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**METHOD STATEMENT FOR
RECLAMATION WORKS
PROPOSED DEVELOPMENT
FORMER BERSHAM COLLIERY TIP
RHOSTYLLLEN, WREXHAM**

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APPENDIX B - HEALTH AND SAFETY PLAN

METHOD STATEMENT FOR RECLAMATION WORKS THE FORMER BERSHAM COLLIERY TIP, RHOSTYLLLEN.

1. INTRODUCTION

- 1.1 The proposed site is located at the former Bersham Colliery Tip, Rhostyllen, Wrexham. The site consists of an abandoned colliery spoil heap located at National Grid Reference SJ 313 481, to the south of the village of Rhostyllen and some 2 km south west of Wrexham Town Centre. The site location is shown on Drawing BGL/A1 included in Appendix A.
- 1.2 The purpose of this method statement is to provide detail on the proposed methods to be adopted for the reclamation works required for the site. The reclamation works have been designed to clear the site of colliery spoil and waste material as shown on the phasing plans referenced as follows;

BGL/001/A Fig 1.2	Phasing master plans & site access & facilities;
BGL/002/A Fig 1.3	Commencement of Phase 1 plan & cross sections
BGL/003/A Fig 1.4	Commencement of Phase 2 plan & cross sections
BGL/004/A Fig 1.5	Commencement of Phase 3 plan & cross sections
BGL/005/A Fig 1.6	Commencement of Phase 4 plan & cross sections
BGL/006/A Fig 1.7	Commencement of Phase 5 plan & cross sections
BGL/007/A Fig 1.8	Commencement of Phase 6 plan & cross sections
BGL/008/A Fig 1.9	Land form on completion of reclamation works.

These documents are provided within Appendix A of this statement. [Figures 1.2-1.9]

- 1.3 This Method Statement forms part of the briefing notes to the consultants undertaking the EIA to accompany the minerals extraction planning application for this site.
- 1.4 The site presently comprises a raised tip area that lies at a topographically higher level than the surrounding ground. Granular materials predominate in the raised area and largely comprise burnt and un-burnt colliery spoil, that is red shale and black shale respectively

2. SITE DESCRIPTION AND PROPOSALS

- 2.1 The site extends to 13.34 hectares and the spoil tip itself is estimated to contain approximately 6 million tonnes of material. It is considered that of the existing material, approximately 60% consists of un-burnt black shale and gravel size coal, with 40% being well burnt red shale. There is an element of 'over-size' rock within the tip that will be suitable for processing to form aggregates for the construction industry.

- 2.2 The Colliery tip forms a low but prominent, flat topped gill with views across to Ruabon Mountains (west), the Cheshire Plain (east) and Erddig. It is bound to the north by the industry and housing of Rhostyllen which is separated from the site by the Glay-y-rafon Brook. To the immediate west is the main A483 from Oswestry to Wrexham. The southern boundary is the main railway line and the industrial units of Bersham Enterprise Centre.
- 2.3 The Colliery was closed in 1986 and the site has undergone some natural regeneration and includes the following habitats: woodland, scrub, sparse grassland and a stream. There are no ponds on the site. Mixed farmland surrounds the wider area including arable and pasture with hedgerows.
- 2.4 In general terms, the reclamation works involves the following:
- Excavation of the existing materials to a reduced level of 100m AOD;
 - Re-distribution of materials generated during excavation and disposal works;
 - Disposal from site by 8 wheeled tipper lorries
 - Disposal from site by articulated lorries - black shale from site to Castle Cement to the north at approximately 1500 tonnes per day (anticipated 52 movements per day)
 - Disposal from site by Rail Freight - likely number and timing of rail movements is to be determined.
- 2.5 The time-scales and phases of this works are as follows:

Current estimate for total clearance is 7 – 9 years. However, issues under consideration include the provision of significant quantities of suitable fill materials by rail for major construction projects.

The works will be carried out in phases with the excavation of material generally in a west to east direction, as illustrated in the phasing plans [Figures 1.2-1.9] included at Appendix A. In this manner the existing mounding and tree screening between the site and occupied areas will be maintained for as long as possible.

Phase 1 of the works, illustrated in Figure 1.3, will involve the clearance of land in the southeast part of the site to enable the construction of the rail freight siding. Extraction will also take place in the southernmost part of the site. The haulage route for this phase of the proposed works runs parallel with southeast site boundary, and the processing and loading area will be situated to the west of this haul route. The screens and, intermittently a crusher, will be located within the processing and loading area. Phase 1 of the works will also involve the construction of a screening bund along southeast site boundary, adjacent to the proposed rail siding.

Phase 2 of the works, illustrated in Figure 1.4, will involve the extraction of materials from the upper parts of the tip, in the centre of the site. The excavated materials will be transported to the processing area by a haul route, which runs east to west and then southward, across the southern face of the tip. A second processing area will be created in the worked out area of Phase 1 and a storage area for oversized material will be created in the southernmost part of the site. A 3m high screening bund will be

constructed along the southwest site boundary and at this phase of the development it is anticipated that the rail freight siding will be operational.

Phase 3 of the works, illustrated in Figure 1.5, will involve the extraction of materials in a northwest to southeast direction, on the western side of the tip. Materials will be hauled directly south, to the two processing and loading areas.

Phase 4, illustrated in Figure 1.6, will involve further extraction of materials from the central and northern areas of the tip. Materials will continue to be hauled directly southward, to the processing and loading areas, one of which will be relocated next to the southwest site boundary during this phase. Phase 4 of the works will also involve an extension of the existing 3m high screening bund, along the south-western and western boundaries of the site.

