

### Design Settings

|                       |                   |                                      |               |
|-----------------------|-------------------|--------------------------------------|---------------|
| Rainfall Methodology  | FSR               | Maximum Time of Concentration (mins) | 30.00         |
| Return Period (years) | 2                 | Maximum Rainfall (mm/hr)             | 0.0           |
| Additional Flow (%)   | 0                 | Minimum Velocity (m/s)               | 1.00          |
| FSR Region            | England and Wales | Connection Type                      | Level Soffits |
| M5-60 (mm)            | 20.000            | Minimum Backdrop Height (m)          | 9.900         |
| Ratio-R               | 0.400             | Preferred Cover Depth (m)            | 1.500         |
| CV                    | 0.750             | Include Intermediate Ground          | ✓             |
| Time of Entry (mins)  | 5.00              | Enforce best practice design rules   | ✓             |

### Nodes

| Name | Area<br>(ha) | T of E<br>(mins) | Cover<br>Level<br>(m) | Diameter<br>(mm) | Easting<br>(m) | Northing<br>(m) | Depth<br>(m) |
|------|--------------|------------------|-----------------------|------------------|----------------|-----------------|--------------|
| 1    | 0.058        | 5.00             | 127.094               | 1500             | 444485.781     | 303189.608      | 1.667        |
| 2    | 0.154        | 5.00             | 126.571               | 1200             | 444479.395     | 303210.152      | 1.725        |
| 3    | 0.133        | 5.00             | 125.862               | 1500             | 444471.061     | 303238.171      | 1.462        |
| 4    | 0.011        | 5.00             | 125.667               | 1500             | 444468.767     | 303245.883      | 1.367        |
| 5    |              |                  | 125.620               | 1500             | 444483.379     | 303249.457      | 1.370        |
| 6    |              |                  | 125.650               | 1500             | 444525.141     | 303232.212      | 1.550        |
| 29   | 0.083        | 5.00             | 126.070               | 1200             | 444541.643     | 303203.190      | 1.502        |
| 7    | 0.032        | 5.00             | 125.300               | 1500             | 444546.879     | 303222.872      | 1.300        |
| 8    | 0.108        | 5.00             | 125.300               | 1500             | 444603.384     | 303207.131      | 1.730        |
| 30   | 0.085        | 5.00             | 125.494               | 1200             | 444631.274     | 303178.732      | 1.694        |
| 9    | 0.027        | 5.00             | 124.896               | 1500             | 444634.455     | 303202.730      | 1.424        |
| 10   | 0.066        | 5.00             | 124.609               | 1500             | 444637.537     | 303216.972      | 1.183        |
| 11   | 0.065        | 5.00             | 124.800               | 1500             | 444656.504     | 303212.856      | 1.435        |
| 14   | 0.103        | 5.00             | 129.125               | 1500             | 444428.409     | 303143.683      | 1.845        |
| 15   | 0.030        | 5.00             | 129.124               | 1200             | 444460.760     | 303140.872      | 2.040        |
| 16   | 0.102        | 5.00             | 128.943               | 1200             | 444467.587     | 303142.714      | 1.901        |
| 17   | 0.109        | 5.00             | 127.804               | 1200             | 444497.955     | 303165.221      | 2.033        |
| 18   | 0.016        | 5.00             | 127.400               | 1200             | 444514.760     | 303171.825      | 1.977        |
| 19   | 0.036        | 5.00             | 127.200               | 1200             | 444532.838     | 303170.093      | 1.876        |
| 31   | 0.089        | 5.00             | 128.330               | 1200             | 444533.630     | 303118.685      | 1.603        |
| 32   | 0.104        | 5.00             | 127.696               | 1200             | 444540.028     | 303138.871      | 2.335        |
| 20   | 0.117        | 5.00             | 127.030               | 1200             | 444548.594     | 303165.897      | 1.986        |
| 21   | 0.111        | 5.00             | 126.486               | 1200             | 444594.569     | 303153.726      | 1.800        |
| 22   | 0.074        | 5.00             | 126.320               | 1200             | 444611.276     | 303151.478      | 1.803        |
| 23   | 0.024        | 5.00             | 126.210               | 1500             | 444629.731     | 303151.977      | 1.985        |
| 24   | 0.042        | 5.00             | 125.822               | 1500             | 444667.738     | 303153.224      | 1.992        |
| 25   | 0.222        | 5.00             | 125.470               | 1500             | 444685.200     | 303149.460      | 1.770        |
| 35   | 0.085        | 5.00             | 129.230               | 1200             | 444486.946     | 303073.647      | 1.677        |
| 36   | 0.045        | 5.00             | 129.045               | 1200             | 444500.876     | 303075.127      | 1.732        |
| 37   | 0.085        | 5.00             | 128.730               | 1200             | 444522.806     | 303074.452      | 1.948        |
| 38   | 0.234        | 5.00             | 127.872               | 1200             | 444585.696     | 303071.197      | 1.725        |
| 39   | 0.029        | 5.00             | 127.679               | 1200             | 444604.609     | 303073.736      | 1.800        |
| 40   | 0.008        | 5.00             | 127.620               | 1200             | 444612.845     | 303080.832      | 1.831        |
| 41   | 0.117        | 5.00             | 127.550               | 1200             | 444619.154     | 303087.998      | 2.058        |
| 42   | 0.014        | 5.00             | 127.075               | 1200             | 444642.770     | 303080.688      | 1.876        |
| 43   | 0.013        | 5.00             | 126.750               | 1200             | 444660.579     | 303073.653      | 1.886        |
| 44   | 0.080        | 5.00             | 126.520               | 1200             | 444671.451     | 303071.131      | 1.800        |
| 48   | 0.012        | 5.00             | 129.120               | 1500             | 444482.776     | 303054.115      | 1.763        |
| 50   | 0.082        | 5.00             | 128.863               | 1200             | 444482.218     | 303027.542      | 1.921        |
| 51   | 0.009        | 5.00             | 128.725               | 1200             | 444490.127     | 303018.649      | 1.979        |
| 52   | 0.011        | 5.00             | 128.618               | 1200             | 444499.726     | 303015.460      | 1.915        |

### Nodes

| Name | Area<br>(ha) | T of E<br>(mins) | Cover<br>Level<br>(m) | Diameter<br>(mm) | Easting<br>(m) | Northing<br>(m) | Depth<br>(m) |
|------|--------------|------------------|-----------------------|------------------|----------------|-----------------|--------------|
| 53   | 0.059        | 5.00             | 128.243               | 1200             | 444536.426     | 303013.682      | 1.926        |
| 54   | 0.025        | 5.00             | 128.050               | 1200             | 444563.169     | 303016.054      | 1.997        |
| 55   | 0.097        | 5.00             | 127.600               | 1200             | 444600.463     | 303014.284      | 1.986        |
| 60   | 0.088        | 5.00             | 127.250               | 1500             | 444611.895     | 303051.790      | 1.577        |
| 56   | 0.041        | 5.00             | 127.480               | 1200             | 444609.468     | 303018.844      | 2.079        |
| 57   | 0.052        | 5.00             | 126.865               | 1500             | 444622.809     | 303010.871      | 1.984        |
| 58   | 0.048        | 5.00             | 126.827               | 1500             | 444669.160     | 303011.875      | 2.051        |
| 59   |              |                  | 126.488               | 1500             | 444677.679     | 303042.183      | 1.988        |
| 45   |              |                  | 126.112               | 1500             | 444688.472     | 303061.997      | 1.712        |
| 46   |              |                  | 125.500               | 1500             | 444697.607     | 303068.968      | 1.400        |
| 47   |              |                  | 125.500               | 1500             | 444708.811     | 303116.704      | 1.500        |
| 26   | 0.041        | 5.00             | 125.200               | 1500             | 444717.046     | 303132.090      | 1.950        |
| 27   |              |                  | 124.550               | 1500             | 444722.039     | 303147.899      | 1.400        |
| 28   |              |                  | 124.550               | 1500             | 444712.403     | 303178.518      | 1.500        |
| 12   |              |                  | 124.550               | 1500             | 444688.754     | 303229.478      | 1.598        |
| 13   |              |                  | 123.740               | 1500             | 444690.490     | 303237.624      | 0.800        |
| 47a  |              |                  | 125.500               | 1500             | 444704.749     | 303125.200      | 1.600        |

### Links

| Name  | US<br>Node | DS<br>Node | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
|-------|------------|------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| 1.000 | 1          | 2          | 21.514        | 0.600          | 125.427      | 124.846      | 0.581       | 37.0           | 225         | 5.17             | 0.0             |
| 1.001 | 2          | 3          | 29.232        | 0.600          | 124.846      | 124.400      | 0.446       | 65.5           | 225         | 5.47             | 0.0             |
| 1.002 | 3          | 4          | 8.046         | 0.600          | 124.400      | 124.300      | 0.100       | 80.5           | 225         | 5.56             | 0.0             |
| 1.003 | 4          | 5          | 15.043        | 0.600          | 124.300      | 124.250      | 0.050       | 300.9          | 375         | 5.80             | 0.0             |
| 1.004 | 5          | 6          | 45.182        | 0.600          | 124.250      | 124.100      | 0.150       | 301.2          | 375         | 6.53             | 0.0             |
| 1.005 | 6          | 7          | 23.660        | 0.600          | 124.100      | 124.000      | 0.100       | 236.6          | 375         | 6.86             | 0.0             |
| 3.000 | 29         | 7          | 20.367        | 0.600          | 124.568      | 124.000      | 0.568       | 35.9           | 225         | 5.15             | 0.0             |
| 1.006 | 7          | 8          | 58.657        | 0.600          | 124.000      | 123.645      | 0.355       | 165.2          | 375         | 7.56             | 0.0             |
| 1.007 | 8          | 9          | 31.381        | 0.600          | 123.570      | 123.472      | 0.098       | 320.2          | 450         | 8.02             | 0.0             |
| 4.000 | 30         | 9          | 24.208        | 0.600          | 123.800      | 123.697      | 0.103       | 235.0          | 225         | 5.48             | 0.0             |
| 1.008 | 9          | 10         | 14.572        | 0.600          | 123.472      | 123.426      | 0.046       | 316.8          | 450         | 8.23             | 0.0             |
| 1.009 | 10         | 11         | 19.408        | 0.600          | 123.426      | 123.365      | 0.061       | 318.2          | 450         | 8.52             | 0.0             |
| 1.010 | 11         | 12         | 36.282        | 0.600          | 123.365      | 123.165      | 0.200       | 181.4          | 450         | 8.92             | 0.0             |

| Name  | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) | Pro<br>Depth<br>(mm) | Pro<br>Velocity<br>(m/s) |
|-------|--------------|--------------|---------------|--------------------|--------------------|----------------|--------------------------|----------------------|--------------------------|
| 1.000 | 2.156        | 85.7         | 0.0           | 1.442              | 1.500              | 0.058          | 0.0                      | 0                    | 0.000                    |
| 1.001 | 1.618        | 64.3         | 0.0           | 1.500              | 1.237              | 0.212          | 0.0                      | 0                    | 0.000                    |
| 1.002 | 1.459        | 58.0         | 0.0           | 1.237              | 1.142              | 0.345          | 0.0                      | 0                    | 0.000                    |
| 1.003 | 1.039        | 114.8        | 0.0           | 0.992              | 0.995              | 0.356          | 0.0                      | 0                    | 0.000                    |
| 1.004 | 1.038        | 114.7        | 0.0           | 0.995              | 1.175              | 0.356          | 0.0                      | 0                    | 0.000                    |
| 1.005 | 1.173        | 129.6        | 0.0           | 1.175              | 0.925              | 0.356          | 0.0                      | 0                    | 0.000                    |
| 3.000 | 2.191        | 87.1         | 0.0           | 1.277              | 1.075              | 0.083          | 0.0                      | 0                    | 0.000                    |
| 1.006 | 1.407        | 155.3        | 0.0           | 0.925              | 1.280              | 0.471          | 0.0                      | 0                    | 0.000                    |
| 1.007 | 1.130        | 179.8        | 0.0           | 1.280              | 0.974              | 0.579          | 0.0                      | 0                    | 0.000                    |
| 4.000 | 0.848        | 33.7         | 0.0           | 1.469              | 0.974              | 0.085          | 0.0                      | 0                    | 0.000                    |
| 1.008 | 1.137        | 180.8        | 0.0           | 0.974              | 0.733              | 0.691          | 0.0                      | 0                    | 0.000                    |
| 1.009 | 1.134        | 180.4        | 0.0           | 0.733              | 0.985              | 0.757          | 0.0                      | 0                    | 0.000                    |
| 1.010 | 1.506        | 239.5        | 0.0           | 0.985              | 0.935              | 0.822          | 0.0                      | 0                    | 0.000                    |

