



SITE LOCATION

PROPOSED RESIDENTIAL DEVELOPMENT

521-525 ESSA ROAD



LIST OF DRAWINGS

RM-1	EXISTING CONDITIONS AND REMOVALS PLAN
ESC-1	EROSION AND SEDIMENT CONTROL PLAN
SERV-1	SITE SERVICING PLAN
GP-1	SITE GRADING PLAN
PM-1	PAVEMENT PAINT MARKINGS AND SIGNAGE PLAN
PRE-1	PRE-DEVELOPMENT CATCHMENT PLAN
POST-1	POST DEVELOPMENT CATCHMENT PLAN
DET-1	STANDARD AND CONSTRUCTION DETAILS
GN-1	GENERAL NOTES AND DETAILS

PROJECT NO.17-11306

SUBMISSION
NOVEMBER 2018





NOTE: EXISTING WELLS ON THE PROPERTY SHALL BE DECOMMISSIONED IN ACCORDANCE ONTARIO REGULATION 403. CONFIRMATION OF WELL DECOMMISSIONING TO BE PROVIDED TO ENGINEER.

- LEGEND**
- EX. HP/LS
 - ◻ EX. CATCHBASIN
 - EX. HYDRANT
 - ⊕ EX. VALVE AND BOX
 - EX. SANITARY MANHOLE
 - EX. STORM MANHOLE
 - ⊕ EX. TRAFFIC LIGHT
 - EX. SIGN
 - 246.00— CONTOUR
 - HW— OVERHEAD HYDRO WIRE
 - DITCH CENTERLINE
 - EXISTING FENCE
 - ⊕ BH-1 APPROXIMATE BOREHOLE LOCATION
 - EXISTING TREE
 - LIMIT OF EXISTING VEGETATION
 - ▭ EXISTING ASPHALT SURFACE

NOTE: EXISTING SERVICES ARE TO BE REMOVED AS PER THE CITY OF BARRIE ENGINEERING STANDARDS. REFER TO SITE SERVICING DRAWING SERV-1 FOR DETAILS.

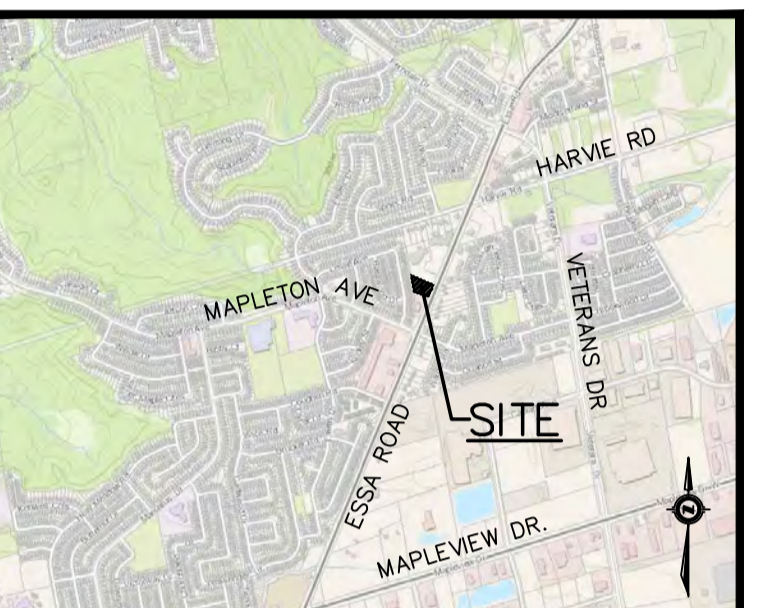
HORIZONTAL CONTROL MONUMENTS
 U.T.M. (ZONE 17) NAD 83
 ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.
 BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED FROM CONTROL MONUMENTS 031950003 (N=4910748.411, E=603095.546) AND ARE REFERRED TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN ZONE, 17 AND ARE BASED ON NAD83)
 BENCHMARK V010865470 300.3254 - CONCRETE HEADWALL ON EASTSIDE OF RED FERN AVENUE, 0.15km NORTH OF DYER ROAD. TABLE IS SET HORIZONTALLY IN THE EAST FACE, 16.3m EAST OF CENTERLINE OF ROAD, 52cm WEST OF SOUTH END, 42 cm BELOW THE TOP



The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.

Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.

Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



- KEY MAP**
- NOTES**
1. TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 6 2017.
 2. SITE PLAN PROVIDED BY PATRICK MARKUS LUCKIE ARCHITECT.
 3. REFER TO SOILS REPORT PREPARED BY PETO MacCALLUM LTD. FOR BOREHOLE DETAILS.
 4. REFER TO DRAWING ESC-1 FOR SITE DISTURBANCE LIMITS.

BENCHMARK

● TBM#1
 TOP OF IB IN NORTHWEST CORNER OF PROPERTY
 ELEVATION 314.30

NO. YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	NOVEMBER 2018
SCALE:	1:250

