

6 Development Proposals

6.1 Description

- 6.1.1 The development proposal is for the construction of a new processing, preparation, packaging and distribution unit for fresh foods together with accommodation associated with the existing horticultural business and the revision of internal access road, car parking and hard standing areas and landscaping.
- 6.1.2 As part of the proposed works the existing staff car park will be relocated eastwards and the existing temporary buildings and associated hard surface will be removed.
- 6.1.3 The roof area of the new building will be approximately $7,300\text{m}^2$ and the external hard standing areas will cover approximately $11,475\text{m}^2$ comprising a service road, loading yard area including approximately $1,830\text{m}^2$ of existing hard standing.
- 6.1.4 As part of the proposed development approximately $1,520\text{m}^2$ of existing outbuildings and associated paved areas will be removed.
- 6.1.5 A copy of the proposed site layout plan is located in Appendix 8 at the rear of this report.

6.2 Drainage Strategy

- 6.2.1 Surface water collected from the loading yard together with surface water from the access road will be passed through a suitable petrol interceptor and will be discharged into the existing reservoir north west of the proposed new building.
- 6.2.2 Surface water from the roof of the new building will be discharged directly into the same reservoir.
- 6.2.3 The total new impermeable surface area, taking account of the existing hard standing and removal of outbuildings, is $15,440\text{m}^2$. The additional volume of runoff generated is thus approximately $1,220\text{m}^3$.
- 6.2.4 This additional volume will be discharged into the reservoir to the north west of the proposed new building. The surface area of the reservoir at its maximum capacity is approximately $10,000\text{m}^2$. The additional surface water runoff volume generated by the new impermeable surface will result in less than 125mm increase in water level.
- 6.2.5 The reservoir is an artificial water body supplying part of the water requirements for the farm operational and irrigation activities. The reservoir is fed by abstracting water from the Pagham Rife.

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- 6.2.6 The level of water within the reservoir is artificially maintained to allow a minimum freeboard of 500mm.
- 6.2.7 The proposed new development will not change the operation of the reservoir and will not result in a reduction of the operational freeboard level.
- 6.2.8 Foul drainage will be discharged to the existing private foul drainage system at Seftor Farm.
- 6.2.9 The full extent of the drainage infrastructure will be confirmed during detailed design and may also include other suitable sustainable drainage techniques.
- 6.2.10 Layouts showing the existing and new impermeable areas (drawings 6 and 7) together with preliminary storage volume calculations and a preliminary drainage strategy plan (drawing 8) are located in Appendix 9 at the rear of this report.



Barfoots of Botley Ltd.

Sefter Farm
Pagham
Bognor Regis
West Sussex
PO21 3PX

12th January 2018

Dear Paul Cann,

Reservoir level management procedure

Aim

To take available roof / yard water and collect in the existing reservoir system for summer irrigation purposes and simultaneously provide flood attenuation for the new build.

Method

Water will be collected from both the roof of the new build and the yard area and directed through pipes to reservoir 1 sited to the rear of Sefter farm. Reservoir 1 will be kept with 1 m of freeboard. The surface area of the reservoir being 10000 sq. m creates 10000 cubic meters of storm event capacity.

Water level in reservoir 1 would be maintained at 1m freeboard by pumping water to reservoirs 2 and 3 to help fill these reservoirs for summer irrigation purposes on the farm. All the reservoirs are interconnected by an underground 15cm diameter main and water can be moved by electric pump from location to location as required.

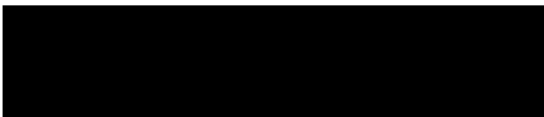
The farm management team measures water levels daily and monitoring of all reservoir water levels is maintained to avoid overfilling. A balance between field irrigation requirements and reservoir capacity will enable the capture of water for farm use and to mitigate storm event rainfall.

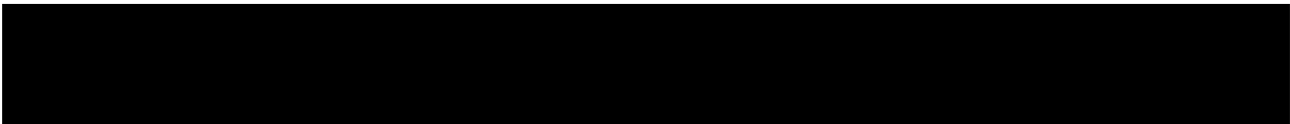
The reservoir system has a total capacity of 105,000 cubic meters.

The ability to fill the reservoirs is complemented by an additional approved abstraction of water from the Pagham Rife up to a total of 91,000 cubic meters.

