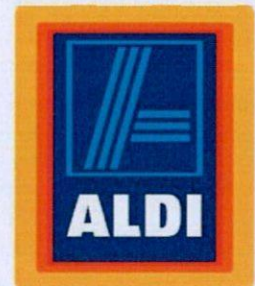

ALDI RDC GOLDTHORPE (ADDITIONAL CAR PARK) - DRAINAGE STRATEGY

PROPOSED CAR PARK



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DATE: JANUARY 2016
CRADDYS DOCUMENT REFERENCE: 10161w0096



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Appendix A - Existing Site Plan
Appendix B - Proposed Drainage Layout

Revision	Date	Notes	Author	Checked	Approved
A	01/02/16	1 st issue	PGC	RJH	CSD

1. INTRODUCTION

- 1.1. This report details the drainage strategy for the proposed additional car park construction at Aldi Stores Ltd's regional distribution centre (RDC) located off Commercial Road near the A365 in Goldthorpe, Rotherham, South Yorkshire.

2. PROPOSED DEVELOPMENT

- 2.1. The proposed car park is situated to the north of the recently completed distribution centre, comprising some 0.4457ha. The nearest postcode for the RDC is S63 9BL and the approximate centre of the proposed development is at OS grid ref SE 44896 03816. The car park is separated from the main RDC site by an existing watercourse, Highgate Lane Drain, which runs east to west to the south of the car park.
- 2.2. The development will allow for approximately 214 car parking spaces, with access situated from the road constructed in previous works to the west of the proposed parking area.
- 2.3. Pedestrian access is proposed to the south of the car park.

3. EXISTING SITE DRAINAGE

- 3.1. The majority of the site to the south of the watercourse has been developed following the recent construction of the RDC. Surface water drainage from the RDC discharges to a combination of drainage ditches situated around the site and soakaways, prior to discharging into the watercourse.
- 3.2. The existing development located is a greenfield area and as such has no positive drainage system. Contours shown on the existing plan (Appendix A) show the site slopes from South East to North West.
- 3.3. The access road to the west of the site discharges to an infiltration trench located within near proximity of the site. Any overflow from this then discharges to the watercourse via a flow control unit at 5l/s.
- 3.4. This same principle will be applied to the additional car park, with surface water from the proposed development discharging to an attenuation and infiltration ditch located at the south of the site which then discharges via a flow control unit to Highgate Lane Drain.

4. PROPOSED DRAINAGE STRATEGY

- 4.1. **Surface Water** : The surface water drainage design for the site has been developed in accordance with SUDS principles and current best practice. To develop the drainage strategy, an assessment has been made based on the SUDS management train. This reviews the different surface water management techniques that can avoid, reduce or delay the surface water discharge rate from site. The techniques considered include discharge to soakaways, watercourses and public sewers, in that order of preference.
 - (a) **Soakaways** : A ground investigation report was conducted in 2007 prior to the construction of the RDC (Soil Mechanics, November 2007, Report A7094). Soakaway Tests were conducted within the site boundary. Results concluded that the infiltration rate of the soil was adequate for soakaways on the site, with the rate varying between 10.4ms^{-1} and 10.5ms^{-1} . It should be noted that all soakaway tests were undertaken to the south of the watercourse. It can however, be assumed that the infiltration rate of the soil to the north of the watercourse will also be within this range. It is therefore proposed to discharge the surface water in the carpark to an infiltration ditch prior to overflow discharge to the watercourse.
 - (b) **Watercourses** : The nearest surface watercourse of size is located at the south of the proposed development. This watercourse is managed by Dearne & Dove Internal Drainage Board (IDB). It is proposed to reduce the surface water discharge into the watercourse by providing an on-line infiltration ditch, as mentioned in the previous section. Any remaining runoff from the proposed development will be delayed by introducing a flow control downstream of the ditch. The discharge rate of this flow control will need to be confirmed with the IDB, however initial practical rates are proposed at 5l/s for the 1 in 30yr + 20% return period
 - (c) **Public Sewers** : There are no existing surface water sewers within the area, however it is

assumed that the infiltration trench and remaining discharge to the watercourse will eliminate the need to discharge to a sewer.