Links

| Name  | US<br>Node | DS<br>Node | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
|-------|------------|------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| 2.000 | 14         | 15         | 32.473        | 0.600          | 127.280      | 127.084      | 0.196       | 165.7          | 300         | 5.44             | 0.0             |
| 2.001 | 15         | 16         | 7.071         | 0.600          | 127.084      | 127.042      | 0.042       | 168.4          | 300         | 5.54             | 0.0             |
| 2.002 | 16         | 17         | 37.799        | 0.600          | 127.042      | 125.771      | 1.271       | 29.7           | 300         | 5.76             | 0.0             |
| 2.003 | 17         | 18         | 18.056        | 0.600          | 125.771      | 125.498      | 0.273       | 66.1           | 300         | 5.91             | 0.0             |
| 2.004 | 18         | 19         | 18.161        | 0.600          | 125.423      | 125.324      | 0.099       | 183.4          | 375         | 6.14             | 0.0             |
| 2.005 | 19         | 20         | 16.305        | 0.600          | 125.324      | 125.044      | 0.280       | 58.2           | 375         | 6.26             | 0.0             |
| 5.000 | 31         | 32         | 21.176        | 0.600          | 126.727      | 125.361      | 1.366       | 15.5           | 225         | 5.11             | 0.0             |
| 5.001 | 32         | 20         | 28.351        | 0.600          | 125.361      | 125.194      | 0.167       | 169.8          | 225         | 5.58             | 0.0             |
| 2.006 | 20         | 21         | 47.559        | 0.600          | 125.044      | 124.686      | 0.358       | 132.8          | 375         | 6.76             | 0.0             |
| 2.007 | 21         | 22         | 16.858        | 0.600          | 124.686      | 124.517      | 0.169       | 99.7           | 375         | 6.92             | 0.0             |
| 2.008 | 22         | 23         | 18.462        | 0.600          | 124.517      | 124.225      | 0.292       | 63.2           | 375         | 7.05             | 0.0             |
| 2.009 | 23         | 24         | 38.027        | 0.600          | 124.225      | 123.905      | 0.320       | 118.8          | 375         | 7.43             | 0.0             |
| 2.010 | 24         | 25         | 17.863        | 0.600          | 123.830      | 123.700      | 0.130       | 137.4          | 450         | 7.60             | 0.0             |
| 2.011 | 25         | 26         | 36.275        | 0.600          | 123.700      | 123.400      | 0.300       | 120.9          | 450         | 7.93             | 0.0             |
| 7.000 | 35         | 36         | 14.008        | 0.600          | 127.553      | 127.313      | 0.240       | 58.4           | 225         | 5.14             | 0.0             |
| 7.001 | 36         | 37         | 21.940        | 0.600          | 127.313      | 126.857      | 0.456       | 48.1           | 225         | 5.33             | 0.0             |
| 7.002 | 37         | 38         | 62.974        | 0.600          | 126.782      | 126.147      | 0.635       | 99.2           | 300         | 5.99             | 0.0             |
| 7.003 | 38         | 39         | 19.083        | 0.600          | 126.147      | 125.879      | 0.268       | 71.2           | 300         | 6.17             | 0.0             |
| 7.004 | 39         | 40         | 10.871        | 0.600          | 125.879      | 125.789      | 0.090       | 120.8          | 300         | 6.29             | 0.0             |
| 7.005 | 40         | 41         | 9.548         | 0.600          | 125.789      | 125.492      | 0.297       | 32.1           | 300         | 6.35             | 0.0             |
| 7.006 | 41         | 42         | 24.721        | 0.600          | 125.492      | 125.199      | 0.293       | 84.4           | 300         | 6.59             | 0.0             |
| 7.007 | 42         | 43         | 19.148        | 0.600          | 125.199      | 124.939      | 0.260       | 73.6           | 300         | 6.76             | 0.0             |
| 7.008 | 43         | 44         | 11.161        | 0.600          | 124.864      | 124.720      | 0.144       | 77.5           | 375         | 6.85             | 0.0             |
| 7.009 | 44         | 45         | 19.317        | 0.600          | 124.720      | 124.475      | 0.245       | 78.8           | 375         | 7.01             | 0.0             |

| Name  | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) | Pro<br>Depth<br>(mm) | Pro<br>Velocity<br>(m/s) |
|-------|--------------|--------------|---------------|--------------------|--------------------|----------------|--------------------------|----------------------|--------------------------|
| 2.000 | 1.218        | 86.1         | 0.0           | 1.545              | 1.740              | 0.103          | 0.0                      | 0                    | 0.000                    |
| 2.001 | 1.209        | 85.4         | 0.0           | 1.740              | 1.601              | 0.133          | 0.0                      | 0                    | 0.000                    |
| 2.002 | 2.893        | 204.5        | 0.0           | 1.601              | 1.733              | 0.235          | 0.0                      | 0                    | 0.000                    |
| 2.003 | 1.936        | 136.8        | 0.0           | 1.733              | 1.602              | 0.344          | 0.0                      | 0                    | 0.000                    |
| 2.004 | 1.334        | 147.4        | 0.0           | 1.602              | 1.501              | 0.360          | 0.0                      | 0                    | 0.000                    |
| 2.005 | 2.378        | 262.6        | 0.0           | 1.501              | 1.611              | 0.396          | 0.0                      | 0                    | 0.000                    |
| 5.000 | 3.340        | 132.8        | 0.0           | 1.378              | 2.110              | 0.089          | 0.0                      | 0                    | 0.000                    |
| 5.001 | 1.000        | 39.8         | 0.0           | 2.110              | 1.611              | 0.193          | 0.0                      | 0                    | 0.000                    |
| 2.006 | 1.570        | 173.4        | 0.0           | 1.611              | 1.425              | 0.706          | 0.0                      | 0                    | 0.000                    |
| 2.007 | 1.814        | 200.3        | 0.0           | 1.425              | 1.428              | 0.817          | 0.0                      | 0                    | 0.000                    |
| 2.008 | 2.282        | 252.0        | 0.0           | 1.428              | 1.610              | 0.891          | 0.0                      | 0                    | 0.000                    |
| 2.009 | 1.661        | 183.4        | 0.0           | 1.610              | 1.542              | 0.915          | 0.0                      | 0                    | 0.000                    |
| 2.010 | 1.732        | 275.5        | 0.0           | 1.542              | 1.320              | 0.957          | 0.0                      | 0                    | 0.000                    |
| 2.011 | 1.847        | 293.8        | 0.0           | 1.320              | 1.350              | 1.179          | 0.0                      | 0                    | 0.000                    |
| 7.000 | 1.715        | 68.2         | 0.0           | 1.452              | 1.507              | 0.085          | 0.0                      | 0                    | 0.000                    |
| 7.001 | 1.890        | 75.2         | 0.0           | 1.507              | 1.648              | 0.130          | 0.0                      | 0                    | 0.000                    |
| 7.002 | 1.579        | 111.6        | 0.0           | 1.648              | 1.425              | 0.215          | 0.0                      | 0                    | 0.000                    |
| 7.003 | 1.865        | 131.8        | 0.0           | 1.425              | 1.500              | 0.449          | 0.0                      | 0                    | 0.000                    |
| 7.004 | 1.429        | 101.0        | 0.0           | 1.500              | 1.531              | 0.478          | 0.0                      | 0                    | 0.000                    |
| 7.005 | 2.782        | 196.7        | 0.0           | 1.531              | 1.758              | 0.486          | 0.0                      | 0                    | 0.000                    |
| 7.006 | 1.712        | 121.0        | 0.0           | 1.758              | 1.576              | 0.603          | 0.0                      | 0                    | 0.000                    |
| 7.007 | 1.834        | 129.6        | 0.0           | 1.576              | 1.511              | 0.617          | 0.0                      | 0                    | 0.000                    |
| 7.008 | 2.059        | 227.5        | 0.0           | 1.511              | 1.425              | 0.630          | 0.0                      | 0                    | 0.000                    |
| 7.009 | 2.042        | 225.5        | 0.0           | 1.425              | 1.262              | 0.710          | 0.0                      | 0                    | 0.000                    |

Links

| Name   | US<br>Node | DS<br>Node | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
|--------|------------|------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| 8.000  | 48         | 50         | 26.579        | 0.600          | 127.357      | 126.942      | 0.415       | 64.0           | 225         | 5.27             | 0.0             |
| 8.002  | 50         | 51         | 11.901        | 0.600          | 126.942      | 126.821      | 0.121       | 98.4           | 225         | 5.42             | 0.0             |
| 8.003  | 51         | 52         | 10.115        | 0.600          | 126.746      | 126.703      | 0.043       | 235.2          | 300         | 5.59             | 0.0             |
| 8.004  | 52         | 53         | 36.743        | 0.600          | 126.703      | 126.317      | 0.386       | 95.2           | 300         | 5.97             | 0.0             |
| 8.005  | 53         | 54         | 26.848        | 0.600          | 126.317      | 126.053      | 0.264       | 101.7          | 300         | 6.25             | 0.0             |
| 8.006  | 54         | 55         | 37.336        | 0.600          | 126.053      | 125.614      | 0.439       | 85.0           | 300         | 6.62             | 0.0             |
| 8.007  | 55         | 56         | 10.094        | 0.600          | 125.614      | 125.401      | 0.213       | 47.4           | 300         | 6.69             | 0.0             |
| 9.000  | 60         | 56         | 33.035        | 0.600          | 125.673      | 125.476      | 0.197       | 167.7          | 225         | 5.55             | 0.0             |
| 8.008  | 56         | 57         | 15.542        | 0.600          | 125.401      | 125.031      | 0.370       | 42.0           | 300         | 6.80             | 0.0             |
| 8.009  | 57         | 58         | 46.362        | 0.600          | 124.881      | 124.776      | 0.105       | 441.5          | 450         | 7.60             | 0.0             |
| 8.010  | 58         | 59         | 31.483        | 0.600          | 124.776      | 124.500      | 0.276       | 114.1          | 450         | 7.88             | 0.0             |
| 8.011  | 59         | 45         | 22.563        | 0.600          | 124.500      | 124.400      | 0.100       | 225.6          | 450         | 8.16             | 0.0             |
| 7.010  | 45         | 46         | 11.491        | 0.600          | 124.400      | 124.250      | 0.150       | 76.6           | 450         | 8.24             | 0.0             |
| 7.011  | 46         | 47         | 49.033        | 0.600          | 124.100      | 124.000      | 0.100       | 490.3          | 600         | 8.99             | 0.0             |
| 7.012  | 47         | 47a        | 9.417         | 0.600          | 124.000      | 123.900      | 0.100       | 94.2           | 600         | 9.05             | 0.0             |
| 7.012b | 47a        | 26         | 14.096        | 0.600          | 123.900      | 123.325      | 0.575       | 24.5           | 600         | 9.10             | 0.0             |
| 2.012  | 26         | 27         | 16.579        | 0.600          | 123.250      | 123.150      | 0.100       | 165.8          | 600         | 9.24             | 0.0             |
| 2.013  | 27         | 28         | 32.099        | 0.600          | 123.150      | 123.050      | 0.100       | 321.0          | 675         | 9.61             | 0.0             |
| 2.014  | 28         | 12         | 56.180        | 0.600          | 123.050      | 122.952      | 0.098       | 573.3          | 675         | 10.47            | 0.0             |
| 1.011  | 12         | 13         | 8.329         | 0.600          | 122.952      | 122.940      | 0.012       | 694.1          | 600         | 10.62            | 0.0             |

| Name   | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) | Pro<br>Depth<br>(mm) | Pro<br>Velocity<br>(m/s) |
|--------|--------------|--------------|---------------|--------------------|--------------------|----------------|--------------------------|----------------------|--------------------------|
| 8.000  | 1.637        | 65.1         | 0.0           | 1.538              | 1.696              | 0.012          | 0.0                      | 0                    | 0.000                    |
| 8.002  | 1.318        | 52.4         | 0.0           | 1.696              | 1.679              | 0.094          | 0.0                      | 0                    | 0.000                    |
| 8.003  | 1.021        | 72.1         | 0.0           | 1.679              | 1.615              | 0.103          | 0.0                      | 0                    | 0.000                    |
| 8.004  | 1.611        | 113.9        | 0.0           | 1.615              | 1.626              | 0.114          | 0.0                      | 0                    | 0.000                    |
| 8.005  | 1.559        | 110.2        | 0.0           | 1.626              | 1.697              | 0.173          | 0.0                      | 0                    | 0.000                    |
| 8.006  | 1.706        | 120.6        | 0.0           | 1.697              | 1.686              | 0.198          | 0.0                      | 0                    | 0.000                    |
| 8.007  | 2.289        | 161.8        | 0.0           | 1.686              | 1.779              | 0.295          | 0.0                      | 0                    | 0.000                    |
| 9.000  | 1.007        | 40.0         | 0.0           | 1.352              | 1.779              | 0.088          | 0.0                      | 0                    | 0.000                    |
| 8.008  | 2.432        | 171.9        | 0.0           | 1.779              | 1.534              | 0.424          | 0.0                      | 0                    | 0.000                    |
| 8.009  | 0.961        | 152.8        | 0.0           | 1.534              | 1.601              | 0.476          | 0.0                      | 0                    | 0.000                    |
| 8.010  | 1.902        | 302.6        | 0.0           | 1.601              | 1.538              | 0.524          | 0.0                      | 0                    | 0.000                    |
| 8.011  | 1.349        | 214.6        | 0.0           | 1.538              | 1.262              | 0.524          | 0.0                      | 0                    | 0.000                    |
| 7.010  | 2.324        | 369.7        | 0.0           | 1.262              | 0.800              | 1.234          | 0.0                      | 0                    | 0.000                    |
| 7.011  | 1.093        | 309.0        | 0.0           | 0.800              | 0.900              | 1.234          | 0.0                      | 0                    | 0.000                    |
| 7.012  | 2.510        | 709.6        | 0.0           | 0.900              | 1.000              | 1.234          | 0.0                      | 0                    | 0.000                    |
| 7.012b | 4.931        | 1394.2       | 0.0           | 1.000              | 1.275              | 1.234          | 0.0                      | 0                    | 0.000                    |
| 2.012  | 1.888        | 533.9        | 0.0           | 1.350              | 0.800              | 2.454          | 0.0                      | 0                    | 0.000                    |
| 2.013  | 1.457        | 521.4        | 0.0           | 0.725              | 0.825              | 2.454          | 0.0                      | 0                    | 0.000                    |
| 2.014  | 1.087        | 389.0        | 0.0           | 0.825              | 0.923              | 2.454          | 0.0                      | 0                    | 0.000                    |
| 1.011  | 0.916        | 259.1        | 0.0           | 0.998              | 0.200              | 3.276          | 0.0                      | 0                    | 0.000                    |

