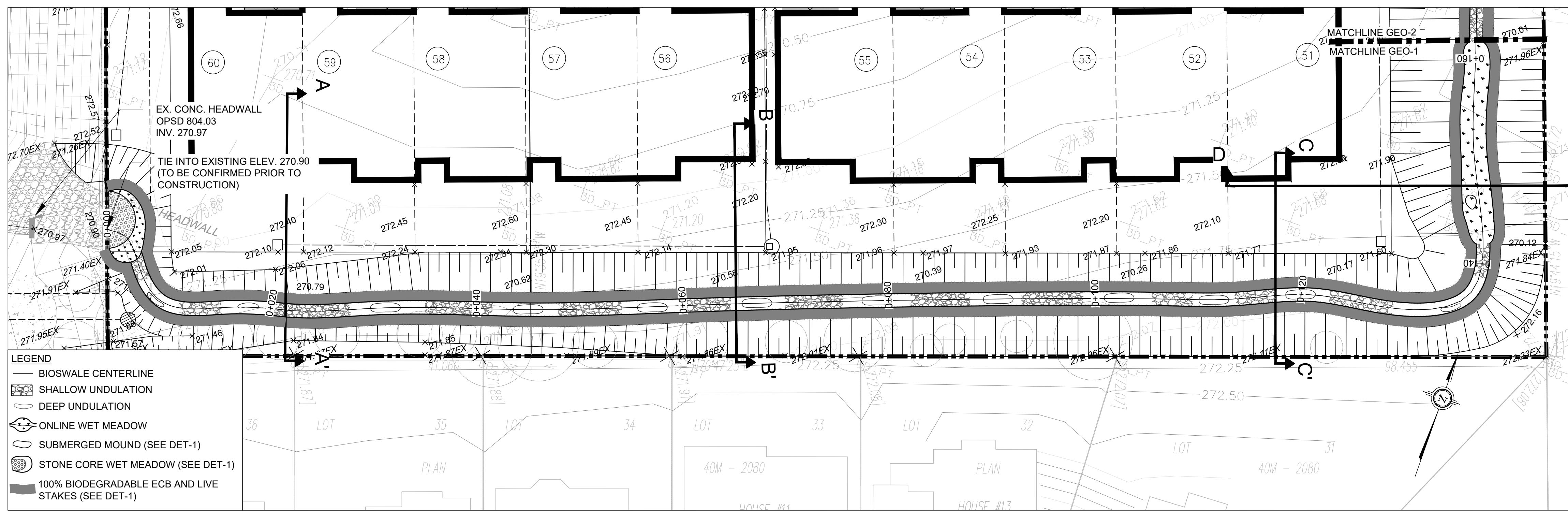
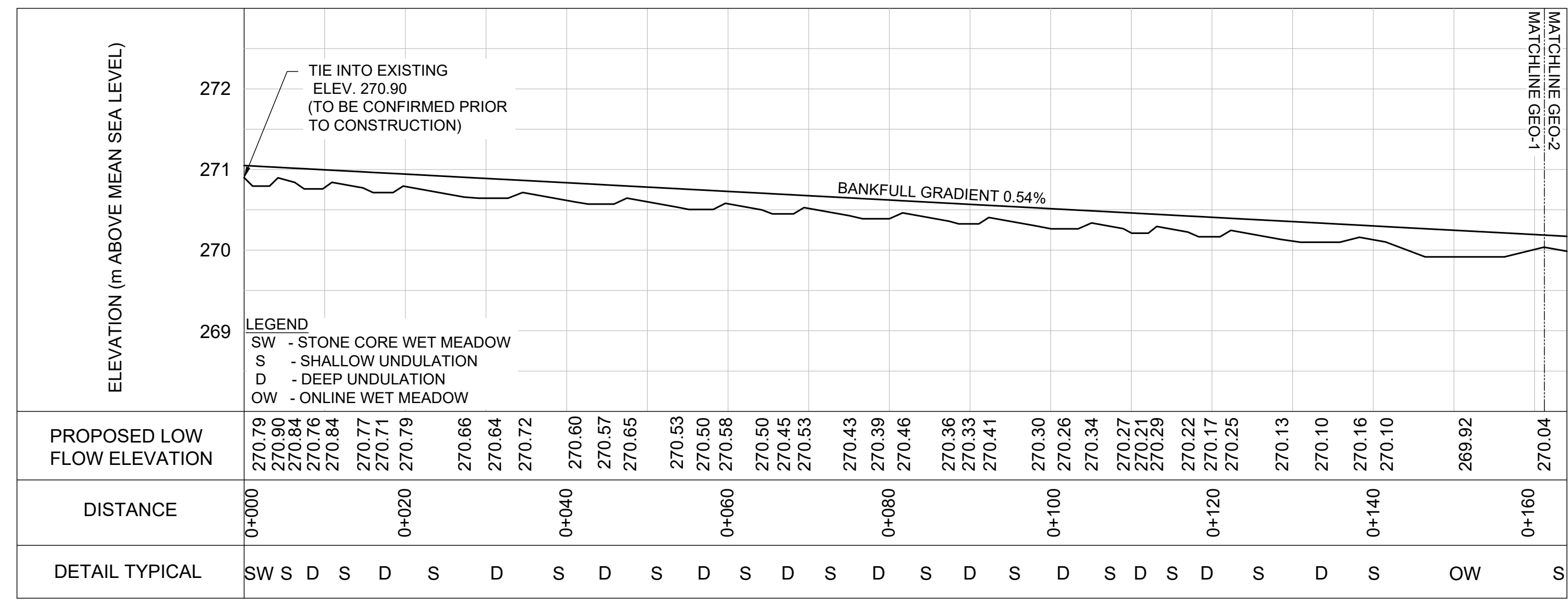


KEY MAP
N.T.S.



PLANFORM
1:250



PROFILE
H = 1:500; V=1:50

GENERAL NOTES

1. ALL CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE PERMITS MUST BE KEPT ON SITE DURING CONSTRUCTION FOR REFERENCE.
2. THE CONTRACTOR MUST NOTIFY THE CONTRACT ADMINISTRATOR AND CONSERVATION AUTHORITY OF THE INTENT TO COMMENCE WORK AT LEAST 48 HOURS IN ADVANCE.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES.
4. LAYOUT MUST BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
5. DESIGNER OR REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION TO PROVIDE GUIDANCE ON INSTALLATION OF THE FEATURES.

TIMING OF WORKS

1. WORKS SHALL BE COMPLETED BETWEEN JULY 1ST TO MARCH 31ST.
2. TREE CLEARING SHOULD BE COMPLETED OUTSIDE THE BIRD NESTING SEASON TO COMPLY WITH THE FEDERAL MIGRATORY BIRDS CONVENTION ACT. ANY TREES THAT REQUIRE REMOVAL OUTSIDE OF THIS TIMING WINDOW MUST FIRST BE INSPECTED BY A QUALIFIED BIOLOGIST 24-48 HOURS PRIOR TO REMOVAL TO DETERMINE THE PRESENCE OF NESTING BIRDS.
3. THE WEATHER FORECAST SHOULD BE CONTINUALLY MONITORED TO ENSURE THAT WORKS ARE UNDERTAKEN ONLY DURING FAVOURABLE WEATHER CONDITIONS.
4. COMPLETE THE WORKS WITH MINIMAL AVOIDABLE INTERRUPTIONS ONCE THEY COMMENCE.

SITE AND MATERIAL MANAGEMENT

1. ALL CONSTRUCTION EQUIPMENT AND MATERIALS (IMPORTED OR EXCAVATED) MUST BE STORED AT LEAST 30 m AWAY FROM ANY WATERBODY IN A STABLE AREA ABOVE THE ACTIVE FLOODPLAIN, OR IN A DESIGNATED STAGING/STORAGE AREA.
2. IN THE EVENT OF AN UNEXPECTED STORM, ALL UNFIXED ITEMS THAT HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW MUST BE MOVED TO A STABLE AREA ABOVE ACTIVE FLOODPLAIN.
3. STOCKPILES MUST BE LOCATED OUTSIDE THE ISOLATED WORK AREAS.
4. STABILIZE STOCKPILED SOILS THAT ARE STORED FOR PROLONGED PERIODS WITH THE APPLICATION OF A NURSE CROP AT A RATE OF 60 kg/ha.
5. STABILIZE, TEMPORARILY OR PERMANENTLY, ANY DISTURBED AREAS AS WORK PROGRESSES, OR SOON AS CONDITIONS ALLOW, ON SOILS THAT WILL BE EXPOSED FOR PROLONG PERIODS; TEMPORARILY INSTALL A BIODEGRADABLE EROSION CONTROL BLANKET ON EXPOSED SOILS, OR APPLY A NURSE CROP AT A RATE OF 60 KG/HA.
6. MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT POSSIBLE.
7. ALL VEGETATION, ADJACENT TO THE WORK AREA, MUST BE PROTECTED AND DELINEATED WITH CONSTRUCTION FENCING OR TREE PROTECTION BARRIERS.
8. ALL GRADES IN THE AREA REGULATED BY THE CONSERVATION AUTHORITY MUST BE MAINTAINED OR MATCHED, UNLESS OTHERWISE AUTHORIZED BY THE APPLICABLE PERMIT.

EROSION AND SEDIMENT CONTROL

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO START OF WORKS.
2. SEDIMENT CONTROLS MUST BE INSPECTED DAILY TO ENSURE THAT THEY ARE IN GOOD REPAIR AND FUNCTIONING AS INTENDED.
3. EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED DURING CONSTRUCTION, AND ANY REQUIRED REPAIRS OR REPLACEMENTS MUST BE COMPLETED WITHIN 24 HOURS AFTER THEY HAVE BEEN IDENTIFIED DURING THE MONITORING.
4. EROSION AND SEDIMENT CONTROL MEASURES MAY REQUIRE PERIODIC ADJUSTMENTS TO REFLECT CHANGING SITE CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THESE ADJUSTMENTS TO ENSURE PROPER FUNCTION.
5. ANY CHANGES TO THE EROSION AND SEDIMENT CONTROL PLAN BEYOND MINOR ADJUSTMENTS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL SUPPLIES MUST BE KEPT ON SITE IN ORDER TO FACILITATE IMMEDIATE REPAIRS AND/OR UPGRADES AS NEEDED.
7. ALL TEMPORARY SEDIMENT CONTROLS MUST BE REMOVED AFTER THE CONTRACT ADMINISTRATOR DEEMS THE SITE TO BE STABLE.

DELETERIOUS SUBSTANCE CONTROL/SPILL MANAGEMENT

1. PREVENT THE RELEASE OF SEDIMENT, SEDIMENT-LADEN WATER, RAW CONCRETE, CONCRETE LEACHATE OR ANY OTHER DELETERIOUS SUBSTANCES INTO ANY WATERBODY, RAINWATER STORM SEWER SYSTEM.
2. ENSURE EQUIPMENT AND MACHINERY ARE IN GOOD OPERATING CONDITION (POWER WASHED), FREE OF LEAKS, EXCESS OIL, AND GREASE.
3. NO EQUIPMENT REFUELLING OR SERVICING SHOULD BE UNDERTAKEN WITHIN 30 m OF ANY WATERCOURSE OR SURFACE WATER DRAINAGE.
4. A SPILL CONTAINMENT KIT MUST BE READILY ACCESSIBLE ON SITE IN THE EVENT OF A RELEASE OF A DELETERIOUS SUBSTANCE TO THE ENVIRONMENT. ON-SITE STAFF MUST BE TRAINED IN ITS USE.
5. THE CONTRACT ADMINISTRATOR MUST BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL OF DELETERIOUS SUBSTANCE.

WORK AREA ISOLATION

1. ALL WORK IN ISOLATED WORK AREAS MUST BE COMPLETED IN THE DRY. AN ADEQUATE NUMBER OF PUMPS MUST BE USED FOR UNWATERING.
2. THE UNWATERING DISCHARGE LOCATION MUST BE LOCATED AT LEAST 30 m FROM ANY WATERCOURSE OR WETLAND IN AN AREA WITH DENSE VEGETATIVE GROUNDCOVER, AND WHERE THE DISCHARGE CAN RETURN TO THE WATERBODY DOWNSTREAM OF THE WORK AREA OVER THE GROUNDCOVER.

5.	21/09/02	LD	THIRD DETAILED DESIGN SUBMISSION TO LSRCA
4.	21/05/04	LD	SECOND DETAILED DESIGN SUBMISSION TO LSRCA
3.	20/10/27	LD	FIRST DETAILED DESIGN SUBMISSION TO LSRCA
2.	MARCH 2019	LD	SECOND SUBMISSION LSRCA
1.	AUGUST 2018	LD	FIRST SUBMISSION LSRCA
	DATE	BY	REVISIONS

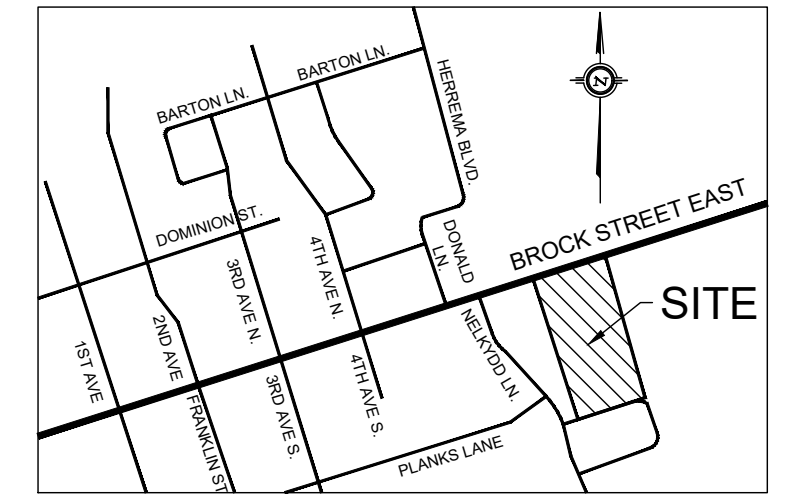
DESIGNED BY: PV
DRAWN BY: LD / BM
CHECKED BY: PV
DATE: SEPTEMBER 2, 2021

PAUL VILLARD
PRACTISING MEMBER
0957
ONTARIO
21/09/02

GEO MORPHIX
Geomorphology
Earth Science
Observations
36 Main Street North, PO Box 205
Campbellville, Ontario L0P 1B0
T: 416.920.0926
www.geomorphix.com

226 BROCK STREET EAST
WESTLANE DEVELOPMENT GROUP LTD.

BIOSWALE DESIGN
PLANFORM AND PROFILE



KEY MAP
N.T.S.

