adesso design inc.
218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4

October 13, 2023

Rebecca Lau,
Planner II, Community Planning Department
City of Burlington
426 Brant Street,
Burlington, ON L7R 3Z6

**VIEWSHED STUDY - TERMS OF REFERENCE (METHODOLOGY & APPLICATIONS), AND STUDY FINDINGS**
**291 NORTH SERVICE ROAD, BURLINGTON, ON**

Rebecca:

We have been retained by King Paving & Construction Ltd. to produce a Viewshed Study for their proposed Asphalt Plant on North Service Road in Burlington, Ontario. The Viewshed Study is intended to be in accordance with the following components of the City's Official Plan (1997, as amended):

*Part III 3.4.3 b) (ii)*

> *Development or re-development of lands designated "Business Corridor" on the north side of North Service Road west of King Road will… be required to undertake… a viewshed study and calculate maximum building heights to ensure views to the escarpment are maintained to the maximum extent,*

*Part V, 2.4 b)*

> *Buildings and structures shall be designed and located so as to maximize their compatibility with the existing natural landscape, minimize their effect on the open-space character of the area and maintain to the maximum possible degree an uninterrupted sight line between Highway 403 and the Niagara Escarpment…*

*Part V, 2.4 e)*

> *Site layout shall preserve key viewsheds from existing roads, such as views to the brow of the Niagara Escarpment, Burlington Bay, Hamilton, and Lake Ontario.*

The methodology for this Viewshed Study has been informed by the Niagara Escarpment Commission's (NEC) Visual Impact Assessment Technical Criteria,

November 18th, 2020, correspondence with City of Burlington staff (January 21, 2022), and NEC comments received July 24, 2023.

Goal of the Viewshed Study

The goal of the Viewshed Study was to assess the impacts of the proposed asphalt plant on the scenic resources of the Niagara Escarpment brow from the following key viewpoints:

- Highway 403 and North Service Road, at the entrance to the proposed asphalt plant;
- Highway 403 and North Service Road, directly south of the proposed asphalt plant;

The Viewshed Study was conducted using Line-of-Sight Cross Sections as per correspondence with City of Burlington staff (January 21, 2022). The Line-of-Sight Cross Sections demonstrate whether the proposed asphalt plant can be seen from the above key viewpoints.

In addition to the above viewpoints, the visual impact of the proposed asphalt plant on views of the escarpment brow was to be assessed per NEC comments.

Project Description

The Subject Site (approximately 4 ha) is situated on the north side of North Service Road, east of Waterdown Road and west of King Road.

The proposed development for the Subject Site will include excavation, grading, and construction of a new asphalt plant and associated facilities for outdoor materials storage (refer to appendix A for Site Layout Plan).

Study Area and Project Details

The Viewshed Study was completed using the highest point of elevation of the proposed asphalt plant, specifically, the top of four proposed hot-mix silos (Refer to Digital Visibility Map for location).

Two Line-of-Sight Cross Sections have been produced to demonstrate the visibility of these four silos from key viewpoints. The Cross Sections are coordinated with proposed Site Layout, Grading, Landscape, and Tree Inventory & Preservation Plans.

The Study Process, Investigative Methods, and Data used in the Viewshed Study and Line-of-Sight Cross Sections are outlined below.

Study Process/Methodology

*Digital Visibility Map (Viewshed Study Area)*

- A Digital Visibility Map was created using the digital modeling program Global Mapper 23.1 to assess the visibility of the proposed hot-mix silos from a 2km radius in order to capture the escarpment brow in the analysis

- The map was produced using *Ontario GeoHub* digital base data, The City of Hamilton's 'Open Hamilton' & The City of Burlington's 'Navigate Burlington Data'. These data include features such as roads, topography, vegetation, and 5.0 metre contour intervals (see list of Metadata used in Viewshed Study);
- The viewer height for modelling was set at 1.5m above grade;
- The vegetation height (woodlots) was set at 20.0m above grade. Existing trees to remain that were not captured in the woodlots data set were added manually and set to have a height of 20.0m above grade (see appendix E for Tree Inventory & Preservation Plan);
- The Digital Visibility Map has been annotated with the extent and location of the proposed asphalt plant, as well as the overall extent of the Viewshed Study Area;

*Line-of-Sight Cross Sections*

- The Line-of-Sight Cross-Sections were created to evaluate the potential visibility of the four hot-mix silos from the key viewpoints listed above (refer to Goals of the Viewshed Study);
- Line-of-Sight Cross-Sections were created using Computer-Aided Drafting & Design (CADD) Software;
- Proposed Site Layout, Grading, Landscape, and Tree Inventory & Preservation Plans are incorporated into the Line-of-Sight Cross Sections to reflect the anticipated changes to existing conditions and their impact on visibility of the proposed hot-mix silos;
- The highest point (MASL-Meters Above Sea Level) of the proposed hot-mix silos was calculated by adding the height of the proposed silos to the proposed elevation (see below);

TABLE 1 MASL of Proposed Hot-Mix Silos

| **Proposed Structure** | **Height (m)** | **Base of Hot-Mix Silos** | | **Grade Change (m)** | **Top of Hot-Mix Silos (MASL)** |
|---|---|---|---|---|---|
| | | **Existing Elevation (MASL)** | **Proposed Elevation (MASL)** | | |
| Hot-Mix Silos (4) | 19.88 | 119.94 | 118.45 | 1.49 | 138.33 |

- Existing and proposed spot elevations are shown on the Grading Plan prepared by S. Llewellyn & Associates (refer to appendix C).
- Site Layout Plan has been provided by S. Llewellyn & Associates (refer to appendix A).
- The height of the proposed hot-mix silos in Table 1 have been provided by King Paving & Construction Ltd. (Refer to appendix B for typical hot-mix silo elevation drawing).
- Landscape Plans have been provided by Adesso Design Inc. (Refer to appendix D).
- Tree Inventory and Preservation Plan has been provided by GeoProcess Research Associates (refer to appendix E).

*Documentation of Existing Conditions*

- Existing conditions at the identified key viewpoints are documented through photographs (taken with a 33 to 52mm lens) that match the view direction of the Line-of-Sight Cross Sections.
- Photographs are annotated with the approximate location and height of the proposed hot-mix silos (see existing conditions panoramic photographs in Viewshed Study).

Study Findings

The Digital Visibility Map produced for this Viewshed Study demonstrates limited potential visibility of the proposed asphalt plant beyond a 500m radius. Much of the proposed development is screened by existing vegetation and landforms to the south, west, and north of the Subject Site.

An important finding of the Digital Visibility Map is that no visibility of the proposed asphalt plant is indicated from the escarpment brow. For this reason, it is our recommendation that no further study of visual impacts of the proposed development on views of the escarpment brow be required.

Areas shown to experience the greatest visual impact (i.e., where the four hot-mix silos can be seen) are located in close proximity to the Subject Site on North Service Road and Highway 403. These are aligned with the two key viewpoints identified in the Goals of the Viewshed Study, and further assessment of potential views can be seen in the Line-of-Sight Cross-Sections.

Screening of the proposed asphalt plant can be enhanced through planting, especially coniferous trees, to increase year-round cover of the four hot-mix silos. As demonstrated in the Line-of-Sight Cross-Sections and Landscape Plan, proposed trees will provide additional screening to mitigate the impacts on visual resources from the two key viewpoints identified.

I trust that the above Terms of Reference, Study Findings and following documents satisfy City requirements for a Viewshed Study of the proposed development at 291 North Service Road:

Viewshed Study
Digital Visibility Map
Line-of-Sight Cross Sections
Documentation of Existing Conditions (Field Checks)
Metadata used in Digital Visibility Map

Appendix A – Terms of Reference (dated February 11, 2022)
Appendix B - Site Layout Plan by S. Llewellyn & Associates
Appendix C – Hot-mix Silo Typical Elevation provided by King Paving & Construction Ltd.
Appendix D – Engineering Plans by S. Llewellyn & Associates
Appendix E – Landscape Plan prepared by Adesso Design Inc.

Appendix F – Tree Inventory & Preservation Plan by GeoProcess Research Associates

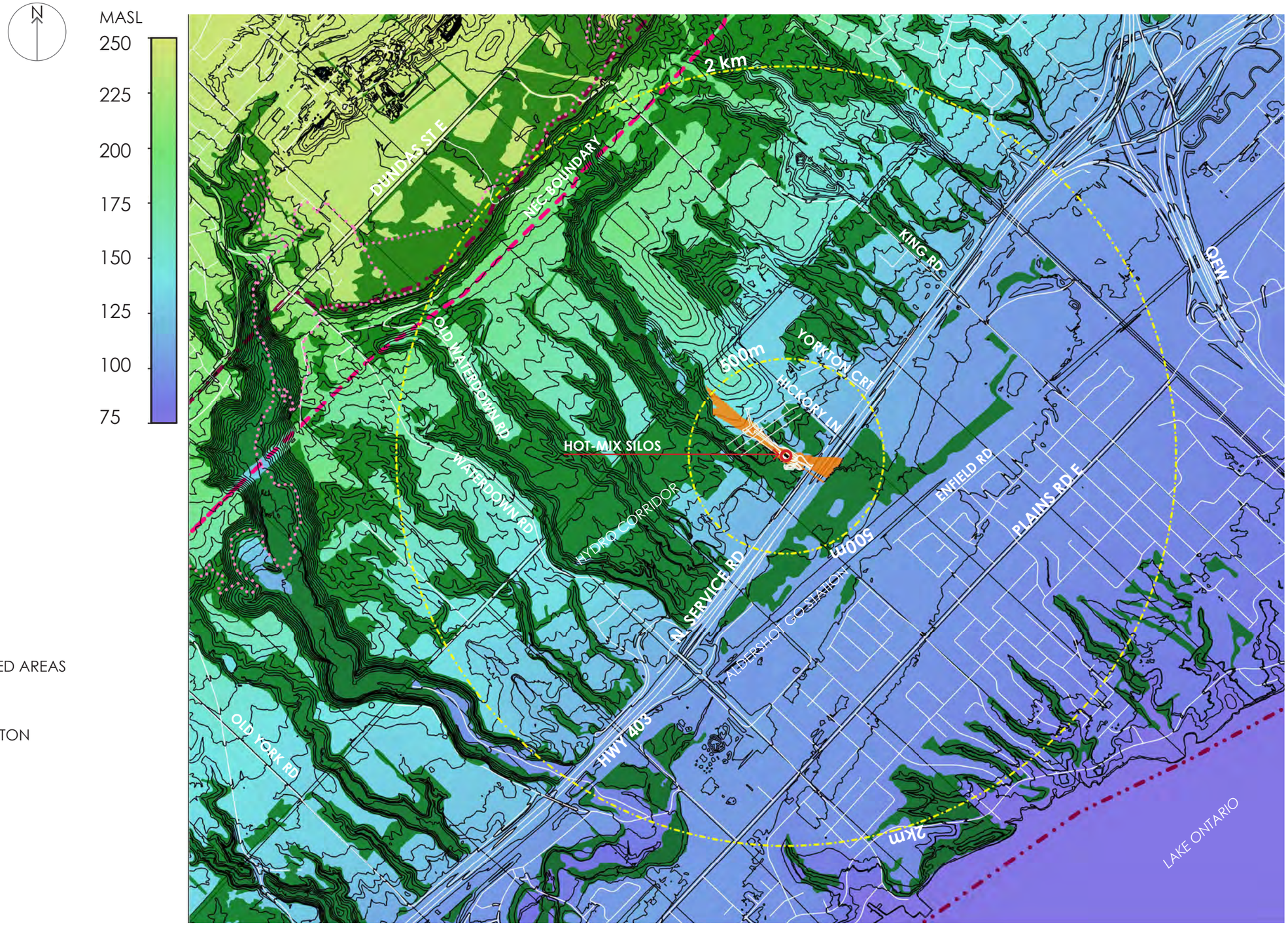
If you have any questions or comments, feel free to contact me.

Regards,
adesso design inc.
per:



Matt Madigan,
Landscape Architect, OALA, CSLA
MM/cp

project #: 21-310




VISIBLE AREA

EXISTING WOODED AREAS

NEC PLANNING BOUNDARY

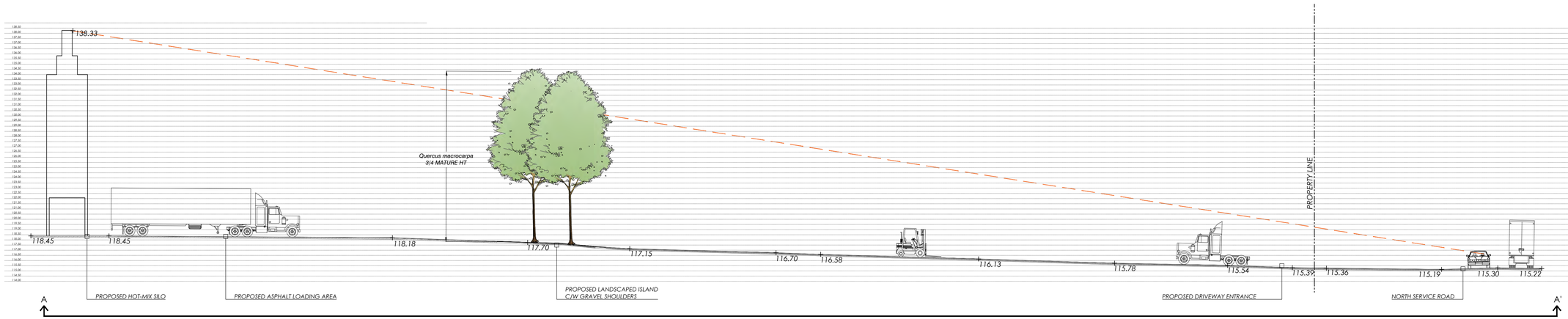
CITY OF BURLINGTON BOUNDARY

BRUCE TRAIL

0m 500m 1000m

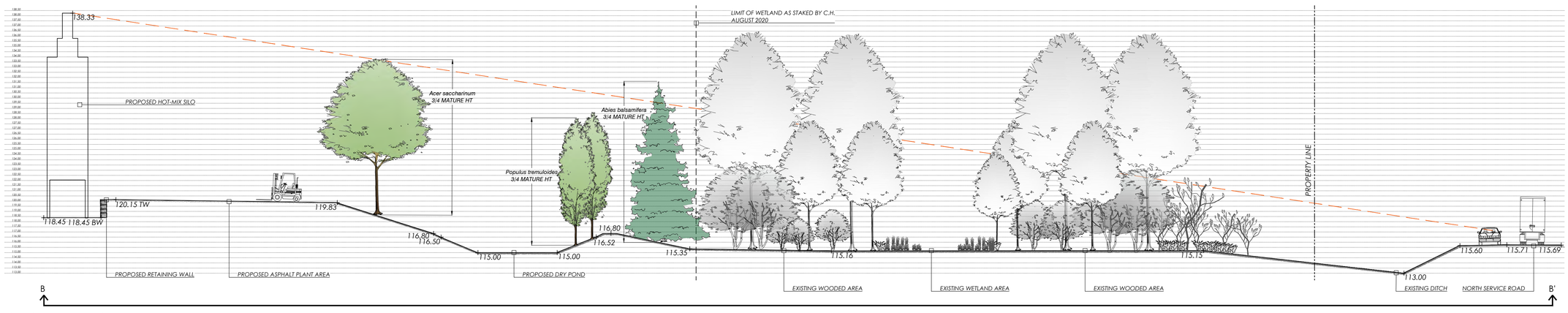
VIEWSHED STUDY:
KING PAVING & CONSTRUCTION LTD.
PROPOSED ASPHALT PLANT

project #: 21-310




Line-of-Sight Cross Section A - A'