- (d) The car park will be drained via a Class 1 bypass separator (NSB10) discharging to Highgate Lane Drain.

4.2. **Foul Water :**

The proposed development will not require foul discharge.

5. APPLICABLE STANDARDS AND MAINTENANCE

- 5.1. All proposed drainage is to be private and designed in accordance with the current Building Regulations, specifically Approved Document Part H, and best practice.
- 5.2. Since all proposed drainage is private, it will remain under the ownership and responsibility of Aldi Stores Ltd. An operations and maintenance schedule will be put in place to suit the proposed drainage system, and the responsible person shall be the Building Maintenance Manager, available via 0800 042 0800.

6. FLOOD RISK STATEMENT

6.1. Flood Zone Classification

According to the flood map for planning, the site is classified by the Environment Agency (EA) as Flood Zone 1. This describes areas assessed as having less than 1 in 1000 annual probability of river or sea flooding in any year. An extract from EA's mapping is included below.

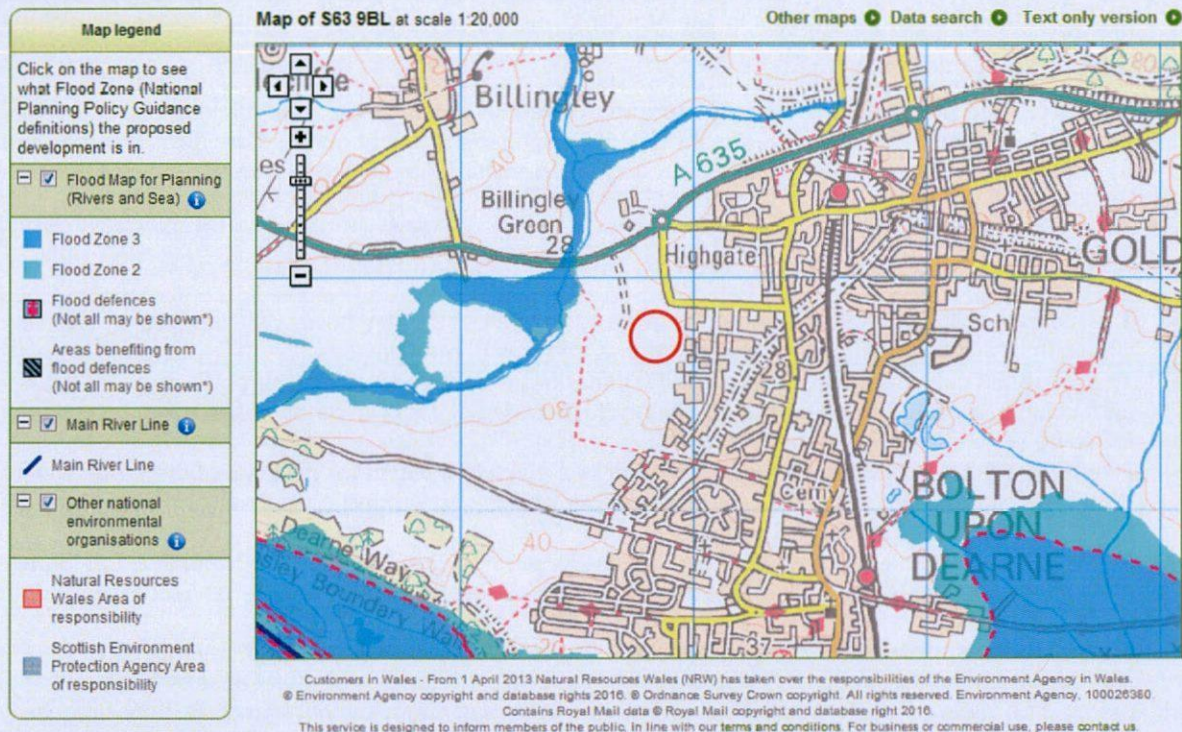


Figure 1 - Environment Agency Flood Map

6.2. Flood Risk Requirements

Since the site is in flood zone 1, the proposed development area totals less than 1.0 hectare and the site is not classified as a critical drainage area, a full flood risk assessment is not required. However, Ove Arup & Partners undertook a site specific flood report prior to the construction of the RDC (Regional Office & Distribution Centre, Goldthorpe, August 2007) and the following factors have been considered in line with EA guidance for developments of this nature.