Phase 5, illustrated in Figure 1.7, will involve extraction in the northeast corner of the site, with haulage in a southwest direction. During this phase of the works the bund along the western boundary will be further extended in a north-easterly direction.

Phase 6, illustrated in Figure 1.8, also involves the extraction of tip materials in the northeast part of the site and at completion, the ground level across the site will range from 105m to 110m AOD.

Given the height of the tip which is approximately 155m AOD at the central plateau, the excavation will be carried out in a series of 3 to 4m lifts, with no cut face to exceed an angle of 45° in order to retain stability. It is estimated that the proposed reclamation will be completed over a period of seven to nine years.

Excavation and loading onto dump trucks will be carried out using tracked excavators. Within the processing area screeners will be loaded by tracked excavators. Any oversize material will be segregated and stockpiled for crushing and screening, which will take place on a campaign basis. Materials will be loaded onto road going wagons by wheeled loading shovels for transport to the market and following the construction of a rail freight siding, material will also be transported by rail.

2.6 The types of machinery to be used on this site for excavation, crushing (by campaign only and not permanently), screening and removal include:

- (i) 35 tonne tracked excavators
- (ii) 20 tonne tracked excavators
- (iii) 35 tonne dump-trucks
- (iv) 17 tonne loading shovels
- (v) power screening plant
- (vi) crushing plant (intermittently)
- (vii) tracked dozer

3. GENERAL SITE ORGANISATION AND CONTROLS

Organisation

- 3.1 Access to and from the site will be via Plas Grano Road, either to the north or south as shown on Figure 1.2 Drawing No. BGL/001/A included in Appendix A. The organisation of transport associated with the disposal of materials from the site will be submitted to the local authority and local Police, for their approval, prior to commencement of the works.
- 3.2 A site compound area will be established as shown on Figure 1.2 drawing reference BGL/001/A (Appendix A) within the site boundary within which site cabins, mess, toilets, changing and hygiene facilities, equipment store, first aid station and car park will be located. Appropriate warning signs will be placed in suitable locations. All personnel, plant, materials and other equipment related to the contract will be confined within the boundaries of the site.
- 3.3 Prior to leaving the site each load will be sheeted to avoid spillage of materials onto the highway. Wheel washing facilities will be located at the exit from the site. The washing facilities shall be utilised for the thorough cleaning of all vehicles and plant prior to leaving the site and entry onto the public highway.
- 3.4 A full services search will be conducted prior to the commencement of any site works. Any live services within the boundary of the site will be marked and protected or appropriate arrangements will be made to truncate them.
- 3.5 The site benefits from existing boundary fencing around the perimeter. Appropriate notices, warning signs, etc. will be erected and the site will be designated as a restricted zone with access limited to authorised personnel only. Access to the site offices and works compound will be controlled.
- 3.6 Unless stated otherwise working hours will be as follows:
- 0700 to 1700 Monday to Friday
0800 to 1300 Saturdays
- No working, with the exception of plant maintenance shall be permitted on Sundays or Bank Holidays.
- 3.7 It is presently anticipated that site works will commence during Spring 2007 with an estimated maximum contract duration of approximately 7 years.

4. SITE CLEARANCE AND PREPARATORY WORKS

- 4.1 It is understood that no Tree Preservation Order (TPO) is present within the boundary of the site. However, there is an extensive area of established Birch trees adjacent to the Plas Grano Road and under the proposed works this buffer will be maintained for as long as possible within the duration of the reclamation works. No cut face shall exceed a retained angle of 45° in order to retain stability of the existing mound.
- 4.2 Concurrent with the placement of any required boundary protective fencing, the area will be progressively cleared of existing vegetation including bushes and trees using a 20 tonne tracked excavator and / or CAT D6 Dozer. Felled trees will be reduced in size passed through a chipping machine and the resulting "mulch" will be stockpiled at a suitable location on site for later use in landscaping. Tree stumps and other unsuitable site clearance arisings will be stockpiled for subsequent disposal.
- 4.4 Any unsuitable contaminated material will be removed from site and disposed of at an appropriate licensed facility if it is not possible to relocate the material within the site boundary.
- 4.4a Japanese Knotweed present on site will be eradicated by a method to be approved by the Environment Agency.
- 4.5 Suitable granular fill will be site won and will be placed and compacted with a CAT D6 Dozer or similar and/or vibrating smooth drum roller in order to construct all necessary haul roads into the working area. This will provide a hard, dry surface for road wagons to enter the site. In a similar manner suitable hardcore will be placed both within and adjacent to the site compound to create a car park and vehicle turning area.
- 4.5 The site office and car parking area will be located close to the site entrance as shown on Figure 1.2 drawing reference BGL/001/A within Appendix A.
- 4.6 The site works compound will be located discreetly from the public highway to the south of the existing electricity sub station.

5. CONCRETE SLABS, HARDSTANDING AND FOUNDATIONS

5.1 Break Out and Excavation

- 5.1 The hard-standing area at the site entrance / compound will be retained throughout the Works.

6. EARTHWORKS

- 6.1 Bulk excavation and loading materials for disposal will be carried out using a combination of 20/35 tonne 360° tracked excavators, dump trucks and loading

shovels. Excavated materials will be loaded onto road going wagons for off site disposal.

