Appendix L – Landscape Design Report

407 TRANSITWAY – WEST OF BRANT STREET TO WEST OF HURONTARIO STREET **MINISTRY OF TRANSPORTATION - CENTRAL REGION**



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Landscape Architecture + Urban Design

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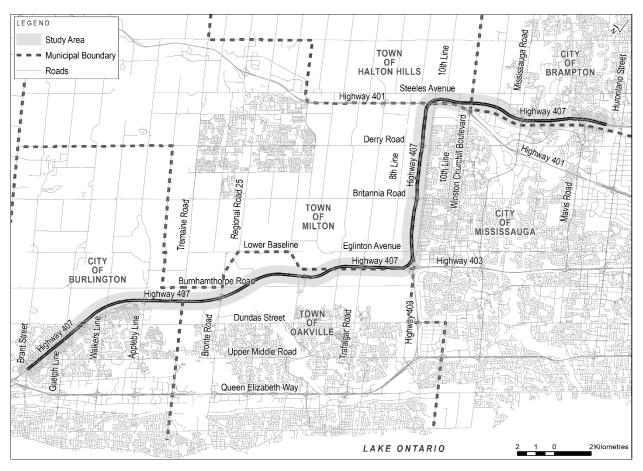
407 TRANSITWAY FROM BRANT STREET TO HURONTARIO STREET TRANSPORTATION PROJECT ASSESSMENT PROCESS

407 TRANSITWAY (Brant Street to Hurontario Street) LANDSCAPE COMPOSITION

PROJECT DESCRIPTION

The Ontario Ministry of Transportation (MTO) is undertaking the Planning Phase, the Environmental Assessment (EA) and the Preliminary Design for the 407 Transitway from west of Brant Street in City of Burlington to west of Hurontario Street in City of Mississauga.

Figure 1:



The study will follow the Transit Project Assessment Process (TPAP) prescribed in *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings* under the *Environmental Assessment Act.* The 407 Transitway will be a two-lane, fully grade separated transit facility on an exclusive right-of-way, running along the Highway 407 Corridor. This section of the transitway facility will consist of 43 km of runningway and a number of stations whose locations will be determined as part of this study. The station layouts will include vehicular and pedestrian access(es), park and ride and pick-up/drop off (PPUDO) facilities, bus lay bay facilitates, on street integration with local transit, shelters, buildings and other amenities. The transitway and the stations will initially be designed to support a two-lane busway service with provisions for future conversion to a two-track light-rail transit technology.

This 43 km segment forms part of the 150 km long high-speed interregional facility planned to be ultimately constructed on a separate right-of-way that parallels Highway 407 from Burlington to Highway 35/115, with stations, parking and access connections. This transitway is a component within the official plans of the stakeholder municipalities and of the Province's commitment to support transit initiatives in the Greater Golden Horseshoe through the Metrolinx Regional Transportation Plan.

Generally, the 407 Transitway follows the swath of vacant land associated with the 407 ETR corridor.

This report provides an inventory and general evaluation of the existing landscape composition and the aesthetic/visual conditions associated with the proposed 407 Transitway runningway and station sites. Figure 1 provides a general map of the study area. The Preliminary Landscape Composition drawings and are presented in Figures 2 to 37. These drawings provide an analysis of the landscape composition and preliminary landscape planting layout for the runningway and eight station sites.

Field work for this report was carried out in September/October 2017 and June 2018

The report has been divided into the following nine (9) segments. These segments have been subdivided into smaller sections that include station sites/runningway sections (heading in an easterly direction):

Segment A: Brant Street to Dundas Street Station

- Brant Street to Dundas Street Station
- Dundas Street Station

Segment B: Dundas Street Station to Appleby Line Station

- Dundas Street Station to Appleby Line Station
- Appleby Line Station

Segment C: Appleby Line Station to Bronte Road Station

- Appleby Line Station to Tremaine Road
- Tremaine Road to Bronte Road Station
- Bronte Road Station

Segment D: Bronte Road Station to Neyagawa Road

- Bronte Road Maintenance Facility
- Bronte Road Station to Neyagawa Road

Segment E: Neyagawa Road to Trafalgar Road Station

- Neyagawa Road to Trafalgar Road Station
- Trafalgar Road Station

Segment F: Trafalgar Road Station to Britannia Road Station

- Trafalgar Road Station to Britannia Road Station
- Britannia Road Station

Segment G: Britannia Road Station to Derry Road Station

- Britannia Road Station to Derry Road Station
- Derry Road Station

Segment H: Derry Road Station to Winston Churchill Blvd

- Derry Road Station to Ninth Line
- Ninth Line to Lisgar Station
- Lisgar Station
- Lisgar Station to Winston Churchill Blvd

Segment I: Winston Churchill Blvd to East Terminus

- Winston Churchill Blvd to Heritage Road
- Heritage Road to Mississauga Road Station
- Mississauga Road Station
- Mississauga Road Station to Mavis Road
- Mavis Road to East Terminus

GENERAL AESTHETICS

The transitway is to be constructed as a two-lane roadway, dedicated to only BRT traffic and eventually LRT traffic. It will be constructed at/near existing grade except where it crosses over/under cross streets, interchange ramps, rail lines, valley lands and 407 ETR. The transitway crosses over numerous watercourses/valley lands including the topographically significant valley lands associated with Bronte Creek, Sixteen Mile Creek, Mullett Creek, Levi Creek and the Credit River.

There are very limited views of the runningway from surrounding visually sensitive land uses to due to the relatively flat geography of the area and the distance from the route to surrounding development. The most significant views are available from along the 407 ETR corridor. Some of the station sites will have a more significant impact as they cover a larger area, and in some cases, are closer to sensitive visual receptors, typically residences.

The visual character/aesthetics of each site will be discussed in more detail in the following analysis of the individual portions of the proposed transitway.

TRANSITWAY RUNNINGWAY/STATION SITE DESCRIPTIONS

The following portion of the report focuses on the surrounding land uses and visual elements and includes an analysis of the existing woody vegetation communities along the proposed transitway. As the study progresses through the Preliminary Design stage, the runningway and station sites may change slightly.

Below is a description of the various components of the transitway (runningway and eight station sites) starting at the west end of the study area.

Segment A: Brant Street to Dundas Street Station

This segment of the Transitway is subdivided into the following two sections:

- Brant Street to Dundas Street
- Dundas Street Station

Brant Street to Dundas Street

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately three and a half kilometers along the north side of the 407 ETR. The route is located on a steep slope associated with the adjacent highway which is in a 'cut' section throughout most of this portion of the route. The runningway will be situated considerably lower than the surrounding topography.

This section of the transitway route is located within the urban area of the City of Burlington with established residential subdivisions located on both sides of the 407 ETR corridor. The proposed runningway will pass under Upper Middle Road and Guelph Line.

A hydro transmission corridor passes over the route, just to the south of Upper Middle Road.

Surrounding land uses include:

- North = primarily residential subdivisions, two high-rise residential buildings located adjacent to Brant Street, a small wooded area north of Upper Middle Road
- South = primarily residential subdivisions, a small wooded area south of Upper Middle Road, Notre Dame Roman Catholic Secondary School (located between Guelph Line and Dundas Street).

Visual Character/Impact of the Project:

This section of the runningway is to be located beside 407 ETR, at a lower level than the surrounding landscape and will pass under the cross streets including Upper Middle Road and Guelph Line. This location will minimize the visual impact on surrounding land uses.

The residential homes immediately adjacent to the depressed 407 ETR corridor typically back onto the corridor and will have very limited views of the new facility.

Notre Dame Roman Catholic Secondary School, although located adjacent to the 407 ETR corridor will not be impacted by the transitway due to the local topography.

The two high-rise residential buildings near Brant Street may be slightly impacted by the transitway route.

Existing Woody Vegetation/Impacts:

The proposed route of the runningway, along the north side of the 407 ETR is populated with scattered early successional woody vegetation and a few groups of young landscape plantings, installed when the highway was constructed.

There are small woodland communities located on the east and west sides of Upper Middle Road.

The proposed runningway route will pass through the two wooded areas located adjacent to Upper Middle Road and will also impact some of the woody vegetation scattered along the 407 ETR corridor.



Photograph #1: View of the north side of 407 ETR, looking west down the proposed runningway corridor.

Dundas Street Station

General Location and Surrounding Land Uses:

The proposed Dundas Street Station is located on the north side of Dundas Street, east of the 407 ETR corridor and the interchange at Dundas Street. The main station site is connected to the runningway, located on the north side of the 407 ETR by an overhead walkway. The proposed land designated for the station site is currently a mix of vacant and agricultural land.

Surrounding land uses include:

- North = 407 ETR and agricultural land
- East = vacant and agricultural lands with a residential subdivision located beyond
- South = an existing car pool lot located adjacent to Dundas Street
- West = agricultural/vacant lands

Visual Character/Impacts of the Station Site:

The station site is relatively flat, sloping gently to the north.

The only visually sensitive land uses in the immediate area of the proposed station site is the new residential subdivision located to the east of the site. At the time of the site survey these homes are partially visually buffered from the station site by a strip of existing hedgerow.

Existing Woody Vegetation/Impacts:

The site is predominantly agricultural land with a number of hedgerows defining the agricultural fields.

The proposed development will impact the hedgerow.

Segment B: Dundas Street Station to Appleby Line Station

This segment of the Transitway is subdivided into the following two sections:

- Dundas Station to Appleby Line Station
- Appleby Line Station

This segment of the proposed transitway corridor is located on the north side of 407 ETR. The route links Dundas Street Station to Appleby Line Station.

Dundas Street Station to Appleby Line Station

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately four kilometers along the north side of the 407 ETR. The route parallels the highway corridor passing through agricultural fields. These fields are divided by numerous stream channels and hedgerows.

The proposed runningway will pass under Walkers Line.

Surrounding land uses include:

- North = agricultural lands with extensive wooded areas beyond the open fields
- South = 407 ETR, beyond the highway are open fields and vacant lands that are rapidly being urbanized to commercial, institutional and industrial land uses.

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural lands beside 407 ETR. The closest development will be the urban non-residential land uses on the south side of the highway corridor. This section of the runningway will have limited visual impact on surrounding land uses.

Existing Woody Vegetation/Impacts:

The proposed route of the runningway, along the north side of the 407 ETR, passing through a number of wooded hedgerows and stream channels. These vegetation communities will be impacted by the undertaking.



Photograph #2: View looking west along the north side of 407 ETR along the proposed runningway route.



Photograph #3: View looking west along the north side of 407 ETR from Appleby Line along the proposed runningway route.

Appleby Line Station

General Location and Surrounding Land Uses:

The proposed Appleby Line Station is located on the north side of the 407 ETR, west of the 407 ETR interchange at Appleby Line. The proposed rectangular piece of land designated for the station site is currently occupied by a car pool lot and agricultural land.

Surrounding land uses include:

- North = Agricultural fields
- East = 407 ETR/Appleby Line interchange and agricultural lands
- South = 407 ETR/Appleby Line interchange with vacant lands beyond the interchange
- West = agricultural fields

Visual Character/Impact of the Station Site:

The station site is relatively flat, sloping gently to the north.

There are no visually sensitive land uses in the general area of the proposed station.

Existing Woody Vegetation/Impacts:

There is no woody vegetation on the proposed station site.



Photograph #4: View looking west along the north side of 407 ETR from Appleby Line showing the Appleby Line Station site.

Segment C: Appleby Line Station to Bronte Road Station

This segment of the Transitway is subdivided into the following three sections:

- Appleby Line Station to Tremaine Road
- Tremaine Road to Bronte Road Station
- Bronte Road Station

Appleby Line Station to Tremaine Road

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately two kilometers along the north side of the 407 ETR. The route passes through agricultural fields, the Bronte Creek valleylands, through vacant lands and under the CN rail line. Between the CN rail line and Tremaine Road the proposed runningway passes through an area of vacant land located beside an active quarry and a hydro transmission substation. The runningway crossed a small stream channel located just west of Tremaine Road.

The most significant natural feature along the route is the heavily wooded Bronte Creek valleyland area.

Surrounding land uses include:

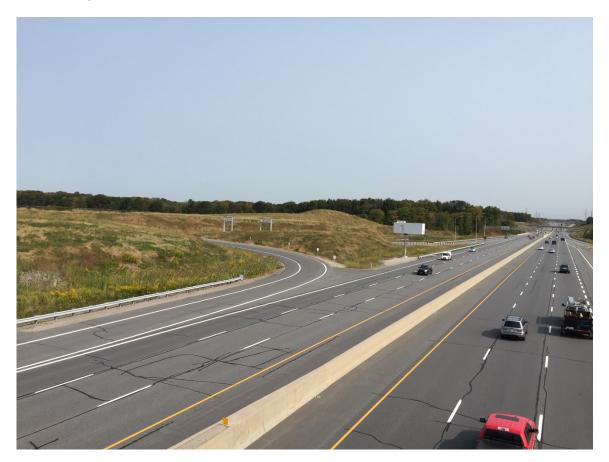
- North = agricultural fields, the wooded Bronte Creek valleylands, a horse farm, a quarry, hydro sub-station and a narrow woodlot
- South = 407 ETR, beyond the highway are agricultural fields, valleylands and vacant lands

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural lands beside 407 ETR. The closest visually sensitive land use will be the horse farm located to the east of the Bronte Creek valleylands. Other than this facility this section of the runningway will have limited visual impact on surrounding land uses.

Existing Woody Vegetation/Impacts:

The proposed route of the runningway, along the north side of the 407 ETR, passing through the heavily wooded Bronte Creek valleylands and a narrow woodlot located to the east of the CN rail line. These vegetation communities will be impacted by the undertaking.



Photograph #5: View looking east along the 407 ETR showing the landscape the north runningway passes through, west of the Bronte Creek valleylands.



Photograph #6: View looking east along the 407 ETR showing the landscape the north runningway passes through, east of the Bronte Creek valleylands.

Tremaine Road to Bronte Road Station

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately two kilometers along the 407 ETR corridor. A few hundred metres east of Tremaine Road the runningway crosses from the north to the south side of the 407 ETR corridor. The route passing through primarily agricultural fields, some vacant lands, and through a small wooded area.

The route crosses over Bronte Road to the south of the 407 ETR interchange, before approaching the Bronte Station site.

Surrounding land uses include:

- North = 407 ETR, beyond the highway are agricultural fields, vacant lands and several woodlots
- South = agricultural fields, a small woodlot and some vacant lands

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural/vacant lands beside 407 ETR. There are no visually sensitive land uses near this section of the proposed route.

Existing Woody Vegetation/Impacts:

The proposed route of the runningway, along the southside of the 407 ETR, passing through the heavily wooded Bronte Creek valleylands and a small woodlot and several hedgerows. These vegetation communities will be impacted by the undertaking.



Photograph #7: View of the proposed runningway route, looking west from Bronte Road.

Bronte Road Station

General Location and Surrounding Land Uses:

The proposed Bronte Road Station is located east of Bronte Road on the south side of the 407 ETR, immediately east of the 407 ETR interchange. The proposed site is currently occupied by agricultural fields. A small stream channel meanders through the site which is generally flat.

Surrounding land uses include:

- North = 407 ETR, the 407 ETR/Bronte Road interchange and vacant lands
- East = agricultural fields
- South = agricultural fields, the Vaishno Devi Temple, and a woodlot
- West = Bronte Road, beyond Bronte Road are agricultural fields, vacant lands

Visual Character/Impact of the Station Site:

The station site is relatively flat.

The only visually sensitive land use in the area is the Vaishno Devi Temple located immediately to the south of the proposed station site.

Existing Woody Vegetation/Impacts:

There are several hedgerows that separate the fields on the site and some mature trees scattered in areas of vacant land. These vegetation communities will be impacted by the undertaking.



Photograph #8: View of the proposed Bronte Road Station site, looking east from Bronte Road.

Segment D: Bronte Road Station to Neyagawa Road

This segment of the Transitway is subdivided into the following two sections:

- Bronte Road Maintenance Facility
- Bronte Road Station to Neyagawa Road

Bronte Road Maintenance Facility

General Location and Surrounding Land Uses:

This proposed maintenance facility is located on the south side of the runningway, immediately east of the Bronte Road Station site. The site covers a large area (approximately 700m in length and 250m wide). It is located in an area dominated by agricultural fields and, a small woodlot and a hedgerow.

Surrounding land uses include:

- North = 407 ETR, beyond the highway are woodlots, vacant lands and agricultural fields,
- East = Vacant/agricultural lands
- South = agricultural fields
- West = Bronte Road Station

Visual Character/Impact of the Facility:

This maintenance facility is located in a rural area south of the 407 ETR corridor. The only visually sensitive land uses near the proposed facility would be the proposed Bronte Creek Station.

Existing Woody Vegetation/Impacts:

There is a small woodlot and a hedgerow located on the proposed maintenance facility site. These vegetation communities will be impacted by the undertaking.

Bronte Road Station to Neyagawa Road

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately four kilometers along the south side of the 407 ETR. The route passing through agricultural fields, two woodlots the Sixteen Mile Creek valleylands and through vacant lands.

The most significant natural feature along the route is the heavily wooded Sixteen Mile Creek valleyland area.

Surrounding land uses include:

- North = 407 ETR, beyond the highway are agricultural fields, valleylands and vacant lands
- South = agricultural fields, the wooded Sixteen Mile Creek valleylands, several woodlots and some vacant lands

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural lands beside 407 ETR. There are no visually sensitive land uses near this section of the proposed route.

Existing Woody Vegetation/Impacts:

The proposed route of the runningway, along the southside of the 407 ETR, passing through the heavily wooded Sixteen Mile Creek valleylands several woodlots, vacant lands with scattered trees and several hedgerows. These vegetation communities will be impacted by the undertaking.



Photograph #9: View looking east along the south side of the 407 ETR, approaching the Sixteen Mile Creek valleylands.



Photograph #10: View looking east along the south side of the 407 ETR, east of the Sixteen Mile Creek valleylands.



Photograph #11: View looking east along the south side of the 407 ETR towards Neyagawa Road

Segment E: Neyagawa Road to Trafalgar Road Station

This segment of the Transitway is subdivided into the following two sections:

- Neyagawa Road to Trafalgar Road Station
- Trafalgar Road Station

Neyagawa Road to Trafalgar Road Station

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately three kilometers along the south side of the 407 ETR. The route passing through agricultural fields, one woodlot and through vacant lands.

The route will pass under 6th Line.

Surrounding land uses include:

- North = 407 ETR, beyond the highway are agricultural fields, woodlots and vacant lands
- South = agricultural fields, one woodlots, a farm complex and some vacant lands.

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural lands beside 407 ETR. The only visually sensitive land uses near this section of the proposed route is the farm complex located on the east side of 6th Line. Existing Woody Vegetation/Impacts:

The proposed route of the runningway, along the south side of the 407 ETR, passing through one woodlot, several hedgerows. These vegetation communities will be impacted by the undertaking.



Photograph #12: View looking east along the south side of the 407 ETR, along the proposed runningway route.



Photograph #13: View looking east along the south side of the 407 ETR, approaching Trafalgar Road, along the proposed runningway route.

Trafalgar Road Station

General Location and Surrounding Land Uses:

The proposed Trafalgar Road Station is located on the west side of Trafalgar Road on the south side of the 407 ETR, south of the 407 ETR interchange at Trafalgar Road. The proposed site is currently occupied by agricultural fields and a commuter parking lot.

Surrounding land uses include:

- North = 407 ETR, the 407 ETR/Trafalgar Road interchange, a woodlot, a small stream channel and vacant lands
- East = Trafalgar Road, a rural residence and agricultural fields
- South = agricultural fields
- West = agricultural fields and a hedgerow

Visual Character/Impact of the Station Site:

The station site is relatively flat.

The only visually sensitive land use in the area is the rural residence located on the east side of Trafalgar Road.

Existing Woody Vegetation/Impacts:

The only vegetation on the site are some landscape plantings associated with the commuter parking lot. These trees will be impacted by the undertaking.



Photograph #14: View looking east along the south side of the 407 ETR, showing the agricultural fields at the proposed Trafalgar Road Station site.

Segment F: Trafalgar Road Station to Britannia Road Station

This segment of the Transitway is subdivided into the following two sections:

- Trafalgar Road Station to Britannia Road Station
- Britannia Road Station

Trafalgar Maintenance Facility to Britannia Road Station

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately four kilometers running for the first section along the south side of the 407 ETR, then crossing to the north side of the highway before entering the area of the 407 ETR/Hwy 403 interchange area. North of the interchange area the runningway passes over the 407 ETR again, this time from west to east. The runningway crosses Eglinton Avenue.

The first section of this route, south of the 407 ETR, passes through a small wooded area and vacant lands. When the runningway crosses to the north side it passes through agricultural fields, vacant lands and beside a hydro transmission sub-station before crossing to the east side of the 407 ETR. Here the runningway passes through vacant lands, agricultural fields and a small wooded area. As the runningway approached Britannia Station it swings to the east away from the 407 ETR corridor along the east side of a large wetland area, parallel to Ninth Line.

Surrounding land uses include:

This description is divided into three sections, South side of 407 ETR

- North = 407 ETR, beyond the highway are agricultural fields
- South = agricultural fields, one woodlots and some vacant lands.

