



SITE LOCATION

829 ESSA ROAD

RESIDENTIAL TOWNHOUSE DEVELOPMENT



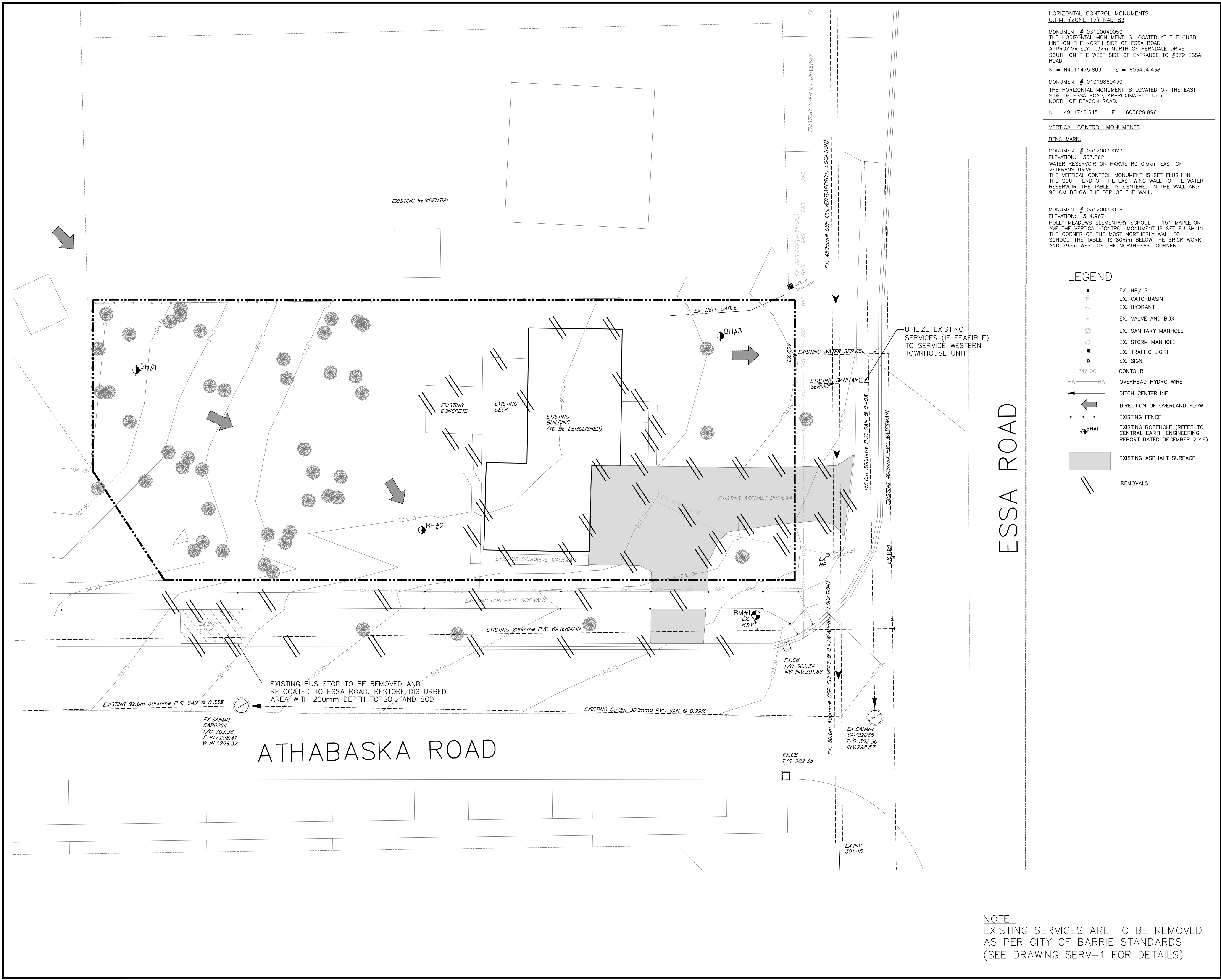
LIST OF DRAWINGS

RM-1
ESC-1
SERV-1
GP-1
DET-1

EXISTING CONDITIONS AND REMOVALS PLAN
EROSION AND SEDIMENT CONTROL PLAN
SITE SERVICING PLAN
SITE GRADING PLAN
STANDARD NOTES AND DETAILS PLAN

PROJECT NO.18-11409B

FOR APPROVAL
FEBRUARY 2021



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

MONUMENT # 03120040050
THE HORIZONTAL MONUMENT IS LOCATED AT THE CURB LINE ON THE NORTH SIDE OF ESSA ROAD, APPROXIMATELY 0.3km NORTH OF FERDALE DRIVE SOUTH ON THE WEST SIDE OF ENTRANCE TO #379 ESSA ROAD.

N = 49111475.809 E = 603404.438

MONUMENT # 01019860430
THE HORIZONTAL MONUMENT IS LOCATED ON THE EAST SIDE OF ESSA ROAD, APPROXIMATELY 15m NORTH OF BEACON ROAD.

N = 4911746.645 E = 603629.996

VERTICAL CONTROL MONUMENTS

BENCHMARK:

MONUMENT # 03120030023
ELEVATION: 303.862
WATER RESERVOIR ON HARVEY RD 0.5km EAST OF VETERANS DRIVE
THE VERTICAL CONTROL MONUMENT IS SET FLUSH IN THE SOUTH END OF THE EAST WING WALL TO THE WATER RESERVOIR. THE TABLET IS CENTERED IN THE WALL AND 90 CM BELOW THE TOP OF THE WALL.

MONUMENT # 03120030016
ELEVATION: 314.967
HOLLY MEADOWS ELEMENTARY SCHOOL - 151 MAPLETON AVE THE VERTICAL CONTROL MONUMENT IS SET FLUSH IN THE CORNER OF THE MOST NORTHERLY WALL TO SCHOOL. THE TABLET IS 80mm BELOW THE BRICK WORK AND 79cm WEST OF THE NORTH-EAST CORNER.