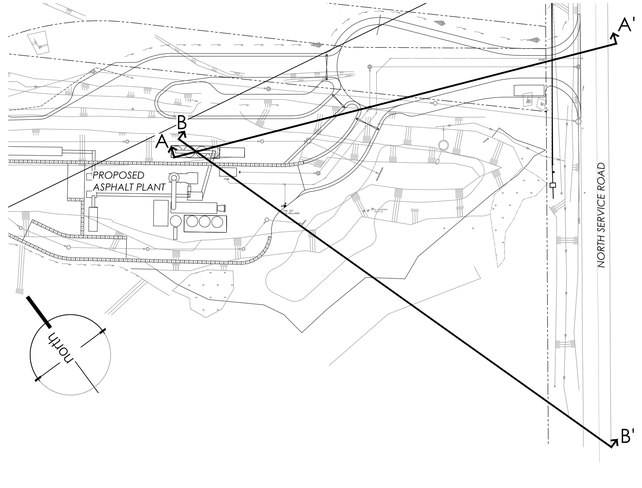
1:200




Line-of-Sight Cross Section B - B'

1:200

Line-of-Sight Cross Sections Key Map




NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

REVISIONS/ SUBMISSIONS

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2022-02-03 | Issued for client review |
| 2 | 2022-02-11 | Issued for first submission |
| 3 | 2023-10-13 | Issued for second submission |

STAMP

CLIENT

MUNICIPALITY
City of Burlington

PROJECT
King Paving & Construction
Proposed Asphalt Plant
291 North Service Road

MUNICIPAL FILE NUMBER

SHEET
Line of Sight
Cross Sections

L-0

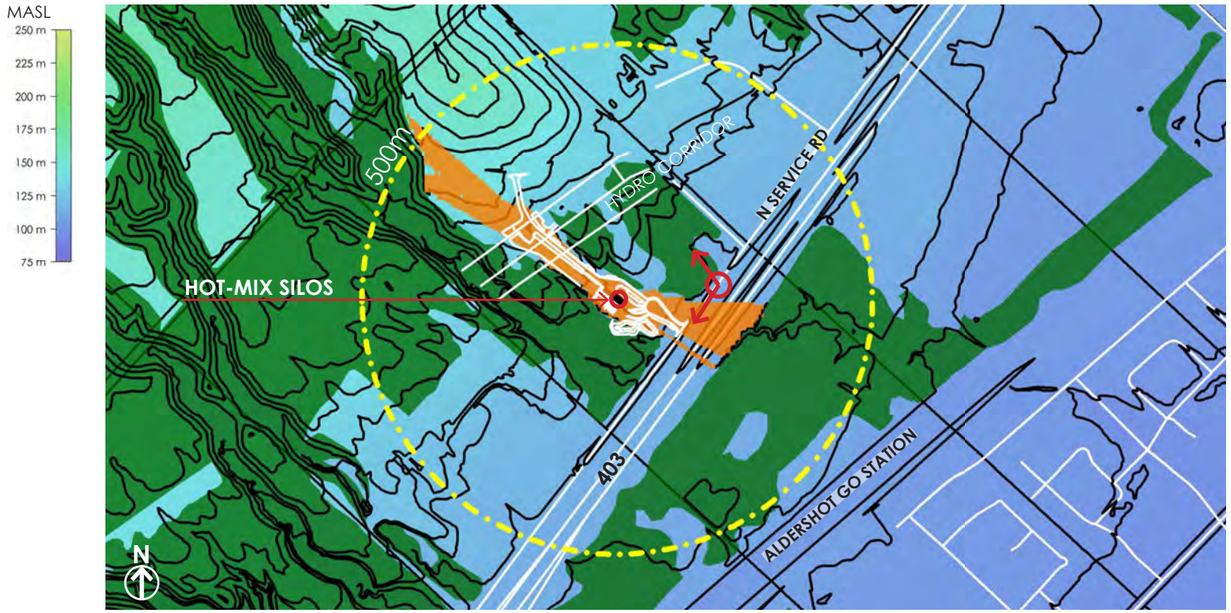
adesso design inc.
landscape architecture

218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
t. 905.526.8876
www.adessodesigninc.ca

R:\21-310\Issued Files\Drawings\21-310 LSS.dwg, Layout: Line of Sight
LAST SAVED BY:Rebecca S, Friday, February 11, 2022 9:32:29 AM PLOTTED BY:Chelsey Hope Friday, October 13, 2023 8:13:27 AM

## PROPOSED ASPHALT PLANT

## VIEWSHED STUDY
## FIELD CHECK 1







aerial source:
Google Earth

**VISIBLE AREA** **FIELD CHECK LOCATION**

**EXISTING WOODLOTS** **DIRECTION OF PHOTO**

MODEL UTM COORDINATES:
EASTING 592982.45
NORTHING 4797143.41

MASL OF HOT-MIX SILOS:138.33

FIELD CHECK LOCATION: North Service Road near proposed entrance
UTM COORDINATES: Easting 593193.44
Northing 4797202.18
VIEW DIRECTION: W - SW

EXISTING CONDITIONS:
The Digital Visibility Map indicates some visibility of the proposed hot-mix silos from this location. Existing conditions as shown in Field Check Photo 1 below show some existing vegetation in the vicinity of the proposed driveway entrance which partially obscure the view of the proposed hot-mix silos. Additionally, visibilty of the proposed hot-mix silos will be mitigated by proposed tree planting (refer to Appendix D for Landscape Plan).

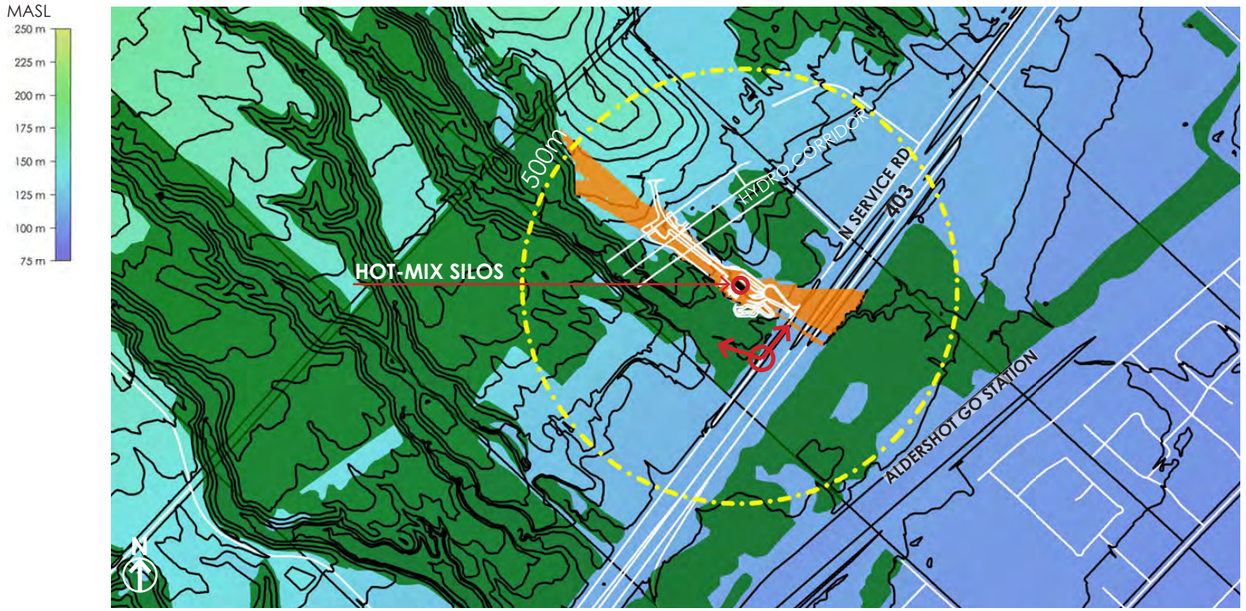
## FIELD CHECK 1 PHOTO




adesso design inc
landscape architecture

## PROPOSED ASPHALT PLANT

## VIEWSHED STUDY
## FIELD CHECK 2







aerial source: Google Earth

FIELD CHECK LOCATION: North Service Road near proposed entrance

UTM COORDINATES: Easting 593081.08
Northing 4797051.46

VIEW DIRECTION: N - NW

MODEL UTM COORDINATES:
EASTING 592982.45
NORTHING 4797143.41

MASL OF HOT-MIX SILOS:138.33

**VISIBLE AREA** **FIELD CHECK LOCATION**

**EXISTING WOODLOTS** **DIRECTION OF PHOTO**

EXISTING CONDITIONS:
The Digital Visibility Map indicates limited visibility of the proposed hot-mix silos from this location. Existing conditions as shown in Field Check Photo 2 below show some existing vegetation and a rise in topography south of the proposed hot-mix silos. A mix of deciduous and coniferous tree species are proposed between the proposed hot-mix silos and Field Check Location 2 which will further obscure the visibility of the silos from this view (refer to Appendix D for Landscape Plan).

## FIELD CHECK 2 PHOTO




adesso design inc
landscape architecture

adesso design inc.
218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4

February 11, 2022

Rebecca Lau,
Planner II, Community Planning Department
City of Burlington
426 Brant Street,
Burlington, ON L7R 3Z6

**VIEWSHED STUDY - TERMS OF REFERENCE (METHODOLOGY & APPLICATIONS)**
**291 NORTH SERVICE ROAD, BURLINGTON, ON**

Rebecca:

We have been retained by King Paving & Construction Ltd. to produce a Viewshed Study for their proposed Asphalt Plant on North Service Road in Burlington, Ontario. The Viewshed Study is intended to be in accordance with the following components of the City's Official Plan (1997, as amended):

*Part III 3.4.3 b) (ii)*

> *Development or re-development of lands designated "Business Corridor" on the north side of North Service Road west of King Road will... be required to undertake... a viewshed study and calculate maximum building heights to ensure views to the escarpment are maintained to the maximum extent,*

*Part V, 2.4 b)*

> *Buildings and structures shall be designed and located so as to maximize their compatibility with the existing natural landscape, minimize their effect on the open-space character of the area and maintain to the maximum possible degree an uninterrupted sight line between Highway 403 and the Niagara Escarpment...*

*Part V, 2.4 e)*

> *Site layout shall preserve key viewsheds from existing roads, such as views to the brow of the Niagara Escarpment, Burlington Bay, Hamilton, and Lake Ontario.*

The methodology for this Viewshed Study has been informed by the Niagara Escarpment Commission's (NEC) Visual Impact Assessment Technical Criteria, November 18th, 2020, and correspondence with City of Burlington staff (January 21, 2022).

## Goal of the Viewshed Study

The goal of the Viewshed Study was to assess the impacts of the proposed asphalt plant on the scenic resources of the Niagara Escarpment brow from the following key viewpoints:

- Highway 403 and North Service Road, at the entrance to the proposed asphalt plant;
- Highway 403 and North Service Road, directly south of the proposed asphalt plant;

The Viewshed Study was conducted using Line-of-Sight Cross Sections as per correspondence with City of Burlington staff (January 21, 2022). The Line-of-Sight Cross Sections demonstrate whether the proposed asphalt plant can be seen from the above key viewpoints.

## Project Description

The Subject Site (approximately 4 ha) is situated on the north side of North Service Road, east of Waterdown Road and west of King Road.

The proposed development for the Subject Site will include excavation, grading, and construction of a new asphalt plant and associated facilities for outdoor materials storage (refer to appendix A for Site Layout Plan).

## Study Area and Project Details

The Viewshed Study will be completed using the highest point of elevation of the proposed asphalt plant, specifically, the top of four proposed hot-mix silos (Refer to Digital Visibility Map for location).

Two Line-of-Sight Cross Sections have been produced to demonstrate the visibility of these four silos from key viewpoints. The Cross Sections are coordinated with proposed Site Layout, Grading, Landscape, and Tree Inventory & Preservation Plans.

The Study Process, Investigative Methods, and Data used in the Viewshed Study and Line-of-Sight Cross Sections are outlined below.

## Study Process/Methodology

*Digital Visibility Map (Viewshed Study Area)*

- A Digital Visibility Map was created using the digital modeling program Global Mapper 19 to assess the visibility of the proposed hot-mix silos from a 500-metre radius;
- The map was produced using *Ontario GeoHub* digital base data, The City of Hamilton's 'Open Hamilton' & The City of Burlington's 'Navigate Burlington Data'. These data include features such as roads, topography,

vegetation, and 5.0 metre contour intervals (see list of Metadata used in Viewshed Study);
- The viewer height for modelling was set at 1.5m above grade;
- The vegetation height (woodlots) was set at 20.0m above grade. Existing trees to remain that were not captured in the woodlots data set were added manually and set to have a height of 20.0m above grade (see appendix E for Tree Inventory & Preservation Plan);
- The Digital Visibility Map has been annotated with the extent and location of the proposed asphalt plant, as well as the overall extent of the Viewshed Study Area;

*Line-of-Sight Cross Sections*

- Line-of-Sight Cross-Sections have been created using Computer-Aided Drafting & Design (CADD) Software;
- Proposed Site Layout, Grading, Landscape, and Tree Inventory & Preservation Plans are incorporated into the Line-of-Sight Cross Sections to reflect the anticipated changes to existing conditions and their impact on visibility of the proposed hot-mix silos;
- The highest point (MASL-Meters Above Sea Level) of the proposed hot-mix silos has been calculated by adding the height of the proposed silos to the proposed elevation (see below);

TABLE 1 MASL of Proposed Hot-Mix Silos

| Proposed Structure | Height (m) | Base of Hot-Mix Silos | | Grade Change (m) | Top of Hot-Mix Silos (MASL) |
|---|---|---|---|---|---|
| | | Existing Elevation (MASL) | Proposed Elevation (MASL) | | |
| Hot-Mix Silos (4) | 19.88 | 119.94 | 118.45 | 1.49 | 138.33 |

- Existing and proposed spot elevations are shown on the Grading Plan prepared by S. Llewellyn & Associates (refer to appendix C).
- Site Layout Plan has been provided by S. Llewellyn & Associates (refer to appendix A).
- The height of the proposed hot-mix silos in Table 1 have been provided by King Paving & Construction Ltd. (Refer to appendix B for typical hot-mix silo elevation drawing).
- Landscape Plans have been provided by Adesso Design Inc. (Refer to appendix D).
- Tree Inventory and Preservation Plan has been provided by GeoProcess Research Associates (refer to appendix E).

*Documentation of Existing Conditions*

- Existing conditions at the identified key viewpoints have been documented through photographs (taken with a 33 to 52mm lens) that match the view direction of the Line-of-Sight Cross Sections.

- Photographs are annotated with the approximate location and height of the proposed hot-mix silos (see existing conditions panoramic photographs in Viewshed Study).