GENERAL NOTES

1. ALL CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE PERMITS MUST BE KEPT ON SITE DURING CONSTRUCTION FOR REFERENCE.
2. THE CONTRACTOR MUST NOTIFY THE CONTRACT ADMINISTRATOR AND CONSERVATION AUTHORITY OF THE INTENT TO COMMENCE WORK AT LEAST 48 HOURS IN ADVANCE.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES.
4. LAYOUT MUST BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
5. DESIGNER OR REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION TO PROVIDE GUIDANCE ON INSTALLATION OF THE FEATURES.

TIMING OF WORKS

1. WORKS SHALL BE COMPLETED BETWEEN JULY 1ST TO MARCH 31ST.
2. TREE CLEARING SHOULD BE COMPLETED OUTSIDE THE BIRD NESTING SEASON TO COMPLY WITH THE FEDERAL MIGRATORY BIRDS CONVENTION ACT. ANY TREES THAT REQUIRE REMOVAL OUTSIDE OF THIS TIMING WINDOW MUST FIRST BE INSPECTED BY A QUALIFIED BIOLOGIST 24-HOURS PRIOR TO REMOVAL TO DETERMINE THE PRESENCE OF NESTING BIRDS.
3. THE WEATHER FORECAST SHOULD BE CONTINUALLY MONITORED TO ENSURE THAT WORKS ARE UNDERTAKEN ONLY DURING FAVOURABLE WEATHER CONDITIONS.
4. COMPLETE THE WORKS WITH MINIMAL AVOIDABLE INTERRUPTIONS ONCE THEY COMMENCE.

SITE AND MATERIAL MANAGEMENT

1. ALL CONSTRUCTION EQUIPMENT AND MATERIALS (IMPORTED OR EXCAVATED) MUST BE STORED AT LEAST 30 m AWAY FROM ANY WATERBODY IN A STABLE AREA ABOVE THE ACTIVE FLOODPLAIN, OR IN A DESIGNATED STAGING/STORAGE AREA. IN THE EVENT OF AN UNEXPECTED STORM, ALL UNFIXED ITEMS THAT HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW MUST BE MOVED TO A STABLE AREA ABOVE ACTIVE FLOODPLAIN.
2. STOCKPILES MUST BE LOCATED OUTSIDE THE ISOLATED WORK AREAS.
3. STABILIZE STOCKPILED SOILS THAT ARE STORED FOR PROLONGED PERIODS WITH THE APPLICATION OF A NURSE CROP AT A RATE OF 60 KG/HA.
4. STABILIZE, TEMPORARILY OR PERMANENTLY, ANY DISTURBED AREAS AS WORK PROGRESSES, OR SOON AS CONDITIONS ALLOW. ON SOILS THAT WILL BE EXPOSED FOR PROLONG PERIODS, TEMPORARILY INSTALL A BIODEGRADABLE EROSION CONTROL BLANKET ON EXPOSED SOILS, OR APPLY A NURSE CROP AT A RATE OF 60 KG/HA.
5. MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT POSSIBLE.
6. ALL VEGETATION, ADJACENT TO THE WORK AREA, MUST BE PROTECTED AND DELINEATED WITH CONSTRUCTION FENCING OR THE PROTECTION BARRIERS.
7. ALL GRADES IN THE AREA REGULATED BY THE CONSERVATION AUTHORITY MUST BE MAINTAINED OR MATCHED, UNLESS OTHERWISE AUTHORIZED IN THE APPLICABLE PERMIT.

EROSION AND SEDIMENT CONTROL

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO START OF WORKS.
2. SEDIMENT CONTROLS MUST BE INSPECTED DAILY TO ENSURE THAT THEY ARE IN GOOD REPAIR AND FUNCTIONING AS INTENDED.
3. EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED DURING CONSTRUCTION, AND ANY REQUIRED REPAIRS OR REPLACEMENTS MUST BE COMPLETED WITHIN 24 HOURS AFTER THEY HAVE BEEN IDENTIFIED DURING THE MONITORING.
4. EROSION AND SEDIMENT CONTROLS SHOULD BE ADJUSTED TO REFLECT CHANGING SITE CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THESE ADJUSTMENTS TO ENSURE PROPER FUNCTION.
5. ANY CHANGES TO THE EROSION AND SEDIMENT CONTROL PLAN BEYOND MINOR ADJUSTMENTS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL SUPPLIES MUST BE KEPT ON SITE IN WORKS TO FACILITATE IMMEDIATE REPAIRS AND/OR UPGRADES AS NEEDED.
7. ALL TEMPORARY SEDIMENT CONTROLS MUST BE REMOVED AFTER THE CONTRACT ADMINISTRATOR DEEMS THE SITE TO BE STABLE.

DELETERIOUS SUBSTANCE CONTROL/SPILL MANAGEMENT

1. PREVENT THE RELEASE OF SEDIMENT, SEDIMENT-LADEN WATER, RAW CONCRETE, CONCRETE LEACHATE OR ANY OTHER DELETERIOUS SUBSTANCES INTO ANY WATERBODY, RAINWE OR STORM SEWER SYSTEM.
2. ENSURE EQUIPMENT AND MACHINERY ARE IN GOOD OPERATING CONDITION (POWER WASHED), FREE OF LEAKS, EXCESS OIL, AND GREASE.
3. NO EQUIPMENT REFUELLING OR SERVICING SHOULD BE UNDERTAKEN WITHIN 30 m OF ANY WATERCOURSE OR SURFACE WATER DRAINAGE.
4. A SPILL CONTAINMENT KIT MUST BE READILY ACCESSIBLE ON SITE IN THE EVENT OF A RELEASE OF A DELETERIOUS SUBSTANCE TO THE ENVIRONMENT. ON-SITE STAFF MUST BE TRAINED IN ITS USE.
5. THE CONTRACT ADMINISTRATOR MUST BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL OF DELETERIOUS SUBSTANCE.

WORK AREA ISOLATION

1. ALL WORK IN ISOLATED WORK AREAS MUST BE COMPLETED IN THE DRY. AN ADEQUATE NUMBER OF PUMPS MUST BE USED FOR UNWATERING.
2. THE UNWATERING DISCHARGE LOCATION MUST BE LOCATED AT LEAST 30 m FROM ANY WATERCOURSE OR WETLAND IN AN AREA WITH DENSE VEGETATIVE GROUNDCOVER, AND WHERE THE DISCHARGE CAN RETURN TO THE WATERBODY DOWNSTREAM OF THE WORK AREA OVER THE GROUNDCOVER.

5.	21/09/02	LD	THIRD DETAILED DESIGN SUBMISSION TO LSRCA
4.	21/05/04	LD	SECOND DETAILED DESIGN SUBMISSION TO LSRCA
3.	20/10/27	LD	FIRST DETAILED DESIGN SUBMISSION TO LSRCA
2.	MARCH 2019	LD	SECOND SUBMISSION LSRCA
1.	AUGUST 2018	LD	FIRST SUBMISSION LSRCA

DESIGNED BY: PV	CHECKED BY: PV
DRAWN BY: LD / BM	DATE: SEPTEMBER 2, 2021

PROFESSIONAL GEOSCIENTIST
PAULEY VILLARD
PRACTISING MEMBER
0957
ONTARIO
21/09/02

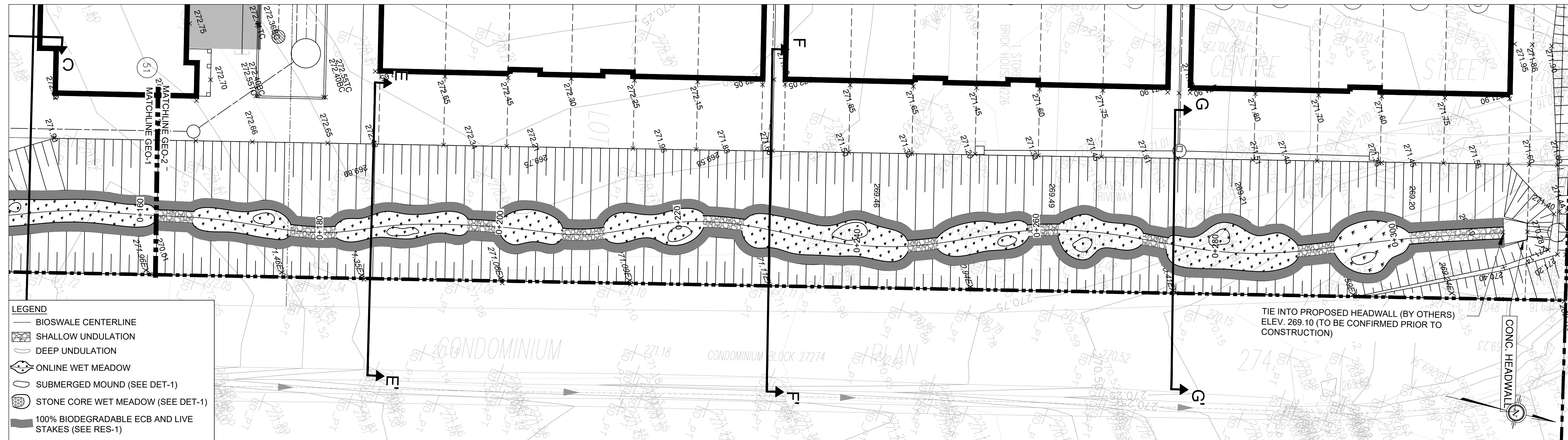
Geomorphology
Earth Science
Observations