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 — HW OVERHEAD HYDRO WIRE
- DITCH CENTERLINE
- DIRECTION OF OVERLAND FLOW
- EXISTING FENCE
- ⊙ EXISTING BOREHOLE (REFER TO CENTRAL EARTH ENGINEERING REPORT DATED DECEMBER 2018)
- EXISTING ASPHALT SURFACE
- /// REMOVALS

ESSA ROAD

NOTE:
EXISTING SERVICES ARE TO BE REMOVED AS PER CITY OF BARRIE STANDARDS (SEE DRAWING SERV-1 FOR DETAILS)

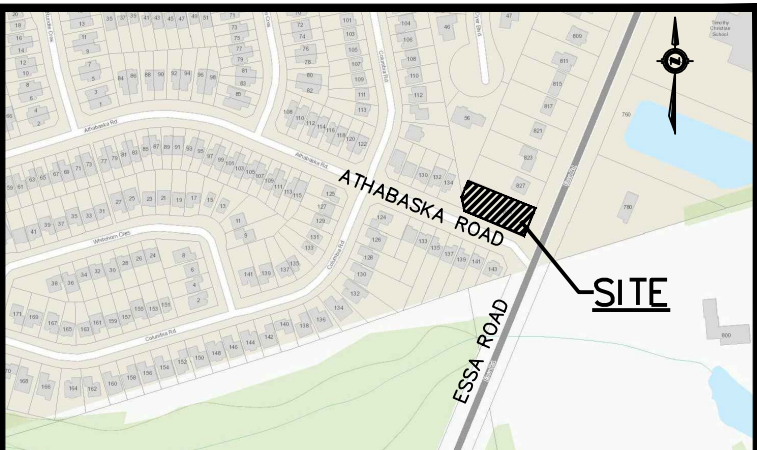


PINESTONE ENGINEERING LIMITED | www.pel.ca

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



KEY MAP

NOTES

- TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY JOE TOPO DECEMBER 18 2018.
- SITE PLAN PREPARED BY INNOVATIVE PLANNING SOLUTIONS.

BENCHMARK

BM#1
TOP OPERATING NUT OF EXISTING FIRE HYDRANT #39 ON NORTH SIDE OF ATHABASKA ROAD
ELEVATION 303.36

NO.	YY.MM.DD	REVISION	BY
4	21.02.23	REVISED TO REFLECT END UNIT CHANGES	J.V.
3	21.02.11	REVISED PER SITE PLAN CHANGES	J.V.
2	20.12.15	REVISED BUILDING LAYOUT	J.V.
1	20.07.30	SITE PLAN REVISION	C.A.