The highest rainfall event occurred in June 2012 when 106mm rain fell in 24 hours. This would have created 1060 cubic meters of water off the new build site comfortably fitting into the strategy of space described above. Any ability to capture rainfall water is both a benefit financially and environmentally for the business.

Yours Sincerely


Nathan Dellicott
Farm Director



c) 500 minimum for main road locations, (i.e. where pipe is under carriageway or where pipe is under verge within 2m of the carriageway edge).

b) 450 minimum for field locations, (i.e. where pipe is under verge, greater than 2m from carriageway edge).

150 # outlet pipe, ...

bedding shall be type Z. Outlet position to be as indicated on drainage layout plan.

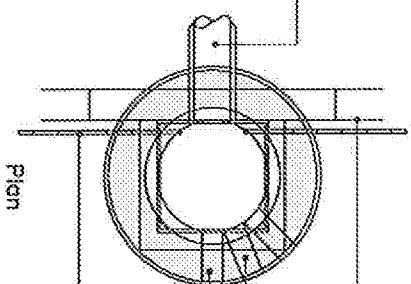
Backfill shall be mix S12 concrete of minimum thickness 150mm

100 minimum mix ST⁴ concrete bed

Grating and frame in accordance with BS EN124, kilnmarked or equivalent, D400, min. waterway 817cm². Non rocking design, or as specified on contract specific drawings.

Grating and frame to be set to crossfall & profile of carriageway 00 to 05mm below channel level

^a 18 mg/ml; minimum polymerization inhibitor (see note 5)

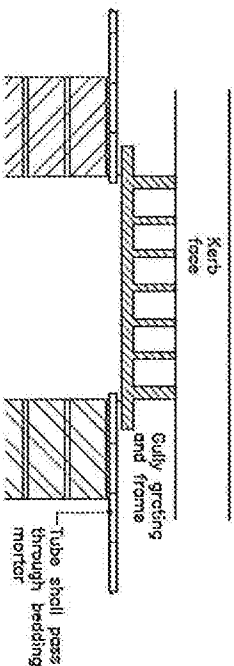


North face

Outlet position to be as indicated on drainage layout plan

Radial brickwork bedding to frame with bolster cut wedges and mortar infill. Grouting omitted for clarity.

Hydraulic relief tube to provide drainage for sand laying course (see note 4), where surfacing material is of block paving



Hydraulic Relief Tube Detail

(For use where surfacing material is black paving)

1. All dimensions are in millimeters.

2. Detail shown using pre-cast concrete gully.

used

(ii) Coated inside using plastic or

average of minimum thickness 150.

1708.

3. Gully type 1T shown with trapped pot, Gully type 1 as detailed but with untrapped pot.

4. The hydraulic relief tube shall be formed from 1/2" nominal diameter mild steel.

from 12mm copper pipe with half vertical saw cuts at 100mm centres, each pipe shall be 1000mm in length, stop ended and surrounded with a geo-textile material having a size distribution of pore opening such that the apparent opening size was determined in accordance with BS-5936 ; part 2, or other appropriate test is 150 microns maximum.

- Where constructed in trafficked roads, brickwork to be laid on polyester resin mortar.

2.	Revised for equipment sales added to play group inspection.	PP-1A-22-80
A	Utility pricing & income info provided.	WC-04-06-78
017	10-27-00-04	

1527

Standard Detail
Gully Type 1 and TT

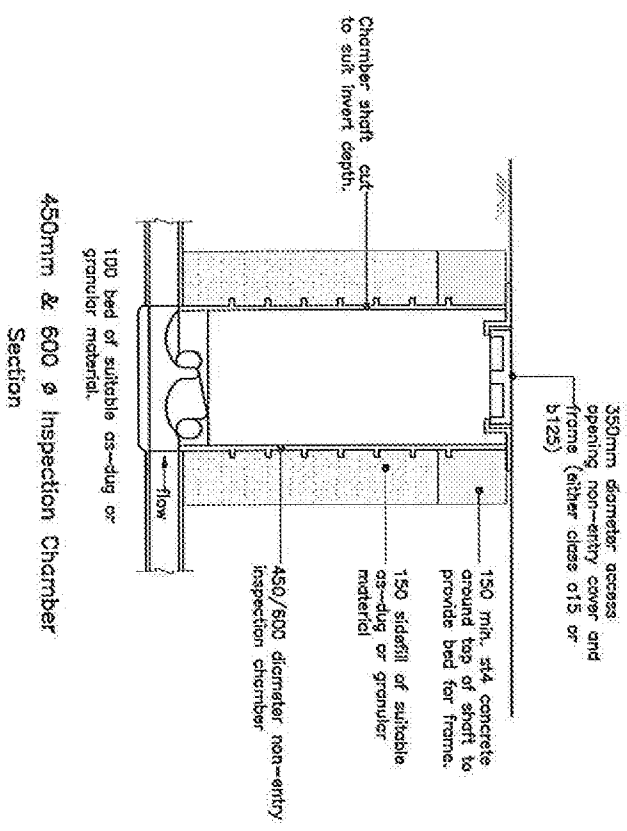
ORDER BY	ORDERED BY	ORDERED IN
REF	IC	IC
SCALE	Q6000	
NAME	ALUBIS	
STD NO.		REVISION
STD0405		0