- 6.2 During excavation, large obstructions, oversize, unsuitable or contaminated materials uncovered during the excavation will be segregated using a 360° tracked excavator. Large material will be stockpiled on site for processing by on site crushing & screening plant. Any contaminated material identified by visual and / or olfactory means will be segregated and stockpiled on site for sampling and laboratory testing in order to determine the nature of any contamination prior to removal from site by licensed carriers to a suitably licensed disposal facility or re-located on site.

7. MATERIALS HANDLING

- 7.1 All deliveries to site will be off-loaded by either lorry-mounted crane / Hiab operated by the driver or by hand in accordance with the Manual Handling Operations Regulations 1992.
- 7.2 Deliveries of heavy materials will be on wooden pallets. The pallets will be split, so items can be manually handled singly.

Two mechanical methods of materials movement will be used;

- (i) the lifting and movement of materials by use of a tracked 360° excavator fitted with check valves for lifting of one tonne weight,
- (ii) the towing of materials behind a 4 wheel drive vehicle or 3 tonne dumper using a proprietary expanding towing ring and 5 tonne rated stamped chain or slings. All operatives of plant are to be appropriately trained and certified.

8. SPECIAL SAFETY REQUIREMENTS

- 8.1 A banksman will be used whenever there is a risk of injury to pedestrians from the plant operation, risk of damage to site structures, risk of plant slippage or over-running. It is envisaged that the majority of the site works will not involve the need for a banksman. However, all personnel (particularly the plant operators) will be made aware of the above method of working by site safety induction.
- 8.2 In advance of each phase of the excavation works and in advance of each 'layer' of material to be removed from a specific phase, in-situ survey and testing will be carried out to assess the potential for spontaneous combustion and/or the emission of gasses associated with colliery waste. Details of the measures to be adopted are included within section 2.06 of the health & safety plan.

9. ENVIRONMENTAL CONSIDERATIONS

- 9.1 For the duration of the reclamation works a monitoring exercise will be undertaken along the perimeter of the site during periods of operations. This monitoring exercise shall establish the following:

- daily observations on the levels of dust, wind blown debris and site security. These details shall be recorded each day in the Site Diary and on formal environmental control records.

9.2 Any excavation works will be controlled and monitored by taking account of the following:

- any dust arising from the bulk excavation operation shall be attenuated by suitable damping down equipment;
- throughout the duration of the works control measures shall be implemented as appropriate so as to ensure that a minimum of observable dust arising from or generated by operations on the site are perceived at the boundary of any neighbouring premises;
- dust emissions to air will be controlled by the damping down of site haul roads during periods of dry weather, by using a spray bowser towed by tractor. Water will be drawn from mains or other approved source.
- a wheel wash / bath will be located within the site compound area and road sweeping will be undertaken as necessary throughout the works to ensure that roads are free of any potential detritus from the Works;
- traffic will be restricted to defined haul roads during the phased execution of the works. In the event that control measures are not fully effective spot check dust monitoring at weekly intervals using 'sticky pad' monitors will be adopted during dry periods.

9.3 The best practical means to minimise noise produced by site operations will be employed and shall comply with the recommendations set out in BS 5228 Code of Practice for Noise Control on Construction and Demolition sites. This will include the following:

- (i) all plant shall be 'sound reduced' models fitted with properly lined and sealed acoustic covers which shall be closed whenever the machines are in use, and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers;
- (ii) all machines in intermittent use shall be shut down in the intervening period between work or throttled down to a minimum;
- (iii) all vehicles, mechanical plant and machinery used for the purpose of the works associated with the contract shall be fitted with proper and effective silencers and shall be maintained in good and efficient working order;
- (iv) in the unlikely event that equipment is required to be run continuously throughout the night, such as electricity generators, they will be required to have additional acoustic screening;

9.4 The following general controls will also be established:

- all fuel or lubrication oils stored in bulk on the site will be located in the site compound and such stores will be surrounded with an effective bund wall capable of holding the full contents of the store + 10 % and constructed of impermeable materials;
- a marker shall be provided within the compound which shall clearly indicate when there is less than 100% of the tank capacity left in the bund. When this level is reached, immediate action shall be taken to remove the liquid contained in the compound;

- any tank used for the storage of fuel shall be of a type and construction suitable for the fuel it contains, and shall be clearly labelled to show its contents and its capacity;
- all off-loading valves and vent pipes shall be sited within the containment bund wall such that any spillages are contained within the compound. All valves and pipes shall be clearly labelled to show their function;
- the delivery hose of any fuel tank shall have an in-line valve, which shall be kept closed and locked when the site is un-manned;
- all tanks and their associated bunds shall be inspected at least weekly for defects to their structural integrity and the contents of the bund. Any defects noted which would impair the containment capability of either the bund or the tank shall be immediately drawn to the attention of the Site Manager and a course of action to remedy the defect shall be immediately implemented. Details of these inspections shall be recorded in the Site Diary;
- all stores shall be kept locked when not in use;

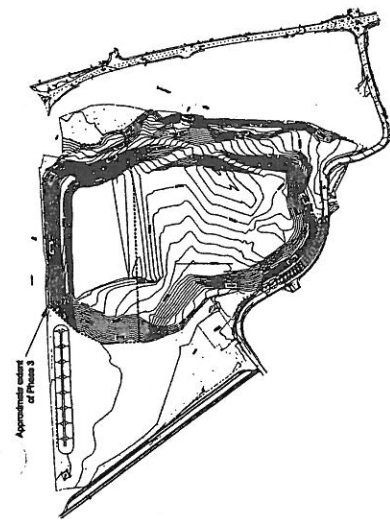
9.5 The stipulated working hours in Section 2 will be adhered to.