North and west side of 407 ETR

- North and West = agricultural fields, vacant lands and a hydro sub-station
- South and East = 407 ETR and 407 ETR/Hwy 403 interchange

East side of 407 ETR

- East = vacant lands, agricultural fields, two wooded areas and Ninth Line (beyond Ninth Line is a residential subdivision)
- West = 407 ETR and wetlands

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural and vacant lands beside 407 ETR. The only visually sensitive land uses near this section of the proposed route are residences fronting onto Ninth Line.

Existing Woody Vegetation/Impacts:

The proposed route of the runningway, passing through two woodlots and several hedgerows. These vegetation communities will be impacted by the undertaking.



Photograph #15: View looking east from Trafalgar Road, showing the route of the transitway adjacent to these agricultural fields



Photograph #16: View looking east along the 407 ETR corridor, at the approximate location where the runningway will cross from the south to the north side of the highway.



Photograph #17: View looking north along the 407 ETR corridor, just south of Eglinton Avenue at the approximate location where the runningway will cross from the west to the east side of the highway.



Photograph #18: View looking west along the 407 ETR corridor at the 403 interchange, the proposed runningway route will pass through these vacant lands beside the highway.



Photograph #19: View looking north-west from the 407 ETR corridor over the stormwater retention pond complex. The proposed runningway route will pass on the far side of the pond.

Britannia Road Station

General Location and Surrounding Land Uses:

The proposed Britannia Road Station is located east of the 407 ETR, on west side of Ninth Line just south of Britannia Road. The proposed site is located in currently vacant fields with a treed hedgerow.

Surrounding land uses include:

- North = Rural residence and Britannia Road
- East = residential subdivision
- South = vacant land
- West = wetland area (407 ETR beyond)

Visual Character/Impact of the Station Site:

The station site is flat.

There visually sensitive land uses in the immediate area include the residential neighbourhood to the east and the rural residence located immediately north of the site.

Existing Woody Vegetation/Impacts:

There is a hedgerow in the middle of the site and a row of trees along the Ninth Line frontage. These trees will be impacted by the undertaking.



Photograph #20: View looking south along Ninth Line, showing the agricultural fields where the proposed Britannia Road Station site.



Photograph #21: View looking south along Ninth Line, showing the residential development across the street from the proposed Britannia Road Station site.

Segment G: Britannia Road Station to Derry Road Station

This segment of the Transitway is subdivided into the following two sections:

- Britannia Road Station to Derry Road Station
- Derry Road Station

Britannia Road Station to Derry Road Station

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately three kilometers along the east side of the 407 ETR. The route passing through an area of industrial land, agricultural fields and vacant lands. The route passes beside a stream channel which runs parallel to the 407 ETR corridor throughout most of the three kilometer length.

The route will pass over Britannia Road and Derry Road.

Surrounding land uses include:

- West = 407 ETR, stream channel and vacant lands
- East = agricultural fields, one woodlots, vacant lands, a storm water management pond, and some industrial land uses.

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly vacant and agricultural lands beside the 407 ETR. There are no visually sensitive land uses in the immediate vicinity of the runningway.

Existing Woody Vegetation/Impacts:

The only woody vegetation in the vicinity of the proposed route of the runningway includes some scattered trees and a wooded area located immediately south of Derry Road. Some scattered trees will be impacted. The should be minimum impacts to the wooded area.



Photograph #22: View looking north from Britannia Road along the east side of the 407 ETR corridor. The runningway will pass through these vacant lands.



Photograph #23: View looking north along the east side of the 407 ETR corridor. The runningway will pass through these vacant lands.



Photograph #24: View looking south along the east side of the 407 ETR corridor. From Derry Road. The runningway will pass through these vacant lands adjacent to the stream channel located in the foreground.

Derry Road Station

General Location and Surrounding Land Uses:

The proposed Derry Road Station is located east of the 407 ETR, on west side of Ninth Line just north of Derry Road. The proposed site is located in currently vacant land with some scattered mature trees. There is a vacant home on the site. A small stream channel passes through the site.

Surrounding land uses include:

- North = vacant lands
- East = residential subdivision
- South = Derry Road
- West = vacant lands and 407 ETR

Visual Character/Impact of the Station Site:

The station site is flat.

There visually sensitive land uses in the immediate area include the residential neighbourhood to the east of the site. The residential neighbourhood is buffered from the site by a noise barrier wall and a row of coniferous trees. The station site should not impact any visually sensitive land uses.

Existing Woody Vegetation/Impacts:

There are some scattered mature trees on the site. These trees will be impacted by the undertaking.



Photograph #25: View looking north from Derry Road along the east side of the 407 ETR corridor. The proposed Derry Road Station site is to be located in these vacant lands on the west side of Ninth Line.

Segment H: Derry Road Station to Winston Churchill Blvd

This segment of the Transitway is subdivided into the following four sections:

- Derry Road Station to Lisgar Station
- Lisgar Station
- Lisgar Station to Winston Churchill Blvd

Derry Road Station to Lisgar Station

General Location and Surrounding Land Uses:

This section of the proposed runningway extends a distance of approximately two kilometers along the east side of the 407 ETR. The route passing through an area of agricultural fields and vacant lands. At the north end of this section of the route the runningway passes under hydro transmission lines.

The route will pass over Britannia Road and Derry Road as well as the east-west CP rail corridor before it changes direction and heads east along the south side of Highway 401 before it crosses over Ninth Line

Surrounding land uses include:

- West = 407 ETR, 407 ETR off-ramp to Highway 401 eastbound
- East = agricultural fields and vacant lands

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly vacant and agricultural lands beside the 407 ETR. There are no visually sensitive land uses in the immediate vicinity of the runningway.

Existing Woody Vegetation/Impacts:

There is no existing woody vegetation located in the immediate area of the runningway.



Photograph #26: View looking north along the east side of the 407 ETR corridor, north of the CP rail corridor. The proposed runningway will pass through these agricultural lands.

Lisgar Station

General Location and Surrounding Land Uses:

The proposed Lisgar Station is located immediately west of the Lisgar GO station. The proposed site is located in a flat area located within a hydro corridor, an area of vacant land.

Surrounding land uses include:

- North = Argentia Road and vacant lands (beyond Argentia)
- East = Lisgar GO Station
- South = CP Rail line (residential subdivision beyond rail line)
- West = Hydro corridor lands (hydro sub station and industrial lands beyond)

Visual Character/Impact of the Station Site:

The station site is flat. There are no visually sensitive land uses in the immediate area. Existing Woody Vegetation/Impacts:

There is no woody vegetation on the site.



Photograph #27: View looking south from the Highway 401 corridor. The proposed runningway is to be located adjacent to these fields used for recreation and agriculture on the east side of Ninth Line.

Lisgar Station to Winston Churchill Blvd

This section of the proposed runningway extends a distance of approximately two kilometers along the south side of the Highway 401 westbound to 407 ETR eastbound ramp before crossing over Highway 401 and running parallel to the south side of the 407 ETR. The route passing through an area of agricultural fields and vacant lands.

The runningway crosses over Highway 401 and Winston Churchill Boulevard.

Surrounding land uses include:

- North = 407 ETR/Highway 401 ramp and 407 ETR
- South = agricultural fields, vacant lands and a storm water management pond.

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly vacant and agricultural lands beside the 407 ETR. There are no visually sensitive land uses in the immediate vicinity of the runningway.

Existing Woody Vegetation/Impacts:

The only woody vegetation located along this section of the runnningway is one hedgerow and some scattered trees in the vacant lands. These vegetation communities will be impacted by the undertaking.



Photograph #28: View looking east from the Highway 401 on ramp from the 407 ETR. The proposed runningway is to be located through these agricultural lands.



Photograph #29: View looking east from Winston Churchill Boulevard along the south side of the 407 ETR. The proposed runningway is to be located through these vacant lands.



Photograph #30: View looking east from the Winston Churchill Boulevard along the south side of the 407 ETR. The proposed runningway is to be located in these vacant/industrial lands located along the south side of the highway.

Segment I: Winston Churchill Blvd to East Terminus

This segment of the Transitway is subdivided into the following five sections:

- Winston Churchill Blvd to Heritage Road
- Heritage Road to Mississauga Station
- Mississauga Road Station
- Mississauga Station
- Mississauga Station to East Terminus

Winston Churchill Blvd to Heritage Road

This section of the proposed runningway extends a distance of approximately half a kilometer along the south side of the 407 ETR. The route passing through an area of agricultural fields and a farm complex.

Surrounding land uses include:

- North = 407 ETR, (industrial lands beyond)
- South = agricultural fields, transmission corridor, and industrial lands

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural lands beside the 407 ETR. The only visually sensitive land use in the immediate vicinity of the proposed runningway is a farm complex located on the west side of Heritage Road.

Existing Woody Vegetation/Impacts:

There are no woody vegetation communities located along this section of the proposed runningway.

Heritage Road to Mississauga Road Station

This section of the proposed runningway extends a distance of approximately one kilometer along the south side of the 407 ETR before crossing over to the north side of the 407 ETR corridor. The route passing through an area of vacant lands with scattered woody vegetation communities throughout the area.

The proposed route crosses over Mullett Creek which is flanked by trees and wetlands.

There is one existing residence located on the east side of Heritage Road, in the immediate vicinity of the proposed runningway.

Surrounding land uses include:

- North = 407 ETR, (vacant and industrial lands beyond)
- South = vacant lands, valleylands and a transmission corridor.

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly vacant lands beside the 407 ETR. The only visually sensitive land use in the immediate vicinity of the proposed runningway is a residence located on the east side of Heritage Drive.

Existing Woody Vegetation/Impacts:

There are a wide variety of small and scattered woody vegetation communities located along this section of the proposed runningway. Some of these communities will be impacted by the undertaking.



Photograph #31: View looking west from Mississauga Road along the south side of the 407 ETR. The proposed runningway is to be located through these vacant lands and utility corridors.

Mississauga Road Station

General Location and Surrounding Land Uses:

The proposed Mississauga Road Station is located on the north side of the 407 ETR, immediately west of the Mississauga Road. The proposed site is located in a flat area of vacant land.

Surrounding land uses include:

- North = office complex/parking lot and a storm water management pond
- East = office complex/parking lot, 407 ETR
- South = 407 ETR (hydro lands beyond)
- West = Mississauga Road (Golf Course beyond)

Visual Character/Impact of the Station Site:

The station site is flat vacant land.

The office complex located immediately north and east of the site will be visually impacted by the station development.

Existing Woody Vegetation/Impacts:

There in not any woody vegetation on the site.

Mississauga Road Station to Mavis Road

This section of the proposed runningway extends a distance of approximately three kilometers extending along the north side of the 407 ETR before crossing to the south side of the highway east of the Credit River. The route passes over Financial Drive, Levi Creek, Credit River and associated valley lands, CP rail line and the Mavis Road/407 ETR interchange area.

The route passing through an area of predominantly vacant lands populated with a variety scattered woody vegetation communities along throughout the area. There is one significant section located between Mississauga Road and Financial Drive where the runningway passes through the edge of a golf course

The proposed route crosses over Levi Creek and the Credit River, both water courses flanked by trees and wetlands.

Surrounding land uses west of the Credit River include:

- North = a golf course, industrial lands, residential subdivisions, vacant lands and valleylands and a cemetery
- South = 407 ETR, beyond the highway there are a variety of land uses including vacant lands, valleylands, transmission corridor, and vacant lands.

Surrounding land uses east of the Credit River include:

- North = residential subdivisions, vacant lands, valleylands and a cemetery
- South = 407 ETR, beyond the road corridor there is a variety of vacant lands, valleylands, transmission corridor, and residential subdivisions located beyond the vacant lands.

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly vacant lands beside the 407 ETR. The Credit River valley dominates the local visual landscape with its wide, gently sloping valleyland area. The most significant visual impacts will be located adjacent to the golf course and the residential subdivision located to the east of Financial Drive.

The only other visual impacts will be to the residentrial subdivisions located to the south of the transmission corridor right-of-way may be visually impacted by the runningway. However, the impact will not be significant compared to the adjacent 407 ETR corridor.

Existing Woody Vegetation/Impacts:

There are a wide variety of small and scattered woody vegetation communities located along this section of the proposed runningway. The most significant wooded area is located along the east side of Mavis Road. Some of these communities will be impacted by the undertaking.



Photograph #32: View looking west from Mavis Road along the 407 ETR corridor. The proposed runningway is to be located through these vacant lands on both the north and south sides of the 407 ETR. The photograph shows the Credit River valley lands in the distance.



Photograph #33: View looking east from Mavis Road along the south side of the 407 ETR. The proposed runningway is to be located through these vacant/wooded lands and utility corridors.



Photograph #34: View looking west from McLaughlin Road along the south side of the 407 ETR. The proposed Mavis Road Station is to be located in these vacant/agricultural lands and utility corridors.

Mavis Road Station to East Terminus

This section of the proposed runningway extends a distance of approximately half a kilometer along the south side of the 407 ETR. The route passing through an area of agricultural/vacant lands.

The proposed route crosses over Fletcher's Creek which is flanked by trees and wetlands.

Surrounding land uses include:

- North = 407 ETR, (residential subdivisions and valley lands beyond)
- South = vacant/agricultural lands, valleylands and a residential subdivision.

Visual Character/Impact of the Runningway:

This section of the runningway is to be routed through predominantly agricultural and vacant lands beside the 407 ETR. The only visually sensitive land use in the immediate vicinity of the proposed runningway is the residential subdivision located south of the runningway route.

Existing Woody Vegetation/Impacts:

There is a variety of scattered trees located in the Flecher's Creek valley lands. Some of this vegetation community will be impacted by the undertaking.



Photograph #36: View looking east from McLaughlin Road along the south side of the 407 ETR. This section of the runningway will terminate in the distance, beyond the Flecher's Creek valleylands. A residential development is located along the south side of the utility corridor.

CONCLUSIONS

In general, the proposed transitway follows a strip of vacant/cultivated land along the south side of the 407 ETR corridor. Some of the vacant lands have evidence of natural regeneration of pioneer tree species starting to occur. There are a few small remnant wooded areas located along the proposed transitway. The most significant wooded areas are located in the valleyland areas associated with Fletchers Creek (just west of the study limits), Etobicoke Creek West, West Humber River, Rainbow Creek and the Lower Humber River.

The visual impacts of the proposed transitway corridor and station sites are typically low as the land uses in the surrounding area are dominated by industrial development and the 407 ETR corridor.

There are a few residential developments in the vicinity of the transitway. These residential areas are single family unit subdivisions and therefore low rise, having limited views due to noise barrier walls, existing vegetation or their distance from the transitway. The most visually sensitive land uses along the corridor are the open space areas associated with the valley lands that provide recreation activities and trails.

The proposed station sites are the areas of most visual concern as they will include station buildings and extensive parking lots.

	Summary of Impacts of Proposed Runningway Sections and Station Sites			
#			Impact on Existing	
	Description	Visual Impact*	Vegetation	
1	Brant Street to Dundas Street	moderate	moderate	
2	Dundas Street Station	moderate	moderate	
3	Dundas Street Station to Appleby Line Station	low	moderate	
4	Appleby Line Station	low	low	
5	Appleby Line Station to Tremaine Road	low	high	
6	Tremaine Road to Bronte Road Station	low	moderate	
7	Bronte Road Station	low	low	
8	Bronte Road Station to Neyagawa Road	moderate	moderate	
9	Neyagawa Road to Trafalgar Road Station	low	moderate	
10	Trafalgar Road Station	low	low	
11	Trafalgar Road Station to Britannia Road Station	moderate	low	
12	Britannia Road Station	moderate	moderate	
13	Britannia Road Station to Derry Road Station	moderate	low	
14	Derry Road Station	moderate	moderate	
15	Derry Road Station to Lisgar Station	low	low	
16	Lisgar Station	low	low	

17	Lisgar Station to Winston Churchill Blvd	low	low		
18	Winston Churchill Blvd to Heritage Road	low	low		
19	Heritage Road to Mississauga Road Station	low	moderate		
20	Mississauga Road Station to Credit River	high	moderate		
21	Credit River to Mavis Road	moderate	moderate		
22	22 Mavis Road to East Terminus low low				
* visual impacts on visually sensitive land uses surrounding the site at the time of the survey					

RECOMMENDATIONS

The following recommendations related to the Landscape Restoration plans have been made by the environmental consultants (LGL) and are copied here.

Invasive Species Management

Efforts to control non-native and invasive plant species that have become established, as well as prevent the establishment of new non-native and invasive plant species at a minimum should include the following:

- where there are dense patches of common buckthorn, swallow-wort (*Cynanchum rossicum*), common reed or garlic mustard, Canada thistle (*Cirsium arvensis*), Russian or Autumn olive (*Elaeagnus angustifolia* and *E. umbellata*), Japanese knotweed (*Fallopia japonica*) the appropriate removal and control of these species by a qualified specialist should be undertaken. Swallow-wort, Canada thistle, common reed, common buckthorn and Japanese knotweed are particularly invasive. These species establish dense stands in meadow habitat but can also invade into forested sites displacing numerous native species. Any emerging or established populations observed should be effectively treated. Treatment of these species may include two or three applications of herbicide, over time, with the use of foliar-applied herbicides when the plants are actively growing. With common reed, only a herbicide formulation that is approved for aquatic use shall be used. Herbicide treatment should be used in conjunction with cutting or mowing to also mitigate spread by seed. Invasive species management is particularly important where restoration and/or enhancement is undertaken as part of supporting restoration trajectories/objectives;
- minimize the exposure of bare soil, where bare soil must persist over a period of time these should be planted with a non-invasive annual cover crop for an interim period; and
- no non-native and invasive ornamentals plants should be used for landscaping (e.g., Norway maple, purple loosestrife, Japanese knotweed, Japanese honeysuckle, etc.).

Planting Plans

Detailed planting plans should be developed prior to construction once areas identified for restoration have been determined in consultation with the respective agencies. It is recommended that the planting of forest and wetland habitat be undertaken with the appropriate native and non-invasive plant species that will be presented on site-specific plans to be developed by an experienced landscape architect/ecologist. At a minimum, planting plans will show the following:

- detailed maps of the planting locations along with the respective allocations of tree, shrub, herbaceous and grass species to be planted inclusive of species and ratio of plantings or abundances; and
- a description of the best management practices that are to be followed in the planting and tending of these sites for a minimum of five years following the initial planting stage. In particular, management will need to be undertaken for those invasive / aggressive plant species.

THE PRELIMINARY LANDSCAPE COMPOSITION DRAWINGS

Figures 2 to 37 provide an overview of the landscape composition in the vicinity of the transit corridor and provide recommended landscape planting treatments for the runningway corridor route and the station sites.

The Preliminary Landscape Composition drawings for the proposed transitway runningway and stations sites provide landscape plantings to mitigate impacts to the adjacent natural and cultural environment. These landscape plantings will also serve to provide 'greening' to the corridor, add tree canopy cover and add to the overall general aesthetics of the project in the context of the existing and proposed surrounding urban development and the natural landscape features.

It is recommended that an ecological approach to restoration planting is developed. This approach to restoration planting will help to recover natural self-sustaining ecosystems, or ecosystem components that support and contribute to the inherent natural biodiversity of the area. This approach will focus on the use on native species.

The landscape restoration planting will be developed providing for the following functional vegetation communities listed below. The location of the various planting schemes will depend on the local conditions of the site and surrounding land uses. The recommended landscape treatments are illustrated on the Preliminary Landscape Composition drawings for the Transitway.

The Preliminary Landscape Composition drawings provide a guide for the detailed landscape planting plans, to be developed prior to construction.

