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COSMOPOLITAN PROJECTS PTY (LTD)

PORTION 8 OF THE FARM RIETSPRUIT 152-IR

1:50 AND 1:100 YEAR FLOODLINE DETERMINATION REPORT

FIRST SUBMISSION: SEPTEMBER 2021

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COSMOPOLITAN PROJECTS PTY (LTD)

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THIS REPORT WAS PREPARED BY INFRACONSULT ENGINEERING FOR COSMOPOLITAN PROJECTS FOR THE FLOODLINE DETERMINATION OF THE 1:50 AND 1:100 YEAR STORM EVENTS FOR PORTION 8 OF THE FARM RIETSPRUIT 152-IR

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1. BACKGROUND AND EXECUTIVE SUMMARY

1.1 BACKGROUND AND INTRODUCTION

A new development is proposed on Portion 8 of the farm Rietspruit 152-IR in Midvaal. A watercourse Rietspruit runs on the Southern side of the current proposed Development from East to West. A need is therefore identified to carry out a detailed floodline study to assess the possible flooding risk due to the 1:50 and 1:100 year flood events along Rietspruit and to determine the available area for development. Infraconsult Engineering was therefore appointed by Cosmopolitan Projects to conduct this study along the watercourse. This is in compliance with the National Environmental Management Act (NEMA) and National Water Act (NWA).

1.2 METHODOLOGY

The catchment area for the calculations of the flood peaks were determined by using the Topographical survey conducted by MESSRS. SVR Land Surveyors for the entire area and the available 1:50 000 Topographical data. The hydrological and hydraulic parameters of the catchments contributing to the Rietspruit were calculated. The peak flow rates were calculated and simulated using Civil Designer and HydroCad to determine the 1:50 and 1:100 year floodlines. Accurate cross sections of the Rietspruit were determined and used while calculating the capacity of the existing Rietspruit and the overflow zones (Floodlines). The Soil Conservation Service (SCS) method was used to calculate the peak flow for the study area, taking into account the future developmental capabilities of the area.

1.3 LOCALITY PLAN

The proposed development area is situated South of the K154 and East of Marlborough Road in Midvaal. A watercourse runs on the Southern side of the proposed development from East to West. See attached locality plan for Portion 8 of farm Rietspruit 152-IR in Midvaal as **Annexure A: Study Area**

1.4 LEGAL AND COUNCIL REQUIREMENTS

The 1:100-year floodline is required in terms of the National Water Act (NWA), Act 36 of 1998, Chapter 14 Part 3 as Given below.

"144. For the purposes of ensuring that all persons who might be affected have access to information regarding potential flood hazards, no person may establish a township unless the layout plan shows, in a form acceptable to the local authority concerned, lines indicating the maximum level likely to be reached by flood waters on average once in every 100 years."

2. SCOPE OF WORK:

2.1 SPECIFICATIONS & STANDARDS

The following is a list of the Design Standards that needs to be adhered to during the detailed design stage of the project:

- All designs, documentation and approvals must comply with the Midvaal Local Municipality's procedures, templates, specifications and standards.
- Documents that can be applied for reference is the Guidelines for Human Settlement Planning and Design (Red Book) latest version.
- The standard specification documents applicable to the construction of the Works and the contract management will be the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities 1998. Or the South African National Standards 1200 (SANS 1200).

2.2 CATCHMENT LAYOUT

See attached Catchment plan for Portion 8 of farm Rietspruit 152-IR in Midvaal as **Annexure B: Catchment Layout**

3. SITE INVESTIGATION

3.1 TOPOGRAPHICAL DETAILS

The general topography was determined by using the 1:50 000 topographical map together with a detailed contour survey compiled by MESSRS. SVR Land Surveyors.

3.2 RIVER VEGETATION AND CN VALUES

The SCS curve number method is a simple, widely used, and efficient method for determining the approximate amount of runoff from a rainfall even in a particular area. The curve number is based on the area's hydrologic soil group, land use, treatment, and hydrologic condition. The two former being of greatest importance. Due to the potential for high development in this area that will increase the "hard areas" and decrease the infiltration rate of the area, a higher CN value of 85 was used.

4. CATCHMENT CHARACTERISTICS

4.1.1 SUB-CATCHMENT CHARACTERISTICS AND DETAILS

TABLE 4.1

NAME	AREA [Ha]	HYDRAULIC LENGTH [m]	HEIGHT DIFFRENCE [m]	SLOPE [m/m]
SC 1	15.2254	549.132	5.039	0.00917
SC 2	184.6477	2037.344	25.753	0.01264
SC 3	66.7657	1298.836	26.944	0.02074
SC 4	40.3575	1804.538	29.818	0.01652
SC 5	16.5282	571.815	10.792	0.01873
SC 6	12.7708	421.561	9.103	0.02159
SC 7	4.1954	279.342	9.897	0.03543

4.1.2 HYDROLOGY METHOD

The hydrology method that was used for this model is the curve number method with water flow lag incorporated into the time of concentration. The reason for choosing this method is based on the size of the site and the accuracy of the run-off flow vs time of concentration vs infiltration rates. The table below refer to the input data used for this project.

TABLE 4.2

PARAMETER DESCRIPTION	UNIT	VALUE
Curve Number - CN for impervious areas	number	85 - 95
Curve Number - CN for pervious areas (overland flow)	number	69 - 79
Depth of depression storage for pervious areas	mm	10 - 20
Horton infiltration parameters (Silt loam – loam)		
Maximum infiltration rate	mm / hr	30
Minimum infiltration rate	mm / hr	10
Infiltration decay constant	1 / hour	4
Drying time	days	7

4.1.3 RAINFALL DATA

TABLE 4.3
Design Rainfall in South Africa: Ver 3 (July 2012)

User selection has the following criteria:
Coordinates: Latitude: 26 degrees 26 minutes; Longitude: 28 degreess 8 minutes
Durations requested: 24 h, 1 d
Return Periods requested: 2 yr, 5 yr, 10 yr, 20 yr, 50 yr, 100 yr
Block Size requested: 0 minutes

Data extracted from Daily Rainfall Estimate Database File
The six closest stations are listed

Station Name	SAWS Number	Distance (km)	Record (Years)	Latitude (°)	Latitude (')	Longitude (°)	Longitude (')	MAP (mm)	Altitude (m)	Duration (m/h/d)	Return Period (years) 2	5	10	20	50	100
KLIPRIVIER (POL)	0476145_W	5.7	59	26	25	28	5	618	1483	1 d	40.8	56.3	68.1	80.6	98.8	114.1
ZWARTKOPJES (RWB)	0476111_W	14.1	92	26	20	28	3	684	1500	1 d	40.1	55.4	67.0	79.3	97.2	112.3
NATALSPRUIT	0476228_W	14.4	48	26	18	28	8	693	1538	1 d	58.7	81.0	98.0	116.0	142.2	164.2
NEW MARKET	0476227_W	16.3	67	26	17	28	7	696	1575	1 d	53.1	73.3	88.6	104.9	128.6	148.5
ROODEKOP	0476317_W	17.1	47	26	17	28	11	591	1540	1 d	51.3	70.9	85.7	101.4	124.4	143.7
GLEN ROY(STATION)	0476563_W	18.8	43	26	23	28	18	661	1590	1 d	52.6	72.6	87.7	103.9	127.3	147.1

