



**SANITARY SEWER DESIGN SHEET**  
**ULTIMATE CONDITIONS**  
**DERRY BRITANNIA DEVELOPMENTS LTD.**  
**CITY OF MISSISSAUGA, REGION OF PEEL**

**PROJECT DETAILS**  
  
**Project No: 20-652**  
**Date: 14-Apr-23**  
**Designed by: TL**  
**Checked by: SR**

**DESIGN CRITERIA**

|                                 |  |
|---------------------------------|--|
| <b>Min. Flow = 13 l/s</b>       | <b>Avg. Domestic Flow = 302.8 l/c/d</b>                              |
| <b>Min Diameter = 250 mm</b>    | <b>Infiltration = 0.200 l/s/ha</b>                                   |
| <b>Mannings 'n' = 0.013</b>     | <b>Max. Peaking Factor = 4.00</b>                                    |
| <b>Min. Velocity = 0.75 m/s</b> | <b>Min. Peaking Factor = 1.50</b>                                    |
| <b>Max. Velocity = 3.50 m/s</b> | <b>Domestic Sewage flow for &lt; 1000 ppl = 0.013m<sup>3</sup>/s</b> |
| <b>Factor of Safety = 20 %</b>  | <b>(Region of Peel Std. 2-5-2)</b>                                   |

**NOMINAL PIPE SIZE USED**

| STREET                | FROM MH  | TO MH   | RESIDENTIAL |                |           |                |                  |      |                  | COMMERCIAL/INDUSTRIAL/INSTITUTIONAL |                |                    |                    |             |                    |                    | FLOW CALCULATIONS |                |                 |                      |                  |                         |                  | PIPE DATA |                    |                          |                          |                       |                  |     |
|-----------------------|----------|---------|-------------|----------------|-----------|----------------|------------------|------|------------------|-------------------------------------|----------------|--------------------|--------------------|-------------|--------------------|--------------------|-------------------|----------------|-----------------|----------------------|------------------|-------------------------|------------------|-----------|--------------------|--------------------------|--------------------------|-----------------------|------------------|-----|
|                       |          |         | AREA (ha)   | ACC. AREA (ha) | UNITS (#) | DENISTY (P/ha) | DENSITY (P/unit) | POP  | ACCUM. RES. POP. | AREA (ha)                           | ACC. AREA (ha) | EQUIV. POP. (p/ha) | FLOW RATE (l/s/ha) | EQUIV. POP. | ACCUM. EQUIV. POP. | INFILTRATION (l/s) | TOTAL ACCUM. POP. | PEAKING FACTOR | RES. FLOW (l/s) | MIN. RES. FLOW (l/s) | COMM. FLOW (l/s) | ACCUM. COMM. FLOW (l/s) | TOTAL FLOW (l/s) | SLOPE (%) | PIPE DIAMETER (mm) | FULL FLOW CAPACITY (l/s) | FULL FLOW VELOCITY (m/s) | ACTUAL VELOCITY (m/s) | PERCENT FULL (%) |     |
| EXTERNAL - NINTH LINE | EX. 100  | 1A      | 31.40       | 31.40          |           |                |                  | 2565 | 2565             |                                     |                |                    |                    |             |                    |                    | 6.3               | 2565           | 3.50            | 31.5                 | 31.5             |                         |                  | 37.7      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.78             | 39% |
| STREET A              | 1A       | 2A      |             | 31.40          | 15        |                | 3.4              | 51   | 2616             |                                     |                |                    |                    |             |                    |                    | 6.3               | 2616           | 3.49            | 32.0                 | 32.0             |                         |                  | 38.3      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.81             | 40% |
| STREET A - PARK       | 2A       | 3A      | 0.76        | 32.16          |           |                |                  |      | 2616             |                                     |                |                    |                    |             |                    |                    | 6.4               | 2616           | 3.49            | 32.0                 | 32.0             |                         |                  | 38.4      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.81             | 40% |
| FUTURE RES            |          | 3A      |             |                | 25        |                | 3.4              | 85   | 85               |                                     |                |                    |                    |             |                    |                    |                   | 85             | 4.00            | 1.2                  | 13.0             |                         |                  | 13.0      |                    |                          |                          |                       |                  |     |
| STREET A              | 3A       | 4A      |             | 32.16          | 30        |                | 3.4              | 102  | 2803             |                                     |                |                    |                    |             |                    |                    | 6.4               | 2803           | 3.47            | 34.1                 | 34.1             |                         |                  | 40.5      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.81             | 42% |
| STREET A              | 4A       | 5A      |             | 32.16          |           |                |                  |      | 2803             |                                     |                |                    |                    |             |                    |                    | 6.4               | 2803           | 3.47            | 34.1                 | 34.1             |                         |                  | 40.5      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.81             | 42% |
| STREET A              | 5A       | 6A      |             | 32.16          |           |                |                  |      | 2803             |                                     |                |                    |                    |             |                    |                    | 6.4               | 2803           | 3.47            | 34.1                 | 34.1             |                         |                  | 40.5      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.81             | 42% |
