

Lagnersh House, Lower Bognor Road,  
Lagness, PO20 1LW

**Erection of agricultural barn for storage of farm machinery & hay along  
with associated hardstanding.**

Planning permission: P/119/18/PL

Condition Numbers: 6 and 7

Surface Water Drainage

## **Condition 6 – Surface Water Drainage**

### **Condition 6 states:**

Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels and winter Percolation testing to BRE 365, or similar approved, will be required to support the design of any Infiltration drainage. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity.

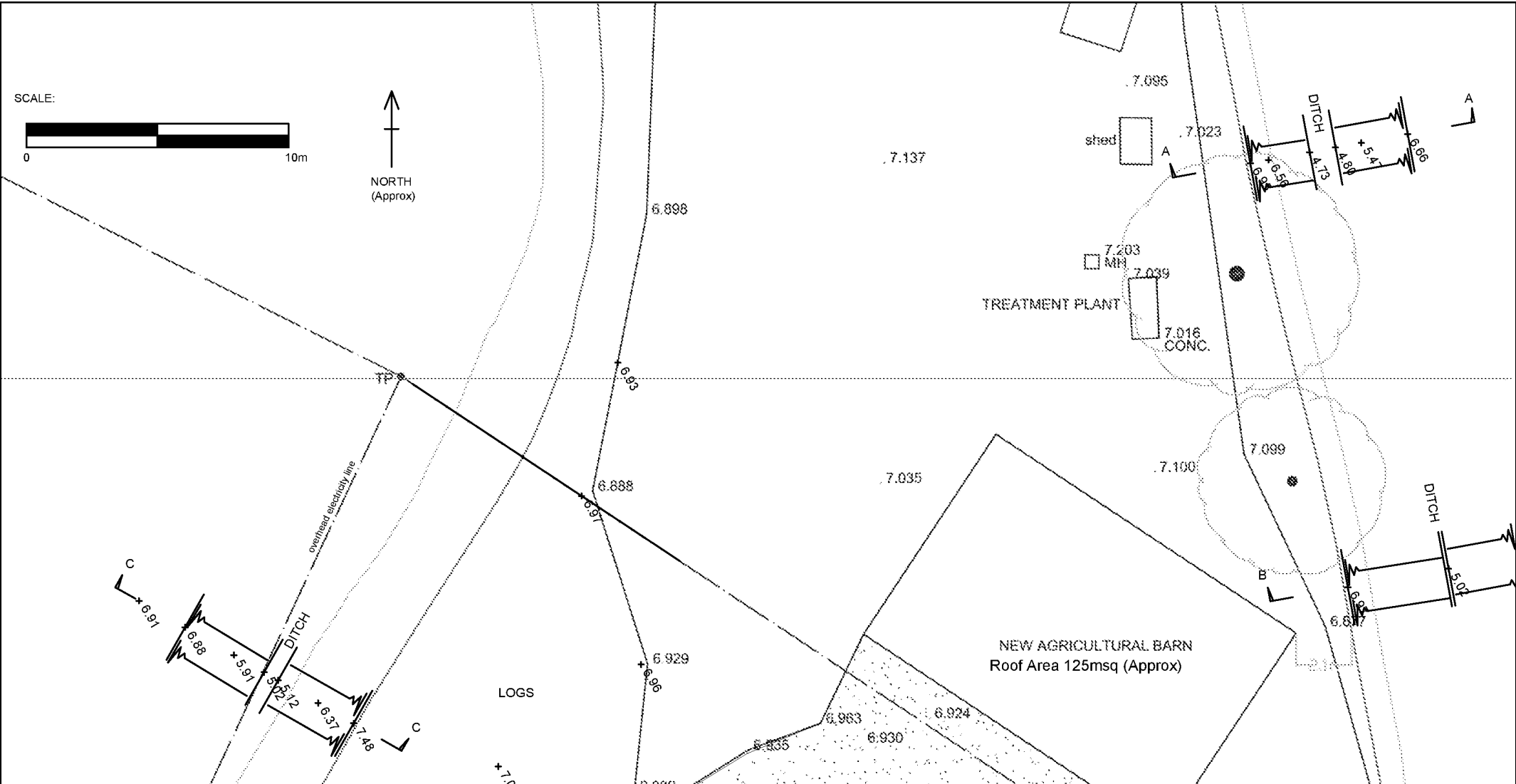
## **Condition 7 – Surface Water Disposal to Watercourse**

