

NOTES FOR SEDIMENT & EROSION CONTROL

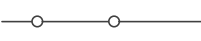
1. DISTURBED AREAS THAT HAVE FAILED TO HAVE STABLE GROUND COVER ESTABLISHED BY OCTOBER 30TH SHALL BE PROTECTED WITH A SILTATION CONTROL FENCE OR STRAW MULCH ETC. AND MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION BECOMES ESTABLISHED IN THE SUBSEQUENT GROWING SEASON.
2. ANY DEWATERING WASTE SHALL BE DISCHARGED TO A VEGETATED AREA AT LEAST 30 M FROM ANY WATERCOURSE AND FILTERED. FILTERING METHODS MUST BE APPROVED BY THE SITE ADMINISTRATOR.
3. SILT FENCE SHALL BE PUT IN PLACE PRIOR TO AND MAINTAINED DURING ALL GRADING. SILT FENCE SHALL COMPLY WITH OPSD 219.110 FOR LIGHT DUTY AND / OR OPSD 219.130 FOR HEAVY DUTY; UNLESS NOTED OTHERWISE. SILT FENCE TO BE INSPECTED PRIOR TO COMMENCEMENT OF EARTH GRADING ACTIVITIES. SILT FENCE TO BE INSPECTED AND REPAIRED OR REPLACED IF DAMAGED AS DIRECTED BY THE SITE ADMINISTRATOR. SILT CONTROLS TO BE INSPECTED ON A REGULAR BASIS AND AFTER EVERY RAIN EVENT. INSTALLATION SHALL BE TO THE MANUFACTURER'S SUGGESTED SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE PREPARED FOR UNEXPECTED CONDITIONS AND ACCORDINGLY HAVE STOCKPILED MATERIALS ON SITE FOR NECESSARY REPAIRS AS A RESULT OF FAILED OR INADEQUATE CONTROL MEASURES. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK, AND AFTER EVERY RAINFALL EVENT.
5. MUD MATS WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES THE SITE SHALL BE USED. MUD MATS TO BE 300mm IN DEPTH, 5.0m WIDE BY 20.0m LONG, FIRST 10.0m TO 150mmØ CLEAR STONE WITH THE REMAINING 10.0m CONSISTING OF 50mmØ CLEAR STONE; OR MEET MUNICIPAL STANDARDS WHERE IDENTIFIED.
6. CONTRACTOR SHALL OBTAIN A CURRENT COPY AND BECOME FAMILIAR WITH OPSS 805, CONSTRUCTION SPECIFICATION FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AS WELL AS ALL APPLICABLE MUNICIPAL STANDARDS.
7. THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES SHOULD BE PRESENTED IN WRITING FOR APPROVAL OF THE SITE ADMINISTRATOR AND MUST BE APPROVED IN WRITING BY THE CONSERVATION AUTHORITY.
8. THE TOPS OF ALL FILTER FABRIC MUST BE A MINIMUM OF 1.0 METRES ABOVE THE GROUND LEVEL AND ATTACHED TO THE FENCE WITH A CONTINUOUS STEEL WIRE. ALTERNATIVELY, THE FILTER FABRIC MUST BE FOLDED OVER THE TOP OF THE FENCE AND ATTACHED TO THE FENCE WITH WIRE LOOPED THROUGH THE FABRIC ON BOTH SIDES OF THE FENCE. FILTER FABRIC IS TO BE TERRAFIX 270R OR EQUIVALENT.
9. ALL DISTURBED GROUND LEFT INACTIVE SHALL BE STABILIZED BY SEEDING, SODDING, MULCHING, OR COVERING OR OTHER EQUIVALENT CONTROL MEASURES. THIS PERIOD OF INACTIVITY SHALL BE AT THE DISCRETION OF THE MUNICIPAL DIRECTOR OF ENGINEERING BUT SHALL NOT EXCEED (30) DAYS OR SUCH LONGER PERIOD DEEMED ADVISABLE BY THE MUNICIPAL DIRECTOR OF ENGINEERING.
10. CONTRACTOR SHALL INSTALL AND MAINTAIN CATCHBASIN SEDIMENT BARRIERS THROUGHOUT THE SITE DURING ALL CONSTRUCTION ACTIVITIES IN ORDER TO MITIGATE SEDIMENT ENTERING THE STORM STORM SEWERS.
11. NO FUEL TO BE STORED ON SITE. IN CASE OF A SPILL PLEASE CONTACT:MOECC SPILLS ACTION CENTER 1-800-268-6060.
12. SEDIMENT CONTROLS ARE TO REMAIN IN PLACE UNTIL WRITTEN DIRECTION IS RECEIVED FROM THE ENGINEER REGARDING THEIR REMOVAL.
13. EROSION AND SEDIMENT CONTROLS WILL BE INSPECTED ON AS PER MUNICIPAL REQUIREMENTS OR AFTER SIGNIFICANT RAINFALL EVENTS.

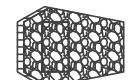
SEQUENCE OF CONSTRUCTION

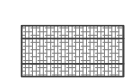
1. ENGINEER TO BE NOTIFIED PRIOR TO INITIATION OF ANY ON SITE WORKS.
2. SILT FENCE AND CONSTRUCTION ACCESS MATS TO BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY WORKS ON SITE.
3. VEGETATION REMOVAL MAY COMMENCE AFTER ALL SILT FENCE IS INSTALLED AND APPROVED BY THE ENGINEER.
4. COMMENCE WITH EARTH EXCAVATION AND SITE SERVICING (TO BE REMOVED FROM SITE - NO STOCKPILE).
5. EROSION CONTROL MEASURES TO BE MAINTAINED AS DIRECTED BY THE ENGINEER DURING THE CONSTRUCTION PERIOD. ADDITIONAL CONTROL MEASURES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
6. ALL DISTURBED GROUND LEFT INACTIVE FOR MORE THAN 30 DAYS SHALL BE STABILIZED WITH SEED, SOD, MULCH OR OTHER ADEQUATE COVERING, AS INSTRUCTED BY THE ENGINEER.
7. ALL CONSTRUCTION VEHICLES TO ACCESS THE SITE VIA THE DESIGNATED CONSTRUCTION ENTRANCES AS SHOWN.

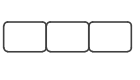
Site Area	1400 sq.m.
Area of Alteration	1400 sq.m.
Existing Land Use	RESIDENTIAL (R1)
Adjoining Property Land Use	RESIDENTIAL
Soil Type	SANDY LOAM (DS)