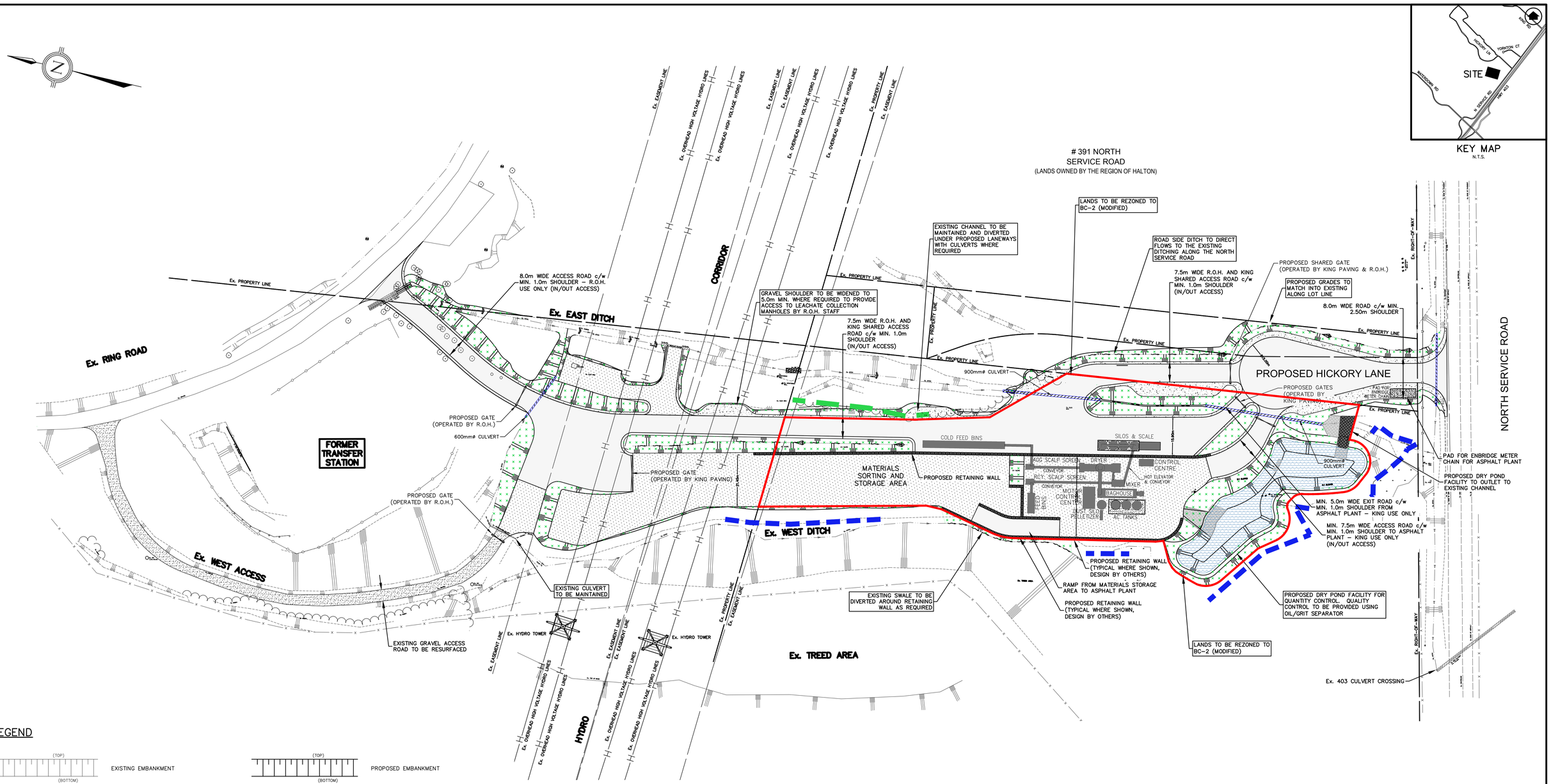
I trust that the above Terms of Reference, Line-of-Sight Cross Sections and accompanying documents satisfy City requirements for a Viewshed Study of the proposed development at 291 North Service Road.

If you have any questions or comments, feel free to contact me.

Regards,
adesso design inc.
per:



Matt Madigan,
Landscape Architect, OALA, CSLA
MM/cp




## LEGEND

- EXISTING EMBANKMENT
- EXISTING POST & WIRE FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING HIGH VOLTAGE HYDRO LINES
- EXISTING OVERHEAD UTILITY LINES
- EXISTING DITCH/DRAINAGE CHANNEL
- EXISTING DRIPLINE/CANOPY LIMITS
- LIMITS OF SIGNIFICANT WOODLOT
- WETLAND LIMITS
- EXISTING RIP RAP
- PROPOSED EMBANKMENT
- PROPOSED GATE
- PROPOSED SWALE
- PROPOSED HDPE CULVERT, SIZE AS NOTED
- PROPOSED RETAINING WALL, TO BE DESIGNED BY OTHERS
- PROPOSED SWM POND AREA
- PROPOSED GRANULAR\RECYCLED ASPHALT SURFACE
- PROPOSED PAVED SURFACE
- PROPOSED LANDSCAPE AREA
- PROPOSED GRANULAR SHOULDERS
- PROPOSED RESURFACED GRANULAR ROAD
- PROPOSED CONCRETE PADS
- PROPOSED RIP RAP, SIZE AS NOTED

### NOTES TO CONTRACTOR:

1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 3.0 | NOV. 2021 | SJD | AS PER REVISED SITE LAYOUT PLAN |
| 2.0 | AUG. 2021 | RB | ISSUED FOR SITE PLAN APPROVAL |
| 1.1 | JULY 2021 | RB | REVISED PER REGION OF HALTON, WASTE MANAGEMENT COMMENTS |
| 1.0 | JUNE 2021 | RB | ISSUED FOR REVIEW |

| DESIGN | RB | CHK'D | | DATE |
|---|---|---|---|---|
| DRAWN | RB | CHK'D | | May 27, 2021 |

**BENCH MARK NOTE:**
UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION

INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT
KING PAVING AND CONSTRUCTION COMPANY
3385 HARVESTER ROAD, BURLINGTON ONTARIO

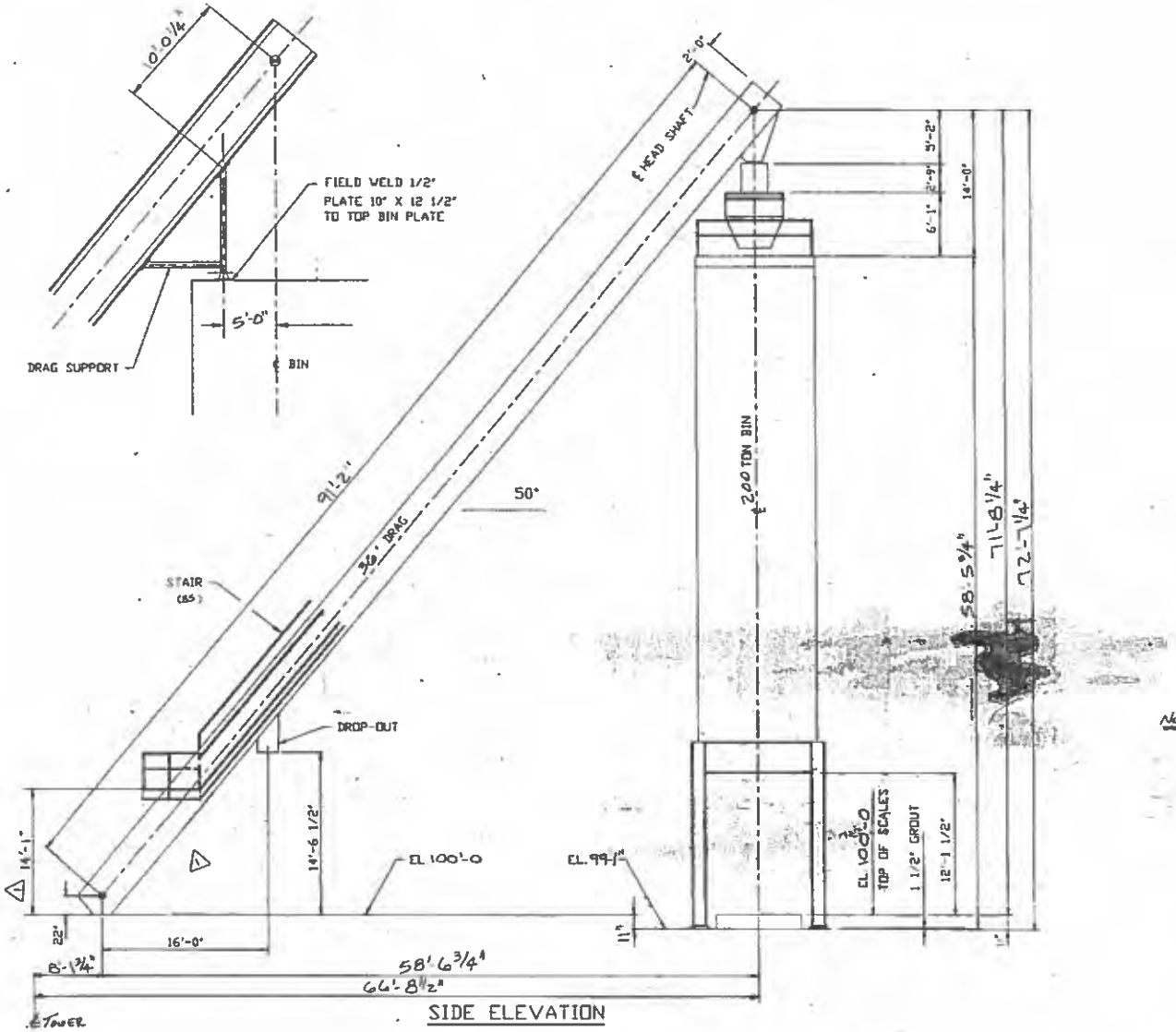
PROJECT NAME
NORTH SERVICE ROAD
ASPHALT PLANT
BURLINGTON, ONTARIO
SITE PLAN No.: T.B.D.

TITLE
SITE LAYOUT PLAN

PROJECT No. 20036
DRAWING No. C-102
SCALE 1:750 (0, 5, 15, 25, 50, 75)

S:\20036\WORKING_Current\20036-Overall Plans.dwg
Plotted: November 1, 2021 4:52:27 PM By: Steven DeGrow

| LIST OF COMPONENTS | | | |
|---|---|---|---|
| ITEM | QUAN | DESCRIPTION | SIZE | REMARKS |




SIDE ELEVATION

NOTE: REF. TO EL 100'-0 FROM BENCH MARK AT TOP OF CONCRETE PIER AT BATCH TOWER. LEGS BENCH MARK IS EL. 102'-0

DSILOD

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

ASTEC INDUSTRIES, INC.

CUSTOMER: TILCON CAPALDI

PART NAME: SIDE ELEVATION

MACHINE

DRN MJ | CHKD | APPD | DATE 2-8-93

JOB NO 92-212 | SHT NO | SCALE | DWG NO 92-212-2 | REV

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ASTEC INDUSTRIES, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ASTEC INDUSTRIES, INC. IS PROHIBITED.

## LEGEND

EXISTING CONTOUR (0.50m INTERVAL)
EXISTING GROUND ELEVATION
EXISTING EMBANKMENT
EXISTING POST & WIRE FENCE
EXISTING CHAIN LINK FENCE
EXISTING OVERHEAD HIGH VOLTAGE HYDRO LINES
EXISTING OVERHEAD HYDRO/UTILITY LINES
EXISTING DITCH/DRAINAGE CHANNEL
EXISTING CONCRETE RETAINING WALL
EXISTING GUIDERAIL
EXISTING HYDRANT
EXISTING MANHOLE
EXISTING PEDESTAL/ ELECTRICAL BOX
EXISTING HYDRO POLE
EXISTING TREE/SHRUB
EXISTING CULVERT
EXISTING DRIPLINE/ CANOPY LIMITS
LIMITS OF SIGNIFICANT WOODLOT
WETLAND LIMITS
EXISTING RIP RAP, SIZE AS NOTED
EXISTING WET AREAS

PROPOSED ELEVATION
EX = MATCH EXISTING ELEVATION
HP = HIGH POINT
TW = TOP OF WALL
BW = BOTTOM OF WALL
T/G = TOP OF GRATE
PROPOSED EMBANKMENT
PROPOSED SWALE/CHANNEL
OVERFLOW ROUTE/EMERGENCY OVERFLOW
DRAINAGE SPLIT
PROPOSED HDPE CULVERT, SIZE AS NOTED
PROPOSED RETAINING WALL, TO BE DESIGNED BY OTHERS
PROPOSED STORM MANHOLE\ CATCHBASIN MANHOLE
PROPOSED CATCHBASIN\ DITCH INLET
PROPOSED HEADWALL PER OPSD 804.030 c/w GRATE PER OPSD 804.050
PROPOSED SANITARY MANHOLE
PROPOSED WATER VALVE/ CURB STOP
PROPOSED HYDRANT COMPLETE WITH BOLLARDS
PROPOSED GATE
PROPOSED ROCK CHECK DAM PER OPSD 219.210
PROPOSED RESURFACED GRANULAR ROAD
PROPOSED CONCRETE PAD
PROPOSED RIP RAP, SIZE AS NOTED

KEY MAP
N.T.S.
SITE
NORTH SERVICE RD
HWY 403
MICHAEL LN
YORKTON CT
WATERDOWN RD

LIMIT OF ASPHALT PAVING
EXISTING TREES TO BE REMOVED AS REQUIRED
EXTEND EXISTING CULVERT TO TOE OF SLOPE. 3x7.0m-600mm⌀ CULVERT INV.=±137.20
Ex. RING ROAD
RE-ALIGN EXISTING CHANNEL AS REQUIRED
Ex. CHAIN LINK FENCE
Ex. DITCH
Ex. GABION
Ex. BUILDING
Ex. ELEC BOX
Ex. MH23 T/G=130.48 INV. 123.87±
Ex. MH22A T/G=128.64 INV. 123.79±
Ex. MH22 T/G=125.79 INV. 122.06±
Ex. MONITORING WELL
Ex. RIP RAP
Ex. GRAVEL
Ex. SWALE
Ex. OVERHEAD HIGH VOLTAGE HYDRO LINES
Ex. EASEMENT LINE
Ex. PROPERTY LINE
SLOPE TO BE RE-GRADED @ 3:1 AS REQUIRED.
PROPOSED ACCESS ROAD TO BE PAVED
PAVED ASPHALT ACCESS ROAD (REGION OF HALTON)
PROVIDE APRON AROUND EXISTING BUILDING TO PROMOTE POSITIVE DRAINAGE AWAY FROM STRUCTURE
AREA ADJACENT TO PAVED ROAD TO BE FINE GRADED AS REQUIRED TO ENSURE POSITIVE DRAINAGE
EXISTING TREES TO BE REMOVED AS REQUIRED
21.0m-600mm⌀ SLOPE CULVERT @ 5.0%
MUTLI-USE ACCESS (GRANULAR SURFACE) (REGION OF HALTON & HYDRO ONE)
SLOPE TO MATCH EXISTING @ 3:1 AS REQUIRED.
PROPOSED GATE OPERATED BY REGION OF HALTON
ASPHALT ACCESS ROAD (SHARED)
SLOPE TO BE RE-GRADED AS REQUIRED. Ex. SWALE/DITCH INVERTS TO BE MAINTAINED
FORMER TRANSFER STATION
LIMIT OF ASPHALT PAVING
ASPHALT ACCESS RAMP (KING PAVING)
LIMIT OF ASPHALT PAVING
PROPOSED GATE
MATERIALS STORAGE AREA (GRANULAR SURFACE) (AS PERMITTED BY HYDRO ONE)
DRAINAGE SPLIT (TYP.)
PROPOSED RETAINING WALL c/w BARRIER (DESIGN BY OTHERS)
MATERIALS STORAGE AREA (GRANULAR SURFACE)
ACCESS ROAD (GRANULAR SURFACE) (REGION OF HALTON)
MATCH GRADES INTO Ex. ACCESS ROAD
MATCH INTO EXISTING GRADE WITH 2:1 MAX. SLOPE
WETLAND LIMITS

REFER TO DRAWING C-103

NOTES TO CONTRACTOR:
1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 2.0 | AUG. 2021 | RB | ISSUED FOR SITE PLAN APPROVAL |
| 1.1 | JULY 2021 | RB | REVISED PER REGION OF HALTON, WASTE MANAGEMENT COMMENTS |
| 1.0 | JUNE 2021 | RB | ISSUED FOR REVIEW |

DESIGN RB CHK'D
DRAWN RB CHK'D
DATE May 27, 2021

**BENCH MARK NOTE:**
UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION
INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