CLIENT/PROJECT

521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT

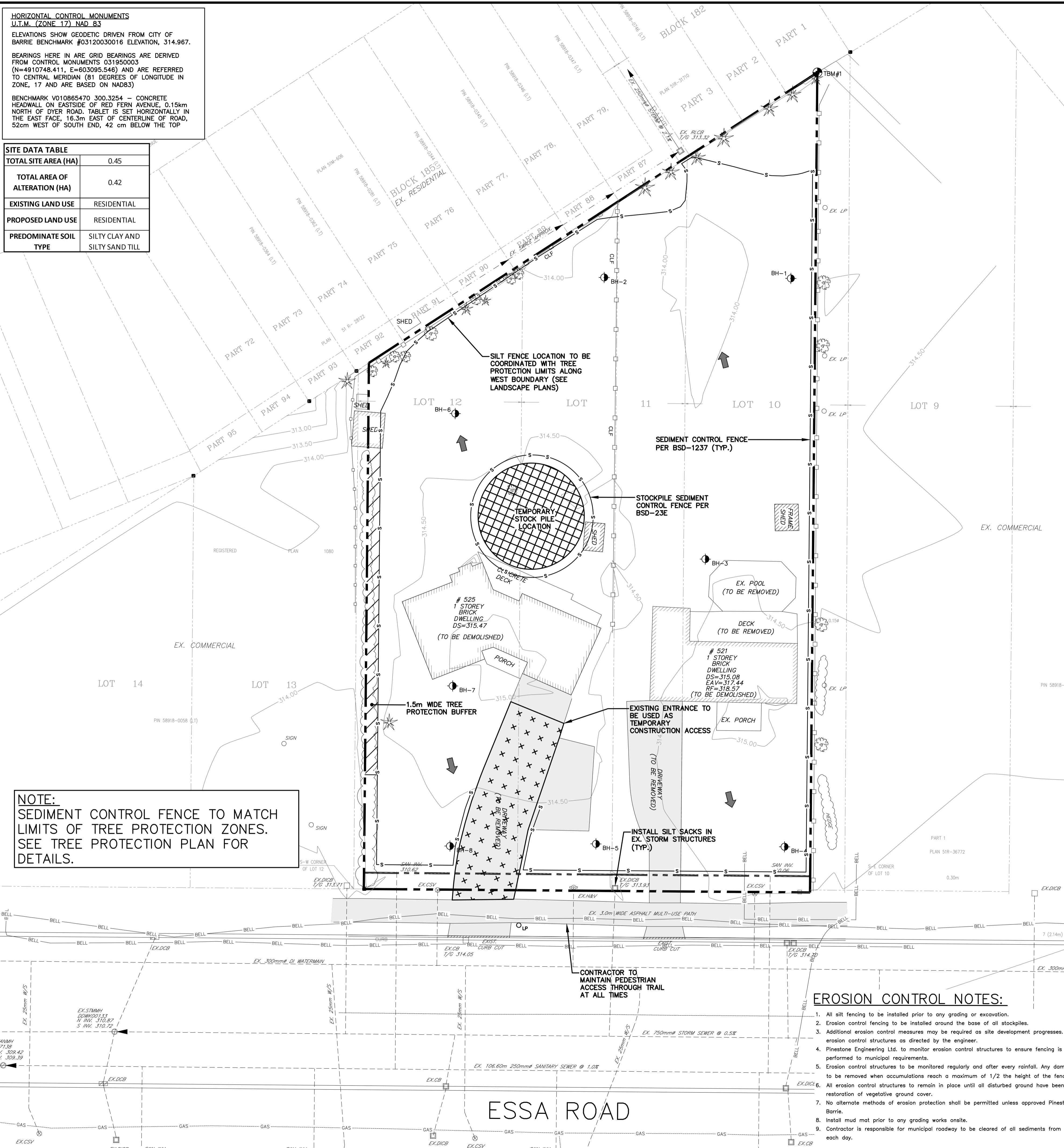
DRAWING TITLE

EXISTING CONDITIONS AND REMOVALS PLAN

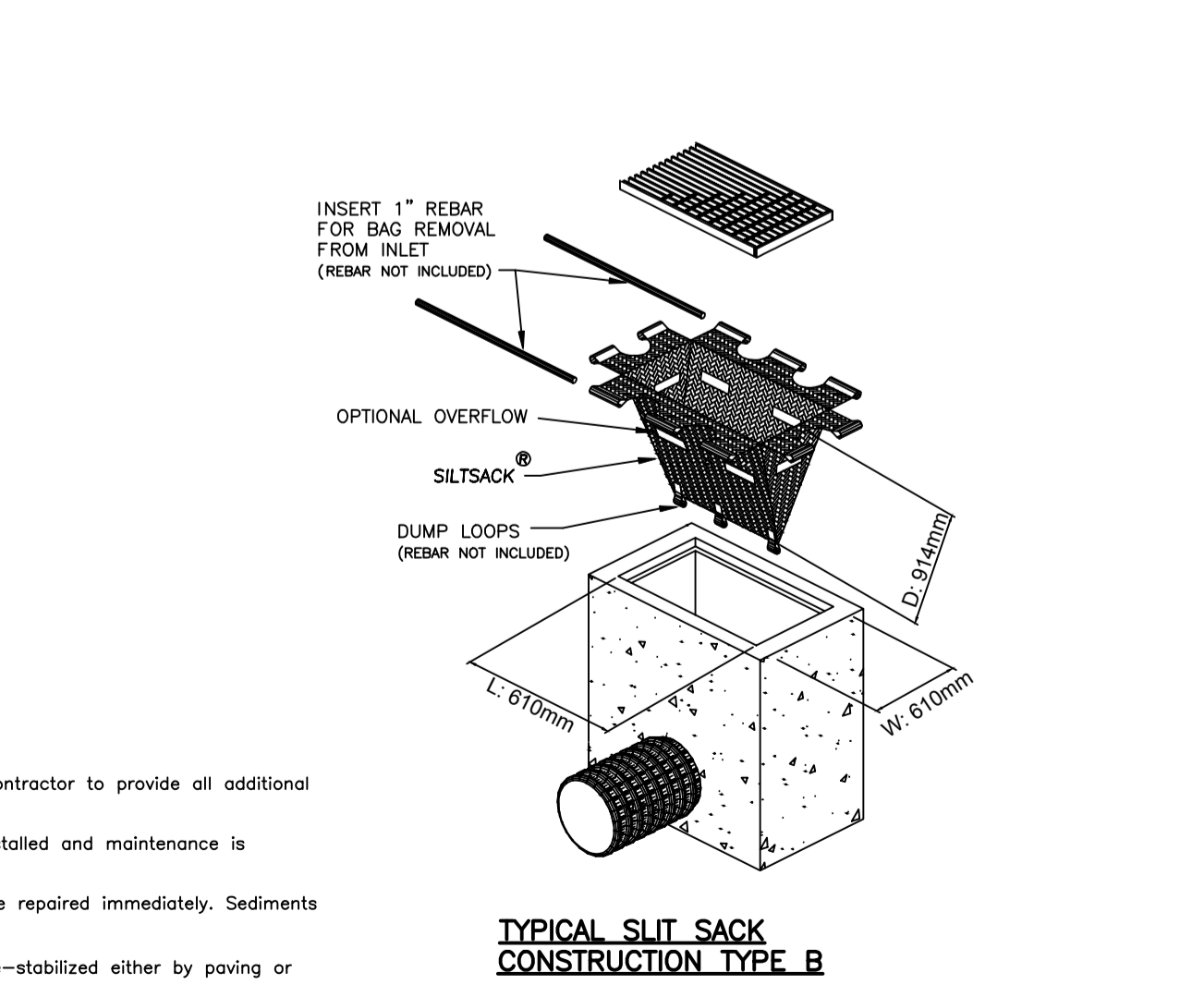
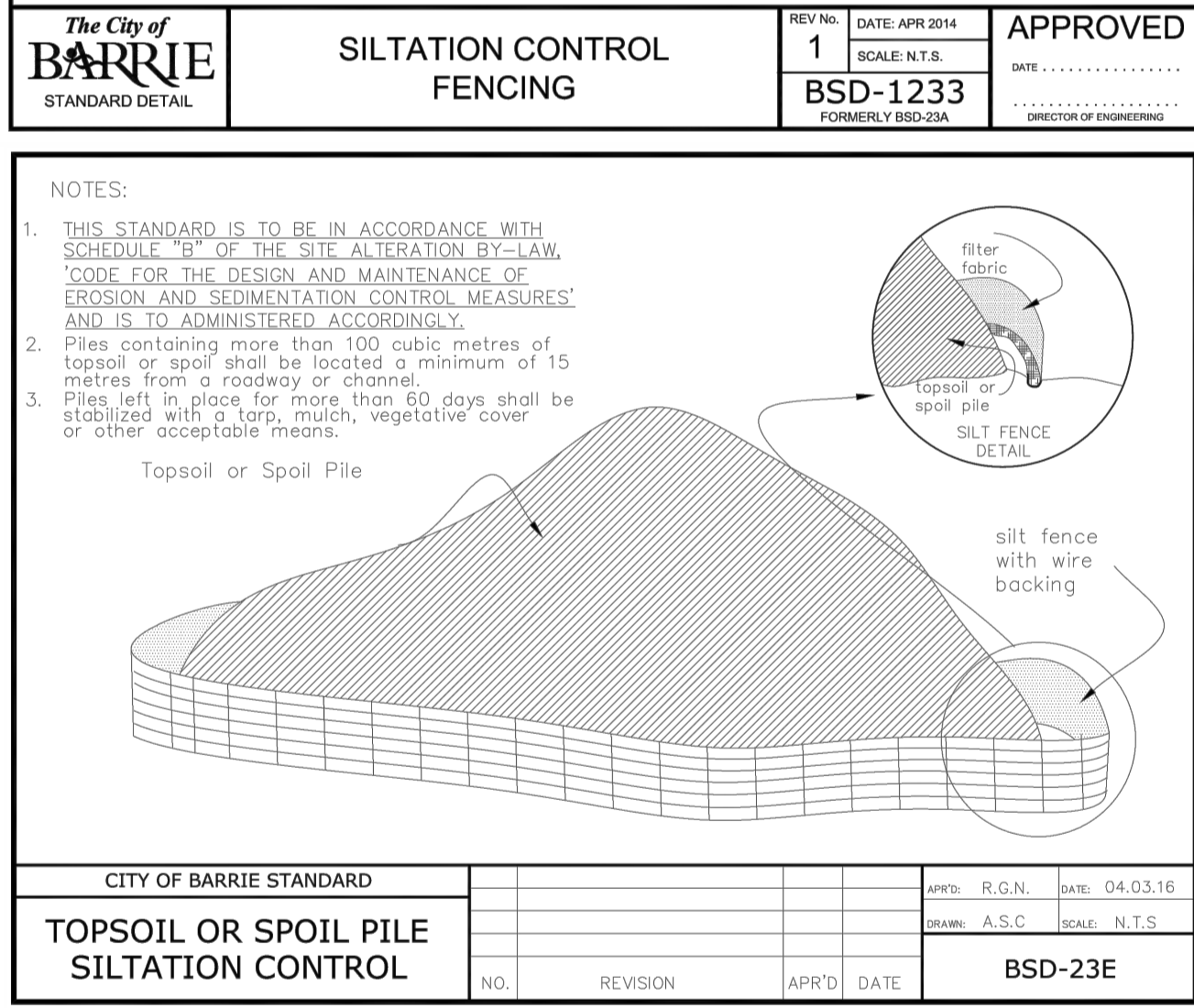
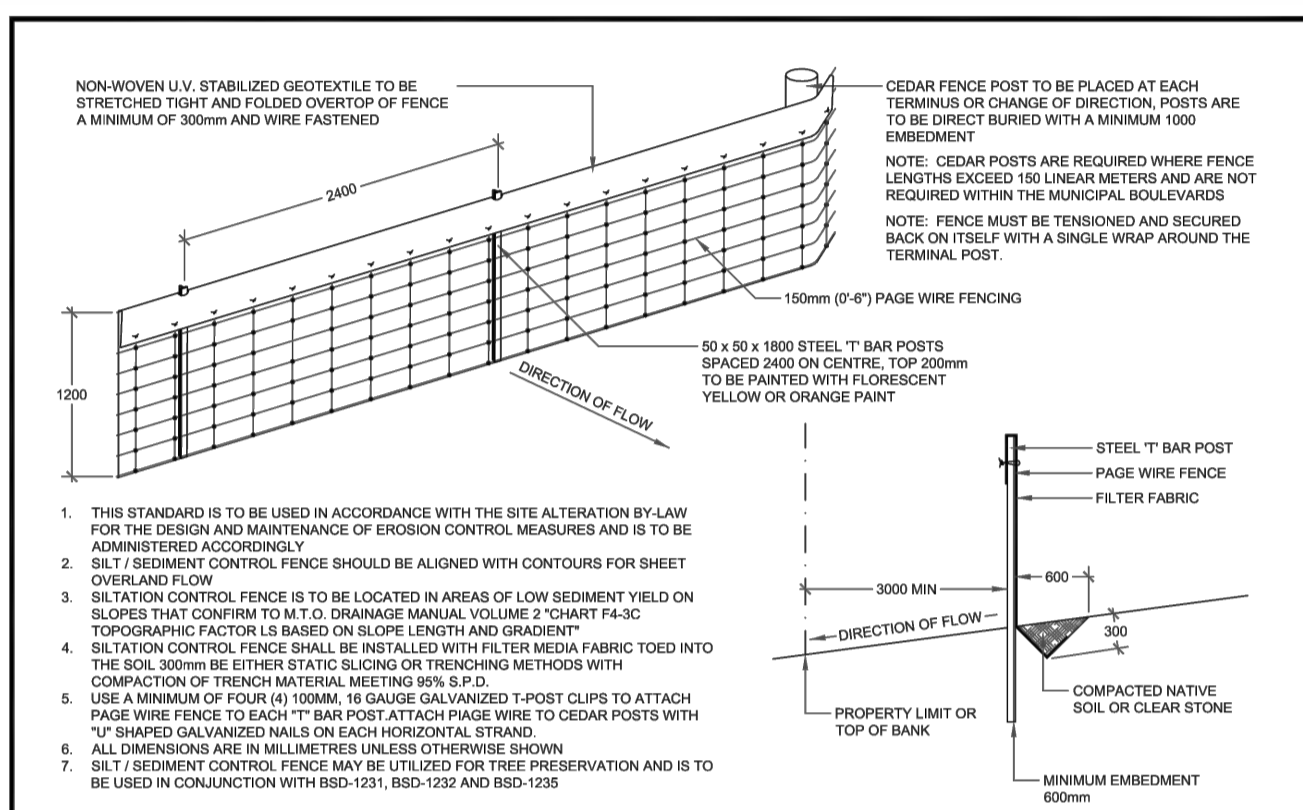
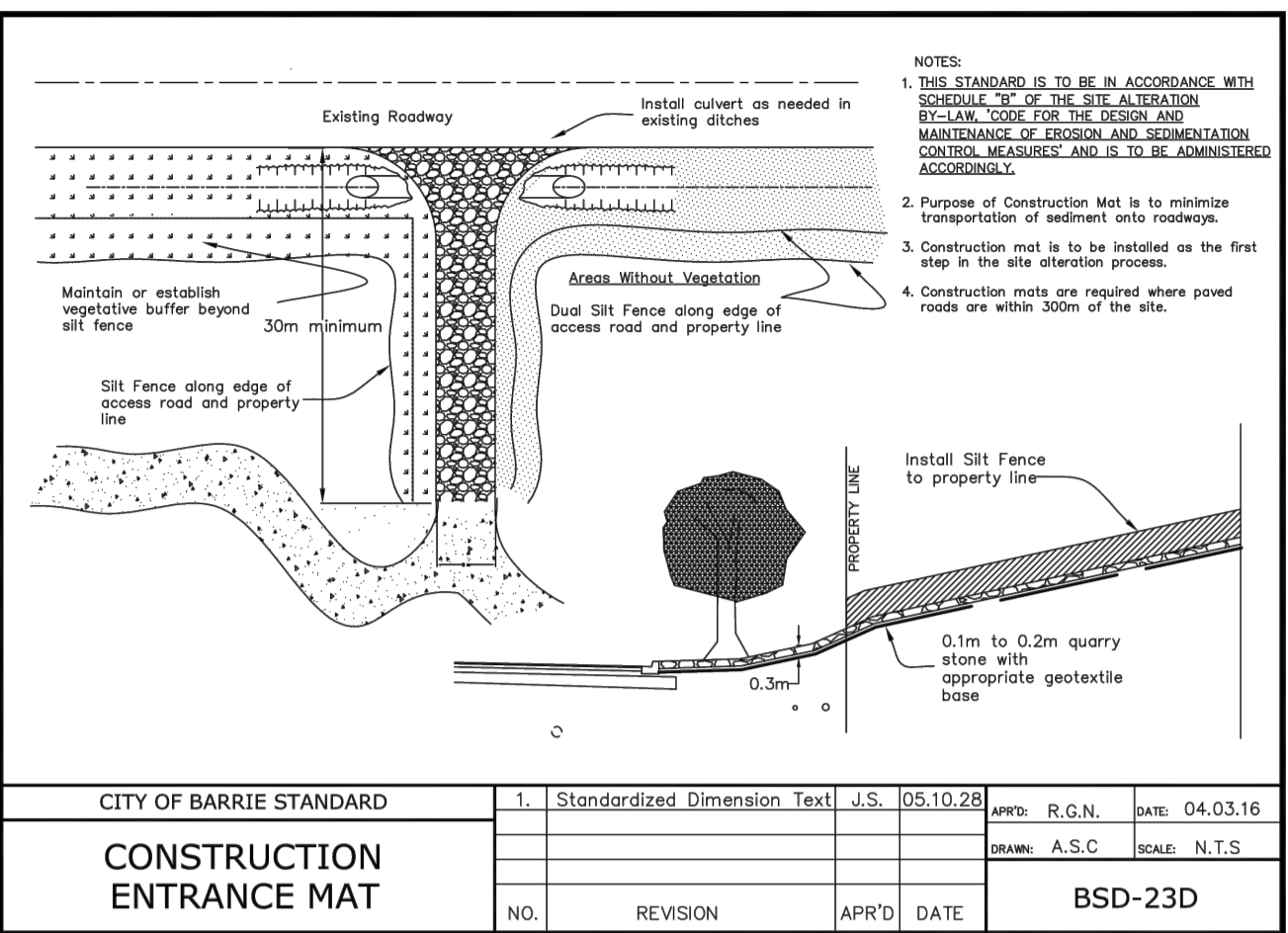
PROJECT NO.	DRAWING NO.	REVISION
17-113061-B	FM-1	0

HORIZONTAL CONTROL MONUMENTS
 U.T.M. (ZONE 17) NAD 83
 ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.
 BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED FROM CONTROL MONUMENTS 031950003 (N=4910748.411, E=603095.546) AND ARE REFERRED TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN ZONE, 17 AND ARE BASED ON NAD83)
 BENCHMARK V010865470 300.3254 - CONCRETE HEADWALL ON EASTSIDE OF RED FERN AVENUE, 0.15km NORTH OF DYER ROAD. TABLET IS SET HORIZONTALLY IN THE EAST FACE, 16.3m EAST OF CENTERLINE OF ROAD, 52cm WEST OF SOUTH END, 42 cm BELOW THE TOP

SITE DATA TABLE	
TOTAL SITE AREA (HA)	0.45
TOTAL AREA OF ALTERATION (HA)	0.42
EXISTING LAND USE	RESIDENTIAL
PROPOSED LAND USE	RESIDENTIAL
PREDOMINATE SOIL TYPE	SILTY CLAY AND SILTY SAND TILL



NOTE:
 SEDIMENT CONTROL FENCE TO MATCH LIMITS OF TREE PROTECTION ZONES.
 SEE TREE PROTECTION PLAN FOR DETAILS.



