DEVELOPMENT DIRECTORATE
**South Yorkshire Mining Advisory Service**

BARNSLEY
Metropolitan Borough Council

| | | | | | |
|---|---|---|---|---|---|
| **To:** | Development Control<br>Planning & Transportation | | **FAO:** | Mr. Matthew Smith | |
| **My Ref:** | PJ/M3860 | | **Your Ref:** | 2007/2131 | |
| **Date:** | 28th December, 2007 | **Enquiries to:** | Mr. P. James | **Ext:** | 2689 |

**Subject:** Erection of new buildings, car park and formation of new access from Wombwell By-Pass to form Advance Learning Centre and playing fields - being the amalgamation of Wombwell High School and the Foulstone School, Darfield (Outline)

With reference to the above planning application, associated environmental statement and site investigation documentation, I wish to make the following comments.

1. The boreholes drilled as part of the site investigation are not shown on a scaled plan and as such it is difficult to determine if these were placed so to investigate the extent of the known underground shallow clay workings which lie at around 15 m to 20 m below original ground level beneath the proposed school building. It would appear that possibly two of the boreholes (namely BH1 and BH6) may have been drilled where the clay workings are thought to be present. This does not constitute a sufficient number to rule out the possibility of mining voids.

   Voids were proved at a depth of 14.5 m as part of a site investigation conducted prior to the construction of the Station Road Industrial Estate to the south.

2. There appears to be no investigation or information with regards to the presence of the shafts on the site. The shafts which formed the means of access to the shallow clay workings will require investigation and appropriate treatment where necessary (particularly those to the south-east of the site which are close to the proposed school building).

   During site stripping operations care should be taken to note any further unrecorded mine entries and to ensure they are adequately treated.

   The former Darfield Main Colliery Shafts have been filled and capped. Further details (i.e. cap specifications) may be obtained from the Coal Authority.

   The shaft locations are marked with 'obelisks'. Site stripping and contouring will interfere with these shafts. Prior to any investigatory works relating to coal mining issues, the Coal Authority should be consulted for indemnification purposes.

   The recently updated Coal Authority's Permit to investigate/interfere with their interests also includes the following condition:

   *"Where in the Authority's opinion any mine entry's proximity to a proposed new development is likely to increase its liabilities the Applicant agrees to take formal conveyance of the mine entry(s). All such mine entries shall be fully stabilised by the applicant prior to the conveyance. The Conveyance will be on the Authority's standard terms and conditions for a nominal sum."*

3. The school building is located close to the former settlement lagoon area which may contain high levels of contamination and dependant on the amount of made ground removed, could have structural implications. The environmental statement acknowledges that further investigation of the extent and depth of made ground across the site is required.

4. Gas testing has been conducted as part of the site investigation although monitoring was only undertaken over a one month period. However the ground investigation report does conclude that gas protection measures should be incorporated into the school buildings.

Considering the above points, further site investigation works are required to:

(i) rule out the presence of shallow mining voids beneath the footprint of the proposed building.

(ii) ensure disused shallow clay mine entries (shafts) are adequately treated.

I have attached the SYMAS mineral report compiled for this site, along with a copy of a memo issued to property and procurement on the 26th May, 2007 which also raised these issues.

Principal Mining Engineer.

Enc.

DEVELOPMENT DIRECTORATE
**South Yorkshire Mining Advisory Service**

BARNSLEY
Metropolitan Borough Council

| | | | |
|---|---|---|---|
| **To:** | Finance & Property Directorate<br>Property & Procurement | **FAO:** | Mr. S. Fairhurst |
| **My Ref:** | MAL/M3860/5 | **Your Ref:** | |
| **Date:** | 19th June, 2006 | **Enquiries to:** | Mr. M. A. Lyons |
| | | **Ext:** | 2684 |

**Subject:** FOULSTONE/WOMBWELL HIGH SCHOOL, BARNSLEY

With reference to your request in respect of the above named project, please find attached a mineral report and two copies of the attached plans nos. M3860/5A to M3860/5G, along with annex 'A' to 'F', which outline the mining and geological position for the land.

Senior Mining Engineer.

Enc.

16/06/2006
MAL/M3860/5

FOULSTONE/WOMBWELL HIGH SCHOOL, BARNSLEY

SITUATION

The above site, situated between Wombwell and Darfield, is currently being considered for a new high school development. The extent of the area is shown edged orange on the attached plan no. M3860/5A.

A site inspection revealed that some of the gardens at 43-49 Pitt Street to the north of the site extend into the area under review.

GEOLOGY

Geological records indicate the site to be situated predominantly on made ground and alluvium above sandstones, shales and mudstones of the Middle Coal Measures. Two different beds of sandstone are indicated, the Ackton Rock Sandstone beneath the eastern part of the site and the Oaks Rock Sandstone just within the western boundary as shown on the above plan. These sandstones may be fissured both naturally and mining induced by the past deep mining operations as detailed below.

The Wheatworth Coal Seam, up to 2250 mm in thickness, is conjectured to outcrop through the western part of the site (beneath the made ground and alluvium), which will dip beneath the land in a north-easterly direction.

Geological faulting is shown in the vicinity, however geological records indicate that only one fault is conjectured to pass just within the western boundary, as indicated on the above plan. Clay workings (as detailed below) beneath the eastern arm of the site encountered an underground fault line, which, if projected back to the surface, would also pass through the site in this vicinity.

SHALLOW CLAY WORKINGS

Clay was worked by underground methods on both a full and partial extraction basis at shallow depth beneath the eastern part of the site. The extent of the workings is shown in brown on plan no. M3860/5B, which took place around the mid-late 1800's. The thickness of clay extracted varied from 1500 mm to 2500 mm.

Two disused shafts within the site (as detailed below and indicated on plan no. M3860/5B) indicate the seam at 16.5 m deep at that location. During the construction of the Station Road Industrial Estate to the south, a site investigation proved workings to lie at a depth of 14.5 m in that area.

CLAY MINING DISUSED SHAFTS

Two disused clay shafts are known to lie within the north-eastern 'arm' of the site. These shafts were sunk to a depth of 34 m, possibly the depth of the underlying

clay seam. File records note that these shafts were filled and capped in January/ February 2002 by Barnsley MBC, the fill material comprising brick demolition rubble. The concrete cap covering the western shaft is 2.5 m below ground level, the shaft diameter being 2.5 m. The cap has a dimension of 6 m x 6 m x 0.4 m, as detailed in the attached specification sheet, annex 'F'. The easterly cap lies around 2 m below ground level and with the shaft being 2 m in diameter has a cap of 4.5 m x 4.5 m x 0.35 m dimension. These caps, which have been founded on rockhead or the shaft lining, are not to British Coal specifications as detailed in the 'Brown Book - Treatment of Disused Shafts and Adits'. Both shafts, which are in Barnsley MBC ownership, are marked at the surface by concrete bollards, as shown in the annexed photographs 'D' and 'E'.

