SECOND ADDENDUM

STORMWATER MANAGEMENT REPORT

524 York Road – Phase 2

York Road
Niagara-on-the-Lake, Ontario

Prepared by: ***Quartek Group Inc.***
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Quartek
Architects • Engineers • Planners • Project Managers

This addendum is to be read in conjunction with the Stormwater Management Report, dated October 2015, and addendum one, dated December 2016, completed for the Intercontinental Combo Hotel development proposal at 525 York Road, Niagara-on-the-Lake.

Tables 2-1 and 2-2 below are revised based upon recalculation of areas.

Table 2-1: Post-Development Areas

Post-Development Drainage Area	Catchment Area (ha)	Impervious Area (m^2)	Impervious Percentage
Internal North Side Sub Catchments			
201	0.053	396	74.7%
202	0.180	1,042	57.9%
203	0.313	2,754	88.0%
204	0.253	2191	86.6%
205	0.099	655	86.0%
206	0.253	2,312	91.4%
SUM	1.151	9,350	81.3%
Internal South Side Sub Catchments			
207	0.167	1,638	98.1%
208	0.131	1,310	100%
209	0.219	2,170	99.1%
210	0.219	2,190	100%
211	0.246	2,440	99.2%
212	0.145	1,405	96.9%
213	0.165	1,492	90.4%
SUM	1.292	12,645	92.9%
External Catchments			
301	2.651	14,591	57.9%
302	1.461	12,178	86.0%

Table 2-2: Proposed Post-Development Impervious Coverage

Property Area (m^2)	Impervious Area (m^2)	Total Impervious Coverage
28310	21995	77.7%

The site's total impervious coverage exceeds the allowable 75% limit, necessitating quantity controls to reduce peak outflow to comply with this threshold. To achieve this, stormwater will be temporarily detained on the combination hotel roof and within designated parking lot areas. The hotel roof will incorporate six (6) Zurn Z105-N1 roof drains to regulate flow, while parking lot areas will utilize surface ponding facilitated by orifice plates installed on catchbasin outlets. Table 2-3 provides a summary of the maximum permitted release rate and the design peak flows for a 5-year return period storm.

Software modelling for the two identified design storms was carried out using MIDUSS (Micro Interactive Design of Urban Storm Sewers) to demonstrate runoff conveyance under the anticipated storm event (see program output in Appendix A).

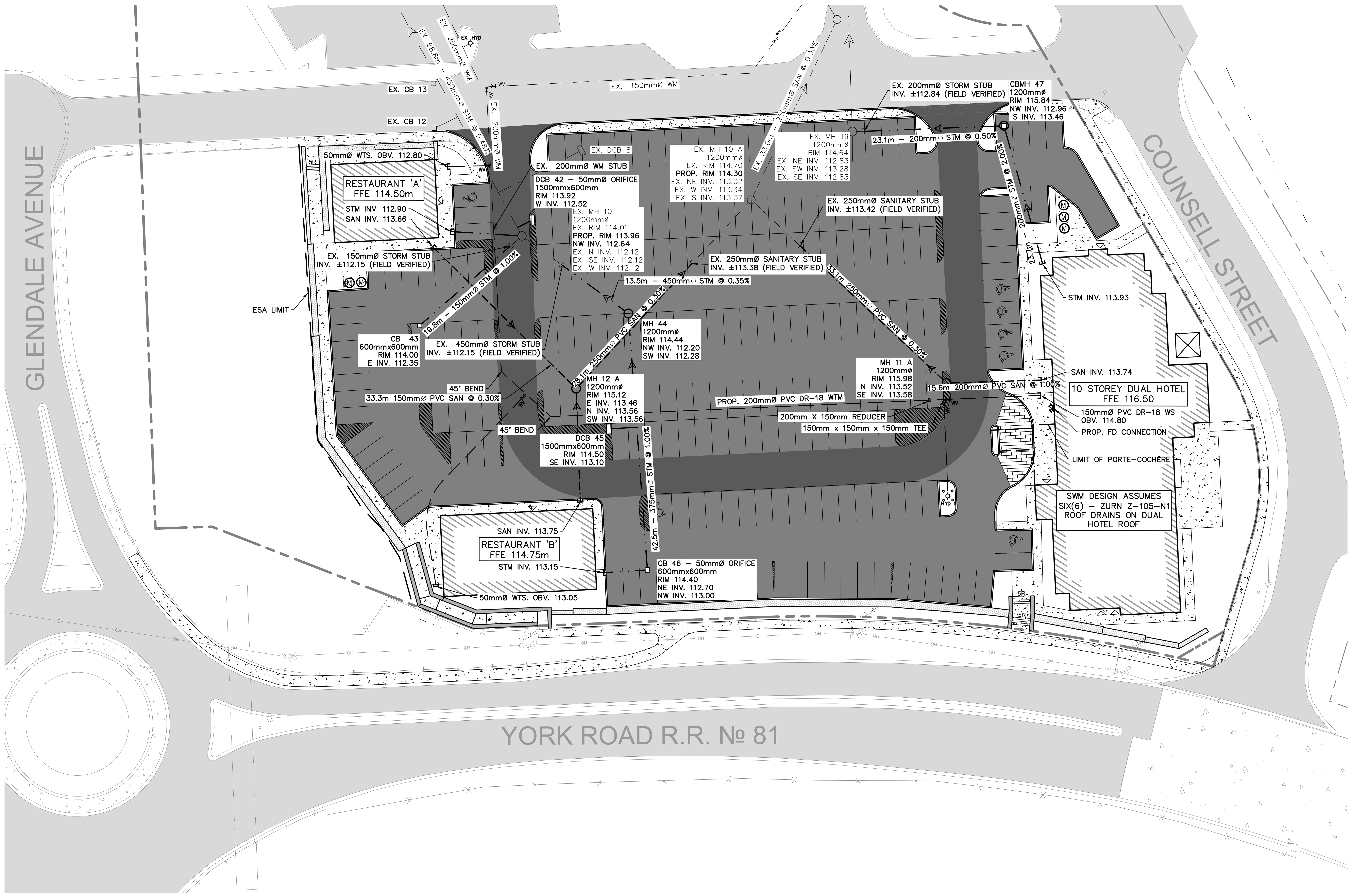
Table 2-3: Peak Flow

Peak Flow		
Outlet Structure	**Max. Allowed Release Rate (m^3/s) 1:5 Year**	**Design Peak Flow (m^3/s) 1:5 Year**
EX. Head Wall 17	0.434	0.395

Attachments

1. Drawing 13254-SS-2: Proposed Servicing
2. Drawing 12254-G-2: Proposed Grading
3. Drawing 13254-STM-2: Storm Drainage Areas
4. Appendix A: MIDUSS Model Output

Stormwater Management Report prepared by: *J. Prinzen, B.Eng., EIT, Quartek Group Inc.*
H. Klassen, P.Eng, Quartek Group Inc.
J. McLeod, B.Eng., EIT, Quartek Group Inc.