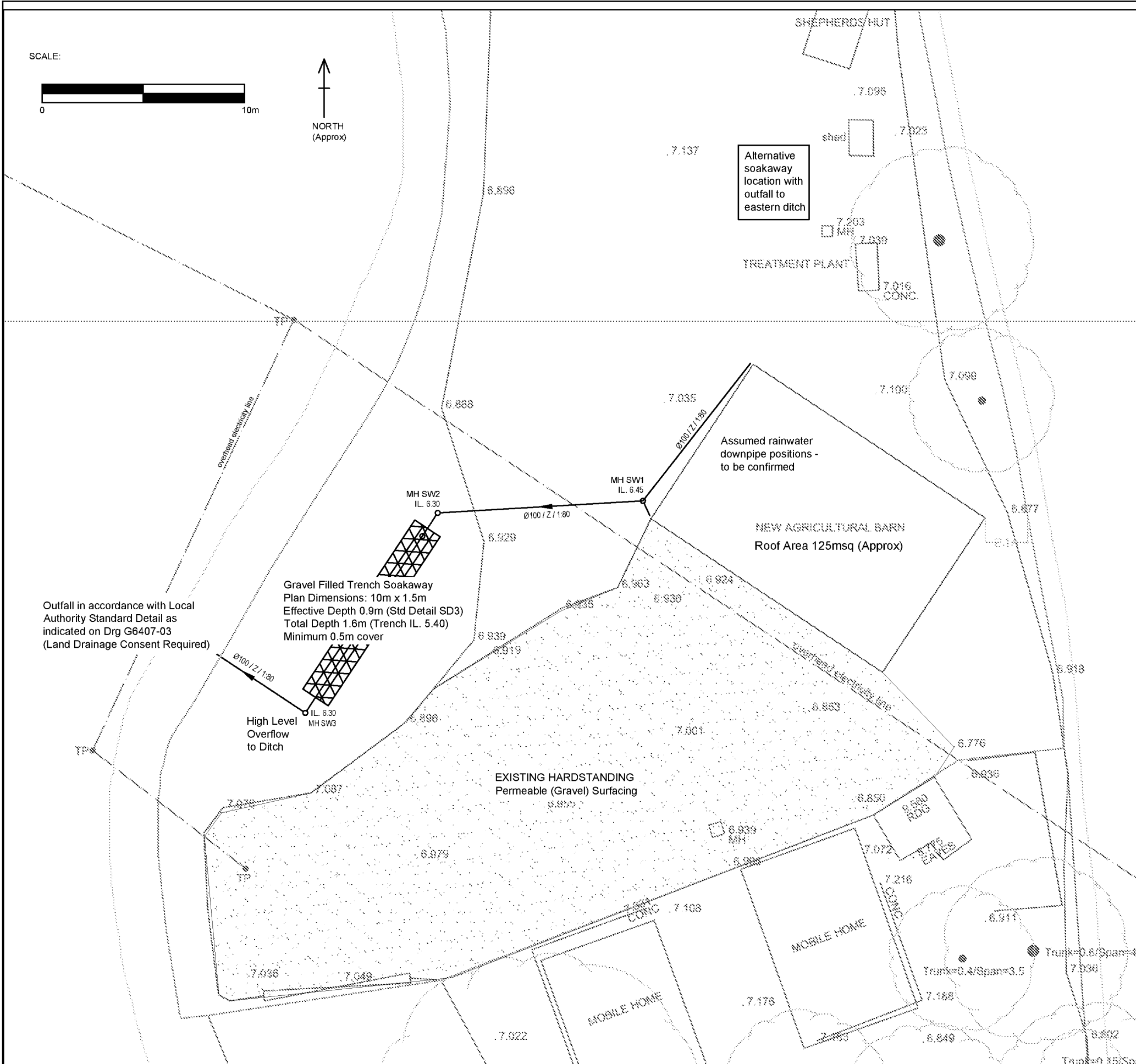
### **Condition 7 states:**

*The development shall not proceed until details have been submitted to and approved in writing by the Local Planning Authority for any proposals: to discharge flows to watercourses; or for the culverting, diversion, infilling or obstruction of any watercourse on or adjacent to the site. Any discharge to a watercourse must be at a rate no greater than the pre-development run-off values. No construction is permitted, which will restrict current and future land owners from undertaking their riparian maintenance responsibilities in respect to any watercourse or culvert on or adjacent to the site.*

### **Response:**

Attached to this response is a detailed report on the surface water drainage scheme which has been informal agreed with Arun DC drainage officers prior to the submission of this formal application to discharge the aforementioned conditions.