Notes

- 1. All dimensions are in millimetres.
- 2. Permitted materials :

Material	British Standards
Plastics :	
Pvc-U	BS 4650
Polypropylene	BS 5254
Unfired clay	BS 65, BS EN295

For use in pedestrian or lightly trafficked areas only.



A	450 360mm CHAMBER AND	Rev	12-08-08
REV	DESCRIPTION	DATE	
DESIGNED BY	CHICKOBY	ENGINEER	
PER	PER	PER	
DATE	09/11/08	ALISA	
MTS			
STAGE	STAGE	REVISION	A
STD/19			

Standard Detail
2450mm & 6600 Inspection Chambers - 1.2m to 3.0m deep

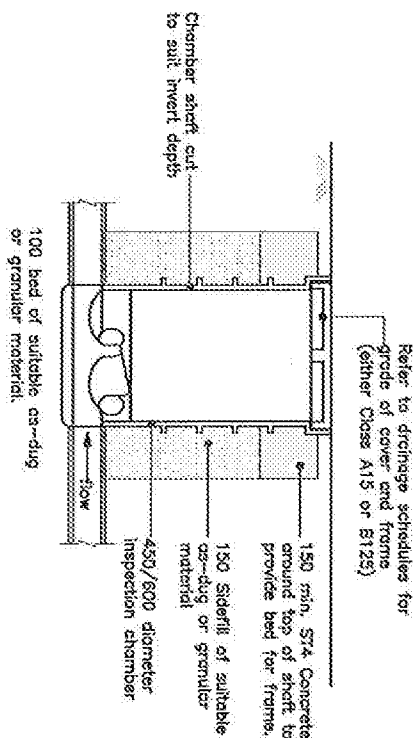
Notes

1. All dimensions are in millimeters.
2. Permitted materials :

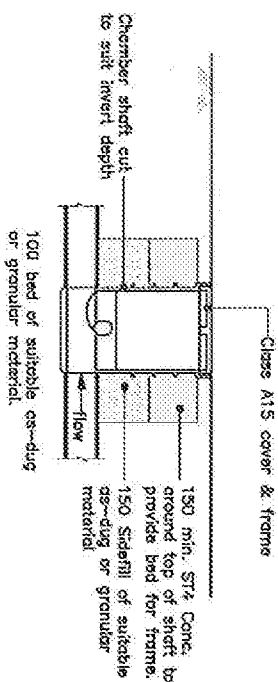
Material:	British Standards
Plastics : Acqua. Polypropylene	BS 4660 BS 5254
Verified clay	BS 65, BS EN235

3 Diameter / depth table :

Type	Internal diameter	Depth to L.L. (m)
Inspection chamber	500mm ϕ	1.2 or less
Inspection chamber	450mm ϕ	1.2 or less
Inspection chamber	250mm ϕ	0.6 or less

800 & 450mm Ø Inspection Chambers
Section

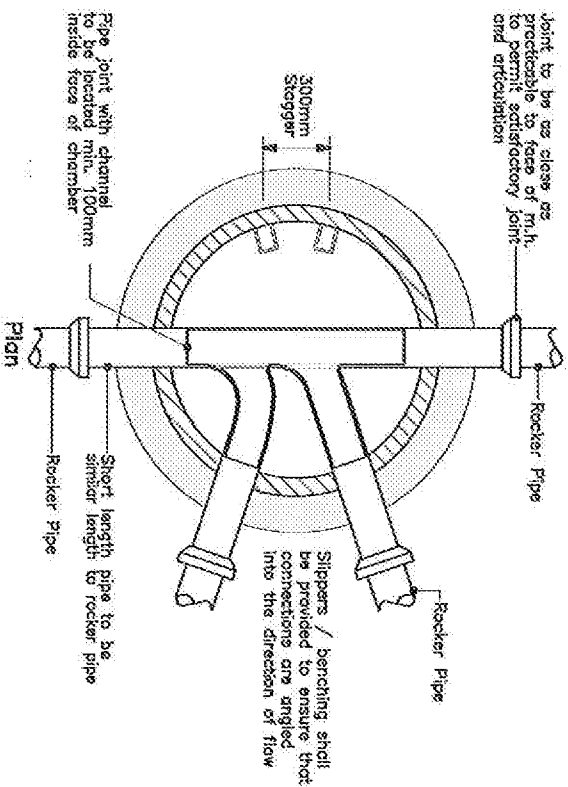
For use in pedestrian or
lightly trafficked areas only