LEGEND

- PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- EXISTING GROUND CONTOUR
- PROPOSED CONCRETE CURB & GUTTER
- PROPOSED SILT FENCE
- PROPOSED STORM SEWER
- PROPOSED WATER SERVICE & CURB STOP
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PRIMARY DUCT BANK PER DWG. E1-2
- SECONDARY DUCT BANK PER DWG. E1-2
- FIB EXISTING FOUND IRON BAR
- SIB EXISTING STANDARD IRON BAR
- FH PROPOSED HYDRANT & VALVE
- MH EXISTING MAINTENANCE HOLE
- PROPOSED MAINTENANCE HOLE
- CB EXISTING CATCHBASIN
- PROPOSED CATCHBASIN
- DIRECTION OF FLOW
- FFE FINISHED FLOOR ELEVATION
- WV PROPOSED WATER VALVE
- PROPOSED GRADE ARROW
- 93.28 x PROPOSED GROUND ELEVATION
- 93.28 x EXISTING GROUND ELEVATION
- PROPOSED TACTILE WARNING PLATE
- TRANSFORMER
- PROPOSED CONCRETE
- EXISTING ASPHALT
- PROPOSED PARKING LOT PAVEMENT STRUCTURE
- PROPOSED ROADWAY PAVEMENT STRUCTURE
- ESA LIMIT

issue	issued for	date	init.
B	OPA/ZBA	19FEB2025	CJM
A	COORDINATION	07JAN2025	CJM

seal

Do not scale drawings. Report any discrepancies to Quartek Group Inc. before proceeding.

Drawings must be sealed by the Architect and / or Engineer prior to the use for any building permit applications and / or government approval. Seals must be signed by the Architect and / or Engineer before drawings are used for any construction.

All construction to be in accordance with the current Ontario Building Code and all applicable Ontario regulations.

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project title

524 YORK ROAD
PHASE 2

524 YORK ROAD, NIAGARA ON THE LAKE

drawing title

SITE SERVICING

drawn by	designed by
CJM	CJM/JRP
scale	**date**
1:400 (24x36)	07 Feb 2025
job number	**issue**
13254	B

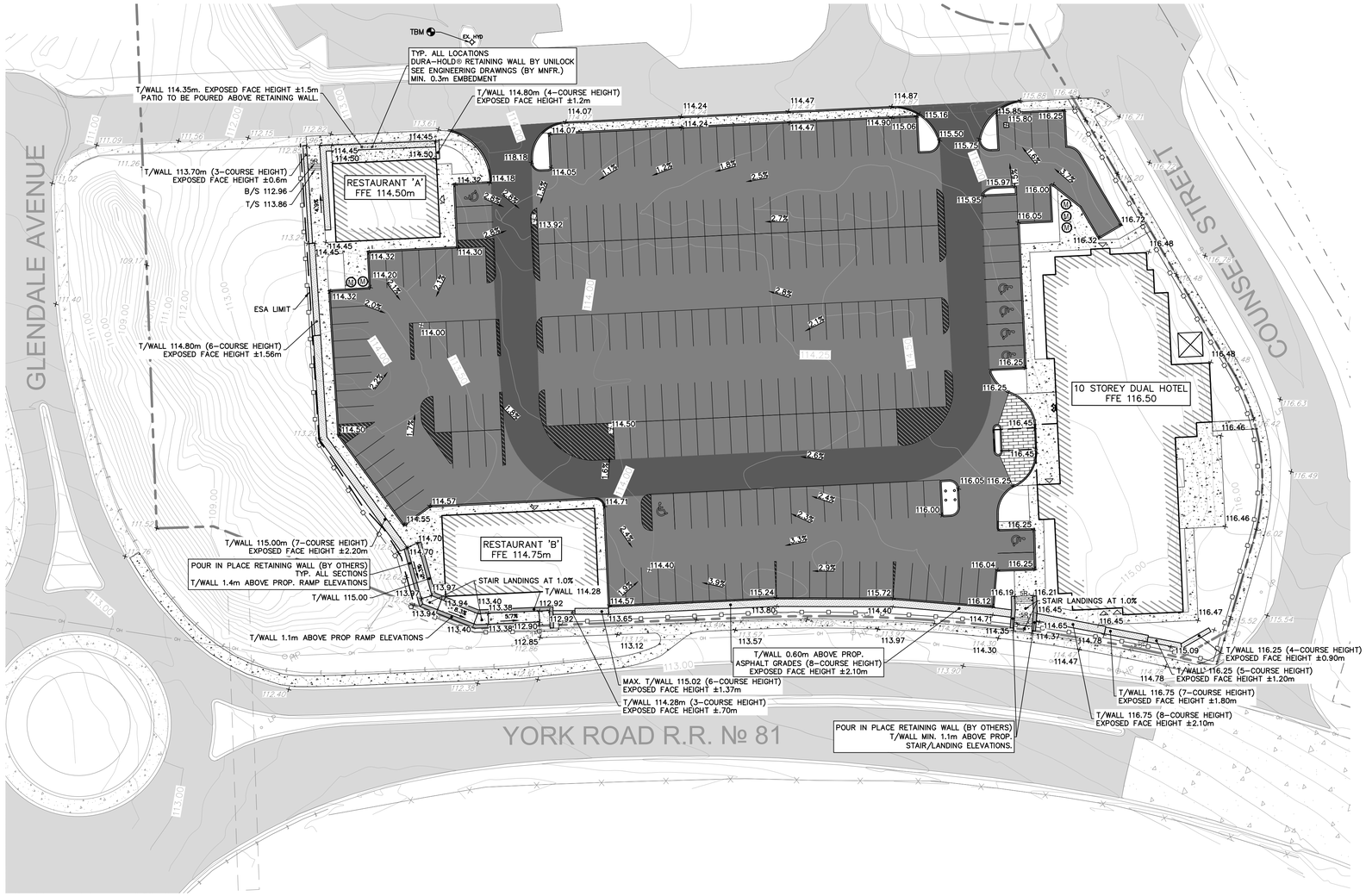
drawing number

SS-2

24"x36" Metric - Meters

P:\2013 Projects\13254 York Glendale Hotel Complex\Drawings\Civil\13254-BP.dwg drawing tab: SS-2

plotted by: jmcleod on Feb 19, 2025 - 1:18pm



TEMPORARY BENCHMARK INFORMATION

TOP OF OPERATING NUT OF FIRE HYDRANT.
LOCATED WITHIN CURB ISLAND NEAR
ENTRANCE OFF GLENDALE.

