RESIDENTIAL DEVELOPMENT 41 EASTGATE SOUTH DRIFFIELD.		SOAKAWAY CALCULATIONS SHEET 1 AREAS.
REFERENCE	AREA (M^2)	COMMENTS.
AREA 1	19.6x9.6 = 182.40	ROOF PLOTS 1-4
AREA 2	26.5x5 = 130	ACCESS ROAD
AREA 3	9.3x5 = 46.50	PARKING (NO 41 EASTGATE
AREA 4	6.5x9.7 = 63.05	PLOT 5 + 50% PLOT 6 ROOFS
AREA 5	6.5x9.7 = 63.05	PLOT 7 + 50% PLOT 6 ROOFS
AREA 6	5.0x9.7 = 48.50	PLOT 8 ROOF
AREA 7	5.0x9.7 = 48.50	PLOT 9 ROOF
AREA 8	16.3x16 = 260.80	ACCESS ROAD + PARKING + VISITOR
	16.0x0.65 = 10.42	PARKING + CYCLE PARK + BIN
	13.0x5 = 65.00	COLLECTION POINT
	16x9 = 144.00	
	480.22	

RESIDENTIAL DEVELOPMENT 41 EASTGATE SOUTH. DRIFFIELD	SOAKAWAY CALCULATIONS SHEET 2

Calculations to determine total Number of soakaway cells to service properties 1-4 AREA 2 & AREA 3 Run off.

Area x rainfall

$241.9 \times 0.05 = 12.09m^2$

Storm cell size $1.000(L) \times 0.500(W) \times 0.400(H) = 0.23$

$\therefore \frac{12.09}{0.23} = 52.5$ cells Say 53

SOAKAWAY SIZE PLOT 1 $2.000 \times 2.000 \times 1.200$ DEEP (13 CELLS)
" " PLOT 2 $2.000 \times 2.000 \times 1.200$ DEEP (13 CELLS)
" " PLOT 3 $2.000 \times 2.000 \times 1.200$ DEEP (14 CELLS)
" " PLOT 4 $2.000 \times 2.000 \times 1.200$ DEEP (14 CELLS)
TOTAL = 54

Calculations to determine total Number of soakaway cells to service properties 5, 6+7.

PROPERTY 5 + 50% PLOT 6

Area x rainfall

$63.05 \times 0.05 = 3.15m^2$

Storm cell size $1.000 \times 0.50 \times 0.40 = 0.23$

$\therefore \frac{3.15}{0.23} = 13.7$ cells say 14.

SOAKAWAY SIZE PLOT 5 $2.000 \times 2.000 \times 1.000$ DEEP (14 cells

PROPERTY 7 + 50% PLOT 6

Area x rainfall

$63.05 \times 0.05 = 3.15m^2$

Storm cell size $1.000 \times 0.50 \times 0.40 = 0.23$

$\therefore \frac{3.15}{0.23} = 13.7$ cells say 14

SOAKAWAY SIZES FOR PLOT 6 + 7 $2.000 \times 2.000 \times 1.000$ DEEP (7 CELLS EACH PROPERTY)

RESIDENTIAL DEVELOPMENT
41 EASTGATE SOUTH.
DRIFFIELD

SOAKAWAY CALCULATIONS
SHEET 3.

Calculations to determine total Number of soakaway cells to service properties 8 & 9.

PROPERTY 8+
Area x rainfall
$48.5 \times 0.05 = 2.42m^2$
Storm cell size $1.000 \times 0.50 \times 0.40 = 0.23$

$\therefore \frac{2.42}{0.23} = 10$ cells

SOAKAWAY SIZE PLOT 8 $2.000 \times 2.000 \times 1.000$ DEEP (10 cells)

PROPERTY 9
Area x rainfall
$48.5 \times 0.05 = 2.42m^2$
Storm cell size $1.000 \times 0.50 \times 0.40 = 0.23$.

$\therefore \frac{2.42}{0.23} = 10$ cells

SOAKAWAY SIZE PLOT 9 $2.000 \times 2.000 \times 1.000$ DEEP (10 cells)

Calculation to determine total Number of soakaway cells to service Access Road + parking areas / cycle park & bin store.

(A) (B) (C) (D)
ROAD + PARKING + CYCLE PARK / BIN STORE
Area x rainfall
$480.22 \times 0.05 = 24.0m^2$
Storm cell size $1.000(L) \times 0.50(W) \times 0.40(H)$

$\therefore \frac{24}{0.23} = 104$ cells

SOAKAWAY SIZE FOR A.B.C & D – $10.50 \times 5 \times 2 - 1.200$ DEEP (105 cells)

RESIDENTIAL DEVELOPMENT
41 EASTGATE SOUTH
DRIFFIELD

SOAKAWAY CALCULATIONS
SHEET 4

L D W
TEST HOLE ① 1·200 × 1·000 × 0·50

3 Tests taken ~ Average 16 minutes (960 secs)

Test hole volume between 75% & 25% effective depth

$V_{(p75-25)} = 1.2 \times 0.50 \times (0.75 - 0.25)$
$= 0.60 \times 0.50$
$= 0.3m^3$

$a_{(p50)}$ $0.50\left[2(1.2+0.5)\right] + 1.20 \times 0.50$
$0.50\left[2 \times 1.70\right] + 0.60$
$0.50 \times 3.40 + 0.60$
$= 4.0m^2$

$t_{(p75-25)} = 12 - 4$
$= 8$ mins

Soil infiltration rate $\frac{0.30}{1.55 \times (8 \times 60)}$

$= \frac{0.30}{1.55 \times 480}$

$= \frac{0.30}{7.44}$

$= 0.32 \times 10^{-5}$ m/sec.

RESIDENTIAL DEVELOPMENT
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DRIFFIELD

SOAKAWAY CALCULATIONS
SHEET 5

L D W

TEST HOLE ② 1.200 x 1.000 x 0.50

3 Tests taken - Average 20 minutes (1200 secs).

Test hole volume between 75% & 25% effective depth

$V_{(p75-25)} = 1.20 \times 0.50 (0.75 - 0.25)$
$= 0.60 \times 0.50$
$= 0.3 m^3$

$a_{(p50)}$ $0.50 \left[2(1.20+0.50)\right] + 1.20 \times 0.50$
$0.50 \left[2 \times 1.70\right] + 0.60$
$0.50 \quad 3.40 + 0.60$
$= 4.0 m^2$

$t_{(p75-25)} = 15 - 5$
$= 10 mins$

Soil infiltration rate $= \frac{0.30}{4.0 \times (10 \times 60)}$

$= \frac{0.30}{4.0 \times 600}$

$= \frac{0.30}{2400}$

$= 2.50 \times 10^{-5} m/s.$