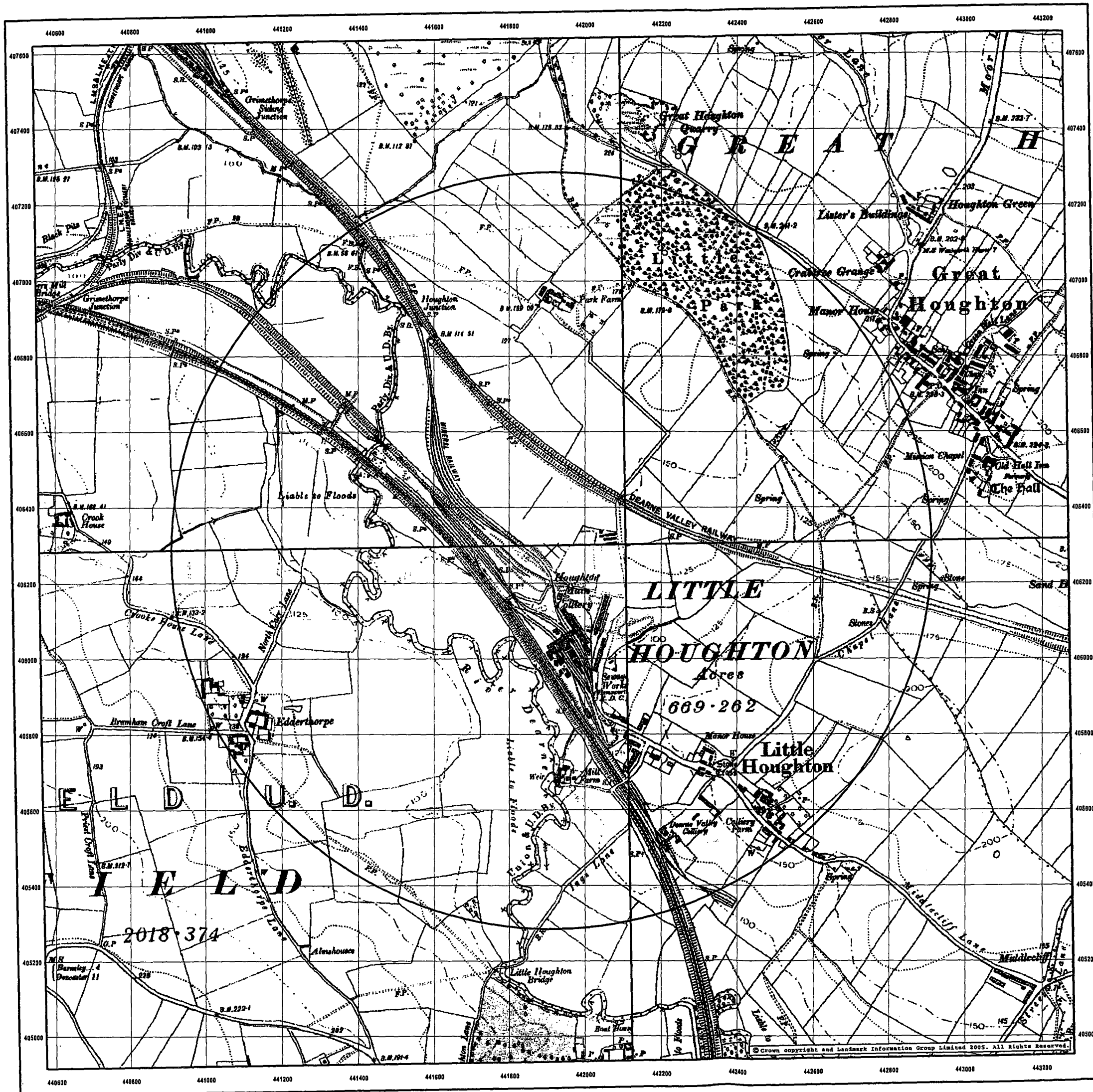




**CLIENT DETAILS** Envirocheck Order No. **EC12202661\_1\_1**  
(04-Jul-2008 12:00)

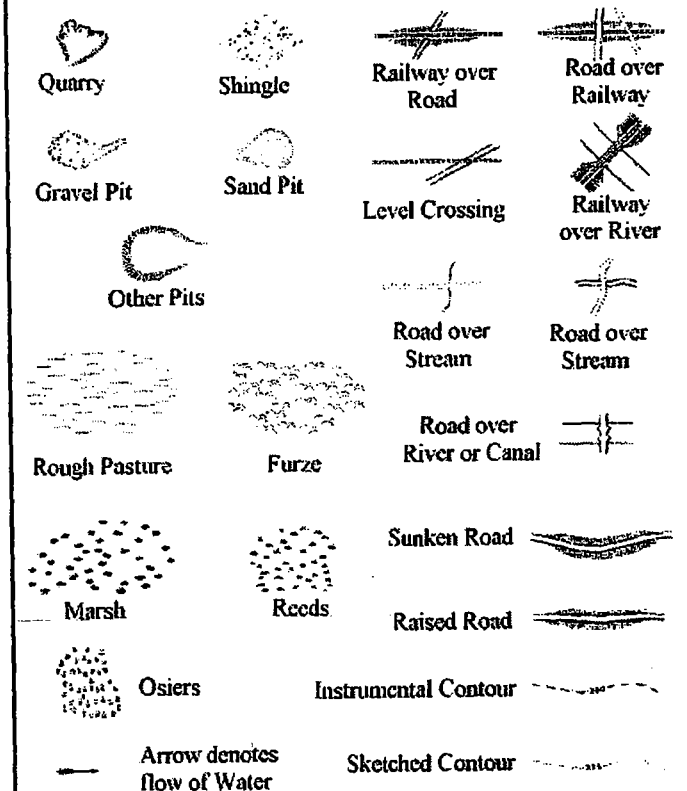
Customer Ref: C Nunn, 9735  
Res Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS** Grid Reference **441910 406290**

Houghton Main

South Yorkshire

**Historical Map Legend**



**Ordnance Survey County Series**

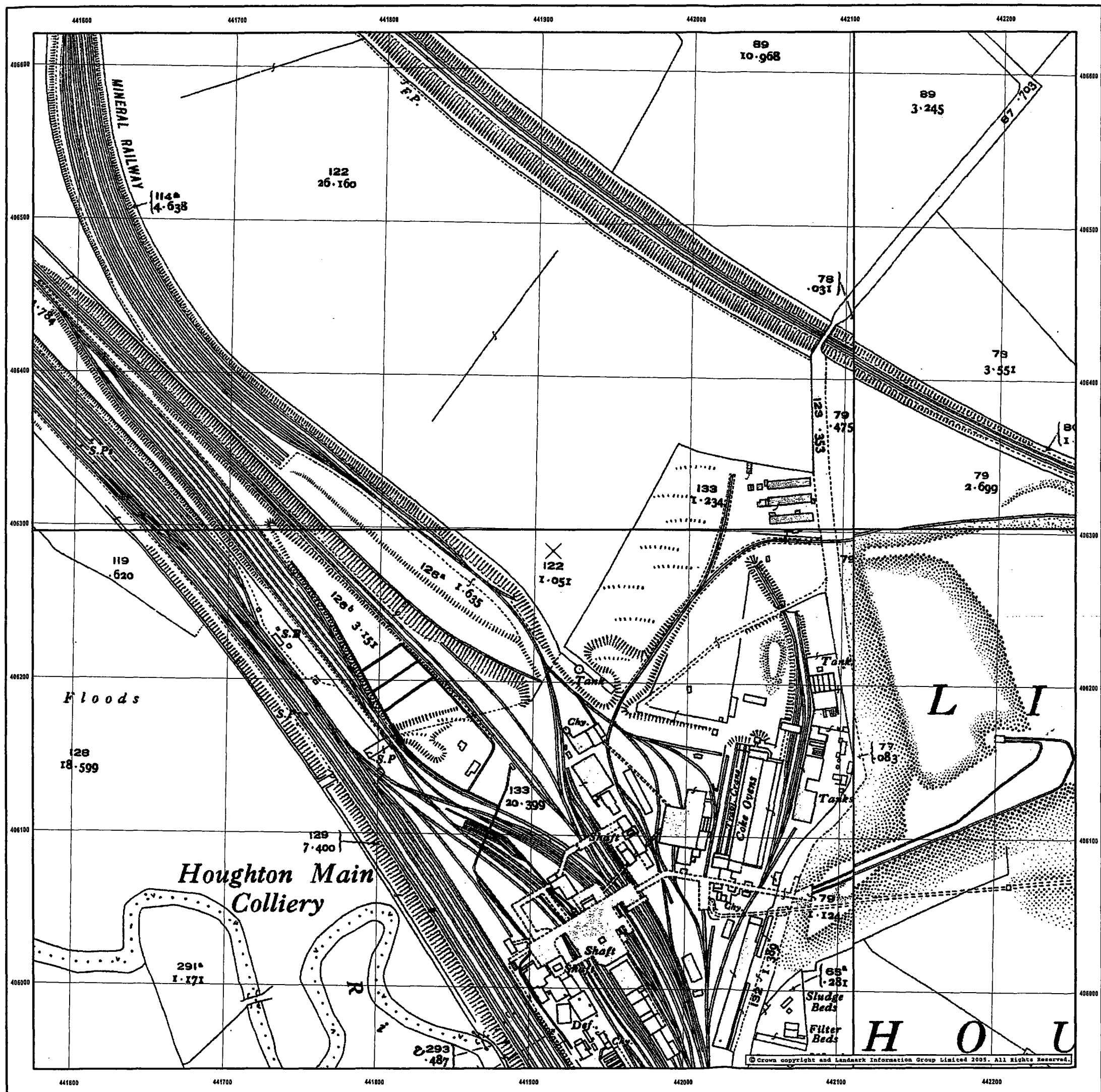
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

