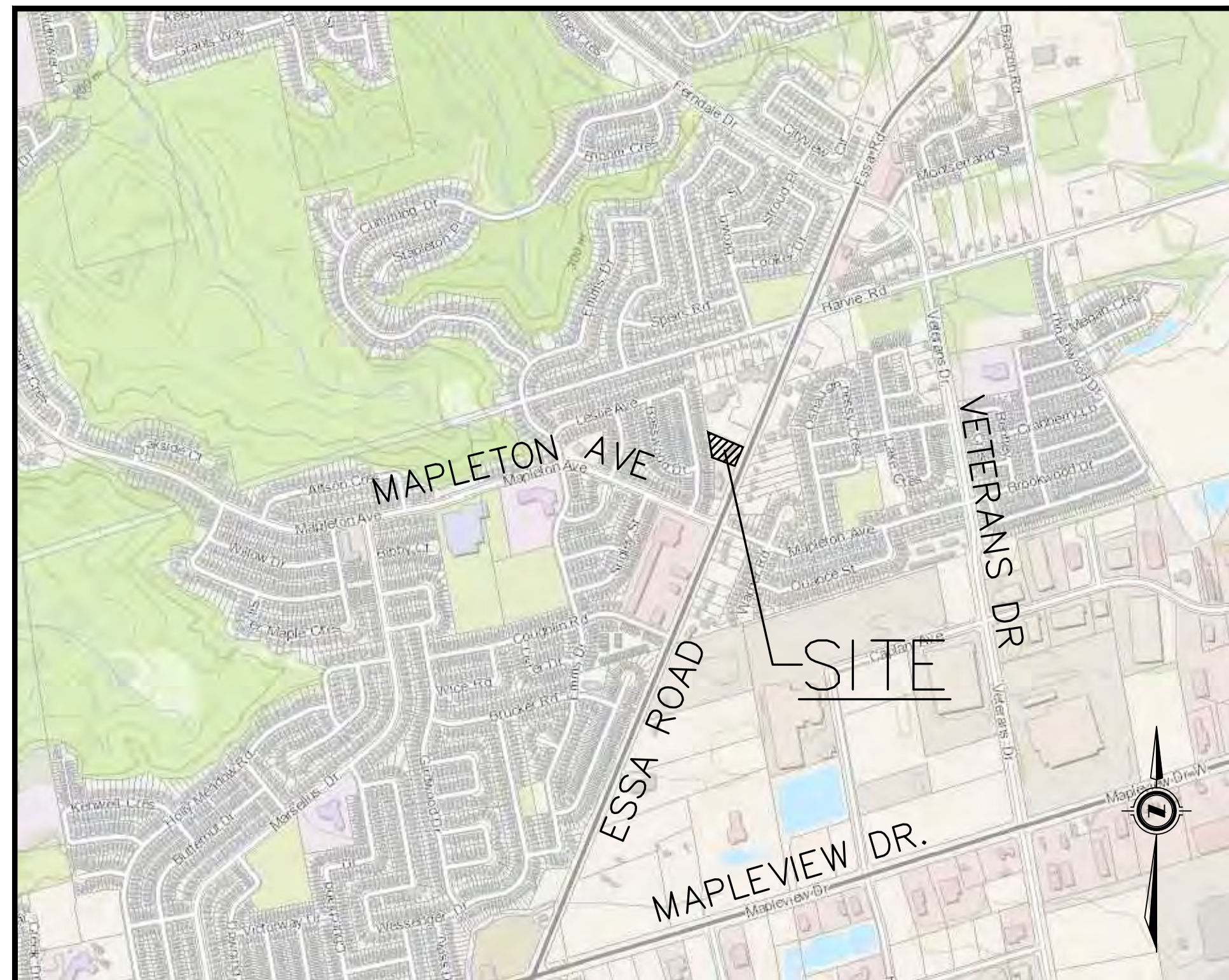




SITE LOCATION

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
STM-1	STORM SEWER CATCHMENT PLAN
DET-1	STANDARD AND CONSTRUCTION DETAILS
GN-1	GENERAL NOTES AND DETAILS

PROJECT NO. 20-11501-B

3rd SUBMISSION
MAY 2020



NOTE: EXISTING WELLS ON THE PROPERTY SHALL BE DECOMMISSIONED IN ACCORDANCE ONTARIO REGULATION 903. CONFIRMATION OF WELL DECOMMISSIONING TO BE PROVIDED TO ENGINEER AND CITY OF BARRIE

LEGEND

- EX. HP/LS
- EX. CATCHBASIN
- EX. HYDRANT
- EX. VALVE AND BOX
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. TRAFFIC LIGHT
- EX. SIGN
- CONTOUR
- OVERHEAD HYDRO WIRE
- DITCH CENTERLINE
- EXISTING FENCE
- APPROXIMATE BOREHOLE LOCATION
- EXISTING TREE
- LIMIT OF EXISTING VEGETATION
- EXISTING ASPHALT SURFACE



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KEY MAP

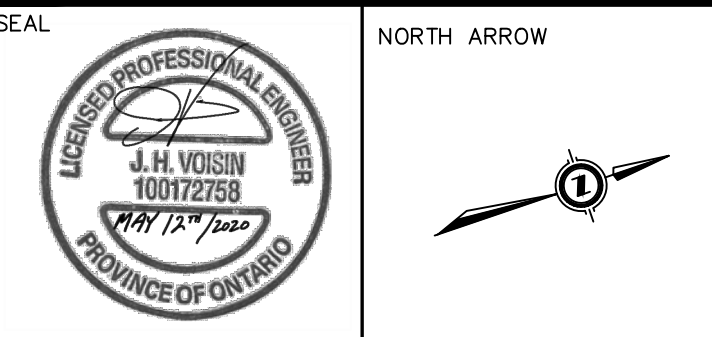
NOTES

- 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.
- REFER TO DRAWING ESC-1 FOR SITE DISTURBANCE LIMITS.
- EXISTING ON-SITE SEWAGE SYSTEMS TO BE PUMPED PRIOR TO REMOVAL.

BENCHMARK

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

NO.	YY.MM.DD	REVISION	BY
2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.



DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	MARCH 2020
SCALE:	1:250

CLIENT/PROJECT

521 AND 525 ESSA ROAD
RESIDENTIAL DEVELOPMENT

DRAWING TITLE

EXISTING CONDITIONS AND
REMOVALS PLAN

PROJECT NO.	DRAWING NO.	REVISION
20-11501-B	RM-1	2

HORIZONTAL CONTROL MONUMENTS

U.T.M. (ZONE 17) NAD 83

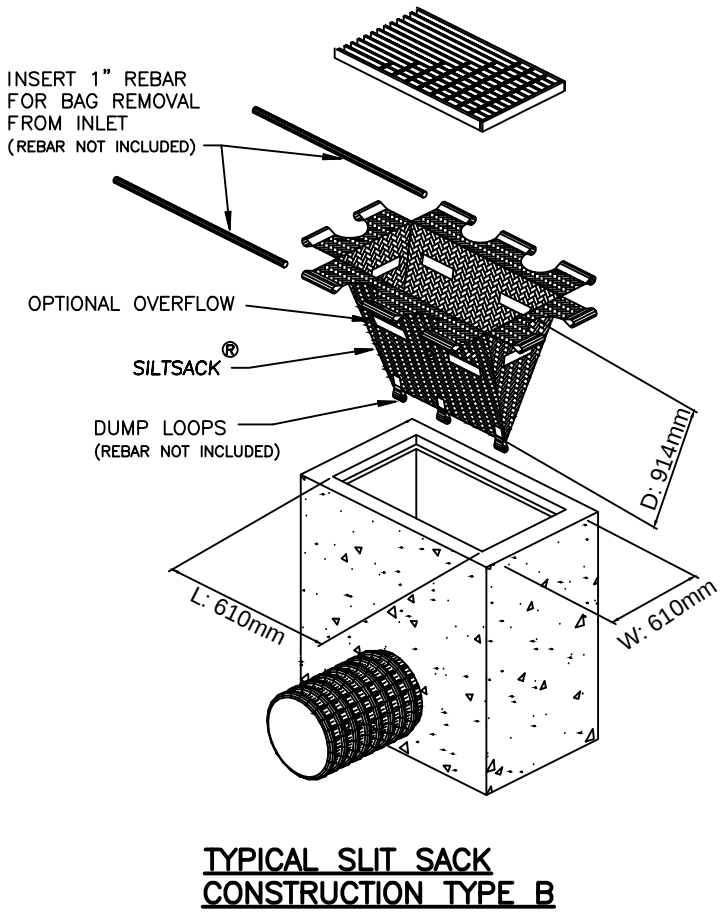
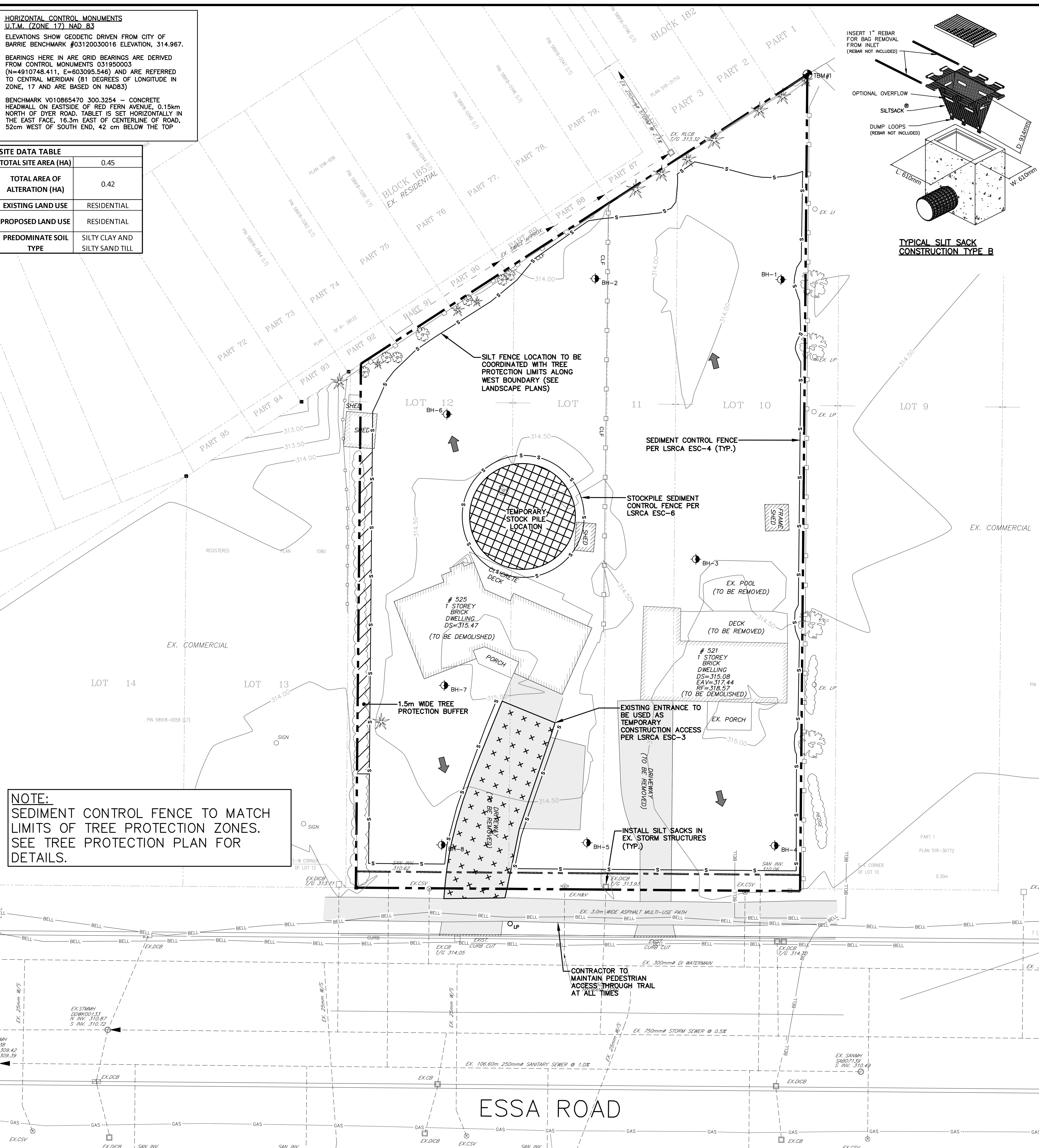
ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.