(AS SURVEYED 2024)
ELEVATION = 114.91
UTM (ZONE 17, NAD83 CSRS 2010 EPOCH)
N: 4,780,327.381m E: 649,508.381m

LEGEND

- PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- 275.00 EXISTING GROUND CONTOUR
- PROPOSED CONCRETE CURB & GUTTER
- PROPOSED SILT FENCE
- PROPOSED STORM SEWER
- PROPOSED WATER SERVICE & CURB STOP
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- NP PRIMARY DUCT BANK PER DWG. E1-2
- S SECONDARY DUCT BANK PER DWG. E1-2
- FIB EXISTING FOUND IRON BAR
- SIB EXISTING STANDARD IRON BAR
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- ESA LIMIT

issue	issued for	date	init.
A	COORDINATION	07FEB2024	CJM

seal

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project title

524 YORK ROAD
PHASE 2

524 YORK ROAD, NIAGARA ON THE LAKE

drawing title

GRADING

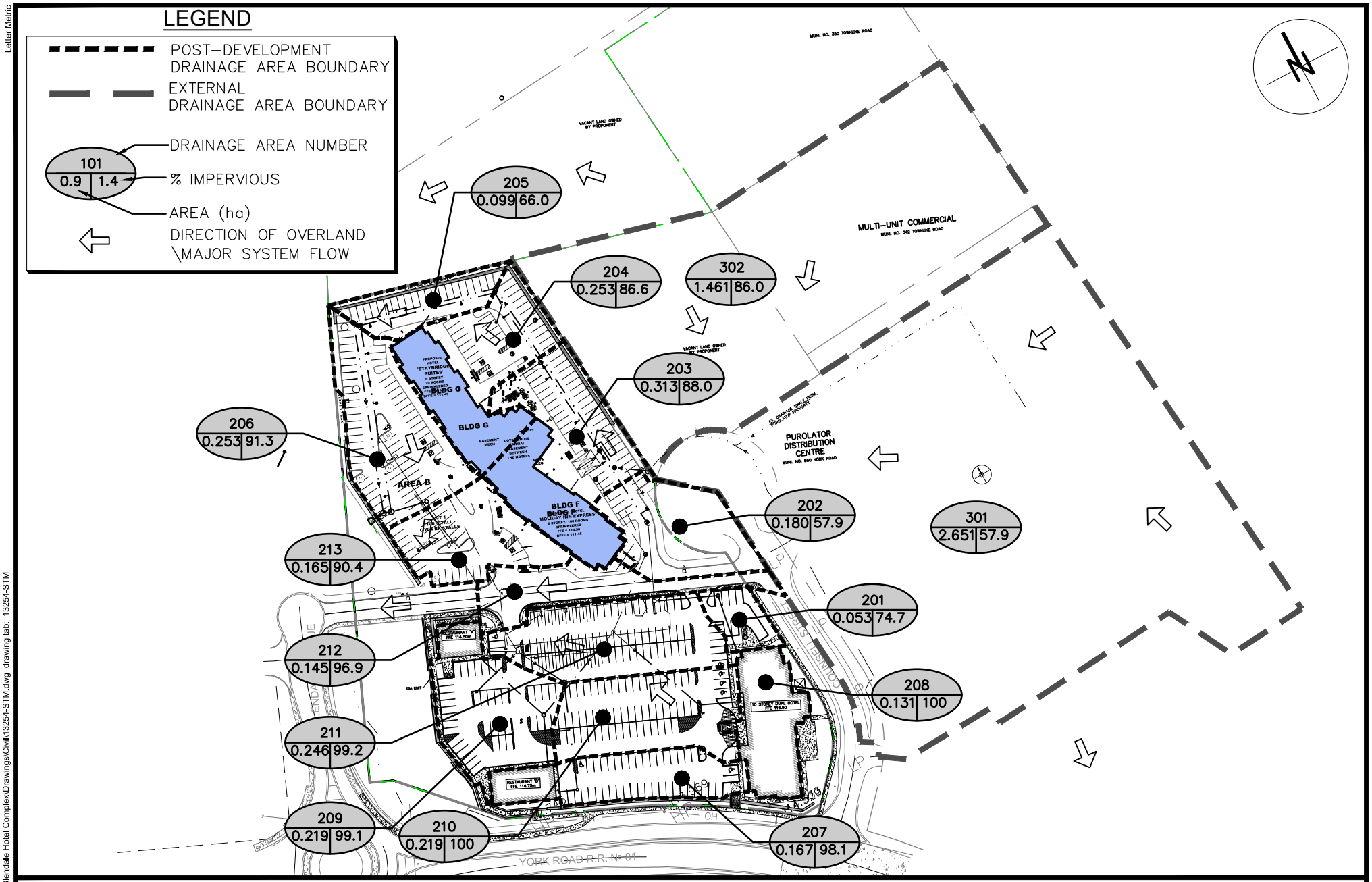
drawn by	designed by
CJM	CJM/JRP

scale	date
1:400 (24x36)	07 Feb 2025

job number	issue
13254	A

drawing number

G-2



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project title

524 YORK ROAD
PHASE 2

525 York Road,
Niagara-on-the-Lake, ON

drawing title

STORM DRAINAGE AREAS

drawn by	designed by
CJM	JRP
scale	date
1:2000	07 FEB 2025
job number	issue
13254	C

