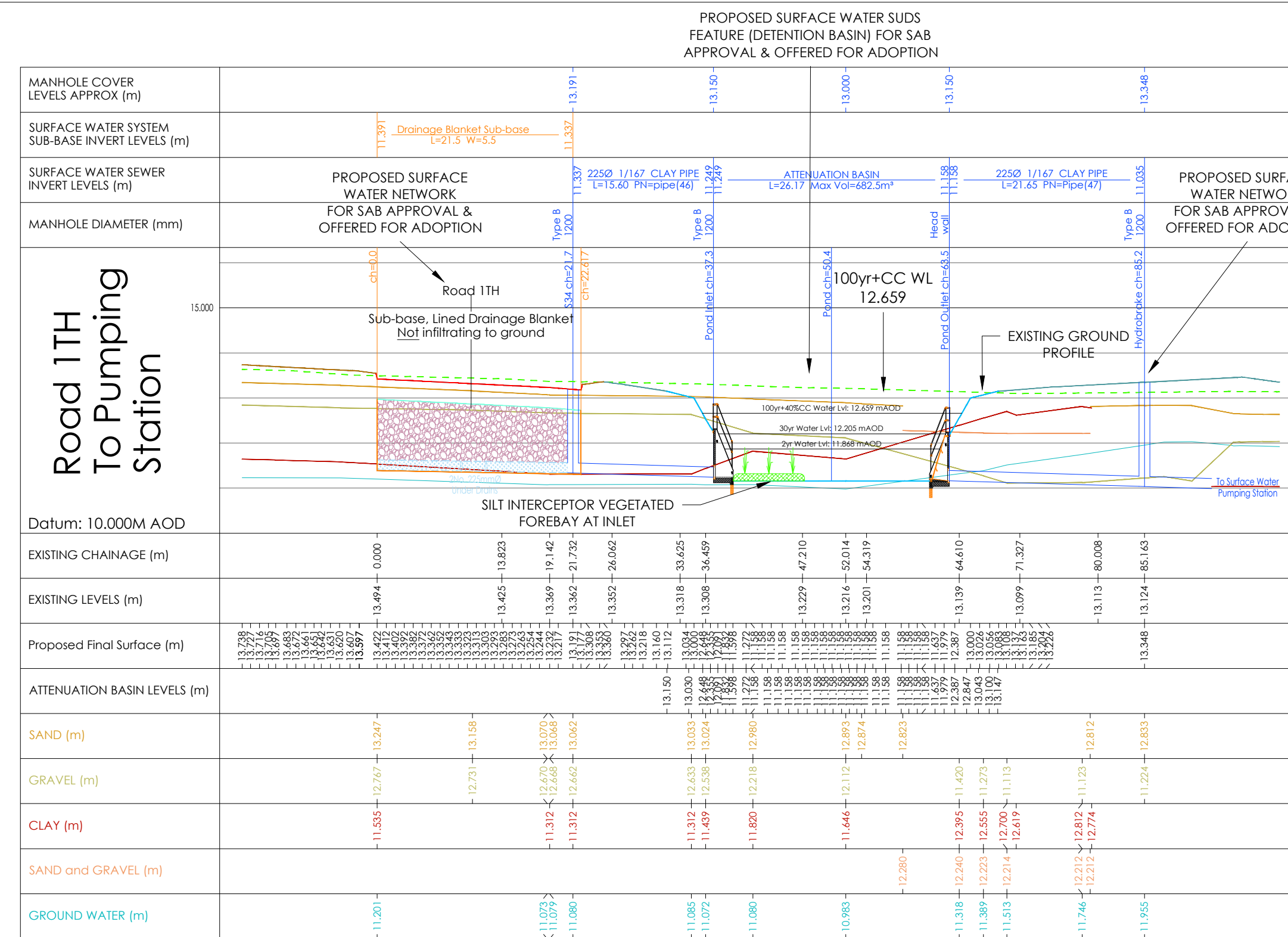




Detention Basin

Key Design Standards

- Silt and pollution must be removed upstream in source control features.
- An inlet flow spreader is required to distribute flows across the basin ideally using a widening grass channel inlet.
- The base should be laid to slight fall of between 1 in 100 and 1 in 200 along the basin to the outlet headwall.
- Side slopes to the basin should be 1 in 3 maximum with clear access for maintenance.