### Pipeline Schedule

| Link  | Length<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | Link<br>Type                | US CL<br>(m) | US IL<br>(m) | US Depth<br>(m) | DS CL<br>(m) | DS IL<br>(m) | DS Depth<br>(m) |
|-------|---------------|----------------|-------------|-----------------------------|--------------|--------------|-----------------|--------------|--------------|-----------------|
| 1.000 | 21.514        | 37.0           | 225         | Circular_Default Sewer Type | 127.094      | 125.427      | 1.442           | 126.571      | 124.846      | 1.500           |
| 1.001 | 29.232        | 65.5           | 225         | Circular_Default Sewer Type | 126.571      | 124.846      | 1.500           | 125.862      | 124.400      | 1.237           |
| 1.002 | 8.046         | 80.5           | 225         | Circular_Default Sewer Type | 125.862      | 124.400      | 1.237           | 125.667      | 124.300      | 1.142           |
| 1.003 | 15.043        | 300.9          | 375         | Circular_Default Sewer Type | 125.667      | 124.300      | 0.992           | 125.620      | 124.250      | 0.995           |
| 1.004 | 45.182        | 301.2          | 375         | Circular_Default Sewer Type | 125.620      | 124.250      | 0.995           | 125.650      | 124.100      | 1.175           |
| 1.005 | 23.660        | 236.6          | 375         | Circular_Default Sewer Type | 125.650      | 124.100      | 1.175           | 125.300      | 124.000      | 0.925           |
| 3.000 | 20.367        | 35.9           | 225         | Circular_Default Sewer Type | 126.070      | 124.568      | 1.277           | 125.300      | 124.000      | 1.075           |
| 1.006 | 58.657        | 165.2          | 375         | Circular_Default Sewer Type | 125.300      | 124.000      | 0.925           | 125.300      | 123.645      | 1.280           |
| 1.007 | 31.381        | 320.2          | 450         | Circular_Default Sewer Type | 125.300      | 123.570      | 1.280           | 124.896      | 123.472      | 0.974           |
| 4.000 | 24.208        | 235.0          | 225         | Circular_Default Sewer Type | 125.494      | 123.800      | 1.469           | 124.896      | 123.697      | 0.974           |
| 1.008 | 14.572        | 316.8          | 450         | Circular_Default Sewer Type | 124.896      | 123.472      | 0.974           | 124.609      | 123.426      | 0.733           |
| 1.009 | 19.408        | 318.2          | 450         | Circular_Default Sewer Type | 124.609      | 123.426      | 0.733           | 124.800      | 123.365      | 0.985           |
| 1.010 | 36.282        | 181.4          | 450         | Circular_Default Sewer Type | 124.800      | 123.365      | 0.985           | 124.550      | 123.165      | 0.935           |
| 2.000 | 32.473        | 165.7          | 300         | Circular_Default Sewer Type | 129.125      | 127.280      | 1.545           | 129.124      | 127.084      | 1.740           |
| 2.001 | 7.071         | 168.4          | 300         | Circular_Default Sewer Type | 129.124      | 127.084      | 1.740           | 128.943      | 127.042      | 1.601           |
| 2.002 | 37.799        | 29.7           | 300         | Circular_Default Sewer Type | 128.943      | 127.042      | 1.601           | 127.804      | 125.771      | 1.733           |
| 2.003 | 18.056        | 66.1           | 300         | Circular_Default Sewer Type | 127.804      | 125.771      | 1.733           | 127.400      | 125.498      | 1.602           |
| 2.004 | 18.161        | 183.4          | 375         | Circular_Default Sewer Type | 127.400      | 125.423      | 1.602           | 127.200      | 125.324      | 1.501           |
| 2.005 | 16.305        | 58.2           | 375         | Circular_Default Sewer Type | 127.200      | 125.324      | 1.501           | 127.030      | 125.044      | 1.611           |
| 5.000 | 21.176        | 15.5           | 225         | Circular_Default Sewer Type | 128.330      | 126.727      | 1.378           | 127.696      | 125.361      | 2.110           |
| 5.001 | 28.351        | 169.8          | 225         | Circular_Default Sewer Type | 127.696      | 125.361      | 2.110           | 127.030      | 125.194      | 1.611           |
| 2.006 | 47.559        | 132.8          | 375         | Circular_Default Sewer Type | 127.030      | 125.044      | 1.611           | 126.486      | 124.686      | 1.425           |
| 2.007 | 16.858        | 99.7           | 375         | Circular_Default Sewer Type | 126.486      | 124.686      | 1.425           | 126.320      | 124.517      | 1.428           |
| 2.008 | 18.462        | 63.2           | 375         | Circular_Default Sewer Type | 126.320      | 124.517      | 1.428           | 126.210      | 124.225      | 1.610           |
| 2.009 | 38.027        | 118.8          | 375         | Circular_Default Sewer Type | 126.210      | 124.225      | 1.610           | 125.822      | 123.905      | 1.542           |

| Link  | US<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type | DS<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type |
|-------|------------|-------------|--------------|------------|------------|-------------|--------------|------------|
| 1.000 | 1          | 1500        | Manhole      | Adoptable  | 2          | 1200        | Manhole      | Adoptable  |
| 1.001 | 2          | 1200        | Manhole      | Adoptable  | 3          | 1500        | Manhole      | Adoptable  |
| 1.002 | 3          | 1500        | Manhole      | Adoptable  | 4          | 1500        | Manhole      | Adoptable  |
| 1.003 | 4          | 1500        | Manhole      | Adoptable  | 5          | 1500        | Manhole      | Adoptable  |
| 1.004 | 5          | 1500        | Manhole      | Adoptable  | 6          | 1500        | Manhole      | Adoptable  |
| 1.005 | 6          | 1500        | Manhole      | Adoptable  | 7          | 1500        | Manhole      | Adoptable  |
| 3.000 | 29         | 1200        | Manhole      | Adoptable  | 7          | 1500        | Manhole      | Adoptable  |
| 1.006 | 7          | 1500        | Manhole      | Adoptable  | 8          | 1500        | Manhole      | Adoptable  |
| 1.007 | 8          | 1500        | Manhole      | Adoptable  | 9          | 1500        | Manhole      | Adoptable  |
| 4.000 | 30         | 1200        | Manhole      | Adoptable  | 9          | 1500        | Manhole      | Adoptable  |
| 1.008 | 9          | 1500        | Manhole      | Adoptable  | 10         | 1500        | Manhole      | Adoptable  |
| 1.009 | 10         | 1500        | Manhole      | Adoptable  | 11         | 1500        | Manhole      | Adoptable  |
| 1.010 | 11         | 1500        | Manhole      | Adoptable  | 12         | 1500        | Manhole      | Adoptable  |
| 2.000 | 14         | 1500        | Manhole      | Adoptable  | 15         | 1200        | Manhole      | Adoptable  |
| 2.001 | 15         | 1200        | Manhole      | Adoptable  | 16         | 1200        | Manhole      | Adoptable  |
| 2.002 | 16         | 1200        | Manhole      | Adoptable  | 17         | 1200        | Manhole      | Adoptable  |
| 2.003 | 17         | 1200        | Manhole      | Adoptable  | 18         | 1200        | Manhole      | Adoptable  |
| 2.004 | 18         | 1200        | Manhole      | Adoptable  | 19         | 1200        | Manhole      | Adoptable  |
| 2.005 | 19         | 1200        | Manhole      | Adoptable  | 20         | 1200        | Manhole      | Adoptable  |
| 5.000 | 31         | 1200        | Manhole      | Adoptable  | 32         | 1200        | Manhole      | Adoptable  |
| 5.001 | 32         | 1200        | Manhole      | Adoptable  | 20         | 1200        | Manhole      | Adoptable  |
| 2.006 | 20         | 1200        | Manhole      | Adoptable  | 21         | 1200        | Manhole      | Adoptable  |
| 2.007 | 21         | 1200        | Manhole      | Adoptable  | 22         | 1200        | Manhole      | Adoptable  |
| 2.008 | 22         | 1200        | Manhole      | Adoptable  | 23         | 1500        | Manhole      | Adoptable  |
| 2.009 | 23         | 1500        | Manhole      | Adoptable  | 24         | 1500        | Manhole      | Adoptable  |

### Pipeline Schedule

| Link  | Length<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | Link<br>Type                | US CL<br>(m) | US IL<br>(m) | US Depth<br>(m) | DS CL<br>(m) | DS IL<br>(m) | DS Depth<br>(m) |
|-------|---------------|----------------|-------------|-----------------------------|--------------|--------------|-----------------|--------------|--------------|-----------------|
| 2.010 | 17.863        | 137.4          | 450         | Circular_Default Sewer Type | 125.822      | 123.830      | 1.542           | 125.470      | 123.700      | 1.320           |
| 2.011 | 36.275        | 120.9          | 450         | Circular_Default Sewer Type | 125.470      | 123.700      | 1.320           | 125.200      | 123.400      | 1.350           |
| 7.000 | 14.008        | 58.4           | 225         | Circular_Default Sewer Type | 129.230      | 127.553      | 1.452           | 129.045      | 127.313      | 1.507           |
| 7.001 | 21.940        | 48.1           | 225         | Circular_Default Sewer Type | 129.045      | 127.313      | 1.507           | 128.730      | 126.857      | 1.648           |
| 7.002 | 62.974        | 99.2           | 300         | Circular_Default Sewer Type | 128.730      | 126.782      | 1.648           | 127.872      | 126.147      | 1.425           |
| 7.003 | 19.083        | 71.2           | 300         | Circular_Default Sewer Type | 127.872      | 126.147      | 1.425           | 127.679      | 125.879      | 1.500           |
| 7.004 | 10.871        | 120.8          | 300         | Circular_Default Sewer Type | 127.679      | 125.879      | 1.500           | 127.620      | 125.789      | 1.531           |
| 7.005 | 9.548         | 32.1           | 300         | Circular_Default Sewer Type | 127.620      | 125.789      | 1.531           | 127.550      | 125.492      | 1.758           |
| 7.006 | 24.721        | 84.4           | 300         | Circular_Default Sewer Type | 127.550      | 125.492      | 1.758           | 127.075      | 125.199      | 1.576           |
| 7.007 | 19.148        | 73.6           | 300         | Circular_Default Sewer Type | 127.075      | 125.199      | 1.576           | 126.750      | 124.939      | 1.511           |
| 7.008 | 11.161        | 77.5           | 375         | Circular_Default Sewer Type | 126.750      | 124.864      | 1.511           | 126.520      | 124.720      | 1.425           |
| 7.009 | 19.317        | 78.8           | 375         | Circular_Default Sewer Type | 126.520      | 124.720      | 1.425           | 126.112      | 124.475      | 1.262           |
| 8.000 | 26.579        | 64.0           | 225         | Circular_Default Sewer Type | 129.120      | 127.357      | 1.538           | 128.863      | 126.942      | 1.696           |
| 8.002 | 11.901        | 98.4           | 225         | Circular_Default Sewer Type | 128.863      | 126.942      | 1.696           | 128.725      | 126.821      | 1.679           |
| 8.003 | 10.115        | 235.2          | 300         | Circular_Default Sewer Type | 128.725      | 126.746      | 1.679           | 128.618      | 126.703      | 1.615           |
| 8.004 | 36.743        | 95.2           | 300         | Circular_Default Sewer Type | 128.618      | 126.703      | 1.615           | 128.243      | 126.317      | 1.626           |
| 8.005 | 26.848        | 101.7          | 300         | Circular_Default Sewer Type | 128.243      | 126.317      | 1.626           | 128.050      | 126.053      | 1.697           |
| 8.006 | 37.336        | 85.0           | 300         | Circular_Default Sewer Type | 128.050      | 126.053      | 1.697           | 127.600      | 125.614      | 1.686           |
| 8.007 | 10.094        | 47.4           | 300         | Circular_Default Sewer Type | 127.600      | 125.614      | 1.686           | 127.480      | 125.401      | 1.779           |
| 9.000 | 33.035        | 167.7          | 225         | Circular_Default Sewer Type | 127.250      | 125.673      | 1.352           | 127.480      | 125.476      | 1.779           |
| 8.008 | 15.542        | 42.0           | 300         | Circular_Default Sewer Type | 127.480      | 125.401      | 1.779           | 126.865      | 125.031      | 1.534           |
| 8.009 | 46.362        | 441.5          | 450         | Circular_Default Sewer Type | 126.865      | 124.881      | 1.534           | 126.827      | 124.776      | 1.601           |
| 8.010 | 31.483        | 114.1          | 450         | Circular_Default Sewer Type | 126.827      | 124.776      | 1.601           | 126.488      | 124.500      | 1.538           |
| 8.011 | 22.563        | 225.6          | 450         | Circular_Default Sewer Type | 126.488      | 124.500      | 1.538           | 126.112      | 124.400      | 1.262           |
| 7.010 | 11.491        | 76.6           | 450         | Circular_Default Sewer Type | 126.112      | 124.400      | 1.262           | 125.500      | 124.250      | 0.800           |

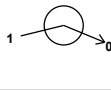
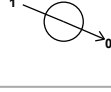
| Link  | US<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type | DS<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type |
|-------|------------|-------------|--------------|------------|------------|-------------|--------------|------------|
| 2.010 | 24         | 1500        | Manhole      | Adoptable  | 25         | 1500        | Manhole      | Adoptable  |
| 2.011 | 25         | 1500        | Manhole      | Adoptable  | 26         | 1500        | Manhole      | Adoptable  |
| 7.000 | 35         | 1200        | Manhole      | Adoptable  | 36         | 1200        | Manhole      | Adoptable  |
| 7.001 | 36         | 1200        | Manhole      | Adoptable  | 37         | 1200        | Manhole      | Adoptable  |
| 7.002 | 37         | 1200        | Manhole      | Adoptable  | 38         | 1200        | Manhole      | Adoptable  |
| 7.003 | 38         | 1200        | Manhole      | Adoptable  | 39         | 1200        | Manhole      | Adoptable  |
| 7.004 | 39         | 1200        | Manhole      | Adoptable  | 40         | 1200        | Manhole      | Adoptable  |
| 7.005 | 40         | 1200        | Manhole      | Adoptable  | 41         | 1200        | Manhole      | Adoptable  |
| 7.006 | 41         | 1200        | Manhole      | Adoptable  | 42         | 1200        | Manhole      | Adoptable  |
| 7.007 | 42         | 1200        | Manhole      | Adoptable  | 43         | 1200        | Manhole      | Adoptable  |
| 7.008 | 43         | 1200        | Manhole      | Adoptable  | 44         | 1200        | Manhole      | Adoptable  |
| 7.009 | 44         | 1200        | Manhole      | Adoptable  | 45         | 1500        | Manhole      | Adoptable  |
| 8.000 | 48         | 1500        | Manhole      | Adoptable  | 50         | 1200        | Manhole      | Adoptable  |
| 8.002 | 50         | 1200        | Manhole      | Adoptable  | 51         | 1200        | Manhole      | Adoptable  |
| 8.003 | 51         | 1200        | Manhole      | Adoptable  | 52         | 1200        | Manhole      | Adoptable  |
| 8.004 | 52         | 1200        | Manhole      | Adoptable  | 53         | 1200        | Manhole      | Adoptable  |
| 8.005 | 53         | 1200        | Manhole      | Adoptable  | 54         | 1200        | Manhole      | Adoptable  |
| 8.006 | 54         | 1200        | Manhole      | Adoptable  | 55         | 1200        | Manhole      | Adoptable  |
| 8.007 | 55         | 1200        | Manhole      | Adoptable  | 56         | 1200        | Manhole      | Adoptable  |
| 9.000 | 60         | 1500        | Manhole      | Adoptable  | 56         | 1200        | Manhole      | Adoptable  |
| 8.008 | 56         | 1200        | Manhole      | Adoptable  | 57         | 1500        | Manhole      | Adoptable  |
| 8.009 | 57         | 1500        | Manhole      | Adoptable  | 58         | 1500        | Manhole      | Adoptable  |
| 8.010 | 58         | 1500        | Manhole      | Adoptable  | 59         | 1500        | Manhole      | Adoptable  |
| 8.011 | 59         | 1500        | Manhole      | Adoptable  | 45         | 1500        | Manhole      | Adoptable  |
| 7.010 | 45         | 1500        | Manhole      | Adoptable  | 46         | 1500        | Manhole      | Adoptable  |