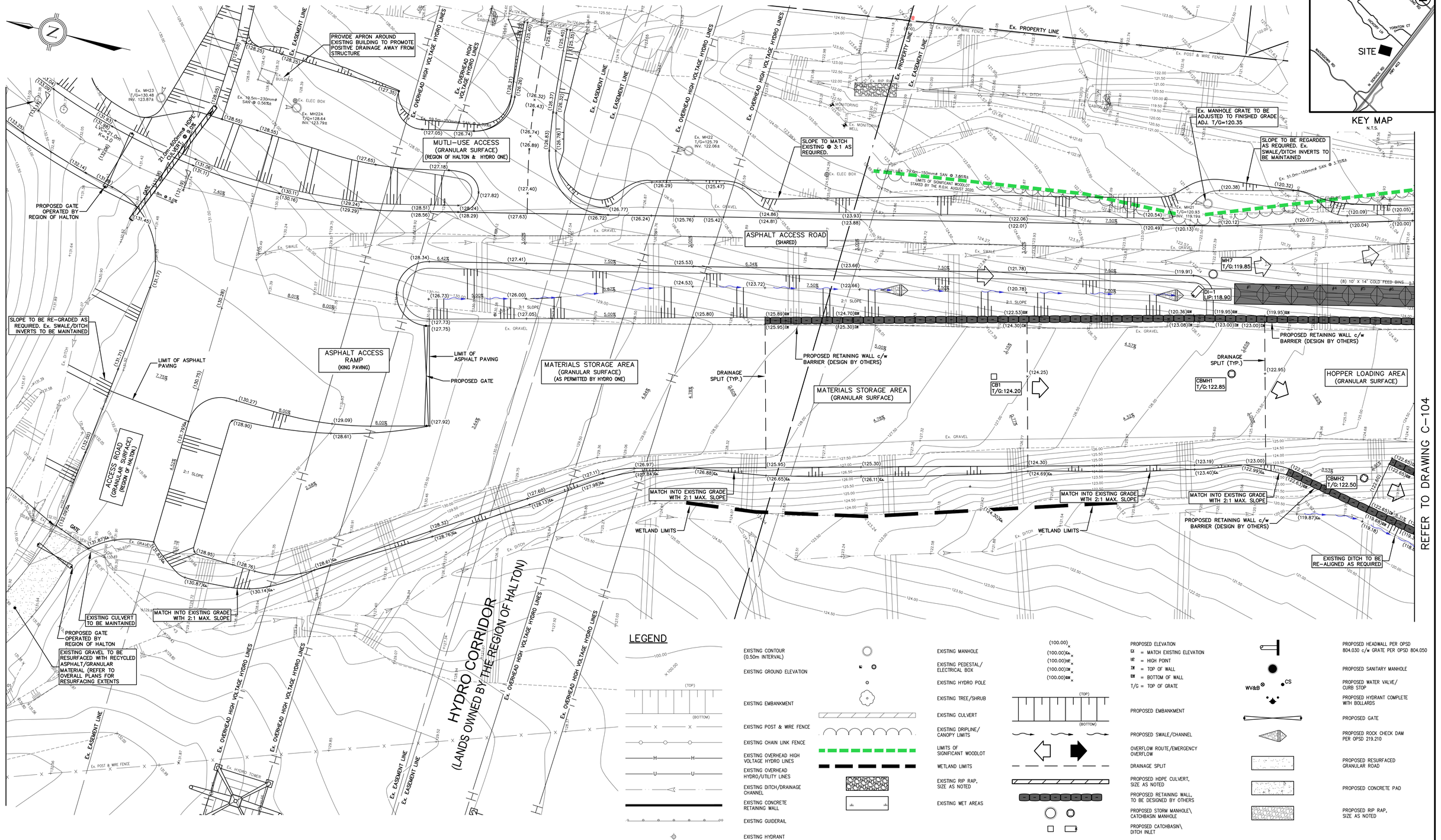
CLIENT
KING PAVING AND CONSTRUCTION COMPANY
3385 HARVESTER ROAD, BURLINGTON ONTARIO

PROJECT NAME
NORTH SERVICE ROAD
ASPHALT PLANT
BURLINGTON, ONTARIO
SITE PLAN No.: T.B.D.

TITLE
GRADING PLAN
SHEET 1 of 4

PROJECT No. 20036
DRAWING No. C-103
SCALE 1:250 (0 5 10 15 20 25)

S:\20036\WORKING_Current\20036-Site Servicing and Grading.dwg
Plotted: Tuesday, August 24, 2021 2:28:25 PM By: Rob Barnett




NOTES TO CONTRACTOR:

1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 2.0 | AUG. 2021 | RB | ISSUED FOR SITE PLAN APPROVAL |
| 1.1 | JULY 2021 | RB | REVISED PER REGION OF HALTON, WASTE MANAGEMENT COMMENTS |
| 1.0 | JUNE 2021 | RB | ISSUED FOR REVIEW |

| DESIGN | RB | CHK'D | | DATE |
|---|---|---|---|---|
| DRAWN | RB | CHK'D | | May 27, 2021 |

BENCH MARK NOTE:
UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION

INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT
KING PAVING AND CONSTRUCTION COMPANY
3385 HARVESTER ROAD, BURLINGTON ONTARIO

PROJECT NAME
NORTH SERVICE ROAD
ASPHALT PLANT
BURLINGTON, ONTARIO
SITE PLAN No.: T.B.D.

TITLE
GRADING PLAN
SHEET 2 of 4

PROJECT No. 20036
DRAWING No. C-104
SCALE 1:250

S:\20036\WORKING_Current\20036-Site Servicing and Grading.dwg
Plotted: Tuesday, August 24, 2021 2:28:35 PM By: Rob Barnett

# # 391 NORTH SERVICE ROAD
(LANDS OWNED BY THE REGION OF HALT(

KEY MAP
N.T.S.
SITE
HIGH RD
HOCKEY LN
TORONTON CT
WATERDOWN RD
N SERVICE RD
HWY 403

REFER TO DRAWING C-103

REFER TO DRAWING C-105

Ex. PROPERTY LINE

Ex. RISER PIPE TO BE REOMVED AND REPLACE WITH 1200mmø PRE-CAST MANHOLE PER OPSD 701.010 c/w WITH GRATE PER OPSD 401.010 (TYPE A). RISER PIPE AND RELATED DELETERIOUS MATERIAL TO BE REMOVED AND DISPOSED OFFSITE T/G=119.10

MATCH INTO EXISTING GRADE WITH 3:1 SLOPE

Ex. RISER PIPE TO BE REOMVED AND REPLACE WITH 1200mmø PRE-CAST MANHOLE PER OPSD 701.010 c/w WITH GRATE PER OPSD 401.010 (TYPE A). RISER PIPE AND RELATED DELETERIOUS MATERIAL TO BE REMOVED AND DISPOSED OFFSITE T/G=117.65

Ex. MANHOLE GRATE TO BE ADJUSTED TO FINISHED GRADE ADJ. T/G=120.35

SLOPE TO BE REGARDED AS REQUIRED. Ex. SWALE/DITCH INVERTS TO BE MAINTAINED

40.5m-900mmø HDPE CULVERT. @ 1.5%

49.5m-900mmø HDPE CULVERT. @ 3.0%

ASPHALT ACCESS ROAD (SHARED)

ASPHALT LOADING AREA

ASPHALT PLANT AREA (GRANULAR SURFACE)

HOPPER LOADING AREA (GRANULAR SURFACE)

ASPHALT RAMP

EXISTING ELECTRICAL BOX TO BE RELOCATED (DESIGN BY OTHERS)

PROPOSED RETAINING WALL c/w BARRIER (DESIGN BY OTHERS)

MATCH INTO EXISTING GRADE WITH 2:1 MAX. SLOPE

EXISTING DITCH TO BE RE-ALIGNED AS REQUIRED

WETLAND LIMITS

Ex. TREED AREA

Ex. WET AREA

PROPOSED HICKORY LANE

PROPOSED GATE OPERATED BY KING PAVING CONSTRUCTION COMPANY AND THE REGION OF HALTON

PROPOSED GATES OPERATED BY KING PAVING & CONSTRUCTION COMPANY

167.190m @ 2.40%

CROSSING #1

CROSSING #2

CROSSING #3

CROSSING #4

ASPHALT ENTRANCE

PAD FOR ENBRIDGE MET CHAIN

OUTLET TO EXISTING CHANNEL INV.=114.90

EMERGENCY OVERFLOW WEIR

200-300m RIP-RAP SPILL MAX. 0.5m THICK MIN OVER TERRAIN 270m GEOTEXTILE

TOP OF POND ELEV.=116.80

TOP OF WEIR ELEV.=116.50

BOTTOM OF POND ELEV.=115.00

LIMIT OF ASPHALT PAVING

HYD. SET c/w BOLLARDS

MH2A T/G:116.92
MH3A T/G:116.90
MH4A T/G:119.25
MH5 T/G:119.75
MH6 T/G:119.75
MH7 T/G:119.85
MH10 T/G:181.05
MH11 T/G:116.80
CBMH1 T/G:122.85
CBMH2 T/G:122.50
MH3 T/G:120.47
CBMH4 T/G:119.35
CBMH5 T/G:119.35
CBMH8 T/G:118.65
CBMH9 T/G:118.00
DI-1 I.P.:118.90

## LEGEND

- EXISTING CONTOUR (0.50m INTERVAL)
- EXISTING GROUND ELEVATION
- EXISTING EMBANKMENT
- EXISTING POST & WIRE FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING OVERHEAD HIGH VOLTAGE HYDRO LINES
- EXISTING OVERHEAD HYDRO/UTILITY LINES
- EXISTING DITCH/DRAINAGE CHANNEL
- EXISTING CONCRETE RETAINING WALL
- EXISTING GUIDERAIL
- EXISTING HYDRANT
- EXISTING MANHOLE
- EXISTING PEDESTAL/ ELECTRICAL BOX
- EXISTING HYDRO POLE
- EXISTING TREE/SHRUB
- EXISTING CULVERT
- EXISTING DRIPLINE/ CANOPY LIMITS
- LIMITS OF SIGNIFICANT WOODLOT
- WETLAND LIMITS
- EXISTING RIP RAP, SIZE AS NOTED
- EXISTING WET AREAS

- PROPOSED ELEVATION
- EX = MATCH EXISTING ELEVATION
- HP = HIGH POINT
- TW = TOP OF WALL
- BW = BOTTOM OF WALL
- T/G = TOP OF GRATE
- PROPOSED EMBANKMENT
- PROPOSED SWALE/CHANNEL
- OVERFLOW ROUTE/EMERGENCY OVERFLOW
- DRAINAGE SPLIT
- PROPOSED HDPE CULVERT, SIZE AS NOTED
- PROPOSED RETAINING WALL, TO BE DESIGNED BY OTHERS
- PROPOSED STORM MANHOLE\ CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN\ DITCH INLET
- PROPOSED HEADWALL PER OPSD 804.030 c/w GRATE PER OPSD 804.050
- PROPOSED SANITARY MANHOLE
- PROPOSED WATER VALVE/ CURB STOP
- PROPOSED HYDRANT COMPLETE WITH BOLLARDS
- PROPOSED GATE
- PROPOSED ROCK CHECK DAM PER OPSD 219.210
- PROPOSED RESURFACED GRANULAR ROAD
- PROPOSED CONCRETE PAD
- PROPOSED RIP RAP, SIZE AS NOTED

NOTES TO CONTRACTOR:
1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 2.0 | AUG. 2021 | RB | ISSUED FOR SITE PLAN APPROVAL |
| 1.1 | JULY 2021 | RB | REVISED PER REGION OF HALTON, WASTE MANAGEMENT COMMENTS |
| 1.0 | JUNE 2021 | RB | ISSUED FOR REVIEW |

| DESIGN | RB | CHK'D | | DATE |
|---|---|---|---|---|
| DRAWN | RB | CHK'D | | May 27, 2021 |

BENCH MARK NOTE:
UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION

INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

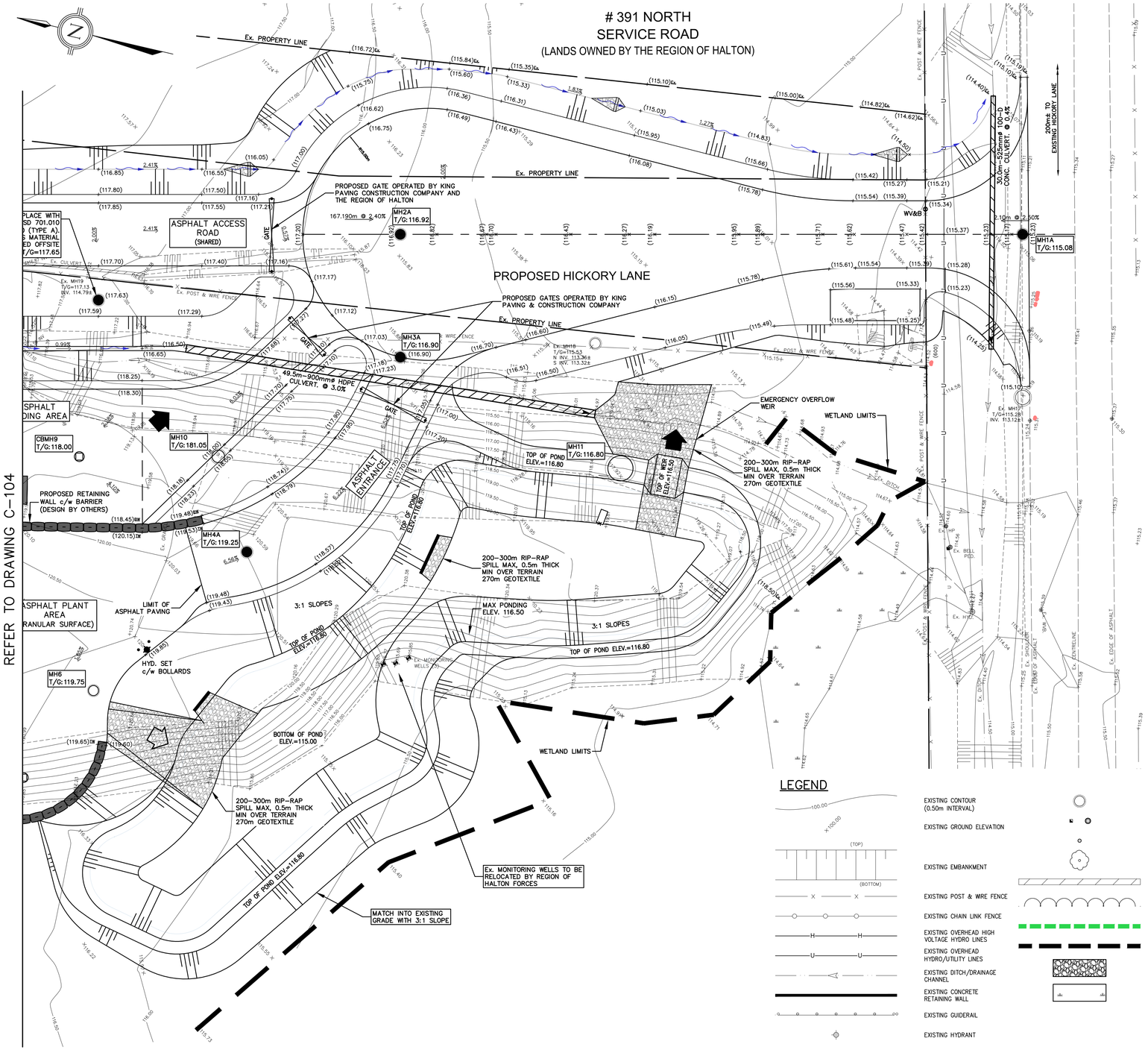
CLIENT
KING PAVING AND CONSTRUCTION COMPANY
3385 HARVESTER ROAD, BURLINGTON ONTARIO

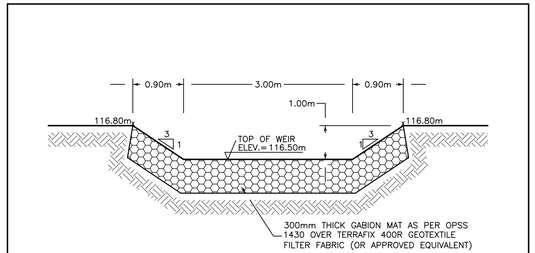
PROJECT NAME
NORTH SERVICE ROAD
ASPHALT PLANT
BURLINGTON, ONTARIO
SITE PLAN No.: T.B.D.

