Environmental Impact Assessment Report Remedial

Derrybrien Wind Farm Development Decommissioning Project – Retained Development

Volume 2c: rEIAR Appendix 8-2 (Part 2)

APPENDIX 8-2

GEOTECHNICAL STABILITY REPORT - WIND FARM SITE (PART 2)

APPENDIX V

AGL MEMO NO. 03-104-DM18 – FULL SCALE TESTING ON THE FLOATING ROADS

AGL Consulting
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Ascon Ltd.
Site Office
Derrybrien Windfarm
Loughrea,
Co. Galway

Memo to: Joe Mc Fadden
By: Conor O'Donnell
Re: Full-scale tests on floating roads
Date: April 22, 2005 **Our Ref:** 03-104-DM 18

The following floating roads on the site to date have now been tested and approved for traffic loads up to 72 tonnes, or 4.8 tonnes per linear meter of road:

T47 to T52	**T47 to T9**	**T53 to T57**	**T59 to T65**
T52 to T57	**T64 to T26**	**T1 to T18**	**T1 to T2**
T3 to T4	**T6 to T24**	**T12 to T16**	**T18 to T26**
T17 to T25	**T66 to T68**	**T24 to T44**	**T25 to T45**
T26 to T46	**T45 to T46**		

This includes all of the floating roads on peat that have been constructed on the site to date with the exception of the stretch of road between T4 and T5. That section has been tested to the full construction traffic load (36 tonnes/ 20 kN/m^2), which has the same load per linear meter as the crane. However, the performance of the road was classified as poor based on the criteria defined in Table No.1, and when the road was subsequently tested using two trucks with a combined load of 62.5 tonnes it was considered that remedial works should be carried out on the road before it is approved for the full traffic load.

All of the remaining roads have been tested to a minimum load of 72 tonnes over a length of 15 m using two fully-loaded 8 wheel trucks traveling back to back. This is equivalent to the crane that will be used to erect the turbines, which we understand will be 15 m long x 2.75 m wide with a fully laden weight of 72 tonnes on six axles when traveling. AGL should be advised if the traffic load exceeds this value.

The tests were carried out on the site on April 20th, 2005 under the continuous inspection of Mr. Daire Cummins of AGL Consulting.

There were still some areas where the performance of the road would be classified as poor based on the criteria in Table No.1. These areas are identified in red in Figures Nos. 1-3. It should be noted that all of these sections have been tested to the full traffic load without any indications of failure in the peat. The performance of the road is largely a serviceability issue based on the observed deflection of the road. The general experience on the site is that the larger deflections occur where water is near the ground surface which softens the crust of the peat. This generally occurs where the peat is deep and soft on relatively flat terrain, or across locally ponded water.

Directors: E R Farrell, BA, BAI, MS, PhD, CEng, FIEI, FGS, EurEng; C O'Donnell, BA, BAI, MS, MIEI
Advanced Geotechnics Ltd. CRO No. 333906

Table No.1 - Performance criteria for road tests under maximum test load

Road Performance Classification	Performance Criteria (36-38 tonne load)
Good	➢ Road deflections generally <10 mm ➢ Road deflects relatively rigidly under truck load with only slightly greater deformation locally under the wheel load at localized soft spots. ➢ Road surface is even with minor rutting and no loose rockfill.
Fair	➢ Road deflections between 10 and 30 mm ➢ Road deflects noticeably under wheel loads ➢ Road surface is relatively even with some rutting along the line of the wheels. The rockfill is generally dense. ➢ Local transverse rutting occurs at soft spots where the rockfill has loosened over weak peat, or where there are gaps in the basal reinforcement trees.
Poor	➢ Road deflections are greater than 30 mm (up to about 60 mm) ➢ Road deforms very noticeably under wheel loads in wave-like motion. ➢ Deformations are uneven causing the truck to tilt slightly on local soft spots. ➢ Road surface is in poor condition with both longitudinal and transverse rutting creating an uneven road surface. ➢ Rockfill is loosened over worst areas.

As a minimum we would recommend that remedial work be carried out in the following areas to improve the performance of the road:

- Between T4 and T5.
- From 100 meters west of T55 to 50 meters east of T55.
- Along the northern edge of the bend at the newly widened junction between T26 and T29.
- At the point where the new road joins the old road between T50 and T51.

The work should be carried out in accordance with the AGL Method Statement in Appendix A. The remaining areas should be monitored to determine if the roads deteriorate during the rest of the construction work on the site. Remedial work can be carried out to upgrade the roads where required.

Construction traffic should travel down the centre of the floating roads wherever possible. In particular, assistance shall be given to the driver of the crane used to erect the turbines to guide the crane down the centre of the upgraded turbary road between T25 and T45.

Signed:

Conor O'Donnell

Conor O'Donnell
AGL Consulting

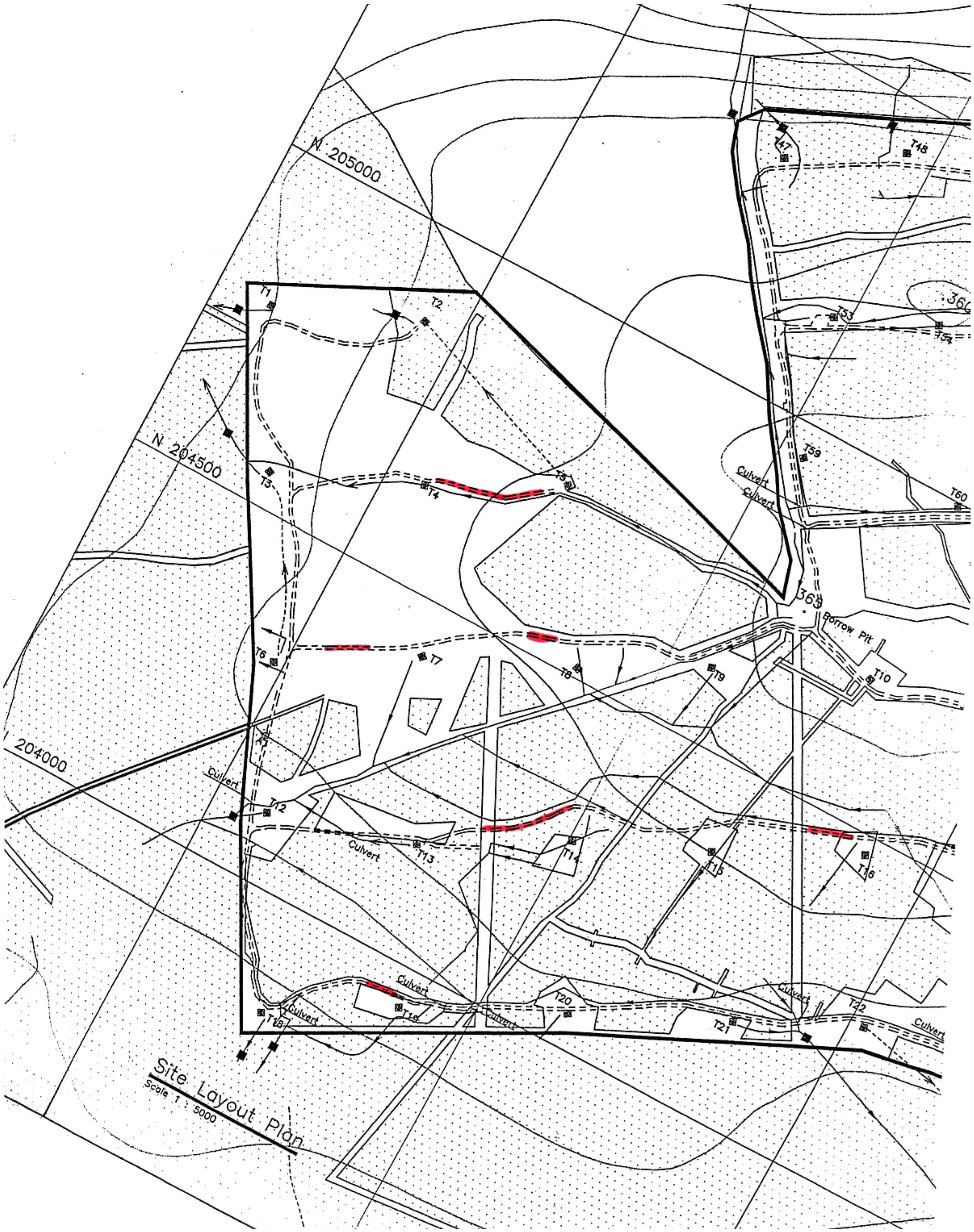

Figure No.1 – Sections of floating road classified as poor on west side of site (marked in red)

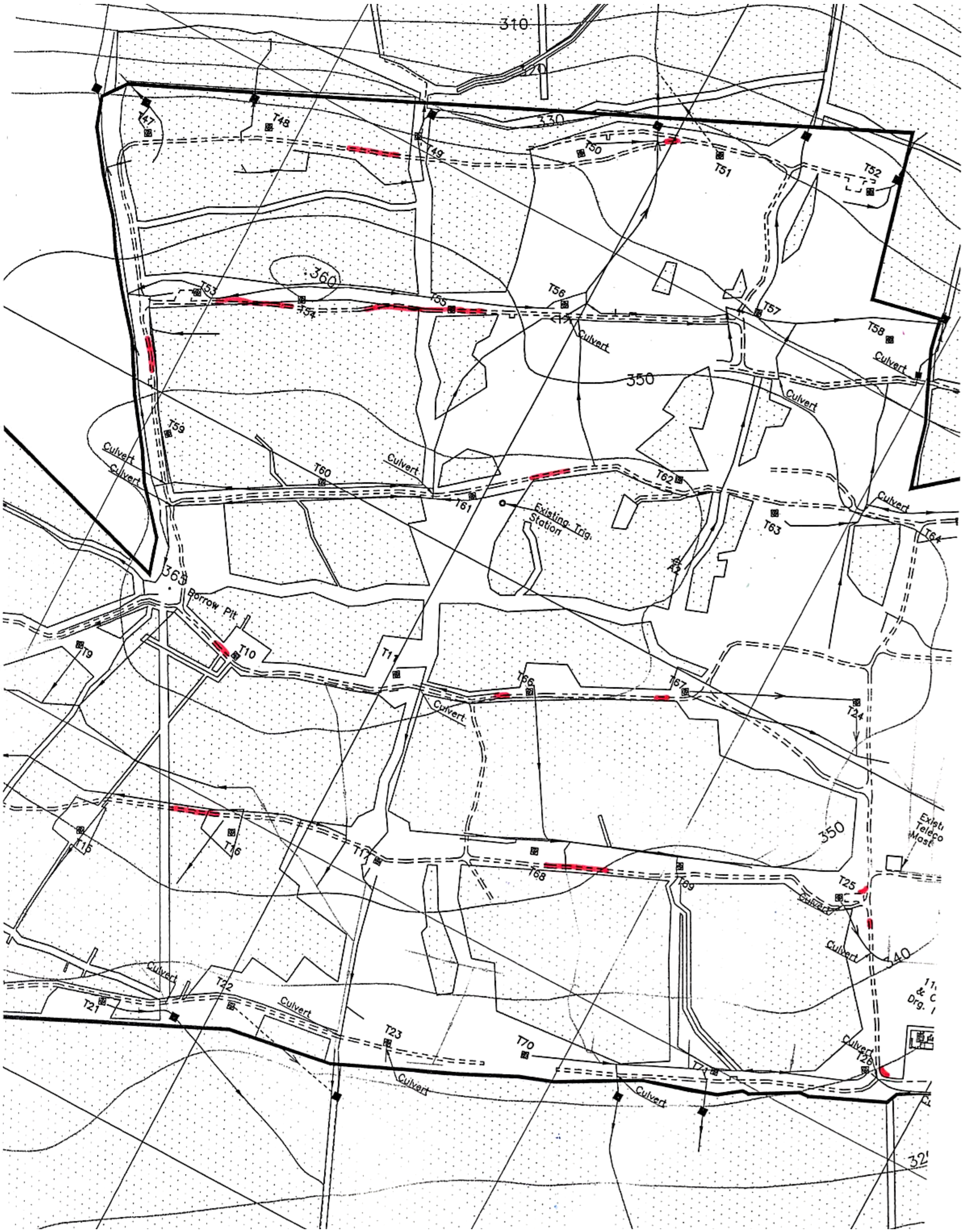

Figure No.2 – Sections of floating road classified as poor in central section of site (marked in red)

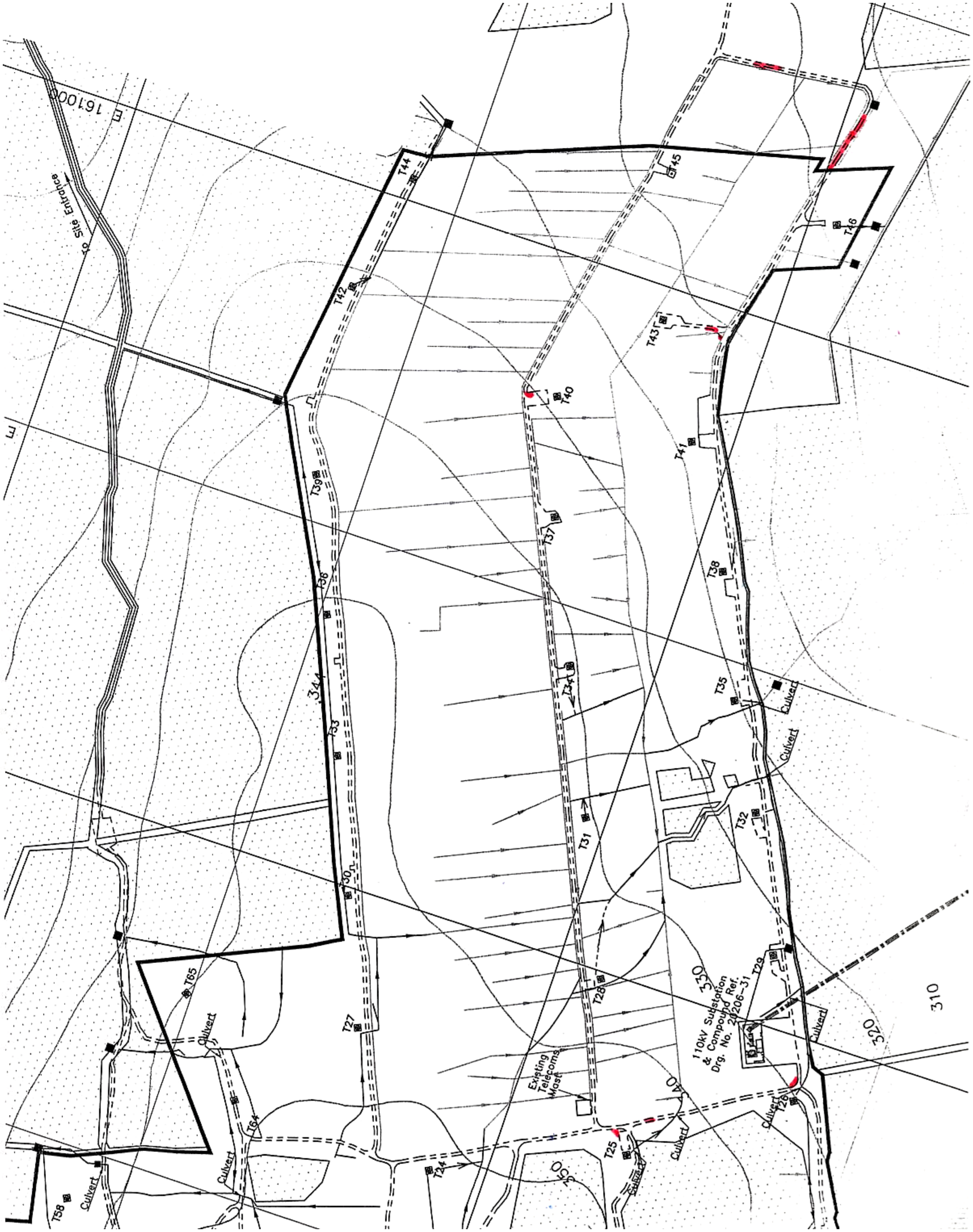

Figure No.3 – Sections of floating road classified as poor on east side of site (marked in red)

Appendix A

AGL Method Statement for remedial work
on the floating roads

Method Statement
for
Remedial Work for Floating Roads on the Derrybrien Windfarm.

1. Purpose

The purpose of this method statement is to outline the remedial work that will need to be carried on the floating roads in areas where the road performed poorly during the road test at 36 tonnes.

The performance of the roads has been visually classified by AGL in accordance with the criteria outlined in our Report No. 03-104-IN1 – "Report on the Stability of the Floating Roads, Turbine Excavations and Peat Disposal Areas on the site of the Derrybrien Windfarm, Co. Galway." The performance of the roads was classified as "Poor" if

- Road deflections are greater than 30 mm (up to about 60 mm)
- The road deforms very noticeably under the wheel loads in a wavelike motion
- Deformations are uneven causing the truck to tilt slightly on local soft spots
- The road surface is in poor condition with both longitudinal and transverse rutting creating an uneven road surface.
- The rockfill is loosened over the worst areas.

2. Scope of Work

This method statement will apply to those areas where the road performance was classified as "Poor" as identified in the AGL Report No. 04-104-R02, dated 16/12/04.

This method statement will also apply to roads that deteriorate over the construction period as a result of heavy construction traffic so that the performance of the road meets the criteria listed in Section 1.

All of the floating roads will be tested with the crane under the maximum proposed load before the roads are approved for turbine erection.

3. Procedure for remedial work on floating roads

1. It is recommended to carry out a test of proposed remedial measures on the section of floating road between T11 and T66 so that a suitable method can be evaluated for the other sections of floating road on the site.

2. Carefully excavate inspection pits at locations where deflections of the road are large and the crushed rockfill is loose to determine if the existing geogrid is ruptured and to measure the thickness of fill placed over the layer of trees under the road. At least 4 No, inspection pits shall be excavated for each section to be repaired.

3. **If the thickness of the road is less than 1.0 m and the geogrid has not been ruptured** in any of the inspection pits:

   - Level the existing surface of the road with an excavator without adding any more rockfill.
   - Place a second layer of Tensar SS30 geogrid.
   - Place a 300 mm thick capping layer of crushed rock fill over the geogrid.

   The total thickness of the road shall not exceed 1.0 m after the remedial work has been completed. If there is more than 700 mm of stone already on the road, then the excess thickness of fill (>700 mm) shall be excavated off the road before the geogrid and capping layer are placed.

4. **If the existing geogrid is ruptured** then it shall be replaced with a new layer of Tensar SS30 at the same level and topped off with crushed rockfill. A second layer of Tensar SS30 shall be placed in the capping layer at least 350 mm below the finished road level.

5. The road shall be tested under the full construction load (36 tonnes).

6. **If the performance of the road is still poor**, then the existing road shall be excavated out and additional trees shall be placed across the width of the road to fill the gaps in the existing basal layer. It may be necessary to place more than 1 No. layer of trees across soft spots to get a level surface for the regulating layer.

7. The new road shall have min. 0.5 m thickness of crushed rock over the trees with 2 No. layers of Tensar SS 30 geogrid. The geogrids shall be placed 300 mm and 450 mm from the road surface.

8. Areas in which a substantial improvement in road performance is recorded shall be deemed acceptable to carry construction traffic.

9. Based on the results of the remedial work at the section of road between T61 and T62, an effective method of remedial work can be adopted for the other sections of floating road classified as "Poor" on the site.

10. Those areas in which a substantial improvement in performance is not recorded after the remedial work shall be assessed by AGL on a case-by-case basis.

APPENDIX VI

AGL REPORT NO. 03-104-R06 – REPORT ON THE LOAD TEST CARRIED OUT ON A TEST SECTION OF FLOATING ROAD

Report on the Load Test Carried out on a Test Section of Floating Road on the Derrybrien Windfarm, Loughrea, Co. Galway

Report No. 03-104-R06

for

Ascon Ltd.
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May 23rd , 2005

Report on the Load Test Carried out on a Test Section of Floating Road on the Derrybrien Windfarm, Loughrea, Co. Galway

1.0 Introduction

This report provides a summary of the results of the load test carried out by AGL Consulting and Ascon Ltd on a test section of floating road on the site of the Derrybrien Windfarm near Loughrea, Co. Galway.

The load test was carried out to compare the actual load bearing capacity of the road to the ultimate capacity predicted using the uncorrected vane shear strengths measured by the Geonor H-10 with the 65/130 mm rectangular vane, and by the Geotech AB device with the 140/280 mm vane with tapered ends.

The Geonor H-10 (65 mm/130mm) vane has been used by Ascon and AGL for the supplemental ground investigation, whereas the larger Geotech AB vane has been used by ESB International. The general experience on the site is that the larger vane gives lower readings of undrained shear strength in the peat.

The main objective of the road test was to confirm that the uncorrected results from the Geonor H-10 (65mm/130mm) vane give a representative index of the undrained shear strength of the peat for the analysis of the stability of the floating roads and peat repository sites.

2.0 Test location

For the purpose of this test a 20 m long section of floating road was constructed parallel to and approximately 5-10 m east of the existing floating road between T64 and T24, as illustrated on Figure No.1. The test section was constructed on relatively level peat sloping gently to the southeast.

This area was selected because the depth of peat is on the order of 4 to 5 m, which is relatively high for the site, and low undrained shear strengths had previously been recorded in the peat in this area by ESBI. The test is also adjacent to the access route for the transformer, which will be the heaviest load that will be carried on the road.

3.0 Road Construction

The test section of floating road was constructed in a similar fashion to the other floating roads that have been constructed on the site. A single layer of trees, typically less than

250 mm in diameter, was first laid over the undisturbed surface of the peat as basal reinforcement. The trees were covered with a regulating layer of crushed rock fill about 150 mm thick and then a layer of SS30 Tensar geogrid was placed over the fill. The road was then finished with crushed rock fill so that the total thickness of fill over the trees was 0.5 m. The width of the road was 5.0 m and the trees were trimmed to the edge of the road.

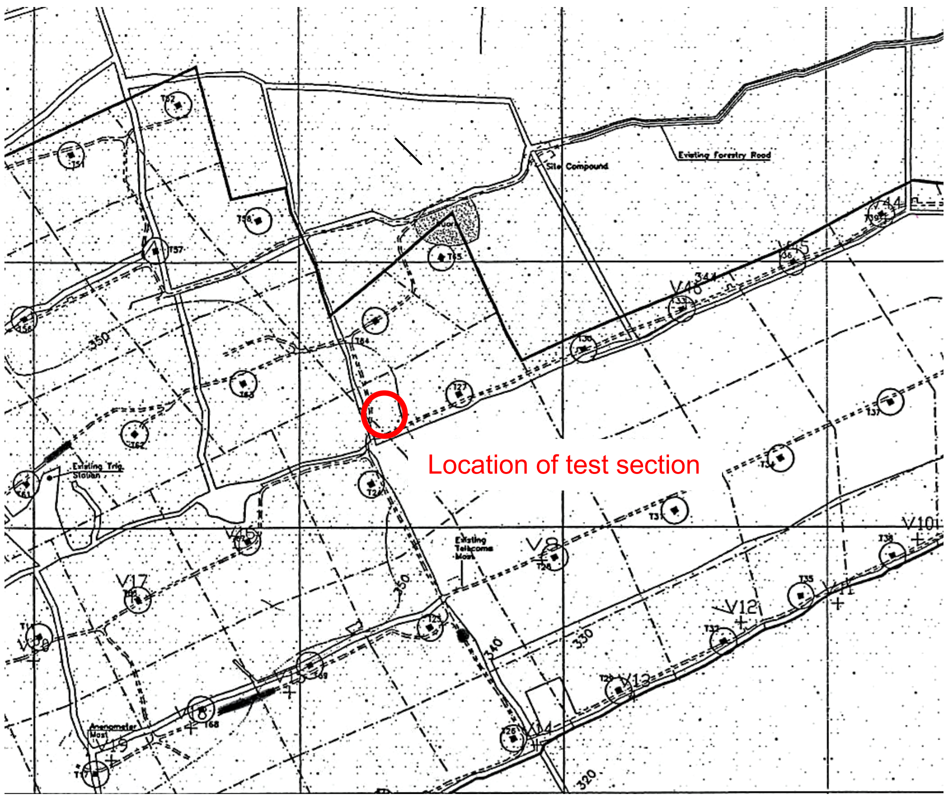


Figure No.1 – Location of test section of floating road

4.0 Ground Investigation

For the purpose of the test on the floating road the following ground investigation was carried out:

- The depth of peat was measured by gouge auger probes.
- The undrained shear strength of the peat was measured with the Geonor H-10 vane and the Geotech AB vane.
- Gouge auger samples of the peat were inspected by AGL to confirm that there was no weak layer or discontinuity at the base of the peat.

4.1 Peat depth

The depth of peat ranged from 4.0 m to 4.65 m.

4.2 Undrained shear strength

A total of 4 No. vane shear tests were carried out at the test section. One test was carried out on the east and west side of the road by Ascon using the Geonor H-10 apparatus with the 65 mm/135 mm vane. The undrained shear strength of the peat was measured at 0.5 m intervals over the full depth of peat. These tests were then repeated by ESBI at adjacent locations using the Geotech AB apparatus with the 140 x 280 mm vane with tapered ends. The test results are included in Appendix A and the uncorrected undrained shear strengths are plotted on Figure No.2.

The undrained shear strengths of the peat recorded by the Geotech AB vane were lower than those recorded with the Geonor H-10, which was consistent with experience elsewhere on the site. The difference was most noticeable from 1.0m to 3.0 m below ground level where peat strengths of 3.1 kPa to 5.4 kPa were recorded with the Geotech AB, with an average of 4.1 kPa. In comparison, the shear strength of the peat measured by the Geonor H-10 over the same depth ranged from 4.9 kPa to 6.8 kPa with an average of 5.5 kPa. This represents a difference of about 35% on average, and up to 120% at a depth of 2.0 m.

4.3 Gouge auger samples

Gouge auger samples of the peat under the road were collected and examined by AGL Consulting. The peat would be classified as very soft. However, no extremely weak layers or discontinuities were observed near the base of the peat.

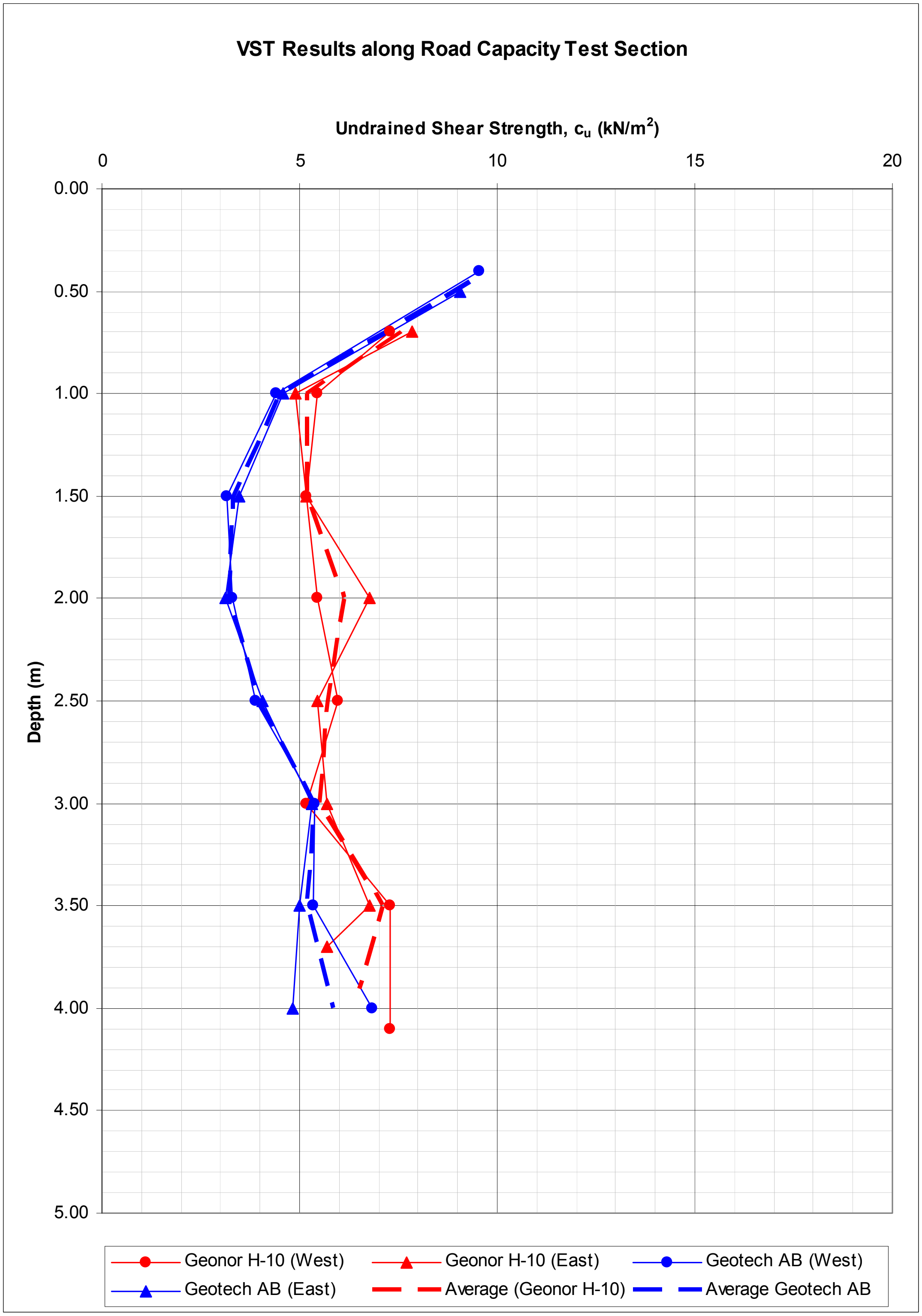


Figure No.2 – Vane shear test results

5.0 Theoretical Bearing Capacity

The theoretical bearing capacity of the floating road was analyzed using the limiting equilibrium slope stability program Slope/W. 2-D plane strain analyses were carried out using the uncorrected average vane shear strength profiles recorded with the Geonor H-10 and the Geotech AB vanes to determine what height of crushed rock granular fill could be supported by the road in the undrained condition. The undrained shear strength profiles used in the analyses are listed in Table No.1. No partial factors were applied to these values so that the ultimate capacity of the road could be calculated for each case.

Table No. 1 – Undrained shear strength profiles used in the Slope/W analyses

Peat Depth	Shear Vane Type	
	Geonor H10 Vane	Geotech AB Vane
(m)	kN/m^2	kN/m^2
0 - 0.75	7.6	9.3
0.75 - 1.25	5.2	4.5
1.25 - 1.75	5.2	3.3
1.75 - 2.25	6.1	3.2
2.25 - 2.75	5.7	4.0
2.75 - 3.25	5.4	5.4
3.25 - 3.75	7.0	5.2
3.75 - 4.65	6.5	5.8

The results of the Slope/W analyses are included in Appendix B. Based on these analyses the theoretical height of granular fill that could be placed on the road in the ultimate condition was 1.7 m using the vane shear strengths from the Geonor H-10 vane, and 1.2 m using the strengths from the Geotech AB vane.

For these analyses the unit weight of the rockfill was assumed to be 19.0 kN/m^3 and the sides of the fill were inclined at an angle of 60°. The road was 0.5 m thick, 5.0 m wide and had a layer of soil reinforcement near the base to model the Tensar SS30 geogrid. The trees at the base of the road will act as basal reinforcement. Therefore, the rockfill was given high shear strength properties to ensure that shear surfaces generated by the program were over the full width of the road.

6.0 Road Test

6.1 Instrumentation

5 No. settlement monitoring points (SMP) were set up on the surface of the road to record settlements during the load test. They were placed at the four corners and at the centre of the 5 m long section of the road that was loaded. The SMP consisted of a piece of steel rebar set in a concrete pad. PVC tubing was used to maintain access to the SMP through the fill.

Some bamboo rods were placed in the peat on either side of the road as a visual indicator of lateral deformation of the peat at the edges of the road.

6.2 Road test procedure

The test was carried out on February 8th, 2005 under the continuous inspection of Dr. Eric Farrell of AGL Consulting. The initial level of the road at each SMP was first related to a temporary bench mark established near the road. Crushed rock fill was then placed on the road in 200-300 mm lifts until the total height of fill at the centre of the road reached 2.0 m. A total of 8 No. lifts were placed on the road.

The level at the top of the fill at each SMP was taken after each lift. The levels of the SMP were recorded after the load had been in place for 5 and 10 minutes. The first load was held in place for a period of one hour. Each subsequent lift was held in place for at least 10 minutes. A photograph of the road after the test had been completed is shown on Figure No. 3.

Figure No.3 – Photo of test section of floating road

6.3 Test Results

The settlement readings are plotted against height of fill on Figure No. 4. The height of fill ranged from 1.70-1.85 m at the corners to 2.0 m at the centre due to the deflection of the road. The total settlement under this fill ranged from 273-394 mm at the corners to 531 mm at the centre. A full set of the results is included in Appendix C

The total load on the road at the end of the test was approximately 145 kN per metre length of road, which is equivalent to a uniformly distributed load of 29 kN/m^2 over the full width of the road. This does not include the weight of the road itself. The load-settlement plots up to this load are essentially linear and do not indicate that the road has reached its ultimate capacity.

The bamboo rods either side of the road indicated that some lateral movement occurred in the peat at the edges of the road. However, there was no obvious heave that would indicate that the road was approaching its ultimate capacity.

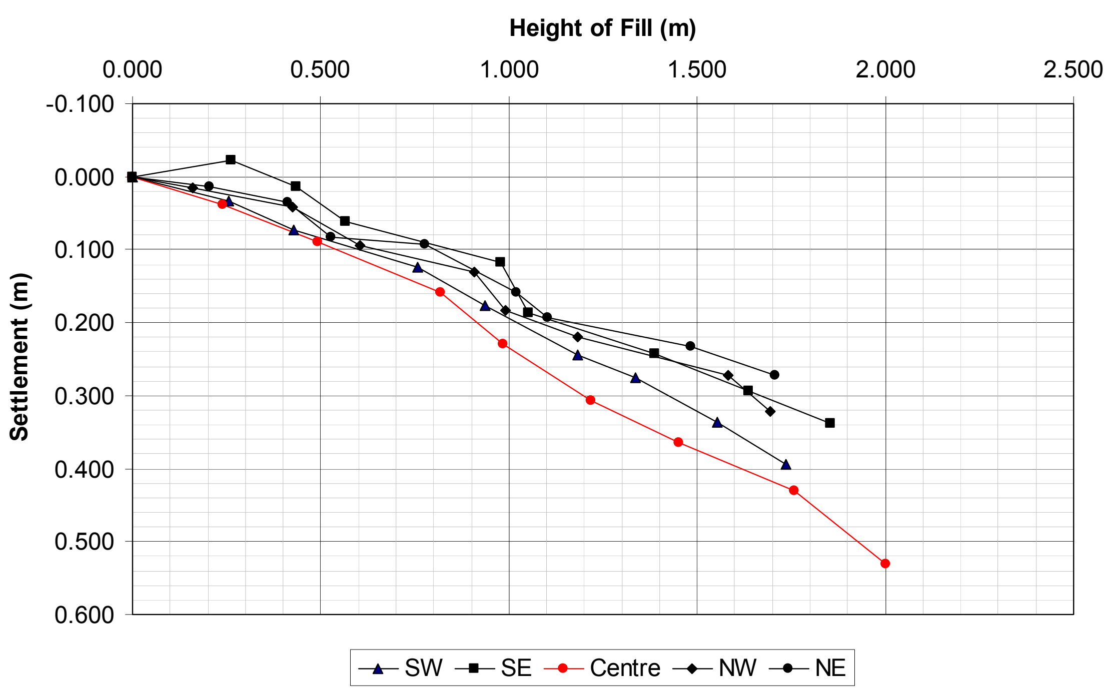


Figure No. 4 – Settlements recorded during the road test

7.0 Conclusions

A load test has been carried out on a test section of floating road to determine whether the Geonor H-10 or the Geotech AB vane gives a representative index of the undrained shear strength of the peat. The Geonor H-10 apparatus was used with the 65/130 mm rectangular vane. The Geotech AB apparatus was used with the 140/280 mm vane with tapered ends.

The undrained shear strengths of the peat measured by the Geotech AB vane were lower than those measured with the Geonor H-10 vane at the same location, which is consistent with the general experience on the site. From 1.0 m to 3.0 m below ground level the range of peat strengths recorded by the Geotech AB vane was 3.1 kPa to 5.4 kPa, with an average of 4.1 kPa. Over the same depth the peat strengths recorded by the Geonor H-10 vane ranged from 4.9 kPa to 6.8 kPa with an average of 5.5 kPa. This represents a difference of about 35% on average, and up to 120% at a depth of 2.0 m.

2-D plane strain limiting equilibrium analyses were carried out on the road using the uncorrected average vane shear strengths from the Geonor H-10 and Geotech AB vanes to determine the theoretical maximum height of crushed rock granular fill that could be placed on the road before failure occurred. The calculated height of fill was 1.7 m and 1.2 m for the Geonor H-10 and Geotech AB vanes, respectively.

The actual height of fill placed on the road during the load test ranged from 1.70-1.85 m at the corners to 2.0 m at the centre. The total load on the road at the end of the test was approximately 145 kN per metre length, which is equivalent to a uniformly distributed load of 29 kN/m^2 over the full width of the road. This does not include the weight of the road itself.

The total settlement under this load ranged from 273-394 mm at the corners to 531 mm at the centre. Some lateral movement was noted in the peat at the edges of the road. However, there were no indications that the road had reached its ultimate capacity at the maximum load. There was no obvious heave at the sides of the road and the load-settlement plots were essentially linear up to this point.

The results of the load test confirm that the uncorrected vane shear strengths measured with the Geonor H-10 (65/130mm) give a reasonably conservative index of the undrained shear strength of the peat, whereas the Geotech AB vane would appear to underestimate the actual strength of the peat. Therefore, the stability analyses carried out on the roads and peat repository sites in accordance with Eurocode EC(7) by applying a partial factor of 1.4 to the uncorrected characteristic vane shear strengths from the Geonor H-10 will have an adequate margin of safety against failure.

For AGL Consulting:

Conor O'Donnell

Conor O'Donnell

Date: 23/5/05

APPENDIX A

Vane Shear Test Results

Derrybrien Wind Farm - Floating Road Capacity Test
Vane Shear Strenghts - Geonor H-10 (65/130 mm) vane

AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project:	Derrybrien Wind Farm		Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. Load**
Job No.	03-104						
Test No.	Geonor-H10 West		Date:			Peat Depth (m) 4.4	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	14.0	3.00	**7.3**				
1.00	10.5	4.00	**5.4**				
1.50	10.0	4.50	**5.2**				
2.00	10.5	4.50	**5.4**				
2.50	11.5	3.00	**6.0**				
3.00	10.0	3.50	**5.2**				
3.50	14.0	2.50	**7.3**				
4.10	14.0	3.00	**7.3**				
Test No.	Geonor-H10 West		Date:			Peat Depth (m) 4.0	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	15.0	4.00	**7.8**				
1.00	9.5	4.00	**4.9**				
1.50	10.0	4.50	**5.2**				
2.00	13.0	3.00	**6.8**				
2.50	10.5	3.50	**5.4**				
3.00	11.0	4.00	**5.7**				
3.50	13.0	3.00	**6.8**				
3.70	11.0	4.00	**5.7**				
Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Derrybrien Wind Farm - Floating Road Capacity Test
Vane Shear Strenghts - Geotech AB (140/280 mm) vane

AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project:	Derrybrien Wind Farm		Vane Type: Geotech AB ($140_{mm}/280_{mm}$)			**Cell No.**	
Job No.	03-104						
Test No.	ESBi Vane West		Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.40			**9.6**				
1.00			**4.4**				
1.50			**3.2**				
2.00			**3.3**				
2.50			**3.9**				
3.00			**5.4**				
3.50			**5.3**				
4.00			**6.9**				
Test No.	ESBi Vane West		Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.50			**9.1**				
1.00			**4.6**				
1.50			**3.5**				
2.00			**3.1**				
2.50			**4.1**				
3.00			**5.3**				
3.50			**5.0**				
4.00			**4.8**				
Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge		c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

APPENDIX B

Slope/W analyses

Floating Road Capacity Test Section

Derrybrien Windfarm - Floating Road Capacity Test Section

5.0 m wide road - 0.5 m thick
Basal reinforcement with trees and 1 layer of Tensar SS30 Geogrid

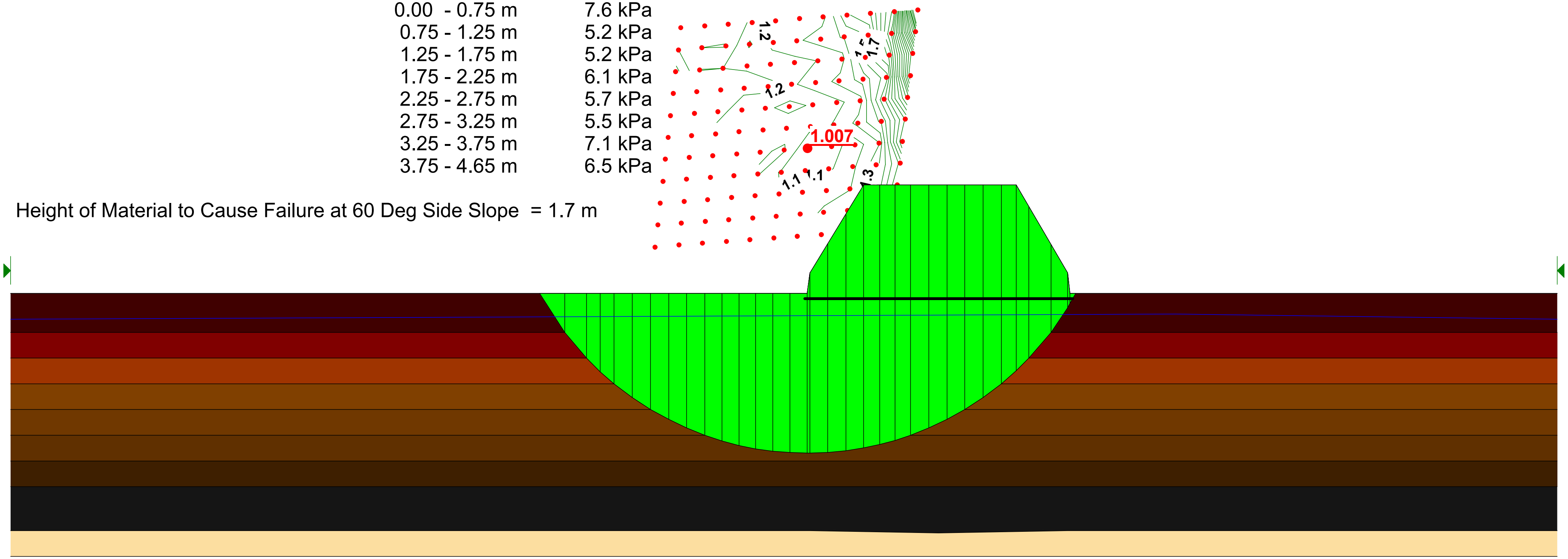
Depth of peat = 4.6 m on downslope side of road
Slope angle = 0.0 Deg at surface, 0.0 Deg at base of peat

No allowance taken for increase in strength under road

Geonor H-10 65-130 mm Peat Strengths:

Depth	Shear Strength
0.00 - 0.75 m	7.6 kPa
0.75 - 1.25 m	5.2 kPa
1.25 - 1.75 m	5.2 kPa
1.75 - 2.25 m	6.1 kPa
2.25 - 2.75 m	5.7 kPa
2.75 - 3.25 m	5.5 kPa
3.25 - 3.75 m	7.1 kPa
3.75 - 4.65 m	6.5 kPa

Height of Material to Cause Failure at 60 Deg Side Slope = 1.7 m



Floating Road Capacity Test Section

Derrybrien Windfarm - Floating Road Capacity Test Section

5.0 m wide road - 0.5 m thick
Basal reinforcement with trees and 1 layer of Tensar SS30 Geogrid

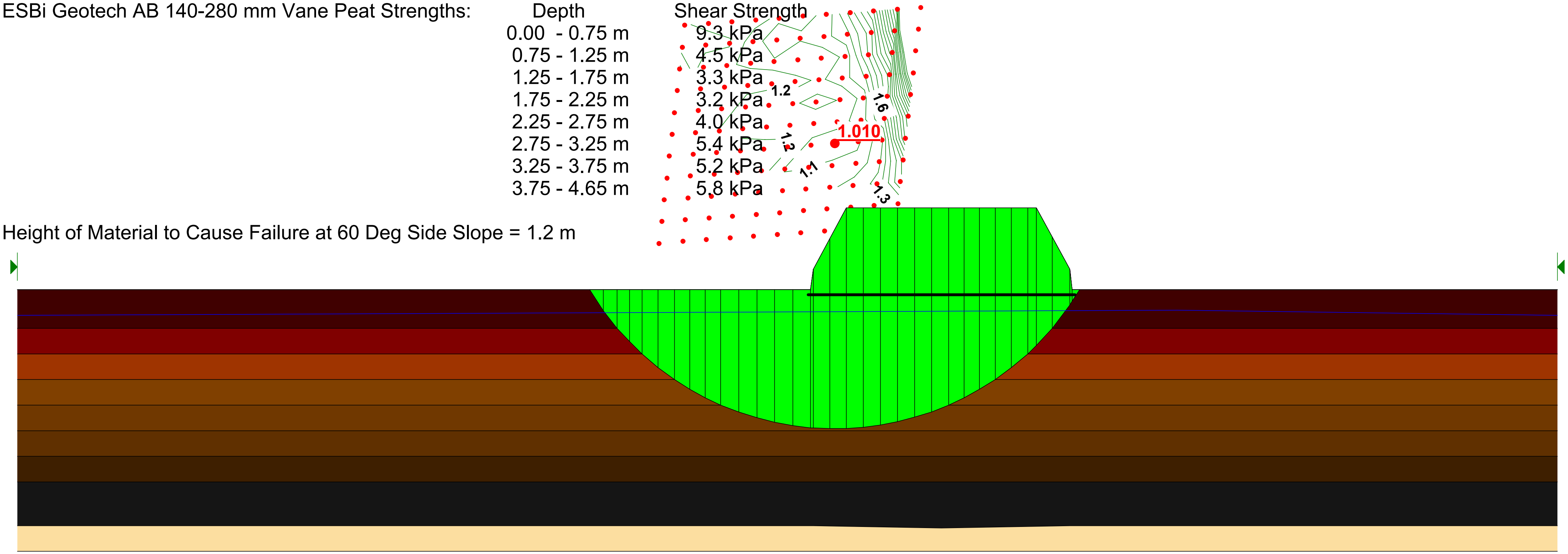
Depth of peat = 4.6 m on downslope side of road
Slope angle = 0.0 Deg at surface, 0.0 Deg at base of peat

No allowance taken for increase in strength under road

ESBi Geotech AB 140-280 mm Vane Peat Strengths:

Depth	Shear Strength
0.00 - 0.75 m	9.3 kPa
0.75 - 1.25 m	4.5 kPa
1.25 - 1.75 m	3.3 kPa
1.75 - 2.25 m	3.2 kPa
2.25 - 2.75 m	4.0 kPa
2.75 - 3.25 m	5.4 kPa
3.25 - 3.75 m	5.2 kPa
3.75 - 4.65 m	5.8 kPa

Height of Material to Cause Failure at 60 Deg Side Slope = 1.2 m



APPENDIX C

Settlement Measurements

03-104 Derrybrien Windfarm - Settlement readings from load test on the test section of floating road (Feb 8th, 2005)

AGL Consulting ***Geotechnical Engineers***		***Survey Levels***					***Height of Fill Measurements***										***Settlement Plate Measurements***				
							Increase in Height of Fill					Total Height of Fill					Cumulative Settlement				
	Staff Position	South West	South East	Centre	North West	North East	South West	South East	Centre	North West	North East	South West	South East	Centre	North West	North East	South West	South East	Centre	North West	North East
Plate Zero Reading		106.051	105.940	105.986	106.037	105.990	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)
Fill Zero Reading		106.018	105.957	105.968	106.003	105.958															
Lift 1	Fill	106.282	106.227	106.187	106.183	106.183															
	Plate+5 min	106.025	105.966	105.948	106.022	105.977	0.257	0.261	**0.239**	0.161	0.206	0.257	0.261	**0.239**	0.161	0.206	0.026	-0.026	0.038	0.015	0.013
	Plate+10 min	106.022	105.966	105.947	106.022	105.977											0.029	-0.026	0.039	0.015	0.013
	Plate +53 min	106.017	105.962	105.947	106.022	105.977											0.034	-0.022	**0.039**	0.015	0.013
Lift 2	Fill	106.411	106.365	106.395	106.419	106.368															
	Plate+5 min	105.983	105.930	105.902	105.995	105.955	0.171	0.174	**0.254**	0.263	0.207	0.428	0.435	**0.493**	0.424	0.413	0.068	0.010	0.084	0.042	0.035
	Plate+10 min	105.978	105.926	105.897	105.996	105.955											0.073	0.014	**0.089**	0.041	0.035
Lift 3	Fill	106.690	106.449	106.651	106.552	106.439															
	Plate+5 min	105.932	105.883	105.833	105.947	105.912	0.330	0.131	**0.325**	0.181	0.114	0.758	0.566	**0.818**	0.605	0.527	0.119	0.057	0.153	0.090	0.078
	Plate+10 min	105.927	105.879	105.827	105.942	105.907											0.124	0.061	**0.159**	0.095	0.083
Lift 4	Fill	106.816	106.805	106.748	106.823	106.655															
	Plate+5 min	105.879	105.827	105.762	105.916	105.878	0.179	0.412	**0.168**	0.302	0.250	0.937	0.978	**0.986**	0.907	0.777	0.172	0.113	0.224	0.121	0.112
	Plate+10 min	105.875	105.823	105.756	105.907	105.897											0.176	0.117	**0.230**	0.130	0.093
Lift 5	Fill	106.992	106.808	106.905	106.840	106.858															
	Plate+5 min	105.809	105.757	105.686	105.848	105.838	0.246	0.073	**0.233**	0.085	0.243	1.183	1.051	**1.219**	0.992	1.020	0.242	0.183	0.300	0.189	0.152
	Plate+10 min	105.806	105.754	105.679	105.854	105.832											0.245	0.186	**0.307**	0.183	0.158
Lift 6	Fill	107.112	107.088	107.075	107.009	106.907															
	Plate+5 min	105.777	105.700	105.624	105.826	105.803	0.152	0.337	**0.232**	0.191	0.084	1.335	1.388	**1.451**	1.183	1.104	0.274	0.240	0.362	0.211	0.187
	Plate+10 min	105.775	105.697	105.622	105.817	105.797											0.276	0.243	**0.364**	0.220	0.193
Lift 7	Fill	107.275	107.283	107.314	107.357	107.242															
	Plate+5 min	105.720	105.647	105.557	105.775	105.759	0.220	0.248	**0.306**	0.399	0.379	1.555	1.636	**1.757**	1.582	1.483	0.331	0.293	0.429	0.262	0.231
	Plate+10 min	105.715	105.647	105.556	105.765	105.757											0.336	0.293	**0.430**	0.272	0.233
Lift 8	Fill	107.404	107.475	107.475	107.429	107.424															
	Plate+5 min	105.667	105.622	105.473	105.734	105.717	0.182	0.217	**0.245**	0.113	0.224	1.737	1.853	**2.002**	1.695	1.707	0.384	0.318	0.513	0.303	0.273
	Plate+10 min	105.657	105.602	105.455	105.715	105.717											0.394	0.338	**0.531**	0.322	0.273

APPENDIX VII

AGL MEMO NO. 03-104-DM24 – TRANSFORMER LOAD ON THE FLOATING ROADS

AGL Consulting
Geotechnical Engineers

Suite 2, The Avenue
Beacon Court
Sandyford, Dublin 18
Tel: (01) 295 6532
Fax: (01) 295 6533

Ascon Ltd.
Site Office - Derrybrien Windfarm
Loughrea,
Co. Galway

Memo to: Joe Mc Fadden
By: Conor O'Donnell
Re: Transformer load on the floating roads
Date: May 23, 2005 **Our Ref:** 03-104-DM 24

You requested that we consider whether the transformer load can be supported adequately on the floating roads on the site. Details of the vehicle that will be used to transport the transformer to the site are shown on the attached Figure No.1. The total load will be approximately 130 tonnes, of which 96 tonnes will be supported on 8 axles on the flatbed trailer at an average load of 12 tonnes per axle. The centre to centre spacing of these axles is 1.4 m. The width of the truck is 3.0 m.

The greatest concentration of load will be under the front set of axles on the trailer, where there will be a total of 36 tonnes (353 kN) spread out over a length of about 3.0 m (2 x 1.4 m + contact area). This is equivalent to 118 kN per meter length of road.

The transformer will be transported over floating roads between the quarry and the substation via T64, T24, T25 and T26. Along this route some deep very soft peat with low undrained shear strengths was recorded north of the junction at T24. This is also the area where the load test was carried out on a test section of floating road. The results of the load test are presented in AGL Report No. 03-104-R06 dated 23/5/05.

During the test the road was loaded to approximately 145 kN per metre length without showing any indications that the road was at its ultimate capacity. Therefore, we would conclude that the road should have the capacity to support the transformer.

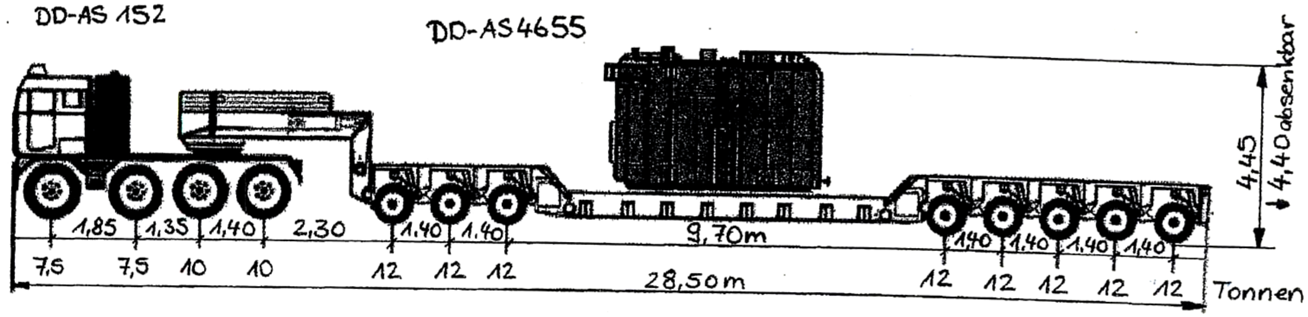
Nevertheless, we would recommend that assistance should be given to the driver of the transporter to guide the vehicle through junctions and down the centre of the roads. Adequate turning circles should be provided at the junctions and the deflection of the road should be observed for any signs of failure. Deflections of the road will also reduce the clearance under the flatbed trailer.

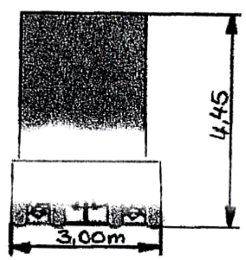
Signed:

Conor O'Donnell

Conor O'Donnell
AGL Consulting

Transport Siemens Dresden nach Jrland





Heinrich Schwertransporte GmbH

Tel. +49 351 888 3660
Fax.+49 351 848 9352

APPENDIX VIII

PEAT REPOSITORY SITES – GEOTECHNICAL INVESTIGATIONS & STABILITY ANALYSES

Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T6R**

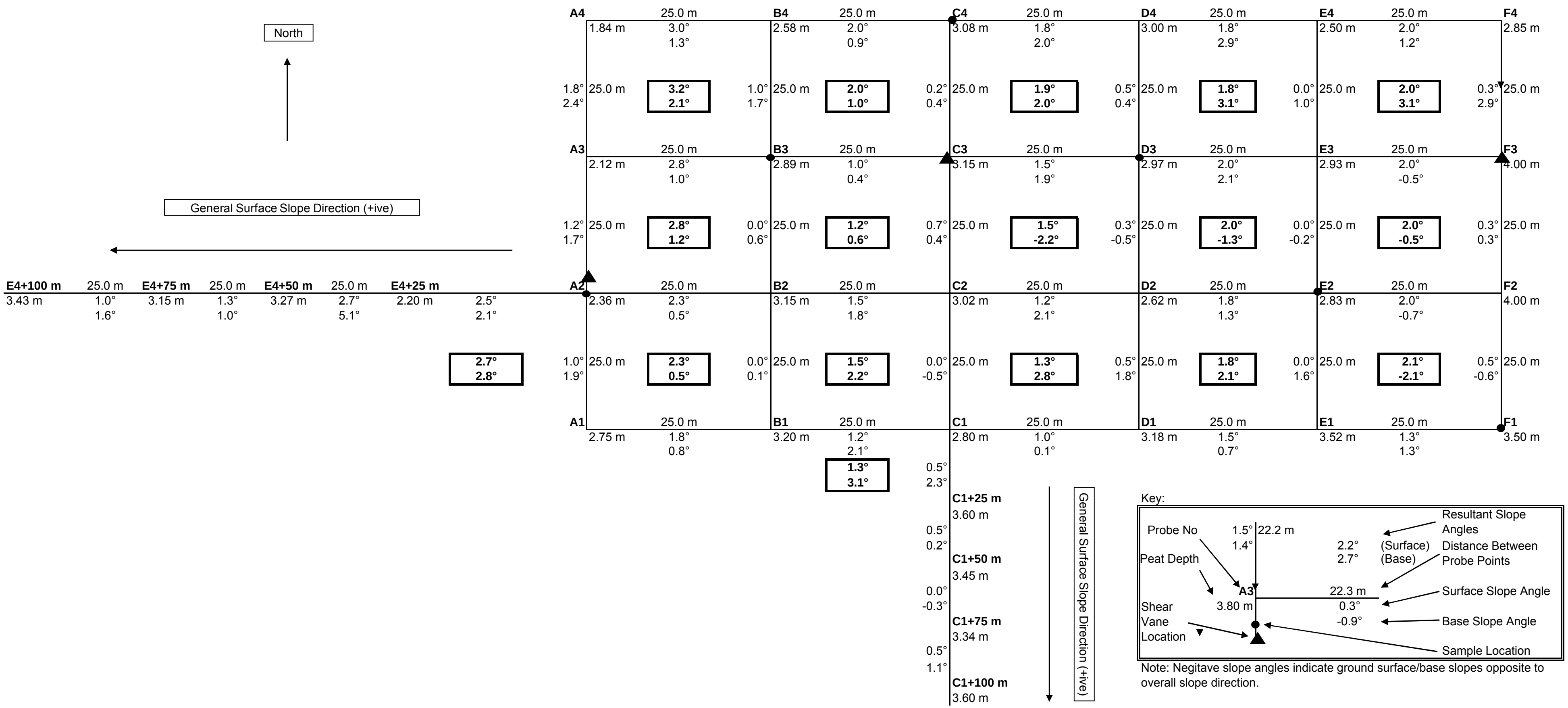
Max Slope at Ground Surface:	3.2°
Downslope:	1.0°
Orthogonal Direction:	3.0°
Resultant:	3.2°

Max Slope at Base of Peat:	3.1°
Downslope:	1.0°
Orthogonal Direction:	2.9°
Resultant:	3.1°

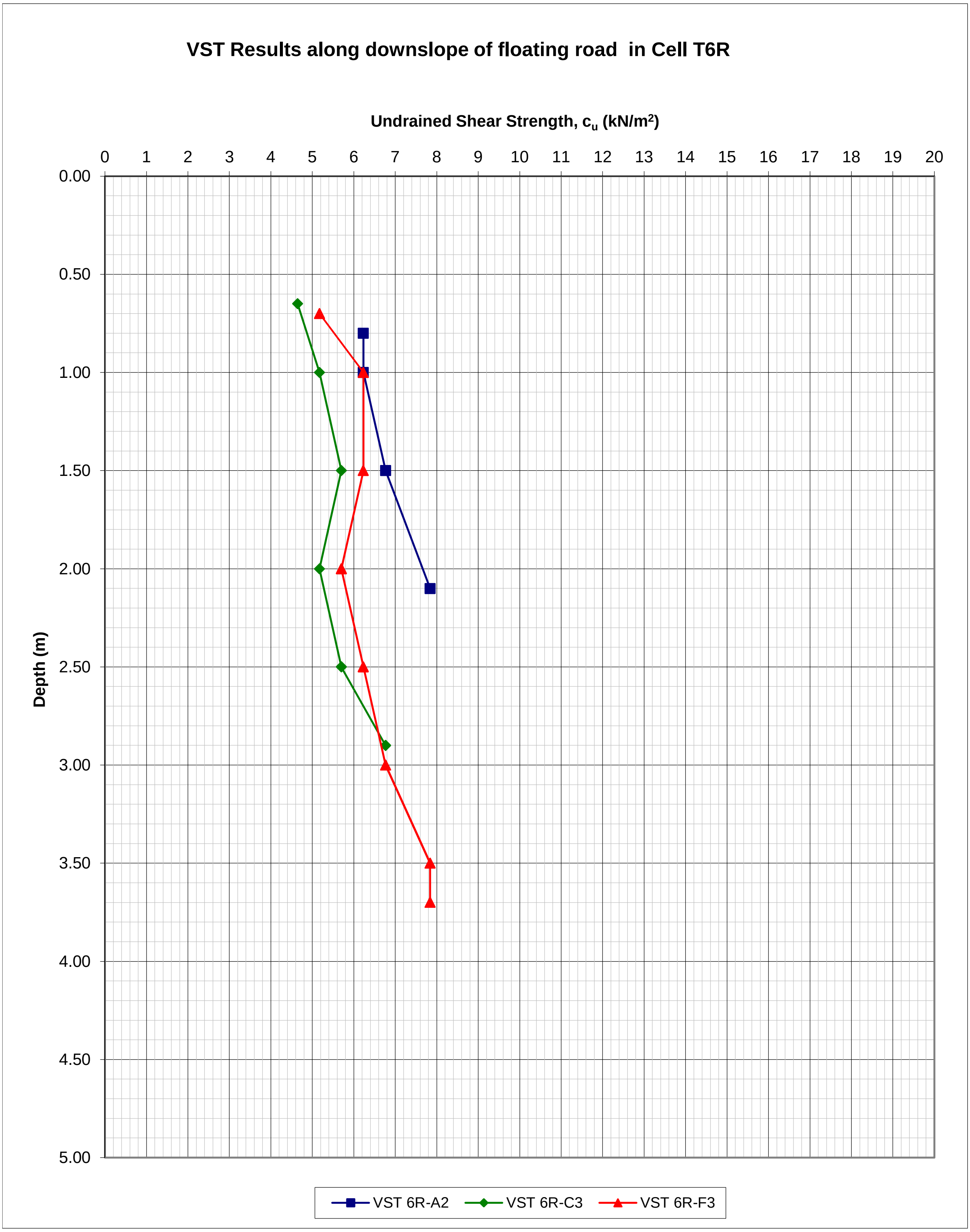
Comments:

Peat Depth :	1.84 m - 4.00 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 0.65 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 6R**
Test No.		VST 6R-A2	Date:			Peat Depth (m) 2.36	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	12.0	3.0	6.2				
1.00	12.0	3.0	6.2				
1.50	13.0	2.0	6.8				
2.10	15.0	3.0	7.8				
Test No.		VST 6R-C3	Date:			Peat Depth (m) 3.20	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	9.0	3.0	4.6				
1.00	10.0	2.5	5.2				
1.50	11.0	3.0	5.7				
2.00	10.0	2.0	5.2				
2.50	11.0	2.0	5.7				
2.90	13.0	2.0	6.8				
Test No.		VST 6R-F3	Date:			Peat Depth (m) 4.00	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	10.0	3.0	5.2				
1.00	12.0	3.0	6.2				
1.50	12.0	2.0	6.2				
2.00	11.0	2.0	5.7				
2.50	12.0	4.0	6.2				
3.00	13.0	4.0	6.8				
3.50	15.0	3.5	7.8				
3.70	15.0	3.0	7.8				
Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments



VST Results along downslope of floating road in Cell T6R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 6R-A2
VST 6R-C3
VST 6R-F3

Peat Repository Site : T6R
Sliding Stability Analysis

T6R

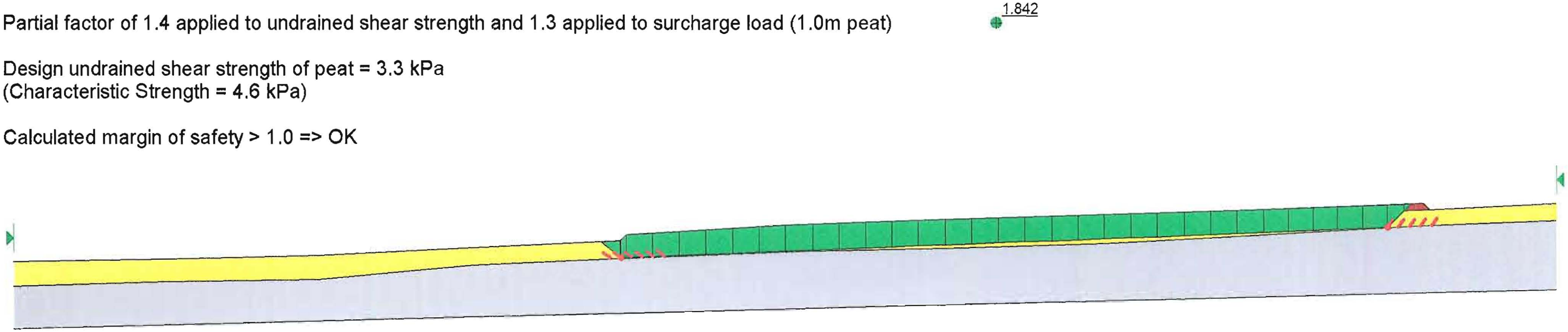
Size of Repository Site = 75 x 125 m
Length of loaded area parallel to resultant slope direction = 130.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.7 - 2.9 m	2.0 - 3.2 Deg	3.1 - 2.1 Deg
0 - 25 m Downslope	2.9 - 2.9 m	2.7 Deg	2.8 Deg
25 - 50 m Downslope	2.9 - 3.9 m	2.7 Deg	5.1 Deg
50 - 75 m Downslope	3.9 - 3.7 m	1.3 Deg	1.0 Deg
75 - 100 m Downslope	3.7 - 4.0 m	1.0 Deg	1.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T6R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

T6R (2kPa)

Size of Repository Site = 75 x 125 m
Length of loaded area parallel to resultant slope direction = 130.0 m

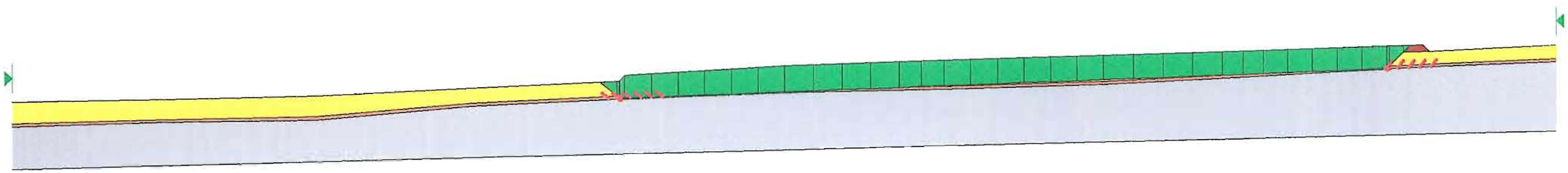
	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.7 - 2.9 m	2.0 - 3.2 Deg	3.1 - 2.1 Deg
0 - 25 m Downslope	2.9 - 2.9 m	2.7 Deg	2.8 Deg
25 - 50 m Downslope	2.9 - 3.9 m	2.7 Deg	5.1 Deg
50 - 75 m Downslope	3.9 - 3.7 m	1.3 Deg	1.0 Deg
75 - 100 m Downslope	3.7 - 4.0 m	1.0 Deg	1.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

1.447

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T7R**

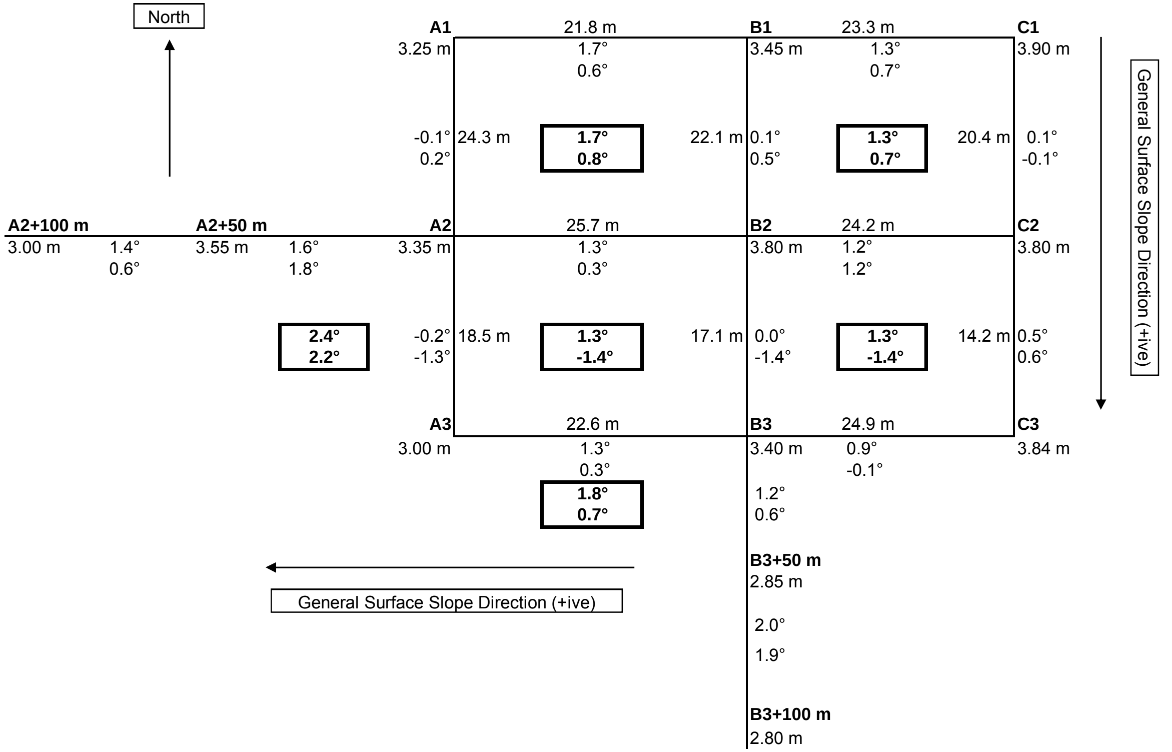
Max Slope at Ground Surface:	1.7°
Downslope:	0.1°
Orthogonal Direction:	1.7°
Resultant:	1.7°

Max Slope at Base of Peat:	-1.4°
Downslope:	1.4°
Orthogonal Direction:	-0.3°
Resultant:	-1.4°

Comments:

Peat Depth :	3.0 m - 3.9 m
Min Undrained Shear Strength:	4.4 kPa at Depth = 2.0 m

Piston Sampling:	Yes	No
Weak Layer/Discontinuity Present:	Yes	No



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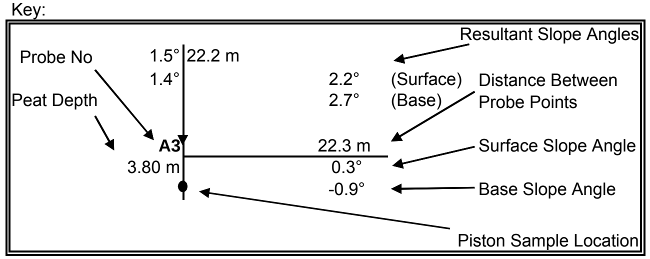


Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

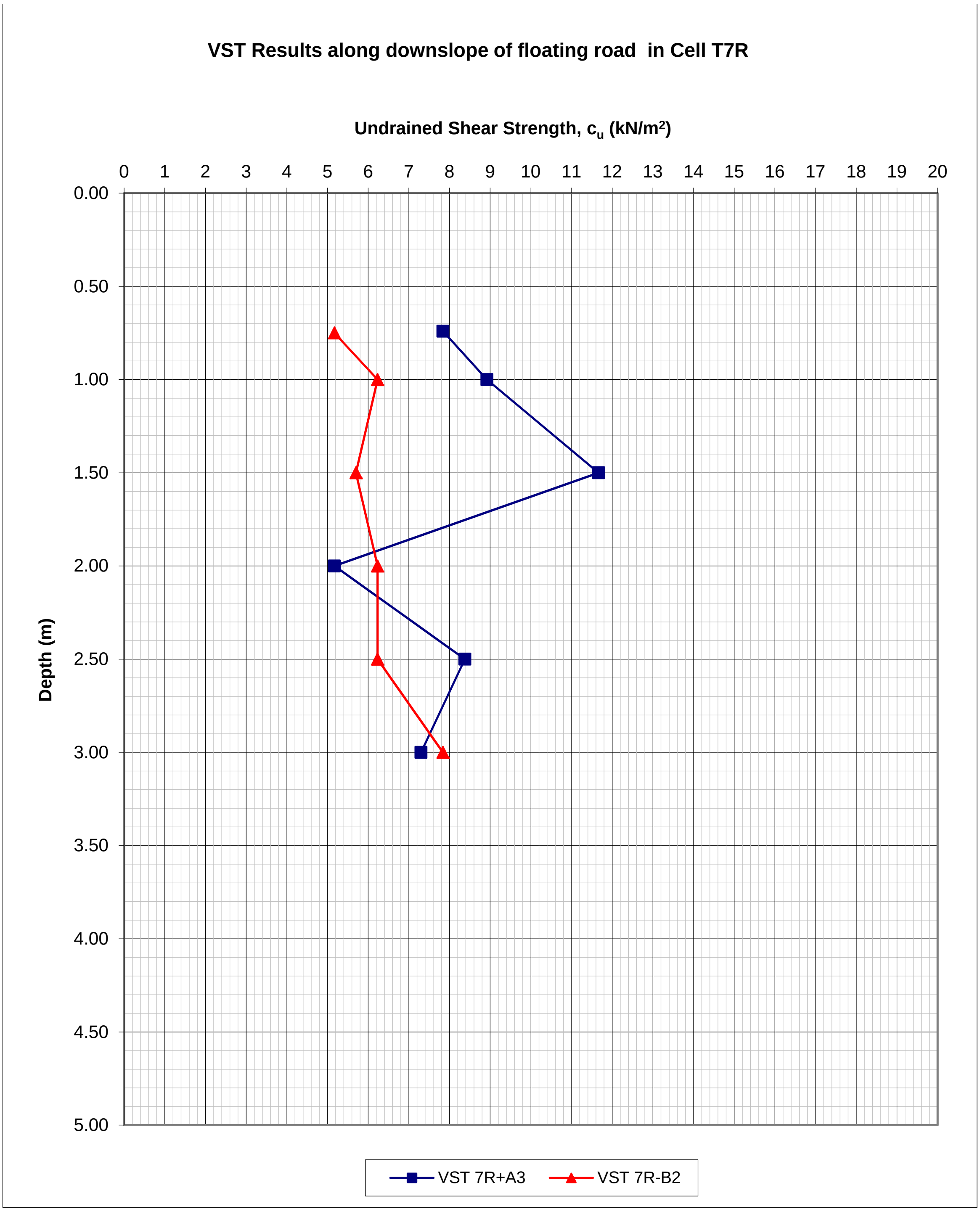
AGL Consulting *Geotechnical Engineers*	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 7R**

Test No.		VST 7R+A3	Date:			Peat Depth (m) 3.10	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.74	15.0	3.50	7.8				
1.00	17.0	3.00	8.9				
1.50	22.0	2.50	11.7				
2.00	10.0	3.00	5.2				
2.50	16.0	2.00	8.4				
3.00	14.0	2.00	7.3				

Test No.		VST 7R-B2	Date:			Peat Depth (m) 3.30	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.75	10.0	2.00	5.2				
1.00	12.0	3.00	6.2				
1.50	11.0	2.50	5.7				
2.00	12.0	3.50	6.2				
2.50	12.0	3.50	6.2				
3.00	15.0	4.00	7.8				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	



VST Results along downslope of floating road in Cell T7R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 7R+A3
VST 7R-B2

T7R

Peat Repository Site : T7R
Sliding Stability Analysis

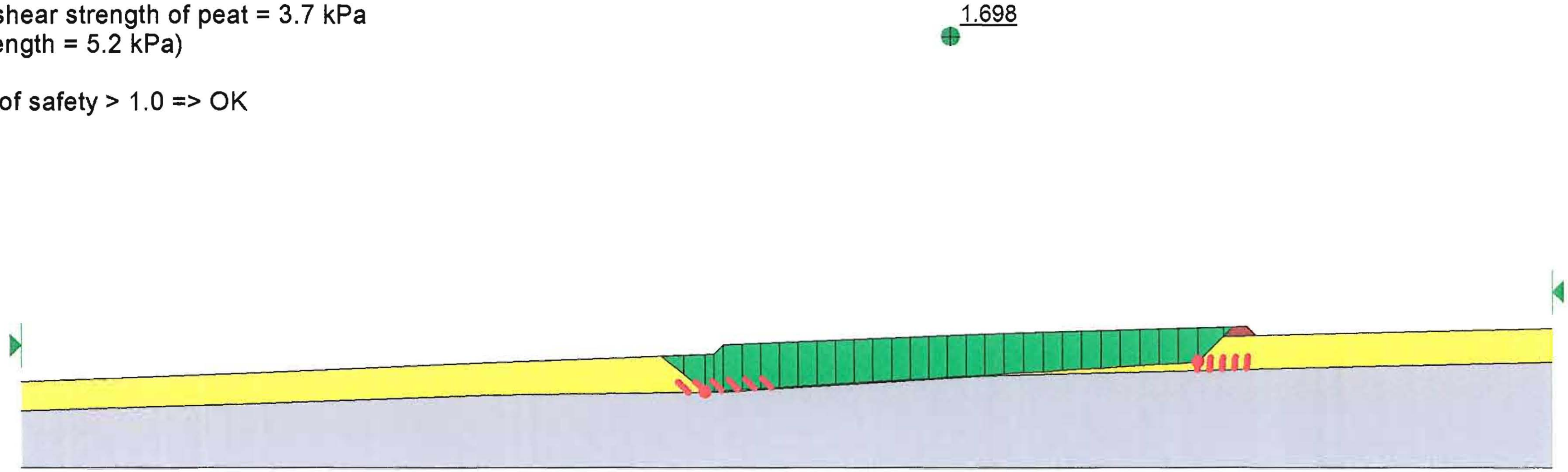
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.6 - 4.0 m	1.7 - 2.6 Deg	1.4 - 3.4 Deg
0 - 25 m Downslope	4.0 - 3.4 m	2.2 Deg	0.8 Deg
25 - 50 m Downslope	3.4 - 3.3 m	2.5 Deg	2.3 Deg
50 - 75 m Downslope	3.3 - 3.1 m	2.0 Deg	1.7 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T7R (2kPa)

Peat Repository Site : T7R
Sliding Stability Analysis with 0.5 m thick layer of very wek peat (cu = 2kPa) at base

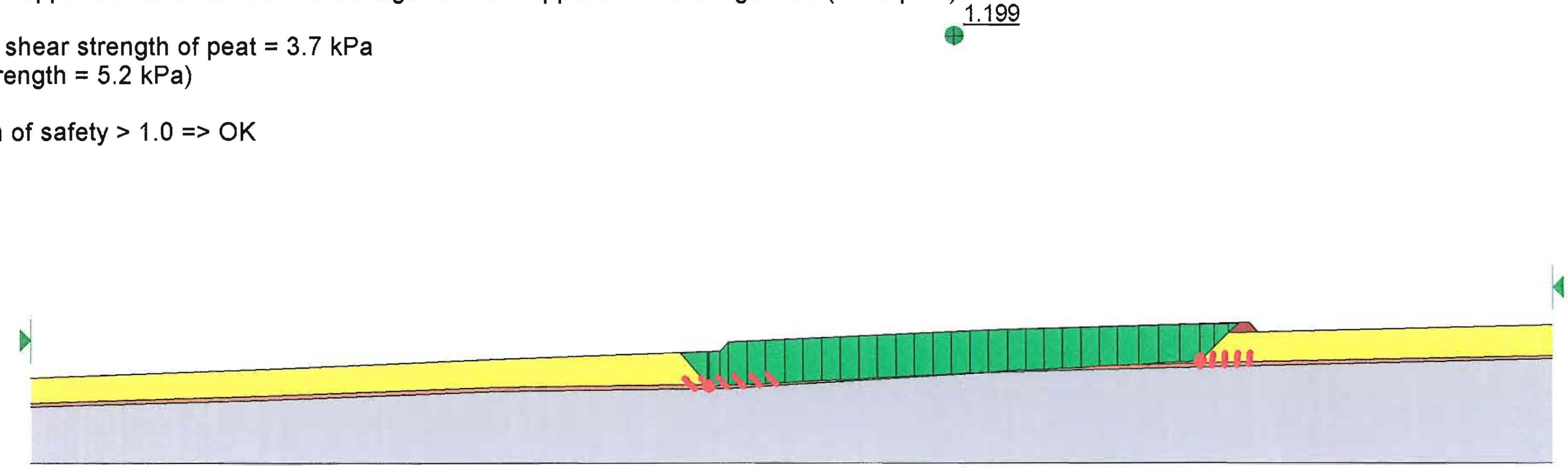
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.6 - 4.0 m	1.7 - 2.6 Deg	1.4 - 3.4 Deg
0 - 25 m Downslope	4.0 - 3.4 m	2.0 Deg	0.8 Deg
25 - 50 m Downslope	3.4 - 3.3 m	2.5 Deg	2.3 Deg
50 - 75 m Downslope	3.3 - 3.1 m	2.0 Deg	1.7 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting ***Geotechnical Engineers***	**Record of Peat Repository Locations**	**Rep. No: T8R**

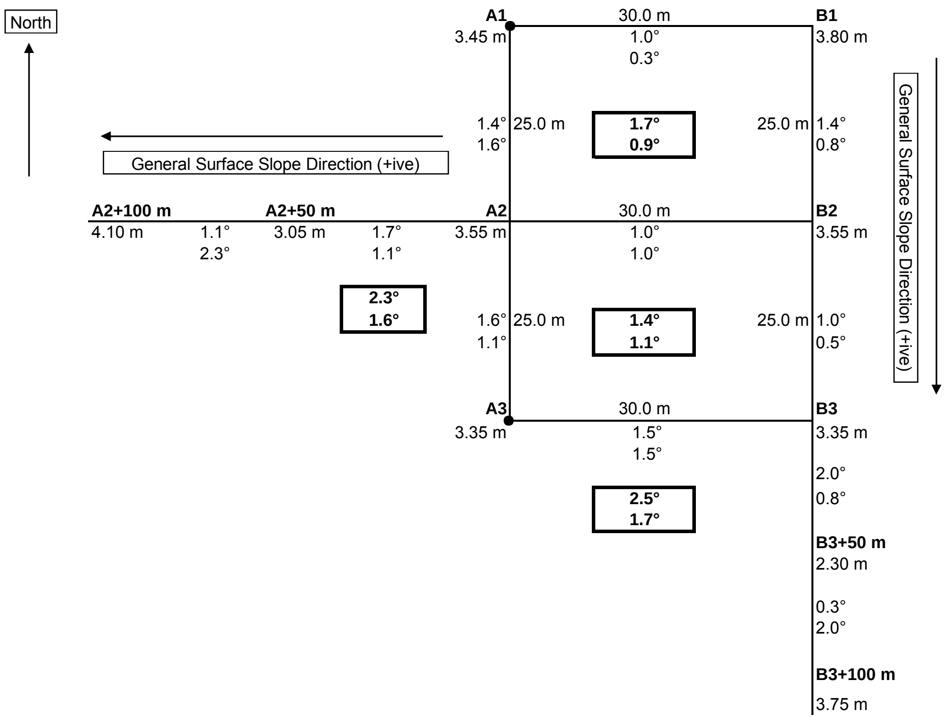
Max Slope at Ground Surface:	1.7°
Downslope:	1.4°
Orthogonal Direction:	1.0°
Resultant:	1.7°

Max Slope at Base of Peat:	1.1°
Downslope:	0.5°
Orthogonal Direction:	1.0°
Resultant:	1.1°

Comments:

Peat Depth :	3.35 m - 3.80 m
Min Undrained Shear Strength:	5.2 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



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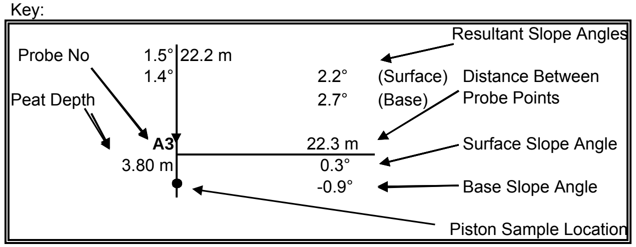


Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

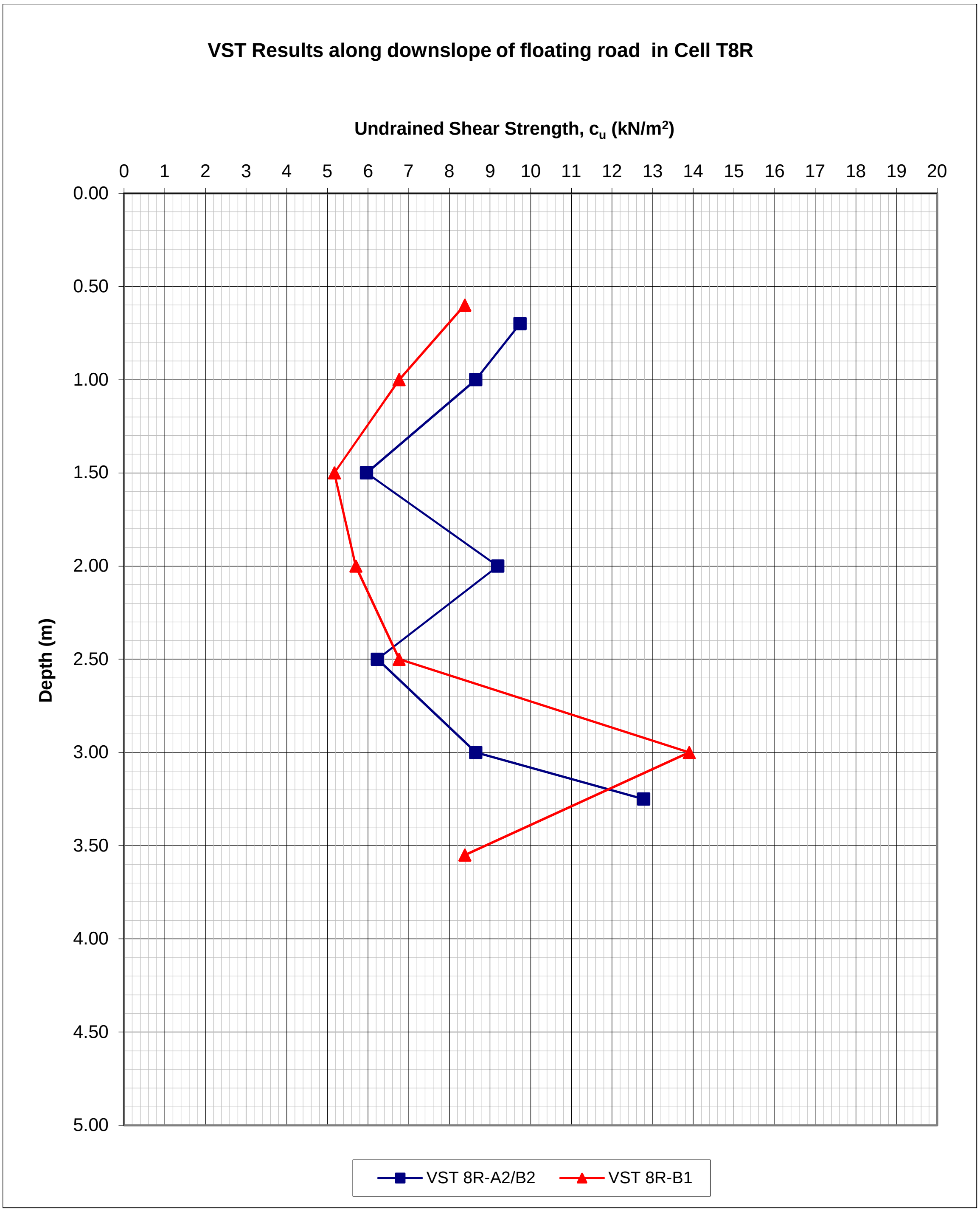
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 8R**

Test No.		VST 8R-A2/B2	Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	18.5	5.00	9.7				
1.00	16.5	6.50	8.6				
1.50	11.5	3.50	6.0				
2.00	17.5	5.50	9.2				
2.50	12.0	4.00	6.2				
3.00	16.5	5.00	8.6				
3.25	24.0	5.50	12.8				

Test No.		VST 8R-B1	Date:			Peat Depth (m) 3.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.60	16.0	5.00	8.4				
1.00	13.0	3.00	6.8				
1.50	10.0	4.00	5.2				
2.00	11.0	3.50	5.7				
2.50	13.0	4.00	6.8				
3.00	26.0	3.50	13.9				
3.55	16.0	5.00	8.4				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments



VST Results along downslope of floating road in Cell T8R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 8R-A2/B2
VST 8R-B1

T8R

Peat Repository Site : T8R
Sliding Stability Analysis

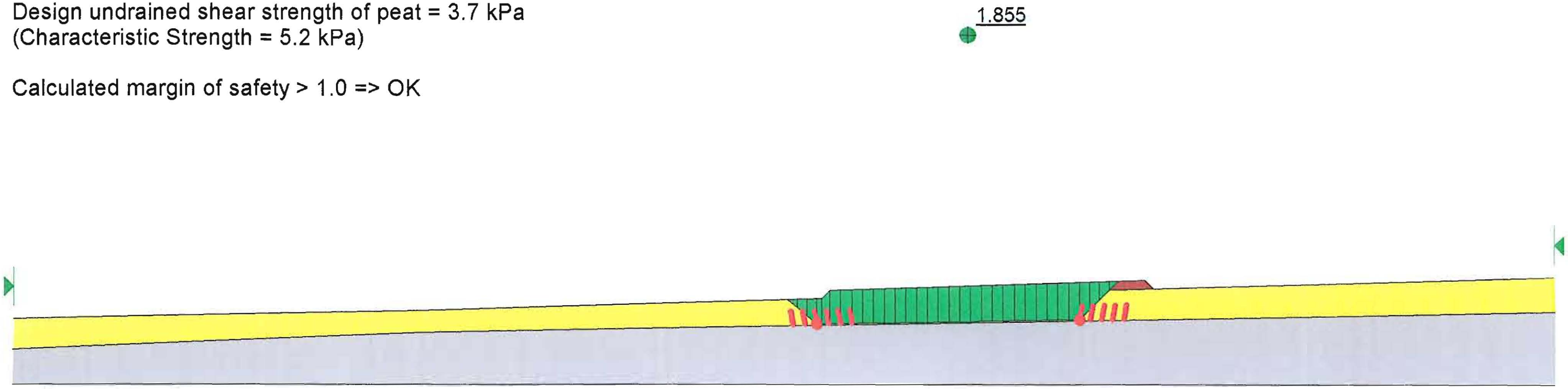
Size of Repository Site = 50 x 30 m
Length of loaded area parallel to resultant slope direction = 39.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.8 - 3.2 m	1.7 Deg	0.9 Deg
0 - 50 m Downslope	3.2 - 2.7 m	1.7 Deg	1.1 Deg
50 - 100 m Downslope	2.7 - 3.7 m	1.1 Deg	2.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T8 (2kPa)

Peat Repository Site : T8R
Sliding Stability Analysis with 0.5 m thick layer of very wek peat (cu = 2kPa) at base

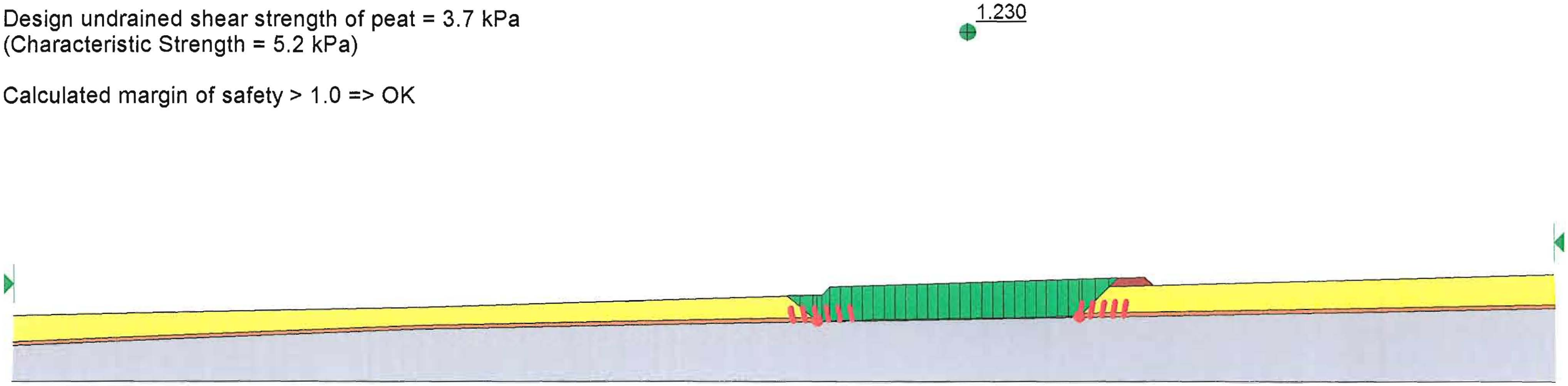
Size of Repository Site = 50 x 30 m
Length of loaded area parallel to resultant slope direction = 39.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.8 - 3.2 m	1.7 Deg	0.9 Deg
0 - 50 m Downslope	3.2 - 2.7 m	1.7 Deg	1.1 Deg
50 - 100 m Downslope	2.7 - 3.7 m	1.1 Deg	2.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting ***Geotechnical Engineers***	**Record of Peat Repository Locations**	**Rep. No: T8Rext**

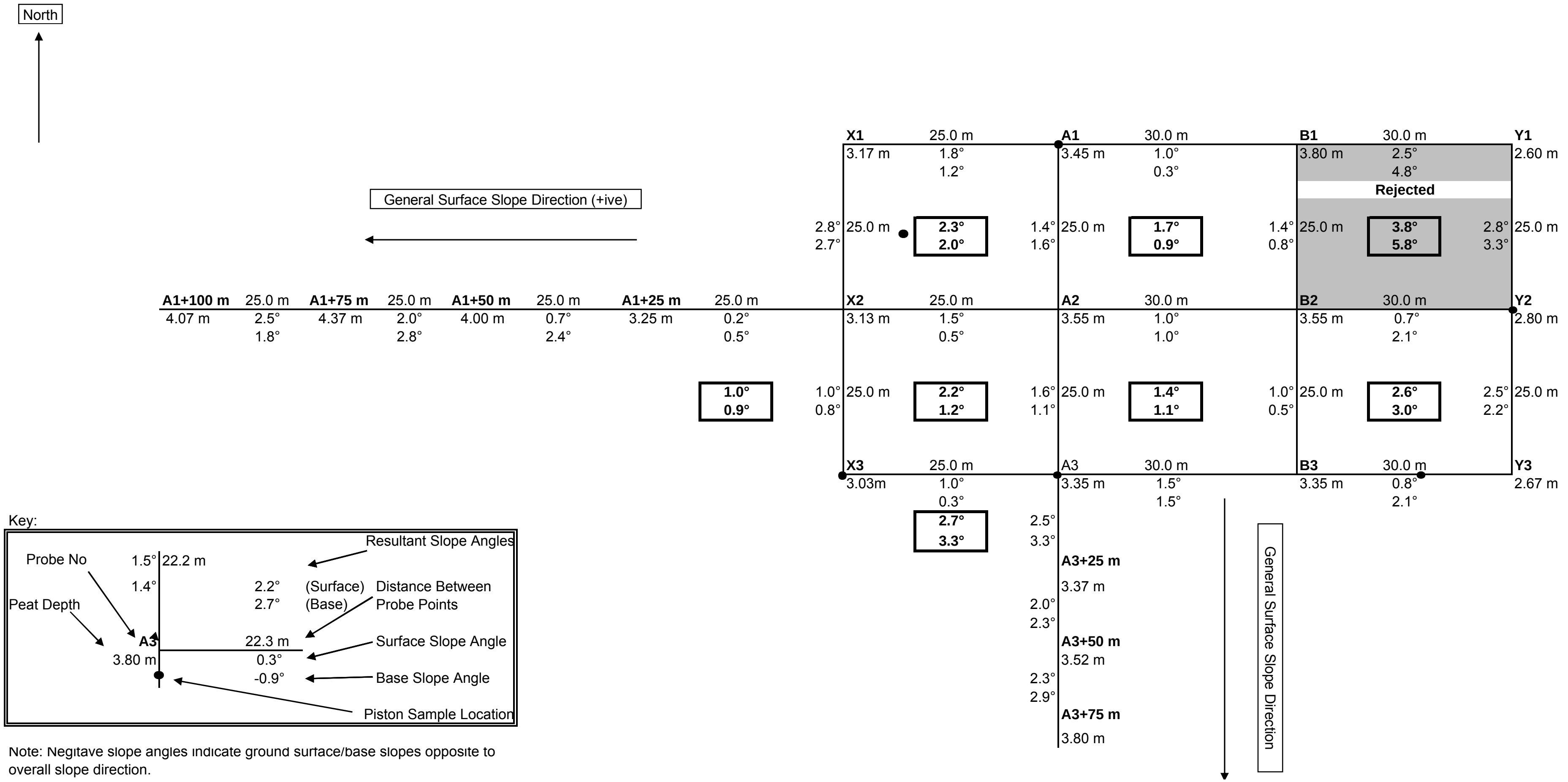
Max Slope at Ground Surface:	2.6°
Downslope:	2.5°
Orthogonal Direction:	0.7°
Resultant:	2.6°

Max Slope at Base of Peat:	3.0°
Downslope:	2.2°
Orthogonal Direction:	2.1°
Resultant:	3.0°

Comments:

Peat Depth :	2.67 m - 3.80 m
Min Undrained Shear Strength:	5.2 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

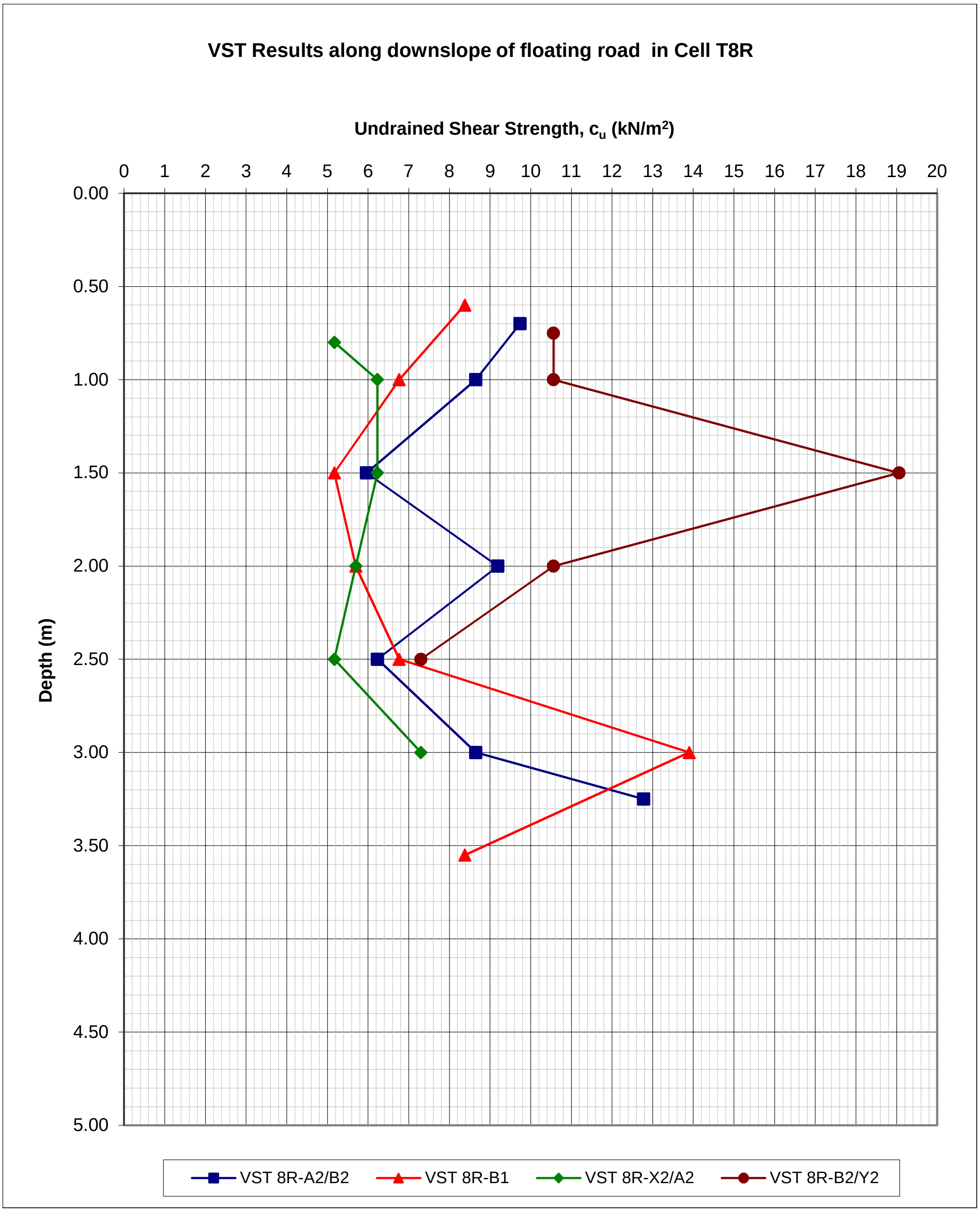
AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 8R**
Job No. 03-104							

Test No.		VST 8R-A2/B2	Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	18.5	5.00	9.7				
1.00	16.5	6.50	8.6				
1.50	11.5	3.50	6.0				
2.00	17.5	5.50	9.2				
2.50	12.0	4.00	6.2				
3.00	16.5	5.00	8.6				
3.25	24.0	5.50	12.8				

Test No.		VST 8R-B1	Date:			Peat Depth (m) 3.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.60	16.0	5.00	8.4				
1.00	13.0	3.00	6.8				
1.50	10.0	4.00	5.2				
2.00	11.0	3.50	5.7				
2.50	13.0	4.00	6.8				
3.00	26.0	3.50	13.9				
3.55	16.0	5.00	8.4				

Test No.		VST 8R-B2/Y2	Date:			Peat Depth (m) 3.00	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.75	20.0	3.00	10.6				
1.00	20.0	4.00	10.6				
1.50	35.0	3.00	19.1				
2.00	20.0	3.00	10.6				
2.50	14.0	4.00	7.3				

Test No.		VST 8R-X2/A2	Date:			Peat Depth (m) 3.30	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	10.0	3.0	5.2				
1.00	12.0	3.5	6.2				
1.50	12.0	3.0	6.2				
2.00	11.0	2.0	5.7				
2.50	10.0	3.0	5.2				
3.00	14.0	2.5	7.3				



VST Results along downslope of floating road in Cell T8R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 8R-A2/B2
VST 8R-B1
VST 8R-X2/A2
VST 8R-B2/Y2

T8R(ext)

Peat Repository Site : T8R(ext)
Sliding Stability Analysis

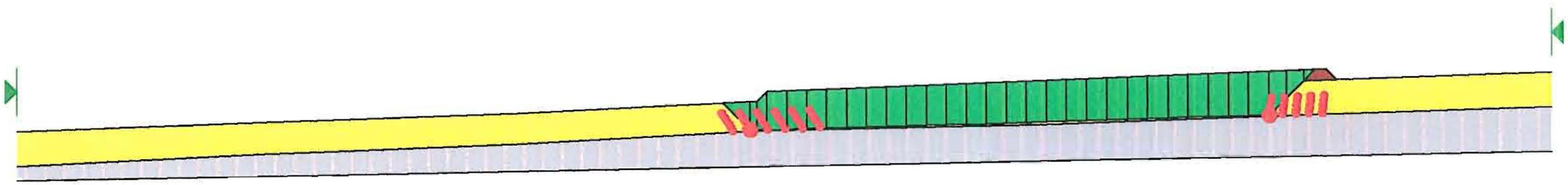
Size of Repository Site = 50 x 85 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.5 - 2.9 m	2.3 - 2.2 Deg	2.0 - 1.2 Deg
0 - 25 m Downslope	2.9 - 3.1 m	2.7 Deg	3.3 Deg
25 - 50 m Downslope	3.1 - 3.2 m	2.0 Deg	2.3 Deg
50 - 75 m Downslope	3.2 - 3.5 m	2.3 Deg	2.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T8Rext (2kPa)

Peat Repository Site : T8R(ext)
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base)

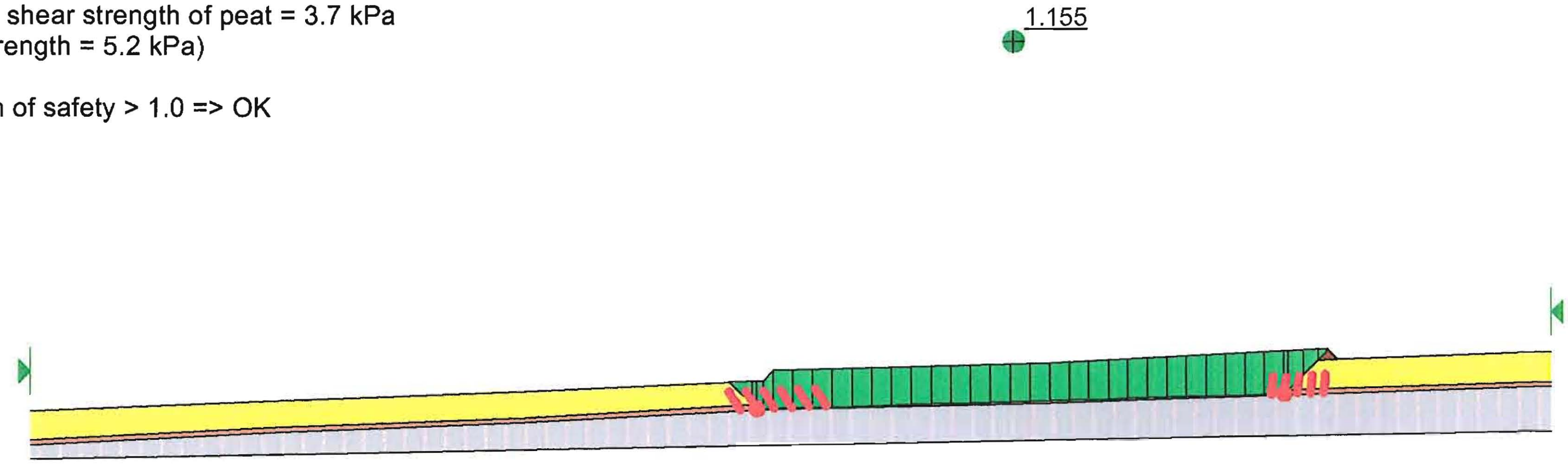
Size of Repository Site = 50 x 85 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.5 - 2.9 m	2.3 - 2.2 Deg	2.0 - 1.2 Deg
0 - 25 m Downslope	2.9 - 3.1 m	2.7 Deg	3.3 Deg
25 - 50 m Downslope	3.1 - 3.2 m	2.0 Deg	2.3 Deg
50 - 75 m Downslope	3.2 - 3.5 m	2.3 Deg	2.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T8R(ext)

Peat Repository Site : T8R(ext)
Sliding Stability Analysis

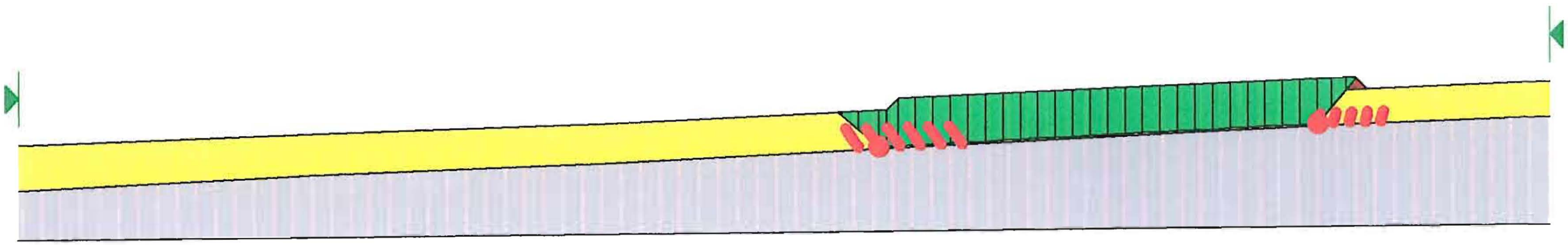
Size of Repository Site = 50 x 85 m
Length of loaded area parallel to resultant slope direction = 39 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.0 - 3.2 m	2.6 Deg	3.0 Deg
0 - 25 m Downslope	3.2 - 3.4 m	2.7 Deg	3.3 Deg
25 - 50 m Downslope	3.4 - 3.5 m	2.0 Deg	2.3 Deg
50 - 75 m Downslope	3.5 - 3.8 m	2.3 Deg	2.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T8R(ext) (2kPa)

Peat Repository Site : T8R(ext)
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

Size of Repository Site = 50 x 85 m
Length of loaded area parallel to resultant slope direction = 39 m

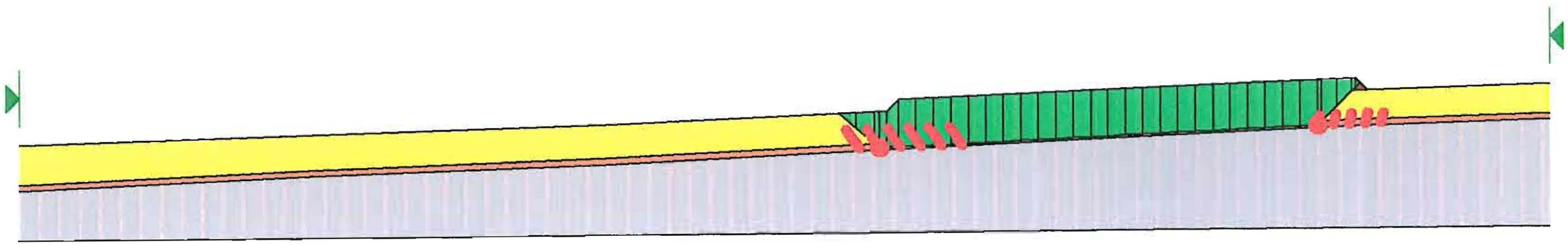
	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.0 - 3.2 m	2.6 Deg	3.0 Deg
0 - 25 m Downslope	3.2 - 3.4 m	2.7 Deg	3.3 Deg
25 - 50 m Downslope	3.4 - 3.5 m	2.0 Deg	2.3 Deg
50 - 75 m Downslope	3.5 - 3.8 m	2.3 Deg	2.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

1.005

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		Record of Peat Repository Locations	Rep. No: T10R

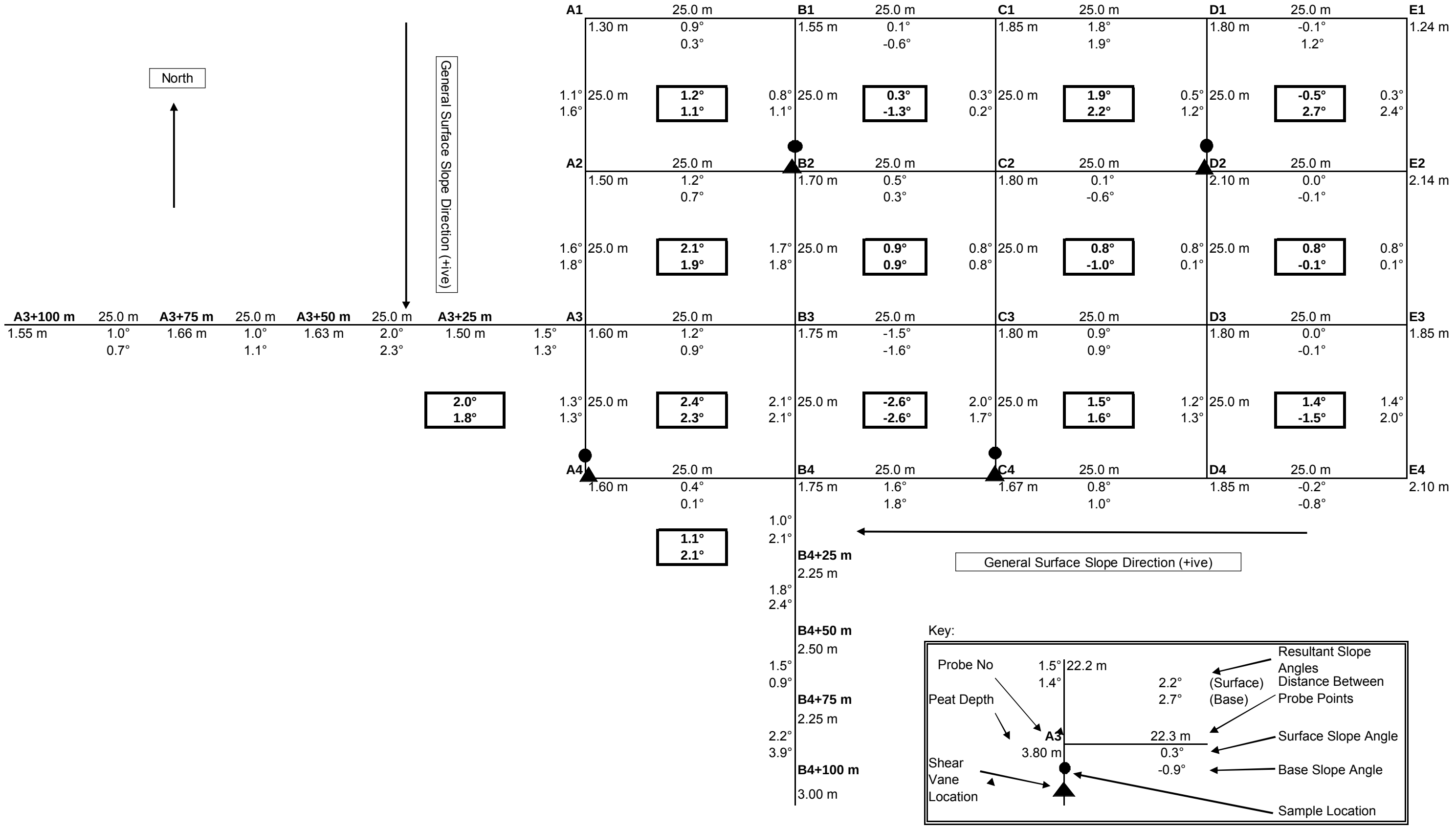
Max Slope at Ground Surface:	-2.6°
Downslope:	1.7°
Orthogonal Direction:	0.5°
Resultant:	1.8°

Max Slope at Base of Peat:	-2.6°
Downslope:	2.1°
Orthogonal Direction:	-1.5°
Resultant:	-2.6°

Comments:

Peat Depth :	1.24 m - 2.10 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 0.78 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

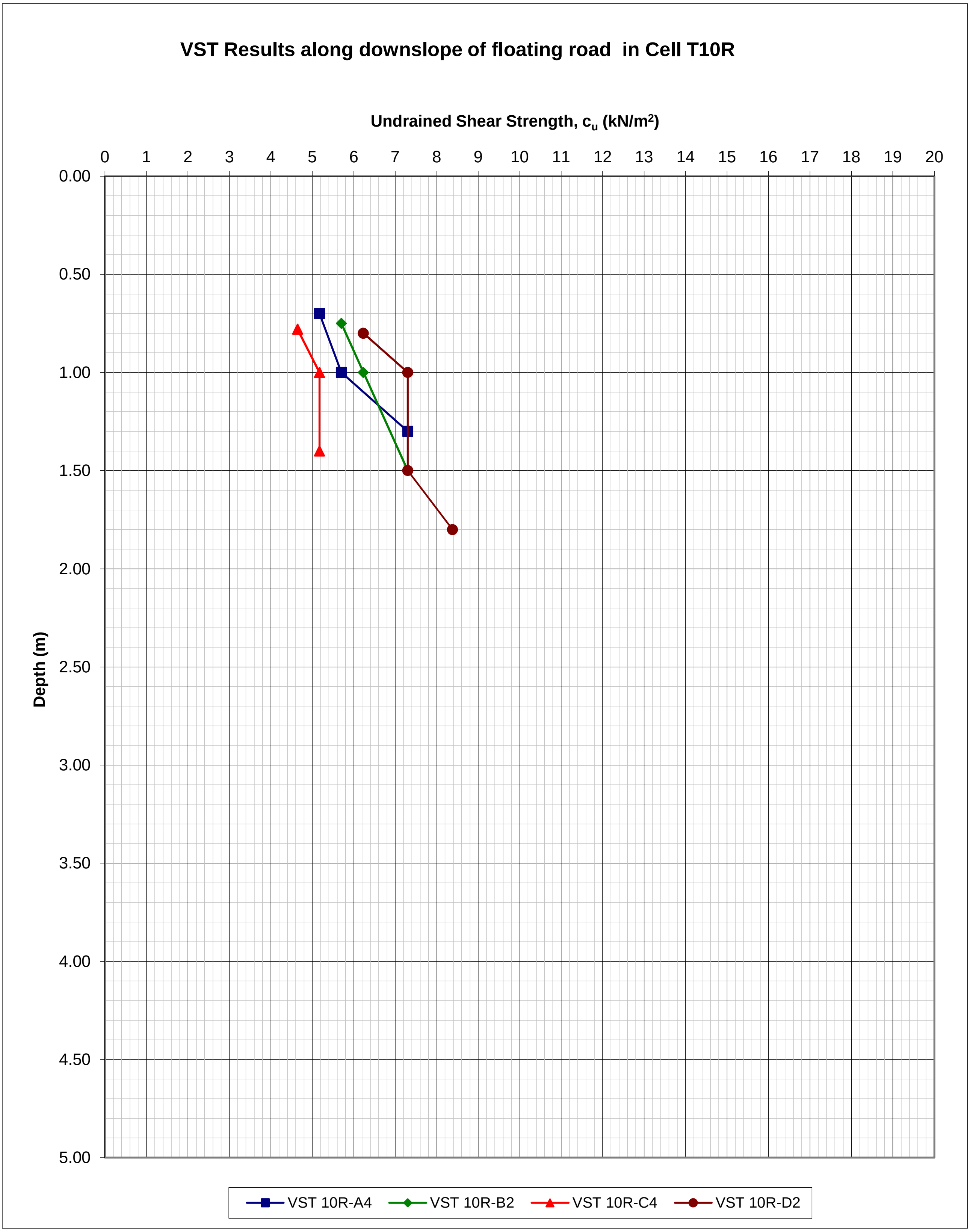
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 10R**

Test No.		VST 10R-A4	Date:			Peat Depth (m) 1.60	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	10.0	4.0	5.2				
1.00	11.0	3.0	5.7				
1.30	14.0	3.0	7.3				

Test No.		VST 10R-B2	Date:			Peat Depth (m) 1.75	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.75	11.0	3.0	5.7				
1.00	12.0	3.0	6.2				
1.50	14.0	2.0	7.3				

Test No.		VST 10R-C4	Date:			Peat Depth (m) 1.70	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.78	9.0	3.0	4.6				
1.00	10.0	3.0	5.2				
1.40	10.0	4.0	5.2				

Test No.		VST 10R-D2	Date:			Peat Depth (m) 2.10	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.80	12.0	2.0	6.2				
1.00	14.0	2.5	7.3				
1.50	14.0	3.0	7.3				
1.80	16.0	2.0	8.4				



VST Results along downslope of floating road in Cell T10R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 10R-A4
VST 10R-B2
VST 10R-C4
VST 10R-D2

T10R

Peat Repository Site : T10R
Sliding Stability Analysis

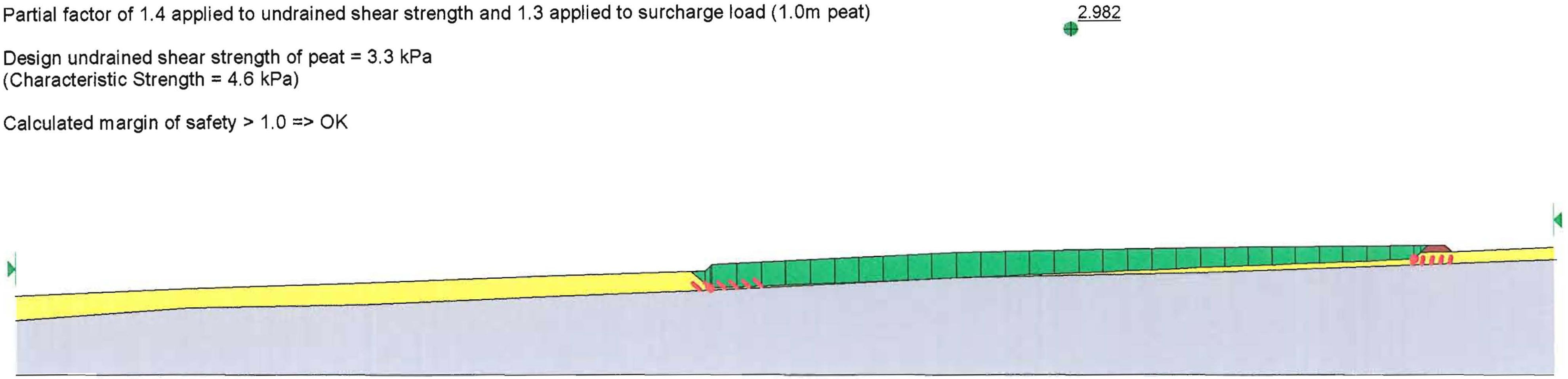
Size of Repository Site = 75 x 100 m
Length of loaded area parallel to resultant slope direction = 105 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.2 - 2.7 m	0.5 - 2.6 Deg	2.7 - 2.6 Deg
0 - 25 m Downslope	2.7 - 2.9 m	1.1 Deg	2.1 Deg
25 - 50 m Downslope	2.9 - 3.1 m	1.8 Deg	2.4 Deg
50 - 75 m Downslope	3.1 - 2.8 m	1.5 Deg	0.9 Deg
75 - 100 m Downslope	2.8 - 3.5 m	2.2 Deg	3.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T10R (2kPa)

Peat Repository Site : T10R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

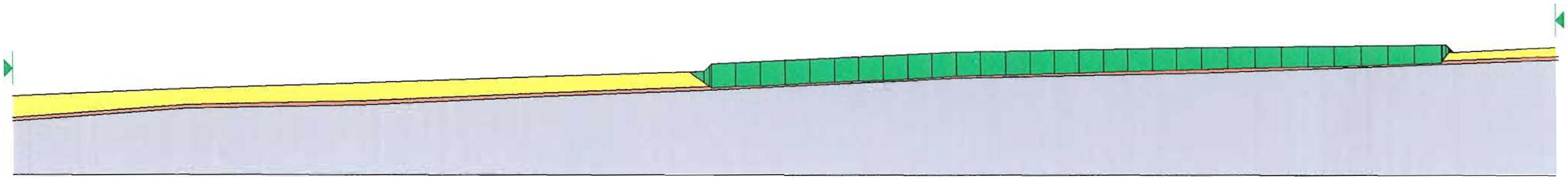
Size of Repository Site = 75 x 100 m
Length of loaded area parallel to resultant slope direction = 105 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.2 - 2.7 m	0.5 - 2.6 Deg	2.7 - 2.6 Deg
0 - 25 m Downslope	2.7 - 2.9 m	1.1 Deg	2.1 Deg
25 - 50 m Downslope	2.9 - 3.1 m	1.8 Deg	2.4 Deg
50 - 75 m Downslope	3.1 - 2.8 m	1.5 Deg	0.9 Deg
75 - 100 m Downslope	2.8 - 3.5 m	2.2 Deg	3.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T11R**

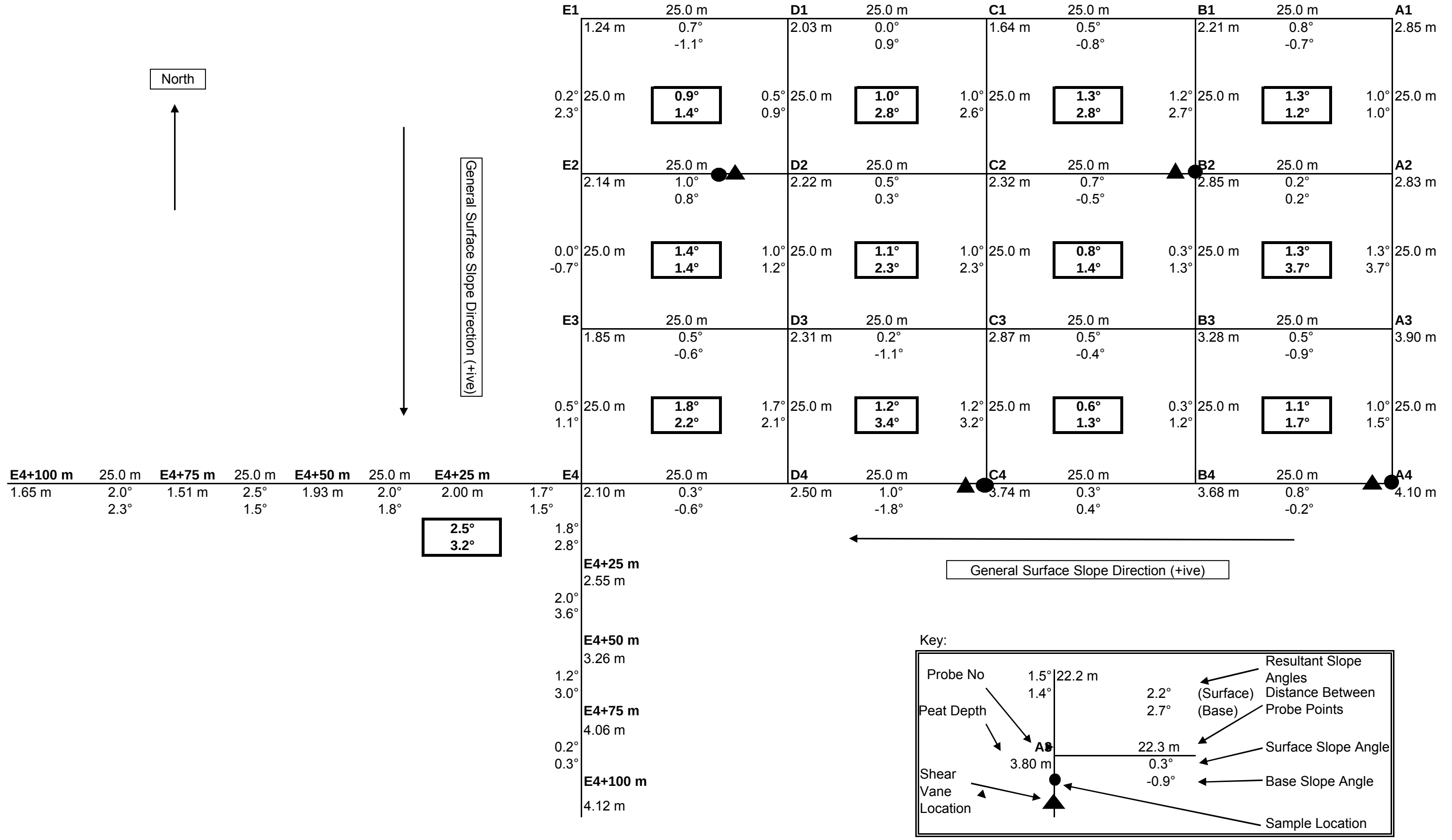
Max Slope at Ground Surface:	1.8°
Downslope:	1.7°
Orthogonal Direction:	0.5°
Resultant:	1.8°

Max Slope at Base of Peat:	3.7°
Downslope:	3.7°
Orthogonal Direction:	0.2°
Resultant:	3.7°

Comments:

Peat Depth :	1.24 m - 4.10 m
Min Undrained Shear Strength:	4.1 kPa at Depth = 2.0 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

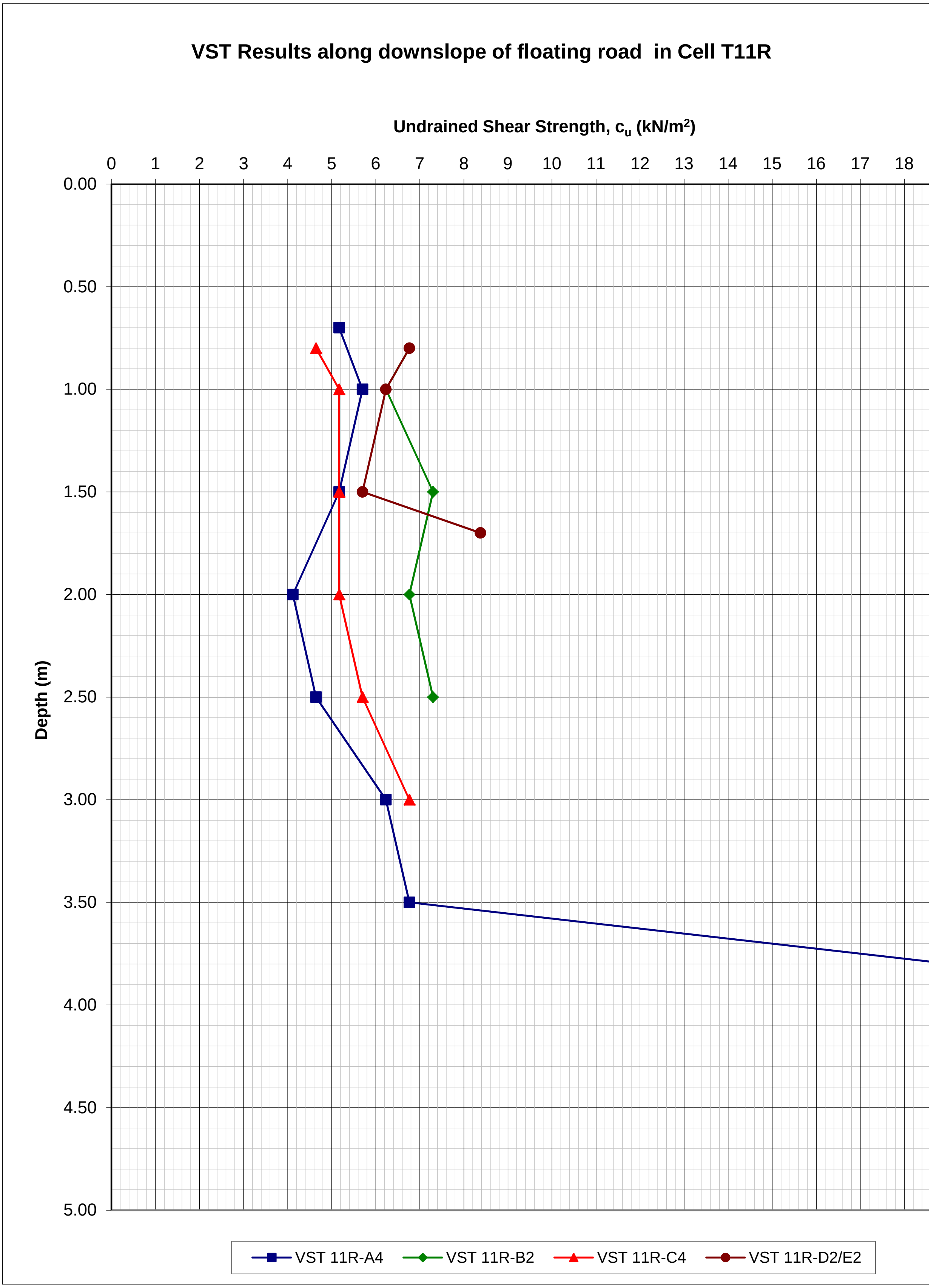
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 11R**

Test No.		VST 11R-A4	Date:			Peat Depth (m) 4.10	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	10.0	3.0	5.2				
1.00	11.0	3.5	5.7				
1.50	10.0	3.0	5.2				
2.00	8.0	3.0	4.1				
2.50	9.0	2.5	4.6				
3.00	12.0	2.5	6.2				
3.50	13.0	3.0	6.8				
3.80	35.0	4.0	19.1				

Test No.		VST 11R-B2	Date:			Peat Depth (m) 2.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	13.0	3.0	6.8				
1.00	12.0	2.5	6.2				
1.50	14.0	3.5	7.3				
2.00	13.0	4.0	6.8				
2.50	14.0	3.0	7.3				

Test No.		VST 11R-C4	Date:			Peat Depth (m) 3.30	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	9.0	3.0	4.6				
1.00	10.0	4.5	5.2				
1.50	10.0	4.0	5.2				
2.00	10.0	3.0	5.2				
2.50	11.0	3.5	5.7				
3.00	13.0	4.0	6.8				

Test No.		VST 11R-D2/E2	Date:			Peat Depth (m) 1.90	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	13.0	3.0	6.8				
1.00	12.0	2.0	6.2				
1.50	11.0	2.0	5.7				
1.70	16.0	2.0	8.4				


VST Results along downslope of floating road in Cell T11R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 11R-A4
VST 11R-B2
VST 11R-C4
VST 11R-D2/E2

T11R

Peat Repository Site : T11R
Sliding Stability Analysis

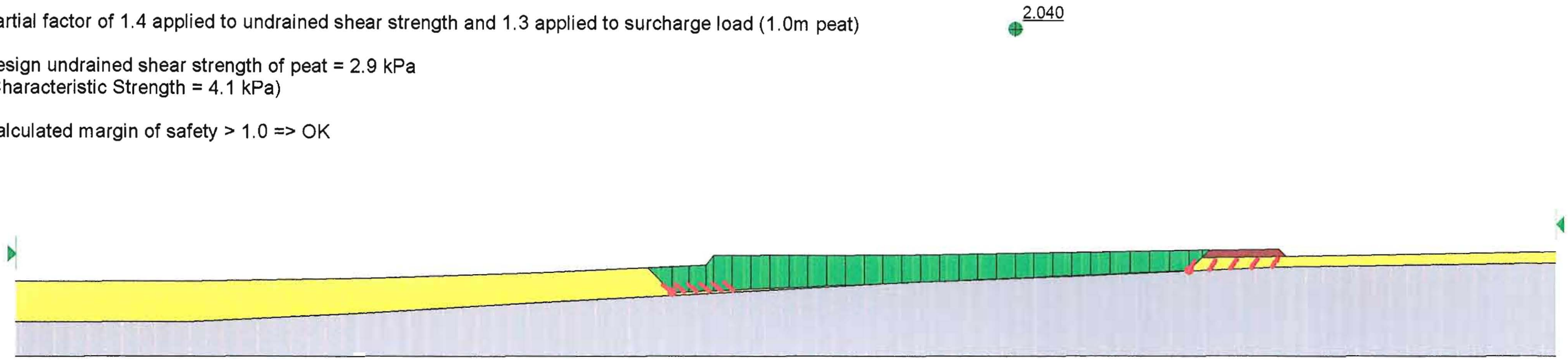
Size of Repository Site = 75 x 100 m
Length of loaded area parallel to resultant slope direction = 35.4 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.6 - 4.0 m	1.0 - 1.2 Deg	2.8 - 3.4 Deg
0 - 25 m Downslope	4.0 - 4.3 m	2.5 Deg	3.2 Deg
25 - 50 m Downslope	4.3 - 5.0 m	2.0 Deg	3.6 Deg
50 - 75 m Downslope	5.0 - 5.8 m	1.2 Deg	3.0 Deg
75 - 100 m Downslope	5.8 - 5.8 m	0.2 Deg	0.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T11R (2kPa)

Peat Repository Site : T11R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base)

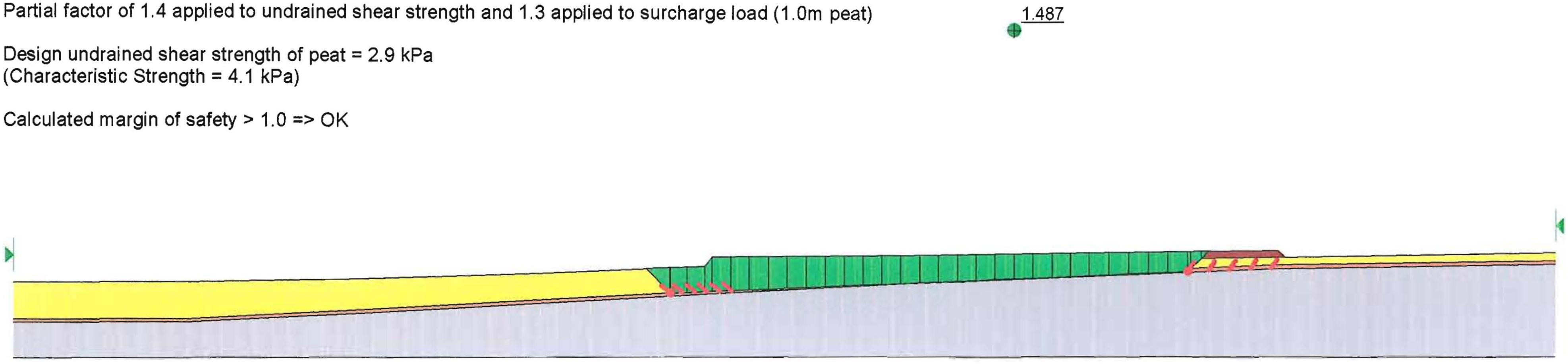
Size of Repository Site = 75 x 100 m
Length of loaded area parallel to resultant slope direction = 35.4 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.6 - 4.0 m	1.0 - 1.2 Deg	2.8 - 3.4 Deg
0 - 25 m Downslope	4.0 - 4.3 m	2.5 Deg	3.2 Deg
25 - 50 m Downslope	4.3 - 5.0 m	2.0 Deg	3.6 Deg
50 - 75 m Downslope	5.0 - 5.8 m	1.2 Deg	3.0 Deg
75 - 100 m Downslope	5.8 - 5.8 m	0.2 Deg	0.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting ***Geotechnical Engineers***		**Record of Peat Repository Locations**	**Rep. No: T12R**

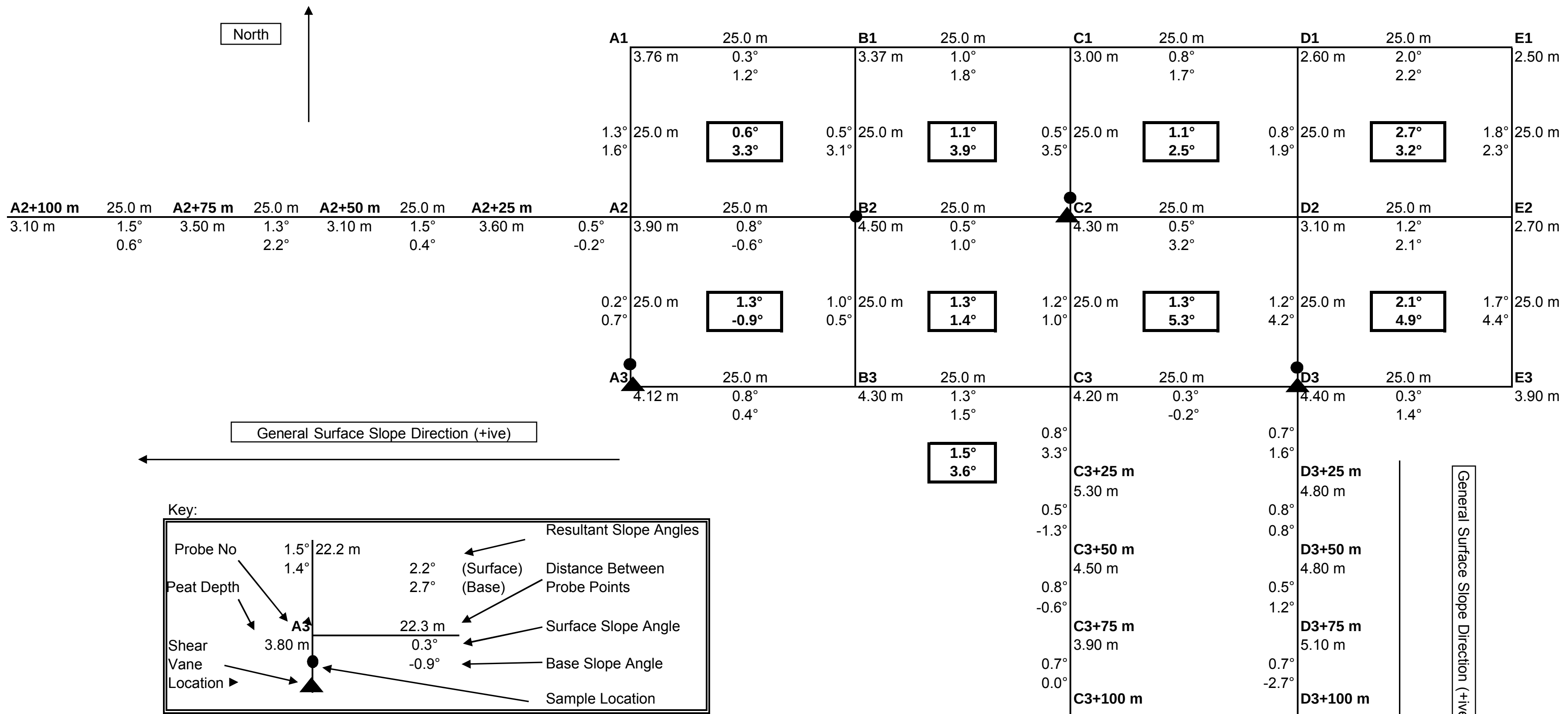
Max Slope at Ground Surface:	2.7°
Downslope:	1.8°
Orthogonal Direction:	2.0°
Resultant:	2.7°

Max Slope at Base of Peat:	5.3°
Downslope:	4.2°
Orthogonal Direction:	3.2°
Resultant:	5.3°

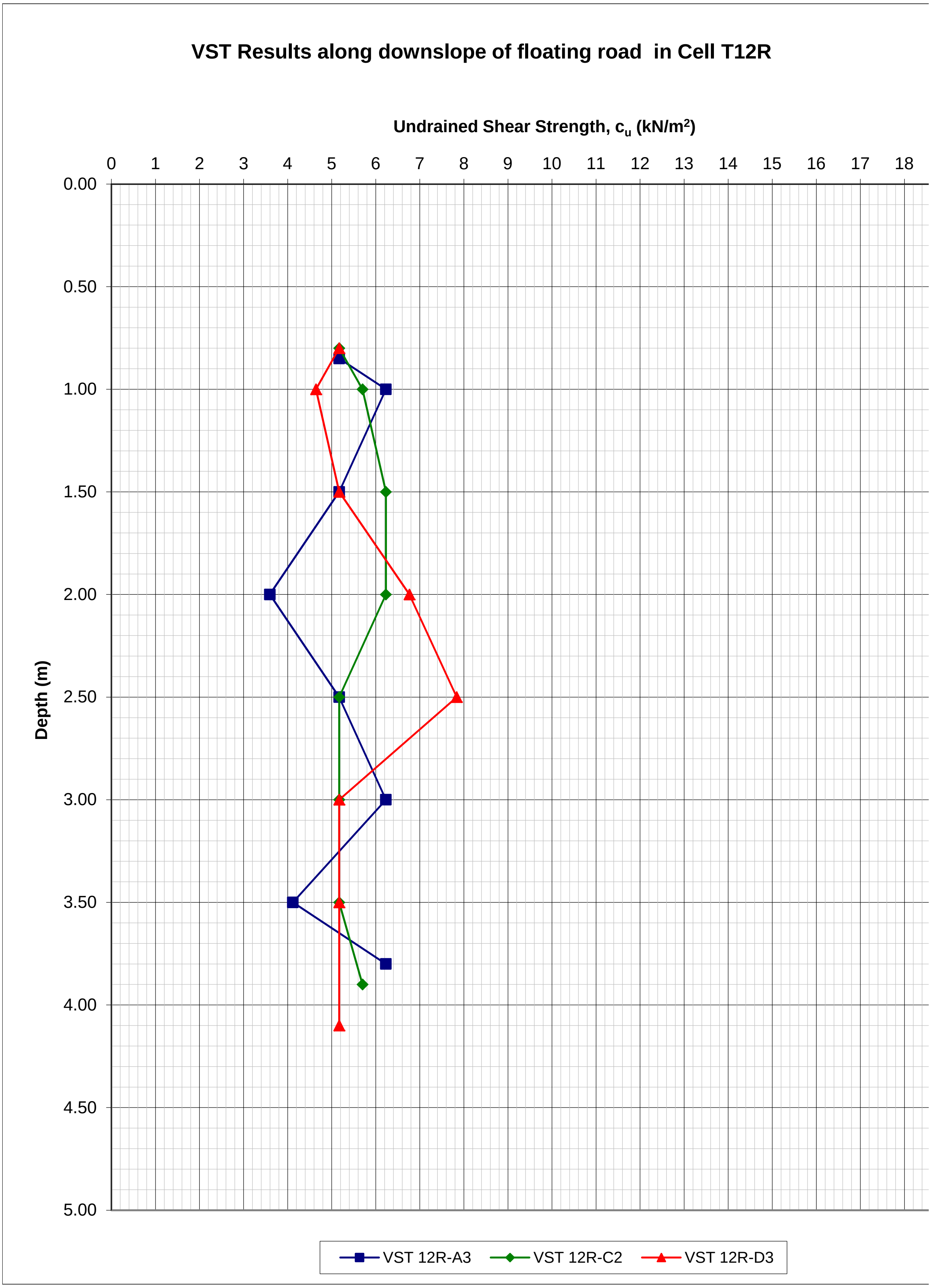
Comments:

Peat Depth :	2.50 m - 4.40 m
Min Undrained Shear Strength:	3.6 kPa at Depth = 2.0 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.



VST Results along downslope of floating road in Cell T12R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Depth (m)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
VST 12R-A3
VST 12R-C2
VST 12R-D3

Derrybrien Wind Farm Additional Ground Investigation

AGL Consulting *Geotechnical Engineers*			Record Of Vane Shear Tests				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 (65_{mm}/130_{mm})				**Cell No. 12R**

Test No.		VST 12R-A3	Date:			Peat Depth (m) 4.10	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.85	10.0	4.5	5.2				
1.00	12.0	3.5	6.2				
1.50	10.0	5.0	5.2				
2.00	7.0	3.0	3.6				
2.50	10.0	3.0	5.2				
3.00	12.0	3.0	6.2				
3.50	8.0	5.0	4.1				
3.80	12.0	4.0	6.2				

Test No.		VST 12R-C2	Date:			Peat Depth (m) 4.20	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	10.0	3.0	5.2				
1.00	11.0	2.5	5.7				
1.50	12.0	3.0	6.2				
2.00	12.0	2.5	6.2				
2.50	10.0	3.0	5.2				
3.00	10.0	5.0	5.2				
3.50	10.0	3.0	5.2				
3.90	11.0	3.5	5.7				

Test No.		VST 12R-D3	Date:			Peat Depth (m) 4.40	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	10.0	3.0	5.2				
1.00	9.0	3.0	4.6				
1.50	10.0	3.0	5.2				
2.00	13.0	2.5	6.8				
2.50	15.0	2.5	7.8				
3.00	10.0	3.5	5.2				
3.50	10.0	3.0	5.2				
4.10	10.0	3.5	5.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

T12R

Peat Repository Site : T12R
Sliding Stability Analysis

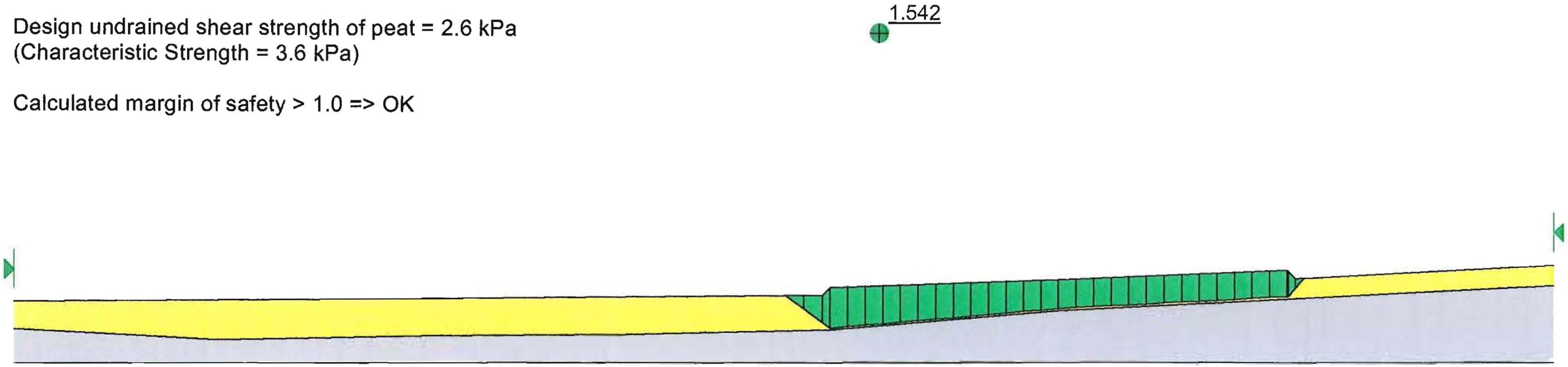
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.2 m	2.7 - 2.1 Deg	3.2 - 4.9 Deg
0 - 25 m Downslope	4.2 - 4.6 m	0.7 Deg	0.8 Deg
25 - 50 m Downslope	4.6 - 4.6 m	0.8 Deg	0.8 Deg
50 - 75 m Downslope	4.6 - 4.9 m	0.5 Deg	1.2 Deg
75 - 100 m Downslope	4.9 - 3.4 m	0.7 Deg	-2.7 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T12R (2kPa)

Peat Repository Site : T12R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

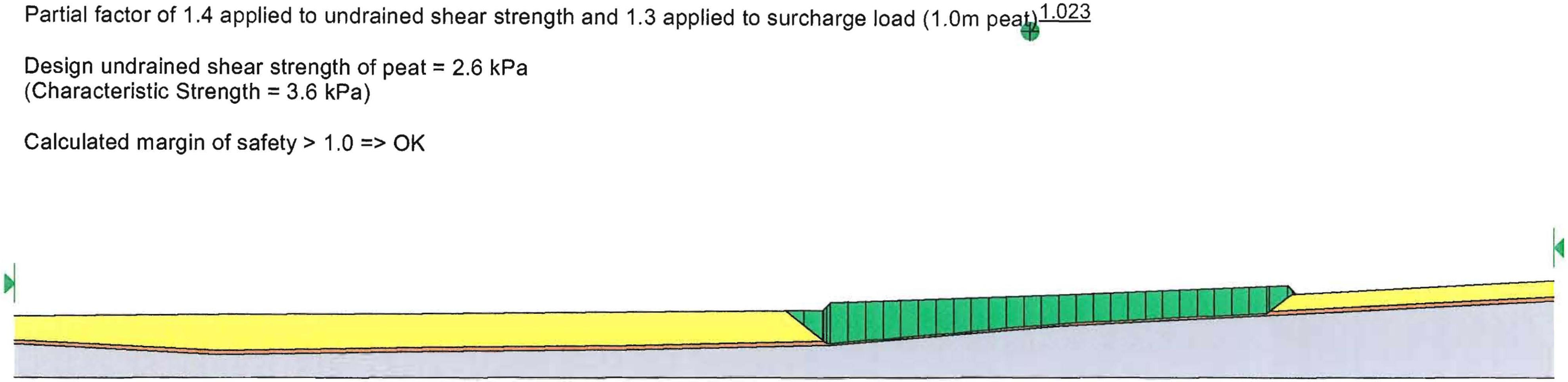
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.2 m	2.7 - 2.1 Deg	3.2 - 4.9 Deg
0 - 25 m Downslope	4.2 - 4.6 m	0.7 Deg	0.8 Deg
25 - 50 m Downslope	4.6 - 4.6 m	0.8 Deg	0.8 Deg
50 - 75 m Downslope	4.6 - 4.9 m	0.5 Deg	1.2 Deg
75 - 100 m Downslope	4.9 - 3.4 m	0.7 Deg	-2.7 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T12R

Peat Repository Site : T12R
Sliding Stability Analysis

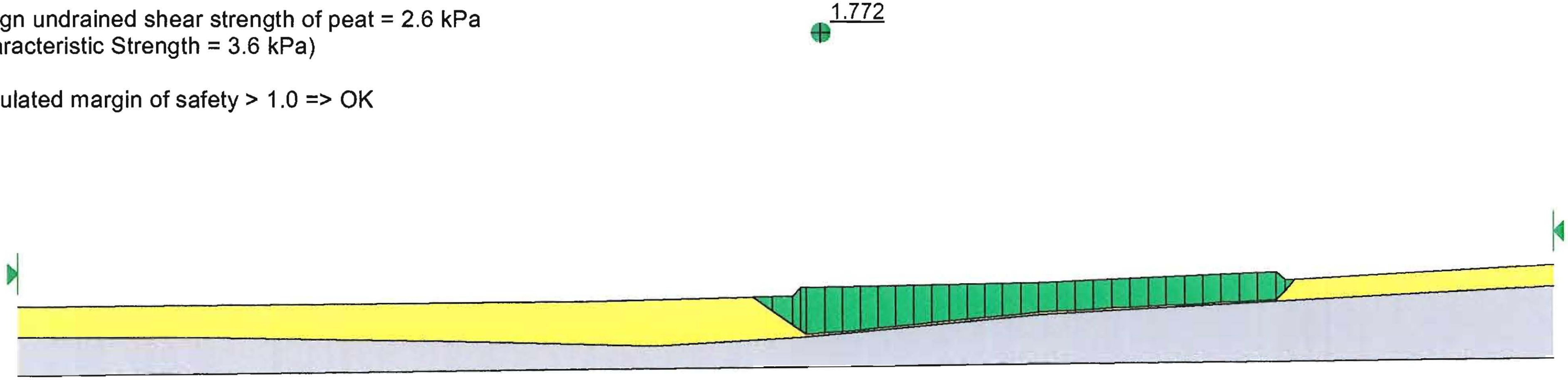
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.8 m	2.7 - 1.3 Deg	3.2 - 5.3 Deg
0 - 25 m Downslope	4.8 - 5.4 m	1.5 Deg	3.6 Deg
25 - 50 m Downslope	5.4 - 4.5 m	0.5 Deg	-1.3 Deg
50 - 75 m Downslope	4.5 - 3.9 m	0.8 Deg	-0.6 Deg
75 - 100 m Downslope	3.9 - 3.6 m	0.7 Deg	0.0 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T12R (2kPa)

Peat Repository Site : T12R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

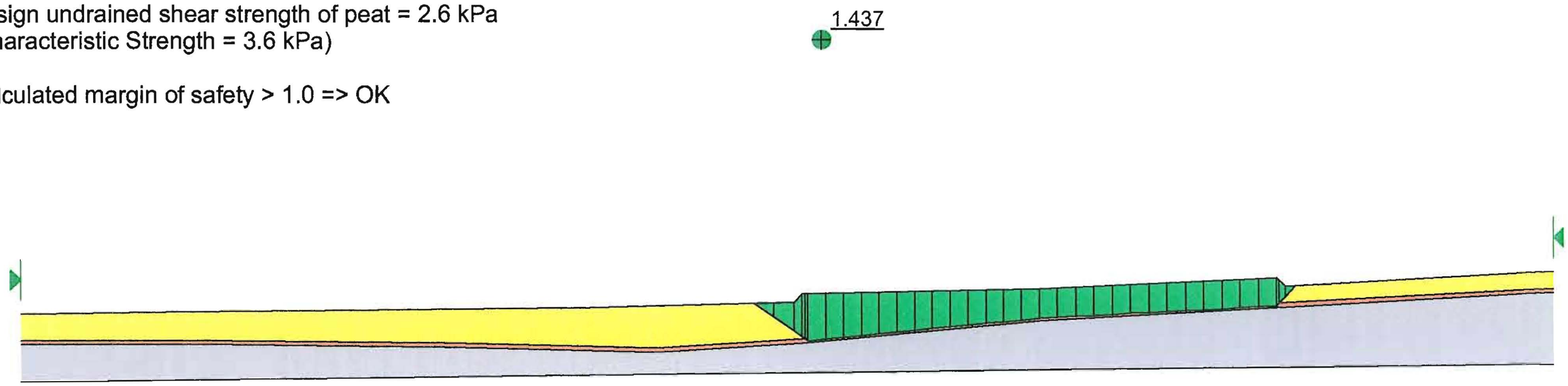
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.8 m	2.7 - 1.3 Deg	3.2 - 5.3 Deg
0 - 25 m Downslope	4.8 - 5.4 m	1.5 Deg	3.6 Deg
25 - 50 m Downslope	5.4 - 4.5 m	0.5 Deg	-1.3 Deg
50 - 75 m Downslope	4.5 - 3.9 m	0.8 Deg	-0.6 Deg
75 - 100 m Downslope	3.9 - 3.6 m	0.7 Deg	0.0 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T12R (2kPa)

Peat Repository Site : T12R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

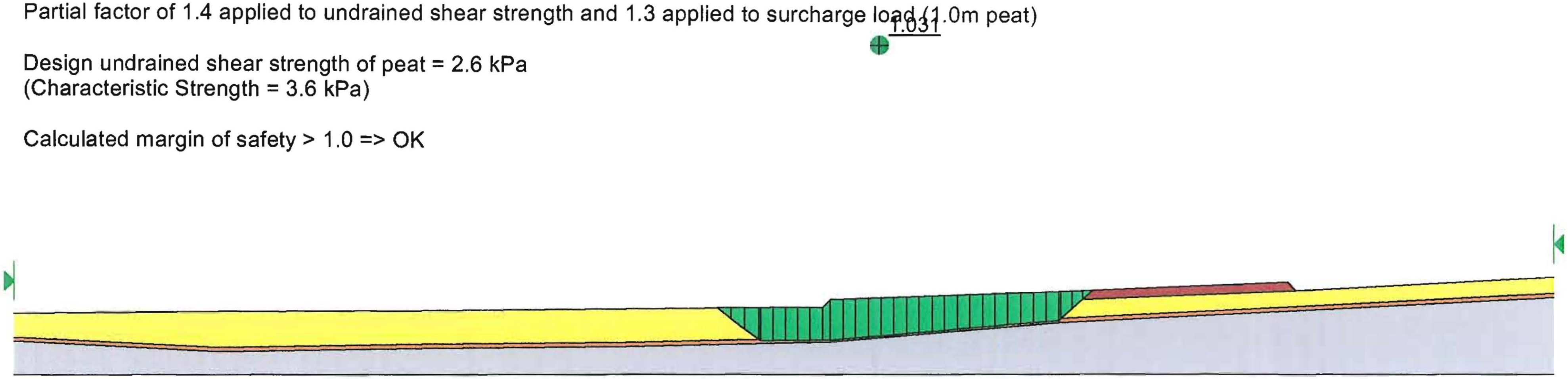
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.2 m	2.7 - 2.1 Deg	3.2 - 4.9 Deg
0 - 25 m Downslope	4.2 - 4.6 m	0.7 Deg	0.8 Deg
25 - 50 m Downslope	4.6 - 4.6 m	0.8 Deg	0.8 Deg
50 - 75 m Downslope	4.6 - 4.9 m	0.5 Deg	1.2 Deg
75 - 100 m Downslope	4.9 - 3.4 m	0.7 Deg	-2.7 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T12R (2kPa)

Peat Repository Site : T12R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

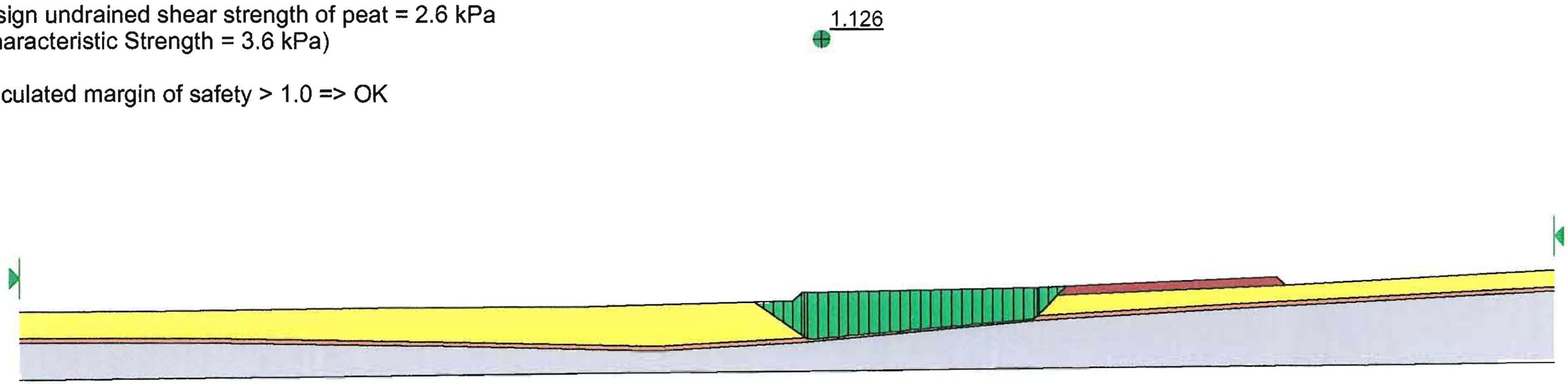
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.8 m	2.7 - 1.3 Deg	3.2 - 5.3 Deg
0 - 25 m Downslope	4.8 - 5.4 m	1.5 Deg	3.6 Deg
25 - 50 m Downslope	5.4 - 4.5 m	0.5 Deg	-1.3 Deg
50 - 75 m Downslope	4.5 - 3.9 m	0.8 Deg	-0.6 Deg
75 - 100 m Downslope	3.9 - 3.6 m	0.7 Deg	0.0 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting ***Geotechnical Engineers***		**Record of Peat Repository Locations**	**Rep. No: T14R**

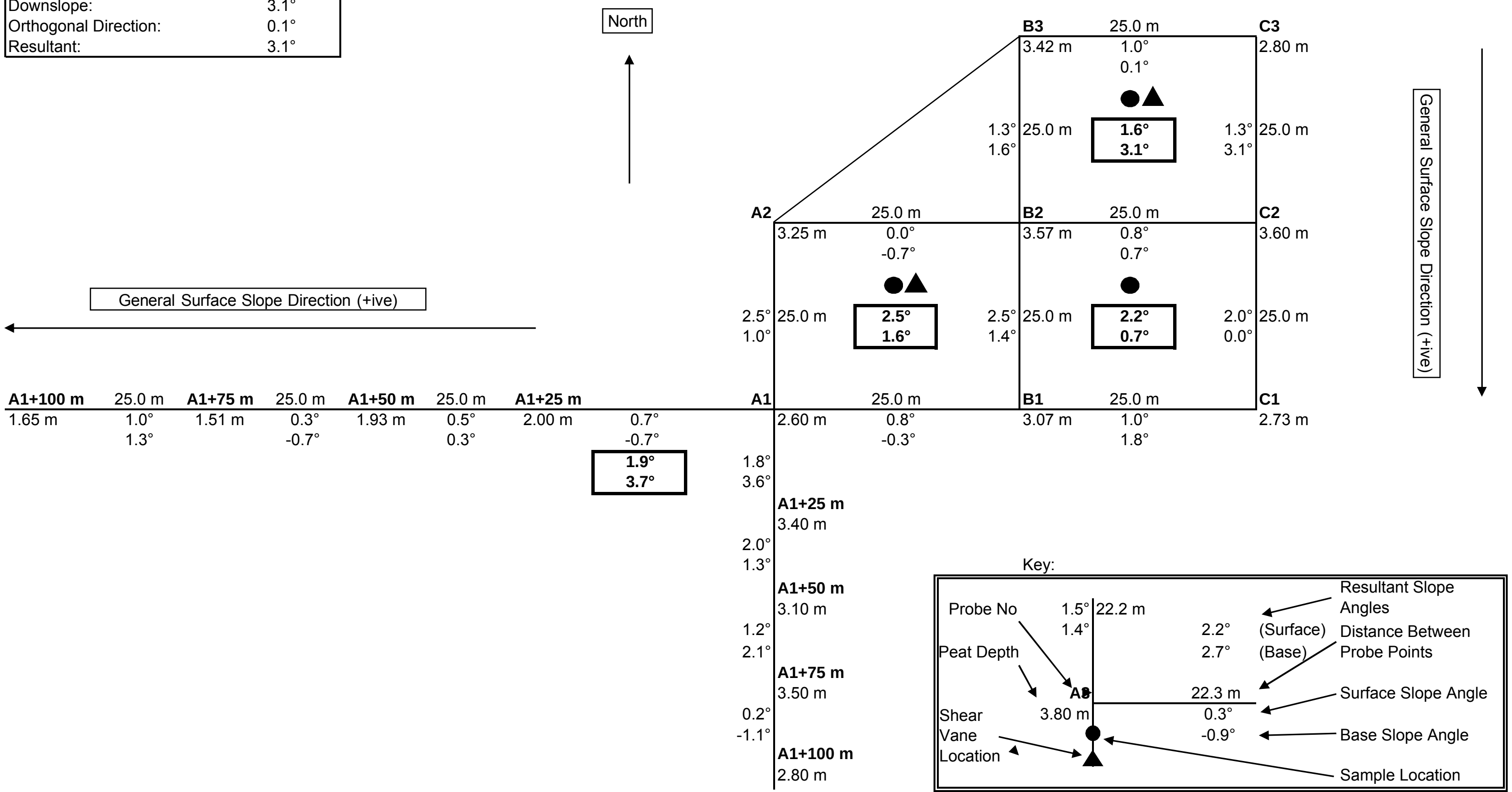
Max Slope at Ground Surface:	2.5°
Downslope:	0.0°
Orthogonal Direction:	2.5°
Resultant:	2.5°

Comments:

Peat Depth :	2.60 m - 3.60 m
Min Undrained Shear Strength:	5.2 kPa at Depth = 1.50 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X

Max Slope at Base of Peat:	3.1°
Downslope:	3.1°
Orthogonal Direction:	0.1°
Resultant:	3.1°



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

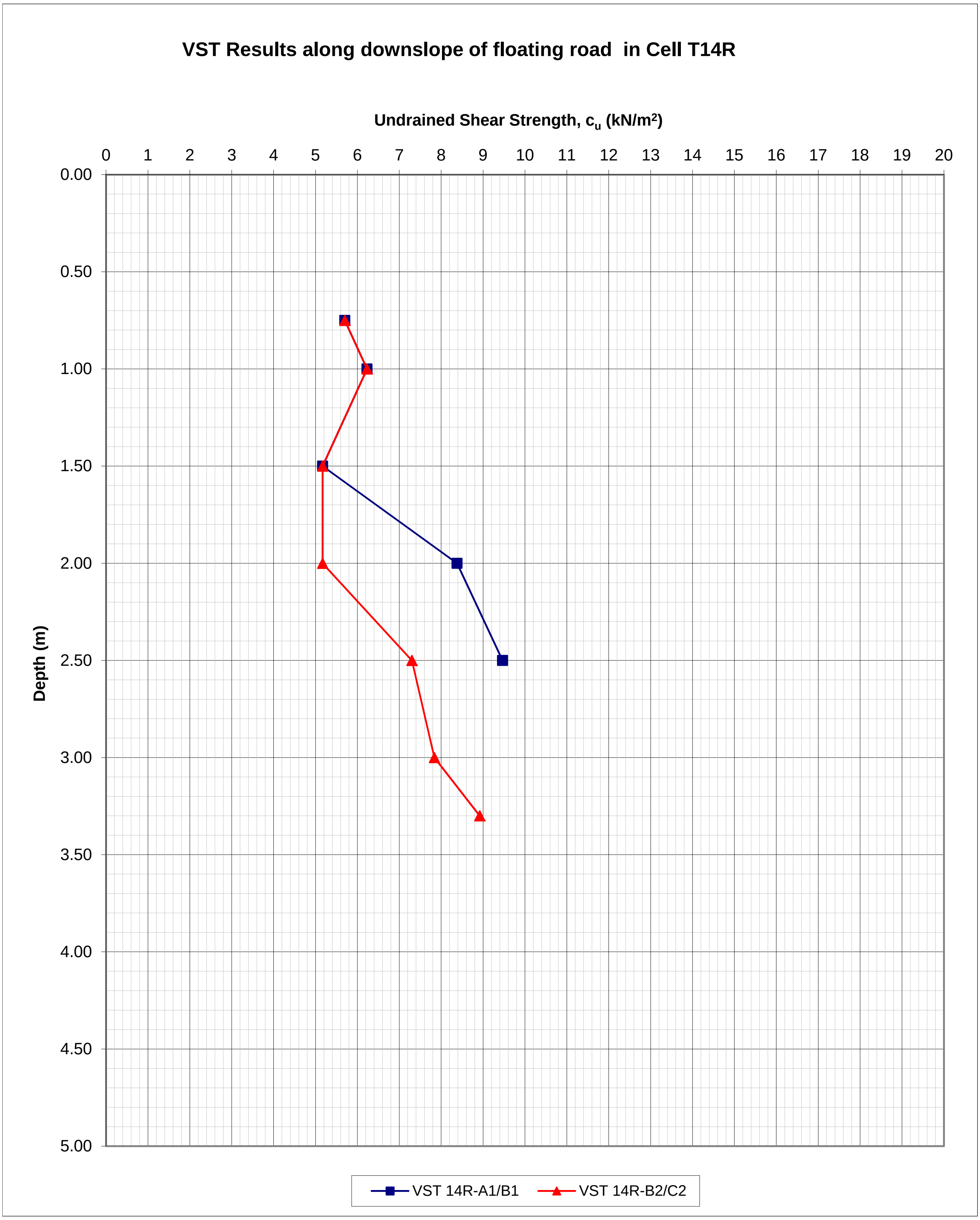
AGL Consulting *Geotechnical Engineers*	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 14R**

Test No.		VST 14R-A1/B1	Date:			Peat Depth (m) 2.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.75	11.0	4.0	5.7				
1.00	12.0	3.0	6.2				
1.50	10.0	4.0	5.2				
2.00	16.0	3.0	8.4				
2.50	18.0	4.0	9.5				

Test No.		VST 14R-B2/C2	Date:			Peat Depth (m) 3.60	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.75	11.0	3.0	5.7				
1.00	12.0	4.0	6.2				
1.50	10.0	3.0	5.2				
2.00	10.0	3.0	5.2				
2.50	14.0	4.0	7.3				
3.00	15.0	3	7.8				
3.30	17.0	3	8.9				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments



VST Results along downslope of floating road in Cell T14R
Undrained Shear Strength, c_u (kN/m²)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Depth (m)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
VST 14R-A1/B1
VST 14R-B2/C2

T14R

Peat Repository Site : T14R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

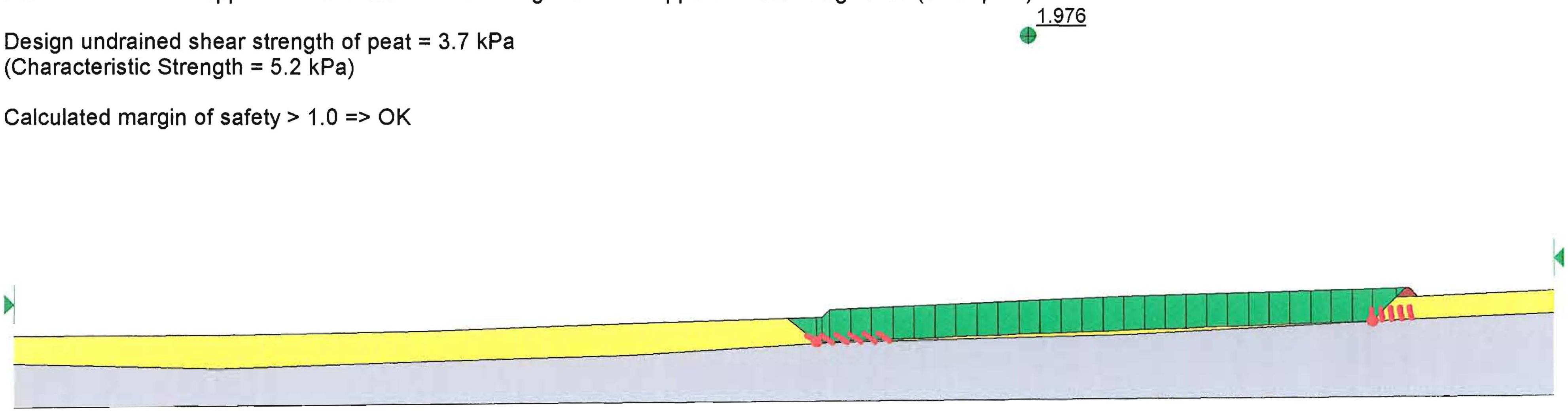
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 71.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.8 - 3.7 m	1.6 - 2.5 Deg	3.1 - 1.6 Deg
0 - 25 m Downslope	3.1 - 3.9 m	1.9 Deg	3.7 Deg
25 - 50 m Downslope	3.9 - 3.7 m	2.0 Deg	1.3 Deg
50 - 75 m Downslope	3.7 - 4.1 m	1.2 Deg	2.1 Deg
75 - 100 m Downslope	4.1 - 3.4 m	0.2 Deg	-1.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T14R (2kPa)

Peat Repository Site : T14R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

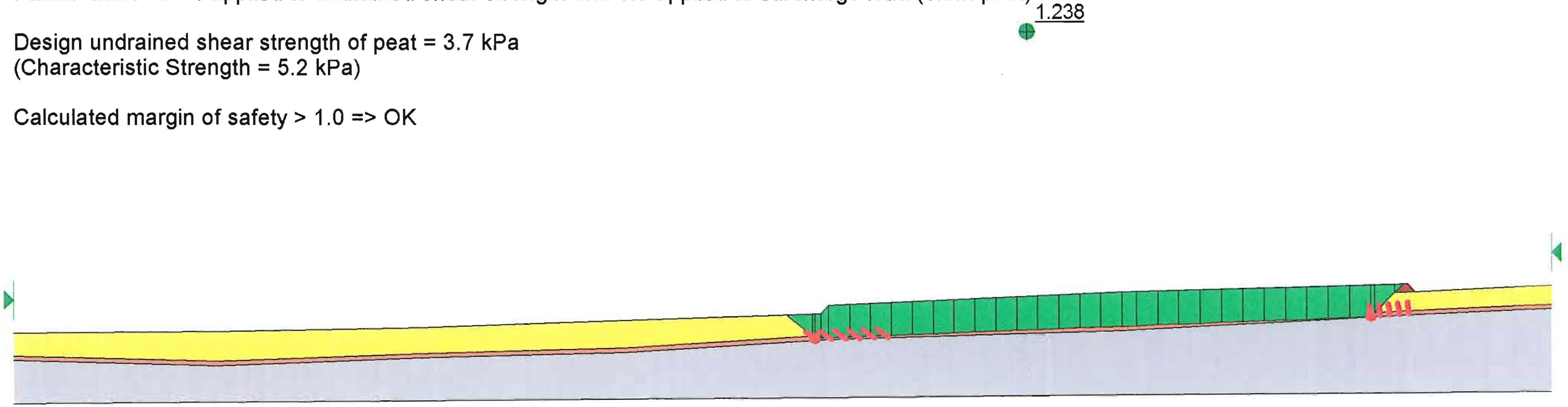
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 71.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.8 - 3.7 m	1.6 - 2.5 Deg	3.1 - 1.6 Deg
0 - 25 m Downslope	3.1 - 3.9 m	1.9 Deg	3.7 Deg
25 - 50 m Downslope	3.9 - 3.7 m	2.0 Deg	1.3 Deg
50 - 75 m Downslope	3.7 - 4.1 m	1.2 Deg	2.1 Deg
75 - 100 m Downslope	4.1 - 3.4 m	0.2 Deg	-1.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



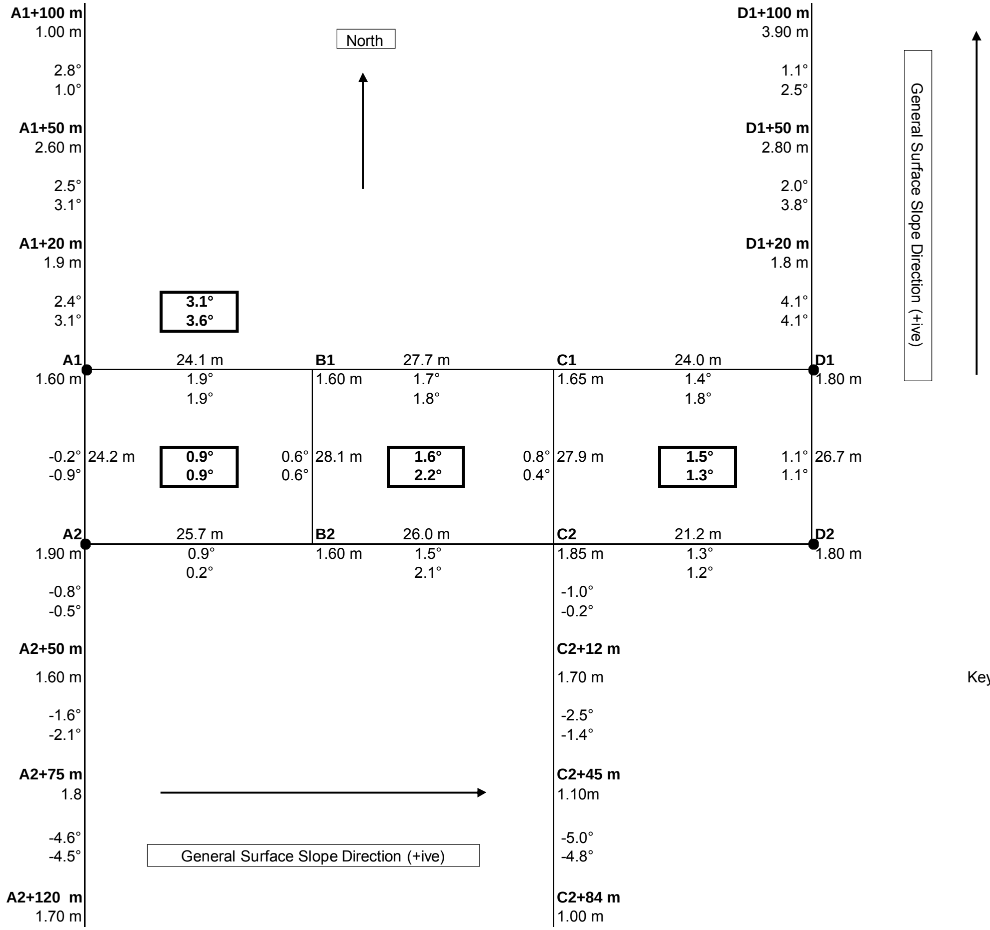
AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T24R**

Max Slope at Ground Surface:	1.6°
Downslope:	0.6°
Orthogonal Direction:	1.5°
Resultant:	1.6°

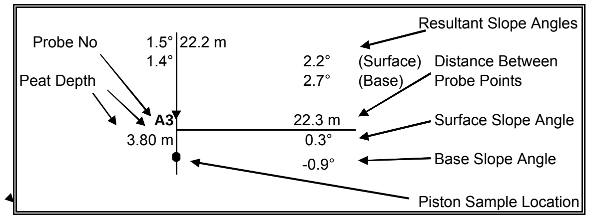
Max Slope at Base of Peat:	2.2°
Downslope:	0.6°
Orthogonal Direction:	2.1°
Resultant:	2.2°

Comments:

Peat Depth :	1.6 m - 1.8 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.0 m



Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

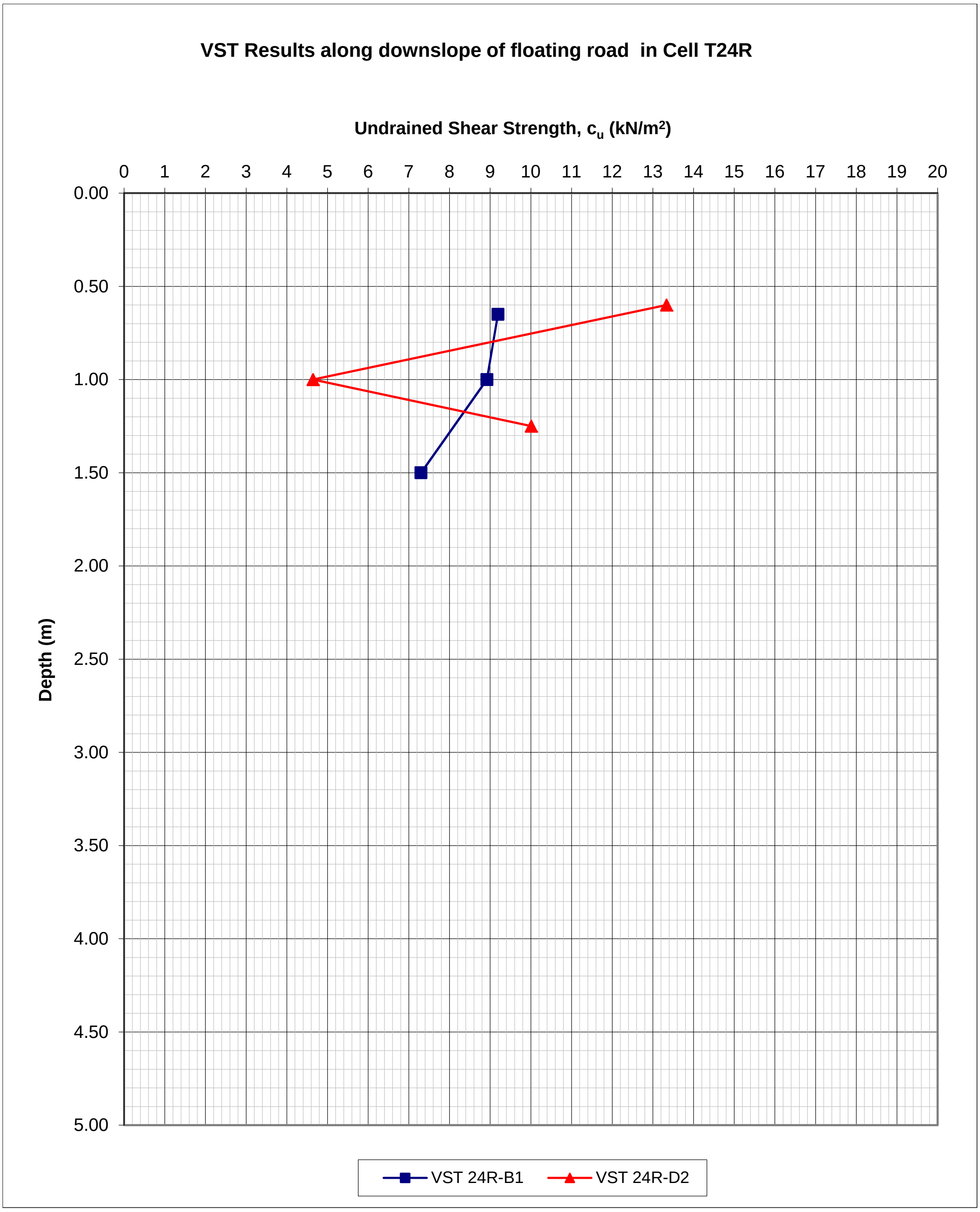
AGL Consulting ***Geotechnical Engineers***	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 24R**

Test No.		VST 24R-B1	Date:			Peat Depth (m) 1.8	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.65	17.5	5.00	9.2				
1.00	17.0	4.00	8.9				
1.50	14.0	4.00	7.3				

Test No.		VST 24R-D2	Date:			Peat Depth (m) 1.5	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.60	25.0	6.00	13.3				
1.00	9.0	2.00	4.6				
1.25	19.0	4.50	10.0				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	



VST Results along downslope of floating road in Cell T24R
Undrained Shear Strength, c_u (kN/m^2)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 24R-B1
VST 24R-D2

Peat Repository Site : T24R
Sliding Stability Analysis

T24R

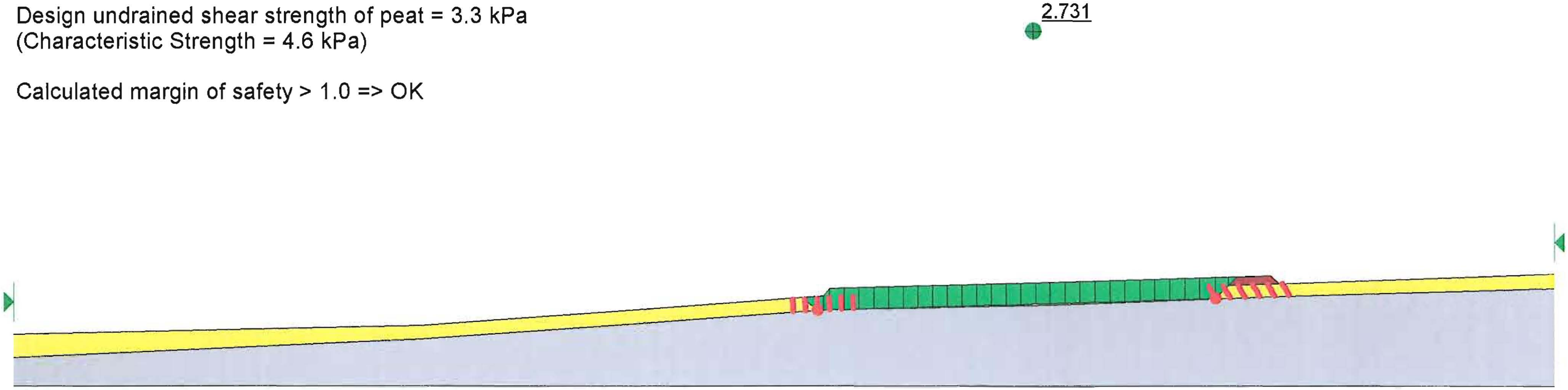
Size of Repository Site = 74 x 27 m
Length of loaded area parallel to resultant slope direction = 54 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.6 - 1.8 m	1.5 - 1.6 Deg	1.3 - 2.2 Deg
0 - 50 m Downslope	1.7 m	4.1 Deg	4.1 Deg
50 - 100 m Downslope	1.7 - 3.6 m	1.1 Deg	2.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T24R
Sliding Stability Analysis with 0.5 m thick layer of very wek peat (cu = 2kPa) at base

T24 (2kPa)

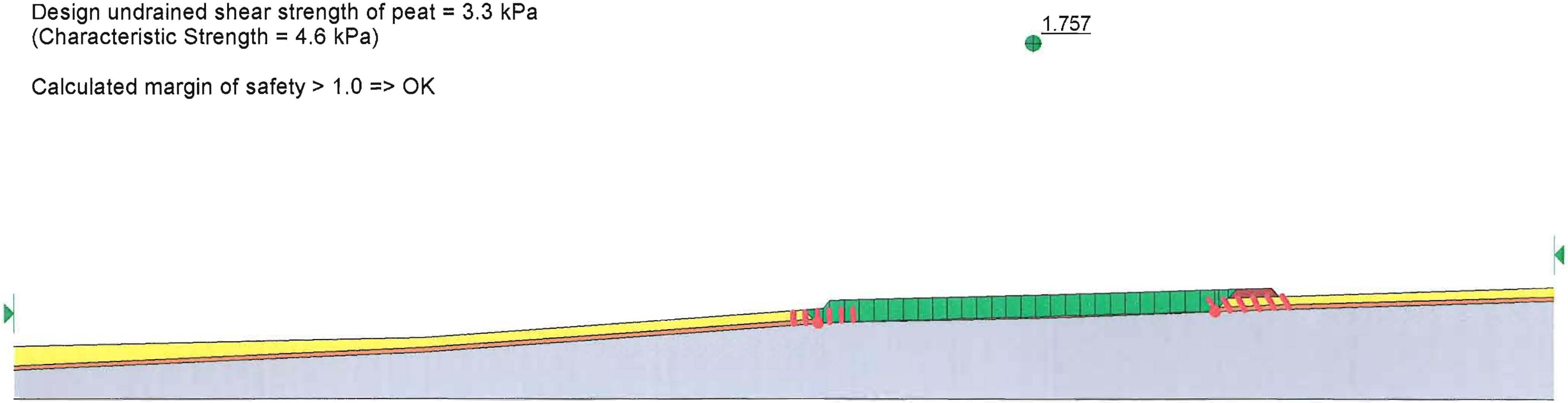
Size of Repository Site = 74 x 27 m
Length of loaded area parallel to resultant slope direction = 54 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.6 - 1.8 m	1.5 - 1.6 Deg	1.3 - 2.2 Deg
0 - 50 m Downslope	1.7 m	4.1 Deg	4.1 Deg
50 - 100 m Downslope	1.7 - 3.6 m	1.1 Deg	2.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T24R(ext)**

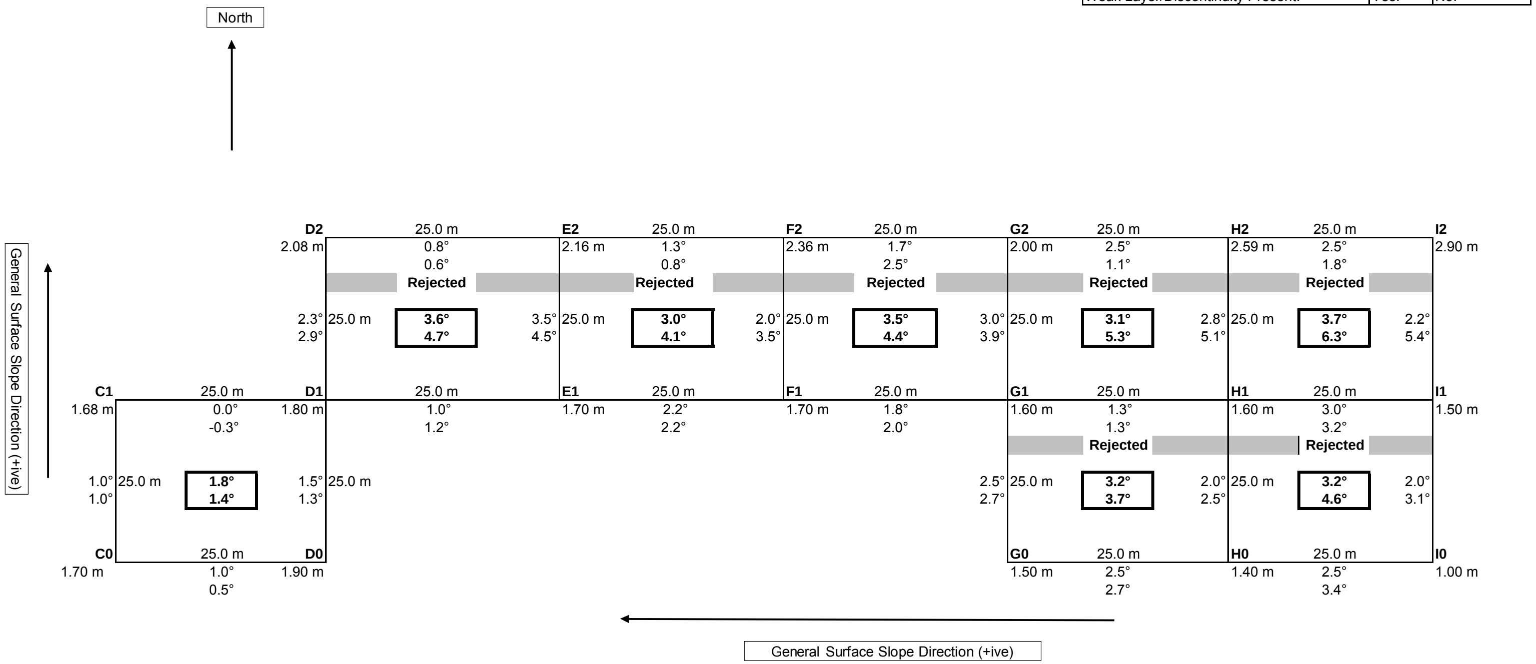
Max Slope at Ground Surface:	3.7°
Downslope:	2.2°
Orthogonal Direction:	3.0°
Resultant:	3.7°

Max Slope at Base of Peat:	6.3°
Downslope:	5.4°
Orthogonal Direction:	3.2°
Resultant:	6.3°

Comments:

Peat Depth :	1.0 m - 2.90 m
Min Undrained Shear Strength:	kPa at Depth = m

Gauge Auger Sampling:	Yes:	No: X
Weak Layer/Discontinuity Present:	Yes:	No:



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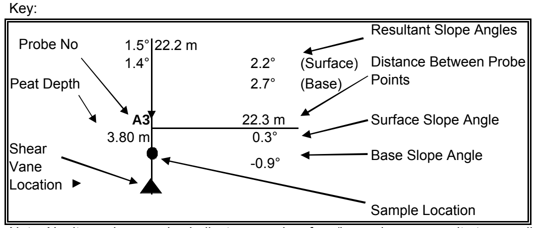


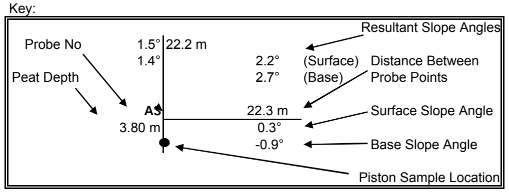
Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T24-25R**

Max Slope at Ground Surface:	3.6°
Downslope:	2.1°
Orthogonal Direction:	2.9°
Resultant:	3.1°

Key:



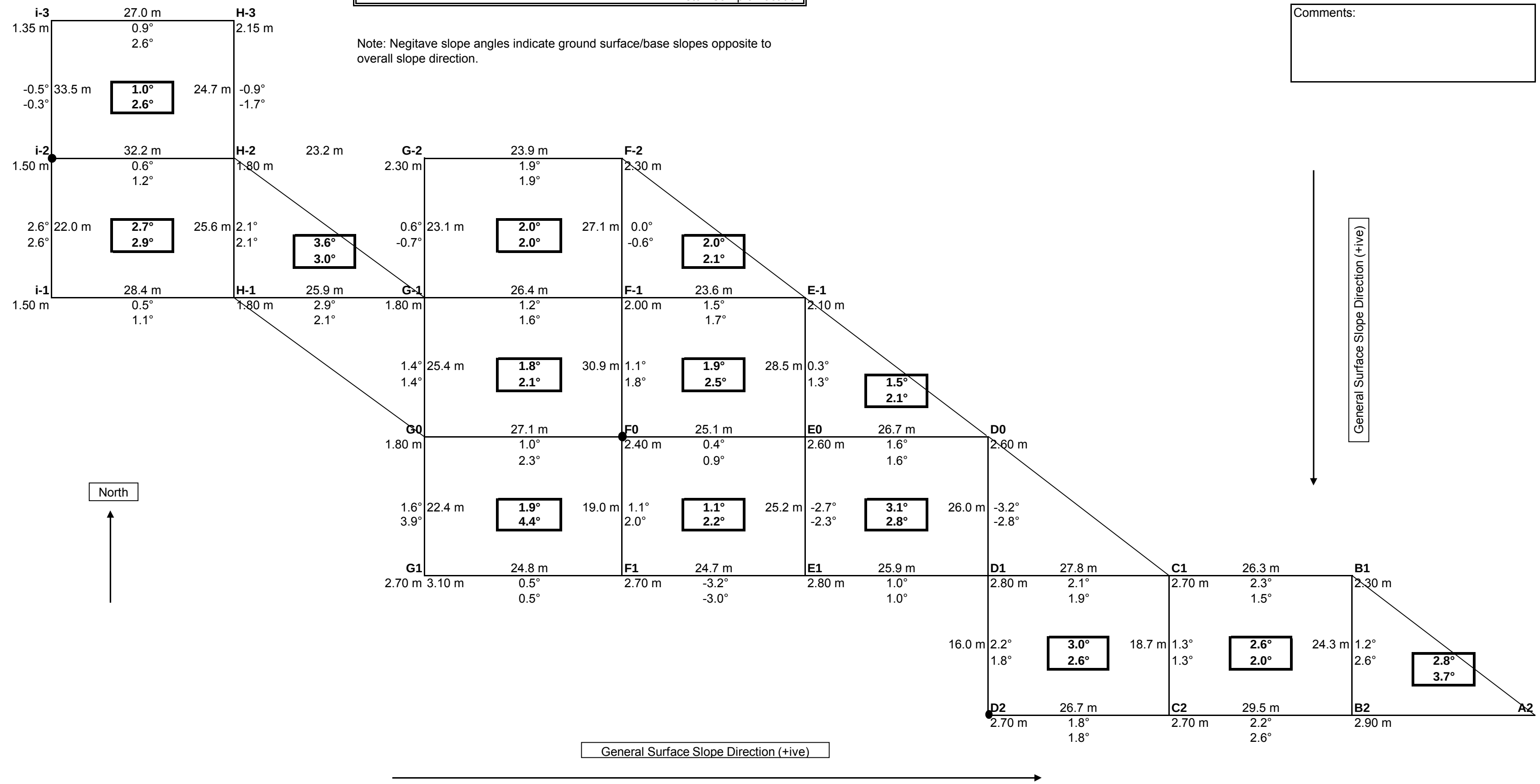
Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Max Slope at Base of Peat:	4.4°
Downslope:	2.3°
Orthogonal Direction:	3.9°
Resultant:	4.4°

Peat Depth :	1.35 m - 2.90 m
Min Undrained Shear Strength:	5.2 kPa at Depth = 2.0 m

Piston Sampling / Gauge Auger:	Yes: X	No:
Location:		
Weak Layer/Discontinuity Present:	Yes:	No: X

Comments:



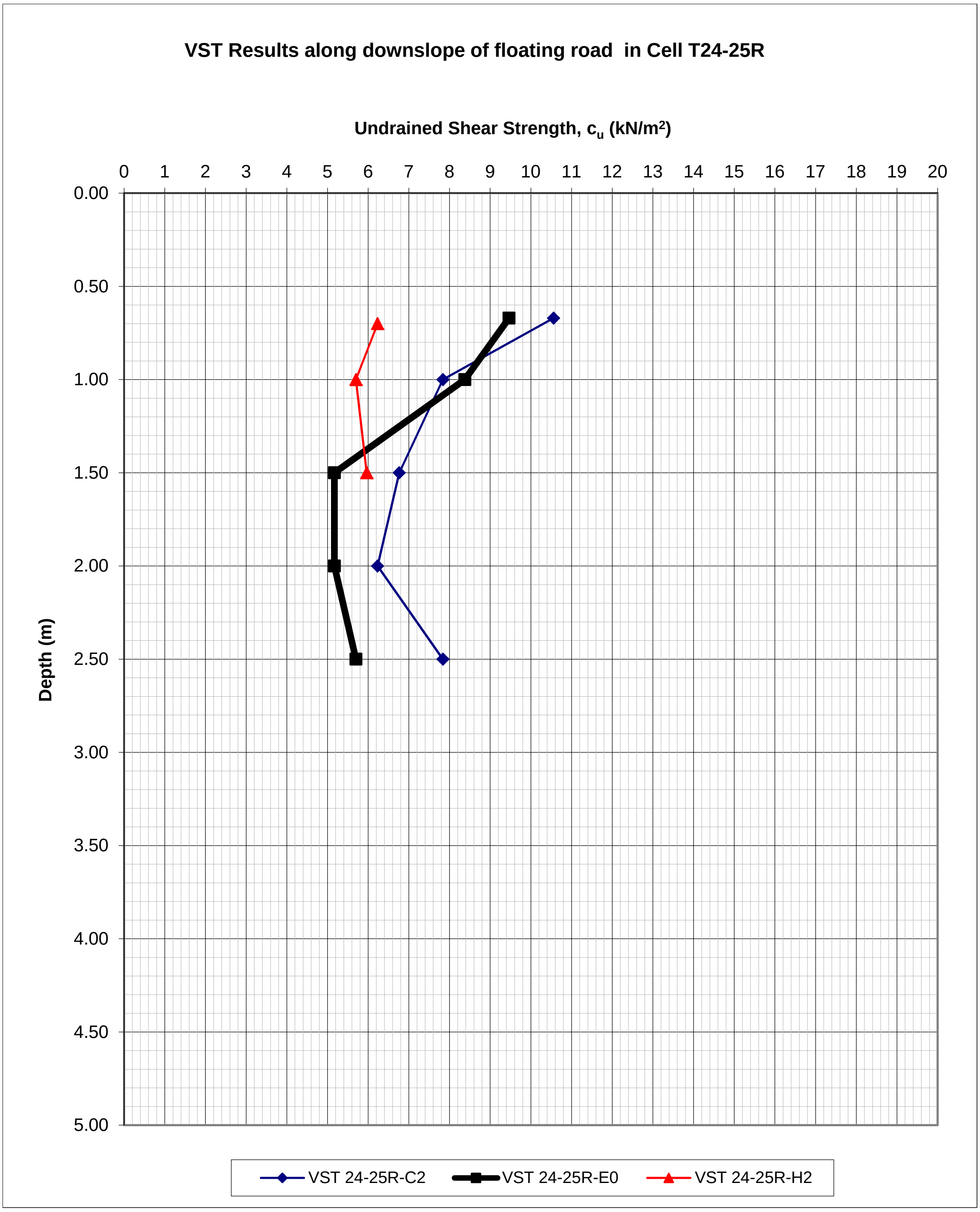
AGL Consulting *Geotechnical Engineers*	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 24-25R**

Test No. VST 24-25R-C2			Date:			Peat Depth (m) 2.7	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments
0.67	20.0	6.00	10.6				
1.00	15.0	5.00	7.8				
1.50	13.0	3.00	6.8				
2.00	12.0	4.00	6.2				
2.50	15.0	5.00	7.8				

Test No. VST 24-25R-E0			Date:			Peat Depth (m) 2.6	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments
0.67	18.0	6.00	9.5				
1.00	16.0	3.00	8.4				
1.50	10.0	3.00	5.2				
2.00	10.0	3.00	5.2				
2.50	11.0	3.00	5.7				

Test No. VST 24-25R-H2			Date:			Peat Depth (m) 1.8	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments
0.70	12.0	4.00	6.2				
1.00	11.0	3.00	5.7				
1.50	11.5	3.00	6.0				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T24-25R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 24-25R-C2
VST 24-25R-E0
VST 24-25R-H2

Peat Repository Site : T24/25R
Sliding Stability Analysis

Size of Repository Site = 111 x 98 m
Length of loaded area parallel to resultant slope direction = 147 m

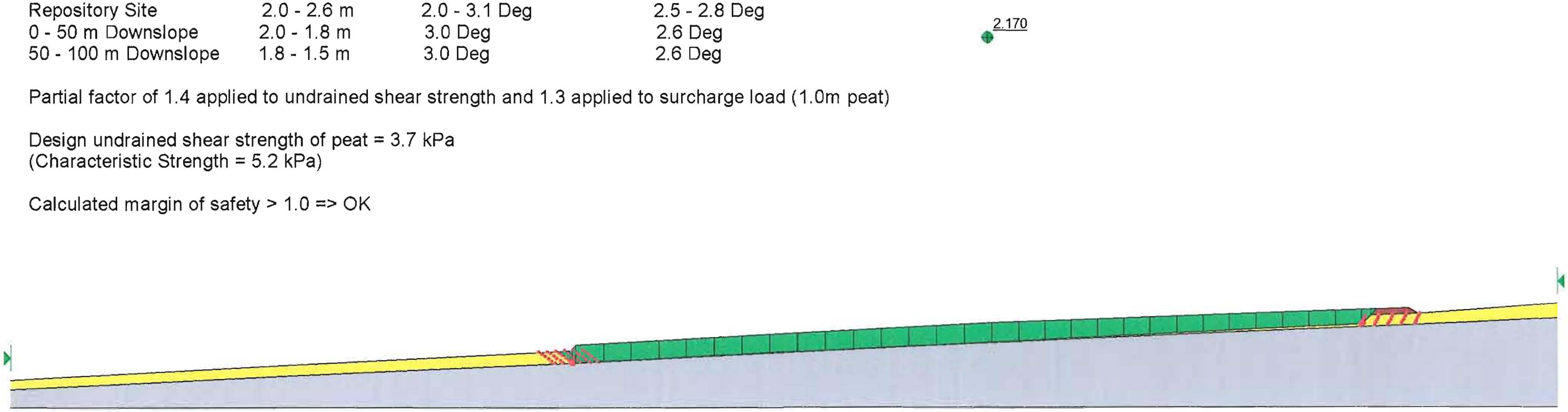
T24-25R

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.0 - 2.6 m	2.0 - 3.1 Deg	2.5 - 2.8 Deg
0 - 50 m Downslope	2.0 - 1.8 m	3.0 Deg	2.6 Deg
50 - 100 m Downslope	1.8 - 1.5 m	3.0 Deg	2.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T24/25R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu=2kPa) at base

T24-25R (2kPa)

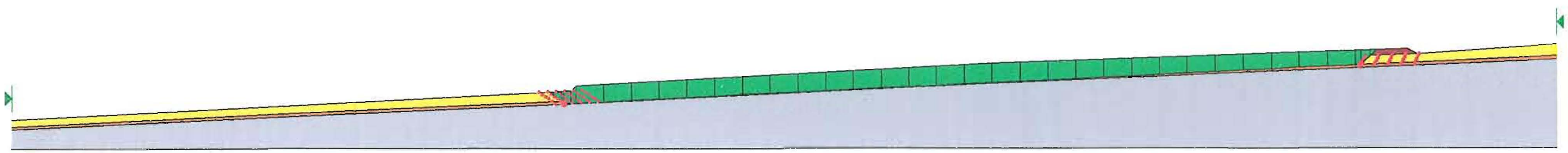
Size of Repository Site = 111 x 98 m
Length of loaded area parallel to resultant slope direction = 147 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.0 - 2.6 m	2.0 - 3.1 Deg	2.5 - 2.8 Deg
0 - 50 m Downslope	2.0 - 1.8 m	3.0 Deg	2.6 Deg
50 - 100 m Downslope	1.8 - 1.5 m	3.0 Deg	2.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*			**Record of Peat Repository Locations**	**Rep. No: T27R**

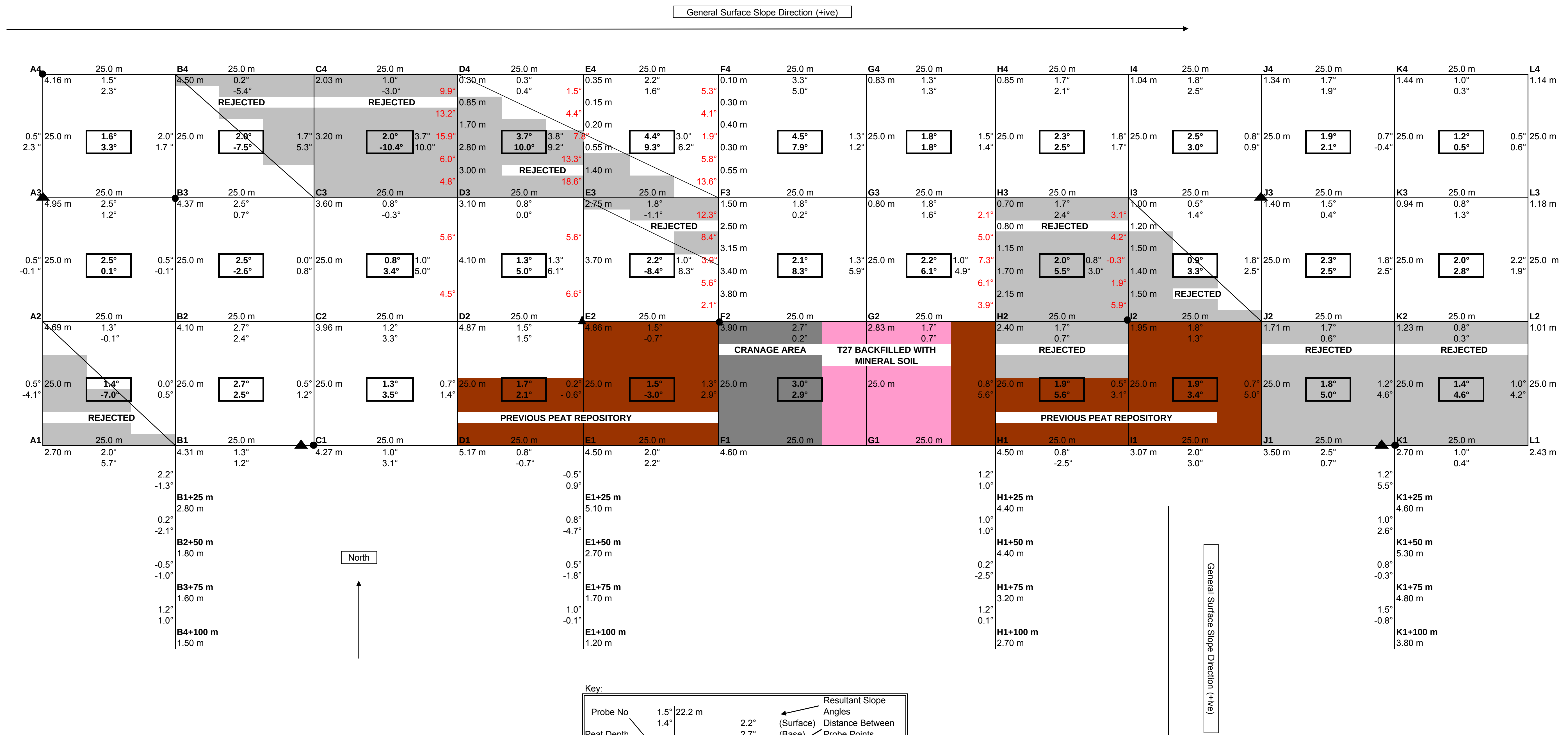
Max Slope at Ground Surface:	4.5°
Downslope:	3.0°
Orthogonal Direction:	3.3°
Resultant:	4.5°

Max Slope at Base of Peat:	-10.4°
Downslope:	10.0°
Orthogonal Direction:	-3.0°
Resultant:	-10.4°

Comments:

Peat Depth :	0.10 m - 5.17 m
Min Undrained Shear Strength:	4.1 kPa at Depth = 1.0 m

Gauge Auger Sampling:	Yes X	No
Weak Layer/Discontinuity Present:	Yes	No X



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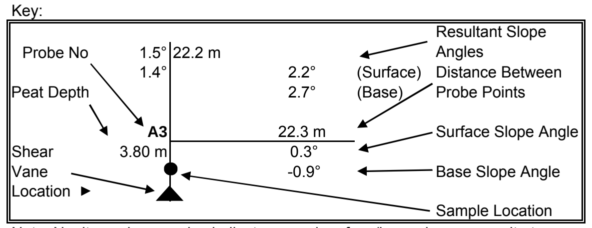


Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 27R**

Test No.		VST 27R-A3	Date:			Peat Depth (m) 4.95	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	11.0	3.0	5.7				
1.00	11.0	3.5	5.7				
1.50	12.0	2.0	6.2				
2.00	15.0	2.5	7.8				
2.50	10.0	3.0	5.2				
3.00	11.0	4.0	5.7				
3.50	12.0	3.5	6.2				
4.00	9.0	3.0	4.6				
4.65	17.0	3.5	8.9				

Test No.		VST 27R-C1	Date:			Peat Depth (m) 4.27	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	10.0	3.0	5.2				
1.00	14.0	3.0	7.3				
1.50	10.0	4.5	5.2				
2.00	11.0	4.0	5.7				
2.50	12.0	2.0	6.2				
3.00	15.0	3.5	7.8				
3.50	15.0	3.5	7.8				
4.00	19.0	3.0	10.0				

Test No.		VST 27R-E2	Date:			Peat Depth (m) 3.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	11.0	3.0	5.7				
1.00	8.0	4.0	4.1				
1.50	11.0	3.5	5.7				
2.00	12.0	2.5	6.2				
2.50	11.0	3.0	5.7				
3.00	9.5	3.0	4.9				
3.50	16.0	3.0	8.4				

Test No.		VST 27R-J3	Date:			Peat Depth (m) 1.40	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	10.0	2.0	5.2				
1.10	14.0	2.0	7.3				

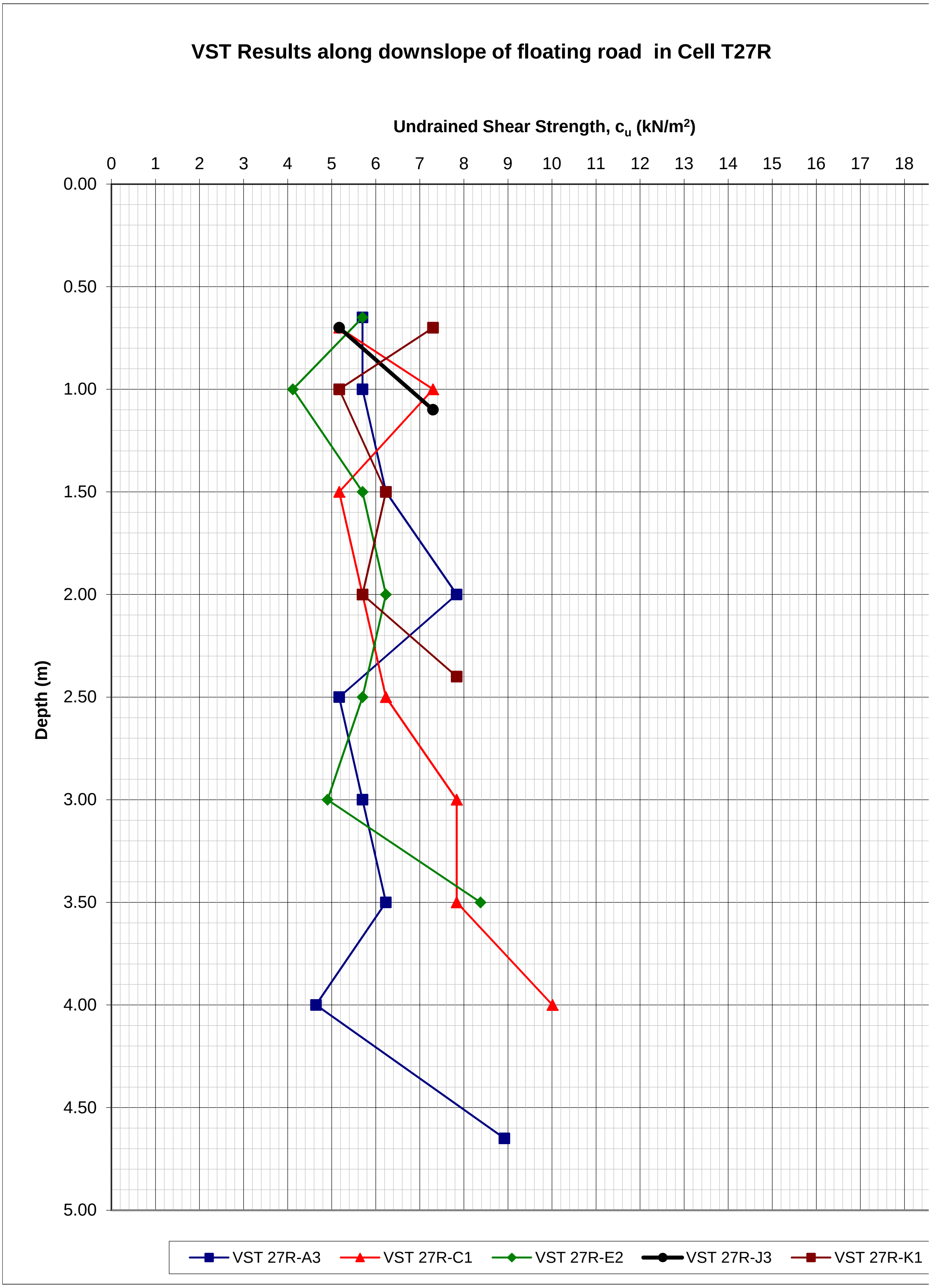
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No.27R**

Test No.		VST 27R-K1	Date:			Peat Depth (m) 2.70	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	14.0	3.0	7.3				
1.00	10.0	3.0	5.2				
1.50	12.0	2.5	6.2				
2.00	11.0	2.0	5.7				
2.40	15.0	2.0	7.8				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	



VST Results along downslope of floating road in Cell T27R
Undrained Shear Strength, c_u (kN/m^2)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 27R-A3
VST 27R-C1
VST 27R-E2
VST 27R-J3
VST 27R-K1

Peat Repository Site : T27R
Sliding Stability Analysis

T27R

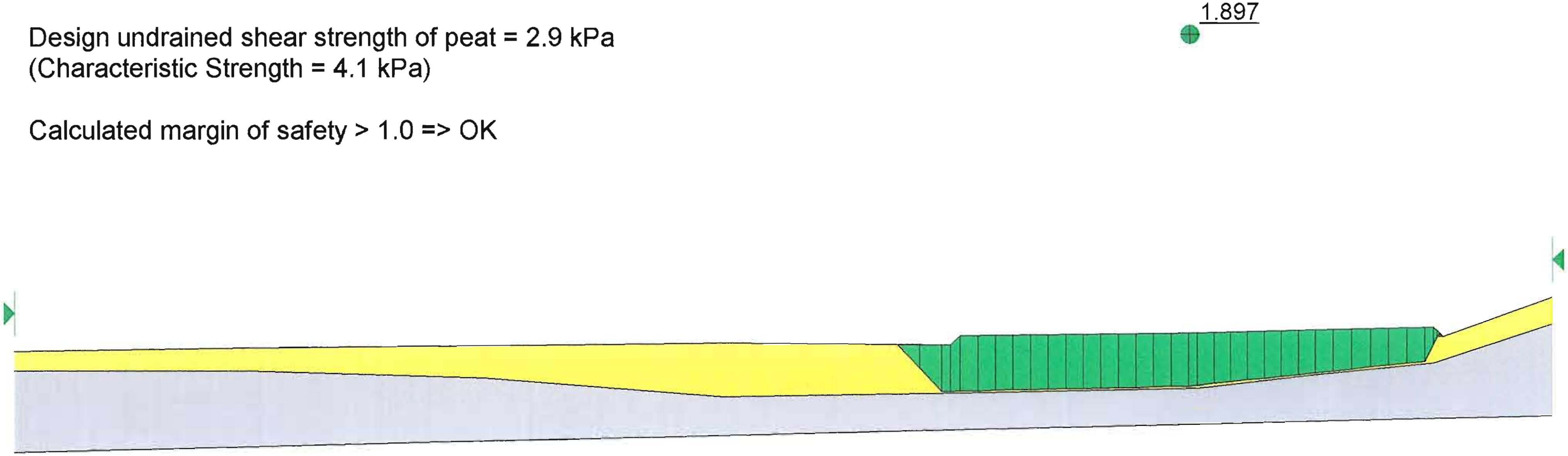
Size of Repository Site = 75 x 275 m
Length of loaded area parallel to resultant slope direction = 50.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.8 - 5.1 m	1.3 - 0.7 Deg	5.6 - 6.6 Deg
0 - 25 m Downslope	5.1 - 5.7 m	-0.5 Deg	0.9 Deg
25 - 50 m Downslope	5.7 - 3.4 m	0.8 Deg	4.7 Deg
50 - 75 m Downslope	3.4 - 2.4 m	0.5 Deg	1.8 Deg
75 - 100 m Downslope	2.4 - 2.0 m	1.0 Deg	0.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T27R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

T27R (2kPa)

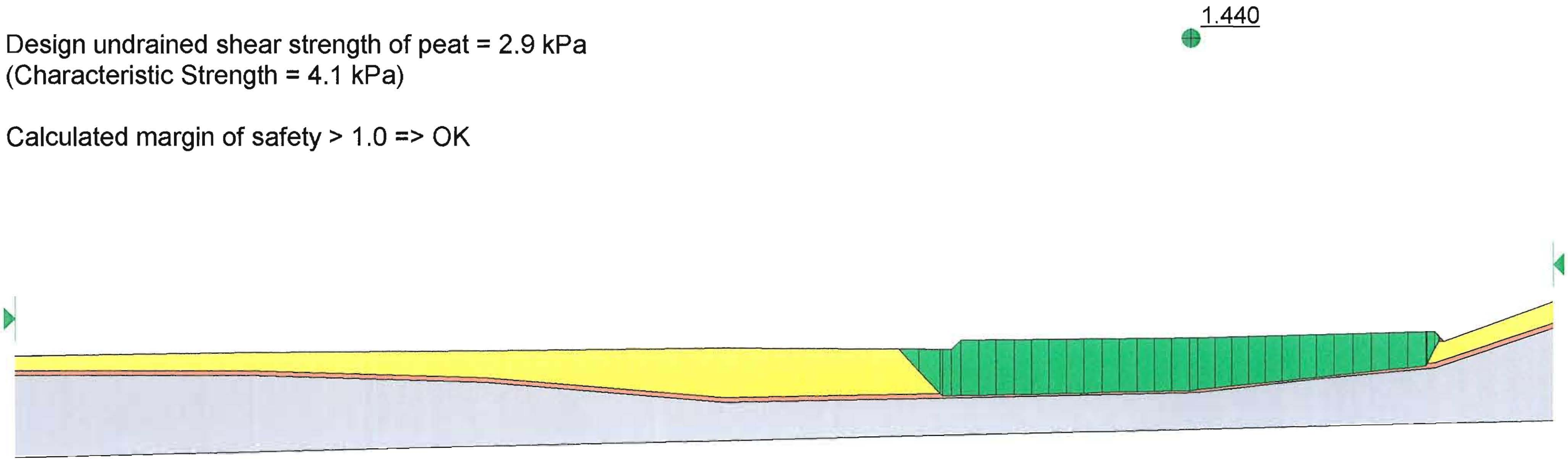
Size of Repository Site = 75 x 275 m
Length of loaded area parallel to resultant slope direction = 50.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.8 - 5.1 m	1.3 - 0.7 Deg	5.6 - 6.6 Deg
0 - 25 m Downslope	5.1 - 5.7 m	-0.5 Deg	0.9 Deg
25 - 50 m Downslope	5.7 - 3.4 m	0.8 Deg	4.7 Deg
50 - 75 m Downslope	3.4 - 2.4 m	0.5 Deg	1.8 Deg
75 - 100 m Downslope	2.4 - 2.0 m	1.0 Deg	0.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T27R
Sliding Stability Analysis

T27R

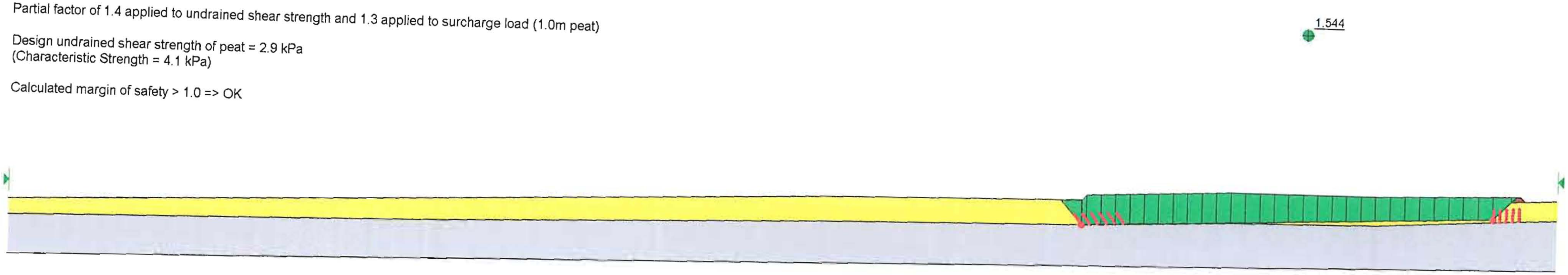
Size of Repository Site = 75 x 275 m
Length of loaded area parallel to resultant slope direction = 90.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.1 - 5.3 m	1.6 - 2.5 Deg	3.3 - 2.5 Deg
0 - 54 m Downslope	5.3 - 5.2 m	1.0 Deg	0.8 Deg
54 - 134 m Downslope	5.2 - 4.5 m	2.0 Deg	1.5 Deg
134 - 224 m Downslope	4.5 - 3.3 m	1.8 Deg	1.0 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T27R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

T27R (2kPa)

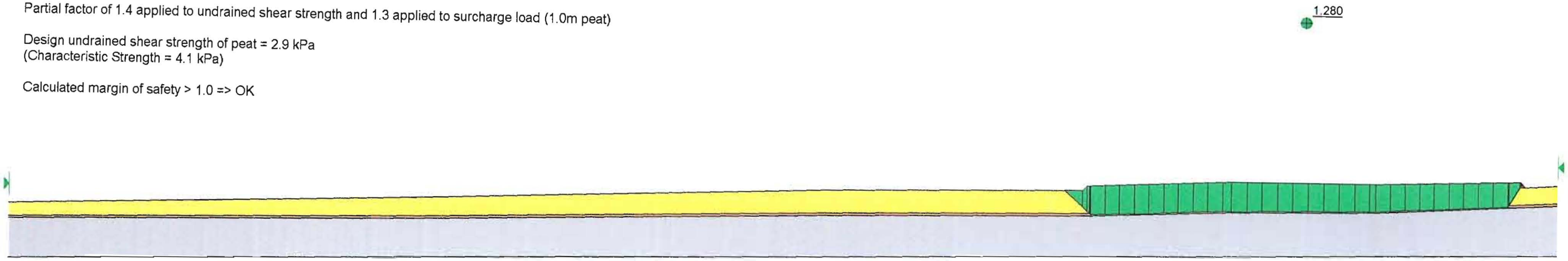
Size of Repository Site = 75 x 275 m
Length of loaded area parallel to resultant slope direction = 90.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.1 - 5.3 m	1.6 - 2.5 Deg	3.3 - 2.5 Deg
0 - 54 m Downslope	5.3 - 5.2 m	1.0 Deg	0.8 Deg
54 - 134 m Downslope	5.2 - 4.5 m	2.0 Deg	1.5 Deg
134 - 224 m Downslope	4.5 - 3.3 m	1.8 Deg	1.0 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T27R
Sliding Stability Analysis

T27R

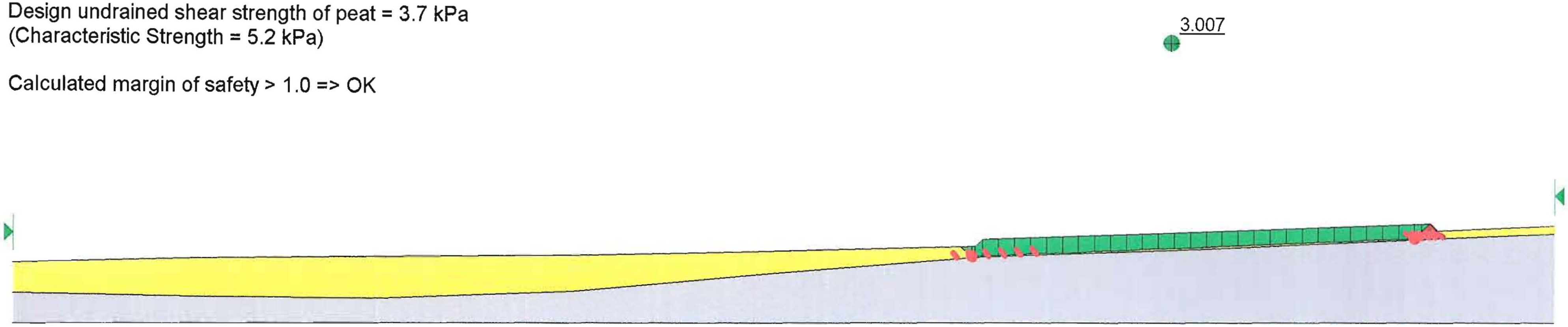
Size of Repository Site = 75 x 275 m
Length of loaded area parallel to resultant slope direction = 60.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.0 - 1.4 m	2.5 - 2.3 Deg	3.0 - 2.5 Deg
0 - 25 m Downslope	1.4 - 3.1 m	1.8 Deg	5.0 Deg
25 - 50 m Downslope	3.1 - 4.8 m	1.6 Deg	5.5 Deg
50 - 75 m Downslope	4.8 - 5.5 m	1.0 Deg	2.6 Deg
75 - 100 m Downslope	5.5 - 5.1 m	0.8 Deg	-0.3 Deg
100 - 125 m Downslope	5.1 - 4.1 m	1.5 Deg	-0.8 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T27R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

T27R (2kPa)

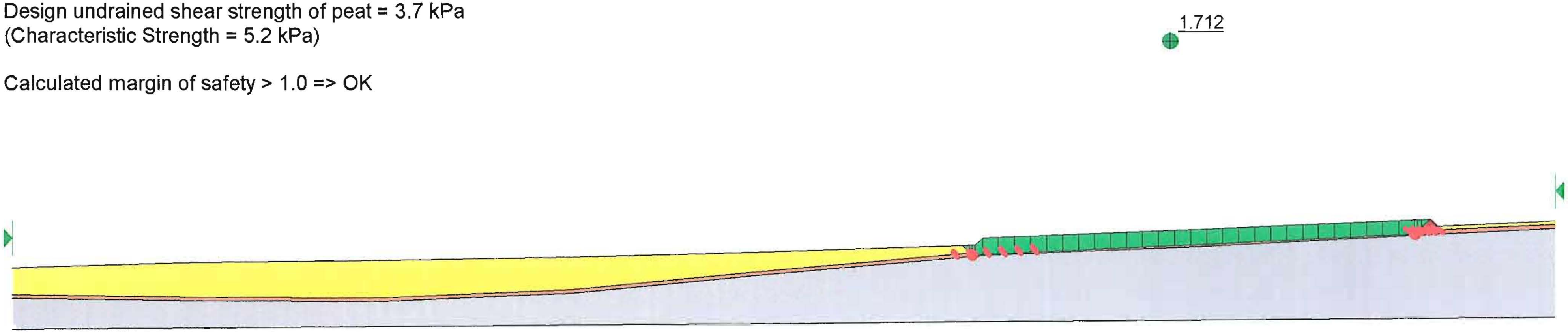
Size of Repository Site = 75 x 275 m
Length of loaded area parallel to resultant slope direction = 60.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.0 - 1.4 m	2.5 - 2.3 Deg	3.0 - 2.5 Deg
0 - 25 m Downslope	1.4 - 3.1 m	1.8 Deg	5.0 Deg
25 - 50 m Downslope	3.1 - 4.8 m	1.6 Deg	5.5 Deg
50 - 75 m Downslope	4.8 - 5.5 m	1.0 Deg	2.6 Deg
75 - 100 m Downslope	5.5 - 5.1 m	0.8 Deg	-0.3 Deg
100 - 125 m Downslope	5.1 - 4.1 m	1.5 Deg	-0.8 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T30R**

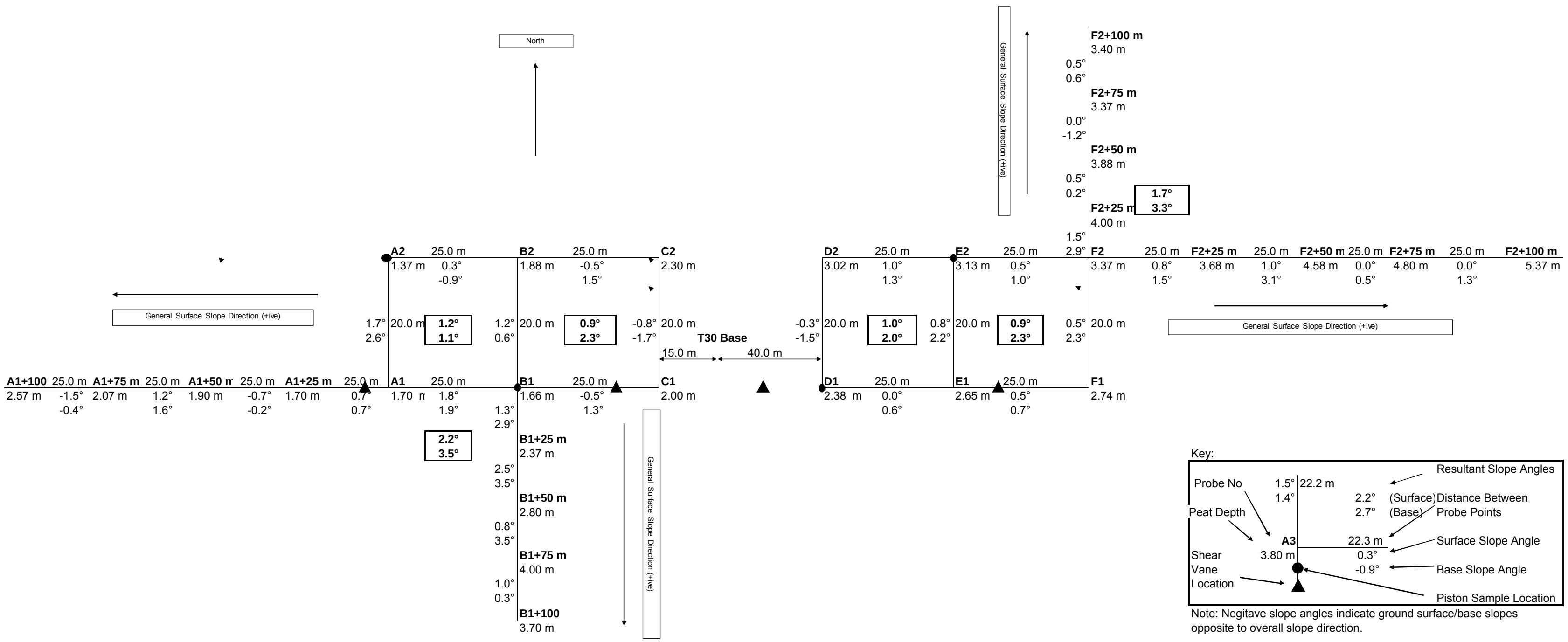
Max Slope at Ground	1.2°
Downslope:	1.2°
Orthogonal Direction:	0.3°
Resultant:	1.2°

Max Slope at Base of Peat:	2.3°
Downslope:	2.2°
Orthogonal Direction:	0.7°
Resultant:	2.3°

Comments:

Peat Depth :	1.37 m - 3.37 m
Min Undrained Shear Strength:	4.1 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Derrybrien Wind Farm Additional Ground Investigation

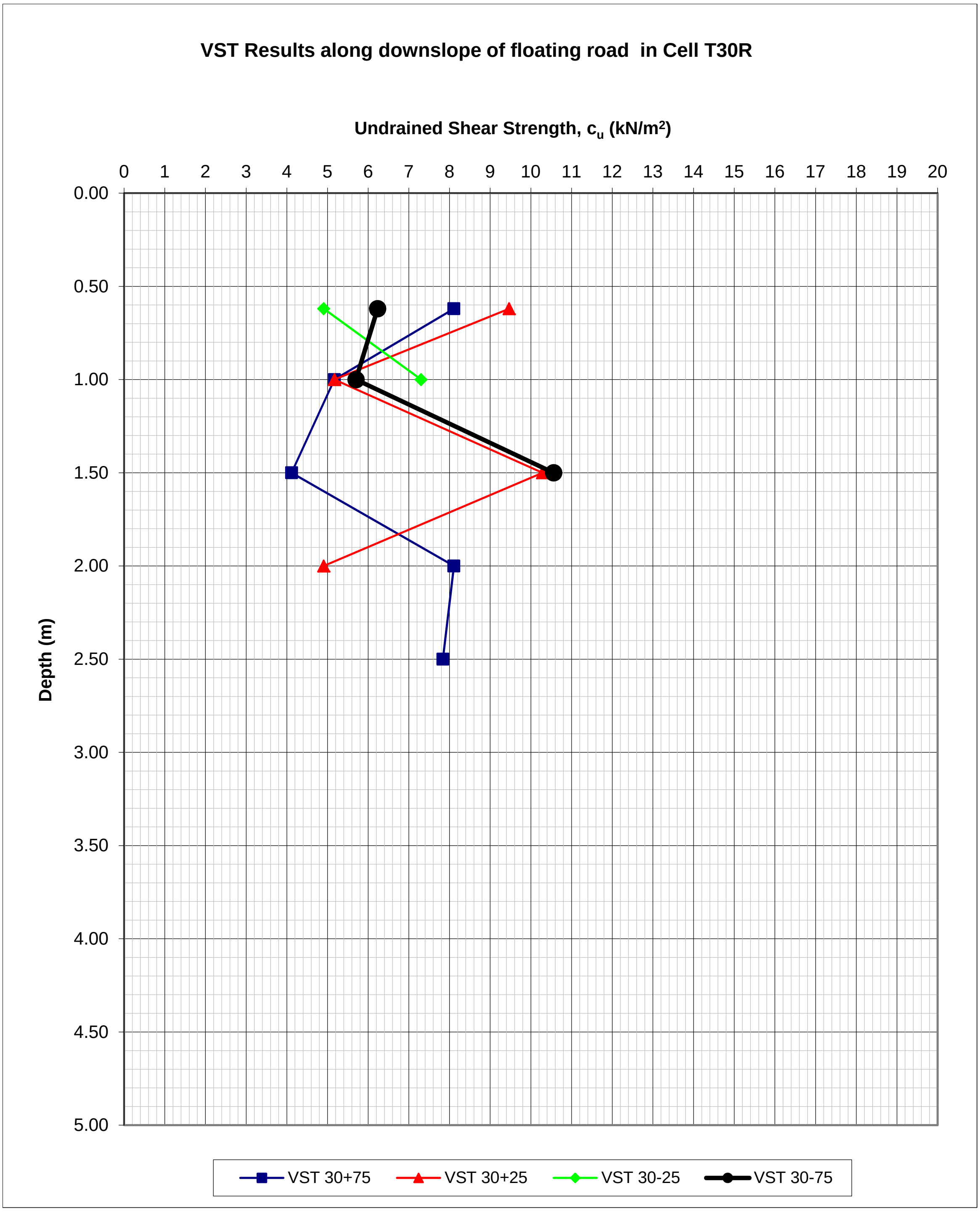
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 30R**

Test No.		VST 30+75	Date:			Peat Depth (m) 2.65	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	15.5	6.50	8.1				
1.00	10.0	5.00	5.2				
1.50	8.0	5.50	4.1				
2.00	15.5	5.50	8.1				
2.50	15.0	3.00	7.8				

Test No.		VST 30+25	Date:			Peat Depth (m) 2.03	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	18.0	5.00	9.5				
1.00	10.0	4.00	5.2				
1.50	19.5	6.00	10.3				
2.00	9.5	3.00	4.9				

Test No.		VST 30-25	Date:			Peat Depth (m) 1.32	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	9.5	4.50	4.9				
1.00	14.0	4.00	7.3				

Test No.		VST 30-75	Date:			Peat Depth (m) 1.63	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	12.0	7.00	6.2				
1.00	11.0	4.00	5.7				
1.50	20.0	4.50	10.6				


VST Results along downslope of floating road in Cell T30R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
VST 30+75
VST 30+25
VST 30-25
VST 30-75

T30R (2kPa)

Peat Repository Site : T30R
Sliding Stability Analysis with 0.5 m thick layer of very wek peat (cu = 2kPa) at base

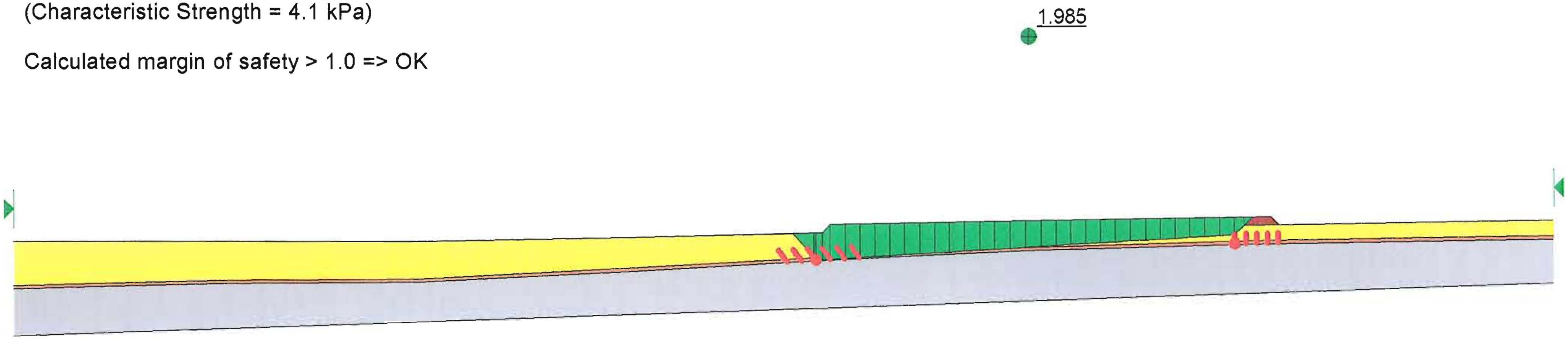
Size of Repository Site = 20 x 50 m
Length of loaded area parallel to resultant slope direction = 54 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.3 - 3.4 m	1.0 - 0.9 Deg	2.0 - 2.3 Deg
0 - 25 m Downslope	3.4 - 4.1 m	1.7 Deg	3.3 Deg
25 - 50 m Downslope	4.1 - 5.0 m	1.0 Deg	3.0 Deg
50 - 75 m Downslope	5.0 - 5.2 m	0.0 Deg	0.5 Deg
75 - 100 m Downslope	5.2 - 5.6 m	0.0 Deg	1.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T30R

Peat Repository Site : T30R
Sliding Stability Analysis

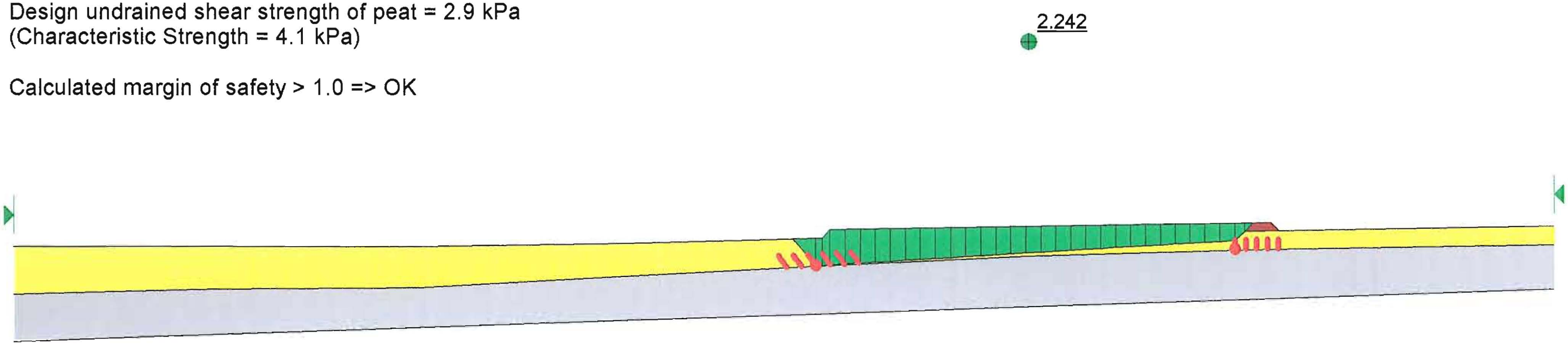
Size of Repository Site = 20 x 50 m
Length of loaded area parallel to resultant slope direction = 54 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.3 - 3.4 m	1.0 - 0.9 Deg	2.0 - 2.3 Deg
0 - 25 m Downslope	3.4 - 4.1 m	1.7 Deg	3.3 Deg
25 - 50 m Downslope	4.1 - 5.0 m	1.0 Deg	3.0 Deg
50 - 75 m Downslope	5.0 - 5.2 m	0.0 Deg	0.5 Deg
75 - 100 m Downslope	5.2 - 5.6 m	0.0 Deg	1.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting Geotechnical Engineers		Record of Peat Repository Locations	Rep. No: T33R

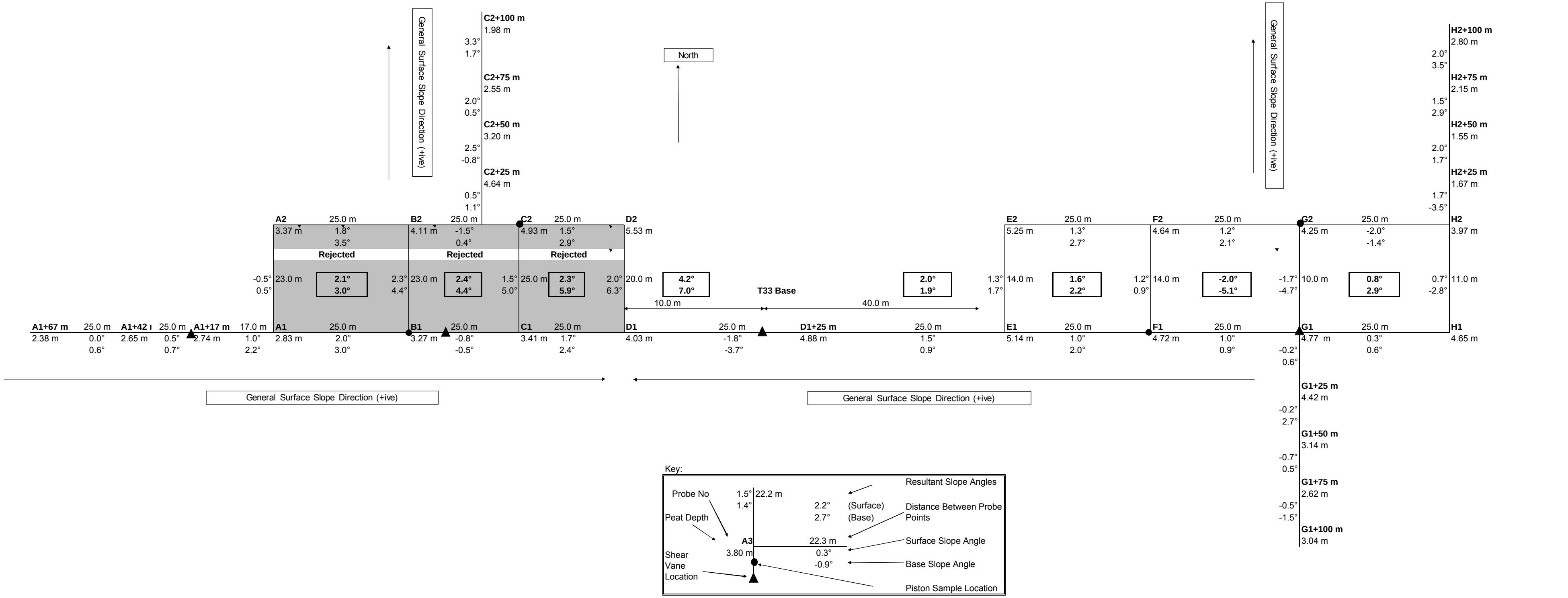
Max Slope at Ground Surface:	-2.0°
Downslope:	-1.7°
Orthogonal Direction:	1.2°
Resultant:	-2.0°

Max Slope at Base of Peat:	-5.1°
Downslope:	-4.7°
Orthogonal Direction:	2.1°
Resultant:	-5.1°

Comments:

Peat Depth :	3.97 m - 5.25 m
Min Undrained Shear Strength:	4.1 kPa at Depth = 2.0 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 33R**

Test No. VST 33-100 | Date: | Peat Depth (m) 2.60

Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments
0.62	13.0	6.50	6.8				
1.00	12.0	5.50	6.2				
1.50	12.0	4.50	6.2				
2.00	10.0	4.00	5.2				
2.50	11.0	5.50	5.7				

Test No. VST 33-50 | Date: | Peat Depth (m) 2.55

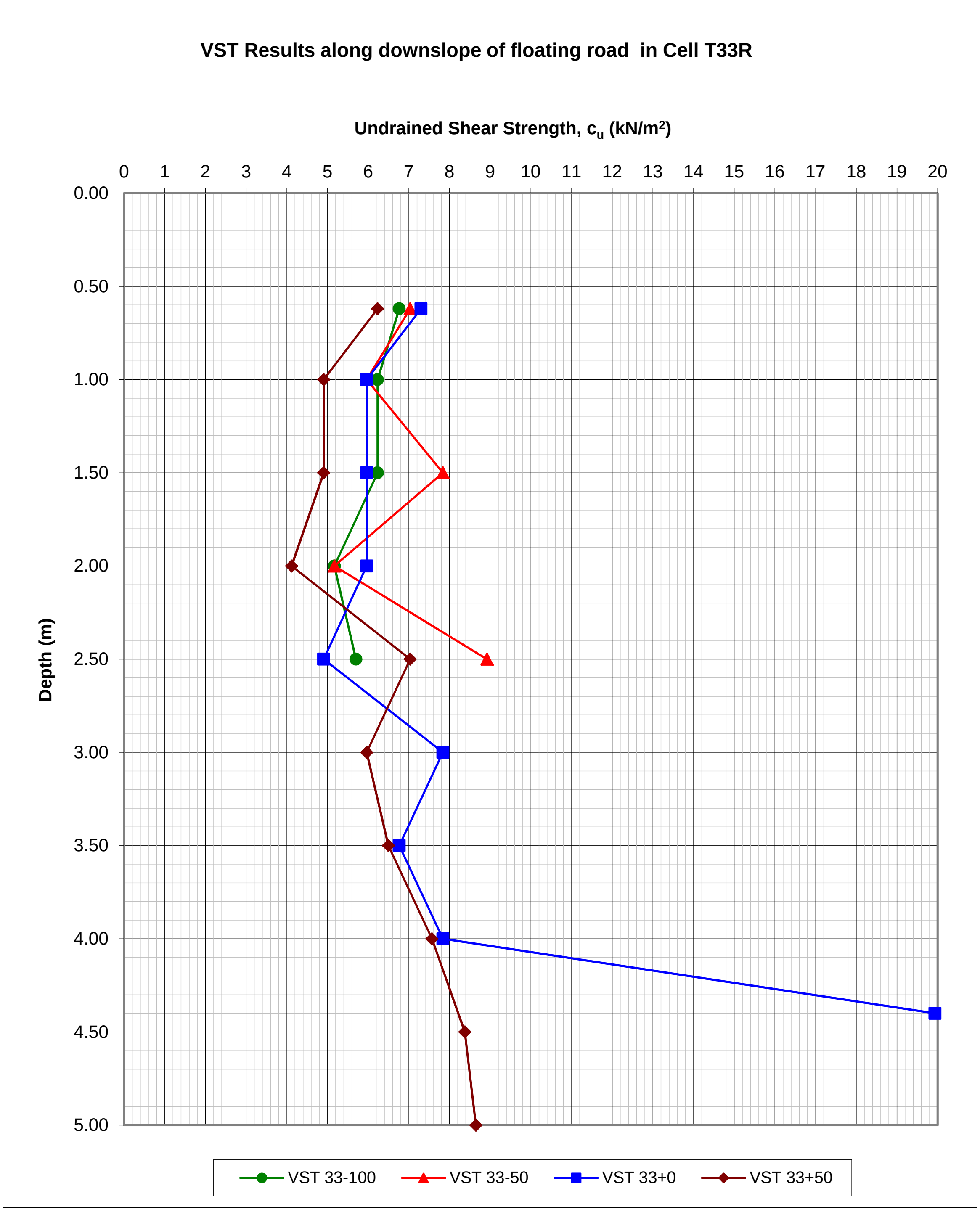
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments
0.62	13.5	5.50	7.0				
1.00	11.5	5.50	6.0				
1.50	15.0	4.00	7.8				
2.00	10.0	3.50	5.2				
2.50	17.0	3.00	8.9				

Test No. VST 33+0 | Date: | Peat Depth (m) 4.45

Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments
0.62	14.0	4.50	7.3				
1.00	11.5	4.00	6.0				
1.50	11.5	4.00	6.0				
2.00	11.5	3.50	6.0				
2.50	9.5	4.50	4.9				
3.00	15.0	5.00	7.8				
3.50	13.0	4.00	6.8				
4.00	15.0	5.00	7.8				
4.40	36.5	5.50	19.9				

Test No. VST 33+50 | Date: | Peat Depth (m) 5.20

Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	Co-ordinates N (m)	Elevation (mOD)	Comments
0.62	12.0	5.50	6.2				
1.00	9.5	5.00	4.9				
1.50	9.5	4.50	4.9				
2.00	8.0	5.50	4.1				
2.50	13.5	4.50	7.0				
3.00	11.5	5.00	6.0				
3.50	12.5	4.50	6.5				
4.00	14.5	4.00	7.6				
4.50	16.0	4.00	8.4				
5.00	16.5	5.00	8.6				


VST Results along downslope of floating road in Cell T33R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
VST 33-100
VST 33-50
VST 33+0
VST 33+50

T33R

Peat Repository Site : T33R
Sliding Stability Analysis

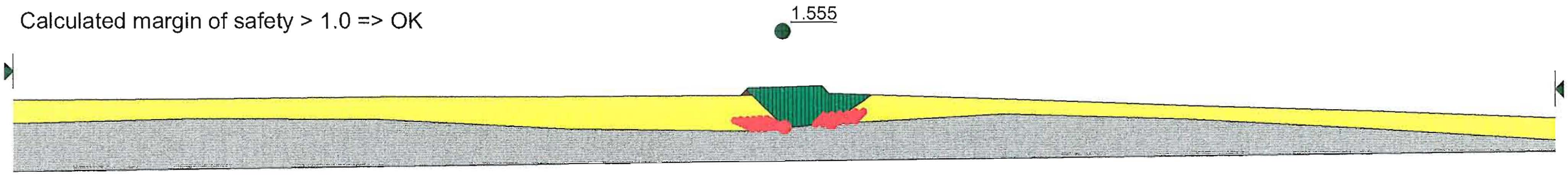
Size of Repository Site = 10 x 75 m
Length of loaded area parallel to resultant slope direction = 10 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.8 - 4.2 m	-2.0 Deg	-5.1 Deg
0 - 25 m Downslope	4.2 - 2.0 m	1.7 Deg	-3.5 Deg
25 - 50 m Downslope	2.0 - 1.8 m	2.0 Deg	1.7 Deg
50 - 75 m Downslope	1.8 - 2.4 m	1.5 Deg	2.9 Deg
75 - 100 m Downslope	2.4 - 3.0 m	2.0 Deg	3.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T33R (2kPa)

Peat Repository Site : T33R
Sliding Stability Analysis with 0.5 m thick layer of very wek peat (cu = 2kPa) at base

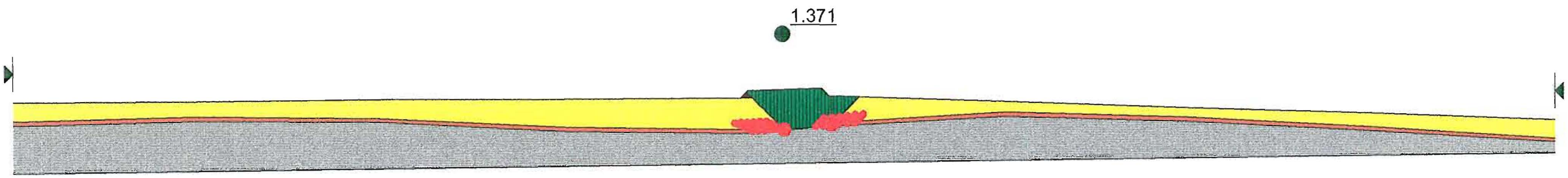
Size of Repository Site = 10 x 75 m
Length of loaded area parallel to resultant slope direction = 10 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.8 - 4.2 m	-2.0 Deg	-5.1 Deg
0 - 25 m Downslope	4.2 - 2.0 m	1.7 Deg	-3.5 Deg
25 - 50 m Downslope	2.0 - 1.8 m	2.0 Deg	1.7 Deg
50 - 75 m Downslope	1.8 - 2.4 m	1.5 Deg	2.9 Deg
75 - 100 m Downslope	2.4 - 3.0 m	2.0 Deg	3.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T33R

Peat Repository Site : T33R
Sliding Stability Analysis

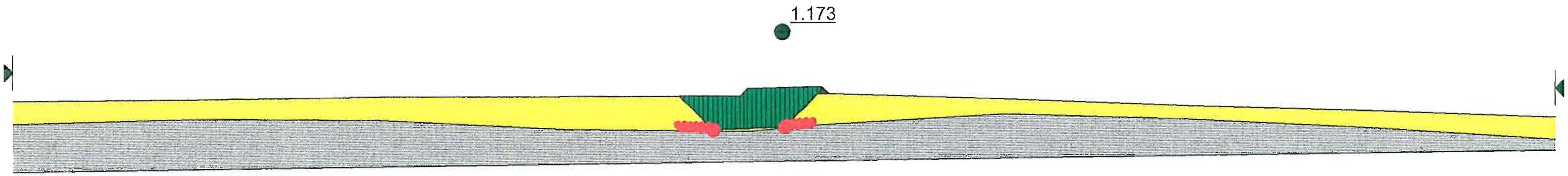
Size of Repository Site = 10 x 75 m
Length of loaded area parallel to resultant slope direction = 10 m

	Peat Depth	Surface Slope Angle	Base
Repository Site	4.2 - 4.8 m	2.0 Deg	5.1 Deg
0 - 25 m Downslope	4.8 - 4.4 m	0.2 Deg	-0.6 Deg
25 - 50 m Downslope	4.4 - 3.1 m	0.2 Deg	-2.7 Deg
50 - 75 m Downslope	3.1 - 2.6 m	0.7 Deg	-0.5 Deg
75 - 100 m Downslope	2.6 - 3.1 m	0.5 Deg	1.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0 m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T33R
Sliding Stability Analysis with 0.5 m thick layer of very wek peat (cu = 2kPa) at base

T33R (2kPa)

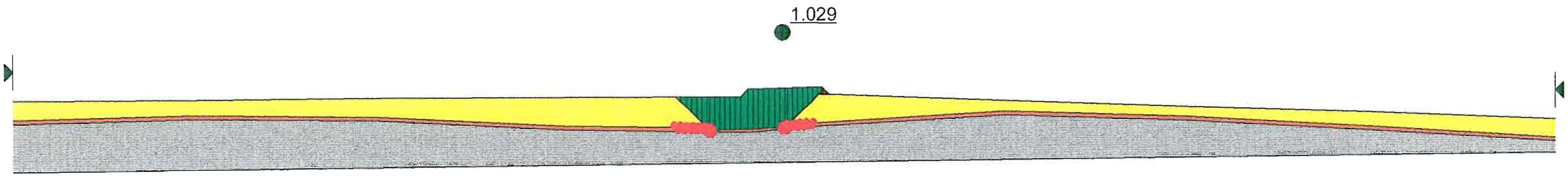
Size of Repository Site = 10 x 75 m
Length of loaded area parallel to resultant slope direction = 10 m

	Peat Depth	Surface Slope Angle	Base
Repository Site	4.2 - 4.8 m	2.0 Deg	5.1 Deg
0 - 25 m Downslope	4.8 - 4.4 m	0.2 Deg	-0.6 Deg
25 - 50 m Downslope	4.4 - 3.1 m	0.2 Deg	-2.7 Deg
50 - 75 m Downslope	3.1 - 2.6 m	0.7 Deg	-0.5 Deg
75 - 100 m Downslope	2.6 - 3.1 m	0.5 Deg	1.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0 m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting Geotechnical Engineers		**Record of Peat Repository Locations**	**Rep. No: T36R**

