

Appendix B

Tree Inventory and Assessment Report

TREE INVENTORY AND ASSESSMENT REPORT



North York Centre South South Service Road Class Environmental Assessment Study

Prepared for:

***GHD
110 Scotia Court, Unit 41
Whitby, ON***

Prepared by:

Schollen & Company Inc.

Date: October 30, 2013

Schollen & Company Inc.

October 30, 2013

1.0 Introduction

As part of the site inventory documentation required for the North York Centre – South Service Road, Class Environmental Study Assessment being undertaken by GHD, Schollen & Company Inc. completed a vegetation inventory and assessment to document existing conditions and characterize the vegetation communities that could be affected by the implementation of the proposed service road. The tree inventory will aid in the process of exploring and evaluating alternative road alignments and configurations which will be prepared as part of the study, with each of the future alternative layouts identifying the existing trees, vegetation and landscape elements potentially impacted by each respective alignment.

The approximate limit of the study area, illustrated in red in the Figure 1.0 Map below, encompasses the general area east of Yonge Street at Sheppard Avenue, specifically with a focus on Doris Avenue and Bonnington Place and portions of Tradewind Avenue and Avondale Avenue.

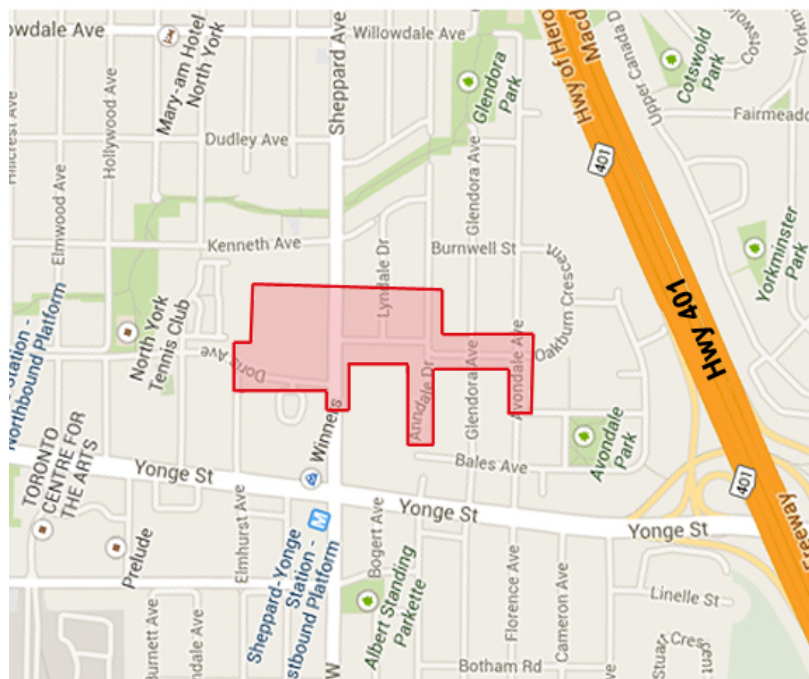


Figure 1.0 Study Area

2.0 Methodology

An inventory of the study area was completed by staff of Schollen & Company Inc. on October 3, 2013. The inventory exercise was focused on identifying and assessing all trees within the study area as well as those within 6m of the limit of the subject site with a diameter at breast height (DBH) of 100mm or greater. However, as a component of the exercise trees smaller than this 100mm threshold were identified in some areas of the site.

Trees were assessed to determine their merit for retention based upon the following parameters:

- *Species Quality* – Species that are non-native, invasive, characteristically weak wooded or prone to disease were considered to be of low species quality. In addition, species that are not well-suited for integration into the proposed streetscape and trees with characteristically poor form and branching characteristics are afforded a lower species quality ranking,
- *Condition* – Trees exhibiting limb loss, crown dieback, splitting, or potential to split, trunk cavities, evidence of insect infestation, and/or bark loss were determined to be in poor condition and were assigned a low merit for retention. Trees that exhibited some of these characteristics but appeared to be otherwise healthy and structurally sound were afforded a ranking of fair. Trees that exhibited poor form, structure and health were designated as in poor condition. Several trees within the site are dead or dying and these were identified as well.
- *Age/Size* – Larger trees were assigned a higher merit for retention than saplings or over-mature specimens.