Basin Details

Perimeter Level: 13.000 m AOD  
Perimeter Area: 573.732 m²

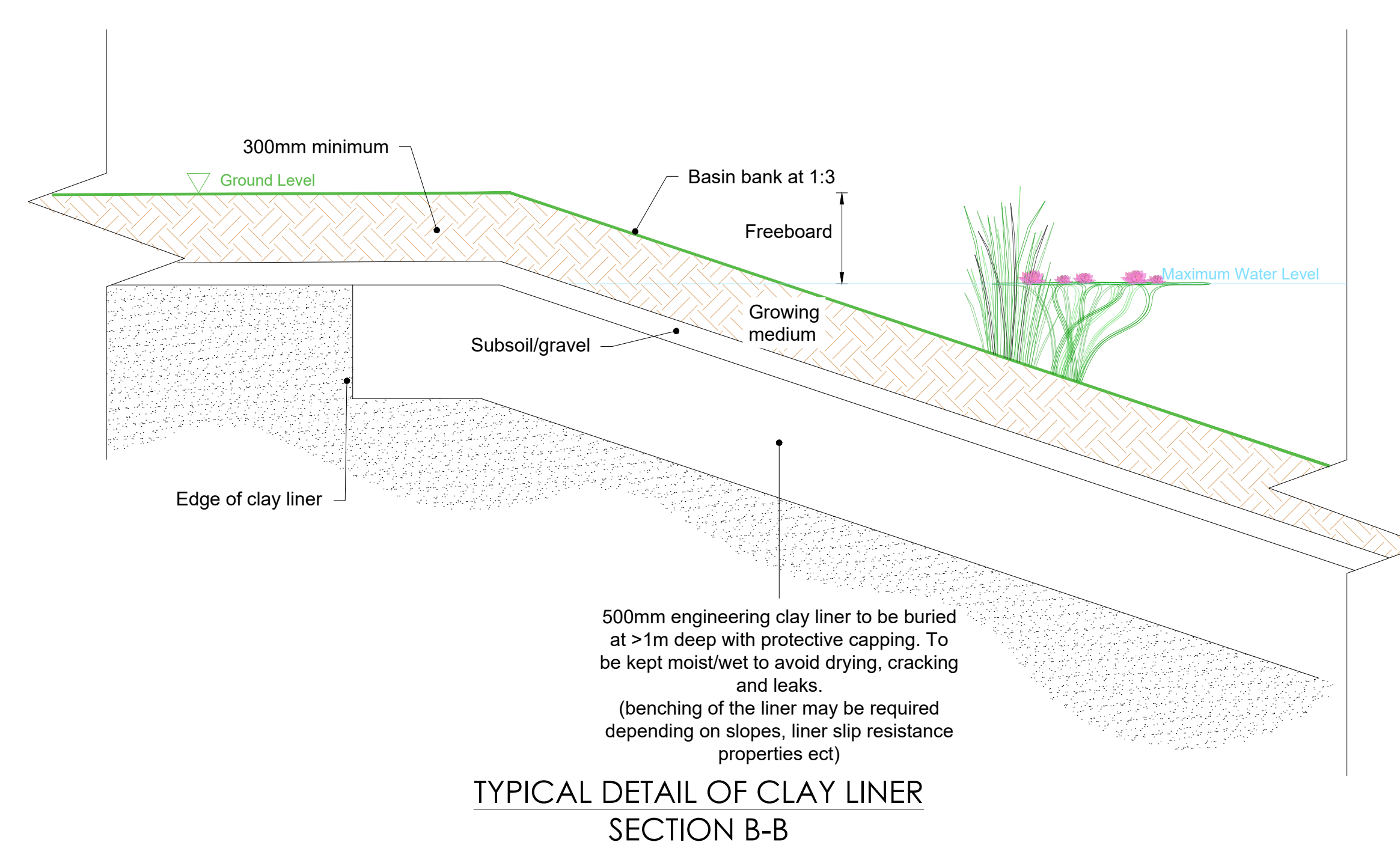
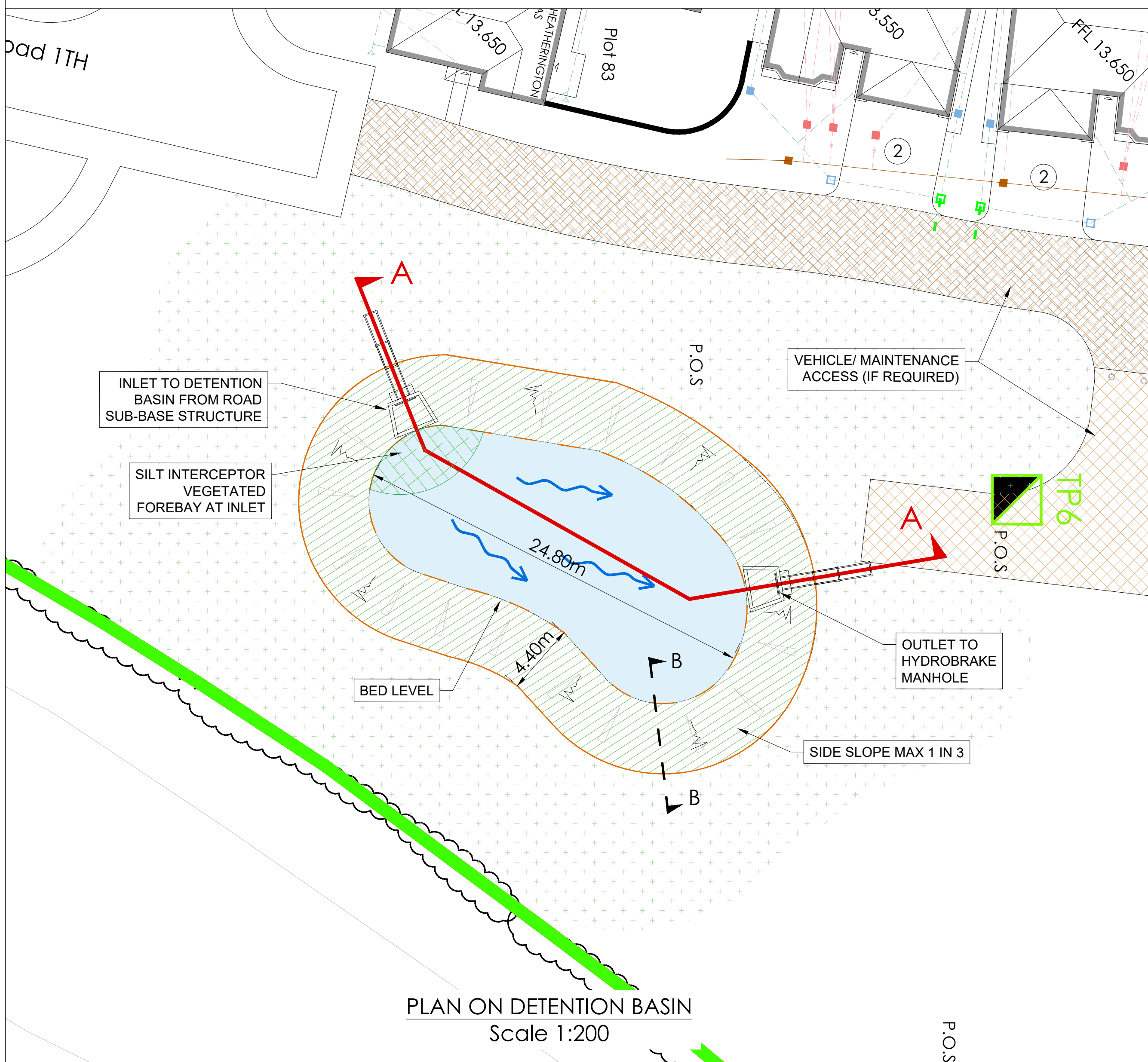
Basin Bed (invert) Level: 11.158 m AOD  
Basin Bed Area: 242.908 m²