36 Main Street North, PO Box 205
Campbellville, Ontario L0P 1B0

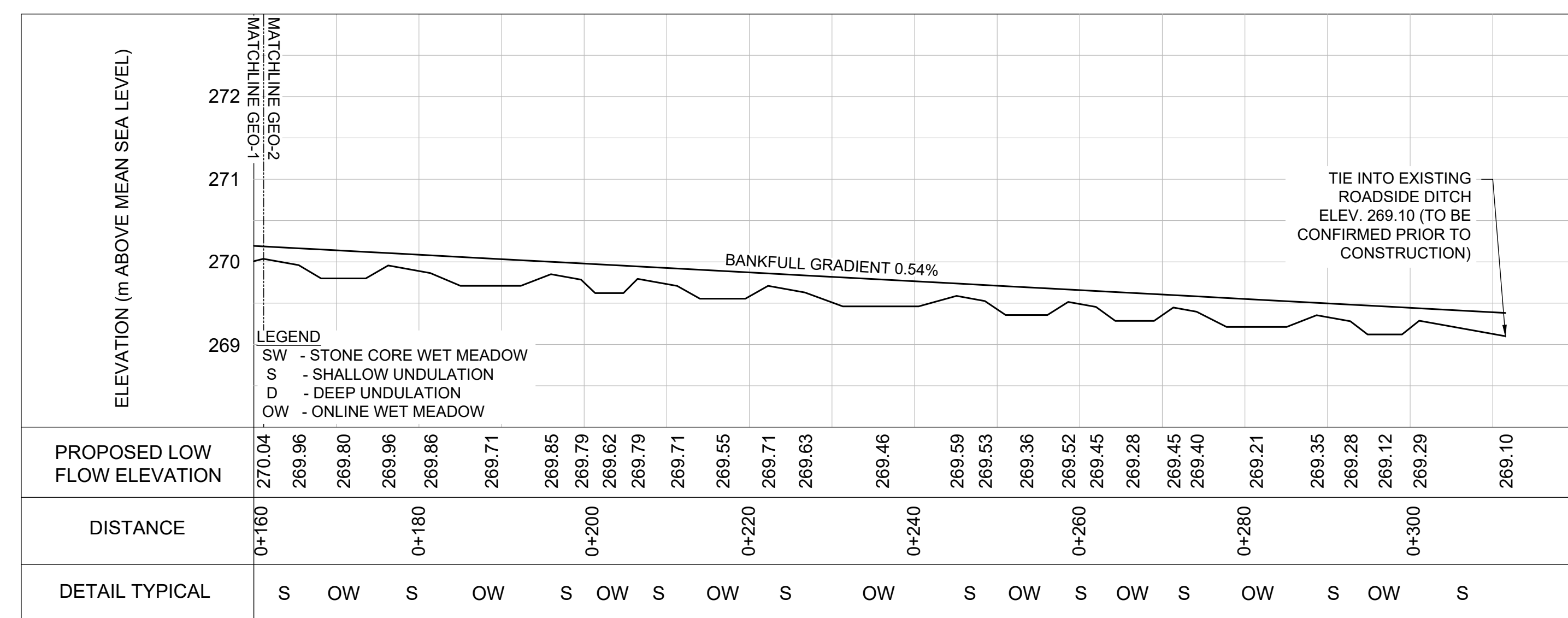
T: 416.920.0926
www.geomorphix.com

226 BROCK STREET EAST
WESTLANE DEVELOPMENT GROUP LTD.

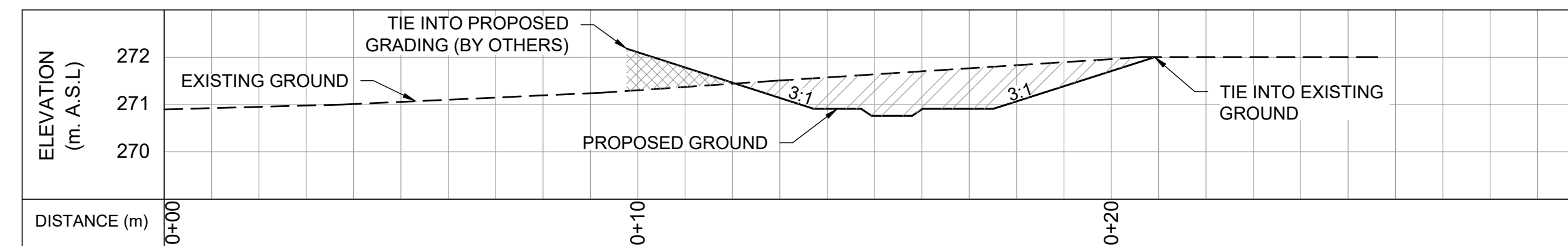
BIOSWALE DESIGN
PLANFORM AND PROFILE



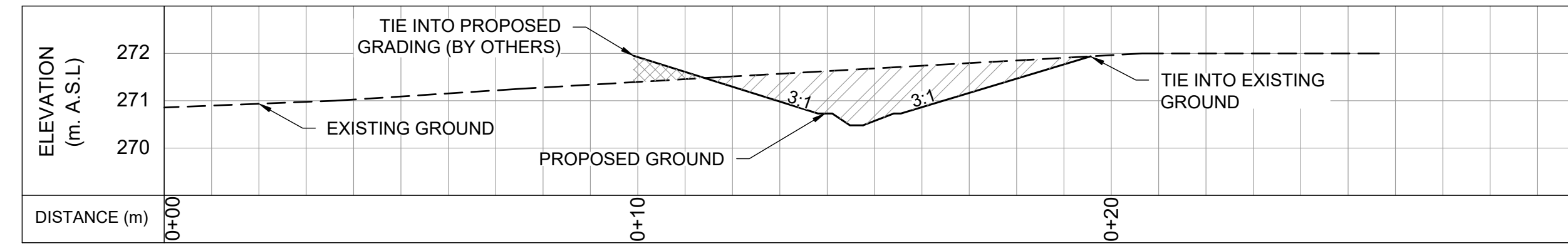
PLANFORM
1:250



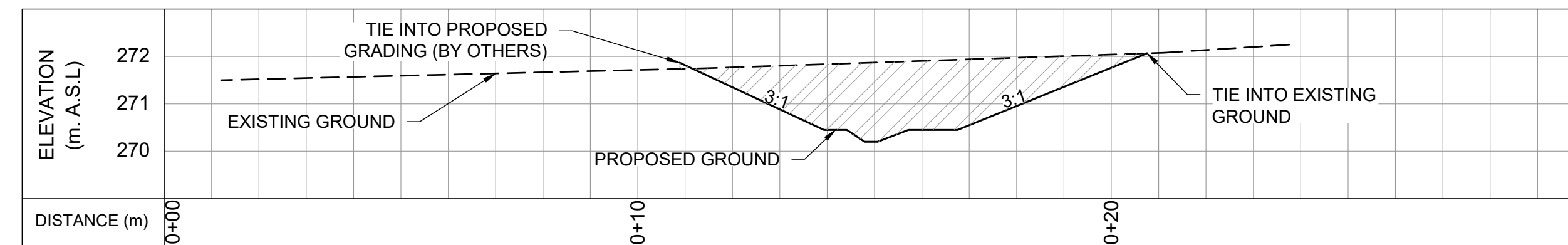
PROFILE
H = 1:500; V=1:50



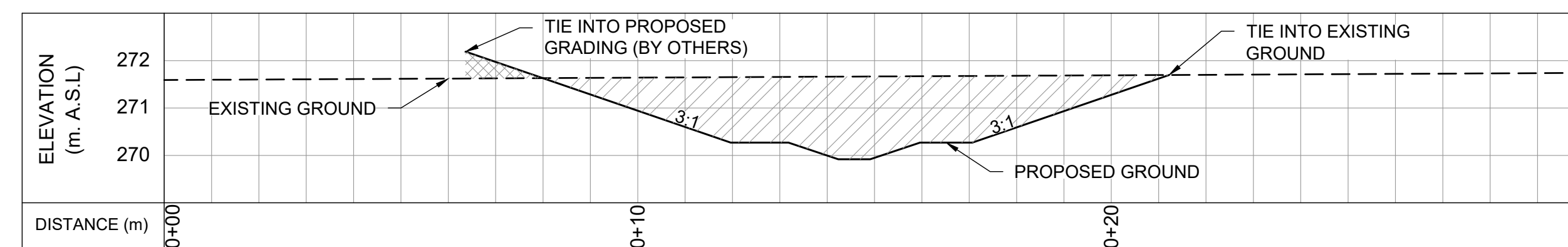
CROSS SECTION A-A'



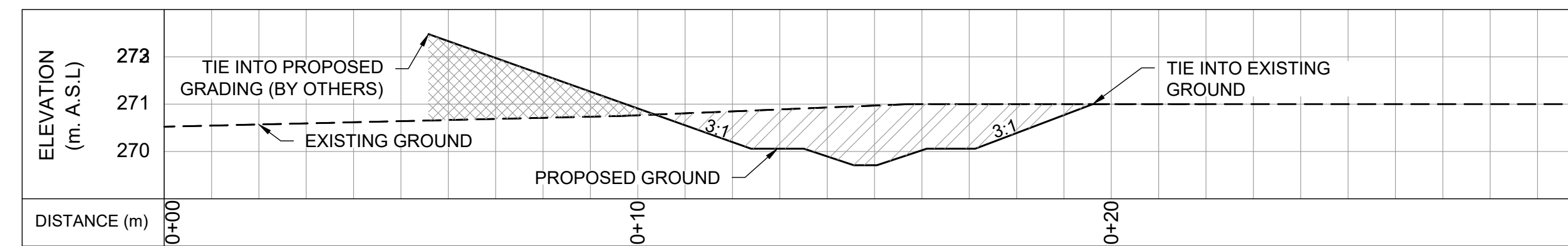
CROSS SECTION B-B'



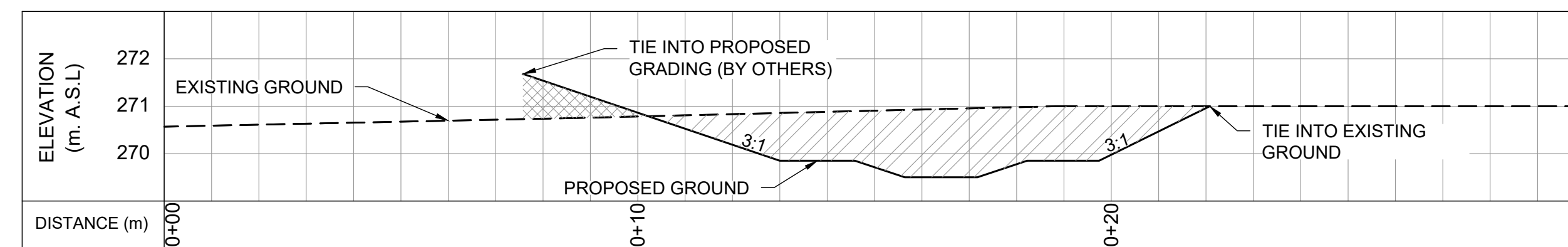
CROSS SECTION C-C'



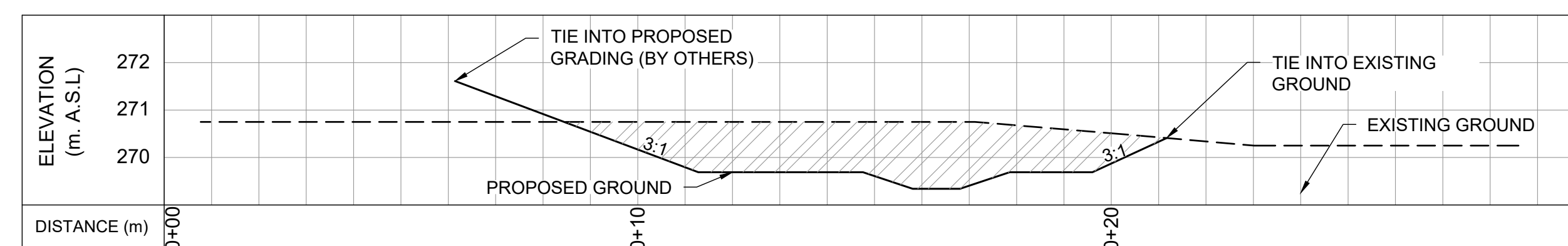
CROSS SECTION D-D'



CROSS SECTION E-E'



CROSS SECTION F-F'



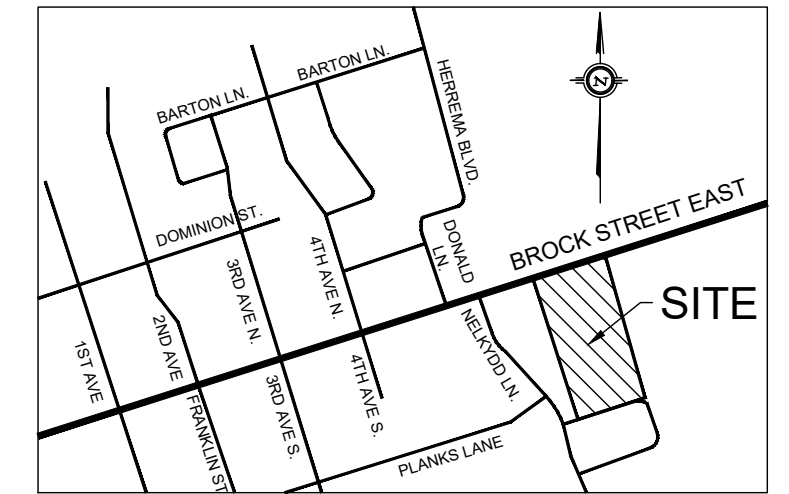
CROSS SECTION G-G'

LEGEND
 AREA TO CUT
 AREA TO FILL

CROSS SECTIONS

H=1:100

V=1:10



KEY MAP
N.T.S.

GENERAL NOTES

1. ALL CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE PERMITS MUST BE KEPT ON SITE DURING CONSTRUCTION FOR REFERENCE.
2. THE CONTRACTOR MUST NOTIFY THE CONTRACT ADMINISTRATOR AND CONSERVATION AUTHORITY OF THE INTENT TO COMMENCE WORK AT LEAST 48 HOURS IN ADVANCE.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES.
4. LAYOUT MUST BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
5. DESIGNER OR REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION TO PROVIDE GUIDANCE ON INSTALLATION OF THE FEATURES.

TIMING OF WORKS

1. WORKS SHALL BE COMPLETED BETWEEN JULY 1ST TO MARCH 31ST.
2. TREE CLEARING SHOULD BE COMPLETED OUTSIDE THE BIRD NESTING SEASON TO COMPLY WITH THE FEDERAL MISYATORY BIRDS CONVENTION ACT. ANY TREES THAT REQUIRE REMOVAL OUTSIDE OF THIS TIMING WINDOW MUST FIRST BE INSPECTED BY A QUALIFIED BIOLOGIST 24-48 HOURS PRIOR TO REMOVAL TO DETERMINE THE PRESENCE OF NESTING BIRDS.
3. THE WEATHER FORECAST SHOULD BE CONTINUALLY MONITORED TO ENSURE THAT WORKS ARE UNDERTAKEN ONLY DURING FAVOURABLE WEATHER CONDITIONS.
4. COMPLETE THE WORKS WITH MINIMAL AVOIDABLE INTERRUPTIONS ONCE THEY COMMENCE.

SITE AND MATERIAL MANAGEMENT

1. ALL CONSTRUCTION EQUIPMENT AND MATERIALS (IMPORTED OR EXCAVATED) MUST BE STORED AT LEAST 30 m AWAY FROM ANY WATERBODY IN A STABLE AREA ABOVE THE ACTIVE FLOODPLAIN, OR IN A DESIGNATED STAGING/STORAGE AREA.
2. IN THE EVENT OF AN UNEXPECTED SPILL, ALL UNIDENTIFIED ITEMS THAT HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW MUST BE MOVED A STABLE AREA ABOVE ACTIVE FLOODPLAIN.
3. STOCKPILES MUST BE LOCATED OUTSIDE THE ISOLATED WORK AREAS.
4. STABILIZE STOCKPILED SOILS THAT ARE STORED FOR PROLONGED PERIODS WITH THE APPLICATION OF A NURSE CROP AT A RATE OF 60 KG/HA.
5. STABILIZE, TEMPORARILY OR PERMANENTLY, ANY DISTURBED AREAS AS WORK PROGRESSES, OR SOON AS CONDITIONS ALLOW, OR SOILS THAT WILL BE EXPOSED FOR PROLONG PERIODS, TEMPORARILY INSTALL A BIODEGRADABLE EROSION CONTROL BLANKET ON EXPOSED SOILS, OR APPLY A NURSE CROP AT A RATE OF 60 KG/HA.
6. MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT POSSIBLE.
7. ALL VEGETATION, ADJACENT TO THE WORK AREA, MUST BE PROTECTED AND DELINEATED WITH CONSTRUCTION FENCING OR TREE PROTECTION BARRIERS.
8. ALL GRADES IN THE AREA REGULATED BY THE CONSERVATION AUTHORITY MUST BE MAINTAINED OR MATCHED, UNLESS OTHERWISE AUTHORIZED IN THE APPLICABLE PERMIT.