drawing number
13254-STM-2

STORMWATER MANAGEMENT REPORT

524 York Road - Phase Two
524 York Road
Niagara-on-the-Lake, Ontario

APPENDIX A

MIDUSS Model Output

```
"               MIDUSS Output ----------------------------------------------->"
"               MIDUSS version                              Version 2.25  rev. 465"
"               MIDUSS created                                    February 5, 2008"
"           10  Units used:                                              ie METRIC"
"               Job folder:                                  P:\2013 Projects\"
"                     13254 York Glendale Hotel Complex\Design\Detailed\MIDUSS"
"               Output filename:                                  5-YR_POST_M.out"
"               Licensee name:                                            Quartek"
"               Company                                                 Quartek_2"
"               Date & Time last used:                 2025-02-07 at 1:36:50 PM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      664.000   Coefficient A"
"        4.700   Constant B"
"        0.744   Exponent C"
"        0.375   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          120.814    mm/hr"
"             Total depth                 41.024    mm"
"            6   005hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 208"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          208   Combo Hotel"
"      100.000   % Impervious"
"        0.131   Total Area"
"       24.000   Flow length"
"        1.500   Overland Slope"
"        0.000   Pervious Area"
"       24.000   Pervious length"
"        1.500   Pervious slope"
"        0.131   Impervious Area"
"       24.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.000   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.863   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.031     0.000     0.000     0.000 c.m/sec"
"             Catchment 208          Pervious   Impervious Total Area "
"             Surface Area           0.000      0.131      0.131      hectare"
"             Time of concentration  22.533     2.017      2.017      minutes"
"             Time to Centroid       129.055    89.014     89.014     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
```

```
"             Rainfall volume        0.00       53.74      53.74      c.m"
"             Rainfall losses        31.994     5.639      5.639      mm"
"             Runoff depth           9.030      35.385     35.385     mm"
"             Runoff volume          0.00       46.35      46.35      c.m"
"             Runoff coefficient     0.000      0.863      0.863      "
"             Maximum flow           0.000      0.031      0.031      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                     0.031     0.031     0.000     0.000"
" 54          POND DESIGN"
"         0.031   Current peak flow    c.m/sec"
"         0.016   Target outflow    c.m/sec"
"          46.4   Hydrograph volume    c.m"
"           11.   Number of stages"
"         0.000   Minimum water level    metre"
"         0.100   Maximum water level    metre"
"         0.000   Starting water level    metre"
"             0   Keep Design Data: 1 = True; 0 = False"
"                   Level Discharge    Volume"
"                   0.000     0.000     0.000"
"                  0.01000   0.00152   0.03550"
"                  0.02000   0.00303    0.2840"
"                  0.03000   0.00455    0.9585"
"                  0.04000   0.00606     2.272"
"                  0.05000   0.00758     4.438"
"                  0.06000   0.00910     7.668"
"                  0.07000   0.01061    12.177"
"                  0.08000   0.01213    18.176"
"                  0.09000   0.01364    25.880"
"                   0.1000   0.01516    35.501"
"            1.   ROOFTOP"
"                 Roof area  Store area  Area/drain  Drain flow  Roof slope"
"                   hectare     hectare    sq.metre  L/min/25mm      g H:1V"
"                     0.131       0.130     217.000      37.900      66.667"
"               Using 6 roofdrains on roofstorage area of 1300. square metre"
"               Peak outflow                  0.011    c.m/sec"
"               Maximum level                 0.073    metre"
"               Maximum storage              14.254    c.m"
"               Centroidal lag                1.680   hours"
"                    0.031     0.031     0.011     0.000 c.m/sec"
" 40          HYDROGRAPH Next link "
"            5   Next link "
"                     0.031     0.011     0.011     0.000"
" 33          CATCHMENT 201"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          201   Restaurant - Bldg. 'E'"
"        74.700   % Impervious"
"         0.053   Total Area"
"        14.000   Flow length"
"         1.500   Overland Slope"
"         0.013   Pervious Area"
"        14.000   Pervious length"
"         1.500   Pervious slope"
"         0.040   Impervious Area"
```

```
"       14.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.861   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.010     0.011     0.011     0.000 c.m/sec"
"             Catchment 201          Pervious   Impervious Total Area "
"             Surface Area           0.013      0.040      0.053      hectare"
"             Time of concentration  16.307     1.460      2.643      minutes"
"             Time to Centroid       121.643    88.214     90.878     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        5.50       16.24      21.74      c.m"
"             Rainfall losses        32.000     5.721      12.369     mm"
"             Runoff depth           9.024      35.303     28.655     mm"
"             Runoff volume          1.21       13.98      15.19      c.m"
"             Runoff coefficient     0.220      0.861      0.698      "
"             Maximum flow           0.000      0.010      0.010      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                     0.010     0.018     0.011     0.000"
" 40          HYDROGRAPH Copy to Outflow"
"            8   Copy to Outflow"
"                     0.010     0.018     0.018     0.000"
" 40          HYDROGRAPH Next link "
"            5   Next link "
"                     0.010     0.018     0.018     0.000"
" 51          PIPE DESIGN"
"        0.018   Current peak flow    c.m/sec"
"        0.012   Manning 'n'"
"        0.200   Diameter    metre"
"        4.000   Gradient   %"
"             Depth of flow                0.069    metre"
"             Velocity                     1.889    m/sec"
"             Pipe capacity                0.071    c.m/sec"
"             Critical depth               0.115    metre"
" 53          ROUTE    Pipe Route 25"
"        25.00      Pipe Route 25 Reach length   ( metre)"
"        0.481   X-factor <= 0.5"
"        9.926   K-lag   ( seconds)"
"        0.000   Default(0) or user spec.(1) values used"
"        0.500   X-factor <= 0.5"
"       30.000   K-lag   ( seconds)"
"        0.500   Beta weighting factor"
"       10.000   Routing time step   ( seconds)"
"            1   No. of sub-reaches"
"             Peak outflow                 0.018    c.m/sec"
"                     0.010     0.018     0.018     0.000 c.m/sec"
" 40          HYDROGRAPH Next link "
"            5   Next link "
```

```
"                    0.010     0.018     0.018     0.000"
" 33          CATCHMENT 202"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          202   ROW & Hotel East"
"       57.900   % Impervious"
"        0.180   Total Area"
"       45.000   Flow length"
"        1.500   Overland Slope"
"        0.076   Pervious Area"
"       45.000   Pervious length"
"        1.500   Pervious slope"
"        0.104   Impervious Area"
"       45.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.862   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.024     0.018     0.018     0.000 c.m/sec"