### Pipeline Schedule

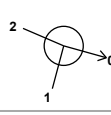
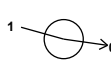
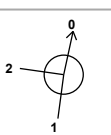
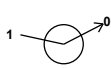
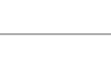
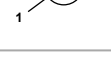
| Link   | Length<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | Link<br>Type                | US CL<br>(m) | US IL<br>(m) | US Depth<br>(m) | DS CL<br>(m) | DS IL<br>(m) | DS Depth<br>(m) |
|--------|---------------|----------------|-------------|-----------------------------|--------------|--------------|-----------------|--------------|--------------|-----------------|
| 7.011  | 49.033        | 490.3          | 600         | Circular_Default Sewer Type | 125.500      | 124.100      | 0.800           | 125.500      | 124.000      | 0.900           |
| 7.012  | 9.417         | 94.2           | 600         | Circular_Default Sewer Type | 125.500      | 124.000      | 0.900           | 125.500      | 123.900      | 1.000           |
| 7.012b | 14.096        | 24.5           | 600         | Circular_Default Sewer Type | 125.500      | 123.900      | 1.000           | 125.200      | 123.325      | 1.275           |
| 2.012  | 16.579        | 165.8          | 600         | Circular_Default Sewer Type | 125.200      | 123.250      | 1.350           | 124.550      | 123.150      | 0.800           |
| 2.013  | 32.099        | 321.0          | 675         | Circular_Default Sewer Type | 124.550      | 123.150      | 0.725           | 124.550      | 123.050      | 0.825           |
| 2.014  | 56.180        | 573.3          | 675         | Circular_Default Sewer Type | 124.550      | 123.050      | 0.825           | 124.550      | 122.952      | 0.923           |
| 1.011  | 8.329         | 694.1          | 600         | Circular_Default Sewer Type | 124.550      | 122.952      | 0.998           | 123.740      | 122.940      | 0.200           |

| Link   | US<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type | DS<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type |
|--------|------------|-------------|--------------|------------|------------|-------------|--------------|------------|
| 7.011  | 46         | 1500        | Manhole      | Adoptable  | 47         | 1500        | Manhole      | Adoptable  |
| 7.012  | 47         | 1500        | Manhole      | Adoptable  | 47a        | 1500        | Manhole      | Adoptable  |
| 7.012b | 47a        | 1500        | Manhole      | Adoptable  | 26         | 1500        | Manhole      | Adoptable  |
| 2.012  | 26         | 1500        | Manhole      | Adoptable  | 27         | 1500        | Manhole      | Adoptable  |
| 2.013  | 27         | 1500        | Manhole      | Adoptable  | 28         | 1500        | Manhole      | Adoptable  |
| 2.014  | 28         | 1500        | Manhole      | Adoptable  | 12         | 1500        | Manhole      | Adoptable  |
| 1.011  | 12         | 1500        | Manhole      | Adoptable  | 13         | 1500        | Manhole      | Adoptable  |

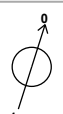
### Manhole Schedule

| Node | Easting<br>(m) | Northing<br>(m) | CL<br>(m) | Depth<br>(m) | Dia<br>(mm) | Connections                                                                          | Link  | IL<br>(m) | Dia<br>(mm) |     |
|------|----------------|-----------------|-----------|--------------|-------------|--------------------------------------------------------------------------------------|-------|-----------|-------------|-----|
| 1    | 444485.781     | 303189.608      | 127.094   | 1.667        | 1500        |   |       |           |             |     |
|      |                |                 |           |              |             | 0                                                                                    | 1.000 | 125.427   | 225         |     |
| 2    | 444479.395     | 303210.152      | 126.571   | 1.725        | 1200        |   | 1     | 1.000     | 124.846     | 225 |
|      |                |                 |           |              |             | 0                                                                                    | 1.001 | 124.846   | 225         |     |
| 3    | 444471.061     | 303238.171      | 125.862   | 1.462        | 1500        |   | 1     | 1.001     | 124.400     | 225 |
|      |                |                 |           |              |             | 0                                                                                    | 1.002 | 124.400   | 225         |     |
| 4    | 444468.767     | 303245.883      | 125.667   | 1.367        | 1500        |  | 1     | 1.002     | 124.300     | 225 |
|      |                |                 |           |              |             | 0                                                                                    | 1.003 | 124.300   | 375         |     |
| 5    | 444483.379     | 303249.457      | 125.620   | 1.370        | 1500        |  | 1     | 1.003     | 124.250     | 375 |
|      |                |                 |           |              |             | 0                                                                                    | 1.004 | 124.250   | 375         |     |
| 6    | 444525.141     | 303232.212      | 125.650   | 1.550        | 1500        |  | 1     | 1.004     | 124.100     | 375 |
|      |                |                 |           |              |             | 0                                                                                    | 1.005 | 124.100   | 375         |     |
| 29   | 444541.643     | 303203.190      | 126.070   | 1.502        | 1200        |   |       |           |             |     |
|      |                |                 |           |              |             | 0                                                                                    | 3.000 | 124.568   | 225         |     |

### Manhole Schedule

| Node | Easting<br>(m) | Northing<br>(m) | CL<br>(m) | Depth<br>(m) | Dia<br>(mm) | Connections                                                                          | Link | IL<br>(m) | Dia<br>(mm) |     |
|------|----------------|-----------------|-----------|--------------|-------------|--------------------------------------------------------------------------------------|------|-----------|-------------|-----|
| 7    | 444546.879     | 303222.872      | 125.300   | 1.300        | 1500        |    | 1    | 3.000     | 124.000     | 225 |
|      |                |                 |           |              |             |                                                                                      | 2    | 1.005     | 124.000     | 375 |
|      |                |                 |           |              |             |                                                                                      | 0    | 1.006     | 124.000     | 375 |
| 8    | 444603.384     | 303207.131      | 125.300   | 1.730        | 1500        |    | 1    | 1.006     | 123.645     | 375 |
|      |                |                 |           |              |             |                                                                                      | 0    | 1.007     | 123.570     | 450 |
| 30   | 444631.274     | 303178.732      | 125.494   | 1.694        | 1200        |    | 0    | 4.000     | 123.800     | 225 |
| 9    | 444634.455     | 303202.730      | 124.896   | 1.424        | 1500        |    | 1    | 4.000     | 123.697     | 225 |
|      |                |                 |           |              |             |                                                                                      | 2    | 1.007     | 123.472     | 450 |
|      |                |                 |           |              |             |                                                                                      | 0    | 1.008     | 123.472     | 450 |
| 10   | 444637.537     | 303216.972      | 124.609   | 1.183        | 1500        |   | 1    | 1.008     | 123.426     | 450 |
|      |                |                 |           |              |             |                                                                                      | 0    | 1.009     | 123.426     | 450 |
| 11   | 444656.504     | 303212.856      | 124.800   | 1.435        | 1500        |  | 1    | 1.009     | 123.365     | 450 |
|      |                |                 |           |              |             |                                                                                      | 0    | 1.010     | 123.365     | 450 |
| 14   | 444428.409     | 303143.683      | 129.125   | 1.845        | 1500        |  | 0    | 2.000     | 127.280     | 300 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.000     | 127.084     | 300 |
| 15   | 444460.760     | 303140.872      | 129.124   | 2.040        | 1200        |  | 0    | 2.001     | 127.084     | 300 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.001     | 127.042     | 300 |
| 16   | 444467.587     | 303142.714      | 128.943   | 1.901        | 1200        |  | 0    | 2.002     | 127.042     | 300 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.002     | 125.771     | 300 |
| 17   | 444497.955     | 303165.221      | 127.804   | 2.033        | 1200        |  | 0    | 2.003     | 125.771     | 300 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.003     | 125.498     | 300 |
| 18   | 444514.760     | 303171.825      | 127.400   | 1.977        | 1200        |  | 0    | 2.004     | 125.423     | 375 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.004     | 125.324     | 375 |
| 19   | 444532.838     | 303170.093      | 127.200   | 1.876        | 1200        |  | 0    | 2.005     | 125.324     | 375 |
|      |                |                 |           |              |             |                                                                                      | 0    | 5.000     | 126.727     | 225 |
| 31   | 444533.630     | 303118.685      | 128.330   | 1.603        | 1200        |  | 0    | 5.000     | 126.727     | 225 |

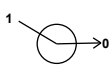
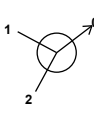
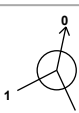
### Manhole Schedule

| Node | Easting<br>(m) | Northing<br>(m) | CL<br>(m) | Depth<br>(m) | Dia<br>(mm) | Connections                                                                          | Link | IL<br>(m) | Dia<br>(mm)             |     |
|------|----------------|-----------------|-----------|--------------|-------------|--------------------------------------------------------------------------------------|------|-----------|-------------------------|-----|
| 32   | 444540.028     | 303138.871      | 127.696   | 2.335        | 1200        |    | 1    | 5.000     | 125.361                 | 225 |
| 20   | 444548.594     | 303165.897      | 127.030   | 1.986        | 1200        |    | 0    | 5.001     | 125.361                 | 225 |
|      |                |                 |           |              |             |                                                                                      | 1    | 5.001     | 125.194                 | 225 |
|      |                |                 |           |              |             |                                                                                      | 2    | 2.005     | 125.044                 | 375 |
| 21   | 444594.569     | 303153.726      | 126.486   | 1.800        | 1200        |    | 0    | 2.006     | 125.044                 | 375 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.006     | 124.686                 | 375 |
| 22   | 444611.276     | 303151.478      | 126.320   | 1.803        | 1200        |    | 0    | 2.007     | 124.686                 | 375 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.007     | 124.517                 | 375 |
| 23   | 444629.731     | 303151.977      | 126.210   | 1.985        | 1500        |    | 0    | 2.008     | <a href="#">124.517</a> | 375 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.008     | <a href="#">124.225</a> | 375 |
| 24   | 444667.738     | 303153.224      | 125.822   | 1.992        | 1500        |  | 0    | 2.009     | 124.225                 | 375 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.009     | 123.905                 | 375 |
| 25   | 444685.200     | 303149.460      | 125.470   | 1.770        | 1500        |  | 0    | 2.010     | 123.830                 | 450 |
|      |                |                 |           |              |             |                                                                                      | 1    | 2.010     | 123.700                 | 450 |
| 35   | 444486.946     | 303073.647      | 129.230   | 1.677        | 1200        |  | 0    | 7.000     | 127.553                 | 225 |
|      |                |                 |           |              |             |                                                                                      | 1    | 7.000     | 127.313                 | 225 |
| 36   | 444500.876     | 303075.127      | 129.045   | 1.732        | 1200        |  | 0    | 7.001     | 127.313                 | 225 |
|      |                |                 |           |              |             |                                                                                      | 1    | 7.001     | 126.857                 | 225 |
| 37   | 444522.806     | 303074.452      | 128.730   | 1.948        | 1200        |  | 0    | 7.002     | 126.782                 | 300 |
|      |                |                 |           |              |             |                                                                                      | 1    | 7.002     | 126.147                 | 300 |
| 38   | 444585.696     | 303071.197      | 127.872   | 1.725        | 1200        |  | 0    | 7.003     | 126.147                 | 300 |
|      |                |                 |           |              |             |                                                                                      | 1    | 7.003     | 125.879                 | 300 |
| 39   | 444604.609     | 303073.736      | 127.679   | 1.800        | 1200        |  | 0    | 7.004     | 125.879                 | 300 |
|      |                |                 |           |              |             |                                                                                      | 1    | 7.004     | 125.789                 | 300 |
| 40   | 444612.845     | 303080.832      | 127.620   | 1.831        | 1200        |  | 0    | 7.005     | 125.789                 | 300 |