NORTH ARROW

DESIGN BY:	D.H.
DRAWN BY:	C.A.
CHECKED:	J.V.
DATE:	FEB 2019
SCALE:	1:150

CLIENT/PROJECT

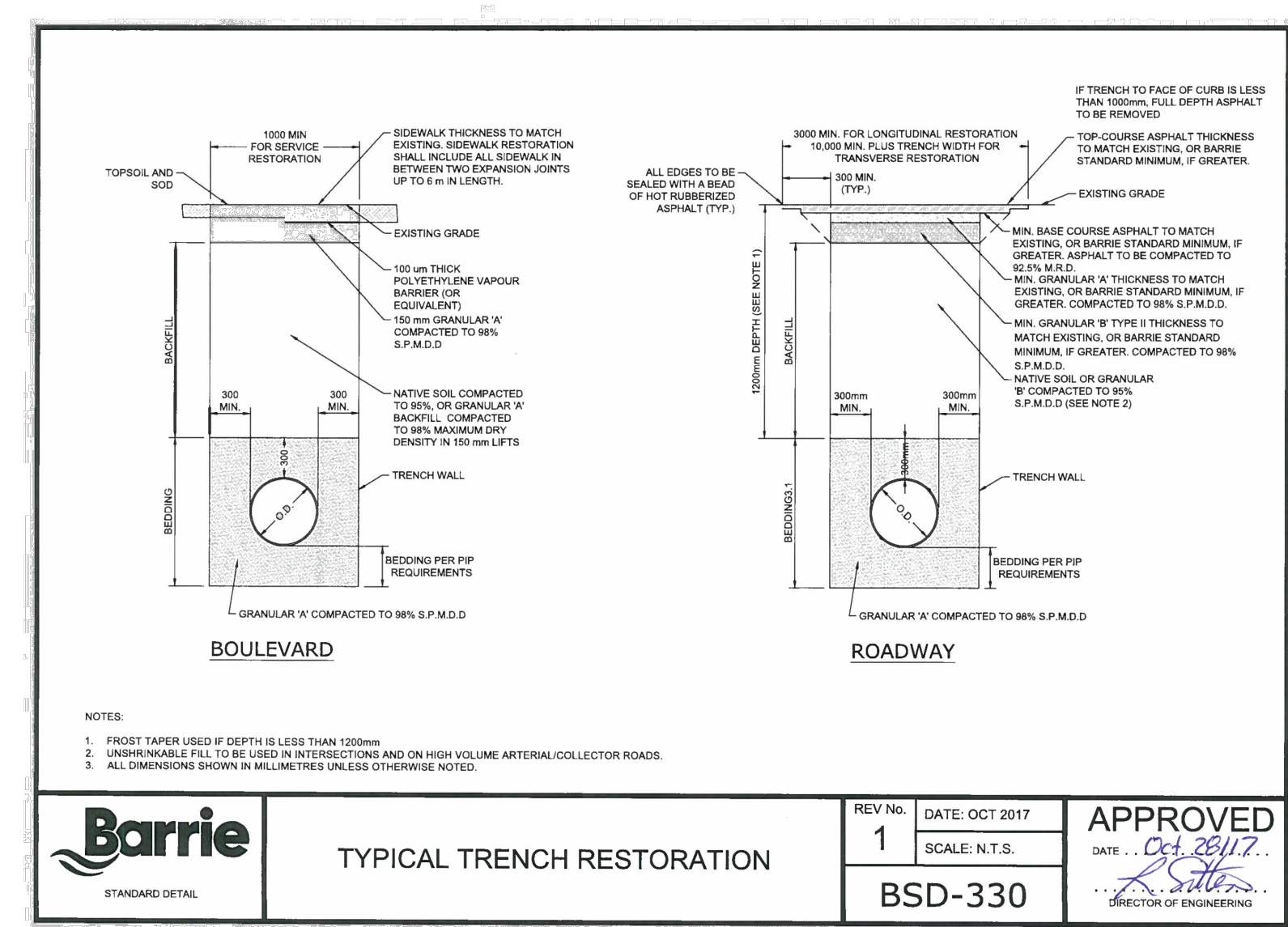
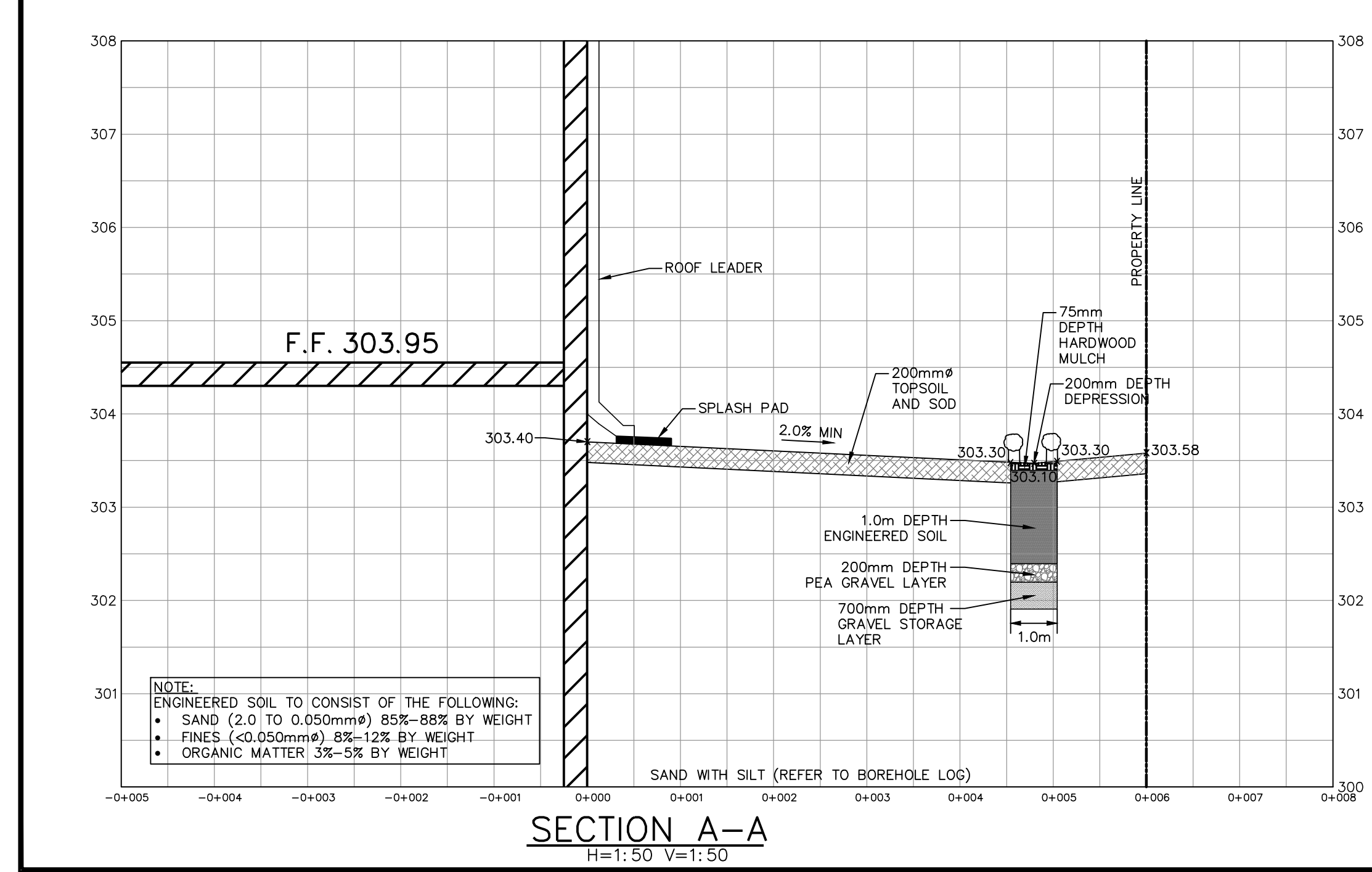
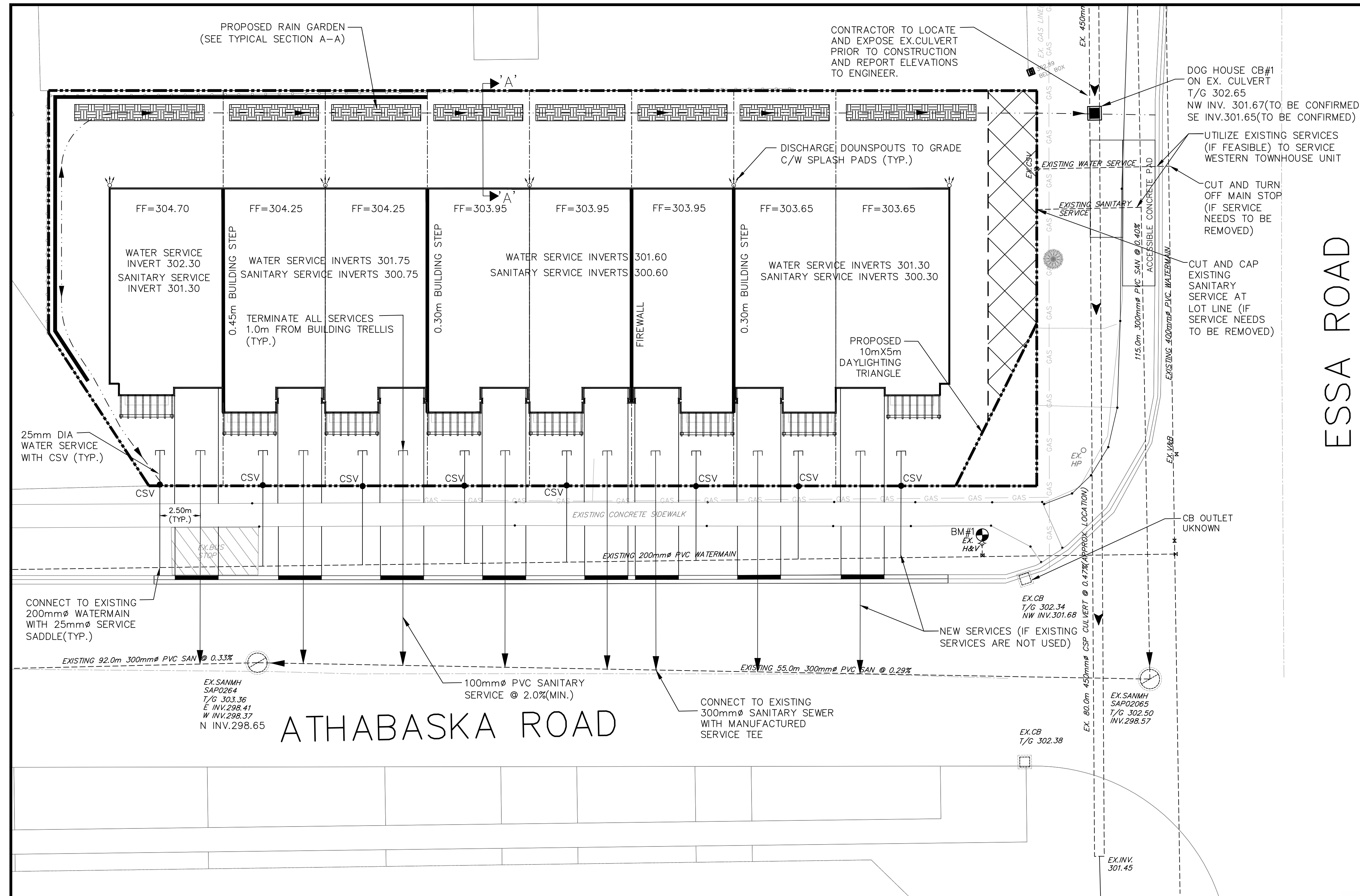
**829 ESSA ROAD
RESIDENTIAL DEVELOPMENT
CITY OF BARRIE**