Four other shafts associated with the clay workings are indicated on records, which are located just to the south-east of the former Darfield Main Colliery and indicated as 'Old Clay Pit Shafts' on plan no. M3860/5B. SYMAS has no record of the nature and condition of these shafts, however records show the two easterly shafts as being 16.5 m to the clay seam, as stated earlier.

## COAL MINING INFORMATION

### Shallow Workings

Although the Wheatworth Coal Seam is conjectured to be at the surface or shallow depth in the western/south-western part of the site, due to its inferior quality (containing many dirt bands) no workings are either recorded or anticipated in the seam.

### Deep Mining

The area has been affected by operations in nine seams of coal in the past at depths ranging between 130 m to 660 m, the most recent being in the Silkstone Seam (depth 660 m, thickness 890 mm) in 1989.

All subsidence movement from these workings will have ceased some 15 years ago and as the site now lies remote from the active coalfield will not be affected in the foreseeable future.

## COAL MINING DISUSED SHAFTS

The former Darfield Main Colliery mineshafts nos. 1, 2 and 3, are illustrated on plans nos. M3860/5A and M3860/5B. According to the Coal Authority's information, details of these shafts are as follows:

| Shaft No. | Depth (m) | Diameter (m) | Treatment |
|---|---|---|---|
| 1 | 309.4 | 3.35 | Filled and capped |
| 2 | 645.7 | 3.5 | Filled and capped |
| 3 | 660.4 | 6.4 | Filled and capped |

A site inspection revealed the 'obelisks' of the shafts within woodland/scrubland, as can be seen in the annexed photographs 'A' to 'C'. Further details (i.e. shaft cap specifications) may be obtained from the Coal Authority.

FORMER LAND USES

Plans nos. M3860/5C to M3860/5F indicate the past land uses in the vicinity of the site.

Plans nos. M3860/5C and M3860/5D indicate the former Darfield Main Colliery and associated sidings, coke ovens, spoil and the various structures that once existed within the site, along with the former Netherwood Hall and Mill. Plan M3860/5C also indicates the 'Old Colliery' in the eastern arm of the site, which comprised the aforementioned clay shafts that were later used as a 'pumping station' by the former Darfield Main Colliery.

Although not shown within the site itself a number of 'pumps' are indicated to the north and east, see plan no. M3860/5E around Hope Street, Providence Street and Pitt Street.

Plan no. M3860/5F indicates the location of the former settling ponds as also detailed on plan M3860/5A.

LANDFILL

The site lies within 250 m of two Category 4 (Nos. 56 and 110) and one Category 2 (No. 125) Landfill Sites, as indicated on the current Borough Landfill Site Map and illustrated on drawing M3860/5G.

CONCLUSIONS

1. The site is stable from the deep coal mining aspect and will remain so in the foreseeable future.

2. The eastern part of the site is underlain by shallow clay workings, which have been proved in the industrial estate further to the south.

   It would be prudent to carry out a borehole site investigation to determine the depth/extent of the clay/workings and whether there has been any void migration to the surface. This will then outline the need for any stabilisation works to the site prior to development.

3. Various disused mineshafts are recorded within the site, some of which are known/visible locations whilst others are not.

   Site investigations would be required to prove/treat the shafts whose locations and/or treatment are unknown, however prior consultation with the Coal Authority will be required for the shafts relating to coal mining.

   The standard principal for development near to disused shafts is that "no building should be sited over the shaft or shaft cap or within an area bounded by a line drawn at 45 degrees back from where the shaft side intersects rockhead."

4. The Wheatworth Coal Seam is conjectured to outcrop through the western part of the site, in which case the coal would be present beneath the made ground and alluvium. Due to its inferior quality the likelihood of uncharted workings in this seam is remote, however any coal exposed during future development works should be blinded off using a suitable sulphur resistant weak mix concrete or other inert material, to prevent spontaneous combustion from occurring.

5. The ownership of any coal seam or associated mine entries (i.e. shafts) and workings are now vested in the Coal Authority, who should be notified/consulted prior to any possible investigation/treatment works for indemnification purposes.

6. The site is shown to be located predominantly on made ground/colliery spoil material above an unknown thickness of alluvial deposits. Also of particular importance, in terms of spoil contamination, is an area where settling ponds once existed in the eastern part of the site.

   The suitability, nature and bearing capacity of this material will require investigation for its intended use, in order to safeguard future development.

7. The clay workings encountered an underground fault line beneath the eastern arm of the site, which, if projected back to the surface, may cause a potential hazard to future development in that area.

   Past mineworkings together with any fault movement may have opened out fissures in the sandstone bedrock.

   Should any weak/faulty ground conditions be encountered they may require treatment and/or foundations to be designed accordingly.

8. SYMAS is not aware of any fugitive gas problems in this area, but due to the presence of colliery spoil/made ground, shafts and clay workings the necessary safety precautions and monitoring procedures should be taken during site works/investigations.

   If gas is detected then protection measures may need to be designed into any future development, for example capping layers and/or geotextile gas membranes.

9. The site lies within 250 m of two Category 4 and one Category 2 Landfill Sites, which according to the borough register are described as:

   Category 2 is a "site on which insufficient information is known to permit an adequate response to be made on the extent to which landfill gas may be present."

Category 4 is a "site which the Waste Disposal Site Licence indicates has been licensed to accept material that would not be expected to give rise to landfill gas in substantial quantities.

Or a site which has been granted an exemption from Waste Management Licensing pursuant to the provisions of the waste Management Licensing Regulations 1994."

10. A site inspection noted that some of the gardens along Pitt Street have been extended into the area under consideration. The ownership of the land in these areas should therefore be checked.

11. Future development works should take into account the possible existence of foundations/services/backfill material, together with any associated contamination that may remain from the former land uses in the area, namely the former colliery and associated developments such as coke ovens and settling ponds etc.

THIS REPORT IS BASED ON AND LIMITED TO THE RECORDS IN THE POSSESSION OF SYMAS AT THE TIME THE ENQUIRY IS ANSWERED.