LEGEND


- 


SILT FENCE
- 


ROCK CHECK DAM
- 


STRAW BALE
- 


SAND BAG BARRIER
- 


TEMPORARY SWALE
- 


DIRECTION OF INTERIM OVERLAND FLOW
- 


NVCA / LSRCA REGULATION LIMIT
- 

FLOOD LINE
- 

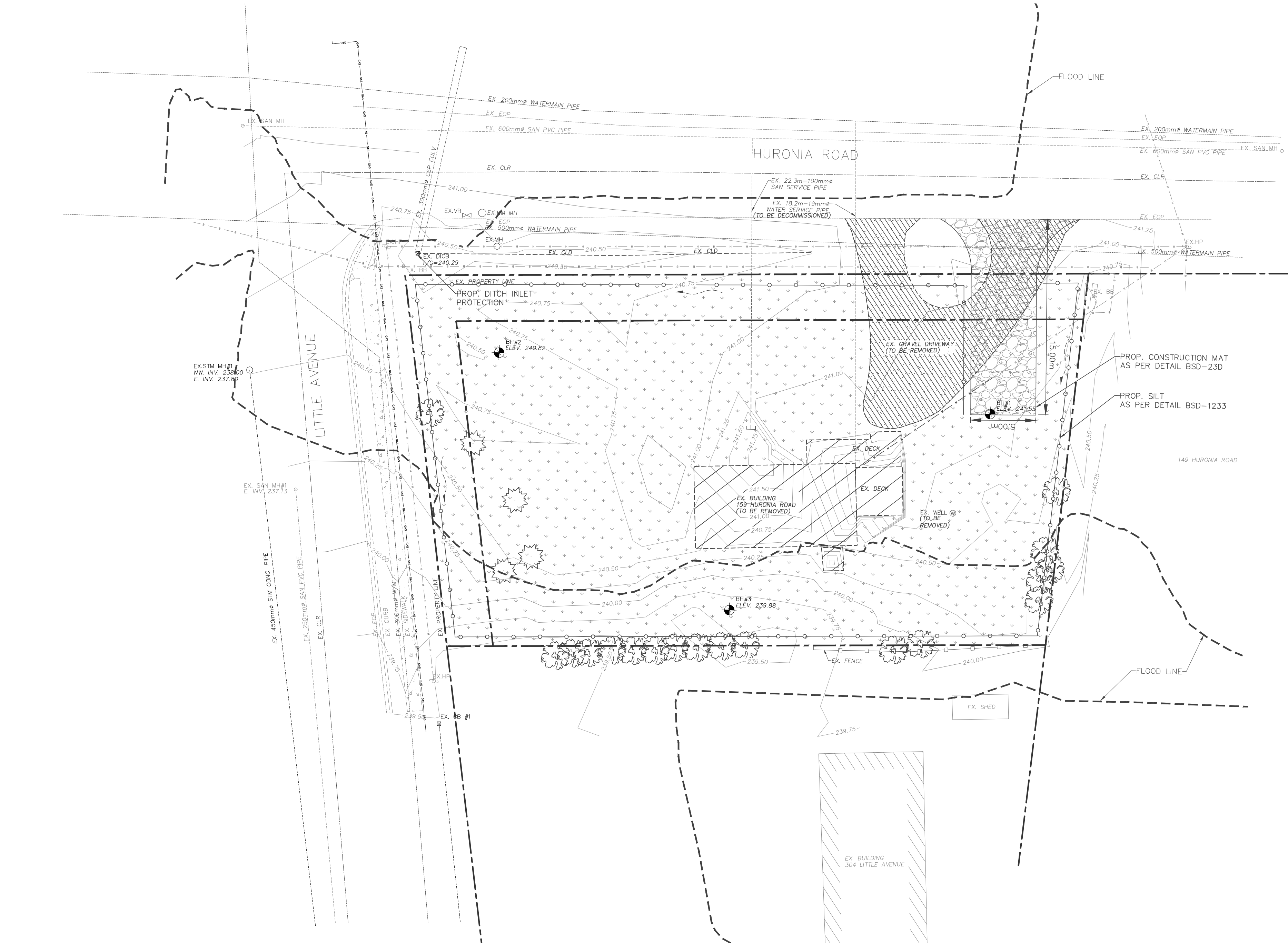
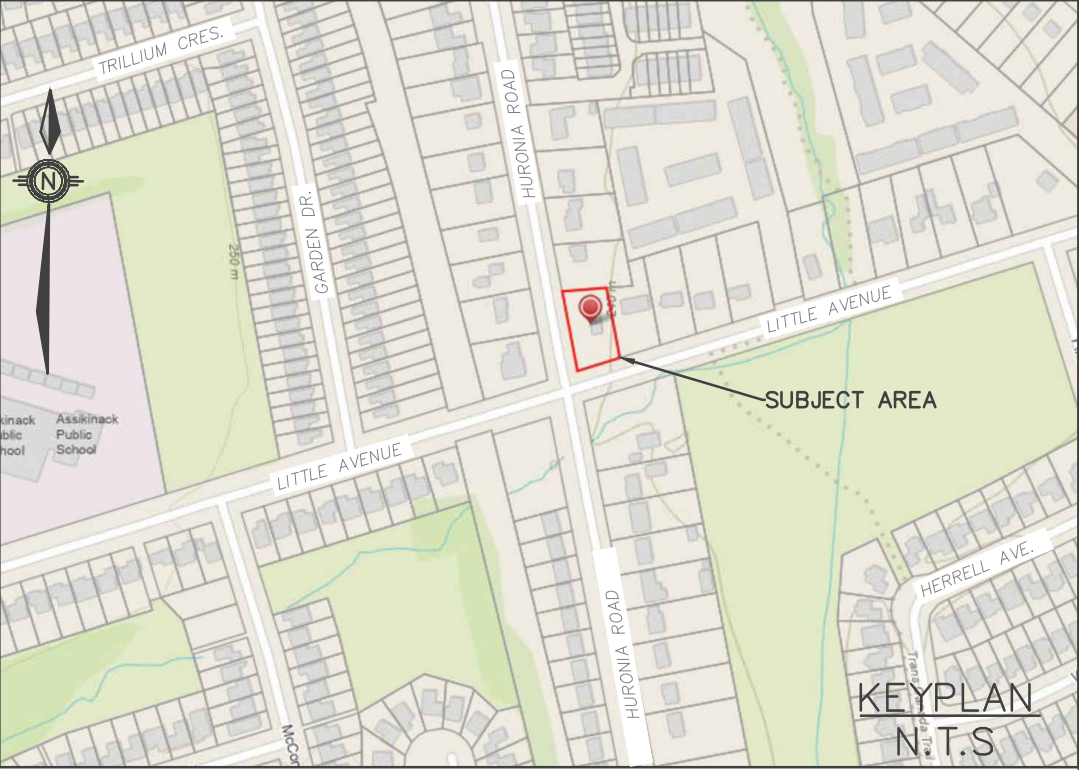
BUILDING REMOVAL AREA
- 

GRAVEL REMOVAL AREA
- 

CONCRETE REMOVAL AREA
- 

DECIDUOUS TREE
- 

CONIFEROUS TREE



1. DRAWINGS

- THE NOTES ON THIS SHEET APPLY TO ALL WORKS UNDER THIS CONTRACT UNLESS OTHERWISE NOTED ON THE SPECIFIC DETAIL DWGS.
- THE STANDARD DRAWINGS OF THE LOCAL MUNICIPALITY , ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS) AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) CONSTITUTE PART OF THE PLANS OF THIS CONTRACT.
- ORDER OF PRECEDENCE OF STANDARD DRAWINGS IS FIRSTLY THE LOCAL MUNICIPALITY AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS.
- THE STANDARD DRAWINGS INCLUDED WITH THESE PLANS ARE PROVIDED FOR CONVENIENCE ONLY AND ARE NOT TO BE CONSTRUED TO BE A COMPLETE SET FOR THE PURPOSE OF THE CONTRACT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL RELEVANT STANDARD DRAWINGS AND SPECIFICATIONS AS REQUIRED FOR THIS CONTRACT.

2. MEASUREMENTS

- ALL DIMENSIONS ARE IN METRES, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETRES, UNLESS SPECIFIED OTHERWISE.
- ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION, AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.

3. GENERAL

- EXISTING SERVICES AND UTILITIES SHOWN ON THESE CONTRACT DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE AND THEIR LOCATIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS THEY WISH WITH THE UNDERSTANDING THAT THE OWNER DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- NATIVE MATERIAL, SUITABLE FOR BACKFILL, SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- GRANULAR MATERIAL, USED FOR BACKFILL, SHALL BE PLACED IN LAYERS 150mm IN DEPTH MAXIMUM AND COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- ALL DISTURBED AREAS ARE TO BE REINSTATED TO THEIR ORIGINAL CONDITION OR BETTER, AS DETERMINED BY THE ENGINEER. ALL GRASS AND VEGETATION COVERED AREAS SHALL BE RESTORED BY PLACING 200mm OF APPROVED TOPSOIL AND NURSERY SOO UNLESS NOTED OTHERWISE.