Gridded values of all points within the specified block

Latitude (°)	Latitude (')	Longitude (°)	Longitude (')	MAP (mm)	Altitude (m)	Duration (m/h/d)	Return Period (years) 2	5	10	20	50	100
26	26	28	8	638	1503	24 h	60.1	83.0	100.4	118.8	145.6	168.2
						1 d	52.1	71.9	86.9	102.9	126.2	145.7

4.1.4. STORM RAINFALL DEPTHS

The rainfall analysis was based on the "Design Rainfall Estimation in South Africa" (DRE or Rainfall 3) program developed by JC Smitters and RE Schules. The program implements procedures from the Water Research Commission (WRC) project entitled "Rainfall Statistics for Design Flood Estimation in South Africa" (WRC Project K5/1060). In this report an extract of the rainfall for the given area is shown.

Rainfall, in the form of storm events intensity, was required for site hydrology calculations. Storm event intensity is data that gives both the depth of rainfall as well as the length of time that the rainfall station using the Design Rainfall extractor (Smithers and Schulze). The rainfall stations for the catchment area were selected based on criteria such as altitude relative to the area of interest, the record history of the weather stations and the proximity to the study area. The Catchment has a mean annual precipitation of 638 mm. The adopted values are shown below.

5. FLOOD HYDROLOGY

The flood hydrological modelling task involved the detailed evaluation of the hydrology of Rietspruit for use in the determination of the 1:50 and 1:100 year floodlines. The hydrological modelling used both deterministic and empirical modelling techniques to aid in the estimation of peak flow rates along Rietspruit watercourse and artificial structures within the Rietspruit. The model parameters include:

- Catchment slope, size and shape of each catchment area. The catchments extended up to the origin of the Rietspruit.
- Land-use information regarding potential future development conditions.
- Watercourse size and shape.
- Storm rainfall, estimated from available program mentioned above.

Suitable Sub-catchments were determined which were used as nodes in the hydraulic model.
The hydrological modelling included the following procedures:

- The available rainfall records as obtained from Schules were analysed to determine the relevant storm rainfall records using weighting where necessary.
- The floods peaks at each Sub-catchment were determined for the 1:50 and 1:100 year storm event.

5.1 LAND USE

The land use for the area was based on the available land cover obtained from the topographical information, satellite images available on Google Earth as well as the relevant literature for the SCS method.

5.2 FLOOD PEAK DATA

Peak flow rates were determined along Rietspruit in order to carry out the hydraulic modelling of the proposed development site and the future developing potential of the area. The magnitude of the flood peak depends on the catchment characteristics and the rainfall intensity.

The Soil Conservation Service (SCS) method was used to calculate the peak flow rates for the study area taking into account the maximum future development potential within the catchment.

5.3 SUMMARY OF FLOOD PEAKS (FUTURE DEVELOPMENT CONDITIONS) SCS METHOD

TABLE 5.1

NAME	STORM EVENT	
	1:50 YEAR (m^3/s)	1:100 YEAR (m^3/s)
SC 1	1.968	2.241
SC 2	12.990	14.811
SC 3	7.204	8.204
SC 4	3.341	3.806
SC 5	2.646	3.013
SC 6	2.452	2.791
SC 7	1.099	1.250

6. HYDROCAD MODEL COMPILATION

The survey data was supplied by MEqSSRS SVR Land Surveyors, that was converted into a Digital Terrain Model (DTM) which was then entered into HydroCad (Version 9) model. This program employs detailed channel morphology as well as site specific hydrological data combined to perform two dimensional hydraulic calculations for stormwater networks. The HydroCad model employs standard backwater techniques to compute the high-water level for various steady flow conditions, taking into account structures and controls across the watercourse.

The main HydroCad parameters are listed below:

TABLE 6.1

PARAMETER DESCRIPTION	UNIT	VALUE
Curve Number - CN for impervious areas	number	85 - 95
Curve Number - CN for pervious areas (overland flow)	number	69 - 79
Type of stream (straight / winding and clean / overgrown)	number	Factor of the CN value
Depth of depression storage for pervious areas	mm	10 - 20
Horton infiltration parameters (Silt loam – loam)		
Maximum infiltration rate	mm / hr	30
Minimum infiltration rate	mm / hr	10
Infiltration decay constant	1 / hour	4
Drying time	days	7
Time of Concentration	Min	Dependant of length of flow path
Hydraulic Length	m	Length of longest path one drop will follow in a Sub-catchment
Change in height of Sub-catchment	m	Difference between the highest point and lowest point of the flow path
Catchment slope	m/m	Change in height of Sub-catchment divided by the longest flow path

Civil Designer was also used to create cross sections and lengths of Rietspruit for the use of HydroCad to analyse each cross section and water depth height to determine the 1:50 and 1:100 year floodlines.

7. FINDINGS OF THE FLOODLINE STUDY

The 1:50 and 1:100 year floodlines were determined based on the HydroCad model and peak flow rates as given in Table 5.1 above.

See attached HydroCad Output Data for Portion 8 of farm Rietspruit 152-IR in Midvaal as **Annexure C: HydroCad Output Data.**

See attached certified floodline drawing for Portion 8 of farm Rietspruit 152-IR in Midvaal as **Annexure D: Certified Floodline Drawing.**

The average velocity of the Rietspruit for a 1:50 year flood event = ± 0.63 m/s and
The average velocity of the Rietspruit for a 1:100 year flood event = ± 0.66 m/s.
The 1:50 and 1:100 year average velocity along Rietspruit is more than 0.5 m/s and some erosion may be expected during these floods.