### Manhole Schedule

| Node | Easting<br>(m) | Northing<br>(m) | CL<br>(m) | Depth<br>(m) | Dia<br>(mm) | Connections                                                                          | Link                          | IL<br>(m)                     | Dia<br>(mm)       |
|------|----------------|-----------------|-----------|--------------|-------------|--------------------------------------------------------------------------------------|-------------------------------|-------------------------------|-------------------|
| 41   | 444619.154     | 303087.998      | 127.550   | 2.058        | 1200        |    | 1 7.005                       | 125.492                       | 300               |
| 42   | 444642.770     | 303080.688      | 127.075   | 1.876        | 1200        |    | 0 7.006<br>1 7.006            | 125.492<br>125.199            | 300<br>300        |
| 43   | 444660.579     | 303073.653      | 126.750   | 1.886        | 1200        |    | 0 7.007<br>1 7.007            | 125.199<br>124.939            | 300<br>300        |
| 44   | 444671.451     | 303071.131      | 126.520   | 1.800        | 1200        |    | 0 7.008<br>1 7.008            | 124.864<br>124.720            | 375<br>375        |
| 48   | 444482.776     | 303054.115      | 129.120   | 1.763        | 1500        |   | 0 8.000                       | 127.357                       | 225               |
| 50   | 444482.218     | 303027.542      | 128.863   | 1.921        | 1200        |  | 0 8.002<br>1 8.000            | 126.942<br>126.942            | 225<br>225        |
| 51   | 444490.127     | 303018.649      | 128.725   | 1.979        | 1200        |  | 0 8.003<br>1 8.002            | 126.746<br>126.821            | 300<br>225        |
| 52   | 444499.726     | 303015.460      | 128.618   | 1.915        | 1200        |  | 0 8.004<br>1 8.003            | 126.703<br>126.703            | 300<br>300        |
| 53   | 444536.426     | 303013.682      | 128.243   | 1.926        | 1200        |  | 0 8.005<br>1 8.004            | 126.317<br>126.317            | 300<br>300        |
| 54   | 444563.169     | 303016.054      | 128.050   | 1.997        | 1200        |  | 0 8.006<br>1 8.005            | 126.053<br>126.053            | 300<br>300        |
| 55   | 444600.463     | 303014.284      | 127.600   | 1.986        | 1200        |  | 0 8.007<br>1 8.006            | 125.614<br>125.614            | 300<br>300        |
| 60   | 444611.895     | 303051.790      | 127.250   | 1.577        | 1500        |  | 0 9.000                       | 125.673                       | 225               |
| 56   | 444609.468     | 303018.844      | 127.480   | 2.079        | 1200        |  | 1 9.000<br>2 8.007<br>0 8.008 | 125.476<br>125.401<br>125.401 | 225<br>300<br>300 |

### Manhole Schedule

| Node | Easting<br>(m) | Northing<br>(m) | CL<br>(m) | Depth<br>(m) | Dia<br>(mm) | Connections                                                                                       | Link   | IL<br>(m) | Dia<br>(mm) |
|------|----------------|-----------------|-----------|--------------|-------------|---------------------------------------------------------------------------------------------------|--------|-----------|-------------|
| 57   | 444622.809     | 303010.871      | 126.865   | 1.984        | 1500        | <div></div> 1   | 8.008  | 125.031   | 300         |
|      |                |                 |           |              |             | 0                                                                                                 | 8.009  | 124.881   | 450         |
| 58   | 444669.160     | 303011.875      | 126.827   | 2.051        | 1500        | <div></div> 1    | 8.009  | 124.776   | 450         |
|      |                |                 |           |              |             | 0                                                                                                 | 8.010  | 124.776   | 450         |
| 59   | 444677.679     | 303042.183      | 126.488   | 1.988        | 1500        | <div></div> 1    | 8.010  | 124.500   | 450         |
|      |                |                 |           |              |             | 0                                                                                                 | 8.011  | 124.500   | 450         |
| 45   | 444688.472     | 303061.997      | 126.112   | 1.712        | 1500        | <div></div> 1   | 7.009  | 124.475   | 375         |
|      |                |                 |           |              |             | 2                                                                                                 | 8.011  | 124.400   | 450         |
|      |                |                 |           |              |             | 0                                                                                                 | 7.010  | 124.400   | 450         |
| 46   | 444697.607     | 303068.968      | 125.500   | 1.400        | 1500        | <div></div> 1    | 7.010  | 124.250   | 450         |
|      |                |                 |           |              |             | 0                                                                                                 | 7.011  | 124.100   | 600         |
| 47   | 444708.811     | 303116.704      | 125.500   | 1.500        | 1500        | <div></div> 1  | 7.011  | 124.000   | 600         |
|      |                |                 |           |              |             | 0                                                                                                 | 7.012  | 124.000   | 600         |
| 26   | 444717.046     | 303132.090      | 125.200   | 1.950        | 1500        | <div></div> 1  | 2.011  | 123.400   | 450         |
|      |                |                 |           |              |             | 2                                                                                                 | 7.012b | 123.325   | 600         |
|      |                |                 |           |              |             | 0                                                                                                 | 2.012  | 123.250   | 600         |
| 27   | 444722.039     | 303147.899      | 124.550   | 1.400        | 1500        | <div></div> 1  | 2.012  | 123.150   | 600         |
|      |                |                 |           |              |             | 0                                                                                                 | 2.013  | 123.150   | 675         |
| 28   | 444712.403     | 303178.518      | 124.550   | 1.500        | 1500        | <div></div> 1  | 2.013  | 123.050   | 675         |
|      |                |                 |           |              |             | 0                                                                                                 | 2.014  | 123.050   | 675         |
| 12   | 444688.754     | 303229.478      | 124.550   | 1.598        | 1500        | <div></div> 1  | 1.010  | 123.165   | 450         |
|      |                |                 |           |              |             | 2                                                                                                 | 2.014  | 122.952   | 675         |
|      |                |                 |           |              |             | 0                                                                                                 | 1.011  | 122.952   | 600         |
| 13   | 444690.490     | 303237.624      | 123.740   | 0.800        | 1500        | <div></div> 1  | 1.011  | 122.940   | 600         |
| 47a  | 444704.749     | 303125.200      | 125.500   | 1.600        | 1500        | <div></div> 1 | 7.012  | 123.900   | 600         |
|      |                |                 |           |              |             | 0                                                                                                 | 7.012b | 123.900   | 600         |

### Simulation Settings

|                      |                   |                            |        |
|----------------------|-------------------|----------------------------|--------|
| Rainfall Methodology | FSR               | Analysis Speed             | Normal |
| Rainfall Events      | Singular          | Skip Steady State          | ✓      |
| FSR Region           | England and Wales | Drain Down Time (mins)     | 240    |
| M5-60 (mm)           | 20.000            | Additional Storage (m³/ha) | 20.0   |
| Ratio-R              | 0.400             | Starting Level (m)         |        |
| Summer CV            | 0.750             | Check Discharge Rate(s)    | ✓      |
| Winter CV            | 0.840             | Check Discharge Volume     | x      |

### Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 2                        | 0                        | 0                        | 0                        |
| 30                       | 0                        | 0                        | 0                        |
| 100                      | 40                       | 0                        | 0                        |

### Pre-development Discharge Rate

|                              |            |                        |      |
|------------------------------|------------|------------------------|------|
| Site Makeup                  | Greenfield | Growth Factor 30 year  | 1.95 |
| Greenfield Method            | IH124      | Growth Factor 100 year | 2.48 |
| Positively Drained Area (ha) |            | Betterment (%)         | 0    |
| SAAR (mm)                    |            | QBar                   |      |
| Soil Index                   | 1          | Q 1 year (l/s)         |      |
| SPR                          | 0.10       | Q 30 year (l/s)        |      |
| Region                       | 1          | Q 100 year (l/s)       |      |
| Growth Factor 1 year         | 0.85       |                        |      |

### Node 12 Online Hydro-Brake® Control

|                          |         |                         |                                |
|--------------------------|---------|-------------------------|--------------------------------|
| Flap Valve               | x       | Objective               | (HE) Minimise upstream storage |
| Replaces Downstream Link | ✓       | Sump Available          | ✓                              |
| Invert Level (m)         | 122.952 | Product Number          | CTL-SHE-0212-2330-1000-2330    |
| Design Depth (m)         | 1.000   | Min Outlet Diameter (m) | 0.225                          |
| Design Flow (l/s)        | 23.3    | Min Node Diameter (mm)  | 1500                           |

### Node 47a Online Hydro-Brake® Control

|                          |         |                         |                                |
|--------------------------|---------|-------------------------|--------------------------------|
| Flap Valve               | x       | Objective               | (HE) Minimise upstream storage |
| Replaces Downstream Link | ✓       | Sump Available          | ✓                              |
| Invert Level (m)         | 123.900 | Product Number          | CTL-SHE-0106-5000-1000-5000    |
| Design Depth (m)         | 1.000   | Min Outlet Diameter (m) | 0.150                          |
| Design Flow (l/s)        | 5.0     | Min Node Diameter (mm)  | 1200                           |

### Node 47a Depth/Area Storage Structure

|                             |         |               |      |                           |         |
|-----------------------------|---------|---------------|------|---------------------------|---------|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 124.000 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity      | 1.00 | Time to half empty (mins) | 255     |

| Depth<br>(m) | Area<br>(m²) | Inf Area<br>(m²) | Depth<br>(m) | Area<br>(m²) | Inf Area<br>(m²) | Depth<br>(m) | Area<br>(m²) | Inf Area<br>(m²) |
|--------------|--------------|------------------|--------------|--------------|------------------|--------------|--------------|------------------|
| 0.000        | 1039.7       | 0.0              | 1.500        | 1684.9       | 0.0              | 1.501        | 0.0          | 0.0              |

**Node 12 Depth/Area Storage Structure**

|                             |         |               |      |                           |         |
|-----------------------------|---------|---------------|------|---------------------------|---------|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 123.050 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity      | 1.00 | Time to half empty (mins) |         |

| Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) |
|--------------|---------------------------|-------------------------------|--------------|---------------------------|-------------------------------|
| 0.000        | 1131.0                    | 0.0                           | 1.500        | 1748.0                    | 0.0                           |

**Results for 2 year Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event       | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter | 1       | 10          | 125.480   | 0.053     | 10.6         | 0.1304        | 0.0000     | OK         |
| 15 minute winter | 2       | 10          | 124.969   | 0.123     | 38.6         | 0.3596        | 0.0000     | OK         |
| 15 minute winter | 3       | 11          | 124.688   | 0.288     | 62.1         | 1.0335        | 0.0000     | SURCHARGED |
| 15 minute winter | 4       | 11          | 124.518   | 0.218     | 62.5         | 0.4207        | 0.0000     | OK         |
| 15 minute winter | 5       | 11          | 124.455   | 0.205     | 62.5         | 0.3615        | 0.0000     | OK         |
| 15 minute winter | 6       | 12          | 124.297   | 0.197     | 61.8         | 0.3480        | 0.0000     | OK         |
| 15 minute winter | 29      | 10          | 124.631   | 0.063     | 15.1         | 0.1405        | 0.0000     | OK         |
| 15 minute winter | 7       | 12          | 124.195   | 0.195     | 78.9         | 0.4395        | 0.0000     | OK         |
| 15 minute winter | 8       | 12          | 123.831   | 0.260     | 94.0         | 0.7856        | 0.0000     | OK         |
| 15 minute winter | 30      | 10          | 123.909   | 0.109     | 15.5         | 0.2333        | 0.0000     | OK         |
| 15 minute winter | 9       | 12          | 123.768   | 0.296     | 110.6        | 0.6355        | 0.0000     | OK         |
| 15 minute winter | 10      | 12          | 123.710   | 0.284     | 119.5        | 0.8189        | 0.0000     | OK         |
| 15 minute winter | 11      | 12          | 123.612   | 0.247     | 128.4        | 0.6600        | 0.0000     | OK         |
| 15 minute winter | 14      | 10          | 127.376   | 0.096     | 18.8         | 0.2757        | 0.0000     | OK         |
| 15 minute winter | 15      | 10          | 127.198   | 0.114     | 24.0         | 0.1628        | 0.0000     | OK         |
| 15 minute winter | 16      | 10          | 127.133   | 0.091     | 42.0         | 0.2007        | 0.0000     | OK         |
| 15 minute winter | 17      | 11          | 125.923   | 0.152     | 61.4         | 0.3356        | 0.0000     | OK         |
| 15 minute winter | 18      | 11          | 125.604   | 0.180     | 63.7         | 0.2334        | 0.0000     | OK         |
| 15 minute winter | 19      | 11          | 125.468   | 0.144     | 70.2         | 0.2184        | 0.0000     | OK         |
| 15 minute winter | 31      | 10          | 126.780   | 0.053     | 16.2         | 0.1182        | 0.0000     | OK         |
| 15 minute winter | 32      | 11          | 125.530   | 0.169     | 35.1         | 0.3414        | 0.0000     | OK         |
| 15 minute winter | 20      | 11          | 125.294   | 0.250     | 124.7        | 0.5772        | 0.0000     | OK         |
| 15 minute winter | 21      | 11          | 124.957   | 0.271     | 144.3        | 0.6396        | 0.0000     | OK         |
| 15 minute winter | 22      | 11          | 124.767   | 0.250     | 156.2        | 0.4876        | 0.0000     | OK         |
| 15 minute winter | 23      | 12          | 124.514   | 0.289     | 159.4        | 0.5800        | 0.0000     | OK         |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 1       | 1.000 | 2       | 10.5          | 0.728          | 0.122    | 0.3159        |                    |
| 15 minute winter               | 2       | 1.001 | 3       | 37.9          | 1.095          | 0.589    | 0.9067        |                    |
| 15 minute winter               | 3       | 1.002 | 4       | 60.6          | 1.525          | 1.046    | 0.3185        |                    |
| 15 minute winter               | 4       | 1.003 | 5       | 62.5          | 0.978          | 0.545    | 0.9625        |                    |
| 15 minute winter               | 5       | 1.004 | 6       | 61.8          | 1.043          | 0.539    | 2.6776        |                    |
| 15 minute winter               | 6       | 1.005 | 7       | 62.0          | 1.066          | 0.478    | 1.3761        |                    |
| 15 minute winter               | 29      | 3.000 | 7       | 15.0          | 1.066          | 0.172    | 0.4512        |                    |
| 15 minute winter               | 7       | 1.006 | 8       | 78.6          | 1.406          | 0.506    | 3.2856        |                    |
| 15 minute winter               | 8       | 1.007 | 9       | 93.4          | 0.908          | 0.519    | 3.2273        |                    |
| 15 minute winter               | 30      | 4.000 | 9       | 15.0          | 0.831          | 0.445    | 0.4393        |                    |
| 15 minute winter               | 9       | 1.008 | 10      | 110.1         | 1.020          | 0.609    | 1.5740        |                    |
| 15 minute winter               | 10      | 1.009 | 11      | 119.1         | 1.224          | 0.660    | 1.8871        |                    |
| 15 minute winter               | 11      | 1.010 | 12      | 126.8         | 1.504          | 0.529    | 3.0743        |                    |
| 15 minute winter               | 14      | 2.000 | 15      | 18.5          | 0.842          | 0.214    | 0.7129        |                    |
| 15 minute winter               | 15      | 2.001 | 16      | 23.6          | 1.114          | 0.277    | 0.1508        |                    |
| 15 minute winter               | 16      | 2.002 | 17      | 41.5          | 1.557          | 0.203    | 1.0189        |                    |
| 15 minute winter               | 17      | 2.003 | 18      | 61.0          | 1.800          | 0.446    | 0.6121        |                    |
| 15 minute winter               | 18      | 2.004 | 19      | 64.0          | 1.401          | 0.434    | 0.8302        |                    |
| 15 minute winter               | 19      | 2.005 | 20      | 70.5          | 1.202          | 0.268    | 0.9540        |                    |
| 15 minute winter               | 31      | 5.000 | 32      | 16.1          | 0.861          | 0.121    | 0.4109        |                    |
| 15 minute winter               | 32      | 5.001 | 20      | 34.1          | 1.116          | 0.857    | 0.8658        |                    |
| 15 minute winter               | 20      | 2.006 | 21      | 125.3         | 1.535          | 0.723    | 3.8801        |                    |
| 15 minute winter               | 21      | 2.007 | 22      | 143.5         | 1.760          | 0.716    | 1.3747        |                    |
| 15 minute winter               | 22      | 2.008 | 23      | 155.3         | 1.839          | 0.616    | 1.5558        |                    |
| 15 minute winter               | 23      | 2.009 | 24      | 158.7         | 1.826          | 0.865    | 3.3025        |                    |

