

**WYNNSTAY GROUP PLC
LLYSONNEN MILL, CARMARTHEN**

INTEGRITY ASSESSMENT

MAY 2011

Prepared for:



**ExCAL Limited
ExCAL House
Capel Hendre Industrial Estate
Ammanford
Carmarthenshire
SA18 3SJ**

**Tel No: 01269 831606
Fax No: 01269 841867**



ExCAL Limited

DOCUMENT CONTROL SHEET

PROJECT:	ENGINEERED CONTAINMENT SYSTEMS ASSESSMENT
TITLE:	INTEGRITY ASSESSMENT

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PREPARED BY:

C Walters:

APPROVED BY:

S Whitehouse:

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**WYNNSTAY GROUP PLC
LLYSONNEN MILL, CARMARTHEN**

INTEGRITY ASSESSMENT

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1.0 INTRODUCTION

1.1 Scope

ExCAL Limited has been commissioned by Wynnstay Group PLC to undertake an assessment of the environmental integrity, adequacy and suitability of existing hardstanding, kerbing and secondary containment systems at their site in Carmarthen.

This report identifies any improvement works required to restore the environmental integrity of the site's hardstanding, kerbing and secondary containment systems.

1.2 Site Description

The site is located at Travellers Rest, Carmarthen (See Figure 1.1 below)

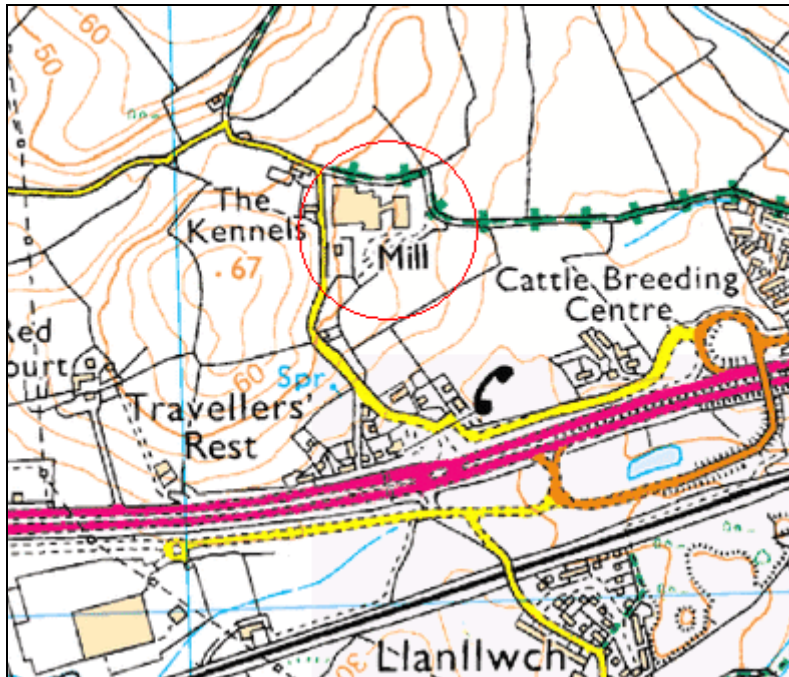


Figure 1.1 - Location plan

The approximate centre of the site is located at NGR: SN 38295 19579.

The installation operates as an animal feed compounding mill which processes vegetable based raw materials to produce a finished product. The raw materials (including fuels) stored and used on site are in solid and liquid states.

2.0 SITE ASSESSMENT

2.1 Hardstanding

There is approximately 6300m² of concrete hardstanding at the site. The hardstanding provides a vehicular access route throughout the site, whilst also controlling any surface waters produced during periods of rainfall.

During the assessment, a number of areas were identified that are in need of repair in order to restore the impermeability of the hardstanding. The damage identified consisted of cracking to the concrete slab and general degradation of the expansion joints.

Drawing 129-01-03.D01 In Appendix A identifies the areas of the hardstanding which require repair, whilst drawing 129-01-03.D02 In Appendix B provides a typical design specification for the repair works.

2.2 Kerbing

Kerbing surrounding areas of hardstanding is required in order to control surface waters. The installation of kerbing ensures that any surface waters produced during periods of rainfall are contained on the hardstanding and are disposed of via the appropriate treatment and surface water drainage systems.