8. RECOMMENDATIONS

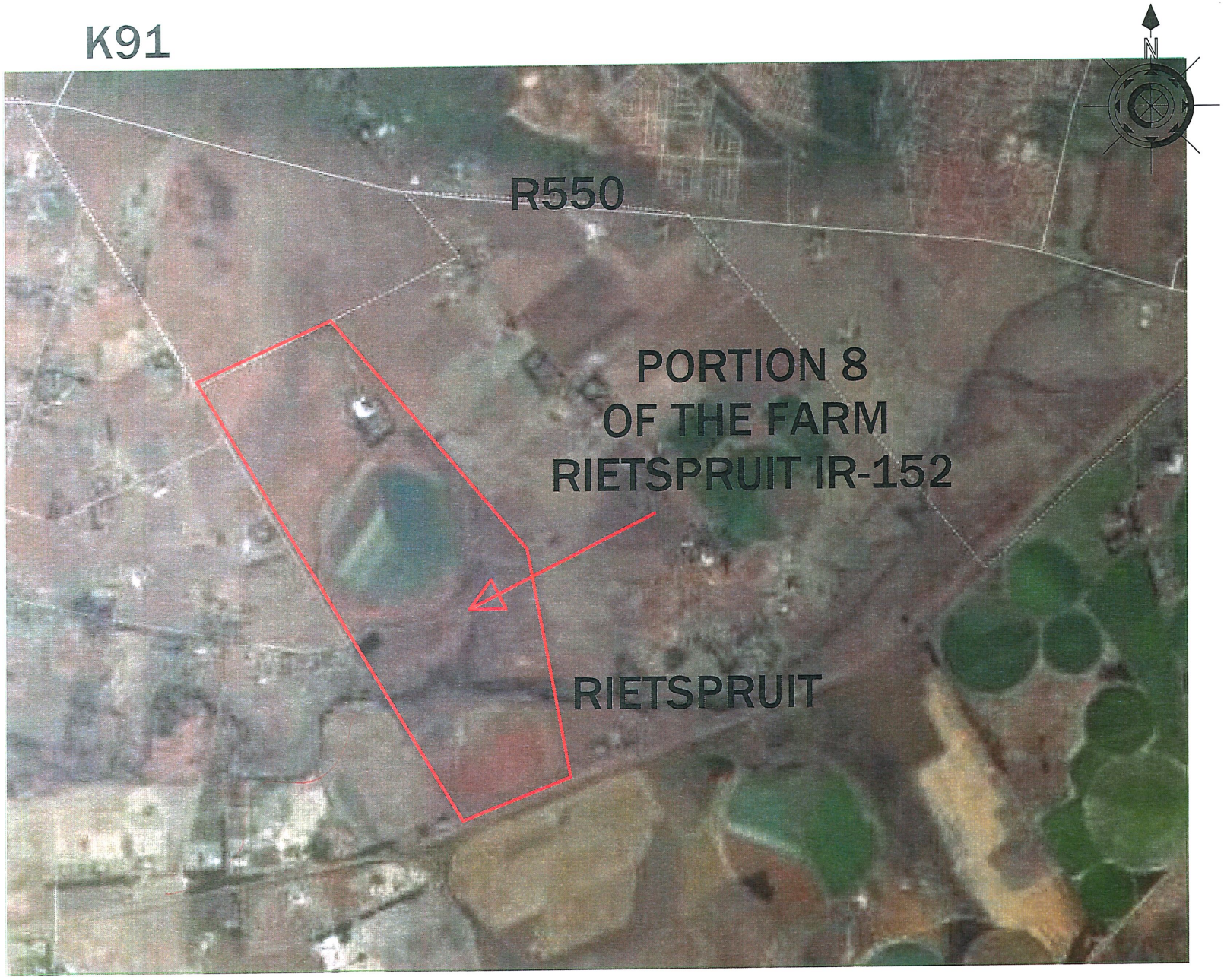
The following is recommended:

- The floodline study is to be used to make sure that no new developments is situated within the 1:100 year floodline.
- The floodlines be revised should the watercourse be altered in anyway.
- Any specialist studies including the environmental compliance studies that might be needed must be done in consultation with relevant authorities.
- It is recommended that where developments are close to the 1:100 year floodlines, the floodlines should be protected against erosion.

Herewith certified,

M.J. JANSEN PrEng PrCPM B. Eng M.Eng FSAICE
DIRECTOR

ANNEXURE A: STUDY AREA



AMENDMENTS			
REV	DATE	BY	DESCRIPTION
1	17/09/21	I.D.	FLOODLINE REPORT

COSMOPOLITAN PROJECTS

PROJECT TITLE:

PORTION 8
OF THE FARM
RIETSPRUIT 152-IR

STUDY AREA

SCALE: SCALE: NTS

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DATE: . . . . . .

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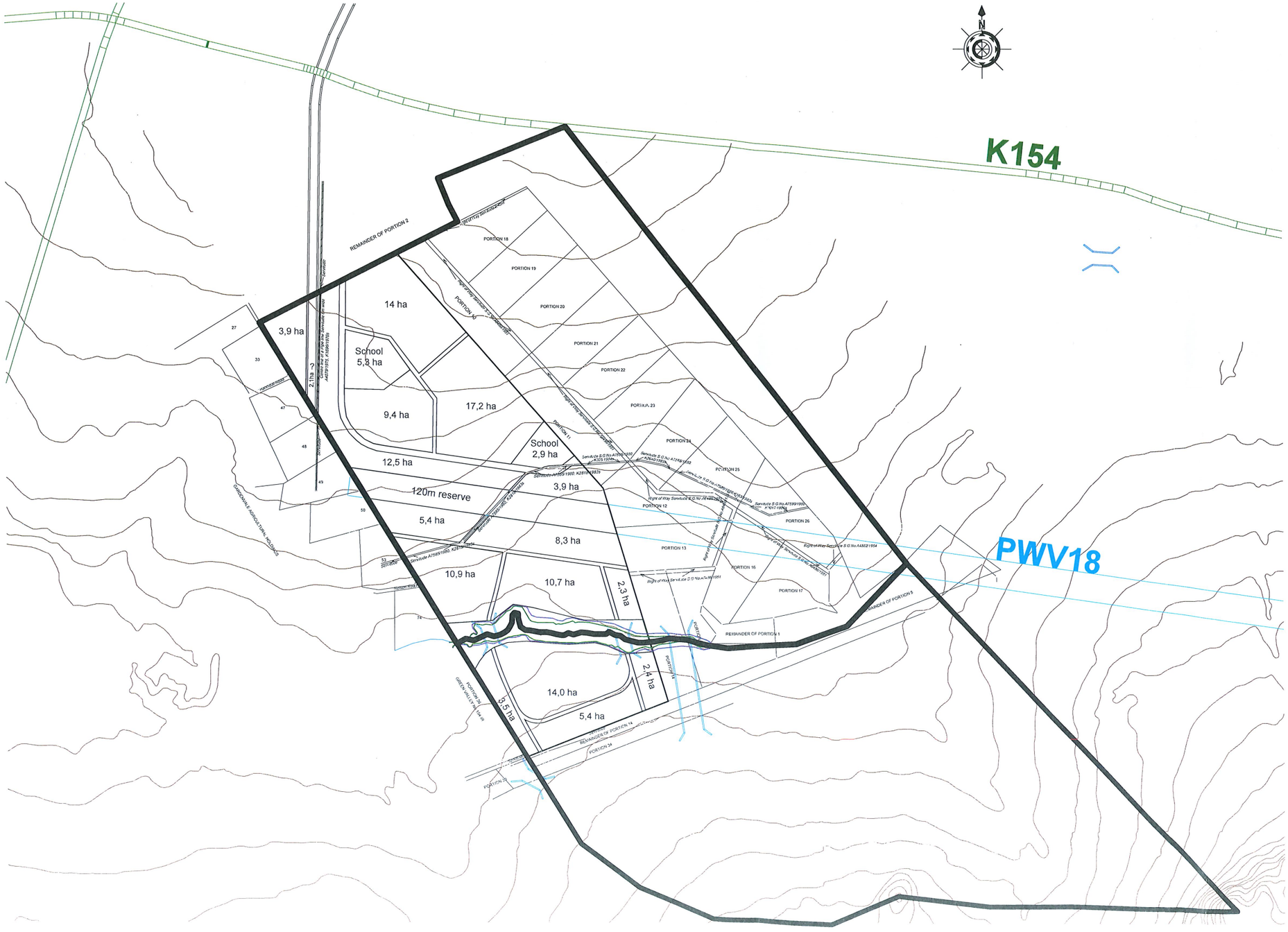
ANNEXURE B: CATCHMENT AREA