DRAWING TITLE

**EXISTING CONDITIONS AND
REMOVALS PLAN**

PROJECT NO.	DRAWING NO.	REVISION
18-11409B	RM-1	4

DWG NAME



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

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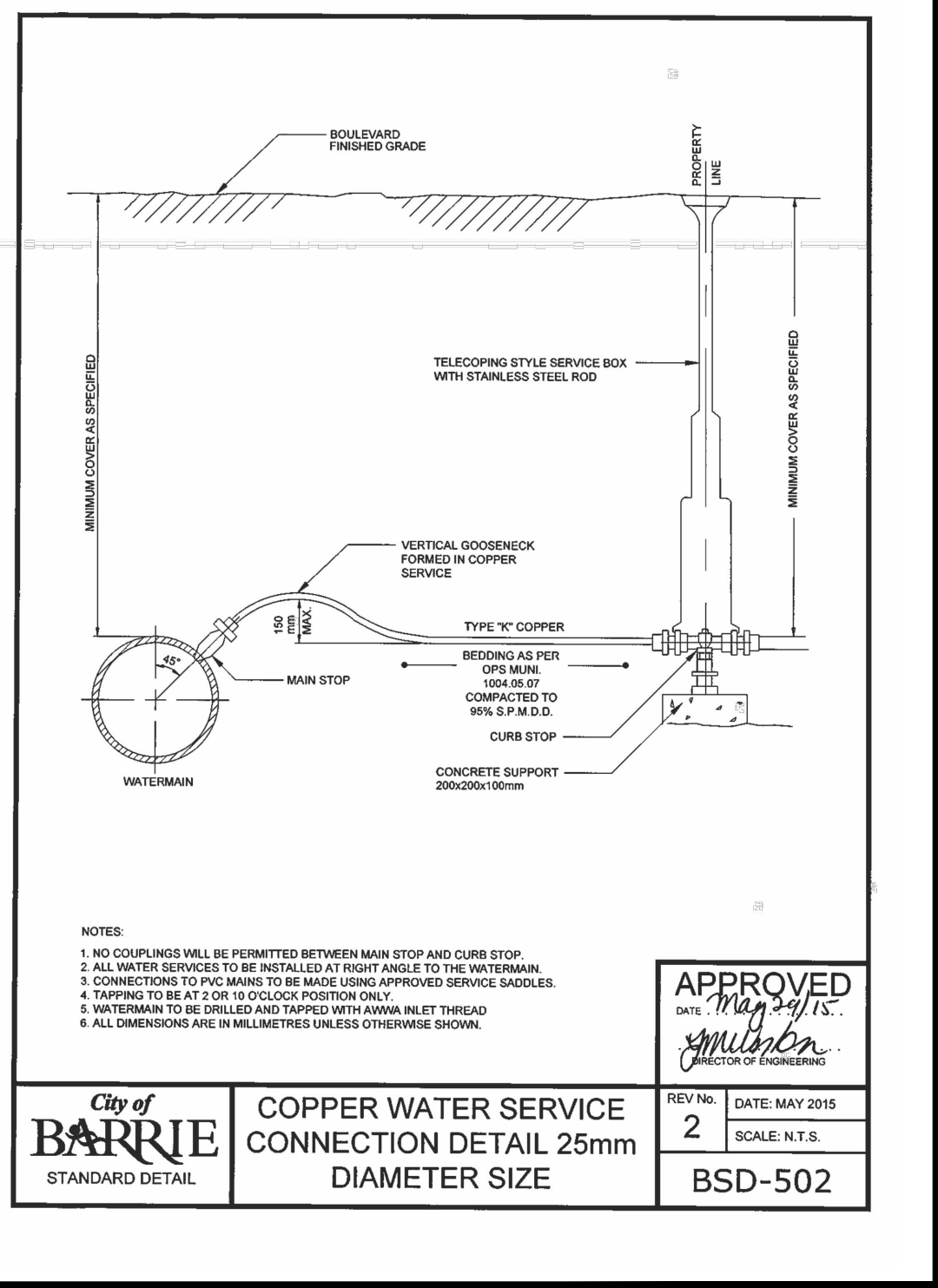
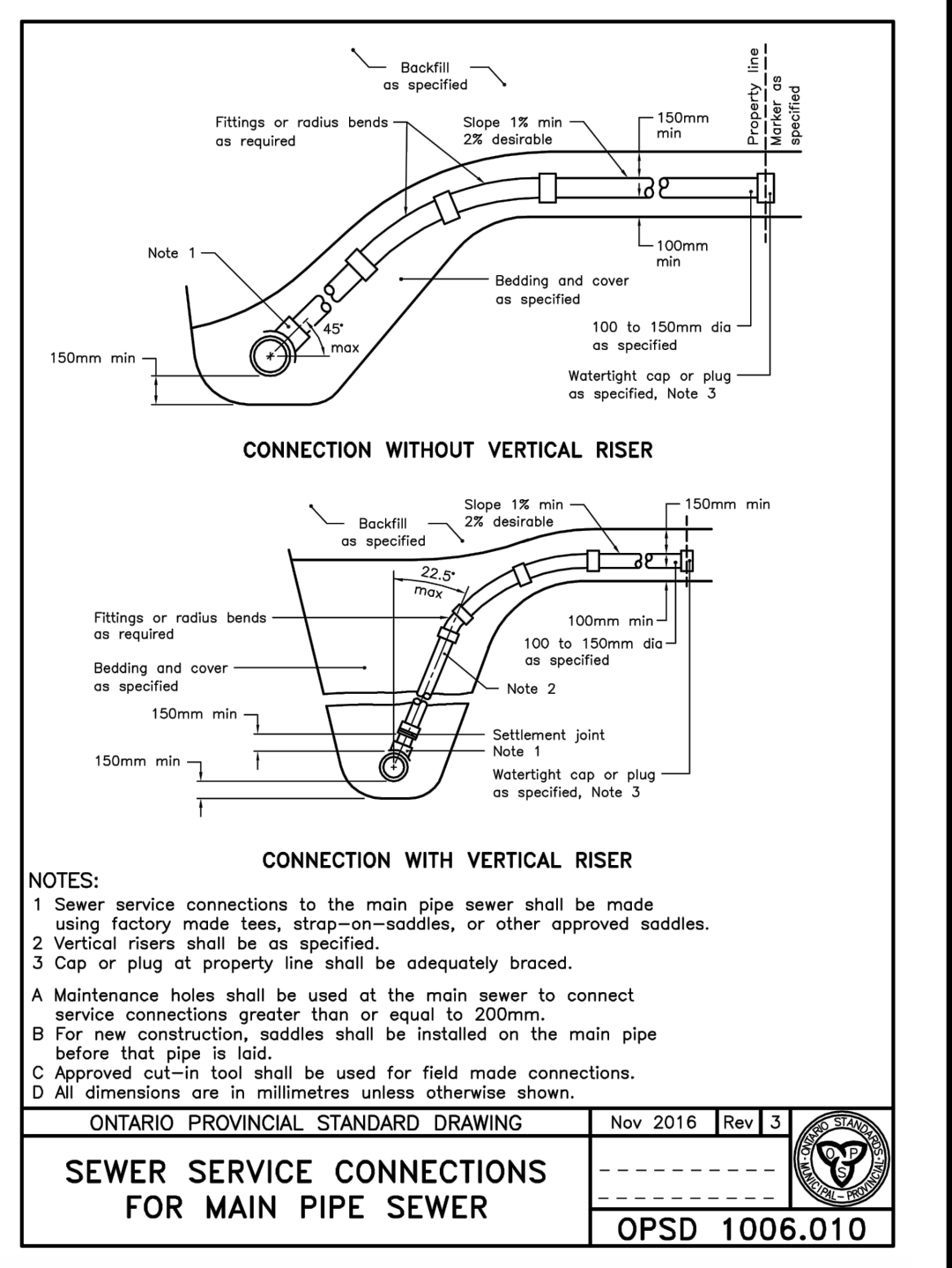
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PEL
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KEY MAP

