

Arborist Report

Dawn Victoria Homes
5209 Stonehaven Drive,
Burlington, ON

City File No.: 510-01/17
Halton Region File No.: 24T-17001/DB-1011



adesso design inc
landscape architecture

~~July 9, 2021~~
November 5, 2021

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Prepared for adesso design inc.
218 Locke Street South, 2nd floor
Hamilton, ON
L8P4B4

Prepared by:
Carleigh Pope,
B.Es, MLA, ISA Certified Arborist ON-2578A

BACKGROUND

The Subject Site is located east of the intersection of Appleby Line and Dundas Street near the Orchard and Tansley Neighbourhoods of Burlington, ON. The site is currently undeveloped with a few large mature trees along its northern boundary. The western limit of the site is bounded by a CN Railway and an existing 3m height noise wall.

Surrounding land uses include detached single-family residential, semi-detached townhouses, industrial/manufacturing, and institutional. West of the CN Railway are several large scale commercial plazas, neighbourhood parks, and recreational areas.

The proposed work includes excavation, grading, and construction of 10 detached single-family homes and an 8-unit townhouse block along with utility installation as required (refer to civil drawings for location of services). A cul-de-sac is proposed at the centre of the subject site and will extend from the existing terminus of Bird Boulevard. A 3 metre height noise wall is proposed along the northwest boundary of the site. Refer to Landscape Plans (designed by IBI Group, updated by adesso design inc.) for proposed softscape treatment.

This report, along with the accompanying Tree Protection Plan (by adesso design inc.), intends to satisfy the City of Burlington and Halton Region (as applicable) requirements for an Arborist Report and any necessary tree-related permit applications. The Subject Site was originally inventoried by IBI Group in 2017 and updated by the report author on July 8th, 2021. For the purposes of this report, *time of inventory* will refer to the inventories carried out on July 8th and October 26th 2021.

METHODS

Trunk size was measured as diameter at breast height (DBH, measured 1.4 m above grade), in accordance with protocols set by the International Society of Arboriculture and adopted by the City of Burlington and Halton Region. None of the inventoried trees are within the jurisdiction of Halton Region, therefore the City of Burlington standards for Tree Inventory and Arborist Report requirements have been used.

All private trees with a trunk diameter equal to or greater than the minimum 20 cm DBH have been included in this report; all Public Trees in the vicinity of the proposed work have been included, regardless of DBH measurement. As per the City's Private Tree Preservation By-Law, the total DBH of trees with multiple stems has been calculated as the sum of all stems.

For the purposes of this report, tree ownership is defined as:

1. "Subject Site Tree": Trees with stem(s) situated on the subject site property,
2. "Neighbouring Tree": Trees with stem(s) situated on adjacent private property
3. "Public Tree": Trees with stem(s) situated on City-owned land adjacent the subject site.
4. "Boundary Tree": Trees with stem(s) from the ground level to the first branch straddles or bi-sects the property line of a lot

This report documents the following:

- Biological data (i.e. species, size, condition, notable observations) for all trees,
- Interpretation of the potential impact of the proposed works on the inventoried trees,
- Recommendations for preservation or removal of individual trees based on the nature of the proposed work, the current health of the tree, and the susceptibility/tolerance of the tree species to various stresses/insults related to construction and other sources,
- Recommendations for protective actions to be taken to mitigate construction-related damage to existing trees to be preserved, and
- Compensation for Trees to be removed as required.

This report has been prepared in accordance with the following applicable municipal by-laws and guidelines of the City of Burlington and Halton Region:

- By-Law to conserve and protect trees on private land within the Urban Planning Area Boundary of City of Burlington (02-2020);
- By-law to regulate planting, maintenance and preservation of trees on or affecting public property (68-2013);
- City of Burlington Specifications Index for Tree Protection and Preservation (SPEC NO. SS12A);
- By-law to prohibit or regulate the destruction or injuring of trees in the Regional Municipality of Halton (121-05)

INVENTORY DATA

Date/Time: July 8, 2021, 7:45 a.m.
Relative Part of Growing Season: Full Leaf
Weather Conditions: Rain 18 °C

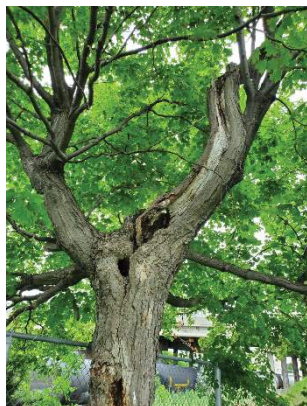
TABLE 1. SUMMARY OF TREES INVENTORIED

Tree Ownership Category	Quantity & Species	Count
1. Subject Site Trees	1 Red Maple 2 Ash Species	subtotal 3
2. Neighbouring Trees	1 Sugar Maple	subtotal 1
3. Public Trees	3 Colorado Spruce 6 White Pine (incl. 1 dead) 2 Littleleaf Linden 1 Red Oak 3 Thornless Honeylocust 1 Tulip Tree 1 White Elm 1 Deciduous tree (dead) 1 Norway Maple 2 Autumn Blaze Maple	subtotal 21
4. Boundary Trees	none	subtotal 0
		total 25

TREE INVENTORY PHOTOS



Tree 1 (Neighbouring)



Tree 1 (Neighbouring) – Large trunk cavity



Tree 2 (Subject Site)



Tree 3 (Subject Site) – Dead/Dying Ash



Tree 4 (Subject Site) – Dead/Dying Ash



Tree 5 (Public)



Tree 6 (Public)



Tree 6 (Public) – Included bark at union



Trees 8 (right) and 9 (left) (Public)



Tree 9 (Public) – Co-dominant leaders and included bark



Tree 10 (Public) – Severe lean due to grapevine growth



Tree 11 (Public)



Trees 12 (left) 13 (centre) and 14 (right) (Public)



Tree 15 (Public)



Trees 16 (left) and 17 (right) (Public)



Tree 18 (Public) – Leader showing signs of decline



Tree 19 (Public) – Dead deciduous tree



Trees 20 (left) 21 (centre) and 22 (right) (Public)



Tree 19 (Public) – large stem wound

OVERALL FINDINGS

A total of 25 individual trees (3 Subject Site, 1 Neighbouring, 21 Public) were recorded at the time of inventory. All trees were located on OLS Survey by Mackay, Mackay, & Peters Ltd (2016).

Inventoried trees represented a range of size classes with some exhibiting symptoms of severe structural and/or health concerns. Trees located within the Municipal Right-of-Way (ROW) are smaller in size and predominantly in good health condition.

Remnants of previously removed trees (by others) were found on the north side of the Stonehaven Drive ROW (i.e. aggressively suckering stumps).

TREES RECOMMENDED FOR PRESERVATION

Trees recommended for preservation have been assessed using one or more of the following criteria:

- Location sufficiently distanced from proposed site works and/or construction related stresses;
- Current health condition is acceptable;
- Tree poses a low hazard level to person or property; and
- General species tolerance to construction-related and other anticipated stressors

Trees recommended for preservation are summarized in table 2 below. All trees to be preserved are to be protected to the satisfaction of the City of Burlington prior to the commencement of construction. All tree protection measures are to remain in place during all stages of construction, as specified in *City of Burlington Specifications Index for Tree Protection and Preservation (SPEC NO. SS12A)*. Refer to the Tree Protection and Mitigation measures section below.

TABLE 2. SUMMARY OF TREES RECOMMENDED FOR PRESERVATION

Tree Ownership Category	Quantity & Species	Count
1. Subject Site Trees	None	subtotal 0
2. Neighbouring Trees	1 Sugar Maple	subtotal 1
3. Public Trees	1 Red Oak 2 Littleleaf Linden 1 Tulip Tree 3 Colorado Spruce 6 White Pine (incl. 2 injuries) 1 Deciduous Tree (dead) 1 Norway Maple 2 Autumn Blaze Maple	subtotal 17 (incl. 2 injuries)
5. Boundary Trees	none	subtotal 0
		total 18

A total of 18 Trees (1 Neighbouring, 17 Public) are recommended for preservation due to sufficient distance from the proposed works. Tree #19 was recorded as dead at the time of inventory, however, it is recommended for preservation as it is on Public property and its size and location make it unlikely to become hazardous.

Two trees (#15 & #17) are identified as to be preserved with non-fatal injury due to minor mTPZ encroachment (3-12%) due to a proposed retaining wall. This degree of encroachment is considered minimal and not expected to cause irreversible damage. Further, the two trees

recommended for preservation with non-fatal injury are both young in age and in good health condition, suggesting a greater resiliency to construction impacts.