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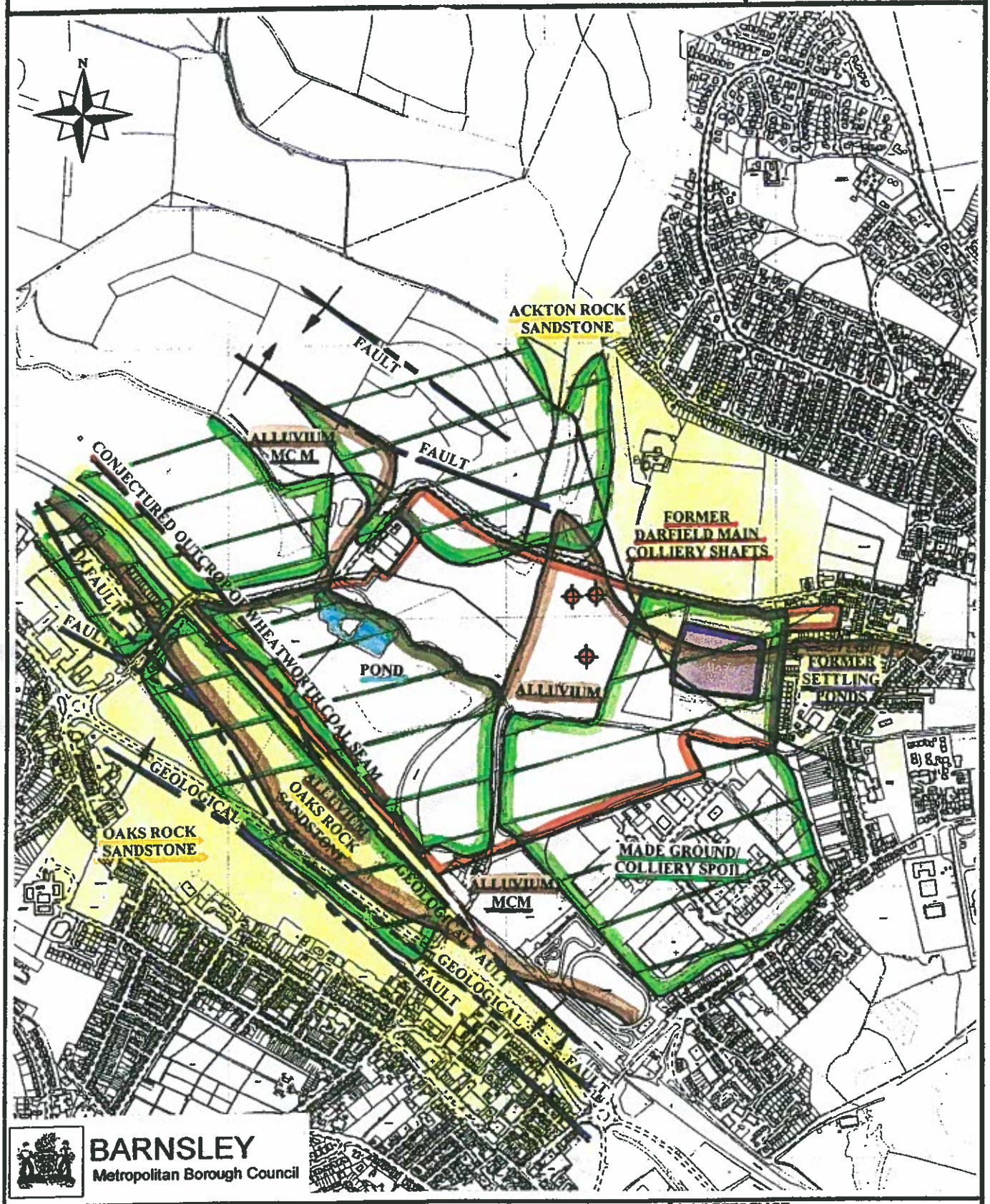
F. Wickham,
Senior Mining Engineer.

DRAWING TITLE

# FOULSTONE / WOMBWELL HIGH SCHOOL, BARNSLEY
# MINING & GEOLOGICAL INFORMATION

DRAWING NO.

M3860 / 5A




BARNSLEY
Metropolitan Borough Council

| SCALE | DATE | | O.S REFERENCE |
|---|---|---|---|
| 1 / 10,000 | 21 / 6 / 06 | SOUTH YORKSHIRE MINING ADVISORY SERVICE | SE 30 SE / 40 SW |
| DRAWN BY: SML | CHECKED BY: MJC | | F. WICKHAM BSc(Hons) MRICS SENIOR MINING ENGINEER |

BMBC Licence Number 100022264 2004

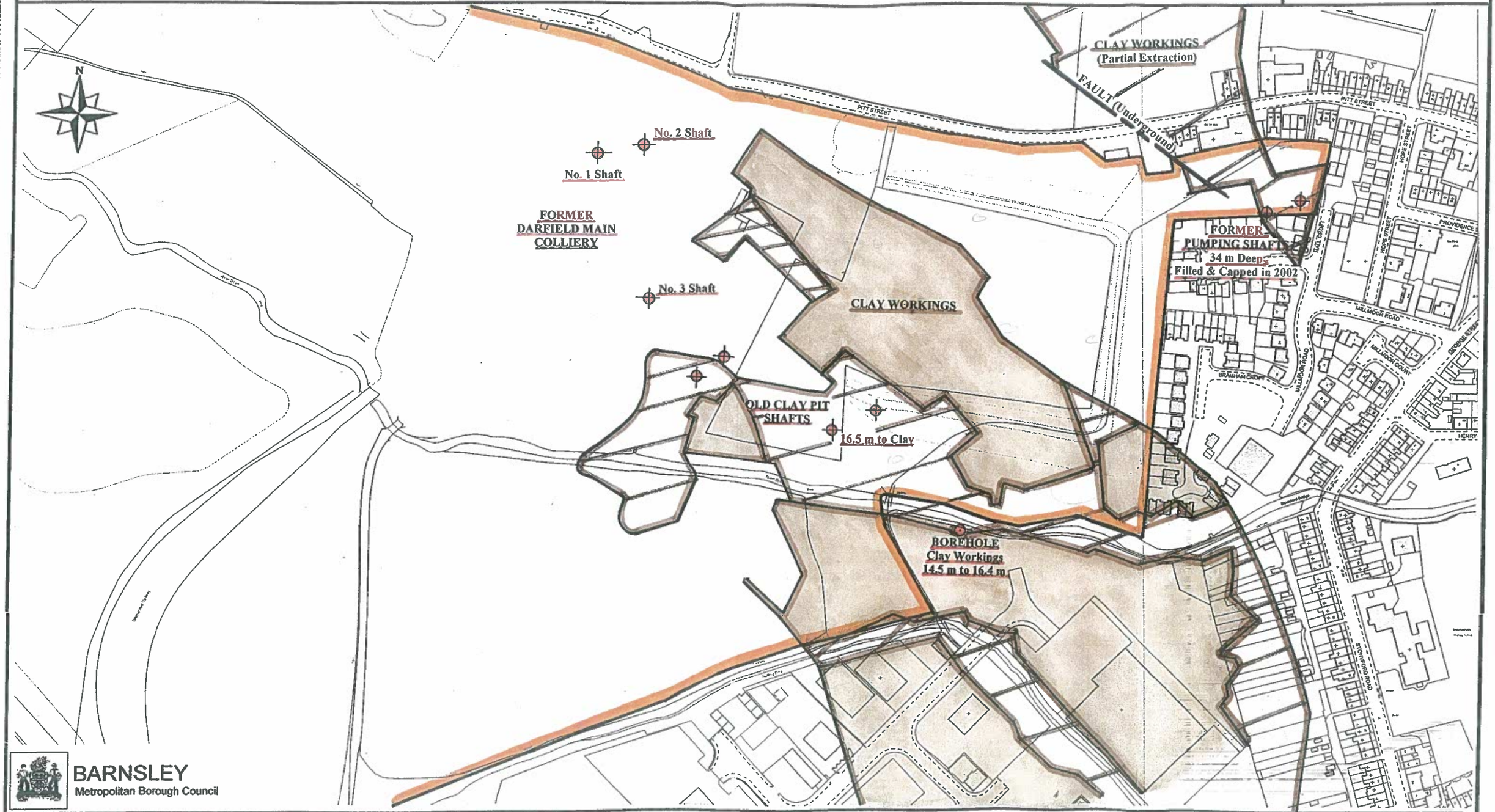
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DRAWING TITLE