250mm Inspection Chamber
Section

Predefined carers only

PROJECT		STANDARD DETAIL	
250mm, 450mm & 600mm Diameter Inspection Chalks			
DRAWN BY	CHKD BY	SEALD BY	DATE
PS	VS	VC	
SCALE	CONT	ALIAS	
N.T.S.			
ISSUED		REVISION	
6/10/01.20		0	



- 1 All dimensions are in millimetres,
- 2 Chambers with outgoing pipes greater than 500mm dia. shall be fitted with guard rails, safety chains or other safety devices.

- 3 Rucker pipe lengths

Pipe Dia. (mm)	Rockner Pipe Length
150-600	0.60m
675-750	1.00m
≥750	1.25m

- 4 Self cleaning toe holes to be provided where chainrod exceeds 600mm width.
- 5 Chamber diameters to be in accordance with table below.

Dia. of Largest Pipe in M.H. (mm)	Chamber Section Dia. (mm)
less than 375mm	1200
375-450	1200
greater than 450mm	the larger of 1800 or (DN+775)

A. 72.4N DETAIL UPDATED TO SHOW LATERAL CONNECTIONS. PP-18-09-02

2014年12月15日

100

Sander Oetli

Private Manhole - Type B4

Depth to Soft: 1.50 to 3.00m

ਪੰਨਾ ੧

VC

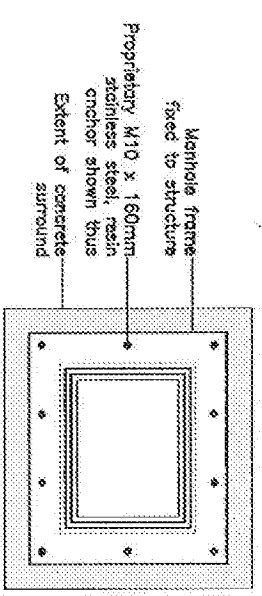
3A

215

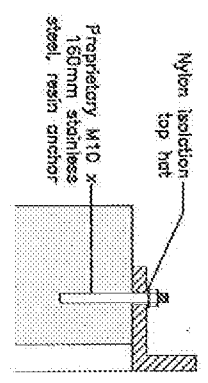
MAY 06

STD.0124

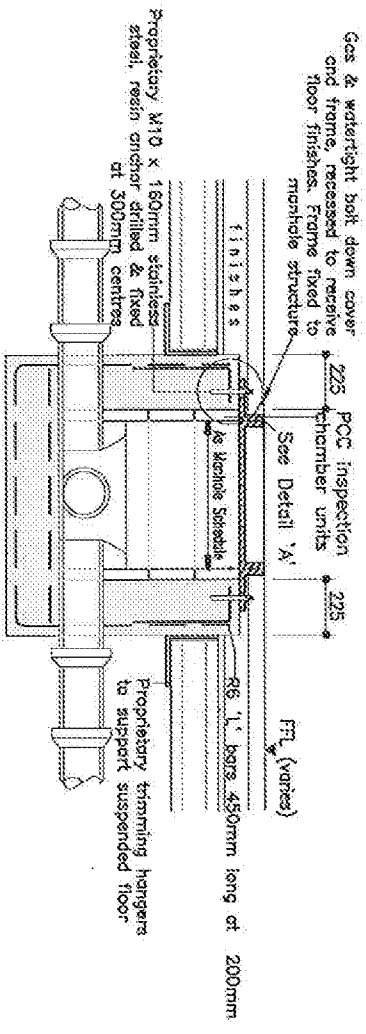
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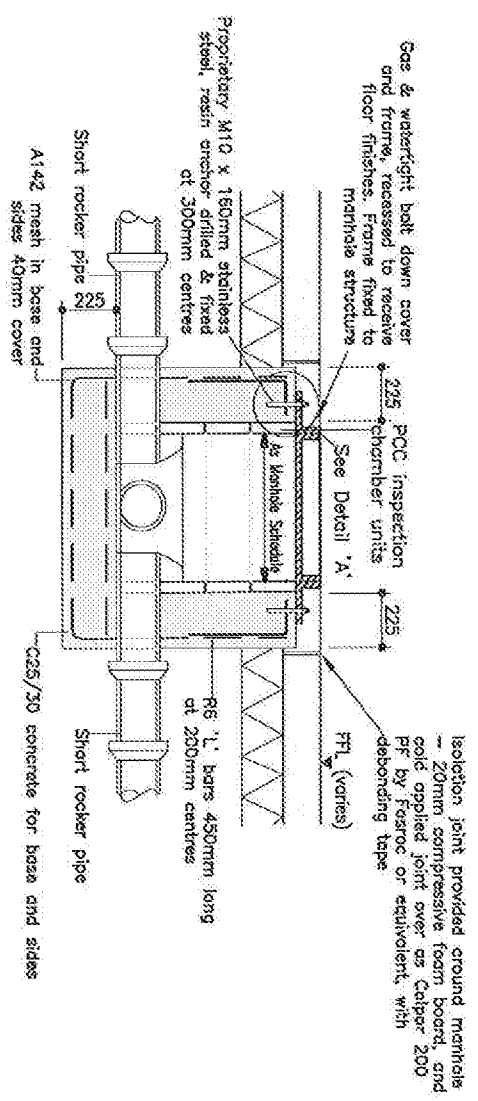
Plan
Pipework not shown