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

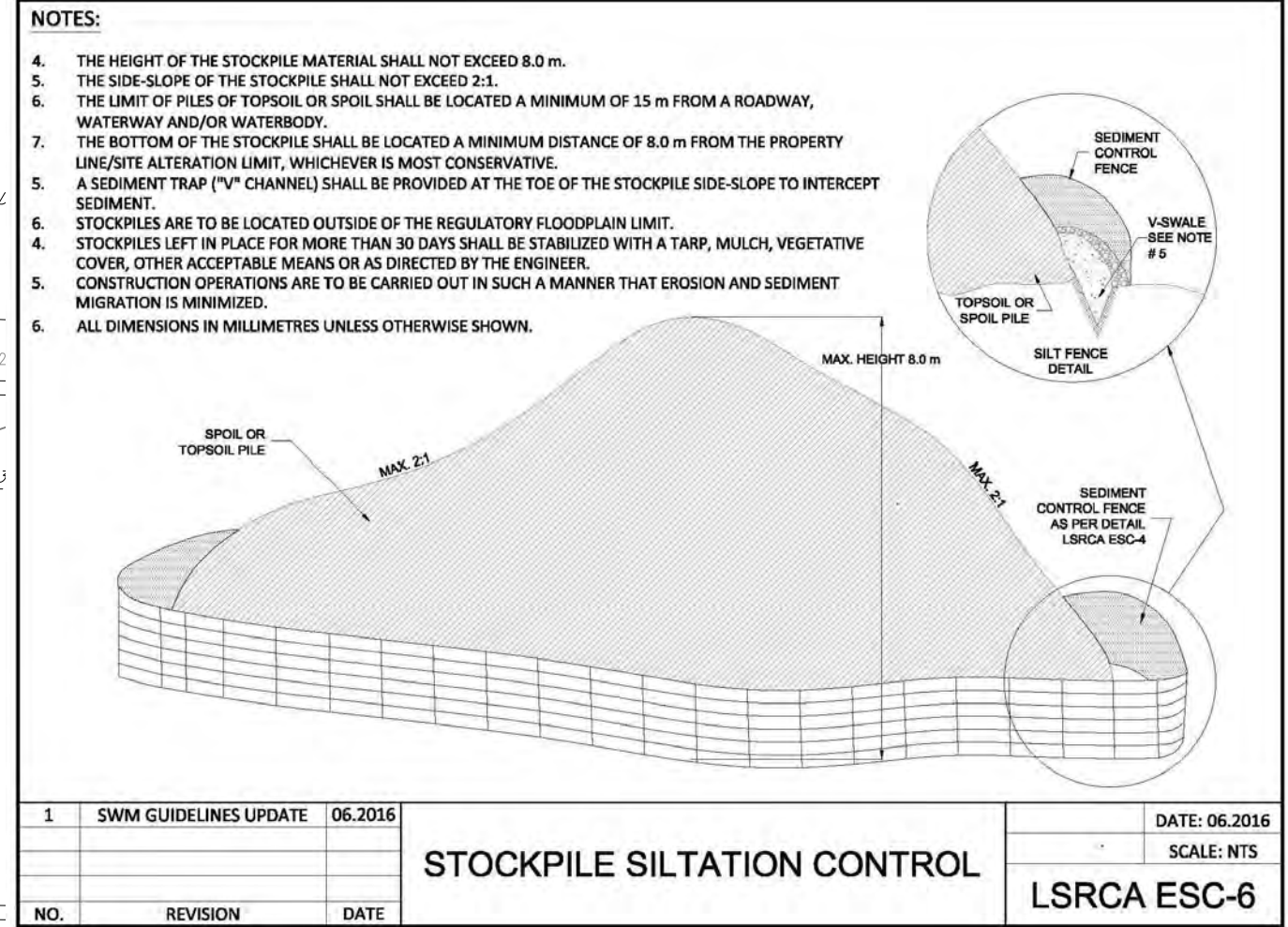
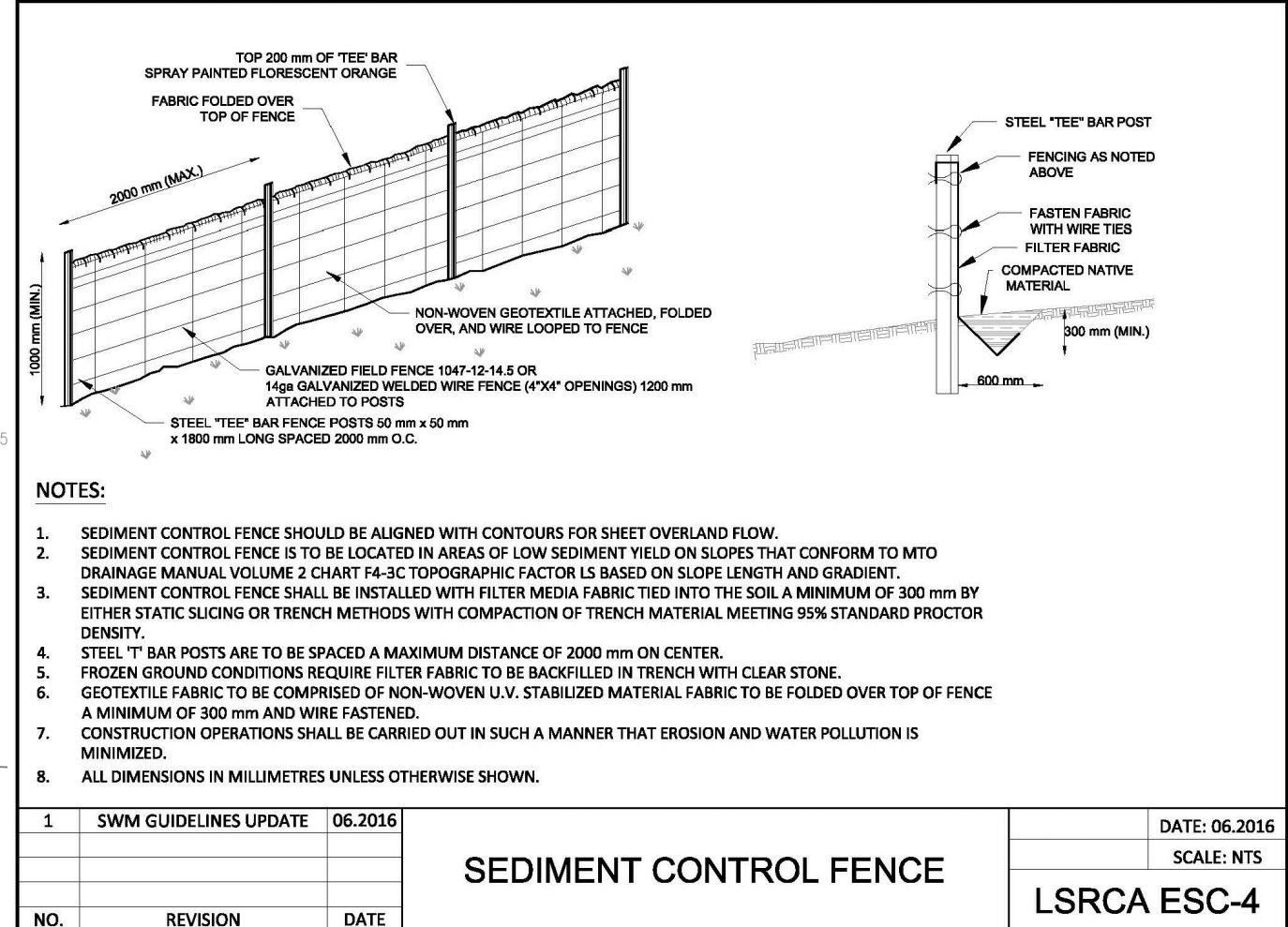
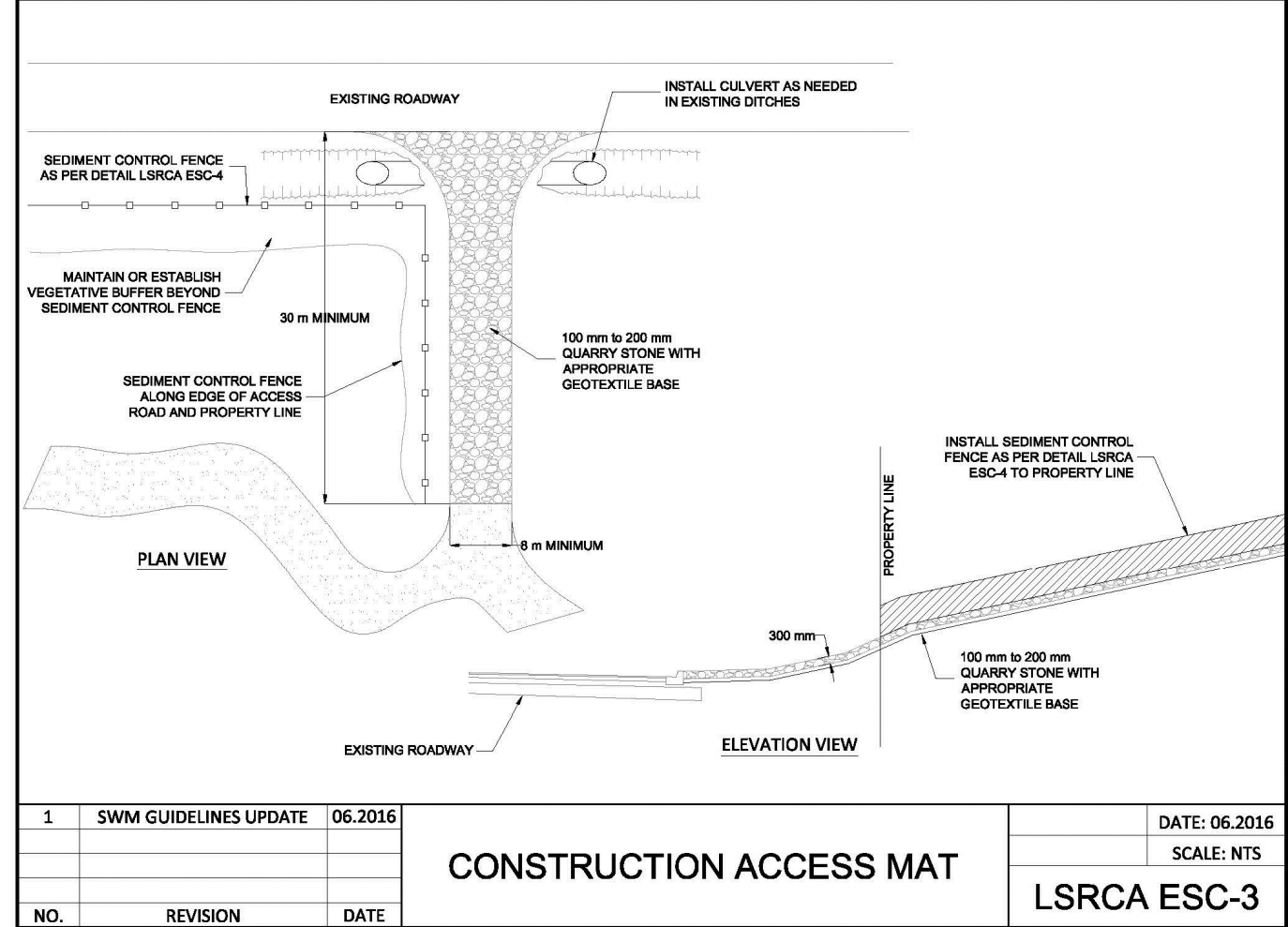
HORIZONTAL CONTROL MONUMENTS
U.T.M. (ZONE 17) NAD 83
ELEVATIONS SHOW GEODETIC DRIVEN FROM CITY OF
BARRIE BENCHMARK #03120030016 ELEVATION, 314.967.
BEARINGS HERE IN ARE GRID BEARINGS ARE DERIVED
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TO CENTRAL MERIDIAN (81 DEGREES OF LONGITUDE IN
ZONE, 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



EROSION AND SEDIMENT CONTROL PLAN NOTES			DATE: 06.2016
1. ALL SEDIMENT CONTROL MEASURES SUCH AS SEDIMENT CONTROL FENCE, TEMPORARY PONDS, CONSTRUCTION ACCESS MATS, SEDIMENT TRAPS, SWALES AND CHECK DAMS MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE WORKS.			LSRCA ESC-1
2. SEDIMENT CONTROL SHOULD BE INSPECTED ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT. REPAIRS TO ESC MEASURES MUST BE COMPLETED IN A TIMELY MANNER TO PREVENT SEDIMENT MIGRATION.			
3. ADDITIONAL MATERIALS SUCH AS CLEAR STONE, FILTER FABRIC, PUMPS, HOSES AND SILT SOCKS TO BE KEPT ON SITE AT ALL TIMES FOR CONDUCTING REPAIRS TO SEDIMENT CONTROL MEASURES.			SCALE: NTS
4. ALL DISTURBED AREAS LEFT INACTIVE FOR MORE THAN THIRTY DAYS ARE TO BE STABILIZED.			
5. THE STABILIZATION SEED MIXTURE IS TO BE AS SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLAN.			DATE: 06.2016
6. THE STABILIZATION SEED MIXTURE IS TO BE APPLIED AT A MINIMUM RATE OF 25 kg/ha.			
7. ENGINEERED CHANGES TO THE ESC MEASURES MAY BE NEEDED AS SITE CONDITIONS CHANGE THROUGHOUT THE CONSTRUCTION PROCESS. THESE UPDATES MUST REFLECT BEST MANAGEMENT PRACTICES TO CONTROL SEDIMENT AND EROSION ON SITE AND SHOULD BE COMPLETED BASED ON DIRECTION FROM THE SITE ENGINEER. ADDITIONAL MEASURES MAY BE REQUIRED AS DIRECTED BY AN ENGINEER THROUGHOUT THE CONSTRUCTION PROCESS.			SCALE: NTS
8. THE CONSTRUCTION ENTRANCE MAT IS TO BE INSTALLED AS THE FIRST STEP IN THE SITE ALTERATION PROCESS.			
9. SEDIMENT CONTROL FENCE IS TO BE INSTALLED DOWNSTREAM OF ALL DISTURBED AREAS. A DOUBLE ROW OF SEDIMENT CONTROL FENCE IS TO BE INSTALLED SURROUNDING ALL NATURAL HERITAGE FEATURES AND AS DIRECTED BY THE SITE ENGINEER. SEDIMENT CONTROL FENCE IS TO BE AS PER LSRCA STANDARD ESC-4 OR ESC-5 AS A MINIMUM. LIGHT CUT-OFF SWALES OR DITCHES ARE TO BE INSTALLED AS SHOWN ON THE ESC PLANS AND AS NECESSARY BASED ON CHANGING SITE CONDITIONS TO DIRECT OVERLAND FLOW TO THE APPROPRIATE SEDIMENT TRAP OR TEMPORARY SEDIMENT POND.			DATE: 06.2016
10. CHECK DAMS ARE TO BE INSTALLED IN ALL SWALES AND DITCHES IN ACCORDANCE WITH DRAWING LSRCA ESC-2, AS A MINIMUM.			
11. TEMPORARY SEDIMENT TRAPS ARE TO BE CONSTRUCTED AT THE BEGINNING OF SITE GRADING AND IF THE SITE DRAINAGE CHANGES DURING CONSTRUCTION, IT MAY BE NECESSARY FOR TEMPORARY SWALES TO BE CONSTRUCTED TO DIRECT SITE FLOWS TO THE TEMPORARY SEDIMENT TRAPS DURING ROUGH GRADING AND AS CONSTRUCTION PROGRESSES.			SCALE: NTS
12. TEMPORARY SEDIMENT PONDS ARE TO BE CONSTRUCTED AT THE BEGINNING OF SITE GRADING AND IF THE SITE DRAINAGE CHANGES DURING CONSTRUCTION, IT MAY BE NECESSARY FOR TEMPORARY SWALES TO BE CONSTRUCTED TO DIRECT SITE FLOWS TO THE TEMPORARY SEDIMENT PONDS DURING ROUGH GRADING AND AS CONSTRUCTION PROGRESSES.			
13. FILTER SOCKS OR APPROVED EQUIVALENT TO BE INSTALLED DOWNSTREAM FROM SEDIMENT TRAP AND TEMPORARY SEDIMENT POND OUTLETS TO A MINIMUM HEIGHT OF 300mm.			DATE: 06.2016
14. IF STOCKPILES ARE USED ON-SITE FOR THE STORAGE OF EXCESS MATERIAL, THEY ARE TO BE IN ACCORDANCE WITH DETAIL DRAWING LSRCA ESC-6 OR BETTER.			
15. ANY DEWATERING OCCURRING ON-SITE MUST BE IN ACCORDANCE WITH AN APPROVED DEWATERING PLAN. ADDITIONAL DEWATERING REQUIREMENTS MAY BE DEEMED NECESSARY AND SHALL BE IMPLEMENTED AS DIRECTED BY THE ENGINEER, CONTRACT ADMINISTRATION OR LOCAL MUNICIPALITY.			SCALE: NTS
16. THE SITE TRAILER IS TO BE LOCATED ONLY AT THE DESIGNATED LOCATION SHOWN ON THE PLANS.			
17. EQUIPMENT AND HYDROCARBON STORAGE IS TO OCCUR ONLY WITHIN THE DESIGNATED AREA SHOWN ON THE PLANS.			DATE: 06.2016
18. REFUELLING IS TO TAKE PLACE ONLY WITHIN THE DESIGNATED AREA SHOWN ON THE PLANS AND SHALL BE A MINIMUM OF THIRTY METRES FROM ANY WATERCOURSE OR ENVIRONMENTALLY SENSITIVE AREA.			
19. AN APPROVED SPILLS MANAGEMENT PLAN IS TO BE KEPT ON-SITE.			SCALE: NTS
20. SPILLS ARE TO BE REPORTED IMMEDIATELY TO THE MOCC SPILLS ACTION CENTRE AT 1-800-388-6066.			
21. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEAN-UP AND RESTORATION, INCLUDING ALL COSTS, DUE TO THE RELEASE OF SEDIMENT FROM THE SITE.			DATE: 06.2016
22. LOW IMPACT DEVELOPMENT (LID) MEASURES ARE NOT TO BE USED AS SEDIMENT CONTROL DEVICES.			
23. ADDITIONAL SEDIMENT CONTROL DEVICES MAY BE DEEMED NECESSARY AND AS SITE CONDITIONS CHANGE AND SHALL BE INSTALLED AS DIRECTED BY THE SITE ENGINEER, CONTRACT ADMINISTRATION OR LOCAL MUNICIPALITY.			SCALE: NTS
24. ADDITIONAL SEDIMENT CONTROL DEVICES MAY BE DEEMED NECESSARY AND AS SITE CONDITIONS CHANGE AND SHALL BE INSTALLED AS DIRECTED BY THE SITE ENGINEER, CONTRACT ADMINISTRATION OR LOCAL MUNICIPALITY.			

