



McWilliam & Associates

Landscape Architecture + Urban Design

November 01, 2010

Project: Bovaird Drive Environmental Assessment Study
From Lake Louise/Worthington Avenue to Peel/Halton Boundary
Peel Region

INTRODUCTION

Bovaird Drive in Peel Region, is to be widened/ upgraded from Lake Louise/Worthington Avenue to the Peel/Halton boundary, a distance of approximately 4.0km. The existing roadway has a rural 2 lane cross section between the Peel/Halton boundary and Ashby Field Road. East of Ashby Field Road the roadway has an urban 4 lane cross-section.

In general, the proposed improvements include:

- Widening to a 4 lane urban cross-section from the Peel/Halton boundary to west of Mississauga Road (Station 12+200)
- Widening to a 6 lane urban cross-section from Station 12+200 to Ashby Field Road
- Widening west bound lanes over rail overpass (between Ashby Field Road and Lake Louise/Worthington Avenue).
- New intersection at James Potter Road/Bovaird Drive
- Upgraded intersections at Heritage Road, Mississauga Road and Ashby Field Road
- Provision for a 6.0m median strip between Heritage Road and Mississauga Road and between Mississauga Road and James Potter Road.
- A recreation trail is to be provided along the north side of Bovaird Drive throughout the study area.

This streetscape/aesthetics study provides:

- an overview of the existing visual character of the road corridor
- a general analysis of the existing vegetation found along the roadway
- identifies the impacts of the road improvements and
- recommended streetscape upgrades.

The study area has been divided into the following four sub-sections starting in the west, to include:

- Section A: Peel/Halton boundary to Heritage Road, (0.7km)
- Section B: Heritage Road to Mississauga Road, (1.3km)
- Section C: Mississauga Road to Ashby Field Road, (0.8km)
- Section D: Ashby Field Road to Lake Louise/Worthington Avenue (1.2km)

The vegetation/aesthetic/streetscape site analysis was carried out in October, 2010. The vegetation analysis is limited to the existing woody vegetation located along the road frontage, typically within or immediately beside the road right-of-way (ROW), and provides an evaluation of the proposed road improvements on the existing vegetation and the aesthetics of the streetscape.

Streetscape improvement recommendations are discussed for each section of the corridor.

Figures 1 to 7 show the location of existing vegetation, and land uses located along this section of the Bovaird Drive Corridor.

GENERAL CORRIDOR AESTHETICS

This section of Dorval Drive passes through both an urban and rural environment. The west section of the corridor, between the Peel/Halton boundary and Mississauga Road passes through a predominantly rural environment with some scattered rural homes, commercial developments and institutional sites.

The east portion of the corridor, extending between Mississauga Road and Lake Louise/Worthington Drive, passes through the urban fringe of the City of Brampton, passing by existing residential and commercial development and areas scheduled for development in the near future.

The east end of the corridor is dominated by the CN rail overpass and the GO station/parking facility located in the north-west quadrant of the overpass.

The general character of the landscape is gently rolling. There are two stream crossings (small tributary of the Credit River) located at the Mississauga Road intersection and another at the Heritage Road intersection.

Existing woody vegetation along this section of the Bovaird Drive corridor is widely scattered.

The following Streetscape Analysis provides an a more detailed description of the existing conditions of the 4 sections of the study area and provides an estimation of impacts of the proposed undertaking and mitigation recommendations.

STREETSCAPE ANALYSIS

Section A: Peel/Halton boundary to Heritage Road

Distance: approximately 0.7km.

Existing Conditions:

The land uses along this section of the Bovaird Drive is dominated by agricultural fields. There is scattered development along roadway, most located on the north side.

On the north side of the roadway there are a number of rural residences (6) fronting onto Bovaird Drive. In addition to the homes there is an institutional building (church) and a Garden Centre. The remaining lands along the road are agricultural fields.

The south side of Bovaird is less developed. The road passes by open fields. There is a City of Brampton works yard set well back from the roadway, the site of a proposed municipal park and a farm complex also set well back from the road frontage.

Existing Vegetation-North Side:

There are a few scattered trees located along the north side of this section of Bovaird Drive, typically located in front of the rural residences. These trees include mature Norway Maple (*acer plantanoides*), Green Ash (*fraxinus pennsylvanica*), Honeylocust (*gleditsia sp.*), Basswood (*tilia sp.*), and Norway Spruce (*picea abies*).

There are some tree/shrub planting areas at the entrance to the church property.

There is an area of mature vegetation in the north-west quadrant of the Heritage Road/Bovaird Drive intersection. Dominant trees in this area include mature Willow (*salix sp.*) and Black Walnut (*juglans nigra*).

Existing Vegetation-South Side:

There is a row of 16 young Green Ash (*fraxinus pennsylvanica*) 200-250mm caliper, located along the frontage of the City of Brampton Works Yard (site of future park).

The only other trees along the roadway are a grouping of White Spruce, Norway Maple and Honeylocust located along the farm complex frontage. There are a couple of large Willow trees, located in the south-west quadrant of the Heritage Drive/Bovaird Drive intersection.

Impacts of the Undertaking:

It is anticipated that the road improvements will have an impact on the following existing trees:

- Some of the trees located in front of the residences on the north side of the road,
- trees located adjacent to the Heritage Road/Bovaird Drive intersection

Recommended Streetscape Treatments:

The following landscape planting treatments are recommended for this section of the Bovaird Drive corridor:

- Tree/shrubs are to be planted where required to replace trees/landscaped areas removed/disturbed due to construction activities.
- Street trees are to be planted on 15 m. spacing along both sides of the roadway
- There should be some riparian planting treatments in disturbed areas of the Credit River tributary located near Heritage Road. There may be some additional riparian plantings in the adjacent valleylands, if required by the CVCA.



Photograph #1: View looking east along Bovaird Drive, showing mature trees along the frontage of rural residences.



Photograph #2: A view looking east showing a row of Ash trees along the frontage of the future park site. Trees should remain undisturbed.



Photograph #3: a view looking east towards the Heritage Road intersection showing a few scattered trees along the road corridor.

Section B: Heritage Road to Mississauga Road

Distance: approximately 1.3km.

Existing Conditions:

The land use along this section of the Bovaird Drive is dominated by agricultural fields. There are two rural residences, a farm complex and some commercial development located near the Mississauga Road intersection.

On the north side of the roadway there is one farm complex located immediately east of Heritage Road. The remainder of the corridor is flanked by agricultural lands, except for the north west corner of the Mississauga Road/Bovaird Drive intersection where a commercial development is located.

The south side of Bovaird is again dominated by agricultural fields. There are 2 rural residences fronting onto the roadway. In the south-west quadrant of the Mississauga Road/Bovaird Drive intersection there is a golf driving range and a service station.

Existing Vegetation-North Side:

In the north-east quadrant of the Heritage Road/Bovaird Drive intersection there is an low poorly drained area occupied by scattered trees, mostly set well back from the roadway.

There are some mature trees located along the farm complex road frontage, including 2 Norway Maple (*acer platanoides*) and 2 Green Ash (*fraxinus pennsylvanica*). There are also some scattered mature trees located along the side of the roadway (fenceline), including Manitoba Maple (*acer negundo*), Basswood (*tilia sp.*), and Red Ash (*fraxinus pennsylvanica*).

The commercial development at Mississauga Road has a row of White Spruce (*picea glauca*), Austrian Pines (*pinus nigra*) and Apple (*malus sp.*) along the Bovaird Drive frontage.

Existing Vegetation-South Side:

The rural residence located immediately east of the Heritage Road intersection, on the south side of Bovaird has several trees along the road frontage including a White Spruce (*picea glauca*) and a Maidenhair Tree (*ginkgo biloba*).

The only other trees along the roadway are some widely scattered trees located along the fenceline include; Elm (*ulmus sp.*), Green Ash (*fraxinus pennsylvanica*) and Manitoba Maple (*acer negundo*).

The golf driving range and service station have some young landscape plantings located along their frontage.

Impacts of the Undertaking:

It is anticipated that the road improvements will have an impact on the following existing trees:

- Some of the trees located in front of the farm complex, and the rural residences, will require removal
- Most of the trees scattered along the road corridor (fenceline) will need to be removed
- Some of the trees located along the frontage of the commercial developments (north-west and south-west quadrants of Mississauga/Bovaird Drive) will need to be removed.

Recommended Streetscape Treatments:

The following landscape planting treatments are recommended for this section of the Bovaird Drive corridor:

- Tree/shrubs are to be planted where required to replace trees/landscaped areas removed/disturbed due to construction activities.
- Street trees are to be planted on 15 m. spacing along both sides of the roadway
- The road geometry provides a 6.0m wide (approximate dimension) median strip, through most of this section of the study area. This area is suitable for planting of trees and shrubs in raised beds and an upgraded hard surface (patterned/coloured concrete)



Photograph #4: A view of the north-east quadrant of Heritage Road/Bovaird Drive showing some scattered mature trees.