TREES RECOMMENDED FOR REMOVAL

Trees recommended for removal have been assessed using one or more of the following criteria:

- Location is in conflict with proposed works to a degree that would compromise the long term structural and/or health integrity
- Current health condition suggests tree is undergoing significant decline and/or death
- Potential impacts from proposed works will cause the tree to become a hazard to person or property
- General species intolerance of construction-related and other anticipated stressors

TABLE 3. SUMMARY OF TREES RECOMMENDED FOR REMOVAL

Tree Ownership Category	Quantity & Species	Count
1. Subject Site Trees	1 Red Maple 2 Ash Species	subtotal 3
2. Neighbouring Trees	none	subtotal 0
3. Public Trees	3 Thornless Honey Locust 1 White Elm	subtotal 4
5. Boundary Trees	none	subtotal 0
		total 7

Seven trees (3 Subject Site, 4 Public) are recommended for removal due to direct conflict with proposed works, excavation, new building construction, utility installation and paving.

The 3 Subject Site Trees recommended for removal were found to be dead/dying (Trees #3 and #4) and/or in a serious state of decline (Tree #2). It is expected that these trees will become hazardous if not removed prior to construction. The condition of Tree #2 at the time of inventory and general species intolerance (Red Maple) of construction related disturbance suggest it will not survive the proposed works.

Tree #11 (Public) is recommended for removal due to direct conflict with proposed servicing. In discussion with the City of Burlington Urban Forestry Department, it was determined the degree of mtpz encroachment from proposed servicing on Tree #11 would make preservation unfeasible.

Existing site conditions constrain alternative layouts for the proposed work that may preserve the three Public Trees recommended for removal. The Subject Site is bounded by a CN Rail corridor to the southwest, Halton Regional Road 5 (Dundas Street) to the northwest, and John William Boich Parkette to the north-northeast. This results in the only possible access to the Subject Site being from the southeast, along Stonehaven Drive.

The current Site Plan proposes a cul-de-sac extension from the existing intersection of Bird Boulevard and Stonehaven Drive, allowing the proposed buildings to be located around the Subject Site's perimeter while utilizing existing infrastructure and servicing.

One Subject Site tree (Tree 2) recommended for removal qualifies under the City of Burlington *Private Tree By-law* (02-2020) and therefore will require a Tree Permit prior to removal. In addition, all Public Trees qualify under the City of Burlington *Public Tree By-law* (68-2013) and will require a Tree Permit prior to removal.

Compensation plantings are proposed for the Subject Site (refer to Landscape Plans designed by IBI Group and updated by adesso design inc.).

Eleven street trees are proposed along Stonehaven Drive and around the proposed cul-de-sac extension from Bird Boulevard (species selection and planting to be carried out by the City of Burlington).

In addition to proposed street trees, a variety of deciduous (9) and coniferous (61) trees are proposed at along the existing and proposed 3 metre height noise wall along the western boundary of the site (refer to Landscape Plans for species and placement).

TREES PREVIOUSLY REMOVED BY OTHERS

Remnants of previously removed trees (i.e. tree stumps aggressively suckering) within the Stonehaven Drive ROW were observed at the time of inventory.

It is important to note that removal of these trees within the Municipal ROW was completed by a party distinct and separate from the current owner of the Subject Site. Any rationale for their removal is speculative and based on available data and/or historical record.

A review of historical Google Streetview imagery indicates that several trees within the Stonehaven Drive ROW have exhibited symptoms of decline and/or stress that may have prompted their removal.

Trees within the Municipal ROW were initially assessed by IBI Group in 2017 and health condition confirmed by City of Burlington Capital Works, Development and Infrastructure Division in an interoffice memorandum from dated October 4 2017 (refer to appendix c).

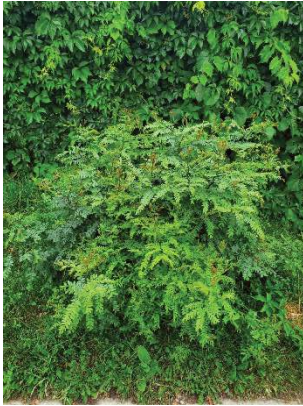
The above memorandum states:

...[T]rees proposed for removal include one black cherry in poor condition (22cm), one ginkgo (DBH 3cm), and four honey locusts (avg DBH 15cm). These trees are rated in good to poor condition as they display minor issues related to trunk integrity and crown structure. These trees are considered immature, and have not reached their ecological potential. [The Capital Works Department] support[s] the removals of these six trees, pending Council approval and compensatory planting/monetary compensation within the ROW.

-Vanessa Aykroyd, Intermediate Technician – Landscaping

It was also clear at the time of inventory that several of the previously removed trees by others were Ash species, and it is likely these were removed in response to an Emerald Ash Borer infestation or related decline. This is not an uncommon practice as untreated Emerald Ash Borer Infestations are virtually terminal for affected trees.

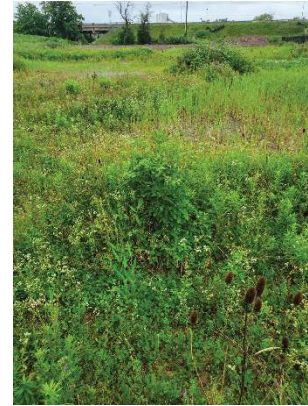
Refer to photos below of trees previously removed by others.



Tree previously removed by others in Stonehaven Drive ROW (Thornless Honeylocust)



Tree previously removed by others in Stonehaven Drive ROW (behind grapevine covered fence) (Ash species)



Tree previously removed by others just beyond Stonehaven Drive ROW (Ash species)

TREE PROTECTION AND MITIGATION MEASURES

The impacts to trees from the construction process can be severe and are often latent. Mechanical damage to tree structures (i.e. trunk, roots, and branches) as well as soil compaction from equipment, staging, material storage, and altered drainage patterns can cause potentially fatal impacts that may not become apparent until long-after construction is completed.

For these reasons, all trees to be preserved shall be afforded adequate protection measures in accordance with *City of Burlington Specifications Index for Tree Protection and Preservation (SPEC NO. SS12A)*. Tree protection measures are to be installed prior to and remain throughout all stages of construction.

The location of temporary tree protection hoarding is depicted graphically on the Tree Protection Plan (by adesso design inc.) accompanying this report. Where possible, the City standard for minimum tree protection zone (mTPZ) and critical root zone (CRZ) have been provided. Table 4 provides a summary of the mTPZ CRZ distances per DBH class for the City of Burlington.

Directional boring is proposed along Stonehaven Drive and through the adjacent John William Boich Parkette to facilitate the installation of new Hydro Electrical Primary Distribution services (refer to Hydro Electrical Layout Plan prepared by IBI Group). This method of utility installation is to be performed at a minimum depth of 1.2m and all associated pits for directional boring are to

be located outside of minimum tree protection zones. Utility installation using trenchless methodologies, such as directional boring, can be minimally invasive to the root system of existing trees with less surface disruption and reduced soil compaction from heavy machinery. It is recommended that trenchless methodologies for utility installation be employed when installing utilities in close proximity to existing trees.

TABLE 4. MINIMUM TREE PROTECTION ZONES PER DBH CLASS

Trunk Diameter (DBH)	Minimum Protection Distances Required	Critical Root Zone Distances Required
< 10 cm	1.8 m	1.8
11-40 cm	2.4 m	4.0
41 – 50 cm	3.0 m	5.0
51 – 60 cm	3.6 m	6.0
61 – 70 cm	4.2 m	7.0
71 – 80 cm	4.8 m	8.0
81 – 90 cm	5.4 m	9.0
91 – 100 cm	6.0 m	10.0

If any disruption or injury occurs to a tree to be preserved, including planned injuries (e.g. “true injuries) and unplanned or accidental injuries (e.g. roots encountered unexpectedly, crown pruning required for construction access or equipment manoeuvring), it is recommended that a qualified tree care professional is consulted and performs all remedial work on the tree(s). General recommendations for mitigating damage trees include (but are not limited to):

- Excavation within mTPZ is to be done by hand and all tree roots that require removal are to be cleanly pruned by a tree care professional and according to best management practices of arboriculture. All exposed tree roots to remain are to be covered immediately with native soil or imported good-quality planting soil using 150mm lifts and hand tamped to prevent air pockets. All areas of disturbed tree roots to remain are to be thoroughly watered immediately upon completion of excavation and backfilling with soil.
- Damaged branches/limbs are to be cleanly pruned by a tree care professional and according to best management practices of arboriculture.
- Damage to tree trunks is to be reported immediately to a tree care professional for consultation and possible action.