- (a) **Surface Water Runoff** : Additional surface water runoff generated by the development is unlikely to have a significant impact upon flooding within the site locality and will not increase the flood risk elsewhere. The drainage system will be designed to not flood for all storm durations up to and including the 1 in 30 year +20% return period event, and for no flooding to leave the site or affect access / egress routes up to the 1 in 100 year plus climate change event.
- (b) **Overland Flows** : The general topography of the area is that the ground falls from south east to north west towards the 'Carr Dike' watercourse. It is therefore considered that any overland flow will not have any significant effect on the site or nearby industrial park.
- (c) **Flooding From Sewers** : As there are no surface water sewers shown within the vicinity of the site, it can be assumed that the development nor surroundings is at risk from sewer flooding.
- (d) **Reservoirs, Canals and Other Sources** : According to the Barnsley Strategic Flood Risk Assessment, the area is not at risk of flooding up to and including the 1:1000 Year flood event. Highgate Lane Drain will be the discharge point for the development and the IDB will need to approve the flow rate from the proposed car park development.

- (e) **Dry Islands** : The EA flood map shows that the wider area surrounding the site is also located in flood zone 1 like the site itself. It is therefore not considered that the site is a dry island nor exhibit the associated risk factors.
- (f) **Climate Change** : An increase of 20% will be applied to rainfall intensity as an allowance for climate change in the design of the proposed drainage system, in accordance with current EA recommendations and assuming a 60 year commercial design life. Any expected increases in rainfall over the design life of the development will therefore not cause flooding of the proposed site nor increase flooding elsewhere. Further to this, the site is not located near to a fluvial flood plain therefore any increases in sea or river levels are not expected to impact the development.