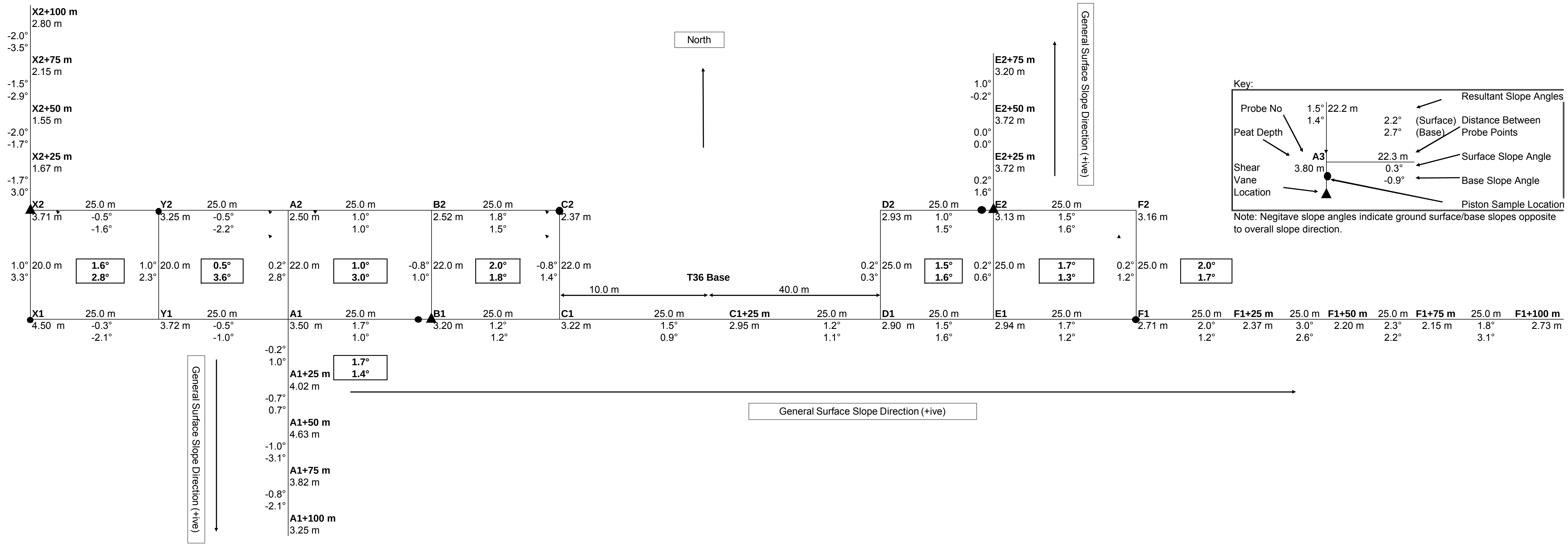
Max Slope at Ground Surface	1.7°
Downslope:	0.2°
Orthogonal Direction:	1.7°
Resultant:	1.7°

Max Slope at Base of Peat:	3.6°
Downslope:	2.8°
Orthogonal Direction:	1.0°
Resultant:	3.6°

Comments:

Peat Depth :	2.37 m - 4.50 m
Min Undrained Shear Strength	3.6 kPa at Depth = 2.0 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



T36R

Peat Repository Site : T36R
Sliding Stability Analysis

Size of Repository Site = 22 x 100 m
Length of loaded area parallel to resultant slope direction = 102.0 m

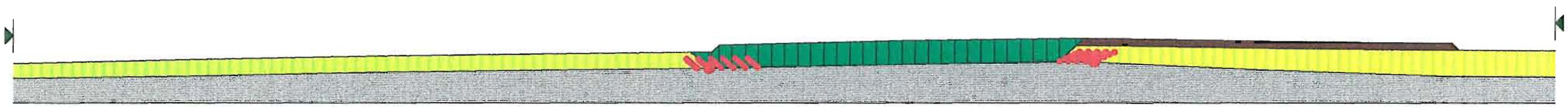
	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.7 - 2.5 m	-2.0 - 1.8 Deg	-1.6 - 1.5 Deg
0 - 25 m Downslope	2.5 - 2.2 m	1.5 Deg	0.9 Deg
25 - 50 m Downslope	2.2 - 2.2 m	1.2 Deg	1.1 Deg
50 - 75 m Downslope	2.2 - 2.0 m	1.5 Deg	1.6 Deg
75 - 100 m Downslope	3.2 - 3.0 m	1.7 Deg	1.2 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

1.977

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T36R (2kPa)

Peat Repository Site : T36R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2 kPa) at Base

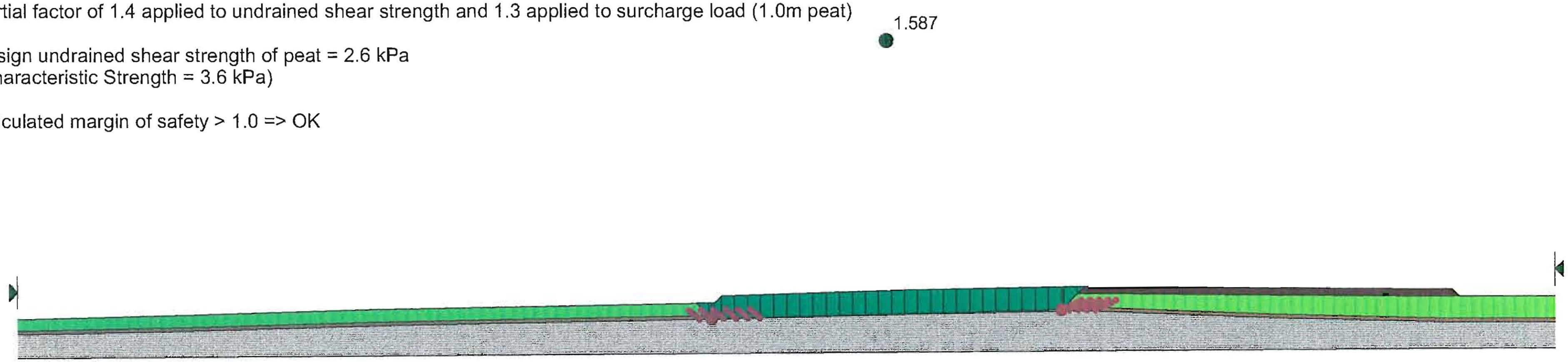
Size of Repository Site = 22 x 100 m
Length of loaded area parallel to resultant slope direction = 102.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.7 - 2.5 m	-2.0 - 1.8 Deg	-1.6 - 1.5 Deg
0 - 25 m Downslope	2.5 - 2.2 m	1.5 Deg	0.9 Deg
25 - 50 m Downslope	2.2 - 2.2 m	1.2 Deg	1.1 Deg
50 - 75 m Downslope	2.2 - 2.0 m	1.5 Deg	1.6 Deg
75 - 100 m Downslope	3.2 - 3.0 m	1.7 Deg	1.2 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T36R

Peat Repository Site : T36R
Sliding Stability Analysis

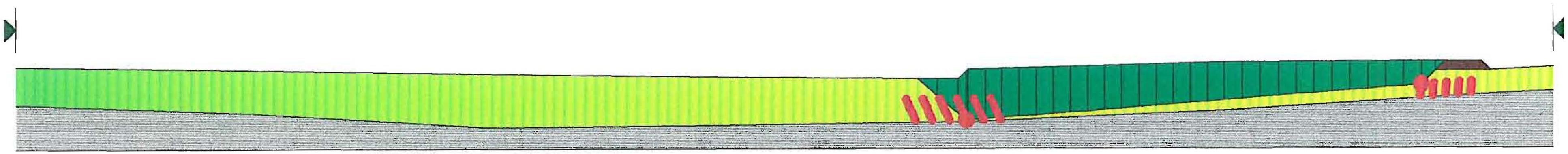
Size of Repository Site = 22 x 100 m
Length of loaded area parallel to resultant slope direction = 54.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.5 m	0.5 - 1.6 Deg	3.6 - 2.8 Deg
0 - 25 m Downslope	4.5 - 5.0 m	-0.2 Deg	1.0 Deg
25 - 50 m Downslope	5.0 - 5.6 m	-0.7 Deg	0.7 Deg
50 - 75 m Downslope	5.6 - 4.6 m	-1.0 Deg	-3.1 Deg
75 - 100 m Downslope	4.6 - 4.0 m	-0.8 Deg	-2.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat) 1.574

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T36R (2kPa)

Peat Repository Site : T36R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2 kPa) at Base

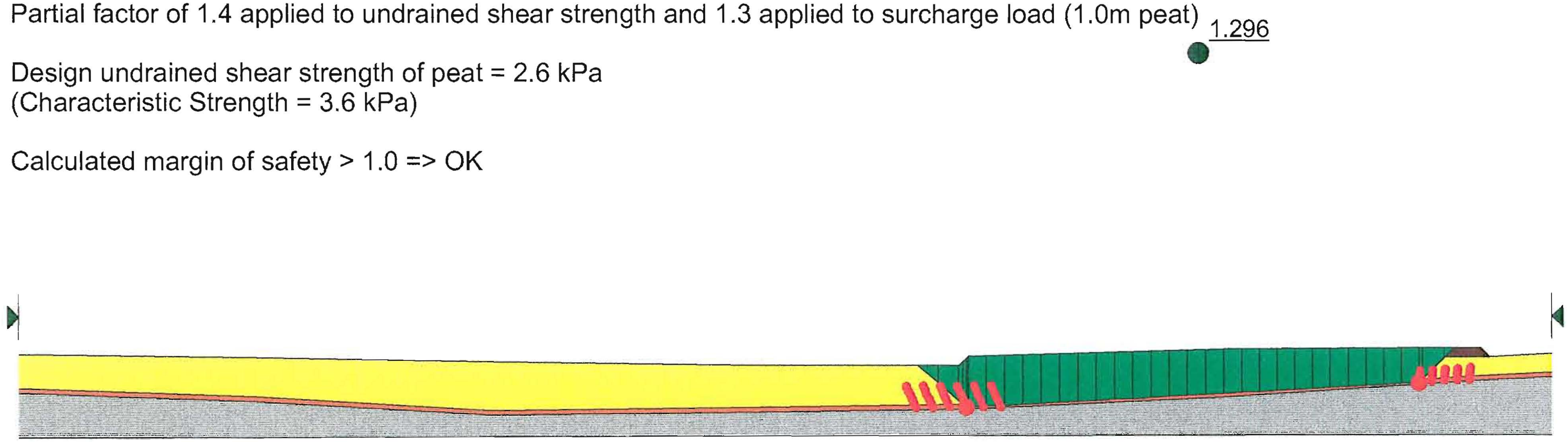
Size of Repository Site = 22 x 100 m
Length of loaded area parallel to resultant slope direction = 54.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 4.5 m	0.5 - 1.6 Deg	3.6 - 2.8 Deg
0 - 25 m Downslope	4.5 - 5.0 m	-0.2 Deg	1.0 Deg
25 - 50 m Downslope	5.0 - 5.6 m	-0.7 Deg	0.7 Deg
50 - 75 m Downslope	5.6 - 4.6 m	-1.0 Deg	-3.1 Deg
75 - 100 m Downslope	4.6 - 4.0 m	-0.8 Deg	-2.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Ground Investigation

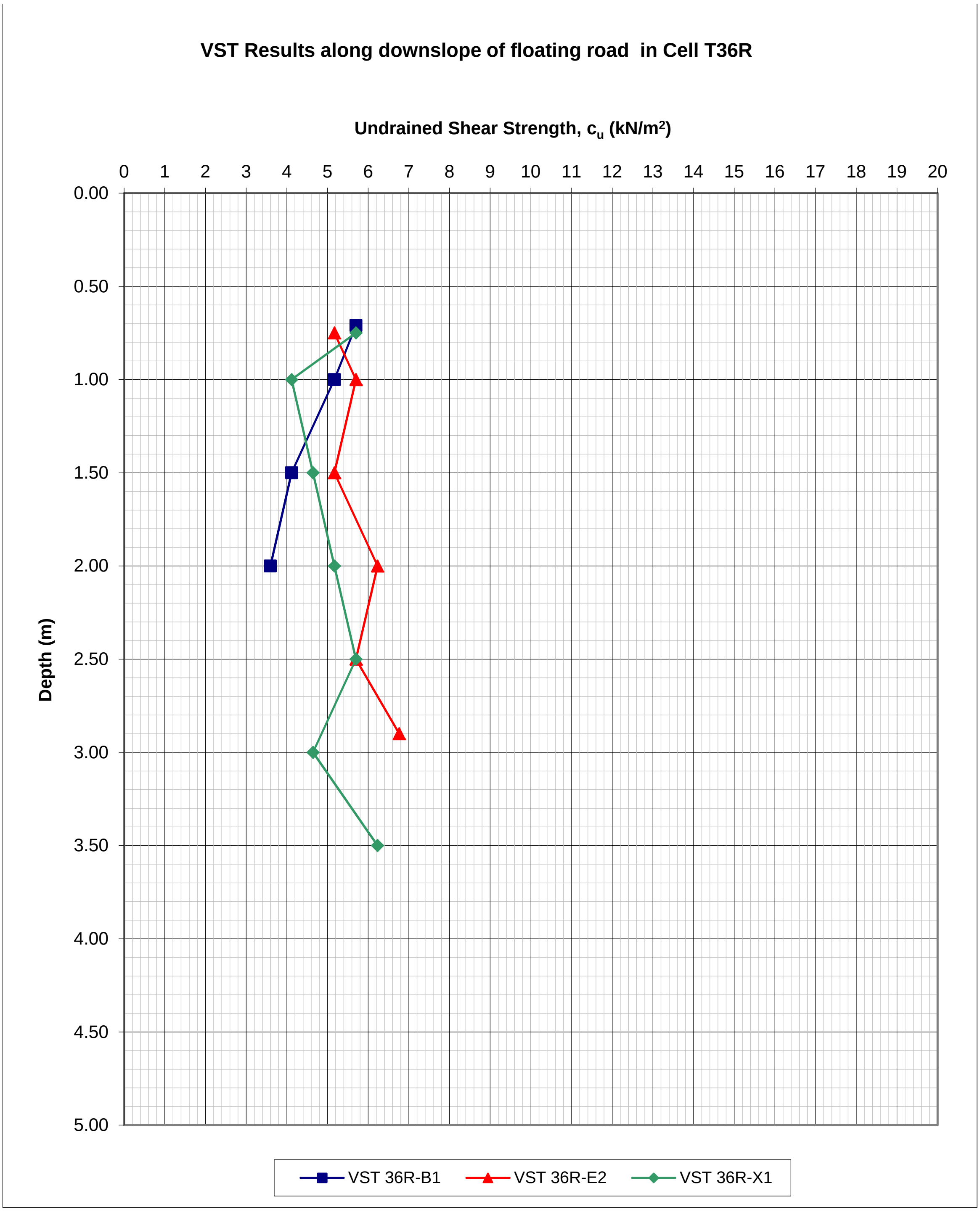
AGL Consulting *Geotechnical Engineers*			Record Of Vane Shear Tests				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 (65mm/130mm)				**Cell No. 36R**

Test No.		VST 36R-B1	Date:			Peat Depth (m) 2.30	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.71	11.0	4.00	5.7				
1.00	10.0	5.00	5.2				
1.50	8.0	5.00	4.1				
2.00	7.0	4.00	3.6				

Test No.		VST 36R-E2	Date:			Peat Depth (m) 3.10	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.75	10.0	2.50	5.2				
1.00	11.0	3.00	5.7				
1.50	10.0	3.50	5.2				
2.00	12.0	4.00	6.2				
2.50	11.0	3.00	5.7				
2.90	13.0	3.00	6.8				

Test No.		VST 36R-X1	Date:			Peat Depth (m) 3.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.75	11.0	4.00	5.7				
1.00	8.0	4.00	4.1				
1.50	9.0	4.00	4.6				
2.00	10.0	3.00	5.2				
2.50	11.0	2.50	5.7				
3.00	9.0	2.0	4.6				
3.50	12.0	3.5	6.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T36R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
Depth (m)
VST 36R-B1
VST 36R-E2
VST 36R-X1

AGL Consulting Geotechnical Engineers		**Record of Peat Repository Locations**	**Rep. No: T39R**

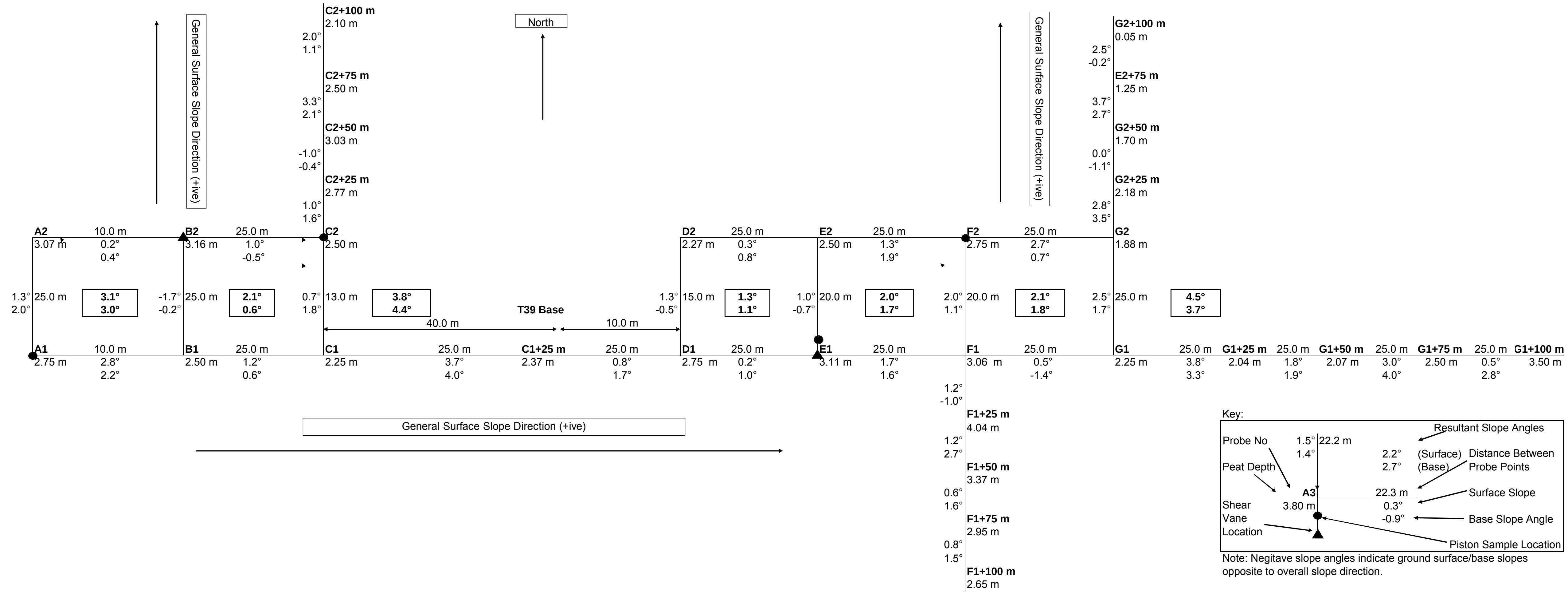
Max Slope at Ground Surface	3.1°
Downslope:	1.3°
Orthogonal Direction:	2.8°
Resultant:	3.1°

Max Slope at Base of Peat:	3.0°
Downslope:	2.0°
Orthogonal Direction:	2.2°
Resultant:	3.0°

Comments:

Peat Depth :	1.88 m - 3.16 m
Min Undrained Shear Strength:	4.1 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

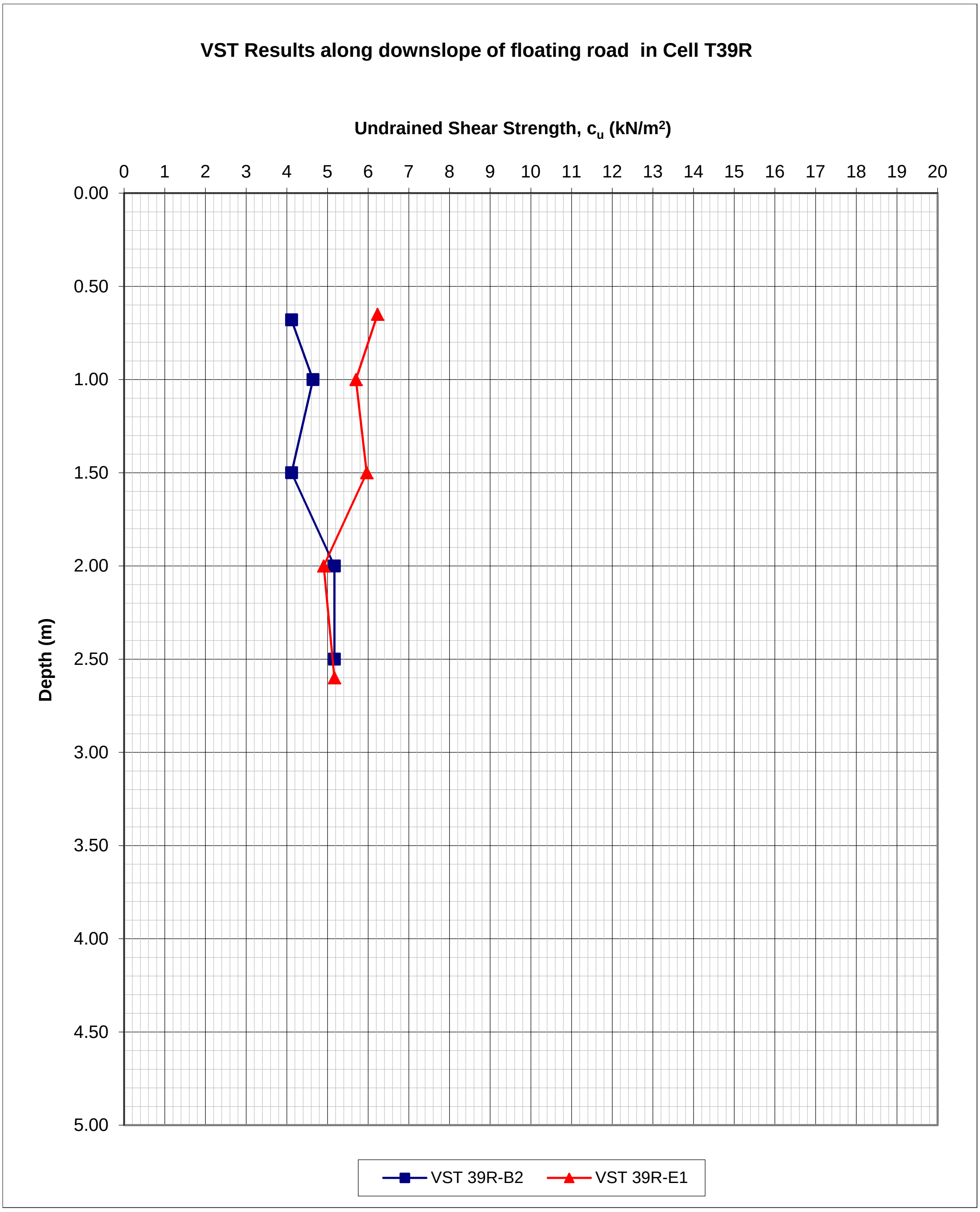
AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 39R**

Test No.		VST 39R-B2	Date:			Peat Depth (m) 2.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.68	8.0	3.00	4.1				
1.00	9.0	3.00	4.6				
1.50	8.0	4.00	4.1				
2.00	10.0	3.00	5.2				
2.50	10.0	2.50	5.2				

Test No.		VST 39R-E1	Date:			Peat Depth (m) 3.10	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	12.0	3.00	6.2				
1.00	11.0	3.00	5.7				
1.50	11.5	3.50	6.0				
2.00	9.5	2.50	4.9				
2.60	10.0	3.00	5.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T39R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
Depth (m)
VST 39R-B2
VST 39R-E1

T39R (2kPa)

Peat Repository Site : T39R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2 kPa) at Base

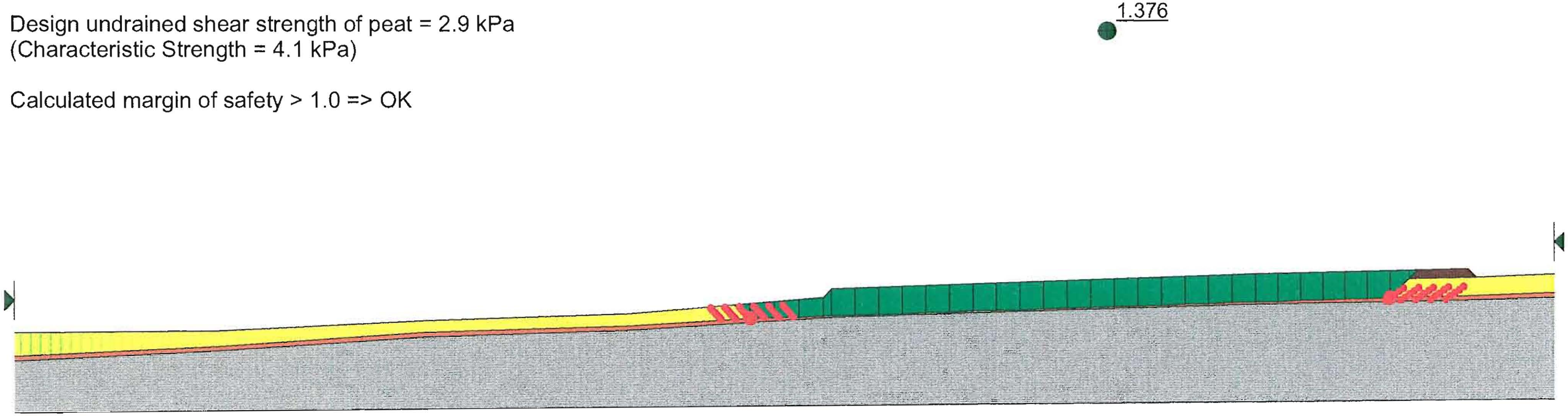
Size of Repository Site = 20 x 75 m
Length of loaded area parallel to resultant slope direction = 78.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.8 - 2.4 m	1.3 - 2.1 Deg	1.1 - 1.8 Deg
0 - 25 m Downslope	2.4 - 2.0 m	4.5 Deg	3.7 Deg
25 - 50 m Downslope	2.0 - 2.0 m	1.8 Deg	1.9 Deg
50 - 75 m Downslope	2.0 - 2.4 m	3.0 Deg	4.0 Deg
75 - 100 m Downslope	2.4 - 3.4 m	0.5 Deg	2.8 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T39R

Peat Repository Site : T39R
Sliding Stability Analysis

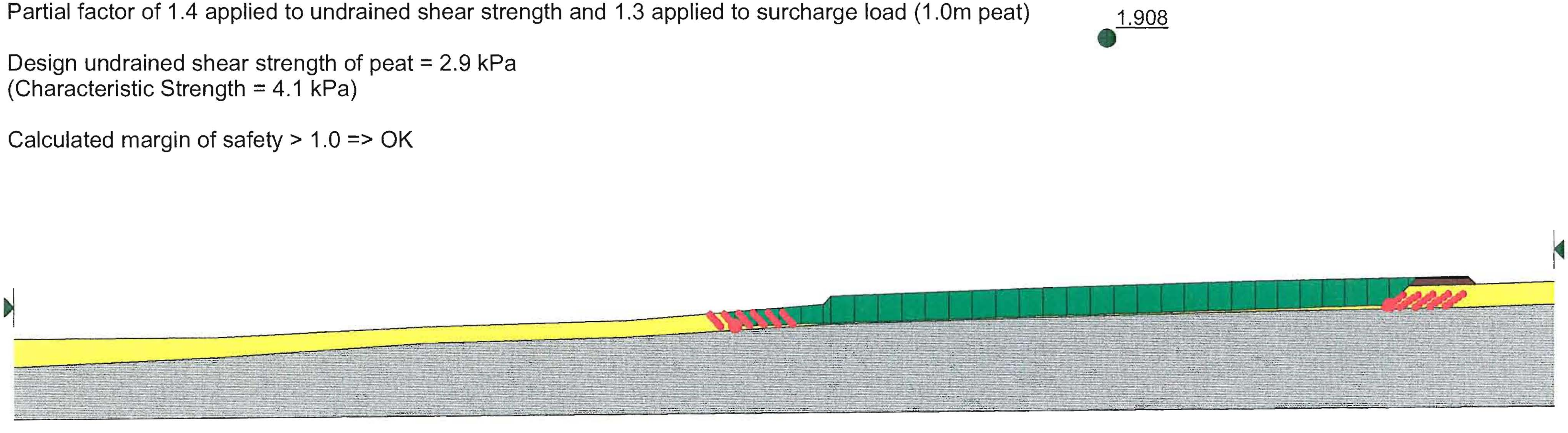
Size of Repository Site = 20 x 75 m
Length of loaded area parallel to resultant slope direction = 78.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.8 - 2.4 m	1.3 - 2.1 Deg	1.1 - 1.8 Deg
0 - 25 m Downslope	2.4 - 2.0 m	4.5 Deg	3.7 Deg
25 - 50 m Downslope	2.0 - 2.0 m	1.8 Deg	1.9 Deg
50 - 75 m Downslope	2.0 - 2.4 m	3.0 Deg	4.0 Deg
75 - 100 m Downslope	2.4 - 3.4 m	0.5 Deg	2.8 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T43R**

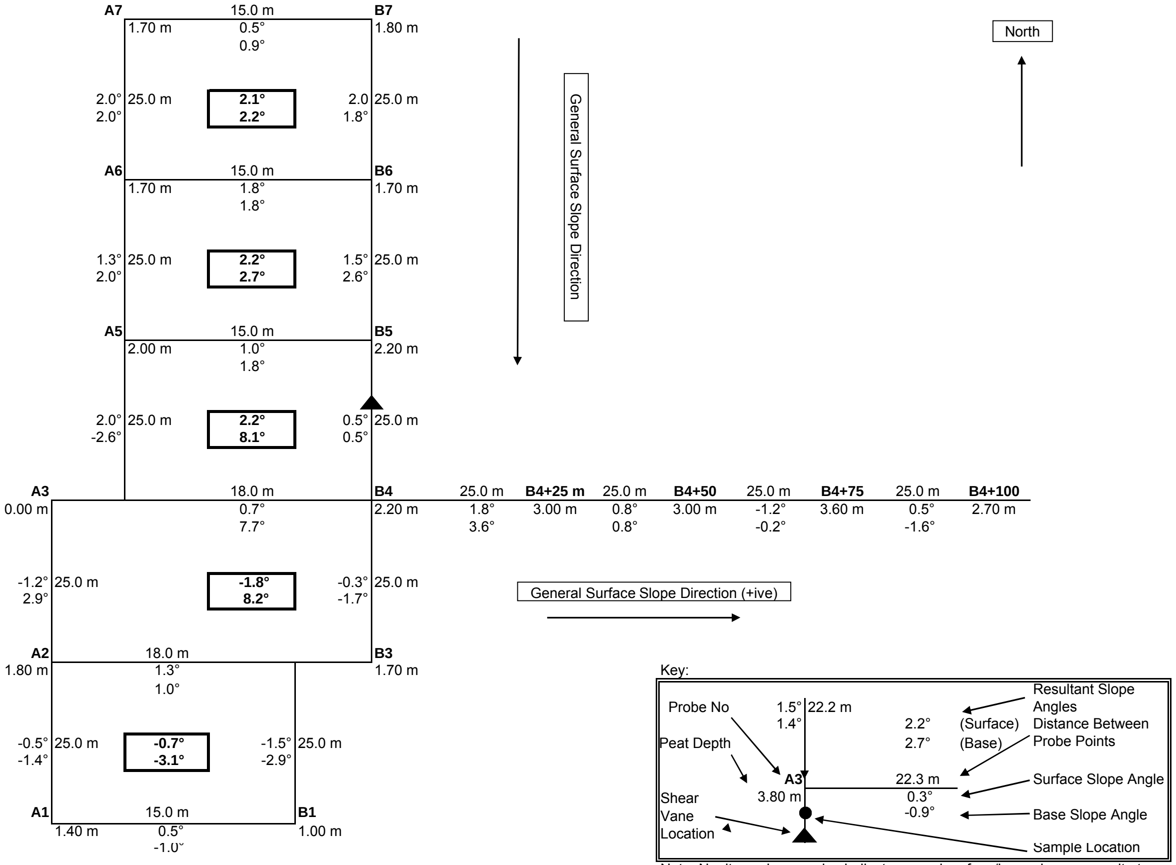
Max Slope at Ground Surface:	2.2°
Downslope:	1.3°
Orthogonal Direction:	1.8°
Resultant:	2.2°

Max Slope at Base of Peat:	8.2°
Downslope:	2.9°
Orthogonal Direction:	7.7°
Resultant:	8.2°

Comments:

Peat Depth :	0.00 m - 2.20 m
Min Undrained Shear Strength:	8.9 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes:	No:
Weak Layer/Discontinuity Present:	Yes:	No:



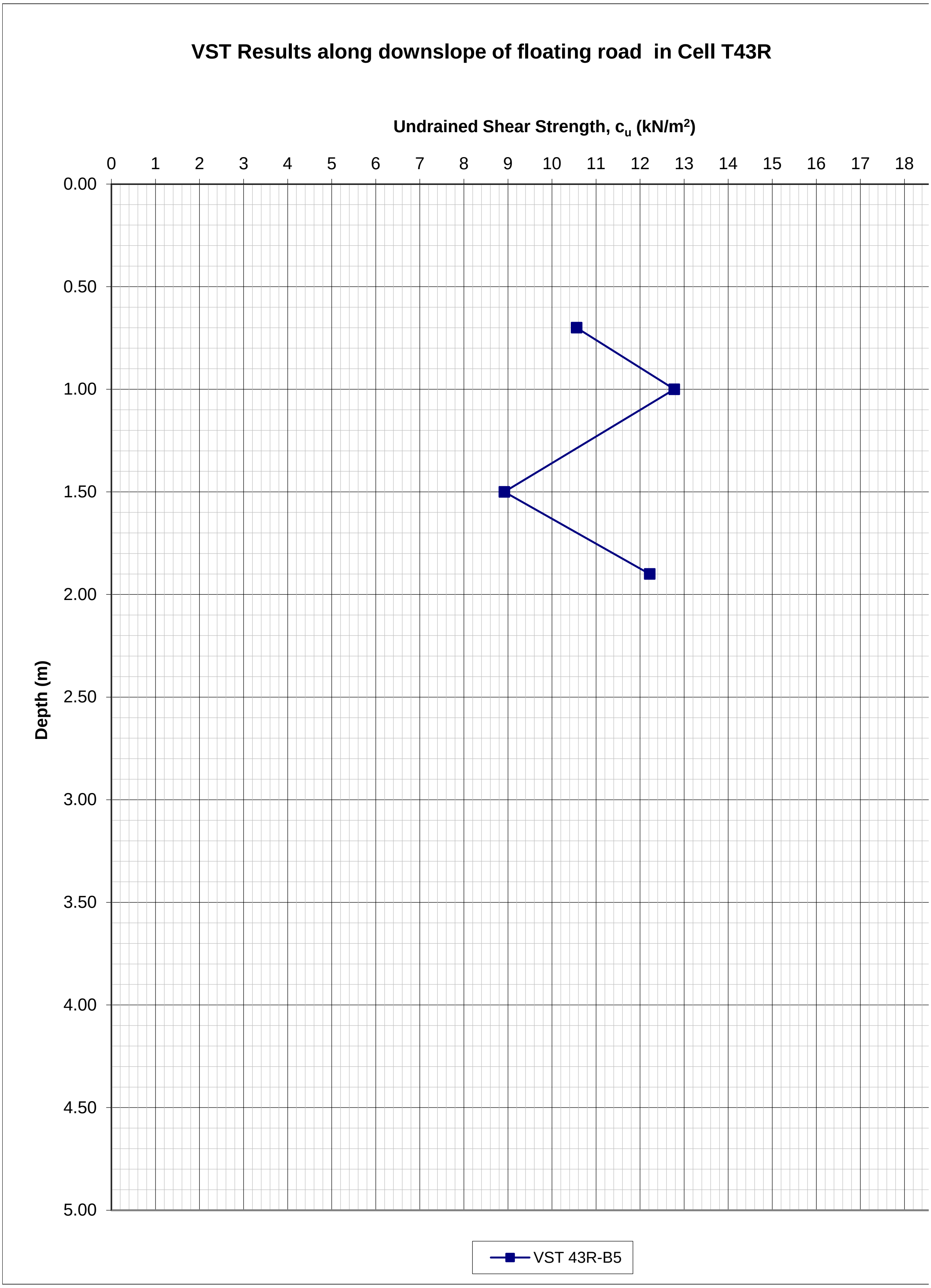
Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

AGL Consulting *Geotechnical Engineers*			Record Of Vane Shear Tests				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)			Cell No. 43R	
Test No.		VST 43R-B5	Date:			Peat Depth (m) 2.20	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	20.0	3.0	10.6				
1.00	24.0	4.0	12.8				
1.50	17.0	3.5	8.9				
1.90	23.0	3.0	12.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments



VST Results along downslope of floating road in Cell T43R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
Depth (m)
VST 43R-B5

Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T46R**

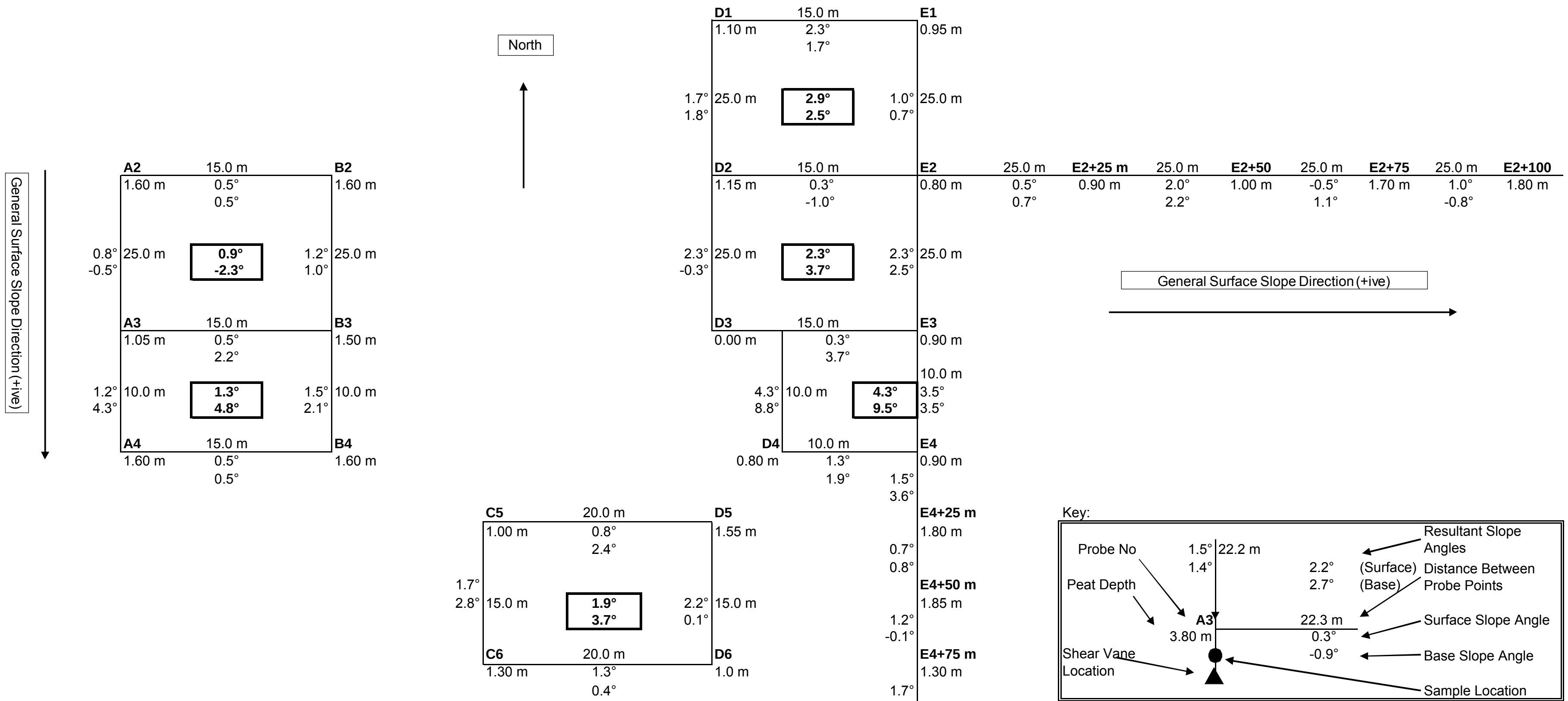
Max Slope at Ground Surface:	4.3°
Downslope:	4.3°
Orthogonal Direction:	0.3°
Resultant:	4.3°

Max Slope at Base of Peat:	9.5°
Downslope:	8.8°
Orthogonal Direction:	3.7°
Resultant:	9.5°

Comments:

Peat Depth :	0.00 m - 1.60 m
Min Undrained Shear Strength:	kPa at Depth = m

Gauge Auger Sampling:	Yes:	No:
Weak Layer/Discontinuity Present:	Yes:	No:



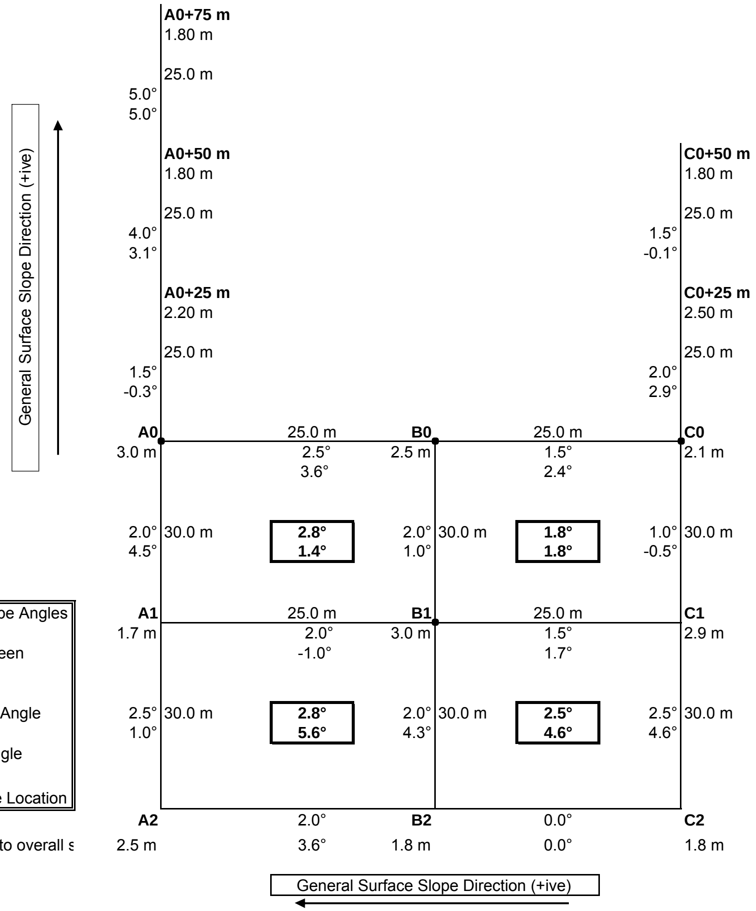
Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

AGL Consulting *Geotechnical Engineers*	**Record of Peat Repository Locations**	**Rep. No: T47R**

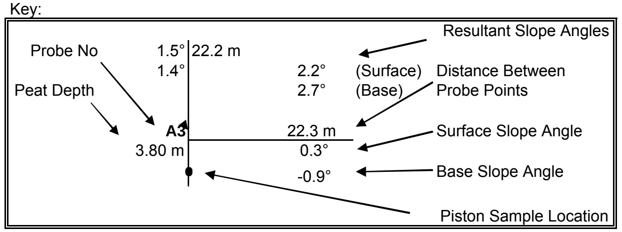
Max Slope at Ground Surface:	2.8°
Downslope:	2.0°
Orthogonal Direction:	2.0°
Resultant:	2.8°

Max Slope at Base of Peat:	5.6°
Downslope:	4.3°
Orthogonal Direction:	3.6°
Resultant:	5.6°

Peat Depth :	1.7 m - 3.0 m	Piston Sampling / Gauge Auger:	Yes: X	No:
Min Undrained Shear Strength:	5.7 kPa at Depth = 2.0 m			
		Weak Layer/Discontinuity	Yes:	No: X



Key:



Comments:

Note: Negitave slope angles indicate ground surface/base slopes opposite to overall s

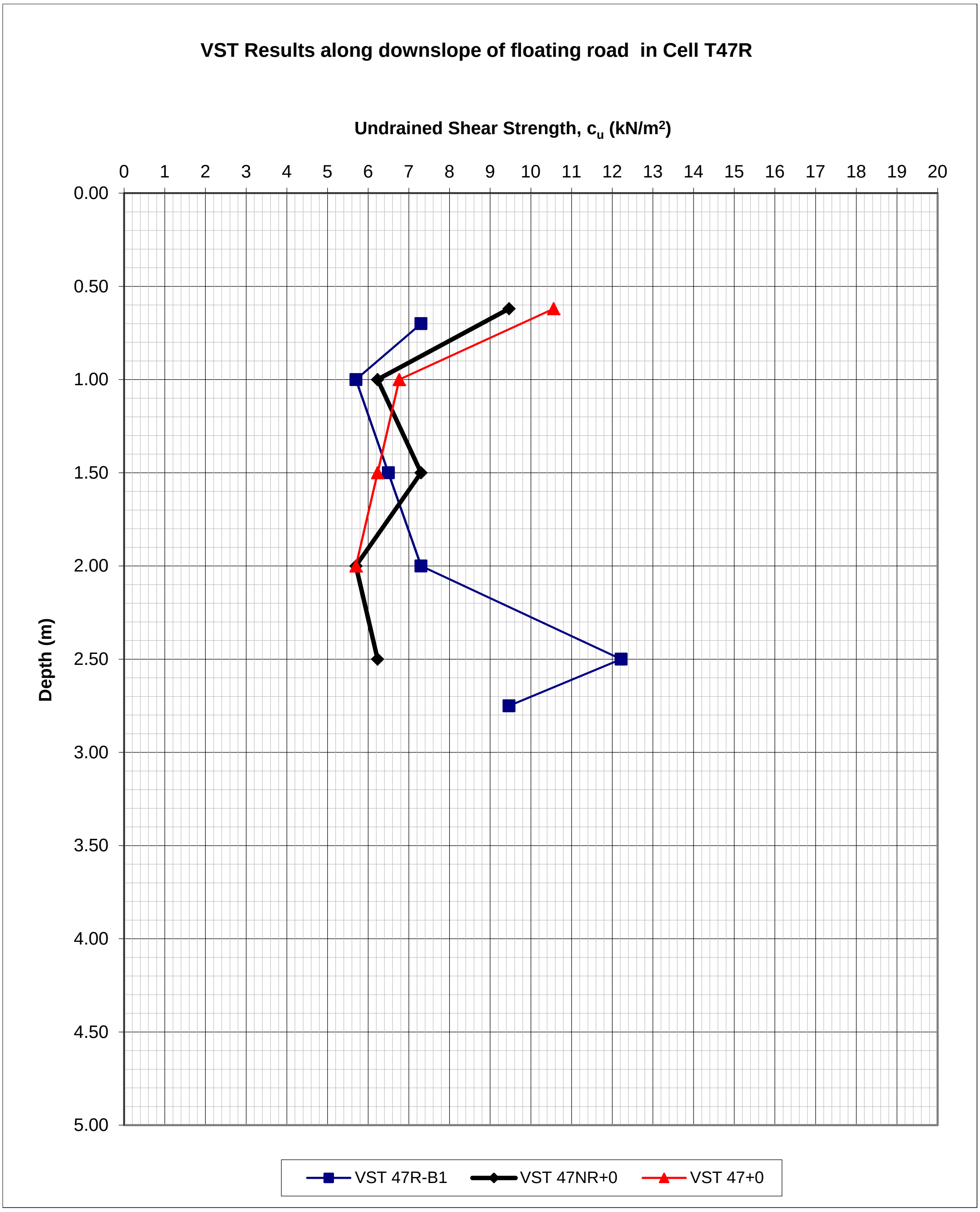
AGL Consulting ***Geotechnical Engineers***	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 47R**

Test No.		VST 47R-B1	Date:			Peat Depth (m) 3.0	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	14.0	5.50	7.3				
1.00	11.0	3.00	5.7				
1.50	12.5	5.00	6.5				
2.00	14.0	5.00	7.3				
2.50	23.0	4.50	12.2				
2.75	18.0	4.00	9.5				

Test No.		VST 47NR+0	Date:			Peat Depth (m) 2.65	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	18.0	4.50	9.5				
1.00	12.0	5.50	6.2				
1.50	14.0	6.00	7.3				
2.00	11.0	5.00	5.7				
2.50	12.0	4.50	6.2				

Test No.		VST 47+0	Date:			Peat Depth (m) 2.01	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	20.0	8.50	10.6				
1.00	13.0	5.50	6.8				
1.50	12.0	9.00	6.2				
2.00	11.0	5.50	5.7				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	



VST Results along downslope of floating road in Cell T47R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 47R-B1
VST 47NR+0
VST 47+0

Peat Repository Site : T47R
Sliding Stability Analysis

T47R

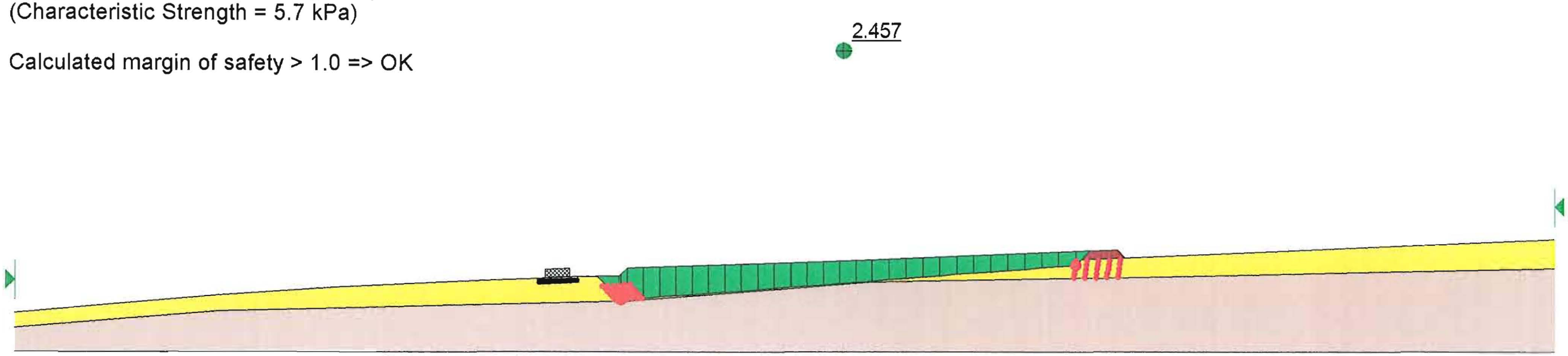
Size of Repository Site = 50 x 60 m
Length of loaded area = 60.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 3.1 m	2.5 - 2.0 Deg	1.0 - 4.5 Deg
0 - 25 m Downslope	3.1 - 2.3 m	1.5 Deg	-0.3 Deg
25 - 50 m Downslope	2.3 - 2.0 m	4.0 Deg	3.1 Deg
50 - 75 m Downslope	2.0 - 2.0 m	5.0 Deg	5.0 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 4.1 kPa
(Characteristic Strength = 5.7 kPa)

Calculated margin of safety > 1.0 => OK



T47R (2 kPa)

Peat Repository Site : T47R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at base

Size of Repository Site = 50 x 60 m
Length of loaded area = 60.0 m

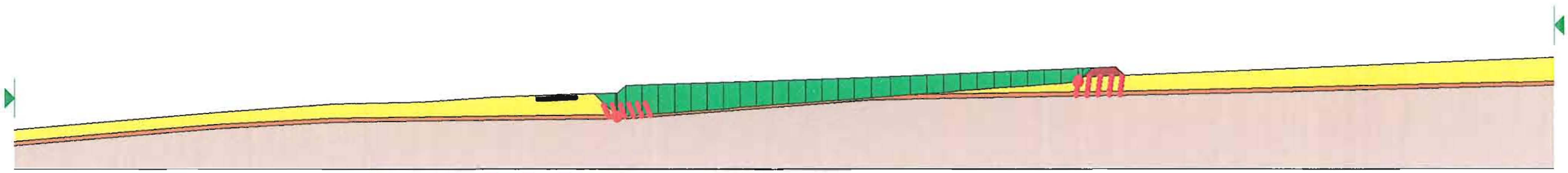
	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.5 - 3.1 m	2.5 - 2.0 Deg	1.0 - 4.5 Deg
0 - 25 m Downslope	3.1 - 2.3 m	1.5 Deg	-0.3 Deg
25 - 50 m Downslope	2.3 - 2.0 m	4.0 Deg	3.1 Deg
50 - 75 m Downslope	2.0 - 2.0 m	5.0 Deg	5.0 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

1.801

Design undrained shear strength of peat = 4.1 kPa
(Characteristic Strength = 5.7 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		Record of Peat Repository Locations	Rep. No: T48R

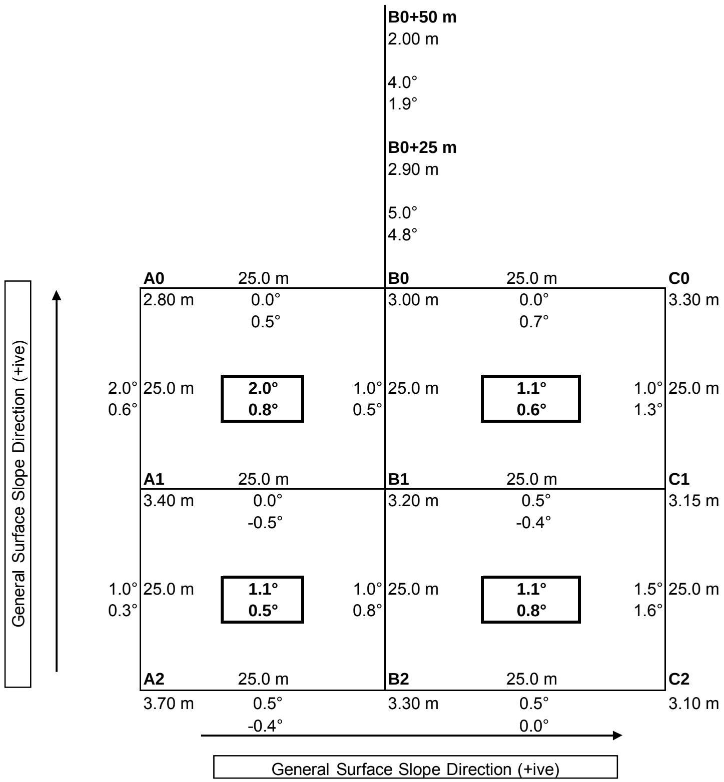
Max Slope at Ground Surface:	2.0°
Downslope:	2.0°
Orthogonal Direction:	0.0°
Resultant:	2.0°

Max Slope at Base of Peat:	0.8°
Downslope:	0.8°
Orthogonal Direction:	0.0°
Resultant:	0.8°

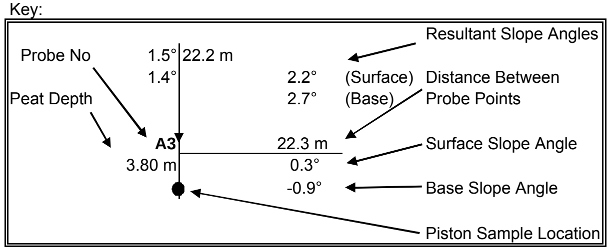
Comments:

Peat Depth :	2.80 m - 3.70 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*	**Record of Peat Repository Locations**	**Rep. No: T48R(B)**

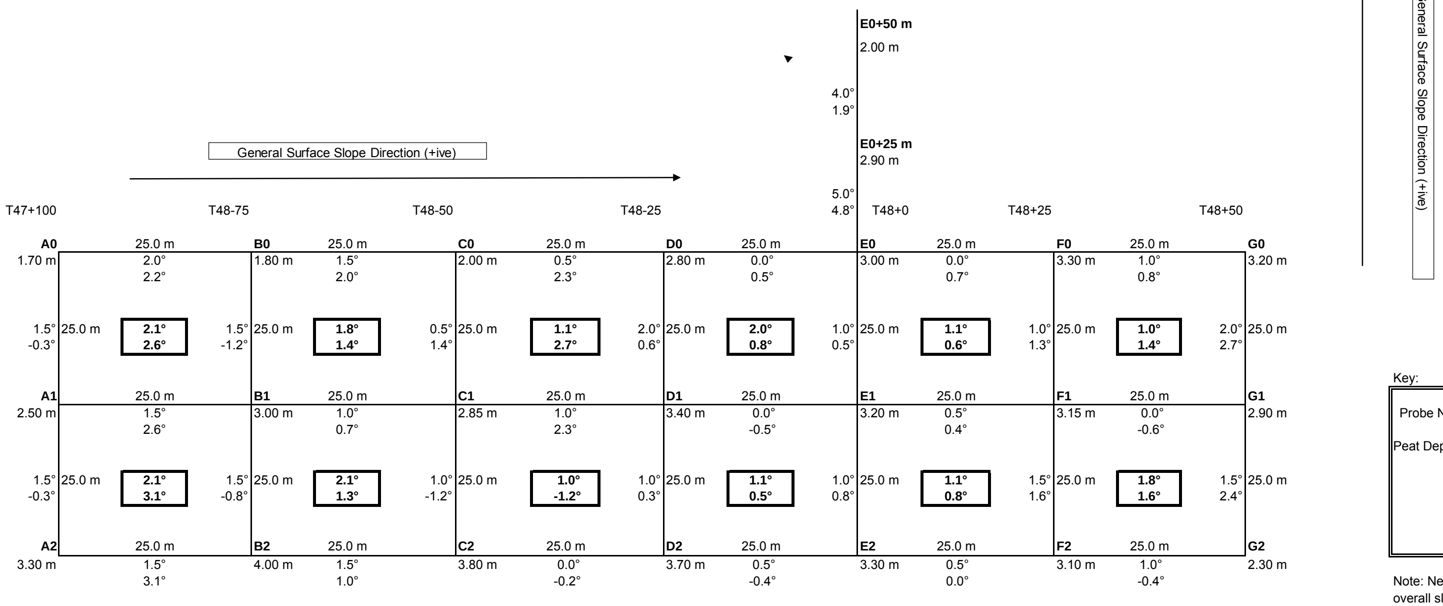
Max Slope at Ground Surface:	2.1°
Downslope:	1.5°
Orthogonal Direction:	1.5°
Resultant:	2.1°

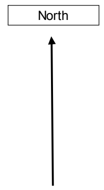
Max Slope at Base of Peat:	3.1°
Downslope:	-0.3°
Orthogonal Direction:	3.1°
Resultant:	3.1°

Comments:

Peat Depth :	1.70 m - 4.00 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.50 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X





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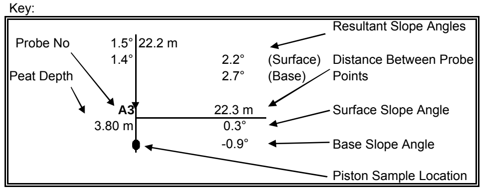


Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

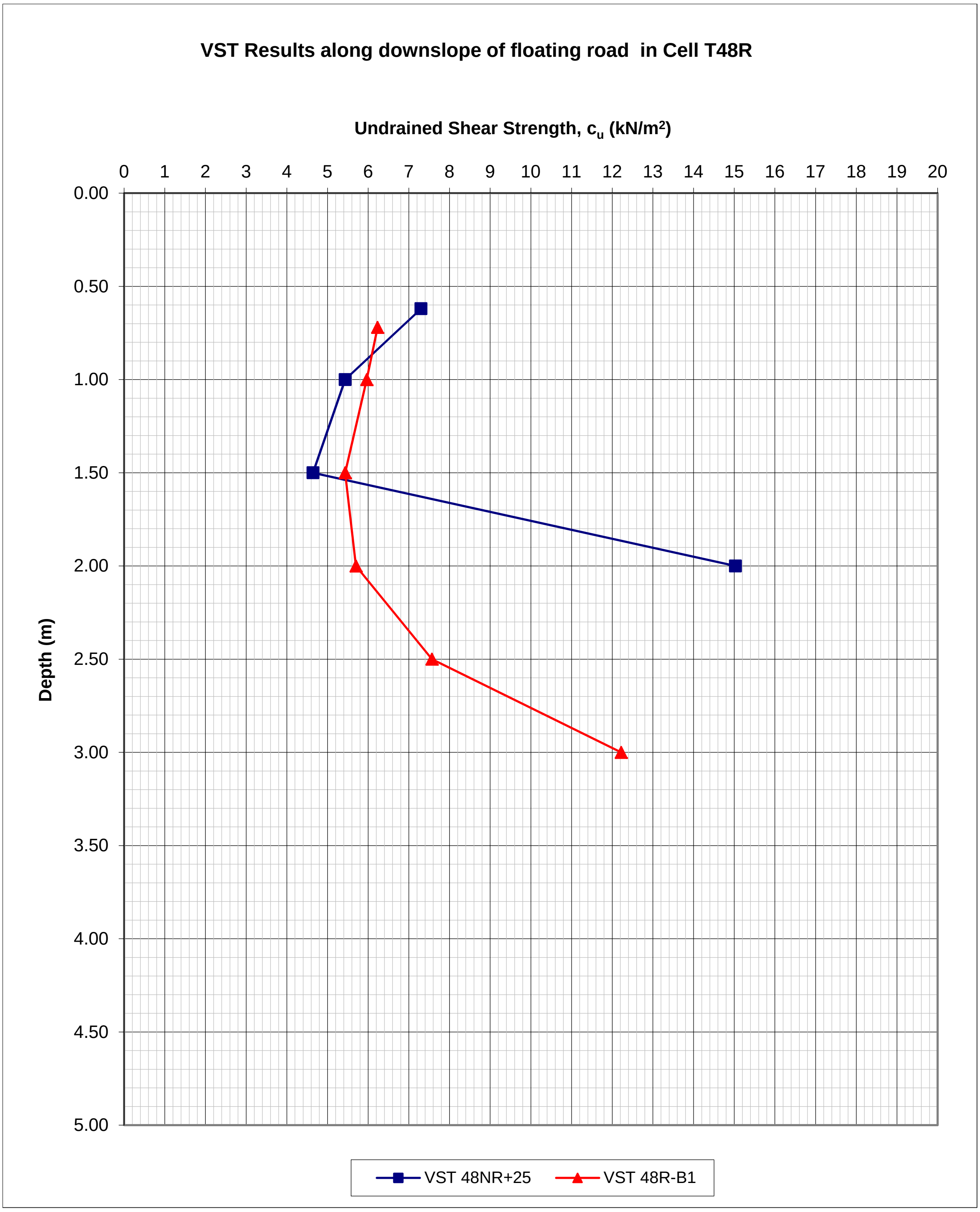
AGL Consulting *Geotechnical Engineers*	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 48R**

Test No.		VST 48NR+25	Date:			Peat Depth (m) 2.05	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	14.0	4.00	7.3				
1.00	10.5	3.50	5.4				
1.50	9.0	2.00	4.6				
2.00	28.0	4.00	15.0				

Test No.		VST 48R-B1	Date:			Peat Depth (m) 3.20	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.72	12.0	4.50	6.2				
1.00	11.5	5.50	6.0				
1.50	10.5	4.00	5.4				
2.00	11.0	3.50	5.7				
2.50	14.5	5.50	7.6				
3.00	23.0	3.00	12.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	



VST Results along downslope of floating road in Cell T48R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
Depth (m)
VST 48NR+25
VST 48R-B1

T48R (2kPa)

Peat Repository Site : T48R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

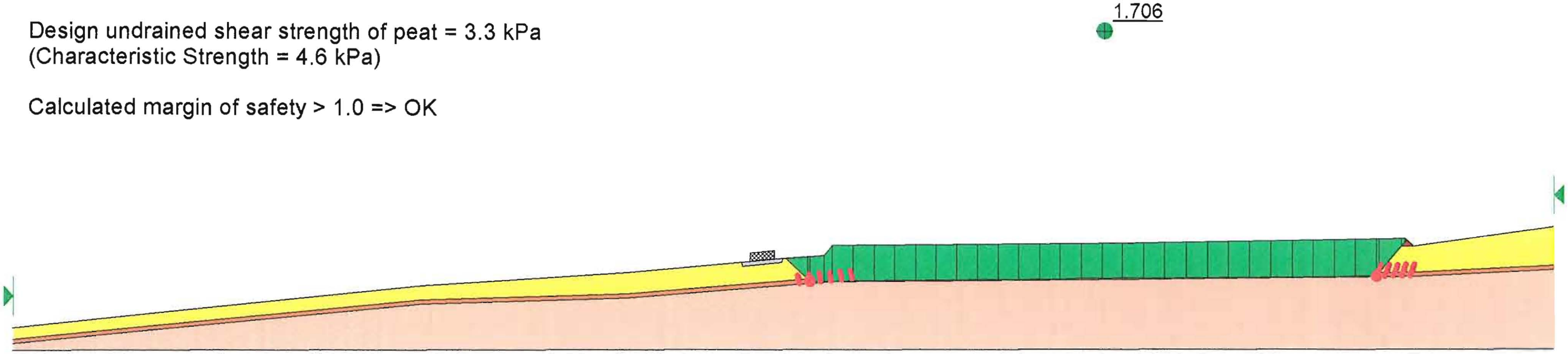
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 71.0 m

	Peat Depth	Surface Slope Angle	Base
Repository Site	3.5 - 3.2 m	1.1 - 1.1 Deg	0.8 - 0.6 Deg
0 - 25 m Downslope	3.2 - 3.1 m	5.0 Deg	4.8 Deg
25 - 50 m Downslope	3.1 - 2.2 m	4.0 Deg	1.9 Deg
50 - 100 m Downslope	2.2 - 1.9 m	6.0 Deg	5.7 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T48R

Peat Repository Site : T48R
Sliding Stability Analysis

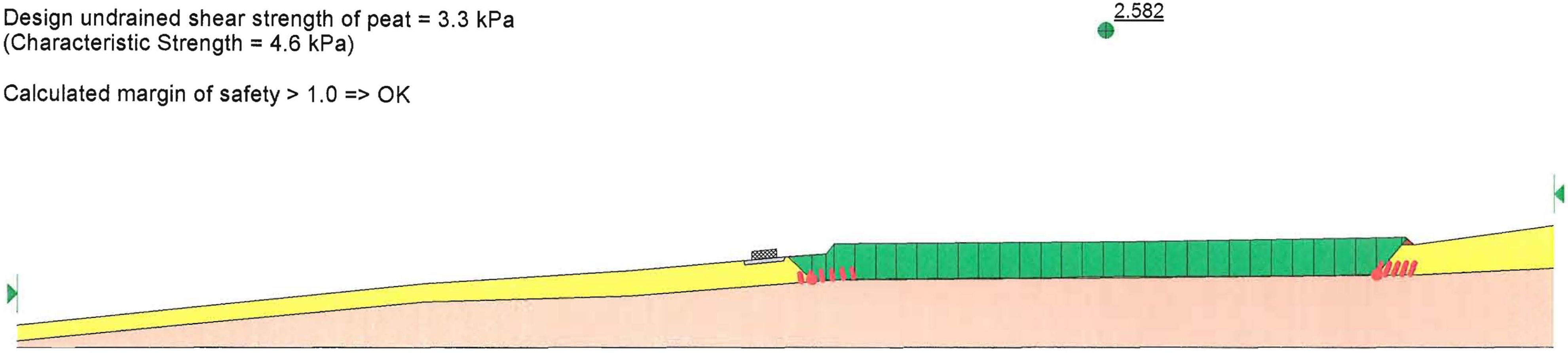
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 71.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.5 - 3.2 m	1.1 - 1.1 Deg	0.8 - 0.6 Deg
0 - 25 m Downslope	3.2 - 3.1 m	5.0 Deg	4.8 Deg
25 - 50 m Downslope	3.1 - 2.2 m	4.0 Deg	1.9 Deg
50 - 100 m Downslope	2.2 - 1.9 m	6.0 Deg	5.7 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T49R**

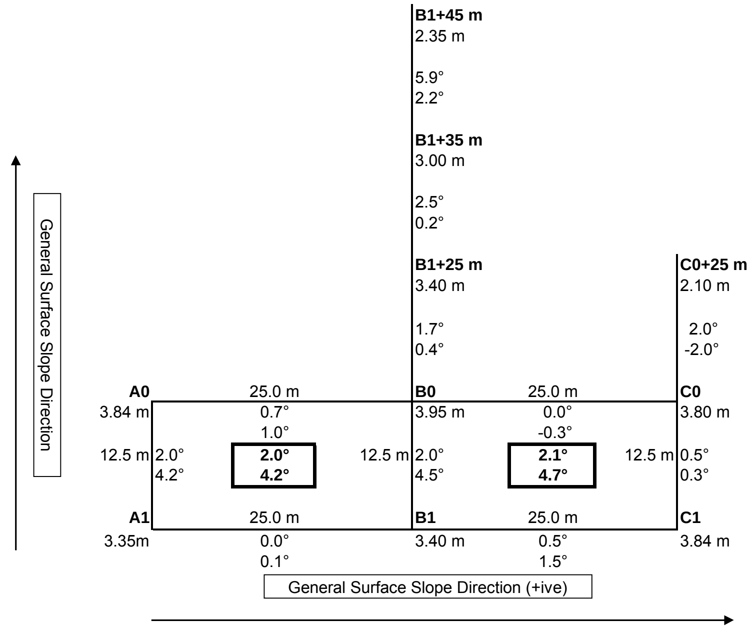
Max Slope at Ground Surface:	2.1°
Downslope:	2.0°
Orthogonal Direction:	0.5°
Resultant:	2.1°

Max Slope at Base of Peat:	4.7°
Downslope:	4.5°
Orthogonal Direction:	1.5°
Resultant:	4.7°

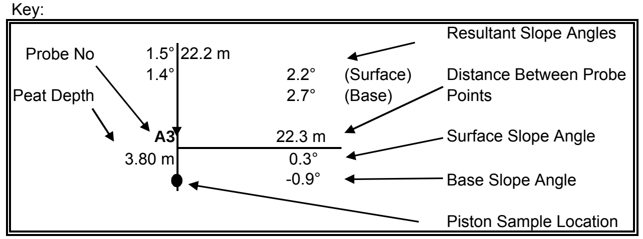
Comments:

Peat Depth :	3.35 m - 3.95 m
Min Undrained Shear Strength:	6.8 kPa at Depth = 2.0 m

Piston Sampling:	Yes: X	No:
Location:		
Weak Layer/Discontinuity Present:	Yes:	No: X



Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall sl
direction.

Derrybrien Wind Farm Additional Ground Investigation

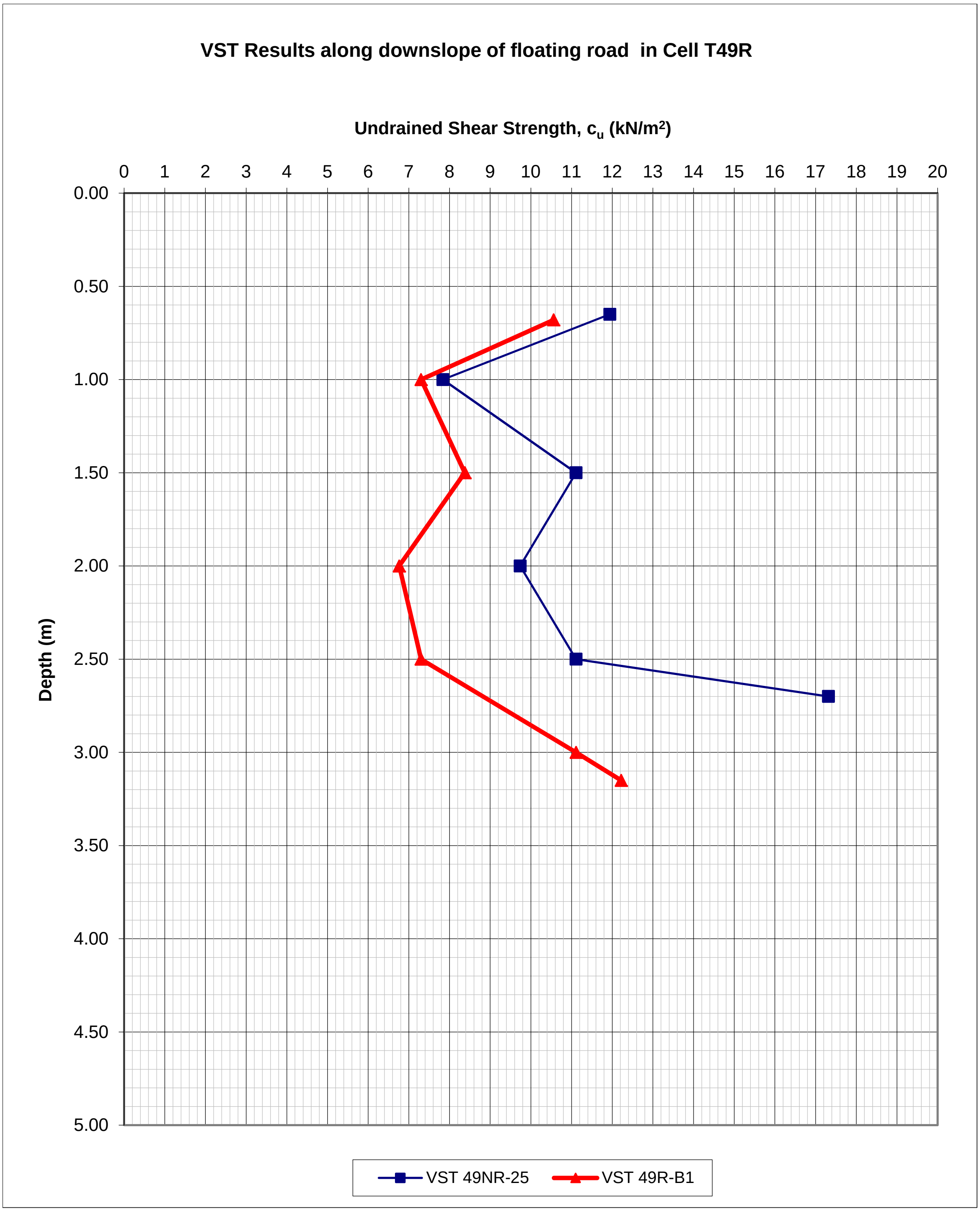
AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 49R**

Test No.		VST 49NR-25	Date:			Peat Depth (m) 2.92	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	22.5	4.50	11.9				
1.00	15.0	5.50	7.8				
1.50	21.0	5.00	11.1				
2.00	18.5	2.50	9.7				
2.50	21.0	3.50	11.1				
2.70	32.0	4.00	17.3				

Test No.		VST 49R-B1	Date:			Peat Depth (m) 3.40	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.68	20.0	4.00	10.6				
1.00	14.0	4.00	7.3				
1.50	16.0	4.50	8.4				
2.00	13.0	3.50	6.8				
2.50	14.0	4.50	7.3				
3.00	21.0	2.50	11.1				
3.15	23.0	3.50	12.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T49R
Undrained Shear Strength, c_u (kN/m²)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Depth (m)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
VST 49NR-25
VST 49R-B1

T49R

Peat Repository Site : T49R
Sliding Stability Analysis

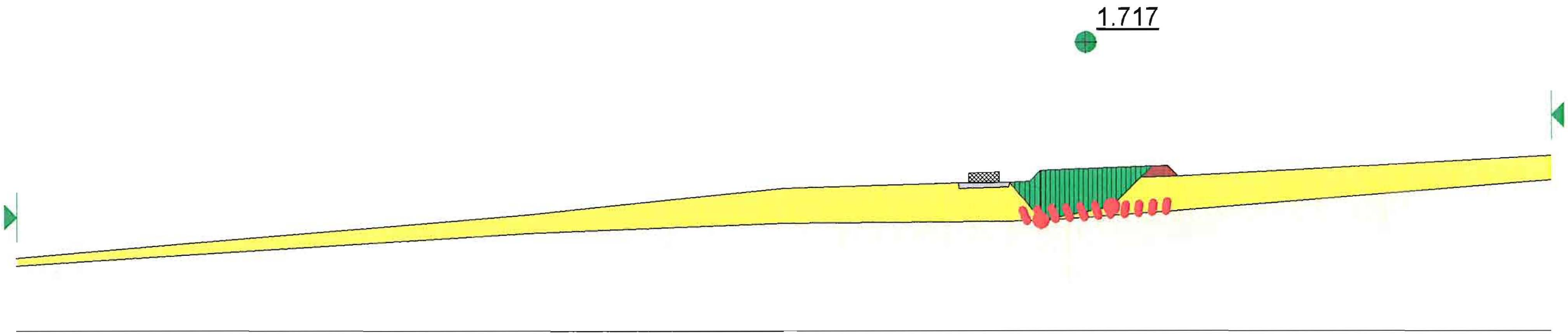
Size of Repository Site = 12.5 x 50 m
Length of loaded area = 12.5 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.4 - 3.9 m	2.1 Deg	4.7 Deg
0 - 25 m Downslope	3.9 - 3.4 m	1.7 Deg	0.4 Deg
25 - 50 m Downslope	3.4 - 1.8 m	5.9 Deg	2.2 Deg
50 - 100 m Downslope	1.8 - 0.8 m	9.5 Deg	7.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 4.9 kPa
(Characteristic Strength = 6.8 kPa)

Calculated margin of safety > 1.0 => OK



T49R (2 kPa)

Peat Repository Site : T49R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at base

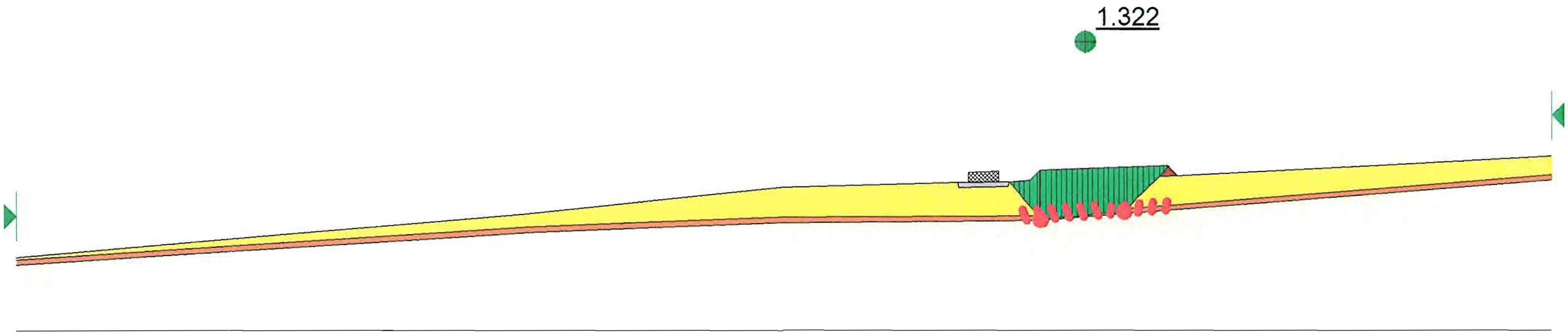
Size of Repository Site = 12.5 x 50 m
Length of loaded area = 12.5 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.4 - 3.9 m	2.1 Deg	4.7 Deg
0 - 25 m Downslope	3.9 - 3.4 m	1.7 Deg	0.4 Deg
25 - 50 m Downslope	3.4 - 1.8 m	5.9 Deg	2.2 Deg
50 - 100 m Downslope	1.8 - 0.8 m	9.5 Deg	7.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 4.9 kPa
(Characteristic Strength = 6.8 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T50R-B**

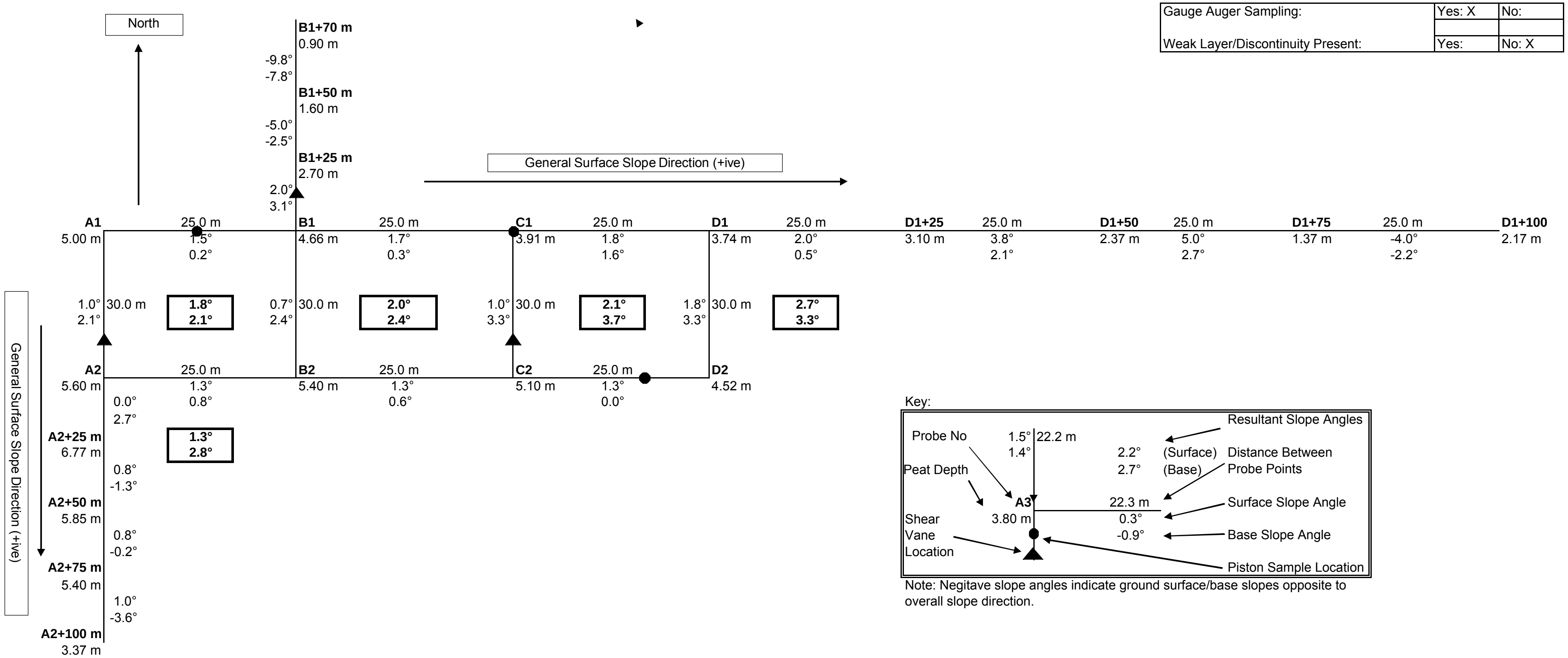
Max Slope at Ground Surface:	2.1°
Downslope:	2.1°
Orthogonal Direction:	0.2°
Resultant:	2.1°

Max Slope at Base of Peat:	3.7°
Downslope:	3.3°
Orthogonal Direction:	1.6°
Resultant:	3.7°

Comments:

Peat Depth :	3.74 m - 5.60 m
Min Undrained Shear Strength:	4.1 kPa at Depth = 2.0 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

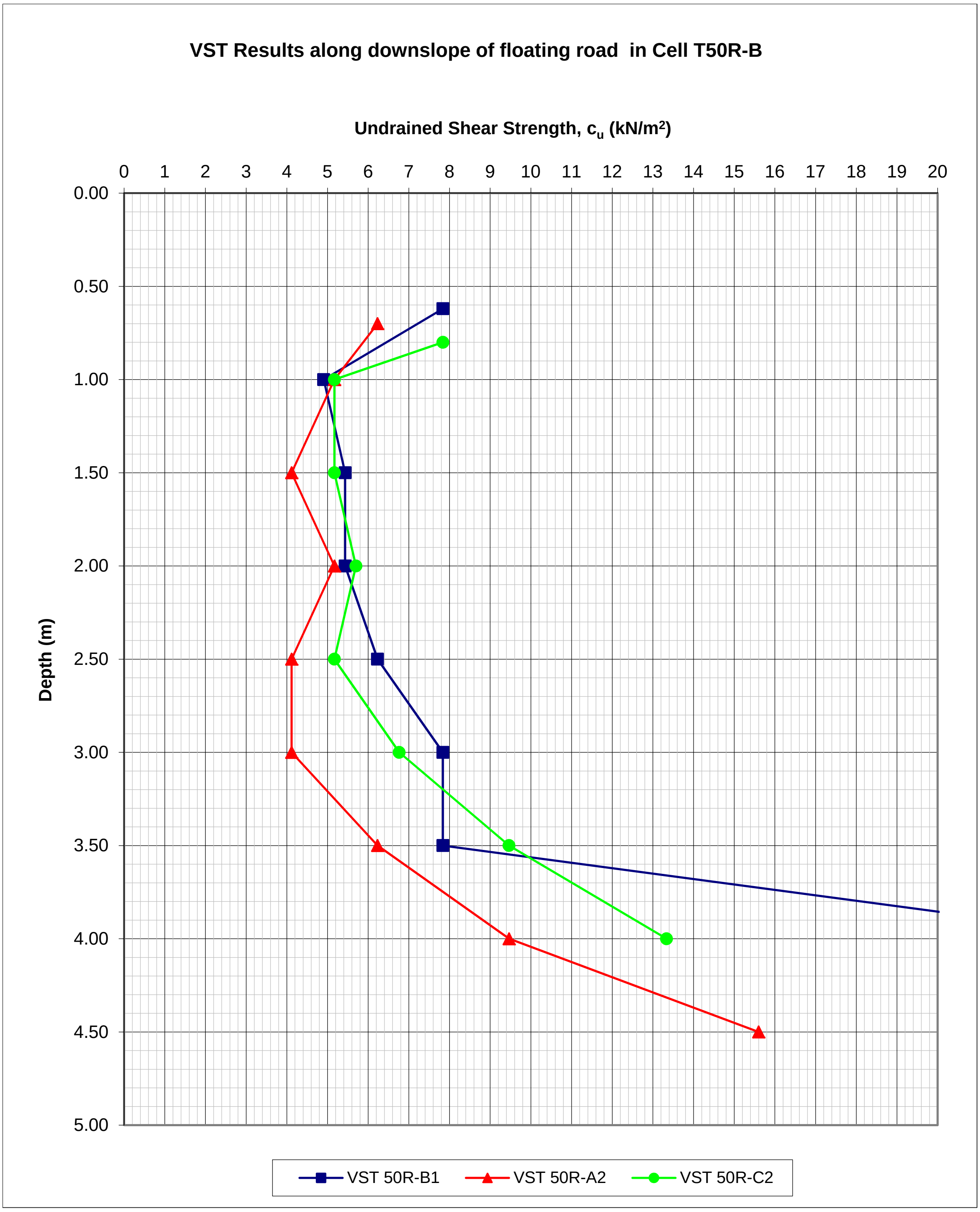
AGL Consulting *Geotechnical Engineers*		**Record Of Vane Shear Tests**	
Project:	Derrybrien Wind Farm	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 50R-B**
Job No.	03-104		

Test No.		VST 50R-B1	Date:			Peat Depth (m) 4.20	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.62	15.0	8.00	7.8				
1.00	9.5	5.50	4.9				
1.50	10.5	5.50	5.4				
2.00	10.5	4.00	5.4				
2.50	12.0	4.50	6.2				
3.00	15.0	7.00	7.8				
3.50	15.0	3.50	7.8				
4.00	45.0	9.00	25.0				

Test No.		VST 50R-A2	Date:			Peat Depth (m) 4.73	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	12.0	4.50	6.2				
1.00	10.0	3.00	5.2				
1.50	8.0	3.50	4.1				
2.00	10.0	3.00	5.2				
2.50	8.0	4.00	4.1				
3.00	8.0	3.50	4.1				
3.50	12.0	3.00	6.2				
4.00	18.0	4.50	9.5				
4.50	29.0	4.50	15.6				

Test No.		VST 50R-C2	Date:			Peat Depth (m) 4.20	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	15.0	6.50	7.8				
1.00	10.0	6.00	5.2				
1.50	10.0	5.00	5.2				
2.00	11.0	4.00	5.7				
2.50	10.0	4.00	5.2				
3.00	13.0	4.00	6.8				
3.50	18.0	5.00	9.5				
4.00	25.0	4.00	13.3				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T50R-B
Undrained Shear Strength, c_u (kN/m²)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Depth (m)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
VST 50R-B1
VST 50R-A2
VST 50R-C2

Peat Repository Site : T50R
Sliding Stability Analysis

T50R-B

Size of Repository Site = 25 x 75 m
Length of loaded area parallel to resultant slope direction = 35 m

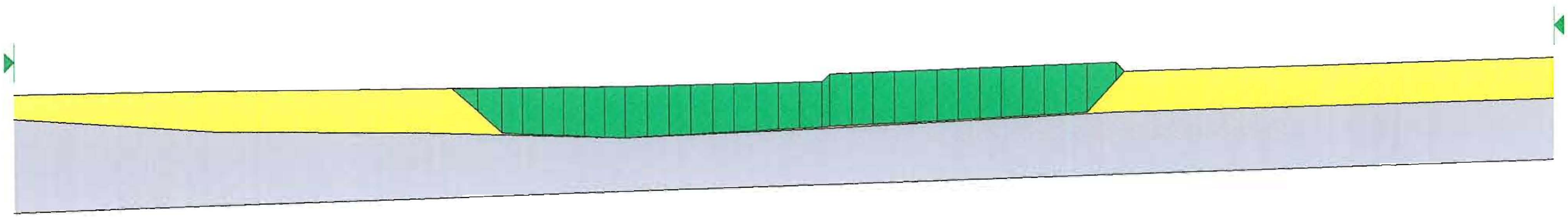
	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	5.0 - 5.7 m	2.1 Deg	3.3 Deg
0 - 25 m Downslope	5.7 - 6.4 m	1.3 Deg	2.8 Deg
25 - 50 m Downslope	6.4 - 5.5 m	0.8 Deg	-1.3 Deg
50 - 75 m Downslope	5.5 - 5.0 m	0.8 Deg	-0.2 Deg
75 - 100 m Downslope	5.0 - 3.0 m	1.0 Deg	-3.6 Deg

1.469

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T50R-B (2kPa)

Peat Repository Site : T50R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at base

Size of Repository Site = 25 x 75 m
Length of loaded area parallel to resultant slope direction = 35 m

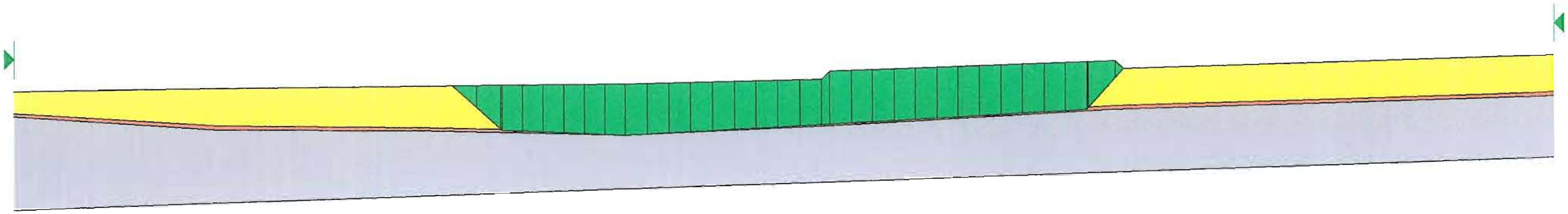
	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	5.0 - 5.7 m	2.1 Deg	3.3 Deg
0 - 25 m Downslope	5.7 - 6.4 m	1.3 Deg	2.8 Deg
25 - 50 m Downslope	6.4 - 5.5 m	0.8 Deg	-1.3 Deg
50 - 75 m Downslope	5.5 - 5.0 m	0.8 Deg	-0.2 Deg
75 - 100 m Downslope	5.0 - 3.0 m	1.0 Deg	-3.6 Deg

1.106

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T50R-B

Peat Repository Site : T50R
Sliding Stability Analysis

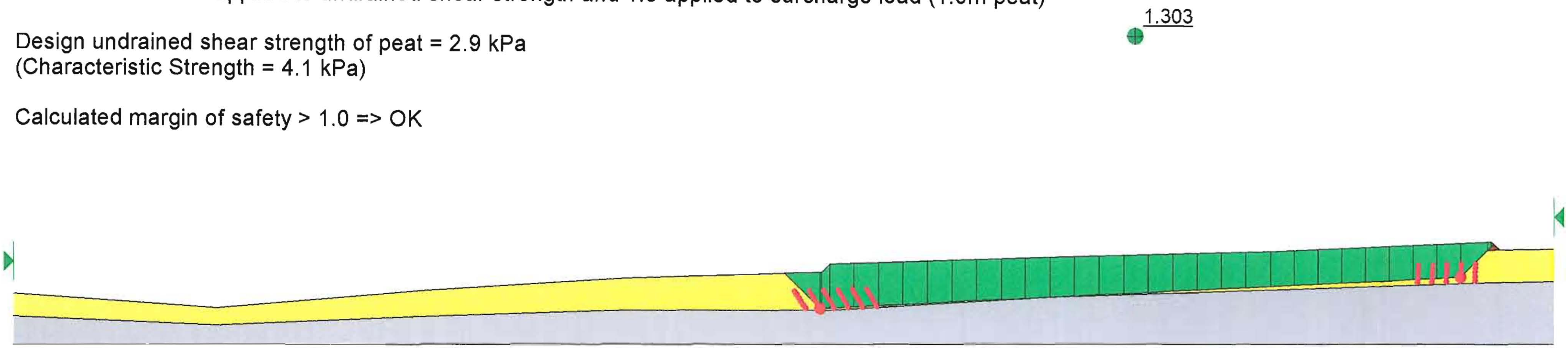
Size of Repository Site = 25 x 75 m
Length of loaded area parallel to resultant slope direction = 81 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.0 - 4.6 m	1.8 - 2.1 Deg	2.1 - 3.7 Deg
0 - 25 m Downslope	4.6 - 3.9 m	2.0 Deg	0.5 Deg
25 - 50 m Downslope	3.9 - 3.1 m	3.8 Deg	2.1 Deg
50 - 75 m Downslope	3.1 - 2.1 m	5.0 Deg	2.7 Deg
75 - 100 m Downslope	2.1 - 2.8 m	-4.0 Deg	-2.2 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T50R-B (2kPa)

Peat Repository Site : T50R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at base

Size of Repository Site = 25 x 75 m
Length of loaded area parallel to resultant slope direction = 81 m

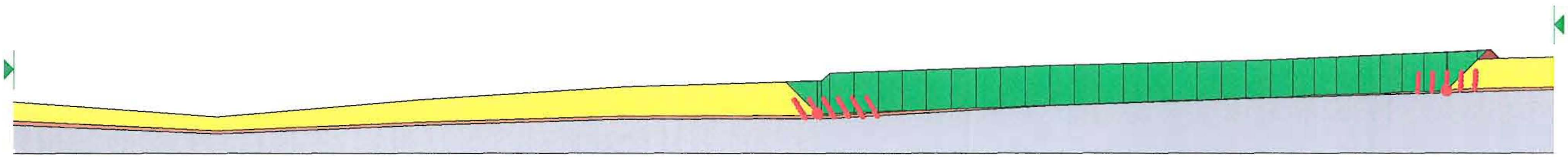
	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.0 - 4.6 m	1.8 - 2.1 Deg	2.1 - 3.7 Deg
0 - 25 m Downslope	4.6 - 3.9 m	2.0 Deg	0.5 Deg
25 - 50 m Downslope	3.9 - 3.1 m	3.8 Deg	2.1 Deg
50 - 75 m Downslope	3.1 - 2.1 m	5.0 Deg	2.7 Deg
75 - 100 m Downslope	2.1 - 2.8 m	-2.2 Deg	-2.2 Deg

1.049

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



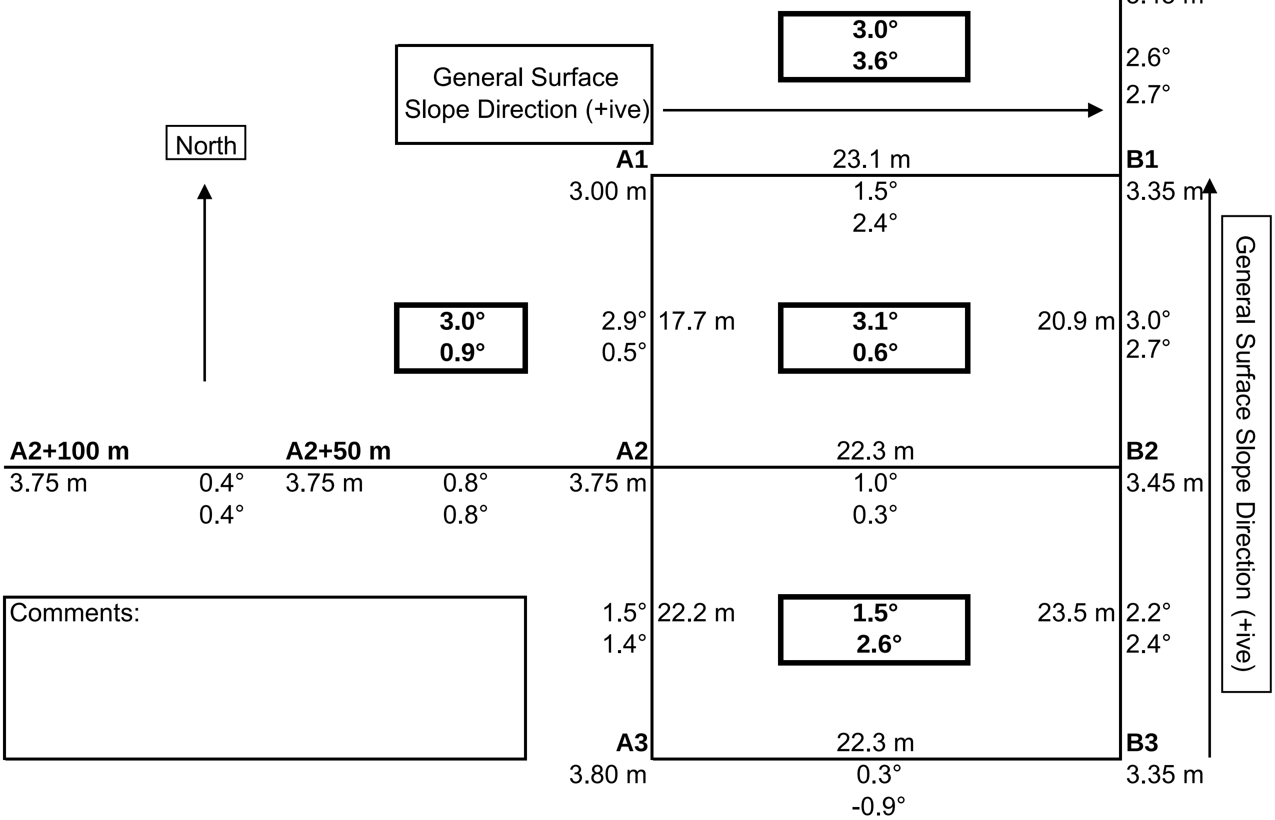
AGL Consulting *Geotechnical Engineers*	**Record of Peat Repository Locations**	**Rep. No: T51R**

Max Slope at Ground Surface:	3.1°
Downslope:	2.9°
Orthogonal Direction:	1.0°
Resultant:	3.1°

Max Slope at Base of Peat:	2.6°
Downslope:	2.4°
Orthogonal Direction:	-0.9°
Resultant:	2.6°

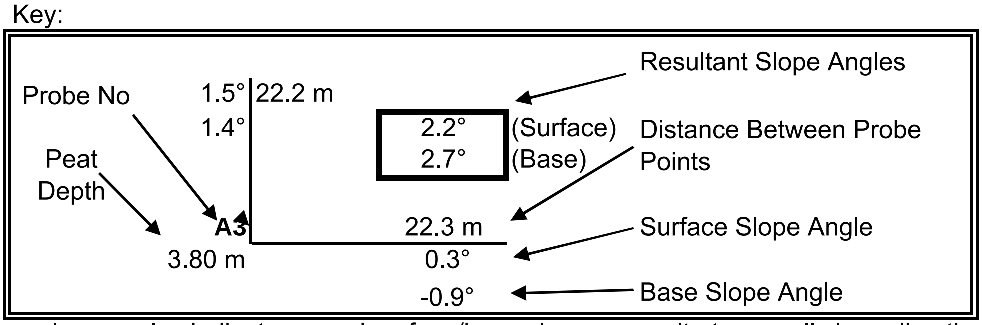
Peat Depth :	3.0 m - 3.75 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.0 m
	5.4 kPa at Depth = 2.0 m

Piston Sampling:	Yes: X	No
Location:		
Weak Layer/Discontinuity Present	Yes	No: X



Comments:

Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

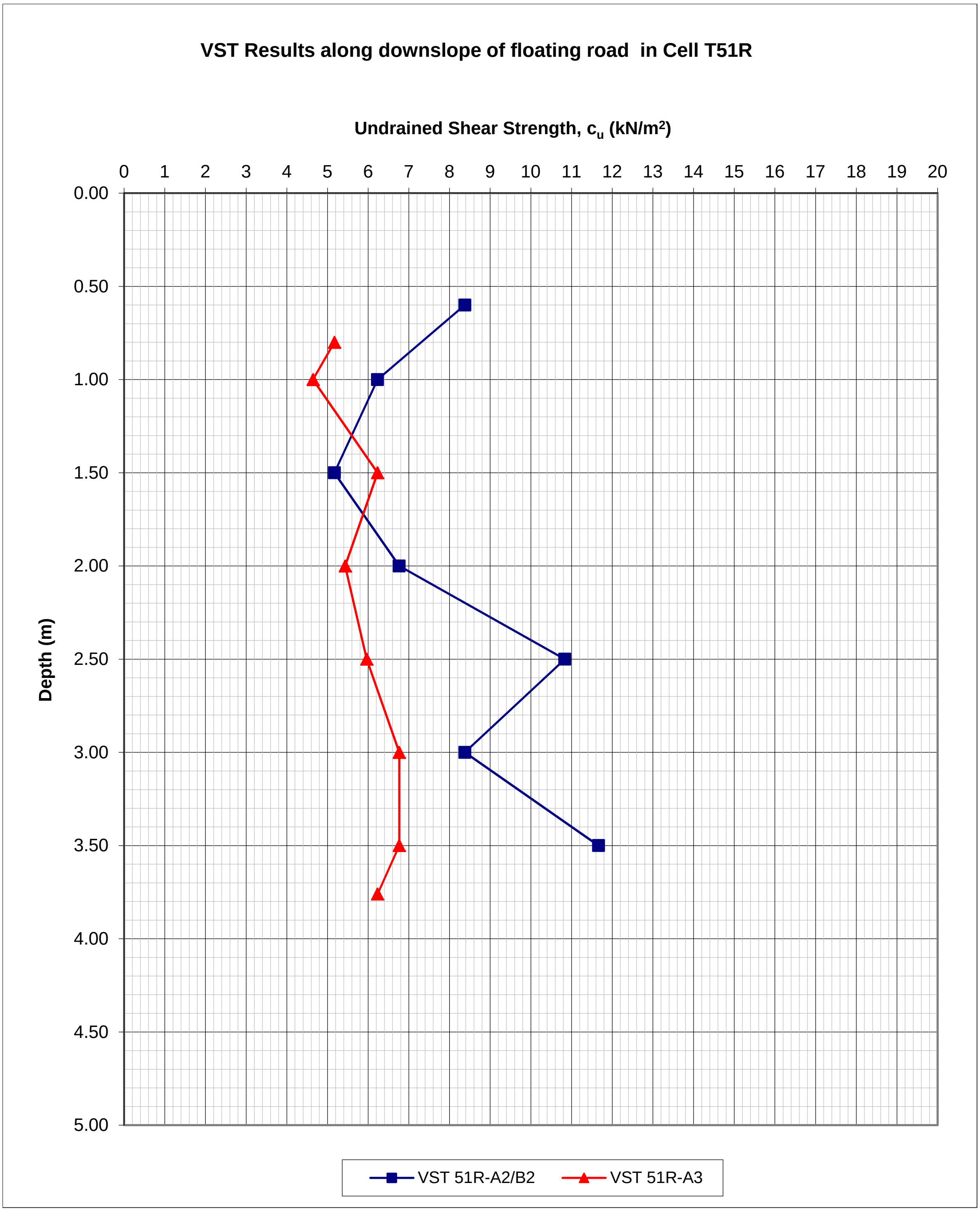
AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 51R**

Test No.		VST 51R-A2/B2	Date:			Peat Depth (m) 3.2	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.60	16.0	8.00	8.4				
1.00	12.0	6.00	6.2				
1.50	10.0	6.00	5.2				
2.00	13.0	5.50	6.8				
2.50	20.5	4.50	10.8				
3.00	16.0	2.50	8.4				
3.50	22.0	4.00	11.7				

Test No.		VST 51R-A3	Date:			Peat Depth (m) 3.76	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.80	10.0	4.00	5.2				
1.00	9.0	5.00	4.6				
1.50	12.0	4.00	6.2				
2.00	10.5	4.50	5.4				
2.50	11.5	4.00	6.0				
3.00	13.0	5.00	6.8				
3.50	13.0	4.00	6.8				
3.76	12.0	4.00	6.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	


VST Results along downslope of floating road in Cell T51R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 51R-A2/B2
VST 51R-A3

T51R

Peat Repository Site : T51R
Sliding Stability Analysis

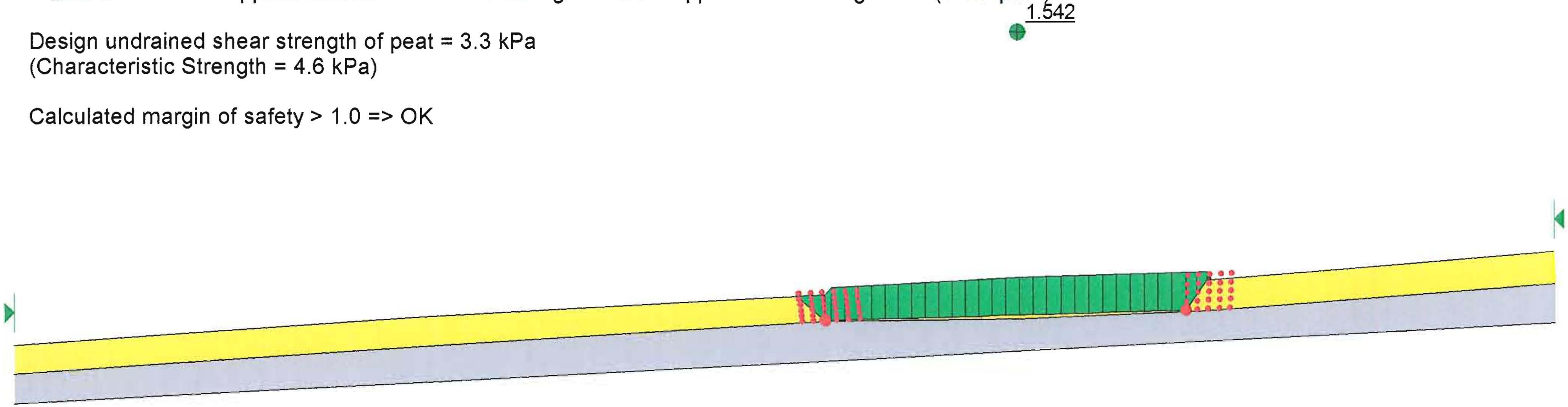
Size of Repository Site = 40 x 23 m
Length of loaded area parallel to resultant slope direction = 46.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.8 - 4.2 m	3.1 - 1.5 Deg	0.6 - 2.6 Deg
0 - 50 m Downslope	3.2 - 3.7 m	3.0 Deg	3.6 Deg
50 - 100 m Downslope	3.5 - 3.7 m	4.1 Deg	3.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T51R (2 kPa)

Peat Repository Site : T51R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

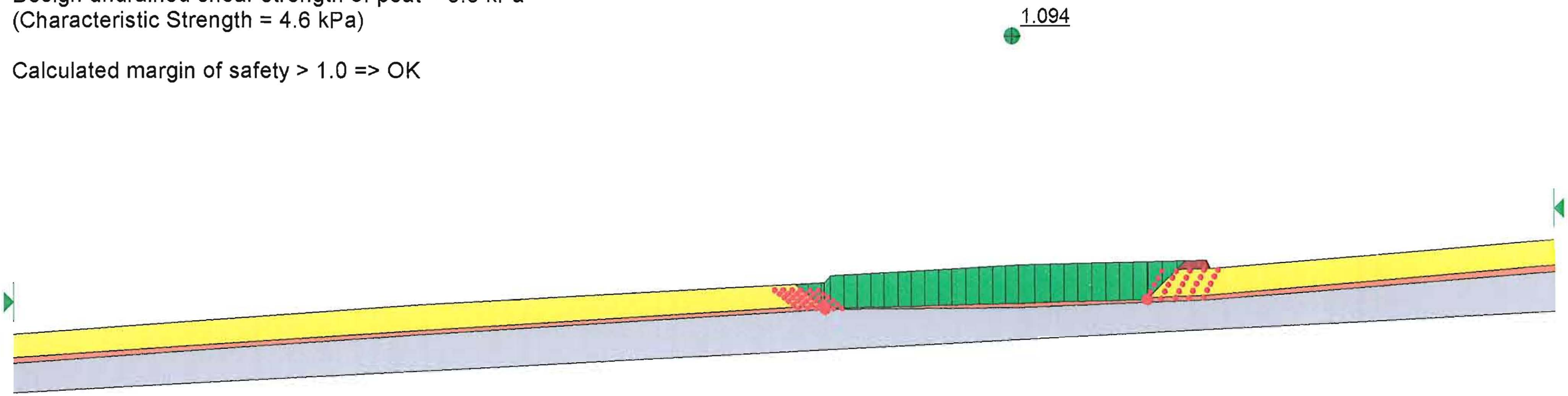
Size of Repository Site = 40 x 23 m
Length of loaded area parallel to resultant slope direction = 46.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.8 - 4.2 m	3.1 - 1.5 Deg	0.6 - 2.6 Deg
0 - 50 m Downslope	3.2 - 3.7 m	3.0 Deg	3.6 Deg
50 - 100 m Downslope	3.5 - 3.7 m	4.1 Deg	3.9 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting *Geotechnical Engineers*		Record of Peat Repository Locations	Rep. No: T51R(b)

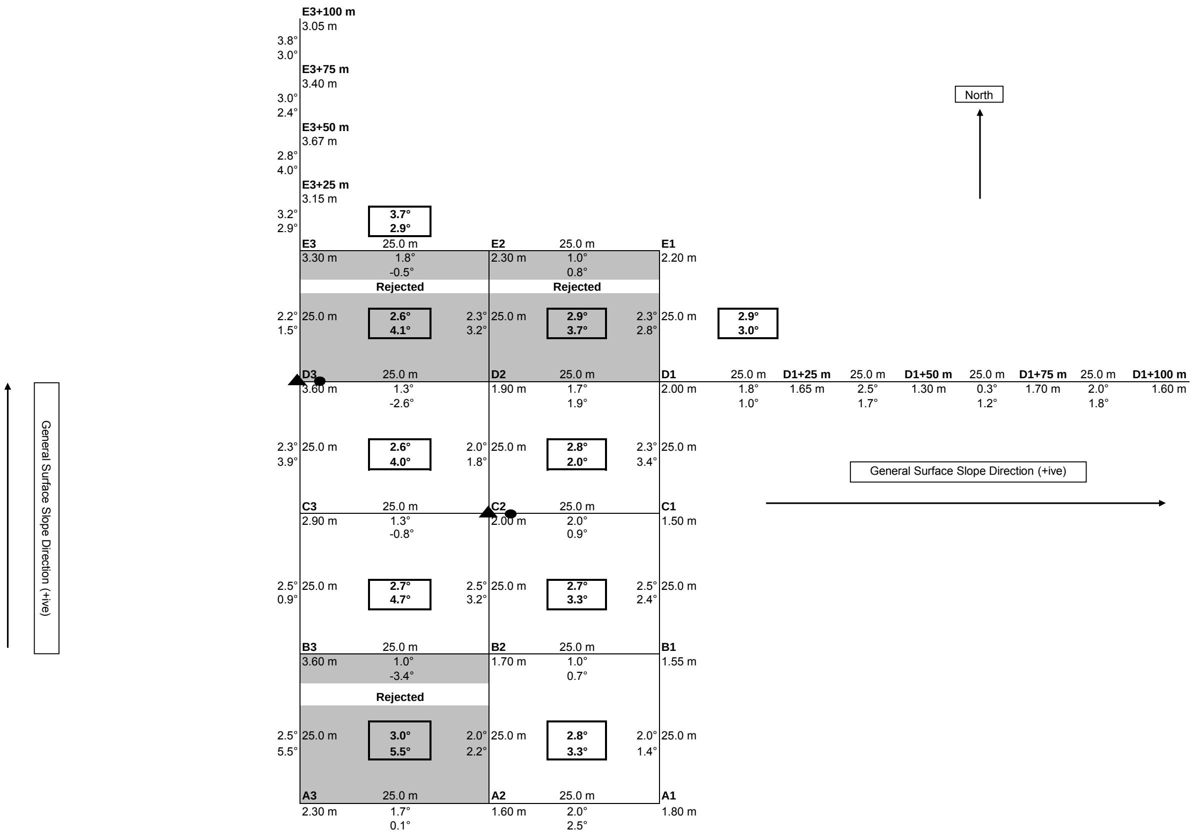
Max Slope at Ground Surface:	2.8°
Downslope:	2.0°
Orthogonal Direction:	2.0°
Resultant:	2.8°

Max Slope at Base of Peat:	4.7°
Downslope:	3.2°
Orthogonal Direction:	3.4°
Resultant:	4.7°

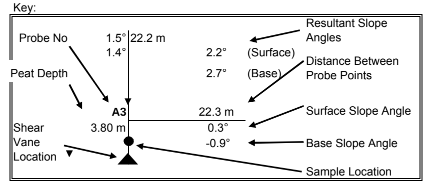
Comments:

Peat Depth :	1.50 m - 3.60 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 0.85 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

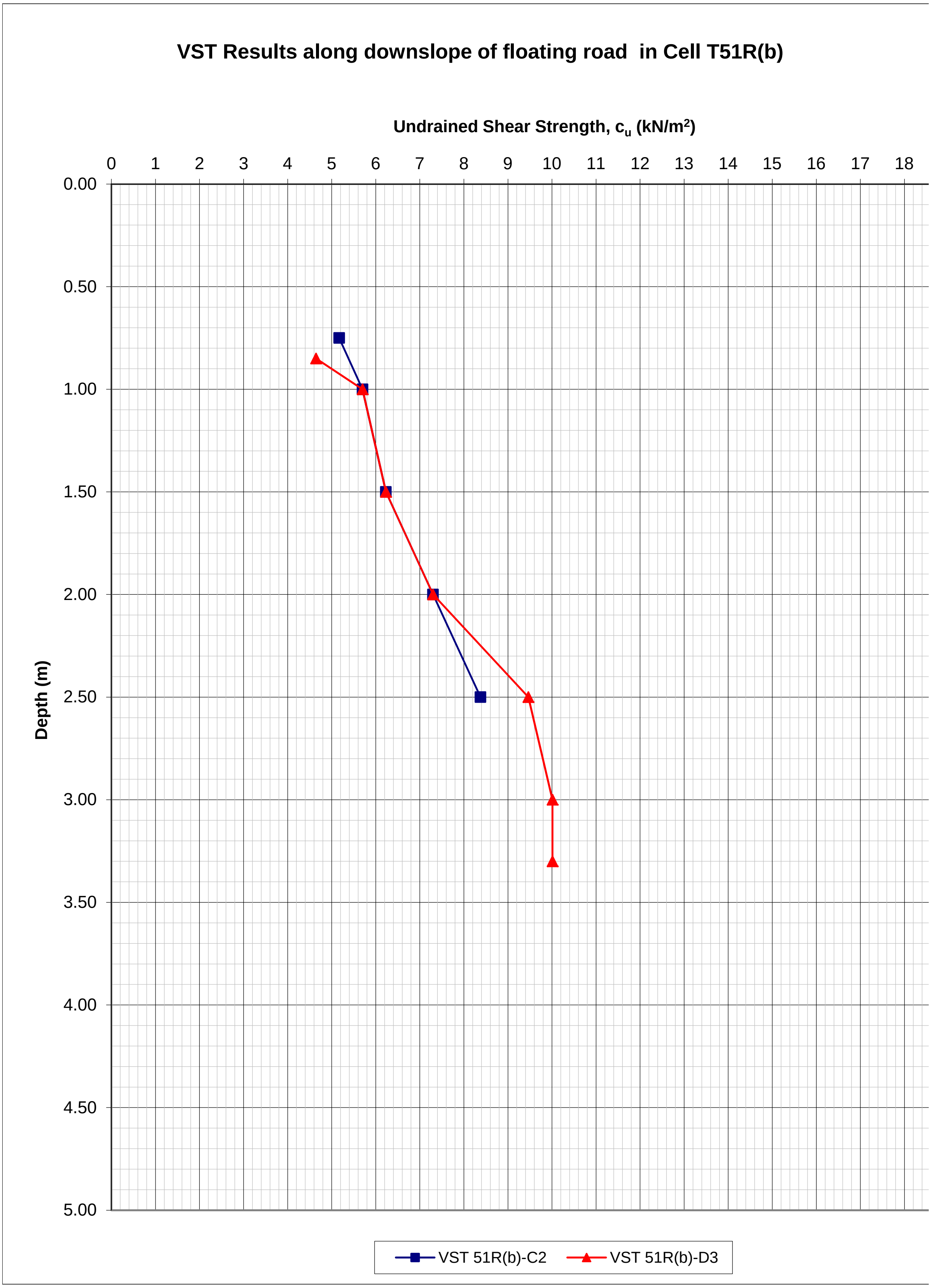
AGL Consulting *Geotechnical Engineers*	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 51R(b)**

Test No.		VST 51R(b)-C2	Date:			Peat Depth (m) 2.80	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.75	10.0	3.0	5.2				
1.00	11.0	2.5	5.7				
1.50	12.0	3.0	6.2				
2.00	14.0	3.0	7.3				
2.50	16.0	4.0	8.4				

Test No.		VST 51R(b)-D3	Date:			Peat Depth (m) 3.60	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.85	9.0	3.0	4.6				
1.00	11.0	4.0	5.7				
1.50	12.0	3.0	6.2				
2.00	14.0	3.0	7.3				
2.50	18.0	4.0	9.5				
3.00	19.0	3.0	10.0				
3.30	19.0	2.0	10.0				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	



VST Results along downslope of floating road in Cell T51R(b)
Undrained Shear Strength, c_u (kN/m^2)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 51R(b)-C2
VST 51R(b)-D3

T51R(b)

Peat Repository Site : T51R(b)
Sliding Stability Analysis

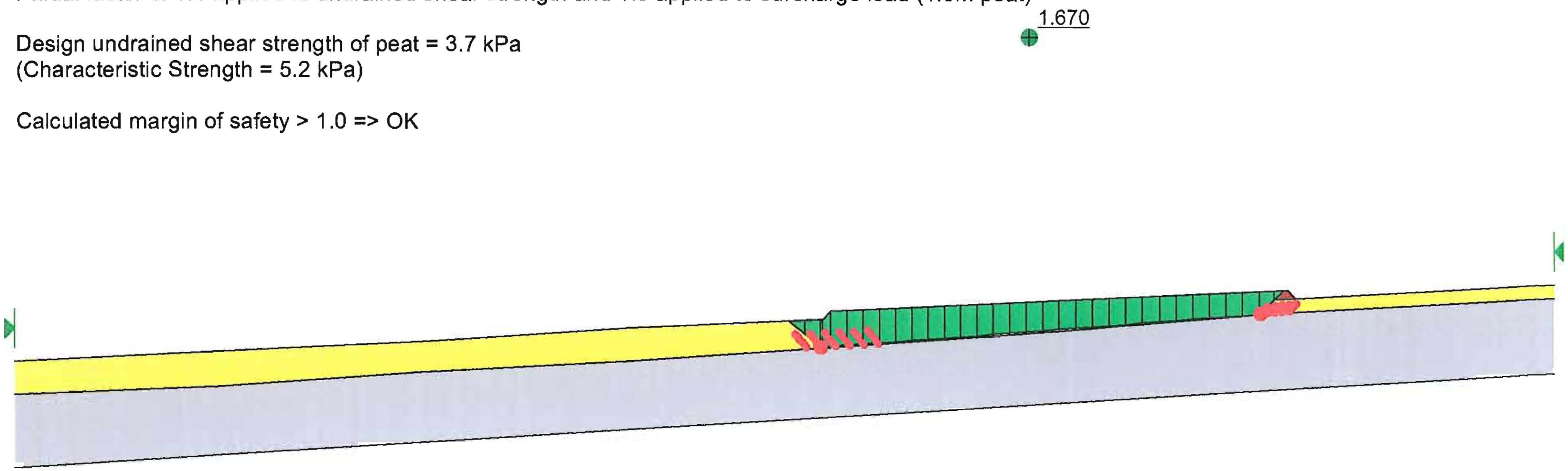
Size of Repository Site = 75 x 50 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.7 - 3.4 m	2.7 - 2.6 Deg	4.7 - 4.0 Deg
0 - 25 m Downslope	3.4 - 4.1 m	2.6 Deg	4.1 Deg
25 - 50 m Downslope	4.1 - 3.8 m	3.7 Deg	2.9 Deg
50 - 75 m Downslope	3.8 - 4.3 m	2.8 Deg	4.0 Deg
75 - 100 m Downslope	4.3 - 4.0 m	3.0 Deg	2.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T51R(b) (2kPa)

Peat Repository Site : T51R(b)
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

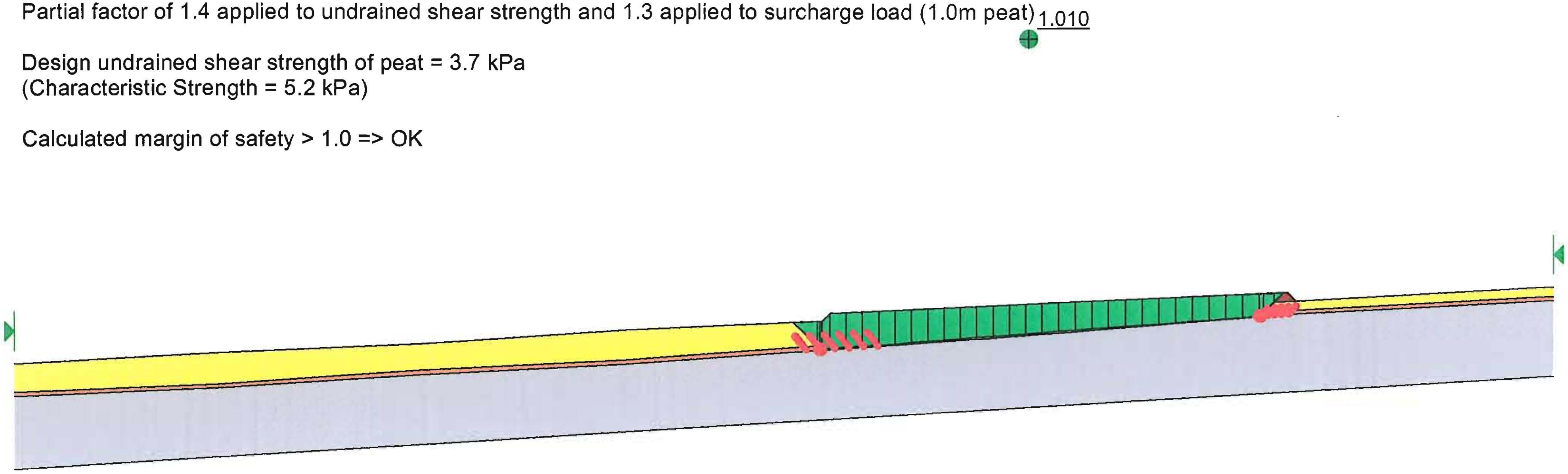
Size of Repository Site = 75 x 50 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.7 - 3.4 m	2.7 - 2.6 Deg	4.7 - 4.0 Deg
0 - 25 m Downslope	3.4 - 4.1 m	2.6 Deg	4.1 Deg
25 - 50 m Downslope	4.1 - 3.8 m	3.7 Deg	2.9 Deg
50 - 75 m Downslope	3.8 - 4.3 m	2.8 Deg	4.0 Deg
75 - 100 m Downslope	4.3 - 4.0 m	3.0 Deg	2.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



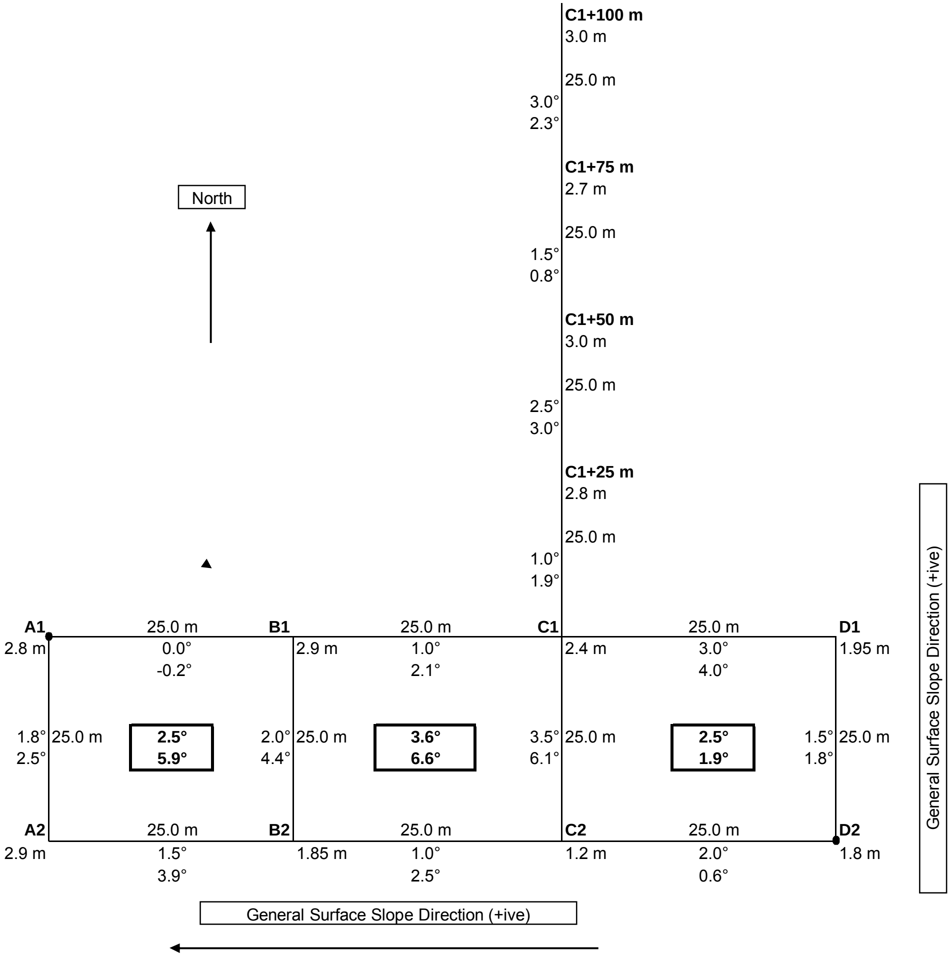
AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T53R**

Max Slope at Ground Surface:	6.6°
Downslope:	6.1°
Orthogonal Direction:	2.5°
Resultant:	6.6°

Max Slope at Base of Peat:	3.6°
Downslope:	3.5°
Orthogonal Direction:	1.0°
Resultant:	3.6°

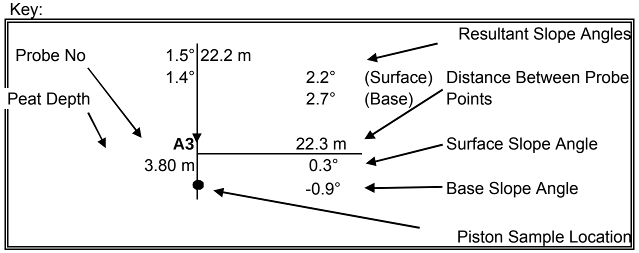
Piston Sampling / Gauge Auger:	Yes: X	No:
Location:		
Weak Layer/Discontinuity Present:	Yes:	No: X

Peat Depth :	1.8 m - 2.9 m
Min. Undrained Shear Strength:	5.2 kPa at Depth = 1.0m



Comments:

Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

AGL Consulting *Geotechnical Engineers*			Record Of Vane Shear Tests				
Project:	Derrybrien Wind Farm		Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 53R**
Job No.	03-104						

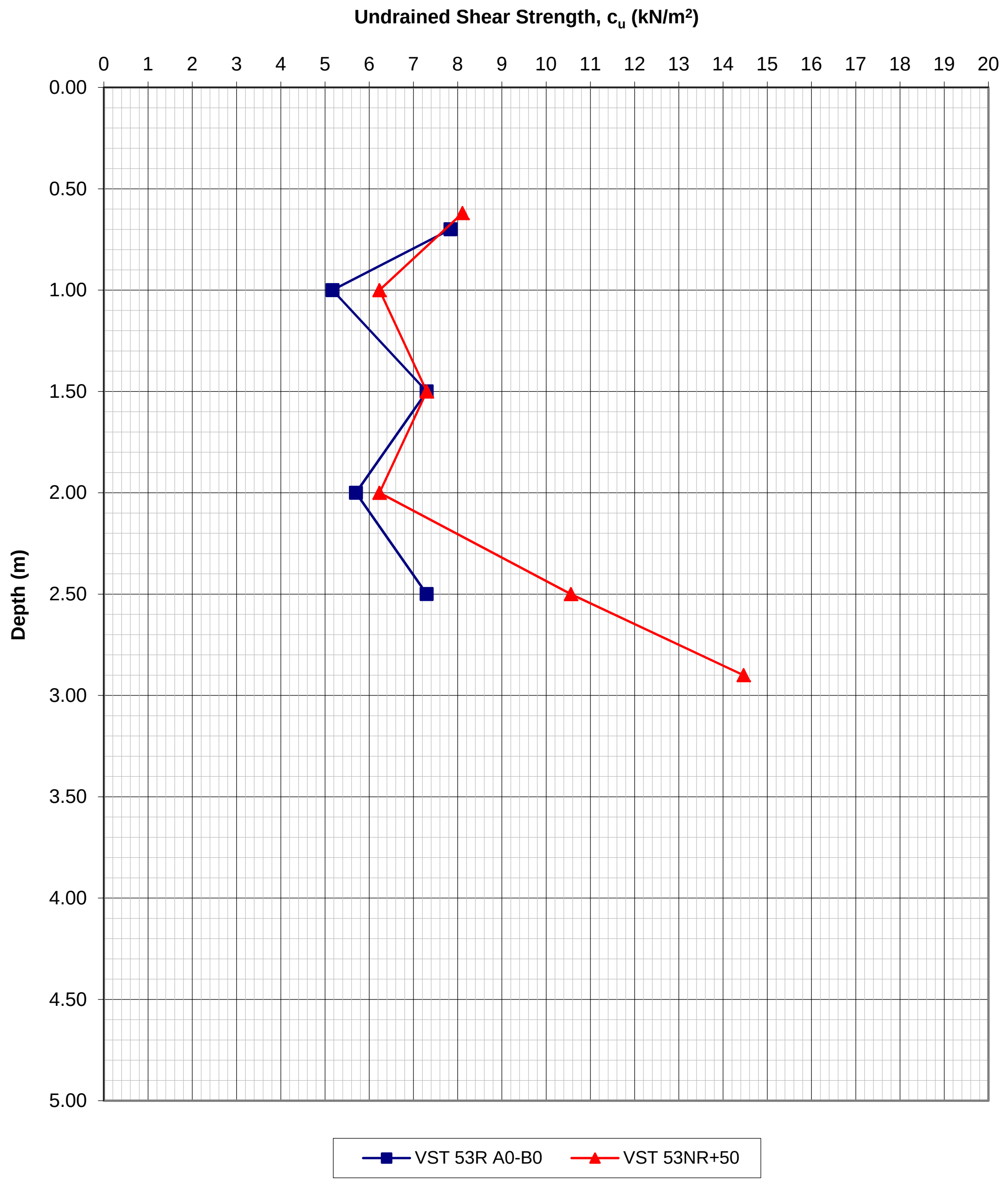
Test No.		VST 53R A0-B0	Date:			Peat Depth (m) 2.7	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	15.0	7.00	7.8				
1.00	10.0	5.00	5.2				
1.50	14.0	5.50	7.3				
2.00	11.0	4.50	5.7				
2.50	14.0	6.00	7.3				

Test No.		VST 53NR+50	Date:			Peat Depth (m) 1.05	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.62	15.5	6.00	8.1				
1.00	12.0	5.50	6.2				
1.50	14.0	5.00	7.3				
2.00	12.0	4.00	6.2				
2.50	20.0	5.50	10.6				
2.90	27.0	5.00	14.5				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

VST Results along downslope of floating road in Cell T53R



T53R

Peat Repository Site : T53R
Sliding Stability Analysis

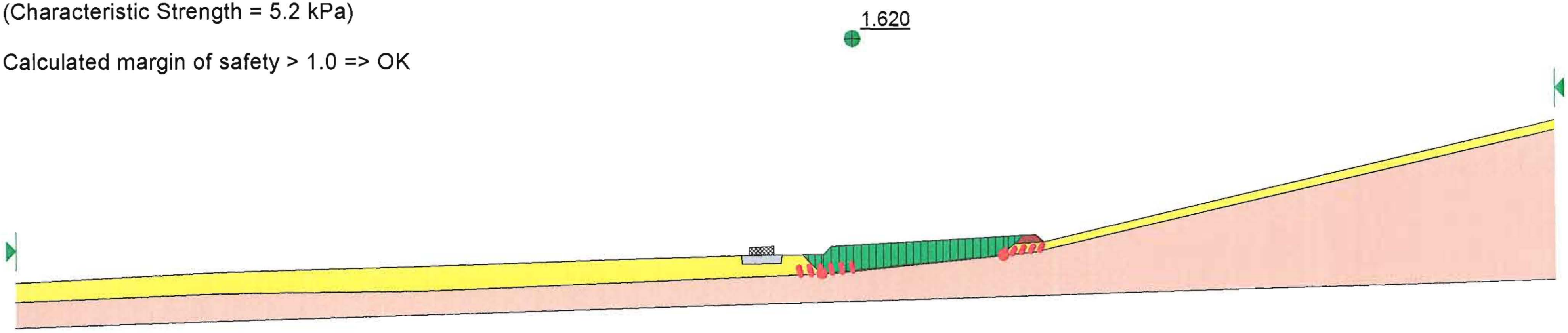
Size of Repository Site = 75 x 25 m
Length of loaded area = 25.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.2 - 2.4 m	3.5 Deg	6.1 Deg
0 - 25 m Downslope	2.4 - 2.8 m	1.0 Deg	1.9 Deg
25 - 50 m Downslope	2.8 - 3.0 m	2.5 Deg	3.0 Deg
50 - 75 m Downslope	3.0 - 2.6 m	1.5 Deg	0.8 Deg
75 - 100 m Downslope	2.6 - 3.0 m	3.0 Deg	2.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



T53R (2 kPa)

Peat Repository Site : T53R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

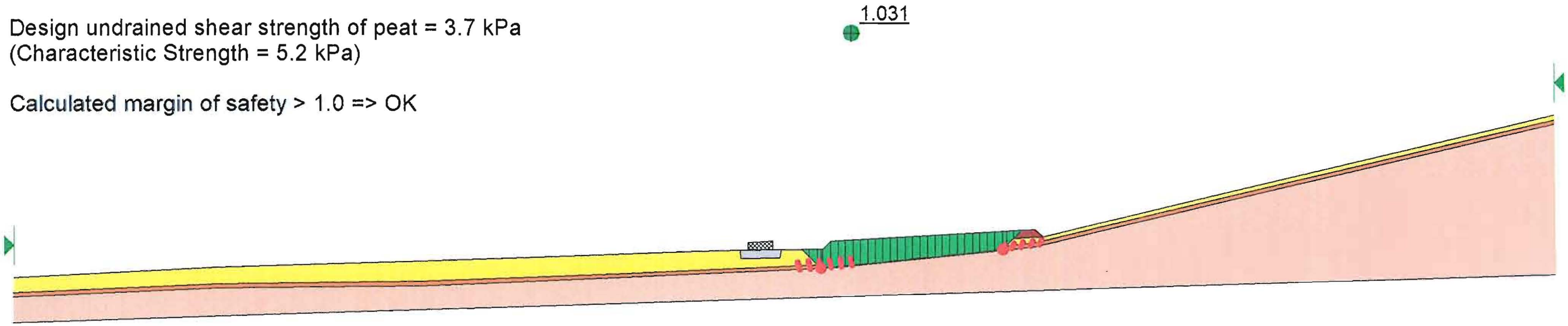
Size of Repository Site = 75 x 25 m
Length of loaded area = 25.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.2 - 2.4 m	3.5 Deg	6.1 Deg
0 - 25 m Downslope	2.4 - 2.8 m	1.0 Deg	1.9 Deg
25 - 50 m Downslope	2.8 - 3.0 m	2.5 Deg	3.0 Deg
50 - 75 m Downslope	3.0 - 2.6 m	1.5 Deg	0.8 Deg
75 - 100 m Downslope	2.6 - 3.0 m	3.0 Deg	2.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.7 kPa
(Characteristic Strength = 5.2 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T54R**

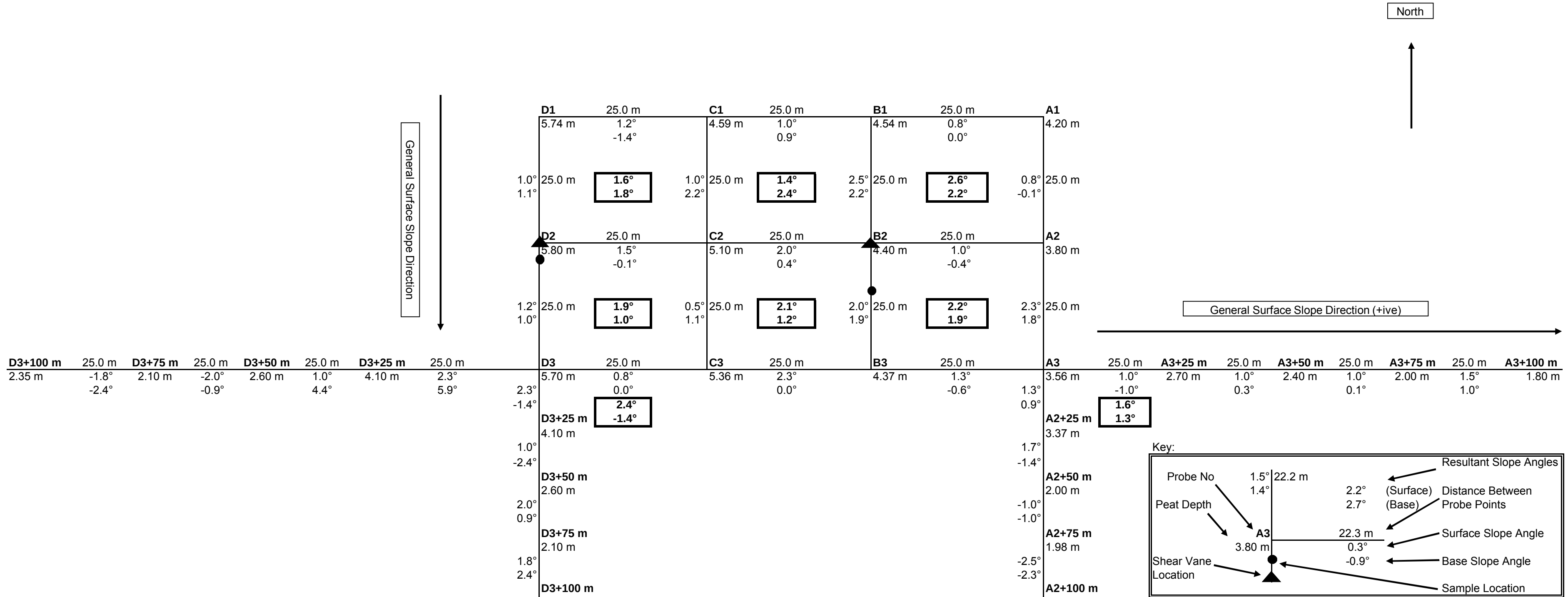
Max Slope at Ground Surface:	2.6°
Downslope:	2.5°
Orthogonal Direction:	0.8°
Resultant:	2.6°

Max Slope at Base of Peat:	2.4°
Downslope:	2.2°
Orthogonal Direction:	0.9°
Resultant:	2.4°

Comments:

Peat Depth :	5.80 m - 3.56 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.50 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Derrybrien Wind Farm Additional Ground Investigation

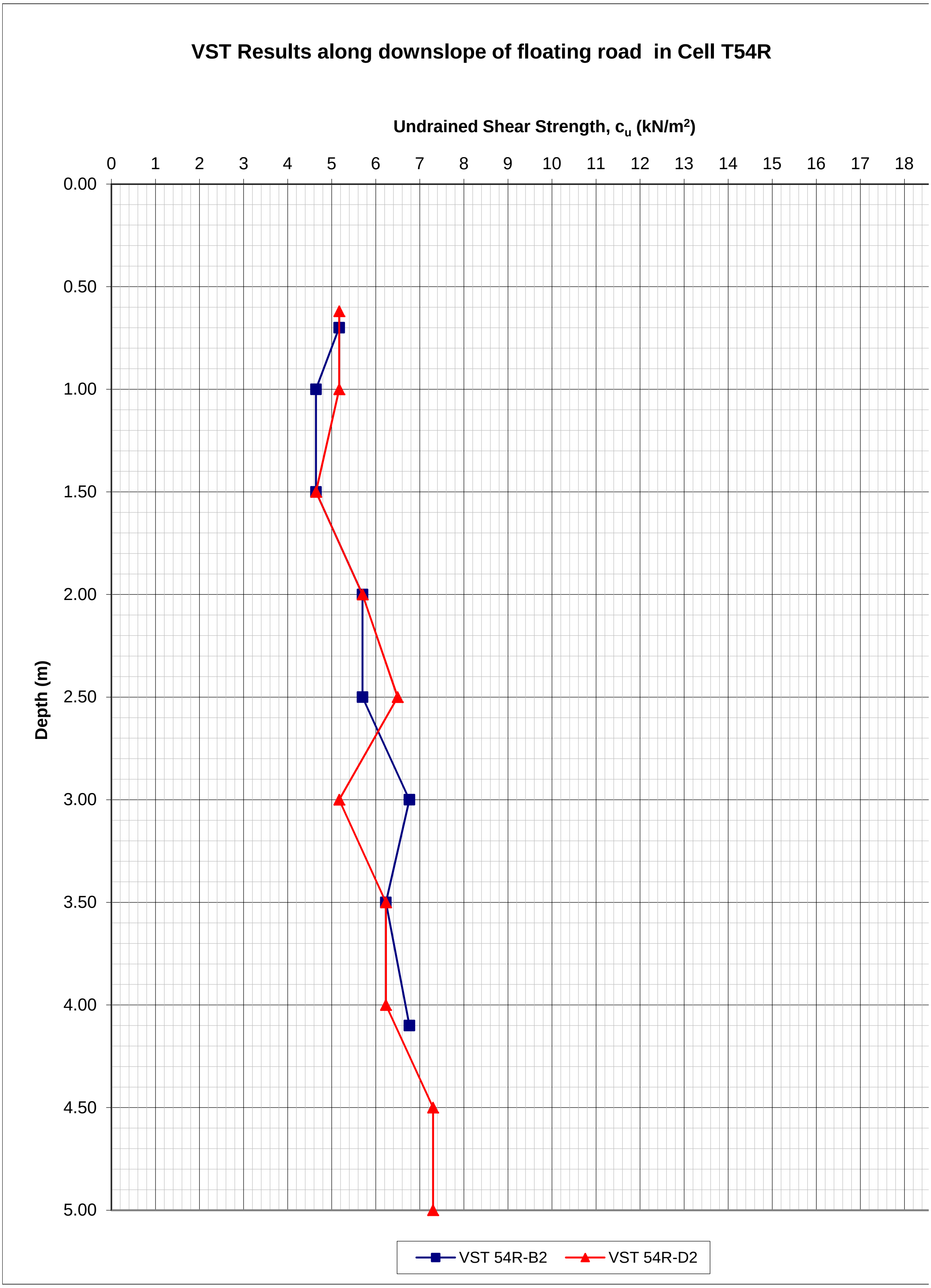
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 (65_{mm}/130_{mm})	**Cell No. 54R**

Test No.		VST 54R-B2	Date:			Peat Depth (m) 4.40	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	10.0	2.0	5.2				
1.00	9.0	3.0	4.6				
1.50	9.0	3.0	4.6				
2.00	11.0	3.5	5.7				
2.50	11.0	3.0	5.7				
3.00	13.0	3.5	6.8				
3.50	12.0	4.0	6.2				
4.10	13.0	3.0	6.8				

Test No.		VST 54R-D2	Date:			Peat Depth (m) 5.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.62	10.0	3.0	5.2				
1.00	10.0	4.0	5.2				
1.50	9.0	3.5	4.6				
2.00	11.0	2.0	5.7				
2.50	12.5	3.5	6.5				
3.00	10.0	3.0	5.2				
3.50	12.0	3.5	6.2				
4.00	12.0	2.0	6.2				
4.50	14.0	2.0	7.3				
5.00	14.0	3.0	7.3				
5.50	16.0	3.0	8.4				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T54R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 54R-B2
VST 54R-D2

Peat Repository Site : T54R
Sliding Stability Analysis

T54R

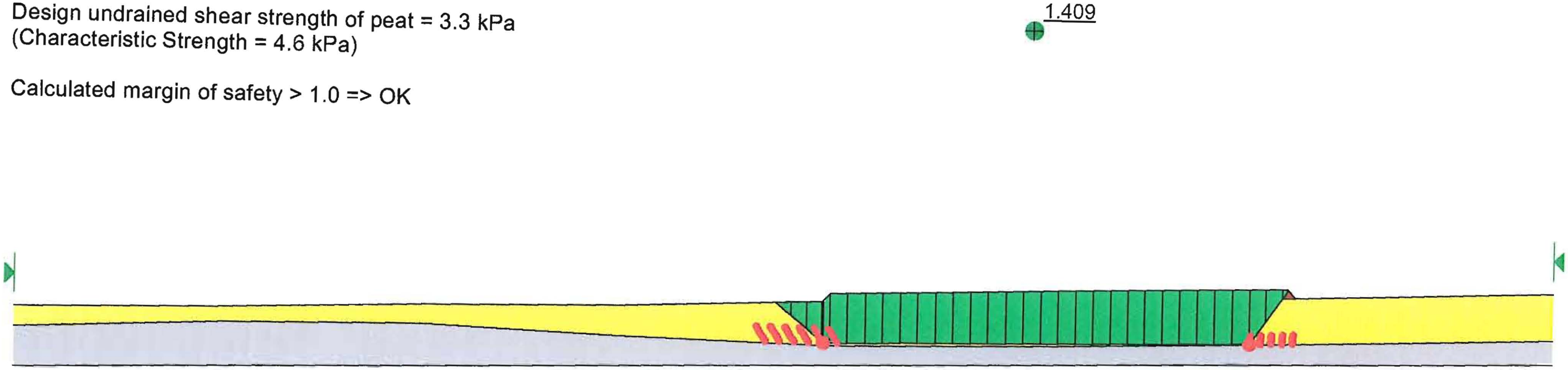
Size of Repository Site = 75 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

Repository Site	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	5.7 - 5.4 m	1.6 - 1.9 Deg	1.8 - 1.0 Deg
0 - 25 m Downslope	5.4 - 3.8 m	2.4 Deg	-1.4 Deg
25 - 50 m Downslope	3.8 - 2.4 m	1.0 Deg	-2.4 Deg
50 - 75 m Downslope	2.4 - 1.9 m	2.0 Deg	0.9 Deg
75 - 100 m Downslope	1.9 - 2.1 m	1.8 Deg	2.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T54R (2kPa)

Peat Repository Site : T54R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

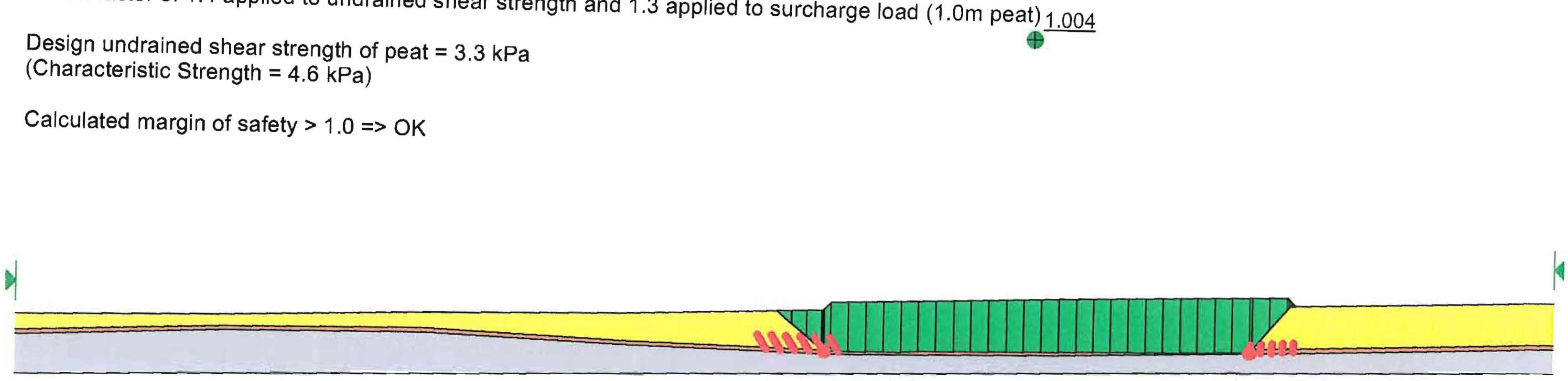
Size of Repository Site = 75 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	5.7 - 5.4 m	1.6 - 1.9 Deg	1.8 - 1.0 Deg
0 - 25 m Downslope	5.4 - 3.8 m	2.4 Deg	-1.4 Deg
25 - 50 m Downslope	3.8 - 2.4 m	1.0 Deg	-2.4 Deg
50 - 75 m Downslope	2.4 - 1.9 m	2.0 Deg	0.9 Deg
75 - 100 m Downslope	1.9 - 2.1 m	1.8 Deg	2.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T54R

Peat Repository Site : T54R
Sliding Stability Analysis

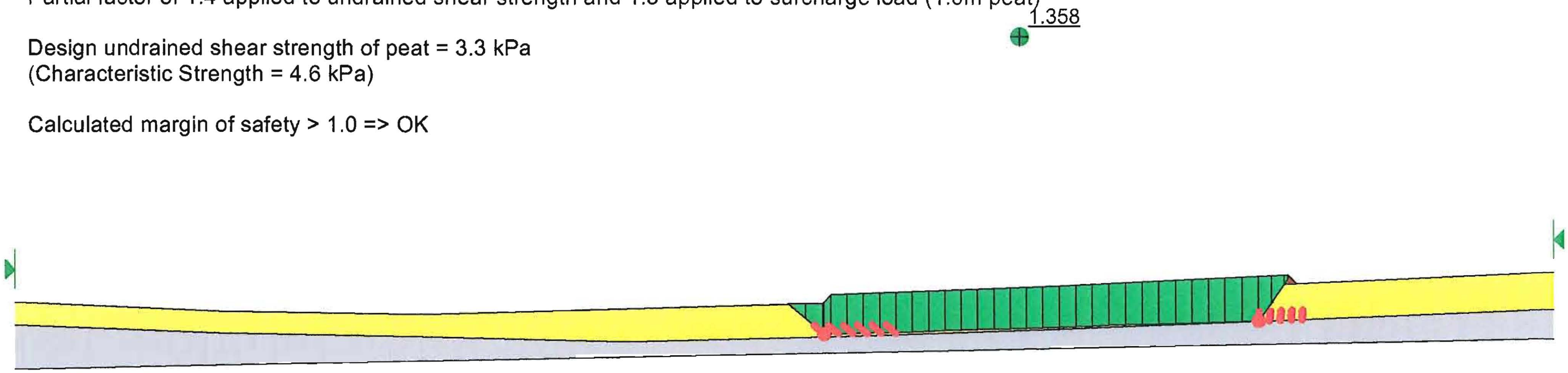
Size of Repository Site = 75 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.5 - 4.1 m	2.6 - 2.2 Deg	2.2 - 1.9 Deg
0 - 25 m Downslope	4.1 - 4.0 m	1.6 Deg	1.3 Deg
25 - 50 m Downslope	4.0 - 2.7 m	1.7 Deg	-1.4 Deg
50 - 75 m Downslope	2.7 - 2.7 m	-1.0 Deg	-1.0 Deg
75 - 100 m Downslope	2.7 - 2.8 m	-2.5 Deg	-2.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T54R (2kPa)

Peat Repository Site : T54R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

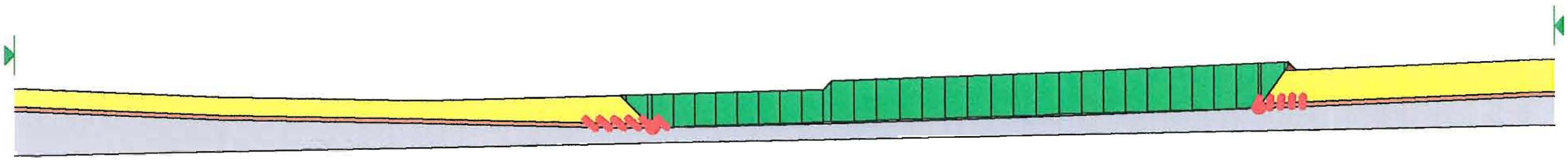
Size of Repository Site = 75 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	4.5 - 4.1 m	2.6 - 2.2 Deg	2.2 - 1.9 Deg
0 - 25 m Downslope	4.1 - 4.0 m	1.6 Deg	1.3 Deg
25 - 50 m Downslope	4.0 - 2.7 m	1.7 Deg	-1.4 Deg
50 - 75 m Downslope	2.7 - 2.7 m	-1.0 Deg	-1.0 Deg
75 - 100 m Downslope	2.7 - 2.8 m	-2.5 Deg	-2.3 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting *Geotechnical Engineers*		Record of Peat Repository Locations	Rep. No: T55R

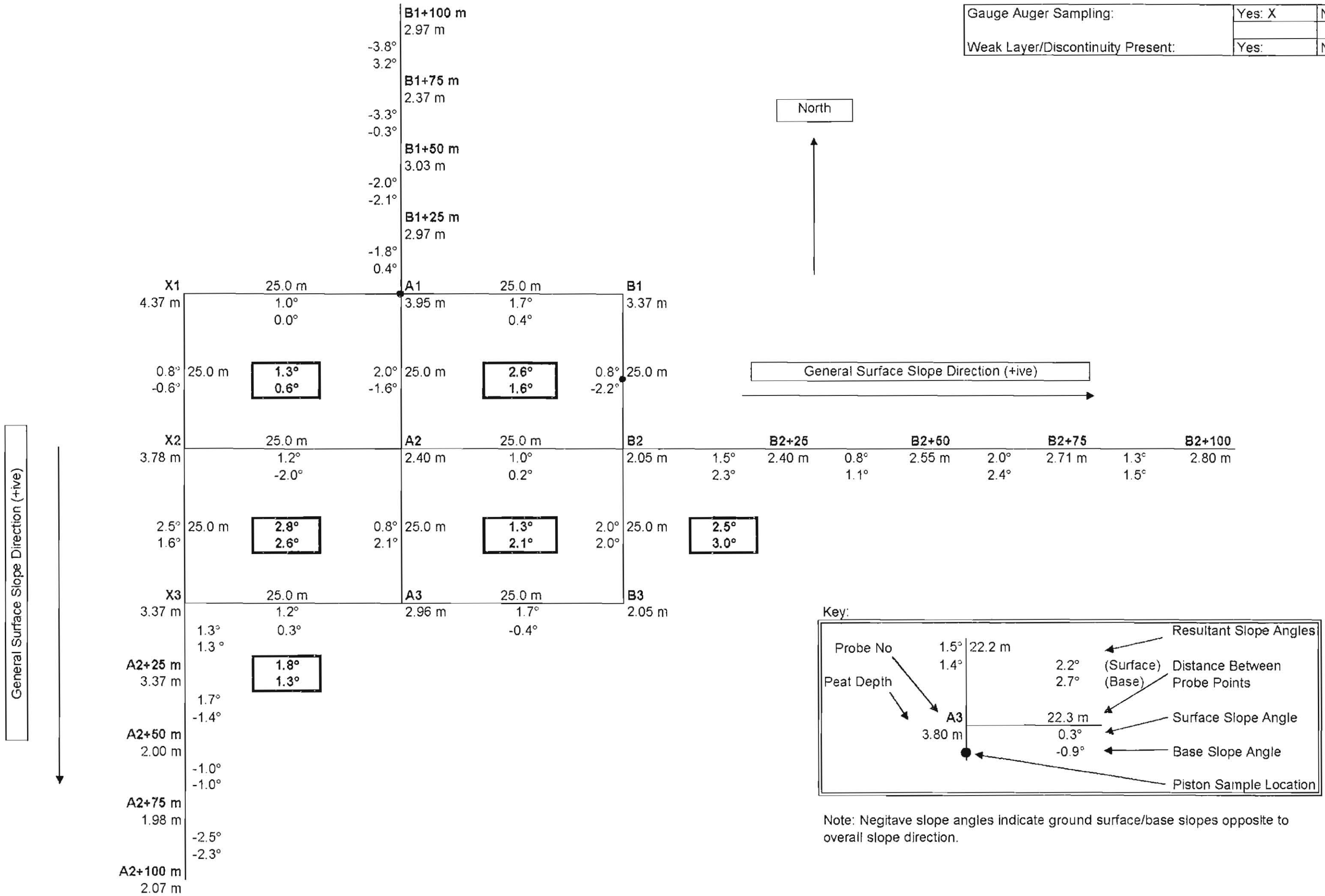
Max Slope at Ground Surface:	2.8°
Downslope:	2.5°
Orthogonal Direction:	1.2°
Resultant:	2.8°

Max Slope at Base of Peat:	2.6°
Downslope:	1.6°
Orthogonal Direction:	2.0°
Resultant:	2.6°

Comments:

Peat Depth :	2.05 m - 4.37 m
Min Undrained Shear Strength:	4.1 kPa at Depth = 1.7 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

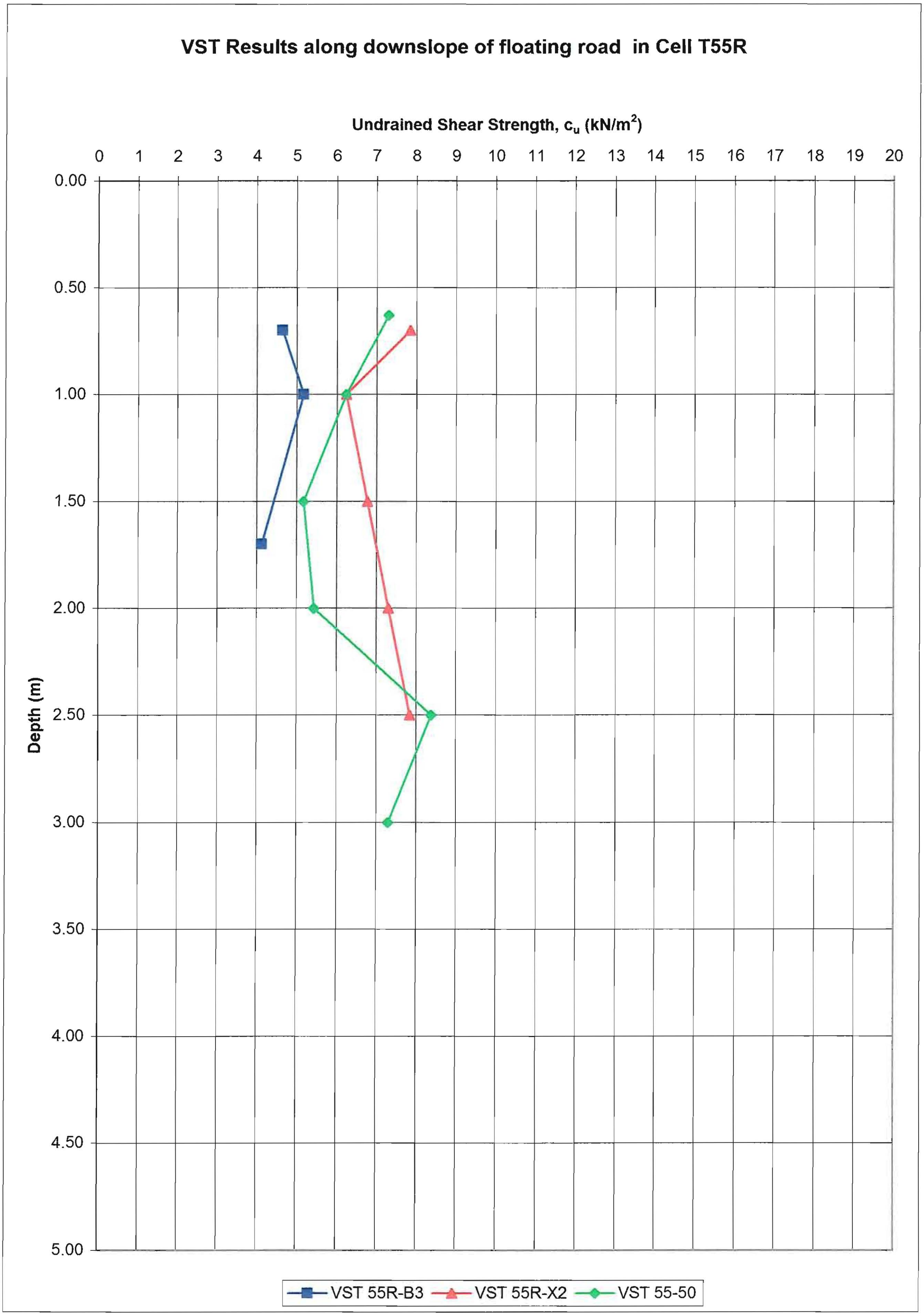
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	Cell No. 55R

Test No.		VST 55R-B3	Date:			Peat Depth (m) 2.00	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	9.0	4.00	4.6				
1.00	10.0	4.00	5.2				
1.70	8.0	4.50	4.1				

Test No.		VST 55R-X2	Date:			Peat Depth (m) 3.70	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	15.0	4.00	7.8				
1.00	12.0	3.50	6.2				
1.50	13.0	3.00	6.8				
2.00	14.0	4.50	7.3				
2.50	15.0	4.00	7.8				
3.00	23.0	4.50	12.2				
3.50	13.0	5.00	6.8				

Test No.		VST 55-50	Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.63	14.0	11.00	7.3				
1.00	12.0	5.00	6.2				
1.50	10.0	6.00	5.2				
2.00	10.5	5.00	5.4				
2.50	16.0	7.00	8.4				
3.00	14.0	5.00	7.3				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments



VST Results along downslope of floating road in Cell T55R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 55R-B3
VST 55R-X2
VST 55-50

T55R

Peat Repository Site : T55R
Sliding Stability Analysis

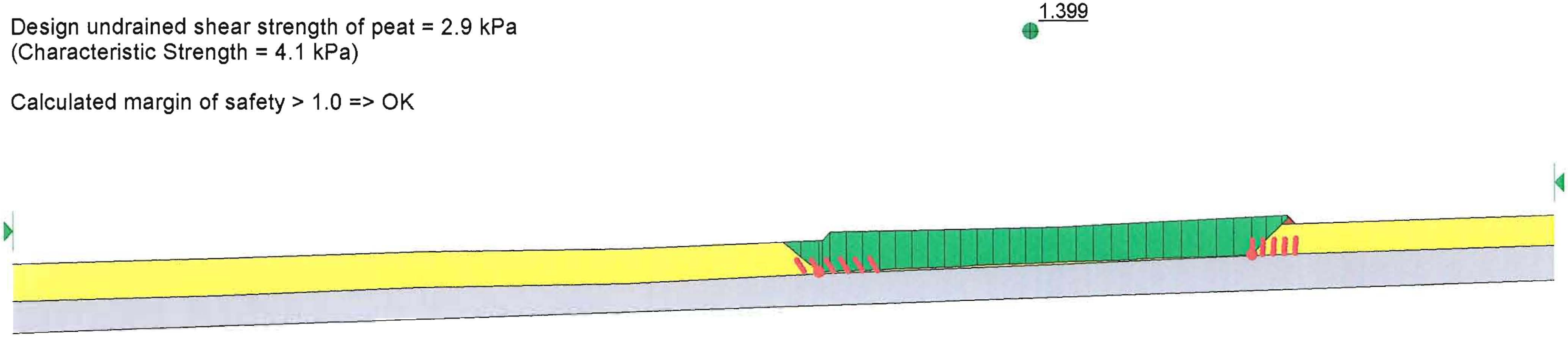
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.7 - 4.0 m	2.8 - 1.3 Deg	2.7 - 2.1 Deg
0 - 25 m Downslope	4.0 - 4.2 m	2.5 Deg	3.0 Deg
25 - 50 m Downslope	4.2 - 4.4 m	0.8 Deg	1.1 Deg
50 - 75 m Downslope	4.4 - 4.5 m	2.0 Deg	2.4 Deg
75 - 100 m Downslope	4.5 - 4.6 m	1.3 Deg	1.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



T55R (2kPa)

Peat Repository Site : T55R
Sliding Stability Analysis with 0.5 m thick layer of very wek peat (cu = 2kPa) at base

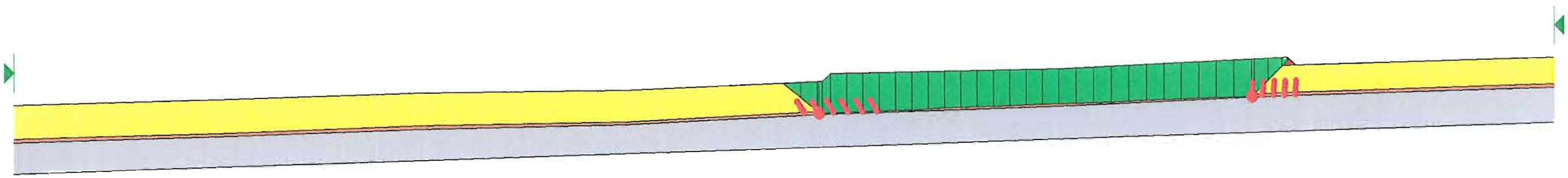
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.7 - 4.0 m	2.8 - 1.3 Deg	2.7 - 2.1 Deg
0 - 25 m Downslope	4.0 - 4.2 m	2.5 Deg	3.0 Deg
25 - 50 m Downslope	4.2 - 4.4 m	0.8 Deg	1.1 Deg
50 - 75 m Downslope	4.4 - 4.5 m	2.0 Deg	2.4 Deg
75 - 100 m Downslope	4.5 - 4.6 m	1.3 Deg	1.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat) 1.053

Design undrained shear strength of peat = 2.9 kPa
(Characteristic Strength = 4.1 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting Geotechnical Engineers		Record of Peat Repository Locations	Rep. No: T56-57R

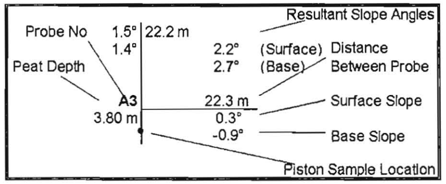
Max Slope at Ground Surface:	2.8°
Downslope:	2.5°
Orthogonal Direction:	1.3°
Resultant:	2.8°

Max Slope at Base of Peat:	3.7°
Downslope:	3.5°
Orthogonal Direction:	1.3°
Resultant:	3.7°

Peat Depth :	1.95 m - 4.5 m
Min Undrained Shear Strength:	3.6 kPa at Depth = 2.0 m

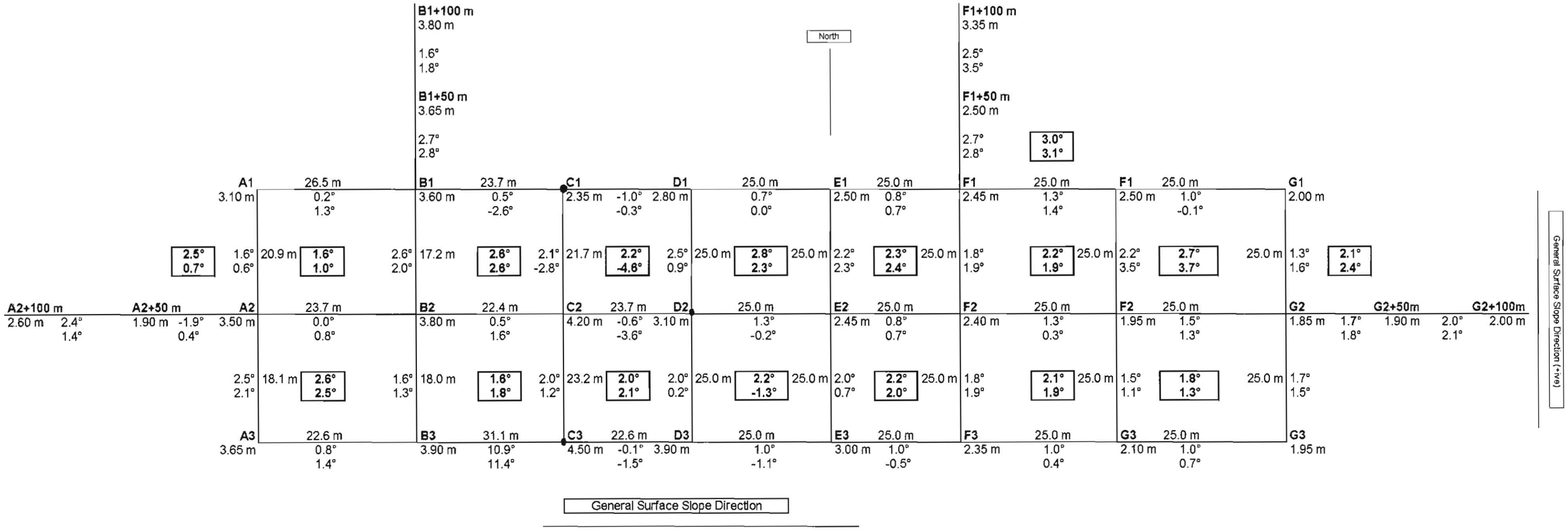
Piston Sampling / Gauge Auger:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X

Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Comments:
Resultant angle of 4.6° between C1/C2 & D1/D2 is a backslope along the base of the peat.



AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	Cell No. T56-57R

Test No.		VST 56-57R-D3	Date:			Peat Depth (m) 2.96	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.72	17.00	9.00	8.9				
1.00	17.00	6.00	8.9				
1.50	13.00	6.00	6.8				
2.00	18.00	6.00	9.5				

Test No.		VST 56-57R-F3	Date:			Peat Depth (m) 3.80	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.72	20.00	9.00	10.6				
1.00	11.00	8.00	5.7				
1.50	10.00	8.00	5.2				
2.00	10.00	7.00	5.2				
2.50	9.00	6.00	4.6				
3.00	7.00	6.00	3.6				
3.50	20.00	6.00	10.6				

Test No.		VST 56-57R-A2/B2	Date:			Peat Depth (m) 3.20	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	32.0	7.00	17.3				
1.00	15.0	6.00	7.8				
1.50	12.5	5.50	6.5				
2.00	11.5	2.50	6.0				
2.50	16.5	5.00	8.6				
3.00	18.0	6.00	9.5				

Test No.		VST 56-57R-A1/B1	Date:			Peat Depth (m) 3.20	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	27.0	5.50	14.5				
1.00	25.5	6.00	13.6				
1.50	16.5	3.00	8.6				
2.00	22.0	4.00	11.7				
2.50	27.0	6.00	14.5				
3.00	20.0	2.50	10.6				

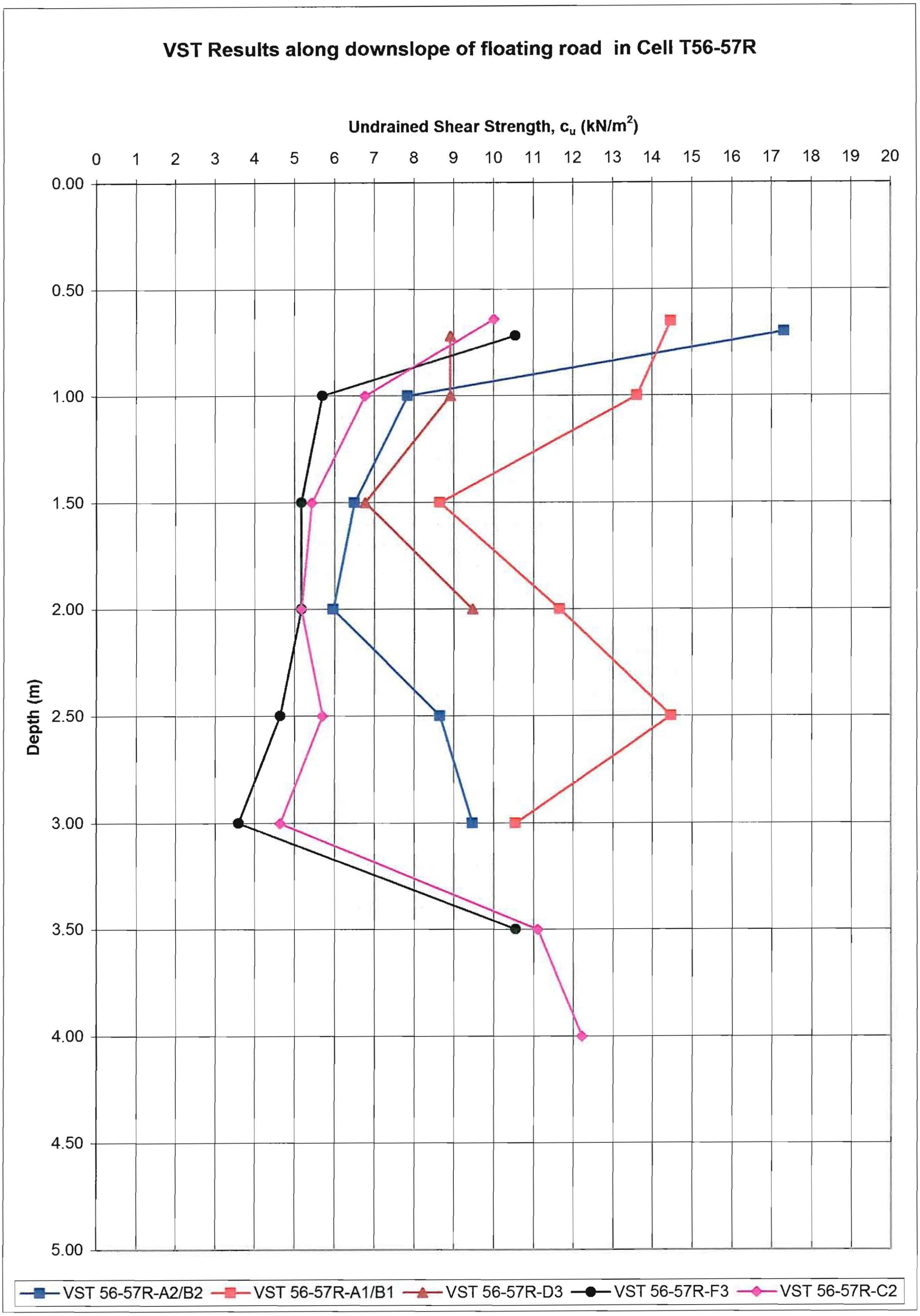
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. T56-57R**

Test No.		VST 56-57R-C2	Date:			Peat Depth (m) 4.20	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.64	19.0	7.00	10.0				
1.00	13.0	4.00	6.8				
1.50	10.5	4.50	5.4				
2.00	10.0	4.00	5.2				
2.50	11.0	4.50	5.7				
3.00	9.0	3.00	4.6				
3.50	21.0	4.50	11.1				
4.00	23.0	3.00	12.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	


VST Results along downslope of floating road in Cell T56-57R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
Depth (m)
VST 56-57R-A2/B2
VST 56-57R-A1/B1
VST 56-57R-D3
VST 56-57R-F3
VST 56-57R-C2

Peat Repository Site : T56/57R
Sliding Stability Analysis

T56-57R

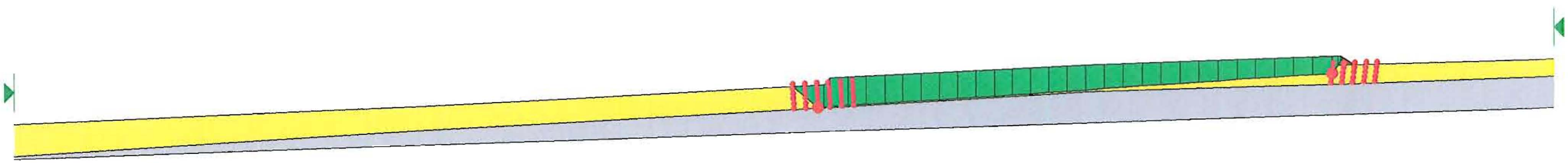
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 62.5 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.3 - 2.8 m	2.1 - 2.7 Deg	1.9 - 3.7 Deg
0 - 50 m Downslope	2.8 - 2.9 m	3.0 Deg	3.1 Deg
50 - 100 m Downslope	2.9 - 3.8 m	2.5 Deg	3.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat) 1.490

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T56-57R (2 kPa)

Peat Repository Site : T56/57R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at base

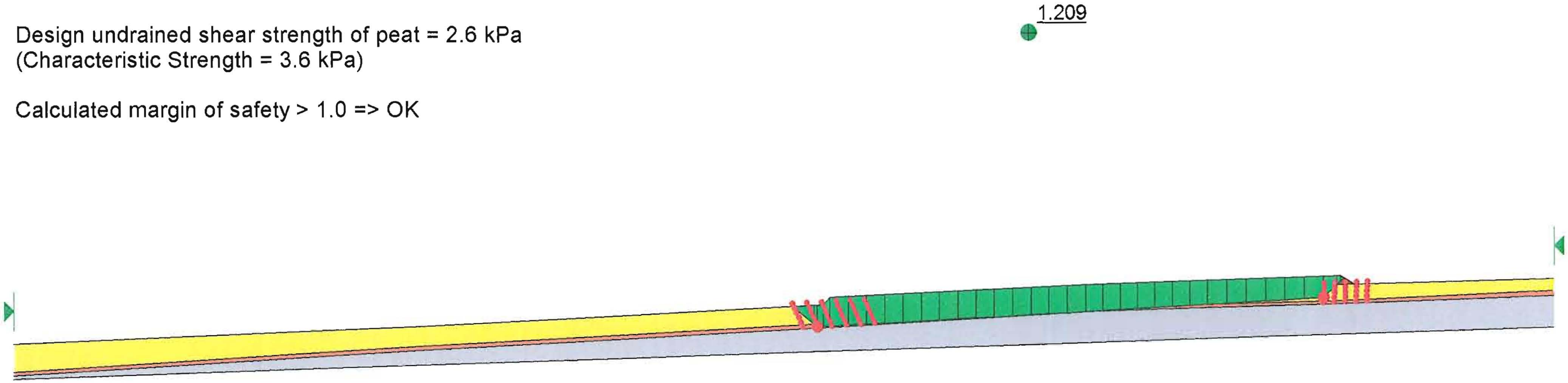
Size of Repository Site = 50 x 100 m
Length of loaded area parallel to resultant slope direction = 62.5 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.3 - 2.8 m	2.1 - 2.7 Deg	1.9 - 3.7 Deg
0 - 50 m Downslope	2.8 - 2.9 m	3.0 Deg	3.1 Deg
50 - 100 m Downslope	2.9 - 3.8 m	2.5 Deg	3.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T56R
Sliding Stability Analysis

T56R

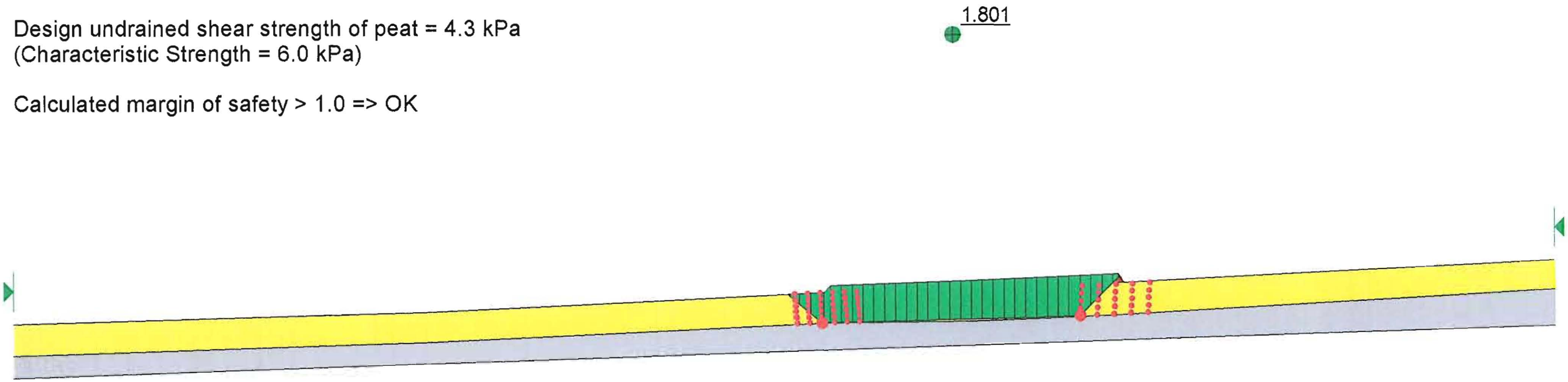
Size of Repository Site = 39 x 26.5 m
Length of loaded area parallel to resultant slope direction = 35.2 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.7 - 3.9 m	1.6 - 2.6 Deg	1.0 - 2.5 Deg
0 - 50 m Downslope	3.7 m	2.7 Deg	2.8 Deg
50 - 100 m Downslope	3.7 - 3.9 m	1.6 Deg	1.8 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 4.3 kPa
(Characteristic Strength = 6.0 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T56R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2 kPa) at Base

T56R (2 kPa)

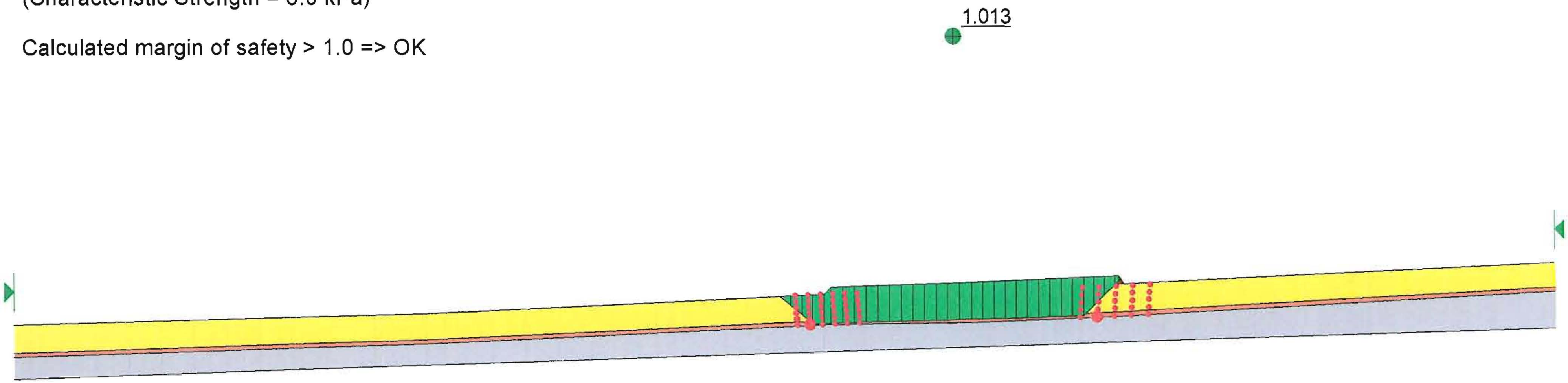
Size of Repository Site = 39 x 26.5 m
Length of loaded area parallel to resultant slope direction = 35.2 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.7 - 3.9 m	1.6 - 2.6 Deg	1.0 - 2.5 Deg
0 - 50 m Downslope	3.7 m	2.7 Deg	2.8 Deg
50 - 100 m Downslope	3.7 - 3.9 m	1.6 Deg	1.8 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 4.3 kPa
(Characteristic Strength = 6.0 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*	**Record of Peat Repository Locations**	**Rep. No: T57R**

Max Slope at Ground Surface:	2.7°
Downslope:	2.1°
Orthogonal Direction:	1.7°
Resultant:	2.7°

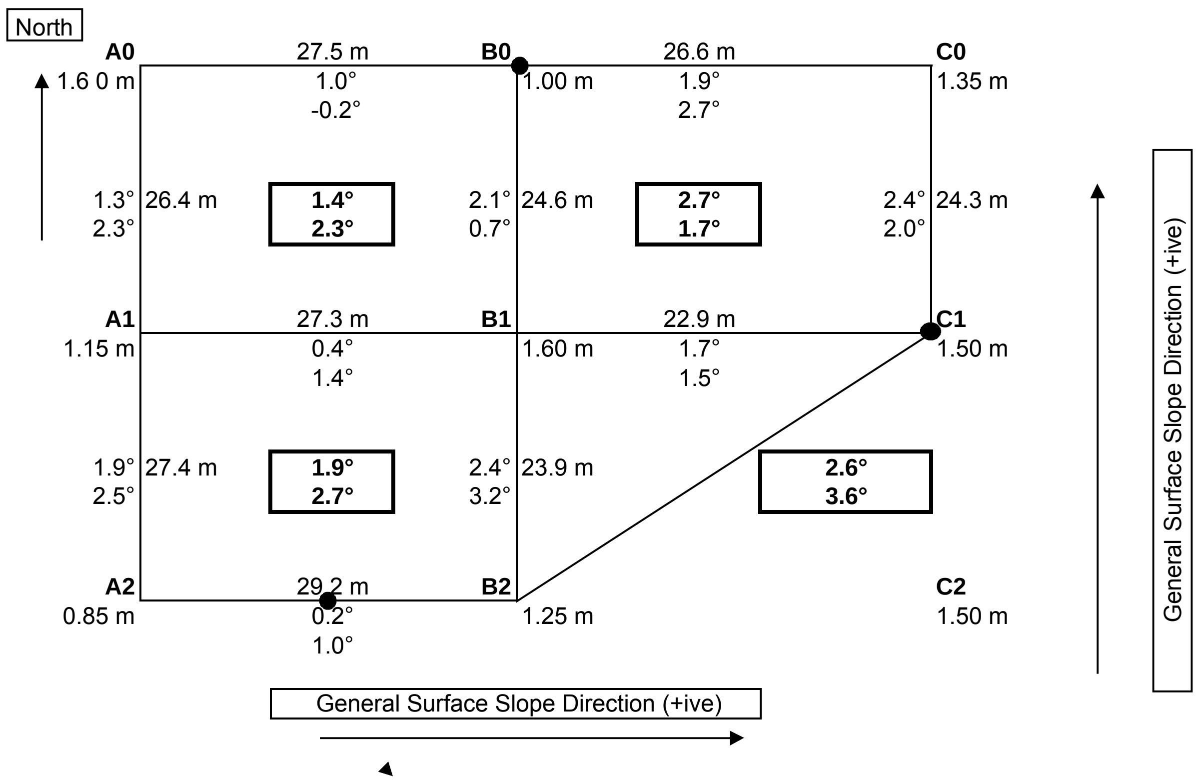
Max Slope at Base of Peat:	3.6°
Downslope:	3.2°
Orthogonal Direction:	1.0°
Resultant:	3.6°

Comments:

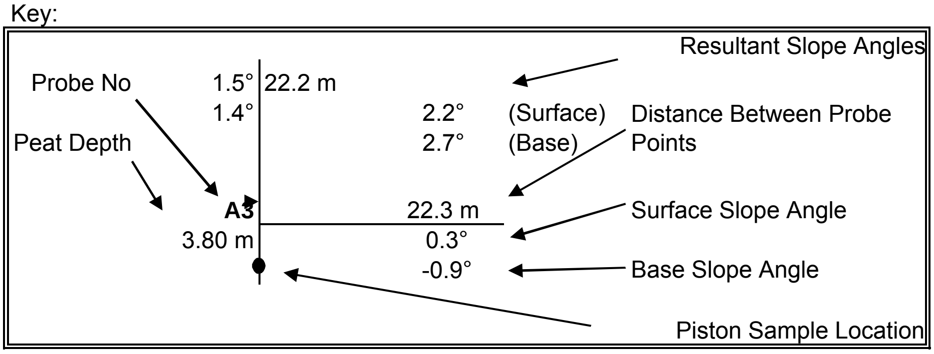
South east corner of proposed area excluded from approved repository site i.e. B2-C2-C1.

Peat Depth :	0.85 m - 1.6 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.0 m

Piston Sampling / Gauge Auger:	Yes: X	No:
Location:		
Weak Layer/Discontinuity Present:	Yes:	No: X



Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

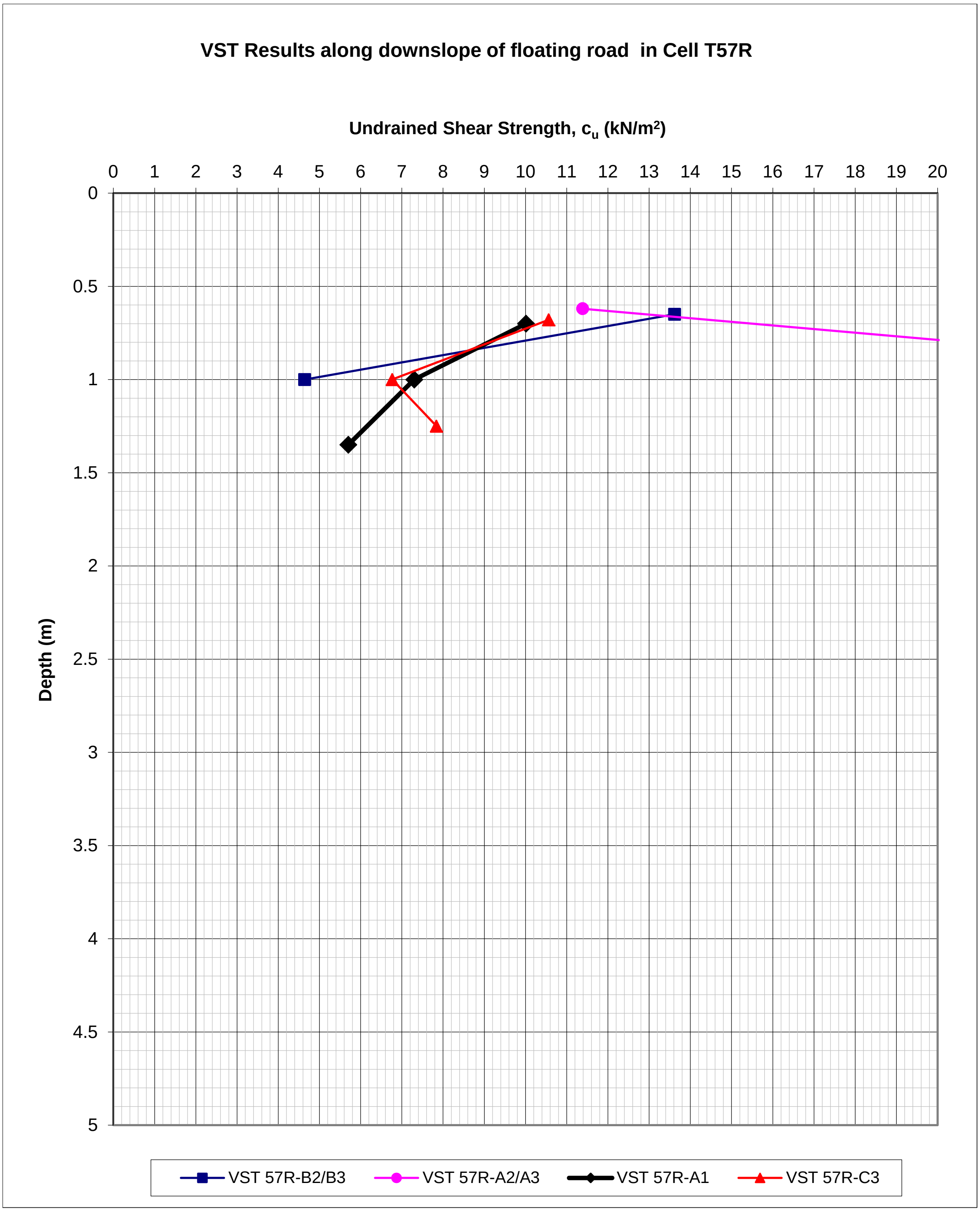
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 57R**

Test No.		VST 57R-B2/B3	Date:			Peat Depth (m) 1.2	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.65	25.5	6.50	13.6				
1.00	9.0	6.00	4.6				

Test No.		VST 57R-A2/A3	Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	21.5	7.00	11.4				
0.92	48.0	8.50	26.8				

Test No.		VST 57R-A1	Date:			Peat Depth (m) 1.6	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	19.0	5.00	10.0				
1.00	14.0	3.00	7.3				
1.35	11.0	3.00	5.7				

Test No.		VST 57R-C3	Date:			Peat Depth (m) 1.5	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.68	20.0	5.00	10.6				
1.00	13.0	3.00	6.8				
1.25	15.0	4.00	7.8				



VST Results along downslope of floating road in Cell T57R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5
VST 57R-B2/B3
VST 57R-A2/A3
VST 57R-A1
VST 57R-C3

T57R

Peat Repository Site : T57R
Sliding Stability Analysis

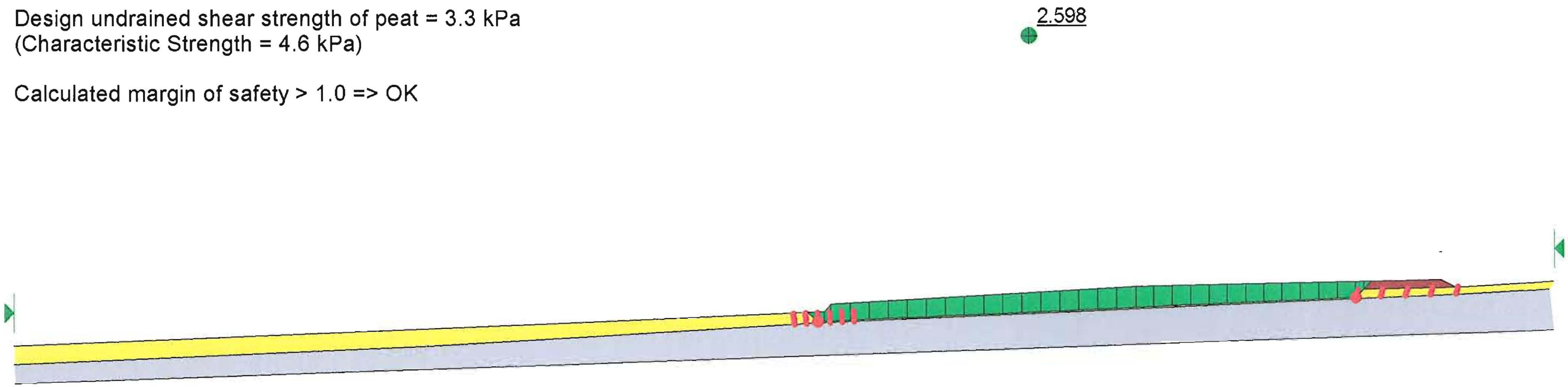
Size of Repository Site = 54 x 52 m
Length of loaded area parallel to resultant slope direction = 74.8 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	0.9 - 1.5 m	1.9 - 2.7 Deg	1.7 - 2.7 Deg
0 - 50 m Downslope	1.2 - 3.1 m	2.3 Deg	3.3 Deg
50 - 100 m Downslope	3.1 - 3.3 m	2.3 Deg	2.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T57R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

T57R (2kPa)

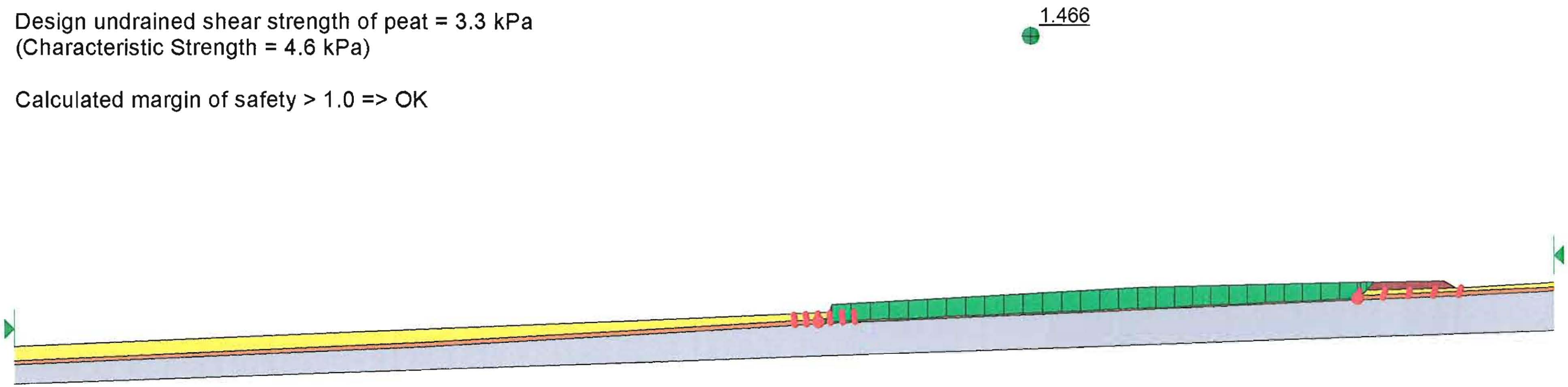
Size of Repository Site = 54 x 52 m
Length of loaded area parallel to resultant slope direction = 74.8 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	0.9 - 1.5 m	1.9 - 2.7 Deg	1.7 - 2.7 Deg
0 - 50 m Downslope	1.2 - 3.1 m	2.3 Deg	3.3 Deg
50 - 100 m Downslope	3.1 - 3.3 m	2.3 Deg	2.5 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting ***Geotechnical Engineers***		**Record of Peat Repository Locations**	**Rep. No: T58R**

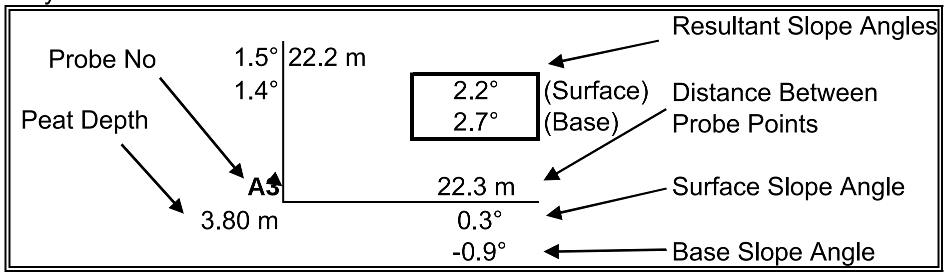
Max Slope at Ground Surface:	2.8°
Downslope:	2.0°
Orthogonal Direction:	2.0°
Resultant:	2.8°

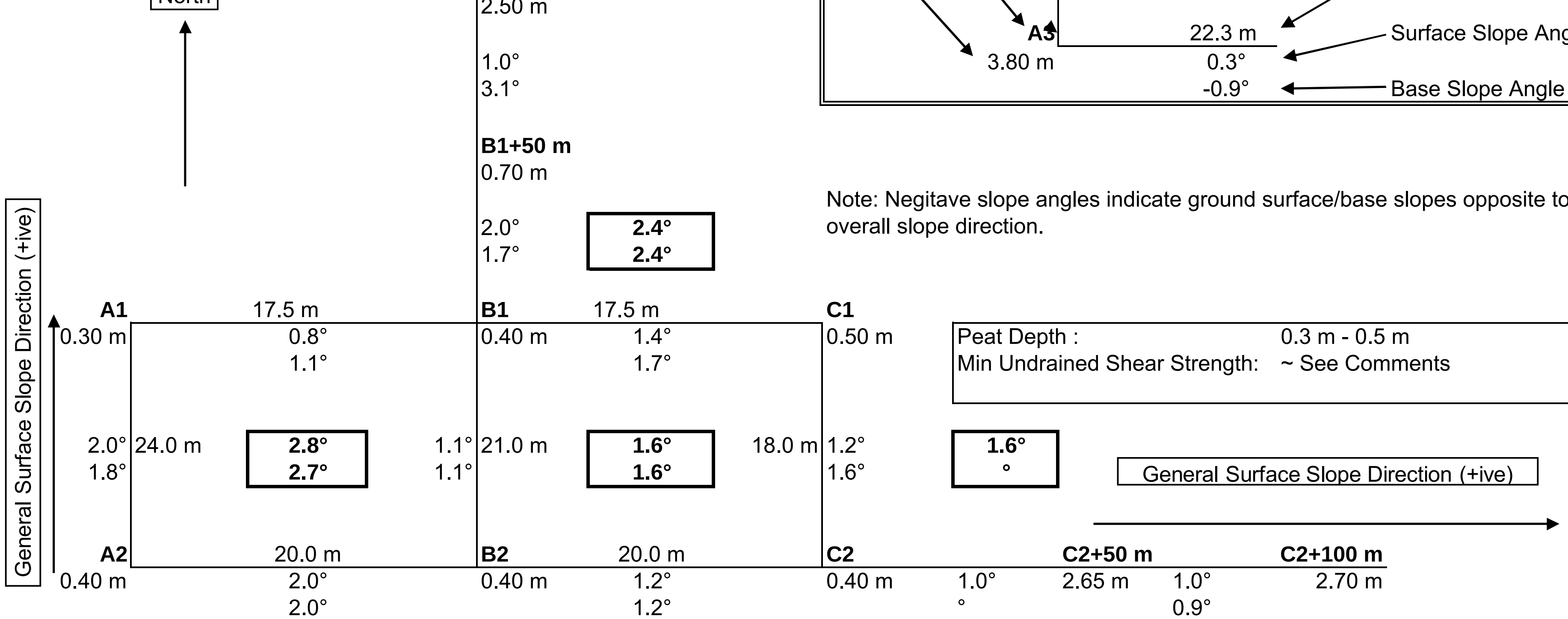
Max Slope at Base of Peat:	2.7°
Downslope:	2.7°
Orthogonal Direction:	0.3°
Resultant:	2.7°

Comments:
No vanes peat too shallow.
No piston samples taken peat too shallow.

Piston Sampling:	Yes:	No: X ~ See Comments
Location:		
Weak Layer/Discontinuity Present:	Yes:	No: X

Key:





Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

Peat Depth :	0.3 m - 0.5 m
Min Undrained Shear Strength:	~ See Comments

T58R

Peat Repository Site : T58R
Sliding Stability Analysis

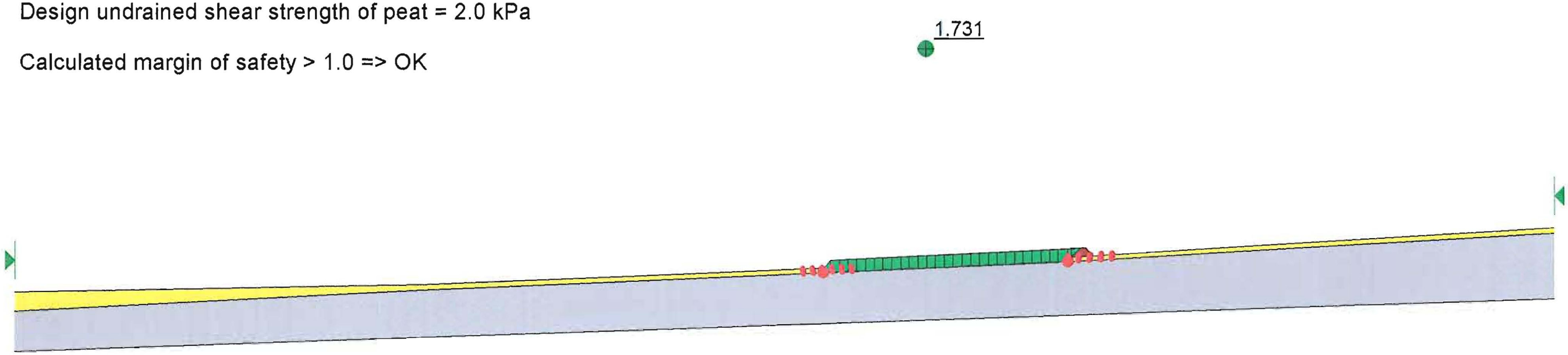
Size of Repository Site = 24 x 35 m
Length of loaded area parallel to resultant slope direction = 31.2 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	0.4 m	2.8 Deg	2.7 Deg
0 - 50 m Downslope	0.40 - 0.7 m	2.1 Deg	2.1 Deg
50 - 100 m Downslope	0.70 - 2.4 m	1.0 Deg	3.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.0 kPa

Calculated margin of safety > 1.0 => OK



T58R (2 kPa)

Peat Repository Site : T58R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base)

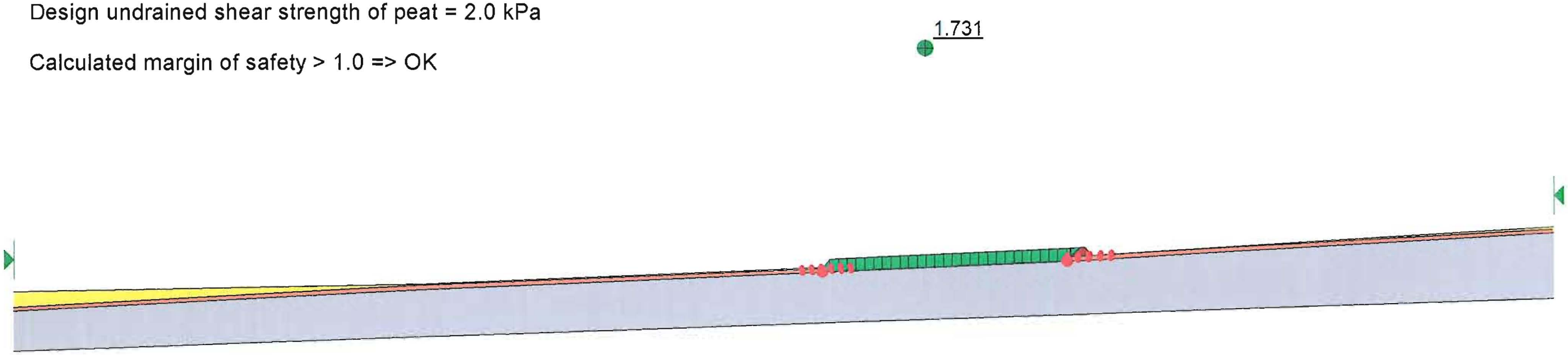
Size of Repository Site = 24 x 35 m
Length of loaded area parallel to resultant slope direction = 31.2 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	0.4 m	2.8 Deg	2.7 Deg
0 - 50 m Downslope	0.40 - 0.7 m	2.1 Deg	2.1 Deg
50 - 100 m Downslope	0.70 - 2.4 m	1.0 Deg	3.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.0 kPa

Calculated margin of safety > 1.0 => OK



Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting ***Geotechnical Engineers***		**Record of Peat Repository Locations**	**Rep. No: T59R**

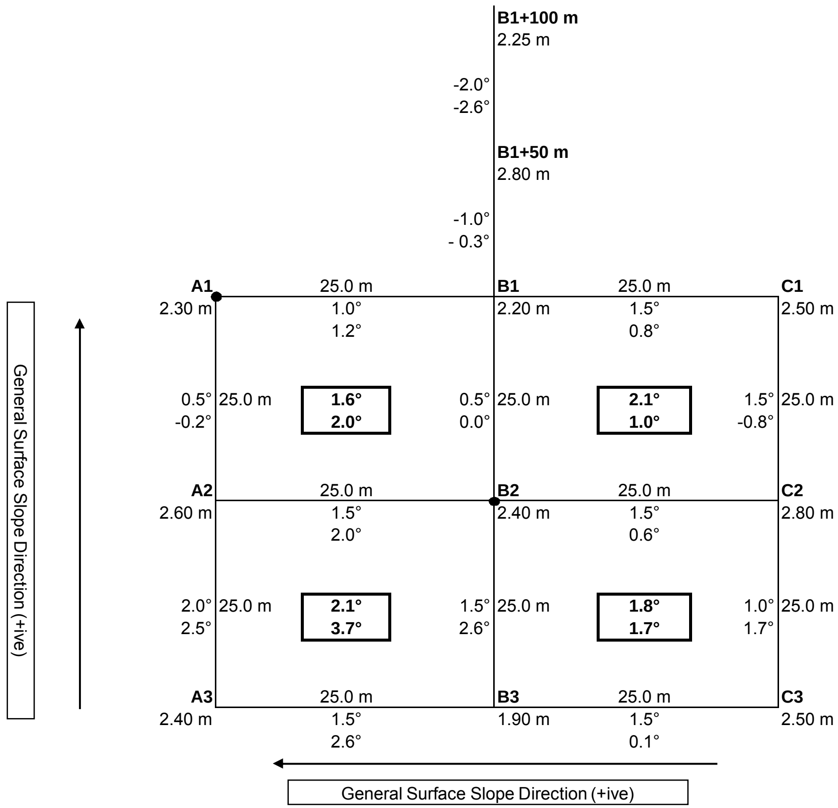
Max Slope at Ground Surface:	2.1°
Downslope:	1.5°
Orthogonal Direction:	1.5°
Resultant:	2.1°

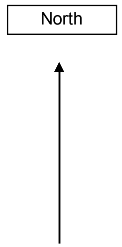
Max Slope at Base of Peat:	3.7°
Downslope:	2.6°
Orthogonal Direction:	2.6°
Resultant:	3.7°

Comments:

Peat Depth :	1.90 m - 2.80 m
Min Undrained Shear Strength:	5.7 kPa at Depth = 1.0 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X





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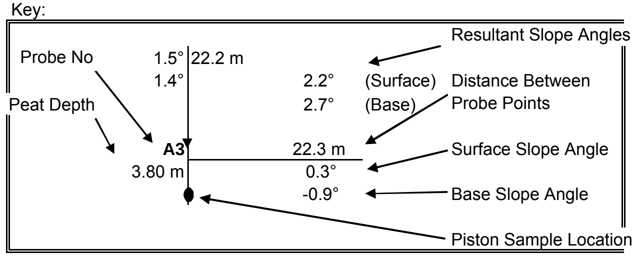


Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope dire

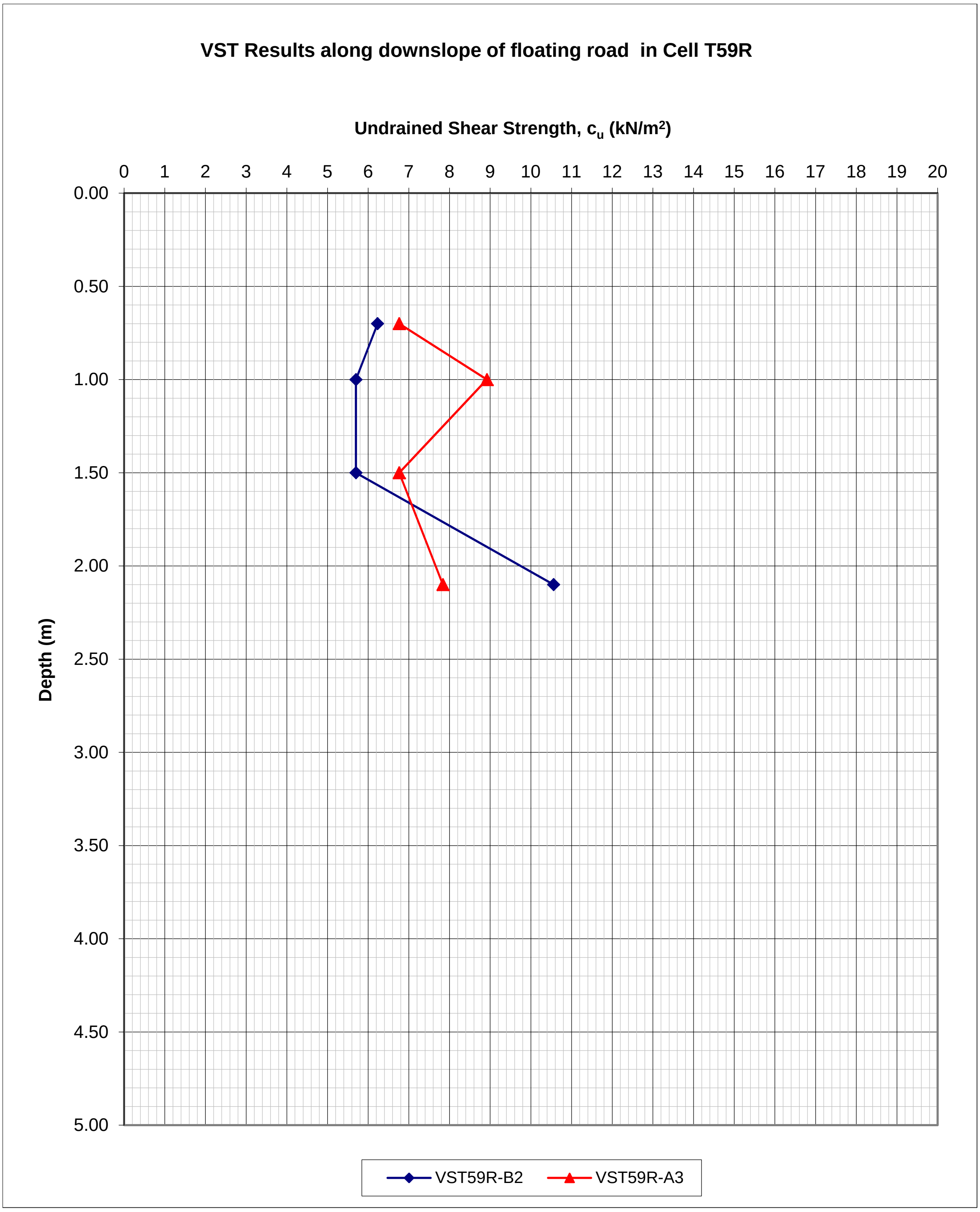
AGL Consulting *Geotechnical Engineers*	**Record Of Vane Shear Tests**	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 59R**

Test No.		VST59R-B2	Date:			Peat Depth (m) 2.4	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	12.0	4.00	6.2				
1.00	11.0	4.00	5.7				
1.50	11.0	5.00	5.7				
2.10	20.0	5.50	10.6				

Test No.		VST59R-A3	Date:			Peat Depth (m) 2.4	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	13.0	3.50	6.8				
1.00	17.0	3.00	8.9				
1.50	13.0	4.00	6.8				
2.10	15.0	3.00	7.8				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T59R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST59R-B2
VST59R-A3

T59R (2kPa)

Peat Repository Site : T59R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

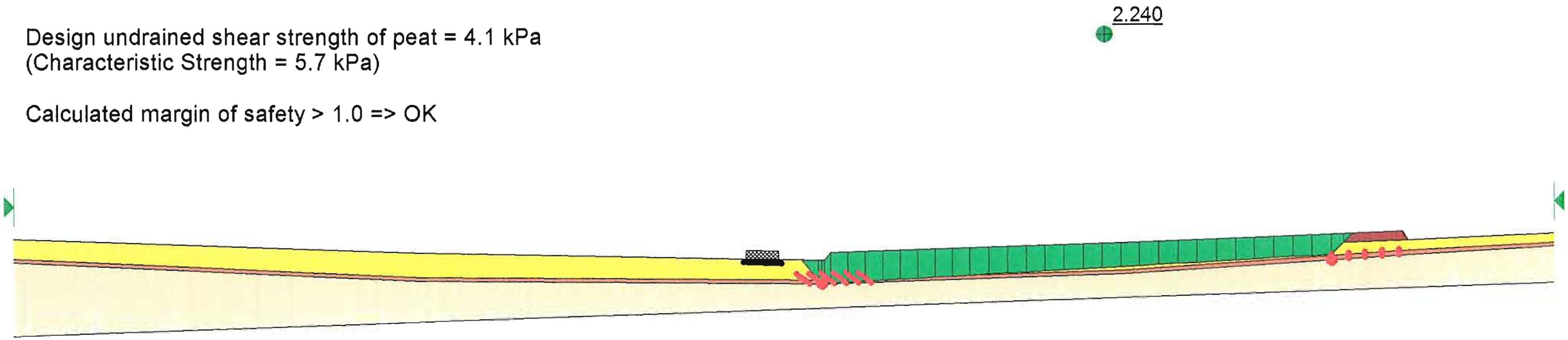
Size of Repository Site = 50 x 50 m
Length of loaded area = 71.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.9 - 2.9 m	2.1 - 1.6 Deg	3.7 - 2.0 Deg
0 - 50 m Downslope	2.9 - 3.5 m	-1.0 Deg	-0.3 Deg
50 - 100 m Downslope	3.5 - 2.9 m	-2.0 Deg	-2.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 4.1 kPa
(Characteristic Strength = 5.7 kPa)

Calculated margin of safety > 1.0 => OK



T59

Peat Repository Site : T59R
Sliding Stability Analysis

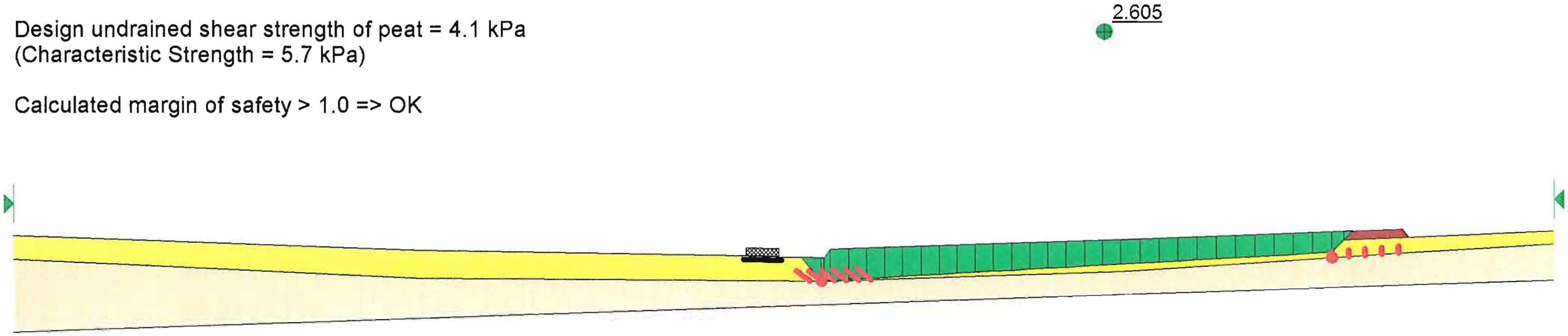
Size of Repository Site = 50 x 50 m
Length of loaded area = 71.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	1.9 - 2.9 m	2.1 - 1.6 Deg	3.7 - 2.0 Deg
0 - 50 m Downslope	2.9 - 3.5 m	-1.0 Deg	-0.3 Deg
50 - 100 m Downslope	3.5 - 2.9 m	-2.0 Deg	-2.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 4.1 kPa
(Characteristic Strength = 5.7 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting *Geotechnical Engineers*	**Record of Peat Repository Locations**	**Rep. No: T60R**

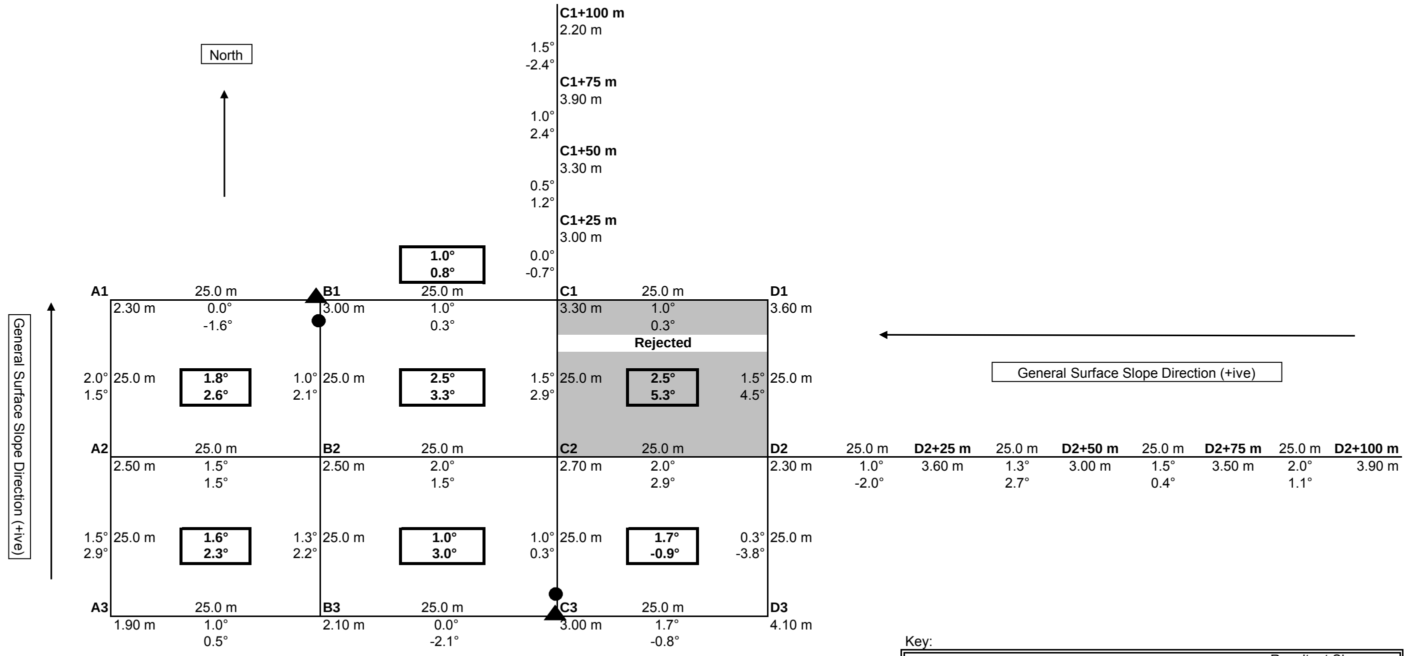
Max Slope at Ground Surface:	2.5°
Downslope:	1.5°
Orthogonal Direction:	2.0°
Resultant:	2.5°

Max Slope at Base of Peat:	3.3°
Downslope:	2.9°
Orthogonal Direction:	1.5°
Resultant:	3.3°

Comments:

Peat Depth :	1.9 m - 4.1 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 2.0 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



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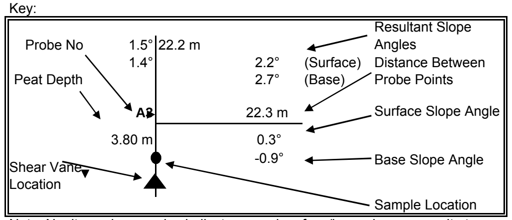


Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

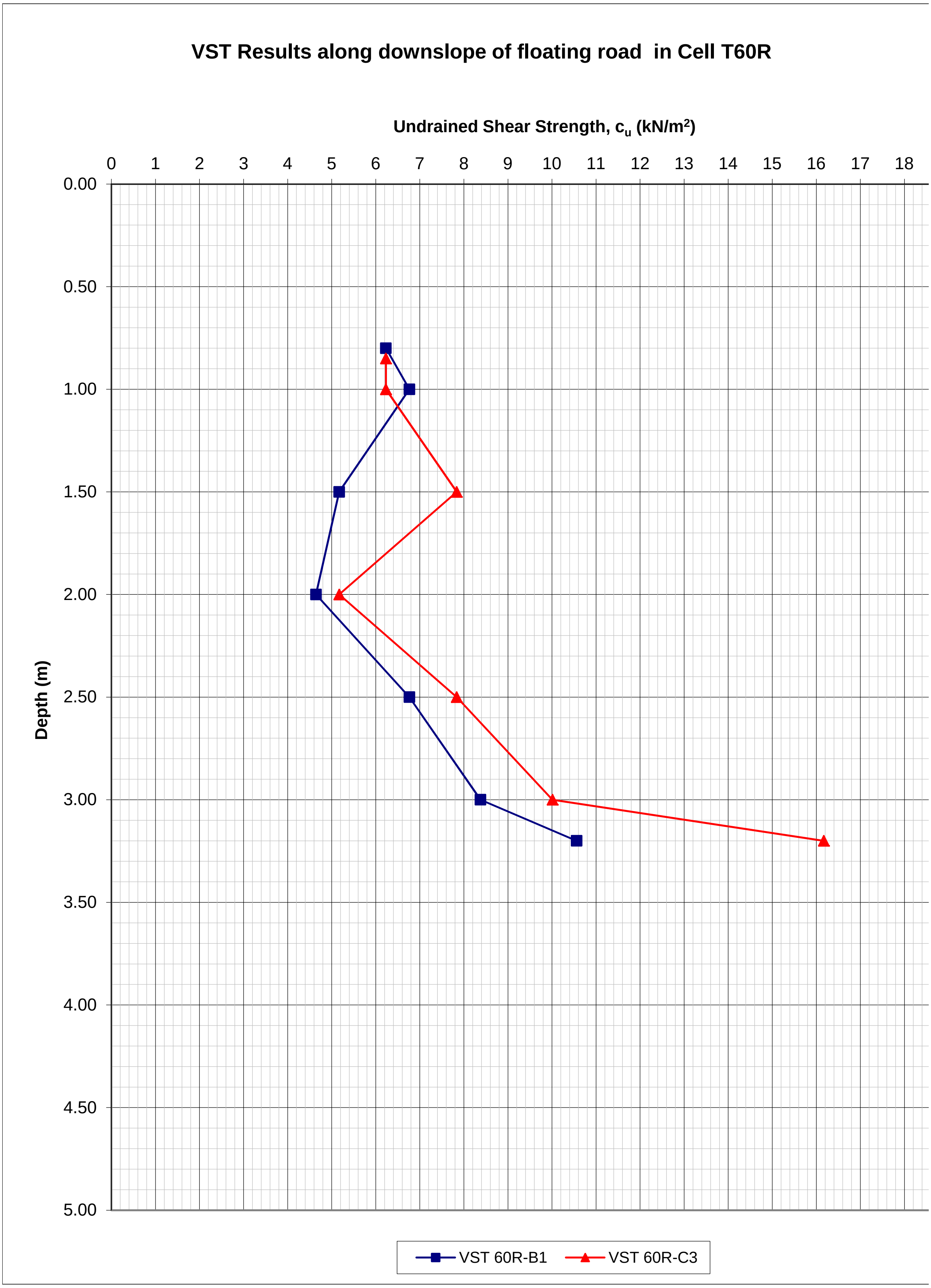
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 60R**

Test No.		VST 60R-B1	Date:			Peat Depth (m) 3.50	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.80	12.0	4.0	6.2				
1.00	13.0	5.0	6.8				
1.50	10.0	4.5	5.2				
2.00	9.0	4.0	4.6				
2.50	13.0	3.5	6.8				
3.00	16.0	5.0	8.4				
3.20	20.0	4.0	10.6				

Test No.		VST 60R-C3	Date:			Peat Depth (m) 3.50	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.85	12.0	4.5	6.2				
1.00	12.0	4.0	6.2				
1.50	15.0	3.0	7.8				
2.00	10.0	5.0	5.2				
2.50	15.0	4.5	7.8				
3.00	19.0	4.0	10.0				
3.20	30.0	5.5	16.2				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	



VST Results along downslope of floating road in Cell T60R
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 60R-B1
VST 60R-C3

T60R

Peat Repository Site : T60R
Sliding Stability Analysis

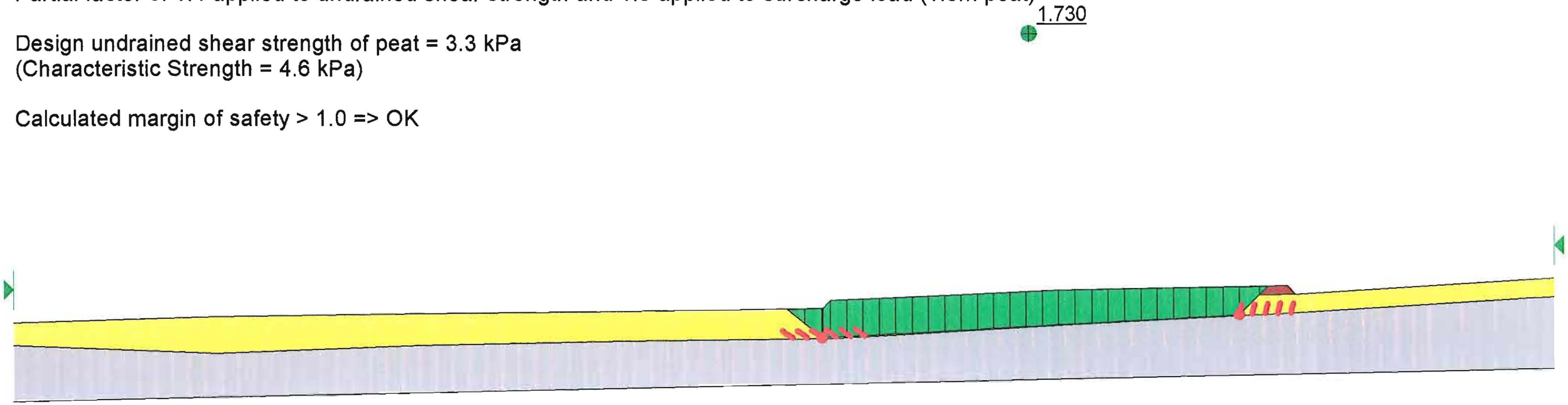
Size of Repository Site = 50 x 75 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.3 - 3.7 m	1.0 - 2.5 Deg	3.0 - 3.3 Deg
0 - 25 m Downslope	3.7 - 3.6 m	1.0 Deg	0.8 Deg
25 - 50 m Downslope	3.6 - 3.9 m	0.5 Deg	1.2 Deg
50 - 75 m Downslope	3.9 - 4.5 m	1.0 Deg	2.4 Deg
75 - 100 m Downslope	4.5 - 2.8 m	1.5 Deg	-2.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



Peat Repository Site : T60R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

T60R (2kPa)

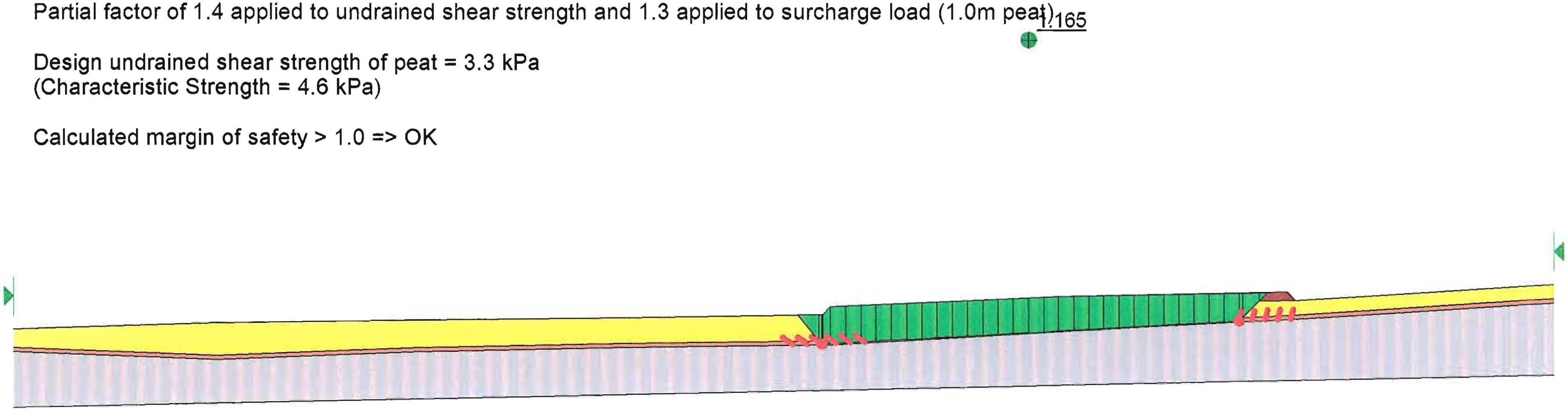
Size of Repository Site = 50 x 75 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.3 - 3.7 m	1.0 - 2.5 Deg	3.0 - 3.3 Deg
0 - 25 m Downslope	3.7 - 3.6 m	1.0 Deg	0.8 Deg
25 - 50 m Downslope	3.6 - 3.9 m	0.5 Deg	1.2 Deg
50 - 75 m Downslope	3.9 - 4.5 m	1.0 Deg	2.4 Deg
75 - 100 m Downslope	4.5 - 2.8 m	1.5 Deg	-2.4 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T62R**

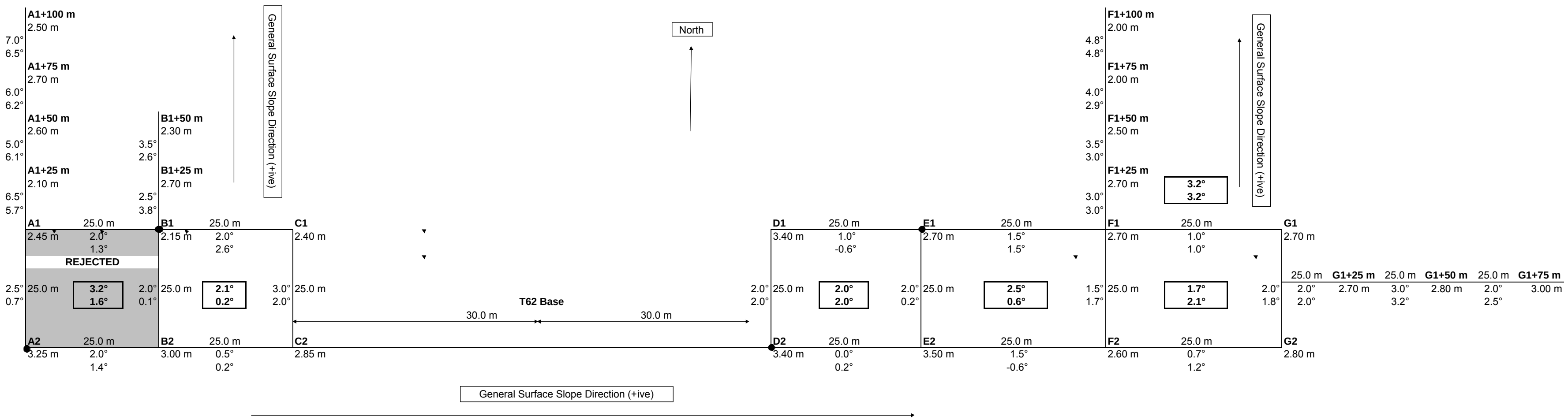
Max Slope at Ground Surface	2.5°
Downslope:	2.0°
Orthogonal Direction:	1.5°
Resultant:	2.5°

Max Slope at Base of Peat:	2.1°
Downslope:	1.7°
Orthogonal Direction:	1.2°
Resultant:	2.1°

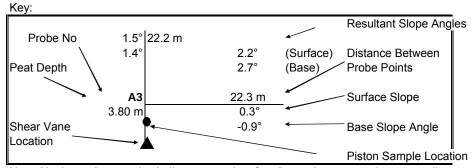
Comments:

Peat Depth :	2.15 m - 3.50 m
Min Undrained Shear Strength:	3.6 kPa at Depth = 2.50 m

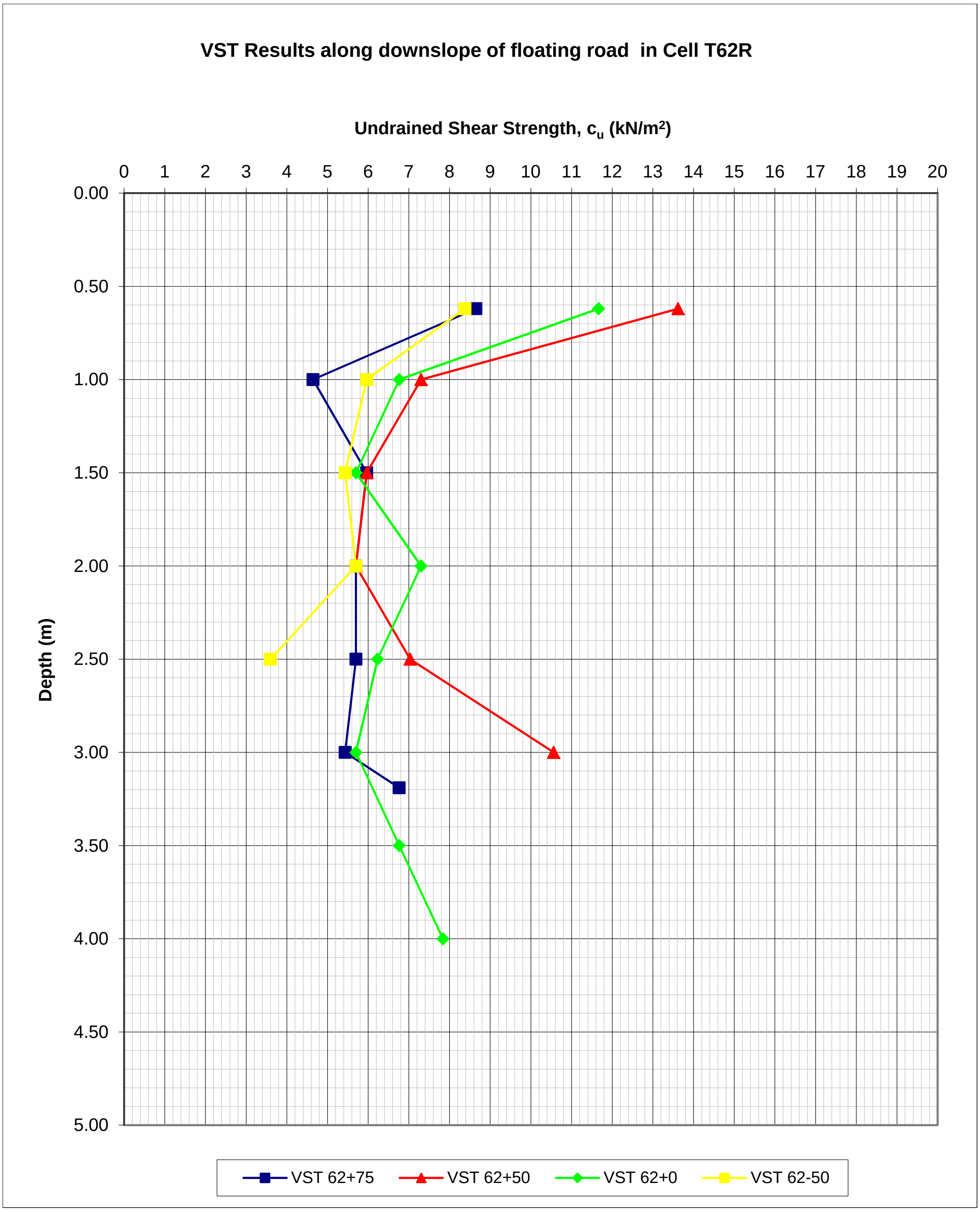
Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Key:



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.



VST Results along downslope of floating road in Cell T62R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
Depth (m)
VST 62+75
VST 62+50
VST 62+0
VST 62-50

AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 62R**

Test No.		VST 62+75	Date:			Peat Depth (m) 3.20	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	16.5	4.00	8.6				
1.00	9.0	3.00	4.6				
1.50	11.5	4.00	6.0				
2.00	11.0	3.00	5.7				
2.50	11.0	4.50	5.7				
3.00	10.5	3.00	5.4				
3.19	13.0	3.00	6.8				

Test No.		VST 62+50	Date:			Peat Depth (m) 3.10	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	25.5	5.50	13.6				
1.0	14.0	5.00	7.3				
1.5	11.5	3.00	6.0				
2.0	11.0	3.00	5.7				
2.5	13.5	4.50	7.0				
3.0	20.0	5.00	10.6				

Test No.		VST 62+0	Date:			Peat Depth (m) 4.02	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	22.0	6.50	11.7				
1.00	13.0	5.00	6.8				
1.50	11.0	5.50	5.7				
2.00	14.0	5.00	7.3				
2.50	12.0	6.00	6.2				
3.00	11.0	5.50	5.7				
3.50	13.0	6.50	6.8				
4.00	15.0	6.00	7.8				

Test No.		VST 62-50	Date:			Peat Depth (m) 2.50	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.62	16.0	6.00	8.4				
1.00	11.5	5.50	6.0				
1.50	10.5	4.00	5.4				
2.00	11.0	3.50	5.7				
2.50	7.0	3.50	3.6				

Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T65R**

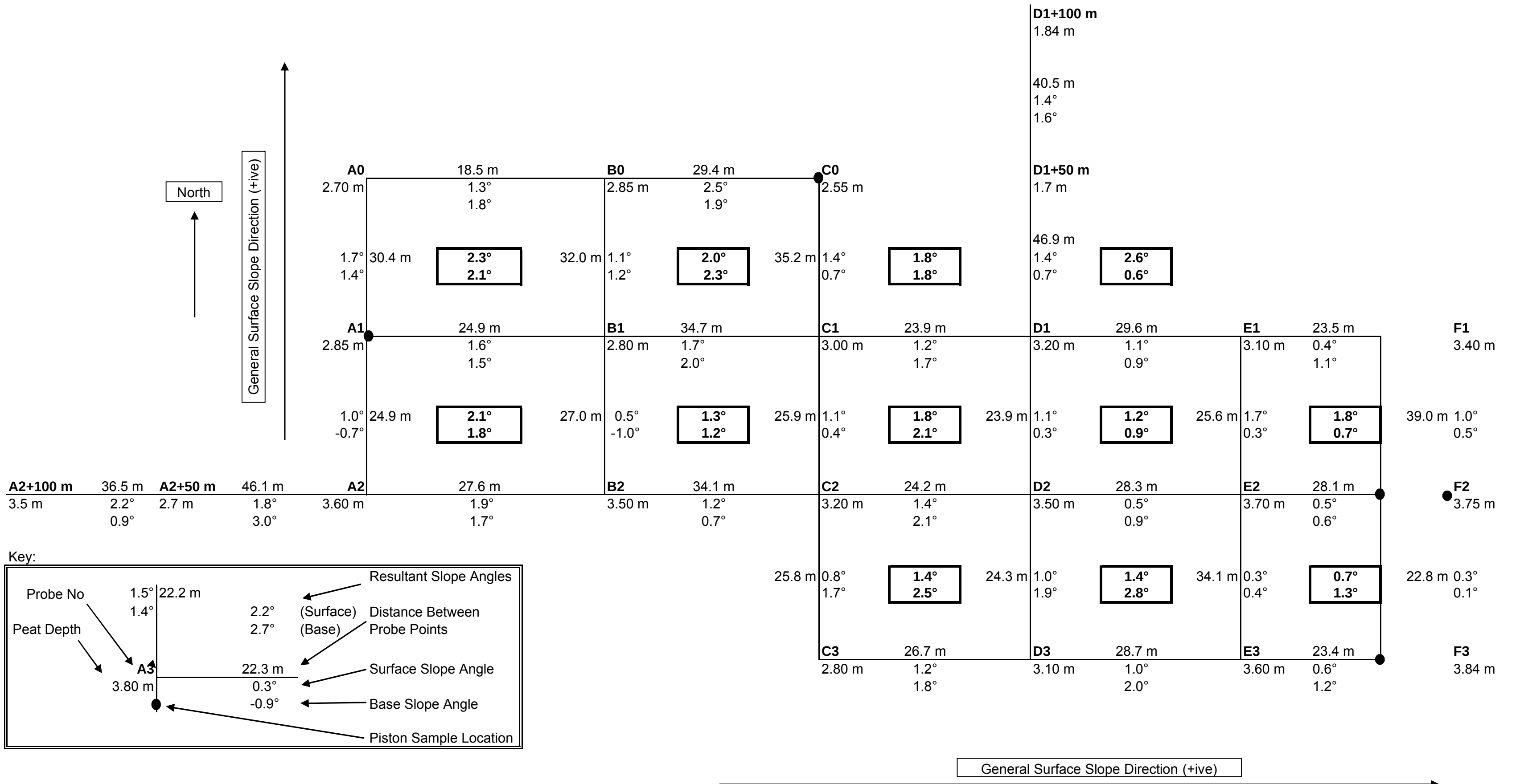
Max Slope at Ground Surface:	2.3°
Downslope:	1.7°
Orthogonal Direction:	1.6°
Resultant:	2.3°

Max Slope at Base of Peat:	2.8°
Downslope:	1.9°
Orthogonal Direction:	2.0°
Resultant:	2.8°

Comments:
10 meter wide strip at south east edge of proposed area excluded from approved repository site i.e. F1-F2-F3.

Peat Depth :	2.7 m - 3.84 m
Min Undrained Shear Strength:	3.6 kPa at Depth = 2.0 m

Piston Sampling:	Yes: X	No:
Location:		
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

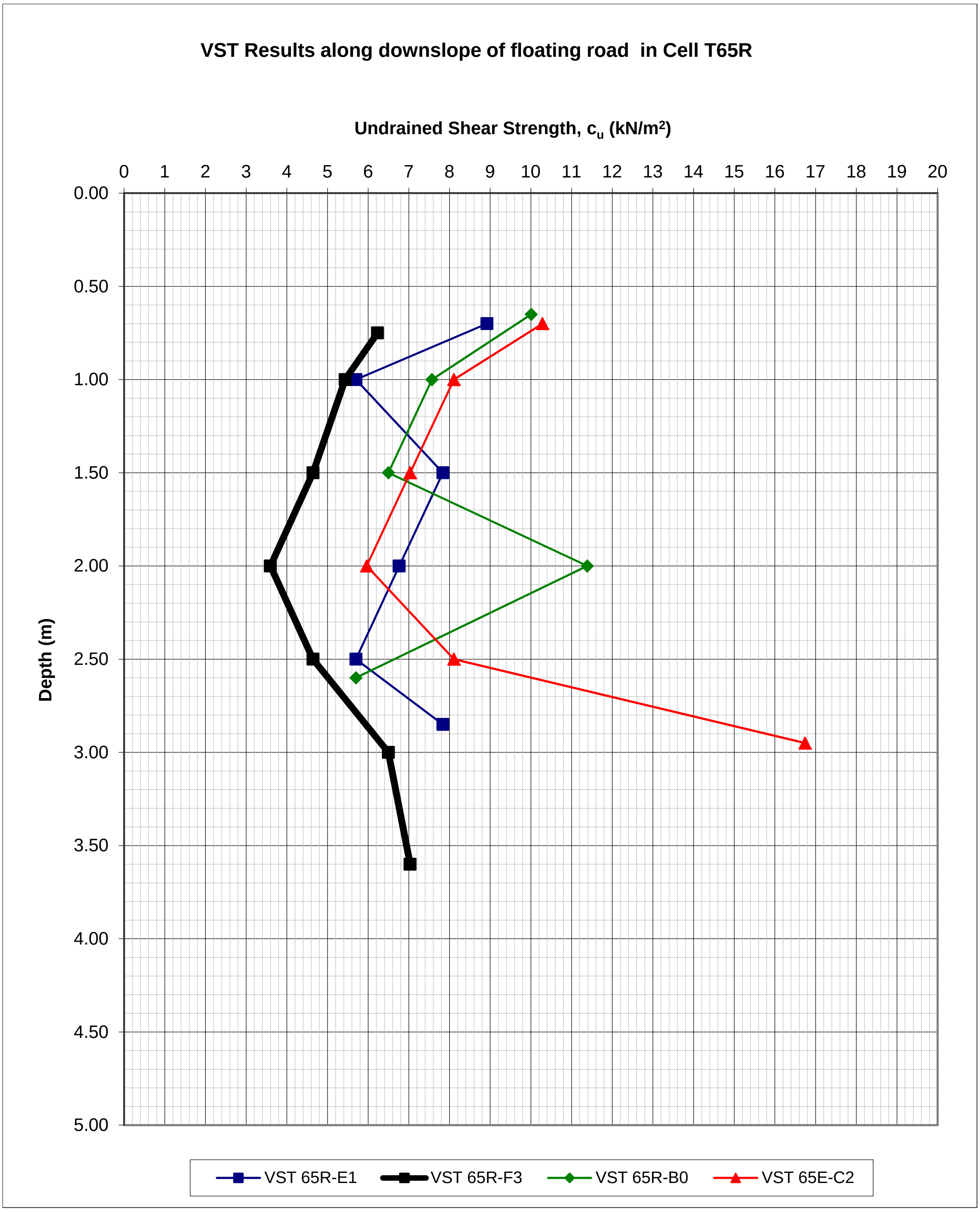
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 65R**

Test No.		VST 65R-E1	Date:			Peat Depth (m) 3.10	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	17.0	8.00	8.9				
1.00	11.0	5.00	5.7				
1.50	15.0	6.50	7.8				
2.00	13.0	5.00	6.8				
2.50	11.0	5.00	5.7				
2.85	15.0	3.50	7.8				

Test No.		VST 65R-F3	Date:			Peat Depth (m) 3.65	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.75	12.0	6.00	6.2				
1.00	10.5	5.00	5.4				
1.50	9.0	5.00	4.6				
2.00	7.0	5.00	3.6				
2.50	9.0	3.50	4.6				
3.00	12.5	4.00	6.5				
3.60	13.5	3.50	7.0				

Test No.		VST 65R-B0	Date:			Peat Depth (m) 2.85	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.65	19.0	6.00	10.0				
1.00	14.5	4.00	7.6				
1.50	12.5	5.00	6.5				
2.00	21.5	5.00	11.4				
2.60	11.0	4.00	5.7				

Test No.		VST 65E-C2	Date:			Peat Depth (m) 3.20	
Depth (m)	Dial Gauge	Time to	c_u	Co-ordinates		Elevation	Comments
	Reading	Failure (mins)	(KN/m^2)	E (m)	N (m)	(mOD)	
0.70	19.5	5.5	10.3				
1.00	15.5	4.5	8.1				
1.50	13.5	4.5	7.0				
2.00	11.5	4.0	6.0				
2.50	15.5	5.0	8.1				
2.95	31.0	5.5	16.7				


VST Results along downslope of floating road in Cell T65R
Undrained Shear Strength, c_u (kN/m²)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 65R-E1
VST 65R-F3
VST 65R-B0
VST 65E-C2

T65R

Peat Repository Site : T65R
Sliding Stability Analysis

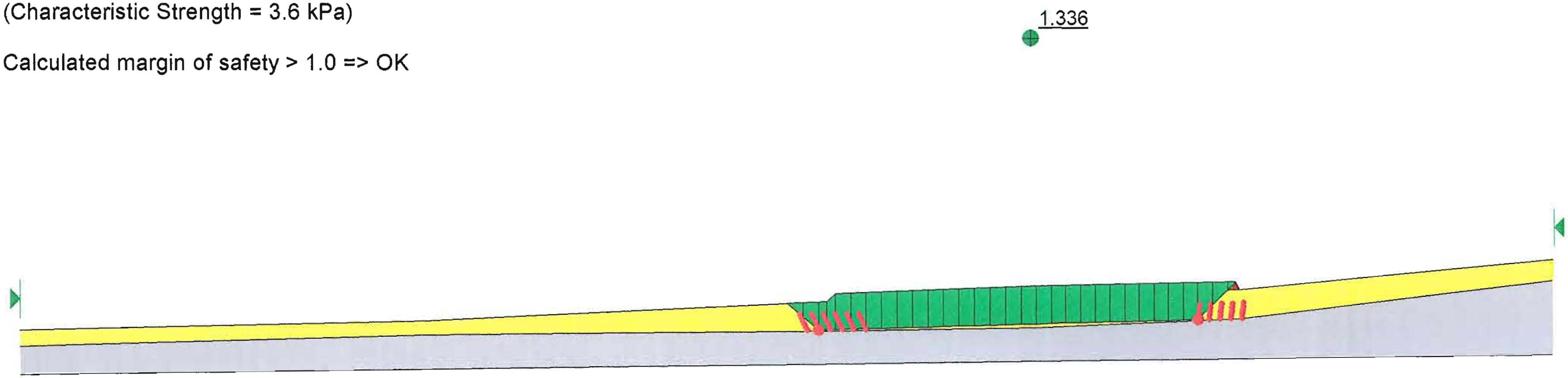
Size of Repository Site = 157 x 92 m
Length of loaded area parallel to resultant slope direction = 50.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.6 - 4.1 m	1.4 - 2.1 Deg	2.5 - 0.9 Deg
0 - 50 m Downslope	3.6 - 1.8 m	2.6 Deg	0.6 Deg
50 - 100 m Downslope	1.8 - 2.0 m	1.4 Deg	1.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



T65R

Peat Repository Site : T65R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat(cu = 2kPa) at Base

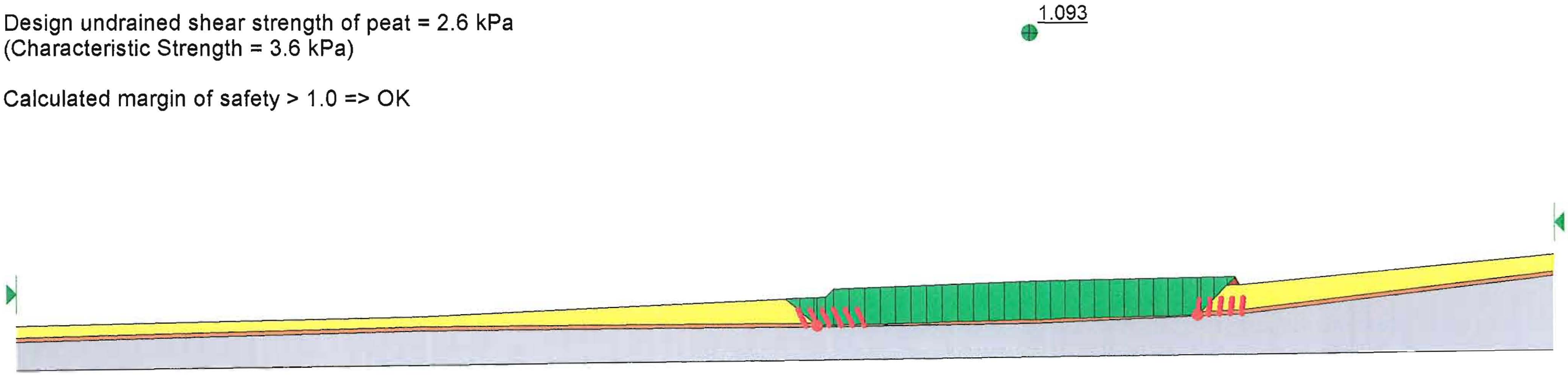
Size of Repository Site = 157 x 92 m
Length of loaded area parallel to resultant slope direction = 50.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	3.6 - 4.1 m	1.4 - 2.1 Deg	2.5 - 0.9 Deg
0 - 50 m Downslope	3.6 - 1.8 m	2.6 Deg	0.6 Deg
50 - 100 m Downslope	1.8 - 2.0 m	1.4 Deg	1.6 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 2.6 kPa
(Characteristic Strength = 3.6 kPa)

Calculated margin of safety > 1.0 => OK



AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 68R**

Test No.		VST 68R-C1	Date:			Peat Depth (m) 3.4	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	11.0	3.0	5.7				
1.00	12.0	3.5	6.2				
1.50	10.0	3.0	5.2				
2.00	13.0	3.5	6.8				
2.50	11.0	4.0	5.7				
3.10	10.0	4.0	5.2				

Test No.		VST 68R-B1	Date:			Peat Depth (m) 2.6	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	12.0	4.0	6.2				
1.00	10.0	4.0	5.2				
1.50	9.0	4.0	4.6				
2.00	11.0	3.0	5.7				
2.30	18.0	3.5	9.5				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

VST Results along downslope of floating road in Cell T68R

Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T68R**

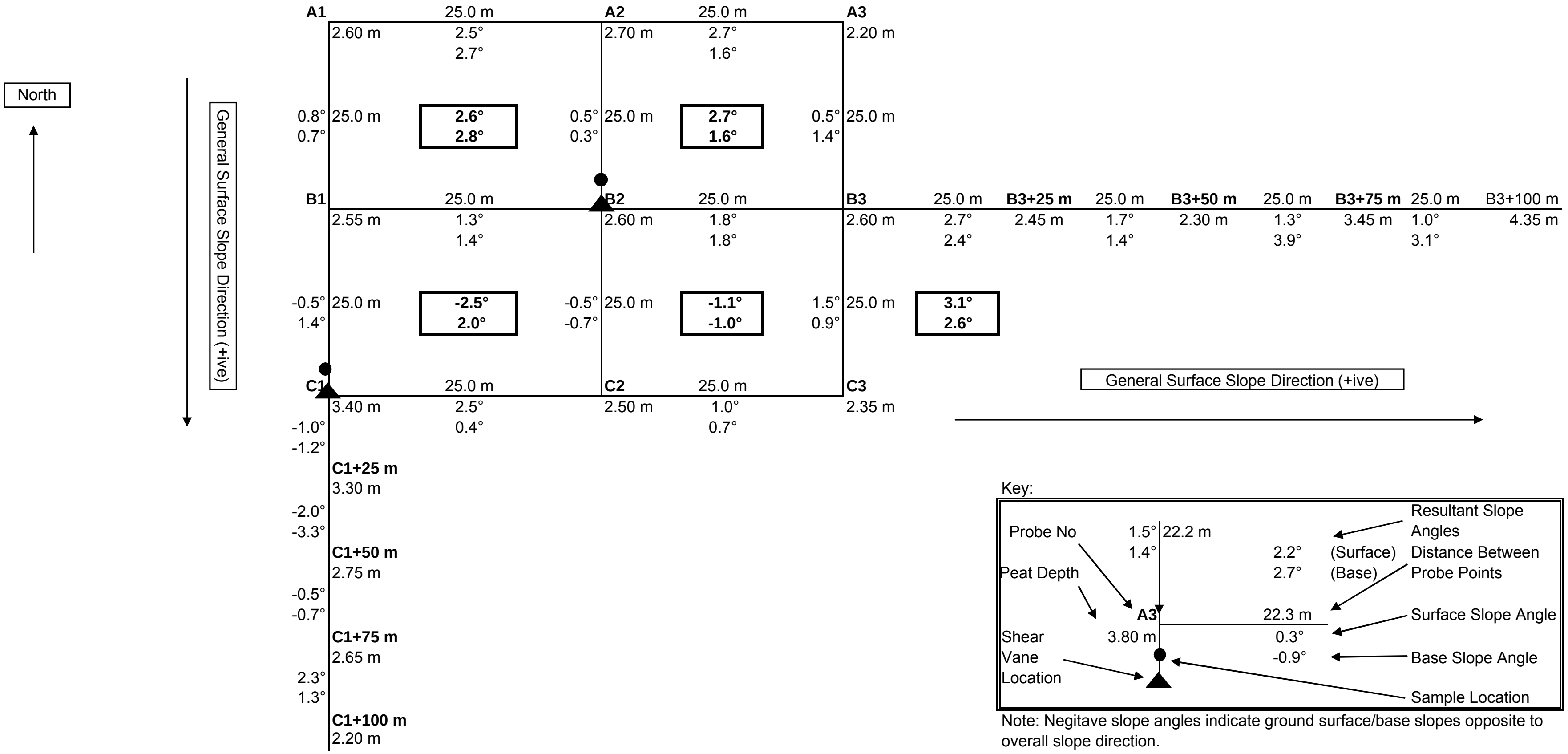
Max Slope at Ground Surface:	2.7°
Downslope:	0.5°
Orthogonal Direction:	2.7°
Resultant:	2.7°

Max Slope at Base of Peat:	2.8°
Downslope:	0.7°
Orthogonal Direction:	2.7°
Resultant:	2.8°

Comments:

Peat Depth :	2.20 m - 3.40 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

T68R (2kPa)

Peat Repository Site : T68R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

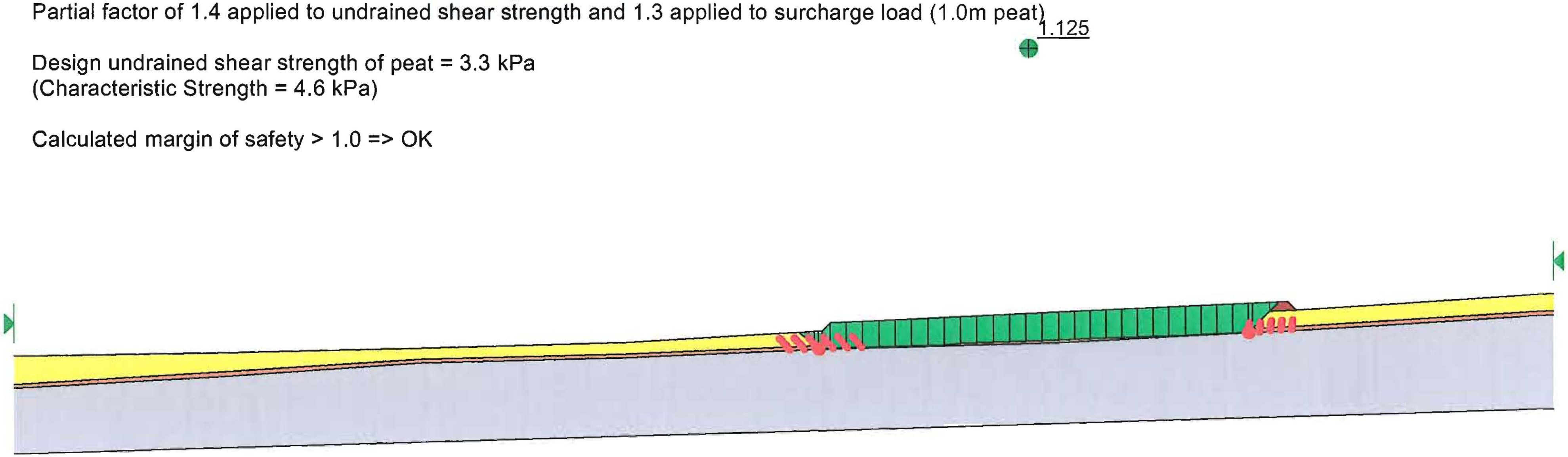
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.6 - 2.2 m	2.6 - 2.7 Deg	2.8 - 1.6 Deg
0 - 25 m Downslope	2.2 - 1.9 m	3.1 Deg	2.6 Deg
25 - 50 m Downslope	1.9 - 1.8 m	1.7 Deg	1.4 Deg
50 - 75 m Downslope	1.8 - 2.9 m	1.3 Deg	3.9 Deg
75 - 100 m Downslope	2.9 - 3.9 m	1.0 Deg	3.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T68R

Peat Repository Site : T68R
Sliding Stability Analysis

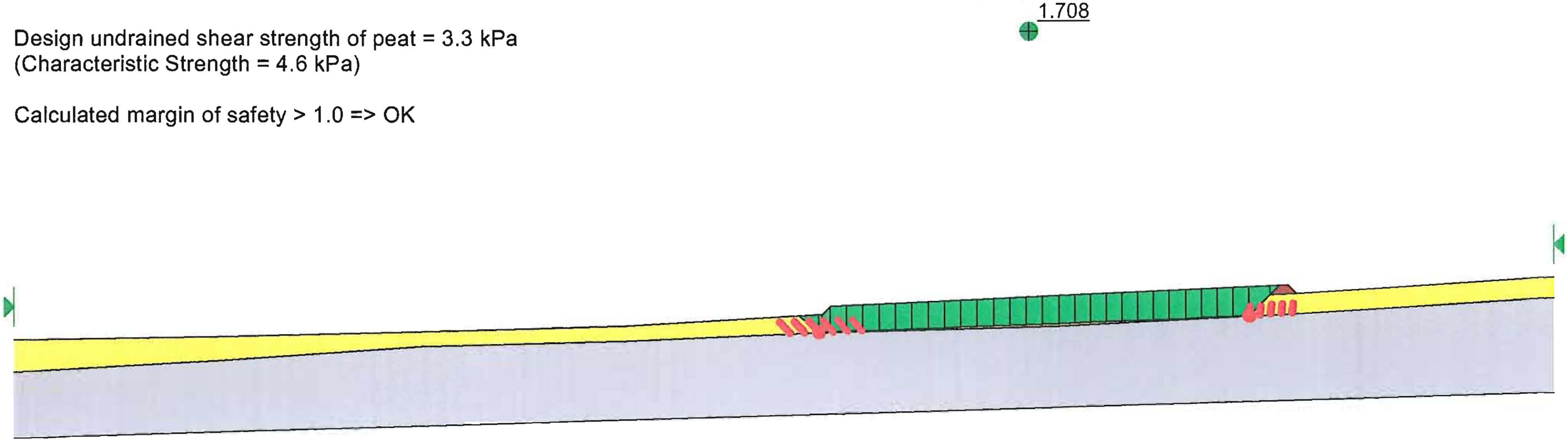
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.6 - 2.2 m	2.6 - 2.7 Deg	2.8 - 1.6 Deg
0 - 25 m Downslope	2.2 - 1.9 m	3.1 Deg	2.6 Deg
25 - 50 m Downslope	1.9 - 1.8 m	1.7 Deg	1.4 Deg
50 - 75 m Downslope	1.8 - 2.9 m	1.3 Deg	3.9 Deg
75 - 100 m Downslope	2.9 - 3.9 m	1.0 Deg	3.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



APPENDIX IX

AGL MEMO NO. 03-104-DM22 – REVIEW OF BLAST MONITORING RECORDS FOR BORROW PIT NO.3

AGL Consulting
Geotechnical Engineers

Suite 2, The Avenue
Beacon Court
Sandyford, Dublin 18
Tel: (01) 295 6532
Fax: (01) 295 6533

Ascon Ltd.
Site Office - Derrybrien Windfarm
Loughrea,
Co. Galway

Memo to: Joe Mc Fadden
By: Conor O'Donnell
Re: Review of blast monitoring records
Date: May 10, 2005 **Our Ref:** 03-104-DM 22

In this memo we provide a summary of our analysis of the blast monitoring records for the quarry in Borrow Pit No. 2 at Derrybrien.