"             Catchment 202          Pervious   Impervious Total Area "
"             Surface Area           0.076      0.104      0.180      hectare"
"             Time of concentration  32.857     2.941      7.631      minutes"
"             Time to Centroid       141.359    90.541     98.509     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        31.09      42.76      73.84      c.m"
"             Rainfall losses        31.986     5.681      16.756     mm"
"             Runoff depth           9.038      35.343     24.268     mm"
"             Runoff volume          6.85       36.83      43.68      c.m"
"             Runoff coefficient     0.220      0.862      0.592      "
"             Maximum flow           0.001      0.023      0.024      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                    0.024     0.041     0.018     0.000"
" 51          PIPE DESIGN"
"        0.041   Current peak flow    c.m/sec"
"        0.012   Manning 'n'"
"        0.250   Diameter    metre"
"        0.400   Gradient   %"
"             Surcharged HGL               0.411    %"
"             Velocity                     0.842    m/sec"
"             Pipe capacity                0.041    c.m/sec"
"             Critical depth               0.000    metre"
" 53          ROUTE    Pipe Route 46"
"        45.60      Pipe Route 46 Reach length   ( metre)"
"        0.143   X-factor <= 0.5"
"       36.934   K-lag   ( seconds)"
"        0.000   Default(0) or user spec.(1) values used"
"        0.500   X-factor <= 0.5"
```

```
"       30.000   K-lag   ( seconds)"
"        0.500   Beta weighting factor"
"       10.000   Routing time step   ( seconds)"
"            1   No. of sub-reaches"
"             Peak outflow                 0.041    c.m/sec"
"                    0.024     0.041     0.041     0.000 c.m/sec"
" 40         HYDROGRAPH Next link "
"            5   Next link "
"                    0.024     0.041     0.041     0.000"
" 33         CATCHMENT 203"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          203   Hotel - East Side"
"       88.000   % Impervious"
"        0.313   Total Area"
"       52.000   Flow length"
"        1.500   Overland Slope"
"        0.038   Pervious Area"
"       52.000   Pervious length"
"        1.500   Pervious slope"
"        0.275   Impervious Area"
"       52.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.861   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.063     0.041     0.041     0.000 c.m/sec"
"             Catchment 203          Pervious   Impervious Total Area "
"             Surface Area           0.038      0.275      0.313      hectare"
"             Time of concentration  35.835     3.208      4.308      minutes"
"             Time to Centroid       144.904    90.985     92.803     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        15.41      113.00     128.41     c.m"
"             Rainfall losses        31.986     5.697      8.852      mm"
"             Runoff depth           9.038      35.327     32.172     mm"
"             Runoff volume          3.39       97.30      100.70     c.m"
"             Runoff coefficient     0.220      0.861      0.784      "
"             Maximum flow           0.001      0.063      0.063      c.m/sec"
" 40         HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                    0.063     0.104     0.041     0.000"
" 51         PIPE DESIGN"
"        0.104   Current peak flow    c.m/sec"
"        0.012   Manning 'n'"
"        0.375   Diameter    metre"
"        0.400   Gradient   %"
"             Depth of flow                0.269    metre"
"             Velocity                     1.224    m/sec"
```

```
"             Pipe capacity                  0.120    c.m/sec"
"             Critical depth                 0.237    metre"
" 53          ROUTE    Pipe Route 65"
"        65.40      Pipe Route 65 Reach length   ( metre)"
"        0.088   X-factor <= 0.5"
"       40.064   K-lag   ( seconds)"
"        0.000   Default(0) or user spec.(1) values used"
"        0.500   X-factor <= 0.5"
"       30.000   K-lag   ( seconds)"
"        0.500   Beta weighting factor"
"       60.000   Routing time step   ( seconds)"
"            1   No. of sub-reaches"
"             Peak outflow                   0.103    c.m/sec"
"                    0.063     0.104     0.103     0.000 c.m/sec"
" 40          HYDROGRAPH Next link "
"            5   Next link "
"                    0.063     0.103     0.103     0.000"
" 33          CATCHMENT 204"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          204   Hotel - NE Side"
"       86.600   % Impervious"
"        0.253   Total Area"
"       53.000   Flow length"
"        1.500   Overland Slope"
"        0.034   Pervious Area"
"       53.000   Pervious length"
"        1.500   Pervious slope"
"        0.219   Impervious Area"
"       53.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.861   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.050     0.103     0.103     0.000 c.m/sec"
"             Catchment 204          Pervious   Impervious Total Area "
"             Surface Area           0.034      0.219      0.253      hectare"
"             Time of concentration  36.247     3.244      4.502      minutes"
"             Time to Centroid       145.394    91.047     93.117     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        13.91      89.88      103.79     c.m"
"             Rainfall losses        31.984     5.707      9.228      mm"
"             Runoff depth           9.040      35.317     31.796     mm"
"             Runoff volume          3.06       77.38      80.44      c.m"
"             Runoff coefficient     0.220      0.861      0.775      "
"             Maximum flow           0.001      0.050      0.050      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
```

```
"                    0.050     0.153     0.103     0.000"
" 51          PIPE DESIGN"
"        0.153   Current peak flow    c.m/sec"
"        0.012   Manning 'n'"
"        0.375   Diameter    metre"
"        0.700   Gradient   %"
"             Depth of flow                0.296    metre"
"             Velocity                     1.639    m/sec"
"             Pipe capacity                0.159    c.m/sec"
"             Critical depth               0.288    metre"
" 53          ROUTE    Pipe Route 26"
"        25.80      Pipe Route 26 Reach length   ( metre)"
"        0.000   X-factor <= 0.5"
"       11.807   K-lag   ( seconds)"
"        0.000   Default(0) or user spec.(1) values used"
"        0.500   X-factor <= 0.5"
"       30.000   K-lag   ( seconds)"
"        0.602   Beta weighting factor"
"       27.273   Routing time step   ( seconds)"
"            1   No. of sub-reaches"
"             Peak outflow                 0.152    c.m/sec"
"                    0.050     0.153     0.152     0.000 c.m/sec"
" 40          HYDROGRAPH Next link "
"           5   Next link "
"                    0.050     0.152     0.152     0.000"
" 33          CATCHMENT 205"
"           1   Triangular SCS"
"           1   Equal length"
"           1   SCS method"
"         205   Hotel North Limit"
"       66.000   % Impervious"
"        0.099   Total Area"
"       18.000   Flow length"
"        1.500   Overland Slope"
"        0.034   Pervious Area"
"       18.000   Pervious length"
"        1.500   Pervious slope"
"        0.065   Impervious Area"
"       18.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.863   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.016     0.152     0.152     0.000 c.m/sec"
"             Catchment 205          Pervious   Impervious Total Area "
"             Surface Area           0.034      0.065      0.099      hectare"