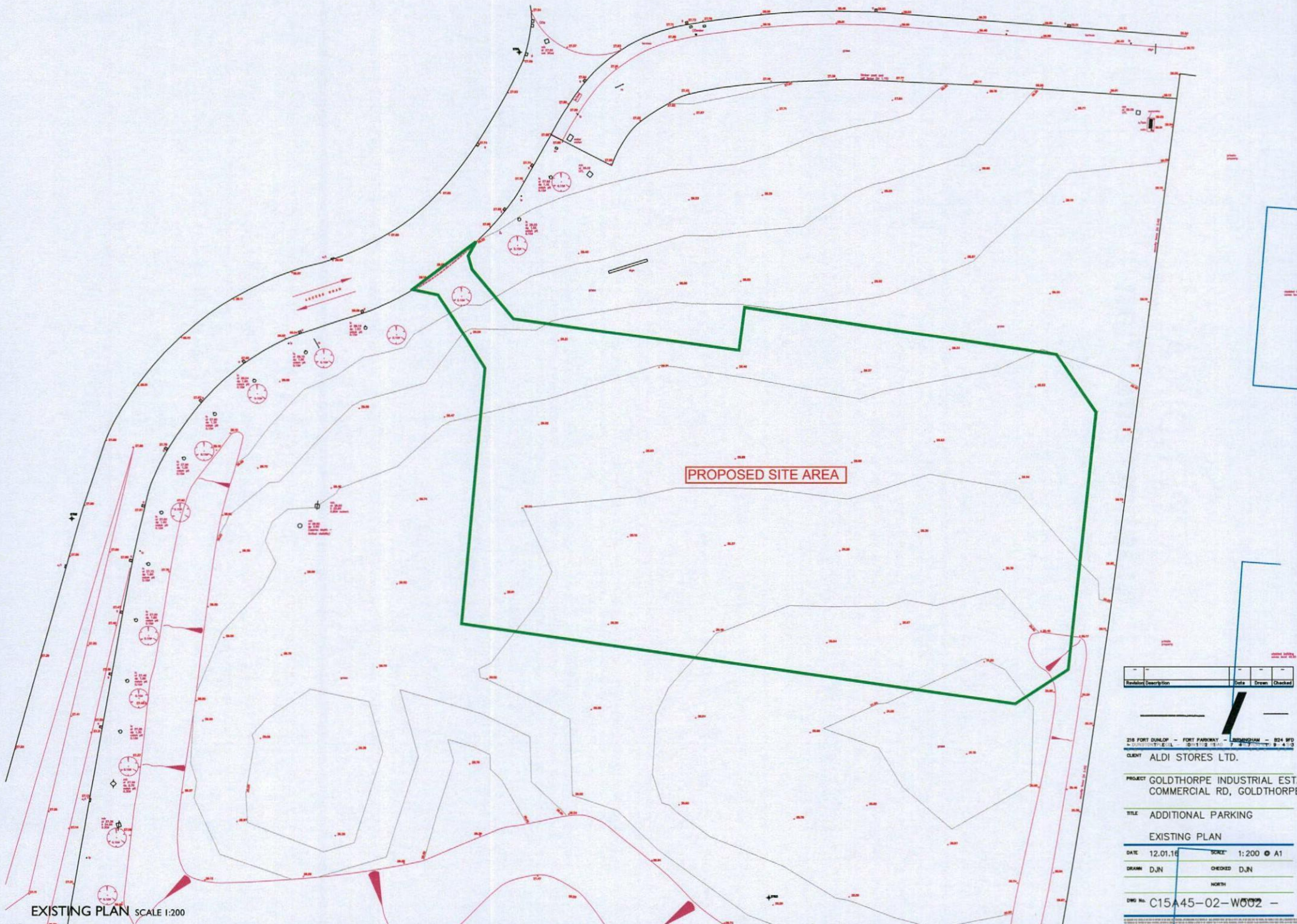
6.3. Flood Risk Conclusion

The proposed development is considered appropriate in this location, is at minimal risk of flooding and its development will not increase the risk of flooding to the neighbouring properties. It is therefore considered that the development as proposed is in accordance with the current Planning Practice Guidance to the National Planning Policy Framework.

7. CONCLUSIONS

- The recently built RDC on site discharges to the Highgate Lane Drain, however is delayed and reduced via a combination of infiltration storage features and flow control devices.
- The proposed development will increase the impermeable area of the site, thereby increasing the rate and volume of surface water runoff. Methods of disposal for this runoff have been investigated following the SUDS management train.
- It is believed that an infiltration storage feature is a suitable solution for disposal of the surface water runoff from the proposed development, given the anticipated ground conditions and since they are being utilised for drainage of the RDC.
- A suitable watercourse (Highgate Lane Drain) located to the south of the proposed car park is considered feasible for additional disposal of the surface water runoff from the development and the discharge rate will need to be confirmed with the Dearne and Dove IDB.
- The proposed surface water drainage will be designed to not flood during storm events up to the 1 in 30 year return period event, and for any flooding to not leave the site or affect access / egress routes during storm events up to and including the 1 in 100 year return period event. A 20% increase in rainfall intensity will be applied to this event as an allowance for climate change in accordance with current guidelines.
- The flood risk to the proposed development has been assessed and the development is considered appropriate in this location and will not worsen flood risk elsewhere.