Photograph #5: A view of the north side of Bovaird Drive east of Heritage Road showing some mature trees along the frontage of a farm complex. These trees will require removal.



Photograph #6: A view looking east along Bovaird Drive, east of Heritage Road showing agricultural lands with a few scattered trees along the south side of the road corridor.

Section C: Mississauga Road to Ashby Field Road,

Distance: approximately 0.8km.

Existing Conditions:

The land uses along Bovaird Drive in this section of the corridor are in a transition phase. Once farm fields, the lands are now either vacant or in the process of being developed with housing subdivisions and commercial development.

A new major intersection is to be constructed between Mississauga Road and Ashby Field Road. This cross street will be named James Potter Road.

Existing Vegetation-North Side:

There are no existing trees located along the north side of this section of the Bovaird Drive corridor.

Existing Vegetation-South Side:

There are no existing trees located along the north side of this section of the Bovaird Drive corridor.

Impacts of the Undertaking:

- There will be no impacts on existing vegetation in this section of the Bovaird Drive corridor.

Recommended Streetscape Treatments:

The following landscape planting treatments are recommended for this section of the Bovaird Drive corridor:

- Tree/shrubs are to be planted where required to replace trees/landscaped areas removed/disturbed due to construction activities.
- Street trees are to be planted on 15 m. spacing along both sides of the roadway
- A section of the road geometry provides a 6.0m wide (approximate dimension) median strip. This area is suitable for planting of trees and shrubs in raised beds and an upgraded hard surface (patterned/coloured concrete)
- There should be some riparian planting treatments in disturbed areas of the Credit River tributary located west of Mississauga Road. There may be some additional riparian plantings in the adjacent valleylands, if required by the CVCA
- A 'Gateway' feature is proposed for the James Potter Road/Bovaird Drive intersection. This area is to be coordinated with the 'Gateway' designers
- A 'Gateway' feature is proposed for the Mississauga Road/Bovaird Drive intersection. This location is identified as a Primary Gateway in the City of Brampton 'Street Corridor Master Plan'



Photograph #7: A view looking east down Bovaird Drive with Mississauga Road in the foreground. This area does not have any trees along the road corridor.



Photograph #8: A view looking east down Bovaird Drive showing the Ashby Field Road intersection and lands being prepared for development.



Photograph #9: A view of the north side of Bovaird Drive west of Ashby Field Road, showing distant development and a lack of trees.

Section D: Ashby Field Road to Lake Louise/Worthington Avenue

Distance: approximately 1.2km.

Existing Conditions:

This section of Bovaird Drive is dominated by the Bovaird Drive overpass over the CN rail line.

The land uses on the north side of Bovaird Drive include the GO rail station and associated parking facility located on the west side of the overpass. On the east side of the overpass the adjacent land uses include an institutional building (church) and a storm water management pond.

The land uses on the south side of Bovaird Drive include residential subdivisions both to the east and west of the overpass.

The overpass has extensive grass slopes leading up to the bridge abutments in all quadrants of the bridge.

Existing Vegetation-North Side:

There are no existing trees located along the north side of this section of the Bovaird Drive corridor.

Existing Vegetation-South Side:

There are no existing trees located along the north side of this section of the Bovaird Drive corridor.

Impacts of the Undertaking:

There will be no impacts on existing vegetation in this section of the Bovaird Drive corridor.

Recommended Streetscape Treatments:

The following landscape planting treatments are recommended for this section of the Bovaird Drive corridor:

- Street trees are to be planted on 15 metre spacing along both sides of the roadway
- Slope stabilization plantings are recommended on the grass slopes in all four quadrants of the Bovaird Drive overpass.



Photograph #10: A view looking east at the north side of the Bovaird Drive overpass (over the CN rail line), showing open grass slopes.



Photograph #11: A view of the grass abutment slopes on the north side of Bovaird Drive



Photograph #12: A view looking west towards Ashby Field Road along the north side of Bovaird Drive, showing some vacant lands adjacent to the GO rail station and a lack of trees.

CONCLUSIONS

The undertaking will have some impacts on existing trees along Bovaird Drive. The impacts will be limited to the section of the corridor west of Mississauga Road, as there will be no impacts on the few trees located along the corridor to the east of Mississauga Road.

It is anticipated that a total of approximately 61 trees will require removal. This total may vary once the detailed design is complete. Most of these trees are semi-mature or mature and include the following species:

- Green Ash (*fraxinus pennsylvanica*)
- Manitoba Maple (*acer negundo*)
- Norway Maple (*acer platanoides*)
- Willow (*salix* sp.)
- Black Walnut (*juglans nigra*)
- Elm (*ulmus* sp.)
- Maidenhair Tree (*ginkgo biloba*)
- Basswood (*tilia Americana*)
- Apple (*malus* sp.)
- Austrian Pine (*pinus nigra*)
- White Spruce (*picea abies*)

It is noted that none of the trees inventoried along this section of the Bovaird Drive corridor are identified as significant specimen trees or rare species.

There are a number of trees located along this section of Bovaird Drive that should remain undisturbed by construction activities associated with the road widening. These trees

should be protected during the construction phase of the road improvements. These areas include:

- Remnant woodlot areas and scattered mature trees
- Landscaped boulevard strips located in front of some of the institutional/commercial developments
- Scattered individual specimen trees

Although the proposed undertaking will require the removal of a number of existing trees, the reconstruction of this portion Bovaird Drive will provide an opportunity to improve the overall aesthetics of this major thoroughfare, with a comprehensive streetscaping/tree planting plan.

The following chart summarizes the streetscape opportunities as noted in this report.

OPPORTUNITY	STREETSCAPE TREATMENT
Peel/Halton boundary to Heritage Road, (0.7km)	
Boulevard Trees	to be planted on 15m centres
Stream Channel Restoration	Riparian plantings at Credit River tributary crossing
Heritage Road to Mississauga Road, (1.3km)	
Boulevard Trees	To be planted on 15m centres
Median Landscape Strip	Tree/shrubs/grasses/perennials in raised planters, and patterned/coloured concrete hard surface treatment
Mississauga Road to Ashby Field Road, (0.8km)	
Boulevard Trees	To be planted on 15m centres
Median Landscape Strip	Tree/shrubs/grasses/perennials in raised planters, and patterned/coloured concrete hard surface treatment
Stream Channel Restoration	Riparian plantings at Huttonville Creek crossing
Primary Gateway	Landscaped 'gateway' feature at Mississauga Road/Bovaird Drive intersection
Gateway	Landscaped 'gateway' feature at James Potter Road/Bovaird Drive intersection
Ashby Field Road to Lake Louise/Worthington Avenue (1.2km)	
Boulevard Trees	To be planted on 15m centres
Slope Planting	Planting trees/shrubs on CN rail overpass embankments

RECOMMENDATIONS

The following recommendations relate to the streetscape improvements that are to be implemented along this portion of the Bovaird Drive corridor:

Vegetation Assessment:

A Vegetation Assessment will be required, prepared by a certified ISA arborist. All existing vegetation removed as part of this project should be inventoried and replaced. Note this document is to be used only as a preliminary guideline as tree conditions will change over time.

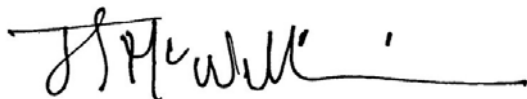
Mitigation During Construction:

- Construction activities are to avoid damaging existing, healthy, trees located close to the ROW wherever possible. This is to be accomplished by installing suitable tree protection fencing, extending to the 'dripline' of trees designated for protection. This tree protection zone is to remain undisturbed by excavation, storage of materials and equipment, and other construction related activities. The fencing is to remain in place through the duration of construction activities.
- Existing trees scheduled for removal are to be inspected to determine if transplanting is a feasible option.
- Existing landscape buffers from adjacent subdivisions are not to be effected if at all possible