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PORTION 8
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ANNEXURE C: HYDROCAD OUTPUT DATA

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SC 7 Runoff Area=4.1954 ha 65.00% Impervious Runoff Depth=78 mm
Flow Length=279.3 m Slope=0.0354 m/m Tc=13.4 min CN=85 Runoff=1.0986 m³/s 3.280 Ml

Subcatchment 2S: SC 6 Runoff Area=12.7708 ha 65.00% Impervious Runoff Depth=78 mm
Flow Length=421.6 m Slope=0.0216 m/m Tc=23.8 min CN=85 Runoff=2.4515 m³/s 9.985 Ml

Subcatchment 3S: SC 5 Runoff Area=16.5282 ha 65.00% Impervious Runoff Depth=78 mm
Flow Length=571.8 m Slope=0.0189 m/m Tc=32.4 min CN=85 Runoff=2.6464 m³/s 12.923 Ml

Subcatchment 4S: SC 4 Runoff Area=40.3575 ha 65.00% Impervious Runoff Depth=78 mm
Flow Length=1,804.5 m Slope=0.0165 m/m Tc=87.0 min CN=85 Runoff=3.3407 m³/s 31.554 Ml

Subcatchment 6S: SC 3 Runoff Area=66.7657 ha 65.00% Impervious Runoff Depth=78 mm
Flow Length=1,298.8 m Slope=0.0207 m/m Tc=59.7 min CN=85 Runoff=7.2043 m³/s 52.201 Ml

Subcatchment 8S: SC 1 Runoff Area=15.2254 ha 65.00% Impervious Runoff Depth=78 mm
Flow Length=549.1 m Slope=0.0092 m/m Tc=45.0 min CN=85 Runoff=1.9683 m³/s 11.904 Ml

Subcatchment 54S: SC 2 Runoff Area=184.6477 ha 65.00% Impervious Runoff Depth=78 mm
Flow Length=2,037.3 m Slope=0.0126 m/m Tc=109.7 min CN=85 Runoff=12.9904 m³/s 144.368 Ml

Reach 1R: Rietspruit CH 1024 Avg. Depth=0.09 m Max Vel=1.75 m/s Inflow=1.0986 m³/s 3.280 Ml
n=0.035 L=4.00 m S=0.0995 m/m Capacity=40.5669 m³/s Outflow=1.0984 m³/s 3.280 Ml

Reach 2R: Rietspruit CH 1020 Avg. Depth=0.16 m Max Vel=1.24 m/s Inflow=2.2217 m³/s 15.184 Ml
n=0.035 L=20.00 m S=0.0224 m/m Capacity=62.2458 m³/s Outflow=2.2198 m³/s 15.184 Ml

Reach 3R: Rietspruit CH 1000 Avg. Depth=1.00 m Max Vel=0.84 m/s Inflow=13.6629 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0012 m/m Capacity=22.3944 m³/s Outflow=13.6603 m³/s 159.553 Ml

Reach 4R: Rietspruit CH 980 Avg. Depth=2.07 m Max Vel=0.39 m/s Inflow=13.6603 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=9.0790 m³/s Outflow=13.6564 m³/s 159.553 Ml

Reach 5R: Rietspruit CH 960 Avg. Depth=2.03 m Max Vel=0.39 m/s Inflow=13.6564 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=9.7083 m³/s Outflow=13.6537 m³/s 159.553 Ml

Reach 6R: Rietspruit CH 940 Avg. Depth=2.60 m Max Vel=0.36 m/s Inflow=13.6537 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=4.0265 m³/s Outflow=13.6506 m³/s 159.553 Ml

Reach 7R: Rietspruit CH 920 Avg. Depth=1.87 m Max Vel=0.34 m/s Inflow=13.6506 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=9.2579 m³/s Outflow=13.6483 m³/s 159.553 Ml

Reach 8R: Rietspruit CH 900 Avg. Depth=0.97 m Max Vel=0.95 m/s Inflow=13.6483 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0014 m/m Capacity=25.2027 m³/s Outflow=13.6478 m³/s 159.553 Ml

Reach 9R: Rietspruit CH 880 Avg. Depth=1.34 m Max Vel=0.59 m/s Inflow=13.6478 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0003 m/m Capacity=19.0782 m³/s Outflow=13.6472 m³/s 159.553 Ml

Reach 10R: Rietspruit CH 860 Avg. Depth=1.77 m Max Vel=0.36 m/s Inflow=13.6472 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=12.0120 m³/s Outflow=13.6456 m³/s 159.553 Ml

Reach 11R: Rietspruit CH 840 Avg. Depth=1.09 m Max Vel=0.66 m/s Inflow=13.6456 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0005 m/m Capacity=25.2971 m³/s Outflow=13.6452 m³/s 159.553 Ml

Reach 12R: Rietspruit CH 820 Avg. Depth=1.56 m Max Vel=0.33 m/s Inflow=13.6452 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.6877 m³/s Outflow=13.6433 m³/s 159.553 Ml

Reach 13R: Rietspruit CH 800 Avg. Depth=0.33 m Max Vel=2.08 m/s Inflow=13.6433 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0245 m/m Capacity=248.3940 m³/s Outflow=13.6431 m³/s 159.553 Ml

Reach 14R: Rietspruit CH 780 Avg. Depth=0.59 m Max Vel=1.37 m/s Inflow=13.6431 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0052 m/m Capacity=86.3727 m³/s Outflow=13.6428 m³/s 159.553 Ml

Reach 15R: Rietspruit CH 760 Avg. Depth=1.28 m Max Vel=0.71 m/s Inflow=13.6428 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0005 m/m Capacity=11.3840 m³/s Outflow=13.6423 m³/s 159.553 Ml

Reach 16R: Rietspruit CH 740 Avg. Depth=2.40 m Max Vel=0.38 m/s Inflow=13.6423 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.0879 m³/s Outflow=13.6408 m³/s 159.553 Ml

Reach 17R: Rietspruit CH 720 Avg. Depth=0.90 m Max Vel=1.00 m/s Inflow=13.6408 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0017 m/m Capacity=48.8451 m³/s Outflow=13.6405 m³/s 159.553 Ml