- NOTES.
- 1.0 GENERAL
- 1.1 This drawing to be read in conjunction with all relevant Architects and Engineers drawings and specifications.
- 1.2 Original topographic survey provided by Client. Datum location to be confirmed.
- 2.0 SITE CHECKS
- 2.1 Before excavation commences, the Contractor shall ascertain the depths, sizes and locations of all services to be crossed. Any conflicts in levels between new works and existing services shall be notified to the Engineer.
- 2.2 Details of existing sewers & drains shall be confirmed by the contractor on site prior to the commencement of works.
- 3.0 REFERENCE SPECIFICATION
- 3.1 All drainage shall be in accordance with Building Regulations 2002: Part H & W.S.A Sewers for Adoption 6th edition.
- 3.2 Private drainage connections shall be detailed by the Architect / building supplier.
- 4.0 DRAINAGE LAYOUT
- 4.1 Positions of rainwater pipes to be obtained from Architect/building suppliers layouts.
- 4.2 All external rainwater down pipes shall discharge through a proprietary bottle gully
- 4.3 Dimensions of manholes on private drains and sewers to be in accordance with requirements of the Building Regulations.
- 4.4 Minimum gradients for pipes where no gradient is shown shall be 1:80.
- 4.5 Sewers of different diameters shall be laid soffit to soffit in manholes, unless backdrops are detailed.
- 4.6 Where trench foundation levels lie above original ground levels, levels shall be made up with either well compacted layers of D.O.T Type 1 or mix ST2 concrete.
- 4.7 Manhole (M.H.) covers and inspection chamber (I.C.) shall be adjusted to suit final surface levels. Existing service chambers under proposed vehicular areas shall have grade D400 covers and frames fitted.
- 5.0 PIPE MATERIALS
- 5.1 For external private drain runs the pipe material shall be either:
- i) Clay pipes, extra strength or super strength in accordance with BS EN 295: 1991
- ii) UPVC pipes on accordance with BS 4660 & BS 5481: 1989 (flexible pipes)
- iii) Ductile iron pipe work in accordance with BS EN 598, as Stanton Integral with high performance joints or equivalent.
- 5.2 Definition of 'rigid' and 'flexible' pipes shall be as Building Regulations Part H, table 7.
- 6.0 PIPE BEDDING AND BACKFILL
- 6.1 Pipe bedding, surround and backfill shall be as indicated on detail sheet SD1
- 6.2 Drainage deeper than adjacent foundations:
- a) Where a drainage trench is within 1.0m of a building's foundations and extends below the depth of the foundations, the trench is to be filled with concrete mix ST2 up to the level of the underside of the foundation.
- b) Where a drainage trench is a distance 'A' (greater than 1m) from the footing and the depth of trench is greater than 'A' below foundation level, the trench shall be infilled with concrete mix ST2 such that the top level of concrete infill is no more than ('A' - 150)mm below the underside of the foundation.

HEALTH & SAFETY WARNINGS

Live overhead cables - Contact Electricity Company.

Stability of excavations and deep ditch bank

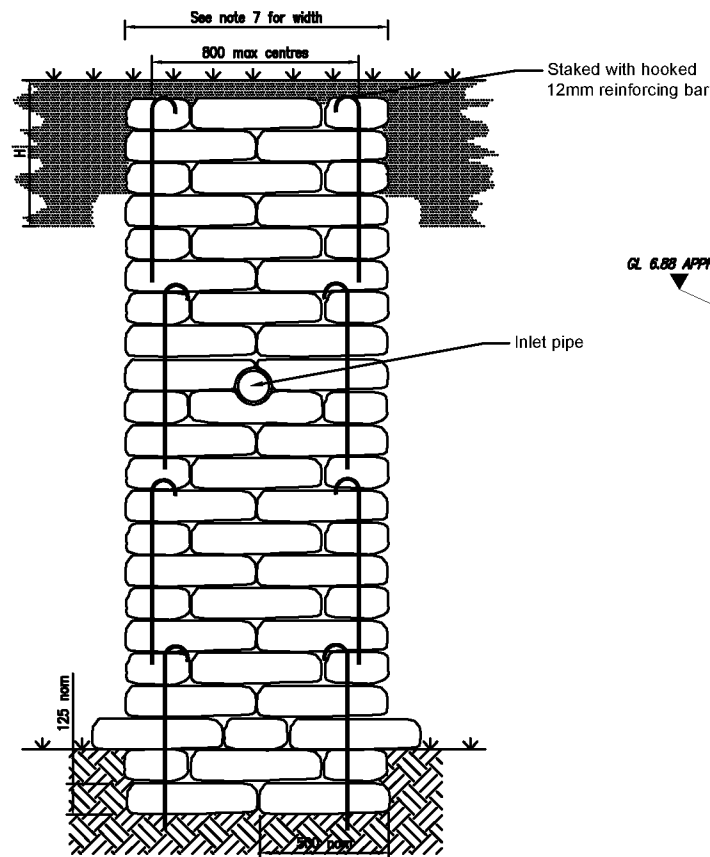
- OUTSTANDING DESIGN ISSUES :
- \* Rainwater downpipe positions
  - \* Proposed floor levels, landscaping and finished ground levels
  - \* Grade of manhole covers to relate to vehicle / pedestrian areas
  - \* Existing underground service locations
  - \* Outfall requires Land Drainage Consent

