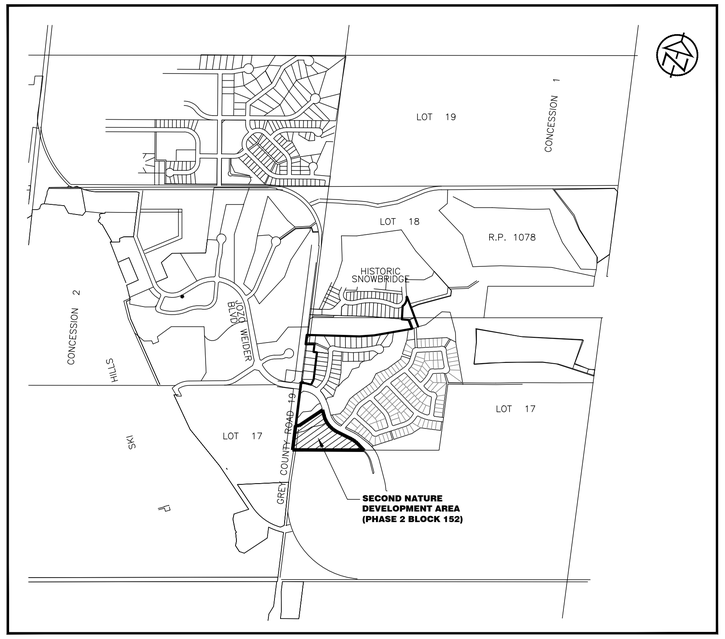
# MANORWOOD HOMES - SECOND NATURE

## TOWN OF THE BLUE MOUNTAINS




**KEY PLAN**

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
AFC Drawings are only valid as part and upon execution of a Development Agreement
signature date 30-Jun 2020

The Consultant shall provide a Communications Plan to notify the Town and Area Residents of significant Construction activities to the satisfaction of the Town.

At a minimum the Plan should provide:

•Installation of a Project Notification Sign, 1.2 m x 2.4 m minimum, to Town template, at each construction access to the Lands and visually obvious to the public, at least two (2) weeks before the construction start date, and maintained for full duration of construction.

•Notification of the construction project to property owners as deemed appropriate in consultation with Development Engineering via hand/mail delivery.

•Schedules of intended site activities updated routinely. (typically, weekly to bi-weekly).

•A minimum of two (2) weeks' notice following Town approval and prior to commencement of:

- o Significant site activities such as site alteration works e.g. tree clearing & grubbing, commencement of site servicing/grading, placement of asphalt, concrete curbs and sidewalk, and landscaping.
- o Off-site works on Town Owned Lands/Roads following receipt of a Municipal Land Use Permit (MLUP).

TATHAM ENGINEERING

**PHASE 2 BLOCK - 152**
**Contract No. : 117227**
**4TH SUBMISSION**
**DATE: APRIL 27, 2020**

# MANORWOOD HOMES - SECOND NATURE
## TOWN OF THE BLUE MOUNTAINS

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|---|---|
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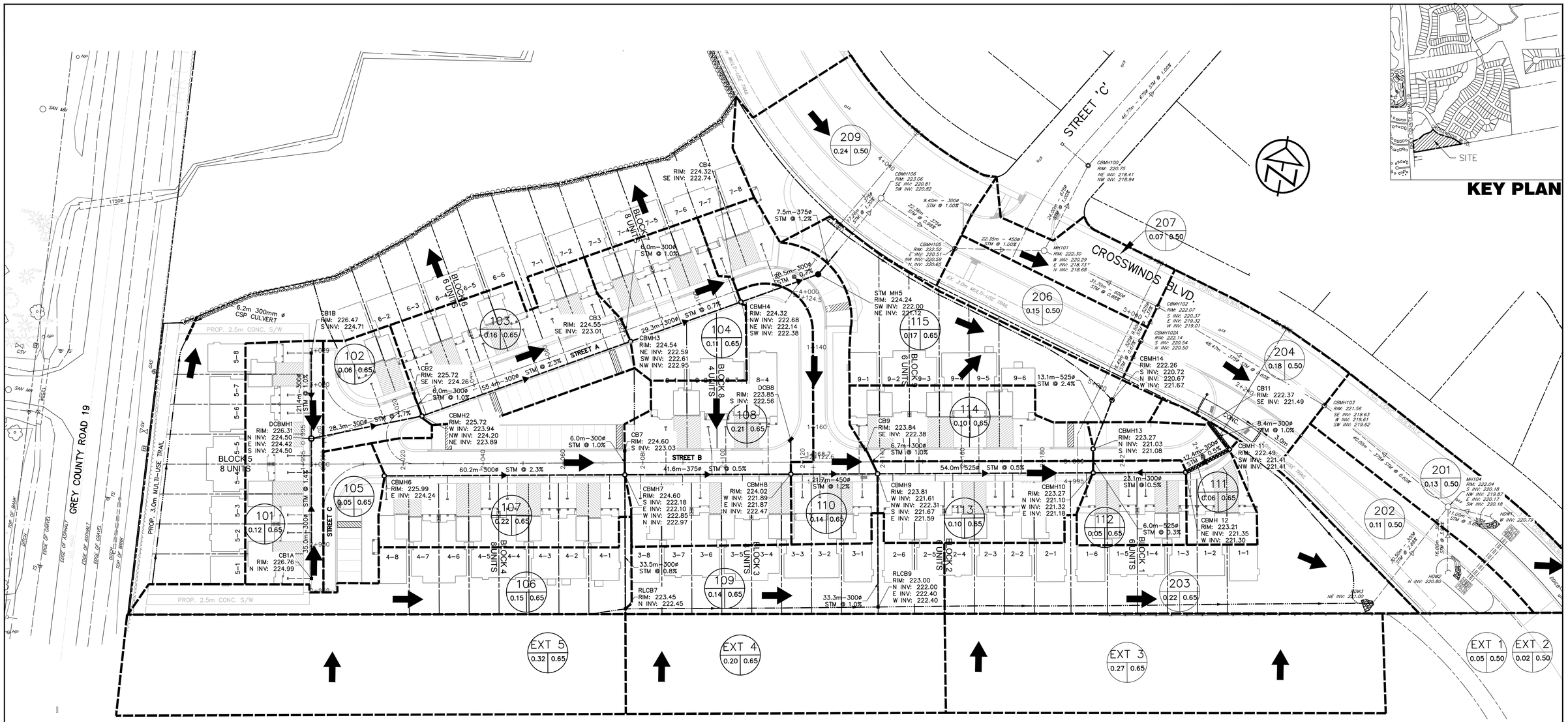
# LEGEND

- PROPERTY LINE
- EXISTING CENTERLINE
- PROPOSED CENTERLINE
- EXISTING EDGE OF ASPHALT
- PROPOSED EDGE OF ASPHALT
- EXISTING EDGE OF SHOULDER
- PROPOSED EDGE OF SHOULDER
- EXISTING DITCH/DIRECTION OF FLOW
- PROPOSED DITCH/DIRECTION OF FLOW
- EXISTING SANITARY SEWER/SIZE/DIRECTION OF FLOW — 200ø SAN
- PROPOSED SANITARY SEWER/SIZE/DIRECTION OF FLOW — 200ø SAN
- EXISTING SANITARY SERVICE
- PROPOSED SANITARY SERVICE
- EXISTING SANITARY FORCEMAIN/SIZE/DIRECTION OF FLOW — 200ø SAN F/M
- EXISTING WATERMAIN/SIZE — 150ø W/M
- PROPOSED WATERMAIN/SIZE — 150ø W/M
- EXISTING WATER SERVICE
- PROPOSED WATER SERVICE
- EXISTING STORM SEWER/SIZE/DIRECTION OF FLOW — 375ø STM
- PROPOSED STORM SEWER/SIZE/DIRECTION OF FLOW — 375ø STM
- PROPOSED STORM SERVICE
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED SWALE LOCATION
- PROPOSED JOINT HYDRO, BELL AND ROGERS
- EXISTING GAS MAIN
- PROPOSED GAS MAIN
- EXISITNG FENCELINE
- PROPOSED FENCELINE
- EXISTING BUSHLINE
- EXISTING CONTOUR — 179.00
- EXISTING SPOT ELEVATION — × 179.00
- PROPOSED SPOT ELEVATION — ×179.00
- EXISTING GRADING DIRECTION
- PROPOSED GRADING DIRECTION
- EXISTING TEMPORARY BENCHMARK — TBM
- EXISTING STANDARD IRON BAR — SIB
- EXISTING BOREHOLE/NUMBER — BH9
- EXISTING GAS VALVE — GAS
- EXISTING HYDRO TRANSFORMER
- EXISTING CABLE PEDESTAL
- EXISTING BELL PEDESTAL
- EXISTING BELL MAINTENANCE HOLE — BELL MH
- EXISTING BELL POLE — BP
- EXISTING HYDRO POLE — HP
- EXISTING HYDRO GUY WIRE
- PROPOSED LIGHT STANDARD — LS
- EXISTING TRAFFIC SIGN — TS
- PROPOSED TRAFFIC SIGN — TS
- PROPOSED STOP SIGN — STOP SIGN
- PROPOSED STREET NAME SIGN — STREET NAME SIGN
- PROPOSED SIGN (MISCELLANEOUS) — SIGN
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING SANITARY MAINTENANCE HOLE/NUMBER — SAN MH17
- PROPOSED SANITARY MAINTENANCE HOLE/NUMBER — SAN MH17
- PROPOSED SANITARY CLEAN OUT — CO
- EXISTING HYDRANT AND VALVE — HYD & WV
- PROPOSED HYDRANT AND VALVE — HYD & WV
- EXISTING WATER VALVE
- PROPOSED WATER VALVE — WV
- PROPOSED CURB STOP VALVE — CSV
- EXISTING BLOW–OFF — BLOWOFF
- PROPOSED BLOW–OFF — BLOWOFF
- EXISTING WATERMAIN PLUG AND THRUST BLOCK
- PROPOSED WATERMAIN PLUG AND THRUST BLOCK
- EXISTING STORM MAINTENANCE HOLE/NUMBER — STM MH20
- PROPOSED STORM MAINTENANCE HOLE/NUMBER — STM MH9
- EXISTING CATCH BASIN/NUMBER — CBMH 18
- PROPOSED CATCH BASIN/NUMBER — CB1
- PROPOSED CATCH BASIN MAINTENANCE HOLE/NUMBER — CBMH12
- PROPOSED DOUBLE CATCH BASIN MAINTENANCE HOLE/NUMBER — DCBMH4
- PROPOSED DOUBLE CATCH BASIN/NUMBER — DCB1
- PROPOSED DITCH INLET/NUMBER — DICB2
- TACTILE SURFACE INDICATORS

TATHAM ENGINEERING

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
AFC Drawings are only valid as part and upon execution of a Development Agreement
signature — date 30-Jun-2020

**PHASE 2 BLOCK - 152**
**Contract No. : 117227**




## LEGEND

- CATCHMENT ID — 101
- AREA IN HECTARES — 0.12
- RUNOFF COEFFICIENT — 0.65
- POST–DEVELOPMENT CATCHMENT AREA
- EXISTING CATCHMENT AREA (PHASE 2)
- PROPOSED OVERLAND FLOW DIRECTION

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### DISCLAIMER AND COPYRIGHT

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### BENCHMARKS

TBM1 – ELEVATION 226.036
TOP NUT FIRE HYDRANT LOCATED AT THE NORTHWEST CORNER OF MOUNTAIN DRIVE AND JOZO WEIDER BOULEVARD (99–21)

TBM2 – ELEVATION 224.127
RAIL ROAD SPIKE IN WEST FACE OF HYDRO POLE LOCATED AT THE SOUTH WEST CORNER OF GREY ROAD 19 AND JOZO WEIDER BOULEVARD

### NOTES

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
AFC Drawings are only valid as part and upon execution of a Development Agreement
signature — date 30-Jun-2020

| No. | REVISION DESCRIPTION | DATE |
|---|---|---|
| 1. | 1ST SUBMISSION | JUL 4/19 |
| 2. | 2ND SUBMISSION | NOV 20/19 |
| 3. | 3RD SUBMISSION | MAR 20/20 |
| 4. | 4TH SUBMISSION | APR 27/20 |

### ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr 27/20 — PROVINCE OF ONTARIO

**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

STORM DRAINAGE PLAN

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: DEP/AO | FILE: 117227 | DWG: SD-1 |
| DRAWN: DEP | DATE: SEP 2017 | |
| CHECK: DJH | SCALE: 1:500 | |

Drawing Name: 117227_SD01.dwg, Plotted: Apr 29, 2020

# STORM SEWER DESIGN SHEET - 5 YEAR (DESIGN)

Approved:

TATHAM ENGINEERING

| IDF Curve Coefficients | | |
|---|---|---|
| Storm | A | B |
| 2 Year | 22.300 | -0.714 |
| **5 Year** | **29.100** | **-0.724** |
| 25 Year | 39.300 | -0.734 |
| 100 Year | 47.700 | -0.738 |

| Manning's Coefficient | |
|---|---|
| CSP | 0.024 |
| Conc. | 0.013 |
| PVC | 0.009 |

Project Name: Second Nature - Block 152
Project Number: 117227
Municipality: Town of The Blue Mountains
Designed By: LC
Date: December 19, 2018
Revised By: AO
Date: February 14, 2020
Checked By: JPA
Date: February 14, 2020
Revision Numbe 6

| STREET NAME | AREA LABEL | UPSTREAM MAINTENANCE HOLE | DOWNSTREAM MAINTENANCE HOLE | TRIBUTARY AREA - A | RUNOFF COEFFICIENT - C | INDIVIDUAL A x C | CUMULATIVE AREA | CUMULATIVE A x C | TIME OF CONCENTRATION | RAINFALL INTENSITY | PEAK FLOW | MANNING'S ROUGHNESS COEFFICIENT | LENGTH | SLOPE | ACTUAL DIAMETER | FULL FLOW VELOCITY | FULL FLOW CAPACITY | ACTUAL VELOCITY | TIME OF FLOW | CALCULATED PIPE DIAMETER | PERCENT PIPE FULL | TIME OF CONCENTRATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MH No. | MH No. | ha | | | ha | | min. | mm/hr | cms | | m | m/m | mm | m/s | cms | m/s | min | mm | % | min |
| **Phase 2** | | | | | | | | | | | | | | | | | | | | | | |
| Crosswinds Boulevard | 201 + EXT2 | HDW1 | STM MH104 | 0.15 | 0.50 | 0.08 | 0.15 | 0.08 | 15.00 | 79.39 | **0.017** | **0.013** | 11.0 | **5.6%** | **300** | 3.24 | **0.229** | 1.81 | 0.10 | 112 | **7.2%** | 15.10 |
| Crosswinds Boulevard | 202 + EXT1 | HDW2 | STM MH104 | 0.16 | 0.50 | 0.08 | 0.16 | 0.08 | 15.00 | 79.39 | **0.018** | **0.013** | 16.0 | **3.9%** | **300** | 2.70 | **0.191** | 1.61 | 0.17 | 123 | **9.2%** | 15.17 |
| Block 152 | 203 + EXT3 | HDW3 | STM MH104 | 0.49 | 0.65 | 0.32 | 0.49 | 0.32 | 15.00 | 79.39 | **0.070** | **0.013** | 30.5 | **2.7%** | **300** | 2.25 | **0.159** | 2.04 | 0.25 | 221 | **44.2%** | 15.25 |
| Crosswinds Boulevard | | STM MH104 | CBMH103 | - | - | - | 0.80 | 0.47 | 15.25 | 78.45 | **0.103** | **0.013** | 40.0 | **0.6%** | **375** | 1.23 | **0.136** | 1.23 | 0.54 | 338 | **76.0%** | 15.79 |
| Crosswinds Boulevard | 204 | CBMH103 | CBMH102 | 0.18 | 0.50 | 0.09 | 0.98 | 0.56 | 15.79 | 76.49 | **0.120** | **0.013** | 48.5 | **0.6%** | **375** | 1.23 | **0.136** | 1.23 | 0.66 | 358 | **88.3%** | 16.45 |
| Street B | 105 | CBMH6 | CBMH7 | 0.05 | 0.65 | 0.03 | 0.05 | 0.03 | 15.00 | 79.39 | **0.007** | **0.013** | 60.2 | **2.3%** | **300** | 2.07 | **0.147** | 1.04 | 0.96 | 97 | **4.9%** | 15.96 |
| Street B | 106 + EXT5 | RLCB 7 | CBMH7 | 0.47 | 0.65 | 0.31 | 0.47 | 0.31 | 15.00 | 79.39 | **0.067** | **0.013** | 33.5 | **0.8%** | **300** | 1.22 | **0.086** | 1.22 | 0.46 | 273 | **77.9%** | 15.46 |
| Street B | 107 | CBMH7 | CBMH8 | 0.22 | 0.65 | 0.14 | 0.74 | 0.48 | 15.96 | 75.89 | **0.101** | **0.013** | 41.6 | **0.5%** | **375** | 1.12 | **0.124** | 1.12 | 0.62 | 348 | **81.8%** | 16.58 |
| Street B | 108 | CBMH8 | CBMH9 | 0.21 | 0.65 | 0.14 | 0.95 | 0.62 | 16.58 | 73.83 | **0.127** | **0.013** | 21.7 | **1.2%** | **450** | 1.96 | **0.312** | 1.74 | 0.21 | 321 | **40.5%** | 16.79 |
| | 109 + EXT4 | RLCB9 | CBMH9 | 0.34 | 0.65 | 0.22 | 0.34 | 0.22 | 15.00 | 79.39 | **0.049** | **0.013** | 33.3 | **1.0%** | **300** | 1.37 | **0.097** | 1.28 | 0.43 | 232 | **50.4%** | 15.43 |
| Street B | 110 | CBMH9 | CBMH10 | 0.14 | 0.65 | 0.09 | 1.43 | 0.93 | 16.79 | 73.17 | **0.189** | **0.013** | 54.0 | **0.5%** | **525** | 1.40 | **0.304** | 1.39 | 0.65 | 439 | **62.1%** | 17.44 |
| Street B | 111 | CBMH11 | CBMH12 | 0.06 | 0.65 | 0.04 | 0.06 | 0.04 | 15.00 | 79.39 | **0.009** | **0.013** | 12.4 | **0.5%** | **300** | 0.97 | **0.068** | 0.62 | 0.33 | 138 | **12.6%** | 15.33 |
| Street B | 112 | CBMH12 | CBMH10 | 0.05 | 0.65 | 0.03 | 0.11 | 0.07 | 15.33 | 78.14 | **0.016** | **0.013** | 23.1 | **0.5%** | **300** | 0.97 | **0.068** | 0.73 | 0.53 | 172 | **22.7%** | 15.86 |
| Street B | 113 | CBMH10 | CBMH13 | 0.10 | 0.65 | 0.07 | 1.64 | 1.07 | 17.44 | 71.19 | **0.211** | **0.013** | 6.0 | **0.3%** | **525** | 1.09 | **0.236** | 1.09 | 0.09 | 503 | **89.5%** | 17.53 |
| Street B | 114 | CBMH13 | CBMH14 | 0.10 | 0.65 | 0.07 | 1.74 | 1.13 | 17.53 | 70.92 | **0.223** | **0.013** | 13.1 | **2.4%** | **525** | 3.08 | **0.666** | 2.60 | 0.08 | 348 | **33.4%** | 17.61 |
| Street B | 115 | CBMH14 | CBMH102A | 0.17 | 0.65 | 0.11 | 1.91 | 1.24 | 17.61 | 70.68 | **0.244** | **0.013** | 16.5 | **0.7%** | **525** | 1.66 | **0.360** | 1.66 | 0.17 | 453 | **67.7%** | 17.78 |
| Crosswinds Boulevard | 206 | CBMH102A | CBMH102 | 0.15 | 0.50 | 0.08 | 2.06 | 1.32 | 17.78 | 70.20 | **0.257** | **0.013** | 9.5 | **1.4%** | 525 | 2.33 | **0.503** | 2.19 | 0.07 | 408 | **51.0%** | 17.85 |
| Crosswinds Boulevard | 207 | CBMH102 | STM MH101 | 0.07 | 0.50 | 0.03 | 3.11 | 1.91 | 16.45 | 74.27 | **0.395** | **0.013** | 31.7 | **1.0%** | 600 | 2.17 | **0.614** | 2.17 | 0.24 | 508 | **64.3%** | 16.69 |
| Street C | 101 | DCBMH1 | CBMH2 | 0.12 | 0.65 | 0.08 | 0.12 | 0.08 | 15.00 | 79.39 | **0.017** | **0.013** | 28.3 | **1.7%** | **300** | 1.78 | **0.126** | 1.18 | 0.40 | 142 | **13.6%** | 15.40 |
| Street A | 102 | CBMH2 | CBMH3 | 0.06 | 0.65 | 0.04 | 0.18 | 0.12 | 15.40 | 77.89 | **0.025** | **0.013** | 55.4 | **2.3%** | **300** | 2.07 | **0.147** | 1.46 | 0.63 | 155 | **17.3%** | 16.03 |
| Street A | 103 | CBMH3 | CBMH4 | 0.16 | 0.65 | 0.10 | 0.34 | 0.22 | 16.03 | 75.66 | **0.046** | **0.013** | 29.3 | **0.7%** | **300** | 1.14 | **0.081** | 1.11 | 0.44 | 244 | **57.4%** | 16.47 |
| Street A | 104 | CBMH4 | STM MH5 | 0.11 | 0.65 | 0.07 | 0.45 | 0.29 | 16.47 | 74.19 | **0.060** | **0.013** | 22.3 | **0.7%** | **300** | 1.14 | **0.081** | 1.14 | 0.32 | 269 | **74.5%** | 16.80 |
| Street A | - | STM MH5 | STM MH106 | - | - | - | 0.45 | 0.29 | 16.80 | 73.15 | **0.059** | **0.013** | 22.7 | **1.2%** | **375** | 1.74 | **0.192** | 1.43 | 0.26 | 241 | **30.9%** | 17.06 |
| Crosswinds Boulevard | | STM MH106 | CBMH105 | - | - | - | 0.45 | 0.29 | 17.06 | 72.33 | **0.059** | **0.013** | 22.4 | **1.0%** | **375** | 1.59 | **0.175** | 1.33 | 0.28 | 249 | **33.5%** | 17.34 |
| Crosswinds Boulevard | 209 | CBMH105 | STM MH101 | 0.24 | 0.50 | 0.12 | 0.69 | 0.41 | 17.34 | 71.48 | **0.082** | **0.013** | 22.3 | **1.0%** | 450 | 1.79 | **0.285** | 1.44 | 0.26 | 281 | **28.6%** | 17.60 |
| **Phase 3** | | | | | | | | | | | | | | | | | | | | | | |
| Street 'C' | - | STM MH101 | CBMH100 | - | - | - | 3.80 | 2.33 | 16.69 | 73.48 | **0.475** | **0.013** | 24.0 | **1.0%** | 675 | 2.35 | **0.841** | 2.28 | 0.18 | 545 | **56.5%** | 16.87 |
| Street 'C' | 301 | CBMH100 | CBMH200 | 0.10 | 0.50 | 0.05 | 3.90 | 2.38 | 16.87 | 72.93 | **0.481** | **0.013** | 41.5 | **1.8%** | 675 | 3.15 | **1.128** | 2.84 | 0.24 | 490 | **42.7%** | 17.11 |
| Street 'C' | 302 | CBMH200 | STM MH201 | 0.25 | 0.50 | 0.13 | 4.15 | 2.50 | 17.11 | 72.18 | **0.501** | **0.013** | 11.4 | **0.7%** | 675 | 1.97 | **0.703** | 1.97 | 0.10 | 594 | **71.3%** | 17.21 |
| Street 'C' | - | STM MH201 | CBMH202 | - | - | - | 4.15 | 2.50 | 17.21 | 71.88 | **0.499** | **0.013** | 36.7 | **1.1%** | 675 | 2.46 | **0.882** | 2.39 | 0.26 | 545 | **55.6%** | 17.46 |
| Street 'C' | 303 | CBMH202 | CBMH203 | 0.03 | 0.50 | 0.01 | 4.17 | 2.51 | 17.46 | 71.12 | **0.496** | **0.013** | 25.0 | **2.0%** | 675 | 3.32 | **1.189** | 2.98 | 0.14 | 486 | **41.8%** | 17.60 |
| Street 'C' | 304 | CBMH203 | STM MH204 | 0.29 | 0.50 | 0.15 | 4.46 | 2.66 | 17.60 | 70.71 | **0.522** | **0.013** | 47.9 | **2.6%** | 675 | 3.79 | **1.355** | 3.33 | 0.24 | 472 | **38.5%** | 17.84 |
| Street 'G' | - | STM MH205 | DCBMH206 | - | - | - | - | - | 15.00 | 79.39 | **0.006** | **0.013** | 82.3 | **0.5%** | **300** | 0.97 | **0.068** | 0.56 | 2.43 | 120 | **8.8%** | 17.43 |
| Street 'G' | 305 | DCBMH206 | STM MH204 | 0.91 | 0.50 | 0.45 | 0.91 | 0.45 | 17.43 | 71.21 | **0.090** | **0.013** | 18.9 | **0.5%** | **375** | 1.12 | **0.124** | 1.12 | 0.28 | 332 | **72.5%** | 17.71 |
| Street 'C' | 306 | STM MH204 | CBMH207 | 0.11 | 0.50 | 0.05 | 5.48 | 3.17 | 17.84 | 70.02 | **0.616** | **0.013** | 55.3 | **0.8%** | **675** | 2.10 | **0.752** | 2.10 | 0.44 | 626 | **81.9%** | 18.28 |
| Street 'C' | 307 | CBMH207 | STM MH208 | 0.22 | 0.50 | 0.11 | 5.70 | 3.28 | 18.28 | 68.80 | **0.626** | **0.013** | 45.1 | **0.8%** | **675** | 2.10 | **0.752** | 2.10 | 0.36 | 630 | **83.2%** | 18.64 |
| Street 'E' | | CBMH209 | CBMH210 | - | - | - | - | - | 15.00 | 79.39 | **0.006** | **0.013** | 62.9 | **0.6%** | **300** | 1.06 | **0.075** | 0.60 | 1.74 | 116 | **8.0%** | 16.74 |
| Street 'E' | 308 | CBMH210 | DCBMH211 | 0.47 | 0.50 | 0.24 | 0.47 | 0.24 | 16.74 | 73.33 | **0.048** | **0.013** | 69.3 | **0.5%** | 300 | 0.97 | **0.068** | 0.97 | 1.19 | 263 | **70.6%** | 17.93 |
| Street 'E' | 309 | DCBMH211 | STM MH208 | 0.84 | 0.50 | 0.42 | 1.31 | 0.66 | 17.93 | 69.77 | **0.127** | **0.013** | 20.0 | **0.5%** | **450** | 1.27 | **0.202** | 1.26 | 0.26 | 379 | **63.1%** | 18.20 |
| Street 'C' | 310 | STM MH208 | CBMH212 | 0.10 | 0.50 | 0.05 | 7.11 | 3.98 | 18.64 | 67.84 | **0.750** | **0.013** | 45.6 | **0.8%** | **750** | 2.25 | **0.996** | 2.25 | 0.34 | 674 | **75.4%** | 18.98 |
| Street 'C' | 311 | CBMH212 | STM MH213 | 0.16 | 0.50 | 0.08 | 7.27 | 4.06 | 18.98 | 66.96 | **0.756** | **0.013** | 55.2 | **0.8%** | **750** | 2.25 | **0.996** | 2.25 | 0.41 | 676 | **75.9%** | 19.38 |
| Street 'D' | - | DCBMH214 | DCBMH215 | - | - | - | - | - | 15.00 | 79.39 | **0.006** | **0.013** | 86.9 | **0.5%** | **300** | 0.97 | **0.068** | 0.56 | 2.57 | 120 | **8.8%** | 17.57 |
| Street 'D' | 312 | DCBMH215 | STM MH213 | 0.67 | 0.50 | 0.33 | 0.67 | 0.33 | 17.57 | 70.81 | **0.066** | **0.013** | 15.6 | **0.5%** | **300** | 0.97 | **0.068** | 0.97 | 0.27 | 295 | **96.1%** | 17.84 |
| Street 'C' | 313 | STM MH213 | CBMH216 | 0.08 | 0.50 | 0.04 | 8.02 | 4.44 | 19.38 | 65.94 | **0.813** | **0.013** | 32.7 | **0.6%** | 825 | 2.08 | **1.112** | 2.08 | 0.26 | 733 | **73.1%** | 19.65 |
| Street 'C' | 314 | CBMH216 | CBMH217 | 0.09 | 0.50 | 0.05 | 8.11 | 4.48 | 19.65 | 65.30 | **0.813** | **0.013** | 32.8 | **0.6%** | 825 | 2.08 | **1.112** | 2.08 | 0.26 | 733 | **73.1%** | 19.91 |