EROSION AND SEDIMENT CONTROL

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO START OF WORKS.
2. SEDIMENT CONTROLS MUST BE INSPECTED DAILY TO ENSURE THAT THEY ARE IN GOOD REPAIR AND FUNCTIONING AS INTENDED.
3. EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED DURING CONSTRUCTION, AND ANY REQUIRED REPAIRS OR REPLACEMENTS MUST BE COMPLETED WITHIN 24 HOURS AFTER THEY HAVE BEEN IDENTIFIED DURING THE MONITORING.
4. EROSION AND SEDIMENT CONTROLS MAY REQUIRE PERIODIC ADJUSTMENTS TO REFLECT CHANGING SITE CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THESE ADJUSTMENTS TO ENSURE PROPER FUNCTION.
5. ANY CHANGES TO THE EROSION AND SEDIMENT CONTROL PLAN BEYOND MINOR ADJUSTMENTS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL SUPPLIES MUST BE KEPT ON SITE IN ORDER TO FACILITATE IMMEDIATE REPAIRS AND/OR UPGRADES AS NEEDED.
7. ALL TEMPORARY SEDIMENT CONTROLS MUST BE REMOVED AFTER THE CONTRACT ADMINISTRATOR DEEMS THE SITE TO BE STABLE.

DELETERIOUS SUBSTANCE CONTROL/SPILL MANAGEMENT

1. PREVENT THE RELEASE OF SEDIMENT, SEDIMENT-LADEN WATER, RAW CONCRETE, CONCRETE LEACHATE OR ANY OTHER DELETERIOUS SUBSTANCES INTO ANY WATERBODY, RAINWATER OR STORM SEWER SYSTEM.
2. ENSURE EQUIPMENT AND MACHINERY ARE IN GOOD OPERATING CONDITION (POWER WASHED), FREE OF LEAKS, EXCESS OIL, AND GREASE.
3. NO EQUIPMENT RE-FUELLING OR SERVICING SHOULD BE UNDERTAKEN WITHIN 30 m OF ANY WATERCOURSE OR SURFACE WATER DRAINAGE.
4. A SPILL CONTAINMENT KIT MUST BE READILY ACCESSIBLE ON SITE IN THE EVENT OF A RELEASE OF A DELETERIOUS SUBSTANCE TO THE ENVIRONMENT. ON-SITE STAFF MUST BE TRAINED IN ITS USE.
5. THE CONTRACT ADMINISTRATOR MUST BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL OF DELETERIOUS SUBSTANCE.

WORK AREA ISOLATION

1. ALL WORK IN ISOLATED WORK AREAS MUST BE COMPLETED IN THE DRY. AN ADEQUATE NUMBER OF PUMPS MUST BE USED FOR UNWATERING.
2. THE UNWATERING DISCHARGE LOCATION MUST BE LOCATED AT LEAST 30 m FROM ANY WATERCOURSE OR WETLAND IN AN AREA WITH DENSE VEGETATION GROUNDCOVER, AND WHERE THE DISCHARGE CAN RETURN TO THE WATERBODY DOWNSTREAM OF THE WORK AREA OVER THE GROUNDCOVER.

5.	21/09/02	LD	THIRD DETAILED DESIGN SUBMISSION TO LSRCA
4.	21/05/04	LD	SECOND DETAILED DESIGN SUBMISSION TO LSRCA
3.	20/10/27	LD	FIRST DETAILED DESIGN SUBMISSION TO LSRCA
2.	MARCH 2019	LD	SECOND SUBMISSION LSRCA
1.	AUGUST 2018	LD	FIRST SUBMISSION LSRCA
	DATE	BY	REVISIONS

DESIGNED BY: PV CHECKED BY: PV

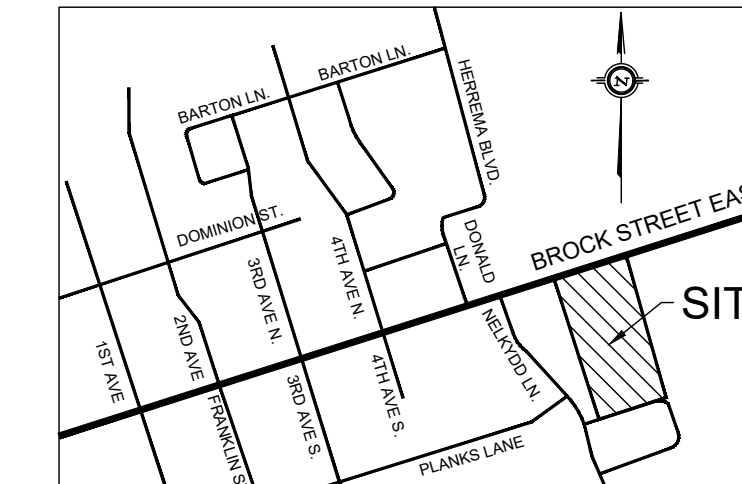
DRAWN BY: LD / BM DATE: SEPTEMBER 2, 2021

GEO MORPHIX
 Geomorphology
 Earth Science
 Observations

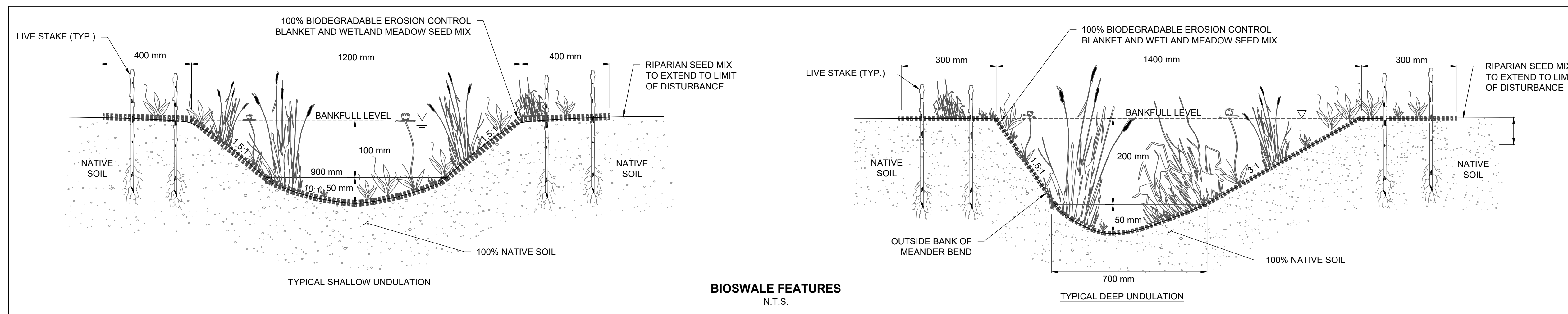
36 Main Street North, PO Box 205
 Campbellville, Ontario L0P 1B0
 T: 416.920.0926
 www.geomorphix.com

**226 BROCK STREET EAST
 WESTLANE DEVELOPMENT GROUP LTD.**

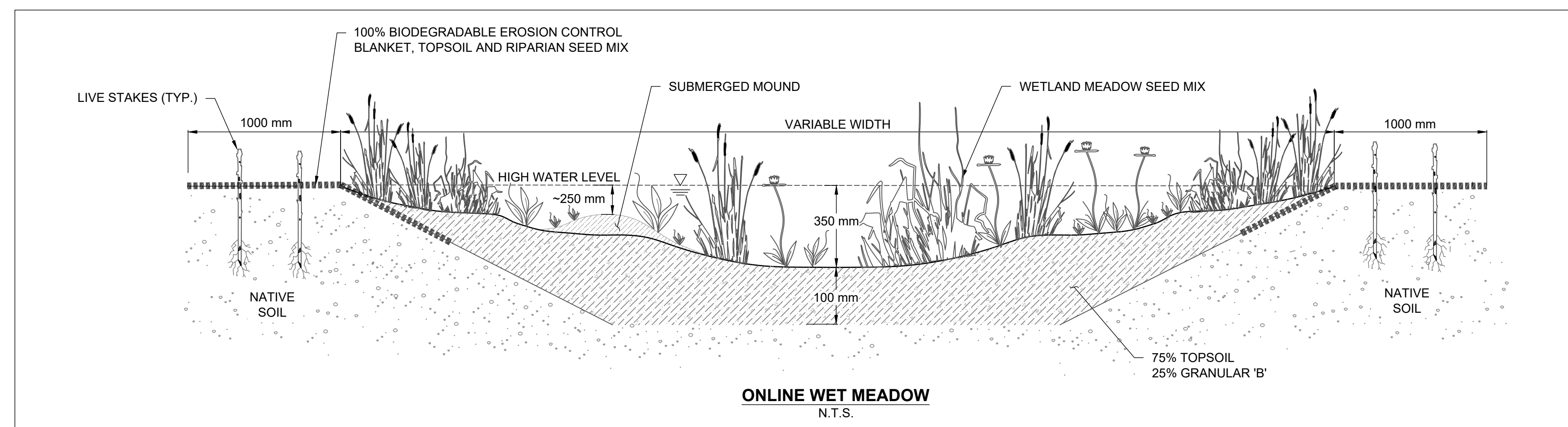
**BIOSWALE DESIGN
 CROSS SECTIONS**



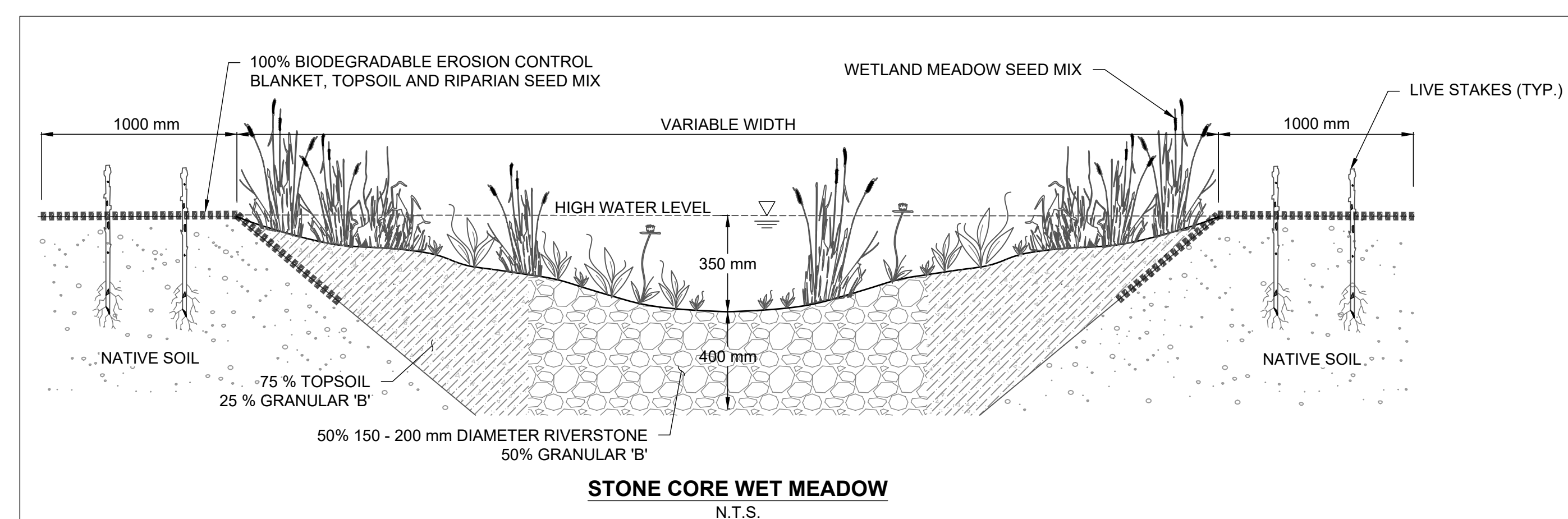
KEY MAP
N.T.S.



BIOSWALE FEATURES
N.T.S.



ONLINE WET MEADOW
N.T.S.



STONE CORE WET MEADOW
N.T.S.

GENERAL NOTES

1. ALL CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE PERMITS MUST BE KEPT ON SITE DURING CONSTRUCTION FOR REFERENCE.
2. TREE CLEARING SHOULD BE COMPLETED OUTSIDE THE BIRD NESTING SEASON TO COMPLY WITH THE FEDERAL MIGRATORY BIRDS CONVENTION ACT. ANY TREES THAT REQUIRE REMOVAL OUTSIDE OF THIS TIMING WINDOW MUST FIRST BE INSPECTED BY A QUALIFIED BIOLOGIST 24-48 HOURS PRIOR TO REMOVAL TO DETERMINE THE PRESENCE OF NESTING BIRDS.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATIONS.
4. LAYOUT MUST BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
5. DESIGNER OR REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION TO PROVIDE GUIDANCE ON INSTALLATION OF THE FEATURES.

TIMING OF WORKS

1. WORKS SHALL BE COMPLETED BETWEEN JULY 1ST TO MARCH 31ST.
2. TREE CLEARING SHOULD BE COMPLETED OUTSIDE THE BIRD NESTING SEASON TO COMPLY WITH THE FEDERAL MIGRATORY BIRDS CONVENTION ACT. ANY TREES THAT REQUIRE REMOVAL OUTSIDE OF THIS TIMING WINDOW MUST FIRST BE INSPECTED BY A QUALIFIED BIOLOGIST 24-48 HOURS PRIOR TO REMOVAL TO DETERMINE THE PRESENCE OF NESTING BIRDS.
3. THE WEATHER FORECAST SHOULD BE CONTINUALLY MONITORED TO ENSURE THAT WORKS ARE UNDERTAKEN ONLY DURING FAVOURABLE WEATHER CONDITIONS.
4. COMPLETE THE WORKS WITH MINIMAL AVOIDABLE INTERRUPTIONS ONCE THEY COMMENCE.