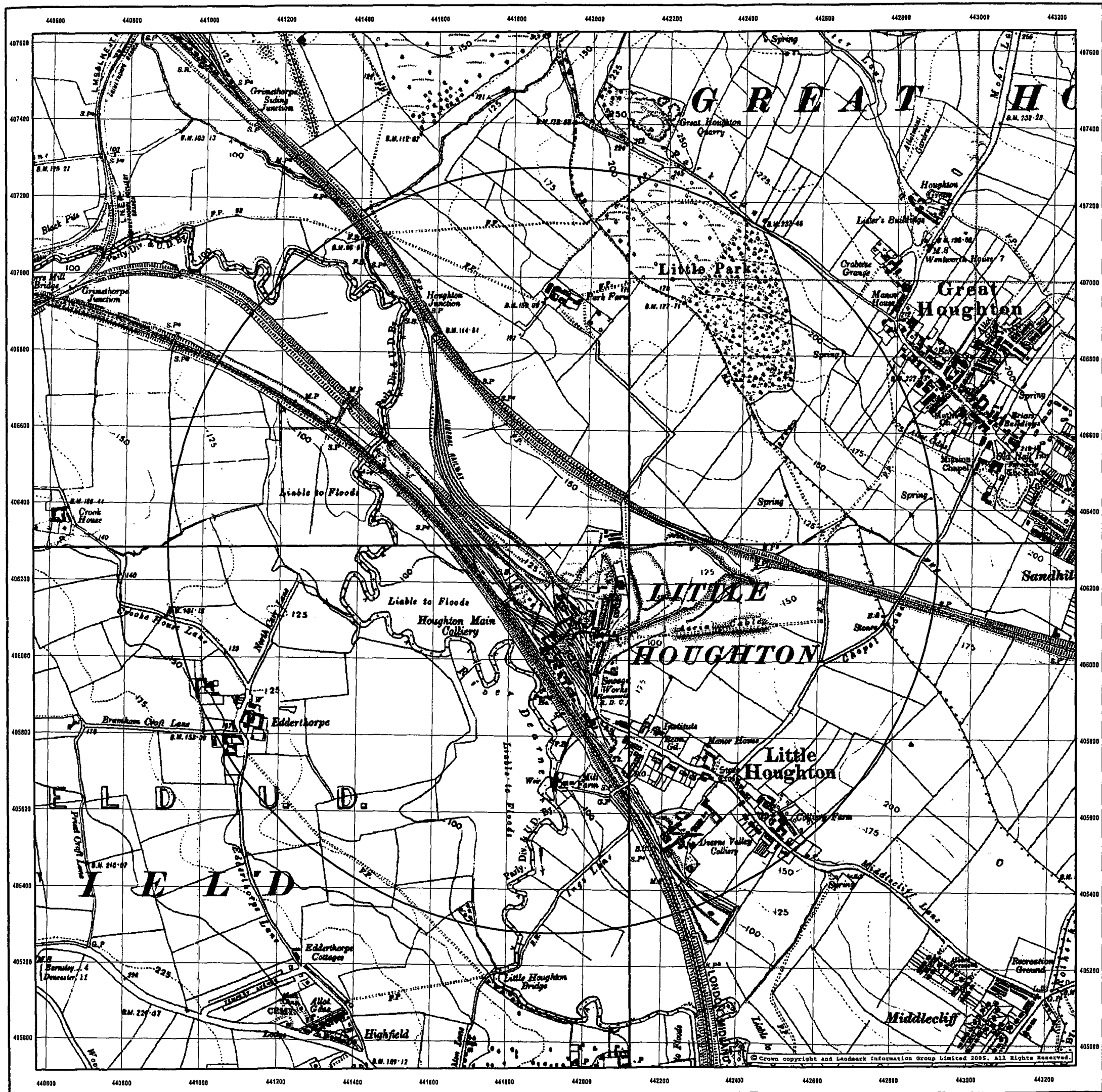
In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

**YORKSHIRE**  
Published 1906 to 1907  
Source map scale - 1:10,560

|      |      |
|------|------|
| 1906 | 1907 |
| 1907 | 1906 |

Date(s) of Publication 13 of 21





**CLIENT DETAILS** Envirocheck Order No. **EC12202661\_1**  
(04-Jul-2008 12:30)

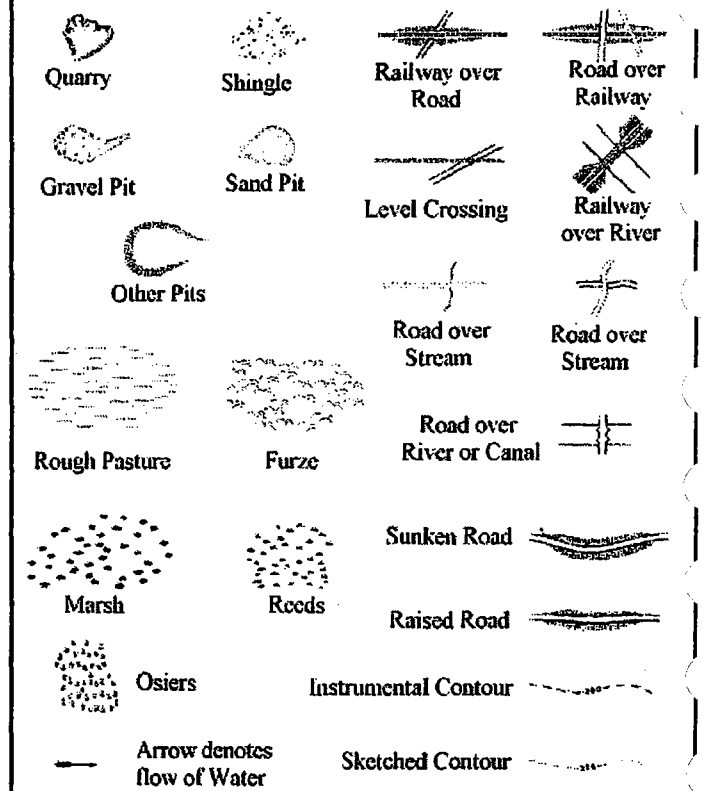
Customer Ref: C Nunn, 9735  
Rea Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS** Grid Reference **441910 406290**

Houghton Main

South Yorkshire

**Historical Map Legend**

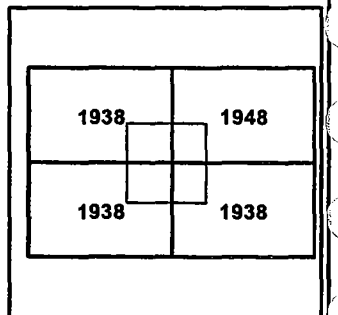


**Ordnance Survey County Series**

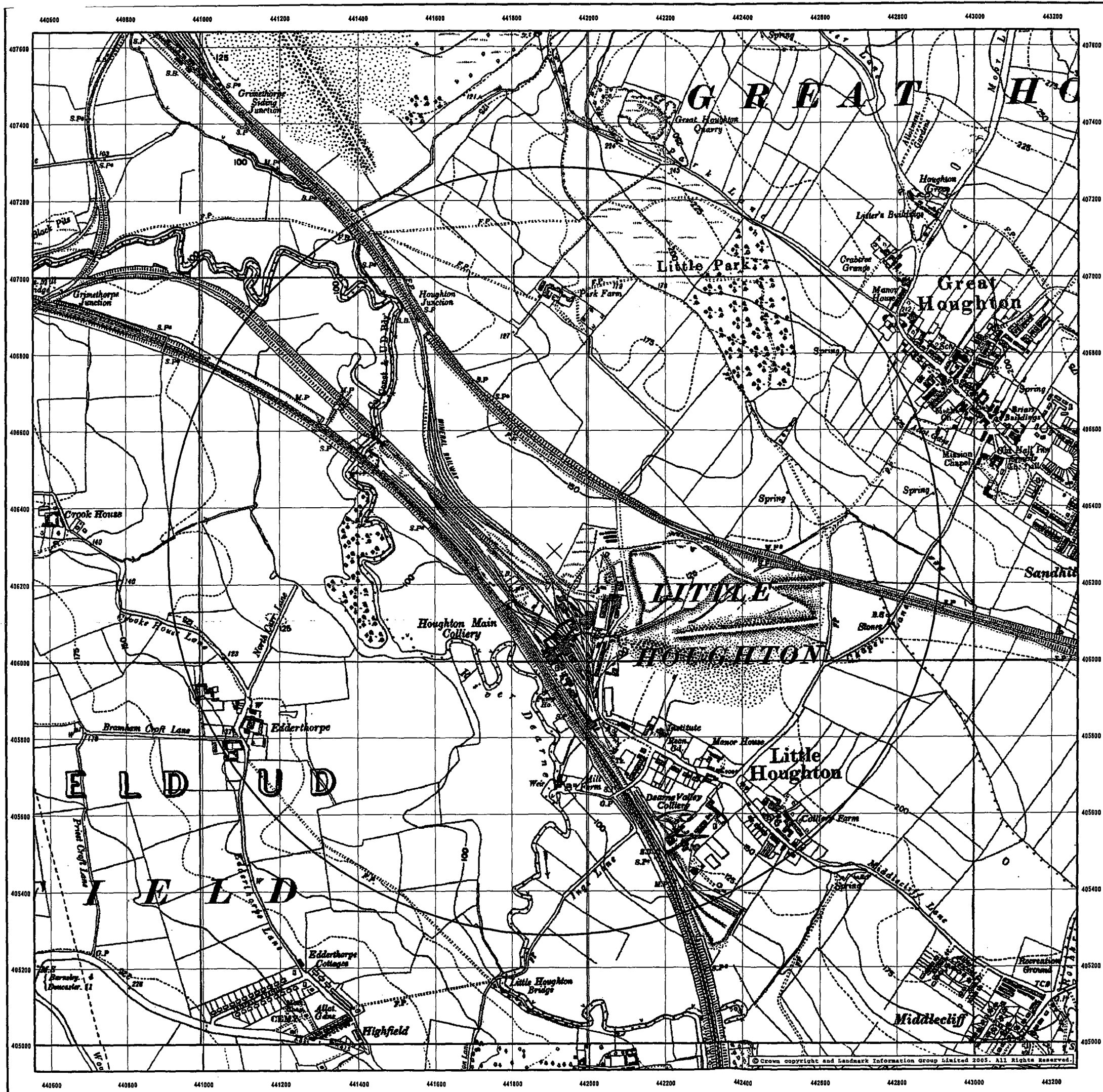
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

**YORKSHIRE**  
Published 1938 to 1948  
Source map scale - 1:10,560



Date(s) of Publication 18 of 21



**CLIENT DETAILS**

Envirocheck Order No. EC12202661\_1\_1  
(04-Jul-2009 12:31)

Customer Ref: C Nunn, 9735  
Rsa Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS**

Grid Reference 441910 406290

Houghton Main

South Yorkshire

**Historical Map Legend**

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
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|  |  |  |

**Ordnance Survey Plan**

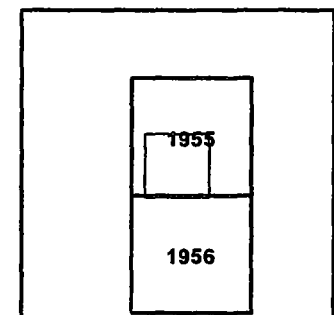
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1954 the 1:25,000 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published data given on the right therefore is often some years later than the surveyed data. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