4. PARKING LOT

- NATIVE SUBGRADE TO BE COMPACTED TO MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- PAVEMENT STRUCTURE TO BE CONFIRMED BY GEOTECHNICAL ENGINEER PRIOR TO START OF CONSTRUCTION
- THE PARKING LOT PAVEMENT STRUCTURE SHALL CONSIST OF THE FOLLOWING:

5. SEWERS

- INTERNAL SANITARY SEWERS AND LATERALS TO BE MINIMUM 150mm DIAMETER PVC DR 28 WITH JOINTS CONFORMING TO CSA STANDARD A257.3.
- SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD 802.010 (GRANULAR 'A' EMBEDMENT MATERIAL), UNLESS APPROVED OTHERWISE BY THE ENGINEER.
- PRECAST MANHOLES SHALL BE 1200mm DIAMETER UNLESS OTHERWISE SPECIFIED, AND SHALL BE IN ACCORDANCE WITH OPSD 701.010. FRAME AND GRATE TO BE "TYPE A" CLOSED COVER AND TO CONFORM TO OPSD 401.010.
- MANHOLE TOPS ARE TO BE SET TO FINAL GRADE.

6. WATERMAINS

- THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE WATERMAIN AND THE SANITARY/STORM SEWER IS TO BE 2.5 METERS.
- A MINIMUM OF 0.5m VERTICAL CLEARANCE BETWEEN THE WATERMAIN, SANITARY, STORM AND/OR ALL UTILITIES MUST BE KEPT, WHILE STILL MAINTAINING A MINIMUM DEPTH OF COVER AT ALL TIMES. WHERE WATERMAIN CONFLICTS WITH SEWER PIPE, DEFLECT WATERMAIN HORIZONTALLY OR VERTICALLY TO OBTAIN MINIMUM COVER AND VERTICAL CLEARANCE.
- WATERMAINS SHALL BE PVC DR 18 AND INSTALLED WITH A MINIMUM COVER OF 1.7m (MEASURED FROM FINISHED GRADE TO TOP OF WATERMAIN). IF MINIMUM COVER CAN NOT BE ACHIEVED, INSULATION AS PER DETAIL PROVIDED.
- WATERMAIN SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD 802.010 (GRANULAR 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES.
- COPPER WATER SERVICES 25mm DIA. SHALL BE EMBEDDED IN SAND 100mm ABOVE AND BELOW TO CONFORM TO 1104.010.
- WATERMAIN BEDDING SHALL ADHERE TO THE MUNICIPAL STANDARD AND BE PLACED MIN 150mm BELOW AND 300mm ABOVE THE WATERMAIN.
- CONCRETE THRUST BLOCKS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, ENDS OF MAINS AND CONNECTIONS 100mm AND LARGER AS PER STANDARD DRAWINGS. ALL BENDS TO BE MECHANICALLY RESTRAINED.
- ALL JOINTS MUST BE MECHANICALLY RESTRAINED AND THRUST BLOCKED.
- ANY EXISTING, ON SITE, WATER WELLS MUST BE DECOMMISSIONED.
- WHERE A COPPER SERVICE MUST BE JOINED UNDER THE FLOOR, THE COPPER SHALL BE JOINED BY SILVER SOLDER CONNECTION ONLY.
- ALL SERVICE PIPE MATERIAL MUST BE DUCTILE IRON AND MECHANICALLY RESTRAINED FROM THE RESTRAINED FLANGE TO A MINIMUM OF 3 METERS OUTSIDE THE FOUNDATION. ALL DUCTILE SHALL BE POLY WRAPPED FOR ADDED PROTECTION.
- OPERATION OF FIRE HYDRANTS AND VALVES ON POTABLE WATER BY OTHER THAN MUNICIPAL CITY DEPARTMENT IS PROHIBITED.
- THE CITY WILL SWAB, CHLORINATE AND FLUSH ALL NEW SERVICES. THE CONTRACTOR SHALL PERFORM PRESSURE TEST WITH WATER FIELD COORDINATOR WITNESSING.
- EXTERNAL CONTRACTOR TO COORDINATE WITH INTERNAL CONTRACTOR ON ALL INSTALLATION, SWABBING, CHLORINATING AND TESTING WITNESSED BY WATER FIELD SERVICES COORDINATOR.
- MECHANICAL RESTRAINTS WILL BE REQUIRED ON ALL HYDRANTS. A MINIMUM OF TWO PIPE LENGTHS OF EITHER SIDE OF THE HYDRANT TEE CONNECTION. HYDRANTS TO BE PAINTED RED.
- TRACING WIRE (#12 TWO STRANDED COPPER) TO BE INSTALLED ON THE TOTAL LENGTH OF ALL PVC WATERMAINS AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT.
- SERVICE CONNECTIONS SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0m AND A MINIMUM OF 0.6m FROM JOINTS.
- CONTRACTOR TO PROVIDE PLAN FOR REMOVING CHLORINATED WATER FROM SITE.
- A CHLORINATION TAIL SHALL BE INSTALLED JUST BEHIND TAPPING VALVE TO FACILITATE CHLORINATING SERVICE, TO BE REMOVED AFTER TESTING.

GENERAL NOTES - WATERMAIN	
1. CONTRACTORS SHALL INFORM THE CITY OF BARRE WATER OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTION TO PERFORM WORK ON WATER INFRASTRUCTURE.	
2. OPERATION OF HYDRANTS AND VALVES ON THE POTABLE WATER SYSTEM BY OTHER THAN QUALIFIED WATER OPERATIONS STAFF IS PROHIBITED. IN CURRENT LOCAL CITY SERVICE FEES ARE PER THE CURRENT FEES BY LAW. THE CITY'S WATER OPERATIONS STAFF WILL SWAB, PRESSURE TEST, CHLORINATE AND FLUSH ALL NEW WATERMAINS.	
3. MINIMUM COVER OVER WATERMAIN SHALL BE 1.7m. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE 2.5m. EXISTING WATERMAIN COVERS WITH EMBLEM FEELS REFLECT WATERMAIN HORIZONTAL OR VERTICAL PIPE PROFILES A MINIMUM OF 50mm CLEARANCE BETWEEN WATERMAIN AND SEWERS. WATERMAIN MINIMUM DEPTH OF COVER AT ALL TIMES.	
4. WATERMAIN SHALL BE INSTALLED IN BEDDING AS PER OPSD 802.010. UNLESS OTHERWISE SPECIFIED, MATERIAL FOR FLEXIBLE PIPES AND OPSD 802.010. CLASS 1 GRANULAR 'A' EMBEDMENT MATERIAL, MINIMUM 100mm DEPTH OF COVER. MATERIAL FOR RIGID PIPES UNLESS OTHERWISE SPECIFIED IS THE CHOICE OF WATER OPERATIONS. ALL MATERIALS EMBEDMENT MATERIAL, LONG SECTION PROFILES, AND PROFILES OF BEDDING ARE TO BE COMPACTED TO THE BEDDING PROCTOR FOR MAXIMUM DRY DENSITY. IN BEDDING, SEE NOTE 1. STANDARD DETAIL, GEOTECHNICAL, CAP CALCULATION OF MATERIAL AND COMPACTED VOLUMES MUST BE PROVIDED EVERY 10 METRES. THE COMPLETION TESTS MUST INCLUDE THE SUFFICIENT EMBEDMENT TAIL, VERTICAL, BEDDING, TOP OF PIPE AND COVER.	
5. COPPER WATER MAINS AND SERVICES 25mm TO 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 100mm ABOVE AND BELOW TO CONFORM TO 1104.010. UNLESS OTHERWISE SPECIFIED.	
6. RESTRAINING WILL BE REQUIRED ON ALL HYDRANTS, THRUST BLOCKS, AS PER OPSD 1103.010 AND 1103.020. RESTRAINING DEVICES MAY BE REQUIRED IN ADDITION TO THRUST BLOCKS TO PREVENT CONCRETE THRUST BLOCKS FROM MOVING. SEE COMPASS DRAWING AT THE CITY'S DISCRETION.	
7. NEW WATERMAINS TO BE PVC DR18 OR 18mm MINIMUM DUCTILE IRON (D.I.) AS PER THE APPROVED MANUFACTURER'S PRODUCTS FOR LINEAR WATER MAINS SYSTEMS.	
8. TRACING WIRE SHALL BE #12 AND HIGH STRENGTH COPPER (LAD 1000) AND SHALL BE INSTALLED ON THE TOTAL LENGTH OF ALL WATERMAIN AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT. ALL SPLICERS TO UTILIZE CONNECTIONS AS PER THE APPROVED MANUFACTURER'S PRODUCTS FOR LINEAR WATER MAINS SYSTEMS.	
9. ALL WATER SERVICES SHALL BE MINIMUM 25mm TYPE V COPPER OR 3/4" DIA. CROSS LINKED POLYETHYLENE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF WATER OPERATIONS. WATER SERVICE JOINTS SHALL BE USED WITH TAPPING AND PVC WATERMAIN.	
10. SERVICE TAPPING SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0m AND A MINIMUM OF 0.6m FROM JOINTS. (ENDS OF PIPE)	
11. REPAIR PIPES ARE TO BE INSTALLED AT PER OPSD 802.010, AND REMOVED AT DIRECTED. SWABBING SCHEDULE TO BE SUPPLIED BY A WATER OPERATIONS FIELD REPRESENTATIVE. ALL PIPES ARE TO BE RESTRAINED AT THRUST BLOCKS.	
12. ALL NEW CURB STOPS AND BOXES TO BE LOCATED AT PROPERTY LINE AND OUT OF DRIVEWAYS AND SIDEWALKS.	