**Results for 2 year Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event       | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|------------------|------------|----------------|--------------|--------------|-----------------|------------------|---------------|--------|
| 15 minute winter | 24         | 12             | 124.125      | 0.295        | 164.7           | 0.6456           | 0.0000        | OK     |
| 15 minute winter | 25         | 12             | 123.993      | 0.293        | 198.9           | 1.2520           | 0.0000        | OK     |
| 15 minute winter | 35         | 10             | 127.628      | 0.075        | 15.5            | 0.1607           | 0.0000        | OK     |
| 15 minute winter | 36         | 10             | 127.403      | 0.090        | 23.5            | 0.1479           | 0.0000        | OK     |
| 15 minute winter | 37         | 11             | 126.901      | 0.119        | 38.6            | 0.2392           | 0.0000        | OK     |
| 15 minute winter | 38         | 11             | 126.335      | 0.188        | 80.4            | 0.7218           | 0.0000        | OK     |
| 15 minute winter | 39         | 11             | 126.106      | 0.227        | 84.3            | 0.3298           | 0.0000        | OK     |
| 15 minute winter | 40         | 11             | 125.955      | 0.166        | 86.0            | 0.2026           | 0.0000        | OK     |
| 15 minute winter | 41         | 11             | 125.736      | 0.244        | 106.2           | 0.5543           | 0.0000        | OK     |
| 15 minute winter | 42         | 11             | 125.436      | 0.237        | 108.7           | 0.3035           | 0.0000        | OK     |
| 15 minute winter | 43         | 11             | 125.085      | 0.221        | 110.1           | 0.2800           | 0.0000        | OK     |
| 15 minute winter | 44         | 11             | 124.941      | 0.221        | 123.6           | 0.4463           | 0.0000        | OK     |
| 15 minute winter | 48         | 10             | 127.385      | 0.028        | 2.2             | 0.0532           | 0.0000        | OK     |
| 15 minute winter | 50         | 10             | 127.035      | 0.093        | 17.0            | 0.1854           | 0.0000        | OK     |
| 15 minute winter | 51         | 10             | 126.851      | 0.105        | 18.2            | 0.1284           | 0.0000        | OK     |
| 15 minute winter | 52         | 11             | 126.788      | 0.085        | 20.1            | 0.1056           | 0.0000        | OK     |
| 15 minute winter | 53         | 11             | 126.429      | 0.112        | 30.4            | 0.1952           | 0.0000        | OK     |
| 15 minute winter | 54         | 11             | 126.164      | 0.111        | 34.9            | 0.1536           | 0.0000        | OK     |
| 15 minute winter | 55         | 11             | 125.745      | 0.131        | 51.5            | 0.2762           | 0.0000        | OK     |
| 15 minute winter | 60         | 10             | 125.772      | 0.099        | 16.0            | 0.2865           | 0.0000        | OK     |
| 15 minute winter | 56         | 11             | 125.554      | 0.153        | 74.1            | 0.2326           | 0.0000        | OK     |
| 15 minute winter | 57         | 11             | 125.115      | 0.234        | 83.0            | 0.5361           | 0.0000        | OK     |
| 15 minute winter | 58         | 11             | 124.955      | 0.179        | 91.1            | 0.4008           | 0.0000        | OK     |
| 15 minute winter | 59         | 12             | 124.740      | 0.240        | 89.9            | 0.4241           | 0.0000        | OK     |
| 15 minute winter | 45         | 12             | 124.691      | 0.291        | 211.5           | 0.5149           | 0.0000        | OK     |

| Link Event<br>(Upstream Depth) | US<br>Node | Link  | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|------------|-------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute winter               | 24         | 2.010 | 25         | 165.5            | 1.510             | 0.601    | 1.9584           |                       |
| 15 minute winter               | 25         | 2.011 | 26         | 199.7            | 1.931             | 0.680    | 3.7502           |                       |
| 15 minute winter               | 35         | 7.000 | 36         | 15.3             | 1.170             | 0.225    | 0.1840           |                       |
| 15 minute winter               | 36         | 7.001 | 37         | 23.1             | 1.626             | 0.308    | 0.3124           |                       |
| 15 minute winter               | 37         | 7.002 | 38         | 38.0             | 1.051             | 0.341    | 2.2832           |                       |
| 15 minute winter               | 38         | 7.003 | 39         | 79.3             | 1.527             | 0.602    | 0.9884           |                       |
| 15 minute winter               | 39         | 7.004 | 40         | 84.6             | 1.729             | 0.838    | 0.5289           |                       |
| 15 minute winter               | 40         | 7.005 | 41         | 86.1             | 1.690             | 0.438    | 0.4849           |                       |
| 15 minute winter               | 41         | 7.006 | 42         | 106.3            | 1.754             | 0.878    | 1.4980           |                       |
| 15 minute winter               | 42         | 7.007 | 43         | 107.9            | 1.939             | 0.833    | 1.0658           |                       |
| 15 minute winter               | 43         | 7.008 | 44         | 109.9            | 1.638             | 0.483    | 0.7530           |                       |
| 15 minute winter               | 44         | 7.009 | 45         | 122.9            | 1.906             | 0.545    | 1.2755           |                       |
| 15 minute winter               | 48         | 8.000 | 50         | 2.1              | 0.250             | 0.033    | 0.2444           |                       |
| 15 minute winter               | 50         | 8.002 | 51         | 16.6             | 1.127             | 0.317    | 0.1761           |                       |
| 15 minute winter               | 51         | 8.003 | 52         | 18.2             | 0.955             | 0.252    | 0.1934           |                       |
| 15 minute winter               | 52         | 8.004 | 53         | 20.2             | 1.007             | 0.177    | 0.7396           |                       |
| 15 minute winter               | 53         | 8.005 | 54         | 30.6             | 1.283             | 0.278    | 0.6400           |                       |
| 15 minute winter               | 54         | 8.006 | 55         | 34.9             | 1.318             | 0.290    | 0.9947           |                       |
| 15 minute winter               | 55         | 8.007 | 56         | 51.5             | 1.574             | 0.319    | 0.3307           |                       |
| 15 minute winter               | 60         | 9.000 | 56         | 15.5             | 0.938             | 0.388    | 0.5468           |                       |
| 15 minute winter               | 56         | 8.008 | 57         | 74.1             | 2.210             | 0.431    | 0.5215           |                       |
| 15 minute winter               | 57         | 8.009 | 58         | 82.9             | 1.168             | 0.543    | 3.2952           |                       |
| 15 minute winter               | 58         | 8.010 | 59         | 89.9             | 1.268             | 0.297    | 2.2694           |                       |
| 15 minute winter               | 59         | 8.011 | 45         | 90.5             | 0.939             | 0.422    | 2.1947           |                       |
| 15 minute winter               | 45         | 7.010 | 46         | 212.6            | 2.183             | 0.575    | 1.1176           |                       |

**Results for 2 year Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event        | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|-------------------|------------|----------------|--------------|--------------|-----------------|------------------|---------------|--------|
| 15 minute winter  | 46         | 12             | 124.445      | 0.345        | 212.6           | 0.6088           | 0.0000        | OK     |
| 15 minute winter  | 47         | 12             | 124.260      | 0.260        | 213.4           | 0.4596           | 0.0000        | OK     |
| 15 minute winter  | 26         | 12             | 123.568      | 0.318        | 210.0           | 0.6965           | 0.0000        | OK     |
| 15 minute winter  | 27         | 12             | 123.478      | 0.328        | 210.4           | 0.5790           | 0.0000        | OK     |
| 720 minute winter | 28         | 495            | 123.387      | 0.337        | 23.4            | 0.5953           | 0.0000        | OK     |
| 720 minute winter | 12         | 495            | 123.387      | 0.435        | 35.5            | 405.4463         | 0.0000        | OK     |
| 15 minute summer  | 13         | 1              | 123.200      | 0.260        | 0.0             | 0.0000           | 0.0000        | OK     |
| 240 minute winter | 47a        | 240            | 124.168      | 0.268        | 57.8            | 182.0200         | 0.0000        | OK     |

| Link Event<br>(Upstream Depth) | US<br>Node | Link         | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|------------|--------------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute winter               | 46         | 7.011        | 47         | 213.4            | 1.503             | 0.691    | 6.9737           |                       |
| 15 minute winter               | 47         | 7.012        | 47a        | 212.4            | 2.628             | 0.299    | 0.7897           |                       |
| 15 minute winter               | 26         | 2.012        | 27         | 210.4            | 1.361             | 0.394    | 2.5632           |                       |
| 15 minute winter               | 27         | 2.013        | 28         | 210.4            | 1.247             | 0.403    | 5.4158           |                       |
| 720 minute winter              | 28         | 2.014        | 12         | 22.7             | 0.240             | 0.058    | 11.8221          |                       |
| 720 minute winter              | 12         | Hydro-Brake® | 13         | 19.1             |                   |          |                  | 486.8                 |
| 240 minute winter              | 47a        | Hydro-Brake® | 26         | 5.0              |                   |          |                  |                       |