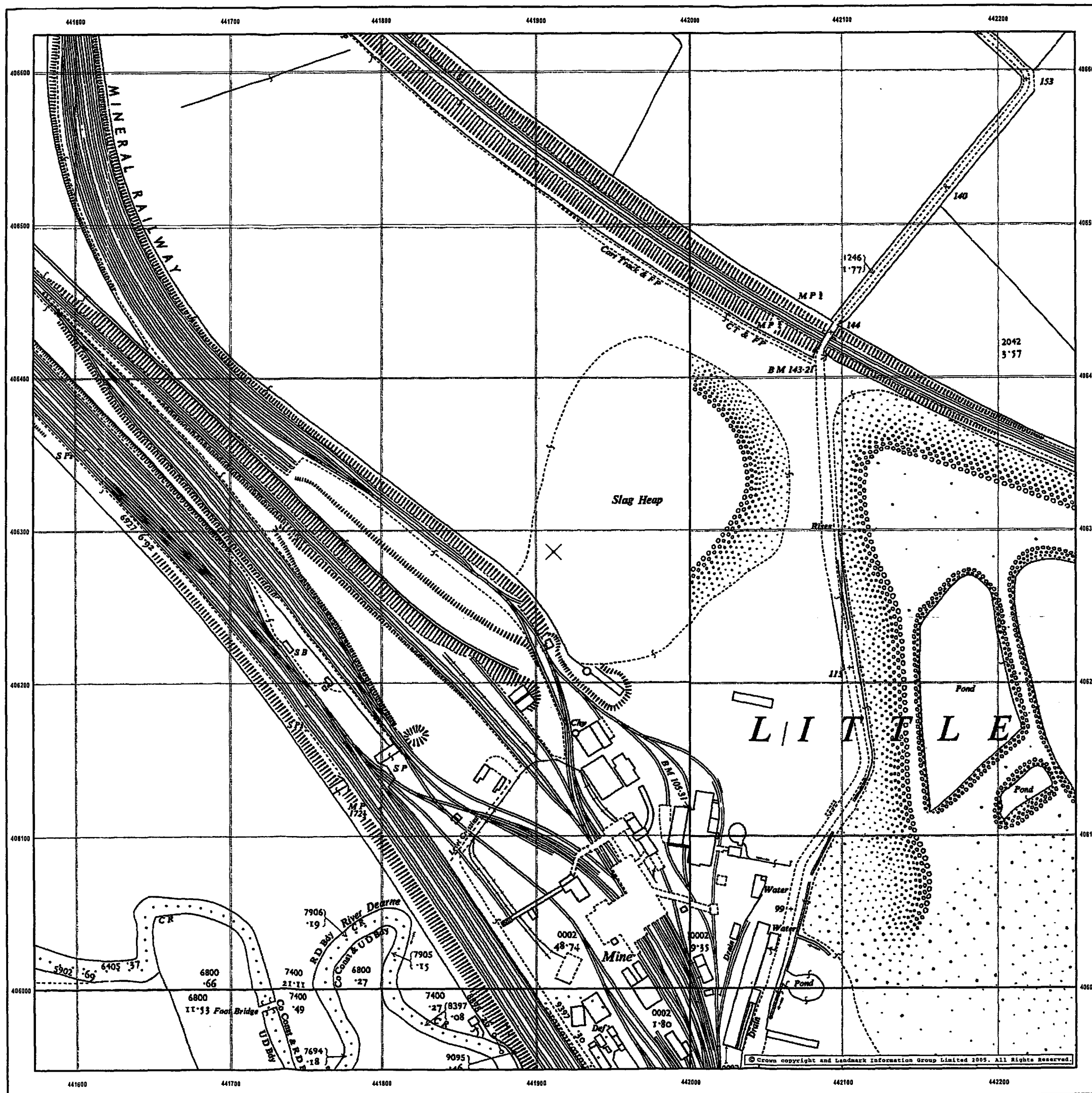
In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1979, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

**ORDNANCE SURVEY PLAN**

Published 1955 to 1956

Source map scale - 1:10,560





**CLIENT DETAILS** Envirocheck Order No. EC12202661\_1\_1  
 Customer Ref: C Nunn,9735  
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 Rookery Farm Mill Road, Battisford  
 Stowmarket  
 Suffolk IP14 2LT

**SITE DETAILS** Grid Reference 441910 406290  
 Houghton Main  
 South Yorkshire

### Historical Map Legend

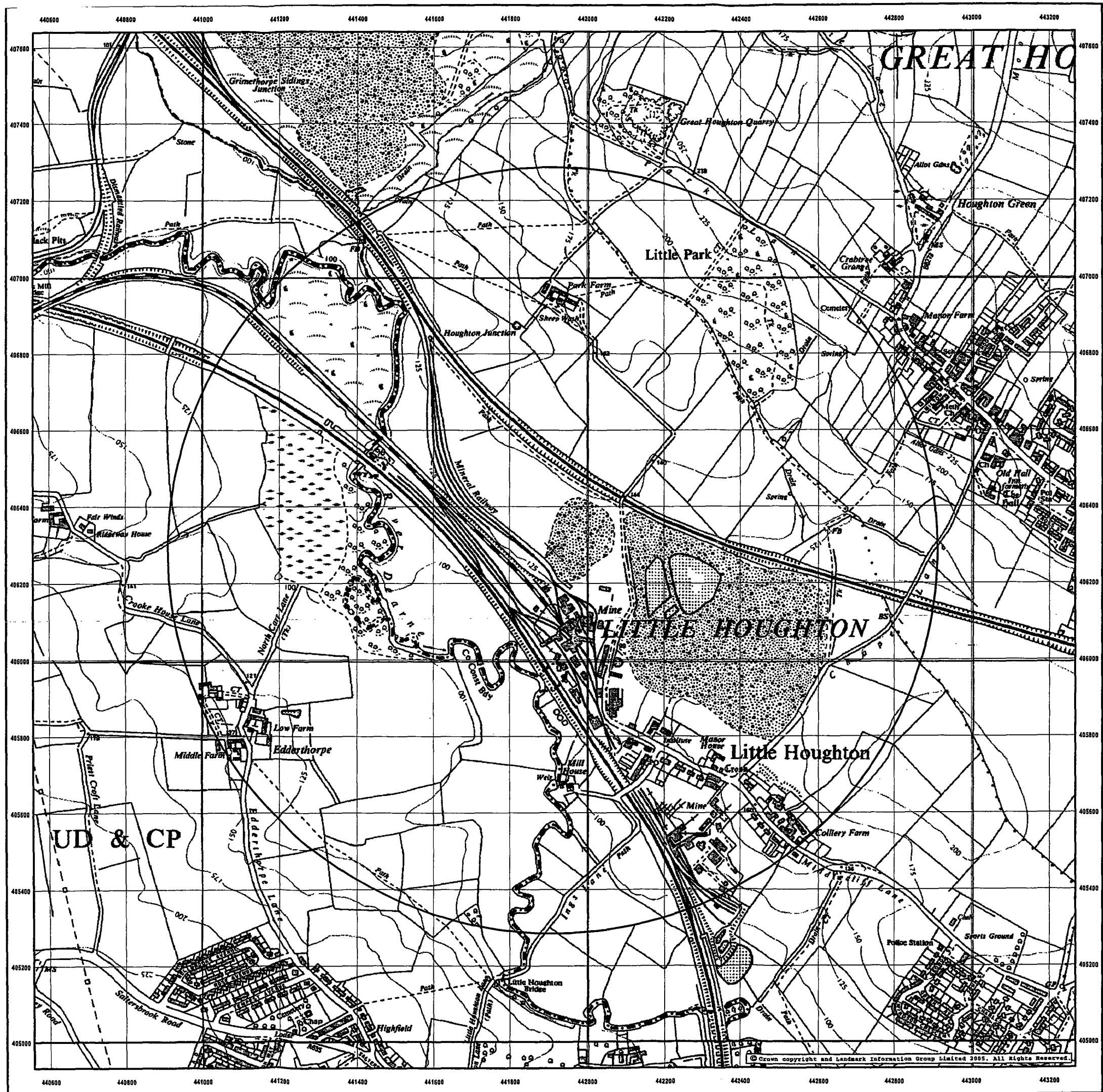
|                                        |                                      |                                |
|----------------------------------------|--------------------------------------|--------------------------------|
|                                        |                                      |                                |
| Inactive Quarry, Chalk Pit or Clay Pit | Active Quarry, Chalk Pit or Clay Pit | Culvert                        |
|                                        |                                      |                                |
| Slope                                  | Slope                                |                                |
|                                        |                                      |                                |
| Pylon                                  | Electricity Transmission Line        | Direction of Water flow        |
|                                        |                                      |                                |
| Marsh                                  | Saltings                             | Orchard Tree                   |
|                                        |                                      |                                |
| Rough Grassland                        | Scrub                                | Heath                          |
|                                        |                                      |                                |
| Coniferous Tree (Surveyed)             | Coniferous Tree (Not Surveyed)       | Non-coniferous Tree (Surveyed) |
|                                        |                                      |                                |
| Non-coniferous Tree (Not Surveyed)     |                                      |                                |

**Ordnance Survey Plan**  
 The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given on the right is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

**ORDNANCE SURVEY PLAN**  
 Published 1962  
 Source map scale - 1:2,500

|      |      |
|------|------|
| 1962 | 1962 |
| 1962 | 1962 |

Date(s) of Publication 4 of 21

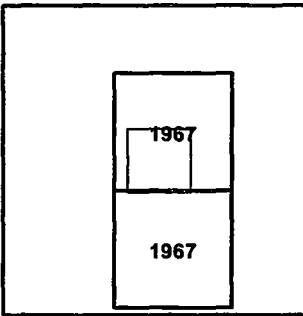


**CLIENT DETAILS**      Envirocheck Order No. **EC12202661\_1**  
(04-Jul-2008 12:01)  
Customer Ref: c Nunn,9735  
Rea Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

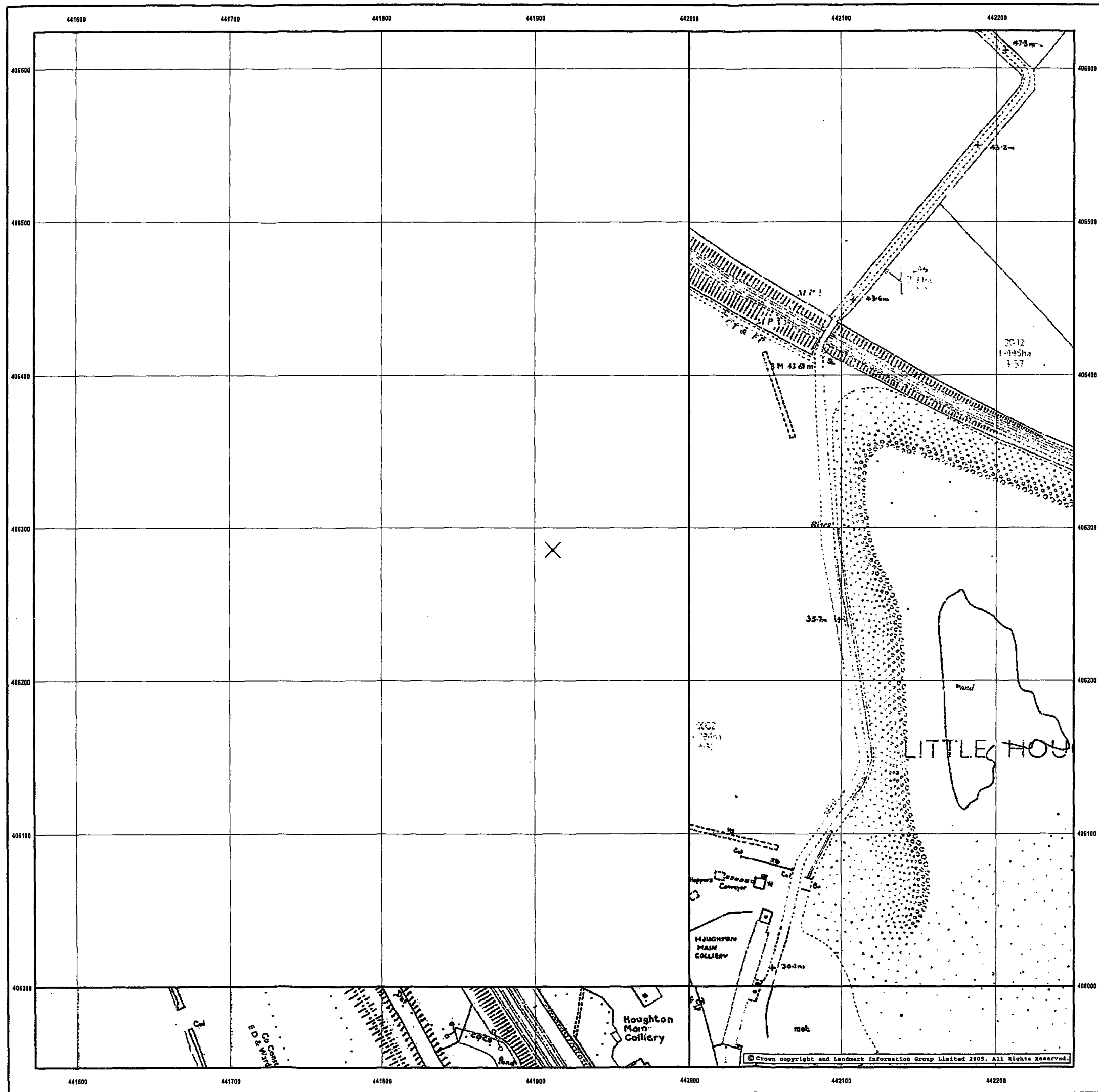
**SITE DETAILS**      Grid Reference      **441910      406290**  
Houghton Main  
  