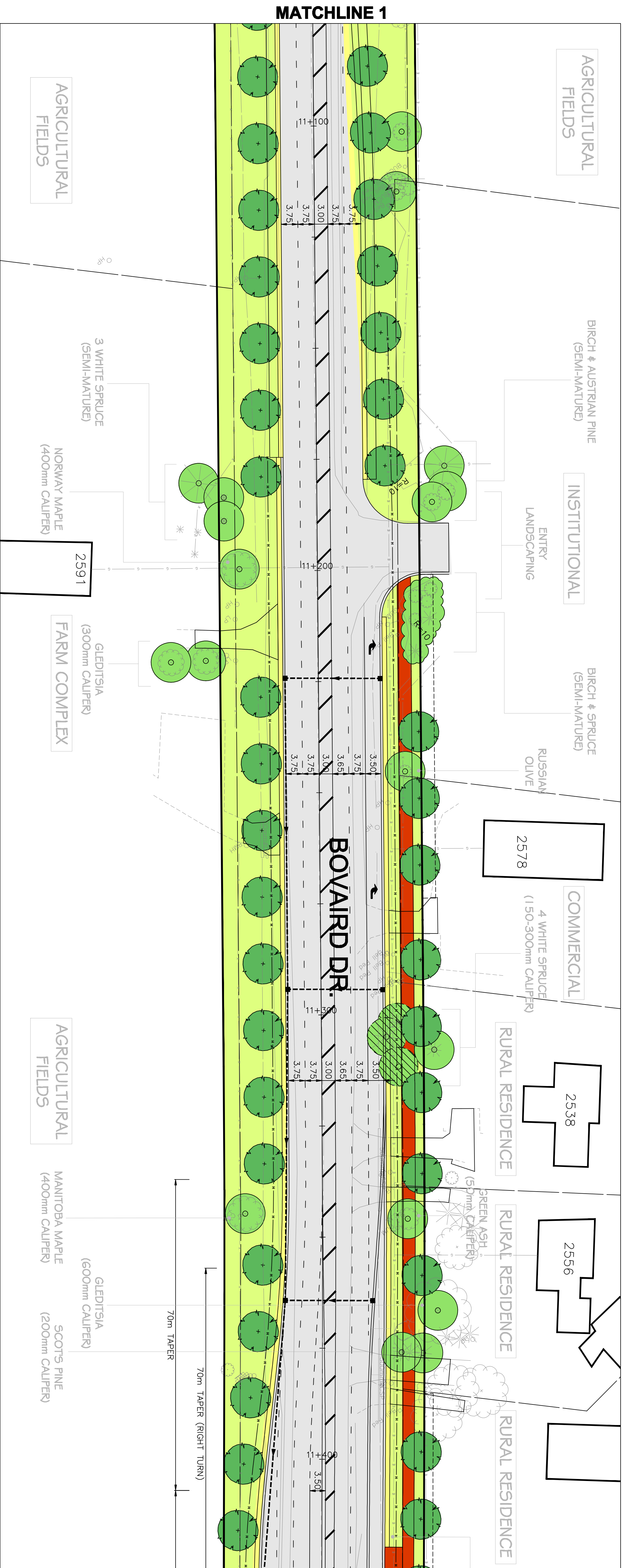
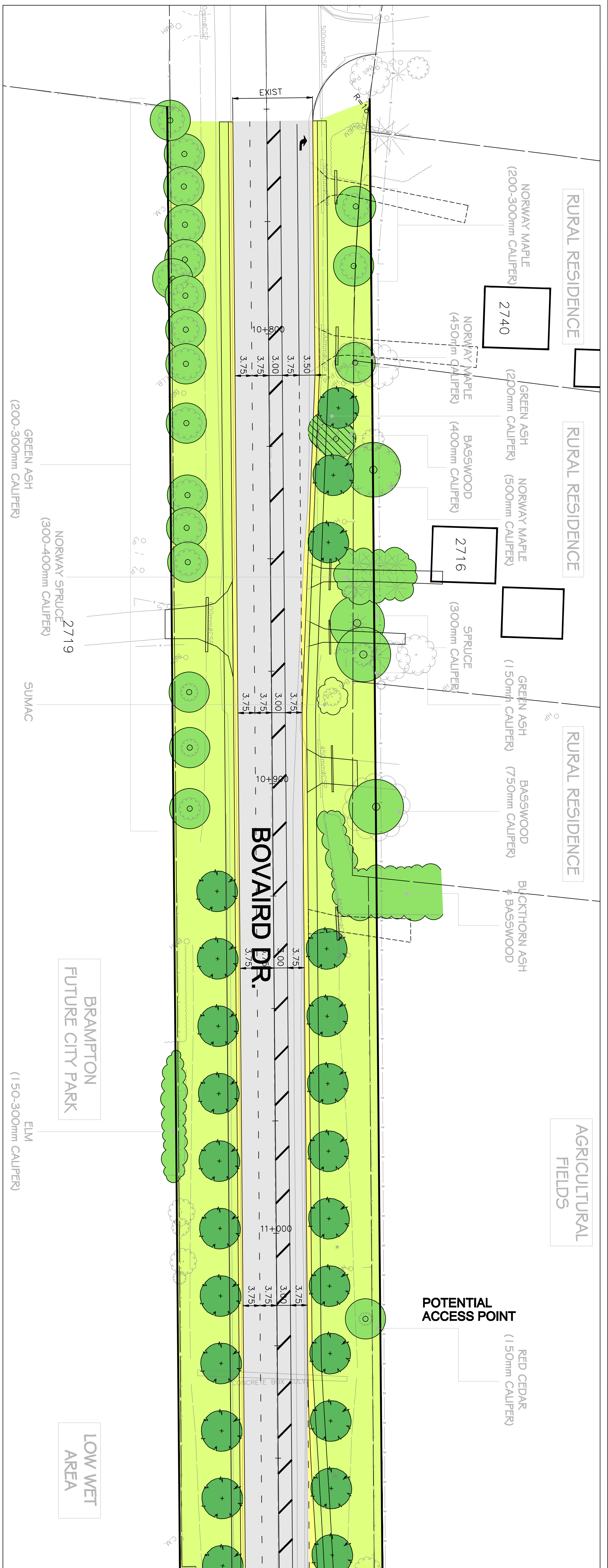
Street Tree Planting and Planting/Streetscape Design:

- Tree planting/streetscape plans are to be prepared for the corridor by a registered landscape architect, as part of the detailed design of the roadway. These plans is to address:
 - Compensation for vegetation requiring removal on or near private property
 - Planting of new street trees to improve the aesthetics of the streetscape, to be planted on 15m centres and similar spacing from hydro poles/light standards
 - Restoration of disturbed boulevard landscaped areas
 - Existing landscape buffers from adjacent subdivisions impacted by construction activities are to be replaced.
- All tree and shrub plantings within the corridor are to be salt-tolerant, non-invasive, low maintenance, disease/pest resistant and drought tolerant.
- The planting of new trees along the corridor is to be coordinated with existing and proposed utility corridors, and light standards
- Regional street trees are to be planted on private property on both sides of the corridor (see typical cross-sections) in consultation with adjacent property owners
- Construction impacts at stream crossing areas are to be mitigated with the planting of riparian vegetation. This vegetation should be native, non-invasive, riparian vegetation, as approved by CVCA.
- Trees to be planted near overhead utilities to be selected to conform to mature height limitations (Hydro approved species)
- New street trees to be installed as per Peel Region 'Regional Streetscape Policy'
- 'Gateway' treatments are to be prepared for the Bovaird Drive/Mississauga Road and Bovaird Drive/James Potter Road intersections
- Coloured pattern concrete treatments 75m in length are to be installed at all intersections, to include 'kill-strips', island medians and pedestrian connections.

Report prepared by:



James McWilliam, BES, BLA, OALA
McWilliam & Associates



LEGEND

- EXISTING TREES TO BE PROTECTED
- EXISTING TREES REQUIRING REMOVAL
- BUSHDENSE GROUPING OF TREES
- PROPOSED STREET TREES
- LANDSCAPED MEDIAN
- PROPOSED RIPARIAN PLANTING
- PROPOSED GATEWAY
- BANK STABILIZATION MASS PLANTING
- RECREATIONAL TRAIL