| REV                                                                                                                                                                                                                                             | DESCRIPTION | DATE        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|
| <div>Ground Management Ltd</div> <div>Civil and Geotechnical Engineering Services</div> <div>Robin Hill Farm Clay Lane Fishbourne CHICHESTER</div> <div>West Sussex PO18 8AB Phone/Fax: 01243 575073</div> <div>mail@groundmanagement.com</div> |             |             |
| PROJECT                                                                                                                                                                                                                                         |             |             |
| LAGNERSH HOUSE PROPOSED AGRICULTURAL BARN                                                                                                                                                                                                       |             |             |
| SURFACE WATER DRAINAGE                                                                                                                                                                                                                          |             |             |
| GENERAL ARRANGEMENT                                                                                                                                                                                                                             |             |             |
| DRAWN BY                                                                                                                                                                                                                                        | CHECKED BY  | DESIGNED BY |
| AT                                                                                                                                                                                                                                              | AT          | AT          |
| SCALE at A3                                                                                                                                                                                                                                     | DATE        |             |
| AS SHOWN                                                                                                                                                                                                                                        | AUG 2020    |             |
| DRAWING No.                                                                                                                                                                                                                                     | REVISION    | STATUS      |
| G6407-02                                                                                                                                                                                                                                        | P2          | PRELIMINARY |

MANHOLE SCHEDULE

| M.H. REF. | INVERT LEVEL LOWEST PIPE | COVER LEVEL | CHAMBER SIZE INTERNAL DIMS | COVER SIZE CLEAR OPENING | COVER TYPE *See Note below | M.H. TYPE | COMMENT (DETAIL REFERENCE)        |
|-----------|--------------------------|-------------|----------------------------|--------------------------|----------------------------|-----------|-----------------------------------|
| SW1       | 6.450                    | TBC         | 675 x 900                  | 600 x 600                | B125                       | BRICK     | TYPE D (SD2)                      |
| SW2       | 6.300                    | TBC         | 675 x 900                  | 600 x 800                | B125                       | BRICK     | TYPE D (SD2) WITH SILT TRAP (SD3) |
| SW3       | 6.300                    | TBC         | 675 x 900                  | 600 x 600                | B125                       | BRICK     | TYPE D (SD2)                      |

\* Note: with vehicular access routes cover upgraded to D400



ELEVATION OF HEADWALL  
OUTFALL TO SIDE OF DITCH

GL 6.88 APPROX

Indicative  
ditch profile  
(existing)

REQUIREMENTS FOR PROTECTION ON  
OPPOSITE BANK TO BE AGREED WITH  
ARUN DC DRAINAGE ENGINEER

SLABS TO EXTEND TO  
PIPE INVERT LEVEL

200

150

50-100mm thick  
PCC paving slab  
laid on class 1  
mortar bed

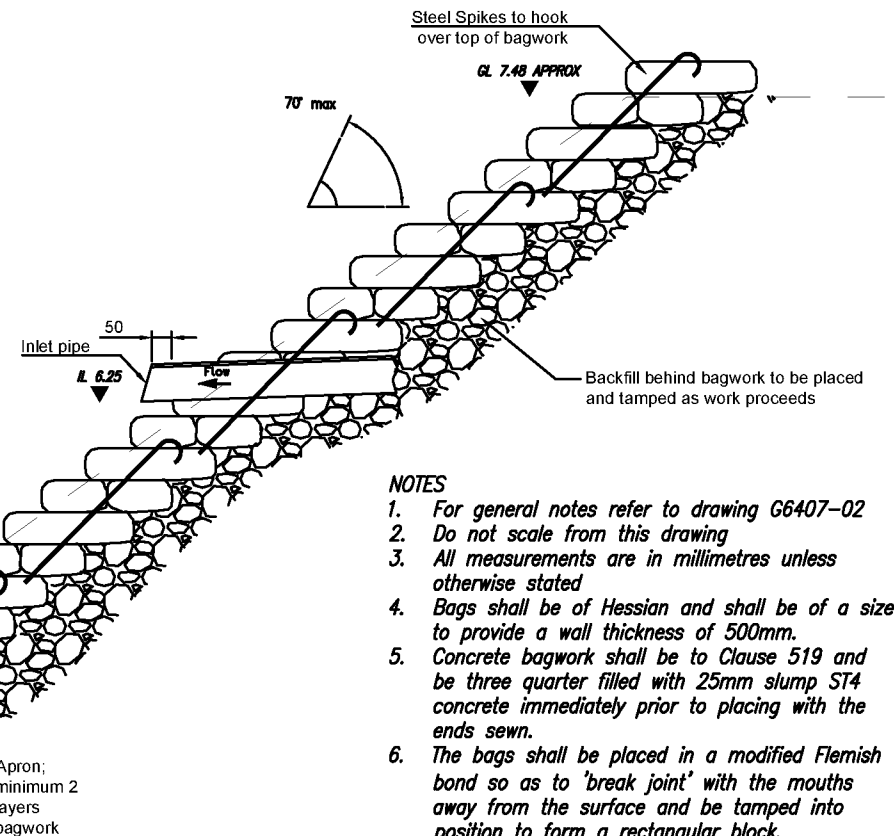
70° max

DITCH INVERT LEVEL TO BE  
CONFIRMED AFTER REMOVAL OF SILT  
AND DEBRIS FROM BED AND LEVEL  
SURVEY OF ADJACENT SECTIONS

GL 5.02

Unsuitable material  
in foundation to be  
excavated and  
backfilled with ST4  
concrete