CONCLUSIONS

A total of 25 (3 Subject Site, 1 Neighbouring, 21 Public) individual trees have been inventoried and assessed for possible preservation in the context of the proposed work. Eighteen trees (1 Neighbouring, 17 Public) are recommended for preservation, and 7 trees (3 Subject Site, 4 Public) are recommended for removal.

A brief summary of trees previously removed by others has been provided and the rationale for their removal by the previous property owner has been speculated based on historical records and imagery.

Five trees (1 Subject Site, 4 Public) recommended for removal qualify under the City of Burlington Tree Protection By-laws (02-2020 and 68-2013), and therefore will require a Tree Permit prior to removal. Additional approval (i.e. Council Approval) may be required for the Public Trees recommended for removal.

Eleven street trees are proposed along Stonehaven Drive and the proposed cul-de-sac extension from Bird Boulevard. A total of 70 trees (9 deciduous, 61 coniferous) are also proposed within the Subject Site. Refer to Landscape Plans (designed by IBI Group, updated by adesso design inc.) for species and proposed location of compensation plantings.

ASSUMPTIONS & LIMITATIONS

The data and assessment presented in this report are only valid at the time of inspection and inventory.

A reasonable effort has been made to assess the overall condition of trees included in this report.

Unless otherwise stated, all tree data and observations were collected from visual inspection of external tree features from the ground level.

This report is to be used only by the intended recipient for the purposes stated in the Background section. Use by any other person or for any other purpose must be authorized in writing by the consulting arborist or adesso design inc.

The data and its interpretation in this report are the sole opinion of adesso design inc. and were not influenced by any other party.



Carleigh Pope,
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APPENDIX A – TREE INVENTORY TABLE

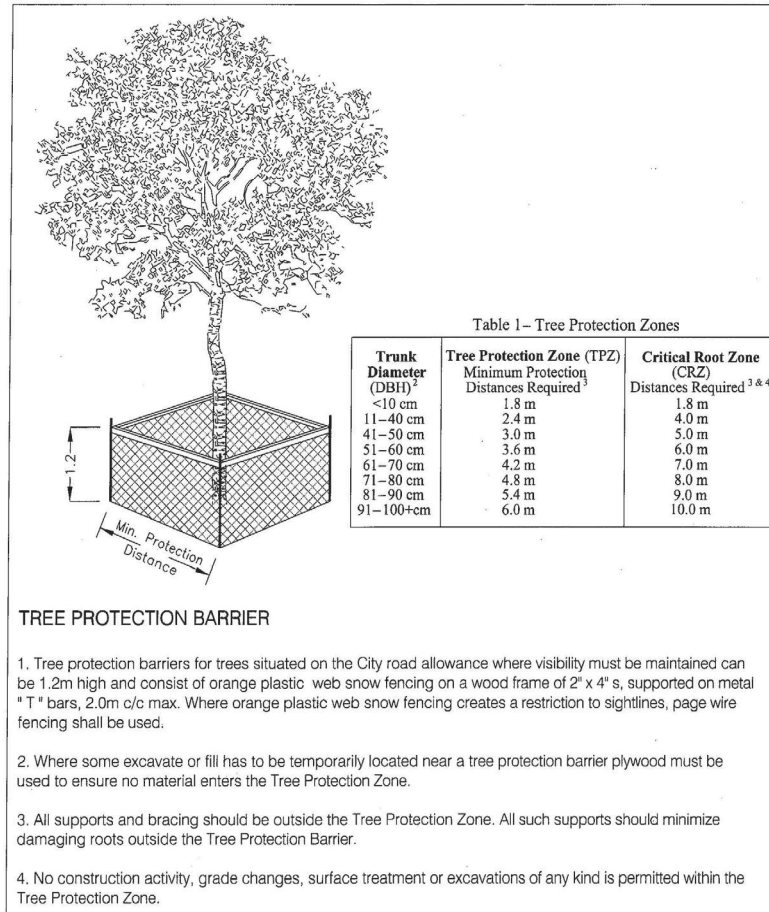
Tree #	Species (Common Name)	Species (Botanical Name)	DBH (cm)	Crown Class*	Condition**	Crown Width (m)	Comments	Potential Impacts from Construction	Ownership	Recommendation
1	Sugar Maple	<i>Acer saccharum</i>	51	D	Fair - Poor	9	Dead branches; large trunk cavity in scaffold branch; stem wound at 1.75m; grapevines throughout canopy		Neighbouring	SAVE
2	Red Maple	<i>Acer rubrum</i>	60	D	Fair - Poor	8	Dead branches; severe grapevine growth in canopy; co-dominant leaders at 2.5m; included bark	direct conflict with proposed noise wall; existing condition makes poses potential hazard	Subject Site	REMOVE
3	Ash species	<i>Fraxinus spp.</i>	65*	D	Dead/Dying	5	Grapevine in canopy; broken leader/major scaffold branch	direct conflict with proposed noise wall; existing condition makes poses potential hazard	Subject Site	REMOVE
4	Ash species	<i>Fraxinus spp.</i>	33	D	Dead/Dying	4	Grapevine in canopy; dead branches; broken branches; leaning southeast	direct conflict with proposed noise wall; existing condition makes poses potential hazard	Subject Site	REMOVE
5	Thornless Honeylocust	<i>Gleditsia triacanthos var. inermis</i>	28	D	Good	6	Tree protection barrier installed; dead branches in canopy (minor)	direct conflict with proposed building footprint	Public	REMOVE
6	Thornless Honeylocust	<i>Gleditsia triacanthos var. inermis</i>	24	D	Good	5	Minor twig dieback; included bark at union	direct conflict with proposed street	Public	REMOVE
7	Red Oak	<i>Quercus rubra</i>	34	D	Good	7	Minor twig dieback		Public	SAVE
8	Littleleaf Linden	<i>Tilia cordata</i>	22	D	Good	4	Included bark at union		Public	SAVE
9	Littleleaf Linden	<i>Tilia cordata</i>	20	D	Good	3.5	Included bark at union; co-dominant leaders at 2.5m; trunk seam on lower stem		Public	SAVE
10	White Elm	<i>Ulmus americana</i>	13	D	Poor	2	Severe grapevine growth throughout canopy; leaning approx. 90° south over existing concrete sidewalk	conflict with proposed driveway(s) and proposed servicing	Public	REMOVE
11	Thornless Honeylocust	<i>Gleditsia triacanthos var. inermis</i>	15	D	Good	4		conflict with proposed servicing; tree recommended for removal in discussion with Burlington Urban Forestry	Public	REMOVE
12	White Pine	<i>Pinus strobus</i>	4	D	Dead	–	Dead standing snag (0.5m ht.)		Public	SAVE

Tree #	Species (Common Name)	Species (Botanical Name)	DBH (cm)	Crown Class*	Condition**	Crown Width (m)	Comments	Potential Impacts from Construction	Ownership	Recommendation
13	White Pine	<i>Pinus strobus</i>	4	D	Good	1			Public	SAVE
14	White Pine	<i>Pinus strobus</i>	4	D	Good	1	Poor form/crooked leader		Public	SAVE
15	White Pine	<i>Pinus strobus</i>	5	D	Good	1	Asymmetrical canopy	3% mtpz encroachment due to proposed noise wall	Public	SAVE
16	White Pine	<i>Pinus strobus</i>	4	D	Good	1			Public	SAVE
17	White Pine	<i>Pinus strobus</i>	4	D	Good	0.75	Conflict with self-seeded <i>Ulmus</i> spp.	12% mtpz encroachment due to proposed noise wall	Public	SAVE
18	Tulip Tree	<i>Liriodendron tulipifera</i>	5	D	Fair - Poor	1	Sparse crown; leader shows significant dieback		Public	SAVE
19	Deciduous tree	—	4	D	Dead	1	Dead standing snag; large stem wound on lower stem		Public	SAVE
20	Colorado Spruce	<i>Picea pungens</i>	5	D	Good	1			Public	SAVE
21	Colorado Spruce	<i>Picea pungens</i>	5	D	Good	0.75			Public	SAVE
22	Colorado Spruce	<i>Picea pungens</i>	5	D	Good	1			Public	SAVE
23	Norway Maple	<i>Acer platanoides</i>	22	D	Good	6	Co-dominant leaders at 2.0m, included bark at unions (minor)		Public	SAVE
24	Autumn Blaze Maple	<i>Acer x freemanii</i> 'Jeffersred'	21	D	Good - Fair	5	Healed stem wounds at 2.0m and 1.0m, included bark at branch-stem unions (moderate), rubbing branches in canopy		Public	SAVE
25	Autumn Blaze Maple	<i>Acer x freemanii</i> 'Jeffersred'	20	D	Good-Fair	4	Poor branch taper, longitudinal crack on main stem		Public	SAVE