# FOULSTONE / WOMBWELL HIGH SCHOOL, BARNSLEY
# CLAY WORKINGS

DRAWING NO.

M3860 / 5B




BARNSLEY
Metropolitan Borough Council

| SCALE | DATE | | O.S REFERENCE |
|---|---|---|---|
| 1 / 2500 | 21 / 6 / 06 | SOUTH YORKSHIRE MINING | SE 4003 / 4004 |
| DRAWN BY: SML | CHECKED BY: | ADVISORY SERVICE | F. WICKHAM BSc(Hons) MRICS SENIOR MINING ENGINEER |

BMBC Licence Number 100022264 2004

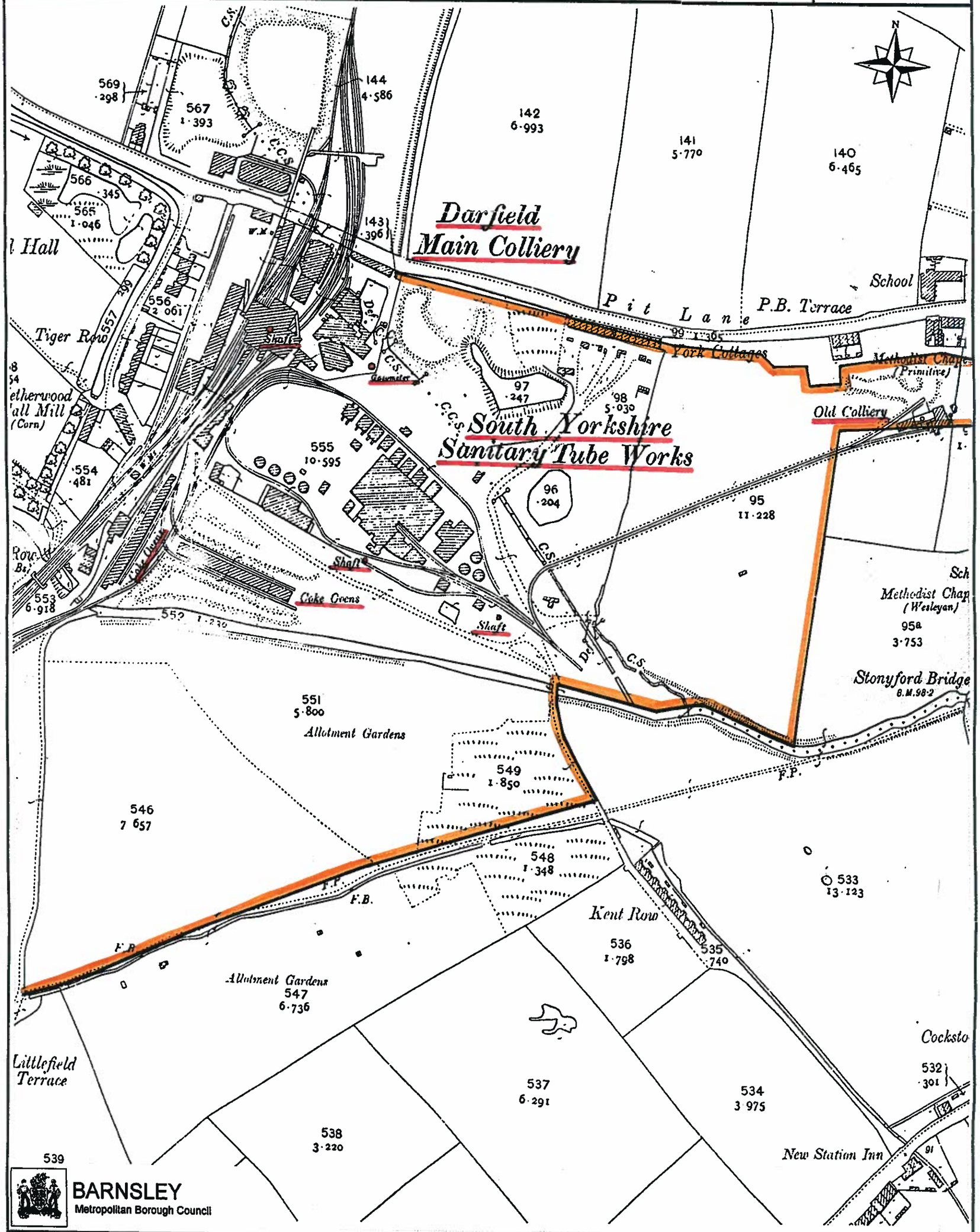
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DRAWING TITLE

# FOULSTONE / WOMBWELL HIGH SCHOOL, BARNSLEY
## HISTORICAL INFORMATION

DRAWING NO.

**M3860 / 5C**




BARNSLEY
Metropolitan Borough Council

| SCALE | DATE | | O.S REFERENCE |
|---|---|---|---|
| 1 / 2500 | 21 / 6 / 06 | **SOUTH YORKSHIRE MINING** | 275 / 14 - 1906 EDITION |
| DRAWN BY | CHECKED BY | **ADVISORY SERVICE** | F. WICKHAM BSc(Hons) MRICS SENIOR MINING ENGINEER |
| SML | | | |