OUTFALL TO SIDE OF DITCH  
HEADWALL SECTION



#### NOTES

1. For general notes refer to drawing G6407-02
2. Do not scale from this drawing
3. All measurements are in millimetres unless otherwise stated
4. Bags shall be of Hessian and shall be of a size to provide a wall thickness of 500mm.
5. Concrete bagwork shall be to Clause 519 and be three quarter filled with 25mm slump ST4 concrete immediately prior to placing with the ends sewn.
6. The bags shall be placed in a modified Flemish bond so as to 'break joint' with the mouths away from the surface and be tamped into position to form a rectangular block.
7. Extent of outlet protection to be the greater of 1500mm or pipe diameter + 1200mm spanning the outlet pipe.
8. Headwall design may need to be adjusted to on site conditions following approval from WBC/ADC Engineer.
9. Ditch to be regraded as requested.
10. All exposed pipework to be certified UV stable.
11. Pipe details to be as specified on supporting drawings.

| REV | DESCRIPTION | DATE |
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|-----|-------------|------|

## Ground Management Ltd

Civil and Geotechnical Engineering Services

Robin Hill Farm Clay Lane Fishbourne CHICHESTER

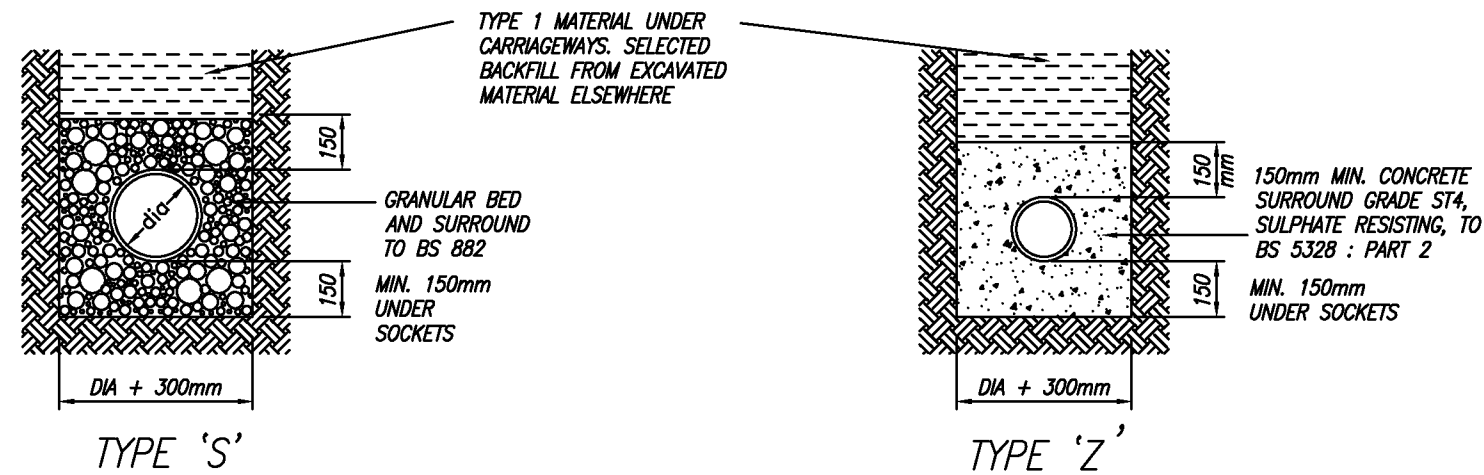
West Sussex PO18 8AB Phone/Fax: 01243 575073

mail@groundmanagement.com

#### PROJECT

LAGNERSH HOUSE PROPOSED AGRICULTURAL BARN  
DRAINAGE DETAILS  
OUTFALL TO DITCH

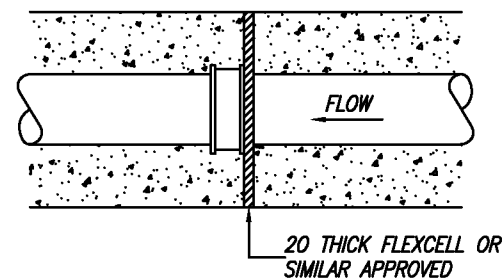
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| DRAWING No. | REVISION   | STATUS      |
| G6407-03    | P2         | PRELIMINARY |