| STREET NAME | AREA LABEL | UPSTREAM MAINTENANCE HOLE | DOWNSTREAM MAINTENANCE HOLE | TRIBUTARY AREA - A | RUNOFF COEFFICIENT - C | INDIVIDUAL A x C | CUMULATIVE AREA | CUMULATIVE A x C | TIME OF CONCENTRATION | RAINFALL INTENSITY | PEAK FLOW | MANNING'S ROUGHNESS COEFFICIENT | LENGTH | SLOPE | ACTUAL DIAMETER | FULL FLOW VELOCITY | FULL FLOW CAPACITY | ACTUAL VELOCITY | TIME OF FLOW | CALCULATED PIPE DIAMETER | PERCENT PIPE FULL | TIME OF CONCENTRATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MH No. | MH No. | ha | | | ha | | min. | mm/hr | cms | | m | m/m | mm | m/s | cms | m/s | min | mm | % | min |
| **Phase 1** | | | | | | | | | | | | | | | | | | | | | | |
| Street 'B' | 106 | CBMH9 | CBMH8 | 0.31 | 0.55 | 0.17 | 0.31 | 0.17 | 15.00 | 79.39 | **0.038** | **0.013** | 44.4 | **1.9%** | **300** | 1.89 | **0.134** | 1.52 | 0.49 | 187 | **28.2%** | 15.49 |
| Street 'B' | 105 | CBMH8 | CBMH7 | 0.26 | 0.55 | 0.14 | 0.57 | 0.31 | 15.49 | 77.58 | **0.068** | **0.013** | 46.0 | **0.5%** | **375** | 1.08 | **0.119** | 1.04 | 0.74 | 303 | **56.9%** | 16.22 |
| Street 'B' | 104 | CBMH7 | CBMH6 | 0.33 | 0.55 | 0.18 | 0.90 | 0.49 | 16.22 | 75.01 | **0.103** | **0.013** | 37.8 | **0.5%** | **375** | 1.16 | **0.128** | 1.16 | 0.55 | 346 | **80.5%** | 16.77 |
| Street 'B' | 103 | CBMH6 | CBMH5 | 0.27 | 0.55 | 0.15 | 1.16 | 0.64 | 16.77 | 73.24 | **0.130** | **0.013** | 42.0 | **0.5%** | **450** | 1.23 | **0.195** | 1.23 | 0.57 | 386 | **66.6%** | 17.34 |
| Street 'B' | 102 | CBMH5 | STMMH4 | 0.29 | 0.55 | 0.16 | 1.46 | 0.80 | 17.34 | 71.49 | **0.159** | **0.013** | 32.6 | **0.5%** | **450** | 1.25 | **0.200** | 1.25 | 0.43 | 413 | **79.7%** | 17.77 |
| Street 'B' | 101 | STMMH4 | STMMH1 | 0.25 | 0.65 | 0.16 | 1.71 | 0.96 | 17.77 | 70.22 | **0.188** | **0.013** | 32.5 | **1.3%** | 600 | 2.50 | **0.705** | 1.98 | 0.27 | 365 | **26.6%** | 18.05 |
| Block 161 | - | STM MH1 | STM MH9 | - | - | - | 1.71 | 0.96 | 18.05 | 69.45 | **0.186** | **0.013** | 75.0 | **0.3%** | 600 | 1.15 | **0.325** | 1.11 | 1.13 | 486 | **57.2%** | 19.17 |
| Block 161 | - | STM MH9 | CBMH217 | - | - | - | 1.71 | 0.96 | 19.17 | 66.47 | **0.178** | **0.013** | 49.0 | **0.3%** | 600 | 1.19 | **0.336** | 1.13 | 0.73 | 472 | **52.9%** | 19.90 |
| **Phase 3** | | | | | | | | | | | | | | | | | | | | | | |
| Street 'C' | 315 | CBMH217 | STM MH218 | 0.30 | 0.50 | 0.15 | 10.12 | 5.60 | 19.91 | 64.68 | **1.005** | **0.013** | 38.9 | **0.2%** | **1050** | 1.41 | **1.221** | 1.41 | 0.46 | 976 | **82.3%** | 20.37 |
| Street 'C' | - | STM MH218 | CBMH219 | - | - | - | 10.12 | 5.60 | 20.37 | 63.62 | **0.989** | **0.013** | 38.6 | **0.2%** | **1050** | 1.41 | **1.221** | 1.41 | 0.46 | 970 | **81.0%** | 20.83 |
| Street 'C' | 316 | CBMH219 | DCBMH220 | 0.34 | 0.50 | 0.17 | 10.46 | 5.77 | 20.83 | 62.61 | **1.003** | **0.013** | 73.4 | **0.2%** | **1050** | 1.41 | **1.221** | 1.41 | 0.87 | 975 | **82.1%** | 21.69 |
| Street 'C' | 317 | DCBMH220 | DCBMH221 | 0.62 | 0.50 | 0.31 | 11.07 | 6.07 | 21.69 | 60.78 | **1.026** | **0.013** | 17.9 | **0.2%** | **1050** | 1.41 | **1.221** | 1.41 | 0.21 | 983 | **84.0%** | 21.90 |
| Street 'H' | - | STM MH201 | CBMH223 | - | - | - | - | - | 15.00 | 79.39 | **0.006** | **0.013** | 79.4 | **2.0%** | **300** | 1.93 | **0.137** | 0.94 | 1.41 | 93 | **4.4%** | 16.41 |
| Street 'H' | 318 | CBMH223 | CBMH224 | 0.63 | 0.50 | 0.31 | 0.63 | 0.31 | 16.41 | 74.41 | **0.065** | **0.013** | 47.2 | **0.8%** | **300** | 1.22 | **0.086** | 1.22 | 0.64 | 269 | **75.2%** | 17.05 |
| Street 'H' | 319 | CBMH224 | CBMH225 | 0.34 | 0.50 | 0.17 | 0.97 | 0.48 | 17.05 | 72.37 | **0.097** | **0.013** | 27.0 | **0.8%** | **375** | 1.42 | **0.157** | 1.41 | 0.32 | 313 | **61.9%** | 17.37 |
| Street 'H' | 320 | CBMH225 | CBMH226 | 0.34 | 0.50 | 0.17 | 1.31 | 0.65 | 17.37 | 71.40 | **0.130** | **0.013** | 48.9 | **0.8%** | **375** | 1.42 | **0.157** | 1.42 | 0.57 | 349 | **82.8%** | 17.94 |
| Street 'G' | - | STM MH205 | DCBMH227 | - | - | - | - | - | 15.00 | 79.39 | **0.006** | **0.013** | 51.6 | **0.8%** | **300** | 1.22 | **0.086** | 0.67 | 1.28 | 110 | **6.9%** | 16.28 |
| Street 'G' | 321 | DCBMH227 | CBMH226 | 0.70 | 0.50 | 0.35 | 0.70 | 0.35 | 16.28 | 74.82 | **0.073** | **0.013** | 21.3 | **0.8%** | **300** | 1.22 | **0.086** | 1.22 | 0.29 | 282 | **84.6%** | 16.57 |
| Street 'H' | 322 | CBMH226 | CBMH228 | 0.21 | 0.50 | 0.11 | 2.22 | 1.11 | 17.94 | 69.74 | **0.215** | **0.013** | 67.3 | **0.5%** | **525** | 1.40 | **0.304** | 1.40 | 0.80 | 461 | **70.8%** | 18.74 |
| Street 'H' | 323 | CBMH228 | CBMH229 | 0.47 | 0.50 | 0.24 | 2.70 | 1.33 | 18.74 | 67.57 | **0.253** | **0.013** | 33.9 | **0.5%** | **525** | 1.40 | **0.304** | 1.40 | 0.40 | 490 | **83.2%** | 19.14 |
| Street 'H' | 324 | CBMH229 | DCBMH230 | 0.16 | 0.50 | 0.08 | 2.86 | 1.43 | 19.14 | 66.54 | **0.264** | **0.013** | 25.5 | **0.5%** | **525** | 1.40 | **0.304** | 1.40 | 0.30 | 498 | **86.8%** | 19.45 |
| Street 'H' | 325 | DCBMH230 | STM MH231 | 0.44 | 0.50 | 0.22 | 3.29 | 1.65 | 19.45 | 65.79 | **0.301** | **0.013** | 18.7 | **0.5%** | 600 | 1.54 | **0.434** | 1.54 | 0.20 | 523 | **69.3%** | 19.65 |
| Street 'E' | - | CBMH209 | STM MH231 | - | - | - | - | - | 15.00 | 79.39 | **0.006** | **0.013** | 41.3 | **1.0%** | **300** | 1.37 | **0.097** | 0.73 | 0.94 | 106 | **6.2%** | 15.94 |
| Street 'E' | | STM MH231 | CBMH232 | | | - | 3.29 | 1.65 | 19.65 | 65.30 | **0.299** | **0.013** | 34.9 | **0.5%** | 600 | 1.54 | **0.434** | 1.54 | 0.38 | 521 | **68.8%** | 20.03 |
| Street 'E' | 326 | CBMH232 | DCBMH233 | 0.24 | 0.50 | 0.12 | 3.54 | 1.77 | 20.03 | 64.40 | **0.316** | **0.013** | 37.1 | **0.5%** | **600** | 1.54 | **0.434** | 1.54 | 0.40 | 533 | **72.9%** | 20.43 |
| Block 162 (Note 5,6,7) | 327 | DDICB116 | STM MH234 | 2.37 | 0.65 | 1.54 | 2.37 | 1.54 | 41.51 | 62.60 | **0.597** | **0.013** | 5.5 | **1.1%** | **600** | 2.28 | **0.644** | 2.28 | 0.04 | 583 | **92.7%** | 41.55 |
| Street 'E' | - | STM MH234 | STM MH236 | - | - | - | 2.37 | 1.54 | 41.55 | 62.56 | **0.597** | **0.013** | 48.4 | **1.0%** | **600** | 2.17 | **0.614** | 2.17 | 0.37 | 593 | **97.2%** | 41.92 |
| Street 'E' | - | STM MH236 | DCBMH233 | - | - | - | 2.37 | 1.54 | 41.92 | 62.15 | **0.595** | **0.013** | 48.6 | **1.0%** | **600** | 2.17 | **0.614** | 2.17 | 0.37 | 593 | **96.9%** | 42.29 |
| Street 'D' | 328 | DCBMH233 | DCBMH234 | 0.32 | 0.50 | 0.16 | 3.86 | 1.93 | 20.43 | 63.48 | **0.935** | **0.013** | 20.0 | **0.5%** | **825** | 1.90 | **1.015** | 1.90 | 0.18 | 800 | **92.1%** | 20.61 |
| Street 'D' | 329 | DCBMH234 | CBMH235 | 0.12 | 0.50 | 0.06 | 3.98 | 1.99 | 20.61 | 63.09 | **0.944** | **0.013** | 68.9 | **0.5%** | **825** | 1.90 | **1.015** | 1.90 | 0.60 | 802 | **93.0%** | 21.21 |
| Street 'D' | 330 | CBMH235 | DCBMH236 | 0.41 | 0.50 | 0.20 | 4.39 | 2.19 | 21.21 | 61.78 | **0.971** | **0.013** | 21.5 | **0.5%** | **825** | 1.90 | **1.015** | 1.90 | 0.19 | 811 | **95.7%** | 21.40 |
| Street 'D' | 331 | DCBMH236 | CBMH237 | 0.42 | 0.50 | 0.21 | 4.81 | 2.40 | 21.40 | 61.39 | **1.005** | **0.013** | 28.6 | **0.5%** | **825** | 1.90 | **1.015** | 1.90 | 0.25 | 822 | **99.0%** | 21.65 |
| Street 'D' | - | CBMH237 | DCBMH214 | - | - | - | 4.81 | 2.40 | 21.65 | 60.87 | **1.001** | **0.013** | 36.9 | **0.5%** | **825** | 1.90 | **1.015** | 1.90 | 0.32 | 820 | **98.6%** | 21.97 |
| Street 'C' | 332 | DCBMH214 | CBMH238 | 0.60 | 0.50 | 0.30 | 5.41 | 2.70 | 21.97 | 60.22 | **1.047** | **0.013** | 42.5 | **0.5%** | **900** | 2.01 | **1.280** | 2.01 | 0.35 | 834 | **81.8%** | 22.33 |
| Street 'C' | 333 | CBMH238 | STM MH239 | 0.27 | 0.50 | 0.14 | 5.68 | 2.84 | 22.33 | 59.53 | **1.064** | **0.013** | 43.8 | **0.5%** | **900** | 2.01 | **1.280** | 2.01 | 0.36 | 840 | **83.1%** | 22.69 |
| Street 'C' | - | STM MH239 | CBMH241 | - | - | - | 5.68 | 2.84 | 22.69 | 58.84 | **1.059** | **0.013** | 19.2 | **0.5%** | **900** | 2.01 | **1.280** | 2.01 | 0.16 | 838 | **82.7%** | 22.85 |
| Street 'C' | 334 | CBMH241 | STM MH243 | 0.61 | 0.50 | 0.31 | 6.29 | 3.15 | 22.85 | 58.54 | **1.106** | **0.013** | 35.4 | **0.5%** | **900** | 2.01 | **1.280** | 2.01 | 0.29 | 852 | **86.4%** | 23.14 |
| Lot 79 / Lot 78 (Note 6,7) | 335 | DICB244 | STM MH243 | 0.87 | 0.75 | 0.65 | 0.87 | 0.65 | 15.00 | 132.69 | **0.241** | **0.013** | 57.2 | **1.0%** | **450** | 1.79 | **0.285** | 1.79 | 0.53 | 422 | **84.4%** | 15.53 |
| Street 'C' | - | STM MH243 | CBMH246 | - | - | - | 6.29 | 3.15 | 23.14 | 58.00 | **1.342** | **0.013** | 19.8 | **0.3%** | **1050** | 1.73 | **1.496** | 1.73 | 0.19 | 1008 | **89.7%** | 23.33 |
| Street 'C' | 336 | CBMH246 | CBMH247 | 0.27 | 0.50 | 0.14 | 6.56 | 3.28 | 23.33 | 57.66 | **1.361** | **0.013** | 31.6 | **0.3%** | **1050** | 1.73 | **1.496** | 1.73 | 0.30 | 1013 | **91.0%** | 23.64 |
| Street 'C' | 337 | CBMH247 | DCBMH221 | 0.20 | 0.50 | 0.10 | 6.76 | 3.38 | 23.64 | 57.12 | **1.372** | **0.013** | 65.1 | **0.3%** | **1050** | 1.73 | **1.496** | 1.73 | 0.63 | 1016 | **91.7%** | 24.27 |
| Block 203 | 338 | DCBMH221 | STM MH248 | 0.29 | 0.50 | 0.14 | 18.12 | 9.60 | 24.27 | 56.05 | **2.330** | **0.013** | 51.7 | **0.2%** | **1500** | 1.79 | **3.161** | 1.79 | 0.48 | 1337 | **73.7%** | 24.75 |
| Block 203 | - | STM MH248 | STM MH249 | - | - | - | 18.12 | 9.60 | 24.75 | 55.25 | **2.309** | **0.013** | 10.3 | **0.2%** | **1500** | 1.79 | **3.161** | 1.79 | 0.10 | 1333 | **73.0%** | 24.84 |
| Block 203 | - | STM MH249 | HEADWALL | - | - | - | 18.12 | 9.60 | 24.84 | 55.10 | **2.305** | **0.013** | 21.6 | **0.2%** | **1500** | 1.79 | **3.161** | 1.79 | 0.20 | 1332 | **72.9%** | 25.04 |

**Notes:**
1. Refer to Storm Drainage Plan drawing STM-1 and drawing STM-2 for Second Nature Phase 3, prepared by Tatham Engineering Limited for catchment areas and pipe details downstream of Block 152.
2. Runoff coefficients based on The Blue Mountains Engineering Standards, 2009.
3. Phase 1 pipe length, size and diameter based on as-built field records, Phase 2 and Phase 3 pipe length, size and diameter based on Accepted for Construction drawings.
4. Highlighted diameters have been manually upsized one pipe diameter size.
5. Flows from the 100-year design storm from Phase 2 lands (0.329 cms) are conveyed in a proposed ditch located in Block 162 and is collected in the storm sewer system via DDICB234.
6. Time of Concentration calculated manually using the Bransby-Williams or Airport method. A minimum time of concentration of 15 minutes was used as specified in The Blue Mountains Engineering Standards, 2009..
7. 100 Year Runoff Coefficient $C_{100} = C_5 * 0.5 + 0.5$


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**BENCHMARKS**

TBM1 – ELEVATION 226.036
TOP NUT FIRE HYDRANT LOCATED AT THE NORTHWEST CORNER OF MOUNTAIN DRIVE AND JOZO WEIDER BOULEVARD (99–21)

TBM2 – ELEVATION 224.127
RAIL ROAD SPIKE IN WEST FACE OF HYDRO POLE LOCATED AT THE SOUTH WEST CORNER OF GREY ROAD 19 AND JOZO WEIDER BOULEVARD

**NOTES**

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
AFC Drawings are only valid as part and upon execution of a Development Agreement
signature — 30-Jun-2020 date

| No. | REVISION DESCRIPTION | DATE |
|---|---|---|
| 1. | 2ND SUBMISSION | NOV 20/19 |
| 2. | 3RD SUBMISSION | MAR 20/20 |
| 3. | 4TH SUBMISSION | APR 27/20 |

**ENGINEER STAMP**

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr.27/20 — PROVINCE OF ONTARIO

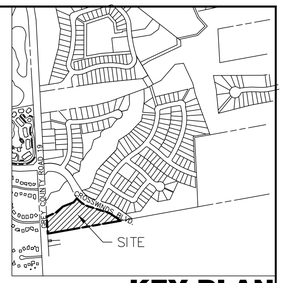
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

STORM DESIGN SHEET

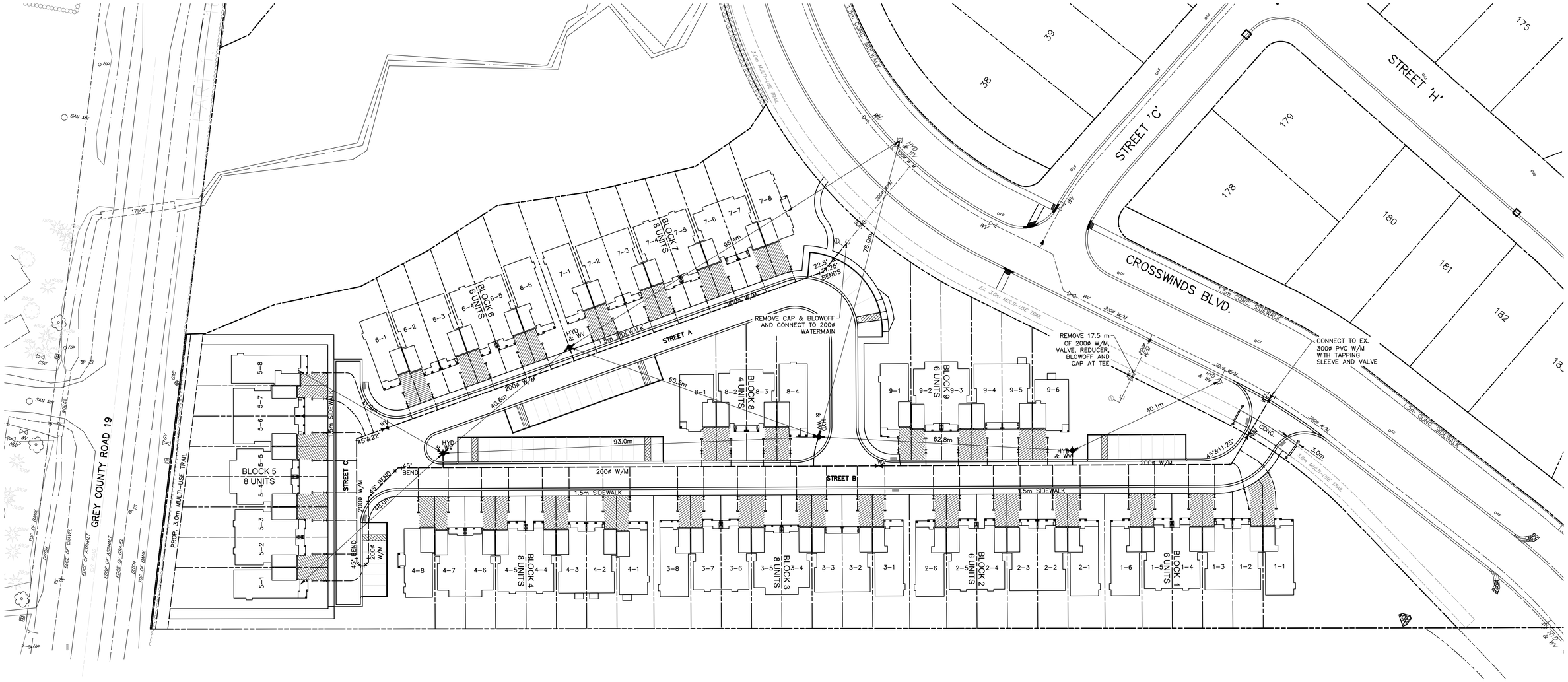
TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: DEP/AO | FILE: 117227 | DWG: |
| DRAWN: DEP | DATE: SEP 2017 | **SD-2** |
| CHECK: DJH | SCALE: 1:500 | |

Drawing Name: 117227_SD01.dwg, Plotted: Apr 29, 2020




**KEY PLAN**

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## NOTES

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| | | |
| | | |

## ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr 27/20
PROVINCE OF ONTARIO

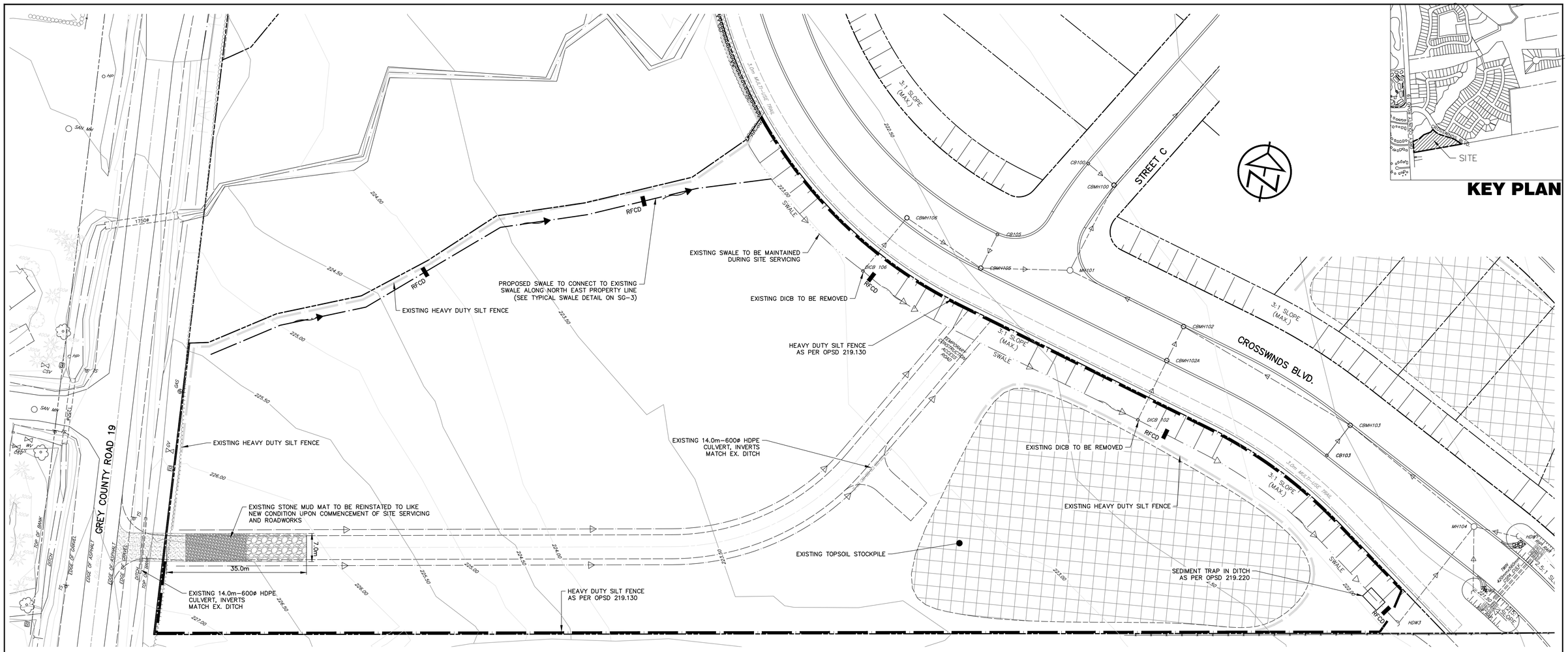
**MANORWOOD HOMES - SECOND NATURE**
# PHASE 2 BLOCK - 152
**TOWN OF THE BLUE MOUNTAINS**