APPENDIX B – CITY OF BURLINGTON TREE PRESERVATION DETAILS

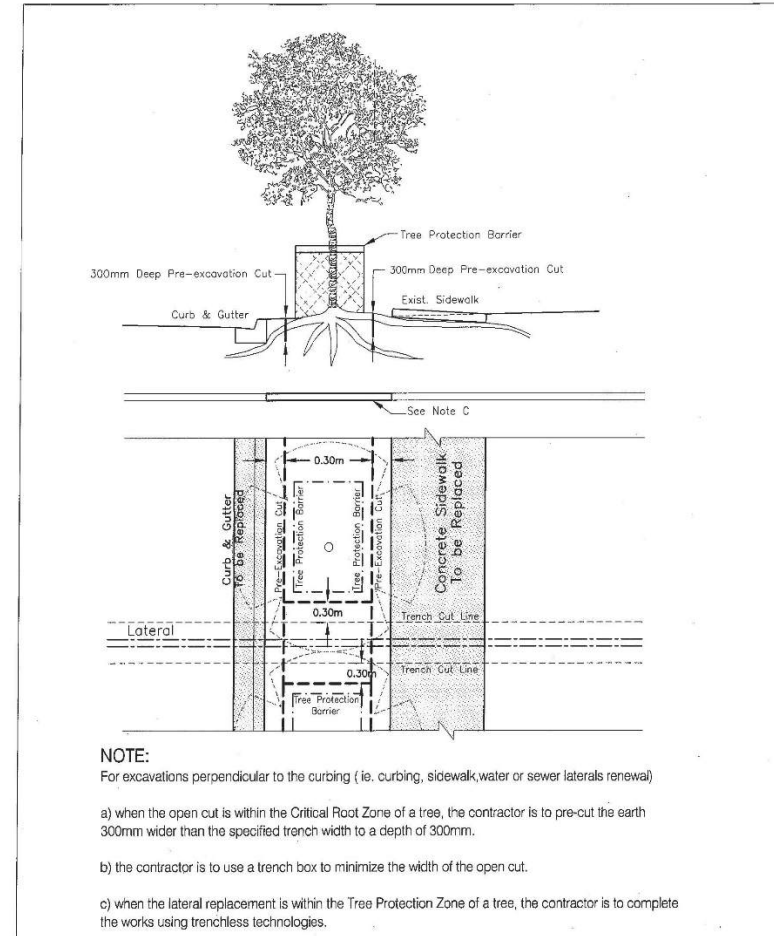
Tree Protection and Preservation Specification No.: SS12

Detail TP-1 – Tree Protection Detail



Tree Protection and Preservation Specification No.: SS12

Detail TP-2 – Root Pruning Detail



APPENDIX C – INTEROFFICE MEMORANDUM – CITY OF BURLINGTON CAPITAL WORKS DEPARTMENT, DEVELOPMENT AND INFRASTRUCTURE GROUP

CITY OF BURLINGTON
“SERVICE ... AN ATTITUDE, A COMMITMENT”

INTEROFFICE MEMORANDUM

Capital Works Department
Development and Infrastructure Group

Date: October 4, 2017

TO: Lauren Vraets
Development Review

CC: Rosalind Minaji
Coordinator of Development Review

Brian McKelvey
City Arborist

FROM: Vanessa Aykroyd, OALA, CSLA
Intermediate Technician - Landscaping
Capital Works
Development and Infrastructure Division

Re: **Rezoning/Subdivision Application**
5209 Stonehaven Drive

File: **510-01/17 & 520-09/17**

Summary

This review is of a submission made by the applicant, and circulated on August 14th, 2017.

The following documents for this rezoning and subdivision have been reviewed:

- Vegetation Management Plan-L1 – by IBI Group, dated May 15th, 2017;
- Draft Plan of Subdivision – by IBI Group, dated June 16th, 2017.
- A site visit on Friday September 27 to confirm species, size, and health of trees on site.

In the following memo, the impacts to urban forestry by the development of this site will be considered through a review of pertinent policy and an analysis of the revised information provided.

Urban Forestry Policy

The City of Burlington has approved long-term and medium-term policy documents that identify the urban forest as key to the city's Strategic Plan goal of a "Healthy and Greener City". The Strategic Plan (2015-2040) identifies the growth of our urban forest as an indicator of environmental health. The current Official Plan also addresses the growth and preservation of our urban forest through specific direction for different planning areas. The Urban Forestry Management Plan (2010-2030) identifies best practices and makes further recommendations to ensure the health and longevity of our urban forest.

The Strategic Plan envisions that the "city's urban forest and tree canopy increases and continues to thrive" through ensuring that "streetscape plans and private development will increase the city's tree canopy". As the majority of our urban forest canopy is composed of privately owned trees, the onus is on both the public *and* private sector to care for the preservation and enhancement of our urban forest.

In the Urban Forest Management Plan, the management of both public and private trees is addressed through five initiatives. Of these, two initiatives directly relate to this rezoning application: 'Protection and Preservation', and 'Replenishment and Enhancement'. These initiatives in relation to the application are discussed below.

The city recognizes the importance of balancing tree protection with the need for greater infill development and infrastructure renewal as the city's population and businesses growth. However, the protection of existing tree resources and replacement of resources that are removed are integral to achieving urban forest sustainability.

Preservation and Replenishment of Trees

City Trees:

Development Impacts

There are six city trees located along the Bird Boulevard/Stonehaven Drive road right of way. One black cherry, one Ginkgo, and four honey locusts are maintained by the City of Burlington and protected by the City's Public tree Bylaw 68-2013. These trees were evaluated by Zara Brown, OALA, ISA (from IBI Group) and listed on the Vegetation Management Plan submitted July 13, 2017. Her assessments of the health and structural condition are in agreement with the City's inventory records.

As per the City's Public Tree Bylaw 68-2013, all city trees (with the exception of those trees listed in Schedule A) that are proposed to be removed (adjacent a site for which a development application has been submitted) require council approval. The request for permission to remove these trees should be included as a recommendation in the Re-zoning/Subdivision to save Council and staff time and resources, as this removal is unlikely to be met with strong resistance.

Impact of Removals and Opportunities for Replacement

The six trees proposed for removal include one black cherry in poor condition (DBH 22cm) one ginkgo (DBH 3), and four honey locusts (Avg DBH 15cm). These trees are rated in good to poor condition as they display minor issues related to trunk integrity and crown structure. These trees are considered immature, and have not yet reached their ecological potential. We support the removals of these six trees, pending Council approval and compensatory planting/monetary compensation within the ROW.

Public trees are replaced as per an 'aggregate caliper ratio' which takes into account the health and structural integrity of the tree in determining its required replacement caliper. After the aggregate caliper formula is applied to account for health and structural condition of public trees, replacement caliper required is 46cm (or 9 x 50mm caliper trees), or a monetary value of \$4600.00. Opportunity to replace these trees in the right of way is open to the lawn areas of lots facing Stonehaven, as well as an extension of Bird Boulevard, which offers additional planting space over and above what exists currently.

On Site Trees:

Development Impacts

There are 42 private trees on this site. Of those 42 trees, 19 (45%) are ash (in extremely poor condition or dead), 16 (38%) are corkscrew willows in fair or poor condition, and the remaining 17% are a combination of black cherry, sugar maple, manitoba maple and cedar. All are listed in poor to fair condition.

Opportunities for Planting/Replanting Trees

While the city does not have a definitive requirement for replanting on private property, our Official Plan, Strategic Plan, Urban Forest Management Plan, Site Plan Application Guidelines,

Public Tree Bylaw, and our Corporate Public Tree Management Policy serve to inform best practices regarding tree replacement on private sites. These documents refer to a 1:1 caliper replacement, meaning caliper removed is the caliper replaced. This is not always possible on private sites or public property so in practice we use the 'aggregate caliper ratio' which takes into account the health and structural integrity of the tree in determining its required replacement caliper.

After the aggregate caliper formula is applied to account for health and structural condition of neighbouring private trees, replacement caliper required is 285cm (or 57x 50mm trees). This amount of planting is potentially feasible on the subject property, especially around the rear lot lines. It is strongly suggested that if caliper replacement cannot be accommodated on site, it should be offered to the new park or school next door.

Landscape

There was no concept landscape/street tree planting plan provided at this time. This plan should be provided at the soonest possible opportunity. The applicant should liaise with the Intermediate Technician – Landscaping in order to provide a planting plan that meets our Strategic Plan initiative of ensuring "private development will increase the city's tree canopy" (p.23) as well as the Urban Forest management Plan goals and objectives and best practices.