Where areas of kerbing are unsuitable, ACO surface water drainage should be installed as an alternative to capture any fugitive release of surface waters.

The site assessment identified that there are currently no areas of hardstanding with kerbing.

Drawing 129-01-03.D01 in Appendix A and drawing 129-01-03.D03 in Appendix B, identify the areas of hardstanding that require kerbing or ACO drainage and provides designs.

2.3 Secondary Containment Systems

Secondary containment bunds are essential to ensure the containment of potentially polluting materials. Bunds should be constructed in areas where the handling, processing and storage of potential pollutants are being undertaken.

2.3.1 Molasses Storage Tanks - Containment Bund

Due to the currently prevailing construction details, it would be possible for the contents of the bund to drain into the surface water drainage system via existing rainwater connections.

This would allow potentially contaminated water or product to be discharged directly into a drainage ditch.

In order to ensure that the bund will contain either rainfall or any product from the tanks, remedial works are necessary. These include: -

- Sealing existing surface water drainage connections within the bund,
- Bund extension to capture potential spills of pipework currently outside the bunds' catchment area.
- Sealing of construction expansion joint at surface level.

Drawing 129-01-03.D01 in Appendix A and drawing 129-01-03.D03 in Appendix B highlight the location and typical design specification of the improvement works required to restore the integrity of the bund.

2.3.2 Fuel Oil Storage Tank – Main Office

The fuel oil storage tank adjacent to the main office is not placed within a bunded area. If a release occurred via damage to the tank or associated pipework, the spill would not be contained.

Drawing 129-01-03.D01 in Appendix A and drawing 129-01-03.D03 in Appendix B highlight the location and typical design specification of the improvement works required to restore the integrity of the Secondary containment at this location.

2.3.3 Fuel Oil Storage Tank – Adjacent to Site Workshop

The fuel oil storage tank adjacent to the Site Workshop is not placed in a bunded area. If a release occurred via damage to the tank or associated pipework, the spill would not be contained.

Drawing 129-01-03.D01 in Appendix A and drawing 129-01-03.D03 in Appendix B highlights the location and typical design specification of the improvement works required.