NOTES

- TOPOGRAPHIC SURVEY AND LEGAL INFORMATION COMPLETED BY JOE TOPO DECEMBER 18 2018.
- SITE PLAN PREPARED BY INNOVATIVE PLANNING SOLUTIONS.
- CURB STOP VALVES ARE NOT PERMITTED IN DRIVEWAYS.

LEGEND

- EX. HP/LS
- EX. CATCHBASIN
- EX. HYDRANT
- EX. VALVE AND BOX
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. SIGN
- CONTOUR
- OVERHEAD HYDRO WIRE
- DITCH CENTERLINE
- PROPOSED BIO-RETENTION/RAIN GARDEN
- PROPOSED 25mm WATER SERVICE WITH CURB STOP VALVE
- PROPOSED 100mm PVC SANITARY SERVICE

NO.	YY.MM.DD	REVISION	BY
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3	21.02.11	REVISED PER SITE PLAN CHANGES	J.V.
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DATE:	JAN 2019
SCALE:	1:150

CLIENT/PROJECT

829 ESSA ROAD
RESIDENTIAL DEVELOPMENT
CITY OF BARRIE

DRAWING TITLE

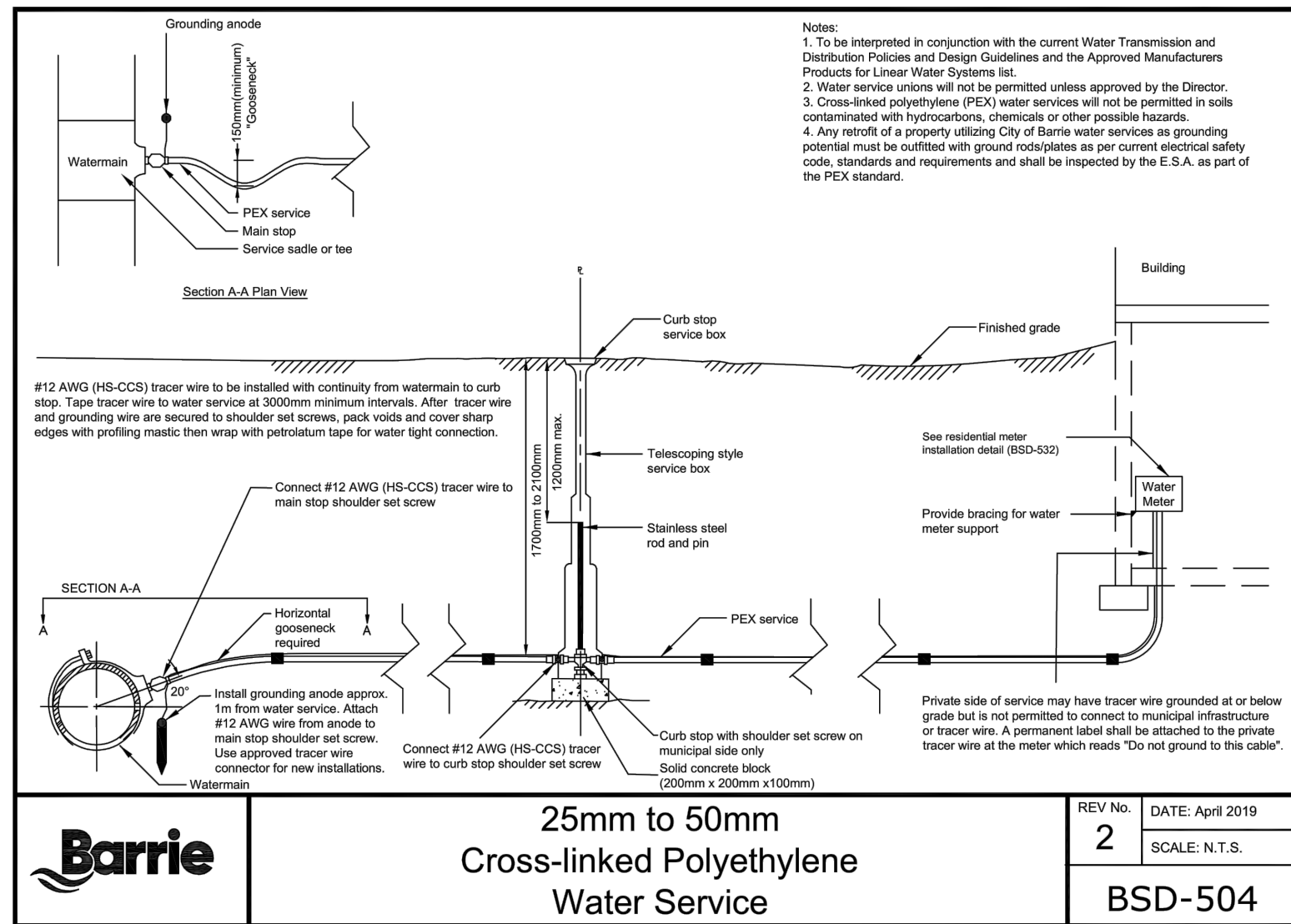
SITE SERVICING PLAN

PROJECT NO.	DRAWING NO.	REVISION
18-11409B	SERV-1	4

DWG NAME

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 NOTIFY THE VARIOUS UTILT COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY 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. (IF ALTERATION IS GREATER THEN 0.5ha)
- NATIVE MATERIAL SUITABLE FOR BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DENSITY.
- GRANULAR MATERIAL USED FOR BACKFILL, SHALL E 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 COMPLE AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE CITY ENGINEERING DEPARTMENT.