TATHAM ENGINEERING

## WATER DISTRIBUTION PLAN

| | | |
|---|---|---|
| DESIGN: VP/AO | FILE: 117227 | DWG: |
| DRAWN: VP | DATE: SEP 2017 | **WD-1** |
| CHECK: DJH | SCALE: 1:500 | |

Drawing Name: 117227_WD01.dwg, Plotted: Apr 29, 2020




## SILTATION & EROSION CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SEDIMENT AND EROSION CONTROL MEASURES THAT ARE DESIGNED TO CONTROL RUNOFF FROM SPECIFIC AREAS MUST BE INSTALLED PRIOR TO ANY DISTURBANCE OF THAT PART OF THE SITE. THE LOCATION OF ALL SILTATION AND EROSION CONTROL WORKS TO BE REVIEWED ON SITE AND MAY BE REVISED AS DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES MUST BE PRESENTED IN WRITING TO THE ENGINEER FOR APPROVAL BY THE TOWN OF THE BLUE MOUNTAINS AND THE GREY SAUBLE CONSERVATION AUTHORITY.
3. THE CONTRACTOR SHALL HAVE MATERIALS AVAILABLE ON-SITE TO REPAIR SEDIMENT AND EROSION CONTROL MEASURES IN THE EVENT OF UNFORESEEN CONDITIONS: HIGH WATER, EXTREME RAINFALL EVENTS, ETC.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED, CLEANED AND MAINTAINED BY THE CONTRACTOR AFTER EACH STORM EVENT. ALL WORKS WILL BE INSPECTED BY THE ENGINEER BI-WEEKLY AND AFTER EACH MAJOR STORM EVENT.
5. CONSTRUCTION OF ALL SILTATION AND EROSION CONTROL WORKS ARE TO BE IN ACCORDANCE WITH THE FOLLOWING STEPS:
   - 5.1. INSTALL STONE MUD MAT AS PER TOWN STANDARD.
   - 5.2. INSTALL SILT FENCE AS PER OPSD 219.130.
   - 5.3. INSTALL ROCK FLOW CHECKS AS PER OPSD 219.210.
   - 5.4. INSTALL TEMPORARY CATCH BASIN SEDIMENT TRAPS ON ALL NEW AND EXISTING CATCH BASIN STRUCTURES. SEDIMENT TRAPS TO BE RECTANGULAR CBST BY LAYFIELD OR APPROVED EQUAL. ALL CATCH BASIN SEDIMENT TRAPS TO REMAIN IN PLACE AND MAINTAINED REGULARLY UNTIL BASE COURSE ASPHALT IS PLACED AND LOT GRADING IS COMPLETE.
6. ALL CONSTRUCTION VEHICLES TO ACCESS SITE USING THE DESIGNATED CONSTRUCTION ACCESS.
7. EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED BY THE CONTRACTOR ONCE GROUND COVER IS ESTABLISHED AND LANDSCAPING IS COMPLETE AND AS APPROVED BY THE ENGINEER.
8. STOCKPILE LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.
9. PROVIDE FENCE OR APPROVED EQUAL ACROSS ALL CONSTRUCTION ACCESSES DURING PERIODS OF INACTIVITY.
10. CONSTRUCTION AREAS THAT EXCEED 30 DAYS OF INACTIVITY SHALL BE STABILIZED BY SEEDING AND/OR AS DIRECTED BY THE TOWN. THIS IS TO INCLUDE STOCKPILES OF FILL AND TOPSOIL.

## STONE MUD MAT NOTES:

1. LENGTH AS REQUIRED BUT NOT LESS THAN 35m.
2. WIDTH OF 7m BUT NOT LESS THAN THE WIDTH AT POINTS WHERE INGRESS AND EGRESS OCCURS.
3. TERRAFIX 270R GEOTEXTILE (OR APPROVED EQUIVALENT) TO BE PLACED OVER THE ENTIRE AREA OF MAT PRIOR TO PLACING STONE.
4. ACCESSES SHALL BE PROVIDED WITH A CULVERT IF REQUIRED FOR ROADSIDE SURFACE DRAINAGE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE ACCESS AND PROVIDE ADDITIONAL STONE TO THE SATISFACTION OF THE TOWN SUCH THAT SEDIMENT IS NOT TRACKED ONTO THE ADJACENT ROADWAY.
6. THE TOWN'S ENGINEER MAY DIRECT ADDITIONAL MEASURES TO BE TAKEN TO ELIMINATE MUD TRACKING UP TO AND INCLUDING VEHICLE WASHING PRIOR TO EXITING THE SITE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING ANY SEDIMENT THAT IS TRACKED ONTO MUNICIPAL RIGHTS-OF-WAY TO THE SATISFACTION OF THE TOWN.
8. STONE MUD MAT SHALL BE INSPECTED DAILY AND REINSTATED ACCORDINGLY.

## LEGEND

- PROPOSED SILT FENCE
- EXISTING SILT FENCE
- RFCD — ROCK FLOW CHECK DAM
- PROPOSED INTERCEPTOR SWALE
- EXISTING INTERCEPTOR SWALE

### DISCLAIMER AND COPYRIGHT

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### BENCHMARKS

TBM1 – ELEVATION 226.036
TOP NUT FIRE HYDRANT LOCATED AT THE NORTHWEST CORNER OF MOUNTAIN DRIVE AND JOZO WEIDER BOULEVARD (99-21)

TBM2 – ELEVATION 224.127
RAIL ROAD SPIKE IN WEST FACE OF HYDRO POLE LOCATED AT THE SOUTH WEST CORNER OF GREY ROAD 19 AND JOZO WEIDER BOULEVARD

### NOTES

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
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signature — 30-Jun-2020 date

| No. | REVISION DESCRIPTION | DATE |
|---|---|---|
| 1. | 2ND SUBMISSION | NOV 20/19 |
| 2. | 3RD SUBMISSION | MAR 20/20 |
| 3. | 4TH SUBMISSION | APR 27/20 |
| | | |
| | | |

### ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr 27/20 — PROVINCE OF ONTARIO

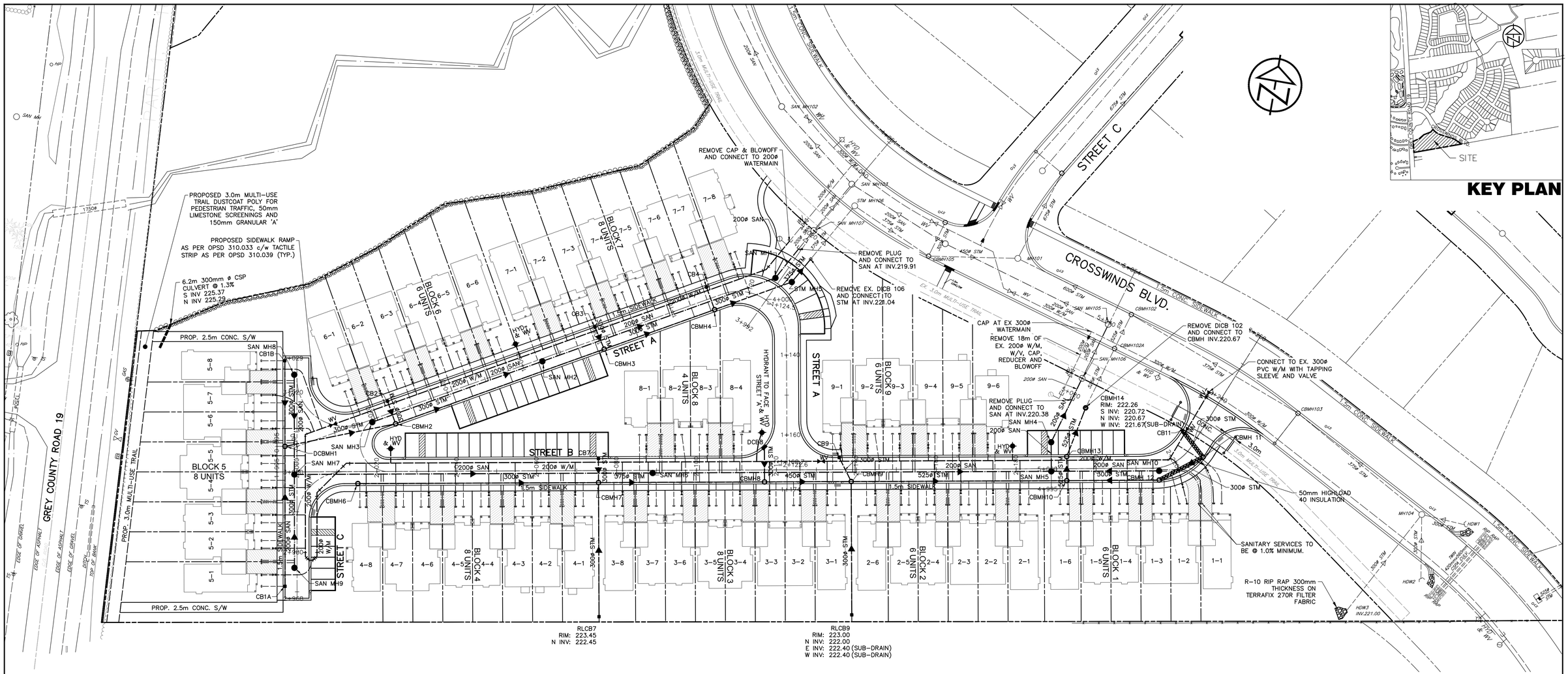
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

# EROSION AND SEDIMENT CONTROL PLAN

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: VP | FILE: 117227 | DWG: ES-1 |
| DRAWN: VP | DATE: SEP 2017 | |
| CHECK: DJH | SCALE: 1:500 | |

Drawing Name: 117227_ES01.dwg, Plotted: Apr 29, 2020

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| 1. | 1ST SUBMISSION | JUL 4/19 |
| 2. | 2ND SUBMISSION | NOV 20/19 |
| 3. | 3RD SUBMISSION | MAR 18/20 |
| 4. | 4TH SUBMISSION | APR 27/20 |

## ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr 27/20 — PROVINCE OF ONTARIO

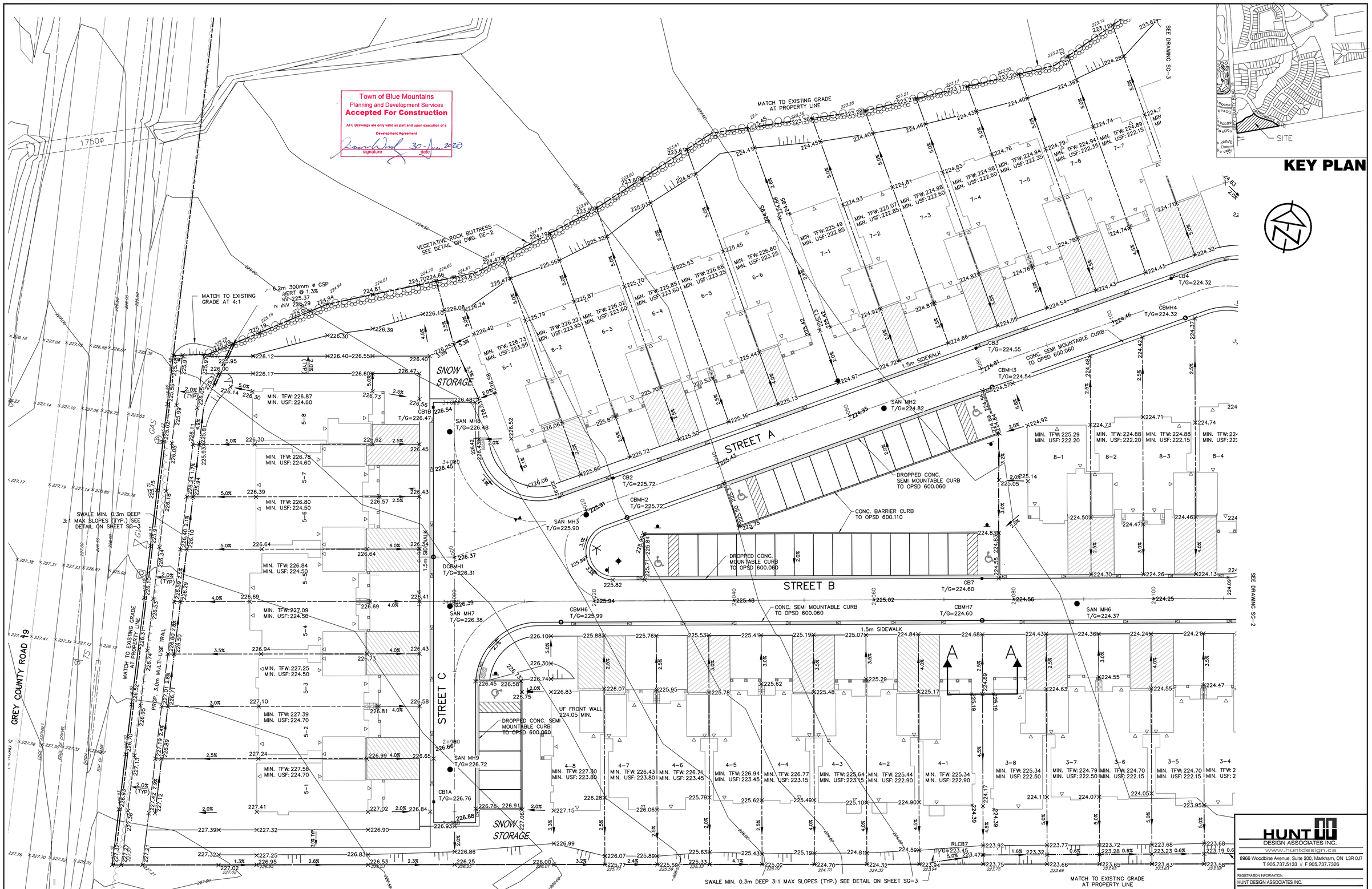
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

SITE SERVICING PLAN

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: MR/AO | FILE: 117227 | DWG: |
| DRAWN: MR | DATE: SEP 2017 | **SS-1** |
| CHECK: DJH | SCALE: 1:500 | |

Drawing Name: 117227_SS01.dwg, Plotted: Apr 29, 2020

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Drawing Name: 117227_SG01.dwg, Plotted: Apr 29, 2020

## BENCHMARKS

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## NOTES

BUILDING ELEVATIONS TO BE COMPLETED BY HUNT DESIGN ARCHITECTS INC.

ALL FUTURE FENCING MUST BE INSTALLED WHOLLY ON PRIVATE LAND.

| No. | REVISION DESCRIPTION | DATE |
|---|---|---|
| 1. | 1ST SUBMISSION | JUL 4/19 |
| 2. | 2ND SUBMISSION | NOV 20/19 |
| 3. | 3RD SUBMISSION | MAR 20/20 |
| 4. | 4TH SUBMISSION | APR 27/20 |

ENGINEER STAMP

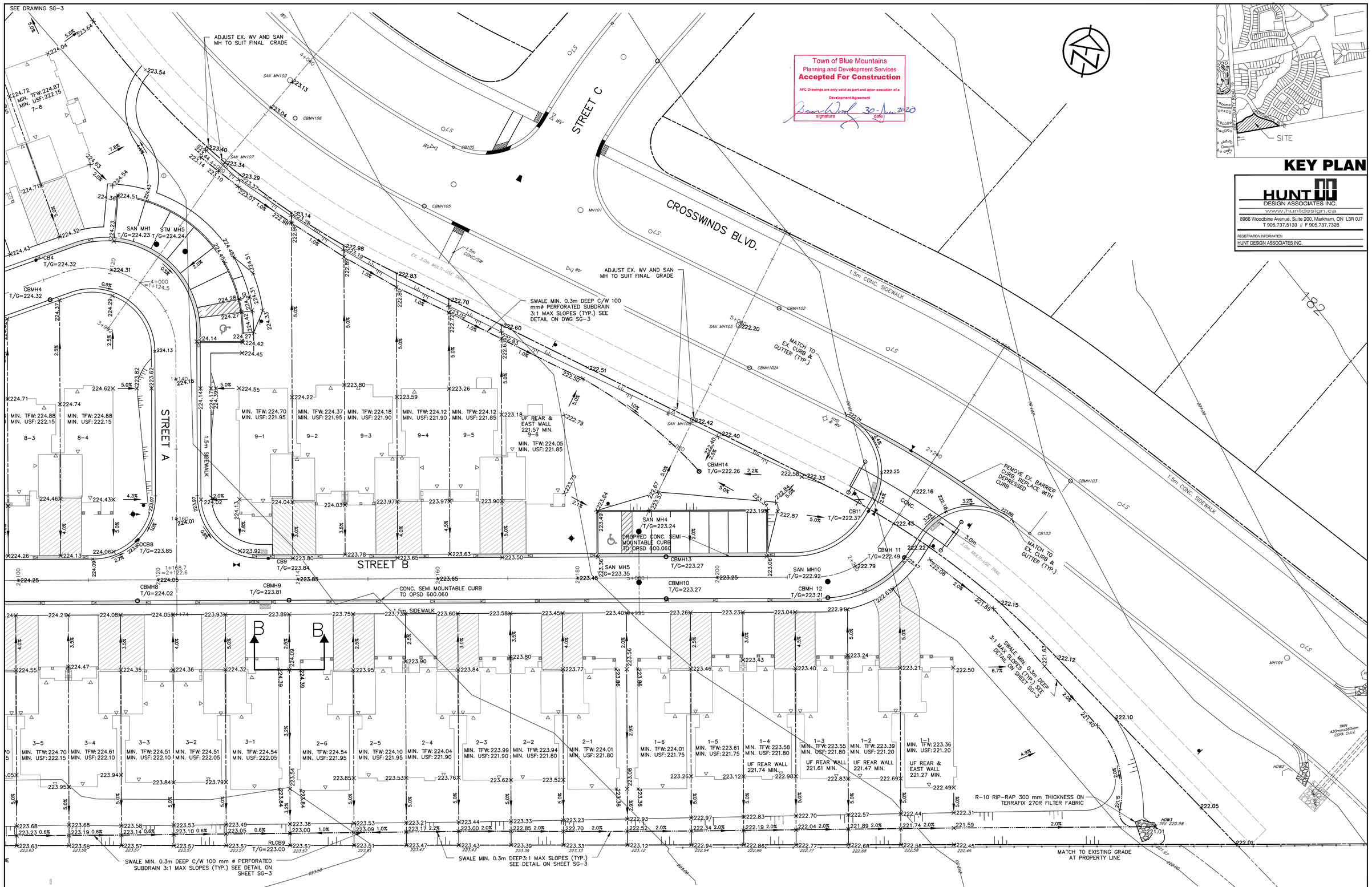
LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr 27/20
PROVINCE OF ONTARIO

**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

SITE GRADING PLAN

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: MR/AO | FILE: 117227 | DWG: |
| DRAWN: MR | DATE: SEP 2017 | SG-1 |
| CHECK: DJH | SCALE: 1:250 | |

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| 3. | 3RD SUBMISSION | MAR 20/20 |
| 4. | 4TH SUBMISSION | APR 27/20 |

ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr 27/20
PROVINCE OF ONTARIO

**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

SITE GRADING PLAN

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: MR/AO | FILE: 117227 | DWG: |
| DRAWN: MR | DATE: SEP 2017 | SG-2 |
| CHECK: DJH | SCALE: 1:250 | |

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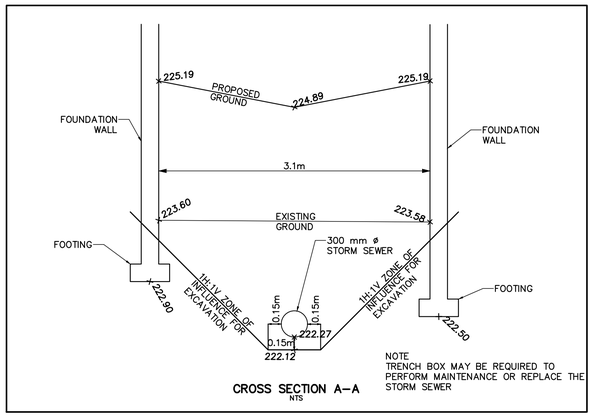
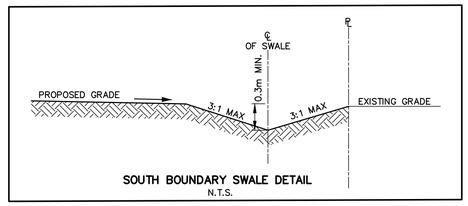
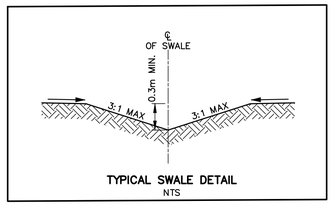


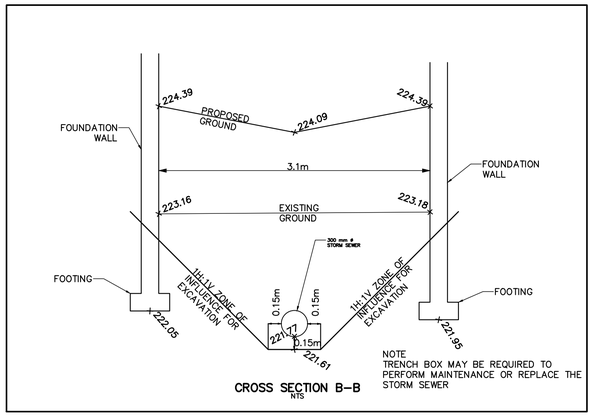

CROSS SECTION A–A
NTS



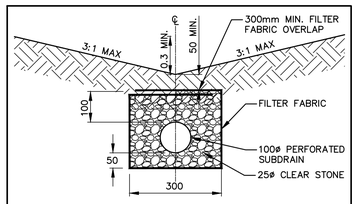

SOUTH BOUNDARY SWALE DETAIL
N.T.S.



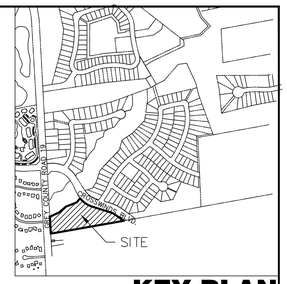

TYPICAL SWALE DETAIL
NTS



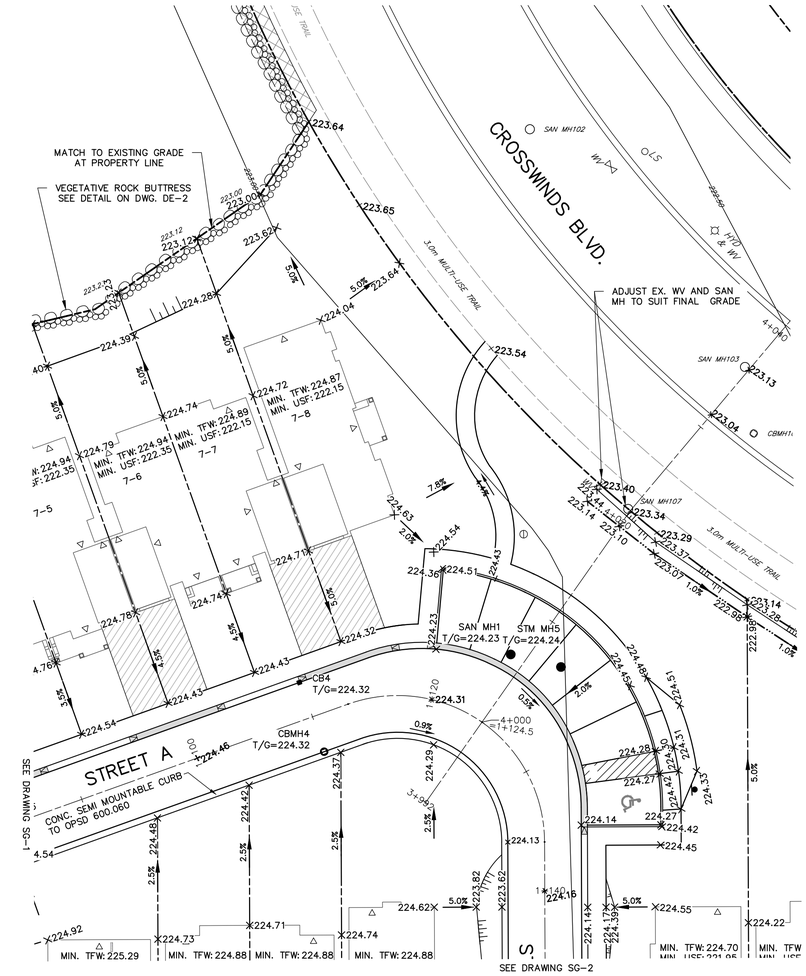

CROSS SECTION B–B
NTS




TYPICL SWALE C/W 100mmø PERFORATED SUBDRAIN
NTS




KEY PLAN




Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
AFC Drawings are only valid as part and upon execution of a Development Agreement
signature date 30-Jun-2020

HUNT DESIGN ASSOCIATES INC.
www.huntdesign.ca
8966 Woodbine Avenue, Suite 200, Markham, ON L3R 0J7
T 905.737.5133 // F 905.737.7326
REGISTRATION INFORMATION
HUNT DESIGN ASSOCIATES INC.