Reach 18R: Rietspruit CH 700 Avg. Depth=3.04 m Max Vel=0.30 m/s Inflow=13.6405 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.0885 m³/s Outflow=13.6384 m³/s 159.553 Ml

Reach 19R: Rietspruit CH 680 Avg. Depth=3.01 m Max Vel=0.26 m/s Inflow=13.6384 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=1.5843 m³/s Outflow=13.6351 m³/s 159.553 Ml

Reach 20R: Rietspruit CH 660 Avg. Depth=0.76 m Max Vel=1.18 m/s Inflow=13.6351 m³/s 159.553 Ml
n=0.035 L=20.00 m S=0.0028 m/m Capacity=45.0199 m³/s Outflow=13.6348 m³/s 159.553 Ml

Reach 21R: Rietspruit CH 640 Avg. Depth=2.72 m Max Vel=0.31 m/s Inflow=13.8484 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0000 m/m Capacity=6.5003 m³/s Outflow=13.8467 m³/s 169.538 Ml

Reach 22R: Rietspruit CH 620 Avg. Depth=1.87 m Max Vel=0.38 m/s Inflow=13.8467 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=10.5095 m³/s Outflow=13.8456 m³/s 169.538 Ml

Reach 23R: Rietspruit CH 600 Avg. Depth=2.12 m Max Vel=0.38 m/s Inflow=13.8456 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.7348 m³/s Outflow=13.8444 m³/s 169.538 Ml

Reach 24R: Rietspruit CH 580 Avg. Depth=0.83 m Max Vel=1.01 m/s Inflow=13.8444 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0019 m/m Capacity=46.5274 m³/s Outflow=13.8441 m³/s 169.538 Ml

Reach 25R: Rietspruit CH 560 Avg. Depth=2.34 m Max Vel=0.36 m/s Inflow=13.8441 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=4.8222 m³/s Outflow=13.8426 m³/s 169.538 Ml

Reach 26R: Rietspruit CH 540 Avg. Depth=2.44 m Max Vel=0.39 m/s Inflow=13.8426 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.6839 m³/s Outflow=13.8413 m³/s 169.538 Ml

Reach 27R: Rietspruit CH 520 Avg. Depth=2.17 m Max Vel=0.40 m/s Inflow=13.8413 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.0032 m³/s Outflow=13.8402 m³/s 169.538 Ml

Reach 28R: Rietspruit CH 500 Avg. Depth=2.68 m Max Vel=0.31 m/s Inflow=13.8402 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0000 m/m Capacity=6.9262 m³/s Outflow=13.8384 m³/s 169.538 Ml

Reach 29R: Rietspruit CH 480 Avg. Depth=2.23 m Max Vel=0.40 m/s Inflow=13.8384 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.3954 m³/s Outflow=13.8373 m³/s 169.538 Ml

Reach 30R: Rietspruit CH 460 Avg. Depth=2.25 m Max Vel=0.40 m/s Inflow=13.8373 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.2053 m³/s Outflow=13.8363 m³/s 169.538 Ml

Reach 31R: Rietspruit CH 440 Avg. Depth=2.38 m Max Vel=0.29 m/s Inflow=13.8363 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=2.3312 m³/s Outflow=13.8336 m³/s 169.538 Ml

Reach 32R: Rietspruit CH 420 Avg. Depth=2.24 m Max Vel=0.37 m/s Inflow=13.8336 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.5475 m³/s Outflow=13.8322 m³/s 169.538 Ml

Reach 33R: Rietspruit CH 400 Avg. Depth=2.18 m Max Vel=0.37 m/s Inflow=13.8322 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.6382 m³/s Outflow=13.8307 m³/s 169.538 Ml

Reach 34R: Rietspruit CH 380 Avg. Depth=0.63 m Max Vel=1.20 m/s Inflow=13.8307 m³/s 169.538 Ml
n=0.035 L=20.00 m S=0.0055 m/m Capacity=4.6167 m³/s Outflow=13.8304 m³/s 169.538 Ml

Reach 35R: Rietspruit CH 360 Avg. Depth=2.04 m Max Vel=0.37 m/s Inflow=15.5295 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.9995 m³/s Outflow=15.5275 m³/s 221.739 Ml

Reach 36R: Rietspruit CH 340 Avg. Depth=2.03 m Max Vel=0.34 m/s Inflow=15.5275 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.1064 m³/s Outflow=15.5250 m³/s 221.739 Ml

Reach 37R: Rietspruit CH 320 Avg. Depth=2.41 m Max Vel=0.38 m/s Inflow=15.5250 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.7920 m³/s Outflow=15.5230 m³/s 221.739 Ml

Reach 38R: Rietspruit CH 300 Avg. Depth=2.35 m Max Vel=0.38 m/s Inflow=15.5230 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.4476 m³/s Outflow=15.5210 m³/s 221.739 Ml

Reach 39R: Rietspruit CH 280 Avg. Depth=2.03 m Max Vel=0.39 m/s Inflow=15.5210 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.8300 m³/s Outflow=15.5194 m³/s 221.739 Ml

Reach 40R: Rietspruit CH 260 Avg. Depth=2.25 m Max Vel=0.39 m/s Inflow=15.5194 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=7.3873 m³/s Outflow=15.5177 m³/s 221.739 Ml

Reach 41R: Rietspruit CH 240 Avg. Depth=2.35 m Max Vel=0.40 m/s Inflow=15.5177 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=7.0309 m³/s Outflow=15.5161 m³/s 221.739 Ml

Reach 42R: Rietspruit CH 220 Avg. Depth=2.36 m Max Vel=0.39 m/s Inflow=15.5161 m³/s 221.739 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.6331 m³/s Outflow=15.5143 m³/s 221.739 Ml

Reach 43R: Rietspruit CH 200 Avg. Depth=5.15 m Max Vel=0.21 m/s Inflow=15.7481 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=0.6325 m³/s Outflow=15.7403 m³/s 234.662 Ml

Reach 44R: Rietspruit CH 180 Avg. Depth=2.68 m Max Vel=0.35 m/s Inflow=15.7403 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=3.9059 m³/s Outflow=15.7380 m³/s 234.662 Ml

Reach 45R: Rietspruit CH 160 Avg. Depth=2.17 m Max Vel=0.36 m/s Inflow=15.7380 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=7.2435 m³/s Outflow=15.7362 m³/s 234.662 Ml

Reach 46R: Rietspruit CH 140 Avg. Depth=1.95 m Max Vel=0.36 m/s Inflow=15.7362 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.4167 m³/s Outflow=15.7344 m³/s 234.662 Ml

Reach 47R: Rietspruit CH 120 Avg. Depth=2.48 m Max Vel=0.39 m/s Inflow=15.7344 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.5886 m³/s Outflow=15.7327 m³/s 234.662 Ml

Reach 48R: Rietspruit CH 100 Avg. Depth=2.40 m Max Vel=0.28 m/s Inflow=15.7327 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=2.5902 m³/s Outflow=15.7293 m³/s 234.662 Ml