South Yorkshire

| Historical Map Legend |                                 |  |                               |
|-----------------------|---------------------------------|--|-------------------------------|
|                       | Chalk Pit, Clay Pit, or Quarry  |  | Non-coniferous Trees          |
|                       | Gravel Pit                      |  | Coniferous Trees              |
|                       | Sand Pit                        |  | Scrub                         |
|                       | Disused Pit or Quarry           |  | Lake, Loch or Pond            |
|                       | Refuse or Slag Heap             |  | Pylon                         |
|                       | Direction of Flow of Water      |  | Electricity Transmission Line |
|                       | Cutting                         |  | Shingle                       |
|                       | Embankment                      |  | Sand                          |
|                       | Road 'T' Under                  |  | Level Crossing                |
|                       | Road 'T' Over                   |  | Foot Bridge                   |
|                       | Standard Gauge Multiple Track   |  | Standard Gauge Single Track   |
|                       | Siding, Tramway or Mineral Line |  | Narrow Gauge                  |
|                       | Bracken                         |  | Heath                         |
|                       | Rough Grassland                 |  | Reeds                         |
|                       | Saltings                        |  | Marsh                         |

**Ordinance Survey Plan**      2  
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.  
In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.  
**ORDNANCE SURVEY PLAN**  
Published 1967  
Source map scale - 1:10,560



Date(s) of Publication 18 of 21



**CLIENT DETAILS**      Envirocheck Order No. **EC12202661\_1\_1**  
(04-Jul-2005 12:45)  
Customer Ref: C Nunn, 9735  
Rsa Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS**      Grid Reference    **441910    406290**  
Houghton Main  
  
South Yorkshire

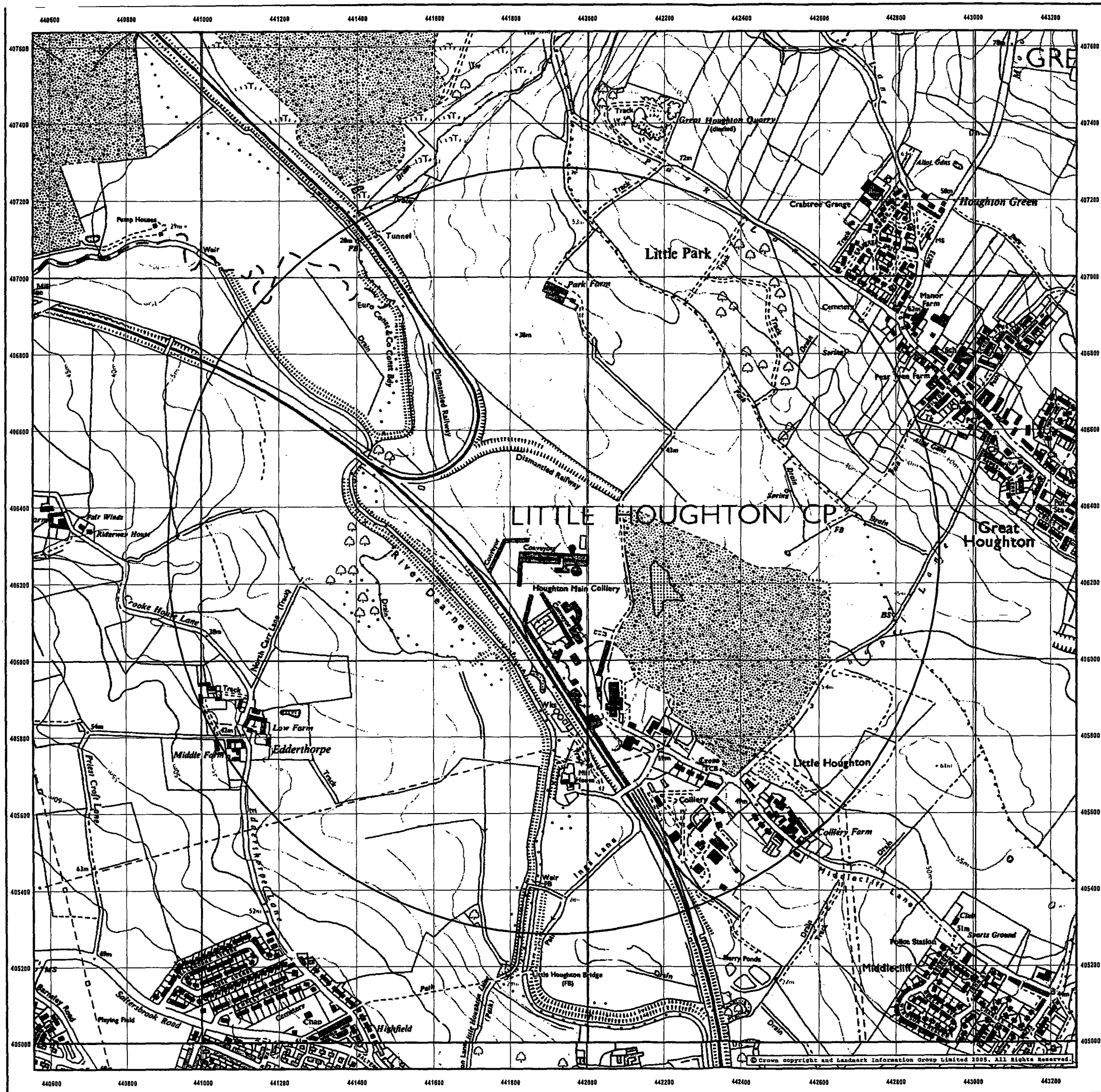
**Historical Map Legend**

|                                        |                                      |                                |
|----------------------------------------|--------------------------------------|--------------------------------|
|                                        |                                      |                                |
| Inactive Quarry, Chalk Pit or Clay Pit | Active Quarry, Chalk Pit or Clay Pit | Culvert                        |
|                                        |                                      |                                |
| Slope                                  | Slope                                |                                |
|                                        |                                      |                                |
| Pylon                                  | Electricity Transmission Line        | Direction of Water flow        |
|                                        |                                      |                                |
| Marsh                                  | Saltings                             | Orchard Tree                   |
|                                        |                                      |                                |
| Rough Grassland                        | Scrub                                | Heath                          |
|                                        |                                      |                                |
| Coniferous Tree (Surveyed)             | Coniferous Tree (Not Surveyed)       | Non-coniferous Tree (Surveyed) |
|                                        |                                      |                                |
| Reeds                                  | Bracken                              |                                |

**Additional SIMs**      2  
The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1991, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

**ORDNANCE SURVEY PLAN**  
Published 1978 to 1979  
Source map scale - 1:2,500

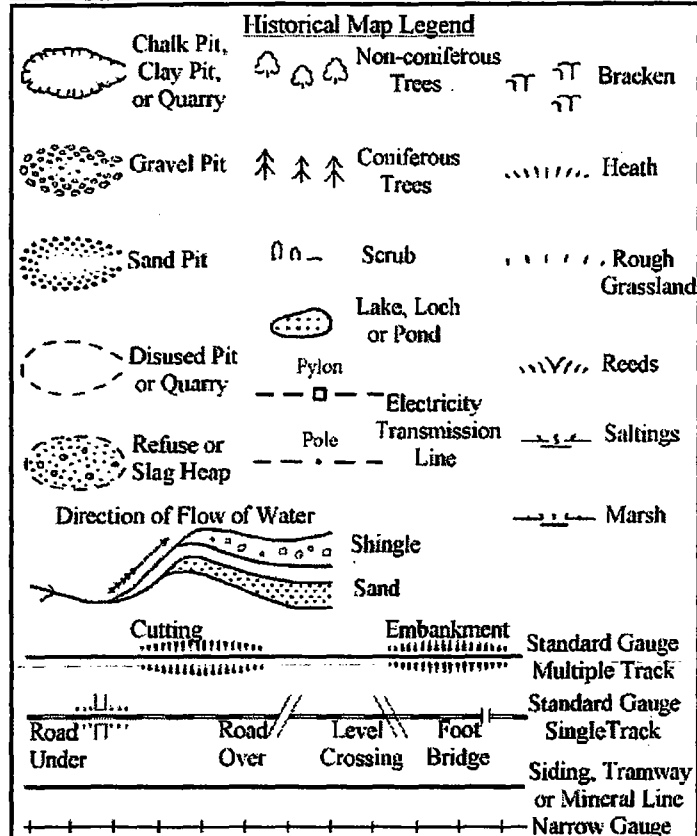
Date(s) of Publication    8 of 21



**CLIENT DETAILS** Envirocheck Order No. EC12202661\_1\_1  
(04-Jun-2009 12:01)  
Customer Ref: C Nunn, 9735  
Rsa Geotechnics Ltd  
Rookery Farm Mill Road, Battsford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS** Grid Reference 441910 406290  
Houghton Main