**Results for 30 year Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event       | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter | 1       | 12          | 125.613   | 0.186     | 20.1         | 0.4574        | 0.0000     | OK         |
| 15 minute winter | 2       | 12          | 125.582   | 0.736     | 72.9         | 2.1464        | 0.0000     | SURCHARGED |
| 15 minute winter | 3       | 11          | 125.108   | 0.708     | 103.9        | 2.5381        | 0.0000     | SURCHARGED |
| 15 minute winter | 4       | 12          | 124.620   | 0.320     | 105.1        | 0.6175        | 0.0000     | OK         |
| 15 minute winter | 5       | 12          | 124.548   | 0.298     | 104.6        | 0.5273        | 0.0000     | OK         |
| 15 minute winter | 6       | 12          | 124.388   | 0.288     | 104.2        | 0.5095        | 0.0000     | OK         |
| 15 minute winter | 29      | 10          | 124.656   | 0.088     | 28.7         | 0.1970        | 0.0000     | OK         |
| 15 minute winter | 7       | 12          | 124.293   | 0.293     | 136.1        | 0.6617        | 0.0000     | OK         |
| 15 minute winter | 8       | 12          | 124.069   | 0.499     | 169.1        | 1.5048        | 0.0000     | SURCHARGED |
| 15 minute winter | 30      | 12          | 124.029   | 0.229     | 29.4         | 0.4888        | 0.0000     | SURCHARGED |
| 15 minute winter | 9       | 12          | 123.966   | 0.494     | 191.5        | 1.0592        | 0.0000     | SURCHARGED |
| 15 minute winter | 10      | 12          | 123.878   | 0.452     | 209.4        | 1.3037        | 0.0000     | SURCHARGED |
| 15 minute winter | 11      | 12          | 123.748   | 0.383     | 226.7        | 1.0242        | 0.0000     | OK         |
| 15 minute winter | 14      | 10          | 127.418   | 0.138     | 35.6         | 0.3972        | 0.0000     | OK         |
| 15 minute winter | 15      | 10          | 127.248   | 0.164     | 45.4         | 0.2338        | 0.0000     | OK         |
| 15 minute winter | 16      | 10          | 127.171   | 0.129     | 80.0         | 0.2834        | 0.0000     | OK         |
| 15 minute winter | 17      | 12          | 126.500   | 0.729     | 117.0        | 1.6059        | 0.0000     | SURCHARGED |
| 15 minute winter | 18      | 12          | 126.321   | 0.897     | 106.6        | 1.1604        | 0.0000     | SURCHARGED |
| 15 minute winter | 19      | 12          | 126.257   | 0.933     | 114.1        | 1.4131        | 0.0000     | SURCHARGED |
| 15 minute winter | 31      | 10          | 126.800   | 0.073     | 30.8         | 0.1642        | 0.0000     | OK         |
| 15 minute winter | 32      | 12          | 126.502   | 1.141     | 66.6         | 2.3073        | 0.0000     | SURCHARGED |
| 15 minute winter | 20      | 12          | 126.187   | 1.143     | 192.0        | 2.6387        | 0.0000     | SURCHARGED |
| 15 minute winter | 21      | 12          | 125.700   | 1.014     | 214.6        | 2.3963        | 0.0000     | SURCHARGED |
| 15 minute winter | 22      | 12          | 125.409   | 0.892     | 232.6        | 1.7418        | 0.0000     | SURCHARGED |
| 15 minute winter | 23      | 12          | 125.043   | 0.818     | 237.9        | 1.6440        | 0.0000     | SURCHARGED |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 1       | 1.000 | 2       | 21.4          | 0.745          | 0.250    | 0.8050        |                    |
| 15 minute winter               | 2       | 1.001 | 3       | 61.4          | 1.545          | 0.955    | 1.1626        |                    |
| 15 minute winter               | 3       | 1.002 | 4       | 101.5         | 2.553          | 1.750    | 0.3200        |                    |
| 15 minute winter               | 4       | 1.003 | 5       | 104.6         | 1.085          | 0.911    | 1.4616        |                    |
| 15 minute winter               | 5       | 1.004 | 6       | 104.2         | 1.133          | 0.909    | 4.1795        |                    |
| 15 minute winter               | 6       | 1.005 | 7       | 102.8         | 1.201          | 0.793    | 2.1687        |                    |
| 15 minute winter               | 29      | 3.000 | 7       | 28.5          | 1.170          | 0.327    | 0.5516        |                    |
| 15 minute winter               | 7       | 1.006 | 8       | 133.9         | 1.364          | 0.862    | 5.9438        |                    |
| 15 minute winter               | 8       | 1.007 | 9       | 160.8         | 1.015          | 0.894    | 4.9721        |                    |
| 15 minute winter               | 30      | 4.000 | 9       | 28.6          | 0.945          | 0.847    | 0.9628        |                    |
| 15 minute winter               | 9       | 1.008 | 10      | 191.6         | 1.209          | 1.060    | 2.3083        |                    |
| 15 minute winter               | 10      | 1.009 | 11      | 209.1         | 1.363          | 1.159    | 2.9324        |                    |
| 15 minute winter               | 11      | 1.010 | 12      | 226.1         | 1.669          | 0.944    | 4.9094        |                    |
| 15 minute winter               | 14      | 2.000 | 15      | 35.0          | 0.987          | 0.407    | 1.1521        |                    |
| 15 minute winter               | 15      | 2.001 | 16      | 44.7          | 1.323          | 0.523    | 0.2413        |                    |
| 15 minute winter               | 16      | 2.002 | 17      | 79.3          | 1.738          | 0.388    | 1.8708        |                    |
| 15 minute winter               | 17      | 2.003 | 18      | 101.1         | 1.972          | 0.739    | 1.2715        |                    |
| 15 minute winter               | 18      | 2.004 | 19      | 102.4         | 1.585          | 0.695    | 2.0031        |                    |
| 15 minute winter               | 19      | 2.005 | 20      | 109.8         | 1.224          | 0.418    | 1.7984        |                    |
| 15 minute winter               | 31      | 5.000 | 32      | 30.6          | 1.010          | 0.231    | 0.5396        |                    |
| 15 minute winter               | 32      | 5.001 | 20      | 51.2          | 1.287          | 1.287    | 1.1275        |                    |
| 15 minute winter               | 20      | 2.006 | 21      | 185.0         | 1.678          | 1.067    | 5.2456        |                    |
| 15 minute winter               | 21      | 2.007 | 22      | 212.6         | 1.928          | 1.061    | 1.8594        |                    |
| 15 minute winter               | 22      | 2.008 | 23      | 231.4         | 2.098          | 0.918    | 2.0363        |                    |
| 15 minute winter               | 23      | 2.009 | 24      | 238.5         | 2.163          | 1.301    | 4.1943        |                    |

**Results for 30 year Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event       | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter | 24      | 12          | 124.376   | 0.546     | 248.4        | 1.1943        | 0.0000     | SURCHARGED |
| 15 minute winter | 25      | 12          | 124.204   | 0.504     | 308.7        | 2.1565        | 0.0000     | SURCHARGED |
| 15 minute winter | 35      | 10          | 127.663   | 0.110     | 29.4         | 0.2361        | 0.0000     | OK         |
| 15 minute winter | 36      | 12          | 127.458   | 0.145     | 44.7         | 0.2396        | 0.0000     | OK         |
| 15 minute winter | 37      | 12          | 127.362   | 0.580     | 73.4         | 1.1619        | 0.0000     | SURCHARGED |
| 15 minute winter | 38      | 12          | 127.172   | 1.025     | 142.6        | 3.9418        | 0.0000     | SURCHARGED |
| 15 minute winter | 39      | 12          | 126.871   | 0.992     | 127.0        | 1.4418        | 0.0000     | SURCHARGED |
| 15 minute winter | 40      | 12          | 126.643   | 0.854     | 128.4        | 1.0400        | 0.0000     | SURCHARGED |
| 15 minute winter | 41      | 12          | 126.426   | 0.934     | 159.4        | 2.1190        | 0.0000     | SURCHARGED |
| 15 minute winter | 42      | 12          | 125.771   | 0.572     | 162.3        | 0.7317        | 0.0000     | SURCHARGED |
| 15 minute winter | 43      | 13          | 125.193   | 0.329     | 165.6        | 0.4176        | 0.0000     | OK         |
| 15 minute winter | 44      | 12          | 125.079   | 0.359     | 187.6        | 0.7246        | 0.0000     | OK         |
| 15 minute winter | 48      | 10          | 127.395   | 0.038     | 4.2          | 0.0726        | 0.0000     | OK         |
| 15 minute winter | 50      | 10          | 127.081   | 0.139     | 32.5         | 0.2764        | 0.0000     | OK         |
| 15 minute winter | 51      | 10          | 126.896   | 0.150     | 34.8         | 0.1832        | 0.0000     | OK         |
| 15 minute winter | 52      | 11          | 126.823   | 0.120     | 38.3         | 0.1497        | 0.0000     | OK         |
| 15 minute winter | 53      | 11          | 126.482   | 0.165     | 58.1         | 0.2870        | 0.0000     | OK         |
| 15 minute winter | 54      | 11          | 126.217   | 0.164     | 66.5         | 0.2264        | 0.0000     | OK         |
| 15 minute winter | 55      | 11          | 125.826   | 0.212     | 98.3         | 0.4469        | 0.0000     | OK         |
| 15 minute winter | 60      | 10          | 125.824   | 0.151     | 30.4         | 0.4361        | 0.0000     | OK         |
| 15 minute winter | 56      | 11          | 125.647   | 0.246     | 141.4        | 0.3751        | 0.0000     | OK         |
| 15 minute winter | 57      | 11          | 125.243   | 0.362     | 158.5        | 0.8291        | 0.0000     | OK         |
| 15 minute winter | 58      | 11          | 125.042   | 0.266     | 173.4        | 0.5943        | 0.0000     | OK         |
| 15 minute winter | 59      | 12          | 124.959   | 0.459     | 171.9        | 0.8109        | 0.0000     | SURCHARGED |
| 15 minute winter | 45      | 12          | 124.871   | 0.471     | 350.1        | 0.8323        | 0.0000     | SURCHARGED |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 24      | 2.010 | 25      | 249.2         | 1.637          | 0.905    | 2.8303        |                    |
| 15 minute winter               | 25      | 2.011 | 26      | 309.7         | 2.044          | 1.054    | 5.5010        |                    |
| 15 minute winter               | 35      | 7.000 | 36      | 29.1          | 1.374          | 0.427    | 0.3056        |                    |
| 15 minute winter               | 36      | 7.001 | 37      | 44.0          | 1.894          | 0.586    | 0.7332        |                    |
| 15 minute winter               | 37      | 7.002 | 38      | 64.1          | 1.098          | 0.575    | 4.4346        |                    |
| 15 minute winter               | 38      | 7.003 | 39      | 119.2         | 1.693          | 0.904    | 1.3438        |                    |
| 15 minute winter               | 39      | 7.004 | 40      | 126.2         | 1.792          | 1.249    | 0.7655        |                    |
| 15 minute winter               | 40      | 7.005 | 41      | 128.4         | 1.824          | 0.653    | 0.6724        |                    |
| 15 minute winter               | 41      | 7.006 | 42      | 158.5         | 2.252          | 1.310    | 1.7408        |                    |
| 15 minute winter               | 42      | 7.007 | 43      | 162.1         | 2.302          | 1.250    | 1.3348        |                    |
| 15 minute winter               | 43      | 7.008 | 44      | 164.4         | 1.743          | 0.723    | 1.1755        |                    |
| 15 minute winter               | 44      | 7.009 | 45      | 185.9         | 2.015          | 0.824    | 2.1140        |                    |
| 15 minute winter               | 48      | 8.000 | 50      | 4.1           | 0.282          | 0.063    | 0.4018        |                    |
| 15 minute winter               | 50      | 8.002 | 51      | 31.7          | 1.311          | 0.605    | 0.2884        |                    |
| 15 minute winter               | 51      | 8.003 | 52      | 34.5          | 1.128          | 0.479    | 0.3103        |                    |
| 15 minute winter               | 52      | 8.004 | 53      | 38.6          | 1.173          | 0.339    | 1.2106        |                    |
| 15 minute winter               | 53      | 8.005 | 54      | 58.4          | 1.481          | 0.530    | 1.0596        |                    |
| 15 minute winter               | 54      | 8.006 | 55      | 66.8          | 1.455          | 0.554    | 1.7287        |                    |
| 15 minute winter               | 55      | 8.007 | 56      | 98.5          | 1.720          | 0.609    | 0.5806        |                    |
| 15 minute winter               | 60      | 9.000 | 56      | 29.8          | 1.035          | 0.746    | 0.9880        |                    |
| 15 minute winter               | 56      | 8.008 | 57      | 141.6         | 2.473          | 0.823    | 0.8938        |                    |
| 15 minute winter               | 57      | 8.009 | 58      | 157.8         | 1.339          | 1.033    | 5.4267        |                    |
| 15 minute winter               | 58      | 8.010 | 59      | 171.9         | 1.374          | 0.568    | 4.0173        |                    |
| 15 minute winter               | 59      | 8.011 | 45      | 169.7         | 1.071          | 0.791    | 3.5750        |                    |
| 15 minute winter               | 45      | 7.010 | 46      | 351.9         | 2.386          | 0.952    | 1.6498        |                    |

**Results for 30 year Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event        | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status     |
|-------------------|------------|----------------|--------------|--------------|-----------------|------------------|---------------|------------|
| 15 minute winter  | 46         | 12             | 124.586      | 0.486        | 351.9           | 0.8587           | 0.0000        | OK         |
| 360 minute winter | 47         | 352            | 124.354      | 0.354        | 86.7            | 0.6260           | 0.0000        | OK         |
| 15 minute winter  | 26         | 12             | 123.682      | 0.432        | 325.6           | 0.9461           | 0.0000        | OK         |
| 15 minute winter  | 27         | 12             | 123.579      | 0.429        | 326.1           | 0.7572           | 0.0000        | OK         |
| 600 minute winter | 28         | 450            | 123.566      | 0.516        | 42.5            | 0.9110           | 0.0000        | OK         |
| 600 minute winter | 12         | 450            | 123.565      | 0.613        | 67.3            | 639.2583         | 0.0000        | SURCHARGED |
| 15 minute summer  | 13         | 1              | 123.200      | 0.260        | 5.6             | 0.0000           | 0.0000        | OK         |
| 360 minute winter | 47a        | 360            | 124.350      | 0.450        | 89.9            | 391.5269         | 0.0000        | OK         |

| Link Event<br>(Upstream Depth) | US<br>Node | Link         | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|------------|--------------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute winter               | 46         | 7.011        | 47         | 350.6            | 1.694             | 1.135    | 10.1340          |                       |
| 360 minute winter              | 47         | 7.012        | 47a        | 89.9             | 0.757             | 0.127    | 1.8816           |                       |
| 15 minute winter               | 26         | 2.012        | 27         | 326.1            | 1.507             | 0.611    | 3.5877           |                       |
| 15 minute winter               | 27         | 2.013        | 28         | 326.0            | 1.418             | 0.625    | 7.3797           |                       |
| 600 minute winter              | 28         | 2.014        | 12         | 41.4             | 0.333             | 0.106    | 17.7885          |                       |
| 600 minute winter              | 12         | Hydro-Brake® | 13         | 23.2             |                   |          |                  | 767.7                 |
| 360 minute winter              | 47a        | Hydro-Brake® | 26         | 5.0              |                   |          |                  |                       |