SITE AND MATERIAL MANAGEMENT

1. ALL CONSTRUCTION EQUIPMENT AND MATERIALS (IMPORTED OR EXCAVATED) MUST BE STORED AT LEAST 30 m AWAY FROM ANY WATERBODY IN A STABLE AREA ABOVE THE ACTIVE FLOODPLAIN, OR IN A DESIGNATED STAGING/STORAGE AREA.
2. IN THE EVENT OF AN UNEXPECTED STORM, ALL UNFIXED ITEMS THAT HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW MUST BE MOVED TO A STABLE AREA ABOVE ACTIVE FLOODPLAIN.
3. STOCKPILES MUST BE LOCATED OUTSIDE THE ISOLATED WORK AREAS.
4. STABILIZE STOCKPILED SOILS THAT ARE STORED FOR PROLONGED PERIODS WITH THE APPLICATION OF A NURSE CROP AT A RATE OF 60 KG/HA.
5. STABILIZE, TEMPORARILY OR PERMANENTLY, ANY DISTURBED AREAS AS WORK PROGRESSES, OR SOON AS CONDITIONS ALLOW, ON SOILS THAT WILL BE EXPOSED FOR PROLONG PERIODS. TEMPORARILY INSTALL A BIODEGRADABLE EROSION CONTROL BLANKET ON EXPOSED SOILS, OR APPLY A NURSE CROP AT A RATE OF 60 KG/HA.
6. MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT POSSIBLE.
7. ALL VEGETATION ADJACENT TO THE WORK AREA, MUST BE PROTECTED AND DELINEATED WITH CONSTRUCTION FENCING OR TREE PROTECTION BARRIERS.
8. ALL GRADES IN THE AREA REGULATED BY THE CONSERVATION AUTHORITY MUST BE MAINTAINED OR MATCHED, UNLESS OTHERWISE AUTHORIZED IN THE APPLICABLE PERMIT.

EROSION AND SEDIMENT CONTROL

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO START OF WORKS.
2. SEDIMENT CONTROLS MUST BE INSPECTED DAILY TO ENSURE THAT THEY ARE IN GOOD REPAIR AND FUNCTIONING AS INTENDED.
3. EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED DURING CONSTRUCTION, AND ANY REQUIRED REPAIRS OR REPLACEMENTS MUST BE COMPLETED WITHIN 24 HOURS AFTER THEY HAVE BEEN IDENTIFIED DURING THE MONITORING.
4. EROSION AND SEDIMENT CONTROLS MAY REQUIRE PERIODIC ADJUSTMENTS TO REFLECT CHANGING SITE CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THESE ADJUSTMENTS TO ENSURE PROPER FUNCTION.
5. ANY CHANGES TO THE EROSION AND SEDIMENT CONTROL PLAN BEYOND MINOR ADJUSTMENTS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL SUPPLIES MUST BE KEPT ON SITE IN ORDER TO FACILITATE IMMEDIATE REPAIRS AND/OR UPGRADES AS NEEDED.
7. ALL TEMPORARY SEDIMENT CONTROLS MUST BE REMOVED AFTER THE CONTRACT ADMINISTRATOR DEEMS THE SITE TO BE STABLE.

DELETERIOUS SUBSTANCE CONTROL/SPILL MANAGEMENT

1. PREVENT THE RELEASE OF SEDIMENT, SEDIMENT-LADEN WATER, RAW CONCRETE, CONCRETE LEACHATE OR ANY OTHER DELETERIOUS SUBSTANCES INTO ANY WATERBODY, NAUVE OR STORM SEWER SYSTEM.
2. ENSURE EQUIPMENT AND MACHINERY ARE IN GOOD OPERATING CONDITION (POWER WASHED), FREE OF LEAKS, EXCESS OIL AND GREASE.
3. NO EQUIPMENT FUELLING OR SERVICING SHOULD BE UNDERTAKEN WITHIN 30 m OF ANY WATERCOURSE OR SURFACE WATER DRAINAGE.
4. A SPILL CONTAINMENT KIT MUST BE READILY ACCESSIBLE ON SITE IN THE EVENT OF A RELEASE OF A DELETERIOUS SUBSTANCE TO THE ENVIRONMENT. ONSITE STAFF MUST BE TRAINED IN ITS USE.
5. THE CONTRACT ADMINISTRATOR MUST BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL OF DELETERIOUS SUBSTANCE.

WORK AREA ISOLATION

1. ALL WORK IN ISOLATED WORK AREAS MUST BE COMPLETED IN THE DRY. AN ADEQUATE NUMBER OF PUMPS MUST BE USED FOR UNWATERING.
2. THE UNWATERING DISCHARGE LOCATION MUST BE LOCATED AT LEAST 30 m FROM ANY WATERCOURSE OR WETLAND IN AN AREA WITH DENSE VEGETATIVE GROUNDCOVER AND WHERE THE DISCHARGE CAN RETURN TO THE WATERBODY DOWNSTREAM OF THE WORK AREA OVER THE GROUND COVER.

5.	21/09/02	LD	THIRD DETAILED DESIGN SUBMISSION TO LSRCA
4.	21/05/04	LD	SECOND DETAILED DESIGN SUBMISSION TO LSRCA
3.	20/10/27	LD	FIRST DETAILED DESIGN SUBMISSION TO LSRCA
2.	MARCH 2019	LD	SECOND SUBMISSION LSRCA
1.	AUGUST 2018	LD	FIRST SUBMISSION LSRCA

DATE	BY	REVISIONS
DESIGNED BY: PV	CHECKED BY: PV	
DRAWN BY: LD / BM	DATE: SEPTEMBER 2, 2021	

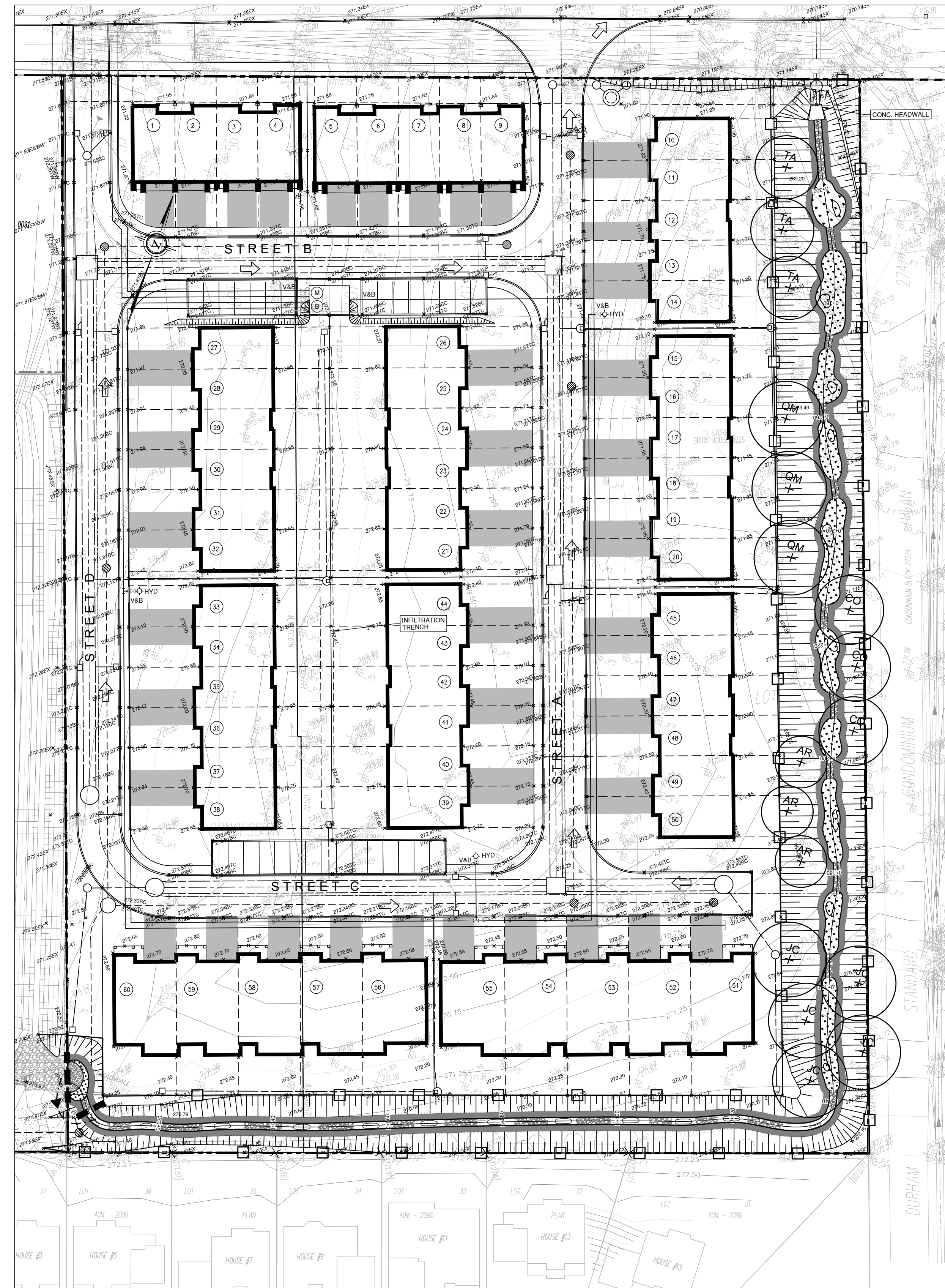
PROFESSIONAL GEOSCIENTIST
PAUL V. VILLARD
PRACTISING MEMBER
0957
ONTARIO
21/09/02

Geomorphology
Earth Science
Observations

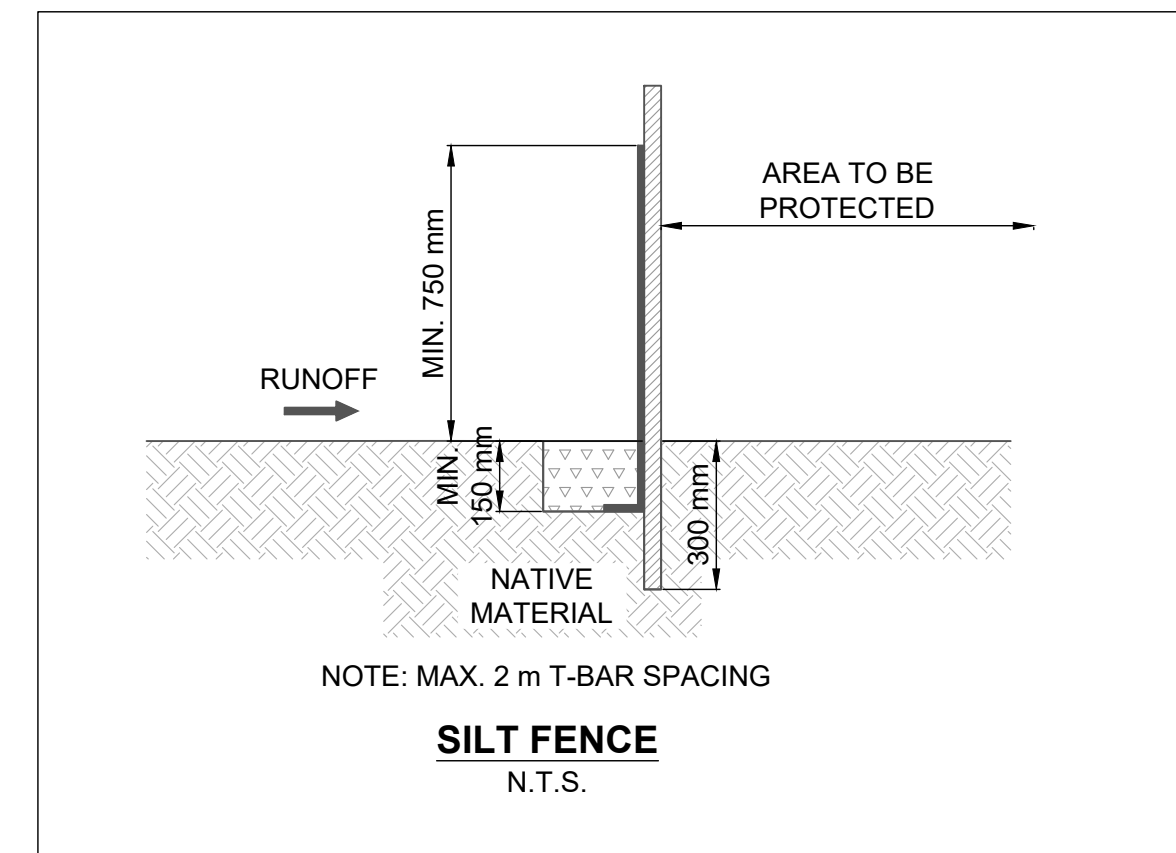
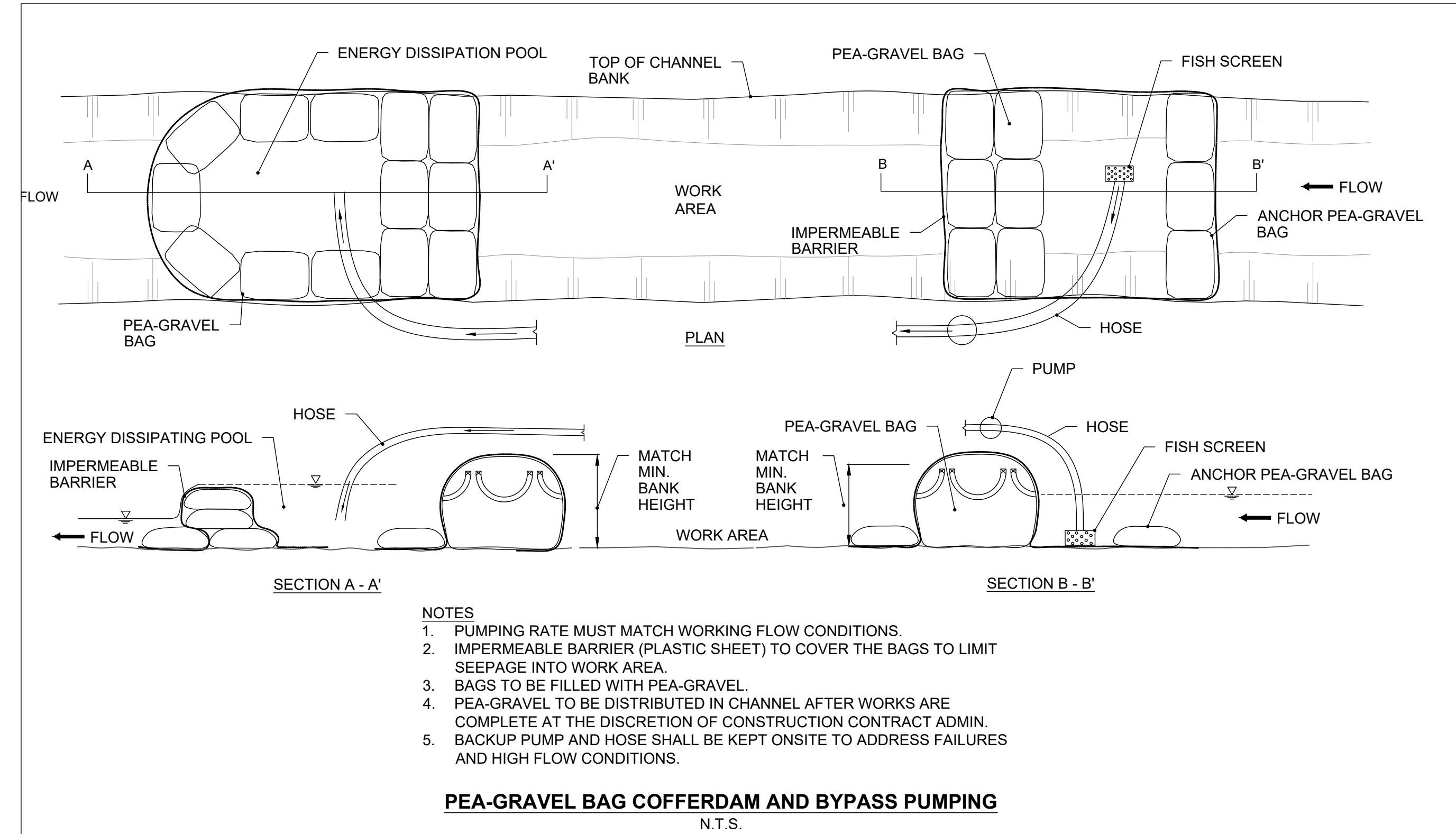
36 Main Street North, PO Box 205
Campbellville, Ontario L0P 1B0
T: 416.920.0926
www.geomorphix.com

