

**THE DEVELOPMENT**

**STORMWATER MANAGEMENT PLAN**  
Refer to table alongside for the existing and new proposed areas. Earthworks will be constructed to the SABS 1200 standard specifications and cut and fill slopes are maximum 1:2. Retaining wall details are shown on a separate drawing. All fills will be compacted to 93% Mod AASHTO density. As the sands on this site are moderately erodable, stormwater controls must be maintained at all times.

**PRE-CONSTRUCTION**

- Prior to any machine moving on site the following items must be done.
  - 3 rows of silt-fencing (as per stormwater control details)
  - Identification of wetlands or other environmentally sensitive areas and the immediate inception of additional controls where necessary.
- A shade cloth fence must be erected on top of banks immediately after platform and final cuts are established and confine only the workable area needed by the contractor. All areas outside the shade cloth fencing are to be planted to final specifications where possible. The landscaper must receive written permission from S.E.H.O.A. prior to the commencement of planting. Only groundcover, lawn and veld grass are permissible at this stage and must be done in accordance to the Approval initial plan submission.
- As soon as the fencing has been erected, the builder is to install all sandbagging and other controls required "During Construction"

**DURING CONSTRUCTION**

- All controls must be incepted according to the "During Construction Water Management Plan" approved by S.E.H.O.A.
- All storm water channelled off the site must be directed in such a manner as not to cause damage to common/ neighbouring grounds.
- Any storm water directed to this system at this stage in the development must have controls in place to trap any sediment from getting into the storm water system. This can be achieved by forcing water through a succession of silt catches.
- Where permanent storm water systems are in use at this stage, water must first be channelled through a succession (2/3) of silt traps/fences. All mud flowing into these systems will end up in our wetlands, dams or ponds.
- At the end of each working day the access route onto the site must be protected by sandbagging, to prevent the flow of storm water and silt onto or off the site. The perimeter gate must be closed and secured