9.6 Lorry movements will be restricted to a defined access route leading from the site via Plas Grano Road.

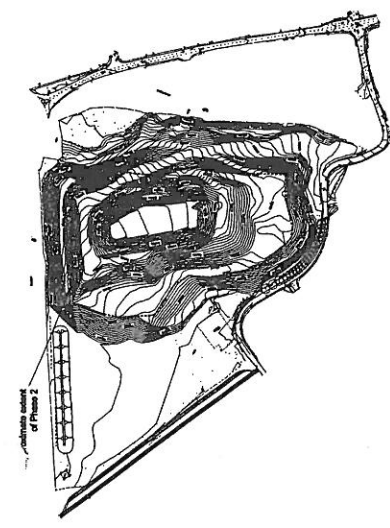
9.7 Lorry movements will be restricted to a number of 140 per day (280 movements).

Notes

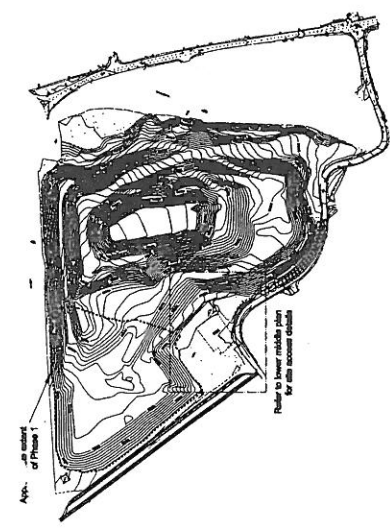
Head outlines, processing areas and site access not shown for clarity.



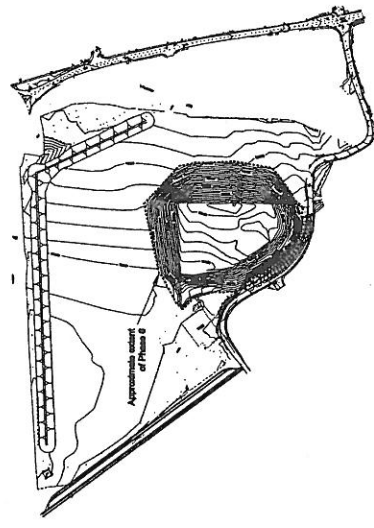
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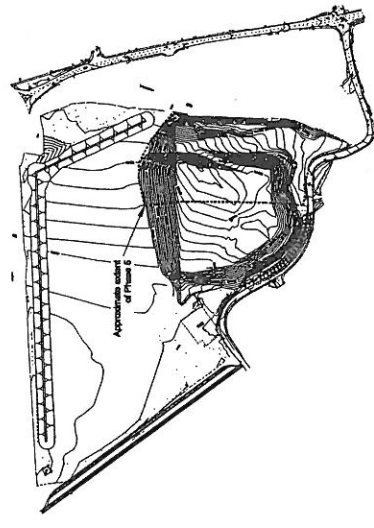
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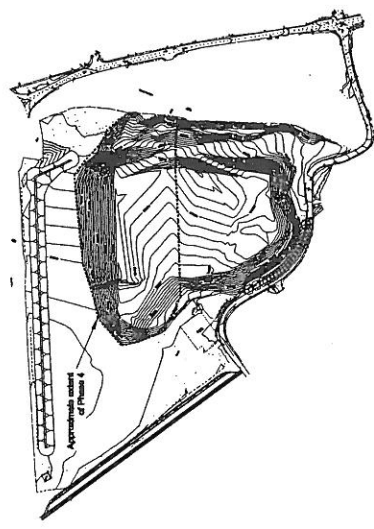
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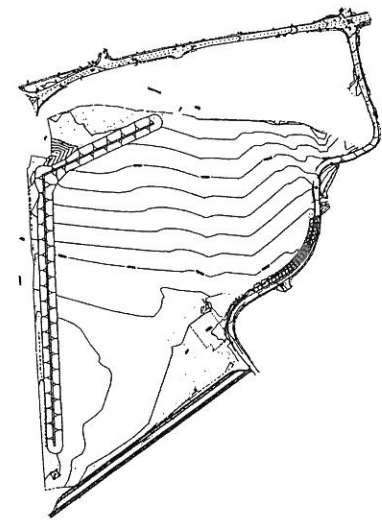
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Commencement of Phase 5



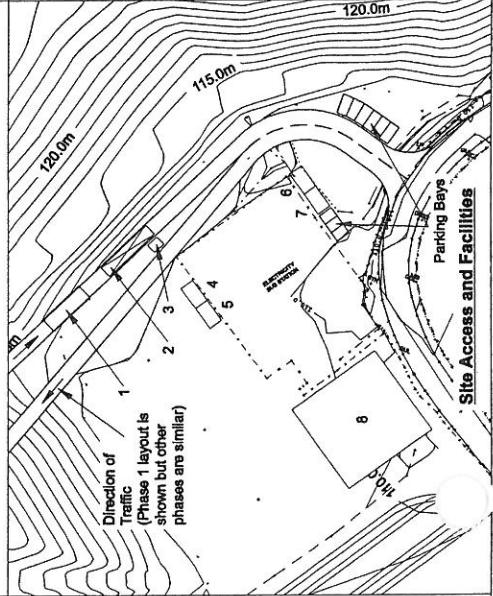
Commencement of Phase 4



Completion

Key

- 1 Wheelwash facility
 - 2 Weighbridge
 - 3 Weighbridge Office
 - 4 Messroom / Canteen
 - 5 Toilets / Showers
 - 6 Site Office
 - 7 Meeting Room
 - 8 Temporary Plant Maintenance Building
- 12.0m x 3.9m
15.0m x 3.0m
3.05m x 2.44m
6.1m x 3.5m
6.1m x 3.5m
6.1m x 3.5m
6.1m x 3.5m
25.0m x 24.0m