The plans focus on a number of different planting layouts that have been designed for a variety of situations including the following:

Woodland/Naturalization Planting: a mix of native deciduous trees, coniferous trees and shrubs

(plantings to be installed in areas where space is available for significant random planting initiatives)

Visual Screen: a mix of native deciduous trees, coniferous trees, and shrubs to be planted in a wide band with an emphasis on coniferous trees

(plantings to be installed where space is available to provide a buffer between the transitway and surrounding sensitive land uses)

Rural Screen: a mix of native deciduous trees, coniferous trees, and shrubs to be planted in a band less wide than the visual/noise screen plantings

Shrub Massing: a mix of native shrubs, perennials and grasses

(plantings to be installed in high profile locations including station site, steep embankments, and high profile sites along the corridor) **Embankment/Slope Stabilization:** a mix of native coniferous trees, shrubs, and live stakes,

(plantings to be installed in scattered groups along steep banks beside the transitway corridor and stations)

Valley Restoration: a mix of native riparian plantings to meet Conservation Authority requirements (*plantings to be installed at valleyland crossings*)

Riparian Plantings: a mix of native riparian plantings to meet Conservation Authority requirements (*plantings to be installed at stream channel crossings*)

Storm Water Management: a mix of native riparian, emergent and submergent vegetation (plantings to be installed around Storm Water Management Ponds) Forest Edge Management: a mix of locally native tree and shrub species to complement/match the adjacent vegetation communities

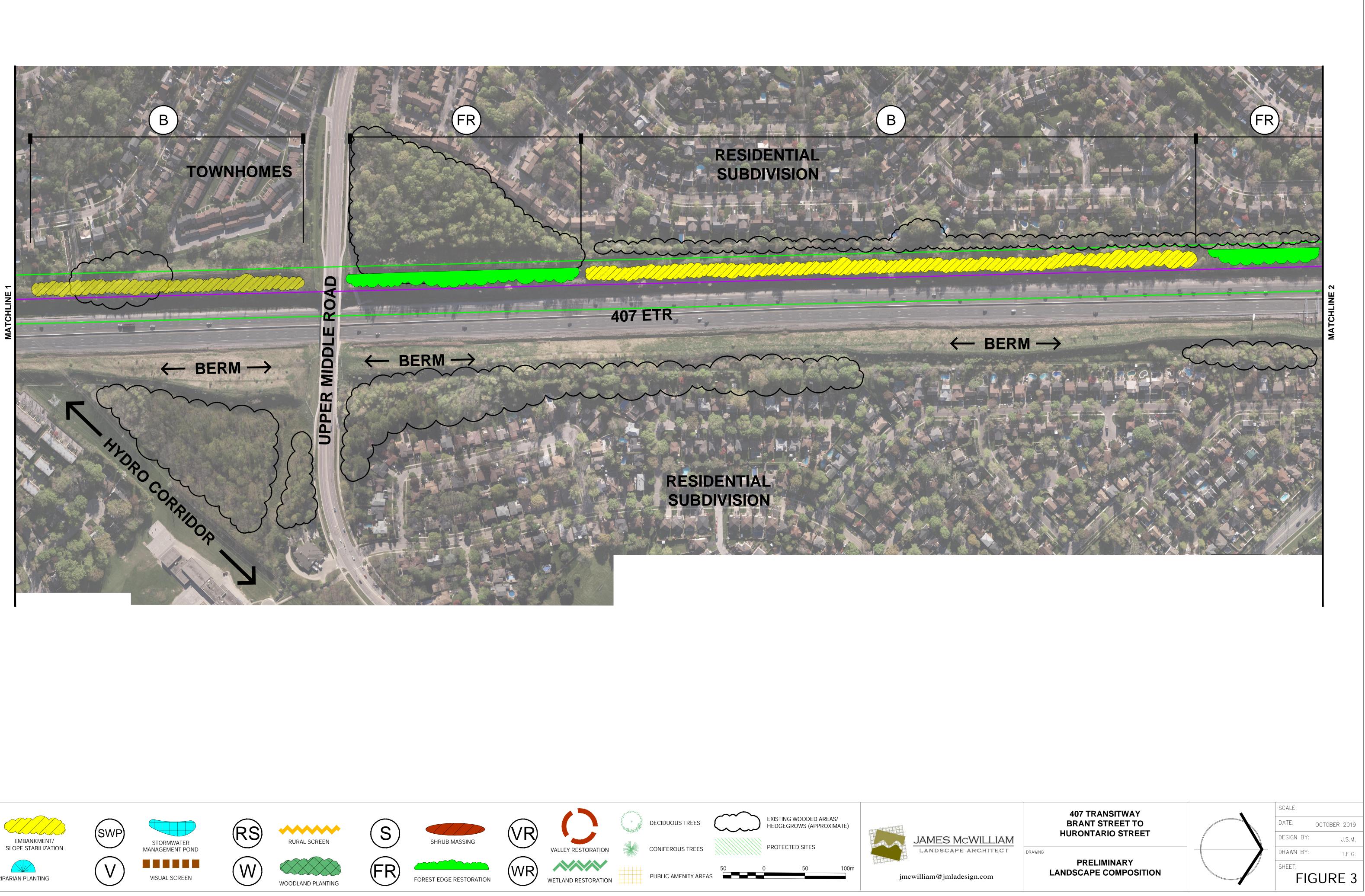
(plantings to be installed where the transitway passes beside disturbed woodland edge)

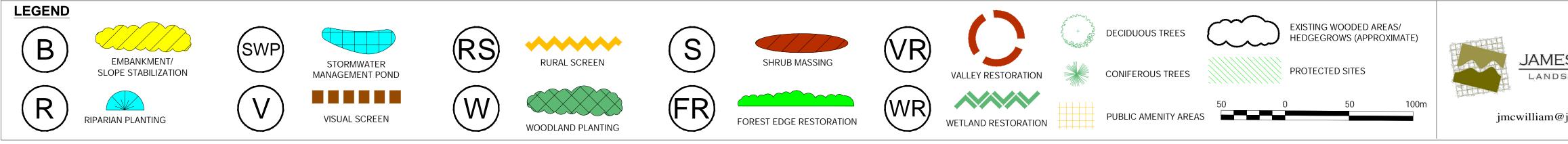
Preliminary planting plans have not been provided for the station sites. Landscape planting plans will be considered and incorporated into the design as necessary at the station sites prior to implementation.

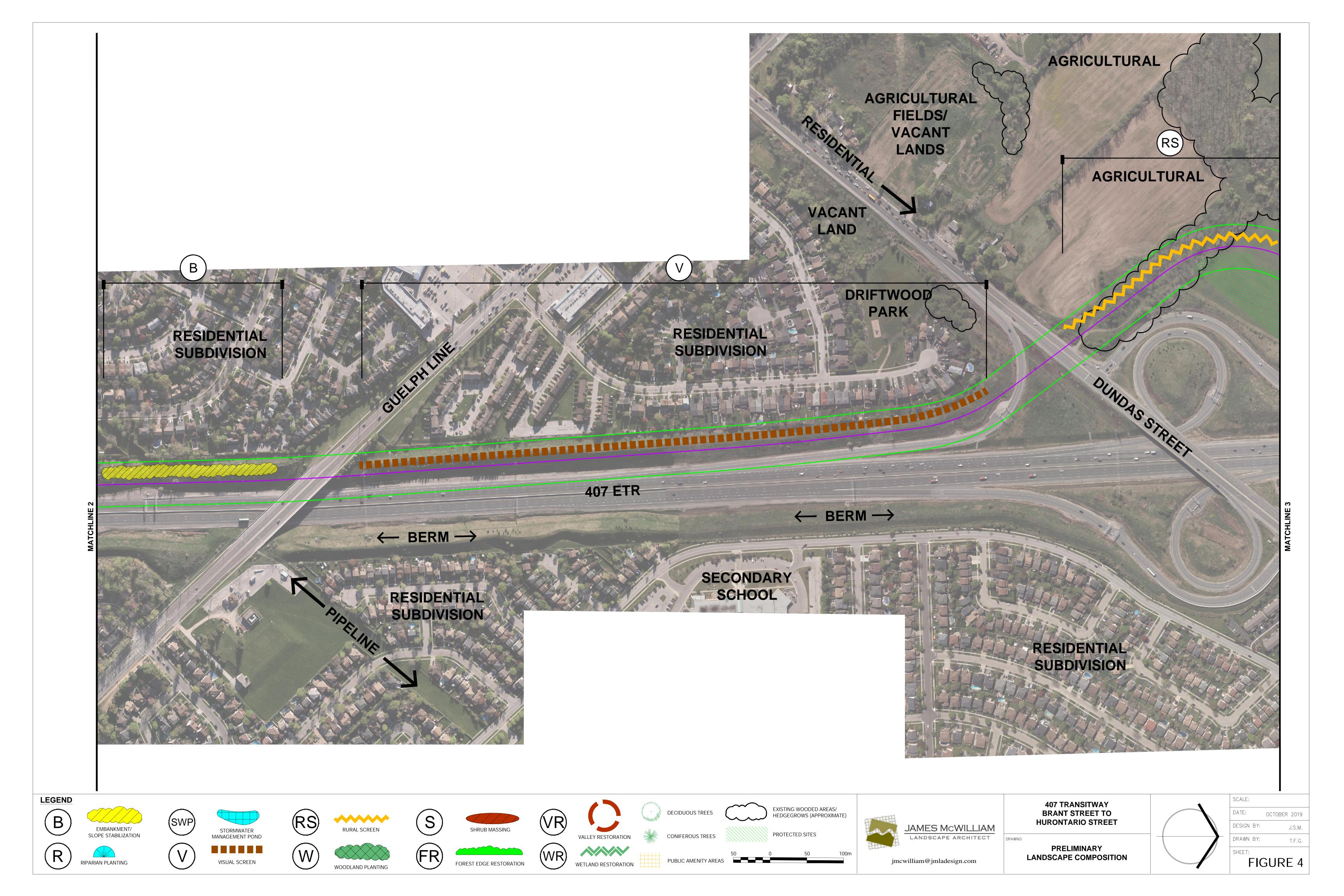
The detailed landscape plans for the station sites can also take on an ecological approach in coordination with more typical landscape design features.

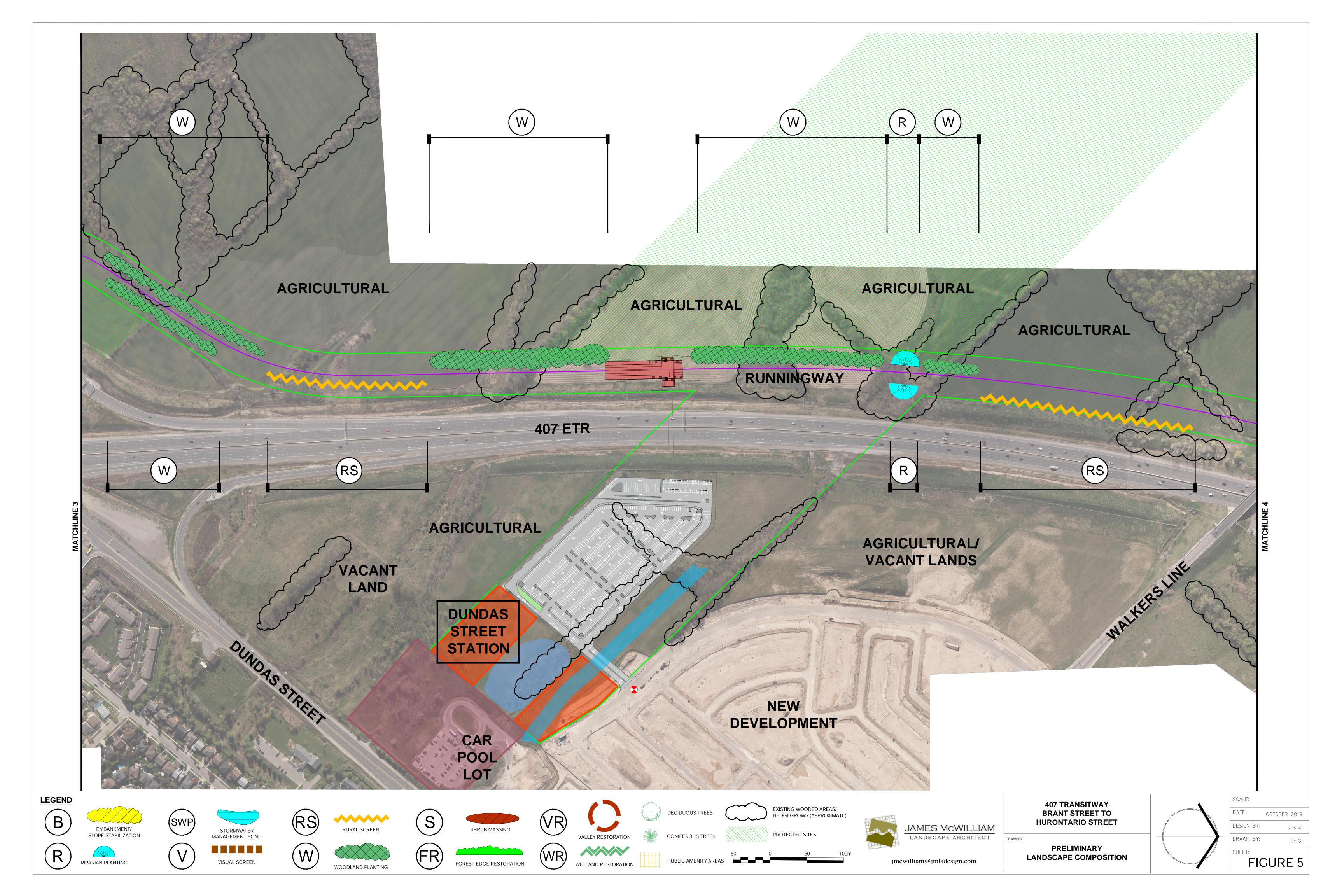
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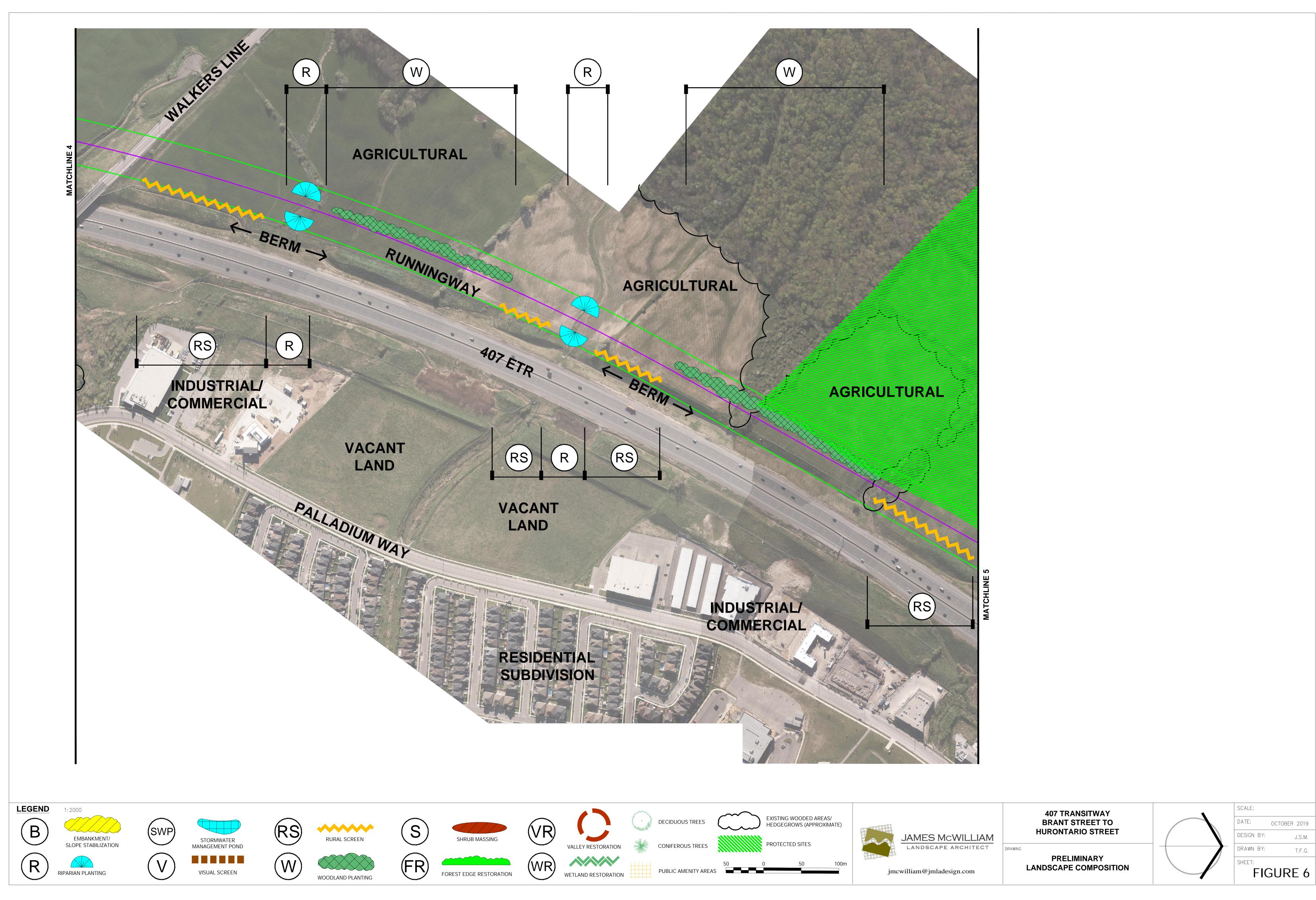
James McWilliam, BES, BLA, OALA, CSLA McWilliam & Associates