Figure D-1 'Tree Inventory Plan' provides an illustration of the findings of the inventory exercise and indicates the location of each tree and grouping and its assigned reference number. Table 1 provides an itemized description of the species, size and condition of each tree inventoried and references existing tree tags where found. Comments related to the specific condition or characteristics of some of the trees are provided within this table. A photographic inventory of the various trees was compiled and is included as Appendix A of this document. Figure D-2 'Tree Inventory Rating Plan' indicates the condition of each tree, expressed as 'good', 'fair' or 'poor'. Figure D-3 includes keys that indicate the vantage point and direction from which each photograph in Appendix A was taken. Figure D-4 – 'Tree Assessment' illustrates the respective 'merit for retention' of each tree inventoried during the evaluation of alternative road alignments and configurations. This figure also illustrates the location of more highly rated trees that are suitable for transplantation should they be anticipated to be adversely impacted by aspects of the proposed road.

Only some of the trees had been previously affixed with metal tag with a number that cross-references to Table 1. It should be noted that the tag numbers affixed to the trees in the field were not necessarily in continuous chronological order and only larger trees in the vicinity of Doris Avenue with a DBH of 200mm or greater were affixed with a tag. Some tags were missing or removed.

To determine the potential for retention of trees within the context of the proposed alternative road alignments, each alternative plan will be overlaid on Drawing D-4 (Option A, B or C) and an assessment identifying the

potential for retention of each tree, and indicating the location of trees that can be retained within the context of the proposed development in anticipation of construction, grading and servicing implications will be prepared.

3.0 Summary of Inventory

Table 1 and Drawings D-1 and D-2 combined provide a detailed description of the location, species composition, size and condition of each tree and group of trees inventoried. The open space parkland, south of the School Board Building on the east side of Doris Avenue and the residences along the west side of Bonnington Place were a prime focus of the inventory due to the potential to be the most affected by the future service road.

A total of 108 trees and tree groups were inventoried. Most were found to be generally in good to fair health and condition.

Table 1 provides an itemized summary of the findings of the inventory exercise. Drawing D-1 illustrates the number and location of all trees inventoried. A 1:500 scale version of Drawing D-1 is included with this report.

4.0 Summary of Future Assessment

Pending the development of the preferred and alternative layouts for the Service Road, the future assessment exercise will be undertaken with the objective of determining the relative ‘merit for retention’ of each tree inventoried on the basis of the parameters set out in Section 2 – Methodology.

Table 2 will indicate the ‘merit for retention’ assigned to each tree in the process of exploring and evaluating alternative road alignments and configurations.

Subsequent to determining the ‘merit for retention’ of each tree inventoried, a comparative assessment of the implications of the construction of the proposed road will be completed to determine the ‘potential for preservation’ of each tree inventoried. Utilizing the various service road alignment alternatives, the degree of potential impact anticipated to arise as a consequence of construction, grading and servicing of the proposed road will be determined and the potential for preservation of each tree defined.

Table 2 and Drawing D-4 (A, B, and C) will describe and illustrate the findings of this assessment task as it relates to each alternative layout.

A 1:500 scale version of Drawing D-4 will be provided with this document.

5.0 Tree Preservation Recommendation

The following recommendations are provided with the objective of mitigating potential impacts on trees that are proposed to be retained.

Site Clearing and Tree Protection

1. *Protect trees and plants on site and adjacent properties where indicated in the approved plans.*
2. *Maintain any temporary protective hoarding around trees and vegetation area adjacent to construction work, as shown on drawings. Evaluate all trees to remain within 6m of the proposed limit of new works, prior to finalizing location for the tree protection fencing.*
3. *Contractor and Owner shall review the limits of construction and proposal location of the tree protection fencing to ensure adequate tree protection zones (T.P.Z.) are maintained for trees to remain to ensure the stability of the trees will not be compromised.*
4. *Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. No dumping and storage of materials over root zones is allowed. Heavy equipment should not be allowed to compact the soil over the root zone of existing trees. To avoid damage to trees are to be protected, access routes should be established away from protected areas.*
5. *Minimize stripping of topsoil and vegetation at limits of work zone adjacent trees to remain.*
6. *Restrict tree removal to areas indicated on drawings.*
7. *Restrict final placement of tree protection fencing, contractor to confirm that the setbacks for fencing adjacent protected trees are in general conformance with the recommended setbacks as noted below.*
8. *No rigging cables shall be wrapped around or installed in trees; and surplus soil, equipment, debris or materials shall not be placed over root systems of the trees within the protective fencing. No contaminants will be dumped or flushed where feeder roots of trees exist.*
9. *Where limbs or portions of trees are removed to accommodate construction work, they will be carefully removed by an ISA certified Arborist.*
10. *Where root system of protected trees are exposed directly adjacent to or damaged by construction work, they shall be assessed for hydrovac excavation and pruned by a qualified arborist and the area back filled with appropriate material to prevent desiccation.*
11. *If grades around trees to be preserved are likely to change, the developer shall be required to take such precaution as dry welling and root feeding to the satisfaction of the City authorities.*
12. *Trees to be preserved that have died or have been damaged beyond repair shall be subject to suitable compensation as determined by the City of Toronto and review of the Tree Inventory and Analysis.*
13. *An ISA certified Arborist shall be on site for any work which impacts any tree or Tree Protection Zone.*