Detail 'A'



Section showing Suspended Floor
Manhole details as below



Section showing Ground Bearing Slab

Notes

1. All dimensions are in millimetres.
2. Rocker pipe lengths:

Pipe Dia. (mm)	Rocker Pipe Length
150-600	0.50m

3. Inspection Chamber section sizes available from Kilton & ARC:

Internal Dims (mm)	Cover Size (Clear Opening)
600 x 450	600 x 450
750 x 600	750 x 600
1000 x 675	1000 x 675

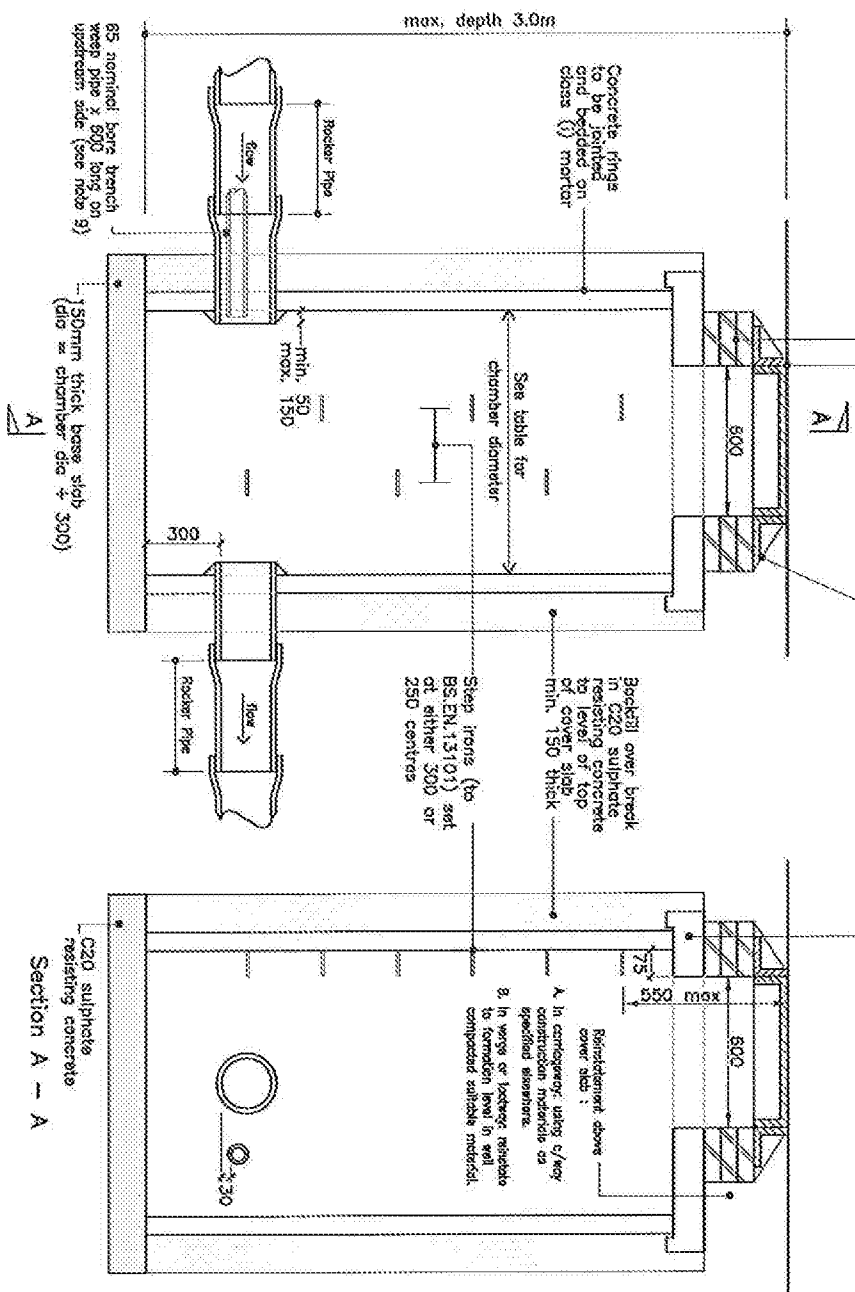
4. Double sealed gas and watertight covers and frames. Proprietary covers shall withstand at least 1.0m working head of water, and be capable of withstanding a 3.0m test head of water.