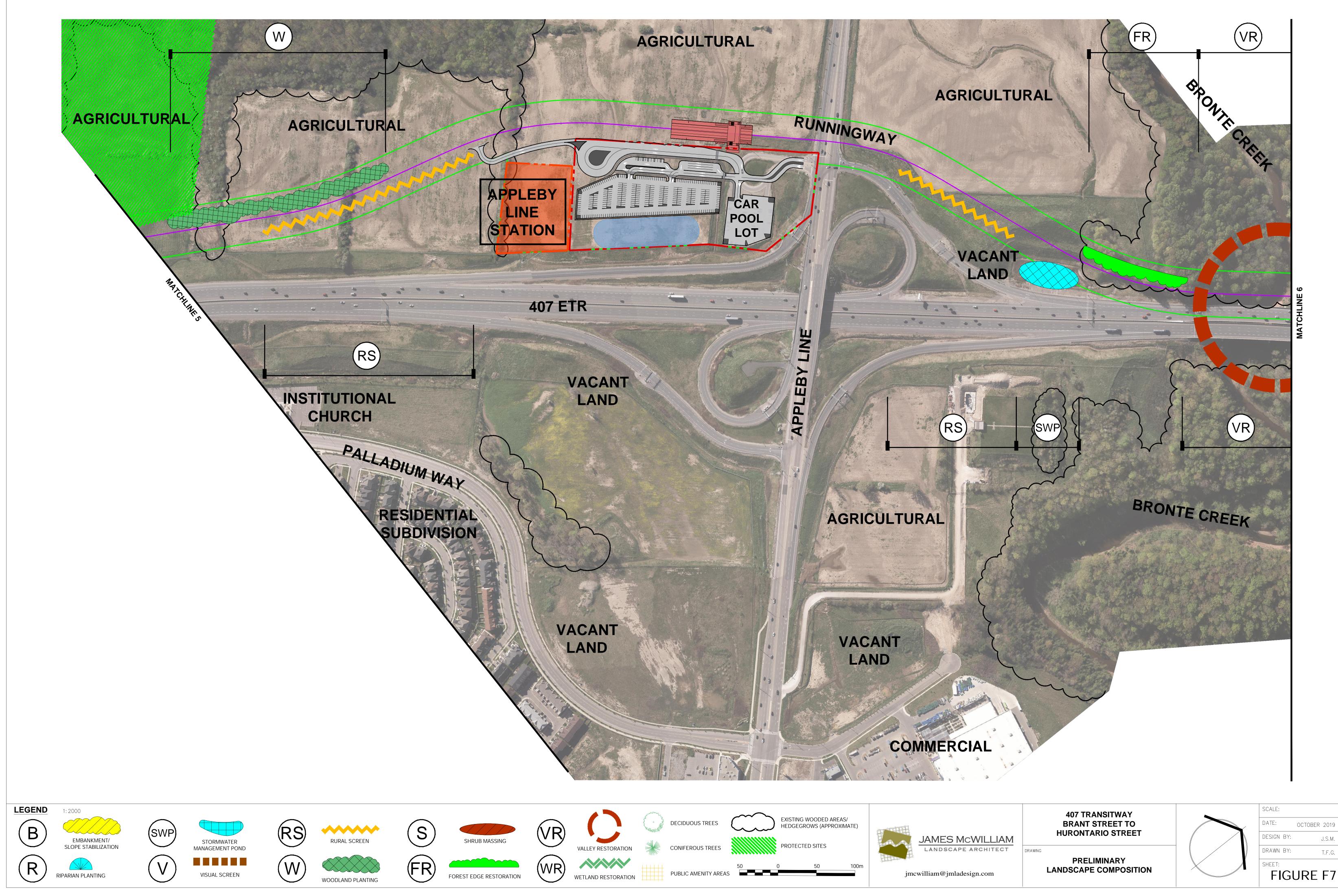


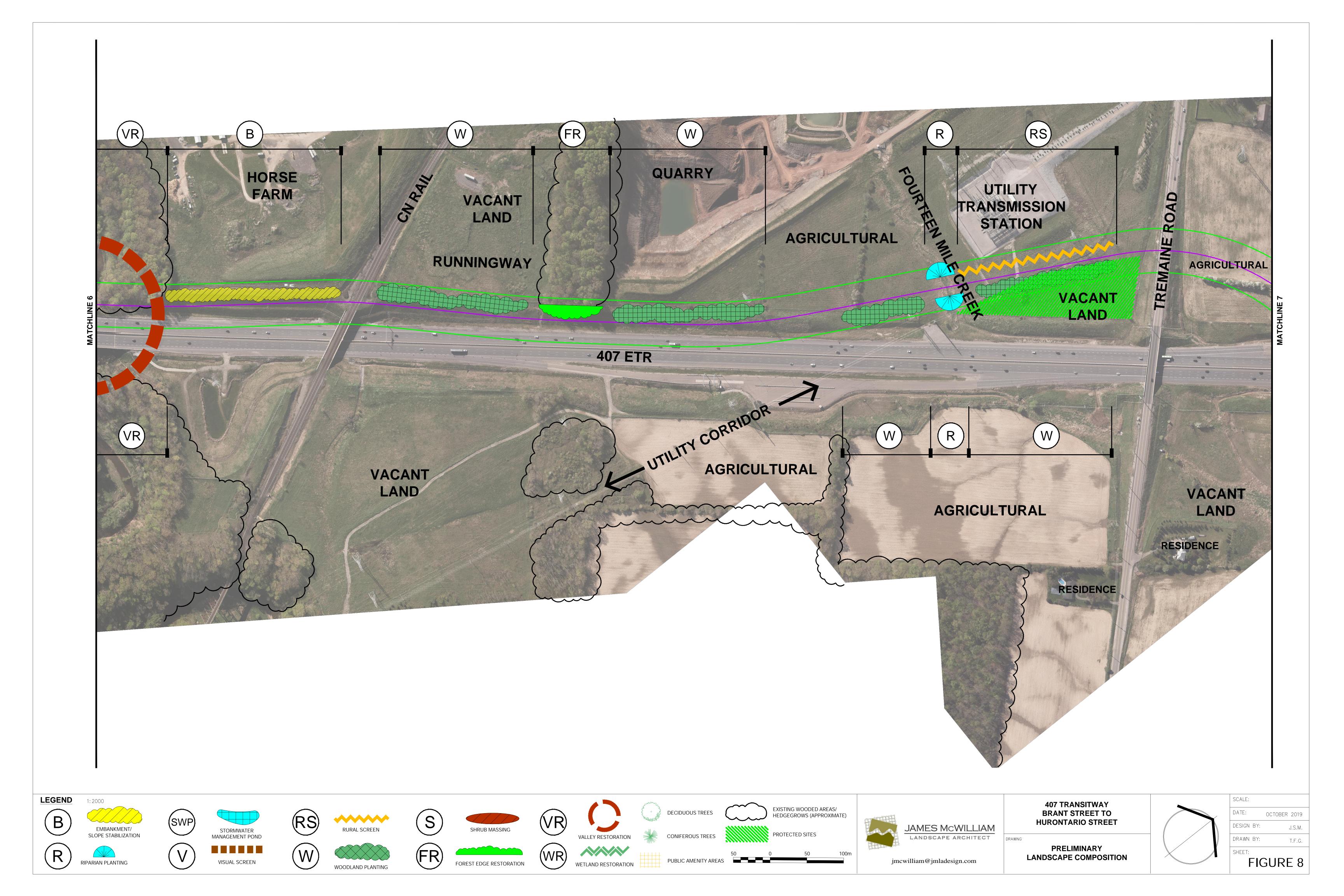


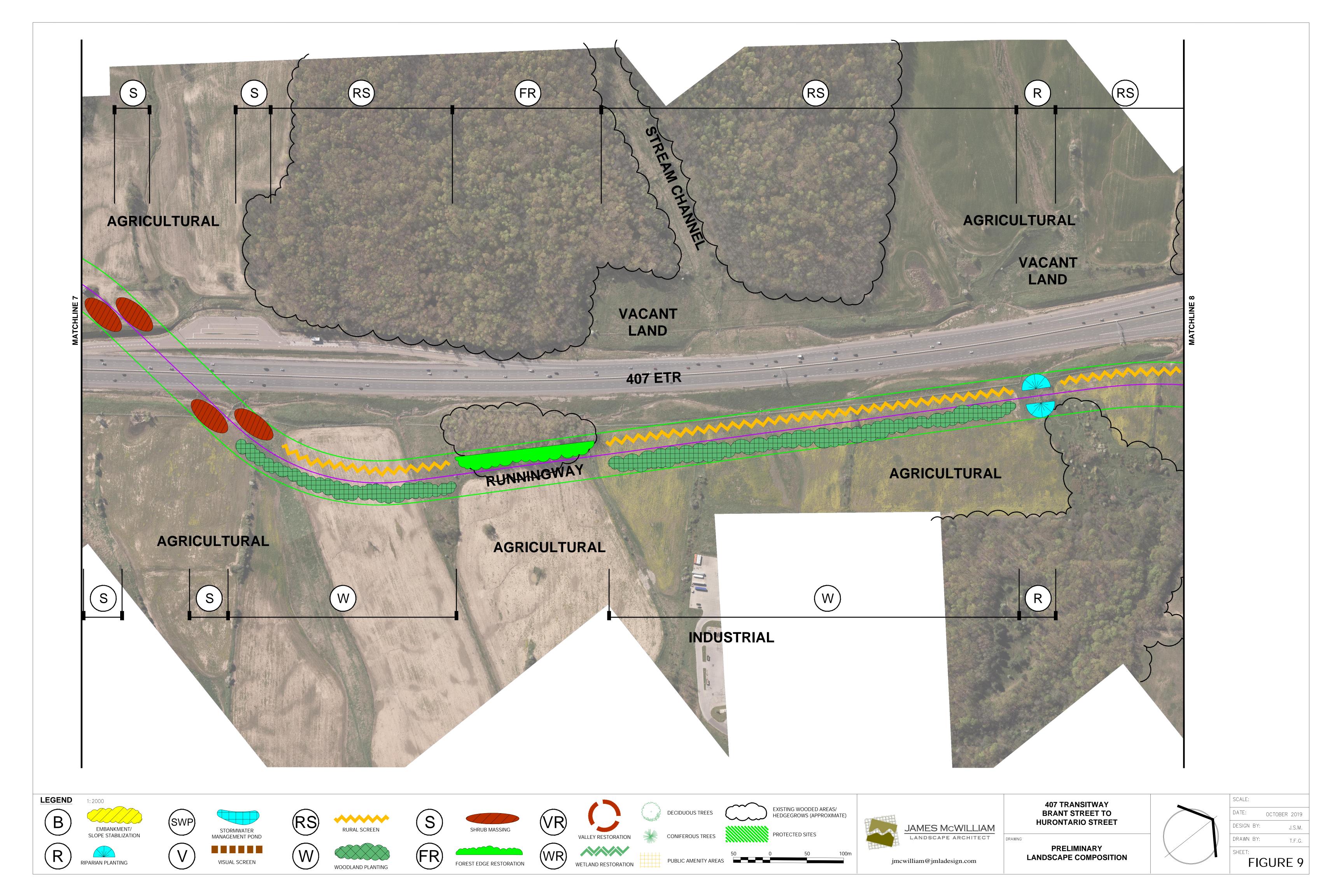


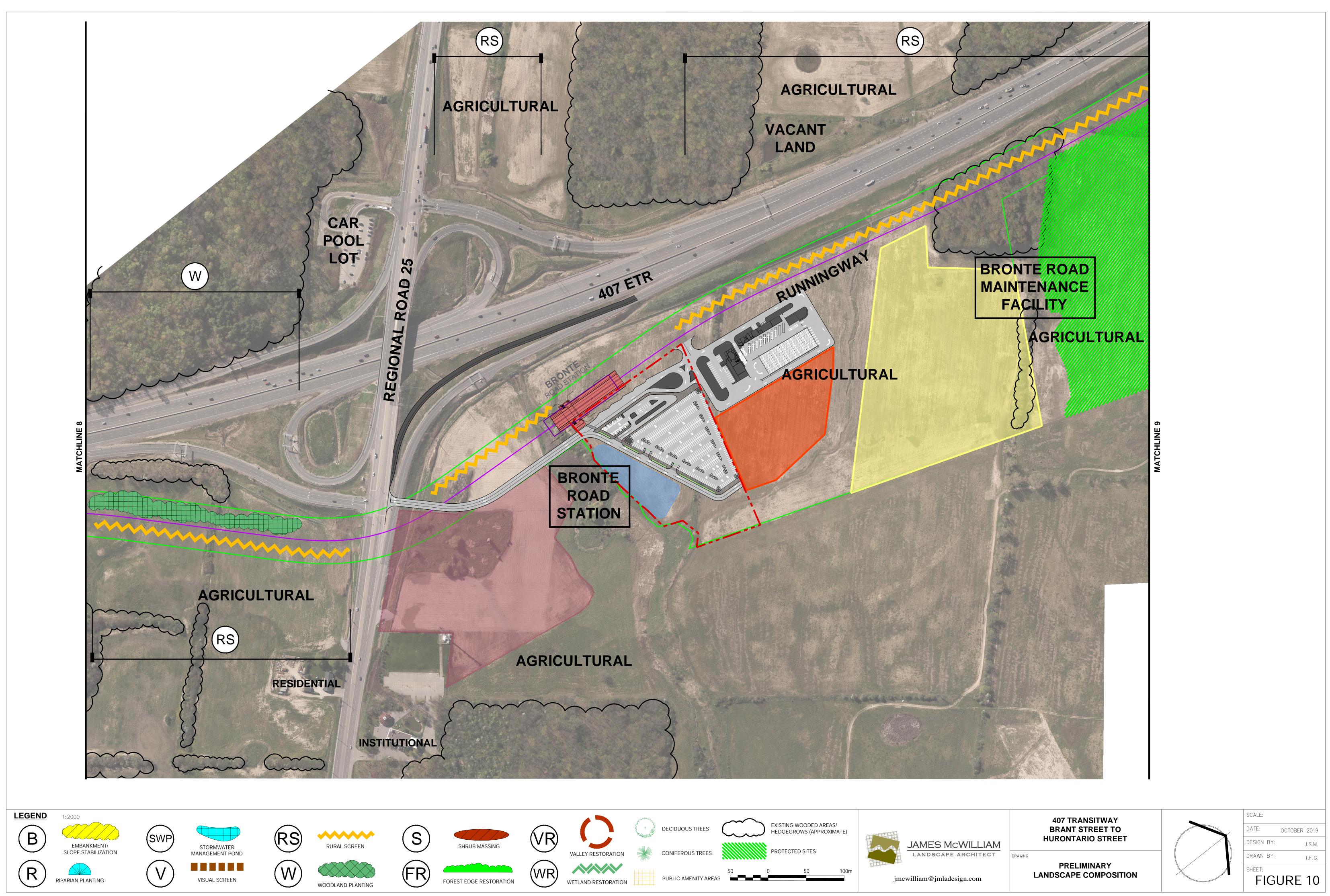


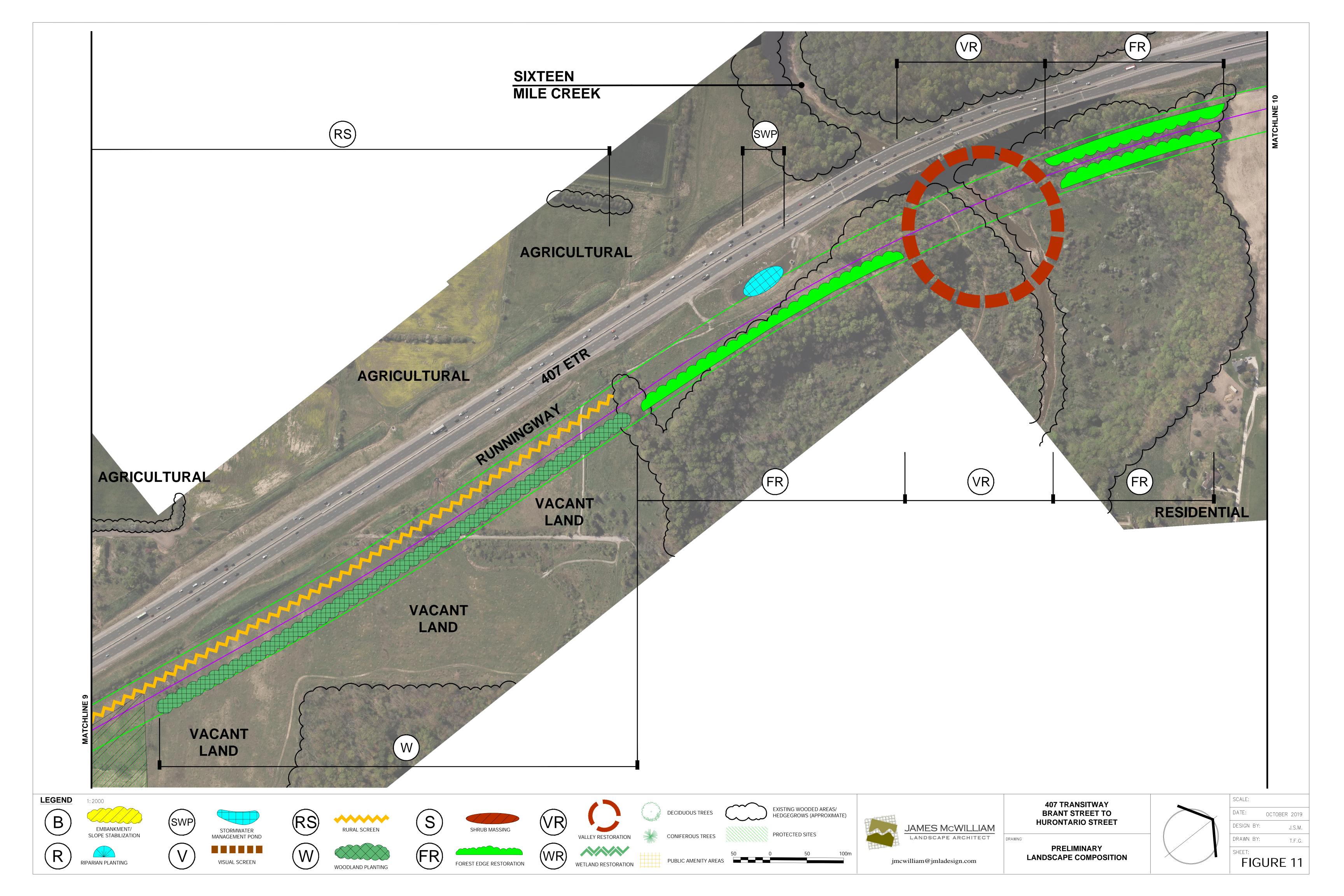


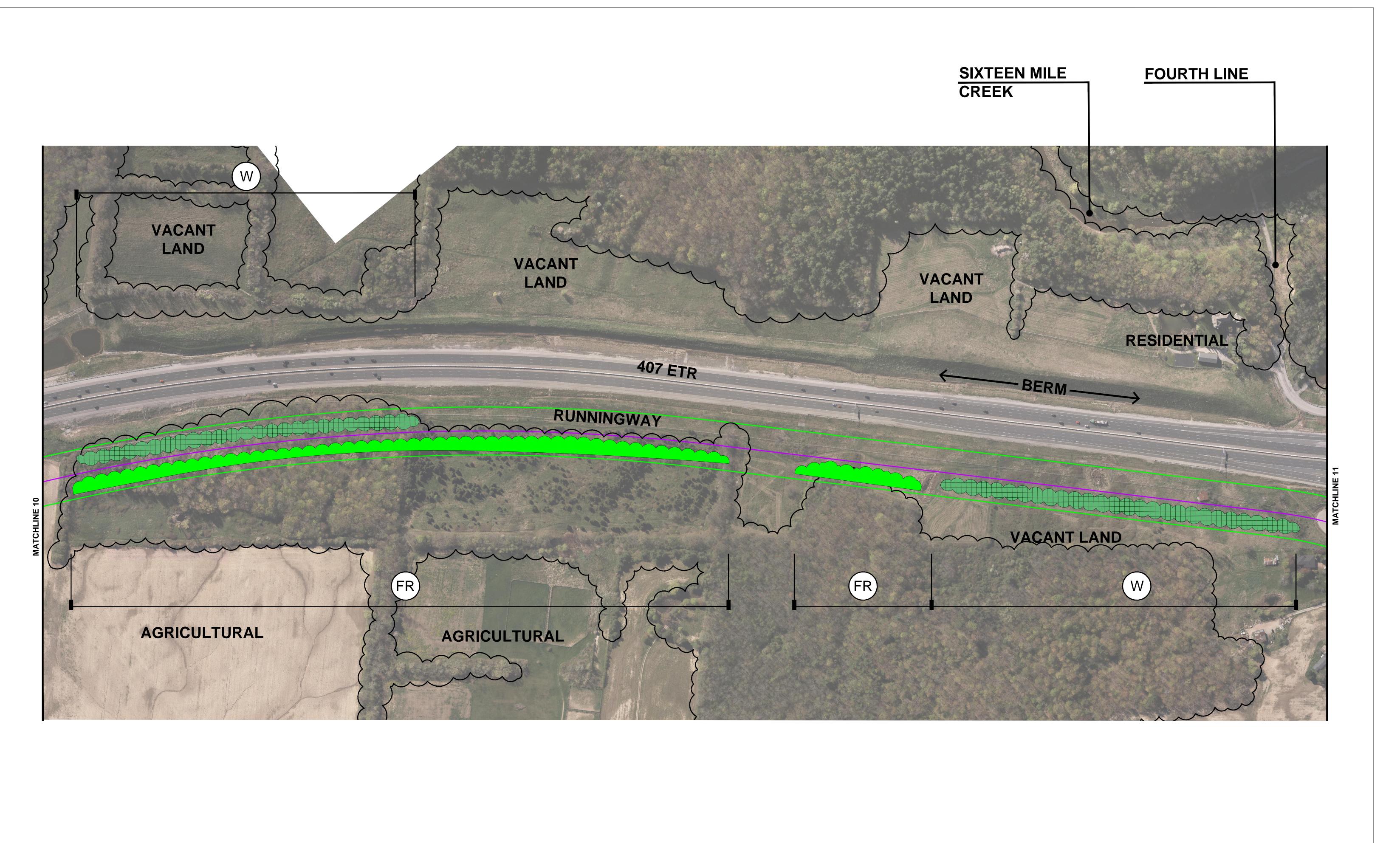


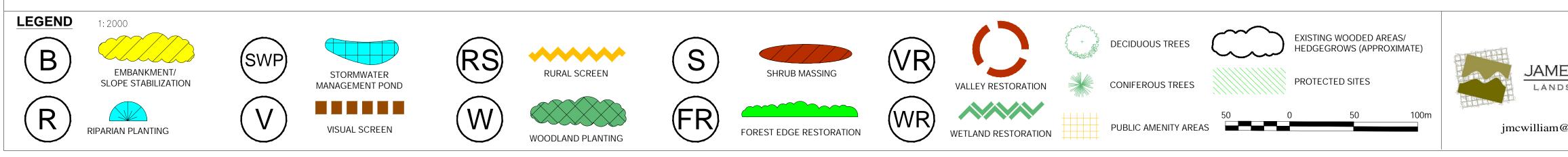










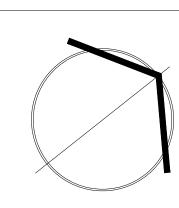


JAMES MCWILLIAM

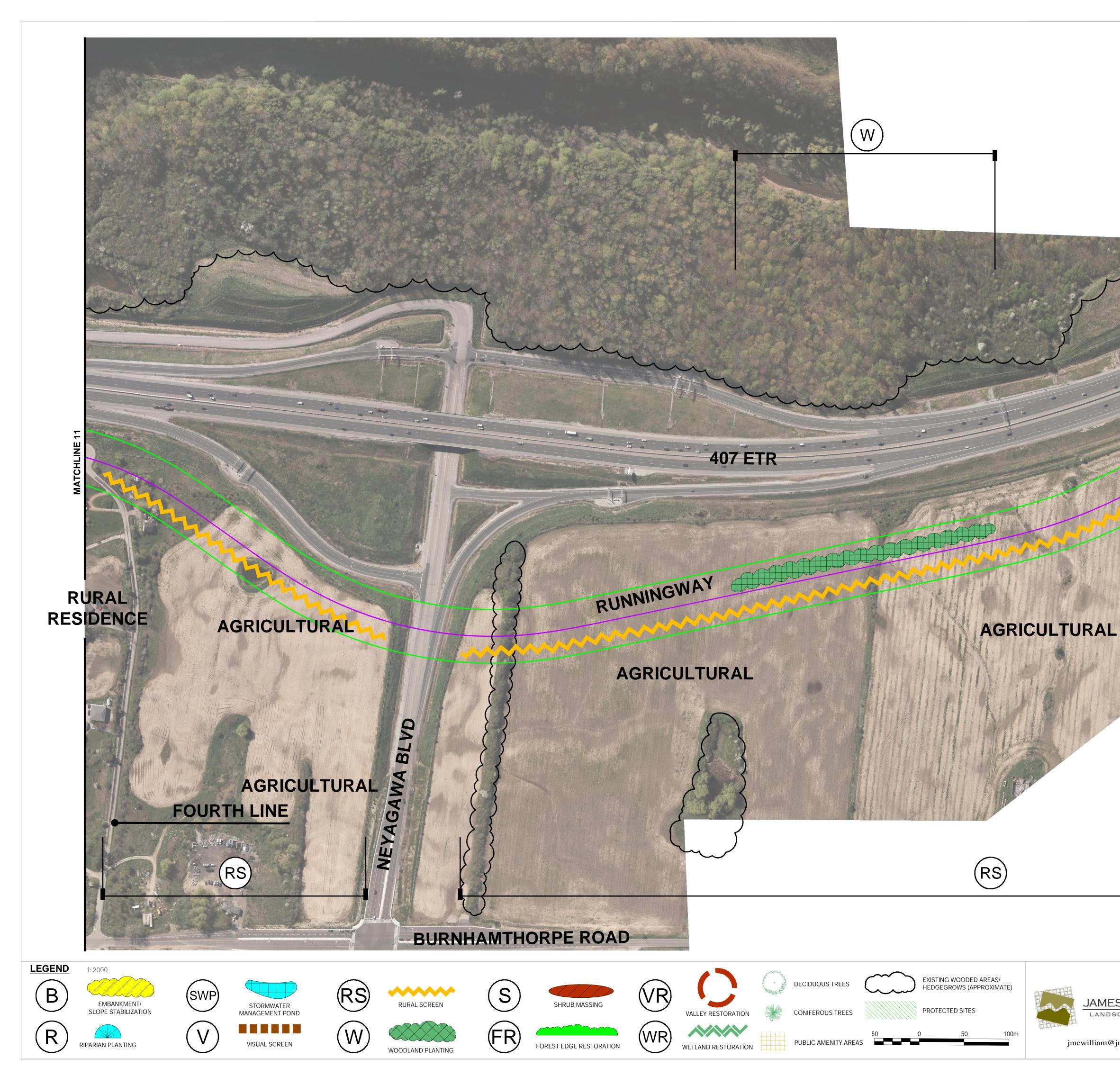
jmcwilliam@jmladesign.com

407 TRANSITWAY BRANT STREET TO HURONTARIO STREET

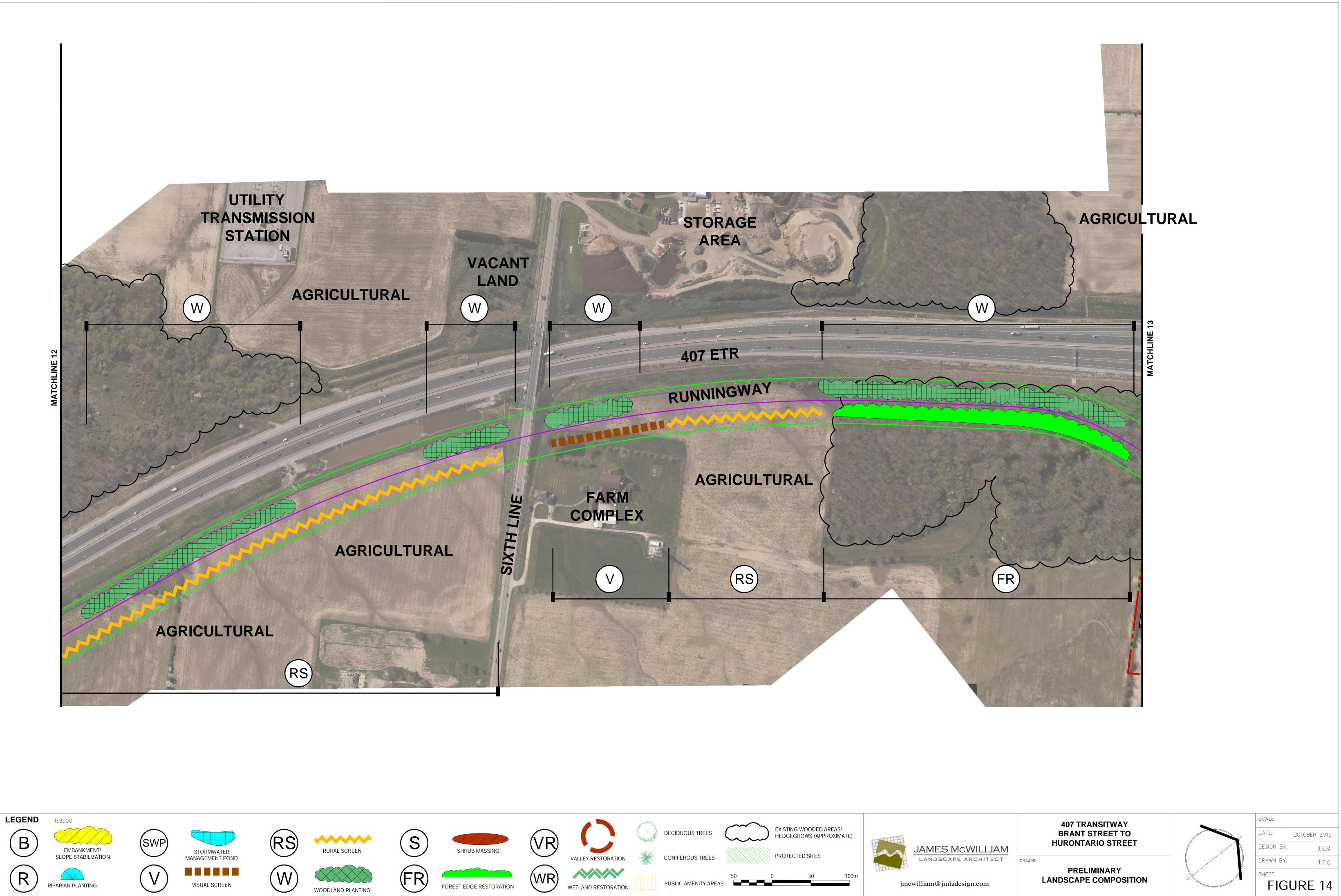
PRELIMINARY LANDSCAPE COMPOSITION

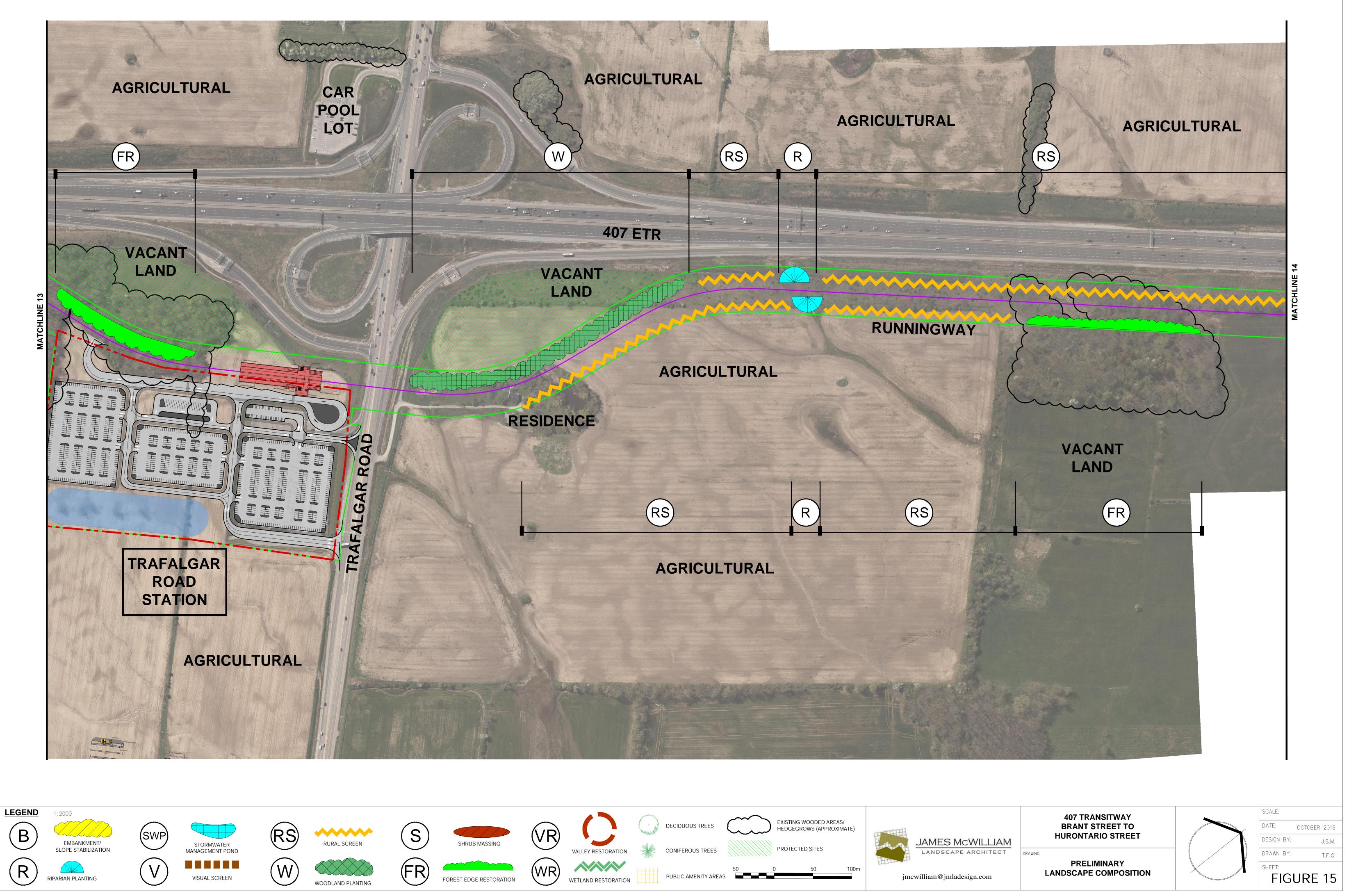


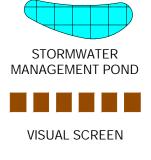