Conclusion

Urban Forestry has no objection to the rezoning and subdivision of this site, subject to the following:

- 1. Council Approval is required for the removal of the six city trees. Removals shall not take place until approval is granted by Council. Compensation will be in the form of replanting and/or cash in lieu, with a total value of \$4600.**
- 2. Provide a Street Tree and lot planting plan to the Satisfaction of the Director of Capital Works showing appropriate compensatory replanting in the ROW and on site.**

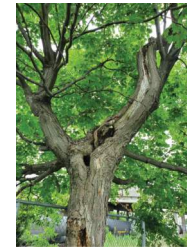
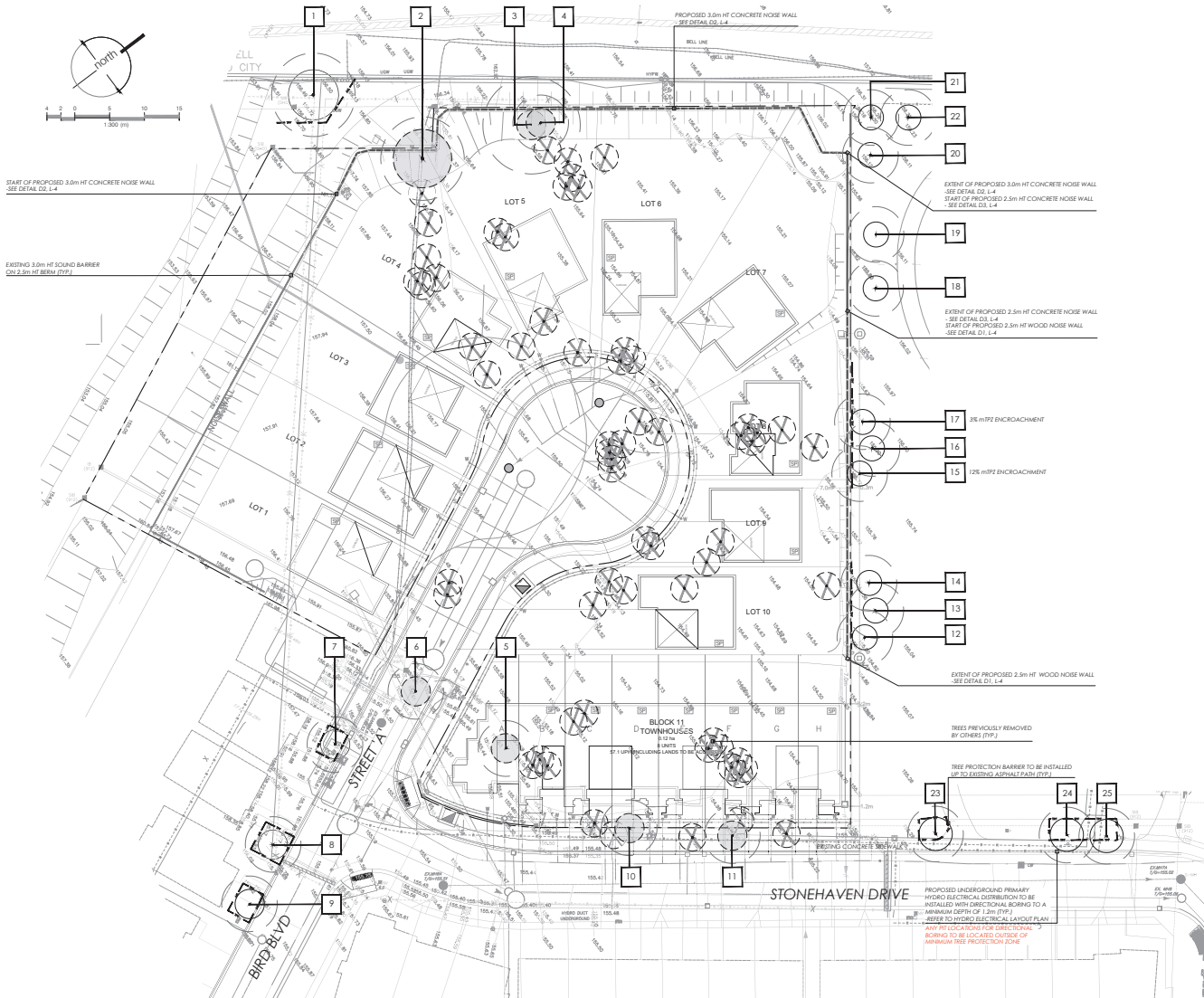
Regards,

Vanessa Aykroyd OALA, CSLA
Intermediate Technician - Landscaping
Capital Works

City of Burlington | www.burlington.ca

P. 905 335 7600, ext 7428 | F. 905 335 7880 | E. vanessa.aykroyd@burlington.ca

Address 426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6



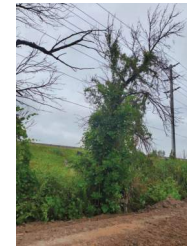
Tree 1 - large trunk cavity



Tree 2



Tree 3



Tree 4



Tree 5



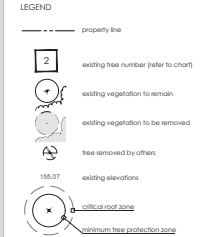
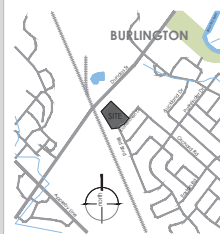
Tree 6



Tree 15



Trees 16 & 17



DRAFT
ISSUED FOR REVIEW & COMMENTS ONLY

NOTE:
Vegetation inventory undertaken by Carleigh Pope
(SA Certified Arborist (ON-2578A) on July 8 2021 and
October 26 2021).

#	DATE	DESCRIPTION
1	2021-07-09	Issued for submission
2	2021-09-30	Issued for submission
3	2021-11-05	Issued for submission



CLIENT
MUNICIPALITY
City of Burlington
PROJECT
5209 Stonehaven Drive

MUNICIPAL FILE NUMBER
510-07/17 & 520-09/17

SHEET
Tree Protection Plan

adesso design inc.
landscape architecture

218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
1.905.524.8876
www.adessodesigninc.ca

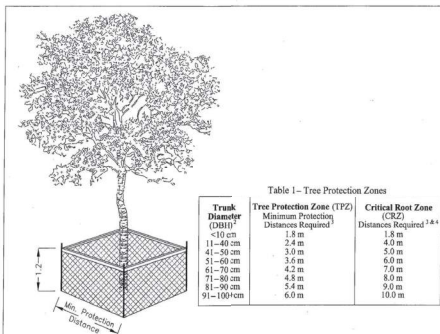
NOTE
Original Tree Preservation Plan submitted by BI Group (2021-03-22).
Revised Tree Preservation Plan and Arborist Report prepared by adesso
design inc. per City of Burlington comments dated February 3 2021.

L-1

Tree Protection and Preservation

Specification No.: SS12

Detail TP-1 – Tree Protection Detail



TREE PROTECTION BARRIER

1. Tree protection barriers for trees situated on the City road allowance where visibility must be maintained can be 1.2m high and consist of orange plastic web snow fencing on a wood frame of 2" x 4" s, supported on metal 1" x 1" bars, 2.0m o/c max. Where orange plastic web snow fencing creates a restriction to sightlines, page wire fencing shall be used.
2. Where some excavate or fill has to be temporarily located near a tree protection barrier plywood must be used to ensure no material enters the Tree Protection Zone.
3. All supports and bracing should be outside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
4. No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

Tree Protection Fencing (with silt fence)

