

WATERTIGHTNESS & LIQUID MANAGEMENT

Water tightness achieved as follows

Initial layer of 450gram/m² geotextile laid as an underlay followed by

2.0mm HDPE fully welded liner.

A floating cover of 1.0mm HDPE to be provided.

All pipework to be fitted over the embankment on top of the under and under the floating cover. No penetrations permitted to the liner. Fully welded penetrations permitted to the floating cover.

Access pad to be bunded where filling / emptying pipework is terminated.

GEOLOGY

Expected clay geology.

Soils to form outer slope of embankment with wet slope being formed from cohesive material.

EXISTING LAND DRAINS

All existing land drains discovered during excavation will be grubbed up under the footprint of the new reservoir and 5m beyond where they shall be plugged with. All excavations to be backfilled and compacted in line with the specification

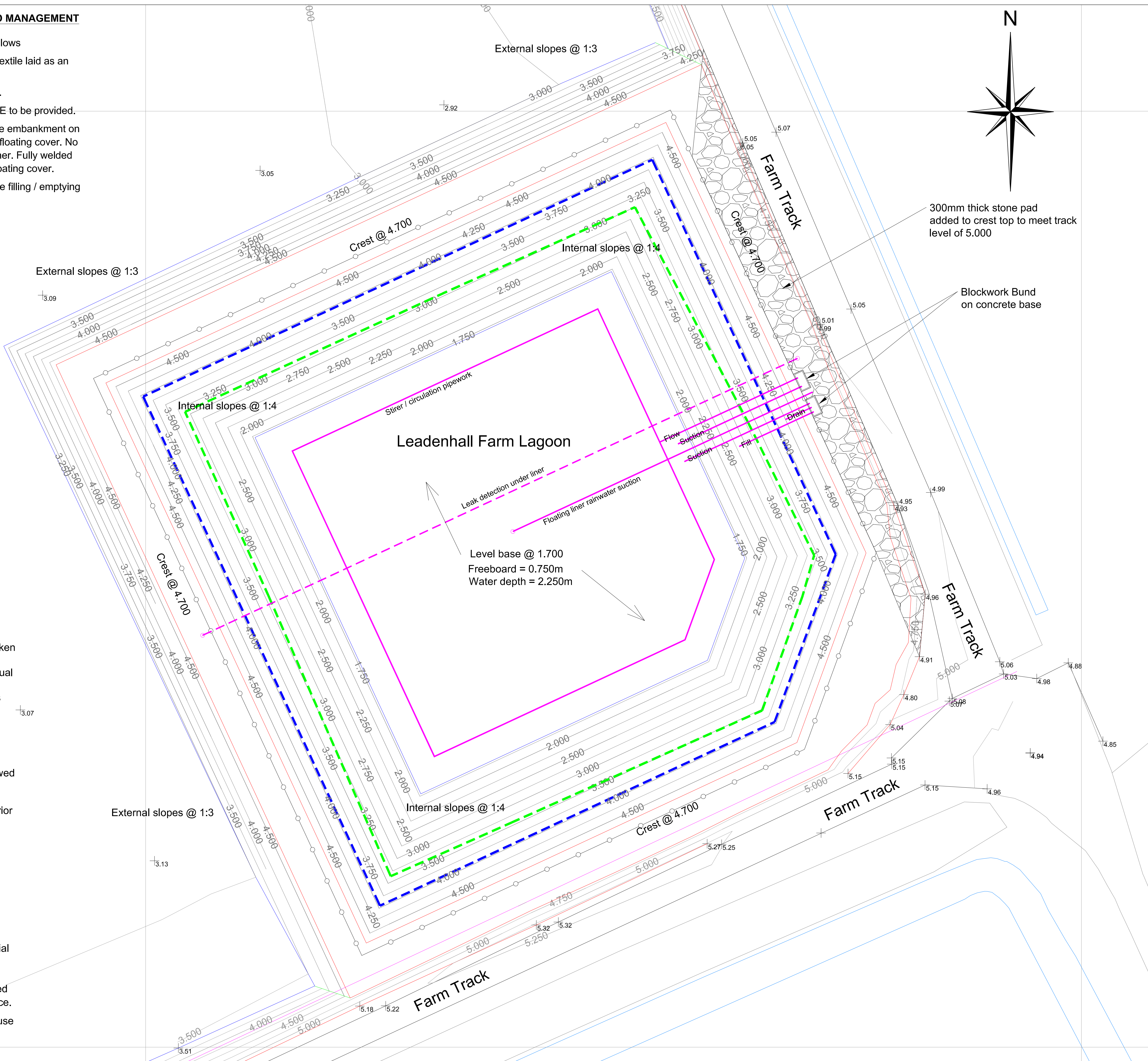
EARTHWORKS

All earthworks will be undertaken in accordance with The Department of Transport Manual of Contract Documents for Highways Works Volume 1 as per the table attached in appendix 1. Embankment fill shall be placed in layers not exceeding 250mm loose thickness. Compaction of all placed fill shall be by BW6 towed vibrating roller. This will be towed by a Komatsu Dozer. Exact plant to be confirmed prior to works commencement.

See appendix 1 of the specification for compaction table 6/4 from Highways specification.

Source of fill to form embankments to be the excavated arisings from the base. Coarser granular material to be used in outer slope with clay used in the inner "wet" slope. Volumetric design based on achieving a cut & fill balance.

Water tightness achieved by use of 1.0mm HDPE liner.



Do not scale from this drawing

- Legend
- Water line @ 19.070m
 - Bottom of batter / bank / slope
 - Top of batter / bank / slope
 - Contour 0.250m interval
 - Verge / valley
 - Cut / Fill line
 - Pipework - as noted
 - Edge of cultivation
 - K-rail fencing

BULK EARTHWORKS VOLUMES

Total cut (excavation) = 4,354m³
Total fill (embankments) = 4,354m³

(Includes 0.500m topsoil strip beyond cut / fill line to outer crest line)

STORAGE CAPACITY SUMMARY

Required storage volume = 5,500m³
New reservoir @ 750mm freeboard
New volume = 5,776m³
Volume stored above lowest adjacent ground level
(3.000m AOD) = 2,931m³

DIMENSIONAL SUMMARY

Overall depth 3.000m
Freeboard 0.750m
Water depth 2.250m
Capacity 5,776m³
Crest width 4.00m
Dry slope 1:3
Wet slope 1:4
Reservoir area 3,508m² (water level when full)
Reservoir area 6,016m² (total footprint)
Embankment crest 7.700 AOD
Water level 3.950m AOD
Base of reservoir 1.700m AOD
Lowest external ground level 3.000m AOD
Max height of embankment 1.700m (Crest to ground level)
Max height of embankment 0.950m (Water level to ground level)

Reservoir sited at National Grid Reference TF366336 (0.1km square)

Basin liner area = 4,317m²
Anchor trench length = 263m

FOR COMMENT

0	First design scheme for comment	NGH	26/08/2020
Rev	Revision	Ini	Date

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Project Beeswax Dyson Farming Ltd Leadenhall Farm Lagoon			
Drawing Title New 5,500m³ Lagoon Scheme design			
Scales 1:200		Sheet Size A1	
Drawn N.Hewerdine	Checked	Approved	Date 26/08/2020
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