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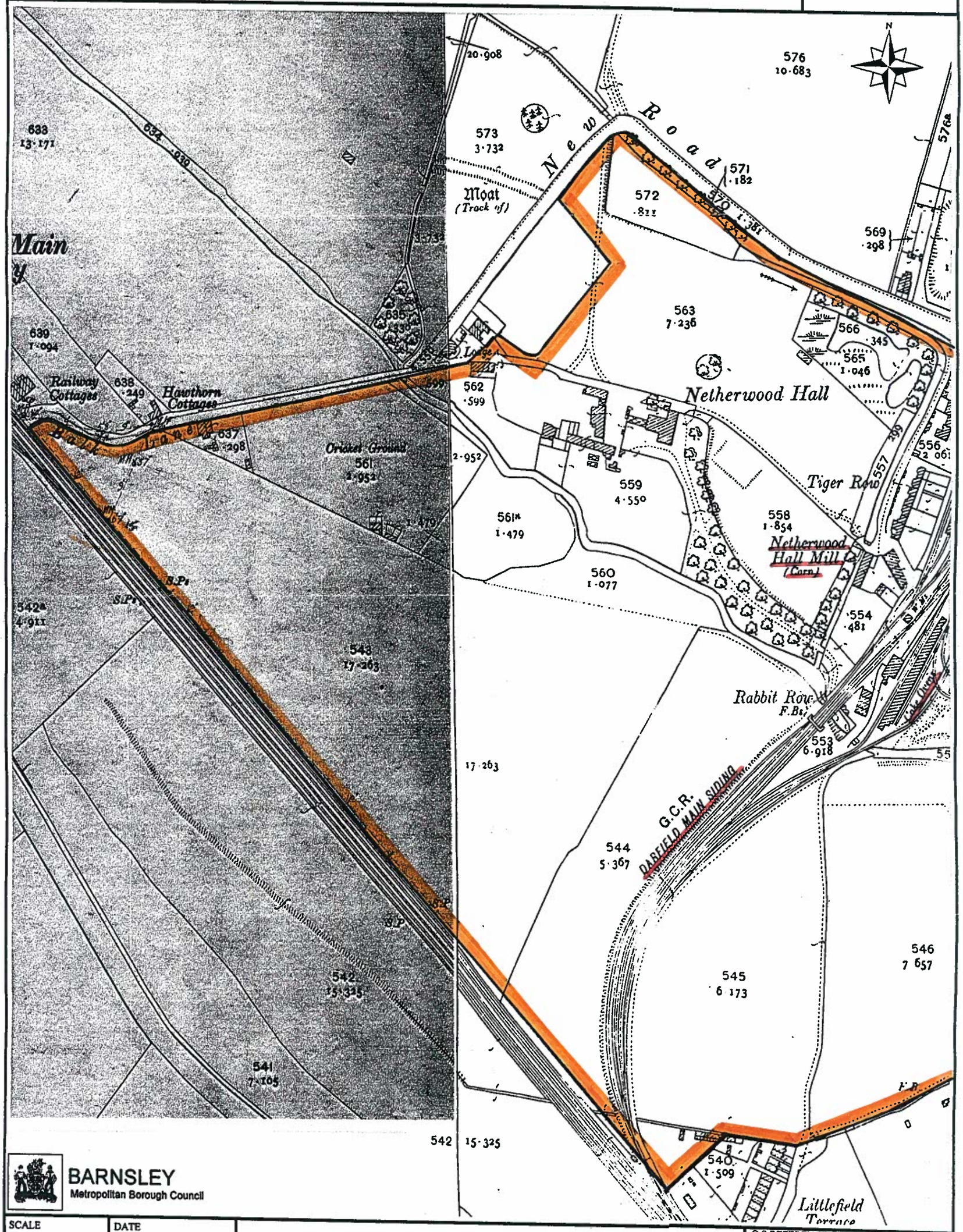
BMBC Licence Number 100022264 2004

DRAWING TITLE

# FOULSTONE / WOMBWELL HIGH SCHOOL, BARNSLEY
## HISTORICAL INFORMATION

DRAWING NO.

**M3860 / 5D**




BARNSLEY
Metropolitan Borough Council

| SCALE | DATE | | O.S REFERENCE |
|---|---|---|---|
| 1 / 2500 | 21 / 6 / 06 | **SOUTH YORKSHIRE MINING ADVISORY SERVICE** | 275 / 14 - 1906 EDITION |
| DRAWN BY: SML | CHECKED BY: MAL | | F. WICKHAM BSc(Hons) MRICS SENIOR MINING ENGINEER |

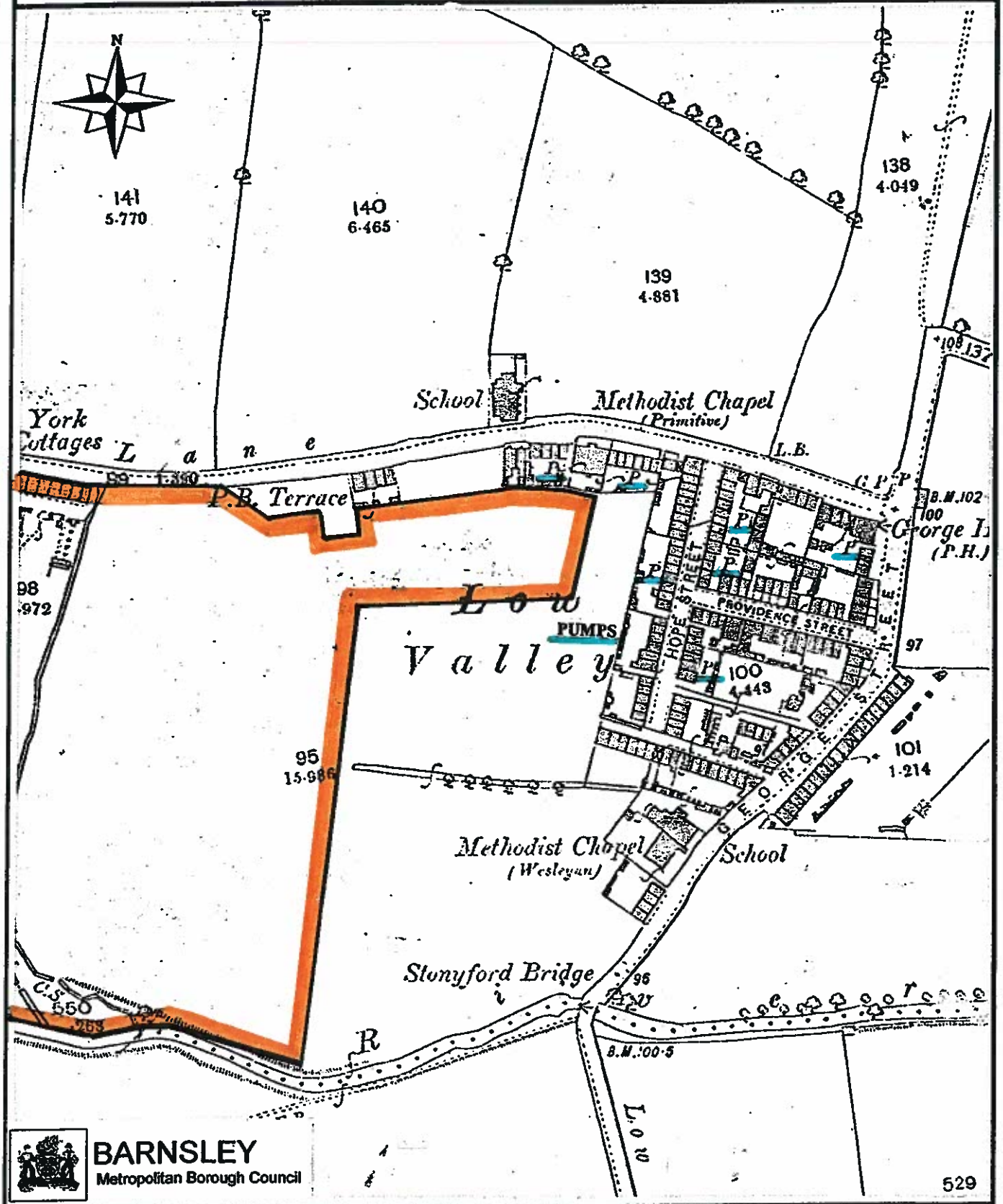
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DRAWING TITLE