GENERAL NOTES - WATERMAIN

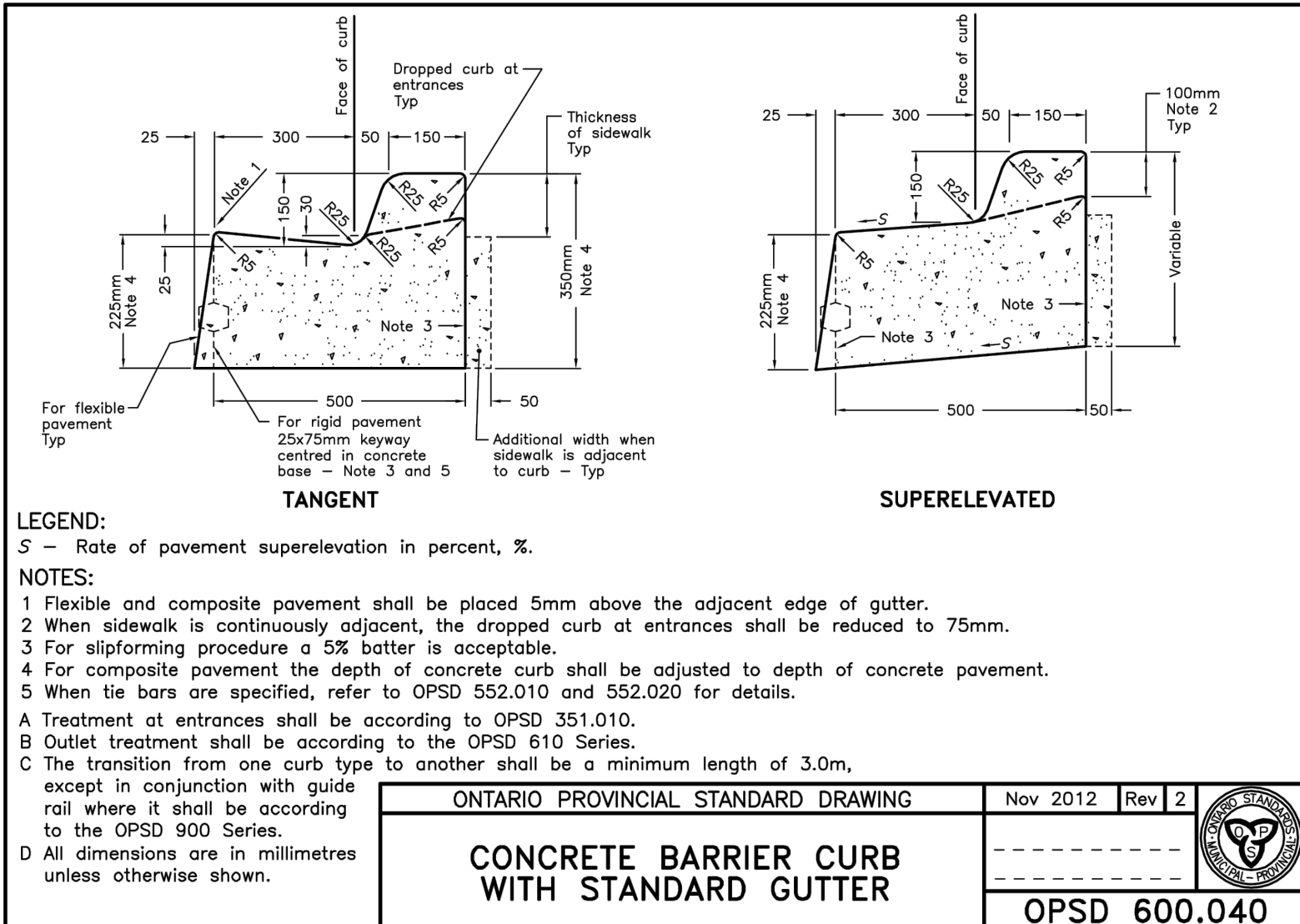
- CONTRACTORS SHALL INFORM THE CITY OF BARRIE WATER OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO PERFORM WORK ON WATER INFRASTRUCTURE.
- OPERATION OF HYDRANTS AND VALVES ON THE POTABLE WATER SYSTEM BY OTHER THAN QUALIFIED WATER OPERATIONS STAFF IS PROHIBITED BY CURRENT BY-LAW. CITY SERVICE FEES ARE PER THE CURRENT FEES BY-LAW. THE CITY'S WATER OPERATIONS STAFF WILL SWAL PRESSURE TEST, CHLORINATE AND FLUSH ALL NEW WATERMANS.
- 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.
- WATERMAIN SHALL BE INSTALLED IN BEDDING AS PER OPSD 802.010 (GRANULAR 'K' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD 802.020 OR 802.031 CLASS 'B' (GRANULAR 'K' BEDDING MATERIAL, GRANULAR 'K' 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 MUNI 1004.05.07 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 (PAUNCHES, BEDDING, TOP OF PIPE AND COVER).
- COPPER WATER MAINS AND SERVICES 25mm to 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 100mm ABOVE AND BELOW TO CONFORM TO OPSD MUNI 1004.05.07.
- RESTRAINING WALL 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 (HS-CCL) AND SHALL BE INSTALLED ON THE TOTAL LENGTH OF ALL WATERMAIN AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT. ALL SPICES 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-510, AND REMOVED AS DIRECTED. SWABING 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 DETAIL

GENERAL NOTES - WATERMAIN

REV NO: 2 DATE: MAY 2015 SCALE: N.T.S. BSD-500

APPROVED
DATE: May 29, 2015
Director of Engineering



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/m²mm CERTIFIED TO C.S.A. STANDARD A247.2-1982, CLASS 50-D (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS II) 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 MANUFACTURES 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 S TO OUTLET INTO THE NEAREST CATCH-BASIN 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 'X' - SUMP PUMP DISCHARGE PIPING B.R. 2003.01.07
3. NOTE 'Y' & 'C' - "DIRECTOR OF ENGINEERING" B.R. 2002.10.28
2. NOTE 'C' OPSD NUMBER REVISION K.C. 2000.03.16
1. NOTE 'D' CHANGED K.C. 98.03.30

APR'D DATE

R.G.N. DATE: 92.05.15
L.A.J. SCALE: N.T.S.

BSD-N5

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-182.2.3.4) (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 OVERT 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 INSERT-A-TEES IN STRICT ACCORDANCE TO MANUFACTURES GUIDELINES.
- MINIMUM PIPE SLOPE TO BE 2.0%, MAXIMUM 8.0% (SEE OPSD-1006.010, 1006.020).