City of BARRE	REVISION 2	DATE: MAY 2015	APPROVED
STANDARD DETAIL	GENERAL NOTES - WATERMAIN	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-500		

WATERMAIN CROSSING DETAIL - ROAD	
1. APPROVED END SEAL SHALL BE REQUIRED.	
2. APPROVED PIPE LINE SPACERS REQUIRED.	
3. END OF PIPE SHALL BE PROTECTED BY APPROVED END OF PIPE PROTECTION.	
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.	
5. EXISTING WATERMAIN SHALL BE PROTECTED BY APPROVED END OF PIPE PROTECTION.	
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13. EXISTING WATERMAIN SHALL BE PROTECTED BY APPROVED END OF PIPE PROTECTION.	

City of BARRE	REVISION 1	DATE: FEB 2015	APPROVED
STANDARD DETAIL	WATERMAIN CROSSING DETAIL - ROAD	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-522		

COPPER WATER SERVICE CONNECTION DETAIL 25mm DIAMETER SIZE	
1. NO COMPLAINTS WILL BE PERMITTED BETWEEN MAIN STOP AND CURB STOP.	
2. ALL WATER SERVICES TO BE INSTALLED AT PROPERTY LINE AND TO BE INSTALLED AT PROPERTY LINE.	
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City of BARRE	REVISION 2	DATE: MAY 2015	APPROVED
STANDARD DETAIL	COPPER WATER SERVICE CONNECTION DETAIL 25mm DIAMETER SIZE	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-502		

SUPPORT FOR WATERMAINS LARGER THAN 300mm DIAMETER	
1. CONCRETE ENCASED MAINS SHALL BE SUPPORTED WITH CONCRETE TO UNDERLIE OF MAIN. ENCASED MAINS TO BE SET WITHIN THE TRENCH WIDTH.	
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.	
3. EXISTING WATERMAIN SHALL BE PROTECTED BY APPROVED END OF PIPE PROTECTION.	
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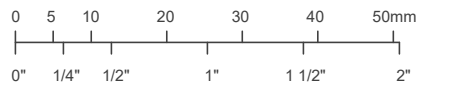
City of BARRE	REVISION 1	DATE: FEB 2015	APPROVED
STANDARD DETAIL	SUPPORT FOR WATERMAINS LARGER THAN 300mm DIAMETER	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-520		

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Handwritten or manual revisions to the drawing are only valid when accompanied by the design engineer's initials.

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This drawing may have been reduced.



GENERAL NOTES - SANITARY SEWER	
1. SANITARY LATERAL CONNECTION TO BE LOCATED AT THE CENTRELINE OF THE LOT AND CAPPED.	
2. LOCATION OF LATERAL TO BE MARKED 2.0m PAST PROPERTY LINE WITH A 50 x 100mm WOOD MARKER, PLANTED TO GROUND, EXTENDING FROM SERVICE INVERT TO 300mm ABOVE GROUND LEVEL.	
3. PIPE TO BE MINIMUM 100mm DIA. PVC SDR26, RUBBER GASKET TYPE JOINTS AND SHALL CONFORM TO CLASS 150-SDR26 (1) (COLOR) FOR A RESIDENTIAL HOUSE AND 100mm MINIMUM DIA. PVC SDR26 FOR INDUSTRIAL/COMMERCIAL DEVELOPMENT.	
4. MINIMUM DEPTH OF LATERAL AT PROPERTY LINE SHALL BE 2.4m MEASURED FROM THE SEWER INVERT TO FINISHED GROUND SURFACE ELEVATION UNLESS NOTED OTHERWISE.	
5. ALL CONNECTIONS TO NEW SANITARY MAINS SHALL BE PRE-MANUFACTURED, FABRICATED TEES, AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT. ALL SPLICERS TO UTILIZE CONNECTIONS AS PER THE APPROVED MANUFACTURER'S PRODUCTS FOR LINEAR WATER MAINS SYSTEMS.	
6. MINIMUM PIPE SLOPE TO BE 2.0% MAXIMUM 8.0% (SEE OPSD-100.010, 100.005).	

CITY OF BARRE STANDARD	REVISION 2	DATE: MAY 2015	APPROVED
STANDARD DETAIL	GENERAL NOTES - SANITARY SEWERS	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-N4		

PVC INSIDE DROP SEWER SERVICE CONNECTION	
1. SERVICE CONNECTIONS ARE TO BE MADE TO SEWERS AS PER CITY POLICES, UNLESS OTHERWISE SPECIFIED.	
2. ALL APPLICATIONS FOR INSIDE DROP SERVICE CONNECTIONS TO WATERMAINS SHALL BE APPROVED BY A PLANNING ENGINEER AND SHALL BE IN ACCORDANCE WITH THE CITY'S POLICIES.	
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CITY OF BARRE STANDARD	REVISION 2	DATE: MAY 2015	APPROVED
STANDARD DETAIL	PVC INSIDE DROP SEWER SERVICE CONNECTION	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-15A		

LOWERING DETAIL OF NEW OR EXIST. WATERMAIN CROSSING NEW OR EXIST. CULVERT, STORM SEWER OR DITCH	
1. MATERIAL FOR LOWERING SHALL BE DUCTILE IRON IF EXISTING MATERIAL IS METALIC.	
2. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
3. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
4. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
5. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
6. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
7. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
8. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
9. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
10. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
11. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
12. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
13. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	

City of BARRE	REVISION 1	DATE: FEB 2015	APPROVED
STANDARD DETAIL	LOWERING DETAIL OF NEW OR EXIST. WATERMAIN CROSSING NEW OR EXIST. CULVERT, STORM SEWER OR DITCH	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-519		

LOWERING DETAIL AT NEW OR EXIST. WATERMAIN CROSSING OF NEW OR EXIST. SANITARY SEWER	
1. MATERIAL FOR LOWERING SHALL BE DUCTILE IRON IF EXISTING MATERIAL IS METALIC.	
2. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
3. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
4. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
5. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	
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13. ALL JOINTS TO BE MECHANICALLY RESTRAINED INCLUDING JOINTS ON EXISTING WATERMAIN.	