# FOULSTONE / WOMBWELL HIGH SCHOOL, BARNSLEY
# HISTORICAL INFORMATION

DRAWING NO.

M3860 / 5E




BARNSLEY
Metropolitan Borough Council

| SCALE | DATE | | O.S REFERENCE |
|---|---|---|---|
| 1 / 2500 | 21 / 6 / 06 | SOUTH YORKSHIRE MINING ADVISORY SERVICE | 275 / 14 - 1893 EDITION |
| DRAWN BY: SML | CHECKED BY: MAC | | F. WICKHAM BSc(Hons) MRICS SENIOR MINING ENGINEER |


BMBC Licence Number 100022264 2004

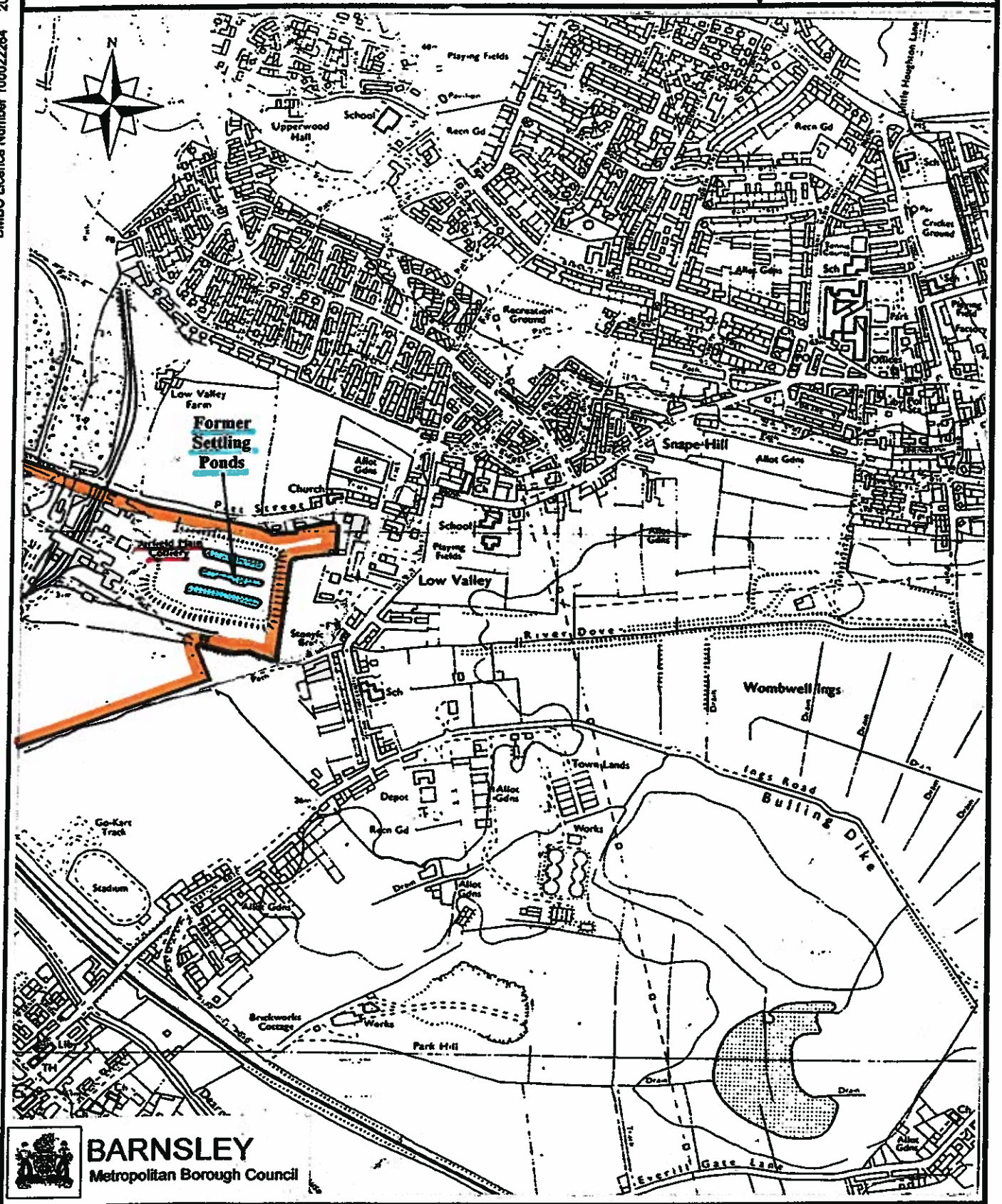
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DRAWING TITLE

# FOULSTONE / WOMBWELL HIGH SCHOOL, BARNSLEY
# HISTORICAL INFORMATION

DRAWING NO.

M3860 / 5F




BARNSLEY
Metropolitan Borough Council

| SCALE | DATE | | O.S REFERENCE |
|---|---|---|---|
| 1 / 10560 | 21 / 6 / 06 | SOUTH YORKSHIRE MINING | SE 40 SW |
| DRAWN BY: SML | CHECKED BY: | ADVISORY SERVICE | F. WICKHAM BSc(Hons) MRICS<br>SENIOR MINING ENGINEER |