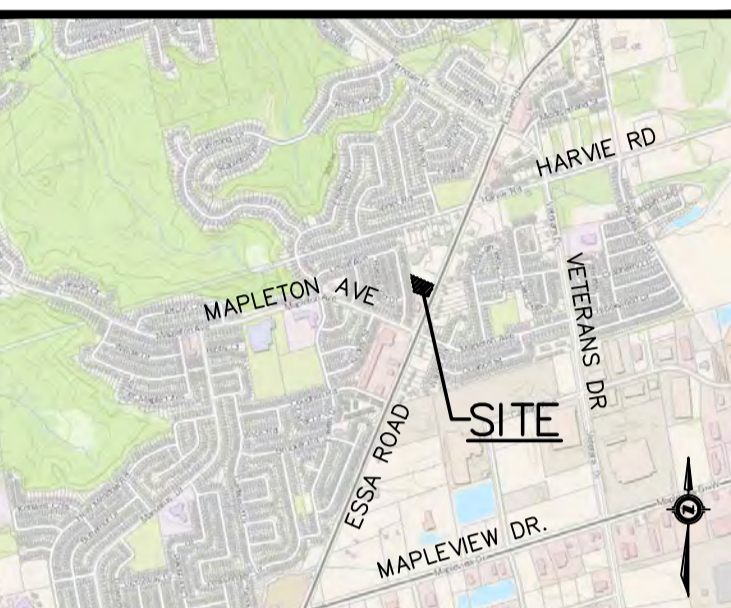
- EROSION CONTROL NOTES:**
- All silt fencing to be installed prior to any grading or excavation.
 - Erosion control fencing to be installed around the base of all stockpiles.
 - Additional erosion control measures may be required as site development progresses. Contractor to provide all additional erosion control structures as directed by the engineer.
 - Pinestone Engineering Ltd. to monitor erosion control structures to ensure fencing is installed and maintenance is performed to municipal requirements.
 - Erosion control structures to be monitored regularly and after every rainfall. Any damage repaired immediately. Sediments to be removed when accumulations reach a maximum of 1/2 the height of the fence.
 - All erosion control structures to remain in place until all disturbed ground have been re-stabilized either by paving or restoration of vegetative ground cover.
 - No alternate methods of erosion protection shall be permitted unless approved Pinestone Engineering Ltd. and the City of Barrie.
 - Install mud mat prior to any grading works onsite.
 - Contractor is responsible for municipal roadway to be cleared of all sediments from vehicular tracking etc. at the end of each day.



The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.

Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.

Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



- KEY MAP NOTES**
- TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 6 2017.
 - SITE PLAN PROVIDED BY PATRICK MARKUS LUCKIE ARCHITECT.
 - REFER TO SOILS REPORT PREPARED BY PETO MACCALLUM LTD. FOR BOREHOLE DETAILS.

- LEGEND**
- 246.00 CONTOUR
 - OH-OH OVERHEAD HYDRO WIRE
 - DITCH CENTERLINE
 - DIRECTION OF OVERLAND FLOW
 - EXISTING FENCE
 - S SILT FENCE
 - CONSTRUCTION ENTRANCE MAT
 - TEMPORARY STOCKPILE LOCATION
 - BH-2 APPROXIMATE BOREHOLE LOCATION

BENCHMARK
 TBM#1
 TOP OF IB IN NORTHWEST CORNER OF PROPERTY
 ELEVATION 314.30

NO. YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

DESIGN BY: J.V.
 DRAWN BY: G.N.
 CHECKED: J.V.
 DATE: SEPT. 2018
 SCALE: 1:250

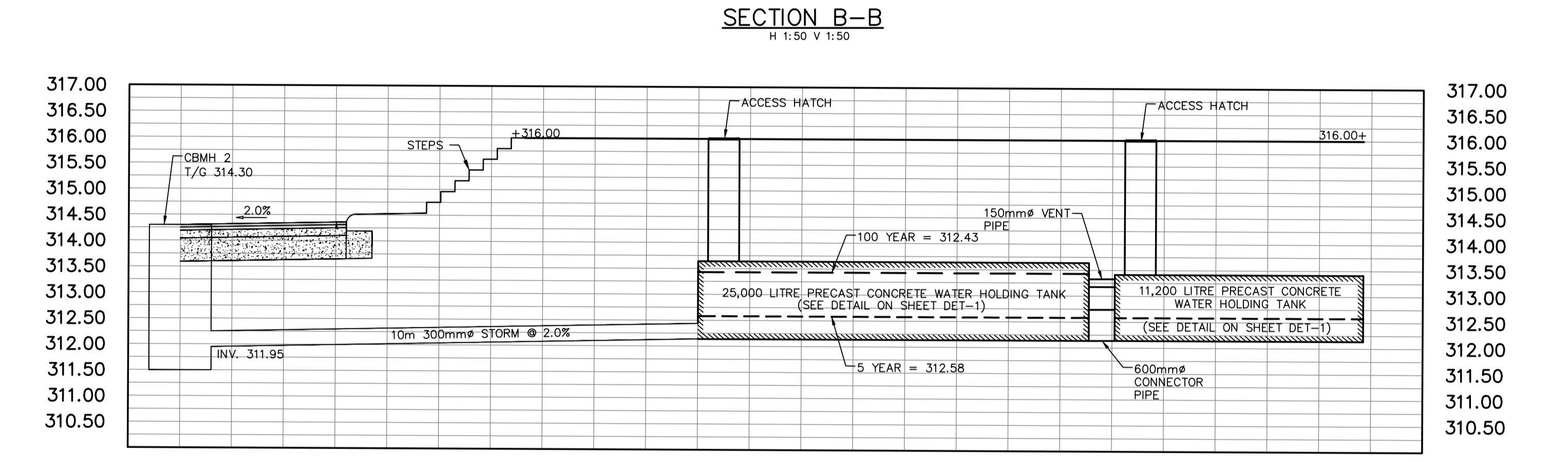
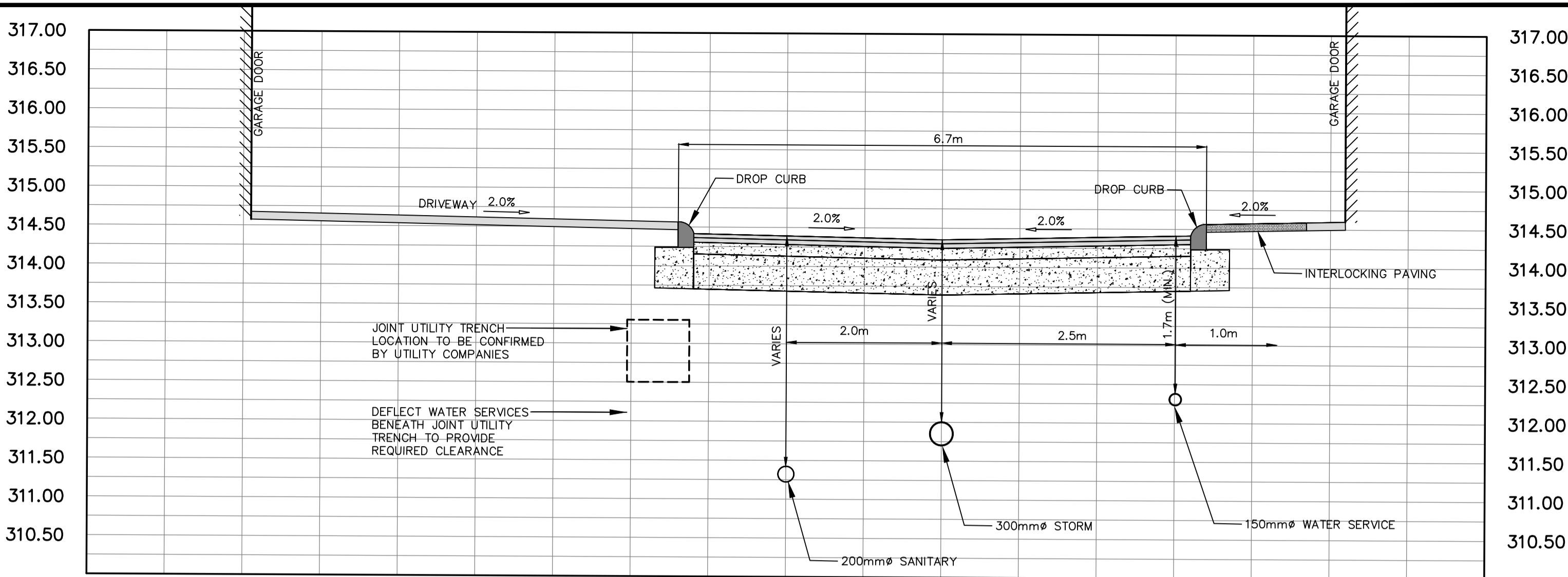
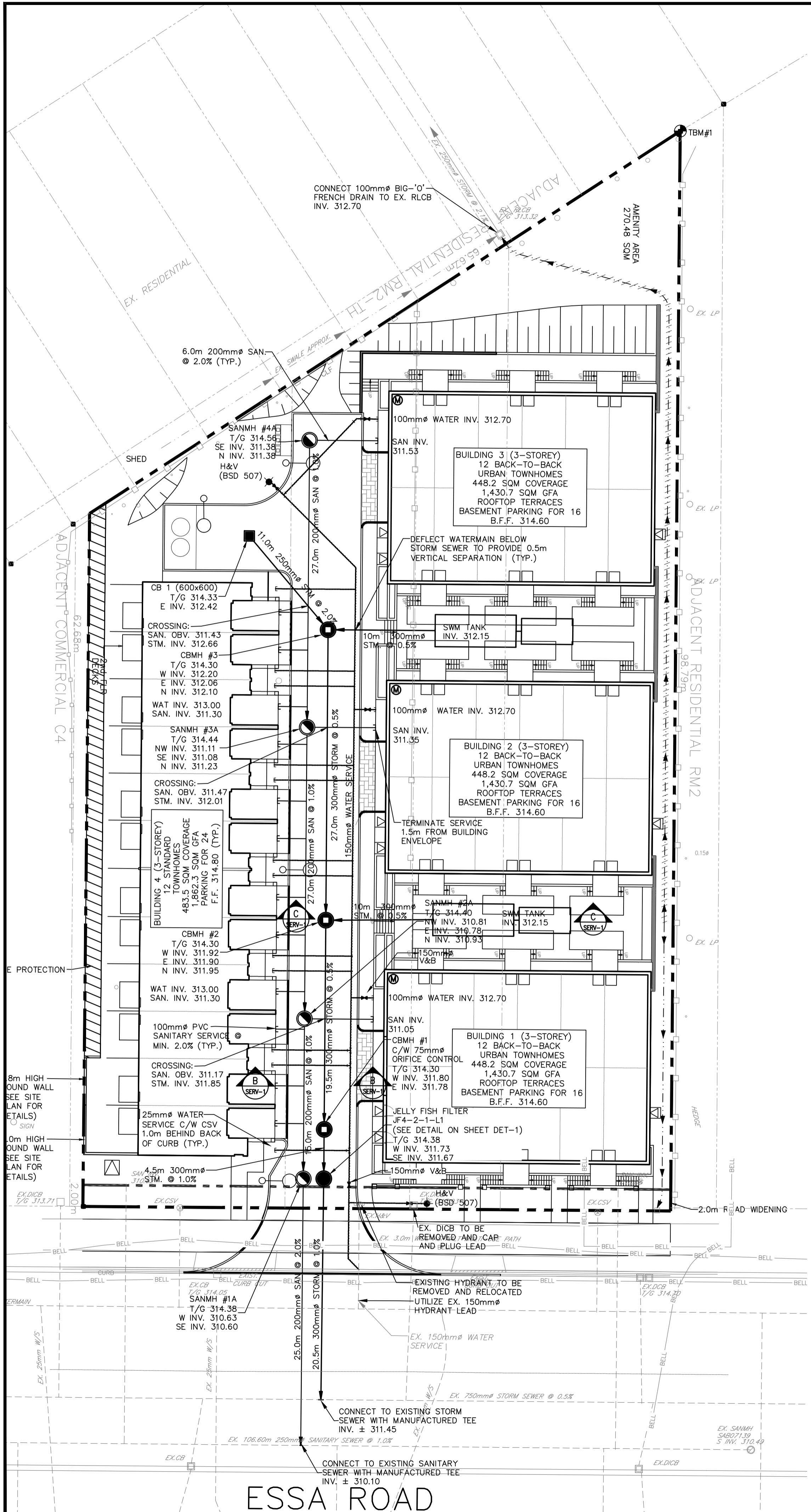
CLIENT/PROJECT

521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT

DRAWING TITLE

EROSION AND SEDIMENT CONTROL PLAN

PROJECT NO. 17-113061-B	DRAWING NO. ESC-1	REVISION 0
----------------------------	----------------------	---------------



The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.

Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.

Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



KEY MAP

- NOTES
- TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 6 2017.
 - SITE PLAN PREPARED BY PATRICK MARCUS LUCKIE, ARCHITECT APRIL 10th 2018

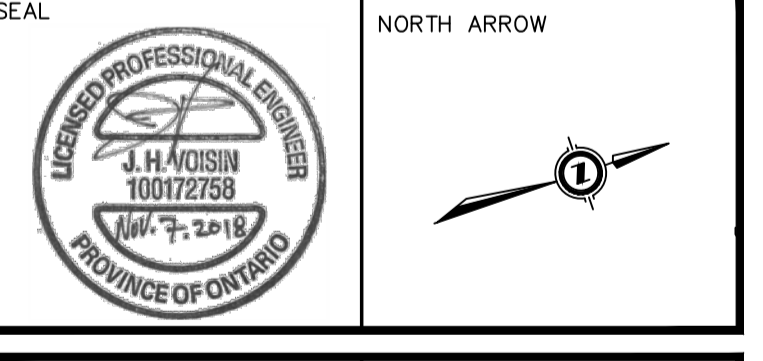
LEGEND

- PROPOSED CATCHBASIN
- PROPOSED JELLYFISH FILTER MODEL NO. JF4-2-1-L1
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED HYDRANT
- WATER METER LOCATION
- LIGHT STANDARD
- FRENCH DRAIN
- SIDE YARD SWALE

BENCHMARK

TBM#1
TOP OF IB IN NORTHWEST CORNER OF PROPERTY
ELEVATION 314.30

NO.	YY.MM.DD	REVISION	BY

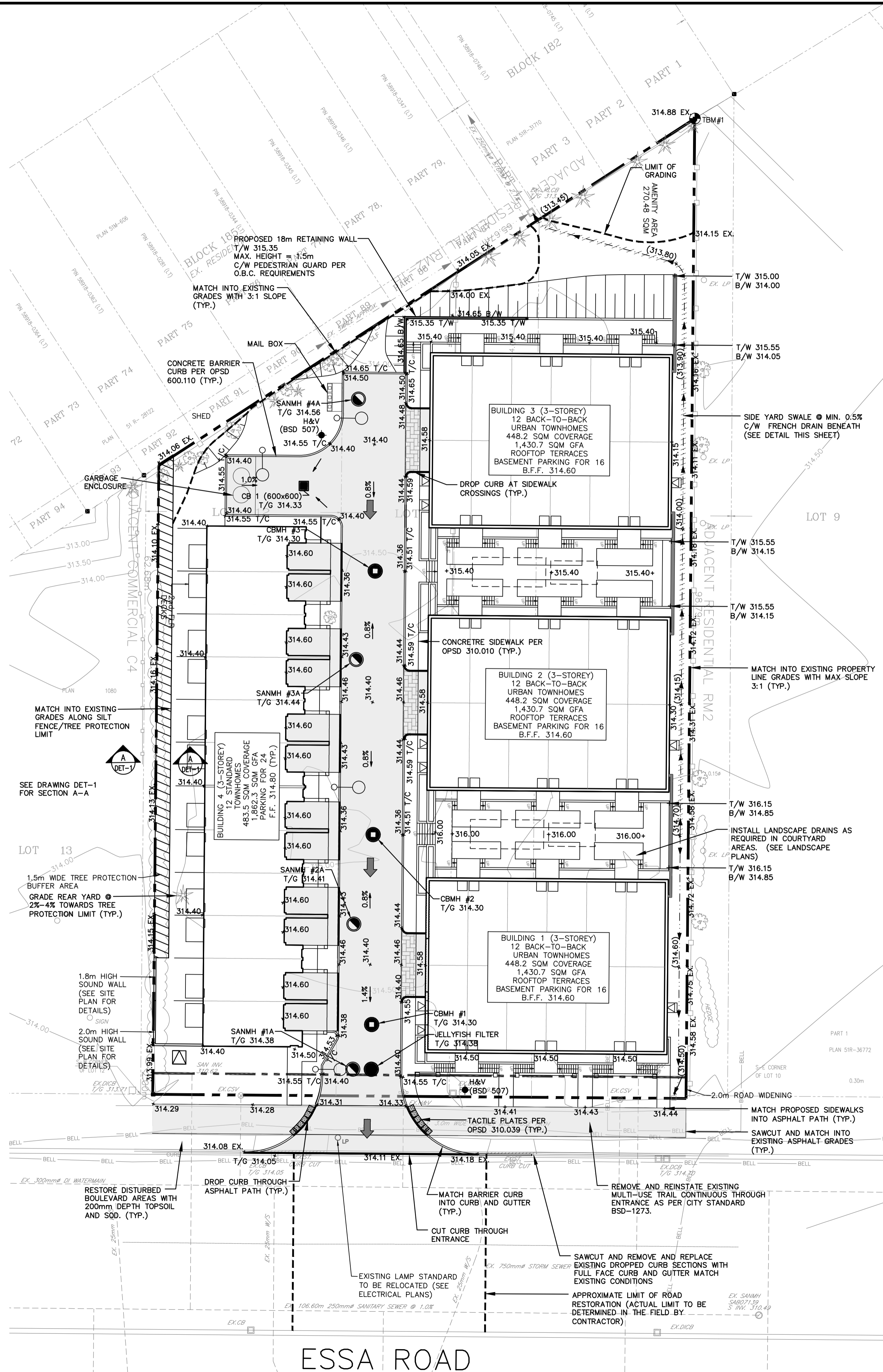


DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	SEPT. 2018
SCALE:	1:250

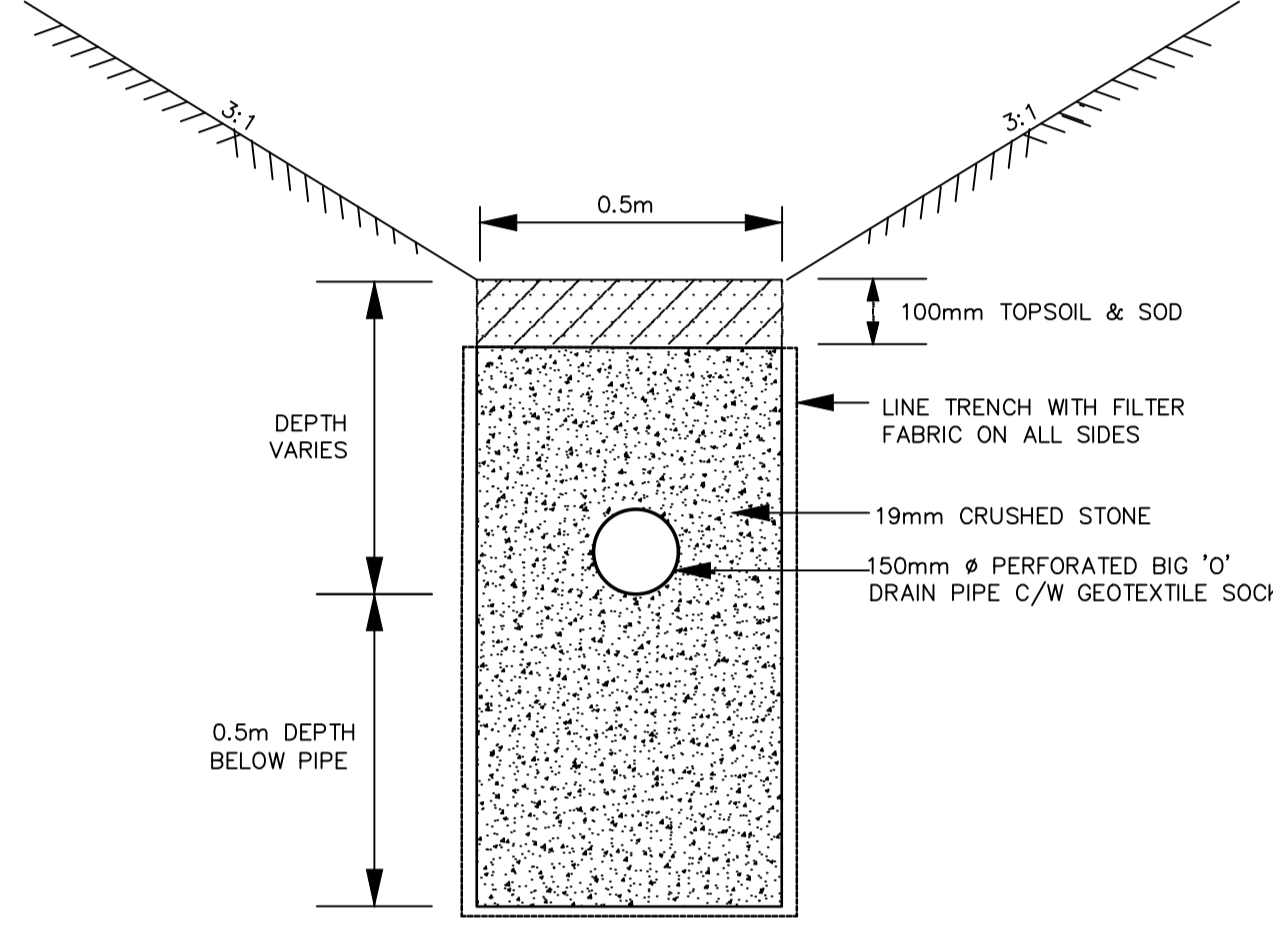
NOTE:
REFER TO TREE PROTECTION PLAN FOR TREE REMOVALS AND PRESERVATION AREAS.

HORIZONTAL CONTROL MONUMENTS
U.T.M. (ZONE 17) NAD 83
ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.
BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED FROM CONTROL MONUMENTS 031950003 (N=4910748.411, E=603095.546) AND ARE REFERRED TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN ZONE, 17 AND ARE BASED ON NAD83)
BENCHMARK V010865470 300.3254 - CONCRETE HEADWALL ON EASTSIDE OF RED FERN AVENUE, 0.15km NORTH OF DYER ROAD. TABLET IS SET HORIZONTALLY IN THE EAST FACE, 16.3m EAST OF CENTERLINE OF ROAD, 52cm WEST OF SOUTH END, 42 cm BELOW THE TOP

CLIENT/PROJECT		
521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT		
DRAWING TITLE		
GENERAL SERVICING PLAN		
PROJECT NO.	DRAWING NO.	REVISION
17-113061-B	SERV-1	0



- LEGEND**
- PROPOSED CATCHBASIN
 - PROPOSED JELLYFISH FILTER MODEL NO. JF4-2-1-1
 - PROPOSED CATCHBASIN MANHOLE
 - PROPOSED SANITARY MANHOLE
 - CURB STOP VALVE
 - PROPOSED HYDRANT
 - EX. SANITARY MANHOLE
 - EX. CATCH BASIN
 - EX. CATCH BASIN MANHOLE
 - EXISTING HYDRANT
 - EXISTING WATER VALVE
 - PROPOSED ELEVATION
 - EXISTING ELEVATION
 - ➔ DIRECTION OF MAJOR OVERLAND FLOW
 - ▨ STAMPED ASPHALT
 - LIGHT STANDARD
 - ▭ DROP CURB
 - ▭ PROPOSED TRANSFORMER LOCATION
 - ▭ FRENCH DRAIN
 - ▭ SIDE YARD SWALE



FRENCH DRAIN DETAIL
NTS

PAVEMENT STRUCTURE

MATERIAL	THICKNESS (mm)	
ASPHALT	HL3 SURFACE HLB BINDER	50 60
GRANULAR BASE (OPSS 1010)	GRANULAR 'A' GRANULAR 'B'	150 450

NOTE:
REFER TO TREE PROTECTION PLAN FOR TREE REMOVALS AND PRESERVATION AREAS.