226 BROCK STREET EAST
WESTLANE DEVELOPMENT GROUP LTD.

BIOSWALE DESIGN
RESTORATION DETAILS

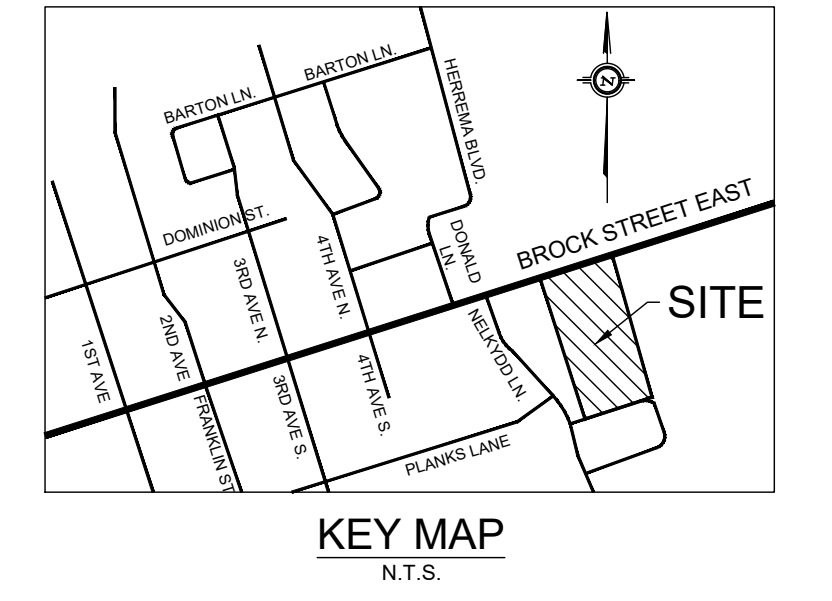


PLANFORM
1:250



SUGGESTED SEQUENCE OF CONSTRUCTION

- DESIGNER OR REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION TO PROVIDE GUIDANCE ON INSTALLATION OF THE FEATURES GIVEN THE WORKS DIFFER FROM ENGINEERING PROJECTS.
- CONSTRUCTION CONTRACT ADMINISTRATOR TO REVIEW SITE CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
- MONITORING WEATHER TO ENSURE IN-WATER WORKS IS COMPLETED UNDER LOW-FLOW CONDITIONS.
- INSTALL SILT FENCE TO ISOLATE THE WORK AREA.
- CONSTRUCT AS MUCH AS ENHANCED BIOSWALE AS POSSIBLE WITHOUT INTERFERENCE TO THE EXISTING FEATURE, INCLUDING DOWNSTREAM TIE-IN.
- STABILIZE ANY DISTURBED AREA WITH SEED AND 100% BIODEGRADABLE EROSION CONTROL BLANKET (BIONET C125BN OR APPROVED EQUIVALENT).
- INSTALL COFFERDAMS AND PUMP FLOWS AROUND WORK ARE TO COMPLETE TIE-IN WITH EXISTING FEATURE AT THE UPSTREAM EXTENT.
- INTRODUCE FLOWS TO THE FEATURE ONCE THE SITE HAS BEEN DEEMED STABLE BY THE DESIGNER OR REPRESENTATIVE.
- REMOVE EROSION AND SEDIMENT CONTROL MEASURES ONCE AREA IS DEEMED STABLE BY THE DESIGNER OR REPRESENTATIVE.



- GENERAL NOTES**
- ALL CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE PERMITS MUST BE KEPT ON SITE DURING CONSTRUCTION FOR REFERENCE.
 - THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CONTRACT ADMINISTRATOR AND CONSERVATION AUTHORITY OF THE INTENT TO COMMENCE WORK AT LEAST 48 HOURS IN ADVANCE.
 - THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES.
 - LAYOUT MUST BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
 - DESIGNER OR REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION TO PROVIDE GUIDANCE ON INSTALLATION OF THE FEATURES.

- TIMING OF WORKS**
- WORKS SHALL BE COMPLETED BETWEEN JULY 1ST TO MARCH 31ST.
 - TREE CLEARING SHOULD BE COMPLETED OUTSIDE THE BIRD NESTING SEASON TO COMPLY WITH THE FEDERAL MIGRATORY BIRDS CONVENTION ACT. ANY TREES THAT REQUIRE REMOVAL OUTSIDE OF THIS TIMING WINDOW MUST FIRST BE INSPECTED BY A QUALIFIED BIRDOLOGIST 24-48 HOURS PRIOR TO REMOVAL TO DETERMINE THE PRESENCE OF NESTING BIRDS.
 - THE WEATHER FORECAST SHOULD BE CONTINUALLY MONITORED TO ENSURE THAT WORKS ARE UNDERTAKEN ONLY DURING FAVOURABLE WEATHER CONDITIONS.
 - COMPLETE THE WORKS WITH MINIMAL UNNECESSARY INTERRUPTIONS ONCE THEY COMMENCE.

- SITE AND MATERIAL MANAGEMENT**
- ALL CONSTRUCTION EQUIPMENT AND MATERIALS (IMPORTED OR EXCAVATED) MUST BE STORED AT LEAST 30 m AWAY FROM ANY WATERBODY IN A STABLE AREA ABOVE THE ACTIVE FLOODPLAIN, OR IN A DESIGNATED STAGING/STORAGE AREA. IN THE EVENT OF AN UNEXPECTED STORM, ALL UNFIXED ITEMS THAT HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW MUST BE MOVED A STABLE AREA ABOVE ACTIVE FLOODPLAIN.
 - STOCKPILES MUST BE LOCATED OUTSIDE THE WORK AREAS.
 - STABILIZE STOCKPILED SOILS THAT ARE STORED FOR PROLONGED PERIODS WITH THE APPLICATION OF A NURSE CROP AT A RATE OF 60 kg/ha.
 - STABILIZE, TEMPORARILY OR PERMANENTLY, ANY DISTURBED AREAS AS WORK PROGRESSES, OR SOON AS CONDITIONS ALLOW. ON SOILS THAT WILL BE EXPOSED FOR PROLONGED PERIODS, TEMPORARILY INSTALL A BIODEGRADABLE EROSION CONTROL BLANKET ON EXPOSED SOILS, OR APPLY A NURSE CROP AT A RATE OF 60 kg/ha.
 - MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT POSSIBLE.
 - ALL VEGETATION, ADJACENT TO THE WORK AREA, MUST BE PROTECTED AND DELINEATED WITH CONSTRUCTION FENCING OR TREE PROTECTION BARRIERS.
 - ALL GRADES IN THE AREA REGULATED BY THE CONSERVATION AUTHORITY MUST BE MAINTAINED OR MATCHED, UNLESS OTHERWISE AUTHORIZED IN THE APPLICABLE PERMIT.

- EROSION AND SEDIMENT CONTROL**
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO START OF WORKS.
 - SEDIMENT CONTROLS MUST BE INSPECTED DAILY TO ENSURE THAT THEY ARE IN GOOD REPAIR AND FUNCTIONING AS INTENDED.
 - EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED DURING CONSTRUCTION, AND ANY REQUIRED REPAIRS OR REPLACEMENTS MUST BE COMPLETED WITHIN 24 HOURS AFTER THEY HAVE BEEN IDENTIFIED DURING THE MONITORING.
 - EROSION AND SEDIMENT CONTROLS MAY REQUIRE PERIODIC ADJUSTMENTS TO REFLECT CHANGING SITE CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THESE ADJUSTMENTS TO ENSURE PROPER FUNCTION.
 - ANY CHANGES TO THE EROSION AND SEDIMENT CONTROL PLAN BEYOND MINOR ADJUSTMENTS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
 - ADDITIONAL EROSION AND SEDIMENT CONTROL SUPPLIES MUST BE KEPT ON SITE IN ORDER TO FACILITATE IMMEDIATE REPAIRS AND/OR UPGRADES AS NEEDED.
 - ALL TEMPORARY SEDIMENT CONTROLS MUST BE REMOVED AFTER THE CONTRACT ADMINISTRATOR DEEMS THE SITE TO BE STABLE.

- DELETERIOUS SUBSTANCE CONTROL/SPILL MANAGEMENT**
- PREVENT THE RELEASE OF SEDIMENT, SEDIMENT-LADEN WATER, RAW CONCRETE, CONCRETE LEACHATE OR ANY OTHER DELETERIOUS SUBSTANCES INTO ANY WATERBODY, RAVINE OR STORM SEWER SYSTEM.
 - ENSURE EQUIPMENT AND MACHINERY ARE IN GOOD OPERATING CONDITION (POWER WASHED), FREE OF LEAKS, EXCESS OIL AND GREASE.
 - NO EQUIPMENT REFUELLING OR SERVICING SHOULD BE UNDERTAKEN WITHIN 30 m OF ANY WATERCOURSE OR SURFACE WATER CHANNEL.
 - A SPILL CONTAINMENT KIT MUST BE READILY ACCESSIBLE ON SITE IN THE EVENT OF A RELEASE OF A DELETERIOUS SUBSTANCE TO THE ENVIRONMENT. ONSITE STAFF MUST BE TRAINED IN ITS USE.
 - THE CONTRACT ADMINISTRATOR MUST BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL OF DELETERIOUS SUBSTANCE.

- WORK AREA ISOLATION**
- ALL WORK IN ISOLATED WORK AREAS MUST BE COMPLETED IN THE DRY. AN ADEQUATE NUMBER OF PUMPS MUST BE USED FOR UNWATERING.
 - THE UNWATERING DISCHARGE LOCATION MUST BE LOCATED AT LEAST 30 m FROM ANY WATERCOURSE OR WETLAND IN AN AREA WITH DENSE VEGETATIVE GROUNDCOVER, AND WHERE THE DISCHARGE CAN RETURN TO THE WATERBODY DOWNSTREAM OF THE WORK AREA OVER THE GROUND COVER.