EROSION AND SEDIMENT CONTROL PLAN NOTES			DATE: 06.2016
NO.	REVISION	DATE	SCALE: NTS
			LSRCA ESC-1





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- KEY MAP NOTES**
1. TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY A2IZ 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.

LEGEND	
246.00	CONTOUR
OH OH	OVERHEAD HYDRO WIRE
←	DITCH CENTERLINE
→	DIRECTION OF OVERLAND FLOW
—	EXISTING FENCE
S 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

2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.

NO. YY.MM.DD REVISION BY

SEAL



NORTH ARROW



DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	MARCH 2020
SCALE:	1:250

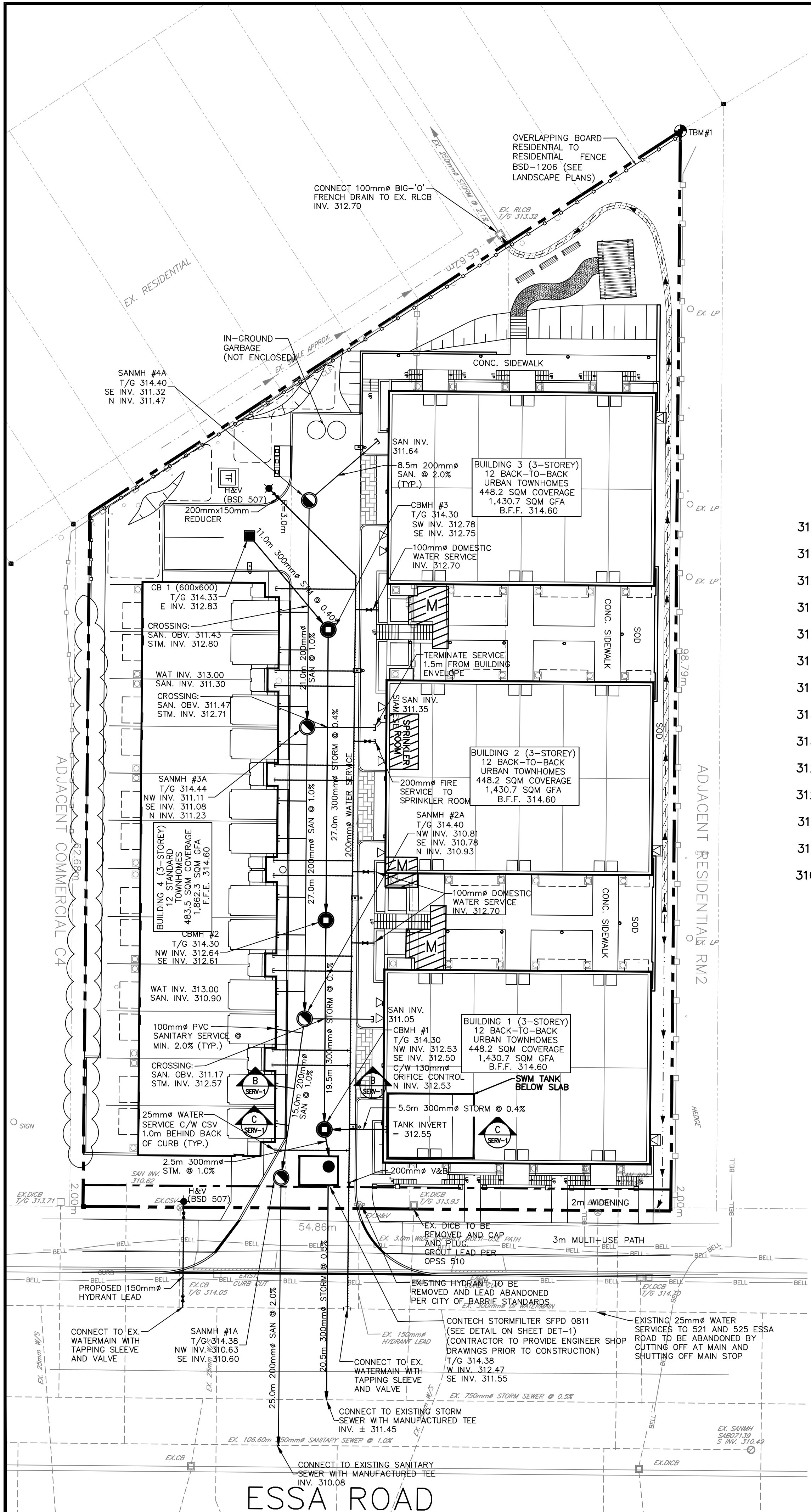
CLIENT/PROJECT

**521 AND 525 ESSA ROAD
RESIDENTIAL DEVELOPMENT**

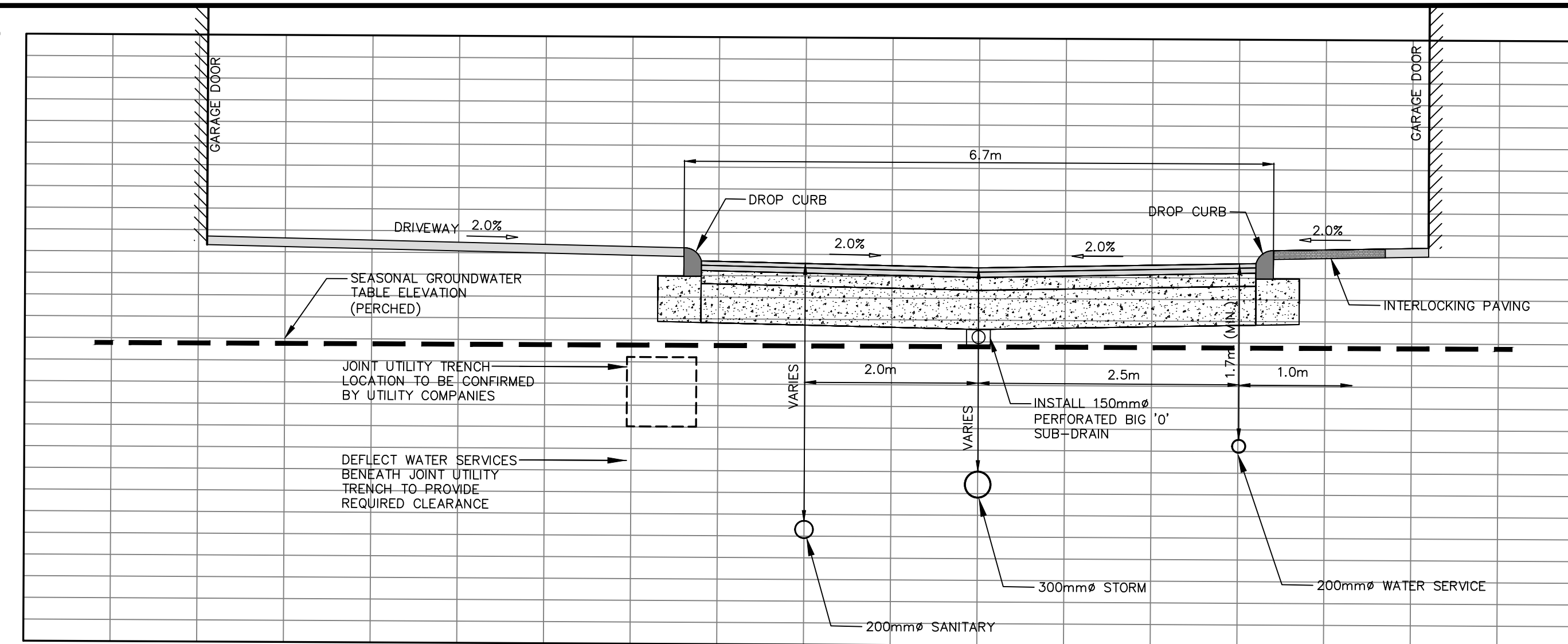
DRAWING TITLE

**EROSION AND SEDIMENT
CONTROL PLAN**

PROJECT NO.	DRAWING NO.	REVISION
20-11501-B	ESC-1	2

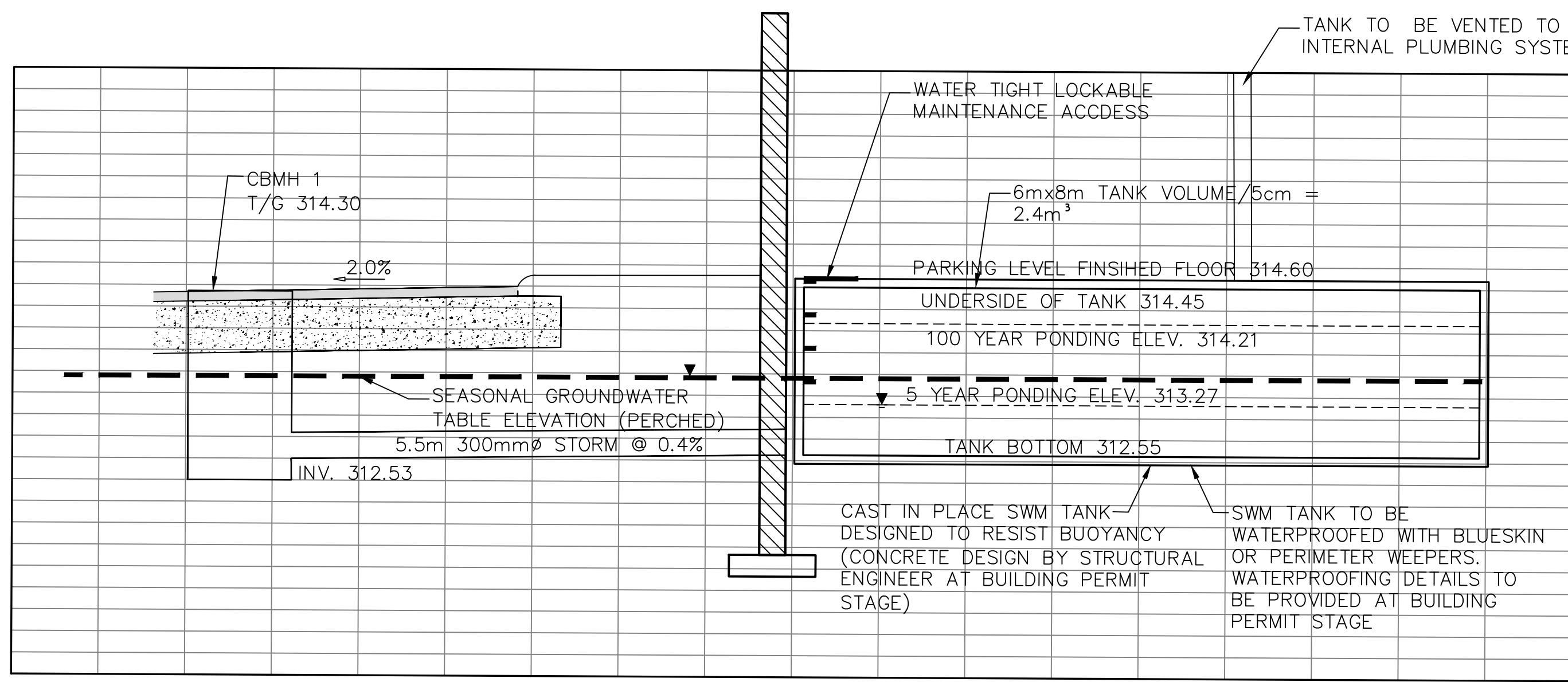


317.00
316.50
316.00
315.50
315.00
314.50
314.00
313.50
313.00
312.50
312.00
311.50
311.00
310.50



SECTION B-B
H 1:50 V 1:50

317.00
316.50
316.00
315.50
315.00
314.50
314.00
313.50
313.00
312.50
312.00
311.50
311.00
310.50



SECTION C-C
TYPICAL SWM TANK SECTION
H 1:50 V 1:50

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
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(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 V01085470 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



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- 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
 3. LOCATE CURB STOP (CSV'S) WITHIN LANDSCAPE AREAS WHERE POSSIBLE
 4. 100mm WATER SERVICES C/W BYPASS PER CITY STANDARD BSD-533 AND BACK-FLOW PREVENTION PER CITY BY-LAW 2017-121
 5. PRIVATE HYDRANT SHALL BE PAINTED RED.
 6. FINAL SIZE AND LOCATION OF THE DOMESTIC WATER SERVICES TO BE DETERMINED AT BUILDING PERMIT STAGE

- LEGEND**
- PROPOSED CATCHBASIN
 - PROPOSED CONTECH STORMFILTER MODEL NO. SFPD0811
 - PROPOSED CATCHBASIN MANHOLE
 - PROPOSED SANITARY MANHOLE
 - PROPOSED HYDRANT
 - WATER METER LOCATION
 - LIGHT STANDARDS
 - FRENCH DRAIN
 - SIDE YARD SWALE

BENCHMARK

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

2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.