TABLE 5 – TREE PROTECTION ZONES (TPZ)

Trunk Diameter (DBH) ¹	Minimum Protection Distances Required ²
< 10 cm	1.2m
10 – 29 cm	1.8m
30 – 40 cm	2.4m
41 – 50 cm	3.0m
51 – 60 cm	3.6m
61 – 70 cm	4.2m
71 – 80 cm	4.8m
81 – 90 cm	5.4m
91 – 100 cm	6.0m
> 100 cm	6 cm protection for each 1 cm diameter

Tree Preservation

Specific tree preservation methods will need to be implemented to ensure that trees are not adversely affected by the proposed construction, including hoarding and fencing specifications.

Four important tree preservation measures should be undertaken if the trees recommended for retention are to be preserved in a manner which will maintain their health over the long term. Firstly, construction access areas must be adequately protected against soil compaction. Secondly, tree protection zones (TPZs) of adequate size must be established around the affected trees prior to the commencement of any construction activity. Thirdly, root-sensitive evacuation should be conducted wherever required. Finally, root pruning must be undertaken prior to any construction where root damage may occur.

Construction Access Areas

The movement of equipment and materials across root zones should be kept to an absolute minimum. All overhanging branches which may interfere with the movement of equipment should be pruned back in an arboriculturally-correct manner. All pruning must be conducted by a certified arborist; trades workers must not be involved in any tree-related work.

Tree Protection Zones (TPZs)

The purpose of a tree protection zone is to prevent root damage, soil compaction and soil contamination, and workers and machinery must not disturb tree protection zones in any way. To prevent access and ensure that the TPZ is effective, the following steps are required:

- 1. No groundbreaking activities or demolition should occur until all tree preservation requirements have been met. The erection of proper hoarding, as described below, is of primary concern.*
- 2. Hoarding shall consist of approved plywood fencing or approved equal, in accordance with plan details, supported by a solid frame, and must be maintained intact and upright throughout the course of construction.*
- 3. All hoarding is to remain in place in good condition throughout the entire duration of the project. Where fill has been temporarily positioned near a tree protection barrier, no such material will be permitted to enter the Tree Protection Zone. When hoarding is removed at the conclusion of site*

works, ensure no gravels or other foreign material are allowed to enter within the tree protection zone and take measures to ensure the preservation of understory and ground cover.

- 4. No fill, equipment or supplies are to be stored within the TPZ at any time.*
- 5. All contractors and supervisors should be informed of the tree protection requirements at a pre-construction meeting.*
- 6. If injury should occur to retained trees during construction, appropriate treatment should be performed in a timely manner by an approval tree service company.*

Root Pruning

Root pruning can help ease the stresses experienced by a tree with root damage, encourage the growth of new fine and feeder roots, and prevent the spread of decay. Proper root pruning should be done in advance of anticipated root-damaging excavation, or immediately afterwards if such injury was unforeseen. Root pruning may be required during the installation of the proposed works and shall be performed as noted.

- 1. Roots that are severed, exposed, or diseased are to be properly pruned with clean hand tools only. Shovels, picks or other construction tools shall not be used to prune roots.*
- 2. Roots should be pruned in a similar fashion as branches, taking care to maintain the integrity of the root bark ridge.*
- 3. Wound dressings or pruning paint must not be used to cover the ends of any cut.*
- 4. Prolonged exposure of tree roots must be avoided – exposed roots should be covered and kept moist with soil if they are to be exposed for longer than 4 hours.*

Post Construction Care

Trees which have been retained through the construction process should be regularly monitored for signs of construction-induced stress, which may not be apparent until 5-10 years after site disturbance. Any broken or dead branches must be properly pruned. Where newly exposed due to adjacent tree removals, existing trees to remain along the perimeter of the work zone are to be reviewed with an approval tree service consultant for potential hazard or dead tree limbs, and pruned where they may pose a danger to the public.