BMBC Licence Number 100022264 2004

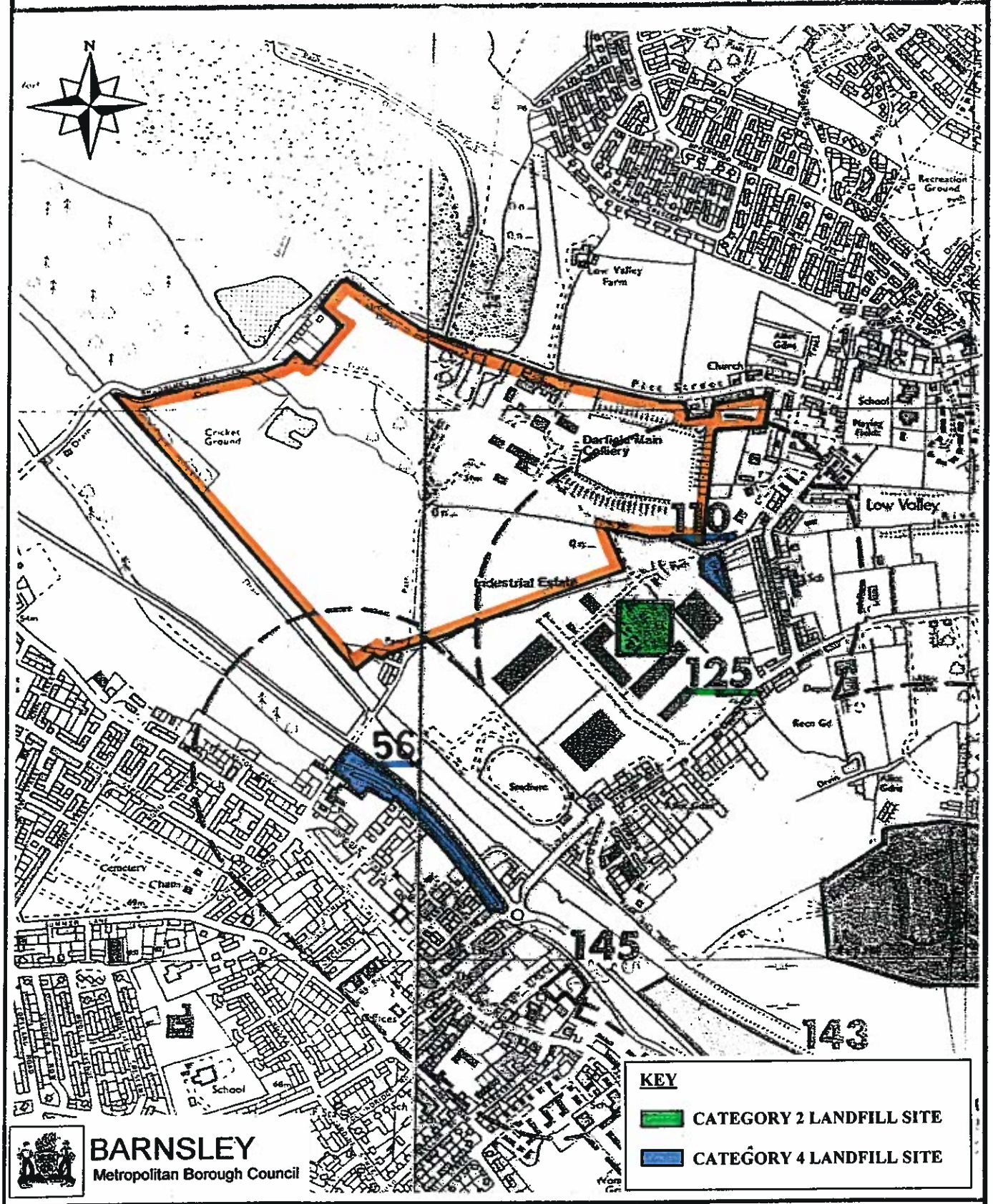
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DRAWING TITLE

# FOULSTONE / WOMBWELL HIGH SCHOOL, BARNSLEY LANDFILL SITES

DRAWING NO.

M3860 / 5G




BARNSLEY
Metropolitan Borough Council

| SCALE | DATE | | O.S REFERENCE |
|---|---|---|---|
| 1 / 10,000 | 21 / 6 / 06 | SOUTH YORKSHIRE MINING ADVISORY SERVICE | |
| DRAWN BY: SML | CHECKED BY: MAC | | F. WICKHAM BSc(Hons) MRICS SENIOR MINING ENGINEER |

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ANNEX




A
(SHAFT No. 2)




B
(SHAFT No. 1)

ANNEX




C
SHAFT
No. 3.