TITLE
SITE GRADING PLAN
SHEET 3 of 4

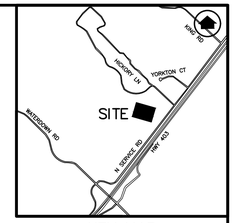
PROJECT No. 20036
DRAWING No. C-105
SCALE 1:250 (0 5 10 15 20 25)

S:\20036\WORKING_Current\20036-Site Servicing and Grading.dwg
Plotted: Tuesday, August 24, 2021 2:28:53 PM By: Rob Barnett

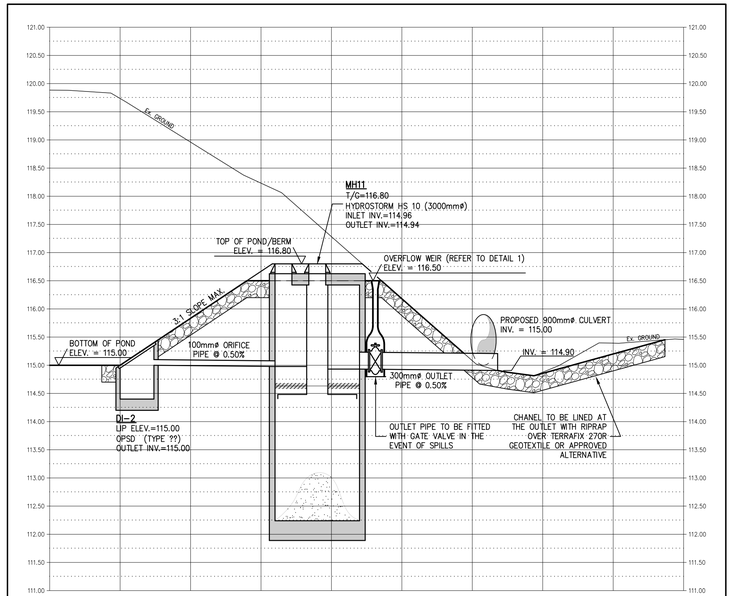



DETAIL 1 — BROAD CRESTED OVERFLOW WEIR
SCALE: N.T.S.




KEY MAP
N.T.S.




DETAIL 2 — SWM FACILITY OUTLET DETAIL
SCALE: 1:100 HORIZ.
1:50 VERT.

## LEGEND

EXISTING CONTOUR (0.50m INTERVAL)
EXISTING GROUND ELEVATION
EXISTING EMBANKMENT
EXISTING POST & WIRE FENCE
EXISTING CHAIN LINK FENCE
EXISTING OVERHEAD HIGH VOLTAGE HYDRO LINES
EXISTING OVERHEAD HYDRO/UTILITY LINES
EXISTING DITCH/DRAINAGE CHANNEL
EXISTING CONCRETE RETAINING WALL
EXISTING GUIDERAIL
EXISTING HYDRANT

EXISTING MANHOLE
EXISTING PEDESTAL/ ELECTRICAL BOX
EXISTING HYDRO POLE
EXISTING TREE/SHRUB
EXISTING CULVERT
EXISTING DRIPLINE/ CANOPY LIMITS
LIMITS OF SIGNIFICANT WOODLOT
WETLAND LIMITS
EXISTING RIP RAP, SIZE AS NOTED
EXISTING WET AREAS

PROPOSED ELEVATION
EX = MATCH EXISTING ELEVATION
HP = HIGH POINT
TW = TOP OF WALL
BW = BOTTOM OF WALL
T/G = TOP OF GRATE
PROPOSED EMBANKMENT
PROPOSED SWALE/CHANNEL
OVERFLOW ROUTE/EMERGENCY OVERFLOW
DRAINAGE SPLIT
PROPOSED HDPE CULVERT, SIZE AS NOTED
PROPOSED RETAINING WALL, TO BE DESIGNED BY OTHERS
PROPOSED STORM MANHOLE\ CATCHBASIN MANHOLE
PROPOSED CATCHBASIN\ DITCH INLET

PROPOSED HEADWALL PER OPSD 804.030 c/w GRATE PER OPSD 804.050
PROPOSED SANITARY MANHOLE
PROPOSED WATER VALVE/ CURB STOP
PROPOSED HYDRANT COMPLETE WITH BOLLARDS
PROPOSED GATE
PROPOSED ROCK CHECK DAM PER OPSD 219.210
PROPOSED RESURFACED GRANULAR ROAD
PROPOSED CONCRETE PAD
PROPOSED RIP RAP, SIZE AS NOTED

NOTES TO CONTRACTOR:
1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 2.0 | AUG. 2021 | RB | ISSUED FOR SITE PLAN APPROVAL |
| 1.1 | JULY 2021 | RB | REVISED PER REGION OF HALTON, WASTE MANAGEMENT COMMENTS |
| 1.0 | JUNE 2021 | RB | ISSUED FOR REVIEW |

| DESIGN | RB | CHK'D | | DATE |
|---|---|---|---|---|
| DRAWN | RB | CHK'D | | May 27, 2021 |

BENCH MARK NOTE:
UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION
INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

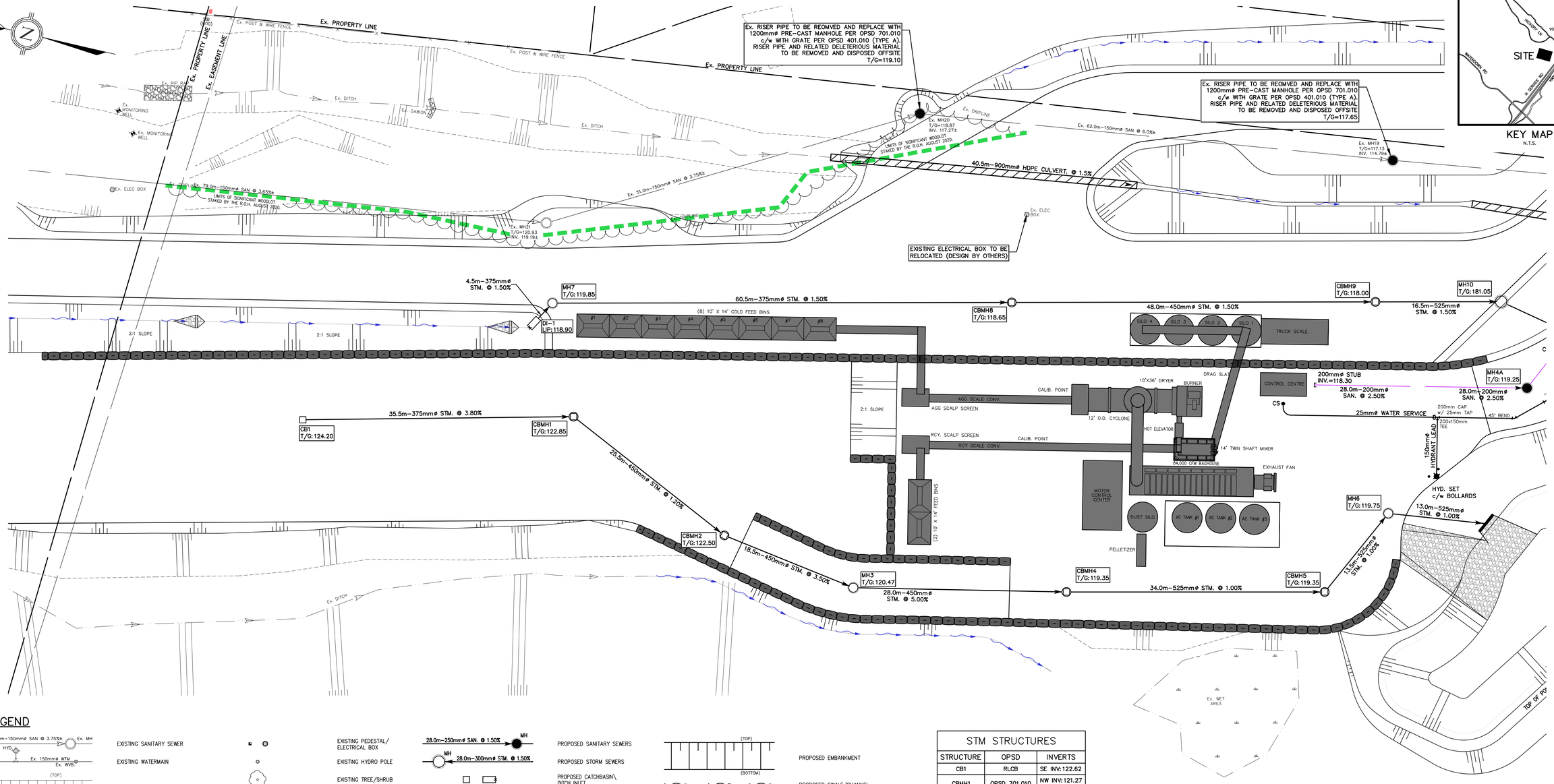
CLIENT
KING PAVING AND CONSTRUCTION COMPANY
3385 HARVESTER ROAD, BURLINGTON ONTARIO

PROJECT NAME
NORTH SERVICE ROAD
ASPHALT PLANT
BURLINGTON, ONTARIO
SITE PLAN No.: T.B.D.

TITLE
SITE GRADING PLAN
SHEET 4 of 4

PROJECT No. 20036
DRAWING No. C-106
SCALE 1:250 (0 5 10 15 20 25)

S:\20036\WORKING_Current\20036-Site Servicing and Grading.dwg
Plotted: Tuesday, August 24, 2021 2:29:09 PM By: Rob Barnett




## LEGEND

EXISTING SANITARY SEWER
EXISTING WATERMAIN
EXISTING EMBANKMENT
EXISTING POST & WIRE FENCE
EXISTING CHAIN LINK FENCE
EXISTING OVERHEAD HIGH VOLTAGE HYDRO LINES
EXISTING OVERHEAD HYDRO/UTILITY LINES
EXISTING DITCH/DRAINAGE CHANNEL
EXISTING CONCRETE RETAINING WALL
EXISTING GUIDERAIL

EXISTING PEDESTAL/ ELECTRICAL BOX
EXISTING HYDRO POLE
EXISTING TREE/SHRUB
EXISTING CULVERT
EXISTING DRIPLINE/ CANOPY LIMITS
LIMITS OF SIGNIFICANT WOODLOT
WETLAND LIMITS
EXISTING RIP RAP, SIZE AS NOTED
EXISTING WET AREAS

PROPOSED SANITARY SEWERS
PROPOSED STORM SEWERS
PROPOSED CATCHBASIN\ DITCH INLET
PROPOSED CATCHBASIN MANHOLE
PROPOSED HEADWALL PER OPSD 804.030 c/w GRATE PER OPSD 804.050
PROPOSED WATERMAIN
PROPOSED WATER VALVE/ CURB STOP
PROPOSED HYDRANT COMPLETE WITH BOLLARDS
PROPOSED HDPE CULVERT, SIZE AS NOTED

PROPOSED EMBANKMENT
PROPOSED SWALE/CHANNEL
PROPOSED RETAINING WALL, TO BE DESIGNED BY OTHERS
PROPOSED GATE
PROPOSED ROCK CHECK DAM PER OPSD 219.210
PROPOSED CONCRETE PAD
PROPOSED RIP RAP, SIZE AS NOTED

### STM STRUCTURES

| STRUCTURE | OPSD | INVERTS |
|---|---|---|
| CB1 | RLCB | SE INV:122.62 |
| CBMH1 | OPSD 701.010 | NW INV:121.27 S INV:121.15 |
| CBMH2 | OPSD 701.010 | N INV:120.84 SE INV:120.25 |
| CBMH5 | OPSD 701.010 | NW INV:117.21 E INV:117.16 |
| CBMH8 | OPSD 701.010 | NW INV:116.93 SE INV:116.81 |
| CBMH9 | OPSD 701.010 | NW INV:116.09 SE INV:115.97 |
| DI–1 | DICB–1200X600 | E INV:118.15 |
| MH3 | OPSD 701.010 | NW INV:119.61 SE INV:119.05 |
| MH6 | OPSD 701.010 | W INV:117.03 SE INV:116.98 |
| MH7 | OPSD 701.010 | W INV:118.08 SE INV:117.84 |

REGIONAL APPROVAL:
REGION DESIGN OF WATER &/OR WASTWATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANARDS & SPECIFICATIONS & LOCATION APPROVAL FROM AREA MUNICIPALITY.

SIGNED:_____ DATED: _____
INFRASTRUCTURE PLANNING & POLICY

The Applicant should be aware that the approval of the water system on private property is the responsibility of the Local Municipality. Regardless, the Applicant must ensure that the Region of Halton's standards and specifications are met. (The Water and Wastewater Linear Design Manual may be obtained thru the Data Management Group at 905–825–6032) Furthermore, all water quality tests must be completed to the Region of Halton's satisfaction, before the water supply can be turned on.

NOTES TO CONTRACTOR:
1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER–GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 2.0 | AUG. 2021 | RB | ISSUED FOR SITE PLAN APPROVAL |
| 1.1 | JULY 2021 | RB | REVISED PER REGION OF HALTON, WASTE MANAGEMENT COMMENTS |
| 1.0 | JUNE 2021 | RB | ISSUED FOR REVIEW |

DESIGN RB CHK'D
DRAWN RB CHK'D
DATE May 27, 2021

BENCH MARK NOTE:
UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION
INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631–6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT
KING PAVING AND CONSTRUCTION COMPANY
3385 HARVESTER ROAD, BURLINGTON ONTARIO

PROJECT NAME
NORTH SERVICE ROAD
ASPHALT PLANT
BURLINGTON, ONTARIO
SITE PLAN No.: T.B.D.

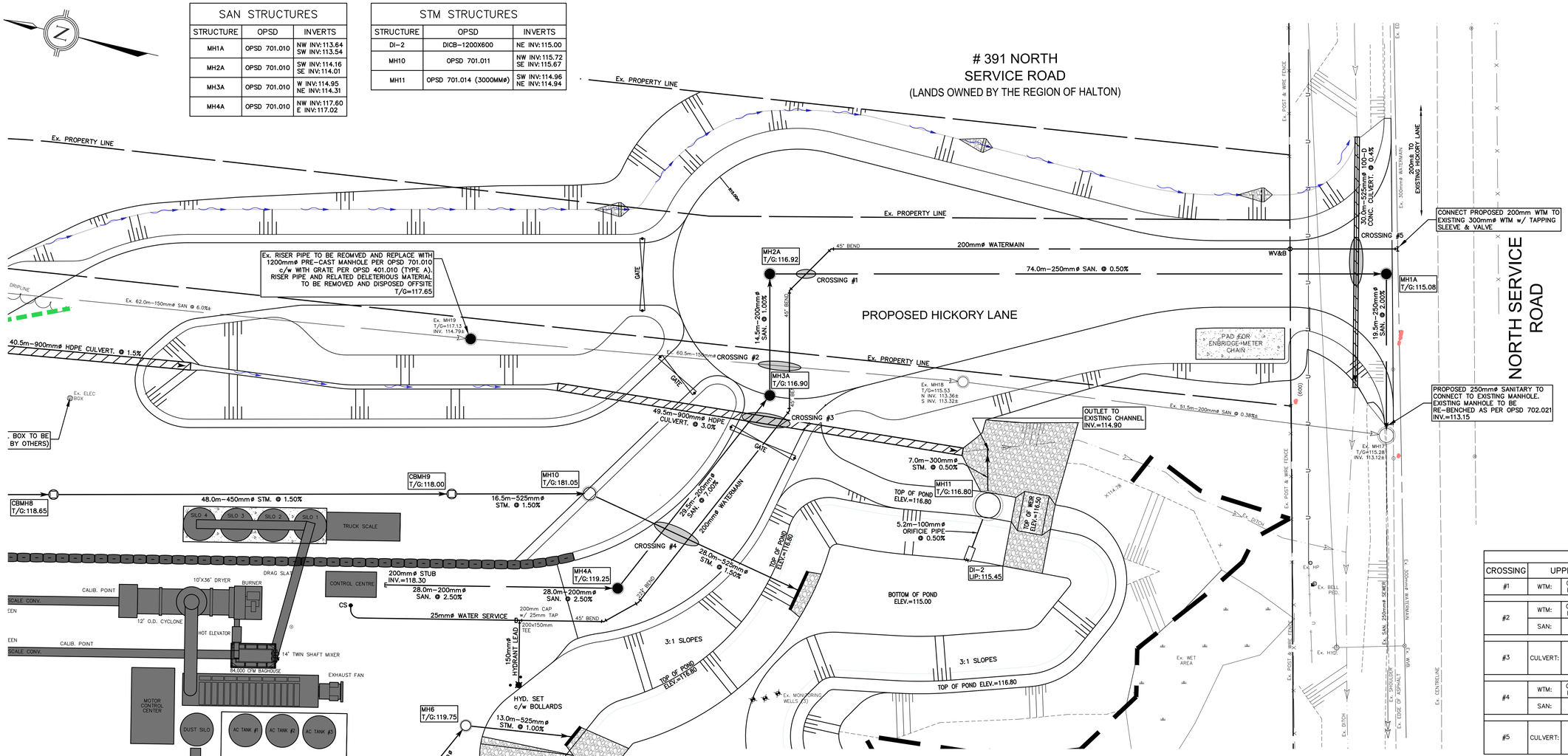
TITLE
SITE SERVICING PLAN
SHEET 1 of 2

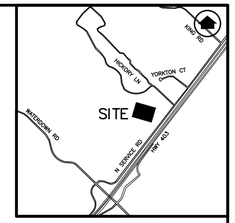
PROJECT No. 20036
DRAWING No. C–107
SCALE 1:250 (0 5 10 15 20 25)

S:\20036\WORKING_Current\20036–Site Servicing and Grading.dwg
Plotted: Tuesday, August 24, 2021 2:29:22 PM By: Rob Barnett

| SAN STRUCTURES | | |
|---|---|---|
| STRUCTURE | OPSD | INVERTS |
| MH1A | OPSD 701.010 | NW INV:113.64<br>SW INV:113.54 |
| MH2A | OPSD 701.010 | SW INV:114.16<br>SE INV:114.01 |
| MH3A | OPSD 701.010 | W INV:114.95<br>NE INV:114.31 |
| MH4A | OPSD 701.010 | NW INV:117.60<br>E INV:117.02 |

| STM STRUCTURES | | |
|---|---|---|
| STRUCTURE | OPSD | INVERTS |
| DI-2 | DICB-1200X600 | NE INV:115.00 |
| MH10 | OPSD 701.011 | NW INV:115.72<br>SE INV:115.67 |
| MH11 | OPSD 701.014 (3000MMø) | SW INV:114.96<br>NE INV:114.94 |

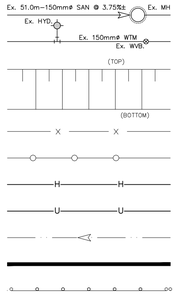



KEY MAP
N.T.S.