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S MCWILLIAM CAPE ARCHITECT	A07 TRANSITWAY BRANT STREET TO HURONTARIO STREET DRAWING PRELIMINARY LANDSCAPE COMPOSITION		SCALE: DATE: OCTOBER 2019 DESIGN BY: J.S.M. DRAWN BY: T.F.G. SHEET: FIGURE 13

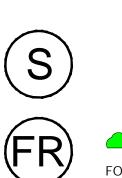


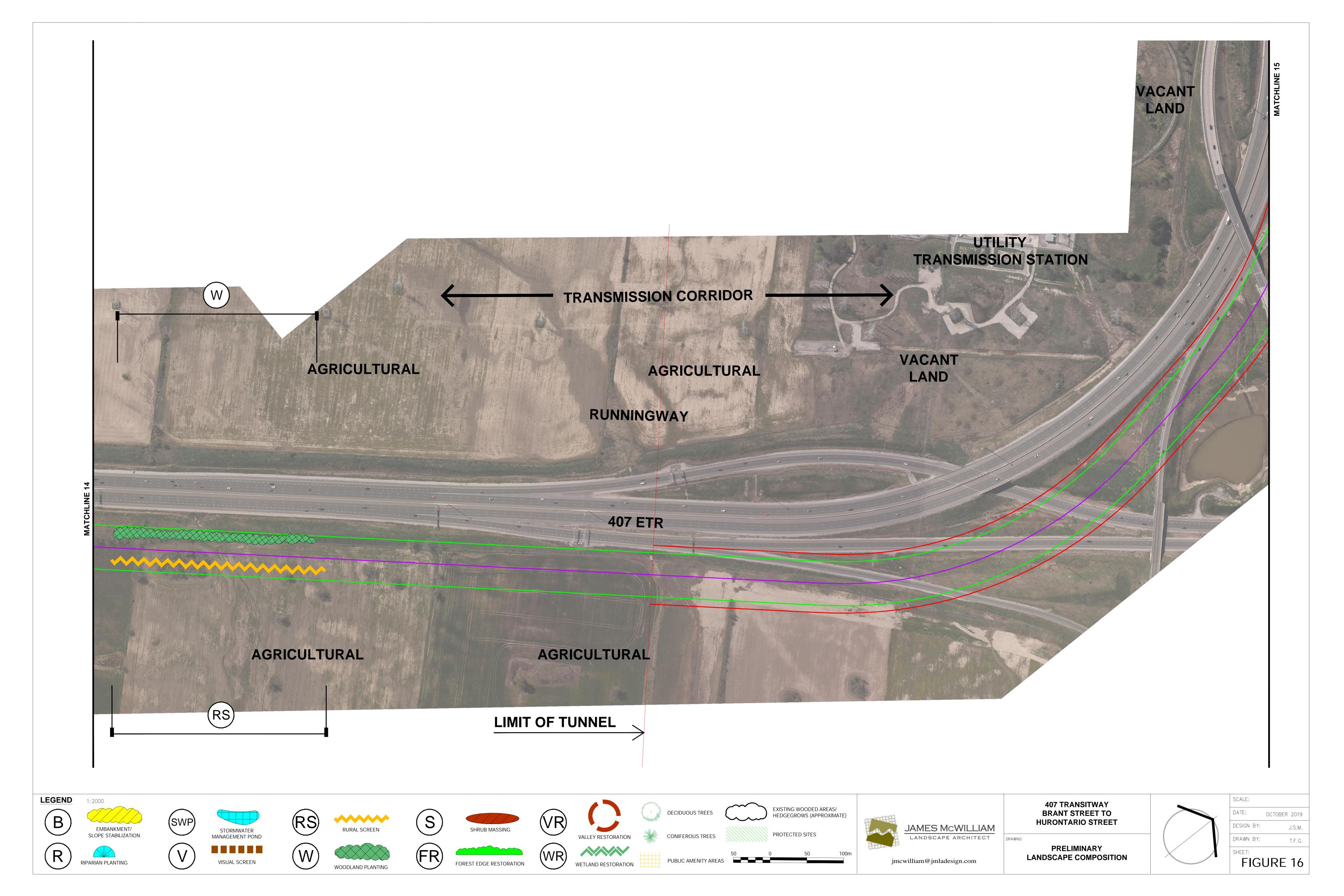


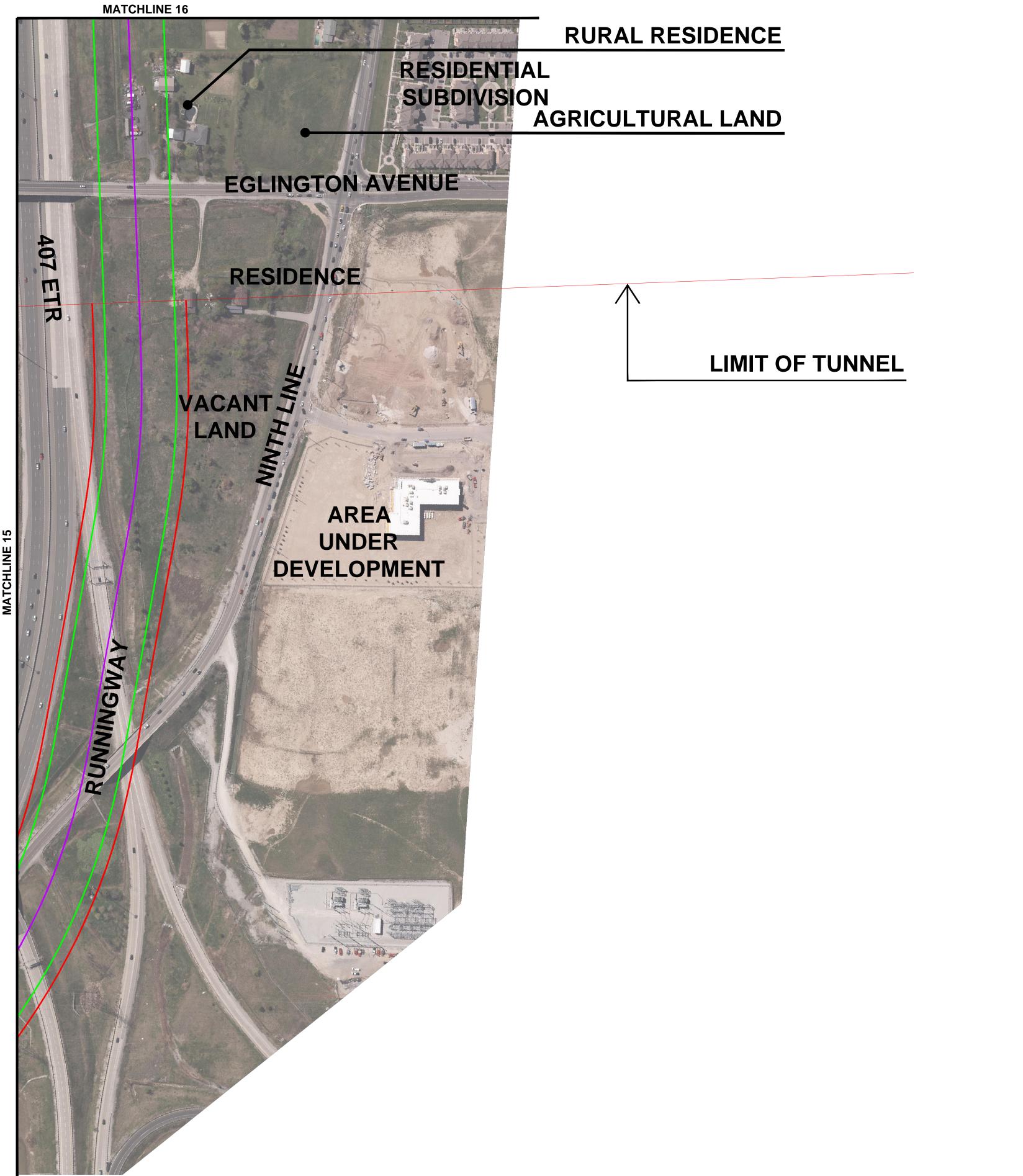




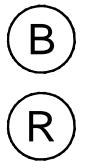








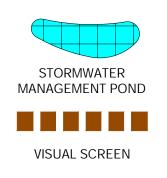


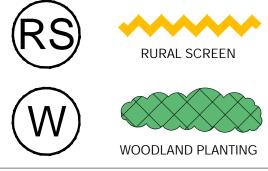




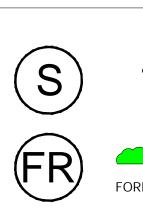
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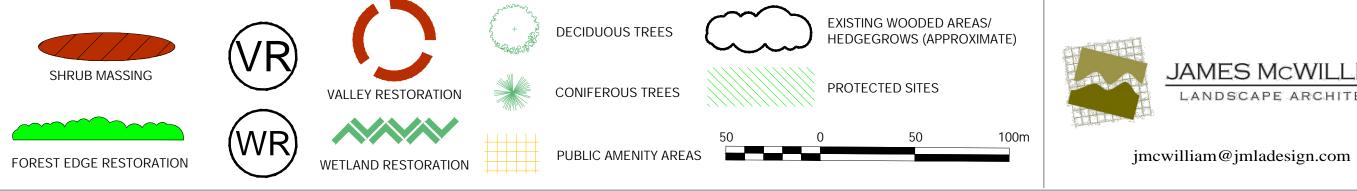












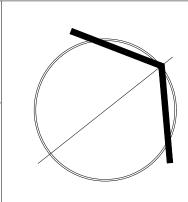
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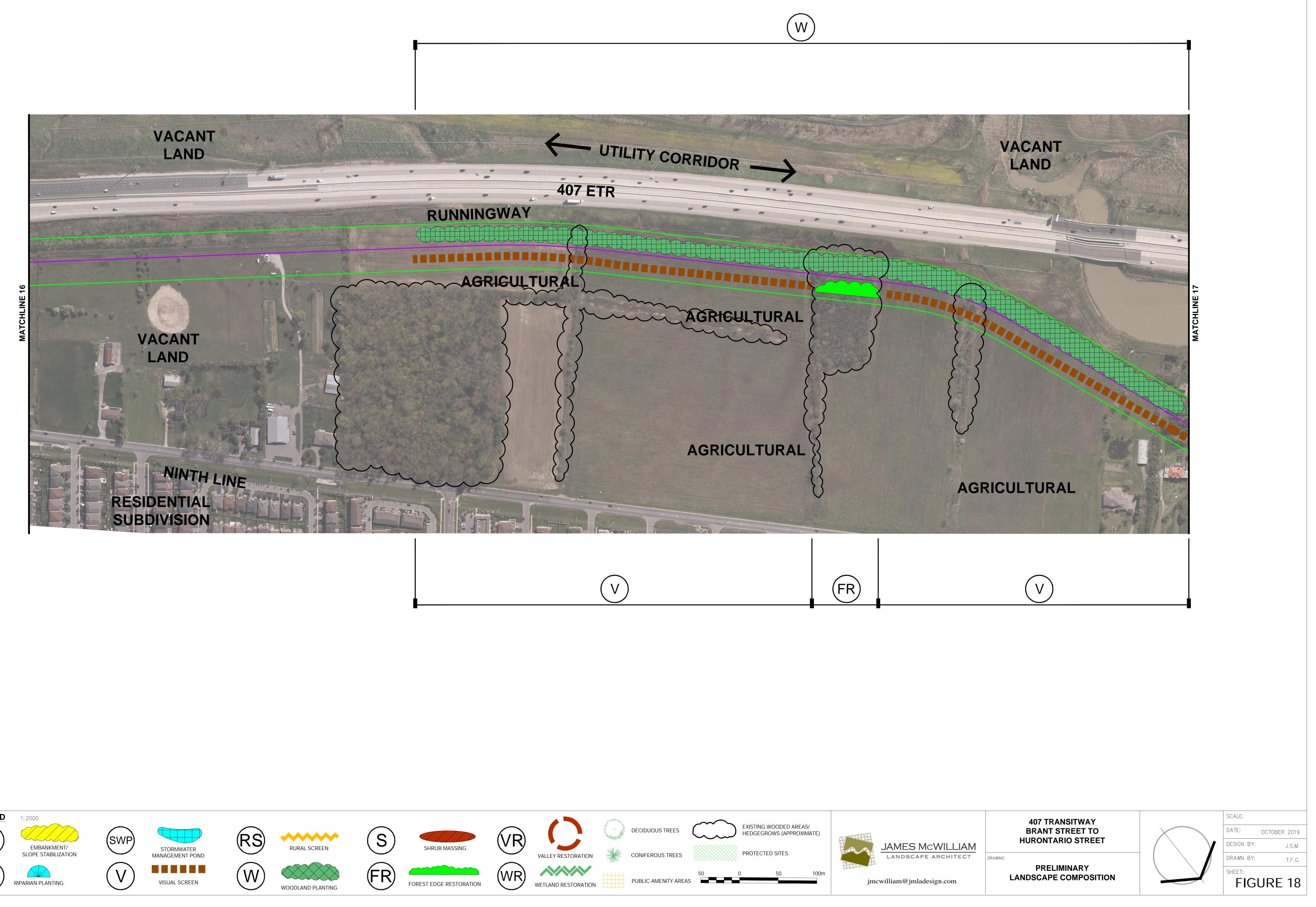
PRELIMINARY LANDSCAPE COMPOSITION