NO. YY.MM.DD REVISION BY

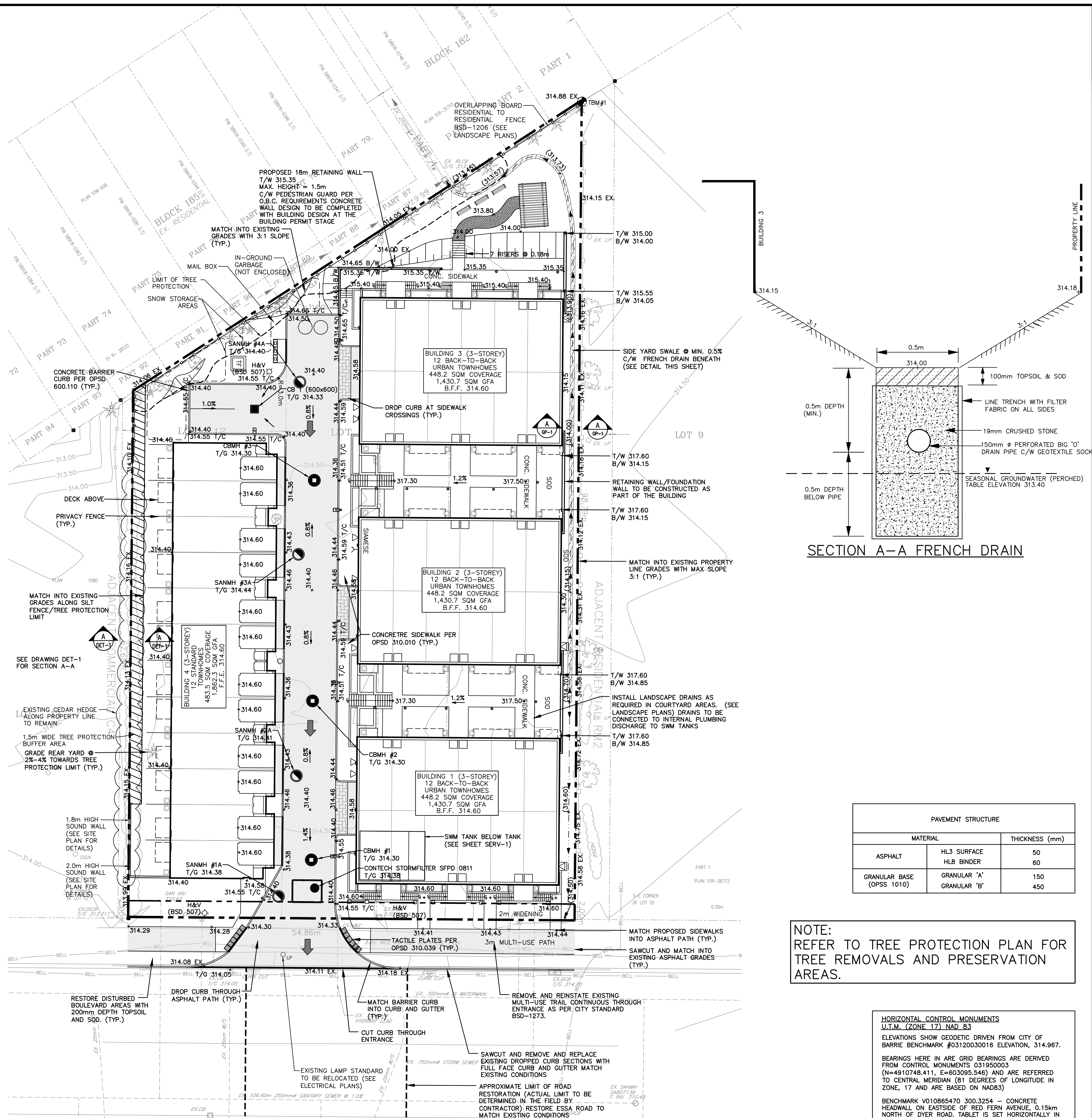
SEAL

NORTH ARROW

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	MARCH 2020
SCALE:	1:250

CLIENT/PROJECT		
521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT		
DRAWING TITLE		
GENERAL SERVING PLAN		
PROJECT NO.	DRAWING NO.	REVISION
20-11501-B	SERV-1	2

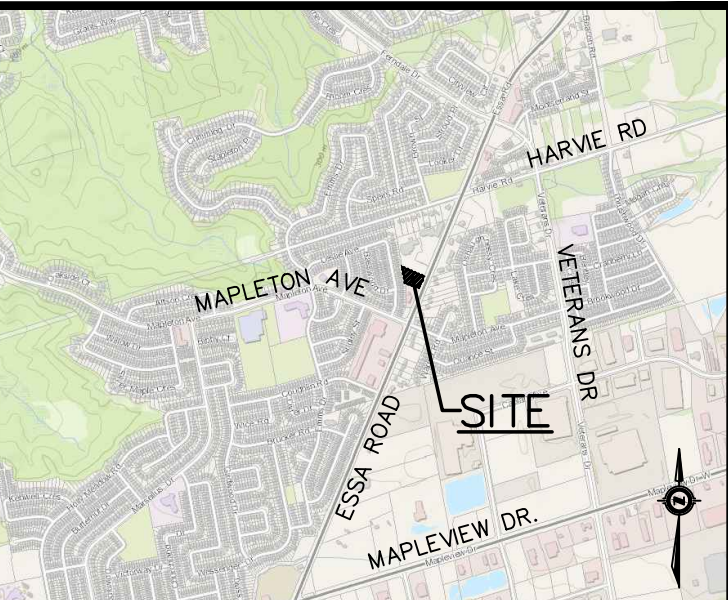
	PROPOSED CATCHBASIN
	PROPOSED CONTECH STORMFILTER MODEL NO. SFPD0811
	PROPOSED CATCHBASIN MANHOLE
	PROPOSED SANITARY MANHOLE
	CURB STOP VALVE
	PROPOSED HYDRANT
	EX. SANITARY MANHOLE
	EX. CATCH BASIN
	EX. CATCH BASIN MANHOLE
	EXISTING HYDRANT
	EXISTING WATER VALVE
	EXISTING ELEVATION
	EXISTING ELEVATION
	DIRECTION OF MAJOR OVERLAND FLOW
	STAMPED ASPHALT
	LIGHT STANDARDS
	DROP CURB
	PROPOSED TRANSFORMER LOCATION
	FRENCH DRAIN
	SIDE YARD SWALE



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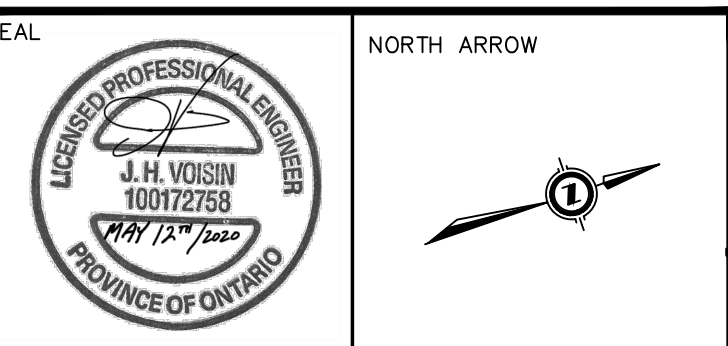


NOTES

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.

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

2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.
0.	YY.MM.DD	REVISION	BY



	DESIGN BY:	J.V.
	DRAWN BY:	G.N.
	CHECKED	J.V.
	DATE:	MARCH 2020
	SCALE:	1:250

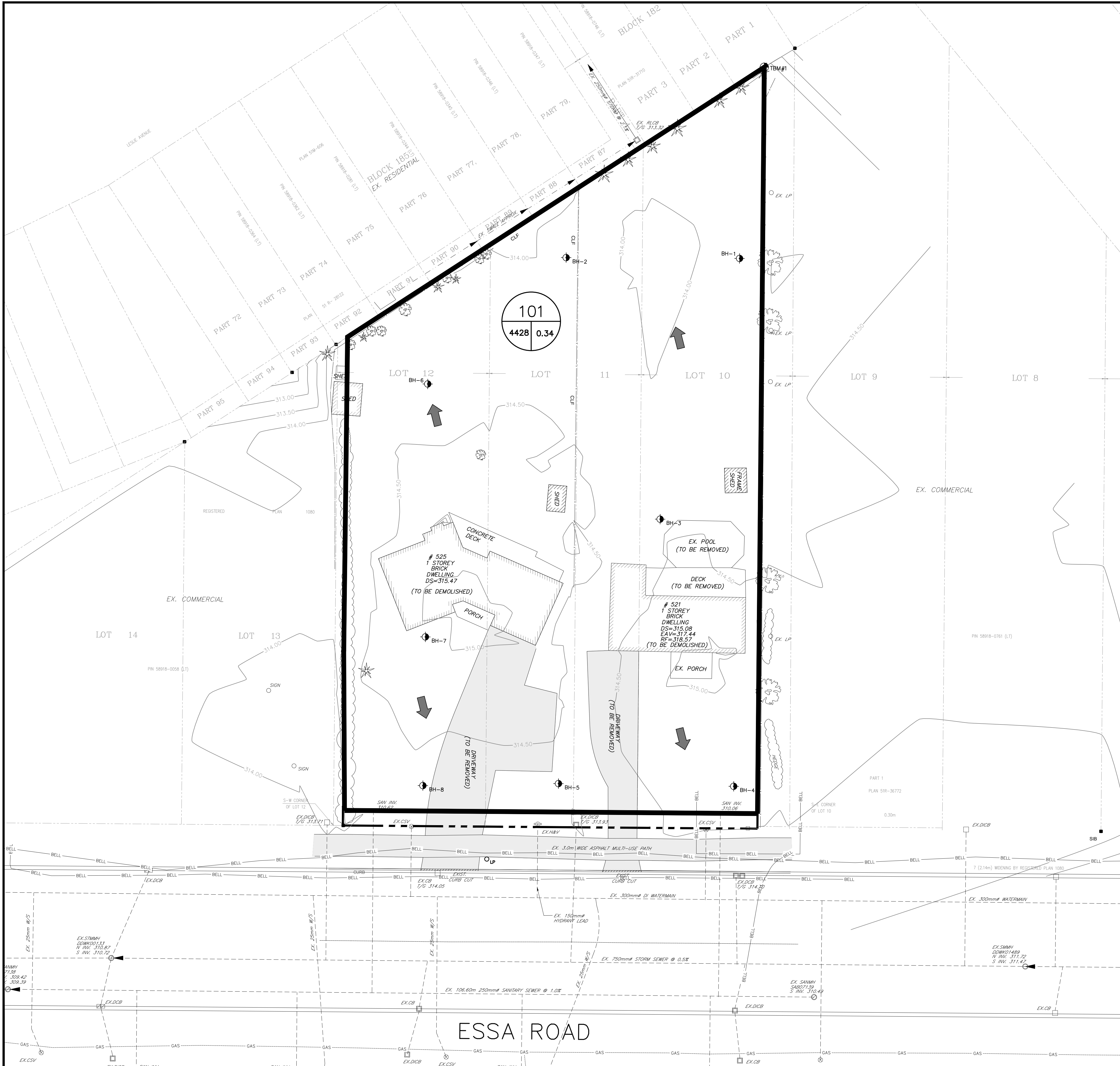
CLIENT/PROJECT

521 AND 525 ESSA ROAD
RESIDENTIAL DEVELOPMENT

DRAWING TITLE

GRADING PLAN

PROJECT NO. 20-11501-B	DRAWING NO. GP-1	REVISION 2
----------------------------------	----------------------------	----------------------



LEGEND

- EX. HP/LS
- EX. CATCHBASIN
- EX. HYDRANT
- EX. VALVE AND BOX
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. TRAFFIC LIGHT
- EX. SIGN
- CONTOUR
- EXISTING ASPHALT
- EXISTING FENCE
- APPROXIMATE BOREHOLE LOCATION
- EXISTING TREE
- LIMIT OF EXISTING VEGETATION
- PRE-DEVELOPMENT CATCHMENT BOUNDARY
- PRE-DEVELOPMENT CATCHMENT NUMBER
- COEFFICIENT
- PRE-DEVELOPMENT CATCHMENT AREA(m)
- DIRECTION OF OVERLAND FLOW



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 - SITE PLAN PROVIDED BY PATRICK MARKUS LUCKIE ARCHITECT
 - REFER TO SOILS REPORT PREPARED BY PETO MacCALLUM LTD. FOR BOREHOLE DETAILS.
 - REFER TO DRAWING ESC-1 FOR SITE DISTURBANCE LIMITS.

BENCHMARK

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

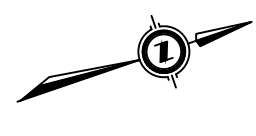
2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.

NO.	YY.MM.DD	REVISION	BY
-----	----------	----------	----

SEAL



NORTH ARROW



DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED	J.V.
DATE:	MARCH 2020
SCALE:	1:250

CLIENT/PROJECT

**521 AND 525 ESSA ROAD
RESIDENTIAL DEVELOPMENT**

DRAWING TITLE

**PRE-DEVELOPMENT CATCHMENT
PLAN**

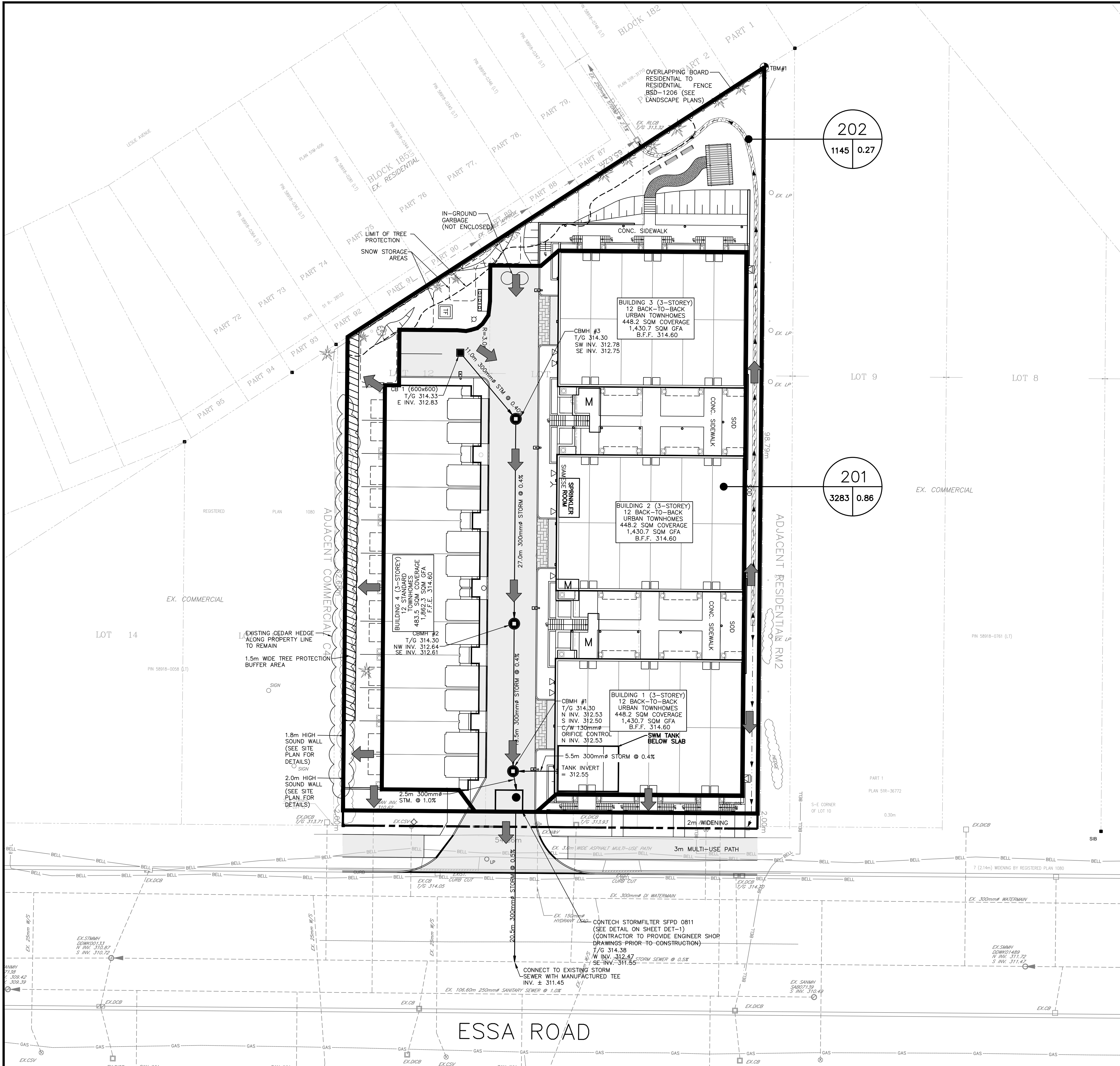
PROJECT NO. 20-11501-B	DRAWING NO. PRE-1	REVISION 2
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HORIZONTAL CONTROL MONUMENTS
U.T.M. (ZONE 17) NAD 83

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

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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



LEGEND

- PROPOSED CATCHBASIN
- PROPOSED CONTECH STORMFILTER
MODEL NO. SFPD0811
- PROPOSED CATCHBASIN MANHOLE
- DIRECTION OF OVERLAND FLOW
- 201
3283 0.00
POST-DEVELOPMENT CATCHMENT NUMBER
- COEFFICIENT
- 202
1145 0.27
POST-DEVELOPMENT CATCHMENT AREA(A)
- DIRECTION OF OVERLAND FLOW

PEL
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KEY MAP

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- 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.
- REFER TO DRAWING ESC-1 FOR SITE DISTURBANCE LIMITS.