| STREET A              | 6A       | 7A      |             | 32.16          |           |                |                  |      | 2803             |                                     |                |                    |                    |             |                    |                    | 6.4               | 2803           | 3.47            | 34.1                 | 34.1             |                         |                  | 40.5      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.81             | 42% |
| FUTURE RES            | CTRL 1A  | 7A      |             |                | 36        |                | 3.4              | 122  | 122              |                                     |                |                    |                    |             |                    |                    |                   | 122            | 4.00            | 1.7                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 7A       | 8A      | 0.08        | 32.24          |           |                |                  |      | 2925             |                                     |                |                    |                    |             |                    |                    | 6.4               | 2925           | 3.45            | 35.4                 | 35.4             |                         |                  | 41.8      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.81             | 44% |
| CONDO ROAD G          |          | CTRL 2A |             |                | 27        |                | 4.2              | 113  | 113              |                                     |                |                    |                    |             |                    |                    |                   | 113            | 4.00            | 1.6                  | 13.0             |                         |                  | 13.0      |                    |                          |                          |                       |                  |     |
| CONDO ROAD G          | CTRL 2A  | 8A      |             |                | 115       |                | 3.4              | 391  | 504              |                                     |                |                    |                    |             |                    |                    |                   | 504            | 3.97            | 7.0                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 8A       | 9A      | 0.15        | 32.39          |           |                |                  |      | 3429             |                                     |                |                    |                    |             |                    |                    | 6.5               | 3429           | 3.39            | 40.8                 | 40.8             |                         |                  | 47.2      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.83             | 49% |
| BLOCK 8N              | CTRL 3A  | 9A      |             |                | 146       |                | 1.7              | 248  | 248              |                                     |                |                    |                    |             |                    |                    |                   | 248            | 4.00            | 3.5                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 9A       | 90A     | 0.50        | 32.89          |           |                |                  |      | 3677             |                                     |                |                    |                    |             |                    |                    | 6.6               | 3677           | 3.37            | 43.4                 | 43.4             |                         |                  | 50.0      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.86             | 52% |
| FUT CONDO BLOCK       | CTRL 16A | 91A     |             |                | 179       |                | 3.1              | 555  | 555              |                                     |                |                    |                    |             |                    |                    |                   | 555            | 3.95            | 7.7                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| FUT. CONDO BLOCK      | CTRL 17A | 91A     |             |                | 179       |                | 3.1              | 555  | 555              |                                     |                |                    |                    |             |                    |                    |                   | 555            | 3.95            | 7.7                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET B              | 91A      | 90A     |             |                |           |                |                  |      | 1110             |                                     |                |                    |                    |             |                    |                    |                   | 1110           | 3.77            | 14.7                 | 14.7             |                         |                  | 14.7      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.77             | 35% |
| STREET A              | 90A      | 10A     |             | 32.89          |           |                |                  |      | 4787             |                                     |                |                    |                    |             |                    |                    | 6.6               | 4787           | 3.26            | 54.7                 | 54.7             |                         |                  | 61.3      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.90             | 64% |