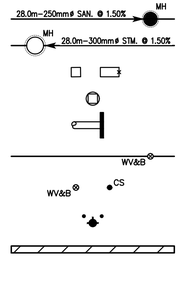
| CROSSING TABLE | | | | | |
|---|---|---|---|---|---|
| CROSSING | UPPER PIPE | | LOWER PIPE | | CLEARANCE |
| #1 | WTM: | OBV. = 115.10±<br>INV. = 114.90± | SAN: | OBV. = 114.19<br>INV. = 113.99 | 0.71m± |
| #2 | WTM: | OBV. = 115.20±<br>INV. = 115.00± | Ex. SAN: | OBV. = 113.63<br>INV. = 113.48 | 1.37m± |
| | SAN: | OBV. = 114.47<br>INV. = 114.27 | | | 0.84m |
| #3 | CULVERT: | OBV. = 116.67<br>INV. = 115.77 | WTM: | OBV. = 115.25<br>INV. = 115.05 | 0.52m |
| | | | SAN: | OBV. = 115.29<br>INV. = 115.09 | 0.48m |
| #4 | WTM: | OBV. = 117.05±<br>INV. = 116.85± | STM: | OBV. = 116.04<br>INV. = 115.52 | 0.81m± |
| | SAN: | OBV. = 116.58<br>INV. = 116.38 | | | 0.34m |
| #5 | CULVERT: | OBV. = 114.98<br>INV. = 114.46 | WTM: | OBV. = 113.50±<br>INV. = 113.30± | 0.96m± |
| | | | SAN: | OBV. = 113.86<br>INV. = 113.66 | 0.60m |

## LEGEND

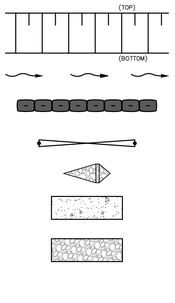



EXISTING SANITARY SEWER
EXISTING WATERMAIN
EXISTING EMBANKMENT
EXISTING POST & WIRE FENCE
EXISTING CHAIN LINK FENCE
EXISTING OVERHEAD HIGH VOLTAGE HYDRO LINES
EXISTING OVERHEAD HYDRO/UTILITY LINES
EXISTING DITCH/DRAINAGE CHANNEL
EXISTING CONCRETE RETAINING WALL
EXISTING GUIDERAIL

EXISTING PEDESTAL/ ELECTRICAL BOX
EXISTING HYDRO POLE
EXISTING TREE/SHRUB
EXISTING CULVERT
EXISTING DRIPLINE/ CANOPY LIMITS
LIMITS OF SIGNIFICANT WOODLOT
WETLAND LIMITS
EXISTING RIP RAP, SIZE AS NOTED
EXISTING WET AREAS




PROPOSED SANITARY SEWERS
PROPOSED STORM SEWERS
PROPOSED CATCHBASIN\ DITCH INLET
PROPOSED CATCHBASIN MANHOLE
PROPOSED HEADWALL PER OPSD 804.030 c/w GRATE PER OPSD 804.050
PROPOSED WATERMAIN
PROPOSED WATER VALVE/ CURB STOP
PROPOSED HYDRANT COMPLETE WITH BOLLARDS
PROPOSED HDPE CULVERT, SIZE AS NOTED




PROPOSED EMBANKMENT
PROPOSED SWALE/CHANNEL
PROPOSED RETAINING WALL, TO BE DESIGNED BY OTHERS
PROPOSED GATE
PROPOSED ROCK CHECK DAM PER OPSD 219.210
PROPOSED CONCRETE PAD
PROPOSED RIP RAP, SIZE AS NOTED

REGIONAL APPROVAL:
**REGION DESIGN OF WATER &/OR WASTWATER SERVICES APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANARDS & SPECIFICATIONS & LOCATION APPROVAL FROM AREA MUNICIPALITY.**

SIGNED:_____ DATED: _____
INFRASTRUCTURE PLANNING & POLICY

The Applicant should be aware that the approval of the water system on private property is the responsibility of the Local Municipality. Regardless, the Applicant must ensure that the Region of Halton's standards and specifications are met. (The Water and Wastewater Linear Design Manual may be obtained thru the Data Management Group at 905-825-6032) Furthermore, all water quality tests must be completed to the Region of Halton's satisfaction, before the water supply can be turned on.

NOTES TO CONTRACTOR:
1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 2.0 | AUG. 2021 | RB | ISSUED FOR SITE PLAN APPROVAL |
| 1.1 | JULY 2021 | RB | REVISED PER REGION OF HALTON, WASTE MANAGEMENT COMMENTS |
| 1.0 | JUNE 2021 | RB | ISSUED FOR REVIEW |

| | | | | |
|---|---|---|---|---|
| DESIGN | RB | CHK'D | | DATE: May 27, 2021 |
| DRAWN | RB | CHK'D | | |

**BENCH MARK NOTE:**
UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION

INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT
KING PAVING AND CONSTRUCTION COMPANY
3385 HARVESTER ROAD, BURLINGTON ONTARIO

PROJECT NAME
NORTH SERVICE ROAD
ASPHALT PLANT
BURLINGTON, ONTARIO
SITE PLAN No.: T.B.D.

TITLE
SITE SERVICING PLAN
SHEET 2 of 2

PROJECT No. 20036
DRAWING No. C-108
SCALE

S:\20036\WORKING_Current\20036-Site Servicing and Grading.dwg
Plotted: Tuesday, August 24, 2021 2:29:36 PM By: Rob Barnett

project #: 21-310

## PLANT SCHEDULE L-1

| TREES | BOTANICAL NAME | COMMON NAME | SIZE | COND. | MATURE HT. (M) | MATURE SPR. (M) | O.C. (M) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 2 | Acer saccharinum | Silver Maple | 50mm Cal. | W.B. | 20.0 | 18.0 | As Shown | Native to Ontario |
| 11 | Populus grandidentata | Largetooth Aspen | 50mm Cal. | W.B. | 18.0 | 8.0 | As Shown | Native to Ontario |
| 2 | Quercus rubra | Red Oak | 50mm Cal. | W.B. | 18.0 | 17.0 | As Shown | Native to Ontario |
| SHRUBS | BOTANICAL NAME | COMMON NAME | SIZE | COND. | MATURE HT. (M) | MATURE SPR. (M) | O.C. (M) | REMARKS |
| 8 | Cornus racemosa | Gray Dogwood | 80cm | #3 cont. | 3.0 | 3.0 | 2.5 | Native to Ontario |
| 22 | Rosa blanda | Meadow Rose | 30cm | #2 cont. | 1.3 | 1.5 | 1.4 | Native to Ontario |
| 22 | Sambucus canadensis | Elderberry | 50cm | #3 cont. | 2.5 | 2.0 | 1.75 | Native to Ontario |
| 33 | Viburnum lentago | Nannyberry | 50cm | #3 cont. | 5.0 | 1.75 | 1.5 | Native to Ontario |

## LANDSCAPE NOTES:

1. All work to be carried out in accordance with by-laws and codes having jurisdiction over site location.
2. Complete all work to the satisfaction of the Landscape Architect.
3. Report any changes, discrepancies or substitutions to the Landscape Architect for review. Obtain approval from the Landscape Architect before proceeding.
4. It is the contractor's responsibility to determine existing service locations.
5. Exact locations of plant material will be determined by placement of site services such as hydro vaults, meters, utilities roof rain water leaders, driveways, light standards, etc.
6. All plant material locations to be staked or marked out and approved by Landscape Architect prior to installation.
7. Supply all plant material in accordance with the Canadian Standards for Nursery Stock (8th ed.).
8. Install plant material according to details shown.
9. Supply and place mulch in accordance with Canadian Landscape Standard (Section 10, Mulching). Disturbed soil areas around trees and shrubs are to be covered with shredded conifer bark mulch such as 'Cedar Bark Mulch' by All Treat Farms or 'Classic Cedar Mulch' by Gro-Bark, or approved equivalent. Alternative mulches must be approved by the Landscape Architect.
10. Contractor to utilize layout dimensions where provided
11. Provide planting bed area as noted on the drawing or to accommodate mature size of plant material.
12. All support systems must be removed by the contractor at time of final acceptance. No extras will be paid to complete this work
13. Supply and place topsoil in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) to a minimum depth of 150mm unless otherwise specified.
14. Supply and place sod in accordance with Canadian Landscape Standard (Section 7, Lawns & Grass and Section 8, Turfgrass Sod)unless otherwise specified.
15. Supply and place seed in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) unless otherwise specified. All 5:1 or greater slopes to be seeded with tacifier. Contractor to provide necessary erosion control protection as required to ensure soil stabilization and proper seed germination.
16. All dimensions in meters unless otherwise noted.
17. If discrepancies arise between plant material count shown on drawing and plant list, the drawing shall be considered correct.
18. Contractor to provide minimum one (1) year warranty (including trees on municipal property) from date accepted on all work unless otherwise specified.
19. Any site plan or grading and servicing shown is for information only. Refer to approved drawings.
20. Not for construction unless stamped, signed and dated by Landscape Architect.
21. Drawings not to be reproduced without written consent from Landscape Architect.
22. Approval of landscape plan to be obtained from municipality.
23. All plant material to be planted a minimum of 1.0m from any swales or ditches.
24. For grading and servicing information refer to the consulting Engineer's drawings.
25. For lighting information and power distribution refer to the electrical consultant's drawings.

## TERRASEED NOTES:

1. Areas to be seeded with naturalization mix shall receive an application of naturalization seed at the rate of 25-30 kg/hectare or 2 kg/100m² for spot applications, in the following mixture:

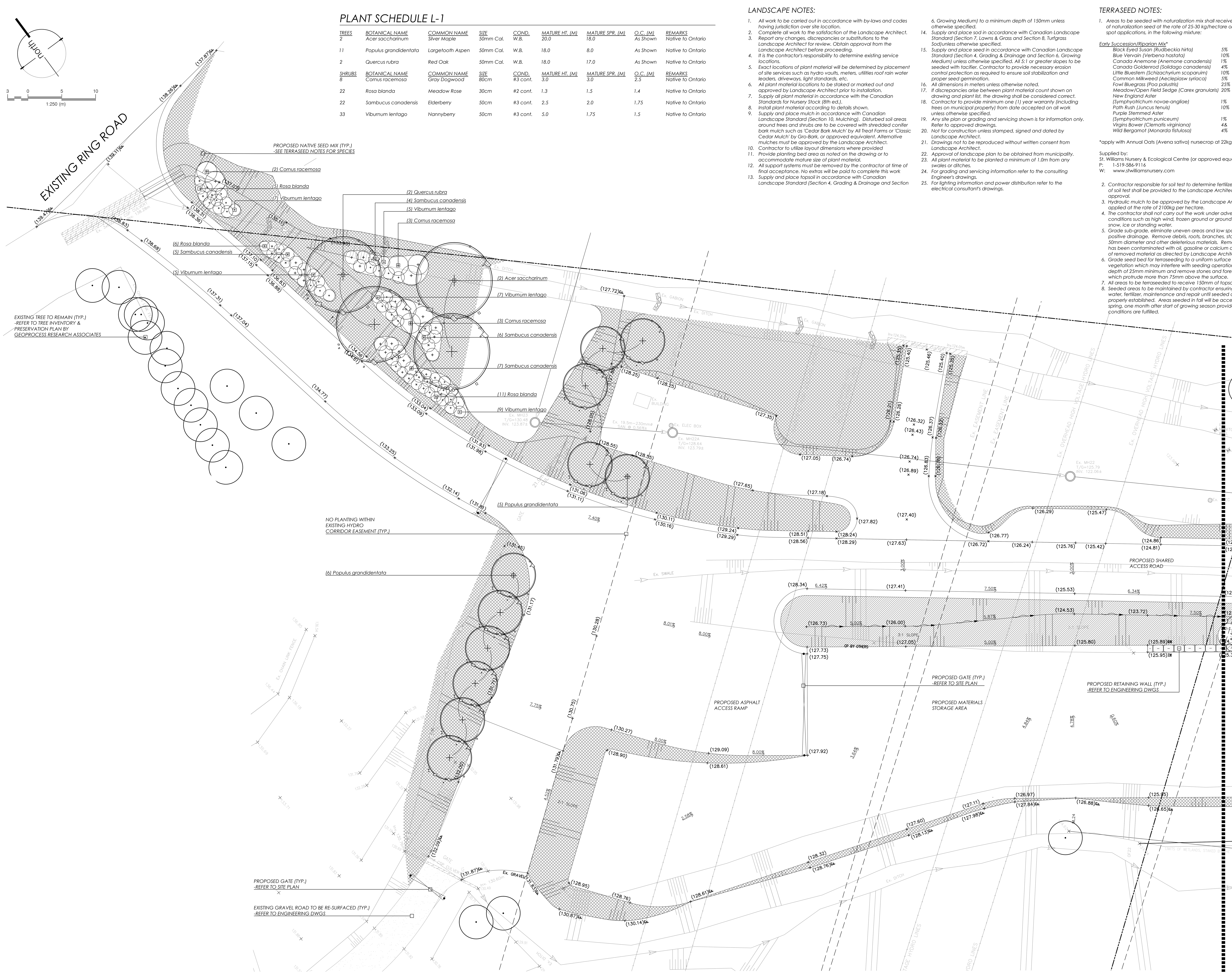
Early Succession/Riparian Mix*

| | |
|---|---|
| Black Eyed Susan (Rudbeckia hirta) | 5% |
| Blue Vervain (Verbena hastata) | 10% |
| Canada Anemone (Anemone canadensis) | 1% |
| Canada Goldenrod (Solidago canadensis) | 4% |
| Little Bluestem (Schizachyrium scoparuim) | 10% |
| Common Milkweed (Aeclepiasw syriaca) | 5% |
| Fowl Bluegrass (Poa palustris) | 25% |
| Meadow/Open Field Sedge (Carex granularis) | 20% |
| New England Aster (Symphyotrichum novae-angliae) | 1% |
| Path Rush (Juncus tenuis) | 10% |
| Purple Stemmed Aster (Symphyotrichum puniceum) | 1% |
| Virgins Bower (Clematis virginiana) | 4& |
| Wild Bergamot (Monarda fistulosa) | 4% |

*apply with Annual Oats (Avena sativa) nursecrop at 22kg/hectare.