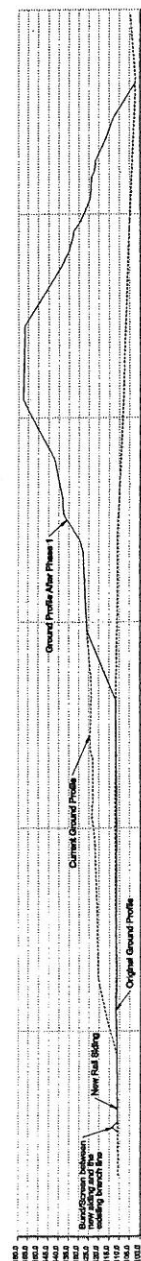


BERSHAM GLENSIDE LTD

Bereham Colliery Tip

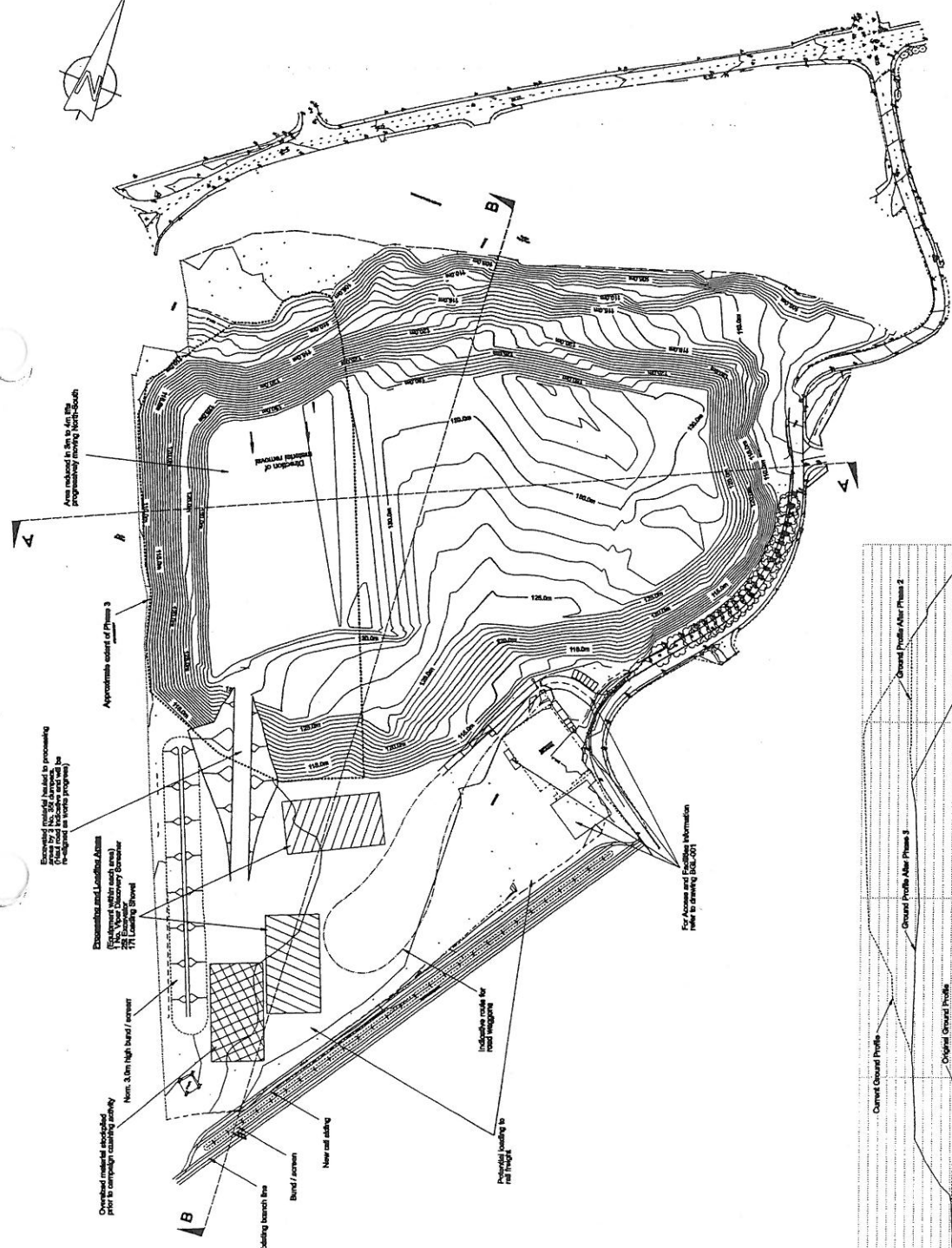
Proposed Phases
&
Site Access and Facilities

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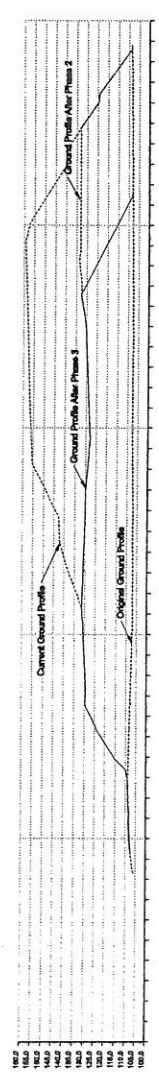