Reach 49R: Rietspruit CH 80 Avg. Depth=0.37 m Max Vel=1.38 m/s Inflow=15.7293 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0094 m/m Capacity=134.4264 m³/s Outflow=15.7290 m³/s 234.662 Ml

Reach 50R: Rietspruit CH 60 Avg. Depth=0.47 m Max Vel=2.55 m/s Inflow=15.7290 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0247 m/m Capacity=218.6737 m³/s Outflow=15.7289 m³/s 234.662 Ml

Reach 51R: Rietspruit CH 40 Avg. Depth=0.51 m Max Vel=2.11 m/s Inflow=15.7289 m³/s 234.662 Ml
n=0.035 L=20.00 m S=0.0148 m/m Capacity=129.1990 m³/s Outflow=15.7286 m³/s 234.662 Ml

Reach 52R: Rietspruit CH 20 Avg. Depth=0.58 m Max Vel=1.61 m/s Inflow=16.9334 m³/s 266.215 Ml
n=0.035 L=20.00 m S=0.0077 m/m Capacity=59.8857 m³/s Outflow=16.9330 m³/s 266.215 Ml

Reach 53R: Rietspruit CH 0 Avg. Depth=1.03 m Max Vel=0.84 m/s Inflow=16.9330 m³/s 266.215 Ml
n=0.035 L=20.00 m S=0.0010 m/m Capacity=22.1864 m³/s Outflow=16.9326 m³/s 266.215 Ml

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SC 7 Runoff Area=4.1954 ha 65.00% Impervious Runoff Depth=89 mm
Flow Length=279.3 m Slope=0.0354 m/m Tc=13.4 min CN=85 Runoff=1.2499 m³/s 3.745 Ml

Subcatchment 2S: SC 6 Runoff Area=12.7708 ha 65.00% Impervious Runoff Depth=89 mm
Flow Length=421.6 m Slope=0.0216 m/m Tc=23.8 min CN=85 Runoff=2.7908 m³/s 11.398 Ml

Subcatchment 3S: SC 5 Runoff Area=16.5282 ha 65.00% Impervious Runoff Depth=89 mm
Flow Length=571.8 m Slope=0.0189 m/m Tc=32.4 min CN=85 Runoff=3.0129 m³/s 14.752 Ml

Subcatchment 4S: SC 4 Runoff Area=40.3575 ha 65.00% Impervious Runoff Depth=89 mm
Flow Length=1,804.5 m Slope=0.0165 m/m Tc=87.0 min CN=85 Runoff=3.8061 m³/s 36.020 Ml

Subcatchment 6S: SC 3 Runoff Area=66.7657 ha 65.00% Impervious Runoff Depth=89 mm
Flow Length=1,298.8 m Slope=0.0207 m/m Tc=59.7 min CN=85 Runoff=8.2035 m³/s 59.590 Ml

Subcatchment 8S: SC 1 Runoff Area=15.2254 ha 65.00% Impervious Runoff Depth=89 mm
Flow Length=549.1 m Slope=0.0092 m/m Tc=45.0 min CN=85 Runoff=2.2412 m³/s 13.589 Ml

Subcatchment 54S: SC 2 Runoff Area=184.6477 ha 65.00% Impervious Runoff Depth=89 mm
Flow Length=2,037.3 m Slope=0.0126 m/m Tc=109.7 min CN=85 Runoff=14.8110 m³/s 164.803 Ml

Reach 1R: Rietspruit CH 1024 Avg. Depth=0.09 m Max Vel=1.84 m/s Inflow=1.2499 m³/s 3.745 Ml
n=0.035 L=4.00 m S=0.0995 m/m Capacity=40.5669 m³/s Outflow=1.2497 m³/s 3.745 Ml

Reach 2R: Rietspruit CH 1020 Avg. Depth=0.17 m Max Vel=1.31 m/s Inflow=2.5284 m³/s 17.334 Ml
n=0.035 L=20.00 m S=0.0224 m/m Capacity=62.2458 m³/s Outflow=2.5262 m³/s 17.334 Ml

Reach 3R: Rietspruit CH 1000 Avg. Depth=1.08 m Max Vel=0.87 m/s Inflow=15.5674 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0012 m/m Capacity=22.3944 m³/s Outflow=15.5645 m³/s 182.137 Ml

Reach 4R: Rietspruit CH 980 Avg. Depth=2.27 m Max Vel=0.40 m/s Inflow=15.5645 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=9.0790 m³/s Outflow=15.5605 m³/s 182.137 Ml

Reach 5R: Rietspruit CH 960 Avg. Depth=2.21 m Max Vel=0.40 m/s Inflow=15.5605 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=9.7083 m³/s Outflow=15.5576 m³/s 182.137 Ml

Reach 6R: Rietspruit CH 940 Avg. Depth=2.91 m Max Vel=0.37 m/s Inflow=15.5576 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=4.0265 m³/s Outflow=15.5543 m³/s 182.137 Ml

Reach 7R: Rietspruit CH 920 Avg. Depth=2.03 m Max Vel=0.35 m/s Inflow=15.5543 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=9.2579 m³/s Outflow=15.5518 m³/s 182.137 Ml

Reach 8R: Rietspruit CH 900 Avg. Depth=1.05 m Max Vel=0.99 m/s Inflow=15.5518 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0014 m/m Capacity=25.2027 m³/s Outflow=15.5512 m³/s 182.137 Ml

Reach 9R: Rietspruit CH 880 Avg. Depth=1.45 m Max Vel=0.62 m/s Inflow=15.5512 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0003 m/m Capacity=19.0782 m³/s Outflow=15.5506 m³/s 182.137 Ml

Reach 10R: Rietspruit CH 860 Avg. Depth=1.92 m Max Vel=0.37 m/s Inflow=15.5506 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=12.0120 m³/s Outflow=15.5489 m³/s 182.137 Ml

Reach 11R: Rietspruit CH 840 Avg. Depth=1.18 m Max Vel=0.69 m/s Inflow=15.5489 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0005 m/m Capacity=25.2971 m³/s Outflow=15.5483 m³/s 182.137 Ml

Reach 12R: Rietspruit CH 820 Avg. Depth=1.73 m Max Vel=0.34 m/s Inflow=15.5483 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.6877 m³/s Outflow=15.5463 m³/s 182.137 Ml

Reach 13R: Rietspruit CH 800 Avg. Depth=0.35 m Max Vel=2.19 m/s Inflow=15.5463 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0245 m/m Capacity=248.3940 m³/s Outflow=15.5461 m³/s 182.137 Ml

Reach 14R: Rietspruit CH 780 Avg. Depth=0.64 m Max Vel=1.44 m/s Inflow=15.5461 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0052 m/m Capacity=86.3727 m³/s Outflow=15.5457 m³/s 182.137 Ml

Reach 15R: Rietspruit CH 760 Avg. Depth=1.39 m Max Vel=0.73 m/s Inflow=15.5457 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0005 m/m Capacity=11.3840 m³/s Outflow=15.5452 m³/s 182.137 Ml