City of BARRE	REVISION 1	DATE: FEB 2015	APPROVED
STANDARD DETAIL	LOWERING DETAIL AT NEW OR EXIST. WATERMAIN CROSSING OF NEW OR EXIST. SANITARY SEWER	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-518		

SOAKAWAY PIT USING ROOF LEADERS	
1. NOT TO BE USED IN AREAS WITH HIGH POTENTIAL OF CONTAMINATED RUNOFF.	
2. BASE OF SOAKAWAY PIT SHALL BE A MINIMUM OF 1.0m BELOW FINISHED FLOOR AND A MINIMUM OF 0.5m FROM THE STRUCTURE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.	
3. STRAINS AND GRATES SHALL BE IN ACCORDANCE WITH THE CITY OF BARRE'S GEOTECHNICAL SPECIFICATIONS.	
4. REFER TO SECTION 4.5.6 OF THE BASE FOUNDATION AND DESIGN MANUAL FOR DESIGN PARAMETERS.	
5. THE BASE FOUNDATION AND DESIGN MANUAL FOR DESIGN PARAMETERS.	
6. THE BASE FOUNDATION AND DESIGN MANUAL FOR DESIGN PARAMETERS.	
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12. THE BASE FOUNDATION AND DESIGN MANUAL FOR DESIGN PARAMETERS.	
13. THE BASE FOUNDATION AND DESIGN MANUAL FOR DESIGN PARAMETERS.	

City of BARRE	REVISION 1	DATE: DEC 2015	APPROVED
STANDARD DETAIL	SOAKAWAY PIT USING ROOF LEADERS	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-1406		

SWALE & UNDERDRAIN DETAIL	
1. PROPOSED SWALE MIN. 0.15m DEPTH	
2. PROPOSED TOPSOIL	
3. NON-WOVEN FILTER FABRIC	
4. 75 - 150 mm	
5. 50mm CLEAR STONE	
6. 150mm PERFORATED PIPE C/W FILTER SOCK	
7. 50mm CLEAR STONE	
8. 1.0m	
9. 0.15m	
10. 0.6m	
11. 2.0m	
12. 1.0m	
13. 0.15m	

City of BARRE	REVISION 1	DATE: DEC 2015	APPROVED
STANDARD DETAIL	SWALE & UNDERDRAIN DETAIL	SCALE: N.T.S.	<i>[Signature]</i> DIRECTOR OF ENGINEERING
	BSD-1406		

PIPE INSULATION DETAIL (N.T.S.)	
1. APPROVED BACKFILL COMPACTED TO 98% SPD.	
2. 50mm THICK x 'W' WIDE EXTRUDED POLYSTYRENE INSULATION	
3. STYROFOAM H-40/60/100 OR APPROVED EQUIVALENT.	
4. INSULATION TO BE OF ADEQUATE COMPRESSIVE STRENGTH AS DETERMINED BY STRUCTURAL/GEOTECHNICAL ENGINEER	
5. SECTIONS TO BE TAPED ALONG THE ENTIRE LENGTH OF EACH SEAM TO PREVENT MOVEMENT.	
6. ENSURE MIN. 1.5m TO SPRINGLINE AT END OF INSULATED SECTION.	
7. SPECIFIED BEDDING	
8. SEWER PIPE	
9. PER MINISTRY OF THE ENVIRONMENT GUIDELINES CALCULATION FOR WIDTH OF INSULATION AS FOLLOWS:	
W=2(x - d) + d, WHERE: W=WIDTH OF INSULATION, x=DEPTH OF INSULATION, d=DEPTH OF COVER, d=PIPE DIAMETER.	

STORM SERVICE OVERFLOW (N.T.S.)	
1. ROOF DOWNSPOUT	
2. OVERFLOW PIPE	
3. TEE-WYE SECTION	
4. 100mm (MIN. 2.0m) NON-PERFORATED PVC PIPE	

SOAKAWAY PIT DETAIL (N.T.S.)	
1. GROUND LEVEL	
2. TOPSOIL	
3. FILTER CLOTH	
4. 50mm CLEAR STONE	
5. 0.6m	
6. 2.0m	
7. 1.0m	
8. 0.15m	

ZONING BY-LAW AMENDMENT	
1. Issuance Description	
2. ZONING BY-LAW AMENDMENT	
3. 23/03/31	

Client	NJ ELECTRIC GENERAL CONTRACTING
182 BIRKSHIRE DRIVE, AURORA, ON L4G 7R8	
Project	PROPOSED TOWNHOUSE DEVELOPMENT
159 HURONIA ROAD, BARRIE, ON	

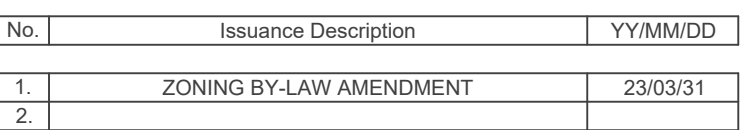
Drawing	
Project No.	484-032-22
Scale	AS NOTED
Orientation	Stamp

NOTES & DETAILS	
1. Project No. 484-032-22	
2. Designed by: IO	
3. Checked by: KF	
4. Drawn by: IO	
5. Approved by: ES	
6. Stamp	