201	
SECTION	
PROJECT	
Standard Detail	
Internal Manholes	
DRAWN BY	CHECKED BY
PF	VC
DATE	DATE
1/1/15	NOV/12
STO 0142	REVISION

ନିର୍ଦ୍ଦେଶ ଦିଆଯାଇଛି
- ଉପରୋକ୍ତ ଶ୍ରମ ସୁରକ୍ଷା
ର ଫରମ୍ ଓ ଫରମ୍

15 min. polyester
resin mortar bed
to cover & frame

Precast reinforced concrete heavy duty cover slab with 500mm dia. access hatches on 10mm class (1) mortar bed



Section A - A

Type	Largest Pipe Dia.	Chamber Dia.
C1A	375	1200
C1B	380 - 450	1200
C1C	500 - 700	1350
C1D	750 - 900	1500

See Note
Below

Where depth to seafloor is between 1.25 to 1.50m chamber dia. shall be 1050

1 All dimensions are in millimetres.

2. Chambers shall be constructed in accordance with Clause 507.
3. Precast units shall be installed in accordance with manufacturers instructions.
4. The Contractor may either construct the chamber base in precast units or in situ C20 sulphate resisting concrete.
5. Where chambers are sited in verge chamber access shall be located furthest from carriageway edge.
6. Where chambers are sited in carriageway chamber access shall be located close to the edge of carriageway but leaving a clear drainage channel at kerb on her side of carriageway.
7. For invert details and grade of cover & frame see drainage schedules.
8. Where constructed on trafficked roads brickwork shall be laid on polyester resin mortar.
9. Pipe shall be built into chamber to drain lower portion of trench, pipe is to be placed above any concrete bed to filter drain.
10. Sump depth (300mm) is relative to the lowest pipe invert.

11 Rocker Pipe Lengths:

Pipe Dia.	Rocket Pipe Length
150-450	0.50-0.75m
451-730	0.75-1.00m
>750	See guidance

A. RESIN CONCRETE REVEALED TO G20 SUBJECTIVE
RESEARCHER

ISSN 1440-0101-007

SECRET 12/20

PROJECT

P.C.C. Chopin

Types C1A, C1B, C1C & C1D

DRIVEN BY

124

DATE: _____

.....

STD.01.45

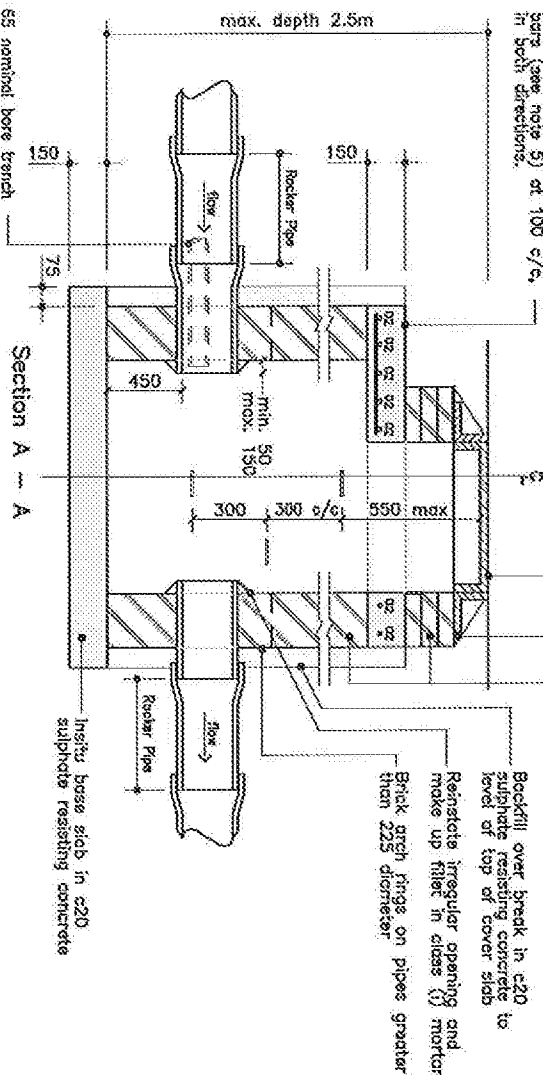
2

Reinforcement Above Cover Slab :