1.0 Blast Records

You provided us with the results of 5 No. blasts that have been carried out in the quarry. Details of the blasts are presented in Table No.1.

Table No.1 – Summary of blasts for which information was provided.

Date of Blast	Total Charge (kg)	No. of Holes	Max. Instantaneous Charge (kg)
January 12th	6,000	60	105
February 4th	4,875	55	92.5
April 4th	4,500	50	90
April 19th	3,075	38	87.5
May 4th	Information not available		

5 No. vibrographs were used to record ground vibrations for each of these blasts at various locations on turbine bases and on the surface of the peat within a distance of 250m to 1 km from the blast area. The results are summarized in Table No.2.

For the shallow slopes on the site in Derrybrien it is considered that the horizontal component of the blast-induced vibrations will have the greatest impact on slope stability. Therefore, we have calculated the resultant horizontal peak particle velocity (PPV) and peak particle acceleration (PPA) from the transverse (T) and longitudinal (L) values recorded by the vibrographs (see Table No.3).

As the transverse and longitudinal vibrations may not be in phase, the calculated resultant values for PPV and PPA in Table No.3 should be conservative. Some of the vibrographs recorded the actual maximum resultant PPV and these values are listed in Table No.2. The values compare reasonably well with the PPV calculated in Table No.3.

The resultant horizontal PPV and PPA are plotted against scaled distance in Figures Nos. 1 and 2, respectively. The scaled distance is defined as $R/W^{1/2}$, where R is the distance from the blast and W is the maximum instantaneous charge in kg. A best fit trend line through the PPV data is plotted on Figure No.3. Some outliers in the data have been neglected.

The following conclusions can be made from the results of these blasts:

1. The magnitude of PPV is very low (<5 mm/s) at distances greater than 500 m from the blast.

2. The radius of influence of the blasts is approximately 1000 m, which does not extend into the area in which the slide occurred on October 16th, 2003 (See Figure No.4).

3. The resultant horizontal PPV 100 m from the blast was less than 15 mm/s, and the maximum value at the blast site should have been less than 30 mm/s.

4. The frequency of the vibrations was typically <25 Hz.

5. The best-fit trendline of PPV versus scaled distance would indicate that the high PPV recorded on the peat at T64 on 19/4/2005 is not representative of the true response of the peat to the blasting and is significantly higher than would be expected at that distance from the blast. The discrepancy may have been due to poor mounting of the transducer.

6. In general, there does not appear to be a significant difference in the PPV recorded on the turbine bases and on the peat.

7. The majority of the PPA values recorded were less than 0.1g m/s^2 with a few possible outliers above this value (g= acceleration due to gravity = 9.81 m/s^2).

8. There is no discernable trend to the plot of resultant horizontal PPA vs scaled distance. However, the PPA on the turbine bases appear to be lower than on peat.

2.0 Review of proposed limits on blast-induced vibrations

There is no established criterion for classifying blast-induced vibration limits on slopes in Ireland. However, there are two different approaches that can be used:

i. Peak Particle Velocity
ii. Peak Particle Acceleration

The traditional approach to controlling the impact of vibrations is to specify a limit of maximum peak particle velocity (PPV) for different levels of vibration frequencies. The PPV is a combined parameter which is directly proportional to the frequency and amplitude of the vibrations. However, for dynamic loads on slopes the method of analysis typically involves a pseudo static approach of analyzing the slope stability in limiting equilibrium under an inertial force, $F=ma$, where m is the mass of the soil and a is the peak particle acceleration of the dynamic load. The potential for soil liquefaction must also be considered for dynamic loads.

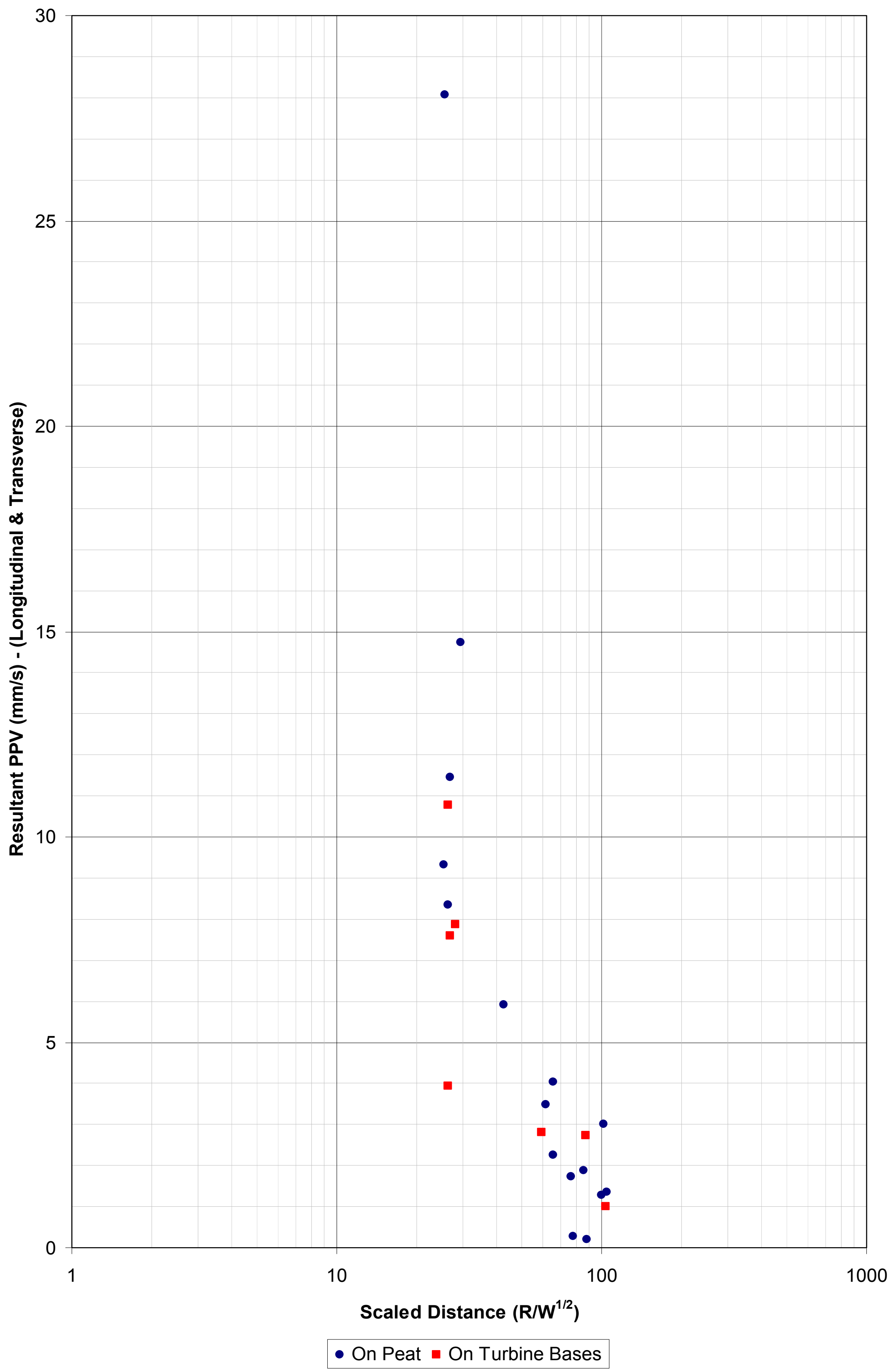


Figure No.1 – Plot of PPV vs Scaled Distance for blasts in Borrow Pit No.2

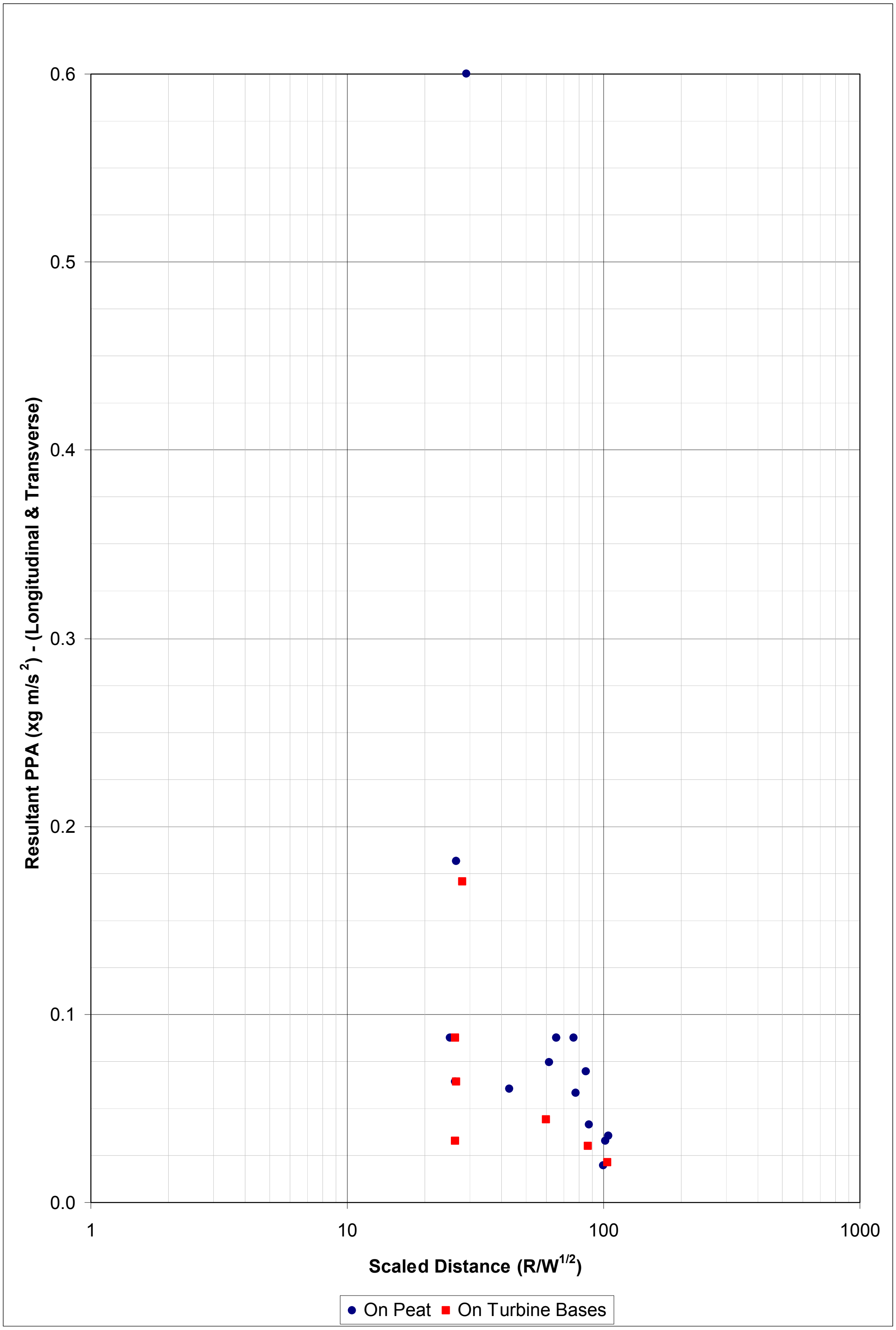


Figure No.2 – Plot of PPA vs Scaled Distance for blasts in Borrow Pit No.2

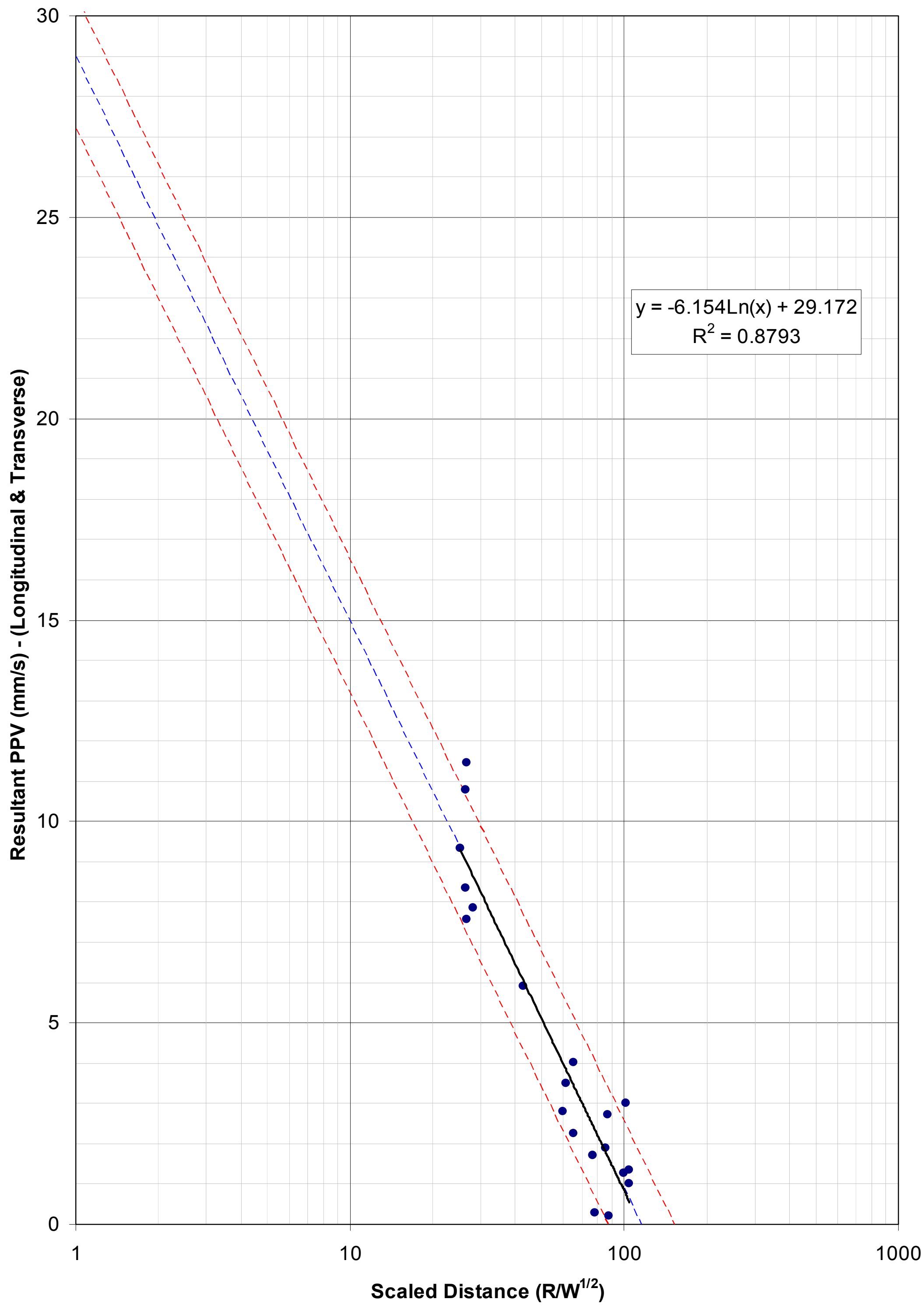


Figure No.3 – Best-fit trend line through resultant horizontal PPV data

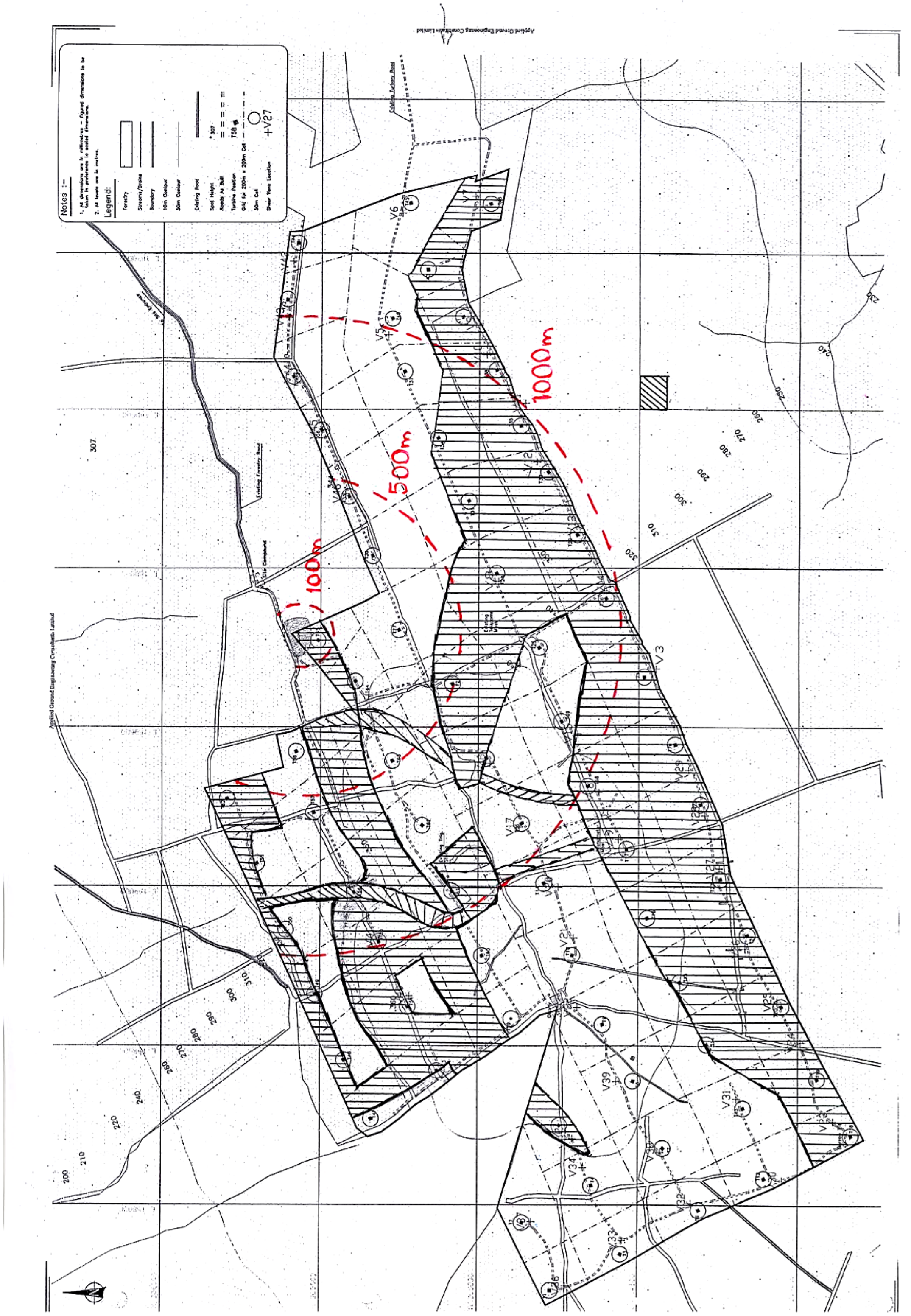


Figure No.4 – Zones of influence of blasting in Borrow Pit No.2

2.1 Peak Particle Velocity (PPV)

Threshold limits for PPV have been empirically established for different levels of potential damage to structures by observing the impact of vibrations from different sources.

For example, for piling operations BS 5228:Part 4 (1992) "Code of Practice for noise and vibration control applicable to piling operations" recommends a maximum peak particle velocity of 10 mm/s for intermittent vibrations on residential structures and 20 mm/s for industrial buildings. These are considered conservative thresholds below which minor or cosmetic damage are unlikely to occur.

For sensitive structures the maximum PPV for construction-induced vibrations is typically limited to 12.5 mm/s where the frequency of the vibrations is <50Hz, and 10.0 mm/s where the frequency of the vibrations is >50Hz. Again, these are considered to be conservative thresholds to prevent cosmetic damage which can be easily repaired. Structural damage would not normally be expected to occur until the PPV exceeds 50 mm/s, unless there is some existing defect in the structure.

These limits are related to structural damage and are therefore not directly applicable to slope stability.

Applied Ground Engineering Consultants Ltd. (AGEC) have suggested that a maximum blast limit of PPV=7.5 mm/s should be applied for critical peat slopes on the site in Derrybrien. This is based on applying a factor of safety of 2 to a PPV of 15 mm/s which they say is typically applied to man-made slopes in Hong Kong. AGEC also quote a PPV value of 50 mm/s that they say is typically applied to highway earthworks.

A number of the recorded PPV have exceeded the limit of 7.5 mm/s suggested by AGEC. However, this limit is very low and no failures have been observed on the site to date as a result of the blasting. Therefore, the suggested limit is overly conservative for the slopes in Derrybrien.

2.2 Peak Particle Acceleration (PPA)

In general, the stability of slopes due to transient dynamic loads from blasting will be governed by the potential for liquefaction of the soil, and by the potential for sliding due to the inertial force, $F=ma$, that is generated by the dynamic load.

2.2.1 Soil liquefaction

Loose to medium dense sands and silty sands at low overburden pressures below the water table are most susceptible to liquefaction due to the build up of excess pore water pressures under cyclic dynamic loading. In contrast peat is a cohesive soil and fibrous. Therefore, the liquefaction potential of the peat would be negligible in its undisturbed state. This was confirmed by a literature review on the subject (Ferritto, 1997)

2.2.2 Pseudo-static sliding block analysis

The standard approach for analyzing the stability of slopes under dynamic loading is to use a pseudo-static Newmark sliding block analysis. In this method the dynamic load is represented by the equivalent static inertial force, $F=ma$, where m is the mass of the soil and a is the peak particle acceleration. The stability of the slope is then analyzed under 2-D plane strain limiting equilibrium conditions.

For the shallow slopes on Derrybrien the horizontal component of the inertial force would have the greatest impact on the stability of the slopes and the resistance to sliding would be a function of the undrained shear strength of the peat.

In reality, the stability of the slopes would also be a function of the duration, frequency and amplitude of the dynamic loads. For example, it can be seen from Figure No.1 and 2 that there is no significant reduction in the PPA with increasing distance from the blast, whereas there is a significant reduction in the PPV, which would indicate that the risk of sliding failures due to the blasting would also reduce with distance from the blast.

To carry out a detailed Newmark analysis would require specific information on the response spectrum of the ground at different locations in addition to the slope geometry and peat strength. Not all of this information is available. Therefore, it would be impractical to carry out such a detailed analysis for the site at Derrybrien. This type of analysis is normally carried out for seismic loads on slopes or embankments.

Based on the blast monitoring data that we have received to date, we would consider that the risk of sliding failures generated from the blasting is largely confined to an area within 100 m of the blast where the PPA is typically less than 0.1g m/s^2 but the PPV could exceed 15 mm/s. This would include the peat repository site for the borrow pit behind the quarry (T65R)

We have carried out a simplified Newmark sliding block analysis for this repository site. The results would indicate that the downslope component of the self weight and inertial force on the peat would not exceed the recorded undrained shear strength of the peat if the horizontal peak particle acceleration of the dynamic load is less than 0.1g m/s^2. However, the undrained shear strength may be exceeded if the PPA exceeds this value.

The PPA recorded on the site has generally been less than 0.1g m/s^2. Values of 0.17g to 0.18g have been recorded on the peat and turbine base at T27. However, there is significant variability in the data from this location, which could indicate that some of the high readings may be erroneous.

It should be emphasized that no failures have been recorded on the site to date as a result of the blasting. There is considerable uncertainty to the pseudo-static slope stability analysis for this application and the analysis is very conservative. It is assumed that the vibrations induce a constant inertial force proportional to the acceleration in the direction of the slope, whereas the actual vibrations are transient, cyclical and have a low frequency. Also, it is possible that locally high values of PPA may be as a result of poor mounting of the vibrograph transducers.

Nevertheless, we would consider that the peat repository site T65R behind the quarry is the primary risk with regard to slope stability under the blast-induced vibrations. Consequently, given the uncertainty of the analysis, we have recommended that a berm of mineral soil be constructed along the face of the peat at the back of the quarry as a preventative measure.

3.0 Conclusion

There is no established criterion for limiting values of PPV or PPA for the stability of shallow peat slopes in Ireland. However, based on the blast monitoring records to date we would recommend that the following criteria be adopted for future blasting operations on the site:

1. The maximum resultant horizontal PPA on the site should not exceed 0.1g m/s^2.
2. The maximum resultant horizontal PPV should be limited to 15 mm/s and 5 mm/s at a distance of 100 m and 500 m from the blast, respectively, and should not exceed 30 mm/s at the blast site.

These limits are consistent with the majority of the data that has been recorded on the site to date and no failures have been observed as a result of the blasting. The maximum instantaneous charge of the blasts was in the range of 87.5 to 105 kg, and the total charge ranged from 3,075 to 6,000 kg.

Based on these criteria the vibrations induced by the blasting should be very low beyond a distance of 500 m from the blast and the radius of influence should be approximately 1000 m, which does not extend into the area in which the slide occurred on October 16th, 2003 (See Figure No.4).

Vibration monitoring should continue on the site to confirm that the response of the ground to blasting is within the expected limits. The limits can be reviewed if necessary when more data becomes available.

Signed:

Conor O'Donnell

Conor O'Donnell
AGL Consulting

References:

Ferritto, J.M., "*Design Criteria for Soil Liquefaction*", NAVFAC Technical Report TR-2077-SHR, Naval Facilities Engineering Service Center, California, June 1997

Table No.2 - Blast data from Borrow Pit No.2 at Derrybrien Windfarm

January 12th, 2005																
Vibrograph No.	Location	On Peat or Turbine	Distance	Max Charge/Delay	Scaled Distance	PPV (mm/s)			RPPV (mm/s)	PPA (x g m/s^2)			Freq (Hz)			Comments
			(m)	W (kg)	$R/W^{1/2}$	L	V	T		L	V	T	L	V	T	
1	T27	Turbine	270	105	26.3	8.2	6	7		0.028	0.155	0.017	15.5	21.7	16.8	
2	T68	Peat	990	105	96.6		-	-		-	-	-	-	-	-	Did not trigger
3	T24	Peat	440	105	42.9	5.1	4.3	3	5.8	0.052	0.104	0.031	2	11.6	2.1	
4	T28	Turbine	611	105	59.6	2.3	1.4	1.6		0.031	0.031	0.031	11.6	10	13.8	
5	T29	Turbine	890	105	86.9	2.7	0.8	0.4		0.021	0.021	0.021	0.3	7.5	30.1	
February 4th, 2005																
Vibrograph No.	Location	On Peat or Turbine	Distance	Max Charge/Delay	Scaled Distance	PPV (mm/s)				PPA (x g m/s^2)			Freq (Hz)			Comments
			(m)	W (kg)	$R/W^{1/2}$	L	V	T		L	V	T	L	V	T	
1	T27	Turbine	270	92.5	28.1	4.7	5.3	6.3		0.038	0.038	0.166	25.3	28.1	17.3	
2	T34	Peat	740	92.5	76.9	1	2.7	1.4		0.062	0.062	0.062	12.2	12.8	9.1	
3	T28	Peat	590	92.5	61.3	3.1	1.2	1.6		0.062	0.062	0.041	8.8	20	12.8	
4	T56	Peat	820	92.5	85.3	1	2	1.6		0.031	0.021	0.062	9.5	49.5	2.1	
5	T68	Turbine	1000	92.5	104.0	1	1.2	0		0.021	0.031	0	11.1	14.6	0	
April 4th, 2005																
Vibrograph No.	Location	On Peat or Turbine	Distance	Max Charge/Delay	Scaled Distance	PPV (mm/s)				PPA (x g m/s^2)			Freq (Hz)			Comments
			(m)	W (kg)	$R/W^{1/2}$	L	V	T		L	V	T	L	V	T	
1	T27	Peat	278	90	29.3	11	12.3	9.8		0.577	0.186	0.166	20	16	21	
2	T34	Peat	740	90	78.0	0.2	0.2	0.2		0.041	0.041	0.041	341.3	341.3	512	
3	T28	Peat	623	90	65.7	1.6	3.3	1.6	3.6	0.062	0.062	0.062	17.1	15.7	13.5	
4	T56	Peat	833	90	87.8	0.2	0	0		0.041	0	0	341.3	49.5	2.1	
5	T68	Peat	993	90	104.7	0.9	1.9	1	2.0	0.023	0.027	0.027	19	20	11	
April 19th, 2005																
Vibrograph No.	Location	On Peat or Turbine	Distance	Max Charge/Delay	Scaled Distance	PPV (mm/s)				PPA (x g m/s^2)			Freq (Hz)			Comments
			(m)	W (kg)	$R/W^{1/2}$	L	V	T		L	V	T	L	V	T	
1	T27	Peat	250	87.5	26.7	10.4	3.9	4.8	10.8	0.165	0.067	0.075	125	8.3	6.6	
2	T27	Turbine	250	87.5	26.7	5	4	5.7		0.062	0.038	0.017	20	27	16.3	
3	T28	Peat	623	87.5	66.6											Malfunction
4	T64	Peat	240	87.5	25.7	18.4	28	21.2					16.7	20.8	17.9	No details on PPA
5	T68	Peat	950	87.5	101.6	2.23	1.99	2.03	3.2	0.023	0.027	0.023	12	10	12	
May 4th, 2005																
Vibrograph No.	Location	On Peat or Turbine	Distance	Max Charge/Delay	Scaled Distance	PPV (mm/s)				PPA (x g m/s^2)			Freq (Hz)			Comments
			(m)	W (kg)	$R/W^{1/2}$	L	V	T		L	V	T	L	V	T	
1	T27	Peat	250	90	26.4	6.1	4.3	5.7		0.062	0.017	0.017	9.3	9.6	9.3	
2	T27	Turbine	250	90	26.4	1.8	1.8	3.5		0.062	0.062	0.062	8.5	12.8	11.6	Max Charge per
3	T28	Peat	623	90	65.7	3.5	2	2	4.0	0.062	0.062	0.062	16.8	10.4	22.3	Delay assumed - no
4	T64	Peat	240	90	25.3	6.6	8.2	6.6		0.062	0.145	0.062	12.6	18.2	11.3	details provided.
5	T68	Peat	950	90	100.1	1.02	0.725	0.75	1.07	0.017	0.01	0.01	4.71	6.25	250	

Table No. 3 - Resultant horizontal PPV and PPA for blasts in Borrow Pit No.2 at Derrybrien Windfarm

Vibro-graph No.	Location	On Peat or Turbine	Scaled Distance $R/W^{1/2}$	Resultant PPV (mm/s) (Horizontal)	Resultant PPA x g (m/s^2) (Horizontal)
January 12th, 2005					
1	T27	Turbine	26.3	10.8	0.033
2	T68	Peat	96.6		
3	T24	Peat	42.9	5.9	0.061
4	T28	Turbine	59.6	2.8	0.044
5	T29	Turbine	86.9	2.7	0.030
February 4th, 2005					
Vibro-graph No.	Location	On Peat or Turbine	Scaled Distance $R/W^{1/2}$	Resultant PPV (mm/s) (Horizontal)	Resultant PPA x g (m/s^2) (Horizontal)
1	T27	Turbine	28.1	7.9	0.170
2	T34	Peat	76.9	1.7	0.088
3	T28	Peat	61.3	3.5	0.074
4	T56	Peat	85.3	1.9	0.069
5	T68	Turbine	104.0	1.0	0.021
April 4th, 2005					
Vibro-graph No.	Location	On Peat or Turbine	Scaled Distance $R/W^{1/2}$	Resultant PPV (mm/s) (Horizontal)	Resultant PPA x g (m/s^2) (Horizontal)
1	T27	Peat	29.3	14.7	0.600
2	T34	Peat	78.0	0.3	0.058
3	T28	Peat	65.7	2.3	0.088
4	T56	Peat	87.8	0.2	0.041
5	T68	Peat	104.7	1.3	0.035
April 19th, 2005					
Vibro-graph No.	Location	On Peat or Turbine	Scaled Distance $R/W^{1/2}$	Resultant PPV (mm/s) (Horizontal)	Resultant PPA x g (m/s^2) (Horizontal)
1	T27	Peat	26.7	11.5	0.181
2	T27	Turbine	26.7	7.6	0.064
3	T28	Peat	66.6		
4	T64	Peat	25.7	28.1	
5	T68	Peat	101.6	3.0	0.033
May 4th, 2005					
Vibro-graph No.	Location	On Peat or Turbine	Scaled Distance $R/W^{1/2}$	Resultant PPV (mm/s) (Horizontal)	Resultant PPA x g (m/s^2) (Horizontal)
1	T27	Peat	26.4	8.3	0.064
2	T27	Turbine	26.4	3.9	0.088
3	T28	Peat	65.7	4.0	0.088
4	T64	Peat	25.3	9.3	0.088
5	T68	Peat	100.1	1.3	0.020

APPENDIX X

AGL GEOTECHNICAL APPROVAL CERTIFICATES

AGL Consulting Geotechnical Engineers	DERRYBRIEN WINDFARM	Suite 2, The Avenue Beacon Court, Sandyford, D18 Tel: (01) 295 6532 Fax: (01) 295 6533

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-01

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/2	3	*Job Specific Method Statement for the Construction of Turbine Base No. 63*
C5023/3	3	*Job Specific Method Statement for the Construction of Turbine Base No. 57*
C5023/4	3	*Job Specific Method Statement for the Construction of Turbine Base No. 58*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T63, T57, T58**

2. The stability of the following floating roads on peat which have been tested and approved for construction traffic loads up to 36 tonnes/20 kN/m^2.

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10			

3. The stability of the following peat repository sites which have been analyzed and approved for up to 1.0 m depth of peat.

T57R	
T58R	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 3/12/04

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 3/12/04

Comments

Ascon shall carry out remedial works along sections of floating roads where road performed poorly during load test at full load (36 tonnes).

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-02

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/008	2	*Job Specific Method Statement for the stripping of peat and mineral soil from Borrow Pit No.3 to facilitate blasting operations*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Borrow Pit No.3**.

2. The stability of the following floating roads on peat which have been tested and approved for construction traffic loads up to 36 tonnes/20 kN/m^2.

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10			

3. The stability of the following peat repository sites which have been analyzed and approved for up to 1.0 m depth of peat from Borrow Pit No.3

T65R	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 3/12/04

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 3/12/04

Comments

Ascon shall implement a programme to monitor vibrations generated across the site by rock blasting in Borrow Pit No.3. Blast charges shall be designed to minimize vibrations transmitted through the rock. A trial blast shall be carried out to assess the level of vibrations that are generated on the peat and rock at locations selected by AGL.

The existing peat in the repository site will settle under the weight of the additional peat. Therefore, the level marks used for monitoring the depth of peat placed on the site shall be free to settle with the underlying peat.

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-03

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/11	2	*Job Specific Method Statement for the Construction of Turbine Base No. 53*
C5023/12	2	*Job Specific Method Statement for the Construction of Turbine Base No. 71*
C5023/13	2	*Job Specific Method Statement for the Construction of Turbine Base No. 52*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T53, T71, T52**

2. The stability of the following floating roads on peat which have been tested and approved for construction traffic loads up to 36 tonnes/20 kN/m^2.

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10			

3. The stability of the following peat repository sites which have been analyzed and approved for up to 1.0 m depth of peat.

T56/57R – for Turbine T52	
Borrow Pit No.2 – for Turbines T53 and T71	

Signed: Conor O'Donnell Firm **AGL Consulting**

DIRECTOR/SENIOR GEOTECHNICAL ENGINEER

Name: **Conor O'Donnell** Date: 14/12/04.

Signed: Eric R Farrell Firm **AGL Consulting**

DIRECTOR/GEOTECHNICAL CONSULTANT

Name: **Dr. Eric Farrell** Date: 14/12/04

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-04

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/006	2	*Job Specific Method Statement for the construction of floating roads around the Derrybrien Windfarm site*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The stability of the following floating roads on peat which have to be constructed on the site.

T53 to T55	T47 to T50	T47 to T53	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 14/12/04.

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 14/12/04.

Comments

The section of floating road that remains to be constructed between T13 and T17 is still under review. A certificate for this section will be forward at a later date when the ground investigation and stability analyses have been completed.

The floating road between T47 and T50 shall be constructed at least 25 m south of the crest of the ridge along the northern boundary of the site.

Ascon shall carry out remedial works on existing floating roads where the performance of the road was classified as "poor" in the road test at the full construction load (36 tonnes).

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-05

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/007	2	*Job Specific Method Statement for the stripping of peat and mineral soil from the location of the 110 Kv Substation*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **the location of the 110 kV Substation**

2. The stability of the following floating roads on peat which have been tested and approved for construction traffic loads up to 36 tonnes/20 kN/m^2.

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**		

3. The stability of the following peat repository sites which have been analyzed and approved for up to 1.0 m depth of peat from the **100kV Substation site**

T24/25R	
T24R	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 15/12/04

Signed: Eric Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 15/12/04

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-06

We hereby certify that the stability of the floating roads on the site has been assessed and the following roads have been tested and approved for construction traffic loads up to 36 tonnes/20 kN/m^2, as shown on the attached Figures Nos. 1 and 2, subject to the conditions outlined in the comments section below:

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**		

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 16/12/04

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 16/12/04

Comments

Remedial works shall be carried out on those sections of the floating road where the performance was classified as "poor" under the full construction load. The works shall conform to the AGL method statement dated 8/12/04.

Additional investigation is required to assess the remedial work that will be required for the section of floating road between T69 and T68. This section of road shall not be used by construction traffic until the remedial work has been completed.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-07

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/11	2	*Job Specific Method Statement for the Construction of Turbine Base No. 47*
C5023/14	2	*Job Specific Method Statement for the Construction of Turbine Base No. 53*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T47 & T53**

2. The stability of the following floating roads on peat which have been tested and approved for construction traffic loads up to 36 tonnes/20 kN/m^2.

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**		

3. The stability of the following peat repository sites which have been analyzed and approved for up to 1.0 m depth of peat.

T47R – for Turbine T47	**Opposite base on south side of floating road**
T53R – for Turbine T53	**Opposite base on south side of floating road**

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 13/1/05

Signed: Eric O Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 13/1/2005

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

A drainage path should be created across the floating road for the water ponded on the south side of the road opposite T47.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-08

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/17	1	*Job Specific Method Statement for the Construction of Turbine Base No. 48*
C5023/15	1	*Job Specific Method Statement for the Construction of Turbine Base No. 49*
C5023/18	1	*Job Specific Method Statement for the Construction of Turbine Base No. 50*
C5023/19	1	*Job Specific Method Statement for the Construction of Turbine Base No. 51*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T48, T49, T50 and T51.**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**		

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T48R – for Turbine T48	**T50R – for Turbine T50**
T49R – for Turbine T49	**T51R – for Turbine T51**

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 13/1/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 18/1/2005

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

The floating road between T47 and T50 shall be tested to the full construction load under the inspection of AGL Consulting before it is used by fully laden concrete trucks.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-09

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/023	1	*Job Specific Method Statement for the Construction of Turbine Base No. 56*
C5023/028	1	*Job Specific Method Statement for the Construction of Turbine Base No. 64*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T56 and T64.**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**		

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T65R (Behind Quarry) – for Turbine T64	
T56/57R – for Turbine T56	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 13/1/05

Signed: Eric O Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 18/1/2005

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-010

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	**Rev. No.**	**Title**
C5023/016	1	*Job Specific Method Statement for the Construction of Turbine Base No. 69*
C5023/012	3	*Job Specific Method Statement for the Construction of Turbine Base No. 71*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T69 and T71.**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**		

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T24/25R – for Turbine T69 & T71	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 13/1/05

Signed: Eric Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 18/1/2005

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Remedial work shall be carried out on floating road classified as "poor" prior to excavation at T69.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-011

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/025	1	*Job Specific Method Statement for the Construction of Turbine Base No. 59*
C5023/027	1	*Job Specific Method Statement for the Construction of Turbine Base No. 8*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T59 and T8.**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T48**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T59R – for Turbine T59	
T8R – for turbine T8	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 31/1/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 31/1/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

L Consulting otechnical Engineers	DERRYBRIEN WINDFARM	Suite 2, The Avenue Beacon Court, Sandyford, D18 Tel: (01) 295 6532 Fax: (01) 295 6533

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-011

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/025	1	*Job Specific Method Statement for the Construction of Turbine Base No. 59*
C5023/027	1	*Job Specific Method Statement for the Construction of Turbine Base No. 8*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T59 and T8**, and T61 if necessary. (D.C. AGL Consulting 16.02.05).
2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T48**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T59R – for Turbine T59	
T8R – for turbine T8	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 31/1/05

Signed: Eric Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 31/1/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-012

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/18	1	*Job Specific Method Statement for the Construction of Turbine Base No. 50*
		(w/ Revised repository site T50R-B)

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T50R.**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T50R-B – for Turbine T50 (Revised Location)	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 4/2/01

Signed: Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date:

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

AGL Consulting *Geotechnical Engineers*	DERRYBRIEN WINDFARM	Suite 2, The Avenue Beacon Court, Sandyford, D18 Tel: (01) 295 6532 Fax: (01) 295 6533

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-013

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/26	1	*Job Specific Method Statement for the Construction of Turbine Base No. 7*
C5023/24	1	*Job Specific Method Statement for the Construction of Turbine Base No. 30*
C5023/22	1	*Job Specific Method Statement for the Construction of Turbine Base No. 55*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T7, T30 & T55.**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T7R– for base T7	**T55R – for base T55**
T30R– for base T30	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 11/2/05

Signed: Eric D. Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 11/2/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

AGL Consulting Geotechnical Engineers	DERRYBRIEN WINDFARM	Suite 2, The Avenue Beacon Court, Sandyford, D18 Tel: (01) 295 6532 Fax: (01) 295 6533

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-014

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/031	1	*Job Specific Method Statement for the Construction of Turbine Base No. 39*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T39R**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T39R– for base T39	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 18/2/05

Signed: Eric Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 18/2/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-015

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/031	1	*Job Specific Method Statement for the Construction of Turbine Base No. 36*
C5023/044	1	*Job Specific Method Statement for the Construction of Turbine Base No. 62*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at turbine bases: **T36R, T62R**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T36R– for base T36	
T62R– for base T62	

Signed: ______________________ Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: ______________________

Signed: ______________________ Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: ______________________

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-016

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/008	2	*Job specific method statement for the stripping of peat and mineral soil from Borrow Pit No. 3 to facilitate blasting operations*
C5023/027	1	*Job Specific Method Statement for the Construction of Turbine Base No. 8*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T8 and Borrow Pit No.3**.

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T8R(ext)– extension to original repository at Base T8	
T11R – for peat from Borrow Pit No.3	

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 28/2/05

Signed: Eric O. Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 28/2/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses. Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active. Repository sites T8R(ext) and T11R have been approved for deposition of up to 1.0 m of peat from the excavation at Base T8 and at Borrow Pit No. 3 (Quarry). AGL shall be advised if the sites are used for any other purpose.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-017

We hereby certify that reasonable professional care has been taken by AGL Consulting in assessing the stability of the following peat repository sites:

Repository Site No.	Location
T11R	***South of the floating road between T11 and T10, west of base T11.***
T8R (ext)	***Extension of existing repository site adjacent to base T8***

The stability of these repository sites has been analyzed by AGL Consulting and they have been approved for the deposition of up to **1.0 m of peat** from authorized excavations on the site, subject to the conditions outlined in the comments section below.

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 4/3/05

Signed: Eric Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 4/3/05

Comments

The AGL analysis summary sheet showing the peat depths and slope angles, and the outputs from the Slope/W analyses for each repository site must accompany this certificate.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall advise AGL of the source of peat deposited in the repository sites.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-018

We hereby certify that reasonable professional care has been taken by AGL Consulting in assessing the stability of the following peat repository sites:

Repository Site No.	Location
T27R	***North of the existing floating road in the clearing to the east and west of turbine T27***

The stability of these repository sites has been analyzed by AGL Consulting and they have been approved for the deposition of up to **1.0 m of peat** from authorized excavations on the site, subject to the conditions outlined in the comments section below.

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 4/3/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 4/3/05

Comments

The AGL analysis summary sheet showing the peat depths and slope angles, and the outputs from the Slope/W analyses for each repository site must accompany this certificate.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

The area bounded by Grid Points F2-F3-H3-H2 shall only be used after the crane pad has been constructed west of the base T27 and backfilled up to original ground level. If the crane pad is not backfilled up to ground level a berm should be constructed on the pad along the upslope side of the peat. The berm should be 1.0 m wide a the crest with 1V:1.5H side slopes.

Ascon shall advise AGL of the location of any floating roads that have to be constructed to access the repository site. No roads shall be constructed in the cells that have been rejected, with the exception of an access road off the existing floating road from K1 to K2, or similar.

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall advise AGL of the source of peat deposited in the repository sites.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-019

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/023	1	*Job Specific Method Statement for the Construction of Turbine Base No. 31*
C5023/030	1	*Job Specific Method Statement for the Construction of Turbine Base No. 33*
C5023/021	1	*Job Specific Method Statement for the Construction of Turbine Base No. 54*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T31, T33 and T54**.

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T33R – for peat from excavation from Turbine Base T33 (Balance to Rep. Site T27R)
T54R – for peat from excavation from Turbine Base T54

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 10/3/05

Signed: Eric R. Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 10/3/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

T31 & T33 – depth of peat at these turbine bases is between 4.0 m and 5.0 m. Shear key of rockfill down to mineral soil will probably be required on all four sides of turbine base excavations to prevent local failure of peat during excavation.

T33: Volume and depth of peat excavated would be minimized by moving the turbine base to the rejected peat repository cell C1-C2-D2-D1 on the AGL summary sheet. The crane pad should also be constructed to the west of the base.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-020

We hereby certify that reasonable professional care has been taken by AGL Consulting in assessing the stability of the following peat repository site:

Repository Site No.	Location
T51R(b)	*West side of the floating road approximately half way between base T57 and the junction to T51*

The stability of this repository site has been analyzed by AGL Consulting and it has been approved for the deposition of up to **1.0 m of peat** from authorized excavations on the site, subject to the conditions outlined in the comments section below.

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 10/3/05

Signed: Eric R. Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 10/3/05

Comments

The AGL analysis summary sheet showing the peat depths, slope angles and vane shear test results, and the outputs from the Slope/W analyses for the repository site must accompany this certificate.

Ascon shall maintain the depth markers across the repository site and the tape identifying the approved boundaries throughout the time that the repository site is active.

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall advise AGL of the source of peat deposited in the repository sites.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-021

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/035	1	*Job Specific Method Statement for the Construction of Turbine Base No. 14*
C5023/033	1	*Job Specific Method Statement for the Construction of Turbine Base No. 6*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T14 and T6**
2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T14R – for peat from excavation from Turbine Base T14
T6R – for peat from excavation from Turbine Base T6

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 16/3/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 16/3/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

T14 – The road between T13 and T16 shall be tested and approved for construction traffic loads up to 36 tonnes/20 kN/m^2 prior to excavation at the base.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-022

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/042	1	*Job Specific Method Statement for the Construction of Turbine Base No. 60*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T60**

2. The stability of the following floating roads on peat which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**

T50 to T52	**T52 to T57**	**T56 to T57**	**T57 to T58**
T53 to T59	**T59 to T65**	**T65 to T26**	**T26 to T18**
T18 to T1	**T1 to T2**	**T3 to T5**	**T6 to T24**
T59 to T10	**T12 to T13**	**T17 to T25**	**T26 to T41**
T25 to T45	**T24 to T44**	**T53 to T56**	**T47 to T51**

3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T60R – for peat from excavation from Turbine Base T60

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 16/3/05

Signed: Eric Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 16/3/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-023

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/049	1	*Job Specific Method Statement for the Construction of Turbine Base No. 68*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T68**
2. The stability of all of the floating roads on peat on the site, which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**
3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T68R – for peat from excavation from Turbine Base T68

Signed:	Conor O'Donnell	Firm	**AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER			
Name:	**Conor O'Donnell**	Date:	19/4/05
Signed:	Eric R Farrell	Firm	**AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT			
Name:	**Dr. Eric Farrell**	Date:	19/4/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

As outlined in the method statement, Ascon shall construct shear keys of crushed rockfill down to mineral soil on the south side of the floating roads for a distance of 5 m west and 10 m east of the section of road already taken down to mineral soil across the slide area.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

AGL Consulting Geotechnical Engineers	DERRYBRIEN WINDFARM	Suite 2, The Avenue Beacon Court, Sandyford, D18 Tel: (01) 295 6532 Fax: (01) 295 6533

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-024

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/050	1	*Job Specific Method Statement for the Construction of Turbine Base No. 15*
C5023/051	1	*Job Specific Method Statement for the Construction of Turbine Base No. 16*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T15 & T16**
2. The stability of all of the floating roads on peat on the site, which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**
3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T12R – for peat from excavation from Turbine Bases T15 & T16

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 21/4/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 21/4/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall mark out the approved boundaries of the repository site and shall place appropriate depth markers across the site to monitor the depth of peat placed there. These shall be maintained throughout the time that the repository is active.

AGL Consulting Geotechnical Engineers	DERRYBRIEN WINDFARM	Suite 2, The Avenue Beacon Court, Sandyford, D18 Tel: (01) 295 6532 Fax: (01) 295 6533

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-25

We hereby certify that reasonable professional skill and care has been taken by AGL with a view to assessing the stability of the floating roads on the site and that the following roads have been tested and approved for construction traffic loads up to 72 tonnes or 4.8 tonnes/linear metre of road, subject to the conditions outlined in the comments section below:

T47 to T52	**T47 to T9**	**T53 to T57**	**T59 to T65**
T52 to T57	**T64 to T26**	**T1 to T18**	**T1 to T2**
T3 to T4	**T6 to T24**	**T12 to T16**	**T18 to T26**
T17 to T25	**T66 to T68**	**T24 to T44**	**T25 to T45**
T26 to T46	**T45 to T46**		

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 21/4/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 21/4/05

Comments

The roads have been tested to a minimum load of 72 tonnes over a length of 15 m using two fully loaded 8-wheel trucks travelling back to back. This is equivalent to the crane that will be used to erect the turbines, which we understand will be 15 m long x 2.75 m wide with a fully laden weight of 72 tonnes on six axles when travelling. AGL shall be advised if the traffic load exceeds this value.

This certificate covers all of the floating roads that have been constructed on the site to date, with the exception of the road between T4 and T5, where remedial works shall be carried out before it can be approved for the full construction loads. The works shall conform to the AGL method statement dated 8/12/04.

The crane shall travel down the centre of the roads wherever possible. In particular, assistance shall be provided to the driver to guide the crane down the centre of the upgraded turbary road between T25 and T45.

AGL Memo No. 03-104-DM18 identifies other areas on the site where remedial work may be required before the road is used by the crane. This is a serviceability criterion based on the observed performance of the road. It has been demonstrated that the roads have the required capacity to support the proposed traffic loads. The AGL memo shall be included with this certificate.

AGL Consulting Geotechnical Engineers	DERRYBRIEN WINDFARM	Suite 2, The Avenue Beacon Court, Sandyford, D18 Tel: (01) 295 6532 Fax: (01) 295 6533

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-026

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/050	1	*Job Specific Method Statement for the Construction of Turbine Base No. 70*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T70**
2. The stability of all of the floating roads on peat on the site, which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**
3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T70R – for peat from excavation from Turbine Base T70 (Behind base and road taken down to mineral soil)

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 4/5/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 4/5/05

Comments

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall construct a shear key of crushed rockfill down to mineral soil on the south side of the floating road for a distance of 10.0 m east of the section of road already taken down to mineral soil across the slide area.

GEOTECHNICAL APPROVAL CERTIFICATE No. GAC(DW)-027

We hereby certify that the geotechnical aspects of following method statements from Ascon have been reviewed by AGL Consulting, and that work can proceed in accordance with the terms of the method statements, subject to the conditions outlined in the comments section below:

Document No.	Rev. No.	Title
C5023/052	3	*Job Specific Method Statement for the Construction of Turbine Base No. 70 (dated 25/5/05)*

Reasonable professional skill and care has been taken by AGL with a view to assessing

1. The methods proposed for excavating the peat and mineral soil at **Turbine Base T70**
2. The stability of all of the floating roads on peat on the site, which have been tested and approved for **construction traffic loads up to 36 tonnes/20 kN/m^2.**
3. The stability of the following peat repository sites which have been analyzed and approved for up to **1.0 m depth of peat**.

T12R – for peat from excavation from Turbine Base T70

Signed: Conor O'Donnell Firm **AGL Consulting**
DIRECTOR/SENIOR GEOTECHNICAL ENGINEER
Name: **Conor O'Donnell** Date: 27/5/05

Signed: Eric R Farrell Firm **AGL Consulting**
DIRECTOR/GEOTECHNICAL CONSULTANT
Name: **Dr. Eric Farrell** Date: 27/5/05

Comments

See also AGL Report No. 03-104-R05 for review of geotechnical investigation and analysis carried out in the vicinity of T70.

AGL Consulting will carry out periodic inspections on site to ensure that the work complies with the approved method statements, and that the stability of the peat repository sites conforms to the results of the stability analyses.

Ascon shall construct a shear key of crushed rockfill down to mineral soil on the south side of the floating road for a distance of 10.0 m east of the section of road already taken down to mineral soil across the slide area.

APPENDIX XI

AGL REPORT NO. 03-104-R03 – REPORT ON MOVEMENT OF THE FLOATING ROAD WEST OF TURBINE T17

Report on the Movement of the Floating Road west of T17 on the Derrybrien Windfarm, Co. Galway

Report No. 03-104-R03

for

Ascon Ltd.
Unit 5
Liosban Business Park
Tuam Road
Galway

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April 8th, 2005

Report on the Movement of the Floating Road west of T17 on the Derrybrien Windfarm, Co. Galway

1.0 INTRODUCTION

This report summarizes the findings of a ground investigation that was carried out to investigate the cause of the movement that occurred along a 30 m section of floating road west of turbine T17 during construction of the road.

The investigation that has been carried out to date in the area includes:

- A visual inspection of the road and the area upslope and downslope from the road.
- Peat depth measurements with the gouge auger probe 1 m and 20 m upslope and downslope from the floating road;
- Slope angle measurements across the road and 20 m upslope and downslope from the road;
- Peat sampling with the gouge auger on the upslope and downslope side of the road,
- 2 No. vane shear tests with the Geonor H-10 vane: 1.0 m from the edge of the road on the upslope and downslope side, and
- Piston sampling in a trial pit on the downslope side of the road.

The probing, slope measurements, sampling and vane shear tests were carried out at the centre of the 30 m long section of road that has moved.

2.0 VISUAL INSPECTION

The movement is confined to a short stretch of the road, approximately 30m long to the west of Turbine Base T17. The road appears to have moved downslope locally in this area. The movement is greatest at the centre of the 30 m long section. There is a tension crack along the upslope edge of the road, and a drain parallel to the road 5 m on the downslope side has closed over. The ground on the upslope side of this drain is higher than the ground on the opposite side. There may also have been some subsidence on the upslope side of the road.

On the upslope side of the road there are a number of open drains that intersect and pass under the road. Around the time that the movement occurred a significant volume of water had accumulated in the open drains upslope from the road. Subsequently, a channel was excavated across the road to release water. The tension crack on the upslope side of the road occurred near the intersection of the drains.

Significantly, the movement of the road appears to be localized. There was no evidence of movement further upslope or downslope from the road, or along the floating road to the east or west of the section that moved.

3.0 PEAT DEPTH

The peat depths recorded with the gouge auger along a profile from north to south across the centre of the section of the floating road where movement occurred were:

- **2.8 m** 20 m upslope from the road
- **2.4 m** 1 m upslope
- **2.1 m** 1 m downslope
- **1.75 m** 20 m downslope

4.0 SLOPE ANGLES

The measured slope angles at the ground surface were:

- 1-20 m upslope from the road: **4°**
- Crossfall on road **4.5°**
- 1-20 m downslope from the road: **5°**

The calculated slope angles along the base of the peat were therefore:

- 1-20 m upslope from the road: **2.7°**
- Crossfall on road **2.5°**
- 1-20 m downslope from the road: **3.7°**

5.0 UNDRAINED SHEAR STRENGTH OF THE PEAT

The undrained shear strength of the peat was measured using the Geonor H-10 65/130 mm vane. 1 No. test was carried out on each side of the road at the centre of the section where movement occurred. A table and plot of the results are attached.

The uncorrected undrained shear strength, c_u, of the peat ranged from 5.2 to 7.8 kPa. Below the crust at the top of the peat, The shear strength of the peat decreased to a minimum value of 5.2-6.2 kPa at a depth of 1.5 m before increasing with depth down to the interface with the mineral soil.

In general, the peat would be classified as very soft. However, no extremely weak layer was encountered in the peat and the recorded strengths were higher than other areas of the site where peat strengths in the range of 3.75-5.0 kPa were recorded with the Geonor H-10 vane.

6.0 GOUGE AUGER SAMPLES

Samples of the peat were collected 1m upslope and downslope from the road at the centre of the section that moved using the 30 mm diameter gouge auger sampler. The samples were 0.6 to 0.7 m long and extended 100 mm into the underlying mineral soil.

The samples would be classified as very soft dark brown very clayey peat with a low fibre content (Class H9 in the Von Post Classification System – practically fully decomposed peat with hardly any recognizable plant structure).

Significantly, both of the samples were continuous over their full length. There were no extremely weak layers, discontinuities or slickensided surfaces in the samples, and there was a transition into the underlying mineral soil rather than a discrete boundary.

Based on our observations of peat around the site, the undrained shear strength of the peat samples would be consistent with the higher strengths recorded with the Geonor H-10 vane.

7.0 PISTON SAMPLES

100 mm diameter and 50 mm diameter piston samples of the peat were collected by AGL and extruded in the Soils Laboratory in Trinity College Dublin. Samples were collected in approx. 1.0 m lengths from 0.6 m to 2.4 m below ground level, extending into the mineral soil below the peat.

All of the samples were continuous over their full length. Water contents in the peat ranged from 240% to 1340% and generally reduced with depth (Figure No.1). There were no extremely weak zones of peat or persistent shear zones in the samples. Some vertical and horizontal fissures were noted at a depth of 1.5 m in two of the samples but the fissures were not persistent and may have been caused by sampling disturbance as they were at the interface between two piston samples and the fissures were noted at the bottom and top of the upper and lower samples, respectively. Also, a trial pit was excavated into the peat to collect the piston samples and there was no shear zone evident at this depth and the peat was fibrous.

8.0 SLOPE/W ANALYSES

We have carried out slope stability analyses using the program Slope/W to check the stability of the road in this area based on the actual slope angles, peat depths and peat strengths recorded. Sample plots for a circular slip surface (local bearing) and block sliding analysis are attached.

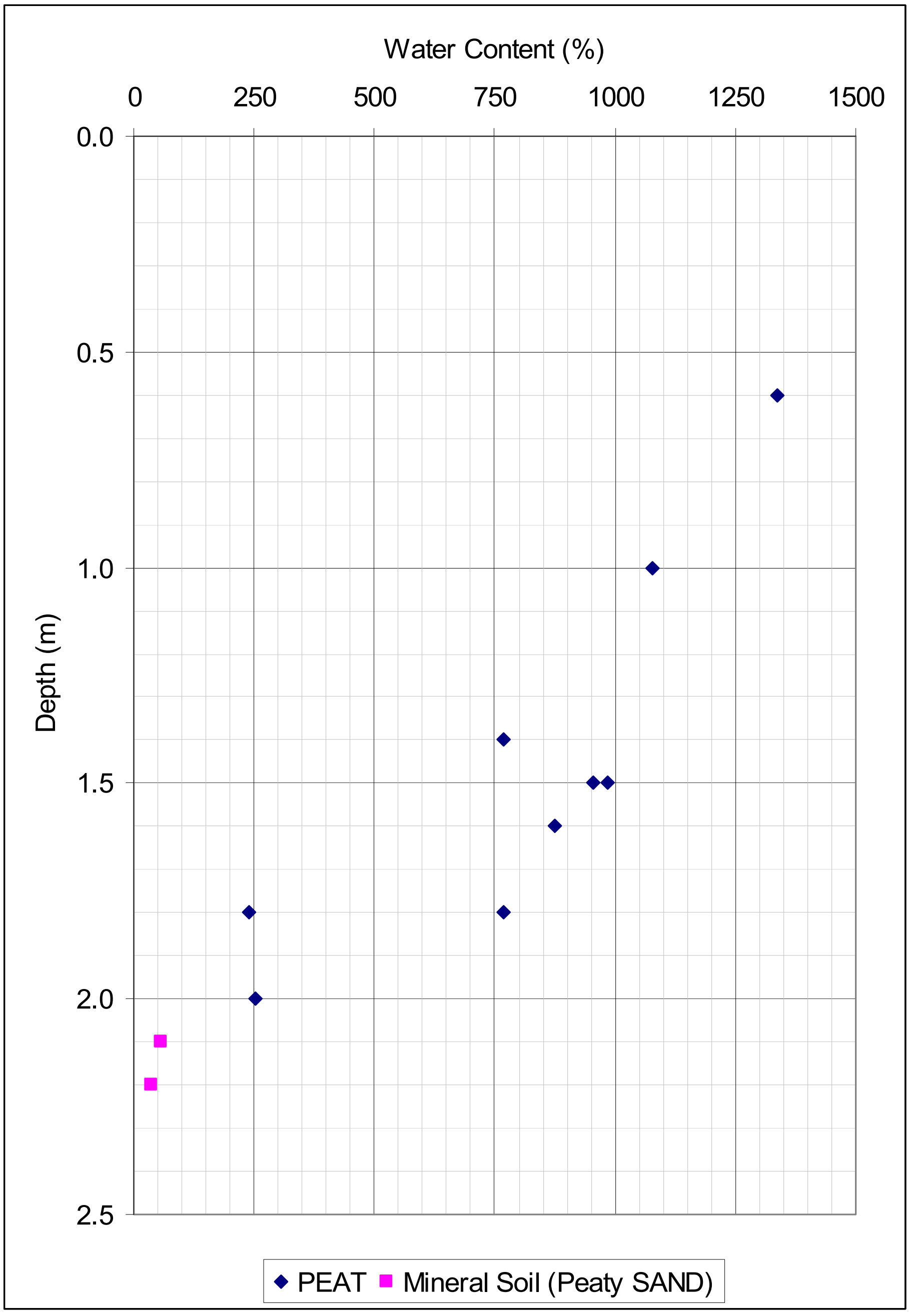


Figure No. 1 – Water contents of piston samples

We have assumed that the thickness of the road surfacing is 0.5 m and that the layers of basal reinforcement will ensure that critical failure surfaces will have to extend over the full width of the road.

A live load surcharge of 17kPa x 1.3 (partial factor) = 22.2 kPa has been applied to simulate the proposed crane load, or the load of construction traffic on the road.

For the purposes of this analysis we have used ***characteristic*** (unfactored) undrained shear strengths to calculate the factor of safety against local bearing or sliding failure. The profile with the lowest recorded undrained shear strengths was used in the analyses, although it should be noted that the peat strengths on the downslope side of the road were higher.

No allowance was taken for the increase in strength of the peat under the weight of the road.

The calculated factors of safety were:

1.23 – for local bearing failure (circular slip surface)
2.26 – for block sliding

9.0 SUMMARY

9.1. Downslope movement occurred along a 30 m length of floating road west of turbine base No. T17.

9.2. At the time that the movement occurred a number of drains approximately 0.5 – 0.75 m deep had been cut into the peat on the upslope and downslope sides of the road.

9.3. On the upslope side of the road a number of open drains intersected and crossed the road through a piped culvert. Around the time of the movement, water had accumulated in the drains upslope from the road.

9.4. Approximately 5 m downslope from the road a drain had been cut into the peat parallel to the road.

9.5. A tension crack opened up on the upslope edge of the road near the drains and the drain on the downslope side had closed over in places. Some subsidence may also have occurred on the road.

9.6. The peat depth reduces from north to south from 2.8 m 20 m upslope from the road, to 2.1-2.4 m at the road, and 1.75 m 20 m downslope from the road.

9.7. The road has been constructed at a break in slope, where the slope angles change from 4° to 5°.

9.8. The slope angles at the base of the peat are lower but still show a break in the slope from 2.5° to 3.7° at the road.

9.9. No extremely weak peat, persistent discontinuities, shear zones or slickensided surfaces were encountered in samples of the peat in this area.

9.10. The recorded undrained shear strength of the peat was in the range 5.2 to 7.8 kPa, which is higher than some weaker areas that have been identified elsewhere on the site.

9.11. The results of slope stability analyses indicate that there is an adequate margin of safety against block sliding (FoS = 2.26)

9.12. The factor of safety against local bearing failure (critical slip circle) was 1.23, which was calculated using the weaker strengths recorded upslope from the road. This is less than the 1.3 – 1.4 that would normally be considered adequate. However, it is still greater than 1.0 and no allowance has been made for the increase in the strength of the peat due to consolidation under the weight of the road. Vane shear tests under existing roads in other areas on the site have confirmed that there is a significant increase in the strength of the peat under the road (30-50%).

10.0 CONCLUSION

The results of this investigation would indicate that the section of road has not actually failed in bearing or sliding. Instead, it appears that the peat under the road may have deformed in shear strain under the weight of the fill and construction traffic on the surface of the peat.

Preliminary results of direct simple shear tests on block samples of the peat from Derrybrien at Trinity College Dublin indicate that downslope movement at the ground surface due to elastic shear strain in the peat could be on the order of 125-150 mm under the weight of the road and construction traffic.

In the laboratory, shear strain values on the order of 0.25 were recorded at a shear stress of 5 kN/m^2 applied across the top of the peat. The deformation was elastic and was fully recovered when the load was removed. In comparison, during construction of the floating road west of T17 in Derrybrien, the shear stress on the surface of the peat was only about 1.2 kN/m^2.

The peat strength under the road west of T17 is relatively stronger than in the vicinity of the area where the slide occurred in October 2003 and there were no extremely weak layers, shear zones, persistent discontinuities or slickensided surfaces in the samples.

Similar conditions have been encountered along the floating roads elsewhere on the site yet all of the roads have been successfully tested to support the same load per linear meter as the crane that will be used to erect the turbine masts and no significant horizontal movement was observed on the roads.

We would consider that the movement that occurred on the road west of T17 was caused by the presence of the drains on the upslope and downslope side of the road, which would have reduced the tensile capacity of the peat on the upslope side, and allowed movement to occur on the downslope side. This would have been exacerbated by the water that was trapped in the open drains upslope from the road, and the break in the slope at the road. The localized rupture in the peat on the upslope side may also have been caused by the movement of construction traffic on the road in the vicinity of the drains, or when the machines were working on the peat when the drains were originally excavated.

Although there is a difference in the level of the peat across the width of the drain that has closed over on the downslope side of the road, this could be partly explained by the fact that the upslope side of the drain was at a higher level before the drain closed over. The deformation of the peat could also have contributed to the change in level.

We would recommend that the 30m section of the road west of T17 should be abandoned and the stone removed to unload the peat. This could be done by long reach excavator in a manner that minimizes any additional load on the road. The weight of a 14 tonne machine would be equivalent to the weight of the stone along a section of the road 0.5 m thick, 5 m wide and 3 m long.

For AGL Consulting:

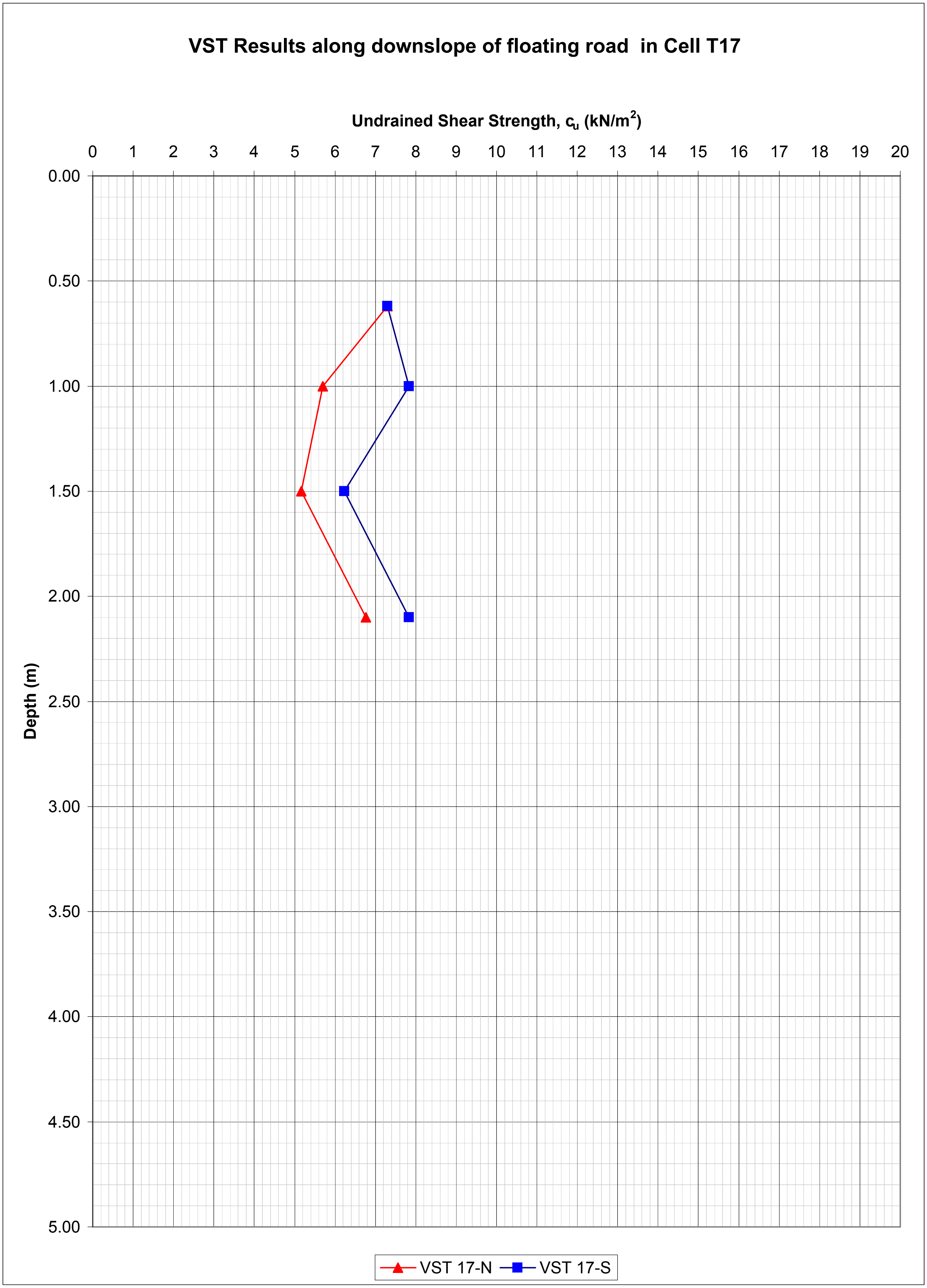
Conor O'Donnell

Conor O'Donnell

Date: 8/4/05

Derrybrien Wind Farm Additional Ground Investigation

AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 17**
Test No.		VST 17-N	Date:			Peat Depth (m) 2.15	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.62	14.0	3.0	7.3				
1.00	11.0	2.5	5.7				
1.50	10.0	4.0	5.2				
2.10	13.0	3.0	6.8				
Test No.		VST 17-S	Date:			Peat Depth (m) 2.40	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.62	14.0	3.0	7.3				
1.00	15.0	3.0	7.8				
1.50	12.0	2.5	6.2				
2.10	15.0	2.5	7.8				
Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments



VST Results along downslope of floating road in Cell T17
Undrained Shear Strength, c_u (kN/m^2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST 17-N
VST 17-S

T17

Derrybrien Windfarm - Floating Road Analysis: Cell T17

5.0 m wide road - 0.5 m thick
Basal reinforcement with trees and 1 layer of Tensar SS30 Geogrid

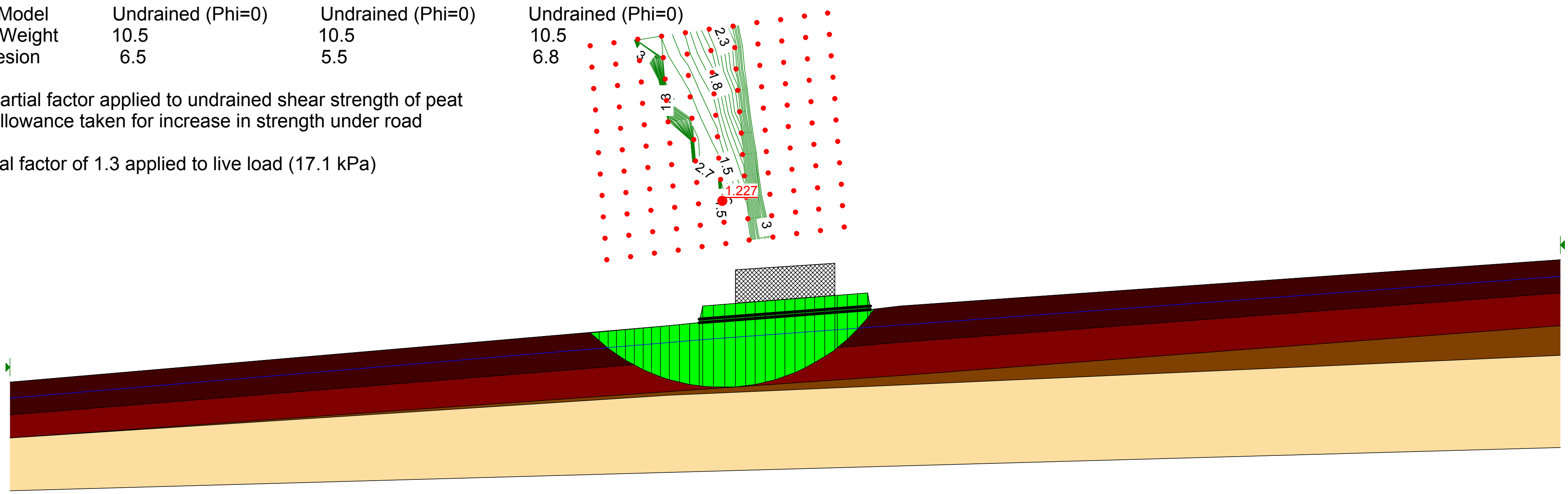
	Peat Depth	Surface Slope Angle	Base Slope Angle
20 m North of Road to 1 m North of Road	2.9 - 2.4 m	4.0 Deg	2.7 Deg
1 m North of Road to 1 m South of Road	2.4 - 2.1 m	4.5 Deg	2.5 Deg
1m South of Road to 20 m South of Road	2.1 - 1.7 m	5.0 Deg	3.7 Deg

Peat Properties

	Peat 0-1 m	Peat 1-2 m	Peat 2-3m
Soil Model	Undrained (Phi=0)	Undrained (Phi=0)	Undrained (Phi=0)
Unit Weight	10.5	10.5	10.5
Cohesion	6.5	5.5	6.8

No partial factor applied to undrained shear strength of peat
No allowance taken for increase in strength under road

Partial factor of 1.3 applied to live load (17.1 kPa)



Derrybrien Windfarm - Floating Road Analysis: Cell T17

T17

5.0 m wide road - 0.5 m thick
Basal reinforcement with trees and 1 layer of Tensar SS30 Geogrid

	Peat Depth	Surface Slope Angle	Base Slope Angle
20 m North of Road to 1 m North of Road	2.9 - 2.4 m	4.0 Deg	2.7 Deg
1 m North of Road to 1 m South of Road	2.4 - 2.1 m	4.5 Deg	2.5 Deg
1m South of Road to 20 m South of Road	2.1 - 1.7 m	5.0 Deg	3.7 Deg

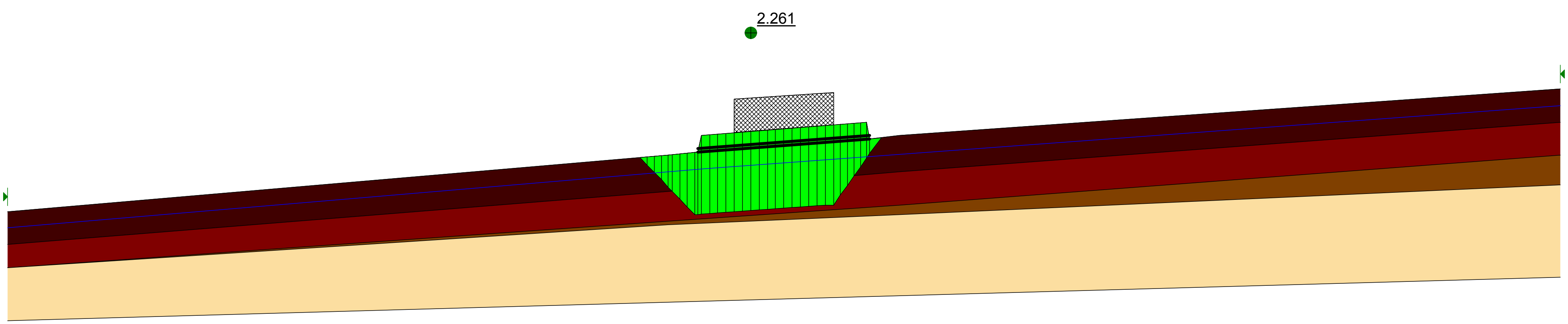
Peat Properties

	Peat 0-1 m	Peat 1-2 m	Peat 2-3m
Soil Model	Undrained (Phi=0)	Undrained (Phi=0)	Undrained (Phi=0)
Unit Weight	10.5	10.5	10.5
Cohesion	6.5	5.2	6.8

Lowest recorded undrained shear strength used for cohesion value in 1-2m peat layer

No partial factor applied to undrained shear strength of peat
No allowance taken for increase in strength under road

Partial factor of 1.3 applied to live load (17.1 kPa)



APPENDIX XII

AGL REPORT NO. 03-104-R04 - REPORT ON THE ASSESSMENT OF THE PROPOSED WORKS AT TURBINE BASE T68 ON THE DERRYBRIEN WINDFARM, CO. GALWAY

Report on the Assessment of the Proposed Works at Turbine Base T68 on the Derrybrien Windfarm, Co. Galway

Report No. 03-104-R04

for

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April 21st, 2005

Report on the Assessment of the Proposed Works at Turbine Base T68 on the Derrybrien Windfarm, Co. Galway

1.0 INTRODUCTION

This report provides a summary of AGL's assessment of the proposed works at Turbine Base T68.

2.0 GENERAL COMMENTS

The base had been partially excavated prior to the slide that occurred to the south of the base on October 16th, 2003. Subsequently the excavation was stopped, the floating road was removed and a new road was constructed down to mineral soil across the width of the slide area.

We have approved work to proceed on the excavation for the turbine base and crane pad at T68 at on the following basis:

1. The road directly in front of the turbine base is constructed down to mineral soil and will act as a barrier to peat upslope from the slide.

2. The floating roads either side of the slide have been analyzed and tested to the full construction load and the weight of the crane that will be used to erect the turbines.

3. Ascon will construct a shear key of rockfill down to mineral soil on the downslope side of the floating road for a distance of 5 m west and 10 m east of the slide area to ensure that the road is permanently supported by a shear key beyond the zone of influence of the slide.

4. Peat excavated from the turbine base and crane pad will be taken to an approved repository site on gently sloping ground outside the exclusion area identified from the aerial photographs. The repository site will be a 50 x 50 m area on the east side of the road between T66 and T68.

5. No extremely weak layers of peat, discontinuities or slickensided surfaces were identified in gouge auger and piston samples from the bottom 1.0 m of the peat along the downslope side of the road in the vicinity of the base and at the repository site.

The results of the field investigation that was carried out along the floating road and at the repository sites are attached as Appendix A and Appendix B, respectively. Further details of the investigation are summarized below.

3.0 ANALYSIS OF FLOATING ROAD IN CELL T68

Details of the ground investigation and stability analysis of the floating road in Cell T68 are provided in AGL Report No. 03-104-R02. The relevant data from the report is included in Appendix A.

3.1 Ground Investigation

The ground investigation consisted of

- Gouge auger probes on 25 m intervals on the downslope side of the road and at a 50 m offset.
- Topographical surveying at probe locations to determine the slope angle at the surface and base of the peat on the downslope side of the road.
- In situ vane shear tests at 50 m intervals along the floating road using the Geonor H-10 65/130 mm vane. At each location vane shear tests were carried out at 0.5 m depth intervals over the full depth of peat.
- Piston sampling and gouge auger sampling at the edges of the slide to inspect the peat and confirm that there is no weak layer or discontinuity near the base of the peat.

3.2 Peat Depth and Slope Angles

The slope angles west of the slide area typically range from 3.5° to 4.0° at the surface of the peat, and 2.8° to 3.7° at the base. The peat depth along the road in this area is between 2.0 m and 2.2 m.

To the east of the slide the peat depth increases to 2.6 m to 3.3 m along the road and the slope angles reduce correspondingly to 1.2° to 2.2° at the surface and 1.5° to 2.6° at the base of the peat.

3.3 Undrained Vane Shear Strength

The undrained shear strength of the peat was measured along the downslope side of the road using the Geonor H-10 65/130 mm vane. Tests were carried out at the turbine base, 50 m to the west of the base, and 50 m and 100 m to the east of the base. A table and plot of the results are attached in Appendix A.

The uncorrected undrained shear strength, c_u , of the peat ranged from 5.2 to 9.5 kPa. Below the crust at the top of the peat, the shear strength of the peat decreased to a minimum value of 5.2 kPa at a depth of 1.5 m before increasing with depth down to the interface with the mineral soil.

In general, the peat would be classified as very soft. However, no extremely weak layer was encountered in the peat and the recorded strengths were higher than other areas of the site where peat strengths in the range of 3.75-5.0 kPa were recorded with the Geonor H-10 vane.

3.4 Stability Analyses

The stability of the floating road in T68 was analyzed using the limiting equilibrium slope stability program Slope/W. A 2-D plane strain analysis was carried out at a representative section along the floating road to calculate the margin of safety for the critical slip circle under the road in the undrained condition.

A representative design profile was determined from the gouge auger probe and topographical survey data in Appendix A. The design section represented the most conservative combination in terms of peat depth and slope angle.

The size of the road was conservatively taken as 5.0 m wide and 1.0 m thick. The basal reinforcement consists of a layer of trees and a single layer of Tensar SS30 geogrid within the crushed rock. We have assumed that critical slip circles would have to develop over the full width of the road for failure to occur.

A live load surcharge of 17.1 kPa has been applied to simulate the proposed load of the crane on the roads. This is equivalent to 15 m long x 2.75 m wide crane with a fully laden weight of 72 tonnes on six axles when traveling.

A representative characteristic undrained shear strength profile was determined for each cell from the unadjusted Geonor H-10 vane shear test data in Appendix A. The profile with the lowest recorded undrained shear strengths was used.

In accordance with Eurocode EC(7), a partial factor of 1.4 was applied to the characteristic undrained shear strengths, c_{uk} , to obtain the design values, c_{ud}. A partial factor of 1.3 was also applied to the live load surcharge. By this method of analysis a calculated margin of safety >1.0 in the slope stability analyses is acceptable. This is more conservative than the British Standard (BS) approach where no partial factor is applied to the live load.

The results of the Slope/W analyses are included in Appendix A. A calculated margin of safety > 1.0 was achieved for the design section, which is an acceptable condition. This was achieved without making an allowance for the increase in strength of the peat under the roads. The actual margin of safety would be higher as the road has been in place for more than 18 months and the peat would have gained strength during this time.

3.5 Gouge Auger and Piston Samples

Gouge auger and piston samples were collected from the bottom 1.0 m of peat on either side of the slide area. The samples were 0.6 to 0.8 m long and extended at least 100 mm into the underlying mineral soil.

The samples would be classified as very soft dark brown very clayey peat with traces of root fibres (Class H8 in the Von Post Classification System – very strongly decomposed peat with roots and fibres that resist decomposition). The samples were continuous over the full length. There were no signs of extremely weak zones, discontinuities or slickensided surfaces in the samples, and there was a transition into the underlying mineral soil rather than a discrete boundary.

3.6 Road Tests

Between 13th and 15th December the floating road between T69 and T68 was tested by measuring deflections and observing the performance of the road under the weight of an 8-wheel truck incrementally loaded to a total mass of 28.1 and 37.4 tonnes. The recorded deflections are included in Appendix A.

Under the criteria in Table No. 1, the performance of the road between T69 and T68 was classified as "poor", whereas the road to the west of T68 was classified as "fair". However, this is a serviceability criterion. The roads did not show any signs of yielding or excessive deflection at the sides. The deformations were generally locally concentrated under the wheel loads and the total load was adequately supported by the road. As is our experience elsewhere on the site, the larger deflections occur where there is water near the ground surface which softens the crust of the peat (e.g. at T69, ≈ 175 m between T68 and T69).

Since the initial road test was completed some remedial work has been carried out on the section of road between T68 and T69. A drain was installed across the road at T69, which is where the deflections of 60 mm were measured during the initial test. A second layer of Tensar SS30 geogrid was placed over the surface of the road, and the road was capped with a further 100-200 mm of crushed rock.

On April 20th, 2005 the road was re-tested with two 8-wheel trucks traveling back-to-back with a combined load greater than 72 tonnes. This would simulate the full load in transit of the crane that will be used to erect the turbine. The road supported the load adequately without any indications of failure. The performance of the road had improved significantly and the backfill to the drain at T69 removed the soft spot that was observed during the intial tests.

Table No.1 - Performance criteria for road tests under maximum test load.

Road Performance Classification	Performance Criteria (36-38 tonne load)
Good	➢ Road deflections generally <10 mm ➢ Road deflects relatively rigidly under truck load with only slightly greater deformation locally under the wheel load at localized soft spots. ➢ Road surface is even with minor rutting and no loose rockfill.
Fair	➢ Road deflections between 10 and 30 mm ➢ Road deflects noticeably under wheel loads ➢ Road surface is relatively even with some rutting along the line of the wheels. The rockfill is generally dense. ➢ Local transverse rutting occurs at soft spots where the rockfill has loosened over weak peat, or where there are gaps in the basal reinforcement trees.
Poor	➢ Road deflections are greater than 30 mm (up to about 60 mm) ➢ Road deforms very noticeably under wheel loads in wave-like motion. ➢ Deformations are uneven causing the truck to tilt slightly on local soft spots. ➢ Road surface is in poor condition with both longitudinal and transverse rutting creating an uneven road surface. ➢ Rockfill is loosened over worst areas.

4.0 ANALYSIS OF PEAT REPOSITORY SITE T68R

All of the peat that will be excavated from the turbine base and crane pad at T68 will be removed to an approved repository site outside of the exclusion zones identified from the aerial photographs of the site, as described in our report No. 03-104-R01 (Rev1). This section provides details of the analysis of the repository site.

4.1 Repository location

The proposed repository site for the peat from the excavation for the turbine base and crane pad at T68 is a 50 x 50 m area on the east side of the floating road approximately half way between base T66 and T68, which is 80-150 m northwest of the base for turbine T68. The coordinates of the repository are:

	Easting	Northing
SW	159202	204688
SE	159256	204712
NW	159187	204735
NE	159236	204750

A plan showing the location of the repository is included in Appendix B.

4.2 Ground Investigation

The ground investigation consisted of

- Gouge auger probes on a 25 m grid over the area of the repository.
- Topographical surveying between probe locations and at 25 m intervals for a distance of 100 m downslope from the repository site in two orthogonal directions (east and south) to determine the slope angle at the surface and base of the peat.
- In situ vane shear tests at 2 No. representative locations using the Geonor H-10 65/130 mm vane. At each location vane shear tests were carried out at 0.5 m depth intervals over the full depth of peat.
- Gouge auger sampling at the vane shear test locations to inspect the peat and confirm that there is no weak layer or discontinuity near the base of the peat.

A summary of the results is presented in Appendix B

4.3 Peat Depth and Slope Angles

The peat depth at the repository site ranges from 2.2 to 3.4 m. The general slope in this area is to the south and east. The resultant slope angles range from 1.1° to 2.7° at the ground surface, and 1.0° to 2.8° at the base of the peat.

On the south side of the repository there is a local backslope facing north away from the zone of the slide at T68 for a distance of 75 m.

To the east of the repository site the slope continues to dip east over a distance of 100 m at angles of 1.0° to 2.7° at the ground surface and 1.4° to 3.9° at the base of the peat.

4.4 Undrained Shear Strength of the Peat

The undrained shear strength of the peat was measured at selected locations on the repository site using the Geonor H-10 65/130 mm vane. Tests were carried out at points C1 and B2 on the grid shown on the summary sheet in Appendix B. A table and plot of the results are also included in the appendix.

The uncorrected undrained shear strength, c_u , of the peat ranged from 4.6 to 9.5 kPa. These results are typical for the peat on the site. The peat would be classified as very soft. However, no extremely weak layer was identified.

4.5 Stability Analyses

A stability analysis was carried out for the repository site T68R to ensure that the peat has sufficient strength to support up to 1.0 m of peat from the excavation for T68.

2 No. 2D plane strain analyses were carried out using Slope/W to calculate the margin of safety against block sliding along the base of the peat in the undrained condition.

For the first analysis (**Case 1**), the characteristic undrained shear strength (c_{uk}) of the peat was taken as the minimum undrained shear strength determined with the Geonor H-10 using the 65mm/130mm vane. This strength was conservatively assumed to apply over the full depth of the peat.

For the second analysis (**Case 2**), a 0.5 m thick layer of very weak peat was introduced at the base of the peat with a design undrained shear strength (c_{ud}) of 2 kPa. This is the lowest strength that was recorded for the weak layer of peat identified in the vicinity of the slide that occurred on the mountain in October 2003.

A representative design profile was determined from the gouge auger probe and topographical survey data in Appendix B. The design section represented the most conservative combination in terms of peat depth and slope angle, which in this case is to the east of the repository site as there is a backfall on the slope to the south. The resultant slope angles were calculated from the slope angles measured on orthogonal planes in each section of the repository sites.

In accordance with Eurocode EC(7), a partial factor of 1.4 was applied to the characteristic undrained shear strength (c_{uk}) of the peat to calculate the design values (c_{ud}), except in the case of the very weak layer, which was assumed to have a design value of 2.0kPa. For both analyses a partial factor of 1.3 was applied to the surcharge load of 10 kN/m^2, which is equivalent to 1.0 m of peat.

The undrained shear strengths recorded with the Geonor H-10 at T68R were greater than 4.6 kN/m^2. Although our analyses consider the presence of a very weak layer near the base of the peat, this is a very conservative condition to demonstrate the suitability of the repository site in the event that a weak layer was not identified in the gouge auger sampling.

The results of the stability analyses from Slope/W are presented in Appendix B. The calculated margins of safety against block sliding are 1.7 and 1.1 for Case 1 and Case 2, respectively. In accordance with EC(7), with a partial factor of 1.4 on the undrained shear strength and 1.3 on the surcharge load, a calculated margin of safety greater than 1.0 is an acceptable condition.

4.6 Gouge Auger Samples

Gouge auger and piston samples were collected from the bottom 1.0 m of peat at the location of the vane shear test (C1 and B2). The samples were 0.7 to 0.8 m long and extended at least 100 mm into the underlying mineral soil.

The samples would be classified as very soft dark brown very clayey peat with some root fibres (Class H8 in the Von Post Classification System – very strongly decomposed peat with roots and fibres that resist decomposition). The samples were continuous over the full length. There were no signs of extremely weak zones, discontinuities or slickensided surfaces in the samples, and there was a transition into the underlying mineral soil rather than a discrete boundary.

5.0 CONCLUSION

Based on the results of the road tests and the stability analyses for the repository sites we would consider that it safe to proceed with the construction of the turbine base and crane pad at T68.

The road directly in front of the turbine base is constructed down to mineral soil and will act as a barrier to peat upslope from the slide.

The floating roads on either side of the slide have been tested to support the maximum load from the vehicles that will be used to construct the turbine. As an added safety measure, a shear key will be constructed of rockfill down to mineral soil on the downslope side of the floating road for a distance of 5 m west and 10 m east of the slide zone to ensure that the road is permanently supported by a shear key beyond the zone of influence of the slide.

The peat excavated from T68 will be removed to a repository site that has been evaluated and approved by a method that has been validated by the safe storage of peat in repository sites elsewhere on the site under similar conditions.

For AGL Consulting:

Conor O'Donnell

Date: 21/4/05

Appendix A

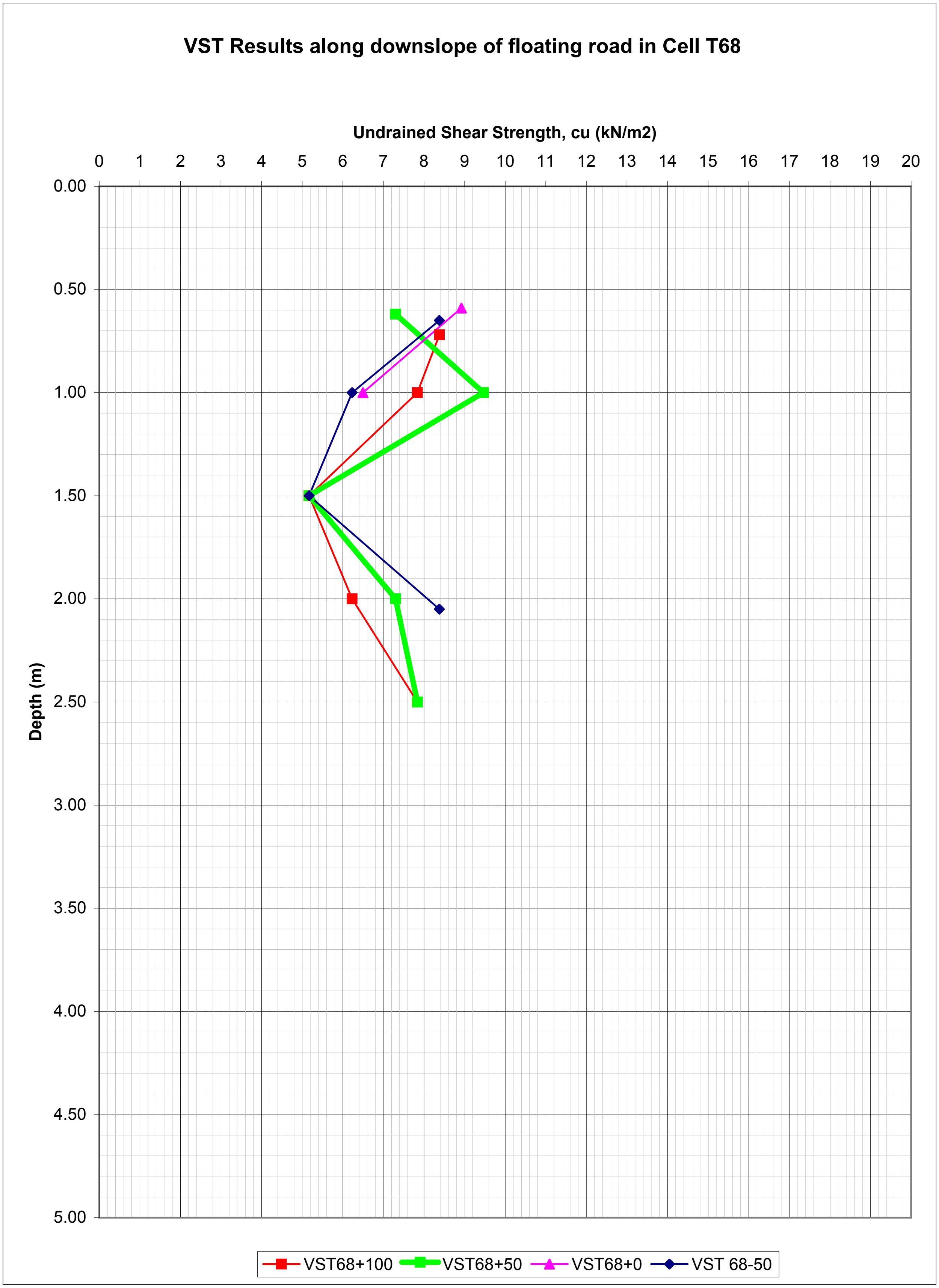
Summary of peat depths, slope angles and vane shear test data along the floating road in cell T68

AGL Consulting *Geotechnical Engineers*				**Record of Gouge Auger Probes**				
Project: Derrybrien Wind Farm					Made By:		**Cell No: 68**	
Job No. 03-104					Date:			
Probe No.	Date	Coordinates		Ground Surface	Depth	Elev at	Slope Angle (Deg)	
		E (m)	N (m)	Elev	(m)	Base of Peat	Top	Base
				(mOD)		(mOD)	of Peat	of Peat
West								
T68/P-100A		159232.2	204594.3	355.99	2.04	353.95	**4.0**	**2.8**
T68/P-100B				352.70	1.09	351.61		
T68/P-75A		159257.1	204603.7	355.37	2.00	353.37	**3.5**	**3.7**
T68/P-75B				352.49	2.20	350.29		
T68/P-50A		159277.7	204612.9	354.82	2.10	352.72	**4.0**	**3.6**
T66/P-50B				351.53	1.80	349.73		
T68/P-25A		159299.5	204623.4	354.11	2.17	351.94	**1.7**	**1.3**
T68/P-25B				352.74	1.90	350.84		
T68/P0A		159322.7	204629.6	352.45	1.37	351.08	**3.5**	**2.8**
T68/P0B				349.57	0.80	348.77		
T68/P25A		159348.4	204641	353.37	2.60	350.77	**2.3**	**2.6**
T68/P25B				351.46	2.80	348.66		
T68/P50A		159371.2	204649	353.11	3.24	349.87	**1.7**	**1.7**
T68/P50B				351.74	3.24	348.50		
T68/P+75A		159393.6	204659.3	352.61	3.30	349.31	**1.2**	**1.5**
T68/P+75B				351.65	3.58	348.07		
T68/P+100A		159415.9	204670.8	351.96	3.14	348.82	**1.7**	**1.8**
T68/P+100B				350.59	3.28	347.31		
East								

Note: i. Minus and plus signs indicate offset along road to west and east of turbine base respectively
ii. 'A' series probes on downslope side of road.'B' series probes are approx 50m downslope from road

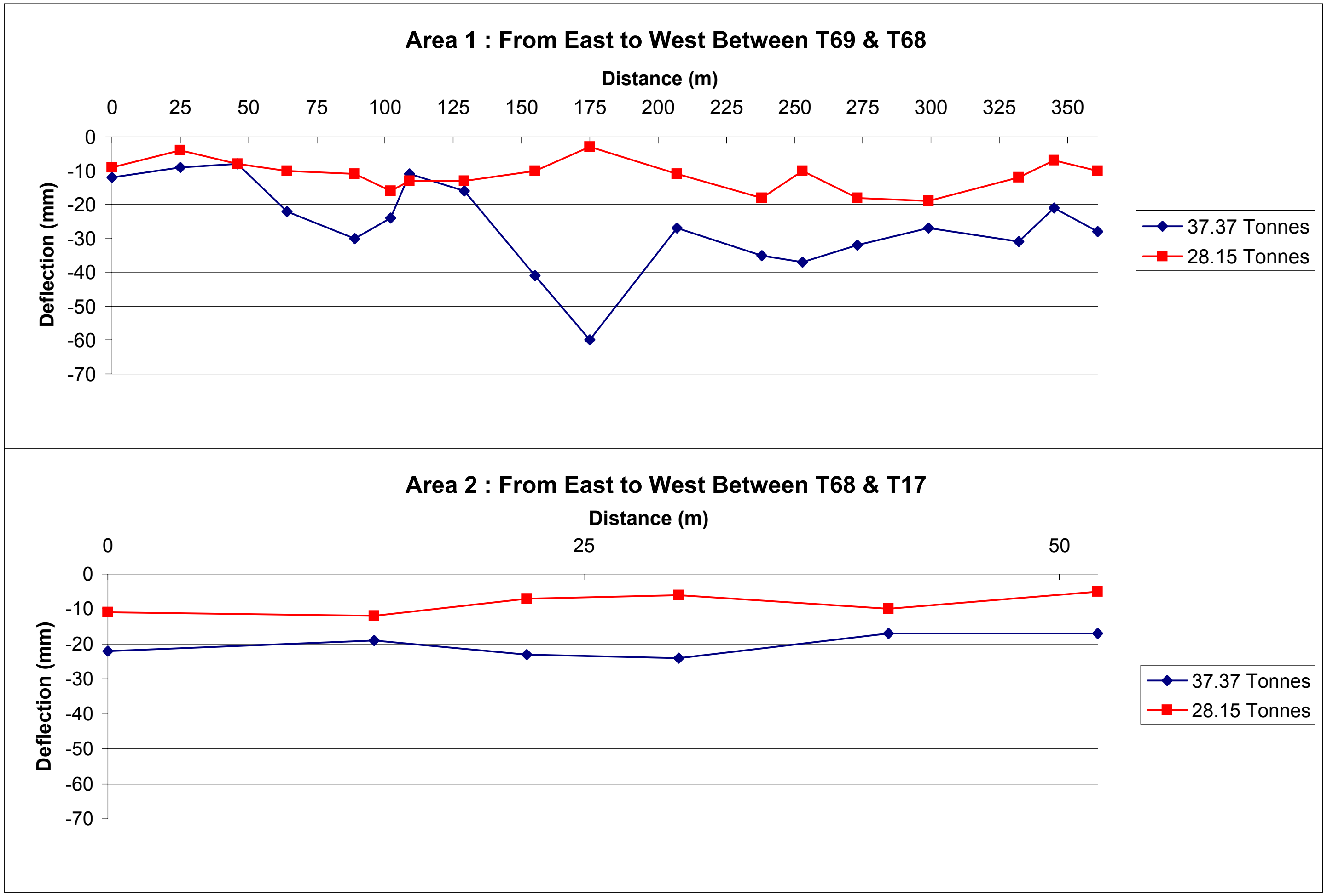
Probes On Turbine Base								
T68B-NE								
T68B-NW								
T68B-SE								
T68B-SW								
T68B-C								
T68B+50								
T68B+100								

AGL Consulting *Geotechnical Engineers*			Record Of Vane Shear Tests				
Project: Derrybrien Wind Farm Job No. 03-104			Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)				**Cell No. 68**
Test No.		VST 68+100	Date: 02-Sep			Peat Depth (m) 2.89	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.72	16.0	6.00	8.4				
1.00	15.0	8.00	7.8				
1.50	10.0	5.00	5.2				
2.00	12.0	6.00	6.2				
2.50	15.0	6.00	7.8				
Test No.		VST 68+50	Date: 02-Sep			Peat Depth (m) 2.96	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.62	14.0	5.00	7.3				
1.00	18.0	5.00	9.5				
1.50	10.0	4.00	5.2				
2.00	14.0	5.00	7.3				
2.50	15.0	4.00	7.8				
Test No.		VST 68+0	Date: 02-Sep			Peat Depth (m) 1.32	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.59	17.0	6.00	8.9				
1.00	12.5	4.00	6.5				
Test No.		VST 68-50	Date:			Peat Depth (m) 2.30	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	16.0	5.00	8.4				
1.00	12.0	4.00	6.2				
1.50	10.0	4.00	5.2				
2.05	16.0	5.00	8.4				



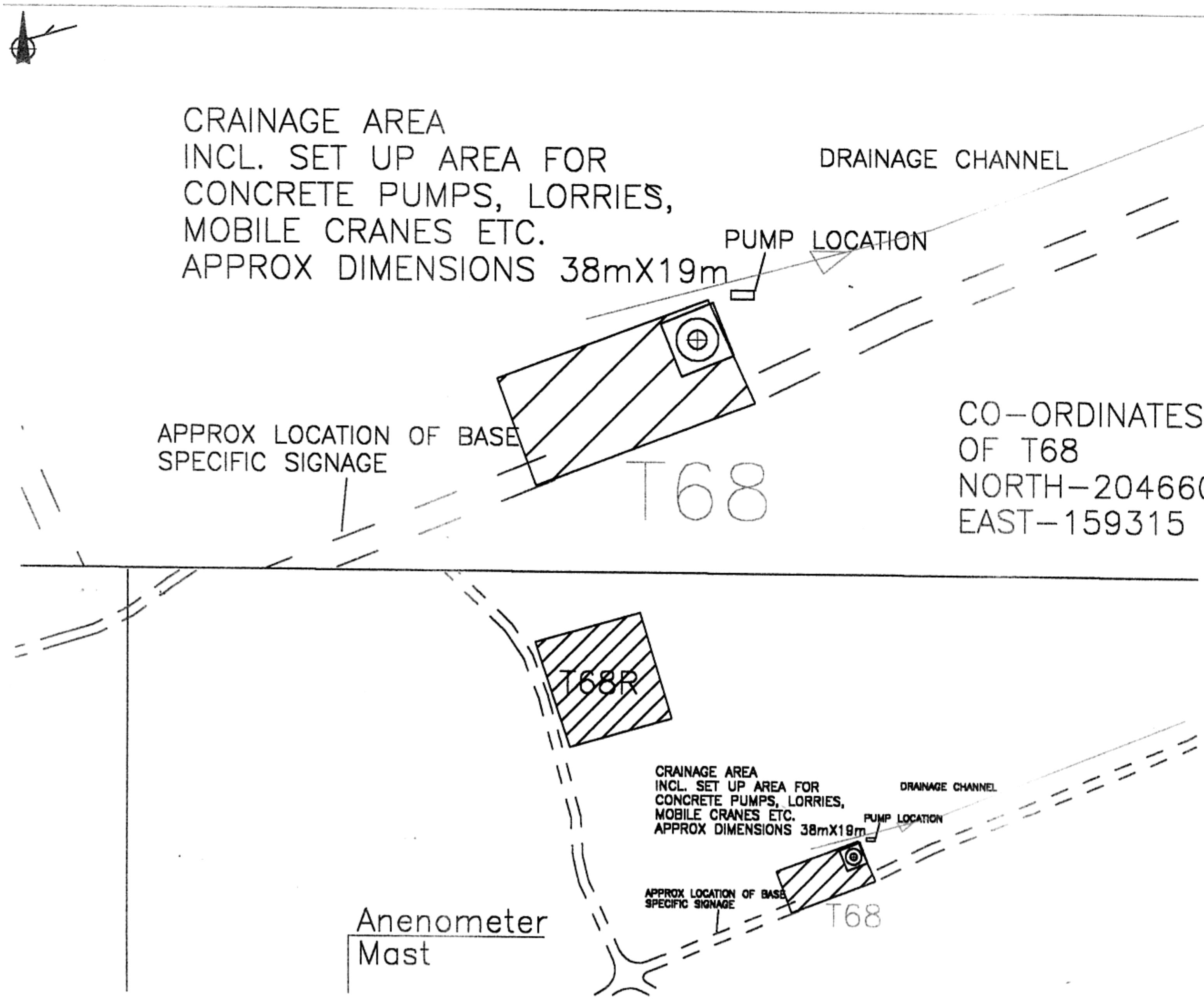
VST Results along downslope of floating road in Cell T68
Undrained Shear Strength, cu (kN/m2)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Depth (m)
0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00
VST68+100
VST68+50
VST68+0
VST 68-50

Derrybrien Windfarm - Road Test Results
Phase 3 Eastern Section of Site



Appendix B

Summary of peat depths, slope angles and vane shear test data for repository site T68R



ACCESS ROAD FROM BASE TO REPOSITORY

Appropriate 1m level mark to be placed in repository

Trees and shrubs to be placed around repository to prevent material slippage

Location of Base 'T68 and Base Details' 19.04.06

Derrybrien Windform

T68 Base Details

Derrybrien Wind Farm Additional Gound Investigation
Peat Repository Location Assessment

AGL Consulting *Geotechnical Engineers*		**Record of Peat Repository Locations**	**Rep. No: T68R**

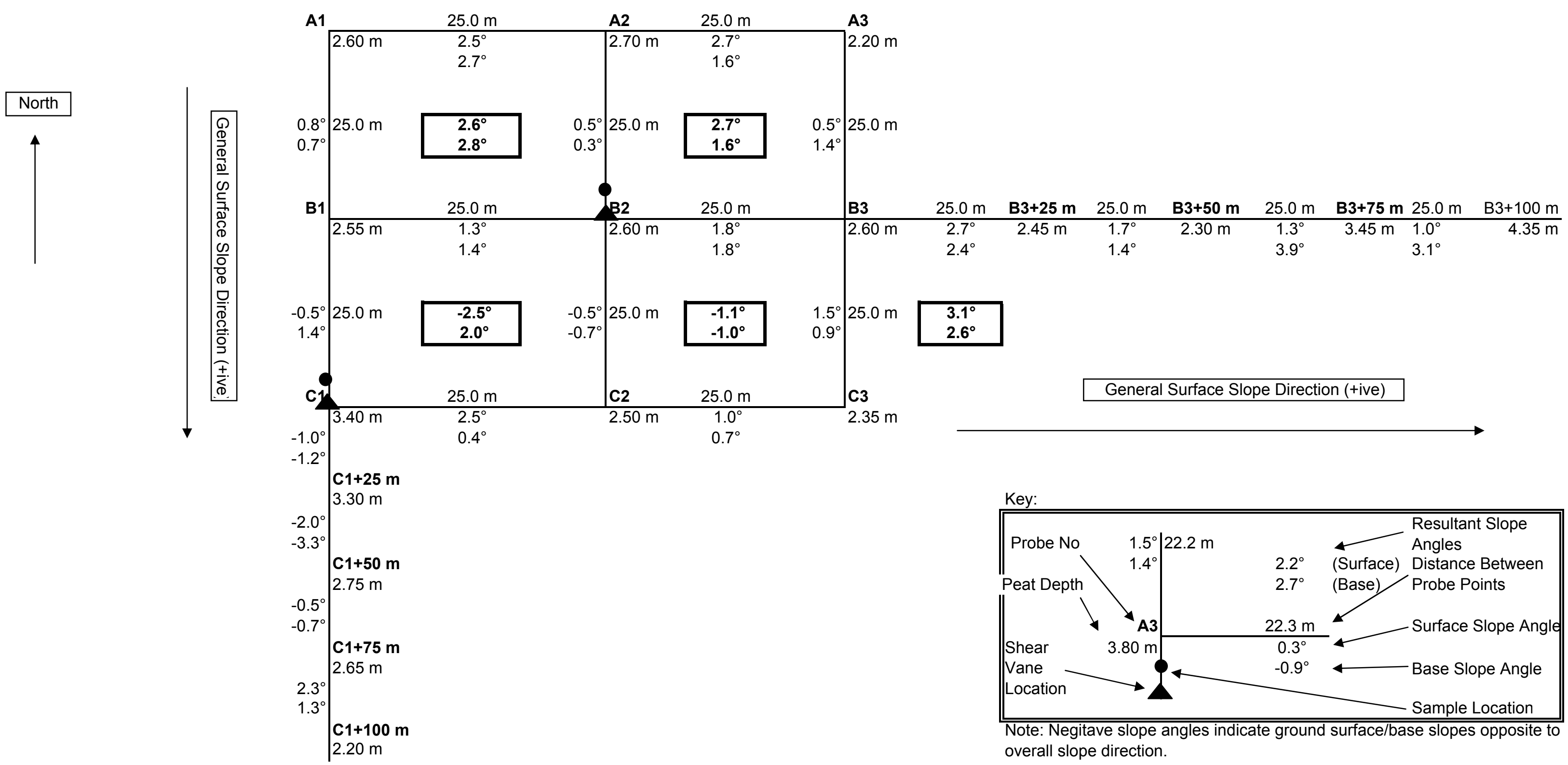
Max Slope at Ground Surface:	2.7°
Downslope:	0.5°
Orthogonal Direction:	2.7°
Resultant:	2.7°

Max Slope at Base of Peat:	2.8°
Downslope:	0.7°
Orthogonal Direction:	2.7°
Resultant:	2.8°

Comments:

Peat Depth :	2.20 m - 3.40 m
Min Undrained Shear Strength:	4.6 kPa at Depth = 1.5 m

Gauge Auger Sampling:	Yes: X	No:
Weak Layer/Discontinuity Present:	Yes:	No: X



Note: Negitave slope angles indicate ground surface/base slopes opposite to overall slope direction.

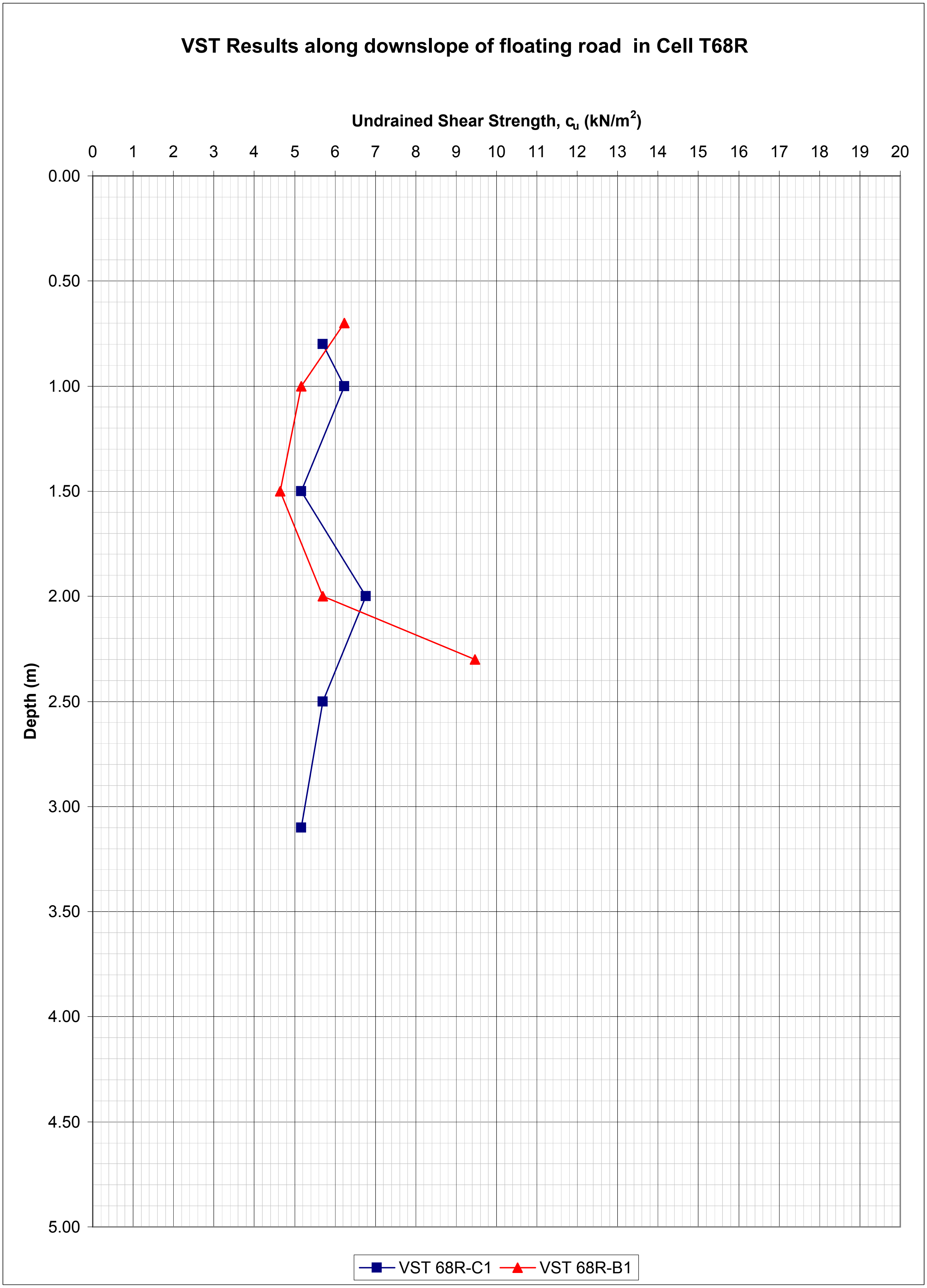
AGL Consulting *Geotechnical Engineers*	Record Of Vane Shear Tests	
Project: Derrybrien Wind Farm Job No. 03-104	Vane Type: Geonor H-10 ($65_{mm}/130_{mm}$)	**Cell No. 68R**

Test No.		VST 68R-C1	Date:			Peat Depth (m) 3.4	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.80	11.0	3.0	5.7				
1.00	12.0	3.5	6.2				
1.50	10.0	3.0	5.2				
2.00	13.0	3.5	6.8				
2.50	11.0	4.0	5.7				
3.10	10.0	4.0	5.2				

Test No.		VST 68R-B1	Date:			Peat Depth (m) 2.6	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.70	12.0	4.0	6.2				
1.00	10.0	4.0	5.2				
1.50	9.0	4.0	4.6				
2.00	11.0	3.0	5.7				
2.30	18.0	3.5	9.5				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T68R
Undrained Shear Strength, c_u (kN/m^2)
Depth (m)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
VST 68R-C1
VST 68R-B1

T68R

Peat Repository Site : T68R
Sliding Stability Analysis

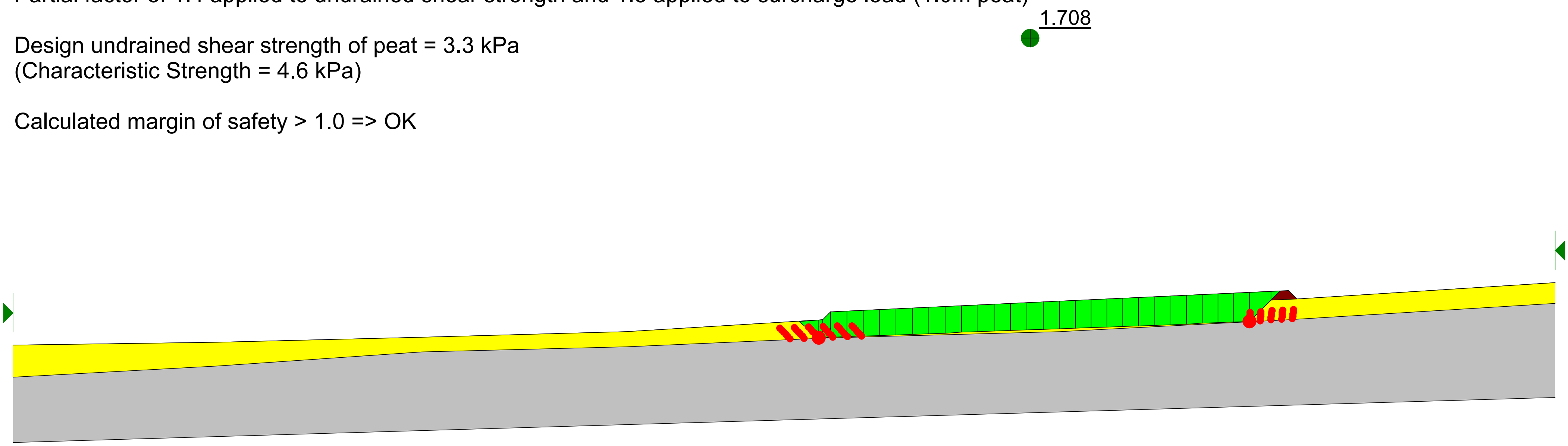
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.6 - 2.2 m	2.6 - 2.7 Deg	2.8 - 1.6 Deg
0 - 25 m Downslope	2.2 - 1.9 m	3.1 Deg	2.6 Deg
25 - 50 m Downslope	1.9 - 1.8 m	1.7 Deg	1.4 Deg
50 - 75 m Downslope	1.8 - 2.9 m	1.3 Deg	3.9 Deg
75 - 100 m Downslope	2.9 - 3.9 m	1.0 Deg	3.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



T68R (2kPa)

Peat Repository Site : T68R
Sliding Stability Analysis with 0.5 m thick layer of very weak peat (cu = 2kPa) at Base

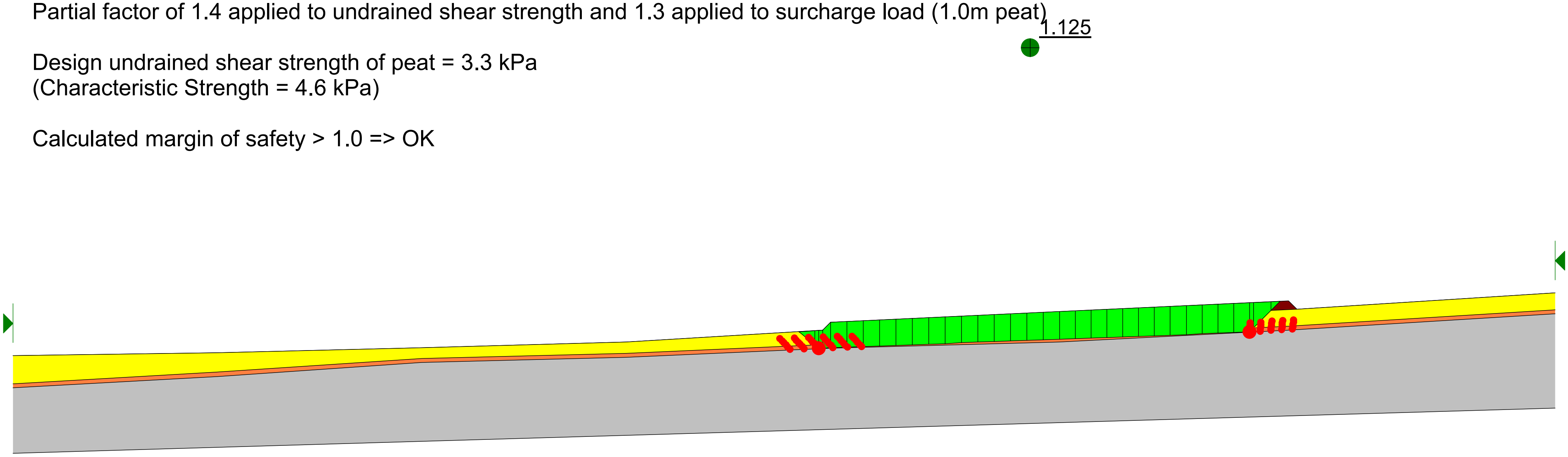
Size of Repository Site = 50 x 50 m
Length of loaded area parallel to resultant slope direction = 56.0 m

	Peat Depth	Surface Slope Angle	Base Slope Angle
Repository Site	2.6 - 2.2 m	2.6 - 2.7 Deg	2.8 - 1.6 Deg
0 - 25 m Downslope	2.2 - 1.9 m	3.1 Deg	2.6 Deg
25 - 50 m Downslope	1.9 - 1.8 m	1.7 Deg	1.4 Deg
50 - 75 m Downslope	1.8 - 2.9 m	1.3 Deg	3.9 Deg
75 - 100 m Downslope	2.9 - 3.9 m	1.0 Deg	3.1 Deg

Partial factor of 1.4 applied to undrained shear strength and 1.3 applied to surcharge load (1.0m peat)

Design undrained shear strength of peat = 3.3 kPa
(Characteristic Strength = 4.6 kPa)

Calculated margin of safety > 1.0 => OK



APPENDIX XIII

AGL REPORT NO. 03-104-R05 - REPORT ON THE ASSESSMENT OF THE PROPOSED WORKS AT TURBINE BASE T70 ON THE DERRYBRIEN WINDFARM, CO. GALWAY

Report on the Assessment of the Proposed Works at Turbine Base T70 on the Derrybrien Windfarm, Co. Galway

Report No. 03-104-R05

for

Ascon Ltd.
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May 4th, 2005

Report on the Assessment of the Proposed Works at Turbine Base T70 on the Derrybrien Windfarm, Co. Galway

1.0 INTRODUCTION

This report provides a summary of AGL's assessment of the proposed works at Turbine Base T70.

2.0 GENERAL COMMENTS

The base will be constructed within the zone of the slide that occurred on October 16th, 2003. After the slide a new road was constructed down to mineral soil across the width of the slide zone. Turbine T70 will be constructed on the upslope side of this road.

We have approved work to proceed on the excavation for the turbine base and crane pad at T70 at on the following basis:

1. The road directly in front of the turbine base is constructed down to mineral soil and will act as a barrier to peat upslope from the slide.

2. The floating roads either side of the slide have been analyzed and tested to the full construction load and the weight of the crane that will be used to erect the turbines.

3. Ascon will construct a shear key of rockfill down to mineral soil on the downslope side of the floating road for a distance of 10.0 m east of the slide area to ensure that the road is permanently supported by a shear key beyond the zone of influence of the slide.

4. Peat excavated from the turbine base and crane pad will be contained by the road across the slide area and by rockfill shear keys upslope from the turbine base and crane pad.

5. No extremely weak layers of peat, persistent discontinuities, or slickensided surfaces were identified in gouge auger and piston samples from the bottom 1.0 m of the peat along the downslope side of the road in the vicinity of the slide.

The results of the field investigation that was carried out along the floating road are presented in Appendix A. Further details of the investigation are summarized below.

3.0 ANALYSIS OF FLOATING ROAD IN CELL T70

Details of the ground investigation and stability analysis of the floating road in Cell T70 are provided in AGL Report No. 03-104-R02. The relevant data from the report is included in Appendix A.

3.1 Ground Investigation

The ground investigation consisted of

- Gouge auger probes on 25 m intervals on the downslope side of the road and at a 50 m offset.
- Topographical surveying at probe locations to determine the slope angle at the surface and base of the peat on the downslope side of the road.
- In situ vane shear tests at 50 m intervals along the floating road using the Geonor H-10 65/130 mm vane. At each location vane shear tests were carried out at 0.5 m depth intervals over the full depth of peat.
- Piston sampling and gouge auger sampling at the edges of the slide to inspect the peat and confirm that there is no weak layer or discontinuity near the base.

3.2 Peat Depth and Slope Angles

The slope angles in the vicinity of the slide typically range from 3.4° to 4.0° at the surface of the peat, and 2.7° to 3.7° at the base.

A base slope angle of 4.2° was recorded 100 m east of the turbine, and 25 m to the west of the turbine the surface and base slopes reduce to 2.3° and 2.7°, respectively.

The limits of the slide are approximately 50 m to the east and west of the turbine base. Outside this zone the peat depth ranges from 2.1 m to 2.6 m. Within the slide zone there is 0.4 m to 1.6 m of peat.

3.3 Undrained Vane Shear Strength

The undrained shear strength of the peat was measured along the downslope side of the road using the Geonor H-10 65/130 mm vane. Tests were carried out 75 m to the east and west of the turbine base. A table and plot of the results are attached in Appendix A.

The uncorrected undrained shear strength, c_u , of the peat ranged from 5.7 to 14.5 kPa. Below the crust at the top of the peat, c_u decreased to a minimum value of 5.7 kPa at a depth of 1.5 m before increasing with depth down to the interface with the mineral soil.

In general, the peat would be classified as very soft. However, no extremely weak layer was encountered in the peat and the recorded strengths were higher than other areas of the site where peat strengths in the range of 3.75-5.0 kPa were recorded with the Geonor H-10 vane.

3.4 Stability Analyses

The stability of the floating road in T70 was analyzed using the limiting equilibrium slope stability program Slope/W. A 2-D plane strain analysis was carried out at a representative section along the floating road to calculate the margin of safety for the critical slip circle under the road in the undrained condition.

A representative design profile was determined from the gouge auger probe and topographical survey data in Appendix A. The design section represented the most conservative combination in terms of peat depth and slope angle.

The size of the road was conservatively taken as 5.0 m wide and 1.0 m thick. The basal reinforcement consists of a layer of trees and a single layer of Tensar SS30 geogrid within the crushed rock. We have assumed that critical slip circles would have to develop over the full width of the road for failure to occur.

A live load surcharge of 17.1 kPa has been applied to simulate the proposed load of the crane on the roads. This is equivalent to 15 m long x 2.75 m wide crane with a fully laden weight of 72 tonnes on six axles when traveling.

A representative characteristic undrained shear strength profile was determined for each cell from the unadjusted Geonor H-10 vane shear test data in Appendix A. The profile with the lowest recorded undrained shear strengths was used.

In accordance with Eurocode EC(7), a partial factor of 1.4 was applied to the characteristic undrained shear strengths, c_{uk} , to obtain the design values, c_{ud}. A partial factor of 1.3 was also applied to the live load surcharge. By this method of analysis a calculated margin of safety >1.0 in the slope stability analyses is acceptable. This is more conservative than the British Standard (BS) approach where no partial factor is applied to the live load.

The results of the Slope/W analyses are included in Appendix A. A calculated margin of safety > 1.0 was achieved for the design section, which is an acceptable condition. This was achieved without making an allowance for the increase in strength of the peat under the roads. The actual margin of safety would be higher as the road has been in place for more than 18 months and the peat would have gained strength during this time.

3.5 Gouge Auger and Piston Samples

Gouge auger and piston samples were collected from the bottom 1.0 m of peat on either side of the slide. The samples were 0.6 to 0.8 m long and generally extended into the underlying mineral soil. The samples did not achieve significant penetration into the mineral soil on the east side of the slide as the peat appeared to overly rock directly. The pistons were pushed to refusal on possible top of rock.

The samples would be classified as very soft dark brown very clayey peat with traces of root fibres (Class H8 in the Von Post Classification System – very strongly decomposed peat with roots and fibres that resist decomposition). Near the base of the samples on the east side there was a transition into amorphous very clayey peat (Class H10) near the base of the samples.

Significantly, there were no extremely weak layers of peat or shear zones in the samples. One of the piston samples on the east side of the site had a discontinuity at the transition between the fibrous and non-fibrous peat near the base of the sample. However, this was not picked up in an adjacent sample or in the gouge auger samples and may have been caused by disturbance in the sampling process.

3.6 Road Tests

Between 23rd and 25th November the floating road between T71 and T23 was tested by observing the performance of the road under the weight of an 8-wheel truck loaded to a total mass of 26.8 and 35.9 tonnes. The results of the test are presented in AGL Report No. 03-104-R02.

Using the criteria in Table No. 1, the performance of the floating road was classified as "good" from T23 to 75 m east of T70, and "fair" from this point to T71. This would be considered acceptable. The roads did not show any signs of yielding or excessive deflection at the sides. Deformations were generally locally concentrated under the wheel loads and the total load was adequately supported by the road.

On April 20th, 2005 the road was re-tested with two 8-wheel trucks traveling back-to-back with a combined load greater than 72 tonnes. This would simulate the full load in transit of the crane that will be used to erect the turbine. The road supported the load adequately without any indications of failure and the performance of the road was acceptable.

Table No.1 - Performance criteria for road tests under maximum test load.

Road Performance Classification	Performance Criteria (36-38 tonne load)
Good	➢ Road deflections generally <10 mm ➢ Road deflects relatively rigidly under truck load with only slightly greater deformation locally under the wheel load at localized soft spots. ➢ Road surface is even with minor rutting and no loose rockfill.
Fair	➢ Road deflections between 10 and 30 mm ➢ Road deflects noticeably under wheel loads ➢ Road surface is relatively even with some rutting along the line of the wheels. The rockfill is generally dense. ➢ Local transverse rutting occurs at soft spots where the rockfill has loosened over weak peat, or where there are gaps in the basal reinforcement trees.
Poor	➢ Road deflections are greater than 30 mm (up to about 60 mm) ➢ Road deforms very noticeably under wheel loads in wave-like motion. ➢ Deformations are uneven causing the truck to tilt slightly on local soft spots. ➢ Road surface is in poor condition with both longitudinal and transverse rutting creating an uneven road surface. ➢ Rockfill is loosened over worst areas.

4.0 PEAT REPOSITORY SITE T70R

The turbine base and crane pad for T70 will be constructed on the upslope side of the road that was constructed down to mineral soil across the slide zone. The depth of peat to be excavated is typically less than 1.0 m and much of this is remoulded. It is proposed to place the peat behind rockfill berms on the upslope side of the base and crane pad, and behind the road across the slide zone. These will contain the remoulded peat and prevent any movement downslope.

5.0 CONCLUSION

Based on the results of the ground investigation and full-scale load tests carried out along the floating roads in the vicinity of T70, and a review of the proposed location for the repository site we would consider that Ascon can proceed with the construction of the turbine base and crane pad at T70.

The road directly in front of the turbine base is constructed down to mineral soil and will act as a barrier to peat upslope from the slide. The peat excavated from T70 will be placed behind this road and upslope from the turbine base and crane pad, which will all act as barriers to contain the remoulded peat.

The floating roads on either side of the slide have been tested to support the maximum load from the vehicles that will be used to construct the turbine. As an added safety measure, a shear key will be constructed of rockfill down to mineral soil on the downslope side of the floating road for a distance of 10 m east of the slide zone to ensure that the road is permanently supported by a shear key beyond the zone of influence of the slide.

For AGL Consulting:

Conor O'Donnell

Date: 4/5/05

Appendix A

Summary of peat depths, slope angles and vane shear test data along the floating road in cell T70

AGL Consulting *Geotechnical Engineers*				**Record of Gouge Auger Probes**				
Project:	Derrybrien Wind Farm				Made By:		**Cell No: 70**	
Job No.	03-104				Date:			
Probe No.	Date	Coordinates		Ground Surface	Depth	Elev at	Slope Angle (Deg)	
		E (m)	N (m)	Elev	(m)	Base of Peat	Top	Base
				(mOD)		(mOD)	of Peat	of Peat
West								
T70/P-100A		159359.2	204322.5	332.33	**2.13**	330.20	**3.9**	**3.2**
T70/P-100B		159376.1	204278.1	329.11	**1.57**	327.54		
T70/P-75A		159383.1	204331.8	332.47	**2.16**	330.31	**4.0**	**3.7**
T70/P-75B		159398.9	204288.6	329.24	**1.90**	327.34		
T70/P-50A		159403.0	204340.8	330.94	**1.44**	329.50	**3.6**	**3.1**
T70/P-50B		159427.9	204309.1	328.39	**1.09**	327.30		
T70/P-25A		159427.1	204351.0	329.55	**0.84**	328.71	**2.3**	**2.7**
T70/P-25B		159444.3	204308.7	327.72	**1.20**	326.52		
T70/P0A		159452.4	204360.5	329.02	**1.32**	327.70	**3.4**	**3.1**
T70/P0B		159474.2	204324.9	326.55	**1.10**	325.45		
T70/P25A		159474.2	204371.3	328.51	**0.40**	328.11	**3.4**	**3.3**
T70/P25B		159491.8	204328.2	325.74	**0.32**	325.42		
T70/P50A		159499.9	204381.5	330.37	**1.64**	328.73	**3.8**	**3.2**
T70/P50B		159520.6	204343.8	327.55	**1.22**	326.33		
T70/P+75A		159520.3	204393.6	331.93	**2.62**	329.31	**3.3**	**2.7**
T70/P+75B		159541.6	204356.6	329.49	**2.21**	327.28		
T70/P+100A		159543.2	204402.4	332.00	**2.52**	329.48	**3.4**	**4.2**
T70/P+100B		159566.0	204365.6	329.42	**3.10**	326.32		
East								

Note: i. Minus and plus signs indicate offset along road to west and east of turbine base respectively
ii. 'A' series probes on downslope side of road.'B' series probes are approx 50m downslope from road

Probes On Turbine Base								
T70B-NE								
T70B-NW								
T70B-SE								
T70B-SW								
T70B-C								
T70B+50								
T70B+100								

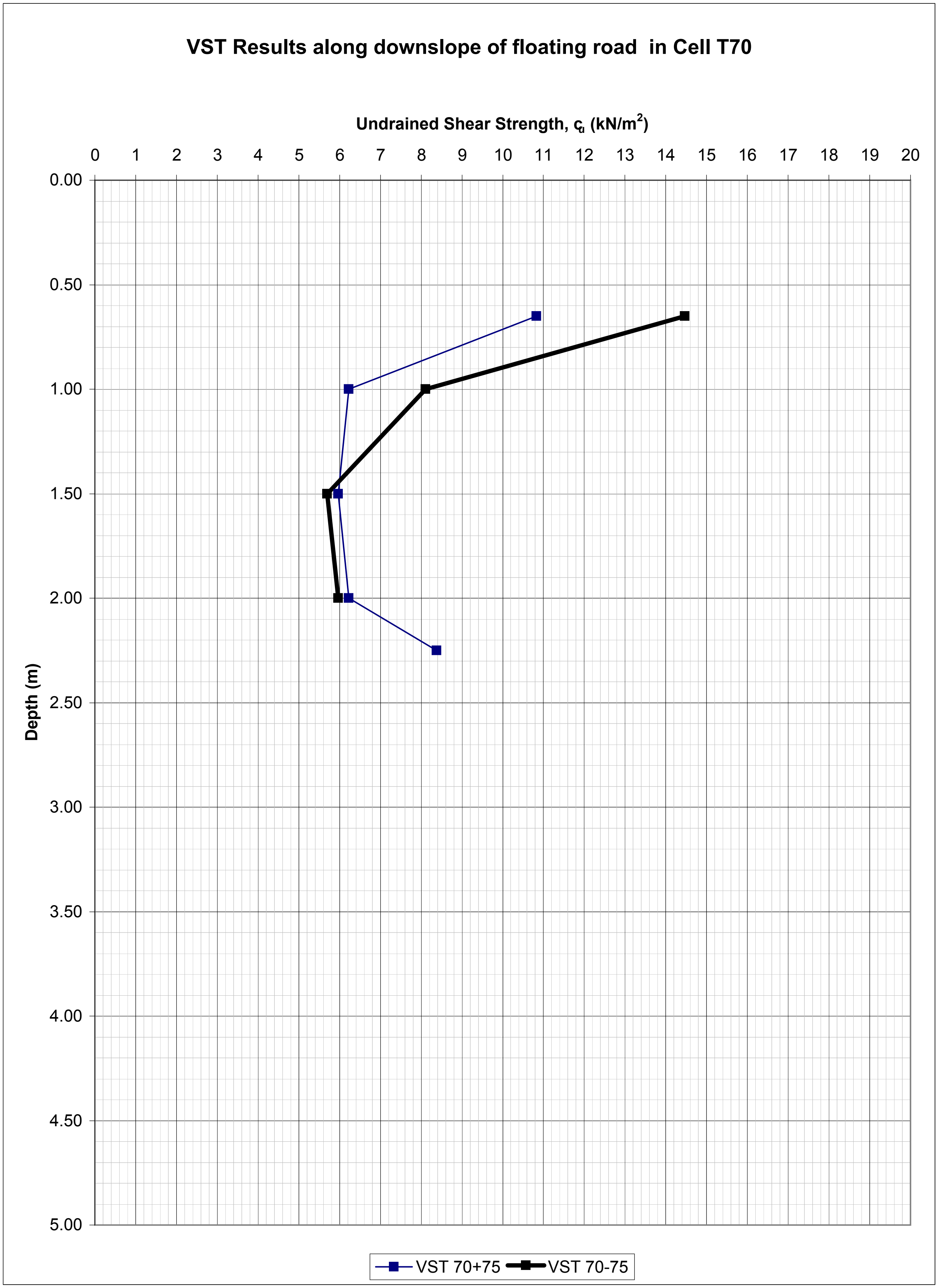
AGL Consulting *Geotechnical Engineers*			**Record Of Vane Shear Tests**				
Project: Derrybrien Wind Farm			Vane Type: Geonor H-10 (65_{mm}/130_{mm})			**Cell No. 70**	
Job No. 03-104							

Test No.		VST 70+75	Date:			Peat Depth (m) 2.50	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	20.5	6.50	10.8				
1.00	12.0	4.00	6.2				
1.50	11.5	4.50	6.0				
2.00	12.0	3.00	6.2				
2.25	16.0	5.50	8.4				

Test No.		VST 70-75	Date:			Peat Depth (m) 2.25	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments
0.65	27.0	6.50	14.5				
1.00	15.5	6.00	8.1				
1.50	11.0	4.50	5.7				
2.00	11.5	4.00	6.0				

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments

Test No.			Date:			Peat Depth (m)	
Depth (m)	Dial Gauge Reading	Time to Failure (mins)	c_u (KN/m^2)	Co-ordinates E (m)	N (m)	Elevation (mOD)	Comments


VST Results along downslope of floating road in Cell T70
Undrained Shear Strength, c_u (kN/m^2)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Depth (m)
VST 70+75
VST 70-75

Derrybrien Windfarm - Floating Road Analysis: Cell T70

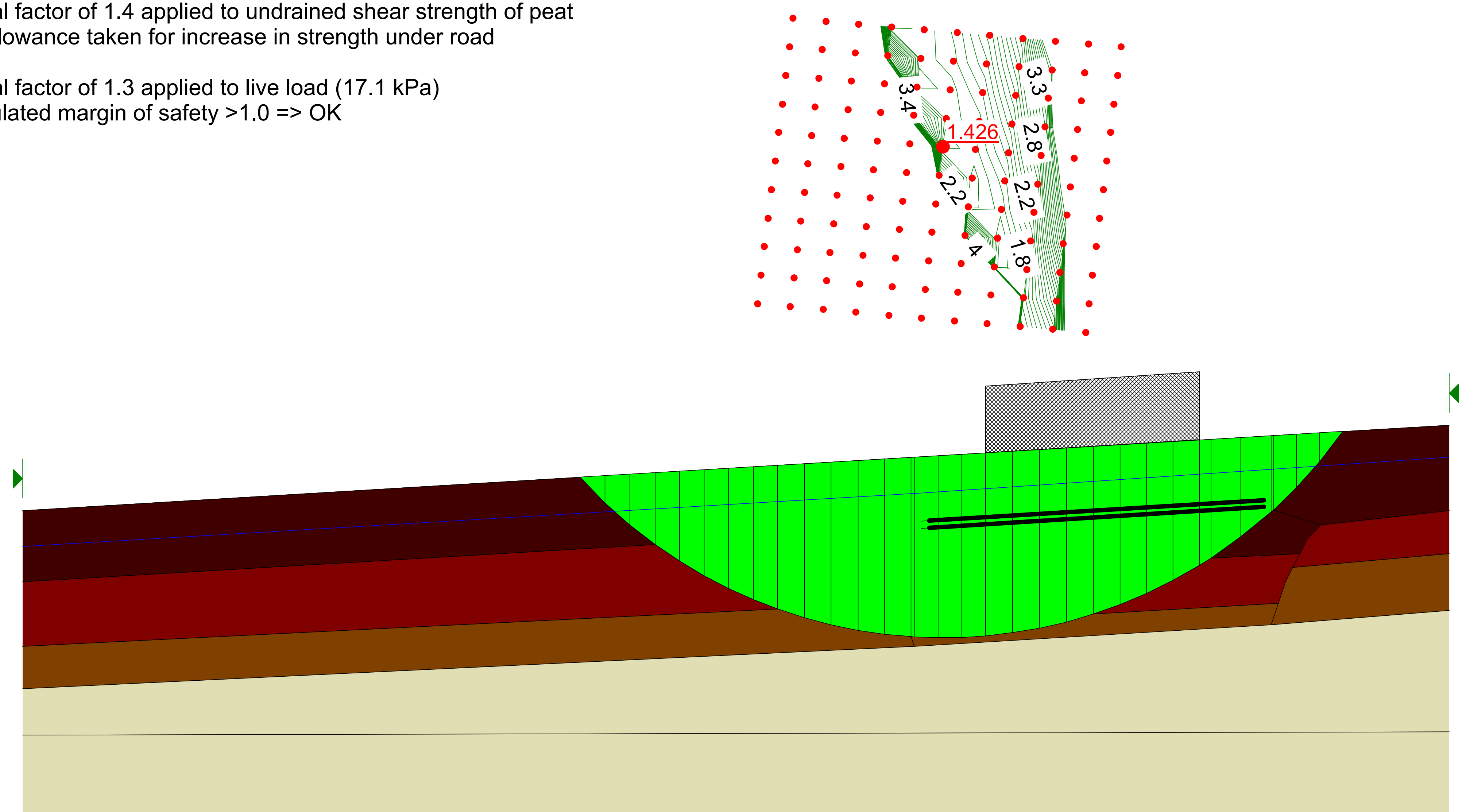
5.0 m wide road - 1.0 m thick
Basal reinforcement with trees and 1 layer of Tensar SS30 Geogrid

Depth of peat = 2.6 m on downslope side of road
Slope angle = 3.3 Deg at surface, 2.7 Deg at base of peat

Partial factor of 1.4 applied to undrained shear strength of peat
No allowance taken for increase in strength under road

Partial factor of 1.3 applied to live load (17.1 kPa)
Calculated margin of safety >1.0 => OK

T70+75



APPENDIX XIV

FACTUAL REPORT OF GEOTECHNICAL INVESTIGATIONS BY ESB INTERNATIONAL – ENGINEERING AND FACILITIES MANAGEMENT (ESBIE)

VOL. 1 (REPORT)

Hibernian Wind Power

Derrybrien Wind Farm, Co Galway

Report on ESBIE Geotechnical Testing

Volume 1 of 2

Report Number: 78015-C11-R1 REV 1

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Report No.: **P78015-C11-R1 REV1**

Rev. No.:

Volume 1 of 2

PRODUCED: Bernard Casey / Samir Hebib	***DATE: 25th January 2005***
CHECKED: Bernard Casey /Con Sheahan	***DATE: 25th January 2005***
APPROVED: Con Sheahan ***TITLE: Senior Project Manager***	***DATE: 25th January 2005***

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Change History of Report

Date	New Rev	Author	Summary of Change
20/04/05	1	R Canavan	VOLUME 1 Addition of slope angle measurements to figure 2 sheet 1 and Appendix A: T1-S1*, T17-S2, T25-S1, T27-S1, T41-S1, T41-S2, T42-S1, T58-S1, T58-S2, T58-S3, T63-S1, T64-S1, T65-S1 *Already present in Appendix A
20/04/05	1	R Canavan	VOLUME 1 Addition of shear vane locations to figure 2 sheet 3 and figure 4: T17_V5, T17_V6, T17_V7, T17_V8, T23_V1, T23_V4, T25_V2, T64_V6, T65_V1, T65_V2, T65_V3, T68_V3, T68_V4, T68_V5, T68_V6, T70_V1,T70_V2,
20/04/05	1	R Canavan	VOLUME 1 Shear vane locations moved on figure 2 sheet 3 and figure 4: T17_V2, T17_V3, T17_V4, T34_V3, T23_V2, T23_V3, T16_V6
20/04/05	1	R Canavan	VOLUME 2 Shear vane locations revised in Appendix B: T17_V2, T17_V3, T17_V4, T34_V3, T16_V6
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Summary

A substantial proportion of the Derrybrien windfarm site area was planted by Coillte for commercial forestry in the 1970's. The best conditions for wind capture by the turbines are provided by an open site and extensive tree felling is, therefore, required. The forested area is covered by very soft peat of variable thickness on gently sloping ground which is locally broken by steep inclines in some parts.

Construction work commenced on the windfarm in July 2003 but was suspended following a peat slide in October 2003. At that stage only minor tree felling, along access road corridors and at borrow pits, had been completed. In advance of recommencement of construction, it was decided to commence full tree felling throughout the site. A comprehensive geotechnical investigation has been carried out by ESBIE at the site between June and December 2004 to assess the stability of the ground surface under the loads imposed by tree-felling plant during the proposed felling operations.

The investigations have confirmed that trees over the major part of the site area may be safely felled using conventional Coillte plant. A small number of local areas have been identified where slope stability analyses showed that instability of the ground under the weight of Coillte plant could not be precluded. Tree felling in these areas should therefore be by hand.

The investigations also provide a large body of data that can be used in the assessment of general construction operations at the site going forward.

1.0 Introduction

The total area within the boundaries of Derrybrien windfarm site is approximately 345ha. A substantial proportion of this site area was planted by Coillte for commercial forestry in the 1970's. Figure 1 shows the extent of forestry relative to the proposed wind turbine positions.

The best conditions for wind capture by the turbines are provided by an open site. Extensive tree felling is, therefore, required. The forested area is covered by very soft peat of variable thickness on gently sloping ground that is locally broken by steep inclines in some parts. Conventional tree felling plant used by Coillte is tracked machinery that imposes a significant surcharge pressure on the surface of the ground during felling operations.

Construction work commenced on the windfarm in July 2003. Tree felling was initially confined to those corridors needed for access road construction to proposed turbine positions and for borrow pit areas. Construction work was suspended following a peat slide at the site in October 2003. A geotechnical investigation at the site was carried out by AGEC following the slide. The investigation report (1) assessed stability of the site under typical construction loading represented by a surcharge pressure of 10kN/m^2. The AGEC work concluded that some locations on site were potentially unstable and recommended that further more detailed investigations be carried out in advance of any further construction work proceeding.

To facilitate recommencement of construction, it was decided that tree felling over the full site area should be the first operation on recommencement. An intensive geotechnical investigation was carried out at the site by ESBIE between June and December 2004 to assess the stability of the ground surface under the planned tree felling operations. The investigation methodology chosen also provides substantial information for general construction recommencement. In parallel with this investigation, another geotechnical investigation was ongoing by AGL Ltd for Ascon, the civil works design-and-build subcontractor to ESBI. The AGL investigation reports (2,3) focus on stability of the site access roads for future construction traffic, and on identification of safe disposal areas for future peat arisings from turbine and crane hardstanding excavations.

This report presents the findings of the ESBIE investigation. The report is presented in two Volumes. Volume 1 (this Volume) includes the text, analyses and figures. Volume 2 includes the test data in Appendices.

2.0 Scope of the Investigation

For convenience of location definition the site is divided into areas (cells), approximately square in shape, centred on each turbine. The assessment of ground stability has focussed on stability of the peat because the underlying mineral soil and bedrock do not pose any stability concerns on the gently sloping ground. For the purposes of this assessment, therefore, ground stability at any given location, under a given ground pressure is governed by: i) slope of the ground surface, ii) thickness of the peat and, iii) strength of the peat.

The scope of the Geotechnical evaluation, therefore, has included:

- Topographical survey to establish critical slope angles through each cell (using Abney Level)
- Peat depth probing to establish variation in peat depth and the slope of the interface between the peat and the underlying mineral soil or rock in each cell
- Gouge auger probing at selected locations to provide visual assessment of the peat
- Shear vane testing (using Geotech automated vane) of the peat at representative locations in each cell
- Analysis of the factor of safety on stability on each cross-section at locations with a critical combination of slope angle, peat depth and shear strength using an infinite slope method of analysis

Piezometers were installed in the peat at selected locations around the site in February 2004 to examine variations in groundwater level with location and over time. A review of piezometer data and an assessment of the impact of varying groundwater levels on the stability of the site was also carried out as part of this study.

The investigated locations are all identified in Figure 2 (Sheets 1 to 3). The procedures used are discussed in sections 3 to 6 herein and the detailed results presented in Appendices.

The investigation works were supervised by on-site Geotechnical Engineers and a Geotechnical Approval system was established to clear areas for tree felling.

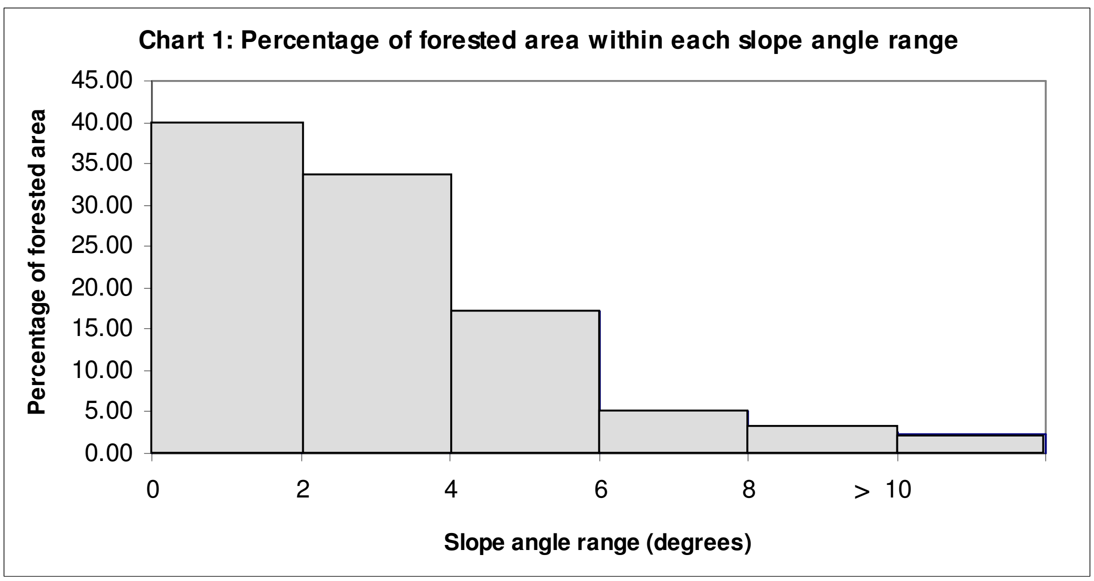
3.0 Slope Angle Measurement and Peat Depth Probing

The available contour data from Ordnance Survey mapping is at 10m intervals and has a quoted accuracy of half the contour interval, i.e. +/-5m. In forested areas, the Ordnance Survey report that the accuracy may be reduced owing to poor resolution from aerial surveys. The OS contour data is shown on Figure 1 and provides a general indication of slope trends at the site. Slope angles inferred from this OS mapping have, however, some degree of uncertainty and detailed field measurements of slope angle variations were, therefore, made during the geotechnical investigation.

Slope angles were measured by a two-man team who walked each cell in advance of slope measurements to identify slope trends and slope breaks. The slope angles were measured using an Abney level with an accuracy of 1 deg. Where necessary, tree branches were felled by hand to facilitate access and sighting through the Abney level. The slope angle was generally measured over incremental lengths typically between 15m and 25m to produce a full slope profile (cross-section) in various orientations across a cell. The locations of the end points of each slope angle measurement were determined using hand-held GPS (Garmin type).

The lengths over which slope angles were measured and the orientation of these measurements on plan are shown on Figure 2 (Sheet 1 of 4). A total of 219no. cross-section lines were generated from 1711no. slope angle measurements.

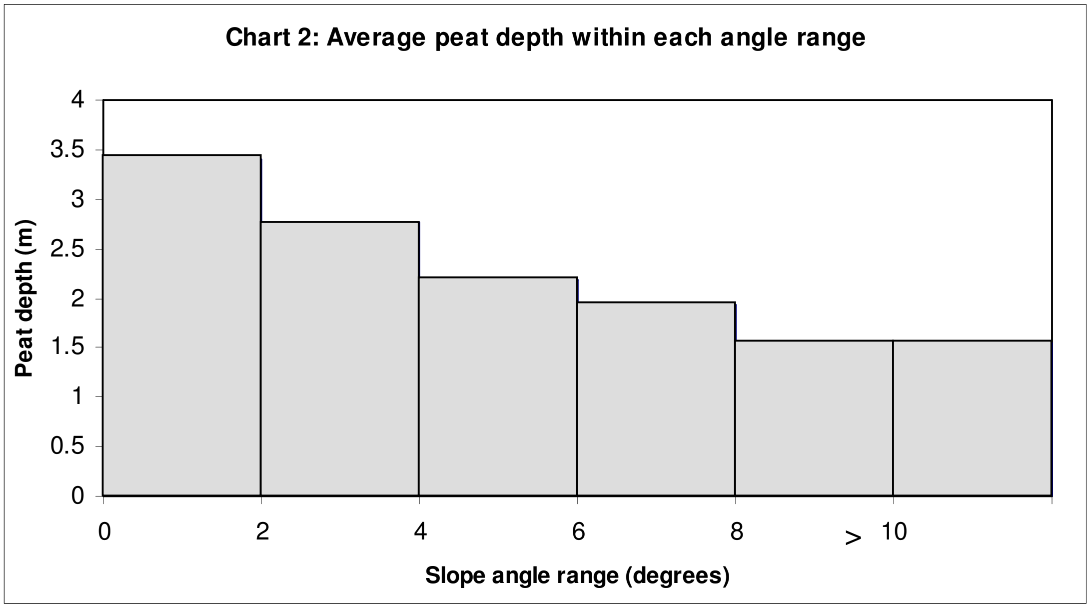
Chart 1 below summarises the proportions of the site in the various slope angle ranges. It can be seen that the ground surface over the majority of the site area is sloped at less than 4 degrees.



The depth of peat was probed using 1m long coupled rigid steel rods at each end of every slope measurement. The probed locations are shown on Figure 2 (Sheet 2 of 4). Contrast in penetration resistance between the peat and the underlying mineral soil (or bedrock at some parts of the site) provided definite indication of the peat base. A total of 3162no. peat depth measurements were made at the site. Figure 3 presents a graphical representation of the peat depth variation across the site based on the accumulated peat depth measurement results.

The detailed cross-sections showing both the surface slope angles and the slope angles of the peat base are included in Appendix A in Volume 2 of this report.

Chart 2 below shows the relationship between slope angle and average peat depth in the forested proportion of the site. It is clear from the chart that the peat depth is generally least on the steeper ground with the deeper peat deposits on relatively flat ground. Examination of the slope angles of the peat base in Appendix A shows that the peat base generally follows or is flatter than the profile of the ground surface.



4.0 Gouge Auger Sampling and Shear Strength Testing of Peat

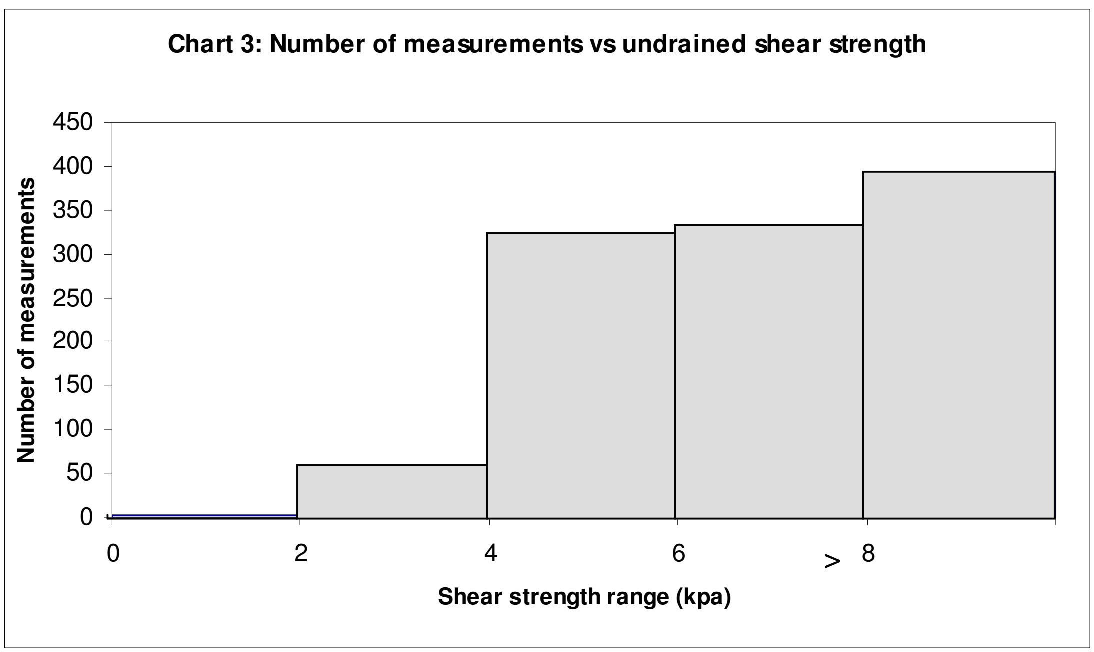
The physical character of the peat was assessed using a Van Walt gouge auger – a long semi-cylindrical chamber, 20mm in diameter that is pushed into the peat. It is then twisted and recovered to produce a full and virtually undisturbed profile of the in-situ peat. The recovered peat samples were logged according to BS 5930:1999 (4) and their degree of decomposition assessed according to the Van Post Classification (5). This sampling technique, in combination with shear strength measurement as described below, enabled areas of extremely soft peat to be identified (seen in the augers as very wet with flow-like characteristics). A total of 222no.gouge augers were sunk at the site. The locations of the augers are shown on Figure 2 (Sheet 4 of 4) and the logs of the augers are included in Appendix C in Volume 2 of this report.

The shear strength of the peat was assessed by means of an electrical vane apparatus with an instrumented head, manufactured by Geotech AB of Sweden. The vane was chosen for its high quoted accuracy at very low shear strength values (+/- 0.1kPa). The vane size used was 140mm (diameter) x 280mm (length) with a tapered end. The use of a large vane ensures that a relatively large body of peat is made to fail in the test and should therefore reduce the risk of non-representative test results. The torque required to rotate the vane is large because of the surface area mobilised in shear and the maximum shear strength recordable with this vane is therefore 10kPa. This is not considered to be a limitation with the vane as the shear strength values that might lead to concern for stability are seen to be generally less than 5kPa (see section 5 of this report).

The instrument incorporates a 15 degree slip coupling so that rod friction can be isolated from the resistance being provided by the peat to torque imparted by the vane. The rotation speed is automated (0.2 degrees per second was adopted for the investigation) and digital recording of the shear resistance with rotation is provided.

The gouge auger results confirm that the upper 1m of peat is generally most fibrous and the strongest within the depth profile. This upper peat generally classifies between H1 and H3 on the Von Post Classification. The peat below this upper layer is more decomposed and weaker than the uppermost layer. Immediately above the mineral soil interface the peat generally appears to increase in strength. The weakest peat is therefore generally in the middle zone or close to the base.

Shear vane test locations were chosen at specific positions on the slope cross-section profiles based on an assessment of where the combination of peat depth and slope angle produced vulnerable ground. Tests were generally at 1m intervals through the full depth of the peat. A test was generally also carried out near the base of the peat. A total of 1179 shear vane tests were carried out on site. The locations of the tests are shown on Figure 2 (Sheet 3 of 4). A summary of the test results is included in Appendix B in Volume 2 of this report. Chart 3 below shows the distribution of shear strength results in bar chart form.



In the early stages of the investigation, the use of the gouge auger was reduced as an understanding was developed of the critical combination of peat depth and slope angle that requires above-average peat shear strength to provide an adequate margin on stability. This is discussed further in section 5.

5.0 Review of Peat Depth and Shear Strength Distribution Trends

The distribution of peat depth across the site, shown on Figure 3, confirms that pockets of deep peat are interspersed with areas of shallow peat in an irregular pattern. The greatest concentration of deep peat is located at the south-west corner of the site in a relatively flat area.

The slide of October 2003 occurred along a natural shallow valley, an area of poorer ground (AGEC (1)). An attempt was made to assess whether any concentrations of particularly soft peat are present in a linear pattern across the site. Figure 4 shows the lowest shear strength measurements at each vane locations in a colour coded representation. It is seen that shear strength values below 4kPa have been recorded at several discrete locations throughout the site, but extended linear patterns are not readily apparent.

It is therefore considered conservative to analyse stability using local data with conservative assumptions regarding the extent of the particularly poor peat.

6.0 Analysis of Stability

6.1 Loading Assumed

The tree harvesting plant used by Coillte are tracked excavators (typically Daewoo Solar LC220, weighing 22t) with proprietary harvesting head to cut and process the timber.
The excavator fells the tree, processes and cuts to length part of it and uses the remaining part to create a mat of timber that has the effect of spreading the weight of the machine over a large area (4m x 3m).

The maximum applied bearing pressure on the ground surface in operation is therefore approximately 18.5kN/m^2. For the purposes of analysis a bearing pressure of 20kN/m^2 has been assumed to be applied to the peat.

6.2 Analysis Methodology Adopted

Stability was analysed using the infinite slope method of analysis (Skempton and DeLory (6)). The infinite slope analysis is suited to long downslope lengths where the mode of failure is by translational sliding, as that which occurred at the site in October 2003. The infinite slope method of analysis is conservative, in that no end resistance is assumed. The only resistance to sliding is assumed to be that provided at the sliding interface between the peat and mineral soil parallel to the surface – the method therefore allows for hypothetical vertical cracking being present through the full depth of the peat.

The factor of safety against sliding in the infinite slope method of analysis is given by:

$$F = cu/(\gamma D \sin\beta \cos\beta)$$

where
cu: undrained shear strength of peat (kN/m^2)
γ: bulk unit weight of peat (assumed to be 10kN/m^3)
D: depth of peat (m)
β: slope angle on base of sliding (deg)

The method assumes that a unique cu value applies to the peat throughout the peat depth. The effect of a construction surcharge load is modelled by increasing the γD term. The British Standard Code of Practice for Earthworks BS 6031:1981(7) states that for a first time failure (i.e. on a site where failure has not occurred so there is no knowledge gained from previous failures) with a good standard of site investigation, the design factor of safety should be between 1.3 and 1.4. For the purposes of this report a required factor of safety of 1.4 is used to clear areas for tree felling.

At each vane location, the representative cross-section was examined to determine:

- The slope angle on the cross-section
- The peat depth on the cross-section
- The lowest recorded shear strength at the vane location

In some cases, where the analysed slope angle was over a very short localised length and the infinite slope method therefore extremely conservative, factors of safety of less than 1.4 were obtained. In these cases a limit equilibrium method of analysis, to reflect the actual extent of the steep slope, and the slope at the interface of the peat and mineral soil, was carried out using the computer program SLOPE by Oasys Ltd.

6.3 Results of Stability Analyses

The results of the stability analyses are shown on Table 1 below. Results are calculated for:

1. Factor of safety of existing slope under no imposed loading
2. Factor of safety of existing slope under a surcharge loading of 10kPa
3. Factor of safety of existing slope under a surcharge loading of 20kPa

Results are also calculated for the surcharge loading that would be associated with the limiting factor of safety of 1.4.

It is seen from the results that the majority of the site area exhibits a factor of safety above 1.4 when analysed using the lowest shear strength at each location and assuming surcharge loading of 20kPa. In some cases the factor of safety is below 1.4 for a surcharge loading of 20kPa but above 1.4 for loading of 10kPa.

In cases where the factor of safety is below 1.4 but the lowest shear strength (used in the analyses) was measured at a high level within the peat profile, the analysis has been repeated using shear strength data from deeper in the profile (that would be more consistent with using the full depth of peat in the analysis).

In cases where the factor of safety is less than 1.4 because of a steep slope of very local extent, a limit equilibrium analysis at the location has been carried out using the computer program Oasys SLOPE. The analyses model the precise ground geometry at the location (surface slope angle, peat depth, peat strength variation with depth) and are therefore more accurate than the more conservative infinite slope analyses.

As a result of the analyses, it is seen that some limited areas do not meet the minimum factor of safety criteria. These areas should therefore be restricted from loading by tree felling or other construction plant or materials unless specific working methods or reduced loading can be demonstrated to provide an adequate factor of safety. The restricted site areas are shown on Figure 5. Tree felling in these areas should be by hand.

Road movement under the weight of a truck carrying stone was noted west of T17 in February 2005. The road was under construction at the time. The incident was investigated and a report produced by AGL (8). The report concluded that the movement was as a result of peat strain rather than bearing or sliding failure. An area around the incident has been included as a restricted area on this basis.

6.4 Impact of drainage and varying groundwater levels on stability

Piezometers were installed at 12 locations throughout the site in February 2004 to assess any seasonal or construction induced variations in groundwater level within the peat. The piezometer locations are in cells T18, T2, T12, T13 and T34. The piezometers are linked to 4 data loggers that automatically record water level data at 4 hourly intervals. The data is communicated digitally to ESBI by telephone connection to a Data Sim card in the loggers. The locations of the loggers and the individual piezometer positions are indicated in Appendix D (the loggers also record data from tilt sensors that detect peat movement – will be the subject of a separate report).

The recordings of the piezometers since February 2004 are shown in Appendix D in Volume 2 of this report. The piezometer readings confirm that the groundwater level fluctuates throughout the year but is generally within 1m from ground level. Several of the piezometers (notably Pz-01, Pz-02, Pz-03, Pz-04, Pz-05, Pz-06) are near existing turbine excavations or drains. There is no evidence of a drawdown in peat water level arising from the excavations.

The shear vane testing of the peat has confirmed that the weakest peat (the strength data for which is used in the stability analyses) occurs at depths that are in excess of 1m. On this basis it is reasonable to assume that the weakest peat is at depths that are permanently below the water table. In the absence of changing moisture content at these depths it can be concluded that groundwater variations that can be anticipated at the site are unlikely to influence stability.

7.0 Conclusions

Field investigations and conservative methods of analysis have confirmed that trees over the major part of the site area may be safely felled using conventional Coillte plant. A small number of local areas have been identified where analyses showed that instability of the ground under the weight of Coillte plant could not be precluded. Tree felling in these areas should be by hand.

It has been shown that groundwater level variations caused by turbine excavations and shallow drainage operations do not significantly impact on stability.

The analyses conclusions for acceptable ground loading for tree felling can be extended to construction operations with ground loading less than 20kN/m^2.

8.0 References

1 *Reports on Derrybrien Windfarm – Final Report on Post-Landslide Site Appraisal*
AGEC Ltd, Feb 2004

2 *Report on the Stability of the Floating Roads, Turbine Bases and Peat Disposal Areas on the site of the Derrybrien Windfarm, Co. Galway*,
AGL Consulting, Nov 2004

3 *Report on the Stability of the Floating Roads on the site of the Derrybrien Windfarm, Co. Galway*,
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4 *BS5930 Code of Practice for Site Investigation*
British Standards Institute (1999)

5 *The Ecology of Peat Bogs of the Glaciated Northeastern United States, U.S. Fish and Wildlife Service Biological Report 85(7.16) Supt. of Documents, Washington D.C.*
Dammon, A.W.H., and French, T.W. (1987)

6 *Stability of Natural Slopes in London Clay*
Proc. 4th Int. Conf. on Soil Mechanics and Foundation Engineering, Rotterdam, Vol. 2, Skempton, A.W. and DeLory, F.A. (1957)

7 *BS6031 Code of Practice for Earthworks*
British Standards Institute

8 *Report on the movement of the floating Road west of T17 on the Derrybrien Windfarm, Co. Galway,*
AGL Consulting, April 2005

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Report Number: 78015-C11-R1 REV 1

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CHECKED: Bernard Casey /Con Sheahan	***DATE: 25th January 2005***
APPROVED: Con Sheahan ***TITLE: Senior Project Manager***	***DATE: 25th January 2005***

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Summary

A substantial proportion of the Derrybrien windfarm site area was planted by Coillte for commercial forestry in the 1970's. The best conditions for wind capture by the turbines are provided by an open site and extensive tree felling is, therefore, required. The forested area is covered by very soft peat of variable thickness on gently sloping ground which is locally broken by steep inclines in some parts.

Construction work commenced on the windfarm in July 2003 but was suspended following a peat slide in October 2003. At that stage only minor tree felling, along access road corridors and at borrow pits, had been completed. In advance of recommencement of construction, it was decided to commence full tree felling throughout the site. A comprehensive geotechnical investigation has been carried out by ESBIE at the site between June and December 2004 to assess the stability of the ground surface under the loads imposed by tree-felling plant during the proposed felling operations.

The investigations have confirmed that trees over the major part of the site area may be safely felled using conventional Coillte plant. A small number of local areas have been identified where slope stability analyses showed that instability of the ground under the weight of Coillte plant could not be precluded. Tree felling in these areas should therefore be by hand.

The investigations also provide a large body of data that can be used in the assessment of general construction operations at the site going forward.

1.0 Introduction

The total area within the boundaries of Derrybrien windfarm site is approximately 345ha. A substantial proportion of this site area was planted by Coillte for commercial forestry in the 1970's. Figure 1 shows the extent of forestry relative to the proposed wind turbine positions.

The best conditions for wind capture by the turbines are provided by an open site. Extensive tree felling is, therefore, required. The forested area is covered by very soft peat of variable thickness on gently sloping ground that is locally broken by steep inclines in some parts. Conventional tree felling plant used by Coillte is tracked machinery that imposes a significant surcharge pressure on the surface of the ground during felling operations.

Construction work commenced on the windfarm in July 2003. Tree felling was initially confined to those corridors needed for access road construction to proposed turbine positions and for borrow pit areas. Construction work was suspended following a peat slide at the site in October 2003. A geotechnical investigation at the site was carried out by AGEC following the slide. The investigation report (1) assessed stability of the site under typical construction loading represented by a surcharge pressure of $10kN/m^2$. The AGEC work concluded that some locations on site were potentially unstable and recommended that further more detailed investigations be carried out in advance of any further construction work proceeding.

To facilitate recommencement of construction, it was decided that tree felling over the full site area should be the first operation on recommencement. An intensive geotechnical investigation was carried out at the site by ESBIE between June and December 2004 to assess the stability of the ground surface under the planned tree felling operations. The investigation methodology chosen also provides substantial information for general construction recommencement. In parallel with this investigation, another geotechnical investigation was ongoing by AGL Ltd for Ascon, the civil works design-and-build subcontractor to ESBI. The AGL investigation reports (2,3) focus on stability of the site access roads for future construction traffic, and on identification of safe disposal areas for future peat arisings from turbine and crane hardstanding excavations.

This report presents the findings of the ESBIE investigation. The report is presented in two Volumes. Volume 1 (this Volume) includes the text, analyses and figures. Volume 2 includes the test data in Appendices.

2.0 Scope of the Investigation

For convenience of location definition the site is divided into areas (cells), approximately square in shape, centred on each turbine. The assessment of ground stability has focussed on stability of the peat because the underlying mineral soil and bedrock do not pose any stability concerns on the gently sloping ground. For the purposes of this assessment, therefore, ground stability at any given location, under a given ground pressure is governed by: i) slope of the ground surface, ii) thickness of the peat and, iii) strength of the peat.

The scope of the Geotechnical evaluation, therefore, has included:

- Topographical survey to establish critical slope angles through each cell (using Abney Level)
- Peat depth probing to establish variation in peat depth and the slope of the interface between the peat and the underlying mineral soil or rock in each cell
- Gouge auger probing at selected locations to provide visual assessment of the peat
- Shear vane testing (using Geotech automated vane) of the peat at representative locations in each cell
- Analysis of the factor of safety on stability on each cross-section at locations with a critical combination of slope angle, peat depth and shear strength using an infinite slope method of analysis

Piezometers were installed in the peat at selected locations around the site in February 2004 to examine variations in groundwater level with location and over time. A review of piezometer data and an assessment of the impact of varying groundwater levels on the stability of the site was also carried out as part of this study.

The investigated locations are all identified in Figure 2 (Sheets 1 to 3). The procedures used are discussed in sections 3 to 6 herein and the detailed results presented in Appendices.

The investigation works were supervised by on-site Geotechnical Engineers and a Geotechnical Approval system was established to clear areas for tree felling.

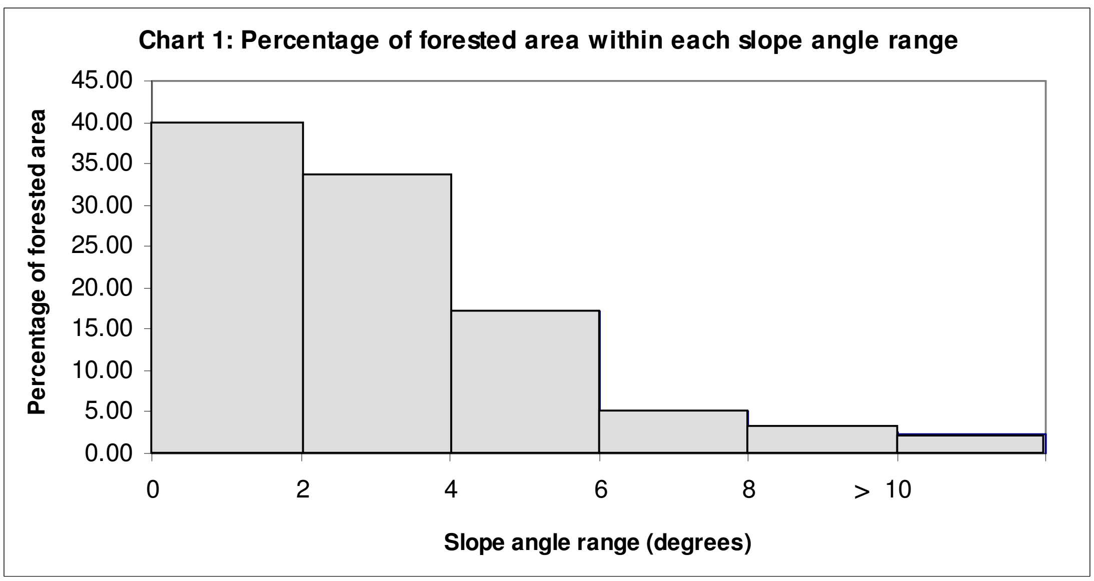
3.0 Slope Angle Measurement and Peat Depth Probing

The available contour data from Ordnance Survey mapping is at 10m intervals and has a quoted accuracy of half the contour interval, i.e. +/-5m. In forested areas, the Ordnance Survey report that the accuracy may be reduced owing to poor resolution from aerial surveys. The OS contour data is shown on Figure 1 and provides a general indication of slope trends at the site. Slope angles inferred from this OS mapping have, however, some degree of uncertainty and detailed field measurements of slope angle variations were, therefore, made during the geotechnical investigation.

Slope angles were measured by a two-man team who walked each cell in advance of slope measurements to identify slope trends and slope breaks. The slope angles were measured using an Abney level with an accuracy of 1 deg. Where necessary, tree branches were felled by hand to facilitate access and sighting through the Abney level. The slope angle was generally measured over incremental lengths typically between 15m and 25m to produce a full slope profile (cross-section) in various orientations across a cell. The locations of the end points of each slope angle measurement were determined using hand-held GPS (Garmin type).

The lengths over which slope angles were measured and the orientation of these measurements on plan are shown on Figure 2 (Sheet 1 of 4). A total of 219no. cross-section lines were generated from 1711no. slope angle measurements.

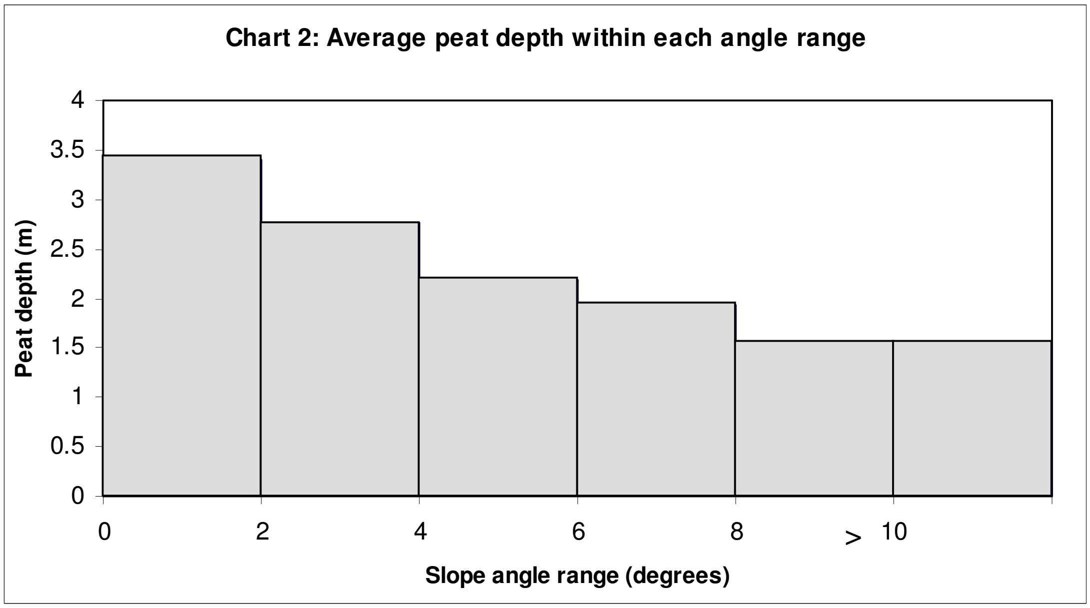
Chart 1 below summarises the proportions of the site in the various slope angle ranges. It can be seen that the ground surface over the majority of the site area is sloped at less than 4 degrees.



The depth of peat was probed using 1m long coupled rigid steel rods at each end of every slope measurement. The probed locations are shown on Figure 2 (Sheet 2 of 4). Contrast in penetration resistance between the peat and the underlying mineral soil (or bedrock at some parts of the site) provided definite indication of the peat base. A total of 3162no. peat depth measurements were made at the site. Figure 3 presents a graphical representation of the peat depth variation across the site based on the accumulated peat depth measurement results.

The detailed cross-sections showing both the surface slope angles and the slope angles of the peat base are included in Appendix A in Volume 2 of this report.

Chart 2 below shows the relationship between slope angle and average peat depth in the forested proportion of the site. It is clear from the chart that the peat depth is generally least on the steeper ground with the deeper peat deposits on relatively flat ground. Examination of the slope angles of the peat base in Appendix A shows that the peat base generally follows or is flatter than the profile of the ground surface.



4.0 Gouge Auger Sampling and Shear Strength Testing of Peat

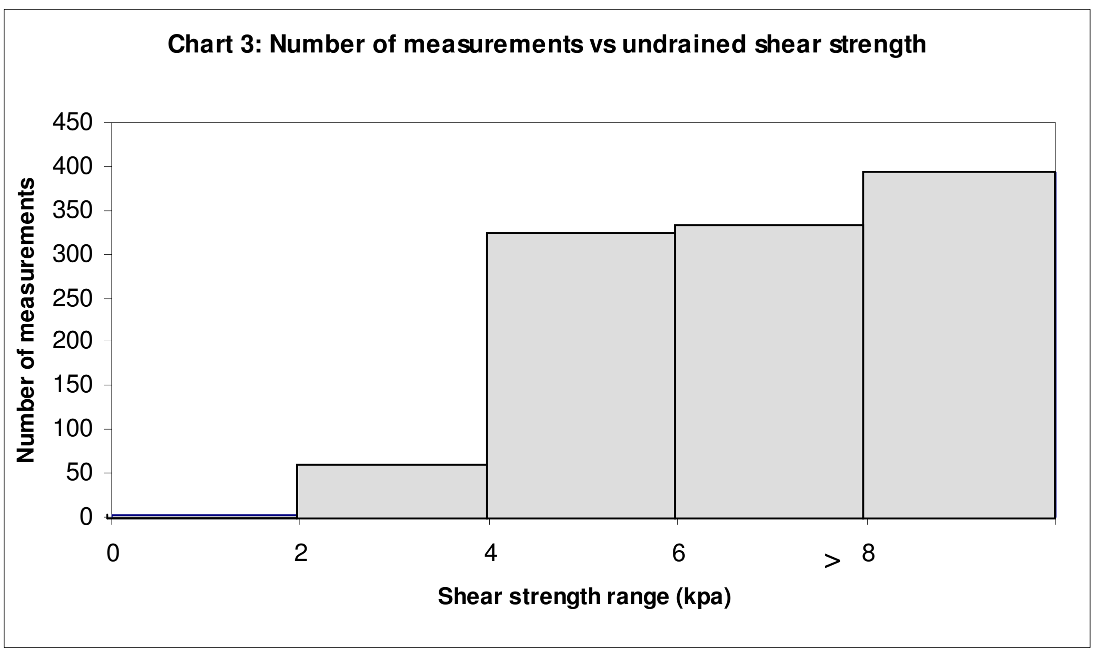
The physical character of the peat was assessed using a Van Walt gouge auger – a long semi-cylindrical chamber, 20mm in diameter that is pushed into the peat. It is then twisted and recovered to produce a full and virtually undisturbed profile of the in-situ peat. The recovered peat samples were logged according to BS 5930:1999 (4) and their degree of decomposition assessed according to the Van Post Classification (5). This sampling technique, in combination with shear strength measurement as described below, enabled areas of extremely soft peat to be identified (seen in the augers as very wet with flow-like characteristics). A total of 222no.gouge augers were sunk at the site. The locations of the augers are shown on Figure 2 (Sheet 4 of 4) and the logs of the augers are included in Appendix C in Volume 2 of this report.

The shear strength of the peat was assessed by means of an electrical vane apparatus with an instrumented head, manufactured by Geotech AB of Sweden. The vane was chosen for its high quoted accuracy at very low shear strength values (+/- 0.1kPa). The vane size used was 140mm (diameter) x 280mm (length) with a tapered end. The use of a large vane ensures that a relatively large body of peat is made to fail in the test and should therefore reduce the risk of non-representative test results. The torque required to rotate the vane is large because of the surface area mobilised in shear and the maximum shear strength recordable with this vane is therefore 10kPa. This is not considered to be a limitation with the vane as the shear strength values that might lead to concern for stability are seen to be generally less than 5kPa (see section 5 of this report).

The instrument incorporates a 15 degree slip coupling so that rod friction can be isolated from the resistance being provided by the peat to torque imparted by the vane. The rotation speed is automated (0.2 degrees per second was adopted for the investigation) and digital recording of the shear resistance with rotation is provided.

The gouge auger results confirm that the upper 1m of peat is generally most fibrous and the strongest within the depth profile. This upper peat generally classifies between H1 and H3 on the Von Post Classification. The peat below this upper layer is more decomposed and weaker than the uppermost layer. Immediately above the mineral soil interface the peat generally appears to increase in strength. The weakest peat is therefore generally in the middle zone or close to the base.

Shear vane test locations were chosen at specific positions on the slope cross-section profiles based on an assessment of where the combination of peat depth and slope angle produced vulnerable ground. Tests were generally at 1m intervals through the full depth of the peat. A test was generally also carried out near the base of the peat. A total of 1179 shear vane tests were carried out on site. The locations of the tests are shown on Figure 2 (Sheet 3 of 4). A summary of the test results is included in Appendix B in Volume 2 of this report. Chart 3 below shows the distribution of shear strength results in bar chart form.



In the early stages of the investigation, the use of the gouge auger was reduced as an understanding was developed of the critical combination of peat depth and slope angle that requires above-average peat shear strength to provide an adequate margin on stability. This is discussed further in section 5.

5.0 Review of Peat Depth and Shear Strength Distribution Trends

The distribution of peat depth across the site, shown on Figure 3, confirms that pockets of deep peat are interspersed with areas of shallow peat in an irregular pattern. The greatest concentration of deep peat is located at the south-west corner of the site in a relatively flat area.

The slide of October 2003 occurred along a natural shallow valley, an area of poorer ground (AGEC (1)). An attempt was made to assess whether any concentrations of particularly soft peat are present in a linear pattern across the site. Figure 4 shows the lowest shear strength measurements at each vane locations in a colour coded representation. It is seen that shear strength values below 4kPa have been recorded at several discrete locations throughout the site, but extended linear patterns are not readily apparent.

It is therefore considered conservative to analyse stability using local data with conservative assumptions regarding the extent of the particularly poor peat.

6.0 Analysis of Stability

6.1 Loading Assumed

The tree harvesting plant used by Coillte are tracked excavators (typically Daewoo Solar LC220, weighing 22t) with proprietary harvesting head to cut and process the timber.
The excavator fells the tree, processes and cuts to length part of it and uses the remaining part to create a mat of timber that has the effect of spreading the weight of the machine over a large area (4m x 3m).

The maximum applied bearing pressure on the ground surface in operation is therefore approximately 18.5kN/m^2. For the purposes of analysis a bearing pressure of 20kN/m^2 has been assumed to be applied to the peat.

6.2 Analysis Methodology Adopted

Stability was analysed using the infinite slope method of analysis (Skempton and DeLory (6)). The infinite slope analysis is suited to long downslope lengths where the mode of failure is by translational sliding, as that which occurred at the site in October 2003. The infinite slope method of analysis is conservative, in that no end resistance is assumed. The only resistance to sliding is assumed to be that provided at the sliding interface between the peat and mineral soil parallel to the surface – the method therefore allows for hypothetical vertical cracking being present through the full depth of the peat.

The factor of safety against sliding in the infinite slope method of analysis is given by:

$$F = cu/(\gamma D \sin\beta \cos\beta)$$

where
cu: undrained shear strength of peat (kN/m^2)
γ: bulk unit weight of peat (assumed to be $10kN/m^3$)
D: depth of peat (m)
β: slope angle on base of sliding (deg)

The method assumes that a unique cu value applies to the peat throughout the peat depth. The effect of a construction surcharge load is modelled by increasing the γD term. The British Standard Code of Practice for Earthworks BS 6031:1981(7) states that for a first time failure (i.e. on a site where failure has not occurred so there is no knowledge gained from previous failures) with a good standard of site investigation, the design factor of safety should be between 1.3 and 1.4. For the purposes of this report a required factor of safety of 1.4 is used to clear areas for tree felling.

At each vane location, the representative cross-section was examined to determine:

- The slope angle on the cross-section
- The peat depth on the cross-section
- The lowest recorded shear strength at the vane location

In some cases, where the analysed slope angle was over a very short localised length and the infinite slope method therefore extremely conservative, factors of safety of less than 1.4 were obtained. In these cases a limit equilibrium method of analysis, to reflect the actual extent of the steep slope, and the slope at the interface of the peat and mineral soil, was carried out using the computer program SLOPE by Oasys Ltd.

6.3 Results of Stability Analyses

The results of the stability analyses are shown on Table 1 below. Results are calculated for:

1. Factor of safety of existing slope under no imposed loading
2. Factor of safety of existing slope under a surcharge loading of 10kPa
3. Factor of safety of existing slope under a surcharge loading of 20kPa

Results are also calculated for the surcharge loading that would be associated with the limiting factor of safety of 1.4.

It is seen from the results that the majority of the site area exhibits a factor of safety above 1.4 when analysed using the lowest shear strength at each location and assuming surcharge loading of 20kPa. In some cases the factor of safety is below 1.4 for a surcharge loading of 20kPa but above 1.4 for loading of 10kPa.

In cases where the factor of safety is below 1.4 but the lowest shear strength (used in the analyses) was measured at a high level within the peat profile, the analysis has been repeated using shear strength data from deeper in the profile (that would be more consistent with using the full depth of peat in the analysis).

In cases where the factor of safety is less than 1.4 because of a steep slope of very local extent, a limit equilibrium analysis at the location has been carried out using the computer program Oasys SLOPE. The analyses model the precise ground geometry at the location (surface slope angle, peat depth, peat strength variation with depth) and are therefore more accurate than the more conservative infinite slope analyses.

As a result of the analyses, it is seen that some limited areas do not meet the minimum factor of safety criteria. These areas should therefore be restricted from loading by tree felling or other construction plant or materials unless specific working methods or reduced loading can be demonstrated to provide an adequate factor of safety. The restricted site areas are shown on Figure 5. Tree felling in these areas should be by hand.

Road movement under the weight of a truck carrying stone was noted west of T17 in February 2005. The road was under construction at the time. The incident was investigated and a report produced by AGL (8). The report concluded that the movement was as a result of peat strain rather than bearing or sliding failure. An area around the incident has been included as a restricted area on this basis.

6.4 Impact of drainage and varying groundwater levels on stability

Piezometers were installed at 12 locations throughout the site in February 2004 to assess any seasonal or construction induced variations in groundwater level within the peat. The piezometer locations are in cells T18, T2, T12, T13 and T34. The piezometers are linked to 4 data loggers that automatically record water level data at 4 hourly intervals. The data is communicated digitally to ESBI by telephone connection to a Data Sim card in the loggers. The locations of the loggers and the individual piezometer positions are indicated in Appendix D (the loggers also record data from tilt sensors that detect peat movement – will be the subject of a separate report).

The recordings of the piezometers since February 2004 are shown in Appendix D in Volume 2 of this report. The piezometer readings confirm that the groundwater level fluctuates throughout the year but is generally within 1m from ground level. Several of the piezometers (notably Pz-01, Pz-02, Pz-03, Pz-04, Pz-05, Pz-06) are near existing turbine excavations or drains. There is no evidence of a drawdown in peat water level arising from the excavations.

The shear vane testing of the peat has confirmed that the weakest peat (the strength data for which is used in the stability analyses) occurs at depths that are in excess of 1m. On this basis it is reasonable to assume that the weakest peat is at depths that are permanently below the water table. In the absence of changing moisture content at these depths it can be concluded that groundwater variations that can be anticipated at the site are unlikely to influence stability.

7.0 Conclusions

Field investigations and conservative methods of analysis have confirmed that trees over the major part of the site area may be safely felled using conventional Coillte plant. A small number of local areas have been identified where analyses showed that instability of the ground under the weight of Coillte plant could not be precluded. Tree felling in these areas should be by hand.

It has been shown that groundwater level variations caused by turbine excavations and shallow drainage operations do not significantly impact on stability.

The analyses conclusions for acceptable ground loading for tree felling can be extended to construction operations with ground loading less than 20kN/m^2.

8.0 References

1 *Reports on Derrybrien Windfarm – Final Report on Post-Landslide Site Appraisal*
AGEC Ltd, Feb 2004

2 *Report on the Stability of the Floating Roads, Turbine Bases and Peat Disposal Areas on the site of the Derrybrien Windfarm, Co. Galway*,
AGL Consulting, Nov 2004

3 *Report on the Stability of the Floating Roads on the site of the Derrybrien Windfarm, Co. Galway*,
AGL Consulting, Dec 2004

4 *BS5930 Code of Practice for Site Investigation*
British Standards Institute (1999)

5 *The Ecology of Peat Bogs of the Glaciated Northeastern United States, U.S. Fish and Wildlife Service Biological Report 85(7.16) Supt. of Documents, Washington D.C.*
Dammon, A.W.H., and French, T.W. (1987)

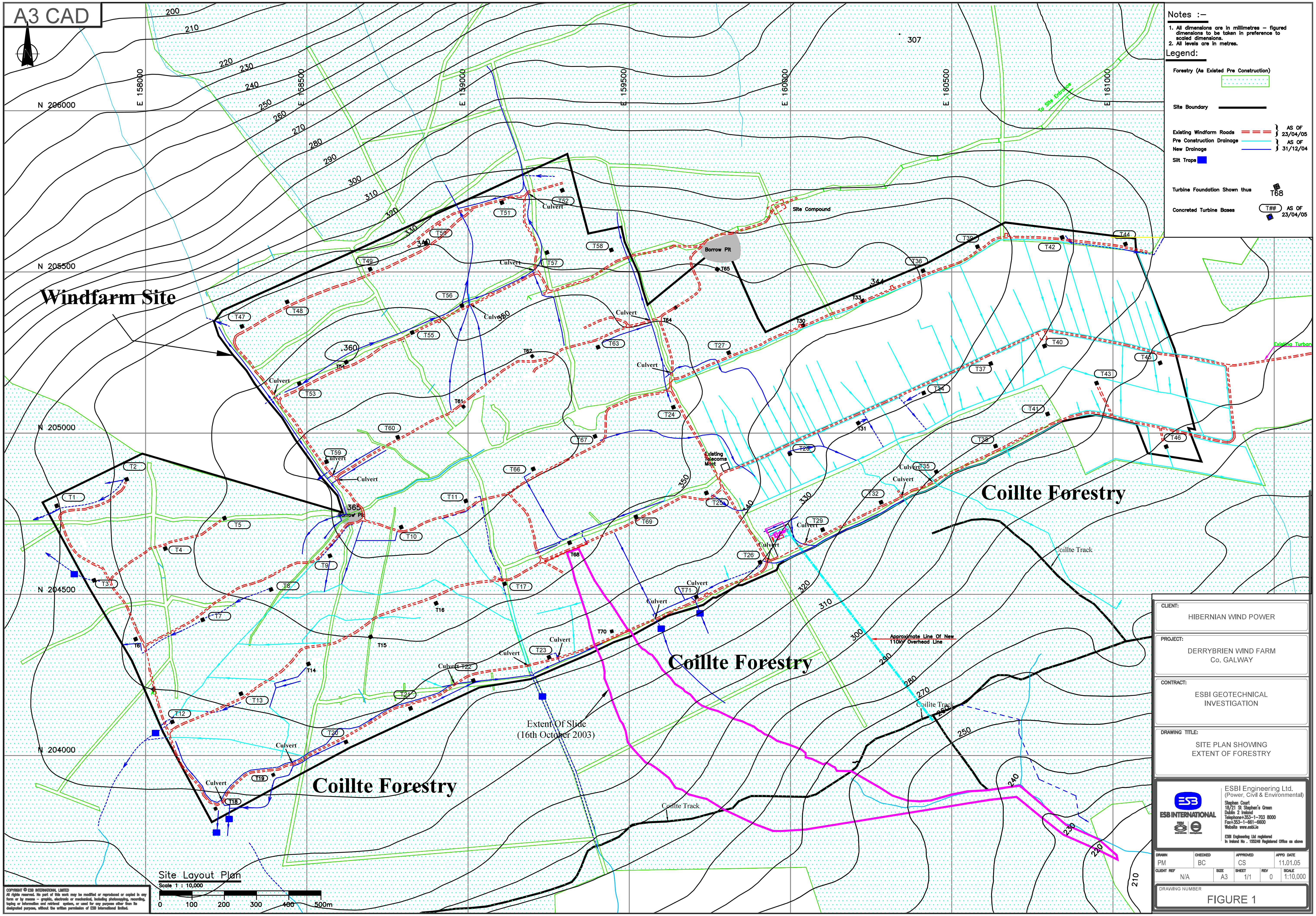
6 *Stability of Natural Slopes in London Clay*
Proc. 4th Int. Conf. on Soil Mechanics and Foundation Engineering, Rotterdam, Vol. 2, Skempton, A.W. and DeLory, F.A. (1957)

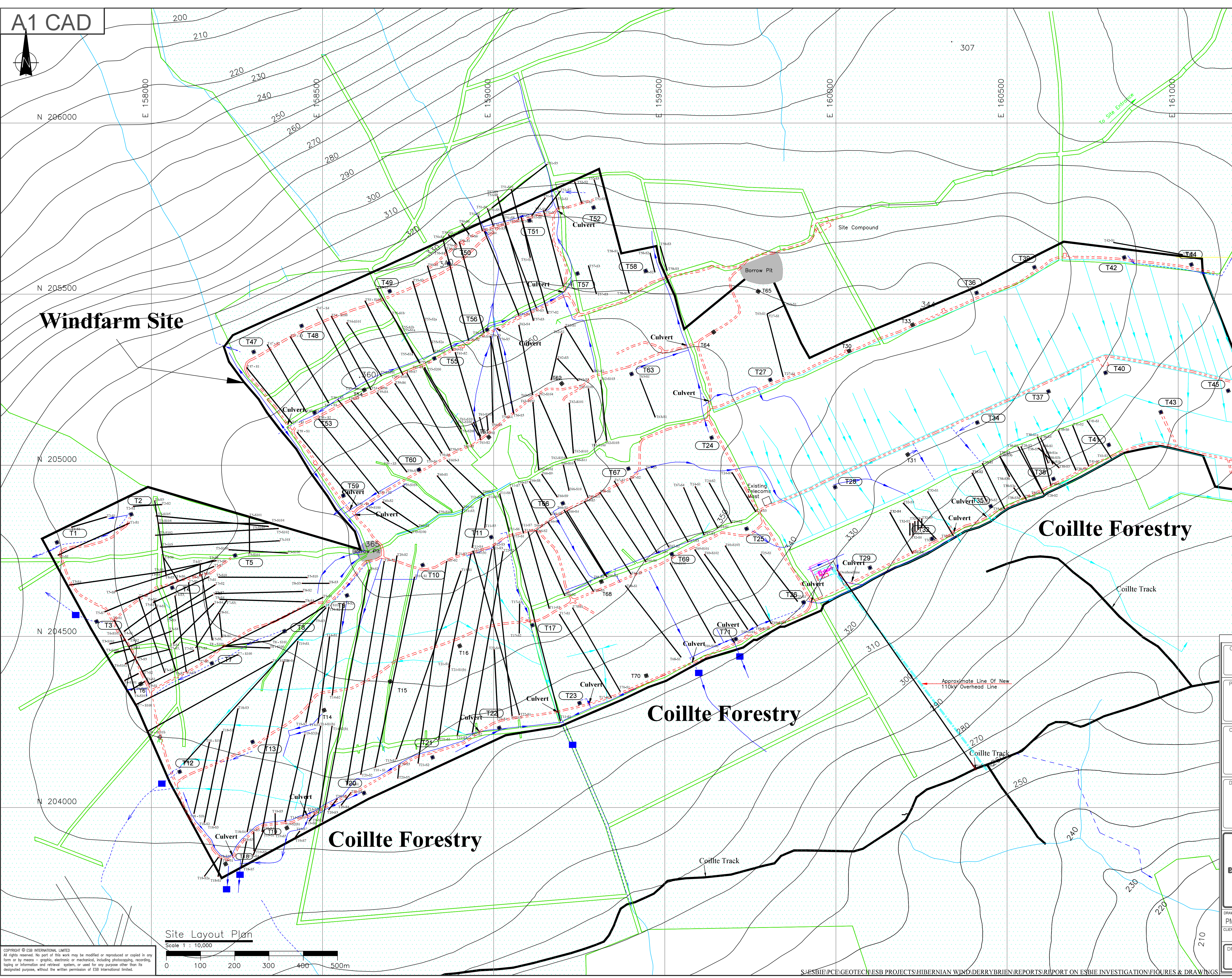
7 *BS6031 Code of Practice for Earthworks*
British Standards Institute

8 *Report on the movement of the floating Road west of T17 on the Derrybrien Windfarm, Co. Galway,*
AGL Consulting, April 2005

FIGURES

Figure 1 Site Plan Showing Extent of Forestry
Figure 2 Sheet 1 of 3 Locations of Slope Angle Measurements
Sheet 2 of 3 Locations of Peat Depth Probes
Sheet 3 of 3 Locations of Gouge Augers and Shear Vane Tests
Figure 3 Peat Depth Variation Across the Site
Figure 4 Shear Strength Variation Across the Site
Figure 5 Restricted Site Areas


A3 CAD
Notes :-
1. All dimensions are in millimetres – figured dimensions to be taken in preference to scaled dimensions.
2. All levels are in metres.
Legend:
Forestry (As Existed Pre Construction)
Site Boundary
Existing Windfarm Roads
Pre Construction Drainage
New Drainage
AS OF 23/04/05
AS OF 31/12/04
Silt Traps
Turbine Foundation Shown thus
T68
Concreted Turbine Bases
T##
AS OF 23/04/05
Windfarm Site
Coillte Forestry
Coillte Forestry
Coillte Forestry
Coillte Track
Coillte Track
Coillte Track
Extent Of Slide
(16th October 2003)
Approximate Line Of New 110kV Overhead Line
Site Compound
Borrow Pit
Existing Telecoms Mast
To Site Entrance
Existing Turbine
Culvert
E 158000
E 158500
E 159000
E 159500
E 160000
E 160500
E 161000
N 206000
N 205500
N 205000
N 204500
N 204000
Site Layout Plan
Scale 1 : 10,000
0
100
200
300
400
500m
CLIENT:
HIBERNIAN WIND POWER
PROJECT:
DERRYBRIEN WIND FARM
Co. GALWAY
CONTRACT:
ESBI GEOTECHNICAL
INVESTIGATION
DRAWING TITLE:
SITE PLAN SHOWING
EXTENT OF FORESTRY
ESB INTERNATIONAL
ESBI Engineering Ltd.
(Power, Civil & Environmental)
DRAWN PM
CHECKED BC
APPROVED CS
APPD DATE 11.01.05
CLIENT REF N/A
SIZE A3
SHEET 1/1
REV 0
SCALE 1:10,000
DRAWING NUMBER
FIGURE 1



Notes :–

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2. All levels are in metres.

Legend:

Forestry (As Existed Pre Construction)

Site Boundary

Existing Windfarm Roads } AS OF 23/04/05

Pre Construction Drainage } AS OF 31/12/04

New Drainage

Silt Traps

Turbine Foundation Shown thus T68

Concreted Turbine Bases T## AS OF 23/04/05

CLIENT: HIBERNIAN WIND POWER

PROJECT: DERRYBRIEN WIND FARM Co. GALWAY

CONTRACT: ESBI GEOTECHNICAL INVESTIGATION

DRAWING TITLE: LOCATION OF SLOPE ANGLE MEASUREMENTS

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DRAWN	CHECKED	APPROVED	APPD DATE
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CLIENT REF	SIZE	SHEET	REV	SCALE
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FIGURE 2 (Sheet 1 of 4)

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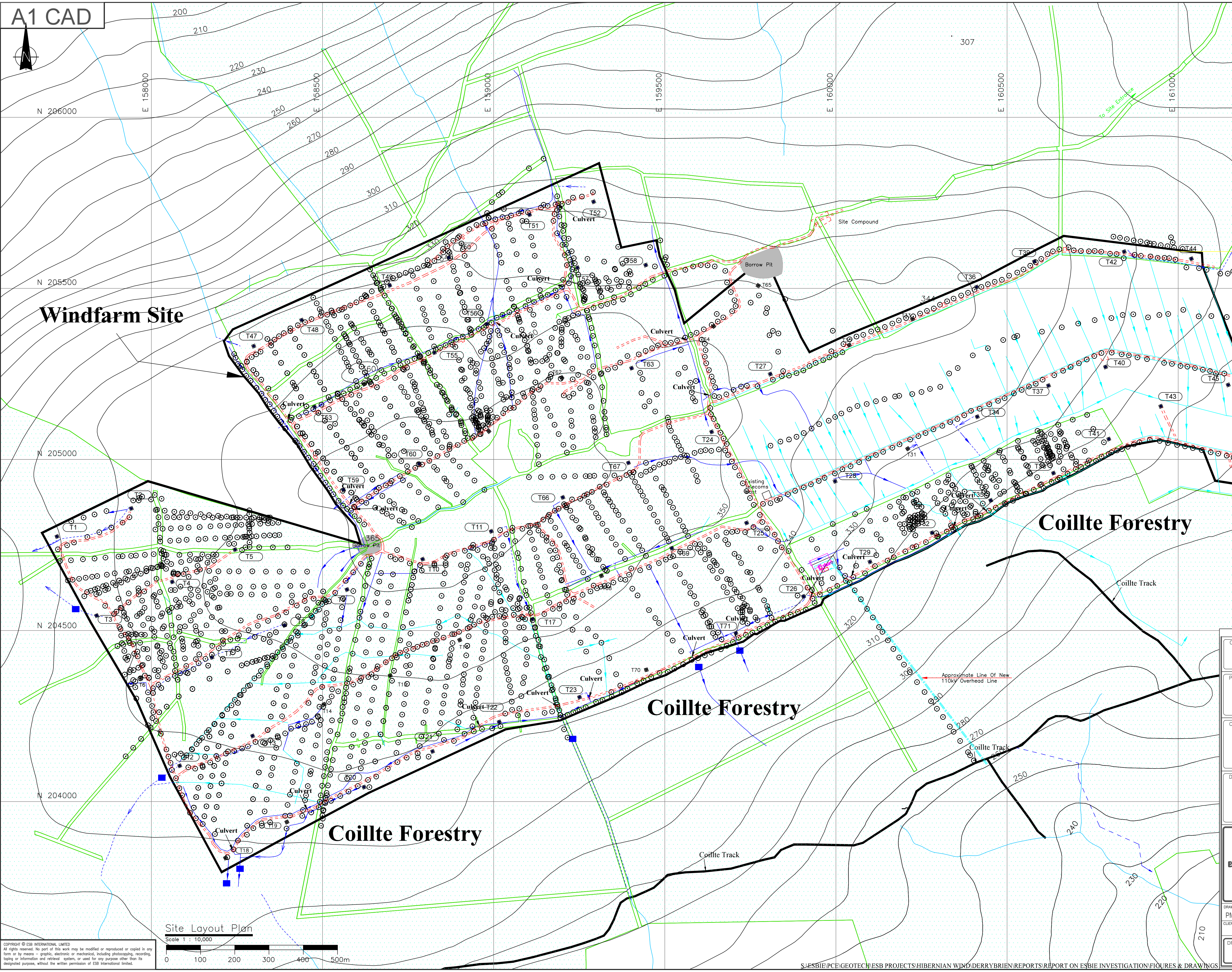

Notes :–

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2. All levels are in metres.

Legend:

Forestry (As Existed Pre Construction)	
Site Boundary	
Existing Windfarm Roads	AS OF 23/04/05
Pre Construction Drainage	AS OF 31/12/04
New Drainage	
Silt Traps	
Turbine Foundation Shown thus	T68
Concreted Turbine Bases	T## AS OF 23/04/05
Peat Depth Probe Location	

CLIENT: HIBERNIAN WIND POWER

PROJECT: DERRYBRIEN WIND FARM Co. GALWAY

CONTRACT: ESBI GEOTECHNICAL INVESTIGATION

DRAWING TITLE: LOCATION OF PEAT DEPTH PROBES

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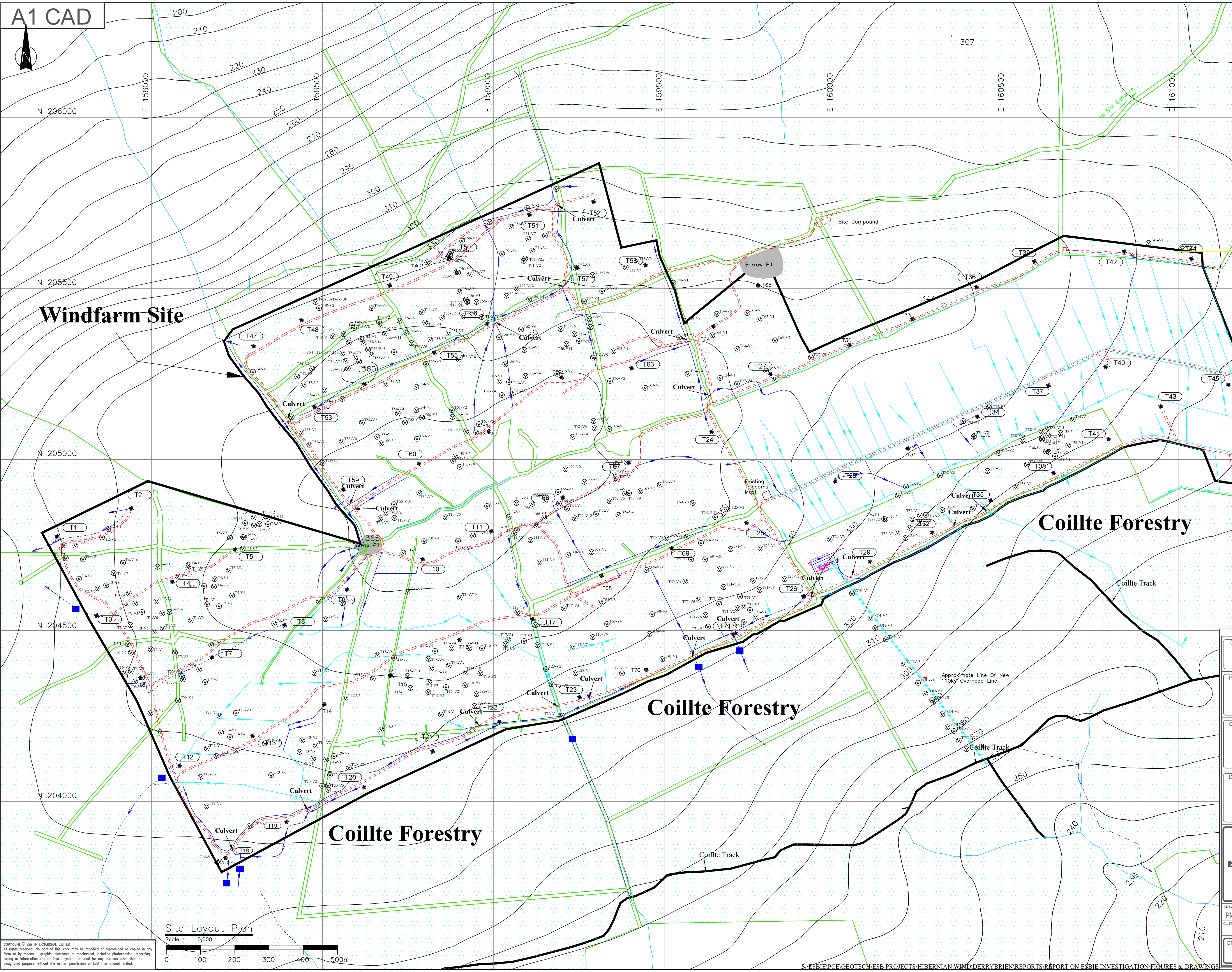

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2. All levels are in metres.

Legend:

Forestry (As Existed Pre Construction)
Site Boundary
Existing Windfarm Roads – AS OF 23/04/05
Pre Construction Drainage
New Drainage – AS OF 31/12/04
Silt Traps
Turbine Foundation Shown thus T68
Concreted Turbine Bases T## – AS OF 23/04/05
Shear Vane Test Location

CLIENT:	HIBERNIAN WIND POWER
PROJECT:	DERRYBRIEN WIND FARM Co. GALWAY
CONTRACT:	ESBI GEOTECHNICAL INVESTIGATION
DRAWING TITLE:	LOCATION OF SHEAR VANE TESTS

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FIGURE 2 (Sheet 3 of 4)

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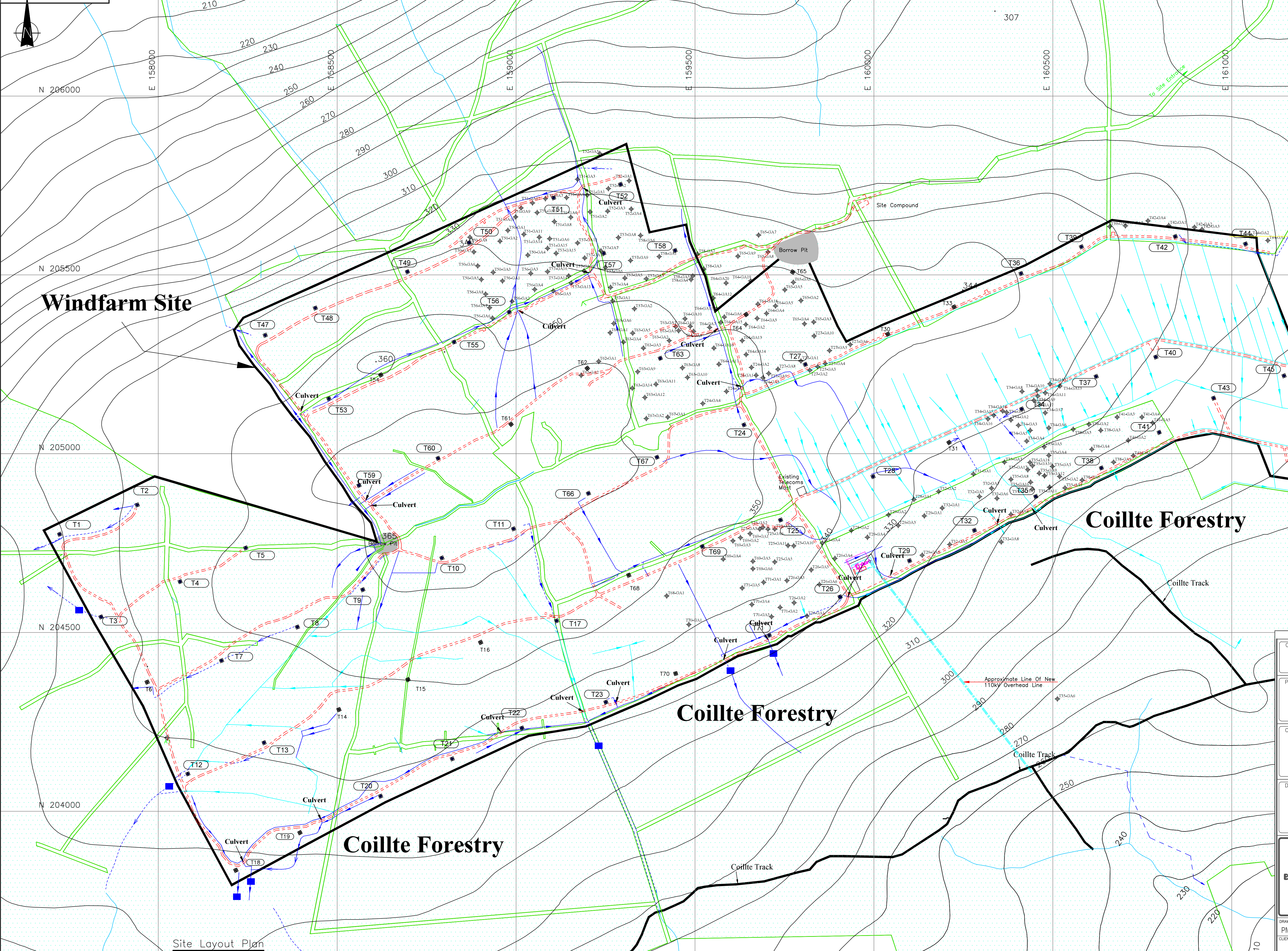
A1 CAD



Notes :-

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2. All levels are in metres.

Legend:

Forestry (As Existed Pre Construction)

Site Boundary

Existing Windfarm Roads } AS OF 23/04/05

Pre Construction Drainage } AS OF 31/12/04

New Drainage

Silt Traps

Turbine Foundation Shown thus T68

Concreted Turbine Bases T## AS OF 23/04/05

Gouge Auger Test Location T44-GA2

CLIENT: HIBERNIAN WIND POWER

PROJECT: DERRYBRIEN WIND FARM Co. GALWAY

CONTRACT: ESBI GEOTECHNICAL INVESTIGATION

DRAWING TITLE: LOCATION OF GOUGE AUGER TESTS

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DRAWN	CHECKED	APPROVED	APPD DATE
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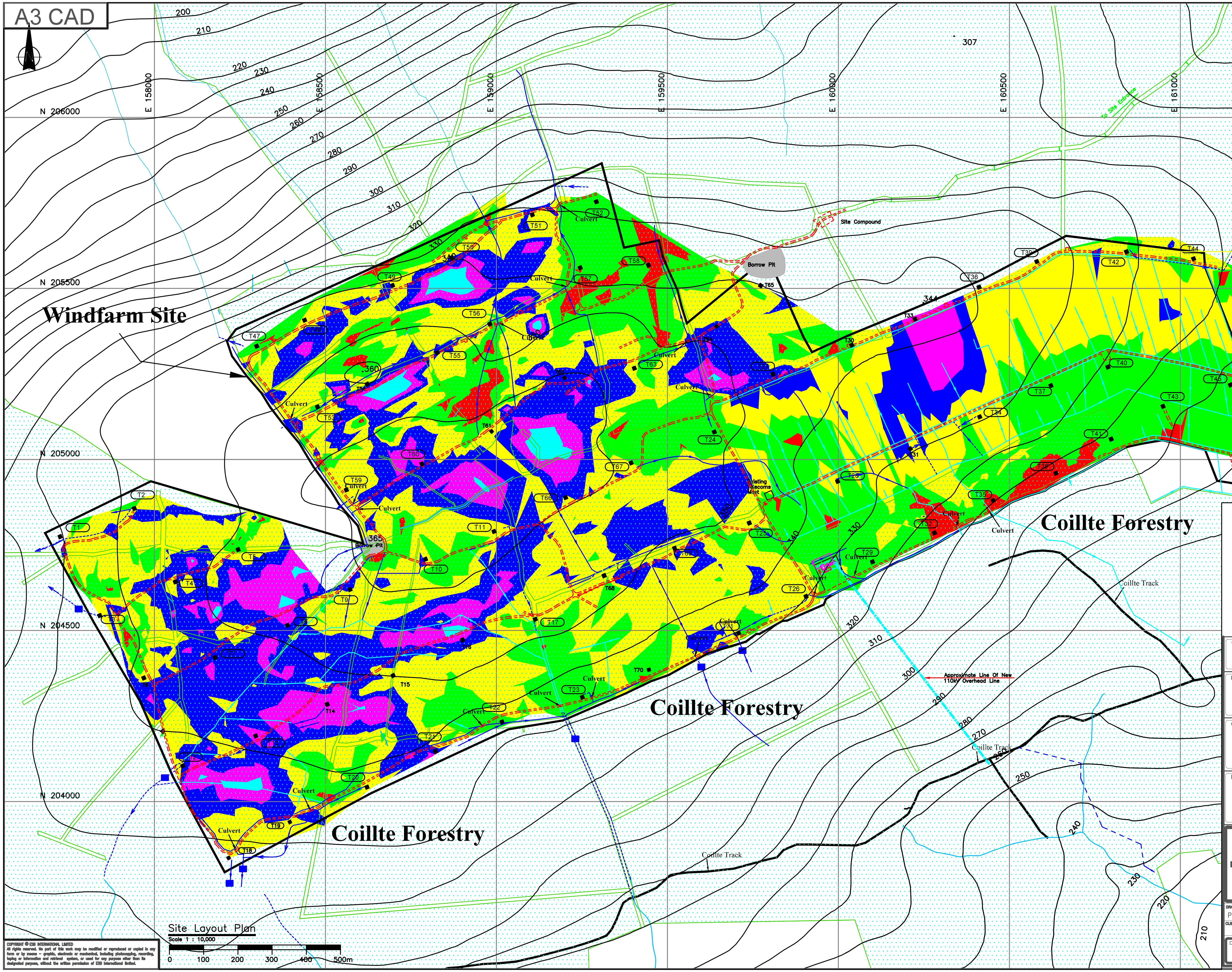
FIGURE 2 (Sheet 4 of 4)



Notes :-
1. All dimensions are in millimetres – figured dimensions to be taken in preference to scaled dimensions.
2. All levels are in metres.

Legend:
Forestry (As Existed Pre Construction)
Site Boundary
Existing Windfarm Roads — AS OF 23/04/05
Pre Construction Drainage
New Drainage — AS OF 31/12/04
Silt Traps
Turbine Foundation Shown thus T68
Concreted Turbine Bases T## AS OF 23/04/05

Peat Depth 0-1m
Peat Depth 1-2m
Peat Depth 2-3m
Peat Depth 3-4m
Peat Depth 4-5m
Peat Depth 5-6m

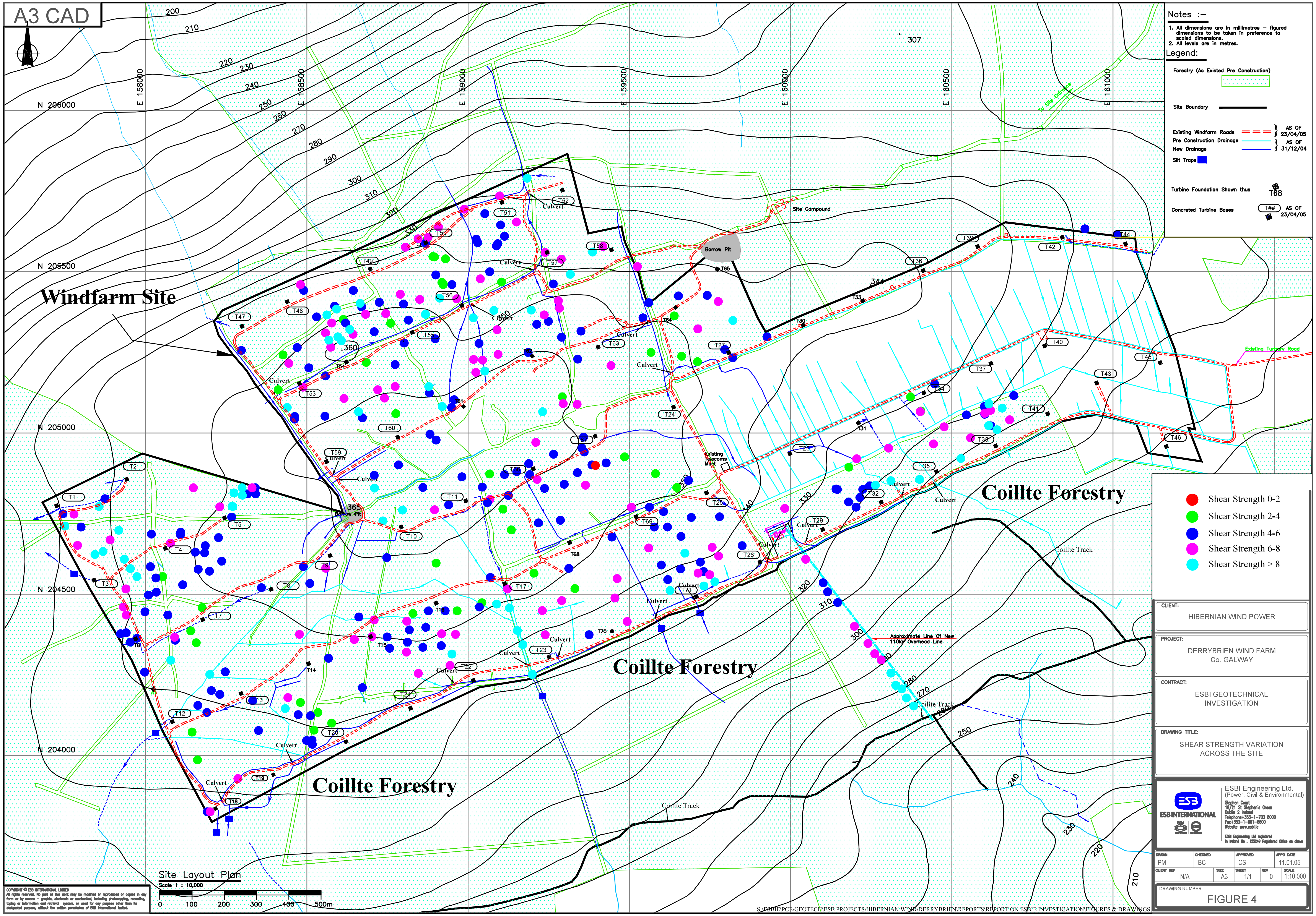
CLIENT: HIBERNIAN WIND POWER
PROJECT: DERRYBRIEN WIND FARM Co. GALWAY
CONTRACT: ESBI GEOTECHNICAL INVESTIGATION
DRAWING TITLE: PEAT DEPTH VARIATION

ESB INTERNATIONAL
ESBI Engineering Ltd.
(Power, Civil & Environmental)
Stephen Court
18/21 St Stephen's Green
Dublin 2 Ireland
Telephone+353-1-703 8000
Fax+353-1-661-6600
Website www.esbi.ie

DRAWN	CHECKED	APPROVED	APPD DATE
PM	BC	CS	11.01.05

CLIENT REF	SIZE	SHEET	REV	SCALE
N/A	A3	1/1	0	1:10,000

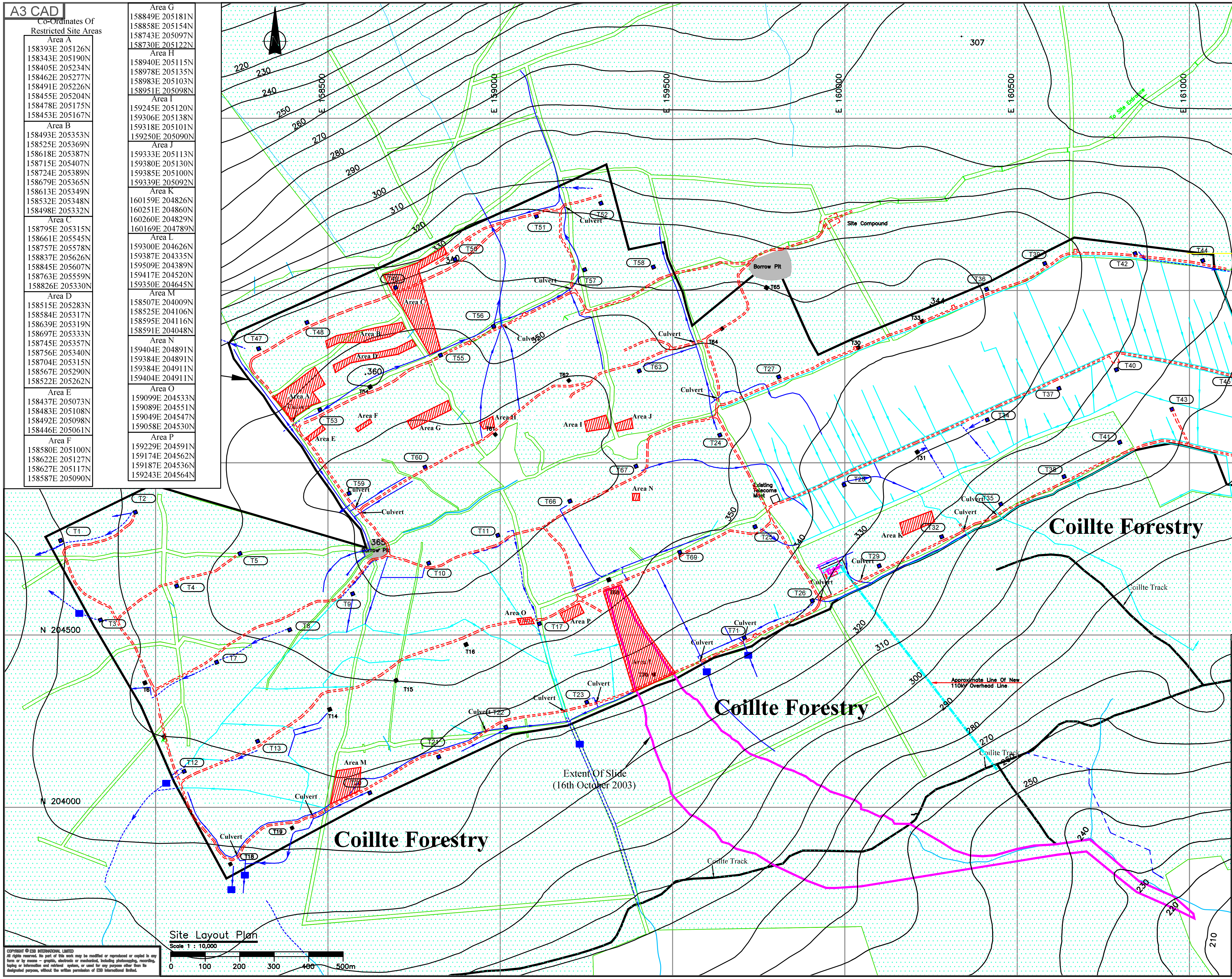
DRAWING NUMBER
FIGURE 3


A3 CAD
Notes :–
1. All dimensions are in millimetres – figured dimensions to be taken in preference to scaled dimensions.
2. All levels are in metres.
Legend:
Forestry (As Existed Pre Construction)
Site Boundary
Existing Windfarm Roads
Pre Construction Drainage
New Drainage
Silt Traps
AS OF 23/04/05
AS OF 31/12/04
Turbine Foundation Shown thus T68
Concreted Turbine Bases T## AS OF 23/04/05
Windfarm Site
Coillte Forestry
Coillte Forestry
Coillte Forestry
Shear Strength 0-2
Shear Strength 2-4
Shear Strength 4-6
Shear Strength 6-8
Shear Strength > 8
Borrow Pit
Site Compound
Existing Telecoms Mast
Approximate Line Of New 110kV Overhead Line
Existing Turbary Road
Coillte Track
Culvert
Site Layout Plan
Scale 1 : 10,000
0 100 200 300 400 500m
CLIENT:
HIBERNIAN WIND POWER
PROJECT:
DERRYBRIEN WIND FARM
Co. GALWAY
CONTRACT:
ESBI GEOTECHNICAL INVESTIGATION
DRAWING TITLE:
SHEAR STRENGTH VARIATION ACROSS THE SITE
ESB INTERNATIONAL
ESBI Engineering Ltd.
(Power, Civil & Environmental)
DRAWN PM
CHECKED BC
APPROVED CS
APPD DATE 11.01.05
CLIENT REF N/A
SIZE A3
SHEET 1/1
REV 0
SCALE 1:10,000
DRAWING NUMBER
FIGURE 4
S:\ESBIE\PCE\GEOTECH\ESB PROJECTS\HIBERNIAN WIND\DERRYBRIEN\REPORTS\REPORT ON ESBIE INVESTIGATION\FIGURES & DRAWINGS

A3 CAD

Co-Ordinates Of Restricted Site Areas

Area A	158393E 205126N
	158343E 205190N
	158405E 205234N
	158462E 205277N
	158491E 205226N
	158455E 205204N
	158478E 205175N
	158453E 205167N
Area B	158493E 205353N
	158525E 205369N
	158618E 205387N
	158715E 205407N
	158724E 205389N
	158679E 205365N
	158613E 205349N
	158532E 205348N
	158498E 205332N
Area C	158795E 205315N
	158661E 205545N
	158757E 205578N
	158837E 205626N
	158845E 205607N
	158763E 205559N
	158826E 205330N
Area D	158515E 205283N
	158584E 205317N
	158639E 205319N
	158697E 205333N
	158745E 205357N
	158756E 205340N
	158704E 205315N
	158567E 205290N
	158522E 205262N
Area E	158437E 205073N
	158483E 205108N
	158492E 205098N
	158446E 205061N
Area F	158580E 205100N
	158622E 205127N
	158627E 205117N
	158587E 205090N
Area G	158849E 205181N
	158858E 205154N
	158743E 205097N
	158730E 205122N
Area H	158940E 205115N
	158978E 205135N
	158983E 205103N
	158951E 205098N
Area I	159245E 205120N
	159306E 205138N
	159318E 205101N
	159250E 205090N
Area J	159333E 205113N
	159380E 205130N
	159385E 205100N
	159339E 205092N
Area K	160159E 204826N
	160251E 204860N
	160260E 204829N
	160169E 204789N
Area L	159300E 204626N
	159387E 204335N
	159509E 204389N
	159417E 204520N
	159350E 204645N
Area M	158507E 204009N
	158525E 204106N
	158595E 204116N
	158591E 204048N
Area N	159404E 204891N
	159384E 204891N
	159384E 204911N
	159404E 204911N
Area O	159099E 204533N
	159089E 204551N
	159049E 204547N
	159058E 204530N
Area P	159229E 204591N
	159174E 204562N
	159187E 204536N
	159243E 204564N



Notes :–
1. All dimensions are in millimetres – figured dimensions to be taken in preference to scaled dimensions.
2. All levels are in metres.