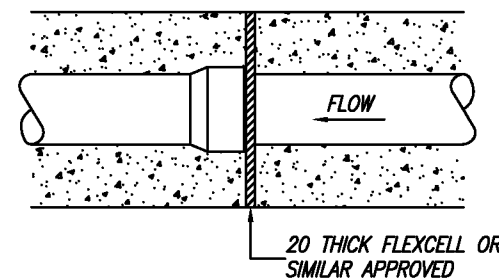
DRAINAGE WITH MORE THAN  
 600mm COVER – SOFT LANDSCAPED AREAS  
 900mm COVER – ROADS/VEHICULAR ACCESS ROUTES  
 (UNLESS BEDDING TYPE IS STATED ON THE DRAINAGE PLANS OR SPECIFICATION)

DRAINAGE WITH LESS THAN  
 600mm COVER – SOFT LANDSCAPED AREAS  
 900mm COVER – ROADS/VEHICULAR ACCESS ROUTES  
 (UNLESS BEDDING TYPE IS STATED ON THE DRAINAGE PLANS OR SPECIFICATION)

## PIPE BEDDING DETAILS IN PRIVATE AREAS



FLEXIBLE JOINT DETAIL  
FOR SLEEVED PIPES



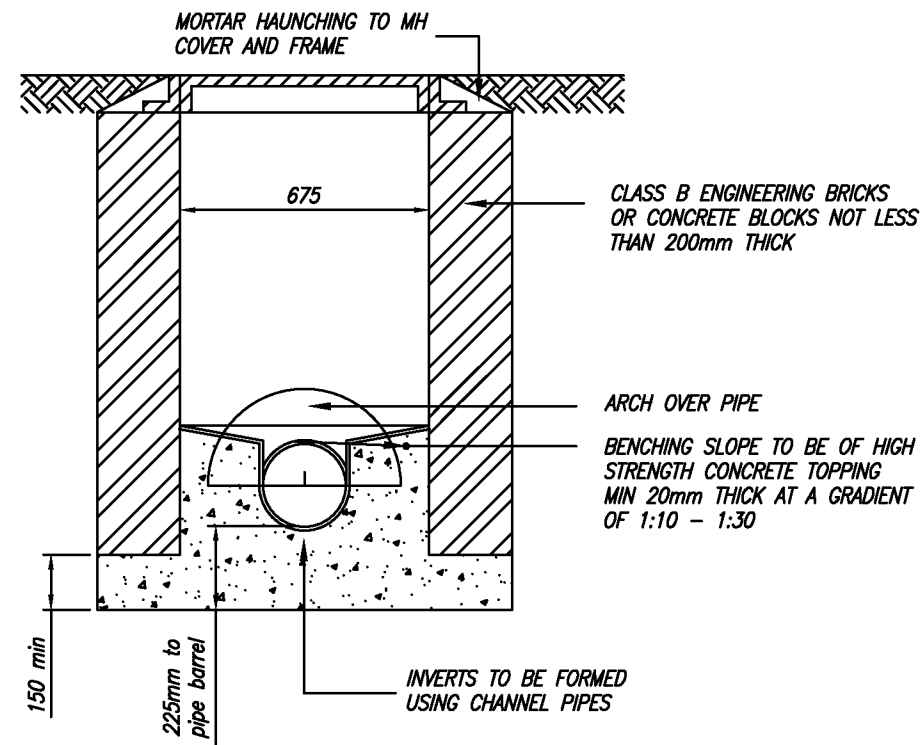
FLEXIBLE JOINT DETAIL  
FOR SOCKETED PIPES

## DETAIL OF EXPANSION JOINT FOR CONCRETE BED OR SURROUND (SEE NOTES 2 & 3)

### NOTES

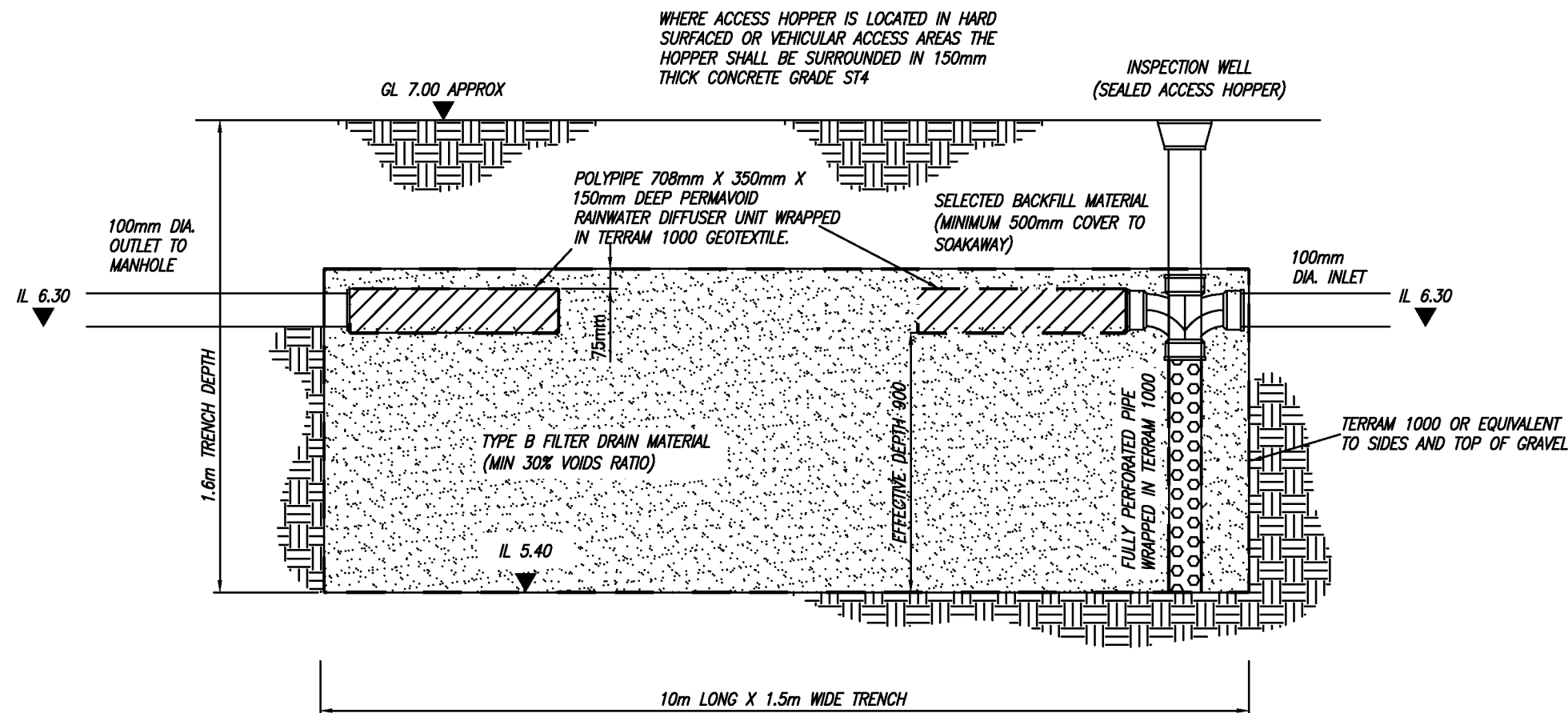
- 1 ALL DIMENSIONS ARE IN MILLIMETRES.
- 2 THE CONCRETE BED OR SURROUND MAY EXTEND TO THE SIDES OF THE TRENCH OR BE OF MINIMUM WIDTH.
- 3 FOR TYPE Z BED AND SURROUND THE CONCRETE COVER MAY BE FORMED TO A RADIUS BATTER OR HORIZONTAL SURFACE. MINIMUM COVER OF CONCRETE SHALL BE 150.

| REV                                                                                                                                                                                                         | DESCRIPTION      | DATE                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------|
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| PROJECT<br>LAGNERSH HOUSE PROPOSED AGRICULTURAL BARN<br>DRAINAGE DETAILS<br>PIPE JOINT AND BED DETAILS                                                                                                      |                  |                       |
| DRAWN BY<br>AT                                                                                                                                                                                              | CHECKED BY<br>AT | DESIGNED BY<br>AT     |
| SCALE at A3<br>N.T.S.                                                                                                                                                                                       | DATE<br>AUG 2020 |                       |
| DRAWING No.<br>G6407-SD1                                                                                                                                                                                    | REVISION<br>P2   | STATUS<br>PRELIMINARY |