SS-12-01

EXISTING VEGETATION IDENTIFICATION TABLE

Tree #	Species (Common Name)	Species (Botanical Name)	DBH (cm)	Crown Class*	Condition **	Crown Width (m)	Comments	Potential Impacts from Construction	Ownership	Recommendation
1	Sugar Maple	Acer saccharum	51	D	Fair - Poor	9	Dead branches; large trunk cavity in scaffold branch; stem wound at 1.75m; grapevines throughout canopy		Neighbouring	SAVE
2	Red Maple	Acer rubrum	60	D	Fair - Poor	8	Dead branches; severe grapevine growth in canopy; co-dominant leaders at 2.5m; included bark	direct conflict with proposed noise wall; existing condition makes poses potential hazard	Subject Site	REMOVE
3	Ash species	Fraxinus spp.	65*	D	Dead/Dying	5	Grapevine in canopy; broken leader/major scaffold branch	direct conflict with proposed noise wall; existing condition makes poses potential hazard	Subject Site	REMOVE
4	Ash species	Fraxinus spp.	33	D	Dead/Dying	4	Grapevine in canopy; dead branches; broken branches; leaning southeast	direct conflict with proposed noise wall; existing condition makes poses potential hazard	Subject Site	REMOVE
5	Thornless Honeylocust	Gleditsia triacanthos var. inermis	28	D	Good	6	Tree protection barrier installed; dead branches in canopy (minor)	direct conflict with proposed building footprint	Public	REMOVE
6	Thornless Honeylocust	Gleditsia triacanthos var. inermis	24	D	Good	5	Minor twig dieback; included bark at union	direct conflict with proposed street	Public	REMOVE
7	Red Oak	Quercus rubra	34	D	Good	7	Minor twig dieback		Public	SAVE
8	Littleleaf Linden	Tilia cordata	22	D	Good	4	Included bark at union		Public	SAVE
9	Littleleaf Linden	Tilia cordata	20	D	Good	3.5	Included bark at union; co-dominant leaders at 2.5m; trunk seam on lower stem		Public	SAVE
10	White Elm	Ulmus americana	13	D	Poor	2	Severe grapevine growth throughout canopy; leaning approx. 90° south over existing concrete sidewalk	conflict with proposed driveway(s) and proposed servicing	Public	REMOVE
11	Thornless Honeylocust	Gleditsia triacanthos var. inermis	15	D	Good	4		conflict with proposed servicing; tree recommended for removal in discussion with Burlington Urban Forestry	Public	REMOVE
12	White Pine	Pinus strobus	4	D	Dead	--	Dead standing snag (0.5m Ht.)		Public	SAVE
13	White Pine	Pinus strobus	4	D	Good	1			Public	SAVE
14	White Pine	Pinus strobus	4	D	Good	1	Poor form/crooked leader		Public	SAVE
15	White Pine	Pinus strobus	5	D	Good	1	Asymmetrical canopy	3% mtpz encroachment due to proposed noise wall	Public	SAVE
16	White Pine	Pinus strobus	4	D	Good	1		12% mtpz encroachment due to proposed noise wall	Public	SAVE
17	White Pine	Pinus strobus	4	D	Good	0.75	Conflict with self-seeded Ulmus spp.		Public	SAVE
18	Tulip Tree	Liriodendron tulipifera	5	D	Fair - Poor	1	Spars crown; leader shows significant dieback		Public	SAVE
19	Deciduous tree	--	4	D	Dead	1	Dead standing snag; large stem wound on lower stem		Public	SAVE
20	Colorado Spruce	Picea pungens	5	D	Good	1			Public	SAVE
21	Colorado Spruce	Picea pungens	5	D	Good	0.75			Public	SAVE
22	Colorado Spruce	Picea pungens	5	D	Good	1			Public	SAVE
23	Norway Maple	Acer platanoides	22	D	Good	6	Co-dominant leaders at 2.0m, included bark at unions (minor)		Public	SAVE
24	Autumn Blaze Maple	Acer x freemanii 'Jefferson'	21	D	Good - Fair	5	Healed stem wounds at 2.0m and 1.0m, included bark at branch-stem unions (moderate), rubbing branches in canopy		Public	SAVE
25	Autumn Blaze Maple	Acer x freemanii 'Jefferson'	20	D	Good-Fair	4	Poor branch taper, longitudinal crack on main stem		Public	SAVE

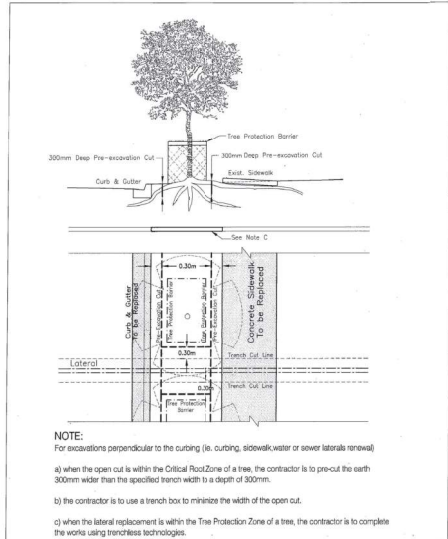
*CROWN CLASS
 Dominant - (I) Emergent canopy (receives full sunlight)
 Co-dominant - (II) Fully emergent top of canopy receives sunlight
 Intermediate - (III) Sub-canopy tree (receives partial sunlight)
 Poor - (IV) Sub-canopy tree (receives partial sunlight)

**CONDITION - consideration of trunk integrity, crown structure and crown vigor
 Good - few or no issues related to trunk integrity, crown structure or crown vigor
 Fair - minor issues related to trunk integrity, crown structure form, some dead or damaged branches or crown vigor (20-85% healthy foliage)
 Poor - issues with trunk integrity such as cavities or exposed dead wood, poor crown structure (poor form, no clear leader, significant dead or damaged branches) or poor crown vigor (<20% healthy foliage)

Tree Protection and Preservation

Specification No.: SS12

Detail TP-2 – Root Pruning Detail



NOTES:

1. The area within the slope of an existing tree shall be properly protected with temporary fencing.
2. The area within the protective fencing shall remain undisturbed with no construction activity, grade changes, surface treatment, compaction, or excavation. Area shall not be used for the storage of building materials or equipment access/storage or project related garaging.
3. Tree protection measures shall be installed prior to any demolition, tree removal or construction and shall remain until the completion of the final grading and sodding, or seeding.
4. Pruning of trees for dead, diseased, weak or hazardous branches only also firm back branches which will interfere with construction, prone for structural deterioration when necessary.
5. No stumps and/or excavated material shall be placed within the tree preservation zone.
6. No rigging cable shall be wrapped around or installed to trees.
7. Where root systems of protected trees are exposed directly adjacent to or damaged by construction work they are to be root pruned and the area back filled with topsoil to prevent root desiccation.
8. Any fine grading within the preservation area is to be done by hand, no heavy equipment is permitted within the preservation zone.
9. Sediment accumulations to be removed by subdivider/builders when sediment deposits reach within 150mm of top of the fabric barrier.
10. A copy of the approved and signed Vegetation Management Plan will be on site for the duration of construction and available upon request.
11. The detail does not represent any particular tree species.

DRAFT
 ISSUED FOR REVIEW & COMMENTS ONLY

NOTE: Vegetation inventory undertaken by Carleigh Pope, ISA Certified Arborist (ON-2578A) on July 8 2021 and October 26 2021.

#	DATE	DESCRIPTION
1	2021-07-09	Issued for submission
2	2021-09-30	Issued for submission
3	2021-11-05	Issued for submission

STAMP



CLIENT

MUNICIPALITY
 City of Burlington

PROJECT
 5209 Stonehaven Drive

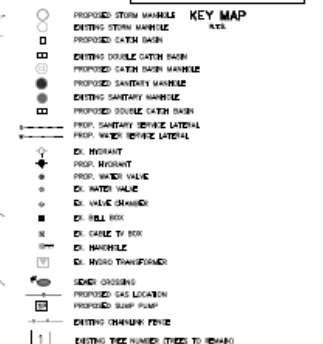
MUNICIPAL FILE NUMBER
 510-07/17 & 520-09/17

SHEET
 Tree Protection Plan

adesso design inc.
 landscape architecture

218 Locke Street South, 2nd Floor
 Hamilton, ON L8P 4B4
 L 905-524-8876
 www.adessodesigninc.ca

L-2

[illegible]

11	MAY 2021	AK	ISSUED FOR PUBLICITY COMMENTS
10	APR 2021	AK	RE-ISSUED FOR TDSB
9	APR 2021	AK	ISSUED FOR FINAL APPROVAL
8	MAR 2021	MS	FOURTH ENGINEERING SUBMISSION TO CITY & REGION
7	MAR 2020	MR	THIRD ENGINEERING SUBMISSION TO CITY & REGION
6	DATE	ROW	REDACTED

10. NO. OF CONTRACTORS

a. CONTRACTORS SHALL NOT EXCEED THE NUMBER

b. ANY CONTRACTOR WHO EXCEEDS BASED ON THE DRAWINGS SHALL BE SUBJECT TO THE DISCIPLINE

c. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK

d. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK

e. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK

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v. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK

w. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK

x. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK

y. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK

z. CONTRACTORS SHALL BE RESPONSIBLE FOR THE WORK


DESIGN	CH'D	IL	DATE
DRAWN	CH'D	IL	Nov. 5, 21

SCALE

1" = 250'

A horizontal scale bar with alternating black and white segments. Below the bar are markings for 0, 50, 100, 150, 200, and 250 feet.