BENCHMARK

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

2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.

NO.	YY.MM.DD	REVISION	BY

SEAL

NORTH ARROW

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	MARCH 2020
SCALE:	1:250

CLIENT/PROJECT

**521 AND 525 ESSA ROAD
RESIDENTIAL DEVELOPMENT**

DRAWING TITLE

**POST DEVELOPMENT CATCHMENT
PLAN**

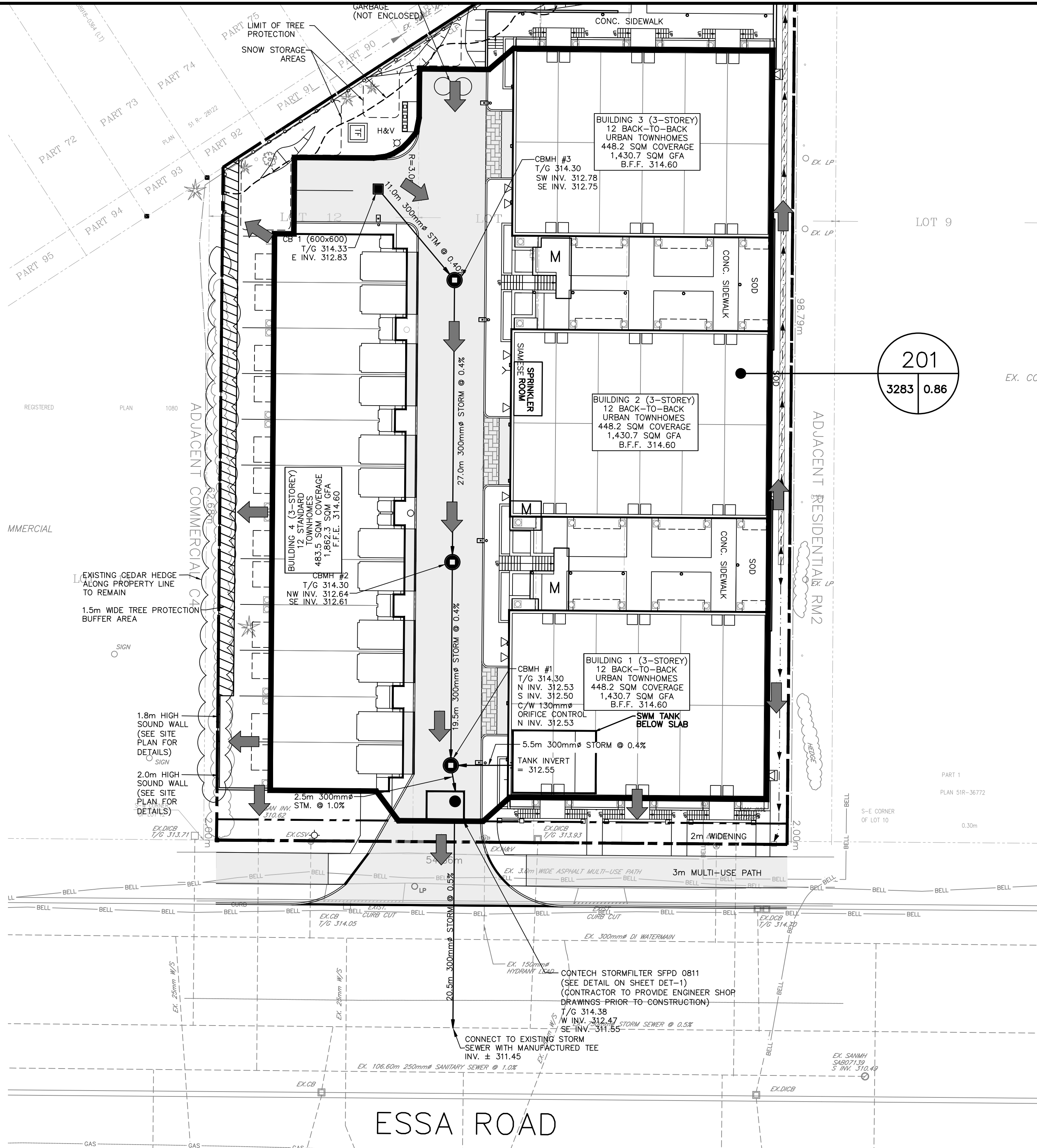
PROJECT NO.	DRAWING NO.	REVISION
20-11501-B	POST-1	2

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



LEGEND

- PROPOSED CATCHBASIN
- PROPOSED CONTECH STORMFILTER MODEL NO. SFPD0811
- PROPOSED CATCHBASIN MANHOLE
- DIRECTION OF OVERLAND FLOW
- 201
- 3283 0.86
- STORM CATCHMENT NUMBER
- COEFFICIENT
- STORM CATCHMENT AREA(A_r)
- DIRECTION OF OVERLAND FLOW

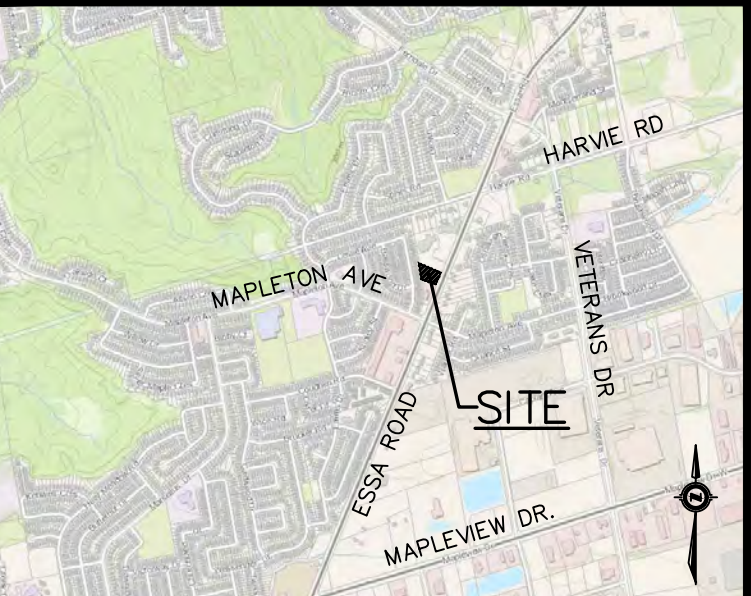


PINESTONE ENGINEERING LIMITED | www.pel.ca

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.



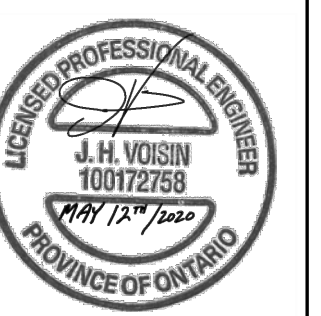
- KEY MAP**
- NOTES**
- TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY AZIZ SURVEYORS INC. APRIL 6 2017.
 - SITE PLAN PROVIDED BY PATRICK MARKUS LUCKIE ARCHITECT.
 - REFER TO SOILS REPORT PREPARED BY PETO MacCALLUM LTD. FOR BOREHOLE DETAILS.
 - REFER TO DRAWING ESC-1 FOR SITE DISTURBANCE LIMITS.

BENCHMARK

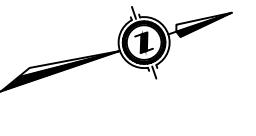
TBM #1
TOP OF IB IN NORTHWEST CORNER OF PROPERTY
ELEVATION 314.30

2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.

NO. YY.MM.DD	REVISION	BY



NORTH ARROW



521 & 525 Essa Road Residential Development				STORM SEWER DESIGN SHEET				Design Parameters										
City of Barrie								ENGINEERING AND PUBLIC WORKS								100 YEAR STORM		
Project Number: 20-11501B Date: May 6, 2020 Design By: DPH Checked By: JHV File: Z:\Project Documents\11501B 521-525 Essa Road Townhomes\SWM Rev 2, April 2020\Storm Sewer Design Sheet (Barrie IDP).xls				Drainage Area Plan No: N/A				Q=kA ^{1.49} R, k=0.00278 Manning's "n" 0.013										
								Intensity (I) = a/(tc+b) ^c Min. Velocity 0.800 m/s										
								a = 1426.408 Max. Velocity 6.000 m/s										
								b = 5.273										
								c = 0.759										
LOCATION				STORMWATER FLOW								DESIGN						
STREET	AREA NUMBER	MANHOLE LOCATION		AREA (A)	RUNOFF COEFF. (C)	A x C	CUMUL. A x C	CONCENTRATION TIME		RAIN INTENSITY (I)	FLOW (Q)	PIPE SIZE	LENGTH	SLOPE	CAPACITY	FULL FLOW VELOCITY	ACTUAL VELOCITY	
		FROM MH	TO MH					TOTAL	IN PIPE									
				ha		ha	ha	min	min	mm/hr	L/s	mm	m	%	L/s	m/s	m/s	
Catchment 201	201	SFPD 0811	Ex. Storm Sewer	100 YEAR CONTROLLED DESIGN FLOW FROM MODIFIED RATIONAL METHOD CALCULATIONS								47.00000	300	20.5	0.50	68.37776	0.9673	1.0424