5.	21/09/02	LD	THIRD DETAILED DESIGN SUBMISSION TO LSRCA
4.	21/05/04	LD	SECOND DETAILED DESIGN SUBMISSION TO LSRCA
3.	20/10/27	LD	FIRST DETAILED DESIGN SUBMISSION TO LSRCA
2.	MARCH 2019	LD	SECOND SUBMISSION LSRCA
1.	AUGUST 2018	LD	FIRST SUBMISSION LSRCA

DATE	BY	REVISIONS
DESIGNED BY:	PV	CHECKED BY: PV
DRAWN BY:	LD / BM	DATE: SEPTEMBER 2, 2021

PAUL VILLARD
PRACTISING MEMBER
0957
ONTARIO

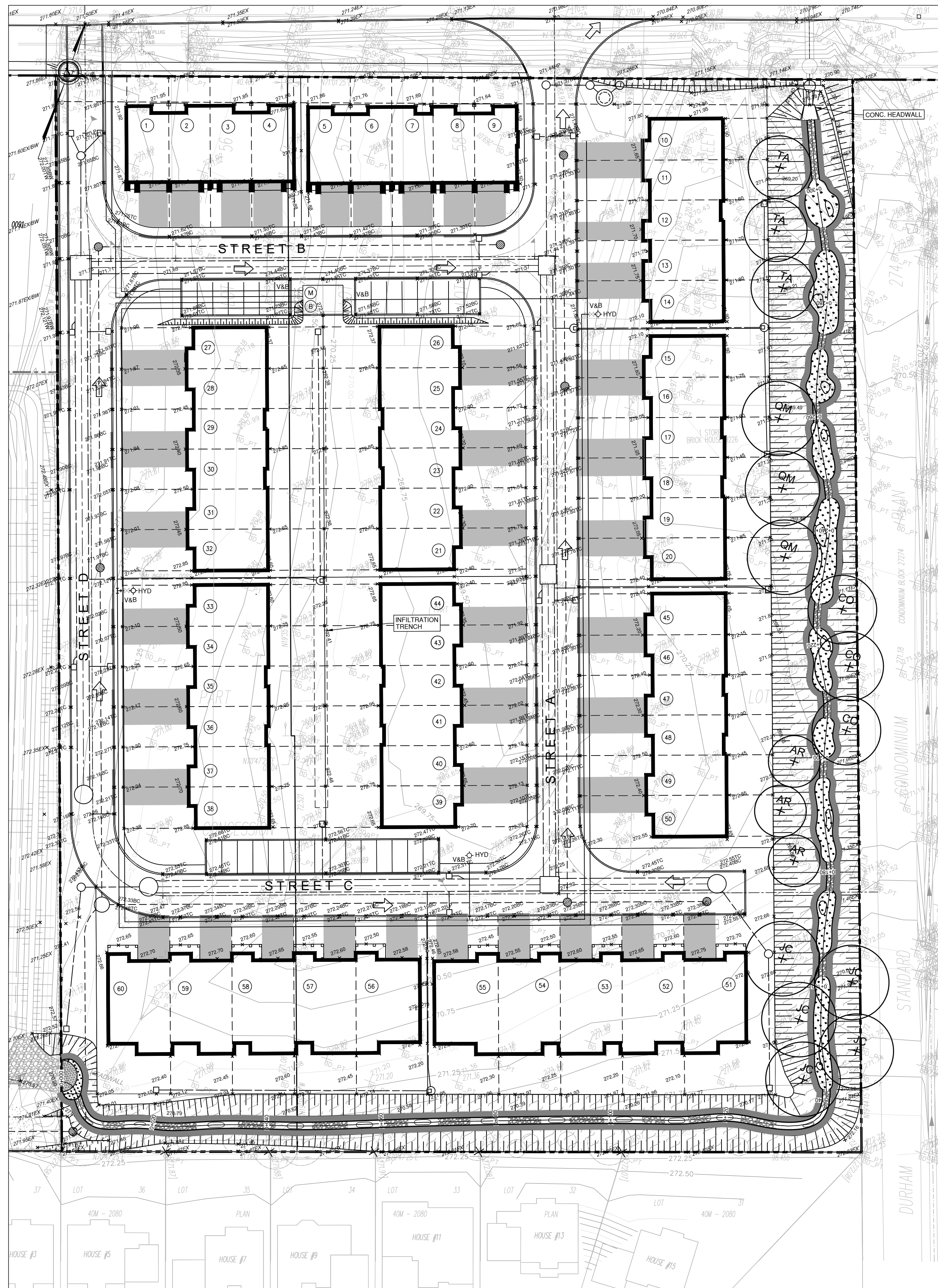
GEO MORPHIX
Geomorphology
Earth Science
Observations

36 Main Street North, PO Box 205
Campbellville, Ontario L0P 1B0

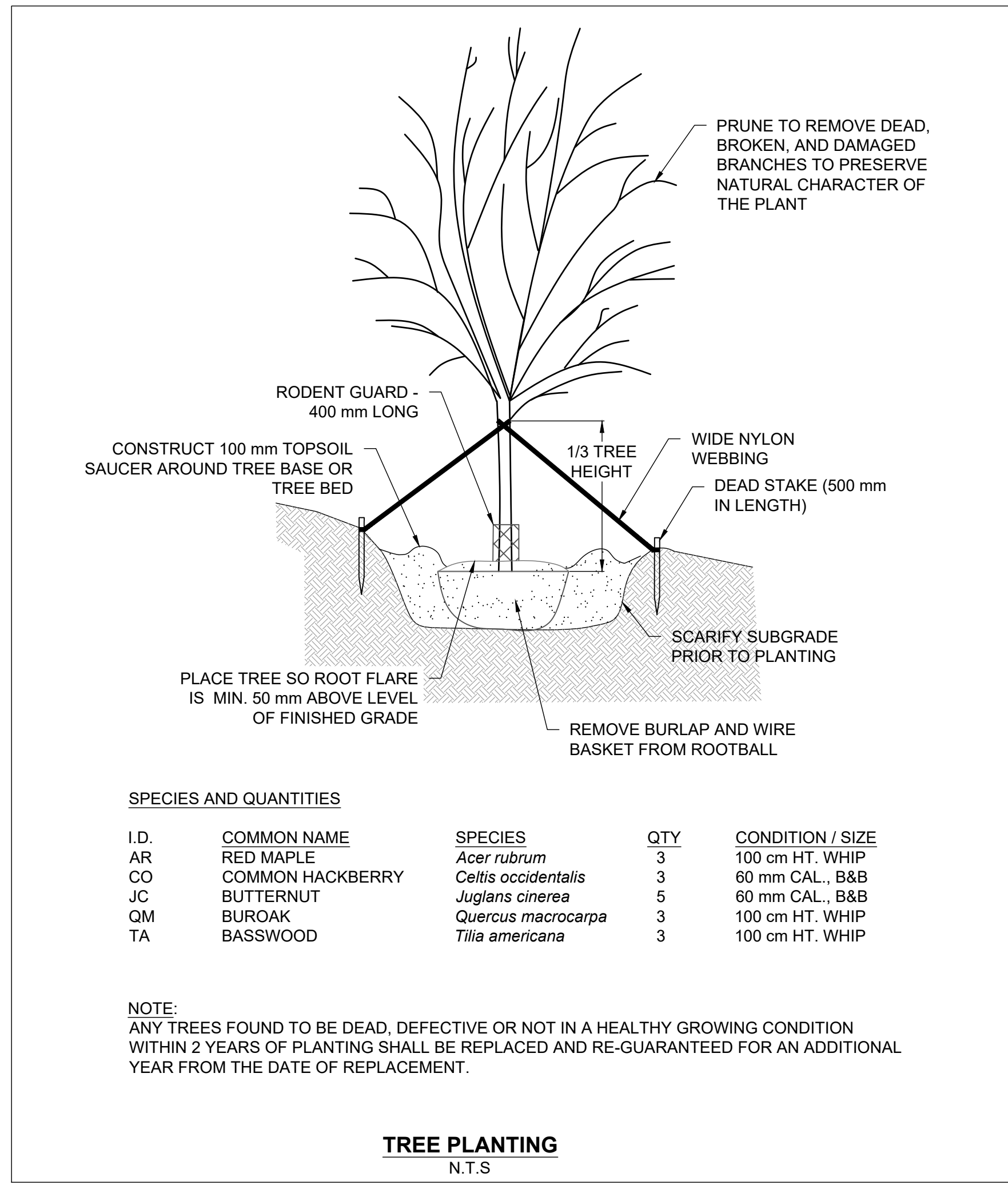
T: 416.920.0926
www.geomorphix.com

226 BROCK STREET EAST
WESTLANE DEVELOPMENT GROUP LTD.

BIOSWALE DESIGN
PHASING AND EROSION AND SEDIMENT
CONTROL PLAN



PLANFORM
1:500

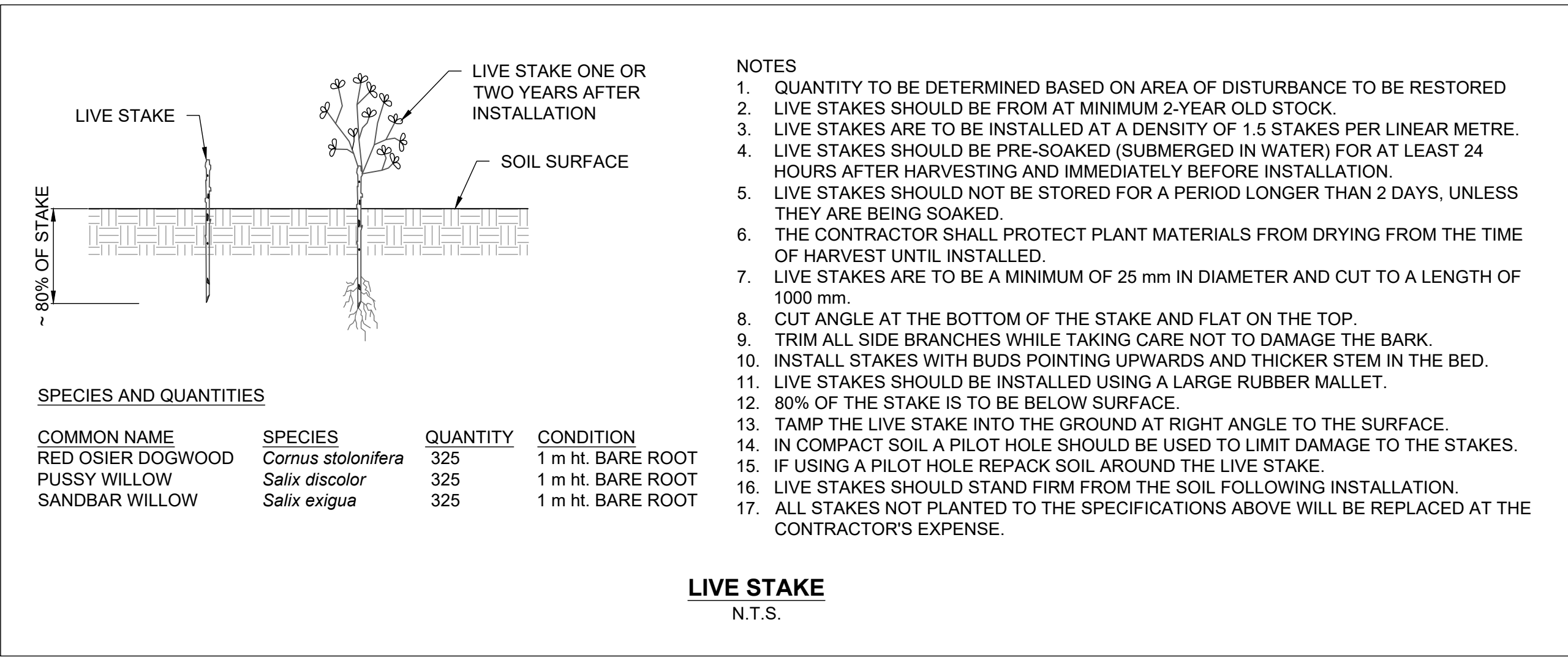


SPECIES AND QUANTITIES

I.D.	COMMON NAME	SPECIES	QTY	CONDITION / SIZE
AR	RED MAPLE	<i>Acer rubrum</i>	3	100 cm HT. WHIP
CO	COMMON HACKBERRY	<i>Celtis occidentalis</i>	3	60 mm CAL. B&B
JC	BUTTERNUT	<i>Juglans cinerea</i>	5	60 mm CAL. B&B
QM	BUROAK	<i>Quercus macrocarpa</i>	3	100 cm HT. WHIP
TA	BASSWOOD	<i>Tilia americana</i>	3	100 cm HT. WHIP

NOTE:
ANY TREES FOUND TO BE DEAD, DEFECTIVE OR NOT IN A HEALTHY GROWING CONDITION WITHIN 2 YEARS OF PLANTING SHALL BE REPLACED AND RE-GUARANTEED FOR AN ADDITIONAL YEAR FROM THE DATE OF REPLACEMENT.

TREE PLANTING
N.T.S.



SPECIES AND QUANTITIES

COMMON NAME	SPECIES	QUANTITY	CONDITION
RED OSIER DOGWOOD	<i>Cornus stolonifera</i>	325	1 m ht. BARE ROOT
PUSSY WILLOW	<i>Salix discolor</i>	325	1 m ht. BARE ROOT
SANDBAR WILLOW	<i>Salix exigua</i>	325	1 m ht. BARE ROOT

LIVE STAKE
N.T.S.