Legend:
Forestry (As Existed Pre Construction)
Site Boundary
Existing Windfarm Roads — AS OF 23/04/05
Pre Construction Drainage
New Drainage — AS OF 31/12/04
Silt Traps
Turbine Foundation Shown thus T68
Concreted Turbine Bases — 23/04/05
Restricted Area For Construction Plant — AS OF

CLIENT: HIBERNIAN WIND POWER

PROJECT: DERRYBRIEN WIND FARM Co. GALWAY

CONTRACT: ESBI GEOTECHNICAL INVESTIGATION

DRAWING TITLE: SITE PLAN SHOWING RESTRICTED SITE AREAS

ESB INTERNATIONAL

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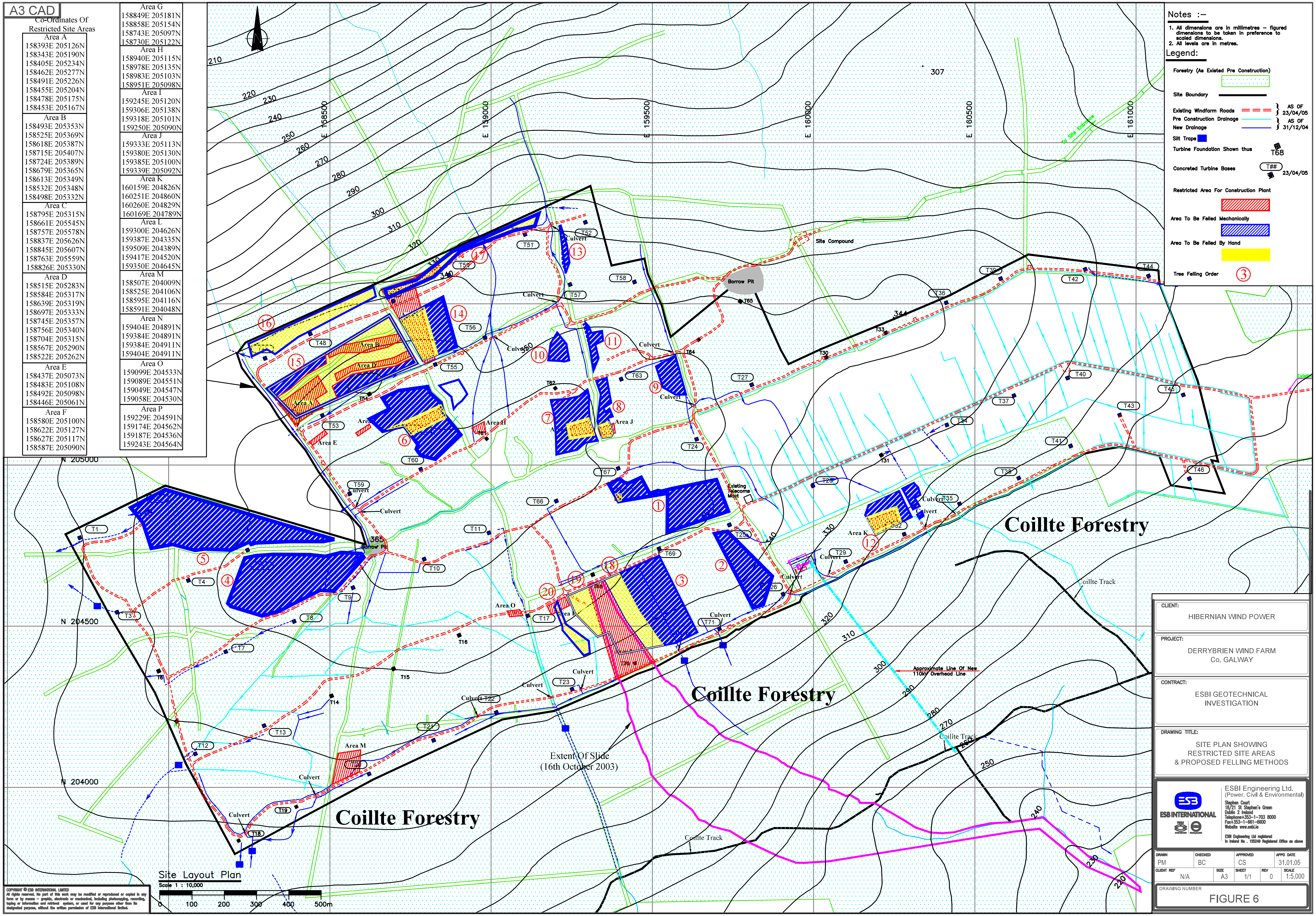
Telephone+353-1-703 8000
Fax+353-1-661-6600
Website www.esbi.ie
ESB Engineering Ltd registered in Ireland No. 135249 Registered Office as above

DRAWN	CHECKED	APPROVED	APPD DATE
PM	BC	CS	31.01.05

CLIENT REF	SIZE	SHEET	REV	SCALE
N/A	A3	1/1	0	1:10,000

DRAWING NUMBER: FIGURE 5



A3 CAD

Co-Ordinates Of Restricted Site Areas

Area A
158393E 205126N
158343E 205190N
158405E 205234N
158462E 205277N
158491E 205226N
158455E 205204N
158478E 205175N
158453E 205167N
Area B
158493E 205353N
158525E 205369N
158618E 205387N
158715E 205407N
158724E 205389N
158679E 205365N
158613E 205349N
158532E 205348N
158498E 205332N
Area C
158795E 205315N
158661E 205545N
158757E 205578N
158837E 205626N
158845E 205607N
158763E 205559N
158826E 205330N
Area D
158515E 205283N
158584E 205317N
158639E 205319N
158697E 205333N
158745E 205357N
158756E 205340N
158704E 205315N
158567E 205290N
158522E 205262N
Area E
158437E 205073N
158483E 205108N
158492E 205098N
158446E 205061N
Area F
158580E 205100N
158622E 205127N
158627E 205117N
158587E 205090N

Area G
158849E 205181N
158858E 205154N
158743E 205097N
158730E 205122N
Area H
158940E 205115N
158978E 205135N
158983E 205103N
158951E 205098N
Area I
159245E 205120N
159306E 205138N
159318E 205101N
159250E 205090N
Area J
159333E 205113N
159380E 205130N
159385E 205100N
159339E 205092N
Area K
160159E 204826N
160251E 204860N
160260E 204829N
160169E 204789N
Area L
159300E 204626N
159387E 204335N
159509E 204389N
159417E 204520N
159350E 204645N
Area M
158507E 204009N
158525E 204106N
158595E 204116N
158591E 204048N
Area N
159404E 204891N
159384E 204891N
159384E 204911N
159404E 204911N
Area O
159099E 204533N
159089E 204551N
159049E 204547N
159058E 204530N
Area P
159229E 204591N
159174E 204562N
159187E 204536N
159243E 204564N

CLIENT: HIBERNIAN WIND POWER

PROJECT: DERRYBRIEN WIND FARM
Co. GALWAY

CONTRACT: ESBI GEOTECHNICAL INVESTIGATION

DRAWING TITLE: SITE PLAN SHOWING RESTRICTED SITE AREAS & PROPOSED FELLING METHODS

ESB INTERNATIONAL
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(Power, Civil & Environmental)
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Website www.esbi.ie
ESB Engineering Ltd registered in Ireland No. 135249 Registered Office as above

DRAWN	CHECKED	APPROVED	APPD DATE
PM	BC	CS	31.01.05

CLIENT REF	SIZE	SHEET	REV	SCALE
N/A	A3	1/1	0	1:5,000

DRAWING NUMBER
FIGURE 6

APPENDIX XIV

FACTUAL REPORT OF GEOTECHNICAL INVESTIGATIONS BY ESB INTERNATIONAL – ENGINEERING AND FACILITIES MANAGEMENT (ESBIE)

VOL. 2 (APPENDICES)

Hibernian Wind Power

Derrybrien Wind Farm, Co Galway

Report on ESBIE Geotechnical Testing Volume 2 of 2

Report Number: 78015-C11-R1 REV 1

ESBI Engineering and Facilities Management
Stephen Court 18/21 St Stephen's Green Dublin 2 Ireland
Telephone+353-1-703 8000 Fax+353-1-661 6600
www.esbi.ie

25 January 2005

ESB INTERNATIONAL

ESB INTERNATIONAL

File Reference: *PO378015A-F1*

Client: **Hibernian Wind Power**

Project Title: Derrybrien Wind Farm, Co. Galway

Report Title: Report on ESBIE Geotechnical Testing

Report No.: **P78015-C11-R1 REV1**

Rev. No.:

Volume 2 of 2

PRODUCED: Bernard Casey / Samir Hebib Bernd Casey	DATE: 25th January 2005
CHECKED: Bernard Casey /Con Sheahan C Sheahan	DATE: 25th January 2005
APPROVED: Con Sheahan TITLE: Senior Project Manager C Sheahan	DATE: 25th January 2005

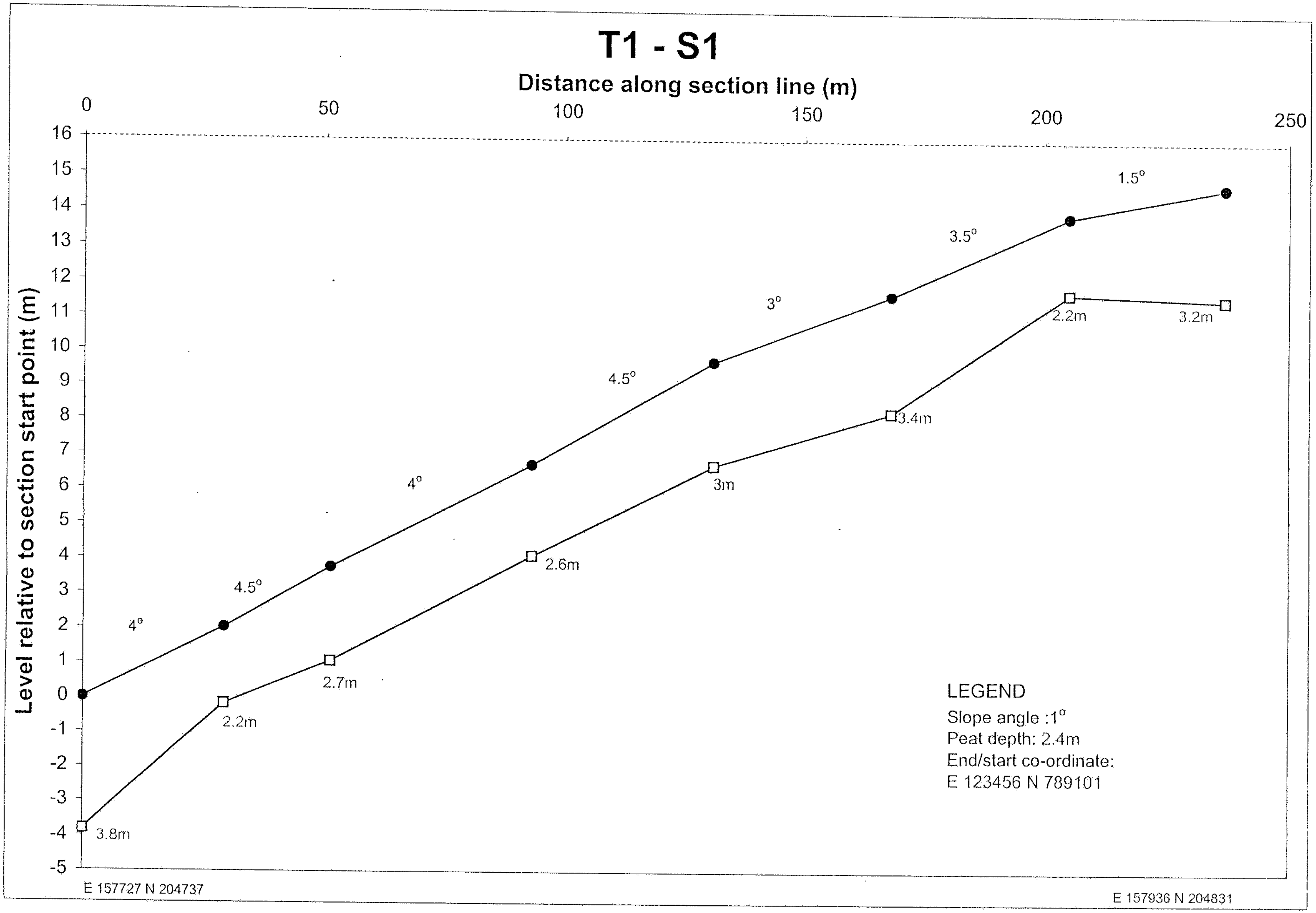
Latest Revision Summary:
Further site investigation data acquired in the period February-March 2005 now included in updated report

Contents

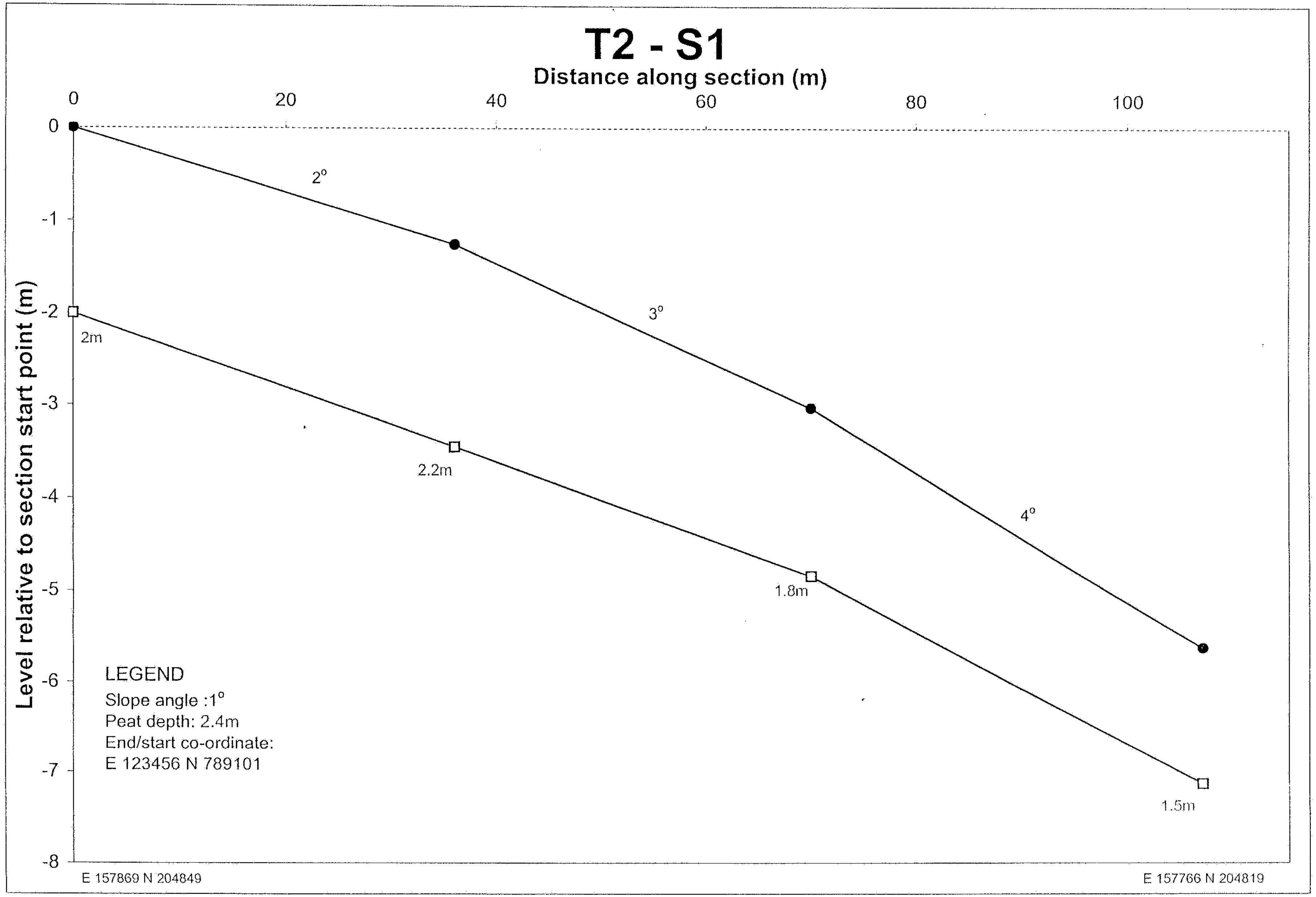
Volume 2

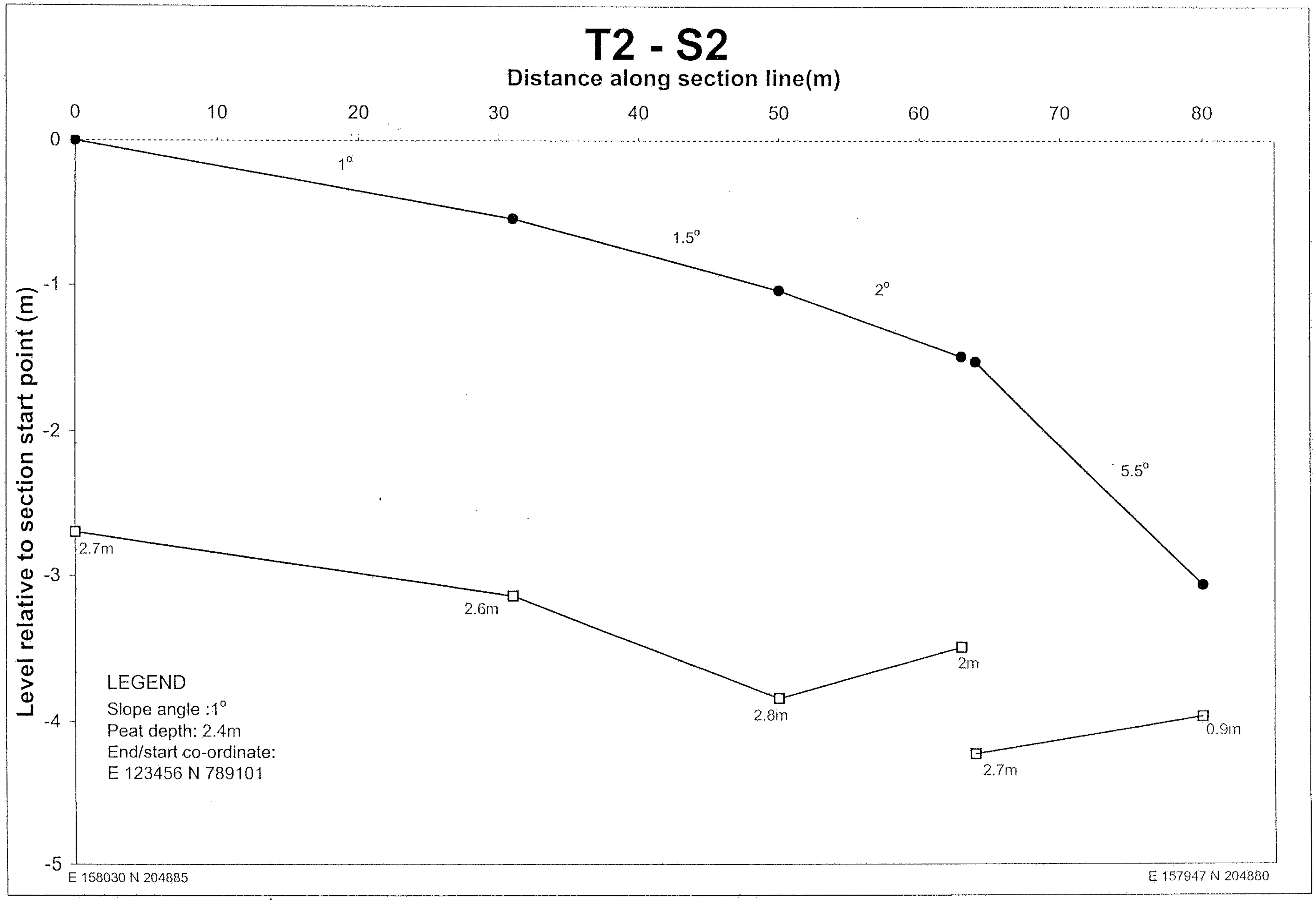
Appendices

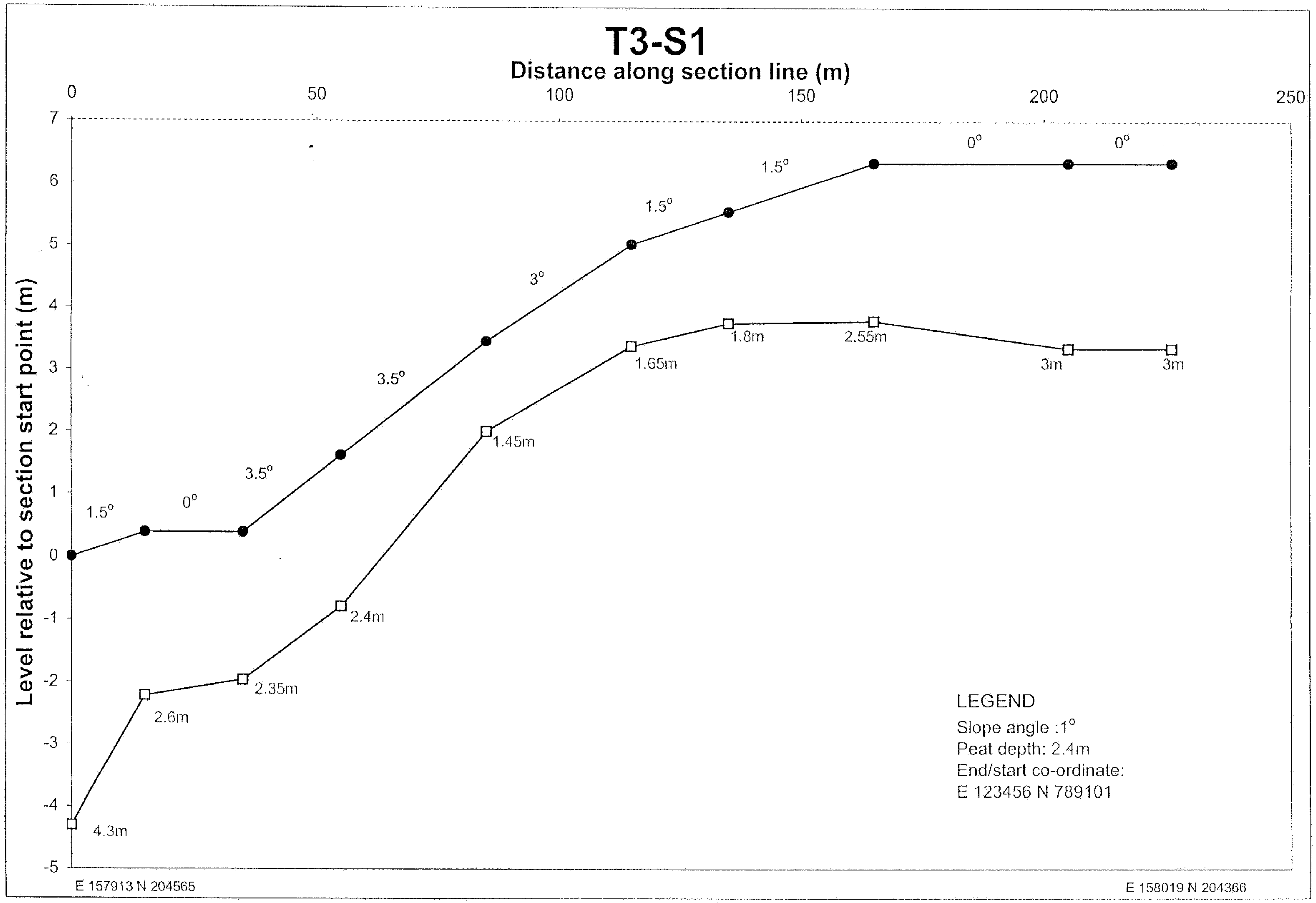
Appendix A Slope angle measurements results
Appendix B Shear Vane test results
Appendix C Gouge Auger results
Appendix D Piezometer Data

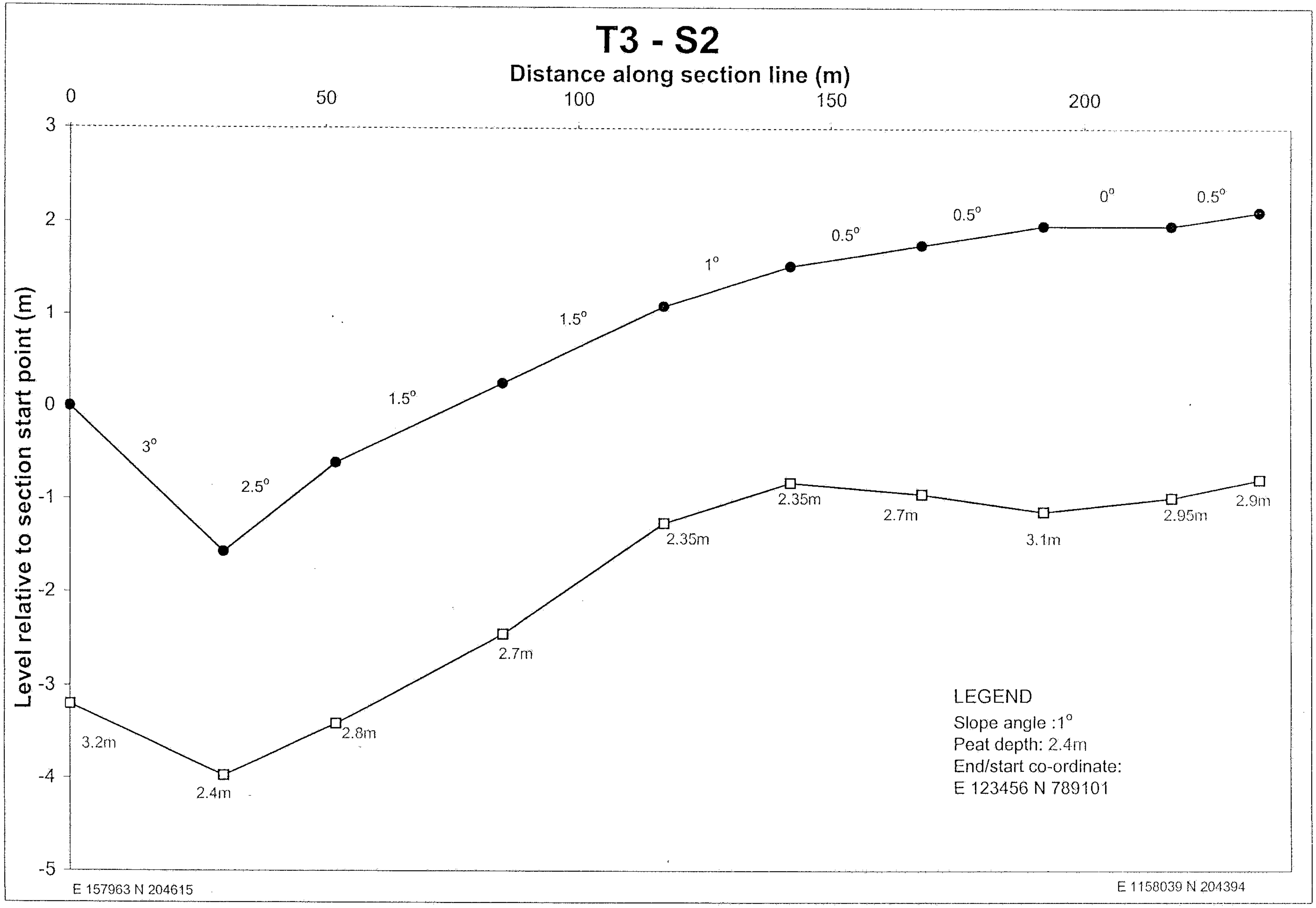


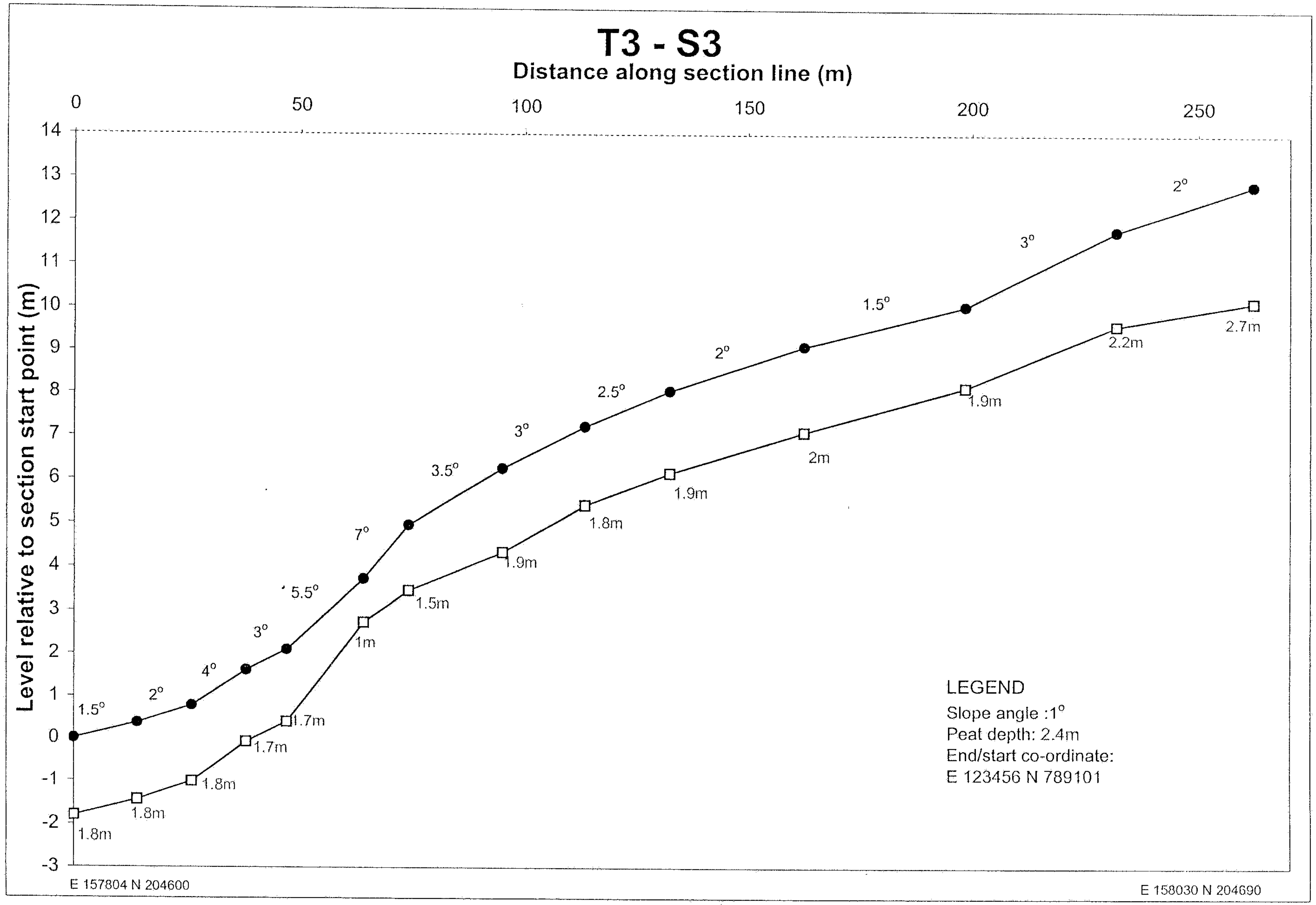
T1 - S1
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
4°
4.5°
4°
4.5°
3°
3.5°
1.5°
3.8m
2.2m
2.7m
2.6m
3m
3.4m
2.2m
3.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157727 N 204737
E 157936 N 204831

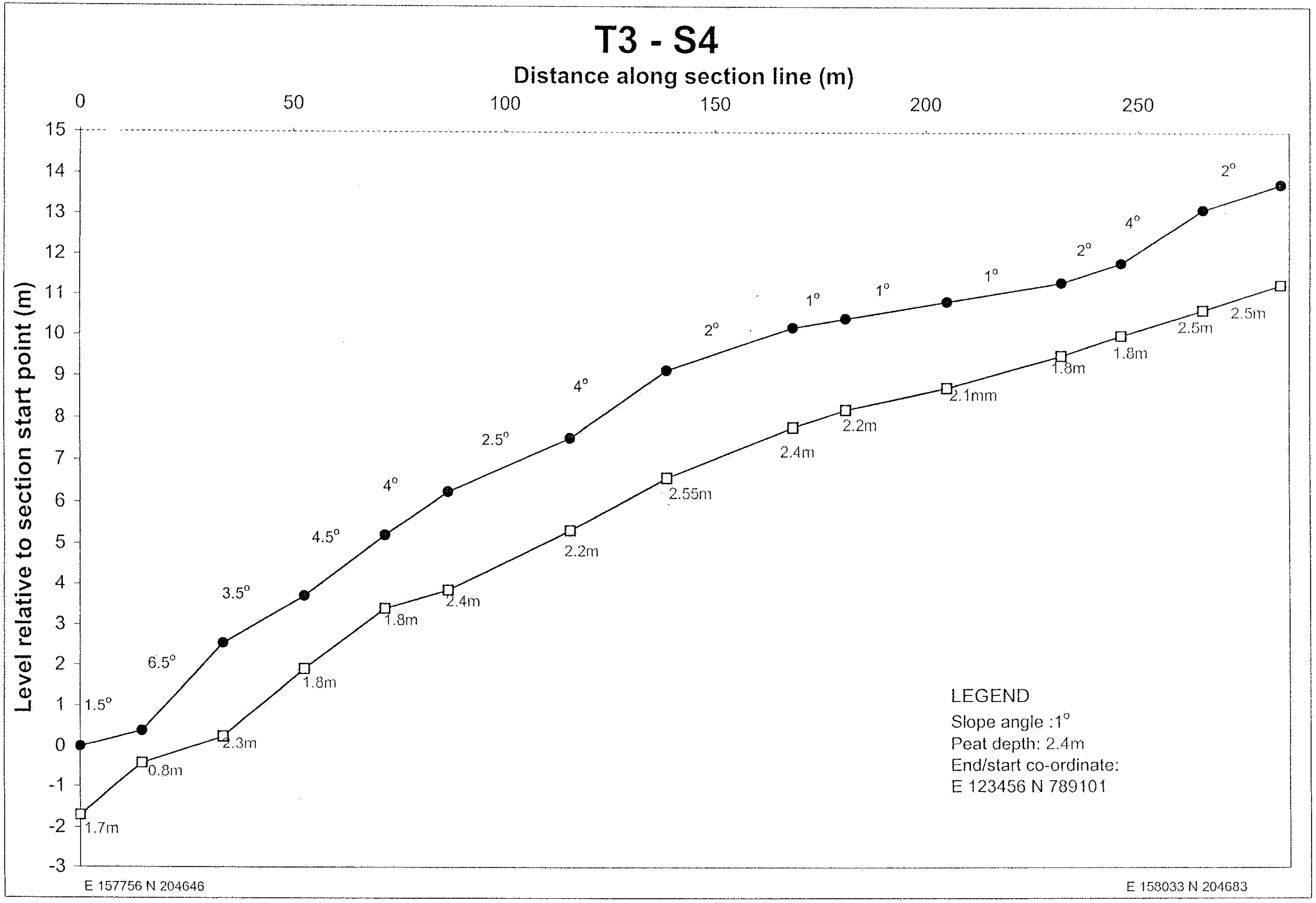

T2 - S1
Distance along section (m)
0
20
40
60
80
100
0
-1
-2
-3
-4
-5
-6
-7
-8
Level relative to section start point (m)
2°
3°
4°
2m
2.2m
1.8m
1.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157869 N 204849
E 157766 N 204819


T2 - S2
Distance along section line(m)
0
10
20
30
40
50
60
70
80
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
1°
1.5°
2°
5.5°
2.7m
2.6m
2.8m
2m
2.7m
0.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158030 N 204885
E 157947 N 204880

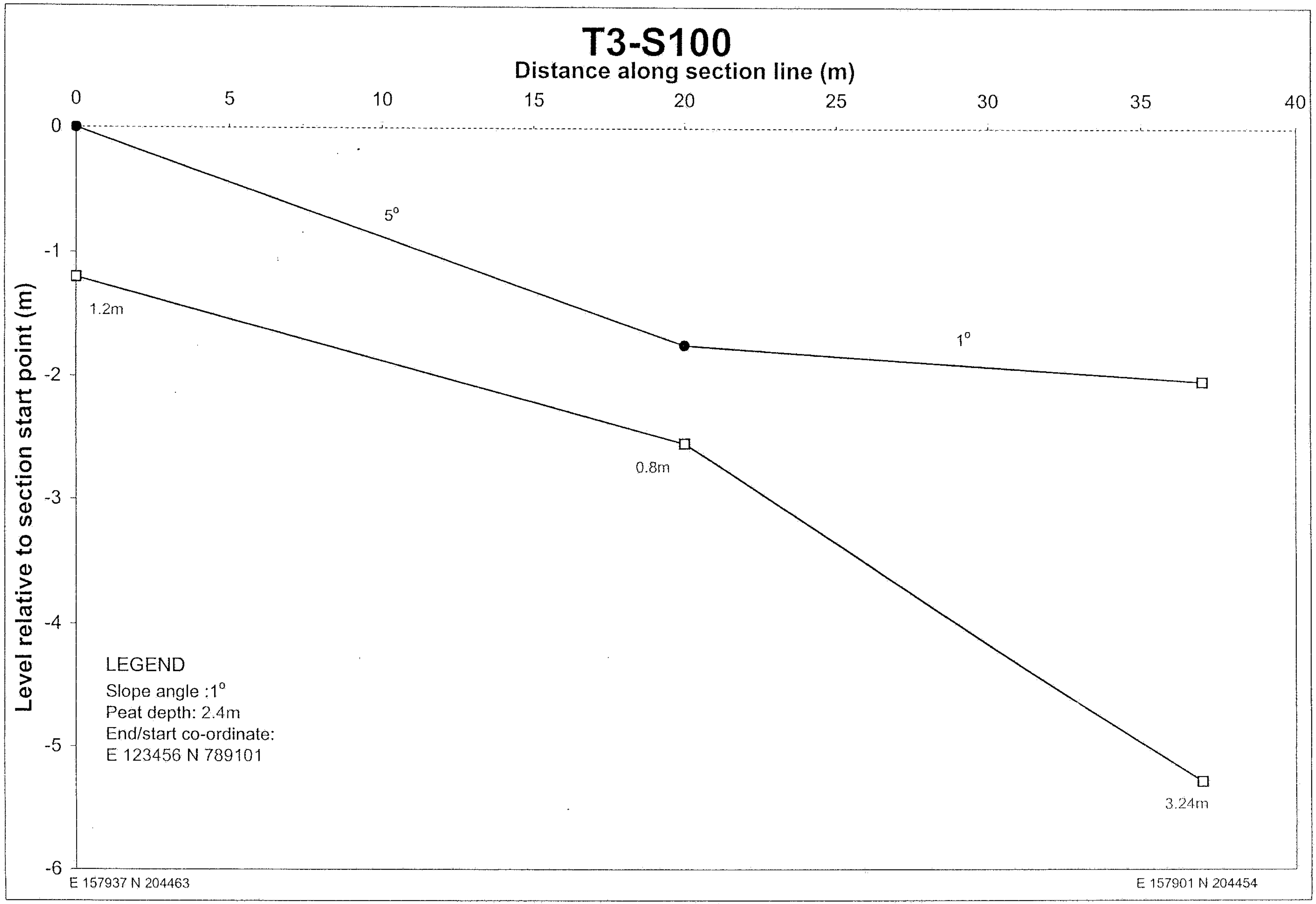

T3-S1
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1.5°
0°
3.5°
3.5°
3°
1.5°
1.5°
0°
0°
4.3m
2.6m
2.35m
2.4m
1.45m
1.65m
1.8m
2.55m
3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157913 N 204565
E 158019 N 204366

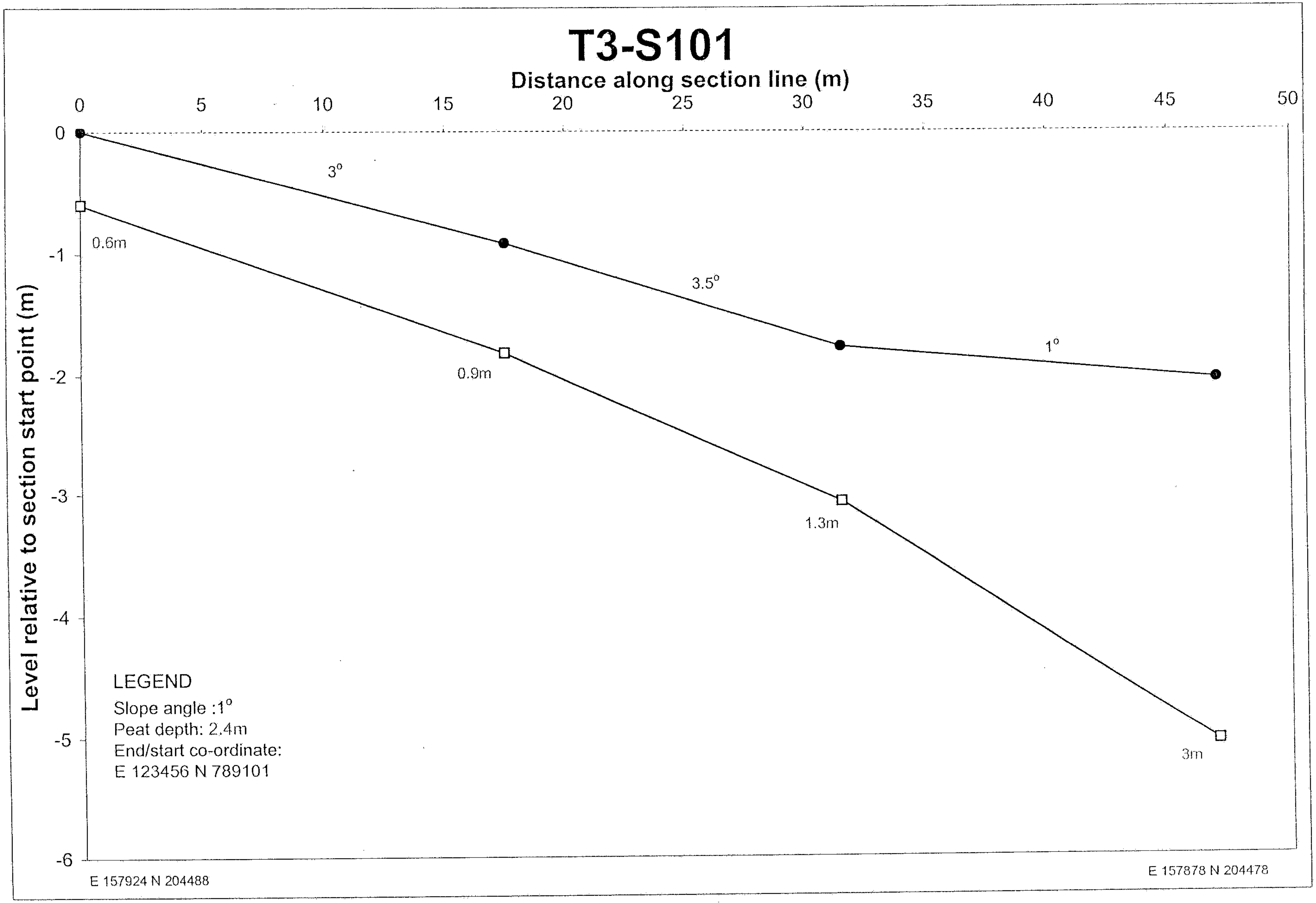

T3 - S2
Distance along section line (m)
0
50
100
150
200
3
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
3°
2.5°
1.5°
1.5°
1°
0.5°
0.5°
0°
0.5°
3.2m
2.4m
2.8m
2.7m
2.35m
2.35m
2.7m
3.1m
2.95m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157963 N 204615
E 1158039 N 204394

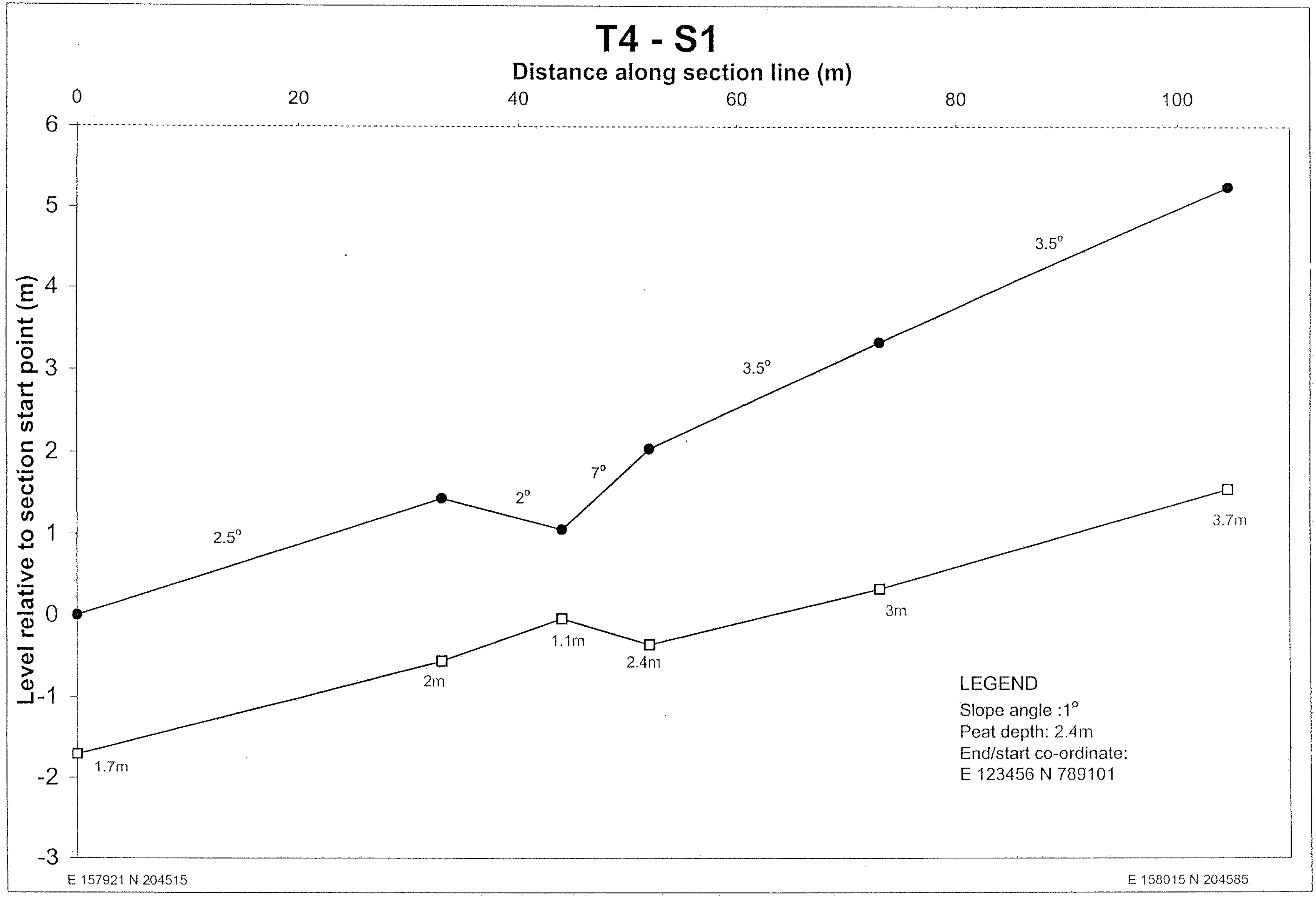

T3 - S3
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
1.5°
2°
4°
3°
5.5°
7°
3.5°
3°
2.5°
2°
1.5°
3°
2°
1.8m
1.8m
1.8m
1.7m
1.7m
1m
1.5m
1.9m
1.8m
1.9m
2m
1.9m
2.2m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157804 N 204600
E 158030 N 204690

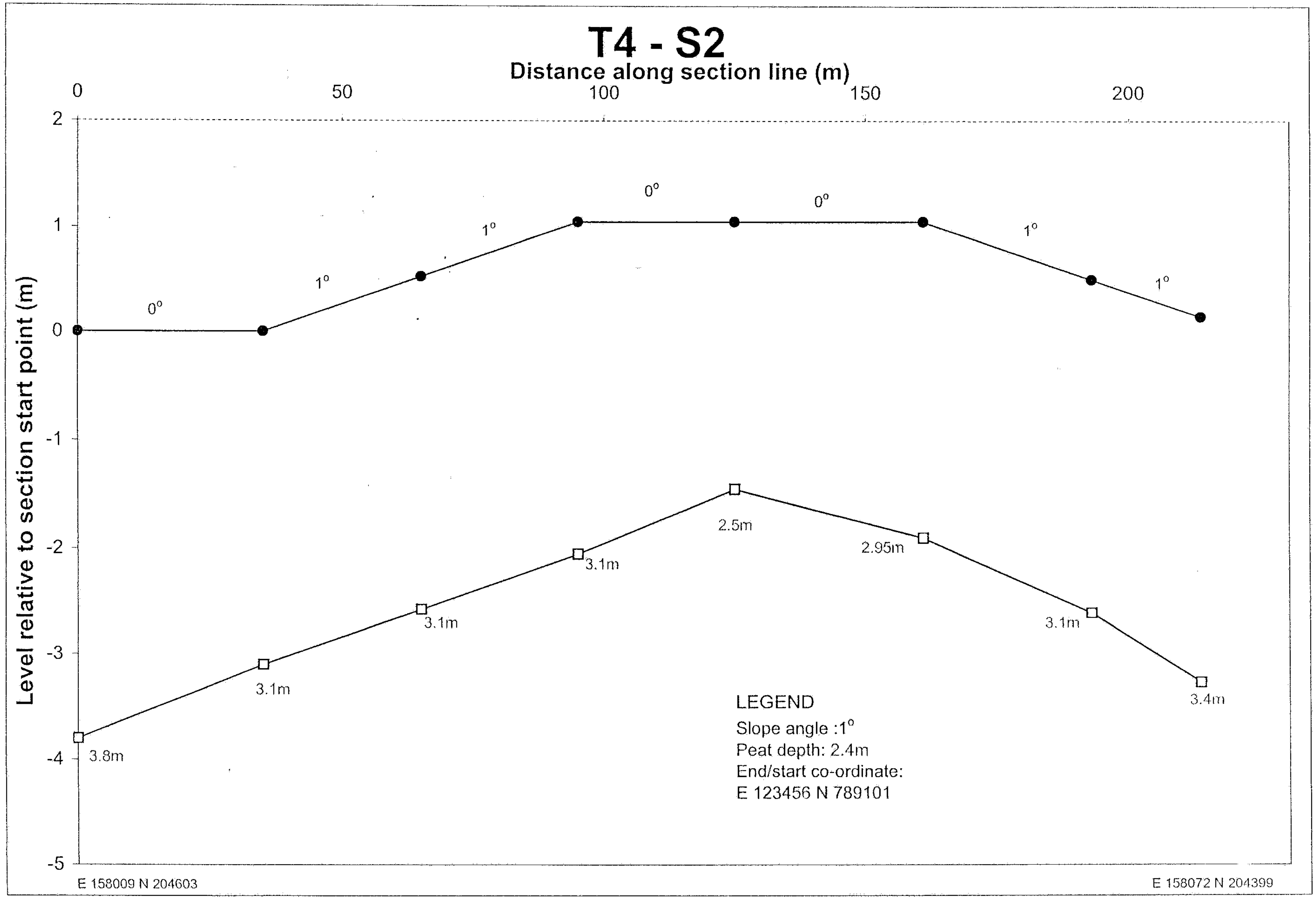


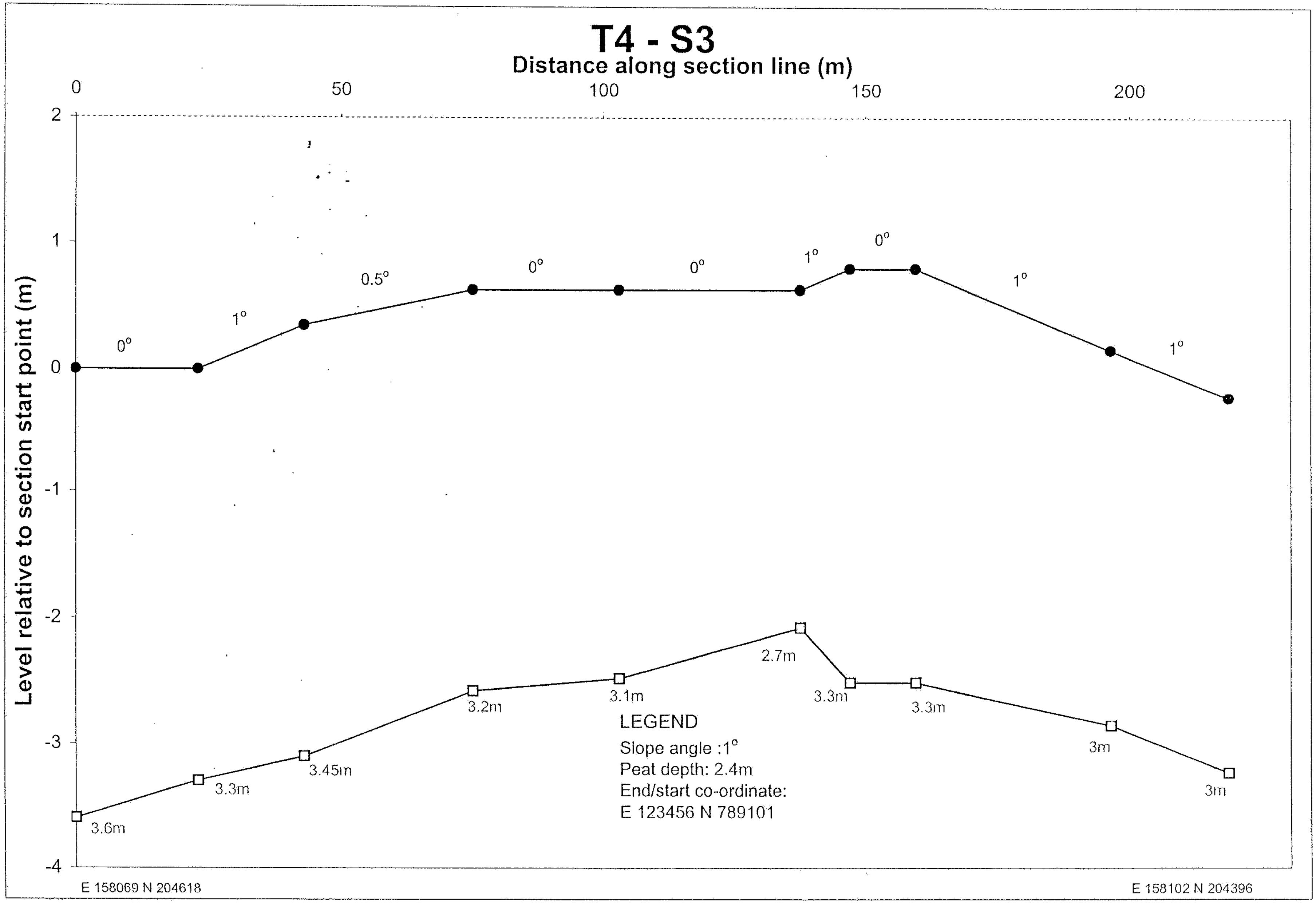
T3 - S4
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
1.5°
6.5°
3.5°
4.5°
4°
2.5°
4°
2°
1°
1°
1°
2°
4°
2°
1.7m
0.8m
2.3m
1.8m
1.8m
2.4m
2.2m
2.55m
2.4m
2.2m
2.1mm
1.8m
1.8m
2.5m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157756 N 204646
E 158033 N 204683

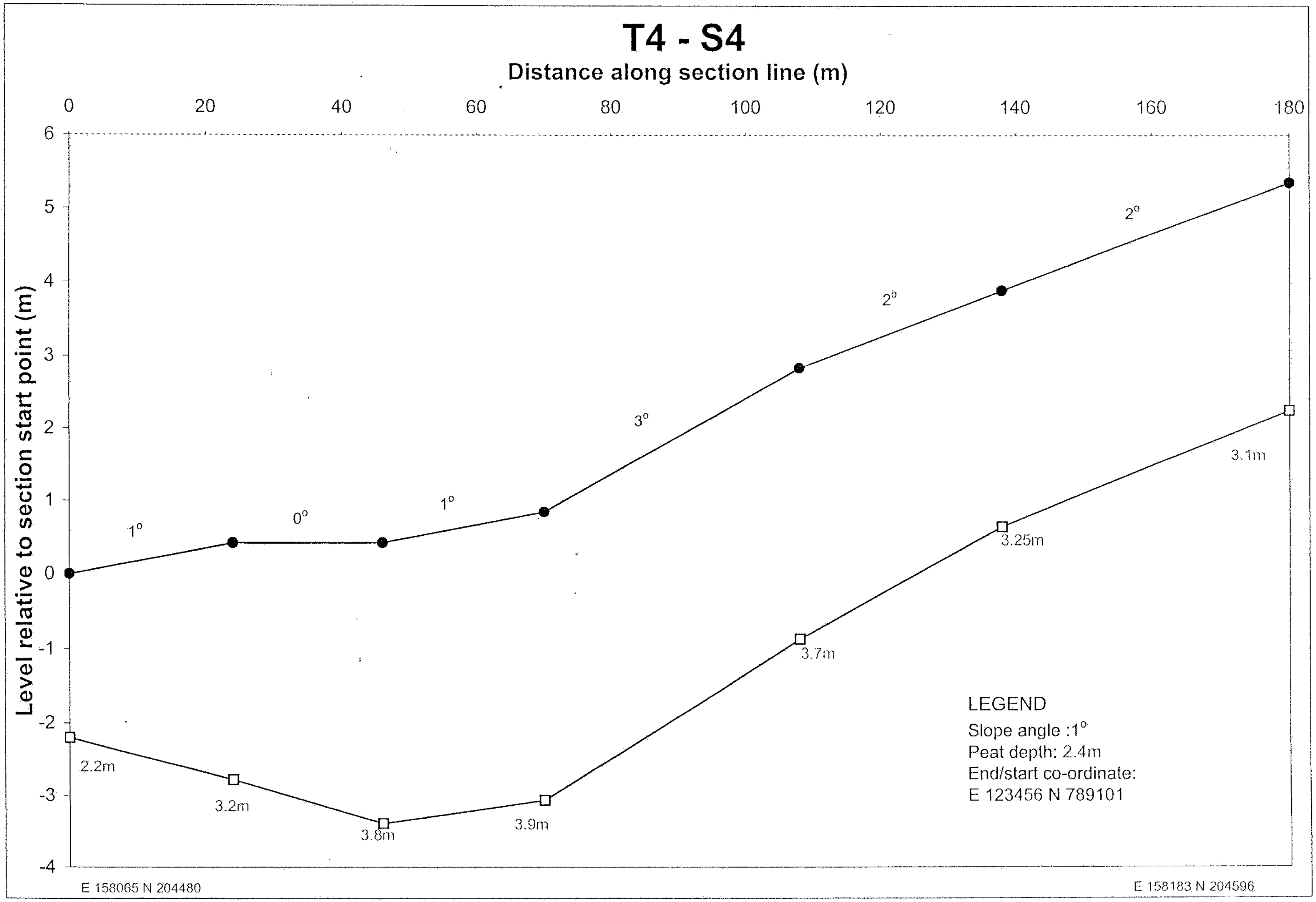

T3-S100
Distance along section line (m)
0
5
10
15
20
25
30
35
40
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
5°
1°
1.2m
0.8m
3.24m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157937 N 204463
E 157901 N 204454


T3-S101
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
3°
3.5°
1°
0.6m
0.9m
1.3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157924 N 204488
E 157878 N 204478

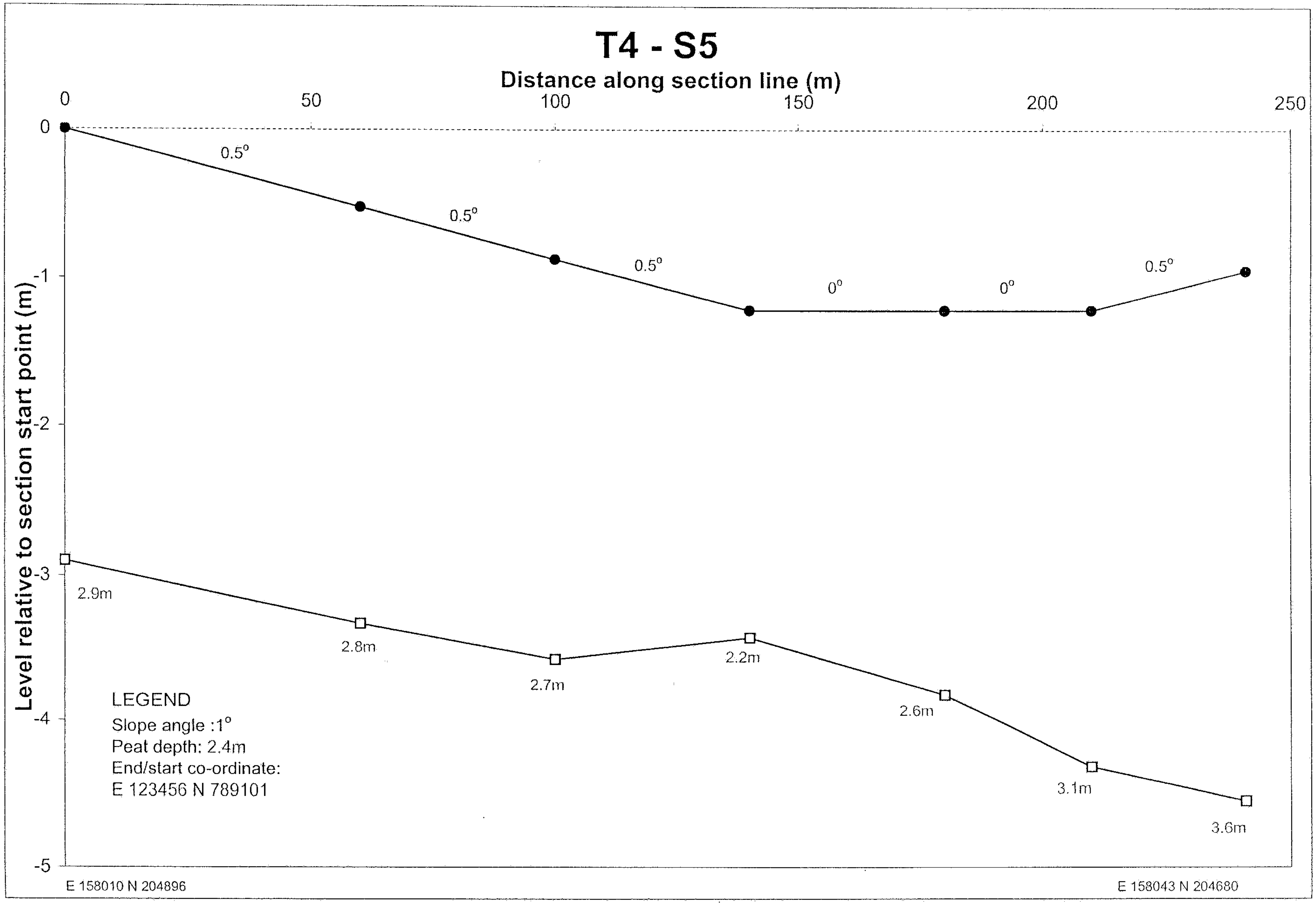

T4 - S1
Distance along section line (m)
0
20
40
60
80
100
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
2.5°
2°
7°
3.5°
3.5°
1.7m
2m
1.1m
2.4m
3m
3.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157921 N 204515
E 158015 N 204585


T4 - S2
Distance along section line (m)
0
50
100
150
200
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
0°
1°
1°
0°
0°
1°
1°
3.8m
3.1m
3.1m
3.1m
2.5m
2.95m
3.1m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158009 N 204603
E 158072 N 204399

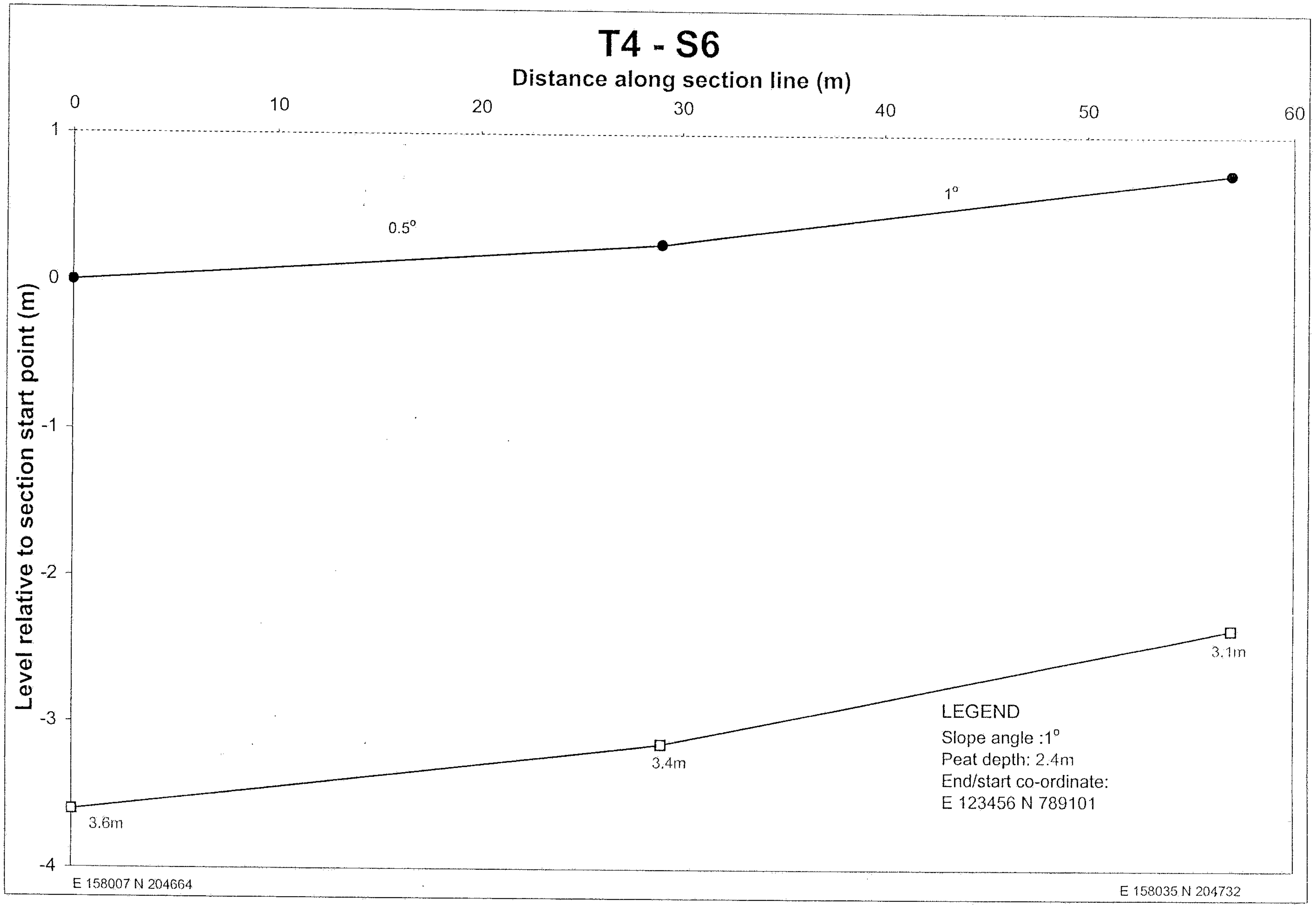

T4 - S3
Distance along section line (m)
0
50
100
150
200
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
0°
1°
0.5°
0°
0°
1°
0°
1°
1°
2.7m
3.3m
3.3m
3.2m
3.1m
3m
3.3m
3.45m
3m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158069 N 204618
E 158102 N 204396



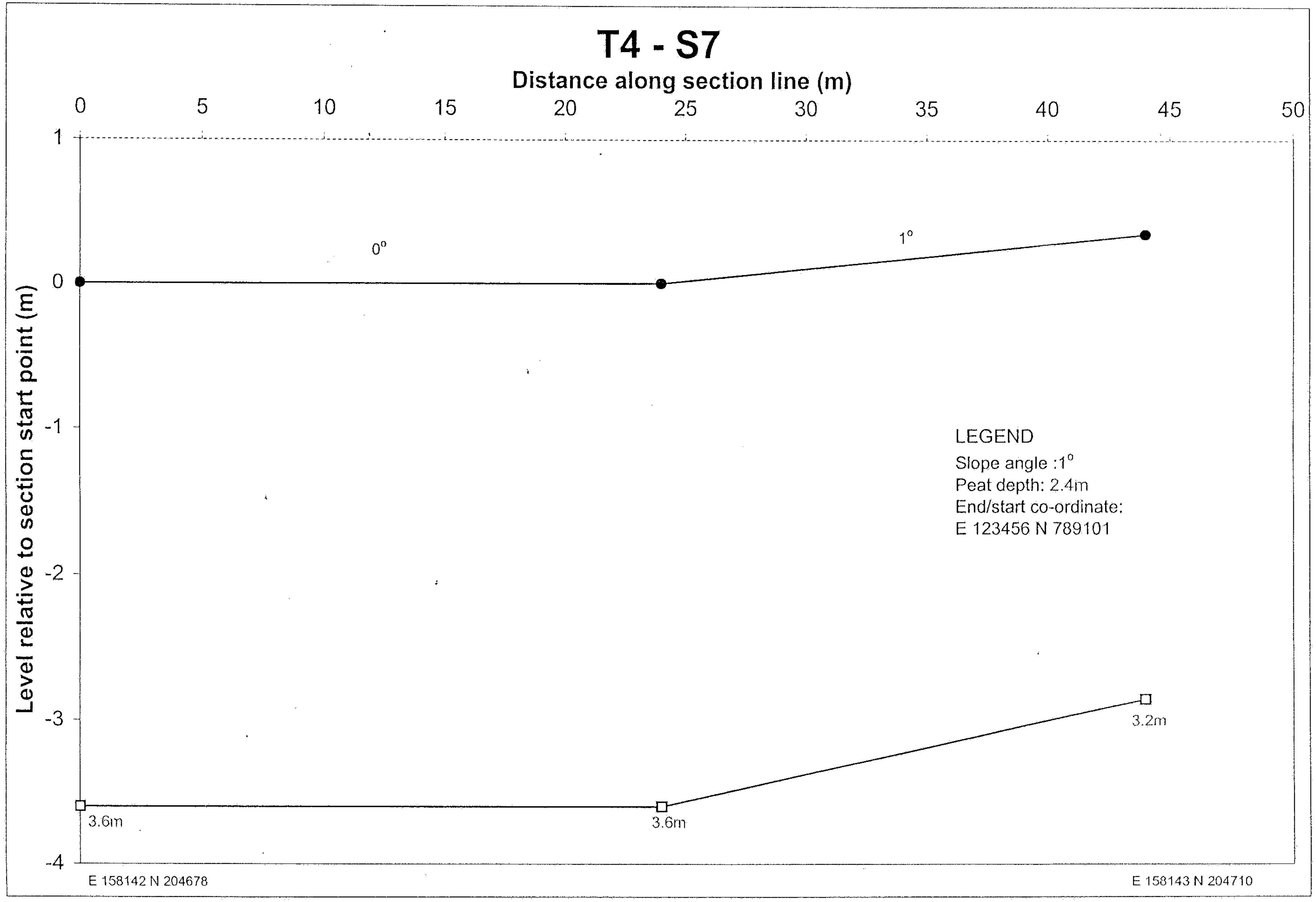
T4 - S4
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
6
5
4
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1°
0°
1°
3°
2°
2°
2.2m
3.2m
3.8m
3.9m
3.7m
3.25m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158065 N 204480
E 158183 N 204596

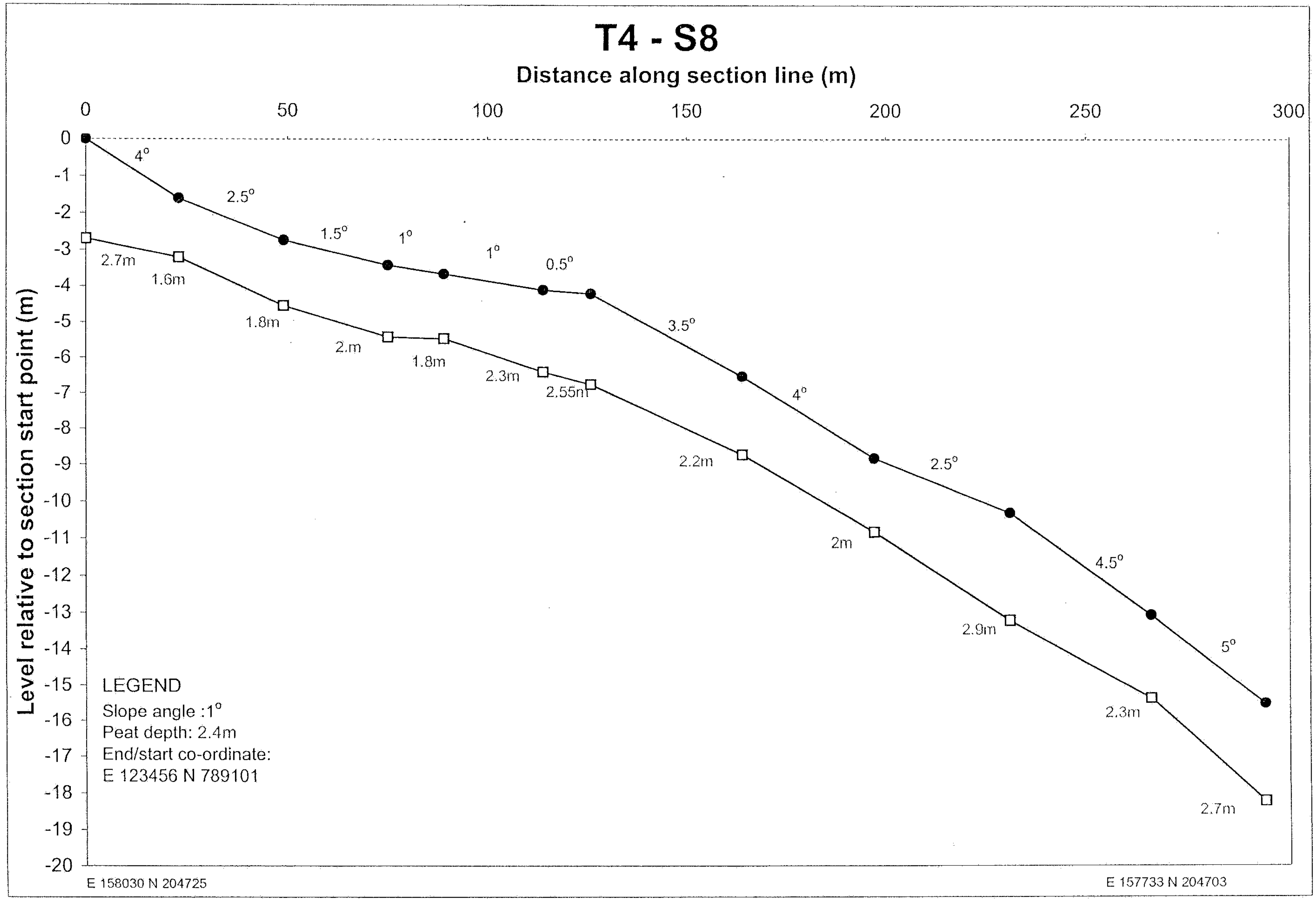


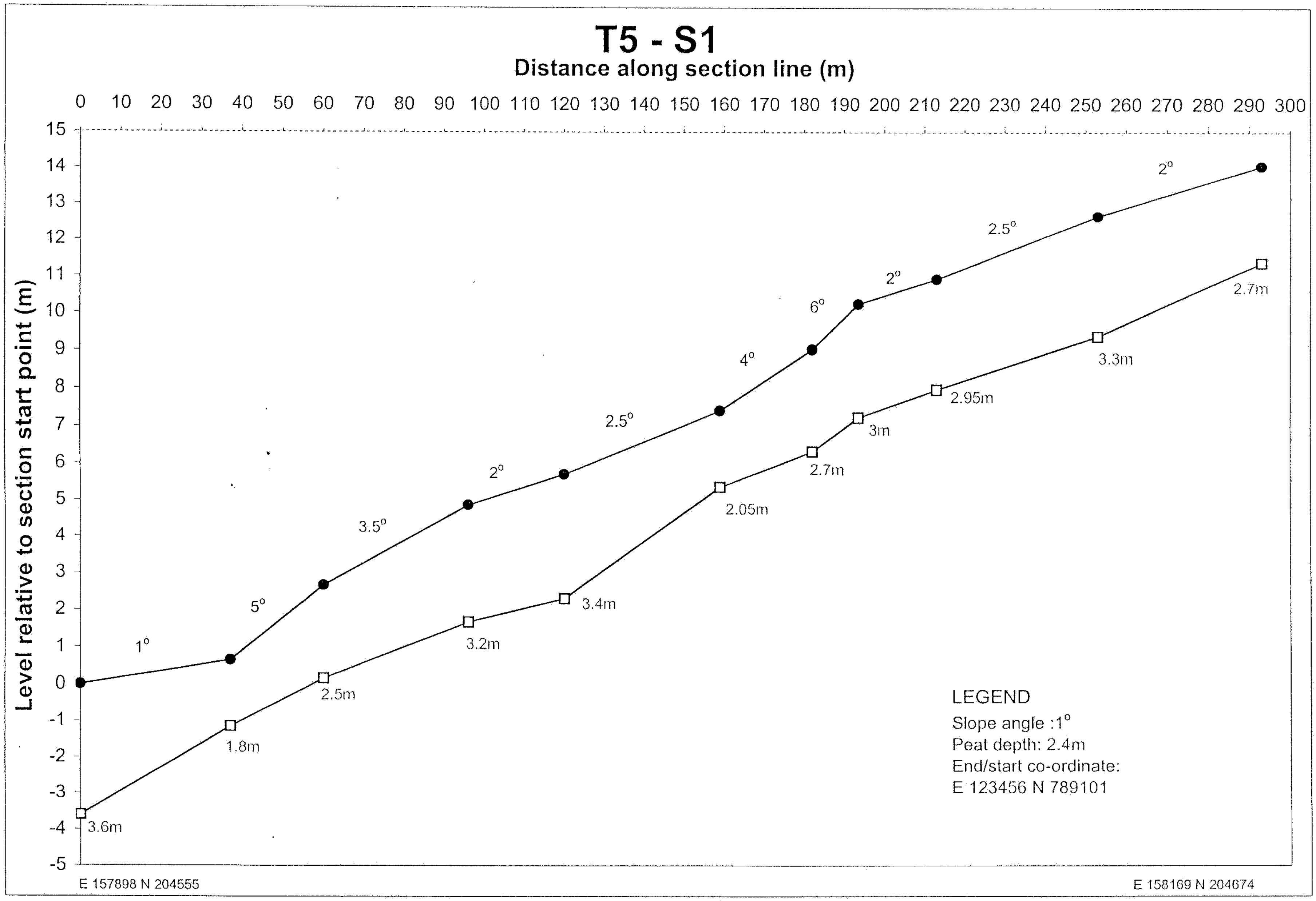
T4 - S5
Distance along section line (m)
0
50
100
150
200
250
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
0.5°
0.5°
0.5°
0°
0°
0.5°
2.9m
2.8m
2.7m
2.2m
2.6m
3.1m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158010 N 204896
E 158043 N 204680

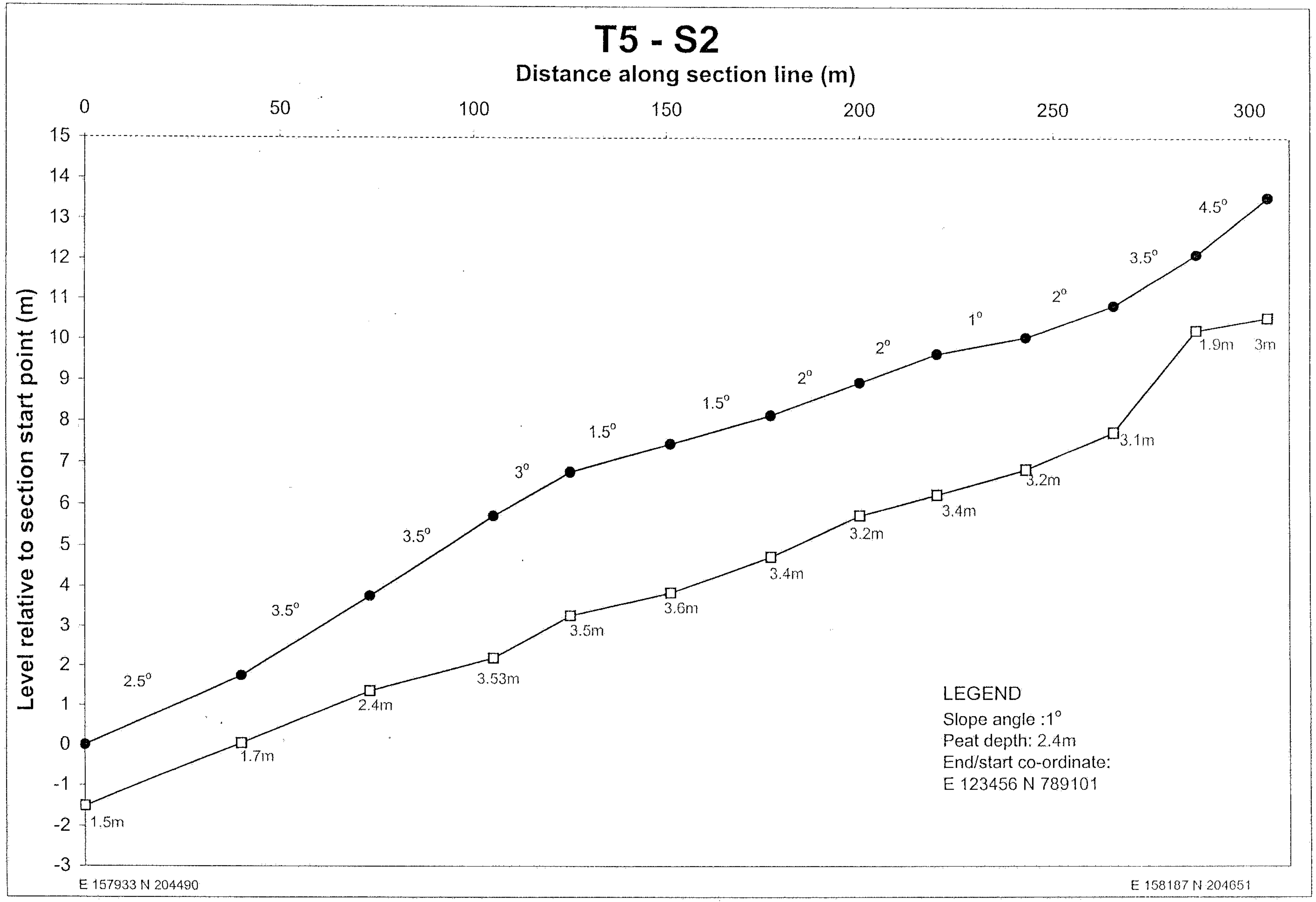


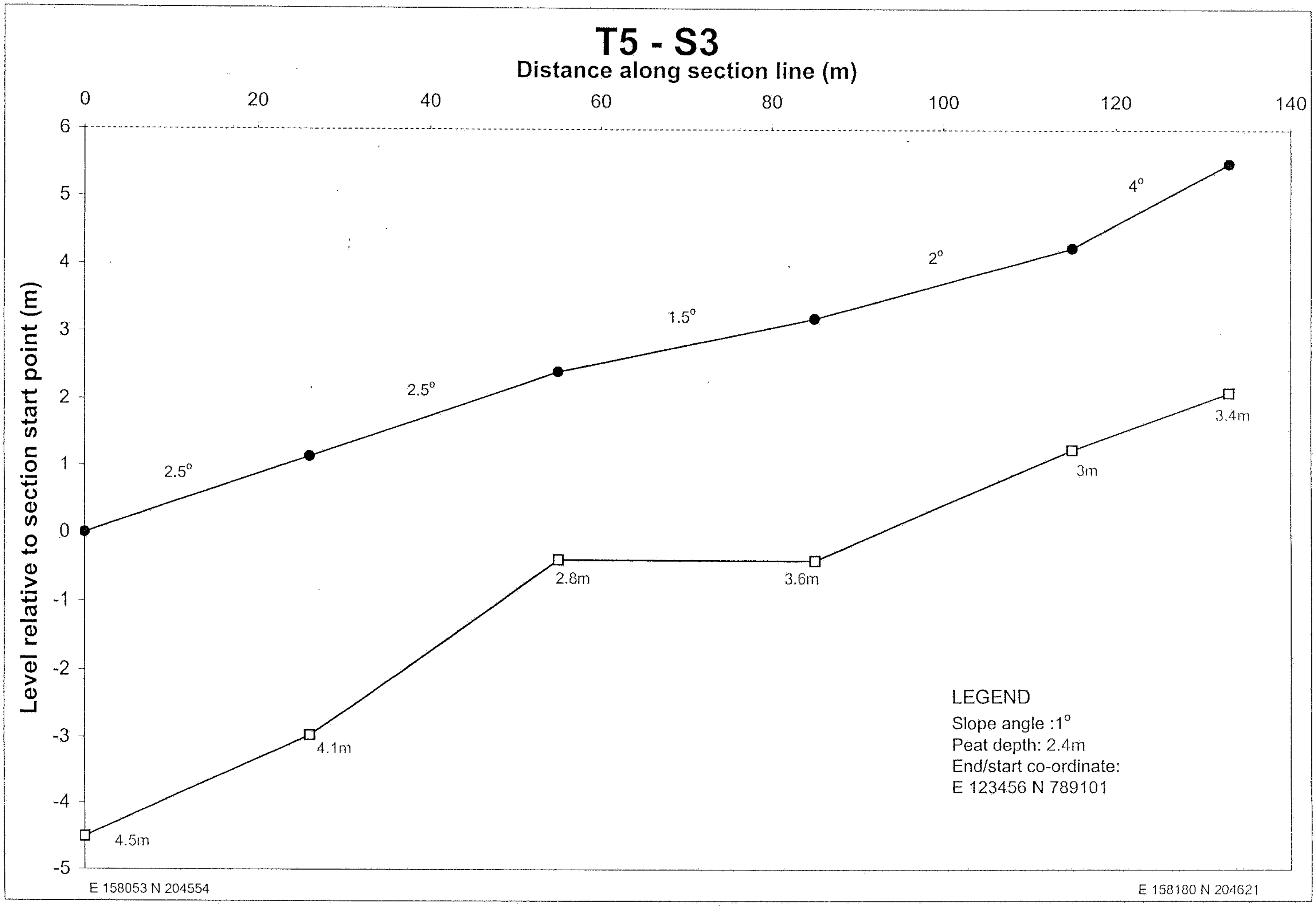
T4 - S6
Distance along section line (m)
0
10
20
30
40
50
60
1
0
-1
-2
-3
-4
Level relative to section start point (m)
0.5°
1°
3.6m
3.4m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158007 N 204664
E 158035 N 204732


T4 - S7
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
Level relative to section start point (m)
1
0
-1
-2
-3
-4
0°
1°
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
3.6m
3.6m
3.2m
E 158142 N 204678
E 158143 N 204710

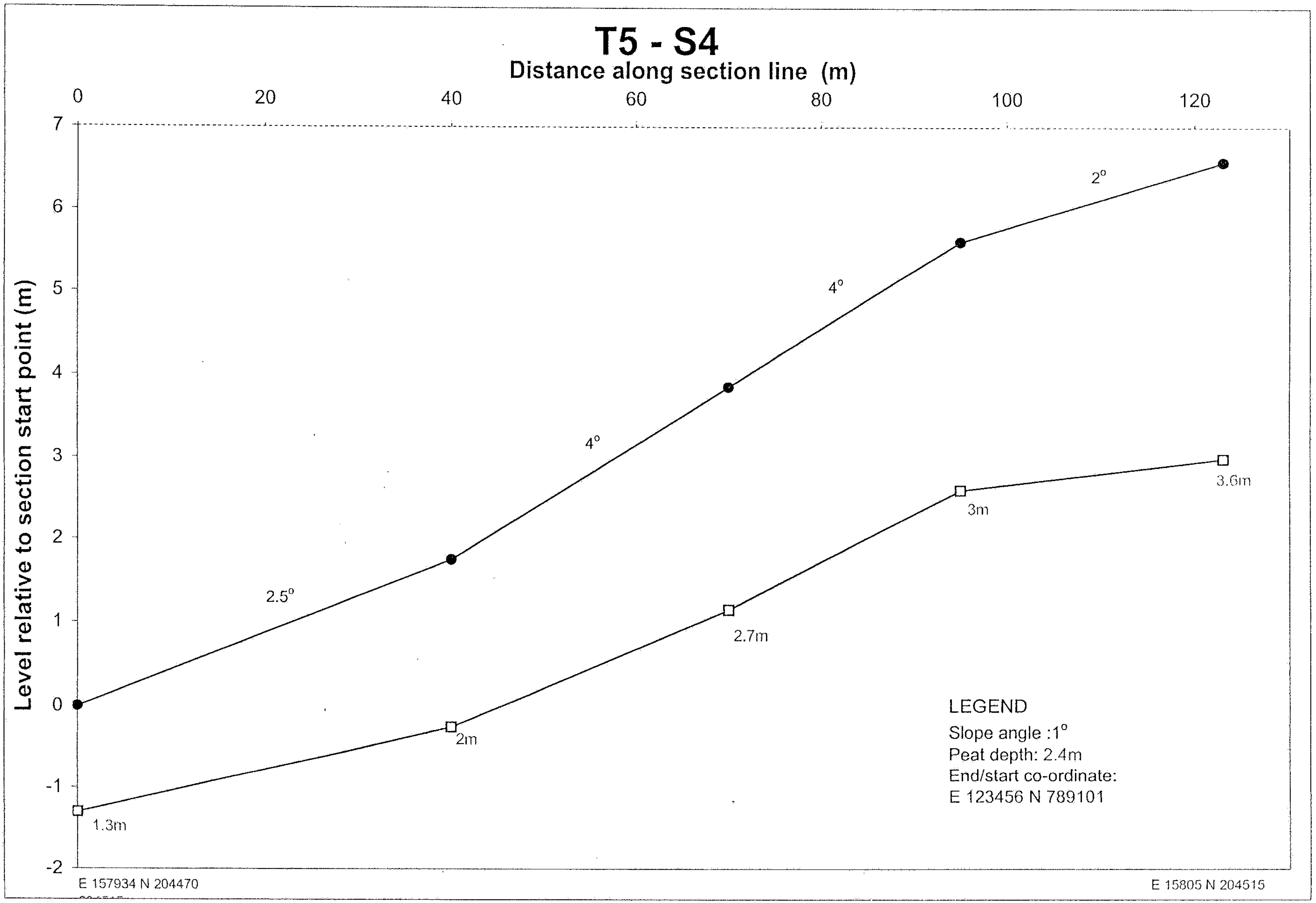

T4 - S8
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
4°
2.5°
1.5°
1°
1°
0.5°
3.5°
4°
2.5°
4.5°
5°
2.7m
1.6m
1.8m
2.m
1.8m
2.3m
2.55m
2.2m
2m
2.9m
2.3m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158030 N 204725
E 157733 N 204703

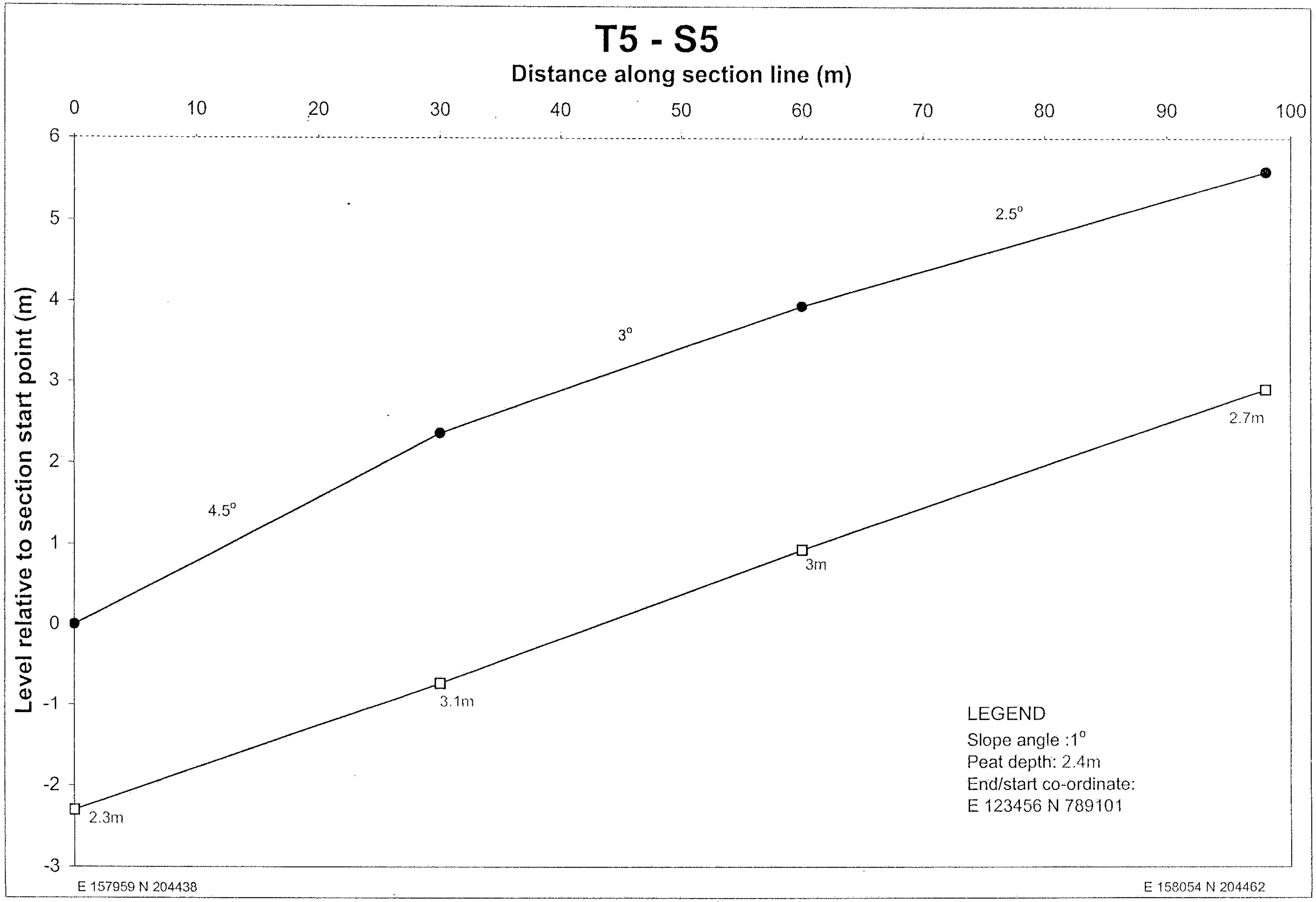

T5 - S1
Distance along section line (m)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300
Level relative to section start point (m)
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 -1 -2 -3 -4 -5
1°
5°
3.5°
2°
2.5°
4°
6°
2°
2.5°
2°
3.6m
1.8m
2.5m
3.2m
3.4m
2.05m
2.7m
3m
2.95m
3.3m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157898 N 204555
E 158169 N 204674

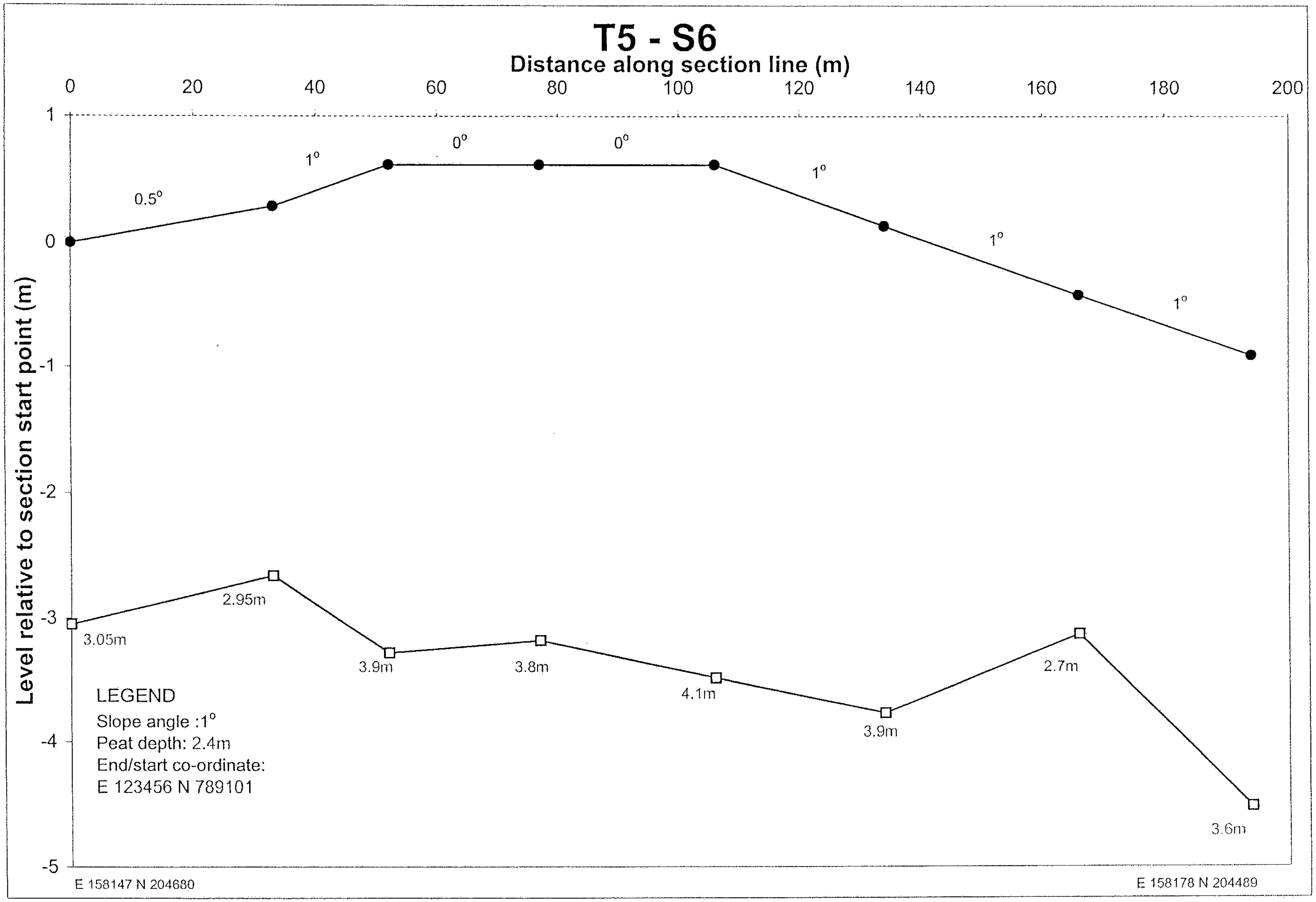

T5 - S2
Distance along section line (m)
0
50
100
150
200
250
300
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
2.5°
3.5°
3.5°
3°
1.5°
1.5°
2°
2°
1°
2°
3.5°
4.5°
1.5m
1.7m
2.4m
3.53m
3.5m
3.6m
3.4m
3.2m
3.4m
3.2m
3.1m
1.9m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157933 N 204490
E 158187 N 204651



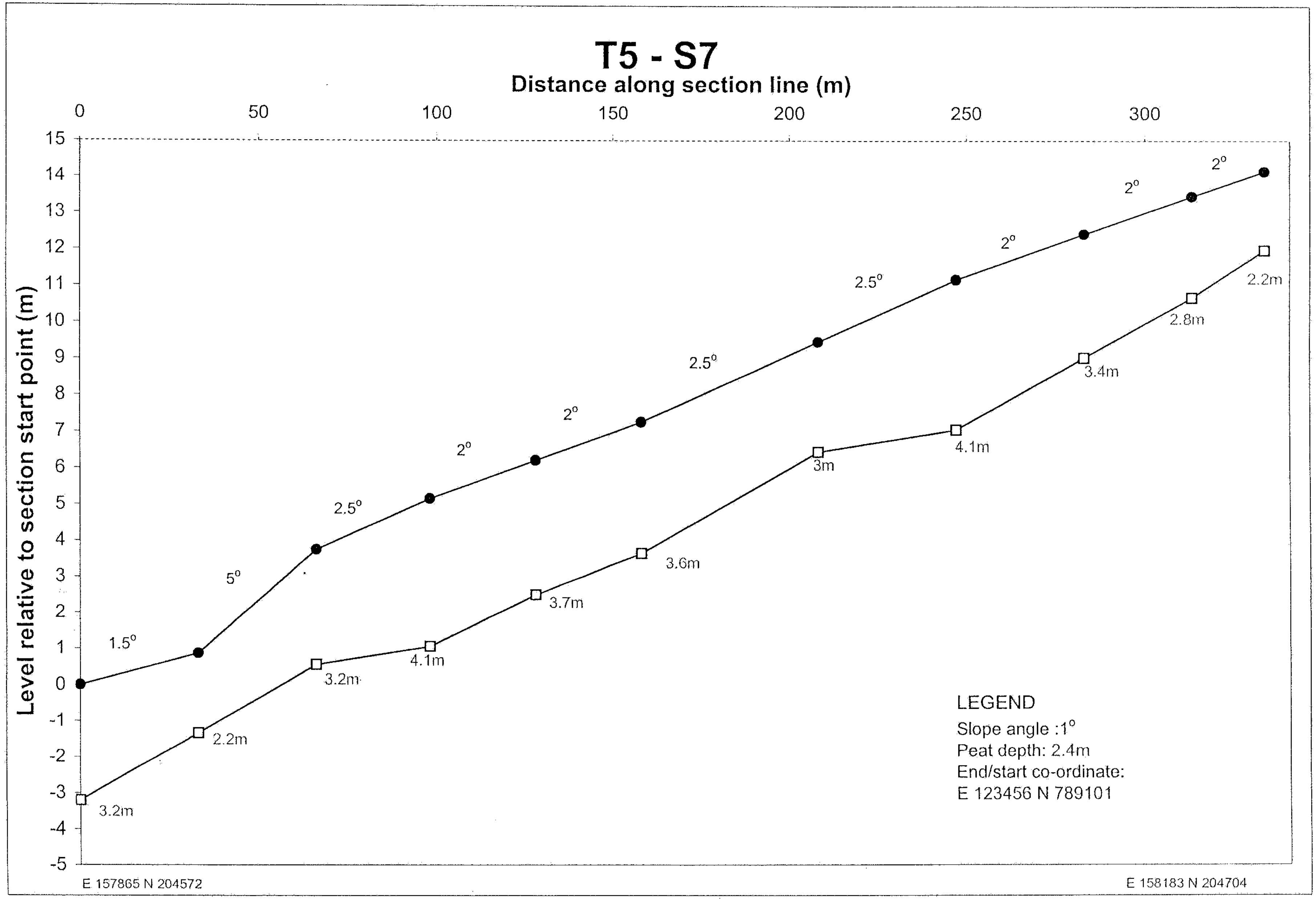
T5 - S3
Distance along section line (m)
0
20
40
60
80
100
120
140
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
2.5°
2.5°
1.5°
2°
4°
4.5m
4.1m
2.8m
3.6m
3m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158053 N 204554
E 158180 N 204621


T5 - S4
Distance along section line (m)
0
20
40
60
80
100
120
7
6
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
2.5°
4°
4°
2°
1.3m
2m
2.7m
3m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157934 N 204470
E 15805 N 204515

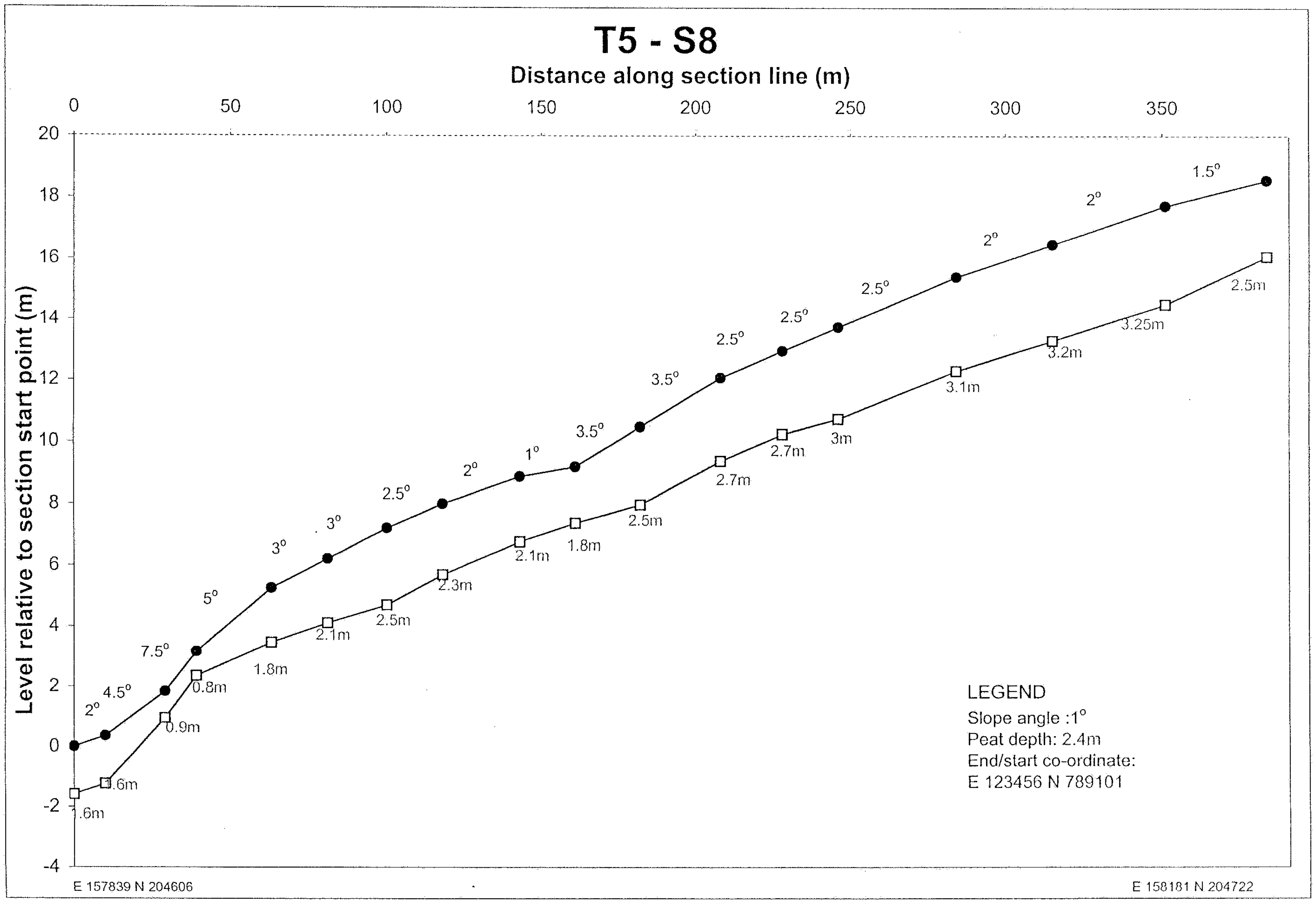

T5 - S5
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
4.5°
3°
2.5°
2.3m
3.1m
3m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157959 N 204438
E 158054 N 204462



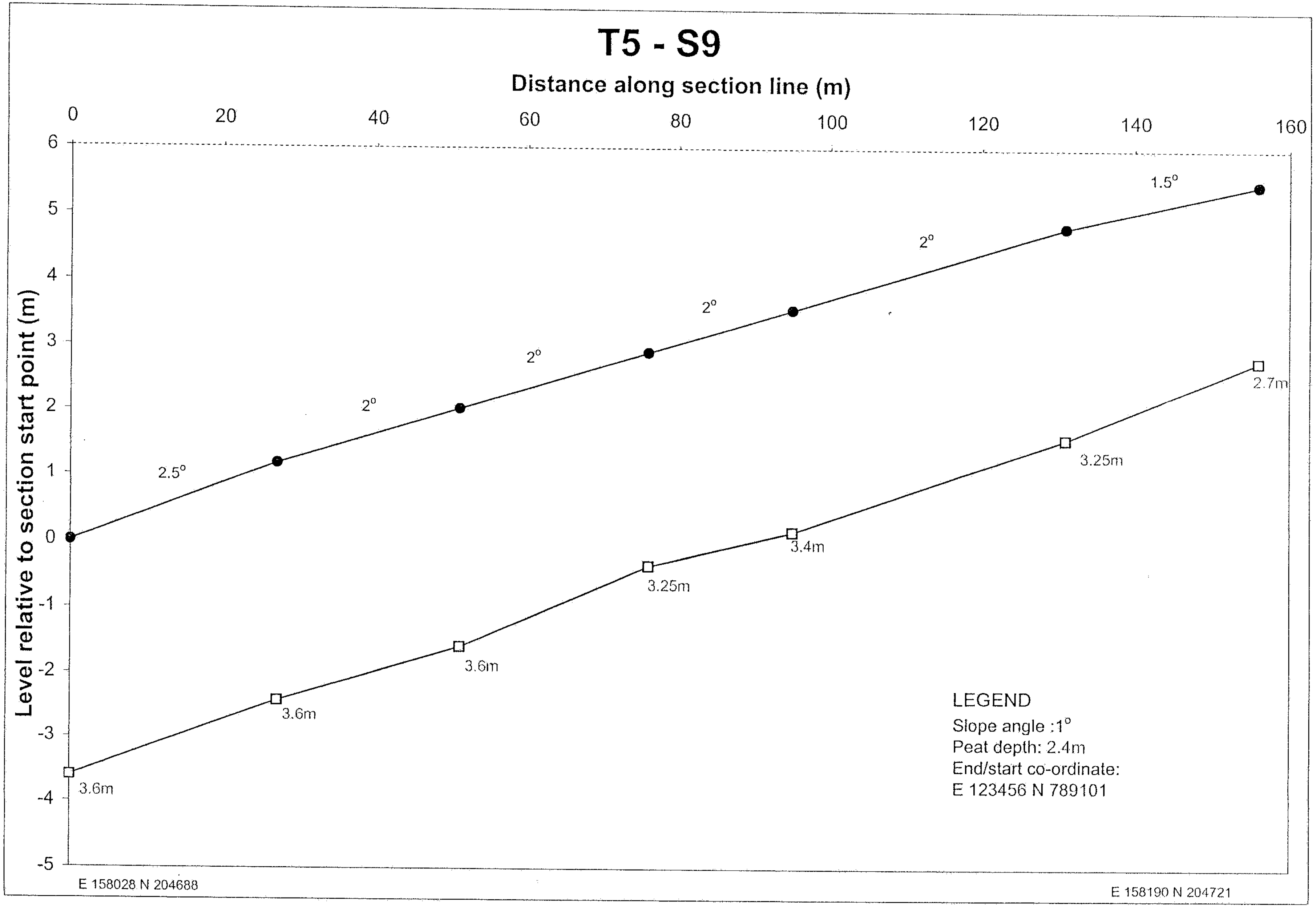
T5 - S6
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
0.5°
1°
0°
0°
1°
1°
1°
3.05m
2.95m
3.9m
3.8m
4.1m
3.9m
2.7m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158147 N 204680
E 158178 N 204489

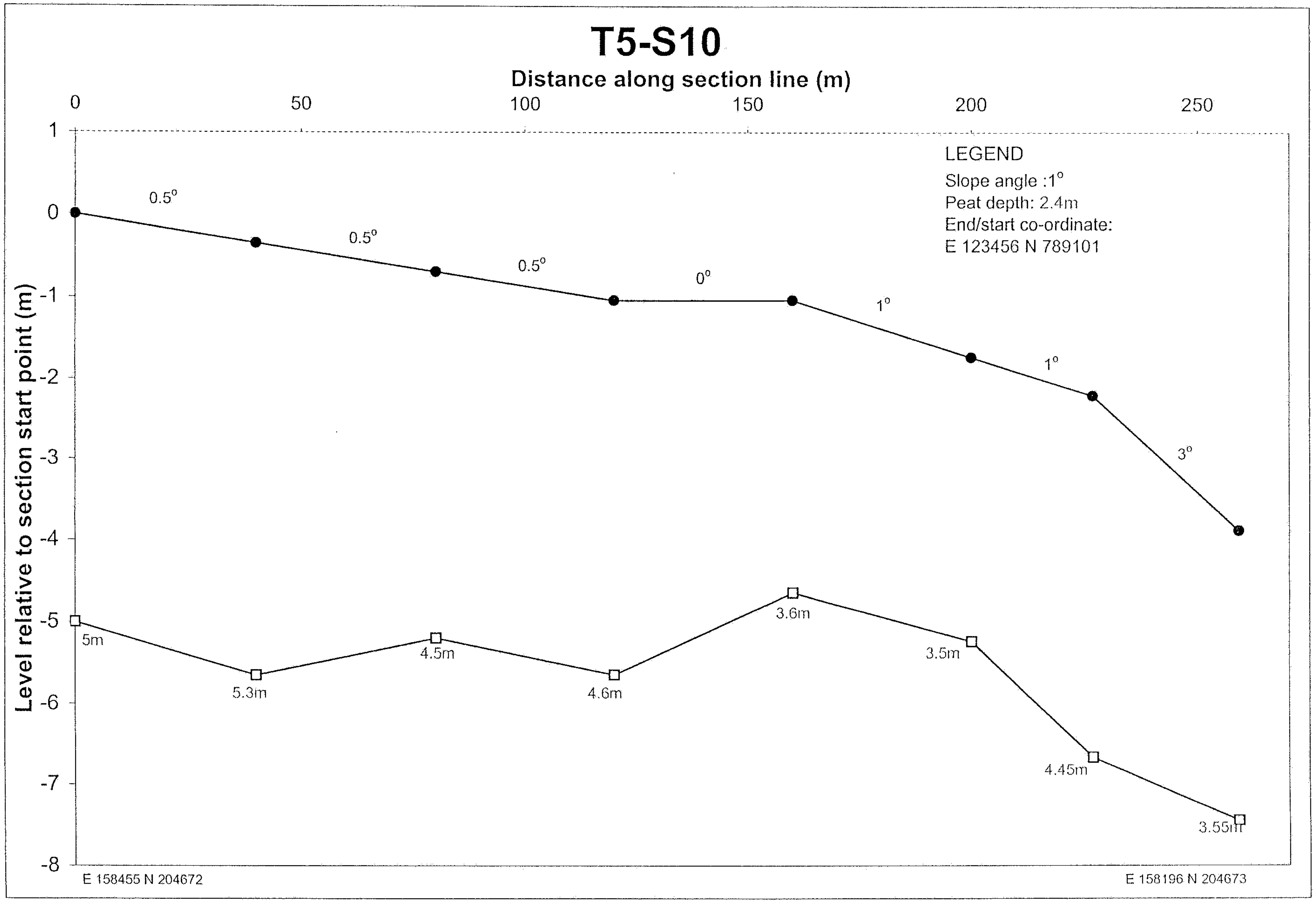


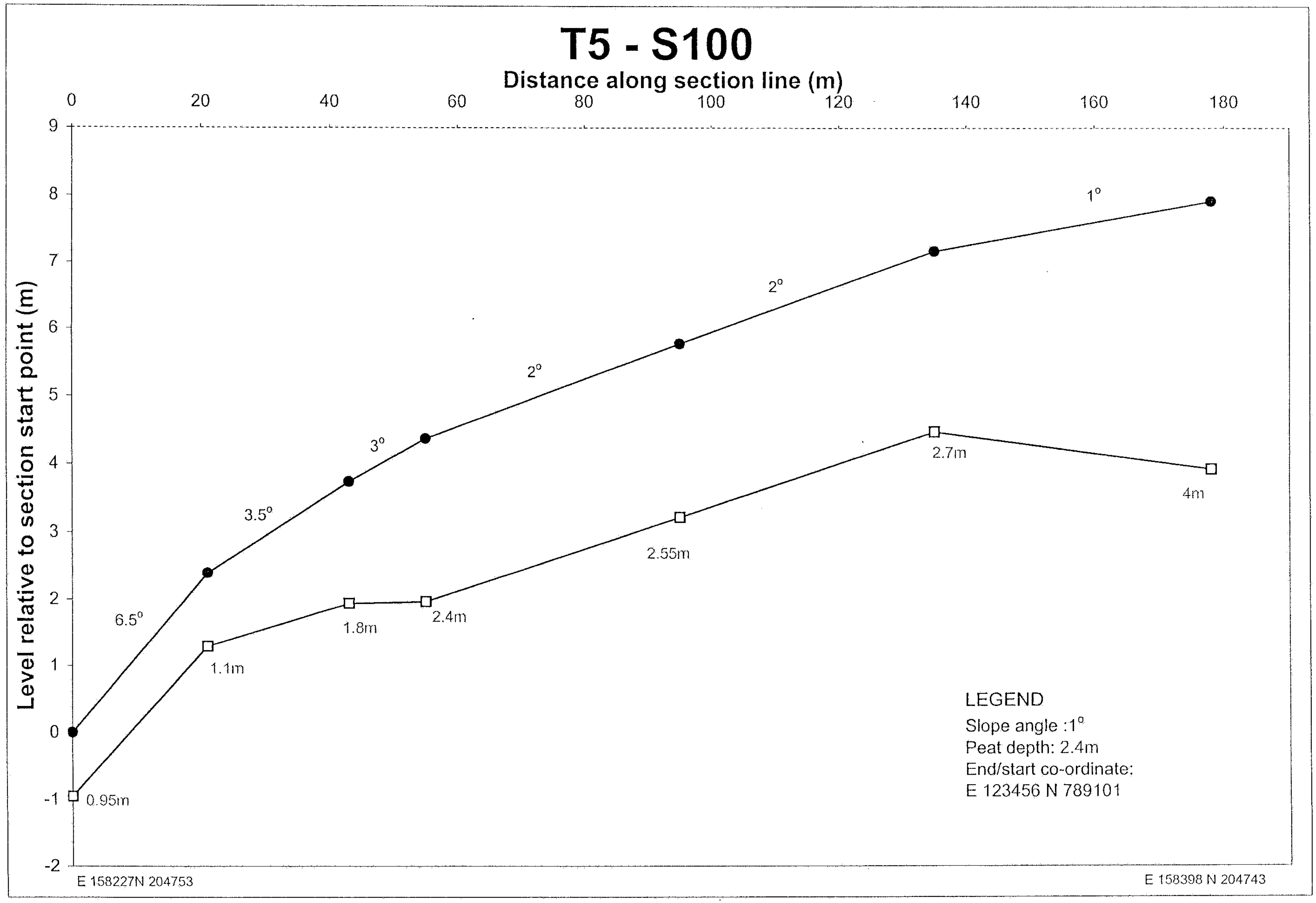
T5 - S7
Distance along section line (m)
0
50
100
150
200
250
300
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
1.5°
5°
2.5°
2°
2°
2.5°
2.5°
2°
2°
2°
3.2m
2.2m
3.2m
4.1m
3.7m
3.6m
3m
4.1m
3.4m
2.8m
2.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157865 N 204572
E 158183 N 204704



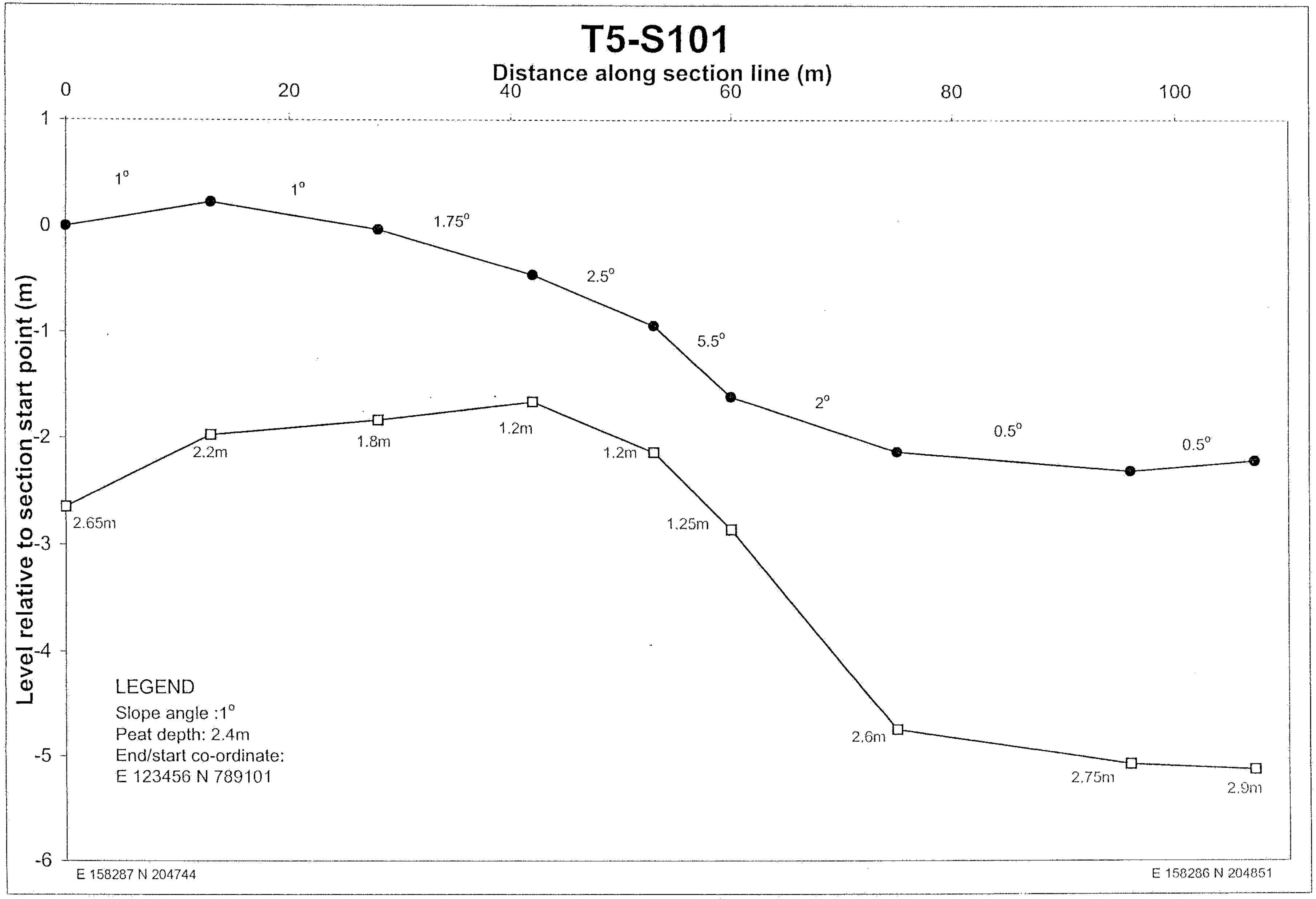
T5 - S8
Distance along section line (m)
0
50
100
150
200
250
300
350
20
18
16
14
12
10
8
6
4
2
0
-2
-4
Level relative to section start point (m)
2°
4.5°
7.5°
5°
3°
3°
2.5°
2°
1°
3.5°
3.5°
2.5°
2.5°
2.5°
2°
2°
1.5°
1.6m
1.6m
0.9m
0.8m
1.8m
2.1m
2.5m
2.3m
2.1m
1.8m
2.5m
2.7m
2.7m
3m
3.1m
3.2m
3.25m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157839 N 204606
E 158181 N 204722


T5 - S9
Distance along section line (m)
0
20
40
60
80
100
120
140
160
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
2.5°
2°
2°
2°
2°
1.5°
3.6m
3.6m
3.6m
3.25m
3.4m
3.25m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158028 N 204688
E 158190 N 204721

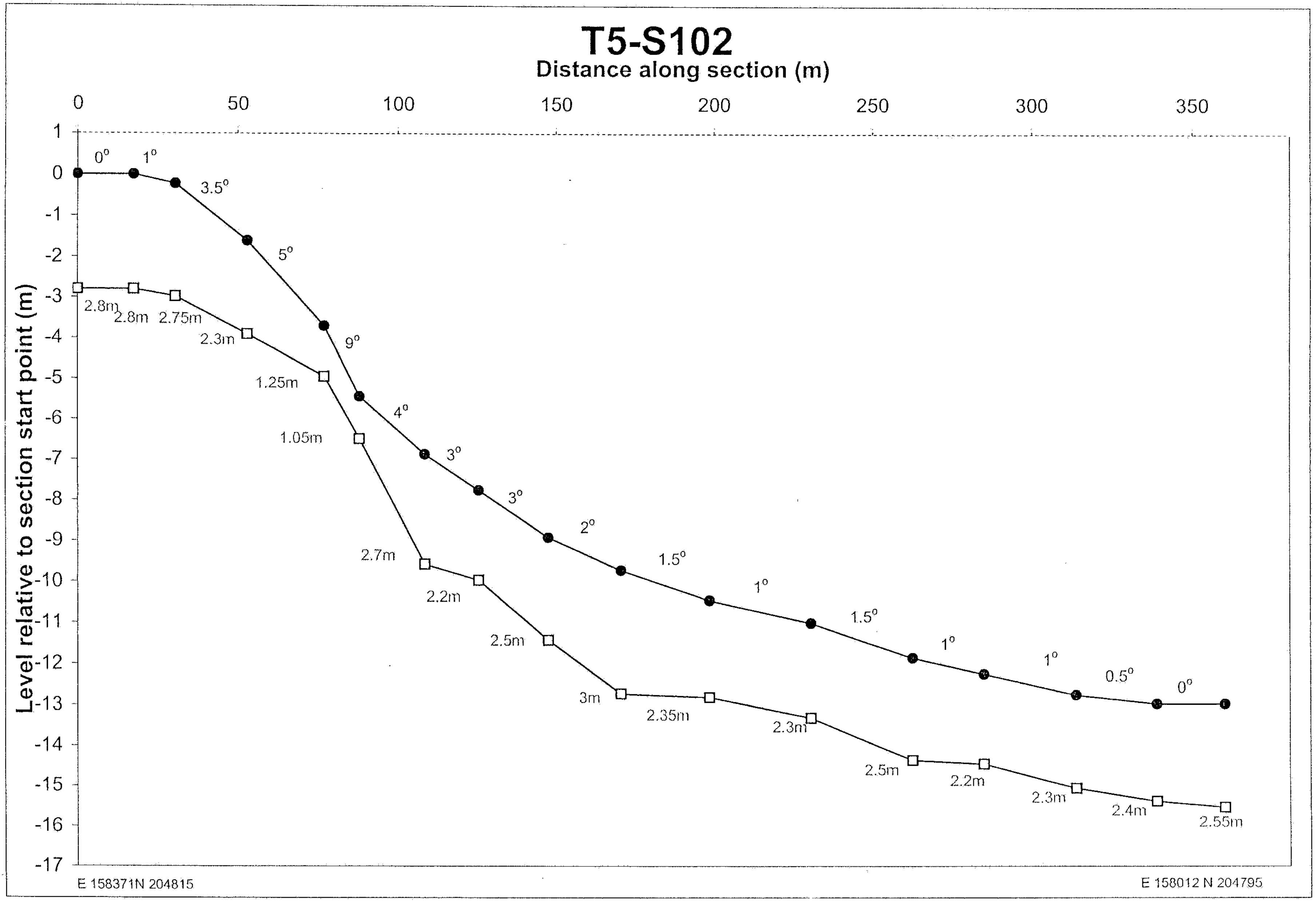

T5-S10
Distance along section line (m)
0
50
100
150
200
250
1
0
-1
-2
-3
-4
-5
-6
-7
-8
Level relative to section start point (m)
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
0.5°
0.5°
0.5°
0°
1°
1°
3°
5m
5.3m
4.5m
4.6m
3.6m
3.5m
4.45m
3.55m
E 158455 N 204672
E 158196 N 204673



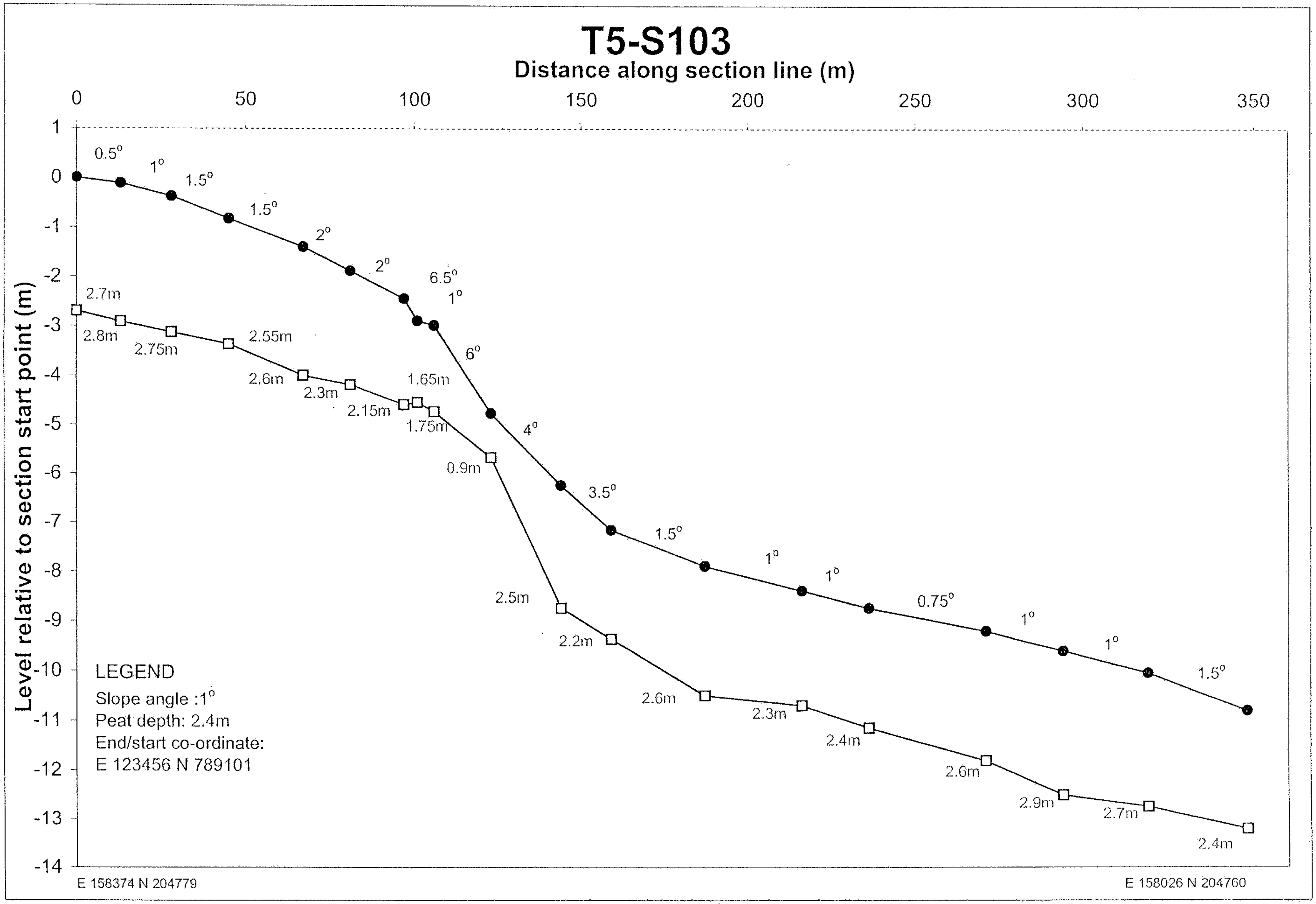
T5 - S100
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
Level relative to section start point (m)
9
8
7
6
5
4
3
2
1
0
-1
-2
6.5°
3.5°
3°
2°
2°
1°
0.95m
1.1m
1.8m
2.4m
2.55m
2.7m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158227N 204753
E 158398 N 204743

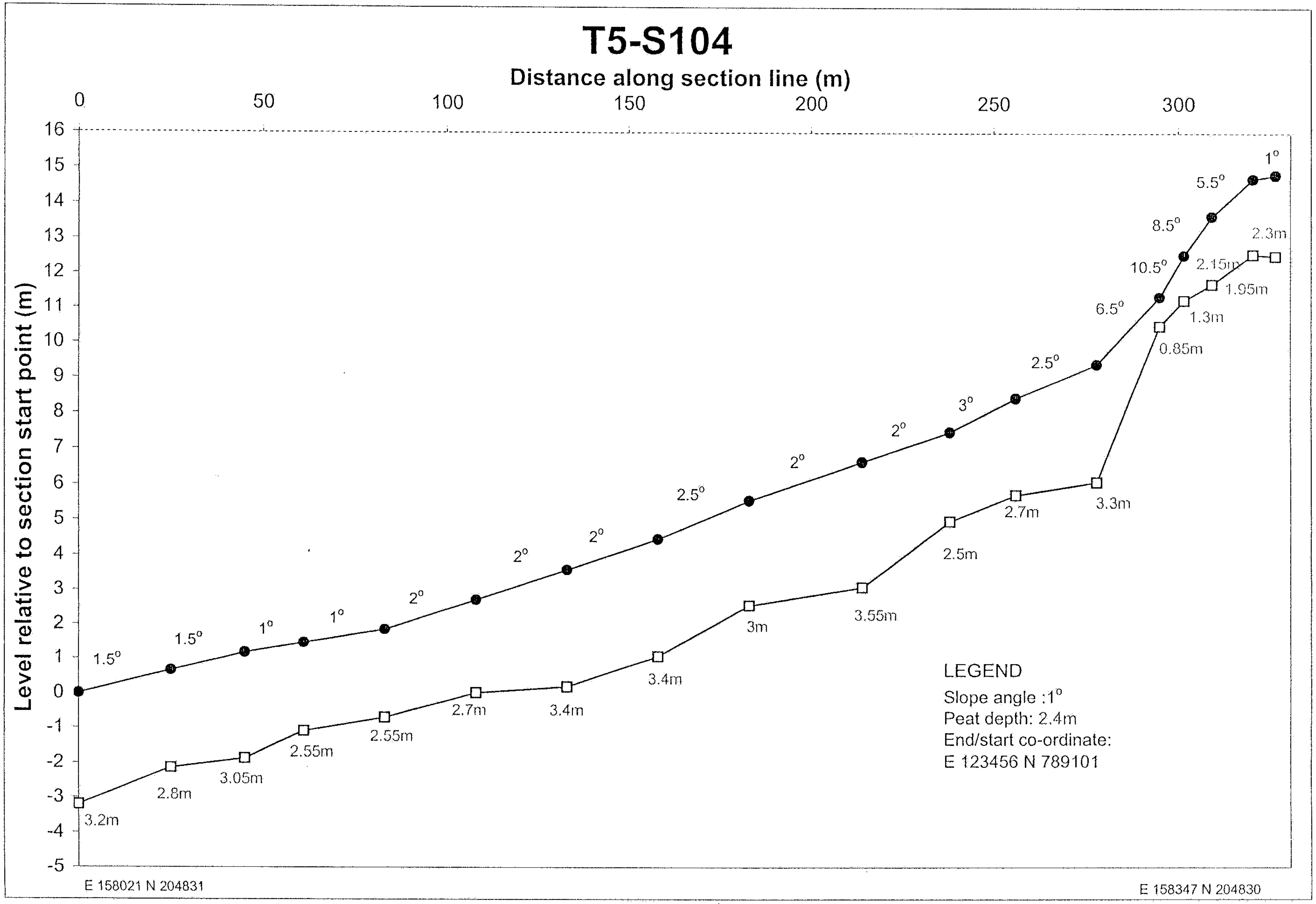


T5-S101
Distance along section line (m)
0
20
40
60
80
100
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
1°
1°
1.75°
2.5°
5.5°
2°
0.5°
0.5°
2.65m
2.2m
1.8m
1.2m
1.2m
1.25m
2.6m
2.75m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158287 N 204744
E 158286 N 204851

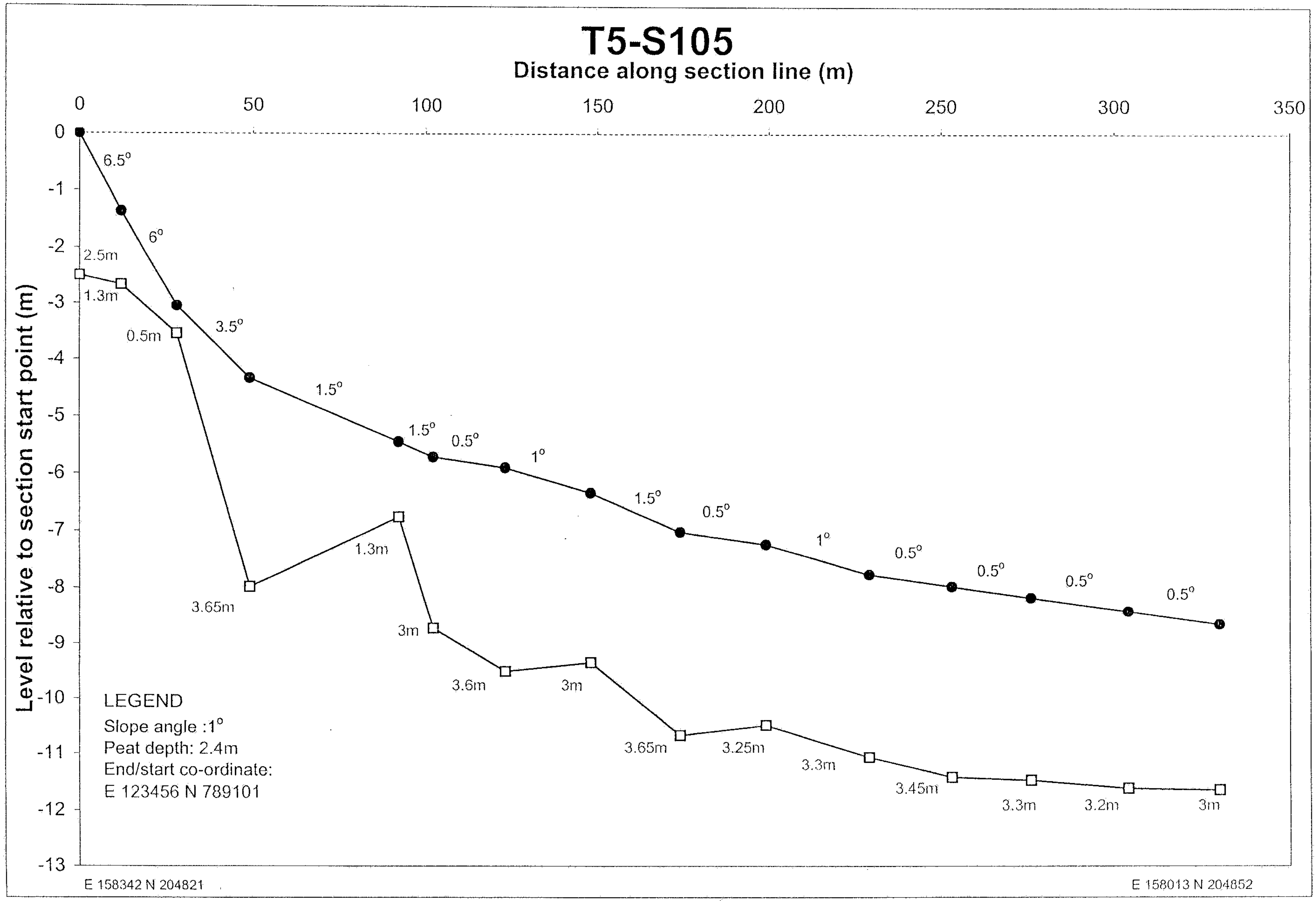


T5-S102
Distance along section (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
0°
1°
3.5°
5°
9°
4°
3°
3°
2°
1.5°
1°
1.5°
1°
1°
0.5°
0°
2.8m
2.8m
2.75m
2.3m
1.25m
1.05m
2.7m
2.2m
2.5m
3m
2.35m
2.3m
2.5m
2.2m
2.3m
2.4m
2.55m
E 158371N 204815
E 158012 N 204795

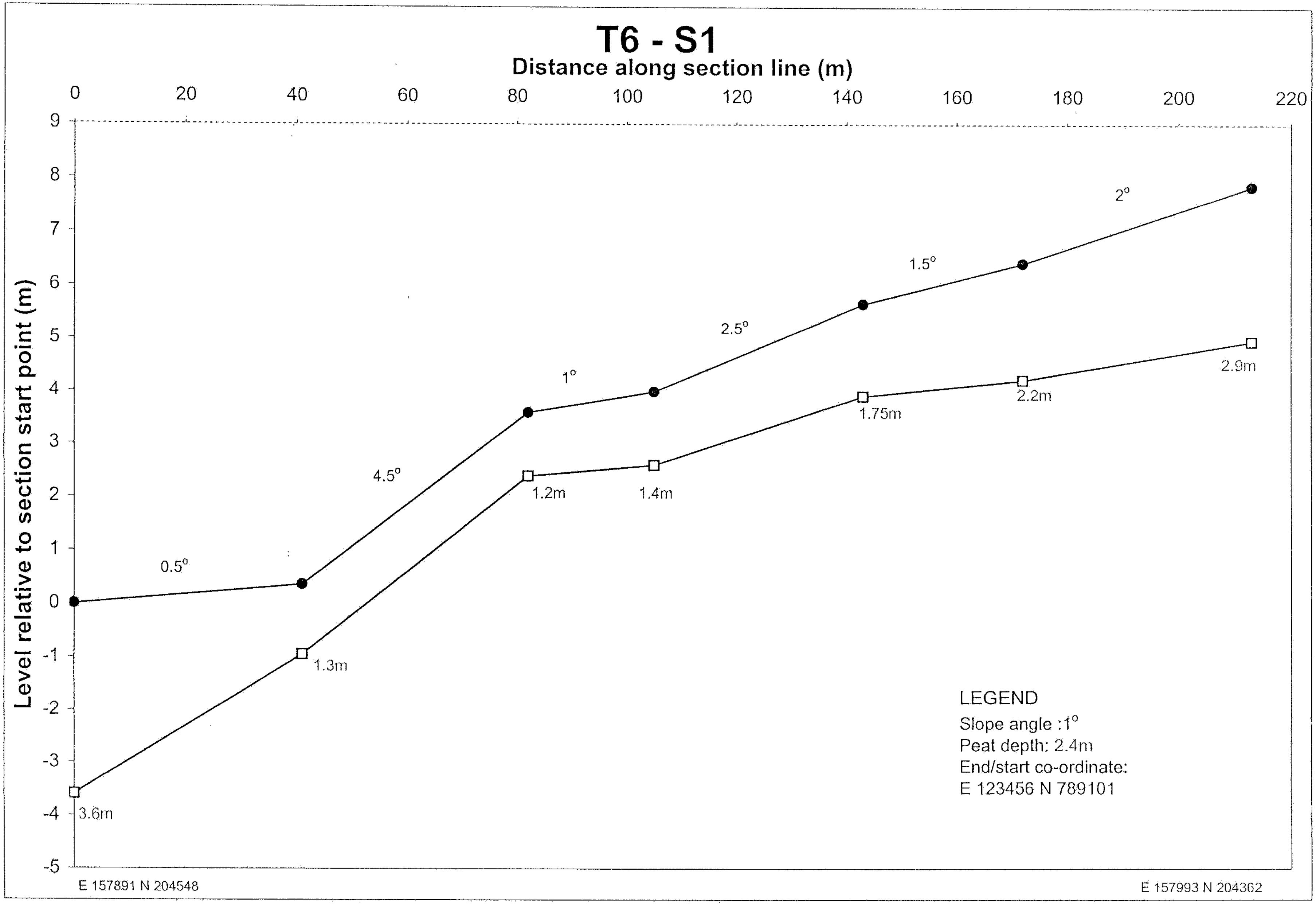

T5-S103
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
0.5°
1°
1.5°
1.5°
2°
2°
6.5°
1°
6°
4°
3.5°
1.5°
1°
1°
0.75°
1°
1°
1.5°
2.7m
2.8m
2.75m
2.55m
2.6m
2.3m
2.15m
1.65m
1.75m
0.9m
2.5m
2.2m
2.6m
2.3m
2.4m
2.6m
2.9m
2.7m
2.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158374 N 204779
E 158026 N 204760



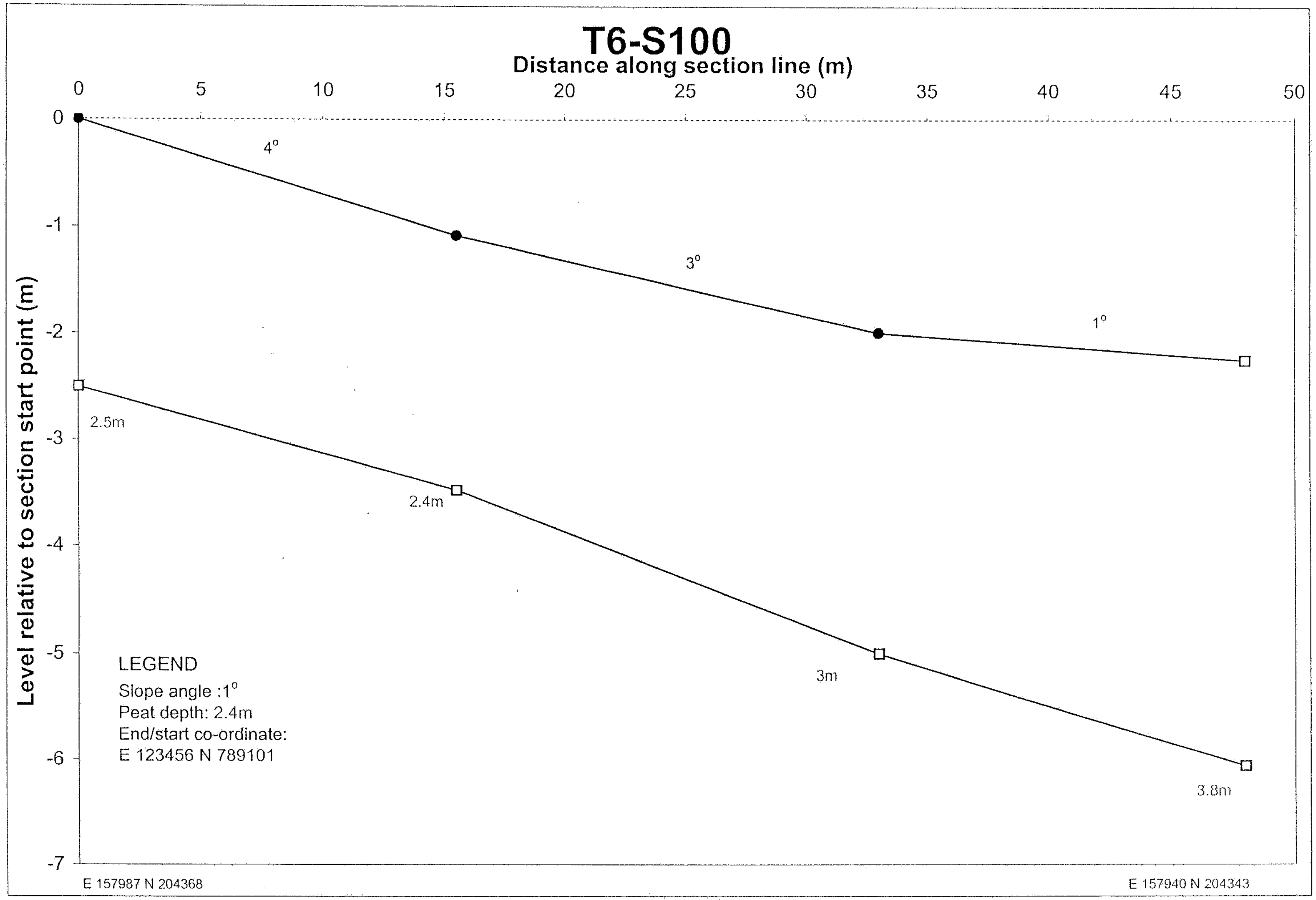
T5-S104
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1.5°
1.5°
1°
1°
2°
2°
2°
2.5°
2°
2°
3°
2.5°
6.5°
10.5°
8.5°
5.5°
1°
3.2m
2.8m
3.05m
2.55m
2.55m
2.7m
3.4m
3.4m
3m
3.55m
2.5m
2.7m
3.3m
0.85m
1.3m
1.95m
2.15m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158021 N 204831
E 158347 N 204830



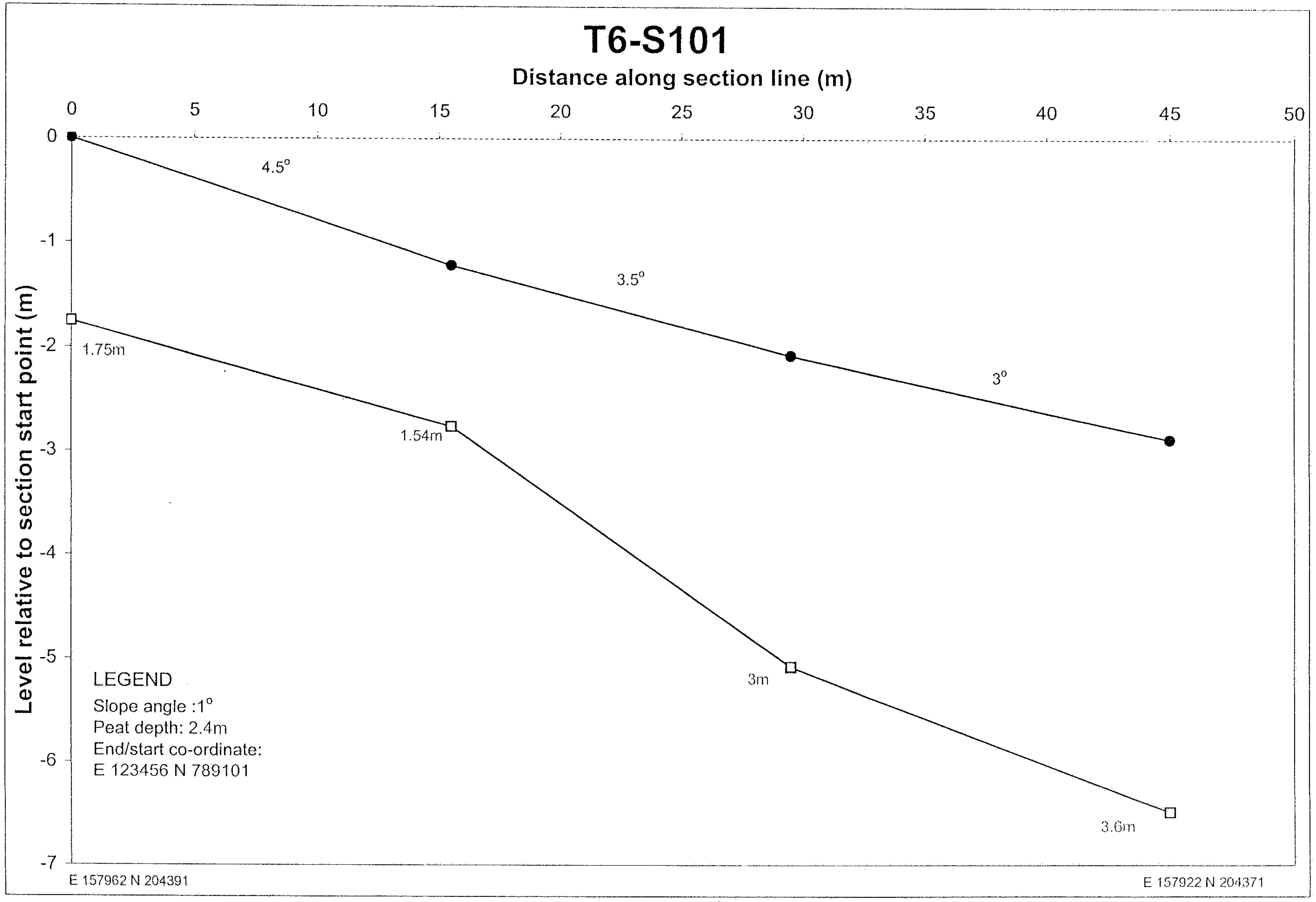
T5-S105
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
6.5°
6°
3.5°
1.5°
1.5°
0.5°
1°
1.5°
0.5°
1°
0.5°
0.5°
0.5°
0.5°
2.5m
1.3m
0.5m
3.65m
1.3m
3m
3.6m
3m
3.65m
3.25m
3.3m
3.45m
3.3m
3.2m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158342 N 204821
E 158013 N 204852

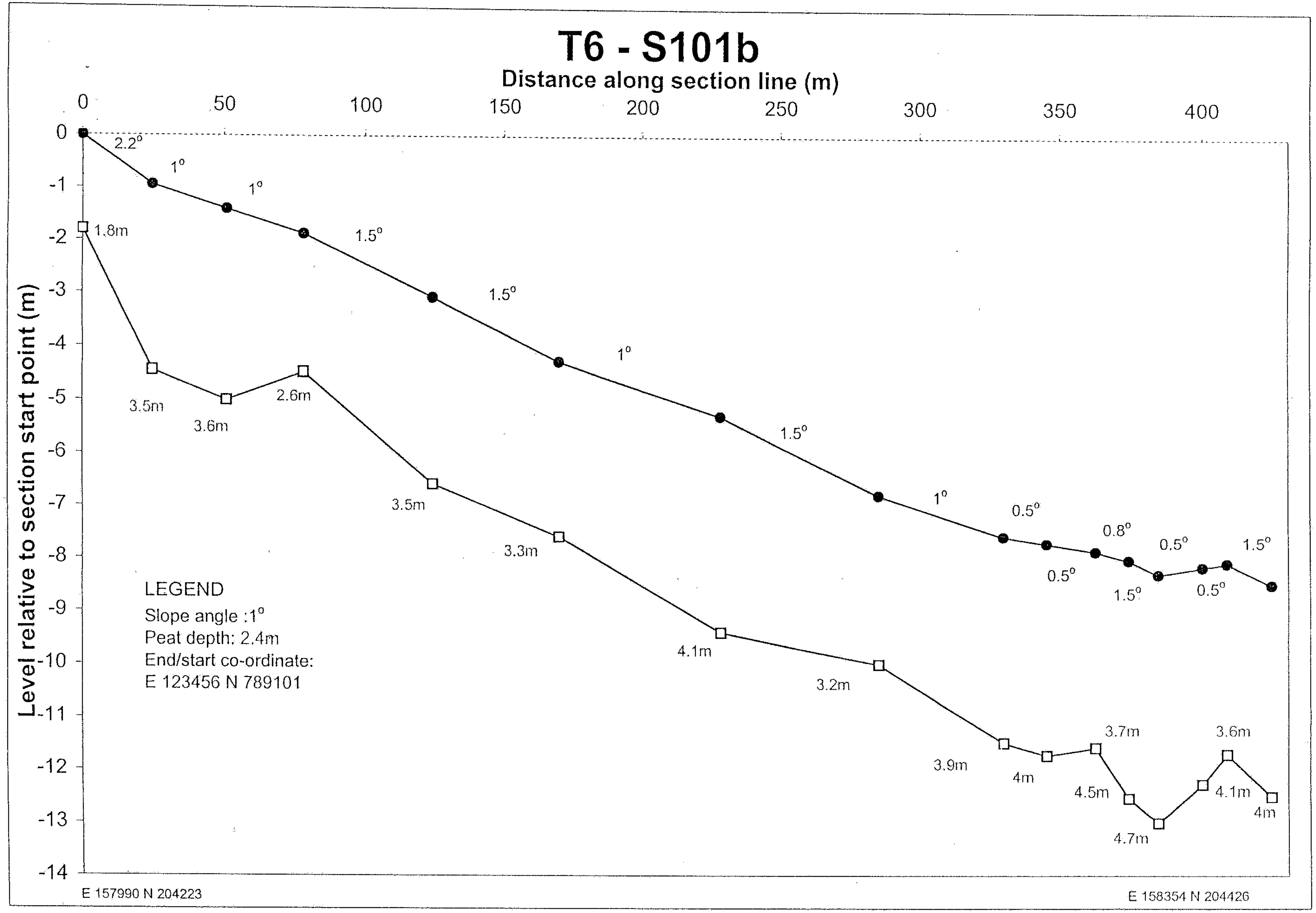


T6 - S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
Level relative to section start point (m)
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
0.5°
4.5°
1°
2.5°
1.5°
2°
3.6m
1.3m
1.2m
1.4m
1.75m
2.2m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157891 N 204548
E 157993 N 204362

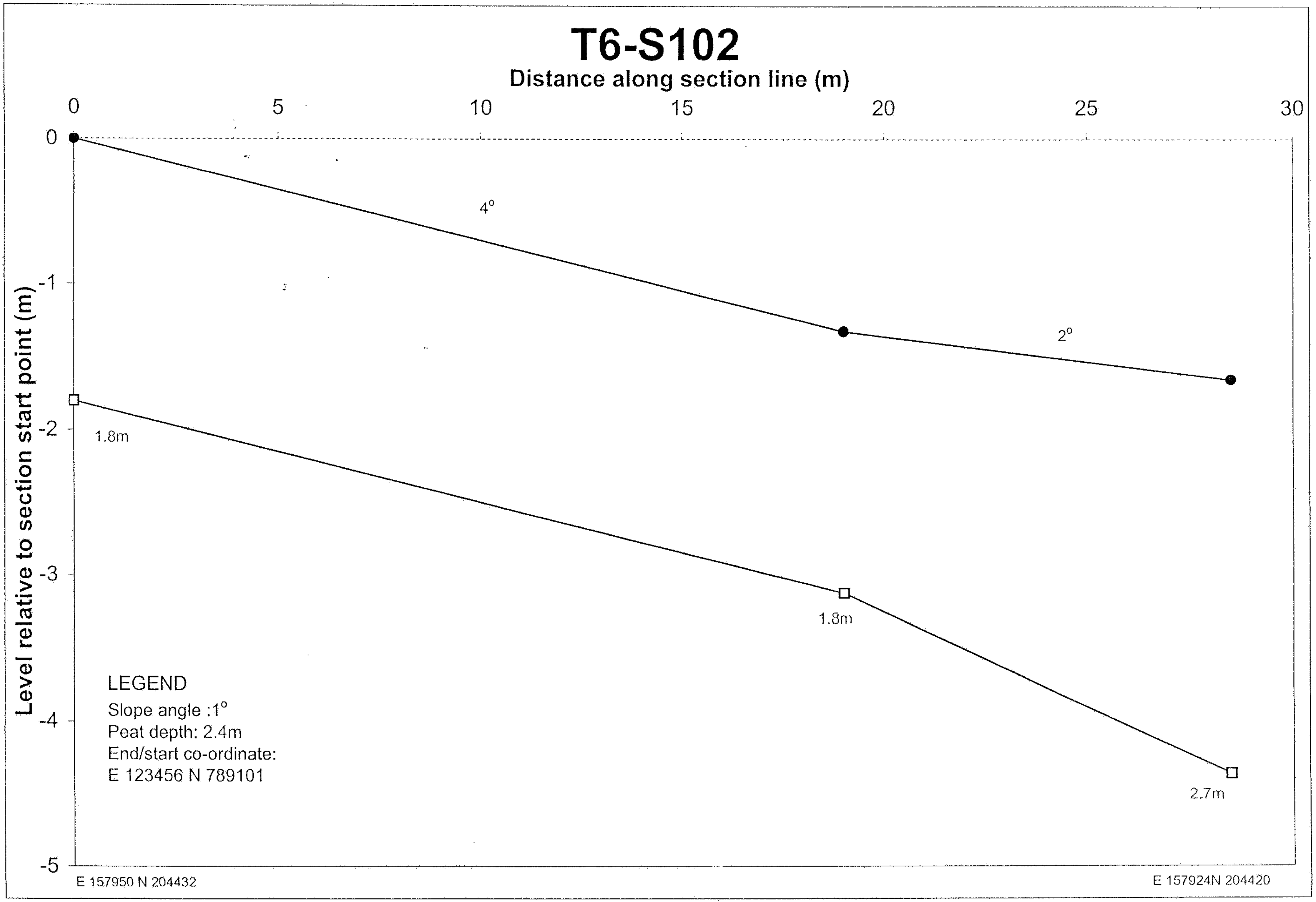


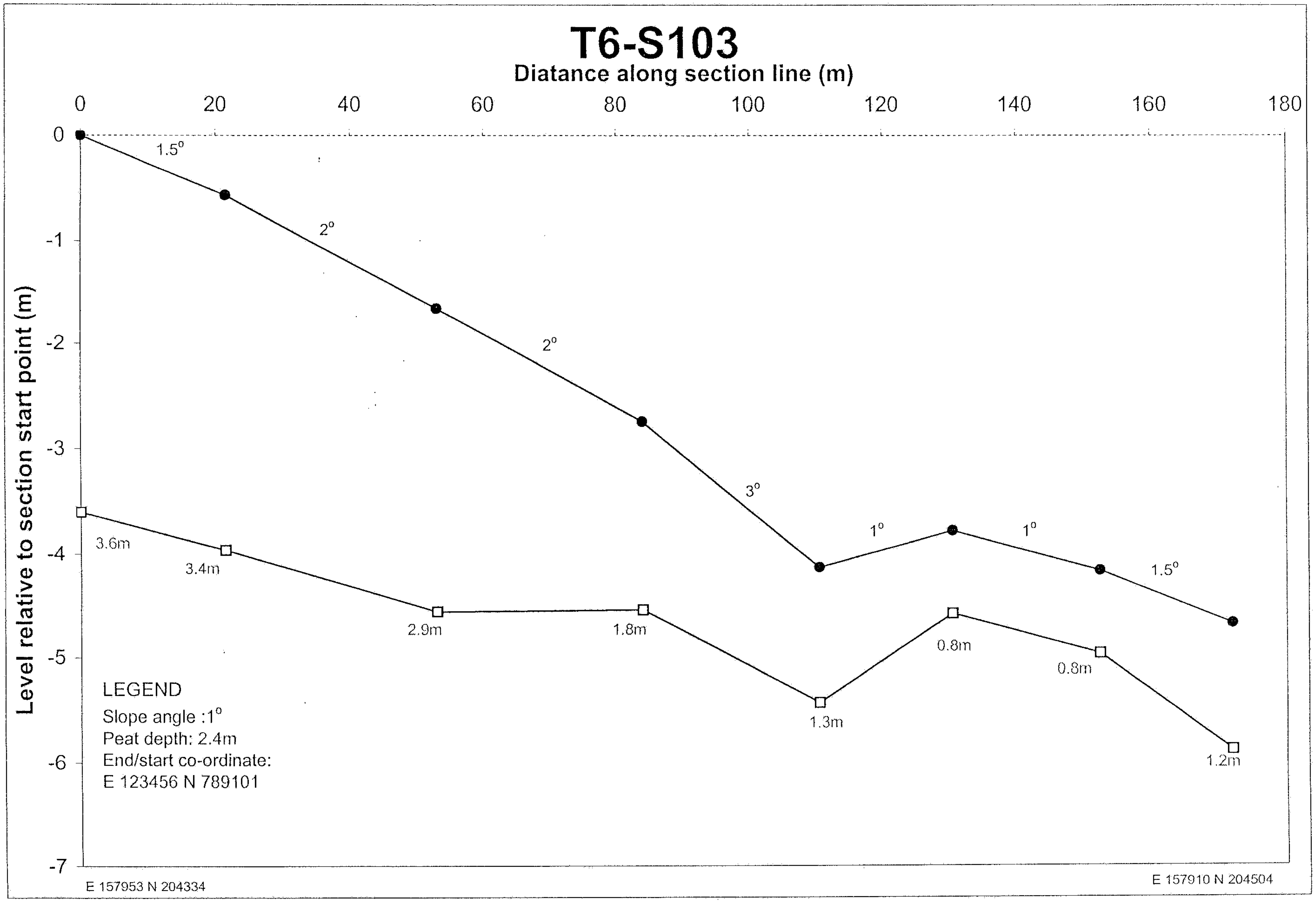
T6-S100
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
4°
3°
1°
2.5m
2.4m
3m
3.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157987 N 204368
E 157940 N 204343


T6-S101
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
4.5°
3.5°
3°
1.75m
1.54m
3m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157962 N 204391
E 157922 N 204371

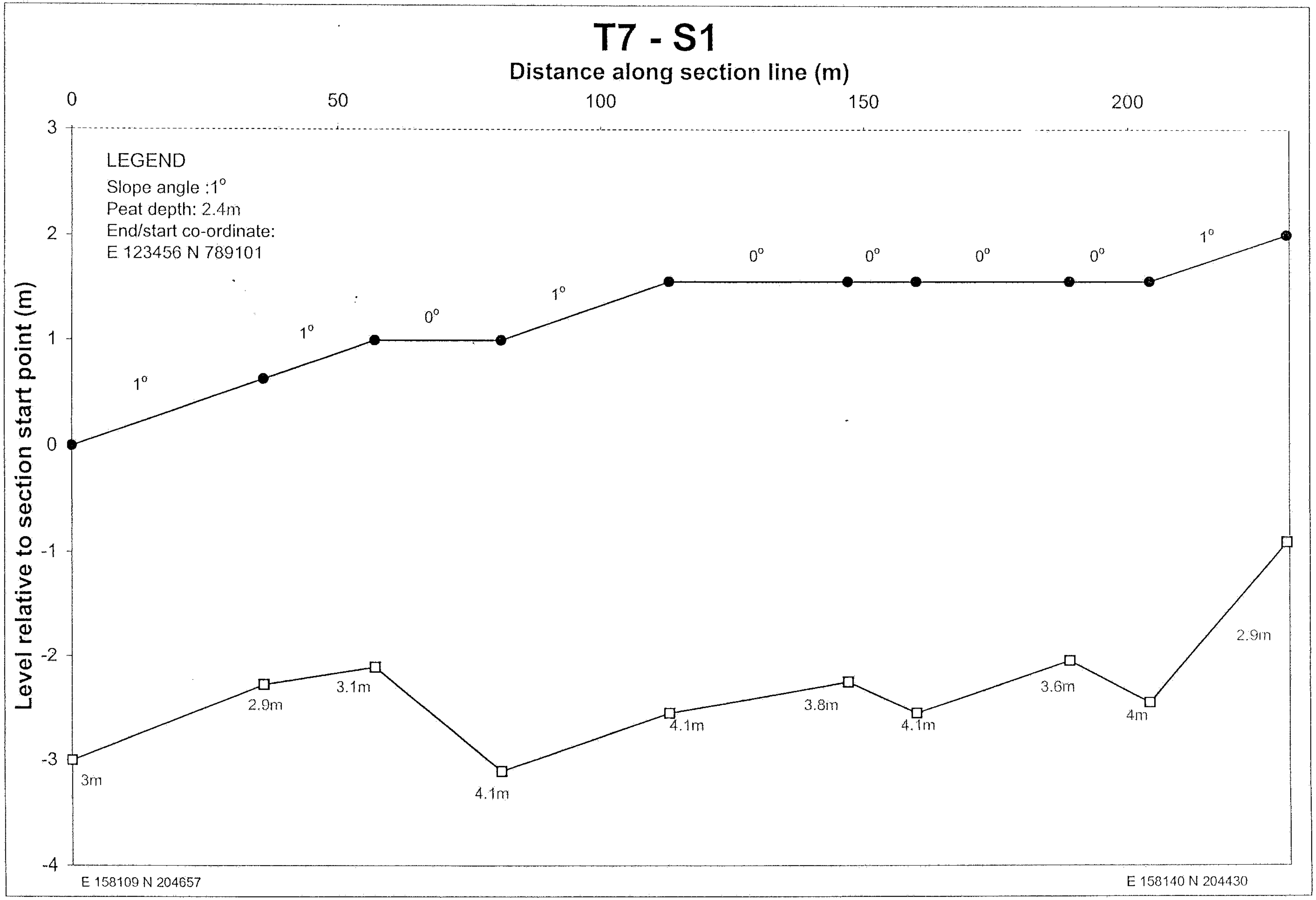


T6 - S101b
Distance along section line (m)
0
50
100
150
200
250
300
350
400
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
2.2°
1°
1°
1.5°
1.5°
1°
1.5°
1°
0.5°
0.8°
0.5°
1.5°
0.5°
1.5°
0.5°
1.8m
3.5m
3.6m
2.6m
3.5m
3.3m
4.1m
3.2m
3.9m
4m
3.7m
4.5m
4.7m
3.6m
4.1m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157990 N 204223
E 158354 N 204426

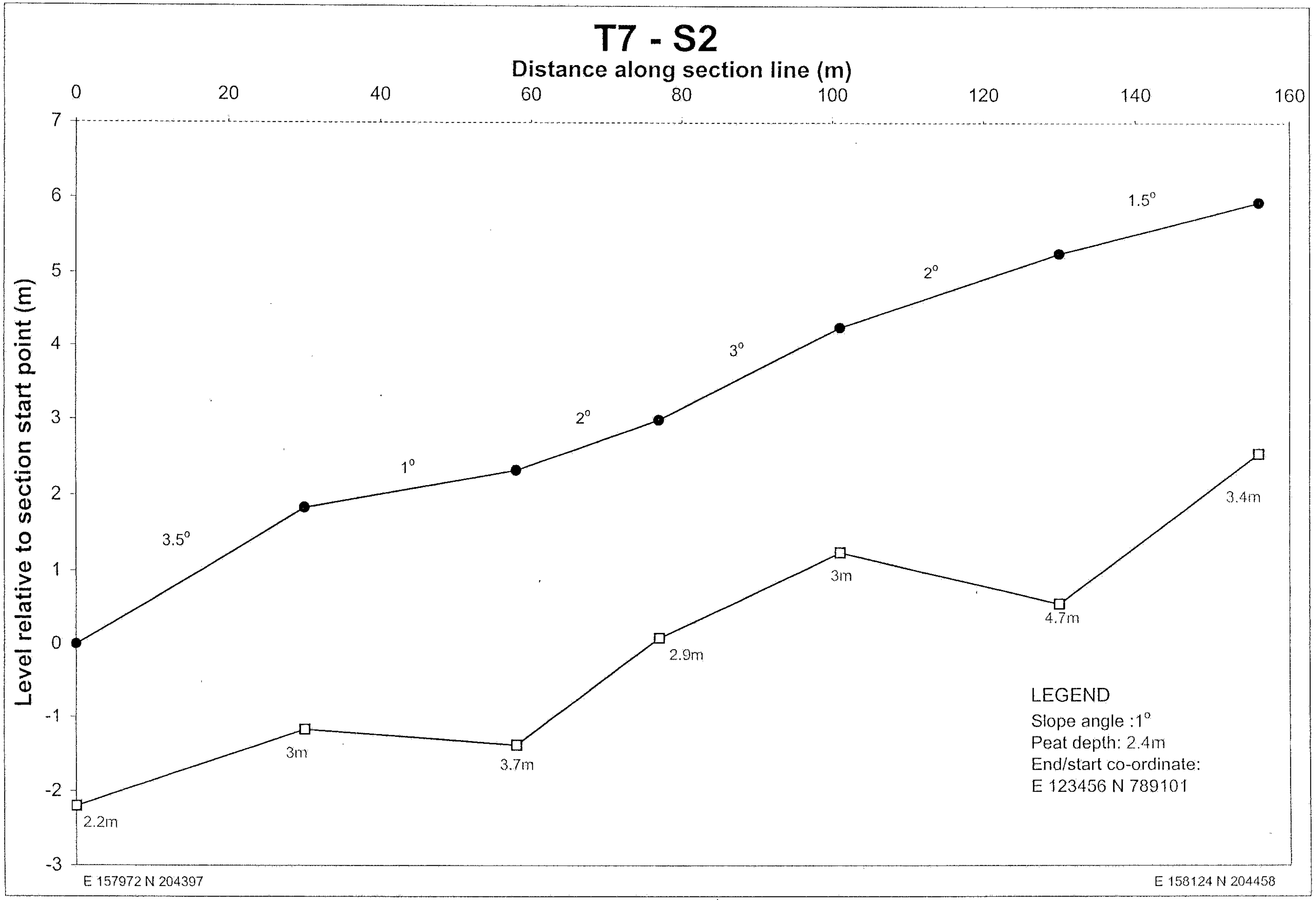

T6-S102
Distance along section line (m)
0
5
10
15
20
25
30
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
4°
2°
1.8m
1.8m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157950 N 204432
E 157924N 204420

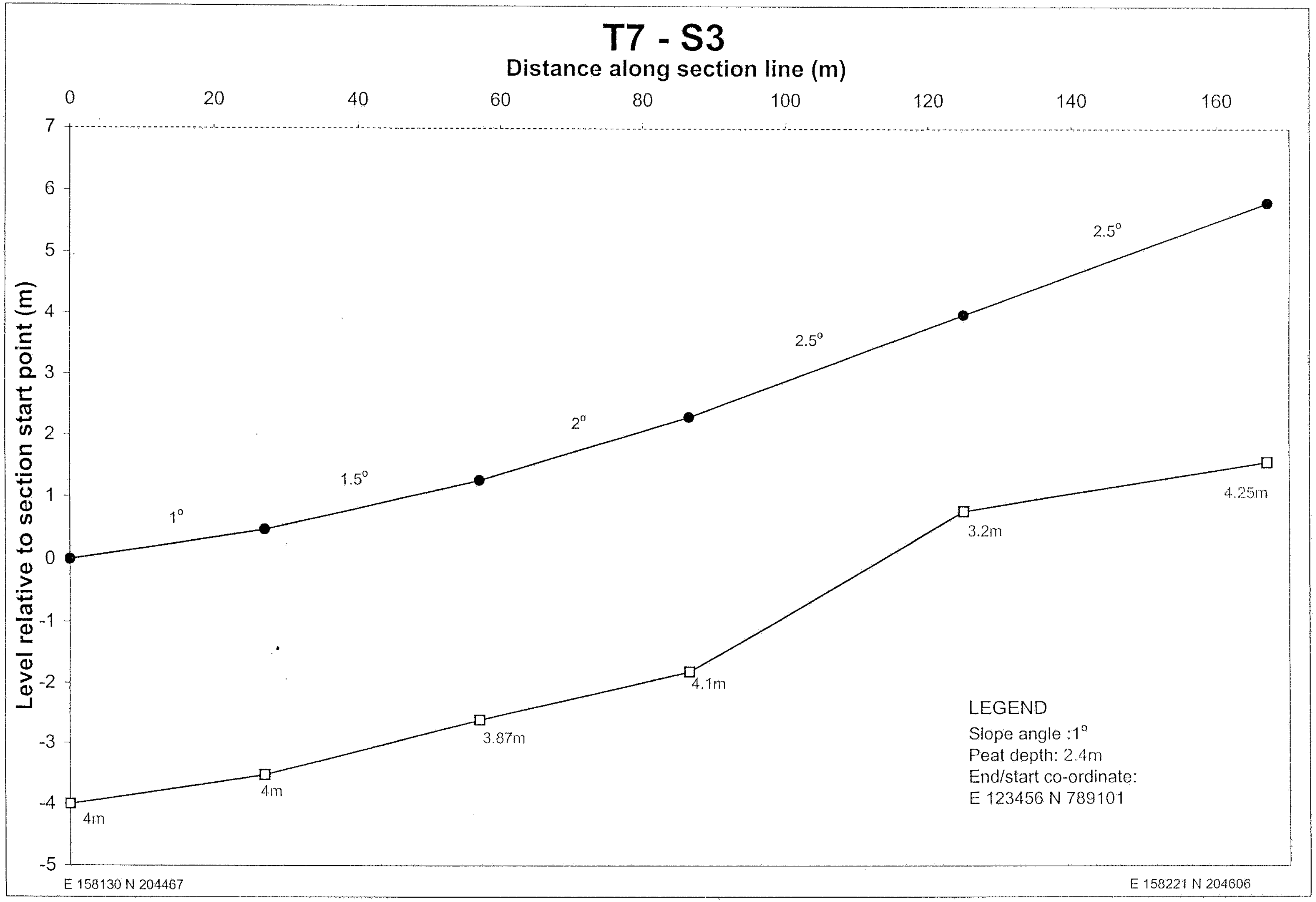


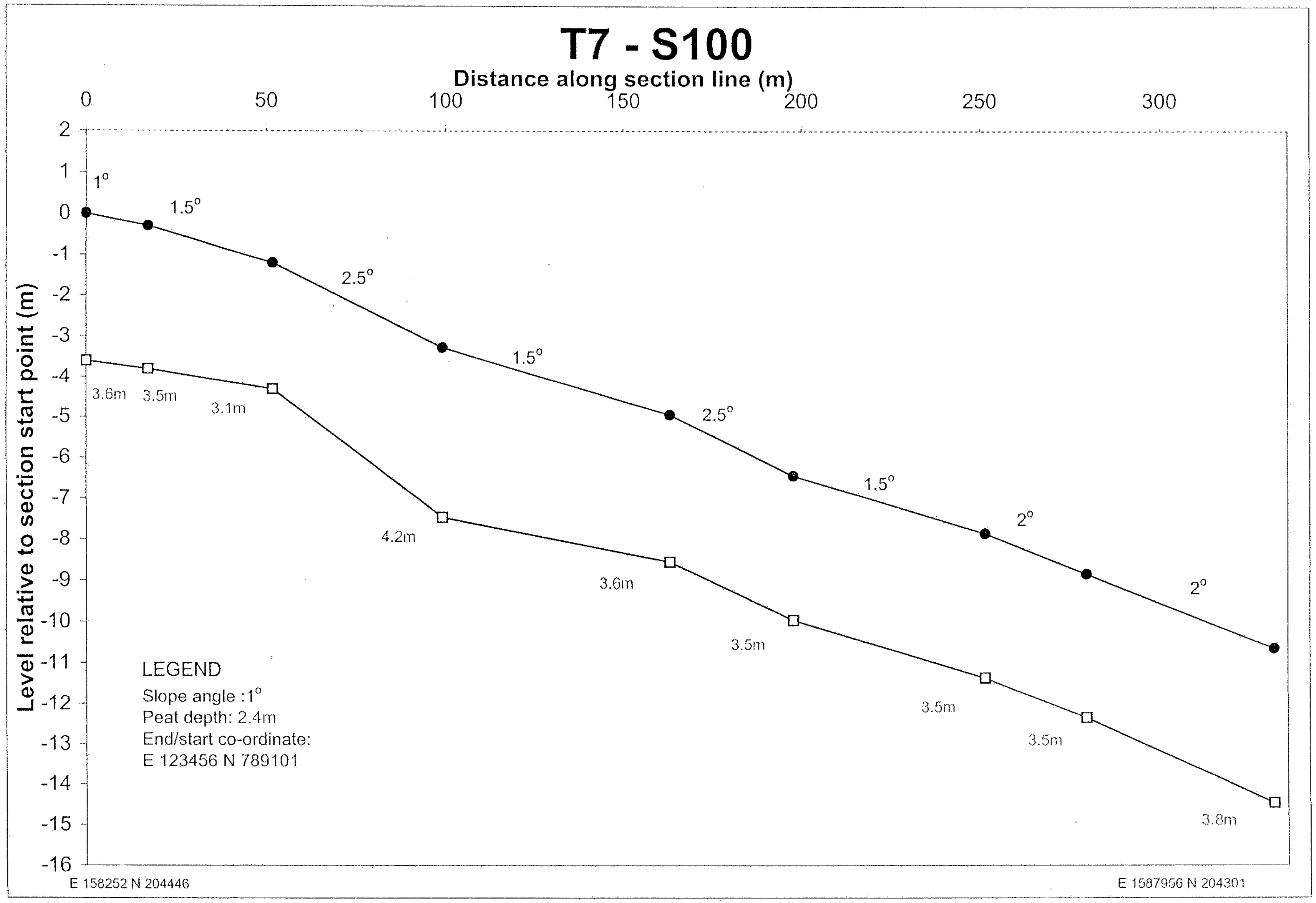
T6-S103
Diatance along section line (m)
0
20
40
60
80
100
120
140
160
180
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
1.5°
2°
2°
3°
1°
1°
1.5°
3.6m
3.4m
2.9m
1.8m
1.3m
0.8m
0.8m
1.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157953 N 204334
E 157910 N 204504

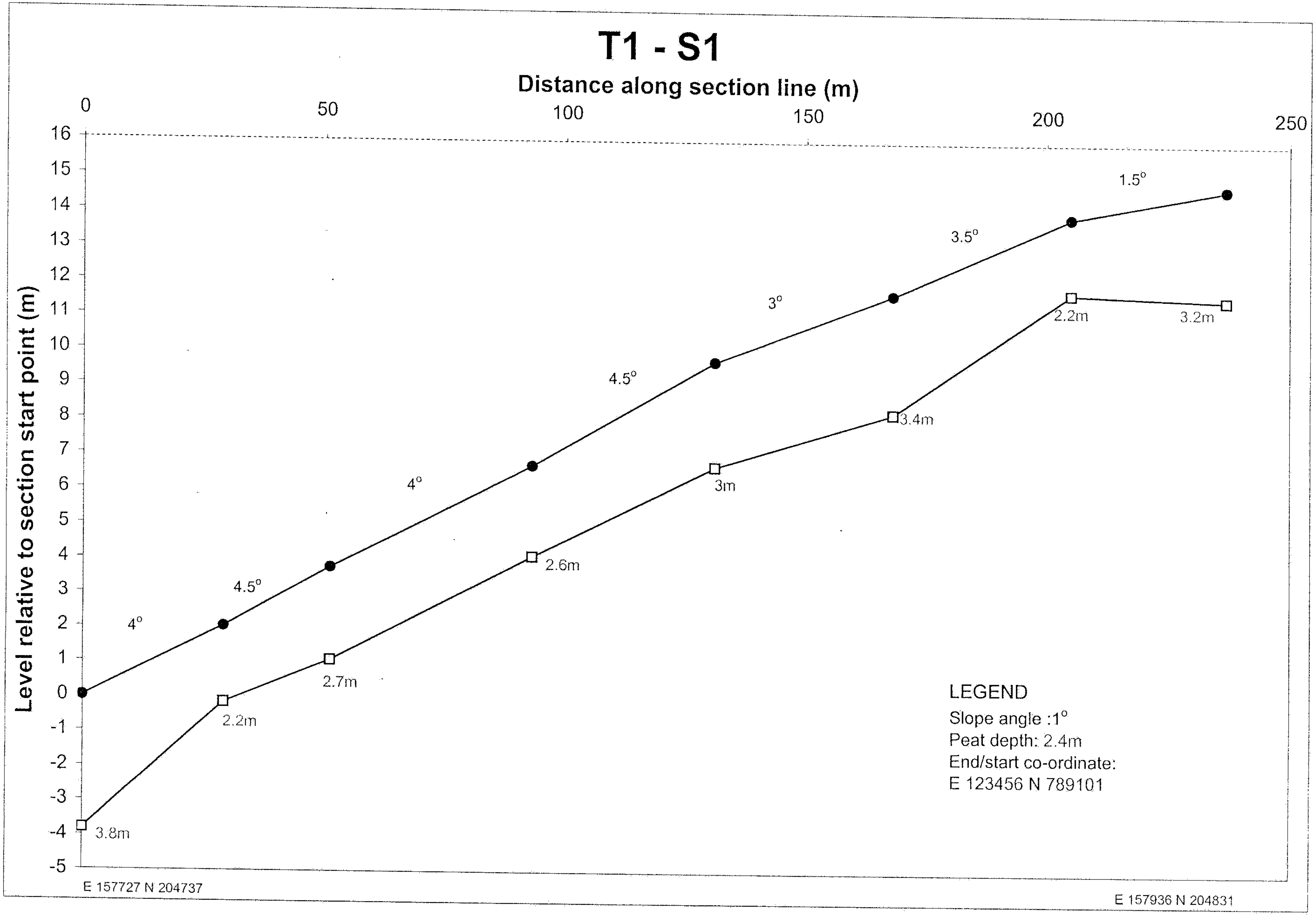


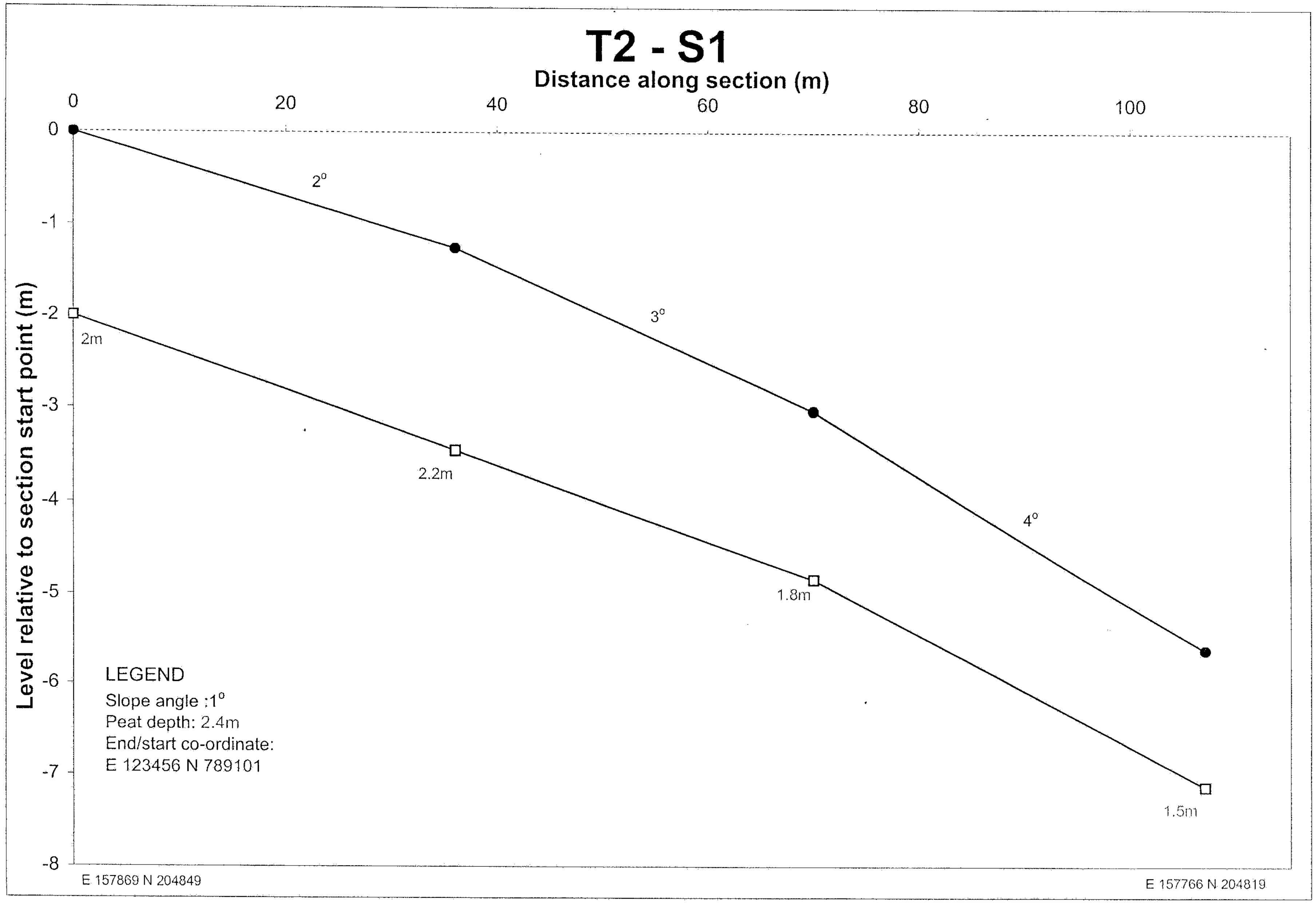
T7 - S1
Distance along section line (m)
0
50
100
150
200
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
1°
1°
0°
1°
0°
0°
0°
0°
1°
3m
2.9m
3.1m
4.1m
4.1m
3.8m
4.1m
3.6m
4m
2.9m
E 158109 N 204657
E 158140 N 204430

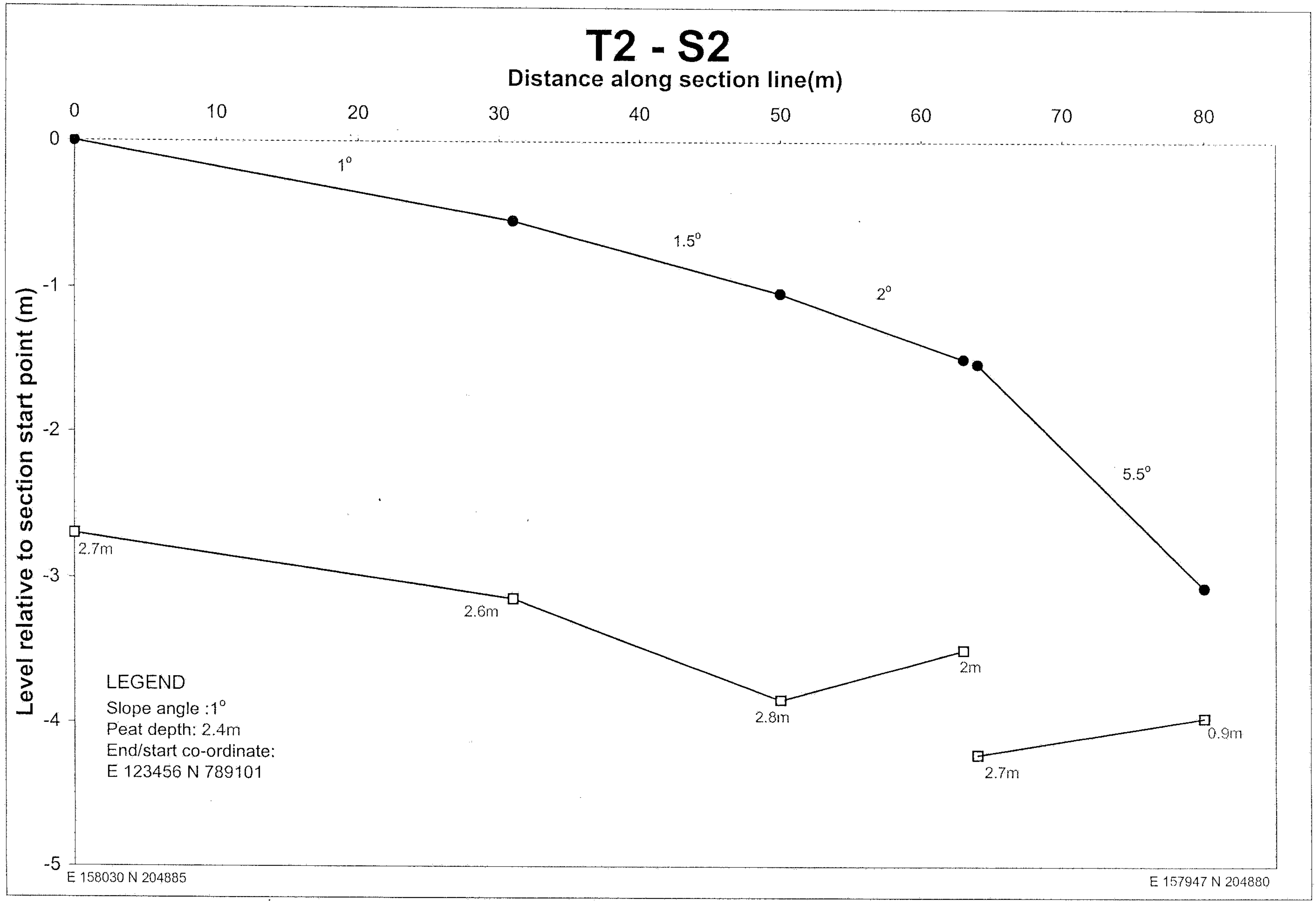

T7 - S2
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
3.5°
1°
2°
3°
2°
1.5°
2.2m
3m
3.7m
2.9m
3m
4.7m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157972 N 204397
E 158124 N 204458

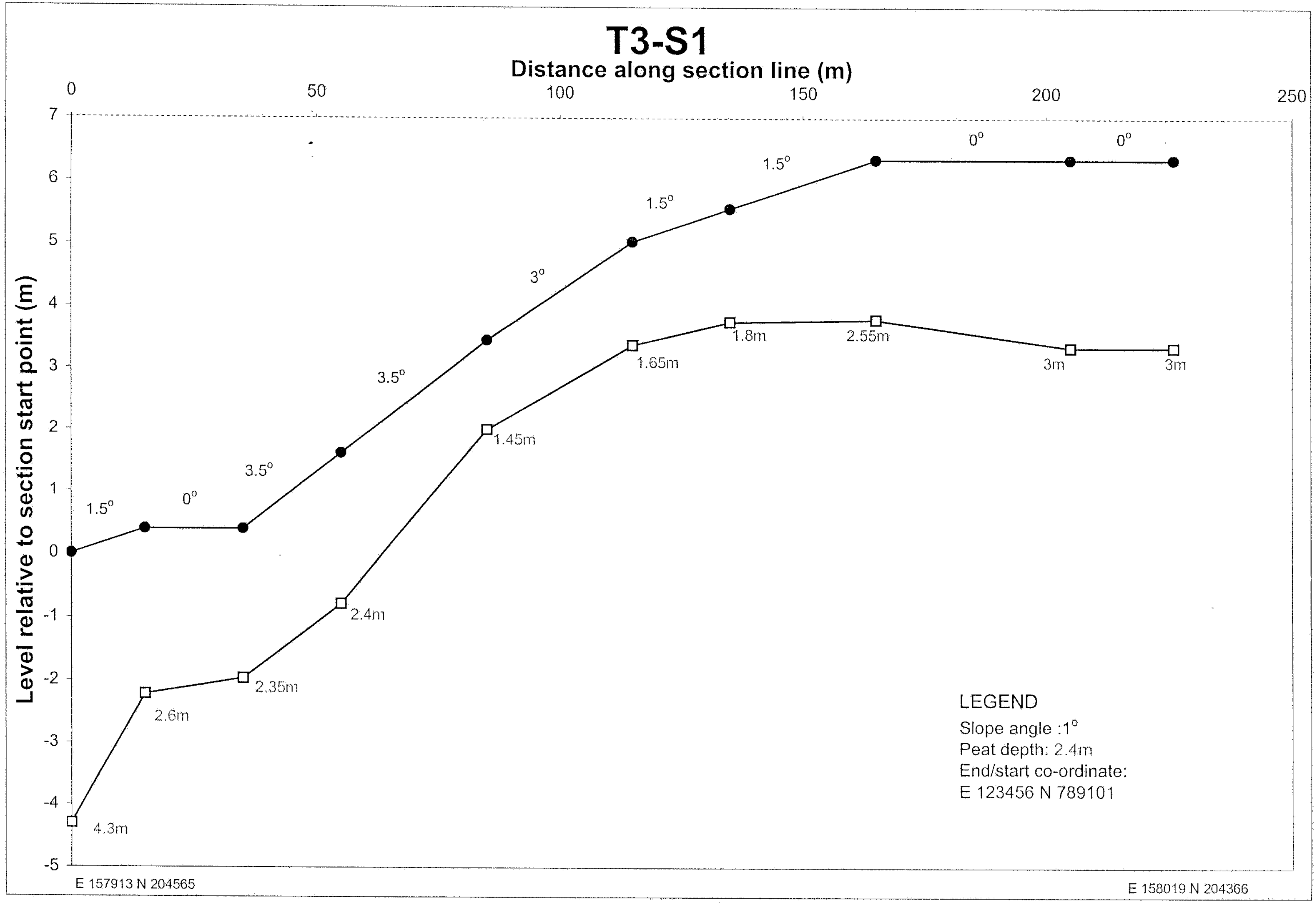

T7 - S3
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1°
1.5°
2°
2.5°
2.5°
4m
4m
3.87m
4.1m
3.2m
4.25m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158130 N 204467
E 158221 N 204606


T7 - S100
Distance along section line (m)
0
50
100
150
200
250
300
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
Level relative to section start point (m)
1°
1.5°
2.5°
1.5°
2.5°
1.5°
2°
2°
3.6m
3.5m
3.1m
4.2m
3.6m
3.5m
3.5m
3.5m
3.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158252 N 204446
E 1587956 N 204301

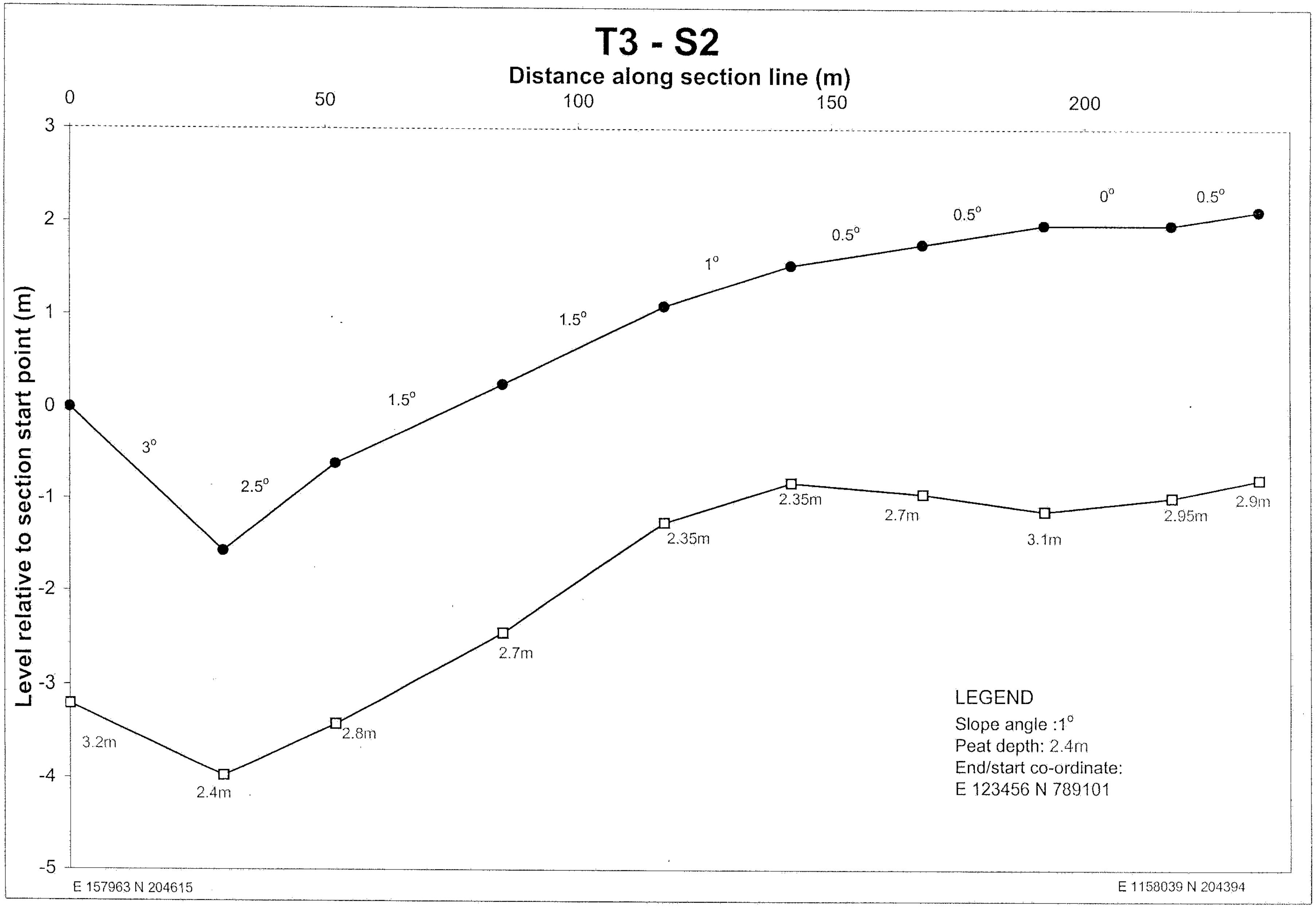

T1 - S1
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
4°
4.5°
4°
4.5°
3°
3.5°
1.5°
3.8m
2.2m
2.7m
2.6m
3m
3.4m
2.2m
3.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157727 N 204737
E 157936 N 204831


T2 - S1
Distance along section (m)
0
20
40
60
80
100
0
-1
-2
-3
-4
-5
-6
-7
-8
Level relative to section start point (m)
2°
3°
4°
2m
2.2m
1.8m
1.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157869 N 204849
E 157766 N 204819

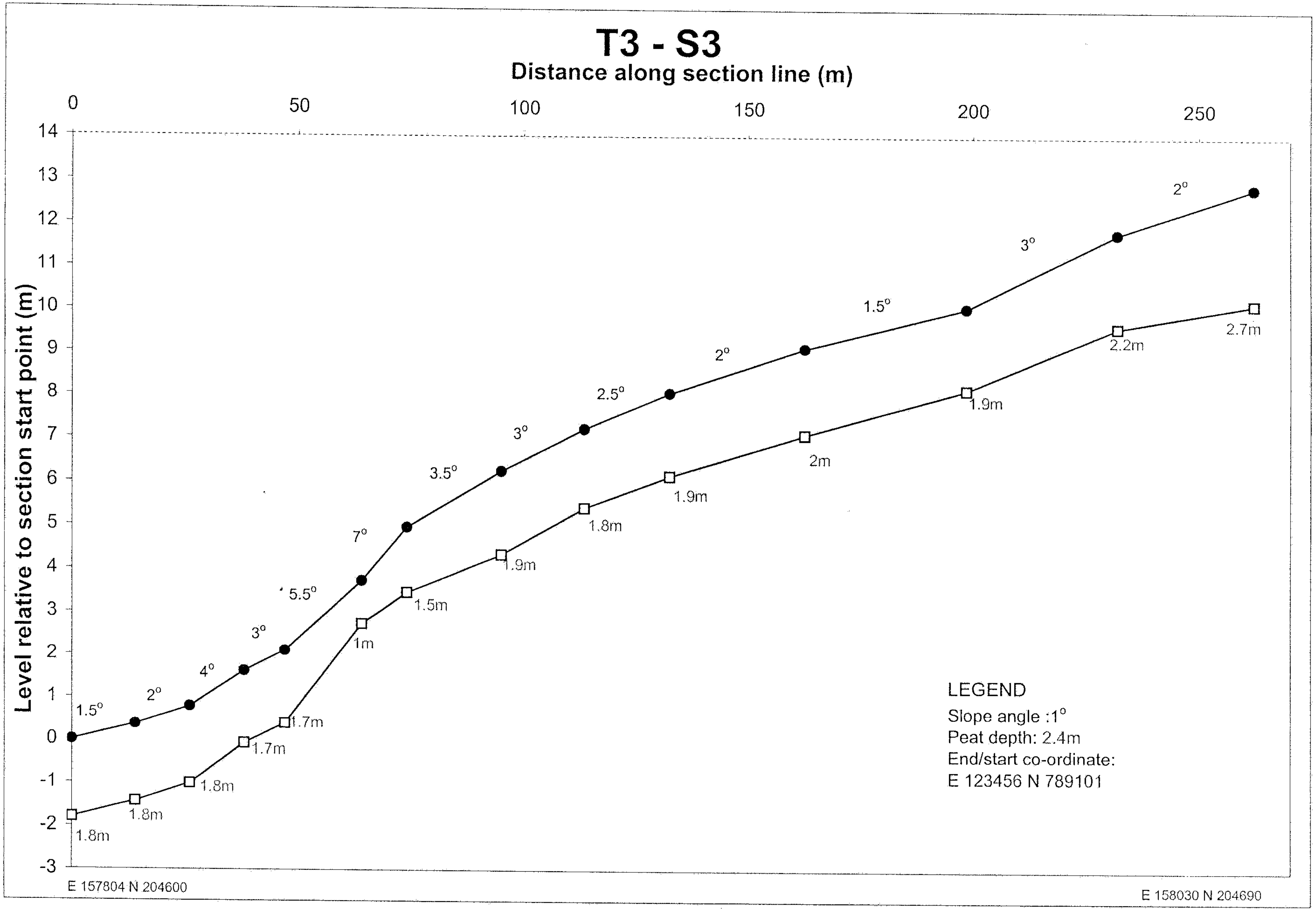

T2 - S2
Distance along section line(m)
0
10
20
30
40
50
60
70
80
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
1°
1.5°
2°
5.5°
2.7m
2.6m
2.8m
2m
2.7m
0.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158030 N 204885
E 157947 N 204880



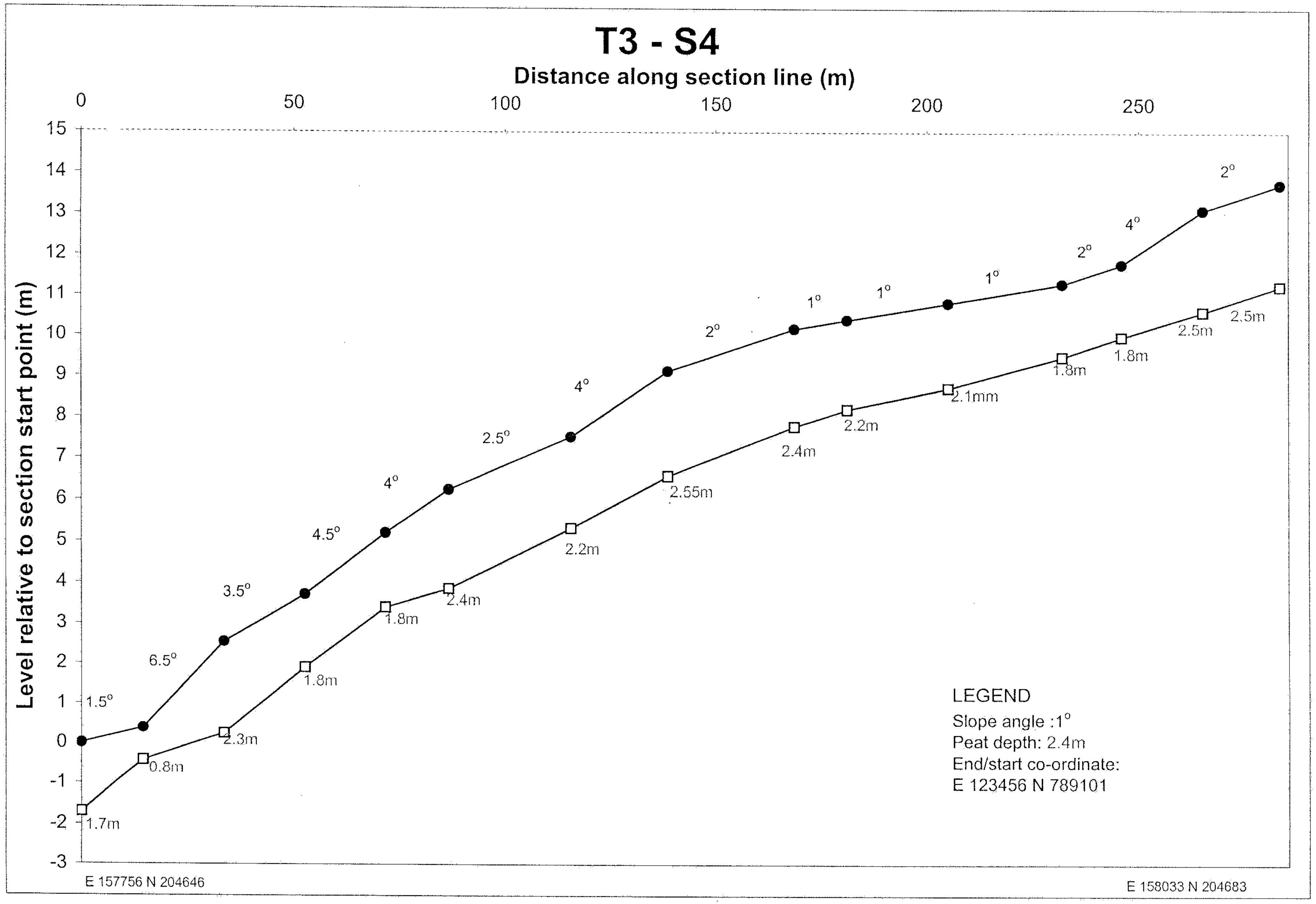
T3-S1
Distance along section line (m)
0
50
100
150
200
250
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
1.5°
0°
3.5°
3.5°
3°
1.5°
1.5°
0°
0°
4.3m
2.6m
2.35m
2.4m
1.45m
1.65m
1.8m
2.55m
3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157913 N 204565
E 158019 N 204366



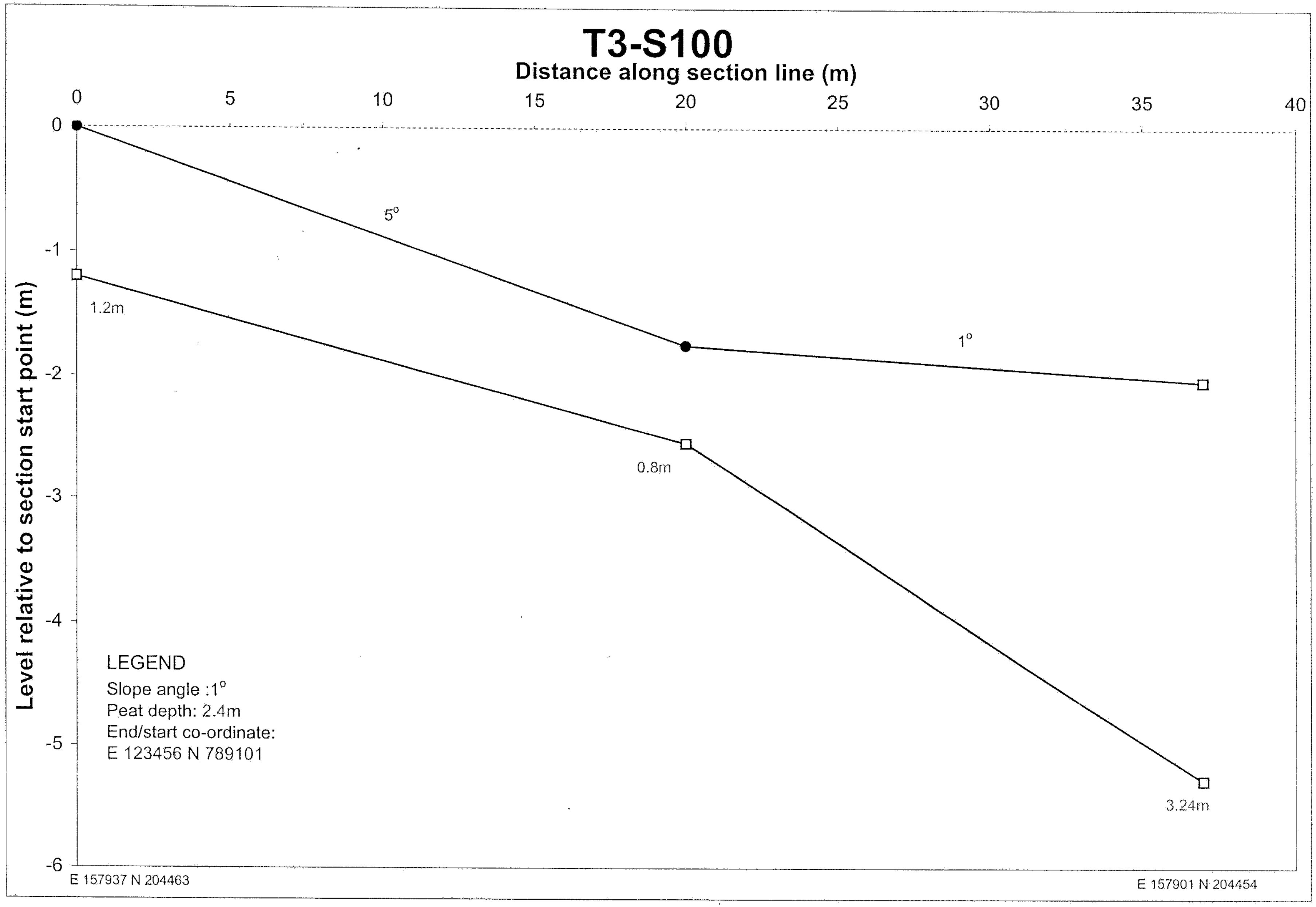
T3 - S2
Distance along section line (m)
0
50
100
150
200
3
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
3°
2.5°
1.5°
1.5°
1°
0.5°
0.5°
0°
0.5°
3.2m
2.4m
2.8m
2.7m
2.35m
2.35m
2.7m
3.1m
2.95m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157963 N 204615
E 1158039 N 204394

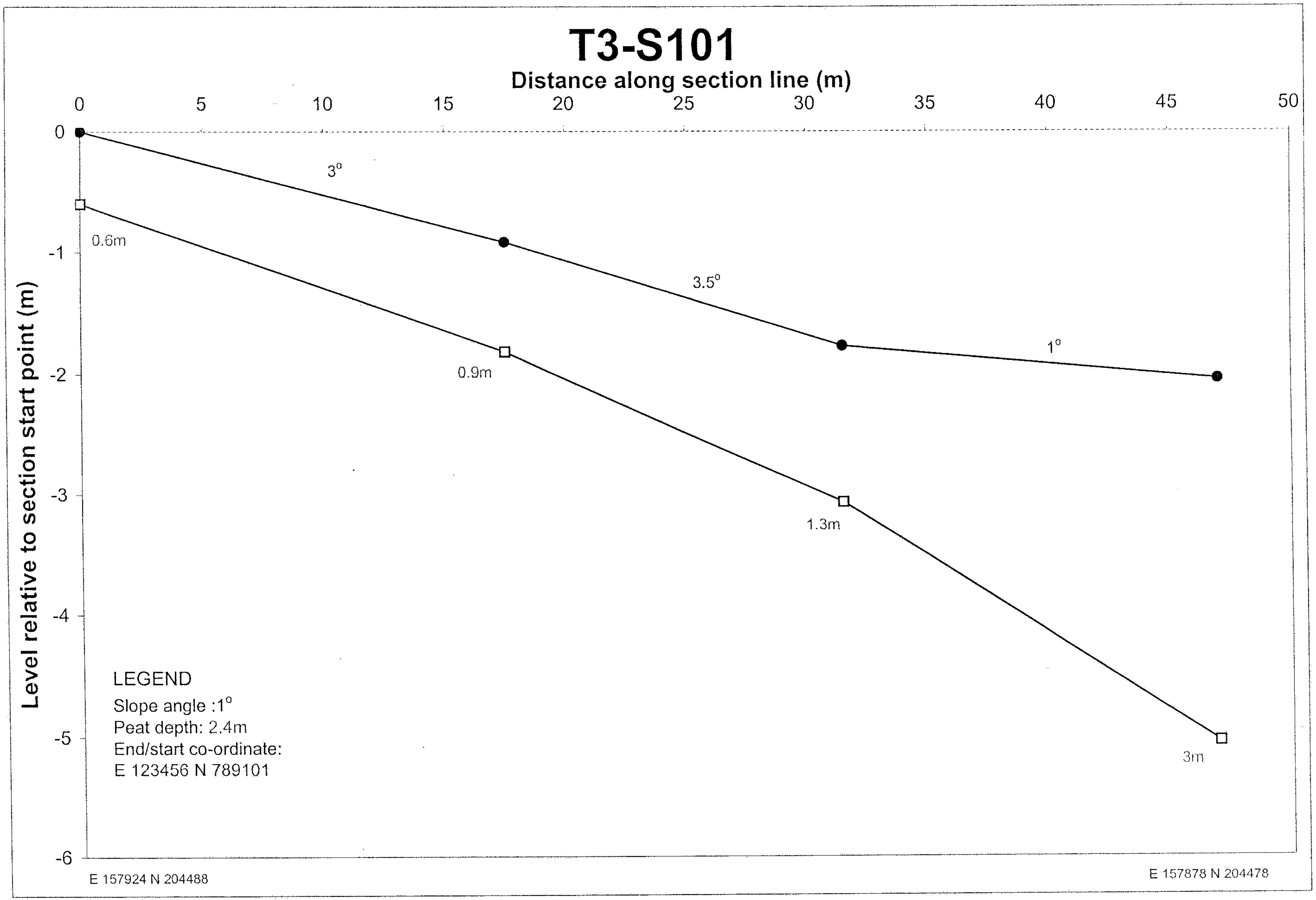


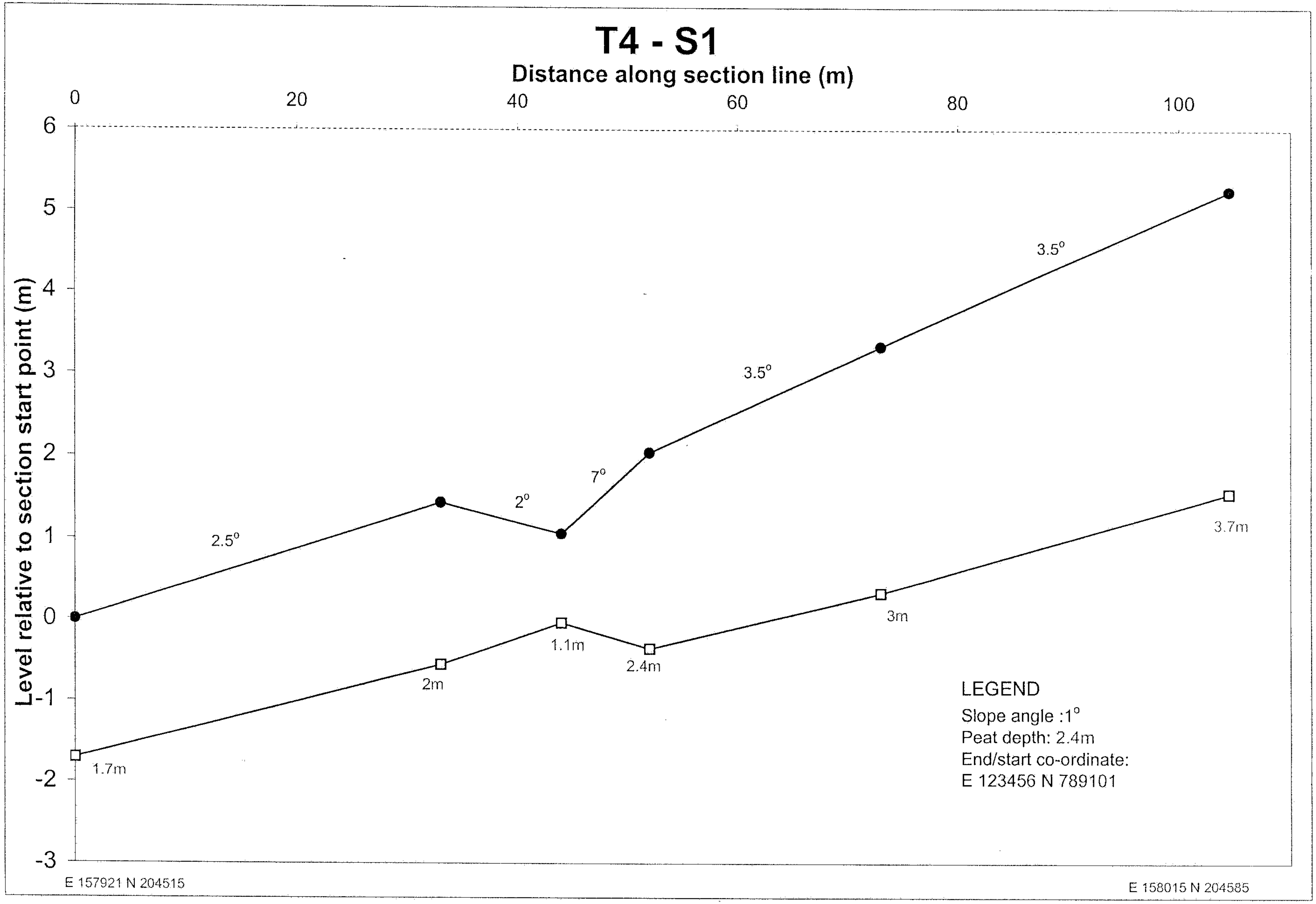
T3 - S3
Distance along section line (m)
0
50
100
150
200
250
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
1.5°
2°
4°
3°
5.5°
7°
3.5°
3°
2.5°
2°
1.5°
3°
2°
1.8m
1.8m
1.8m
1.7m
1.7m
1m
1.5m
1.9m
1.8m
1.9m
2m
1.9m
2.2m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157804 N 204600
E 158030 N 204690



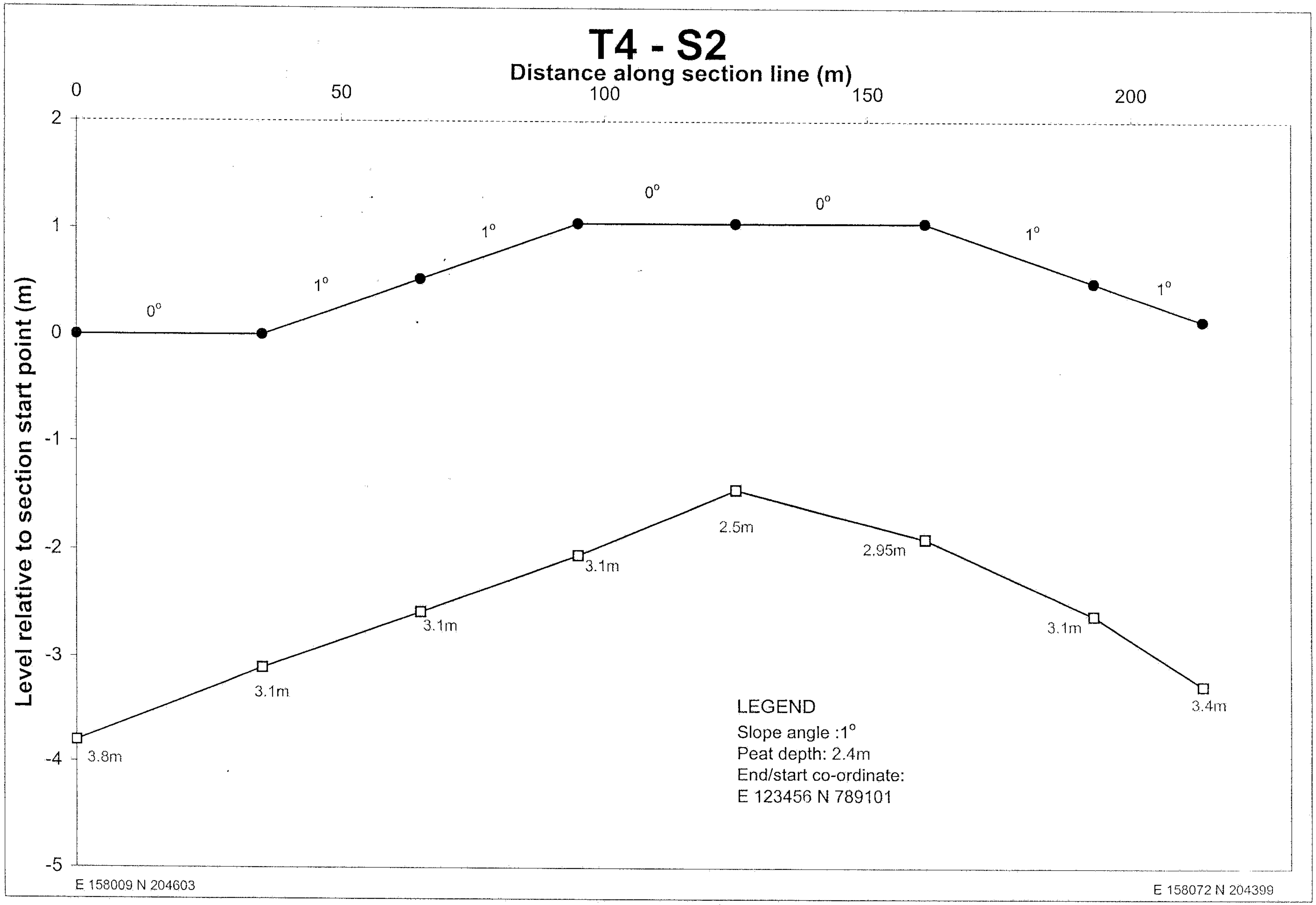
T3 - S4
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
1.5°
6.5°
3.5°
4.5°
4°
2.5°
4°
2°
1°
1°
1°
2°
4°
2°
1.7m
0.8m
2.3m
1.8m
1.8m
2.4m
2.2m
2.55m
2.4m
2.2m
2.1mm
1.8m
1.8m
2.5m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157756 N 204646
E 158033 N 204683

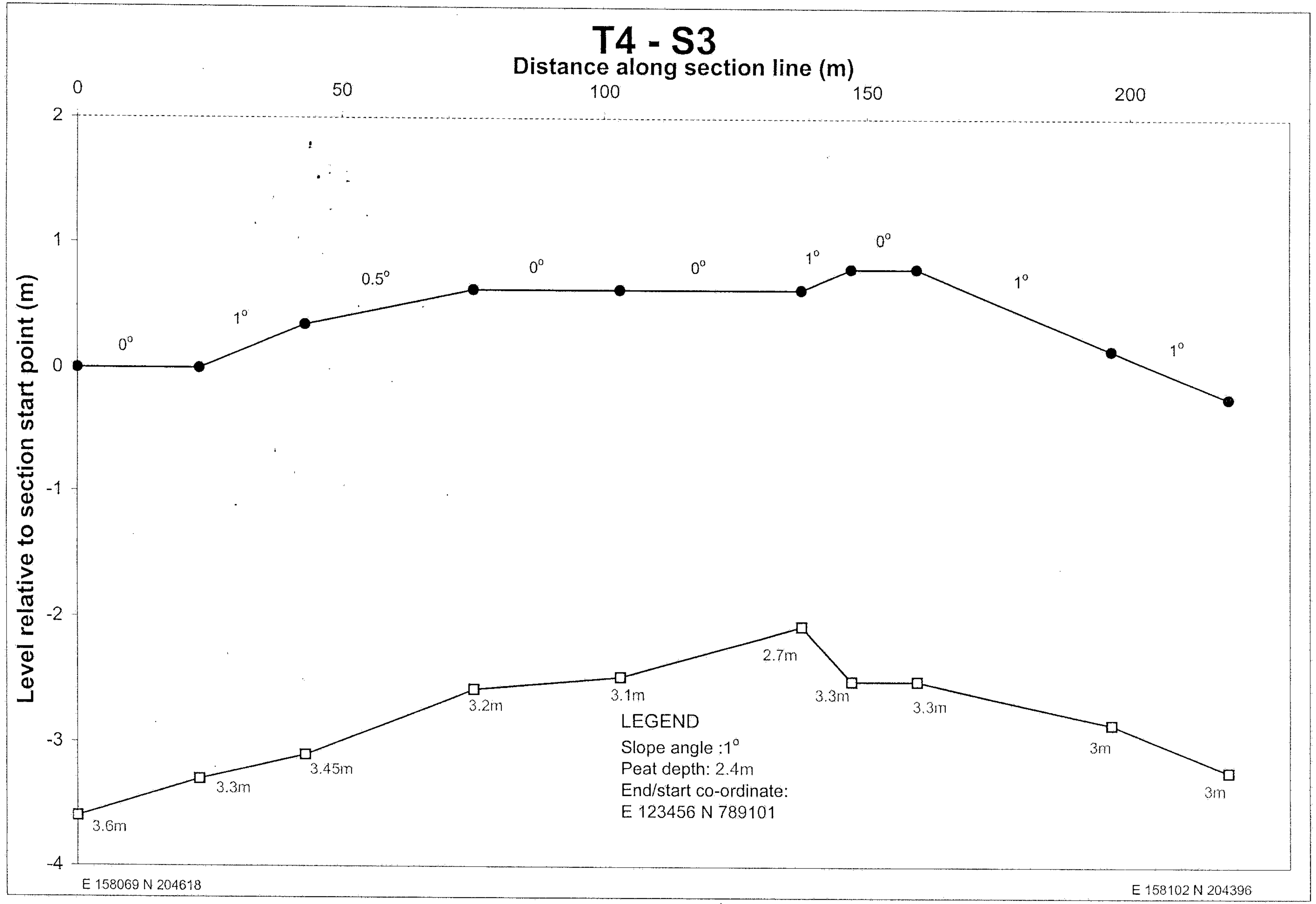

T3-S100
Distance along section line (m)
0
5
10
15
20
25
30
35
40
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
5°
1°
1.2m
0.8m
3.24m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157937 N 204463
E 157901 N 204454


T3-S101
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
3°
3.5°
1°
0.6m
0.9m
1.3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157924 N 204488
E 157878 N 204478

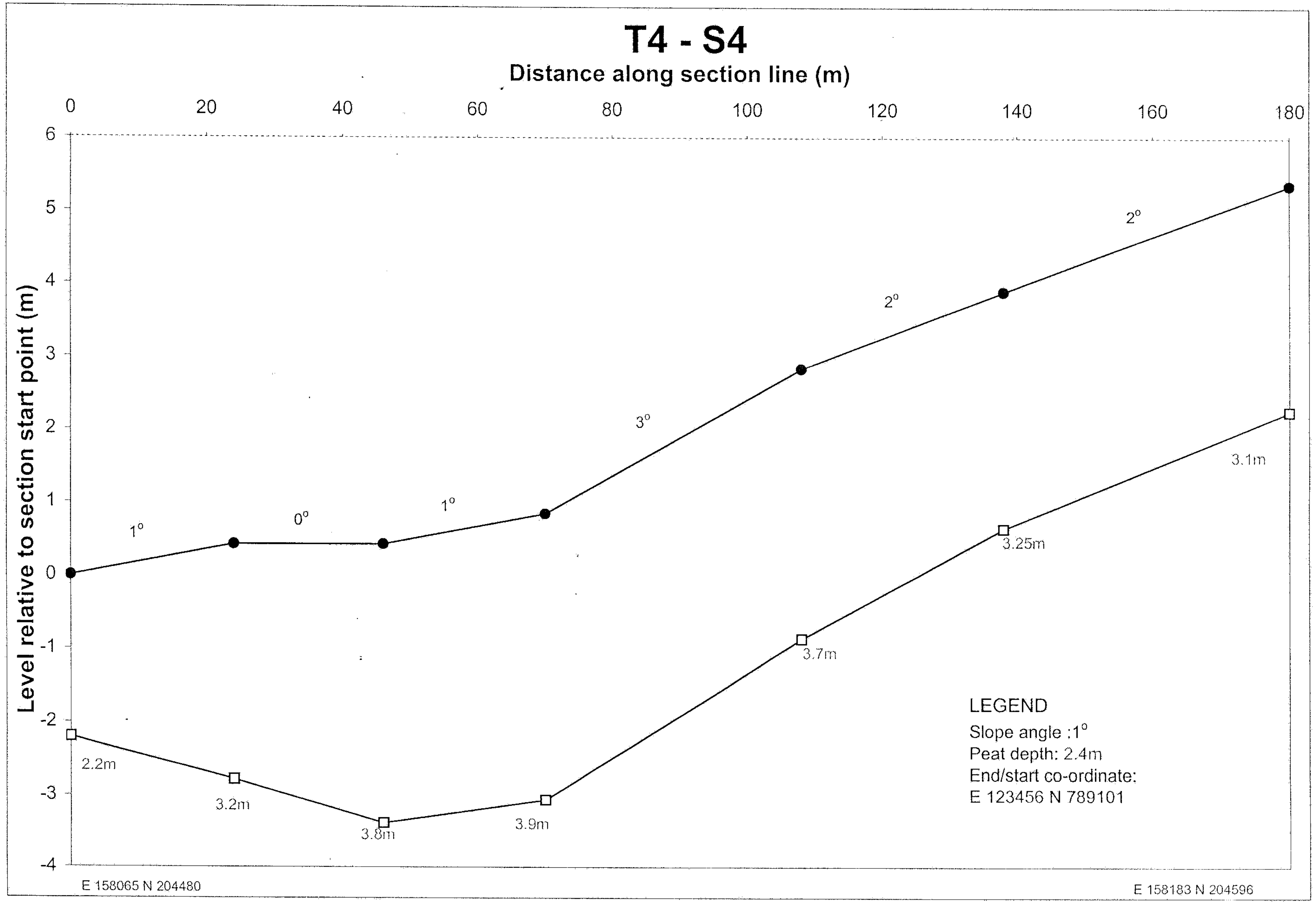


T4 - S1
Distance along section line (m)
0
20
40
60
80
100
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
2.5°
2°
7°
3.5°
3.5°
3.7m
3m
1.1m
2.4m
2m
1.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157921 N 204515
E 158015 N 204585

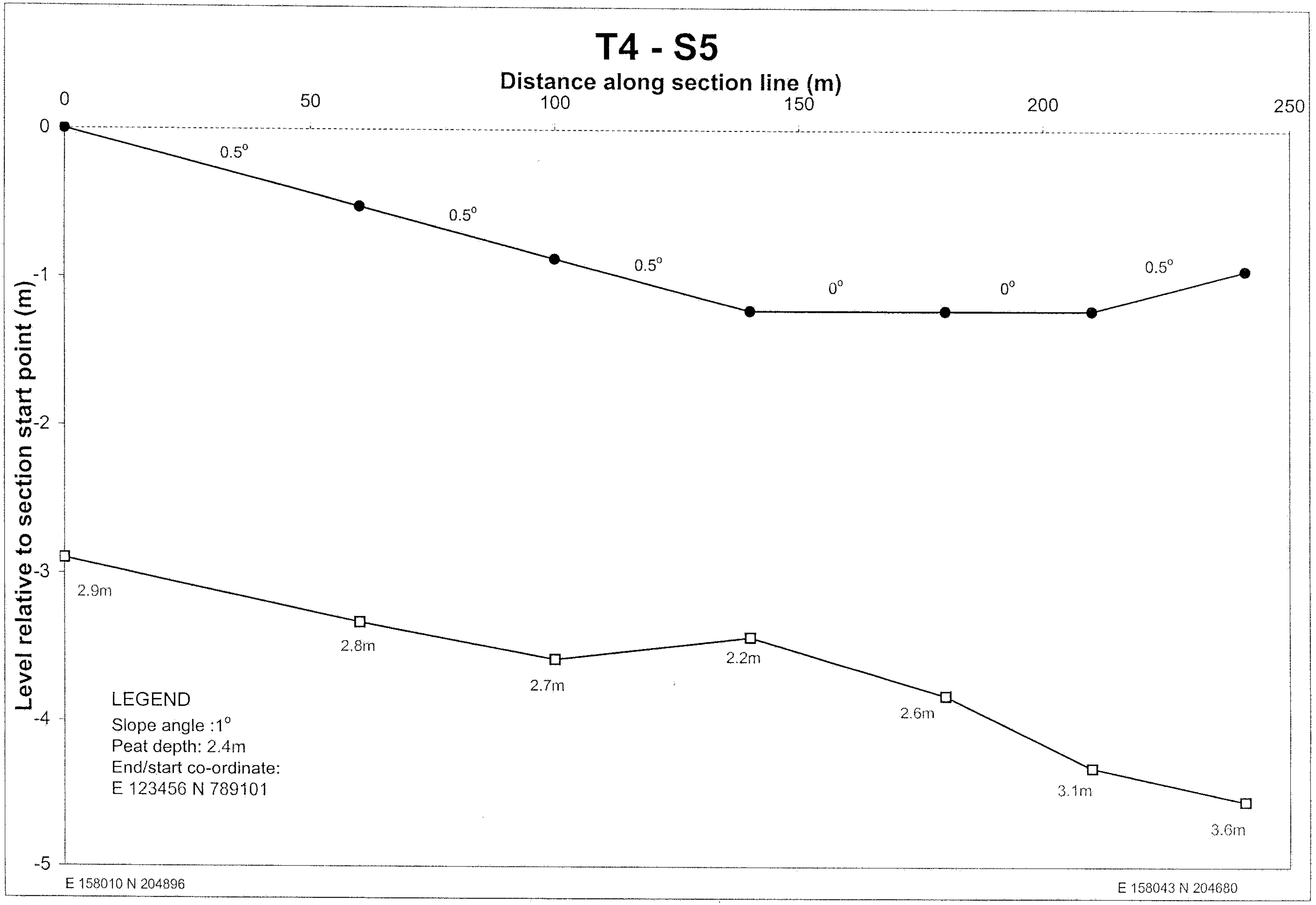

T4 - S2
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
2
1
0
-1
-2
-3
-4
-5
0°
1°
1°
0°
0°
1°
1°
3.8m
3.1m
3.1m
3.1m
2.5m
2.95m
3.1m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158009 N 204603
E 158072 N 204399



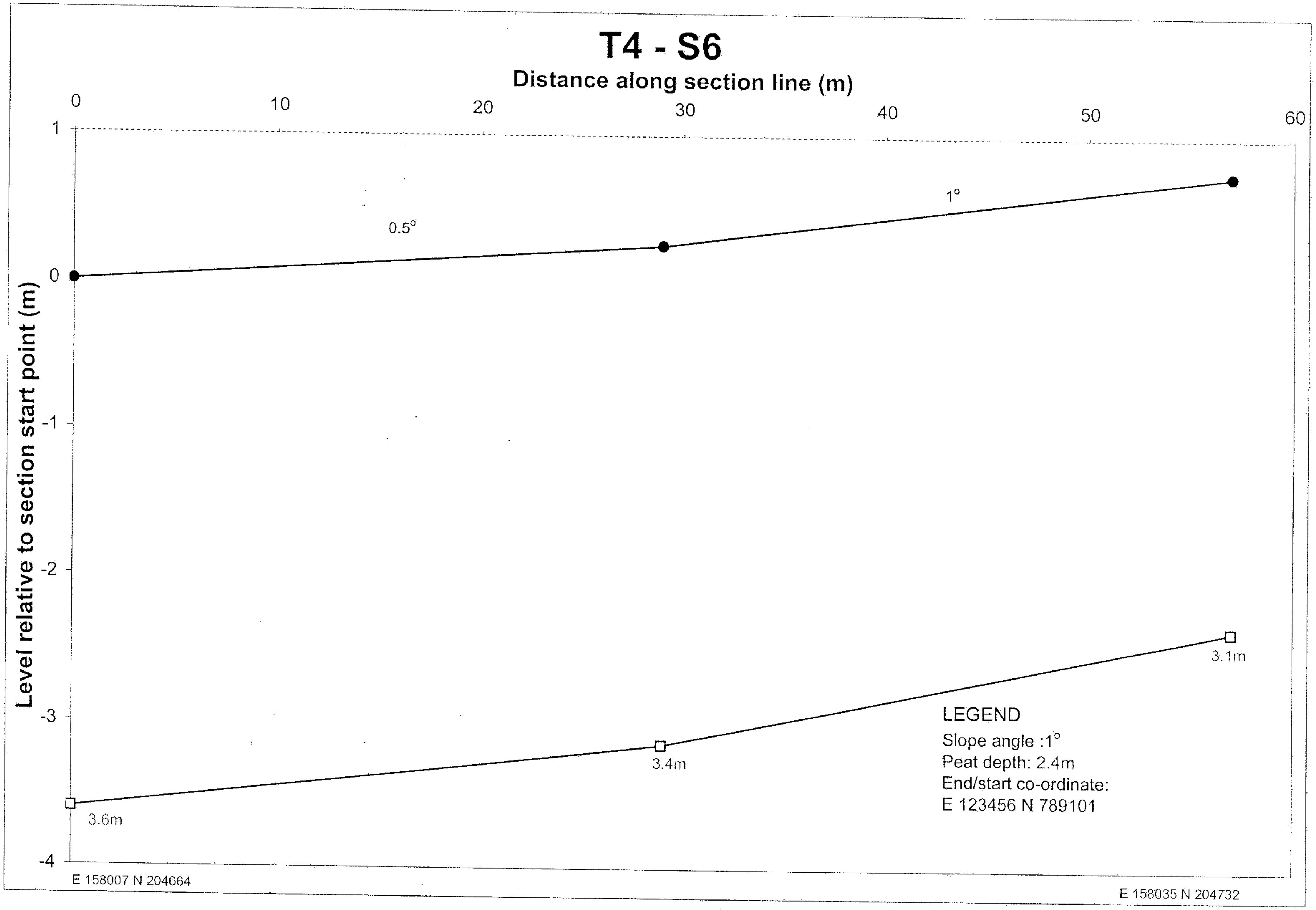
T4 - S3
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
2
1
0
-1
-2
-3
-4
0°
1°
0.5°
0°
0°
1°
0°
1°
1°
2.7m
3.1m
3.2m
3.3m
3.3m
3m
3.45m
3.3m
3.6m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158069 N 204618
E 158102 N 204396

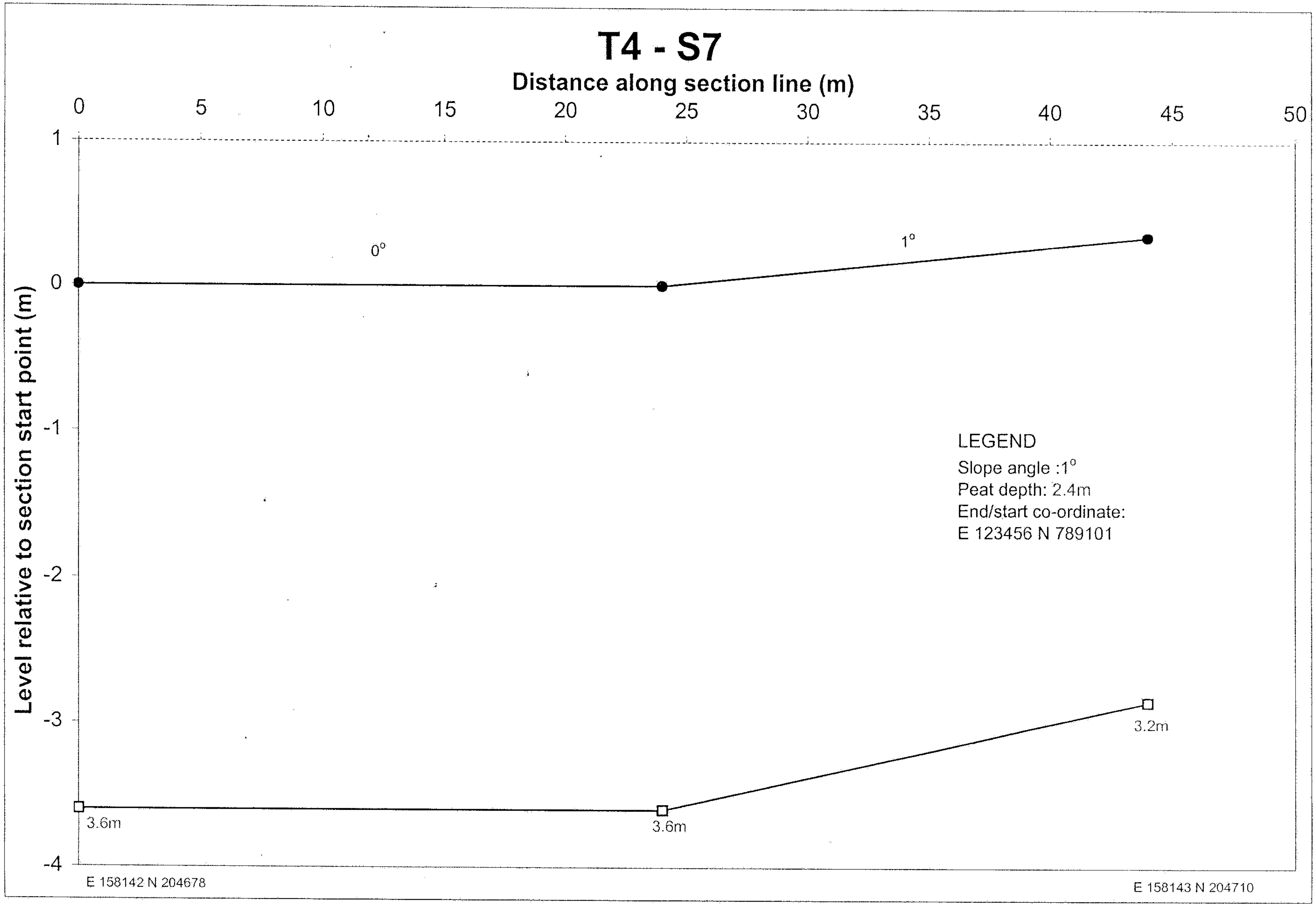


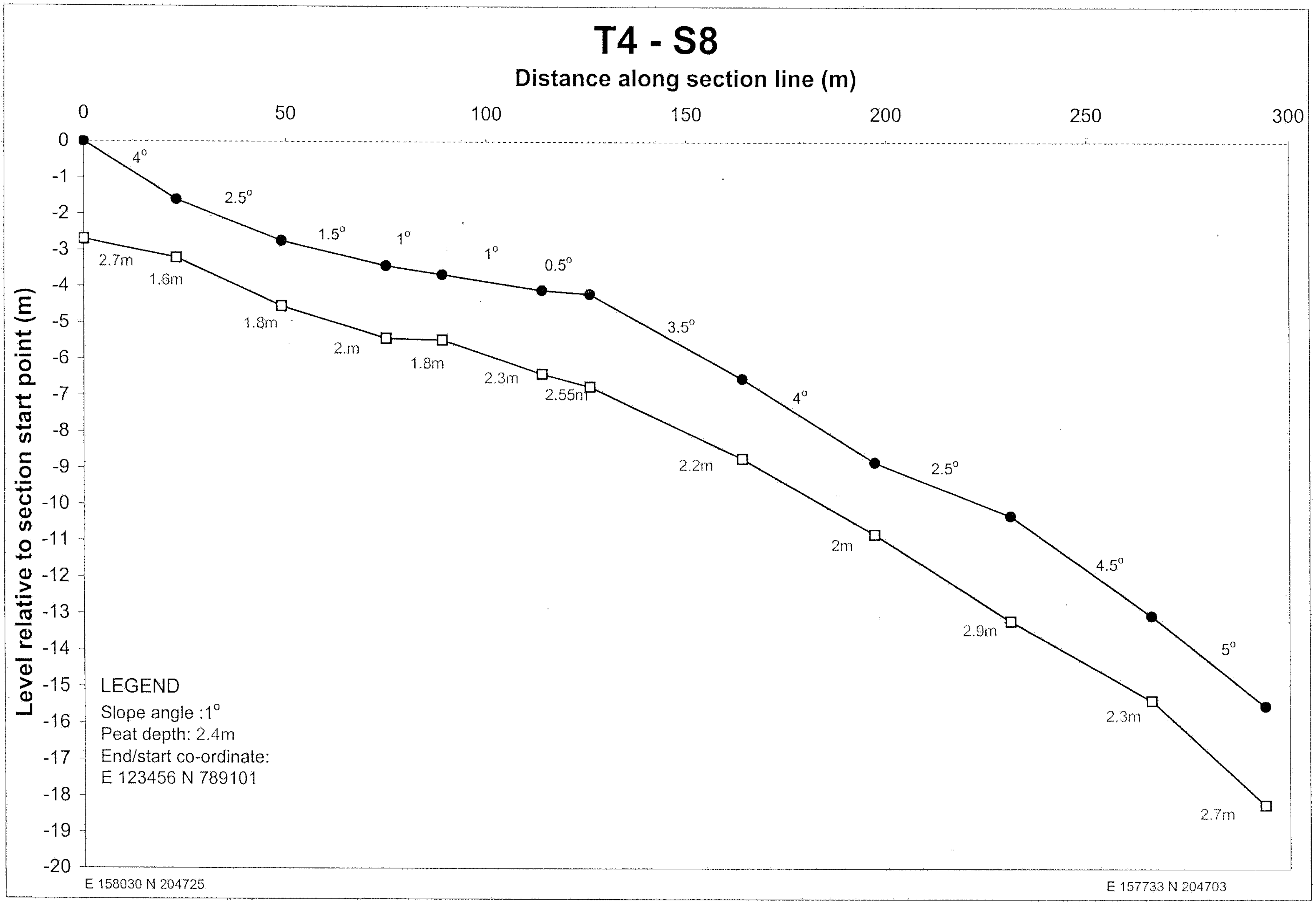
T4 - S4
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
-4
1°
0°
1°
3°
2°
2°
2.2m
3.2m
3.8m
3.9m
3.7m
3.25m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158065 N 204480
E 158183 N 204596



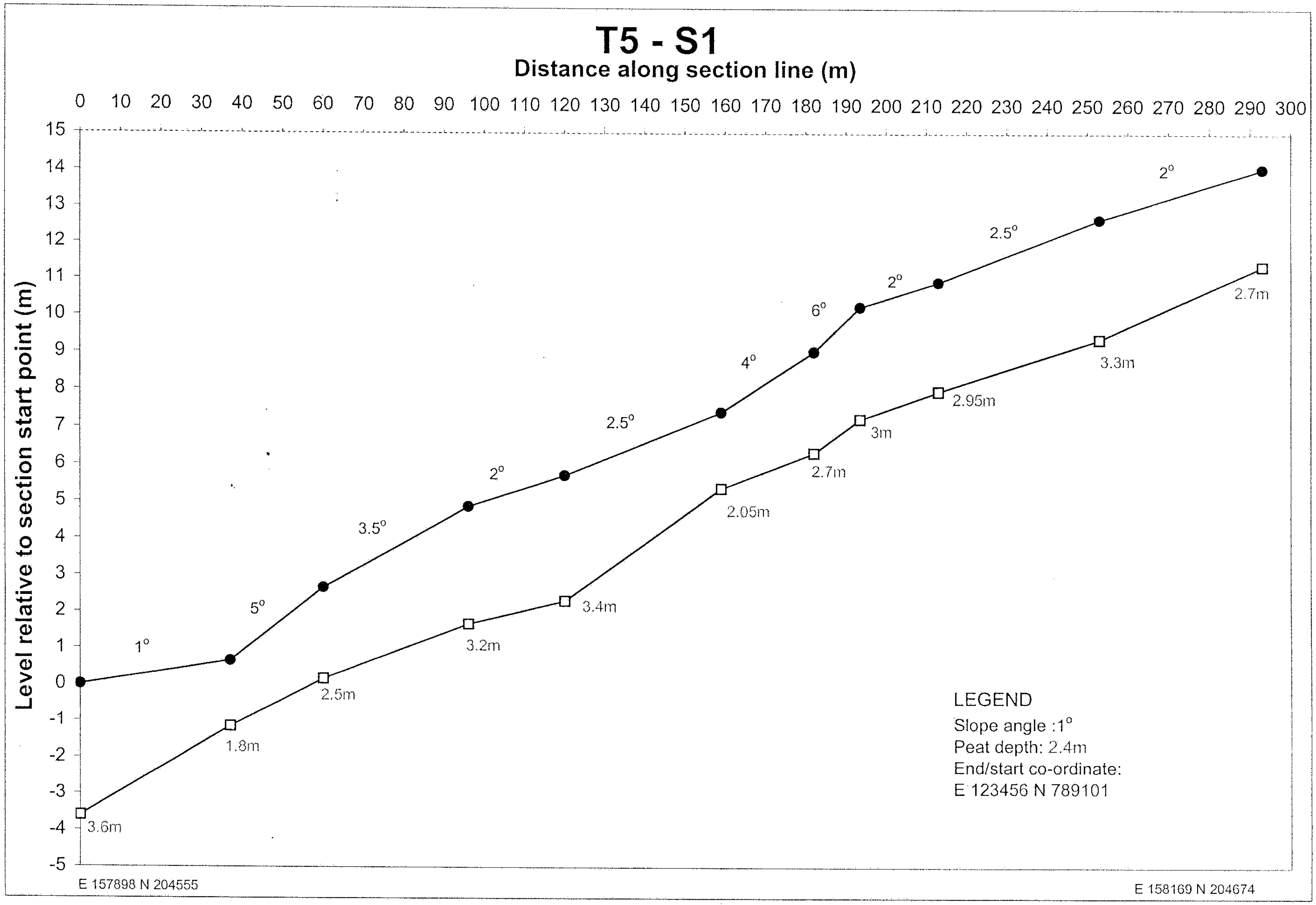
T4 - S5
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
0.5°
0.5°
0.5°
0°
0°
0.5°
2.9m
2.8m
2.7m
2.2m
2.6m
3.1m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158010 N 204896
E 158043 N 204680


T4 - S6
Distance along section line (m)
0
10
20
30
40
50
60
1
0
-1
-2
-3
-4
Level relative to section start point (m)
0.5°
1°
3.6m
3.4m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158007 N 204664
E 158035 N 204732

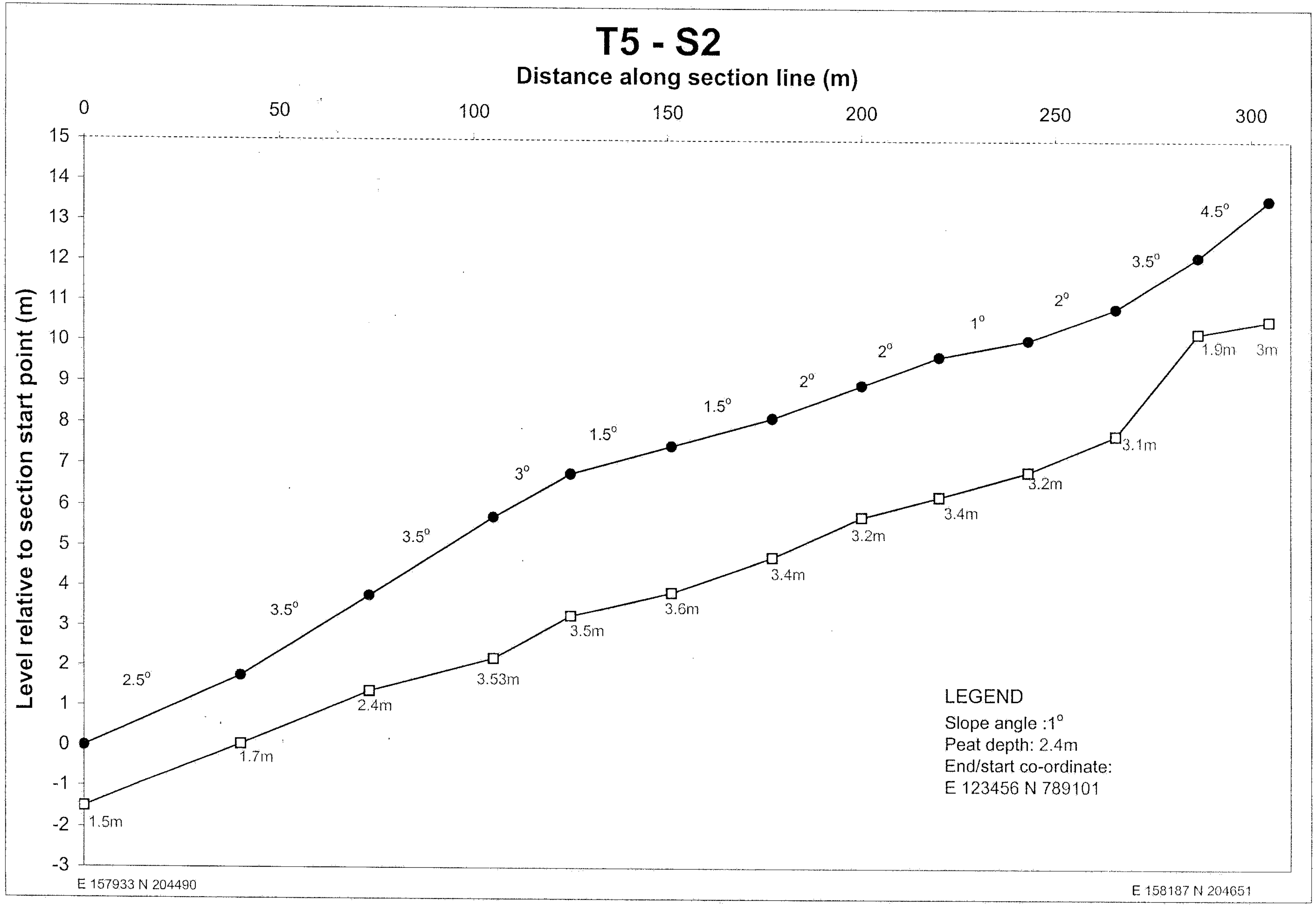

T4 - S7
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
Level relative to section start point (m)
1
0
-1
-2
-3
-4
0°
1°
3.6m
3.6m
3.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158142 N 204678
E 158143 N 204710



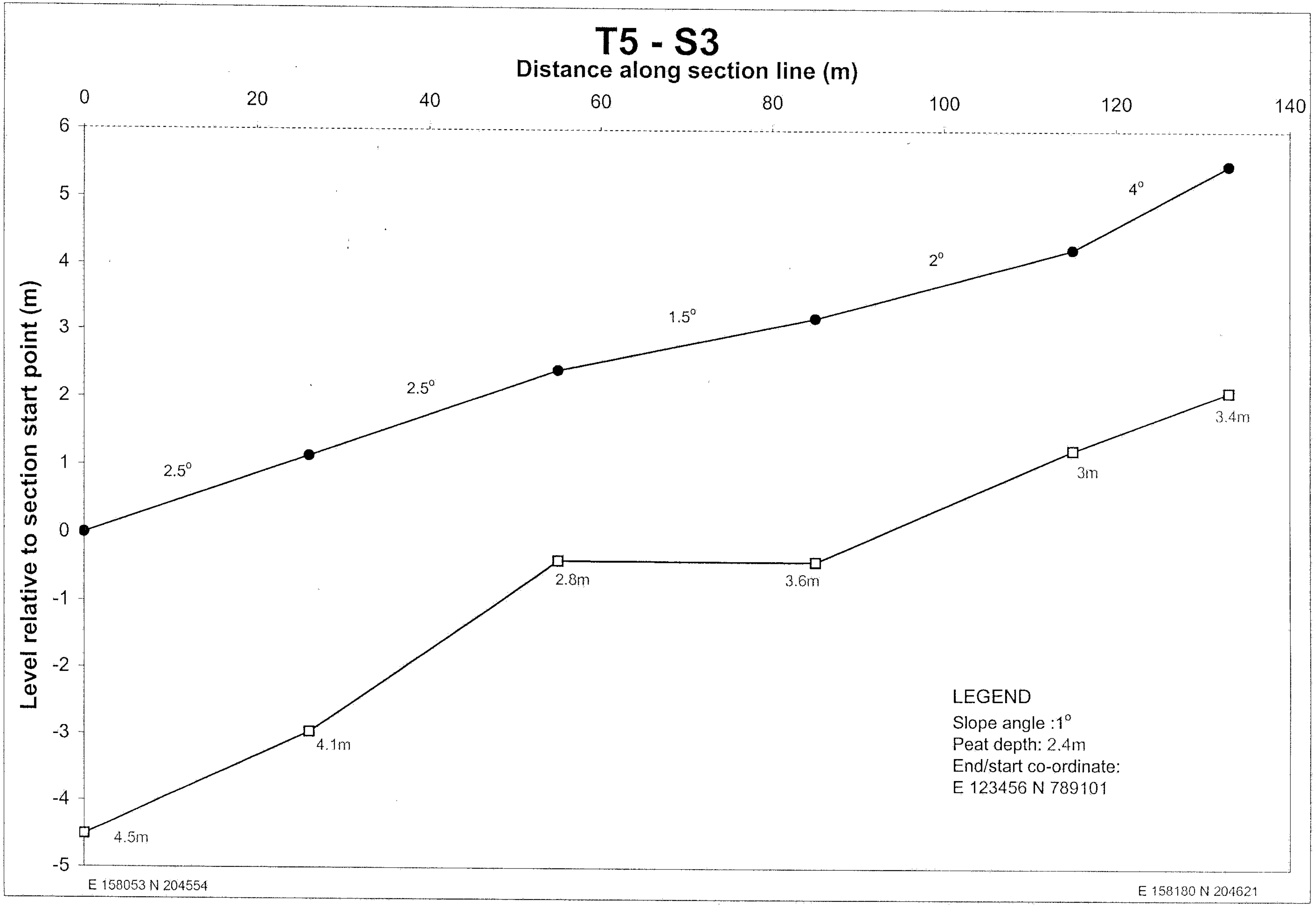
T4 - S8
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
4°
2.5°
1.5°
1°
1°
0.5°
3.5°
4°
2.5°
4.5°
5°
2.7m
1.6m
1.8m
2.m
1.8m
2.3m
2.55m
2.2m
2m
2.9m
2.3m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158030 N 204725
E 157733 N 204703

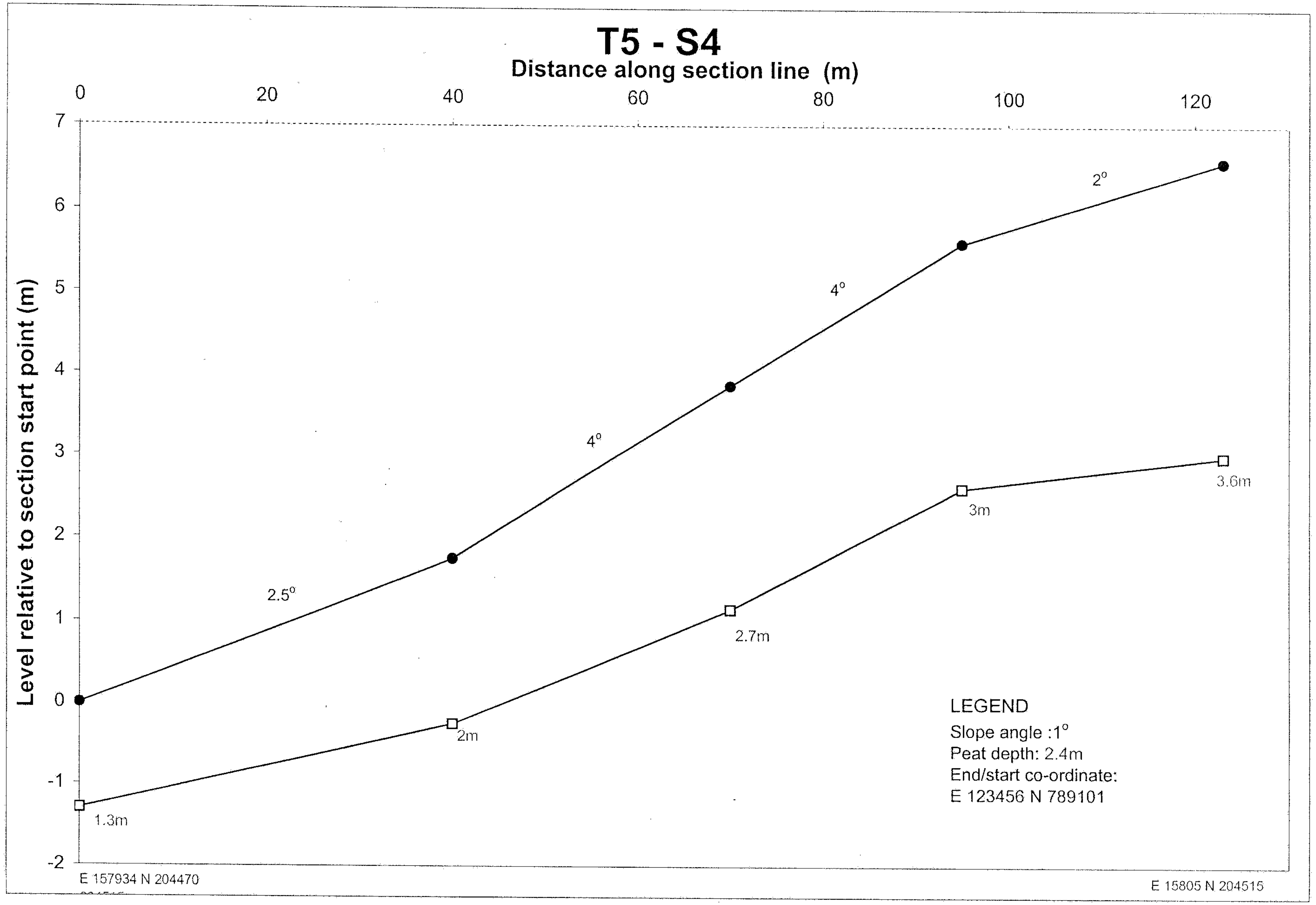


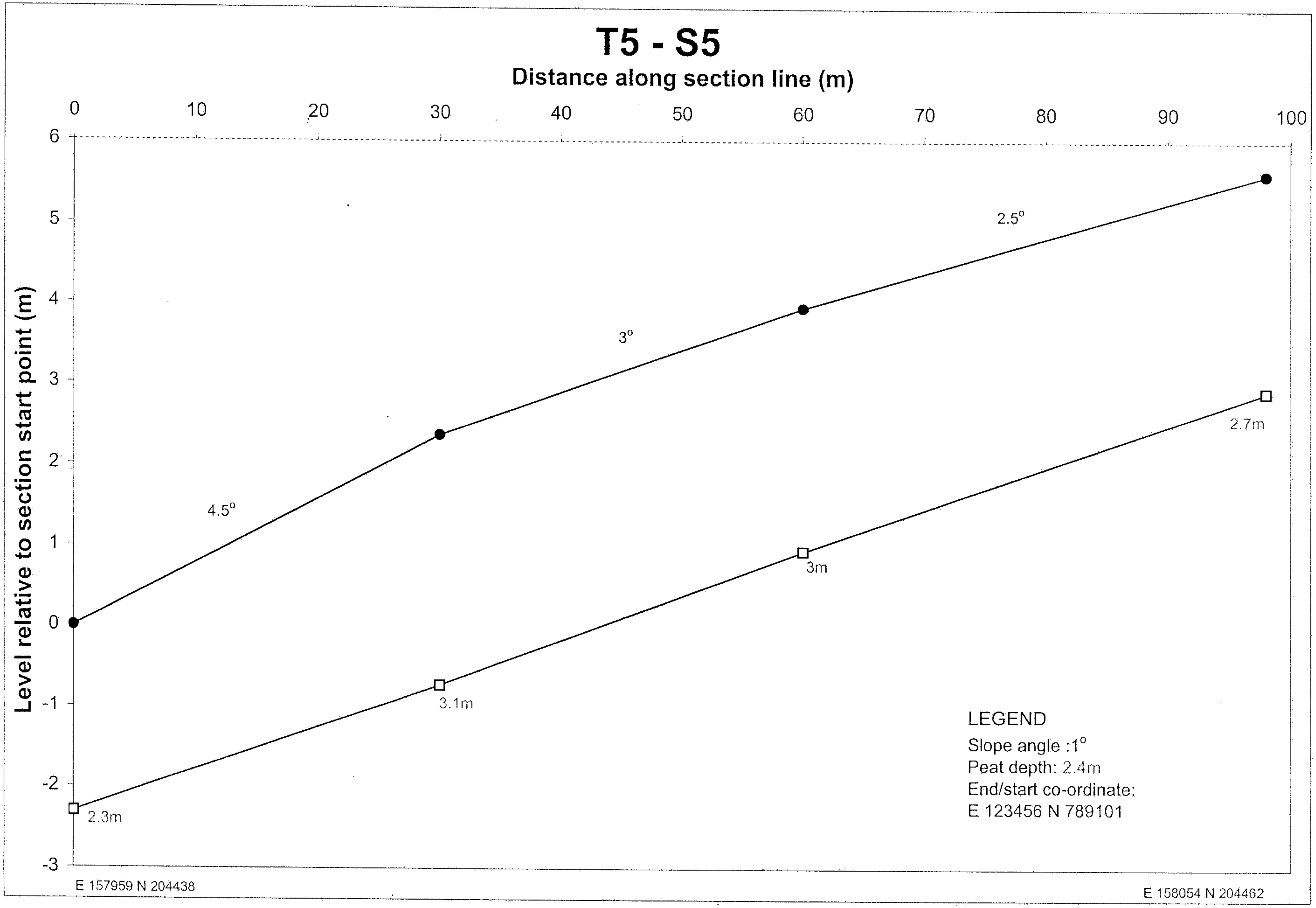
T5 - S1
Distance along section line (m)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300
Level relative to section start point (m)
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 -1 -2 -3 -4 -5
1°
5°
3.5°
2°
2.5°
4°
6°
2°
2.5°
2°
3.6m
1.8m
2.5m
3.2m
3.4m
2.05m
2.7m
3m
2.95m
3.3m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157898 N 204555
E 158169 N 204674

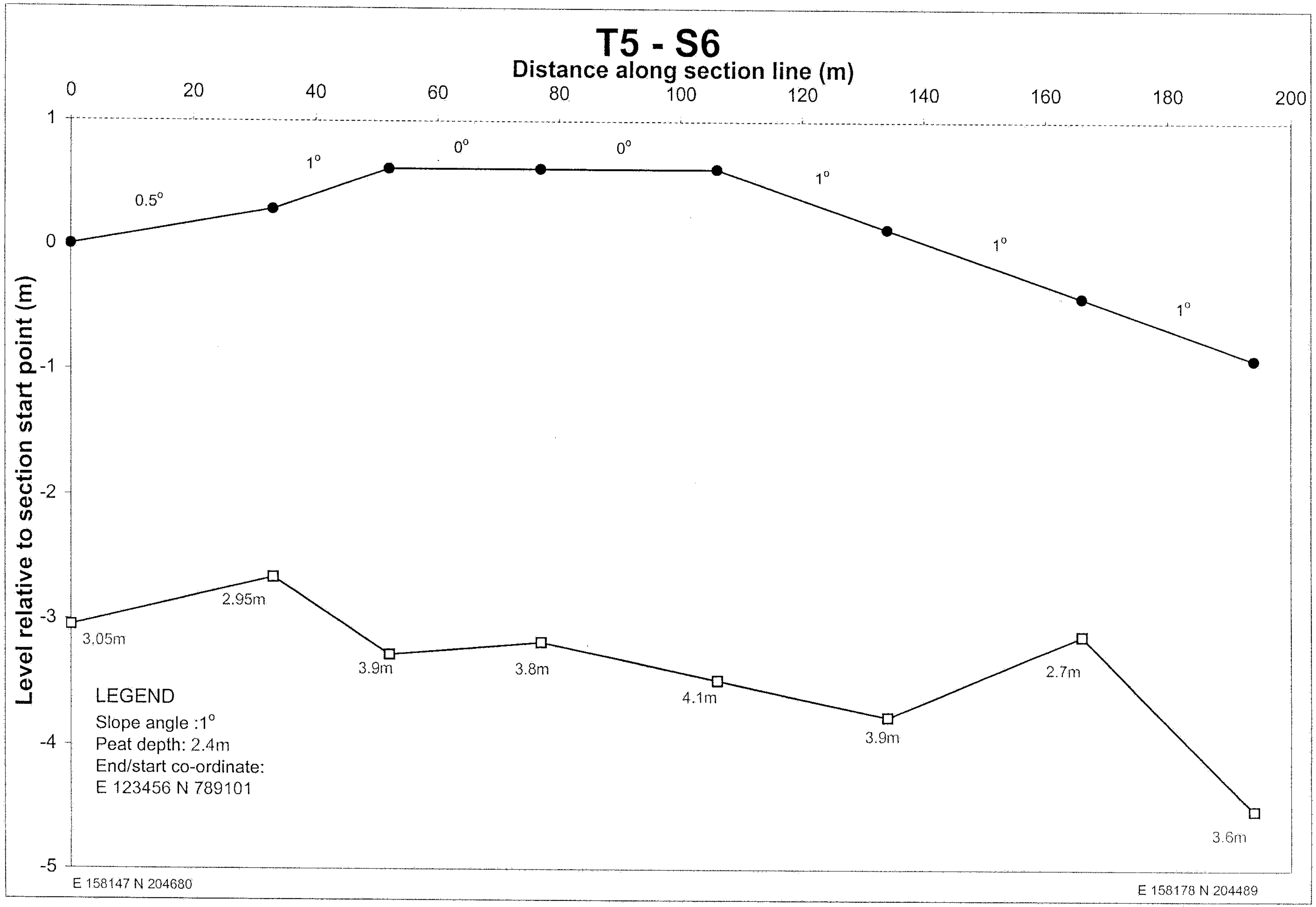


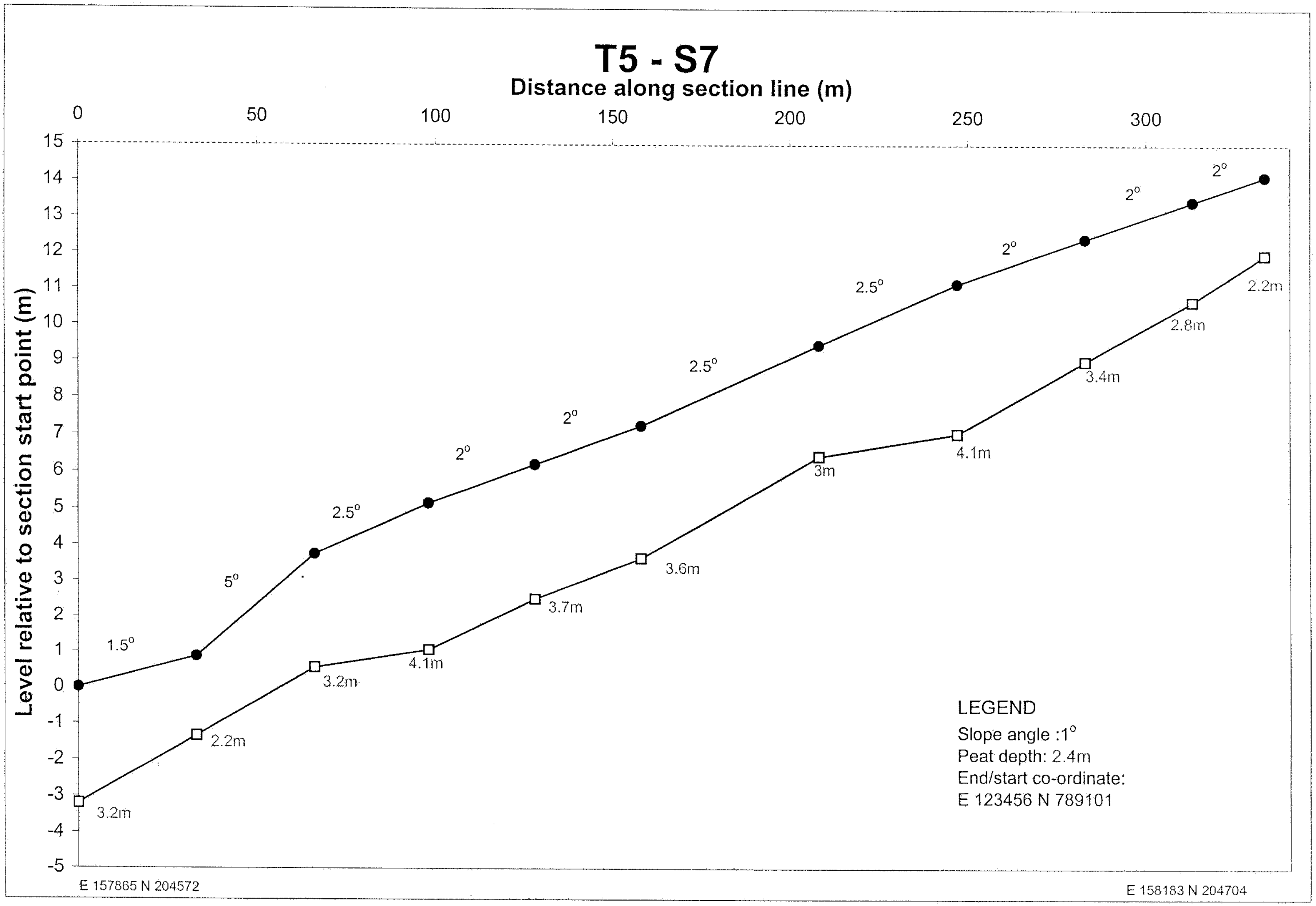
T5 - S2
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
2.5°
3.5°
3.5°
3.5°
3°
1.5°
1.5°
2°
2°
1°
2°
3.5°
4.5°
1.5m
1.7m
2.4m
3.53m
3.5m
3.6m
3.4m
3.2m
3.4m
3.2m
3.1m
1.9m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157933 N 204490
E 158187 N 204651


T5 - S3
Distance along section line (m)
0
20
40
60
80
100
120
140
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
2.5°
2.5°
1.5°
2°
4°
4.5m
4.1m
2.8m
3.6m
3m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158053 N 204554
E 158180 N 204621

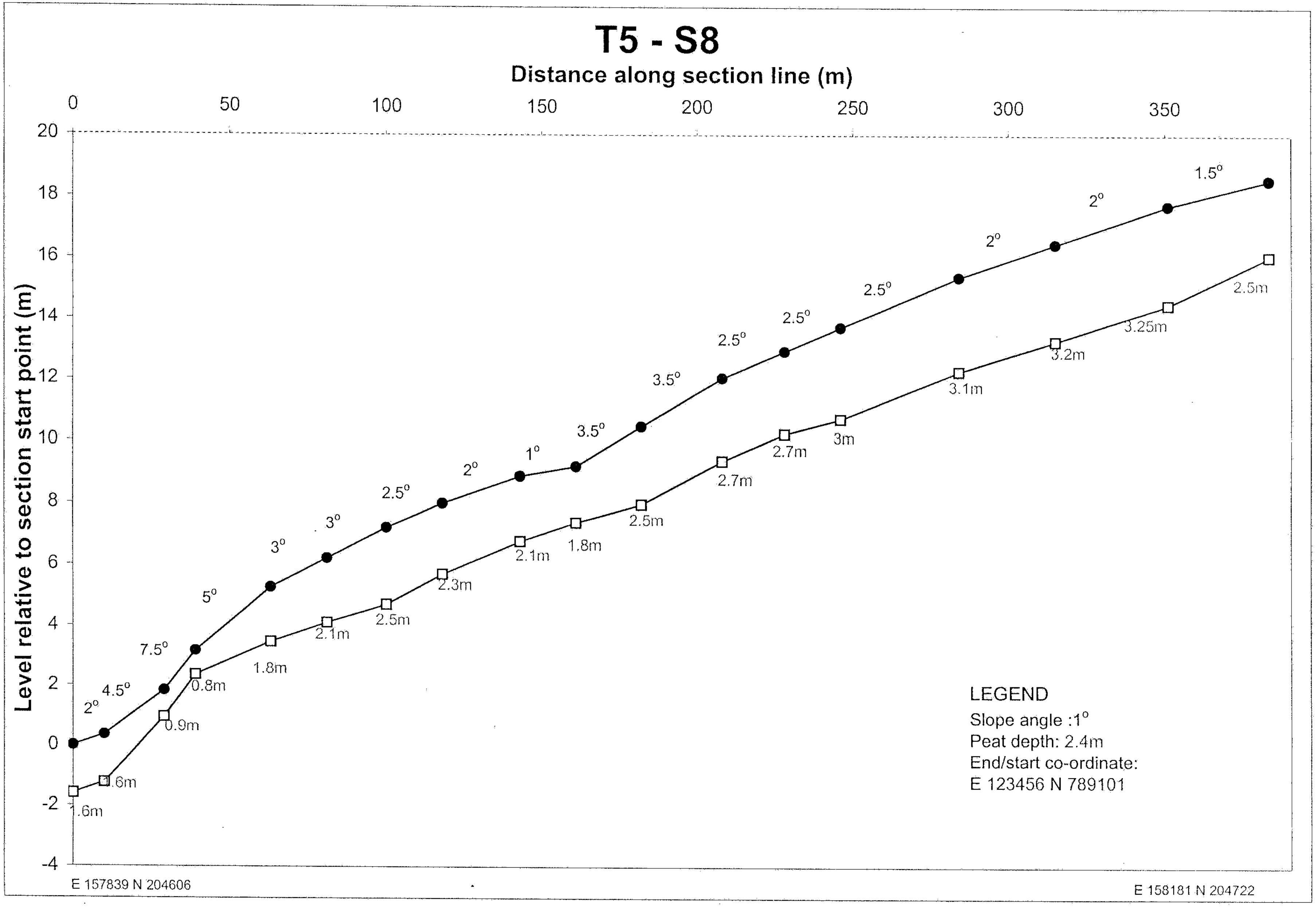

T5 - S4
Distance along section line (m)
0
20
40
60
80
100
120
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
2.5°
4°
4°
2°
1.3m
2m
2.7m
3m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157934 N 204470
E 15805 N 204515

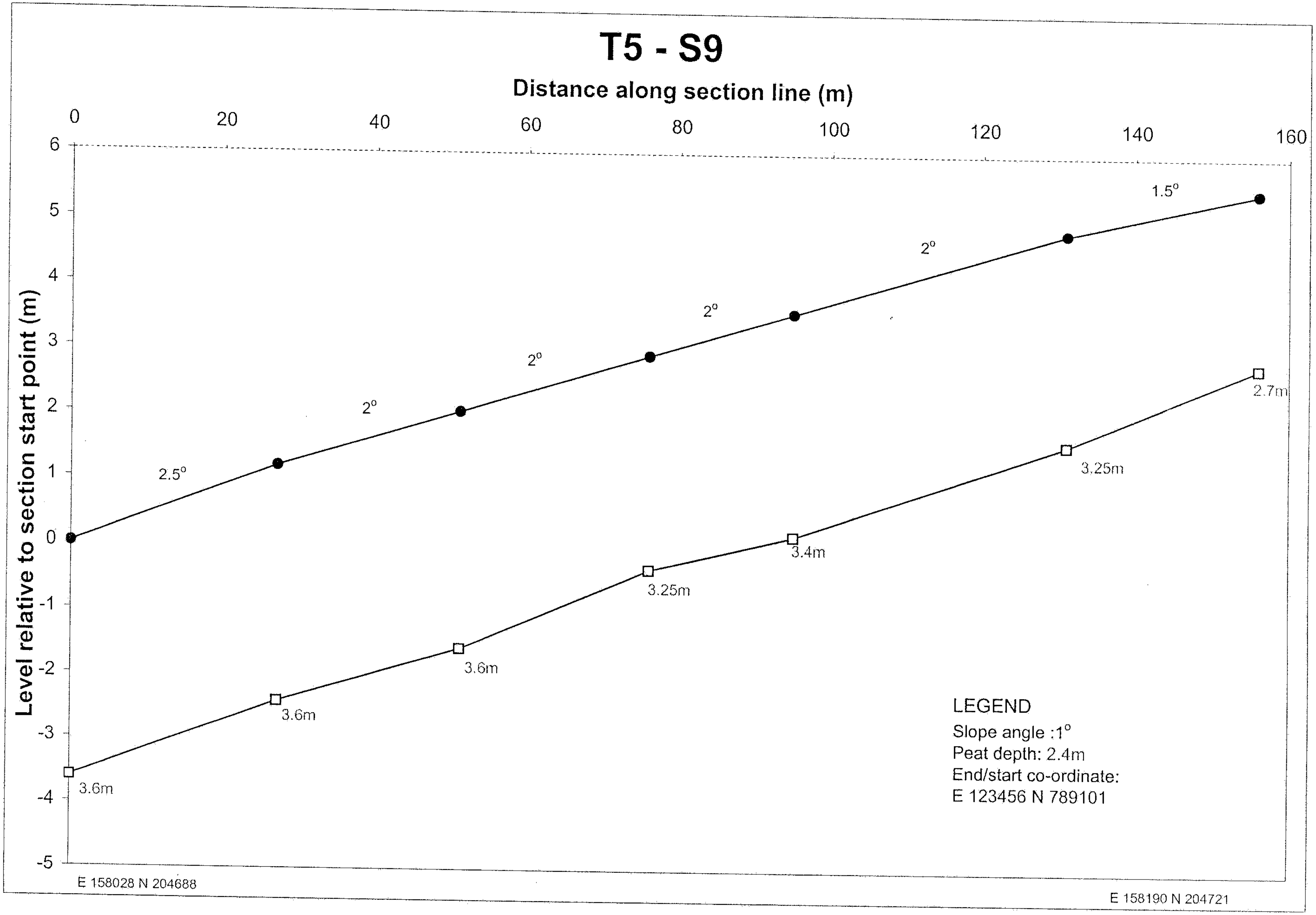

T5 - S5
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
4.5°
3°
2.5°
2.3m
3.1m
3m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157959 N 204438
E 158054 N 204462