HORIZONTAL CONTROL MONUMENTS
U.T.M. (ZONE 17) NAD 83
ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.
BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED FROM CONTROL MONUMENTS 031950003 (N=4910748.411, E=603095.546) AND ARE REFERRED TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN ZONE, 17 AND ARE BASED ON NAD83)
BENCHMARK V010865470 300.3254 - CONCRETE HEADMALL ON EASTSIDE OF RED FERN AVENUE, 0.15km NORTH OF DYER ROAD. TABLE IS SET HORIZONTALLY IN THE EAST FACE, 16.3m EAST OF CENTERLINE OF ROAD, 52cm WEST OF SOUTH END, 42 cm BELOW THE TOP



The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.
Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.
Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



- KEY MAP**
- NOTES**
1. TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 6 2017.
 2. SITE PLAN PREPARED BY PATRICK MARCUS LUCKIE, ARCHITECT.
 3. ESSA ROAD TO BE RESTORED TO CITY OF BARRIE STANDARDS.

BENCHMARK

TBM#1
TOP OF IB IN NORTHWEST CORNER OF PROPERTY
ELEVATION 314.30

NO.	YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

DESIGN BY:	J.V. L.B.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	NOVEMBER 2018
SCALE:	1: 250

CLIENT/PROJECT

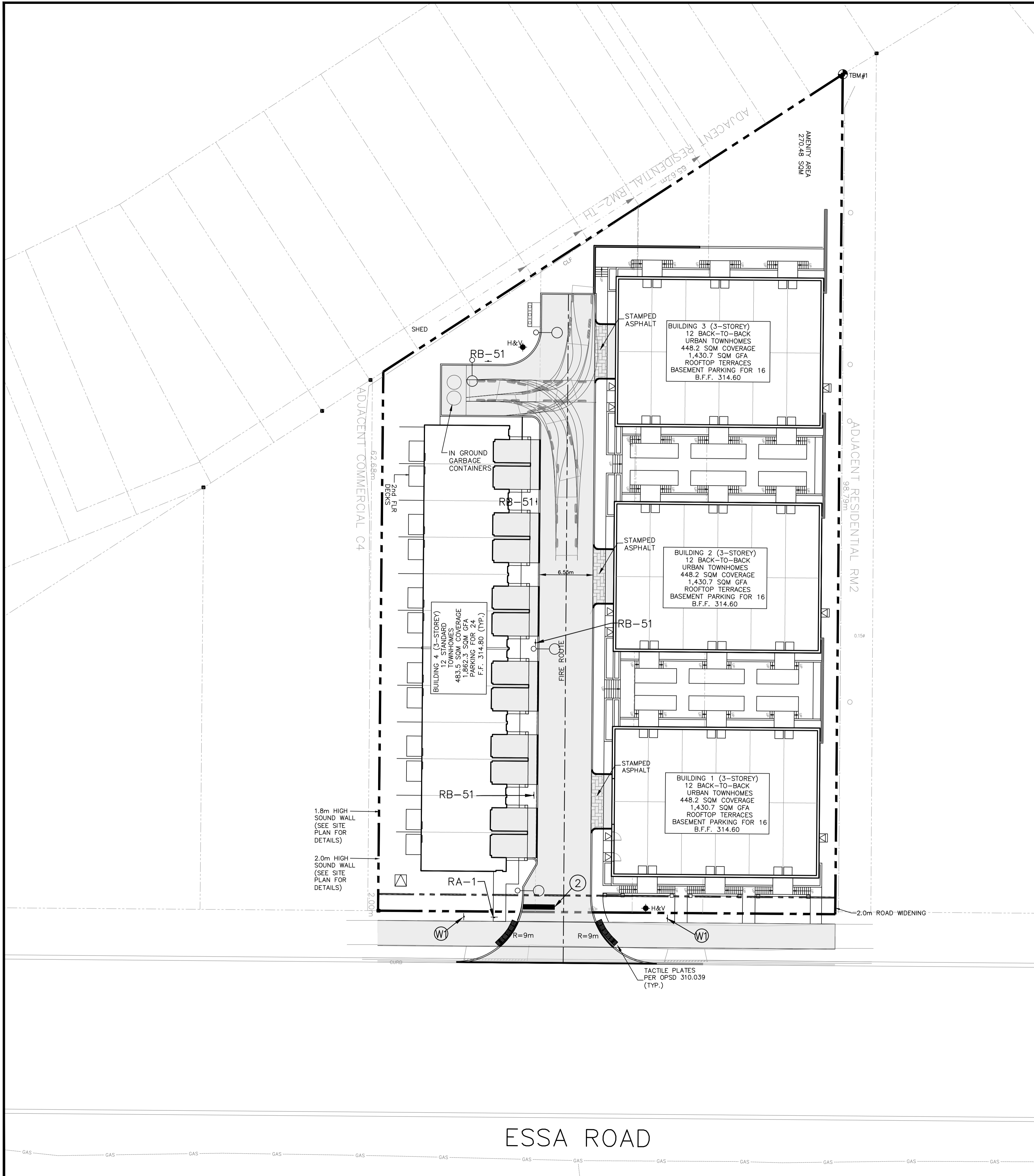
521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT

DRAWING TITLE

GRADING PLAN

PROJECT NO.	DRAWING NO.	REVISION
17-11306.1B	GP-1	0

ESSA ROAD

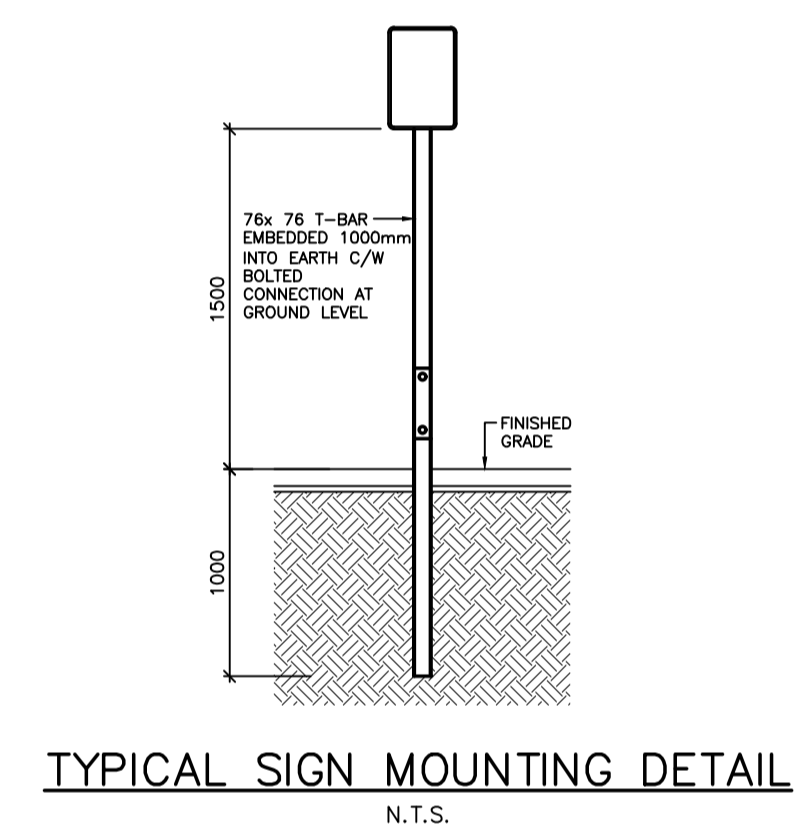


PAVEMENT MARKING AND SIGNAGE NOTES:

1. PROVIDE ALL SITE SIGNAGE AND PAVEMENT MARKINGS AS SHOWN ON SITE PLAN AND PAVEMENT MARKING AND SIGNAGE PLAN.
2. FINAL LOCATION OF FIRE ROUTE SIGNAGE TO BE DETERMINED IN FIELD BY LOCAL FIRE DEPARTMENT.
3. SAIGNAGE AND LINE PAINTING TO BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
4. REFER TO SITE PLAN FOR BARRIER FREE PARKING SIGNAGE DETAILS.
5. PAVEMENT MARKING TO CONFORM WITH OPSS.710 AND 1712.
6. W1 SIGN TO BE APPROVED BY CITY OF BARRIE PRIOR TO CONSTRUCTION. SIGN TO MATCH EXISTING SIGNS USED AT RIGHT IN RIGHT OUT ENTRANCE LOCATED BETWEEN MAPLETON AVE. AND COUGHLIN ROAD, ON THE WEST SIDE OF ESSA ROAD.
7. ALL STRIPPING TO BE 100mm WIDE AND WHITE.

LEGEND

- RA-1
- RB-51
- (W1) WATCH FOR VEHICLES TURNING
- SOLID WHITE 60cm WIDTH
- PROPOSED ASPHALT AREA
- PROPOSED SIGN FACE (DIRECTION)
- TACTILE PLATE PER OPSS 310.039 (TYP.)
- LIGHT STANDARD
- WASTE DISPOSAL TRUCK TURNING PATH



The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.

Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.

Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



KEY MAP

NOTES

1. TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 6 2017.
2. SITE PLAN PREPARED BY PATRICK MARCUS LUCKIE, ARCHITECT APRIL 10th, 2018

BENCHMARK

TBM#1
TOP OF IB IN NORTHWEST CORNER OF PROPERTY
ELEVATION 314.30

NO.	YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

PAVEMENT STRUCTURE		
MATERIAL		THICKNESS (mm)
ASPHALT	HL3 SURFACE	50
	HLB BINDER	60
GRANULAR BASE (OPSS 1010)	GRANULAR 'A'	150
	GRANULAR 'B'	450

HORIZONTAL CONTROL MONUMENTS
U.T.M. (ZONE 17) NAD 83

ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.

BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED FROM CONTROL MONUMENTS 031950003 (N=4910748.411, E=603095.546) AND ARE REFERRED TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN ZONE, 17 AND ARE BASED ON NAD83)

BENCHMARK V010865470 300.3254 - CONCRETE HEADWALL ON EASTSIDE OF RED FERN AVENUE, 0.15km NORTH OF DYER ROAD. TABLE IS SET HORIZONTALLY IN THE EAST FACE, 16.3m EAST OF CENTERLINE OF ROAD, 52cm WEST OF SOUTH END, 42 cm BELOW THE TOP