SECTION B:B

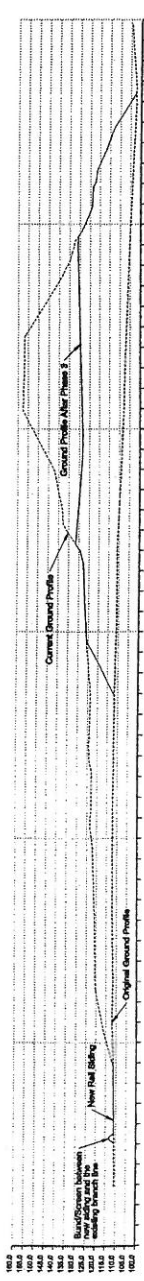
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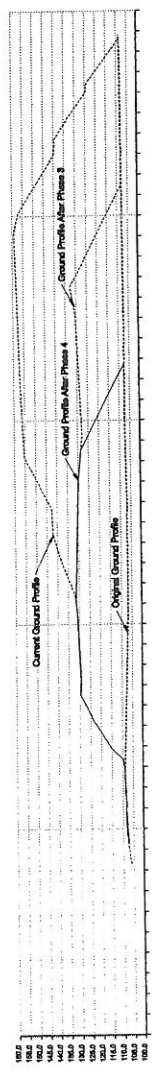
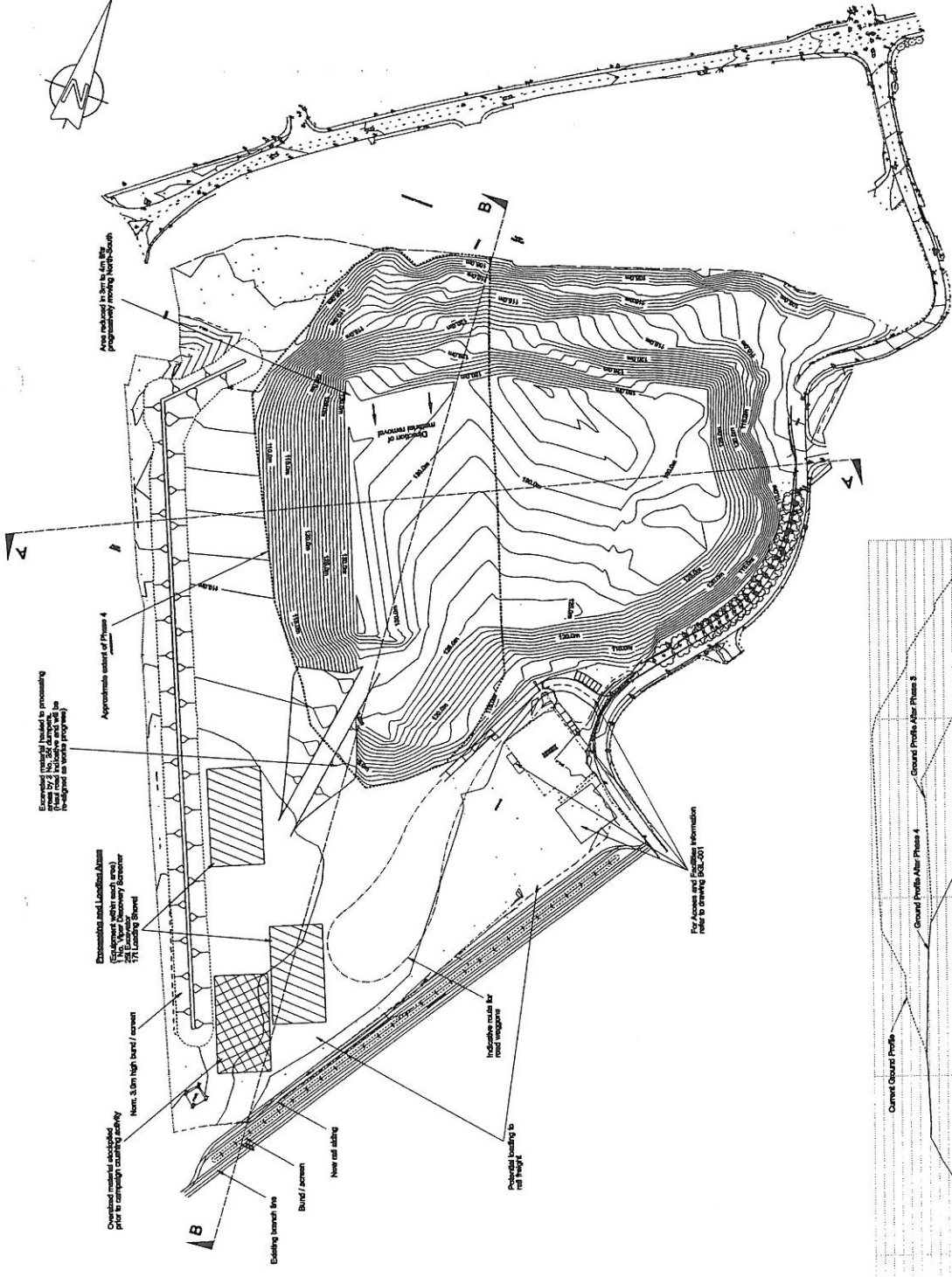