**DISCLAIMER AND COPYRIGHT**

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**BENCHMARKS**

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**NOTES**

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| No. | REVISION DESCRIPTION | DATE |
|---|---|---|
| 1. | 3RD SUBMISSION | MAR 20/20 |
| 2. | 4TH SUBMISSION | APR 27/20 |
| | | |
| | | |
| | | |

**ENGINEER STAMP**

LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr 27/20
PROVINCE OF ONTARIO

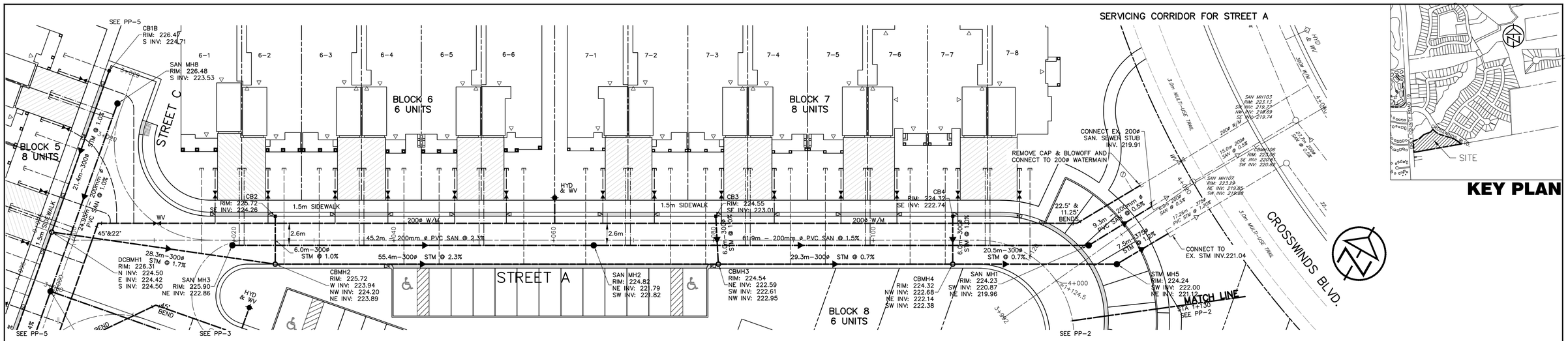
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

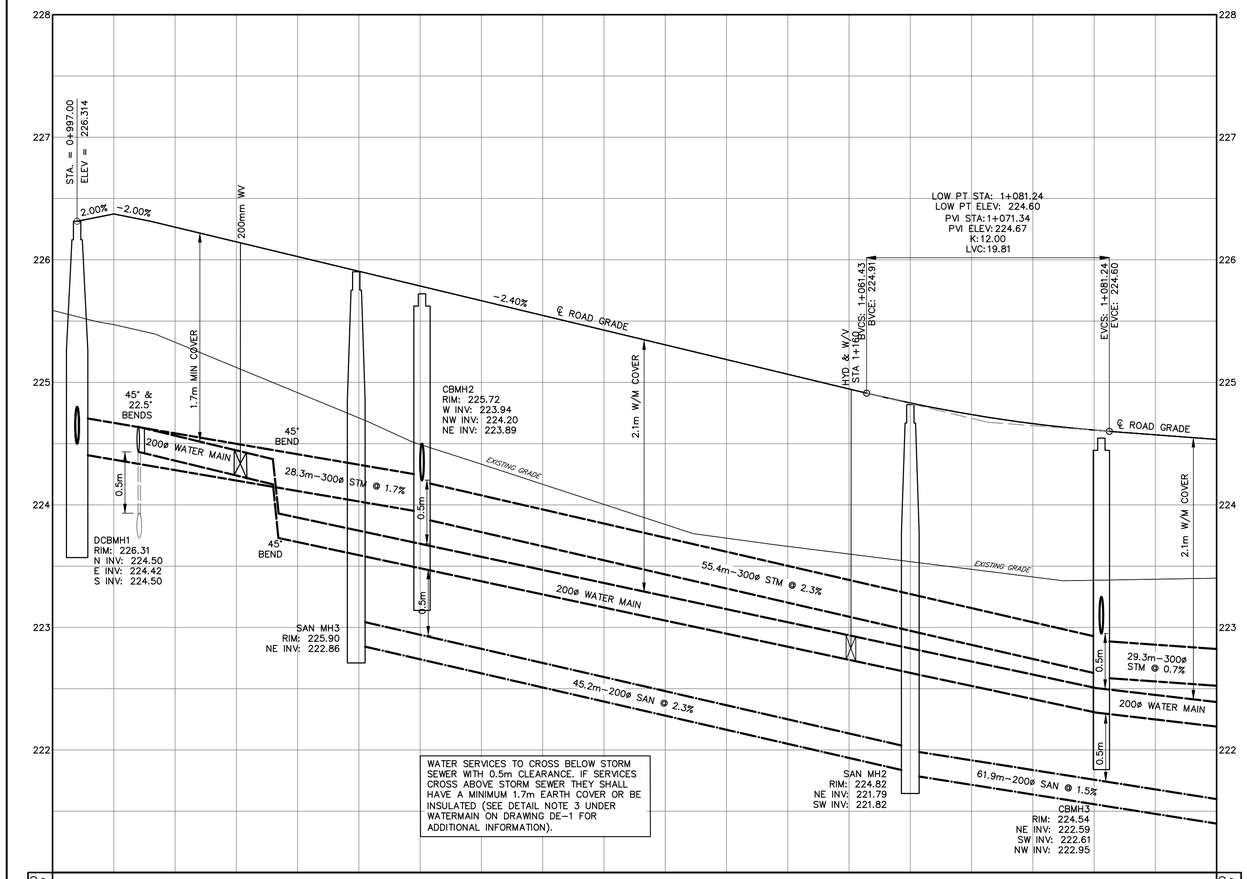
SITE GRADING AND DETAILS PLAN

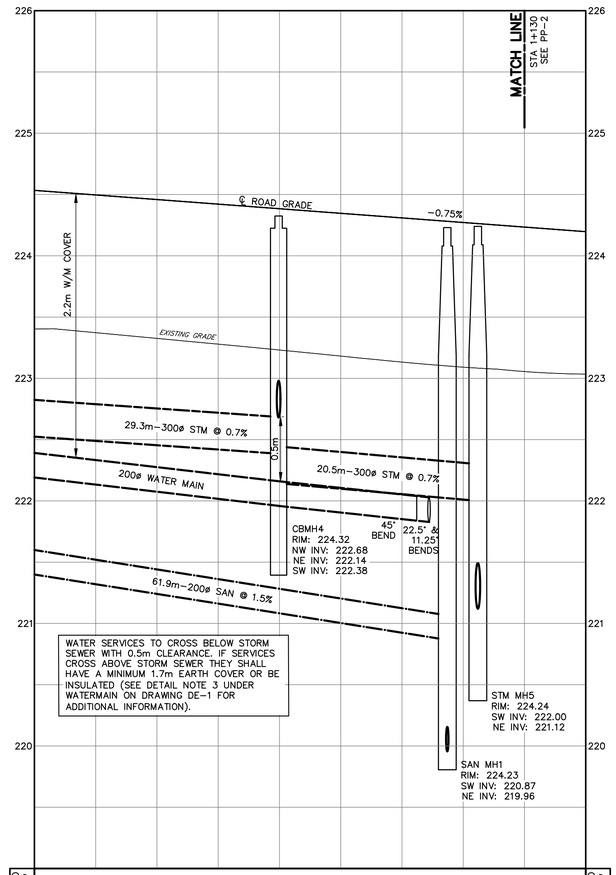
TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: MR/AO | FILE: 117227 | DWG: |
| DRAWN: SBU | DATE: SEP 2017 | **SG-3** |
| CHECK: DJH | SCALE: 1:250 | |

Drawing Name: 117227_SG01.dwg, Plotted: Apr 29, 2020




| CHAINAGE | 1+000 | 1+020 | 1+040 | 1+060 | 1+080 |
|---|---|---|---|---|---|
| PROPOSED C/L ELEV | 226.37 | 225.91 | 225.43 | 224.95 | 224.61 |
| EXISTING C/L ELEV | 225.47 | 224.71 | 224.00 | 223.60 | 223.38 |

| CHAINAGE | 1+100 | 1+120 |
|---|---|---|
| PROPOSED C/L ELEV | 224.46 | 224.31 |
| EXISTING C/L ELEV | 223.33 | 223.13 |

Town of Blue Mountains
Planning and Development Services
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LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr 27/20
PROVINCE OF ONTARIO

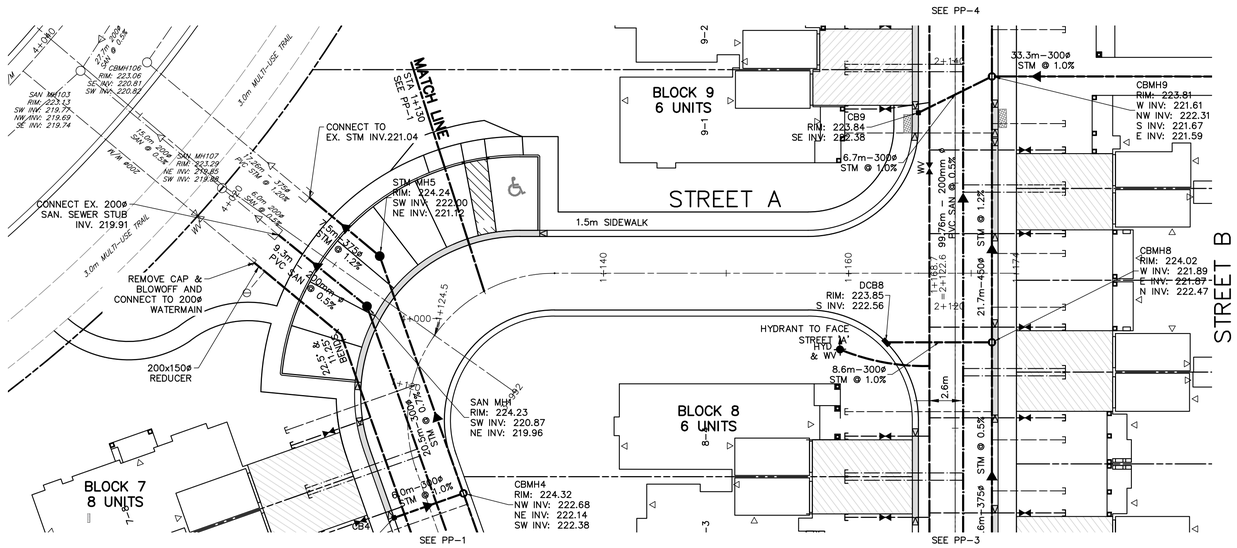
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

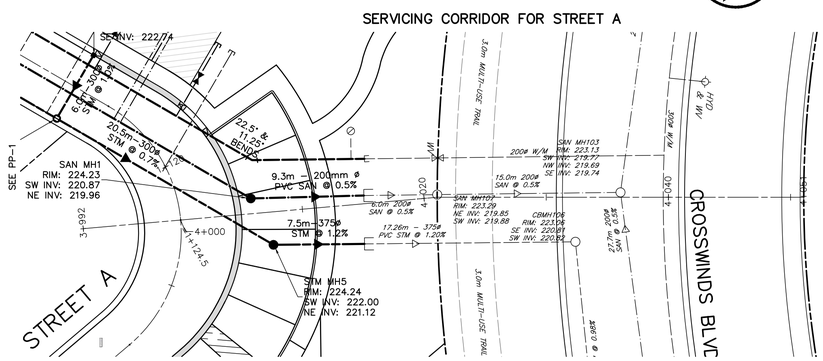
PLAN AND PROFILE
STREET A
STA. 0+995 TO STA. 1+130

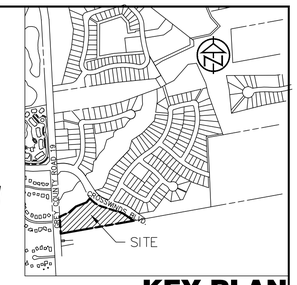
TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: VP | FILE: 117227 | DWG: |
| DRAWN: VP | DATE: SEP 2017 | **PP-1** |
| CHECK: DJH | SCALE: 1:250/1:25 | |

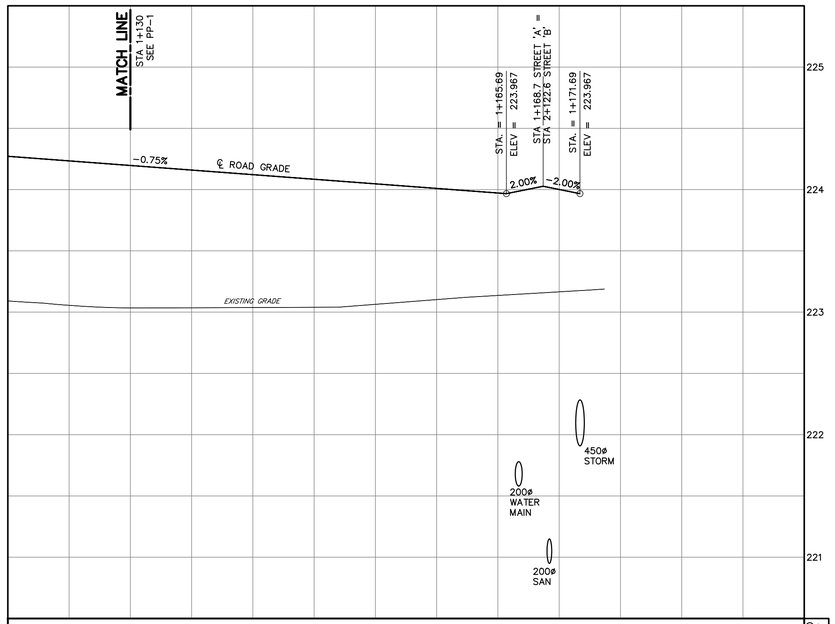
Drawing Name: 117227_PP01.dwg, Plotted: Apr 29, 2020

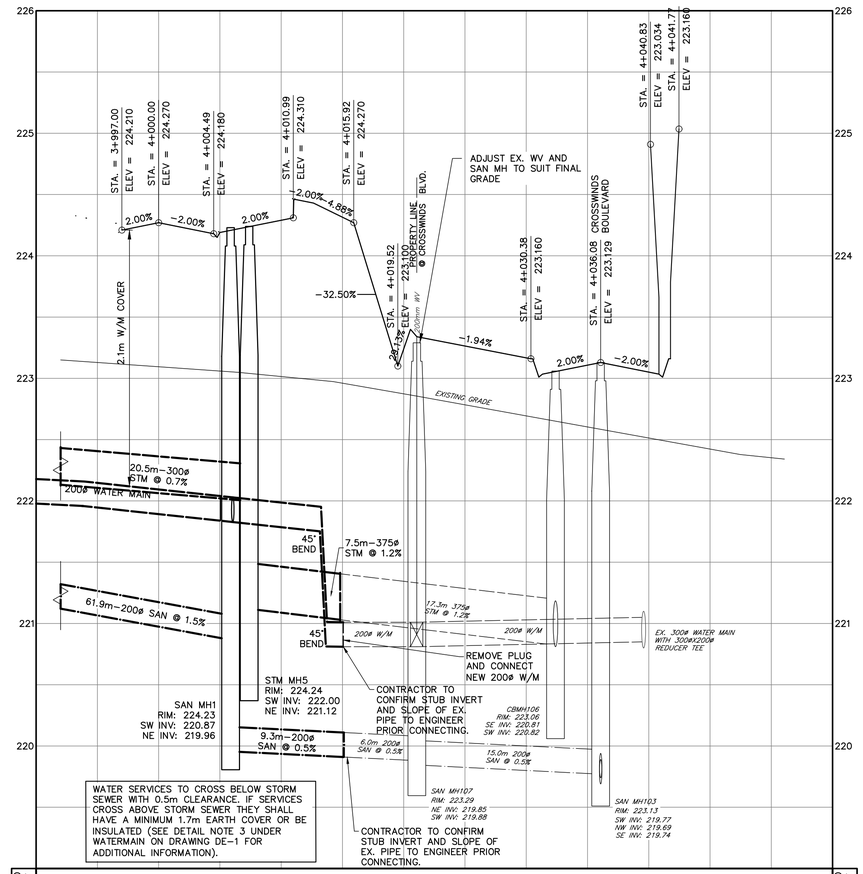



**KEY PLAN**




| CHAINAGE | EXISTING C/L ELEV | PROPOSED C/L ELEV |
|---|---|---|
| 1+140 | 223.04 | 224.16 |
| 1+160 | 223.10 | 224.01 |
| 1+180 | | 224.03 |

| CHAINAGE | EXISTING C/L ELEV | PROPOSED C/L ELEV |
|---|---|---|
| 4+000 | 223.09 | 224.27 |
| 4+020 | 222.87 | 223.24 |
| 4+040 | 222.51 | 223.05 |

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| | | |
| | | |

## ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr 27/20
PROVINCE OF ONTARIO

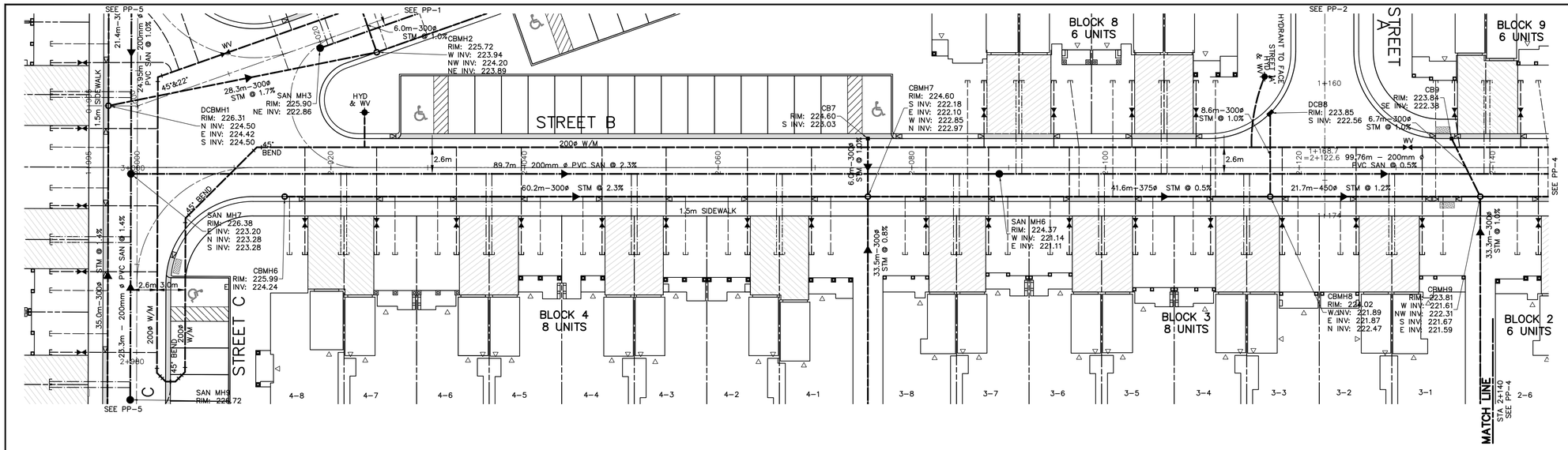
**MANORWOOD HOMES - SECOND NATURE**
# PHASE 2 BLOCK - 152
**TOWN OF THE BLUE MOUNTAINS**

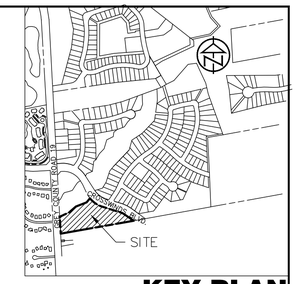
PLAN AND PROFILE
STREET A STA. 1+130 TO STA. 1+174
SERVICE CORRIDOR STA. 3+992 TO STA. 4+051

TATHAM ENGINEERING

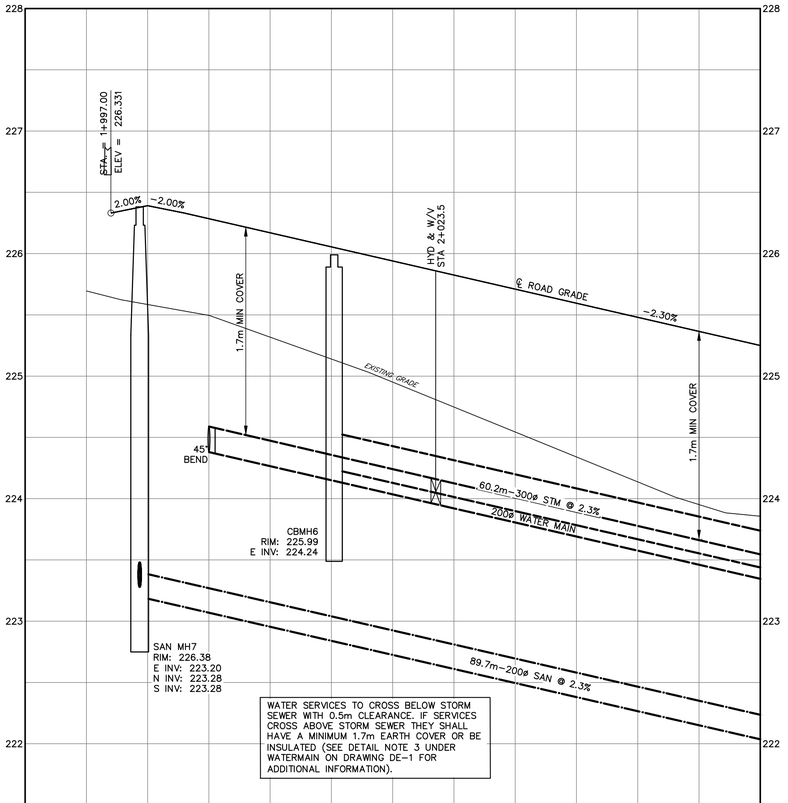
| | | |
|---|---|---|
| DESIGN: VP | FILE: 117227 | DWG: PP-2 |
| DRAWN: VP | DATE: SEP 2017 | |
| CHECK: DJH | SCALE: 1:250/1:25 | |

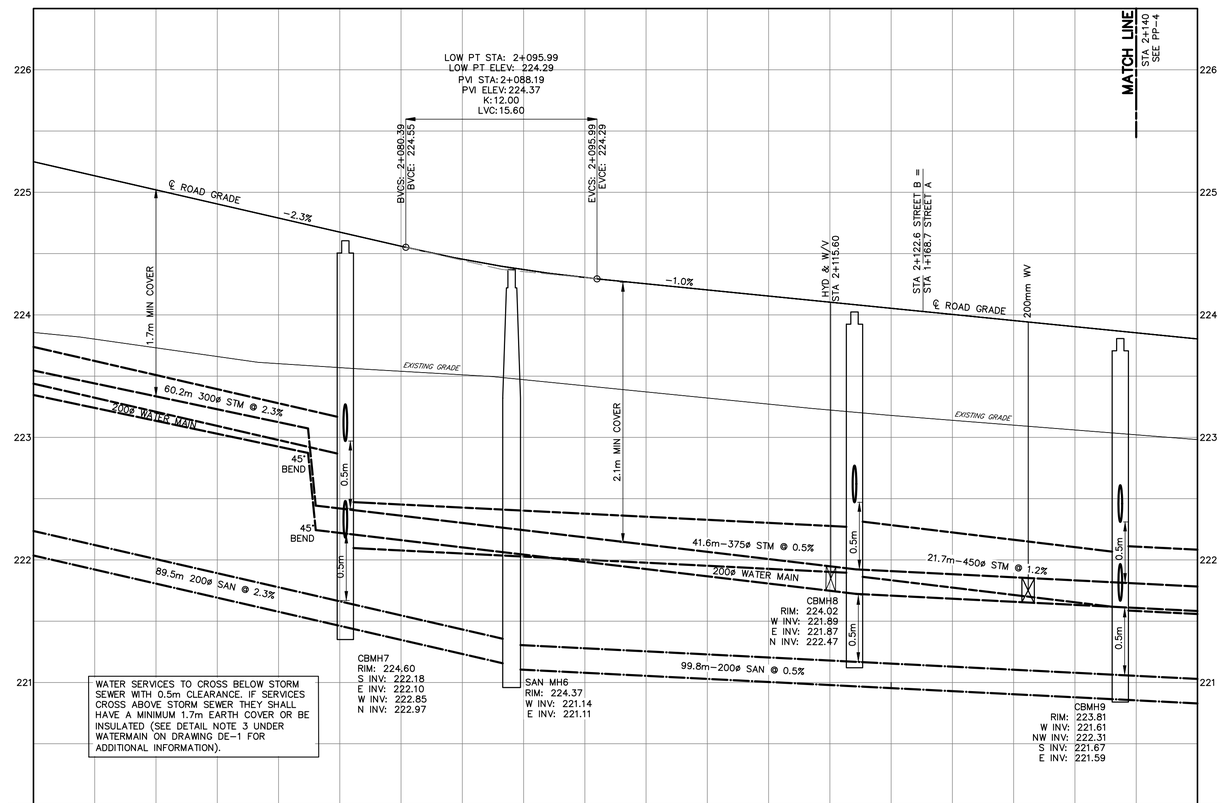
Drawing Name: 117227_PP01.dwg, Plotted: Apr 29, 2020




**KEY PLAN**




| CHAINAGE | 2+000 | 2+020 | 2+040 |
|---|---|---|---|
| EXISTING C/L ELEV | 225.58 | 224.95 | 224.14 |
| PROPOSED C/L ELEV | 226.39 | 225.94 | 225.48 |

| CHAINAGE | 2+060 | 2+080 | 2+100 | 2+120 | 2+140 |
|---|---|---|---|---|---|
| EXISTING C/L ELEV | 223.73 | 223.54 | 223.37 | 223.18 | 223.02 |
| PROPOSED C/L ELEV | 225.02 | 224.56 | 224.25 | 224.05 / 224.03 | 223.85 |


**DISCLAIMER AND COPYRIGHT**

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**BENCHMARKS**

TBM1 – ELEVATION 226.036
TOP NUT FIRE HYDRANT LOCATED AT THE NORTHWEST CORNER OF MOUNTAIN DRIVE AND JOZO WEIDER BOULEVARD (99-21)