Tree Transplantation – Procedures and Post Care

Young trees suitable for transplanting from 60-150mm dia are designated on the Tree Assessment Plan, Dwg. D-4. Trees are to be confirmed in the field by the Consultant for transplantation potential prior to tree clearing operations and marked for the contractor's review and confirmation with the tree-moving firm. Recommended trees shall have good form, crown and single leader to be considered for relocation. Tree moving procedures to conform to transplantation standards and approved practices.



1. Group 1 Pines and Linden beyond



2. View north to Trees 1-3



3. Tree 9 - Linden



4. Trees 6, 7, 8



5. Trees 11-14 & Group 15



6. Trees 17, 18 & Group 16



7. Tree 19



8. Trees 20, 21, 22, 23 Group



9. Group 23 Pines



10. Group 54 and large Tree 61,
view south along Doris Drive

North York Service Road Tree Inventory Photographs

13004
3 October 2013



9B. Group 23 Pines



11. Tree 24



12. Tree 25



13. Tree 26



14. Tree 27



15. Trees 28, 29



16. Tree 30



17. Tree 32



18. Trees 33, 34, 25



19. Tree 35



20. Tree 37 Small Oak Tree



21. Group 38

North York Service Road
Tree Inventory Photographs

13004
3 October 2013



22. Trees 39, 40, 41



23. Tree 42



24. Trees 43, 44, 45



25. Trees 48, 49



26. Trees 50-53



27. Overview looking south at
Pine group 54



28. Overlooking northwest at south
end Group 54 and Trees 55-59



29. Tree 57



30. Tree 61, large maple



31. Group 63 and 64, 12 Crabapple



32. Trees 65-68



33. Trees 69-71, 99

North York Service Road
Tree Inventory Photographs

13004
3 October 2013



34. Tree 72



35. Trees 77-80