APPROVALS

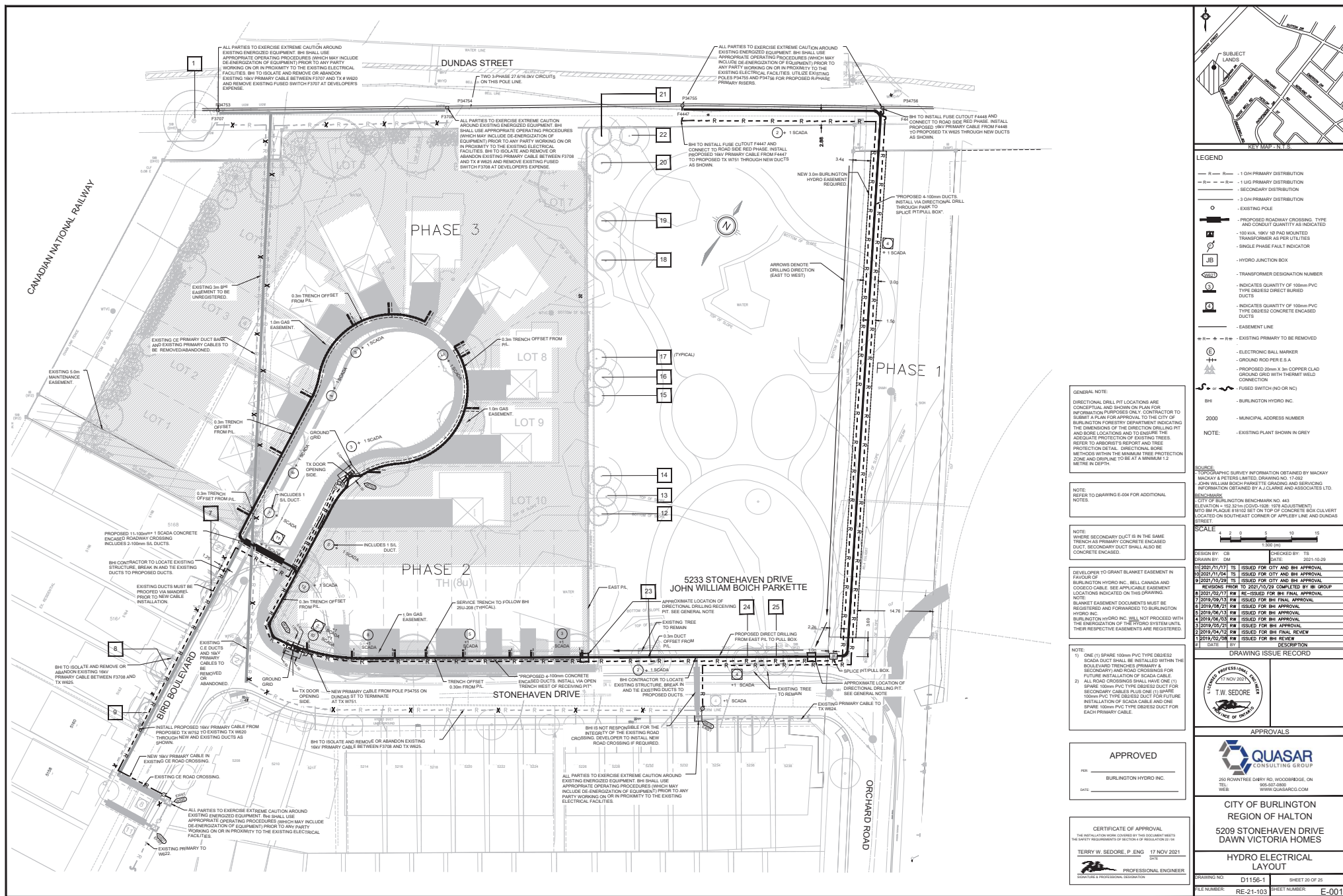
MUNICIPAL	STAMP
EXECUTIVE DIRECTOR OF CAPITAL WORKS	
DATE	



CITY OF BURLINGTON

PROJECT NAME
BASINGSTOKE ENTERPRISES LTD.
STONEHAVEN SUBDIVISION
5209 STONEHAVEN DRIVE
REGION OF HALTON FILE No.: 24T-17001/
DB-1011
MUNICIPAL FILE No.: 510-01/17

	
<h1 style="text-align: center;">SERVICING PLAN</h1>	
PROJECT No. 21052	DRAWING No. 3 of 27



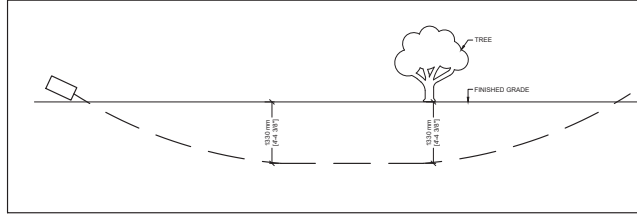
DETAILS & TOWNHOUSE DEVELOPMENT

- TRANSFORMER FOUNDATIONS TO BE PRECAST CONCRETE AS PER B.H.I. SPECIFICATIONS AND STD. DWG. 37-378A
- GROUNDING AT TRANSFORMER TO BE IN ACCORDANCE WITH B.H.I. STANDARDS AND SPECIFICATIONS (B.H.I. STD. DWG. 37-380) AND ELECTRICAL SAFETY AUTHORITY SPECIFICATIONS.
- MINIMUM 4" x 3/4" DIAMETER CU. CLAD GROUND RODS SHALL BE USED WITH 2# 3/8" STRANDED COPPER GRID BURIED HORIZONTALLY TO A MINIMUM DEPTH OF 250mm.
- FISH WIRE, CONSISTING OF 3/8" POLYPROPYLENE ROPS TO BE PULLED INTO EACH DUCT AFTER BEING PROVIDED.
- METERBASE TO BE A MIN. 200A (UNLESS OTHERWISE NOTED ON THE DRAWING) LOCATED 1.0m BACK OF FACE OF HOUSE, 8" (1.6m) TO TOP OF METER GLASS FROM FINISHED GRADE.
- DEMARCATION POINT FROM B.H.I. IS THE LINE SIDE OF THE METERBASE CONNECTION.
- STREETLIGHT SYSTEM SERVICING IS SUBJECT TO INSPECTION AND APPROVAL BY ELECTRICAL SAFETY AUTHORITY AND IS TO BE MAINTAINED BY THE CITY.
- WHERE TRANSFORMERS ARE CLOSER THAN 3.0m TO ANY COMBUSTIBLE SURFACE OR OPENING A SUITABLE FIRE-RESISTANT WALL MUST BE CONSTRUCTED TO ELECTRICAL SAFETY AUTHORITY REQUIREMENTS REFER TO B.H.I. STANDARD DWG. 37-116A FOR DETAILS. CONSTRUCTION OF FIRE-RESISTANT WALL TO BE COMPLETED BY BUILDER'S FORCES. TRANSFORMERS THAT ARE PROTECTED BY AN INTERNAL CURRENT LIMITING FUSE AND ARE EQUIPPED WITH PRESSURE RELIEF DEVICE SHALL BE PERMITTED TO BE INSTALLED WITHIN 3.0m DISTANCE WITHOUT FIRE-RESISTANT WALL, PROVIDED THAT THE CLEARANCES SPECIFIED IN B.H.I. STD. DWG. 37-525 ARE MET.
- TRENCHES ARE TO BE LOCATED 1.0m BACK OF CURB UNLESS OTHERWISE NOTED.
- WHERE TRANSFORMERS ARE POSITIONED LESS THAN 2.0m FROM CURB, THEY ARE TO BE PROTECTED BY 150mm CONCRETE FILLED BOLLARDS (TO BE DETERMINED AND APPROVED BY B.H.I.). SEE B.H.I. STD. DWG. 37-318.
- ALL SECONDARY SERVICES TO BE MARKED AT METERBASES AND TRANSFORMER WITH UNIT AND BLOCK IDENTIFICATION.
- PRIMARY CABLE TO BE 10 AL 28KV TROUSSEAU PER B.H.I. SPECIFICATION. NEXANS PRODUCT APPROVED BY B.H.I.
- TRANSFORMERS TO BE 100kVA 1002V/120V/240V PAD MOUNTED UNLESS OTHERWISE NOTED. CAV FAULT INDICATORS INSTALLED AT EACH LOCATION (HOFSTADT/ANN GMBH #29-6029 LEADKIT).
- SECONDARY CABLE TO BE 5/30 AL 600V USE 90 OR 2/40 CU. RWU 90 + 1/40 CU. RWU 90 1002V IN 100mm PVC TYPE DB952 DUCT. NEXANS PRODUCT APPROVED BY B.H.I.
- SIL CABLE TO BE 2/4# CU. COW GND. NMMU CABLE IN 90mm PVC TYPE DB952 DUCT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATES FROM ALL UTILITIES PRIOR TO CONSTRUCTION. STARTING THE CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM. CONTRACTOR TO HAND EXCAVATE AND EXPOSE UTILITIES AS REQUIRED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION IN EXISTING AREAS (e.g. BOULEVARDS AND DAW AFRONS) TO THE SATISFACTION OF THE CITY OF BURLINGTON. REGION OF HALTON, BURLINGTON HYDRO AND THE HOME OWNER.
- SPICES IN 10 AL 28KV PRIMARY CABLES ARE NOT PERMITTED.
- CONTRACTOR SHALL LEAVE 5.0m COL OF PRIMARY CABLE AT TRANSFORMERS FOR TERMINATIONS AND CONNECTIONS BY B.H.I.
- CONTRACTOR TO INSTALL "LOCAL BALL MARKERS" ON ALL DUCT STRUCTURES. "LOCAL BALL MARKERS" TO BE SUPPLIED BY BURLINGTON HYDRO TO THE CONTRACTOR AND MAINTAINED TO THE DEVELOPER.
- CONNECTIONS TO EXISTING BURLINGTON HYDRO SYSTEMS TO BE COMPLETED BY HYDRO FORCES AT THE EXPENSE OF THE DEVELOPER.
- CONTRACTOR SHALL COIL 20.0m OF PRIMARY CABLE (IF phase) AT THE BASE OF TERMINAL POLES. FINAL TAPPING TO BE COMPLETED BY B.H.I.
- ALL TERMINATIONS IN ENERGIZED EQUIPMENT TO BE DONE BY B.H.I. FORCES AT THE DEVELOPER'S EXPENSE.
- ENSURE SECONDARY CABLES IN TRANSFORMER ARE TAPPED TO CORRESPOND WITH THEIR RESPECTIVE UNIT NUMBERS, USING B.H.I. APPROVED TAPPING.
- ALL CABLE TIES INTO EXISTING HYDRO PLANT AND EQUIPMENT TO BE INSTALLED WITH B.H.I. ASSISTANCE AFTER ALL OTHER CABLES ARE INSTALLED. B.H.I. TO TERMINATE THESE TIE-IN CABLES AT BOTH ENDS.
- ALL DUCT COUPLINGS TO BE PVC DB952.
- MATERIALS NOT APPROVED BY B.H.I. WILL NOT BE ACCEPTED (INCLUDING METERBASES).
- DEVELOPER/BUILDER TO PROVIDE SOFT LANDSCAPE AT FROST LOOP FOR HYDRO SERVICES.
- EASEMENT IS REQUIRED FOR PRIMARY & SECONDARY CABLES AND TRANSFORMERS LOCATED ON PRIVATE PROPERTY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SECONDARY HYDRO SERVICE TAILS DO NOT ENTER THE LOT UNDER THE PROPOSED DRIVEWAYS.
- FROST LOOPS NOT TO BE UNDER DRIVEWAYS OR SIDEWALKS.
- UNLESS OTHERWISE NOTED, EACH ROAD CROSSING SHALL INCLUDE 2 DUCTS FOR TELEPHONE AND 2 DUCTS FOR CATV. THESE DUCTS SHALL NOT BE EXTENDED TO OR ENTER ANY ELECTRICAL EQUIPMENT.
- CONDUIT QUANTITIES INDICATED IN THIS DRAWING ARE FOR HYDRO SYSTEM ONLY. REFER TO BELL AND CATV DESIGNS FOR COMMUNICATION CONDUIT REQUIREMENTS.