Supplied by:
St. Williams Nursery & Ecological Centre (or approved equal)
P: 1-519-586-9116
W: www.stwilliamsnursery.com

2. Contractor responsible for soil test to determine fertilizer rates. Results of soil test shall be provided to the Landscape Architect for review and approval.
3. Hydraulic mulch to be approved by the Landscape Architect shall be applied at the rate of 2100kg per hectare.
4. The contractor shall not carry out the work under adverse weather conditions such as high wind, frozen ground or ground covered with snow, ice or standing water.
5. Grade sub-grade, eliminate uneven areas and low spots, ensure positive drainage. Remove debris, roots, branches, stones in excess of 50mm diameter and other deleterious materials. Remove subsoil that has been contaminated with oil, gasoline or calcium chloride, dispose of removed material as directed by Landscape Architect.
6. Grade seed bed for terraseeding to a uniform surface and remove vegetation which may interfere with seeding operations. Loosen soil to depth of 25mm minimum and remove stones and foreign material which protrude more than 75mm above the surface.
7. All areas to be terraseeded to receive 150mm of topsoil.
8. Seeded areas to be maintained by contractor ensuring adequate water, fertilizer, maintenance and repair until seeded areas are properly established. Areas seeded in fall will be accepted in following spring, one month after start of growing season provided acceptance conditions are fulfilled.




FILE:Z:\Project_files\Projects_2021\21-310_King Paving_North Service Rd_Burlington\01-Current_Drawings\21-310L.dwg LAYOUT:1_Landscape
LAST SAVED BY:Station13, Friday, October 13, 2023 8:17:19 AM PLOTTED BY:Carleigh Pope Friday, October 13, 2023 8:20:28 AM

KEY MAP - N.T.S.




LEGEND

| | |
|---|---|
| property line | |
| existing tree to remain | |
| proposed deciduous tree | |
| proposed coniferous tree | |
| proposed shrub | |
| existing elevation | 122.45 |
| proposed elevation | (119.70) |
| min. 150mm topsoil, fine grade & sod | |
| native seed mix (refer to terraseed notes) | |

NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

REVISIONS/ SUBMISSIONS

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2022-02-03 | Issued for client review |
| 2 | 2022-02-11 | Issued for first submission |
| 3 | 2023-10-13 | Issued for second submission |

STAMP

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS MARIO PATITUCCI OALA MEMBER

CLIENT

MUNICIPALITY
City of Burlington

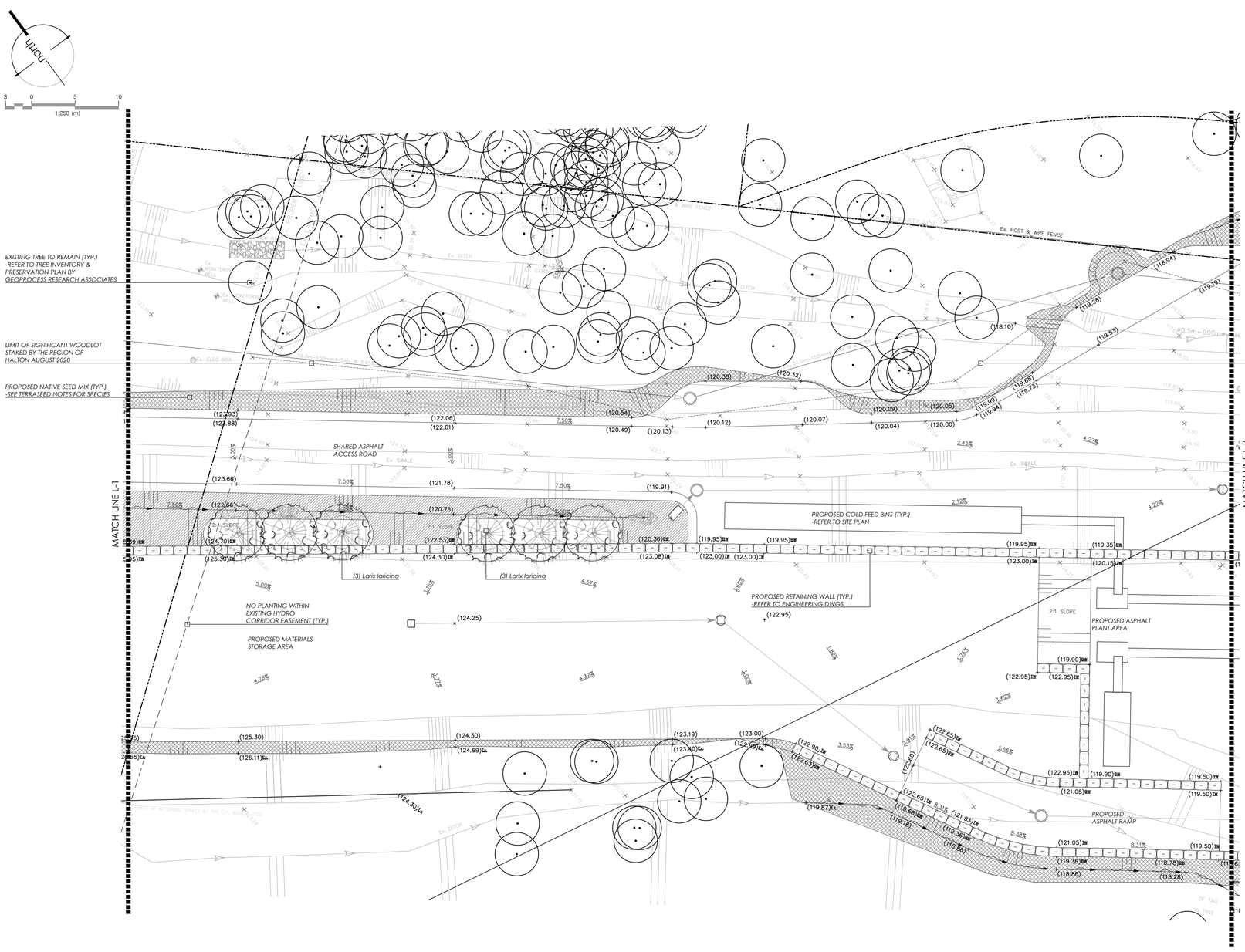
PROJECT
King Paving & Construction
Proposed Asphalt Plant
291 North Service Road

MUNICIPAL FILE NUMBER

SHEET
Landscape Plan
L-1


adesso design inc.
landscape architecture
218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
t. 905.526.8876
www.adessodesigninc.ca

project #: 21-310




## PLANT SCHEDULE L-2

| TREES | BOTANICAL NAME | COMMON NAME | SIZE | COND. | MATURE HT. (M) | MATURE SPR. (M) | O.C. (M) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 6 | *Larix laricina* | *Tamarack* | *200cm Ht.* | *W.B.* | *8.0* | *8.0* | *As Shown* | *Native to Ontario* |

## LANDSCAPE NOTES:

1. All work to be carried out in accordance with by-laws and codes having jurisdiction over site location.
2. Complete all work to the satisfaction of the Landscape Architect.
3. Report any changes, discrepancies or substitutions to the Landscape Architect for review. Obtain approval from the Landscape Architect before proceeding.
4. It is the contractor's responsibility to determine existing service locations.
5. Exact locations of plant material will be determined by placement of site services such as hydro vaults, meters, utilities roof rain water leaders, driveways, light standards, etc.
6. All plant material locations to be staked or marked out and approved by Landscape Architect prior to installation.
7. Supply all plant material in accordance with the Canadian Standards for Nursery Stock (8th ed.).
8. Install plant material according to details shown.
9. Supply and place mulch in accordance with Canadian Landscape Standard (Section 10, Mulching). Disturbed soil areas around trees and shrubs are to be covered with shredded conifer bark mulch such as 'Cedar Bark Mulch' by All Treat Farms or 'Classic Cedar Mulch' by Gro-Bark, or approved equivalent. Alternative mulches must be approved by the Landscape Architect.
10. Contractor to utilize layout dimensions where provided
11. Provide planting bed area as noted on the drawing or to accommodate mature size of plant material.
12. All support systems must be removed by the contractor at time of final acceptance. No extras will be paid to complete this work
13. Supply and place topsoil in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) to a minimum depth of 150mm unless otherwise specified.
14. Supply and place sod in accordance with Canadian Landscape Standard (Section 7, Lawns & Grass and Section 8, Turfgrass Sod)unless otherwise specified.
15. Supply and place seed in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) unless otherwise specified. All 3:1 or greater slopes to be seeded with tacifier. Contractor to provide necessary erosion control protection as required to ensure soil stabilization and proper seed germination.
16. All dimensions in meters unless otherwise noted.
17. If discrepancies arise between plant material count shown on drawing and plant list, the drawing shall be considered correct.
18. Contractor to provide minimum one (1) year warranty (including trees on municipal property) from date accepted on all work unless otherwise specified.
19. Any site plan or grading and servicing shown is for information only. Refer to approved drawings.
20. Not for construction unless stamped, signed and dated by Landscape Architect.
21. Drawings not to be reproduced without written consent from Landscape Architect.
22. Approval of landscape plan to be obtained from municipality.
23. All plant material to be planted a minimum of 1.0m from any swales or ditches.
24. For grading and servicing information refer to the consulting Engineer's drawings.
25. For lighting information and power distribution refer to the electrical consultant's drawings.

## TERRASEED NOTES:

1. Areas to be seeded with naturalization mix shall receive an application of naturalization seed at the rate of 25-30 kg/hectare or 2 kg/100m² for spot applications, in the following mixture:

| *Early Succession/Riparian Mix** | |
|---|---|
| *Black Eyed Susan (Rudbeckia hirta)* | *5%* |
| *Blue Vervain (Verbena hastata)* | *10%* |
| *Canada Anemone (Anemone canadensis)* | *1%* |
| *Canada Goldenrod (Solidago canadensis)* | *4%* |
| *Little Bluestem (Schizachyrium scoparium)* | *10%* |
| *Common Milkweed (Aeclepiasw syriaca)* | *5%* |
| *Fowl Bluegrass (Poa palustris)* | *25%* |
| *Meadow/Open Field Sedge (Carex granularis)* | *20%* |
| *New England Aster (Symphyotrichum novae-angliae)* | *1%* |
| *Path Rush (Juncus tenuis)* | *10%* |
| *Purple Stemmed Aster (Symphyotrichum puniceum)* | *1%* |
| *Virgins Bower (Clematis virginiana)* | *4&* |
| *Wild Bergamot (Monarda fistulosa)* | *4%* |

*apply with Annual Oats (Avena sativa) nursecrop at 22kg/hectare.

Supplied by:
St. Williams Nursery & Ecological Centre (or approved equal)
P: 1-519-586-9116
W: www.stwilliamsnursery.com

2. Contractor responsible for soil test to determine fertilizer rates. Results of soil test shall be provided to the Landscape Architect for review and approval.
3. Hydraulic mulch to be approved by the Landscape Architect shall be applied at the rate of 2100kg per hectare.
4. The contractor shall not carry out the work under adverse weather conditions such as high wind, frozen ground or ground covered with snow, ice or standing water.
5. Grade sub-grade, eliminate uneven areas and low spots, ensure positive drainage. Remove debris, roots, branches, stones in excess of 50mm diameter and other deleterious materials. Remove subsoil that has been contaminated with oil, gasoline or calcium chloride, dispose of removed material as directed by Landscape Architect.
6. Grade seed bed for terraseeding to a uniform surface and remove vegetation which may interfere with seeding operations. Loosen soil to depth of 25mm minimum and remove stones and foreign material which protrude more than 75mm above the surface.
7. All areas to be terraseeded to receive 150mm of topsoil.
8. Seeded areas to be maintained by contractor ensuring adequate water, fertilizer, maintenance and repair until seeded areas are properly established. Areas seeded in fall will be accepted in following spring, one month after start of growing season provided acceptance conditions are fulfilled.

KEY MAP - N.T.S.




LEGEND

- property line
- existing tree to remain
- proposed deciduous tree
- proposed coniferous tree
- proposed shrub
- existing elevation
- proposed elevation
- min. 150mm topsoil, fine grade & sod
- native seed mix (refer to terraseed notes)

NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

REVISIONS/ SUBMISSIONS

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2022-02-03 | Issued for client review |
| 2 | 2022-02-11 | Issued for first submission |
| 3 | 2023-10-13 | Issued for second submission |

STAMP

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS MEMBER

CLIENT

MUNICIPALITY
City of Burlington

PROJECT
King Paving & Construction
Proposed Asphalt Plant
291 North Service Road

MUNICIPAL FILE NUMBER

SHEET
Landscape Plan
L-2

adesso design inc.
landscape architecture
218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
t. 905.526.8876
www.adessodesigninc.ca

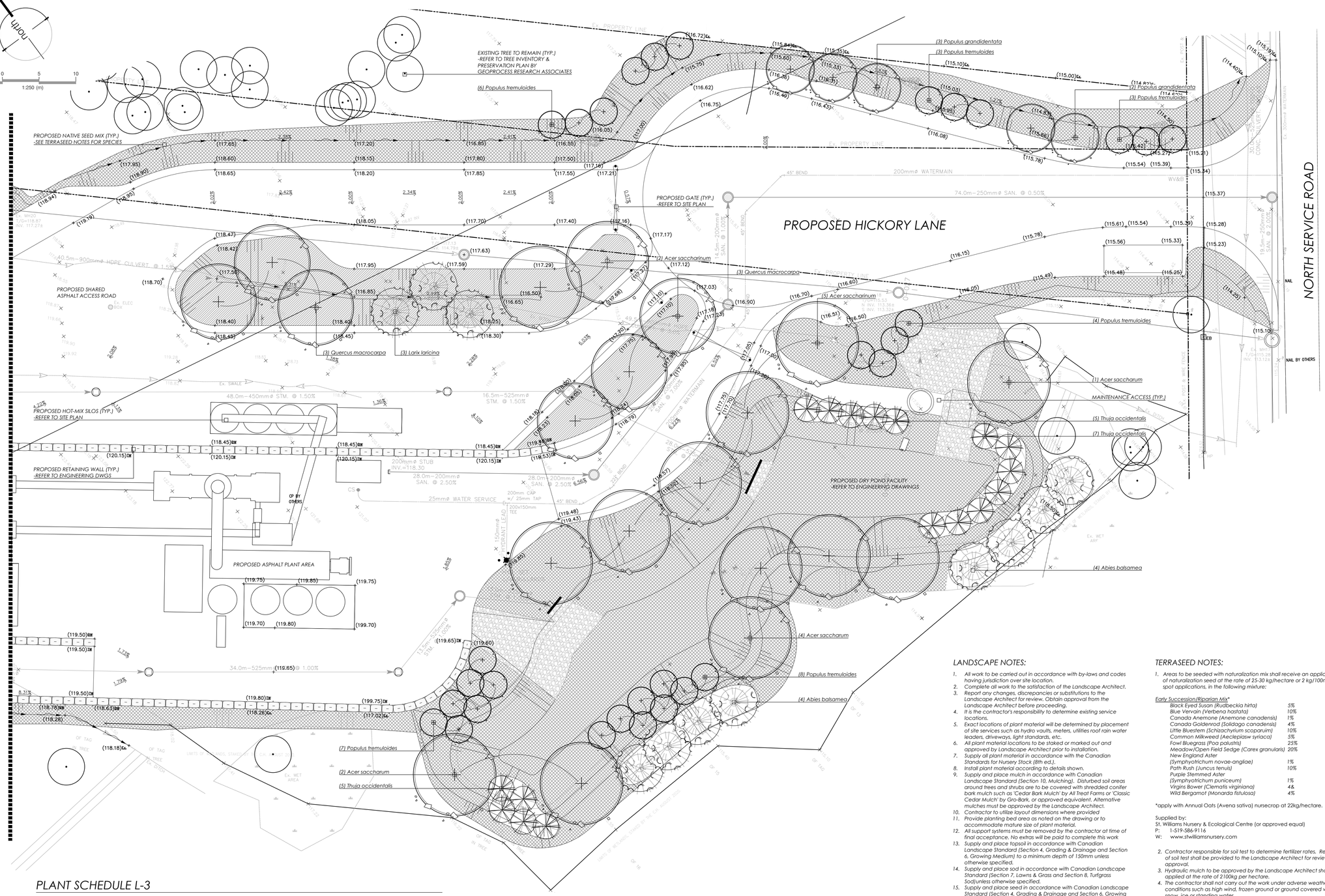
REF:\\Project Files\Projects_2021\21-310 King Paving\King Paving - Proj & Burlington\01 Current Drawings\21-310_King - LAYOUT.vwx Landscape
LAST SAVED BY: jbastian3, Friday, October 13, 2023 8:17:19 AM PLOTTED BY: Carleigh Hope Friday, October 13, 2023 8:25:54 AM

project #: 21-310

north

3 0 5 10
1:250 (m)