APPENDIX A
Existing Site Plan



PROPOSED SITE AREA

EXISTING PLAN SCALE 1:200

Revision	Description	Date	Drawn	Checked

216 FORT DUNLOP - FORT PARKWAY - LAMINGTON - 624 8FD
 CLIENT ALDI STORES LTD.

PROJECT GOLDTHORPE INDUSTRIAL ESTATE
 COMMERCIAL RD, GOLDTHORPE

TITLE ADDITIONAL PARKING

EXISTING PLAN

DATE 12.01.16 SCALE 1:200 @ A1

DRAWN D.J.N CHECKED D.J.N

NORTH

DWG No. C15A45-02-W002 -

APPENDIX B
Proposed Drainage Layout

**PROPOSED IMPERMEABLE
AREA 0.4457ha**



IF YOU HAVE A QUERY CALL US
SCALING FROM THIS DRAWING OR OBTAINING DIMENSIONS ELECTRONICALLY MAY
NOT PROVIDE ACCURATE INFORMATION AND SHOULD BE AVOIDED. WORK ONLY
FROM PROVIDED DIMENSIONS.

GENERAL NOTES

DRAWINGS AND SPECIFICATIONS: This drawing is to be read in conjunction with all relevant Architect, Engineers and Specialist drawings together with the specification.

KERB INTERNAL/EXTERNAL ANGLES: Provide 90°/45° Splays using radii kerbs to form internal/external angle. Cut kerbs are not acceptable.

CONSTRUCTION THICKNESSES: Construction thicknesses have been designed to meet Highway Standards. The construction makeup should not be altered in any way unless it has been previously agreed with Craddys Pitches Division.

LEVELS: Levels have been derived by criteria for Highway Design and drainage requirements. Levels should not be revised unless previously agreed with Craddys Pitches Division.

SETTING OUT: The setting out has been derived by using standard widths and radii compatible with recommended manufacturers products. Kerbs should be laid with the correct radius curves and not made up using straight sections unless the specified radius is not available as a proprietary product.

- KEY**
- Proposed surface water drain (private)
 - SFA1 Type 3 PPG (surface water)
 - Road gully and connection
 - ACO Gmax 150 Outlet Chamber
 - Flow Control Chamber (To restrict flow to Silt)
 - Silt to be used for attenuation (SFA 1000)
 - Class 1 bypass Separator in accordance with PPG 3 (NSB 10)
 - Existing Public Combined Sewer

S.D.M. SIGNIFICANT HAZARDS

THE FOLLOWING HEALTH AND SAFETY HAZARDS ARE IDENTIFIED BY THE DESIGNER AS NECESSARY IN PURSUANCE OF THE CURRENT CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS.

RISKS DURING CONSTRUCTION

- No abnormal risks have been identified relating to this design element.

OPERATION/MAINTENANCE RISKS

- No abnormal risks have been identified relating to this design element.

RISKS DURING DEMOLITION (DECOMMISSIONING) / DISMANTLING / ALTERATIONS

- No abnormal risks have been identified relating to this design element.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY COMPETENT & ADEQUATELY RESOURCES CONTRACTORS WORKING TO SAFE SYSTEMS OF WORK.

A	1ST ISSUE	PGC/28.01.18
REV	REVISION DETAILS	BY DATE

CRADDYS

63 MACRAE ROAD, EDEN OFFICE PARK, HAM GREEN
BRISTOL, BS20 0DD
TEL: 01275 371 333
email: info@craddys.co.uk www.craddys.co.uk