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	NOVEMBER 2018
SCALE:	1:200

CLIENT/PROJECT

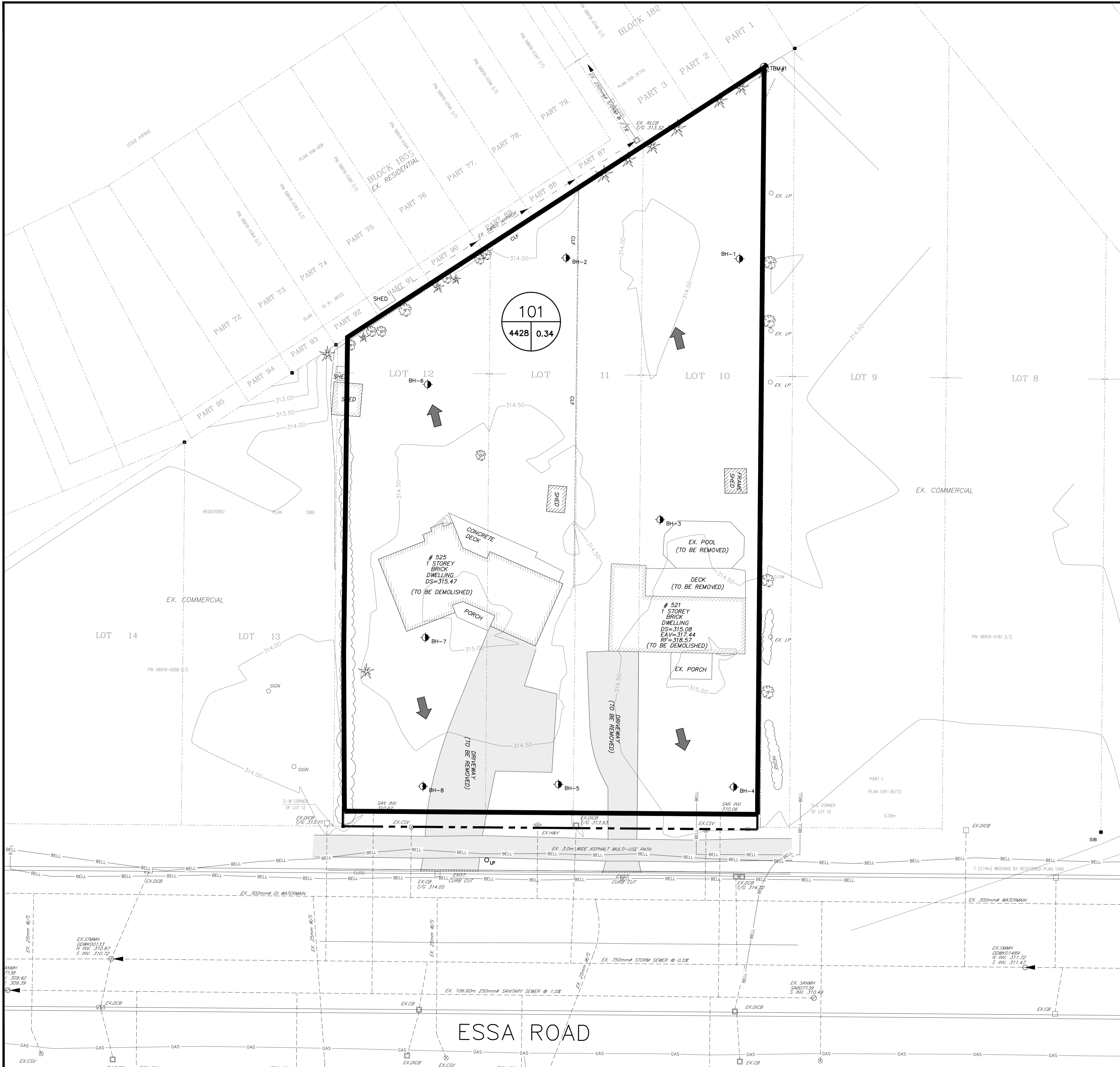
521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT

DRAWING TITLE

PAVEMENT MARKINGS AND SIGNAGE PLAN

PROJECT NO.	DRAWING NO.	REVISION
17-11306.1-B	PM-1	0

ESSA ROAD



LEGEND

- EX. HP/LS
- ◻ EX. CATCHBASIN
- ◊ EX. HYDRANT
- ⊕ EX. VALVE AND BOX
- ⊙ EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- ⊗ EX. TRAFFIC LIGHT
- ◌ EX. SIGN
- 246.00 — EXISTING ASPHALT
- — — EXISTING FENCE
- ⊕ BH-1 APPROXIMATE BOREHOLE LOCATION
- EXISTING TREE
- ~ LIMIT OF EXISTING VEGETATION
- PRE-DEVELOPMENT CATCHMENT BOUNDARY
- 101 PRE-DEVELOPMENT CATCHMENT NUMBER
- 4428 0.34 COEFFICIENT
- 101 PRE-DEVELOPMENT CATCHMENT AREA(m²)
- ← DIRECTION OF OVERLAND FLOW



The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.

Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.

Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



- ### KEY MAP
- ### NOTES
1. TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 6 2017.
 2. SITE PLAN PROVIDED BY PATRICK MARKUS LUCKIE ARCHITECT.
 3. REFER TO SOILS REPORT PREPARED BY PETO MacCALLUM LTD. FOR BOREHOLE DETAILS.
 4. REFER TO DRAWING ESC-1 FOR SITE DISTURBANCE LIMITS.

BENCHMARK

TBM#1
TOP OF IB IN NORTHWEST CORNER OF PROPERTY
ELEVATION 314.30

NO.	YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	NOVEMBER, 2018
SCALE:	1: 200

CLIENT/PROJECT

**521 AND 525 ESSA RD
RESIDENTIAL DEVELOPMENT**

DRAWING TITLE

**PRE-DEVELOPMENT CATCHMENT
PLAN**

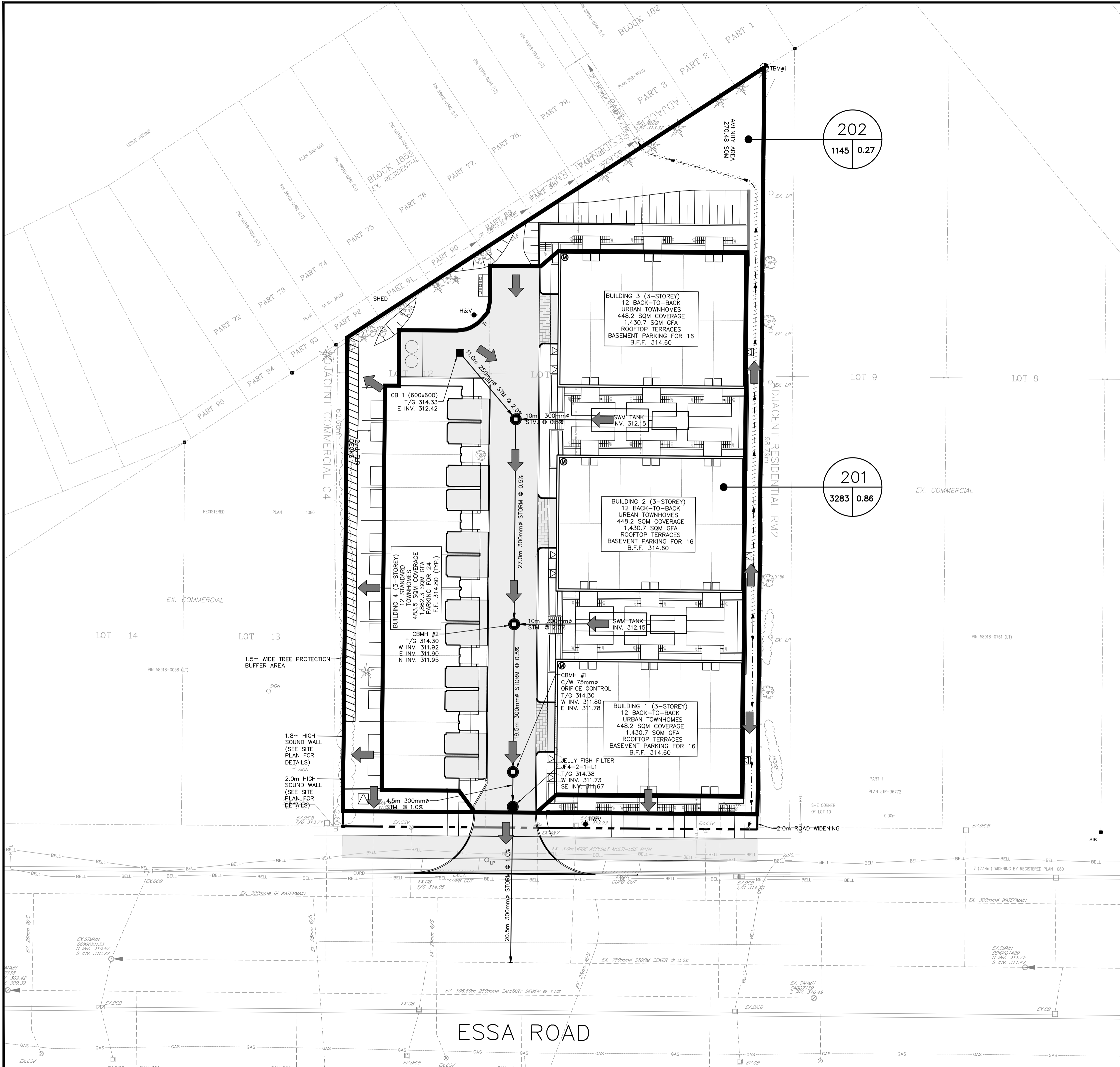
PROJECT NO.	DRAWING NO.	REVISION
17-11306.1-B	PRE-1	0

HORIZONTAL CONTROL MONUMENTS
U.T.M. (ZONE 17) NAD 83

ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.

BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED FROM CONTROL MONUMENTS 031950003 (N=4910748.411, E=603095.546) AND ARE REFERRED TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN ZONE, 17 AND ARE BASED ON NAD83)

BENCHMARK V010865470 300.3254 - CONCRETE HEADWALL ON EASTSIDE OF RED FERN AVENUE, 0.15km NORTH OF DYER ROAD. TABLE IS SET HORIZONTALLY IN THE EAST FACE, 16.3m EAST OF CENTERLINE OF ROAD, 52cm WEST OF SOUTH END, 42 cm BELOW THE TOP



LEGEND

- PROPOSED CATCHBASIN
- PROPOSED JELLYFISH FILTER
- ◀ DIRECTION OF OVERLAND FLOW
- 201 POST-DEVELOPMENT CATCHMENT NUMBER
- 3283 | 0.86 COEFFICIENT
- 3283 | 0.00 POST-DEVELOPMENT CATCHMENT AREA(A)
- ◀ DIRECTION OF OVERLAND FLOW

The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.

Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.

Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



- KEY MAP**
- NOTES**
1. TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 8 2017
 2. SITE PLAN PROVIDED BY PATRICK MARKUS LUCKIE ARCHITECT.
 3. REFER TO SOILS REPORT PREPARED BY PETO McCALLUM LTD. FOR BOREHOLE DETAILS.
 4. REFER TO DRAWING ESC-1 FOR SITE DISTURBANCE LIMITS.

BENCHMARK

TBM#1
TOP OF IB IN NORTHWEST CORNER OF PROPERTY
ELEVATION 314.30

NO.	YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	NOVEMBER 2018
SCALE:	1: 250

CLIENT/PROJECT

521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT

DRAWING TITLE

POST DEVELOPMENT CATCHMENT PLAN

PROJECT NO.	DRAWING NO.	REVISION
17-11306.1-B	POST-1	0

HORIZONTAL CONTROL MONUMENTS
U.T.M. (ZONE 17) NAD 83

ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.

BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED FROM CONTROL MONUMENTS 031950003 (N=4910748.411, E=603095.546) AND ARE REFERRED TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN ZONE, 17 AND ARE BASED ON NAD83)

BENCHMARK V010865470 300.3254 - CONCRETE HEADWALL ON EASTSIDE OF RED FERN AVENUE, 0.15km NORTH OF DYER ROAD. TABLE IS SET HORIZONTALLY IN THE EAST FACE, 16.3m EAST OF CENTERLINE OF ROAD, 52cm WEST OF SOUTH END, 42 cm BELOW THE TOP

PARKING LOT/DRIVEWAY NOTES

- EXISTING SOILS AND GRANULAR MATERIALS TO BE REMOVED TO THE LIMITS SHOWN ON THE DRAWINGS AND ANY SURPLUS IS TO BE DISPOSED OFF-SITE AT A LOCATION CHOSEN BY, AND PAID FOR, BY THE CONTRACTOR.
- PROPOSED SUB-GRADE TO BE INSPECTED AND PROOF-ROLLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER AND APPROVED PRIOR TO PLACEMENT OF GRANULAR "B". DEFICIENT AREAS ARE TO BE SUB-EXCAVATED AND REPLACED WITH GRANULAR "B" AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- THE GRANULAR SUB-BASE IS TO BE INSPECTED AND PROOF-ROLLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER AND APPROVED PRIOR TO PLACEMENT OF THE GRANULAR "A".
- THE GRANULAR BASE IS TO BE INSPECTED AND PROOF-ROLLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER AND APPROVED PRIOR TO PLACEMENT OF THE ASPHALT.
- CONTRACTOR TO PROVIDE SAMPLES OF GRANULAR MATERIALS AND THE ASPHALT MIX DESIGNS TO THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
- GRANULAR MATERIALS TO BE UNIFORMLY COMPACTED TO MINIMUM 100% STANDARD PROCTOR MAXIMUM DRY DENSITY. HOT LAID ASPHALT TO BE ROLLED UNIFORMLY TO A MINIMUM OF 97% MARSHALL BULK DENSITY.
- GRASSED AREAS DISTURBED DURING CONSTRUCTION TO BE RESTORED WITH MINIMUM 200mm TOPSOIL AND SOD.
- TOPSOIL SHALL CONFORM TO OPSS 570, EXCEPT THAT TOPSOIL SHALL CONTAIN NOT LESS THAN 4% ORGANIC MATTER FOR CLAY LOAMS AND NOT LESS THAN 2% FOR SANDY LOAMS, WITH AN ACIDITY VALUE RANGING FROM P.H. 6.0 TO P.H. 7.5 AND CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH. IT SHALL BE FREE FROM ANY ADMIXTURE OF SUBSOIL, CLAY LUMPS, STONES GREATER THAN 25mm IN DIAMETER AND ANY OTHER EXTRANEEOUS MATTER.
- SOD SHALL CONFORM TO OPSS 571.

GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARD DRAWINGS (BSD) AND ONTARIO PROVINCIAL STANDARD DRAWINGS.
- ORDER OF PRECEDENCE OF STANDARD DRAWINGS FIRSTLY CITY OF BARRIE STANDARD DRAWINGS (BSD) AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).
- LOCATION OF EXISTING SERVICES ARE NOT GUARANTEED. THE CONTRACTOR IS REQUIRED TO WORK.
- A RIGHT OF WAY ACTIVITY PERMIT IS REQUIRED FROM THE CITY OF BARRIE OPERATIONS DEPARTMENT PRIOR TO THE COMMENCEMENT OF ANY WORKS ON THE SITE.
- A SITE ALTERATION PERMIT IS REQUIRED FROM THE ENGINEERING DEPARTMENT PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS ON THE SITE.
- NATIVE MATERIAL SUITABLE FOR BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM 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 CITY ENGINEERING DEPARTMENT.
- ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE CITY ENGINEERING DEPARTMENT.

RESTORATION NOTES

- REINSTATE ROADS TO PREVIOUS CONDITION OR BETTER. MINIMUM 40mm HL3, 100mm HL4, 150mm GRANULAR 'A' AND 500mm GRANULAR 'B'.
- CONTRACTOR TO RESTORE DRIVEWAYS AND BOULEVARD IN AREAS DISTURBED BY CONSTRUCTION TO EQUAL OR BETTER CONDITIONS.
- MINIMUM GRAVEL DRIVEWAY RESTORATION TO BE 150mm, GRANULAR 'A', ASPHALT DRIVEWAY RESTORATION TO BE 50mm OF HL3, AND 200mm GRANULAR 'A'.
- ALL GRASSED AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED WITH 200mm DEPTH TOPSOIL AND SOD, MAINTAIN UNTIL ESTABLISHED.
- ALL RESTORATION WORK TO BE COMPLETED TO THE SATISFACTION OF THE ENGINEER. F. DRIVEWAYS TO BE 50mm HL3 WITH 200mm GRANULAR 'A' MINIMUM.

GENERAL NOTES - STORM SEWER

STORM SEWER

- STORM SEWER TO BE PROVIDED ON ALL ROADS WITH CURB AND GUTTER.
- PLACE ALL CATCH BASIN LATERALS AT 2% GRADE UNLESS OTHERWISE NOTED. PIPE SIZE MINIMUM 250mm DIA. SINGLE, 300mm DIA. DOUBLE.
- STORM SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD-802.010 (GRAN. 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD-802.030 OR 802.031 CLASS B (GRAN. 'A' BEDDING MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING.
- MAINTENANCE HOLE TOPS (FRAMES) AND CATCH BASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. ALL ADJUSTMENT WILL BE ACCORDANCE WITH BSD-N2.
- STORM SEWER TO BE LOCATED OFFSET 3.0m SOUTH OR EAST OF CENTRELINE UNLESS OTHERWISE SPECIFIED.
- ALL CONNECTIONS TO THE STORM MAIN SHALL BE MADE WITH A STORM MANHOLE OR APPROVED FACTORY TEE CONNECTION AS PER OPSD-708.01 OR 708.03.
- PIPE MATERIAL TO BE REINFORCED CONCRETE WITH A MINIMUM STRENGTH OF 50 N/m²/mm CERTIFIED TO C.S.A. STANDARD A247.2-1992, CLASS 50-D (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS 1) OR PVC CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4.
- STORM SEWER TO BE MINIMUM 300mm DIAMETER WITH JOINTS CONFORMING TO C.S.A. STANDARD A257.3.
- ALL PIPE BEDDING MUST CONFORM TO OPSD, MAXIMUM COVER TABLE, NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH OF COVER GREATER THAN 6 METRES UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF ENGINEERING.
- ALL PIPE HANDLING INSTALLATIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES AND THE O.C.P.A. OR UNIBELL GUIDELINES.
- SUMP PUMP DISCHARGE PIPING IN BOULEVARD: IN THE EVENT OF OVERACTIVE SUMP PUMP ACTIVITY, A 150mm DIAMETER PVC DR-28 SEWER MAY BE INSTALLED, WHEN SO DIRECTED BY THE DIRECTOR OF ENGINEERING, ALONG THE FRONTAGES OF DESIGNATED LOTS, WITH AN OFFSET OF 0.6m FROM BACK OF CURB. THIS SEWER IS TO BE CAPPED AT THE UPSTREAM END AND IS TO OUTLET INTO THE NEAREST CATCHBASIN DOWNSTREAM. DEPTH OF SEWER IS TO BE EQUAL TO SUBDRAIN DEPTH, NOT TO BE DIRECTLY CONNECTED TO FOUNDATION DRAINS.

CITY OF BARRIE STANDARD		4. NOTE 'X' - SUMP PUMP DISCHARGE PIPING	B.R.	2003.01.07	APPR'D:	R.G.N.	DATE:	92.05.15
		3. NOTE 'Y' & 'C' - "DIRECTOR OF ENGINEERING"	B.R.	2002.10.28	APPR'D:	R.G.N.	DATE:	92.05.15
		2. NOTE 'C' OPSD NUMBER REVISION	K.C.	2000.03.16	APPR'D:	L.A.J.	SCALE:	N.T.S.
		1. NOTE 'D' CHANGED	K.C.	98.03.30	APPR'D:	L.A.J.	SCALE:	N.T.S.
NO.	REVISION	APPR'D	DATE	BSD-N5				

GENERAL NOTES - SANITARY SEWER

SANITARY SEWERS

- SANITARY SEWER TO BE LOCATED AT THE CENTRELINE OF THE ROAD.
- SEWERS SHALL BE CONSTRUCTED WITH BEDDINGS AS PER OPSD-802.010, (GRAN. 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD-802.030 OR 802.031 CLASS B (GRAN. 'A' BEDDING MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING.
- MAXIMUM DEFLECTION FROM COMBINED LIVE AND DEAD LOADING SHALL NOT EXCEED ANY C.S.A., O.P.S. OR MANUFACTURERS RECOMMENDED SPECIFICATIONS.
- PVC, CONCRETE AND PROFILE WALL PVC SEWERS SHALL HAVE RUBBER GASKET TYPE JOINTS AND SHALL BE CERTIFIED TO CONFORM TO ALL APPLICABLE CURRENT C.S.A. SPECIFICATIONS.
- CONCRETE SANITARY SEWERS SHALL HAVE A MINIMUM STRENGTH OF 50 N/m²/mm CONFORMING TO CSA STANDARD A257.2-1992, CLASS 50-D (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS 1).
- MAINTENANCE HOLE TOPS (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. ALL ADJUSTMENT WILL BE ACCORDANCE WITH BSD-N2.
- ALL CONNECTIONS TO NEW SANITARY MAINS SHALL BE PRE-MANUFACTURED, FABRICATED TEES, CONNECTIONS TO EXISTING SANITARY SEWER SHALL BE MADE WITH APPROVED FACTORY MADE TEES OR INSERTA-TEES IN STRICT ACCORDANCE TO MANUFACTURERS GUIDELINES.

CITY OF BARRIE STANDARD		4. NOTE 'B' - "ENGINEERING"	B.R.	2002.10.28	APPR'D:	R.G.N.	DATE:	92.05.15
		3. NOTE 'B' OPSD NUMBER REVISION	K.C.	2000.03.16	APPR'D:	R.G.N.	DATE:	92.05.15
		2. NOTE 'T' CHANGED	K.C.	98.03.30	APPR'D:	L.A.J.	SCALE:	N.T.S.
		1. CHANGES TO B. TO G.	K.C.	95.04.24	APPR'D:	L.A.J.	SCALE:	N.T.S.
NO.	REVISION	APPR'D	DATE	BSD-N3				

GENERAL NOTES SANITARY SEWERS

ONLINE ORIFICE DETAIL

GENERAL NOTES - WATERMAIN

- CONTRACTORS SHALL NOTIFY THE CITY OF BARRIE WATER OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO PERFORM WORK ON WATER INFRASTRUCTURE.
- OPERATION OF HYDRANTS AND VALVES ON THE POTABLE WATER SYSTEM BY OTHER THAN QUALIFIED WATER OPERATIONS STAFF IS PROHIBITED BY CURRENT BY-LAW. CITY SERVICE FEES ARE FOR THE CURRENT FEES BY-LAW. THE CITY'S WATER OPERATIONS STAFF WILL SWAB, PRESSURE TEST, CHLORINATE AND FLUSH ALL NEW WATERMANS.
- MINIMUM COVER OVER WATERMAIN SHALL BE 1.2m. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE 2.5m WHERE WATERMAIN CONFLICTS WITH SEWER PIPES, DEFLECT WATERMAIN HORIZONTALLY OR VERTICALLY WHILE PROVIDING A MINIMUM OF 0.5m CLEARANCE BETWEEN WATERMAIN AND SEWERS. MAINTAIN MINIMUM DEPTH OF COVER AT ALL TIMES.
- WATERMAIN SHALL BE INSTALLED IN BEDDING AS PER OPSD 802.010 (GRANULAR 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD 802.030 OR 802.031 CLASS B (GRANULAR 'A' BEDDING MATERIAL, GRANULAR 'A' OR SELECT NATIVE COVER. MATERIAL FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF WATER OPERATIONS, ALTERNATIVE EMBEDMENT MATERIAL - SAND MEETING GRADATION REQUIREMENTS OF OPSD MIN 100% COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY IS PERMISSIBLE WHERE NOTED IN STANDARD DETAILS. GEOTECHNICAL CERTIFICATION OF MATERIAL AND COMPACTION TESTING MUST BE PROVIDED EVERY 150 METRES. THE COMPACTION TESTING MUST INCLUDE THE ENTIRE EMBEDMENT ENVELOPE (BRANCHES, BEDDING, TOP OF PIPE AND COVER).
- COPPER WATER MAINS AND SERVICES 25mm TO 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 150mm ABOVE AND BELOW TO CONFORM TO OPSD MNI 1004.05.07.
- 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 STANDARD CONCRETE THRUST BLOCKING WHERE SOIL CONDITIONS WARRANT AT THE CITY'S DISCRETION.
- NEW WATERMANS TO BE PVC DR18 CL150 MINIMUM DUCTILE IRON CL52 AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST.
- TRACING WIRE SHALL BE #12 AWG HIGH STRENGTH COPPER CLAD (H5-CSS) AND SHALL BE INSTALLED ON THE TOTAL LENGTH OF ALL WATERMAIN AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT. ALL SPLICES TO UTILIZE CONNECTORS AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST.
- ALL WATER SERVICES SHALL BE MINIMUM 25mm TYPE 'Y' COPPER OR 25mm CROSS-LINKED POLYETHYLENE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF WATER OPERATIONS. WATER SERVICE SADDLES SHALL BE USED WHEN TAPPING INTO PVC WATERMAIN.
- SERVICE TAPPINGS SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0m AND A MINIMUM OF 0.6m FROM JOINTS. (ENDS OF PIPE)
- RISER PIPES ARE TO BE INSTALLED AS PER BSD-515, AND REMOVED AS DIRECTED. SWABBING SCHEDULE TO BE SUPPLIED BY A WATER OPERATIONS FIELD REPRESENTATIVE. ALL RISERS ARE TO BE RESTRAINED OR THRUST BLOCKED.
- ALL NEW CURB STOPS AND BOXES TO BE LOCATED AT PROPERTY LINE AND OUT OF DRIVEWAYS AND SIDEWALKS.