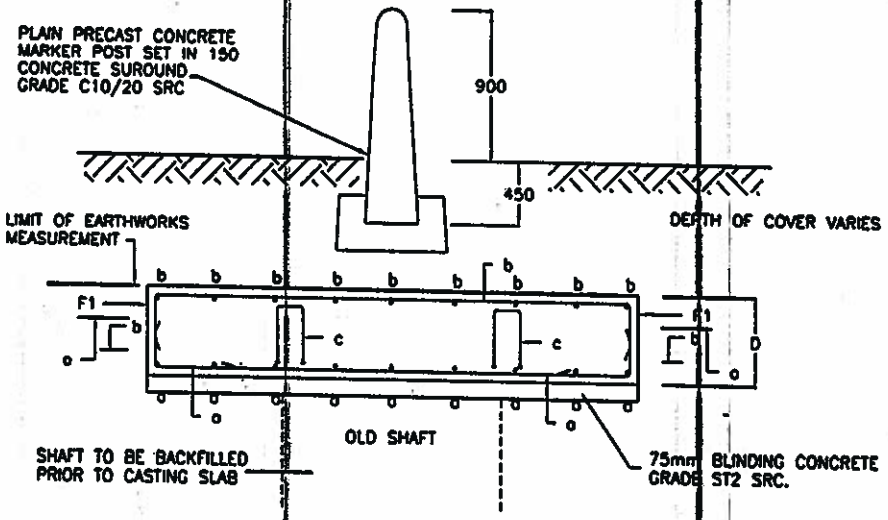
ANNEX



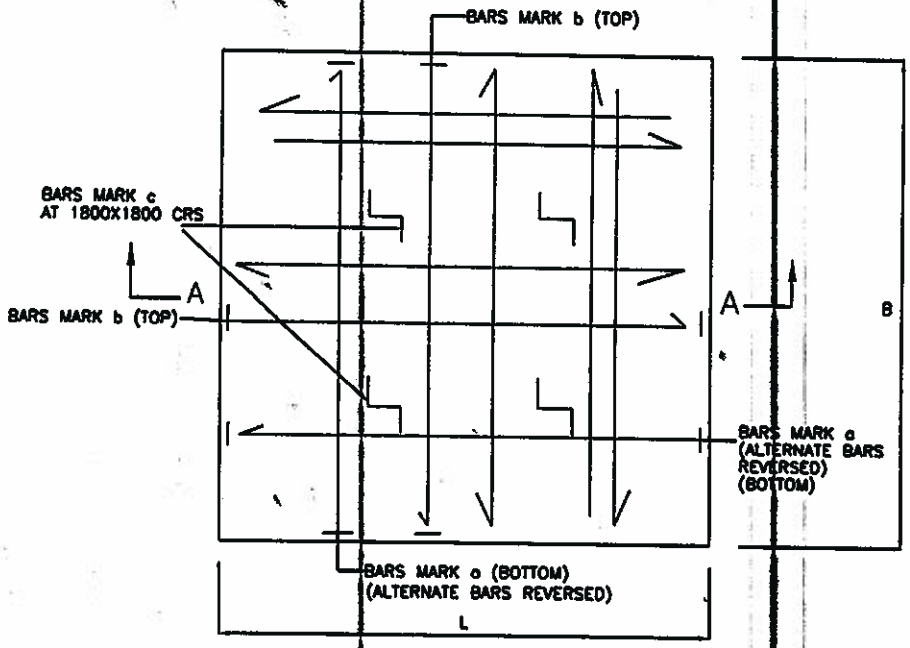

D




E




SECTION A–A




PLAN ON COVER SLAB

## SCHEDULE OF DIMENSIONS AND REINFORCEMENT

| SLAB SIZE | DIMENSIONS (mm) L | B | D | REINFORCEMENT BARS "a" | BARS "b" | BARS "c" |
|---|---|---|---|---|---|---|
| 4.5 | 4500 | 4500 | 350 | 46T25-01-200 | 30T16-02-300 | 4T16-03 |
| 6.0 | 6000 | 6000 | 400 | 80T25-04-150 | 40T16-05-300 | 5T16-06 |
| 7.5 | 7500 | 7500 | 500 | 76T32-07-200 | 50T16-08-300 | 12T16-09 |
| 9.0 | 9000 | 9000 | 550 | 120T32-10-150 | 60T16-11-300 | 16T16-12 |
| 10.5 | 10500 | 10500 | 625 | 106T40-13-200 | 70T16-14-300 | 25T16-15 |
| 11.5 | 11500 | 11500 | 700 | 154T40-16-150 | 78T16-17-300 | 36T16-18 |

## BENDING SCHEDULE

| SLAB SIZE | BAR MARK | TYPE &SIZE | NO.OF MBRS | NO.IN EACH | TOTAL NO. | LENGTH EACH BAR | SHAPE CODE | A mm | B mm | C mm | D mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.5 | a-01 | T25 | | 46 | | 4495 | 37 | 230 | | | |
| | b-02 | T16 | | 30 | | 4795 | 38 | 230 | 4400 | | |
| | c-03 | T16 | | 4 | | 1110 | 83 | 460 | 165 | 225 | |
| 6.0 | a-04 | T25 | | 80 | | 6000 | 37 | 300 | | | |
| | b-05 | T16 | | 40 | | 6425 | 38 | 300 | 5890 | | |
| | c-06 | T16 | | 9 | | 1180 | 83 | 460 | 200 | 225 | |
| 7.5 | a-07 | T32 | | 76 | | 7500 | 37 | 300 | | | |
| | b-08 | T16 | | 50 | | 7925 | 38 | 300 | 7390 | | |
| | c-09 | T16 | | 12 | | 1380 | 83 | 460 | 300 | 225 | |
| 9.0 | a-10 | T32 | | 120 | | 9120 | 37 | 400 | | | |
| | b-11 | T16 | | 60 | | 9425 | 38 | 300 | 8890 | | |
| | c-12 | T16 | | 16 | | 1480 | 83 | 460 | 350 | 225 | |
| 10.5 | a-13 | T40 | | 106 | | 10660 | 37 | 450 | | | |
| | b-14 | T16 | | 70 | | 10925 | 38 | 300 | 10390 | | |
| | c-15 | T16 | | 25 | | 1830 | 83 | 460 | 410 | 225 | |
| 11.5 | a-16 | T40 | | 154 | | 11710 | 37 | 500 | | | |
| | b-17 | T16 | | 78 | | 11925 | 38 | 300 | 11390 | | |
| | c-18 | T16 | | 36 | | 1780 | 83 | 460 | 485 | 225 | |

## SUMMARY OF QUANTITIES

| SLAB SIZE | CONCRETE GRADE 40/20 $m^3$ | CONCRETE GRADE ST2 ($m^3$) | 16mm REINFORCEMENT | REINFORCEMENT 25MM & OVER | FORMWORK F1 PLAIN VERTICAL |
|---|---|---|---|---|---|
| 4.5 | 7.1 | 1.5 | 0.23 TONNES | 0.8 TONNES | 6.3 $m^2$ |
| 6.0 | 14.4 | 2.7 | 0.42 " | 1.85 " | 9.6 $m^2$ |
| 7.5 | 28.1 | 4.2 | 0.65 " | 3.60 " | 15.0 $m^2$ |
| 9.0 | 44.6 | 6.1 | 0.93 " | 6.91 " | 19.8 $m^2$ |
| 10.5 | 69.0 | 8.3 | 1.27 " | 10.46 " | 28.3 $m^2$ |
| 11.5 | 92.6 | 10.0 | 1.57 " | 17.79 " | 32.2 $m^2$ |

## NOTES

1. STRUCTURAL CONCRETE TO BE MIX E GRADE 40/20 MINIMUM CEMENT CONTENT 330Kg/$m^3$.
2. BLINDING CONCRETE TO BE GRADE ST2 S.R.C.
3. T32 DENOTES 32mm DIAMETER HIGH YIELD STEEL BARS.
4. COVER TO REINFORCEMENT TO BE 50mm.
5. SLABS HAVE BEEN DESIGNED TO CARRY AN UNLIMITED HEIGHT OF FILL OVER.
6. MARKER POST TO BE ERECTED CENTRALLY OVER CAPPED SHAFT ON COMPLETION OF BACKFILLING ABOVE SLAB (WHERE SURFACE CONDITIONS ALLOW).
7. S.R.C. DENOTES SULPHATE RESISTANT CEMENT.

| SLAB SIZE | SHAFT DIAMETER (m) SLAB FOUNDED ON ROCK OR SHAFT WALL | SLAB FOUNDED ON OTHER MATERIAL |
|---|---|---|
| 4.5 | < 2.5 | < 1.8 |
| 6.0 | 2.5–3.0 | 1.8–2.4 |
| 7.5 | 3.0–3.75 | 2.4–3.0 |
| 9.0 | 3.75–4.5 | 3.0–3.6 |
| 10.5 | 4.5–5.25 | 3.6–4.3 |
| 11.5 | 5.25–5.75 | 4.3–4.9 |

BARNSLEY Metropolitan Borough Council

# PITT STREET – DARFIELD MINE SHAFT CAP

| Scale | |
|---|---|
| NOT TO SCALE | |
| Drawn | Date |
| J.G.H. | SEPT 96 |
| Checked | File |
| | 58/99 |

G.J. Birkett, BTech(Hons), C.Eng., M.I.C.E.
ASSISTANT DIRECTOR HIGHWAYS AND ENGINEERING
CENTRAL OFFICES, KENDRAY STREET,
BARNSLEY S70 2TN.
Tel. (01226) 770770 Fax. (01226) 772222

Drawing No. H/1176/6/1

ANNEX F