407 TRANSITWAY BRANT STREET TO

HURONTARIO STREET



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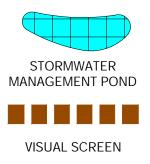






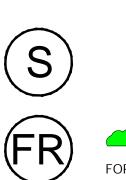


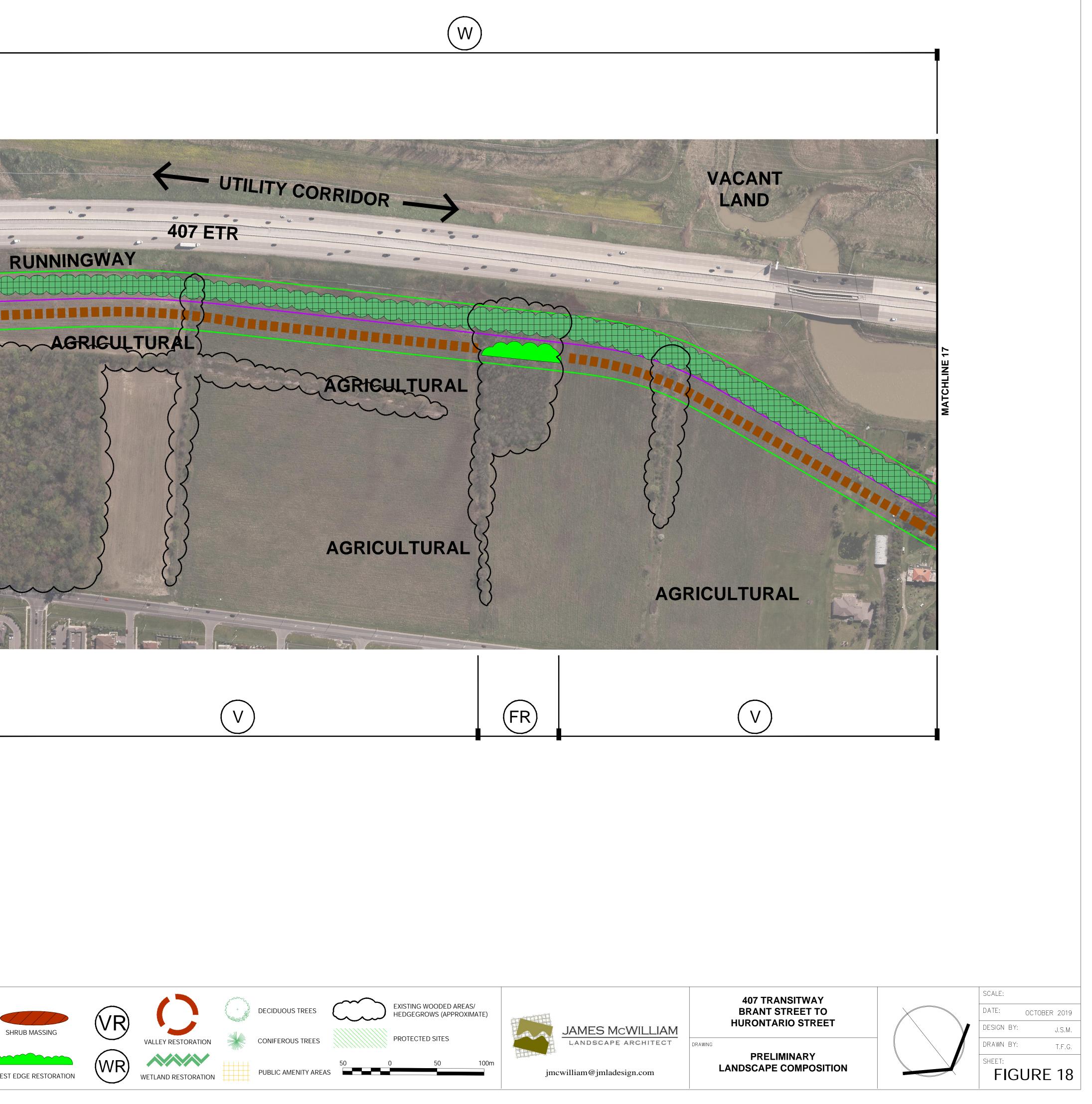






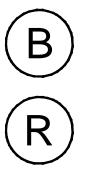






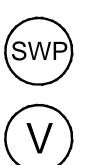


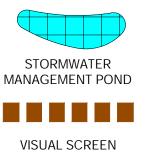






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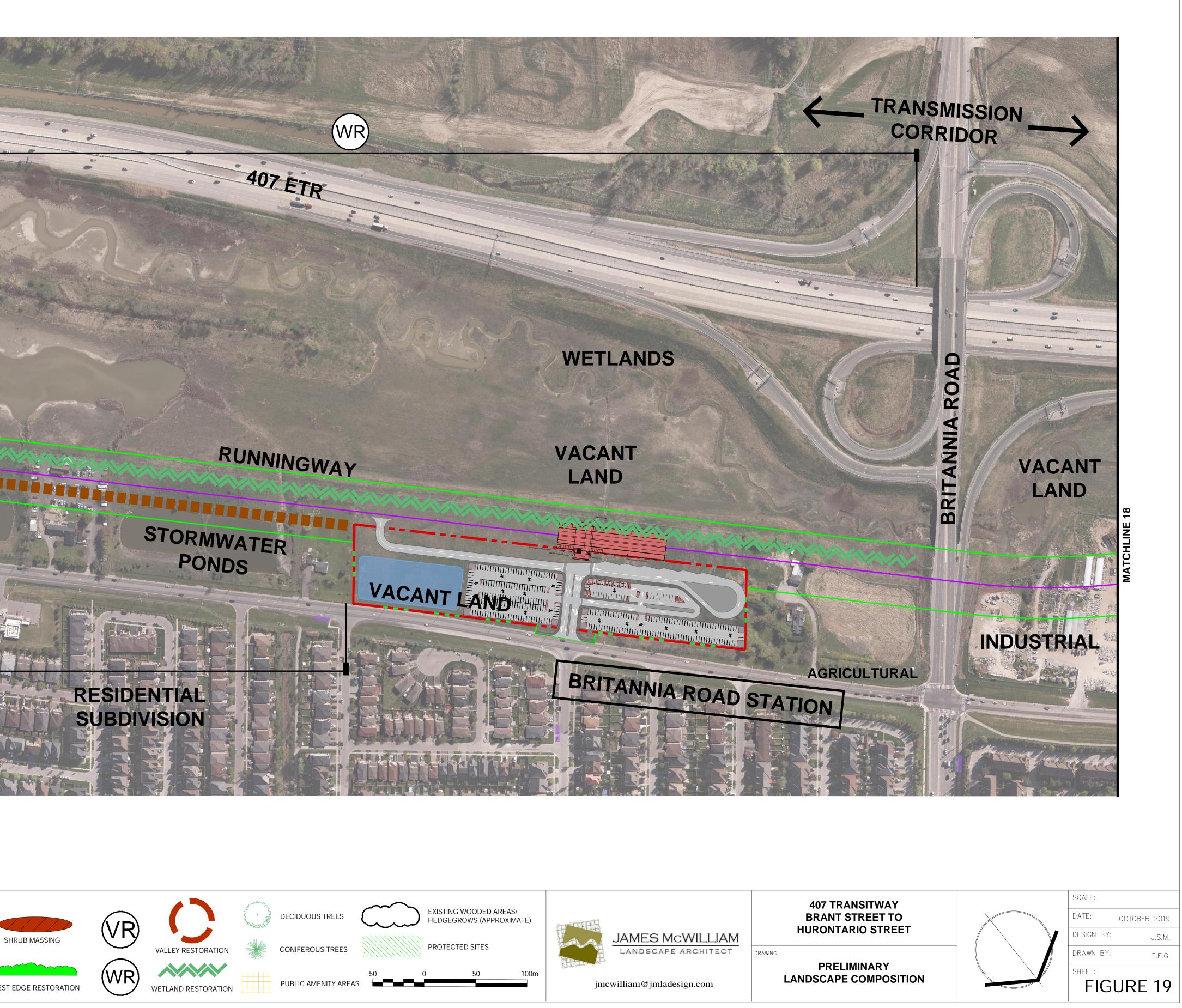


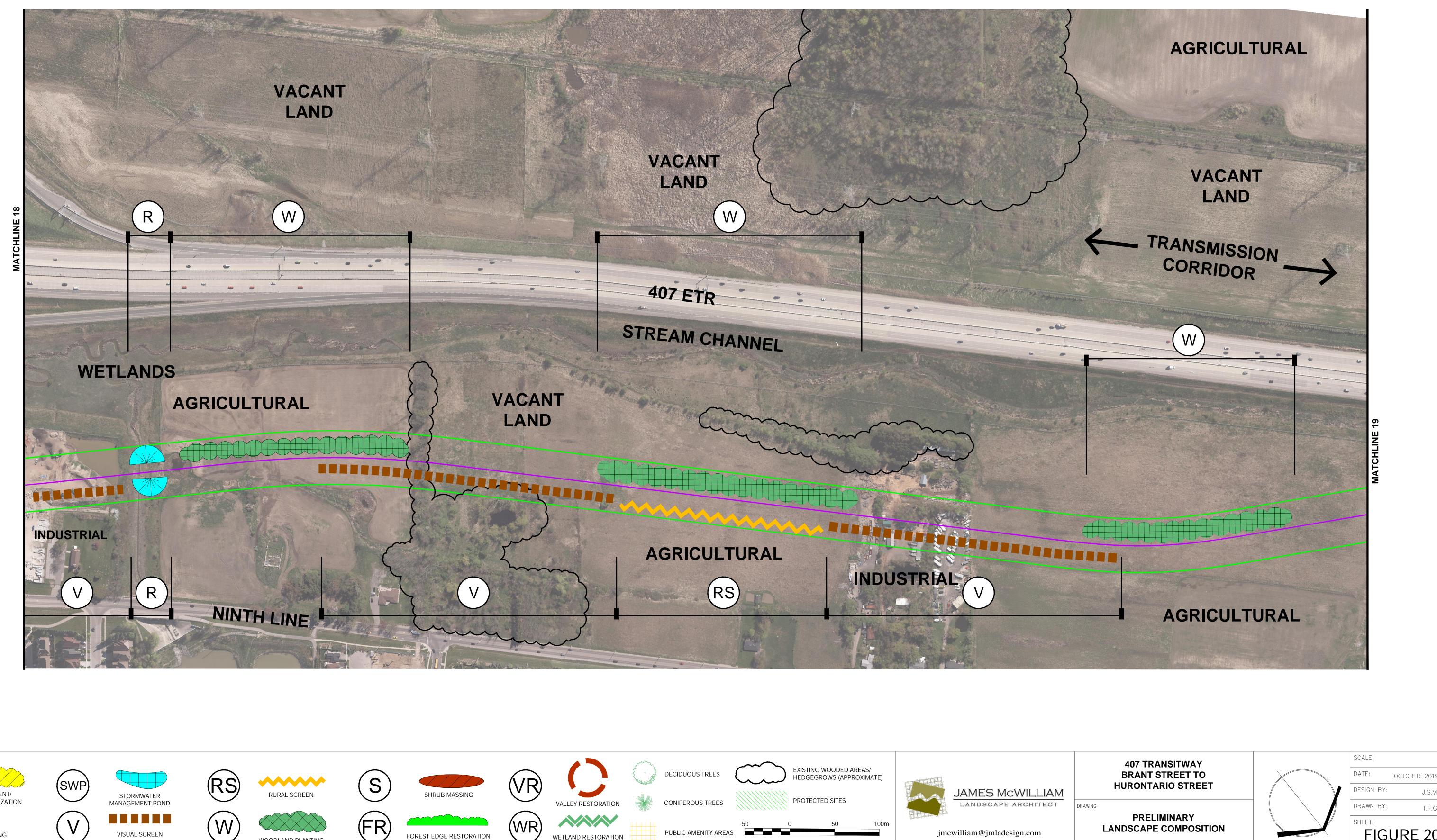


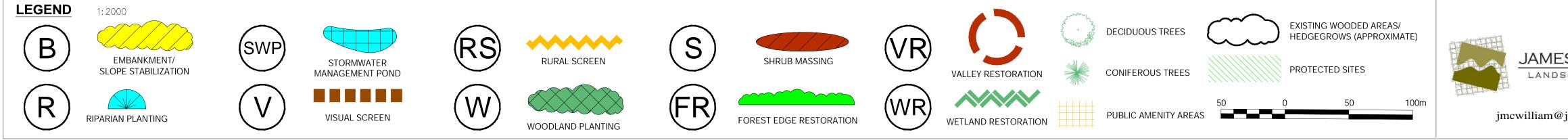




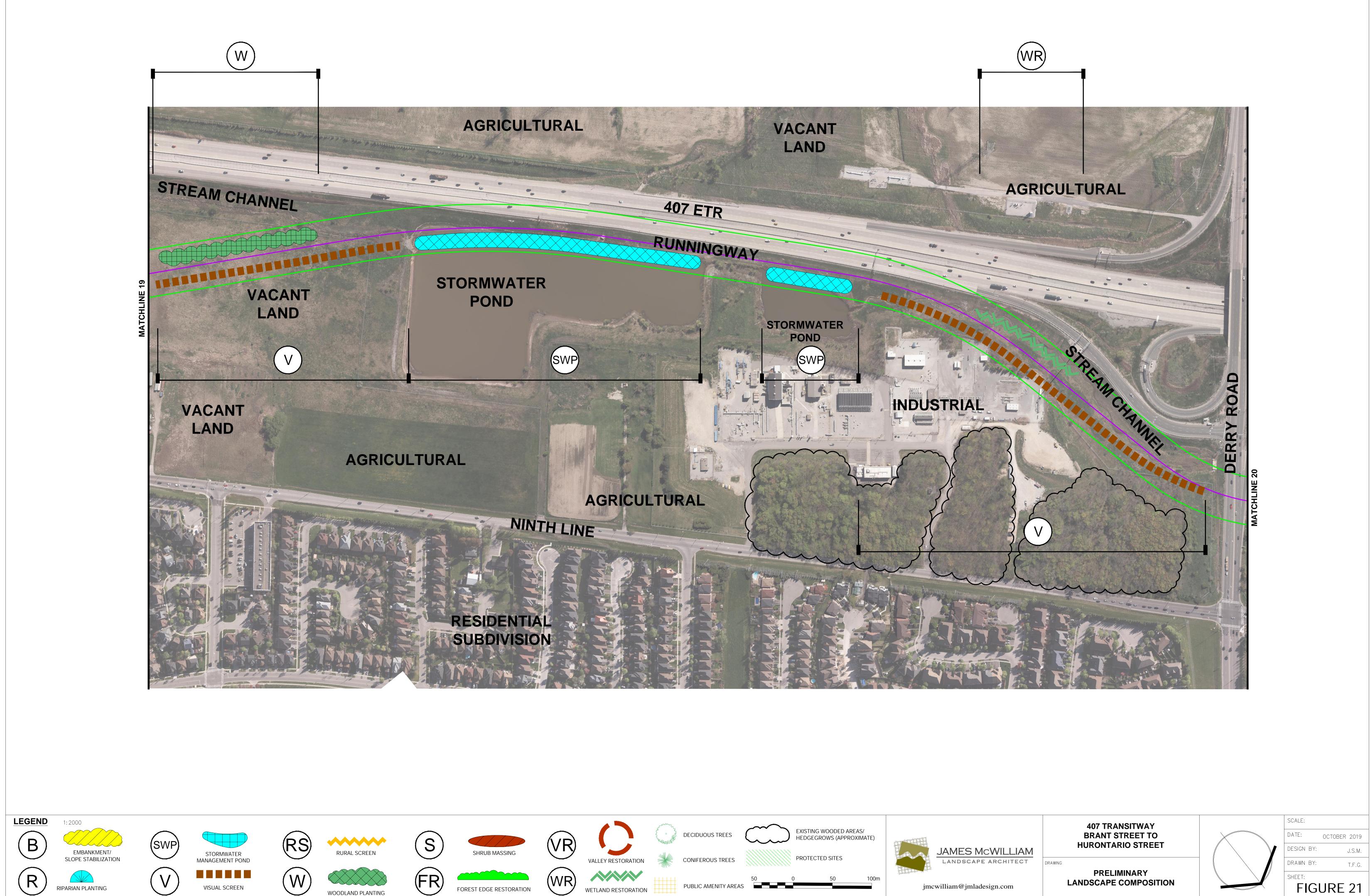


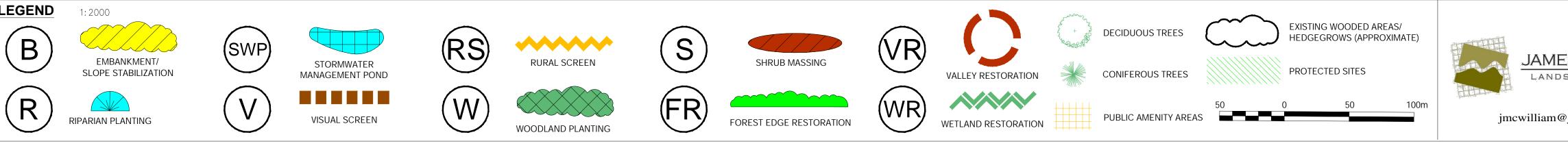


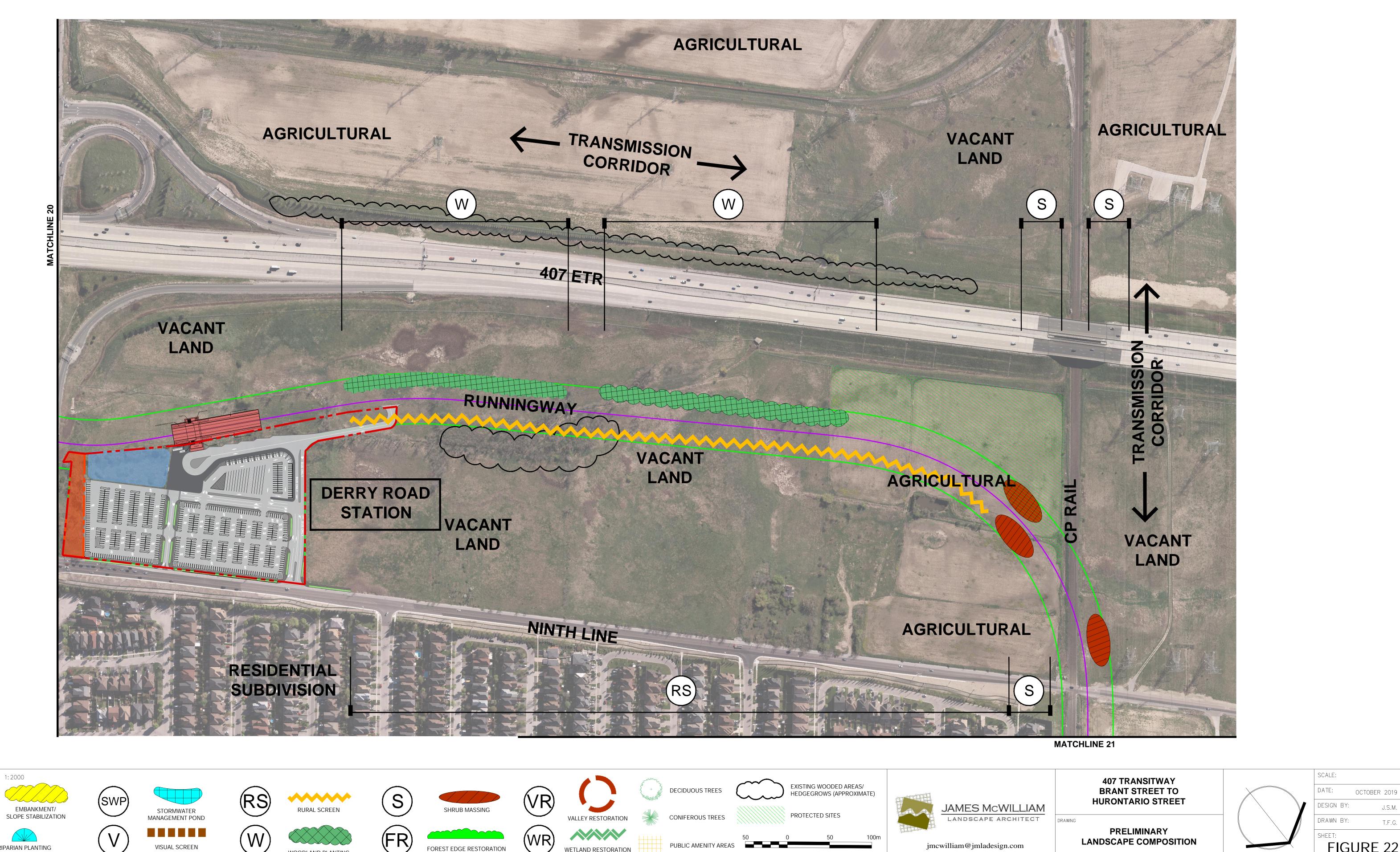




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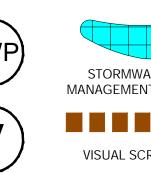