CITY OF BARRIE STANDARD

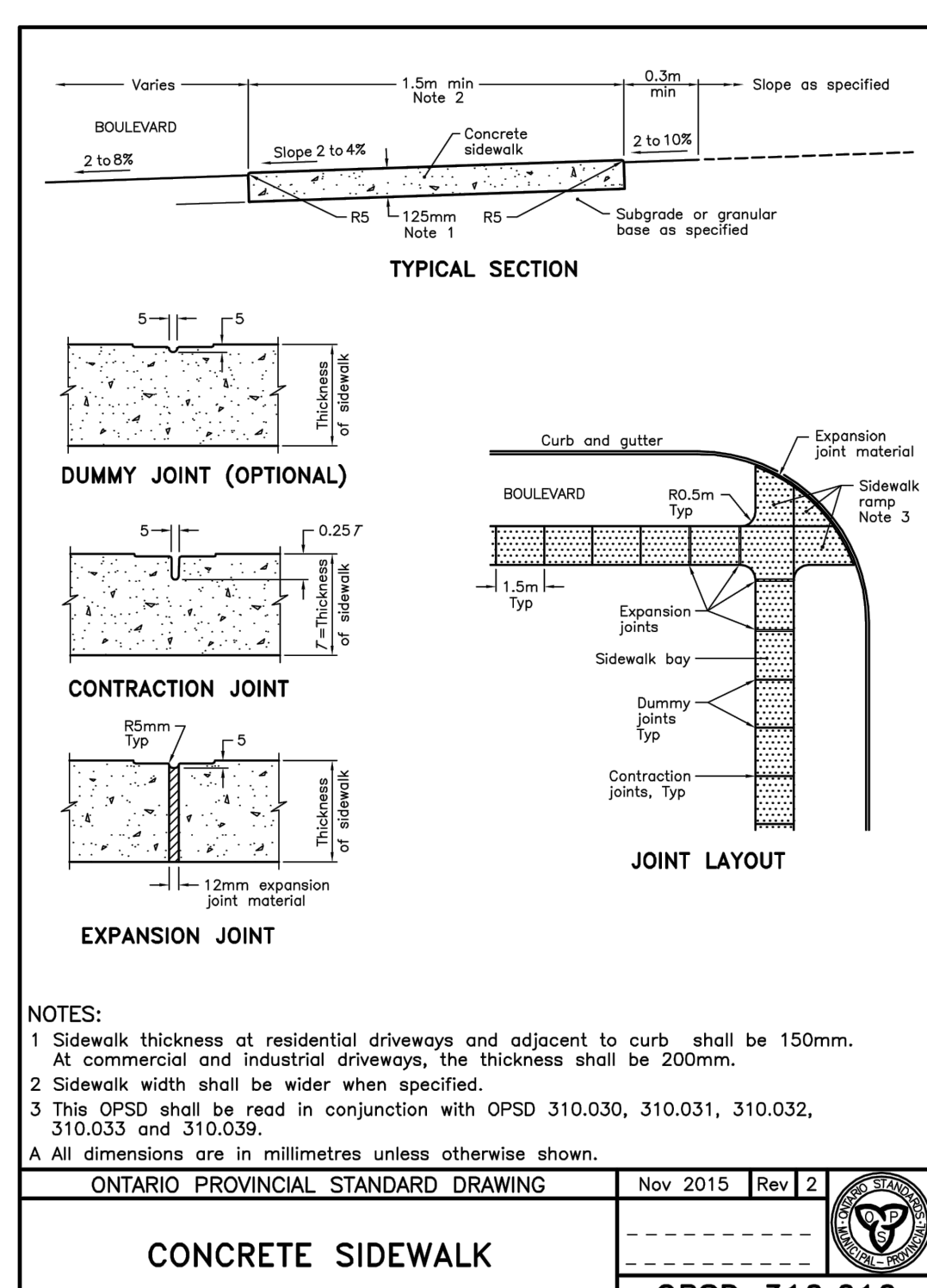
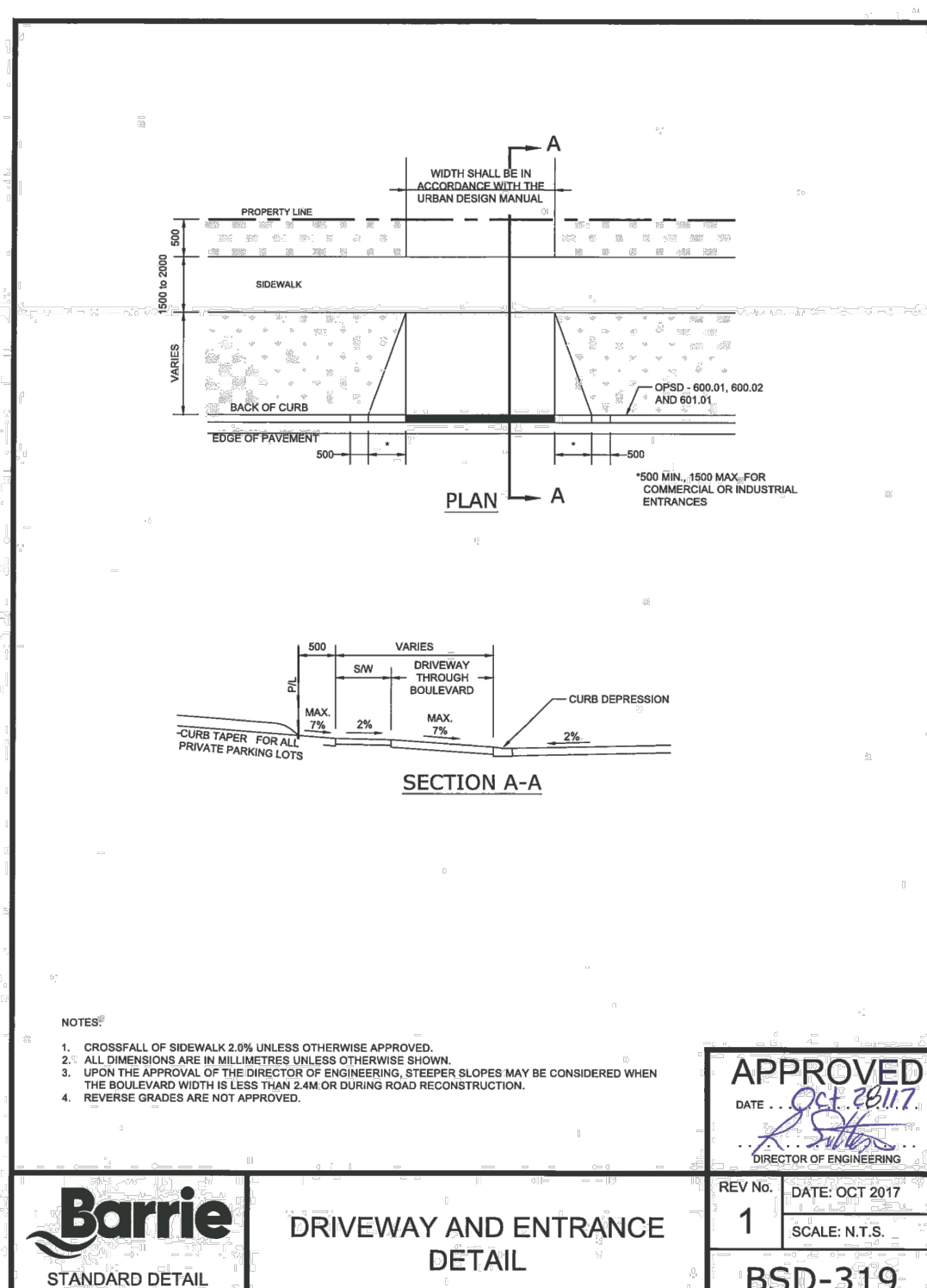
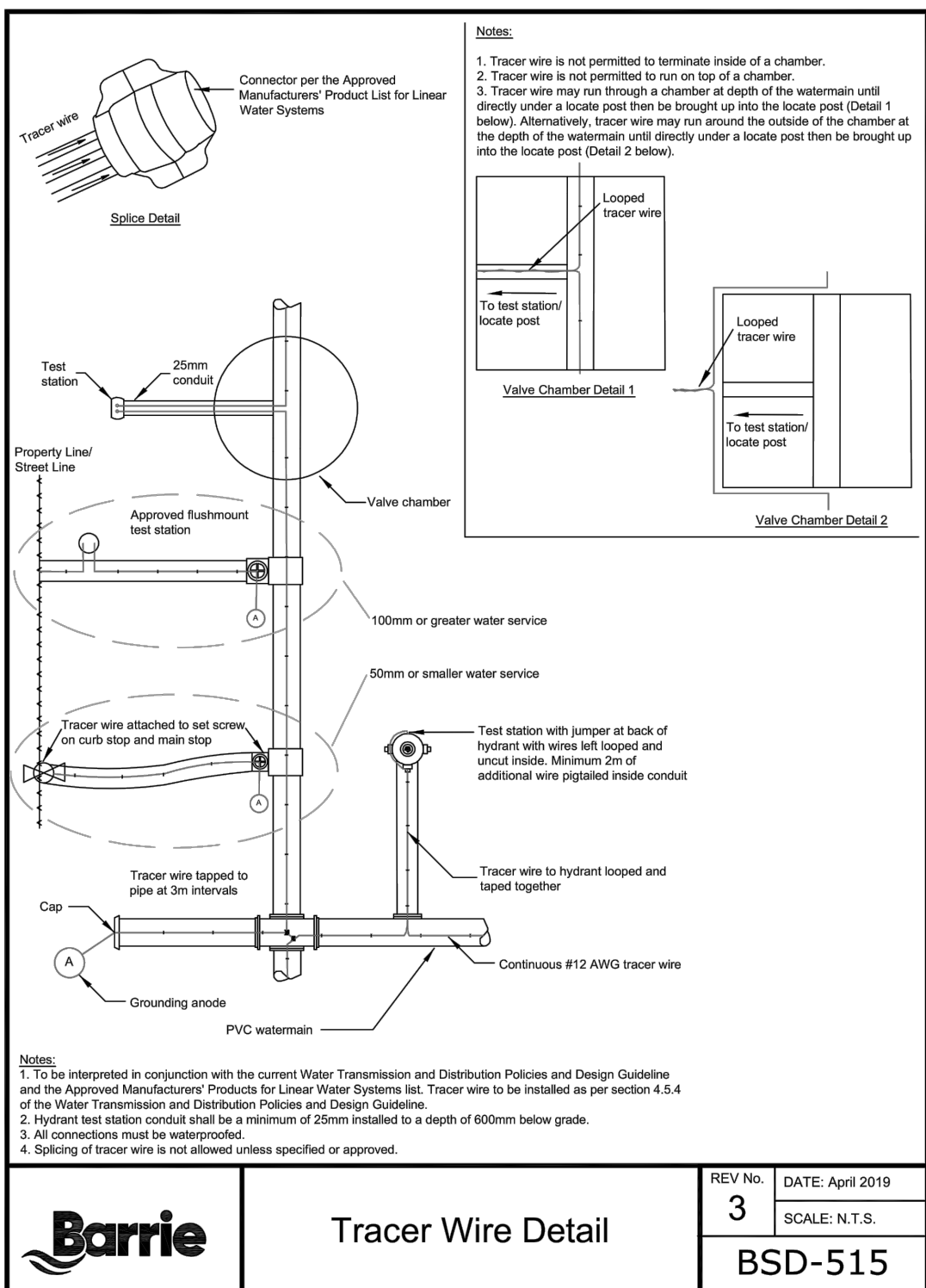
GENERAL NOTES SANITARY SEWERS