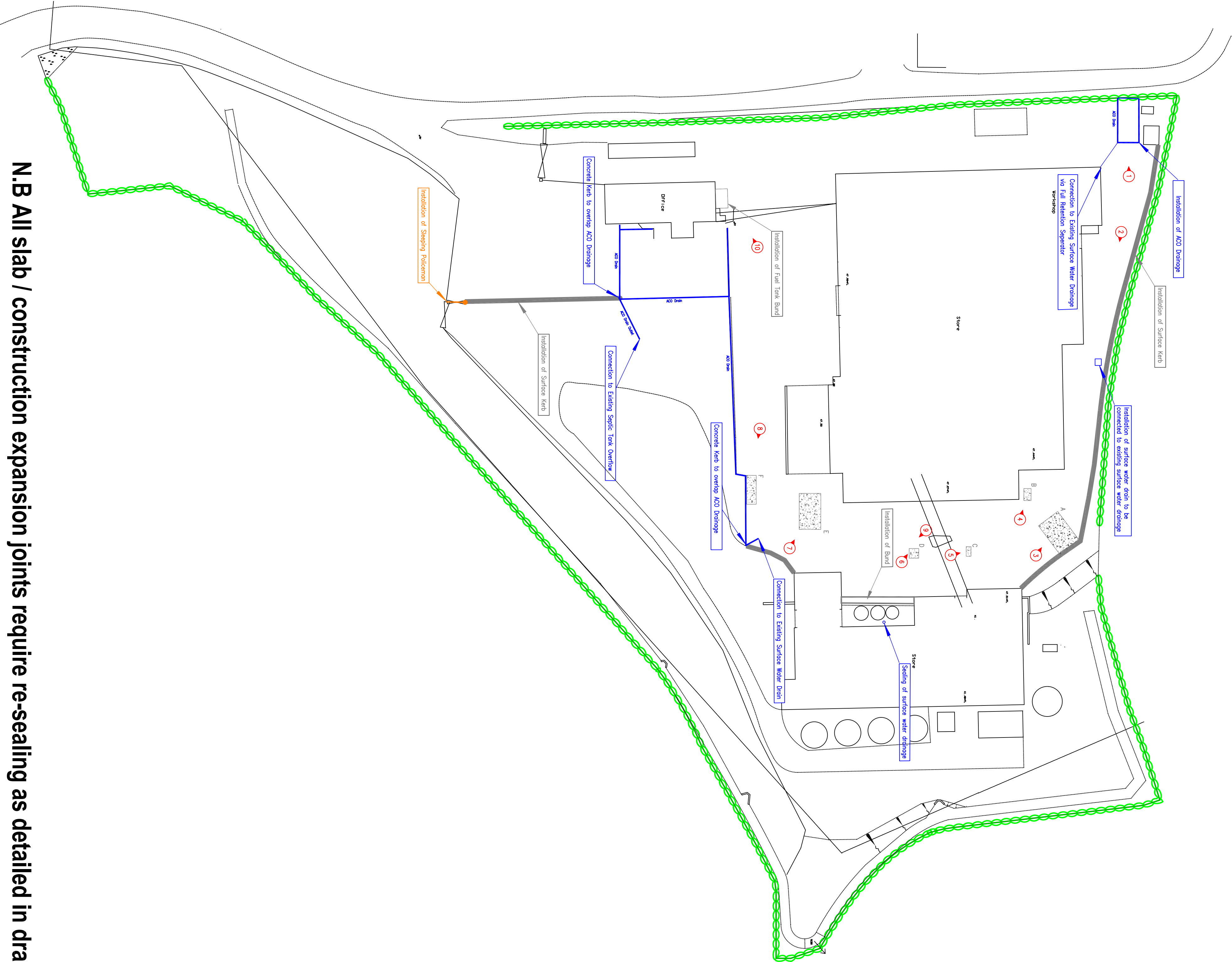
APPENDIX A

Drawings

Indicative Slab Dimensions

- A. 7.5m x 5.0m
- B. 2.5m x 1.5m
- C. 2.0m x 2.0m
- E. 7.3m x 4.5m
- F. 6.0m x 2.0m

 Location of pictures referenced in Appendix C



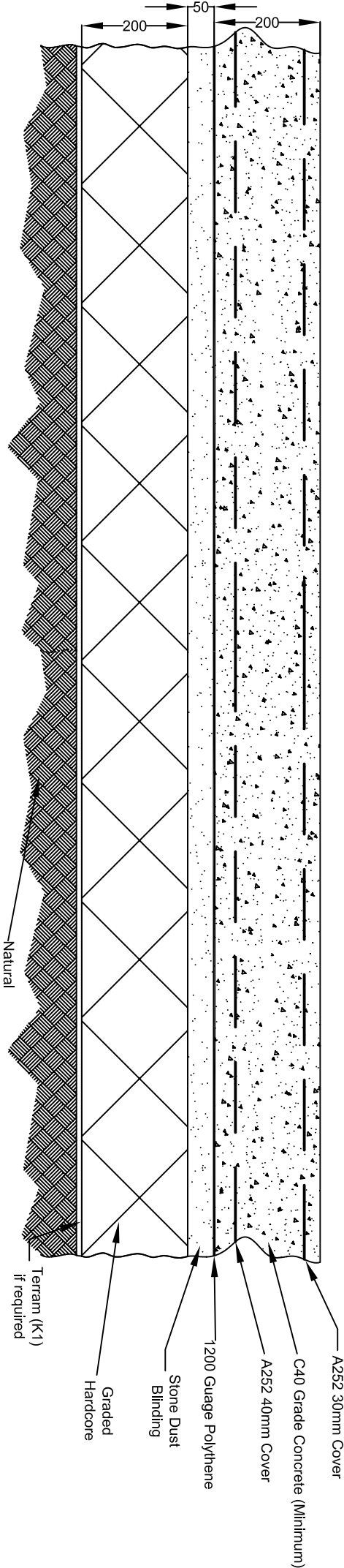
N.B All slab / construction expansion joints require re-sealing as detailed in drawing 129-01-02.D03

Job: Wynstay Group PLC	
Title: Integrity Assessment Plan	
Date: April 2011	
Scale: NTS	
Drawn by: CW	
Checked by: SW	
 1 St. Mary's Street Carmarthen Carmarthenshire SA31 1TN Tel: 01287 234231 Fax: 01287 234232 Website: www.ecaluk.com Email: info@ecaluk.com	
Drawing No: 129-01-03.D01	
Revision No:	Date:

APPENDIX B

Typical Design Specification

Concrete Slab Construction Detail

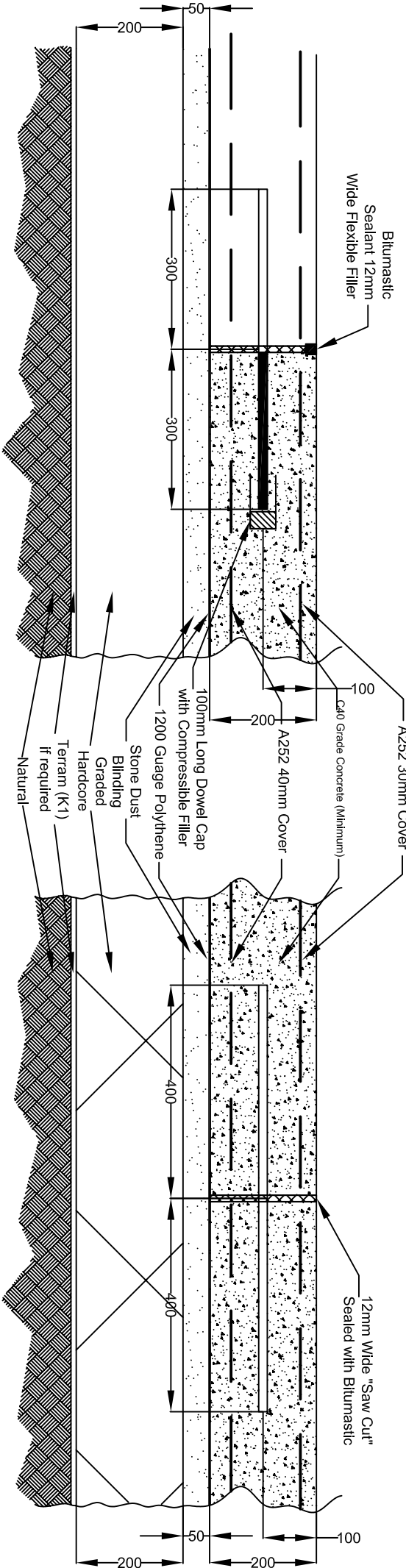


Expansion Joint Detail

(16mm $\varnothing$ Bars @ 300mm Centres Plain Round Bars)

Longitudinal Joint Detail

(T12mm $\varnothing$ Bars @ 400mm Centres High-Bond Bars)