NOTE:
FULL IMPACTS OF CONSTRUCTION ON EXISTING TREES TO BE DETERMINED DURING DETAILED DESIGN

MATCHLINE 1

MATCHLINE 2

NO.	DESCRIPTION	DATE

JAMES McWILLIAM
LANDSCAPE ARCHITECT

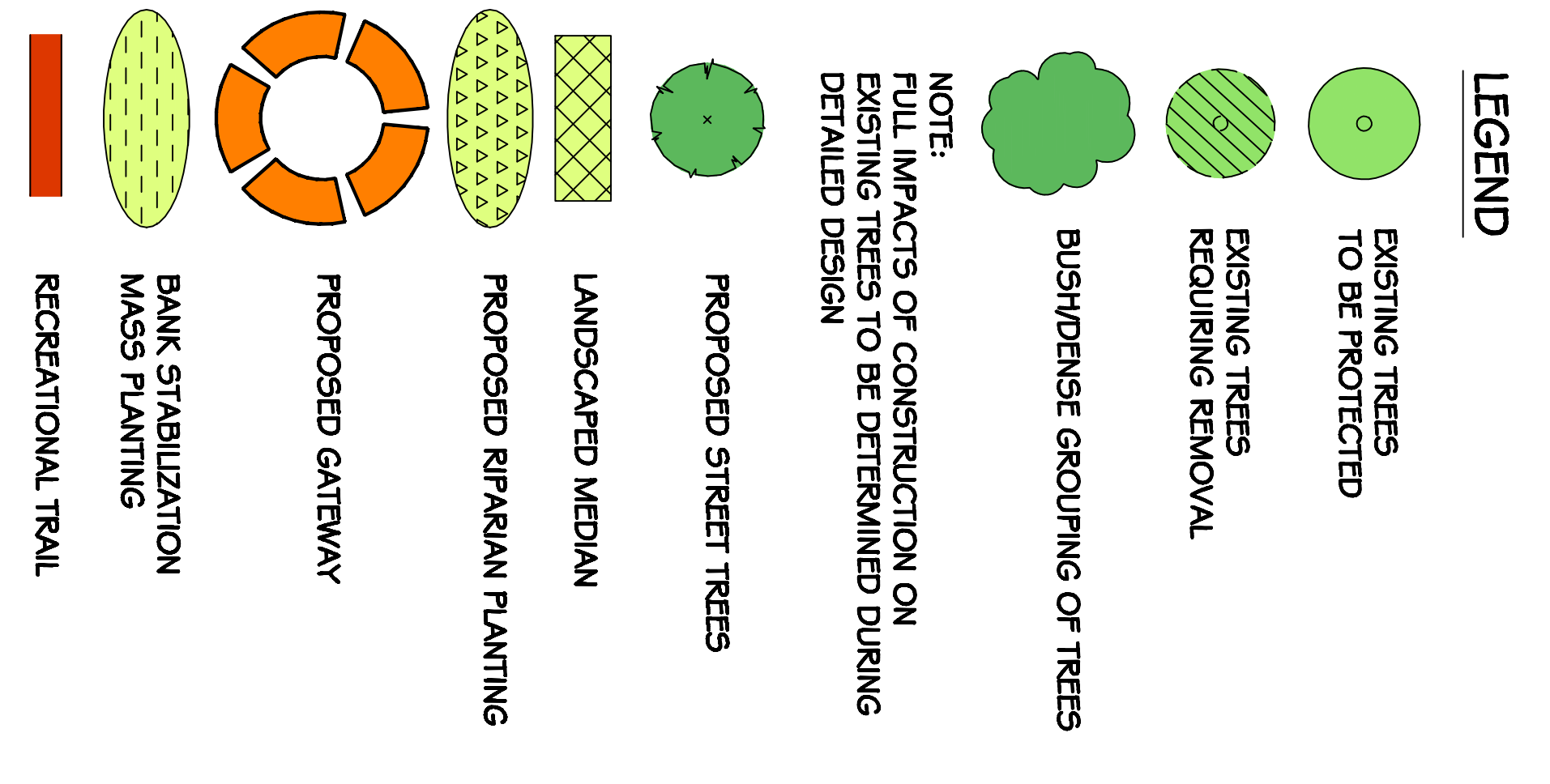
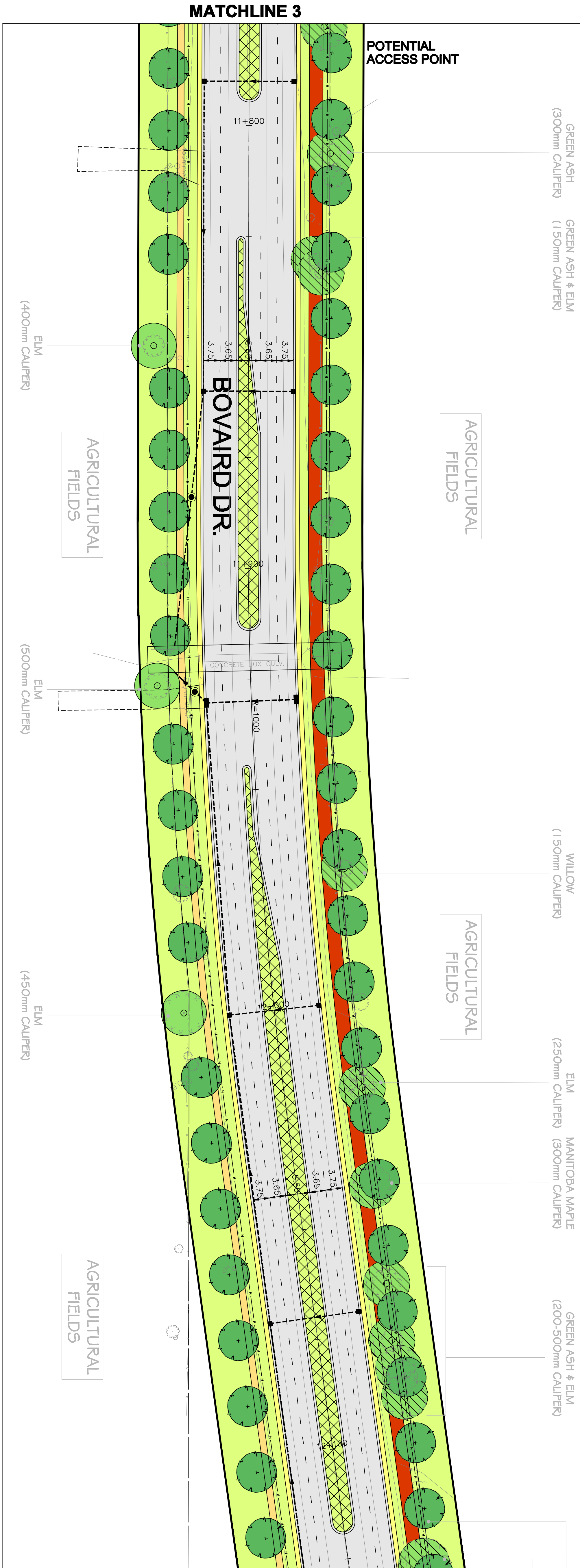
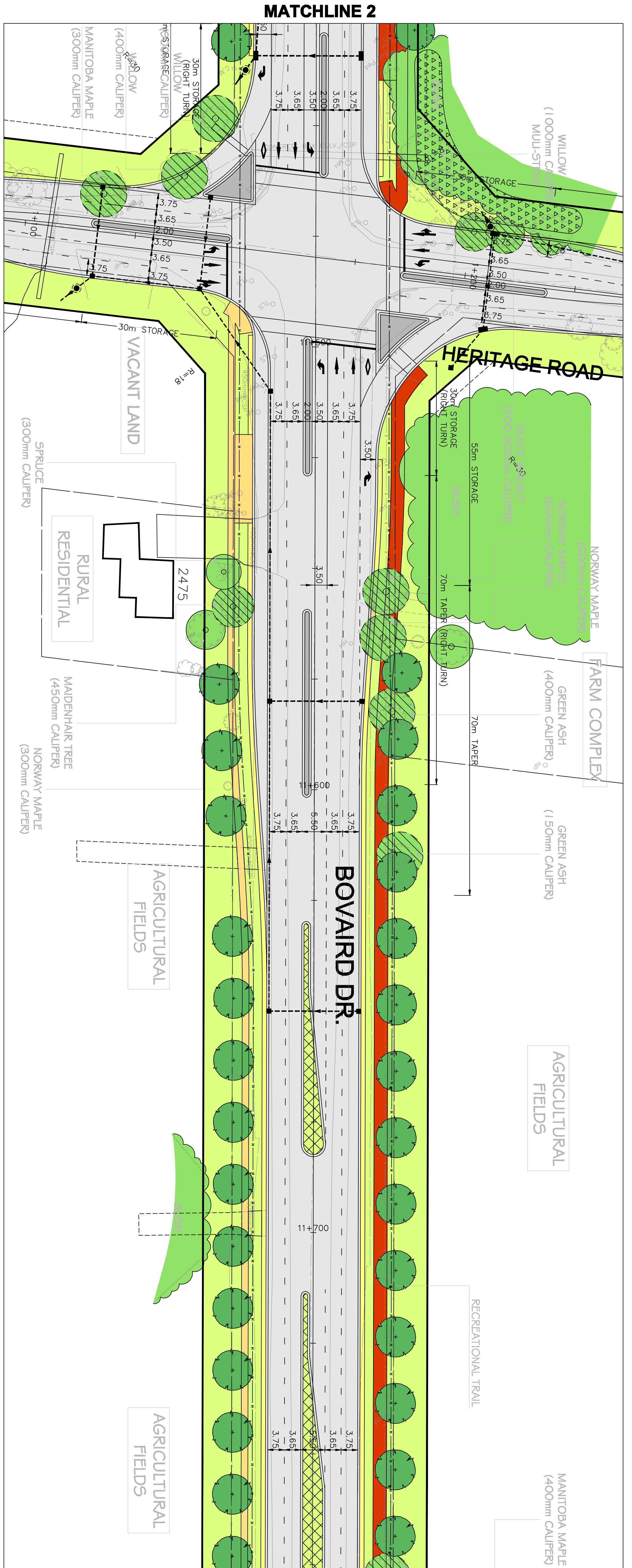
Phone: 905-937-8666, Fax: 905-938-9959
BOYARD DRIVE E.A.
(MORTHINGTON/LAKE LOUISE TO PEEL/LALTON BOUNDARY)
BRAMPTON, ON.

PRELIMINARY LANDSCAPE PLAN



SCALE: 1:500
DATE: OCTOBER 2010
DESIGN BY: J.S.W.
DRAWN BY: T.F.G.