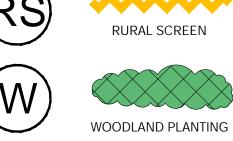


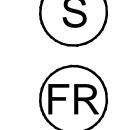
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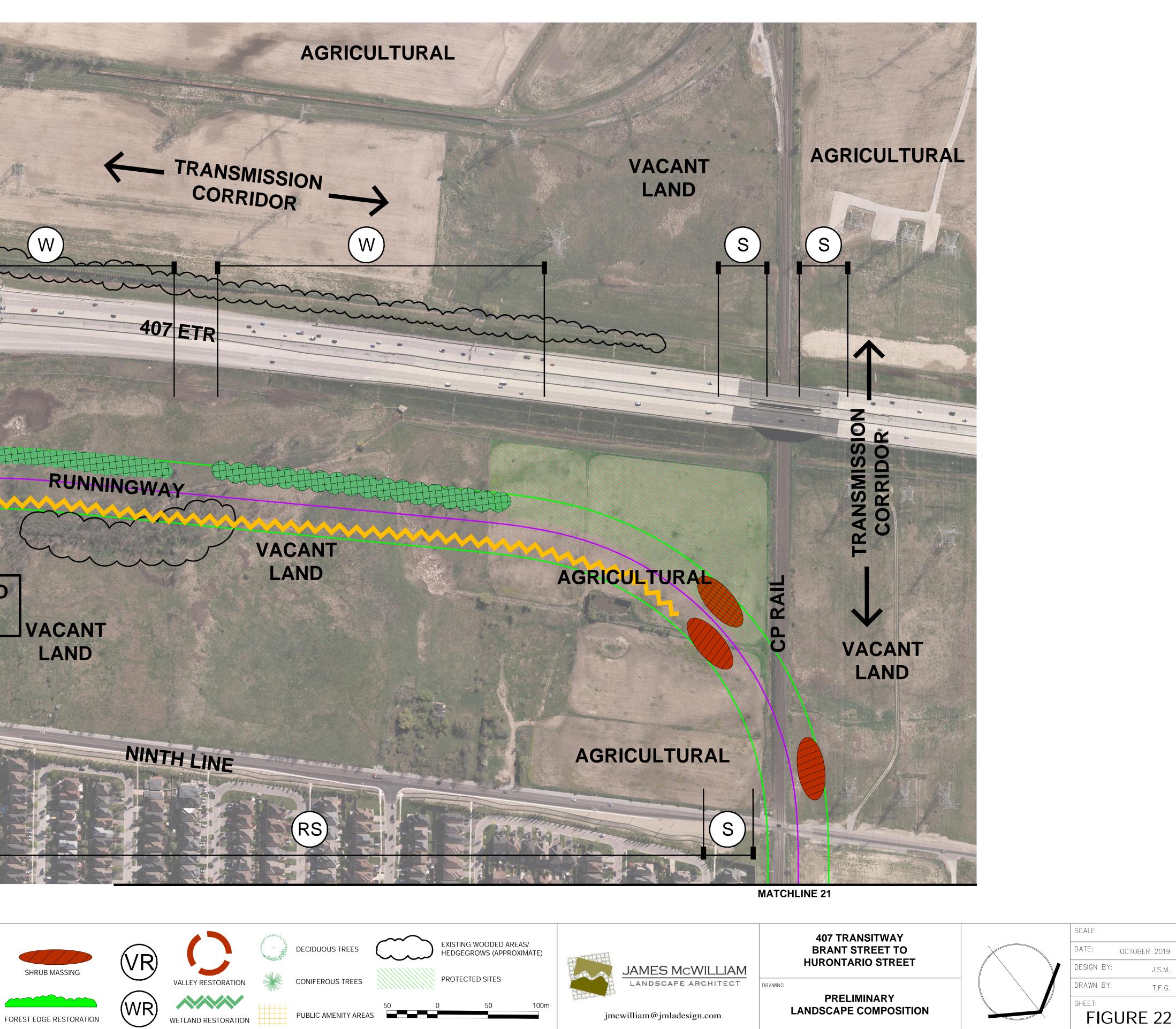






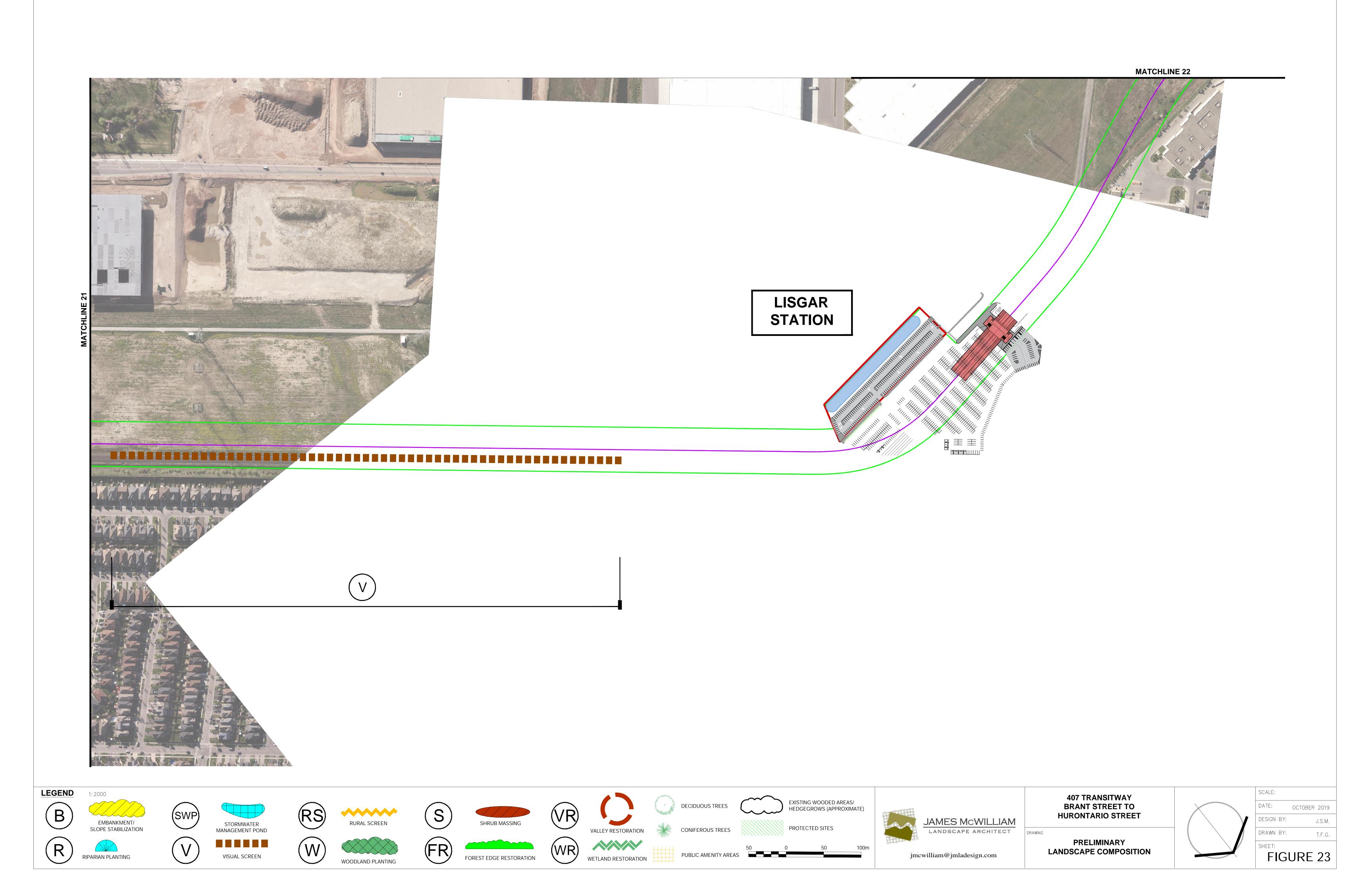


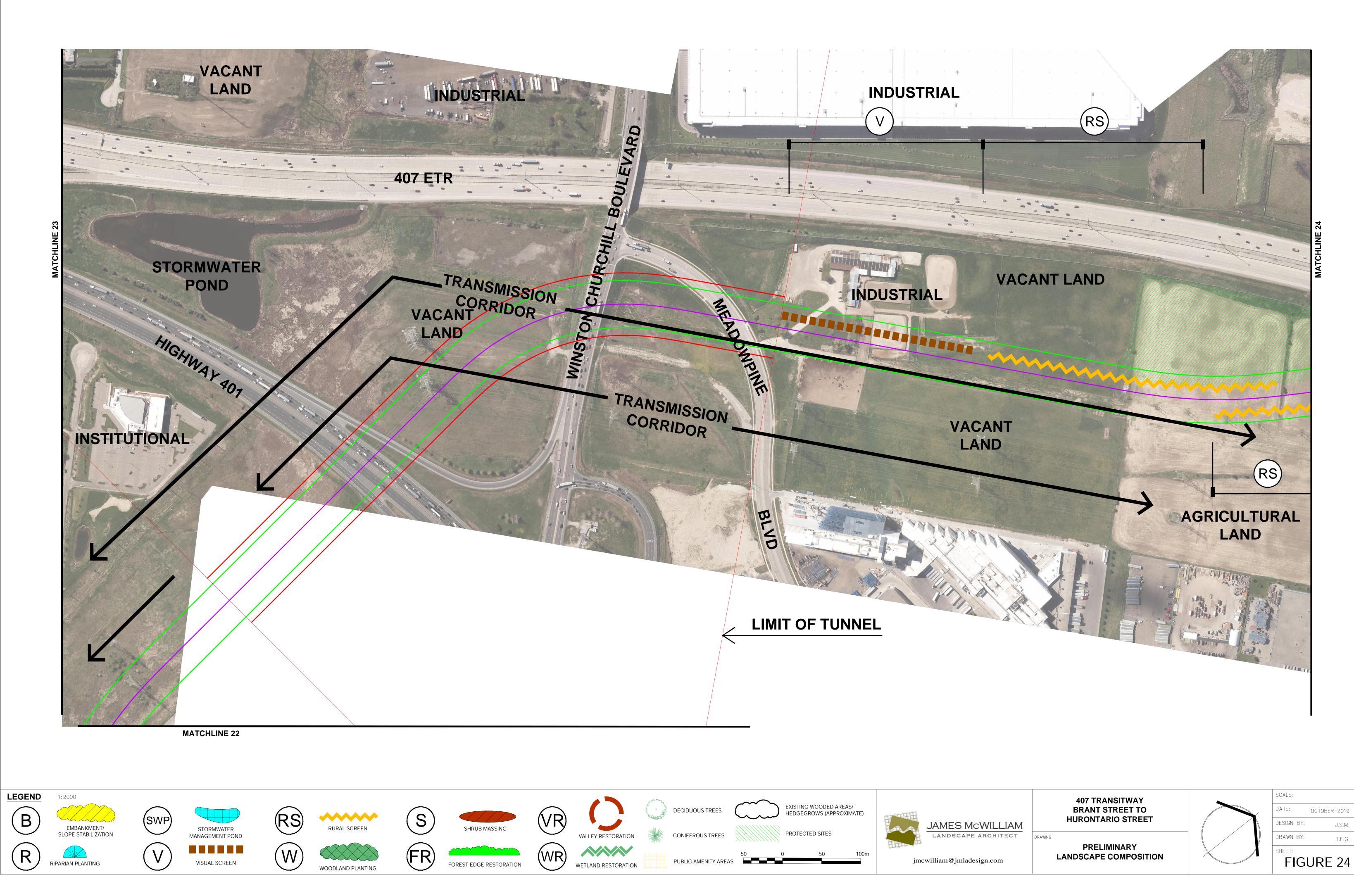


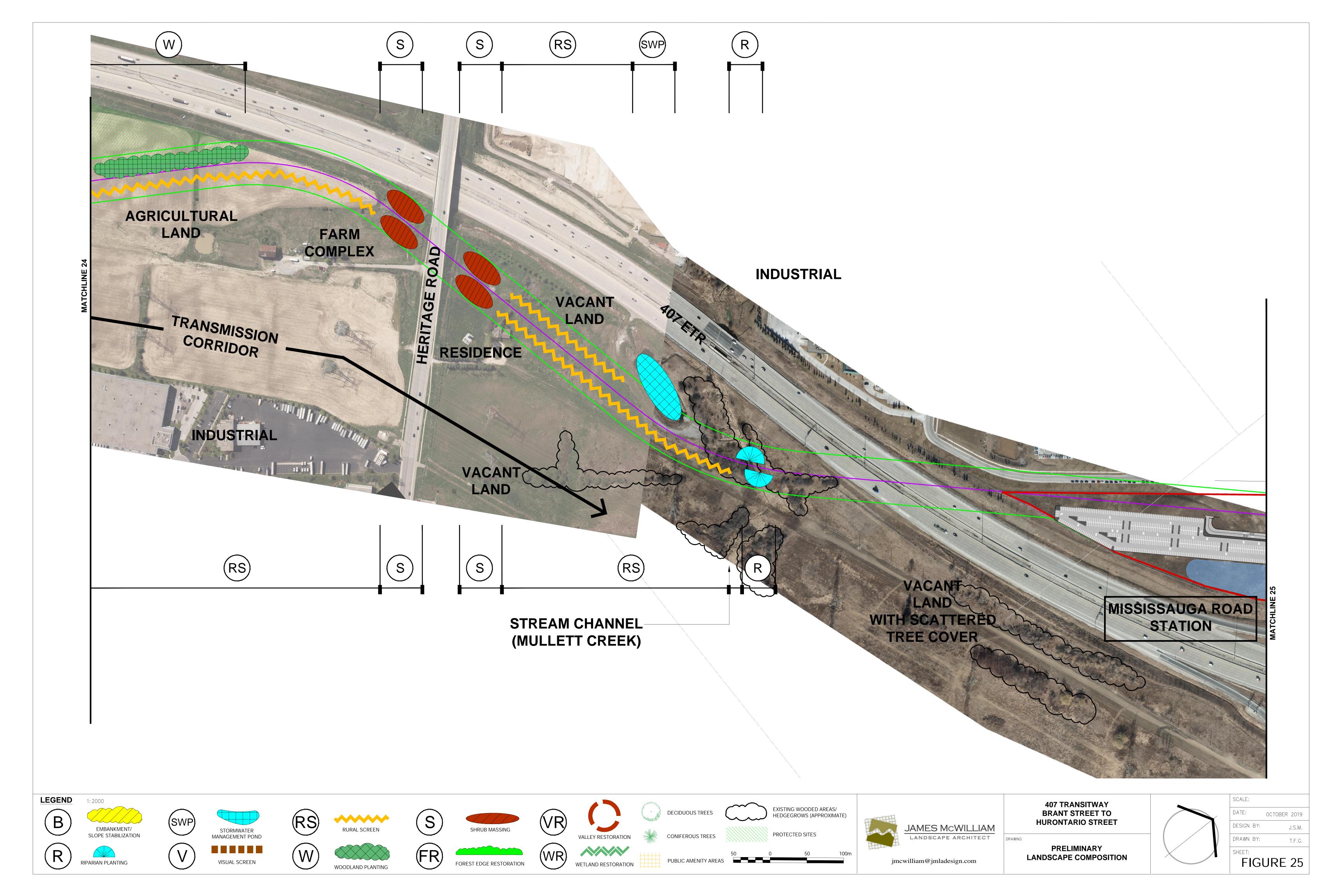


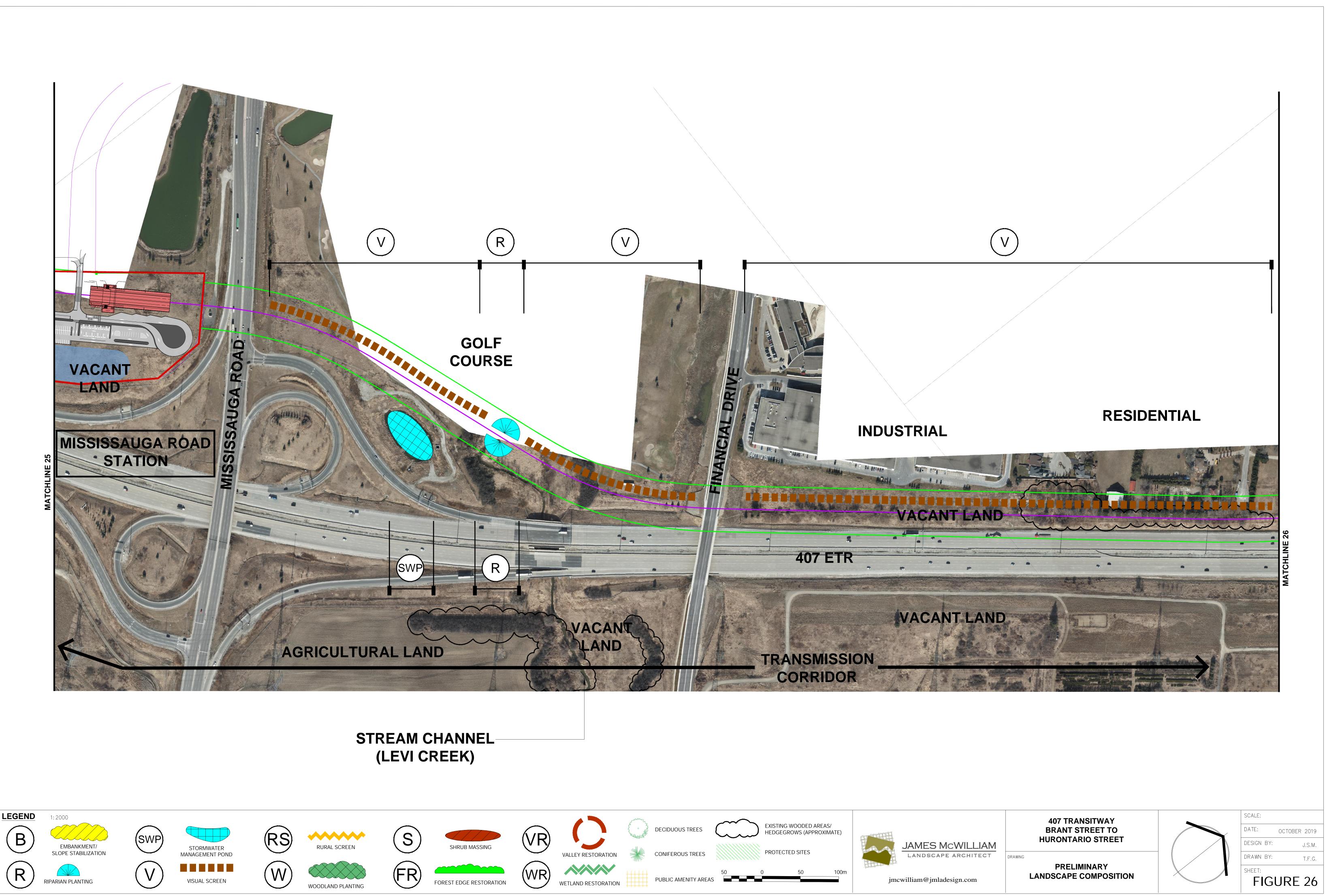
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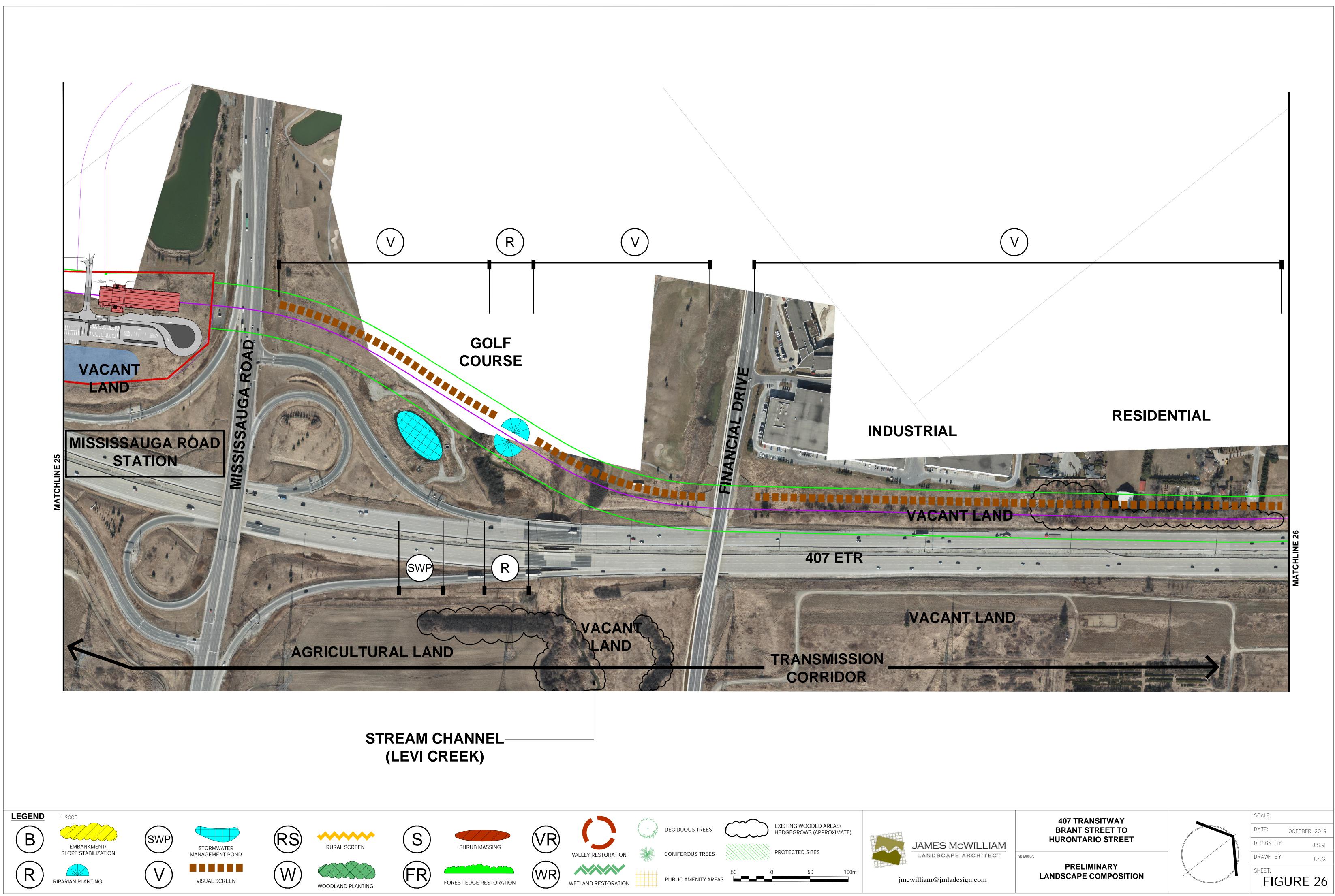
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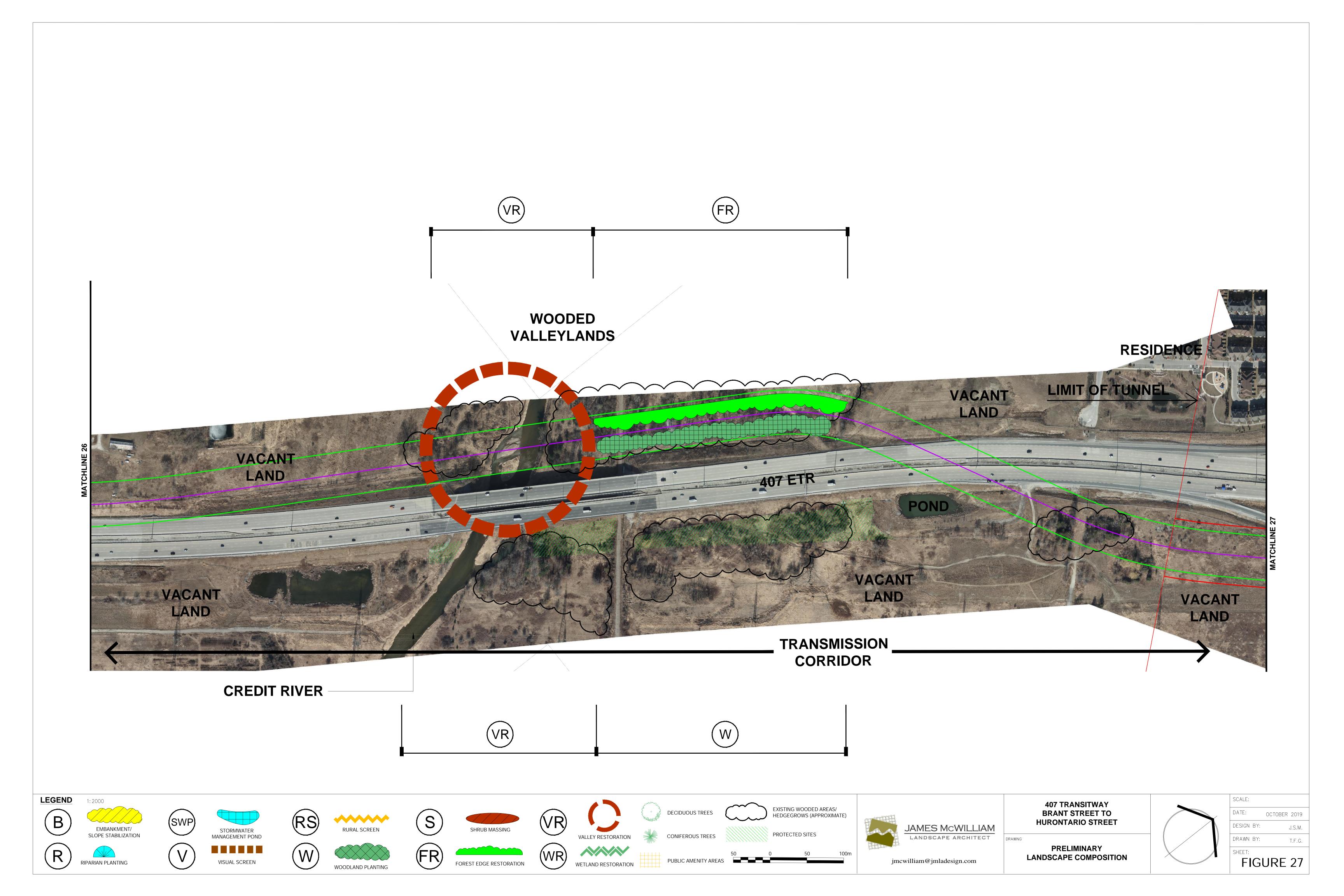