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

DESIGN BY: J.V.	
DRAWN BY: G.N.	
CHECKED: J.V.	
DATE: MARCH 2020	
SCALE: 1:250	

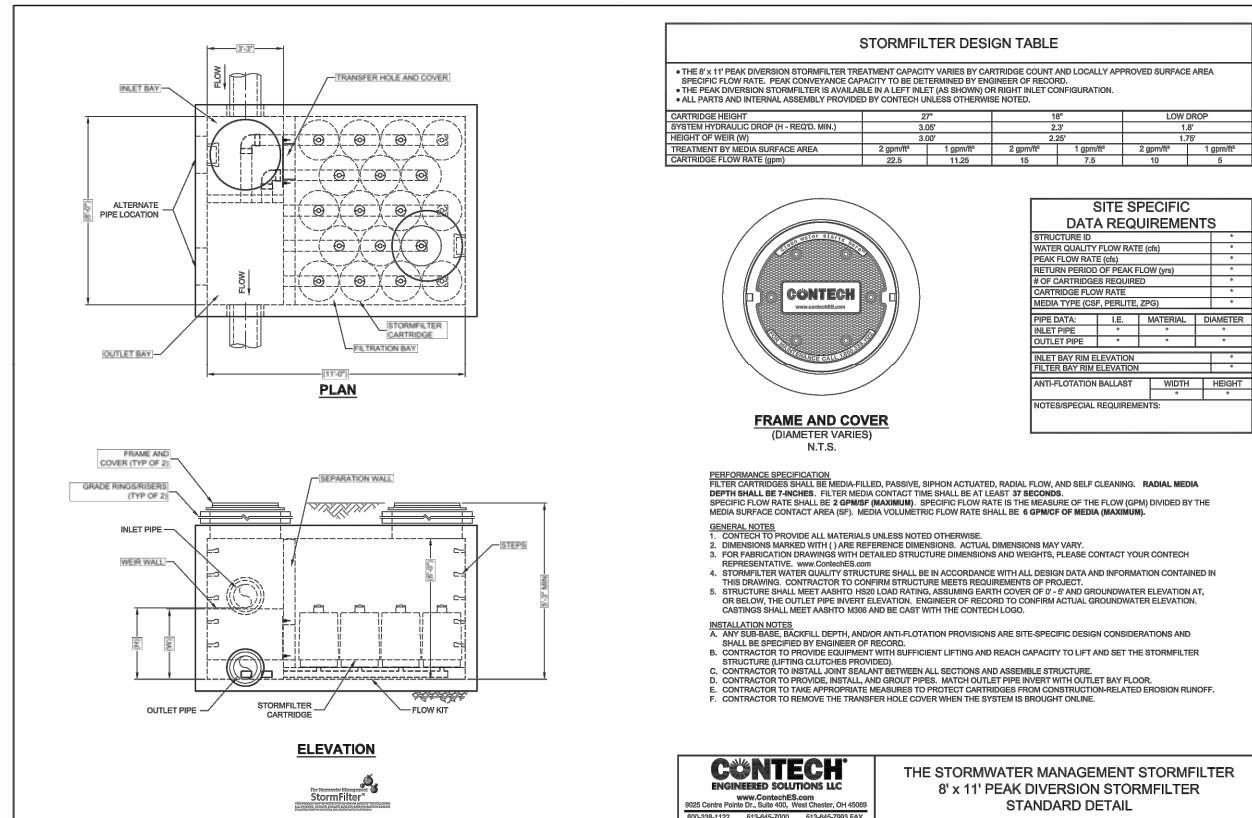
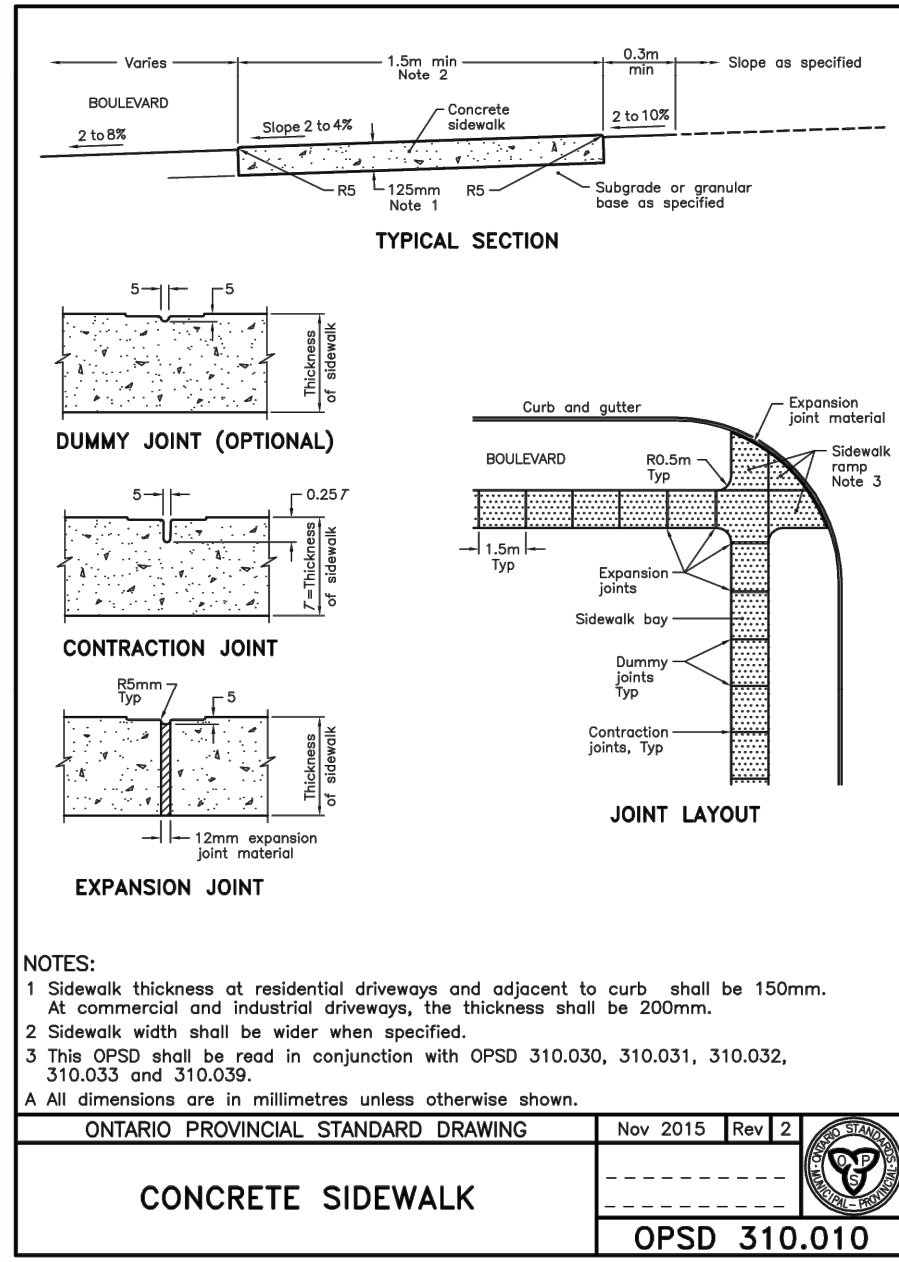
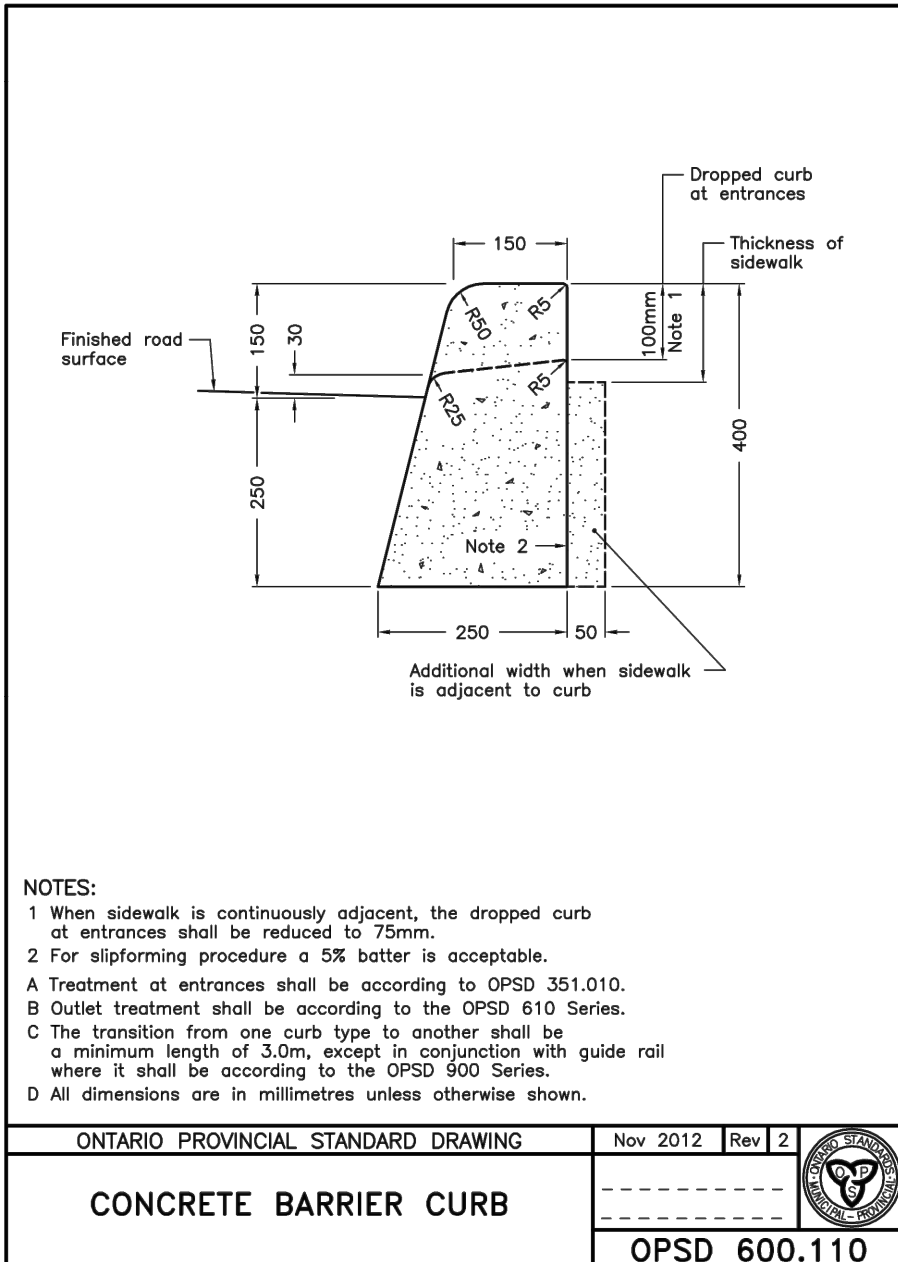
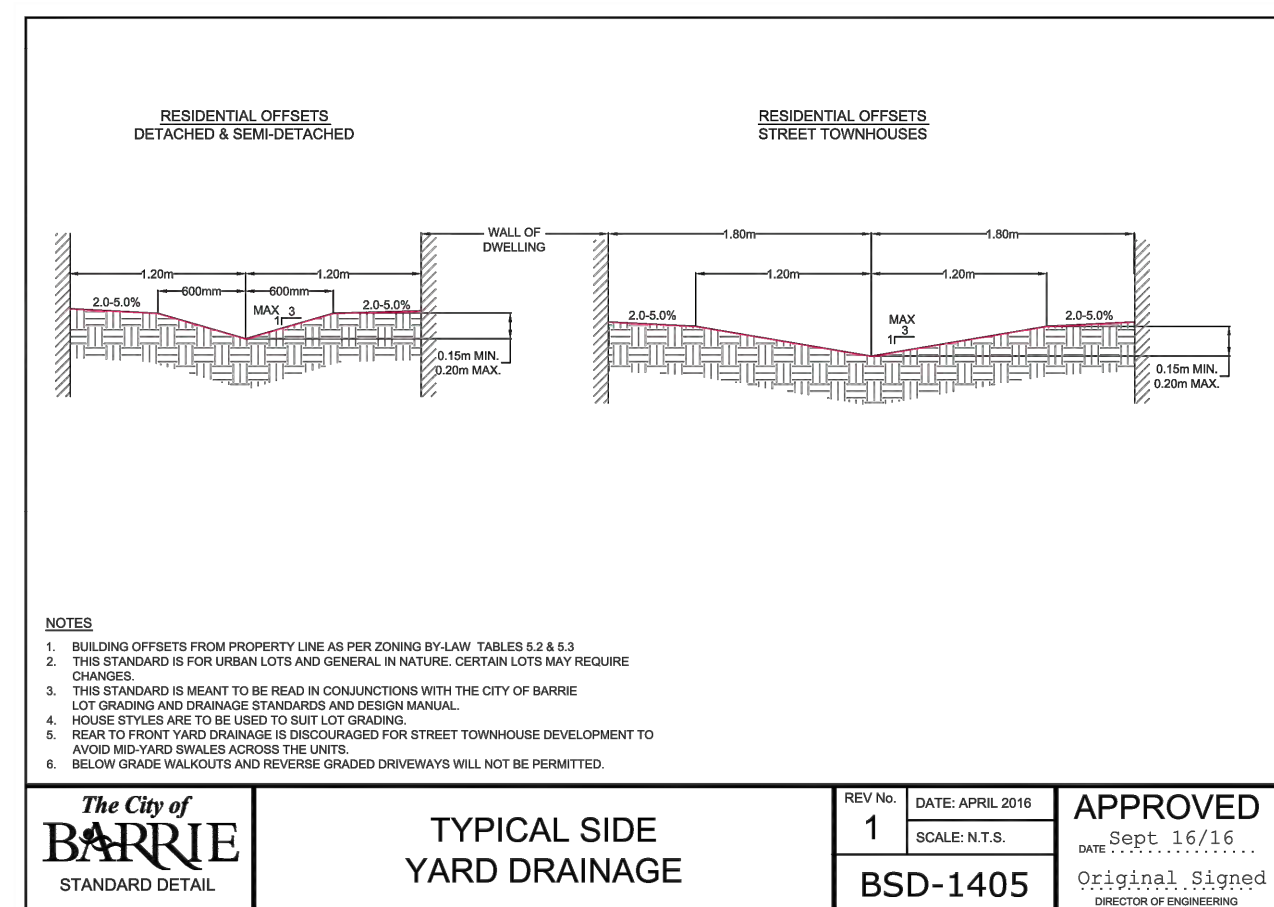
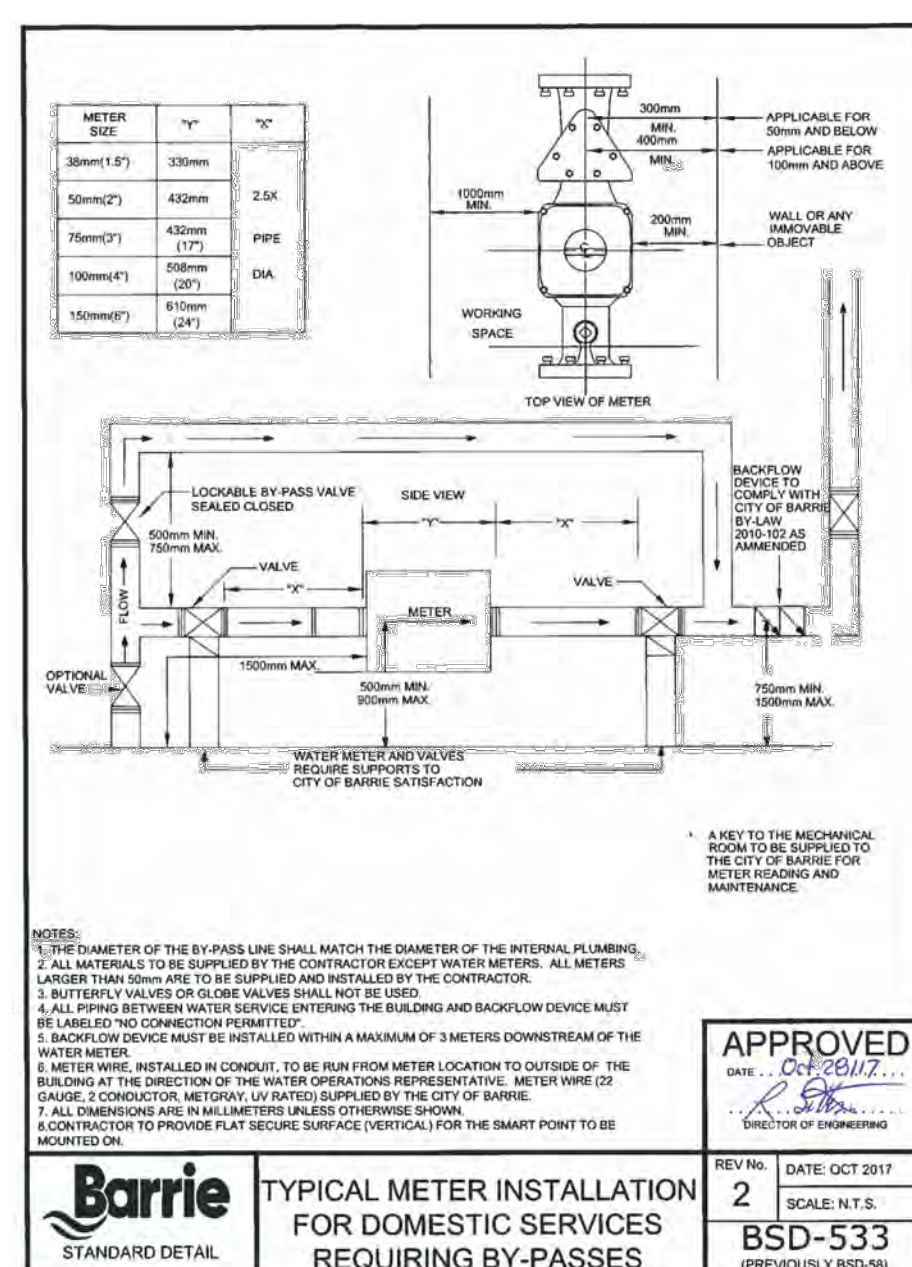
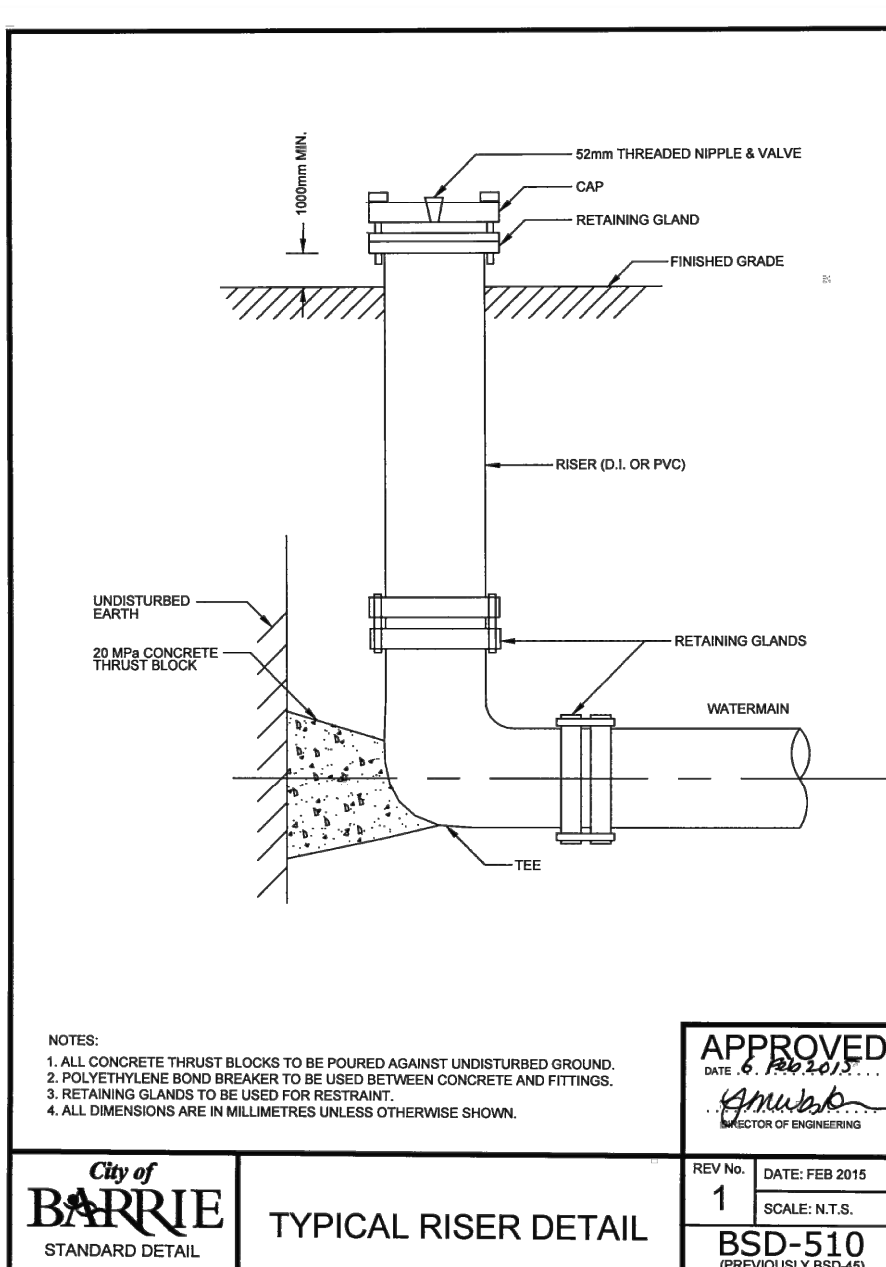
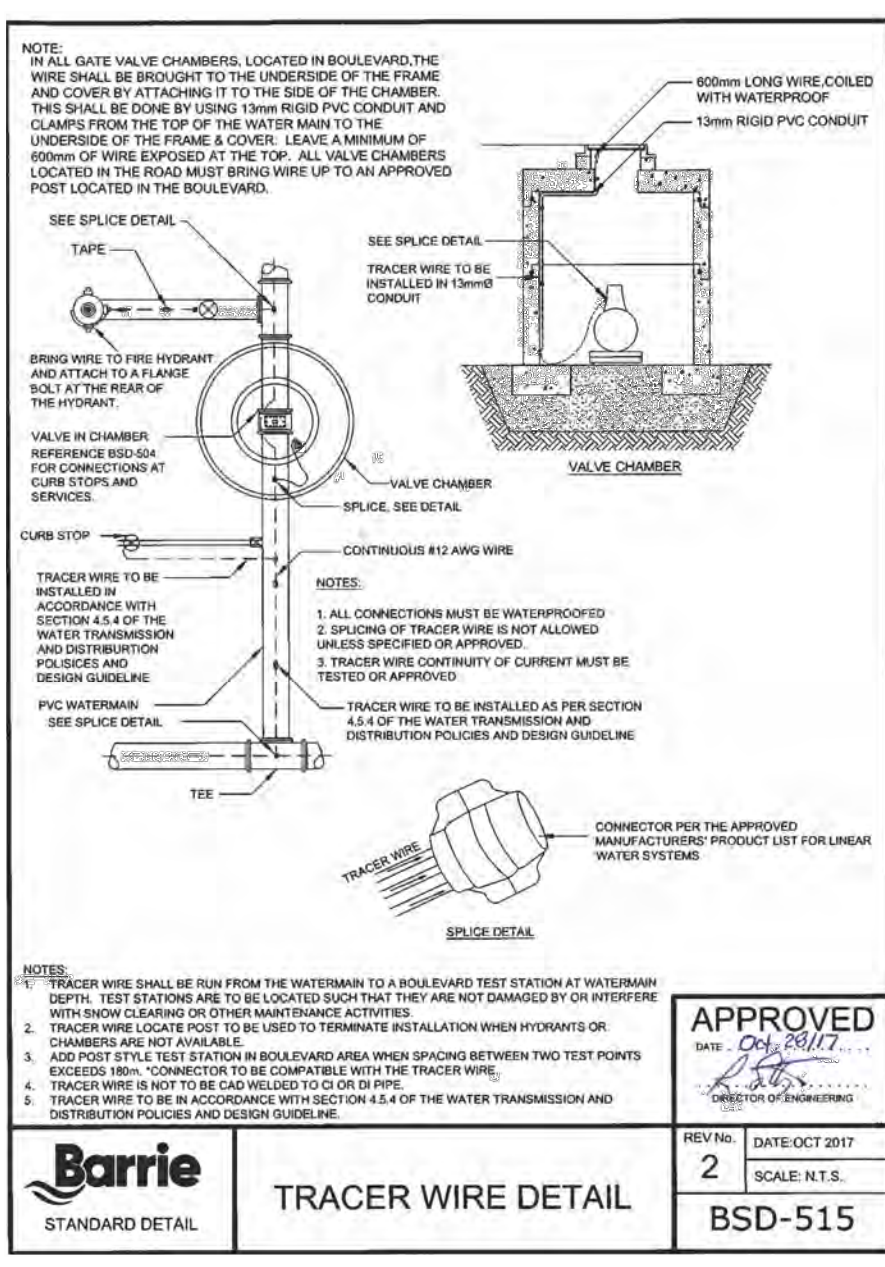
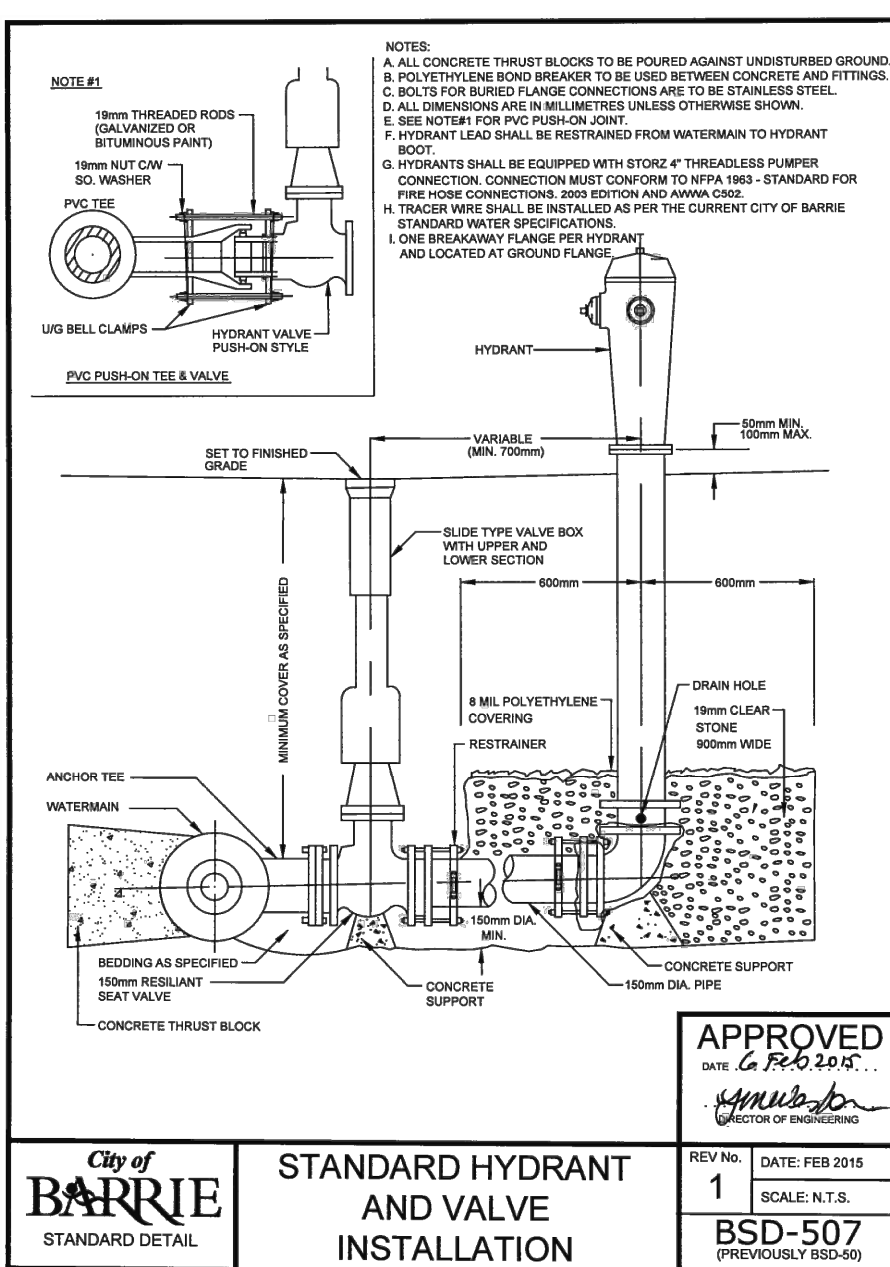
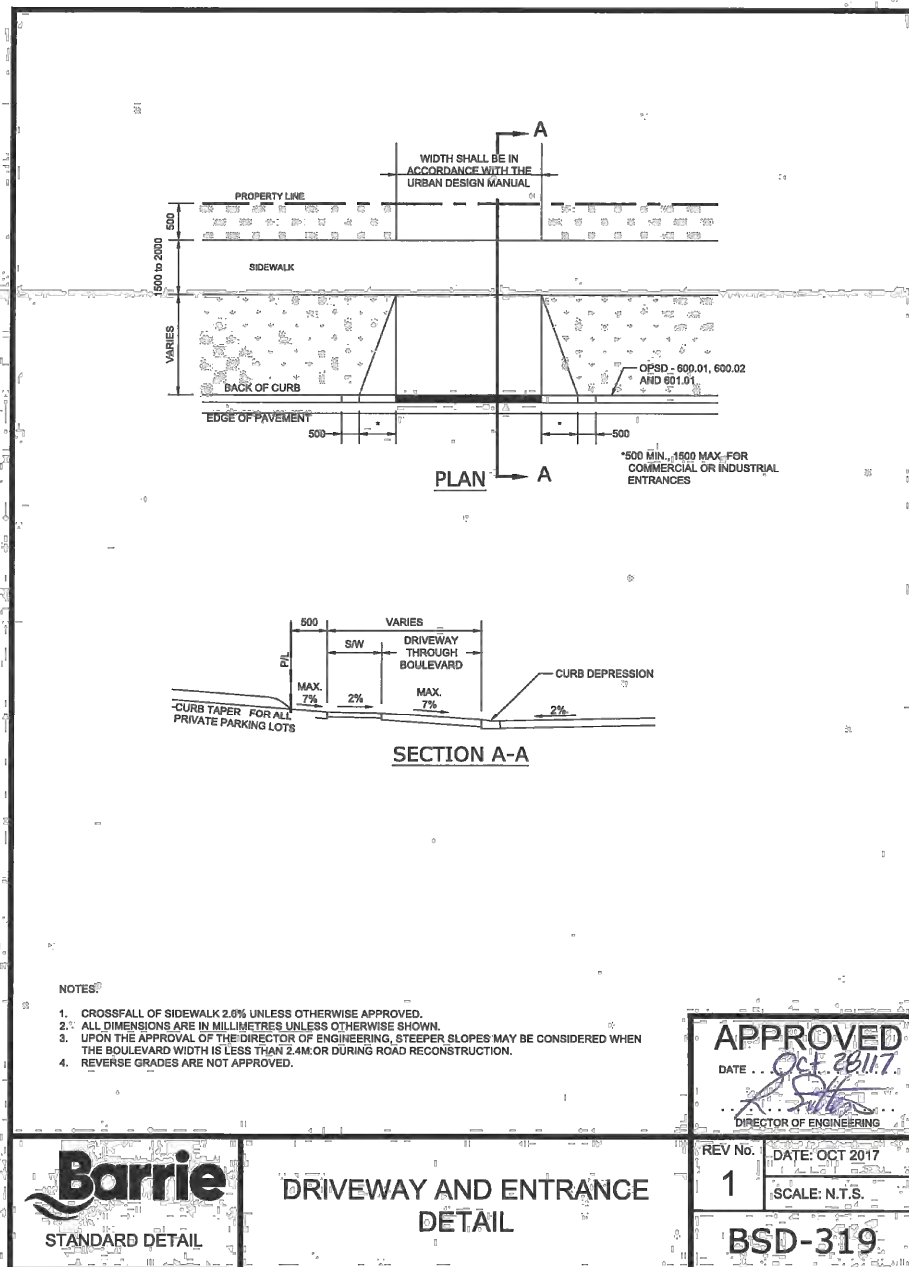
CLIENT/PROJECT