| BLOCK 13S             | CTRL 4A  | 10A     |             |                | 146       |                | 1.7              | 248  | 248              |                                     |                |                    |                    |             |                    |                    |                   | 248            | 4.00            | 3.5                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 10A      | 11A     | 0.43        | 33.32          |           |                |                  |      | 5035             |                                     |                |                    |                    |             |                    |                    | 6.7               | 5035           | 3.24            | 57.2                 | 57.2             |                         |                  | 63.9      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.91             | 67% |
| CONDO ROAD J          | CTRL 5A  | 11A     |             |                | 118       |                | 3.4              | 401  | 401              |                                     |                |                    |                    |             |                    |                    |                   | 401            | 4.00            | 5.6                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 11A      | 12A     |             | 33.32          |           |                |                  |      | 5436             |                                     |                |                    |                    |             |                    |                    | 6.7               | 5436           | 3.21            | 61.2                 | 61.2             |                         |                  | 67.8      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.93             | 71% |
| CONDO ROAD J          | CTRL 6A  | 12A     |             |                | 14        |                | 3.4              | 48   | 48               |                                     |                |                    |                    |             |                    |                    |                   | 48             | 4.00            | 0.7                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 12A      | 13A     |             | 33.32          |           |                |                  |      | 5484             |                                     |                |                    |                    |             |                    |                    | 6.7               | 5484           | 3.21            | 61.6                 | 61.6             |                         |                  | 68.3      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.93             | 71% |
| CONDO ROAD L          | CTRL 7A  | 13A     |             |                | 53        |                | 3.4              | 180  | 180              |                                     |                |                    |                    |             |                    |                    |                   | 180            | 4.00            | 2.5                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 13A      | 14A     |             | 33.32          |           |                |                  |      | 5664             |                                     |                |                    |                    |             |                    |                    | 6.7               | 5664           | 3.19            | 63.4                 | 63.4             |                         |                  | 70.1      | 0.30               | 375                      | 96.0                     | 0.87                  | 0.93             | 73% |
| ELEMENTARY SCHOOL     | CTRL 8A  | 14A     |             |                |           |                |                  | 450  | 450              | 2.83                                | 2.83           |                    |                    |             |                    |                    | 0.6               | 450            | 4.00            | 6.3                  | 13.0             |                         |                  | 13.6      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 32% |
| CONDO ROAD K          | CTRL 9A  | 14A     |             |                | 27        |                | 3.4              | 92   | 92               |                                     |                |                    |                    |             |                    |                    |                   | 92             | 4.00            | 1.3                  | 13.0             |                         |                  | 13.0      | 0.50               | 250                      | 42.0                     | 0.86                  | 0.75             | 31% |
| STREET A              | 14A      | 15A     | 0.58        | 33.90          |           |                |                  |      | 6206             |                                     | 2.83           |                    |                    |             |                    |                    | 7.3               | 6206           | 3.16            | 68.7                 | 68.7             |                         |                  | 76.0      | 0.20               | 450                      | 127.5                    | 0.80                  | 0.83             | 60% |

| STREET              | FROM MH  | TO MH  | RESIDENTIAL |                |           |                |                  |       |                  | COMMERCIAL/INDUSTRIAL/INSTITUTIONAL |                |                    |                    |             |                    | FLOW CALCULATIONS  |                   |                |                 |                      |                  |                         | PIPE DATA        |           |                    |                          |                          |                       |                  |     |
|---------------------|----------|--------|-------------|----------------|-----------|----------------|------------------|-------|------------------|-------------------------------------|----------------|--------------------|--------------------|-------------|--------------------|--------------------|-------------------|----------------|-----------------|----------------------|------------------|-------------------------|------------------|-----------|--------------------|--------------------------|--------------------------|-----------------------|------------------|-----|