A. In carriageway, using carriageway construction materials as specified elsewhere.

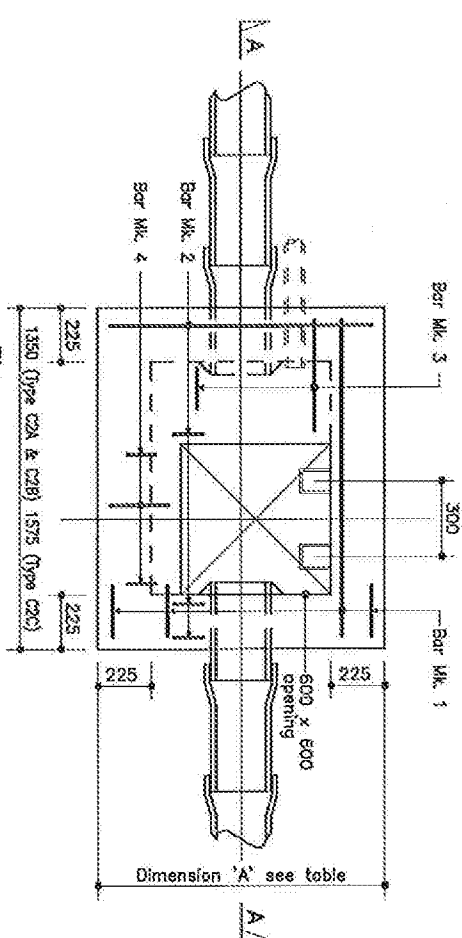
B. In verge or footway, rebar to be finished level in compacted suitable material.

Cover slab 30/20 sulphate resisting concrete reinforced with 16/12 dia. bars (see note 5) at 100 c/c, in both directions.



Section A - A

55 nominal bore trench (see note 4)



Plan

Cover & Frame Omitted for Clarity

Notes

- 1 All dimensions are in millimetres.
- 2 Overall chamber dimensions based on brick module.
- 3 Where constructed on trafficked roads brickwork shall be laid on polyester resin mortar.
- 4 Pipe to be built into chamber to drain lower portion of trench, pipe is to be placed above any concrete bed to filter drain.
- 5 Width / reinforcement schedule : - 40mm cover
All bars are high yield steel (straight)

Type	Nominal Pipe	Width 'A'	Mk	Dia.	Length	No.
C2A	UP TO 375	1125	1	15	1250	5
			2	12	1040	7
			3	16	450	6
			4	Not Required		-
C2B	450	1350	1	16	1250	7
			2	12	1270	7
			3	16	450	6
			4	12	450	6
C2C	UP TO 750	1575	1	16	1475	10
			2	12	1500	10
			3	16	570	6
			4	12	570	6

- 6 Sump depth (300mm) is relative to the lowest pipe invert.

7 Rocker Pipe Lengths:-

Pipe Dia.	Rocker Pipe Length
150-450	0.50-0.75m
451-750	0.75-1.00m
>750	See Guidance

A	PERU CONCRETE RINGS TO C20 SULPHATE RESISTING	PR-14-81-27
REV	22/06/2018	2018

PROJECT

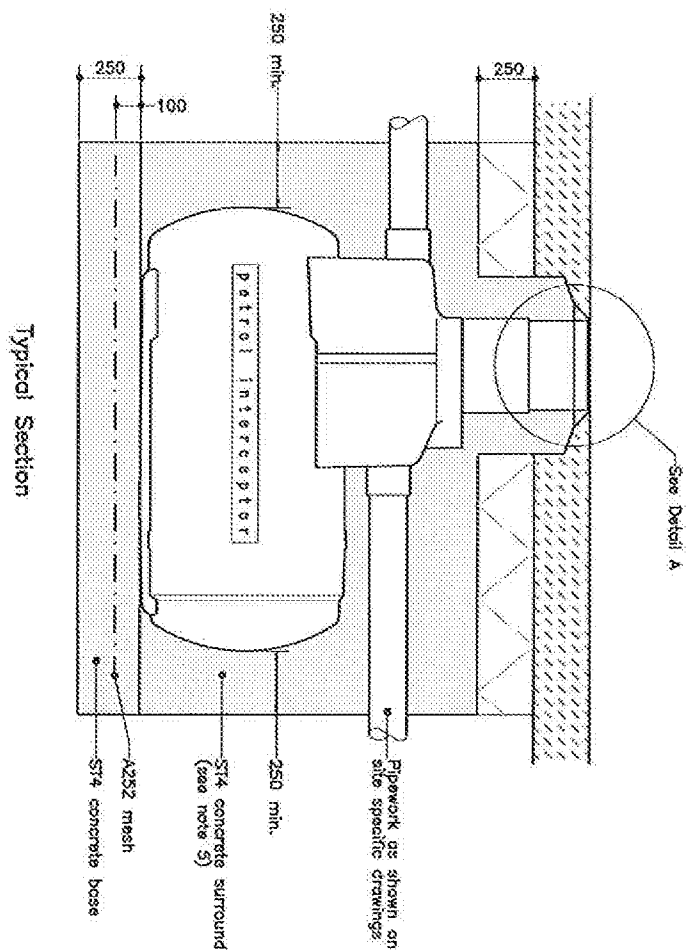
Standard Detail:
Brickwork Catchpit Chamber