521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT

DRAWING TITLE

STORM SEWER CATCHMENT PLAN

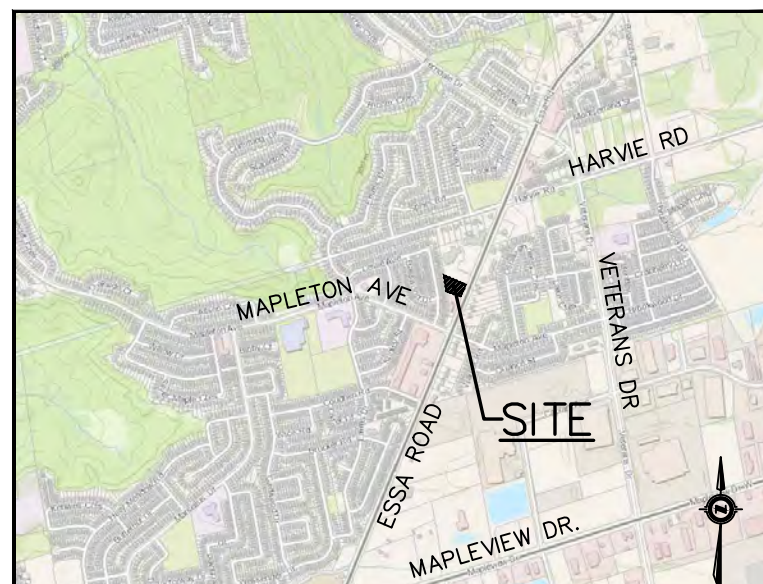
PROJECT NO. 20-11501-B	DRAWING NO. STM-1	REVISION 2
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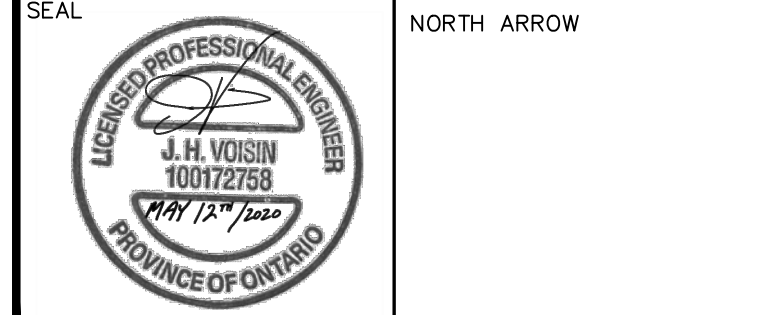


KEY MAP NOTES

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

2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.