Reach 16R: Rietspruit CH 740 Avg. Depth=2.66 m Max Vel=0.39 m/s Inflow=15.5452 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.0879 m³/s Outflow=15.5436 m³/s 182.137 Ml

Reach 17R: Rietspruit CH 720 Avg. Depth=0.97 m Max Vel=1.04 m/s Inflow=15.5436 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0017 m/m Capacity=48.8451 m³/s Outflow=15.5432 m³/s 182.137 Ml

Reach 18R: Rietspruit CH 700 Avg. Depth=3.36 m Max Vel=0.31 m/s Inflow=15.5432 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.0885 m³/s Outflow=15.5408 m³/s 182.137 Ml

Reach 19R: Rietspruit CH 680 Avg. Depth=3.40 m Max Vel=0.27 m/s Inflow=15.5408 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=1.5843 m³/s Outflow=15.5371 m³/s 182.137 Ml

Reach 20R: Rietspruit CH 660 Avg. Depth=0.83 m Max Vel=1.23 m/s Inflow=15.5371 m³/s 182.137 Ml
n=0.035 L=20.00 m S=0.0028 m/m Capacity=45.0199 m³/s Outflow=15.5368 m³/s 182.137 Ml

Reach 21R: Rietspruit CH 640 Avg. Depth=3.01 m Max Vel=0.31 m/s Inflow=15.7785 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0000 m/m Capacity=6.5003 m³/s Outflow=15.7763 m³/s 193.535 Ml

Reach 22R: Rietspruit CH 620 Avg. Depth=2.04 m Max Vel=0.39 m/s Inflow=15.7763 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=10.5095 m³/s Outflow=15.7751 m³/s 193.535 Ml

Reach 23R: Rietspruit CH 600 Avg. Depth=2.34 m Max Vel=0.39 m/s Inflow=15.7751 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.7348 m³/s Outflow=15.7736 m³/s 193.535 Ml

Reach 24R: Rietspruit CH 580 Avg. Depth=0.89 m Max Vel=1.06 m/s Inflow=15.7736 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0019 m/m Capacity=46.5274 m³/s Outflow=15.7733 m³/s 193.535 Ml

Reach 25R: Rietspruit CH 560 Avg. Depth=2.61 m Max Vel=0.37 m/s Inflow=15.7733 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=4.8222 m³/s Outflow=15.7715 m³/s 193.535 Ml

Reach 26R: Rietspruit CH 540 Avg. Depth=2.71 m Max Vel=0.40 m/s Inflow=15.7715 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.6839 m³/s Outflow=15.7701 m³/s 193.535 Ml

Reach 27R: Rietspruit CH 520 Avg. Depth=2.39 m Max Vel=0.41 m/s Inflow=15.7701 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.0032 m³/s Outflow=15.7688 m³/s 193.535 Ml

Reach 28R: Rietspruit CH 500 Avg. Depth=2.97 m Max Vel=0.32 m/s Inflow=15.7688 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0000 m/m Capacity=6.9262 m³/s Outflow=15.7667 m³/s 193.535 Ml

Reach 29R: Rietspruit CH 480 Avg. Depth=2.45 m Max Vel=0.42 m/s Inflow=15.7667 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.3954 m³/s Outflow=15.7655 m³/s 193.535 Ml

Reach 30R: Rietspruit CH 460 Avg. Depth=2.48 m Max Vel=0.42 m/s Inflow=15.7655 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.2053 m³/s Outflow=15.7642 m³/s 193.535 Ml

Reach 31R: Rietspruit CH 440 Avg. Depth=2.68 m Max Vel=0.29 m/s Inflow=15.7642 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=2.3312 m³/s Outflow=15.7611 m³/s 193.535 Ml

Reach 32R: Rietspruit CH 420 Avg. Depth=2.48 m Max Vel=0.38 m/s Inflow=15.7611 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.5475 m³/s Outflow=15.7595 m³/s 193.535 Ml

Reach 33R: Rietspruit CH 400 Avg. Depth=2.43 m Max Vel=0.38 m/s Inflow=15.7595 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.6382 m³/s Outflow=15.7578 m³/s 193.535 Ml

Reach 34R: Rietspruit CH 380 Avg. Depth=0.71 m Max Vel=1.22 m/s Inflow=15.7578 m³/s 193.535 Ml
n=0.035 L=20.00 m S=0.0055 m/m Capacity=4.6167 m³/s Outflow=15.7574 m³/s 193.535 Ml

Reach 35R: Rietspruit CH 360 Avg. Depth=2.26 m Max Vel=0.38 m/s Inflow=17.7070 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.9995 m³/s Outflow=17.7048 m³/s 253.125 Ml

Reach 36R: Rietspruit CH 340 Avg. Depth=2.25 m Max Vel=0.35 m/s Inflow=17.7048 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.1064 m³/s Outflow=17.7020 m³/s 253.125 Ml

Reach 37R: Rietspruit CH 320 Avg. Depth=2.69 m Max Vel=0.39 m/s Inflow=17.7020 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=5.7920 m³/s Outflow=17.6997 m³/s 253.125 Ml

Reach 38R: Rietspruit CH 300 Avg. Depth=2.60 m Max Vel=0.39 m/s Inflow=17.6997 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.4476 m³/s Outflow=17.6974 m³/s 253.125 Ml

Reach 39R: Rietspruit CH 280 Avg. Depth=2.24 m Max Vel=0.40 m/s Inflow=17.6974 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.8300 m³/s Outflow=17.6955 m³/s 253.125 Ml

Reach 40R: Rietspruit CH 260 Avg. Depth=2.49 m Max Vel=0.40 m/s Inflow=17.6955 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=7.3873 m³/s Outflow=17.6936 m³/s 253.125 Ml

Reach 41R: Rietspruit CH 240 Avg. Depth=2.61 m Max Vel=0.41 m/s Inflow=17.6936 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=7.0309 m³/s Outflow=17.6916 m³/s 253.125 Ml

Reach 42R: Rietspruit CH 220 Avg. Depth=2.61 m Max Vel=0.39 m/s Inflow=17.6916 m³/s 253.125 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.6331 m³/s Outflow=17.6895 m³/s 253.125 Ml

Reach 43R: Rietspruit CH 200 Avg. Depth=5.85 m Max Vel=0.21 m/s Inflow=17.9540 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=0.6325 m³/s Outflow=17.9452 m³/s 267.877 Ml

Reach 44R: Rietspruit CH 180 Avg. Depth=3.00 m Max Vel=0.36 m/s Inflow=17.9452 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=3.9059 m³/s Outflow=17.9425 m³/s 267.877 Ml

Reach 45R: Rietspruit CH 160 Avg. Depth=2.39 m Max Vel=0.37 m/s Inflow=17.9425 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=7.2435 m³/s Outflow=17.9403 m³/s 267.877 Ml