Drawing No.	
ND-1	

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ZONING BY-LAW AMENDMENT

Client NJ ELECTRIC GENERAL
CONTRACTING

182 BIRKSHIRE DRIVE
AURORA, ON L4G 7R8

Project **PROPOSED TOWNHOUSE DEVELOPMENT**

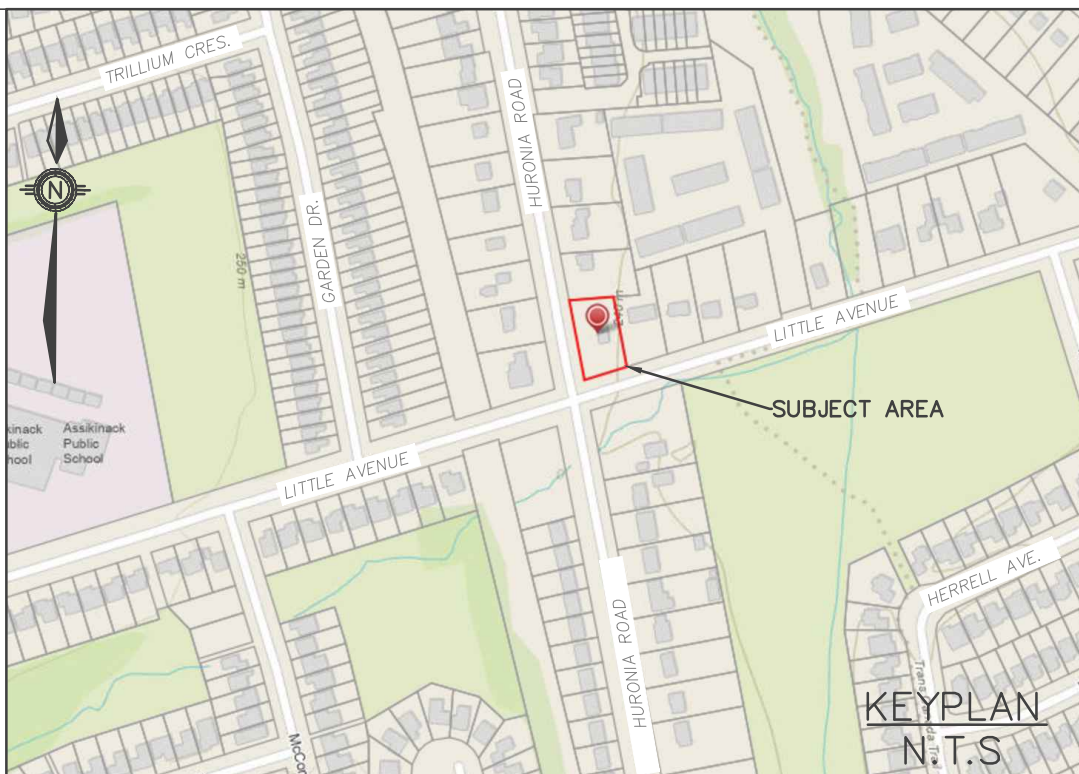
159 HURONIA ROAD,
BARRIE, ON

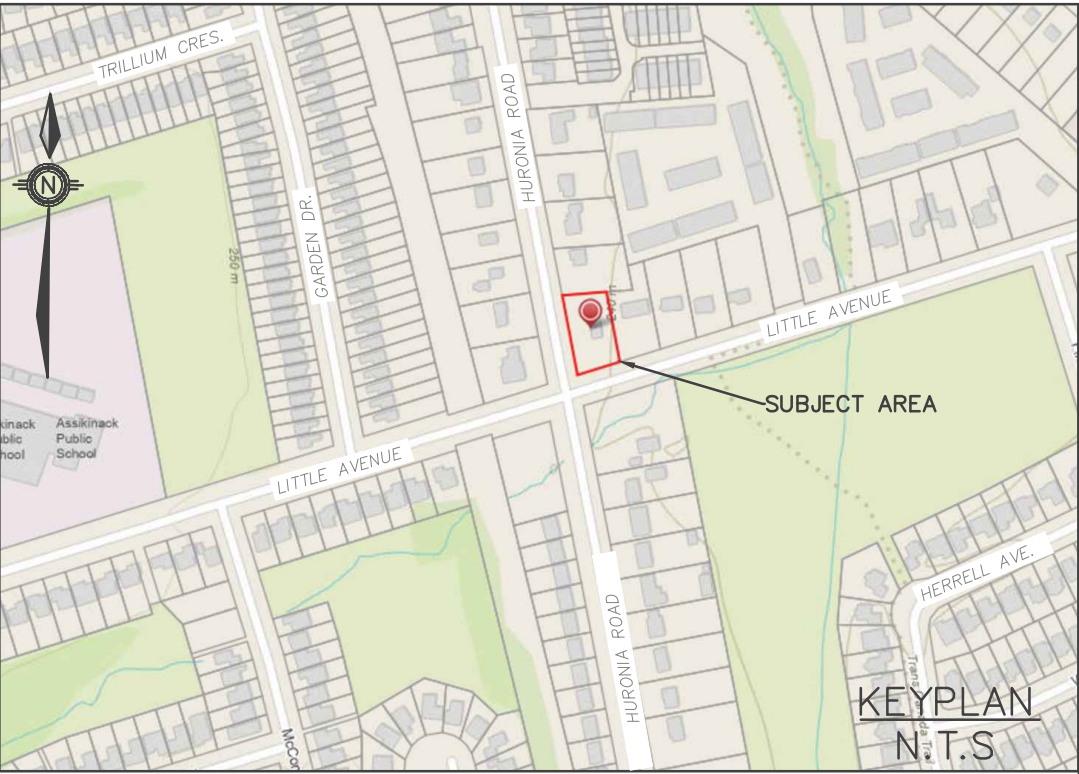
Drawing:

SITE SERVICING PLAN

Project No.	484-032-22	Designed by: IO	Checked by: KF
Scale:	1:200	Drawn by: IO	Approved by ES
Orientation	Stamp		

Orientation



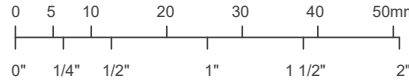


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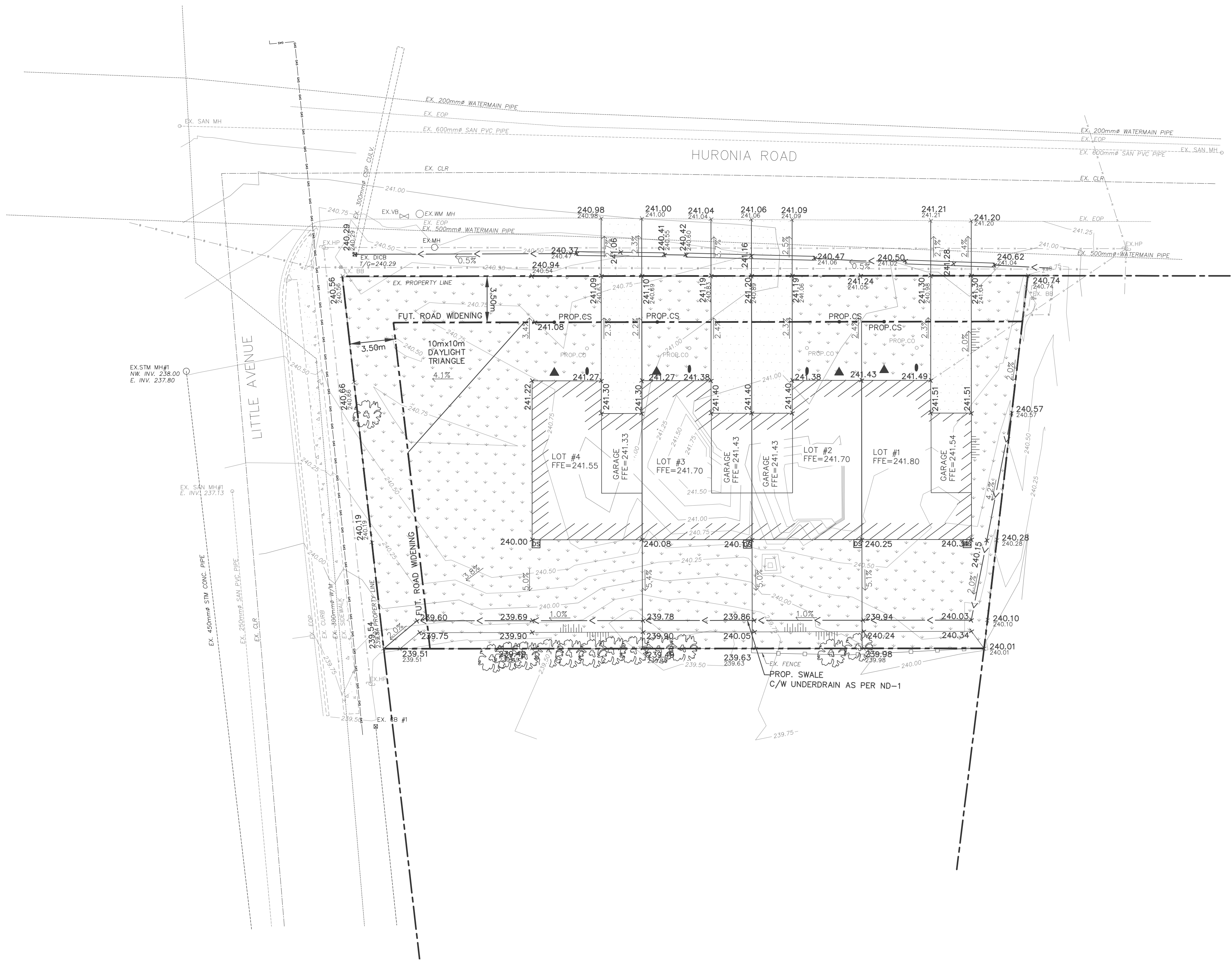
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LEGEND

- PRIVACY FENCE
- ACOUSTIC FENCE
- CHAIN LINK FENCE
- SILT FENCE
- GAS LINE
- HYDRO LINE
- BELL LINE
- SAN# EXISTING SANITARY MAINTENANCE HOLE
- SAN# PROPOSED SANITARY MAINTENANCE HOLE
- CB# EXISTING CATCH BASIN
- CB# PROPOSED CATCH BASIN
- STM# EXISTING STORM MAINTENANCE HOLE
- STM# PROPOSED STORM MAINTENANCE HOLE
- SERVICE CAP
- DOWN SPOUTS
- FIRE DEPT CONNECTION
- HYD&V# EXISTING FIRE HYDRANT
- HYD&V# PROPOSED FIRE HYDRANT
- VB# EXISTING VALVE BOX
- VB# PROPOSED VALVE BOX
- PROPOSED SIGN
- EXISTING LIGHT POLE
- MANDOOR
- OVERHEAD DOOR
- PROPOSED ELEVATION
- EXISTING ELEVATION
- PROPOSED GRADE
- 3:1 MAX SLOPE
- SWALE
- HIGH POINT
- LANDSCAPE AREA
- ASPHALT AREA
- CONCRETE AREA



Issued For:

ZONING BY-LAW AMENDMENT

Client **NJ ELECTRIC GENERAL CONTRACTING**

182 BIRKSHIRE DRIVE,
AURORA, ON L4G 7R8

Project **PROPOSED TOWNHOUSE DEVELOPMENT**

159 HURONIA ROAD,
BARRIE, ON

Drawing:

SITE GRADING PLAN

Project No. 484-032-22 Designed by: IO Checked by: KF

Scale: 1:200 Drawn by: IO Approved by: ES

Orientation Stamp



Drawing No.