South Yorkshire

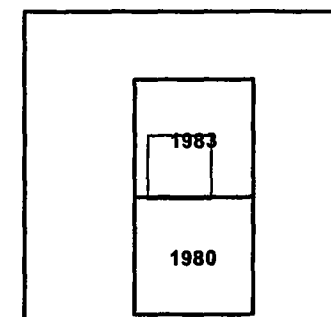


**Ordnance Survey Plan**

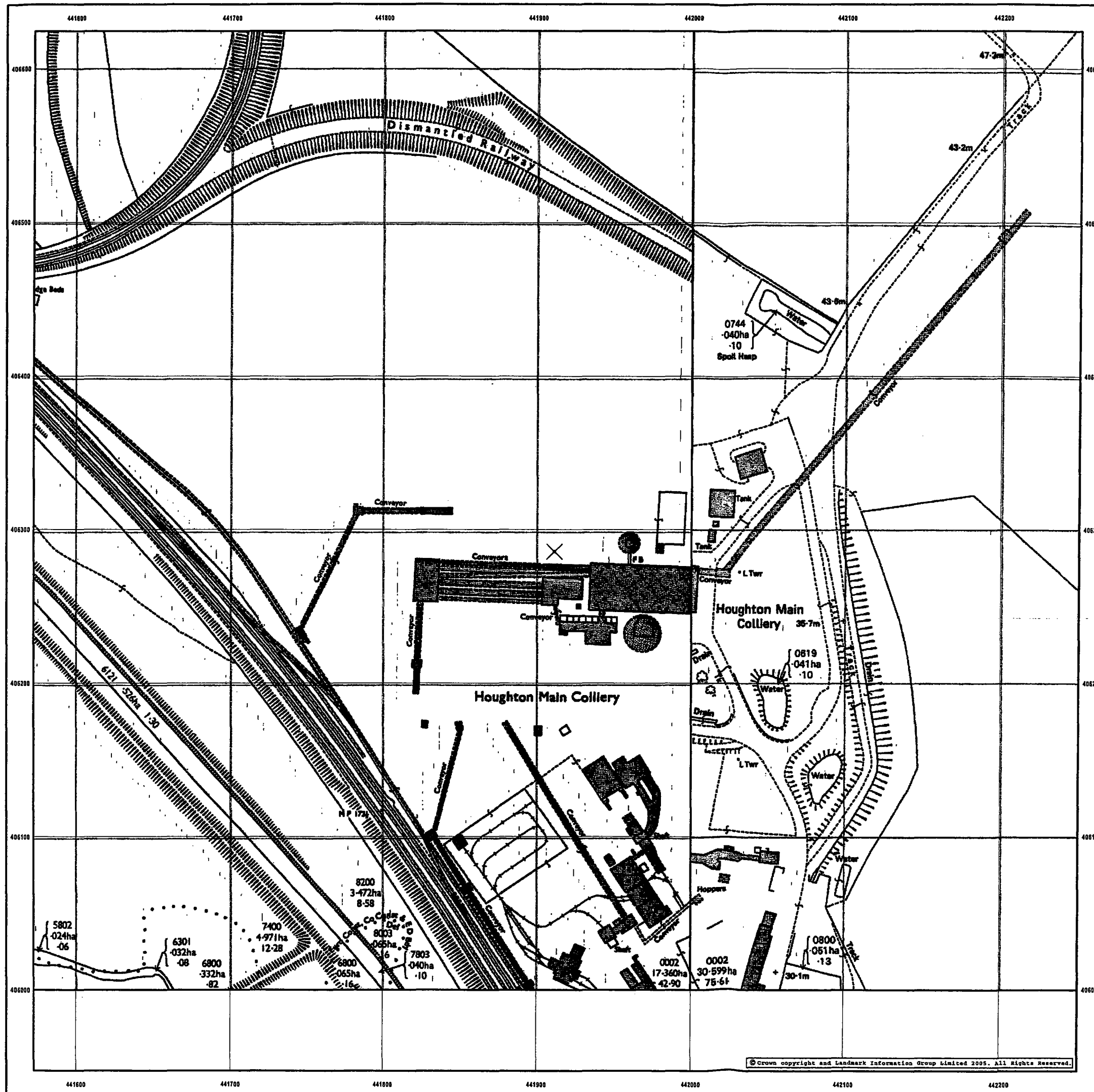
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

**ORDNANCE SURVEY PLAN**  
Published 1980 to 1983  
Source map scale - 1:10,000



Date(s) of Publication 19 of 21



**CLIENT DETAILS**      Envirocheck Order No. EC12202661\_1\_1  
(04-Jul-2008 12:47)  
Customer Ref: C Nunn, 9735  
Rae Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

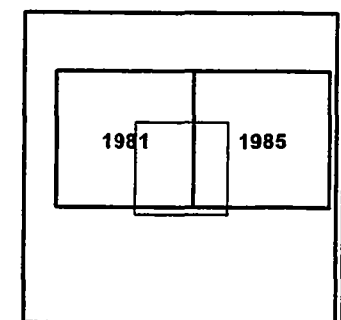
**SITE DETAILS**      Grid Reference    441910    406290  
Houghton Main  
South Yorkshire

**Historical Map Legend**

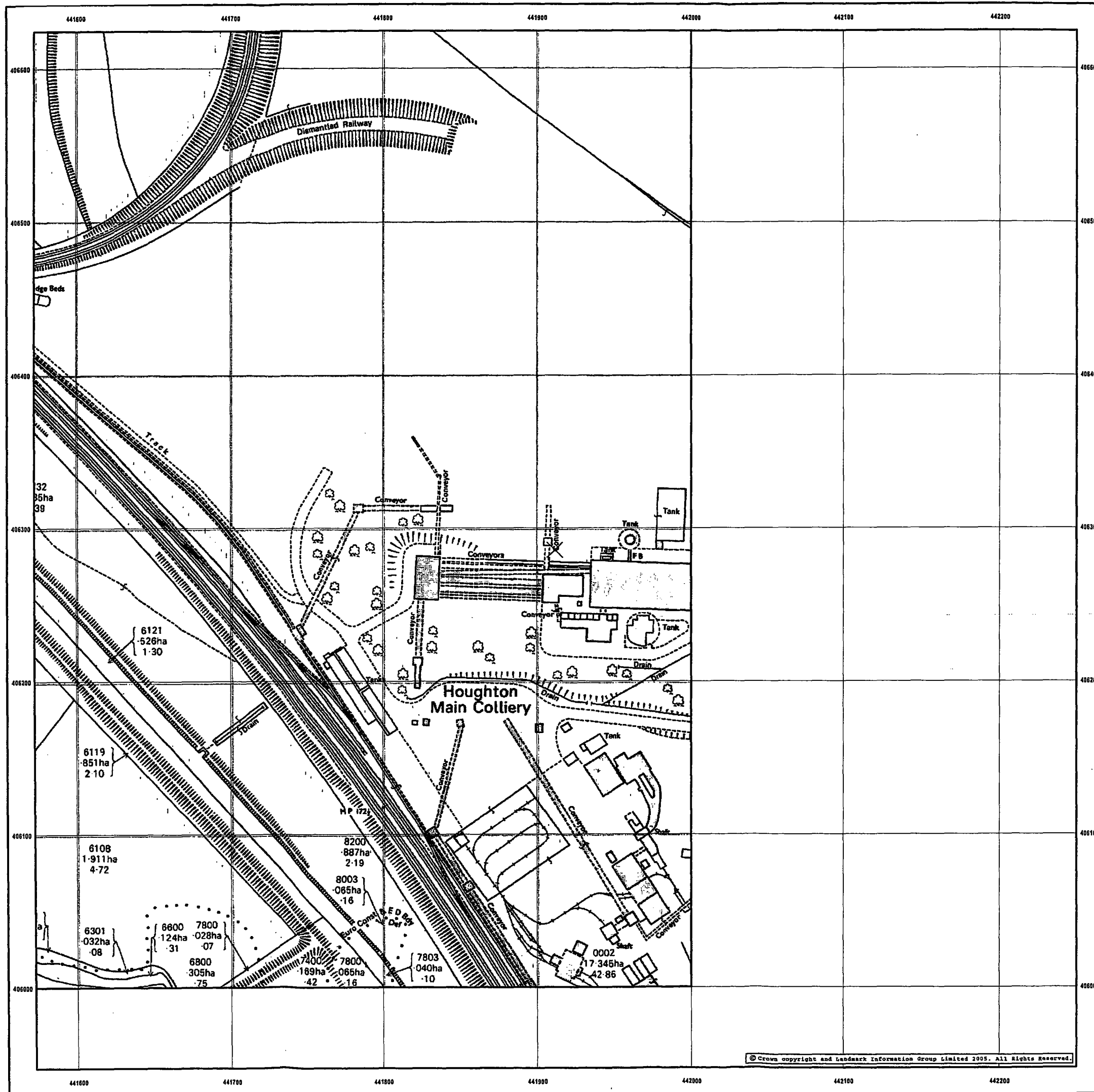
|                                        |                                      |                                |
|----------------------------------------|--------------------------------------|--------------------------------|
|                                        |                                      |                                |
| Inactive Quarry, Chalk Pit or Clay Pit | Active Quarry, Chalk Pit or Clay Pit | Culvert                        |
|                                        |                                      |                                |
| Slope                                  | Slope                                |                                |
|                                        |                                      |                                |
| Pylon                                  | Electricity Transmission Line        | Direction of Water flow        |
|                                        |                                      |                                |
| Marsh                                  | Saltings                             | Orchard Tree                   |
|                                        |                                      |                                |
| Rough Grassland                        | Scrub                                | Heath                          |
|                                        |                                      |                                |
| Coniferous Tree (Surveyed)             | Coniferous Tree (Not Surveyed)       | Non-coniferous Tree (Surveyed) |
|                                        |                                      |                                |
| Non-coniferous Tree (Not Surveyed)     |                                      |                                |

**Ordnance Survey Plan**      2  
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1954 the 1:2,500 scale was adopted for mapping urban areas and by 1996 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given on the right is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

**ORDNANCE SURVEY PLAN**  
Published 1981 to 1985  
Source map scale - 1:2,500



Date(s) of Publication    5 of 21



**CLIENT DETAILS**      Envirocheck Order No. **EC12202661\_1\_1**  
(04-Jul-2005 12:40)

Customer Ref: C Nunn,9735  
Rsa Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS**      Grid Reference    **441910    406290**

Houghton Main

South Yorkshire

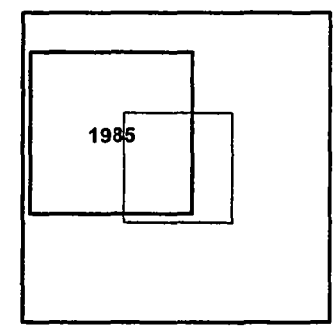
**Historical Map Legend**

|                                        |                                      |                                |
|----------------------------------------|--------------------------------------|--------------------------------|
|                                        |                                      |                                |
| Inactive Quarry, Chalk Pit or Clay Pit | Active Quarry, Chalk Pit or Clay Pit | Culvert                        |
|                                        |                                      |                                |
| Slope                                  | Slope                                |                                |
|                                        |                                      |                                |
| Pylon                                  | Electricity Transmission Line        | Direction of Water flow        |
|                                        |                                      |                                |
| Marsh                                  | Saltings                             | Orchard Tree                   |
|                                        |                                      |                                |
| Rough Grassland                        | Scrub                                | Heath                          |
|                                        |                                      |                                |
| Coniferous Tree (Surveyed)             | Coniferous Tree (Not Surveyed)       | Non-coniferous Tree (Surveyed) |
|                                        |                                      |                                |
| Reeds                                  | Bracken                              |                                |