T5 - S6
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
0.5°
1°
0°
0°
1°
1°
1°
3.05m
2.95m
3.9m
3.8m
4.1m
3.9m
2.7m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158147 N 204680
E 158178 N 204489

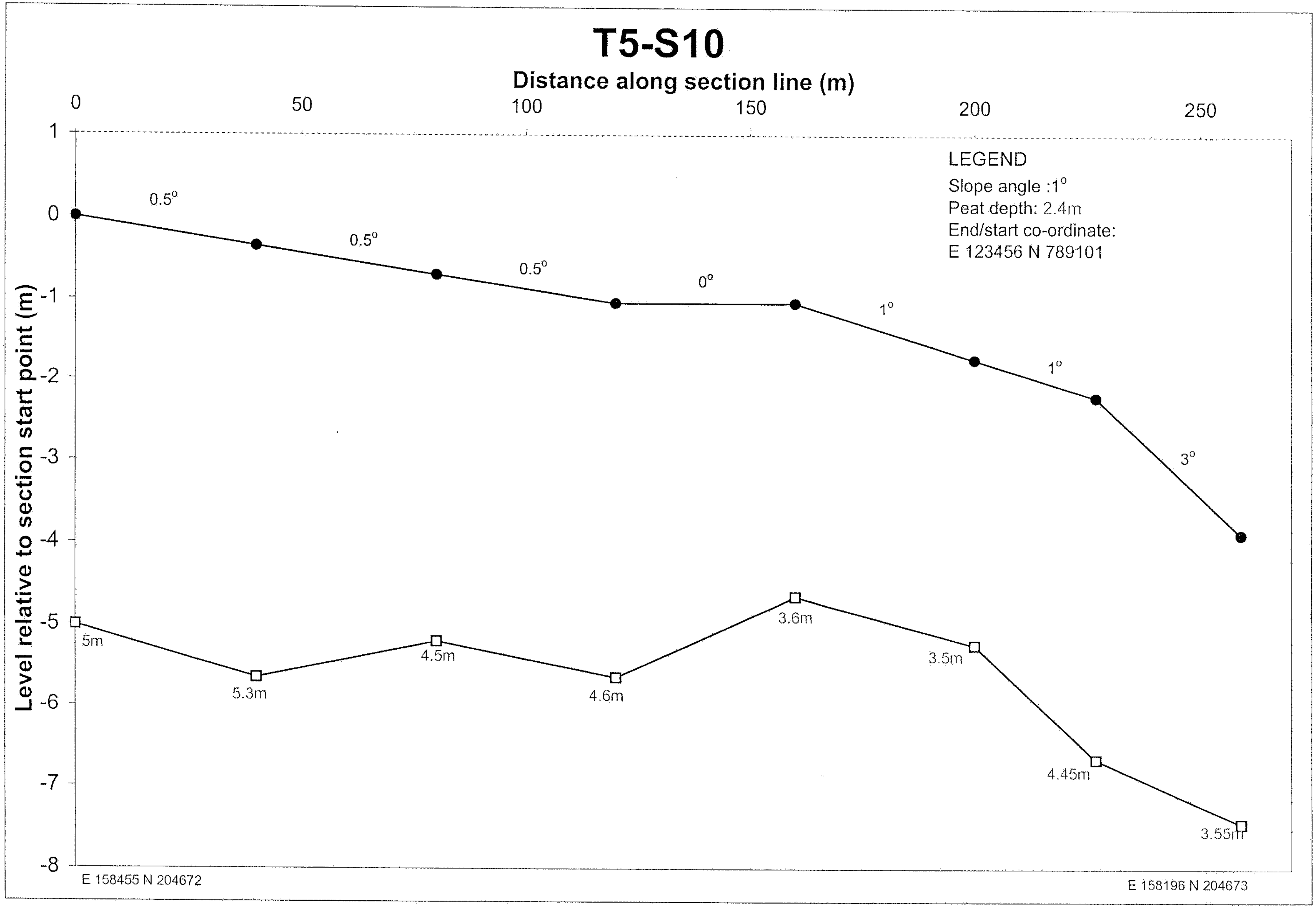


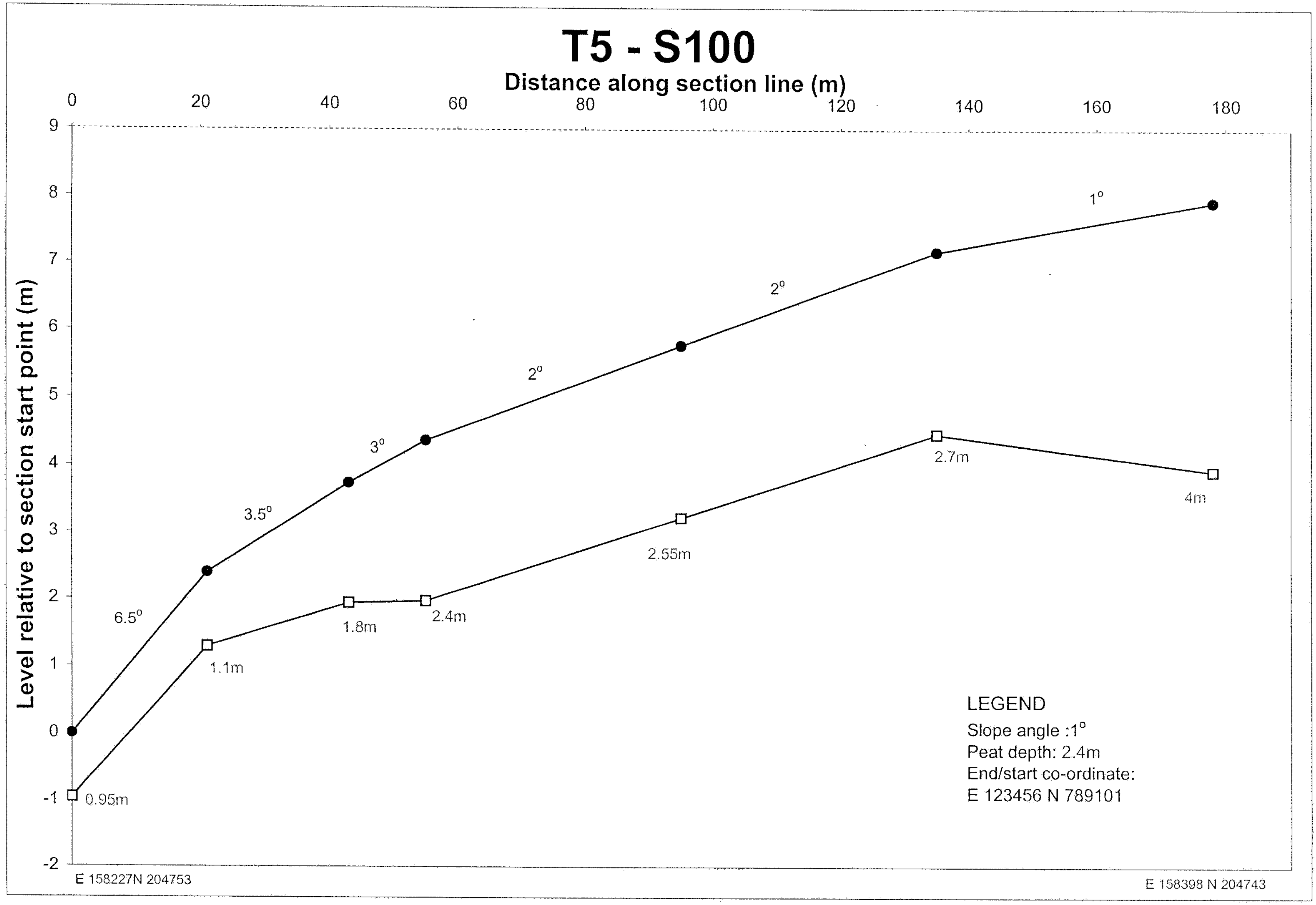
T5 - S7
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1.5°
5°
2.5°
2°
2°
2.5°
2.5°
2°
2°
2°
3.2m
2.2m
3.2m
4.1m
3.7m
3.6m
3m
4.1m
3.4m
2.8m
2.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157865 N 204572
E 158183 N 204704

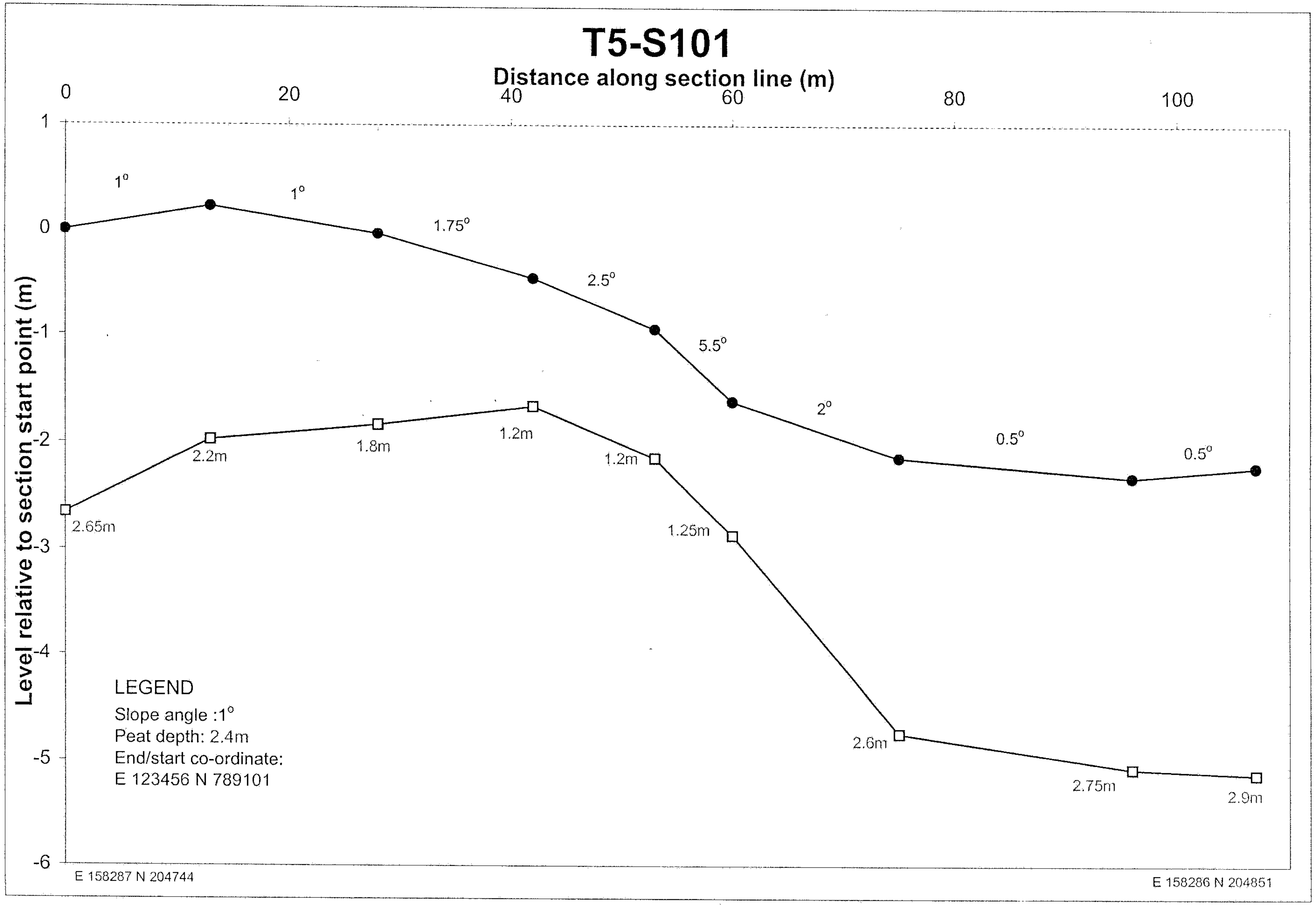

T5 - S8
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
20
18
16
14
12
10
8
6
4
2
0
-2
-4
2°
4.5°
7.5°
5°
3°
3°
2.5°
2°
1°
3.5°
3.5°
2.5°
2.5°
2.5°
2°
2°
1.5°
1.6m
1.6m
0.9m
0.8m
1.8m
2.1m
2.5m
2.3m
2.1m
1.8m
2.5m
2.7m
2.7m
3m
3.1m
3.2m
3.25m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157839 N 204606
E 158181 N 204722

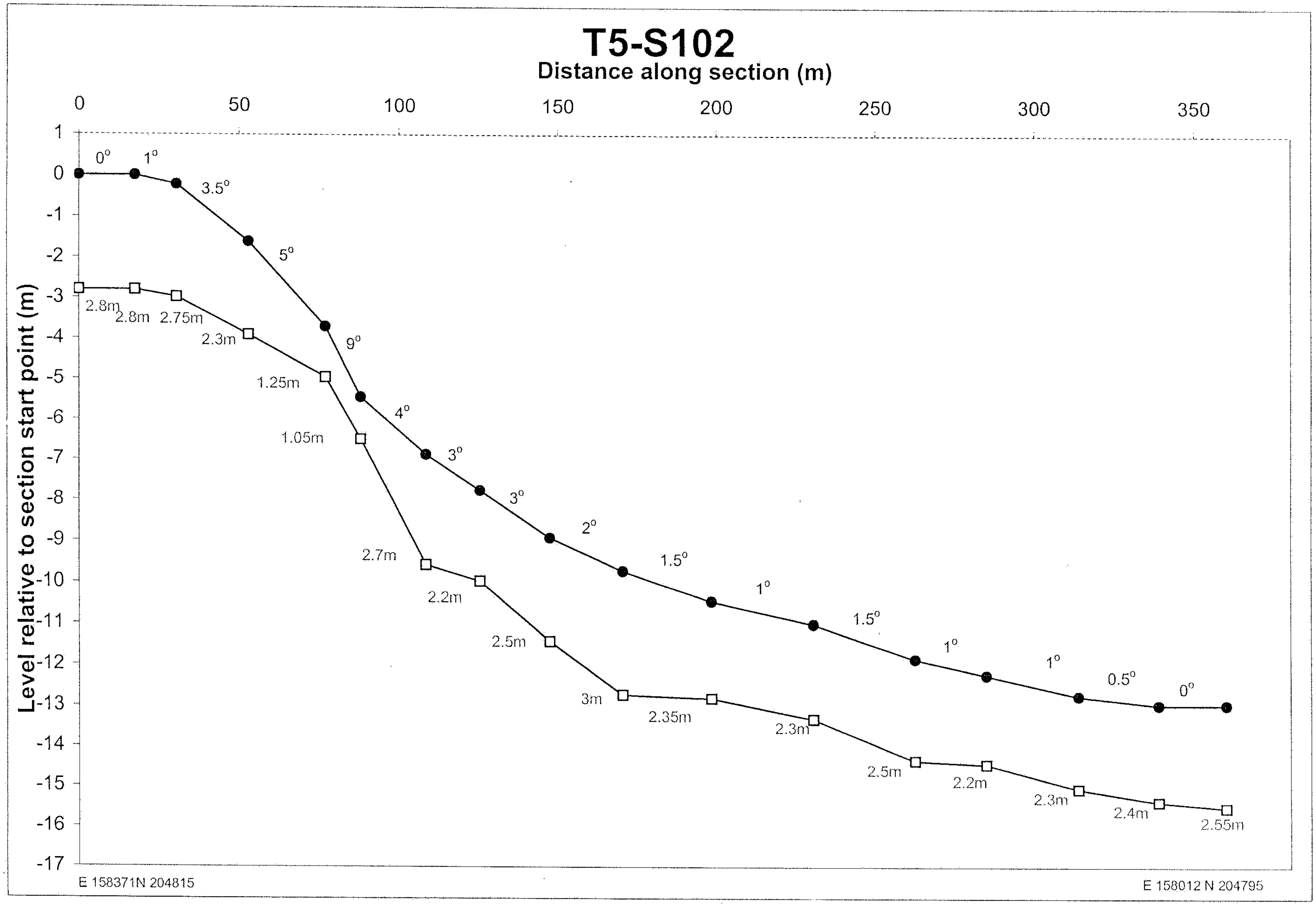


T5 - S9
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
2.5°
2°
2°
2°
2°
1.5°
3.6m
3.6m
3.6m
3.25m
3.4m
3.25m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158028 N 204688
E 158190 N 204721

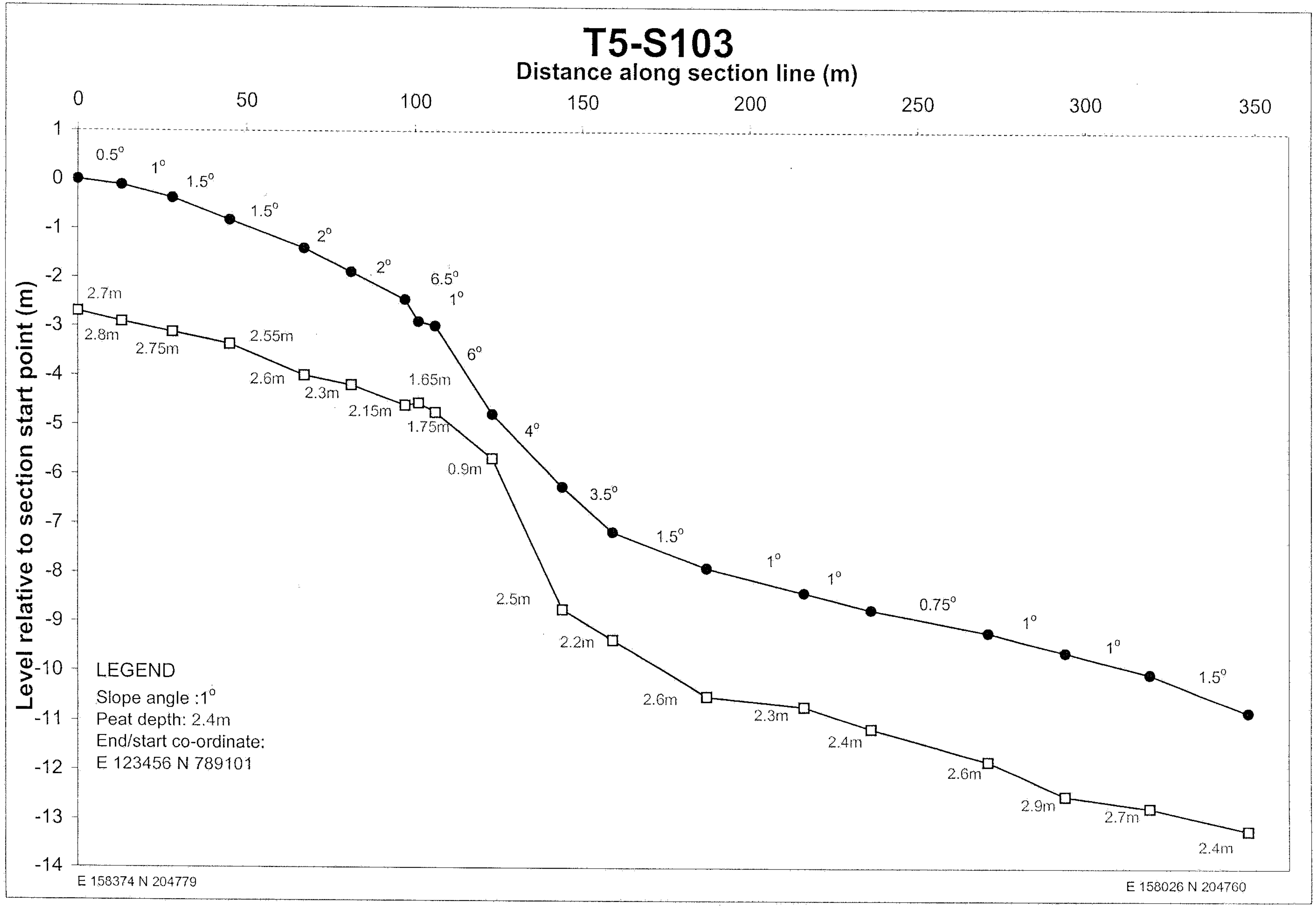

T5-S10
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
0.5°
0.5°
0.5°
0°
1°
1°
3°
5m
5.3m
4.5m
4.6m
3.6m
3.5m
4.45m
3.55m
E 158455 N 204672
E 158196 N 204673


T5 - S100
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
Level relative to section start point (m)
9
8
7
6
5
4
3
2
1
0
-1
-2
6.5°
3.5°
3°
2°
2°
1°
0.95m
1.1m
1.8m
2.4m
2.55m
2.7m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158227N 204753
E 158398 N 204743

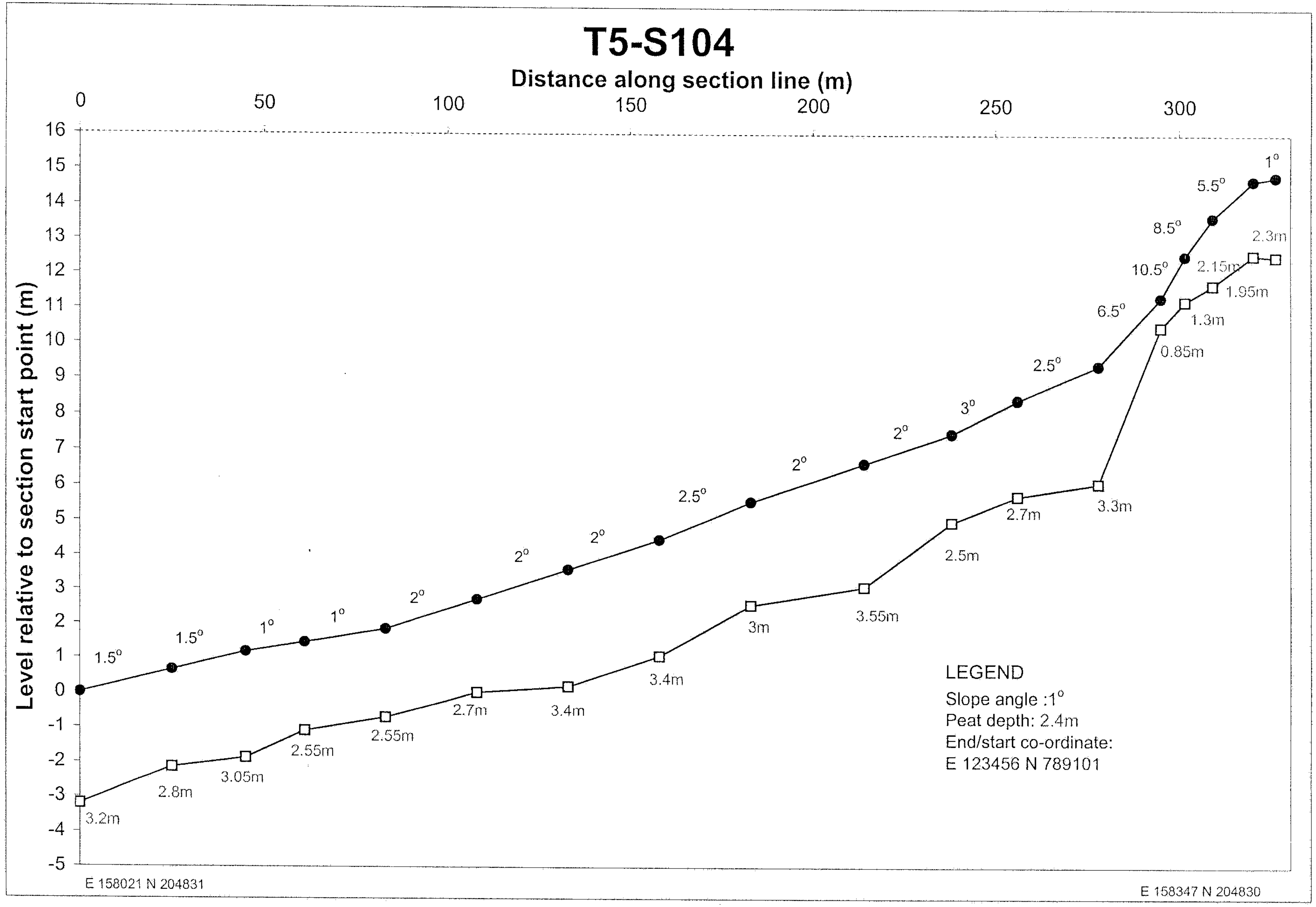

T5-S101
Distance along section line (m)
0
20
40
60
80
100
1
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
1°
1°
1.75°
2.5°
5.5°
2°
0.5°
0.5°
2.65m
2.2m
1.8m
1.2m
1.2m
1.25m
2.6m
2.75m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158287 N 204744
E 158286 N 204851



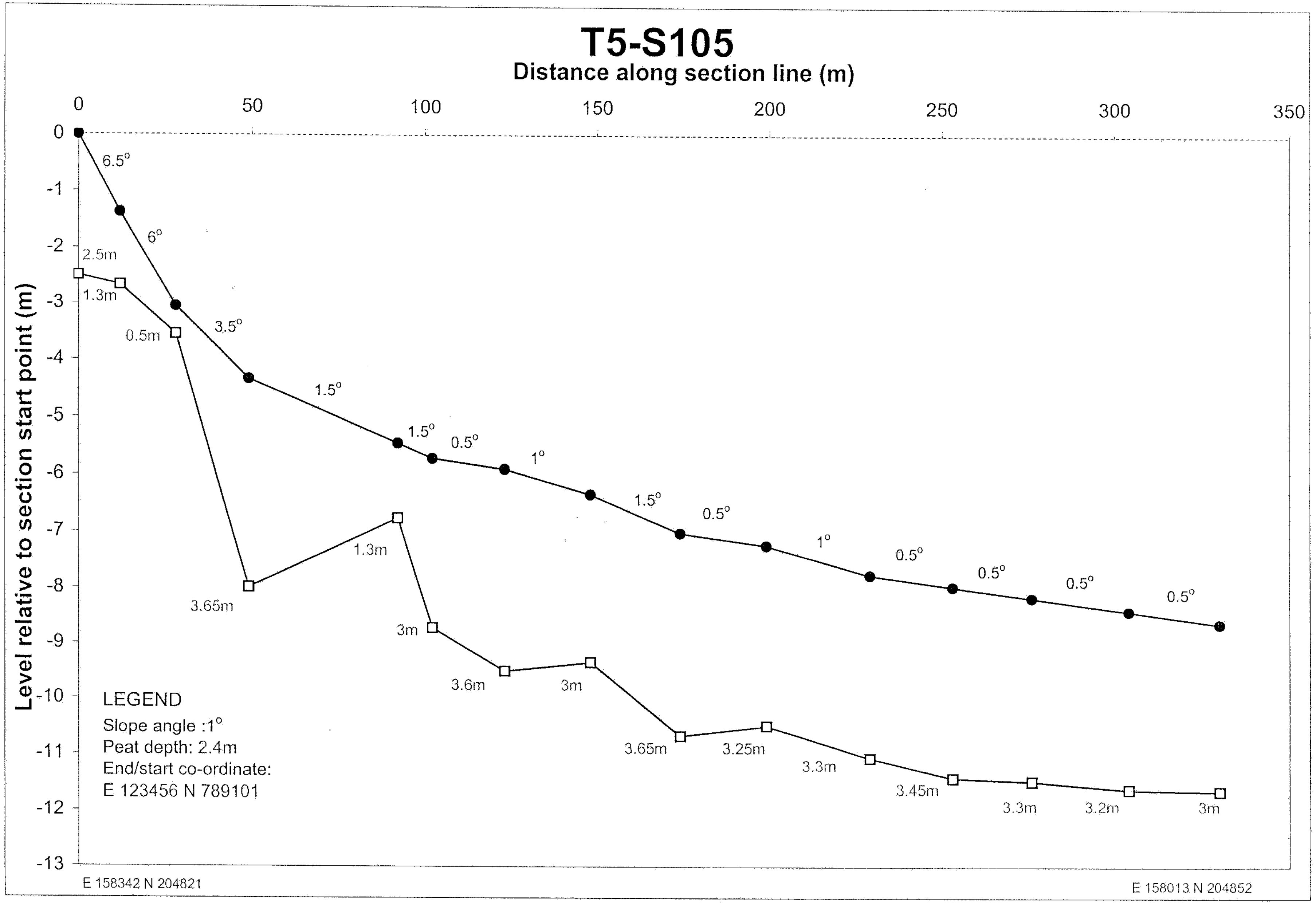
T5-S102
Distance along section (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
0°
1°
3.5°
5°
9°
4°
3°
3°
2°
1.5°
1°
1.5°
1°
1°
0.5°
0°
2.8m
2.8m
2.75m
2.3m
1.25m
1.05m
2.7m
2.2m
2.5m
3m
2.35m
2.3m
2.5m
2.2m
2.3m
2.4m
2.55m
E 158371N 204815
E 158012 N 204795

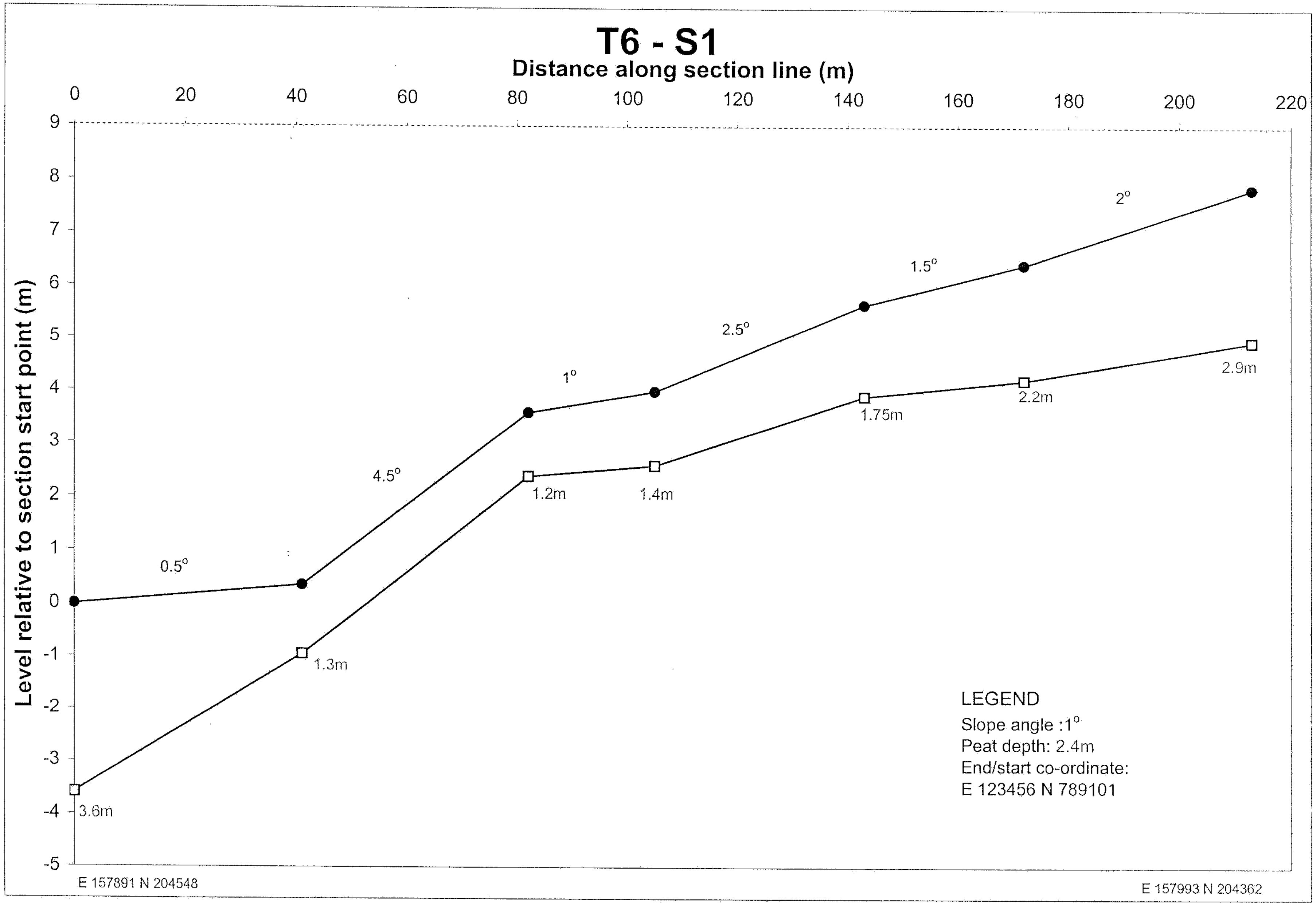


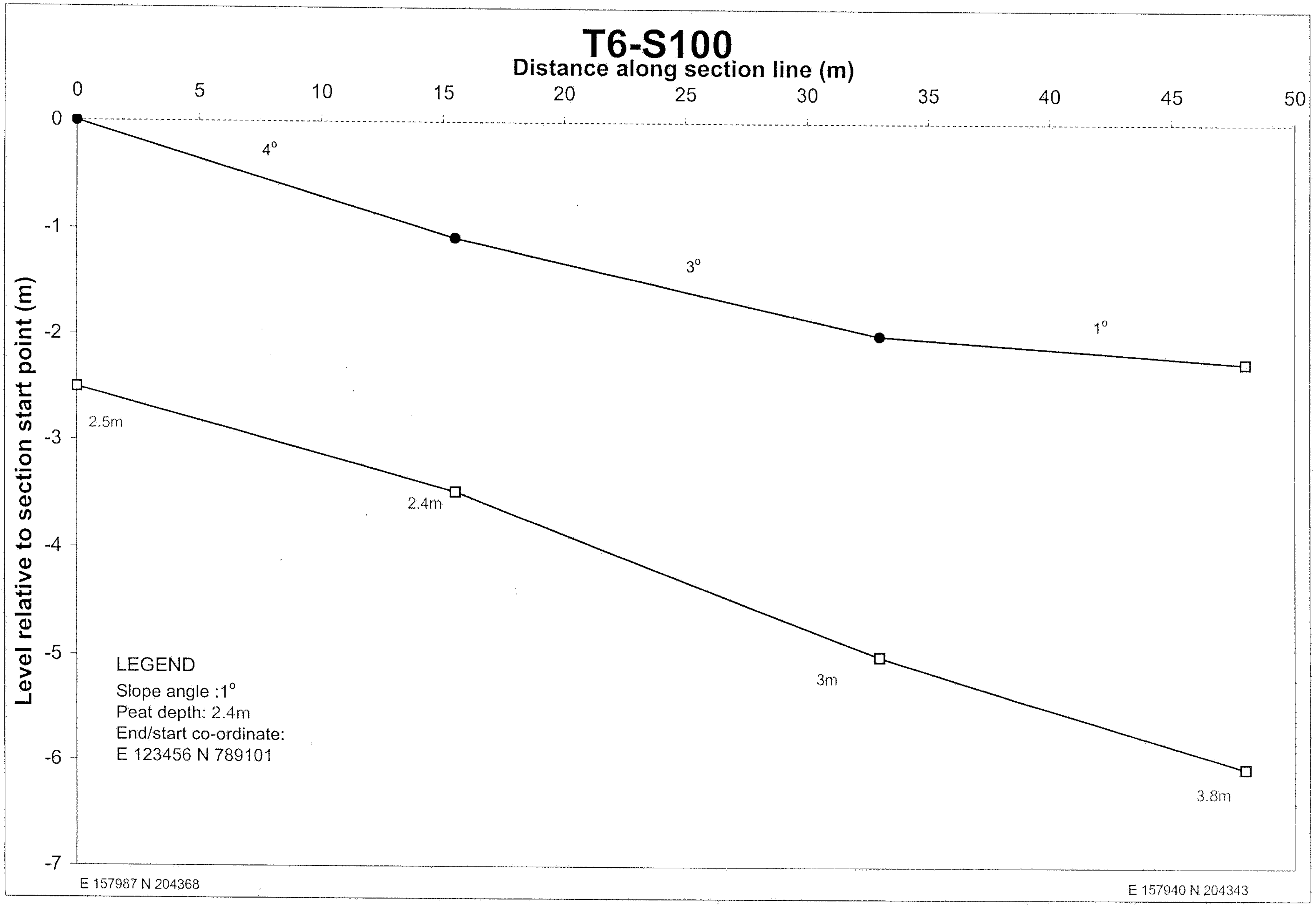
T5-S103
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
0.5°
1°
1.5°
1.5°
2°
2°
6.5°
1°
6°
4°
3.5°
1.5°
1°
1°
0.75°
1°
1°
1.5°
2.7m
2.8m
2.75m
2.55m
2.6m
2.3m
2.15m
1.65m
1.75m
0.9m
2.5m
2.2m
2.6m
2.3m
2.4m
2.6m
2.9m
2.7m
2.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158374 N 204779
E 158026 N 204760



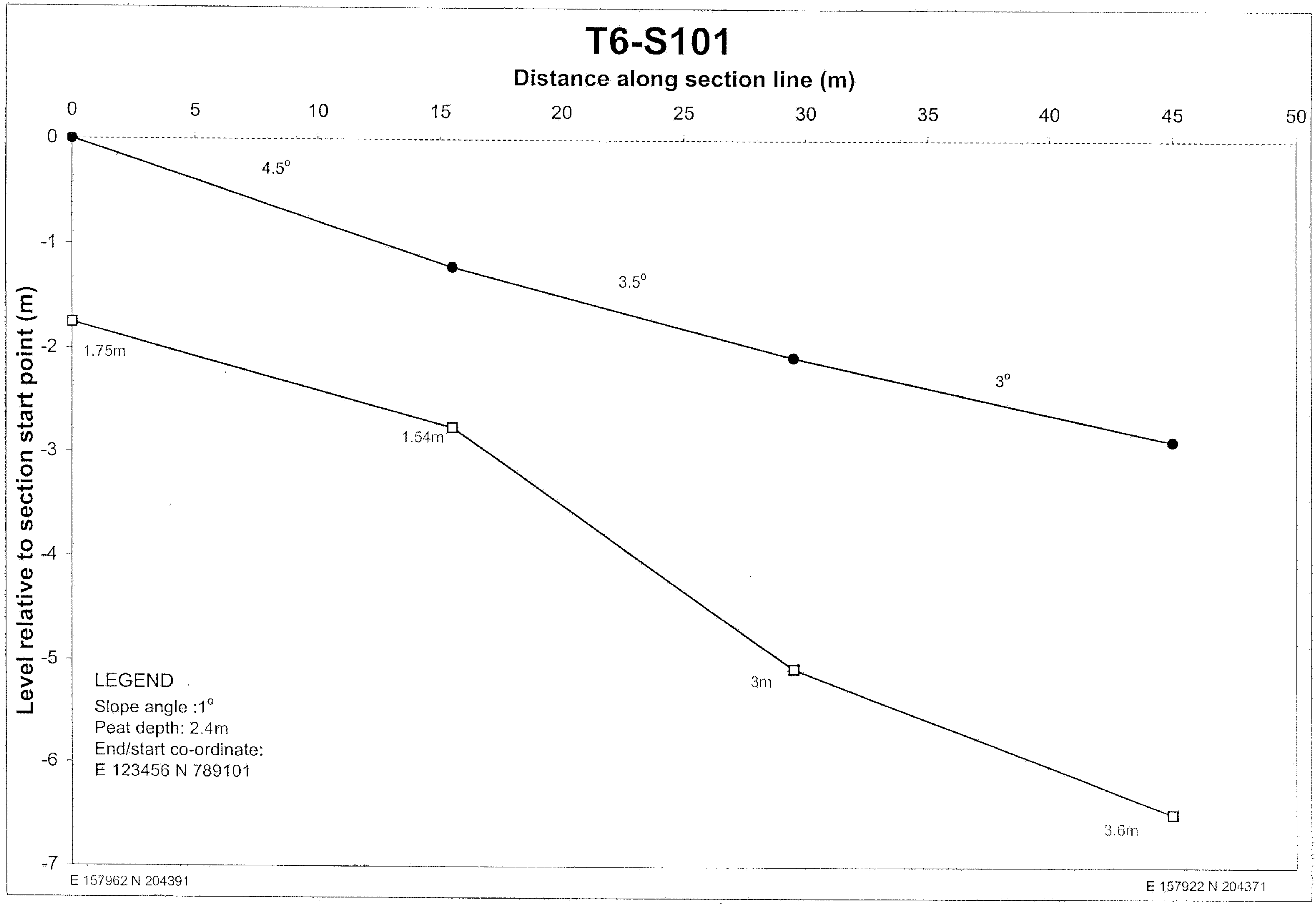
T5-S104
Distance along section line (m)
Level relative to section start point (m)
0
50
100
150
200
250
300
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1.5°
1.5°
1°
1°
2°
2°
2°
2.5°
2°
2°
3°
2.5°
6.5°
10.5°
8.5°
5.5°
1°
3.2m
2.8m
3.05m
2.55m
2.55m
2.7m
3.4m
3.4m
3m
3.55m
2.5m
2.7m
3.3m
0.85m
1.3m
1.95m
2.15m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158021 N 204831
E 158347 N 204830


T5-S105
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
6.5°
6°
3.5°
1.5°
1.5°
0.5°
1°
1.5°
0.5°
1°
0.5°
0.5°
0.5°
0.5°
2.5m
1.3m
0.5m
3.65m
1.3m
3m
3.6m
3m
3.65m
3.25m
3.3m
3.45m
3.3m
3.2m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158342 N 204821
E 158013 N 204852

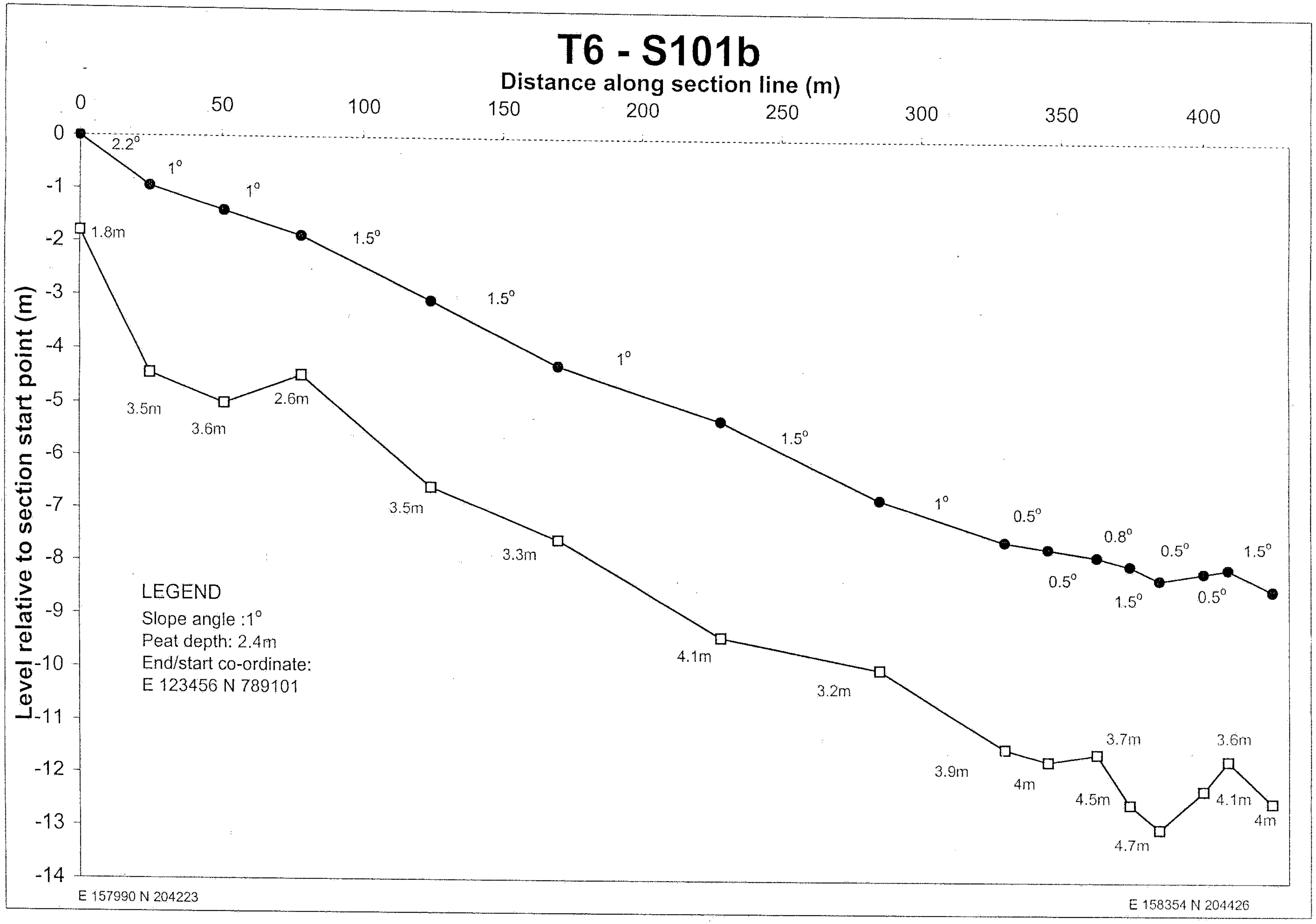

T6 - S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
Level relative to section start point (m)
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
0.5°
4.5°
1°
2.5°
1.5°
2°
3.6m
1.3m
1.2m
1.4m
1.75m
2.2m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157891 N 204548
E 157993 N 204362

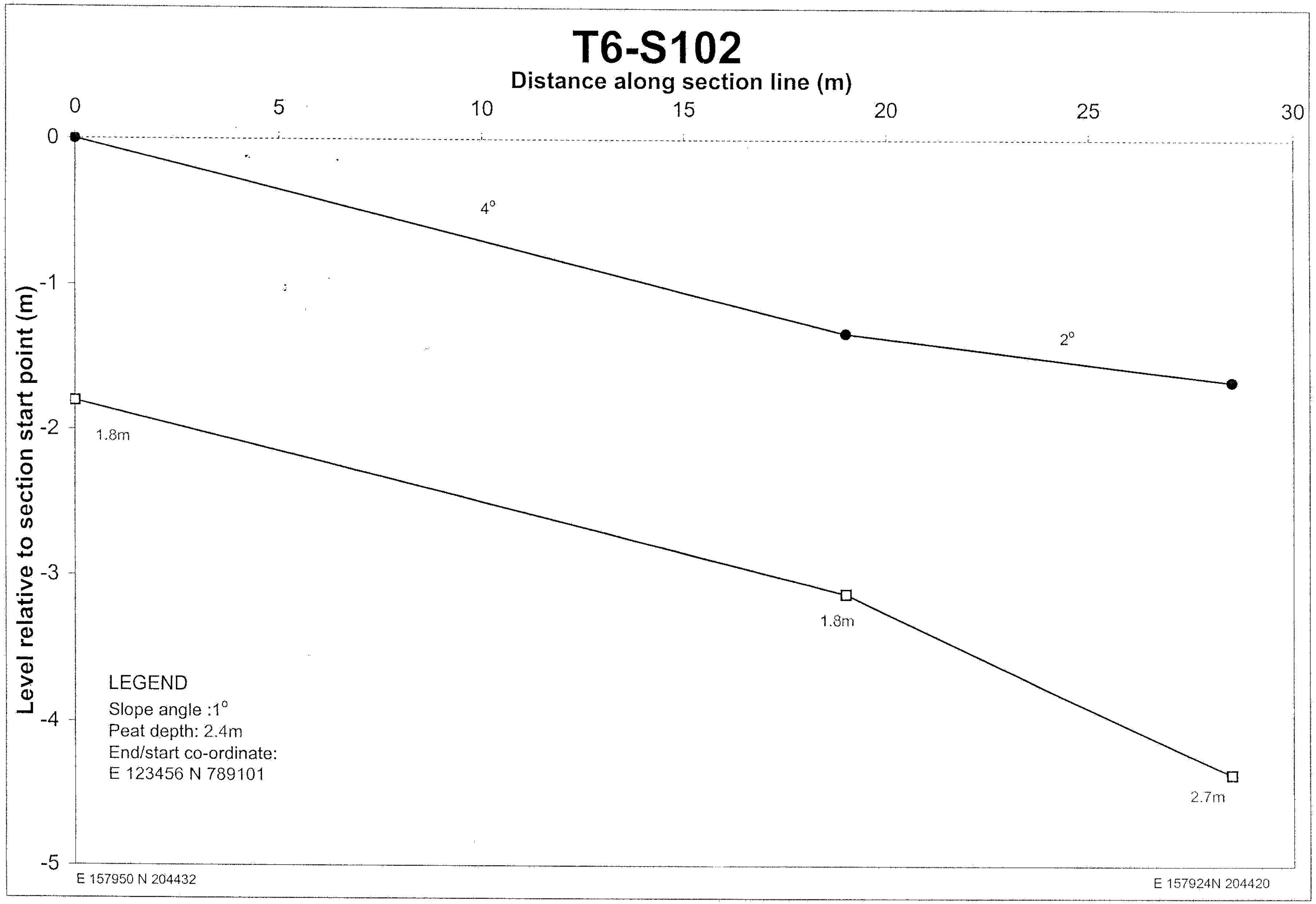


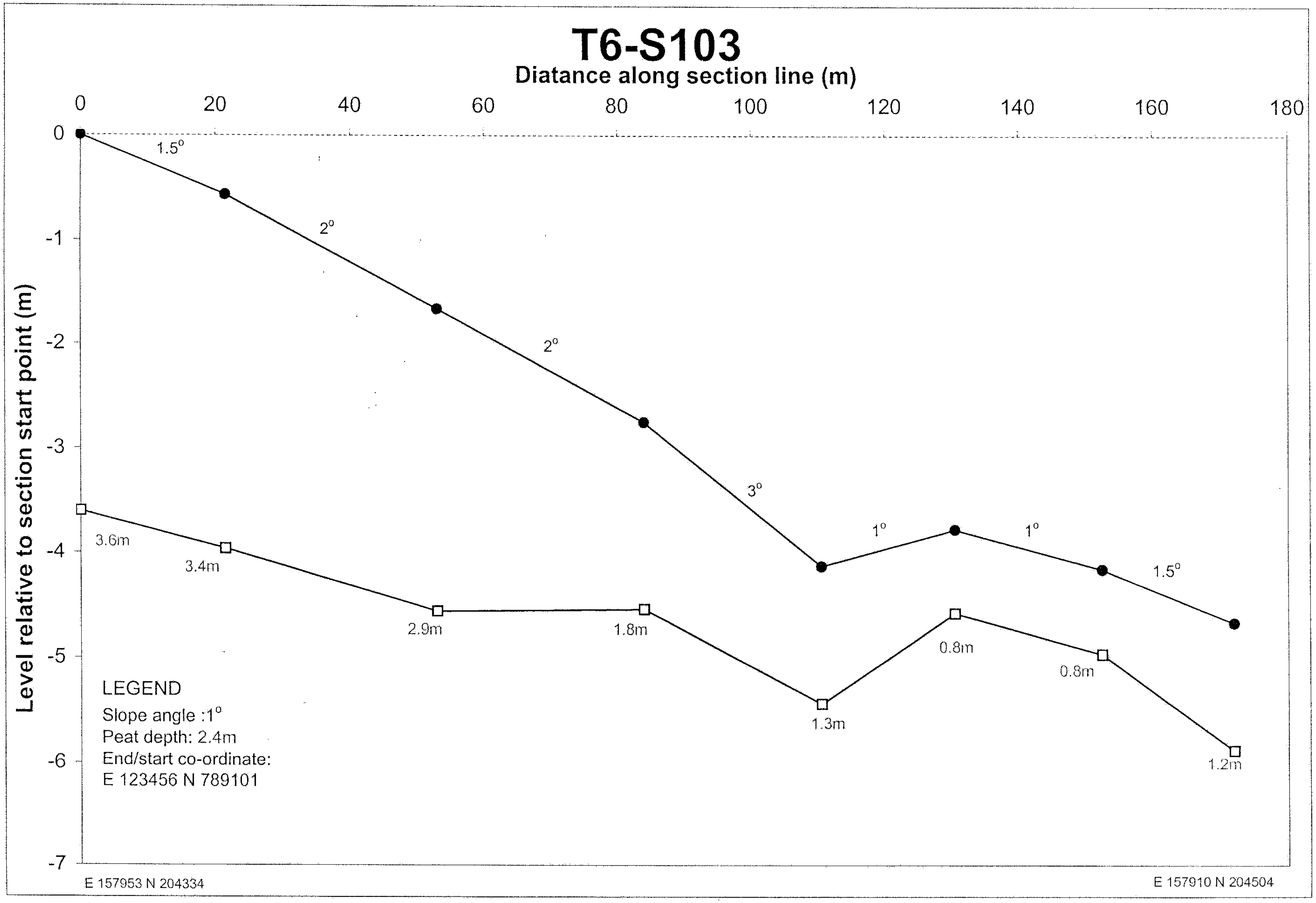
T6-S100
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
4°
3°
1°
2.5m
2.4m
3m
3.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157987 N 204368
E 157940 N 204343



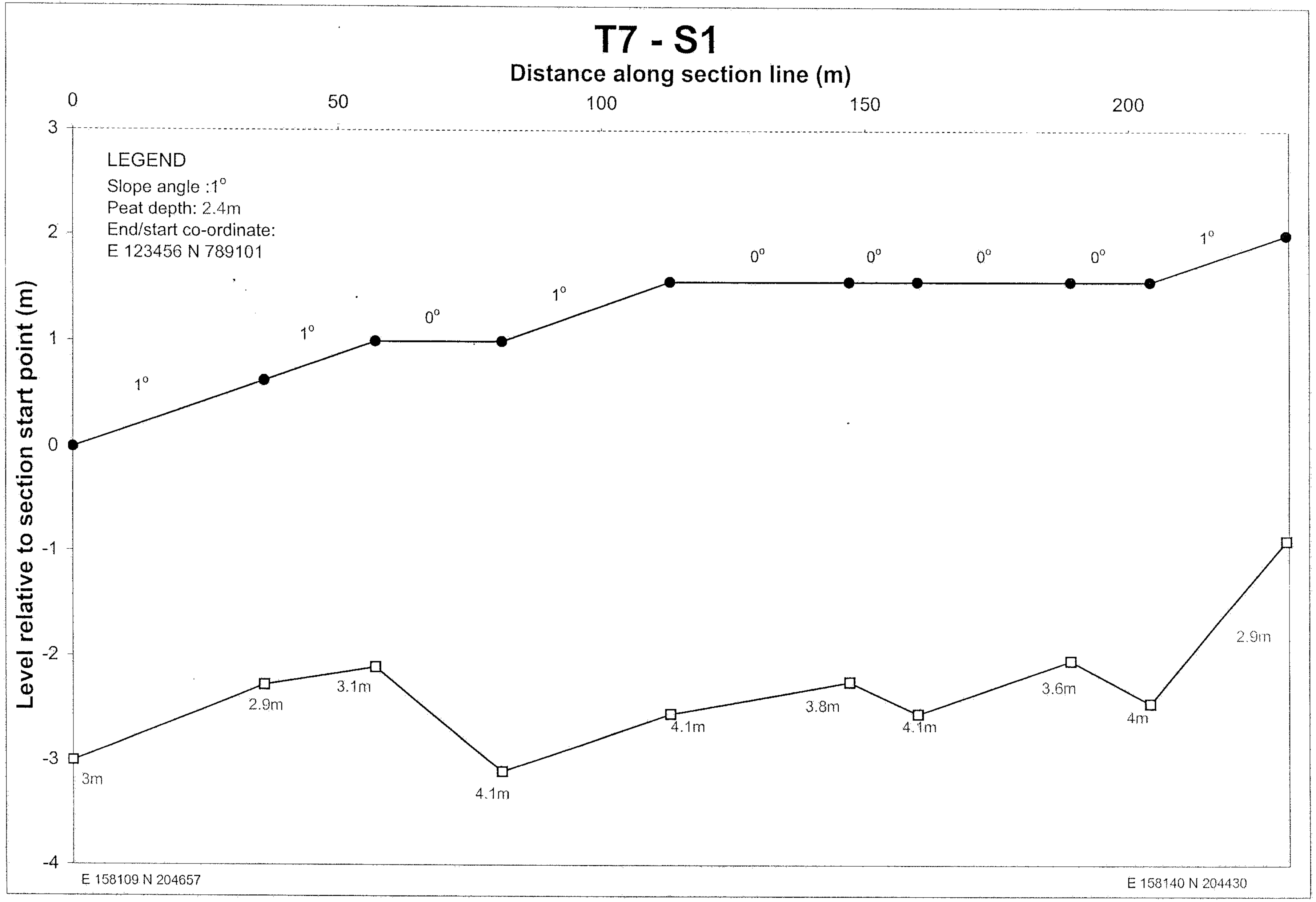
T6-S101
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
4.5°
3.5°
3°
1.75m
1.54m
3m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157962 N 204391
E 157922 N 204371


T6 - S101b
Distance along section line (m)
0
50
100
150
200
250
300
350
400
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
Level relative to section start point (m)
2.2°
1°
1°
1.5°
1.5°
1°
1.5°
1°
0.5°
0.8°
0.5°
1.5°
0.5°
1.5°
0.5°
1.5°
1.8m
3.5m
3.6m
2.6m
3.5m
3.3m
4.1m
3.2m
3.9m
4m
3.7m
4.5m
4.7m
3.6m
4.1m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157990 N 204223
E 158354 N 204426

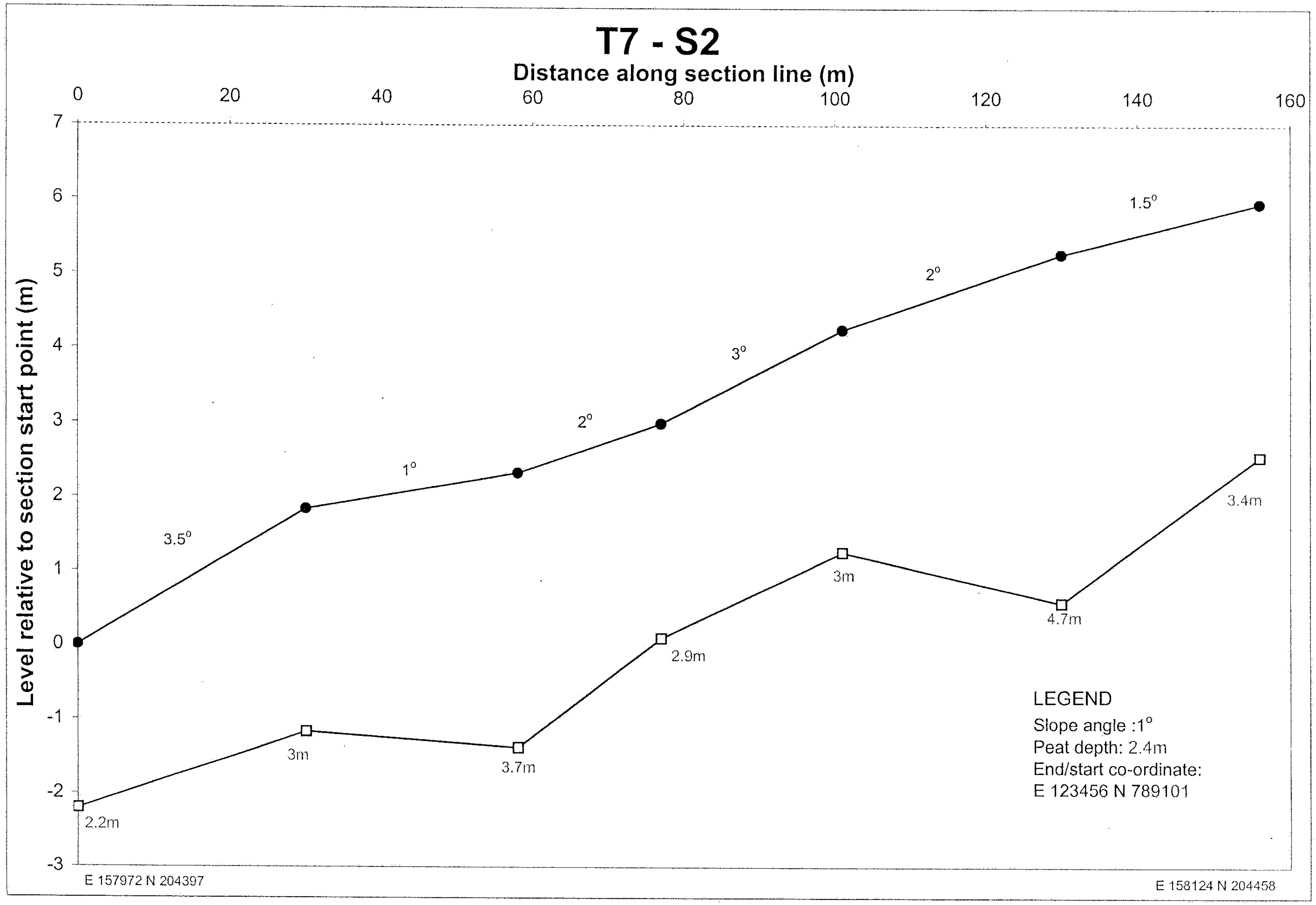

T6-S102
Distance along section line (m)
0
5
10
15
20
25
30
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
4°
2°
1.8m
1.8m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157950 N 204432
E 157924N 204420



T6-S103
Diatance along section line (m)
0
20
40
60
80
100
120
140
160
180
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
1.5°
2°
2°
3°
1°
1°
1.5°
3.6m
3.4m
2.9m
1.8m
1.3m
0.8m
0.8m
1.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157953 N 204334
E 157910 N 204504

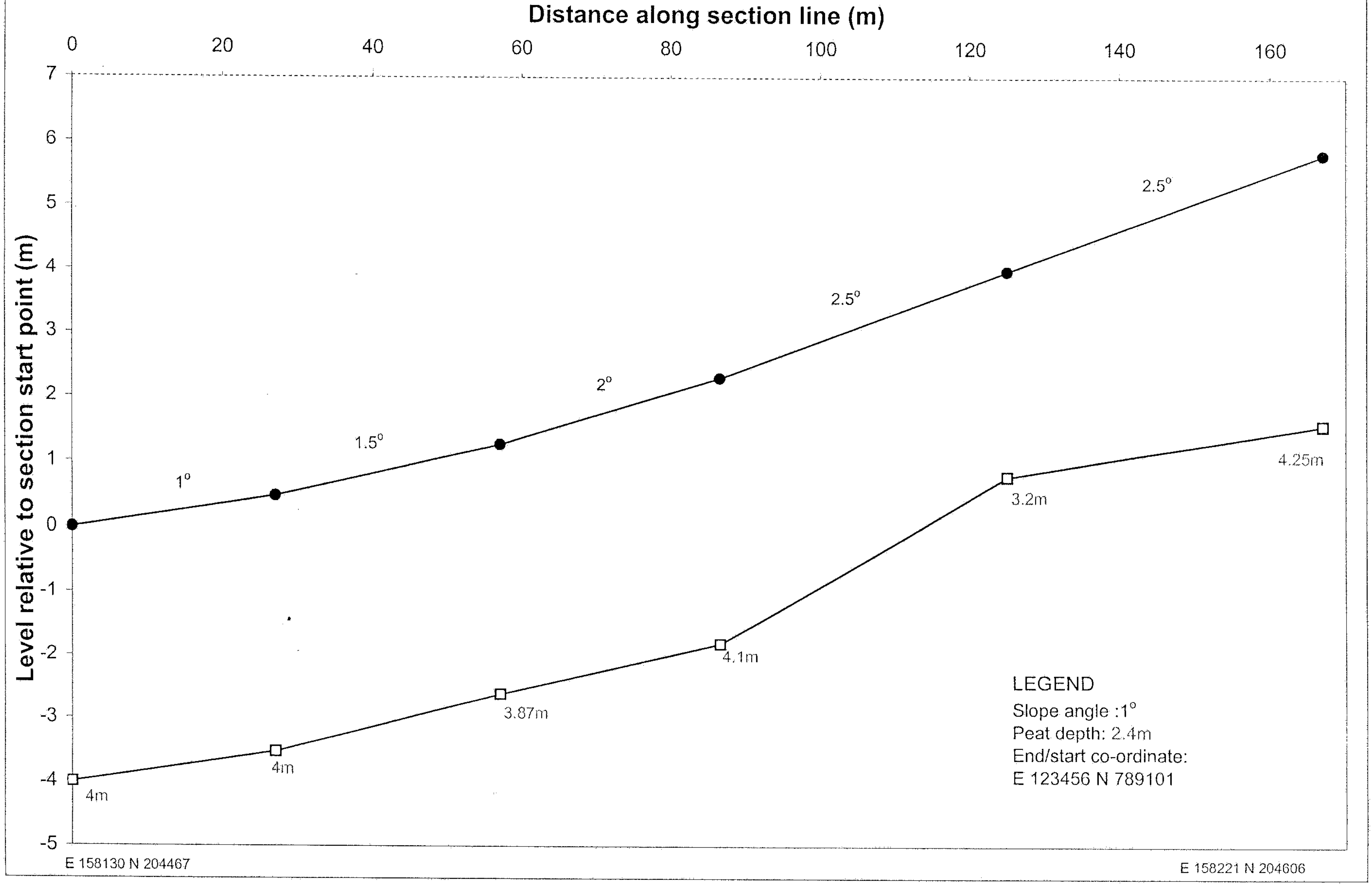


T7 - S1
Distance along section line (m)
0
50
100
150
200
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
1°
1°
0°
1°
0°
0°
0°
0°
1°
3m
2.9m
3.1m
4.1m
4.1m
3.8m
4.1m
3.6m
4m
2.9m
E 158109 N 204657
E 158140 N 204430

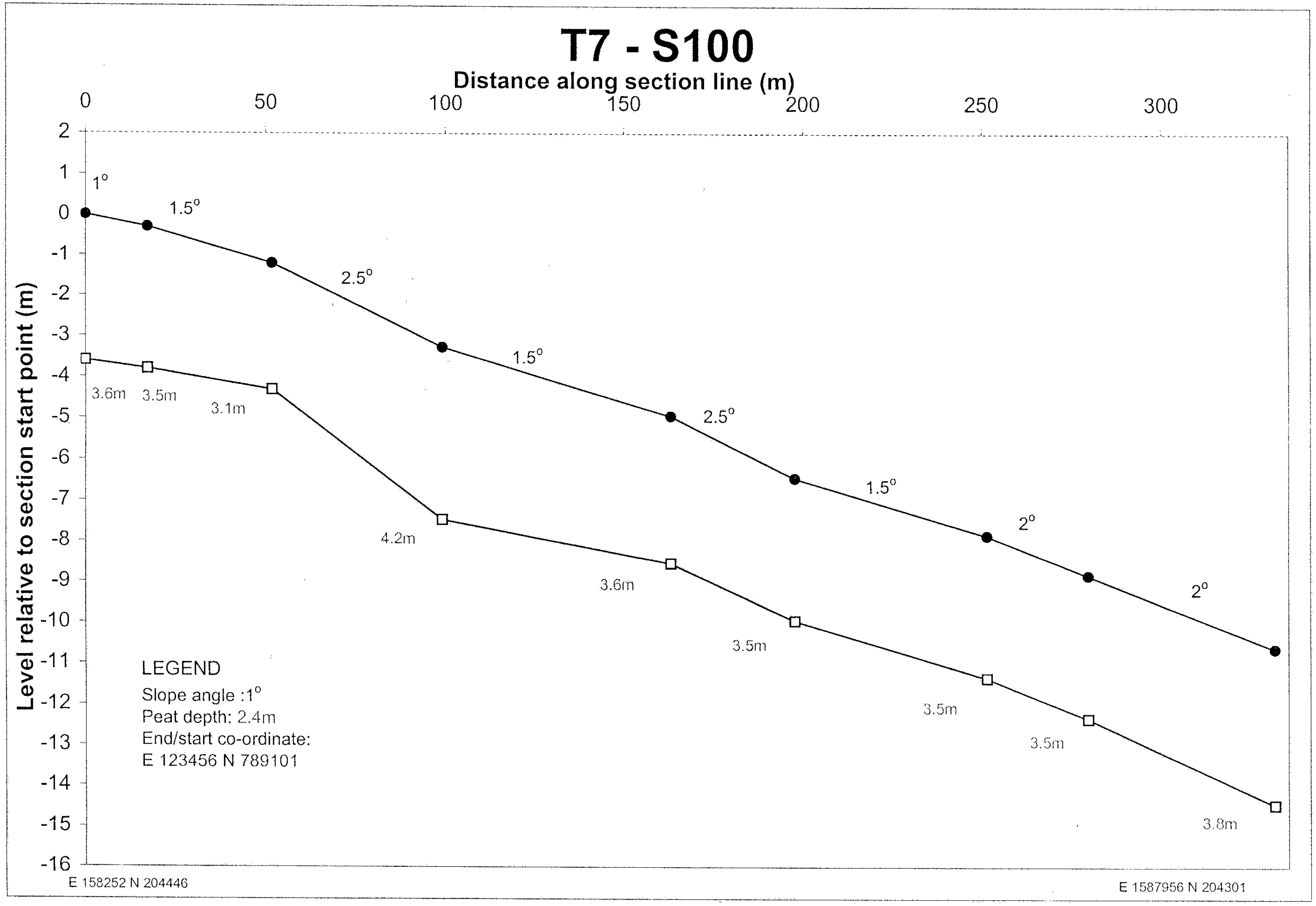


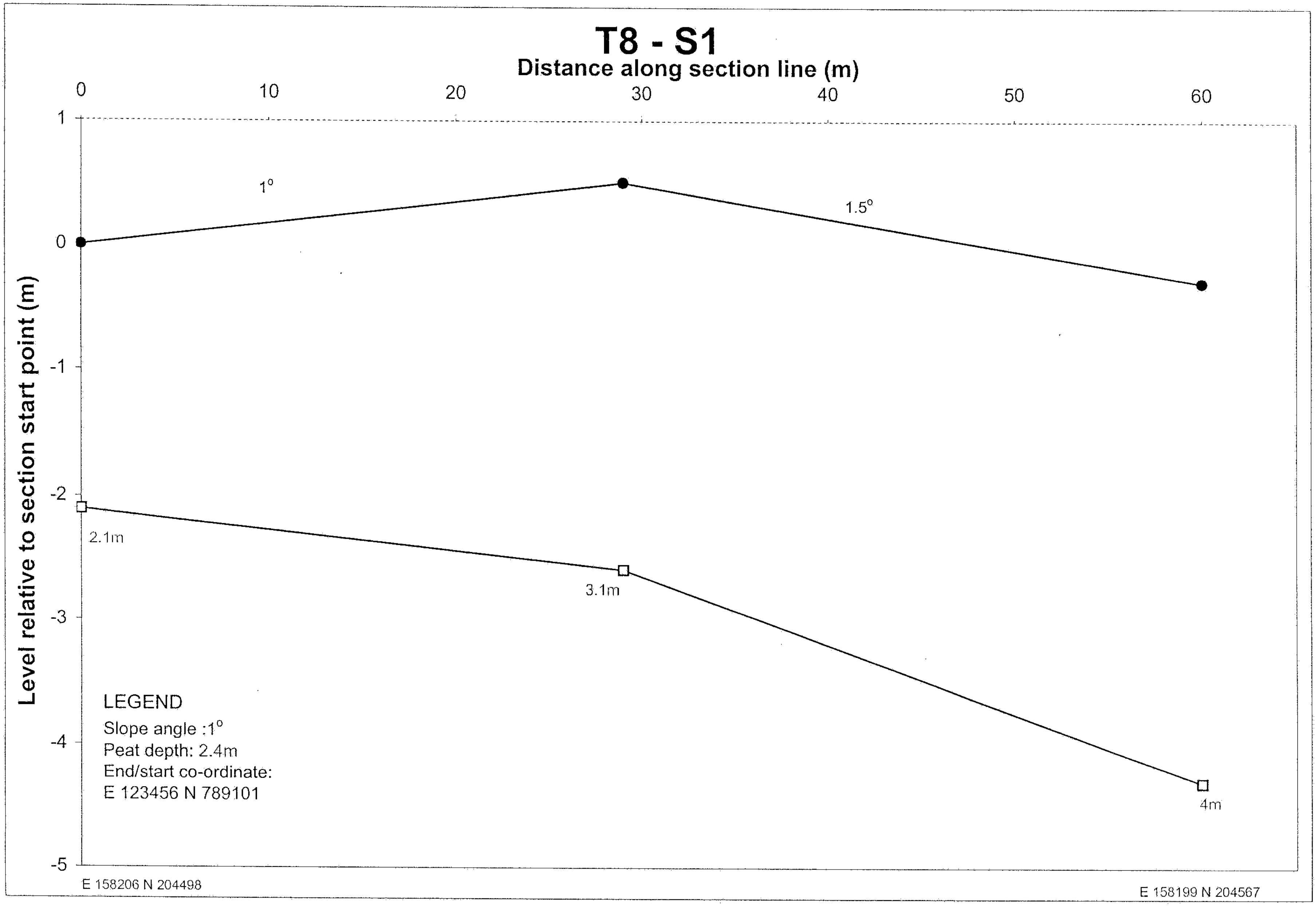
T7 - S2
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
3.5°
1°
2°
3°
2°
1.5°
2.2m
3m
3.7m
2.9m
3m
4.7m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157972 N 204397
E 158124 N 204458

T7 - S3

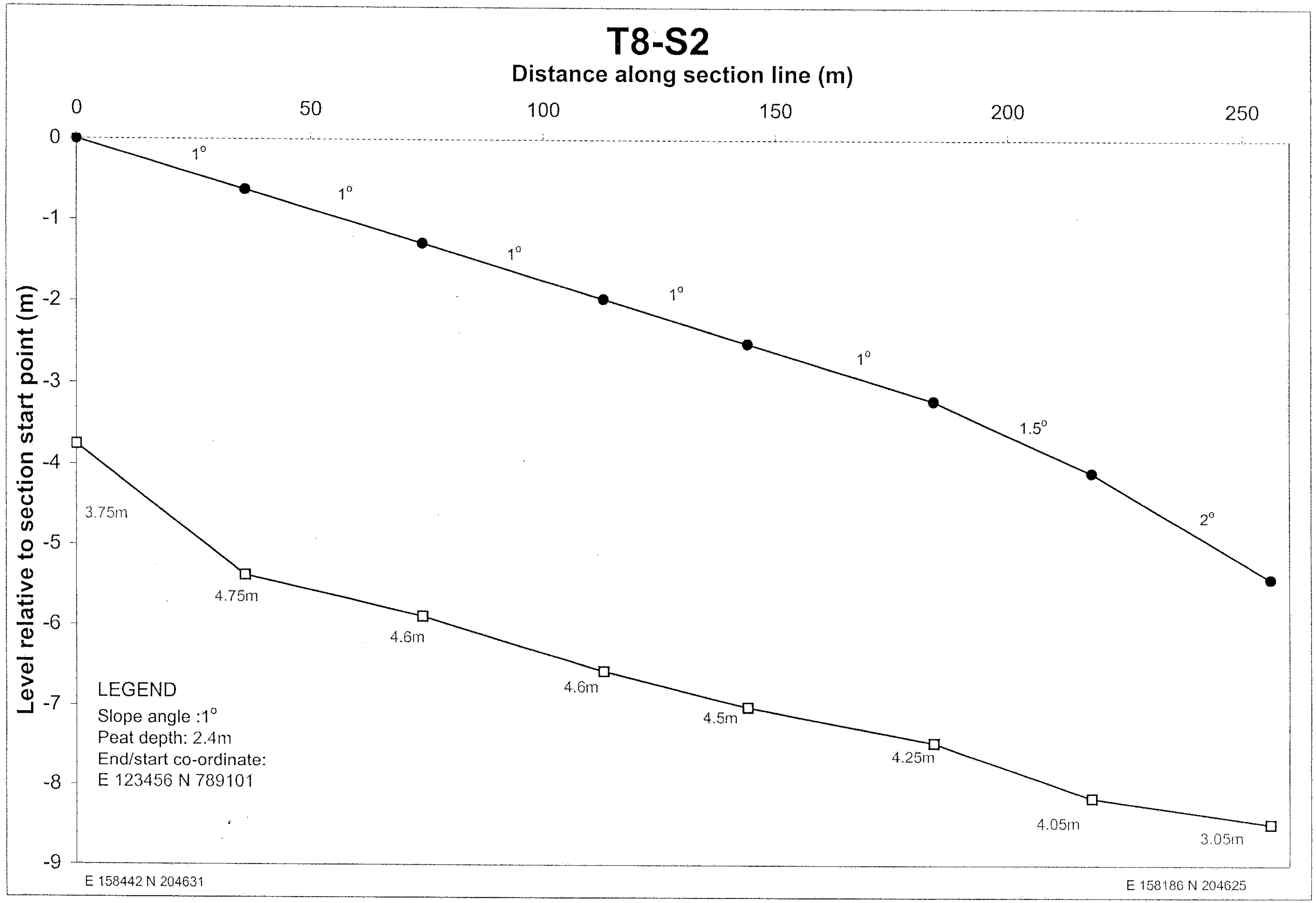


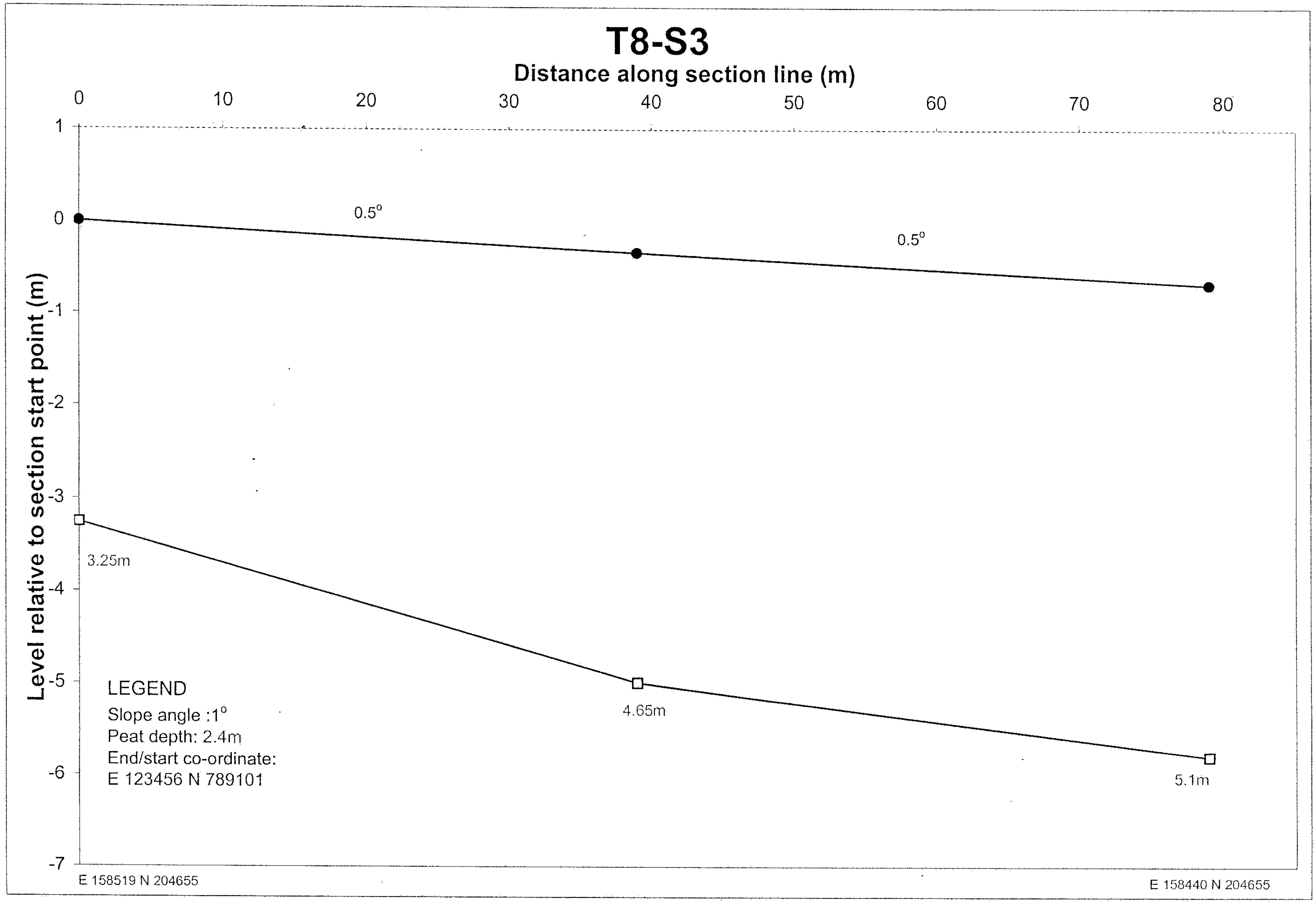
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1°
1.5°
2°
2.5°
2.5°
4m
4m
3.87m
4.1m
3.2m
4.25m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158130 N 204467
E 158221 N 204606


T7 - S100
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
1°
1.5°
2.5°
1.5°
2.5°
1.5°
2°
2°
3.6m
3.5m
3.1m
4.2m
3.6m
3.5m
3.5m
3.5m
3.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158252 N 204446
E 1587956 N 204301

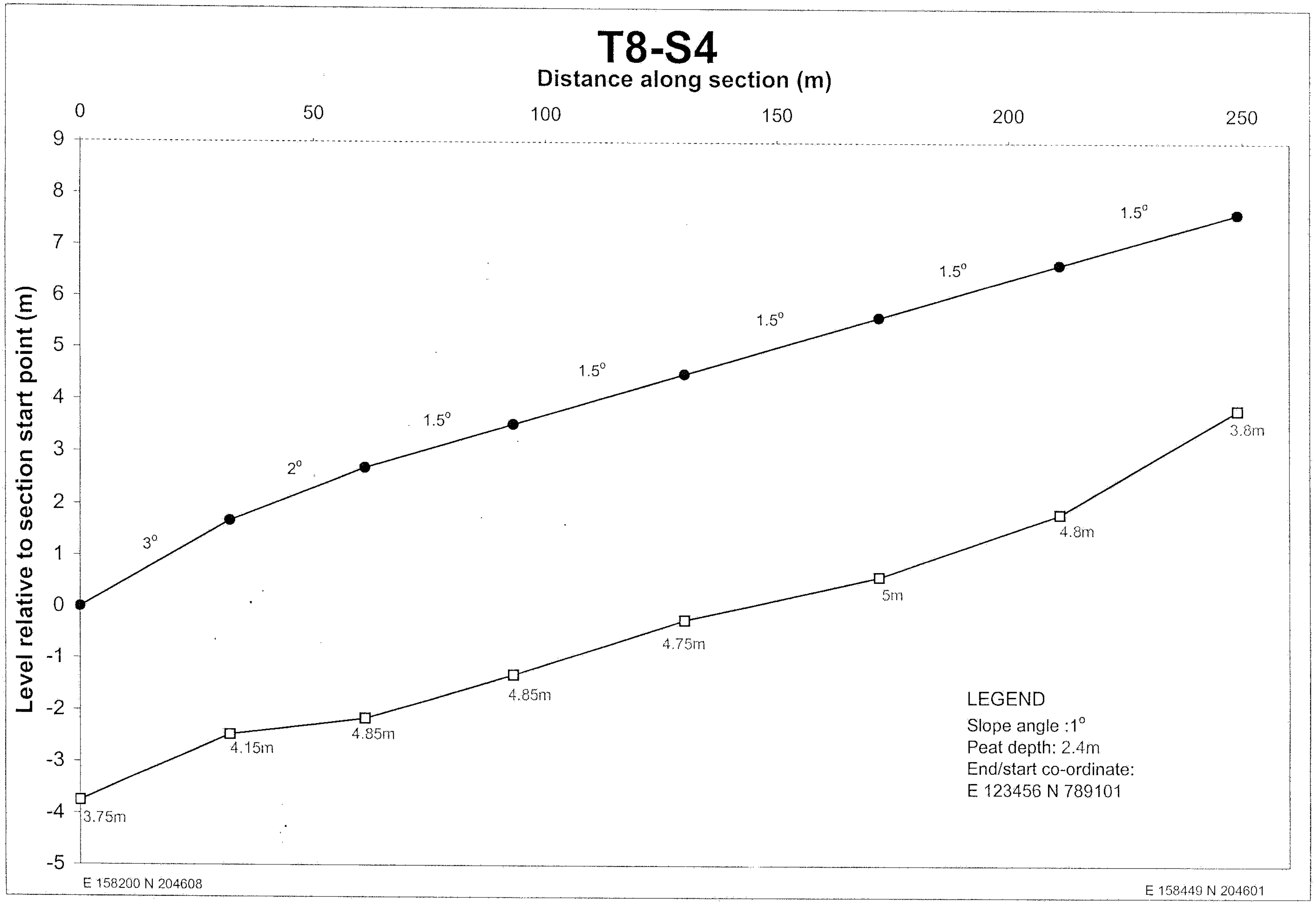


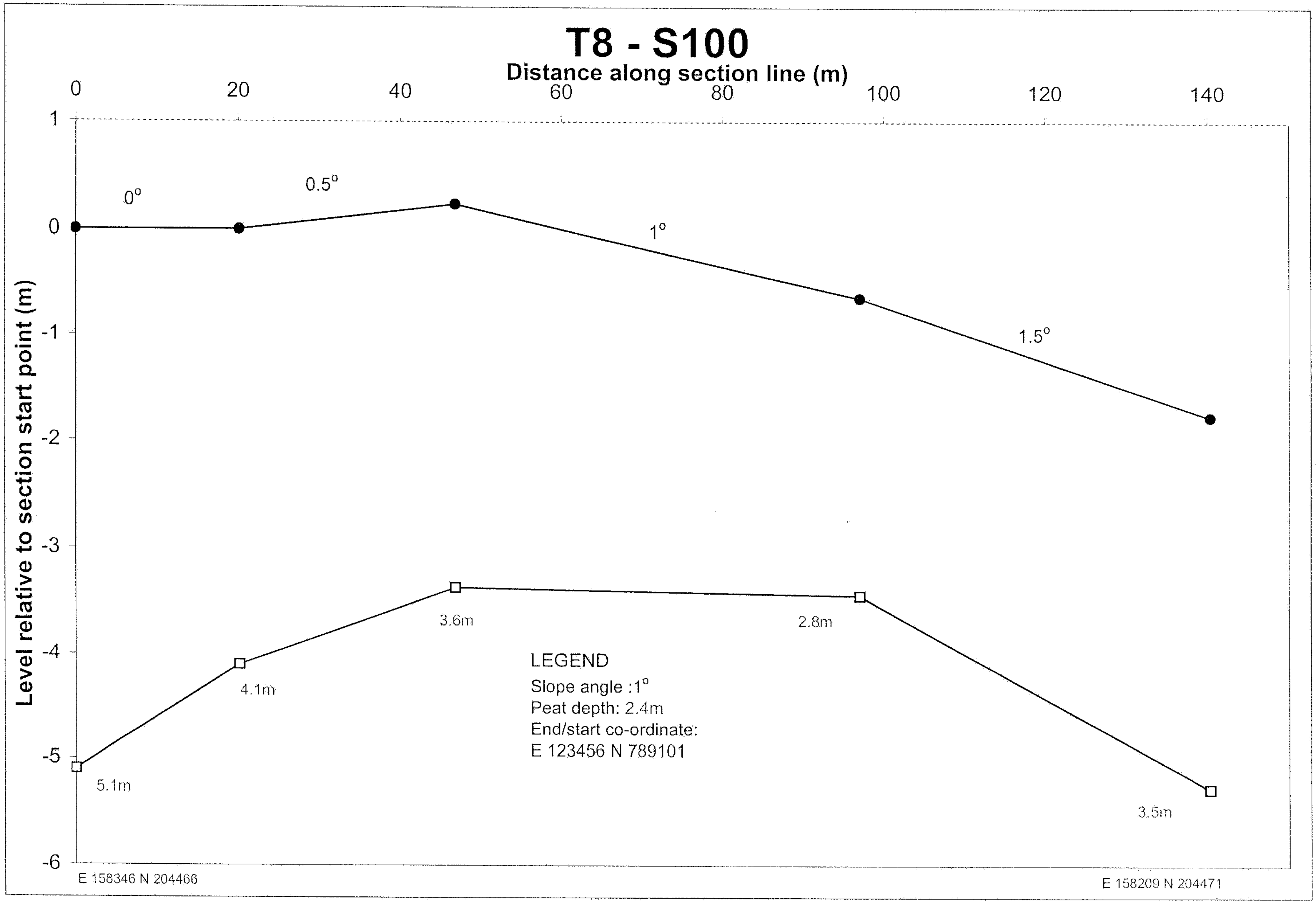
T8 - S1
Distance along section line (m)
0
10
20
30
40
50
60
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
1°
1.5°
2.1m
3.1m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158206 N 204498
E 158199 N 204567

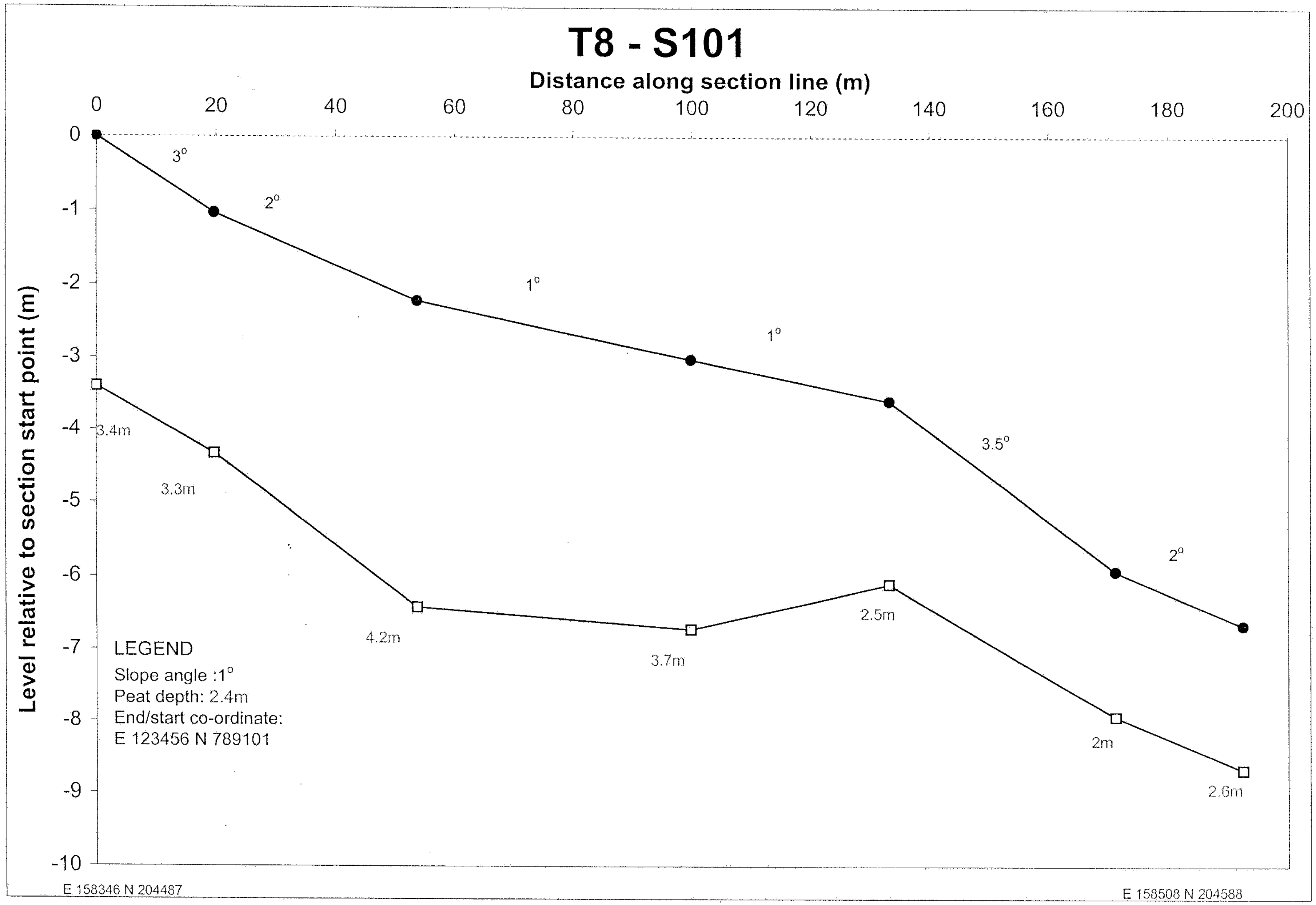

T8-S2
Distance along section line (m)
0
50
100
150
200
250
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
Level relative to section start point (m)
1°
1°
1°
1°
1°
1.5°
2°
3.75m
4.75m
4.6m
4.6m
4.5m
4.25m
4.05m
3.05m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158442 N 204631
E 158186 N 204625



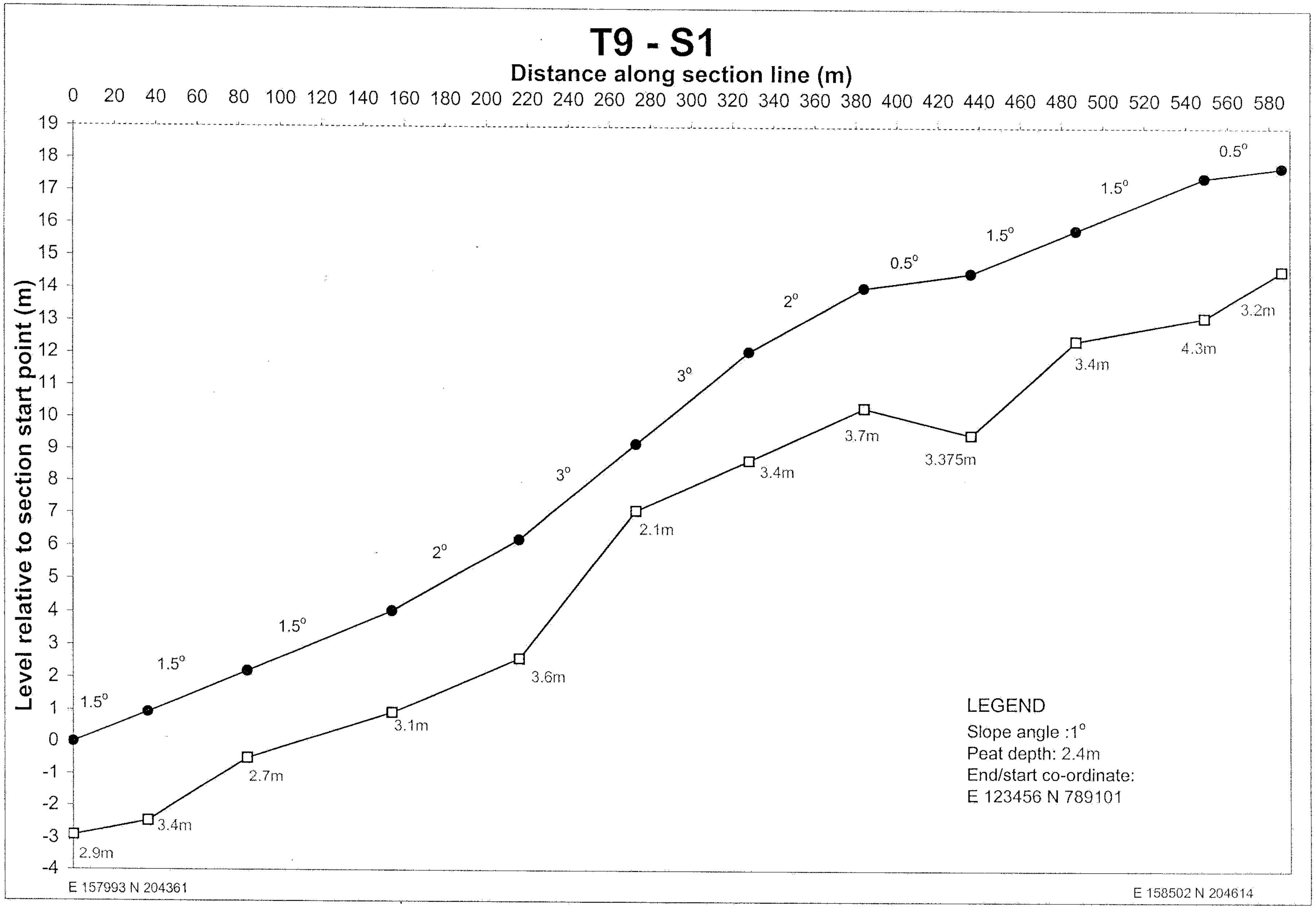
T8-S3
Distance along section line (m)
0
10
20
30
40
50
60
70
80
1
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
0.5°
0.5°
3.25m
4.65m
5.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158519 N 204655
E 158440 N 204655

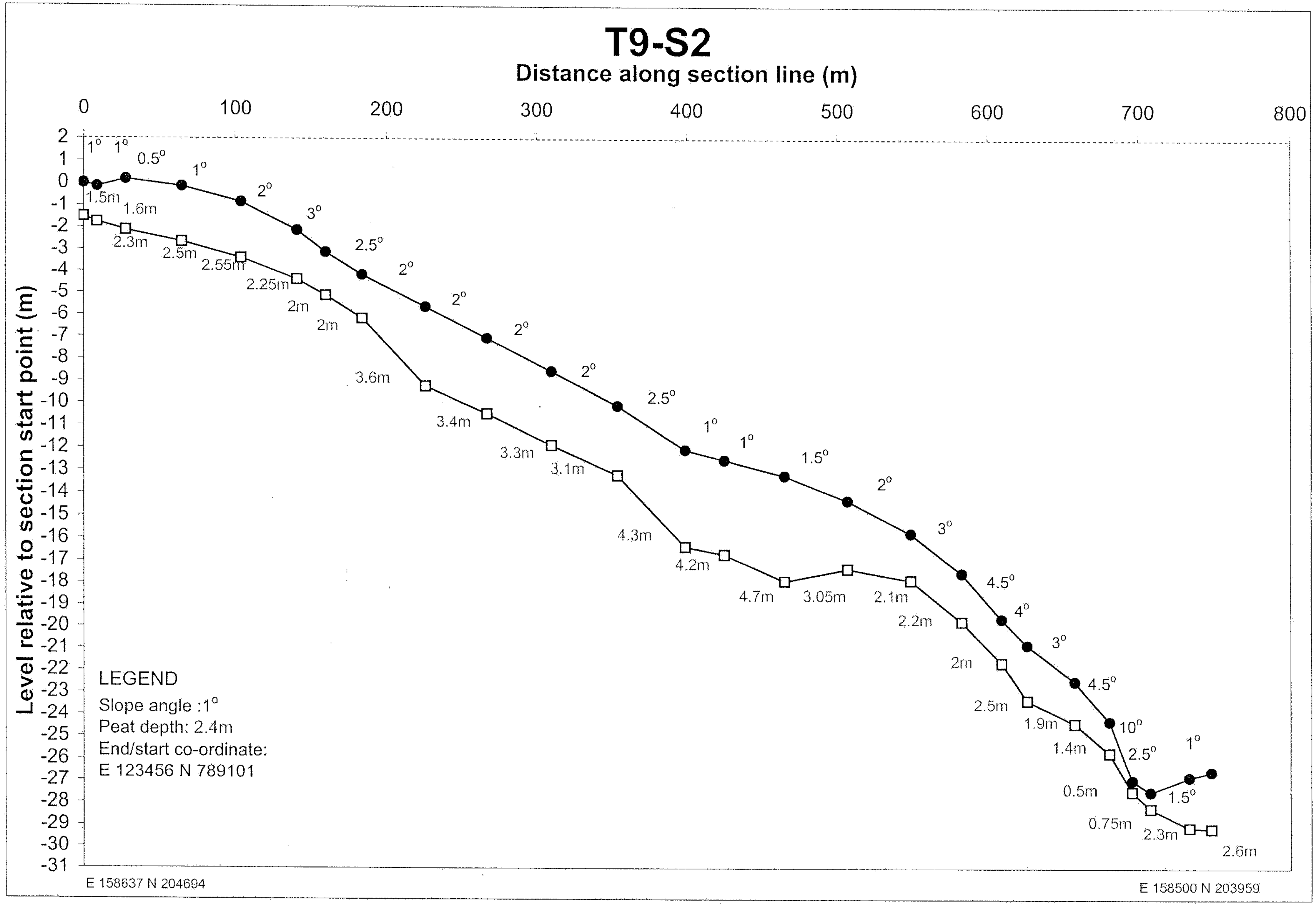

T8-S4
Distance along section (m)
0
50
100
150
200
250
Level relative to section start point (m)
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
3°
2°
1.5°
1.5°
1.5°
1.5°
1.5°
3.75m
4.15m
4.85m
4.85m
4.75m
5m
4.8m
3.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158200 N 204608
E 158449 N 204601

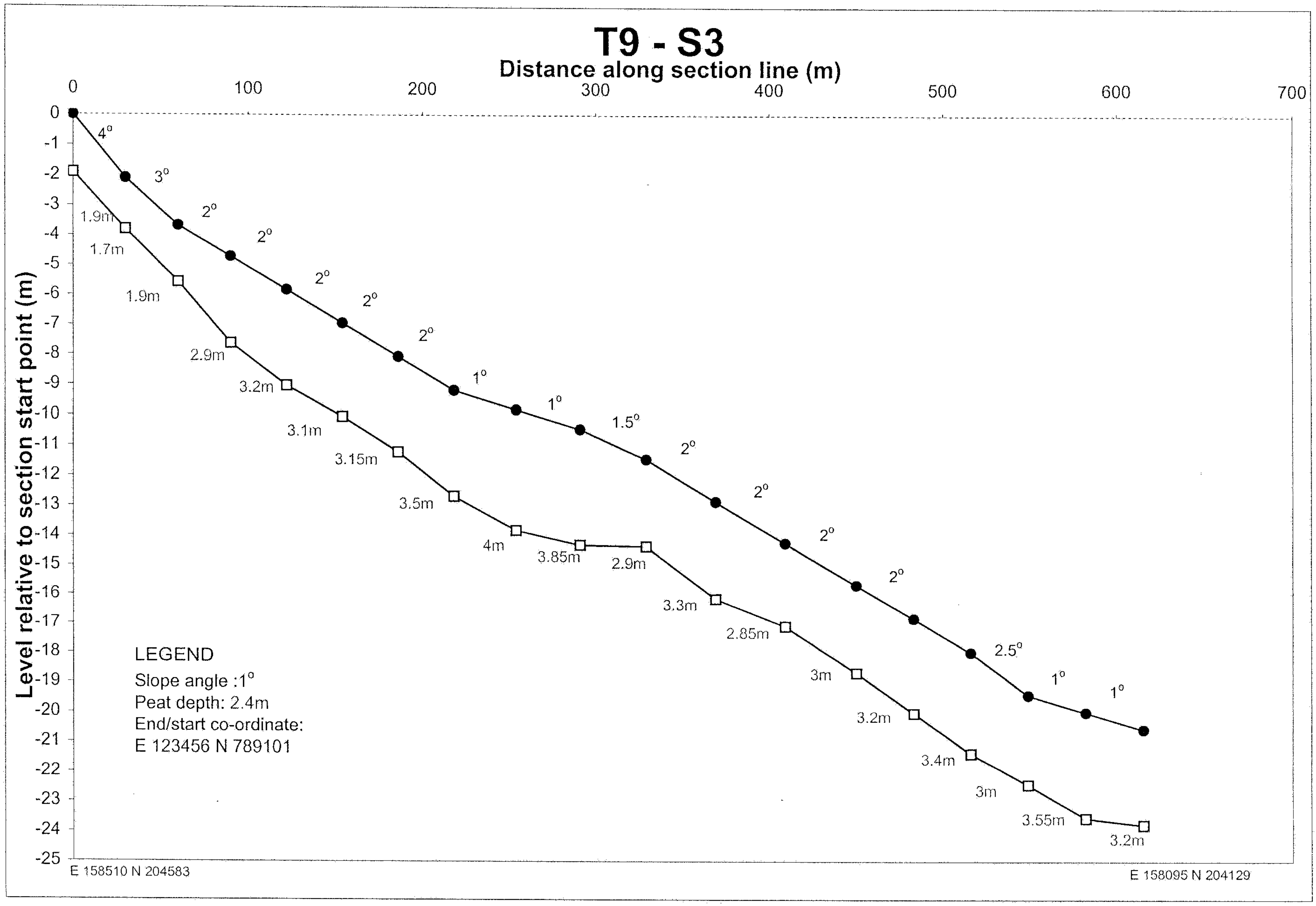

T8 - S100
Distance along section line (m)
0
20
40
60
80
100
120
140
1
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
0°
0.5°
1°
1.5°
3.6m
2.8m
4.1m
5.1m
3.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158346 N 204466
E 158209 N 204471

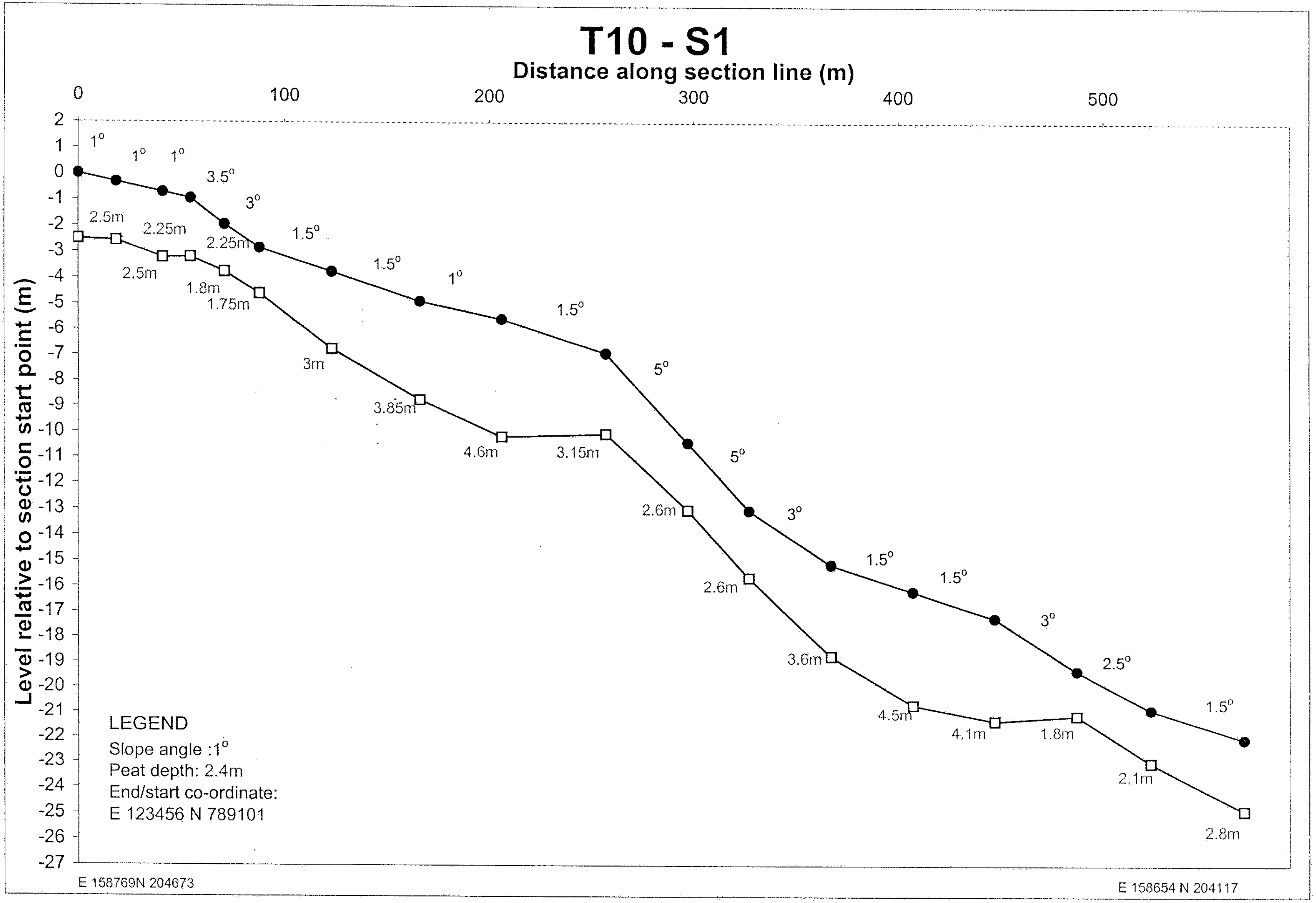


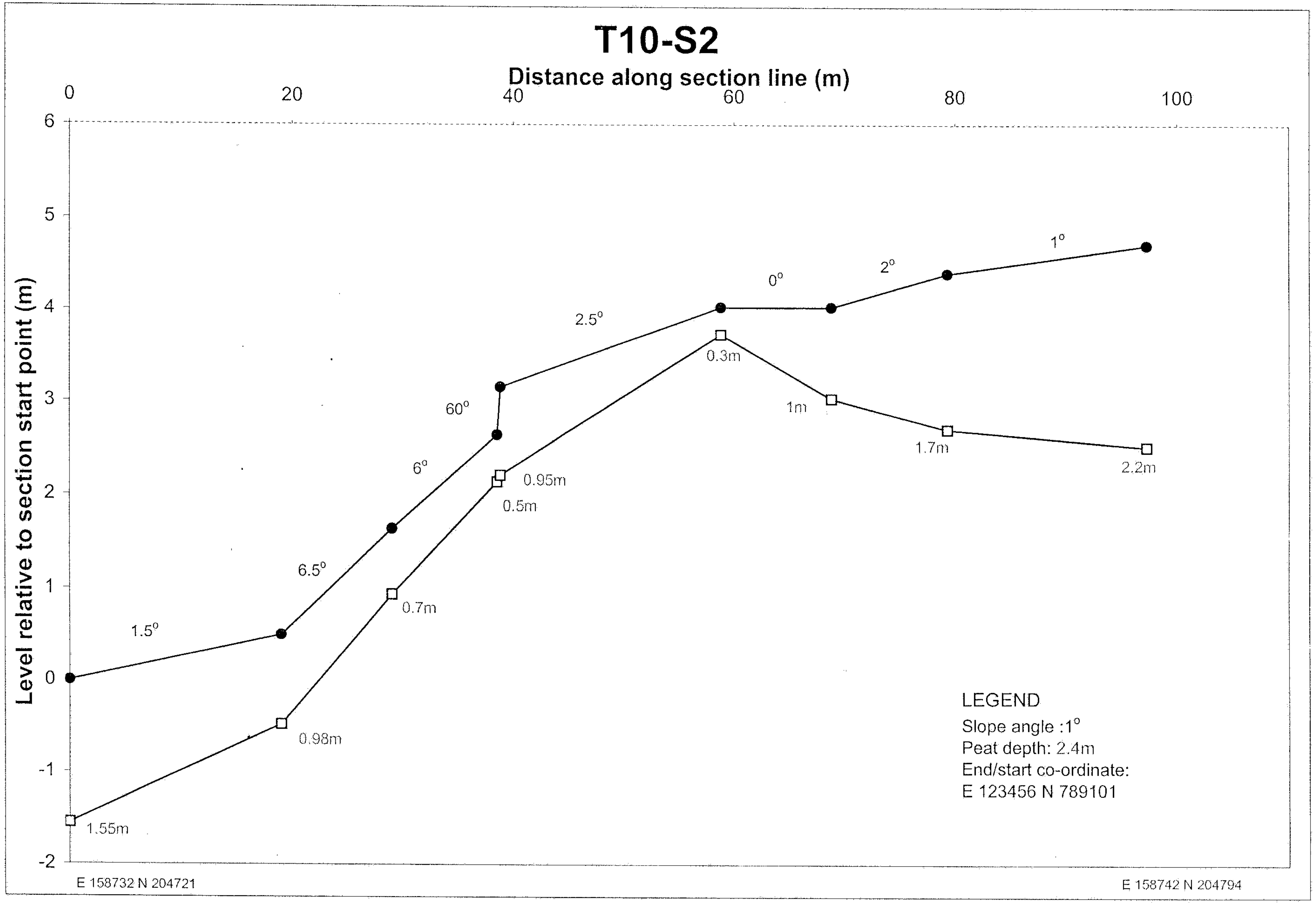
T8 - S101
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
3°
2°
1°
1°
3.5°
2°
3.4m
3.3m
4.2m
3.7m
2.5m
2m
2.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158346 N 204487
E 158508 N 204588

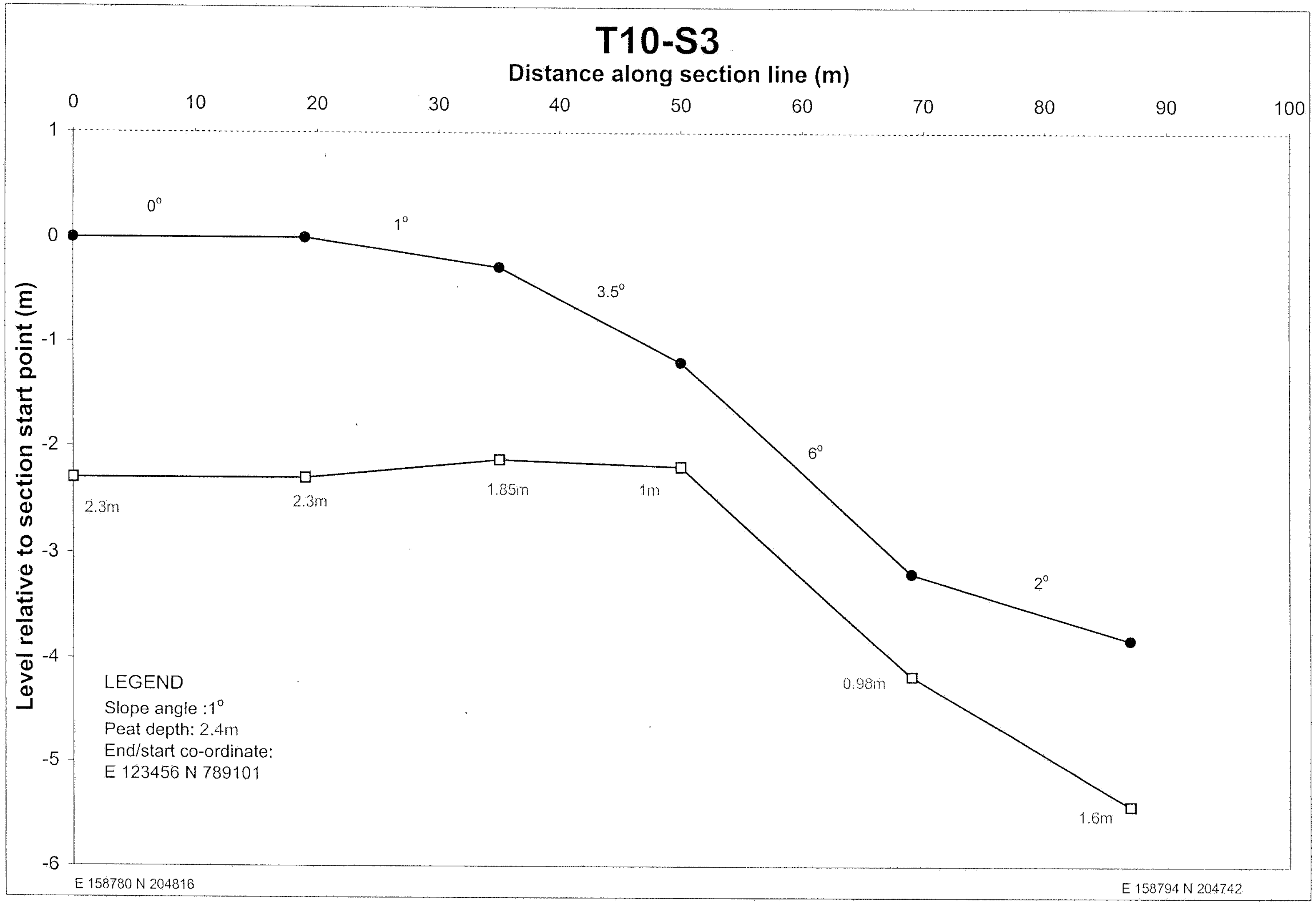

T9 - S1
Distance along section line (m)
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580
Level relative to section start point (m)
19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 -1 -2 -3 -4
1.5°
1.5°
1.5°
2°
3°
3°
2°
0.5°
1.5°
1.5°
0.5°
2.9m
3.4m
2.7m
3.1m
3.6m
2.1m
3.4m
3.7m
3.375m
3.4m
4.3m
3.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 157993 N 204361
E 158502 N 204614

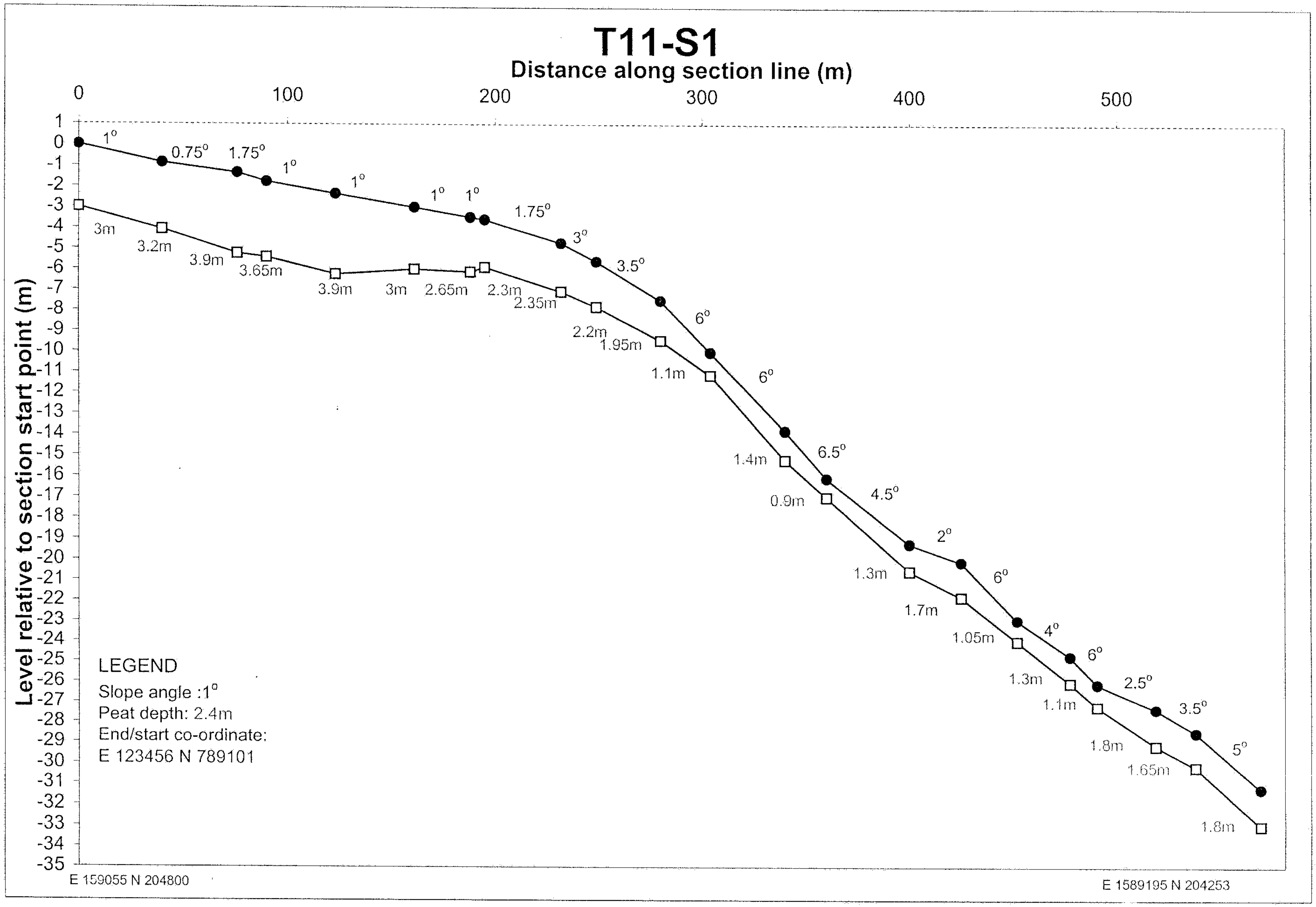

T9-S2
Distance along section line (m)
0
100
200
300
400
500
600
700
800
Level relative to section start point (m)
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
-24
-25
-26
-27
-28
-29
-30
-31
1°
1°
0.5°
1°
2°
3°
2.5°
2°
2°
2°
2°
2.5°
1°
1°
1.5°
2°
3°
4.5°
4°
3°
4.5°
10°
2.5°
1°
1.5°
1.5m
1.6m
2.3m
2.5m
2.55m
2.25m
2m
2m
3.6m
3.4m
3.3m
3.1m
4.3m
4.2m
4.7m
3.05m
2.1m
2.2m
2m
2.5m
1.9m
1.4m
0.5m
0.75m
2.3m
2.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158637 N 204694
E 158500 N 203959

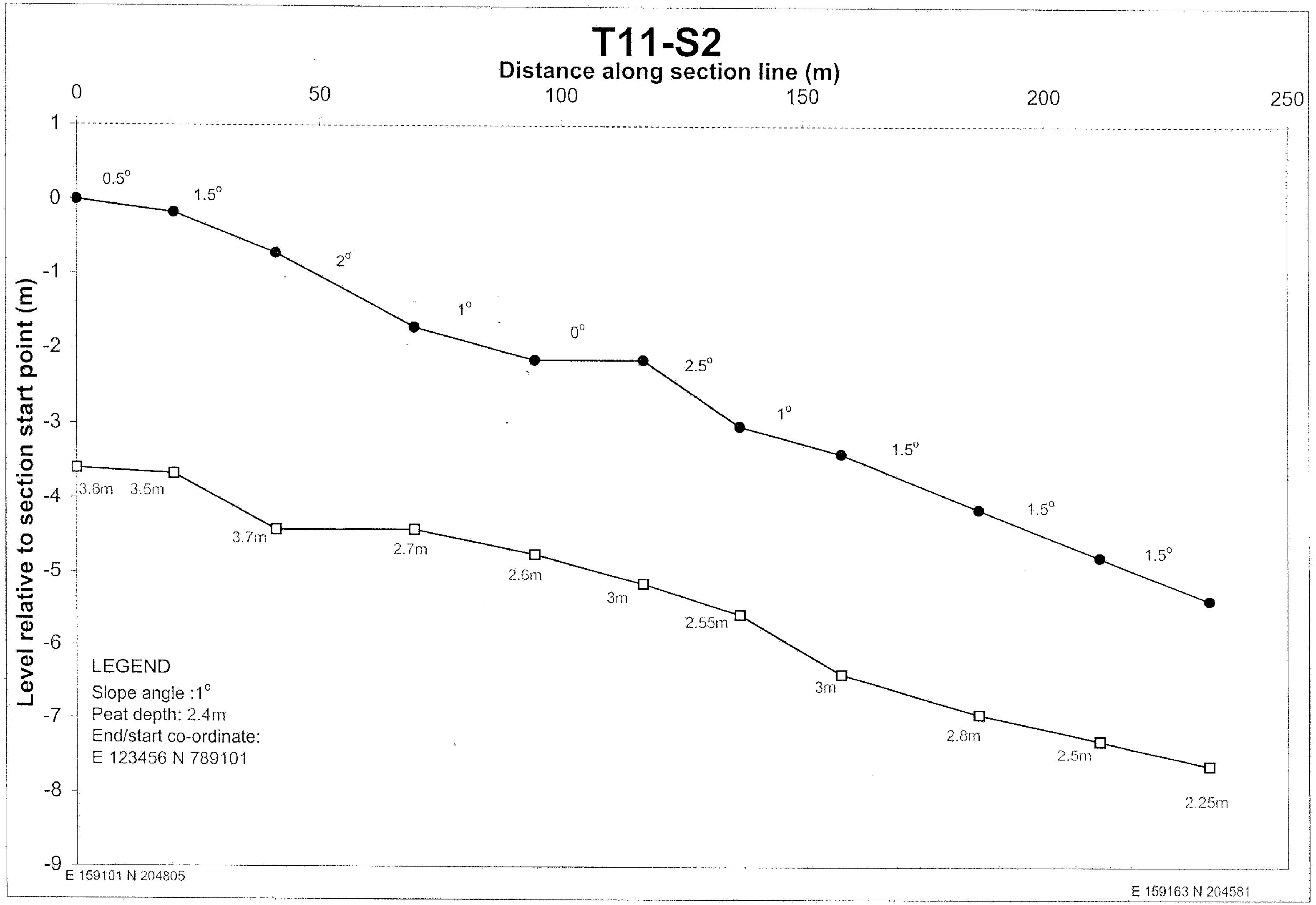

T9 - S3
Distance along section line (m)
0
100
200
300
400
500
600
700
Level relative to section start point (m)
4°
3°
2°
2°
2°
2°
2°
1°
1°
1.5°
2°
2°
2°
2°
2.5°
1°
1°
1.9m
1.7m
1.9m
2.9m
3.2m
3.1m
3.15m
3.5m
4m
3.85m
2.9m
3.3m
2.85m
3m
3.2m
3.4m
3m
3.55m
3.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158510 N 204583
E 158095 N 204129


T10 - S1
Distance along section line (m)
0
100
200
300
400
500
Level relative to section start point (m)
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
-24
-25
-26
-27
1°
1°
1°
3.5°
3°
1.5°
1.5°
1°
1.5°
5°
5°
3°
1.5°
1.5°
3°
2.5°
1.5°
2.5m
2.25m
2.25m
2.5m
1.8m
1.75m
3m
3.85m
4.6m
3.15m
2.6m
2.6m
3.6m
4.5m
4.1m
1.8m
2.1m
2.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158769N 204673
E 158654 N 204117

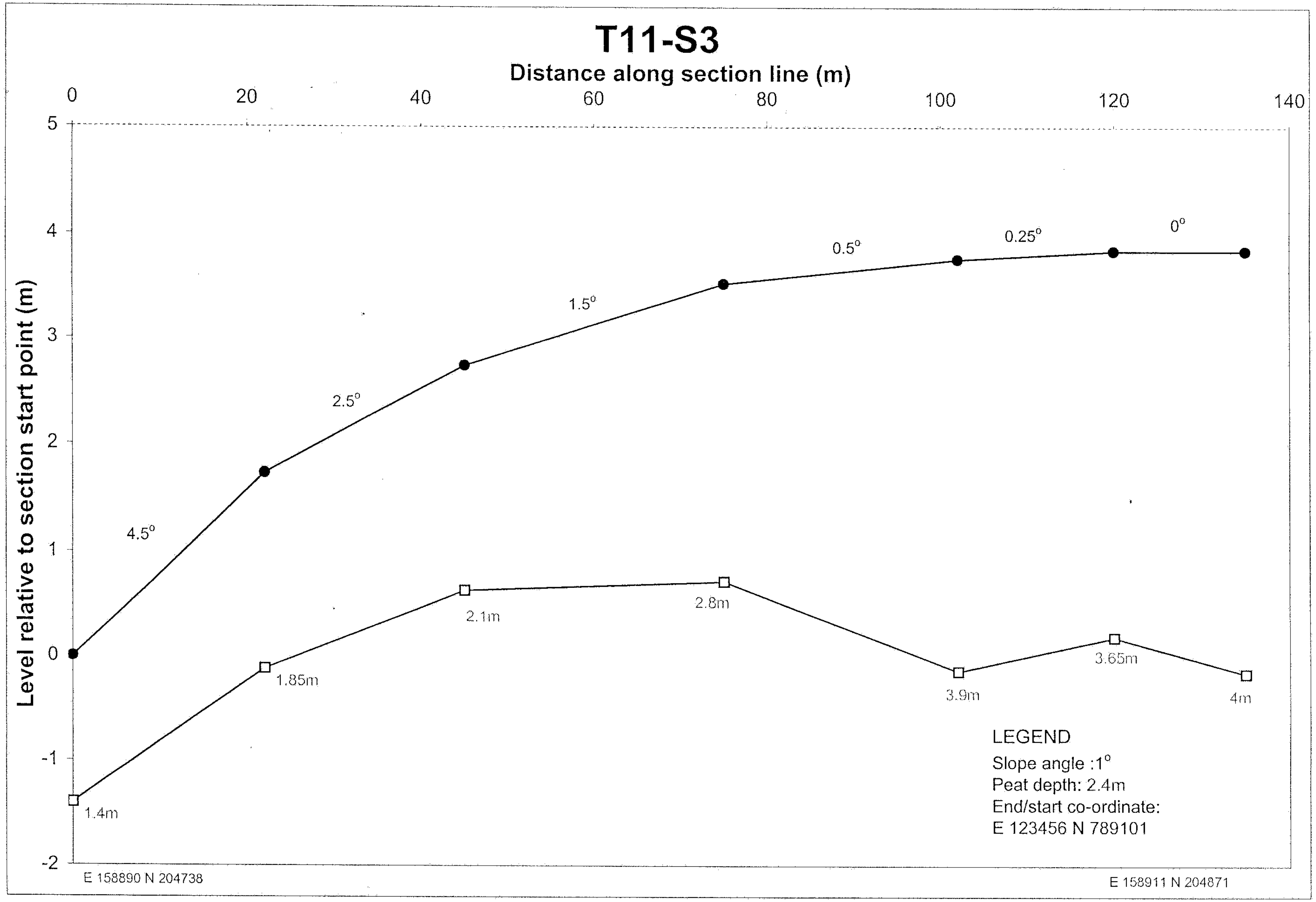

T10-S2
Distance along section line (m)
0
20
40
60
80
100
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
1.5°
6.5°
6°
60°
2.5°
0°
2°
1°
1.55m
0.98m
0.7m
0.5m
0.95m
0.3m
1m
1.7m
2.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158732 N 204721
E 158742 N 204794

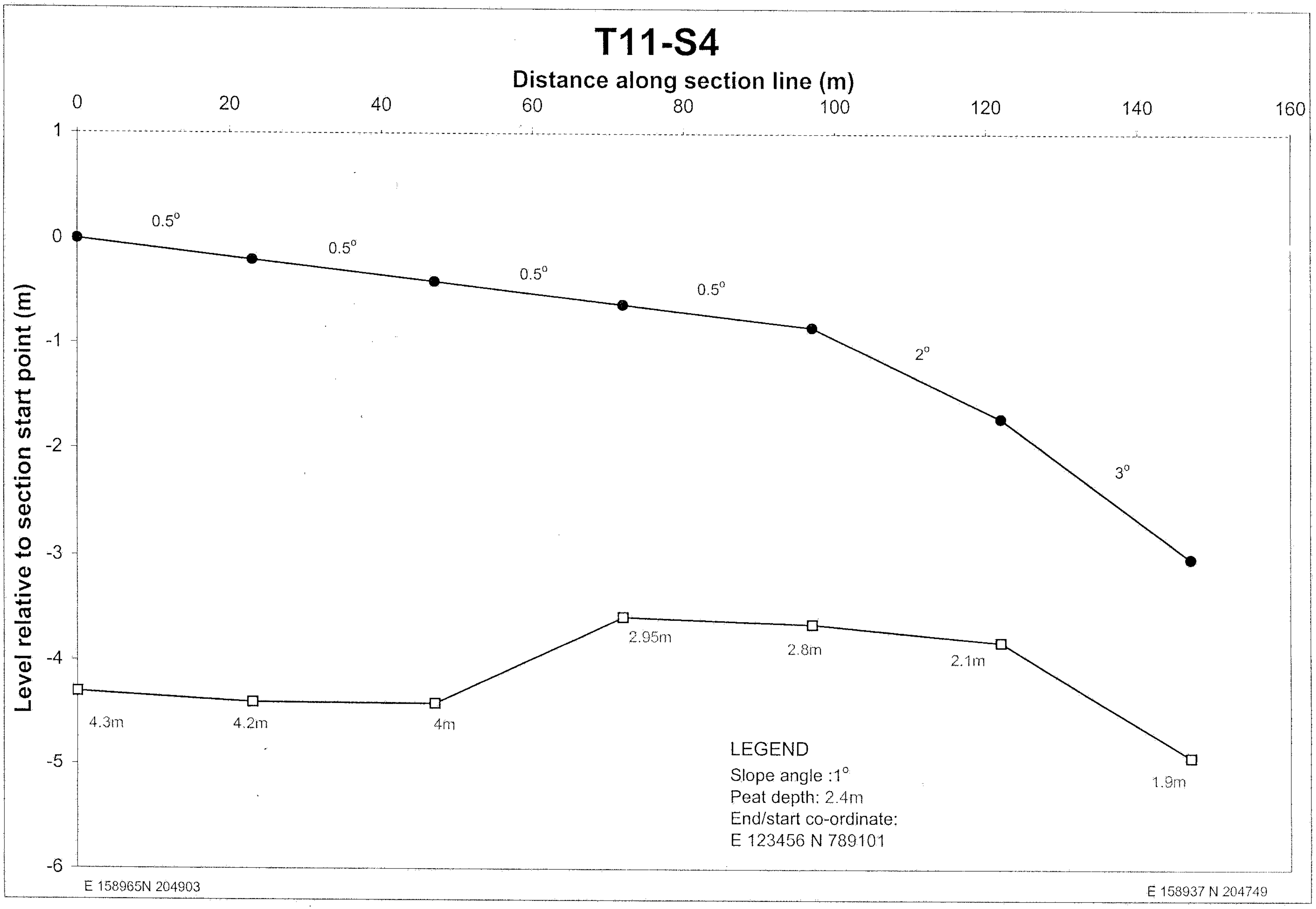

T10-S3
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
0°
1°
3.5°
6°
2°
2.3m
2.3m
1.85m
1m
0.98m
1.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158780 N 204816
E 158794 N 204742

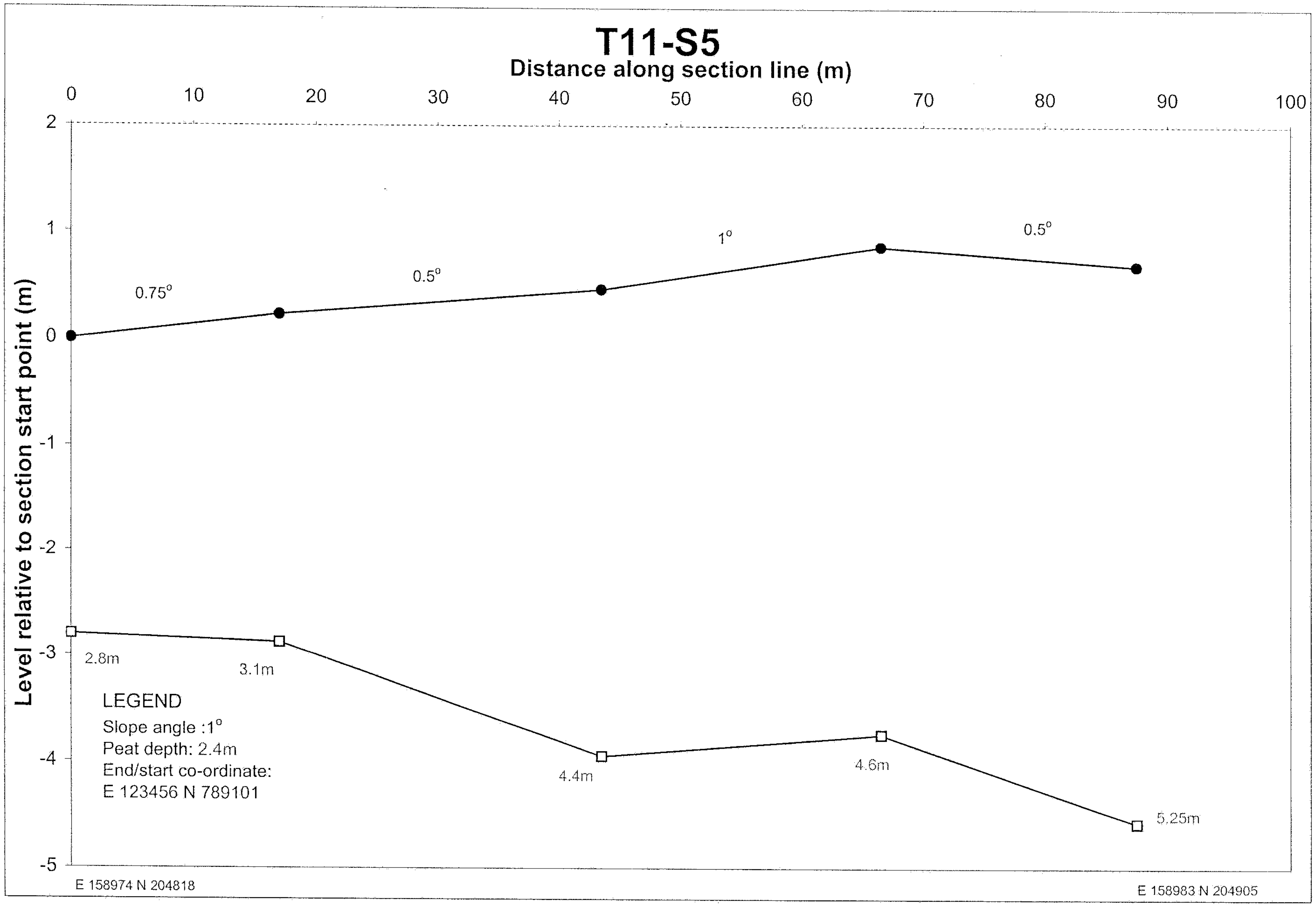

T11-S1
Distance along section line (m)
Level relative to section start point (m)
1°
0.75°
1.75°
1°
1°
1°
1°
1.75°
3°
3.5°
6°
6°
6.5°
4.5°
2°
6°
4°
6°
2.5°
3.5°
5°
3m
3.2m
3.9m
3.65m
3.9m
3m
2.65m
2.3m
2.35m
2.2m
1.95m
1.1m
1.4m
0.9m
1.3m
1.7m
1.05m
1.3m
1.1m
1.8m
1.65m
1.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159055 N 204800
E 1589195 N 204253



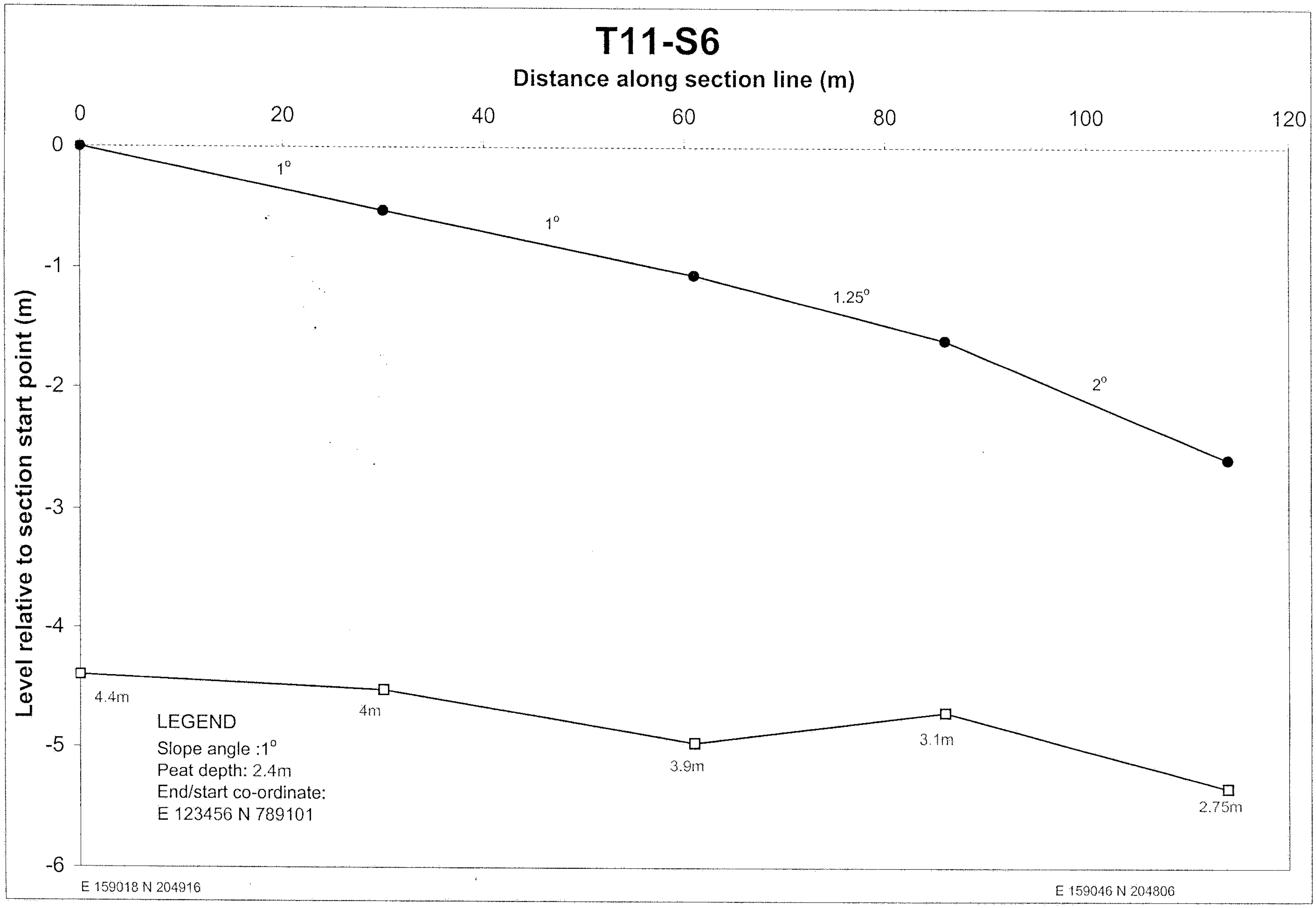
T11-S2
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
0.5°
1.5°
2°
1°
0°
2.5°
1°
1.5°
1.5°
1.5°
3.6m
3.5m
3.7m
2.7m
2.6m
3m
2.55m
3m
2.8m
2.5m
2.25m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159101 N 204805
E 159163 N 204581


T11-S3
Distance along section line (m)
0
20
40
60
80
100
120
140
Level relative to section start point (m)
5
4
3
2
1
0
-1
-2
4.5°
2.5°
1.5°
0.5°
0.25°
0°
1.4m
1.85m
2.1m
2.8m
3.9m
3.65m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158890 N 204738
E 158911 N 204871

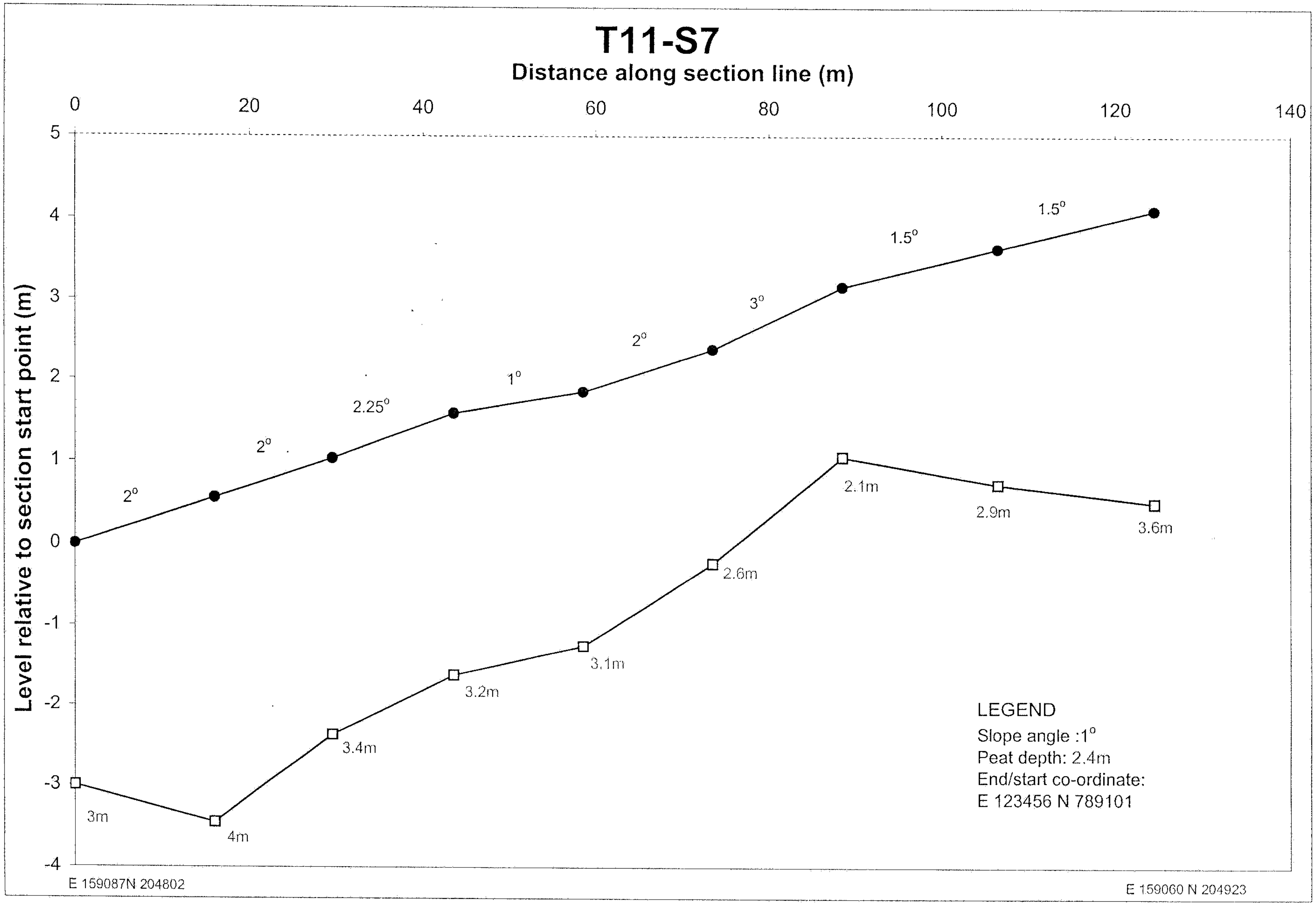

T11-S4
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
0.5°
0.5°
0.5°
0.5°
2°
3°
4.3m
4.2m
4m
2.95m
2.8m
2.1m
1.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158965N 204903
E 158937 N 204749

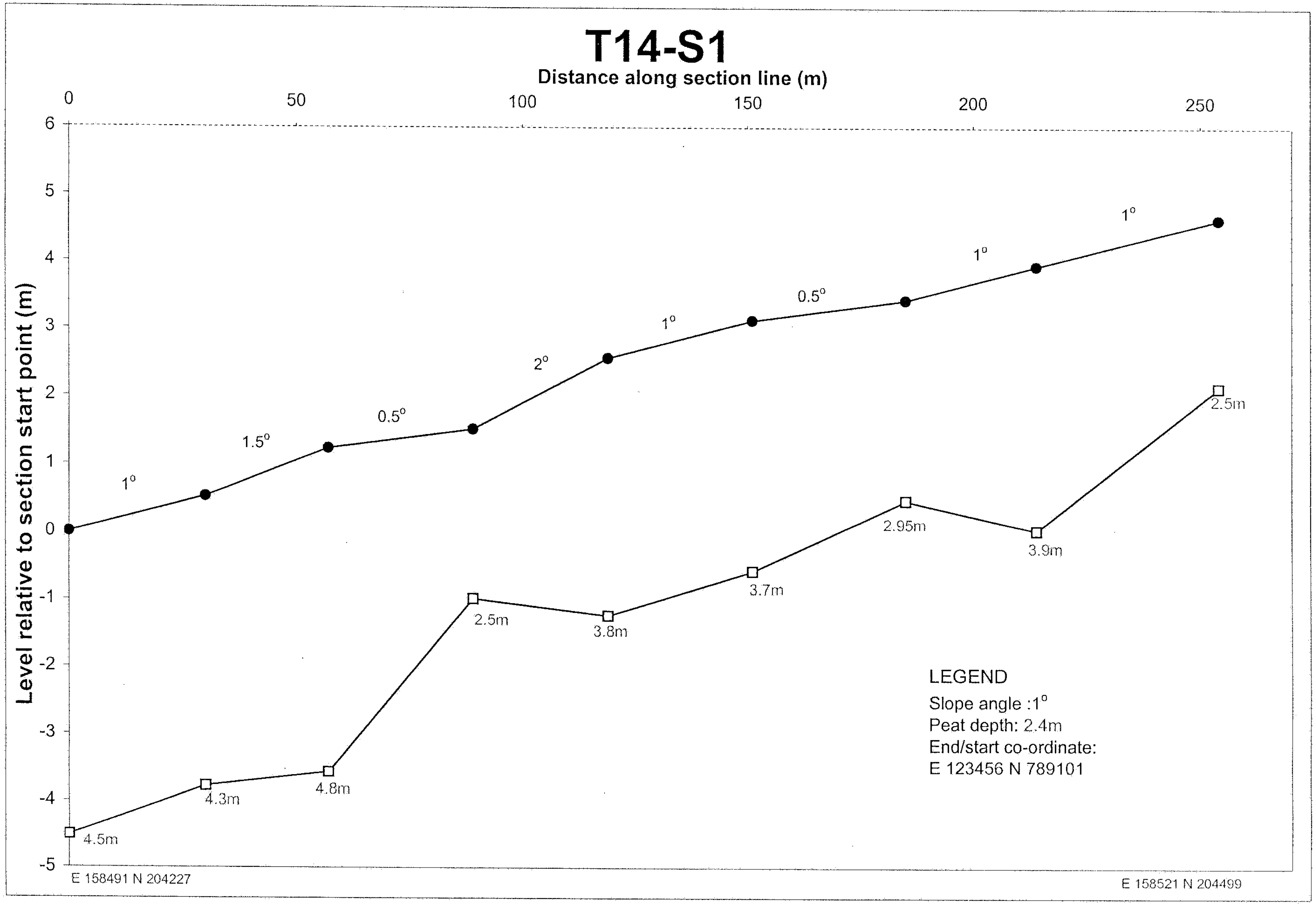


T11-S5
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
0.75°
0.5°
1°
0.5°
2.8m
3.1m
4.4m
4.6m
5.25m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158974 N 204818
E 158983 N 204905

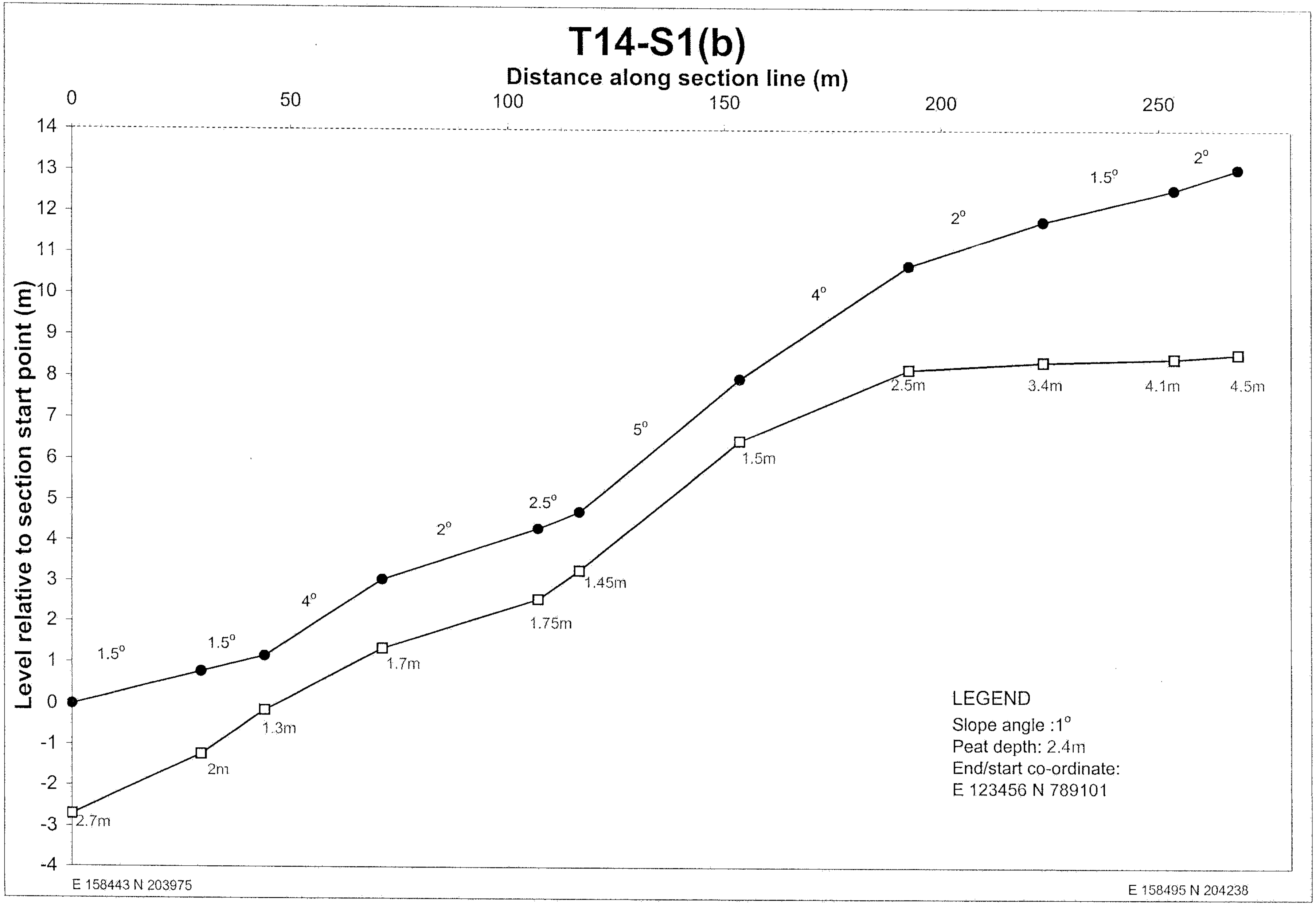


T11-S6
Distance along section line (m)
0
20
40
60
80
100
120
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
1°
1°
1.25°
2°
4.4m
4m
3.9m
3.1m
2.75m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159018 N 204916
E 159046 N 204806

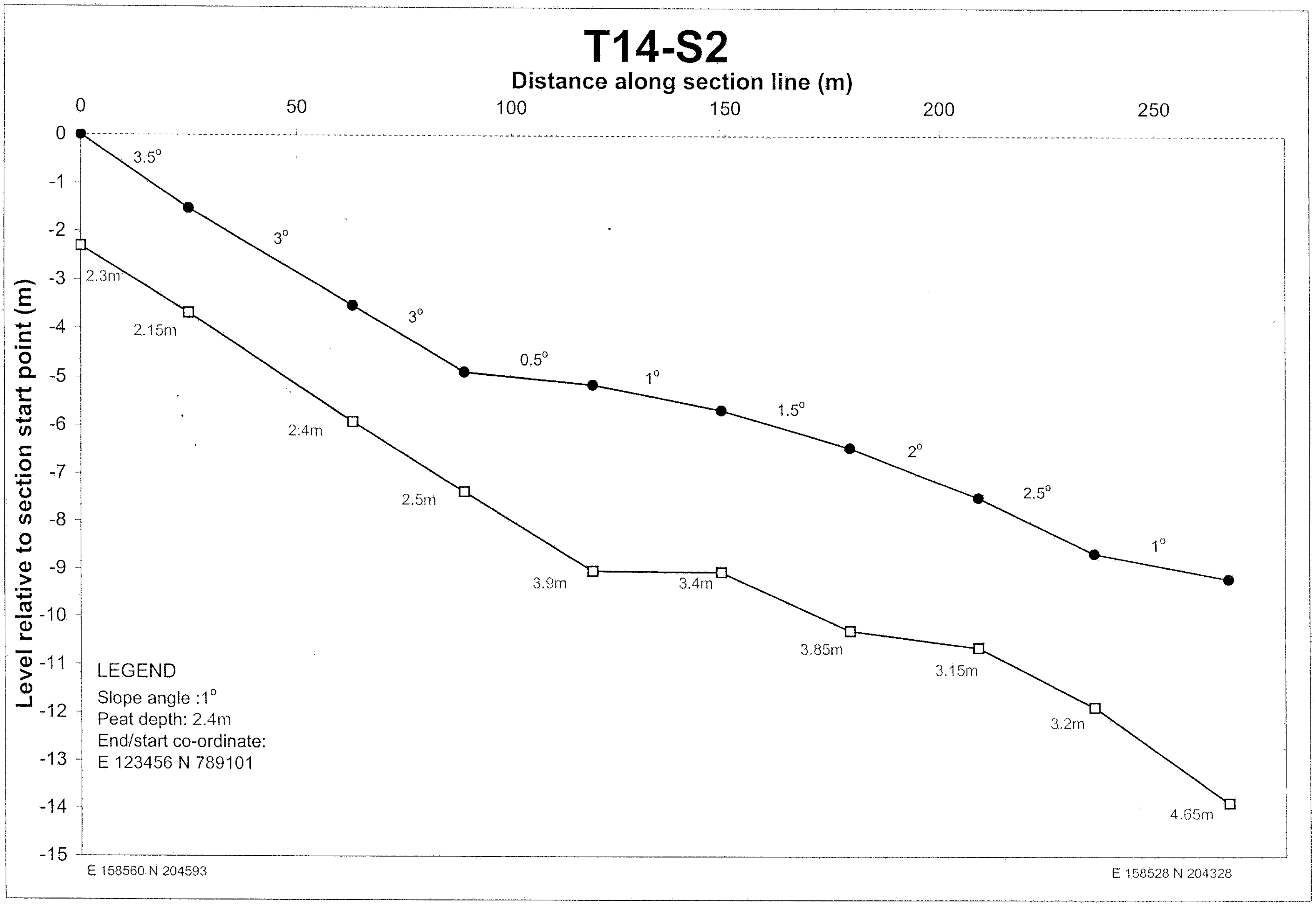

T11-S7
Distance along section line (m)
0
20
40
60
80
100
120
140
5
4
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
2°
2°
2.25°
1°
2°
3°
1.5°
1.5°
3m
4m
3.4m
3.2m
3.1m
2.6m
2.1m
2.9m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159087N 204802
E 159060 N 204923

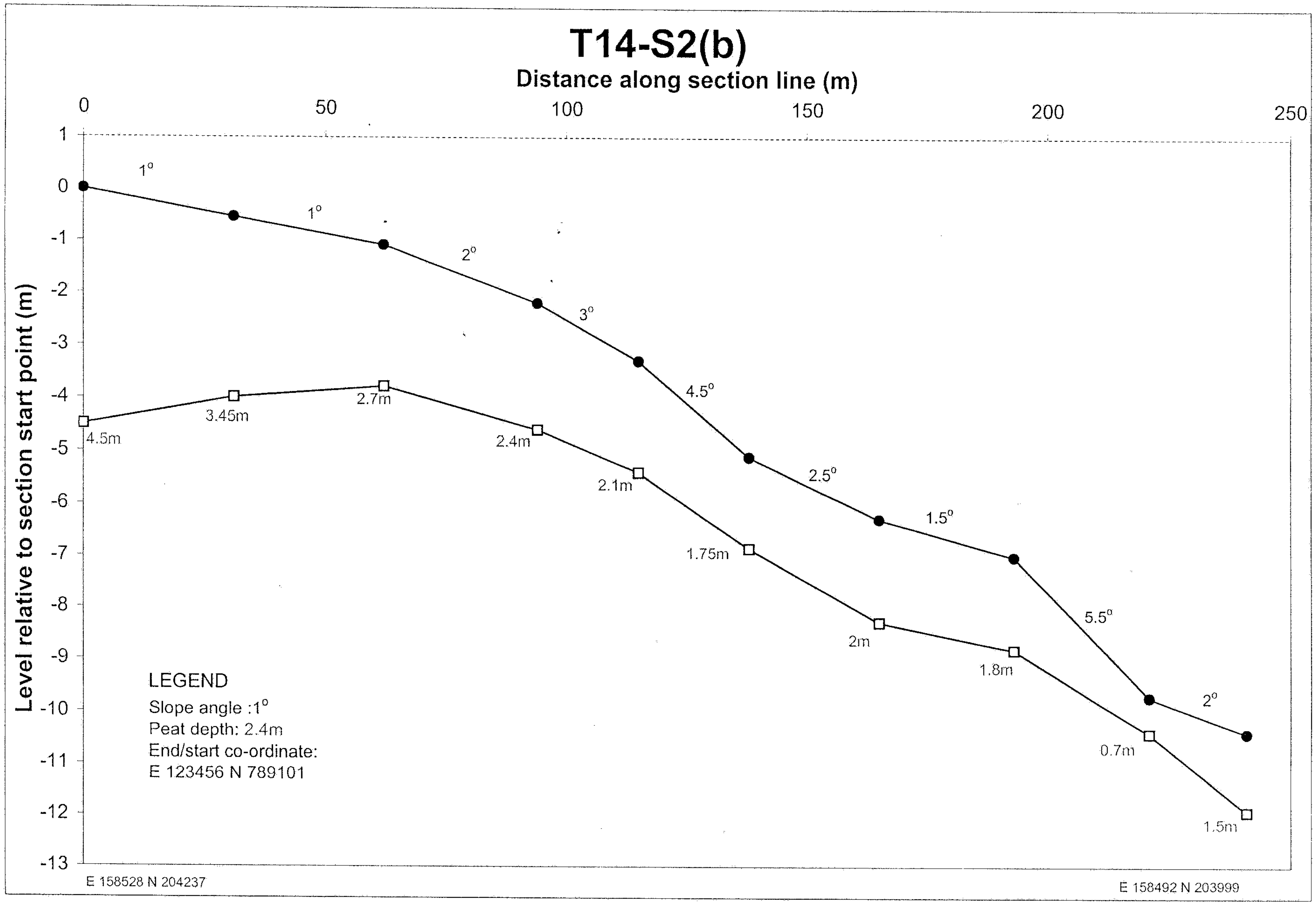


T14-S1
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1°
1.5°
0.5°
2°
1°
0.5°
1°
1°
4.5m
4.3m
4.8m
2.5m
3.8m
3.7m
2.95m
3.9m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158491 N 204227
E 158521 N 204499

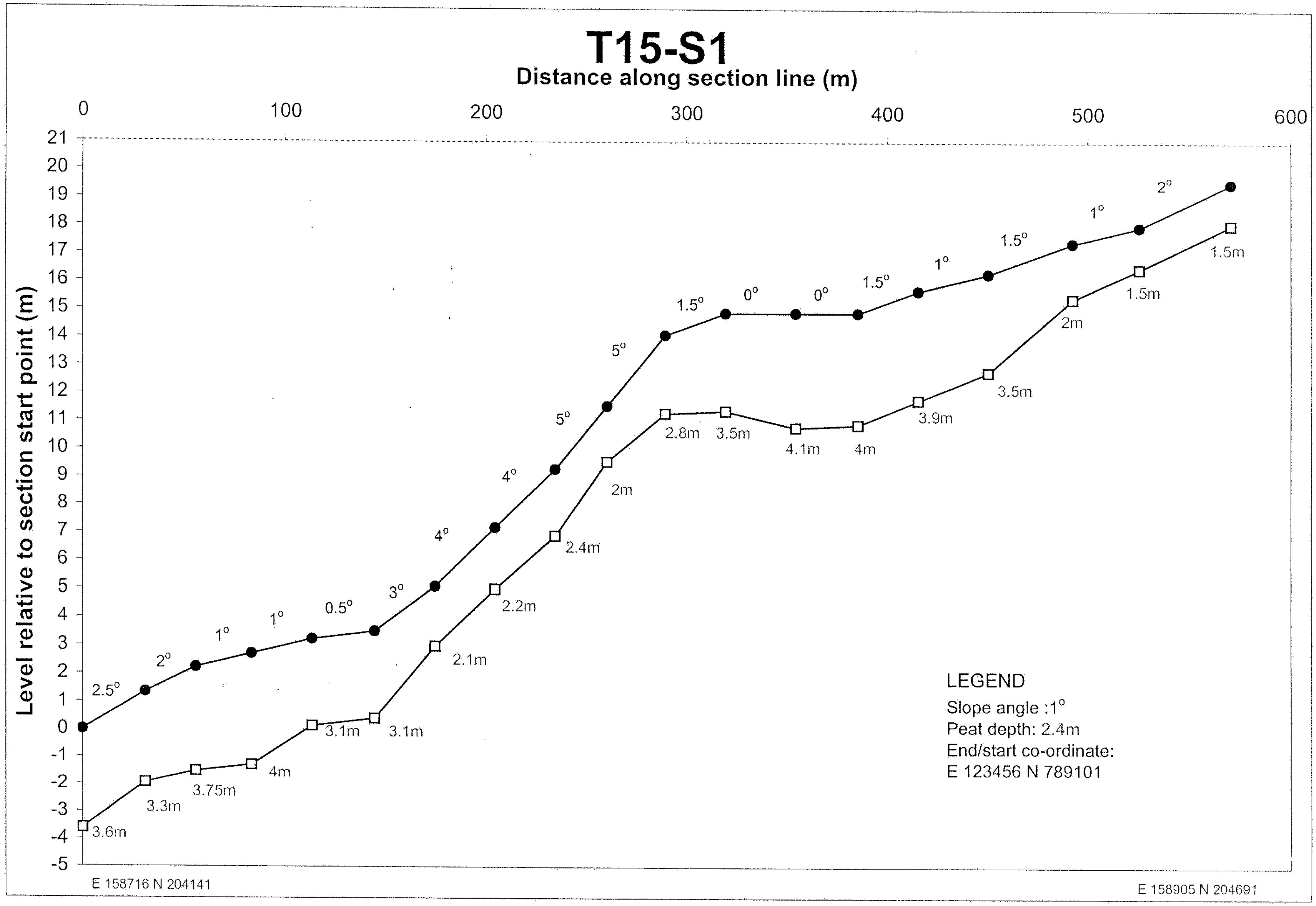


T14-S1(b)
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
1.5°
1.5°
4°
2°
2.5°
5°
4°
2°
1.5°
2°
2.7m
2m
1.3m
1.7m
1.75m
1.45m
1.5m
2.5m
3.4m
4.1m
4.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158443 N 203975
E 158495 N 204238

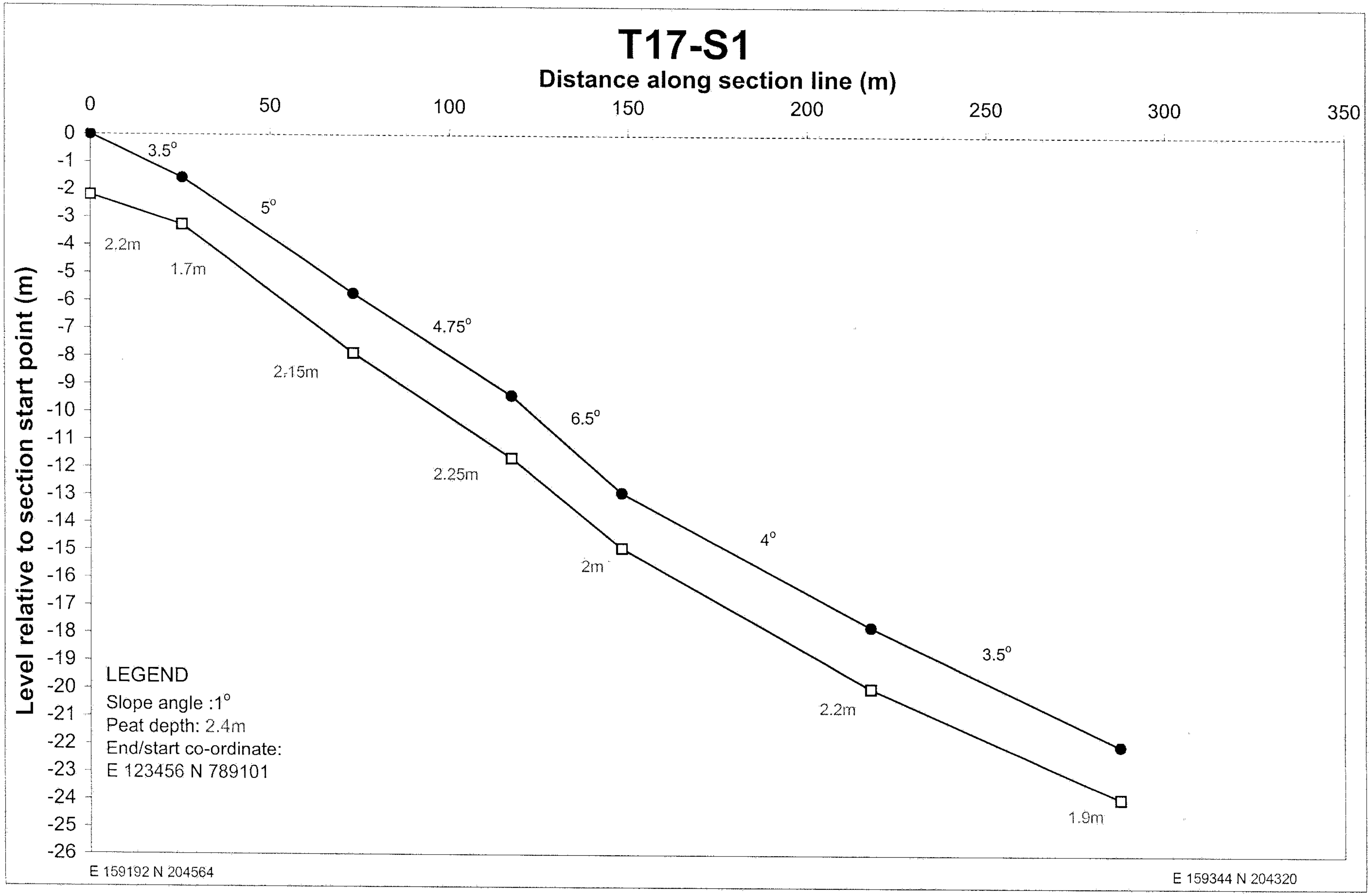

T14-S2
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
3.5°
3°
3°
0.5°
1°
1.5°
2°
2.5°
1°
2.3m
2.15m
2.4m
2.5m
3.9m
3.4m
3.85m
3.15m
3.2m
4.65m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158560 N 204593
E 158528 N 204328

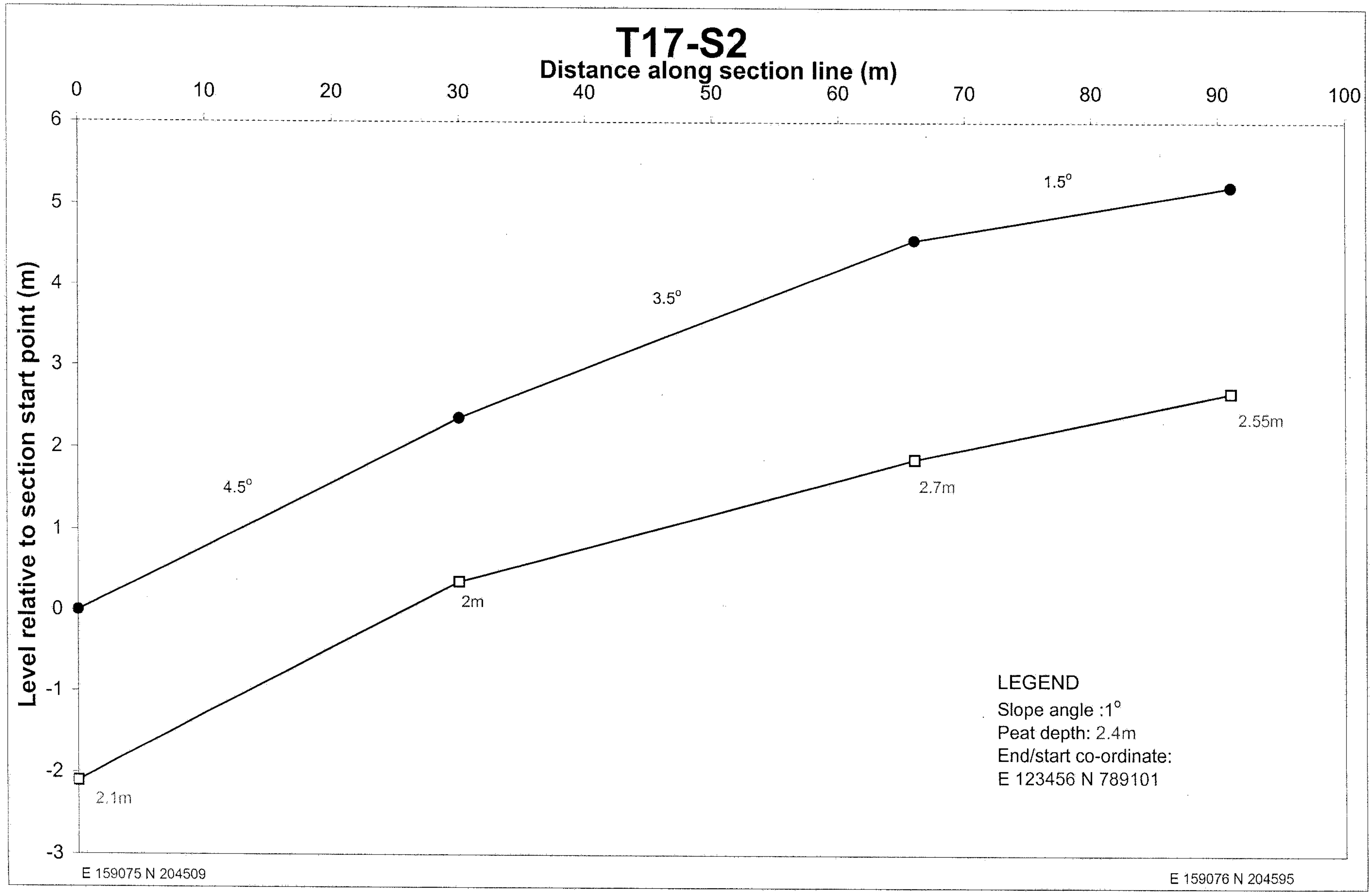


T14-S2(b)
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
1°
1°
2°
3°
4.5°
2.5°
1.5°
5.5°
2°
4.5m
3.45m
2.7m
2.4m
2.1m
1.75m
2m
1.8m
0.7m
1.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158528 N 204237
E 158492 N 203999

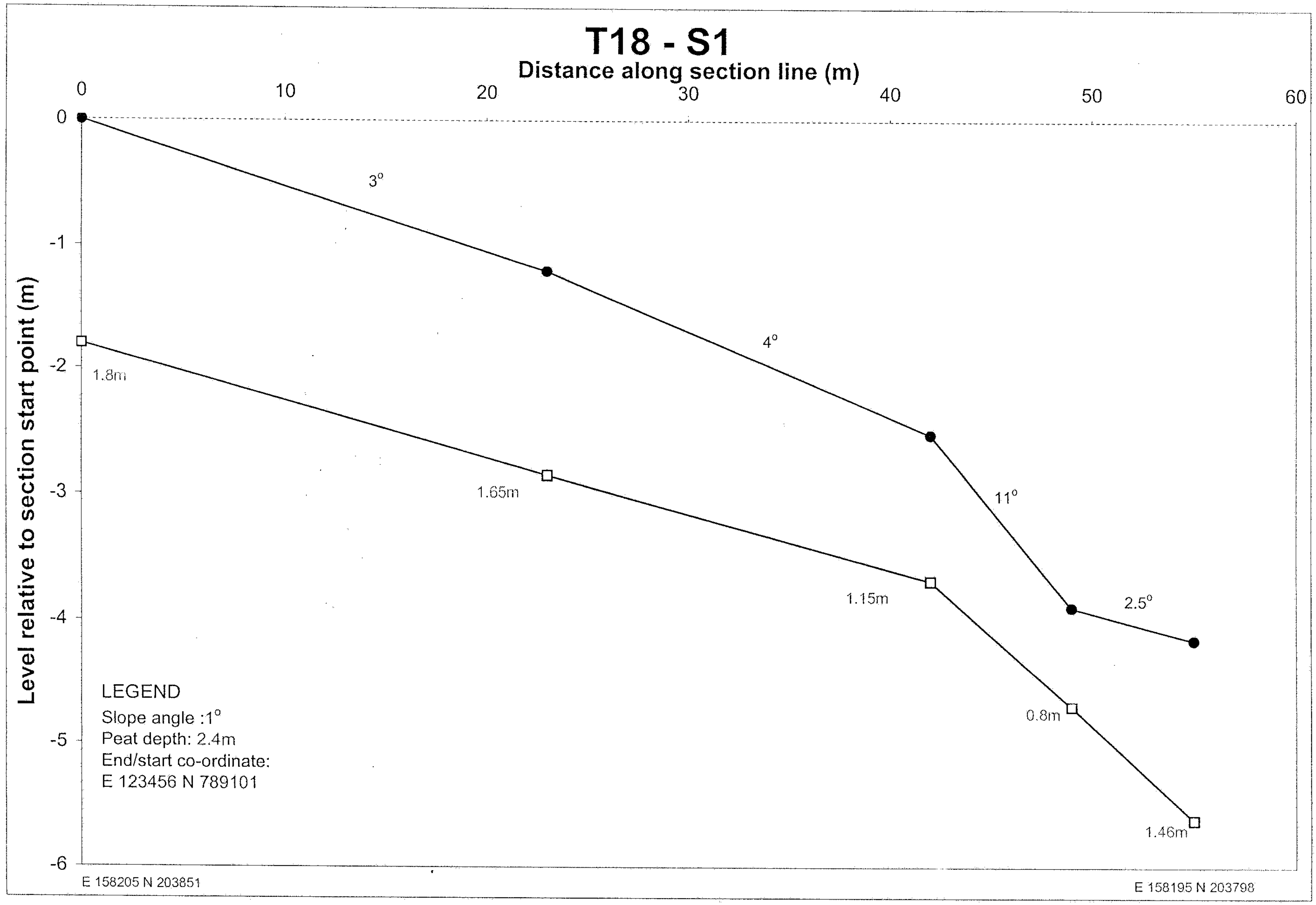


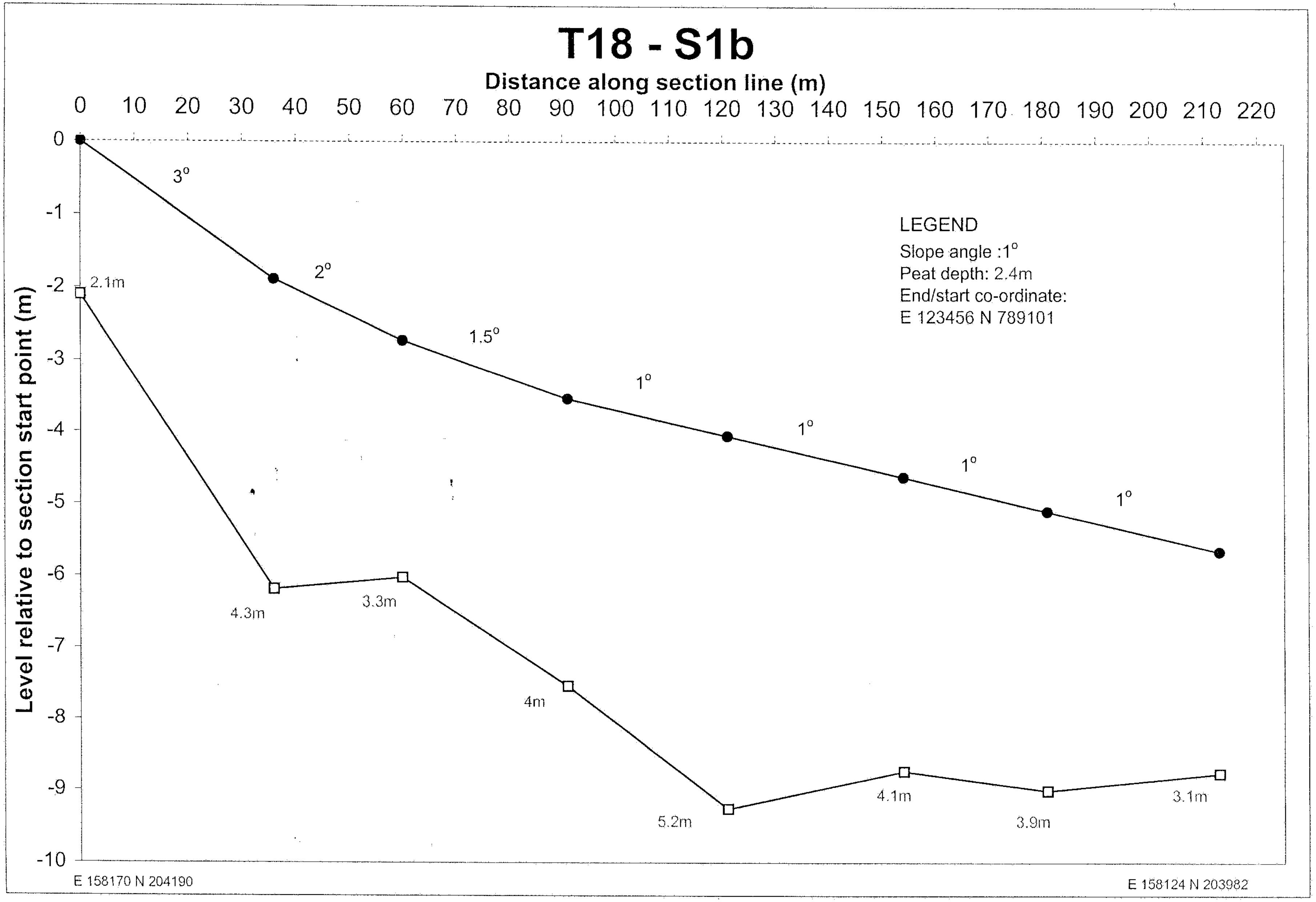
T15-S1
Distance along section line (m)
Level relative to section start point (m)
2.5°
2°
1°
1°
0.5°
3°
4°
4°
5°
5°
1.5°
0°
0°
1.5°
1°
1.5°
1°
2°
3.6m
3.3m
3.75m
4m
3.1m
3.1m
2.1m
2.2m
2.4m
2m
2.8m
3.5m
4.1m
4m
3.9m
3.5m
2m
1.5m
1.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158716 N 204141
E 158905 N 204691


T17-S1
Distance along section line (m)
Level relative to section start point (m)
0
50
100
150
200
250
300
350
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
-24
-25
-26
3.5°
5°
4.75°
6.5°
4°
3.5°
2.2m
1.7m
2.15m
2.25m
2m
2.2m
1.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159192 N 204564
E 159344 N 204320

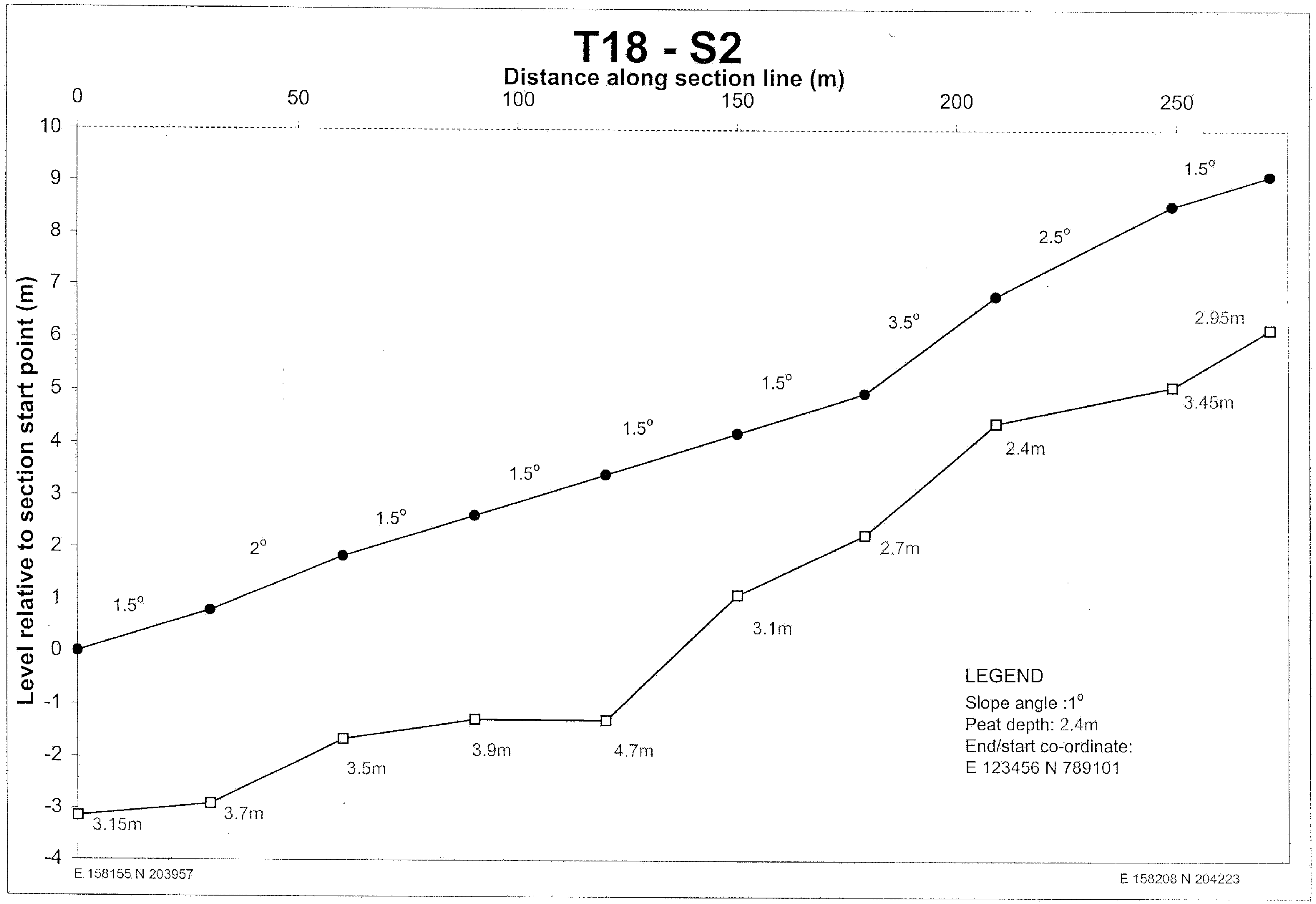


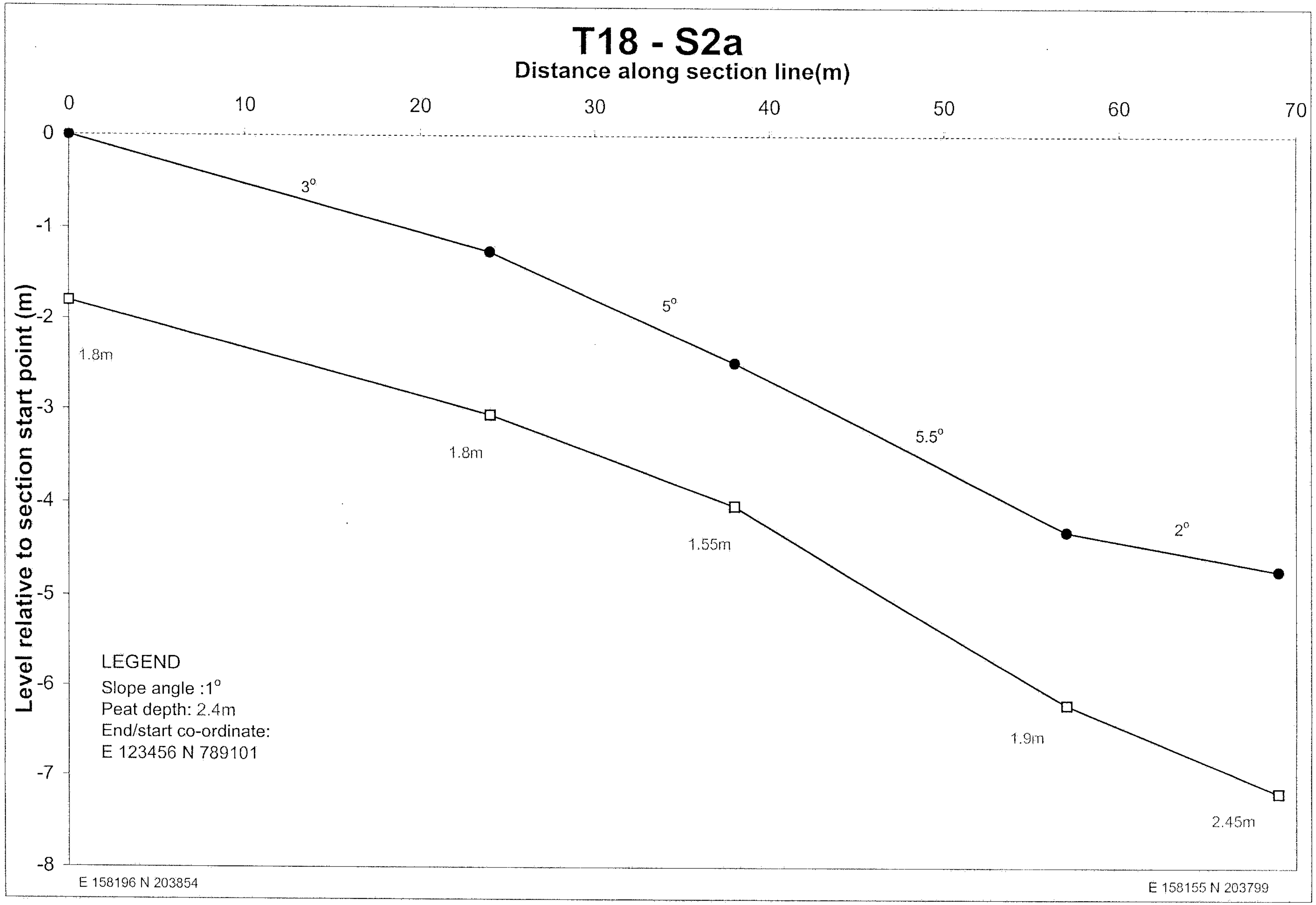
T17-S2
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
1.5°
3.5°
4.5°
2.55m
2.7m
2m
2.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159075 N 204509
E 159076 N 204595

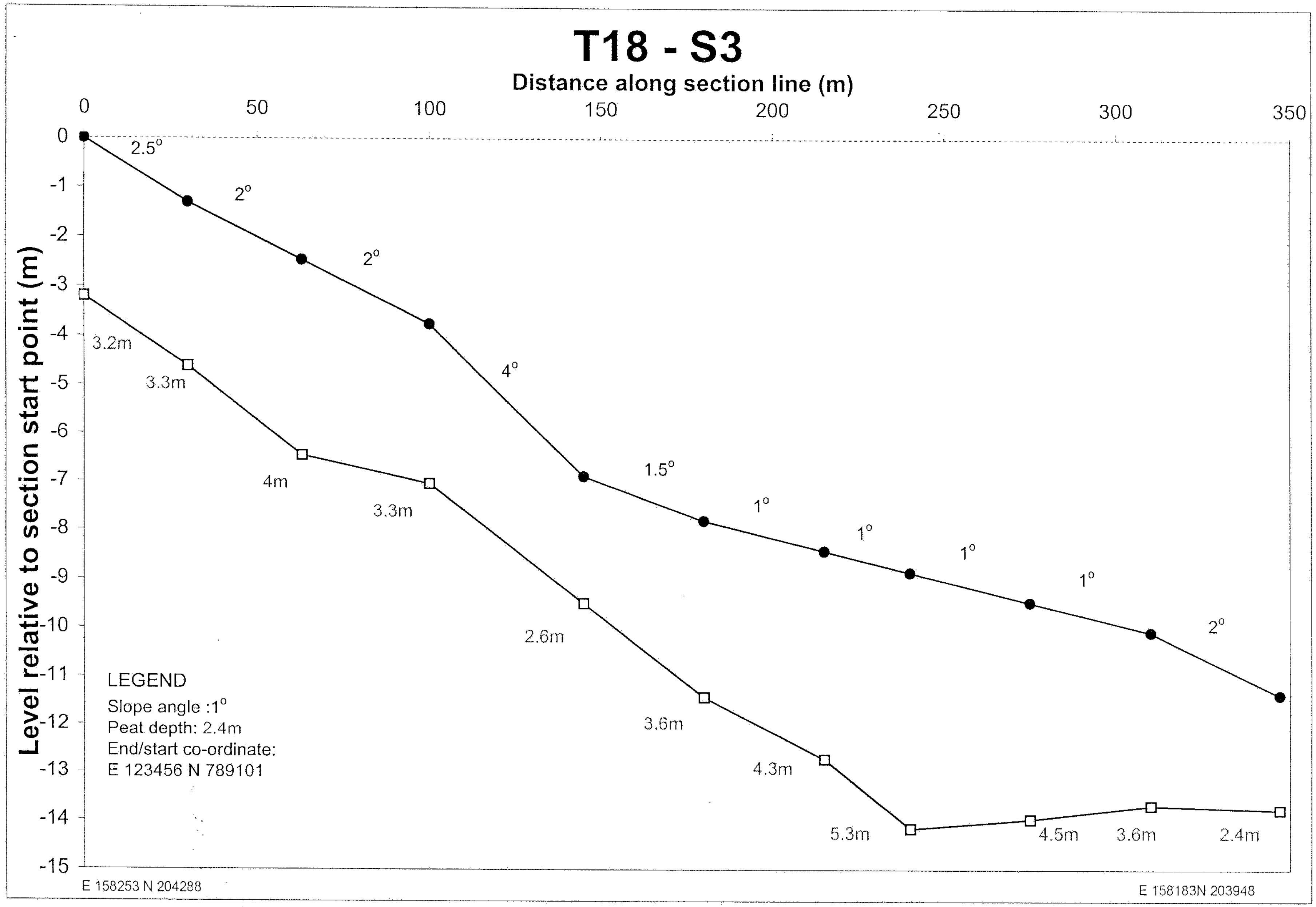

T18 - S1
Distance along section line (m)
0
10
20
30
40
50
60
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
3°
4°
11°
2.5°
1.8m
1.65m
1.15m
0.8m
1.46m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158205 N 203851
E 158195 N 203798



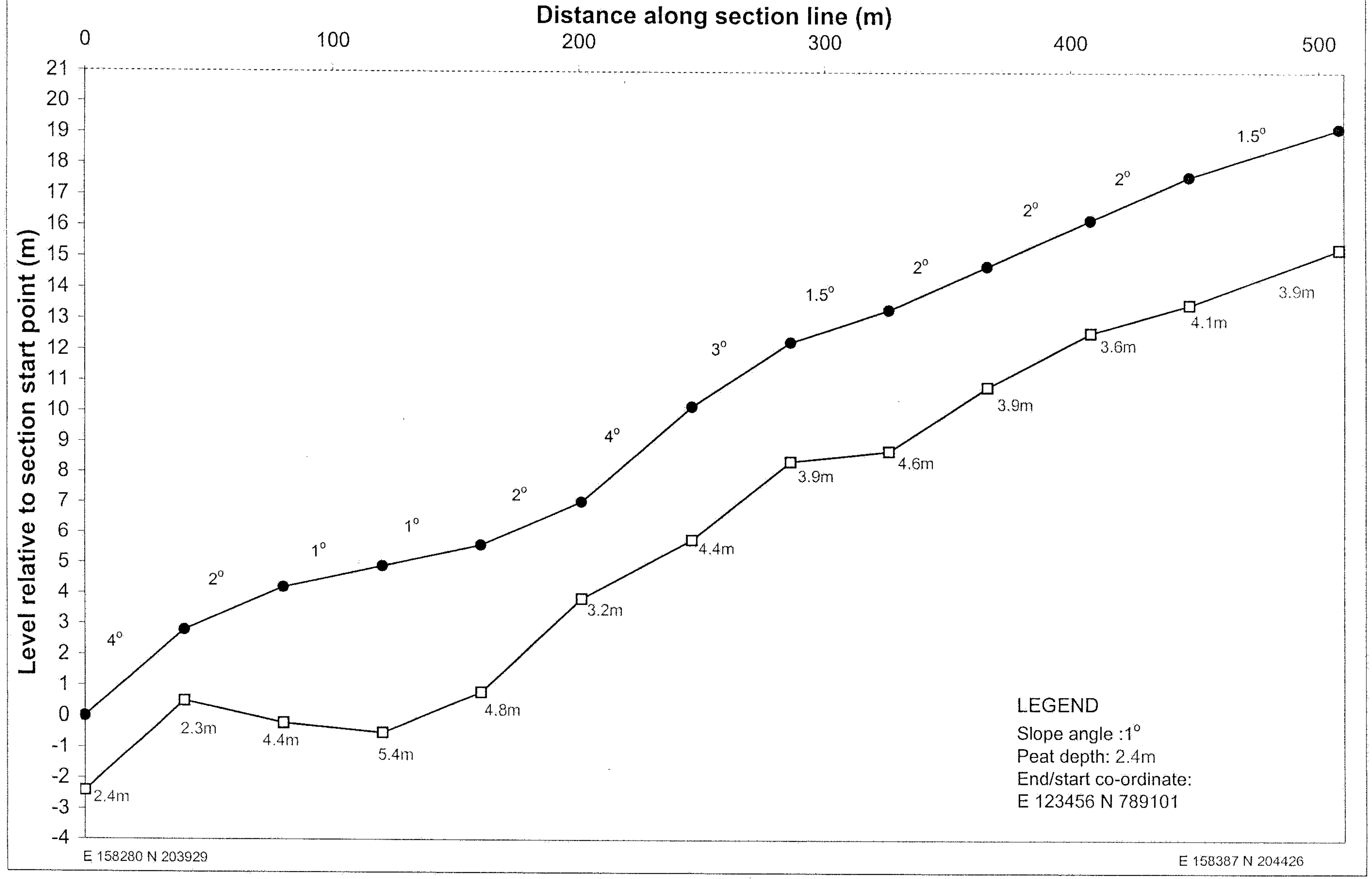
T18 - S1b
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
3°
2°
1.5°
1°
1°
1°
1°
2.1m
4.3m
3.3m
4m
5.2m
4.1m
3.9m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158170 N 204190
E 158124 N 203982

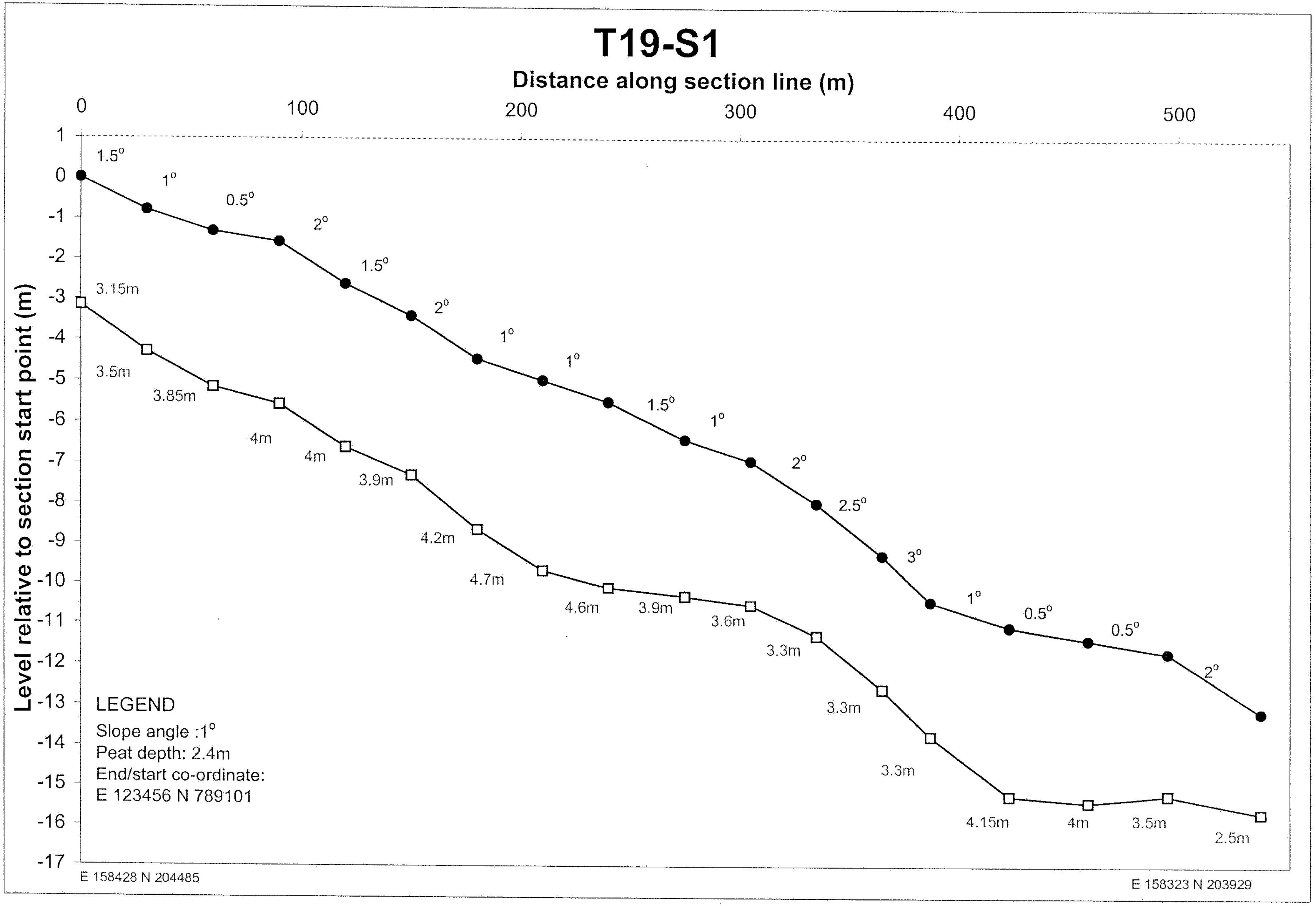

T18 - S2
Distance along section line (m)
0
50
100
150
200
250
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1.5°
2°
1.5°
1.5°
1.5°
1.5°
3.5°
2.5°
1.5°
3.15m
3.7m
3.5m
3.9m
4.7m
3.1m
2.7m
2.4m
3.45m
2.95m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158155 N 203957
E 158208 N 204223

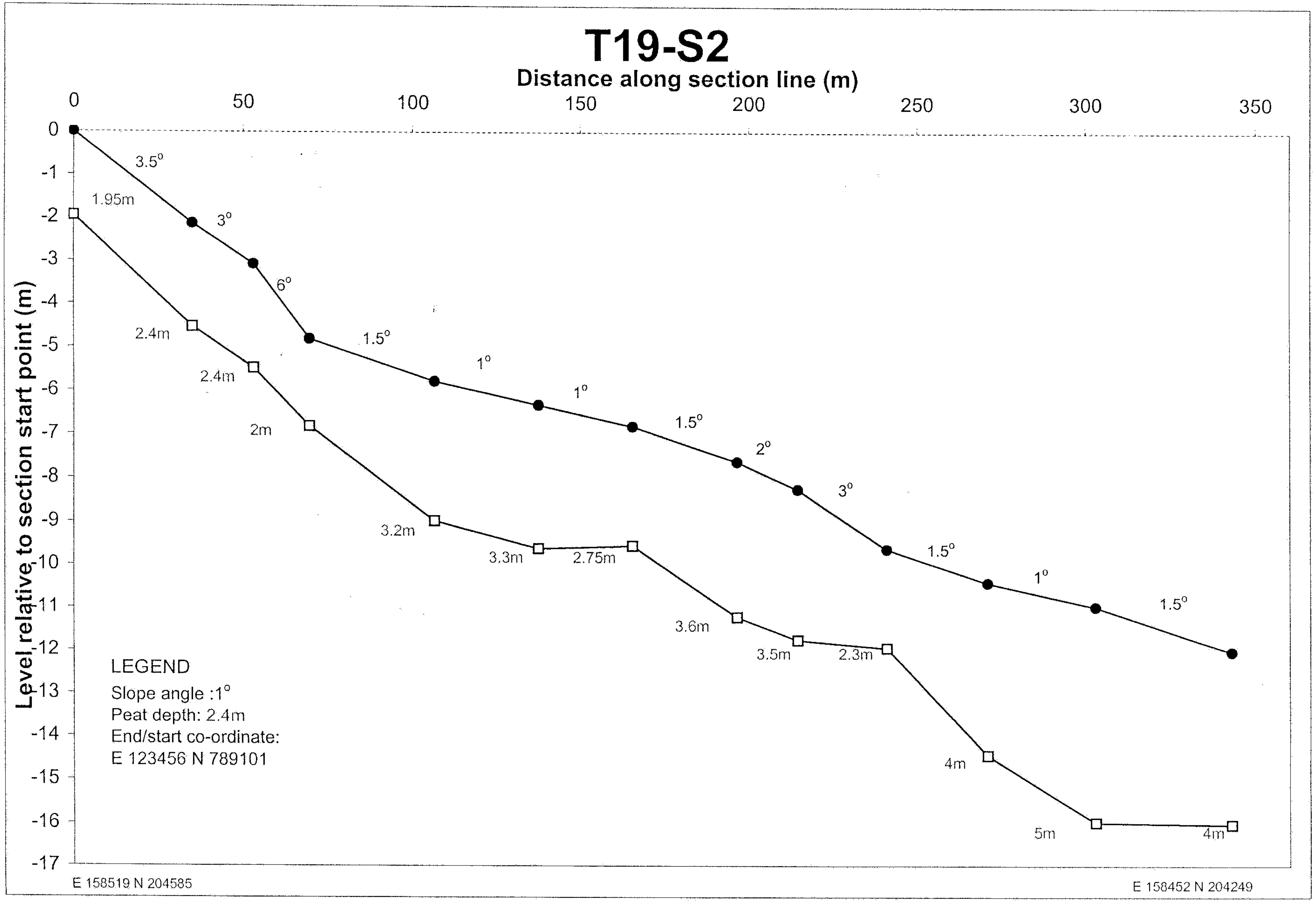

T18 - S2a
Distance along section line(m)
0
10
20
30
40
50
60
70
0
-1
-2
-3
-4
-5
-6
-7
-8
Level relative to section start point (m)
3°
5°
5.5°
2°
1.8m
1.8m
1.55m
1.9m
2.45m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158196 N 203854
E 158155 N 203799


T18 - S3
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
2.5°
2°
2°
4°
1.5°
1°
1°
1°
1°
2°
3.2m
3.3m
4m
3.3m
2.6m
3.6m
4.3m
5.3m
4.5m
3.6m
2.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158253 N 204288
E 158183N 203948

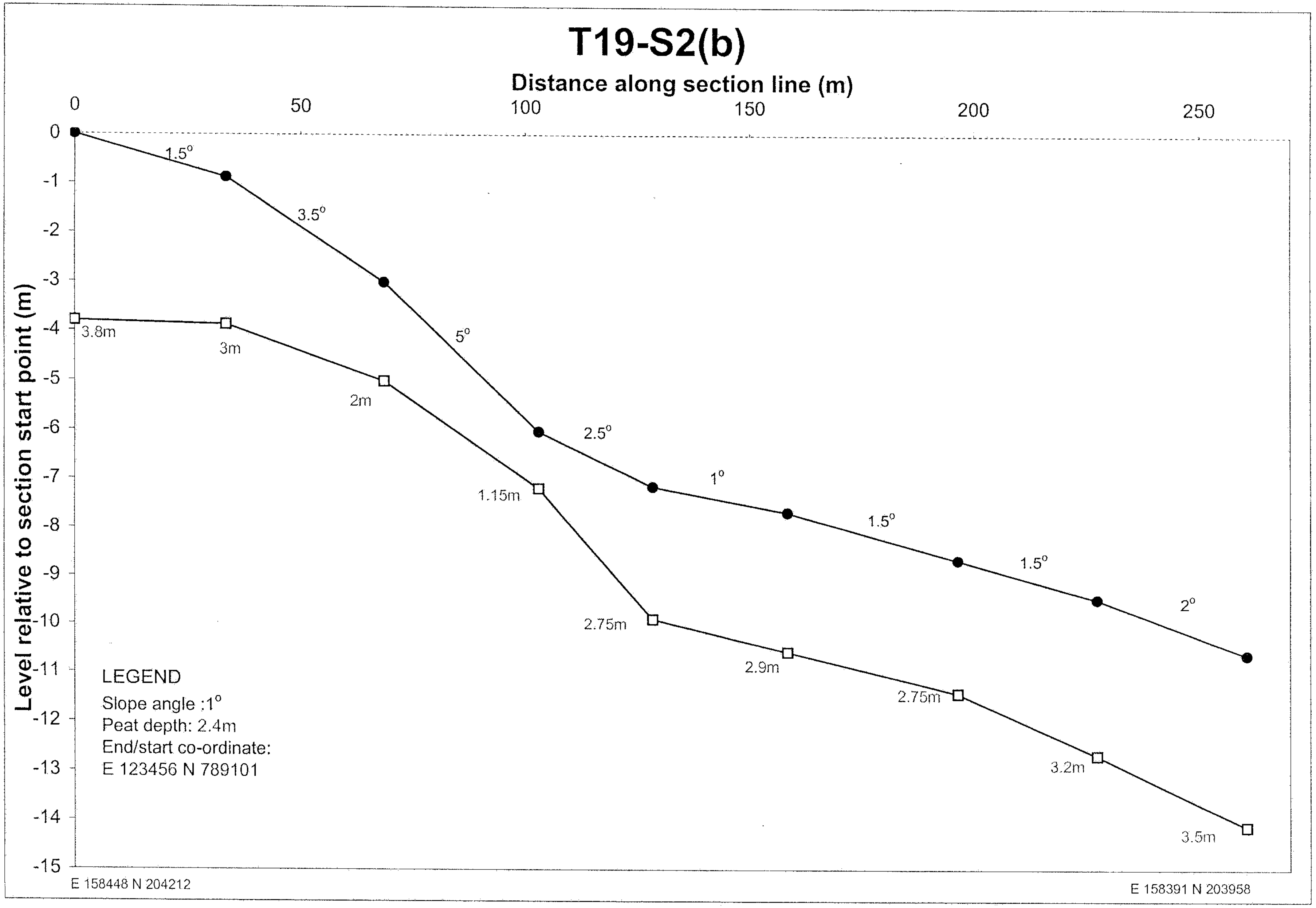
T18 - S4

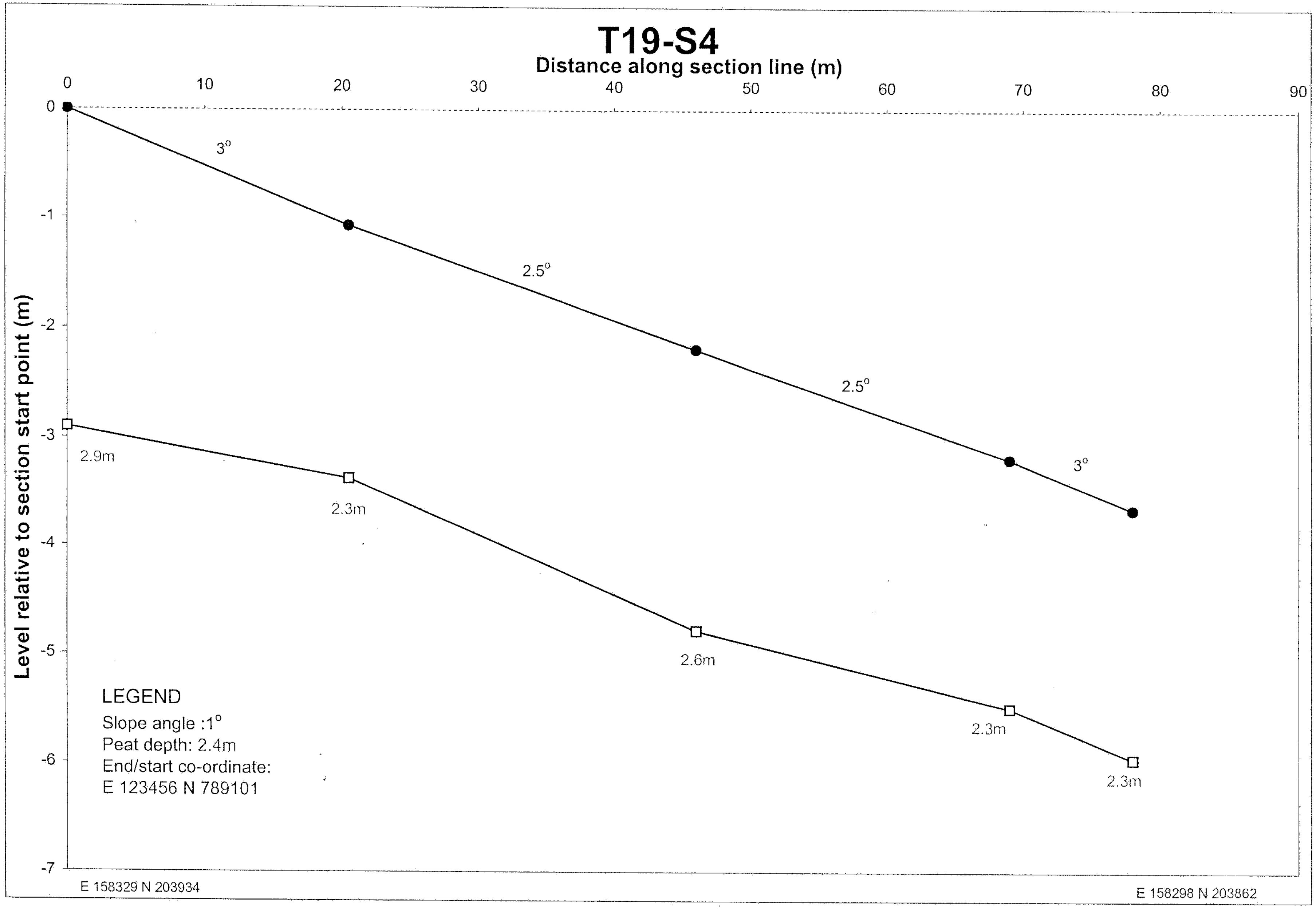

Distance along section line (m)
0
100
200
300
400
500
Level relative to section start point (m)
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
4°
2°
1°
1°
2°
4°
3°
1.5°
2°
2°
2°
1.5°
2.4m
2.3m
4.4m
5.4m
4.8m
3.2m
4.4m
3.9m
4.6m
3.9m
3.6m
4.1m
3.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158280 N 203929
E 158387 N 204426


T19-S1
Distance along section line (m)
0
100
200
300
400
500
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
1.5°
1°
0.5°
2°
1.5°
2°
1°
1°
1.5°
1°
2°
2.5°
3°
1°
0.5°
0.5°
2°
3.15m
3.5m
3.85m
4m
4m
3.9m
4.2m
4.7m
4.6m
3.9m
3.6m
3.3m
3.3m
3.3m
4.15m
4m
3.5m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158428 N 204485
E 158323 N 203929

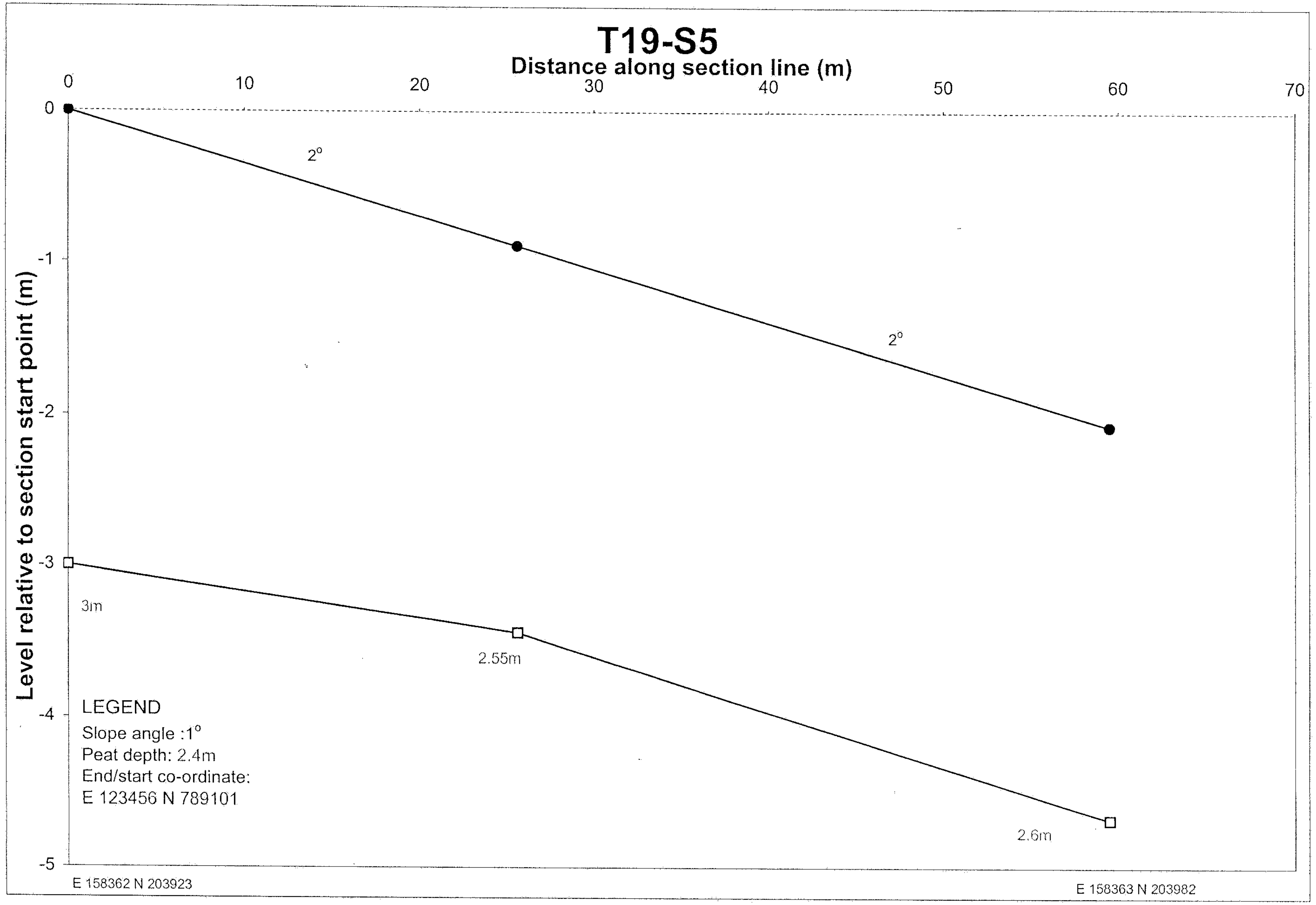


T19-S2
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
3.5°
3°
6°
1.5°
1°
1°
1.5°
2°
3°
1.5°
1°
1.5°
1.95m
2.4m
2.4m
2m
3.2m
3.3m
2.75m
3.6m
3.5m
2.3m
4m
5m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158519 N 204585
E 158452 N 204249

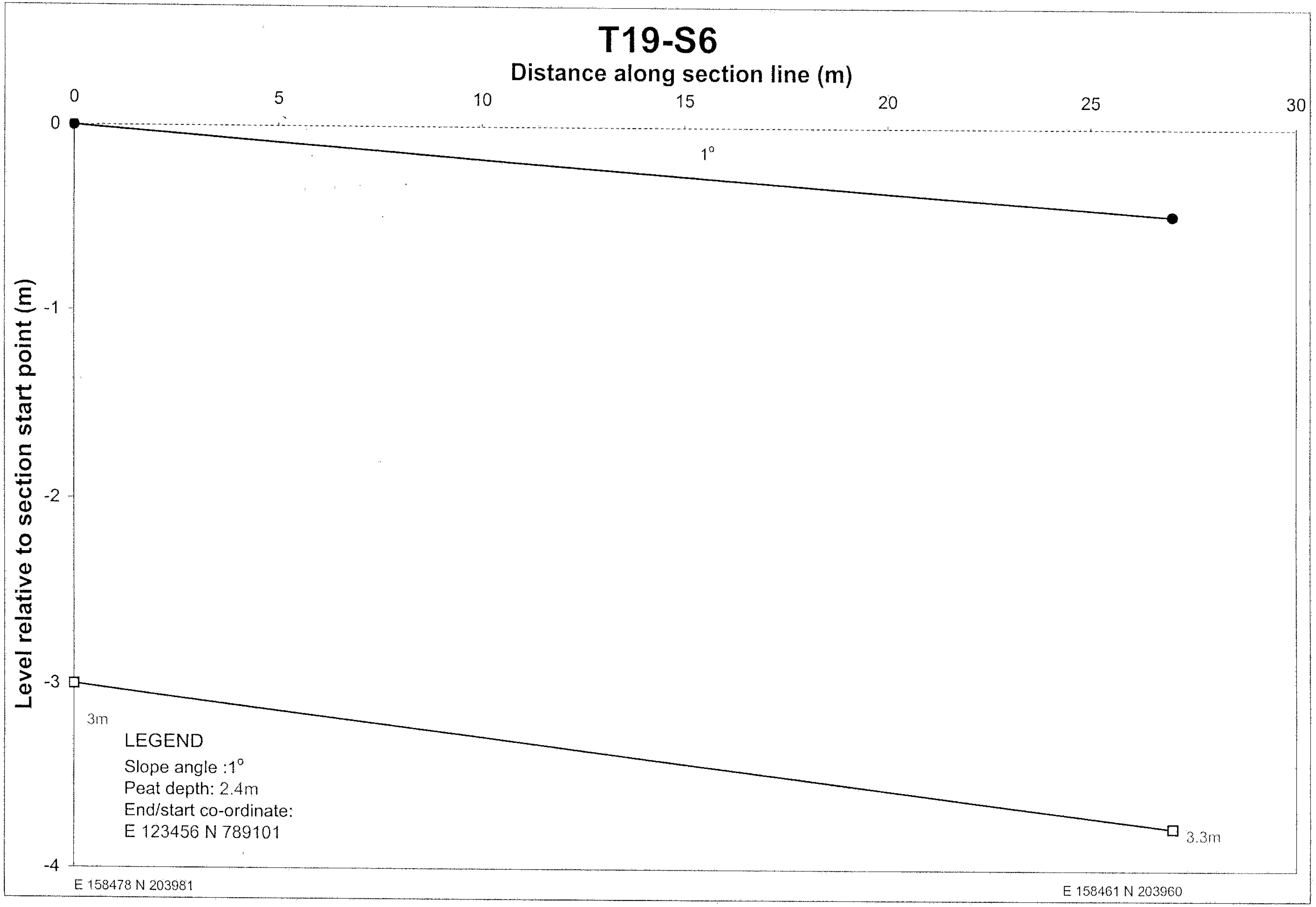

T19-S2(b)
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
1.5°
3.5°
5°
2.5°
1°
1.5°
1.5°
2°
3.8m
3m
2m
1.15m
2.75m
2.9m
2.75m
3.2m
3.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158448 N 204212
E 158391 N 203958

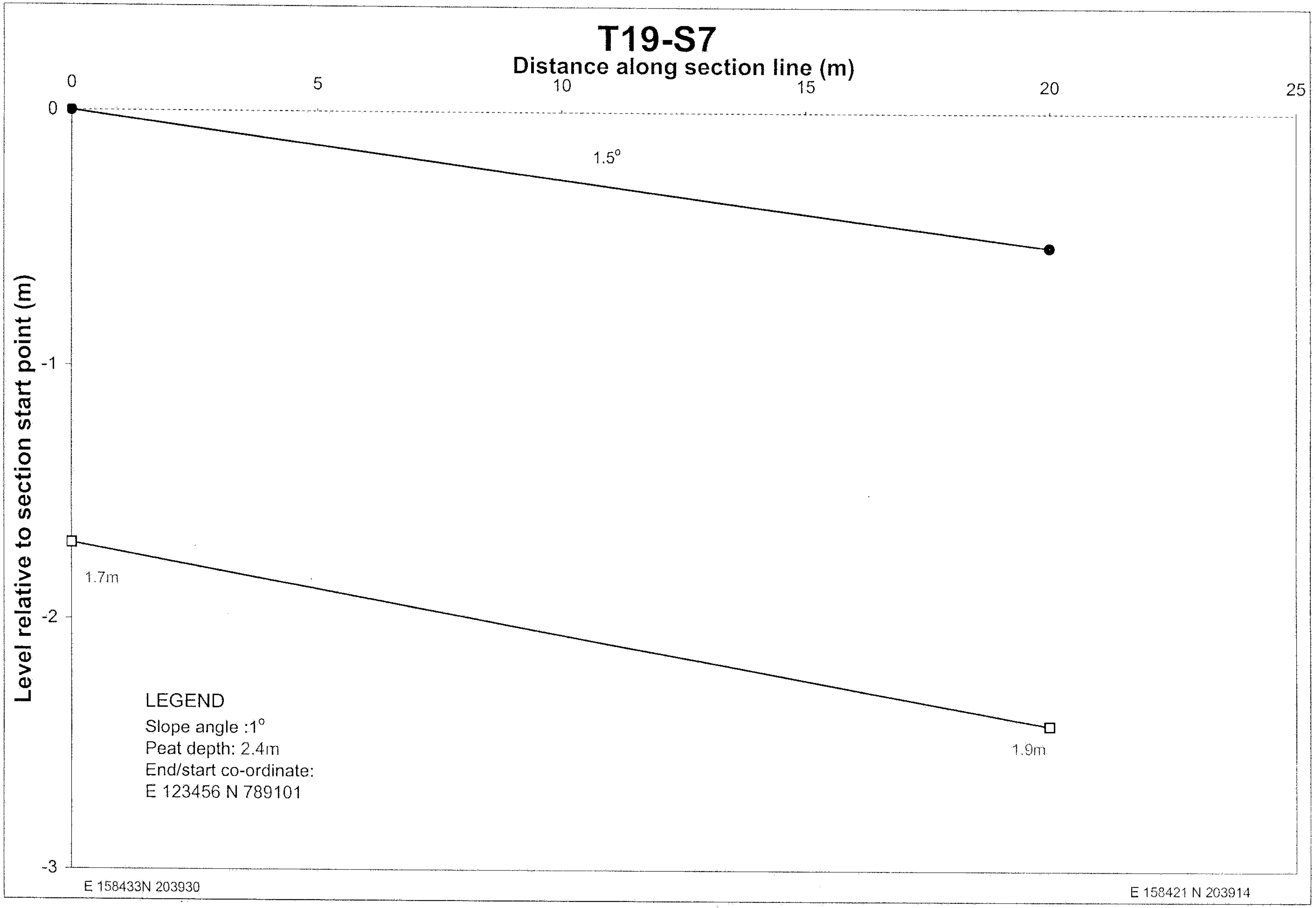


T19-S4
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
3°
2.5°
2.5°
3°
2.9m
2.3m
2.6m
2.3m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158329 N 203934
E 158298 N 203862

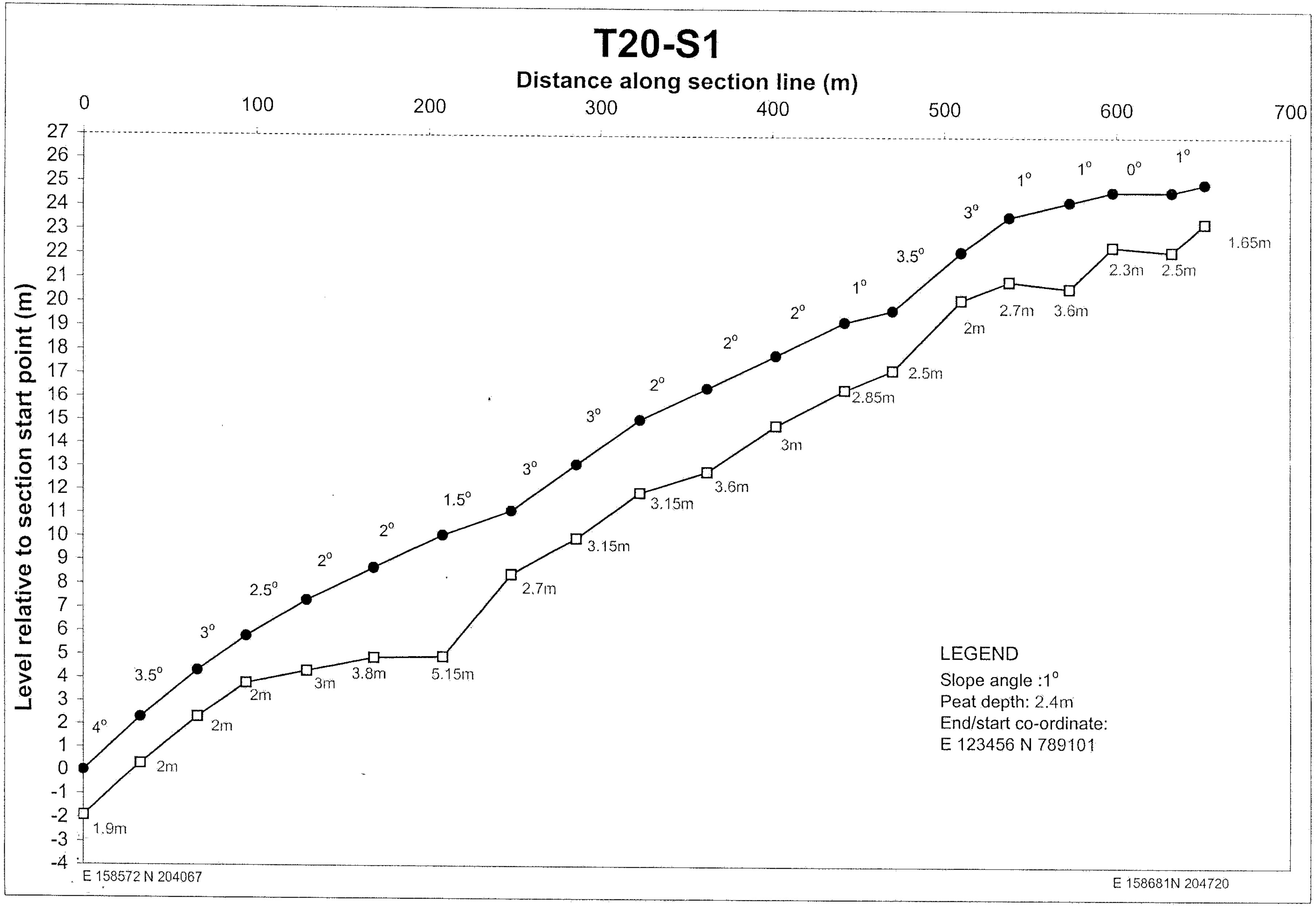


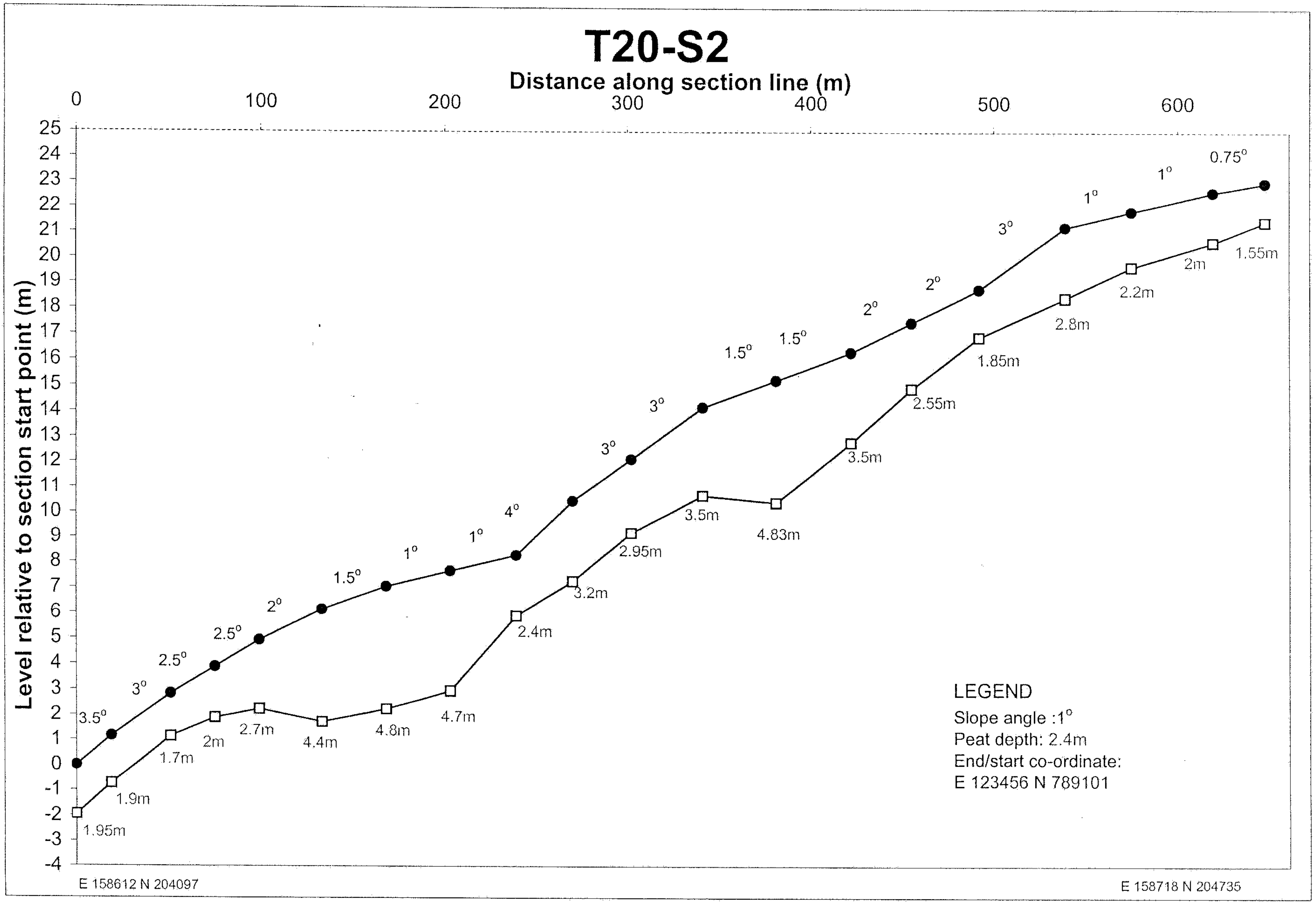
T19-S5
Distance along section line (m)
0
10
20
30
40
50
60
70
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
2°
2°
3m
2.55m
2.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158362 N 203923
E 158363 N 203982


T19-S6
Distance along section line (m)
0
5
10
15
20
25
30
0
-1
-2
-3
-4
Level relative to section start point (m)
1°
3m
3.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158478 N 203981
E 158461 N 203960

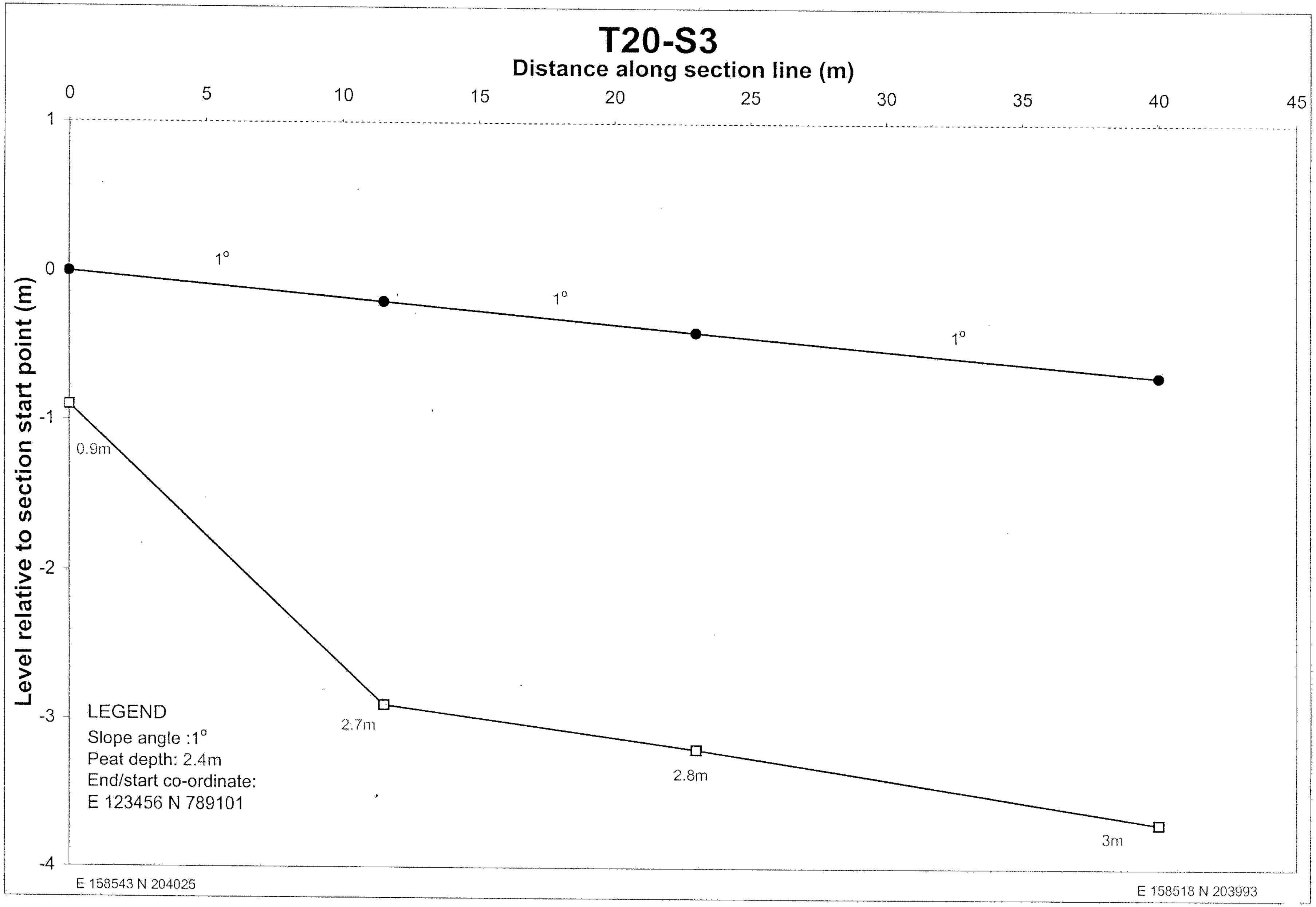


T19-S7
Distance along section line (m)
0
5
10
15
20
25
0
-1
-2
-3
Level relative to section start point (m)
1.5°
1.7m
1.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158433N 203930
E 158421 N 203914

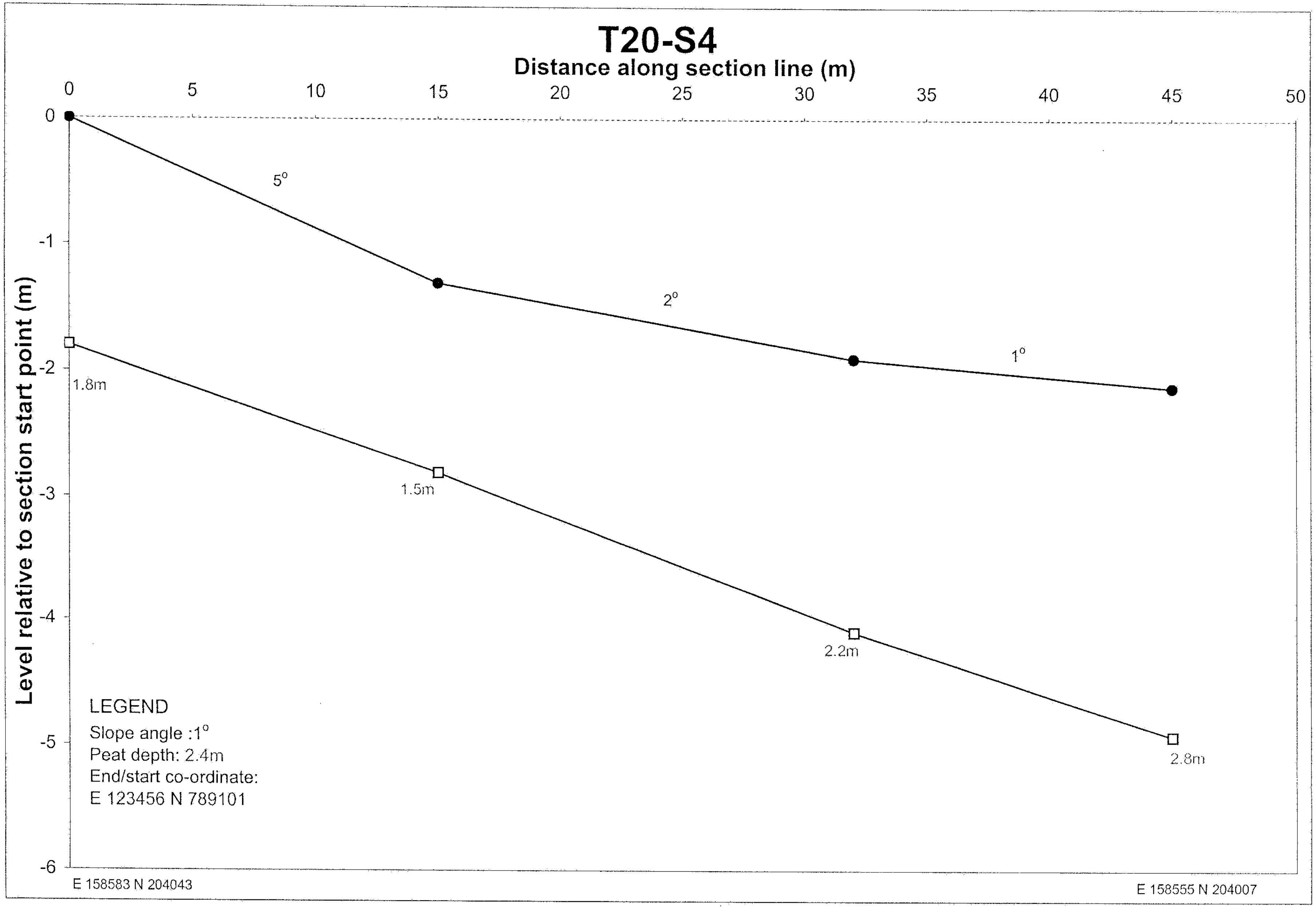

T20-S1
Distance along section line (m)
0
100
200
300
400
500
600
700
Level relative to section start point (m)
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
4°
3.5°
3°
2.5°
2°
2°
1.5°
3°
3°
3°
2°
2°
2°
1°
3.5°
3°
1°
1°
0°
1°
1.9m
2m
2m
2m
3m
3.8m
5.15m
2.7m
3.15m
3.15m
3.6m
3m
2.85m
2.5m
2m
2.7m
3.6m
2.3m
2.5m
1.65m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158572 N 204067
E 158681N 204720



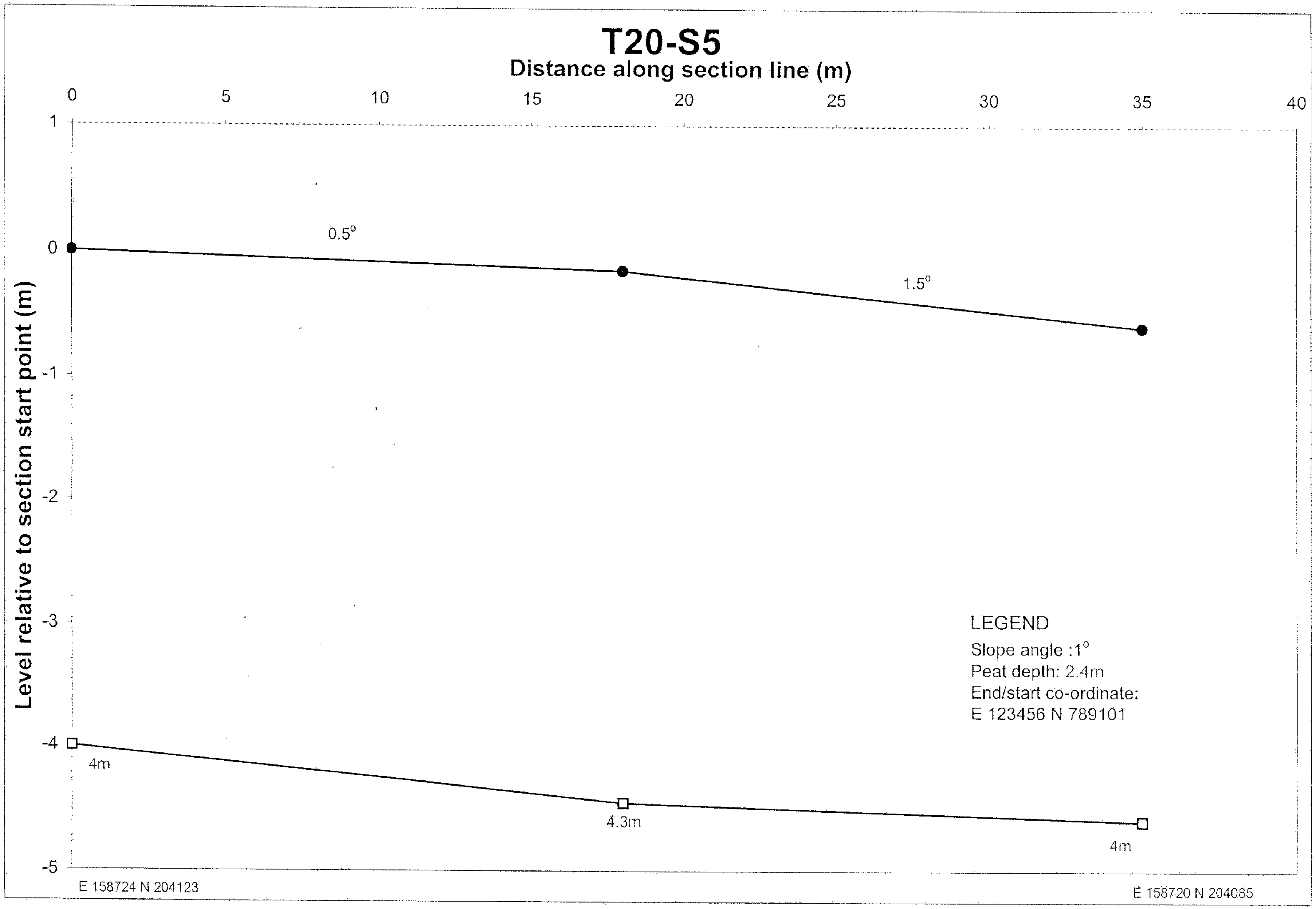
T20-S2
Distance along section line (m)
0
100
200
300
400
500
600
Level relative to section start point (m)
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
3.5°
3°
2.5°
2.5°
2°
1.5°
1°
1°
4°
3°
3°
1.5°
1.5°
2°
2°
3°
1°
1°
0.75°
1.95m
1.9m
1.7m
2m
2.7m
4.4m
4.8m
4.7m
2.4m
3.2m
2.95m
3.5m
4.83m
3.5m
2.55m
1.85m
2.8m
2.2m
2m
1.55m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158612 N 204097
E 158718 N 204735

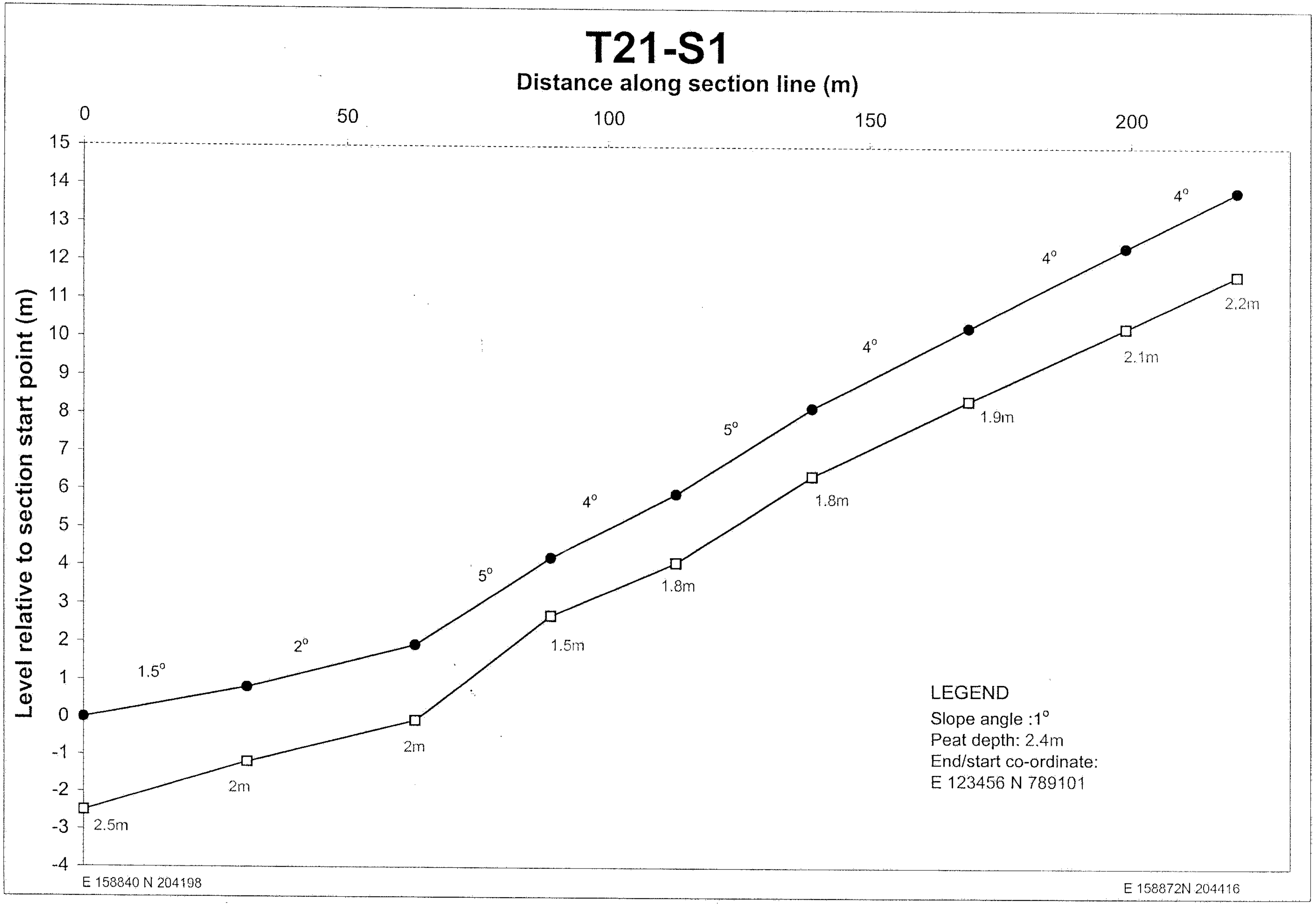


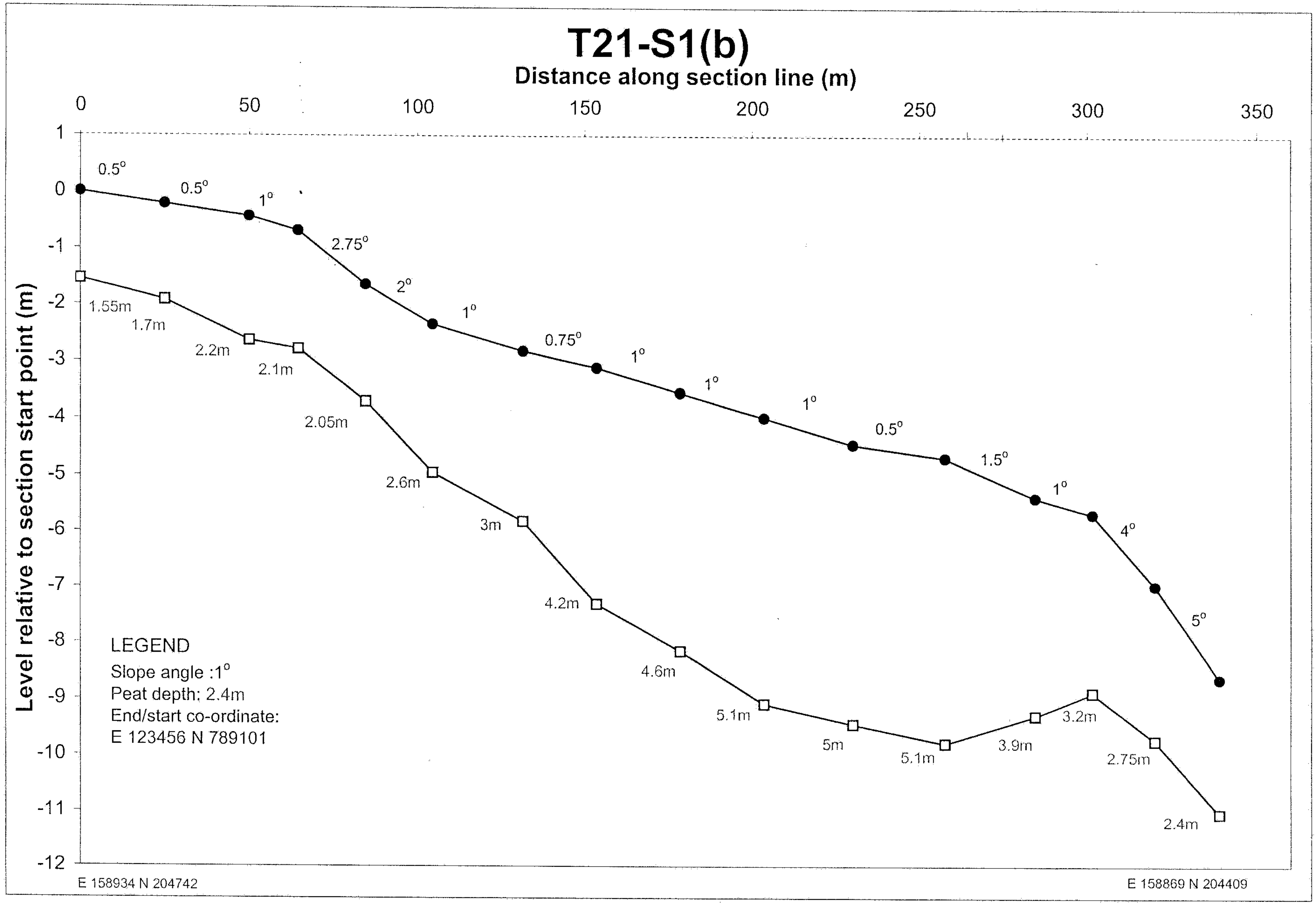
T20-S3
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1°
1°
1°
0.9m
2.7m
2.8m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158543 N 204025
E 158518 N 203993



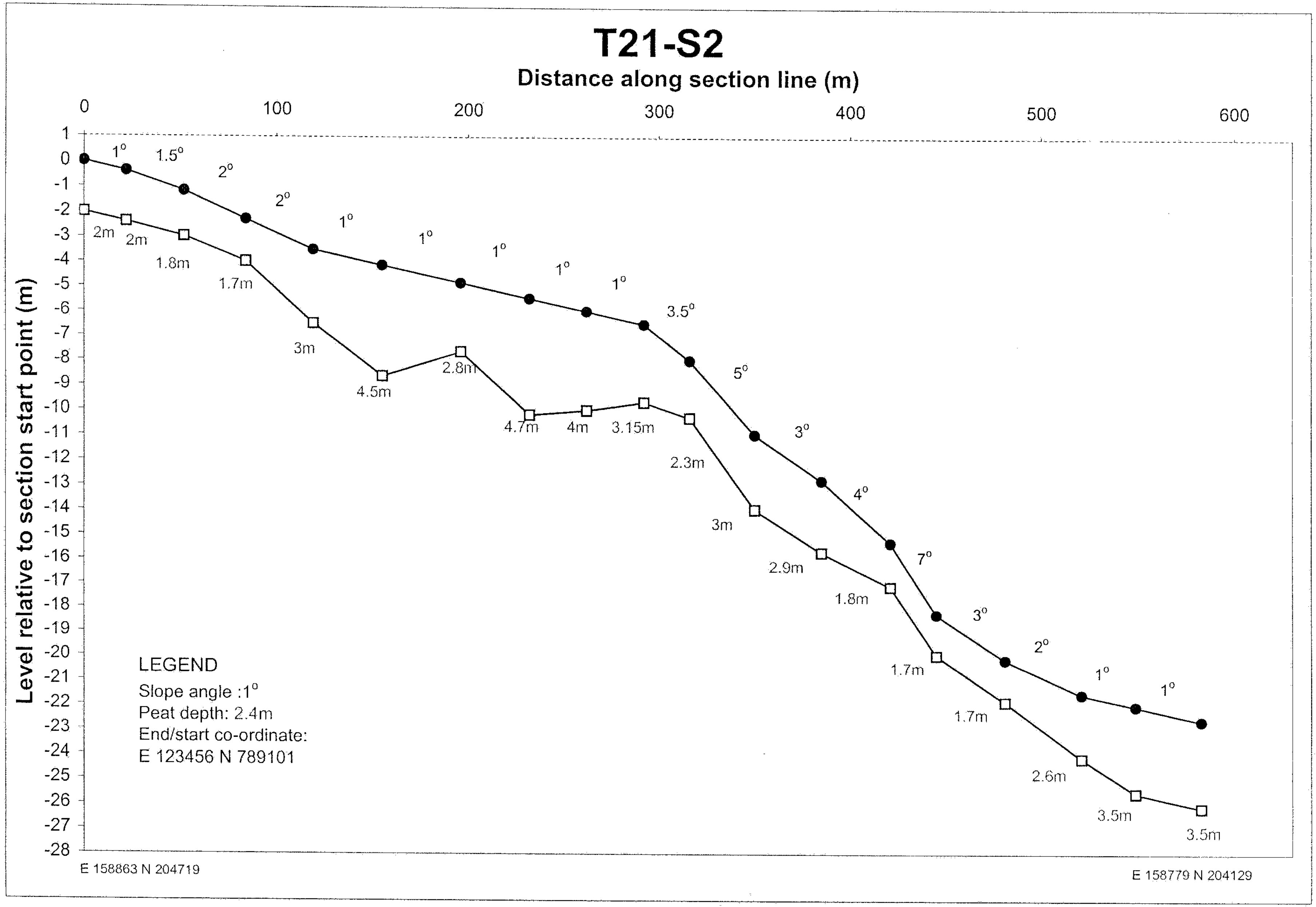
T20-S4
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
5°
2°
1°
1.8m
1.5m
2.2m
2.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158583 N 204043
E 158555 N 204007

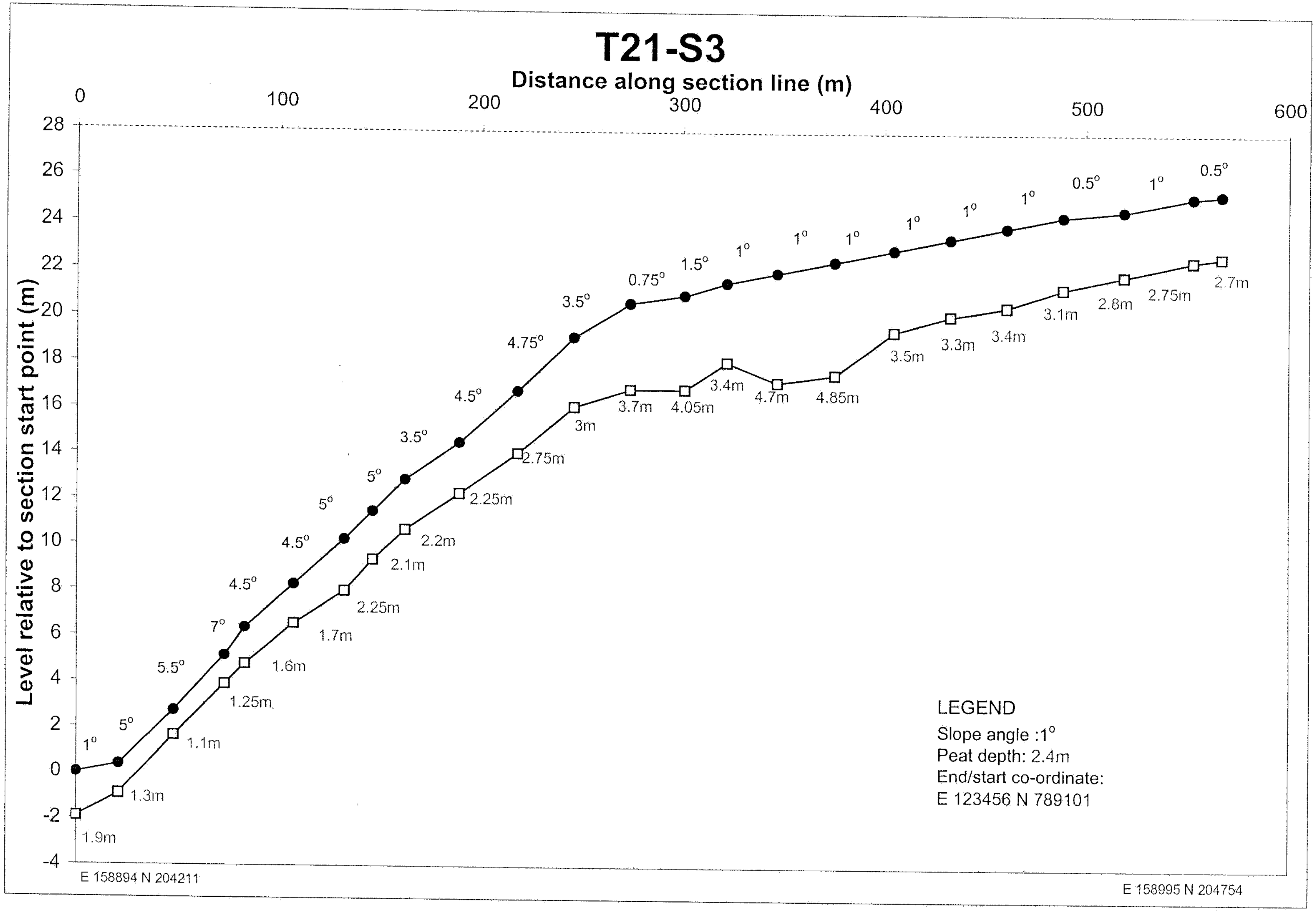

T20-S5
Distance along section line (m)
0
5
10
15
20
25
30
35
40
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
0.5°
1.5°
4m
4.3m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158724 N 204123
E 158720 N 204085