TBM2 – ELEVATION 224.127
RAIL ROAD SPIKE IN WEST FACE OF HYDRO POLE LOCATED AT THE SOUTH WEST CORNER OF GREY ROAD 19 AND JOZO WEIDER BOULEVARD

**NOTES**

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
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signature — date 30-Jun-2020

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|---|---|---|
| 1. | 2ND SUBMISSION | NOV 20/19 |
| 2. | 3RD SUBMISSION | MAR 20/20 |
| 3. | 4TH SUBMISSION | APR 27/20 |
| | | |
| | | |

**ENGINEER STAMP**

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr 27/20 — PROVINCE OF ONTARIO

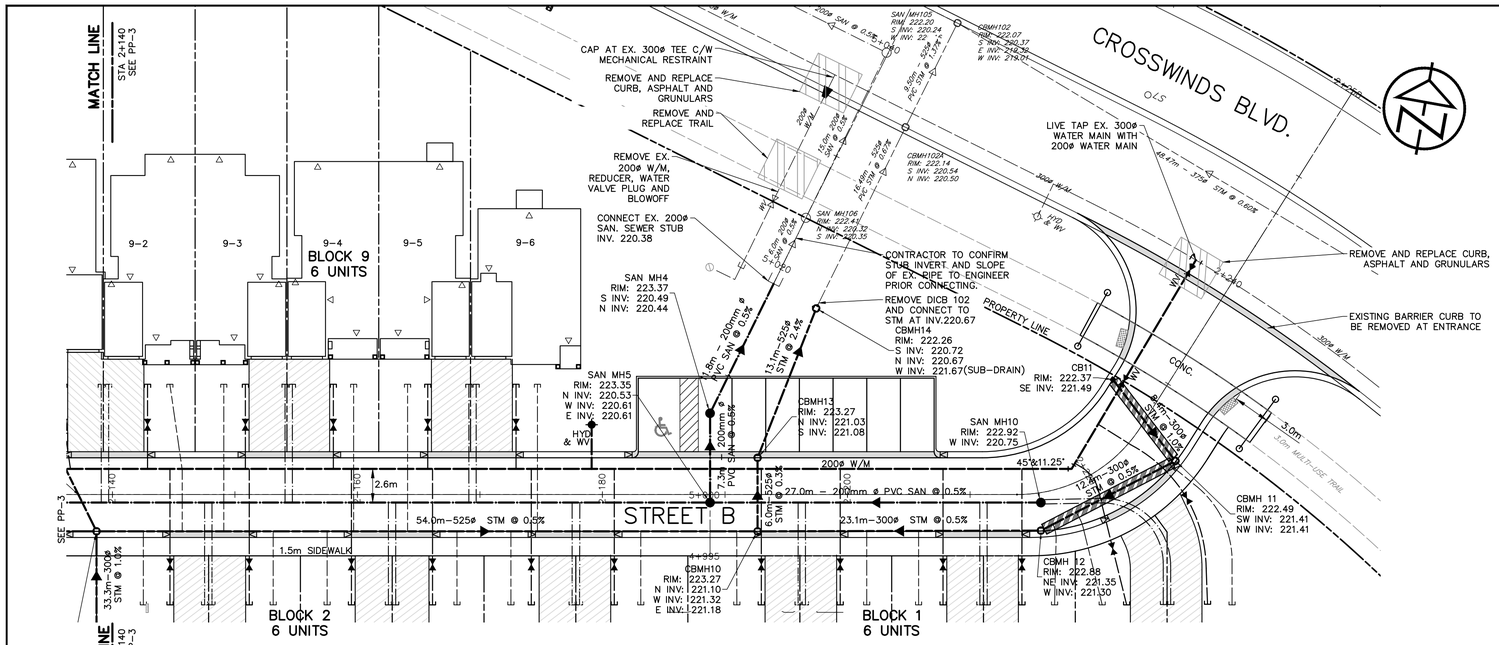
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

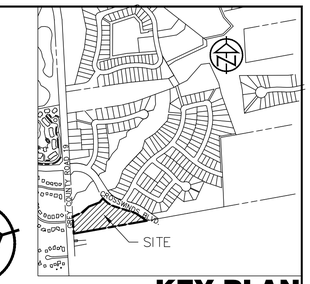
PLAN AND PROFILE
STREET B
STA. 1+995 TO STA. 2+140

TATHAM ENGINEERING

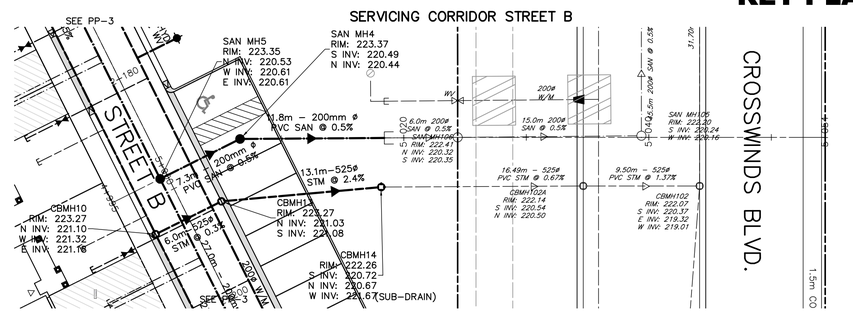
| | | |
|---|---|---|
| DESIGN: VP | FILE: 117227 | DWG: |
| DRAWN: VP | DATE: SEP 2017 | **PP-3** |
| CHECK: DJH | SCALE: 1:250 | |

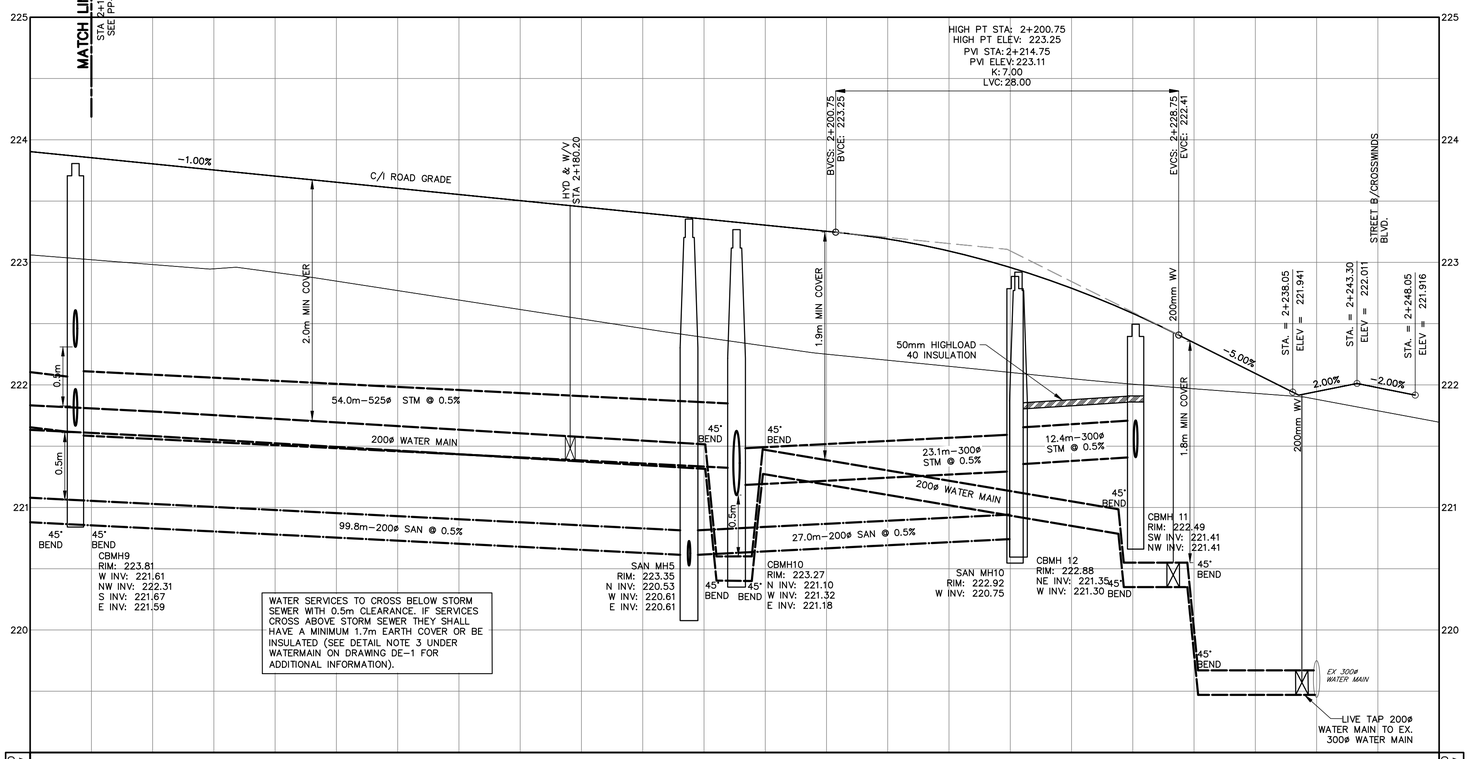
Drawing Name: 117227_PP01.dwg, Plotted: Apr 29, 2020

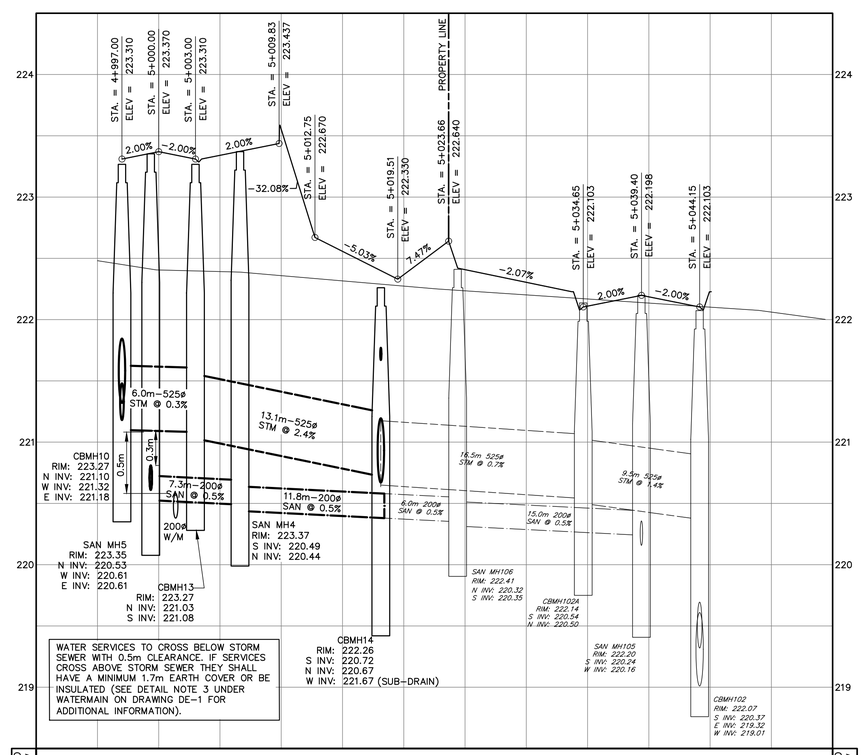



**KEY PLAN**




| CHAINAGE | 2+140 | 2+160 | 2+180 | 2+200 | 2+220 | 2+240 |
|---|---|---|---|---|---|---|
| PROPOSED C/L ELEV | 223.85 | 223.65 | 223.45 | 223.25 | 222.79 | 221.95 |
| EXISTING C/L ELEV | 223.02 | 222.85 | 222.54 | 222.25 | 222.05 | 221.88 |

| CHAINAGE | 5+000 | 5+020 | 5+040 |
|---|---|---|---|
| PROPOSED C/L ELEV | 223.37 | 222.37 | 222.19 |
| EXISTING C/L ELEV | 222.41 | 222.27 | 222.13 |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**BENCHMARKS**

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TOP NUT FIRE HYDRANT LOCATED AT THE NORTHWEST CORNER OF MOUNTAIN DRIVE AND JOZO WEIDER BOULEVARD (99–21)

TBM2 – ELEVATION 224.127
RAIL ROAD SPIKE IN WEST FACE OF HYDRO POLE LOCATED AT THE SOUTH WEST CORNER OF GREY ROAD 19 AND JOZO WEIDER BOULEVARD

**NOTES**

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
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| 3. | 4TH SUBMISSION | APR 27/20 |
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| | | |

**ENGINEER STAMP**

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr 27/20 — PROVINCE OF ONTARIO

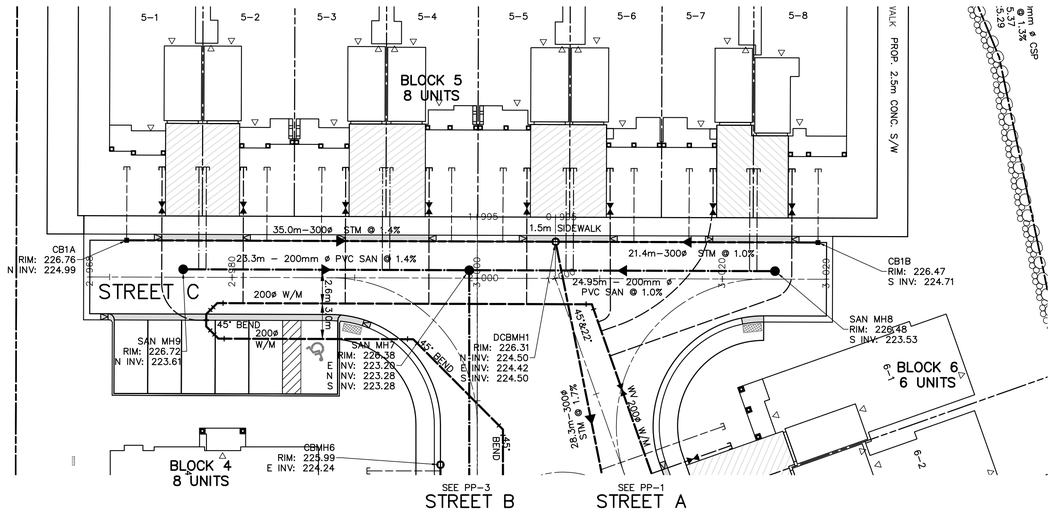
**MANORWOOD HOMES - SECOND NATURE**
# PHASE 2 BLOCK - 152
**TOWN OF THE BLUE MOUNTAINS**

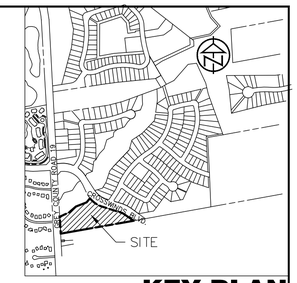
TATHAM ENGINEERING

PLAN AND PROFILE
STREET B STA. 2+140 TO STA. 2+258
SERVICE CORRIDOR STA. 4+995 TO STA. 5+054

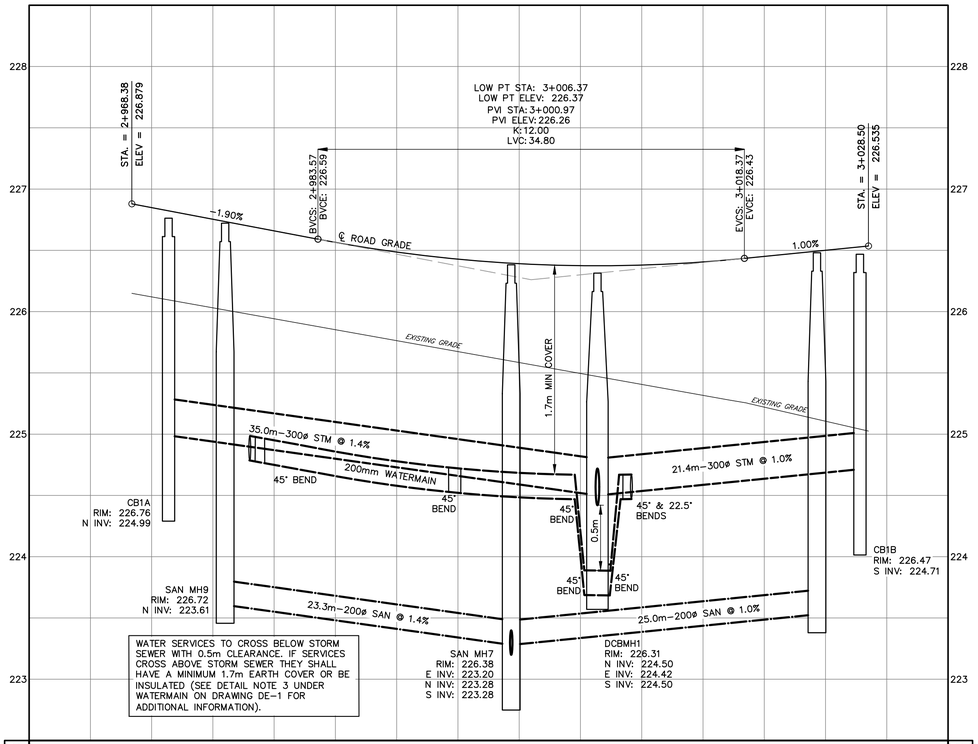
| | | |
|---|---|---|
| DESIGN: VP | FILE: 117227 | DWG: PP-4 |
| DRAWN: VP | DATE: SEP 2017 | |
| CHECK: DJH | SCALE: 1:250 | |

Drawing Name: 117227_PP01.dwg, Plotted: Apr 29, 2020




**KEY PLAN**




WATER SERVICES TO CROSS BELOW STORM SEWER WITH 0.5m CLEARANCE. IF SERVICES CROSS ABOVE STORM SEWER THEY SHALL HAVE A MINIMUM 1.7m EARTH COVER OR BE INSULATED (SEE DETAIL NOTE 3 UNDER WATERMAIN ON DRAWING DE-1 FOR ADDITIONAL INFORMATION).

| | | | | | | |
|---|---|---|---|---|---|---|
| PROPOSED C/L ELEV | 226.88 | 226.66 | 226.39 | 226.45 | 226.54 | PROPOSED C/L ELEV |
| EXISTING C/L ELEV | 226.13 | 225.94 | 225.58 | 225.22 | 225.03 | EXISTING C/L ELEV |
| CHAINAGE | 2+970 | 2+980 | 3+000 | 3+020 | 3+028 | CHAINAGE |

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| 3. | 4TH SUBMISSION | APR 27/20 |
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**ENGINEER STAMP**

LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr.27/20
PROVINCE OF ONTARIO

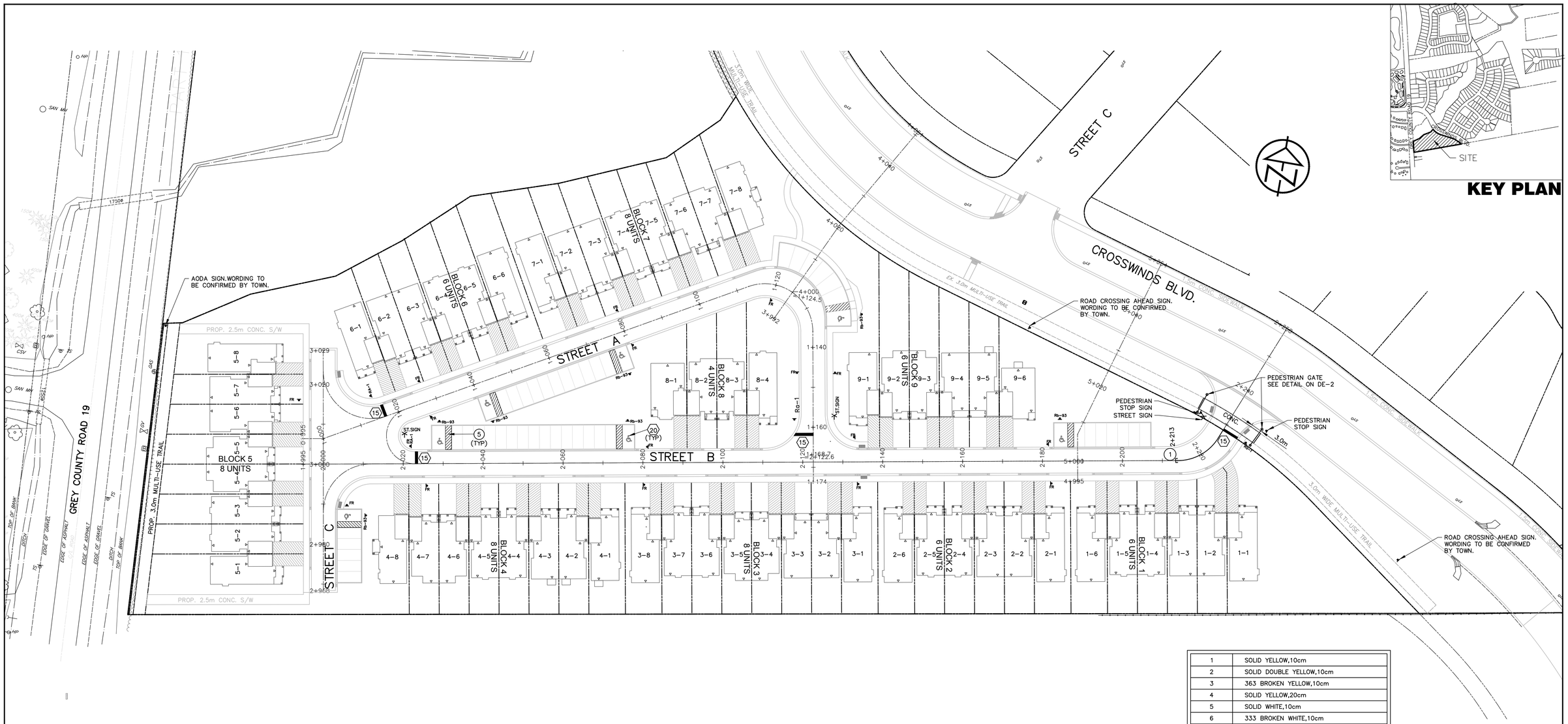
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

PLAN AND PROFILE
STREET C
STA. 2+968 TO STA. 3+029

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: VP | FILE: 117227 | DWG: |
| DRAWN: VP | DATE: SEP 2017 | **PP-5** |
| CHECK: DJH | SCALE: 1:250 | |

Drawing Name: 117227_PP01.dwg, Plotted: Apr 29, 2020




| | |
|---|---|
| 1 | SOLID YELLOW,10cm |
| 2 | SOLID DOUBLE YELLOW,10cm |
| 3 | 363 BROKEN YELLOW,10cm |
| 4 | SOLID YELLOW,20cm |
| 5 | SOLID WHITE,10cm |
| 6 | 333 BROKEN WHITE,10cm |
| 7 | 363 BROKEN WHITE,10cm |
| 8 | 393 BROKEN WHITE,10cm |
| 9 | SOLID WHITE,20cm |
| 10 | 111 BROKEN WHITE,20cm |
| 11 | 333 BROKEN WHITE,20cm |
| 12 | 333 BROKEN WHITE,30cm |
| 13 | SOLID WHITE,30cm |
| 14 | SOLID WHITE,45cm |
| 15 | SOLID WHITE,60cm |
| 16 | 1-0.6-1 WHITE,45cm |
| 17 | 1.8-1.8-1.8 WHITE,20cm |
| 20 | SYMBOLS |
| ] [ | LIMITS OF MARKINGS |

NOTES:

1. 333, 363, 393, Denotes Pavement Marking Spacing (ie., 3 m line, 3 m gap, 3 m line)
2. (1) Denotes PAVEMENT MARKING, PAINT
3. [1] Denotes PAVEMENT MARKING, TEMPORARY
4. △1 Denotes PAVEMENT MARKING, TEMPORARY-REMOVABLE
5. (1) Denotes PAVEMENT MARKING, DURABLE

FR Rq-1 Rb-93

## DISCLAIMER AND COPYRIGHT

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## NOTES

Town of Blue Mountains
Planning and Development Services
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| | | |
| | | |

## ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
Apr 27/20
PROVINCE OF ONTARIO

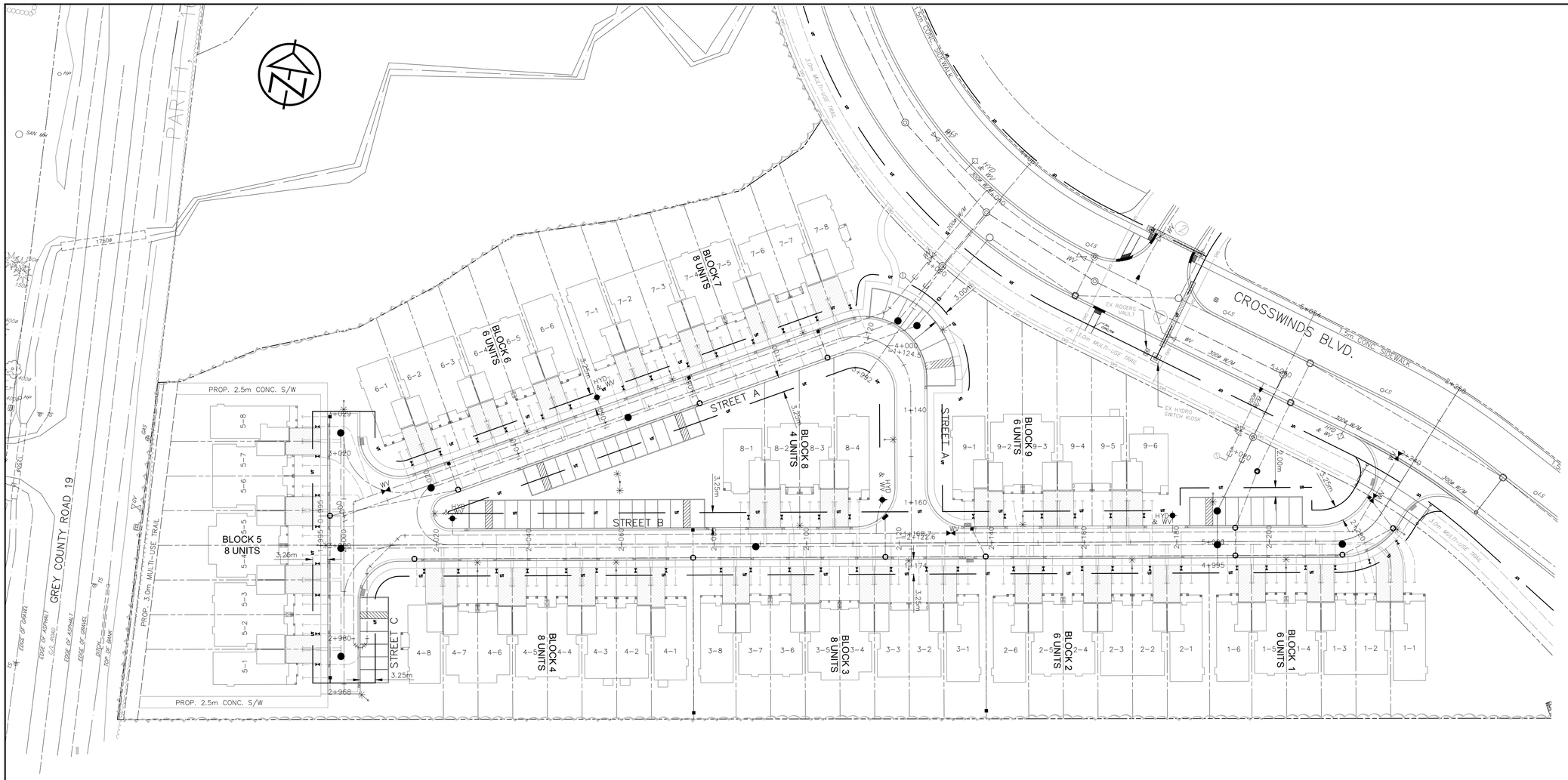
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

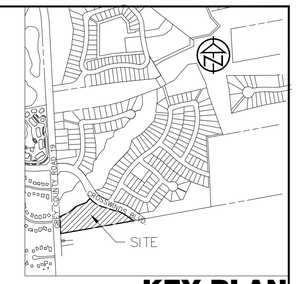
# PAVEMENT MARKING AND SIGNAGE PLAN

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: SBU | FILE: 117227 | DWG: |
| DRAWN: SBU | DATE: SEP 2017 | **PM-1** |
| CHECK: DJH | SCALE: 1:500 | |

Drawing Name: 117227_PM01.dwg, Plotted: Apr 29, 2020




**KEY PLAN**

LEGEND

- PROP. STOP SIGN
- PROP. STREET SIGN
- PROP. LIGHT STANDARD
- PROP. WALKWAY LIGHT BOLLARD
- PROPOSED HYDRO TRANSFORMER & GROUND GRID
- HCBG — PROPOSED ROAD CROSSING INCL. H–HYDRO, C–CABLE, B–BELL, G–GAS (GAS NO DUCT) NOTE: CONCRETE TO BE ENCASED TO 0.30m PAST BACK OF CURB.
- UT — PROPOSED UTILITY TRENCH
- H — PROP. HYDRO SERVICE
- PROP. BELL PEDESTAL (PHASE 1 ONLY)
- PROP. BELL – FLUSH TO GRADE LEVEL BOX IN BLVD. (LARGE)
- PROP. BELL – FLUSH TO GRADE LEVEL BOX AT LOT (SMALL)
- PROP. CABLE PEDESTAL
- PROP. GAS VALVE
- PROP. CANADA POST MAILBOX MODEL E201 WITH E101 CONC. BASE.
- BLOCK 2/6 UNITS — BLOCK/UNITS NUMBER
- 2–4 — BLOCK/UNIT NUMBER
- PROP. SANITARY SERVICE
- PROP. STORM SERVICE
- PROP. WATER SERVICE

NOTES

THIS PLAN TO BE USED FOR REFERENCE PURPOSES ONLY. SEE PLANS BY UTILITY PROVIDERS FOR CONSTRUCTION DETAILS.