**PERMANENT STORM WATER CONTROLS(Post building completion)**

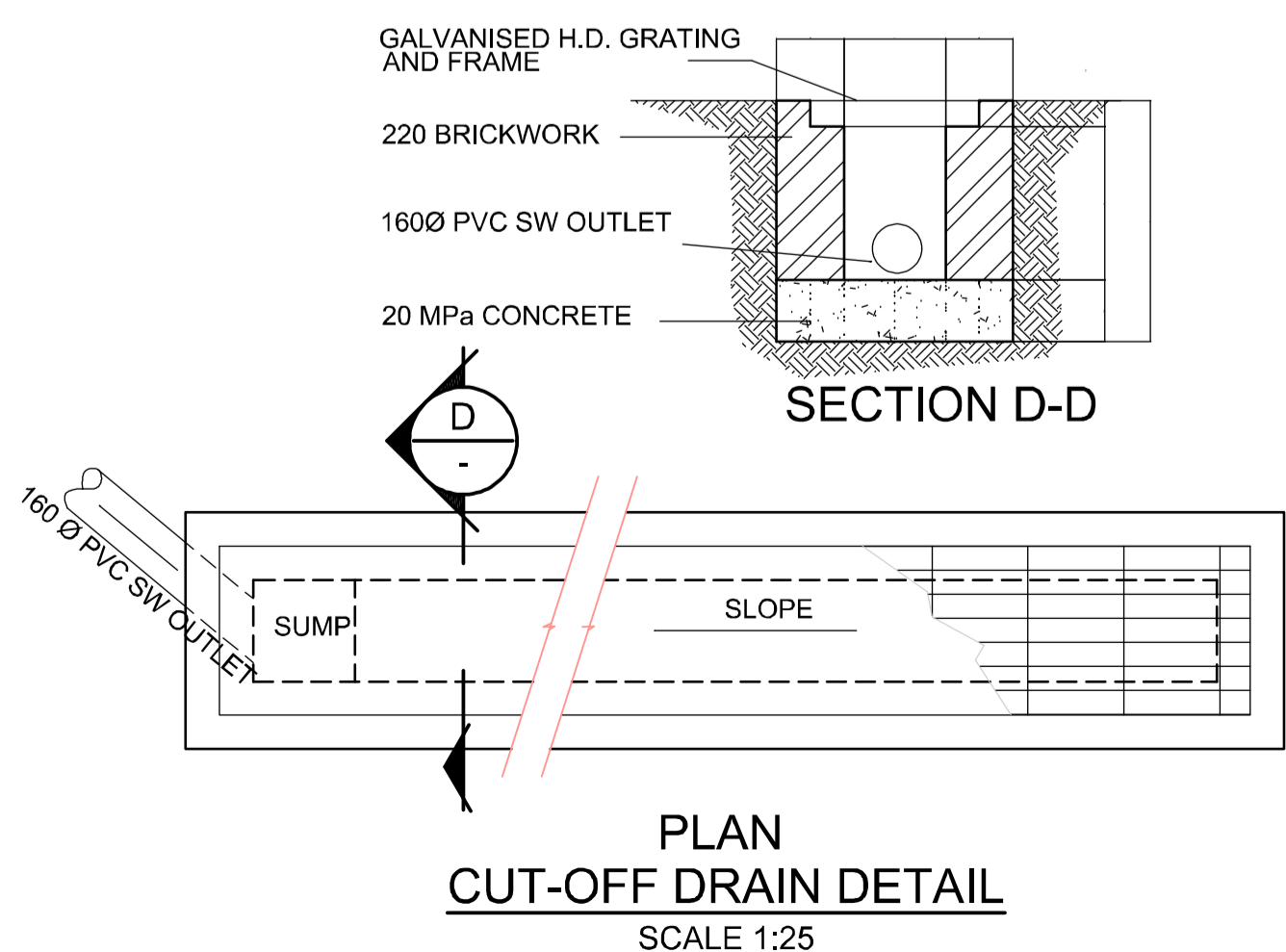
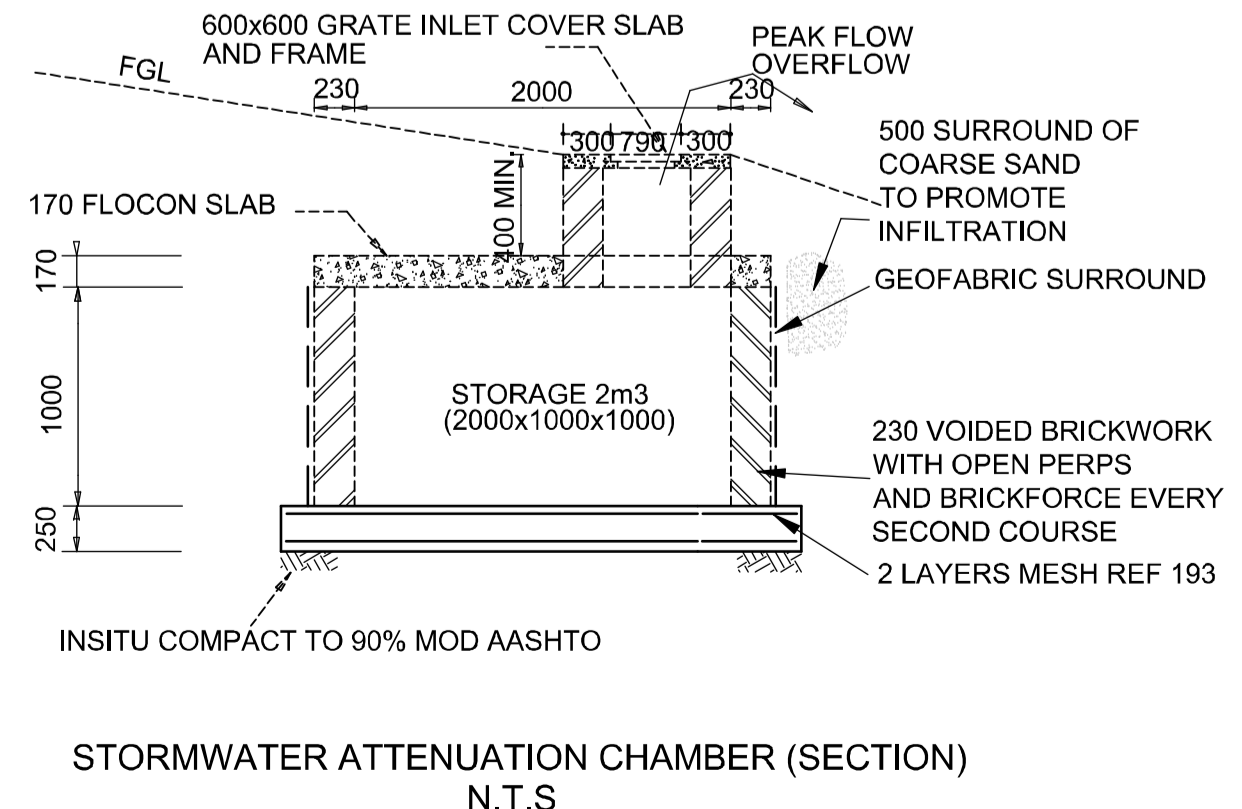
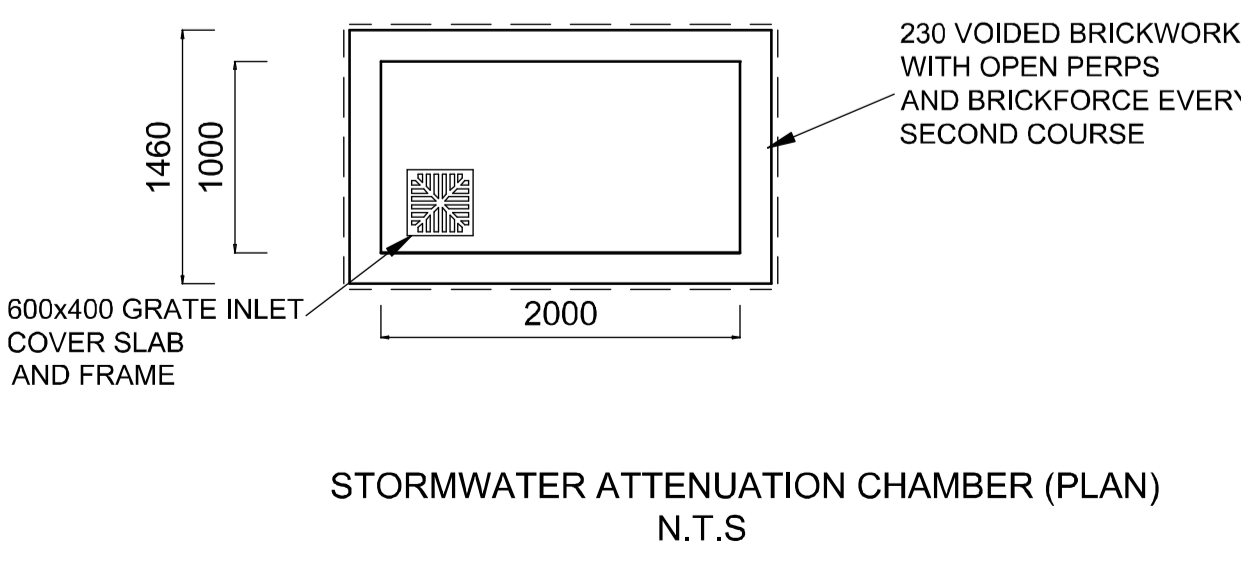
**POST CONSTRUCTION**  
All roof drainage is conveyed from gutters to rainwater pipework into the stormwater pipes with pipe sizes designed for a 1:3 year storm. Surface water off paved surfaces should be directed towards the drains and then via the pipes into the stormwater chamber as shown. The chamber accommodates the difference in discharge between the 1:50 year pre and post development storms over a concentration period of three times the time of concentration that being 45 mins. The chamber has an outlet pipe which has been sized for the 1:10 year pre-development event, that is 16 l/s, before outletting to the existing manhole. All stormwater flow and storage calculations for 1:10 and 1:50 pre and post development flows are shown in the stormwater calculations included