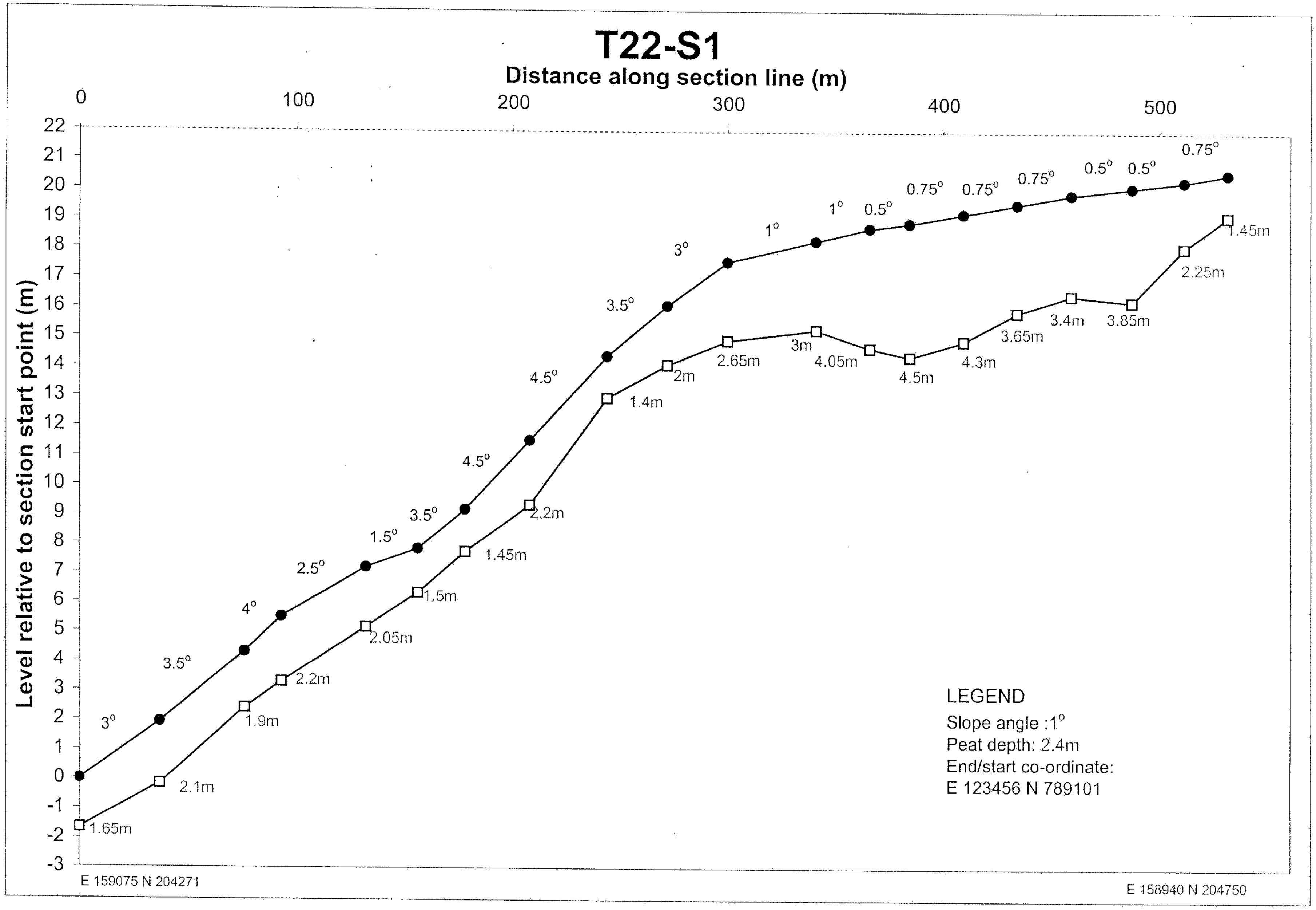

T21-S1
Distance along section line (m)
0
50
100
150
200
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1.5°
2°
5°
4°
5°
4°
4°
4°
2.5m
2m
2m
1.5m
1.8m
1.8m
1.9m
2.1m
2.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158840 N 204198
E 158872N 204416



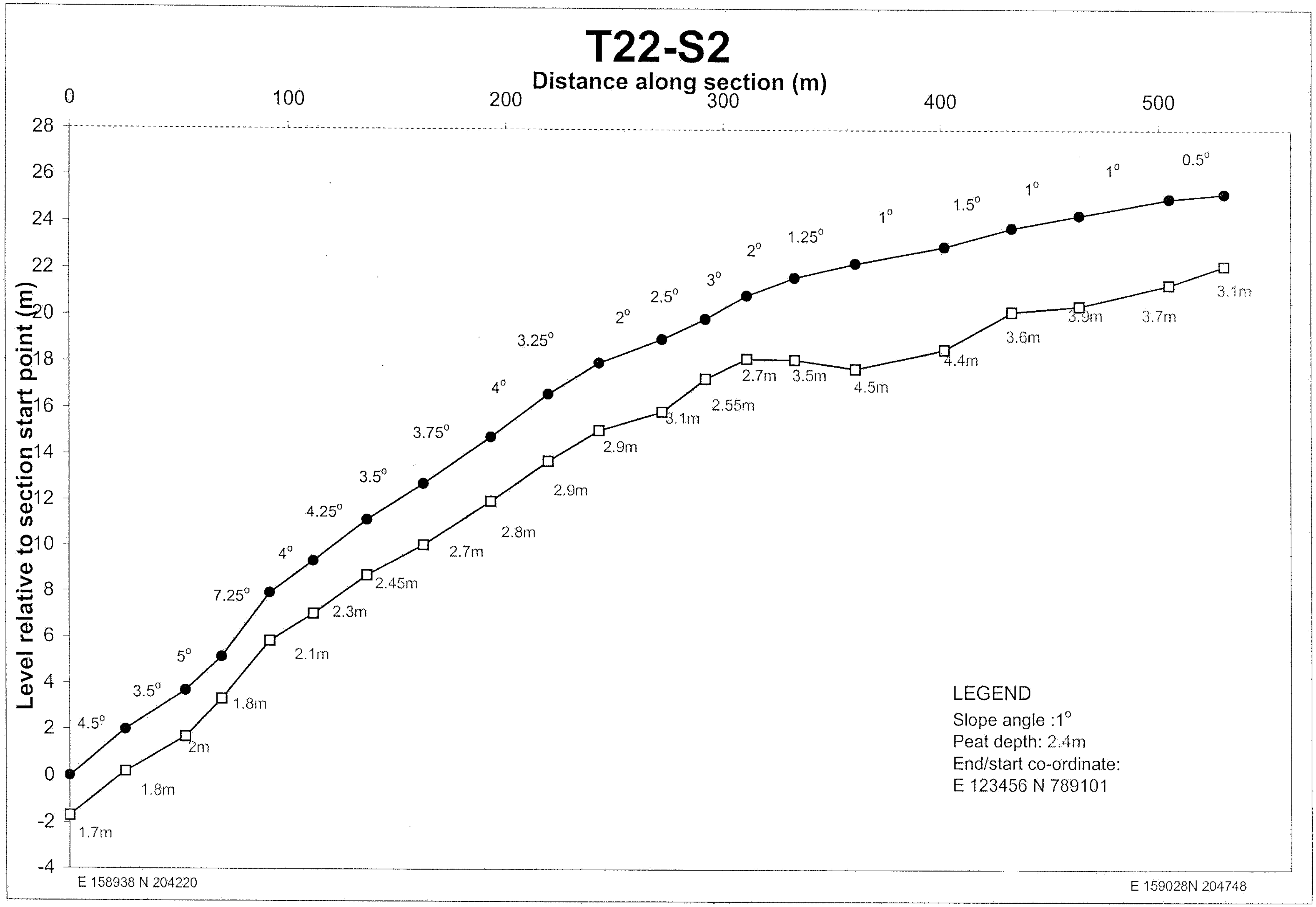
T21-S1(b)
Distance along section line (m)
0
50
100
150
200
250
300
350
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
Level relative to section start point (m)
0.5°
0.5°
1°
2.75°
2°
1°
0.75°
1°
1°
1°
0.5°
1.5°
1°
4°
5°
1.55m
1.7m
2.2m
2.1m
2.05m
2.6m
3m
4.2m
4.6m
5.1m
5m
5.1m
3.9m
3.2m
2.75m
2.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158934 N 204742
E 158869 N 204409

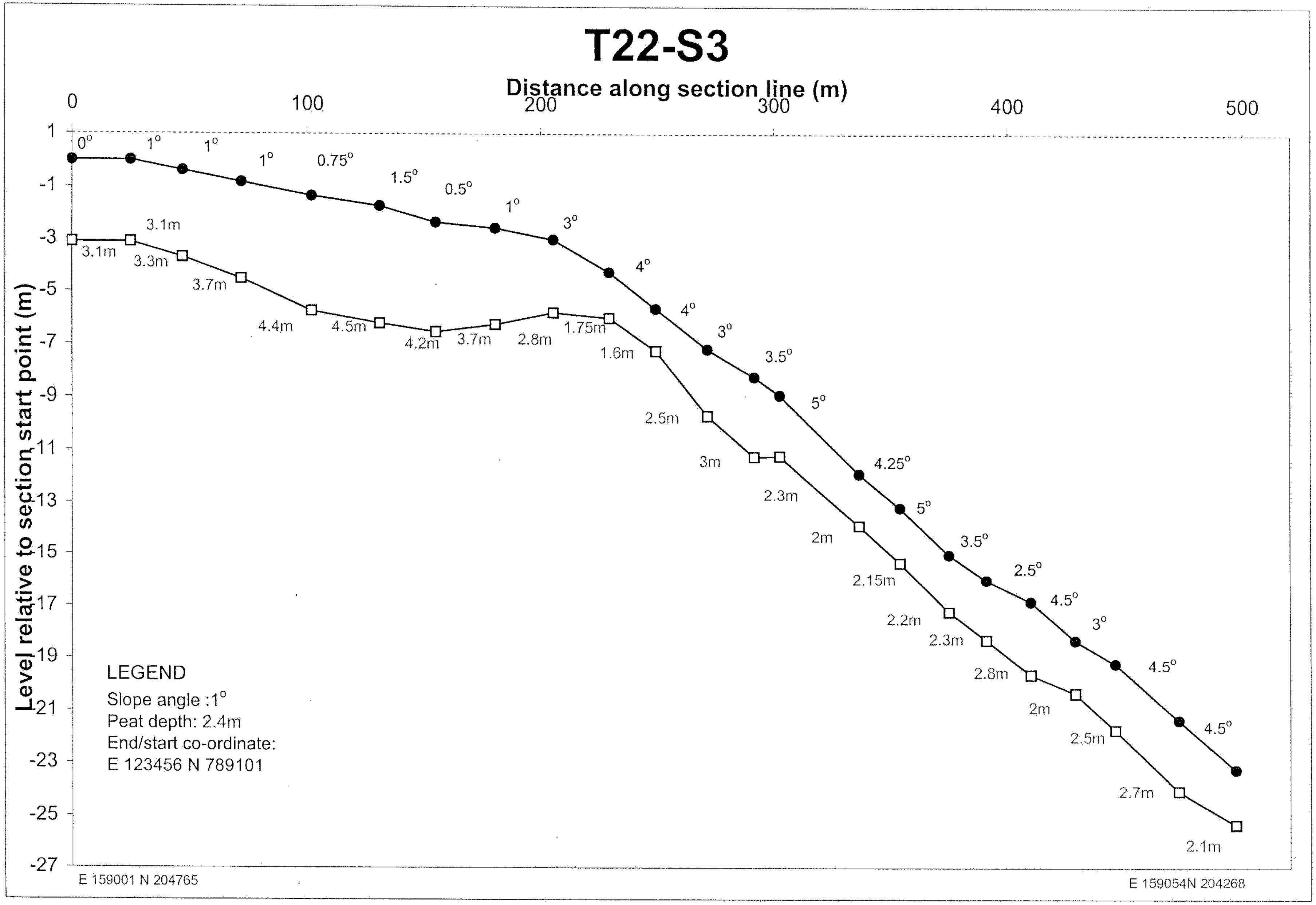

T21-S2
Distance along section line (m)
Level relative to section start point (m)
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158863 N 204719
E 158779 N 204129

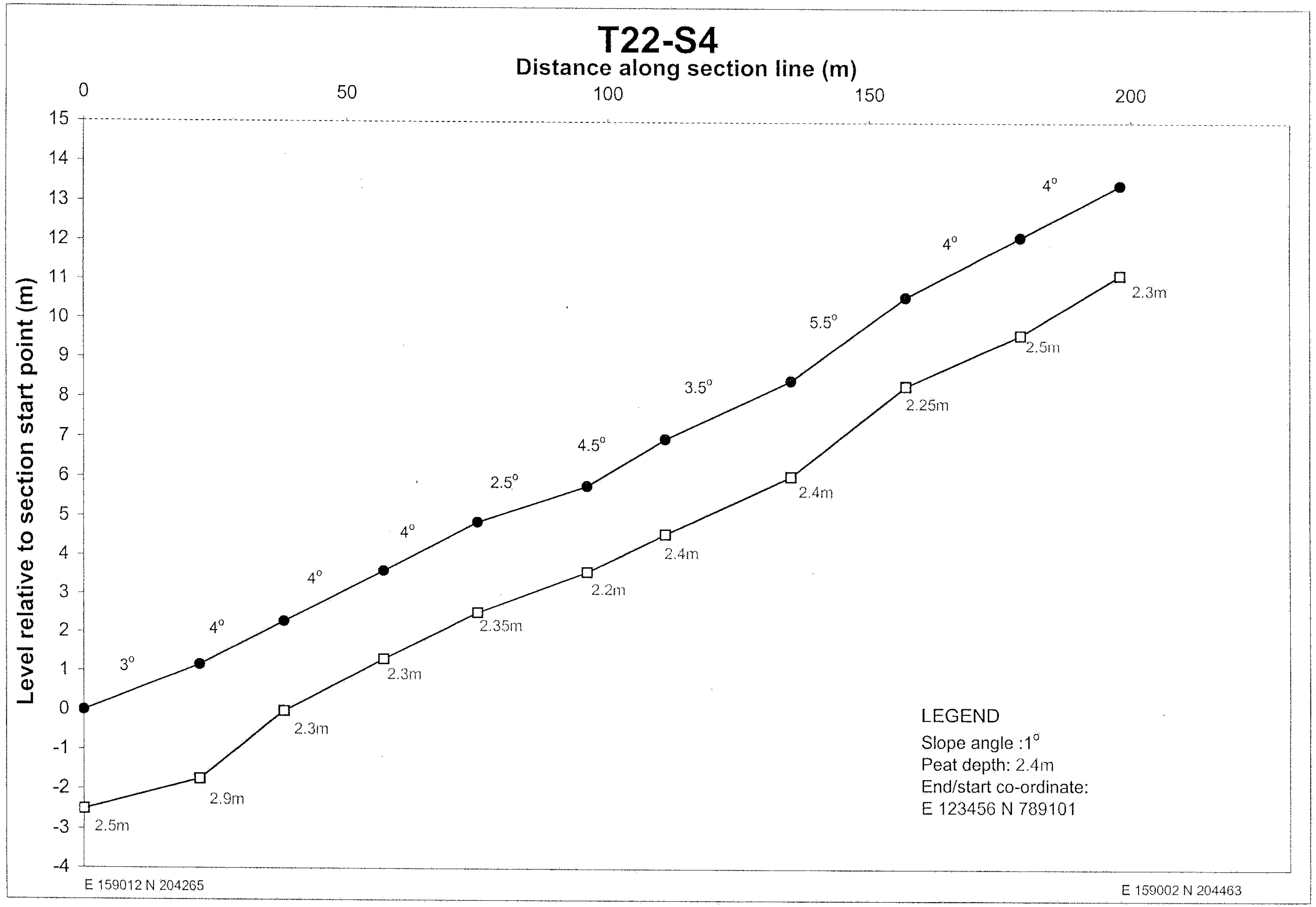

T21-S3
Distance along section line (m)
0
100
200
300
400
500
600
Level relative to section start point (m)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
1°
5°
5.5°
7°
4.5°
4.5°
5°
5°
3.5°
4.5°
4.75°
3.5°
0.75°
1.5°
1°
1°
1°
1°
1°
1°
0.5°
1°
0.5°
1.9m
1.3m
1.1m
1.25m
1.6m
1.7m
2.25m
2.1m
2.2m
2.25m
2.75m
3m
3.7m
4.05m
3.4m
4.7m
4.85m
3.5m
3.3m
3.4m
3.1m
2.8m
2.75m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158894 N 204211
E 158995 N 204754

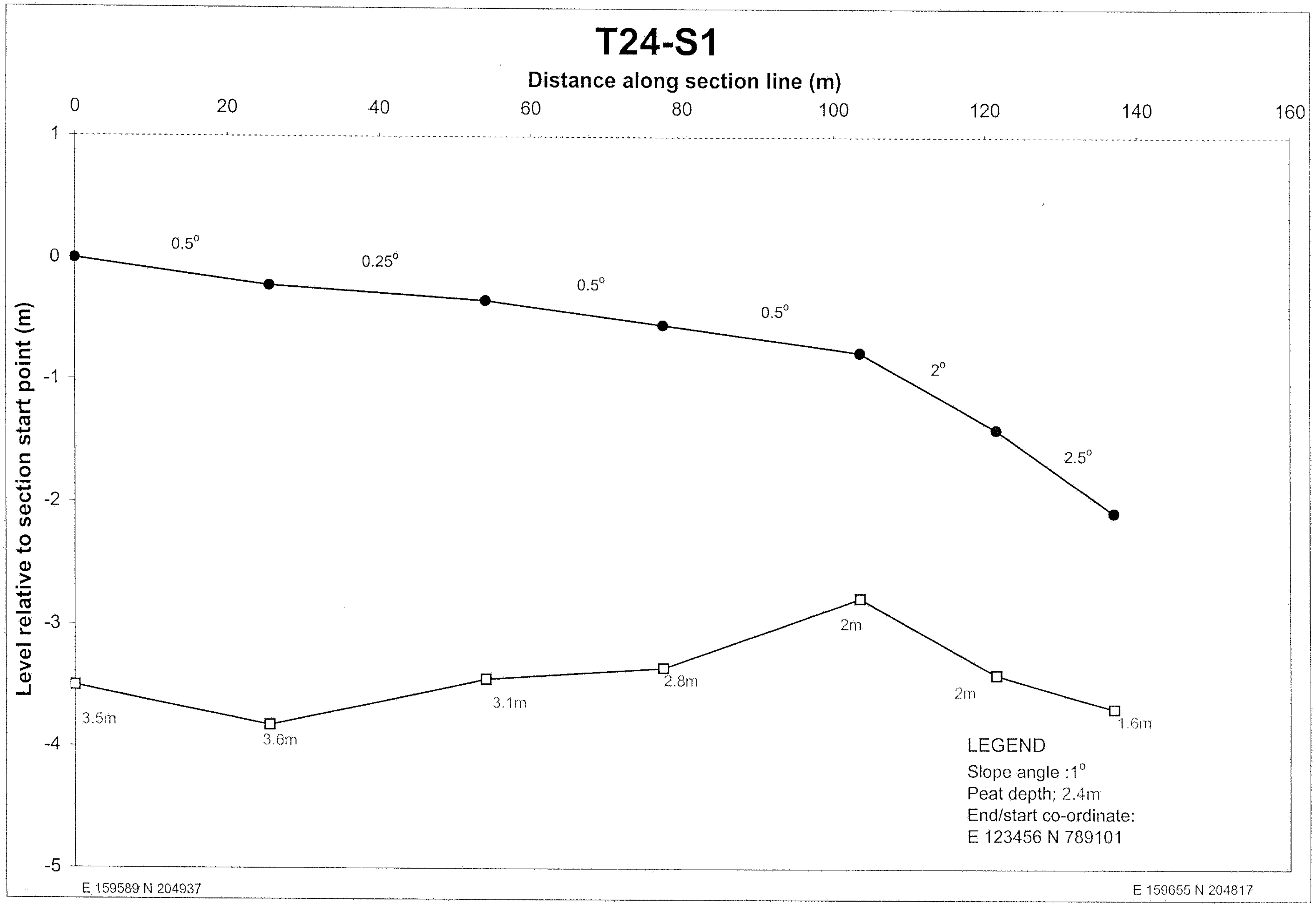


T22-S1
Distance along section line (m)
0
100
200
300
400
500
Level relative to section start point (m)
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
3°
3.5°
4°
2.5°
1.5°
3.5°
4.5°
4.5°
3.5°
3°
1°
1°
0.5°
0.75°
0.75°
0.75°
0.5°
0.5°
0.75°
1.65m
2.1m
1.9m
2.2m
2.05m
1.5m
1.45m
2.2m
1.4m
2m
2.65m
3m
4.05m
4.5m
4.3m
3.65m
3.4m
3.85m
2.25m
1.45m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159075 N 204271
E 158940 N 204750

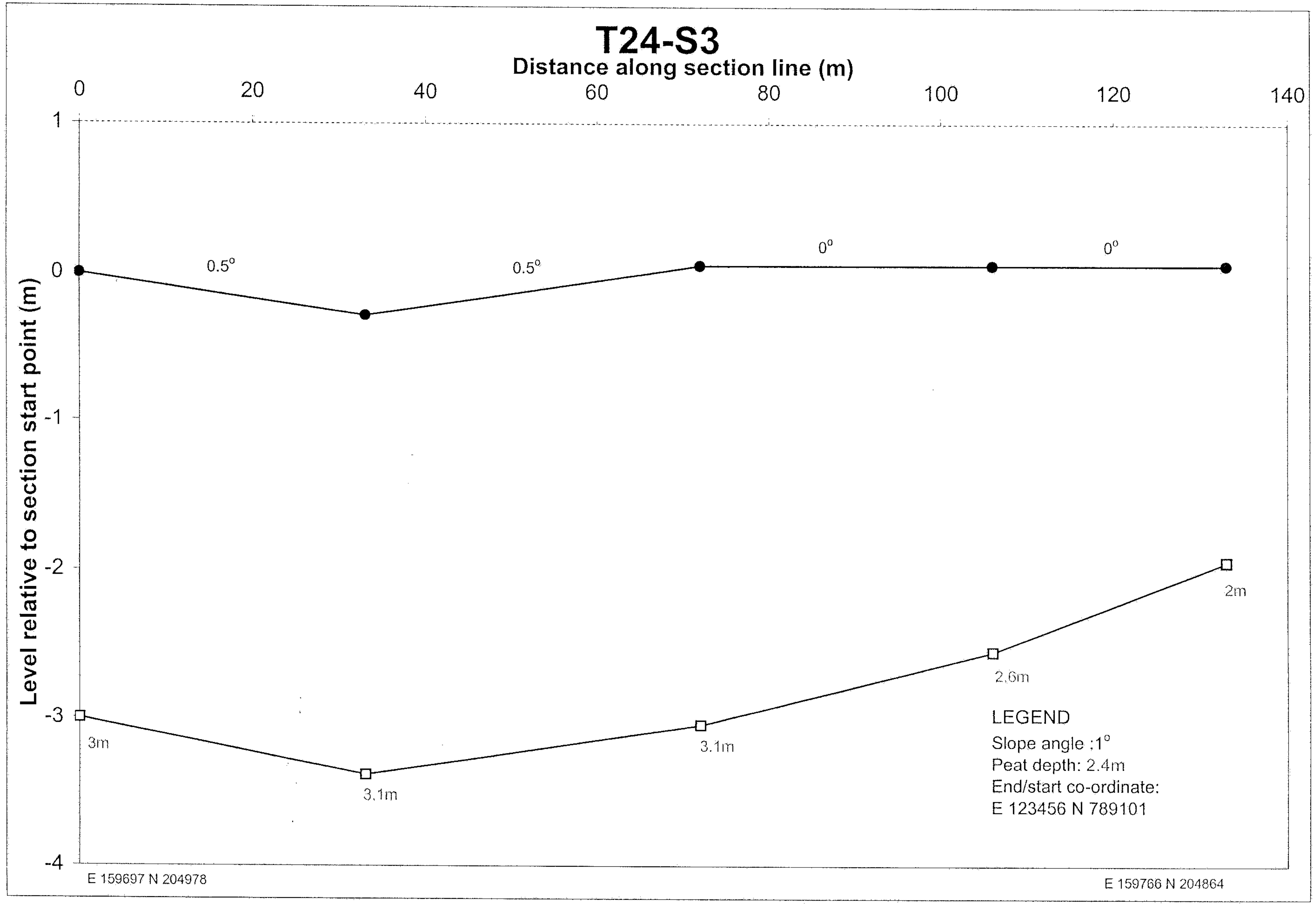

T22-S2
Distance along section (m)
0
100
200
300
400
500
Level relative to section start point (m)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
4.5°
3.5°
5°
7.25°
4°
4.25°
3.5°
3.75°
4°
3.25°
2°
2.5°
3°
2°
1.25°
1°
1.5°
1°
1°
0.5°
1.7m
1.8m
2m
1.8m
2.1m
2.3m
2.45m
2.7m
2.8m
2.9m
2.9m
3.1m
2.55m
2.7m
3.5m
4.5m
4.4m
3.6m
3.9m
3.7m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158938 N 204220
E 159028N 204748

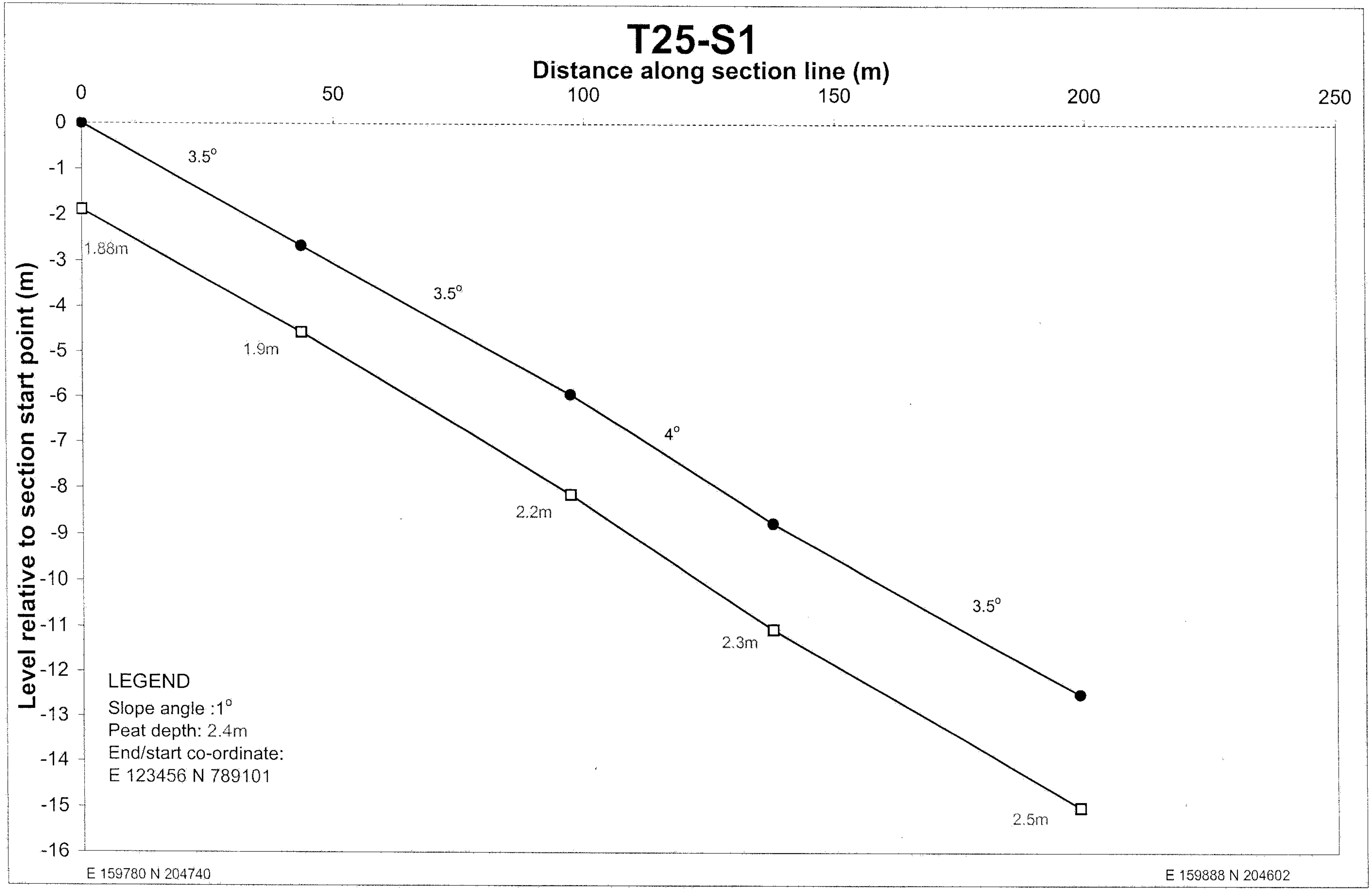

T22-S3
Distance along section line (m)
0
100
200
300
400
500
Level relative to section start point (m)
1
-1
-3
-5
-7
-9
-11
-13
-15
-17
-19
-21
-23
-25
-27
0°
1°
1°
1°
0.75°
1.5°
0.5°
1°
3°
4°
4°
3°
3.5°
5°
4.25°
5°
3.5°
2.5°
4.5°
3°
4.5°
4.5°
3.1m
3.1m
3.3m
3.7m
4.4m
4.5m
4.2m
3.7m
2.8m
1.75m
1.6m
2.5m
3m
2.3m
2m
2.15m
2.2m
2.3m
2.8m
2m
2.5m
2.7m
2.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159001 N 204765
E 159054N 204268

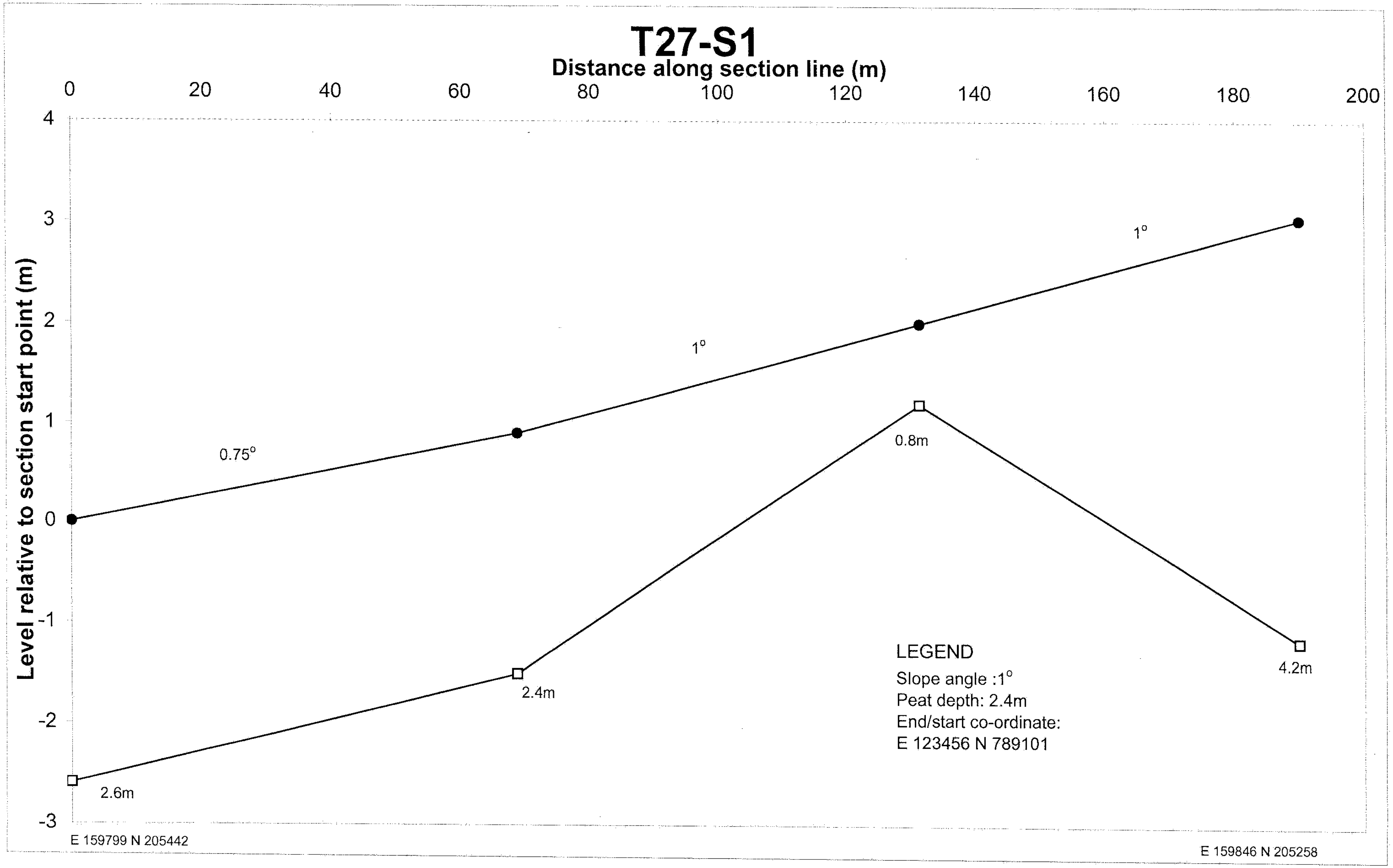

T22-S4
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
3°
4°
4°
4°
2.5°
4.5°
3.5°
5.5°
4°
4°
2.5m
2.9m
2.3m
2.3m
2.35m
2.2m
2.4m
2.4m
2.25m
2.5m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159012 N 204265
E 159002 N 204463



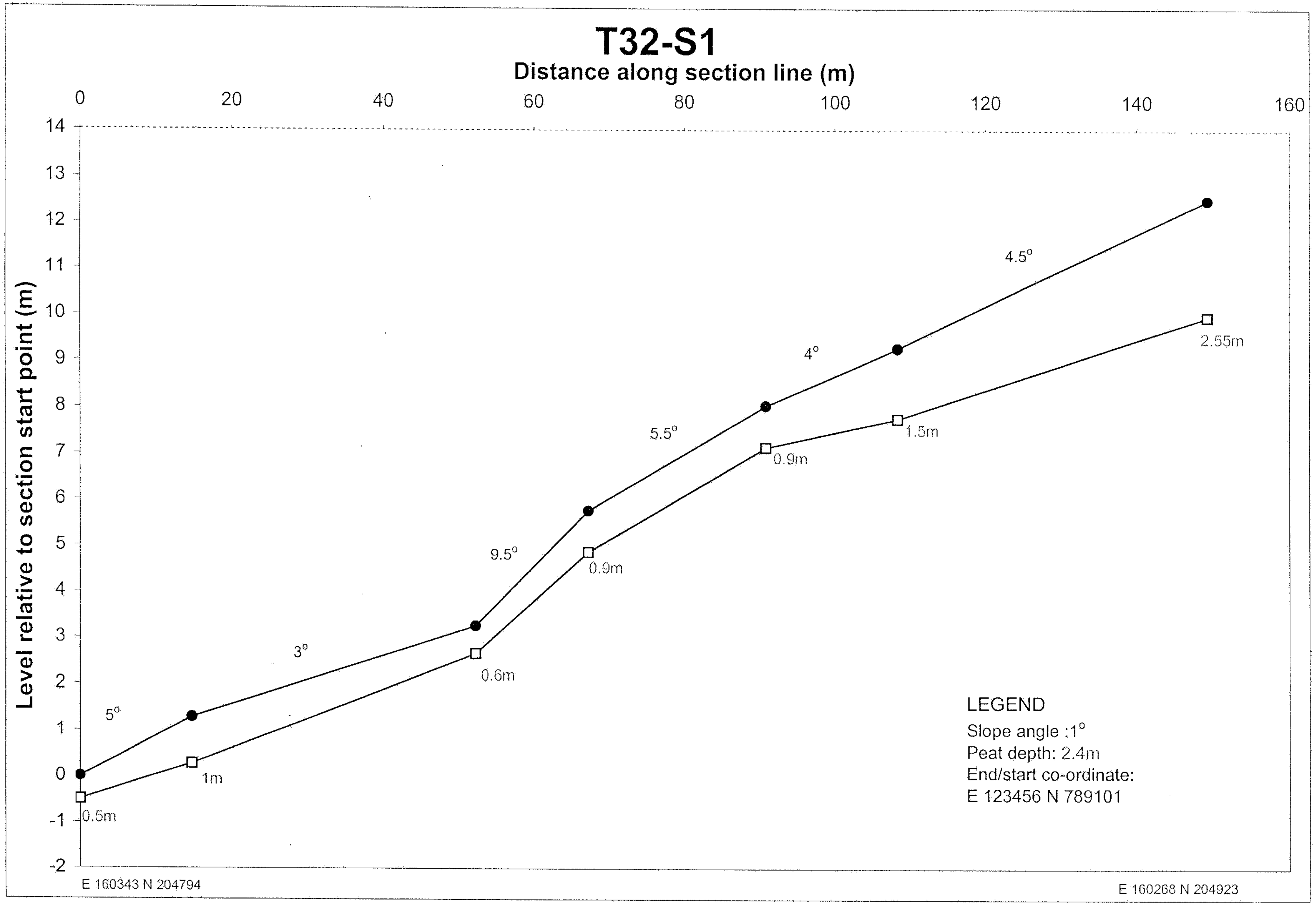
T24-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
0.5°
0.25°
0.5°
0.5°
2°
2.5°
3.5m
3.6m
3.1m
2.8m
2m
2m
1.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159589 N 204937
E 159655 N 204817


T24-S3
Distance along section line (m)
0
20
40
60
80
100
120
140
1
0
-1
-2
-3
-4
Level relative to section start point (m)
0.5°
0.5°
0°
0°
3m
3.1m
3.1m
2.6m
2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159697 N 204978
E 159766 N 204864

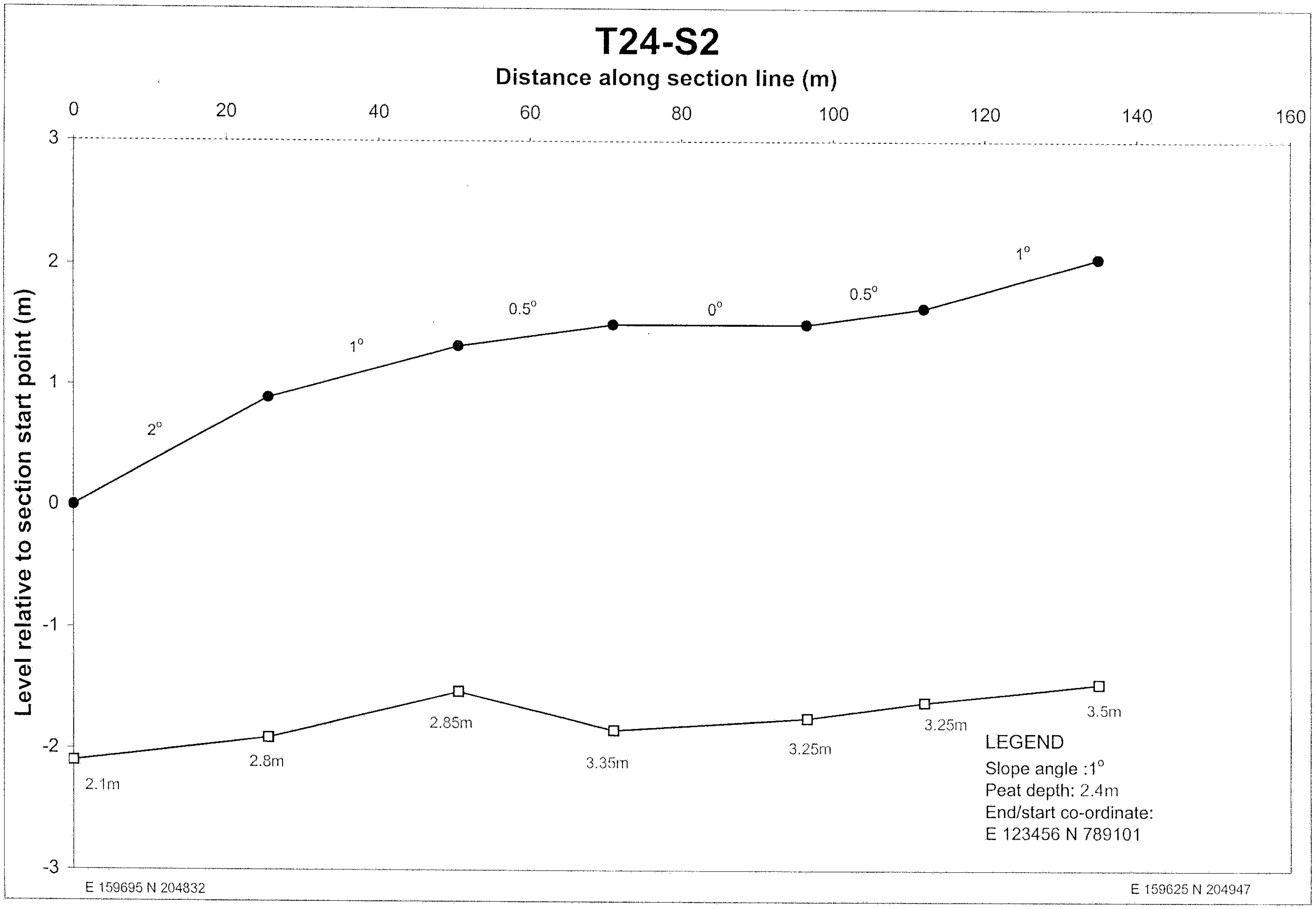

T25-S1
Distance along section line (m)
0
50
100
150
200
250
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
Level relative to section start point (m)
3.5°
3.5°
4°
3.5°
1.88m
1.9m
2.2m
2.3m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159780 N 204740
E 159888 N 204602



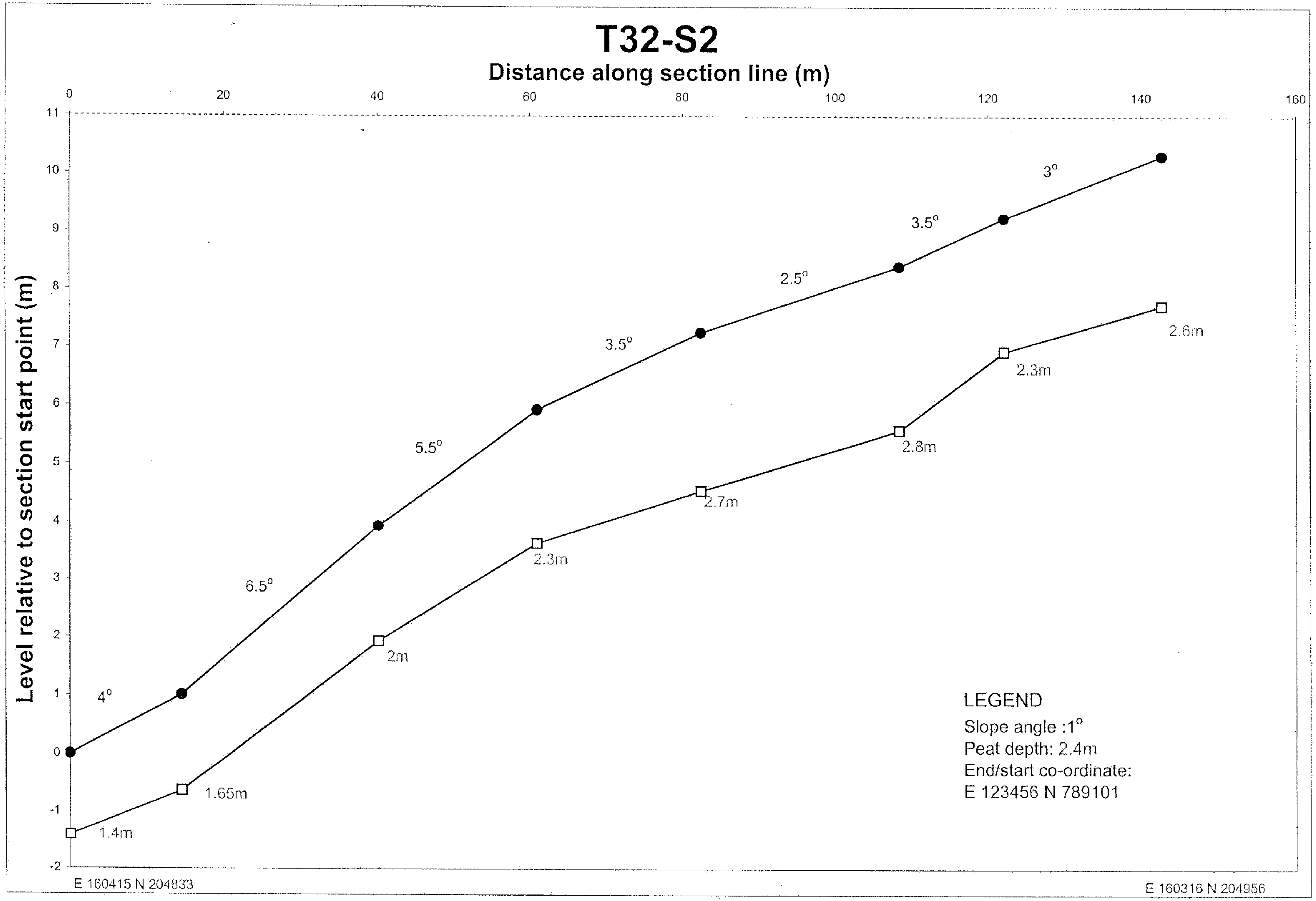
T27-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
0.75°
1°
1°
2.6m
2.4m
0.8m
4.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159799 N 205442
E 159846 N 205258

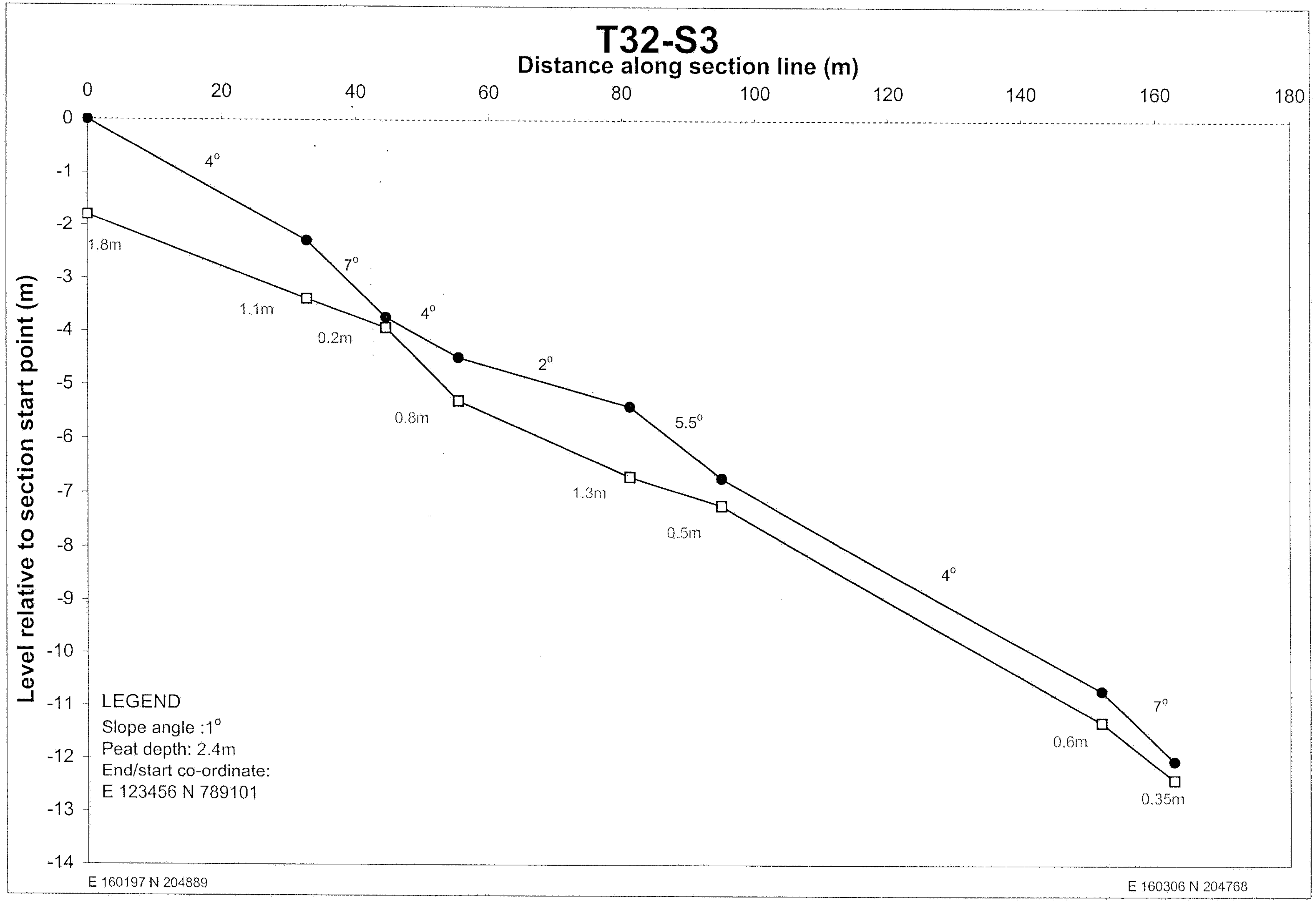


T32-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
5°
3°
9.5°
5.5°
4°
4.5°
0.5m
1m
0.6m
0.9m
0.9m
1.5m
2.55m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160343 N 204794
E 160268 N 204923

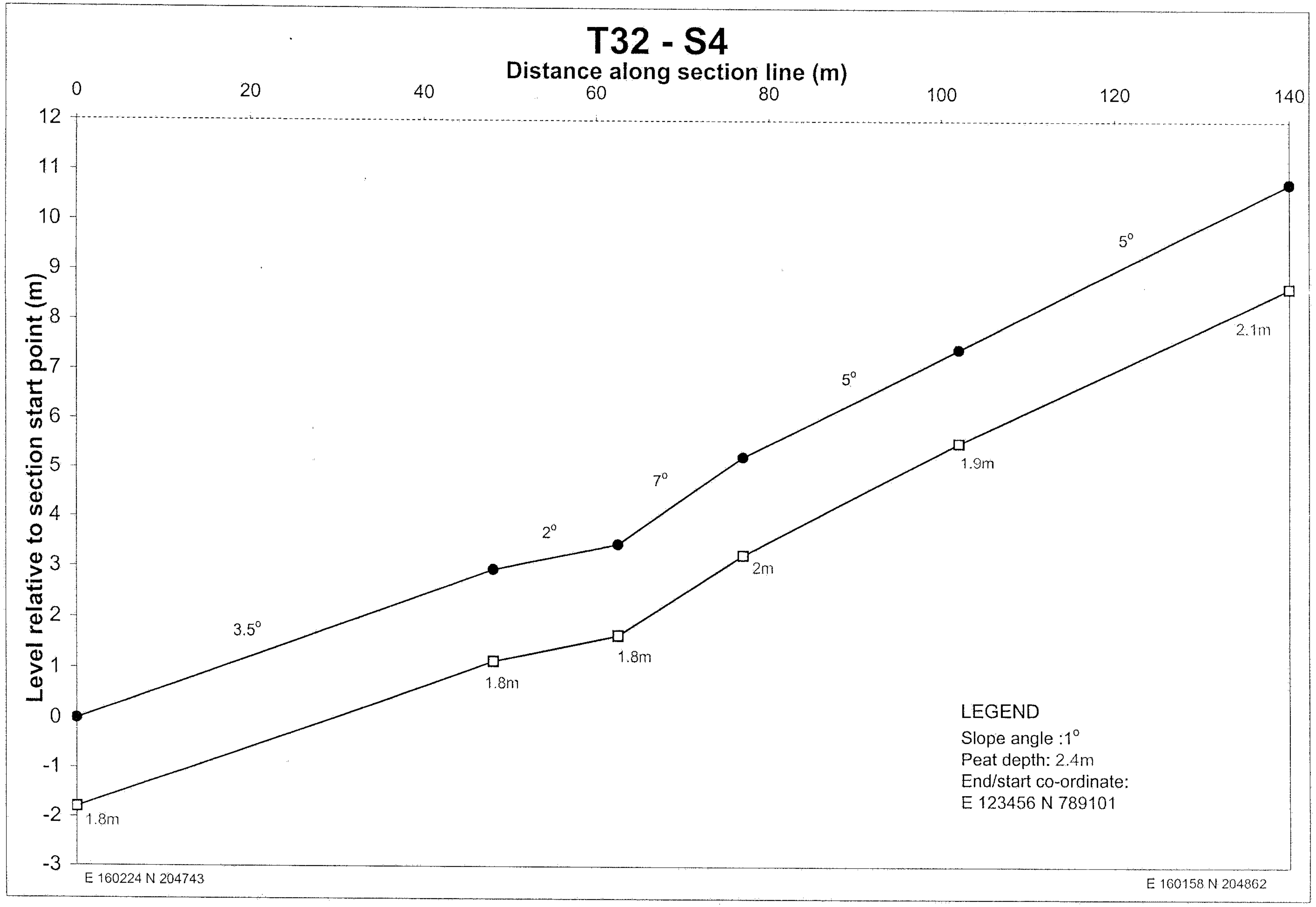


T24-S2
Distance along section line (m)
0
20
40
60
80
100
120
140
160
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
2°
1°
0.5°
0°
0.5°
1°
2.1m
2.8m
2.85m
3.35m
3.25m
3.25m
3.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159695 N 204832
E 159625 N 204947

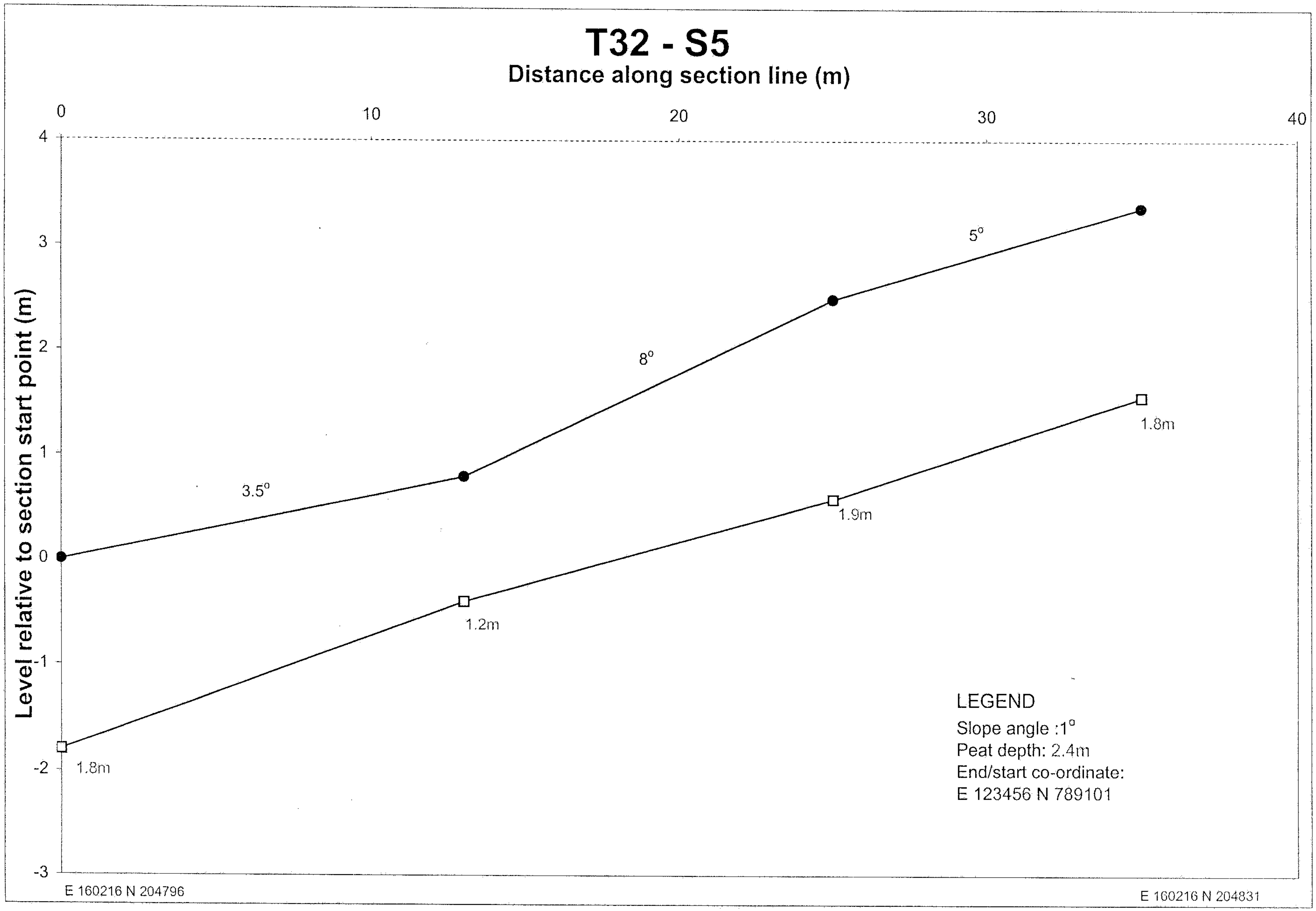

T32-S2
Distance along section line (m)
0
20
40
60
80
100
120
140
160
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
4°
6.5°
5.5°
3.5°
2.5°
3.5°
3°
1.4m
1.65m
2m
2.3m
2.7m
2.8m
2.3m
2.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160415 N 204833
E 160316 N 204956

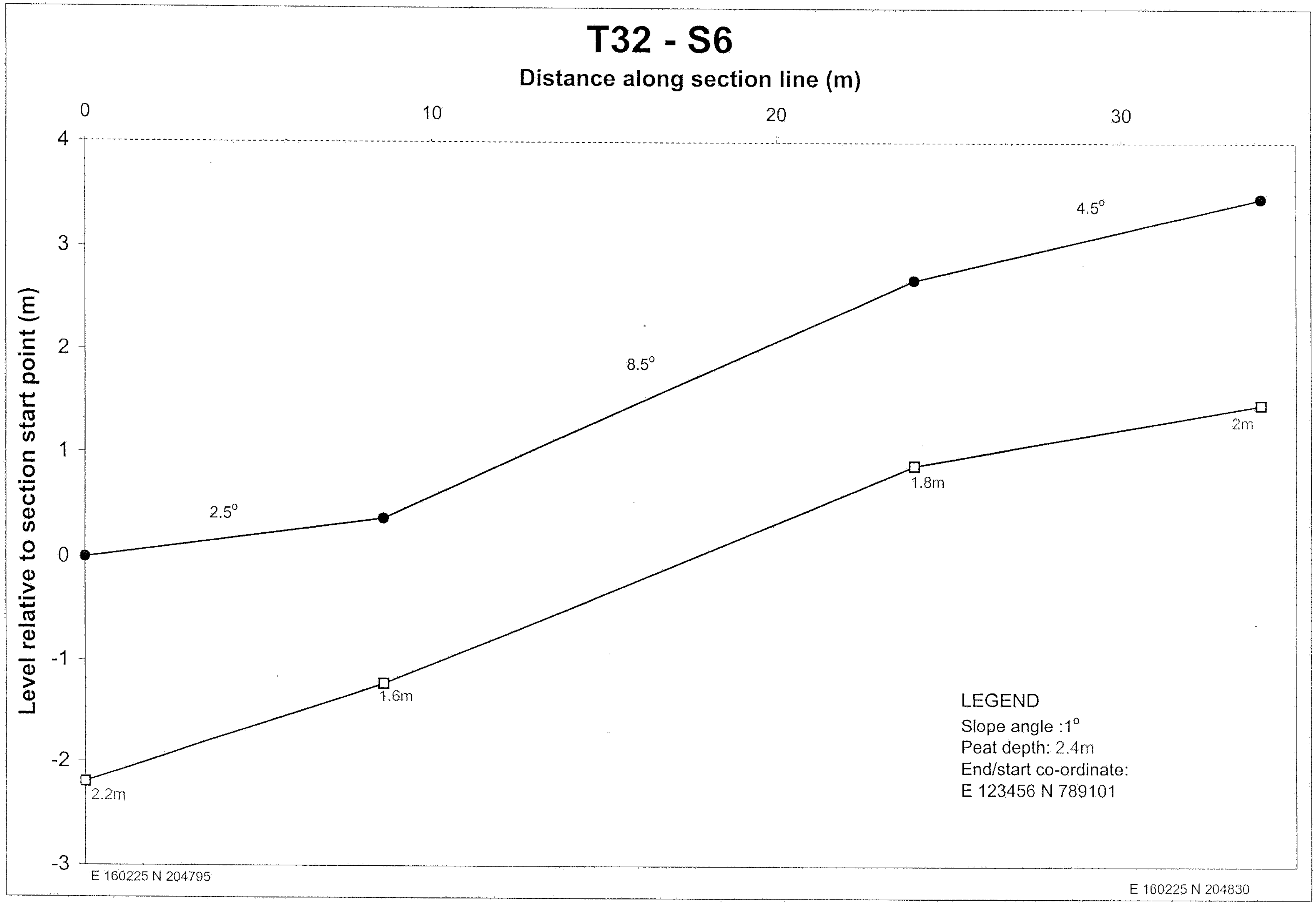


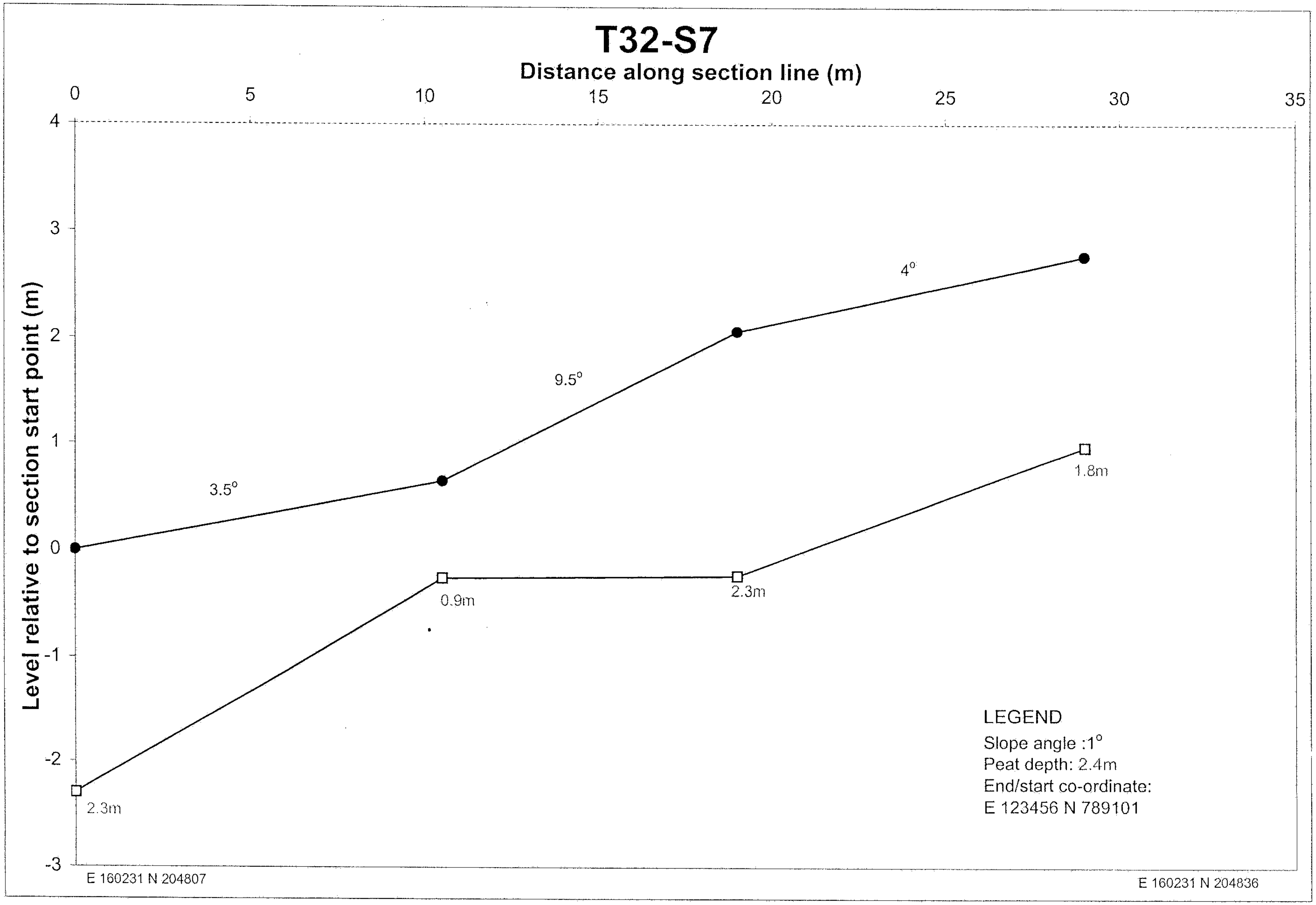
T32-S3
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
Level relative to section start point (m)
4°
7°
4°
2°
5.5°
4°
7°
1.8m
1.1m
0.2m
0.8m
1.3m
0.5m
0.6m
0.35m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160197 N 204889
E 160306 N 204768



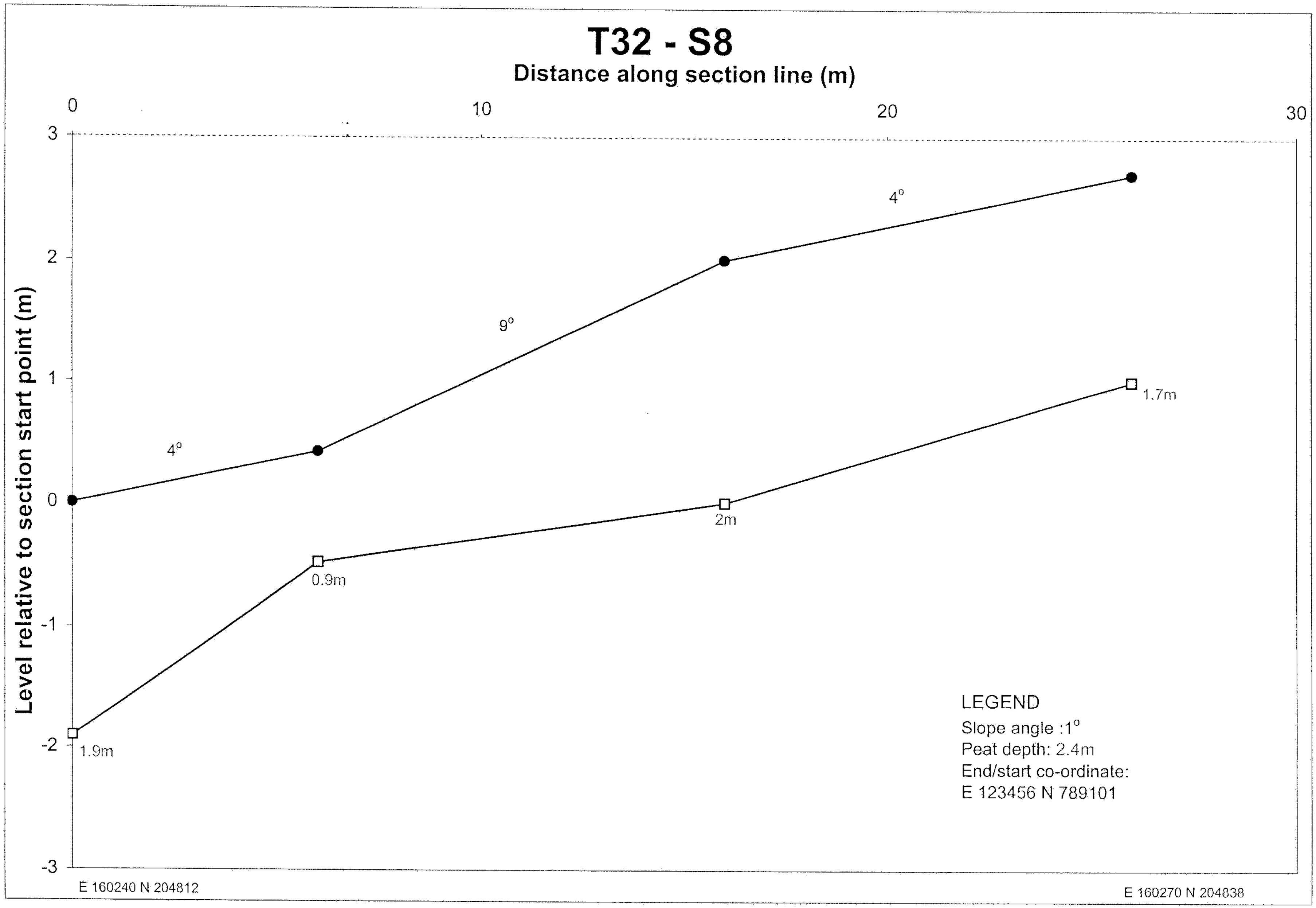
T32 - S4
Distance along section line (m)
0
20
40
60
80
100
120
140
Level relative to section start point (m)
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
3.5°
2°
7°
5°
5°
1.8m
1.8m
1.8m
2m
1.9m
2.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160224 N 204743
E 160158 N 204862


T32 - S5
Distance along section line (m)
0
10
20
30
40
Level relative to section start point (m)
4
3
2
1
0
-1
-2
-3
3.5°
8°
5°
1.8m
1.2m
1.9m
1.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160216 N 204796
E 160216 N 204831


T32 - S6
Distance along section line (m)
0
10
20
30
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
2.5°
8.5°
4.5°
2.2m
1.6m
1.8m
2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160225 N 204795
E 160225 N 204830

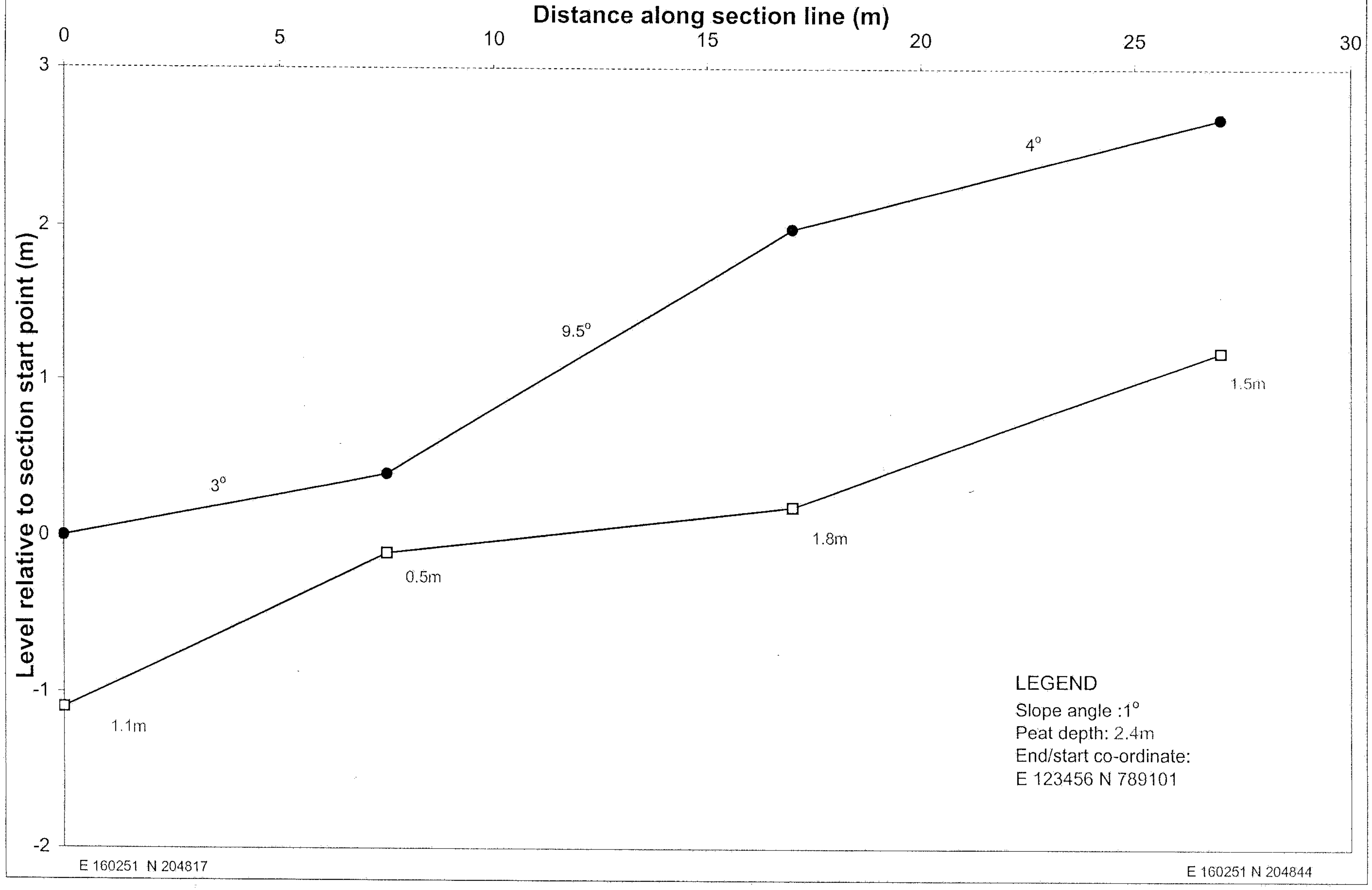


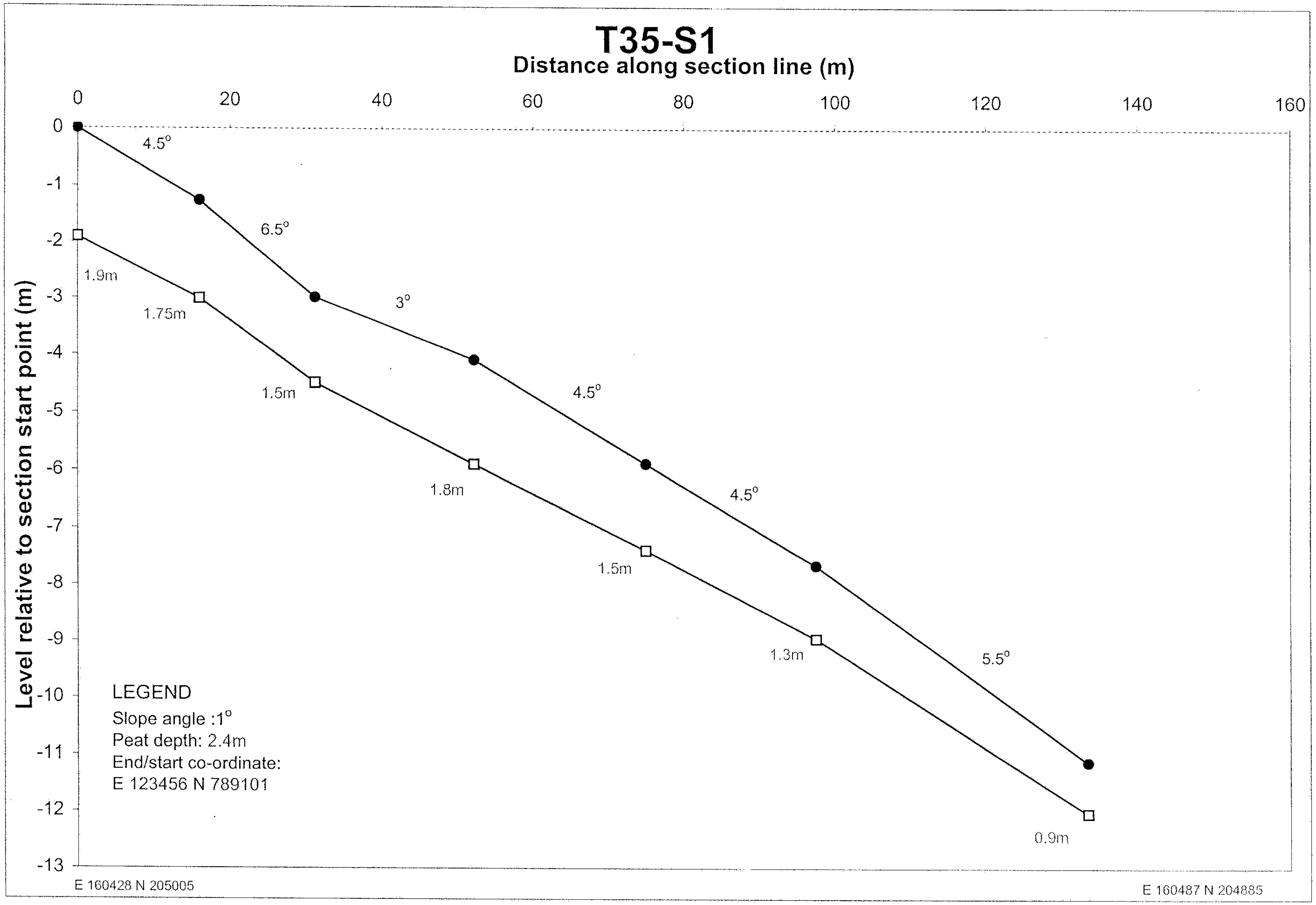
T32-S7
Distance along section line (m)
0
5
10
15
20
25
30
35
Level relative to section start point (m)
4
3
2
1
0
-1
-2
-3
3.5°
9.5°
4°
0.9m
2.3m
1.8m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160231 N 204807
E 160231 N 204836

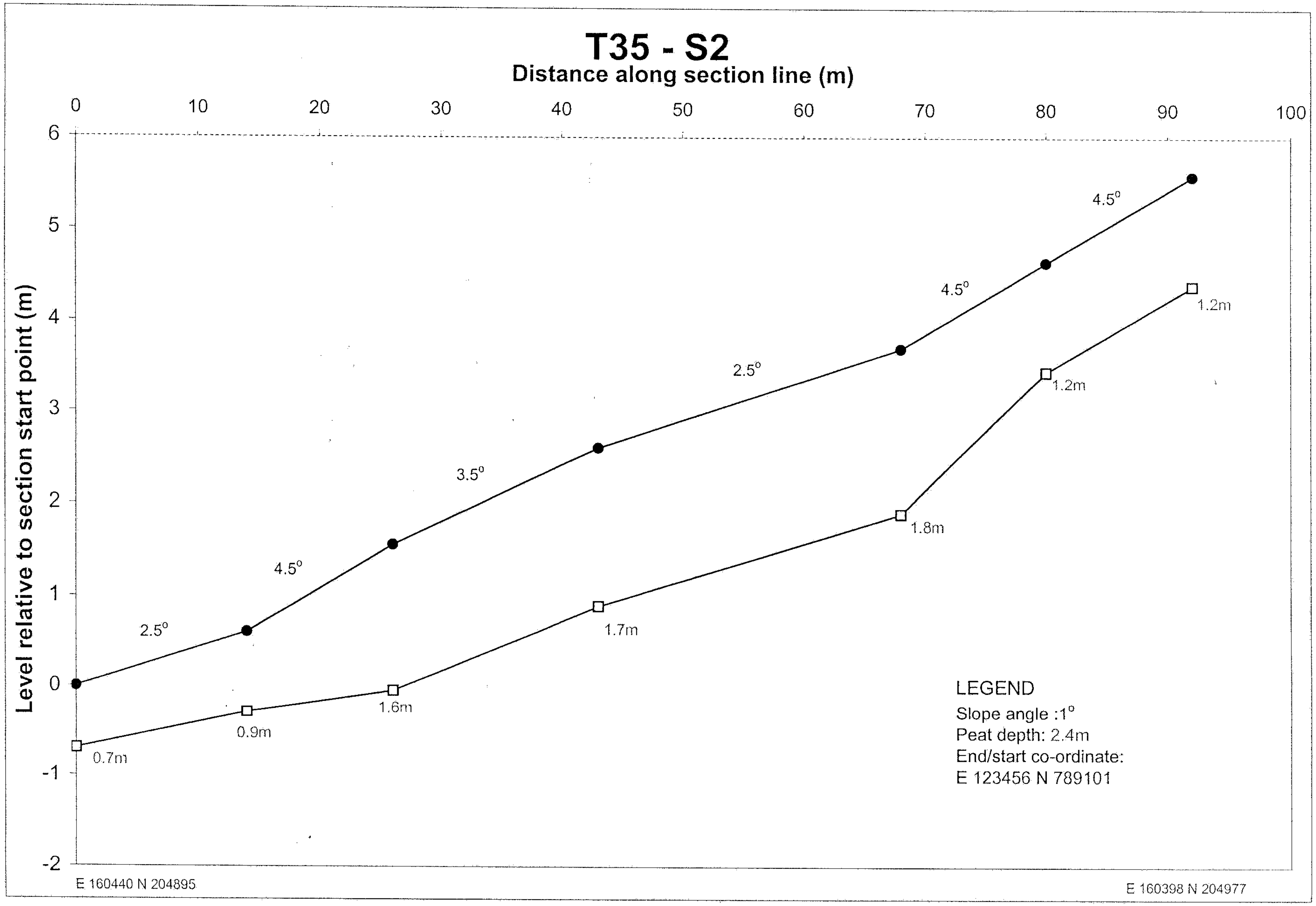


T32 - S8
Distance along section line (m)
0
10
20
30
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
4°
9°
4°
1.9m
0.9m
2m
1.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160240 N 204812
E 160270 N 204838

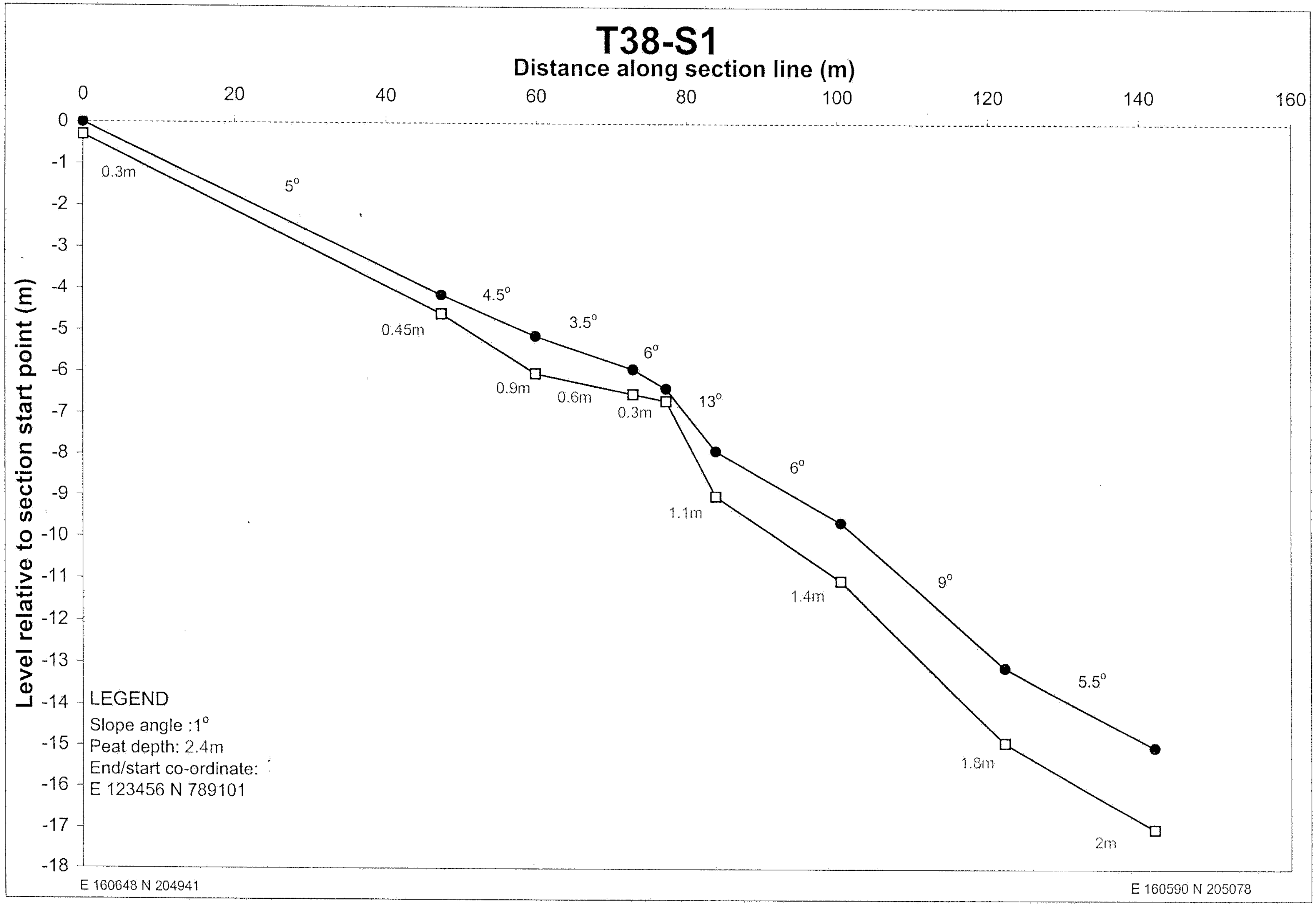
T32-S9

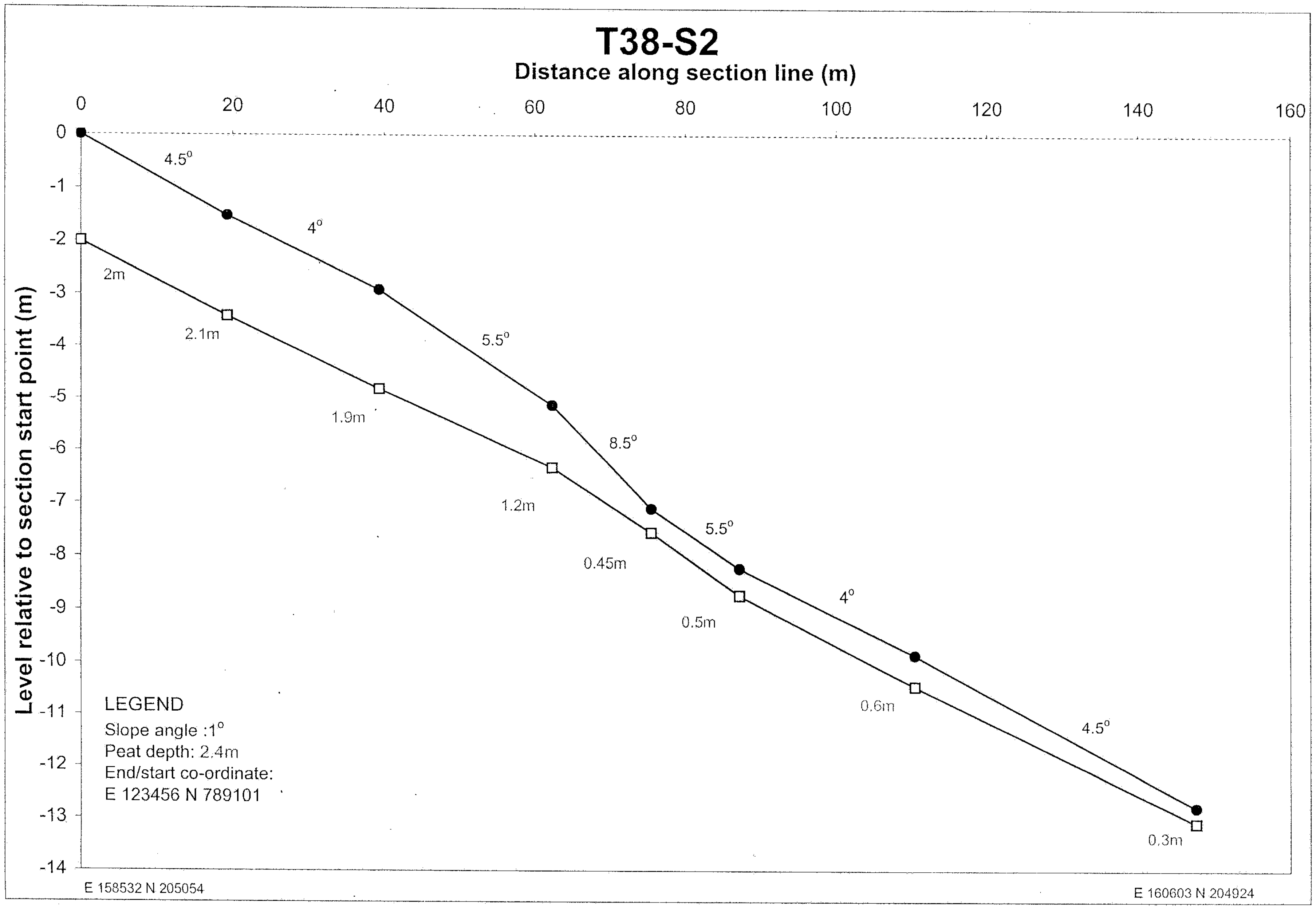

Distance along section line (m)
0
5
10
15
20
25
30
3
2
1
0
-1
-2
Level relative to section start point (m)
3°
9.5°
4°
1.1m
0.5m
1.8m
1.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160251 N 204817
E 160251 N 204844


T35-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
Level relative to section start point (m)
4.5°
6.5°
3°
4.5°
4.5°
5.5°
1.9m
1.75m
1.5m
1.8m
1.5m
1.3m
0.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160428 N 205005
E 160487 N 204885

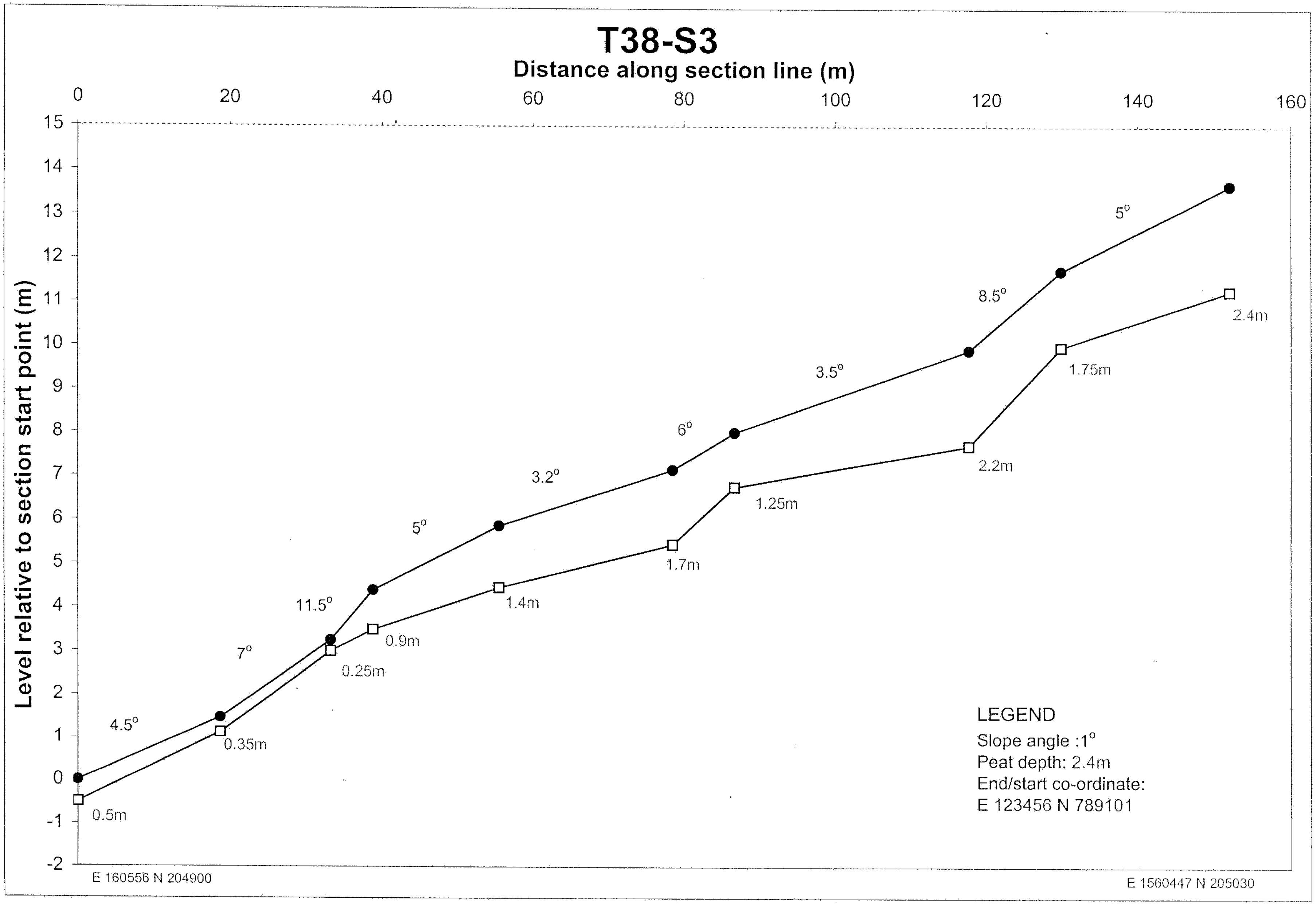


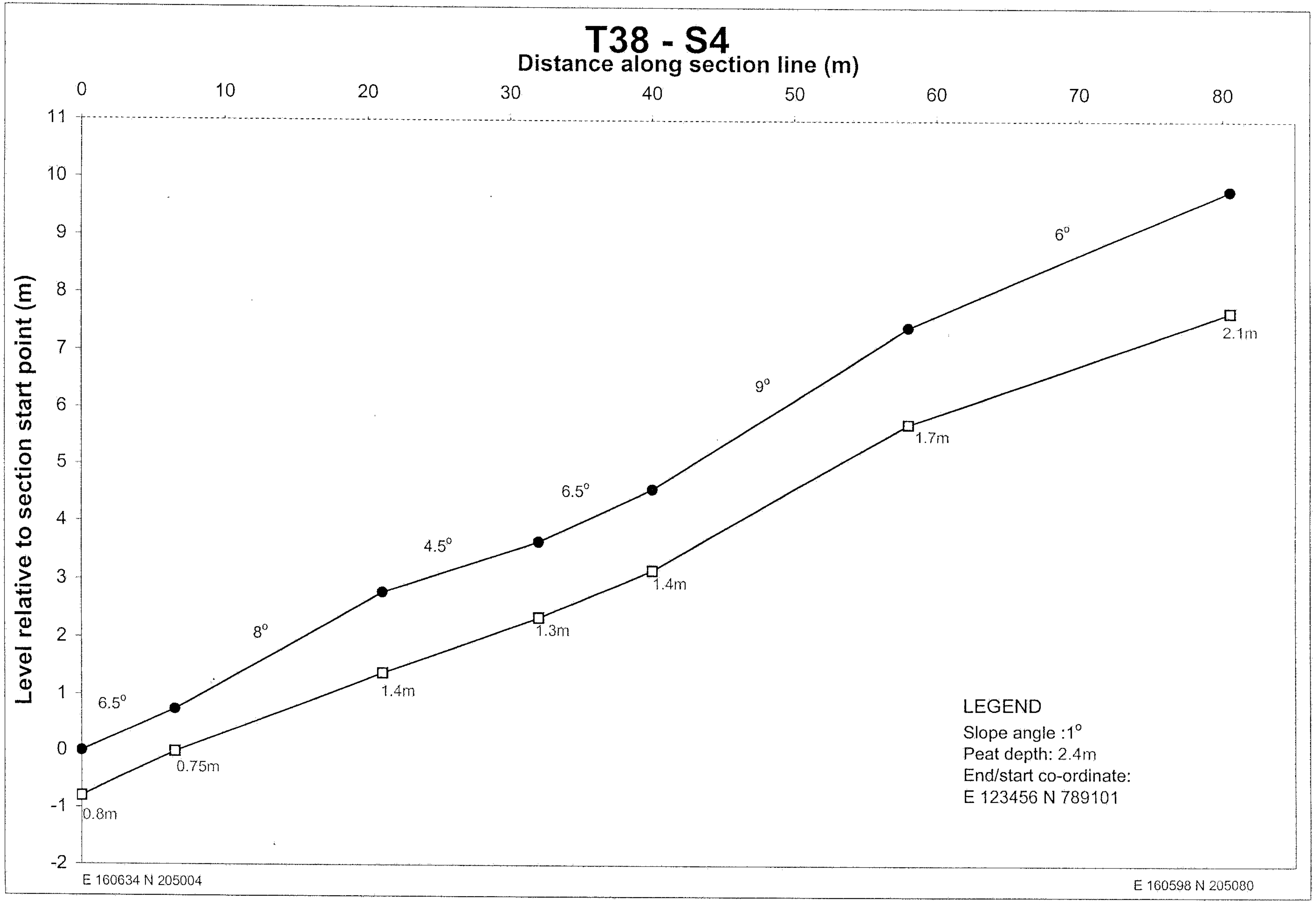
T35 - S2
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
6
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
2.5°
4.5°
3.5°
2.5°
4.5°
4.5°
0.7m
0.9m
1.6m
1.7m
1.8m
1.2m
1.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160440 N 204895
E 160398 N 204977

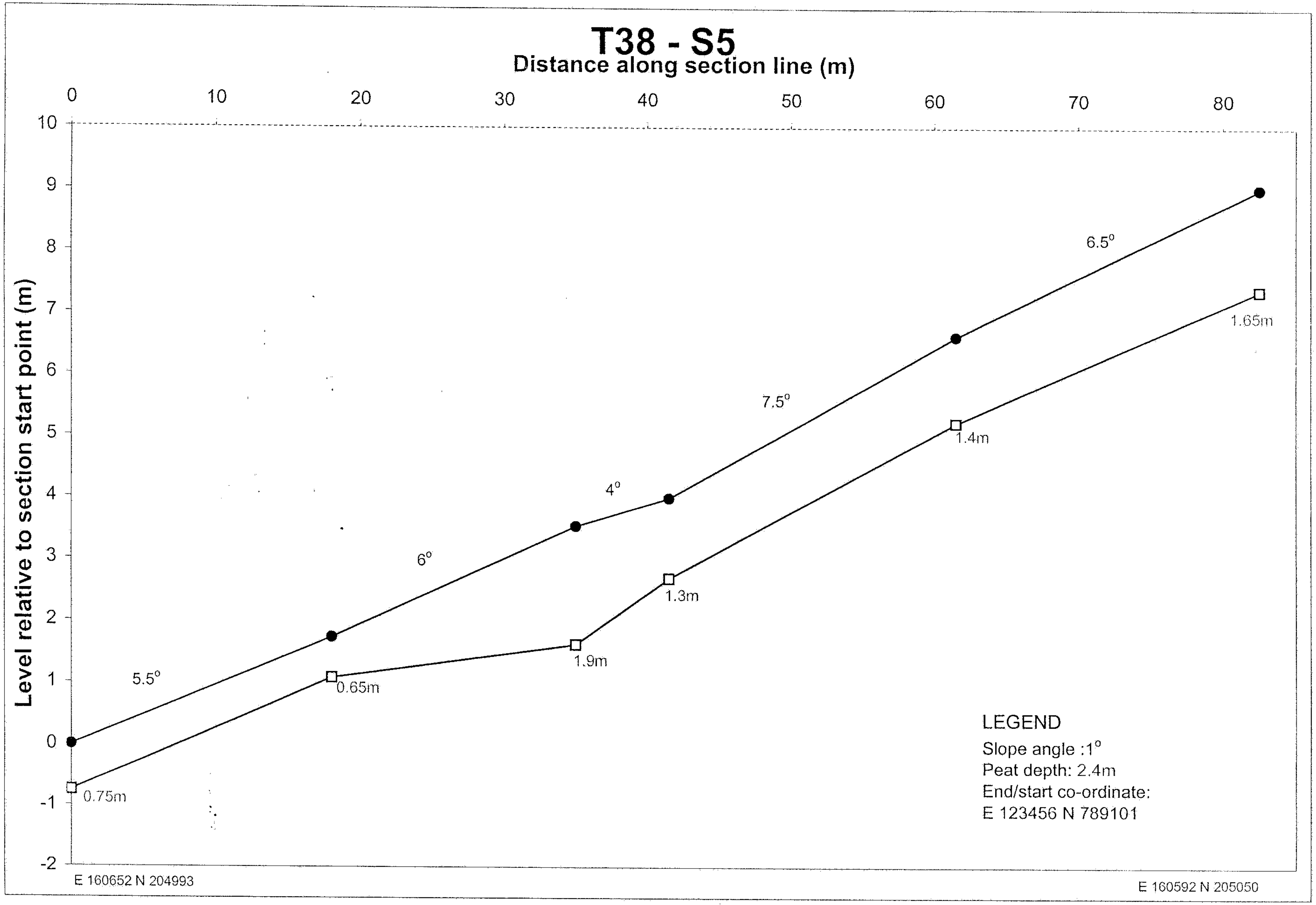

T38-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
0.3m
5°
4.5°
0.45m
3.5°
6°
0.9m
0.6m
0.3m
13°
6°
1.1m
9°
1.4m
5.5°
1.8m
2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160648 N 204941
E 160590 N 205078

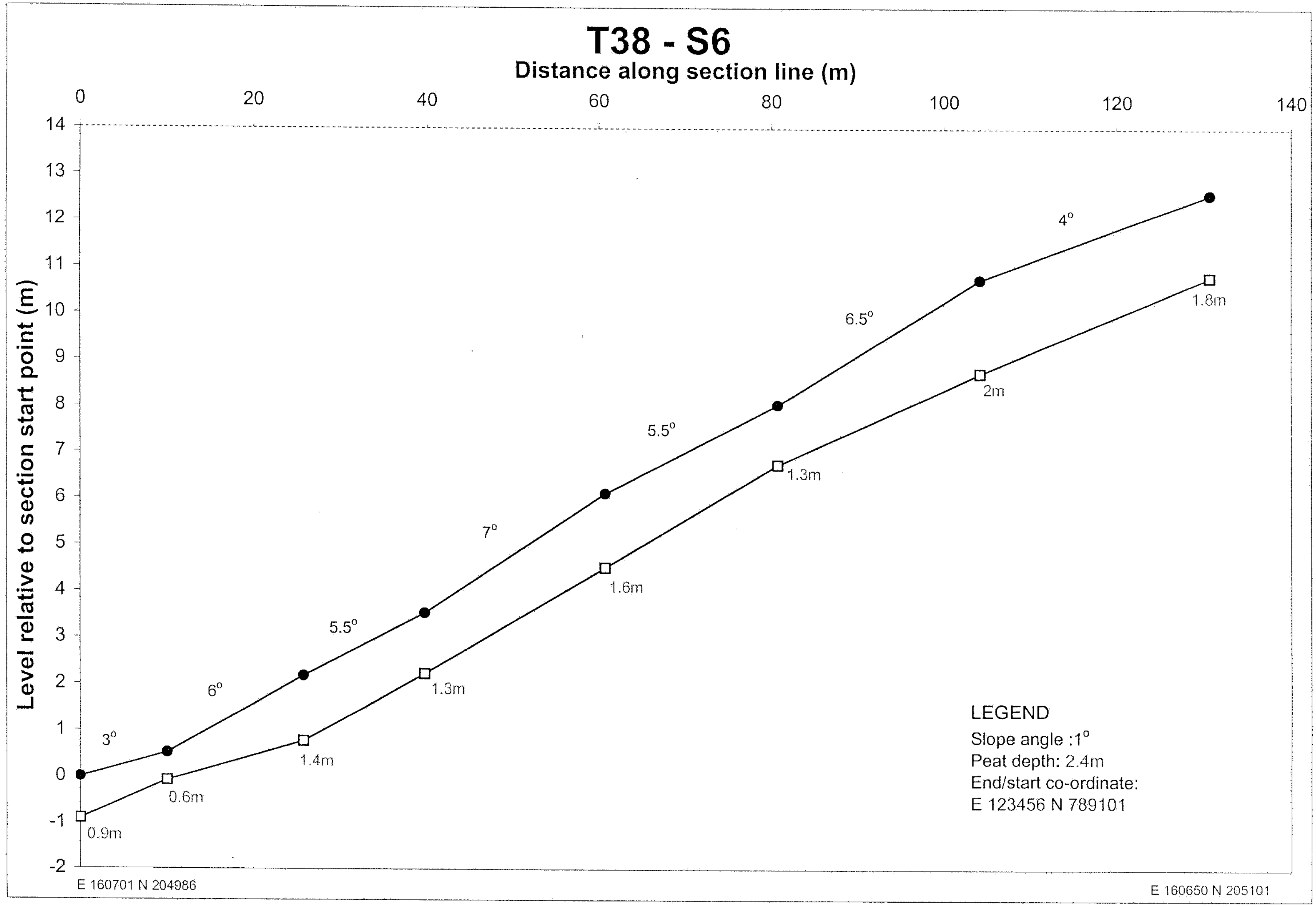


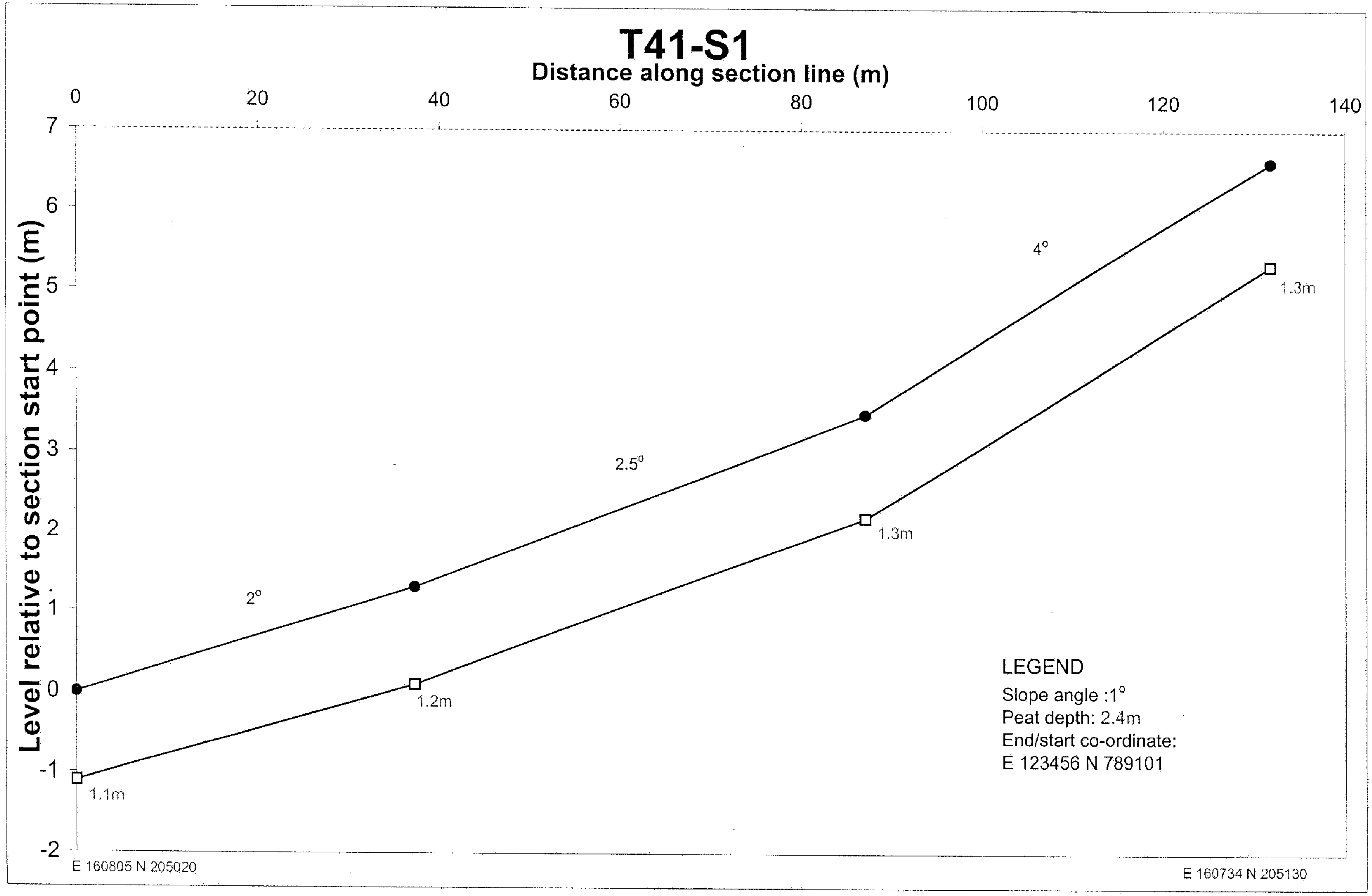
T38-S2
Distance along section line (m)
0
20
40
60
80
100
120
140
160
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
Level relative to section start point (m)
4.5°
4°
5.5°
8.5°
5.5°
4°
4.5°
2m
2.1m
1.9m
1.2m
0.45m
0.5m
0.6m
0.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158532 N 205054
E 160603 N 204924


T38-S3
Distance along section line (m)
0
20
40
60
80
100
120
140
160
Level relative to section start point (m)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
4.5°
7°
11.5°
5°
3.2°
6°
3.5°
8.5°
5°
0.5m
0.35m
0.25m
0.9m
1.4m
1.7m
1.25m
2.2m
1.75m
2.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160556 N 204900
E 1560447 N 205030

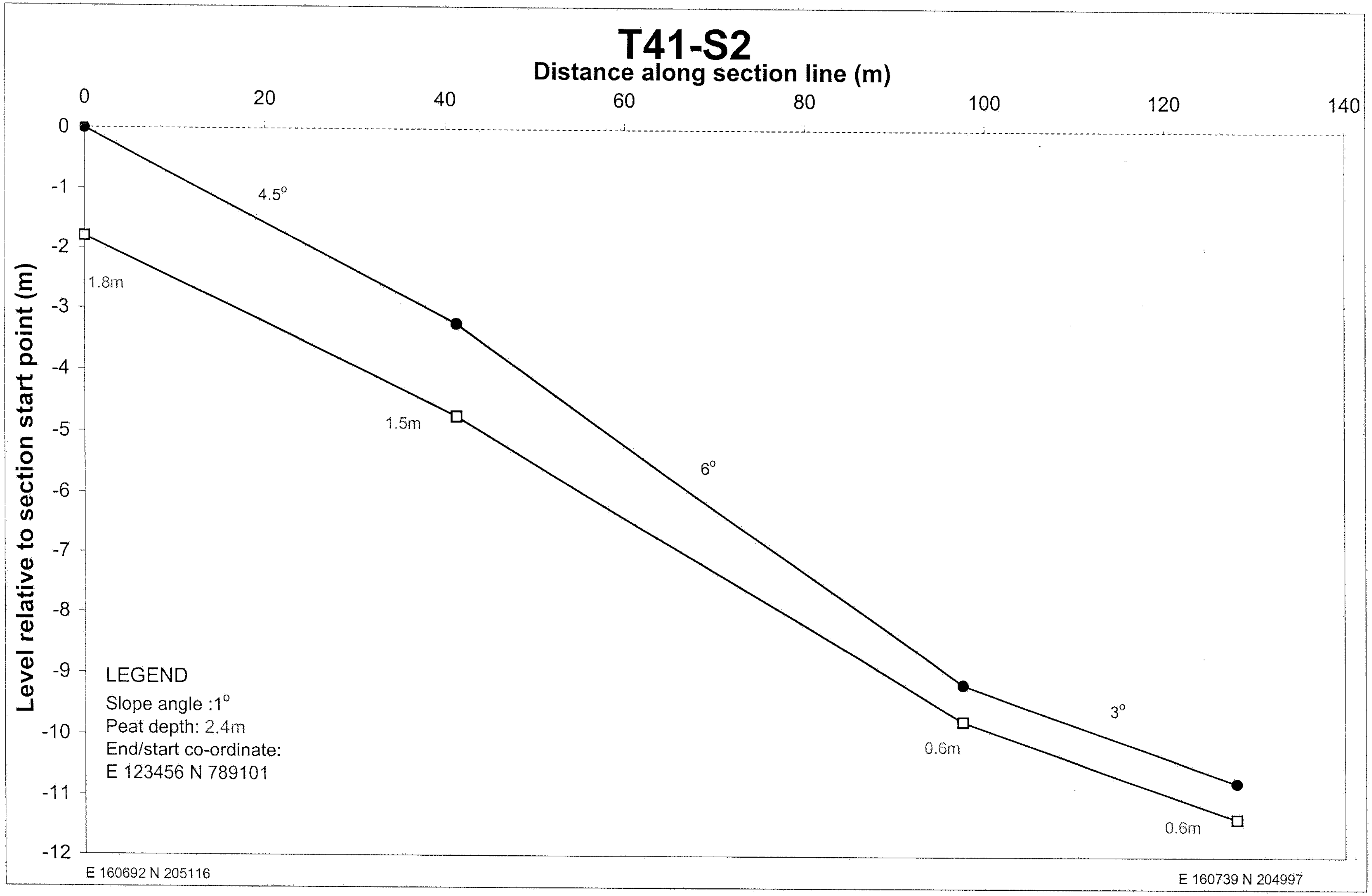

T38 - S4
Distance along section line (m)
0
10
20
30
40
50
60
70
80
Level relative to section start point (m)
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
6.5°
8°
4.5°
6.5°
9°
6°
0.8m
0.75m
1.4m
1.3m
1.4m
1.7m
2.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160634 N 205004
E 160598 N 205080


T38 - S5
Distance along section line (m)
0
10
20
30
40
50
60
70
80
Level relative to section start point (m)
10
9
8
7
6
5
4
3
2
1
0
-1
-2
5.5°
6°
4°
7.5°
6.5°
0.75m
0.65m
1.9m
1.3m
1.4m
1.65m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160652 N 204993
E 160592 N 205050

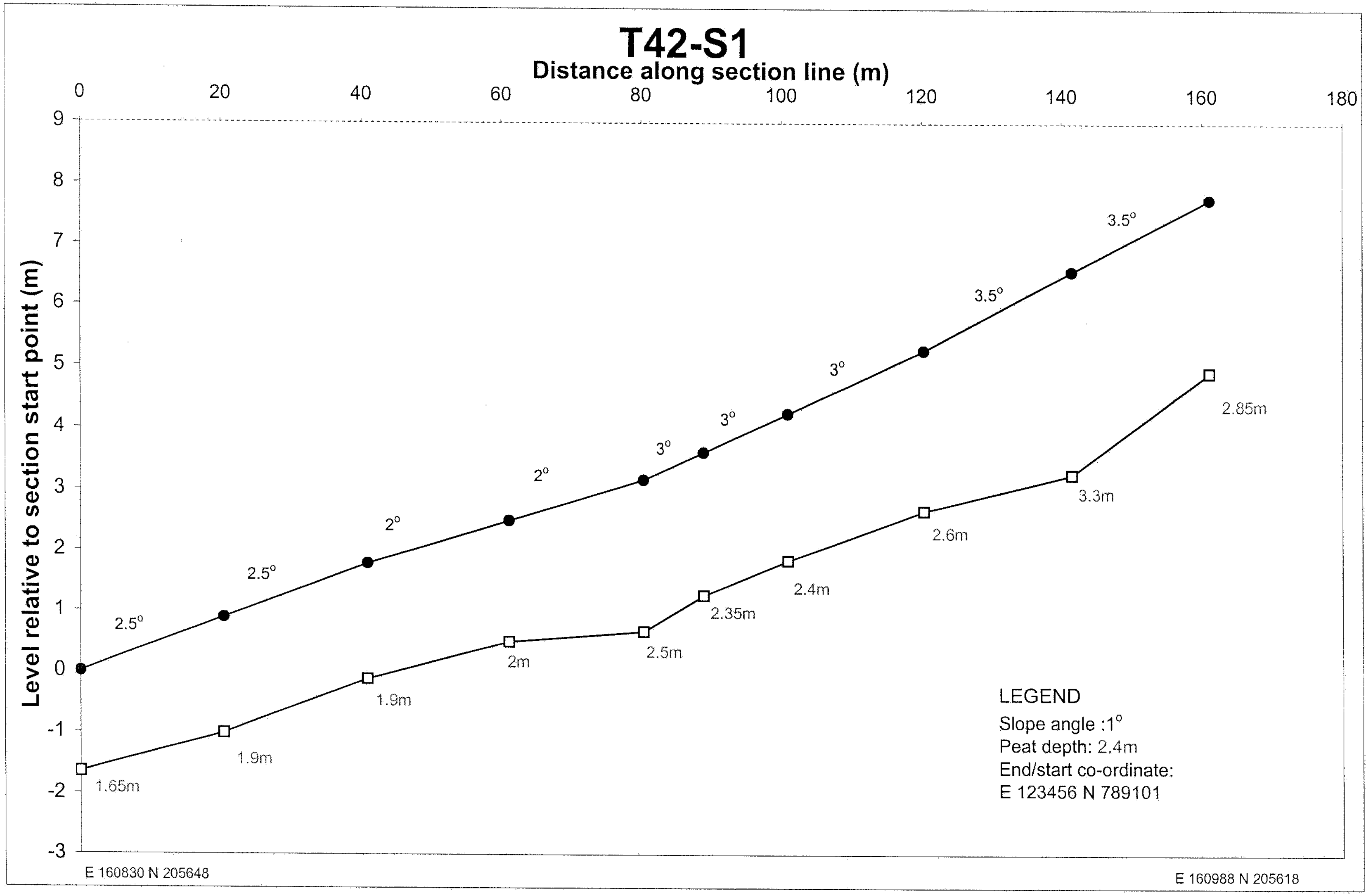

T38 - S6
Distance along section line (m)
0
20
40
60
80
100
120
140
Level relative to section start point (m)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
3°
6°
5.5°
7°
5.5°
6.5°
4°
0.9m
0.6m
1.4m
1.3m
1.6m
1.3m
2m
1.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160701 N 204986
E 160650 N 205101

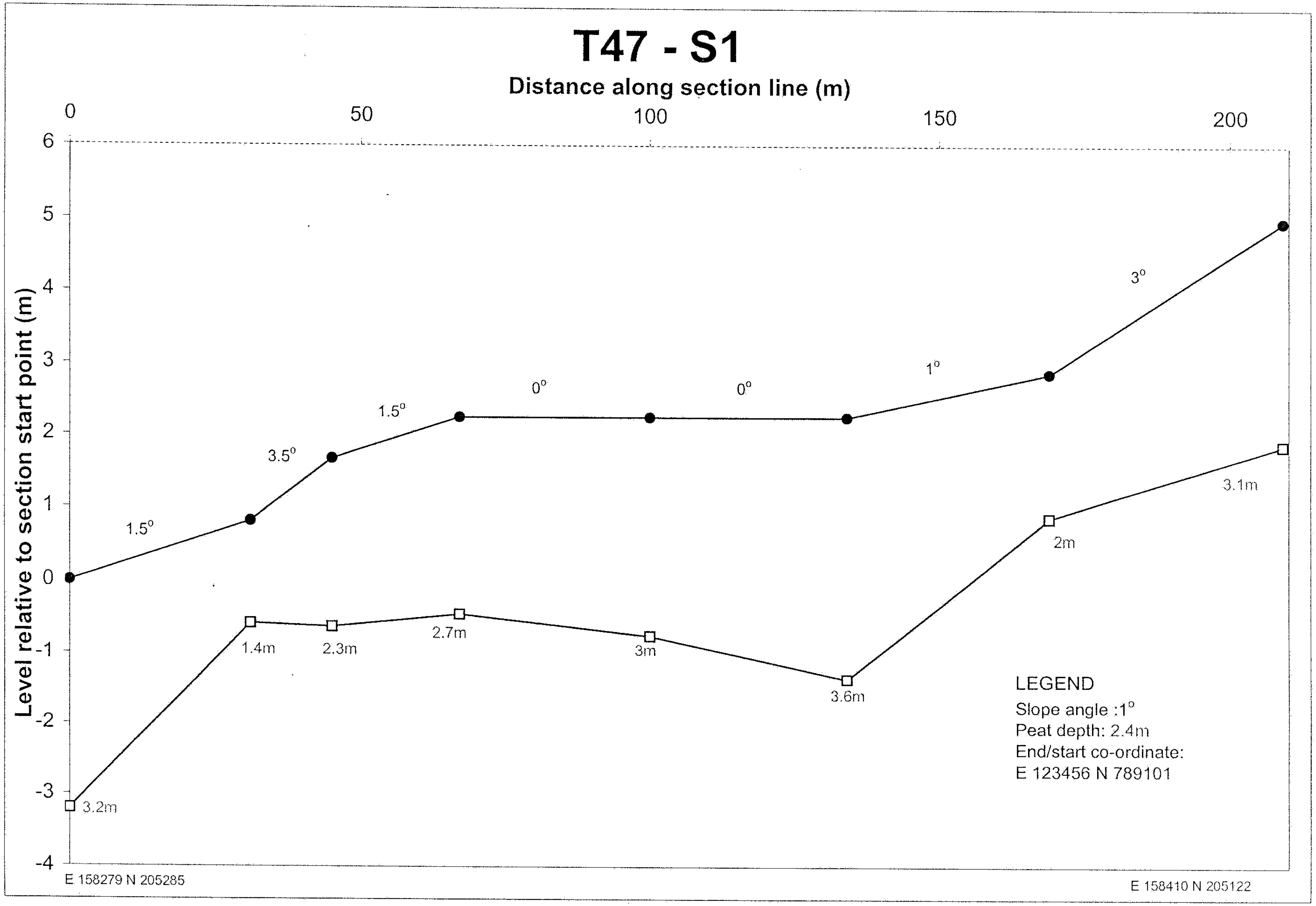


T41-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
7
6
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
2°
2.5°
4°
1.1m
1.2m
1.3m
1.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160805 N 205020
E 160734 N 205130

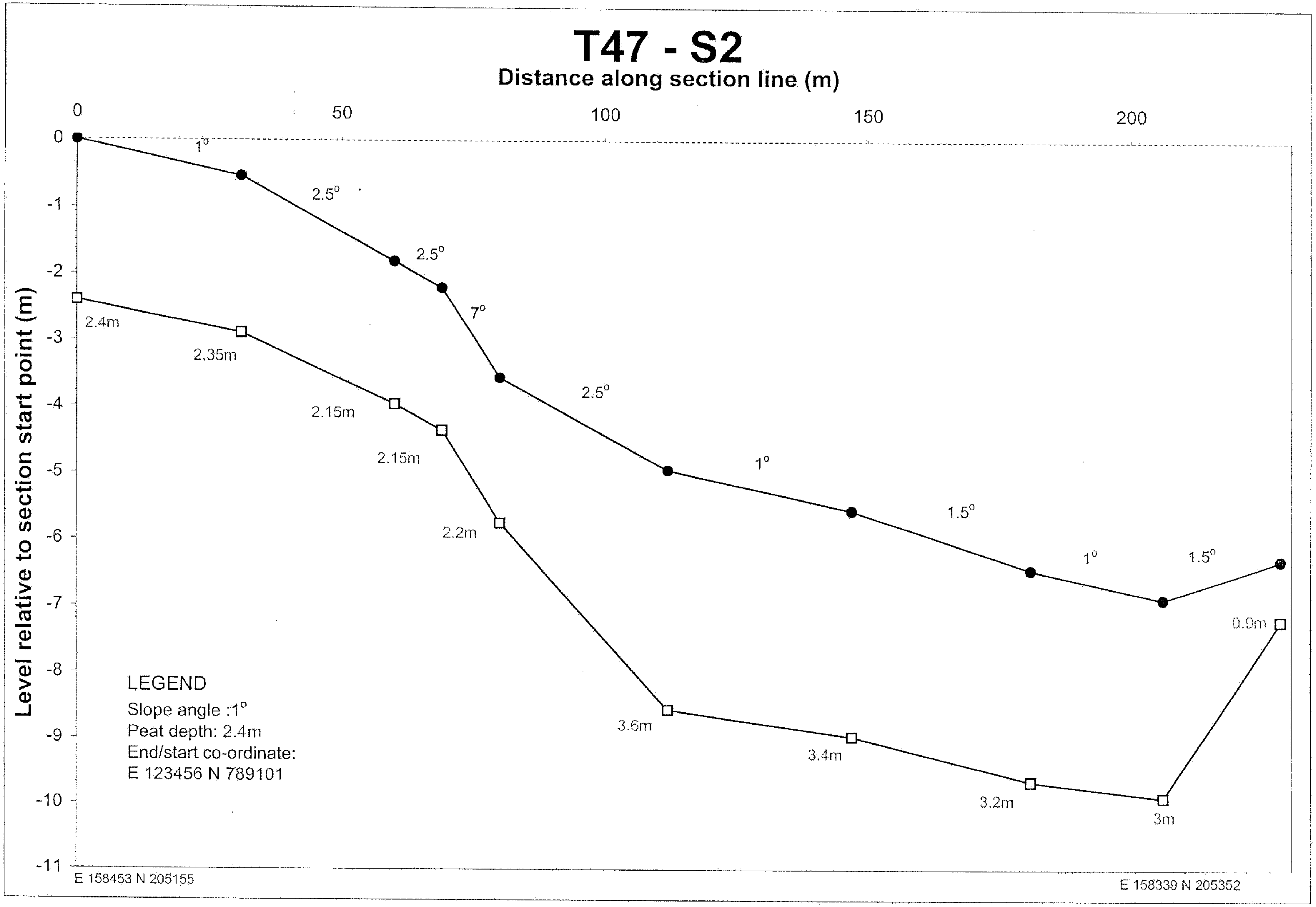


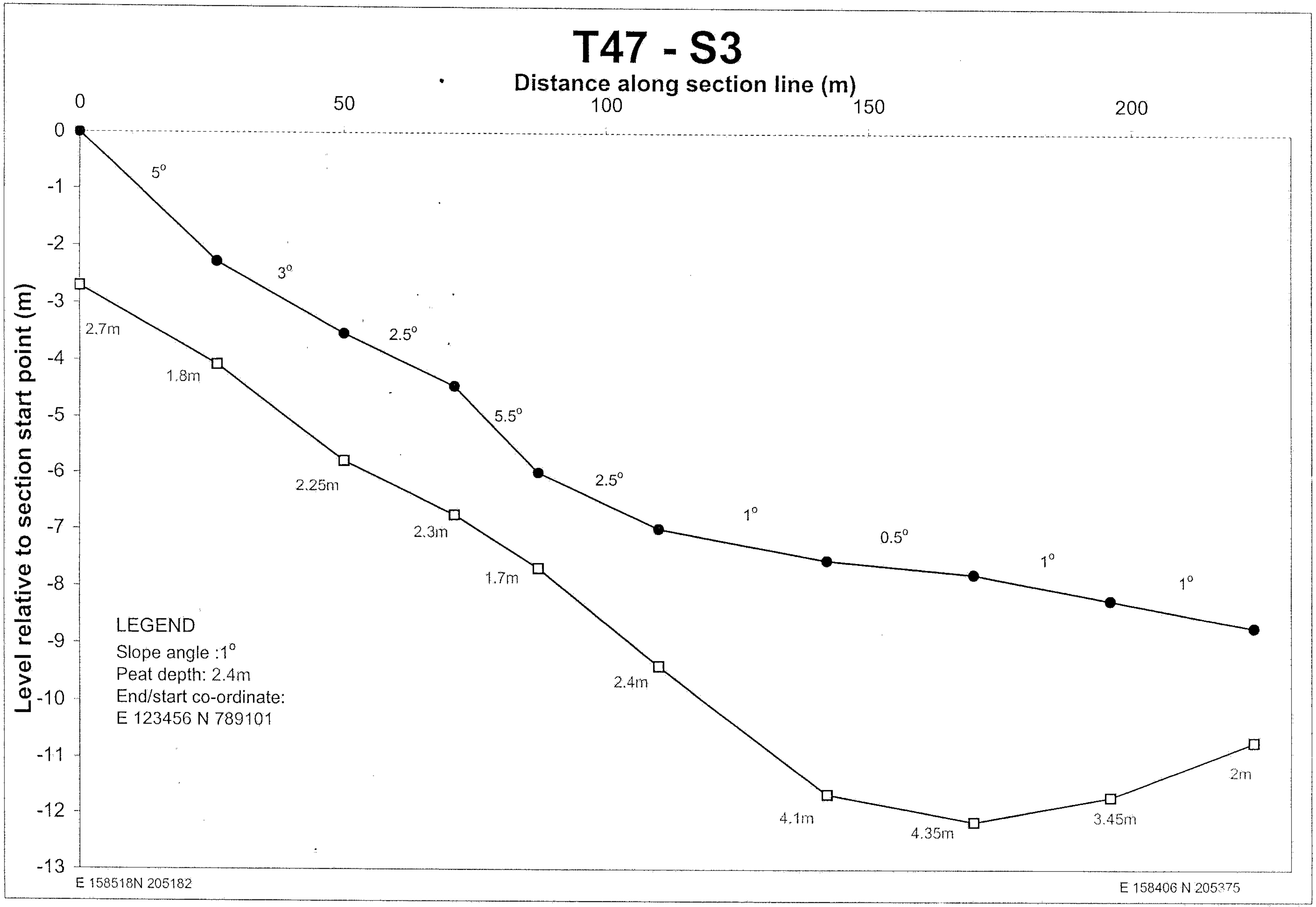
T41-S2
Distance along section line (m)
0
20
40
60
80
100
120
140
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
Level relative to section start point (m)
4.5°
1.8m
1.5m
6°
0.6m
3°
0.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160692 N 205116
E 160739 N 204997


T42-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
2.5°
2.5°
2°
2°
3°
3°
3°
3.5°
3.5°
1.65m
1.9m
1.9m
2m
2.5m
2.35m
2.4m
2.6m
3.3m
2.85m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160830 N 205648
E 160988 N 205618

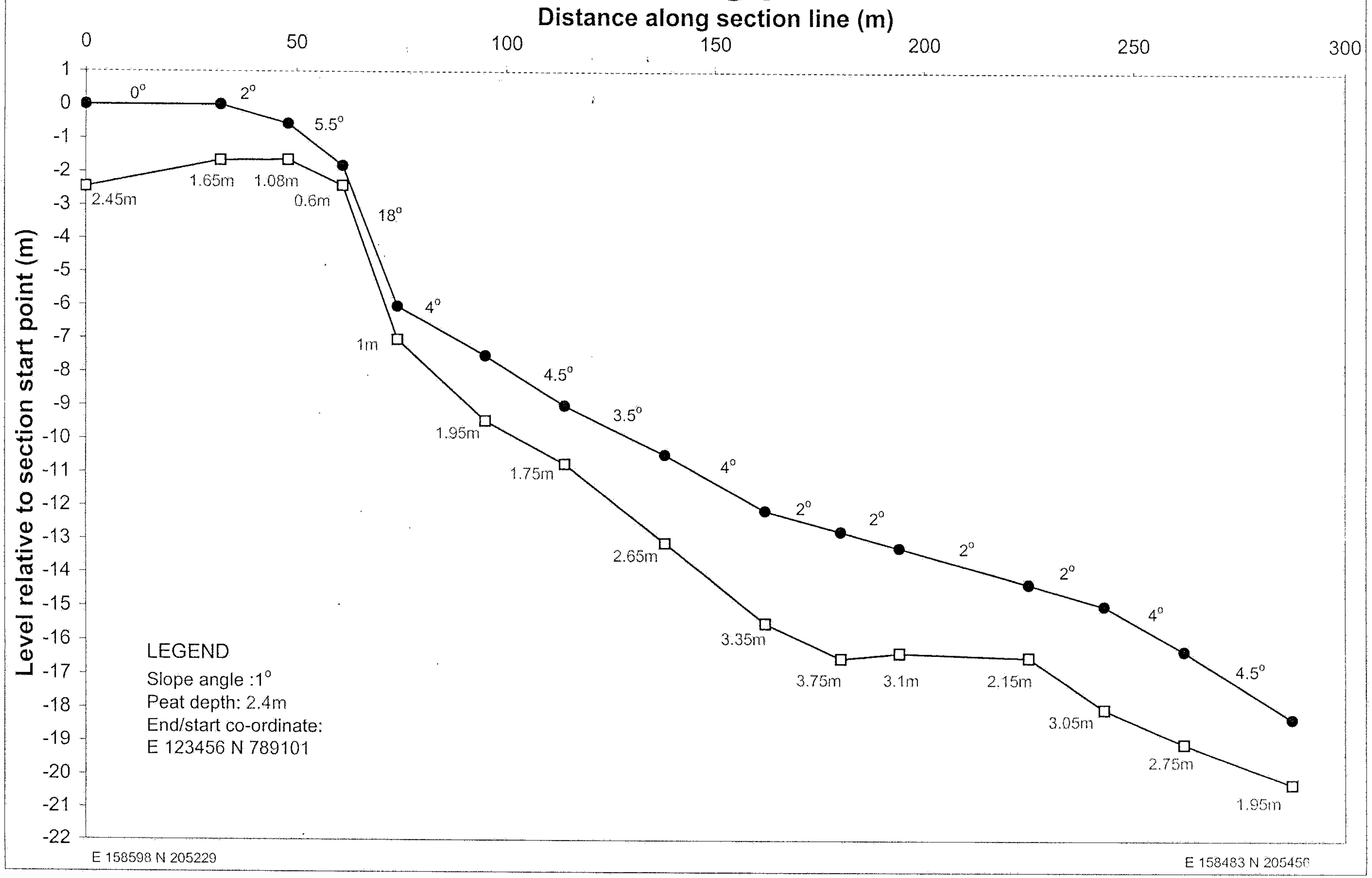


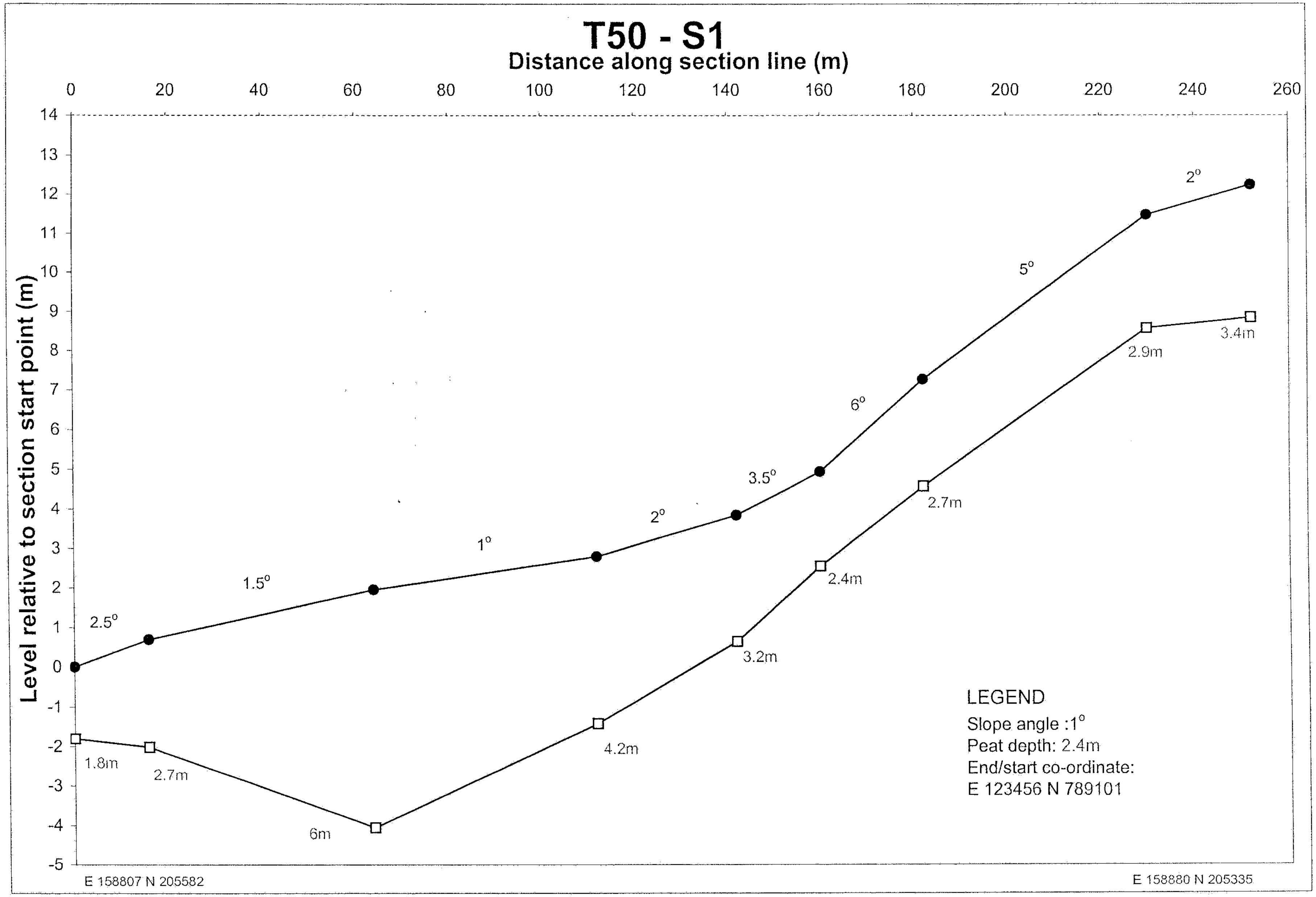
T47 - S1
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
-4
1.5°
3.5°
1.5°
0°
0°
1°
3°
3.2m
1.4m
2.3m
2.7m
3m
3.6m
2m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158279 N 205285
E 158410 N 205122


T47 - S2
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
1°
2.5°
2.5°
7°
2.5°
1°
1.5°
1°
1.5°
2.4m
2.35m
2.15m
2.15m
2.2m
3.6m
3.4m
3.2m
3m
0.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158453 N 205155
E 158339 N 205352

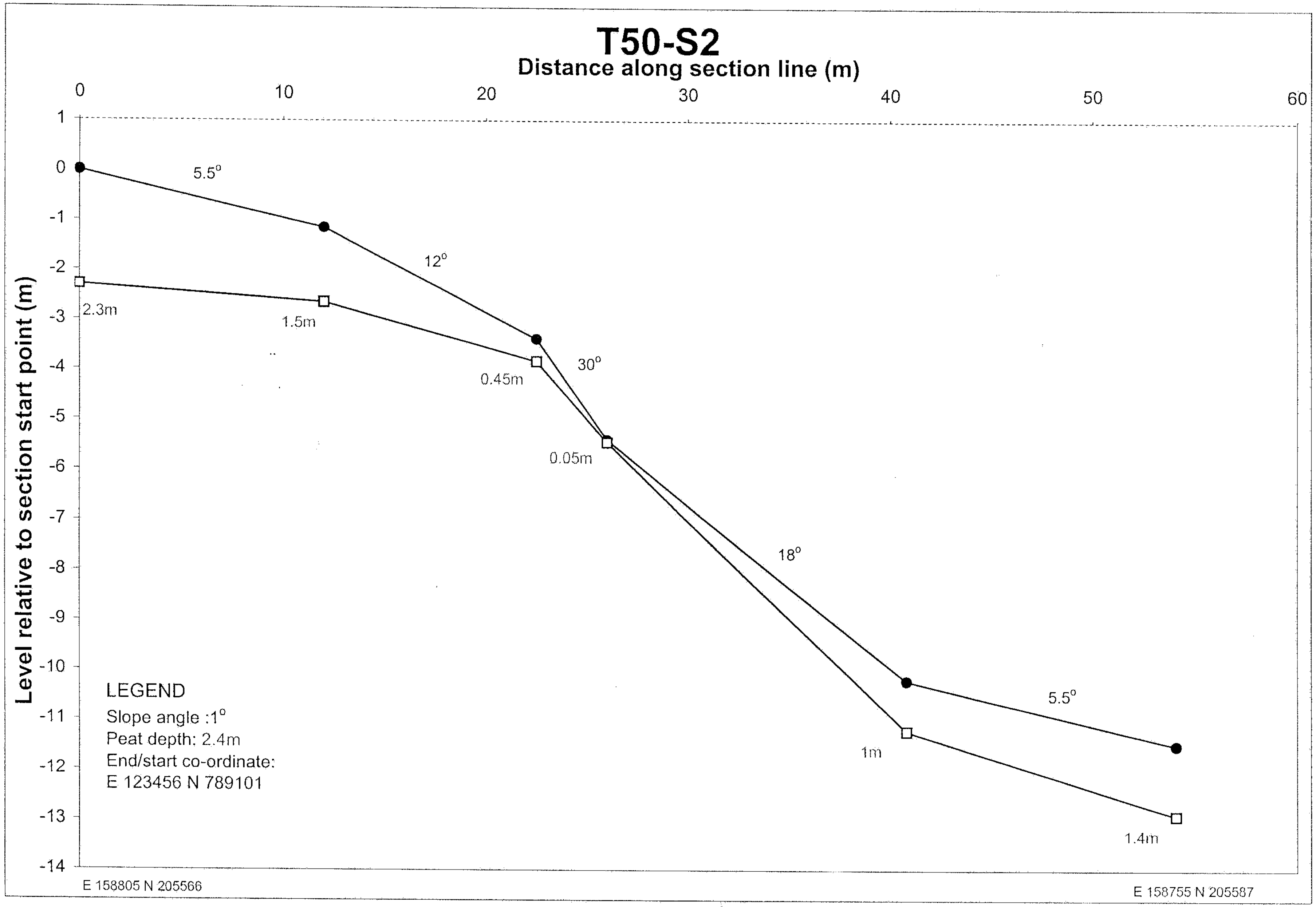

T47 - S3
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
5°
3°
2.5°
5.5°
2.5°
1°
0.5°
1°
1°
2.7m
1.8m
2.25m
2.3m
1.7m
2.4m
4.1m
4.35m
3.45m
2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158518N 205182
E 158406 N 205375

T47 - S4

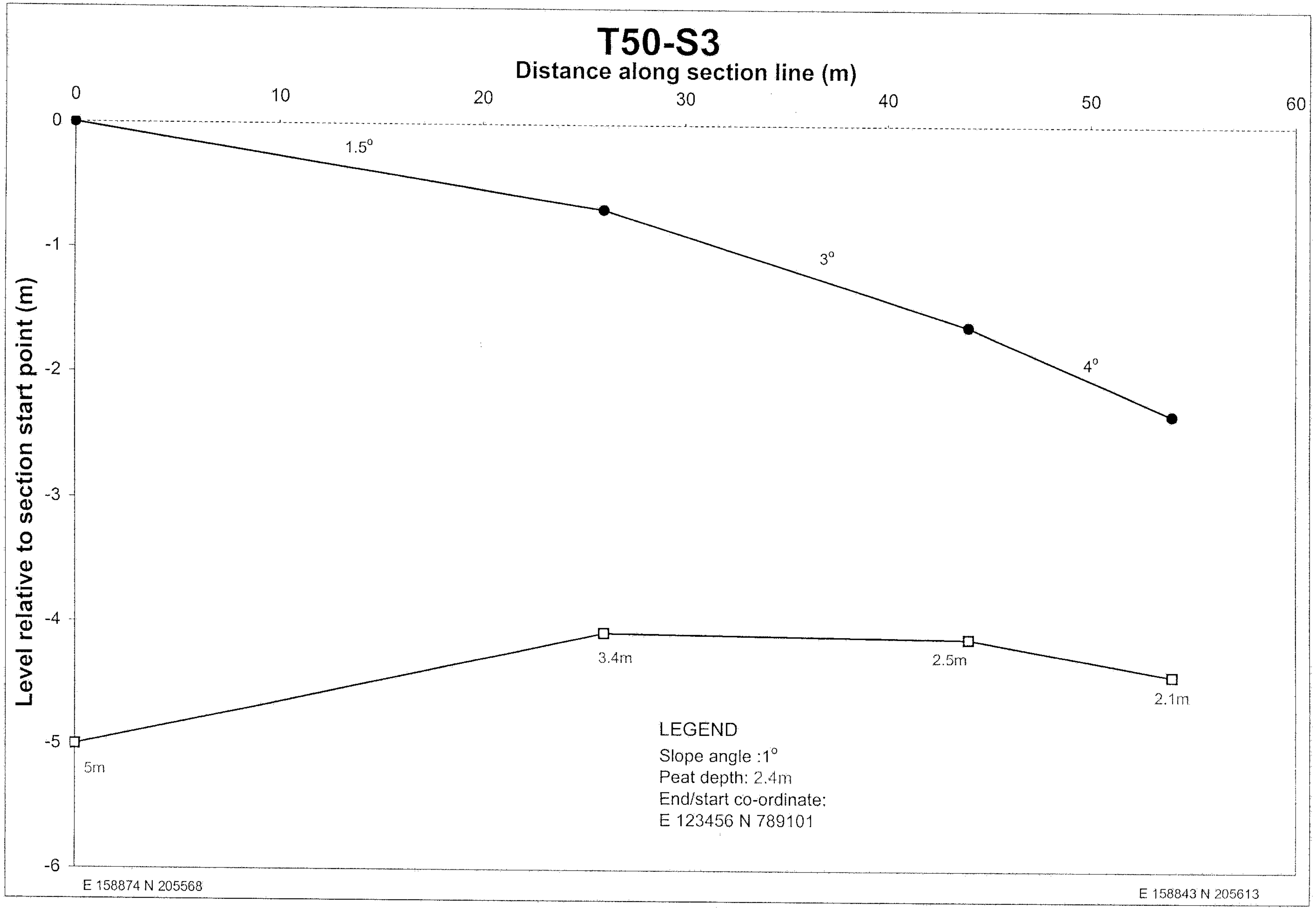

Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
0°
2°
5.5°
18°
4°
4.5°
3.5°
4°
2°
2°
2°
2°
4°
4.5°
2.45m
1.65m
1.08m
0.6m
1m
1.95m
1.75m
2.65m
3.35m
3.75m
3.1m
2.15m
3.05m
2.75m
1.95m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158598 N 205229
E 158483 N 20545

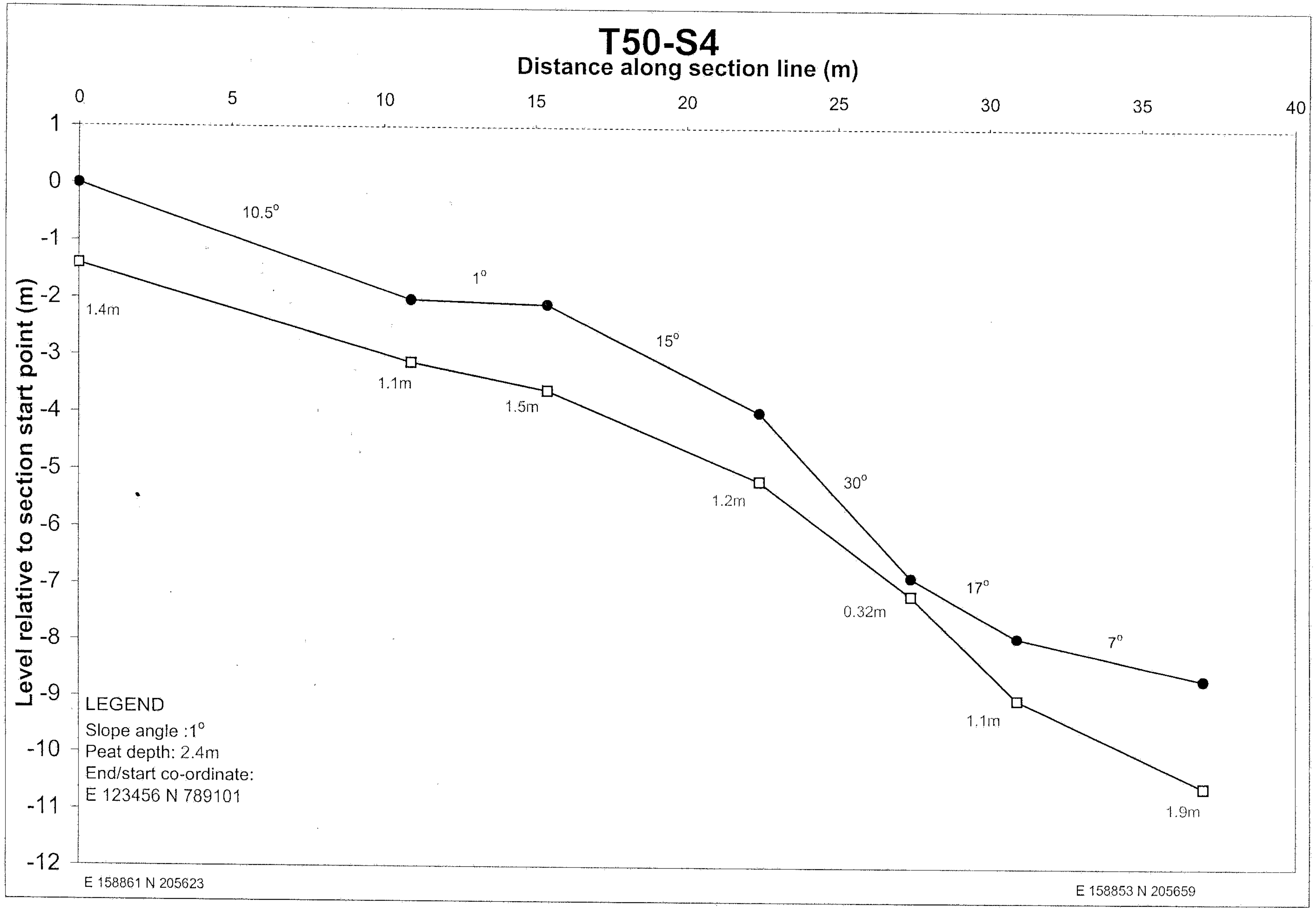


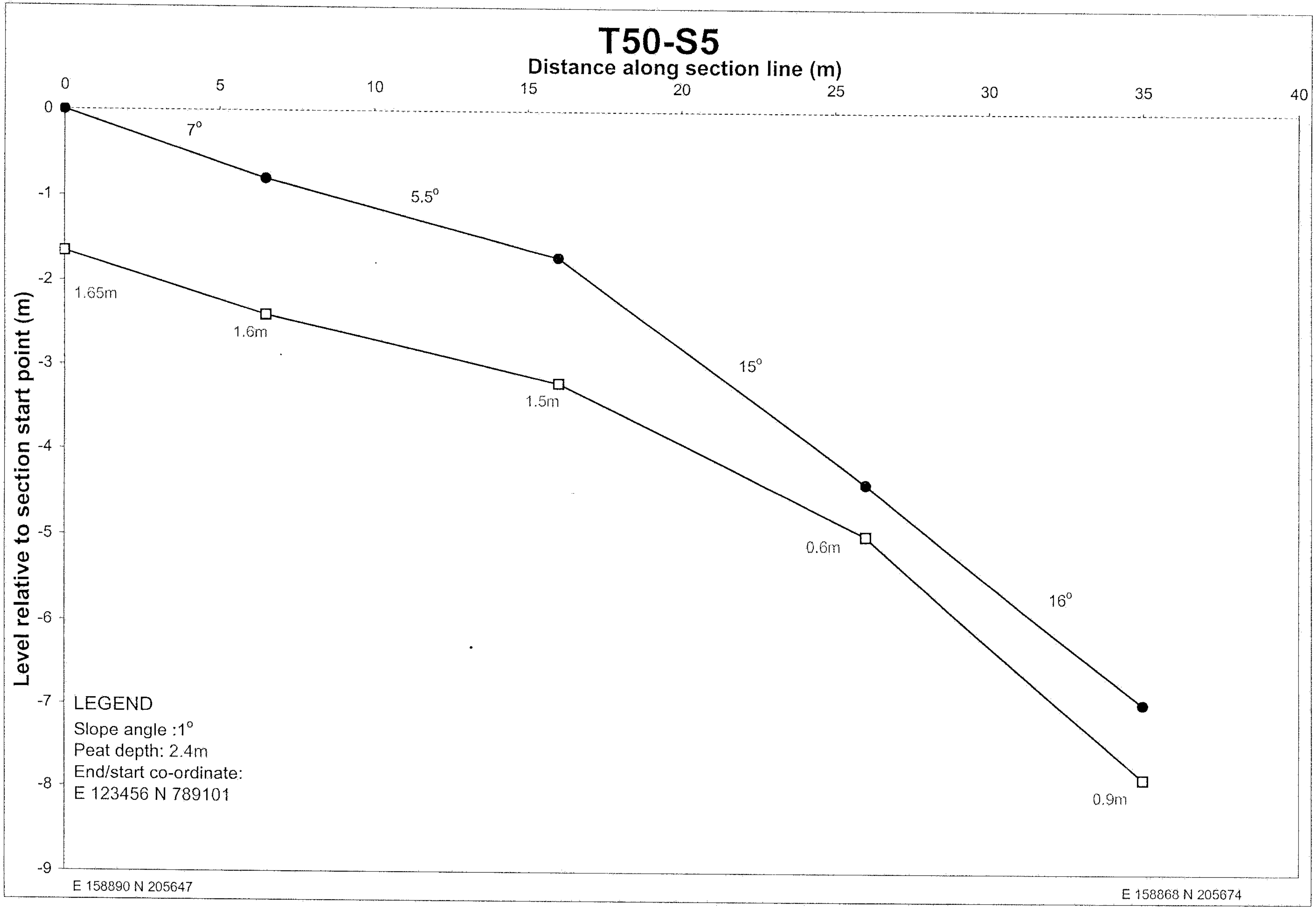
T50 - S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
Level relative to section start point (m)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
2.5°
1.5°
1°
2°
3.5°
6°
5°
2°
1.8m
2.7m
6m
4.2m
3.2m
2.4m
2.7m
2.9m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158807 N 205582
E 158880 N 205335



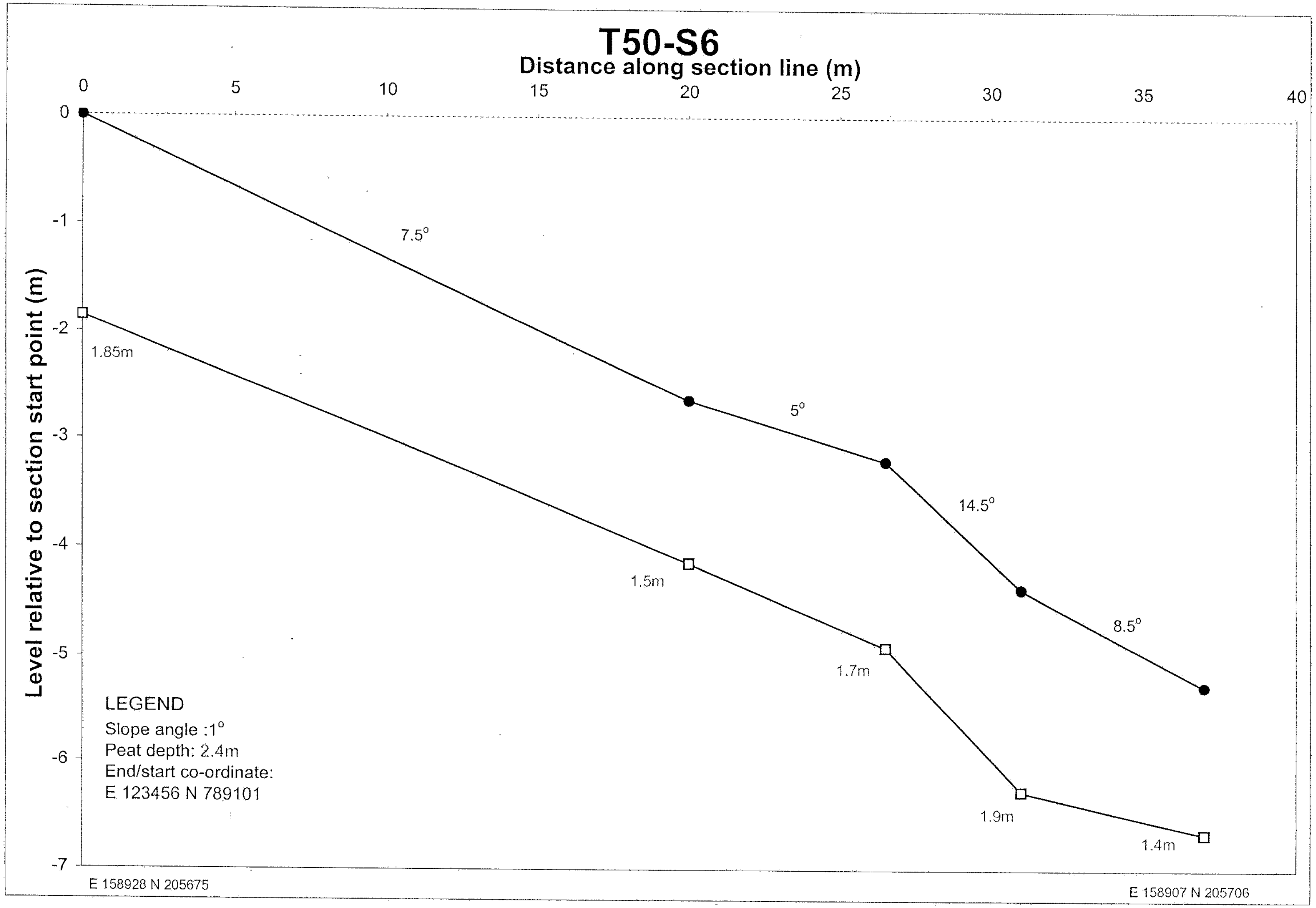
T50-S2
Distance along section line (m)
0
10
20
30
40
50
60
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
Level relative to section start point (m)
5.5°
12°
30°
18°
5.5°
2.3m
1.5m
0.45m
0.05m
1m
1.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158805 N 205566
E 158755 N 205587


T50-S3
Distance along section line (m)
0
10
20
30
40
50
60
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
1.5°
3°
4°
3.4m
2.5m
2.1m
5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158874 N 205568
E 158843 N 205613

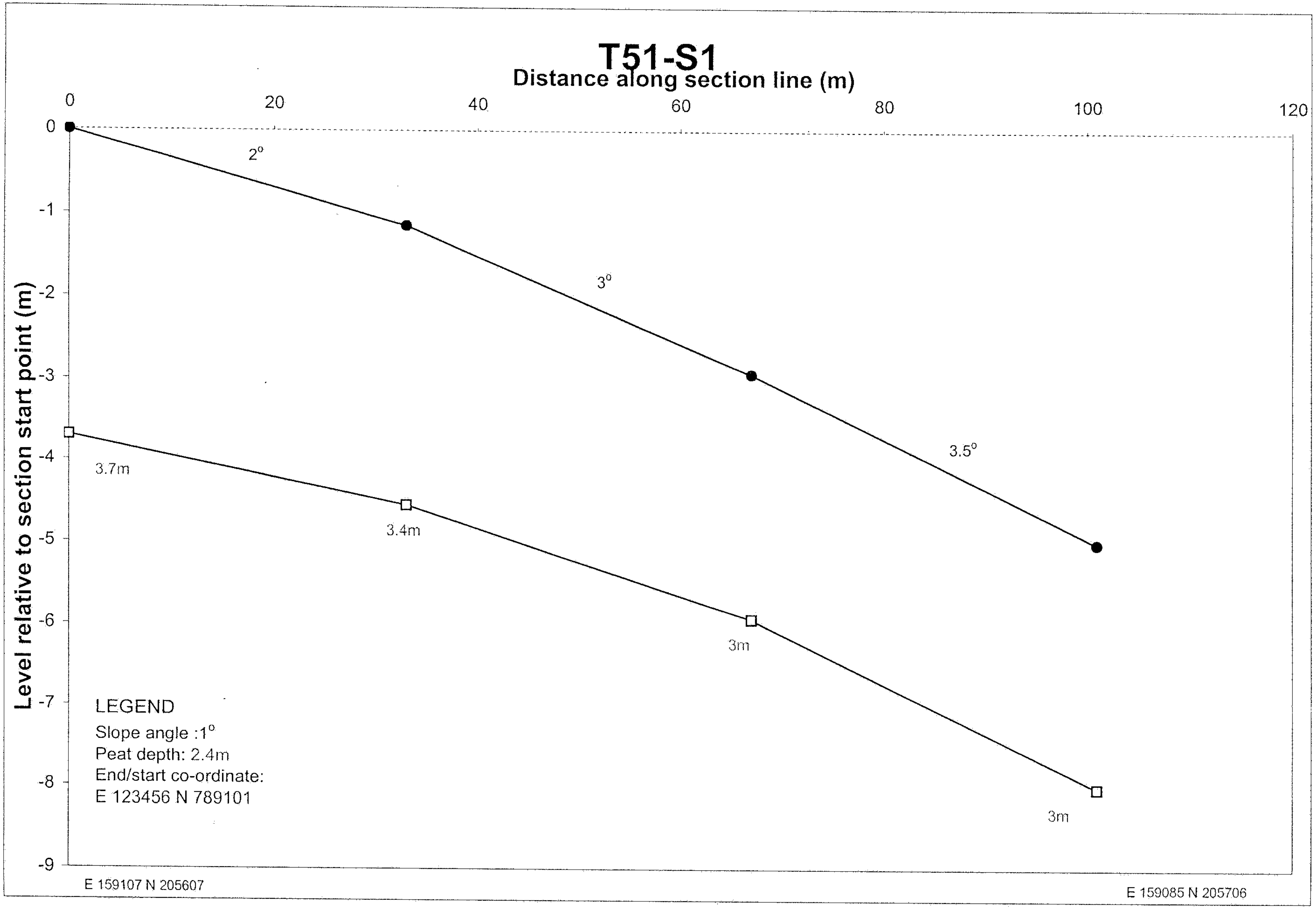

T50-S4
Distance along section line (m)
0
5
10
15
20
25
30
35
40
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
Level relative to section start point (m)
10.5°
1°
15°
30°
17°
7°
1.4m
1.1m
1.5m
1.2m
0.32m
1.1m
1.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158861 N 205623
E 158853 N 205659



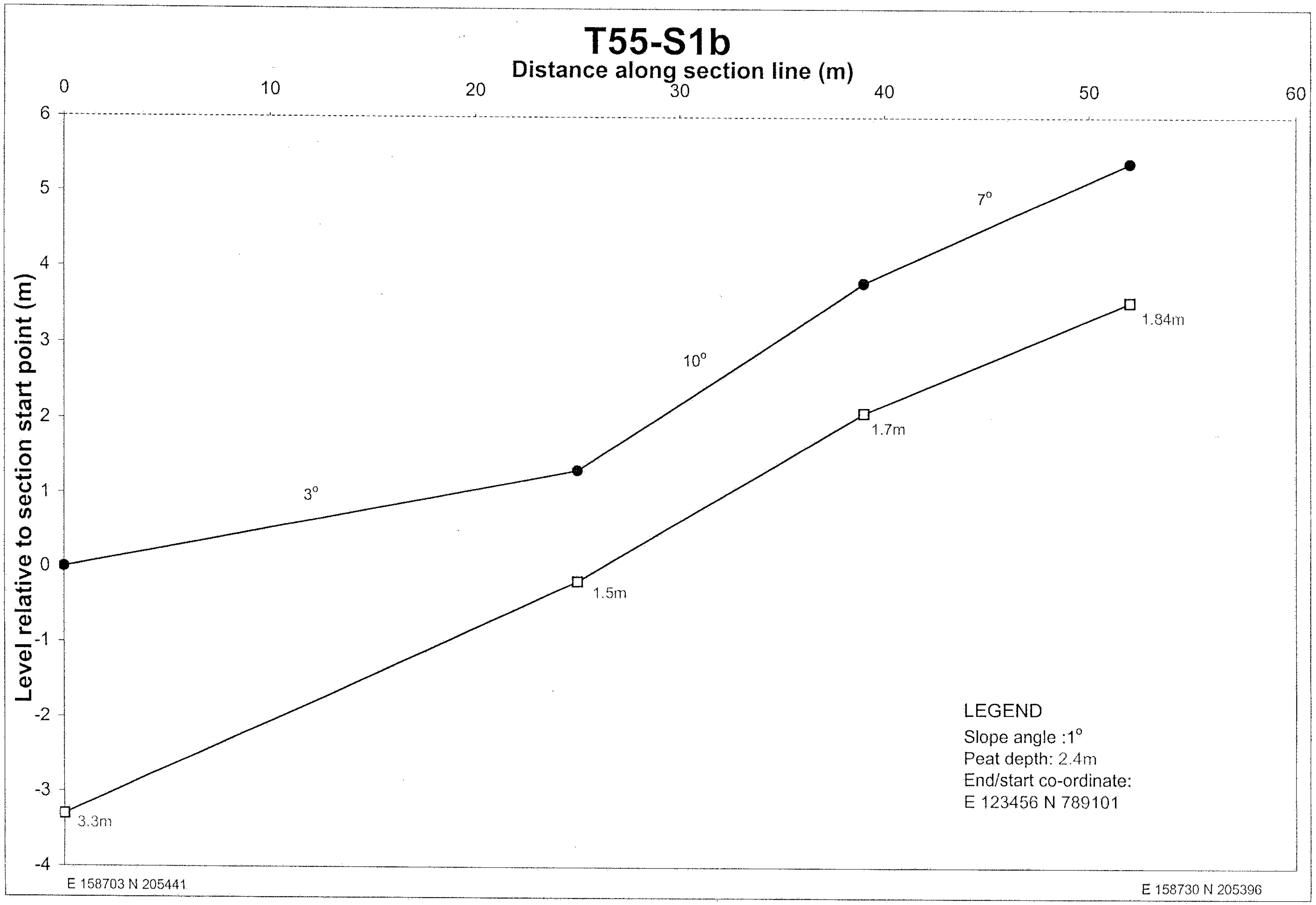
T50-S5
Distance along section line (m)
0
5
10
15
20
25
30
35
40
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
7°
5.5°
15°
16°
1.65m
1.6m
1.5m
0.6m
0.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158890 N 205647
E 158868 N 205674



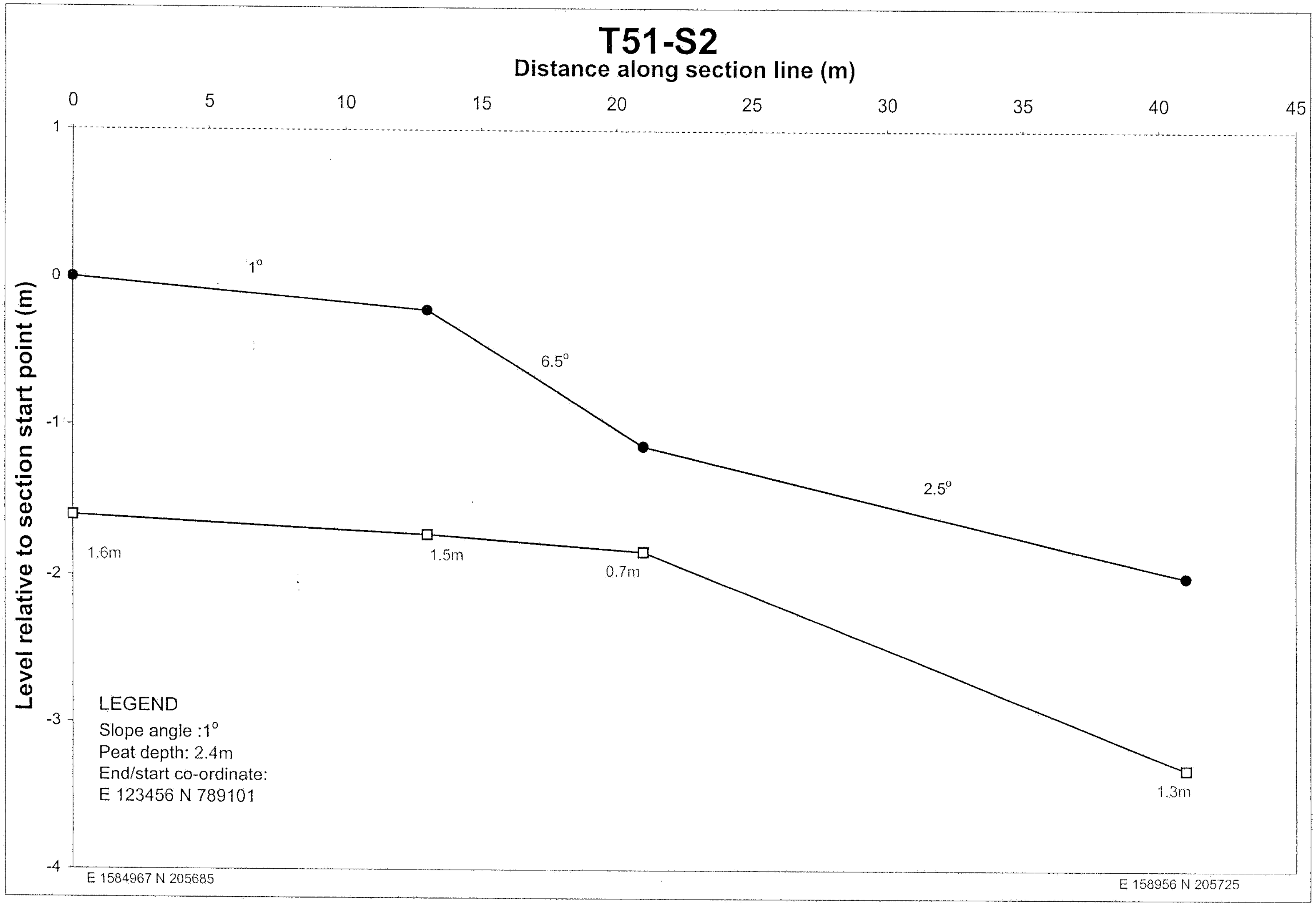
T50-S6
Distance along section line (m)
0
5
10
15
20
25
30
35
40
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
7.5°
5°
14.5°
8.5°
1.85m
1.5m
1.7m
1.9m
1.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158928 N 205675
E 158907 N 205706



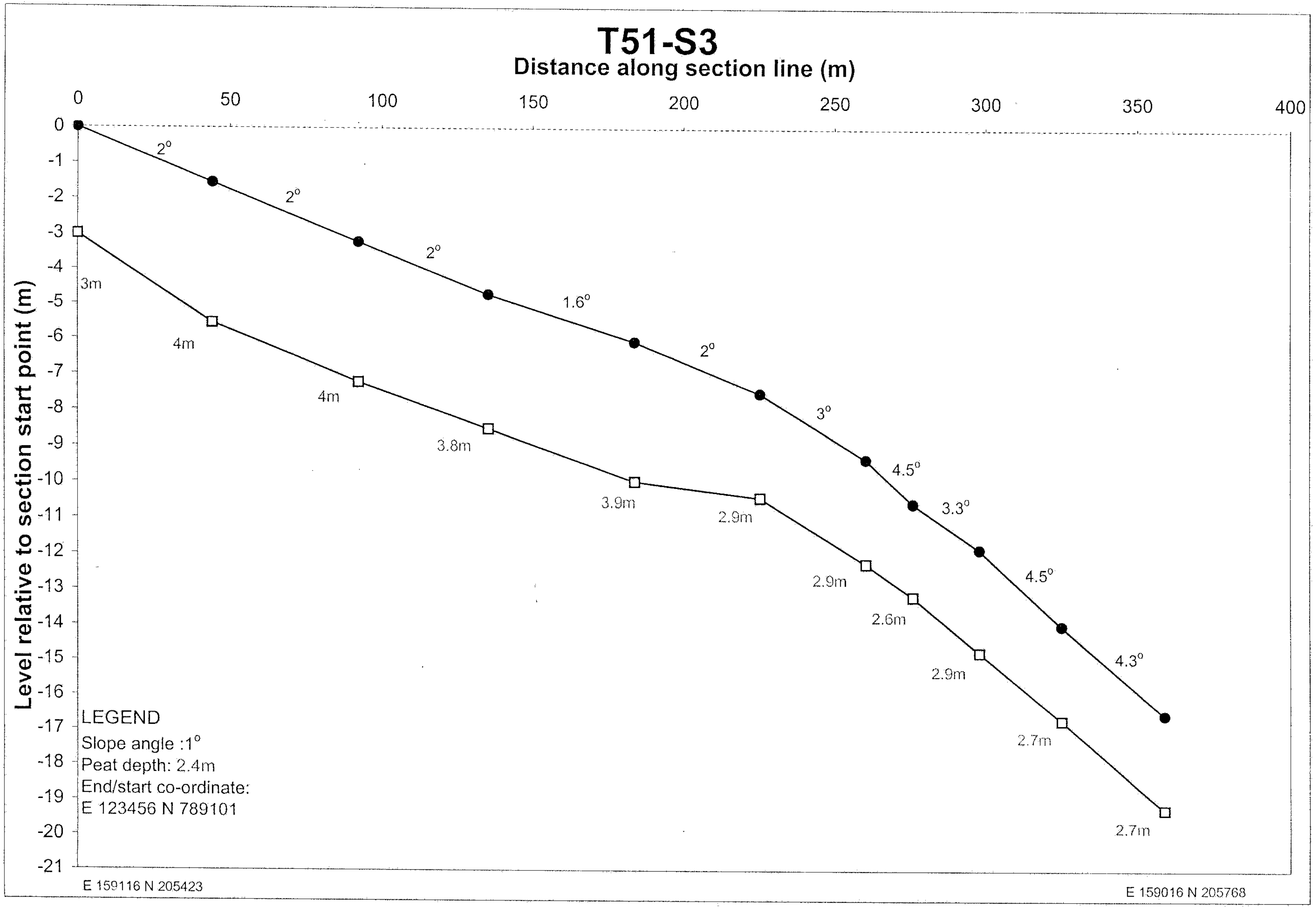
T51-S1
Distance along section line (m)
0
20
40
60
80
100
120
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
Level relative to section start point (m)
2°
3°
3.5°
3.7m
3.4m
3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159107 N 205607
E 159085 N 205706

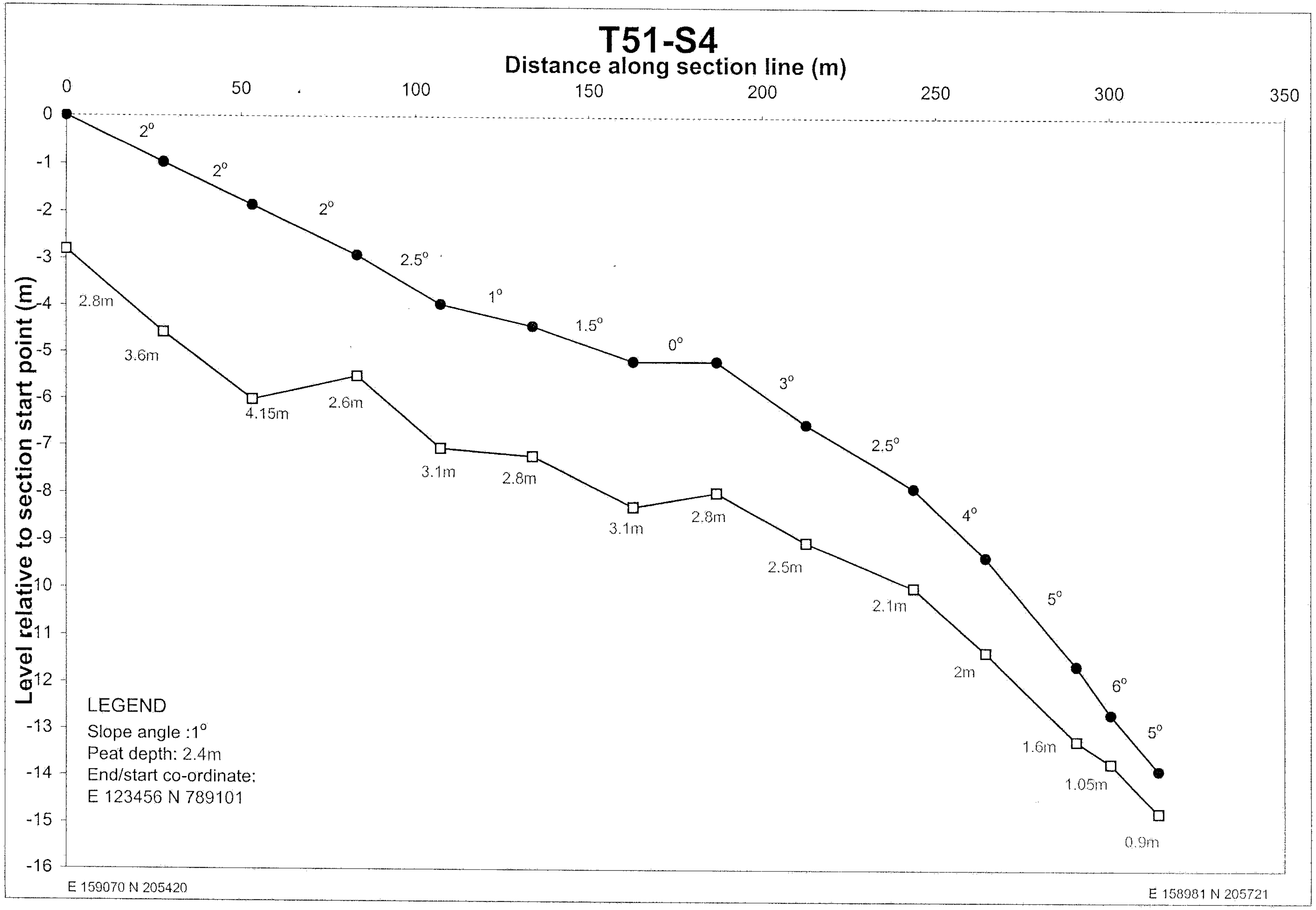


T55-S1b
Distance along section line (m)
0
10
20
30
40
50
60
6
5
4
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
7°
10°
3°
1.84m
1.7m
1.5m
3.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158703 N 205441
E 158730 N 205396

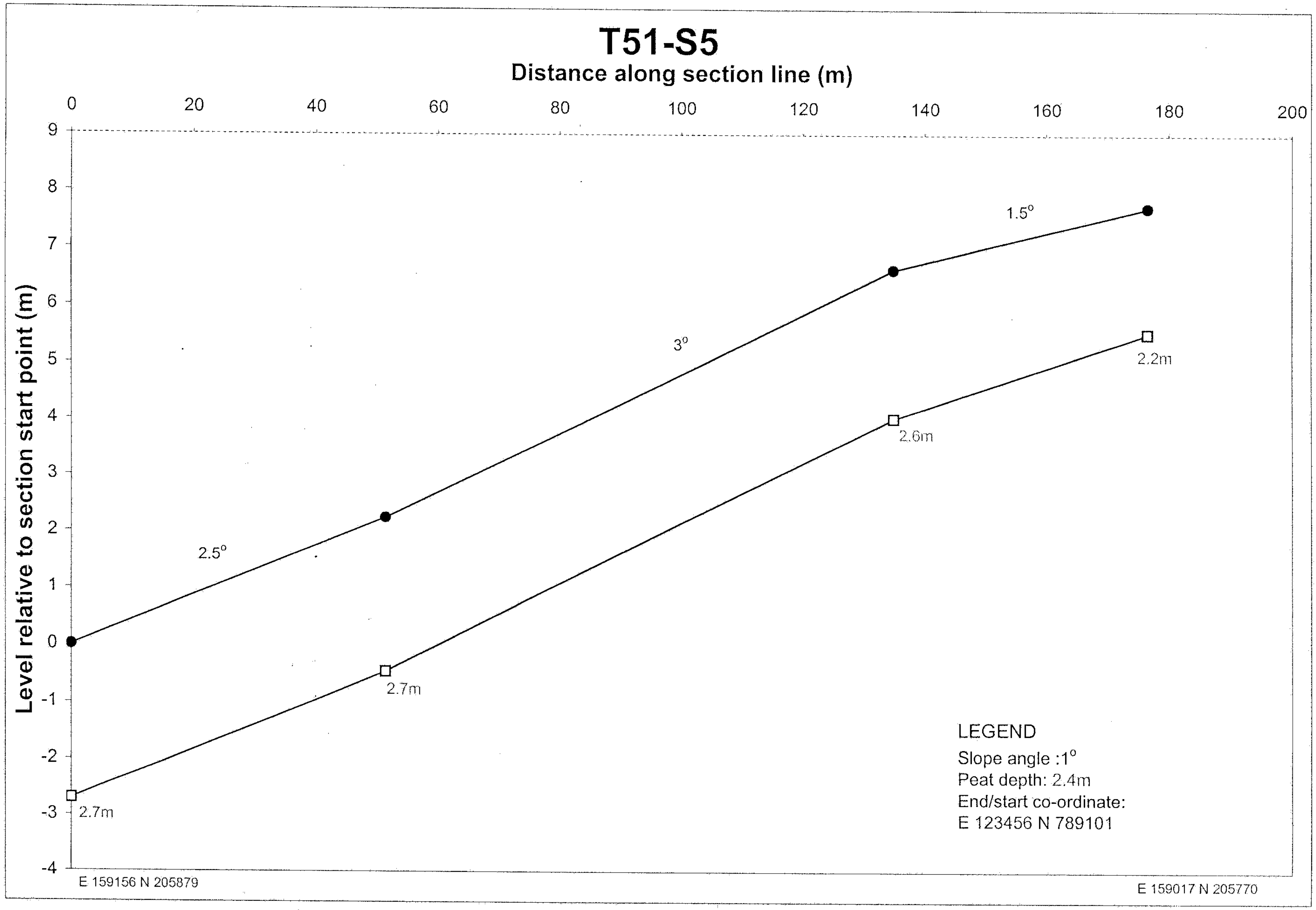


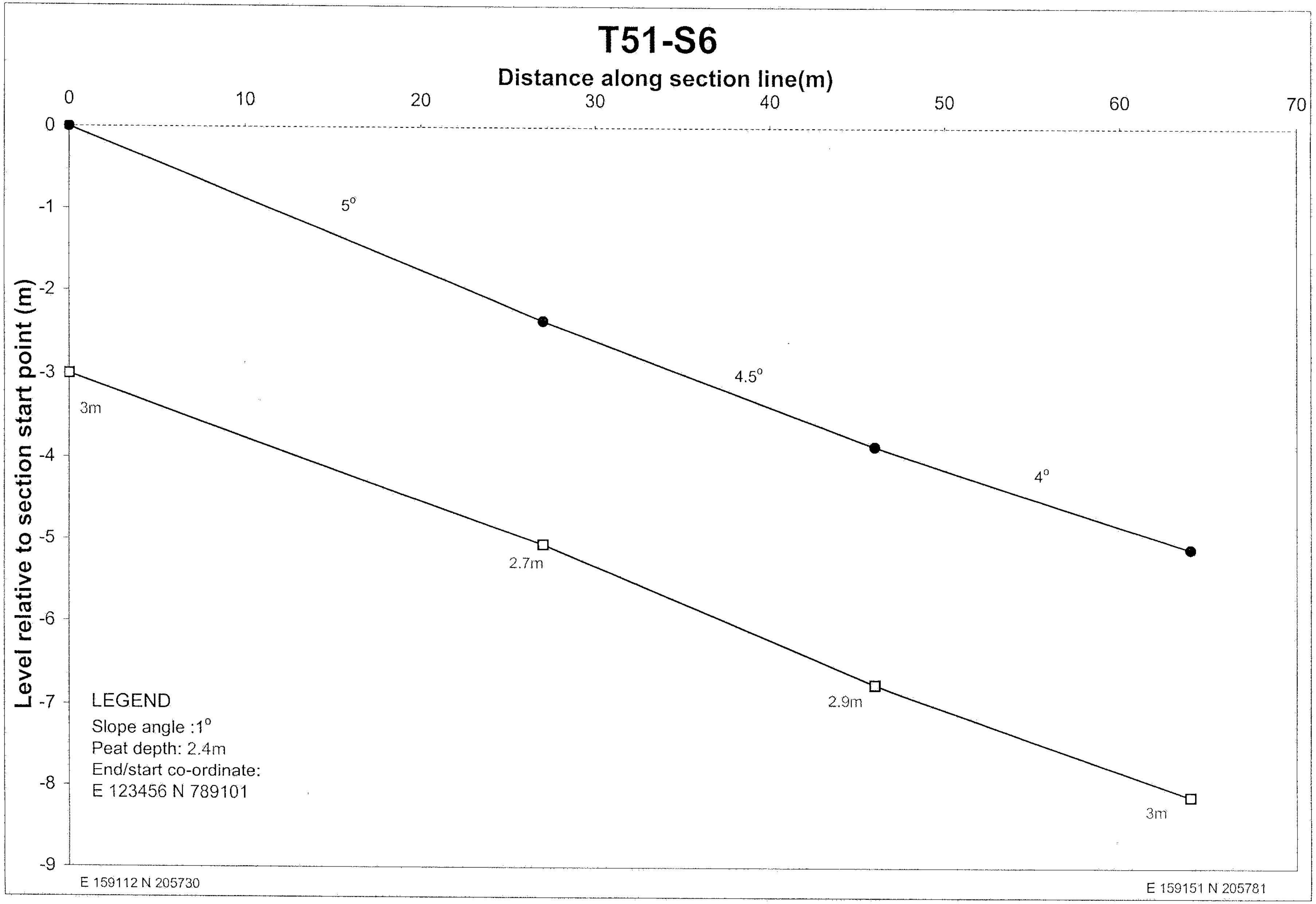
T51-S2
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1°
6.5°
2.5°
1.6m
1.5m
0.7m
1.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 1584967 N 205685
E 158956 N 205725

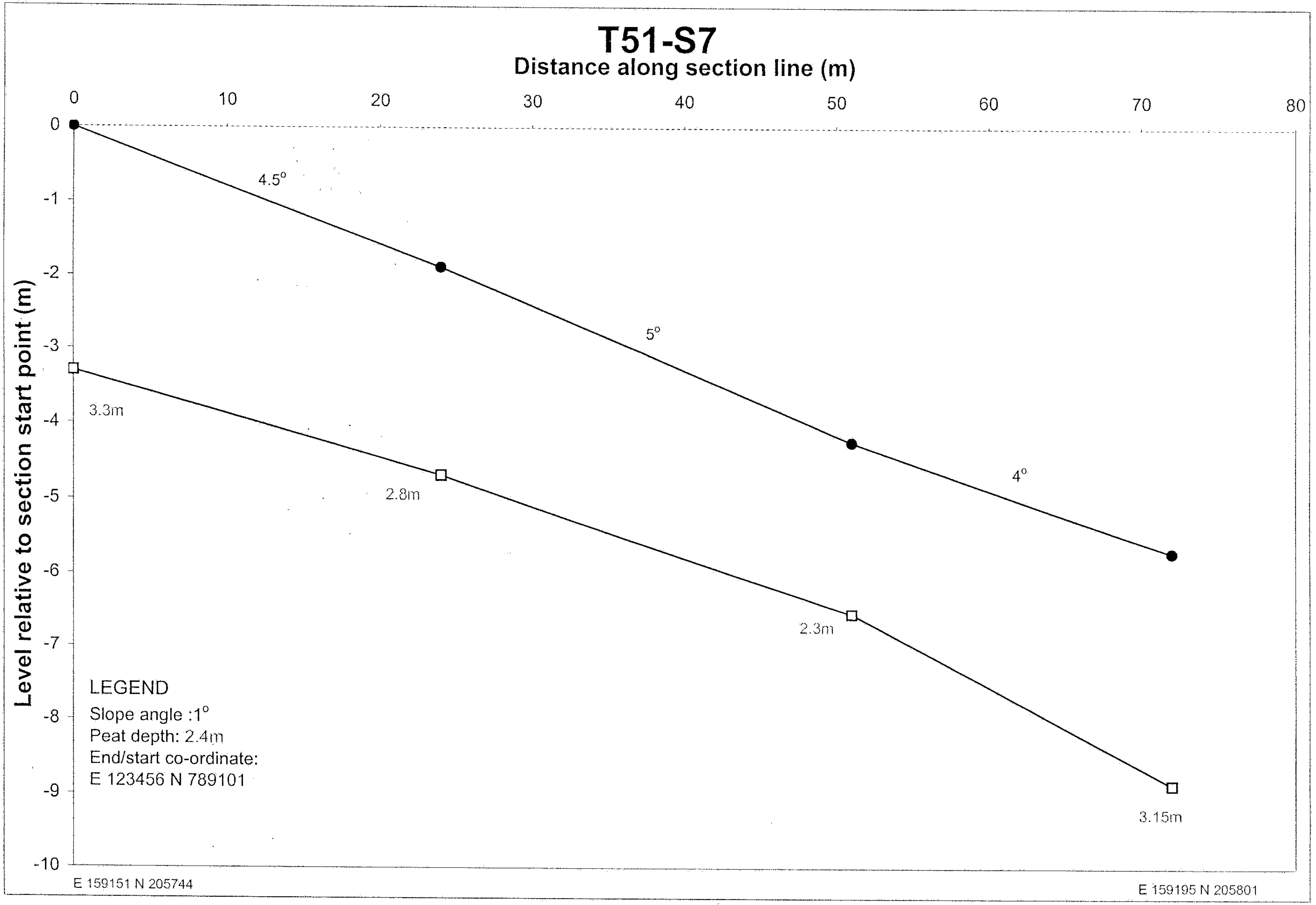

T51-S3
Distance along section line (m)
0
50
100
150
200
250
300
350
400
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
2°
2°
2°
1.6°
2°
3°
4.5°
3.3°
4.5°
4.3°
3m
4m
4m
3.8m
3.9m
2.9m
2.9m
2.6m
2.9m
2.7m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159116 N 205423
E 159016 N 205768



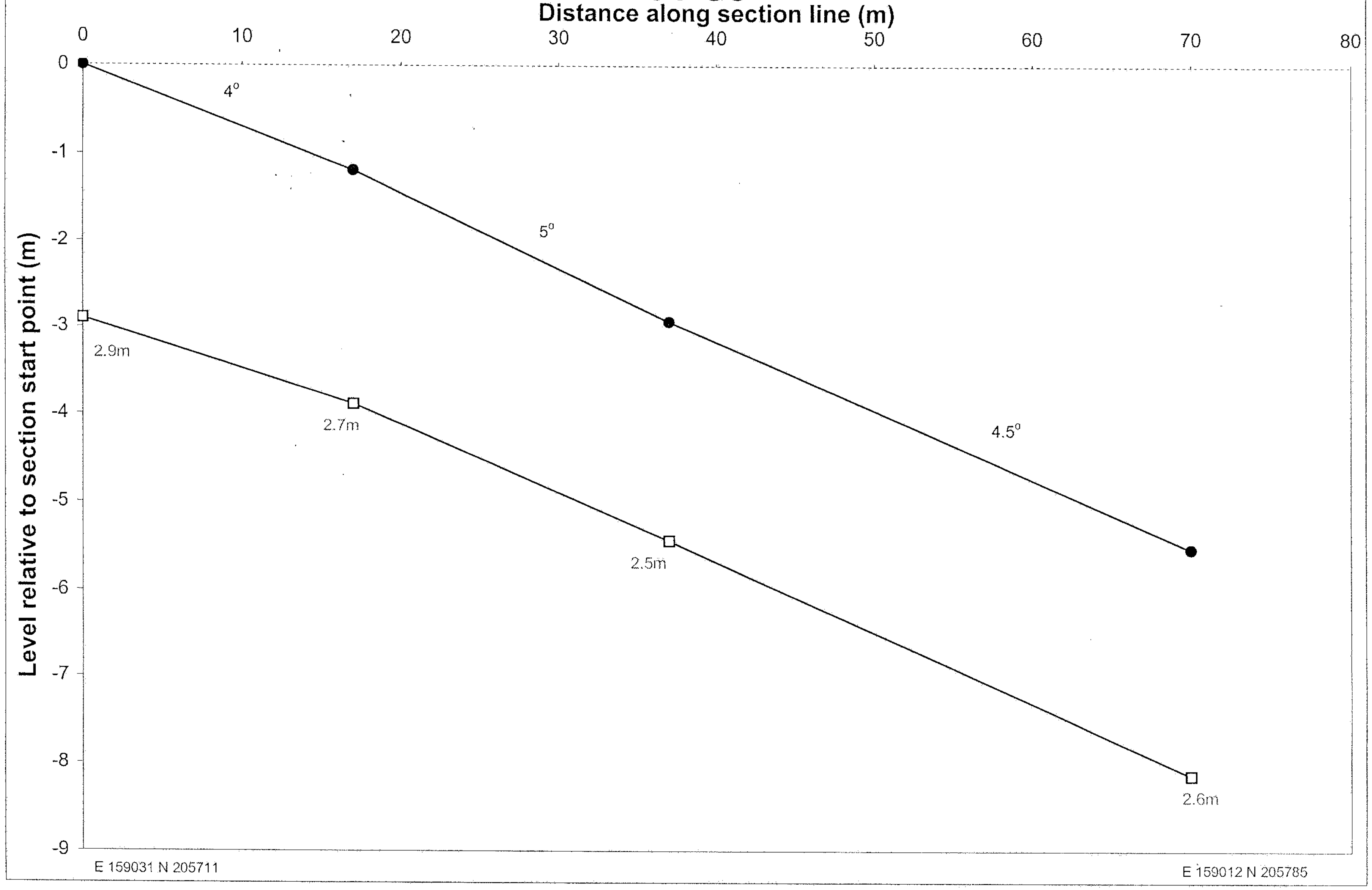
T51-S4
Distance along section line (m)
0
50
100
150
200
250
300
350
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
2°
2°
2°
2.5°
1°
1.5°
0°
3°
2.5°
4°
5°
6°
5°
2.8m
3.6m
4.15m
2.6m
3.1m
2.8m
3.1m
2.8m
2.5m
2.1m
2m
1.6m
1.05m
0.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159070 N 205420
E 158981 N 205721


T51-S5
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
Level relative to section start point (m)
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
2.5°
3°
1.5°
2.7m
2.7m
2.6m
2.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159156 N 205879
E 159017 N 205770

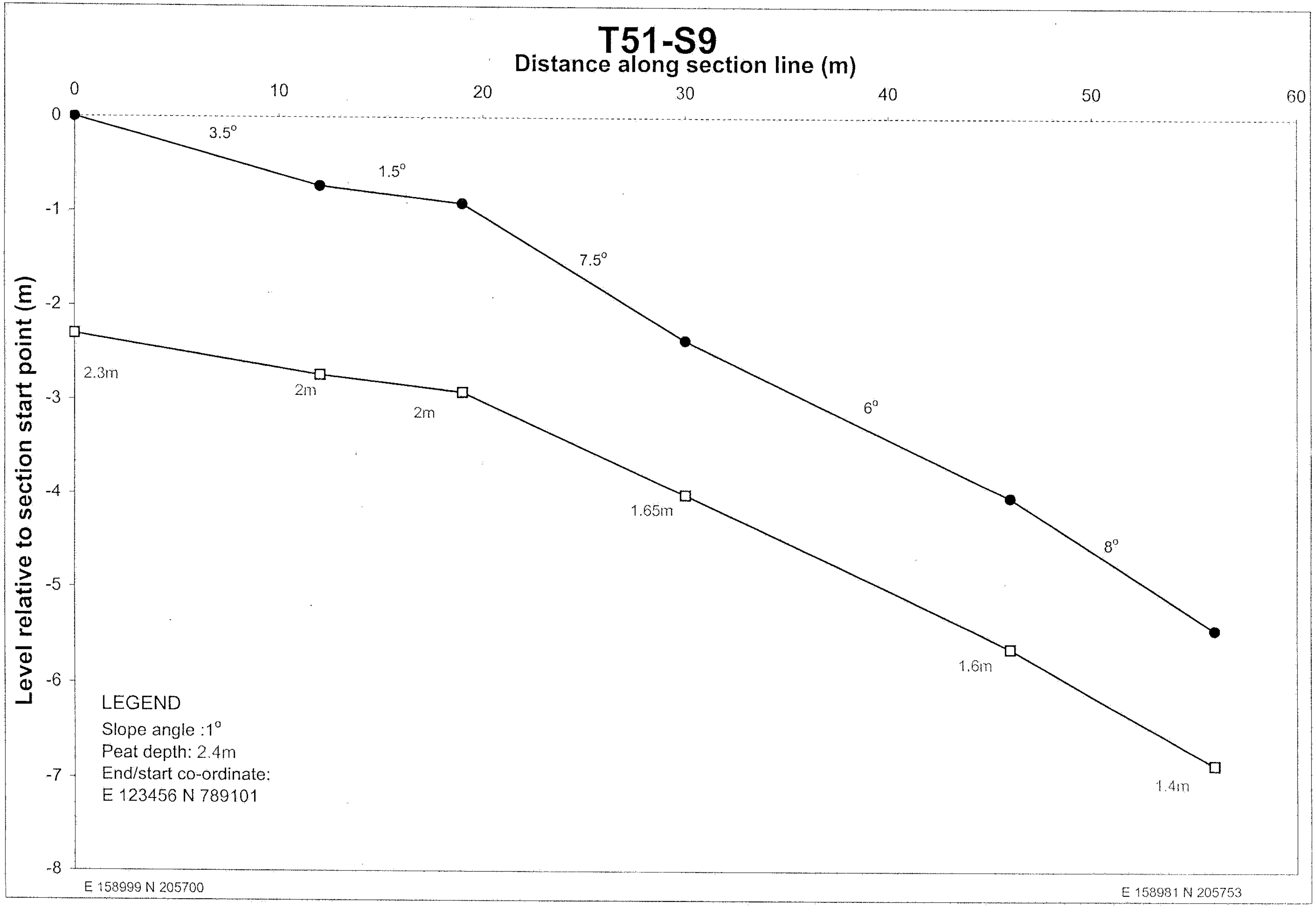

T51-S6
Distance along section line(m)
0
10
20
30
40
50
60
70
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
5°
4.5°
4°
3m
2.7m
2.9m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159112 N 205730
E 159151 N 205781


T51-S7
Distance along section line (m)
0
10
20
30
40
50
60
70
80
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
4.5°
5°
4°
3.3m
2.8m
2.3m
3.15m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159151 N 205744
E 159195 N 205801

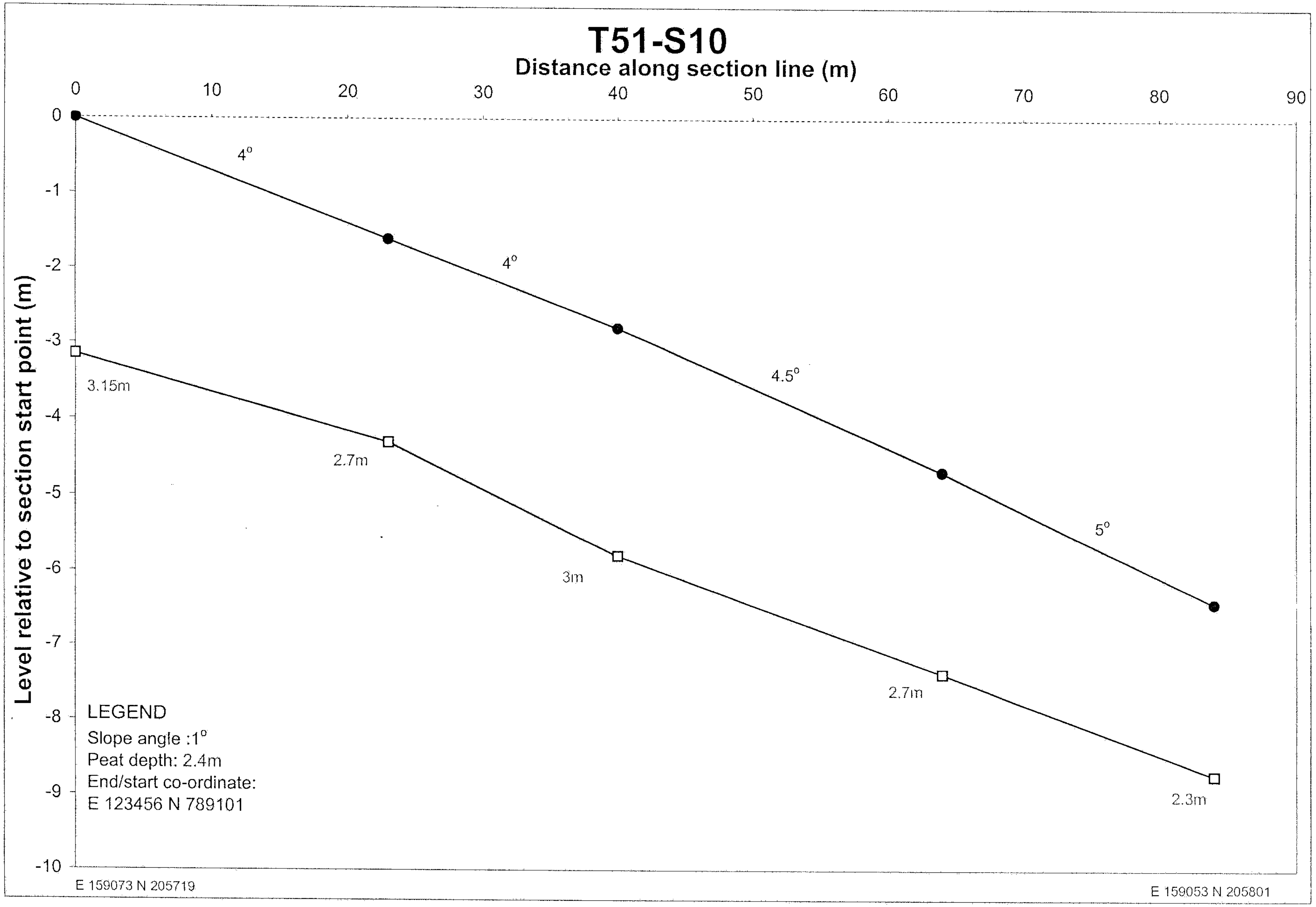
T51-S8



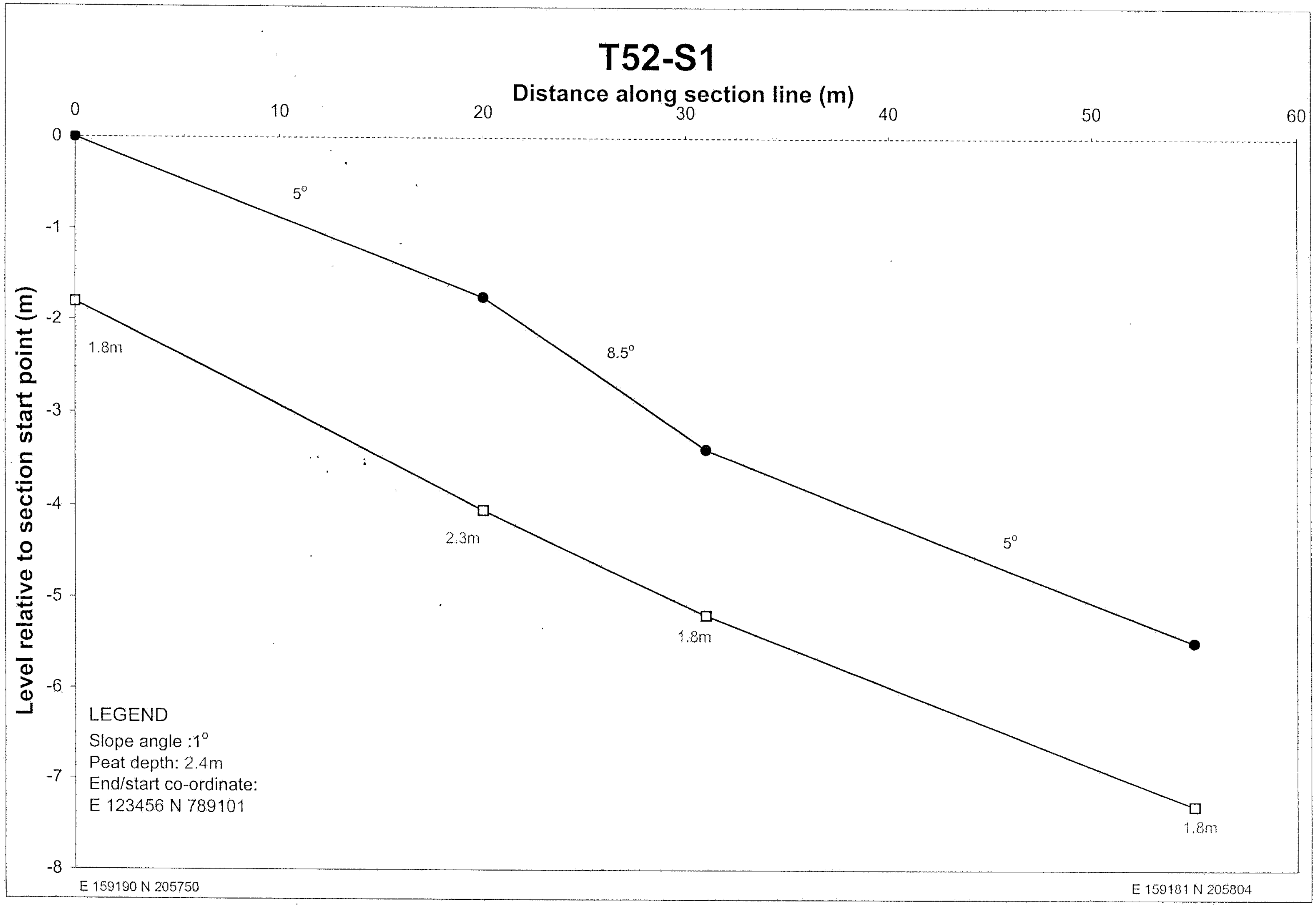
Distance along section line (m)
0
10
20
30
40
50
60
70
80
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
4°
5°
4.5°
2.9m
2.7m
2.5m
2.6m
E 159031 N 205711
E 159012 N 205785



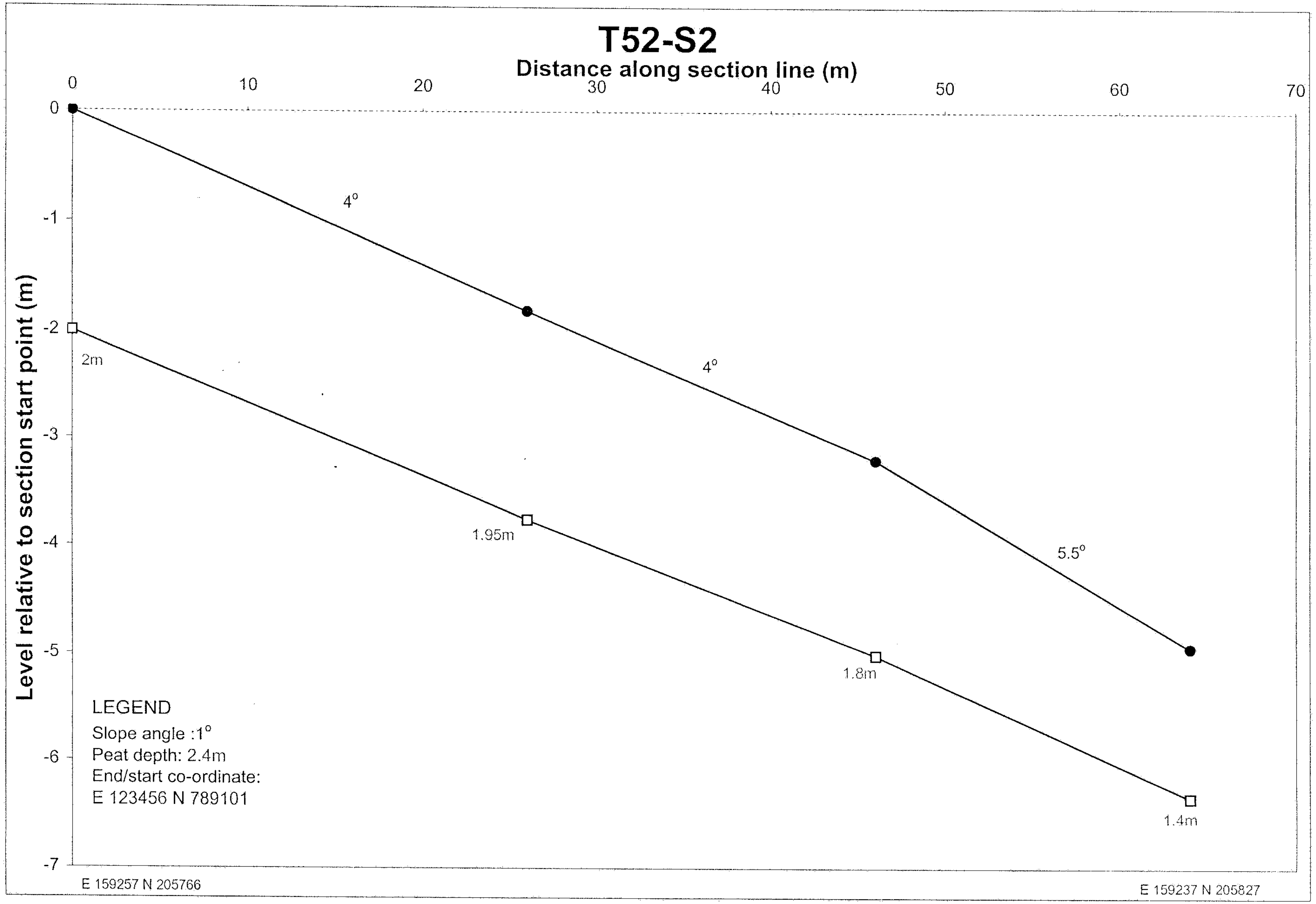
T51-S9
Distance along section line (m)
0
10
20
30
40
50
60
0
-1
-2
-3
-4
-5
-6
-7
-8
Level relative to section start point (m)
3.5°
1.5°
7.5°
6°
8°
2.3m
2m
2m
1.65m
1.6m
1.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158999 N 205700
E 158981 N 205753

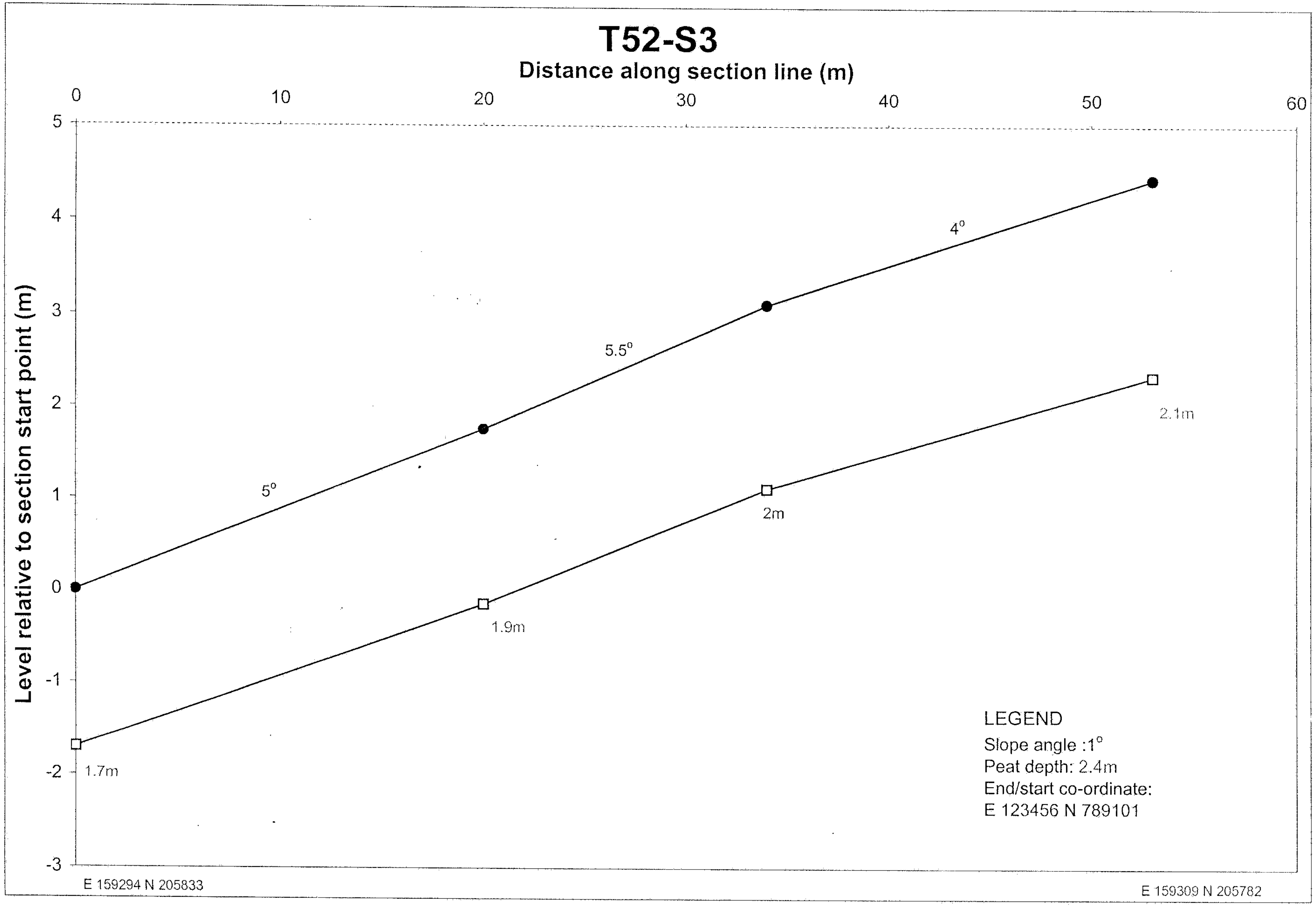


T51-S10
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
Level relative to section start point (m)
4°
4°
4.5°
5°
3.15m
2.7m
3m
2.7m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159073 N 205719
E 159053 N 205801

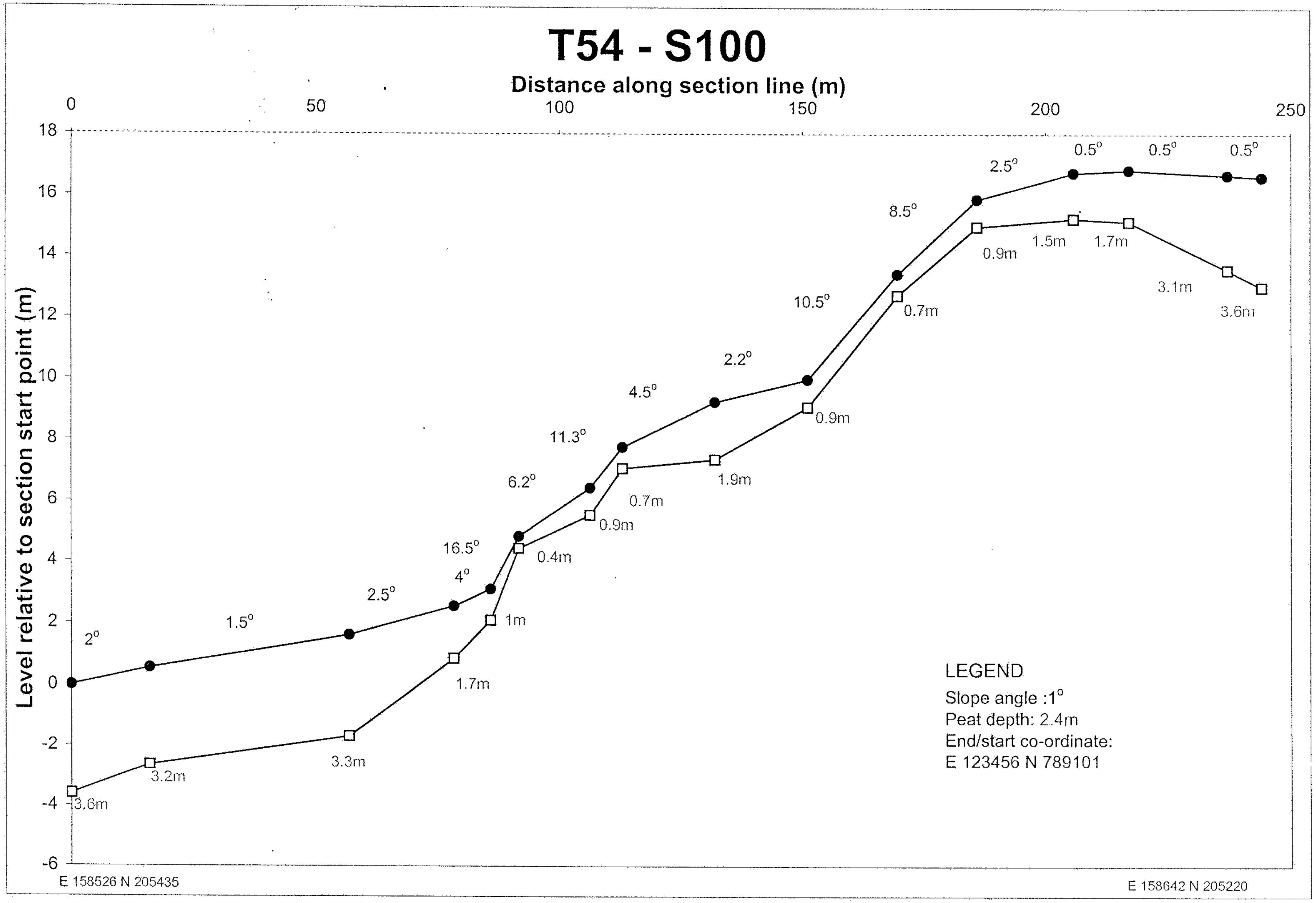


T52-S1
Distance along section line (m)
0
10
20
30
40
50
60
0
-1
-2
-3
-4
-5
-6
-7
-8
Level relative to section start point (m)
5°
8.5°
5°
1.8m
2.3m
1.8m
1.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159190 N 205750
E 159181 N 205804

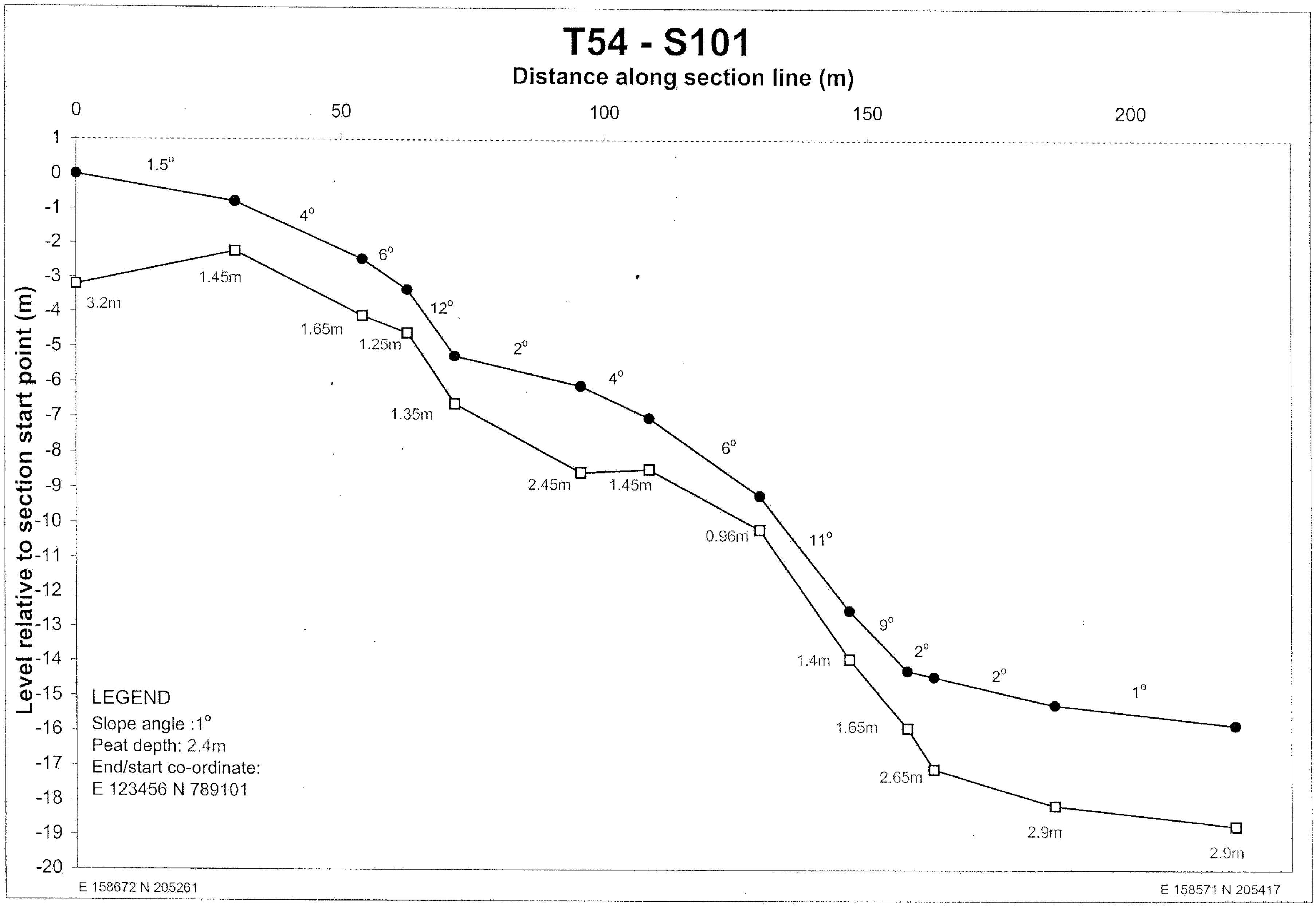

T52-S2
Distance along section line (m)
0
10
20
30
40
50
60
70
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
4°
4°
5.5°
2m
1.95m
1.8m
1.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159257 N 205766
E 159237 N 205827



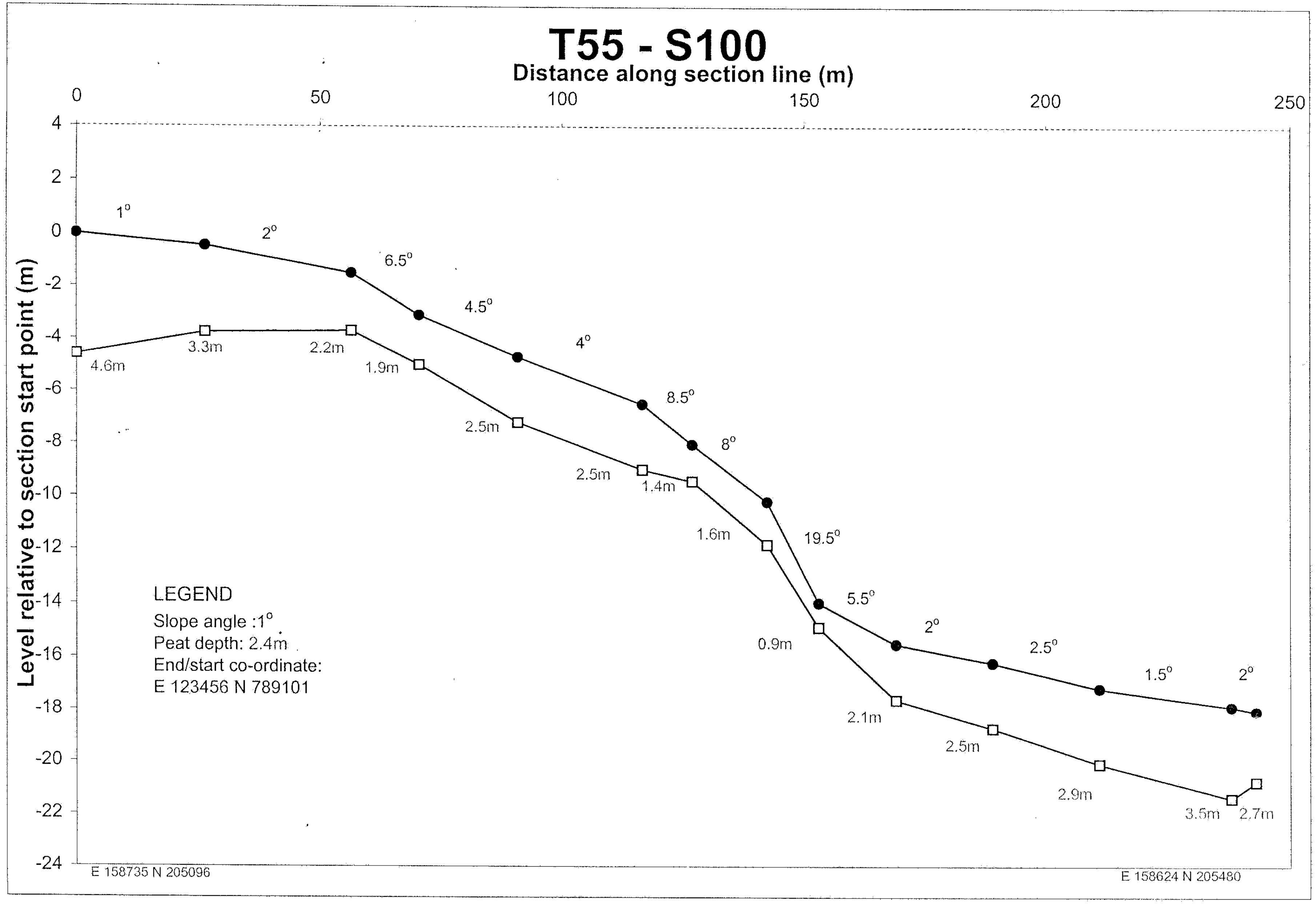
T52-S3
Distance along section line (m)
0
10
20
30
40
50
60
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
5°
5.5°
4°
1.7m
1.9m
2m
2.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159294 N 205833
E 159309 N 205782



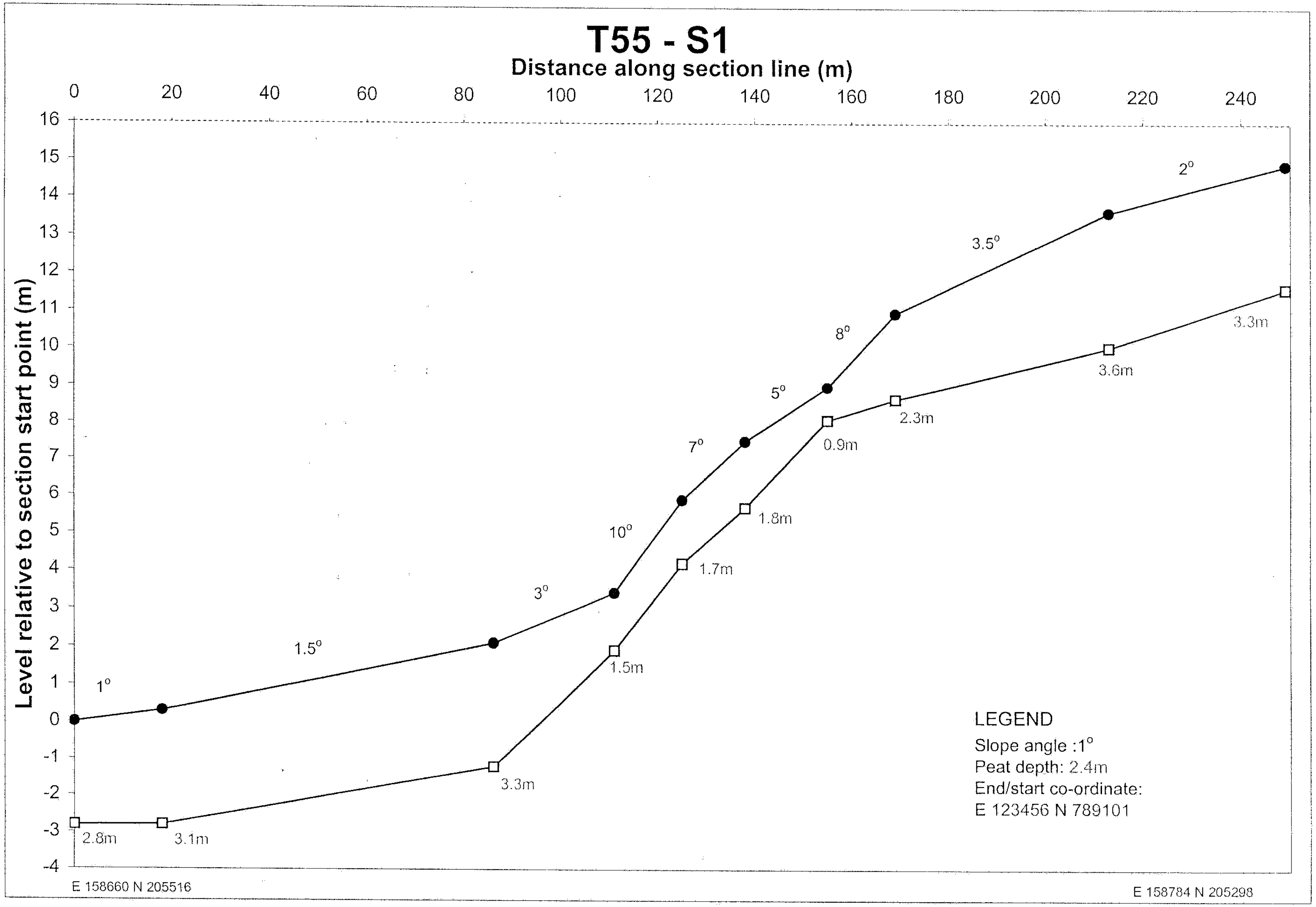
T54 - S100
Distance along section line (m)
0
50
100
150
200
250
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
Level relative to section start point (m)
2°
1.5°
2.5°
4°
16.5°
6.2°
11.3°
4.5°
2.2°
10.5°
8.5°
2.5°
0.5°
0.5°
0.5°
3.6m
3.2m
3.3m
1.7m
1m
0.4m
0.9m
0.7m
1.9m
0.9m
0.7m
0.9m
1.5m
1.7m
3.1m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158526 N 205435
E 158642 N 205220



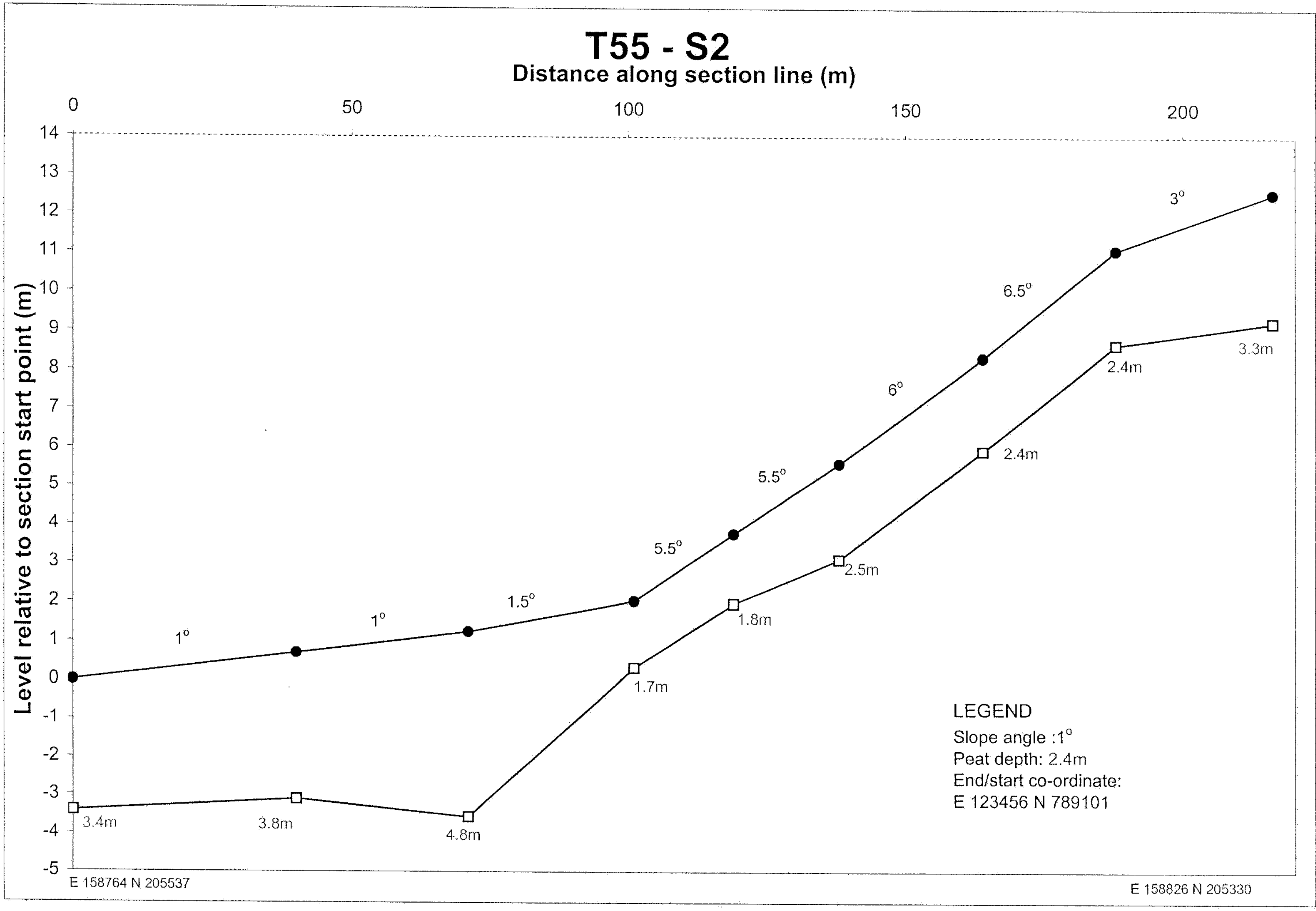
T54 - S101
Distance along section line (m)
0
50
100
150
200
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
Level relative to section start point (m)
1.5°
4°
6°
12°
2°
4°
6°
11°
9°
2°
2°
1°
3.2m
1.45m
1.65m
1.25m
1.35m
2.45m
1.45m
0.96m
1.4m
1.65m
2.65m
2.9m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158672 N 205261
E 158571 N 205417

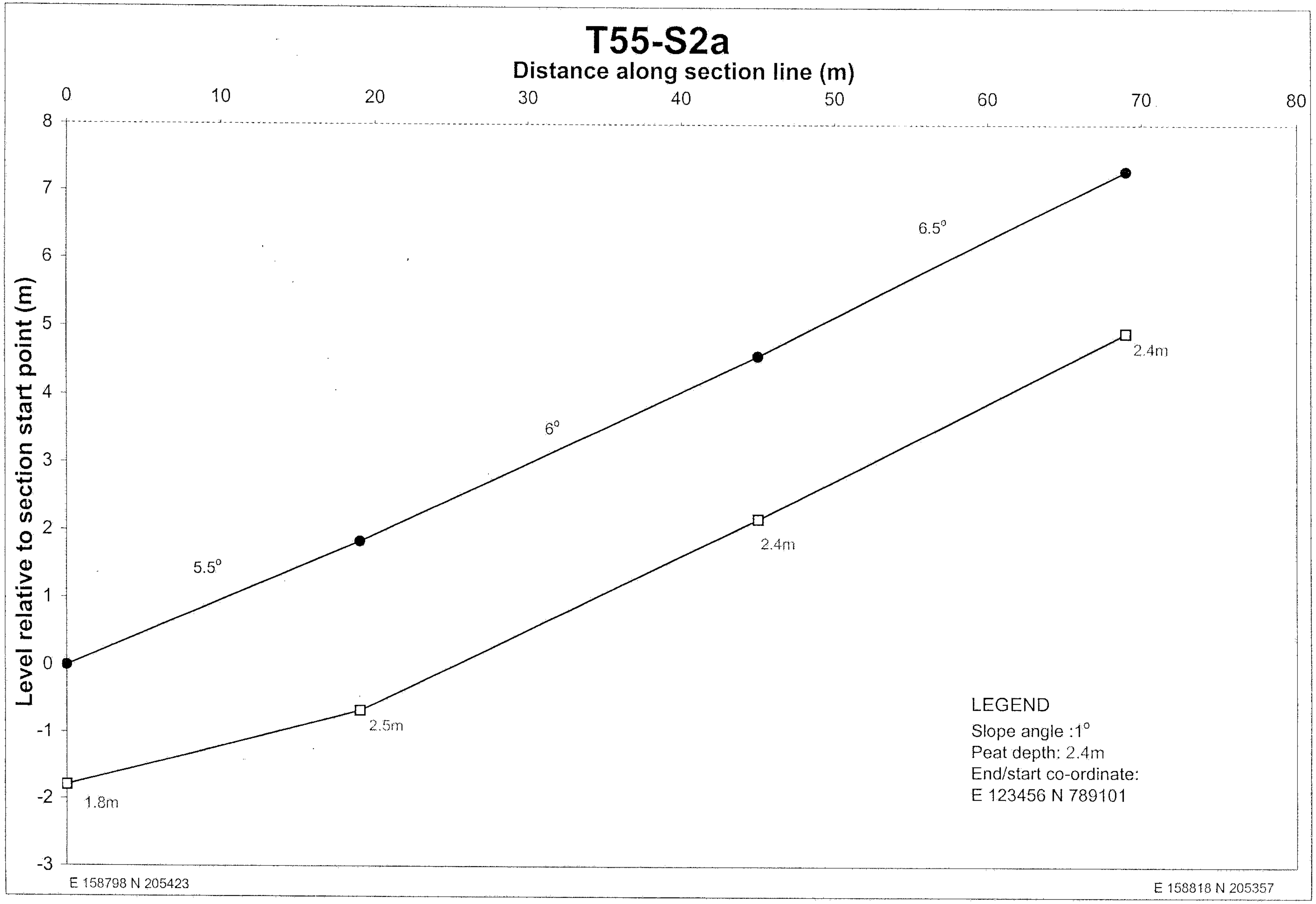


T55 - S100
Distance along section line (m)
0
50
100
150
200
250
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
Level relative to section start point (m)
1°
2°
6.5°
4.5°
4°
8.5°
8°
19.5°
5.5°
2°
2.5°
1.5°
2°
4.6m
3.3m
2.2m
1.9m
2.5m
2.5m
1.4m
1.6m
0.9m
2.1m
2.5m
2.9m
3.5m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158735 N 205096
E 158624 N 205480

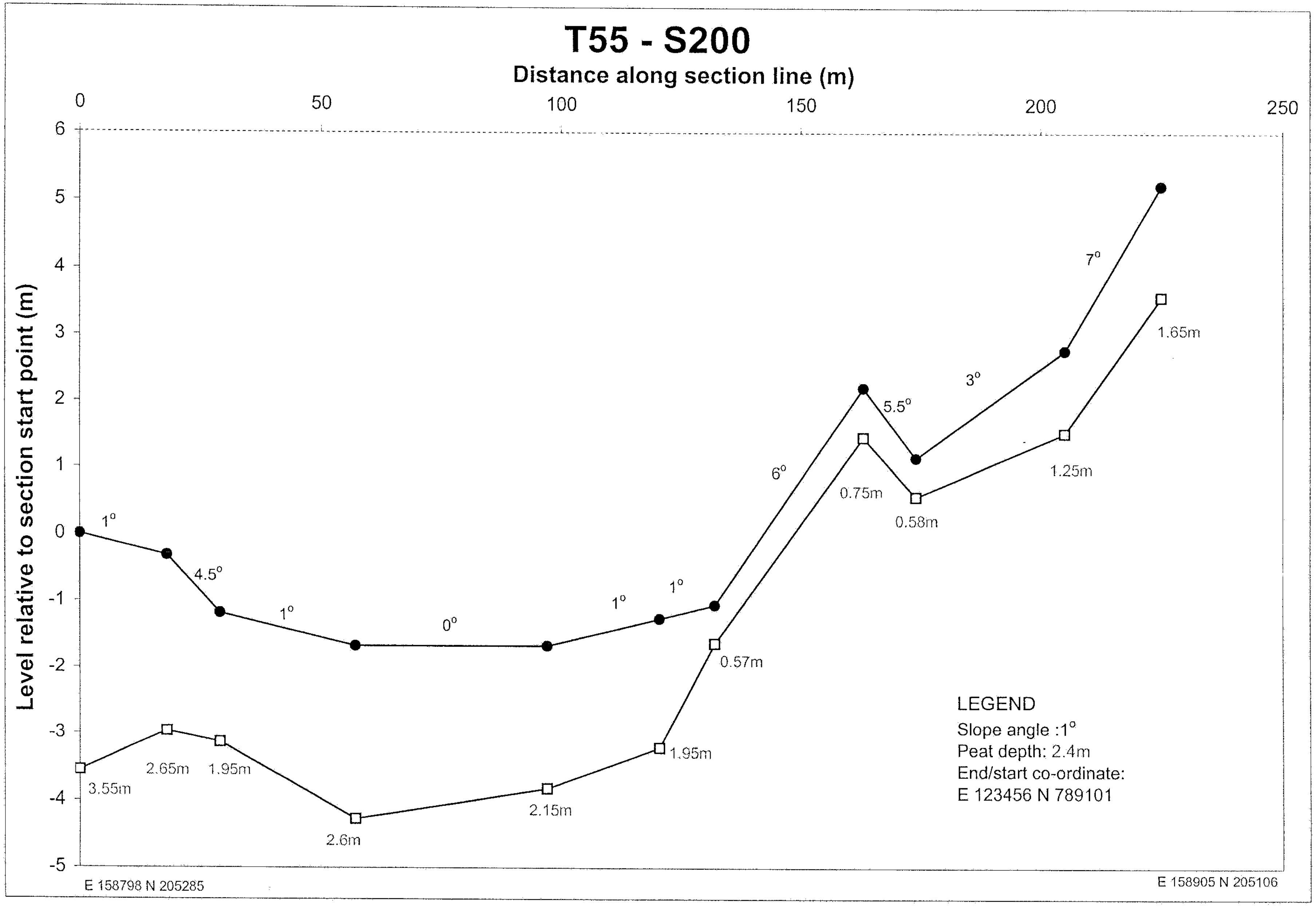


T55 - S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
240
Level relative to section start point (m)
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
1°
1.5°
3°
10°
7°
5°
8°
3.5°
2°
2.8m
3.1m
3.3m
1.5m
1.7m
1.8m
0.9m
2.3m
3.6m
3.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158660 N 205516
E 158784 N 205298

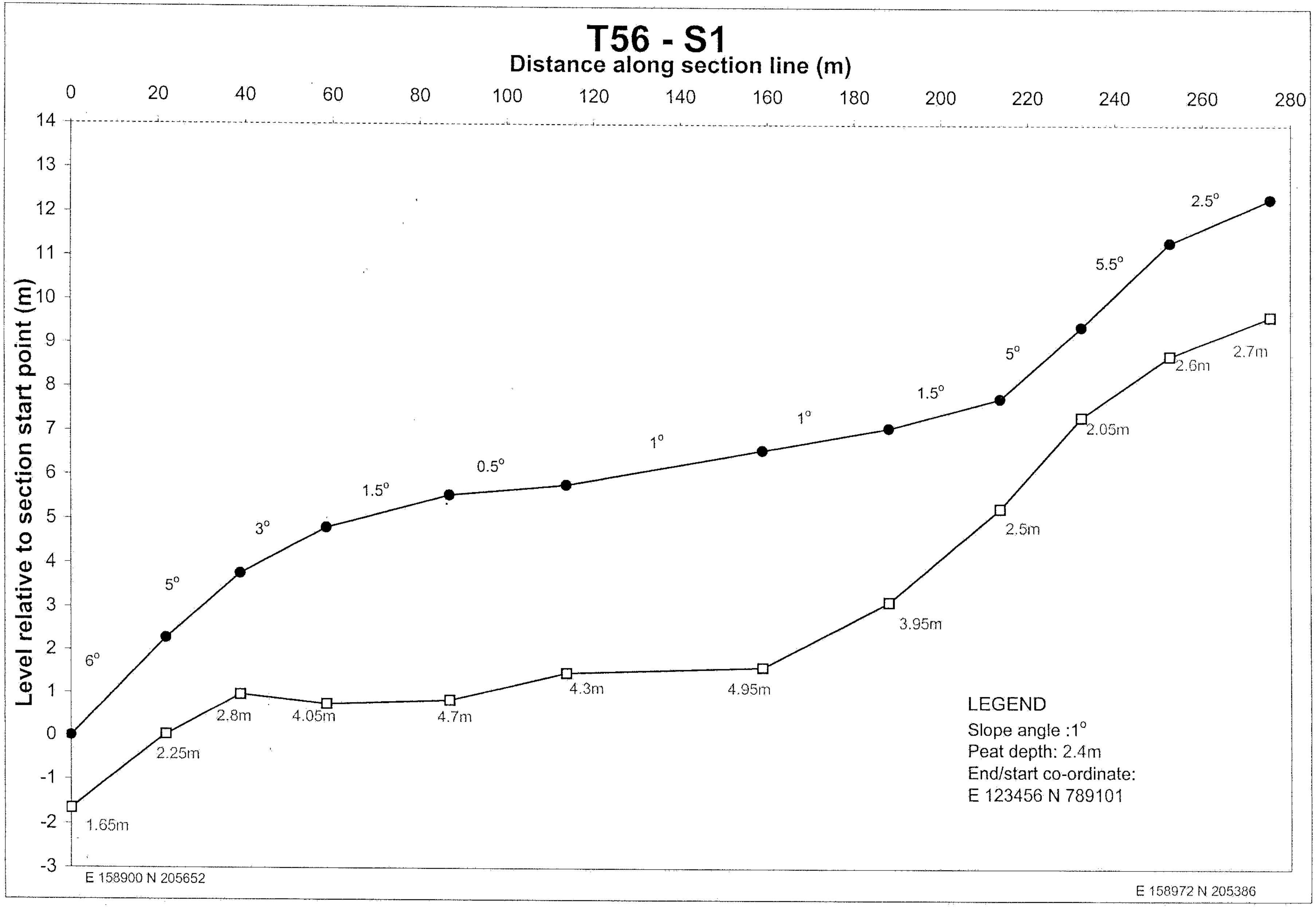

T55 - S2
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
1°
1°
1.5°
5.5°
5.5°
6°
6.5°
3°
3.4m
3.8m
4.8m
1.7m
1.8m
2.5m
2.4m
2.4m
3.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158764 N 205537
E 158826 N 205330



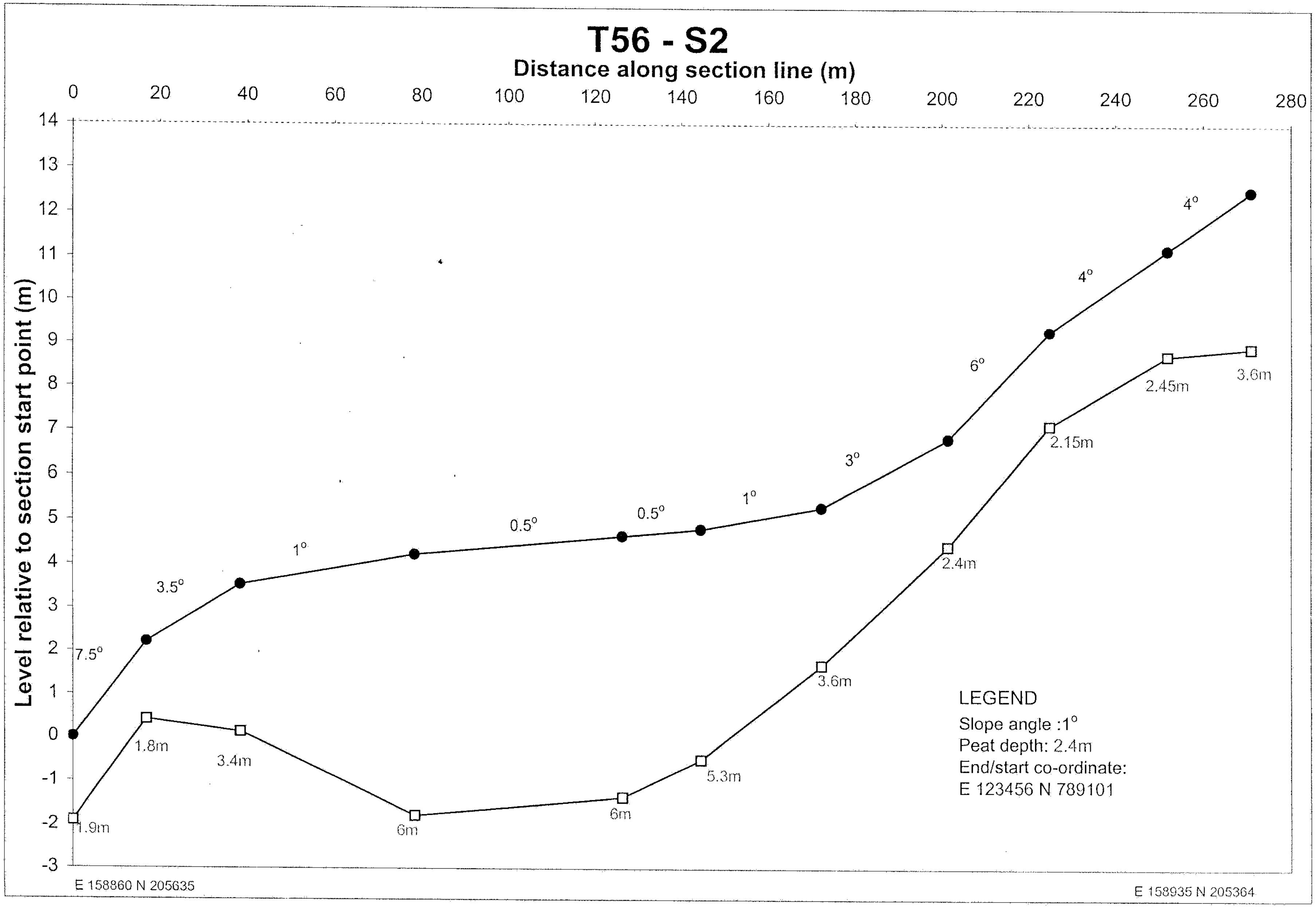
T55-S2a
Distance along section line (m)
0
10
20
30
40
50
60
70
80
8
7
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
6.5°
6°
5.5°
2.4m
2.4m
2.5m
1.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158798 N 205423
E 158818 N 205357



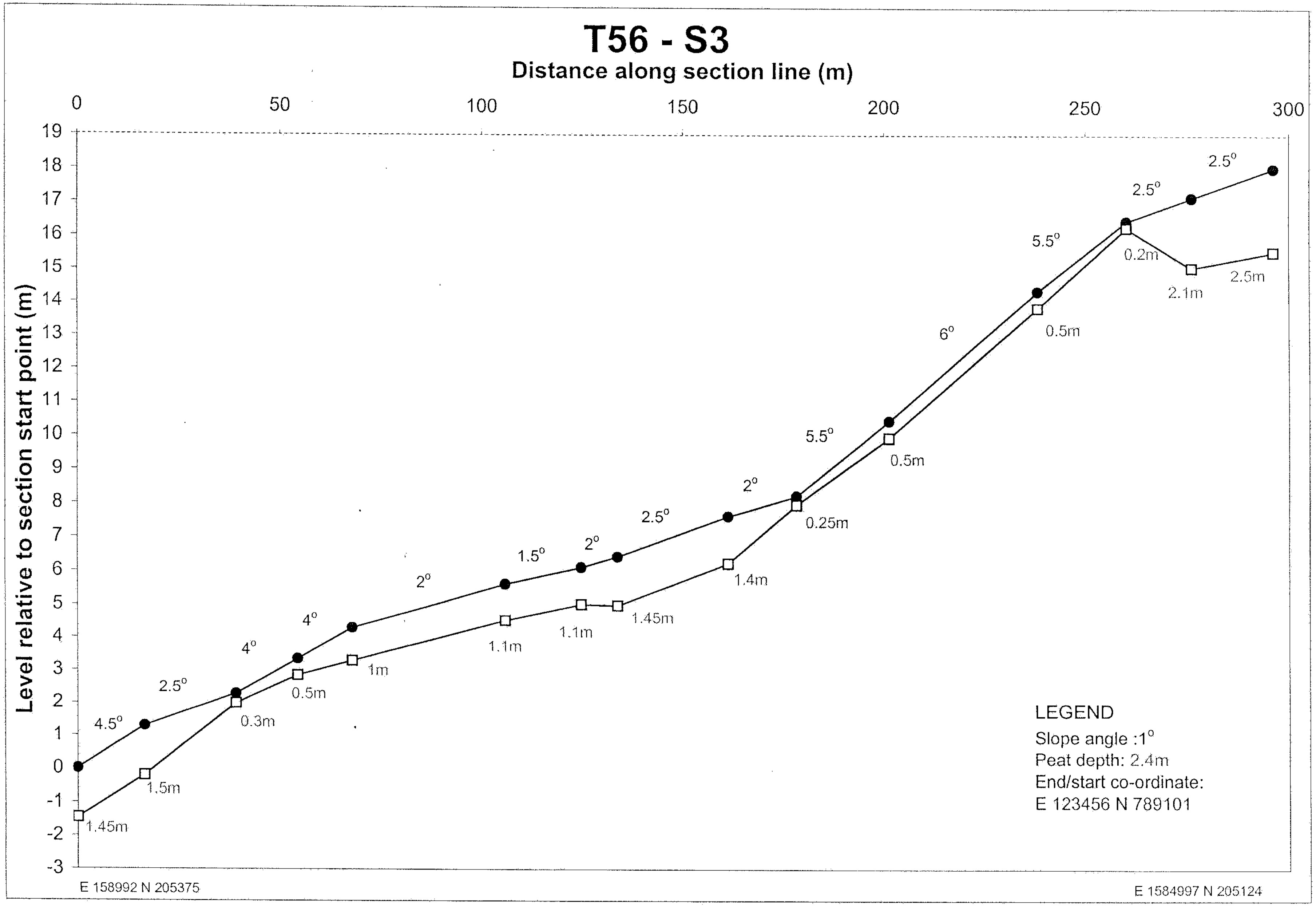
T55 - S200
Distance along section line (m)
0
50
100
150
200
250
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
1°
4.5°
1°
0°
1°
1°
6°
5.5°
3°
7°
3.55m
2.65m
1.95m
2.6m
2.15m
1.95m
0.57m
0.75m
0.58m
1.25m
1.65m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158798 N 205285
E 158905 N 205106



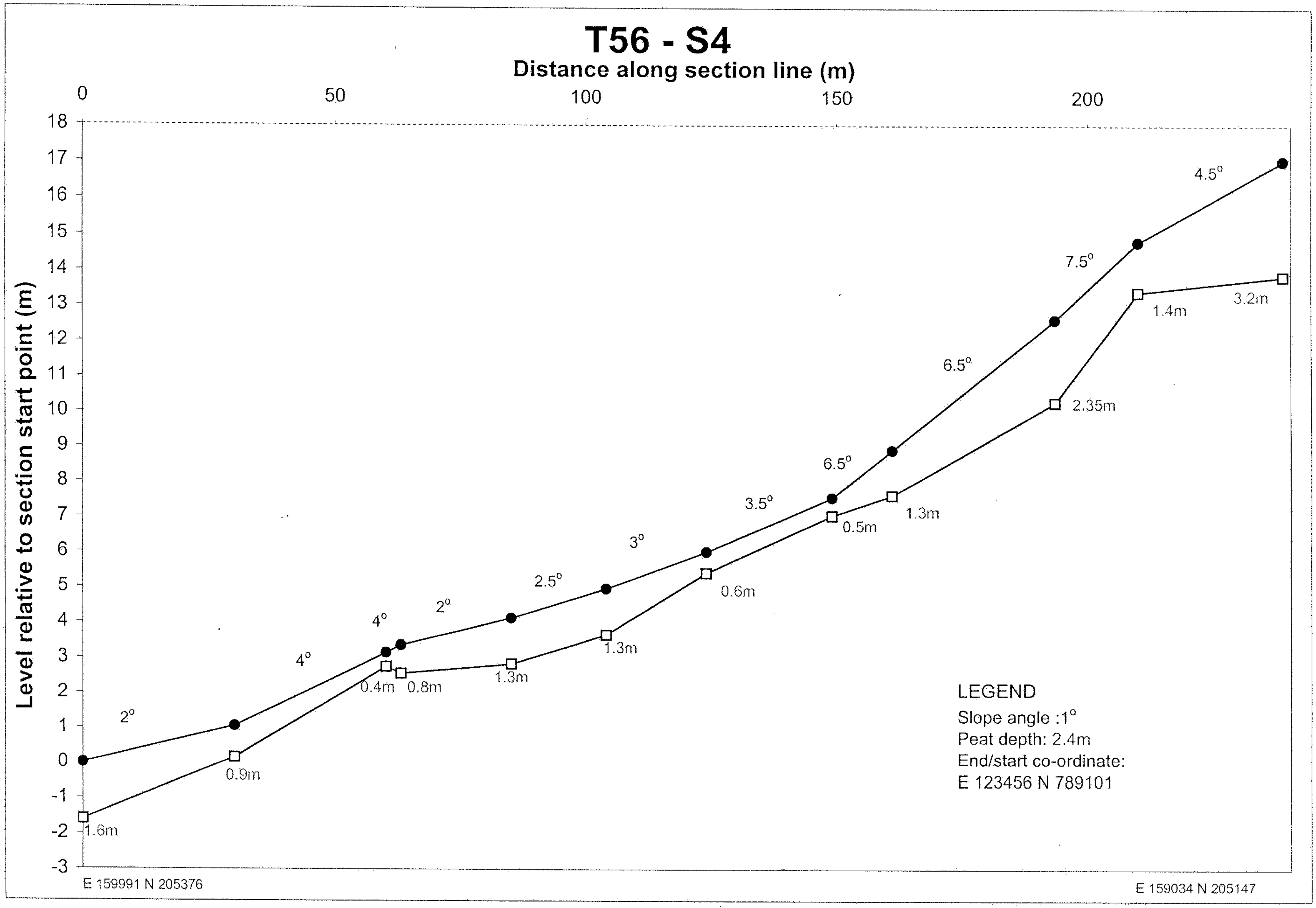
T56 - S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
Level relative to section start point (m)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
6°
5°
3°
1.5°
0.5°
1°
1°
1.5°
5°
5.5°
2.5°
1.65m
2.25m
2.8m
4.05m
4.7m
4.3m
4.95m
3.95m
2.5m
2.05m
2.6m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158900 N 205652
E 158972 N 205386



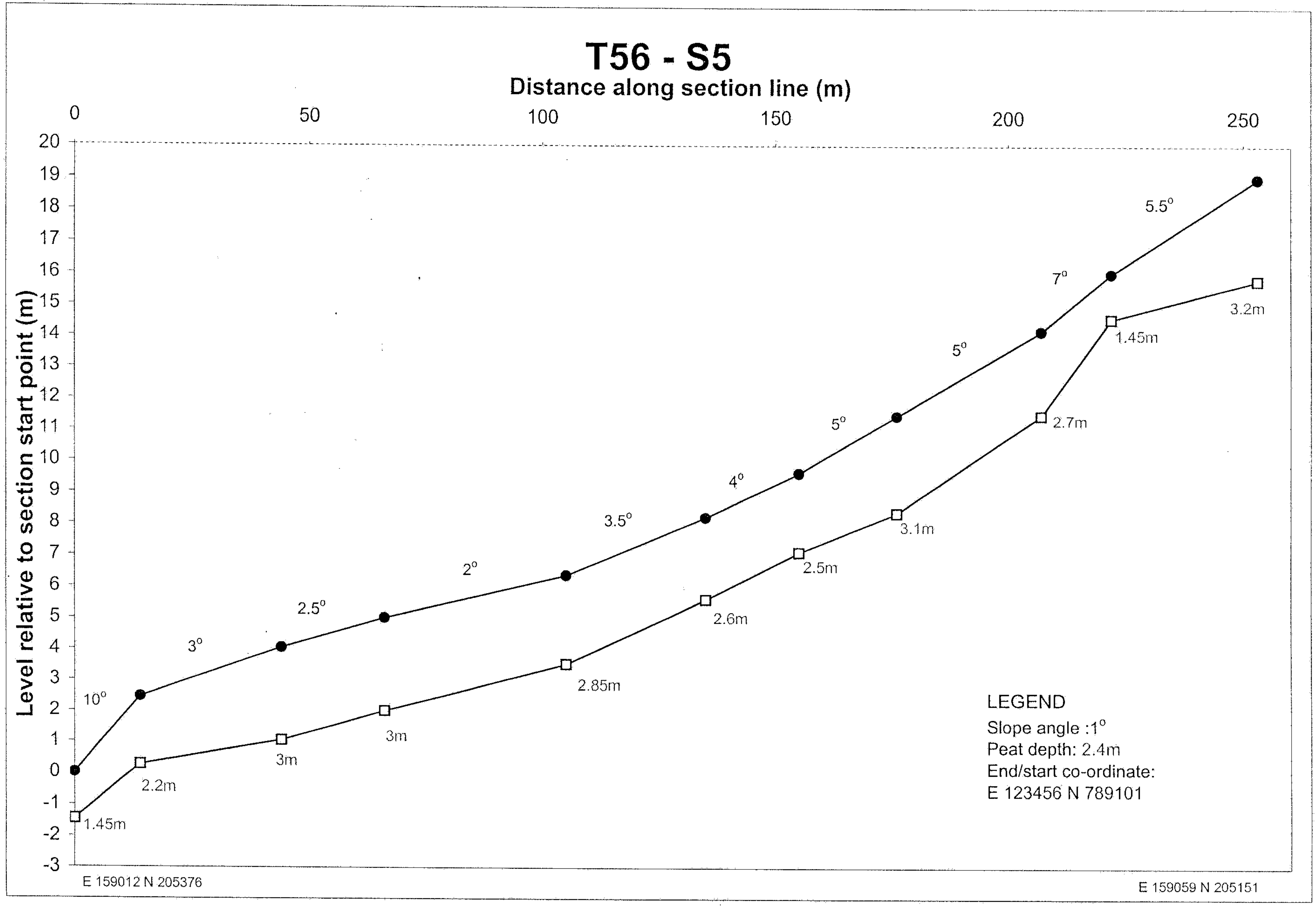
T56 - S2
Distance along section line (m)
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280
Level relative to section start point (m)
14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 -1 -2 -3
7.5°
3.5°
1°
0.5°
0.5°
1°
3°
6°
4°
4°
1.9m
1.8m
3.4m
6m
6m
5.3m
3.6m
2.4m
2.15m
2.45m
3.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158860 N 205635
E 158935 N 205364