2. OPSD NUMBERS REVISED K.C. 2000.08.17
1. CHANGES TO B. TO G. K.C. 95.04.24

APR'D DATE

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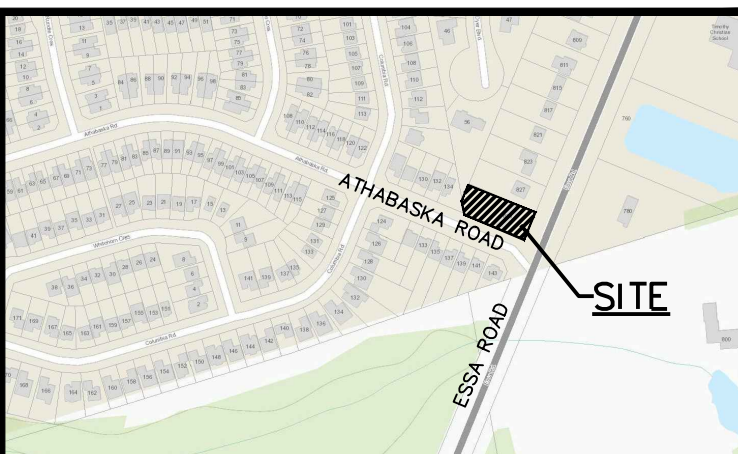
BSD-N4



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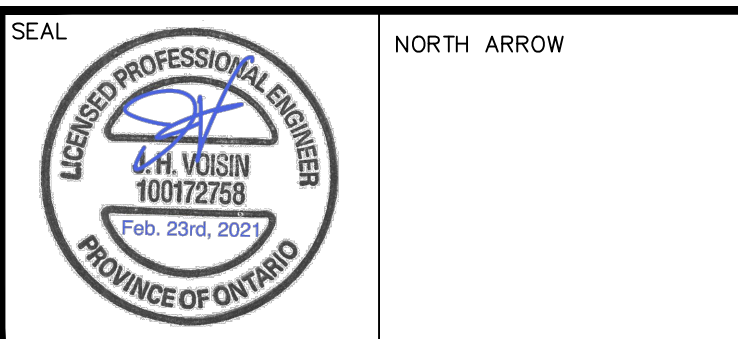
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