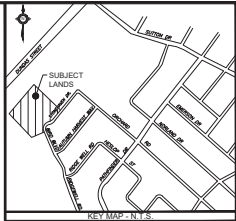
NOTE:
1) ONE (1) SPARE 100mm PVC TYPE DB952 SCADA DUCT SHALL BE INSTALLED WITHIN THE BOULEVARD TRENCHES PRIMARY & SECONDARY AND ROAD CROSSINGS FOR FUTURE INSTALLATION OF SCADA CABLE.
2) ALL ROAD CROSSINGS SHALL HAVE ONE (1) SPARE 100mm PVC TYPE DB952 DUCT FOR FUTURE INSTALLATION OF SCADA CABLE AND ONE SPARE 100mm PVC TYPE DB952 DUCT FOR EACH PRIMARY CABLE.

DEVELOPER TO GRANT BLANKET EASEMENT IN FAVOUR OF BURLINGTON HYDRO INC. BELL CANADA AND COGECO CABLE. SEE APPLICABLE EASEMENT LOCATION ON E-501, E-502 & E-503.
NOTE:
BLANKET EASEMENT DOCUMENTS MUST BE REGISTERED AND FORWARDED TO BURLINGTON HYDRO INC. BURLINGTON HYDRO INC. SHALL NOT PROCEED WITH THE ENERGIZATION OF THE HYDRO SYSTEM UNTIL THEIR RESPECTIVE EASEMENTS ARE REGISTERED.

NOTE:
WHERE SECONDARY DUCT IS IN THE SAME TRENCH AS PRIMARY CONCRETE ENCASED DUCT, SECONDARY DUCT SHALL ALSO BE CONCRETE ENCASED.




33 05 07.13-XX-SI - UTILITY DIRECTIONAL DRILLING [1-50XP]
SCALE: N.T.S.



LEGEND	
— R — R —	- 1 OH PRIMARY DISTRIBUTION
— R — R —	- 1 LG PRIMARY DISTRIBUTION
— R — R —	- SECONDARY DISTRIBUTION
— R — R —	- 3 OH PRIMARY DISTRIBUTION
— R — R —	- EXISTING POLE
— R — R —	- PROPOSED ROADWAY CROSSING, TYPE AND CONDUIT QUANTITY AS INDICATED
— R — R —	- 100 kVA, 18KV IS PAD MOUNTED TRANSFORMER AS PER UTILITIES
— R — R —	- SINGLE PHASE FAULT INDICATOR
— R — R —	- HYDRO JUNCTION BOX
— R — R —	- TRANSFORMER DESIGNATION NUMBER
— R — R —	- INDICATES QUANTITY OF 100mm PVC TYPE DB952 DIRECT BURIED DUCTS
— R — R —	- INDICATES QUANTITY OF 100mm PVC TYPE DB952 DIRECT BURIED DUCTS
— R — R —	- EASEMENT LINE
— R — R —	- EXISTING PRIMARY TO BE REMOVED
— R — R —	- ELECTRONIC BALL MARKER
— R — R —	- GROUND ROD PER E.S.A.
— R — R —	- PROPOSED 25mm x 3m COPPER CLAD GROUND GRID WITH THERMAL WELD CONNECTION
— R — R —	- FUSED SWITCH (NO OR NC)
— R — R —	- BURLINGTON HYDRO INC.
— R — R —	- 2000 - MUNICIPAL ADDRESS NUMBER
— R — R —	- EXISTING PLANT SHOWN IN GREY

SOURCE:
TOPOGRAPHIC SURVEY INFORMATION OBTAINED BY MACKAY MACKAY & PETERS LIMITED, DRAWING NO. 17-062
JOHN WILLIAM BISHOP PARTNERS GRADING AND SERVICES
INFORMATION OBTAINED BY A.J. CLARKE AND ASSOCIATES LTD.

REFERENCE:
CITY OF BURLINGTON BENCHMARK NO. 443
BURLINGTON + 102.32 M (GVD+102.32 M ADJUSTMENT)
WFO BM PLACED IN 105.181 M ON TOP OF CONCRETE BOX CULVERT LOCATED ON SOUTHEAST CORNER OF APPLEBY LINE AND DUNDAS STREET.

			
1:500 (m)			
DESIGN BY: CB			
DRAWN BY: DB			
CHECKED BY: TS			
DATE: 2021-10-29			
11	2021/11/17	TS	ISSUED FOR CITY AND BHI APPROVAL
12	2021/11/17	TS	ISSUED FOR CITY AND BHI APPROVAL
9	2021/10/19	TS	ISSUED FOR CITY AND BHI APPROVAL
REVISIONS PRIOR TO 2021/10/29 COMPLETED BY SH GROUP			
6	2019/02/17	RW	RE-ISSUED FOR BHI APPROVAL
7	2019/02/17	RW	ISSUED FOR BHI FINAL REVIEW
8	2019/02/17	RW	RE-ISSUED FOR BHI APPROVAL
5	2019/06/13	RW	ISSUED FOR BHI APPROVAL
4	2019/06/03	RW	ISSUED FOR BHI APPROVAL
3	2019/05/21	RW	ISSUED FOR BHI APPROVAL
2	2019/04/12	RW	ISSUED FOR BHI FINAL REVIEW