Reach 46R: Rietspruit CH 140 Avg. Depth=2.15 m Max Vel=0.37 m/s Inflow=17.9403 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=8.4167 m³/s Outflow=17.9383 m³/s 267.877 Ml

Reach 47R: Rietspruit CH 120 Avg. Depth=2.75 m Max Vel=0.40 m/s Inflow=17.9383 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=6.5886 m³/s Outflow=17.9363 m³/s 267.877 Ml

Reach 48R: Rietspruit CH 100 Avg. Depth=2.70 m Max Vel=0.28 m/s Inflow=17.9363 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0001 m/m Capacity=2.5902 m³/s Outflow=17.9323 m³/s 267.877 Ml

Reach 49R: Rietspruit CH 80 Avg. Depth=0.40 m Max Vel=1.46 m/s Inflow=17.9323 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0094 m/m Capacity=134.4264 m³/s Outflow=17.9320 m³/s 267.877 Ml

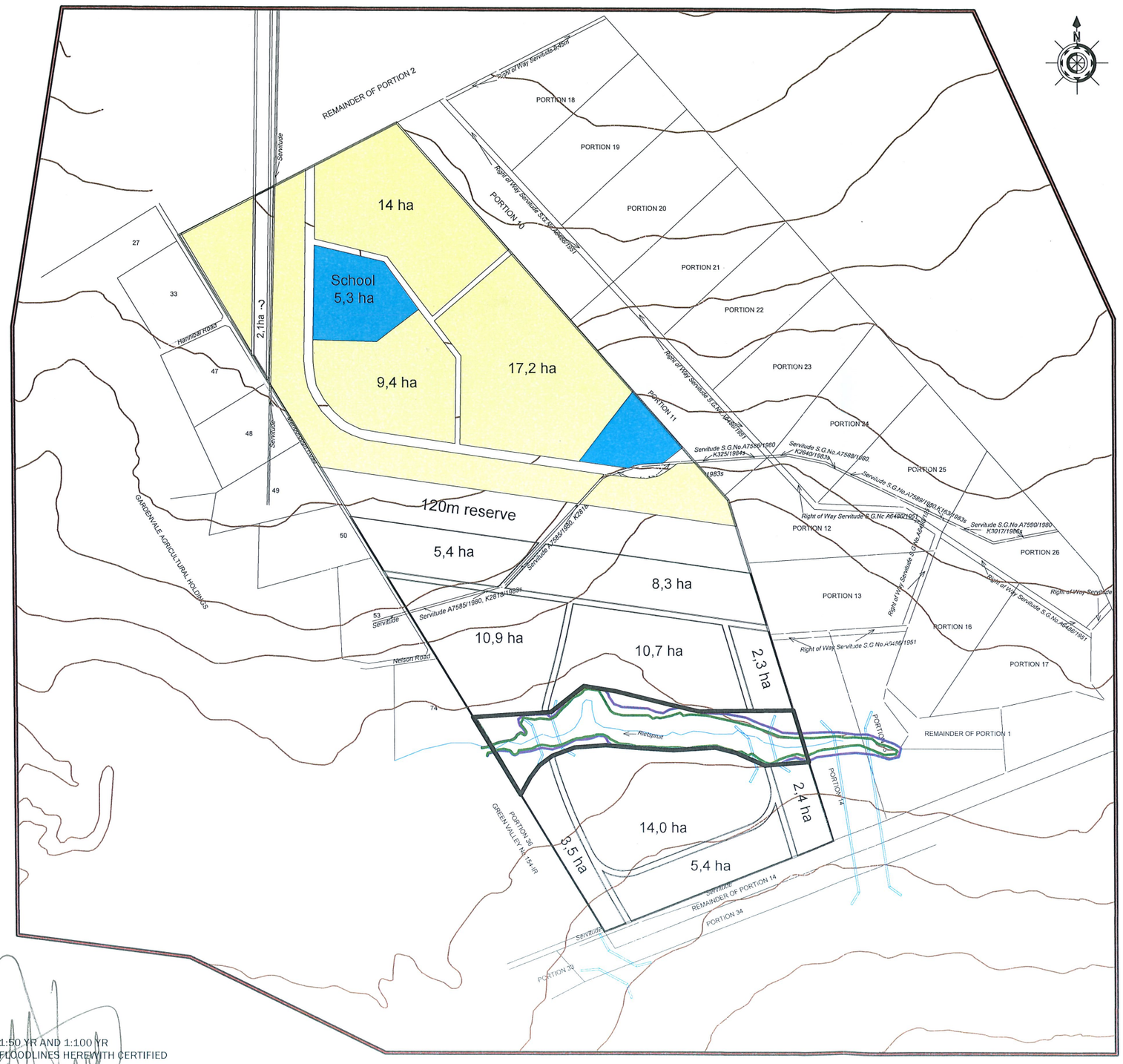
Reach 50R: Rietspruit CH 60 Avg. Depth=0.51 m Max Vel=2.67 m/s Inflow=17.9320 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0247 m/m Capacity=218.6737 m³/s Outflow=17.9318 m³/s 267.877 Ml

Reach 51R: Rietspruit CH 40 Avg. Depth=0.56 m Max Vel=2.22 m/s Inflow=17.9318 m³/s 267.877 Ml
n=0.035 L=20.00 m S=0.0148 m/m Capacity=129.1990 m³/s Outflow=17.9315 m³/s 267.877 Ml

Reach 52R: Rietspruit CH 20 Avg. Depth=0.62 m Max Vel=1.69 m/s Inflow=19.3219 m³/s 303.897 Ml
n=0.035 L=20.00 m S=0.0077 m/m Capacity=59.8857 m³/s Outflow=19.3215 m³/s 303.897 Ml

Reach 53R: Rietspruit CH 0 Avg. Depth=1.11 m Max Vel=0.88 m/s Inflow=19.3215 m³/s 303.897 Ml
n=0.035 L=20.00 m S=0.0010 m/m Capacity=22.1864 m³/s Outflow=19.3210 m³/s 303.897 Ml

ANNEXURE D: FLOODLINE DRAWING



LEGEND

1:100 YR FLOODLINE

1:50 YR FLOODLINE

RIETSPRUIT

1:50 YR AND 1:100 YR
FLOODLINES HEREWITH CERTIFIED

Pr.ENGINEER

2006091

ECSA Pr.Eng No.

17/09/2021

DATE

AMENDMENTS			
REV	DATE	BY	DESCRIPTION
1	17/09/21	I.D.	FLOODLINE REPORT

COSMOPOLITAN PROJECTS

PROJECT TITLE:

PORTION 8 OF THE FARM RIETSPRUIT 152-IR

1:50 YR AND 1:100 YR FLOODLINES

SCALE: SCALE: NTS

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DESIGNED:	I.D.
CHECKED:	M.J.

APPROVED

SIGNATURE

DATE

DRAWING No
RIETSPRUIT-50-100-FL-001

SHEET No
1 OF 1

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