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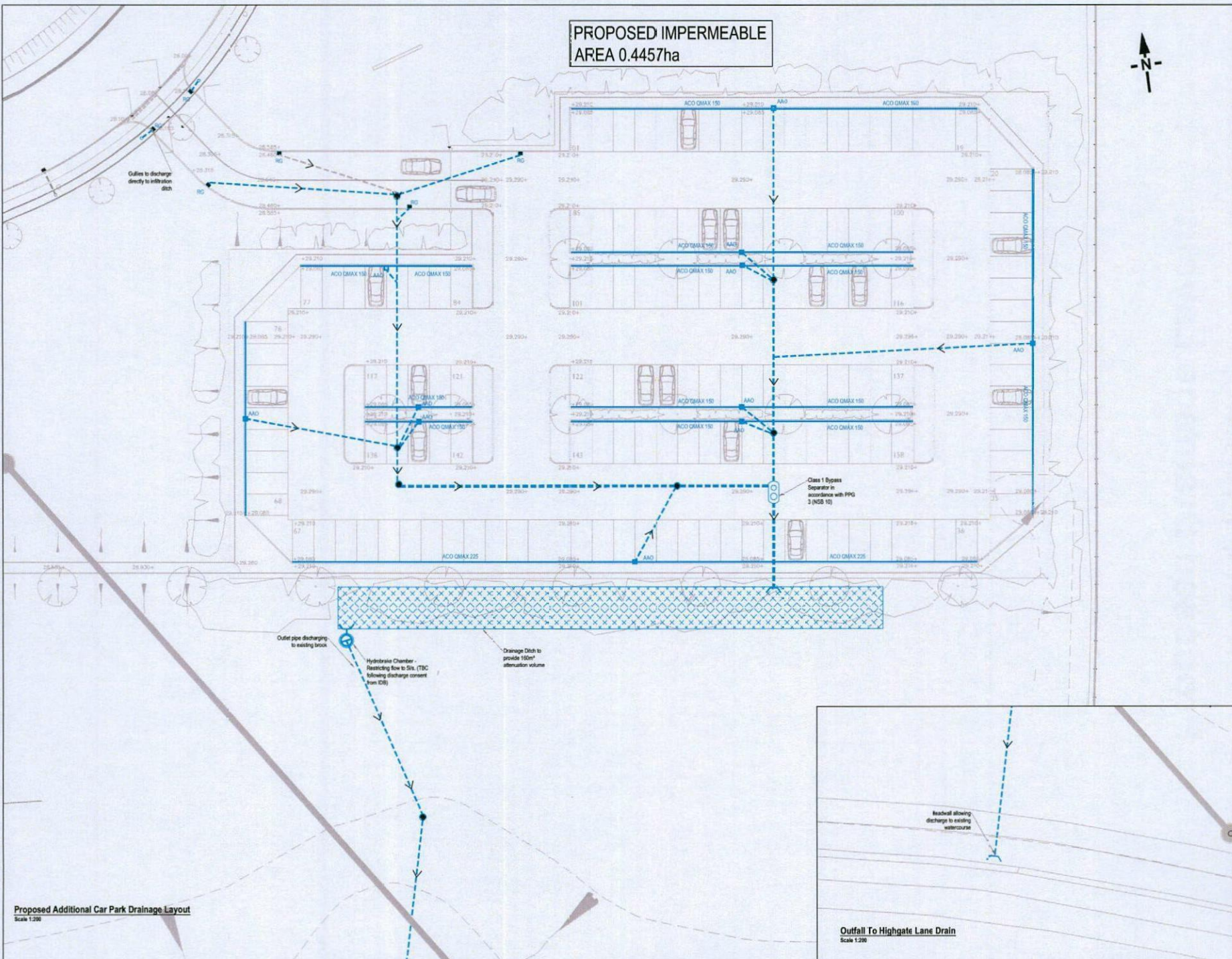
PROJECT TITLE
ALDI RDC
GOLDTHORPE