"             Time of concentration  18.961     1.697      3.703      minutes"
"             Time to Centroid       124.785    88.520     92.734     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
```

```
"            Rainfall volume        13.81      26.81      40.61      c.m"
"            Rainfall losses        31.994     5.640      14.600     mm"
"            Runoff depth           9.030      35.384     26.424     mm"
"            Runoff volume          3.04       23.12      26.16      c.m"
"            Runoff coefficient     0.220      0.863      0.644      "
"            Maximum flow           0.001      0.016      0.016      c.m/sec"
" 40         HYDROGRAPH Add Runoff "
"           4   Add Runoff "
"                    0.016     0.165     0.152     0.000"
" 51         PIPE DESIGN"
"       0.165   Current peak flow    c.m/sec"
"       0.012   Manning 'n'"
"       0.450   Diameter    metre"
"       0.350   Gradient   %"
"            Depth of flow                0.335    metre"
"            Velocity                     1.301    m/sec"
"            Pipe capacity                0.183    c.m/sec"
"            Critical depth               0.286    metre"
" 53         ROUTE    Pipe Route 54"
"       54.20      Pipe Route 54 Reach length   ( metre)"
"       0.000   X-factor <= 0.5"
"      31.243   K-lag   ( seconds)"
"       0.000   Default(0) or user spec.(1) values used"
"       0.500   X-factor <= 0.5"
"      30.000   K-lag   ( seconds)"
"       0.600   Beta weighting factor"
"      75.000   Routing time step   ( seconds)"
"           1   No. of sub-reaches"
"            Peak outflow                 0.163    c.m/sec"
"                    0.016     0.165     0.163     0.000 c.m/sec"
" 40         HYDROGRAPH Next link "
"           5   Next link "
"                    0.016     0.163     0.163     0.000"
" 33         CATCHMENT 206"
"           1   Triangular SCS"
"           1   Equal length"
"           1   SCS method"
"         206   Hotel - NW Side"
"      91.300   % Impervious"
"       0.253   Total Area"
"      32.000   Flow length"
"       1.500   Overland Slope"
"       0.022   Pervious Area"
"      32.000   Pervious length"
"       1.500   Pervious slope"
"       0.231   Impervious Area"
"      32.000   Impervious length"
"       1.500   Impervious slope"
"       0.250   Pervious Manning 'n'"
"      75.000   Pervious SCS Curve No."
"       0.220   Pervious Runoff coefficient"
"       0.100   Pervious Ia/S coefficient"
"       8.467   Pervious Initial abstraction"
"       0.015   Impervious Manning 'n'"
"      98.000   Impervious SCS Curve No."
"       0.863   Impervious Runoff coefficient"
```

```
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.053     0.163     0.163     0.000 c.m/sec"
"             Catchment 206          Pervious   Impervious Total Area "
"             Surface Area           0.022      0.231      0.253      hectare"
"             Time of concentration  26.779     2.397      2.976      minutes"
"             Time to Centroid       134.102    89.692     90.747     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        9.03       94.76      103.79     c.m"
"             Rainfall losses        31.990     5.620      7.914      mm"
"             Runoff depth           9.034      35.404     33.110     mm"
"             Runoff volume          1.99       81.78      83.77      c.m"
"             Runoff coefficient     0.220      0.863      0.807      "
"             Maximum flow           0.000      0.053      0.053      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                     0.053     0.212     0.163     0.000"
" 51          PIPE DESIGN"
"        0.212   Current peak flow    c.m/sec"
"        0.012   Manning 'n'"
"        0.450   Diameter    metre"
"        0.600   Gradient   %"
"             Depth of flow                 0.330    metre"
"             Velocity                      1.699    m/sec"
"             Pipe capacity                 0.239    c.m/sec"
"             Critical depth                0.325    metre"
" 53          ROUTE    Pipe Route 74"
"        74.00      Pipe Route 74 Reach length   ( metre)"
"        0.195   X-factor <= 0.5"
"       32.661   K-lag   ( seconds)"
"        0.000   Default(0) or user spec.(1) values used"
"        0.500   X-factor <= 0.5"
"       30.000   K-lag   ( seconds)"
"        0.500   Beta weighting factor"
"       50.000   Routing time step   ( seconds)"
"            1   No. of sub-reaches"
"             Peak outflow                  0.210    c.m/sec"
"                     0.053     0.212     0.210     0.000 c.m/sec"
" 40          HYDROGRAPH   Combine    2"
"            6   Combine "
"            2   Node #"
"                O/G Separator(s)"
"             Maximum flow                  0.210    c.m/sec"
"             Hydrograph volume           396.279    c.m"
"                     0.053     0.212     0.210     0.210"
" 40          HYDROGRAPH Start - New Tributary"
"            2   Start - New Tributary"
"                     0.053     0.000     0.210     0.210"
" 33          CATCHMENT 207"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          207   Restaurant - Bldg. 'D'"
"       98.100   % Impervious"
"        0.167   Total Area"
"       47.000   Flow length"
```

```
"        2.000   Overland Slope"
"        0.003   Pervious Area"
"       47.000   Pervious length"
"        2.000   Pervious slope"
"        0.164   Impervious Area"
"       47.000   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.861   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.036     0.000     0.210     0.210 c.m/sec"
"             Catchment 207          Pervious   Impervious Total Area "
"             Surface Area           0.003      0.164      0.167      hectare"
"             Time of concentration  30.937     2.769      2.908      minutes"
"             Time to Centroid       139.069    90.236     90.477     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        1.30       67.21      68.51      c.m"
"             Rainfall losses        31.985     5.712      6.212      mm"
"             Runoff depth           9.039      35.312     34.812     mm"
"             Runoff volume          0.29       57.85      58.14      c.m"
"             Runoff coefficient     0.220      0.861      0.849      "
"             Maximum flow           0.000      0.036      0.036      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                    0.036     0.036     0.210     0.210"
" 54          POND DESIGN"
"        0.036   Current peak flow    c.m/sec"
"        0.016   Target outflow    c.m/sec"
"         58.1   Hydrograph volume    c.m"
"          11.   Number of stages"
"      112.700   Minimum water level    metre"
"      114.650   Maximum water level    metre"
"      112.700   Starting water level    metre"
"            0   Keep Design Data: 1 = True; 0 = False"
"                  Level Discharge    Volume"
"                112.700     0.000     0.000"
"                112.895   0.00220  1.00E-07"
"                113.090   0.00327  1.00E-07"
"                113.285   0.00407  1.00E-07"
"                113.480   0.00473  1.00E-07"
"                113.675   0.00532  1.00E-07"
"                113.870   0.00584  1.00E-07"
"                114.065   0.00632  1.00E-07"
"                114.260   0.00677  1.00E-07"
"                114.455   0.00719    0.4356"
"                114.650   0.00759    40.906"
"           1.   ORIFICES"
"                Orifice   Orifice   Orifice Number of"
"                 invert coefficie  diameter  orifices"
```

```
"               112.700     0.630    0.0500     1.000"
"           1.   WEDGES"
"                  Wedge   Grade 1   Grade 2     Angle    Number"
"                 invert    g1H:1V    g2H:1V subtended of wedges"
"               114.400    50.000    50.000    90.000     4.000"