Maximum Water Level: 12.700 m AOD  
Depth: 1.542 m  
Freeboard: 0.300 m  
Total volume of water to maximum water level: 527.637 m³

Simulated Water Level: 12.659 m AOD (Simulated)  
Depth: 1.501 m  
Freeboard: 0.341 m  
Total volume of water to Simulated water level: 507.243m³

Cut & Fill Volumetric Calculations :

Volumes of pond bed (invert) against original ground surface  
Volume of Cut: 835.065 m³  
Volume of Fill: 0.000 m³



Notes:-

Specification for site won and site imported clay to be used as a pond liner:

- General  
Material to be used as puddle clay shall be naturally occurring homogeneous plastic material. It shall be free from deleterious matter such as sand, stones and organic material. The use of lime-stabilised clays shall not be allowed.
- Properties  
a. More than 65% of the natural material shall be finer than 0.06mm and more than 40% shall be finer than 0.002mm.  
b. The natural material shall be defined as firm clay in accordance with bs5930:1981 table 8 (cu 40-75 kpa).

- The natural material shall be defined as clay of intermediate to extremely high plasticity in accordance with bs5930:1981, figure 31 and the liquid limit shall not be less than 35%.
- The coefficient of permeability (k) of the remoulded material shall not be greater than 10<sup>-9</sup> m/s.
- The remoulded material shall be defined as non-dispersible (nd1) in accordance with bs1377:part 5:1990, table 2.
- Identification  
An indication of a material's suitability may be obtained from the following empirical tests, at the moisture content agreed for placement.  
a. Tenacity test  
A 300mm long, 25mm diameter cylinder of clay is held vertically for 15 seconds so that at least 200mm is unsupported and in tension under its

weight. If the cylinder breaks the Clay will be rejected as unsuitable.  
b. Pinch test  
A 75mm diameter ball of remoulded clay is squeezed into a 25mm thick flat disc. If any cracks appear the clay may be rejected as unsuitable.  
c. Slaking test  
A 50mm diameter ball of remoulded clay is placed in a 600ml beaker and covered with water if the ball disintegrates within 24 hours the clay may be rejected as unsuitable.  
d. Permeability test  
A sample of remoulded clay shall be formed into a tray to hold 20 litres of water and the loss measured after 24 hours. This shall be compared with the water loss from a metal tray of the same surface area holding the same quantity of water. If the difference is Greater than 1% the clay may be rejected.