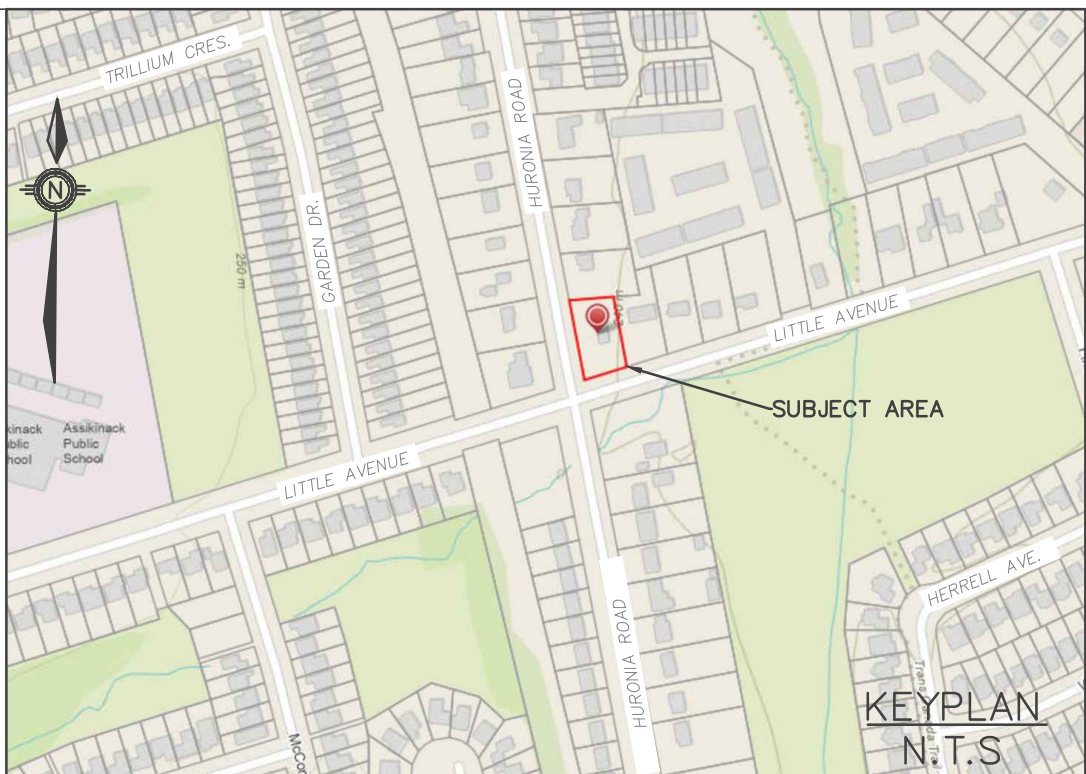
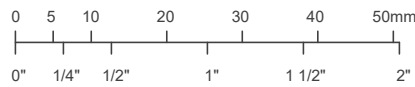
SG-1

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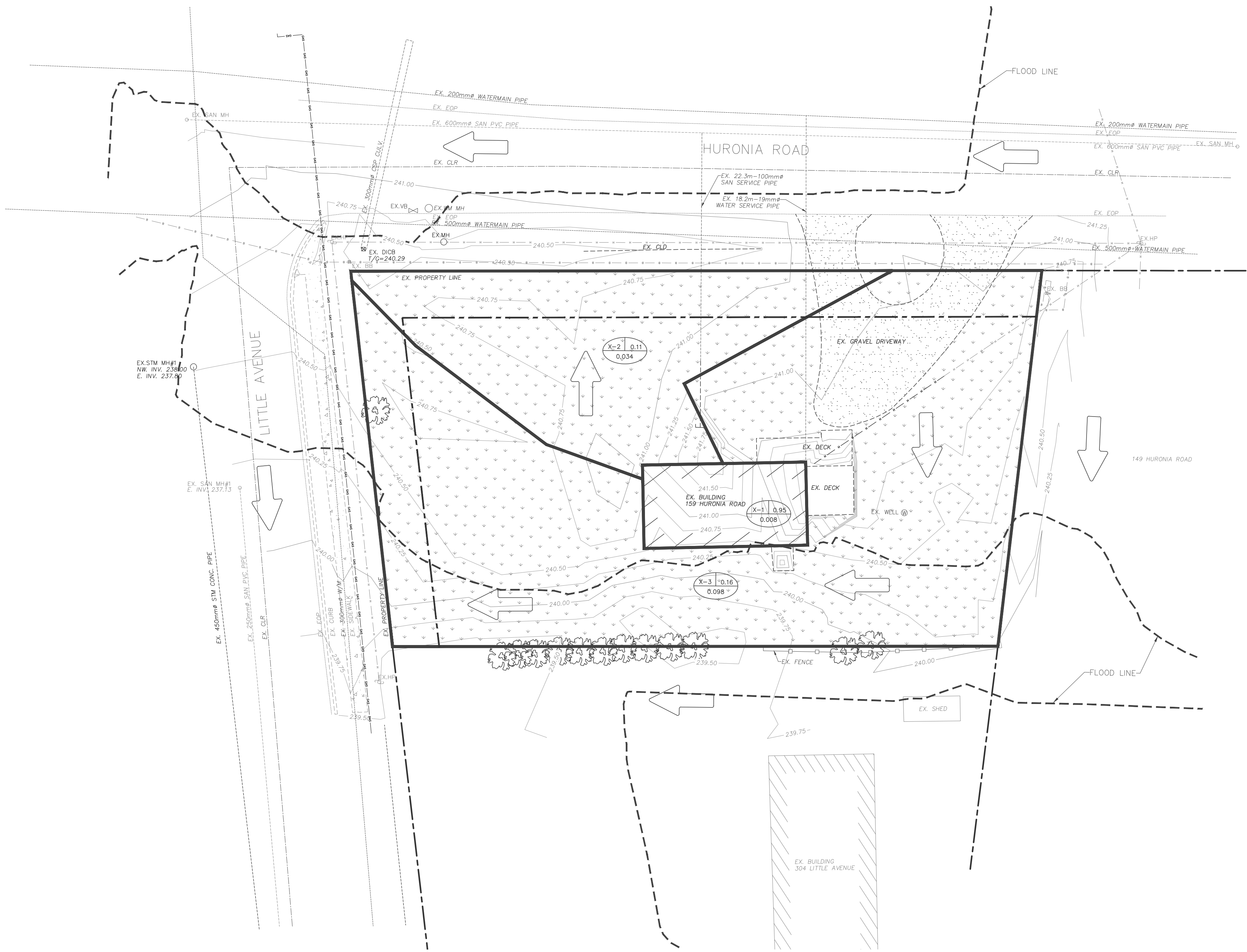
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LEGEND

- ID $\frac{X/P-1}{5.55}$ RUNOFF COEFFICIENT
AREA (ha)
CATCHMENT BOUNDARY
OVERLAND FLOW ROUTE
100 YEAR PONDING AREA
FLOOD LINE



Issued For:

ZONING BY-LAW
AMENDMENT

Client
NJ ELECTRIC GENERAL
CONTRACTING

182 BIRKSHIRE DRIVE,
AURORA, ON L4G 7R8

Project
PROPOSED TOWNHOUSE
DEVELOPMENT

159 HURONIA ROAD,
BARRIE, ON

Drawing:

PRE-DEVELOPMENT
STORMWATER
MANAGEMENT PLAN

Project No. 484-032-22 Designed by: IO Checked by: KF

Scale: 1:200 Drawn by: IO Approved by: ES

Orientation Stamp



Drawing No.