FIGURE 1



NOTE: FULL IMPACTS OF CONSTRUCTION ON EXISTING TREES TO BE DETERMINED DURING DETAILED DESIGN

NO.	DESCRIPTION	DATE

JAMES McWILLIAM
LANDSCAPE ARCHITECT

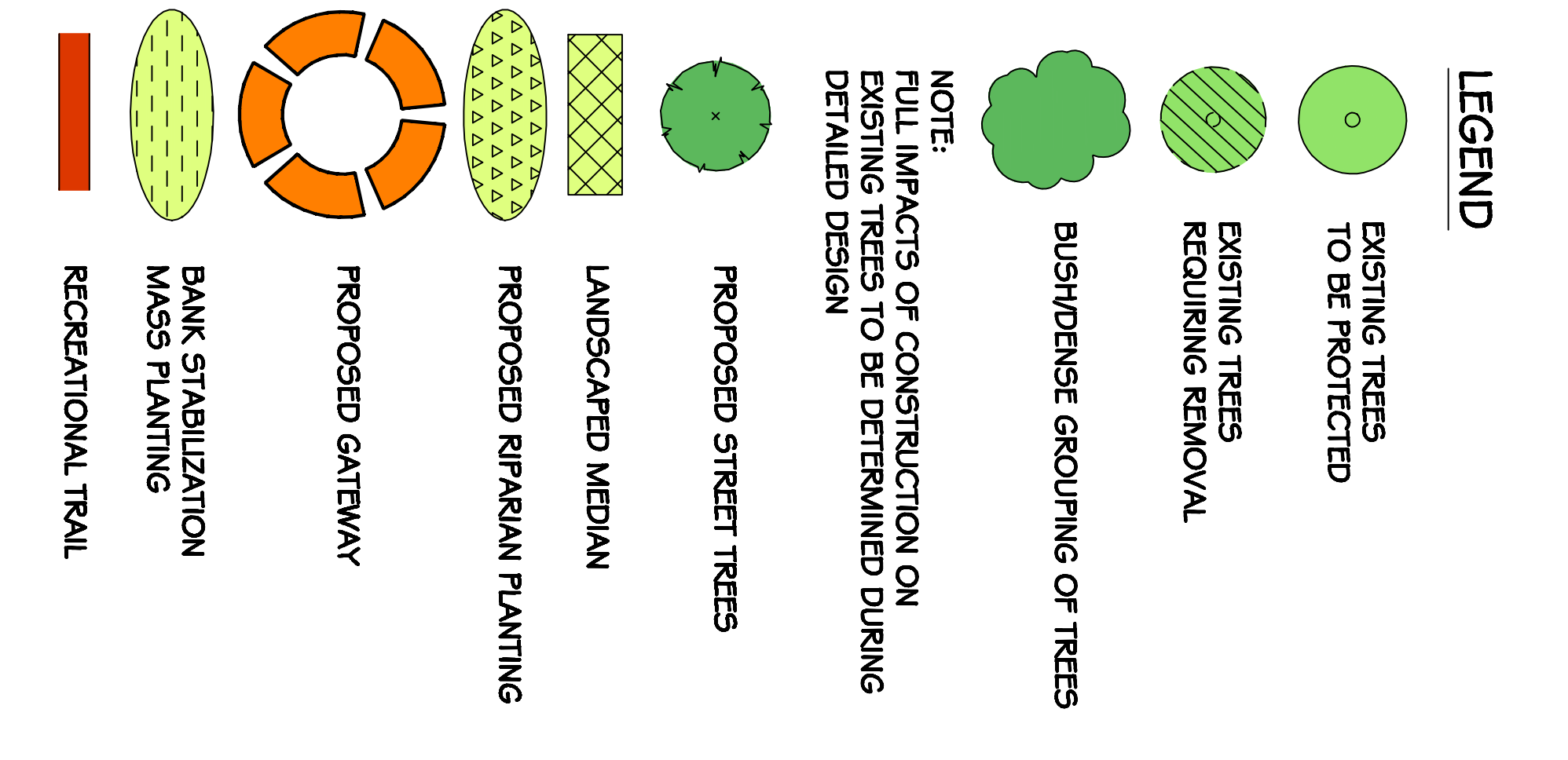
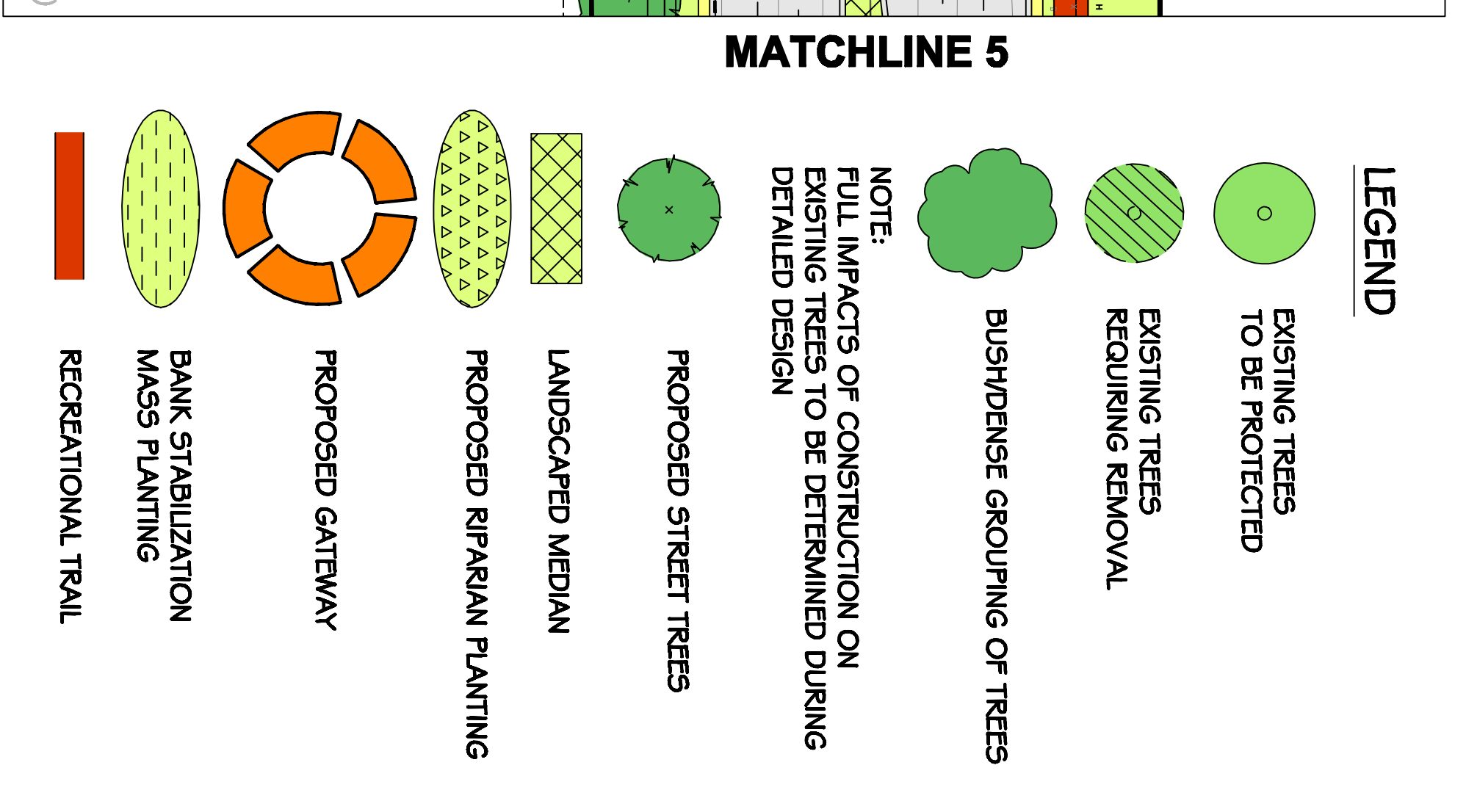
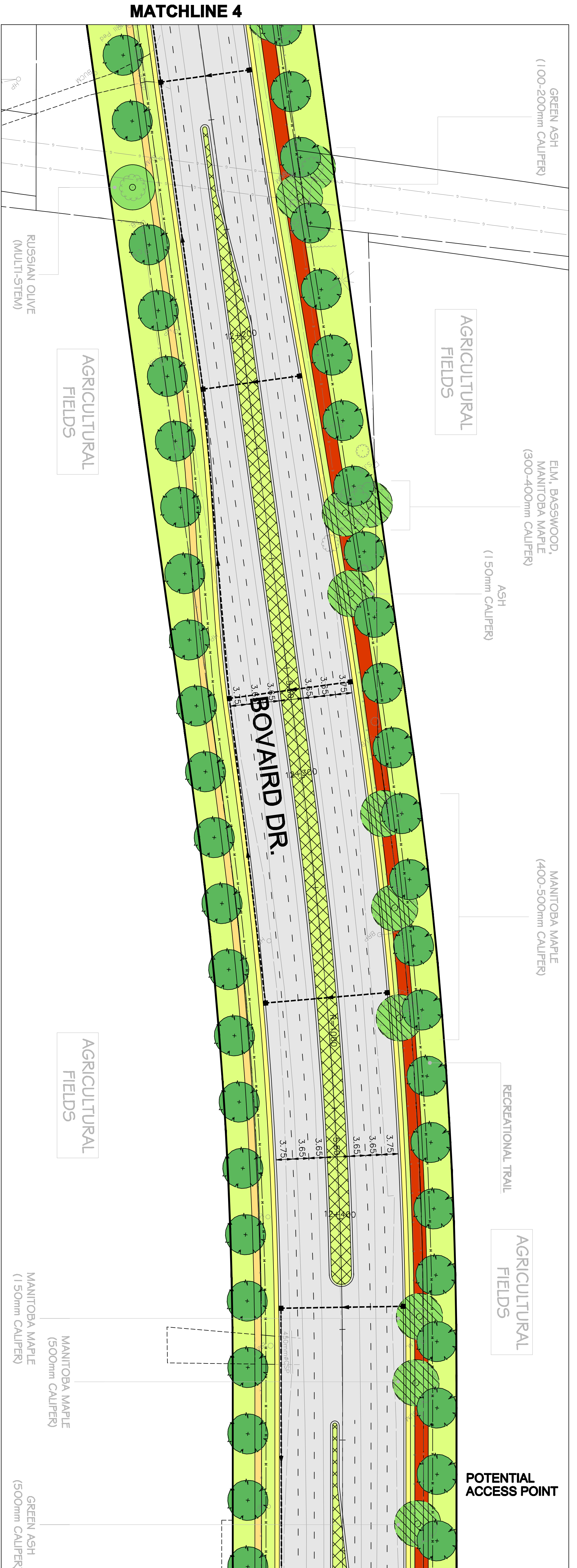
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BOIVARD DRIVE E.A.
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PRELIMINARY LANDSCAPE PLAN