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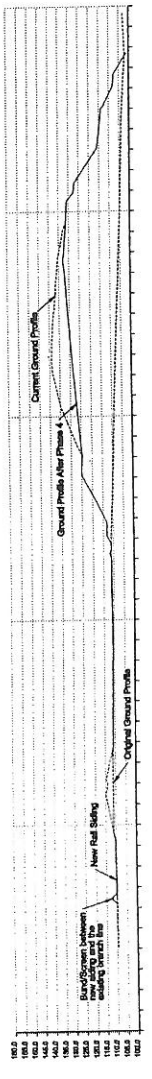
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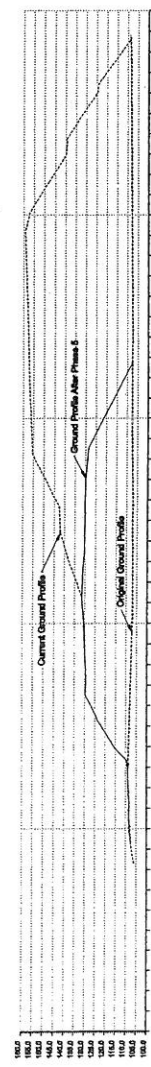
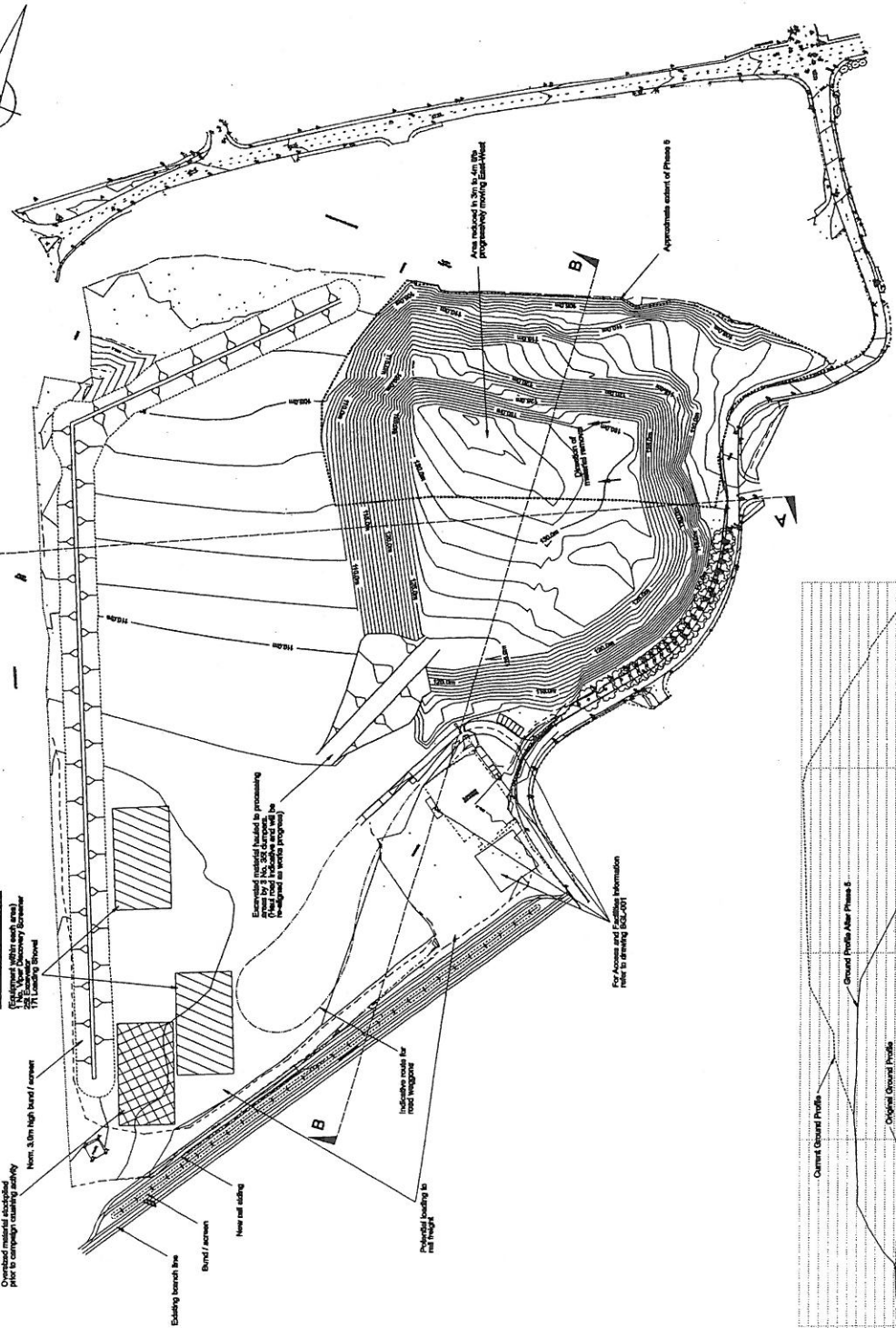