36. Overview looking west toward Doris Ave, Trees 48-57 in centre photo



37A. Trees 81-84



37B. Group 85 and 86



38. Tree 87



39. Tree 88



40. Trees 91-96



41. Trees 97, 98, 99



42. Group 100



43. Trees 104-101,
View east on Sheppard Ave. E

North York Service Road
Tree Inventory Photographs

13004
3 October 2013



44. Tree 105



45. Tree 106



46. Overview of Hedgerow:
Group 108 north end



47. Group 108 at lot 22, Bonnington Place
Pines and Chinese Elm at fence line



48. Tree 106/107 at 18 and 16 Bonnington
Place



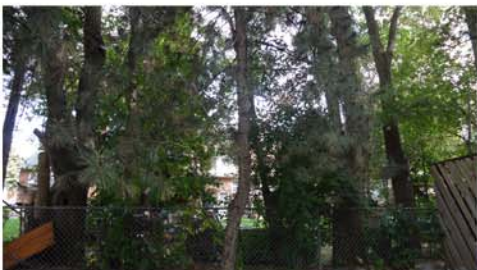
49. Tree 109 at 14 Bonnington Place



50. Tree 111 and 112 at
12 Bonnington Place



51. Tree 115, 114, 116 at
8 and 6 Bonnington Place



52. Group 113 and 6 and 4
Bonnington Place



53. Backyards Trees, Group 119



54. Group 119



55. Group 120 Backyard Overview at
25 and 23 Bonnington Place

North York Service Road
Tree Inventory Photographs

13004
3 October 2013



56. Frontyard Tree #122



57. Group 120 Trees along property line
between 23 and 21 Bonnington Place



58. Tree 125C



59. Tree Group 125 backyard



60. Tree 128



61. Group 130 wet edge



62. Group 130, view of south edge



63. Tree 141



64. Group 148



65. Tree 149 - Wide canopy tree in
boulevard



66. Tree 150 in backyard

North York Service Road
Tree Inventory Photographs

13004
3 October 2013



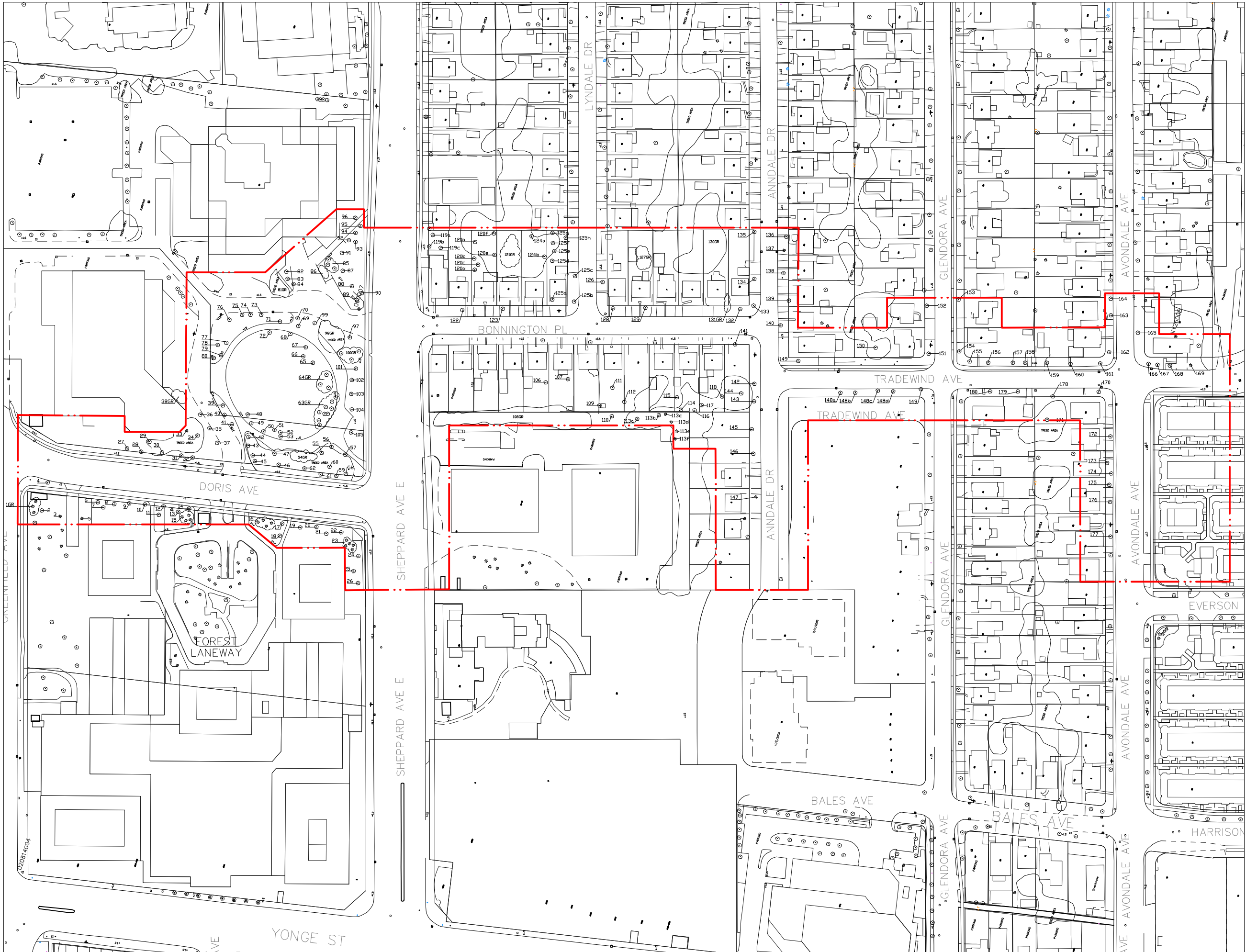
67. Trees 156-158 view south



68. Group 171, Tree 178
view north



69. Trees 179, 189 view south



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No.	Revision	Date	By
1			

- LEGEND**
- TREE
 - TREE NUMBER
 - GROUP OF TREES
 - STUDY AREA LIMIT

Consultant:

Municipality:

Drawing Prepared By:

SCHOLLEN & Company Inc.
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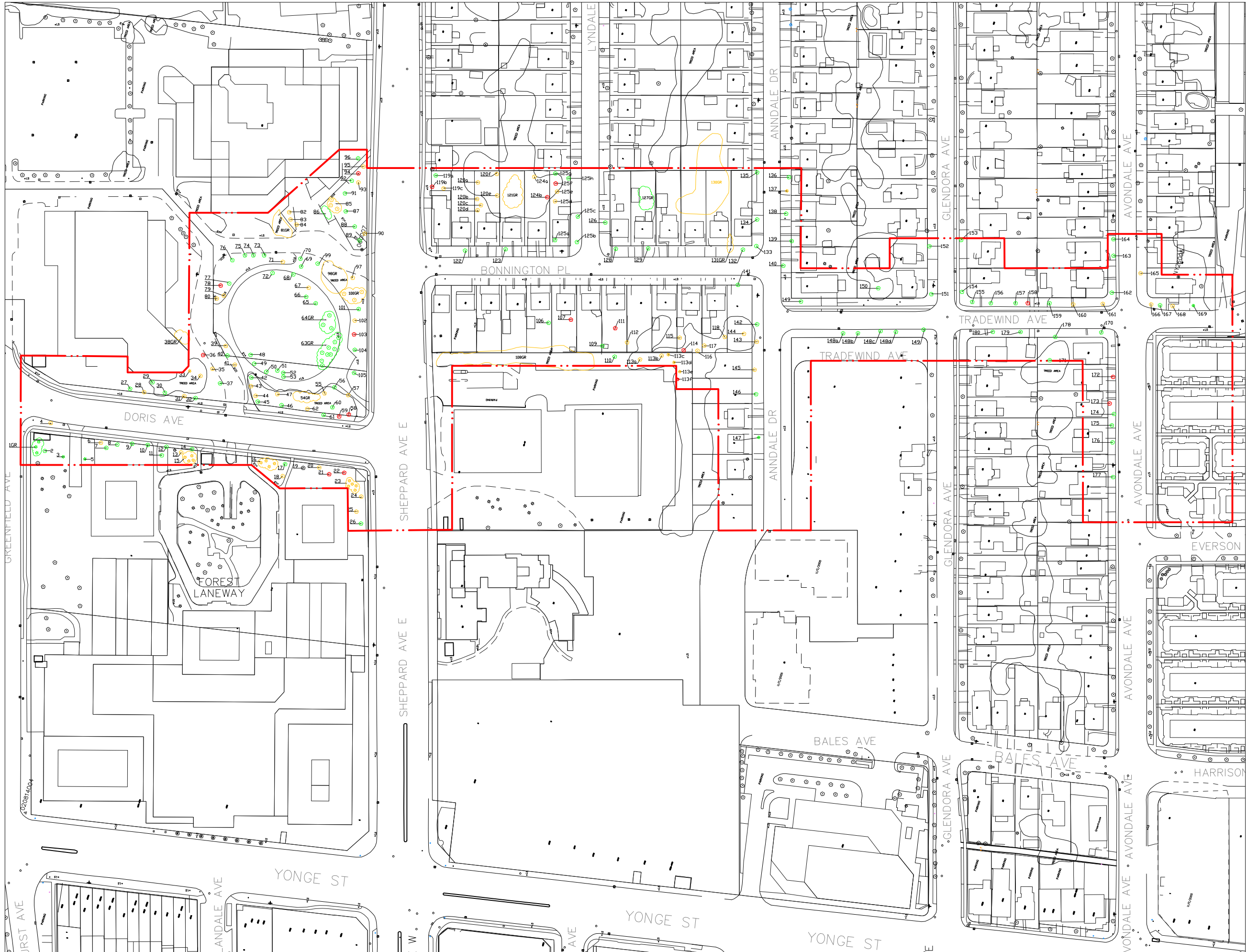
**NORTH YORK
SERVICE ROAD**

Drawing Title:

**TREE INVENTORY
PLAN**

Drawn: AK	Design: RMS	Date: Oct 2013
Checked: RMS	Apprvd:	Scale:
Project No.: 13004		

TOWN REVIEWED	D-1
Town No	



No.	Revision	Date	By
1			

TREE CONDITION

- GOOD, GOOD-FAIR
- FAIR, FAIR-POOR
- POOR



Consultant:



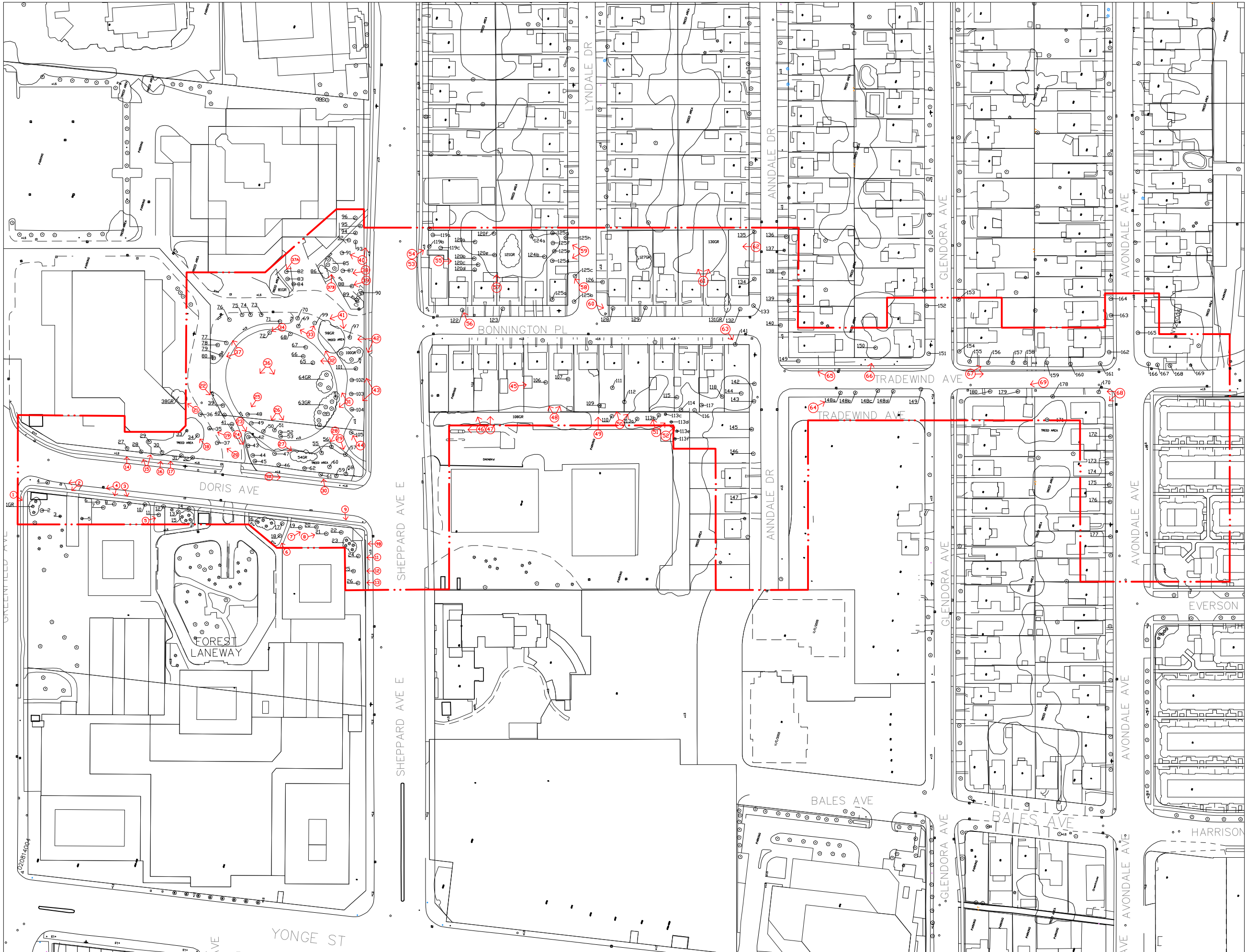
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Project Name:
**NORTH YORK
SERVICE ROAD**

Drawing Title:
**TREE INVENTORY
PLAN**

Drawn: AK	Design: RMS	Date: Oct 2013
Checked: RMS	Appr'd: RMS	Scale:
Project No.: 13004	TOWN REVIEWED:	D-2

Drawn by: [Signature] Date: [Date]
Checked by: [Signature] Date: [Date]
Appr'd by: [Signature] Date: [Date]
Project No.: 13004
Town No.



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No.	Revision	Date	By
1			

1 PHOTO NUMBER

Consultant:

Municipality:

Drawing Prepared By:

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**NORTH YORK
SERVICE ROAD**

Drawing Title:

**TREE INVENTORY
PLAN**

Drawn: AK	Design: RMS	Date: Oct 2013
Checked: RMS	Apprvd:	Scale:

Project No.:
13004

TOWN REVIEWED

D-3

Town No