|                     |          |        | AREA (ha)   | ACC. AREA (ha) | UNITS (#) | DENISTY (P/ha) | DENSITY (P/unit) | POP   | ACCUM. RES. POP. | AREA (ha)                           | ACC. AREA (ha) | EQUIV. POP. (p/ha) | FLOW RATE (l/s/ha) | EQUIV. POP. | ACCUM. EQUIV. POP. | INFILTRATION (l/s) | TOTAL ACCUM. POP. | PEAKING FACTOR | RES. FLOW (l/s) | MIN. RES. FLOW (l/s) | COMM. FLOW (l/s) | ACCUM. COMM. FLOW (l/s) | TOTAL FLOW (l/s) | SLOPE (%) | PIPE DIAMETER (mm) | FULL FLOW CAPACITY (l/s) | FULL FLOW VELOCITY (m/s) | ACTUAL VELOCITY (m/s) | PERCENT FULL (%) |     |
| STREET A            | 15A      | 16A    |             | 33.90          |           |                |                  |       | 6206             |                                     | 2.83           |                    |                    |             |                    |                    | 7.3               | 6206           | 3.16            | 68.7                 | 68.7             |                         |                  | 76.0      | 0.20               | 450                      | 127.5                    | 0.80                  | 0.83             | 60% |
| STREET A            | 16A      | 17A    | 1.36        | 35.26          |           |                |                  |       | 6206             |                                     | 2.83           |                    |                    |             |                    | 7.6                | 6206              | 3.16           | 68.7            | 68.7                 |                  |                         | 76.3             | 0.20      | 450                | 127.5                    | 0.80                     | 0.83                  | 60%              |     |
| STREET A            | 17A      | 18A    | 0.13        | 35.39          |           |                |                  |       | 6206             |                                     | 2.83           |                    |                    |             |                    | 7.6                | 6206              | 3.16           | 68.7            | 68.7                 |                  |                         | 76.3             | 0.20      | 450                | 127.5                    | 0.80                     | 0.83                  | 60%              |     |
| CONDO ROAD O        | CTRL 11A | 18A    |             |                | 48        |                | 3.4              | 163   | 163              |                                     |                |                    |                    |             |                    |                    | 163               | 4.00           | 2.3             | 13.0                 |                  |                         | 13.0             | 0.50      | 250                | 42.0                     | 0.86                     | 0.75                  | 31%              |     |
| STREET A            | 18A      | 19A    | 0.14        | 35.53          |           |                |                  |       | 6369             |                                     | 2.83           |                    |                    |             |                    | 7.7                | 6369              | 3.15           | 70.2            | 70.2                 |                  |                         | 77.9             | 0.20      | 450                | 127.5                    | 0.80                     | 0.83                  | 61%              |     |
| CONDO ROAD P        | CTRL 12A | 19A    |             |                | 69        |                | 3.4              | 235   | 235              |                                     |                |                    |                    |             |                    |                    | 235               | 4.00           | 3.3             | 13.0                 |                  |                         | 13.0             | 0.50      | 250                | 42.0                     | 0.86                     | 0.75                  | 31%              |     |
| STREET A            | 19A      | 20A    |             | 35.53          | 26        |                | 3.4              | 89    | 6693             |                                     | 2.83           |                    |                    |             |                    | 7.7                | 6693              | 3.13           | 73.3            | 73.3                 |                  |                         | 81.0             | 0.20      | 450                | 127.5                    | 0.80                     | 0.83                  | 64%              |     |
| STREET A            | 20A      | 21A    |             | 35.53          |           |                |                  |       | 6693             |                                     | 2.83           |                    |                    |             |                    | 7.7                | 6693              | 3.13           | 73.3            | 73.3                 |                  |                         | 81.0             | 0.20      | 450                | 127.5                    | 0.80                     | 0.83                  | 64%              |     |
| WALKWAY BLOCK       | CTRL 13A | 21A    |             |                | 96        |                | 3.4              | 326   | 326              |                                     |                |                    |                    |             |                    |                    | 326               | 4.00           | 4.6             | 13.0                 |                  |                         | 13.0             | 0.50      | 250                | 42.0                     | 0.86                     | 0.75                  | 31%              |     |
| STREET A            | 21A      | 22A    |             | 35.53          | 26        |                | 3.4              | 89    | 7108             |                                     | 2.83           |                    |                    |             |                    | 7.7                | 7108              | 3.10           | 77.2            | 77.2                 |                  |                         | 84.9             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 67%              |     |