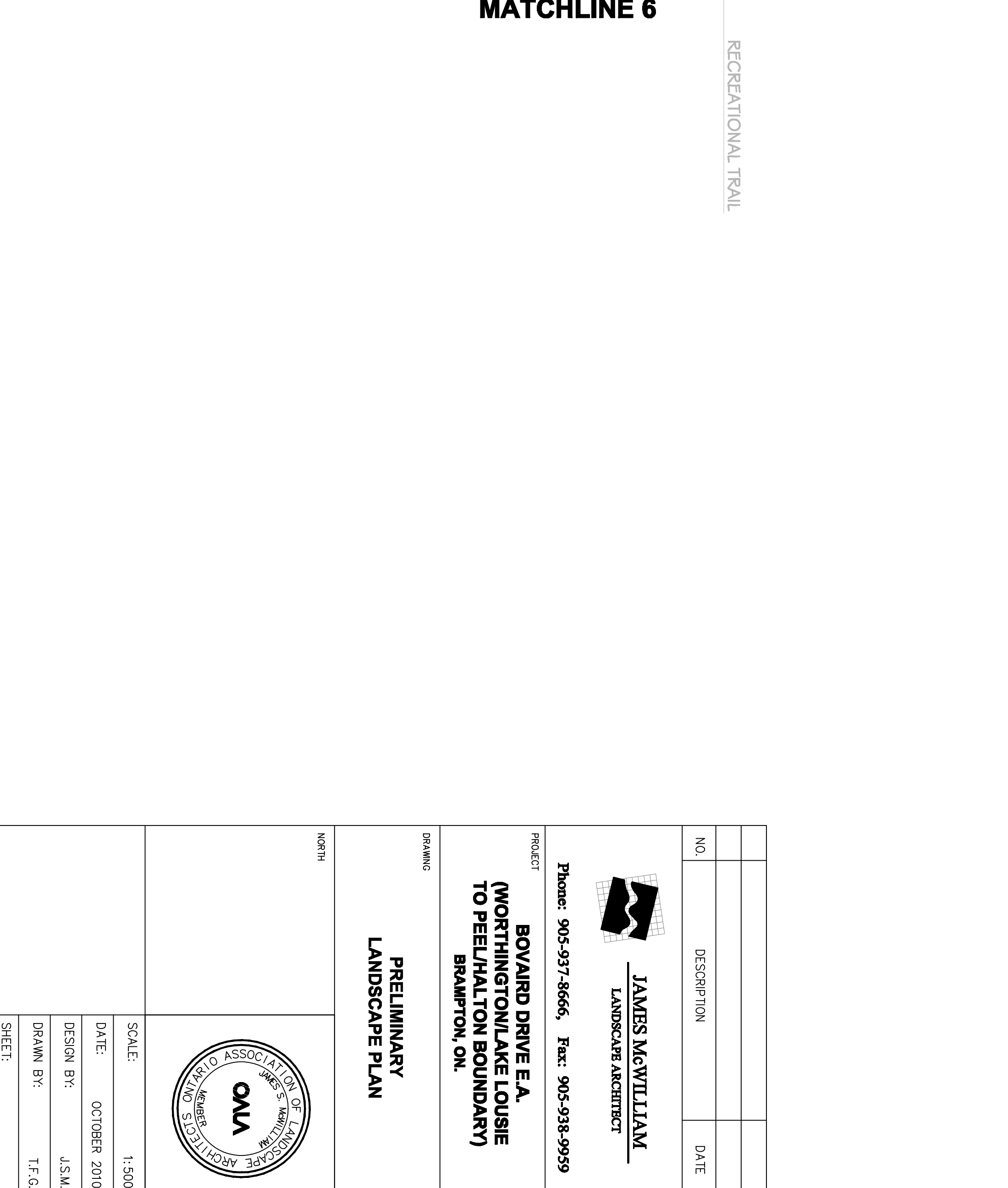
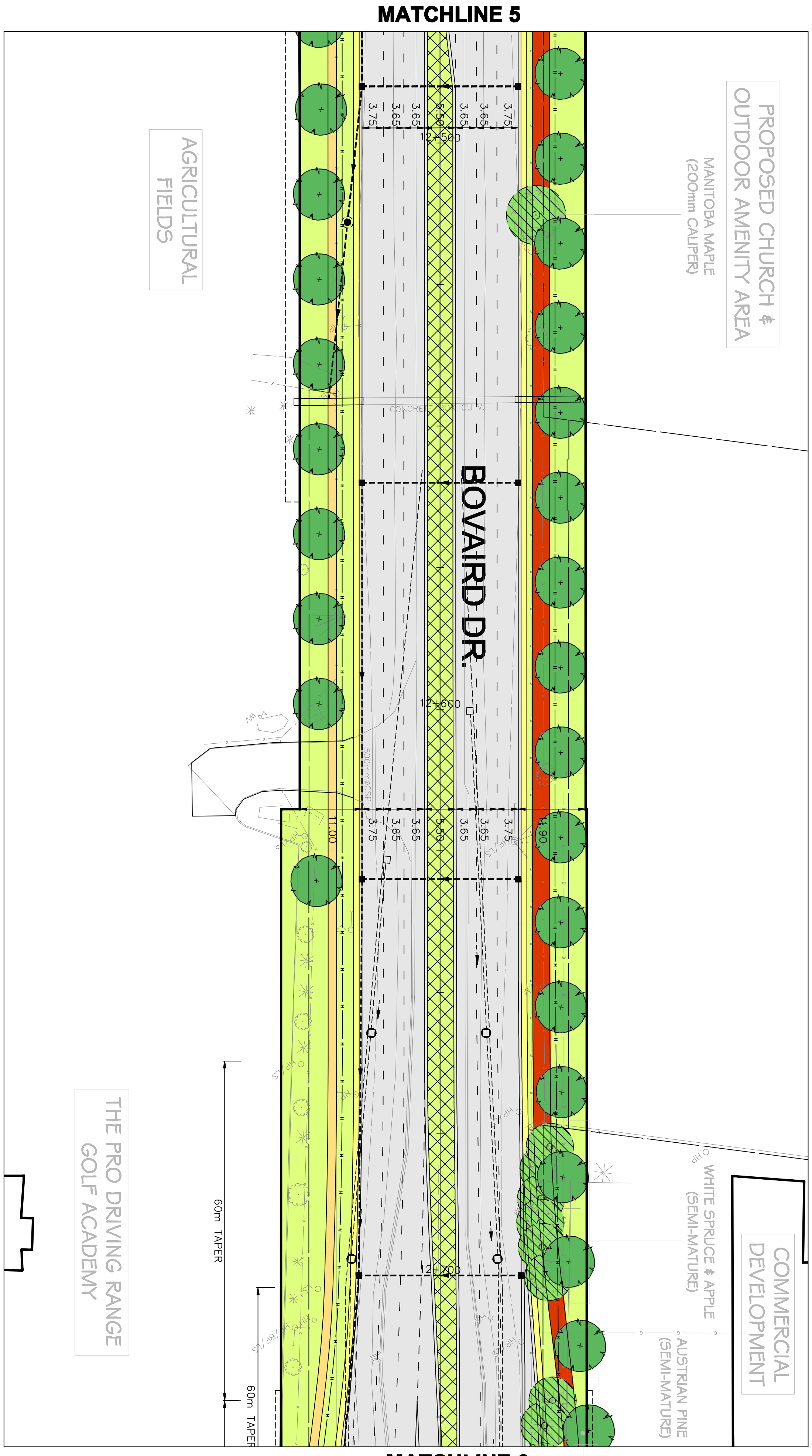


SCALE: 1:500
 DATE: OCTOBER 2010
 DESIGN BY: J.S.M.
 DRAWN BY: T.F.G.