CITY OF BARRIE STANDARD		2. OPSD NUMBERS REVISED	K.C.	2000.08.17	APPR'D:	R.G.N.	DATE:	92.05.15
		1. CHANGES TO B. TO G.	K.C.	95.04.24	APPR'D:	L.A.J.	SCALE:	N.T.S.
NO.	REVISION	APPR'D	DATE	BSD-N4				

GENERAL NOTES - SANITARY SEWER

SANITARY SERVICE LATERALS

- SANITARY LATERAL CONNECTION TO BE LOCATED AT THE CENTRELINE OF THE LOT AND CAPPED.
- LOCATION OF LATERAL TO BE MARKED 2.0m PAST PROPERTY LINE WITH A 50 x 100mm WOOD MARKER, PAINTED GREEN, EXTENDING FROM SERVICE INVERT TO 300mm ABOVE GROUND LEVEL.
- PIPE TO BE MINIMUM 100 mm DIA. PVC SDR28, RUBBER GASKET TYPE JOINTS AND SHALL CONFORM TO C.S.A. (B-182.3.4) (COLOURED) FOR A RESIDENTIAL HOUSE AND 150mm MINIMUM DIA. PVC SDR28 FOR INDUSTRIAL/COMMERCIAL DEVELOPMENT.
- MINIMUM DEPTH OF LATERAL AT PROPERTY LINE SHALL BE 2.4m MEASURED FROM THE SEWER OBVERT TO FINISHED GROUND SURFACE ELEVATION UNLESS NOTED OTHERWISE.
- ALL CONNECTIONS TO NEW SANITARY MAINS SHALL BE PRE-MANUFACTURED, FABRICATED TEES, CONNECTIONS TO EXISTING SANITARY SEWER SHALL BE MADE WITH APPROVED FACTORY MADE TEES OR INSERTA-TEES IN STRICT ACCORDANCE TO MANUFACTURERS GUIDELINES.
- MINIMUM PIPE SLOPE TO BE 2.0%, MAXIMUM 8.0% (SEE OPSD-1006.010, 1006.020).

CITY OF BARRIE STANDARD		2. OPSD NUMBERS REVISED	K.C.	2000.08.17	APPR'D:	R.G.N.	DATE:	92.05.15
		1. CHANGES TO B. TO G.	K.C.	95.04.24	APPR'D:	L.A.J.	SCALE:	N.T.S.
NO.	REVISION	APPR'D	DATE	BSD-N4				



The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of such utilities and facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume all liability for damage to them.

Drawings shall not be used for construction unless sealed and signed. All work to be performed in accordance with the Occupational Health & Safety Act 1990.

Any errors and/or omissions shall be reported to Pinestone Engineering Ltd. without delay.



KEY MAP

NO.	YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	NOVEMBER 2018
SCALE:	N.T.S.

CLIENT/PROJECT

521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT

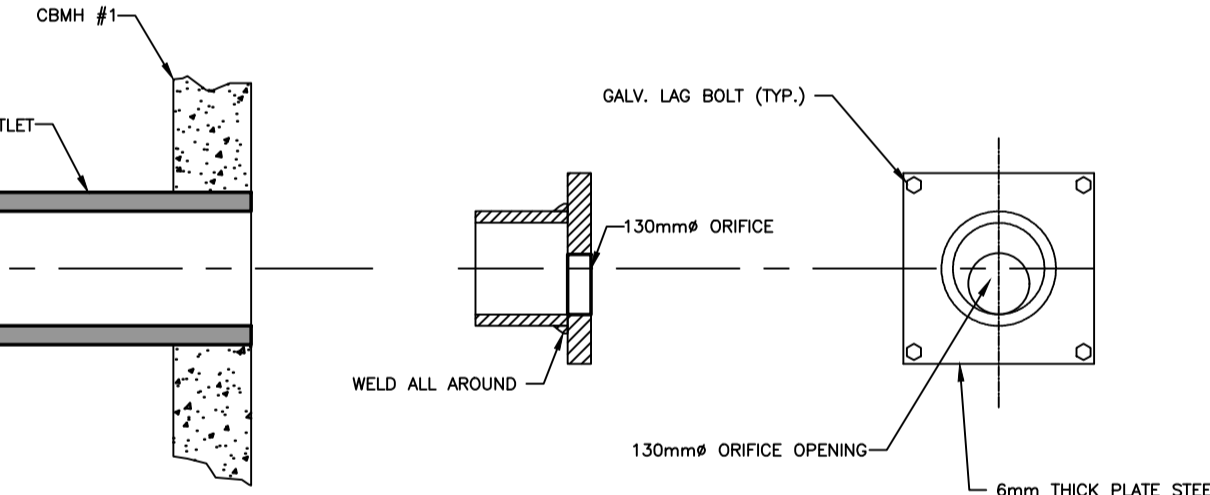
GENERAL NOTES AND DETAILS

PROJECT NO.	DRAWING NO.	REVISION
17-11903.1-B	GN-1	0

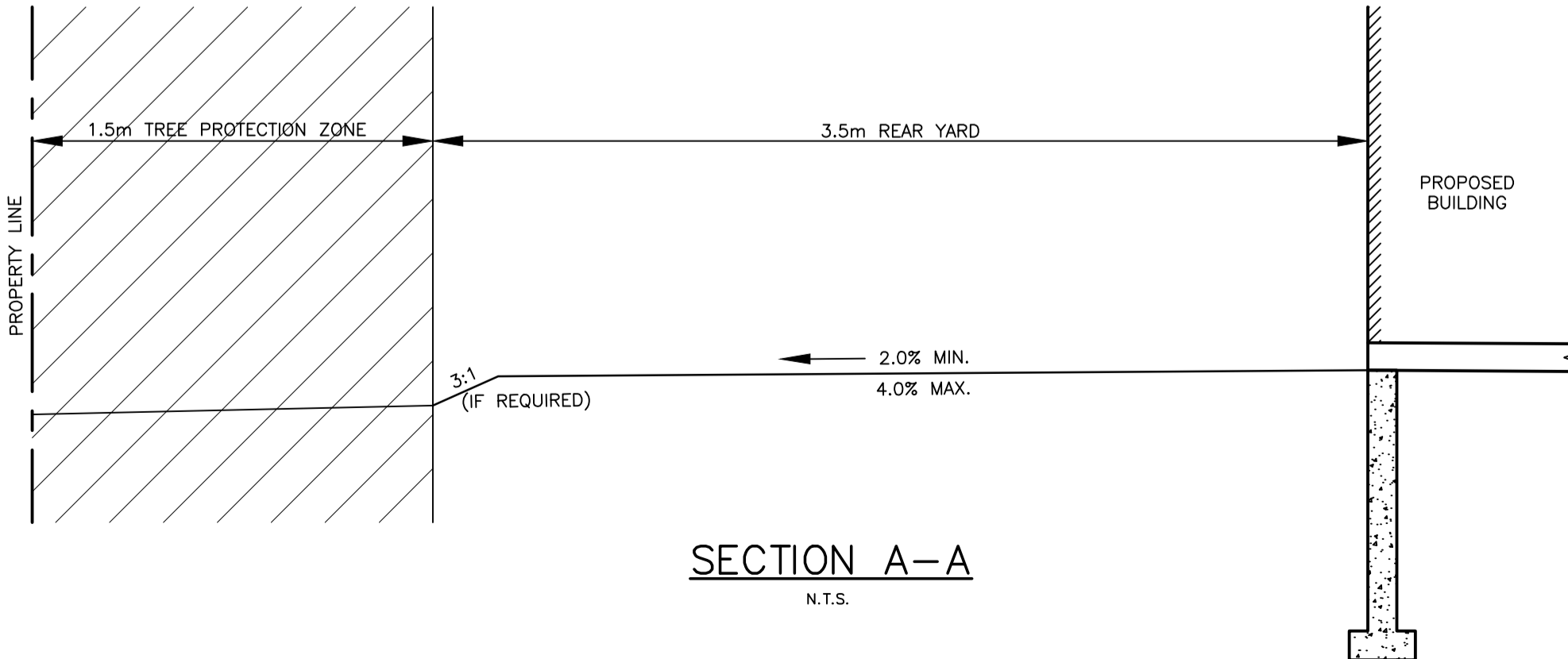
- NOTES:
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING CODE, ADESS BY LOCAL MUNICIPAL BY LAWS AND REGULATORY AGENCIES THAT MAY AFFECT THE WORK.
 - THE CONTRACTOR SHALL REVIEW THE SITE CONDITIONS AND ASSUME RESPONSIBILITY FOR EXISTING SERVICES (WATER, POWER, SEWER, GAS ETC) THAT EXIST AT THE SITE.
 - CONCRETE SLAB TO HAVE A MINIMUM THICKNESS OF 150 mm.
 - CONCRETE SLAB SHALL BE REINFORCED WITH 10mm DIA. BARS AT 150mm ON CENTER OR AS NOTED ON DRAWING.
 - CONCRETE SLAB SHALL BE REINFORCED WITH 10mm DIA. BARS AT 150mm ON CENTER OR AS NOTED ON DRAWING.
 - CONCRETE CONSTRUCTION SHALL CONFORM TO CSA A23.1.
 - CONCRETE TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA A23.1 AND CSA 23.2.
 - CSA A23.1 CONCRETE EXPOSURE CLASSIFICATION TO BE C-1 WITH THE FOLLOWING PROPERTIES:
 - MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 35 MPa
 - MINIMUM WATER TO CEMENTING MATERIALS RATIO: 0.40
 - MAXIMUM COARSE AGGREGATE SIZE: 20 mm
 - MAXIMUM SLUMP: 90 mm
 - AIR CONTENT: 5% TO 8%
 - SURFACE OF SLAB TO BE SLOPED 2% (MIN) TO THE NEAREST PLUVIAL DRAIN.
 - TOP OF SLAB TO HAVE A TEXTURED BROOM FINISH TO CSA A23.1. EDGES OF SLAB TO HAVE A SMOOTH TOOLED FINISH.
 - SLAB REINFORCEMENT TO BE 10mm X 150mm MIN. W/ 90° BARS. WELDED WIRE FABRIC CONTAINING TO ASTM T604M REINFORCEMENT TO BE PLACED AT MID-DEPTH OF SLAB OR AS PROVIDED OTHERWISE.
 - APPLY PROMOTED CURING COMPOUND TO SURFACE OR REPAIR OF REPAIR OF SLAB TO BE ACCORDANCE WITH CSA A23.1 (WHITE POLYURETHANE COLOUR, CLASS B BROWN).
 - ALL SITE LOCATIONS REQUIRE OPC AND MUNICIPAL APPROVAL.
 - IF SITE CONDITIONS LIMIT PLACEMENT, CONTACT OPC FOR ASSISTANCE.
 - LARGER PAGES AND NUMBER OF BOXES PERMITTED WITH OPC INPUT.

SECTION A-A

NO.	REVISION	DATE	BY
1	ISSUED FOR PERMIT	NOV 2018	J.V.
2	ISSUED FOR PERMIT	NOV 2018	J.V.
3	ISSUED FOR PERMIT	NOV 2018	J.V.
4	ISSUED FOR PERMIT	NOV 2018	J.V.
5	ISSUED FOR PERMIT	NOV 2018	J.V.
6	ISSUED FOR PERMIT	NOV 2018	J.V.
7	ISSUED FOR PERMIT	NOV 2018	J.V.
8	ISSUED FOR PERMIT	NOV 2018	J.V.
9	ISSUED FOR PERMIT	NOV 2018	J.V.
10	ISSUED FOR PERMIT	NOV 2018	J.V.
11	ISSUED FOR PERMIT	NOV 2018	J.V.
12	ISSUED FOR PERMIT	NOV 2018	J.V.
13	ISSUED FOR PERMIT	NOV 2018	J.V.
14	ISSUED FOR PERMIT	NOV 2018	J.V.
15	ISSUED FOR PERMIT	NOV 2018	J.V.
16	ISSUED FOR PERMIT	NOV 2018	J.V.
17	ISSUED FOR PERMIT	NOV 2018	J.V.
18	ISSUED FOR PERMIT	NOV 2018	J.V.
19	ISSUED FOR PERMIT	NOV 2018	J.V.
20	ISSUED FOR PERMIT	NOV 2018	J.V.



ONLINE ORIFICE DETAIL
N.T.S.



SECTION A-A
N.T.S.