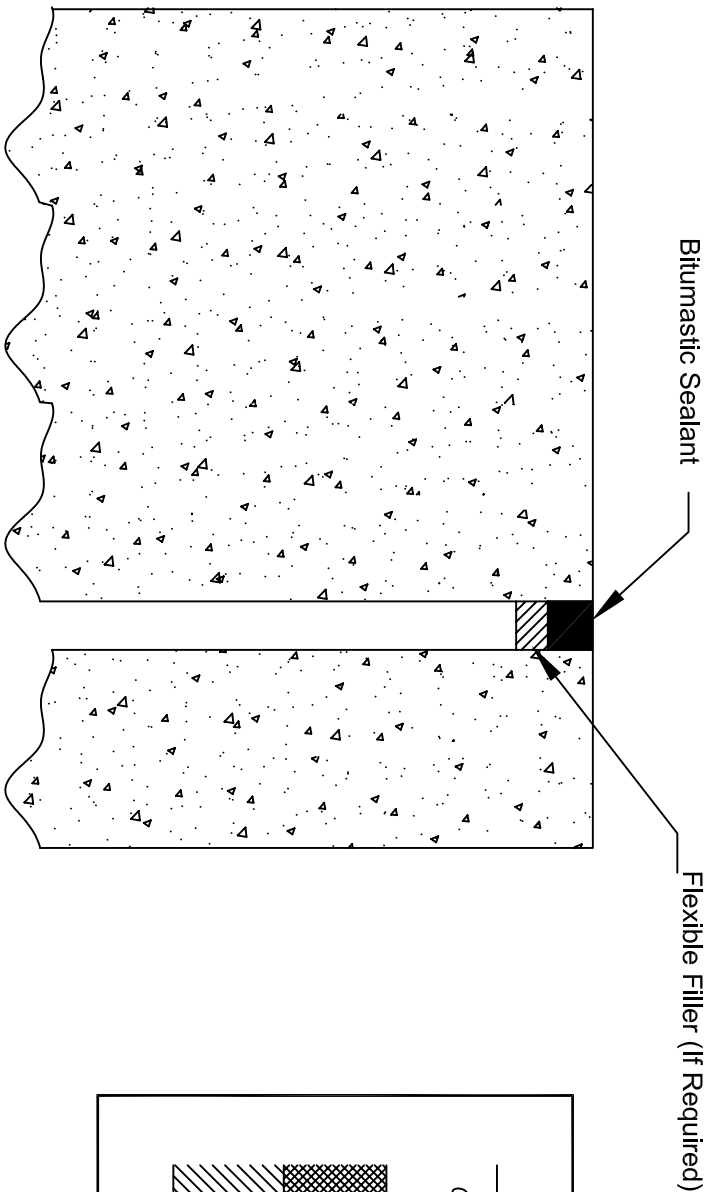
Material Specification

Grade 40 (minimum) is to be adopted in the construction of the ground slab. Cement is to be Ordinary Portland cement in accordance with BS12. Nominal (maximum) size of aggregate to be 20mm. Mesh fabric reinforcement is to comprise high tensile steel wires conforming to BS4483 or hard drawn mild steel conforming to BS4482. Placed concrete is to be agitated with an appropriate mechanical implement, and is to receive a tamped or brushed finish.

DRAWING NOT TO SCALE - DIMENSIONS IN MM

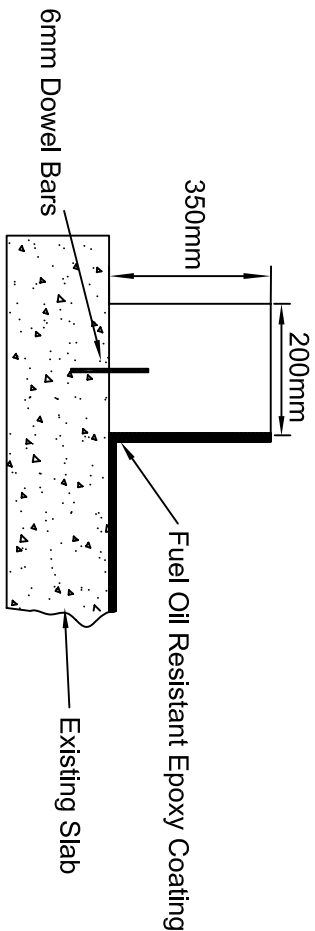
Job:	
Wynnstay Group PLC	
Llysennen Mill	
Travellers Rest	
Carmarthen	
Title:	
Concrete Slab Construction Detail	
Date:	April 2011
Scale:	NTS
Drawn by:	CW
Checked by:	SW
1 St. Mary's Street	
Carmarthen	
Carmarthenshire	
SA31 1TN	
Tel: 01267 234231	
Fax: 01267 234232	
Website: www.ecaluk.com	
E-mail: info@ecaluk.com	
Drawing No: 129-01-03.D02	
Revision No:	Date:

Re-sealing of Expansion Joints

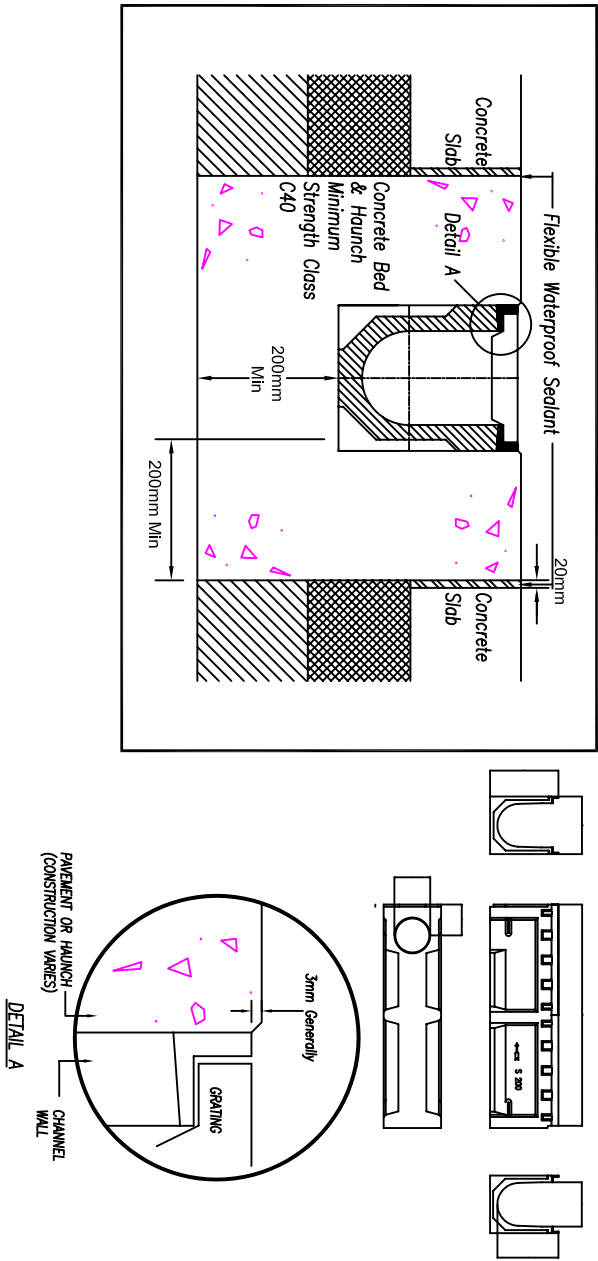


N.B All joints to be appropriately cleaned prior to re-sealing and where appropriate, joints to be cut using a road saw prior to cleaning and re-sealing

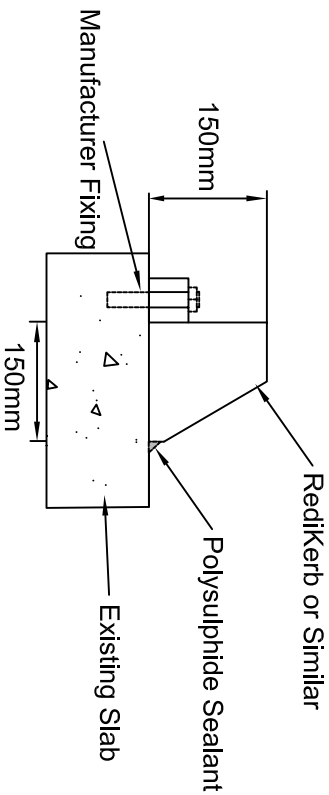
Concrete Bund Detail



ACO Drainage Detail



Surface Kerb Detail



Material Specification

Grade 40 (minimum) is to be adopted.
Ordinary Portland cement in accordance with BS12. Nominal (maximum) size of aggregate to be 20mm.

Placed concrete is to be agitated with an appropriate mechanical implement

Job:		Wynnstay Group PLC Llysennen Mill Travellers Rest Carmarthen
Title:		Typical Construction Details
Date:		April 2011
Scale:		NTS
Drawn by:		CW
Checked by:		SW
Drawing No:		129-01-03.D03
Revision No:		Date:



1 St. Mary's Street
Carmarthen
Carmarthenshire
SA31 1TN
Tel: 01267 234231
Fax: 01267 234232
Website: www.ecaluk.com
E-mail: info@ecaluk.com

APPENDIX C

Assessment Photographs



Picture 1 – Installation of ACO Drainage required to ensure capture and treatment of possible fuel spills.



Picture 2 – Installation of Surface Kerb required to ensure the on-site containment and treatment of surface waters.



Picture 3 – Slab Area A highlighted in drawing 129-01-03.D01



Picture 4 – Slab Area B highlighted in drawing 129-01-03.D01



Picture 5 – Slab Area C highlighted in drawing 129-01-03.D01



Picture 6 – Slab Area D highlighted in drawing 129-01-03.D01



Picture 7 – Slab Area E highlighted in drawing 129-01-03.D01



Picture 8 – Slab Area F highlighted in drawing 129-01-03.D01



Picture 9 – Installation of Containment Bund required to ensure the capture of potential spills.



Picture 10 – Installation of Fuel Tank Bund with 110% Capacity to ensure the capture of potential spills.



Picture 11 – Installation of ACO surface water drainage required to ensure the on-site capture and treatment of surface waters.