DRAWING TITLE
PROPOSED DRAINAGE LAYOUT
ADDITIONAL CAR PARK

CLIENT
ALDI

STATUS
PRELIMINARY

SCALE	DRAWN	CHECKED	APPROVED
1:200	AT/1	PGC	RJM
DRG SIZE	DRAWING NUMBER	REV	
A1	9206-1295		



Proposed Additional Car Park Drainage Layout
Scale 1:200

Outfall To Highgate Lane Drain
Scale 1:200

TERMS OF BUSINESS

- 1.0 DEFINITIONS**
- 1.1 The following defined words have the following meanings in this Agreement:
"Offer" means the letter of offer and any appendices and/or attachments thereto issued to the Client by the Consultant.
"Agreement" means the Consultant's letter of offer enclosing these Terms of Business, the Appendix to the offer, and any subsequently agreed variations to the "Agreement".
"The Client" means either the person who, or organisation or company which, accepts the Offer.
"Consultant" means Craddy Pitchers Ltd.
"Services" means the services to be provided for the Client and which the Consultant identifies in the Offer.
"In writing" means any communication sent by mail or by facsimile transmission.
"Force majeure" means any circumstance or condition outside the reasonable control or influence of the Consultant, and includes any deferral in the requirement for the Services by the Client.
- 1.2 The headings in this Agreement do not affect its construction.
- 2.0 VARIATIONS**
- 2.1 No variation of any kind to this Agreement may be made without the agreement in writing of the Client and of the Consultant.
- 3.0 PERFORMANCE**
- 3.1 The Client agrees to supply to the Consultant without charge all the matters and things necessary for the performance of the Services by the Consultant, and also where necessary, to provide facilities and approvals to the Consultant.
- 3.2 The Consultant shall subject to the Agreement carry out the Services in the Offer and any variation to the Services.
- 3.3 The Client shall make payment in accordance with the Agreement.
- 3.4 Unless otherwise agreed in advance, approvals from the Client shall be deemed to have been given unless the Consultant is notified to the contrary within five working days of such approval having been requested.
- 4.0 INTELLECTUAL PROPERTY & CONFIDENTIALITY**
- 4.1 The copyright and all other intellectual property rights in all work prepared or compiled by the Consultant in the performance of this Agreement remains vested in the Consultant but conditional upon payment of all fees and disbursements properly due the Consultant hereby issues a free licence to the Client to use such work as is supplied under this Agreement, for the purposes for which the work was prepared or compiled, always providing that such licence shall be limited strictly to the works carried out under this Agreement.
- 4.2 The Client agrees that any know-how, techniques, or processes carried out in the course of the Services are confidential information. The Client shall not without the prior written consent of the Consultant divulge to any party details of any confidential information disclosed by the Consultant in the performance of the Services.
- 5.0 LIABILITY**
- 5.1 The Consultant undertakes to exercise reasonable skill care and diligence in performing the Services, and shall be liable only for negligent failure in performing the Services.
- 5.2 In respect of any matter of force majeure the Consultant shall have no liability for his failure or delay in the performance of the Services or any part of them. Where relevant, the Client shall not cease payments to the Consultant under this Agreement throughout any period or periods of force majeure.
- 5.3 The Client and the Consultant agree that the total liability of the Consultant arising out of or in connection with this Agreement shall not, unless otherwise agreed in writing, exceed £25,000 or ten times the fee received by the Consultant from the Client, whichever is the lesser, howsoever that liability might arise.
- 5.4 Notwithstanding any provision in this Agreement or the identification of any individual in this Agreement all duties obligations and liabilities arising under or by virtue of this Agreement or which may arise by virtue of common law statute or in equity from the performance of any work contemplated by this Agreement shall be owed or incurred exclusively by the Consultant and not by any employee or member (including any officer or director) of the Consultant. The Client acknowledges that no such individual owes or shall owe any such duty or obligation or shall incur any such liability to the Client and agrees that the Client will not seek to make liable any such individual for any act default omission or negligence committed by the individual whatsoever and irrespective of how such liability may arise. This clause shall not operate to exclude liability for death or personal injury to the Client where the Client is an individual or group of individuals.
- 5.5 Nothing in this Agreement confers or purports to confer on any third party any benefit or any right to enforce any term of this Agreement.
- 5.6 Unless specifically noted otherwise in the letter of appointment, liability for any claim(s) arising from pollution or contamination or asbestos is excluded.
- 6.0 SUSPENSION AND TERMINATION**