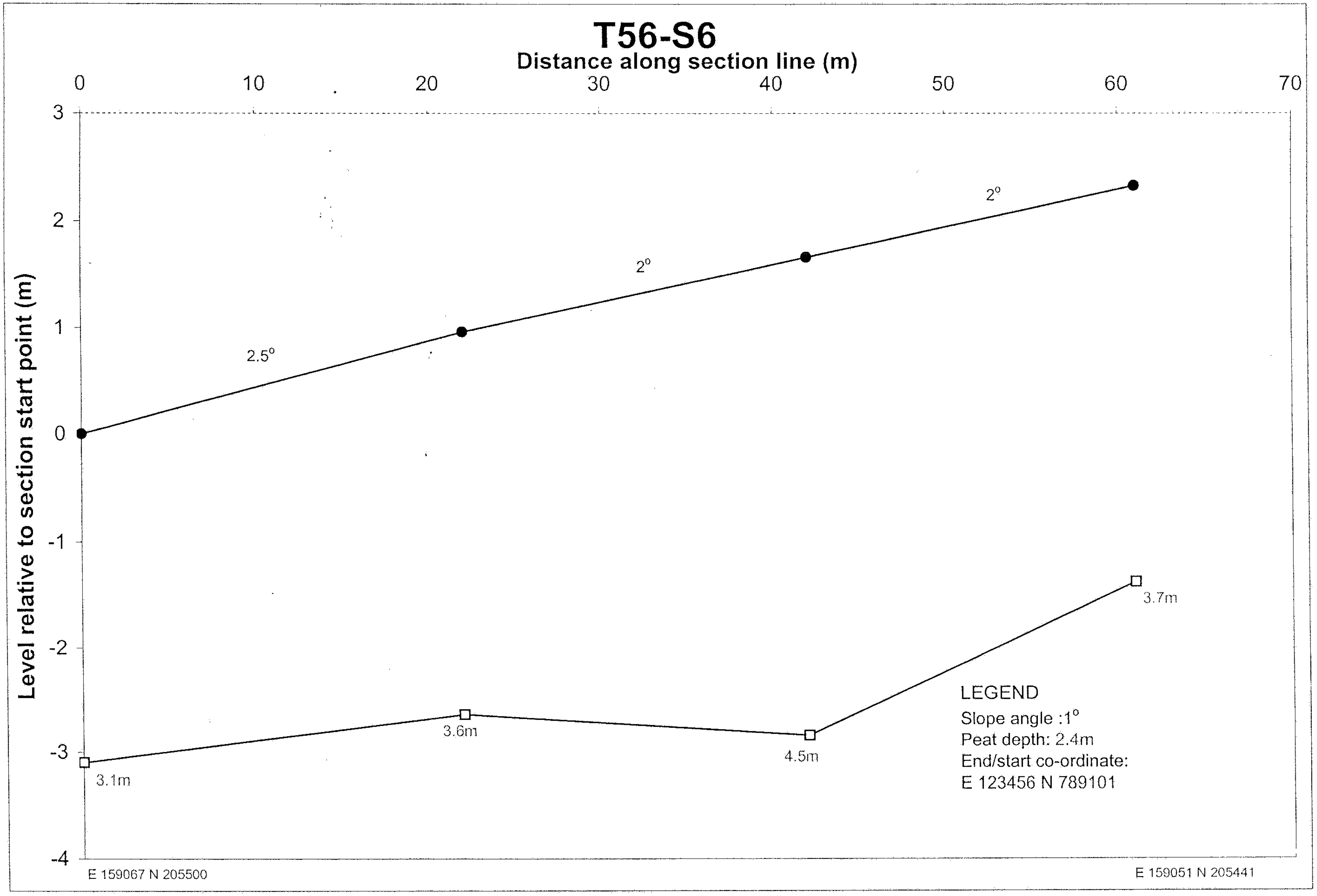
T56 - S3
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
4.5°
2.5°
4°
4°
2°
1.5°
2°
2.5°
2°
5.5°
6°
5.5°
2.5°
2.5°
1.45m
1.5m
0.3m
0.5m
1m
1.1m
1.1m
1.45m
1.4m
0.25m
0.5m
0.5m
0.2m
2.1m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158992 N 205375
E 1584997 N 205124

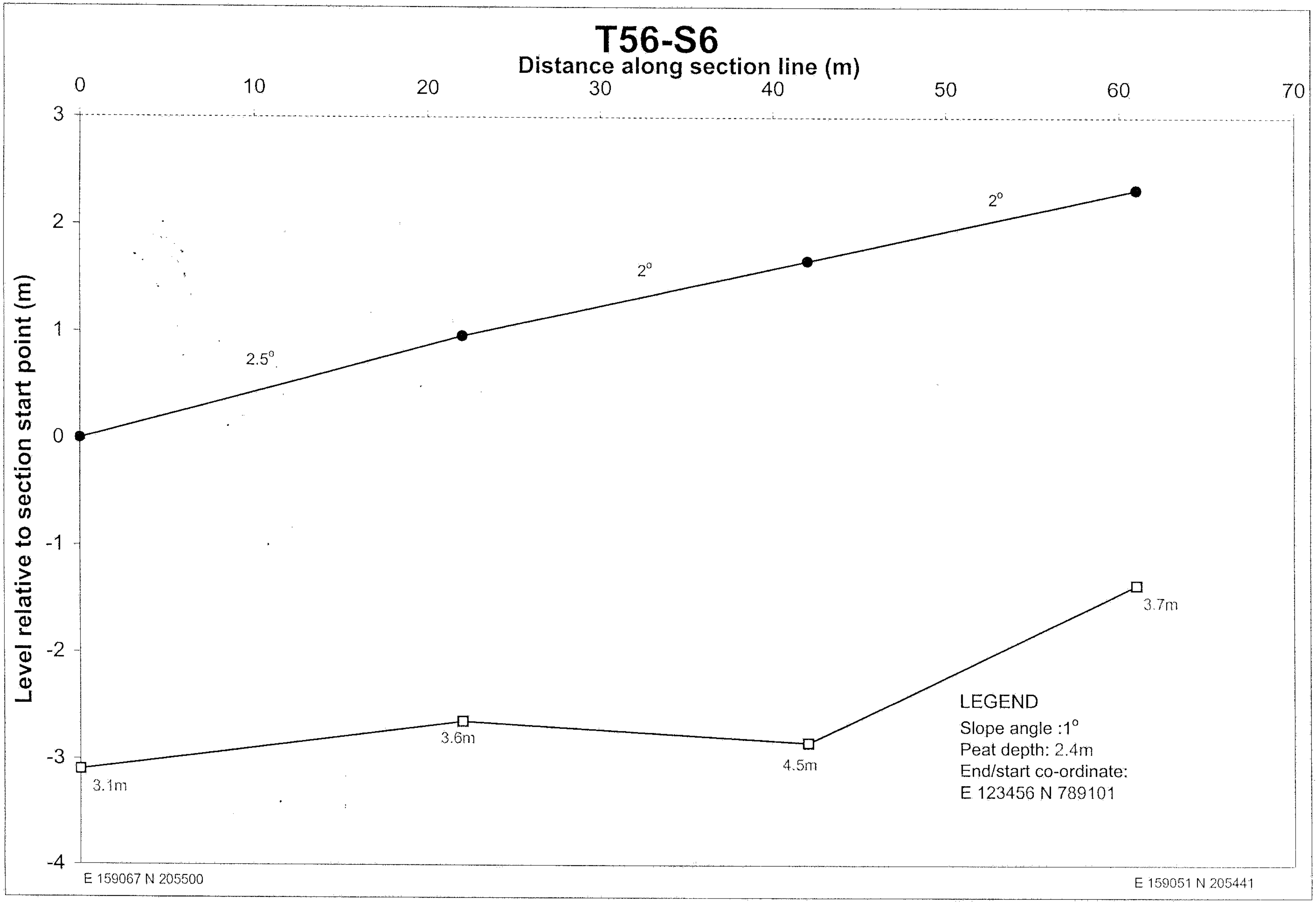


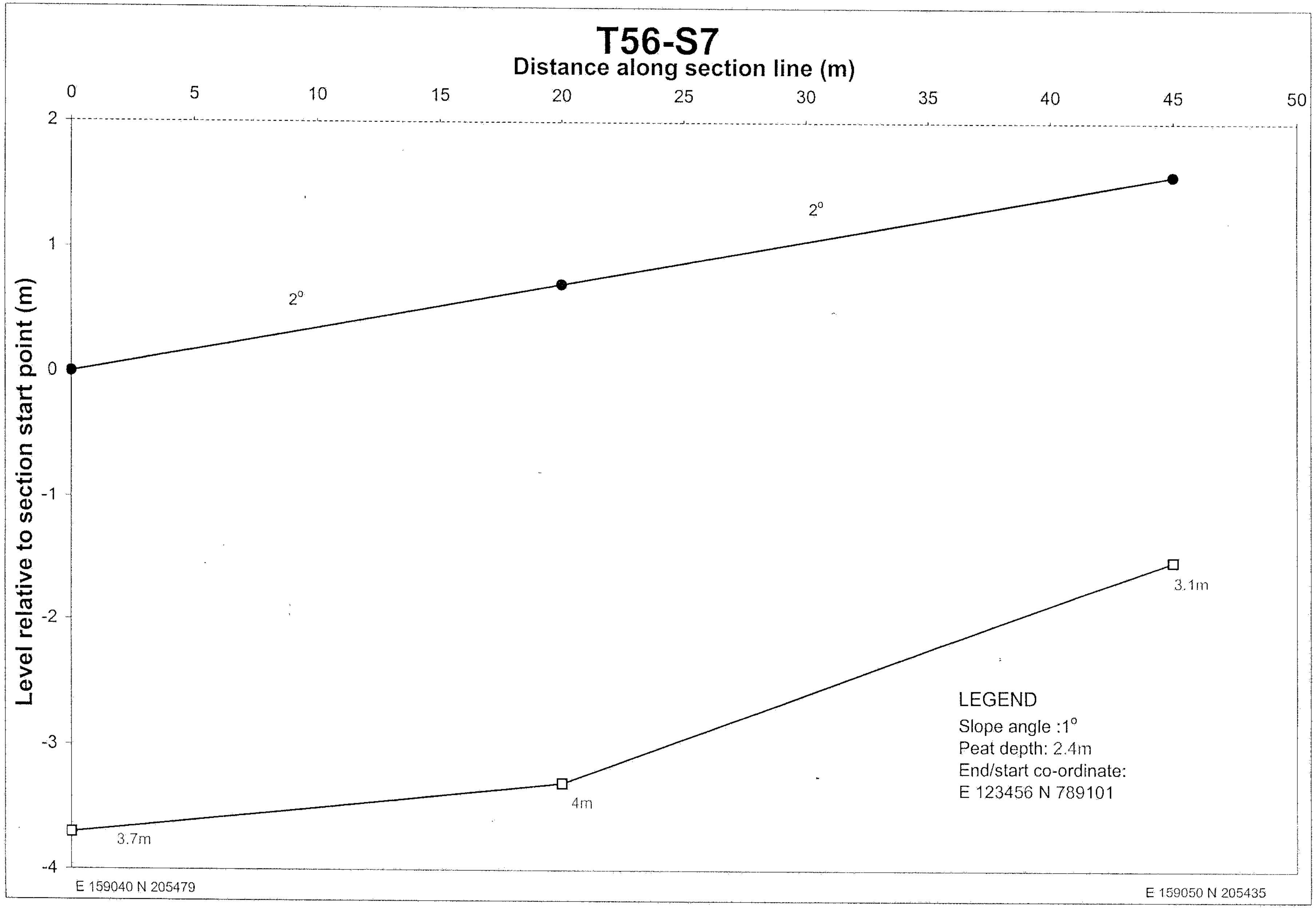
T56 - S4
Distance along section line (m)
0
50
100
150
200
Level relative to section start point (m)
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
2°
4°
4°
2°
2.5°
3°
3.5°
6.5°
6.5°
7.5°
4.5°
1.6m
0.9m
0.4m
0.8m
1.3m
1.3m
0.6m
0.5m
1.3m
2.35m
1.4m
3.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159991 N 205376
E 159034 N 205147

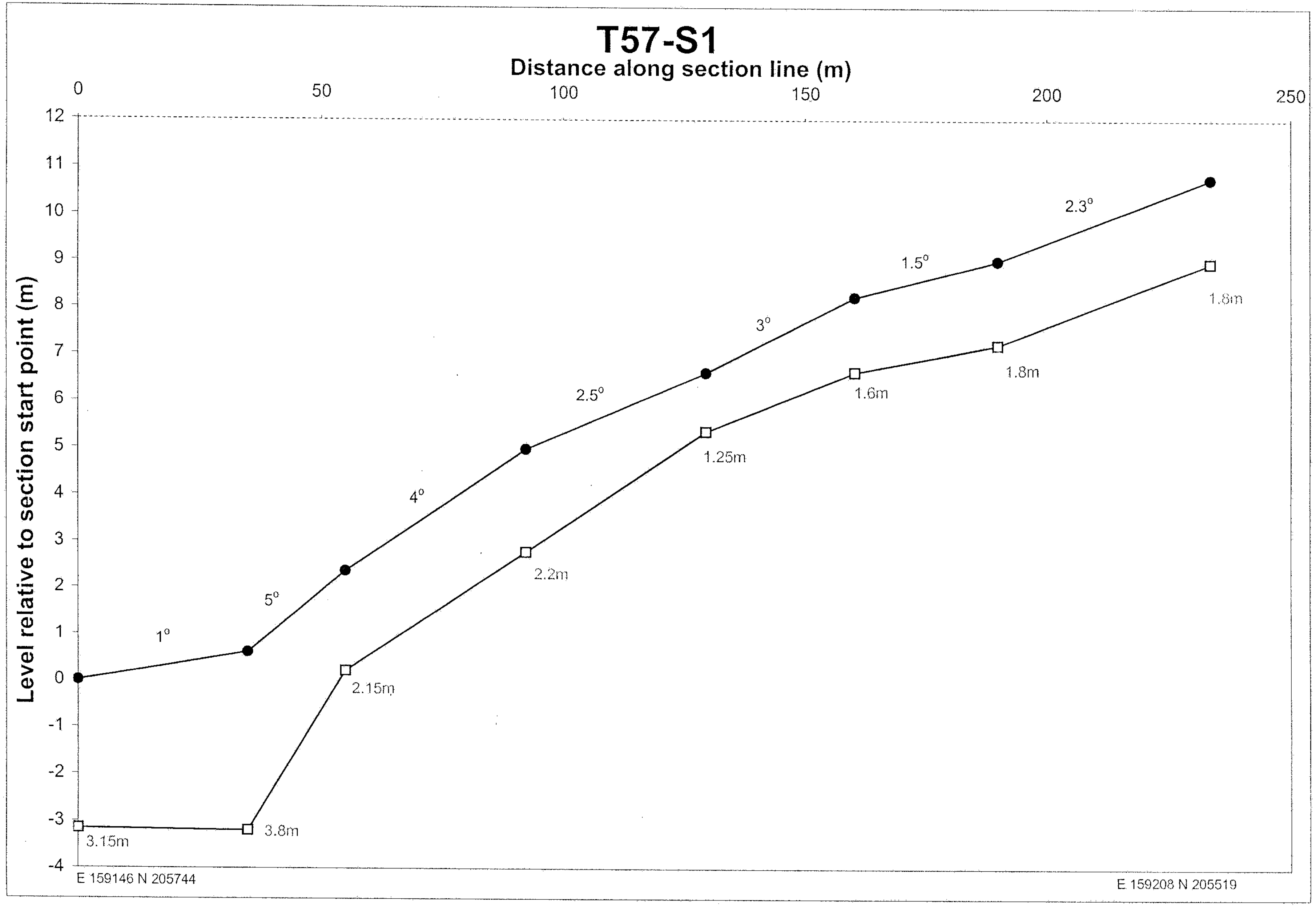


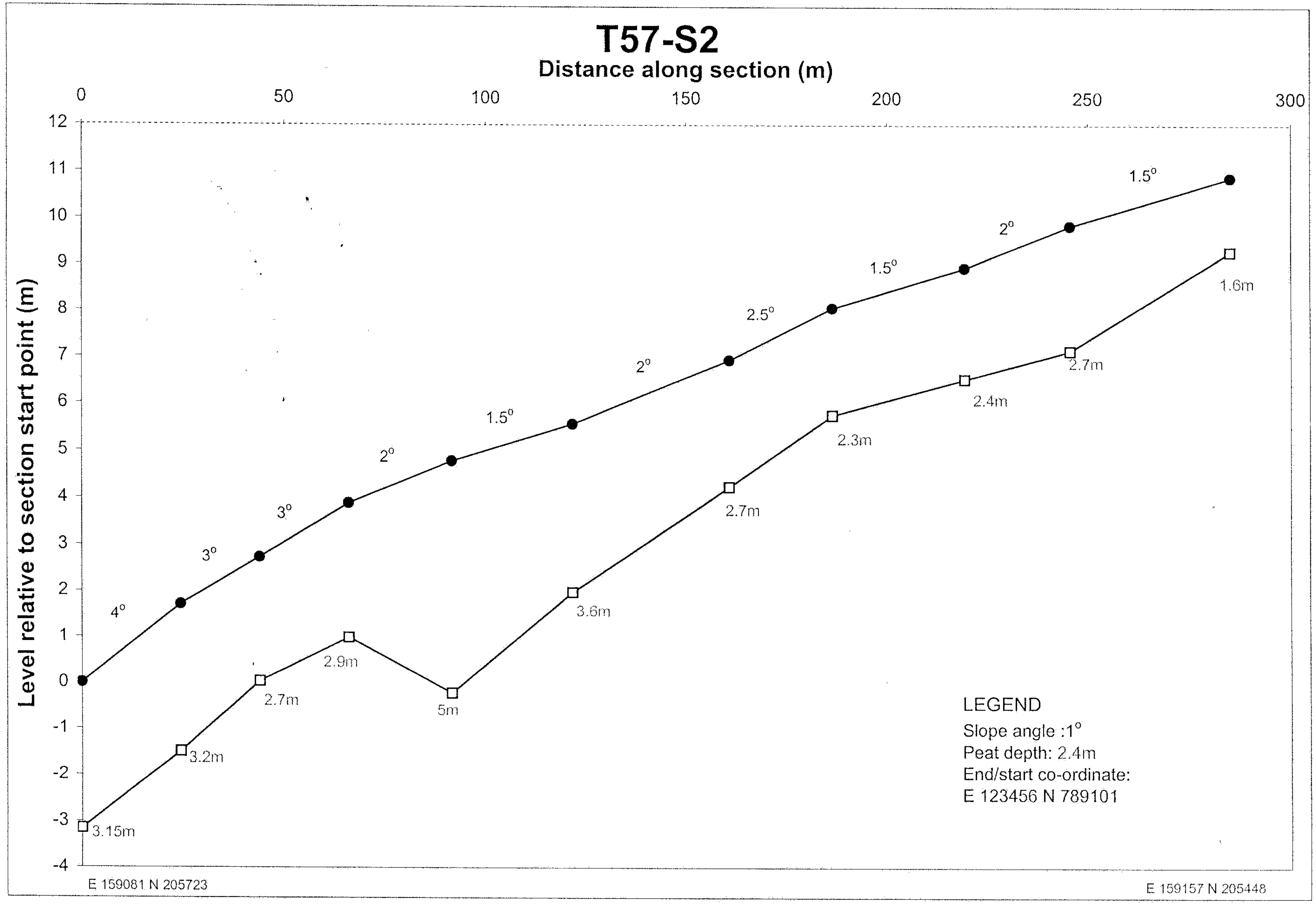
T56 - S5
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
10°
3°
2.5°
2°
3.5°
4°
5°
5°
7°
5.5°
1.45m
2.2m
3m
3m
2.85m
2.6m
2.5m
3.1m
2.7m
1.45m
3.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159012 N 205376
E 159059 N 205151

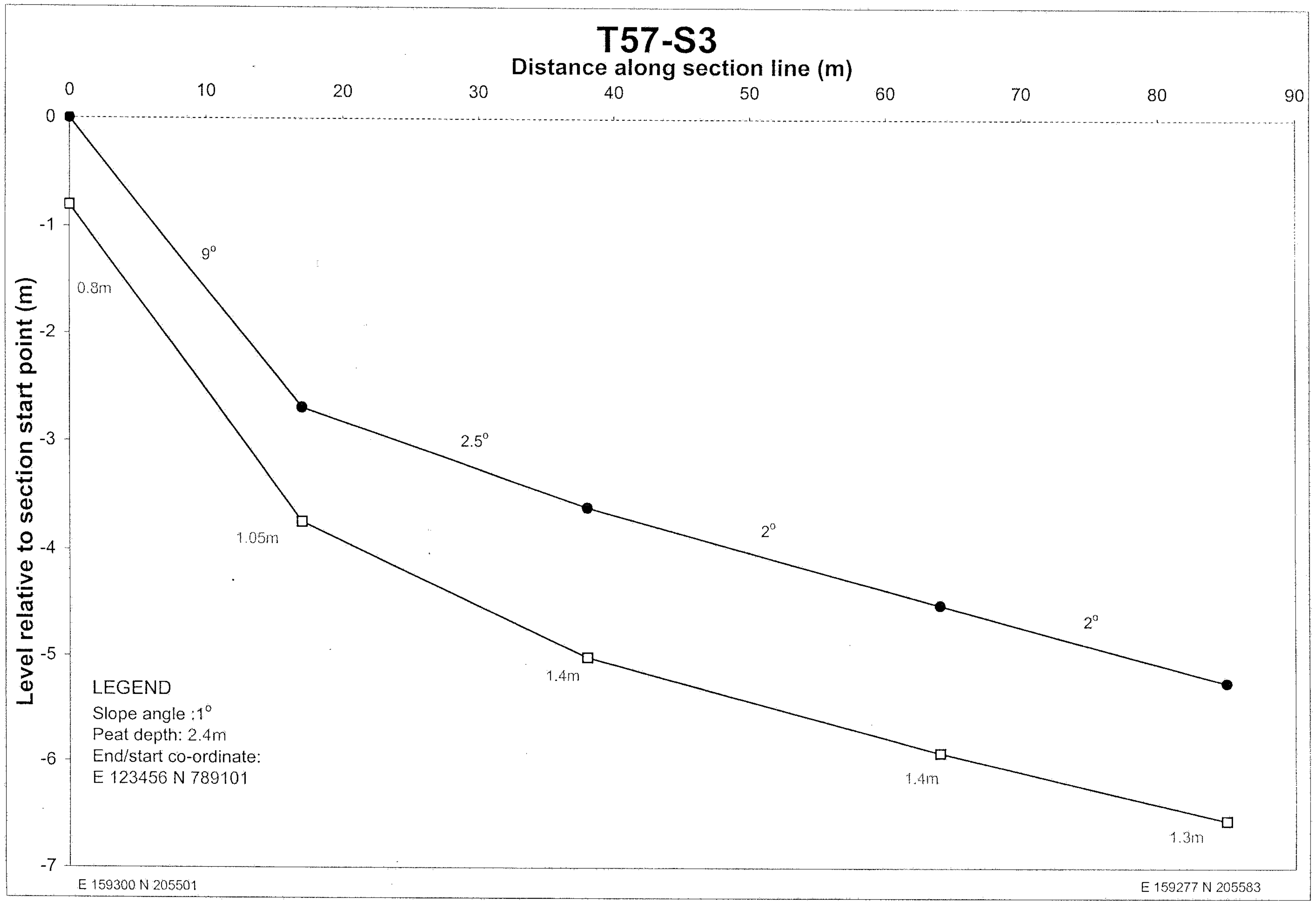

T56-S6
Distance along section line (m)
0
10
20
30
40
50
60
70
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
2.5°
2°
2°
3.1m
3.6m
4.5m
3.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159067 N 205500
E 159051 N 205441

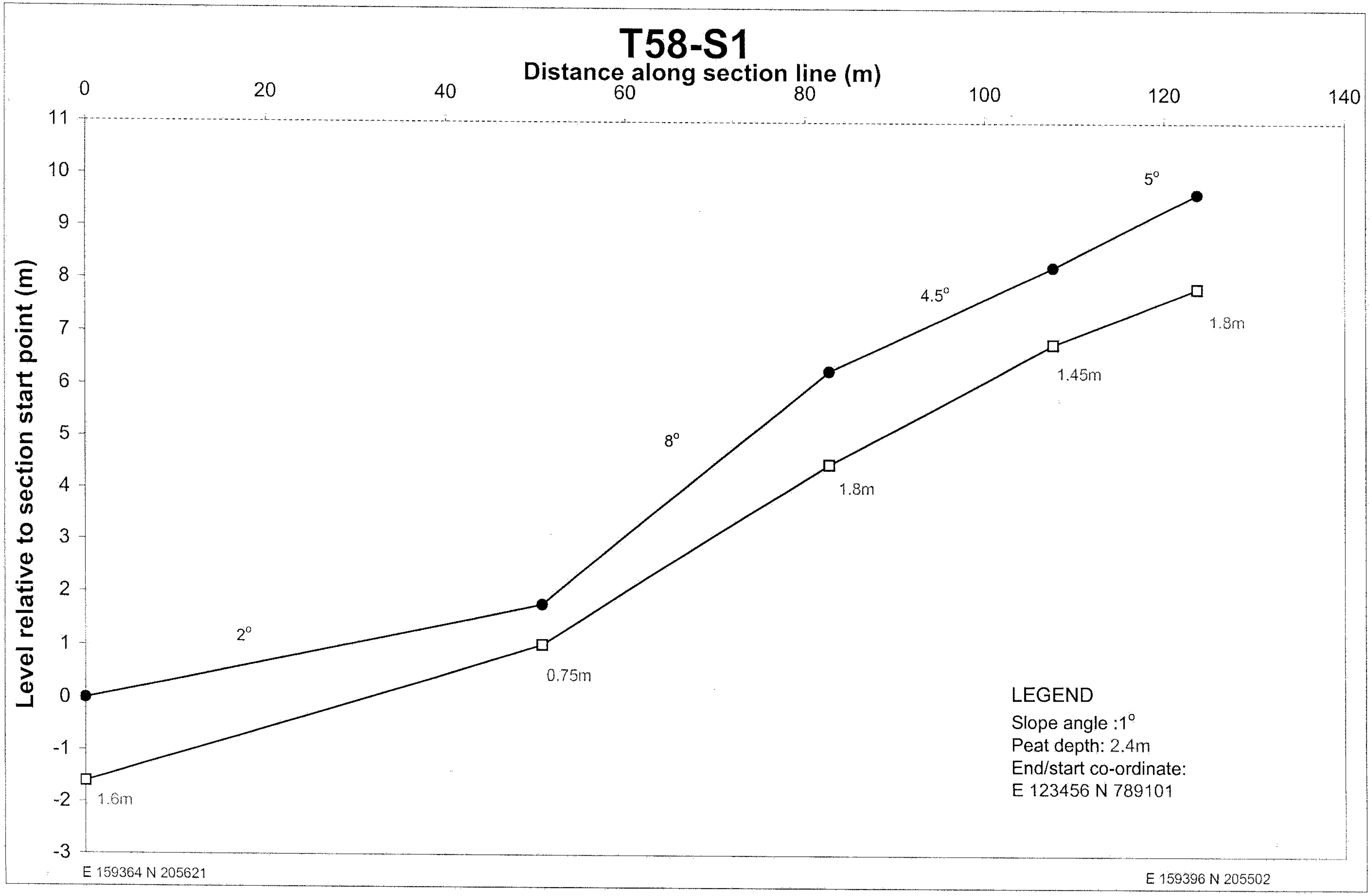

T56-S6
Distance along section line (m)
0
10
20
30
40
50
60
70
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
2.5°
2°
2°
3.1m
3.6m
4.5m
3.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159067 N 205500
E 159051 N 205441


T56-S7
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
50
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
2°
2°
3.1m
4m
3.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159040 N 205479
E 159050 N 205435

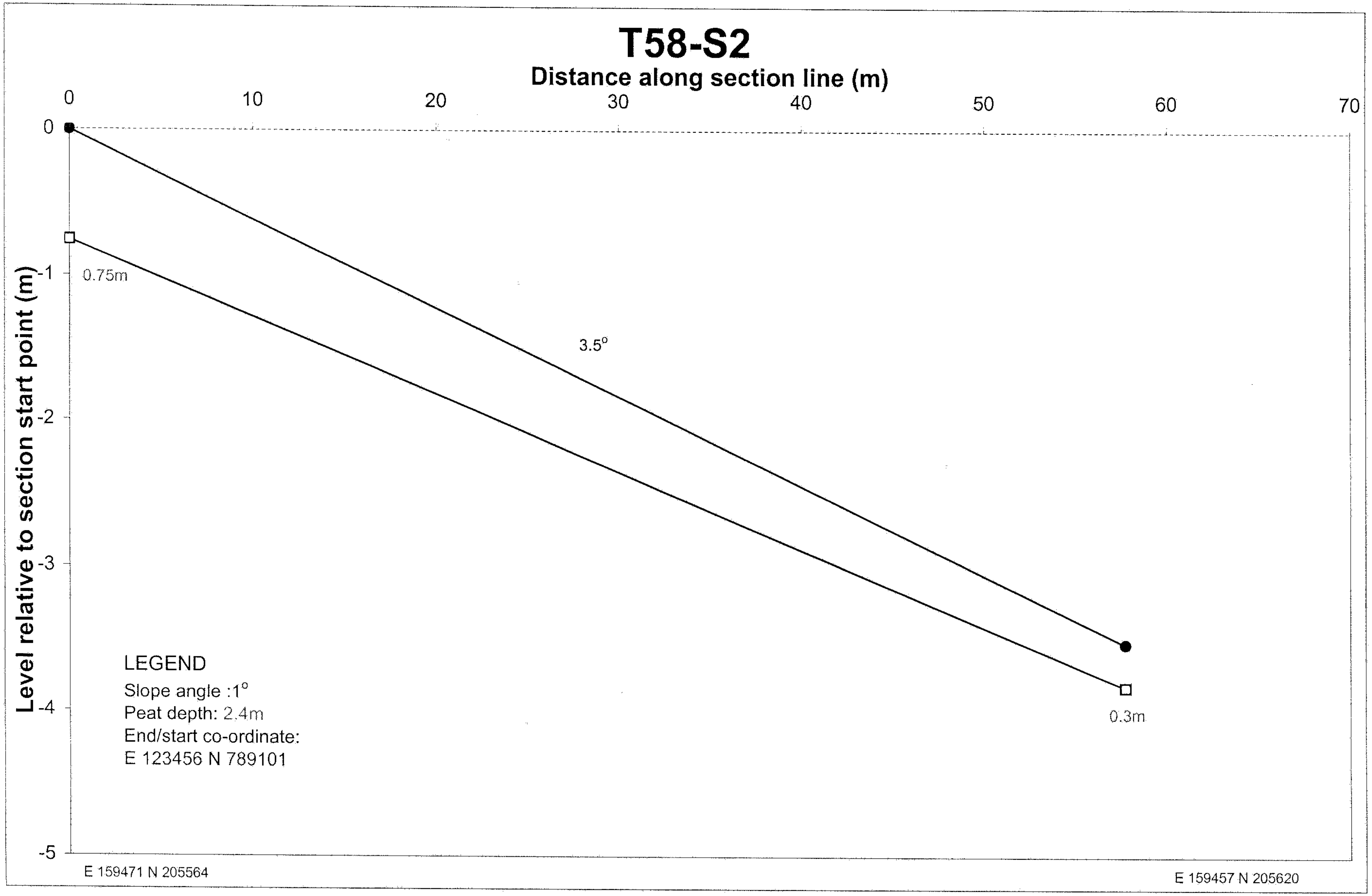

T57-S1
Distance along section line (m)
0
50
100
150
200
250
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1°
5°
4°
2.5°
3°
1.5°
2.3°
3.15m
3.8m
2.15m
2.2m
1.25m
1.6m
1.8m
1.8m
E 159146 N 205744
E 159208 N 205519


T57-S2
Distance along section (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
4°
3°
3°
2°
1.5°
2°
2.5°
1.5°
2°
1.5°
3.15m
3.2m
2.7m
2.9m
5m
3.6m
2.7m
2.3m
2.4m
2.7m
1.6m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159081 N 205723
E 159157 N 205448

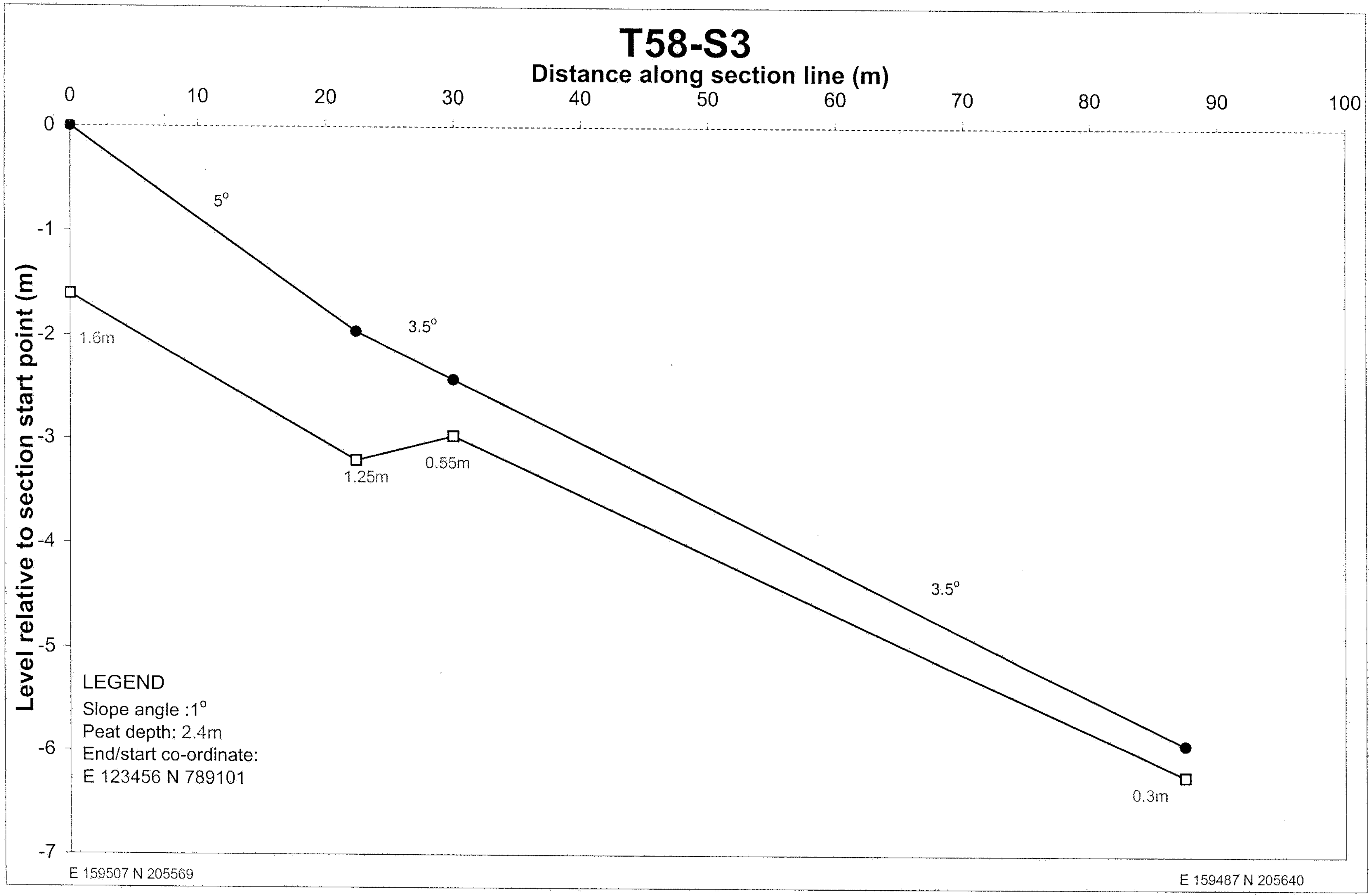

T57-S3
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
9°
2.5°
2°
2°
0.8m
1.05m
1.4m
1.4m
1.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159300 N 205501
E 159277 N 205583



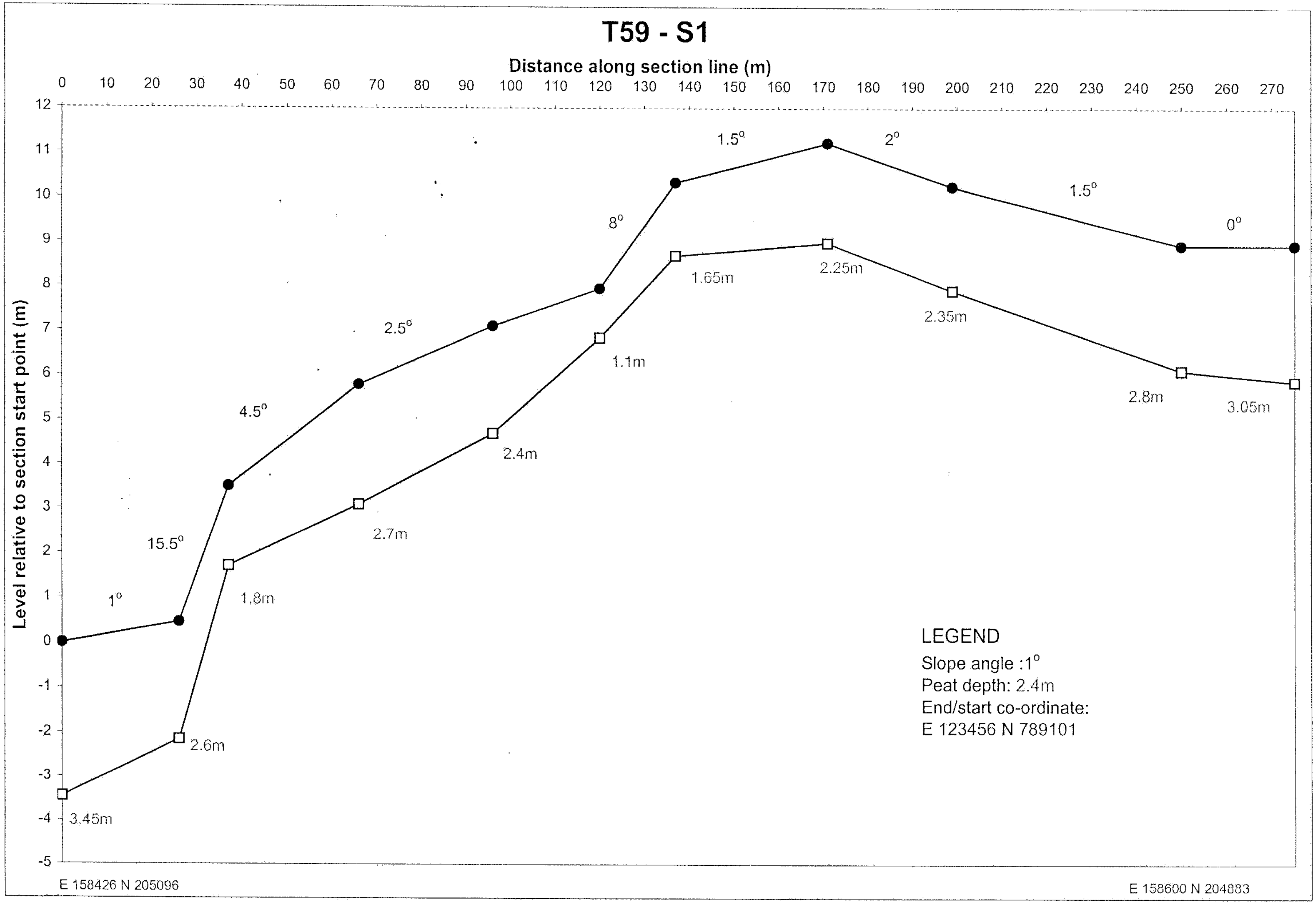
T58-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
Level relative to section start point (m)
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
2°
8°
4.5°
5°
1.6m
0.75m
1.8m
1.45m
1.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159364 N 205621
E 159396 N 205502



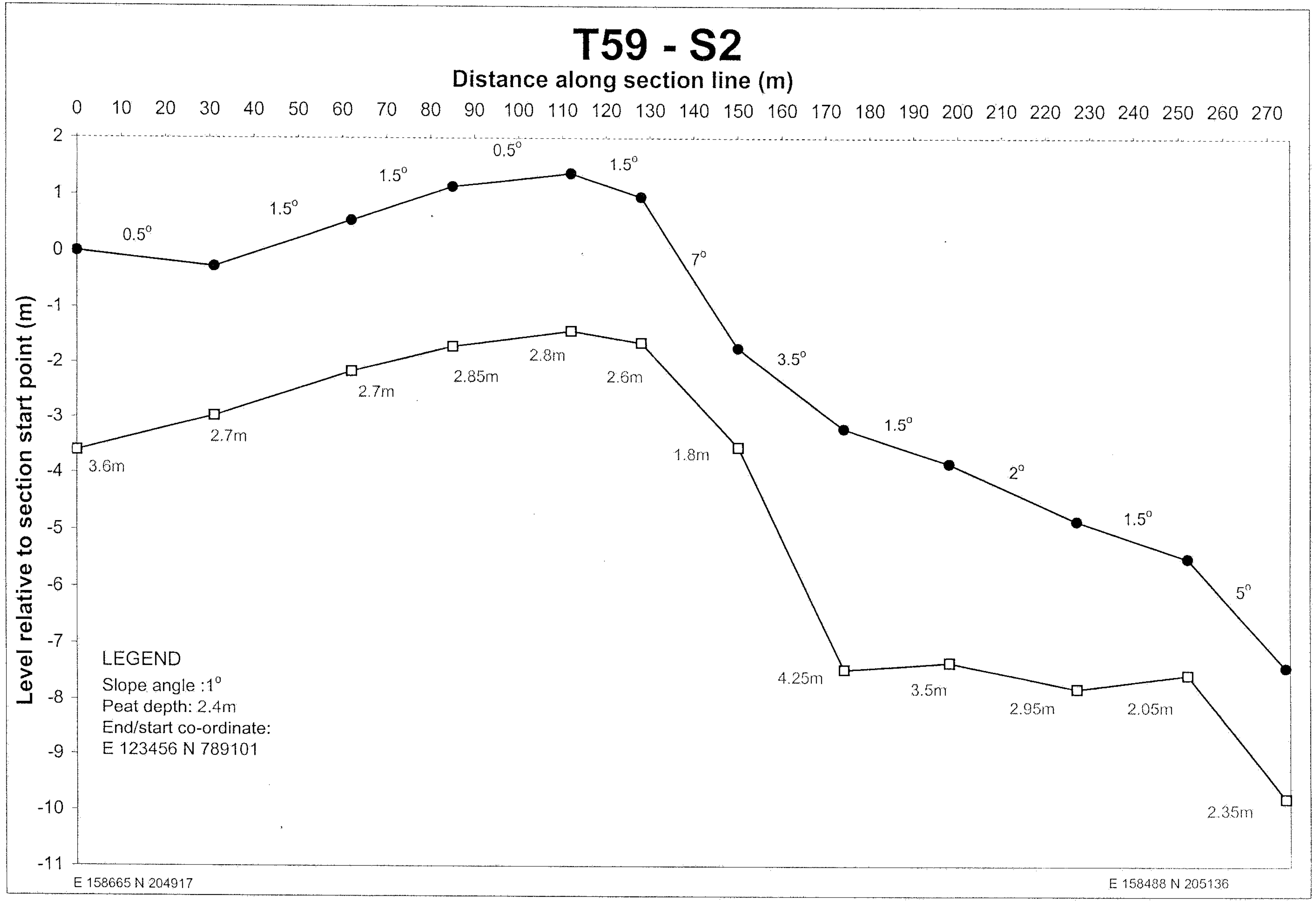
T58-S2
Distance along section line (m)
0
10
20
30
40
50
60
70
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
0.75m
3.5°
0.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159471 N 205564
E 159457 N 205620



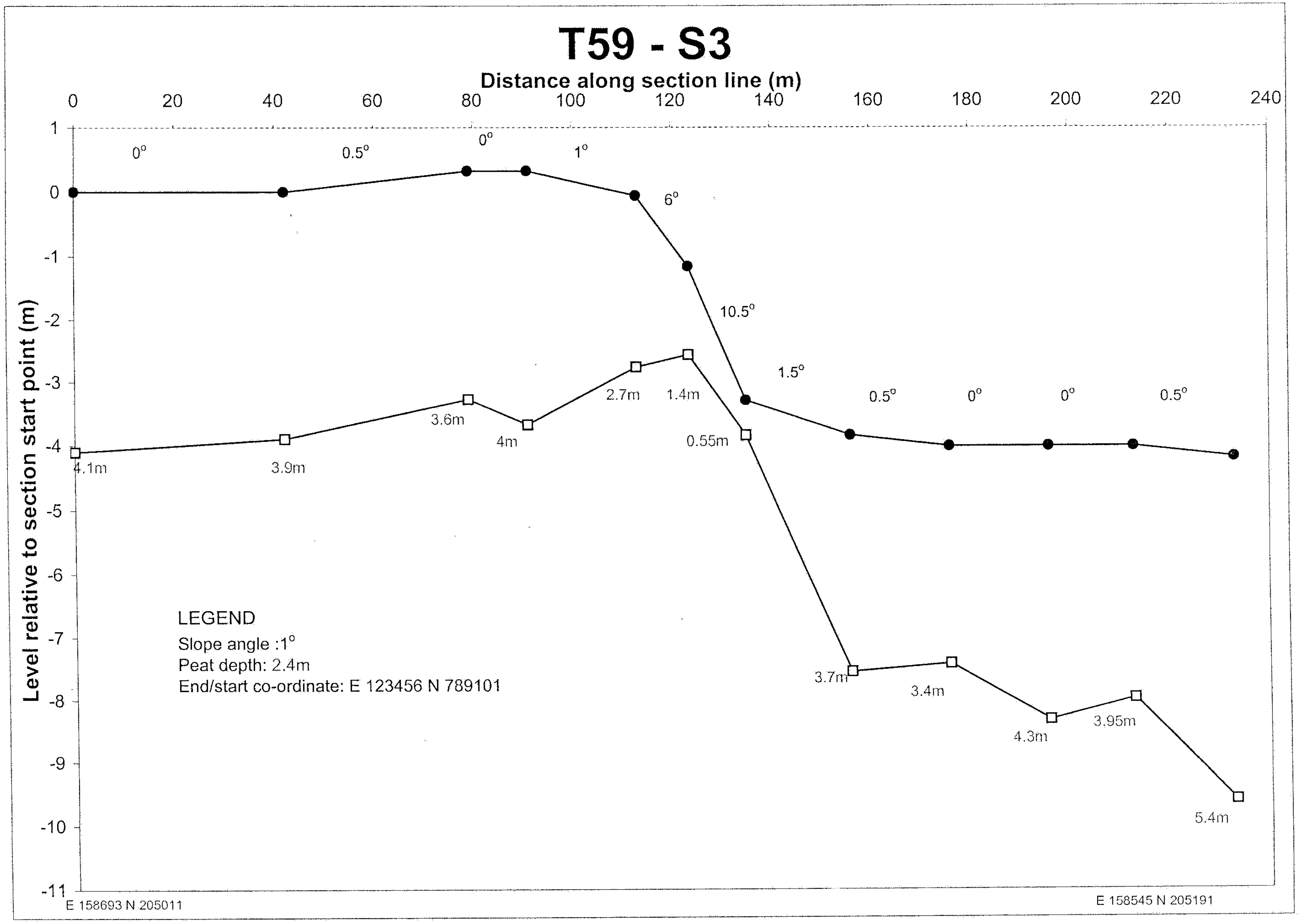
T58-S3
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
5°
3.5°
3.5°
1.6m
1.25m
0.55m
0.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159507 N 205569
E 159487 N 205640

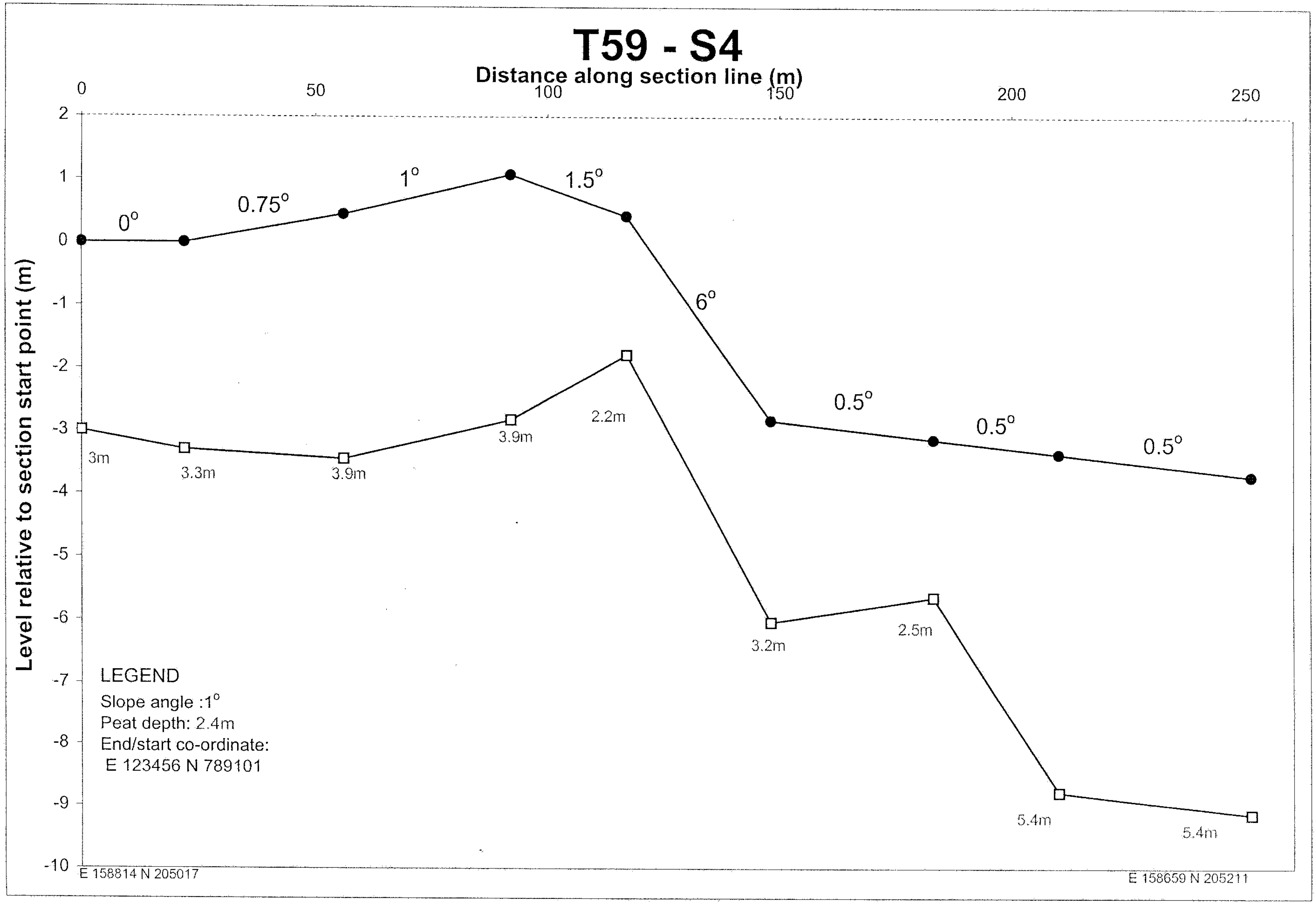


T59 - S1
Distance along section line (m)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270
Level relative to section start point (m)
12 11 10 9 8 7 6 5 4 3 2 1 0 -1 -2 -3 -4 -5
1°
15.5°
4.5°
2.5°
8°
1.5°
2°
1.5°
0°
3.45m
2.6m
1.8m
2.7m
2.4m
1.1m
1.65m
2.25m
2.35m
2.8m
3.05m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158426 N 205096
E 158600 N 204883

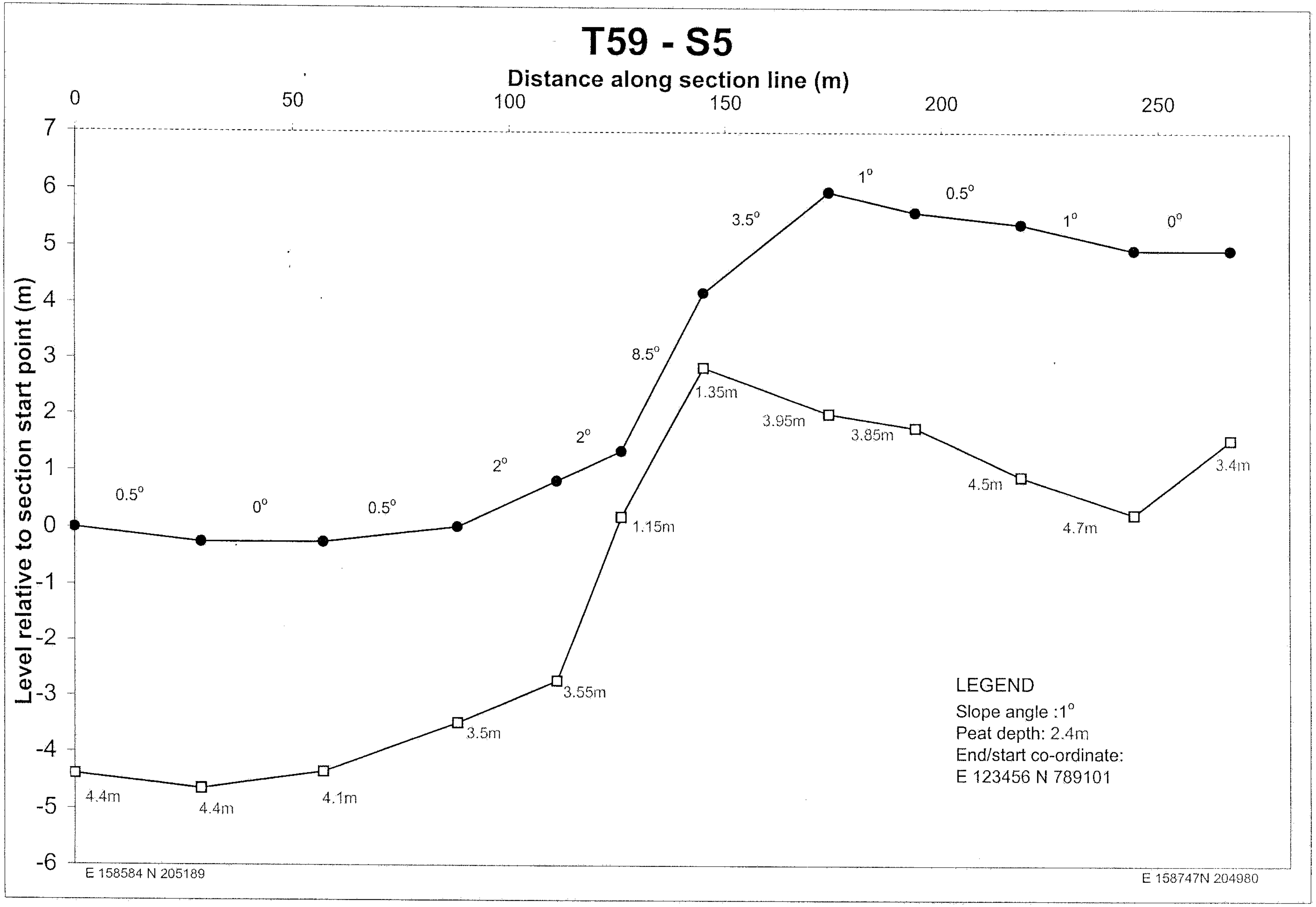


T59 - S2
Distance along section line (m)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270
2 1 0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -10 -11
Level relative to section start point (m)
0.5°
1.5°
1.5°
0.5°
1.5°
7°
3.5°
1.5°
2°
1.5°
5°
3.6m
2.7m
2.7m
2.85m
2.8m
2.6m
1.8m
4.25m
3.5m
2.95m
2.05m
2.35m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158665 N 204917
E 158488 N 205136

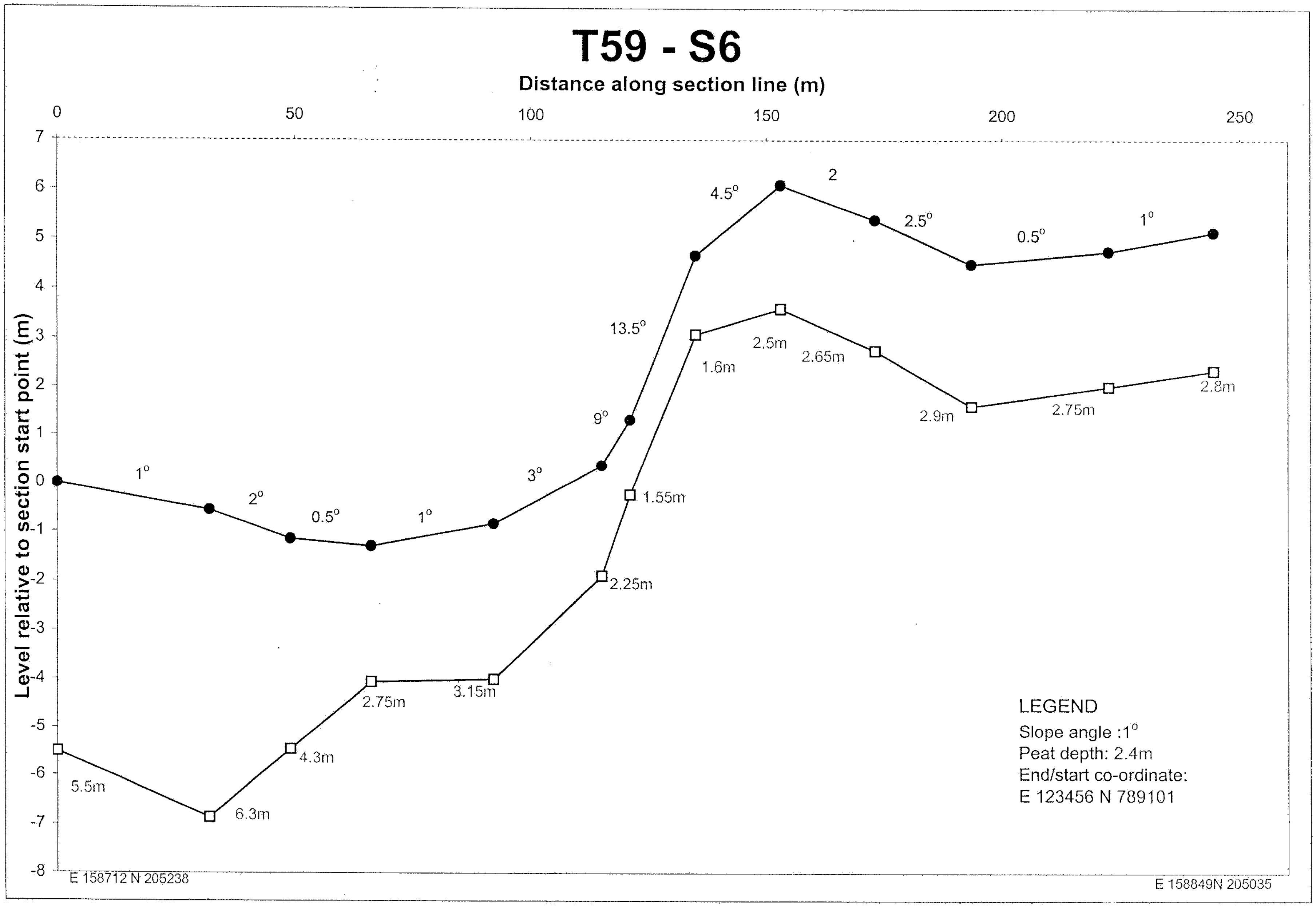

T59 - S3
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
240
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
0°
0.5°
0°
1°
6°
10.5°
1.5°
0.5°
0°
0°
0.5°
4.1m
3.9m
3.6m
4m
2.7m
1.4m
0.55m
3.7m
3.4m
4.3m
3.95m
5.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate: E 123456 N 789101
E 158693 N 205011
E 158545 N 205191



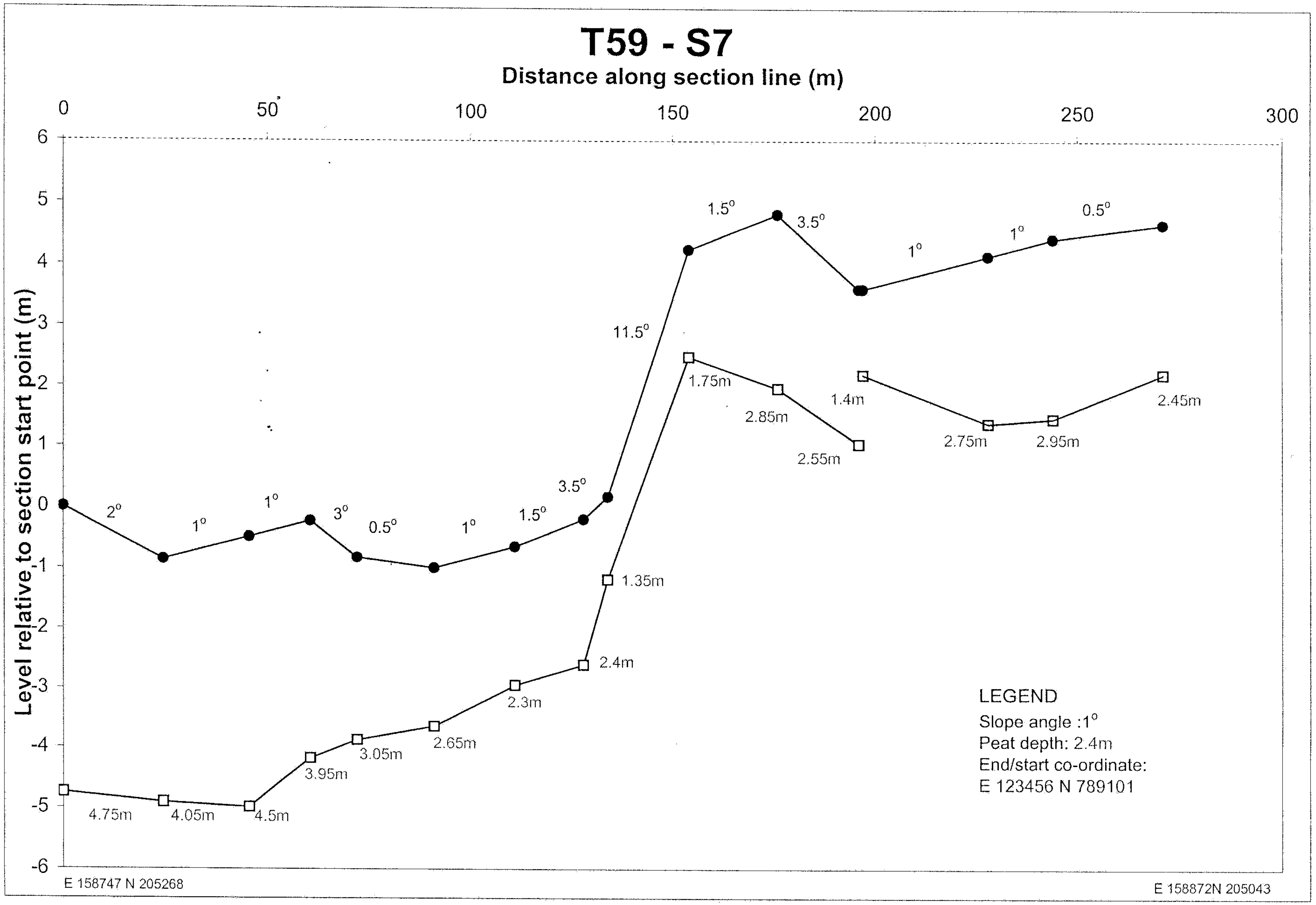
T59 - S4
Distance along section line (m)
0
50
100
150
200
250
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
Level relative to section start point (m)
0°
0.75°
1°
1.5°
6°
0.5°
0.5°
0.5°
3m
3.3m
3.9m
3.9m
2.2m
3.2m
2.5m
5.4m
5.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158814 N 205017
E 158659 N 205211



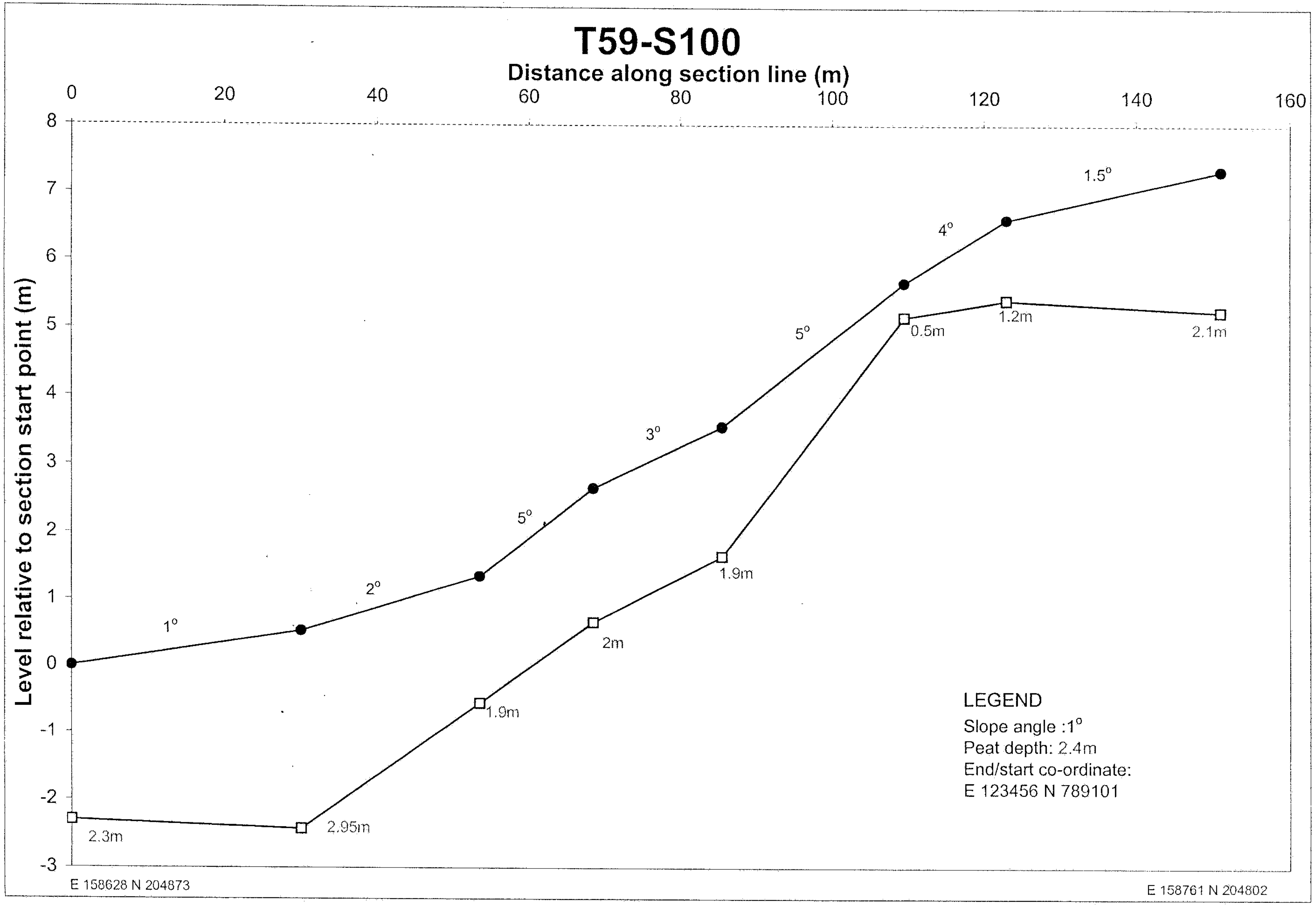
T59 - S5
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
0.5°
0°
0.5°
2°
2°
8.5°
3.5°
1°
0.5°
1°
0°
4.4m
4.4m
4.1m
3.5m
3.55m
1.15m
1.35m
3.95m
3.85m
4.5m
4.7m
3.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158584 N 205189
E 158747N 204980

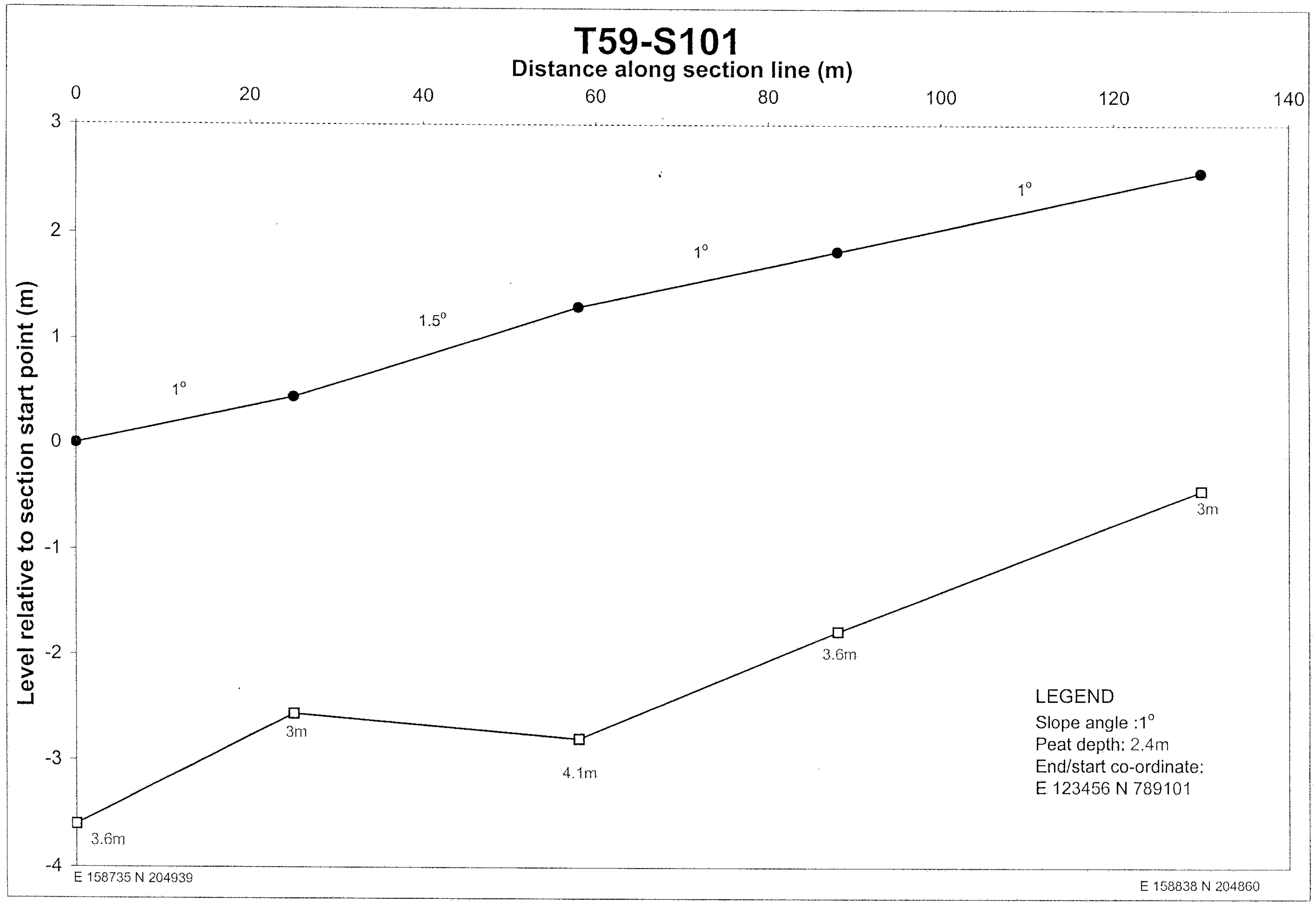


T59 - S6
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
1°
2°
0.5°
1°
3°
9°
13.5°
4.5°
2
2.5°
0.5°
1°
5.5m
6.3m
4.3m
2.75m
3.15m
2.25m
1.55m
1.6m
2.5m
2.65m
2.9m
2.75m
2.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158712 N 205238
E 158849N 205035

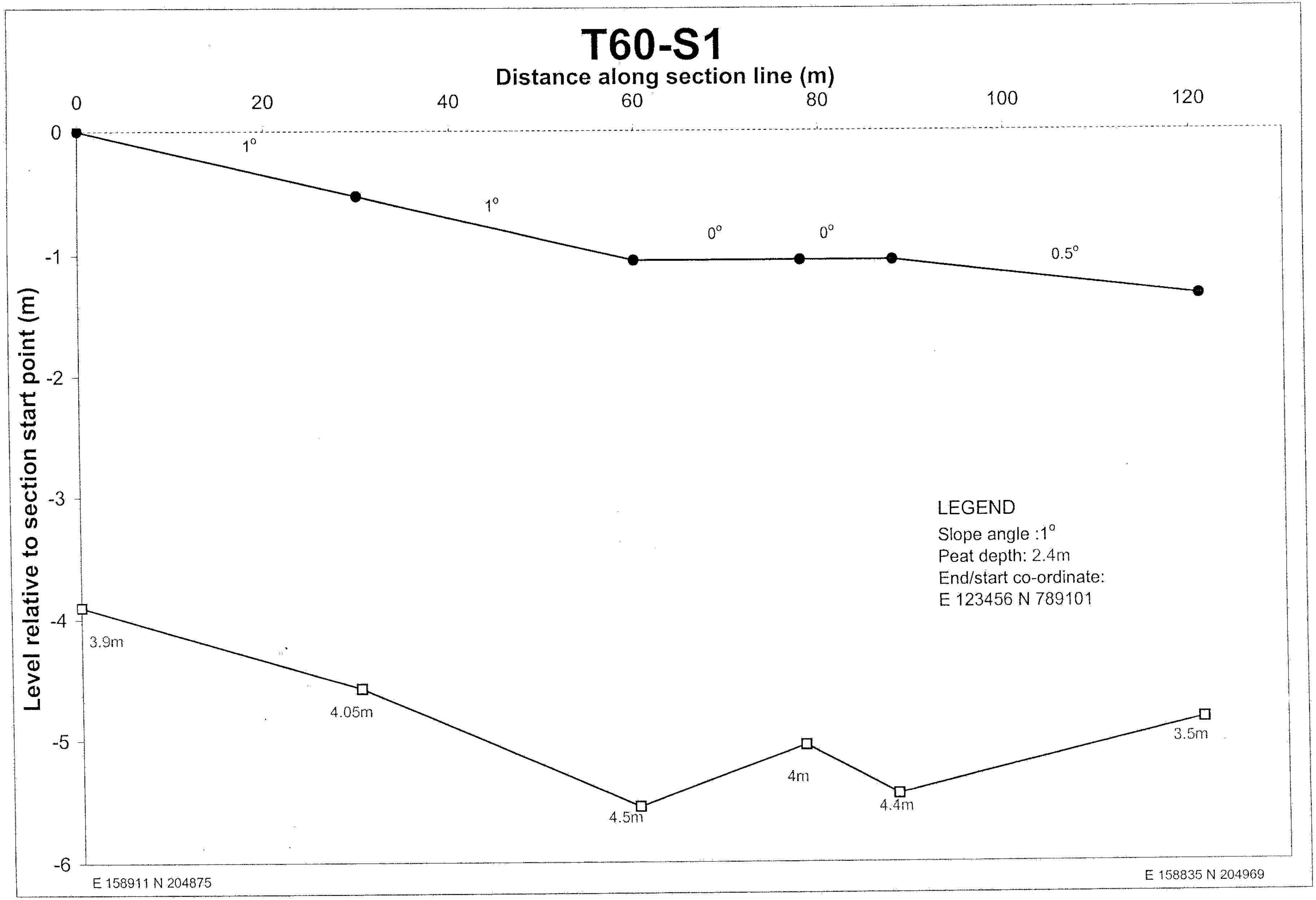


T59 - S7
Distance along section line (m)
0
50
100
150
200
250
300
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
2°
1°
1°
3°
0.5°
1°
1.5°
3.5°
11.5°
1.5°
3.5°
1°
1°
0.5°
4.75m
4.05m
4.5m
3.95m
3.05m
2.65m
2.3m
2.4m
1.35m
1.75m
2.85m
2.55m
1.4m
2.75m
2.95m
2.45m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158747 N 205268
E 158872N 205043

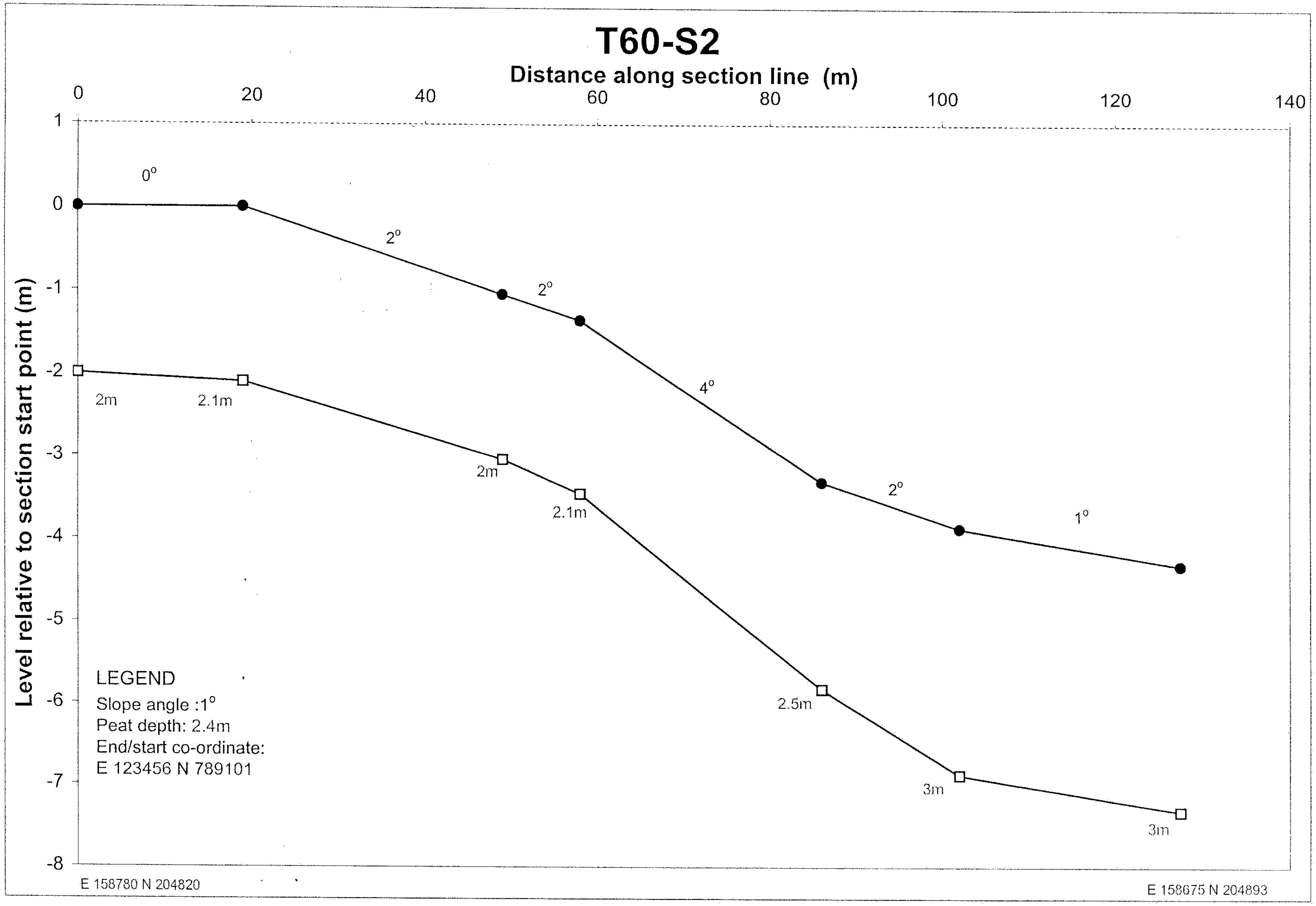

T59-S100
Distance along section line (m)
0
20
40
60
80
100
120
140
160
8
7
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
1°
2°
5°
3°
5°
4°
1.5°
2.3m
2.95m
1.9m
2m
1.9m
0.5m
1.2m
2.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158628 N 204873
E 158761 N 204802



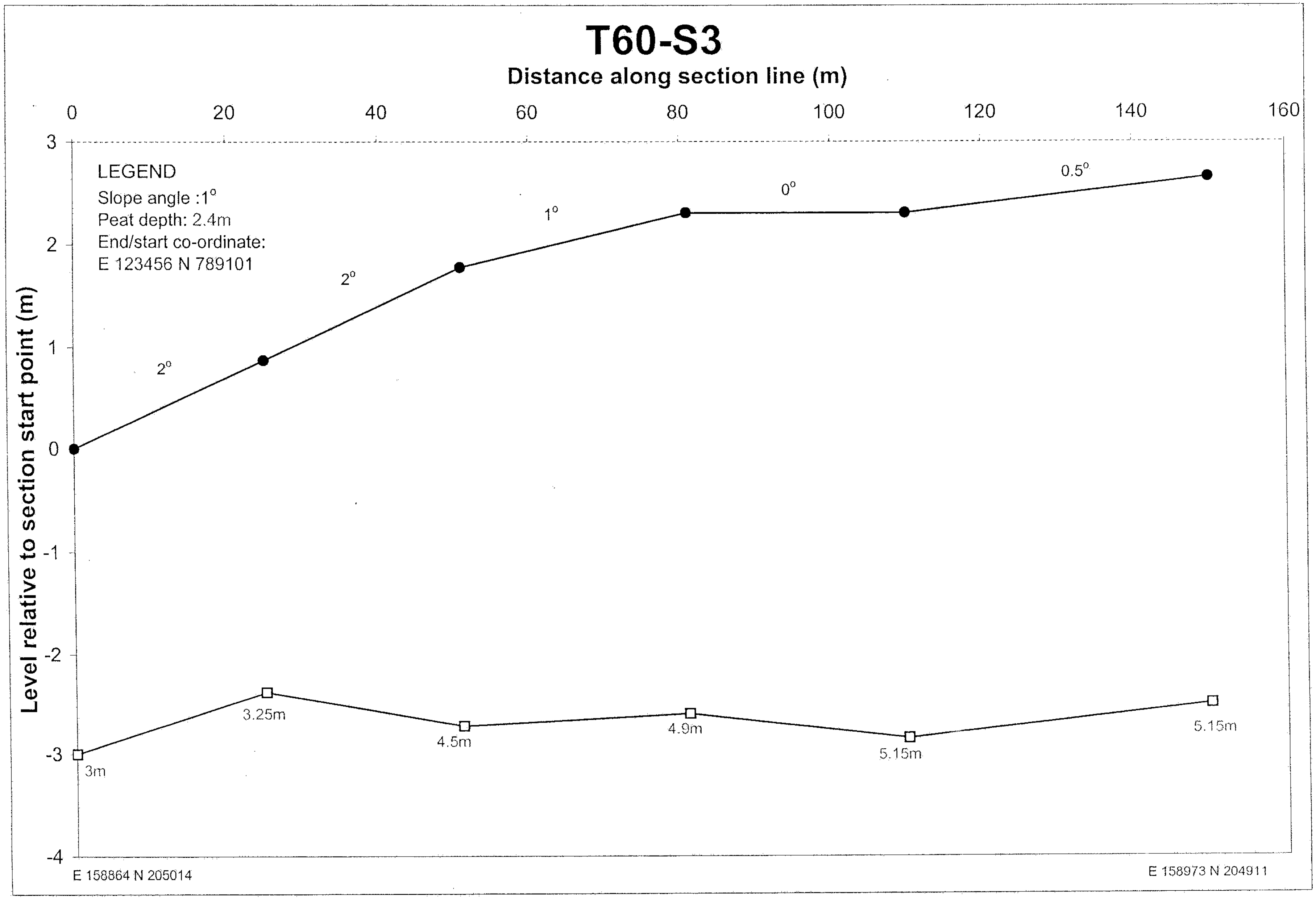
T59-S101
Distance along section line (m)
0
20
40
60
80
100
120
140
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1°
1.5°
1°
1°
3.6m
3m
4.1m
3.6m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158735 N 204939
E 158838 N 204860

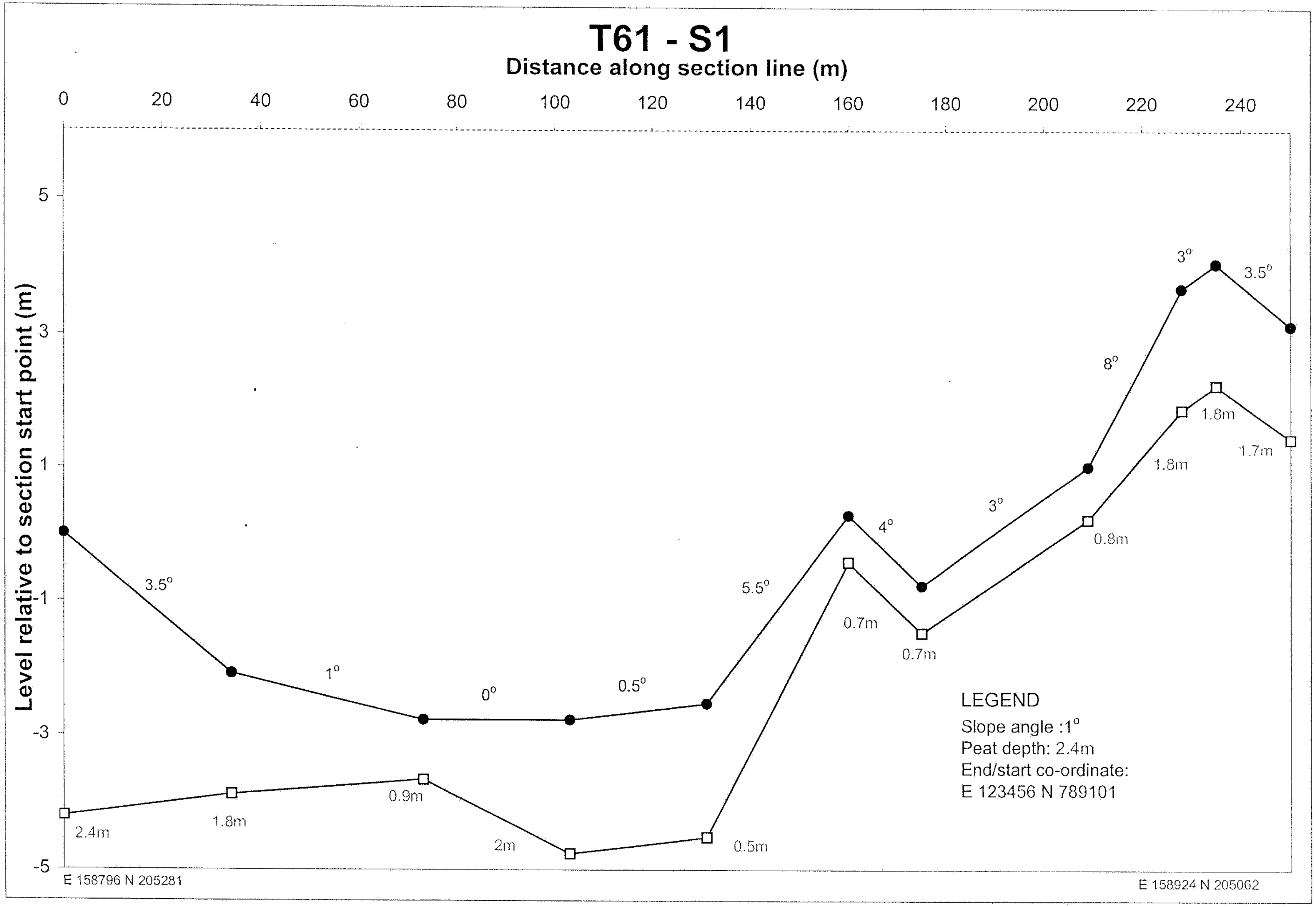


T60-S1
Distance along section line (m)
0
20
40
60
80
100
120
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
1°
1°
0°
0°
0.5°
3.9m
4.05m
4.5m
4m
4.4m
3.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158911 N 204875
E 158835 N 204969

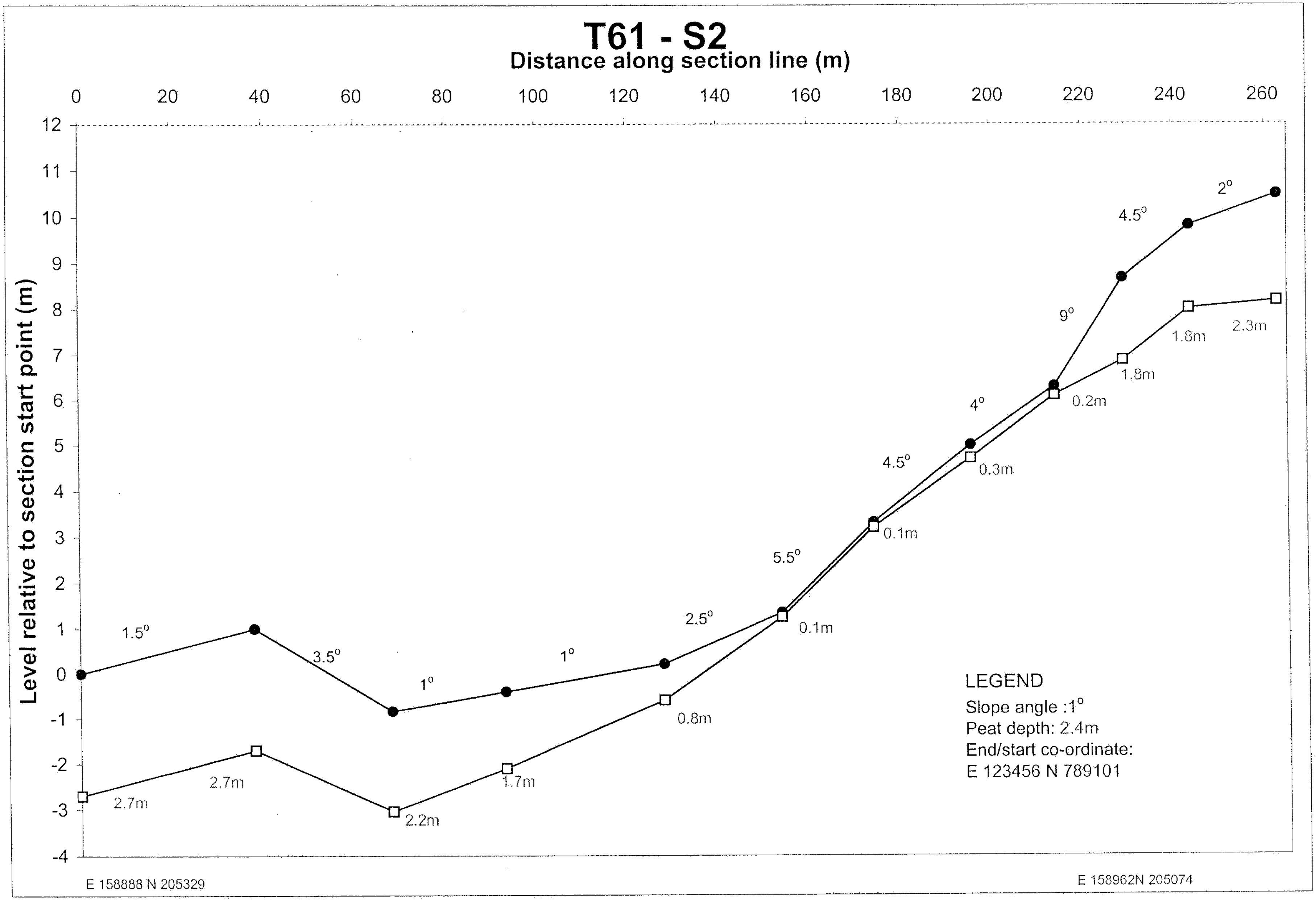


T60-S2
Distance along section line (m)
0
20
40
60
80
100
120
140
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0°
2°
2°
4°
2°
1°
2m
2.1m
2m
2.1m
2.5m
3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158780 N 204820
E 158675 N 204893

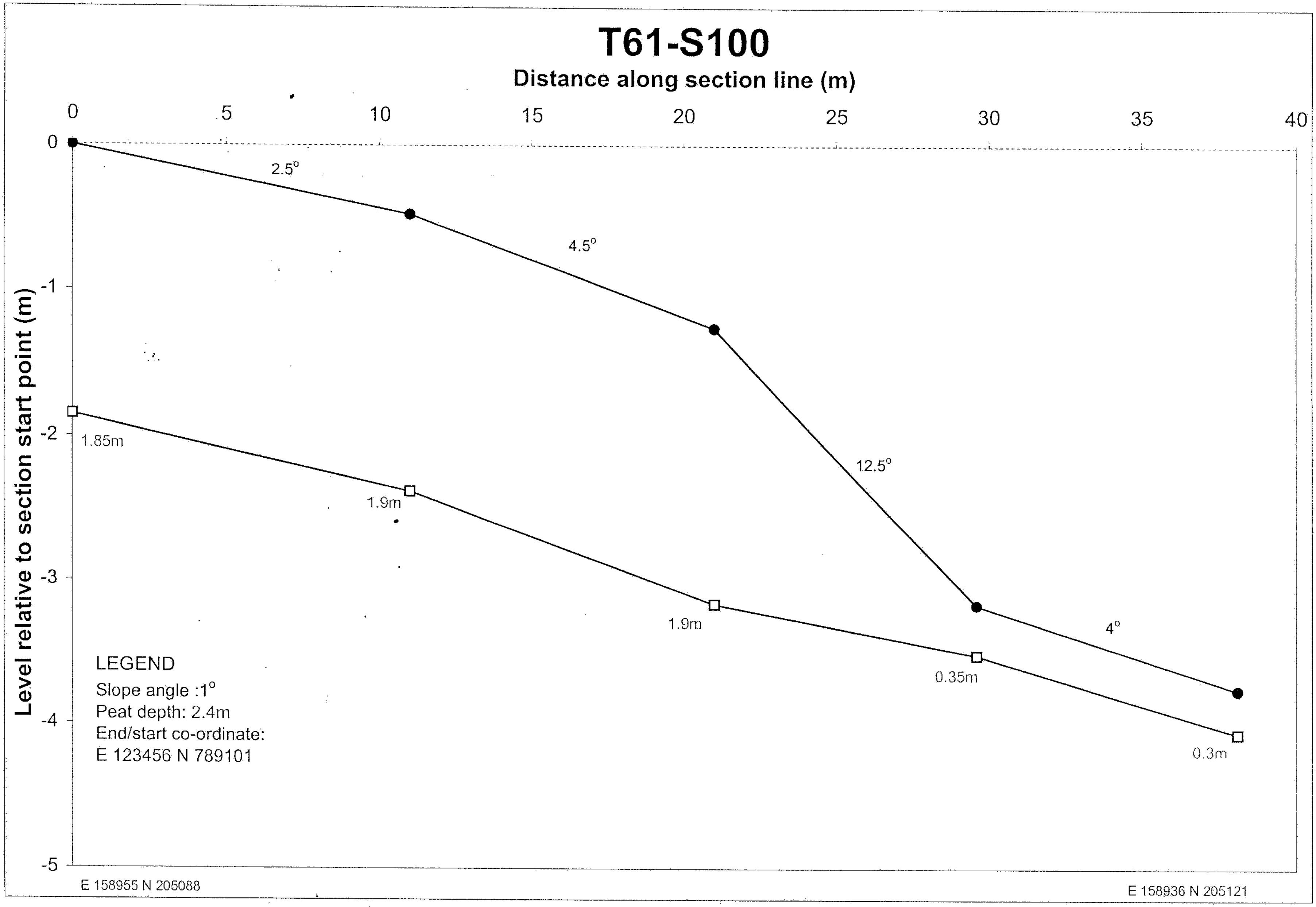

T60-S3
Distance along section line (m)
0
20
40
60
80
100
120
140
160
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
2°
2°
1°
0°
0.5°
3m
3.25m
4.5m
4.9m
5.15m
5.15m
E 158864 N 205014
E 158973 N 204911

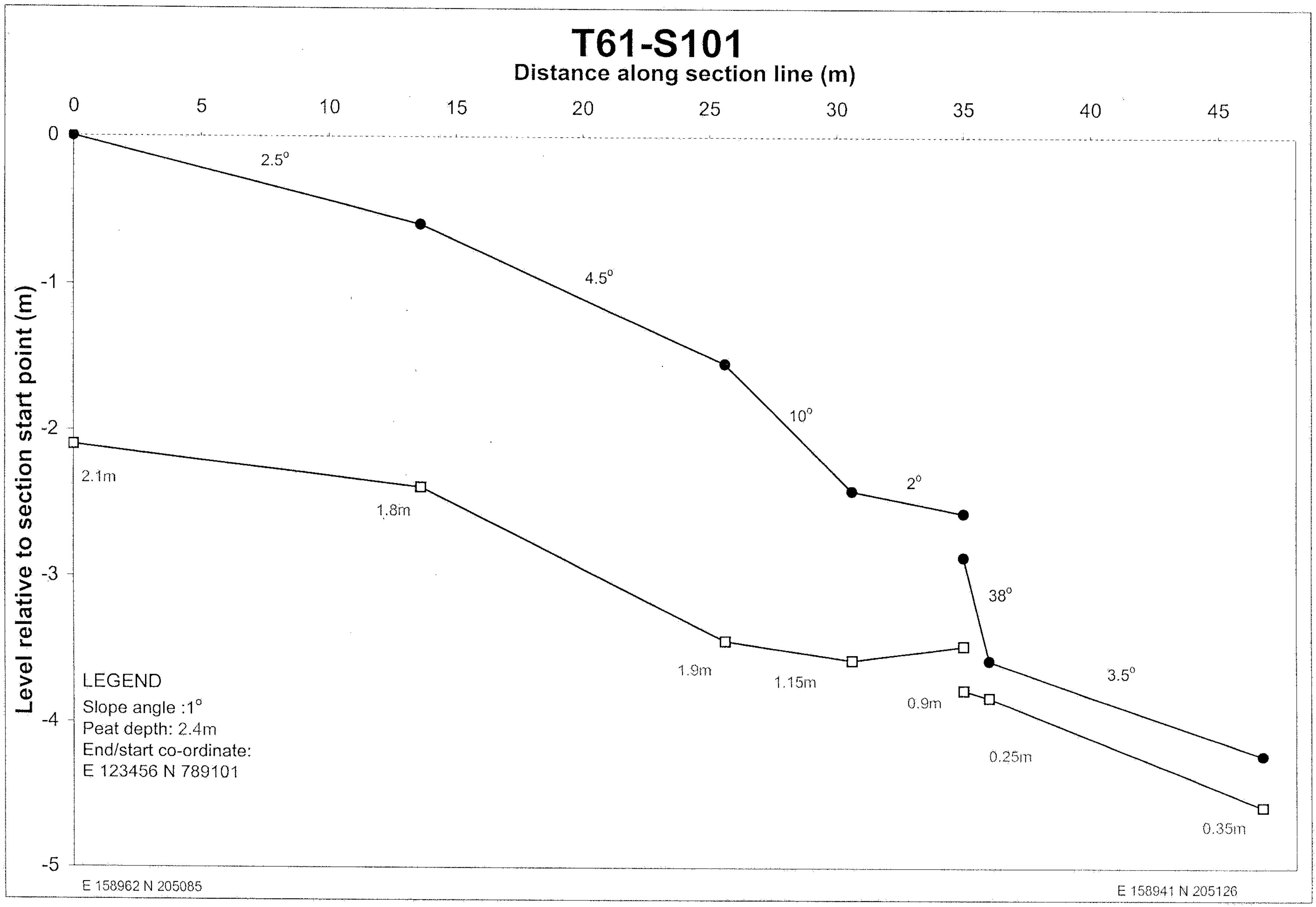


T61 - S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
240
Level relative to section start point (m)
5
3
1
-1
-3
-5
3.5°
1°
0°
0.5°
5.5°
4°
3°
8°
3°
3.5°
2.4m
1.8m
0.9m
2m
0.5m
0.7m
0.7m
0.8m
1.8m
1.8m
1.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158796 N 205281
E 158924 N 205062

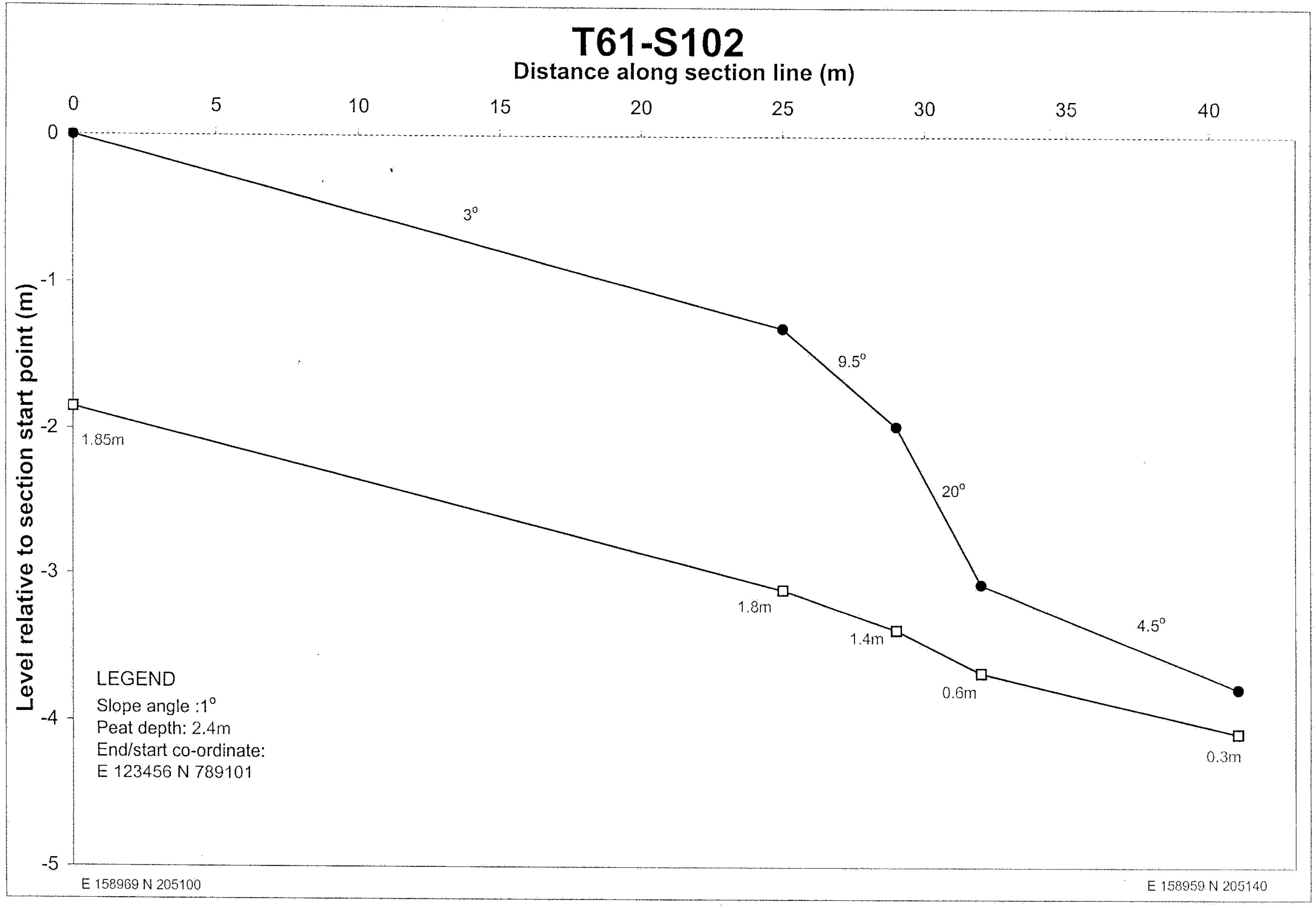


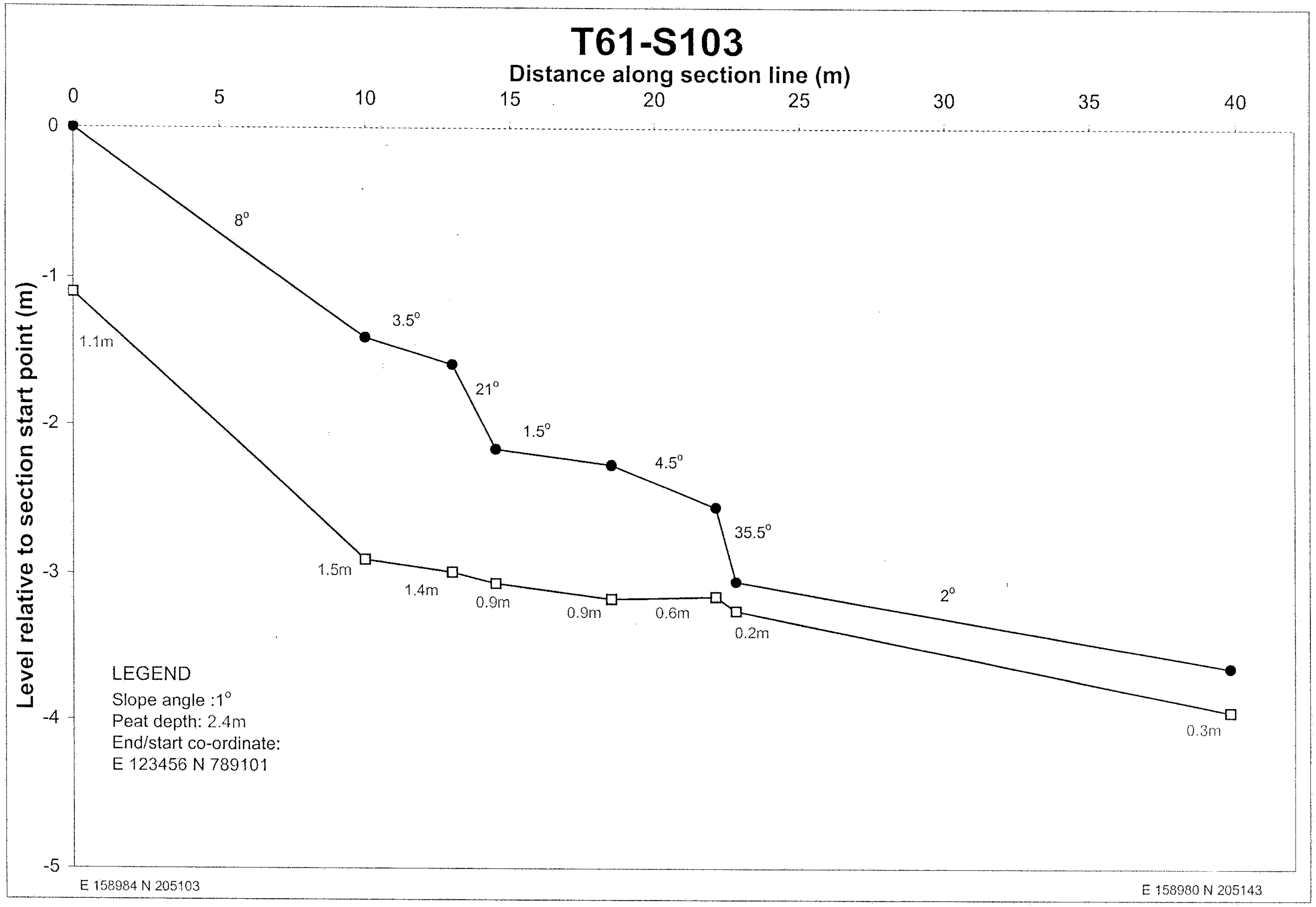
T61 - S2
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
Level relative to section start point (m)
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
1.5°
3.5°
1°
1°
2.5°
5.5°
4.5°
4°
9°
4.5°
2°
2.7m
2.7m
2.2m
1.7m
0.8m
0.1m
0.1m
0.3m
0.2m
1.8m
1.8m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158888 N 205329
E 158962N 205074

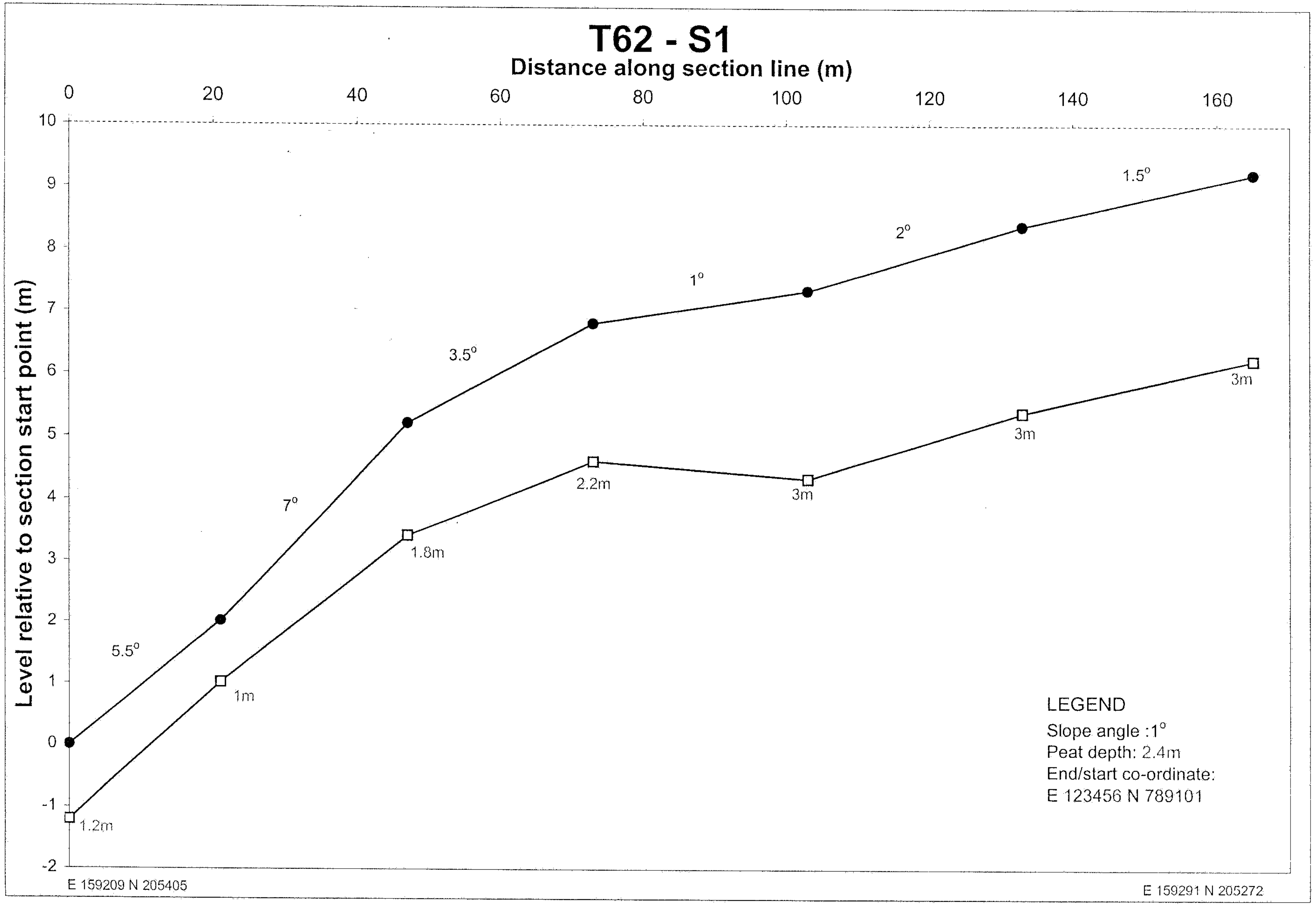

T61-S100
Distance along section line (m)
0
5
10
15
20
25
30
35
40
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
2.5°
4.5°
12.5°
4°
1.85m
1.9m
1.9m
0.35m
0.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158955 N 205088
E 158936 N 205121



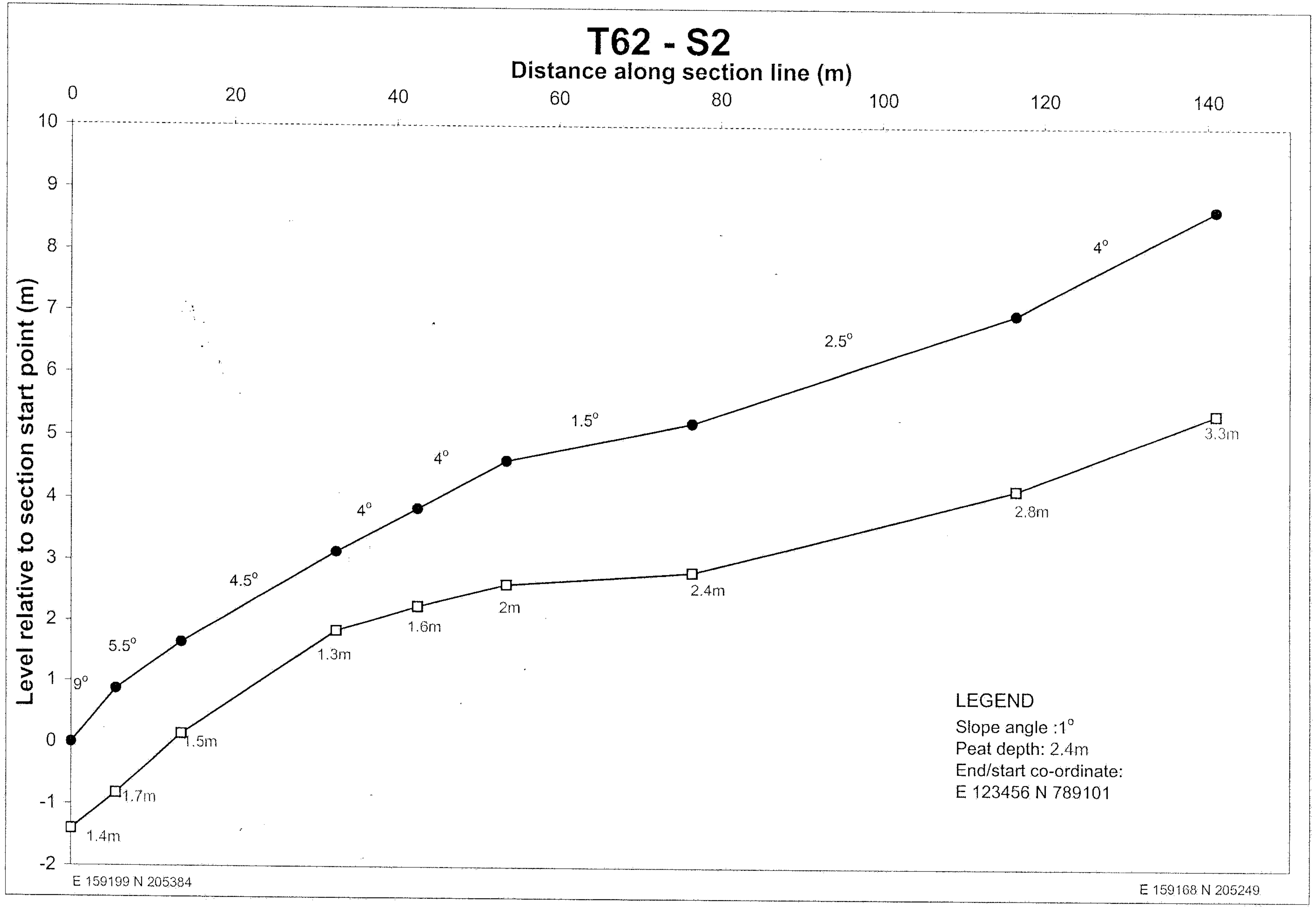
T61-S101
Distance along section line (m)
0
5
10
15
20
25
30
35
40
45
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
2.5°
4.5°
10°
2°
38°
3.5°
2.1m
1.8m
1.9m
1.15m
0.9m
0.25m
0.35m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158962 N 205085
E 158941 N 205126


T61-S102
Distance along section line (m)
0
5
10
15
20
25
30
35
40
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
3°
9.5°
20°
4.5°
1.85m
1.8m
1.4m
0.6m
0.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158969 N 205100
E 158959 N 205140

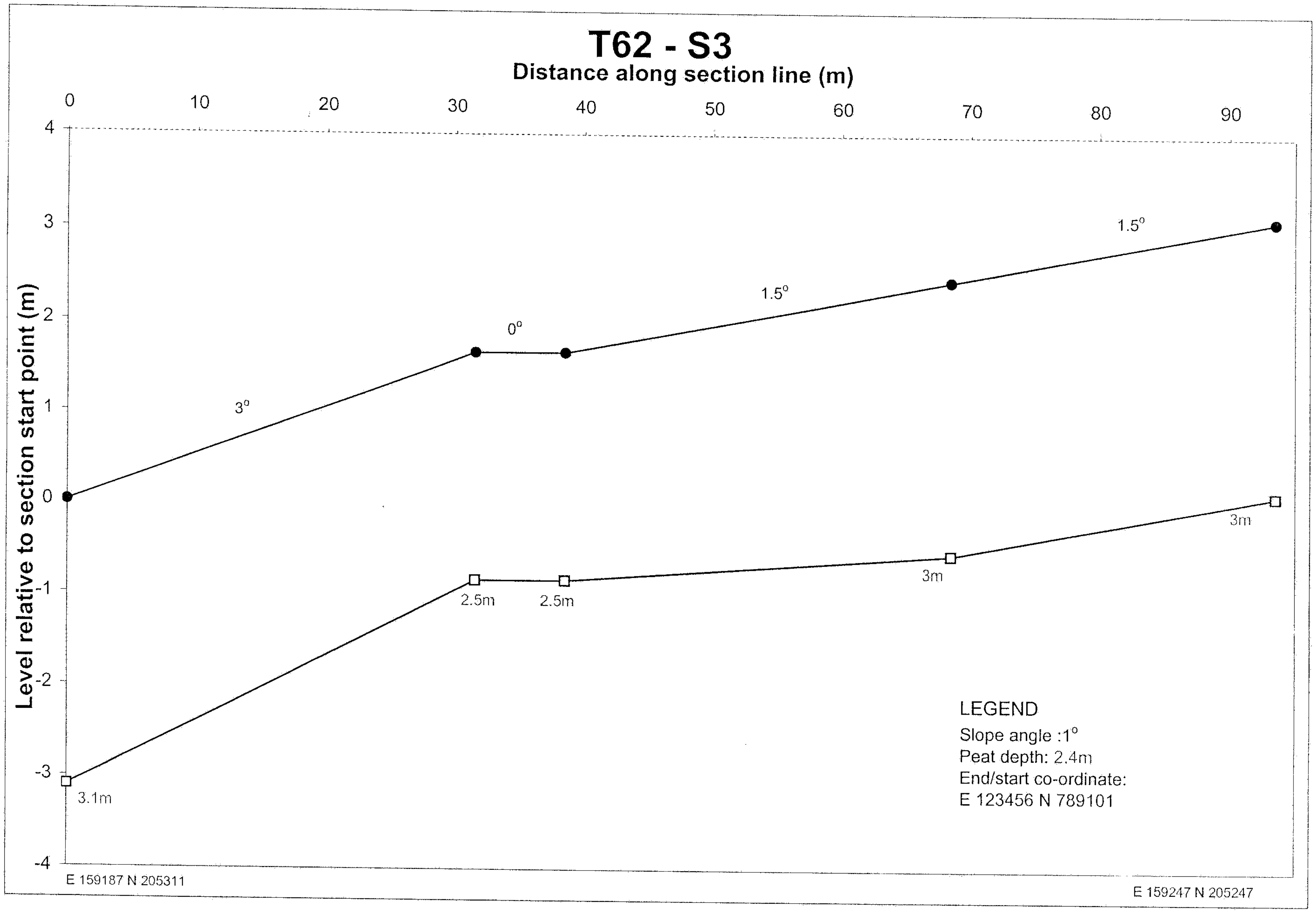

T61-S103
Distance along section line (m)
0
5
10
15
20
25
30
35
40
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
8°
3.5°
21°
1.5°
4.5°
35.5°
2°
1.1m
1.5m
1.4m
0.9m
0.9m
0.6m
0.2m
0.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 158984 N 205103
E 158980 N 205143



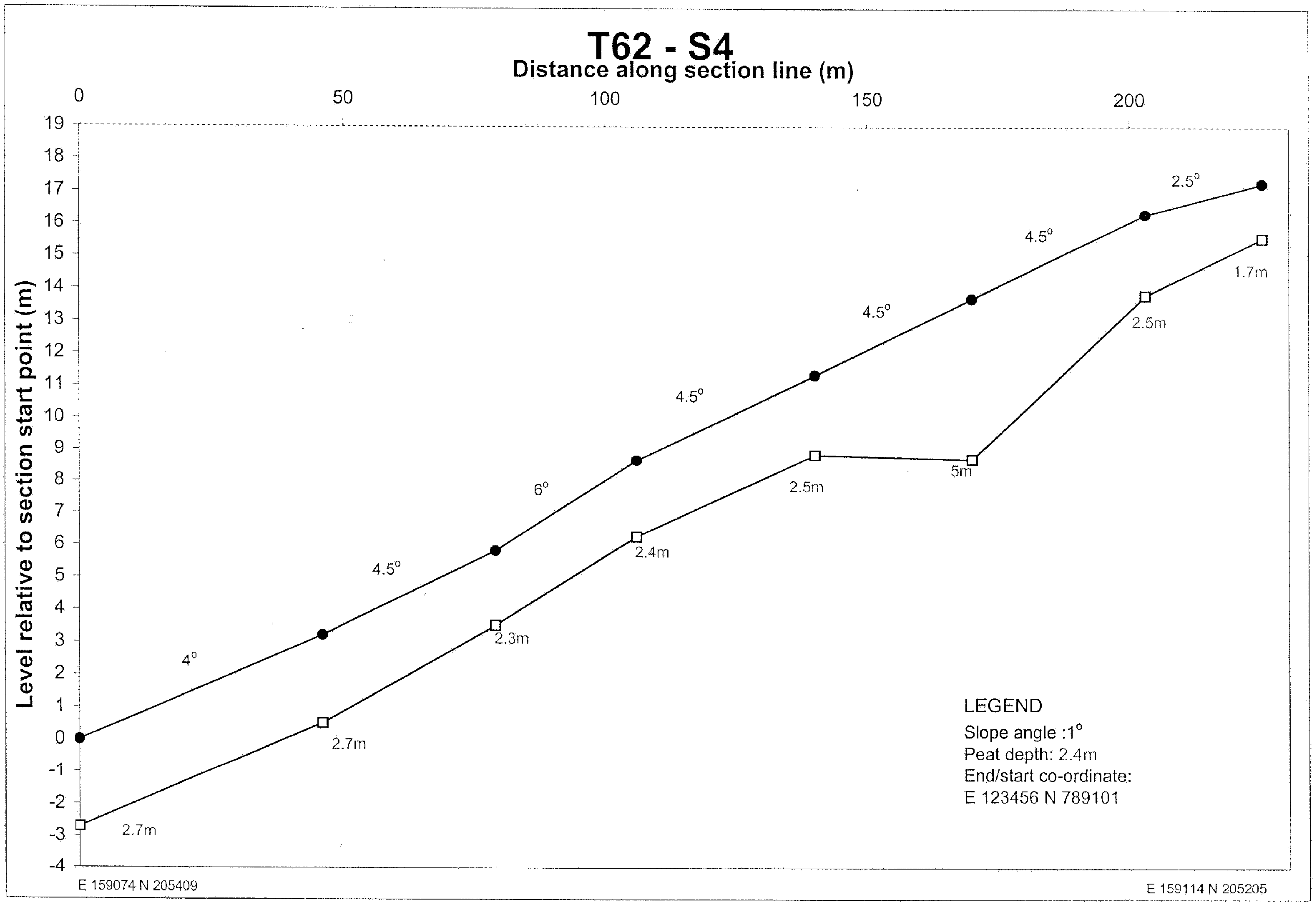
T62 - S1
Distance along section line (m)
0
20
40
60
80
100
120
140
160
10
9
8
7
6
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
5.5°
7°
3.5°
1°
2°
1.5°
1.2m
1m
1.8m
2.2m
3m
3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159209 N 205405
E 159291 N 205272



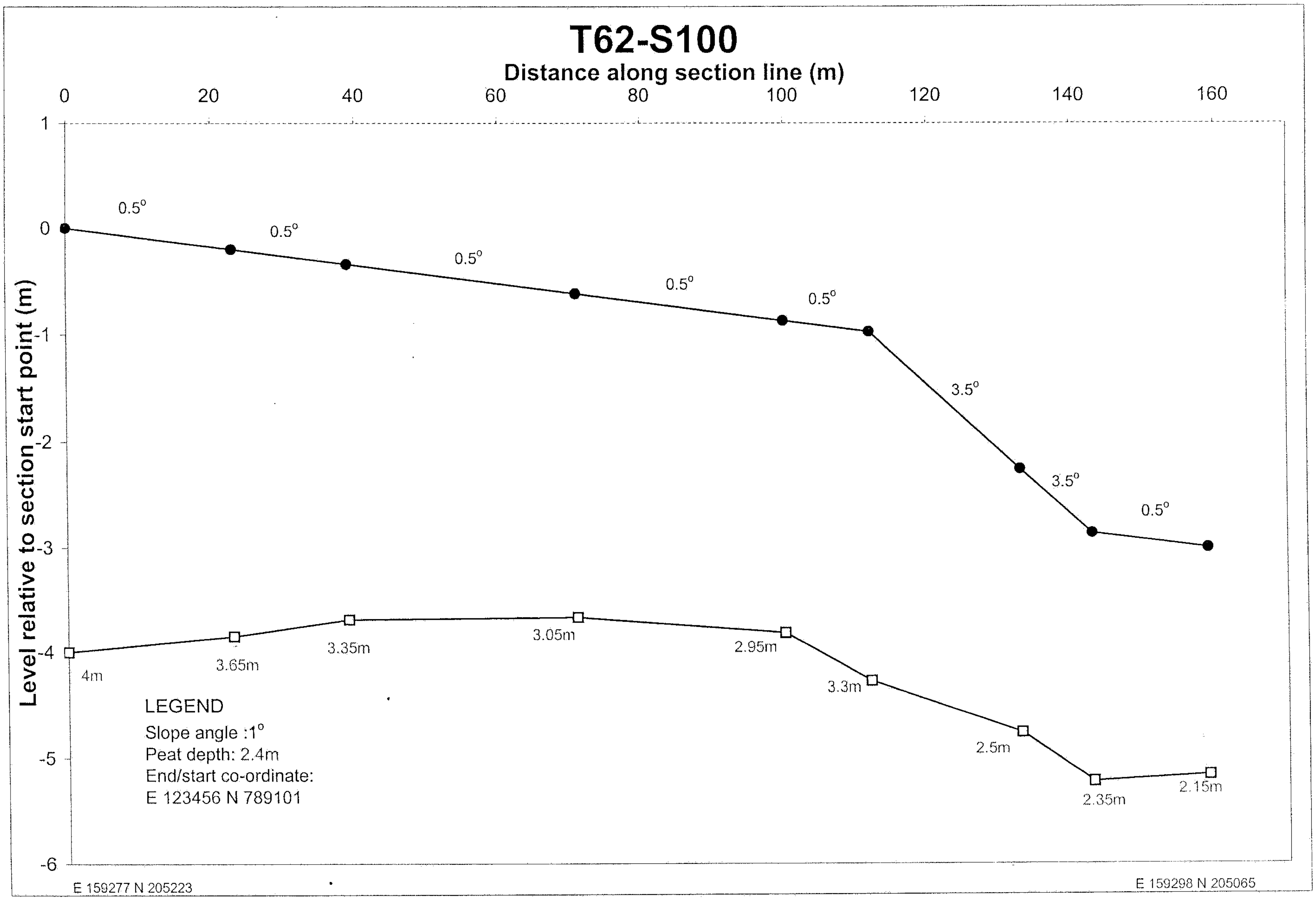
T62 - S2
Distance along section line (m)
0
20
40
60
80
100
120
140
10
9
8
7
6
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
9°
5.5°
4.5°
4°
4°
1.5°
2.5°
4°
1.4m
1.7m
1.5m
1.3m
1.6m
2m
2.4m
2.8m
3.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159199 N 205384
E 159168 N 205249

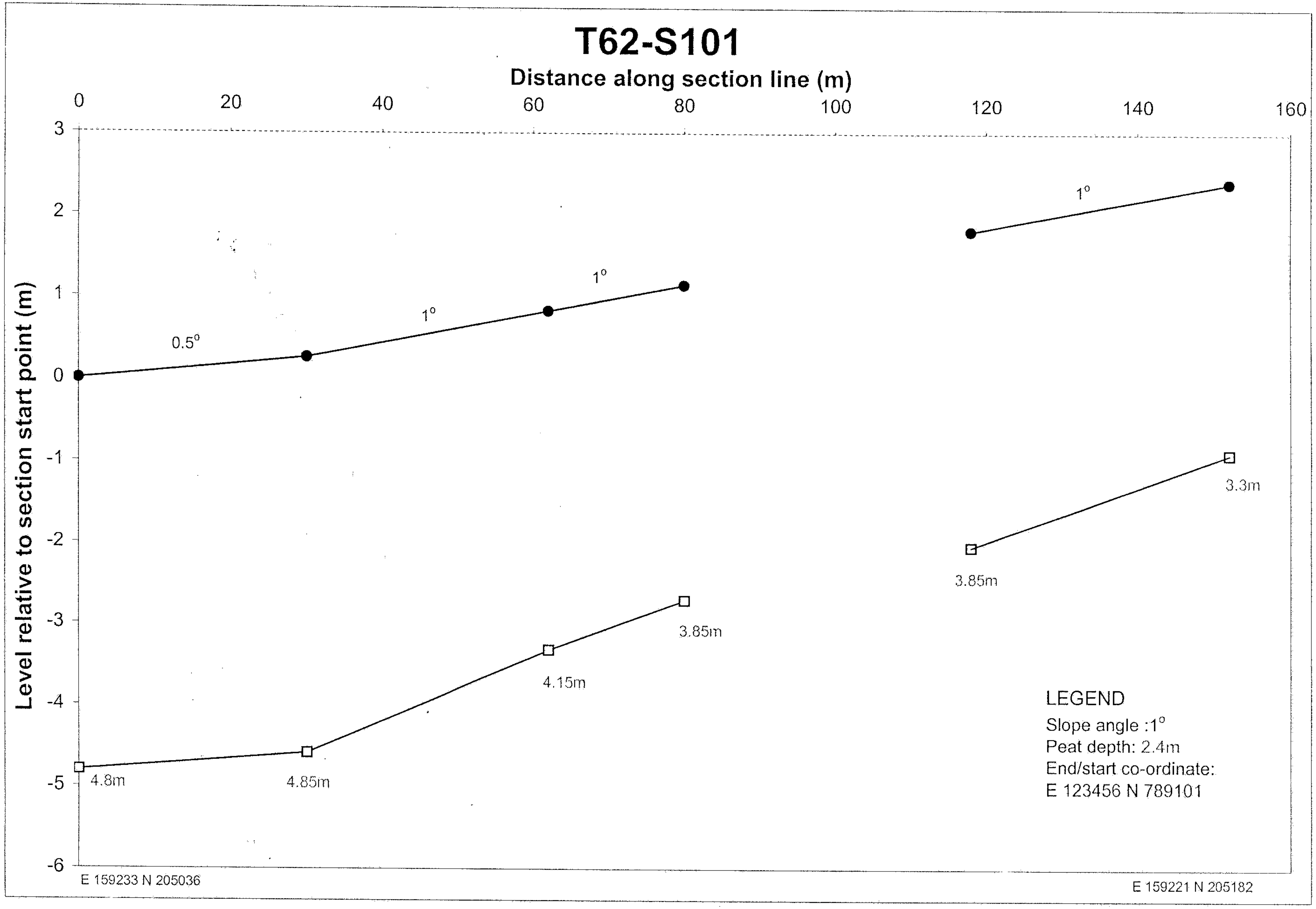


T62 - S3
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
Level relative to section start point (m)
4
3
2
1
0
-1
-2
-3
-4
3°
0°
1.5°
1.5°
3.1m
2.5m
2.5m
3m
3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159187 N 205311
E 159247 N 205247

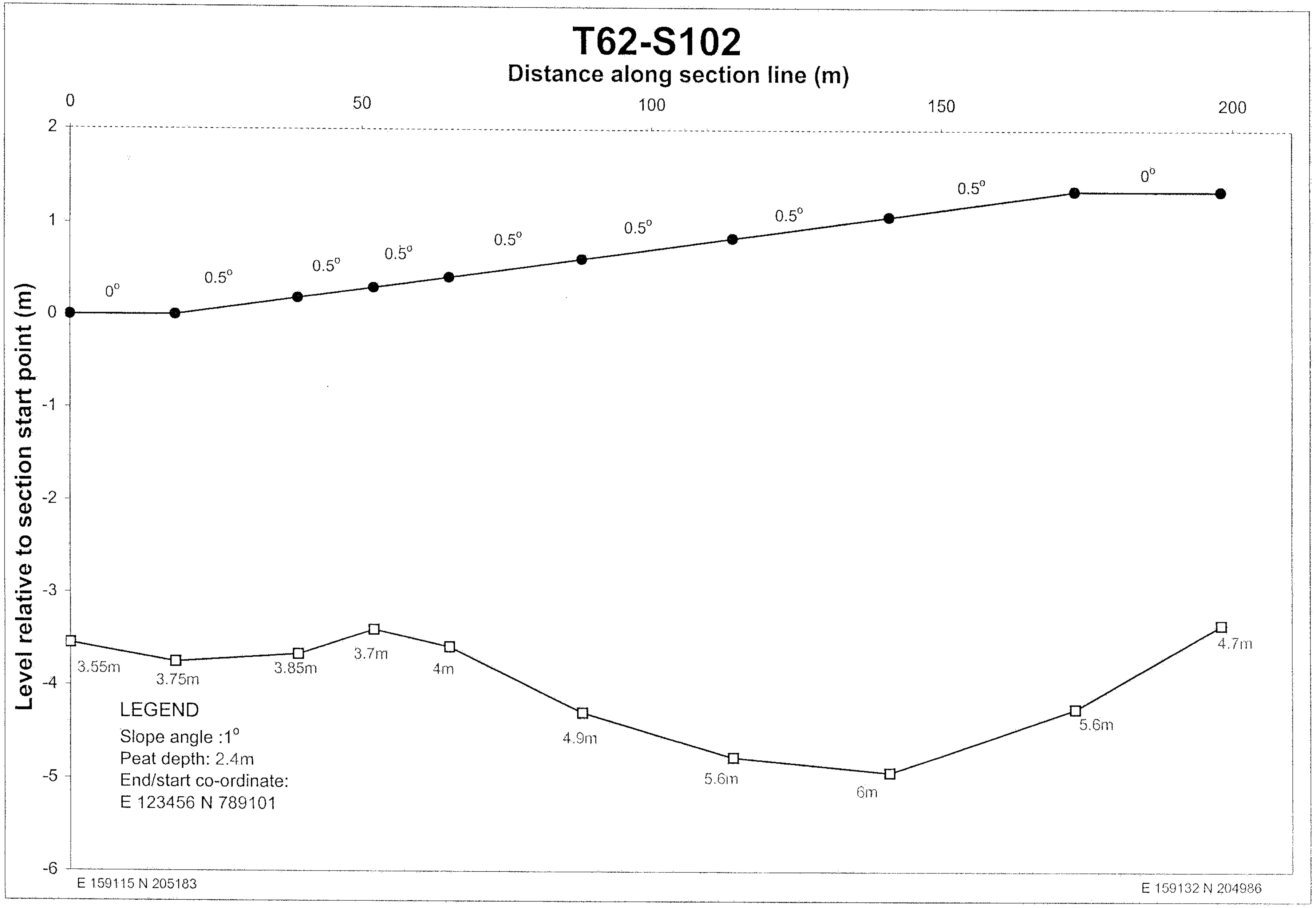


T62 - S4
Distance along section line (m)
0
50
100
150
200
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
2.5°
4.5°
1.7m
4.5°
2.5m
4.5°
6°
5m
2.5m
4.5°
2.4m
2.3m
4°
2.7m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159074 N 205409
E 159114 N 205205

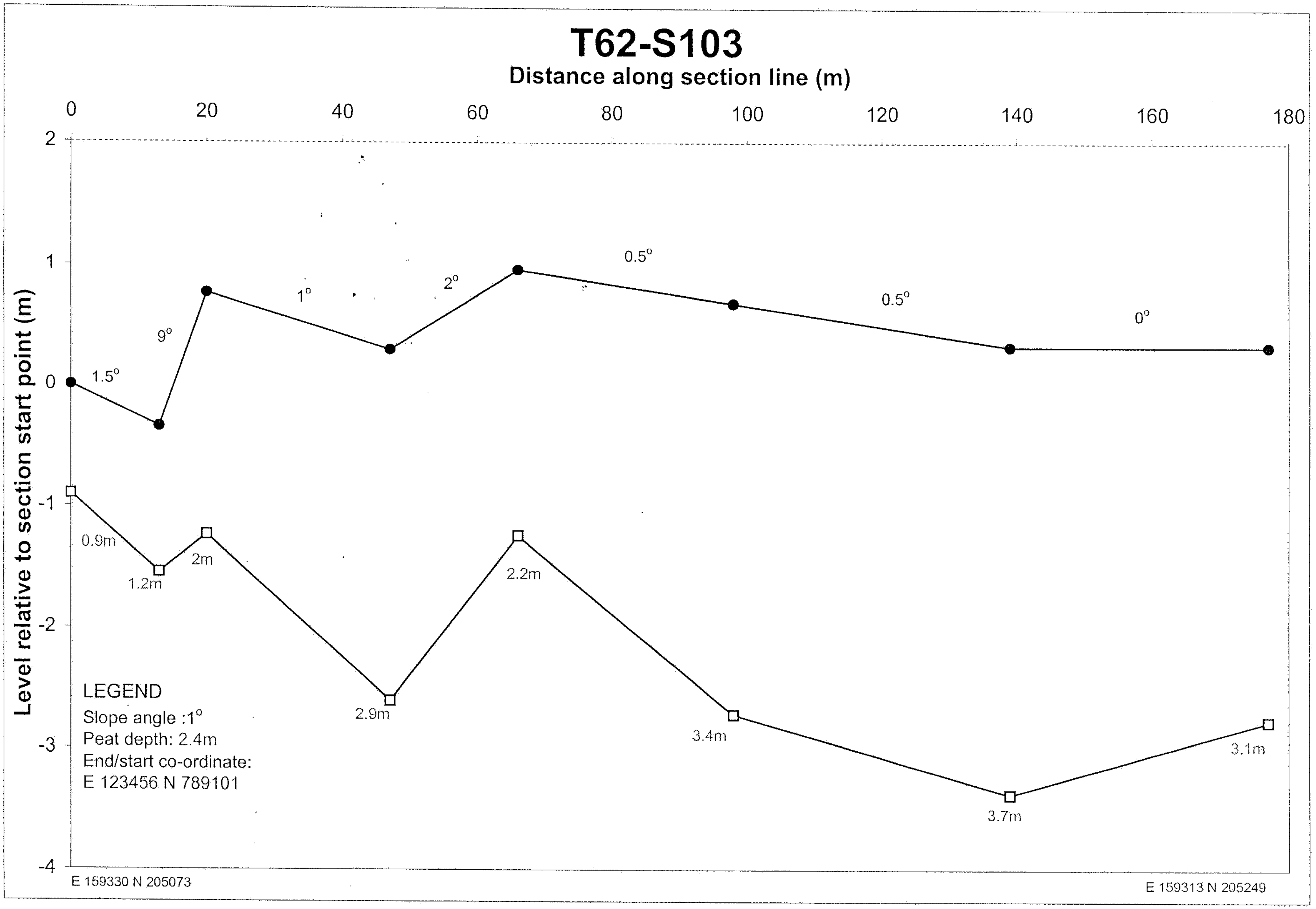

T62-S100
Distance along section line (m)
0
20
40
60
80
100
120
140
160
1
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
0.5°
0.5°
0.5°
0.5°
0.5°
3.5°
3.5°
0.5°
4m
3.65m
3.35m
3.05m
2.95m
3.3m
2.5m
2.35m
2.15m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159277 N 205223
E 159298 N 205065



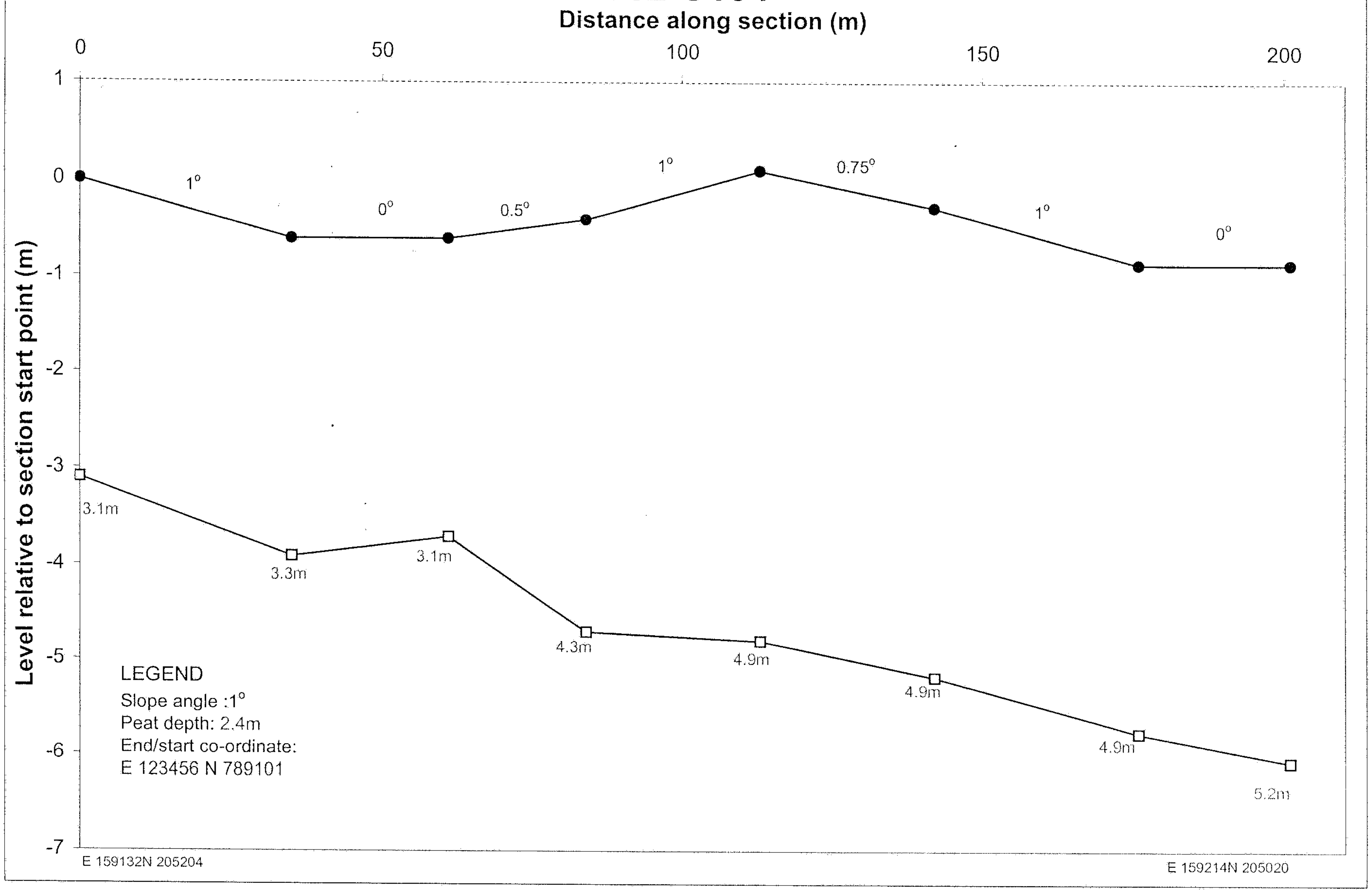
T62-S101
Distance along section line (m)
0
20
40
60
80
100
120
140
160
3
2
1
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
0.5°
1°
1°
1°
4.8m
4.85m
4.15m
3.85m
3.85m
3.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159233 N 205036
E 159221 N 205182



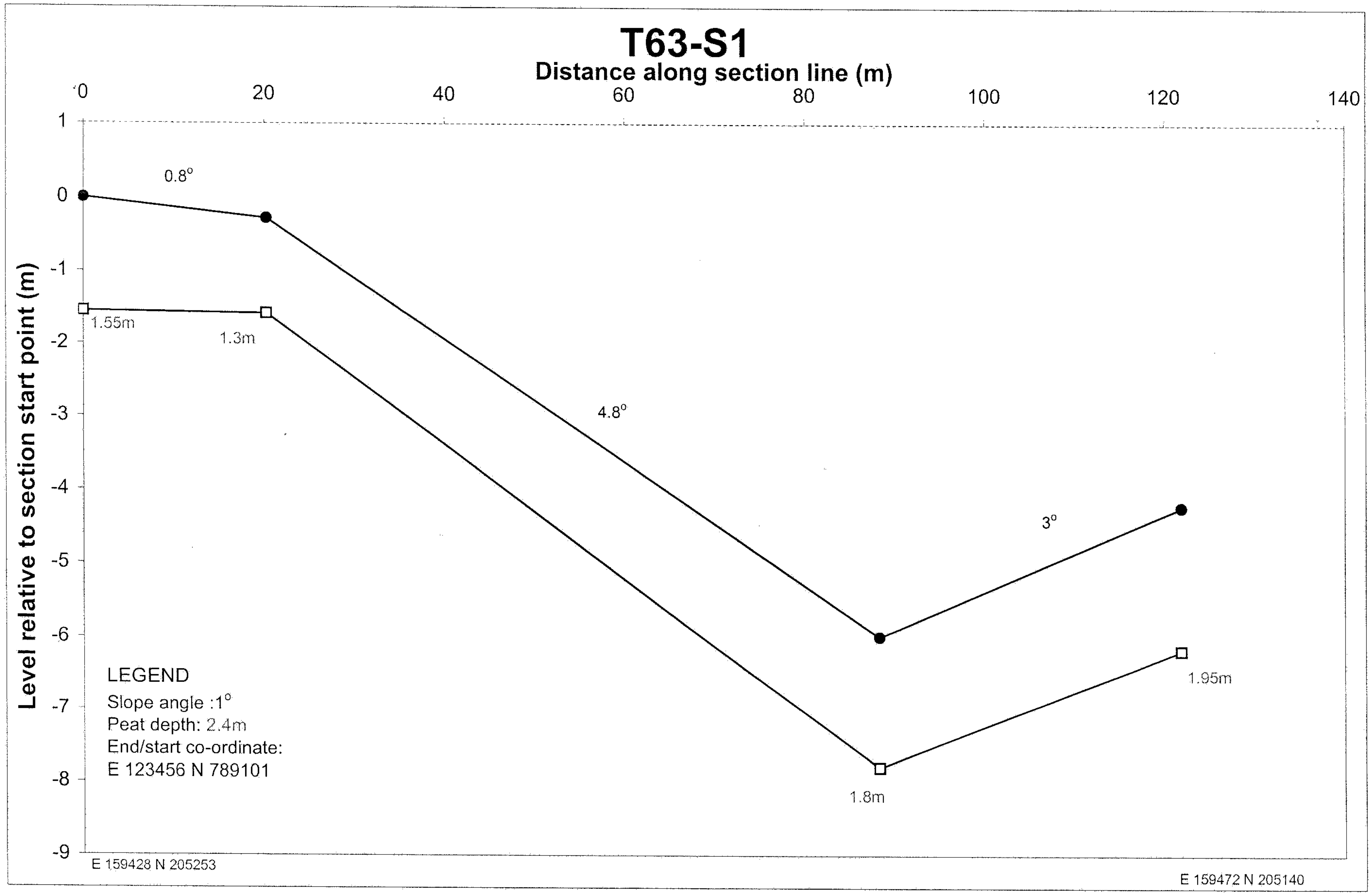
T62-S102
Distance along section line (m)
0
50
100
150
200
2
1
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
0°
0.5°
0.5°
0.5°
0.5°
0.5°
0.5°
0.5°
0°
3.55m
3.75m
3.85m
3.7m
4m
4.9m
5.6m
6m
5.6m
4.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159115 N 205183
E 159132 N 204986

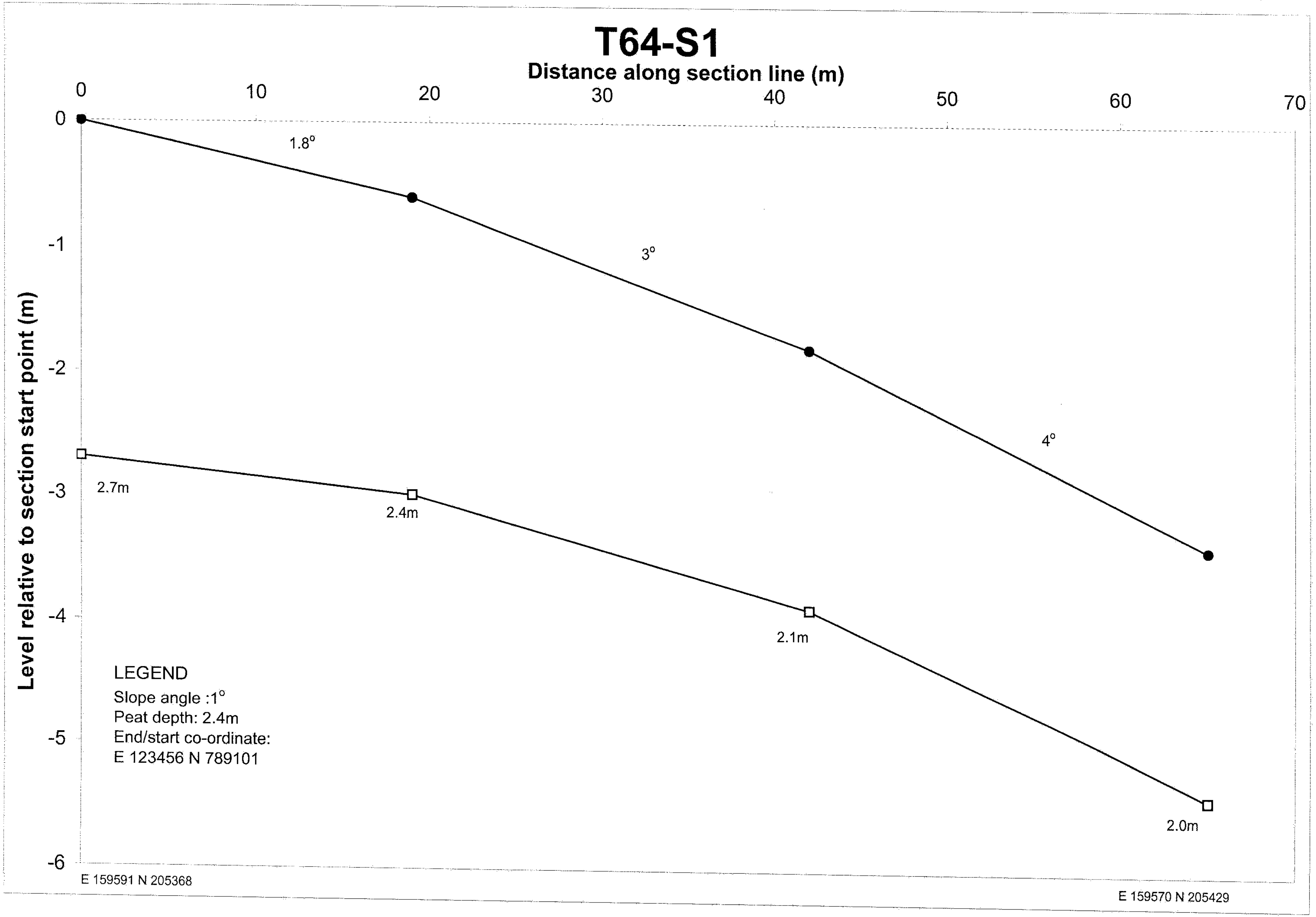

T62-S103
Distance along section line (m)
0
20
40
60
80
100
120
140
160
180
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
1.5°
9°
1°
2°
0.5°
0.5°
0°
0.9m
1.2m
2m
2.9m
2.2m
3.4m
3.7m
3.1m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159330 N 205073
E 159313 N 205249

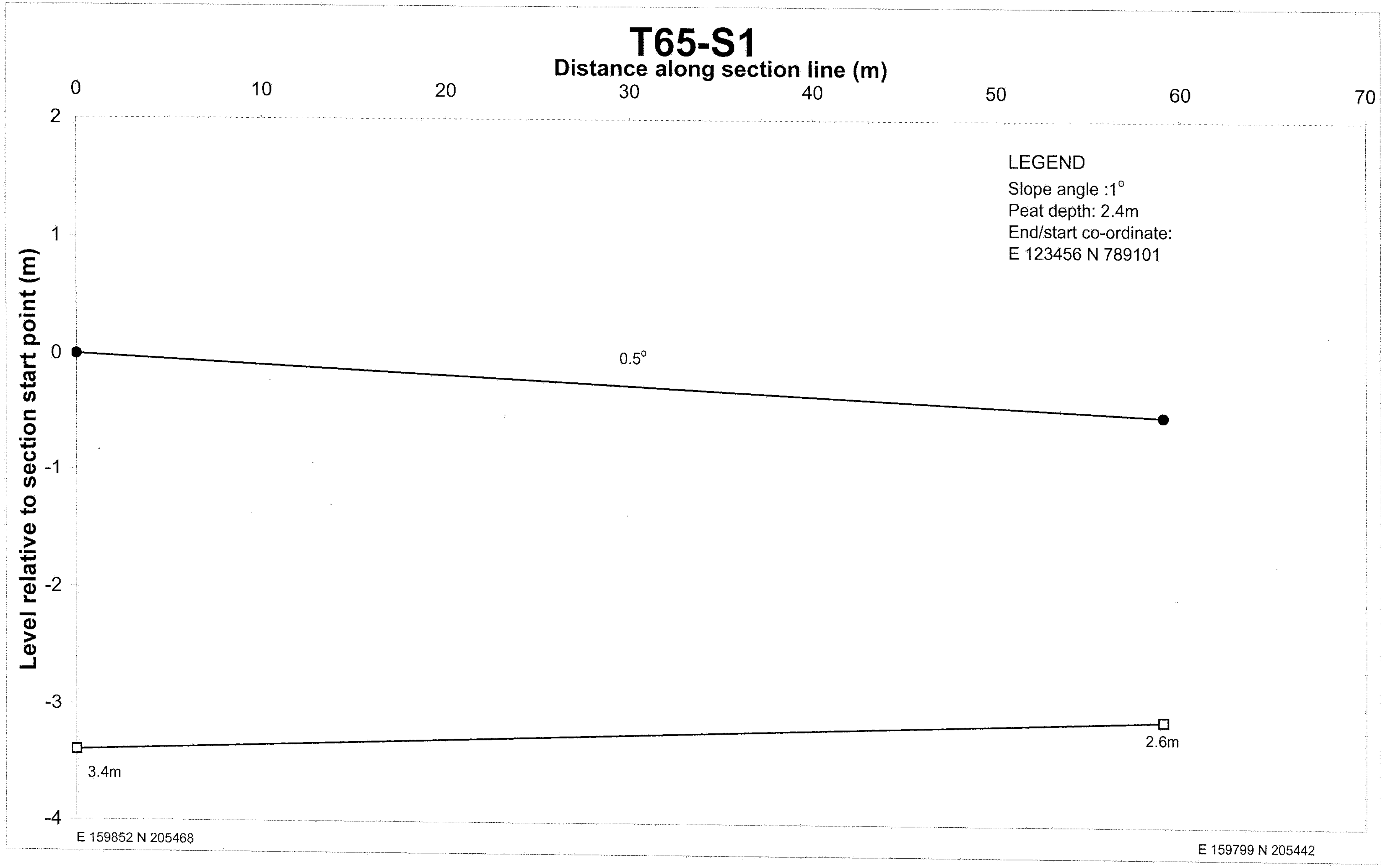
T62-S104

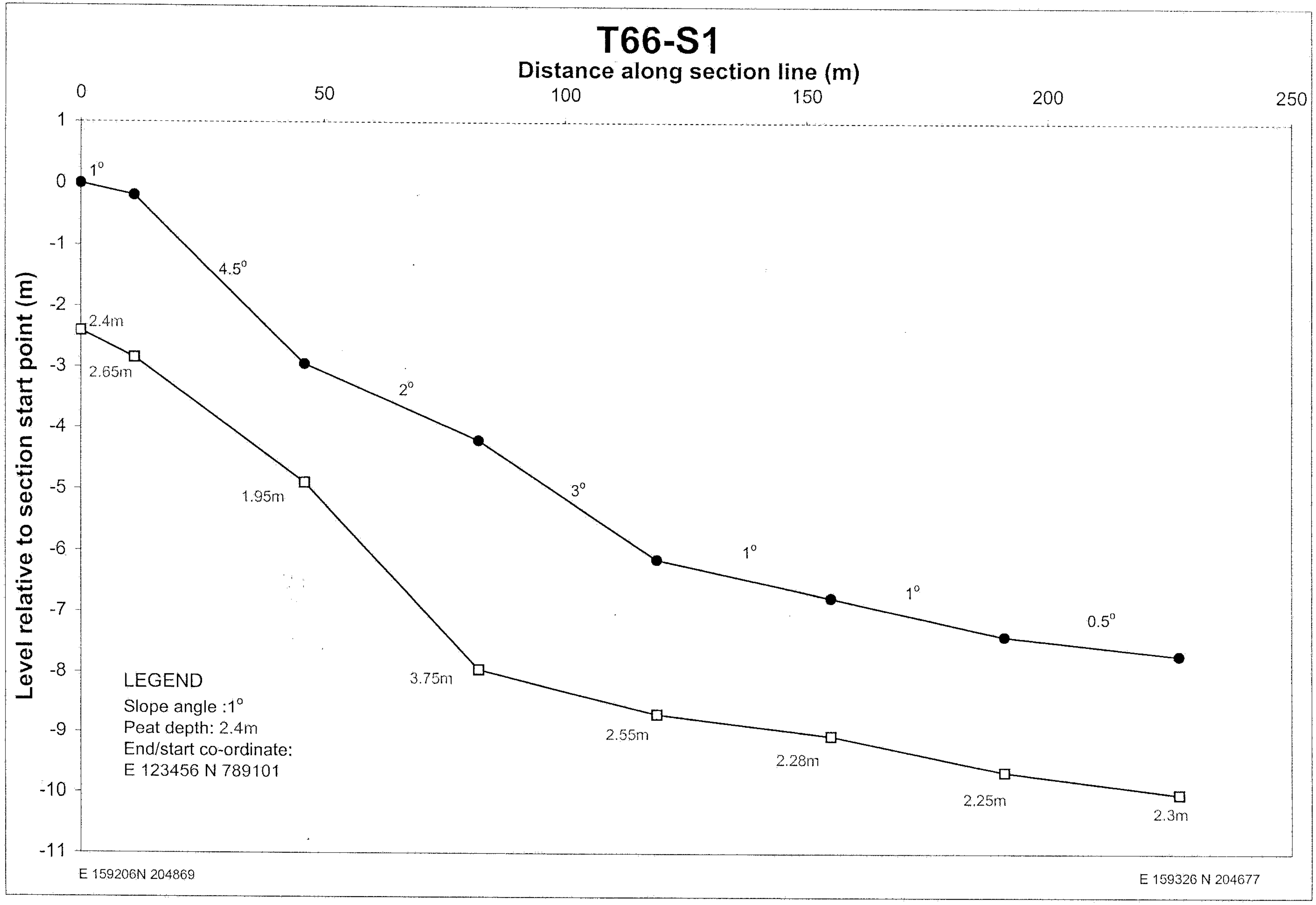


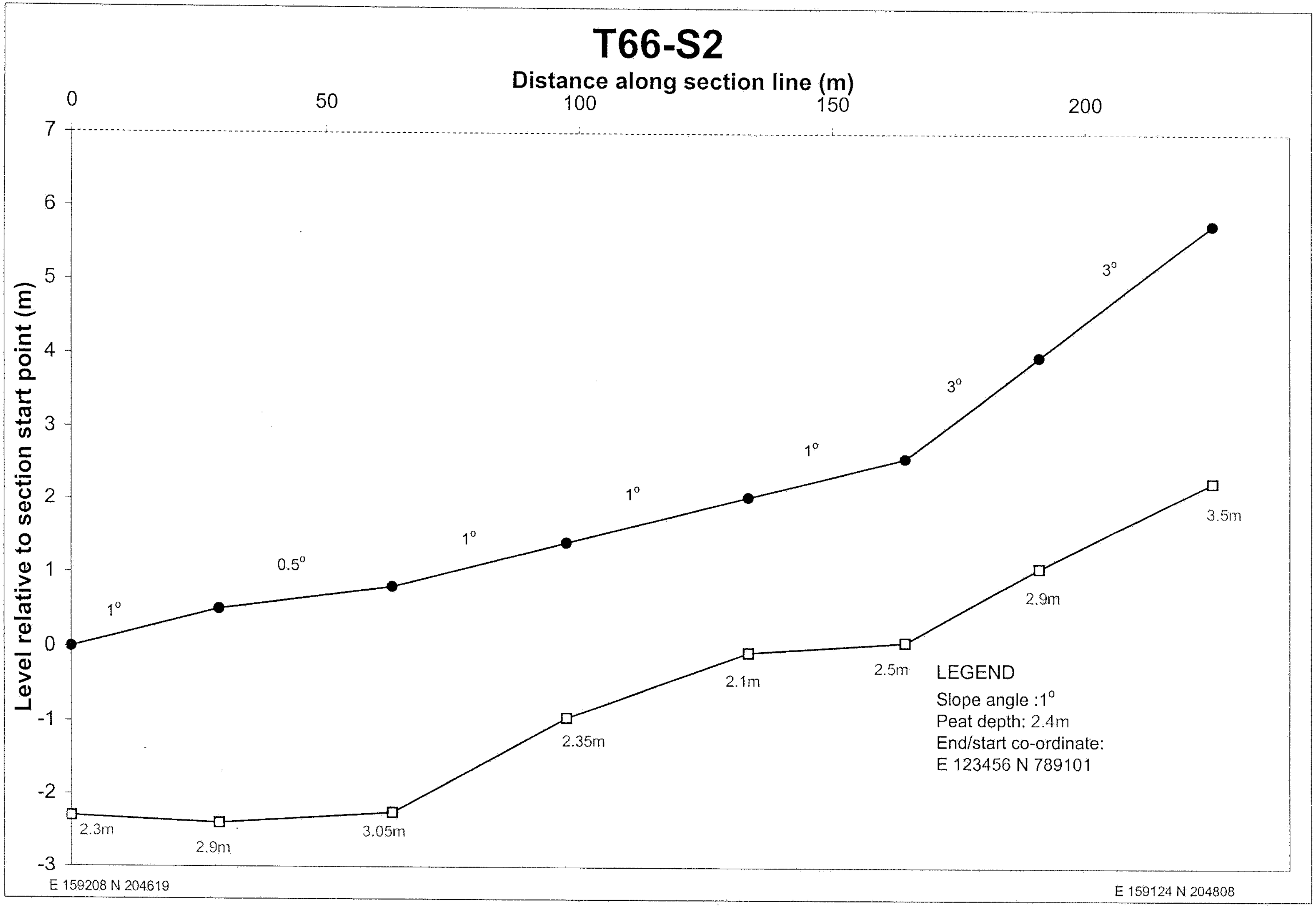
Distance along section (m)
0
50
100
150
200
1
0
-1
-2
-3
-4
-5
-6
-7
Level relative to section start point (m)
1°
0°
0.5°
1°
0.75°
1°
0°
3.1m
3.3m
3.1m
4.3m
4.9m
4.9m
4.9m
5.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159132N 205204
E 159214N 205020

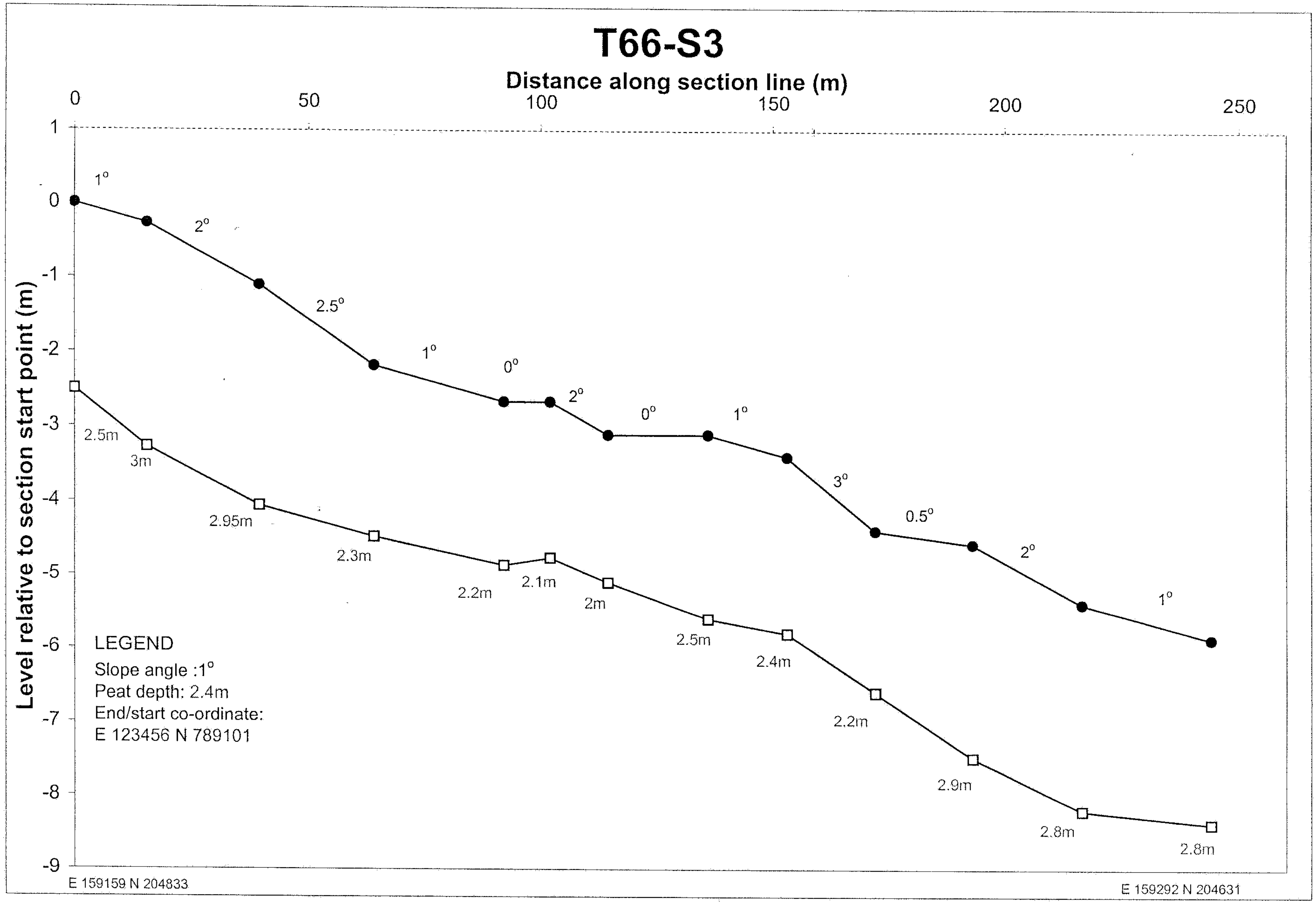

T63-S1
Distance along section line (m)
0
20
40
60
80
100
120
140
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
Level relative to section start point (m)
0.8°
4.8°
3°
1.55m
1.3m
1.8m
1.95m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159428 N 205253
E 159472 N 205140

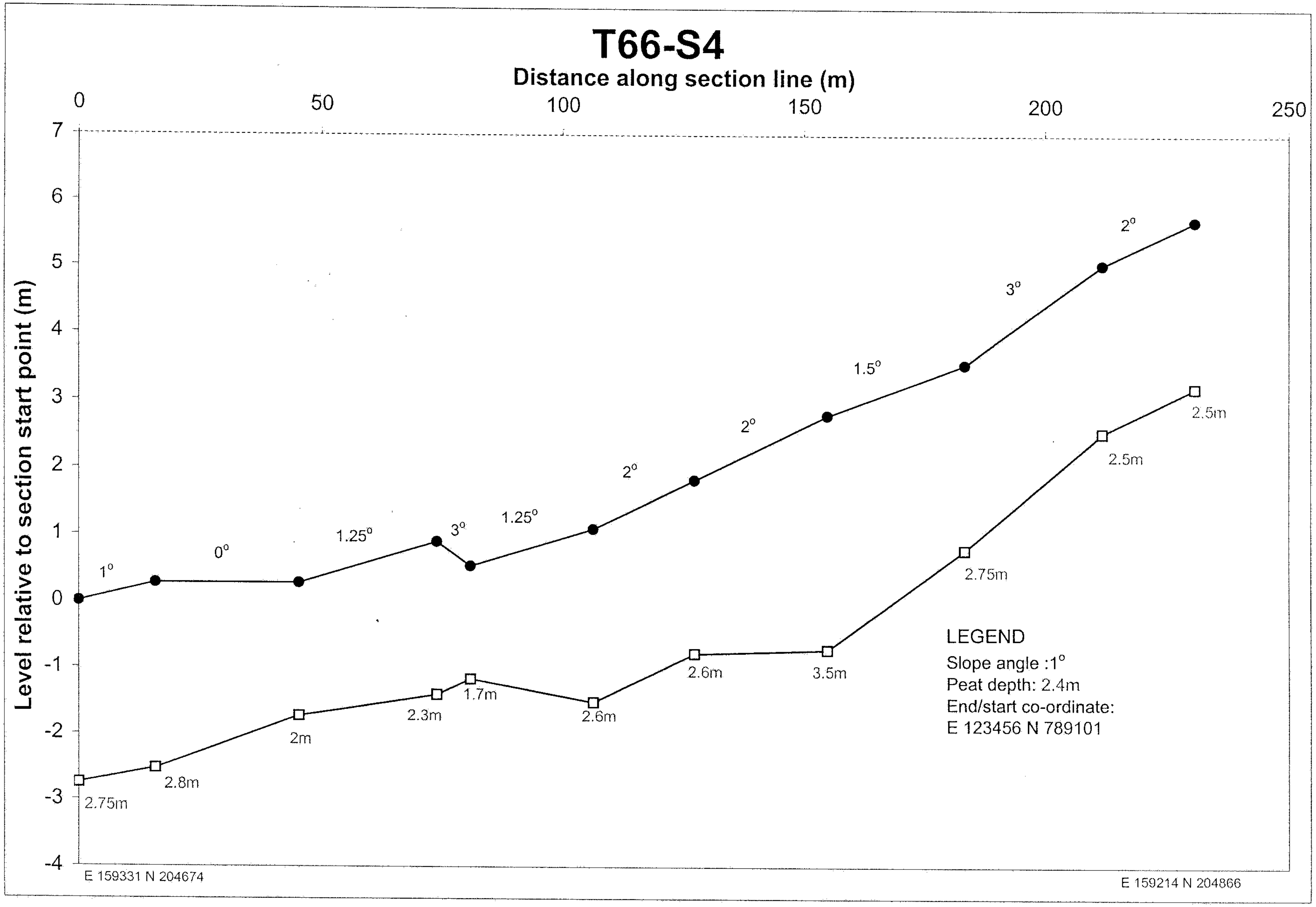

T64-S1
Distance along section line (m)
0
10
20
30
40
50
60
70
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
1.8°
3°
4°
2.7m
2.4m
2.1m
2.0m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159591 N 205368
E 159570 N 205429

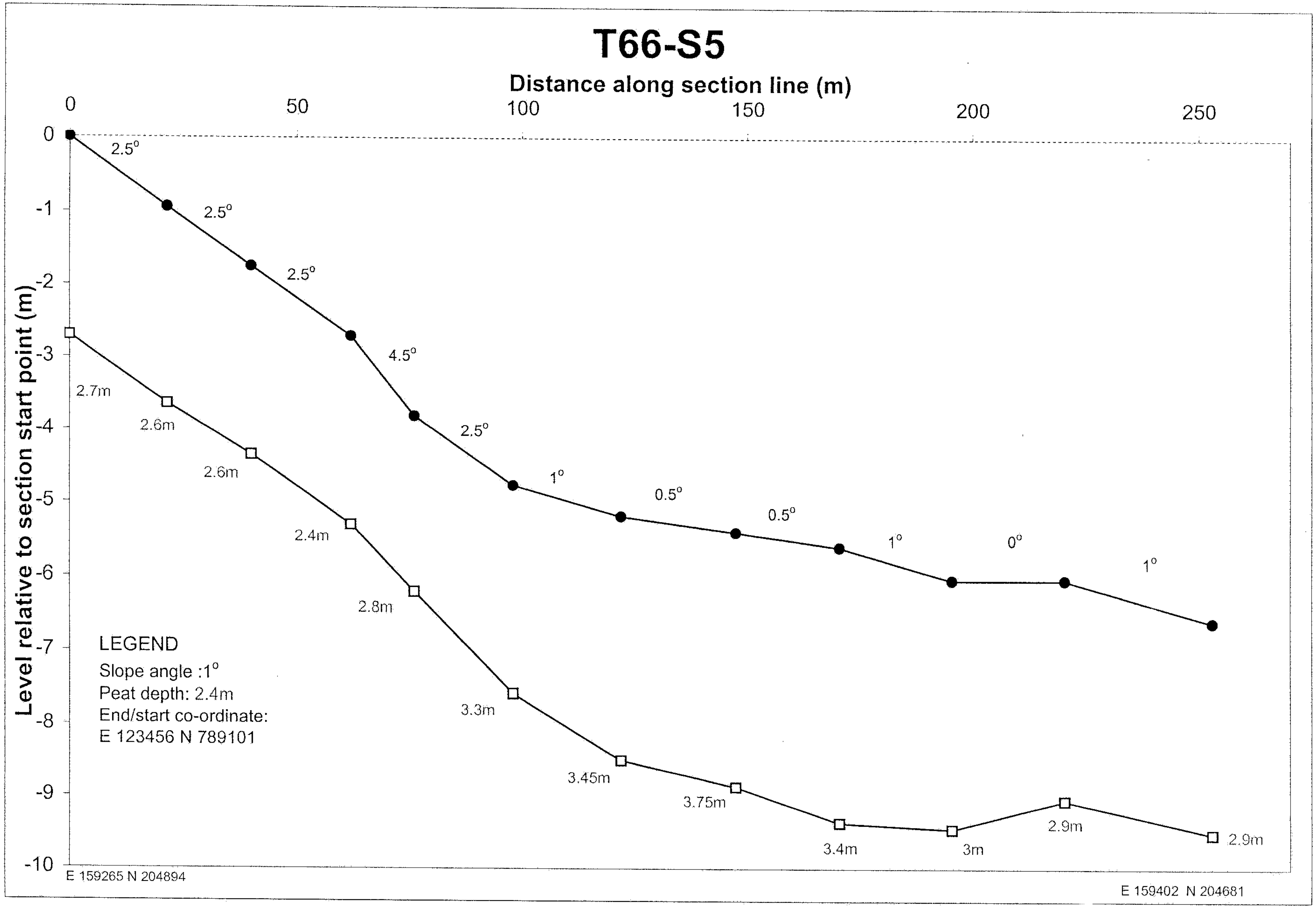

T65-S1
Distance along section line (m)
0
10
20
30
40
50
60
70
2
1
0
-1
-2
-3
-4
Level relative to section start point (m)
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
0.5°
2.6m
3.4m
E 159852 N 205468
E 159799 N 205442

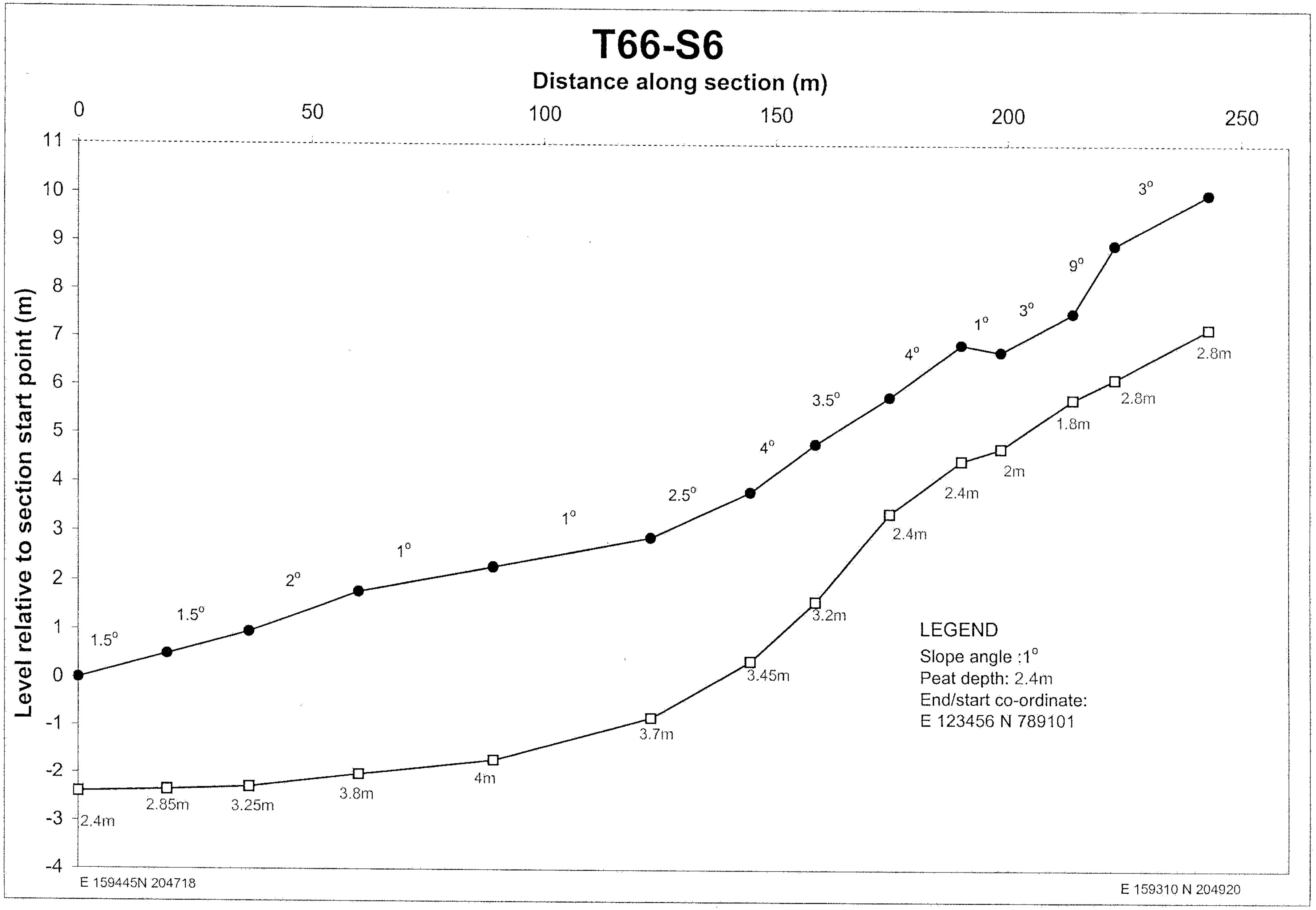

T66-S1
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
1°
4.5°
2°
3°
1°
1°
0.5°
2.4m
2.65m
1.95m
3.75m
2.55m
2.28m
2.25m
2.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159206N 204869
E 159326 N 204677


T66-S2
Distance along section line (m)
0
50
100
150
200
7
6
5
4
3
2
1
0
-1
-2
-3
Level relative to section start point (m)
1°
0.5°
1°
1°
1°
3°
3°
2.3m
2.9m
3.05m
2.35m
2.1m
2.5m
2.9m
3.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159208 N 204619
E 159124 N 204808

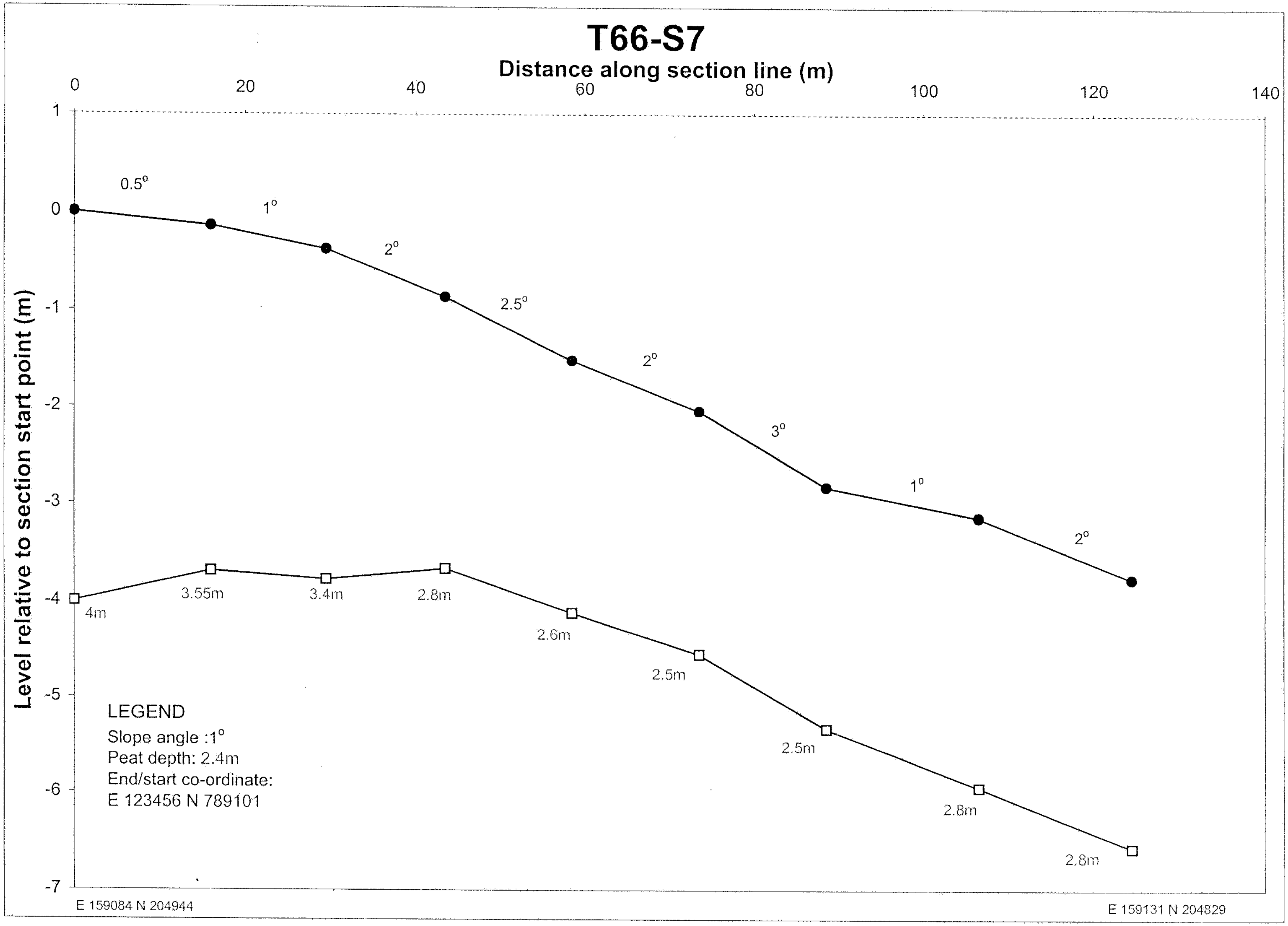

T66-S3
Distance along section line (m)
0
50
100
150
200
250
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
Level relative to section start point (m)
1°
2°
2.5°
1°
0°
2°
0°
1°
3°
0.5°
2°
1°
2.5m
3m
2.95m
2.3m
2.2m
2.1m
2m
2.5m
2.4m
2.2m
2.9m
2.8m
2.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159159 N 204833
E 159292 N 204631


T66-S4
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
7
6
5
4
3
2
1
0
-1
-2
-3
-4
1°
0°
1.25°
3°
1.25°
2°
2°
1.5°
3°
2°
2.75m
2.8m
2m
2.3m
1.7m
2.6m
2.6m
3.5m
2.75m
2.5m
2.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159331 N 204674
E 159214 N 204866

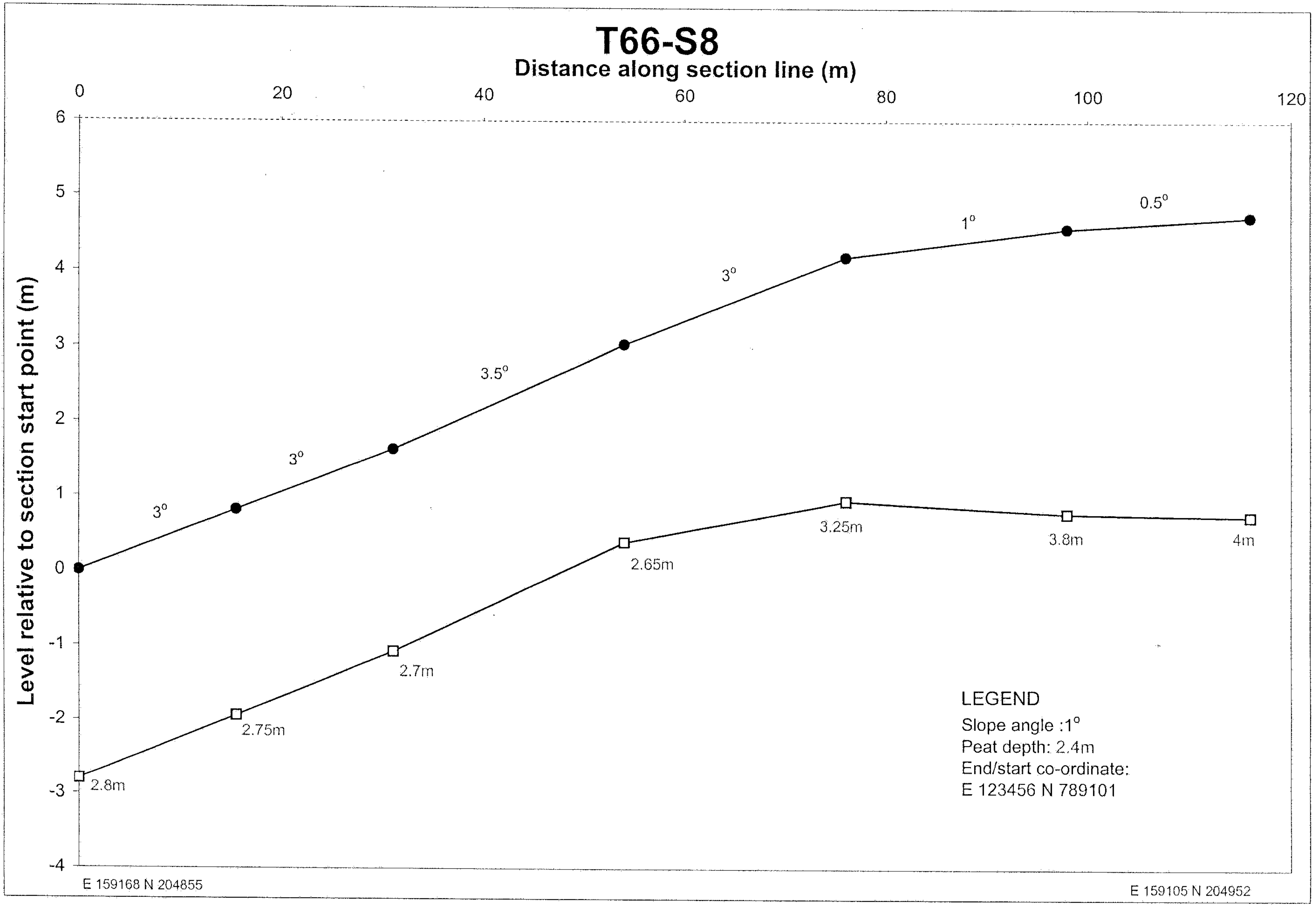

T66-S5
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
2.5°
2.5°
2.5°
4.5°
2.5°
1°
0.5°
0.5°
1°
0°
1°
2.7m
2.6m
2.6m
2.4m
2.8m
3.3m
3.45m
3.75m
3.4m
3m
2.9m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159265 N 204894
E 159402 N 204681

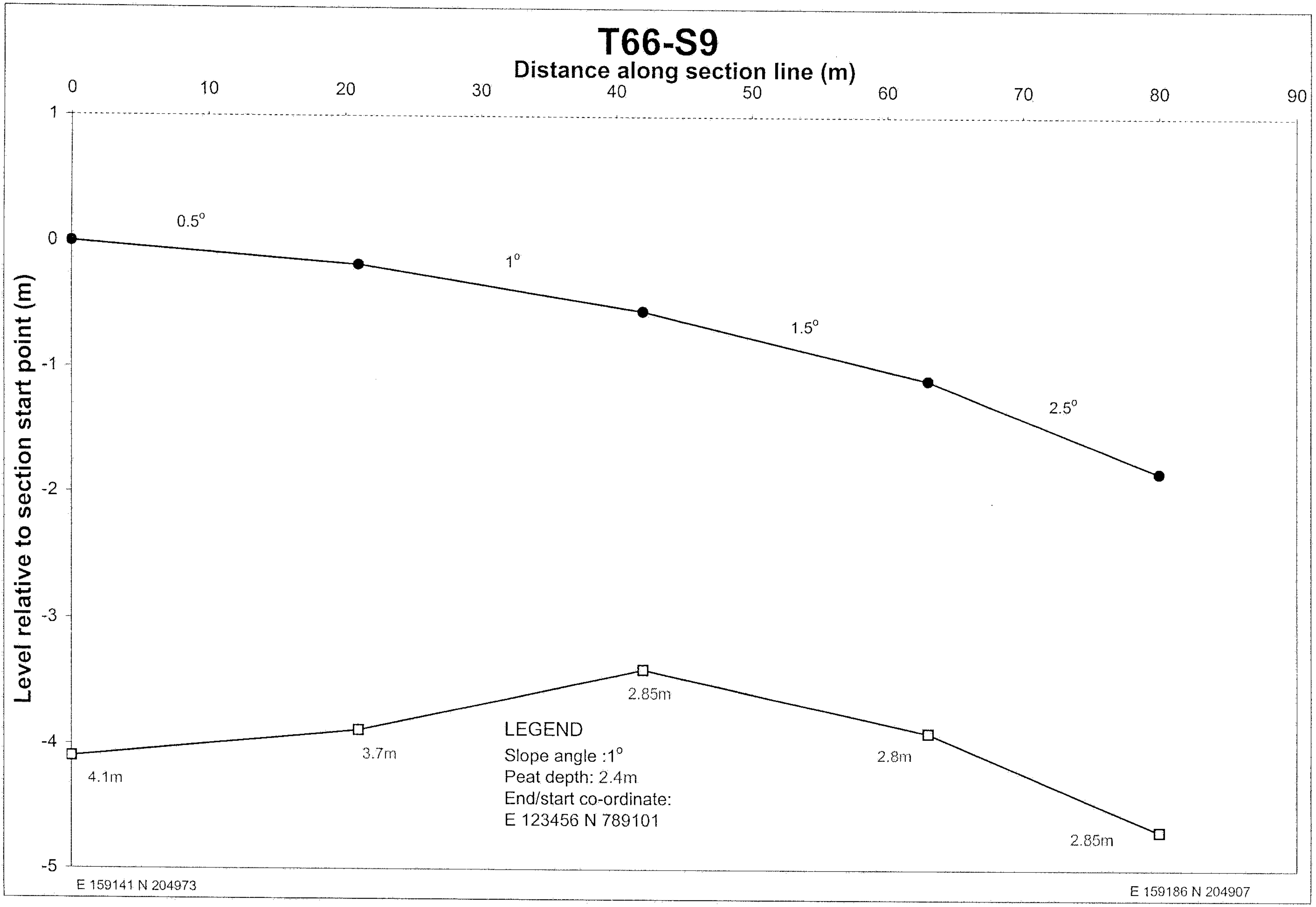


T66-S6
Distance along section (m)
0
50
100
150
200
250
Level relative to section start point (m)
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
1.5°
1.5°
2°
1°
1°
2.5°
4°
3.5°
4°
1°
3°
9°
3°
2.4m
2.85m
3.25m
3.8m
4m
3.7m
3.45m
3.2m
2.4m
2.4m
2m
1.8m
2.8m
2.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159445N 204718
E 159310 N 204920

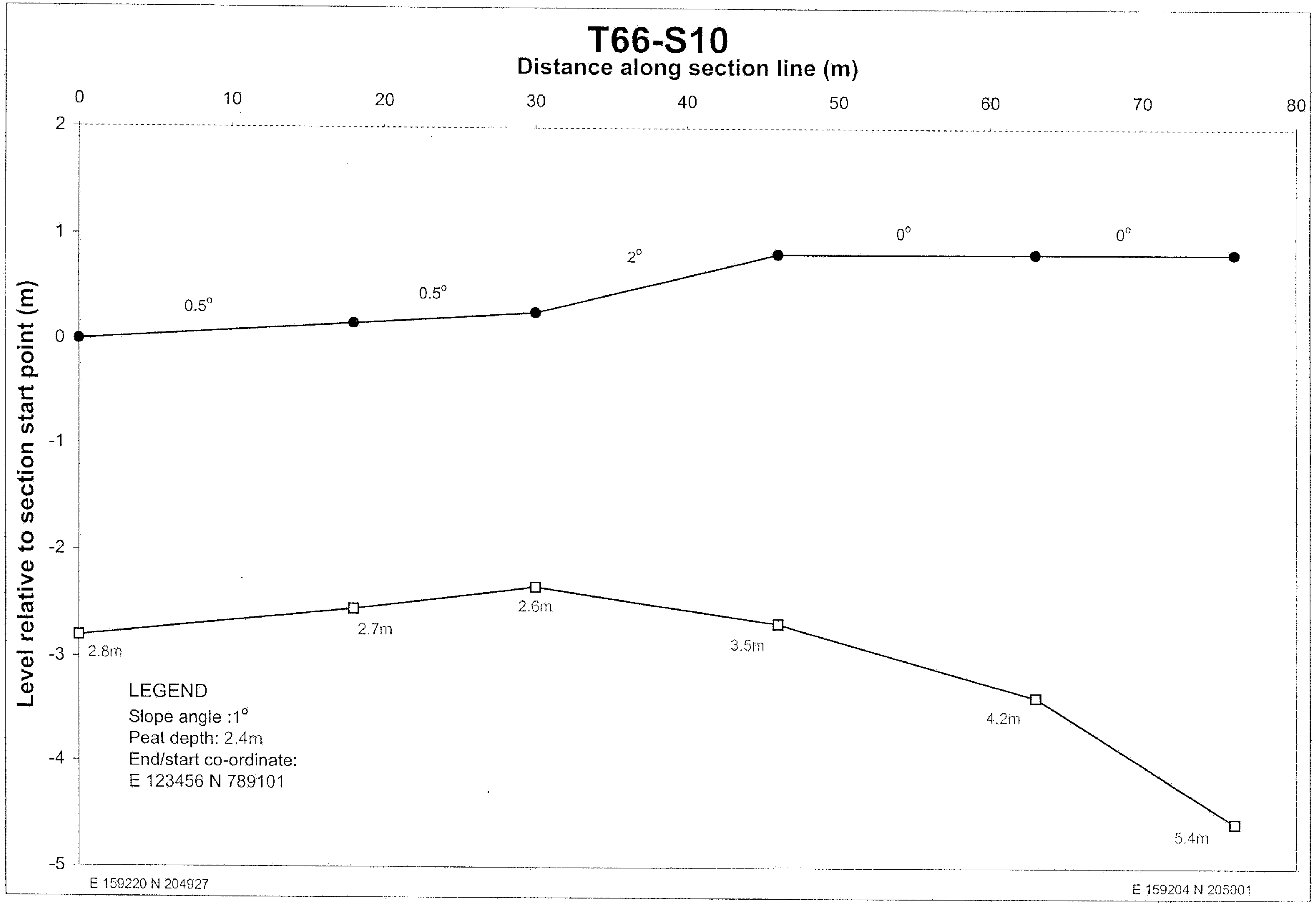


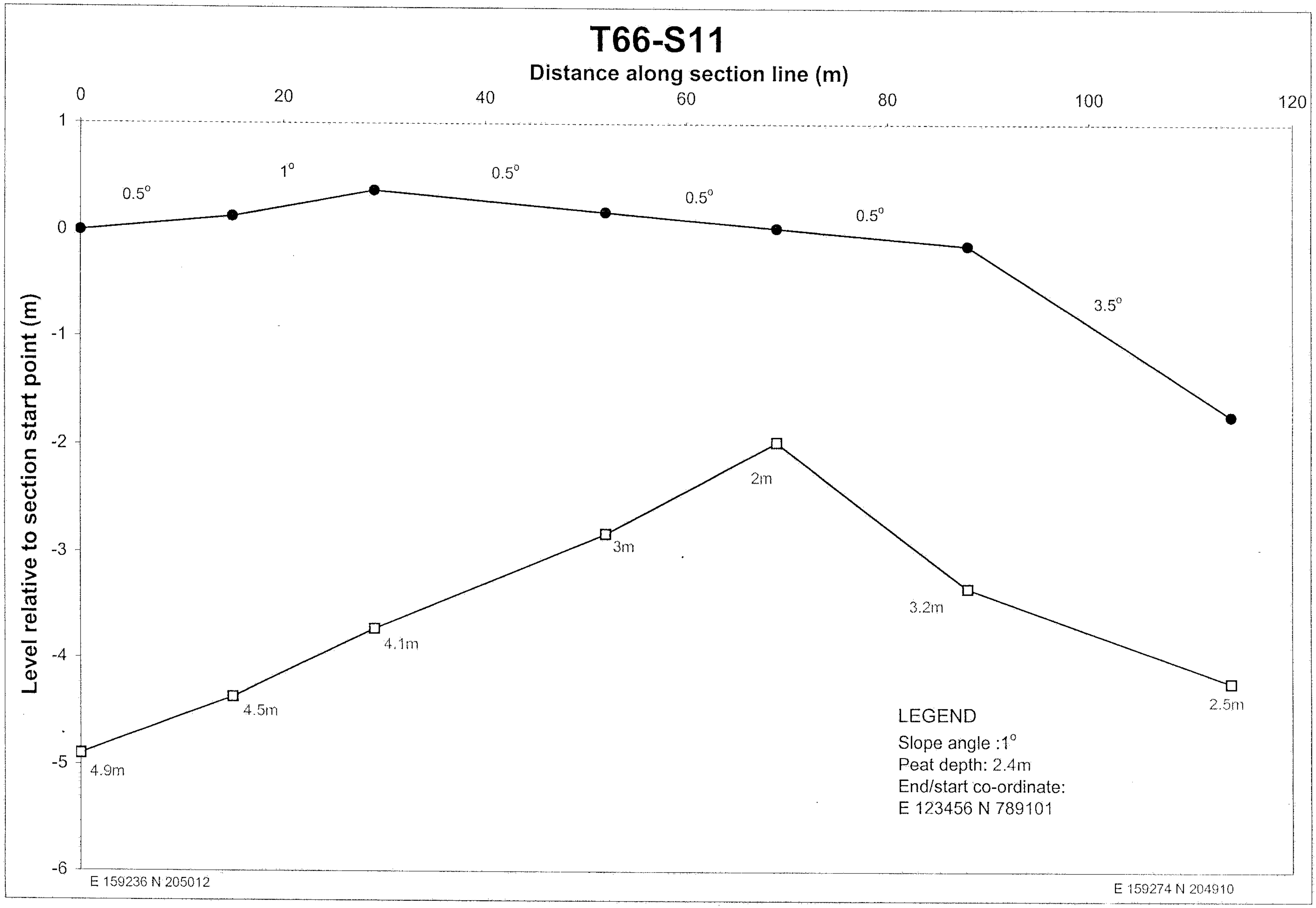
T66-S7
Distance along section line (m)
0
20
40
60
80
100
120
140
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
0.5°
1°
2°
2.5°
2°
3°
1°
2°
4m
3.55m
3.4m
2.8m
2.6m
2.5m
2.5m
2.8m
2.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159084 N 204944
E 159131 N 204829


T66-S8
Distance along section line (m)
0
20
40
60
80
100
120
Level relative to section start point (m)
6
5
4
3
2
1
0
-1
-2
-3
-4
3°
3°
3.5°
3°
1°
0.5°
2.8m
2.75m
2.7m
2.65m
3.25m
3.8m
4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159168 N 204855
E 159105 N 204952

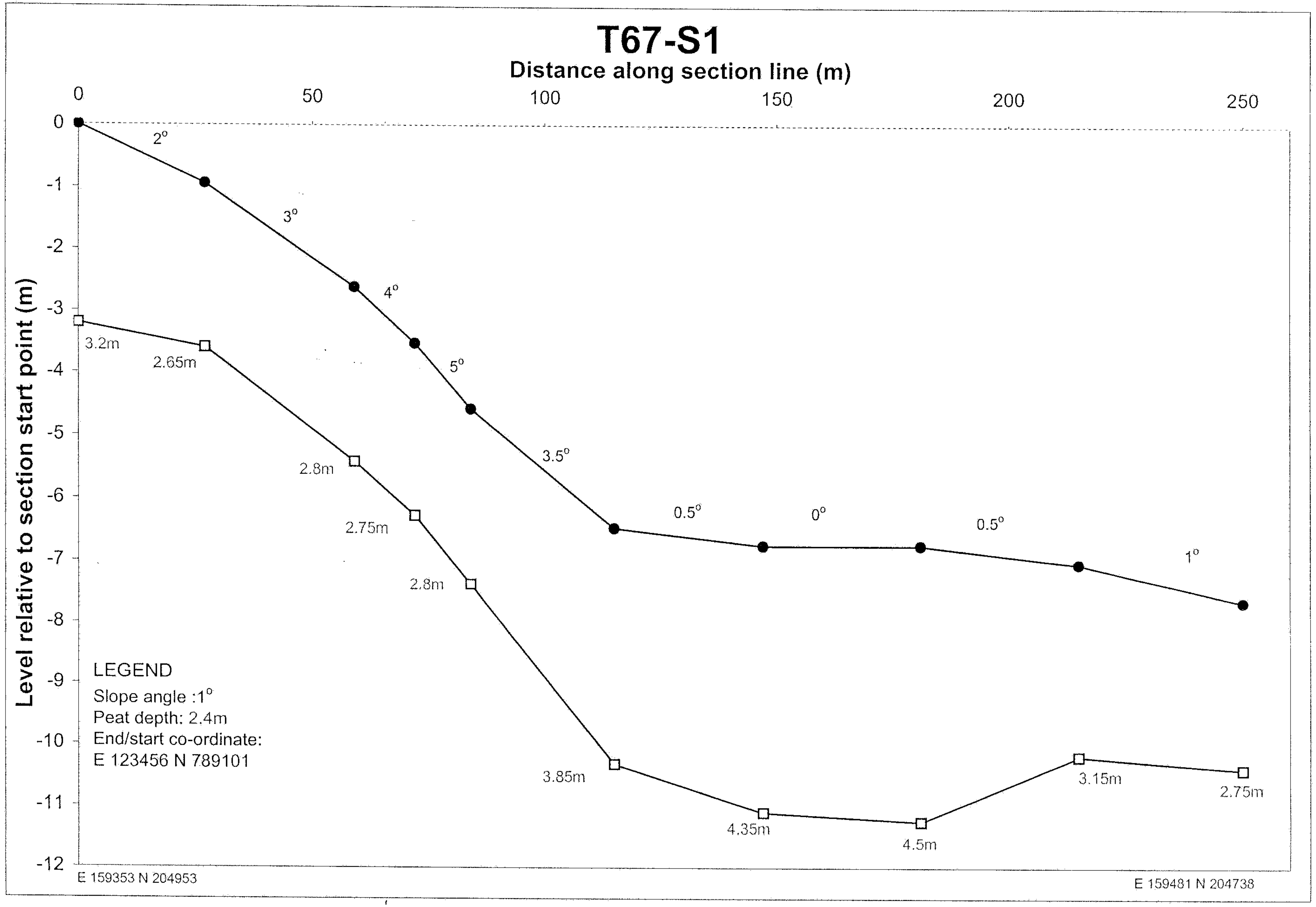


T66-S9
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
0.5°
1°
1.5°
2.5°
2.85m
3.7m
4.1m
2.8m
2.85m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159141 N 204973
E 159186 N 204907

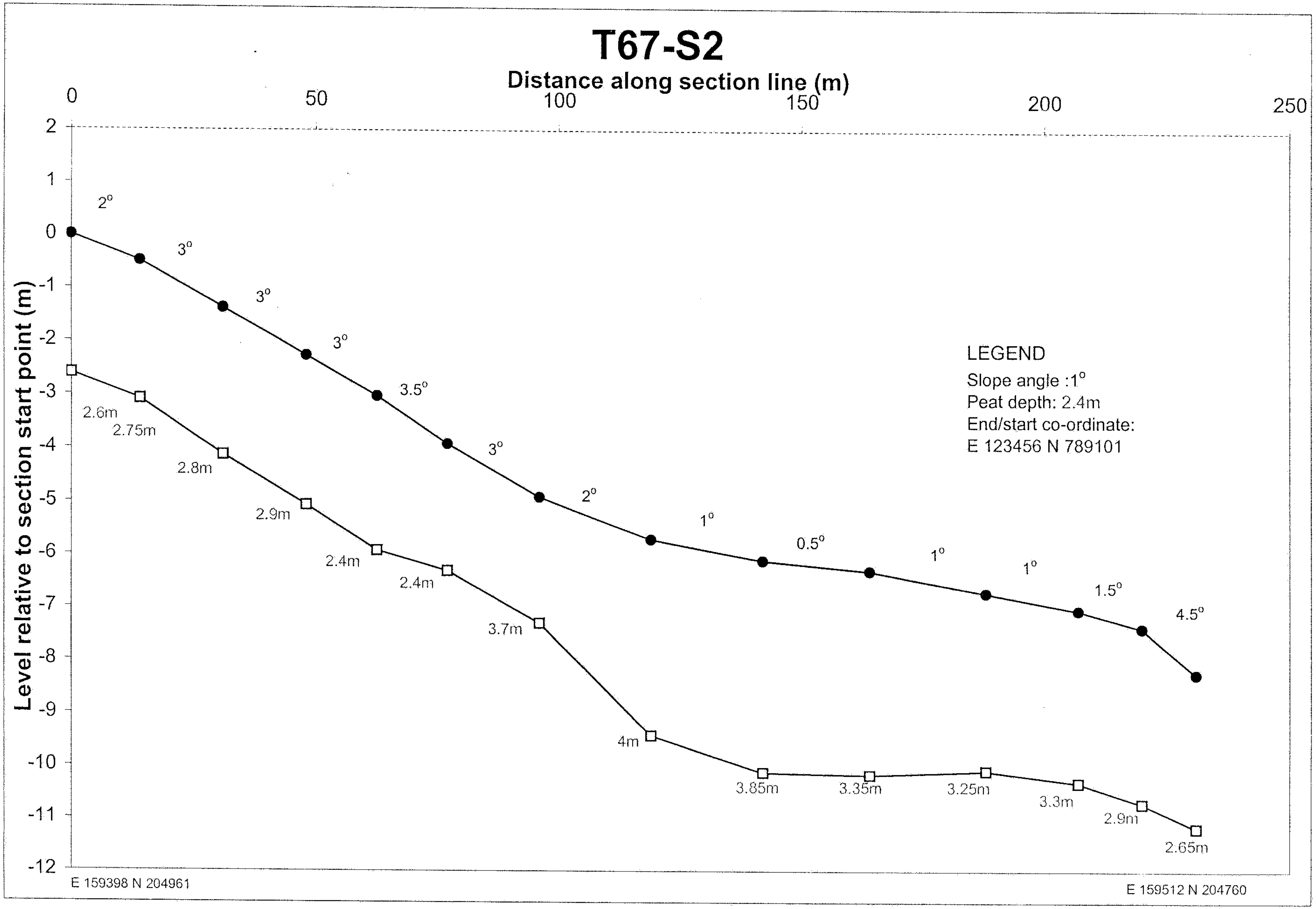

T66-S10
Distance along section line (m)
0
10
20
30
40
50
60
70
80
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
0.5°
0.5°
2°
0°
0°
2.8m
2.7m
2.6m
3.5m
4.2m
5.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159220 N 204927
E 159204 N 205001

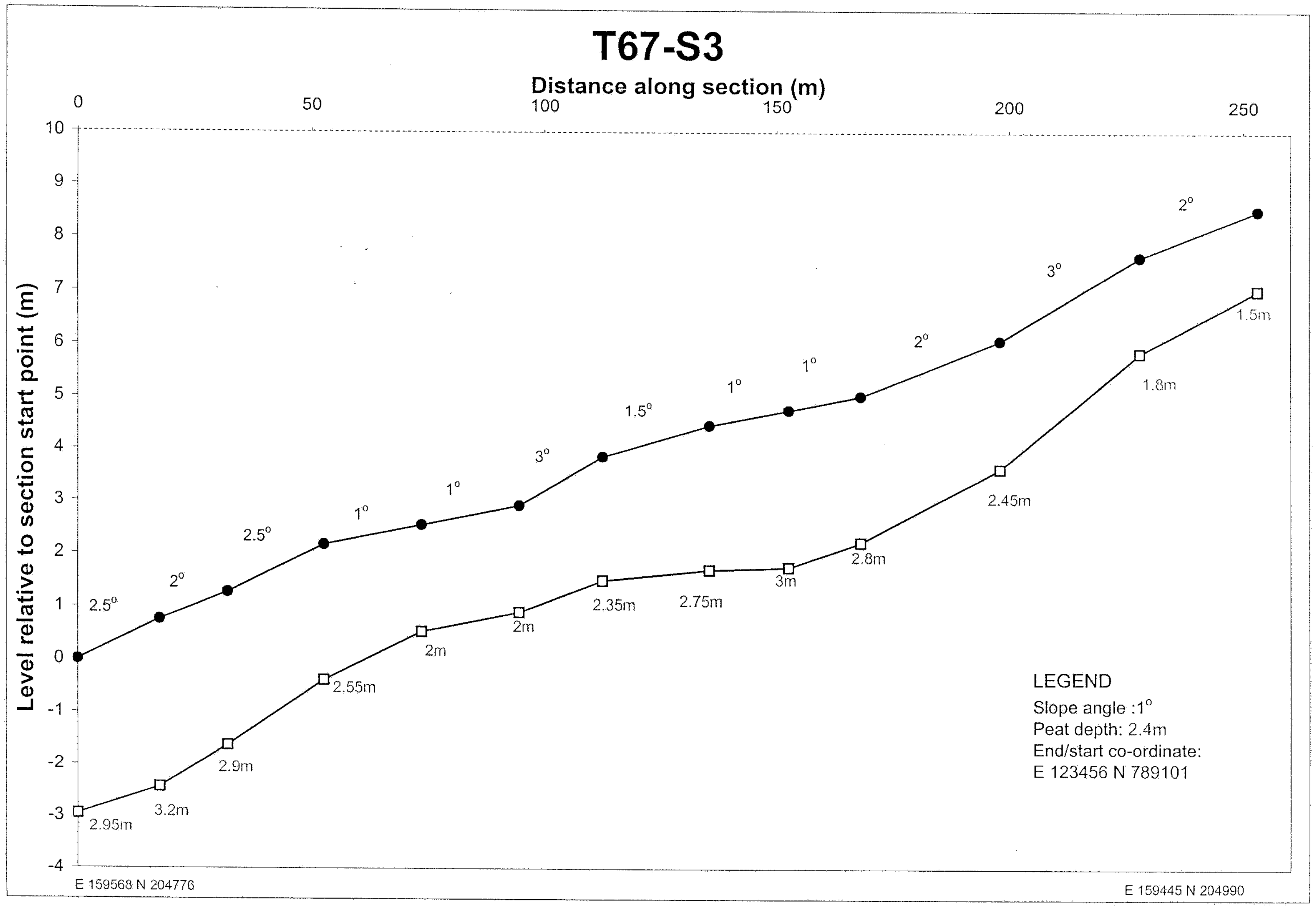


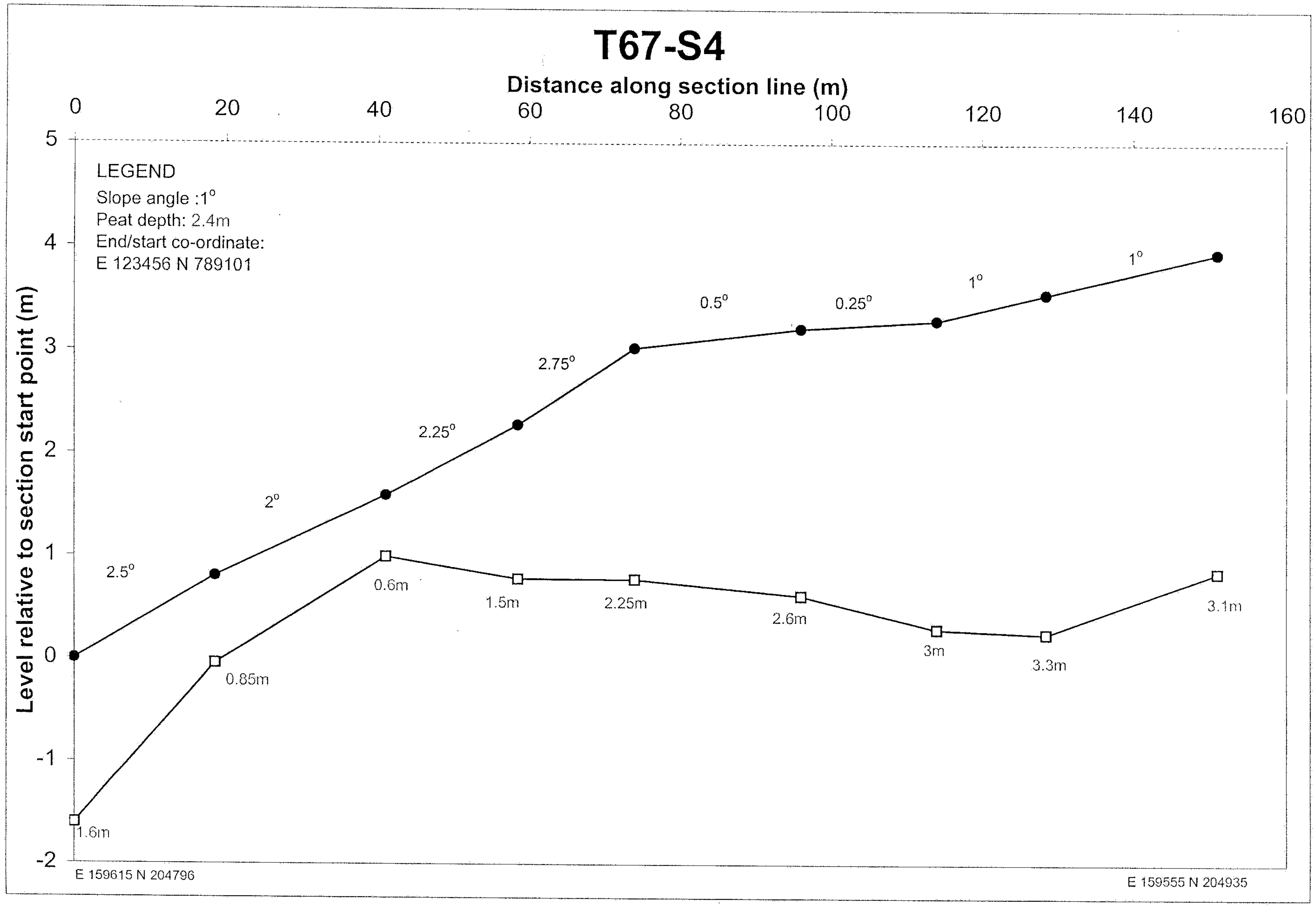
T66-S11
Distance along section line (m)
0
20
40
60
80
100
120
1
0
-1
-2
-3
-4
-5
-6
Level relative to section start point (m)
0.5°
1°
0.5°
0.5°
0.5°
3.5°
2m
3m
3.2m
4.1m
4.5m
2.5m
4.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159236 N 205012
E 159274 N 204910



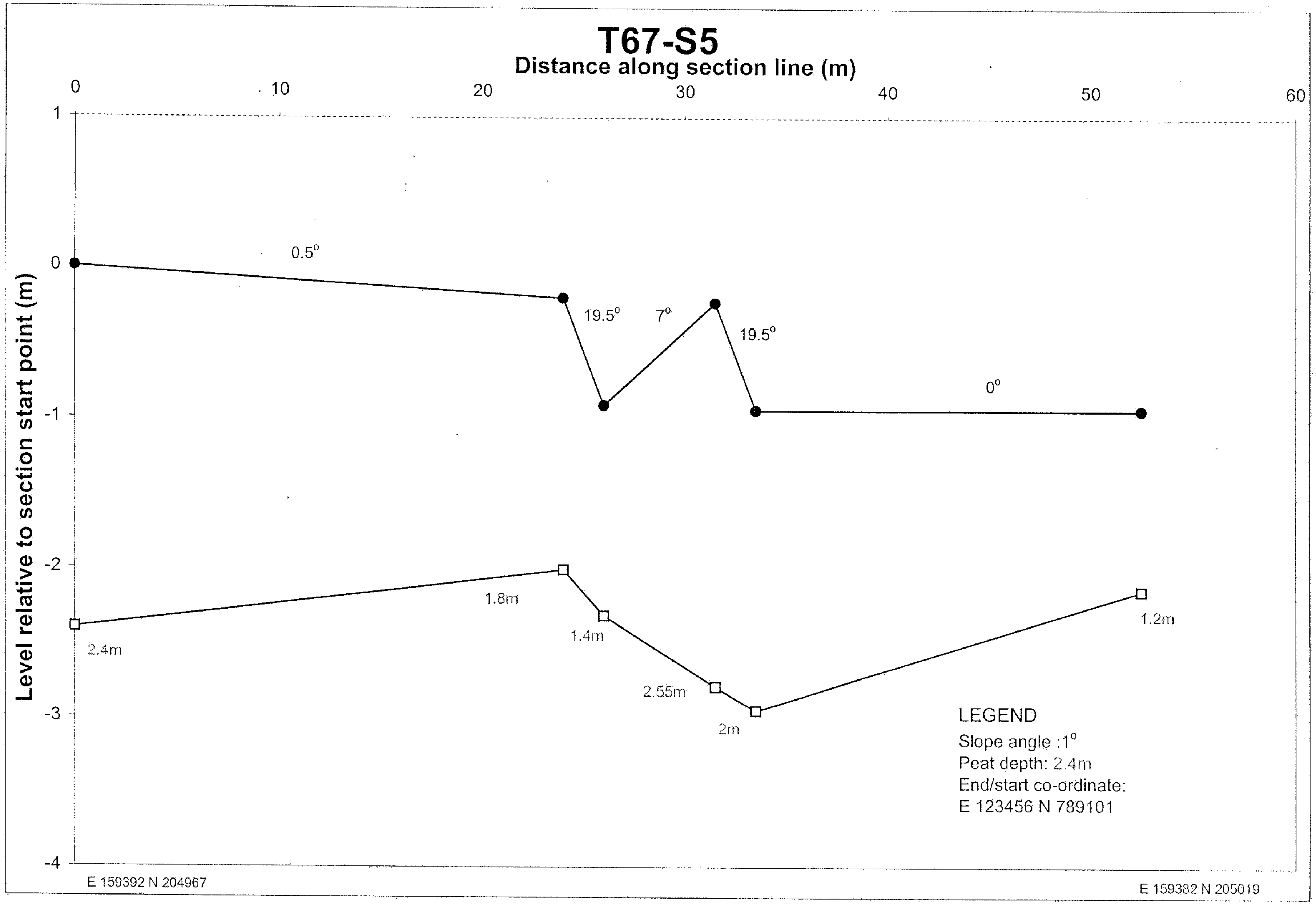
T67-S1
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
2°
3°
4°
5°
3.5°
0.5°
0°
0.5°
1°
3.2m
2.65m
2.8m
2.75m
2.8m
3.85m
4.35m
4.5m
3.15m
2.75m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159353 N 204953
E 159481 N 204738


T67-S2
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
2°
3°
3°
3°
3.5°
3°
2°
1°
0.5°
1°
1°
1.5°
4.5°
2.6m
2.75m
2.8m
2.9m
2.4m
2.4m
3.7m
4m
3.85m
3.35m
3.25m
3.3m
2.9m
2.65m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159398 N 204961
E 159512 N 204760

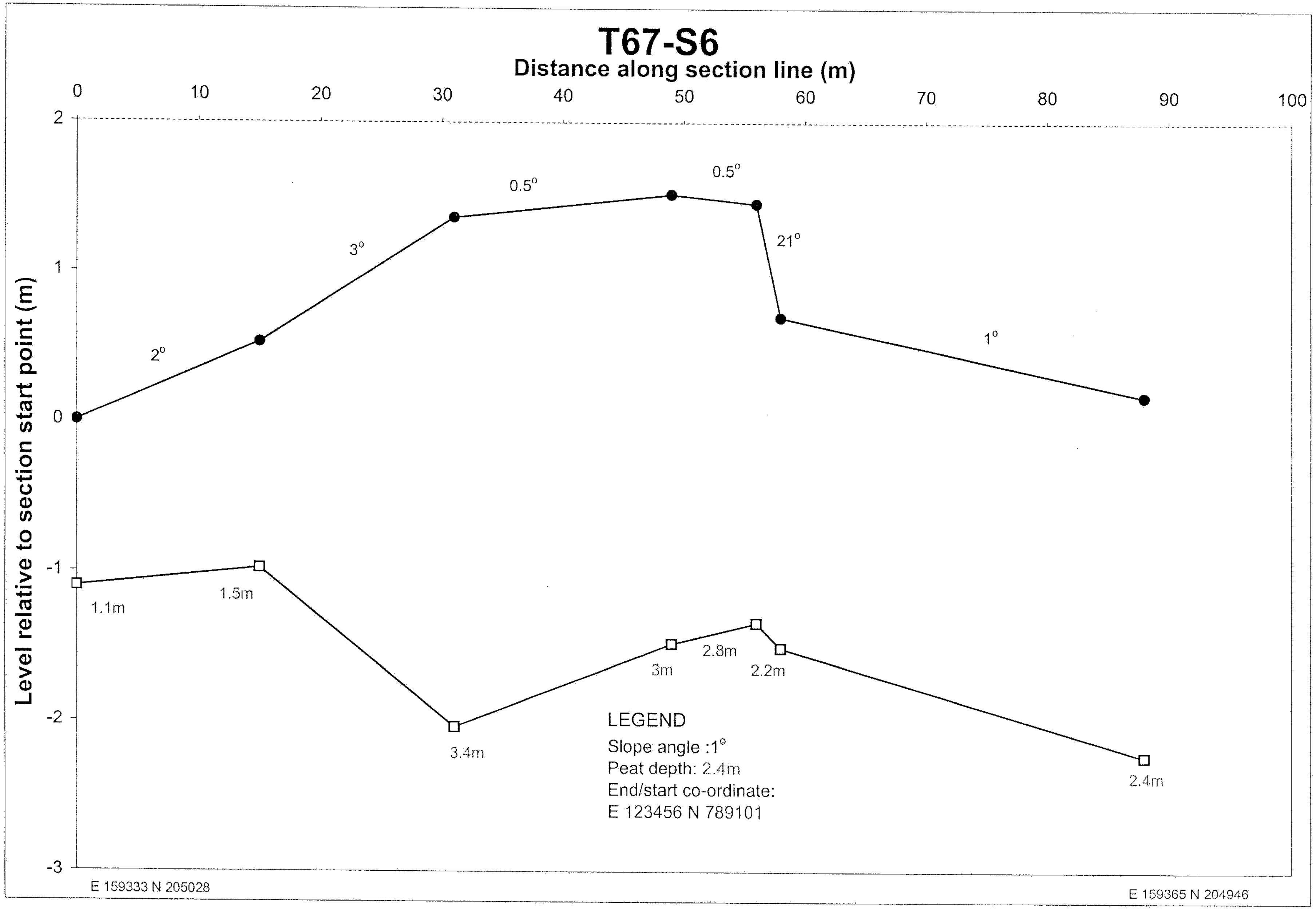

T67-S3
Distance along section (m)
0
50
100
150
200
250
Level relative to section start point (m)
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
2.5°
2°
2.5°
1°
1°
3°
1.5°
1°
1°
2°
3°
2°
2.95m
3.2m
2.9m
2.55m
2m
2m
2.35m
2.75m
3m
2.8m
2.45m
1.8m
1.5m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159568 N 204776
E 159445 N 204990



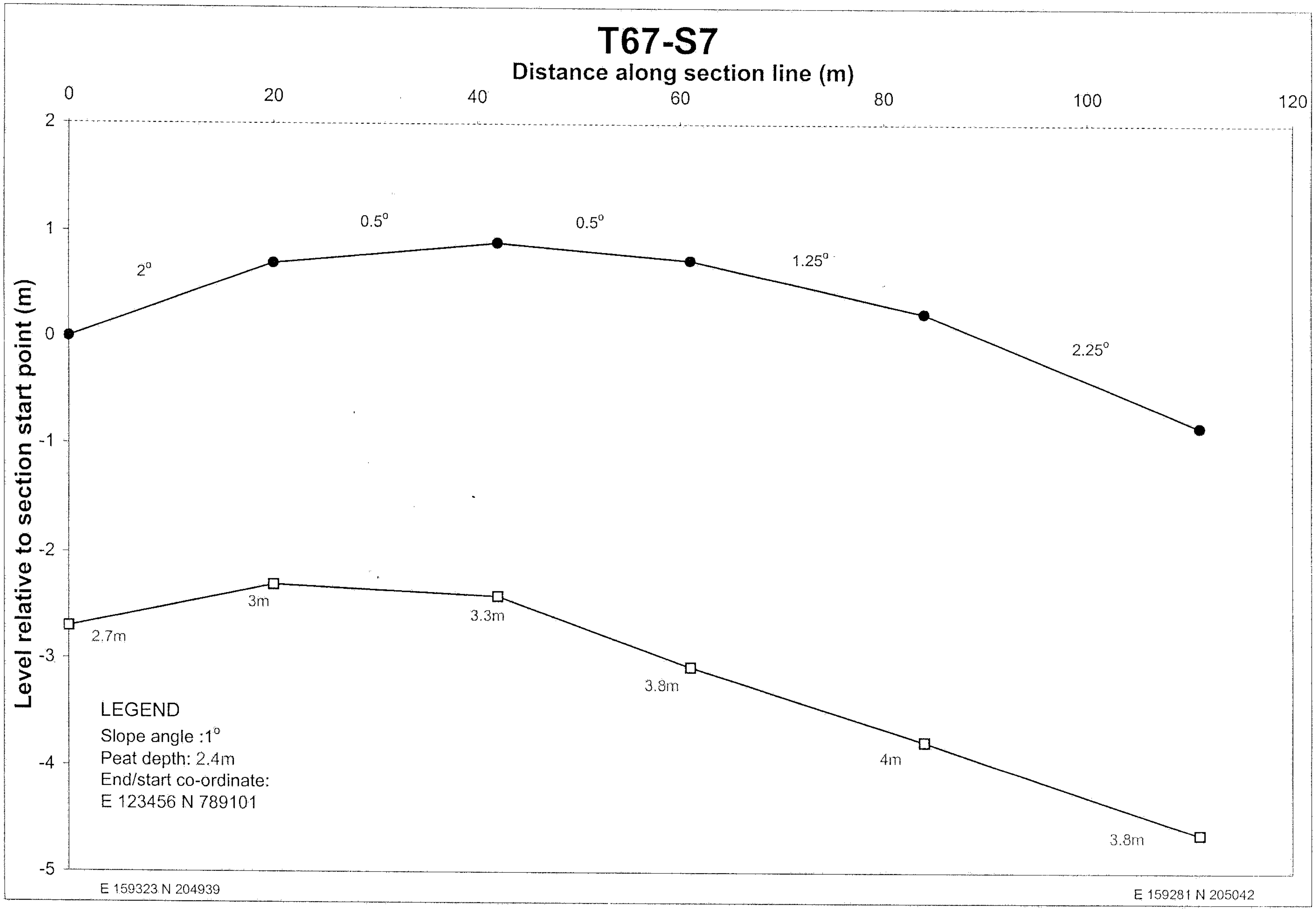
T67-S4
Distance along section line (m)
0
20
40
60
80
100
120
140
160
5
4
3
2
1
0
-1
-2
Level relative to section start point (m)
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
2.5°
2°
2.25°
2.75°
0.5°
0.25°
1°
1°
1.6m
0.85m
0.6m
1.5m
2.25m
2.6m
3m
3.3m
3.1m
E 159615 N 204796
E 159555 N 204935



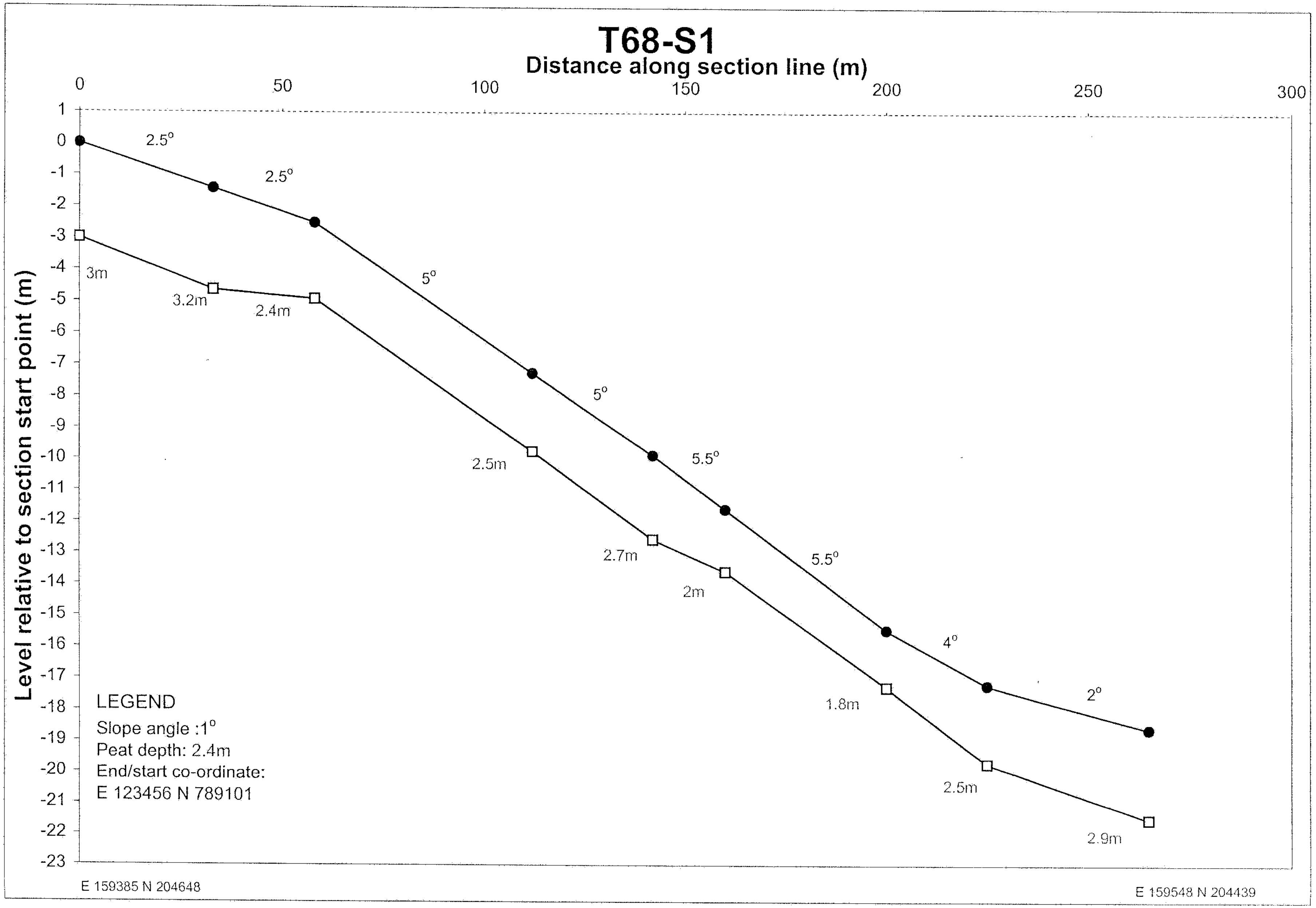
T67-S5
Distance along section line (m)
0
10
20
30
40
50
60
1
0
-1
-2
-3
-4
Level relative to section start point (m)
0.5°
19.5°
7°
19.5°
0°
1.8m
2.4m
1.4m
2.55m
2m
1.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159392 N 204967
E 159382 N 205019

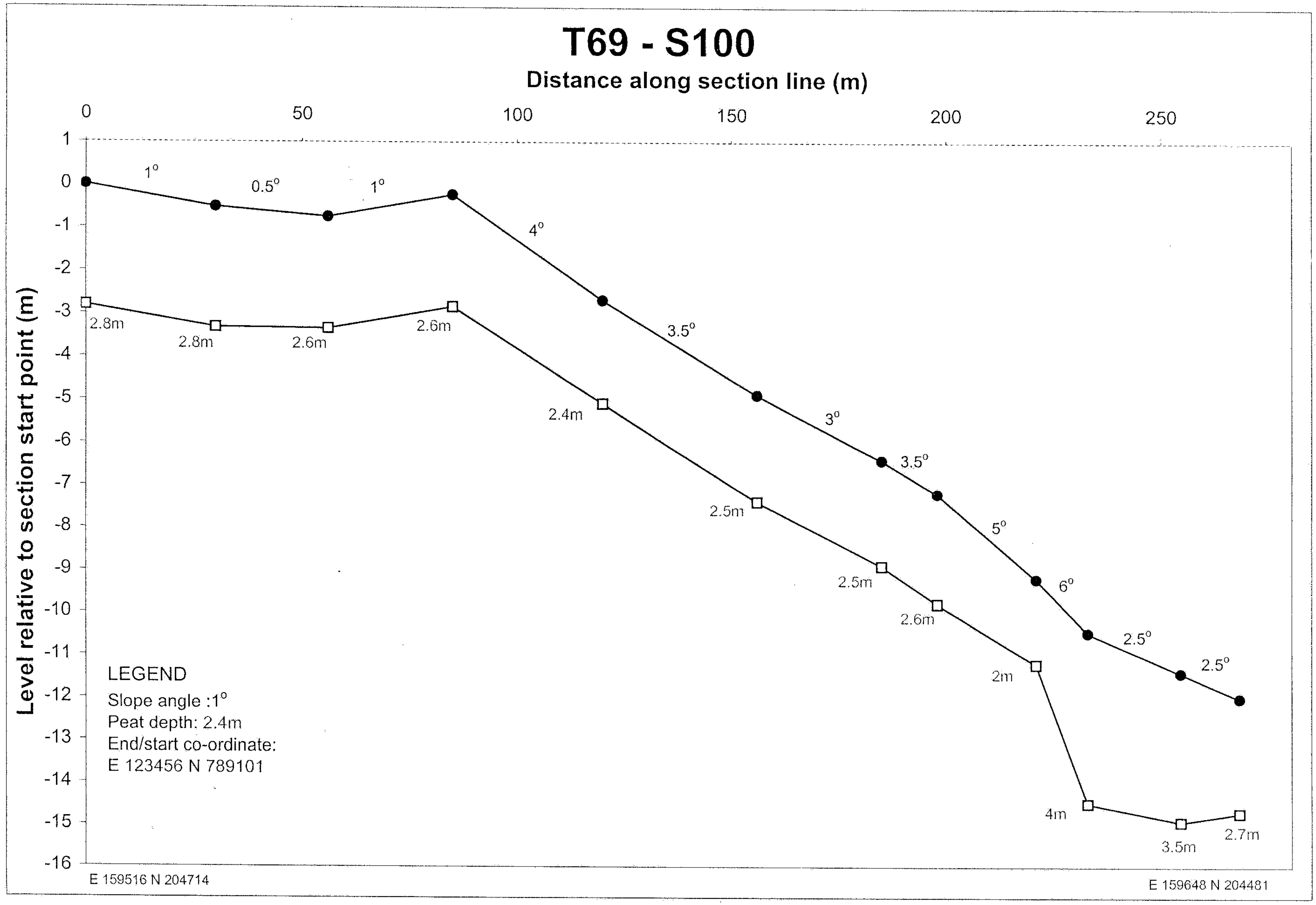


T67-S6
Distance along section line (m)
0
10
20
30
40
50
60
70
80
90
100
Level relative to section start point (m)
2
1
0
-1
-2
-3
2°
3°
0.5°
0.5°
21°
1°
1.1m
1.5m
3.4m
3m
2.8m
2.2m
2.4m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159333 N 205028
E 159365 N 204946

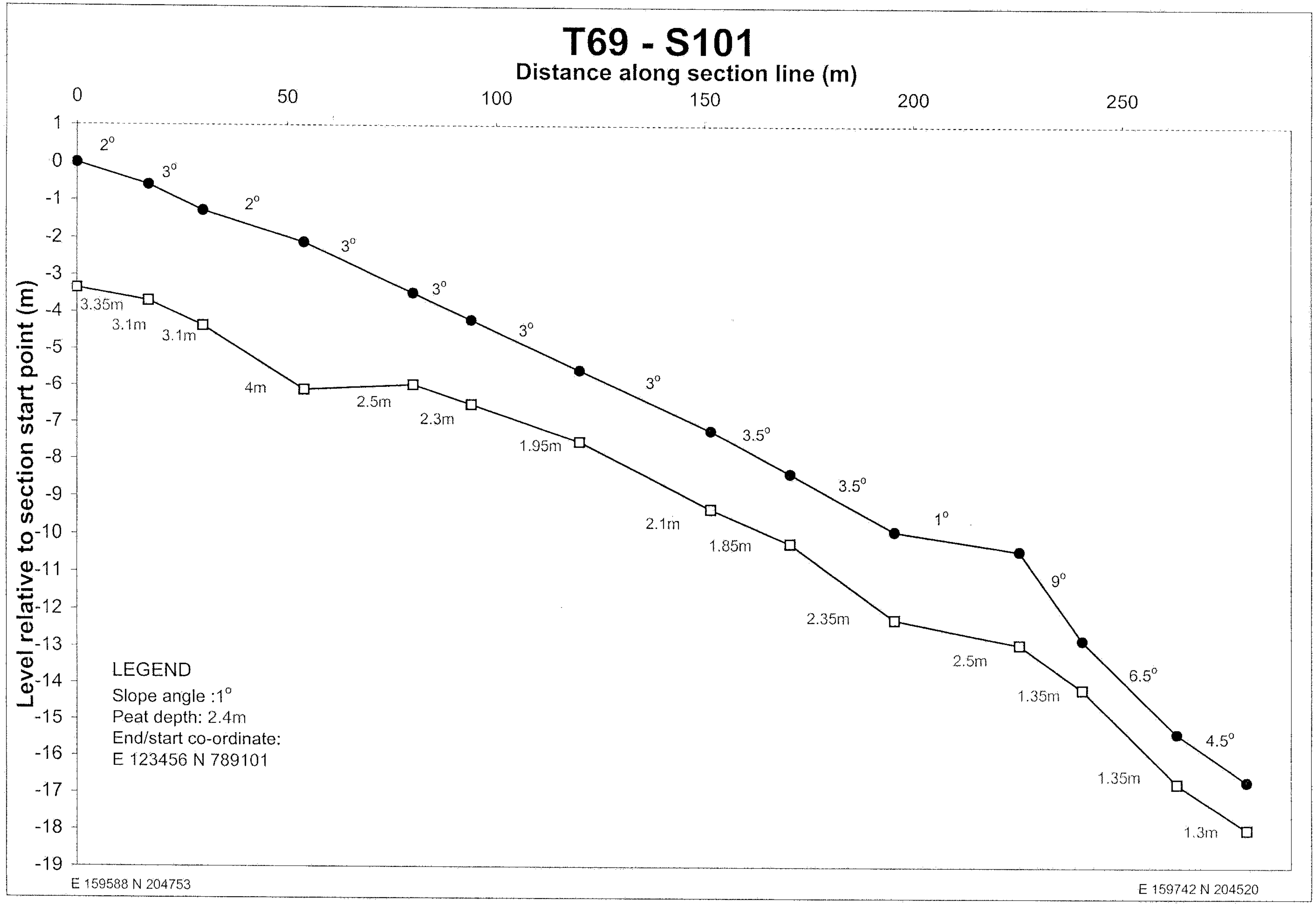


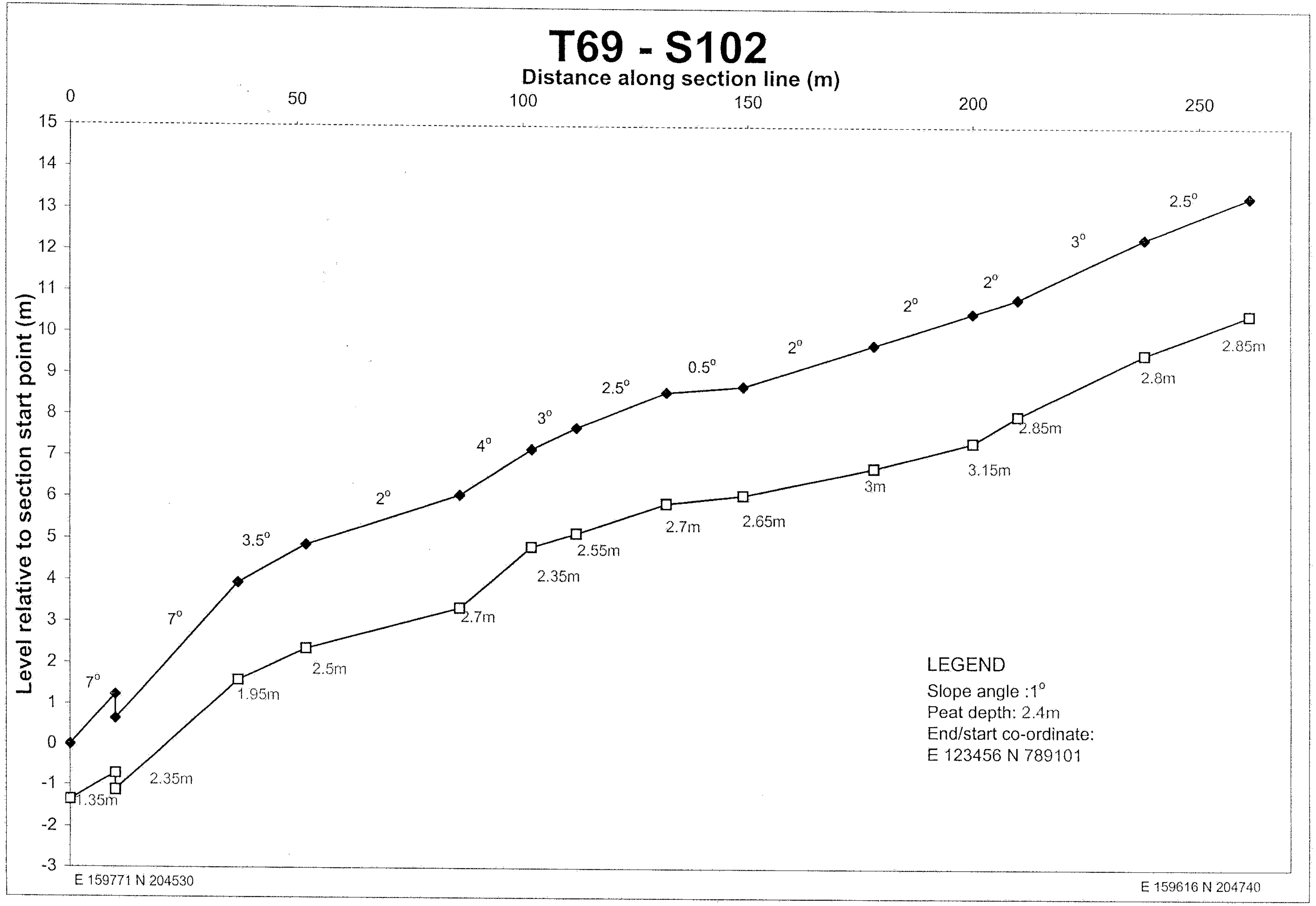
T67-S7
Distance along section line (m)
0
20
40
60
80
100
120
2
1
0
-1
-2
-3
-4
-5
Level relative to section start point (m)
2°
0.5°
0.5°
1.25°
2.25°
2.7m
3m
3.3m
3.8m
4m
3.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159323 N 204939
E 159281 N 205042

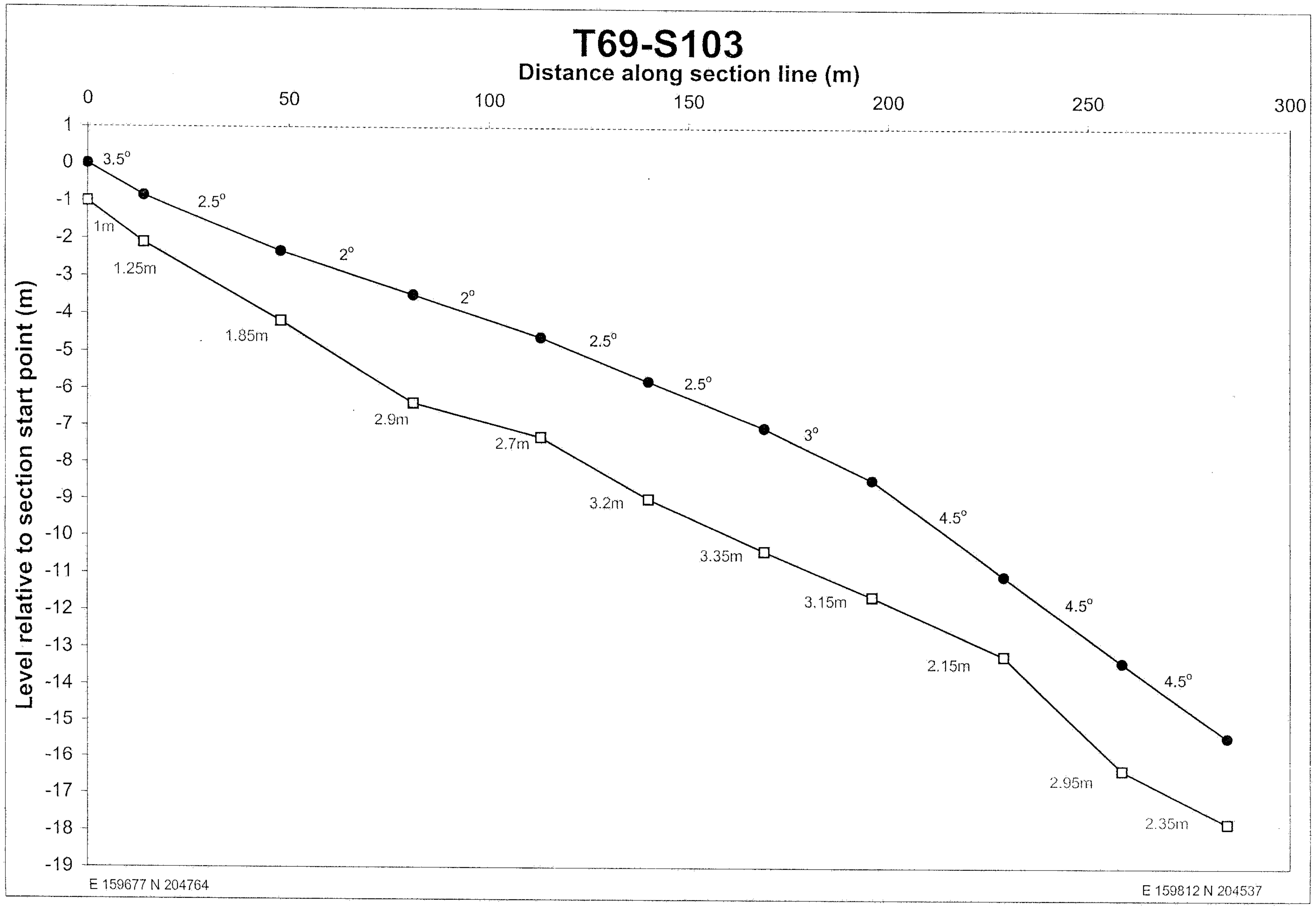

T68-S1
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
2.5°
2.5°
5°
5°
5.5°
5.5°
4°
2°
3m
3.2m
2.4m
2.5m
2.7m
2m
1.8m
2.5m
2.9m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159385 N 204648
E 159548 N 204439



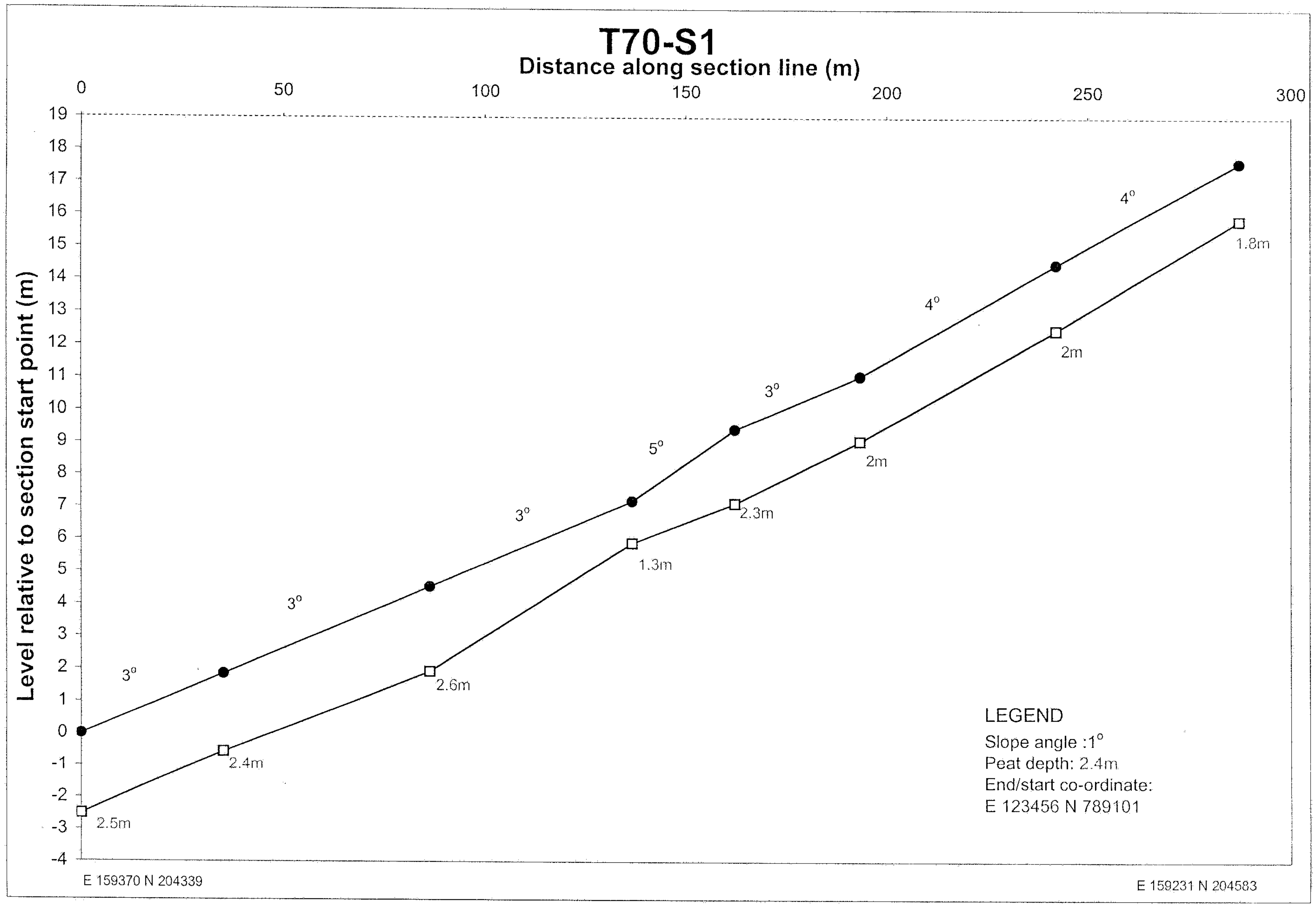
T69 - S100
Distance along section line (m)
0
50
100
150
200
250
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
Level relative to section start point (m)
1°
0.5°
1°
4°
3.5°
3°
3.5°
5°
6°
2.5°
2.5°
2.8m
2.8m
2.6m
2.6m
2.4m
2.5m
2.5m
2.6m
2m
4m
3.5m
2.7m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159516 N 204714
E 159648 N 204481

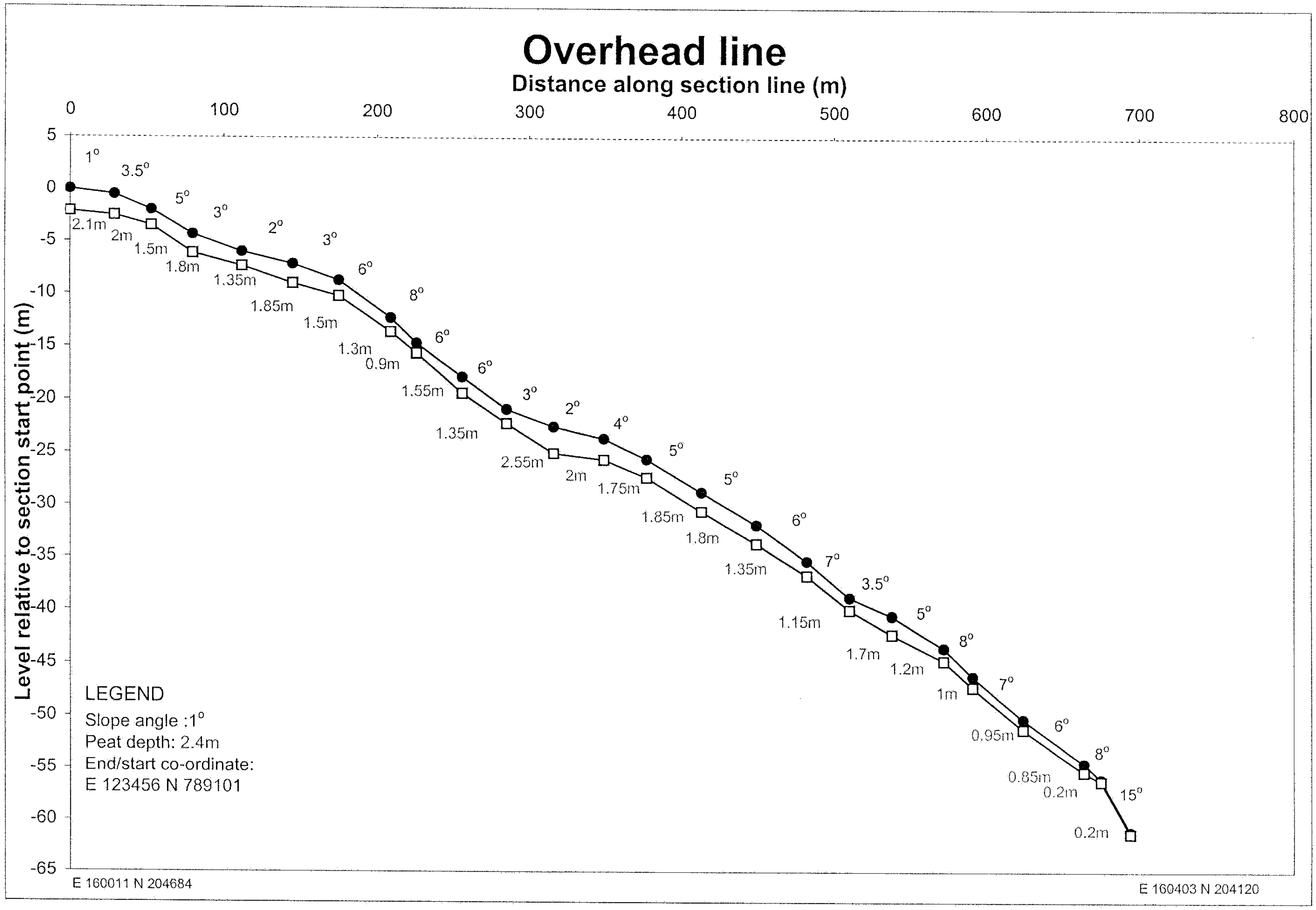

T69 - S101
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
2°
3°
2°
3°
3°
3°
3°
3.5°
3.5°
1°
9°
6.5°
4.5°
3.35m
3.1m
3.1m
4m
2.5m
2.3m
1.95m
2.1m
1.85m
2.35m
2.5m
1.35m
1.35m
1.3m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159588 N 204753
E 159742 N 204520


T69 - S102
Distance along section line (m)
0
50
100
150
200
250
Level relative to section start point (m)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
7°
7°
3.5°
2°
4°
3°
2.5°
0.5°
2°
2°
2°
3°
2.5°
1.35m
2.35m
1.95m
2.5m
2.7m
2.35m
2.55m
2.7m
2.65m
3m
3.15m
2.85m
2.8m
2.85m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159771 N 204530
E 159616 N 204740



T69-S103
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
3.5°
2.5°
2°
2°
2.5°
2.5°
3°
4.5°
4.5°
4.5°
1m
1.25m
1.85m
2.9m
2.7m
3.2m
3.35m
3.15m
2.15m
2.95m
2.35m
E 159677 N 204764
E 159812 N 204537


T70-S1
Distance along section line (m)
0
50
100
150
200
250
300
Level relative to section start point (m)
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
3°
3°
3°
5°
3°
4°
4°
2.5m
2.4m
2.6m
1.3m
2.3m
2m
2m
1.8m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 159370 N 204339
E 159231 N 204583


Overhead line
Distance along section line (m)
0
100
200
300
400
500
600
700
800
Level relative to section start point (m)
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
1°
3.5°
5°
3°
2°
3°
6°
8°
6°
6°
3°
2°
4°
5°
5°
6°
7°
3.5°
5°
8°
7°
6°
8°
15°
2.1m
2m
1.5m
1.8m
1.35m
1.85m
1.5m
1.3m
0.9m
1.55m
1.35m
2.55m
2m
1.75m
1.85m
1.8m
1.35m
1.15m
1.7m
1.2m
1m
0.95m
0.85m
0.2m
0.2m
LEGEND
Slope angle :1°
Peat depth: 2.4m
End/start co-ordinate:
E 123456 N 789101
E 160011 N 204684
E 160403 N 204120