REFER TO TYPICAL ROAD CROSS SECTION ON DWG. DE–1 FOR LOCATION OF UTILITIES.

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ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr 27/20 — PROVINCE OF ONTARIO

**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

COMPOSITE UTILITY PLAN

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: AO | FILE: 117227 | DWG: |
| DRAWN: SBU | DATE: SEP 2017 | **CUP-1** |
| CHECK: DJH | SCALE: 1:500 | |

Drawing Name: 117227_CUP-1.dwg, Plotted: Apr 29, 2020

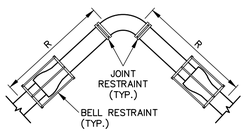



**FIGURE 1**
**HORIZONTAL BEND**

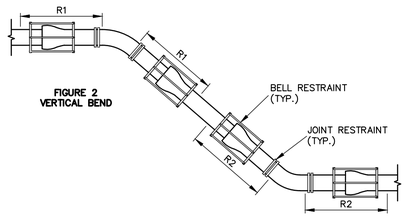



**FIGURE 2**
**VERTICAL BEND**

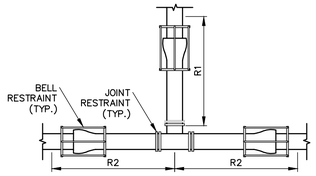



**FIGURE 3**
**TEE**

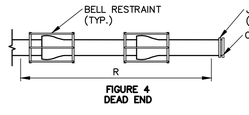



**FIGURE 4**
**DEAD END**

**CHARACTERISTICS USED TO CALCULATE RESTRAINT LENGTH**

| | |
|---|---|
| PIPE MATERIAL: | PVC |
| SOIL TYPE: | ML (SILTS, VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS) |
| SAFETY FACTOR: | 1.5 TO 1 |
| TRENCH TYPE: | 5 (PIPE BEDDED IN COMPACT GRANULAR MATERIAL) |
| DEPTH OF BURY: | 1.8m (6 ft) |
| TEST PRESSURE: | 1035 kPa (150 p.s.i.) |
| PROGRAM: | SIGMA IRON – RESTRAINT LENGTH CALCULATOR 1.0 |

TABLE 2: PIPE RESTRAINT SCHEDULE FOR PVC TEES
(ALL JOINTS AND BELLS LOCATED WITHIN THE CALCULATED RESTRAINT LENGTH SHALL BE RESTRAINED WITH APPROVED BELL AND JOINT RESTRAINTS)

| TEES | | | |
|---|---|---|---|
| NOMINAL PIPE DIA. | BRANCH PIPE DIA. | RESTRAINT 1 LENGTH (m) | RESTRAINT 2 LENGTH (m) |
| 150 | 150 | 4.6 | 3.0 |
| 200 | 150 | 2.4 | 3.0 |
| 150 | 200 | 9.8 | 3.0 |
| 200 | 200 | 7.9 | 3.0 |
| 300 | 150 | 0.3 | 3.0 |
| 300 | 200 | 4.0 | 3.0 |
| 300 | 300 | 14.3 | 3.0 |

TABLE 1: PIPE RESTRAINT SCHEDULE FOR PVC PIPE
(ALL JOINTS AND BELLS LOCATED WITHIN THE CALCULATED RESTRAINT LENGTH SHALL BE RESTRAINED WITH APPROVED BELL AND JOINT RESTRAINTS)

| | | HORIZONTAL BEND | VERTICAL BEND | | DEAD END (NO BEND ANGLE) |
|---|---|---|---|---|---|
| PIPE DIA. | BEND ANGLE | RESTRAINT LENGTH (m) | RESTRAINT 1 LENGTH (m) | RESTRAINT 2 LENGTH (m) | RESTRAINT LENGTH (m) |
| 150ø | 90° | 3.7 | – | – | 11.6 |
| | 45° | 1.6 | 4.9 | 1.5 | |
| | 22.5° | 0.9 | 2.5 | 0.9 | |
| | 11° | 0.6 | 1.3 | 0.6 | |
| 200ø | 90° | 4.6 | – | – | 15.0 |
| | 45° | 2.2 | 6.1 | 2.2 | |
| | 22.5° | 0.9 | 3.1 | 1.0 | |
| | 11° | 0.6 | 1.6 | 0.6 | |
| 300ø | 90° | 6.4 | – | – | 21.4 |
| | 45° | 2.8 | 8.9 | 2.8 | |
| | 22.5° | 1.5 | 4.3 | 1.5 | |
| | 11° | 0.9 | 3.4 | 0.9 | |

NOTES
1. CONTRACTOR TO REPORT IN WRITING TO THE ENGINEER ANY CHANGES TO SOIL OR SITE CHARACTERISTIC THAT MAY ALTER THE PIPE RESTRAINT CALCULATION.
2. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THRUST RESTRAINT REQUIREMENTS WITH THE PIPE AND RESTRAINT MANUFACTURERS.
3. VALVES TO BE RESTRAINED AS IF THEY ARE DEAD ENDS.

## GENERAL

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH TOWN OF THE BLUE MOUNTAINS STANDARDS AND OPS STANDARDS. WHERE CONFLICT OCCURS, TOWN STANDARDS TO GOVERN.
2. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN METERS.
3. THE CONTRACTOR MUST OBTAIN A ROAD OCCUPANCY PERMIT FROM PUBLIC WORKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
4. THE OWNER'S ENGINEER SHALL PROVIDE BENCHMARK ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED LAYOUT OF THE WORK.
5. ALL PROPERTY BARS TO BE PRESERVED AND REPLACED BY OLS AT CONTRACTOR'S EXPENSE IF REMOVED/DAMAGED DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE SUPPLY OF TEMPORARY WATER AND POWER.
7. DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS.MUNI 517 AND OPSS.MUNI 518. MAINTAIN ALL TRENCHES IN A DRY CONDITION. A MECP PERMIT TO TAKE WATER (PTTW) WILL BEEN OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL ENSURE THAT ALL DEWATERING WORKS ARE IN ACCORDANCE WITH THE PERMIT.
8. ALL TOPSOIL SHALL BE STRIPPED AND STOCKPILED AT A LOCATION APPROVED BY THE ENGINEER. ALL LOTS TO BE ROUGH GRADED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY PRIOR TO PLACING ANY ROADWAY GRANULAR MATERIALS.
9. ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL DISTRICT.
10. GENERAL INSTALLATION AND TESTING OF SEWERS, WATERMAIN AND APPURTENANCES TO BE IN ACCORDANCE WITH MUNICIPAL STANDARDS AND FURTHER SUPPORTED AS NECESSARY BY OPSS 407, OPSS 408, OPSS.MUNI 409, OPSS.MUNI 410, OPSS.MUNI 421, AND OPSS.MUNI 441 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS.
11. ALL MAINTENANCE HOLES ARE 1200 mm DIAMETER, UNLESS OTHERWISE SPECIFIED.
12. ALL STRUCTURES TO BE INSTALLED WITH FROST STRAPS TO OPSD 701.100.
13. PIPE SUPPORT AT ALL STRUCTURES TO OPSD 708.020.
14. ALL MAINTENANCE HOLE AND CATCH BASIN FRAME AND GRATES TO BE SET TO BASE COURSE ASPHALT ELEVATION IN ACCORDANCE WITH OPSD 704.010. FRAME AND GRATES TO BE RAISED TO FINISHED GRADE PRIOR TO THE PLACEMENT OF SURFACE COURSE ASPHALT USING CONCRETE ADJUSTMENT UNITS. MAXIMUM COMBINED HEIGHT OF ADJUSTMENT UNITS SHALL BE 300 mm.
15. TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL OR IMPORTED SELECT SUBGRADE MATERIAL TO OPSS.MUNI 1010. BACKFILL TO BE PLACED IN MAXIMUM 200 mm THICK LIFTS (OR AS OTHERWISE DIRECTED BY THE GEOTECHNICAL CONSULTANT) AND COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
16. PIPE EMBEDMENT TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD. BACKFILL AND EMBEDMENT TO OPSD 802.010 (FLEXIBLE PIPE), GRANULAR 'A' EMBEDMENT OR OPSD 802.031 (RIGID PIPE) CLASS "B", GRANULAR 'A' BEDDING, GRANULAR 'B' COVER (MAX. AGGREGATE SIZE 25 mm). MINIMUM BEDDING DEPTH 150 mm, MINIMUM COVER DEPTH 300 mm ON ALL PIPES. WHERE EXCESSIVELY WET OR POOR SUBGRADE IS ENCOUNTERED AT THE INVERT LEVEL, IT MAY BE NECESSARY TO INCREASE THE BEDDING THICKNESS.
17. CLEAR STONE COMPLETELY WRAPPED IN FILTER FABRIC MAY BE SUBSTITUTED FOR EMBEDMENT MATERIAL IF APPROVED BY THE ENGINEER.
18. DISTURBED AREAS TO BE REINSTATED TO PREVIOUS CONDITION OR BETTER.
19. REINSTATEMENT OF ALL DISTURBED BOULEVARDS AND DITCHES TO INCLUDE REGRADING, PLACEMENT OF TOPSOIL AND SOD/SEED IN ACCORDANCE WITH OPSS 802, OPSS.MUNI 803 AND OPSS.MUNI 804. SOD TO BE STAKED WHERE NECESSARY TO AVOID MOVEMENT.
20. TRAFFIC MARKERS AND SIGNS ARE TO BE INSTALLED IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL BOOK 7.
21. LOCATIONS OF EXISTING UTILITIES ARE NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL EXISTING INFRASTRUCTURE/FACILITIES AS WELL AS NOTIFYING ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK AND CO–ORDINATE CONSTRUCTION ACCORDINGLY.
22. ALL ON–SITE MATERIAL SHALL BE PROPERLY STORED, SECURED, MONITORED AND COVERED AS REQUIRED. SPECIFICALLY, ALL PVC PIPE SHALL BE COVERED WHILE STORED ON–SITE.
23. ALL SIGNAGE TO COMPLY WITH THE TOWN OF THE BLUE MOUNTAINS SIGN BY–LAW.
24. ALL FUTURE FENCING SHALL BE INSTALLED WHOLLY ON PRIVATE LAND.

## ROADS

1. SUBGRADE AND BOULEVARD MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD. SUBGRADE TO BE PROOF ROLLED AND CERTIFIED PRIOR TO PLACING GRANULAR 'B'.
2. GRANULAR 'A' AND 'B' TO BE COMPACTED TO A DRY DENSITY OF 100% OF THE MATERIAL'S RESPECTIVE SPMDD.
3. ASPHALT TO BE COMPACTED TO A MINIMUM OF 97% OF THE MARSHALL BULK DENSITY.
4. ROADWAYS TO BE CONSTRUCTED WITH MIN. 450 mm GRANULAR 'B', 150 mm GRANULAR 'A', 80 mm HL8 ASPHALT, AND 40 mm HL3 ASPHALT.
5. JOINTS WITH EXISTING ASPHALT TO BE SAW CUT STRAIGHT PRIOR TO PLACING NEW ASPHALT. WHERE EXISTING ASPHALT IS THICKER THAN 75 mm, A 500 mm WIDE BY 40 mm DEEP LAP JOINT SHALL BE GROUND INTO EXISTING ASPHALT PRIOR TO THE PLACEMENT OF SURFACE COURSE ASPHALT.
6. ALL GRANULAR AND ASPHALT MATERIAL TO BE PLACED IN ACCORDANCE WITH OPSS.MUNI 310 AND OPSS.MUNI 314.
7. STOP SIGNS AND STREET SIGNS TO BE INSTALLED PER TOWN STANDARDS AND ONTARIO TRAFFIC MANUAL BOOK 7.
8. TACK COAT TO BE APPLIED AT THE DIRECTION OF THE ENGINEER.
9. CONCRETE CURB TO OPSD 600.060 AND OPSD 600.110 (AS SPECIFIED) AND OPSS.MUNI 353.
   CURB DEPRESSIONS AT SIDEWALK CROSSINGS IN ACCORDANCE WITH OPSD 310.033.
   CURB DEPRESSIONS AT DRIVEWAYS IN ACCORDANCE WITH OPSD 351.010.
10. CONCRETE CURB TERMINATIONS TO BE CONSTRUCTED IN ACCORDANCE WITH OPSD 608.010.
11. CONCRETE SIDEWALK TO OPSD 310.020, CONCRETE SIDEWALK RAMPS TO OPSD 310.033 AND OPSS 351. SUBBASE TO CONSIST OF 150 mm DEPTH GRANULAR 'A'.
12. UNPAINTED CAST IRON TACTILE WALKING SURFACE INDICATOR COMPONENTS TO BE IN ACCORDANCE WITH OPSD 310.039
13. ASPHALT DRIVEWAYS TO BE CONSTRUCTED WITH A MINIMUM OF 65 mm OF HL3A ASPHALT AND 200 mm GRANULAR 'A'.
14. GRANULAR TRAILS TO BE CONSTRUCTED WITH 100 mm COMPACTED LIMESTONE SCREENINGS AND 100 mm GRANULAR 'A'. ASPHALT TRAILS TO BE CONSTRUCTED WITH 150 mm GRANULAR 'B', 100 mm GRANULAR 'A' AND 50 mm HL3 SURFACE COURSE ASPHALT.
15. 100 mm DIAMETER PIPE SUBDRAINS SHALL BE PROVIDED ON BOTH SIDES OF THE ROAD IN ACCORDANCE WITH OPSS.MUNI 405 AND OPSD 216.021, UNWRAPPED TRENCH, GRANULAR 'A' EMBEDMENT.
16. SUBDRAINS TO BE PERFORATED, COMPLETE WITH FILTER SOCK, OTHER THAN THE 2.0 m SECTION IMMEDIATELY UPSTREAM OF ALL STRUCTURES WHICH SHALL BE NON–PERFORATED.

## STORM SEWER

1. STORM MAINTENANCE HOLES AND CATCH BASIN MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 701.010 and 701.011,
2. MAINTENANCE HOLES TO BE BENCHED TO OPSD 701.021. MINIMUM BENCHING WIDTH SHALL BE 230 mm. CATCH BASIN MAINTENANCE HOLES TO HAVE A SUMP PER OPSD 701.010.
3. MAINTENANCE HOLE AND CATCH BASIN MAINTENANCE HOLE STEPS TO OPSD 405.010.
4. MAINTENANCE HOLE FRAMES AND GRATES TO OPSD 401.010, TYPE 'A' CLOSED COVER.
5. CATCH BASINS AND DOUBLE CATCH BASINS TO OPSD 705.010 AND 705.020 C/W 600 mm SUMP. CATCH BASINS AND DOUBLE CATCH BASINS FRAMES AND GRATES TO OPSD 400.020, REAR LOT CATCH BASINS FRAME AND GRATES TO OPSD 400.120. FRAME AND GRATES WITHIN ROAD TO BE INSTALLED IN THE CURB LINE TO OPSD 610.010.
6. DITCH INLETS TO OPSD 705.030, GRATES INSTALLED IN ACCORDANCE WITH OPSD 403.010 (4:1 SLOPE UNLESS OTHERWISE SPECIFIED), C/W 600 mm SUMP. REAR LOT DITCH INLET CATCH BASINS WITHOUT SUMP.
7. CATCH BASIN LEADS – 300 mm DIA. SINGLE AND 300 mm DIA. DOUBLE. CATCH BASIN CONNECTIONS TO OPSD 708.010 AND OPSD 708.030.
8. RESIDENTIAL STORM SERVICE CONNECTIONS TO TOWN STD. DRAWING ST–STD–SUMP, 100 mm DIAMETER, GRANULAR 'A' EMBEDMENT (MIN. 150 mm BEDDING AND 300 mm COVER), USING PREMANUFACTURED CONNECTIONS TO THE MAIN. TERMINATE WHERE SHOWN C/W A CAP/PLUG AND A 38 mm X 89 mm MARKER PLACED FROM THE INVERT TO 600 mm ABOVE FINISHED GRADE PAINTED WHITE. MINIMUM GRADE TO BE 1.0%. TERMINATE AT AN OBVERT ELEVATION AT LEAST 1.4 m BELOW PROPOSED GRADE AND BE EXTENDED 5.5 m BEHIND BACK OF CURB.
9. STORM SEWERS WITH LESS THAN 1.5 m OF COVER REQUIRE 50 mm OF INSULATION INSTALLED PER THE DETAIL DRAWING.

## SANITARY SEWER

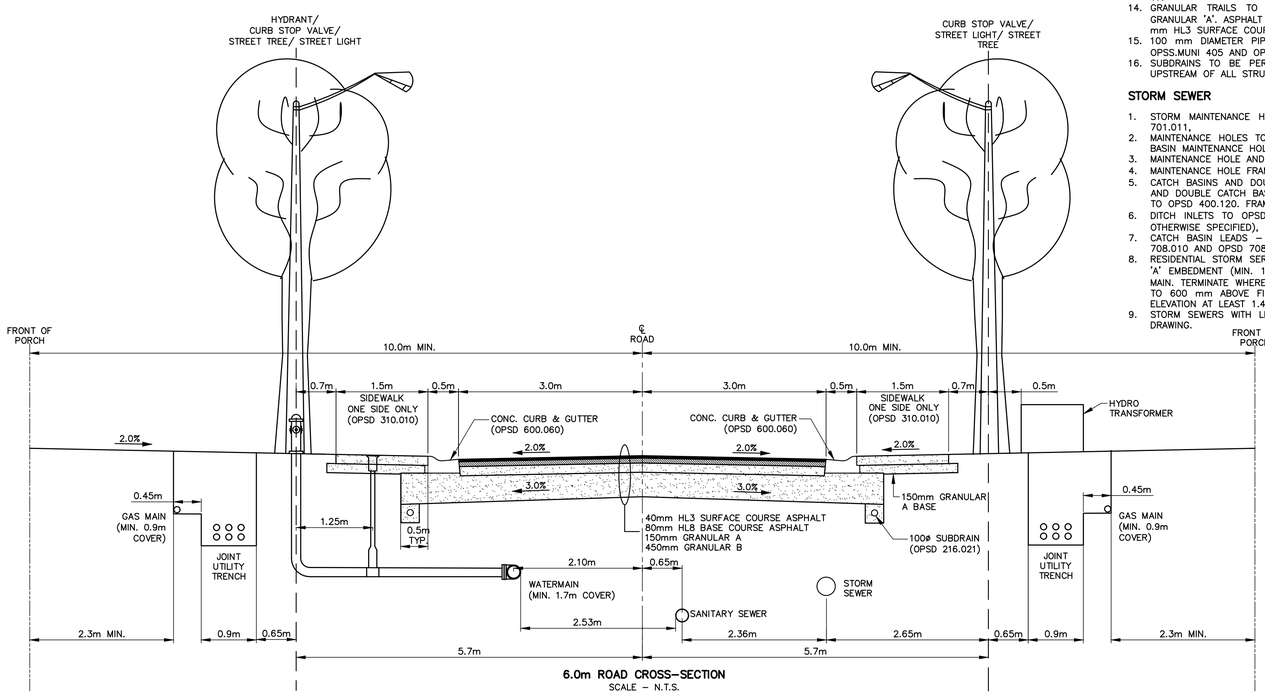
1. SANITARY MAINTENANCE HOLES TO OPSD 701.010.
2. SANITARY MAINTENANCE HOLES TO BE BENCHED TO OPSD 701.021 ALL CONNECTIONS TO MAINTENANCE HOLES TO INCLUDE A KOR–N–SEAL RUBBER BOOT PIPE CONNECTION.
3. MAINTENANCE HOLE STEPS TO OPSD 405.010
4. MAINTENANCE HOLE FRAME AND COVER TO OPSD 401.010, TYPE 'A' CLOSED COVER.
5. MAINTENANCE HOLE STRUCTURES EXCEEDING 5.0m IN DEPTH TO INCLUDE SAFETY PLATFORM TO OPSD 404.020.
6. DROP STRUCTURES AT MAINTENANCE HOLES TO OPSD 1003.020.
7. RESIDENTIAL SERVICE CONNECTIONS TO OPSD 1006.010, WITH AN APPROVED MANUFACTURED TEE AT THE MAIN, 125 mm DIAMETER, GRANULAR 'A' EMBEDMENT (MIN. 150mm BEDDING AND 300 mm COVER).
8. RESIDENTIAL SERVICE CONNECTIONS TO BE TERMINATED 5.5m BEHIND BACK OF CURB WITH PLUG SUITABLY BRACED TO WITHSTAND TEST PRESSURES AND A 38mm x 89mm MARKER PLACED FROM THE INVERT OF THE CONNECTION TO 600 mm ABOVE FINISHED GRADE PAINTED GREEN. MINIMUM GRADE OF SERVICE TO BE 2%, MAXIMUM GRADE TO BE 8%. TERMINATE AT AN ELEVATION AT LEAST 2.7m BELOW PROPOSED GRADE AT TERMINATION POINT.
9. RADIUS BENDS TO BE USED ON ALL SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90°.