- 6.1 The Client and Consultant agree that without prejudice to any other rights and remedies which the Consultant may possess if the Client shall fail to pay the Consultant in full any amount properly due and payable under this Agreement by the final date for payment as defined in 7.2 the Consultant may after giving the Client seven (7) days notice in writing of the same suspend its performance and obligations under this Agreement until payment in full occurs.
- 6.2 Any period during which the Consultant exercises its right to suspend its performance pursuant to 6.1 shall be disregarded in computing for the purposes of any contractual time limit the time taken by the Consultant, or any of the Consultants' sub-contractors, to complete any Services directly or indirectly affected by the exercise of such right.
- 6.3 The Client and the Consultant agree that either may give to the other written notice of termination in the following circumstances:-
 (a) if fourteen days after having received written notice of a breach of the Agreement, no attempt to rectify that breach has been made; or
 (b) the Agreement has been affected by force majeure for at least 60 days.
- 6.4 In the event of termination under 6.3 of this Agreement, the Client shall pay to the Consultant the following sums:
 (a) such payment as is due for the performance of the Services up to and including the day upon which notice of termination was given;
 (b) such payment as is due in accordance with 5.2 above;
 (c) such monies, if any, as would become due and payable by the Consultant in respect of separate arrangements entered in to by the Consultant in the performance of the Services.
- 6.5 In the event that the Client instructs the Consultant to carry out the Services in a way which could, in the Consultant's reasonable opinion, lead to a breach of the Environmental Protection Act 1990, the Environment Act 1995, or other Statute, the Consultant may without prejudice to any other remedy, and upon not less than 4 weeks notice, suspend for a period of up to 12 weeks the performance of the Services under this Agreement. If the Client does not, to the reasonable satisfaction of the Consultant, take steps within the period of suspension to remedy any act or instruction that may breach the aforementioned Statutes, then the Consultant may by further notice on the expiry of the period of suspension determine the Agreement forthwith.
- 7.0 PAYMENT**
- 7.1 Unless noted otherwise in the Agreement, the payment provisions of the Housing Grants, Construction and Regeneration Act 1996, as amended on 1st October 2011, will apply to this agreement.
- 7.2 Unless noted otherwise in the Agreement, the payment due date for all Craddy Pitchers Ltd. invoices shall be 10 calendar days, excluding bank holidays, after the date of the invoice.
- 7.3 Unless noted otherwise in the Agreement, the final date for payment for all Craddy Pitchers Ltd. invoices shall be 28 calendar days, excluding bank holidays, after the date of the invoice.
- 7.4 Interest, at the rate of 4% over the base rate of HSBC Bank plc shall be added to all amounts remaining unpaid after the final date for payment.
- 8.0 DISPUTES**
- 8.1 Any dispute which cannot be settled amicably shall, in the first instance, be referred to the respective Chief Executive of the Client and the Consultant who shall attempt, in good faith, to resolve the matter.
- 8.2 In the event of the dispute not being resolved under 8.1 above the matter shall be referred to adjudication in accordance with the Construction Industry Council Model Adjudication Procedure current at the time of referral.
- 8.3 In the event of either the Client or the Consultant not agreeing with the Decision of an Adjudicator under 8.2 above, the dispute shall be referred to arbitration in accordance with The Institution of Civil Engineers' Arbitration Procedure.
- 9.0 PERSONNEL**
- 9.1 No Party shall directly solicit the services of any employee, agent or representative of another Party without the prior written consent of that other Party during the term of this Agreement or for the period of six months after the termination of this Agreement. If during the term of this Agreement or for the period of six months after the termination of this Agreement any employee of one Party accepts an offer of employment made by another Party as a result of an introduction in the course of this Agreement, the Party that made the offer of employment shall pay to the other a sum equivalent to six months gross salary of the employee concerned including any monetary bonuses payable to that employee during the term of this Agreement or for the period of six months after termination of this Agreement.
- 10 CDM REGULATIONS**
- 10.1 It is a requirement of the CDM Regulations 2007 that the Client must be aware of its associated responsibilities. Refer to www.hse.gov.uk/construction/cdm/clients.htm for details.
- 10.2 If a project is deemed notifiable under the CDM regulations then the client must appoint a CDM co-ordinator before anything other than outline design is undertaken on the project.
- 11.0 APPLICABLE LAW**
- 11.1 The Client and the Consultant agree that the construction, validity and performance of the Agreement shall be governed by and construed under English Law, and for all matters arising under, out of, or in connection with the Agreement, they shall submit themselves to the exclusive jurisdiction of the English Courts.