**STORMWATER CONTROL DETAILS**  
Silt Fencing, Instant Lawn, Poles (Banks), Drainage Pines, Sandbagging, Earth Berms, Small Trenches with Small Earth-berms and Agricultural Trenches should be in accordance with the Simbithi Storm Water Management Protocols - Revision Edition - September 2006

Once the proposed stormwater pipework and stormwater chambers are constructed, all temporary stormwater measures detailed above should be channelled towards inlets.

NOTE:  
REFER TO ARCHITECTS PLAN FOR  
RAINWATER DOWNPIPE POSITIONS

**CHAMBER NOTES:**  
THE ENGINEER TO BE CALLED TO INSPECT FOUNDATION AND COMPLETED STRUCTURE PRIOR TO BACKFILLING  
CONCRETE STRENGTH = 25 MPa  
COVER TO STEEL = 50mm UNLESS OTHERWISE SHOWN  
BRICKWORK TO BE CROSSBONDED IN CLASS II MORTAR



Using the Ethekwini Metro Rainfall data to determine intensities:

FACILITY No. A	Pre development		Post development	
	Return Period		Return Period	
	1 in 10	1 in 50	1 in 10	1 in 50
<b>Area (m<sup>2</sup>):</b>				
grassed areas	3996	3996	3376	3376
road surfacing/paved areas	0	0	200	200
rooftops	0	0	420	420
Flow length (m)				
Height of fall				
Ave grade (%)	Ethekwini Rainfall data used to obtain intensities			
Flow velocity (m/s) *				
Flow time (mins/secs)				
Time of entry *				
<b>Run-off coeff. **</b>				
grassed areas	0.40	0.40	0.40	0.40
road surfacing	0.90	0.90	0.90	0.90
rooftops	0.90	0.90	0.90	0.90
Ct	0.47	0.52	0.70	0.75
Time of Concentration (Tc) mins	20.00	20.00	15.00	15.00
Rainfall intensity *** (mm/hr)	115	185	155	204
<b>Discharge Q (m<sup>3</sup>/s):</b>				
grassed areas	0.051	0.082	0.058	0.077
road surfacing	0.000	0.000	0.008	0.010
rooftops	0.000	0.000	0.016	0.021
Total	0.051	0.082	0.082	0.108
Attenuation Required (m <sup>3</sup> ) *	15.500			

PRELIMINARY

no	date	details	checked	approved
designed				
drawn				
checked				
traced				
date				
approved				
CAD	NOV 2012			

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CLIENT	
PROJECT	
TITLE	
scale	AS SHOWN
drg. no	12470/SMP/01
rev.	---