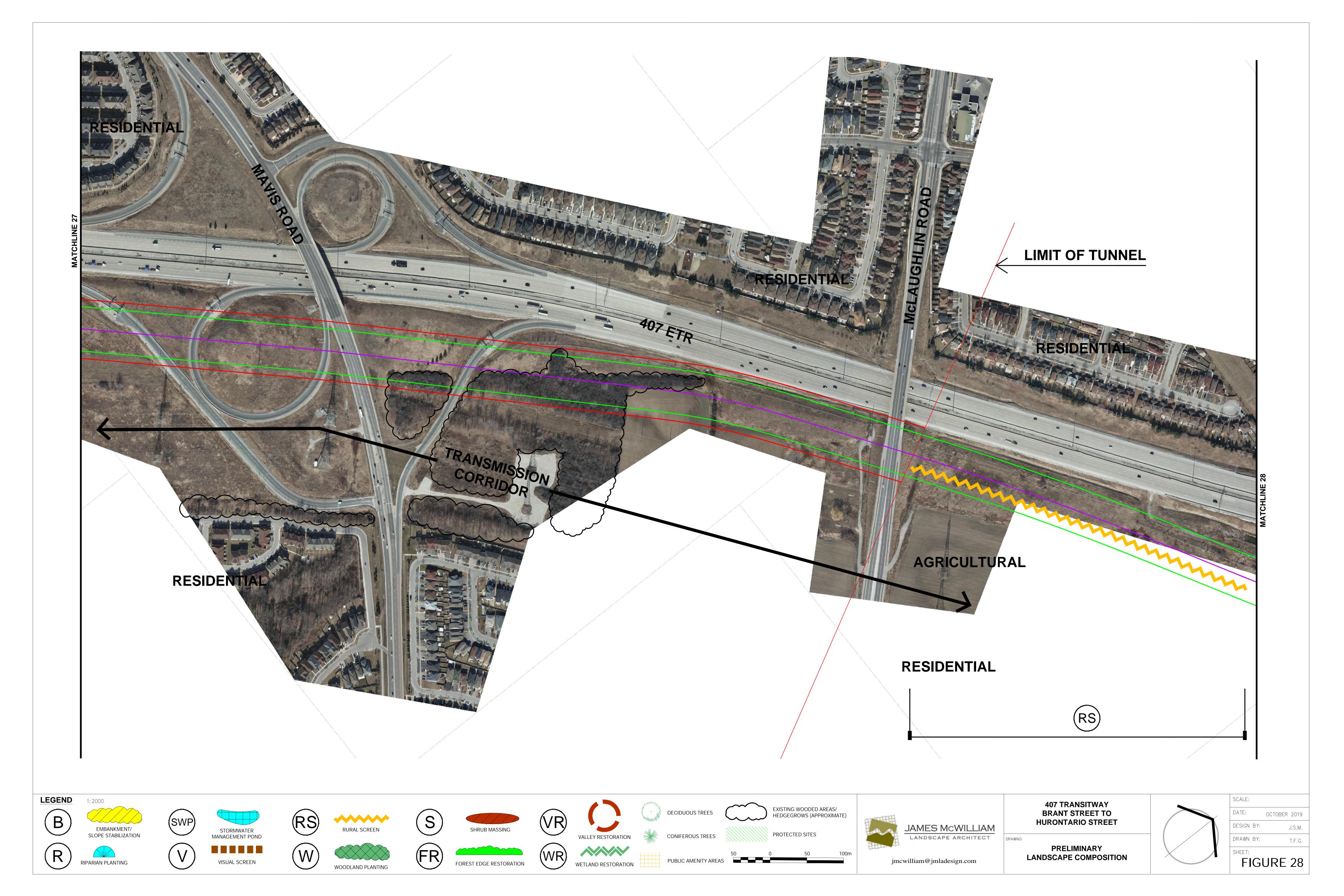


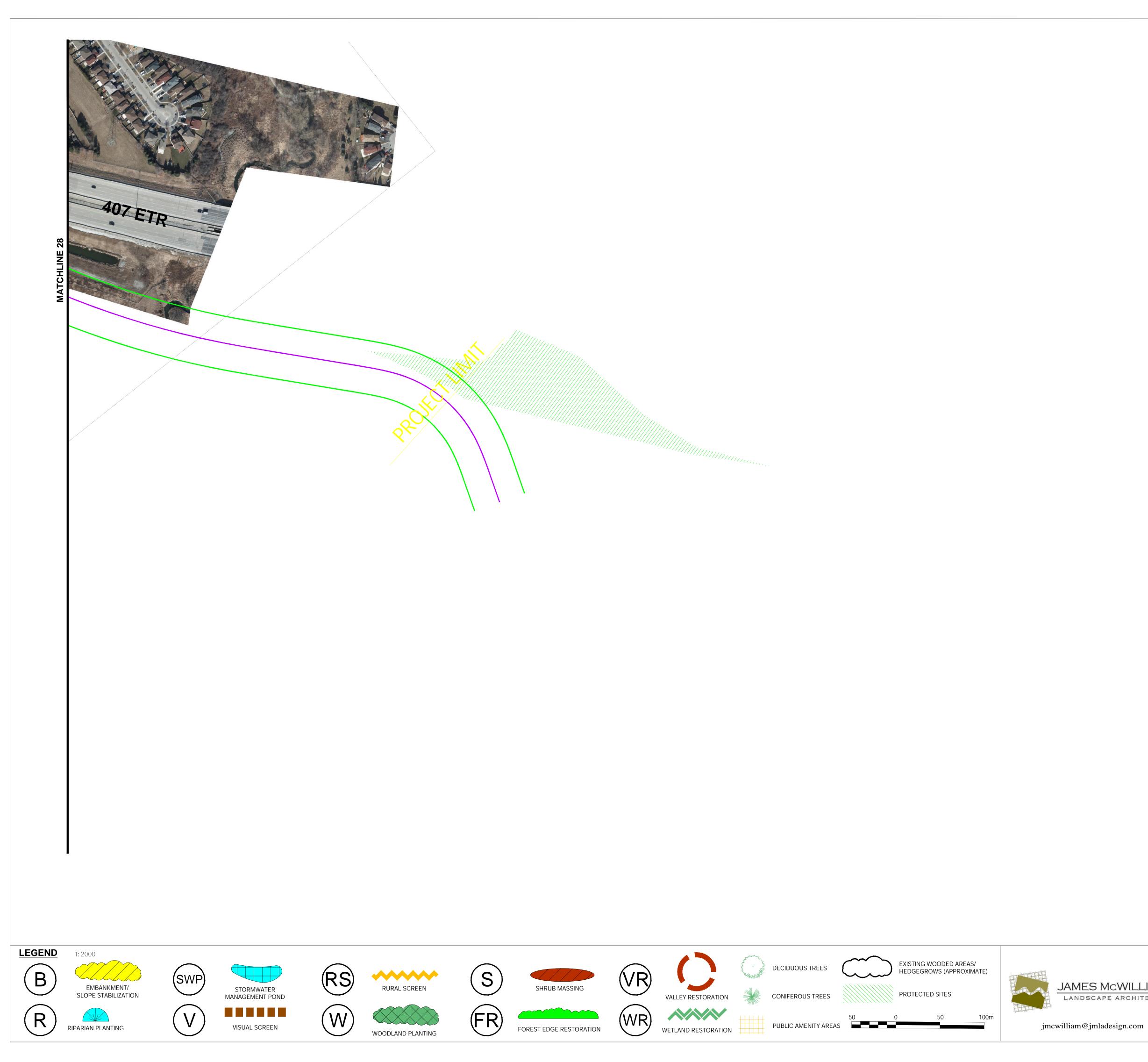












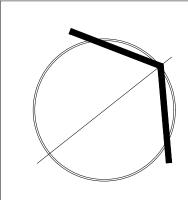
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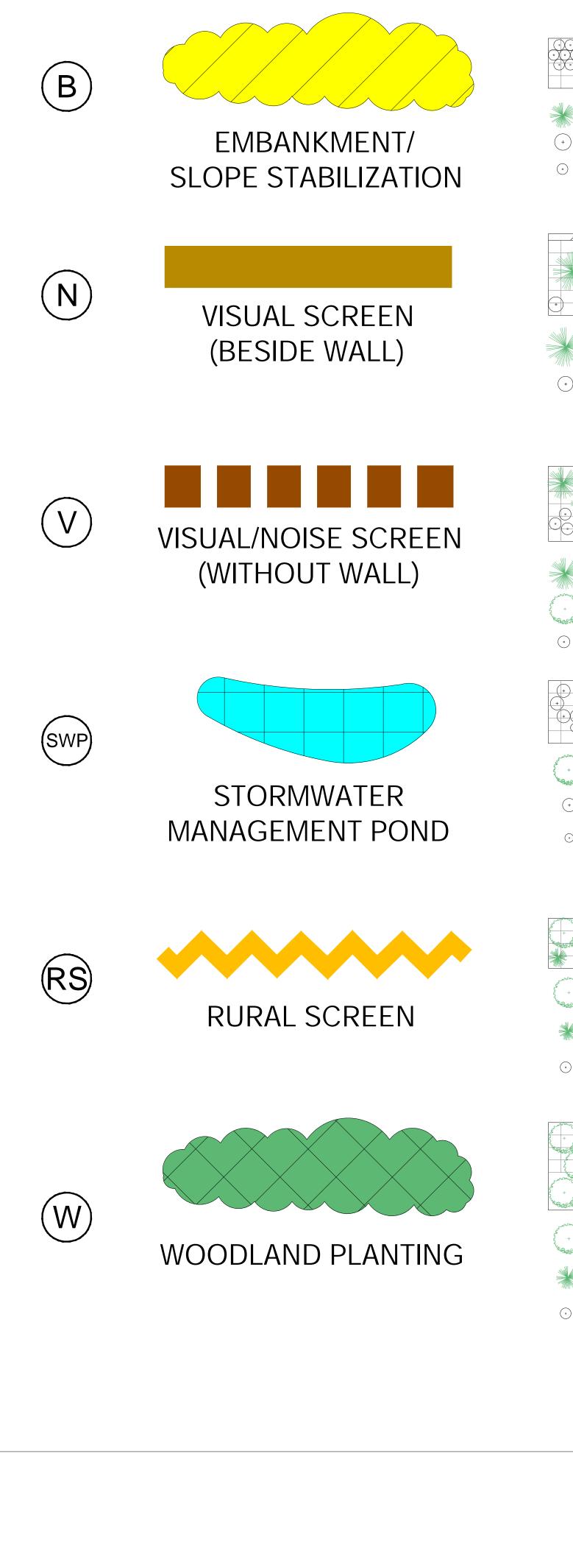
PRELIMINARY LANDSCAPE COMPOSITION

407 TRANSITWAY BRANT STREET TO

HURONTARIO STREET

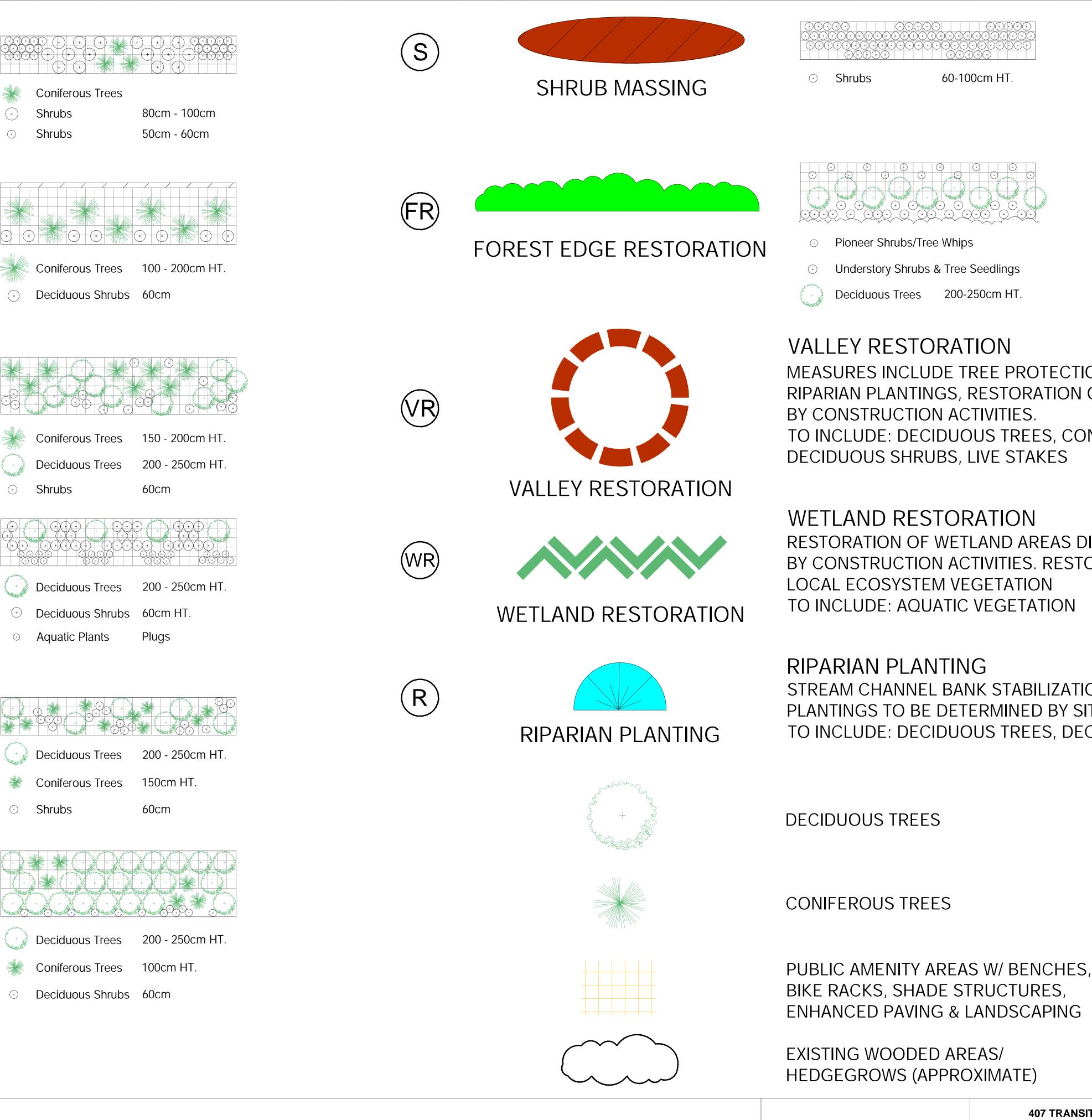


SCALE:	
DATE:	OCTOBER 2019
DESIGN BY:	J.S.M.
DRAWN BY:	T.F.G.
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FIG	JRE 29



	Coniferous Trees	
+	Shrubs	80cm - 100cr
٠	Shrubs	50cm - 60cm
	Coniferous Trees	100 - 200cm
	Deciduous Shrubs	60cm
	Coniferous Trees	150 - 200cm
+ + +	Deciduous Trees	200 - 250cm
	Shrubs	60cm
\bigcirc		
+	Deciduous Trees	200 - 250cm
+	Deciduous Shrubs	60cm HT.
٠	Aquatic Plants	Plugs
	-	-
Sunda		and the second s

Deciduous Trees	200 - 250cm
Coniferous Trees	150cm HT.
Shrubs	60cm





MEASURES INCLUDE TREE PROTECTION, EROSION CONTROL, RIPARIAN PLANTINGS, RESTORATION OF AREAS DISTURBED TO INCLUDE: DECIDUOUS TREES, CONIFEROUS TREES,

RESTORATION OF WETLAND AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. RESTORATION TO REFLECT

STREAM CHANNEL BANK STABILIZATION & STREAM SHADING PLANTINGS TO BE DETERMINED BY SITE CONDITIONS. TO INCLUDE: DECIDUOUS TREES, DECIDUOUS SHRUBS, LIVE STAKES

	407 TRANSITWAY	SCALE:	
	BRANT STREET TO	DATE:	OCTOBER 2019
S MCWILLIAM	HURONTARIO STREET	DESIGN BY:	J.S.M.
CAPE ARCHITECT	DRAWING	DRAWN BY:	T.F.G.
mladesign.com	PRELIMINARY LANDSCAPE COMPOSITION	SHEET: FIG	URE 30