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T1_V1	157744	204749	2	0.7	9.56
				1.4	5.35
				2.1	7.2
T1_V2	157750	204711	2.4	1	>9.71
				1.7	>10.00
				2.03	>9.78
T1_V3	157800	204708	2.9	1	7.71
				2	5.39
				2.58	7.59
T1_V4	157778	204748	2.8	1	>9.8
				2	6.61
				2.47	>9.7
T2_V1	157874	204796	3	1	5.66
				2	5.83
				2.87	4.39
T2_V2	157856	204742	3.15	1	9.6
				2	8.12
				2.94	9.38
T3_V1	157939	204516	2.2	1	7.9
				1.5	6.05
				1.78	8.89
T3_V2	158009	204497	2.4	0.7	9.48
				1.5	5.6
				2	7.37
T3_V3	157953	204579	2.5	1	9.69
				1.8	>10.3
			Interface only 19cm deeper		
T3_V4	157934	204608	2.3	0.7	8.7
				1.5	9.51
				1.87	9.59
T3_V5	157973	204554	2.4	1	9.55
				1.5	9.61
T3_V6	157789	204651	2.3	0.7	9.67
				1.4	7.02
				1.86	9.39
T3_V7	157890	204668	2.15	0.7	9.29
				1.5	6.25
				1.8	7.64
T3_V8	157868	204632	1.8	0.7	>9.62
				1.4	6.84
T3_V9	157843	204623	1.6	0.7	>9.55
				1.28	8.92
T3_V10	157931	204460	1.3	0.85	6.03
T4_V1	158163	204577	5	1.5	3.96
				2.5	4.9
				3.5	Dead Battery
				3.72	>9.58
T4_V2	158115	204529	3.8	1.5	5.02
				2.5	4.17
				3.5	6.28
			Interface only 10cm deeper		
T4_V3	158183	204628	3	1	5.75
				2	4.73
				2.79	>9.19
T4_V4	158053	204554	3.6	1.5	4.7
				2.5	3.22
				3.26	>9.7
T4_V5	158154	204630	3	1	6.91
				2	5.38
				2.73	8.79
T4_V6	158032	204550	3.2	1	7.82
				2	4.95
				2.98	9.26
T4_V7	158077	204658	3	1	7.97
				2	6.06
				2.7	8.88
T4_V8	158033	204506	2.8	1	6.92
				2	5.85
				2.58	7.68
T4_V9	158108	204684	3.6	1	6.22
				2	4.91
				3	>9.16
T4_V10	157917	204698	2.1	0.7	7.67
				1.4	7.56
				1.9	9.31

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T4_V11	158109	204692	3.5	1	5.14
				2	4.25
				2.7	4.72
				3.3	8.05
T4_V12	158015	204585	3.3	1	5.45
				2	5.67
				2.9	7.61
T4_V13	158018	204686	2.3	0.7	7.88
				1.4	5.45
				1.86	6.65
			Interface only 5cm deeper		
T5_V1	158185	204650	3	1	5.39
				2	6.58
				2.7	9.64
T5_V2	158267	204739	2	0.5	7.76
				1.2	5.9
				1.68	4.65
T5_V3	158226	204675	3	1	5.65
				2	5.24
				3	5.44
T5_V4	158236	204602	4	1.15	4.43
				2	4.86
				3	6.52
				3.93	6.29
T5_V5	158270	204772	1.25	0.5	9.49
T5_V6	158268	204773	1.75	0.5	9.73
				1	7.95
				1.7	8.64
T5_V7	158230	204771	2.4	0.7	9.21
				1.2	6.47
				1.8	6.13
T5_V8	158341	204811	2.75	0.7	5.95
				1.4	5.8
				2.1	4.56
				2.461	6.95
T5_V9	158316	204811	2	0.7	9.14
				1.2	7.07
				1.8	5.05
T5_V10	158300	204807	1.25	0.5	9.61
				0.95	9.77
T5_V11	158274	204814	2.7	0.7	9.58
				1.4	9.18
				1.92	9.54
T5_V12	158330	204830	1.8	0.5	>10.36
				1.2	6.65
				1.58	7.03
T5_V13	158299	204830	2	0.5	>9.68
				1	9.66
				1.5	>9.44
				1.9	>9.86
T5_V14	158340	204830	2.5	0.7	7.77
				1.4	5.99
				1.9	4.97
				2.26	7.06
T6_V1	157998	204445	2.15	0.7	>9.57
				1.5	5.38
				2	5.92
T6_V2	157973	204363	2.4	1	9.02
				1.5	5.24
				2.28	6.03
T6_V3	157953	204351	3	1	4.92
				2	4.89
				2.94	5.88
T6_V4	157940	204380	2.9	1	8.04
				2	5.74
				2.72	7.9
T6_V5	157922	204377	3.6	1	5.45
				2	4.39
				2.8	4.54
				3.29	8.17
T6_V6	157940	204435	1.8	0.7	9.38
				1.3	6.17
				1.65	7.78
T6_V7	157997	204258	3.5	1	4.74
				2	4.24
				2.8	4.03
				3.1	6.28

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T7_V1	158198	204571	5	1.5	4.53
				2.5	4.95
				3.5	6.05
				4	>10.06
				4.31	>10.46
T7_V2	158069	204435	3	1	5.38
				2	5.84
				2.72	>9.54
T7_V3	158175	204458	3.5	1	4.76
				2	3.55
				3	4.32
				3.3	8.86
T7_V4	158140	204386	3.5	1	5.53
				2	3.55
				2.8	3.98
				3.38	6.19
T7_V5	158157	204349	3.7	1	4.74
				2	3.36
				3	3.55
				3.49	5.88
T7_V6	158092	204357	3.6	1	5.19
				2	5.45
				3	5.81
				3.35	7.27
T8_V1	158489	204585	2.15	0.7	6.72
				1.4	5.72
				1.79	7.31
T8_V2	158359	204520	3	1	6.78
				2	5.32
				2.83	7.99
T8_V3	158509	204533	2.4	0.7	>9.41
				1.4	4.54
				1.9	5.14
				2.28	6.7
T9_V1	158558	204580	2.3	0.7	>9.86
				1.4	6.26
				2.15	6.42
T10_V1	158748	204613	2.2	0.5	>9.53
				1.2	5.42
				1.7	5.38
				2.04	6.74
T10_V2	158710	204829	1.8	0.5	>10.3
				1	>9.51
				1.5	>9.37
T10_V3	158736	204727	0.9	0.65	9.52
T10_V4	158797	204761	0.9	0.65	9.07
T10_V5	158860	204831	3	0.7	>9.63
				1.5	5.85
				2.2	7.89
T11_V1	159060	204784	3.3	0.7	9.33
				1.7	4.26
				2.7	6.55
T11_V2	159068	204794	3	0.7	7.8
				1.7	7.01
				2.4	7.66
				2.9	>9.52
T11_V3	158896	204762	1.85	0.7	9.64
				1.2	7.59
T11_V4	158940	204777	2.1	0.7	9.6
				1.2	4.72
				1.7	6.17
T11_V5	158981	204864	4.7	0.7	7.22
				1.7	4.24
				2.4	4.06
				3.7	5.67
T11_V6	159044	204832	3.1	0.7	8.76
				1.7	5.96
				2.2	5.09
				2.95	8.45
T11_V7	159067	204873	2.6	0.7	8.22
				1.2	5.64
				1.9	3.95
				2.3	4.7
T11_V8	159108	204764	3.5	0.7	6.9
				1.7	3.8
				2.5	4.7
				3.08	6.43

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T11_V9	159134	204699	3	0.7	7.53
				1.5	4.36
				2.2	3.85
				2.75	5.76
T12_V1	158162	204155	3.4	1	5.5
				2	4.57
				3	>9.59
			Interface only 25cm deeper		
T12_V2	158161	203986	3.75	0.7	5.28
				1.5	3.24
				2.5	3.92
				3.53	8.27
T12_V3	158144	204072	4	1	6.1
				2	3.94
				3	6.85
				3.8	7.49
T13_V1	158204	204201	3.3	0.7	9.58
				1.5	5.49
				2.5	5.45
				3.23	7.53
T13_V2	158190	204133	2.1	0.7	8.76
				1.5	4.87
				2.6	8.54
T13_V3	158247	204259	3	0.7	7.76
				1.5	5.95
				2.2	8.29
				2.8	7.06
T13_V4	158230	204189	3	0.7	8.68
				1.5	5.32
				2.2	4.15
				2.9	8.24
T13_V5	158332	204170	3.5	0.7	>9.61
				1.5	5.49
				2.5	6.07
				3.07	>9.3
T13_V6	158350	204077	3.3	0.7	>9.56
				1.5	4.28
				2.5	7.58
				3	>9.57
T13_V7	158441	204179	3	0.7	>9.57
				1.5	>9.59
				2.2	8.26
				2.8	7.45
T13_V8	158433	204145	2	0.5	>9.55
				1.2	9.18
				1.58	>9.59
T14_V1	158477	204375	3.5	1	7.64
				2	8.1
				2.8	>9.6
				3.23	>9.64
T14_V2	158480	204164	2.5	0.7	7.14
				1.4	3.48
				1.9	4.12
				2.3	4.98
T14_V3	158567	204301	4.3	1	7.86
				2	7
				3	5.96
				4.18	>9.56
T15_V1	158709	204420	3.4	0.7	9.69
				1.5	6.5
				2.3	6.67
				2.94	>9.71
T15_V2	158702	204368	2.5	0.7	7.06
				1.5	6.08
				2.26	7.83
T15_V3	158672	204210	3.9	1	6.79
				2	5.33
				3	7.36
				3.65	6.18
T15_V4	158647	204359	3.3	1	7.22
				2	7.04
				2.7	>9.55
T15_V5	158661	204429	3.5	1	7.86
				2	5.26
				2.6	8.86
				3.33	>9.92
T15_V6	158818	204389	2	0.7	>9.55
				1.2	6.62
				1.66	5.55

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T15_V7	158812	204351	1.9	0.7	9.57
				1.2	5.21
				1.64	5.84
T15_V8	158809	204320	1.8	0.7	9.95
				1.2	6.15
				1.55	7.43
T15_V9	158810	204416	2.8	0.7	9.5
				1.4	6.02
				2.1	7.07
				2.58	9.47
T15_V10	158749	204367	2.4	0.7	9.5
				1.2	5.74
				1.7	4.04
				2.28	6.69
T15_V11	158757	204332	2.2	0.7	9.48
				1.4	5.69
				2.15	8.55
T16_V1	158846	204254	2	0.7	9.66
				1.2	6.83
				1.75	6.08
T16_V2	158860	204335	1.8	0.7	9.59
				1.21	5.52
				1.65	7.11
T16_V3	158869	204397	2.1	0.7	9.59
				1.2	6.24
				2	5.58
T16_V4	158877	204448	2.6	0.7	8.67
				1.2	5.76
				1.9	5.15
				2.4	5.87
T16_V5	158829	204440	3.15	0.7	7.96
				1.4	3.68
				2.1	4.37
				3.08	9.56
T16_V6	159035	204460	2.2	0.7	7.13
				1.2	4.9
				1.9	5.61
T16_V7	158966	204448	2.9	0.7	8.66
				1.2	6.76
				1.7	2.18
				2.2	6.28
T16_V8	158961	204375	2.5	0.7	8.81
				1.2	6.69
				1.7	7.11
				2.2	8.8
T16_V9	158917	204340	2.25	0.7	9.65
				1.2	5.53
				1.7	5.74
T16_V10	158918	204377	2.2	0.7	7.99
				1.2	6
				1.7	8.58
				2.05	8.87
T16_V11	158929	204448	3	0.7	9.89
				1.2	6.27
				1.9	4.91
				2.4	5.04
				2.8	8.63
T16_V12	158901	204596	4.2	1	5.36
				2	3.43
				3	7.41
				3.9	9.71
T17_V1	159122	204516	1.95	0.7	>9.77
				1.2	6.61
				1.63	7.57
T17_V2	159128	204457	1.4	0.6	>10.10
				1.1	8.18
T17_V3	159089	204469	2.2	0.7	>9.58
				1.2	8.27
				1.97	9.14
T17_V4	159043	204473	3	0.7	8.98
				1.2	6.59
				1.9	3.74
				2.4	7.3
T17-V5	159205	204564	2	1	4.81
				1.85	3.63
T17-V6	159290	204480	2	1	7.15
				1.8	7.96
T17-V7	159230	204449	1.15	0.85	6.59
T17-V8	159069	204552	2.55	1	5.21
				1.5	6.4

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				2	6.1
					7.22
T18_V1	158200	203825	2	0.5	>9.5
				1	6.73
				1.47	6.24
T18_V2	158191	203825	1.3	0.5	>9.52
				1	5.91
			Interface only 18cm below		
T18_V3	158286	203928	2.1	0.5	9.58
				1.2	7.47
				1.9	6.56
T19_V1	158473	204126	1.5	0.5	9.35
				1	4.96
			interface only 25cm deeper		
T20_V1	158511	204123	2.1	0.7	7.41
				1.4	4.16
				1.93	6.08
T20_V2	158499	204046	1.8	0.5	>10.01
				1	5.55
				1.62	7.04
T20_V3	158577	204100	2	0.5	>9.54
				1	5.03
				1.5	3.31
			interface only 27cm deeper		
T20_V4	158517	204034	1.4	0.7	6.73
				1.23	4.65
T20_V5	158516	204047	?	0.7	8.28
				1.2	5.11
				1.88	5.93
T20_V6	158522	204078	2.5	0.7	>9.48
				1.2	4.49
				1.7	3.43
				2.2	5.32
T20_V7	158534	204133	2.2	0.7	7.21
				1.2	4.24
				1.7	3.44
				2.04	6.05
T22_V1	158078	204295	2.5	0.7	>10.07
				1.4	8.04
				1.9	8.47
T22_V2	158090	204366	2.5	0.7	9.71
				1.2	7.4
				1.7	6.75
				2.1	9.53
T22_V3	158950	204314	2.1	0.7	9.68
				1.2	9.7
				1.7	9.64
T22_V4	158944	204279	2	0.7	9.6
				1.2	6.91
				1.7	6.44
T23_V1	159199	204251	1.8	0.7	>9.59
				1.2	8.86
				1.55	>9.75
T23_V2	159153	204387	1.7	0.7	9.66
				1.2	9.49
T23_V3	159170	204343	1.3	0.7	>9.52
				1.2	>10.04
T23_V4	159239	204332	1.3	0.5	>8.22
				0.95	7.12
T24_V1	159662	205238	4.65	0.6	8.5
				1.5	3.07
				2.5	2.5
				3.5	3.2
				4.2	4.69
T25_V1	159780	204740	1.8	0.8	9.23
				1.2	4.73
				1.6	4.65
T25_V1b	159647	204831	0.7	0.7	6.11
				1.2	3.89
				1.7	3.31
T25_V2	159683	204853	2.8	0.7	7.14
				1.2	5.14
				1.7	4.12
				2.2	5.03
T26_V1	159850	204650	2.3	1.1	7.26
				1.55	5.07
				1.95	7.55
T27_V1	159796	205259	3.2	2	4.7
				2.5	6.78

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T27_V2	159821	205233	3.4	1.2	5.27
				2.5	5.98
				3.2	5.11
				3.5	7.4
T27_V3	159927	205298	2.2	1	10.8
				1.8	4.39
T27_V4	159711	205221	4.15	0.7	8.05
				1.7	2.91
				2.5	2.58
				3.6	6.8
T29_V1	160141	204826	1.95	1	6.18
				1.5	4.06
T29_V2	160141	204826	2	1	6.45
				1.4	5.2
				1.8	4.73
T29_V3	159982	204766	1.5	1	7.94
T29_V4	160145	204825	1.95	1	6.96
				1.4	4.82
				1.8	5.98
T32_V2	160181	204894	1.9	1	3.92
				1.5	7.26
T32_V3	160311	204852	0.9	0.56	>9.06
T32_V4	160205	204920	2.6	1	7.54
				1.6	8.67
				2.05	> 7.59
				2.4	7.15
T32_V5	160180	204786	1.7	1	6.81
				1.4	5.32
T32_V6	160400	204856		1	8.71
				1.5	> 8.82
T32_V7	160203	204770	1.8	0.6	> 9.16
				1	4.55
				1.5	4.45
T32_V8	160304	204953	2.8	1	6.18
				1.8	6.88
				2.6	7.82
T32_V9	160215	204800	1.8	1	7.3
				1.5	5.03
T32_V10	160224	204825	2	1	7.35
				1.6	5.2
T32_V11	160245	204836	1.7	0.9	6.32
				1.3	5.99
T32_V12	160263	204838	1	0.6	>9.52
T34_V1	160372	205112	2.7	1.5	3.5
				2	5.26
				2.4	8.62
T34_V2	160404	205066	2.5	0.7	10
				1.5	4.86
				2.2	1.98
T34_V3	160447	205152	2.2	1.5	5.18
T34_V4	160402	205066	2.2	2.2	7.5
T35_V2	160476	205019	1.8	1	7.4
				1.5	6.09
T35_V1	160443	204966	1.8	1	8.42
				1.5	7.12
T38_V1	160601	205082	1.85	1	6.61
				1.5	5.1
T38_V2	160621	205022	1.1	0.5	5.26
				0.87	6.1
T38_V3	160621	205022	0.8	0.5	5.96
T38_V4	160656	205077	1.8	1	7.49
				1.5	5.64
T38_V5	160528	204921	0.9	0.5	9.31
				0.75	9.1
T38_V6	160614	205023	1.25	0.5	9.17
				0.96	9.23
T38_V7	160558	204985	1.3	0.6	8.9
				1	7.33
T38_V8	160602	205058	1.8	0.5	9.36
				1	7.29
				1.5	5.28
T38_V9a	160545	205056	1.95	1	8.62
				1.65	5.96
T38_V10	160679	205041	1.6	1	7.61
				1.33	8.7
T38_V11	160620	205070	1.4	1	7.56
				1.25	8.73
T38_V12	160602	205061	1.8	1	7.31
				1.65	>9.44
T38_V13	160640	205010	1	0.5	8.71
				0.9	9.99

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T38_V14	160615	205090	2.1	1	8.01
				1.8	9.85
T41_V1	160692	205116	1.5	1	5.5
T42_V1	160913	205633	2.35	1	5.19
				1.65	4.2
T44_V1	161013	205615	2.7	1	6.11
				2	4.26
T47_V1	158297	205256	2.1	0.7	6.06
				1.4	4.99
				1.81	6.29
T48_V1	158530	205360	3.1	1	9.34
				1.7	4.31
				2.2	4.29
				3.17	5.01
T48_V2	158490	205442	3.1	1	5.27
				2	6.09
				3	8.49
				3m at interface	
T48_V3,T4	158480	205460	2.25	0.5	>9.23
				1	4.77
				1.5	7.38
				2.08	7.17
				Interface at 2.08	
T48_V4	158562	205366	1.5	0.5	>9.53
				0.93	>9.7
T48_V5	158577	205341	0.9	0.5	8.05
			interface	0.8	6.9
T48_V6	158586	205393	2.1	0.5	>9.64
				1.2	8.42
				1.75	5.22
				interface at 1.75	
T48_V7	158613	205352	1	0.5	>9.83
				0.9	3.42
T48_V8	158592	205384	1.5	0.5	>9.58
				0.9	>9.59
T49_V1	158644	205442	2.4	0.7	8.11
				1.5	5.23
				2.27	5.38
				2.27 is interface	
T49_V2	158665	205402	1.6	0.5	>9.58
				1	>9.68
				1.36	>9.83
				1.36 is interface	
T49_V3	158670	205391	1.5	0.5	>9.56
				1	4.97
			interface only 0.25cm down		
T50_V1	158988	205694	1.4	1.13	7.81
T50_V3	158891	205547	5	1	4.16
				2	3.4
				3	3.09
				4	>8
				4.45	>7.09
T50_V3a	158896	205546	5+	1	4.3
				2	3.19
				3	3.65
				4	7.54
				4.45	>9.36
T50_V4	158873	205600	3	1	4.95
				2	3.63
				2.4	5.65
T50_V4a	158876	205607	2.4	1	6.85
				2	6.93
				2.3	8
T50_V5	158908	205639	2.4	1	6.58
				1.5	8
				2	6
T50_V7	158868	205588	3.4	0.7	6.31
				1.5	6.22
				2.2	4.49
				3.08	7.66
T51_V1	159150	205654	3.6	1.5	6.38
				2.5	7.32
				3	7.06
				3.4	7.93
T51_V2	159088	205580	3.95	1.5	4.05
				2.5	4.97
				3	4.79

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				3.5	4.58
T51_V2a	159092	205587	3.6	1.5	5.13
				2.5	5.94
				3	6.88
				3.5	5.66
T51_V3	159098	205735	2.75	1.5	6.95
				2.5	8.64
T51_V4	159113	205610	3.4	1.5	4.54
				2.5	6.22
				3.4	8.36
T51_V5	159052	205680	2.7	1.5	4.85
				2.2	7.04
T51_V6	159025	205601	3.4	1.5	5.06
				2.5	7.83
				3.1	9.67
T51_V7	159101	205645	3.2	0.7	9.08
				1.5	7.35
				2.3	5.94
				2.75	9.41
T52_V1	159183	205790	1.9	1.55	>10
T53_V1	158439	205079	2.6	1	>9.34
				1.8	>9.67
			Too difficult to push to interface		
T53_V2	158462	205043	2.7	1	5.03
				1.7	5.13
				2.2	5.09
				2.5	5.19
T53_V3	158488	205142	1.9	0.7	>9.57
				1.2	8.89
				1.6	7.35
T53_V4	158556	205052	3.6	1	6.02
				2	5.13
				3	4.49
				3.31	7.63
T53_V5	158444	205216	2.1	0.7	>9.57
				1.4	8.79
				2.11	6.62
			interface at 2.11m		
T53_V6	158426	205242	3.8	1	7.05
				2	5.64
				3	3.05
				3.8	>9.62
			interface at 3.8m		
T53_V7	158411	205734	3.5	1	6.26
				2	4.31
				2.9	2.65
				interface at2.9	
T54_V1	158558	205177	3.9	1	5.55
				2	5.02
				3	5.85
				3.56	>9.2
T54_V2	158615	205107	1.4	0.5	>9.9
				1	7.63
			interface only 23cm down		
T54_V3	158684	205219	5.6	1	5.19
				2.5	3.65
				4	4.42
				5.19	8.21
			Interface deeper, not enough length		
T54_V4	158720	205134	2.5	0.7	9.49
				1.5	8.64
				2.28	7.5
T54_V5	158774	205144	2.3	0.7	6.11
				1.4	7.89
				2.06	>9.64
			Last test at interface		
T54_V6	158774	205212	5.1	1	4.97
				2	6.35
				3	6.52
				4.84	9.44
T54_V7	158470	205265	2.4	0.7	>9.52
				1.4	5
				2.1	5.47
				2.44	8.09
T54_V8	158506	205202	2	0.5	6.88
				1.2	5.6
				1.83	>9.47

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T54_V9	158596	205298	1	0.5	>9.77
				0.8	9.65
			0.8m at interface		
T54_V10	158574	205266	1	0.5	>9.96
				1.02	7.21
			1.02 at interface		
T54_V11	158568	205288	1	0.5	>9.95
			Couldn't push to interface as peat very strong		
T54_v12,T	158558	205310	2	0.7	6.9
				1,2	6.29
				1.8	7.68
T54_V13	158607	205286	0.8	0.5	>9.74
			couldn't push further		
T55_V1	158868	205368	2.7	1.5	8.12
				2	>8.45
				2.4	>9.04
T55_V2	158850	205414	2.7	1.5	6.67
				2	8.47
				2.5	9.27
T55_V3	158790	205430	1.8	1.1	7.44
				1.6	>9.15
T55_V4	158800	205400	2.4	1.5	7.71
				2.2	5.78
T55_V5	158815	205350	2.4	1.5	5.19
				2	5.43
T55_V6	158760	205340	2.35	1.5	3.89
				1.8	7.01
				2.2	7.76
T55_V7	158745	205370	2.1	1	9.06
				1.75	6.97
T55_V8	158725	205405	1.75	1	5.97
				1.55	8.01
T55_V9	158802	205279	3.5	0.6	6.37
				1	5.62
				1.5	4.41
				2	4.13
				3	5.45
				3.18	9.24
T55_V10	158898	205292	2.7	0.6	6.93
				1	5.07
				1.5	4.48
				2	4.6
				2.5	6.56
T55_V11	158682	205368	2.3	0.7	9.52
				1.4	7.56
				1.83	>9.65
T55_V12	158643	205306	1.5	0.5	6.51
				1	8.11
			interface only 5cm below		
T55_V13	158633	205321	1.6	0.5	>9.54
				1	8.68
				1.35	>9.64
T55_V14	158620	205341	2.5	0.7	7.98
				1.5	5.54
				2	7.2
				2.350	9.47
			interface at 2.35		
T55_V15	158709	205314	2.5	0.7	>9.67
				1.4	5.78
				1.9	6.61
				2.2	6.06
T56_V1	159104	205468	3.4	1	6.77
				2	3.69
				3	5.79
T56_V2	158965	205416	2.6	1	8.25
				2	7.96
				2.431	8.65
T56_V3	158923	205462	4.35	1	6.94
				2	2.81
				3	2.11
				3.5	6.23
T56_V3a	158919	205467	1	1	6.99
			2	2	3.47
			3	3	6.6
T56_V4	158912	205418	2.8	1.5	>9.02
				2	>9.11
T56_V5a	158900	205490	>5	1.5	4.94
				2.5	3.4
				3.5	5.57
				4	7.43
				5.05	>9.42

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T56_V6	158950	205460	3.15	1.5	5.04
				2	4.82
				2.5	7.69
T56_V7	158930	205540	>4.5	1.5	4.17
				2.5	2.49
				3.5	8
				4	8.17
T56_V8	158923	205460	4.5	1	8.75
				2	3.49
				3	3.92
				3.5	9.14
T56_V9	159034	205278	2.9	1	8.52
				2	5.06
				2.67	>9.72
T56_V10	159016	205357	2	1	8.21
				2	9.36
T56_V11	159213	205337	2.3	1	7.39
				1.6	5.34
				2.25	6.53
T56_V12	159067	205500	3.1	0.7	8.25
				1.5	5.48
				2.2	6.74
				2.7	9.5
T56_V13	159038	205478	3.7	0.7	8.8
				1.5	6.14
				2.2	8.38
				3.2	9.47
T57_V1	159239	205560	1.2	1	6.17
T57_V2	159283	205387	1.95	1.6	6.67
T57_V3	159317	205492	0.75	0.75	8.65
T57_V4	159264	205462	1.2	1	5.85
T57_V4a	159289	205539	1.5	0.7	9.61
				1.2	7.88
T57_V5	159386	205561		1	8.01
				1.47	> 9.22
T57_V6	159196	205381	1.7	0.7	>9.63
				1.6	8.25
T57_V7	159236	205366	2.2	1	6.83
				2	7.6
				2.2	o close to previous point
T57_V8	159249	205346	2.2	0.7	7.03
				1.5	4.65
				2.15	5.02
T58_V1	159525	205516	2.5	1.5	6.67
				2.5	9.13
T58_V2	159418	205578	2.3	0.5	>9.28
				1	8.83
				1.5	6.73
				2	8.59
T59_V1	159501	204989	1.7	0.5	>9.6
				1	6.63
				1.4	7.14
T59_V2	158888	205009	2.2	0.8	7.05
				1.5	6.6
				2.2	7.54
T59_V3	158669	204828	2	0.5	8.17
				1	7.7
				1.5	8.84
T59_V4	158684	204842	1.9	0.5	>9.52
				1	7.75
				1.5	7.8
T60_V1	158741	205108	1.8	0.5	7.91
				1.2	6.29
				1.52	8.45
T60_V2	158776	205060	4.4	1	4.24
				2	3.92
				3	4.31
				4.04	5.85
T60_V3	158791	205122	2.4	0.7	7.84
				1.4	5.05
				1.9	7.03
			Interface only 2cm down		
T60_V4	158880	205124	1.8	0.5	7.05
				1	4.87
				1.45	7.68
T60_V5	158672	205047	3	0.7	9.2
				2	5.72
				3	6.29

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T60_V6	158660	205066	1.2	0.5	8.83
				1	8.37
			Interface only 11cm below		
T60_V7	158882	204996	3.8	1	5.93
				2	4.22
				3	4.86
				3.55	>9.55
T60_V8	158901	204978	4.5	1	6.44
				2	5.46
				3	5.69
				4.45	9.64
T60_V9	158783	204902	4.5	1	4.9
				2	8.44
				3	5.67
				3.8	9.56
T60_V10	158709	204869	2.5	1	8.93
				1.7	4.86
				2.28	6.62
T61_V1	158920	205082	1.8	1	9.28
				1.65	>10.51
T61_V2	158878	205144	0.7	0.5	>10.32
				0.63	>10.18
T61_V3	158949	205079	2	0.6	10.02
				1.2	4.23
				1.7	8.94
T61_V4	159024	205188	2.3	0.6	>10.33
				1	7.61
				1.5	7.42
				2	9.6
T61_V5	158957	205103	2.2	0.8	8.72
				1.2	7.08
				1.7	5.14
T62_V1	159017	205228	1.2	0.6	9.19
				0.93	7.76
T62_V2	159052	205192	2.5	1	>9.55
				2	8.66
				2.2	>9.57
T62_V3	159045	205226	2.7	1	7.88
				2	9.37
				2.3	>10
T62_V4	159093	205244	2.7	1	8.84
				2	7.26
				2.55	>9.62
T62_V5	159090	205320	2.5	1	>9.66
				1.5	7.52
				2.1	8.44
T62_V6	159080	205380	2.6	1	8.14
				2	9.56
				2.31	>9.67
T62_V7	159186	205250	3.1	1.5	4.56
				2.5	5.44
				2.7	o close to previous point
T62_V8	159292	205112	3.1	0.7	>9.67
				1.5	5.29
				2.3	3.21
				2.65	5.5
T62_V9	159295	205091	2.3	0.7	9.59
				1.4	8.68
				2	6.39
T63_V1	159350	205316	3.1	1.5	5.15
				2.75	9.5
T63_V2	159340	205229	3.3	1.5	4.9
				2.5	4.9
				2.9	5.19
T63_V3	159443	205209	2.8	1.5	6.84
				2.2	6.11
T63_V4	159280	205410	1.8	0.9	7.84
				1.4	6.44
T63_V5	159290	205297	3	1	5.85
				2	6.15
				2.52	>10.04
T64_V1	159639	205363	3.7	0.8	5.13
				1.5	2.92
				2.5	3.36
				3.45	8.71
T64_V2	159542	205357	2.3	1.8	3.82
				2.51	4.41
T64_V3	159560	205404	2.2	1.8	5.83
T64_V4	159567	205250	4.2	2	1.72
				2.5	2.15
				3	3.8
				3.5	4.39
				4	7.97

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T64_V5	159652	205425	2.7	1.5	4.38
				2	4.98
T64_V6	159712	205323	0.7	0.5	6.69
T65_V1	159776	205408	3.3	1	8.08
				2	6.35
				2.7	8.41
T65_V2	159822	205348	0.9	0.55	8.63
T65_V3	159741	205427	2.7	1	Slippage in machine
				1.3	5.48
				2	5.35
				2.5	6.04
T66_V1	159214	204856	2.8	0.7	>9.45
				1.5	6.44
				2	6.19
				2.5	8.34
T66_V2	159191	204871	2.8	0.7	8.66
				1.4	4.06
				2.1	5.68
				2.57	7.35
T66_V3	159148	204830	2.3	0.7	7.09
				1.2	6.04
				1.7	6.18
				2.05	7.32
T66_V4	159113	204871	2.5	0.7	9.04
				1.2	6.3
				1.7	4.52
				2.22	6.44
T66_V5	159151	204880	2.7	0.7	9.55
				1.2	8.22
				1.7	5.02
				2.27	6.1
T66_V6	159210	204971	3.5	0.7	9.6
				1.7	7.58
				2.7	7.62
				3.22	8.03
T66_V7	159188	204905	2.8	0.7	9.37
				1.5	5.2
				2	5.03
				2.58	6.39
T66_V8	159265	204934	3.2	0.7	7.36
				1.7	4.56
				2.2	4.32
				2.74	6.83
T66_V9	159125	204806	3.5	0.7	8.09
				1.7	4.26
				2.5	4.97
				3.3	6.13
T66_V10	159237	204828	2.75	0.7	9.1
				1.7	4.66
				2.4	4.09
T66_V11	159298	204841	2.6	0.7	8.39
				1.2	5.28
				1.7	5.3
				2.2	5.43
				2.6	6.64
T67_V1	159360	204941	2.7	0.7	6.64
				1.5	4.71
				2.1	4.69
			interface only 25cm down		
T67_V2	159353	204953	2	0.5	>10.12
				1	4.56
				1.5	4.52
			interface only 25cm down		
T67_V3	159338	205089	1.2	0.5	>9.78
				1	6.04
T67_V4	159231	205066	4.5	1	8.25
				2	9.17
				3	>9.57
T67_V5	159339	204877	2.4	0.7	9.5
				1.2	7.76
				1.7	5.38
				2.2	5.6
T67_V6	159428	204907	2.9	0.7	9.61
				1.5	4.91
				2.1	4.22
				2.76	6.09
T67_V7	159485	204926	2.5	0.7	8.52
				1.5	3.69
				2	3.69
				2.45	4.91
T67_V8	159384	204901	2.8	0.7	9.42
				1.2	6.03
				1.7	5.51
				2.4	6.18

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T67_V9	159394	204884	2.8	0.7	9.62
				1.2	6.02
				1.7	2.86
				2.2	1.81
T67_V10	159385	204987	2	0.7	4.73
				1.2	4.95
				1.55	6.95
T68_V1	159218	204721	2.5	0.7	7.13
				1.2	4.91
				1.7	4.13
				2.3	6.17
T68_V2	159286	204729	2.3	0.7	7.02
				1.2	5.97
				1.7	5.89
T68_V3	159463	204547	2.6	1	>7.49
				2	6.68
T68_V4	159455	204488	2.45	1	9.19
				1.6	6.53
				2.3	7.98
T68_V5	159312	204580	2.25	1	>5.94
				1.5	6.06
				2	5.41
T68_V6	159331	204517	2.6	1	6.91
				1.5	3.81
				2	3.85
				2.35	4.31
T69_V1	159660	204679	2.75	1.5	5.09
				2	7.5
				2.5	6.13
				3	9.92
T69_V2	159577	204708	3.6	1.5	5
				2	6.29
				2.5	5.04
				3	6.92
T69_V2a	159446	204677	~3	0.5	>9.4
				1	7.14
				1.5	4.41
				2	4.78
				2.5	5.21
				3	9.21
T69_V2b	159618	204708	3.5	1	5.53
				2	4.98
				3	4.06
				3.35	6.38
T69_V3a	159606	204756	2.7	1.5	4.44
				2	4.87
				2.4	5.03
T69_V3b	159560	204643	2.5	1	7.02
				1.7	6.7
				2.14	9.43
T69_V4	159364	204838	3.45	0.7	9.42
				1.2	9.59
				1.9	7.62
				2.5	7.84
				2.9	9.59
T69_V5	159506	204770	3.3	0.7	8.71
				1.5	6.81
				2.2	6.44
				2.9	7.42
T69_V6	159562	204770	2.35	0.7	9.61
				1.2	5.75
				1.7	4.35
				2.15	5.48
T69_V7	159581	204874	2.25	0.7	5.25
				1.2	3.89
				1.7	3.23
				2.2	4.96
T70_V1	159493	204415	2.6	1	7.23
				1.6	6.14
				2.4	6.43
T70_V2	159357	204374	2.5	1	7.71
				1.5	5.95
				2	6.03
				2.3	6.92
T71_V1	159757	204645	2.95	1.5	6.31
				2.1	6.09
				2.7	6.72
T71_V2	159659	204578	2.05	1.25	6.88
				1.75	4.75
T71_V3	159730	204570	2.55	1.5	5.76
				1.9	6.41
				2.3	6.8

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T71_V1a	159731	204525	1.5	0.7	>9.81
				1.27	9.13
T71_V2a	159713	204565	2.2	0.7	>9.7
				1.5	7.71
				2.03	9.4
T71_V3a	159672	204627	2	0.7	>9.8
				1.5	>9.76
				1.87	>9.78
T71_V4	159626	204511	3	1	9.58
				2	>9.77
			unable of push further,v strong peat		
T71_V5	159619	204545	2.5	1	5.74
				1.7	6.81
				2.2	>9.62
T71_V6	159599	204590	2.5	1	5.46
				1.7	5.24
				2.1	7.02
T71_V7	159692	204738	3	1	>9.76
				2	5.83
				2.73	>10.18
T71_V8	159777	204618	3.2	1	8.58
				2	6.58
				3	>9.69
			interface onle 20cm below		
T71_V9	159765	204538	1.9	1	9.18
				1.74	>9.67
T71_V10	159749	204560	2.5	0.7	>9.75
				1.5	6.89
				2.08	9.61
T71_V11	159720	204599	2.6	1	5.34
				1.8	5.97
				2.43	6.06
Ttilt12	158845	205602	1.65	0.5	9.68
				1	7.32
				1.44	9.53
Ttilt 13b	158806	205576	1	0.7	4.84
Ttilt 13	158806	205579	1.6	0.5	9.53
				1	7.68
				1.42	8.48
TOH_V1	160047	204608	1.8	0.5	>9.55
				1	>9.67
				1.68	6.48
TOH_V2	160101	204535	1.5	0.5	7.48
				1	5.07
TOH_V3	160115	204507	1.3	0.5	7.67
				1.16	4.79
TOH_V4	160146	204474	1.5	0.5	>9.59
				1	5.44
TOH_V5	160198	204400	2	0.7	>9.68
				1.2	7.94
				1.77	7.43
TOH_V6	160240	204347	1.85	0.7	>9.54
				1.2	7.69
				1.64	8.5
TOH_V7	160261	204315	1.8	0.7	9.56
				1.2	8.47
				1.55	7.49
TOH_V8	160281	204296	1.4	0.5	9.57
				1	7.05
TOH_V9	160311	204255	1.7	0.5	9.62
				1	8.11
TOH_V10	160326	204217	1.2	0.7	9.59
				1.2	8.73
TOH_V11	160345	204206	1	0.7	>9.59
TOH_V12	160359	204178	0.95	0.7	>9.59
TOH_V13	160382	204153	0.85	0.62	>9.52

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T24_GA1

Easting	159671.0	Start date	16/06/2004
Northing	205219.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.40	Page	1 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark borwn very fibrous PEAT. H1-H2
								...becoming fibrous
								...becoming H3-H4
						(4.40)		
								...becoming H5-H6

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T24_GA1

Easting	159671.0	Start date	16/06/2004
Northing	205219.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.40	Page	2 of 2

Job No. : 378015C

Site Name : Derrybrien Windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						4.40		...Refusal

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T24_GA2

Easting	159662.0	Start date	16/06/2004
Northing	205241.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	5.00	Page	1 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (*Thickness*)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...Softer layer between 1.10m - 1.60m
								...becoming H3-H4 and fibrous
						(4.65)		
								...softer layer between 3.50m - 4.0m
								...becoming H4-H5. Softer layer between 4.0m - 4.50m

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T24_GA2

Easting	159662.0	Start date	16/06/2004
Northing	205241.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	5.00	Page	2 of 2

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						4.65		
						(0.35)		Firm grey white sandy SILT/CLAY
						5.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T24_GA3

Easting	159643.0	Start date	16/06/2004
Northing	205277.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.00	Page	1 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.65) 3.65		Very soft dark brown very fibrous PEAT. H1-H2. ...becoming H2-H3 ...becoming fibrous ...softer layer between 2.0m - 3.0m ...becoming H4-H5
						(0.35) 4.00		Firm light brown sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T24_GA3

Easting	159643.0	Start date	16/06/2004
Northing	205277.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.00	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T24_GA4

Easting	159632.0	Start date	16/06/2004
Northing	205316.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.15	Page	1 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming fibrous
						(4.00)		...becoming H3-H4 and fibrous
								...becoming H4-H5
								...becoming black amorphous. H8-H9
						4.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T24_GA4

Easting	159632.0	Start date	16/06/2004
Northing	205316.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.15	Page	2 of 2

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.15) 4.15		Firm light brown sandy SILT/CLAY with some roots

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA1

Easting	159723.0	Start date	08/07/2004
Northing	204789.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.60) 1.60		Very soft dark brown fibrous PEAT ...becoming darker and less fibrous
						(0.40) 2.00		Soft light grey SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA2

Easting	159690.0	Start date	08/07/2004
Northing	204794.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	1.85	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown fibrous PEAT
						(1.80)		...becoming less fibrous
						1.80		
						(0.05) 1.85		Loose grey SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA3

Easting	159681.0	Start date	08/07/2004
Northing	204789.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	1.60	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.35) 1.35		Very soft dark brown fibrous PEAT ...becoming less fibrous
						(0.25) 1.60		Soft light grey sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA4

Easting	159856.0	Start date	07/07/2004
Northing	204750.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.45	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.45)		Very soft dark brown very fibrous PEAT. H4-H5 ...becoming H6-H7 ...becoming black and amorphous
						1.45		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : **378015C**
Site Name : **Derrybrien windfarm**

Record of Gouge Auger T25_GA5

Easting	159723.0	Start date	08/07/2004
Northing	204697.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	2.60	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.60)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming H4-H5 ...becoming H6-H7 ...becoming black amorphous
						2.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA6

Easting	159704.0	Start date	08/07/2004
Northing	204784.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	1.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.30)		Very soft dark brown very fibrous PEAT. H3-H4
						1.30		...becoming black amorphous

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA8

Easting	159579.0	Start date	12/07/2004
Northing	204705.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	3.65	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming fibrous
						(3.65)		
								...becoming H6-H7
								...becoming amorphous
								...becoming black
						3.65		
								...timber remains

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA9

Easting	159662.0	Start date	12/07/2004
Northing	204678.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	3.25	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous. H5-H6
						(3.25)		...becoming slightly fibrous. Softer layer between 1.7m - 2.0m
								...becoming H7-H8
								...becoming amorphous
						3.25		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA10

Easting	159776.0	Start date	12/07/2004
Northing	204742.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.25	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.25)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming H5-H6 ...becoming amorphous
						2.25		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T25_GA11

Easting	159760.0	Start date	12/07/2004
Northing	204743.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	1.75	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(1.75)		
								...becoming H5-H6
								...becoming amorphous and black
						1.75		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T26_GA1

Easting	159813.0	Start date	08/07/2004
Northing	204546.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	2.20	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.20)		Very soft dark brown very fibrous PEAT ...Becoming less fibrous . H5-H6 ...becoming black and amorphous
						2.20		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T26_GA2

Easting	159777.0	Start date	08/07/2004
Northing	204583.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
						(2.00)		...becoming less fibrous. H6-H7
						2.00		...becoming amorphous

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T26_GA3

Easting	159757.0	Start date	08/07/2004
Northing	204645.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	2.85	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
								...becoming less fibrous. H5-H6
						(2.85)		
								...becoming slightly fibrous. H7-H8
						2.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T26_GA4

Easting	159891.0	Start date	07/07/2004
Northing	204707.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.55	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.40)		Very soft dark brown very fibrous PEAT ...becoming H5-H6 ...becoming black. H7-H8
						1.40 (0.15) 1.55		Firm to Stiff light brown organic sandy CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T26_GA5

Easting	159825.0	Start date	12/07/2004
Northing	204675.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
						(2.00)		...becoming less fibrous. H5-H6
						2.00		...becoming slightly fibrous. H7-H8

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T26_GA6

Easting	159848.0	Start date	12/07/2004
Northing	204634.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.35	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown PEAT
								...becoming less fibrous. H5-H6
						(2.25)		
								...becoming amorphous. H7-H8
								...becoming black
						2.25		
						(0.10)		Firm to Stiff light brown slightly organic sandy SILT
						2.35		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA1

Easting	159796.0	Start date	14/06/2004
Northing	205259.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	3.50	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.20)		Very soft dark brown firbrous PEAT. H1-H2 ...becoming less fibrous ...becoming H7-H8 and black
						3.20 (0.30) 3.50		Soft to firm brown sandy CLAY/SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA2

Easting	159821.0	Start date	14/06/2004
Northing	205233.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	4.00	Page	1 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown fibrous PEAT
								...softer layer between 0.9m - 1.3m
						(4.00)		
								...becoming black. Softer layer between 3.0m - 3.40m
								...becoming amorphous
						4.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger	**T27_GA2**		
Easting	159821.0	Start date	14/06/2004
Northing	205233.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	4.00	Page	2 of 2

Job No. : **378015C**

Site Name : **Derrybrien Windfarm**

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA3

Easting	159843.0	Start date	14/06/2004
Northing	205243.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	4.60	Page	1 of 2

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions
								Very soft brown fibrous PEAT
								...Softer layer between 1.9m - 2.0m
						(4.20)		
								...becoming less fibrous. Softer layer between 2.4m - 3.0m
								...Softer layer between 3.5m - 3.6m
								...Wooden roots observed

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA3

Easting	159843.0	Start date	14/06/2004
Northing	205243.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	4.60	Page	2 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						4.20		
						(0.40)		Firm white grey sandy SILT
						4.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T27_GA4

Easting	159864.0	Start date	14/06/2004
Northing	205252.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	4.00	Page	1 of 2

Job No. : 378015C

Site Name : Derrybrien Windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.60)		Very soft brown very fibrous PEAT ...becoming less fibrous ...becoming black with presence of some wooden roots.
						3.60		
						(0.40)		Firm white grey sandy SILT
						4.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA4

Easting	159864.0	Start date	14/06/2004
Northing	205252.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	4.00	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA5

Easting	159876.0	Start date	14/06/2004
Northing	205288.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	2.60	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.10)		Very soft dark brown very fibrous PEAT ...becoming black with presence of some wooden roots.
						2.10		
						(0.50)		Firm grey white slightly organic sandy CLAY ...becoming pinkish
						2.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA6

Easting	159934.0	Start date	14/06/2004
Northing	205305.0	End date	14/06/2004
Ground level		Backfill date	14/06/2004
Final depth	2.60	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.20)		Very soft dark brown very fibrous PEAT ...becoming less fibrous. Softer layer between 2.0m - 2.20m
						2.20		
						(0.40)		Firm light grey slightly organic sandy CLAY ...becoming pinkish
						2.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA7

Easting	159800.0	Start date	15/06/2004
Northing	205275.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	4.55	Page	1 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
								...Softer layer between 1.80m - 3.0m
								...becoming less fibrous
						(4.15)		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA7

Easting	159800.0	Start date	15/06/2004
Northing	205275.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	4.55	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth *(Thickness)*	Level	Strata Descriptions
						4.15		
						(0.40)		Firm grey white organic sandy SILT
						4.55		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA8

Easting	159732.0	Start date	16/06/2004
Northing	205236.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.50	Page	1 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
								...Softer layer between 1.65m - 2.0m
						(4.15)		...becoming H4-H5. Softer layer between 2.0m - 3.0m
								...becoming H5-H6

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA8

Easting	159732.0	Start date	16/06/2004
Northing	205236.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.50	Page	2 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						4.15		
						(0.35)		Firm grey white sandy SILT/CLAY
						4.50		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA9

Easting	159706.0	Start date	16/06/2004
Northing	205224.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.20	Page	1 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
								...becoming fibrous
						(4.20)		...becoming H4-H5
								presence of some wooden roots

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_GA9

Easting	159706.0	Start date	16/06/2004
Northing	205224.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.20	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						4.20		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_G10

Easting	159690.0	Start date	16/06/2004
Northing	205212.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	5.00	Page	1 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming H3-H4
								...becoming H4-H5
						(5.00)		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T27_G10

Easting	159690.0	Start date	16/06/2004
Northing	205212.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	5.00	Page	2 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						5.00		...timber remains

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T28_GA1

Easting	160112.0	Start date	07/07/2004
Northing	204872.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.85	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H4-H5
						(1.85)		...becoming less fibrous. H6-H7
								...becoming black and slightly fibrous. H7-H8
						1.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T28_GA2

Easting	159937.0	Start date	07/07/2004
Northing	204785.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.00	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Strata: Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.00)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming black and slightly fibrous. H7-H8
						1.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T29_GA1

Easting	160141.0	Start date	07/07/2004
Northing	204826.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.00)		...becoming less fibrous. H5-H6
								...becoming black. H7-H8
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T29_GA2

Easting	160041.0	Start date	07/07/2004
Northing	204829.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.45	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.10)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous. H6-H7
						1.10		
						(0.35)		Firm to Stiff light brown organic sandy CLAY ...becoming pinkish
						1.45		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T29_GA3

Easting	160068.0	Start date	07/07/2004
Northing	204799.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(1.00)		...becoming H6-H7
						1.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T29_GA4

Job No. : 378015C

Site Name : Derrybrien windfarm

Easting	159982.0	Start date	07/07/2004
Northing	204766.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.50	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.50) 1.50		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous. H5-H6 ...becoming black. H7-H8

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T29_GA5

Easting	160135.0	Start date	07/07/2004
Northing	204716.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.55	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.55)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous. H5-H6 ...becoming black and slightly fibrous. H7-H8
						1.55		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T31_GA1

Easting	160278.0	Start date	08/07/2004
Northing	204943.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	1.85	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.85)		Very soft dark brown very fibrous PEAT. H4-H5 ...becoming less fibrous. H6-H7 ...becoming slightly fibrous
						1.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA1

Easting	160191.0	Start date	07/07/2004
Northing	204848.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.85	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.80) 1.80		Very soft dark brown very fibrous PEAT. H4-H5 ...becoming less fibrous. H5-H6 ...becoming black. H6-H7
						(0.05) 1.85		Firm to Stiff light brown slightly organic sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA2

Easting	160181.0	Start date	07/07/2004
Northing	204894.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H4-H5
						(2.00)		...becoming less fibrous. H5-H6
								...becoming slightly fibrous. H7-H8
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA3

Easting	160295.0	Start date	07/07/2004
Northing	204880.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.20	Page	1 of 1

Samples & Testing						Strata		
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.20)		Very soft dark brown very fibrous PEAT. H4-H5 ...becoming black and less fibrous. H6-H7 ...becoming slightly fibrous
						1.20		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA4

Easting	160383.0	Start date	07/07/2004
Northing	204830.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.60	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(1.60)		
								...becoming less fibrous. H5-H6
								...becoming black amorphous. H8-H9
						1.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA5

Easting	160212.0	Start date	07/07/2004
Northing	204746.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.00)		...becoming less fibrous
								...becoming H6-H7
								...becoming black. H7-H8
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA6

Easting	160344.0	Start date	21/07/2004
Northing	204875.0	End date	21/07/2004
Ground level		Backfill date	21/07/2004
Final depth	2.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H2-H3
								...becoming less fibrous. H5-H6
						(2.70)		
								...becoming H6-H7
								...becoming amorphous
						2.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA7

Easting	160329.0	Start date	21/07/2004
Northing	204903.0	End date	21/07/2004
Ground level		Backfill date	21/07/2004
Final depth	2.80	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H2-H3
								...becoming less fibrous. H4-H5
						(2.80)		...becoming amorphous. H8-H10
								...some tree remains between 2.0m - 2.8m
						2.80		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T32_GA8

Easting	160356.0	Start date	21/07/2004
Northing	204853.0	End date	21/07/2004
Ground level		Backfill date	21/07/2004
Final depth	1.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.70)		Very soft dark brown very fibrous PEAT. H2-H3 ...becoming less fibrous. H4-H5 ...becoming amorphous H8-H10. some tree remains between 1.35m - 1.7m
						1.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA1

Easting	160371.0	Start date	15/06/2004
Northing	205115.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.70)		Very soft dark brown very fibrous PEAT ...becoming less fibrous ...Softer layer between 2.0m - 2.7m
						2.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA2

Easting	160383.0	Start date	15/06/2004
Northing	205094.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.10	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.10)		Very soft dark brown very fibrous PEAT ...presence of some tree roots ...becoming less fibrous
						2.10		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA3

Easting	160404.0	Start date	15/06/2004
Northing	205079.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.50	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.50)		Very soft dark brown very fibrous PEAT ...becoming less fibrous. Softer layer between 1.5m - 2.0m
						2.50		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA4

Easting	160427.0	Start date	15/06/2004
Northing	205035.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.10	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.10)		Very soft dark brown very fibrous PEAT ...becoming less fibrous and black
						2.10		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA5

Easting	160437.0	Start date	15/06/2004
Northing	205065.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.00)		Very soft dark brown very fibrous PEAT
						2.00		...becoming less fibrous

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T34_GA6

Easting	160489.0	Start date	15/06/2004
Northing	205072.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	1.65	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien Windfarm

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.65)		Very soft dark brown very fibrous PEAT ...becoming less fibrous
						1.65		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA7

Easting	160479.0	Start date	15/06/2004
Northing	205114.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	1.90	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.90) 1.90		Very soft dark brown very fibrous PEAT ...becoming less fibrous

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T34_GA8

Job No. : 378015C
Site Name : Derrybrien Windfarm

Easting	160414.0	Start date	15/06/2004
Northing	205174.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	1.85	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
						(1.85)		...becoming less fibrous
								...presence of some tree roots between 1.5m - 1.6m
						1.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA9

Easting	160458.0	Start date	15/06/2004
Northing	205161.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.15	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.55)		Very soft dark brown very fibrous PEAT ...becoming less fibrous
						1.55		
						(0.60)		Firm light brown organic sandy CLAY
						2.15		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_G10

Easting	160456.0	Start date	15/06/2004
Northing	205177.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.50	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
								...becoming less fibrous
						(2.15)		
								...becoming black
						2.15		
								Firm grey white sandy CLAY
						(0.35)		
						2.50		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA11

Easting	160479.0	Start date	15/06/2004
Northing	205170.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	1.85	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.85)		Very soft dark brown very fibrous PEAT ...becoming less fibrous ...presence of some tree roots between 1.35m - 1.4m
						1.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA12

Easting	160492.0	Start date	15/06/2004
Northing	205195.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Samples & Testing: Depths To	Samples & Testing: Type	Legend	Strata: Depth *(Thickness)*	Strata: Level	Strata Descriptions
						(1.85)		Very soft dark brown very fibrous PEAT ...becoming less fibrous
						1.85		
						(0.15)		Firm light brown sandy CLAY
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T34_GA13

Easting	160520.0	Start date	15/06/2004
Northing	205189.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.35	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien Windfarm

Shear Strength	Water	Samples & Testing Depths From	To	Type	Legend	Strata Depth (Thickness)	Level	Strata Descriptions
						(1.85)		Very soft dark brown very fibrous PEAT ...becoming less fibrous
						1.85		
						(0.50)		Firm light brown sandy CLAY ...becoming pinkish
						2.35		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA14

Easting	160360.0	Start date	15/06/2004
Northing	205119.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.40	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.40)		Very soft dark brown very fibrous PEAT ...becoming less fibrous ...presence of tree roots between 2.0m - 2.4m
						2.40		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA15

Easting	160335.0	Start date	15/06/2004
Northing	205107.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	3.15	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
								...becoming fibrous
								...presenceof some roots between 1.30m - 1.60m
						(3.10)		
								...Softer layer between 1.70m - 2.0m
								...Softer layer between 2.6m - 3.0m
						3.10		
						(0.05)		Firm light brown sandy CLAY
						3.15		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA16

Easting	160319.0	Start date	15/06/2004
Northing	205097.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	3.60	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.30)		Very soft dark brown very fibrous PEAT ...becoming fibrous ...becoming black
						3.30		
						(0.30)		Firm grey white sandy CLAY
						3.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T34_GA17

Easting	160447.0	Start date	15/06/2004
Northing	205149.0	End date	15/06/2004
Ground level		Backfill date	15/06/2004
Final depth	2.20	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
								...becoming fibrous
						(2.20)		
						2.20		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T35_GA1

Easting	160534.0	Start date	17/06/2004
Northing	204904.0	End date	17/06/2004
Ground level		Backfill date	17/06/2004
Final depth	0.50	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions
						(0.50) 0.50		Very soft dark brown fibrous PEAT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T35_GA2

Easting	160519.0	Start date	17/06/2004
Northing	204936.0	End date	17/06/2004
Ground level		Backfill date	17/06/2004
Final depth	1.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.70) 0.70		Very soft brown fibrous PEAT
						(0.30) 1.00		Loose light brown silty SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T35_GA3

Easting	160499.0	Start date	17/06/2004
Northing	204964.0	End date	17/06/2004
Ground level		Backfill date	17/06/2004
Final depth	1.30	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien Windfarm

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions
						(1.20) 1.20		Very soft dark brown fibrous PEAT
						(0.10) 1.30		Soft to firm brown sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T35_GA4

Easting	1604489.0	Start date	17/06/2004
Northing	204995.0	End date	17/06/2004
Ground level		Backfill date	17/06/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.75) 1.75		Very soft dark brown fibrous PEAT
						(0.25) 2.00		Soft grey sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T35_GA5

Easting	160476.0	Start date	17/06/2004
Northing	205019.0	End date	17/06/2004
Ground level		Backfill date	17/06/2004
Final depth	2.10	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.10) 2.10		Very soft dark brown fibrous PEAT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

SID for Windows (c) 1996 MZ Associates.

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T35_GA6

Easting	160513.0	Start date	17/06/2004
Northing	204314.0	End date	17/06/2004
Ground level		Backfill date	17/06/2004
Final depth	0.50	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.50) 0.50		Very soft dark brown fibrous PEAT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

SID for Windows (c) 1996 MZ Associates

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T38_GA1

Easting	160670.0	Start date	06/07/2004
Northing	204976.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	0.80	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.80)		Very soft dark brown very fibrous PEAT. H4-H5
								...becoming black H6-H7
						0.80		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T38_GA2

Easting	160601.0	Start date	06/07/2004
Northing	205082.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.00)		...becoming H5-H6
								...becoming black and less fibrous. H7-H8
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T38_GA3

Easting	160634.0	Start date	06/07/2004
Northing	205065.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.80)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming H4-H5 ...becoming black
						1.80 (0.20) 2.00		Firm to Stiff light brown organic sandy CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

SID for Windows (c) 1996 MZ Associates.

ESB INTERNATIONAL

Record of Gouge Auger **T38_GA4**

Easting	160609.0	Start date	06/07/2004
Northing	205012.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	1.50	Page	1 of 1

Job No. : **378015C**

Site Name : **Derrybrien windfarm**

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.20)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming H6-H7 ...becoming black and less fibrous
						1.20		
						(0.30)		Firm to Stiff brown organic sandy CLAY
						1.50		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T38_GA5

Easting	160557.0	Start date	06/07/2004
Northing	205068.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	2.00	Page	1 of 1

Samples & Testing / Strata

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.85)		Very soft dark brown very fibrous PEAT. H4-H5 ...becoming less fibrous H5-H6 ...becoming slightly fibrous ...becoming black and slighly fibrous H6-H7
						1.85		
						(0.15)		Firm to Stiff light brown organic sandy CLAY
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T38_GA6

Easting	160582.0	Start date	07/07/2004
Northing	204926.0	End date	07/07/2004
Ground level		Backfill date	07/07/2004
Final depth	1.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.85)		Very soft dark brown very fibrous PEAT. H4-H5 ...becoming black amorphous H8-H9
						0.85 (0.15) 1.00		Firm light grey organic sandy CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T39_GA1

Easting	160659.0	Start date	14/07/2004
Northing	205635.0	End date	14/07/2004
Ground level		Backfill date	14/07/2004
Final depth	1.85	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.85)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous. H5-H6 ...becoming amorphous H8-H10
						1.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T39_GA2

Easting	160703.0	Start date	14/07/2004
Northing	205637.0	End date	14/07/2004
Ground level		Backfill date	14/07/2004
Final depth	2.25	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.25)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H6-H7 ...becoming amorphous
						2.25		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T41_GA1

Easting	160725.0	Start date	06/07/2004
Northing	204994.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	0.45	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.45)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming black and slightly fibrous H6-H7
						0.45		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T41_GA2

Easting	160711.0	Start date	06/07/2004
Northing	205037.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	0.60	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.60)		Very soft dark brown very fibrous PEAT. H4-H5
						0.60		...becoming black H6-H7

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : **378015C**
Site Name : **Derrybrien windfarm**

Record of Gouge Auger T41_GA3

Easting	160680.0	Start date	06/07/2004
Northing	205102.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	1.50	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.30)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H4-H5 ...becoming black H7-H8
						1.30		
						(0.20)		Firm to Stiff light brown organic sandy SILT/CLAY
						1.50		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T41_GA4

Easting	160749.0	Start date	06/07/2004
Northing	205102.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	1.25	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.10)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming black and less fibrous
						1.10		
						(0.15) 1.25		Firm to Stiff light brown organic sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T41_GA5

Easting	160779.0	Start date	06/07/2004
Northing	205086.0	End date	06/07/2004
Ground level		Backfill date	06/07/2004
Final depth	1.70	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.70)		Very soft dark brown very fibrous PEAT. H2-H3 ...becoming H5-H6 ...becoming black H7-H8
						1.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T42_GA1

Easting	160824.0	Start date	14/07/2001
Northing	205638.0	End date	14/07/2004
Ground level		Backfill date	14/07/2004
Final depth	1.85	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.85) 1.85		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H6-H7 ...becoming amorphous H8-H10

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T42_GA2

Easting	160896.0	Start date	14/07/2004
Northing	205633.0	End date	14/07/2004
Ground level		Backfill date	14/07/2004
Final depth	2.25	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H2-H3
						(2.25)		...becoming less fibrous H5-H6
								...becoming amorphous H8-H10
						2.25		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T42_GA3

Easting	160917.0	Start date	14/07/2004
Northing	205627.0	End date	14/07/2004
Ground level		Backfill date	14/07/2004
Final depth	2.35	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.35)		
								...becoming less fibrous H5-H6
								...becoming amorphous H8-H10
						2.35		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T42_GA4

Easting	160766.0	Start date	14/07/2004
Northing	205651.0	End date	14/07/2004
Ground level		Backfill date	14/07/2004
Final depth	2.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(2.70)		
								...becoming amorphous H8-H10
						2.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T44_GA1

Easting	161101.0	Start date	13/07/2004
Northing	205596.0	End date	13/07/2004
Ground level		Backfill date	13/07/2004
Final depth	2.85	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(2.85)		
								...becoming slightly fibrous H7-H8
								...becoming amorphous H8-H10
						2.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T44_GA2

Easting	161055.0	Start date	13/07/2004
Northing	205609.0	End date	13/07/2004
Ground level		Backfill date	13/07/2004
Final depth	2.70	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H4-H5
								...becoming less fibrous H6-H7
						(2.70)		
								...becoming slightly fibrous H7-H8
								...becoming amorphous H8-H10
								...becoming black
						2.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA1

Easting	158977.0	Start date	27/07/2004
Northing	205624.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	1.30	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions
						(1.15)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous ...becoming black amorphous H8-H10
						1.15		
						(0.15) 1.30		Medium dense light brown organic silty SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA2

Easting	158955.0	Start date	21/07/2004
Northing	205594.0	End date	21/07/2004
Ground level		Backfill date	21/07/2004
Final depth	1.45	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(1.45)		
								...becoming less fibrous H5-H6
						1.45		...becoming amorphous

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T50_GA3

Job No. : 378015C

Site Name : Derrybrien windfarm

Easting	158936.0	Start date	27/07/2004
Northing	205507.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	3.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.00)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming amorphous H8-H10. Softer layer between 2.2m - 3.0m
						3.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA4

Easting	159033.0	Start date	27/07/2004
Northing	205555.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	4.60	Page	1 of 2

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
								...becoming H6-H7
						(4.60)		
								...becoming amorphous H8-H10. Some tree remains between 3.0m - 4.6m
								...becoming black

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA4

Easting	159033.0	Start date	27/07/2004
Northing	205555.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	4.60	Page	2 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						4.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA5

Easting	158903.0	Start date	04/08/2004
Northing	205487.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	5.30	Page	1 of 2

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(5.30)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6. Softer layer between 1.0m - 3.0m ...becoming amorphous. Some tree remains between 3.0m - 4.0m ...softer layer between 3.55m - 5.0m

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA5

Easting	158903.0	Start date	04/08/2004
Northing	205487.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	5.30	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						5.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA6

Easting	158893.0	Start date	04/08/2004
Northing	205525.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	5.70	Page	1 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(5.70)		Very soft dark brown very fibrous PEAT. H3-H4 ...Recovery between 1.0m - 1.2m only. Softer layer ...Recovery between 2.0m - 2.2m only. Softer layer ...Recovery between 3.0m - 3.1m only. Softer layer becoming amorphous H8-H10

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA6

Easting	158893.0	Start date	04/08/2004
Northing	205525.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	5.70	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths		Type	Legend	Depth (Thickness)	Level	Strata Descriptions
		From	To					
						5.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA7

Easting	158882.0	Start date	04/08/2004
Northing	205564.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	3.80	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(3.80)		...becoming amorphous H8-H10
								...Softer layer between 2.6m - 3.0m
						3.80		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T50_GA8

Easting	158871.0	Start date	04/08/2004
Northing	205605.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	2.25	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(2.25)		
								...becoming amorphous H8-H10
						2.25		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA1

Easting	159199.0	Start date	29/06/2004
Northing	205723.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.60	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.60) 1.60		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous H4-H5

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA2

Easting	159207.0	Start date	29/06/2004
Northing	205676.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.70)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming black
						1.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA3

Easting	159172.0	Start date	29/06/2004
Northing	205767.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.70)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous
						1.70		
						(0.30)		Firm to Stiff grey white sandy SILT
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA4

Easting	159153.0	Start date	26/07/2004
Northing	205661.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	3.50	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Samples & Testing: Depths To	Samples & Testing: Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.50) 3.50		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming H7-H8 ...becoming amorphous H8-H10 ...some tree remains between 3.0m - 3.5m

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA5

Easting	159141.0	Start date	26/07/2004
Northing	205716.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	3.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(3.30)		...becoming H7-H8
								...becoming amorphous H8-H10
								...becoming black
						3.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA6

Easting	159094.0	Start date	26/07/2004
Northing	205601.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	3.75	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous
						(3.50)		...becoming H5-H6
								...becoming amorphous H8-H10
						3.50		
						(0.25)		Firm to Stiff light brown organic sandy CLAY
						3.75		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA7

Easting	159082.0	Start date	26/07/2004
Northing	205713.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	3.05	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.00) 3.00		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming H6-H7 ...becoming amorphous H8-H10
						(0.05) 3.05		Firm to Stiff light brown organic sandy CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : **378015C**
Site Name : **Derrybrien windfarm**

Record of Gouge Auger T51_GA8

Easting	159107.0	Start date	26/07/2004
Northing	205649.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	2.80	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming fibrous H5-H6
						(2.80)		
								...becoming H6-H7
								...becoming amorphous H8-H10
						2.80		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA9

Easting	159014.0	Start date	26/07/2004
Northing	205687.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	2.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.20)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous ...becoming black amorphous H8-H10 ...occasional tree remains
						2.20		
						(0.10)		Firm light brown slightly organic sandy CLAY/SILT
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA10

Easting	158999.0	Start date	27/07/2004
Northing	205662.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	2.15	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.15)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming black amorphous H8-H10
						2.15		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA11

Easting	159022.0	Start date	27/07/2004
Northing	205613.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	3.60	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(3.45)		...becoming amorphous with some occasional tree remains
								...becoming black amorphous H8-H10
						3.45		
						(0.15)		Firm to Stiff light brown slightly organic sandy CLAY
						3.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA12

Easting	159046.0	Start date	27/07/2004
Northing	205701.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	2.50	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.50)		
								...becoming less fibrous H5-H6
								...becoming amorphous H8-H10
						2.50		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA13

Easting	159059.0	Start date	27/07/2004
Northing	205674.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	2.60	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous
						(2.60)		
								...becoming amorphous H8-H10
						2.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA14

Easting	159065.0	Start date	27/07/2004
Northing	205605.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	3.60	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.45)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming amorphous H8-H10 ...Softer layer between 2.3m - 2.7m ...some tree remains
						3.45 (0.15) 3.60		Firm to Stiff light grey organic sandy CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA15

Easting	159088.0	Start date	27/07/2004
Northing	205574.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	4.00	Page	1 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.95)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming amorphous H8-H10 ...Softer layer between 3.3m - 3.6m ...some tree remains ...becoming black
						3.95		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T51_GA15

Easting	159088.0	Start date	27/07/2004
Northing	205574.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	4.00	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth *(Thickness)*	Level	Strata Descriptions
						(0.05) 4.00		Firm to Stiff light brown slightly organic sandy CLAY/SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T52_GA1

Easting	159316.0	Start date	29/06/2004
Northing	205763.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.78	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.78)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous
						1.78		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T52_GA2

Easting	159258.0	Start date	29/06/2004
Northing	205741.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.60	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien windfarm

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.60)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous
						1.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T52_GA3

Easting	159256.0	Start date	29/06/2004
Northing	205678.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.80	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
						(1.80)		...becoming less fibrous
								...becoming black
						1.80		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T52_GA4

Easting	159322.0	Start date	29/06/2004
Northing	205684.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.70) 1.70		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous ...becoming black

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T52_GA5

Easting	159234.0	Start date	30/06/2004
Northing	205839.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	1.65	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.60) 1.60		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous ...becoming black
						(0.05) 1.65		Firm to Stiff light brown sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA1

Easting	158962.0	Start date	27/07/2004
Northing	205483.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	2.70	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous
						(2.70)		
								...becoming H5-H6
								...becoming amorphous H8-H10. Softer layer between 2.0m - 2.7m
						2.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA2

Easting	158989.0	Start date	27/07/2004
Northing	205426.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	0.86	Page	1 of 1

Samples & Testing						Strata		
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.86) 0.86		Very soft dark brown very fibrous PEAT. H3-H4

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA3

Easting	159041.0	Start date	27/07/2004
Northing	205504.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	3.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(3.00)		
								...becoming amorphous H8-H10
						3.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA4

Easting	159052.0	Start date	27/07/2004
Northing	205459.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	4.00	Page	1 of 2

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H2-H3
								...becoming less fibrous H5-H6
						(4.00)		...becoming H6-H7
								...becoming amorphous H8-H10
								...Softer layer between 3.0m - 3.6m
						4.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA4

Easting	159052.0	Start date	27/07/2004
Northing	205459.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	4.00	Page	2 of 2

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA5

Easting	159104.0	Start date	27/07/2004
Northing	205455.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	3.45	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.45)		Very soft dark brown very fibrous PEAT. H2-H3 ...becoming less fibrous H5-H6. Softer layer between 1.0m - 3.45m ...becoming amorphous
						3.45		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA6

Easting	158934.0	Start date	04/08/2004
Northing	205379.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	2.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.30)		Very soft dark brown fibrous PEAT. H3-H4 ...becoming H5-H6 ...becoming amorphous H8-H10
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA7

Easting	158926.0	Start date	04/08/2004
Northing	205408.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	2.20	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(2.20)		
								...becoming amorphous H8-H10
						2.20		...becoming black

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T56_GA8

Easting	158915.0	Start date	04/08/2004
Northing	205446.0	End date	04/08/2004
Ground level		Backfill date	04/08/2004
Final depth	3.20	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.05)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming amorphous H8-H10
						3.05		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA1

Easting	159270.0	Start date	28/06/2004
Northing	205427.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.60)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous
						1.60		
						(0.10)		Firm to Stiff light brown organic sandy CLAY/SILT
						1.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA2

Easting	159331.0	Start date	28/06/2004
Northing	205405.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.30	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.30)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA3

Easting	159364.0	Start date	28/06/2004
Northing	205489.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.60	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.30)		Very soft dark brown very fibrous PEAT. H2-H4 ...becoming black and less fibrous. H4-H6
						1.30		
						(0.30)		Medium dense brown white SAND
						1.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA4

Easting	159264.0	Start date	28/06/2004
Northing	205465.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.40	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.40)		Very soft dark brown very fibrous PEAT. H1-H2
								...becoming black and less fibrous
						1.40		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA5

Easting	159304.0	Start date	28/06/2004
Northing	205491.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.05	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.85)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming black and less fibrous
						0.85 (0.20) 1.05		Firm to Stiff light brown slightly organic sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA6

Easting	159250.0	Start date	28/06/2004
Northing	205521.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	0.60	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.55) 0.55		Very soft dark brown very fibrous PEAT. H1-H2
						(0.05) 0.60		Firm to Stiff light brown slightly organic sandy CLAY/SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

SID for Windows (c) 1996 MZ Associates.

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA7

Easting	159257.0	Start date	28/06/2004
Northing	205567.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.70	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.55)		Very soft dark brown very fibrous PEAT ...becoming black and less fibrous
						1.55		
						(0.15)		Firm to Stiff light brown slightly organic very sandy SILT
						1.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA8

Easting	159286.0	Start date	29/06/2004
Northing	205604.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.45	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.45)		Very soft dark brown very fibrous PEAT ...becoming less fibrous
						1.45		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA9

Easting	159320.0	Start date	29/06/2004
Northing	205540.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.25	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.25) 1.25		Very soft dark brown very fibrous PEAT ...becoming black and less fibrous

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA10

Easting	159190.0	Start date	26/07/2004
Northing	205511.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.80)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming H7-H8 ...becoming amorphous
						1.80		
						(0.20)		Firm to Stiff white slightly organic sandy CLAY
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T57_GA11

Easting	159192.0	Start date	26/07/2004
Northing	205547.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	2.20	Page	1 of 1

Job No. : 378015C
Site Name : Derrybrien windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.00)		Very soft dark brown very fibrous PEAT. H2-H3 ...becoming less fibrous H5-H6. Softer layer between 1.0m - 1.5m ...becoming black H7-H8
						2.00		
						(0.20)		Firm to Stiff light brown slightly organic sandy CLAY
						2.20		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA12

Easting	159172.0	Start date	26/07/2004
Northing	205589.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	1.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.70) 1.70		Very soft dark brown very fibrous PEAT. H4-H5 ...becoming less fibrous H5-H6 ...becoming amorphous H8-H10

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA13

Easting	159154.0	Start date	26/07/2004
Northing	205477.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	2.10	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.10)		...becoming less fibrous H5-H6
								...becoming H7-H8
								...becoming amorphous H8-H10
						2.10		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA14

Easting	159147.0	Start date	26/07/2004
Northing	205497.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	3.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.65)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming amorphous H8-H10 ...becoming black
						2.65		
						(0.35)		Firm to stiff light brown slightly organic sandy CLAY
						3.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA15

Easting	159112.0	Start date	26/07/2004
Northing	205560.0	End date	26/07/2004
Ground level		Backfill date	26/07/2004
Final depth	2.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.60)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming H5-H6 ...Softer layer between 1.7m - 2.2m ...becoming amorphous H8-H10 ...becoming black
						2.60 (0.10) 2.70		Medium dense brown slightly organic silty SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T57_GA16

Easting	159088.0	Start date	27/07/2004
Northing	205509.0	End date	27/07/2004
Ground level		Backfill date	27/07/2004
Final depth	2.75	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth *(Thickness)*	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(2.75)		
								...becoming amorphous H8-H10
						2.75		...becoming black

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T58_GA1

Easting	159400.0	Start date	28/06/2007
Northing	205551.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.10	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H2-H4
						(2.00)		...becoming less fibrous
								...becoming H7-H8
						2.00		
						(0.10) 2.10		Medium dense brown coarse SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T58_GA2

Easting	159507.0	Start date	28/06/2004
Northing	205558.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.60	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.40)		Very soft dark brown very fibrous PEAT. H2-H4 ...becoming H8-H9
						1.40 (0.20)		Medium dense brown coarse SAND
						1.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T58_GA3

Easting	159525.0	Start date	28/06/2004
Northing	205516.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.55	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.50)		Very soft dark brown very fibrous PEAT. H2-H4 ...becoming less fibrous ...Softer layer between 1.0m - 1.8m ...becoming H8-H9
						2.50		
						(0.05)		Firm grey sandy SILT
						2.55		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T58_GA4

Easting	159483.0	Start date	28/06/2004
Northing	205487.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	0.70	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.50) 0.50		Very soft dark brown fibrous PEAT. H5-H6
						(0.20) 0.70		Medium dense brown coarse SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T58_GA5

Easting	159494.0	Start date	28/06/2004
Northing	205497.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	0.60	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.40) 0.40		Very soft dark brown very fibrous PEAT H2-H4
						(0.20) 0.60		Medium dense brown coarse SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T58_GA6

Easting	159348.0	Start date	29/06/2004
Northing	205610.0	End date	29/06/2004
Ground level		Backfill date	29/06/2004
Final depth	1.70	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.70)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous
						1.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T62_GA1

Easting	159231.0	Start date	01/07/2004
Northing	205258.0	End date	01/07/2004
Ground level		Backfill date	01/07/2004
Final depth	3.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous H4-H5
						(3.00)		
						3.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T62_GA2

Easting	159182.0	Start date	01/07/2004
Northing	205219.0	End date	01/07/2004
Ground level		Backfill date	01/07/2004
Final depth	3.15	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous H3-H4
						(3.15)		
								...becoming H5-H6
								...becoming black
						3.15		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T63_GA1

Easting	159454.0	Start date	28/06/2004
Northing	205344.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.10	Page	1 of 1

Job No. : 378015C
Site Name : Derrybrien windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.10)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming black and less fibrous
						1.10		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger **T63_GA2**

Job No. : **378015C**
Site Name : **Derrybrien windfarm**

Easting	159428.0	Start date	28/06/2004
Northing	205316.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.70	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.45)		Very soft dark brown very fibrous PEAT. H1-H2 ...Softer layer between 0.8m - 1.0m ...becoming less fibrous ...becoming black
						1.45		
						(0.25)		Firm to stiff light brown organic sandy SILT/CLAY
						1.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA3

Easting	159356.0	Start date	28/06/2004
Northing	205295.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	3.10	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Vrey soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous H3-H4
								...Softer layer between 1.2m - 1.8m
						(3.10)		
						3.10		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA4

Easting	159300.0	Start date	28/06/2004
Northing	205312.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.85	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.85) 2.85		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous ...becoming H3-H4

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA5

Easting	159326.0	Start date	28/06/2004
Northing	205337.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.60	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous
						(2.60)		
								...becoming H3-H4
						2.60		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA6

Easting		Start date	28/06/2004
Northing	205364.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
						(2.00)		...becoming less fibrous
						2.00		
						(0.30)		Firm to stiff light brown organic sandy SILT/CLAY
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA7

Easting	159446.0	Start date	28/06/2004
Northing	205355.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.90)		Very soft dark brown very fibrous PEAT. H2-H4 ...becoming less fibrous. Softer layer between 0.6m - 0.9m
						0.90 (0.10) 1.00		Firm light grey sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA8

Easting	159465.0	Start date	30/06/2004
Northing	205240.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	2.00	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT
						(2.00)		...becoming less fibrous
								...becoming black
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA9

Easting	159340.0	Start date	30/06/2004
Northing	205229.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	3.30	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.30)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous H3-H4 ...becoming less fibrous H5-H6. Softer layer between 2.0m - 3.0m ...becoming black
						3.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA10

Easting	159479.0	Start date	30/06/2004
Northing	205213.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	2.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous H2-H3
						(2.30)		
								...becoming black and slightly fibrous
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA11

Easting	159391.0	Start date	30/06/2004
Northing	205194.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	1.35	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.20) 1.20		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming black and less fibrous H3-H4
						(0.15) 1.35		Medium dense brown silty SAND

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA12

Easting	159360.0	Start date	30/06/2004
Northing	205157.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	1.40	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
						(1.40)		...becoming less fibrous H4-H5
								...becoming black
						1.40		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T63_GA14

Easting	159325.0	Start date	01/07/2004
Northing	205183.0	End date	01/07/2004
Ground level		Backfill date	01/07/2004
Final depth	2.85	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H3
								...becoming less fibrous H2-H3
						(2.85)		
								...becoming black
						2.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA1

Easting	159623.0	Start date	16/06/2004
Northing	205338.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.40	Page	1 of 2

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very soft PEAT. H1-H2
								...becoming less fibrous
						(4.00)		
								...becoming H4-H5
								...becoming black H5-H6
						4.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA1

Easting	159623.0	Start date	16/06/2004
Northing	205338.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.40	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.40) 4.40		Firm light brown sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA2

Easting	159642.0	Start date	16/06/2004
Northing	205361.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	3.70	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming fibrous H3-H4
						(3.70)		
								...Softer layer between 2.6m - 3.0m
								...becoming black slightly fibrous H5-H6
						3.70		...some tree remains

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : **378015C**
Site Name : **Derrybrien windfarm**

Record of Gouge Auger T64_GA3

Easting	159674.0	Start date	16/06/2004
Northing	205378.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	3.20	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous
						(3.20)		
								...becoming H3-H4
						3.20		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA4

Easting	159700.0	Start date	16/06/2004
Northing	205392.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	2.85	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
						(2.85)		...becoming less fibrous
								...becoming H4-H5
						2.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA5

Easting	159725.0	Start date	16/06/2004
Northing	205413.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	2.85	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous
						(2.45)		
								...becoming black slightly fibrous H5-H6
						2.45		
						(0.40)		Firm light brown sandy SILT/CLAY
						2.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA6

Easting	159582.0	Start date	28/06/2004
Northing	205382.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	3.10	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H2-H4
								...becoming less fibrous H5-H6
						(3.00)		
								...Becoming H8-H9. Softer layer between 1.8m - 2.0m
						3.00		
						(0.10)		Firm to stiff grey SILT
						3.10		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA7

Easting	159541.0	Start date	28/06/2004
Northing	205353.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.40	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.30) 2.30		Very soft dark brown very fibrous PEAT. H2-H4 ...becoming less fibrous ...Becoming H8-H9. Softer layer between 1.6m - 2.0m ...becoming black
						(0.10) 2.40		Firm grey sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA8

Easting	159496.0	Start date	28/06/2004
Northing	205342.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	0.80	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.50) 0.50		Very soft dark brown very fibrous PEAT. H2-H4
						(0.30) 0.80		Firm grey sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T64_GA9

Job No. : 378015C
Site Name : Derrybrien windfarm

Easting	159487.0	Start date	28/06/2004
Northing	205356.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	0.80	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth *(Thickness)*	Level	Strata Descriptions
						(0.50) 0.50		Very soft dark brown very fibrous PEAT. H2-H4
						(0.30) 0.80		Firm grey sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

SID for Windows (c) 1996 MZ Associates.

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA10

Easting	159472.0	Start date	28/06/2004
Northing	205377.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.00	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.90)		Very soft dark brown very fibrous PEAT. H2-H4 ...becoming less fibrous and black
						0.90		
						(0.10)		Firm grey sandy SILT
						1.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA11

Easting	159560.0	Start date	28/06/2004
Northing	205404.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H2-H4
								...becoming less fibrous
						(2.20)		
								...becoming H8-H9
								...becoming amorphous
						2.20		
						(0.10)		Firm light brown sandy SILT
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA12

Easting	159551.0	Start date	28/06/2004
Northing	205435.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.75	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.50)		Very soft dark brown very fibrous PEAT. H2-H4 ...becoming less fibrous H8-H9
						2.50 (0.05)		Medium dense brown SAND
						2.55 (0.20)		Firm light brown grey sandy SILT
						2.75		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA13

Easting	159632.0	Start date	16/06/2004
Northing	205316.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.15	Page	1 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous
						(4.00)		...becoming H3-H4
								...becoming H4-H5
								...becoming black amorphous
						4.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA13

Easting	159632.0	Start date	16/06/2004
Northing	205316.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.15	Page	2 of 2

Shear Strength	Water	Samples & Testing: Depths From	Samples & Testing: Depths To	Samples & Testing: Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(0.15) 4.15		Firm light brown slightly organic sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T64_GA14

Easting	159643.0	Start date	16/06/2004
Northing	205277.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.00	Page	1 of 2

Job No. : 378015C

Site Name : Derrybrien windfarm

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(3.65)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous ...Softer layer between 2.0m - 3.0m ...becoming H4-H5
						3.65 (0.35) 4.00		Firm light brown sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA14

Easting	159643.0	Start date	16/06/2004
Northing	205277.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	4.00	Page	2 of 2

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth *(Thickness)*	Level	Strata Descriptions

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA15

Easting	159572.0	Start date	18/06/2004
Northing	205367.0	End date	18/06/2004
Ground level		Backfill date	18/06/2004
Final depth	3.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.80)		Very soft dark brown very fibrous PEAT ...becoming less fibrous. Softer layer between 1.0m - 1.3m ...Softer layer between 2.0m - 2.5m
						2.80		
						(0.20)		Soft light grey sandy SILT
						3.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA16

Easting	159553.0	Start date	30/06/2004
Northing	205295.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	3.40	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous. Softer layer between 1.0m - 2.0m
						(3.25)		
								...becoming H3-H4. Softer layer between 2.0m - 2.6m
								...becoming black
						3.25		
						(0.15)		Firm to stiff light brown organic sandy SILT
						3.40		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T64_GA17

Easting	159567.0	Start date	30/06/2004
Northing	205250.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth		Page	1 of 2

Job No. : 378015C

Site Name : Derrybrien windfarm

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous
						(4.20)		...Softer layer between 2.0m - 3.0m
								...becoming H3-H4. Softer layer between 3.0m - 3.8m
								...becoming black with some tree remains

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T64_GA18

Easting	159676.0	Start date	05/07/2004
Northing	205418.0	End date	05/07/2004
Ground level		Backfill date	05/07/2004
Final depth	2.70	Page	1 of 1

Job No. : 378015C
Site Name : Derrybrien windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.45)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming H6-H7 ...becoming black
						2.45		
						(0.25)		Firm to stiff light brown slightly organic sandy SILT/CLAY
						2.70		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA19

Easting	159656.0	Start date	05/07/2004
Northing	205483.0	End date	05/07/2004
Ground level		Backfill date	05/07/2004
Final depth	2.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(2.30)		
								...becoming H6-H7
								...becoming black
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T64_GA20

Easting	159587.0	Start date	05/07/2004
Northing	205477.0	End date	05/07/2004
Ground level		Backfill date	05/07/2004
Final depth	2.20	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.10)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming black slightly fibrous H6-H7
						2.10		
						(0.10)		Firm to stiff light brown organic sandy SILT
						2.20		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T65_GA1

Easting	159775.0	Start date	28/06/2004
Northing	205479.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.80	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.65) 1.65		Very soft dark brown very fibrous PEAT. H1-H2
						(0.15) 1.80		Firm light brown organic sandy SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T65_GA2

Easting	159796.0	Start date	28/06/2004
Northing	205428.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	3.30	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien windfarm

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions
						(3.05)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous ...becoming H3-H4
						3.05		
						(0.25)		Firm light grey slightly organic sandy SILT/CLAY
						3.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T65_GA3

Easting	159832.0	Start date	28/06/2004
Northing	205368.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	2.30	Page	1 of 1

Job No. : **378015C**

Site Name : **Derrybrien windfarm**

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Strata: Depth (Thickness)	Level	Strata Descriptions
						(2.00)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming fibrous H3-H4
						2.00		
						(0.30)		Firm light brown organic sandy SILT/CLAY
						2.30		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T65_GA4

Easting	159806.0	Start date	28/06/2004
Northing	205363.0	End date	28/06/2004
Ground level		Backfill date	28/06/2004
Final depth	1.90	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.90)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous
						1.90		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T65_GA5

Easting	159751.0	Start date	16/06/2004
Northing	205458.0	End date	16/06/2004
Ground level		Backfill date	16/06/2004
Final depth	2.90	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H1-H2
								...becoming less fibrous
						(2.60)		
								...becoming black H4-H5
						2.60		
						(0.30)		Firm light brown sandy SILT/CLAY
						2.90		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T65_GA7

Easting	159678.0	Start date	05/07/2004
Northing	205611.0	End date	05/07/2004
Ground level		Backfill date	05/07/2004
Final depth	1.90	Page	1 of 1

Samples & Testing					Strata				
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(1.90)		...becoming less fibrous
								...becoming black H5-H6
						1.90		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T65_GA8

Easting	159704.0	Start date	05/07/2004
Northing	205564.0	End date	05/07/2004
Ground level		Backfill date	05/07/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.00)		...becoming less fibrous H5-H6
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Record of Gouge Auger T65_GA9

Easting	159620.0	Start date	05/07/2004
Northing	205552.0	End date	05/07/2004
Ground level		Backfill date	05/07/2004
Final depth	2.40	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien windfarm

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.40)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming H5-H6 ...becoming less fibrous H6-H7 ...becoming black and slightly fibrous H6-H7
						2.40		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T67_GA1

Easting	259424.0	Start date	30/06/2004
Northing	205102.0	End date	30/06/2004
Ground level		Backfill date	30/06/2004
Final depth	1.85	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.55)		Very soft dark brown very fibrous PEAT. H1-H2 ...becoming less fibrous ...becoming black H4-H5
						1.55		
						(0.30)		Firm to stiff light brown organic sandy SILT/CLAY
						1.85		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T67_GA2

Job No. : 378015C
Site Name : Derrybrien windfarm

Easting	159364.0	Start date	01/07/2004
Northing	205098.0	End date	01/07/2004
Ground level		Backfill date	01/07/2004
Final depth	1.15	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown fibrous PEAT. H1-H2
						(1.15)		...becoming slightly fibrous H3-H4
						1.15		...becoming black H5-H6

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 78015C
Site Name : Derrybrien Windfarm

Record of Gouge Auger T68_GA1

Easting	159421.0	Start date	20/01/2005
Northing	204602.0	End date	20/01/2005
Ground level		Backfill date	
Final depth	2.40	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Strata: Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.20) 1.20		Very soft very fibrous brown PEAT (H2-H3)
						(0.80) 2.00		Very soft very fibrous dark brown PEAT
						(0.40) 2.40		Very soft fibrous brown PEAT
								Auger reached refusal (bedrock?)

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T69_GA1

Easting	159654.0	Start date	08/07/2004
Northing	204776.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	0.40	Page	1 of 1

Job No. : **378015C**

Site Name : **Derrybrien windfarm**

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth *(Thickness)*	Level	Strata Descriptions
						(0.40) 0.40		Very soft dark brown fibrous PEAT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T69_GA2

Easting	159627.0	Start date	08/07/2004
Northing	204765.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth	2.30	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.30) 2.30		Very soft dark brown very fibrous PEAT ...becoming less fibrous ...Softer layer between 1.8m - 2.0m

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

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ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T69_GA3

Easting	159606.0	Start date	08/07/2004
Northing	204756.0	End date	08/07/2004
Ground level		Backfill date	08/07/2004
Final depth		Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.75) 2.75		Very soft dark brown very fibrous PEAT ...becoming less fibrous ...Softer layer between 2.1m - 2.5m
						(0.25) 3.00		Firm grey SILT/CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T69_GA4

Easting	159579.0	Start date	12/07/2004
Northing	204705.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	3.65	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous
						(3.65)		...becoming slightly fibrous H6-H7
								...becoming amorphous
								...becoming black
						3.65		...timber remains

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

Record of Gouge Auger T69_GA5

Easting	159662.0	Start date	12/07/2004
Northing	204699.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.90	Page	1 of 1

Samples & Testing					Strata			
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (*Thickness*)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming less fibrous H5-H6
						(*2.90*)		
								...becoming slightly fibrous H6-H7
								...becoming black amorphous
						2.90		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T69_GA6

Easting		Start date	12/07/2004
Northing	204678.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	3.25	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
								...becoming fibrous H5-H6
						(3.25)		...becoming slightly fibrous. Softer layer between 1.7m - 2.0m
								...becoming slightly fibrous. H7-H8
								...becoming amorphous H8-H9
						3.25		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 78015C

Site Name : Derrybrien Windfarm

Record of Gouge Auger T70_GA1

Easting	159483.0	Start date	20/01/2005
Northing	204522.0	End date	20/01/2005
Ground level		Backfill date	
Final depth	2.30	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Strata: Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.00) 1.00		Very soft dark brown very fibrous PEAT (H2-H3)
						(0.50) 1.50		Very soft dark brown fibrous PEAT (H3-H4)
						(0.50) 2.00		Very soft dark brown slightly fibrous PEAT (H5-H6)
						(0.30) 2.30		Firm to stiff light brown sandy SILT

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T71_GA1

Easting	159692.0	Start date	12/07/2004
Northing	204640.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.30	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.15)		...becoming less fibrous H5-H6
								...becoming amorphous
						2.15		
						(0.15) 2.30		Firm to Stiff light brown slightly organic sandy CLAY

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T71_GA2

Easting	159738.0	Start date	12/07/2004
Northing	204570.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.40	Page	1 of 1

Shear Strength	Water	Samples & Testing: Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(2.20)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming less fibrous H5-H6 ...becoming slightly fibrous H7-H8
						2.20 (0.20)		Firm to stiff brown organic sandy CLAY
						2.40		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Record of Gouge Auger T71_GA3

Easting	159714.0	Start date	12/07/2004
Northing	204544.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	1.35	Page	1 of 1

Job No. : 378015C

Site Name : Derrybrien windfarm

Shear Strength	Water	Samples & Testing: Depths From	To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
						(1.35)		Very soft dark brown very fibrous PEAT. H3-H4 ...becoming amorphous ...becoming black
						1.35		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

SID for Windows (c) 1996 MZ Associates.

ESB INTERNATIONAL

Job No. : 378015C

Site Name : Derrybrien windfarm

Record of Gouge Auger T71_GA4

Easting	159659.0	Start date	12/07/2004
Northing	204578.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.00	Page	1 of 1

Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.00)		...becoming less fibrous H4-H5
								...becoming amorphous
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger

ESB INTERNATIONAL

Job No. : 378015C
Site Name : Derrybrien windfarm

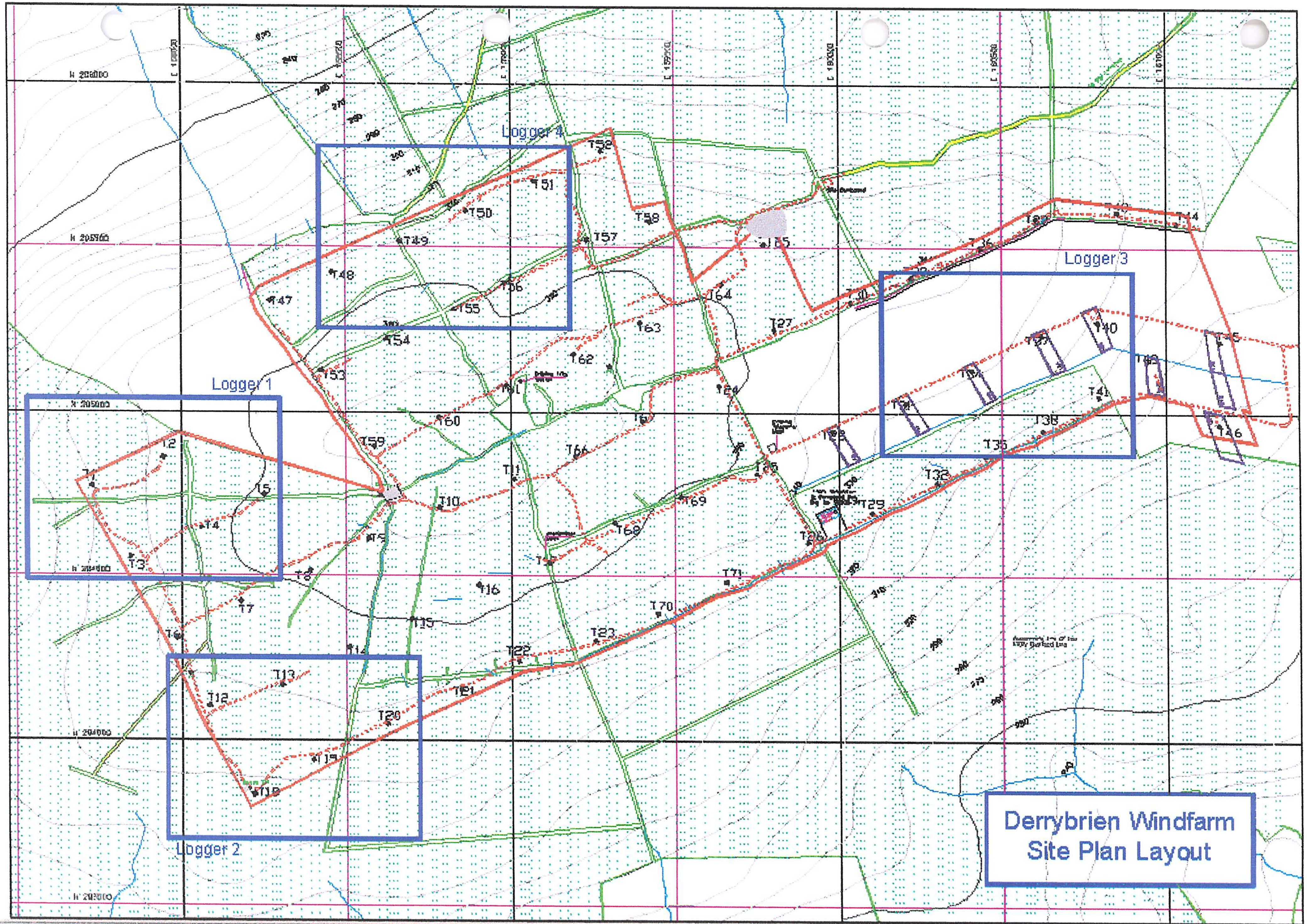
Record of Gouge Auger T71_GA5

Easting	159632.0	Start date	12/07/2004
Northing	204624.0	End date	12/07/2004
Ground level		Backfill date	12/07/2004
Final depth	2.00	Page	1 of 1

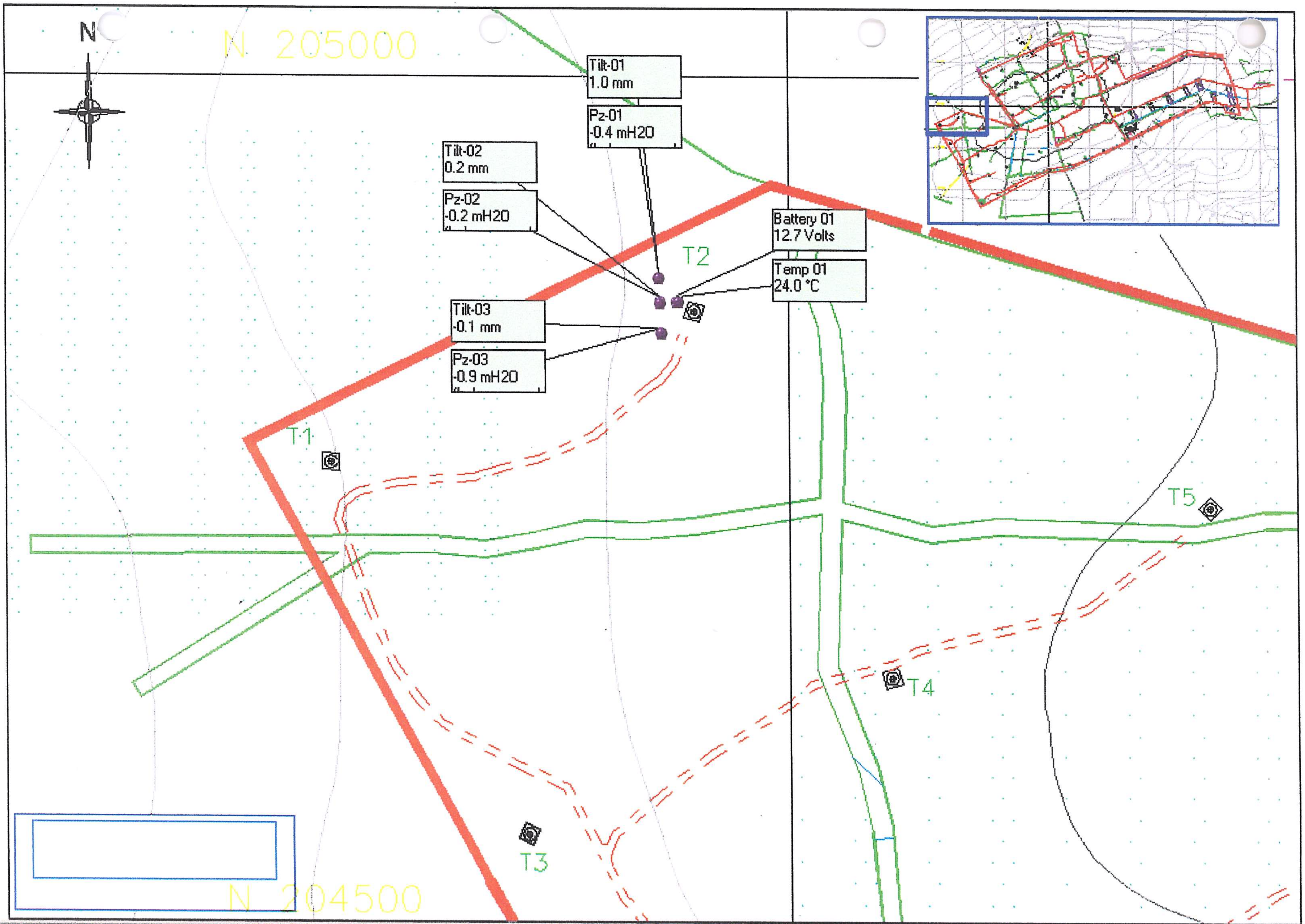
Shear Strength	Water	Depths From	Depths To	Type	Legend	Depth (Thickness)	Level	Strata Descriptions
								Very soft dark brown very fibrous PEAT. H3-H4
						(2.00)		...becoming less fibrous H5-H6
								...becoming slightly fibrous H7-H8. Softer layer between 1.5m - 2.0m
						2.00		

General remarks

Samples recovered using a 20mm diameter Van Walt Gouge Auger



ITM Ltd - Map view of: 'Derrybrien Site Plan'. - Logger readings timed at: 22/09/2004 09:00:00 | 22/09/2004 | 09:14



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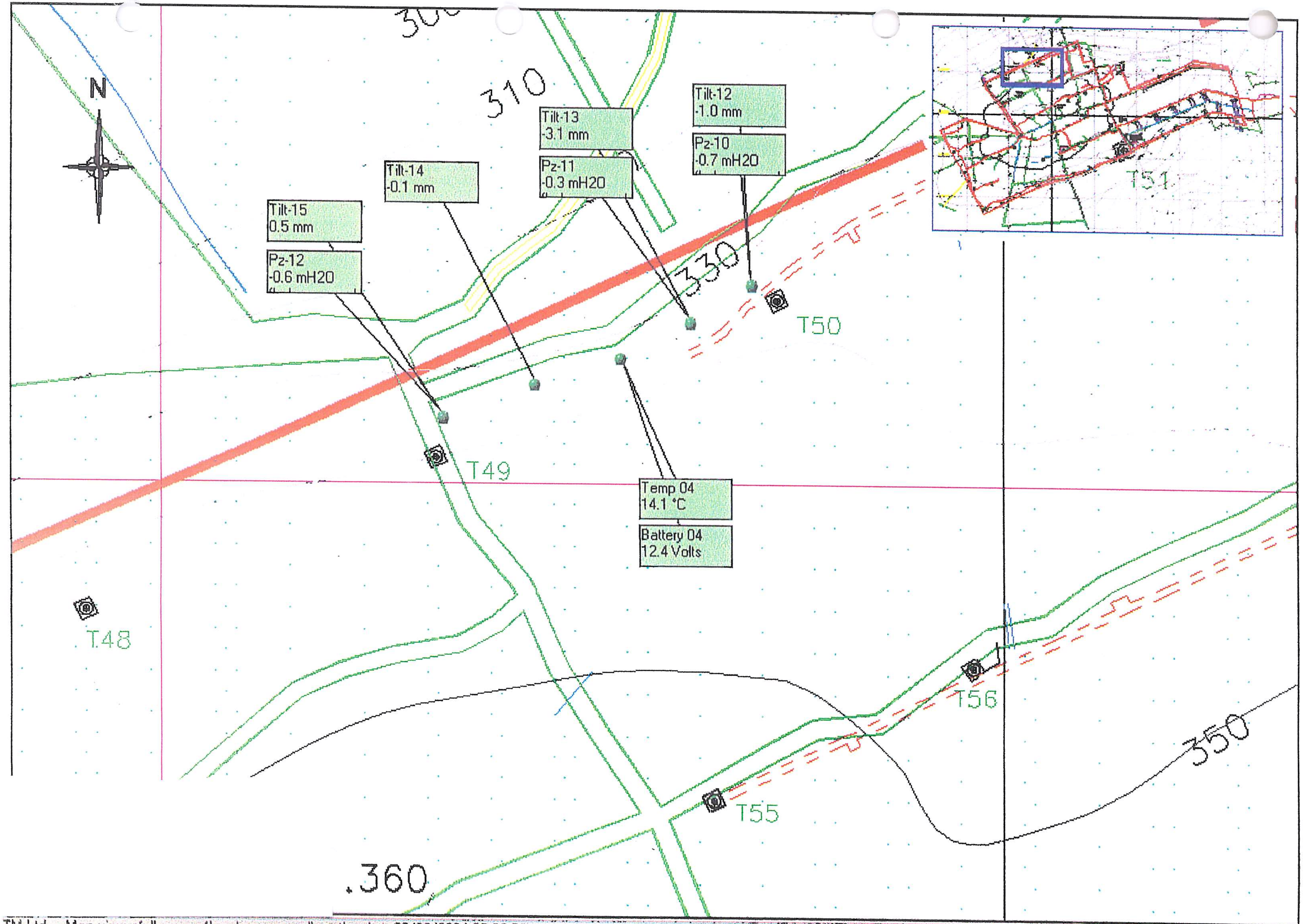

TM Ltd - Map view of: 'Logger 4'. - Logger readings timed at: 22/09/2004 09:00:00

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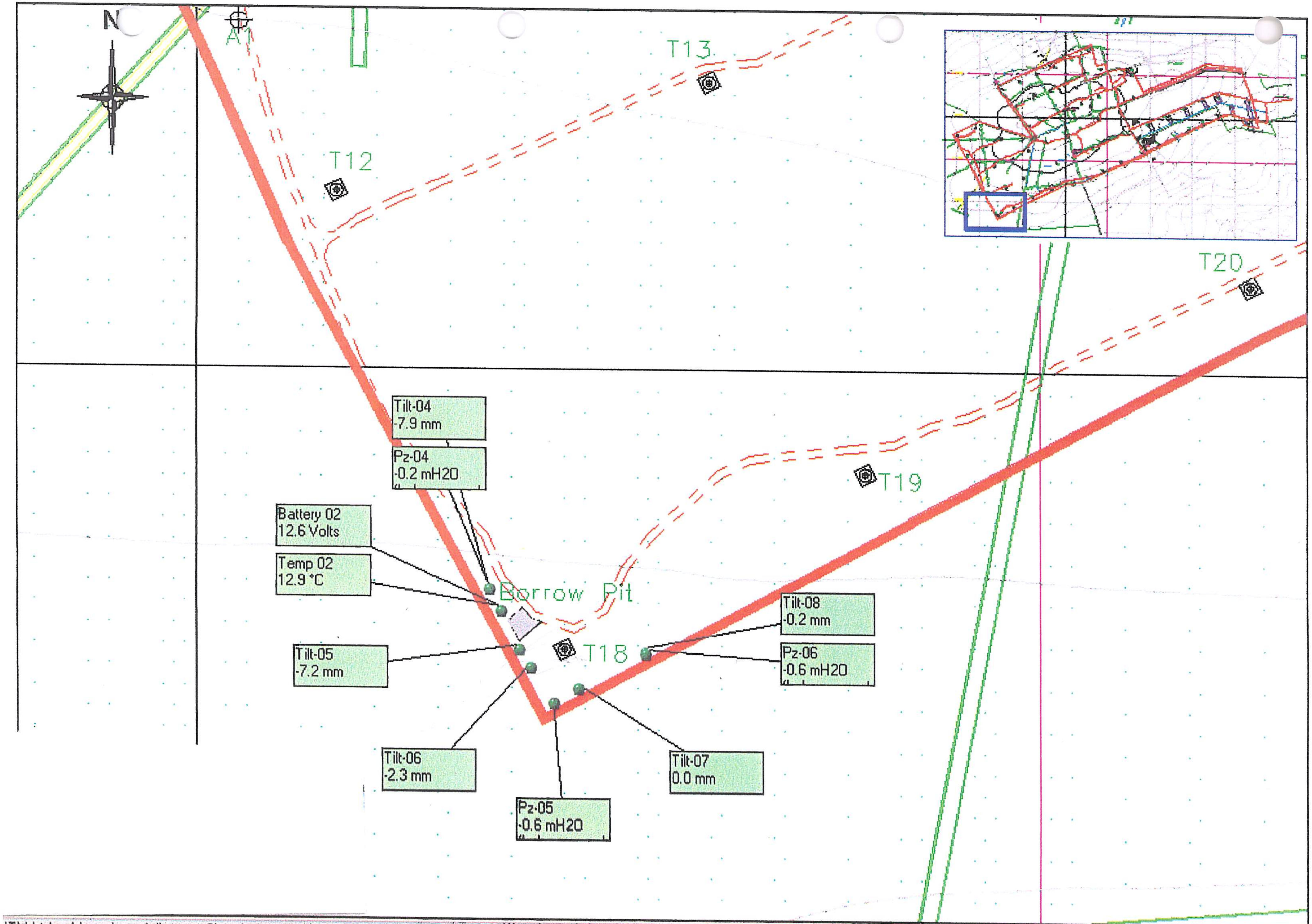

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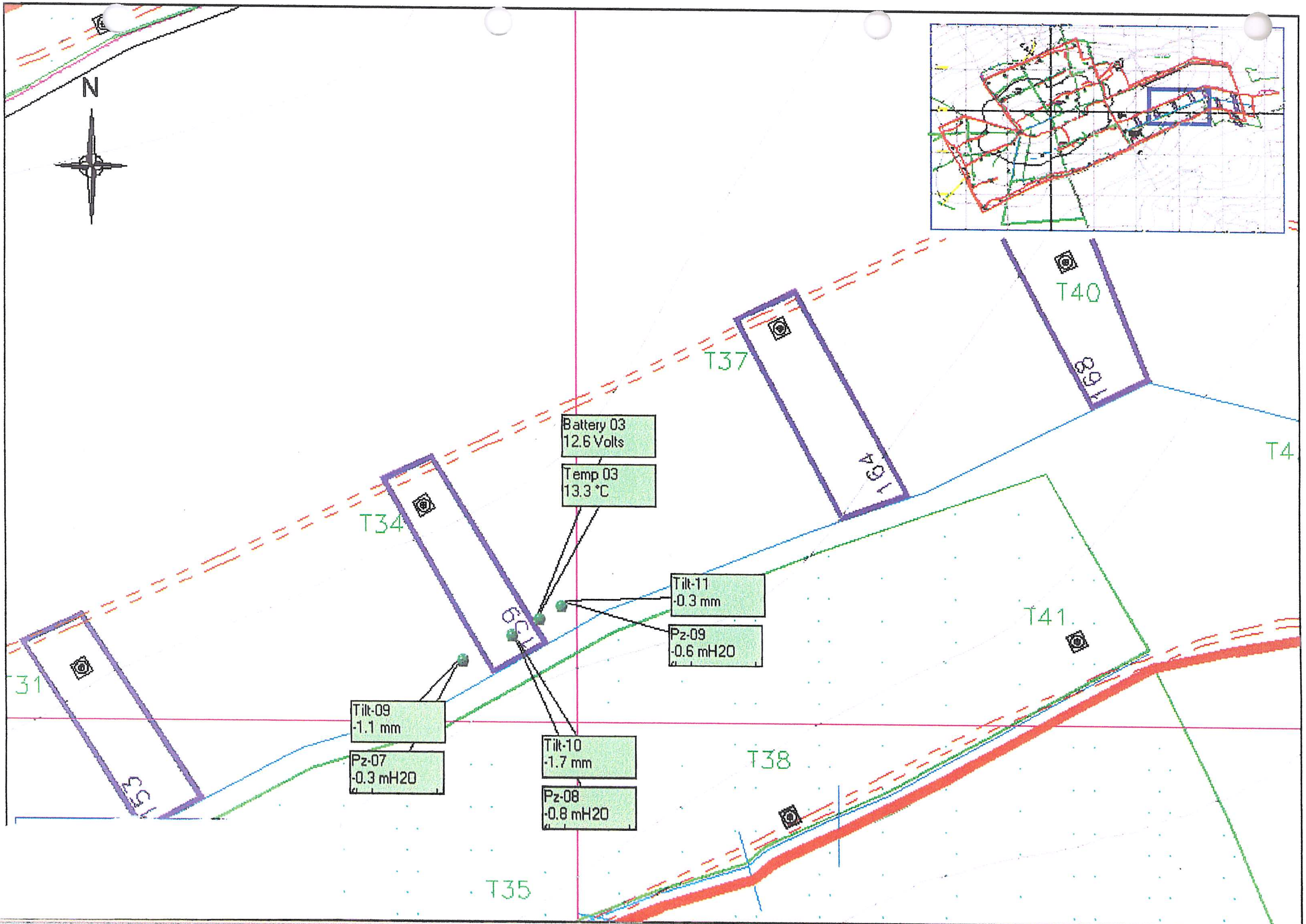
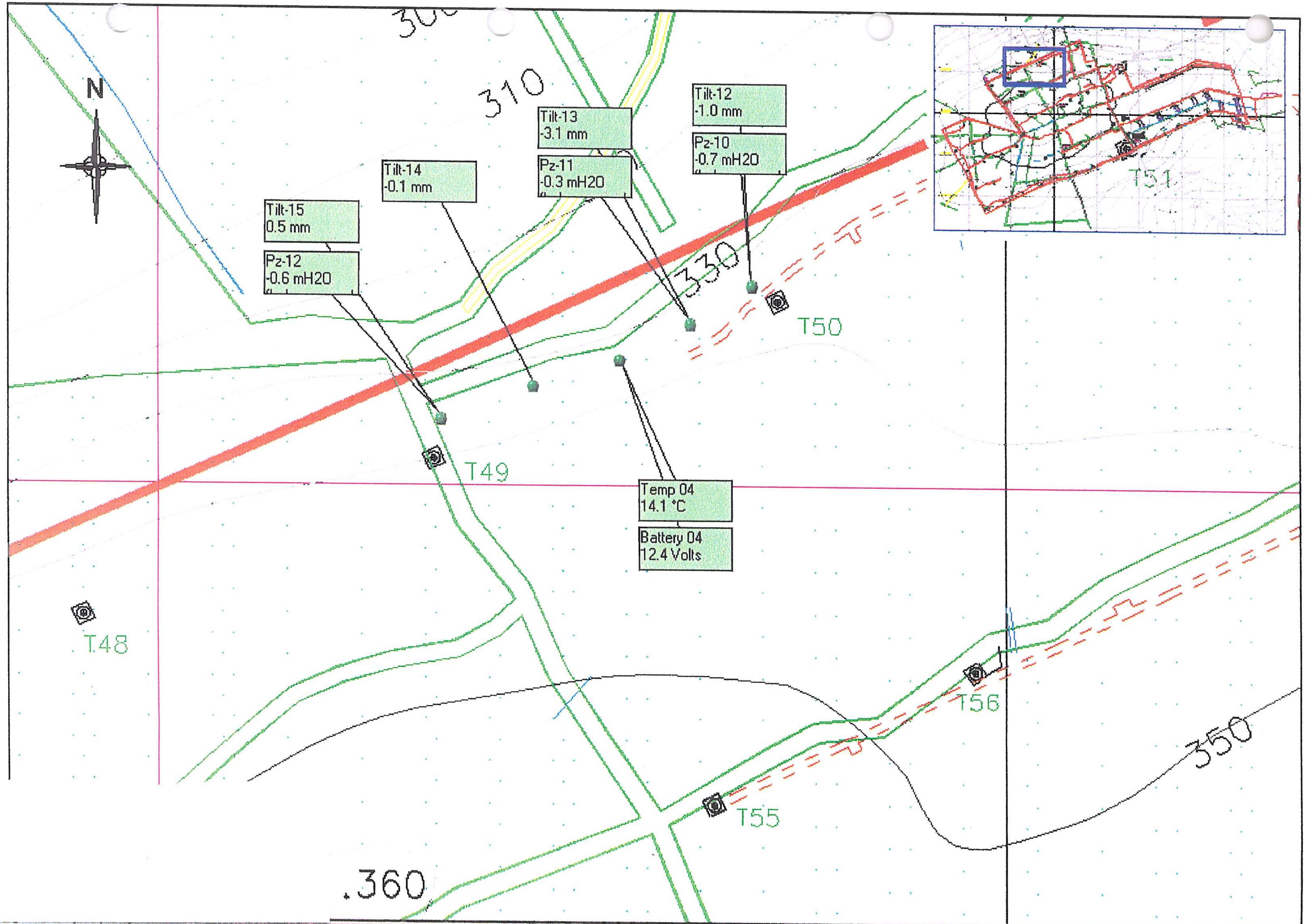
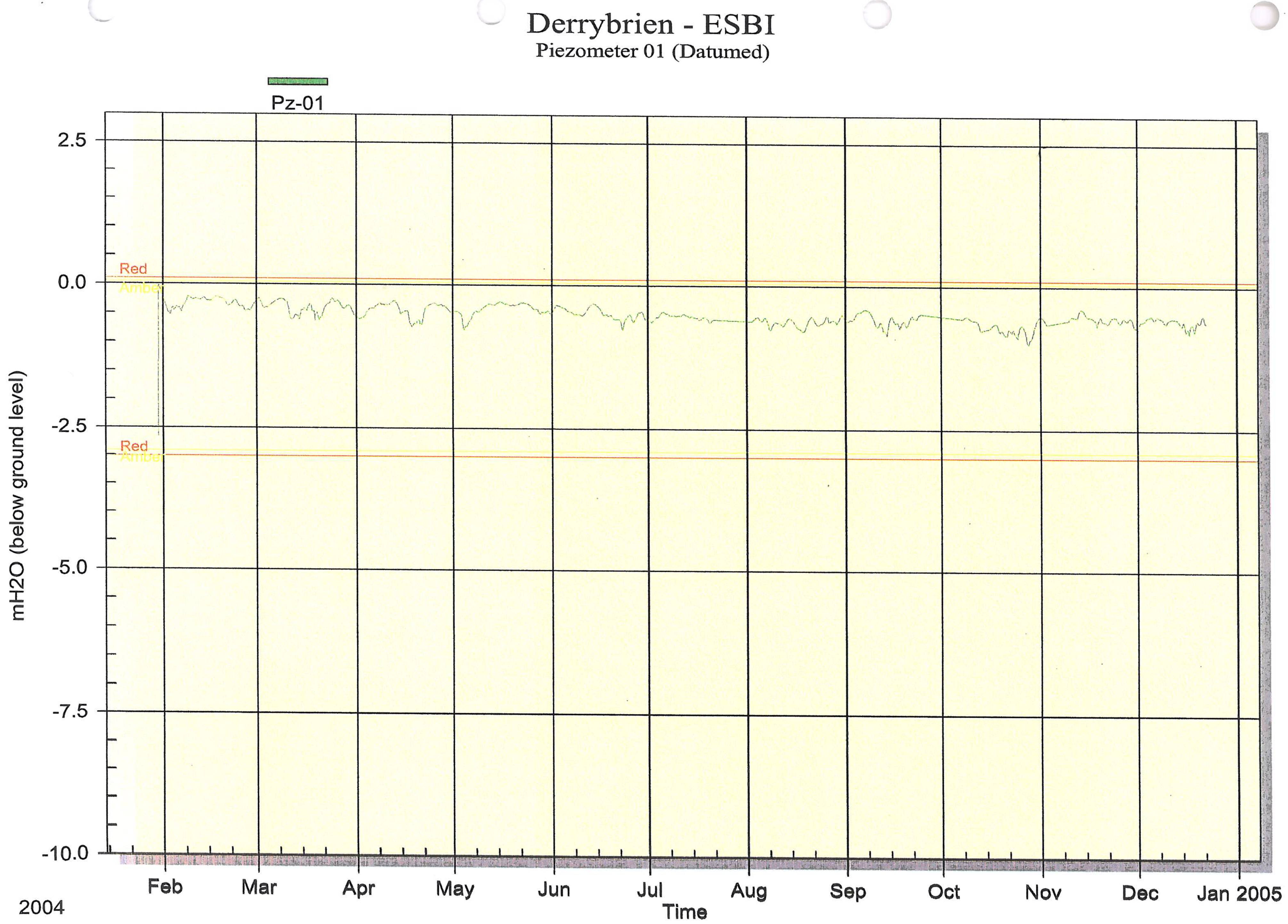


ITM Ltd · Map view of: 'Logger 3'. · Logger readings timed at: 22/09/2004 09:00:00 | 22/09/2004 | 09:10



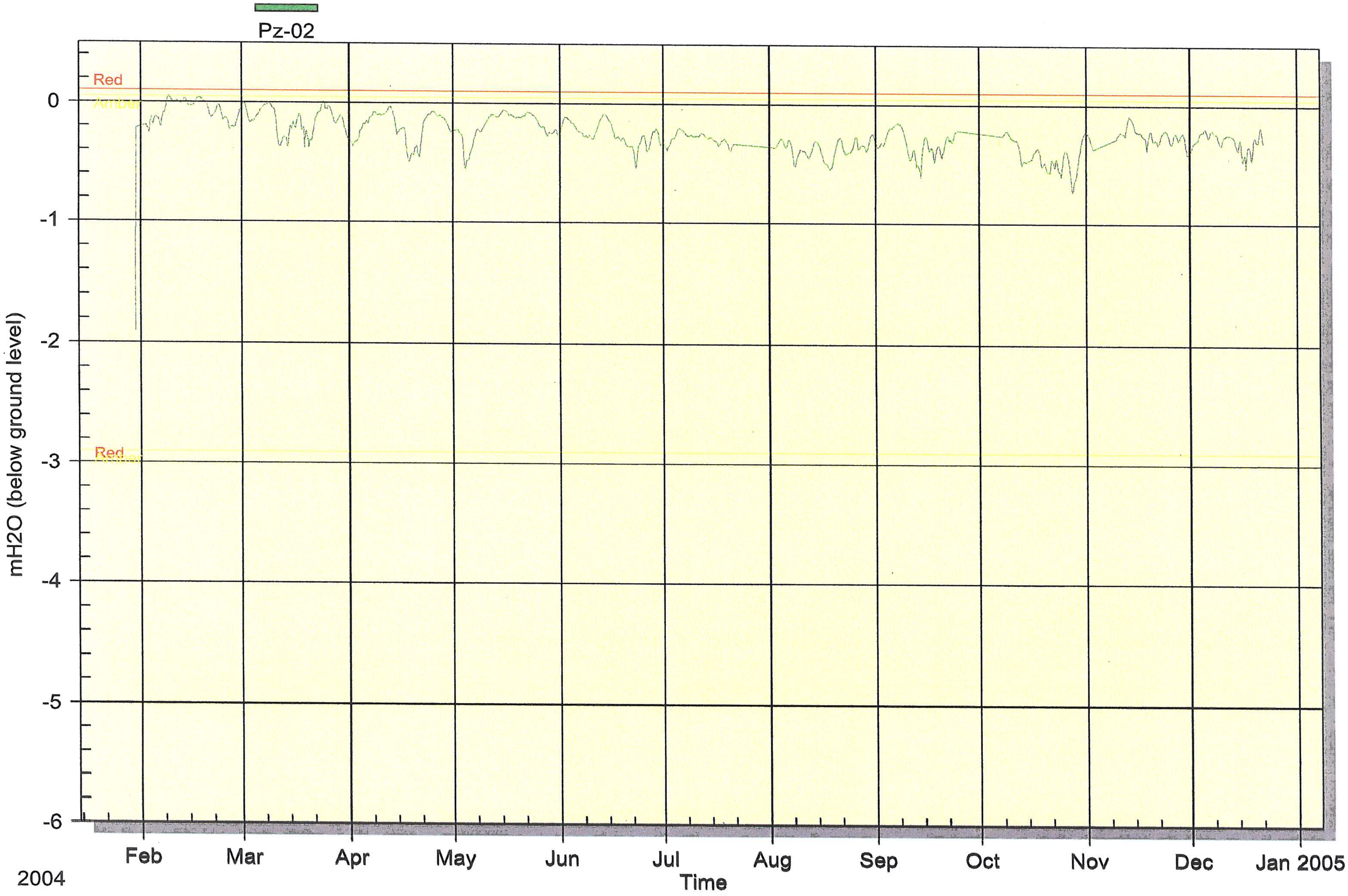
ITM Ltd - Map view of: 'Logger 4'. - Logger readings timed at: 22/09/2004 09:00:00

22/09/2004 09:12

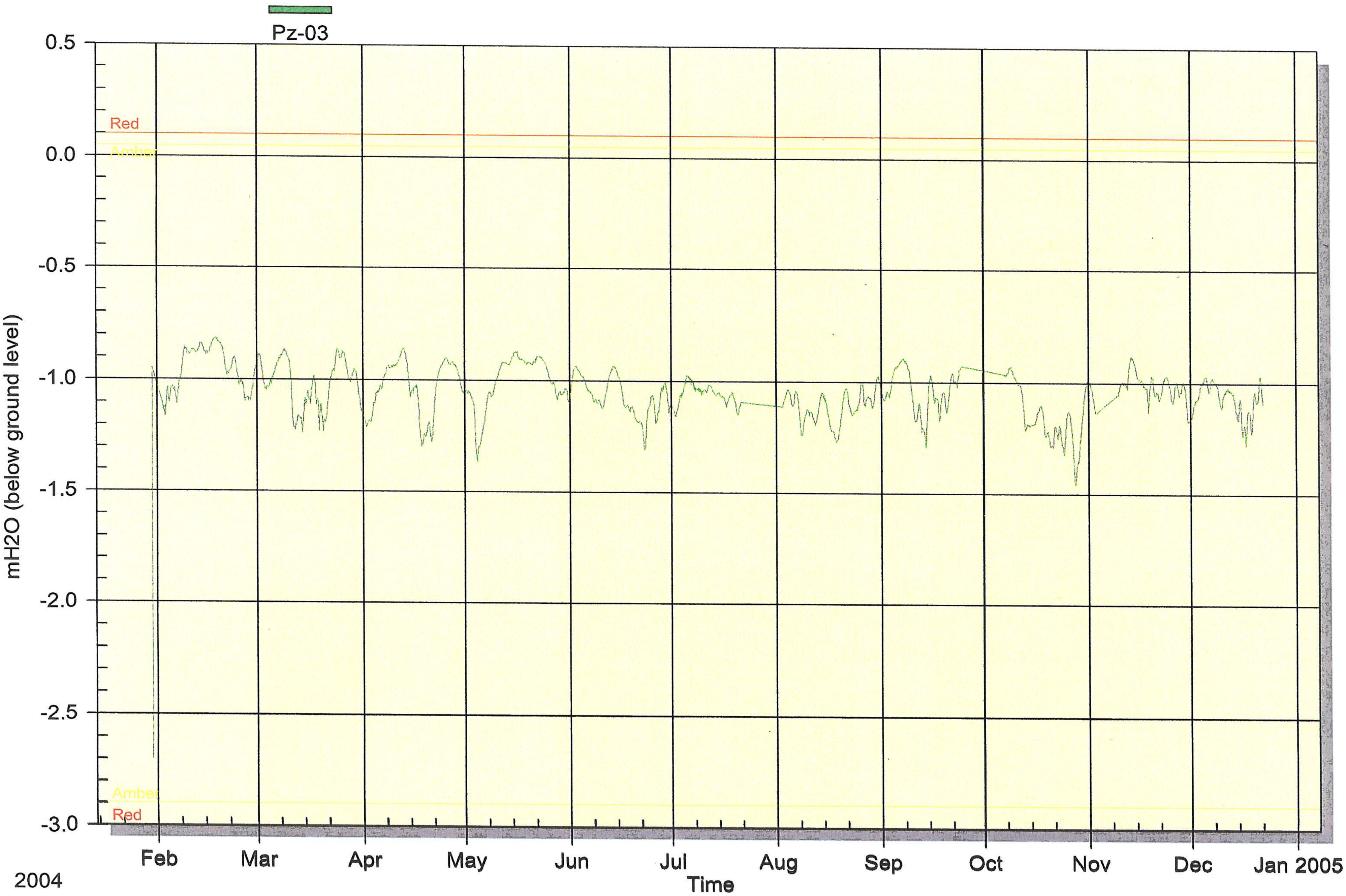

Derrybrien - ESBI
Piezometer 01 (Datumed)
Pz-01
2.5
0.0
-2.5
-5.0
-7.5
-10.0
mH2O (below ground level)
Red
Amber
Red
Amber
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan 2005
2004
Time

Derrybrien - ESBI

Piezometer 02 (Datumed)

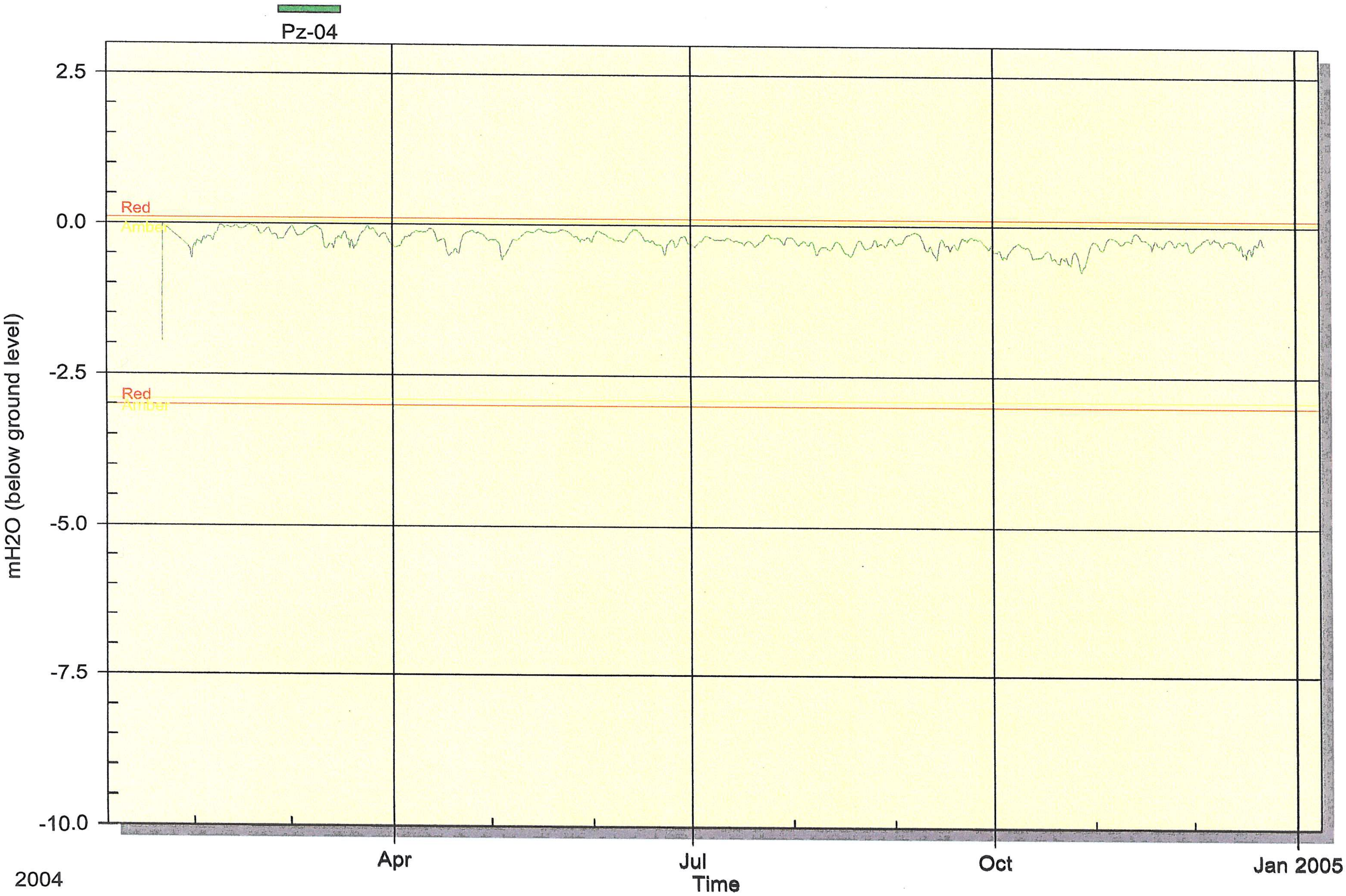


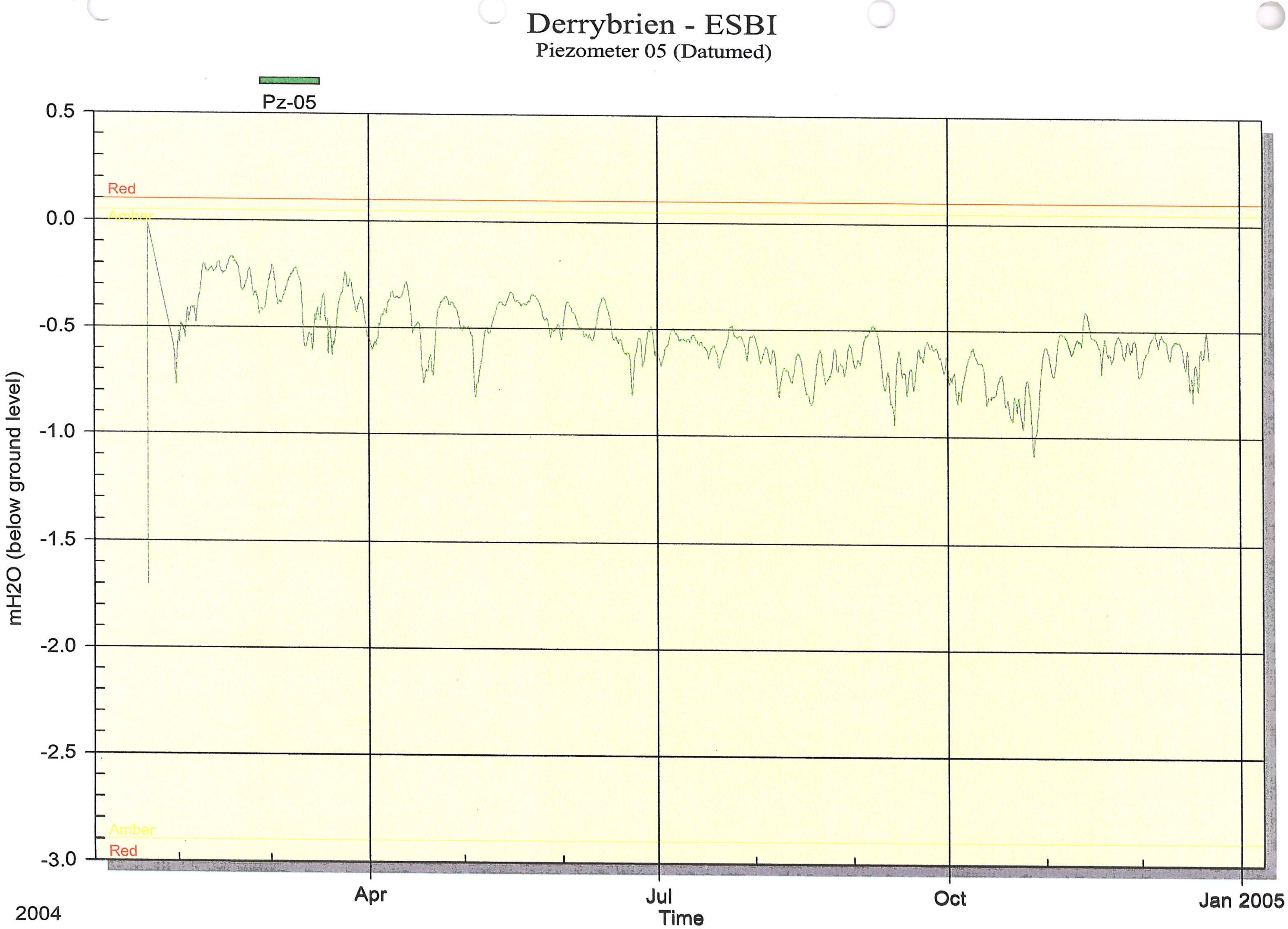
Derrybrien - ESBI
Piezometer 03 (Datumed)



Derrybrien - ESBI

Piezometer 04 (Datumed)

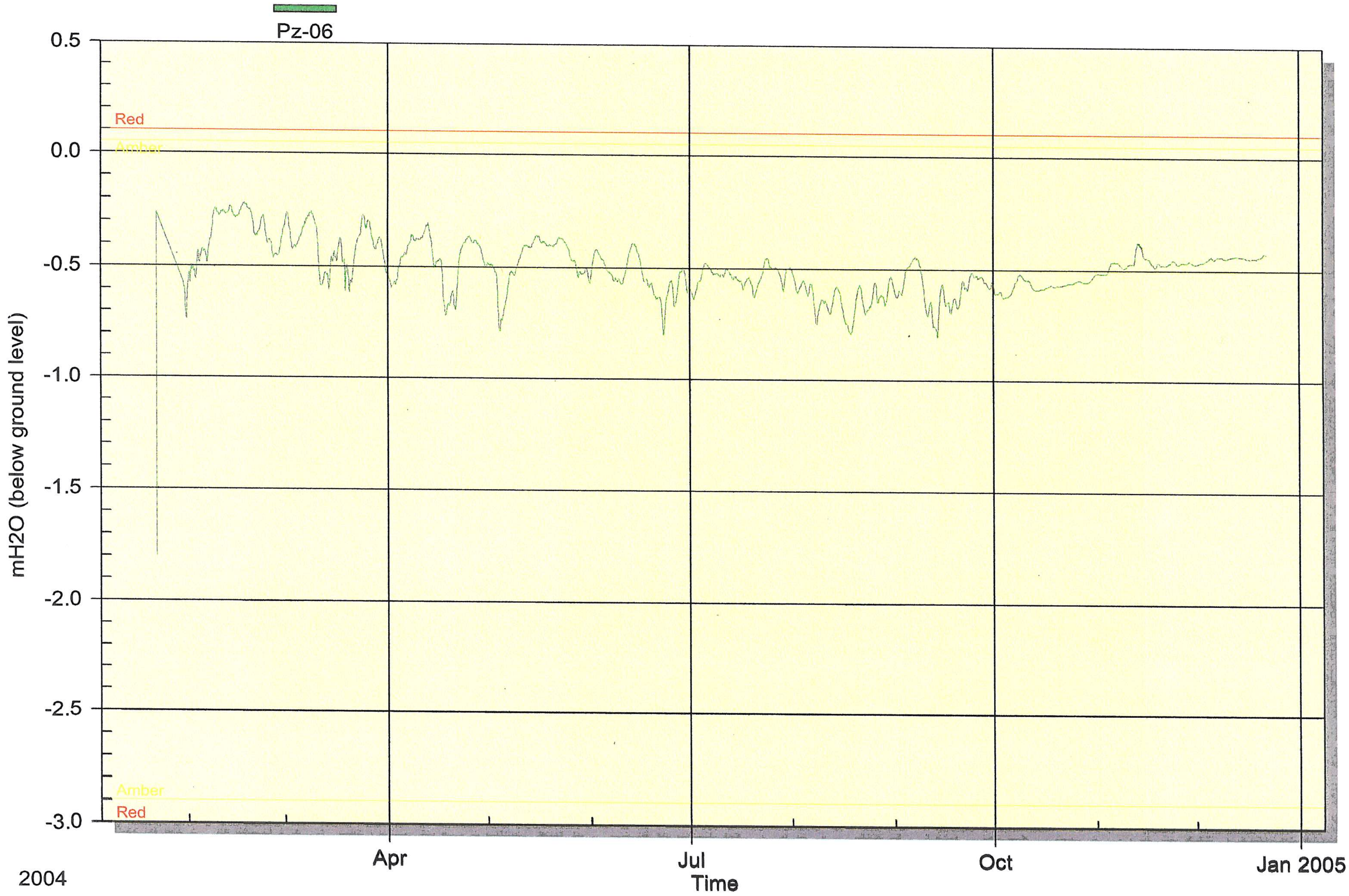




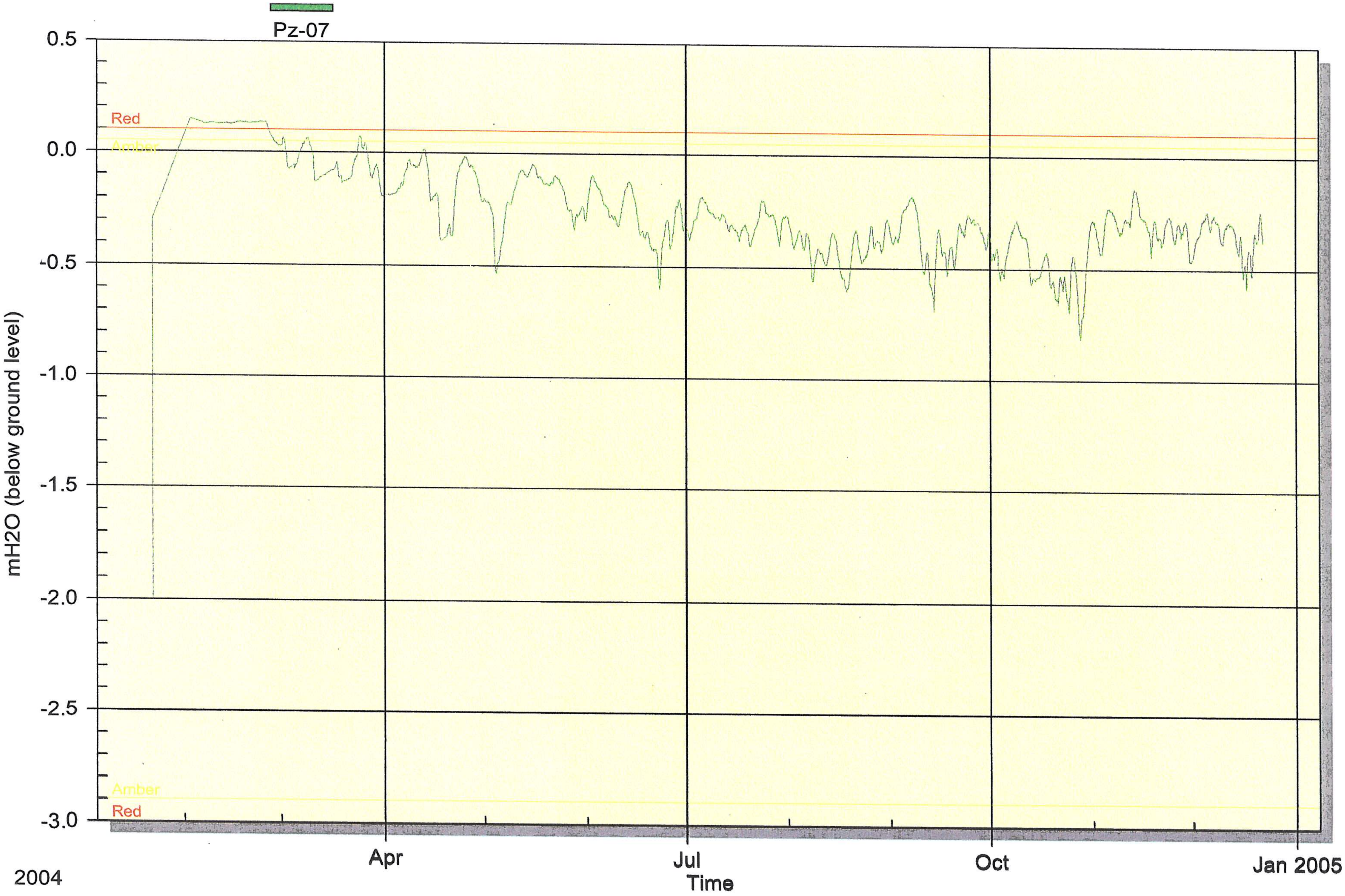
Derrybrien - ESBI
Piezometer 05 (Datumed)
Pz-05
Red
Amber
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
mH2O (below ground level)
Amber
Red
2004
Apr
Jul
Oct
Jan 2005
Time

Derrybrien - ESBI

Piezometer 06 (Datumed)

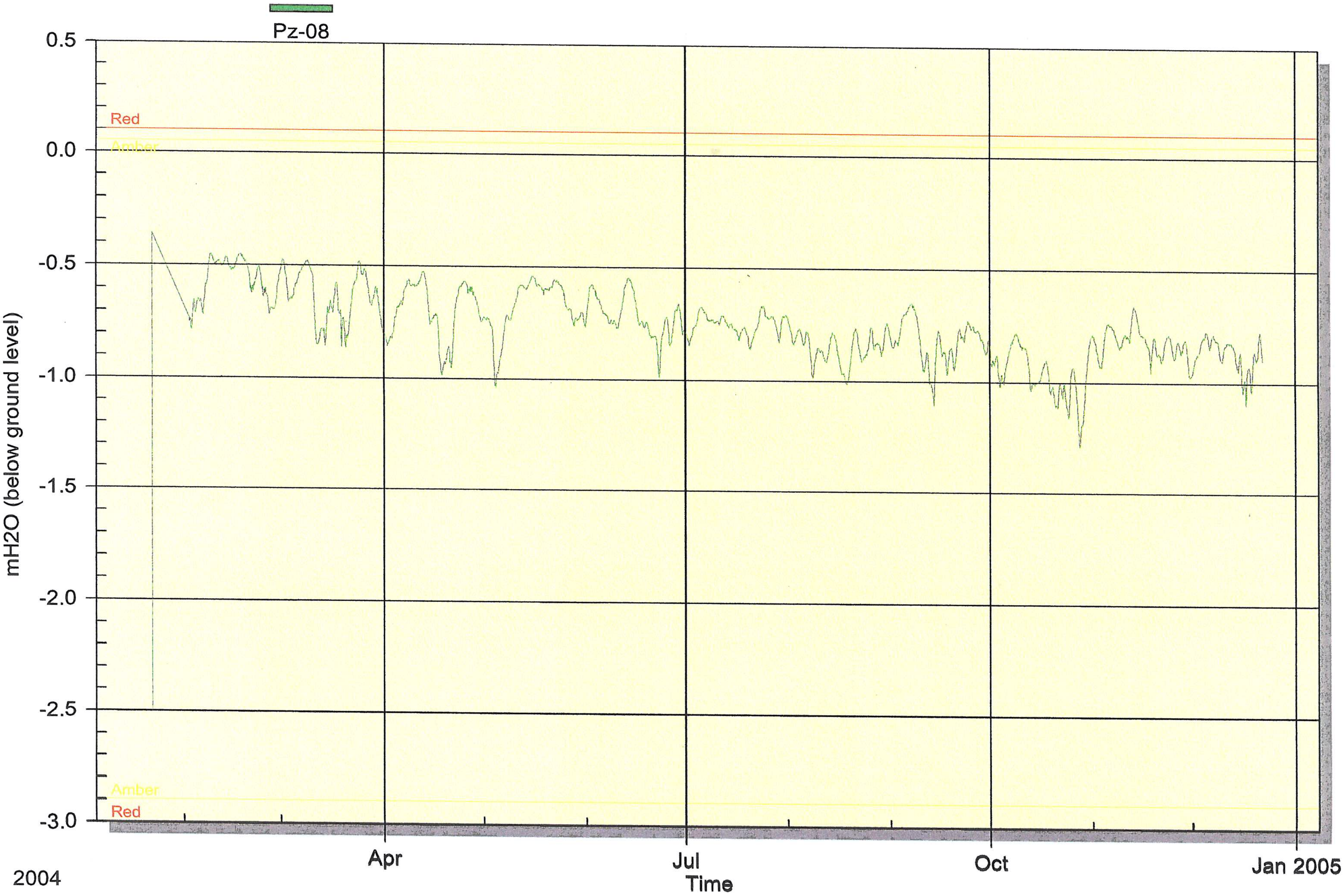


Derrybrien - ESBI
Piezometer 07 (Datumed)

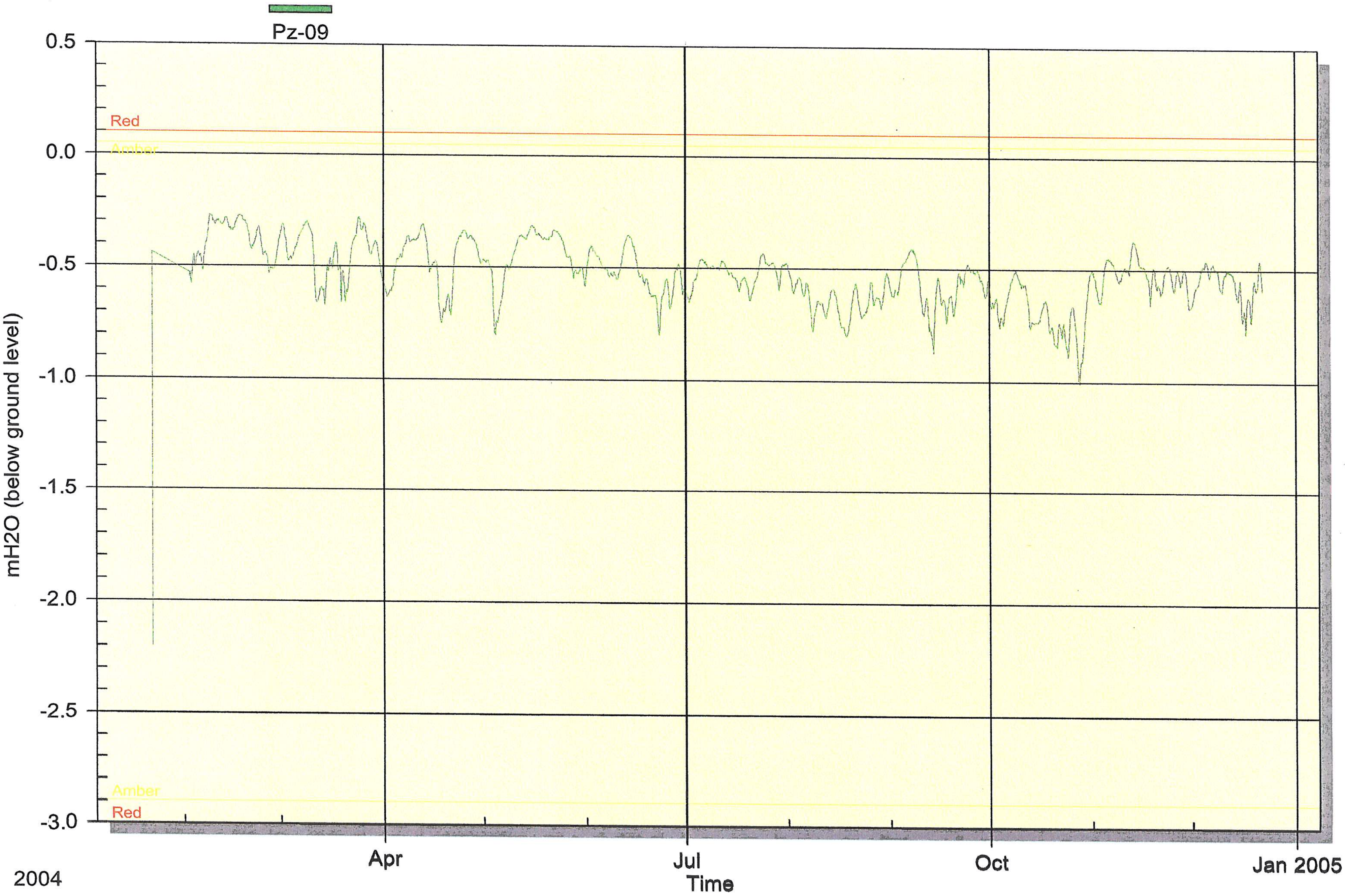


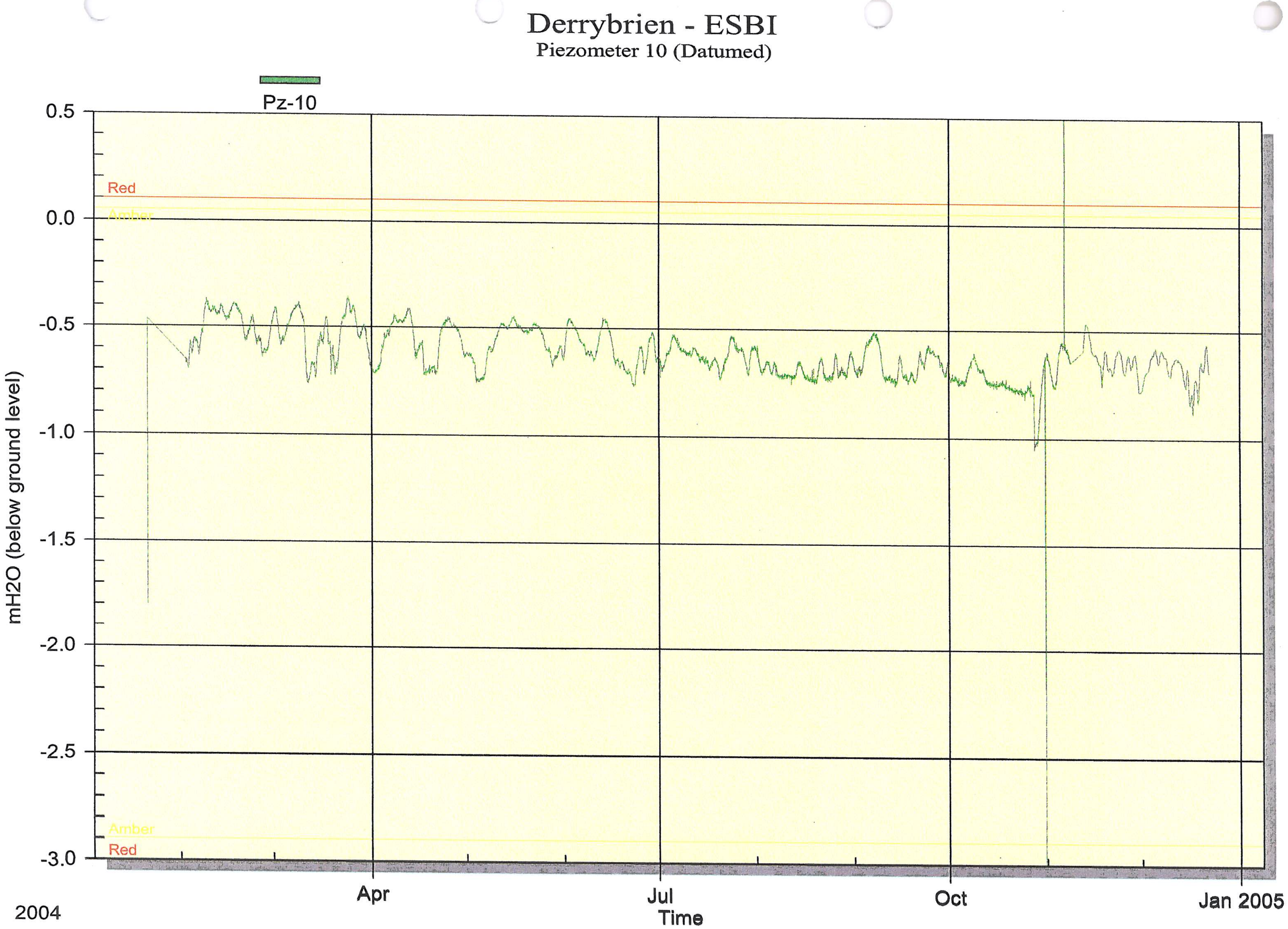
Derrybrien - ESBI

Piezometer 08 (Datumed)



Derrybrien - ESBI
Piezometer 09 (Datumed)

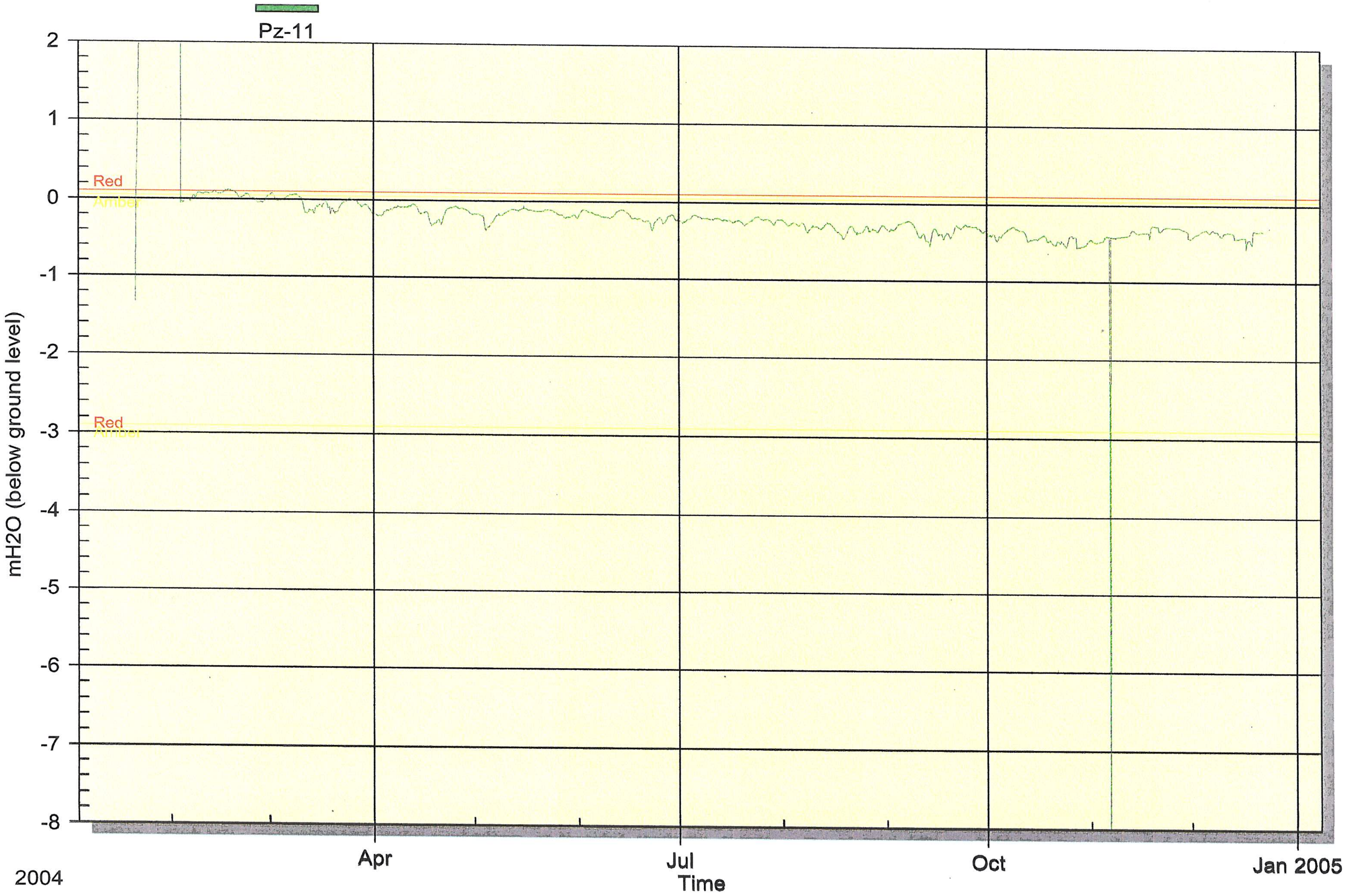




Derrybrien - ESBI
Piezometer 10 (Datumed)
Pz-10
Red
Amber
Amber
Red
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
mH2O (below ground level)
2004
Apr
Jul
Oct
Jan 2005
Time

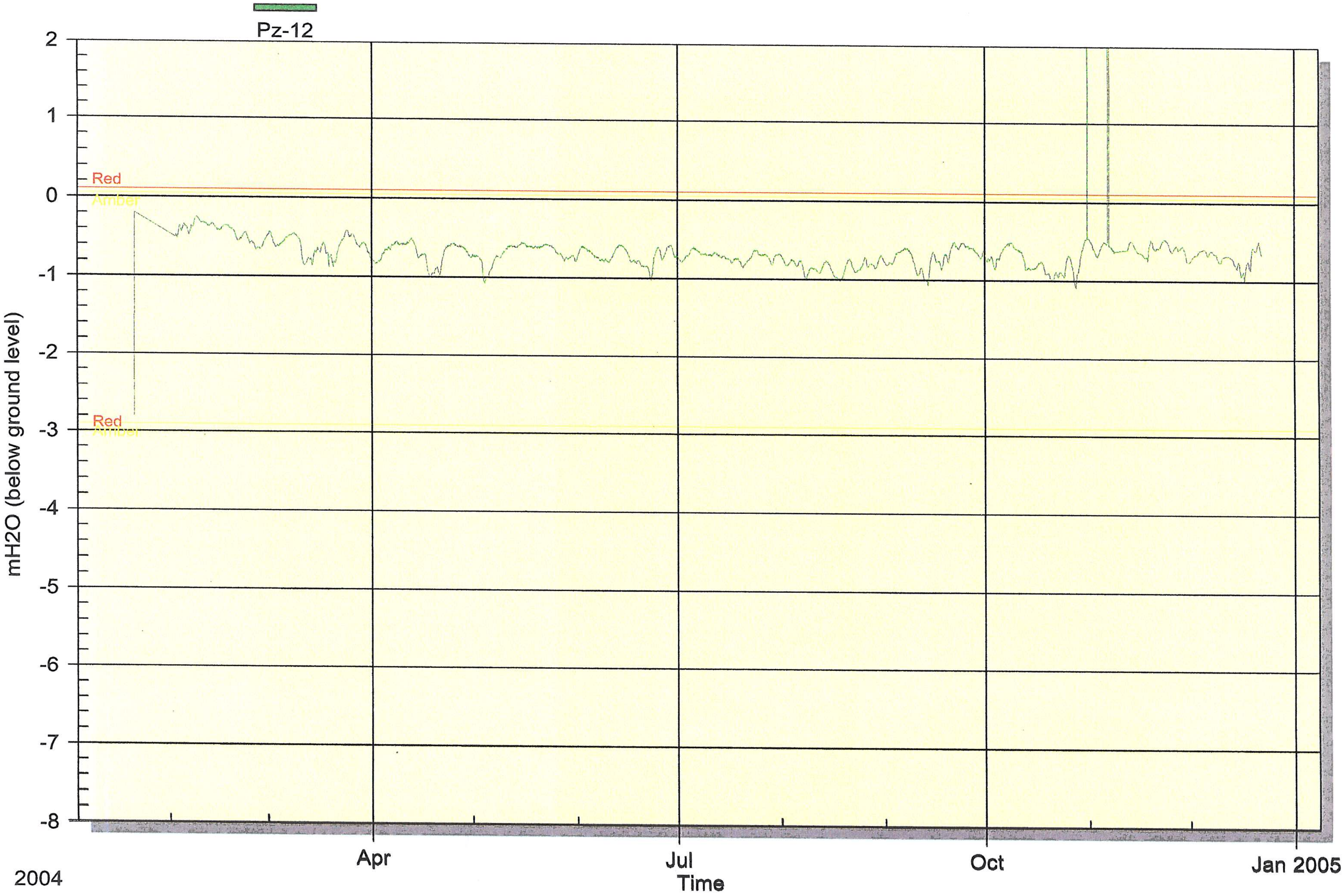
Derrybrien - ESBI

Piezometer 11 (Datumed)



Derrybrien - ESBI

Piezometer 12 (Datumed)



APPENDIX XIV

FACTUAL REPORT OF GEOTECHNICAL INVESTIGATIONS BY ESB INTERNATIONAL – ENGINEERING AND FACILITIES MANAGEMENT (ESBIE)

VOL. 2 (APPENDICES)

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T1_V1	157744	204749	2	0.7	9.56
				1.4	5.35
				2.1	7.2
T1_V2	157750	204711	2.4	1	>9.71
				1.7	>10.00
				2.03	>9.78
T1_V3	157800	204708	2.9	1	7.71
				2	5.39
				2.58	7.59
T1_V4	157778	204748	2.8	1	>9.8
				2	6.61
				2.47	>9.7
T2_V1	157874	204796	3	1	5.66
				2	5.83
				2.87	4.39
T2_V2	157856	204742	3.15	1	9.6
				2	8.12
				2.94	9.38
T3_V1	157939	204516	2.2	1	7.9
				1.5	6.05
				1.78	8.89
T3_V2	158009	204497	2.4	0.7	9.48
				1.5	5.6
				2	7.37
T3_V3	157953	204579	2.5	1	9.69
				1.8	>10.3
			Interface only 19cm deeper		
T3_V4	157934	204608	2.3	0.7	8.7
				1.5	9.51
				1.87	9.59
T3_V5	157973	204554	2.4	1	9.55
				1.5	9.61
T3_V6	157789	204651	2.3	0.7	9.67
				1.4	7.02
				1.86	9.39
T3_V7	157890	204668	2.15	0.7	9.29
				1.5	6.25
				1.8	7.64
T3_V8	157868	204632	1.8	0.7	>9.62
				1.4	6.84
T3_V9	157843	204623	1.6	0.7	>9.55
				1.28	8.92
T3_V10	157931	204460	1.3	0.85	6.03
T4_V1	158163	204577	5	1.5	3.96
				2.5	4.9
				3.5	Dead Battery
				3.72	>9.58
T4_V2	158115	204529	3.8	1.5	5.02
				2.5	4.17
				3.5	6.28
			Interface only 10cm deeper		
T4_V3	158183	204628	3	1	5.75
				2	4.73
				2.79	>9.19
T4_V4	158053	204554	3.6	1.5	4.7
				2.5	3.22
				3.26	>9.7
T4_V5	158154	204630	3	1	6.91
				2	5.38
				2.73	8.79
T4_V6	158032	204550	3.2	1	7.82
				2	4.95
				2.98	9.26
T4_V7	158077	204658	3	1	7.97
				2	6.06
				2.7	8.88
T4_V8	158033	204506	2.8	1	6.92
				2	5.85
				2.58	7.68
T4_V9	158108	204684	3.6	1	6.22
				2	4.91
				3	>9.16
T4_V10	157917	204698	2.1	0.7	7.67
				1.4	7.56
				1.9	9.31

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T4_V11	158109	204692	3.5	1	5.14
				2	4.25
				2.7	4.72
				3.3	8.05
T4_V12	158015	204585	3.3	1	5.45
				2	5.67
				2.9	7.61
T4_V13	158018	204686	2.3	0.7	7.88
				1.4	5.45
				1.86	6.65
			Interface only 5cm deeper		
T5_V1	158185	204650	3	1	5.39
				2	6.58
				2.7	9.64
T5_V2	158267	204739	2	0.5	7.76
				1.2	5.9
				1.68	4.65
T5_V3	158226	204675	3	1	5.65
				2	5.24
				3	5.44
T5_V4	158236	204602	4	1.15	4.43
				2	4.86
				3	6.52
				3.93	6.29
T5_V5	158270	204772	1.25	0.5	9.49
T5_V6	158268	204773	1.75	0.5	9.73
				1	7.95
				1.7	8.64
T5_V7	158230	204771	2.4	0.7	9.21
				1.2	6.47
				1.8	6.13
T5_V8	158341	204811	2.75	0.7	5.95
				1.4	5.8
				2.1	4.56
				2.461	6.95
T5_V9	158316	204811	2	0.7	9.14
				1.2	7.07
				1.8	5.05
T5_V10	158300	204807	1.25	0.5	9.61
				0.95	9.77
T5_V11	158274	204814	2.7	0.7	9.58
				1.4	9.18
				1.92	9.54
T5_V12	158330	204830	1.8	0.5	>10.36
				1.2	6.65
				1.58	7.03
T5_V13	158299	204830	2	0.5	>9.68
				1	9.66
				1.5	>9.44
				1.9	>9.86
T5_V14	158340	204830	2.5	0.7	7.77
				1.4	5.99
				1.9	4.97
				2.26	7.06
T6_V1	157998	204445	2.15	0.7	>9.57
				1.5	5.38
				2	5.92
T6_V2	157973	204363	2.4	1	9.02
				1.5	5.24
				2.28	6.03
T6_V3	157953	204351	3	1	4.92
				2	4.89
				2.94	5.88
T6_V4	157940	204380	2.9	1	8.04
				2	5.74
				2.72	7.9
T6_V5	157922	204377	3.6	1	5.45
				2	4.39
				2.8	4.54
				3.29	8.17
T6_V6	157940	204435	1.8	0.7	9.38
				1.3	6.17
				1.65	7.78
T6_V7	157997	204258	3.5	1	4.74
				2	4.24
				2.8	4.03
				3.1	6.28

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T7_V1	158198	204571	5	1.5	4.53
				2.5	4.95
				3.5	6.05
				4	>10.06
				4.31	>10.46
T7_V2	158069	204435	3	1	5.38
				2	5.84
				2.72	>9.54
T7_V3	158175	204458	3.5	1	4.76
				2	3.55
				3	4.32
				3.3	8.86
T7_V4	158140	204386	3.5	1	5.53
				2	3.55
				2.8	3.98
				3.38	6.19
T7_V5	158157	204349	3.7	1	4.74
				2	3.36
				3	3.55
				3.49	5.88
T7_V6	158092	204357	3.6	1	5.19
				2	5.45
				3	5.81
				3.35	7.27
T8_V1	158489	204585	2.15	0.7	6.72
				1.4	5.72
				1.79	7.31
T8_V2	158359	204520	3	1	6.78
				2	5.32
				2.83	7.99
T8_V3	158509	204533	2.4	0.7	>9.41
				1.4	4.54
				1.9	5.14
				2.28	6.7
T9_V1	158558	204580	2.3	0.7	>9.86
				1.4	6.26
				2.15	6.42
T10_V1	158748	204613	2.2	0.5	>9.53
				1.2	5.42
				1.7	5.38
				2.04	6.74
T10_V2	158710	204829	1.8	0.5	>10.3
				1	>9.51
				1.5	>9.37
T10_V3	158736	204727	0.9	0.65	9.52
T10_V4	158797	204761	0.9	0.65	9.07
T10_V5	158860	204831	3	0.7	>9.63
				1.5	5.85
				2.2	7.89
T11_V1	159060	204784	3.3	0.7	9.33
				1.7	4.26
				2.7	6.55
T11_V2	159068	204794	3	0.7	7.8
				1.7	7.01
				2.4	7.66
				2.9	>9.52
T11_V3	158896	204762	1.85	0.7	9.64
				1.2	7.59
T11_V4	158940	204777	2.1	0.7	9.6
				1.2	4.72
				1.7	6.17
T11_V5	158981	204864	4.7	0.7	7.22
				1.7	4.24
				2.4	4.06
				3.7	5.67
T11_V6	159044	204832	3.1	0.7	8.76
				1.7	5.96
				2.2	5.09
				2.95	8.45
T11_V7	159067	204873	2.6	0.7	8.22
				1.2	5.64
				1.9	3.95
				2.3	4.7
T11_V8	159108	204764	3.5	0.7	6.9
				1.7	3.8
				2.5	4.7
				3.08	6.43

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T11_V9	159134	204699	3	0.7	7.53
				1.5	4.36
				2.2	3.85
				2.75	5.76
T12_V1	158162	204155	3.4	1	5.5
				2	4.57
				3	>9.59
			Interface only 25cm deeper		
T12_V2	158161	203986	3.75	0.7	5.28
				1.5	3.24
				2.5	3.92
				3.53	8.27
T12_V3	158144	204072	4	1	6.1
				2	3.94
				3	6.85
				3.8	7.49
T13_V1	158204	204201	3.3	0.7	9.58
				1.5	5.49
				2.5	5.45
				3.23	7.53
T13_V2	158190	204133	2.1	0.7	8.76
				1.5	4.87
				2.6	8.54
T13_V3	158247	204259	3	0.7	7.76
				1.5	5.95
				2.2	8.29
				2.8	7.06
T13_V4	158230	204189	3	0.7	8.68
				1.5	5.32
				2.2	4.15
				2.9	8.24
T13_V5	158332	204170	3.5	0.7	>9.61
				1.5	5.49
				2.5	6.07
				3.07	>9.3
T13_V6	158350	204077	3.3	0.7	>9.56
				1.5	4.28
				2.5	7.58
				3	>9.57
T13_V7	158441	204179	3	0.7	>9.57
				1.5	>9.59
				2.2	8.26
				2.8	7.45
T13_V8	158433	204145	2	0.5	>9.55
				1.2	9.18
				1.58	>9.59
T14_V1	158477	204375	3.5	1	7.64
				2	8.1
				2.8	>9.6
				3.23	>9.64
T14_V2	158480	204164	2.5	0.7	7.14
				1.4	3.48
				1.9	4.12
				2.3	4.98
T14_V3	158567	204301	4.3	1	7.86
				2	7
				3	5.96
				4.18	>9.56
T15_V1	158709	204420	3.4	0.7	9.69
				1.5	6.5
				2.3	6.67
				2.94	>9.71
T15_V2	158702	204368	2.5	0.7	7.06
				1.5	6.08
				2.26	7.83
T15_V3	158672	204210	3.9	1	6.79
				2	5.33
				3	7.36
				3.65	6.18
T15_V4	158647	204359	3.3	1	7.22
				2	7.04
				2.7	>9.55
T15_V5	158661	204429	3.5	1	7.86
				2	5.26
				2.6	8.86
				3.33	>9.92
T15_V6	158818	204389	2	0.7	>9.55
				1.2	6.62

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				1.66	5.55
T15_V7	158812	204351	1.9	0.7	9.57
				1.2	5.21
				1.64	5.84
T15_V8	158809	204320	1.8	0.7	9.95
				1.2	6.15
				1.55	7.43
T15_V9	158810	204416	2.8	0.7	9.5
				1.4	6.02
				2.1	7.07
				2.58	9.47
T15_V10	158749	204367	2.4	0.7	9.5
				1.2	5.74
				1.7	4.04
				2.28	6.69
T15_V11	158757	204332	2.2	0.7	9.48
				1.4	5.69
				2.15	8.55
T16_V1	158846	204254	2	0.7	9.66
				1.2	6.83
				1.75	6.08
T16_V2	158860	204335	1.8	0.7	9.59
				1.21	5.52
				1.65	7.11
T16_V3	158869	204397	2.1	0.7	9.59
				1.2	6.24
				2	5.58
T16_V4	158877	204448	2.6	0.7	8.67
				1.2	5.76
				1.9	5.15
				2.4	5.87
T16_V5	158829	204440	3.15	0.7	7.96
				1.4	3.68
				2.1	4.37
				3.08	9.56
T16_V6	159035	204460	2.2	0.7	7.13
				1.2	4.9
				1.9	5.61
T16_V7	158966	204448	2.9	0.7	8.66
				1.2	6.76
				1.7	2.18
				2.2	6.28
T16_V8	158961	204375	2.5	0.7	8.81
				1.2	6.69
				1.7	7.11
				2.2	8.8
T16_V9	158917	204340	2.25	0.7	9.65
				1.2	5.53
				1.7	5.74
T16_V10	158918	204377	2.2	0.7	7.99
				1.2	6
				1.7	8.58
				2.05	8.87
T16_V11	158929	204448	3	0.7	9.89
				1.2	6.27
				1.9	4.91
				2.4	5.04
				2.8	8.63
T16_V12	158901	204596	4.2	1	5.36
				2	3.43
				3	7.41
				3.9	9.71
T17_V1	159122	204516	1.95	0.7	>9.77
				1.2	6.61
				1.63	7.57
T17_V2	159128	204457	1.4	0.6	>10.10
				1.1	8.18
T17_V3	159089	204469	2.2	0.7	>9.58
				1.2	8.27
				1.97	9.14
T17_V4	159043	204473	3	0.7	8.98
				1.2	6.59
				1.9	3.74
				2.4	7.3
T17-V5	159205	204564	2	1	4.81
				1.85	3.63
T17-V6	159290	204480	2	1	7.15
				1.8	7.96
T17-V7	159230	204449	1.15	0.85	6.59
T17-V8	159069	204552	2.55	1	5.21
				1.5	6.4

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				2	6.1
					7.22
T18_V1	158200	203825	2	0.5	>9.5
				1	6.73
				1.47	6.24
T18_V2	158191	203825	1.3	0.5	>9.52
				1	5.91
			Interface only 18cm below		
T18_V3	158286	203928	2.1	0.5	9.58
				1.2	7.47
				1.9	6.56
T19_V1	158473	204126	1.5	0.5	9.35
				1	4.96
			interface only 25cm deeper		
T20_V1	158511	204123	2.1	0.7	7.41
				1.4	4.16
				1.93	6.08
T20_V2	158499	204046	1.8	0.5	>10.01
				1	5.55
				1.62	7.04
T20_V3	158577	204100	2	0.5	>9.54
				1	5.03
				1.5	3.31
			interface only 27cm deeper		
T20_V4	158517	204034	1.4	0.7	6.73
				1.23	4.65
T20_V5	158516	204047	?	0.7	8.28
				1.2	5.11
				1.88	5.93
T20_V6	158522	204078	2.5	0.7	>9.48
				1.2	4.49
				1.7	3.43
				2.2	5.32
T20_V7	158534	204133	2.2	0.7	7.21
				1.2	4.24
				1.7	3.44
				2.04	6.05
T22_V1	158078	204295	2.5	0.7	>10.07
				1.4	8.04
				1.9	8.47
T22_V2	158090	204366	2.5	0.7	9.71
				1.2	7.4
				1.7	6.75
				2.1	9.53
T22_V3	158950	204314	2.1	0.7	9.68
				1.2	9.7
				1.7	9.64
T22_V4	158944	204279	2	0.7	9.6
				1.2	6.91
				1.7	6.44
T23_V1	159199	204251	1.8	0.7	>9.59
				1.2	8.86
				1.55	>9.75
T23_V2	159153	204387	1.7	0.7	9.66
				1.2	9.49
T23_V3	159170	204343	1.3	0.7	>9.52
				1.2	>10.04
T23_V4	159239	204332	1.3	0.5	>8.22
				0.95	7.12
T24_V1	159662	205238	4.65	0.6	8.5
				1.5	3.07
				2.5	2.5
				3.5	3.2
				4.2	4.69
T25_V1	159780	204740	1.8	0.8	9.23
				1.2	4.73
				1.6	4.65
T25_V1b	159647	204831	0.7	0.7	6.11
				1.2	3.89
				1.7	3.31
T25_V2	159683	204853	2.8	0.7	7.14
				1.2	5.14
				1.7	4.12
				2.2	5.03
T26_V1	159850	204650	2.3	1.1	7.26
				1.55	5.07
				1.95	7.55
T27_V1	159796	205259	3.2	2	4.7
				2.5	6.78

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T27_V2	159821	205233	3.4	1.2	5.27
				2.5	5.98
				3.2	5.11
				3.5	7.4
T27_V3	159927	205298	2.2	1	10.8
				1.8	4.39
T27_V4	159711	205221	4.15	0.7	8.05
				1.7	2.91
				2.5	2.58
				3.6	6.8
T29_V1	160141	204826	1.95	1	6.18
				1.5	4.06
T29_V2	160141	204826	2	1	6.45
				1.4	5.2
				1.8	4.73
T29_V3	159982	204766	1.5	1	7.94
T29_V4	160145	204825	1.95	1	6.96
				1.4	4.82
				1.8	5.98
T32_V2	160181	204894	1.9	1	3.92
				1.5	7.26
T32_V3	160311	204852	0.9	0.56	>9.06
T32_V4	160205	204920	2.6	1	7.54
				1.6	8.67
				2.05	> 7.59
				2.4	7.15
T32_V5	160180	204786	1.7	1	6.81
				1.4	5.32
T32_V6	160400	204856		1	8.71
				1.5	> 8.82
T32_V7	160203	204770	1.8	0.6	> 9.16
				1	4.55
				1.5	4.45
T32_V8	160304	204953	2.8	1	6.18
				1.8	6.88
				2.6	7.82
T32_V9	160215	204800	1.8	1	7.3
				1.5	5.03
T32_V10	160224	204825	2	1	7.35
				1.6	5.2
T32_V11	160245	204836	1.7	0.9	6.32
				1.3	5.99
T32_V12	160263	204838	1	0.6	>9.52
T34_V1	160372	205112	2.7	1.5	3.5
				2	5.26
				2.4	8.62
T34_V2	160404	205066	2.5	0.7	10
				1.5	4.86
				2.2	1.98
T34_V3	160447	205152	2.2	1.5	5.18
T34_V4	160402	205066	2.2	2.2	7.5
T35_V2	160476	205019	1.8	1	7.4
				1.5	6.09
T35_V1	160443	204966	1.8	1	8.42
				1.5	7.12
T38_V1	160601	205082	1.85	1	6.61
				1.5	5.1
T38_V2	160621	205022	1.1	0.5	5.26
				0.87	6.1
T38_V3	160621	205022	0.8	0.5	5.96
T38_V4	160656	205077	1.8	1	7.49
				1.5	5.64
T38_V5	160528	204921	0.9	0.5	9.31
				0.75	9.1
T38_V6	160614	205023	1.25	0.5	9.17
				0.96	9.23
T38_V7	160558	204985	1.3	0.6	8.9
				1	7.33
T38_V8	160602	205058	1.8	0.5	9.36
				1	7.29
				1.5	5.28
T38_V9a	160545	205056	1.95	1	8.62
				1.65	5.96
T38_V10	160679	205041	1.6	1	7.61
				1.33	8.7
T38_V11	160620	205070	1.4	1	7.56
				1.25	8.73
T38_V12	160602	205061	1.8	1	7.31
				1.65	>9.44
T38_V13	160640	205010	1	0.5	8.71
				0.9	9.99

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T38_V14	160615	205090	2.1	1	8.01
				1.8	9.85
T41_V1	160692	205116	1.5	1	5.5
T42_V1	160913	205633	2.35	1	5.19
				1.65	4.2
T44_V1	161013	205615	2.7	1	6.11
				2	4.26
T47_V1	158297	205256	2.1	0.7	6.06
				1.4	4.99
				1.81	6.29
T48_V1	158530	205360	3.1	1	9.34
				1.7	4.31
				2.2	4.29
				3.17	5.01
T48_V2	158490	205442	3.1	1	5.27
				2	6.09
				3	8.49
				3m at interface	
T48_V3,T4	158480	205460	2.25	0.5	>9.23
				1	4.77
				1.5	7.38
				2.08	7.17
				Interface at 2.08	
T48_V4	158562	205366	1.5	0.5	>9.53
				0.93	>9.7
T48_V5	158577	205341	0.9	0.5	8.05
			interface	0.8	6.9
T48_V6	158586	205393	2.1	0.5	>9.64
				1.2	8.42
				1.75	5.22
				interface at 1.75	
T48_V7	158613	205352	1	0.5	>9.83
				0.9	3.42
T48_V8	158592	205384	1.5	0.5	>9.58
				0.9	>9.59
T49_V1	158644	205442	2.4	0.7	8.11
				1.5	5.23
				2.27	5.38
				2.27 is interface	
T49_V2	158665	205402	1.6	0.5	>9.58
				1	>9.68
				1.36	>9.83
				1.36 is interface	
T49_V3	158670	205391	1.5	0.5	>9.56
				1	4.97
				interface only 0.25cm down	
T50_V1	158988	205694	1.4	1.13	7.81
T50_V3	158891	205547	5	1	4.16
				2	3.4
				3	3.09
				4	>8
				4.45	>7.09
T50_V3a	158896	205546	5+	1	4.3
				2	3.19
				3	3.65
				4	7.54
				4.45	>9.36
T50_V4	158873	205600	3	1	4.95
				2	3.63
				2.4	5.65
T50_V4a	158876	205607	2.4	1	6.85
				2	6.93
				2.3	8
T50_V5	158908	205639	2.4	1	6.58
				1.5	8
				2	6
T50_V7	158868	205588	3.4	0.7	6.31
				1.5	6.22
				2.2	4.49
				3.08	7.66
T51_V1	159150	205654	3.6	1.5	6.38
				2.5	7.32
				3	7.06
				3.4	7.93
T51_V2	159088	205580	3.95	1.5	4.05
				2.5	4.97
				3	4.79

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				3.5	4.58
T51_V2a	159092	205587	3.6	1.5	5.13
				2.5	5.94
				3	6.88
				3.5	5.66
T51_V3	159098	205735	2.75	1.5	6.95
				2.5	8.64
T51_V4	159113	205610	3.4	1.5	4.54
				2.5	6.22
				3.4	8.36
T51_V5	159052	205680	2.7	1.5	4.85
				2.2	7.04
T51_V6	159025	205601	3.4	1.5	5.06
				2.5	7.83
				3.1	9.67
T51_V7	159101	205645	3.2	0.7	9.08
				1.5	7.35
				2.3	5.94
				2.75	9.41
T52_V1	159183	205790	1.9	1.55	>10
T53_V1	158439	205079	2.6	1	>9.34
				1.8	>9.67
			Too difficult to push to interface		
T53_V2	158462	205043	2.7	1	5.03
				1.7	5.13
				2.2	5.09
				2.5	5.19
T53_V3	158488	205142	1.9	0.7	>9.57
				1.2	8.89
				1.6	7.35
T53_V4	158556	205052	3.6	1	6.02
				2	5.13
				3	4.49
				3.31	7.63
T53_V5	158444	205216	2.1	0.7	>9.57
				1.4	8.79
				2.11	6.62
			interface at 2.11m		
T53_V6	158426	205242	3.8	1	7.05
				2	5.64
				3	3.05
				3.8	>9.62
			interface at 3.8m		
T53_V7	158411	205734	3.5	1	6.26
				2	4.31
				2.9	2.65
			interface at2.9		
T54_V1	158558	205177	3.9	1	5.55
				2	5.02
				3	5.85
				3.56	>9.2
T54_V2	158615	205107	1.4	0.5	>9.9
				1	7.63
			interface only 23cm down		
T54_V3	158684	205219	5.6	1	5.19
				2.5	3.65
				4	4.42
				5.19	8.21
			Interface deeper, not enough length		
T54_V4	158720	205134	2.5	0.7	9.49
				1.5	8.64
				2.28	7.5
T54_V5	158774	205144	2.3	0.7	6.11
				1.4	7.89
				2.06	>9.64
			Last test at interface		
T54_V6	158774	205212	5.1	1	4.97
				2	6.35
				3	6.52
				4.84	9.44
T54_V7	158470	205265	2.4	0.7	>9.52
				1.4	5
				2.1	5.47
				2.44	8.09
T54_V8	158506	205202	2	0.5	6.88
				1.2	5.6
				1.83	>9.47

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T54_V9	158596	205298	1	0.5	>9.77
				0.8	9.65
				0.8m at interface	
T54_V10	158574	205266	1	0.5	>9.96
				1.02	7.21
				1.02 at interface	
T54_V11	158568	205288	1	0.5	>9.95
				Couldn't push to interface as peat very strong	
T54_v12,T	158558	205310	2	0.7	6.9
				1,2	6.29
				1.8	7.68
T54_V13	158607	205286	0.8	0.5	>9.74
			couldn't push further		
T55_V1	158868	205368	2.7	1.5	8.12
				2	>8.45
				2.4	>9.04
T55_V2	158850	205414	2.7	1.5	6.67
				2	8.47
				2.5	9.27
T55_V3	158790	205430	1.8	1.1	7.44
				1.6	>9.15
T55_V4	158800	205400	2.4	1.5	7.71
				2.2	5.78
T55_V5	158815	205350	2.4	1.5	5.19
				2	5.43
T55_V6	158760	205340	2.35	1.5	3.89
				1.8	7.01
				2.2	7.76
T55_V7	158745	205370	2.1	1	9.06
				1.75	6.97
T55_V8	158725	205405	1.75	1	5.97
				1.55	8.01
T55_V9	158802	205279	3.5	0.6	6.37
				1	5.62
				1.5	4.41
				2	4.13
				3	5.45
				3.18	9.24
T55_V10	158898	205292	2.7	0.6	6.93
				1	5.07
				1.5	4.48
				2	4.6
				2.5	6.56
T55_V11	158682	205368	2.3	0.7	9.52
				1.4	7.56
				1.83	>9.65
T55_V12	158643	205306	1.5	0.5	6.51
				1	8.11
				interface only 5cm below	
T55_V13	158633	205321	1.6	0.5	>9.54
				1	8.68
				1.35	>9.64
T55_V14	158620	205341	2.5	0.7	7.98
				1.5	5.54
				2	7.2
				2.350	9.47
				interface at 2.35	
T55_V15	158709	205314	2.5	0.7	>9.67
				1.4	5.78
				1.9	6.61
				2.2	6.06
T56_V1	159104	205468	3.4	1	6.77
				2	3.69
				3	5.79
T56_V2	158965	205416	2.6	1	8.25
				2	7.96
				2.431	8.65
T56_V3	158923	205462	4.35	1	6.94
				2	2.81
				3	2.11
				3.5	6.23
T56_V3a	158919	205467	1	1	6.99
			2	2	3.47
			3	3	6.6
T56_V4	158912	205418	2.8	1.5	>9.02
				2	>9.11
T56_V5a	158900	205490	>5	1.5	4.94
				2.5	3.4

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				3.5	5.57
				4	7.43
				5.05	>9.42
T56_V6	158950	205460	3.15	1.5	5.04
				2	4.82
				2.5	7.69
T56_V7	158930	205540	>4.5	1.5	4.17
				2.5	2.49
				3.5	8
				4	8.17
T56_V8	158923	205460	4.5	1	8.75
				2	3.49
				3	3.92
				3.5	9.14
T56_V9	159034	205278	2.9	1	8.52
				2	5.06
				2.67	>9.72
T56_V10	159016	205357	2	1	8.21
				2	9.36
T56_V11	159213	205337	2.3	1	7.39
				1.6	5.34
				2.25	6.53
T56_V12	159067	205500	3.1	0.7	8.25
				1.5	5.48
				2.2	6.74
				2.7	9.5
T56_V13	159038	205478	3.7	0.7	8.8
				1.5	6.14
				2.2	8.38
				3.2	9.47
T57_V1	159239	205560	1.2	1	6.17
T57_V2	159283	205387	1.95	1.6	6.67
T57_V3	159317	205492	0.75	0.75	8.65
T57_V4	159264	205462	1.2	1	5.85
T57_V4a	159289	205539	1.5	0.7	9.61
				1.2	7.88
T57_V5	159386	205561		1	8.01
				1.47	> 9.22
T57_V6	159196	205381	1.7	0.7	>9.63
				1.6	8.25
T57_V7	159236	205366	2.2	1	6.83
				2	7.6
				2.2	o close to previous point
T57_V8	159249	205346	2.2	0.7	7.03
				1.5	4.65
				2.15	5.02
T58_V1	159525	205516	2.5	1.5	6.67
				2.5	9.13
T58_V2	159418	205578	2.3	0.5	>9.28
				1	8.83
				1.5	6.73
				2	8.59
T59_V1	159501	204989	1.7	0.5	>9.6
				1	6.63
				1.4	7.14
T59_V2	158888	205009	2.2	0.8	7.05
				1.5	6.6
				2.2	7.54
T59_V3	158669	204828	2	0.5	8.17
				1	7.7
				1.5	8.84
T59_V4	158684	204842	1.9	0.5	>9.52
				1	7.75
				1.5	7.8
T60_V1	158741	205108	1.8	0.5	7.91
				1.2	6.29
				1.52	8.45
T60_V2	158776	205060	4.4	1	4.24
				2	3.92
				3	4.31
				4.04	5.85
T60_V3	158791	205122	2.4	0.7	7.84
				1.4	5.05
				1.9	7.03
			Interface only 2cm down		
T60_V4	158880	205124	1.8	0.5	7.05
				1	4.87
				1.45	7.68
T60_V5	158672	205047	3	0.7	9.2
				2	5.72
				3	6.29

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
T60_V6	158660	205066	1.2	0.5	8.83
				1	8.37
			Interface only 11cm below		
T60_V7	158882	204996	3.8	1	5.93
				2	4.22
				3	4.86
				3.55	>9.55
T60_V8	158901	204978	4.5	1	6.44
				2	5.46
				3	5.69
				4.45	9.64
T60_V9	158783	204902	4.5	1	4.9
				2	8.44
				3	5.67
				3.8	9.56
T60_V10	158709	204869	2.5	1	8.93
				1.7	4.86
				2.28	6.62
T61_V1	158920	205082	1.8	1	9.28
				1.65	>10.51
T61_V2	158878	205144	0.7	0.5	>10.32
				0.63	>10.18
T61_V3	158949	205079	2	0.6	10.02
				1.2	4.23
				1.7	8.94
T61_V4	159024	205188	2.3	0.6	>10.33
				1	7.61
				1.5	7.42
				2	9.6
T61_V5	158957	205103	2.2	0.8	8.72
				1.2	7.08
				1.7	5.14
T62_V1	159017	205228	1.2	0.6	9.19
				0.93	7.76
T62_V2	159052	205192	2.5	1	>9.55
				2	8.66
				2.2	>9.57
T62_V3	159045	205226	2.7	1	7.88
				2	9.37
				2.3	>10
T62_V4	159093	205244	2.7	1	8.84
				2	7.26
				2.55	>9.62
T62_V5	159090	205320	2.5	1	>9.66
				1.5	7.52
				2.1	8.44
T62_V6	159080	205380	2.6	1	8.14
				2	9.56
				2.31	>9.67
T62_V7	159186	205250	3.1	1.5	4.56
				2.5	5.44
				2.7	o close to previous point
T62_V8	159292	205112	3.1	0.7	>9.67
				1.5	5.29
				2.3	3.21
				2.65	5.5
T62_V9	159295	205091	2.3	0.7	9.59
				1.4	8.68
				2	6.39
T63_V1	159350	205316	3.1	1.5	5.15
				2.75	9.5
T63_V2	159340	205229	3.3	1.5	4.9
				2.5	4.9
				2.9	5.19
T63_V3	159443	205209	2.8	1.5	6.84
				2.2	6.11
T63_V4	159280	205410	1.8	0.9	7.84
				1.4	6.44
T63_V5	159290	205297	3	1	5.85
				2	6.15
				2.52	>10.04
T64_V1	159639	205363	3.7	0.8	5.13
				1.5	2.92
				2.5	3.36
				3.45	8.71
T64_V2	159542	205357	2.3	1.8	3.82
				2.51	4.41
T64_V3	159560	205404	2.2	1.8	5.83
T64_V4	159567	205250	4.2	2	1.72
				2.5	2.15
				3	3.8

Derrybrien windfarm summary of shear vane results

Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				3.5	4.39
				4	7.97
T64_V5	159652	205425	2.7	1.5	4.38
				2	4.98
T64_V6	159712	205323	0.7	0.5	6.69
T65_V1	159776	205408	3.3	1	8.08
				2	6.35
				2.7	8.41
T65_V2	159822	205348	0.9	0.55	8.63
T65_V3	159741	205427	2.7	1	Slippage in machine
				1.3	5.48
				2	5.35
				2.5	6.04
T66_V1	159214	204856	2.8	0.7	>9.45
				1.5	6.44
				2	6.19
				2.5	8.34
T66_V2	159191	204871	2.8	0.7	8.66
				1.4	4.06
				2.1	5.68
				2.57	7.35
T66_V3	159148	204830	2.3	0.7	7.09
				1.2	6.04
				1.7	6.18
				2.05	7.32
T66_V4	159113	204871	2.5	0.7	9.04
				1.2	6.3
				1.7	4.52
				2.22	6.44
T66_V5	159151	204880	2.7	0.7	9.55
				1.2	8.22
				1.7	5.02
				2.27	6.1
T66_V6	159210	204971	3.5	0.7	9.6
				1.7	7.58
				2.7	7.62
				3.22	8.03
T66_V7	159188	204905	2.8	0.7	9.37
				1.5	5.2
				2	5.03
				2.58	6.39
T66_V8	159265	204934	3.2	0.7	7.36
				1.7	4.56
				2.2	4.32
				2.74	6.83
T66_V9	159125	204806	3.5	0.7	8.09
				1.7	4.26
				2.5	4.97
				3.3	6.13
T66_V10	159237	204828	2.75	0.7	9.1
				1.7	4.66
				2.4	4.09
T66_V11	159298	204841	2.6	0.7	8.39
				1.2	5.28
				1.7	5.3
				2.2	5.43
				2.6	6.64
T67_V1	159360	204941	2.7	0.7	6.64
				1.5	4.71
				2.1	4.69
				interface only 25cm down	
T67_V2	159353	204953	2	0.5	>10.12
				1	4.56
				1.5	4.52
				interface only 25cm down	
T67_V3	159338	205089	1.2	0.5	>9.78
				1	6.04
T67_V4	159231	205066	4.5	1	8.25
				2	9.17
				3	>9.57
T67_V5	159339	204877	2.4	0.7	9.5
				1.2	7.76
				1.7	5.38
				2.2	5.6
T67_V6	159428	204907	2.9	0.7	9.61
				1.5	4.91
				2.1	4.22
				2.76	6.09
T67_V7	159485	204926	2.5	0.7	8.52
				1.5	3.69
				2	3.69

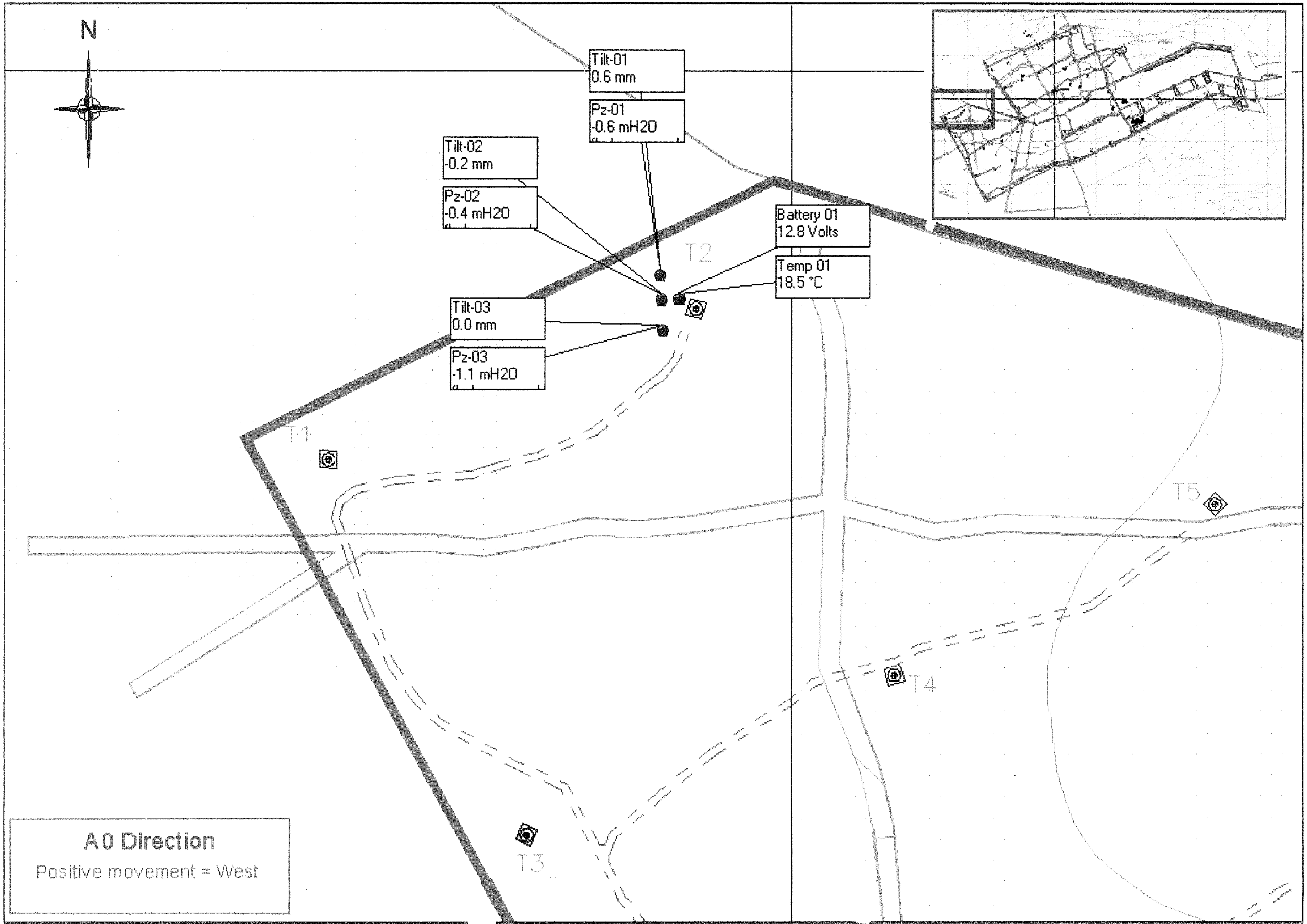
Derrybrien windfarm summary of shear vane results

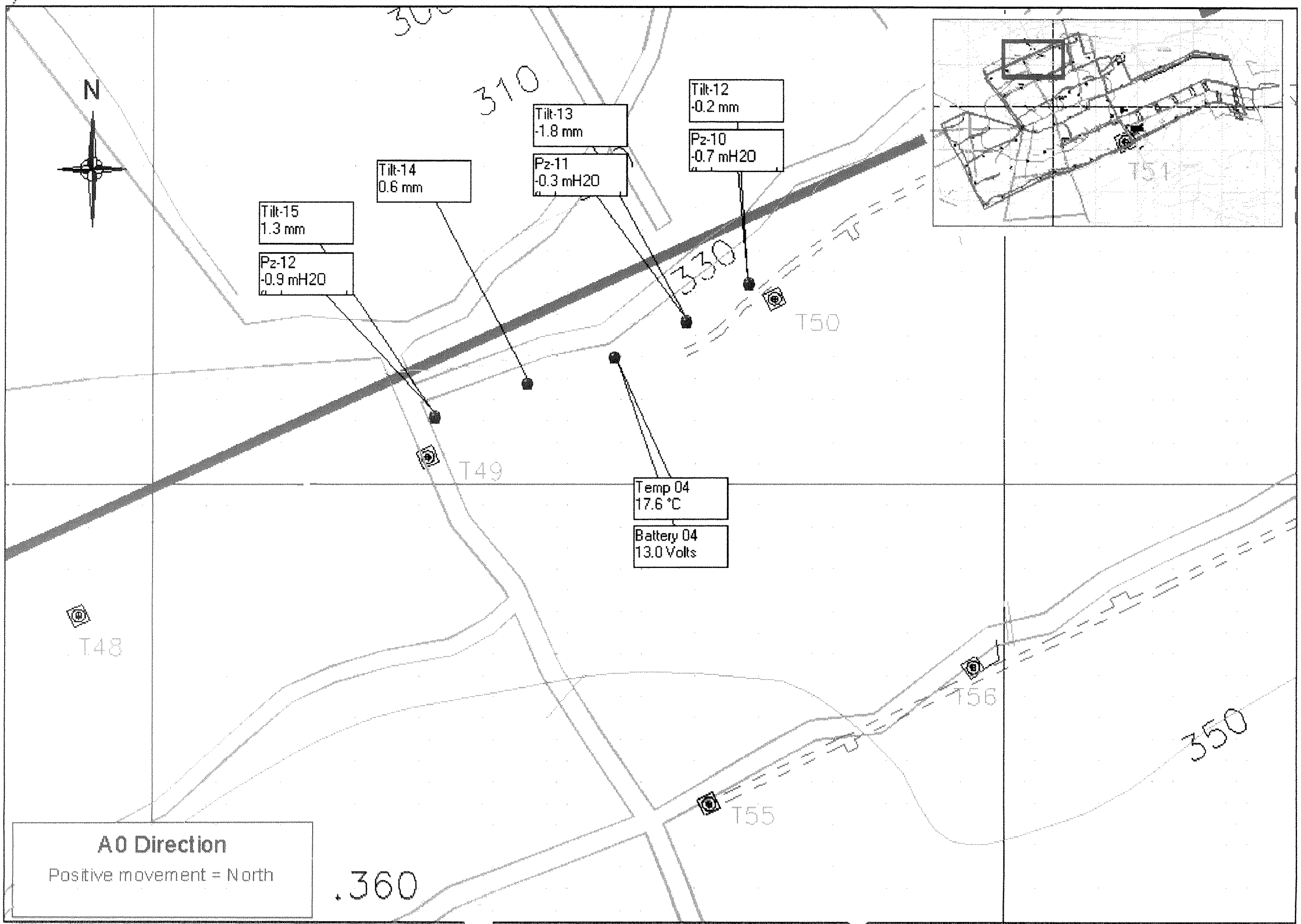
Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				2.45	4.91
T67_V8	159384	204901	2.8	0.7	9.42
				1.2	6.03
				1.7	5.51
				2.4	6.18
T67_V9	159394	204884	2.8	0.7	9.62
				1.2	6.02
				1.7	2.86
				2.2	1.81
T67_V10	159385	204987	2	0.7	4.73
				1.2	4.95
				1.55	6.95
T68_V1	159218	204721	2.5	0.7	7.13
				1.2	4.91
				1.7	4.13
				2.3	6.17
T68_V2	159286	204729	2.3	0.7	7.02
				1.2	5.97
				1.7	5.89
T68_V3	159463	204547	2.6	1	>7.49
				2	6.68
T68_V4	159455	204488	2.45	1	9.19
				1.6	6.53
				2.3	7.98
T68_V5	159312	204580	2.25	1	>5.94
				1.5	6.06
				2	5.41
T68_V6	159331	204517	2.6	1	6.91
				1.5	3.81
				2	3.85
				2.35	4.31
T69_V1	159660	204679	2.75	1.5	5.09
				2	7.5
				2.5	6.13
				3	9.92
T69_V2	159577	204708	3.6	1.5	5
				2	6.29
				2.5	5.04
				3	6.92
T69_V2a	159446	204677	~3	0.5	>9.4
				1	7.14
				1.5	4.41
				2	4.78
				2.5	5.21
				3	9.21
T69_V2b	159618	204708	3.5	1	5.53
				2	4.98
				3	4.06
				3.35	6.38
T69_V3a	159606	204756	2.7	1.5	4.44
				2	4.87
				2.4	5.03
T69_V3b	159560	204643	2.5	1	7.02
				1.7	6.7
				2.14	9.43
T69_V4	159364	204838	3.45	0.7	9.42
				1.2	9.59
				1.9	7.62
				2.5	7.84
				2.9	9.59
T69_V5	159506	204770	3.3	0.7	8.71
				1.5	6.81
				2.2	6.44
				2.9	7.42
T69_V6	159562	204770	2.35	0.7	9.61
				1.2	5.75
				1.7	4.35
				2.15	5.48
T69_V7	159581	204874	2.25	0.7	5.25
				1.2	3.89
				1.7	3.23
				2.2	4.96
T70_V1	159493	204415	2.6	1	7.23
				1.6	6.14
				2.4	6.43
T70_V2	159357	204374	2.5	1	7.71
				1.5	5.95
				2	6.03
				2.3	6.92
T71_V1	159757	204645	2.95	1.5	6.31
				2.1	6.09

Derrybrien windfarm summary of shear vane results

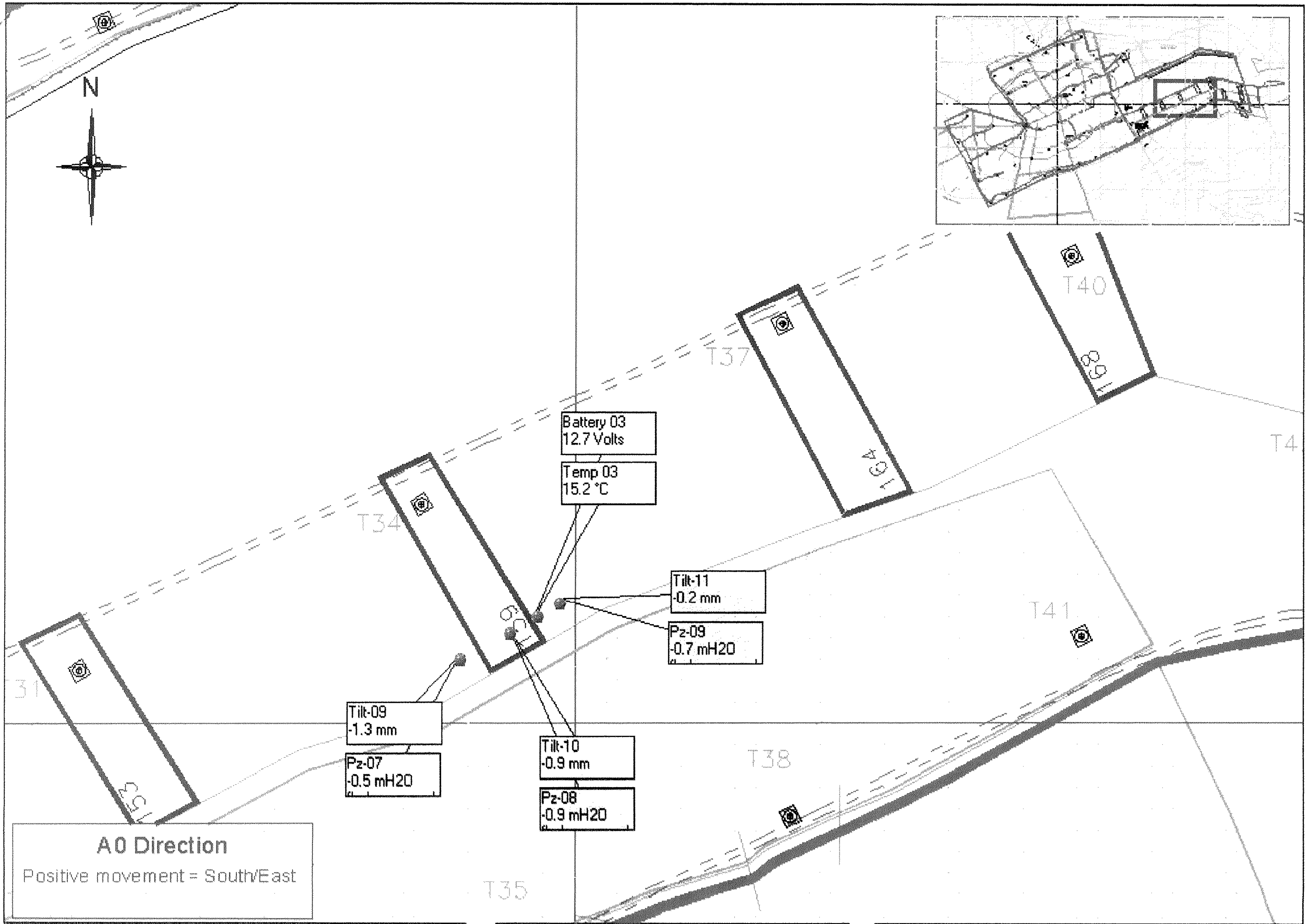
Vane ID	Easting	Northing	Probed peat depth (m)	Depth (m)	measured c_u (kPa)
				2.7	6.72
T71_V2	159659	204578	2.05	1.25	6.88
				1.75	4.75
T71_V3	159730	204570	2.55	1.5	5.76
				1.9	6.41
				2.3	6.8
T71_V1a	159731	204525	1.5	0.7	>9.81
				1.27	9.13
T71_V2a	159713	204565	2.2	0.7	>9.7
				1.5	7.71
				2.03	9.4
T71_V3a	159672	204627	2	0.7	>9.8
				1.5	>9.76
				1.87	>9.78
T71_V4	159626	204511	3	1	9.58
				2	>9.77
			unable of push further,v strong peat		
T71_V5	159619	204545	2.5	1	5.74
				1.7	6.81
				2.2	>9.62
T71_V6	159599	204590	2.5	1	5.46
				1.7	5.24
				2.1	7.02
T71_V7	159692	204738	3	1	>9.76
				2	5.83
				2.73	>10.18
T71_V8	159777	204618	3.2	1	8.58
				2	6.58
				3	>9.69
			interface onle 20cm below		
T71_V9	159765	204538	1.9	1	9.18
				1.74	>9.67
T71_V10	159749	204560	2.5	0.7	>9.75
				1.5	6.89
				2.08	9.61
T71_V11	159720	204599	2.6	1	5.34
				1.8	5.97
				2.43	6.06
Ttilt12	158845	205602	1.65	0.5	9.68
				1	7.32
				1.44	9.53
Ttilt 13b	158806	205576	1	0.7	4.84
Ttilt 13	158806	205579	1.6	0.5	9.53
				1	7.68
				1.42	8.48
TOH_V1	160047	204608	1.8	0.5	>9.55
				1	>9.67
				1.68	6.48
TOH_V2	160101	204535	1.5	0.5	7.48
				1	5.07
TOH_V3	160115	204507	1.3	0.5	7.67
				1.16	4.79
TOH_V4	160146	204474	1.5	0.5	>9.59
				1	5.44
TOH_V5	160198	204400	2	0.7	>9.68
				1.2	7.94
				1.77	7.43
TOH_V6	160240	204347	1.85	0.7	>9.54
				1.2	7.69
				1.64	8.5
TOH_V7	160261	204315	1.8	0.7	9.56
				1.2	8.47
				1.55	7.49
TOH_V8	160281	204296	1.4	0.5	9.57
				1	7.05
TOH_V9	160311	204255	1.7	0.5	9.62
				1	8.11
TOH_V10	160326	204217	1.2	0.7	9.59
				1.2	8.73
TOH_V11	160345	204206	1	0.7	>9.59
TOH_V12	160359	204178	0.95	0.7	>9.59
TOH_V13	160382	204153	0.85	0.62	>9.52

T67_V11				0.7	9.71
				1.2	8.37
				1.7	7.09
				2.2	7.2
T67_V12				0.7	7.04
				1.2	4.42
				1.7	6.26
				2.2	5.25

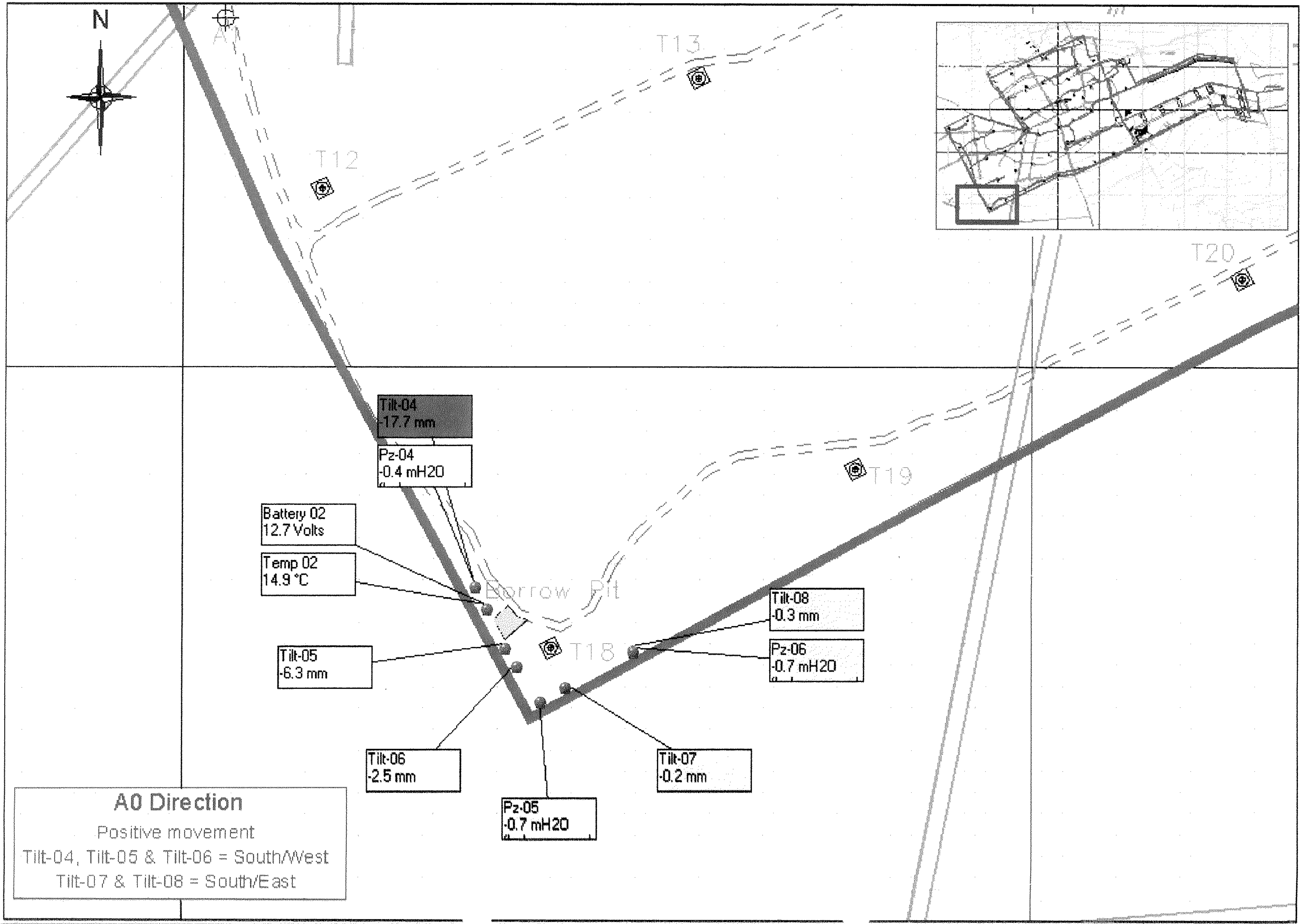

N
Tilt-01
0.6 mm
Pz-01
-0.6 mH2O
Tilt-02
-0.2 mm
Pz-02
-0.4 mH2O
Battery 01
12.8 Volts
Temp 01
18.5 °C
T2
Tilt-03
0.0 mm
Pz-03
-1.1 mH2O
T1
T5
T4
T3
A0 Direction
Positive movement = West

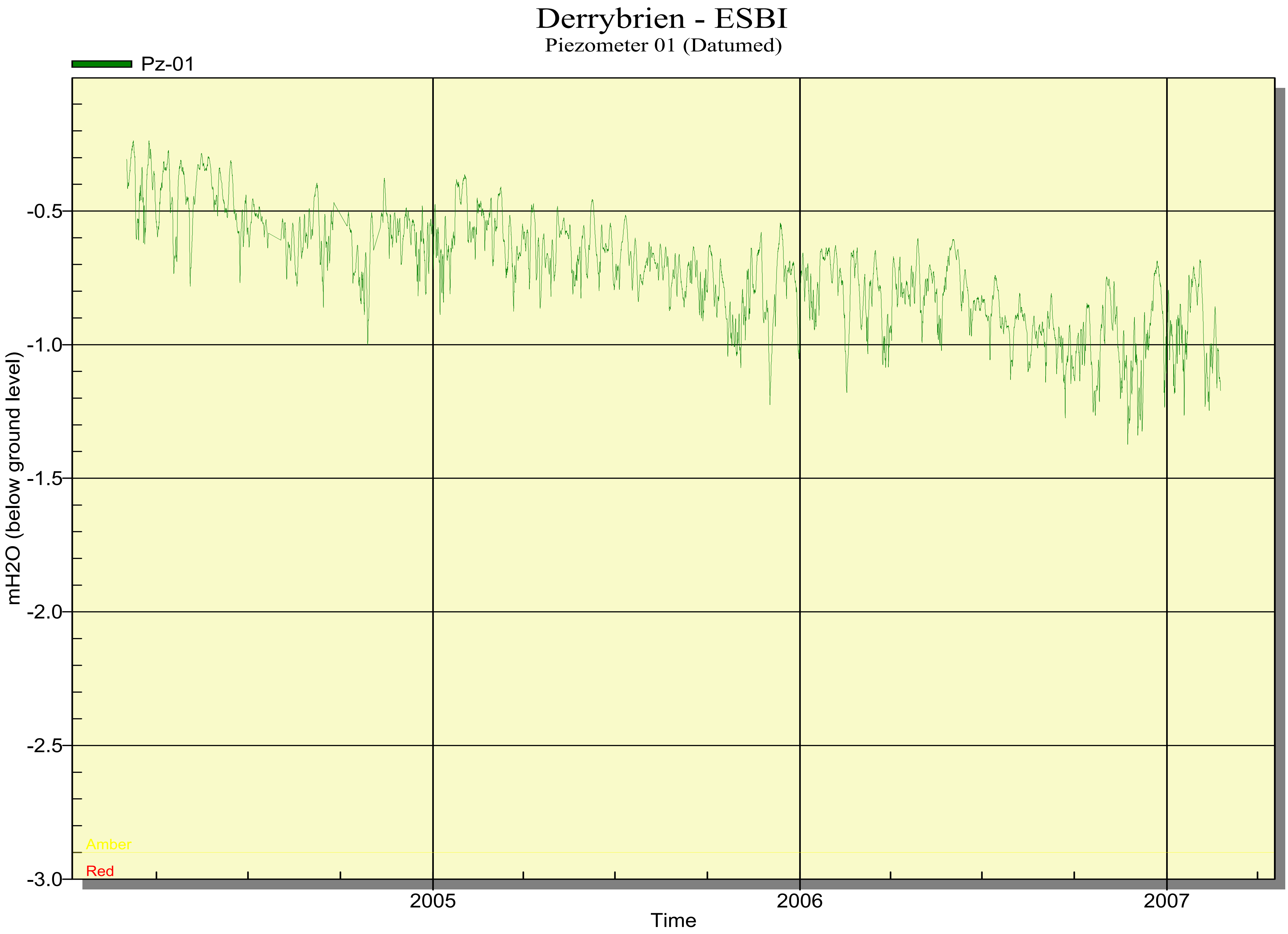


ITM Ltd - Map view of: 'Logger 4'. - Logger readings timed at: 11/08/2004 21:00:00 | 12/08/2004 | 13:51



ITM Ltd · Map view of: 'Logger 3'. · Logger readings timed at: 11/08/2004 21:00:00 | 12/08/2004 | 13:50

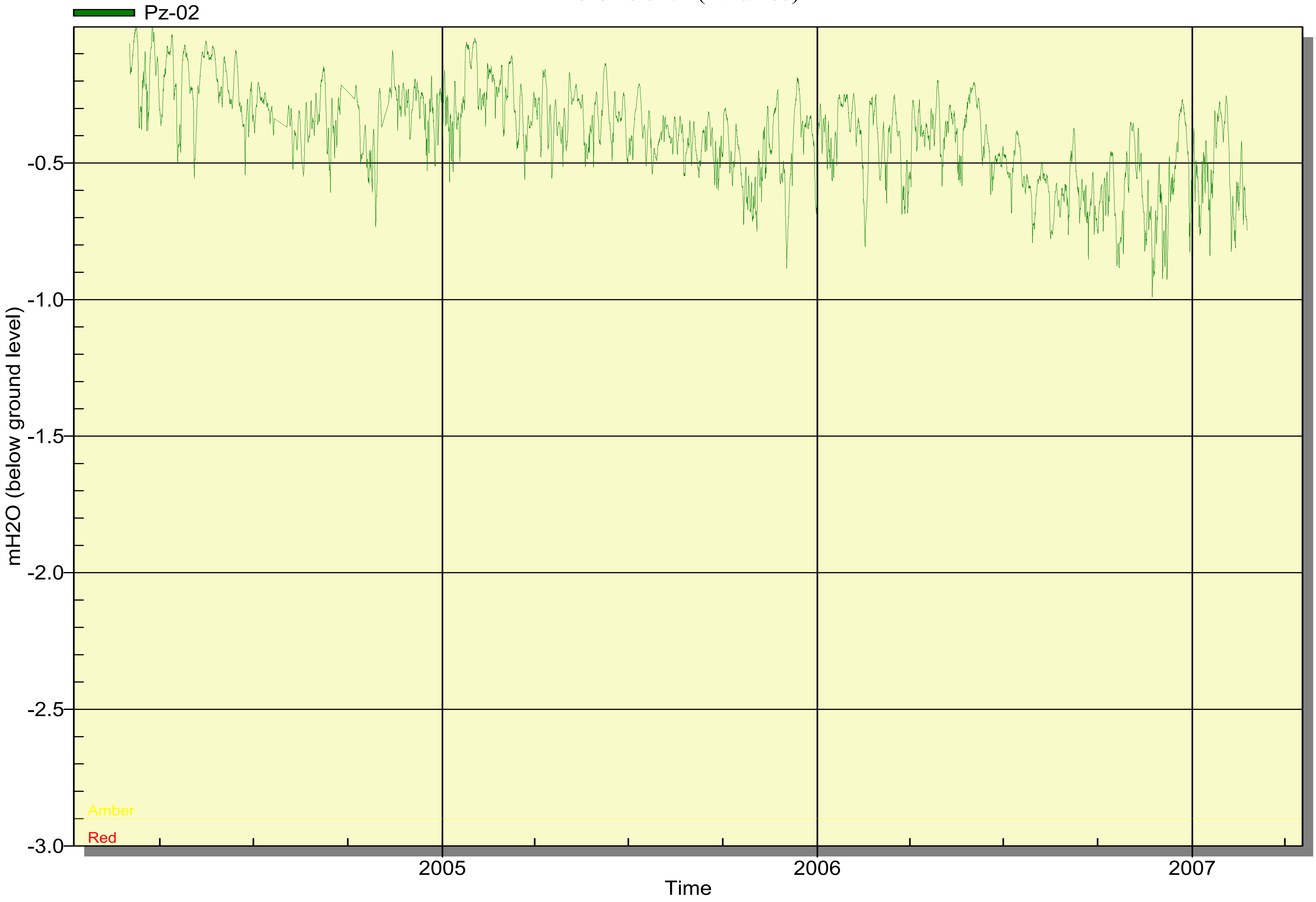

N
T13
T12
T20
Tilt-04
-17.7 mm
Pz-04
-0.4 mH20
T19
Battery 02
12.7 Volts
Temp 02
14.9 °C
Borrow Pit
Tilt-08
-0.3 mm
Pz-06
-0.7 mH20
T18
Tilt-05
-6.3 mm
Tilt-06
-2.5 mm
Tilt-07
-0.2 mm
Pz-05
-0.7 mH20
A0 Direction
Positive movement
Tilt-04, Tilt-05 & Tilt-06 = South/West
Tilt-07 & Tilt-08 = South/East

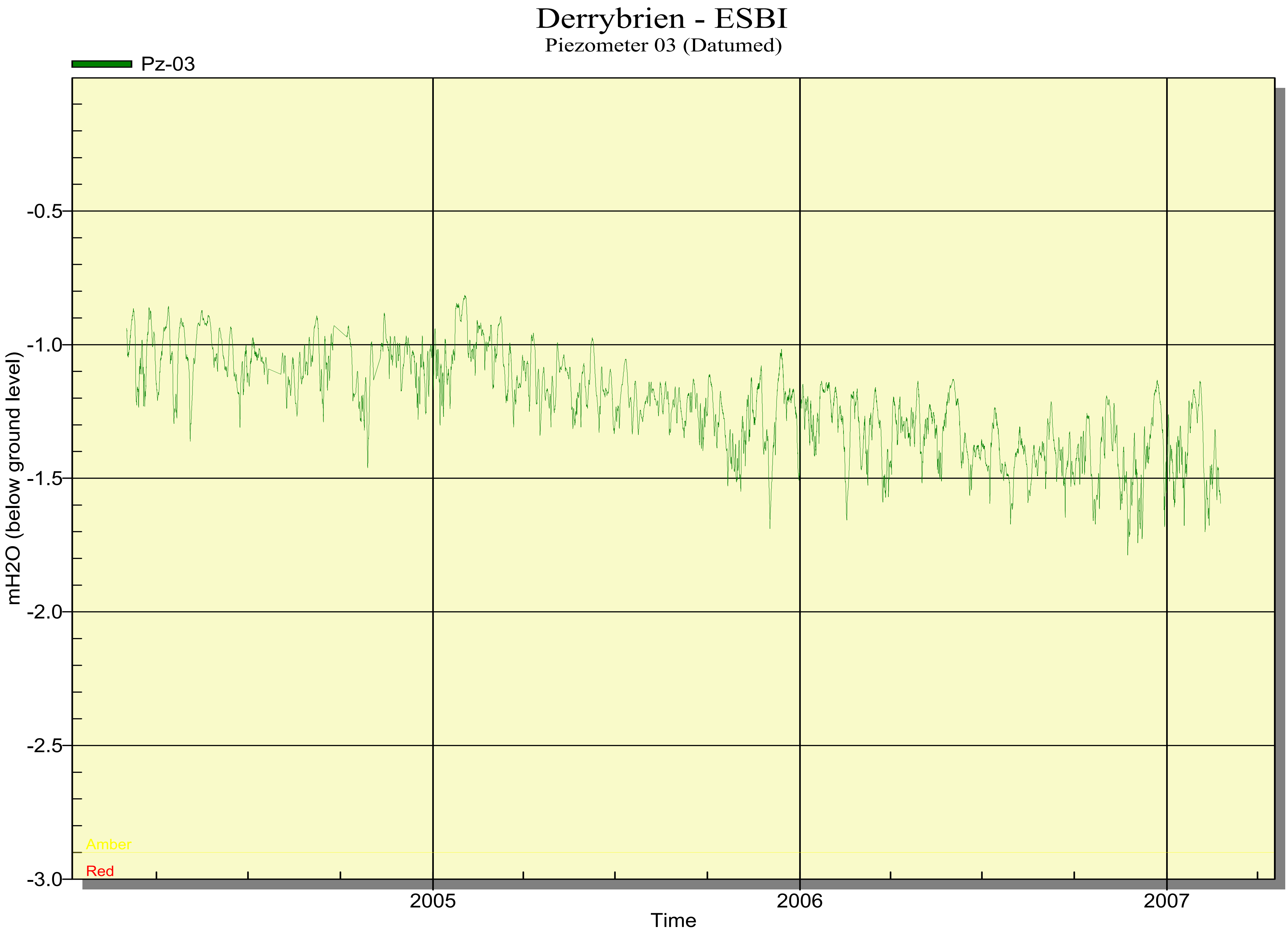


Derrybrien - ESBI
Piezometer 01 (Datumed)
Pz-01
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
mH2O (below ground level)
Amber
Red
2005
2006
2007
Time

Derrybrien - ESBI

Piezometer 02 (Datumed)

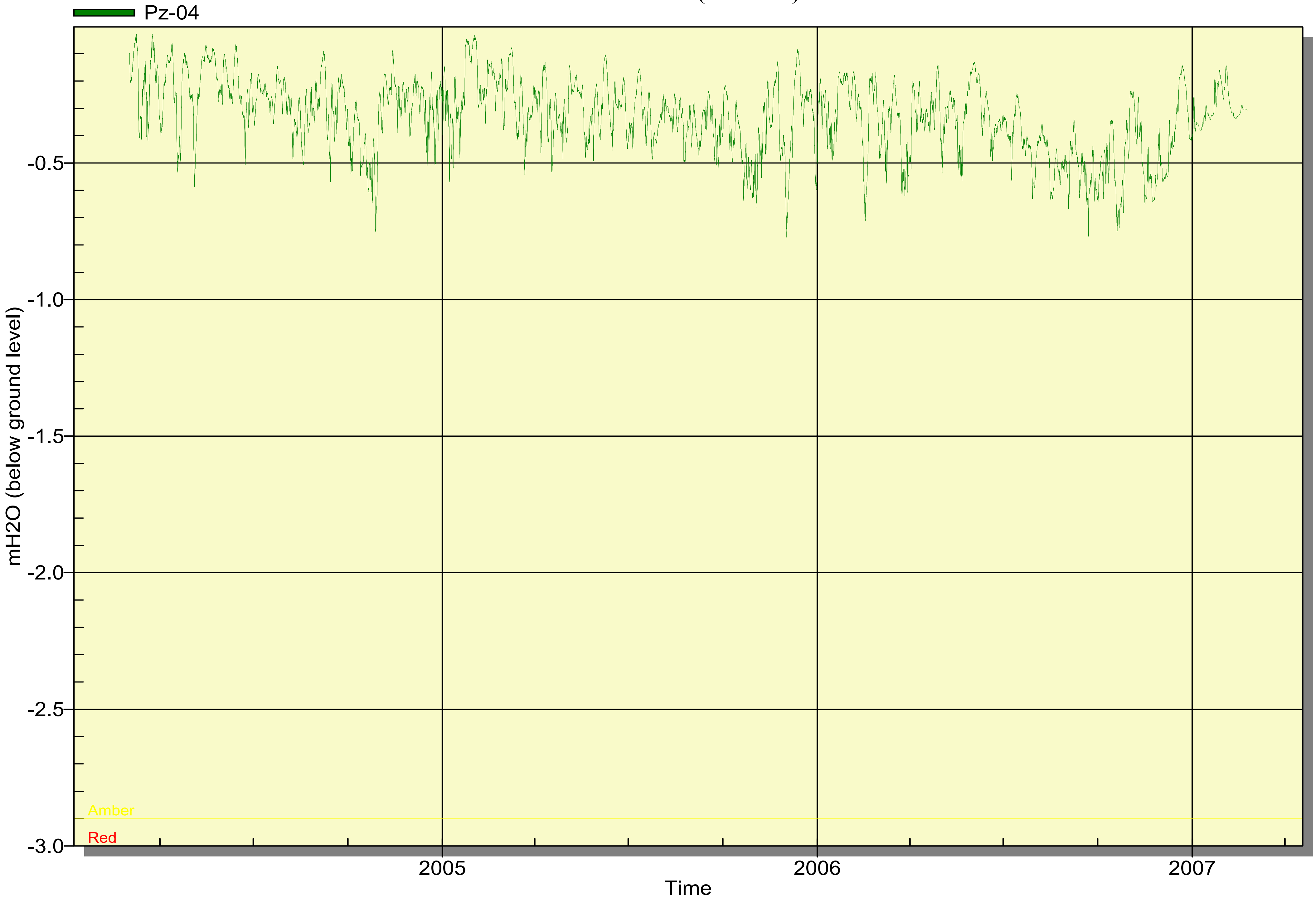


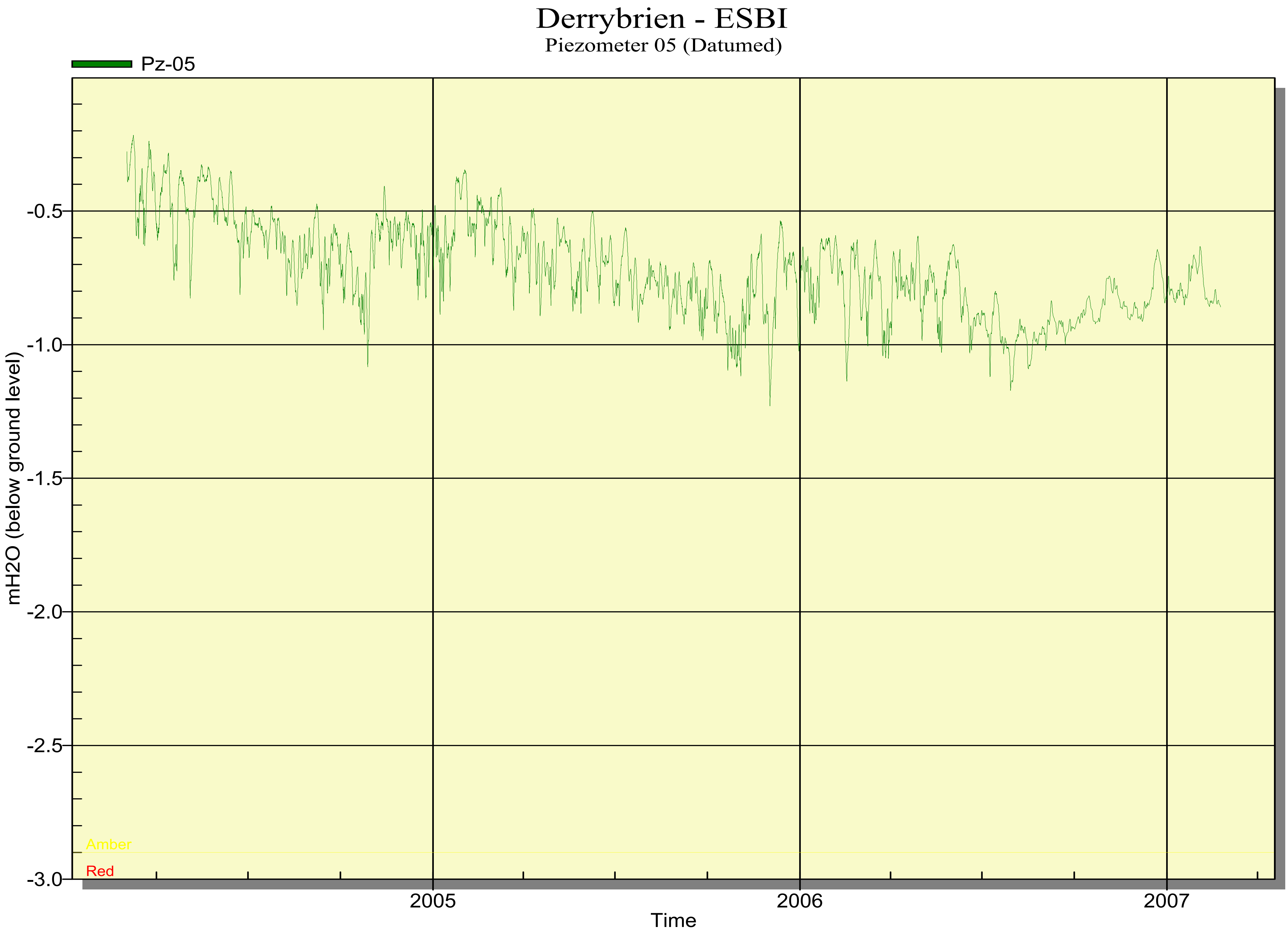


Derrybrien - ESBI
Piezometer 03 (Datumed)
Pz-03
mH2O (below ground level)
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
Amber
Red
2005
2006
2007
Time

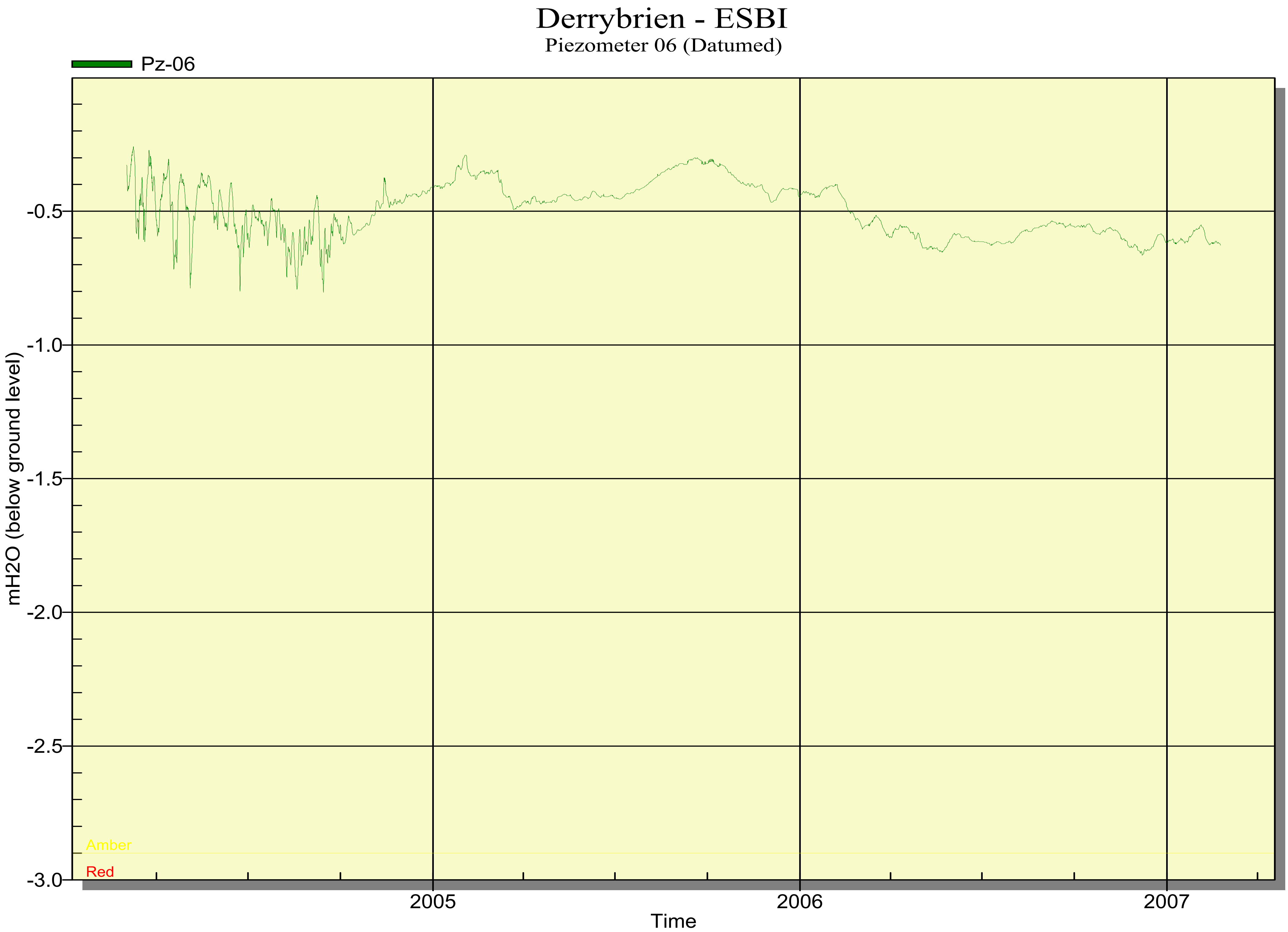
Derrybrien - ESBI

Piezometer 04 (Datumed)





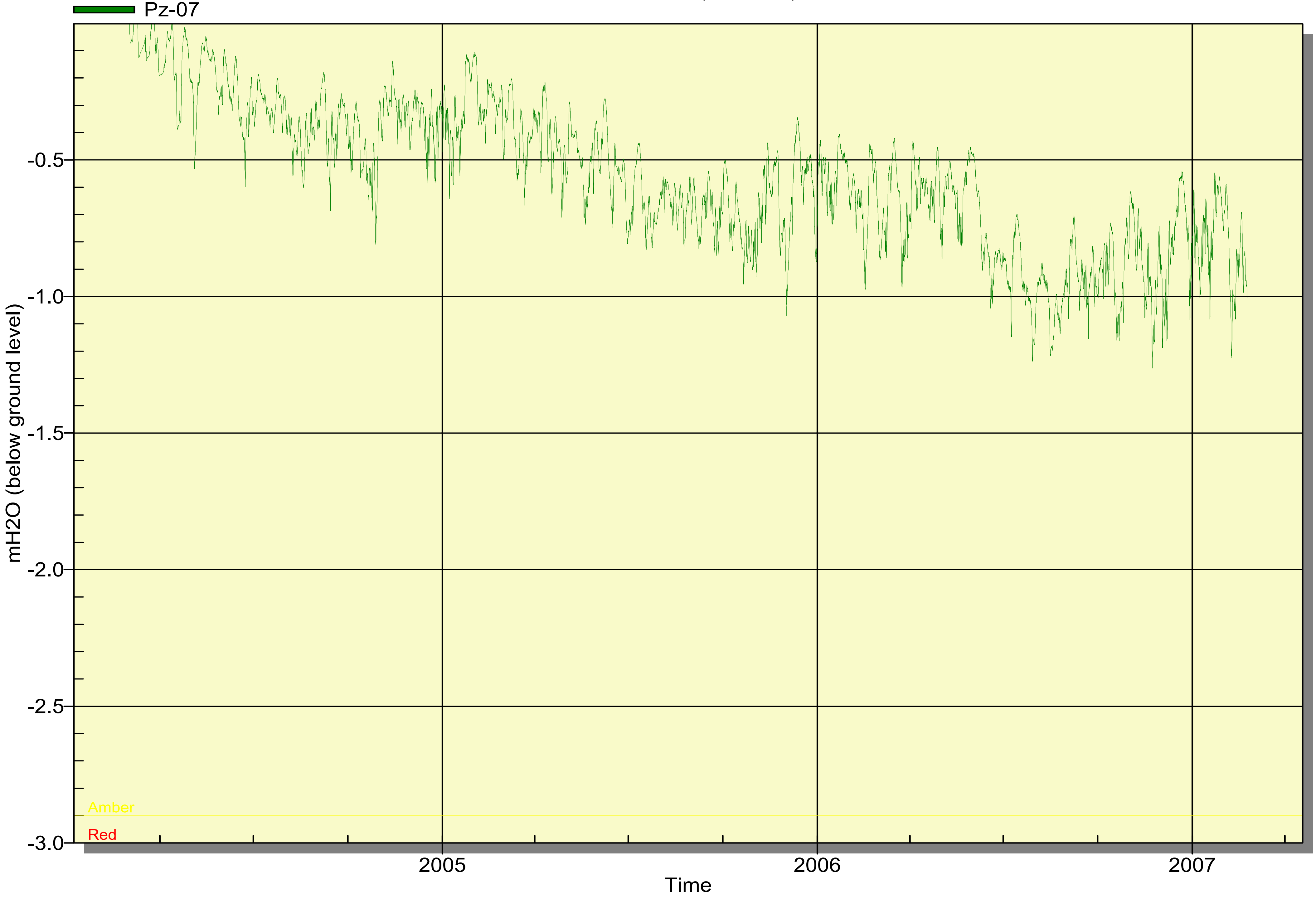
Derrybrien - ESBI
Piezometer 05 (Datumed)
Pz-05
mH2O (below ground level)
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
Amber
Red
2005
2006
2007
Time

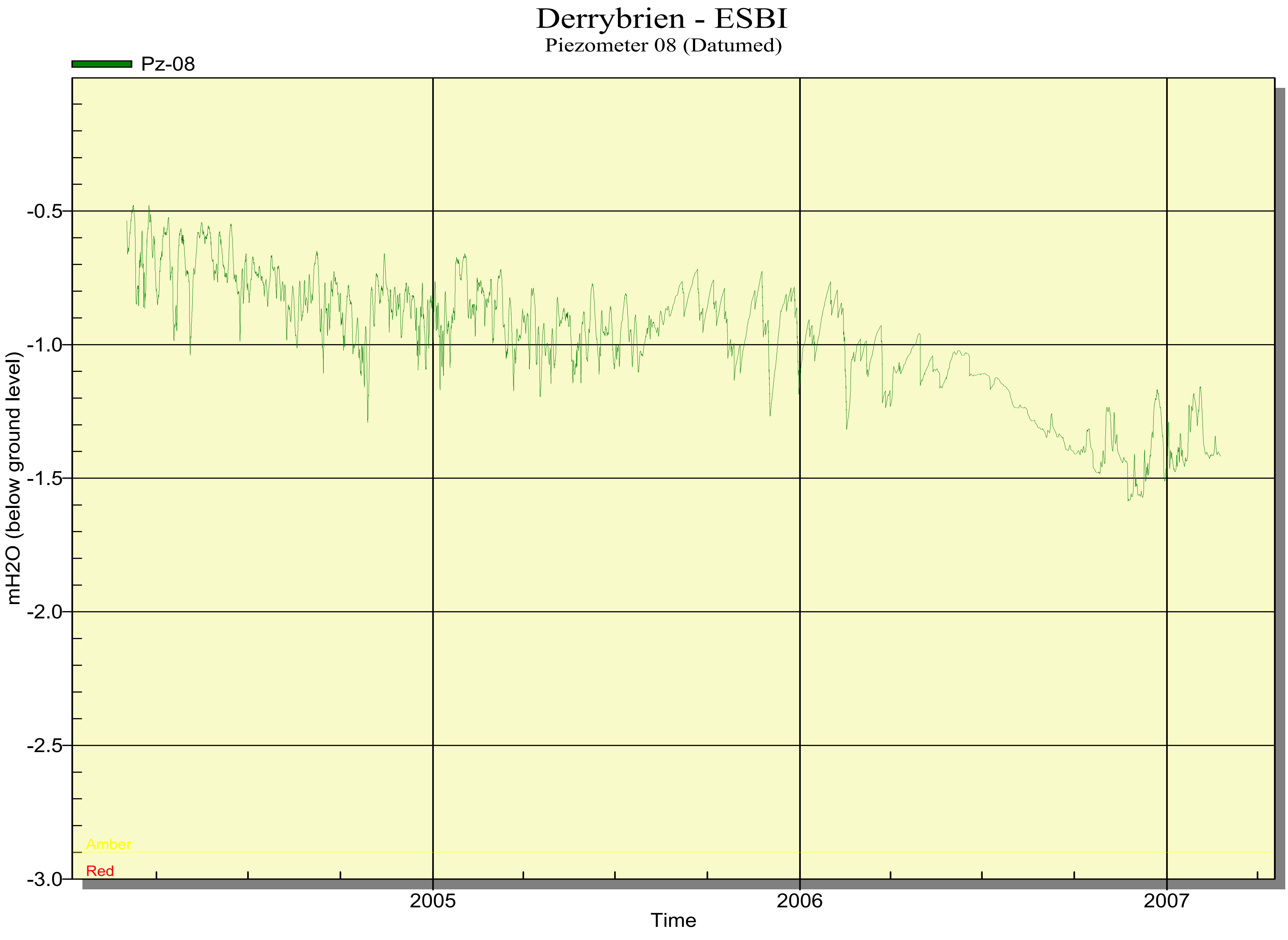


Derrybrien - ESBI
Piezometer 06 (Datumed)
Pz-06
mH2O (below ground level)
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
Amber
Red
2005
2006
2007
Time

Derrybrien - ESBI

Piezometer 07 (Datumed)

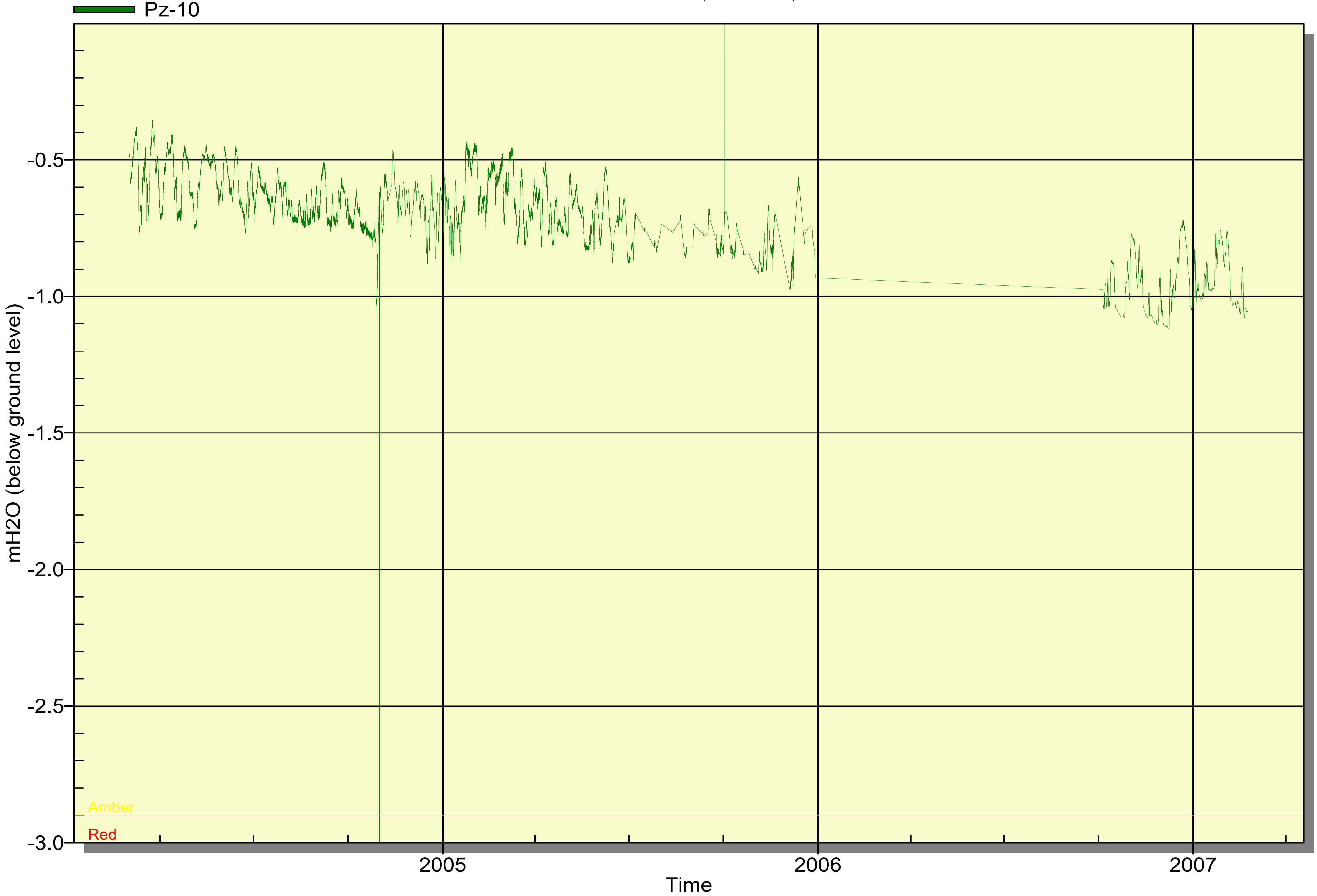


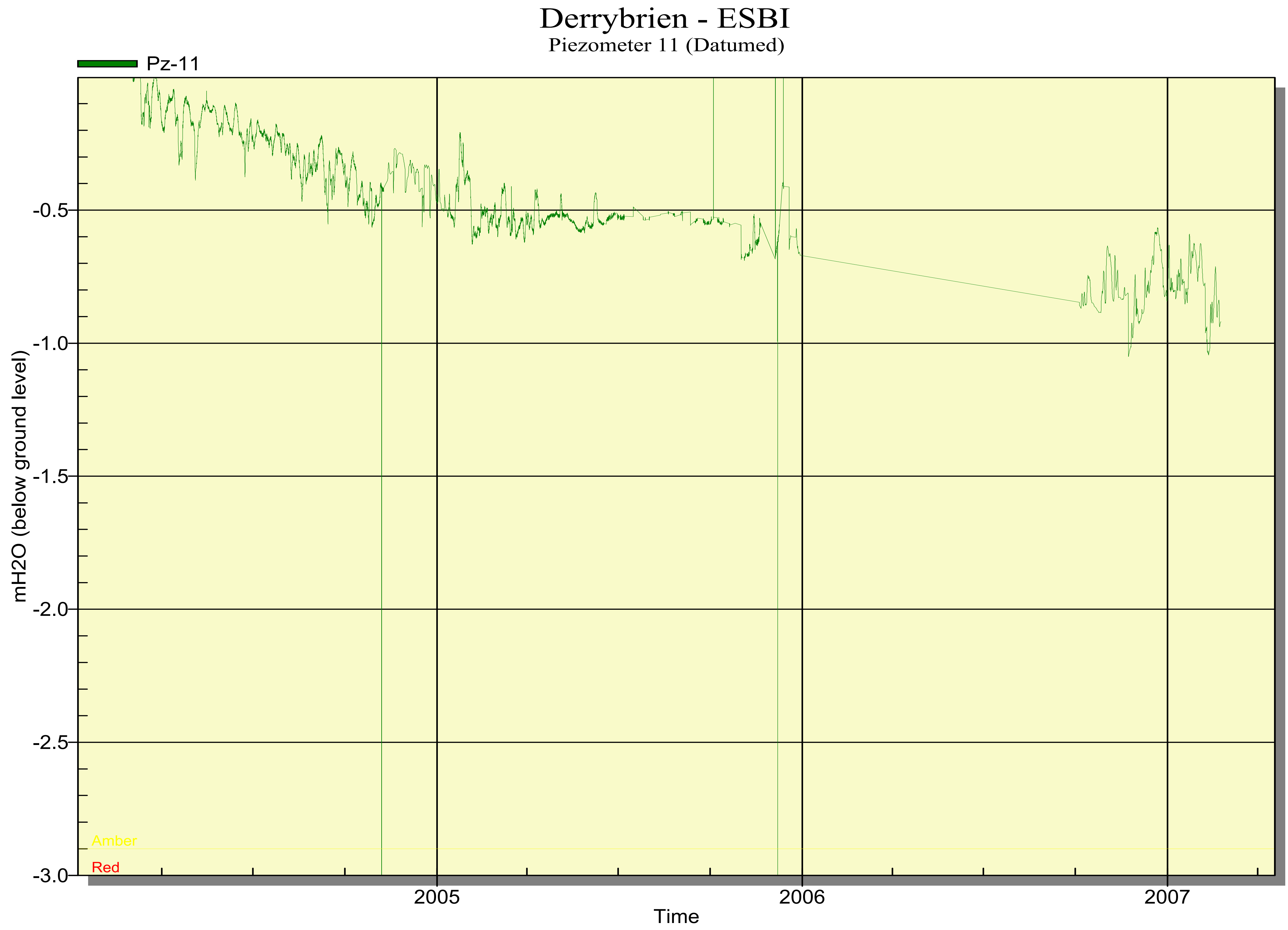


Derrybrien - ESBI
Piezometer 08 (Datumed)
Pz-08
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
mH2O (below ground level)
Amber
Red
2005
2006
2007
Time

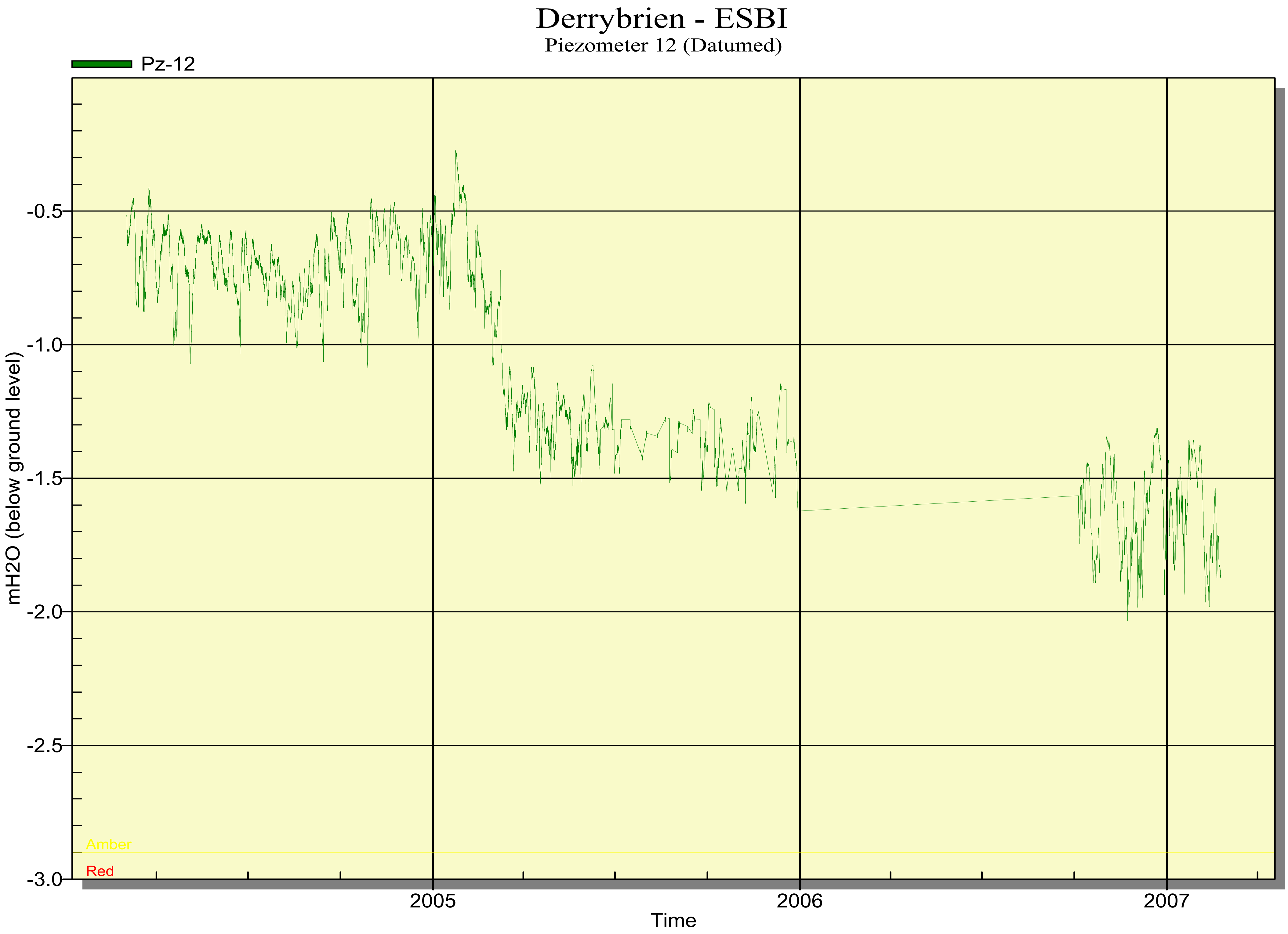
Derrybrien - ESBI

Piezometer 10 (Datumed)





Derrybrien - ESBI
Piezometer 11 (Datumed)
Pz-11
mH2O (below ground level)
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
Amber
Red
2005
2006
2007
Time



Derrybrien - ESBI
Piezometer 12 (Datumed)
Pz-12
mH2O (below ground level)
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
Amber
Red
2005
2006
2007
Time