"             Peak outflow                  0.007    c.m/sec"
"             Maximum level                114.559    metre"
"             Maximum storage               21.990    c.m"
"             Centroidal lag                 1.961   hours"
"                  0.036     0.036     0.007     0.210 c.m/sec"
" 40          HYDROGRAPH Next link "
"            5   Next link "
"                      0.036     0.007     0.007     0.210"
" 33          CATCHMENT 210"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          210    "
"       100.000   % Impervious"
"         0.219   Total Area"
"        47.000   Flow length"
"         2.000   Overland Slope"
"         0.000   Pervious Area"
"        47.000   Pervious length"
"         2.000   Pervious slope"
"         0.219   Impervious Area"
"        47.000   Impervious length"
"         2.000   Impervious slope"
"         0.250   Pervious Manning 'n'"
"        75.000   Pervious SCS Curve No."
"         0.000   Pervious Runoff coefficient"
"         0.100   Pervious Ia/S coefficient"
"         8.467   Pervious Initial abstraction"
"         0.015   Impervious Manning 'n'"
"        98.000   Impervious SCS Curve No."
"         0.861   Impervious Runoff coefficient"
"         0.100   Impervious Ia/S coefficient"
"         0.518   Impervious Initial abstraction"
"                      0.048     0.007     0.007     0.210 c.m/sec"
"              Catchment 210          Pervious   Impervious Total Area "
"              Surface Area           0.000      0.219      0.219      hectare"
"              Time of concentration  30.937     2.769      2.769      minutes"
"              Time to Centroid       139.069    90.236     90.236     minutes"
"              Rainfall depth         41.024     41.024     41.024     mm"
"              Rainfall volume        0.00       89.84      89.84      c.m"
"              Rainfall losses        31.985     5.712      5.712      mm"
"              Runoff depth           9.039      35.312     35.312     mm"
"              Runoff volume          0.00       77.33      77.33      c.m"
"              Runoff coefficient     0.000      0.861      0.861      "
"              Maximum flow           0.000      0.048      0.048      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                      0.048     0.056     0.007     0.210"
" 51          PIPE DESIGN"
"         0.056   Current peak flow    c.m/sec"
"         0.012   Manning 'n'"
```

```
"        0.375   Diameter    metre"
"        1.000   Gradient   %"
"             Depth of flow                0.139    metre"
"             Velocity                     1.493    m/sec"
"             Pipe capacity                0.190    c.m/sec"
"             Critical depth               0.171    metre"
" 53          ROUTE    Pipe Route 43"
"        43.00      Pipe Route 43 Reach length   ( metre)"
"        0.410   X-factor <= 0.5"
"       21.606   K-lag   ( seconds)"
"        0.000   Default(0) or user spec.(1) values used"
"        0.500   X-factor <= 0.5"
"       30.000   K-lag   ( seconds)"
"        0.500   Beta weighting factor"
"       25.000   Routing time step   ( seconds)"
"            1   No. of sub-reaches"
"             Peak outflow                 0.056    c.m/sec"
"                    0.048     0.056     0.056     0.210 c.m/sec"
" 40          HYDROGRAPH Next link "
"            5   Next link "
"                    0.048     0.056     0.056     0.210"
" 33          CATCHMENT 209"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          209   Resturant Bldgs. 'B' & 'C'"
"       99.200   % Impervious"
"        0.256   Total Area"
"       66.000   Flow length"
"        1.500   Overland Slope"
"        0.002   Pervious Area"
"       66.000   Pervious length"
"        1.500   Pervious slope"
"        0.254   Impervious Area"
"       66.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.857   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.059     0.056     0.056     0.210 c.m/sec"
"             Catchment 209          Pervious   Impervious Total Area "
"             Surface Area           0.002      0.254      0.256      hectare"
"             Time of concentration  41.345     3.701      3.779      minutes"
"             Time to Centroid       151.481    91.812     91.936     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        0.84       104.18     105.02     c.m"
"             Rainfall losses        31.988     5.848      6.058      mm"
"             Runoff depth           9.036      35.176     34.966     mm"
"             Runoff volume          0.19       89.33      89.51      c.m"
```

```
"             Runoff coefficient     0.220      0.857      0.852      "
"             Maximum flow           0.000      0.059      0.059      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                    0.059     0.114     0.056     0.210"
" 40          HYDROGRAPH Copy to Outflow"
"            8   Copy to Outflow"
"                    0.059     0.114     0.114     0.210"
" 40          HYDROGRAPH   Combine    3"
"            6   Combine "
"            3   Node #"
"                EX. MH 10"
"             Maximum flow                  0.114    c.m/sec"
"             Hydrograph volume           225.108    c.m"
"                    0.059     0.114     0.114     0.114"
" 40          HYDROGRAPH Start - New Tributary"
"            2   Start - New Tributary"
"                    0.059     0.000     0.114     0.114"
" 33          CATCHMENT 211"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          211   Restaurant Bldg. 'A'"
"       99.200   % Impervious"
"        0.246   Total Area"
"       38.000   Flow length"
"        2.000   Overland Slope"
"        0.002   Pervious Area"
"       38.000   Pervious length"
"        2.000   Pervious slope"
"        0.244   Impervious Area"
"       38.000   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.863   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.056     0.000     0.114     0.114 c.m/sec"
"             Catchment 211          Pervious   Impervious Total Area "
"             Surface Area           0.002      0.244      0.246      hectare"
"             Time of concentration  27.233     2.438      2.489      minutes"
"             Time to Centroid       134.642    89.749     89.841     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        0.81       100.11     100.92     c.m"
"             Rainfall losses        31.987     5.624      5.835      mm"
"             Runoff depth           9.037      35.400     35.189     mm"
"             Runoff volume          0.18       86.39      86.57      c.m"
"             Runoff coefficient     0.220      0.863      0.858      "
"             Maximum flow           0.000      0.056      0.056      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
```

```
"            4   Add Runoff "
"                     0.056     0.056     0.114     0.114"
" 54          POND DESIGN"
"         0.056   Current peak flow    c.m/sec"
"         0.016   Target outflow    c.m/sec"
"          86.6   Hydrograph volume    c.m"
"           11.   Number of stages"
"       112.520   Minimum water level    metre"
"       114.180   Maximum water level    metre"
"       112.520   Starting water level    metre"
"            0   Keep Design Data: 1 = True; 0 = False"
"                  Level Discharge    Volume"
"                112.520     0.000     0.000"
"                112.686   0.00200  1.00E-07"
"                112.852   0.00299  1.00E-07"
"                113.018   0.00374  1.00E-07"
"                113.184   0.00435  1.00E-07"
"                113.350   0.00489  1.00E-07"
"                113.516   0.00538  1.00E-07"
"                113.682   0.00582  1.00E-07"
"                113.848   0.00623  1.00E-07"
"                114.014   0.00662    2.175"
"                114.180   0.00699    46.015"