## WATERMAIN

1. ALL WORK ON EXISTING WATERMAIN TO BE COORDINATED WITH THE TOWN.
2. MINIMUM GROUND COVER OVER WATERMAIN, SERVICE LATERALS AND HYDRANT LEADS TO BE 1.7m AT ALL POINTS, MAXIMUM GROUND COVER OVER WATERMAIN TO BE 2.5 m.
3. WHERE SPECIFIED, INSULATION TO BE INSTALLED OVER WATERMAIN OR SERVICES WITH LESS THAN 1.7m DEPTH OF COVER AS NOTED ON THE DRAWINGS OR MINIMUM AS FOLLOWS:
   3.1 DEPTH OF COVER BETWEEN 1.4 TO 1.7m REQUIRES 50mm INSULATION.
   3.2 DEPTH OF COVER BETWEEN 1.2 TO 1.7m REQUIRES 100mm INSULATION.
   3.3 WATERMAIN NOT TO BE INSTALLED WITH LESS THAN 1.2 METRES DEPTH OF COVER.
4. THRUST BLOCKS OR PIPE RESTRAINTS TO BE PROVIDED AT ALL CHANGES IN PIPE DIRECTION, TERMINATIONS AND ANY LOCATION WHERE THRUST PRESSURES MAY OCCUR. WATER VALVES SHALL BE RESTRAINED ON EITHER SIDE TO THE SAME STANDARD THAT A DEAD END WOULD BE. WHERE SOIL CONDITIONS ARE SUSPECT, SUCH AS IN DISTURBED SOILS OR SOILS WITH BEARING STRENGTH OF LESS THAN 200 kPa, PIPE RESTRAINERS SHALL BE USED. IN LIEU OF THRUST BLOCKS PIPE RESTRAINTS FOR PVC SHALL BE PER TOWN STANDARDS, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. THREADED ROD IN JOINT RESTRAINT IS NOT PERMISSIBLE. THRUST BLOCKS TO OPSD 1103.010 AND 1103.020.
5. CATHODIC PROTECTION OF ALL WATERMAIN FITTINGS AND APPURTENANCES TO BE PROVIDED AS PER TOWN STANDARD (SEE CHART).
6. RESIDENTIAL SERVICE CONNECTIONS TO OPSD 1104.010, 25 mm DIAMETER, 300 mm DEPTH GRANULAR 'A' EMBEDMENT.
7. RESIDENTIAL SERVICE CONNECTIONS TO HAVE CURB STOP INSTALLED 2.15m BEHIND BACK OF CURB ON SIDEWALK SIDE OF ROAD AND 1.8m BEHIND BACK OF CURB ON SIDE OF ROAD WITHOUT SIDEWALK. SERVICE ON HOUSE SIDE OF CURB STOP SHALL BE EXTENDED 5.5 m BEHIND BACK OF CURB WITH MIN. 1.7m COVER AND 300mm DEPTH EMBEDMENT THEN TESTING TAIL SHALL BE EXTENDED TO SURFACE CAPPED OR CRIMPED AND A 38mm x 89mm MARKER FROM INVERT OF SERVICE TO 600 mm ABOVE GRADE PAINTED BLUE. THE TESTING TAIL SHALL INCLUDE MINIMUM 3 m LENGTH OF SERVICE PIPE ABOVE GRADE.
8. HYDRANTS TO BE INSTALLED TO OPSD 1105.010.
9. HYDRANTS TO BE PAINTED CHROME YELLOW AND INCLUDE A FLEXSTAKE HYDRANT MARKER MODEL FHV804, 1.2 m LONG, COLOUR YELLOW WITH REFLECTIVE GRAPHIC ON BOTH SIDES AT THE TOP OF THE MARKER. MARKER TO BE POSITIONED ON THE RIGHT PORT AS VIEWED FROM THE STREET. A FIRE HYDRANT MARKER POST AND SIGN SHALL BE INSTALLED 0.3 m BEHIND EACH HYDRANT. THE SIGN SHALL BE REFLECTIVE WITH A RED HYDRANT ON A WHITE BACKGROUND AND MEASURE 0.3 x 0.3 m. THE SIGN SHALL BE MOUNTED 1.5 m ABOVE GRADE.
10. ALL PVC WATERMAIN AND PE RESIDENTIAL SERVICES TO HAVE TRACER WIRE BETWEEN HYDRANTS AND OTHER CONDUCTING APPURTENANCES. CONTRACTOR SHALL TEST ALL TRACER WIRE TO CONFIRM CONNECTIVITY.
11. TRACER WIRE TO BE 10 GAUGE, MULTI–STRAND SHALL BE PLACED ON TOP AND ATTACHED IN TWO PLACES ON EACH LENGTH OF PVC OR PE PIPE. ALL CONNECTIONS SHALL BE MADE WITH "DRYCONN WATERPROOF CONNECTORS" OR APPROVED EQUAL.
12. VERTICAL CLEARANCE BETWEEN WATERMAINS AND SEWERS TO BE A MINIMUM OF 0.5m WHEN WATERMAIN IS BELOW THE SEWERS, HORIZONTAL CLEARANCE BETWEEN WATERMAINS AND SEWERS TO BE A MINIMUM OF 2.5m.
13. ALL WATER SERVICES TO INCLUDE THE INSTALLATION OF AN INDIVIDUAL PRV WITHIN EACH UNIT. PRVs TO BE SUPPLIED AND INSTALLED BY THE BUILDER DURING HOUSE CONSTRUCTION.
14. THE COMPLETE WATER SYSTEM, INCLUDING RESIDENTIAL SERVICE CONNECTIONS TO THE CURB STOP VALVE AND HYDRANTS SHALL BE TESTED IN ACCORDANCE WITH THE TOWN'S WATERMAIN COMMISSIONING PROTOCOL. CONTRACTOR TO PROVIDE DETAILED WRITTEN WATERMAIN COMMISSIONING PROTOCOL FOR APPROVAL PRIOR TO COMMENCING TESTING OPERATIONS. CONNECTIONS TO EXISTING MAINS SHALL NOT BE MADE UNTIL WRITTEN AUTHORIZATION IS PROVIDED BY THE ENGINEER AND THE TOWN.
15. FOLLOWING TESTING, CONTRACTOR SHALL OPERATE EACH SERVICE TO VERIFY FULL FLOW AND PRESSURE AT CURB STOP TO SATISFACTION OF THE ENGINEER.
16. WATER VALVES TO BE OPERATED BY TOWN STAFF ONLY.

## MATERIALS

1. ALL MATERIAL TO COMPLY WITH CSA, OPSS AND TOWN STANDARDS.
2. SANITARY SEWER – PVC DR 35.
3. SANITARY SERVICE CONNECTIONS – PVC SDR 28.
4. STORM SEWER – PVC SDR 35 OR CONCRETE 65–D. ALL SEWER TO BE JOINED WITH A GASKETED BALL AND SPIGOT SYSTEM. NON–REINFORCED CONCRETE PIPE MAY BE USED FOR SIZES UP TO AND INCLUDING 375 mm DIA. REINFORCED CONCRETE PIPE MAY BE USED FOR ALL SIZES OF SEWER.
5. STORM SERVICE CONNECTIONS – PVC SDR 28, COLOUR WHITE.
6. PERFORATED SUBDRAIN – BIG 'O' WITH GEOTEXTILE FILTER SOCK OR APPROVED EQUAL.
7. ALL CHEMICALS AND MATERIALS USED IN THE ALTERATION OR OPERATION OF THE DRINKING WATER SYSTEM THAT COMES IN CONTACT WITH WATER WITHIN THE SYSTEM SHALL MEET ALL APPLICABLE STANDARDS SET BY BOTH THE AMERICAN WATER WORKS ASSOCIATION ("AWWA") AND THE AMERICAN NATIONAL STANDARDS INSTITUTE ("ANSI") SAFETY CRITERIA STANDARDS NSF/60, NSF/61 AND NSF372.
8. WATERMAIN – PVC DR 18.
9. WATER SERVICE CONNECTIONS TO BE 25 mm DIA. TYPE 'K' COPPER PIPE OR REHAU'S MUNICIPLEX (BLUE) POLYETHYLENE MEETING ANSI/AWWA C904.
10. WATER SERVICE FITTINGS SHALL BE:
    10.1. MAIN STOP – MUELLER B25008 OR CAMBRIDGE BRASS SERIES 301NL
    10.2. CURB STOP – MUELLER B25209 OR CAMBRIDGE BRASS SERIES 202NL
    10.3. SERVICE SADDLE – ROBAR 2626 DOUBLE STRAP OR CAMBRIDGE BRASS 8403 DOUBLE BOLT
    10.4. TAPPING SLEEVE – ROBAR 6606
    10.5. SERVICE BOXES– MUELLER A–726, STAINLESS STEEL RODS
    10.6. PIPE RESTRAINERS – SIGMA C–900.
11. HYDRANTS – MUELLER CENTURY OR AVK 2780 SERIES NOSTALGIC STYLE DRY BARREL, OPEN LEFT, WITH STORTZ CONNECTIONS ON ALL STEAMER PORTS. HYDRANT SETS SHALL BE INSTALLED NOT LESS THAN 0.9 m FROM THE CENTER OF THE VALVE TO THE CENTER OF THE HYDRANT. A HYDRANT SIGN AND YELLOW FLEX MARKER SHALL BE INSTALLED 1m BEHIND THE HYDRANT. TRACER WIRE SHALL BE ATTACHED TO THE OUTSIDE OF THE VALVE BOX AND WIRE BROUGHT INTO VALVE BOX UNDER CAP.
12. LIVE TAP SADDLES TO BE EPOXY COATED COMPLETE WITH STAINLESS STEEL BOLTS.
13. MECHANICAL JOINT DUCTILE FITTINGS TO AWWA/ANSI C153/A21.53. INCLUDING PROTECTO–CAPS, CAT NO. 175P190 OR APPROVED EQUAL.
14. ISOLATION VALVES TO BE RESILIENT SEAT GATE VALVES WITH MECHANICAL JOINTS, OPEN COUNTER CLOCKWISE, CLOW OR MUELLER. VALVE BOXES TO BE BIBBY OR STAR PIPE SLIDE TYPE UPPER AND LOWER MVB COMPOSITE COMPLETE WITH GUIDE PLATE AND DUCTILE ADJUSTABLE TOP AND LID OR APPROVED EQUAL. CAPS TO BE PAINTED BLUE.
15. ALL WATERMAIN FITTINGS TO HAVE ZINC NUTS.
16. ALL SPECIFIED AGGREGATES TO OPSS.MUNI 1010.
17. FILTER FABRIC – TERRAFIX 270R OR APPROVED EQUAL.
18. INSULATION – STYROFOAM HIGHLOAD 40 EXTRUDED POLYSTYRENE FOAM INSULATION, 50mm THICK SHEETS.




**6.0m ROAD CROSS–SECTION**
SCALE – N.T.S.

## ANODE SIZING CHART FOR ZINC ANODES

| WTM/FITTING | ANODE SIZE (kg) | SPACING |
|---|---|---|
| 100 mm | 2.3 | PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE |
| 150 mm | 2.3 | PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE |
| 200 mm | 5.5 | PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE |
| 250 mm | 5.5 | PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE |
| 300 mm | 11 | PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE |
| COPPER SERVICE | 2.3 | AT EACH CURBSTOP |
| HYDRANT | 5.5 | AT HYDRANT BASE |
| VALVE | 5.5 | AT EACH VALVE |
| SERVICE SADDLE | 2.3 | AT EACH SERVICE SADDLE (CONNECT WIRE TO BOLT ON SADDLE TIGHT BETWEEN 2 NUTS) |
| TEES, ELBOWS ETC. | 2.3 | ON EACH FITTING FOR 100 mm – 150 mm PIPE |
| TEES, ELBOWS ETC. | 5.5 | ON EACH FITTING FOR 200 mm – 300 mm PIPE |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**BENCHMARKS**

TBM1 – ELEVATION 226.036
TOP NUT FIRE HYDRANT LOCATED AT THE NORTHWEST CORNER OF MOUNTAIN DRIVE AND JOZO WEIDER BOULEVARD (99–21)

TBM2 – ELEVATION 224.127
RAIL ROAD SPIKE IN WEST FACE OF HYDRO POLE LOCATED AT THE SOUTH WEST CORNER OF GREY ROAD 19 AND JOZO WEIDER BOULEVARD

**NOTES**

Town of Blue Mountains
Planning and Development Services
**Accepted For Construction**
AFC Drawings are only valid as part and upon execution of a Development Agreement
signature — date 30-Jun-2020

| No. | REVISION DESCRIPTION | DATE |
|---|---|---|
| 1. | 1ST SUBMISSION | JUL 4/19 |
| 2. | 2ND SUBMISSION | NOV 20/19 |
| 3. | 3RD SUBMISSION | MAR 20/20 |
| 4. | 4TH SUBMISSION | APR 27/20 |

**ENGINEER STAMP**

LICENSED PROFESSIONAL ENGINEER — D. J. HURLEY — Apr. 27/20 — PROVINCE OF ONTARIO

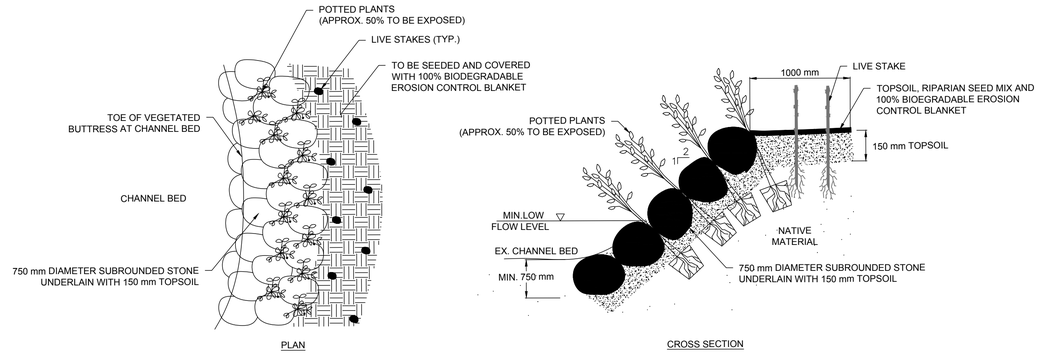
**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

DETAILS & NOTES

TATHAM ENGINEERING

| | | |
|---|---|---|
| DESIGN: DEP/AO | FILE: 117227 | DWG: |
| DRAWN: DEP | DATE: SEP 2017 | **DE-1** |
| CHECK: DJH | SCALE: AS NOTED | |

Drawing Name: 117227_DE01.dwg, Plotted: Apr 29, 2020



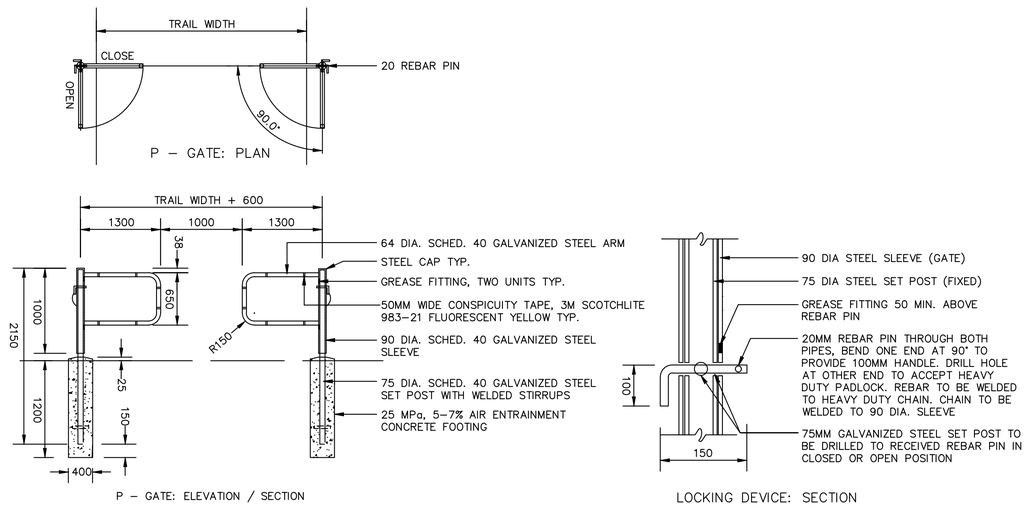

CONSTRUCTION NOTES

1. VEGETATED ROCK BUTTRESS TO BE INSTALLED IN LIFTS.
2. TOE STONES TO BE EMBEDDED INTO CHANNEL BED.
3. INSTALL PLANTS 1 m O/C IN EACH LAYER.
4. LATERALLY STAGGER EACH SUCCESSIVE LAYER OF PLANTS TO AVOID VERTICAL STACKING.
5. PLANTING SPECIES PLACEMENT SHOULD BE RANDOM.

POTTED PLANTINGS SPECIES AND QUANTITIES

| COMMON NAME | SPECIES | CONDITION |
|---|---|---|
| RED OSIER DOGWOOD | *Salix discolor* | 1 m ht. POTTED |
| SANDBAR WILLOW | *Salix exigua* | 1 m ht. POTTED |
| SHINING WILLOW | *Salix lucida* | 1 m ht. POTTED |

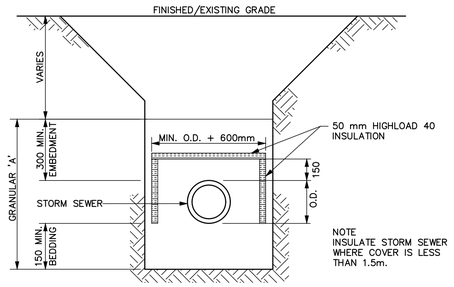
VEGETATED ROCK BUTTRESS
N.T.S




NOTES:

2. ALL PIPE SHALL BE SCHEDULE 40 STEEL.
3. ALL WELDS TO BE 5 MM CONTINUOUS SEAM AND GROUND SMOOTH.
4. CONTRACTOR TO SUPPLY HEAVY DUTY PADLOCK AS REQUIRED.
5. CONTRACTOR TO SUBMIT SHOP DRAWINGS.
6. LOCATION OF GATES TO BE FIELD STAKED BY CONTRACTOR FOR REVIEW BY TOWN. LOCATION TO BE APPROVED PRIOR TO INSTALLATION.

TRAIL SWING GATES
NTS




TYPICAL STORM SEWER INSULATION DETAIL
NOT TO SCALE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| No. | REVISION DESCRIPTION | DATE |
|---|---|---|
| 1. | 3RD SUBMISSION | MAR 20/20 |
| 2. | 4TH SUBMISSION | APR 27/20 |
| 2. | UPDATED PEDESTRIAN GATE DETAIL | MAY 21/20 |
| | | |
| | | |

ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER
D. J. HURLEY
May 21, 2020
PROVINCE OF ONTARIO

**MANORWOOD HOMES - SECOND NATURE**
**PHASE 2 BLOCK - 152**
**TOWN OF THE BLUE MOUNTAINS**

DETAILS

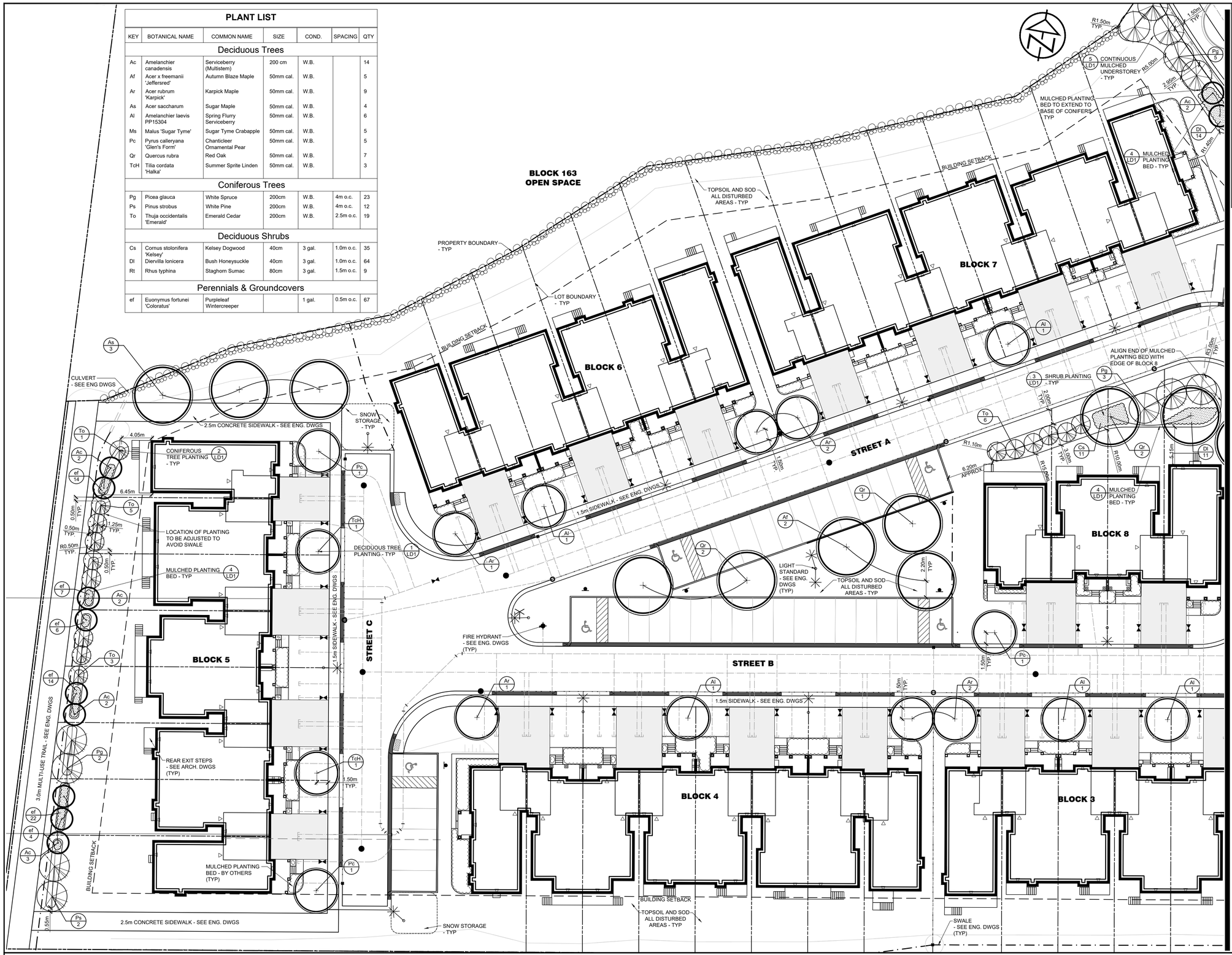
TATHAM ENGINEERING

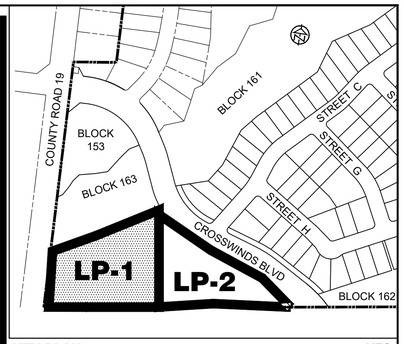
| | | |
|---|---|---|
| DESIGN: DEP/AO | FILE: 117227 | DWG: |
| DRAWN: DEP | DATE: SEP 2017 | **DE-2** |
| CHECK: DJH | SCALE: AS NOTED | |

Drawing Name: 117227_DE01.dwg, Plotted: May 21, 2020

## PLANT LIST

| KEY | BOTANICAL NAME | COMMON NAME | SIZE | COND. | SPACING | QTY |
|---|---|---|---|---|---|---|
| **Deciduous Trees** | | | | | | |
| Ac | Amelanchier canadensis | Serviceberry (Multistem) | 200 cm | W.B. | | 14 |
| Af | Acer x freemanii 'Jeffersred' | Autumn Blaze Maple | 50mm cal. | W.B. | | 5 |
| Ar | Acer rubrum 'Karpick' | Karpick Maple | 50mm cal. | W.B. | | 9 |
| As | Acer saccharum | Sugar Maple | 50mm cal. | W.B. | | 4 |
| Al | Amelanchier laevis PP15304 | Spring Flurry Serviceberry | 50mm cal. | W.B. | | 6 |
| Ms | Malus 'Sugar Tyme' | Sugar Tyme Crabapple | 50mm cal. | W.B. | | 5 |
| Pc | Pyrus calleryana 'Glen's Form' | Chanticleer Ornamental Pear | 50mm cal. | W.B. | | 5 |
| Qr | Quercus rubra | Red Oak | 50mm cal. | W.B. | | 7 |
| TcH | Tilia cordata 'Halka' | Summer Sprite Linden | 50mm cal. | W.B. | | 3 |
| **Coniferous Trees** | | | | | | |
| Pg | Picea glauca | White Spruce | 200cm | W.B. | 4m o.c. | 23 |
| Ps | Pinus strobus | White Pine | 200cm | W.B. | 4m o.c. | 12 |
| To | Thuja occidentalis 'Emerald' | Emerald Cedar | 200cm | W.B. | 2.5m o.c. | 19 |
| **Deciduous Shrubs** | | | | | | |
| Cs | Cornus stolonifera 'Kelsey' | Kelsey Dogwood | 40cm | 3 gal. | 1.0m o.c. | 35 |
| Dl | Diervilla lonicera | Bush Honeysuckle | 40cm | 3 gal. | 1.0m o.c. | 64 |
| Rt | Rhus typhina | Staghorn Sumac | 80cm | 3 gal. | 1.5m o.c. | 9 |
| **Perennials & Groundcovers** | | | | | | |
| ef | Euonymus fortunei 'Coloratus' | Purpleleaf Wintercreeper | | 1 gal. | 0.5m o.c. | 67 |




**KEY PLAN** NTS

### LEGEND

- PROPERTY BOUNDARY
- LOT BOUNDARY
- HYDRO TRANSFORMER - SEE ENG. DWGS
- HYD & WV — FIRE HYDRANT - SEE ENG. DWGS
- SIGN - SEE ENG. DWGS
- CATCHBASIN - SEE ENG. DWGS
- MANHOLE - SEE ENG. DWGS
- LIGHT STANDARD - SEE ENG. DWGS
- UNDERGROUND SERVICES - SEE ENG. DWGS
- SWALE - SEE ENG. DWGS
- SNOW STORAGE - SEE ENG DWGS
- DECIDUOUS TREE
- CONIFEROUS TREE
- SHRUB GROUPING
- MULCHED PLANTING BED - BY OTHERS
- SPECIES / QUANTITIY — SP / QTY — PLANT REFERENCE TAG

**GENERAL NOTES**

1. DEPICTED ON THIS PLAN ARE THE SPECIES AND THE APPROXIMATE LOCATION OF STREET TREES. ONCE DRIVEWAYS, SERVICES, UTILITIES, LIGHT STANDARDS AND OTHER ABOVE AND BELOW GROUND FEATURES ARE INSTALLED, THE EXACT LOCATION OF STREET TREES WILL BE STAKED ON SITE AND APPROVED BY THE LANDSCAPE ARCHITECT AND TOWN PRIOR TO PLANTING.
2. TREE PITS AND PLANTING BEDS FOR ALL TREES AND SHRUBS LOCATED WITHIN 1 METER OF UNDERGROUND UTILITIES OR SERVICES ARE TO BE HAND DUG.
3. ACTUAL LAYOUT OF TREES SHALL BE IN ACCORDANCE WITH THE FOLLOWING 'TABLE OF OFFSETS' ;

| TABLE OF OFFSETS<br>THE FOLLOWING MINIMUM CLEARANCES FOR TREES SHALL APPLY: | |
|---|---|
| FIRE HYDRANTS | 3.0m |
| DRIVEWAYS | 1.5m |
| NEIGHBOURHOOD MAILBOXES | 3.0m |
| HYDRO TRANSFORMERS | 3.0m |
| BELL OR CABLE PEDESTALS | 1.0m |
| STREETLIGHT POLES | 5.0m |
| UNDERGROUND SERVICES | 1.0m |
| FACE OF ALL WARNING SIGNS | 18.0m |

4. WHEN THE MINIMUM DISTANCES NOTED IN THE 'TABLE OF OFFSETS' CANNOT BE ACHIEVED, STREET TREES SHALL BE PLANTED IN AN ALTERNATE LOCATION APPROVED OR STIPULATED BY THE TOWN.
5. ALL PLANTING TO BE IN ACCORDANCE WITH NOTES AND DETAILS ON LD-1.