MATCH LINE L-2




## PLANT SCHEDULE L-3

| TREES | BOTANICAL NAME | COMMON NAME | SIZE | COND. | MATURE HT. (M) | MATURE SPR. (M) | O.C. (M) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 8 | Abies balsamea | Balsam Fir | 200cm Ht. | W.B. | 18.0 | 7.0 | As Shown | Native to Ontario |
| 7 | Acer saccharinum | Silver Maple | 50mm Cal. | W.B. | 20.0 | 18.0 | As Shown | Native to Ontario |
| 7 | Acer saccharum | Sugar Maple | 50mm Cal. | W.B. | 30.0 | 18.0 | As Shown | Native to Ontario |
| 3 | Larix laricina | Tamarack | 200cm Ht. | W.B. | 8.0 | 8.0 | As Shown | Native to Ontario |
| 5 | Populus grandidentata | Largetooth Aspen | 50mm Cal. | W.B. | 18.0 | 8.0 | As Shown | Native to Ontario |
| 31 | Populus tremuloides | Trembling Aspen | 50mm Cal. | W.B. | 12.0 | 5.0 | As Shown | Native to Ontario |
| 6 | Quercus macrocarpa | Burr Oak | 50mm Cal. | W.B. | 20.0 | 13.0 | As Shown | Native to Ontario |
| 17 | Thuja occidentalis | Eastern White Cedar | 180cm Ht. | W.B. | 10.0 | 4.0 | As Shown | Native to Ontario |

### LANDSCAPE NOTES:

1. All work to be carried out in accordance with by-laws and codes having jurisdiction over site location.
2. Complete all work to the satisfaction of the Landscape Architect.
3. Report any changes, discrepancies or substitutions to the Landscape Architect for review. Obtain approval from the Landscape Architect before proceeding.
4. It is the contractor's responsibility to determine existing service locations.
5. Exact locations of plant material will be determined by placement of site services such as hydro vaults, meters, utilities roof rain water leaders, driveways, light standards, etc.
6. All plant material locations to be staked or marked out and approved by Landscape Architect prior to installation.
7. Supply all plant material in accordance with the Canadian Standards for Nursery Stock (8th ed.).
8. Install plant material according to details shown.
9. Supply and place mulch in accordance with Canadian Landscape Standard (Section 10, Mulching). Disturbed soil areas around trees and shrubs are to be covered with shredded conifer bark mulch such as 'Cedar Bark Mulch' by All Treat Farms or 'Classic Cedar Mulch' by Gro-Bark, or approved equivalent. Alternative mulches must be approved by the Landscape Architect.
10. Contractor to utilize layout dimensions where provided
11. Provide planting bed area as noted on the drawing or to accommodate mature size of plant material.
12. All support systems must be removed by the contractor at time of final acceptance. No extras will be paid to complete this work
13. Supply and place topsoil in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) to a minimum depth of 150mm unless otherwise specified.
14. Supply and place sod in accordance with Canadian Landscape Standard (Section 7, Lawns & Grass and Section 8, Turfgrass Sod)unless otherwise specified.
15. Supply and place seed in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) unless otherwise specified. All 5:1 or greater slopes to be seeded with tacifier. Contractor to provide necessary erosion control protection as required to ensure soil stabilization and proper seed germination.
16. All dimensions in meters unless otherwise noted.
17. If discrepancies arise between plant material count shown on drawing and plant list, the drawing shall be considered correct.
18. Contractor to provide minimum one (1) year warranty (including trees on municipal property) from date accepted on all work unless otherwise specified.
19. Any site plan or grading and servicing shown is for information only. Refer to approved drawings.
20. Not for construction unless stamped, signed and dated by Landscape Architect.
21. Drawings not to be reproduced without written consent from Landscape Architect.
22. Approval of landscape plan to be obtained from municipality.
23. All plant material to be planted a minimum of 1.0m from any swales or ditches.
24. For grading and servicing information refer to the consulting Engineer's drawings.
25. For lighting information and power distribution refer to the electrical consultant's drawings.

### TERRASEED NOTES:

1. Areas to be seeded with naturalization mix shall receive an application of naturalization seed at the rate of 25-30 kg/hectare or 2 kg/100m² for spot applications, in the following mixture:

| Early Succession/Riparian Mix* | |
|---|---|
| Black Eyed Susan (Rudbeckia hirta) | 5% |
| Blue Vervain (Verbena hastata) | 10% |
| Canada Anemone (Anemone canadensis) | 1% |
| Canada Goldenrod (Solidago canadensis) | 4% |
| Little Bluestem (Schizachyrium scoparum) | 10% |
| Common Milkweed (Asclepiasw syriaca) | 5% |
| Fowl Bluegrass (Poa palustris) | 25% |
| Meadow/Open Field Sedge (Carex granularis) | 20% |
| New England Aster (Symphyotrichum novae-angliae) | 1% |
| Path Rush (Juncus tenuis) | 10% |
| Purple Stemmed Aster (Symphyotrichum puniceum) | 1% |
| Virgins Bower (Clematis virginiana) | 4& |
| Wild Bergamot (Monarda fistulosa) | 4% |

*apply with Annual Oats (Avena sativa) nursecrop at 22kg/hectare.

Supplied by:
St. Williams Nursery & Ecological Centre (or approved equal)
P: 1-519-586-9116
W: www.stwilliamsnursery.com

2. Contractor responsible for soil test to determine fertilizer rates. Results of soil test shall be provided to the Landscape Architect for review and approval.
3. Hydraulic mulch to be approved by the Landscape Architect shall be applied at the rate of 2100kg per hectare.
4. The contractor shall not carry out the work under adverse weather conditions such as high wind, frozen ground or ground covered with snow, ice or standing water.
5. Grade sub-grade, eliminate uneven areas and low spots, ensure positive drainage. Remove debris, roots, branches, stones in excess of 50mm diameter and other deleterious materials. Remove subsoil that has been contaminated with oil, gasoline or calcium chloride, dispose of removed material as directed by Landscape Architect.
6. Grade seed bed for terraseeding to a uniform surface and remove vegetation which may interfere with seeding operations. Loasen soil to depth of 25mm minimum and remove stones and foreign material which protrude more than 75mm above the surface.
7. All areas to be terraseeded to receive 150mm of topsoil.
8. Seeded areas to be maintained by contractor ensuring adequate water, fertilizer, maintenance and repair until seeded areas are properly established. Areas seeded in fall will be accepted in following spring, one month after start of growing season provided acceptance conditions are fulfilled.

KEY MAP - N.T.S.




LEGEND

- property line
- existing tree to remain
- proposed deciduous tree
- proposed coniferous tree
- proposed shrub
- existing elevation
- proposed elevation
- min. 150mm topsoil, fine grade & sod
- native seed mix (refer to terraseed notes)

NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

REVISIONS/ SUBMISSIONS

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2022-02-03 | Issued for client review |
| 2 | 2022-02-11 | Issued for first submission |
| 3 | 2023-10-13 | Issued for second submission |

STAMP

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — MARK PATTERSON — 1044 — MEMBER

CLIENT

MUNICIPALITY
City of Burlington

PROJECT
King Paving & Construction
Proposed Asphalt Plant
291 North Service Road

MUNICIPAL FILE NUMBER

SHEET
Landscape Plan

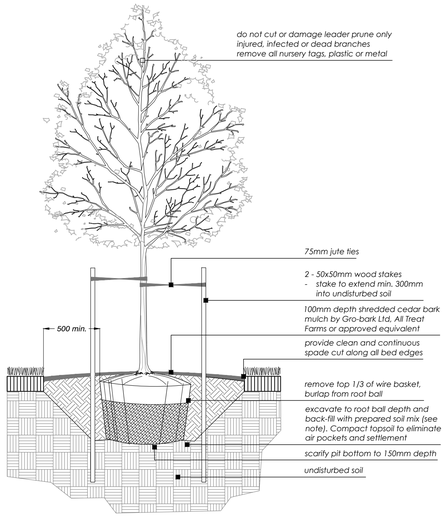
L-3

adesso design inc.
landscape architecture

218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
t. 905.526.8876
www.adessodesigninc.ca

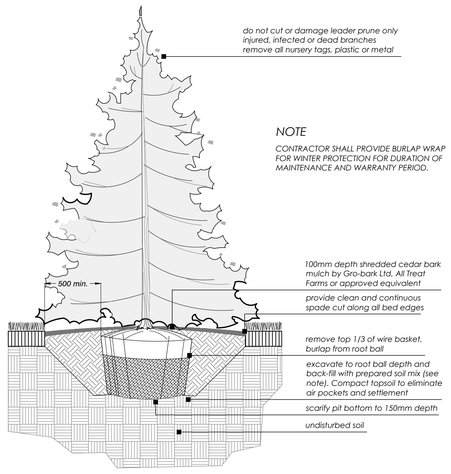
REFS:Project Files\Drawings\21-310_City Paving\North Service Rd, Burlington\01 Current Drawings\21-310_Key Layout.dwg, 2023-10-13 8:57:19 AM, PLOTTED BY:Christine Frost
LAST SAVED BY:Christine Frost, Friday, October 13, 2023 8:57:19 AM

project #: 21-310



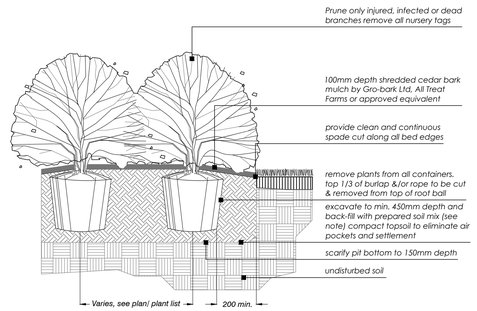

Balled & Burlapped/ Wire Basket Deciduous Tree — 1 / L-4

SCALE: NTS



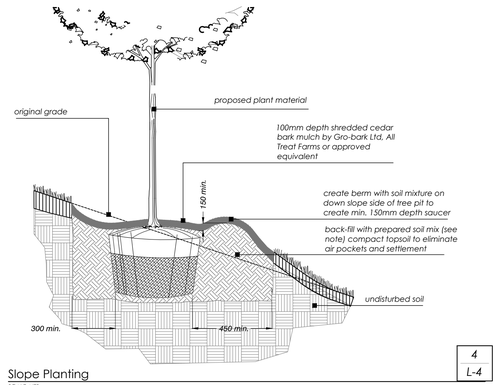

Balled & Burlapped/ Wire Basket Coniferous Tree — 3 / L-4

SCALE: NTS




Container Grown Shrub — 3 / L-4

SCALE: NTS




Slope Planting — 4 / L-4

SCALE: NTS

## PLANTING NOTES:

1. *Soil mixture: four (4) parts native soil, one (1) part well rotted compost.If existing soil is not suitable provide triple mix topsoil or approved equal.*
2. *Saucer shall be soaked with water and mulched immediately following planting.*
3. *Massed shrubs shall be planted in continuous mulched beds unless otherwise noted.*
4. *Staking schedule:*
   - *< 30mm caliper size/ 2500mm ht. - one stake*
   - *> 30mm caliper size/ 2500mm ht. - two stakes*
   - *> 70mm caliper - three stakes*
5. *All support systems must be removed once tree is established.*
6. *All trees to be straight and planted vertically regardless of slope.*
7. *Top of root flare shall be positioned 50mm above grade.*
8. The following depths of soil are required for planting:
   - 15cm topsoil for sod;
   - 30cm of topsoil for perennials;
   - 45cm of topsoil for shrubs;
   - 90cm of topsoil for trees

*NOT FOR CONSTRUCTION*
*ISSUED FOR REVIEW & COMMENTS ONLY*

REVISIONS/ SUBMISSIONS

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2022-02-03 | Issued for client review |
| 2 | 2022-02-11 | Issued for first submission |
| 3 | 2023-10-13 | Issued for second submission |

STAMP

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — MARIO PATITUCCI — OALA — MEMBER

CLIENT

MUNICIPALITY
City of Burlington

PROJECT
King Paving & Construction
Proposed Asphalt Plant
291 North Service Road

MUNICIPAL FILE NUMBER

SHEET
Details — L-4

adesso design inc.
landscape architecture

218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
t. 905.526.8876
www.adessodesigninc.ca

REVIT Project Path: P:\2021\21-310 King Paving - Work Sharing\4 Architectural\Current Drawings\21-310_King - LANDSCAPE 4 Planting Details LAST SAVED BY: Barbara Liu Friday, October 13, 2023 8:37:19 AM ACHITECTURE\Design Files\ Friday, October 13, 2023 8:39:39 AM

592790 592875 592960 4797360 593045 593130

4797360 4797280 4797200 4797120 4797040

## Legend

- Study Area
- Compartment A (woodland per by-law)
- Site Plan
- Dripline-Staked by ROH (August 2020)

Tree Preservation Plan

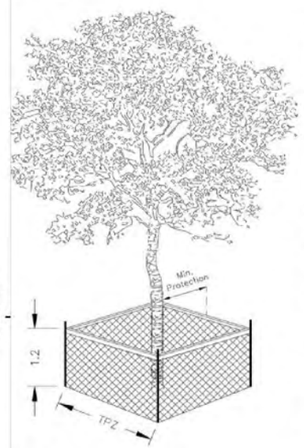
- Minimum Tree Protection Zone for planning purposes
- Tree Protection Fencing
- Removal Tree
- Retention Tree
- Hazard Trees for Removal

N

0 12 24 36 48 60 m

Prepared using QGIS and Google Satellite Imagery

**Tree Protection and Preservation Specification No.: SS12A**




TREE PROTECTION BARRIER

**Detail TP-1 – Tree Protection Detail.**

| Trunk Diameter (DBH) [2] | Minimum Tree Protection Zone (MTPZ) Distances Required [3] | Critical Root Zone (CRZ) Distances Required [3&4] |
|---|---|---|
| < 10 cm | 1.8 m | 1.8 m |
| 11 - 40 cm | 2.4 m | 4.0 m |
| 41 - 50 cm | 3.0 m | 5.0 m |
| 51 - 60 cm | 3.6 m | 6.0 m |
| 61 - 70 cm | 4.2 m | 7.0 m |
| 71 - 80 cm | 4.8 m | 8.0 m |
| 81 - 90 cm | 5.4 m | 9.0 m |
| 91 - 100+ cm | 6.0 m | 10.0 m |

NOTES:

[1] The roots of a tree can extend from the trunk to approximately 2-3 times the distance of the drip line.
[2] Diameter at breast height (DBH) is the measurement of tree trunk taken at 1.4 metres above ground.
[3] Minimum Tree Protection Zone and Critical Root Zone distances are to be measured from the outside edge of the tree base towards the drip line and may be limited by an existing paved surface, provided the existing paved surface remains intact throughout the construction work and is subject to Section 6 of this specification.
[4] Where work is being performed beyond the Minimum Tree Protection Zone but within the Critical Root Zone the works are subject to Section 8 of this specification.

Notes
1.Removal of vegetation should be avoided during the period of March 31st to August 31st as per the Migratory Birds Convention Act, 1994

GeoProcess RESEARCH ASSOCIATES

| | | | |
|---|---|---|---|
| CREATED BY: | MD | PROJECT NO.: | P2020-433 |
| CHECKED BY: | JR | DATE: | Oct 01, 2021 |

**Map 7.**

Tree Preservation Plan
Full Scale

# TREE PRESERVATION PLAN
# 291 NORTH SERVICE ROAD
KING PAVING LTD.

G:\My Drive\Projects\P 2020-433 King Paving Asphalt Plant EIS\Mapping\GIS\Projects\DH\TPP_DH.qgz