FIGURE 2



NOTE:
FULL IMPACTS OF CONSTRUCTION ON EXISTING TREES TO BE DETERMINED DURING DETAILED DESIGN



NO.	DESCRIPTION	DATE

JAMES McWILLIAM
 LANDSCAPE ARCHITECT
 Phone: 905-937-8666, Fax: 905-938-9959

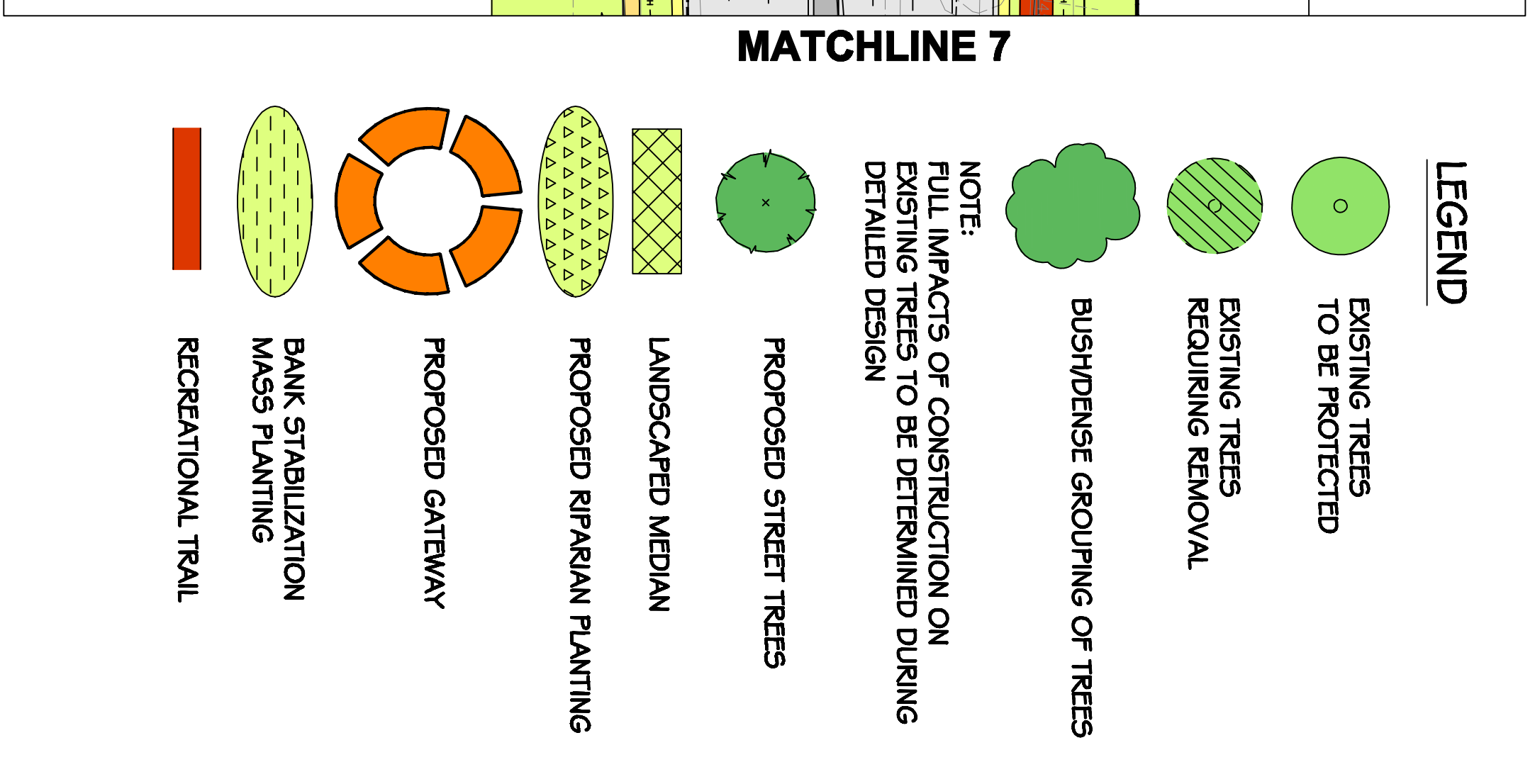
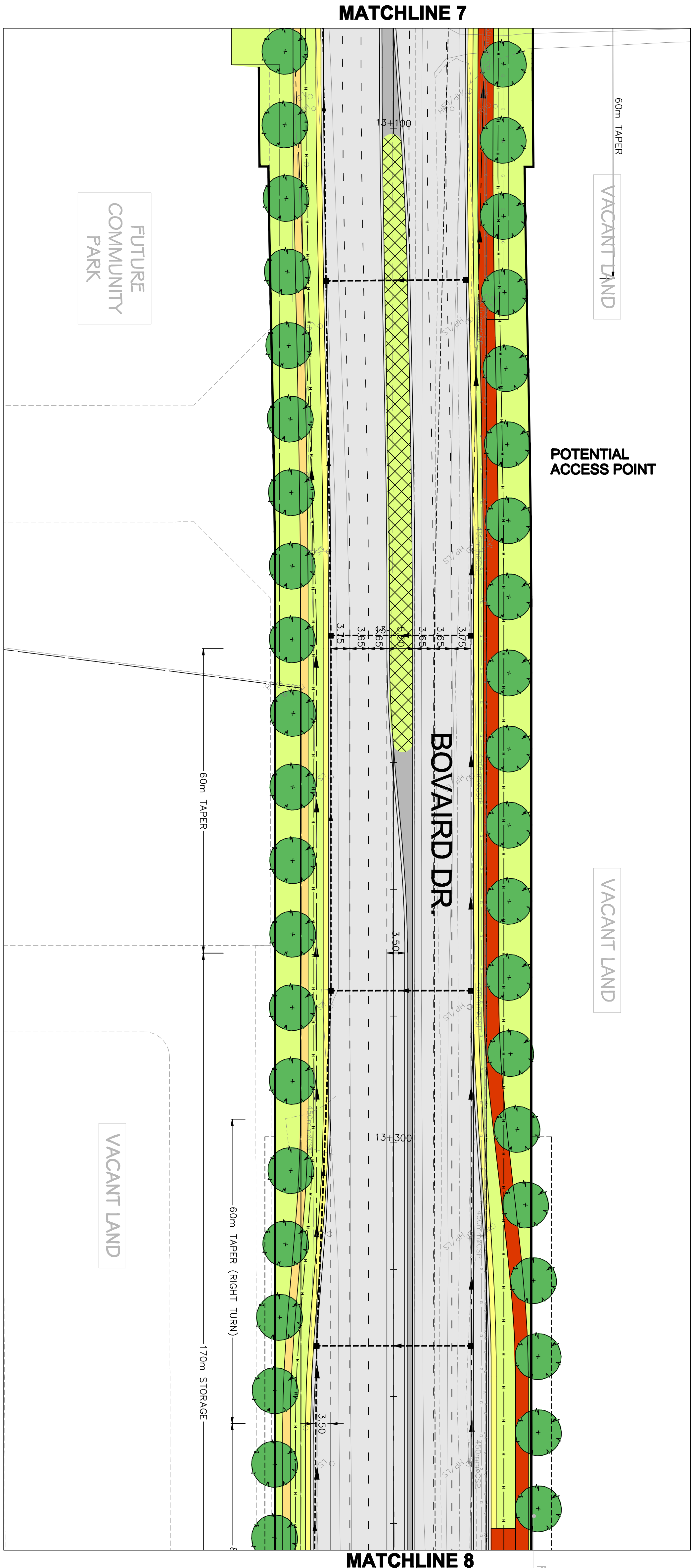
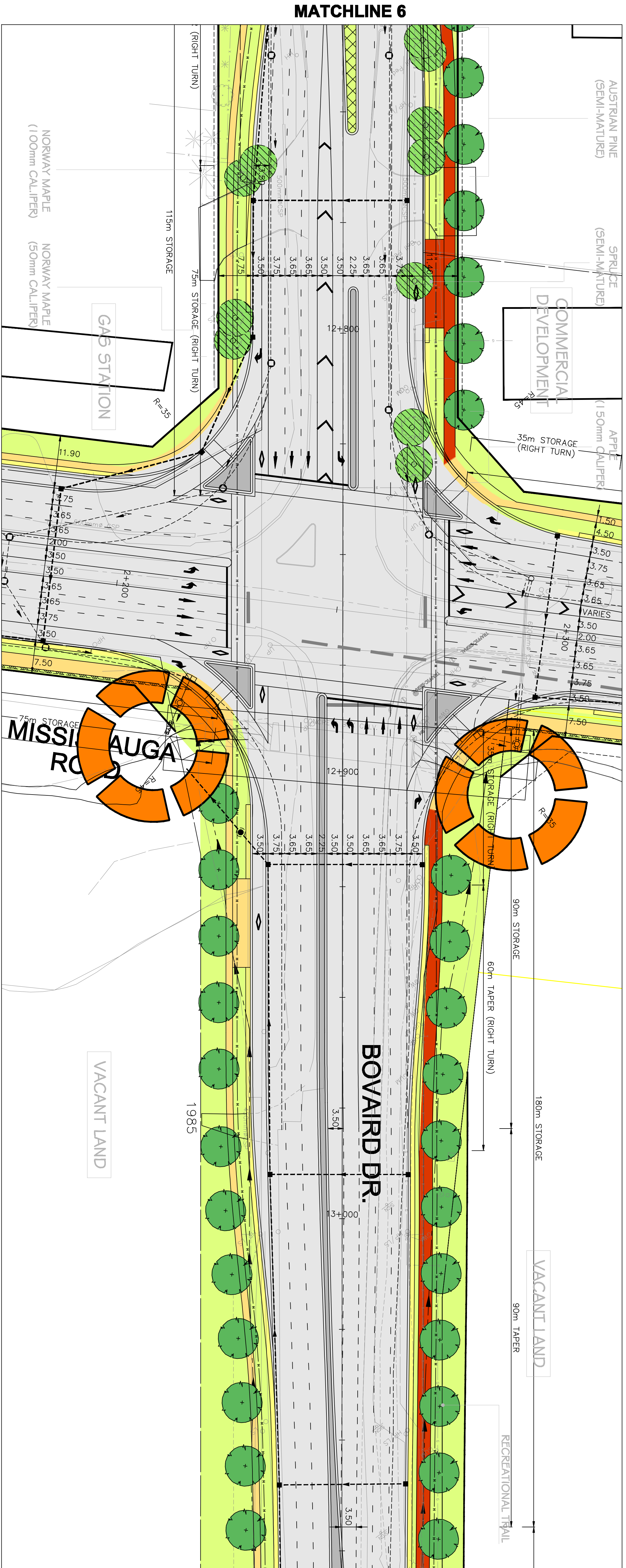
BOVAIRD DRIVE E.A.
 (MORTHINGTON/AKE LOUISE TO PEEL/LALTON BOUNDARY)
 BRAMPTON, ON.