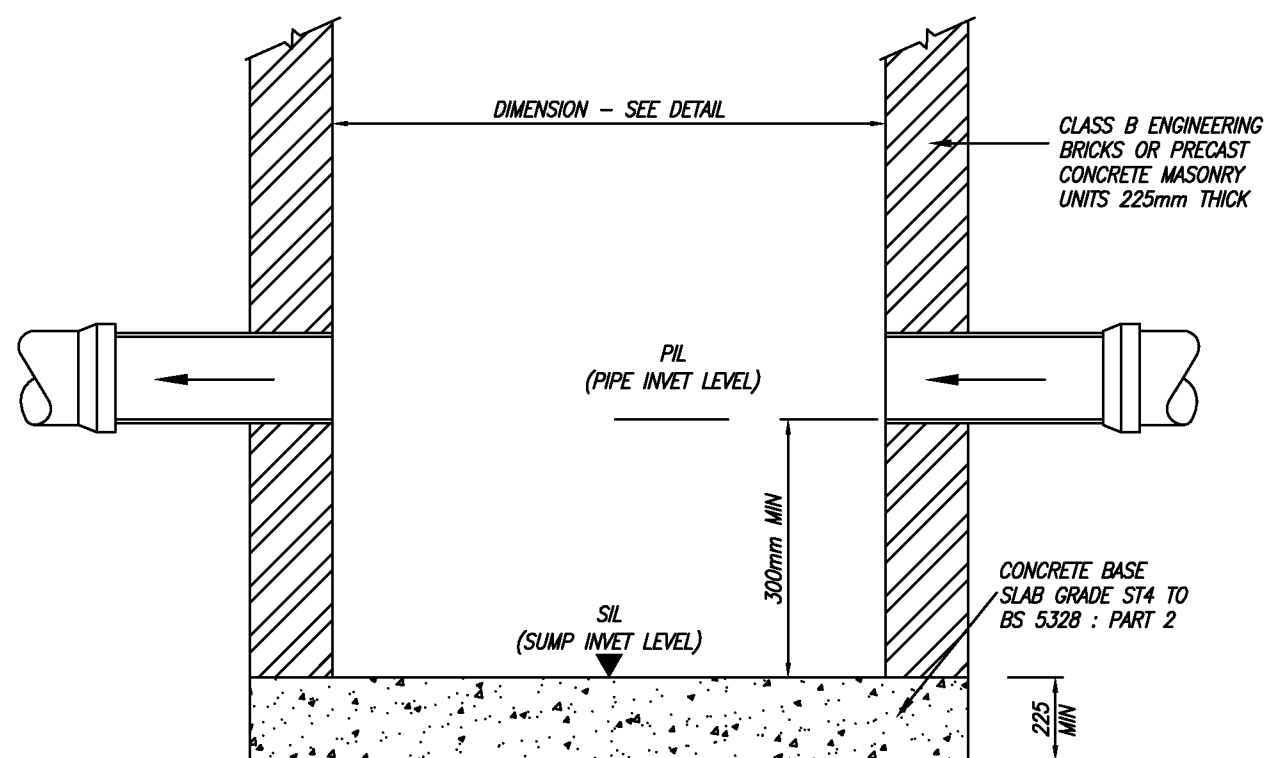


THE USE OF PRECAST RECTANGULAR CONCRETE MANHOLE UNITS WITH 150mm grade GEN3 CONCRETE SURROUND (DESIGNED TO BRE SPECIAL DIGEST 1 CONCRETE IN AGGRESSIVE GROUNDS) IS PERMITTED.

| REV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | DESCRIPTION                                                                                           | DATE        |             |                                                                                                       |             |           |          |             |
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| <h1 style="margin: 0;">Ground Management Ltd</h1> <p style="margin: 5px 0;">Civil and Geotechnical Engineering Services</p> <p style="margin: 5px 0;">Robin Hill Farm Clay Lane Fishbourne CHICHESTER</p> <p style="margin: 5px 0;">West Sussex PO18 8AB Phone/Fax: 01243 575073</p> <p style="margin: 5px 0;">mail@groundmanagement.com</p>                                                                                                                                                                                                                     |                                                                                                       |             |             |                                                                                                       |             |           |          |             |
| <div style="border-bottom: 1px solid black; margin-bottom: 5px;">PROJECT</div> <p style="margin: 0; text-align: center;">LAGNERSH HOUSE PROPOSED AGRICULTURAL BARN<br/>DRAINAGE DETAILS<br/>PIPE JOINT AND BED DETAILS</p>                                                                                                                                                                                                                                                                                                                                       |                                                                                                       |             |             |                                                                                                       |             |           |          |             |
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| DRAWN BY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CHECKED BY                                                                                            | DESIGNED BY |             |                                                                                                       |             |           |          |             |
| AT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | AT                                                                                                    | AT          |             |                                                                                                       |             |           |          |             |
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| SCALE at A3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">©</div> DATE </div> |             |             |                                                                                                       |             |           |          |             |
| N.T.S.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | AUG 2020                                                                                              |             |             |                                                                                                       |             |           |          |             |
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| DRAWING No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | REVISION                                                                                              | STATUS      |             |                                                                                                       |             |           |          |             |
| G6407-SD2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | P2                                                                                                    | PRELIMINARY |             |                                                                                                       |             |           |          |             |



TYPICAL TRENCH SOAKAWAY



TYPICAL CATCHPIT/SILT TRAP DETAIL  
REFER TO DRAINAGE LAYOUT FOR MANHOLE TYPE

| REV                                                                                                                                                                                                            | DESCRIPTION      | DATE                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------|
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| PROJECT<br>LAGNERSH HOUSE PROPOSED AGRICULTURAL BARN<br>DRAINAGE DETAILS<br>SOAKAWAY AND CATCHPIT DETAIL                                                                                                       |                  |                       |
| DRAWN BY<br>AT                                                                                                                                                                                                 | CHECKED BY<br>AT | DESIGNED BY<br>AT     |
| SCALE at A3<br>N.T.S.                                                                                                                                                                                          | DATE<br>AUG 2020 |                       |
| DRAWING No.<br>G6407-SD3                                                                                                                                                                                       | REVISION<br>P2   | STATUS<br>PRELIMINARY |