"           1.   ORIFICES"
"                Orifice   Orifice   Orifice Number of"
"                 invert coefficie  diameter  orifices"
"                112.520     0.630    0.0500     1.000"
"           1.   WEDGES"
"                  Wedge   Grade 1   Grade 2     Angle    Number"
"                 invert    g1H:1V    g2H:1V subtended of wedges"
"                113.920    50.000    50.000    90.000     4.000"
"             Peak outflow                  0.007    c.m/sec"
"             Maximum level               114.166    metre"
"             Maximum storage              42.314    c.m"
"             Centroidal lag                2.513   hours"
"                  0.056     0.056     0.007     0.114 c.m/sec"
" 40          HYDROGRAPH   Combine    3"
"            6   Combine "
"            3   Node #"
"                EX. MH 10"
"             Maximum flow                  0.121    c.m/sec"
"             Hydrograph volume           311.753    c.m"
"                     0.056     0.056     0.007     0.121"
" 40          HYDROGRAPH Start - New Tributary"
"            2   Start - New Tributary"
"                     0.056     0.000     0.007     0.121"
" 40          HYDROGRAPH   Confluence    3"
"            7   Confluence "
"            3   Node #"
"                EX. MH 10"
"             Maximum flow                  0.121    c.m/sec"
"             Hydrograph volume           311.753    c.m"
"                     0.056     0.121     0.007     0.000"
" 40          HYDROGRAPH Copy to Outflow"
"            8   Copy to Outflow"
"                     0.056     0.121     0.121     0.000"
```

```
" 40          HYDROGRAPH Next link "
"            5   Next link "
"                     0.056     0.121     0.121     0.000"
" 33          CATCHMENT 212"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          212   Street 'A'"
"       96.900   % Impervious"
"        0.145   Total Area"
"       97.000   Flow length"
"        1.500   Overland Slope"
"        0.004   Pervious Area"
"       97.000   Pervious length"
"        1.500   Pervious slope"
"        0.141   Impervious Area"
"       97.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.870   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.033     0.121     0.121     0.000 c.m/sec"
"             Catchment 212          Pervious   Impervious Total Area "
"             Surface Area           0.004      0.141      0.145      hectare"
"             Time of concentration  52.091     4.663      5.044      minutes"
"             Time to Centroid       164.296    93.145     93.717     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        1.84       57.64      59.48      c.m"
"             Rainfall losses        31.983     5.338      6.164      mm"
"             Runoff depth           9.041      35.686     34.860     mm"
"             Runoff volume          0.41       50.14      50.55      c.m"
"             Runoff coefficient     0.220      0.870      0.850      "
"             Maximum flow           0.000      0.033      0.033      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                     0.033     0.154     0.121     0.000"
" 40          HYDROGRAPH Copy to Outflow"
"            8   Copy to Outflow"
"                     0.033     0.154     0.154     0.000"
" 40          HYDROGRAPH Next link "
"            5   Next link "
"                     0.033     0.154     0.154     0.000"
" 33          CATCHMENT 213"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          213   Hotel - SW Side"
"       90.400   % Impervious"
"        0.165   Total Area"
```

```
"       37.000   Flow length"
"        1.500   Overland Slope"
"        0.016   Pervious Area"
"       37.000   Pervious length"
"        1.500   Pervious slope"
"        0.149   Impervious Area"
"       37.000   Impervious length"
"        1.500   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.220   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.861   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                    0.033     0.154     0.154     0.000 c.m/sec"
"             Catchment 213          Pervious   Impervious Total Area "
"             Surface Area           0.016      0.149      0.165      hectare"
"             Time of concentration  29.216     2.615      3.318      minutes"
"             Time to Centroid       137.016    89.989     91.232     minutes"
"             Rainfall depth         41.024     41.024     41.024     mm"
"             Rainfall volume        6.50       61.19      67.69      c.m"
"             Rainfall losses        31.988     5.684      8.209      mm"
"             Runoff depth           9.036      35.340     32.815     mm"
"             Runoff volume          1.43       52.71      54.15      c.m"
"             Runoff coefficient     0.220      0.861      0.800      "
"             Maximum flow           0.000      0.033      0.033      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                    0.033     0.187     0.154     0.000"
" 51          PIPE DESIGN"
"        0.187   Current peak flow    c.m/sec"
"        0.012   Manning 'n'"
"        0.450   Diameter    metre"
"        0.600   Gradient   %"
"             Depth of flow                0.299    metre"
"             Velocity                     1.664    m/sec"
"             Pipe capacity                0.239    c.m/sec"
"             Critical depth               0.304    metre"
" 53          ROUTE    Pipe Route 50"
"        50.40      Pipe Route 50 Reach length   ( metre)"
"        0.141   X-factor <= 0.5"
"       22.722   K-lag   ( seconds)"
"        0.000   Default(0) or user spec.(1) values used"
"        0.500   X-factor <= 0.5"
"       30.000   K-lag   ( seconds)"
"        0.500   Beta weighting factor"
"       37.500   Routing time step   ( seconds)"
"            1   No. of sub-reaches"
"             Peak outflow                 0.185    c.m/sec"
"                    0.033     0.187     0.185     0.000 c.m/sec"
" 40          HYDROGRAPH   Combine    2"
"            6   Combine "
```

```
"            2   Node #"
"                O/G Separator(s)"
"             Maximum flow                  0.395    c.m/sec"
"             Hydrograph volume           812.723    c.m"
"                     0.033     0.187     0.185     0.395"
" 40          HYDROGRAPH   Confluence    2"
"            7   Confluence "
"            2   Node #"
"                O/G Separator(s)"
"             Maximum flow                  0.395    c.m/sec"
"             Hydrograph volume           812.723    c.m"
"                     0.033     0.395     0.185     0.000"
" 51          PIPE DESIGN"
"         0.395   Current peak flow    c.m/sec"
"         0.012   Manning 'n'"
"         0.900   Diameter    metre"
"         0.900   Gradient   %"
"              Depth of flow                0.282    metre"
"              Velocity                     2.322    m/sec"
"              Pipe capacity                1.861    c.m/sec"
"              Critical depth               0.364    metre"
" 53          ROUTE    Pipe Route 6"
"          6.20      Pipe Route 6 Reach length   ( metre)"
"         0.000   X-factor <= 0.5"
"         2.002   K-lag   ( seconds)"
"         0.000   Default(0) or user spec.(1) values used"
"         0.500   X-factor <= 0.5"
"        30.000   K-lag   ( seconds)"
"         0.737   Beta weighting factor"
"         7.317   Routing time step   ( seconds)"
"             1   No. of sub-reaches"
"              Peak outflow                 0.395    c.m/sec"
"                     0.033     0.395     0.395     0.000 c.m/sec"
" 38          START/RE-START TOTALS 2"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    2.480    hectare"
"             Total Impervious area                   2.236    hectare"
"             Total % impervious                     90.167"
" 19          EXIT"
```