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NOTES

1. BASE PLAN PREPARED BY TATHAM ENGINEERING (APRIL, 2020).
2. ALL DIMENSIONS IN METRES UNLESS OTHERWISE NOTED.

| NO. | REVISIONS | DATE | INITIAL |
|---|---|---|---|
| 1. | SECOND SUBMISSION | APR. 27/20 | AB |

APPROVED

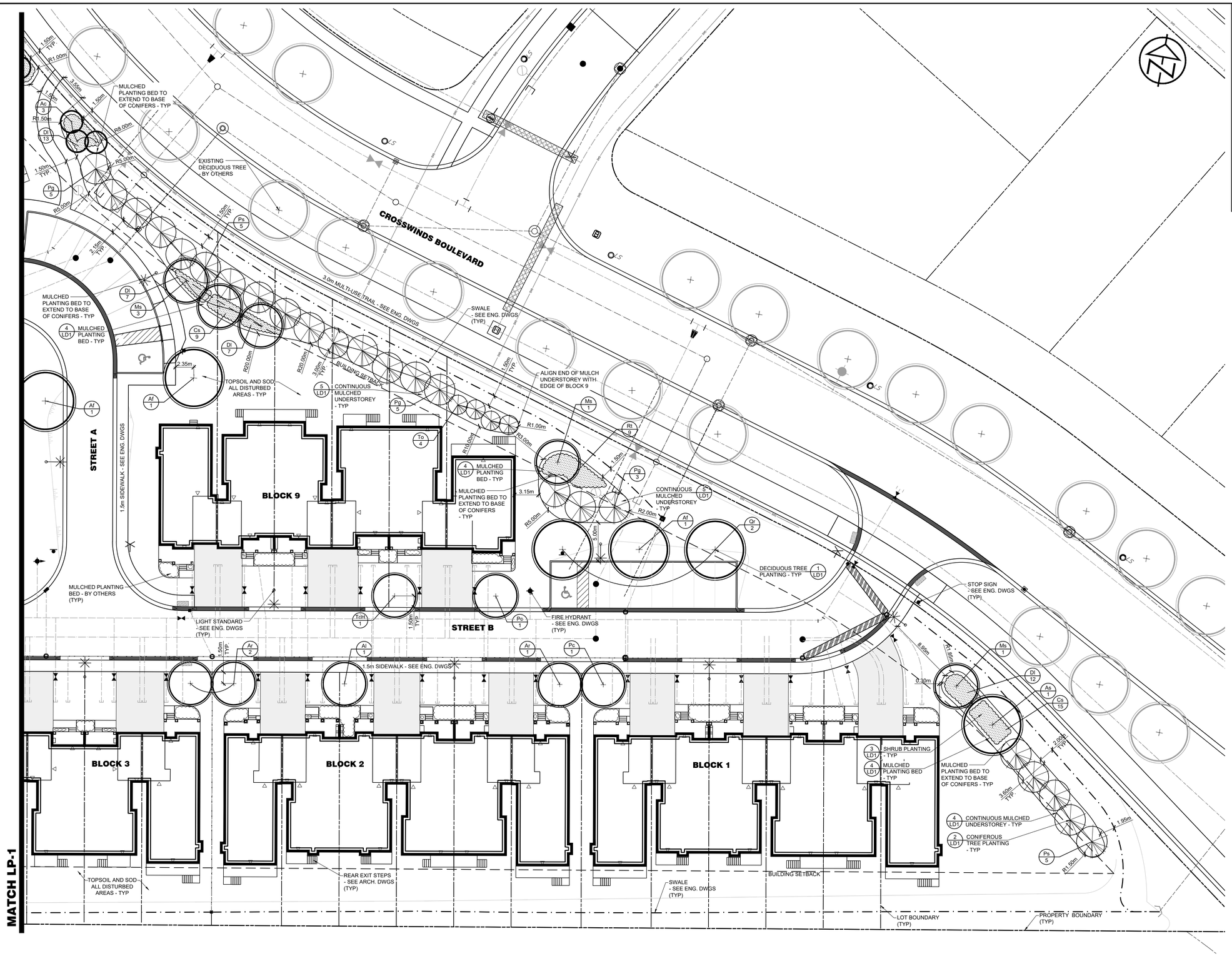
ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — ALISON M. BONO — APR. 27/20 — OALA — MEMBER

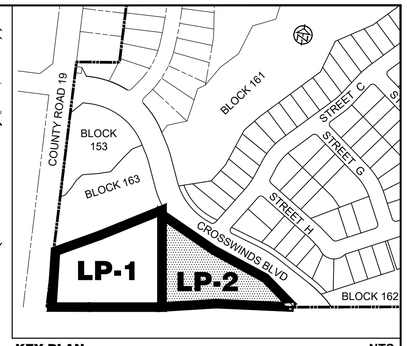
**SECOND NATURE**
**BLOCK 152**
**TOWN OF THE BLUE MOUNTAINS**

# PLANTING PLAN

ENVISIONTATHAM
115 Sandford Fleming Drive, Suite 200, Collingwood, ON L9Y 5A6
Tel. 705.445.0422
inquiry@envision-tatham.com

| | | | |
|---|---|---|---|
| SCALE: 1:250 | | JOB NO. | ET115014-2 |
| DESIGN: AB | CHECKED: AB | DWG. | **LP-1** |
| DRAWN: AJS | DATE: NOV. 21, 2019 | | |




**KEY PLAN** NTS

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- LIGHT STANDARD - SEE ENG. DWGS
- UNDERGROUND SERVICES - SEE ENG. DWGS
- SWALE - SEE ENG. DWGS
- SNOW STORAGE - SEE ENG DWGS
- BOULEVARD TREE - BY OTHERS
- DECIDUOUS TREE
- CONIFEROUS TREE
- SHRUB GROUPING
- MULCHED PLANTING BED - BY OTHERS
- SPECIES SP / QUANTITIY QTY — PLANT REFERENCE TAG

**NOTES**

1. FOR PLANT LIST AND TREE LAYOUT NOTES SEE DRAWING LP-1.
2. FOR PLANTING DETAILS AND NOTES SEE DRAWING LD-1.

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ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — ALISON M. BOND — APR. 27/20 — OALA MEMBER

**SECOND NATURE**
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# PLANTING PLAN

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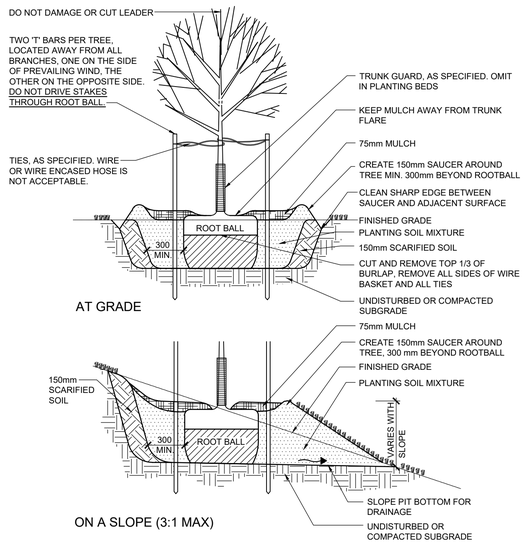
| DRAWN: AJS | DATE: NOV. 21, 2019 | | |

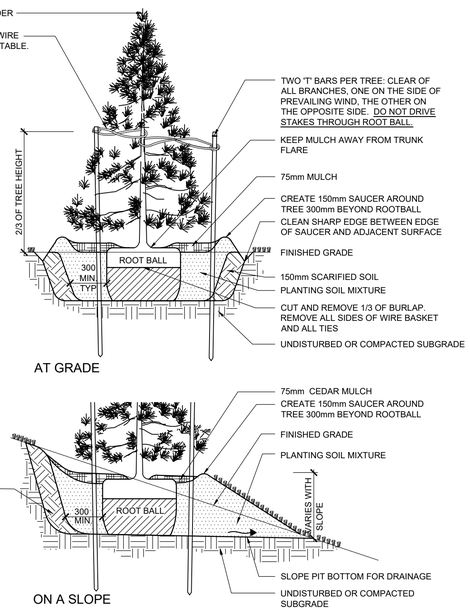



**NOTES**

1. ALL MATERIALS ARE SPECIFIED IN THE GENERAL PLANTING NOTES.
2. DO NOT ALLOW AIR POCKETS WHEN BACKFILLING.
3. POSITION CROWN OF ROOT BALL 75mm ABOVE FINISHED GRADE TO ALLOW FOR SETTLING.
4. CORRECTIVE PRUNE TO RETAIN NATURAL FORM OF TREE AS DIRECTED BY THE LANDSCAPE ARCHITECT, INCLUDING REMOVAL OF DEAD, BROKEN, OR CROSSING BRANCHES. DO NOT REMOVE MORE THAN 20% OF LIVE CANOPY.
5. FOR TREES PLANTED WITHIN PLANTING OR SHRUB BEDS, DELETE SAUCER AROUND BASE OF TREE.
6. NO TREE PITS SHALL BE LEFT OPEN OVERNIGHT.
7. STAKES AND TIES TO BE REMOVED ONE YEAR AFTER PLANTING.

## 1 LD1 DECIDUOUS TREE PLANTING

NTS




**NOTES**

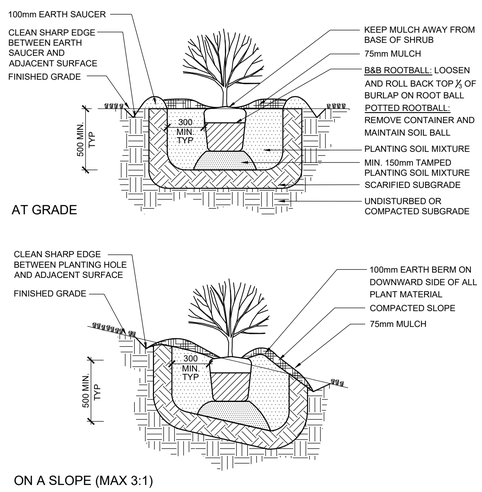
1. ALL MATERIALS ARE AS SPECIFIED IN THE GENERAL PLANTING NOTES.
2. DO NOT ALLOW AIR POCKETS WHEN BACKFILLING.
3. POSITION CROWN OF ROOT BALL 75mm ABOVE FINISHED GRADE TO ALLOW FOR SETTLING.
4. CORRECTIVELY PRUNE TREES AS DIRECTED BY THE LANDSCAPE ARCHITECT, INCLUDING REMOVAL OF DEAD OR BROKEN BRANCHES. DO NOT REMOVE MORE THAN 20% OF LIVE CANOPY. PRUNING TO BE UNDERTAKEN BY ISA CERTIFIED ARBORIST.
5. FOR TREES PLANTED WITHIN PLANTING OR SHRUB BEDS, DELETE SAUCER AROUND BASE OF TREE.
6. NO TREE PITS SHALL BE LEFT OPEN OVERNIGHT.
7. REMOVE STAKES AND TIES ONE YEAR AFTER PLANTING.

## 2 LD1 CONIFEROUS TREE PLANTING

NTS

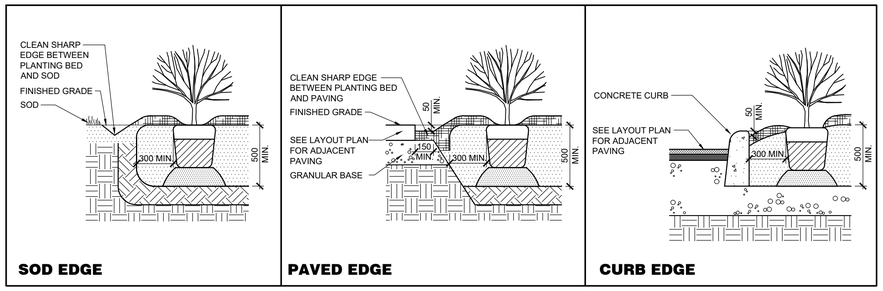
NOTES

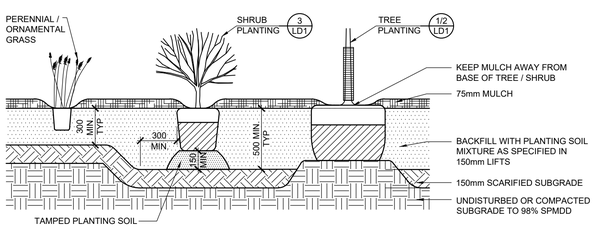
1. ALL MATERIALS ARE SPECIFIED IN THE GENERAL PLANTING NOTES.
2. FOR SHRUBS PLANTED IN SHRUB BEDS, DELETE SAUCER AROUND BASE OF SHRUB.
3. DO NOT ALLOW AIR POCKETS WHEN BACKFILLING.
4. POSITION CROWN OF ROOT BALL 25mm ABOVE FINISH GRADE TO ALLOW FOR SETTLING.




## 3 LD1 SHRUB PLANTING

NTS



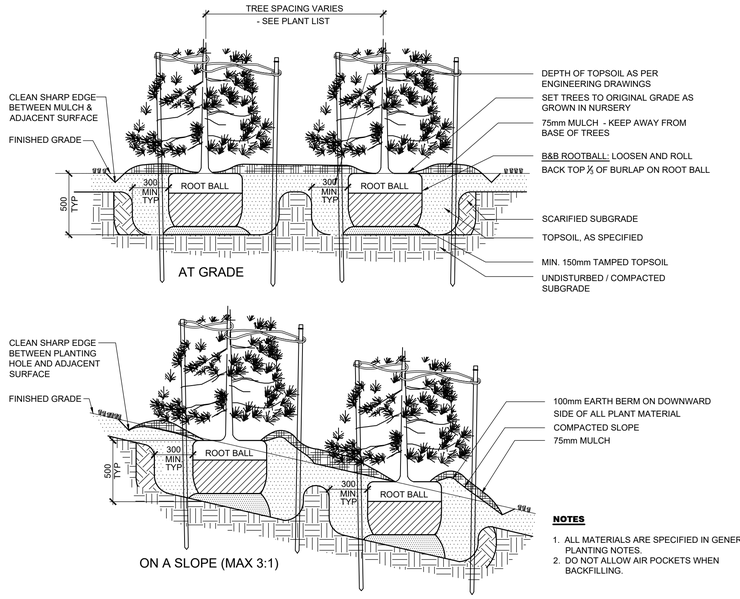




**NOTES**

1. ALL MATERIALS ARE SPECIFIED IN THE GENERAL PLANTING NOTES.
2. DO NOT ALLOW AIR POCKETS WHEN BACKFILLING.
3. ENSURE SOIL SETTLEMENT HAS OCCURRED PRIOR TO MULCHING.
4. PLANTING SOIL DEPTH MAY BE 300mm (MIN.) UNDER PERENNIALS.
5. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND OFFSITE DISPOSAL OF EXCAVATED MATERIAL FROM PLANTING BED CONSTRUCTION.

## 4 LD1 MULCHED PLANTING BED

NTS




**NOTES**

1. ALL MATERIALS ARE SPECIFIED IN GENERAL PLANTING NOTES.
2. DO NOT ALLOW AIR POCKETS WHEN BACKFILLING.

## 5 LD1 CONTINUOUS MULCHED UNDERSTOREY

NTS

## GENERAL NOTES

### 1.0 PLANTING

1. SUPPLY AND INSTALL TREES, SHRUBS AND GROUNDCOVERS IN ACCORDANCE WITH THE APPLICABLE DETAILS AND SPECIFICATIONS.
2. PLANT MATERIAL SHALL BE IN ACCORDANCE WITH THE CANADIAN LANDSCAPE STANDARD (LATEST EDITION), PUBLISHED BY THE CANADIAN NURSERY LANDSCAPE ASSOCIATION AND THE CANADIAN SOCIETY OF LANDSCAPE ARCHITECTS, EXCEPT WHERE SPECIFIED OTHERWISE.
3. ALL PLANTS SHALL BE SUPPLIED AS SPECIFIED IN THE 'PLANT LIST'. SUBSTITUTIONS WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.
4. ALL MATERIALS TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
5. MULCH TO BE SHREDDED CEDAR BARK FREE OF DYES AND CHEMICALS, OR APPROVED EQUAL.
6. PLANTING SOIL MIXTURE SHALL BE TWO PARTS SCREENED TOPSOIL TO ONE PART SCREENED COMPOST WITH BONEMEAL APPLIED AT A RATE OF 0.6KG PER CUBIC METRE, AS SPECIFIED. CONTRACTOR SHALL PROVIDE SOURCE AND SAMPLE OF SOIL MIXTURE, AS SPECIFIED, FOR APPROVAL PRIOR TO COMMENCING WORK.
7. TREE STAKES TO BE 1800mm LONG HEAVY DUTY GAUGE T-BARS.
8. TIES SHALL BE WOVEN POLYPROPYLENE PROPRIETARY TIE SYSTEMS THAT REMAIN FLEXIBLE DURING WINTER MONTHS. 50mm WIDE BURLAP STRIPS LOOPED IN A LOOSE FIGURE 8 AND SECURED WITH WIRE TIES ARE ALSO ACCEPTABLE.
9. TRUNK PROTECTION TO BE 100mm DIA. HDPE PIPE, 500mm LONG OR TO LOWEST BRANCH, EXCEPT IN SWM PONDS AND NATURALIZATION AREAS WHERE IT IS TO BE WHITE SPIRAL PLASTIC TREE GUARD.
10. STAKES AND TIES SHALL BE REMOVED 1 YEAR AFTER PLANTING.
11. TRUNK PROTECTION SHALL BE REMOVED AT COMPLETION OF WARRANTY PERIOD.
12. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND OFFSITE DISPOSAL OF EXCAVATED MATERIAL FROM PLANTING BED CONSTRUCTION AND TREE PIT EXCAVATION.

### 2.0 TOPSOIL & FINISH GRADING

1. ALL TOPSOIL AND FINISH GRADING SHALL BE IN ACCORDANCE WITH OPSS 802, UNLESS OTHERWISE SPECIFIED.
2. SUPPLY, PLACE, FINE GRADE, AND COMPACT SPECIFIED DEPTH OF IMPORTED SCREENED TOPSOIL MEETING THE SPECIFICATIONS FOR 'TOPSOIL' FOR ALL DISTURBED AREAS.
3. TOPSOIL SHALL BE IMPORTED TOPSOIL. PROVIDE SOURCE AND SAMPLE FOR APPROVAL BY CONSULTANT PRIOR TO THE SUPPLY, HAULING OR PLACEMENT. THE APPROVED SOURCE MUST NOT BE CHANGED WITHOUT FURTHER APPROVAL BY THE CONSULTANT.
4. TOPSOIL SHALL BE FRIABLE LOAM, NEITHER HEAVY CLAY NOR MATERIAL OF A VERY LIGHT SANDY NATURE. CONTAINING MINIMUM OF 4% ORGANIC MATTER FOR CLAY LOAMS AND 2% FOR SANDY LOAMS, TO MAXIMUM OF 25% BY VOLUME. TOPSOIL SHALL BE FREE OF SUBSOIL, CLAY LUMPS, ROOTS OVER 25 mm IN DIAMETER, GRASS, TOXIC MATERIALS, STONES, OR FOREIGN OBJECTS, HAVING AN ACIDITY RANGE (PH) OF 5.5 - 7.5 AND BE REASONABLY FREE OF WEEDS. TOPSOIL CONTAINING CRABGRASS, COUCHGRASS, OR OTHER NOXIOUS WEEDS IS NOT ACCEPTABLE. TOPSOIL SHALL BE FRIABLE WHEN MOIST.
5. SCHEDULE PLACING OF TOPSOIL MIXTURE AND FINISH GRADING TO PERMIT SOD AND SEEDING OPERATIONS UNDER OPTIMUM GROWING CONDITIONS.
6. NO WORK SHALL PROCEED IF THE SITE AND SOIL MATERIALS ARE EXCESSIVELY WET.
7. TOPSOIL SHALL BE SPREAD TO A MINIMUM UNIFORM DEPTH OF 150mm FOR ALL GENERAL LANDSCAPE AREAS AND BE 15mm BELOW FINISHED GRADE FOR AREAS TO BE SODDED.
8. ROLL AND COMPACT TOPSOIL TO BETWEEN 83 AND 87% SPMDD, UNLESS OTHERWISE INDICATED.
9. TOLERANCES: ALL TOPSOIL FINISH GRADE SURFACES SHALL ON COMPLETION BE SHAPED TO THE GRADES AND CROSS SECTIONS SPECIFIED WITHIN THE FOLLOWING VERTICAL TOLERANCES OF ESTABLISHED GRADE OVER A 3.0m STRAIGHTEDGE (NOT BE UNIFORMLY HIGH OR LOW):
   1. GENERAL LANDSCAPE AREAS, EMBANKMENTS, DITCHES AND SWALES: +/-25mm
   2. SPORTS FIELDS - BASEBALL DIAMOND OUTFIELD: +/-10mm
10. GRADE TO ELIMINATE ROUGH SPOTS, LOW AND UNEVEN AREAS, AND ENSURE SMOOTH TRANSITIONS AND POSITIVE DRAINAGE. PREPARE LOOSE FRIABLE BED BY MEANS OF CULTIVATION AND SUBSEQUENT RAKING.
11. LEAVE SURFACES SMOOTH, UNIFORM, AND FIRM AGAINST FOOTPRINTS, WITH A FINE, LOOSE TEXTURE BEFORE SOD IS PLACED.
12. SURPLUS/ UNSUITABLE OR CONTAMINATED TOPSOIL OR DELETERIOUS MATERIAL SHALL BE DISPOSED OFF-SITE IN LOCATION APPROVED BY THE CONSULTANT.

### 3.0 SODDING

1. SODDING SHALL BE IN ACCORDANCE WITH OPSS 803, UNLESS OTHERWISE SPECIFIED.
2. SOD SHALL BE NUMBER ONE GRADE TURFGRASS NURSERY SOD WITH A KENTUCKY BLUEGRASS SOD CLASSIFICATION.
3. SOD SHALL BE GROWN AND SOLD IN ACCORDANCE WITH THE 'SPECIFICATIONS FOR TURFGRASS SOD FOR ONTARIO' PUBLISHED BY THE NURSERY SOD GROWERS ASSOCIATION (N.S.G.A.) AND SHALL BE ESPECIALLY SOWN AND CULTIVATED IN NURSERY FIELDS AS TURFGRASS CROP.
4. SODDING MAY BE PERFORMED AT ANY TIME BETWEEN MAY 1ST AND NOVEMBER 15TH.
5. SOD SHALL BE DELIVERED TO SITE WITHIN 24 HOURS OF BEING LIFTED IN COMPLETE ROLLS. SMALL IRREGULAR OR BROKEN PIECES OF SOD WILL NOT BE ACCEPTED.
6. LAY SOD WITHIN 36 HOURS OF BEING LIFTED OR WITHIN 24 HOURS OF BEING LIFTED IF AIR TEMPERATURE EXCEEDS 20°.
7. DURING WET WEATHER ALLOW SOD TO DRY SUFFICIENTLY TO PREVENT TEARING DURING LIFTING AND HANDLING.
8. DURING DRY WEATHER, PROTECT SOD FROM DRYING OUT AND WATER SOD AS NECESSARY TO ENSURE ITS VITALITY AND PREVENT DROPPING OF SOIL IN HANDLING. DRY SOD WILL BE REJECTED.
9. LAY SOD SECTIONS IN ROWS WITH JOINTS STAGGERED. BUTT SECTIONS CLOSELY WITHOUT OVERLAPPING OR LEAVING GAPS OR OPEN JOINTS BETWEEN SECTIONS. CUT OUT IRREGULAR OR THIN SECTIONS WITH SHARP IMPLEMENTS.
10. ENSURE FINISHED SOD SURFACE IS FLUSH WITH ADJOINING GRASS AREAS, PAVEMENT OR TOP SURFACE OF CURBS.
11. LAY SOD SECTIONS LONGITUDINALLY ALONG CONTOURS OF SLOPES AND START LAYING SOD AT BOTTOM OF SLOPES.
12. PEG SOD ON SLOPES STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL, 100mm BELOW TOP EDGE AT 200mm ON CENTRE FOR FIRST SOD SECTIONS ALONG CONTOURS OF SLOPES AND NOT LESS THAN 4 PEGS PER SQUARE METRE WITH PEGS DRIVEN TO 50 MM ABOVE SOIL SURFACE OF SOD SECTIONS.
13. SOD STAKING SHALL BE WITH WOODEN PEGS AT 17 X 8 X 200mm, OR APPROVED EQUAL.
14. WATER SOD IMMEDIATELY AFTER LAYING TO OBTAIN MOISTURE PENETRATION INTO TOP 100mm OF TOPSOIL.
15. PROVIDE CLOSE CONTACT BETWEEN THE SOD AND THE UNDERLYING ROOT ZONE MIX BY ROLLING WITH A LIGHT ROLLER. IMPERFECTIONS IN THE SURFACE LEVEL SHOULD BE CORRECTED PRIOR TO THE LAYING OF THE SOD AND NOT BY ROLLING WITH A HEAVY ROLLER. USE OF HEAVY ROLLER TO CORRECT IRREGULARITIES TO GRADE IS NOT PERMITTED.
16. MAINTENANCE DURING THE ESTABLISHMENT PERIOD SHALL CONSIST OF BUT NOT BE LIMITED TO WATERING IN SUFFICIENT QUANTITIES AND AT REQUIRED FREQUENCY TO MAINTAIN CONTINUOUS SUBSOIL MOISTURE IMMEDIATELY UNDER SOD TO A DEPTH OF 75-100mm, ROLLING TO REMOVE MINOR DEPRESSIONS OR IRREGULARITIES, WEED CONTROL TO ENSURE THAT NON-SPECIFIED VEGETATION SHALL NOT EXCEED 5%, AND MOWING AT LEAST TWICE TO MAINTAIN GRASS AT A 40mm HEIGHT (AFTER GRASS REACHED 60mm HEIGHT).
17. REMOVE WOODEN SOD PEGS AFTER SOD HAS ESTABLISHED WITH APPROVAL OF THE CONSULTANT.

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APPROVED

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — ALISON M. BOND — APR. 27/20 — OALA MEMBER

**SECOND NATURE**
**BLOCK 152**
**TOWN OF THE BLUE MOUNTAINS**

**LANDSCAPE DETAILS**


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| | | | |
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