PRELIMINARY LANDSCAPE PLAN

SCALE: 1:500
 DATE: OCTOBER 2010
 DESIGN BY: J.S.M.
 DRAWN BY: T.F.G.

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 ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS

SHEET: **FIGURE 3**

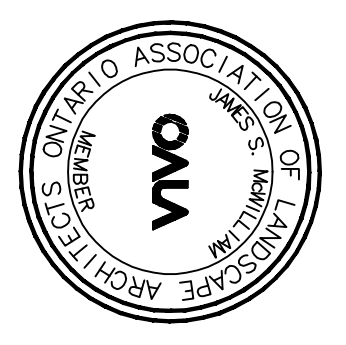


- LEGEND**
- EXISTING TREES TO BE PROTECTED
 - EXISTING TREES REQUIRING REMOVAL
 - BUSHDENSE GROUPING OF TREES
 - PROPOSED STREET TREES
 - LANDSCAPED MEDIAN
 - PROPOSED RIPARIAN PLANTING
 - PROPOSED GATEWAY
 - BANK STABILIZATION MASS PLANTING
 - RECREATIONAL TRAIL
- NOTE:**
FULL IMPACTS OF CONSTRUCTION ON EXISTING TREES TO BE DETERMINED DURING DETAILED DESIGN

NO.	DESCRIPTION	DATE

JAMES McWILLIAM
LANDSCAPE ARCHITECT

Phone: 905-937-8666, Fax: 905-938-9959
BOVAIRD DRIVE E.A.
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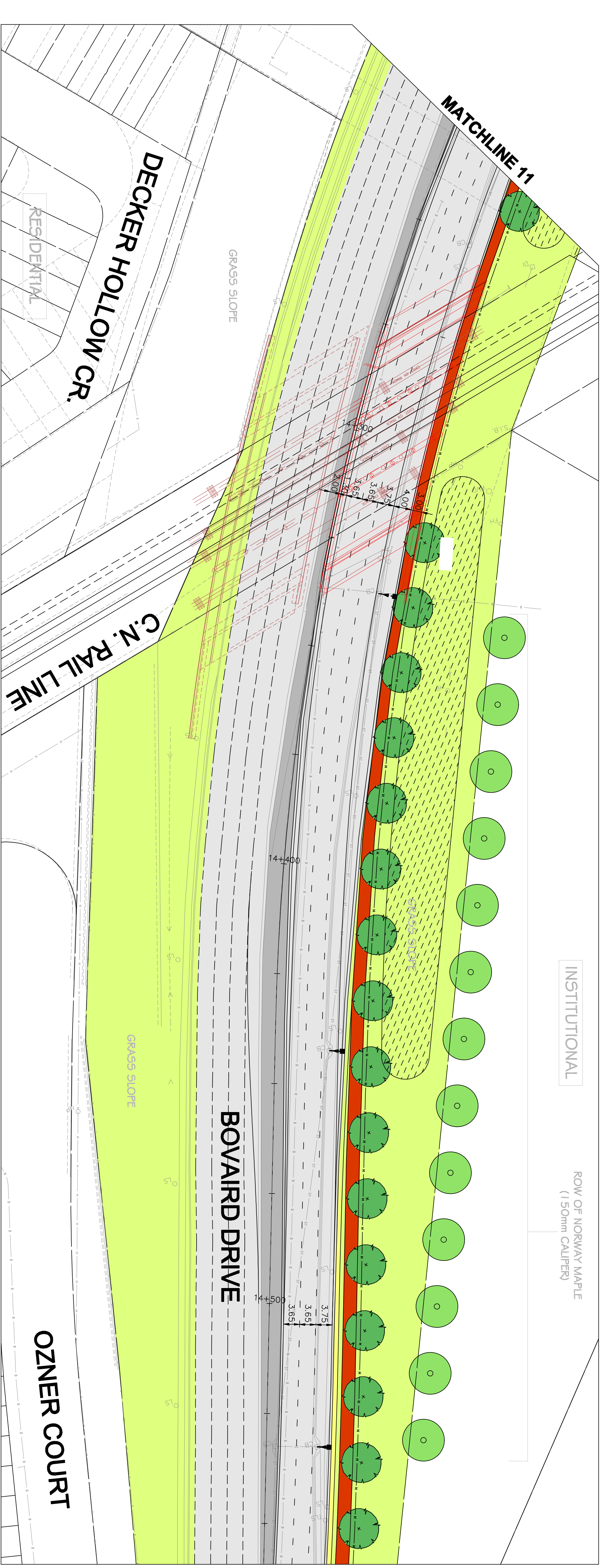
PRELIMINARY LANDSCAPE PLAN

SCALE: 1:500
 DATE: OCTOBER 2010
 DESIGN BY: J.S.M.
 DRAWN BY: T.F.G.

FIGURE 4



MATCHLINE 11



MATCHLINE 12

- LEGEND**
- EXISTING TREES TO BE PROTECTED
 - EXISTING TREES REQUIRING REMOVAL
 - BUSHDENSE GROUPING OF TREES
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 - RECREATIONAL TRAIL

NOTE:
FULL IMPACTS OF CONSTRUCTION ON EXISTING TREES TO BE DETERMINED DURING DETAILED DESIGN

NO.	DESCRIPTION	DATE

JAMES McWILLIAM
LANDSCAPE ARCHITECT

Phone: 905-937-8666, Fax: 905-938-9959
BOVAIRD DRIVE E.A.
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PRELIMINARY
LANDSCAPE PLAN



SCALE: 1:500
DATE: OCTOBER 2010
DESIGN BY: J.S.M.
DRAWN BY: T.F.G.
SHEET: **FIGURE 6**



LEGEND

- EXISTING TREES TO BE PROTECTED
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NOTE:
FULL IMPACTS OF CONSTRUCTION ON EXISTING TREES TO BE DETERMINED DURING DETAILED DESIGN

NO.	DESCRIPTION	DATE

JAMES McWILLIAM
LANDSCAPE ARCHITECT

Phone: 905-937-8666, Fax: 905-938-9959

PROJECT
BOVAIRD DRIVE E.A.
(WORTHINGTON/LAKE LOUISE
TO PEELHATTON BOUNDARY)
BRAMPTON, ON.

DRAWING

PRELIMINARY
LANDSCAPE PLAN

NORTH



SCALE: 1:500
DATE: OCTOBER 2010
DESIGN BY: J.S.M.
DRAWN BY: T.F.G.
SHEET:

FIGURE 7