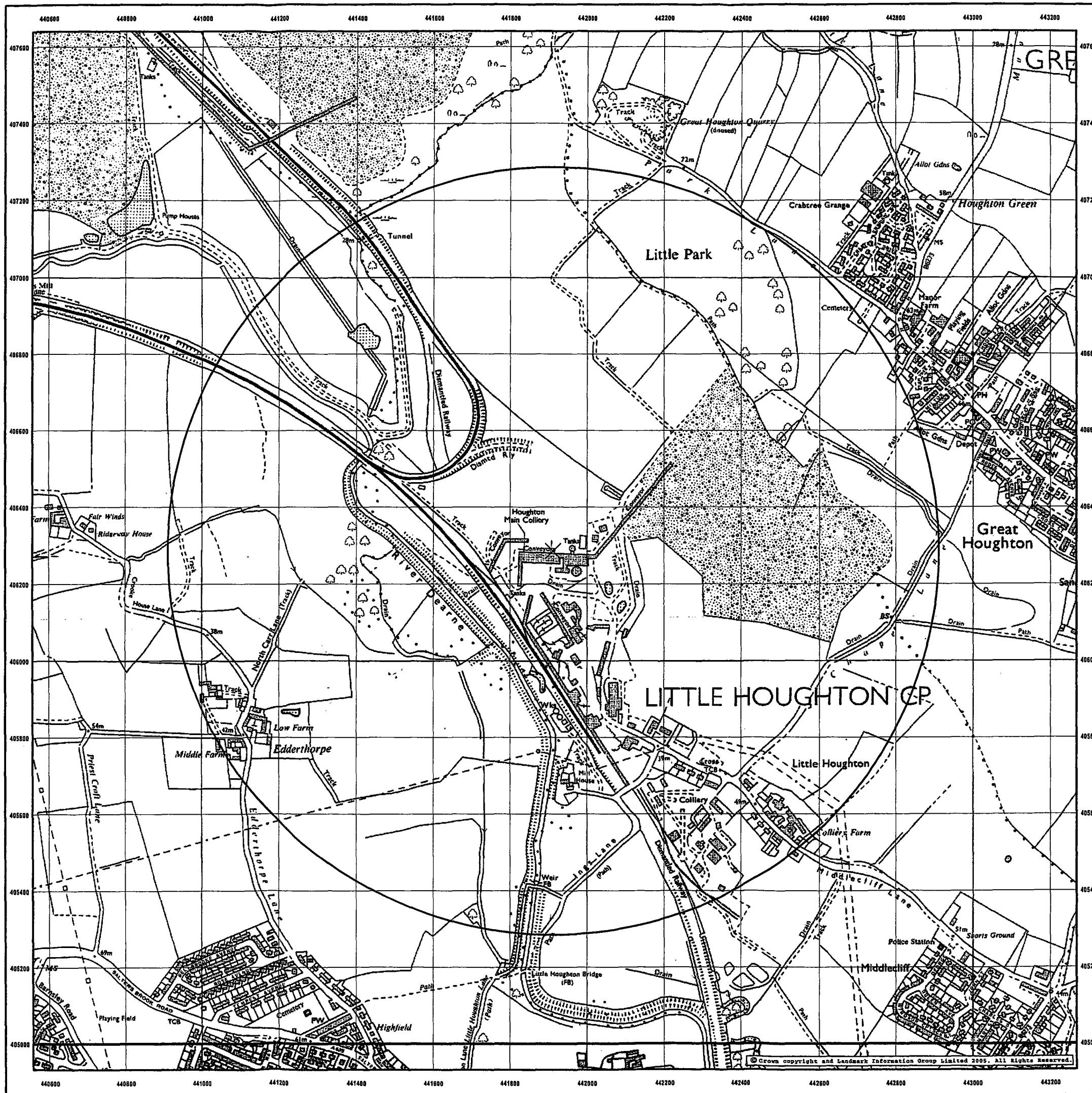
**Ordnance Survey Plan**      3

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1886 it covered the whole of what was considered to be the cultivated parts of Great Britain. The published data given on the right is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

**ORDNANCE SURVEY PLAN**  
Published 1985  
Source map scale - 1:2,500



Date(s) of Publication    8 of 21

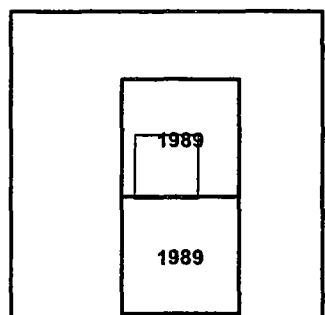


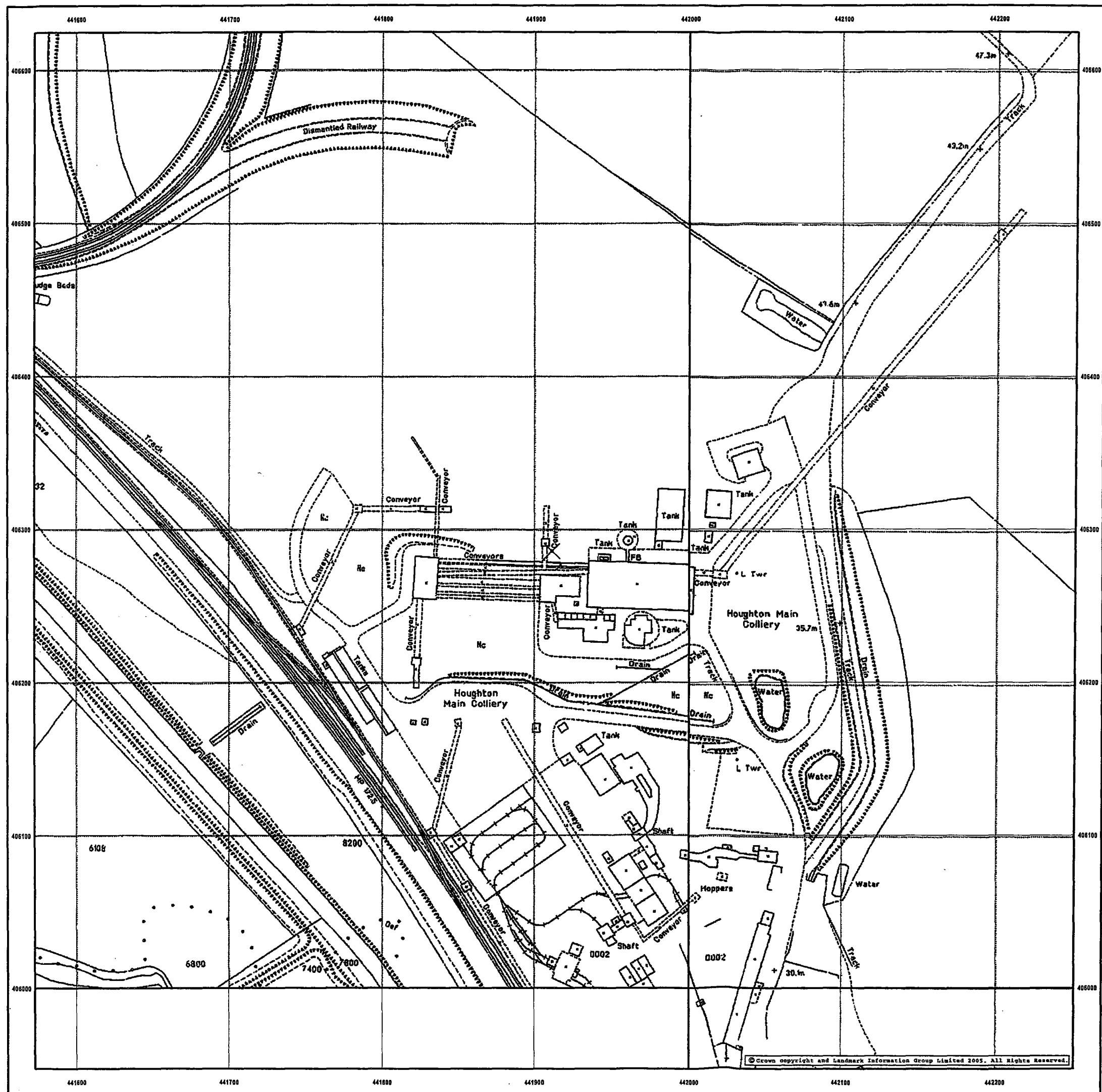
**CLIENT DETAILS** Envirocheck Order No. **EC12202661\_1\_1**  
(04-Jul-2008 12:01)  
Customer Ref: C Nunn, 9735  
Rsa Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS** Grid Reference **441910 406290**  
Houghton Main  
South Yorkshire

| Historical Map Legend |                                |  |                                 |
|-----------------------|--------------------------------|--|---------------------------------|
|                       | Chalk Pit, Clay Pit, or Quarry |  | Non-coniferous Trees            |
|                       | Gravel Pit                     |  | Coniferous Trees                |
|                       | Sand Pit                       |  | Scrub                           |
|                       | Disused Pit or Quarry          |  | Lake, Loch or Pond              |
|                       | Refuse or Slag Heap            |  | Pylon                           |
|                       | Direction of Flow of Water     |  | Electricity Transmission Line   |
|                       | Shingle                        |  | Marsh                           |
|                       | Sand                           |  | Standard Gauge Multiple Track   |
|                       | Cutting                        |  | Standard Gauge Single Track     |
|                       | Embankment                     |  | Siding, Tramway or Mineral Line |
|                       | Road Under                     |  | Narrow Gauge                    |
|                       | Road Over                      |  |                                 |
|                       | Level Crossing                 |  |                                 |
|                       | Foot Bridge                    |  |                                 |

**Ordnance Survey Plan** 2  
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given on the right therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.  
In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.  
**ORDNANCE SURVEY PLAN**  
Published 1989  
Source map scale - 1:10,000

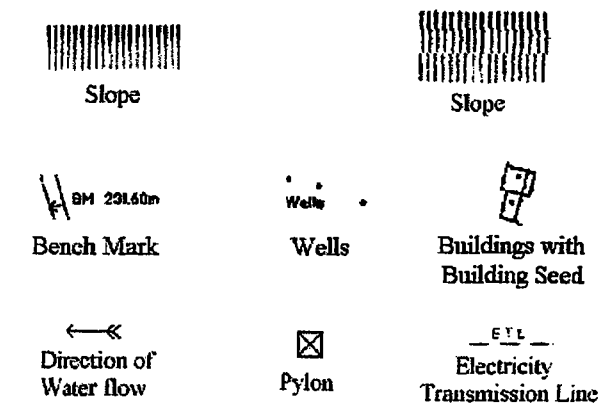




**CLIENT DETAILS**      Envirocheck Order No. EC12202661\_1\_1  
Customer Ref: C Nunn, 9735  
Rsa Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS**      Grid Reference    441910    406290  
Houghton Main  
  
South Yorkshire

**Historical Map Legend**



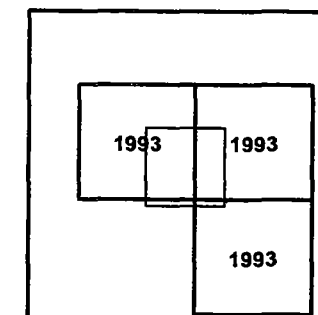
**Administrative Boundaries**

- ..... Civil parish/community boundary
- — — District boundary
- . — County boundary
- Boundary post/stone
- Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