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event       | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter | 1       | 10          | 126.711   | 1.284     | 36.5         | 3.1619        | 0.0000     | SURCHARGED |
| 15 minute winter | 2       | 10          | 126.571   | 1.725     | 126.2        | 5.0301        | 8.3348     | FLOOD      |
| 15 minute winter | 3       | 10          | 125.862   | 1.462     | 157.6        | 5.2442        | 9.4912     | FLOOD      |
| 15 minute winter | 4       | 12          | 125.442   | 1.142     | 134.8        | 2.2019        | 0.0000     | FLOOD RISK |
| 15 minute winter | 5       | 12          | 125.383   | 1.133     | 130.5        | 2.0022        | 0.0000     | FLOOD RISK |
| 15 minute winter | 6       | 12          | 125.246   | 1.146     | 122.3        | 2.0246        | 0.0000     | SURCHARGED |
| 15 minute winter | 29      | 12          | 125.332   | 0.764     | 52.2         | 1.7088        | 0.0000     | SURCHARGED |
| 15 minute winter | 7       | 12          | 125.162   | 1.162     | 160.1        | 2.6256        | 0.0000     | FLOOD RISK |
| 15 minute winter | 8       | 12          | 124.725   | 1.155     | 216.2        | 3.4848        | 0.0000     | SURCHARGED |
| 15 minute winter | 30      | 11          | 124.761   | 0.961     | 53.4         | 2.0510        | 0.0000     | SURCHARGED |
| 15 minute winter | 9       | 12          | 124.538   | 1.066     | 273.0        | 2.2875        | 0.0000     | SURCHARGED |
| 15 minute winter | 10      | 12          | 124.355   | 0.929     | 308.4        | 2.6772        | 0.0000     | FLOOD RISK |
| 15 minute winter | 11      | 12          | 124.078   | 0.713     | 342.9        | 1.9048        | 0.0000     | SURCHARGED |
| 15 minute winter | 14      | 12          | 128.515   | 1.235     | 64.7         | 3.5617        | 0.0000     | SURCHARGED |
| 15 minute winter | 15      | 12          | 128.419   | 1.335     | 76.7         | 1.9017        | 0.0000     | SURCHARGED |
| 15 minute winter | 16      | 12          | 128.363   | 1.321     | 125.7        | 2.9109        | 0.0000     | SURCHARGED |
| 15 minute winter | 17      | 11          | 127.804   | 2.033     | 179.2        | 4.4787        | 3.7808     | FLOOD      |
| 15 minute summer | 18      | 11          | 127.372   | 1.949     | 154.8        | 2.5203        | 0.0000     | FLOOD RISK |
| 15 minute winter | 19      | 11          | 127.200   | 1.876     | 177.8        | 2.8421        | 1.3750     | FLOOD      |
| 15 minute winter | 31      | 11          | 127.978   | 1.251     | 55.9         | 2.8041        | 0.0000     | SURCHARGED |
| 15 minute winter | 32      | 10          | 127.696   | 2.335     | 115.3        | 4.7214        | 6.1490     | FLOOD      |
| 15 minute winter | 20      | 10          | 127.030   | 1.986     | 306.7        | 4.5857        | 26.0823    | FLOOD      |
| 15 minute winter | 21      | 10          | 126.486   | 1.800     | 265.2        | 4.2552        | 7.8408     | FLOOD      |
| 15 minute winter | 22      | 10          | 126.202   | 1.685     | 272.9        | 3.2890        | 0.0000     | FLOOD RISK |
| 15 minute winter | 23      | 11          | 125.754   | 1.529     | 275.8        | 3.0709        | 0.0000     | SURCHARGED |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 1       | 1.000 | 2       | 35.1          | 0.883          | 0.410    | 0.8556        |                    |
| 15 minute winter               | 2       | 1.001 | 3       | 74.1          | 1.863          | 1.152    | 1.1626        |                    |
| 15 minute winter               | 3       | 1.002 | 4       | 128.3         | 3.227          | 2.212    | 0.3200        |                    |
| 15 minute winter               | 4       | 1.003 | 5       | 130.5         | 1.184          | 1.137    | 1.6592        |                    |
| 15 minute winter               | 5       | 1.004 | 6       | 122.3         | 1.150          | 1.066    | 4.9834        |                    |
| 15 minute winter               | 6       | 1.005 | 7       | 128.5         | 1.239          | 0.991    | 2.6096        |                    |
| 15 minute winter               | 29      | 3.000 | 7       | 43.5          | 1.329          | 0.500    | 0.8100        |                    |
| 15 minute winter               | 7       | 1.006 | 8       | 167.1         | 1.515          | 1.075    | 6.4697        |                    |
| 15 minute winter               | 8       | 1.007 | 9       | 214.6         | 1.355          | 1.194    | 4.9721        |                    |
| 15 minute winter               | 30      | 4.000 | 9       | 46.3          | 1.163          | 1.371    | 0.9628        |                    |
| 15 minute winter               | 9       | 1.008 | 10      | 274.9         | 1.735          | 1.521    | 2.3088        |                    |
| 15 minute winter               | 10      | 1.009 | 11      | 309.5         | 1.954          | 1.716    | 3.0751        |                    |
| 15 minute winter               | 11      | 1.010 | 12      | 343.7         | 2.171          | 1.435    | 5.5819        |                    |
| 15 minute winter               | 14      | 2.000 | 15      | 58.9          | 1.052          | 0.684    | 2.2867        |                    |
| 15 minute winter               | 15      | 2.001 | 16      | 70.9          | 1.371          | 0.829    | 0.4979        |                    |
| 15 minute winter               | 16      | 2.002 | 17      | 123.3         | 1.760          | 0.603    | 2.6618        |                    |
| 15 minute winter               | 17      | 2.003 | 18      | 147.7         | 2.098          | 1.080    | 1.2715        |                    |
| 15 minute summer               | 18      | 2.004 | 19      | 154.9         | 1.428          | 1.051    | 2.0031        |                    |
| 15 minute winter               | 19      | 2.005 | 20      | 164.8         | 1.494          | 0.627    | 1.7984        |                    |
| 15 minute winter               | 31      | 5.000 | 32      | 53.9          | 1.354          | 0.406    | 0.8422        |                    |
| 15 minute winter               | 32      | 5.001 | 20      | 72.7          | 1.828          | 1.827    | 1.1275        |                    |
| 15 minute winter               | 20      | 2.006 | 21      | 219.6         | 1.991          | 1.266    | 5.2456        |                    |
| 15 minute winter               | 21      | 2.007 | 22      | 247.1         | 2.240          | 1.233    | 1.8594        |                    |
| 15 minute winter               | 22      | 2.008 | 23      | 267.4         | 2.424          | 1.061    | 2.0363        |                    |
| 15 minute winter               | 23      | 2.009 | 24      | 278.5         | 2.526          | 1.519    | 4.1943        |                    |

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event       | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter | 24      | 11          | 124.889   | 1.059     | 297.8        | 2.3185        | 0.0000     | SURCHARGED |
| 15 minute winter | 25      | 10          | 124.647   | 0.947     | 434.0        | 4.0512        | 0.0000     | SURCHARGED |
| 15 minute winter | 35      | 12          | 129.174   | 1.621     | 53.4         | 3.4778        | 0.0000     | FLOOD RISK |
| 15 minute winter | 36      | 12          | 129.043   | 1.730     | 68.8         | 2.8568        | 0.0000     | FLOOD RISK |
| 15 minute winter | 37      | 11          | 128.595   | 1.813     | 113.5        | 3.6339        | 0.0000     | FLOOD RISK |
| 15 minute winter | 38      | 10          | 127.872   | 1.725     | 248.7        | 6.6309        | 31.4182    | FLOOD      |
| 15 minute winter | 39      | 11          | 127.679   | 1.800     | 156.8        | 2.6154        | 0.5290     | FLOOD      |
| 15 minute winter | 40      | 11          | 127.525   | 1.736     | 143.5        | 2.1147        | 0.0000     | FLOOD RISK |
| 15 minute winter | 41      | 11          | 127.370   | 1.878     | 198.5        | 4.2596        | 0.0000     | FLOOD RISK |
| 15 minute winter | 42      | 11          | 126.550   | 1.351     | 191.5        | 1.7295        | 0.0000     | SURCHARGED |
| 15 minute winter | 43      | 11          | 125.818   | 0.954     | 195.4        | 1.2105        | 0.0000     | SURCHARGED |
| 15 minute winter | 44      | 11          | 125.635   | 0.915     | 241.5        | 1.8491        | 0.0000     | SURCHARGED |
| 15 minute winter | 48      | 13          | 127.472   | 0.115     | 9.2          | 0.2197        | 0.0000     | OK         |
| 15 minute winter | 50      | 13          | 127.462   | 0.520     | 58.9         | 1.0325        | 0.0000     | SURCHARGED |
| 15 minute winter | 51      | 12          | 127.378   | 0.632     | 61.8         | 0.7725        | 0.0000     | SURCHARGED |
| 15 minute winter | 52      | 12          | 127.354   | 0.651     | 67.8         | 0.8110        | 0.0000     | SURCHARGED |
| 15 minute winter | 53      | 12          | 127.280   | 0.963     | 98.1         | 1.6791        | 0.0000     | SURCHARGED |
| 15 minute winter | 54      | 12          | 127.131   | 1.078     | 102.1        | 1.4890        | 0.0000     | SURCHARGED |
| 15 minute winter | 55      | 12          | 126.870   | 1.256     | 138.4        | 2.6476        | 0.0000     | SURCHARGED |
| 15 minute winter | 60      | 12          | 126.904   | 1.230     | 55.3         | 3.5474        | 0.0000     | SURCHARGED |
| 15 minute winter | 56      | 12          | 126.637   | 1.236     | 193.3        | 1.8849        | 0.0000     | SURCHARGED |
| 15 minute winter | 57      | 12          | 125.954   | 1.073     | 218.6        | 2.4577        | 0.0000     | SURCHARGED |
| 15 minute winter | 58      | 12          | 125.687   | 0.911     | 242.9        | 2.0359        | 0.0000     | SURCHARGED |
| 15 minute winter | 59      | 12          | 125.445   | 0.945     | 243.7        | 1.6693        | 0.0000     | SURCHARGED |
| 15 minute winter | 45      | 12          | 125.253   | 0.853     | 475.7        | 1.5067        | 0.0000     | SURCHARGED |

| Link Event<br>(Upstream Depth) | US Node | Link  | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 24      | 2.010 | 25      | 297.9         | 1.881          | 1.081    | 2.8303        |                    |
| 15 minute winter               | 25      | 2.011 | 26      | 430.1         | 2.715          | 1.464    | 5.7223        |                    |
| 15 minute winter               | 35      | 7.000 | 36      | 43.9          | 1.399          | 0.644    | 0.5571        |                    |
| 15 minute winter               | 36      | 7.001 | 37      | 67.2          | 1.851          | 0.894    | 0.8726        |                    |
| 15 minute winter               | 37      | 7.002 | 38      | 110.9         | 1.575          | 0.994    | 4.4346        |                    |
| 15 minute winter               | 38      | 7.003 | 39      | 139.6         | 1.983          | 1.059    | 1.3438        |                    |
| 15 minute winter               | 39      | 7.004 | 40      | 138.8         | 1.972          | 1.374    | 0.7655        |                    |
| 15 minute winter               | 40      | 7.005 | 41      | 143.3         | 2.036          | 0.729    | 0.6724        |                    |
| 15 minute winter               | 41      | 7.006 | 42      | 182.7         | 2.594          | 1.509    | 1.7408        |                    |
| 15 minute winter               | 42      | 7.007 | 43      | 187.2         | 2.659          | 1.444    | 1.3484        |                    |
| 15 minute winter               | 43      | 7.008 | 44      | 192.2         | 1.763          | 0.845    | 1.2310        |                    |
| 15 minute winter               | 44      | 7.009 | 45      | 238.0         | 2.158          | 1.055    | 2.1306        |                    |
| 15 minute winter               | 48      | 8.000 | 50      | 9.8           | 0.290          | 0.151    | 0.8009        |                    |
| 15 minute winter               | 50      | 8.002 | 51      | 56.1          | 1.417          | 1.071    | 0.4733        |                    |
| 15 minute winter               | 51      | 8.003 | 52      | 60.9          | 1.305          | 0.845    | 0.7123        |                    |
| 15 minute winter               | 52      | 8.004 | 53      | 68.4          | 1.245          | 0.601    | 2.5874        |                    |
| 15 minute winter               | 53      | 8.005 | 54      | 87.3          | 1.509          | 0.792    | 1.8906        |                    |
| 15 minute winter               | 54      | 8.006 | 55      | 103.7         | 1.496          | 0.860    | 2.6292        |                    |
| 15 minute winter               | 55      | 8.007 | 56      | 130.3         | 1.850          | 0.805    | 0.7108        |                    |
| 15 minute winter               | 60      | 9.000 | 56      | 42.9          | 1.079          | 1.072    | 1.3138        |                    |
| 15 minute winter               | 56      | 8.008 | 57      | 193.1         | 2.743          | 1.123    | 1.0945        |                    |
| 15 minute winter               | 57      | 8.009 | 58      | 219.3         | 1.384          | 1.435    | 7.3458        |                    |
| 15 minute winter               | 58      | 8.010 | 59      | 243.7         | 1.538          | 0.805    | 4.9883        |                    |
| 15 minute winter               | 59      | 8.011 | 45      | 244.2         | 1.541          | 1.138    | 3.5750        |                    |
| 15 minute winter               | 45      | 7.010 | 46      | 476.2         | 3.006          | 1.288    | 1.8207        |                    |

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.23%**

| Node Event        | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status     |
|-------------------|------------|----------------|--------------|--------------|-----------------|------------------|---------------|------------|
| 15 minute winter  | 46         | 12             | 124.770      | 0.670        | 476.2           | 1.1831           | 0.0000        | SURCHARGED |
| 960 minute winter | 47         | 945            | 124.703      | 0.703        | 54.3            | 1.2423           | 0.0000        | SURCHARGED |
| 600 minute winter | 26         | 585            | 123.992      | 0.742        | 74.0            | 1.6236           | 0.0000        | SURCHARGED |
| 600 minute winter | 27         | 570            | 123.992      | 0.842        | 73.0            | 1.4885           | 0.0000        | SURCHARGED |
| 600 minute winter | 28         | 585            | 123.992      | 0.942        | 72.0            | 1.6640           | 0.0000        | SURCHARGED |
| 600 minute winter | 12         | 570            | 123.992      | 1.040        | 114.9           | 1250.1040        | 0.0000        | SURCHARGED |
| 15 minute summer  | 13         | 1              | 123.200      | 0.260        | 22.4            | 0.0000           | 0.0000        | OK         |
| 960 minute winter | 47a        | 945            | 124.703      | 0.803        | 97.0            | 838.9242         | 0.0000        | SURCHARGED |

| Link Event<br>(Upstream Depth) | US<br>Node | Link         | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|------------|--------------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute winter               | 46         | 7.011        | 47         | 476.9            | 1.788             | 1.544    | 12.0408          |                       |
| 960 minute winter              | 47         | 7.012        | 47a        | 97.0             | 0.766             | 0.137    | 2.6526           |                       |
| 600 minute winter              | 26         | 2.012        | 27         | 73.0             | 0.856             | 0.137    | 4.6699           |                       |
| 600 minute winter              | 27         | 2.013        | 28         | 72.0             | 0.616             | 0.138    | 11.4586          |                       |
| 600 minute winter              | 28         | 2.014        | 12         | 70.8             | 0.421             | 0.182    | 20.0550          |                       |
| 600 minute winter              | 12         | Hydro-Brake® | 13         | 23.2             |                   |          |                  | 795.2                 |
| 960 minute winter              | 47a        | Hydro-Brake® | 26         | 5.0              |                   |          |                  |                       |