| STREET A            | 22A      | 23A    |             | 35.53          |           |                |                  |       | 7108             |                                     | 2.83           |                    |                    |             |                    | 7.7                | 7108              | 3.10           | 77.2            | 77.2                 |                  |                         | 84.9             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 67%              |     |
| CONDO ROAD R        | CTRL 14A | 23A    |             |                | 38        |                | 3.4              | 129   | 129              |                                     |                |                    |                    |             |                    |                    | 129               | 4.00           | 1.8             | 13.0                 |                  |                         | 13.0             | 0.50      | 250                | 42.0                     | 0.86                     | 0.75                  | 31%              |     |
| STREET A            | 23A      | 24A    | 0.12        | 35.65          |           |                |                  |       | 7237             |                                     | 2.83           |                    |                    |             |                    | 7.7                | 7237              | 3.09           | 78.4            | 78.4                 |                  |                         | 86.1             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 68%              |     |
| CONDO ROAD S        | CTRL 15A | 24A    |             |                | 67        |                | 3.4              | 228   | 228              |                                     |                |                    |                    |             |                    |                    | 228               | 4.00           | 3.2             | 13.0                 |                  |                         | 13.0             | 0.50      | 250                | 42.0                     | 0.86                     | 0.75                  | 31%              |     |
| STREET A            | 24A      | 25A    | 0.42        | 36.07          |           |                |                  |       | 7465             |                                     | 2.83           |                    |                    |             |                    | 7.8                | 7465              | 3.08           | 80.6            | 80.6                 |                  |                         | 88.3             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 69%              |     |
| STREET A            | 25A      | 26A    |             | 36.07          |           |                |                  |       | 7465             |                                     | 2.83           |                    |                    |             |                    | 7.8                | 7465              | 3.08           | 80.6            | 80.6                 |                  |                         | 88.3             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 69%              |     |
| STREET A            | 26A      | 27A    |             | 36.07          |           |                |                  |       | 7465             |                                     | 2.83           |                    |                    |             |                    | 7.8                | 7465              | 3.08           | 80.6            | 80.6                 |                  |                         | 88.3             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 69%              |     |
| STREET A            | 27A      | 28A    |             | 36.07          |           |                |                  |       | 7465             |                                     | 2.83           |                    |                    |             |                    | 7.8                | 7465              | 3.08           | 80.6            | 80.6                 |                  |                         | 88.3             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 69%              |     |
| NINTH LINE          | 28A      | 29A    |             | 36.07          |           |                |                  |       | 7465             |                                     | 2.83           |                    |                    |             |                    | 7.8                | 7465              | 3.08           | 80.6            | 80.6                 |                  |                         | 88.3             | 0.20      | 450                | 127.5                    | 0.80                     | 0.84                  | 69%              |     |
| EXISTING NINTH LINE | A        | 29A    |             |                |           |                |                  | 10750 | 10750            |                                     |                |                    |                    |             |                    |                    | 10750             | 2.92           | 110.1           | 110.1                |                  |                         | 110.1            | 0.15      | 450                | 110.4                    | 0.69                     | 0.79                  | 100%             |     |
| NINTH LINE          | 29A      | 30A    |             | 36.07          |           |                |                  |       | 18215            |                                     | 2.83           |                    |                    |             |                    | 7.8                | 18215             | 2.69           | 171.9           | 171.9                |                  |                         | 179.7            | 0.15      | 600                | 237.8                    | 0.84                     | 0.92                  | 76%              |     |
| NINTH LINE          | 30A      | EX. MH |             | 36.07          |           |                |                  |       | 18215            |                                     | 2.83           |                    |                    |             |                    | 7.8                | 18215             | 2.69           | 171.9           | 171.9                |                  |                         | 179.7            | 0.15      | 600                | 237.8                    | 0.84                     | 0.92                  | 76%              |     |