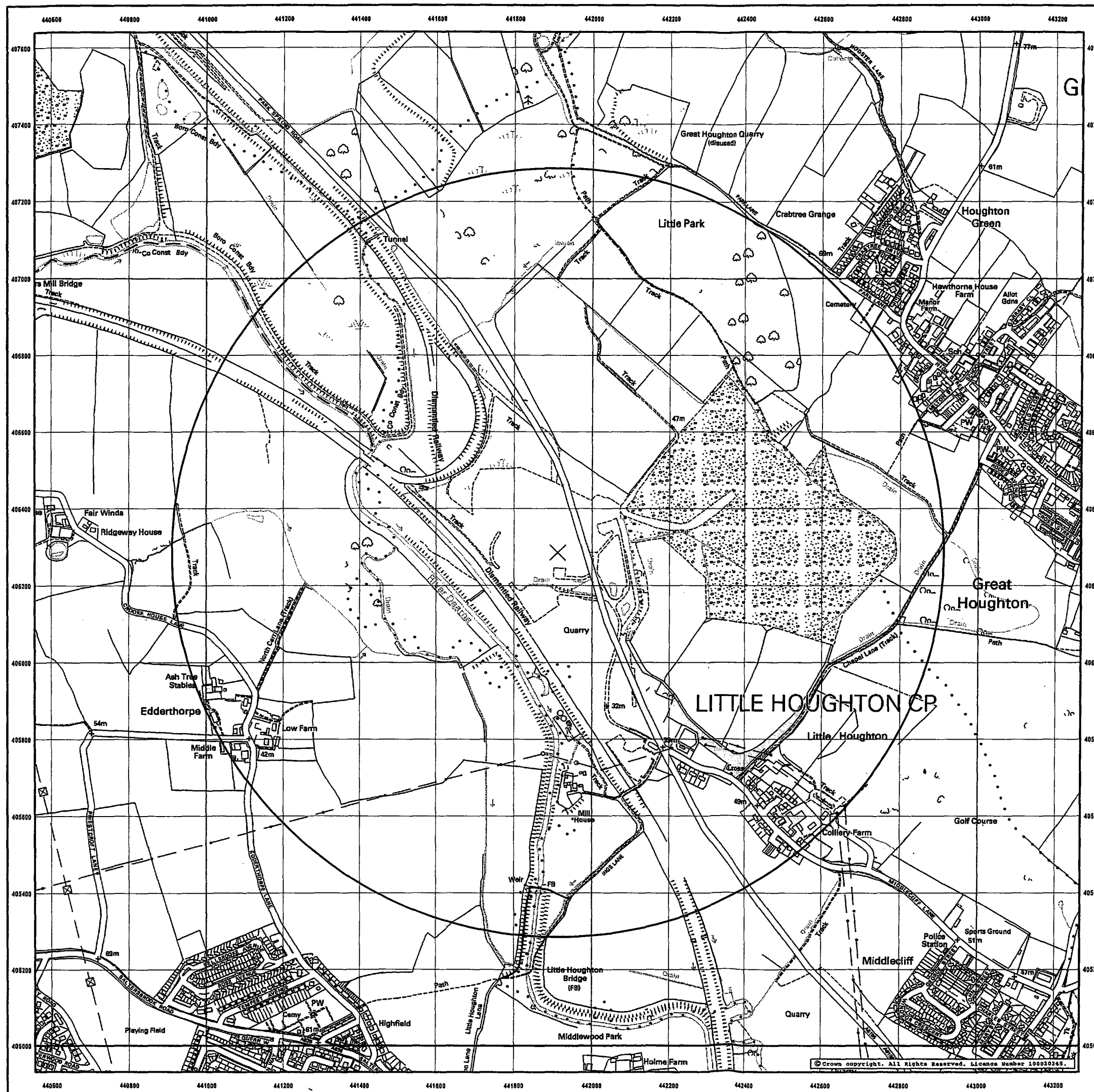
**Large-Scale National Grid Data**

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1993. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

**ORDNANCE SURVEY PLAN**  
Published 1993  
Source map scale - 1:2,500



Date(s) of Publication 11 of 21



**CLIENT DETAILS** Envirocheck Order No. EC12202661\_1\_1  
(04-Jul-2000 12:01)

Customer Ref: C Nunn, 9735  
Rsa Geotechnics Ltd  
Rookery Farm Mill Road, Battisford  
Stowmarket  
Suffolk IP14 2LT

**SITE DETAILS** Grid Reference 441910 406290

Houghton Main

South Yorkshire

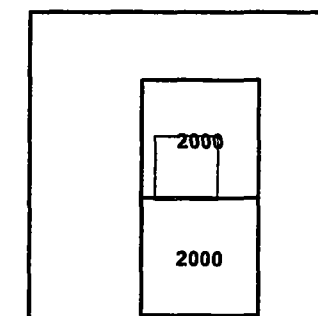
**Historical Map Legend**

|  |                                    |  |                                                          |
|--|------------------------------------|--|----------------------------------------------------------|
|  | Non-coniferous Trees               |  | Pylon                                                    |
|  | Coniferous Trees                   |  | Telephone Line (where shown)                             |
|  | Orchard                            |  | Electricity Transmission Line (with poles)               |
|  | Rough Grassland                    |  | Gravel Pit                                               |
|  | Heath                              |  | Shingle                                                  |
|  | Scrub                              |  | Refuse Tip or Slag Heap                                  |
|  | Marsh, Salt Marsh or Reeds         |  | Sand                                                     |
|  | County Boundary (England only)     |  | Sand Pit                                                 |
|  | Civil Parish or Community Boundary |  | Slopes                                                   |
|  | Constituency Boundary              |  | District, Unitary, Metropolitan, London Borough Boundary |

**10K Raster Mapping**

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan<sup>®</sup> which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

**ORDNANCE SURVEY PLAN**  
Published 2000  
Source map scale - 1:10,000



Date(s) of Publication 21 of 21

# Appendix B

## **BGS Borehole Records**

87/183B

1-in. Geological map: 87.

6-in. map: Yorks. 275 N.W.

NCB. N.E. Div.

Site: Lat. 53° 33' 13" Long. 1° 22' 8"

Borehole commenced at floor of BEAMSHAW 1195.95 ft. below O.D.

Borers: Messrs. Andrew Kyle Ltd.

Date: 1952.

Cores examined by R. F. Goossens.

| Description of Strata |                                                                                       | Thickness  | Depth              |
|-----------------------|---------------------------------------------------------------------------------------|------------|--------------------|
| KENT'S THIN           | Grey clunch with rootlets and ironstone nodules                                       | 4 0 1.22   | 4 0 1.22           |
|                       | Grey siltstone                                                                        | 2 6 0.76   | 6 6 1.98           |
|                       | Pale grey sandstone                                                                   | 2 0 0.61   | 8 6 2.59           |
|                       | Banded siltstone                                                                      | 4 6 1.37   | 13 0 3.96          |
|                       | Grey siltstone with ironstone bands                                                   | 4 6 1.37   | 17 6 5.33          |
|                       | Grey shale with ironstone bands                                                       | 4 6        | 22 0 6.71          |
|                       | Dark grey shale with mussels                                                          | 6 0 1.5    | 22 6 6.86          |
|                       | Grey shale with ironstone bands and scattered mussels                                 | 4 6 1.37   | 27 0 8.23          |
|                       | Hard grey silty shale                                                                 | 2 6 0.76   | 29 6 8.99          |
|                       | Grey siltstone                                                                        | 8 6 2.59   | 38 0 11.58         |
|                       | Grey shale                                                                            | 1 9 0.53   | 39 9 12.12         |
|                       | Black shale                                                                           | 6 1 0.16   | 40 3 12.28         |
|                       | COAL (a few fragments recovered, thickness according to borer)                        | 1 7 2 0.49 | 41 11 12.78        |
|                       | Dark grey clunch                                                                      | 7 0 1.8    | 42 6 12.95         |
|                       | Stone clunch                                                                          | 2 0 0.23   | 43 3 13.18         |
|                       | Pale grey sandstone                                                                   | 4 0 1.22   | 47 3 14.40         |
|                       | Grey siltstone                                                                        | 3 3 0.99   | 50 6 15.39         |
|                       | Grey shale with ironstone bands and with mussels at 56' 0"                            | 8 6 2.59   | 59 0 17.98         |
|                       | Grey siltstone with scattered rootlets                                                | 4 6 1.37   | 63 6 19.35         |
|                       | Banded sandstone                                                                      | 4 0 1.22   | 67 6 20.57         |
| KENT'S THICK          | Grey shale                                                                            | 3 0 0.8    | 67 9 20.65         |
|                       | Shelly ironstone                                                                      | 3 0 0.8    | 68 0 20.73         |
|                       | Black shale                                                                           | 3 0 0.8    | 68 3 20.80         |
|                       | Grey siltstone with scattered rootlets                                                | 5 9 1.75   | 74 0 22.56         |
|                       | Pale grey sandstone                                                                   | 1 9 0.53   | 75 9 23.09         |
|                       | Grey siltstone with ironstone bands                                                   | 1 3 0.38   | 77 0 23.47         |
|                       | Banded sandstone                                                                      | 1 0 0.30   | 78 0 23.77         |
|                       | Grey siltstone                                                                        | 5 0 1.52   | 83 0 25.3          |
|                       | Grey shale with ironstone bands                                                       | 3 0 0.91   | 86 0 26.21         |
|                       | Grey siltstone                                                                        | 5 6 1.68   | 91 6 27.89         |
|                       | Pale grey sandstone                                                                   | 2 0 0.61   | 93 6 28.5          |
|                       | Grey shale with ironstone bands                                                       | 4 3 1.30   | 97 9 29.79         |
|                       | Dark grey shale with scattered mussels                                                | 1 3 0.38   | 99 0 30.16         |
|                       | Black shale with mussels in upper part                                                | 4 0 1.0    | 99 4 30.28         |
|                       | Grey sandstone with plant remains                                                     | 6 0 1.5    | 99 10 30.43        |
|                       | COAL (11% recovery as fragments, thickness according to penetration record and borer) | 2 9 0.84   | 102 7 31.27        |
|                       | Hard dark grey clunch with rootlets and coal streaks                                  |            | 9 0 23 103 4 31.49 |

W. n. Lamb

27 7 52

British Geological Survey

British Geological Survey

British Geological Survey

N 62° 11'