- NOTES**
- QUANTITY TO BE DETERMINED BASED ON AREA OF DISTURBANCE TO BE RESTORED
 - LIVE STAKES SHOULD BE FROM AT MINIMUM 2-YEAR OLD STOCK
 - LIVE STAKES ARE TO BE INSTALLED AT A DENSITY OF 1.5 STAKES PER LINEAR METRE.
 - LIVE STAKES SHOULD BE PRE-SOAKED (SUBMERGED IN WATER) FOR AT LEAST 24 HOURS AFTER HARVESTING AND IMMEDIATELY BEFORE INSTALLATION.
 - LIVE STAKES SHOULD NOT BE STORED FOR A PERIOD LONGER THAN 2 DAYS, UNLESS THEY ARE BEING SOAKED.
 - THE CONTRACTOR SHALL PROTECT PLANT MATERIALS FROM DRYING FROM THE TIME OF HARVEST UNTIL INSTALLED.
 - LIVE STAKES ARE TO BE A MINIMUM OF 25 mm IN DIAMETER AND CUT TO A LENGTH OF 1000 mm.
 - CUT ANGLE AT THE BOTTOM OF THE STAKE AND FLAT ON THE TOP.
 - TRIM ALL SIDE BRANCHES WHILE TAKING CARE NOT TO DAMAGE THE BARK.
 - INSTALL STAKES WITH BUDS POINTING UPWARDS AND THICKER STEM IN THE BED.
 - LIVE STAKES SHOULD BE INSTALLED USING A LARGE RUBBER MALLET.
 - 80% OF THE STAKE IS TO BE BELOW SURFACE.
 - TAMP THE LIVE STAKE INTO THE GROUND AT RIGHT ANGLE TO THE SURFACE.
 - IN COMPACT SOIL A PILOT HOLE SHOULD BE USED TO LIMIT DAMAGE TO THE STAKES.
 - IF USING A PILOT HOLE REPACK SOIL AROUND THE LIVE STAKE.
 - LIVE STAKES SHOULD STAND FIRM FROM THE SOIL FOLLOWING INSTALLATION.
 - ALL STAKES NOT PLANTED TO THE SPECIFICATIONS ABOVE WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

RIPARIAN SEED MIX

COMMON NAME	SPECIES	% OF MIX
BLUE VERVAIN	<i>Verbena hastata</i>	3
BLUNT BROOM SEDGE	<i>Carex scoparia</i>	5
FOX SEDGE	<i>Carex vulpinoidea</i>	30
GREEN BULRUSH	<i>Scirpus atrovirens</i>	10
PURPLE STEMMED ASTER	<i>Aster puniceus</i>	5
SPOTTED JOE PYE WEED	<i>Eupatorium maculatum</i>	2
SWAMP MILKWEED	<i>Asclepias incarnata</i>	10
SWEET FLAG	<i>Acorus americana</i>	5
VIRGINIA WILD RYE	<i>Elymus virginicus</i>	30

NOTES

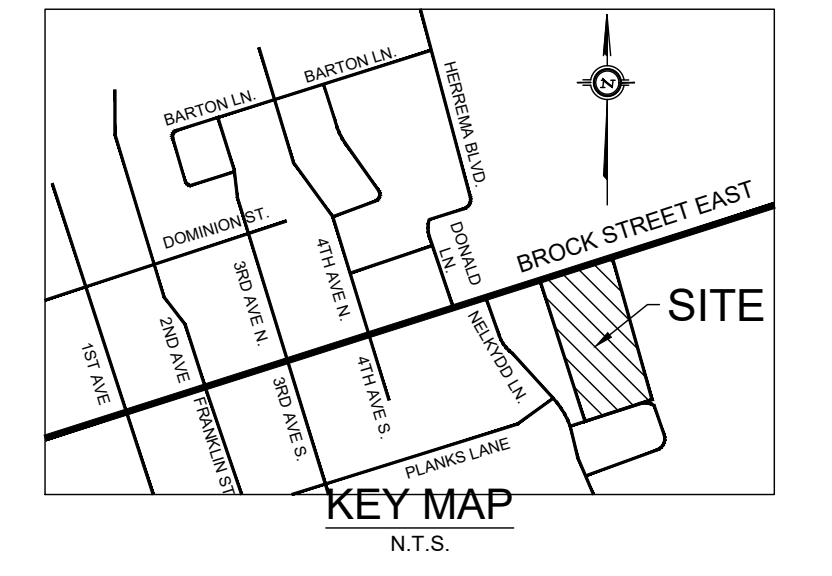
- APPLY SEED MIX AT A RATE OF 30 kg PER HECTARE.
- SEEDING SHALL OVERLAP ADJACENT GROUND COVER BY 300 mm.
- APPLY OAT OR RYE NURSE CROP AT A RATE OF 25 kg PER HECTARE.
- WATER SOIL AFTER SEED APPLICATION.

WETLAND MEADOW SEED MIX

COMMON NAME	SPECIES	% OF MIX
BEBB'S SEDGE	<i>Carex bebbii</i>	1
BLUE LOBELIA	<i>Lobelia siphilitica</i>	1
BLUE VERVAIN	<i>Verbena hastata</i>	10
BONESET	<i>Eupatorium perfoliatum</i>	1
DARK GREEN BULRUSH	<i>Scirpus atrovirens</i>	1
FOWL BLUEGRASS	<i>Poa palustris</i>	20
FOX SEDGE	<i>Carex vulpinoidea</i>	27
NEW ENGLAND ASTER	<i>Aster novae-angliae</i>	2
PURPLE STEMMED ASTER	<i>Aster puniceus</i>	1
SOFT RUSH	<i>Juncus effusus</i>	2
SPOTTED JOE PYE WEED	<i>Eupatorium maculatum</i>	1
SQUARE STEMMED MONKEY FLOWER	<i>Mimulus ringens</i>	2
SWAMP MILKWEED	<i>Asclepias incarnata</i>	1
TALL MANNAGRASS	<i>Glyceria grandis</i>	2
VIRGINIA WILD RYE	<i>Elymus virginicus</i>	27
WOOLGRASS	<i>Scirpus cyperinus</i>	1

NOTES

- APPLY SEED MIX AT A RATE OF 25 kg PER HECTARE WITHIN WETLANDS (SEE WETLAND DETAIL).
- SEEDING SHALL OVERLAP ADJACENT GROUND COVER BY 300 mm.
- APPLY COMMON OAT (*Avena sativa*) NURSE CROP AT A RATE OF 25 kg PER HECTARE.



- GENERAL NOTES**
- ALL CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE PERMITS MUST BE KEPT ON SITE DURING CONSTRUCTION FOR REFERENCE.
 - THE CONTRACTOR MUST NOTIFY THE CONTRACT ADMINISTRATOR AND CONSERVATION AUTHORITY OF THE INTENT TO COMMENCE WORK AT LEAST 48 HOURS IN ADVANCE.
 - THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES.
 - LANDFILL MUST BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
 - DESIGNER OR REPRESENTATIVE SHALL BE PRESENT DURING CONSTRUCTION TO PROVIDE GUIDANCE ON INSTALLATION OF THE FEATURES.

- TIMING OF WORKS**
- WORKS SHALL BE COMPLETED BETWEEN JULY 1ST TO MARCH 31ST.
 - TREE CLEARING SHOULD BE COMPLETED OUTSIDE THE BIRD NESTING SEASON TO COMPLY WITH THE FEDERAL MIGRATORY BIRD CONVENTION ACT. ANY TREES THAT REQUIRE REMOVAL OUTSIDE OF THIS TIMING WINDOW MUST FIRST BE INSPECTED BY A QUALIFIED BIOLOGIST 24-48 HOURS PRIOR TO REMOVAL TO DETERMINE THE PRESENCE OF NESTING BIRDS.
 - THE WEATHER FORECAST SHOULD BE CONTINUALLY MONITORED TO ENSURE THAT WORKS ARE UNDERTAKEN ONLY DURING FAVOURABLE WEATHER CONDITIONS.
 - COMPLETE THE WORKS WITH MINIMAL AVOIDABLE INTERRUPTIONS ONCE THEY COMMENCE.

- SITE AND MATERIAL MANAGEMENT**
- ALL CONSTRUCTION EQUIPMENT AND MATERIALS (IMPORTED OR EXCAVATED) MUST BE STORED AT LEAST 30 m AWAY FROM ANY WATERBODY IN A STABLE AREA ABOVE THE ACTIVE FLOODPLAIN, OR IN A DESIGNATED STAGING/STORAGE AREA.
 - IN THE EVENT OF AN UNEXPECTED STORM, ALL UNFIXED ITEMS THAT HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW MUST BE MOVED A STABLE AREA ABOVE ACTIVE FLOODPLAIN.
 - STOCKPILES MUST BE LOCATED OUTSIDE THE ISOLATED WORK AREAS.
 - STABILIZE STOCKPILED SOILS THAT ARE STORED FOR PROLONGED PERIODS WITH THE APPLICATION OF A NURSE CROP AT A RATE OF 60 kg/ha.
 - STABILIZE, TEMPORARILY OR PERMANENTLY, ANY DISTURBED AREAS AS WORK PROGRESSES, OR SOON AS CONDITIONS ALLOW. ON SOILS THAT WILL BE EXPOSED FOR PROLONG PERIODS, TEMPORARILY INSTALL A BIODEGRADABLE EROSION CONTROL BLANKET ON EXPOSED SOILS, OR APPLY A NURSE CROP AT A RATE OF 60 kg/ha.
 - MINIMIZE THE AREA OF DISTURBANCE TO THE EXTENT POSSIBLE.
 - ALL VEGETATION ADJACENT TO THE WORK AREA, MUST BE PROTECTED AND DELINEATED WITH CONSTRUCTION FENCING OR TREE PROTECTION BARRIERS.
 - ALL GRASSES IN THE AREA REGULATED BY THE CONSERVATION AUTHORITY MUST BE MAINTAINED OR MATCHED, UNLESS OTHERWISE AUTHORIZED IN THE APPLICABLE PERMIT.

- EROSION AND SEDIMENT CONTROL**
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO START OF WORKS.
 - SEDIMENT CONTROLS MUST BE INSPECTED DAILY TO ENSURE THAT THEY ARE IN GOOD REPAIR AND FUNCTIONING AS INTENDED.
 - EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED DURING CONSTRUCTION, AND ANY REQUIRED REPAIRS OR REPLACEMENTS MUST BE COMPLETED WITHIN 24 HOURS AFTER THEY HAVE BEEN IDENTIFIED DURING THE MONITORING.
 - EROSION AND SEDIMENT CONTROLS MAY REQUIRE PERIODIC ADJUSTMENTS TO REFLECT CHANGING SITE CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THESE ADJUSTMENTS TO ENSURE PROPER FUNCTION.
 - ANY CHANGES TO THE EROSION AND SEDIMENT CONTROL PLAN BEYOND MINOR ADJUSTMENTS MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
 - ADDITIONAL EROSION AND SEDIMENT CONTROL SUPPLIES MUST BE KEPT ON SITE IN ORDER TO FACILITATE IMMEDIATE REPAIRS AND/OR UPGRADES AS NEEDED.
 - ALL TEMPORARY SEDIMENT CONTROLS MUST BE REMOVED AFTER THE CONTRACT ADMINISTRATOR DEEMS THE SITE TO BE STABLE.

- DELETERIOUS SUBSTANCE CONTROL/SPILL MANAGEMENT**
- PREVENT THE RELEASE OF SEDIMENT, SEDIMENT-LADEN WATER, RAW CONCRETE, CONCRETE LEACHATE OR ANY OTHER DELETERIOUS SUBSTANCES INTO ANY WATERBODY, RAVIDE OR STORM SEWER SYSTEM.
 - ENSURE EQUIPMENT AND MACHINERY ARE IN GOOD OPERATING CONDITION (POWER WASHED), FREE OF LEAKS, EXCESS OIL AND GREASE.
 - NO EQUIPMENT REFUELLING OR SERVICING SHOULD BE UNDERTAKEN WITHIN 30 m OF ANY WATERCOURSE OR SURFACE WATER DRAINAGE.
 - A SPILL CONTAINMENT KIT MUST BE READILY ACCESSIBLE ON SITE IN THE EVENT OF A RELEASE OF A DELETERIOUS SUBSTANCE TO THE ENVIRONMENT. ON-SITE STAFF MUST BE TRAINED IN ITS USE.
 - THE CONTRACT ADMINISTRATOR MUST BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL OF DELETERIOUS SUBSTANCE.

- WORK AREA ISOLATION**
- ALL WORK IN ISOLATED WORK AREAS MUST BE COMPLETED IN THE DRY. AN ADEQUATE NUMBER OF PUMPS MUST BE USED FOR UNWATERING.
 - THE UNWATERING DISCHARGE LOCATION MUST BE LOCATED AT LEAST 30 m FROM ANY WATERCOURSE OR WETLAND IN AN AREA WITH DENSE VEGETATIVE GROUND COVER, AND WHERE THE DISCHARGE CAN RETURN TO THE WATERBODY DOWNSTREAM OF THE WORK AREA OVER THE GROUND COVER.

NO.	DATE	BY	REVISIONS
5.	21/09/02	LD	THIRD DETAILED DESIGN SUBMISSION TO LSRCA
4.	21/05/04	LD	SECOND DETAILED DESIGN SUBMISSION TO LSRCA
3.	20/10/27	LD	FIRST DETAILED DESIGN SUBMISSION TO LSRCA
2.	MARCH 2019	LD	SECOND SUBMISSION LSRCA
1.	AUGUST 2018	LD	FIRST SUBMISSION LSRCA

DESIGNED BY: PV
CHECKED BY: PV
DRAWN BY: LD / BM
DATE: SEPTEMBER 2, 2021

PROFESSIONAL GEOSCIENTIST
PAUL V. VILLARD
PRACTISING MEMBER 0957
ONTARIO 21/09/02

GEO MORPHIX
Geomorphology
Earth Science
Observations
36 Main Street North, PO Box 205
Campbellville, Ontario L0P 1B0
T: 416.920.0926
www.geomorphix.com

226 BROCK STREET EAST
WESTLANE DEVELOPMENT GROUP LTD.

BIOSWALE DESIGN
RESTORATION PLAN AND DETAILS

PROJECT No.: 20094
DRAWING No.: RES-1
SCALE: AS NOTED
SHEET 6 OF 6