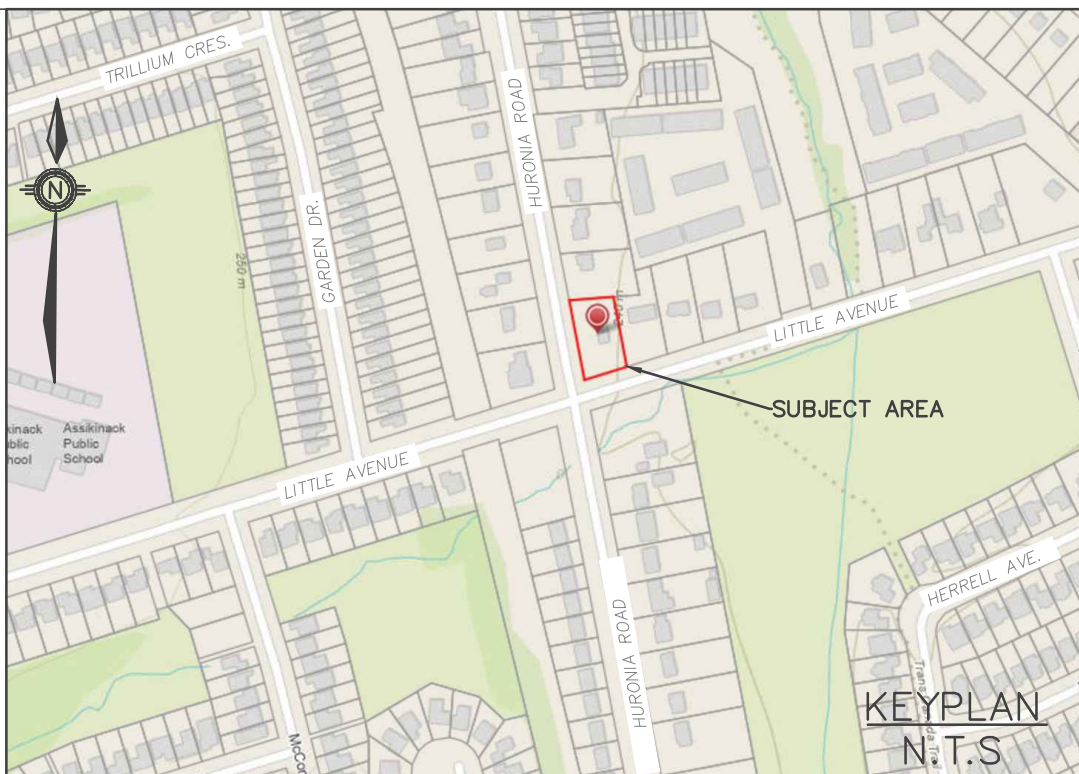
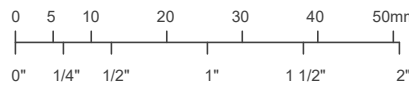
STM-1

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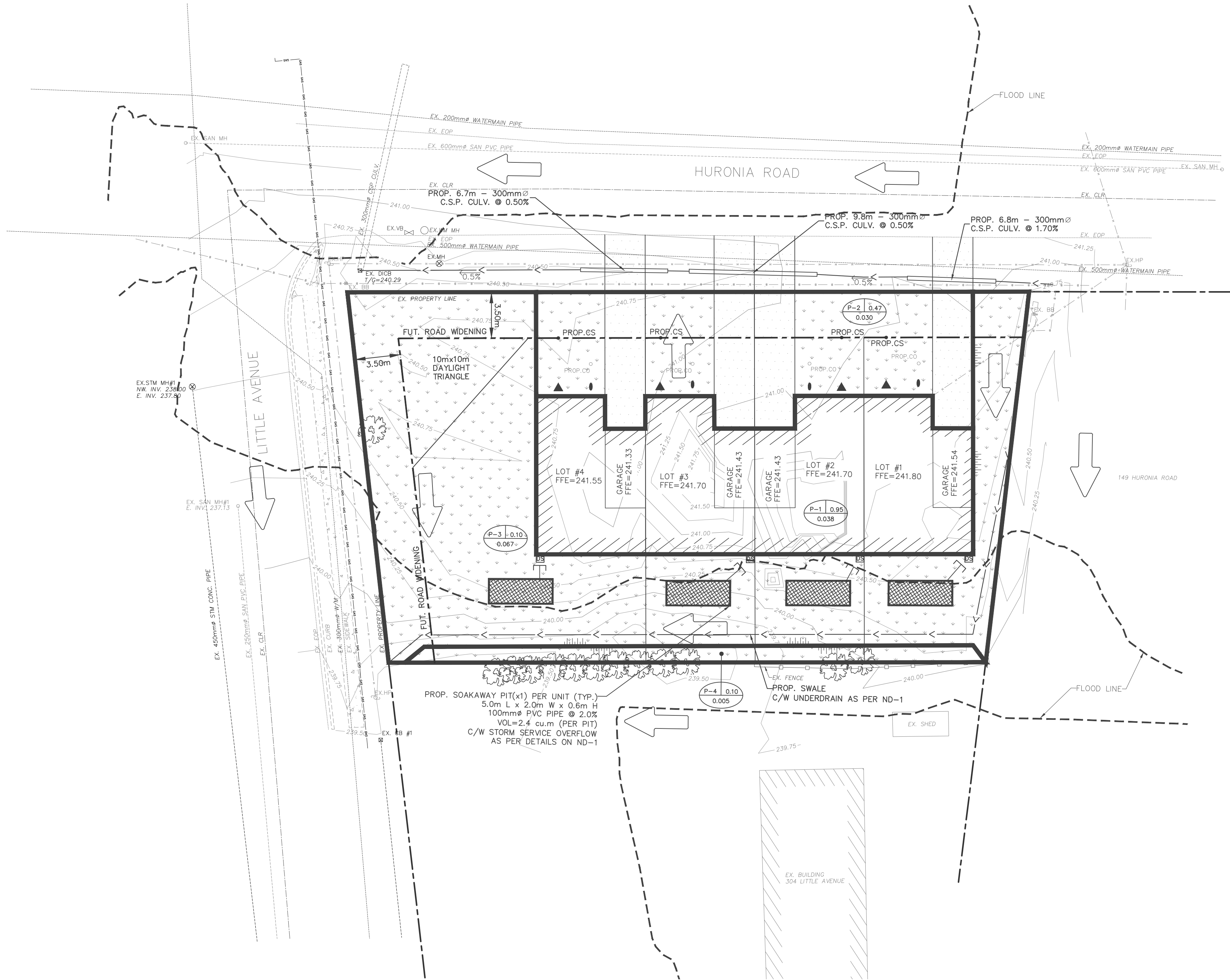
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LEGEND

- ID $\frac{X/P-1}{5.55}$ RUNOFF COEFFICIENT
AREA (ha)
- CATCHMENT BOUNDARY
- ← OVERLAND FLOW ROUTE
- 100 YEAR PONDING AREA
- FLOOD LINE



Issued For:

ZONING BY-LAW AMENDMENT

Client **NJ ELECTRIC GENERAL CONTRACTING**

182 BIRKSHIRE DRIVE,
AURORA, ON L4G 7R8

Project **PROPOSED TOWNHOUSE DEVELOPMENT**

159 HURONIA ROAD,
BARRIE, ON

Drawing:

POST-DEVELOPMENT STORMWATER MANAGEMENT PLAN

Project No. 484-032-22 Designed by: IO Checked by: KF

Scale: 1:200 Drawn by: IO Approved by: ES

Orientation Stamp



Drawing No.

STM-2