British Geological Survey

British Geological Survey

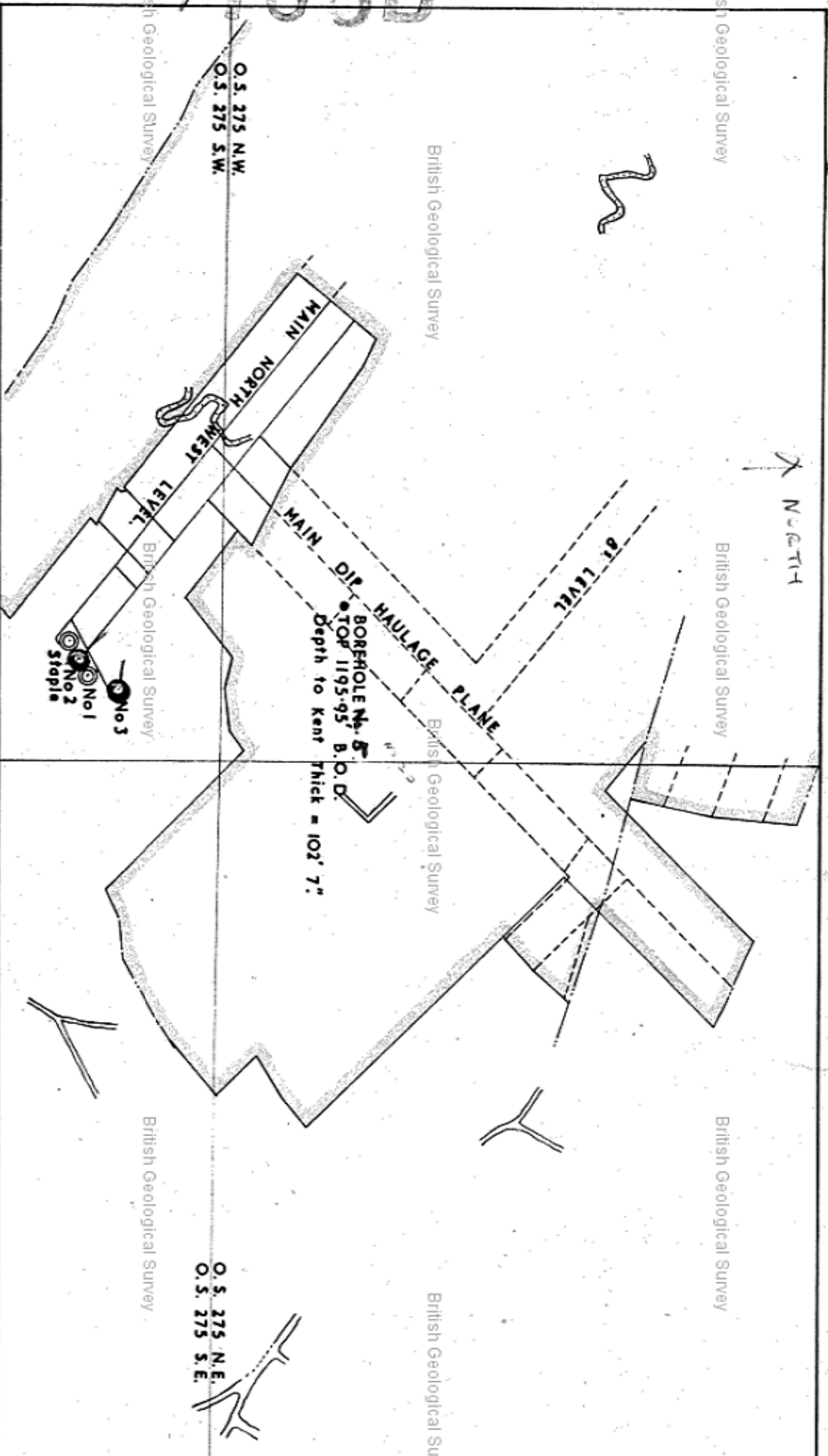
British Geological Survey

O.S. 275 N.W.  
O.S. 275 S.W.O.S. 275 N.E.  
O.S. 275 S.E.

British Geological Survey

British Geological Survey

British Geological Survey



Drawn by A.E.L.  
Traced by A.E.L.  
Checked by G.P.J.

30-4-1952.  
SCALE 1" = 10560

N.C.B. N.E. DIV. No 4 AREA.  
HOUGHTON MAIN UNIT.  
BEAMSHAW SEAM.

Location.  
Borehole—Beamshaw to Kent Thick Seam  
On 35 Loader Level—off Main Dip

British Geological Survey

British Geological Survey

British Geological Survey

## SECTION OF

HOUGHTON MAIN COLLIERY -

No. 11 Underground Borehole

## PURPOSE

To prove thickness and quality of  
the Top Beamsaw and Winter Seams

## EXACT SITE

British Geological Survey O.S. N.G.R. SE/41772/06539  
N.C.B. N.G.R. 44/4140/772539

## LEVEL AT WHICH

shaft  
bore  
ditch

COMMENCED RELATIVE TO O.D. 1190 ft B.O.D.

## DATE OF SINKING OR BORING

January 1968

## SINKER OR BORER

National Coal Board

Cores other than coal examined by W. J. Smith

(County, Sheet and Qtr.)

SE 40 NW/22

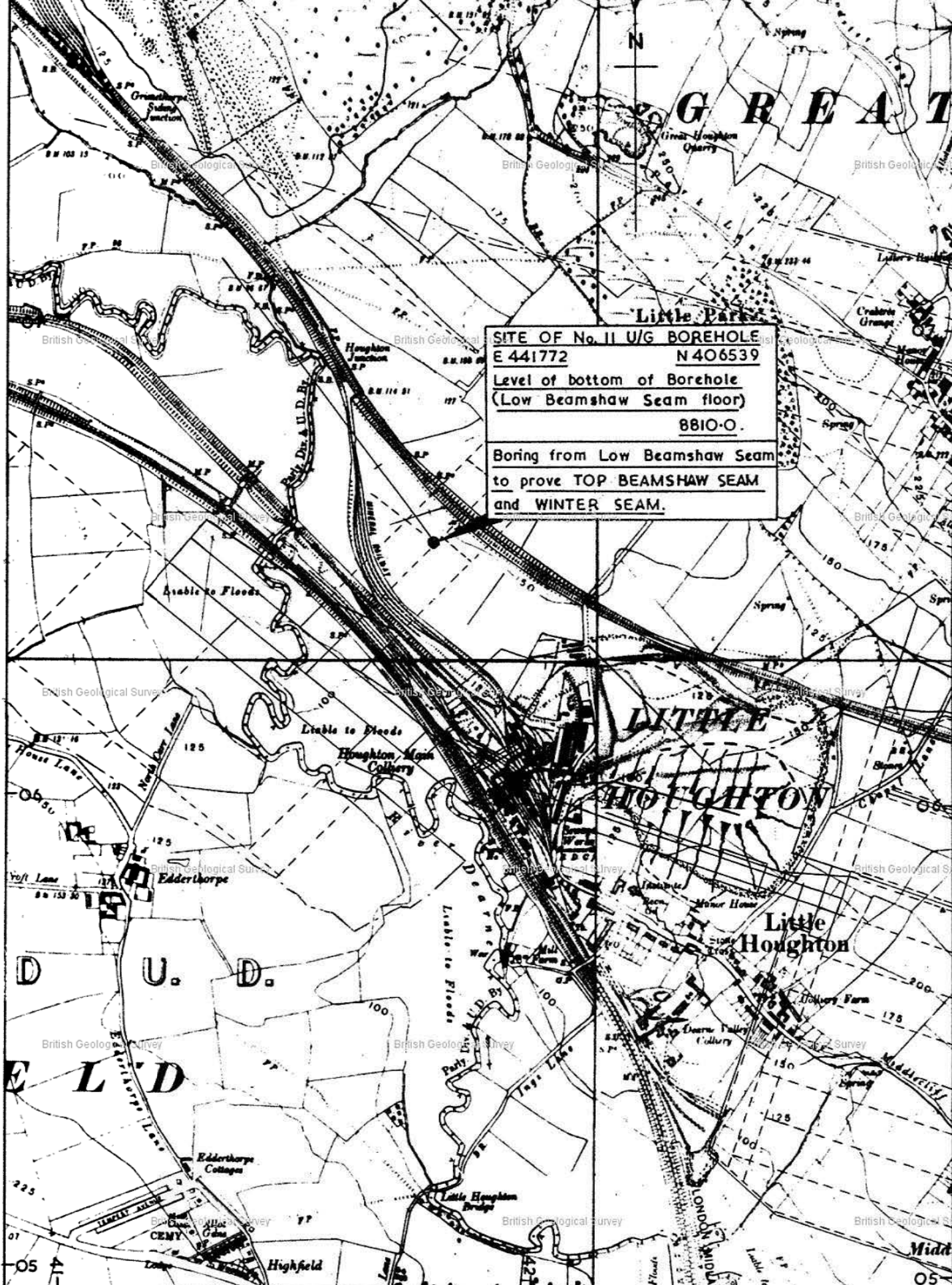
(Nat. Grid, Sheet and Qtr.)

Attach tracing from a map or  
sketch map if possible

British Geological Survey

British Geological Survey

| GEOLOGICAL<br>CLASSIFICATION | NATURE OF STRATA                                                               | THICKNESS |     | DEPTH |     |
|------------------------------|--------------------------------------------------------------------------------|-----------|-----|-------|-----|
|                              |                                                                                | FEET      | IN. | FEET  | IN. |
|                              | TOP OF HOLE                                                                    | -         | -   | -     | -   |
| WINTER                       | Rather weak grey shaly mudstone with<br>ironstone bands                        | 1.22      | 4   | 0     | 4   |
|                              | Black shale                                                                    | 0.20      |     | 4     | 8   |
|                              | COAL                                                                           | 0.66      | 2   | 6     | 10  |
|                              | Grey silty mudstone-seatearth with<br>rootlets                                 | 0.25      |     | 7     | 8   |
|                              | Grey siltstone with rootlets                                                   | 0.16      |     | 8     | 2   |
|                              | Pale grey sandstone                                                            | 0.26      |     | 9     | 1   |
|                              | OPEN HOLE - NO CORE                                                            | 15.09     | 49  | 58    | 7   |
|                              | Grey silty mudstone with ironstone bands                                       | 0.3       | 1   | 59    | 7   |
|                              | Grey shaly mudstone with ironstone bands,<br>mussel fragments at top           | 0.79      | 2   | 62    | 2   |
|                              | Dark grey mudstone with <u>Anthracosia</u> ,<br><u>Naiadites</u> and ostracods | 0.13      |     | 62    | 7   |
| TOP<br>BEAMSHAW (?)          | Inferior COAL 7 1/2"                                                           | 0.19      |     |       |     |
|                              | COAL 5"                                                                        | 0.13      |     | 63    | 7   |
|                              | Strong grey silty mudstone-seatearth with<br>rootlets                          | 0.85      | 2   | 66    | 5   |
|                              | Grey silty mudstone with rootlets                                              | 0.66      | 2   | 68    | 7   |
|                              | OPEN HOLE - NO CORE                                                            | 11.89     | 39  | 107   | 7   |
|                              | Floor of LOW BEAMSHAW                                                          |           |     |       |     |



**SITE OF No. II U/G BOREHOLE**  
**E 441772      N 406539**  
**Level of bottom of Borehole**  
**(Low Beamshaw Seam floor)**  
**8810.0**  
**Boring from Low Beamshaw Seam**  
**to prove TOP BEAMSHAW SEAM**  
**and WINTER SEAM.**

N.C.B.      **BARNSELY AREA.**  
**HOUGHTON MAIN COLLIERY. BEAMSHAW SEAM.**  
**SITE PLAN.**  
**No. II UNDERGROUND BOREHOLE.**  
**SCALE :- 6 INCHES TO ONE MILE.**  
**PREPARED BY HOUGHTON MAIN SURVEY DEPT. 30-1-68.**

SHIRE 275 NW.

SE. 40 NW. 12

HTON MAIN COLLIERY

1968

Underground Borehole

1190 FT. B.O.D.

0 Depth in Feet

LOG

Seam Sections  
& Depths to  
Important Horizons

CORING



C 26" at 6' - 10"

NO  
CORE

50

BEAMSHAW ?



C 7 1/2" at 63' 2 1/2"  
C 5" at 63' 7 1/2"

NO  
CORE

100

Floor of LOW BEAMSHAW 107' 7"