SECTION A-A

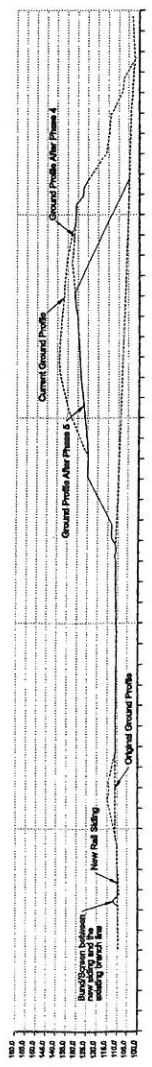


SECTION B-B

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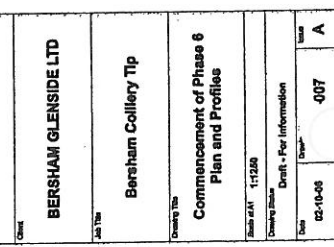


SECTION A:A



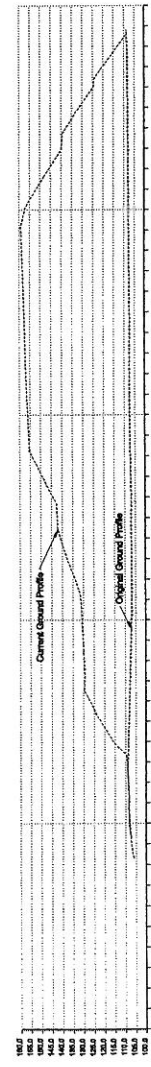
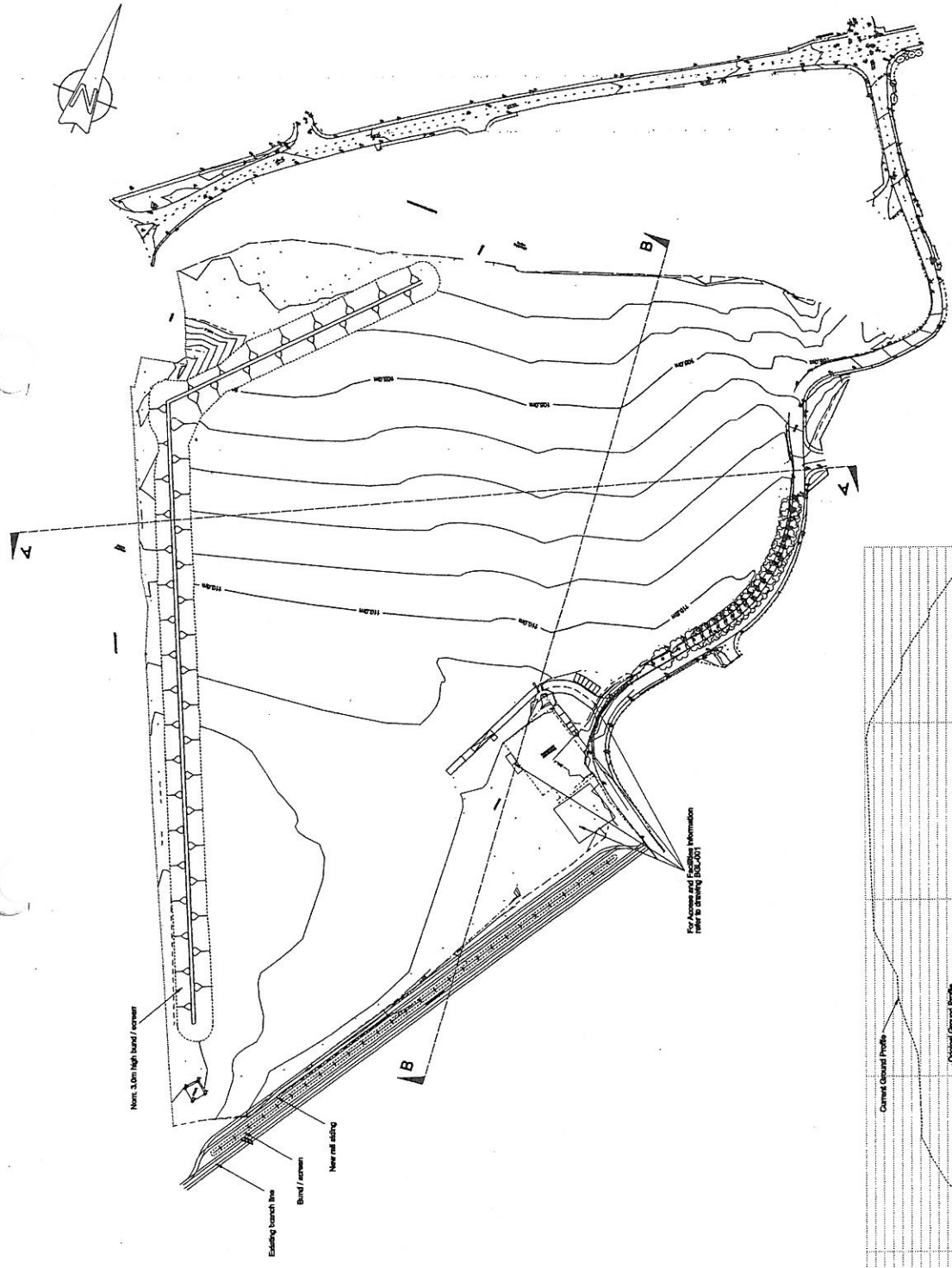
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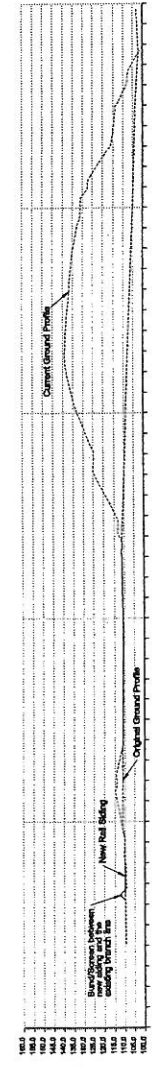


SECTION B:B

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SECTION A:A



SECTION B:B