NO.	YY.MM.DD	REVISION	BY
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DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	MARCH 2020
SCALE:	1:250

CLIENT/PROJECT		
521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT		
DRAWING TITLE		
STANDARD AND CONSTRUCTION DETAILS		
PROJECT NO.	DRAWING NO.	REVISION
20-11501-B	DET-1	2

GENERAL NOTES

1. DRAWINGS

A. ALL DRAWINGS SHALL BE PRODUCED IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARDS & SYMBOLS FOR PLAN & PROFILE DRAWINGS, GENERAL SERVICE PLANS AND LOT GRADING PLANS.

2. MEASUREMENTS

A. ALL DIMENSIONS ARE IN METRES, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETRES, UNLESS SPECIFIED OTHERWISE.

3. GENERAL

A. ALL WORK SHALL BE IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARD DRAWINGS (BSD) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).

B. ORDER OF PRECEDENCE OF STANDARD DRAWINGS IS FIRSTLY CITY OF BARRIE STANDARD DRAWINGS (BSD) AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).

C. LOCATION OF EXISTING SERVICES ARE NOT GUARANTEED. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

D. A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE ROADS AND PARKS OPERATIONS BRANCH PRIOR TO THE COMMENCEMENT OF WORK WITHIN ANY CITY RIGHT-OF-WAY.

E. A SITE ALTERATION PERMIT IS REQUIRED FROM THE ENGINEERING DEPARTMENT PRIOR TO THE COMMENCEMENT OF ANY EARTH WORKS ON THE SITE.

F. NATIVE MATERIAL, SUITABLE FOR BACKFILL, SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.

G. GRANULAR MATERIAL , USED FOR BACKFILL , SHALL BE PLACED IN LAYERS 150mm IN DEPTH MAXIMUM AND COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.

H. ALL DISTURBED AREAS ARE TO BE REINSTATED TO THEIR ORIGINAL CONDITION OR BETTER, AS DETERMINED BY THE CITY ENGINEERING DEPARTMENT.

I. 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.

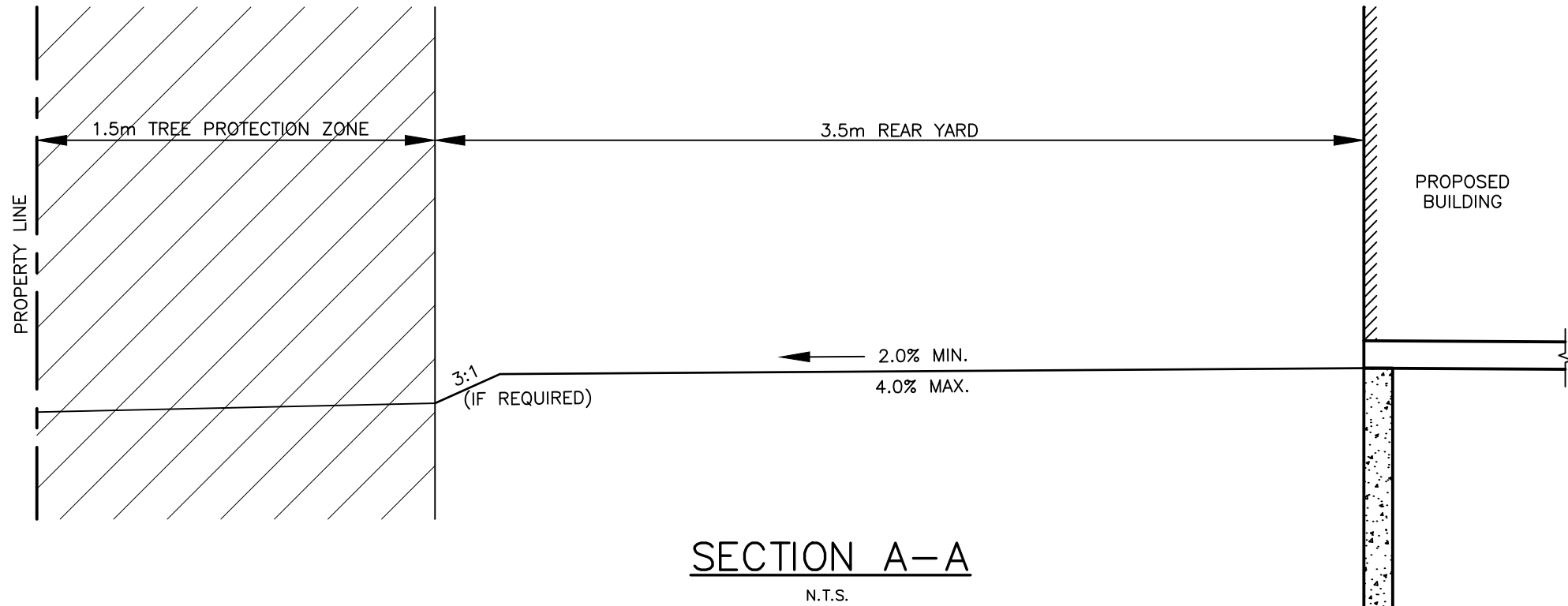
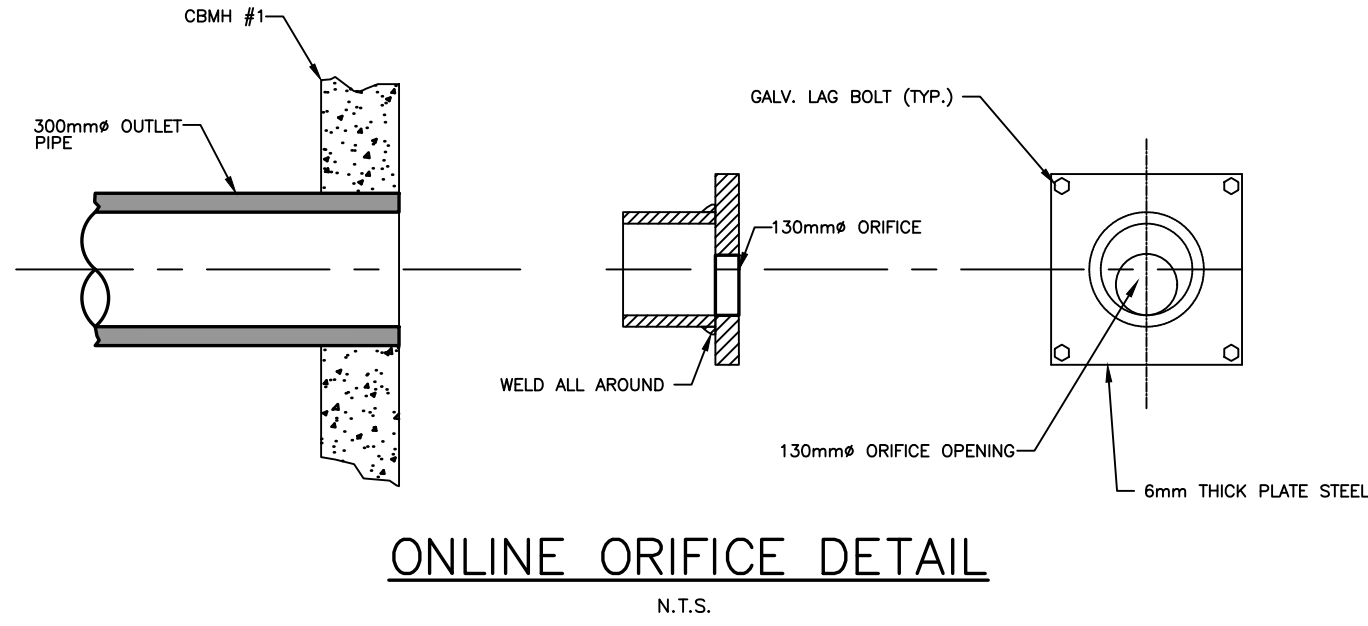
CITY OF BARRIE STANDARD					
GENERAL NOTES	3.	3. NOTE 3.E, REVISED & 3.I. ADDED	J.S.	05.01.10	APPR'D: R.G.N.
	2.	3.D. - "ENGINEERING DEPARTMENT"	B.R.	02.10.28	DATE: 92.05.15
	1.	3.E. TOPSOIL PERMIT		01.12.06	DRAWN: L.A.J. SCALE: N.T.S.
	NO.	REVISION	APR'D	DATE	BSD-N6

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 EXTRANEOUS MATTER.
- SOD SHALL CONFORM TO OPSS 571.

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

A. STORM SEWER TO BE PROVIDED ON ALL ROADS WITH CURB AND GUTTER.

B. PLACE ALL CATCH BASIN LATERALS AT 2% GRADE UNLESS OTHERWISE NOTED. PIPE SIZE MINIMUM 250mm DIA. SINGLE , 300mm DIA. DOUBLE.

C. 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.

D. 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.

E. STORM SEWER TO BE LOCATED OFFSET 3.0m SOUTH OR EAST OF CENTRELINE UNLESS OTHERWISE SPECIFIED.

F. 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.

G. 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-B (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS II) OR PVC CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4.

H. STORM SEWER TO BE MINIMUM 300mm DIAMETER WITH JOINTS CONFORMING TO C.S.A. STANDARD A257.3.

I. ALL PIPE BEDDING MUST CONFORM TO OPSD, MAXIMUM COVER TABLE, NO FLEXIBLE PIPE WORKS WILL BE INSTALLED WITH A DEPTH OF COVER GREATER THAN 6 METRES UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF ENGINEERING.

J. ALL PIPE HANDLING INSTALLATIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURES INSTALLATION GUIDES AND THE O.C.P.A. OR UNIBELL GUIDELINES.

K. 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 CAPED 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					
GENERAL NOTES STORM SEWERS	4.	NOTE "K" – SUMP PUMP DISCHARGE PIPING	B.R.	2003.01.07	APPR'D: R.G.N.
	3.	NOTE "Y" & "C" – "DIRECTOR OF ENGINEERING"	B.R.	2002.10.28	DATE: 92.05.15
	2.	NOTE "C" OPSD NUMBER REVISION	K.C.	2000.03.16	DRAWN: L.A.J. SCALE: N.T.S.
	1.	NOTE "D" CHANGED	K.C.	98.03.30	
	NO.	REVISION	APR'D	DATE	BSD-N5

GENERAL NOTES – SANITARY SEWER

SANITARY SEWERS

A. SANITARY SEWER TO BE LOCATED AT THE CENTRELINE OF THE ROAD.

B. 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.

C. MAXIMUM DEFLECTION FROM COMBINED LIVE AND DEAD LOADING SHALL NOT EXCEED ANY C.S.A., O.P.S. OR MANUFACTURERS RECOMMENDED SPECIFICATIONS.

D. 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.

E. CONCRETE SANITARY SEWERS SHALL HAVE A MINIMUM STRENGTH OF 50 N/m²/mm CONFORMING TO CSA STANDARD A257.2-1992, CLASS 50-B (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS II).

F. 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.

G. 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 MANUFACTURES GUIDELINES.

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

GENERAL NOTES - WATERMAIN

1. CONTRACTORS SHALL INFORM THE CITY OF BARRIE WATER OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS 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 BY CURRENT BY-LAW. 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 WATERMANS.

3. MINIMUM COVER OVER WATERMAIN SHALL BE 1.7m. 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.

4. 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 OPSS MINI 1004.65.07 COMPACTED TO 95% 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 (HAUNCHES, BEDDING, TOP OF PIPE AND COVER).

5. COPPER WATER MAINS AND SERVICES 25mm TO 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 150mm ABOVE AND BELOW TO CONFORM TO OPSS MINI 1004.65.07.

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 STANDARD CONCRETE THRUST BLOCKING WHERE SOIL CONDITIONS WARRANT AT THE CITY'S DISCRETION.

7. NEW WATERMANS TO BE PVC DR18 CL150 MINIMUM, DUCTILE IRON CL52 AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST.

8. 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.

9. ALL WATER SERVICES SHALL BE MINIMUM 25mm TYPE 'K' 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.

10. SERVICE TAPPINGS SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0m AND A MINIMUM OF 0.6m FROM JOINTS. (ENDS OF PIPE)

11. RISER PIPES ARE TO BE INSTALLED AS PER BSD-S10, AND REMOVED AS DIRECTED. SWABBING SCHEDULE TO BE SUPPLIED BY A WATER OPERATIONS FIELD REPRESENTATIVE. ALL RISERS ARE TO BE RESTRAINED OR THRUST BLOCKED.

12. ALL NEW CURB STOPS AND BOXES TO BE LOCATED AT PROPERTY LINE AND OUT OF DRIVEWAYS AND SIDEWALKS.

City of BARRIE STANDARD DETAIL	GENERAL NOTES - WATERMAIN	REV No.	DATE: MAY 2015	APPROVED DATE: <i>May 29/15</i> <i>[Signature]</i> DIRECTOR OF ENGINEERING
		2	SCALE: N.T.S.	
		BSD-500		

GENERAL NOTES - WATERMAIN

GENERAL NOTES – SANITARY SEWER

SANITARY SERVICE LATERALS

A. SANITARY LATERAL CONNECTION TO BE LOCATED AT THE CENTRELNE OF THE LOT AND CAPPED.

B. 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.

C. PIPE TO BE MINIMUM 100 mm DIA. PVC SDR28, RUBBER GASKET TYPE JOINTS AND SHALL CONFORM TO C.S.A. (B-182.2.3.4) (COLOURED) FOR A RESIDENTIAL HOUSE AND 150mm MINIMUM DIA. PVC SDR28 FOR INDUSTRIAL/COMMERCIAL DEVELOPMENT.

D. MINIMUM DEPTH OF LATERAL AT PROPERTY LINE SHALL BE 2.4m MEASURED FROM THE SEWER OVERT TO FINISHED GROUND SURFACE ELEVATION UNLESS NOTED OTHERWISE.

E. 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 MANUFACTURES GUIDELINES.

F. MINIMUM PIPE SLOPE TO BE 2.0%, MAXIMUM 8.0% (SEE OPSD-1006.010, 1006.020).

CITY OF BARRIE STANDARD					
GENERAL NOTES SANITARY SEWERS					APPR'D: R.G.N.
	2.	OPSD NUMBERS REVISED	K.C.	2000.08.17	DATE: 92.05.15
	1.	CHANGES TO B. TO G.	K.C.	95.04.24	DRAWN: L.A.J. SCALE: N.T.S.
	NO.	REVISION	APR'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

2	20.05.13	SITE PLAN REVISION	G.N.
1	19.06.06	REVISED PER CITY COMMENTS	G.N.

NO.	YY.MM.DD	REVISION	BY
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SEAL	NORTH ARROW

DESIGN BY:	J.V.
DRAWN BY:	G.N.
CHECKED:	J.V.
DATE:	MARCH 2020
SCALE:	N.T.S.

CLIENT/PROJECT		
521 AND 525 ESSA ROAD RESIDENTIAL DEVELOPMENT		
DRAWING TITLE		
GENERAL NOTES AND DETAILS		
PROJECT NO. 20-11501-B	DRAWING NO. GN-1	REVISION 2