Types C2A, C2B & C2C

DESIGNED BY	VC	DRAWN BY	VC
CHECKED BY	VC	CHECKED BY	VC
DATE	01/05/15	DATE	01/05/15
BY	VC	BY	VC

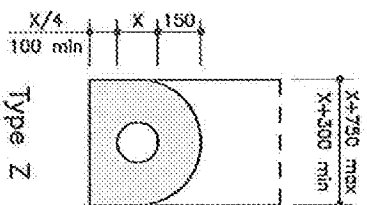
STD NO.	STD-01.50	SECTION	A
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- 1 All dimensions are in millimetres unless noted otherwise.
- 2 Steel reinforcement shall be in accordance with BS.4449 or BS.4453.
- 3 Concrete shall be in accordance with BS.5320.
- 4 Whilst concrete is placed, the tank shall be placed into the concrete base.
- 5 Whilst buckling tank note that buoyancy forces will tend to lift tank, make provision for this.
- 5 The Contractor shall consult with the interceptor supplier prior to construction.

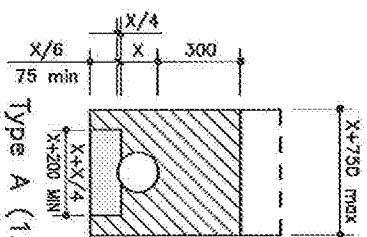


8	PERIOD INTERCEPTION DETAIL UPDATED.	02-03-04-02
A	226mm CONCRETE COVER SPOTTED OVER WORK	04-03-03-03
NOV	02/03/04	

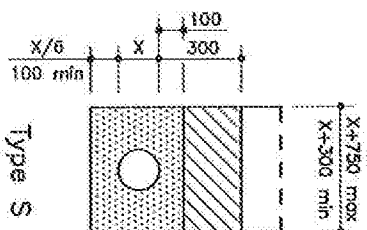
Product		Standard Detail	
Petrol Interceptor		Petrol Interceptor	
Beneath Trafficked Area			
DRINKING	PC	DRINKING BT	PC
PC			
SCULPT	PC	SCULPT BT	PC
N.T.S.			
STANDARD	STANDARD	STANDARD BT	STANDARD
STD 01.57		STD 01.57	
3		3	



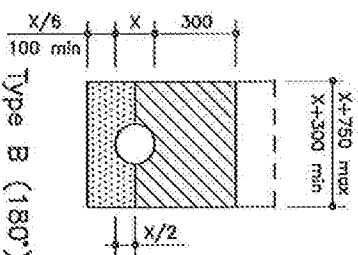
Type Z



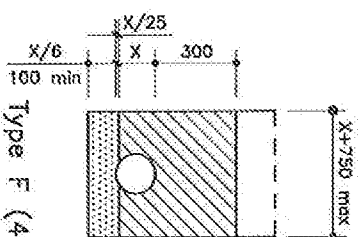
Type A (120°)



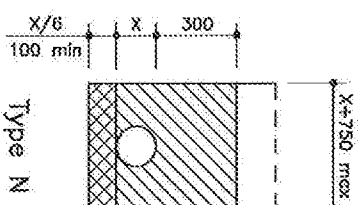
Type S



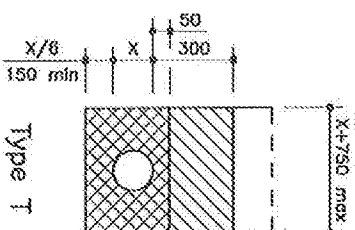
Type B (80%)



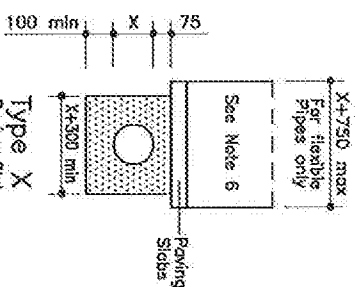
Type F (46%)



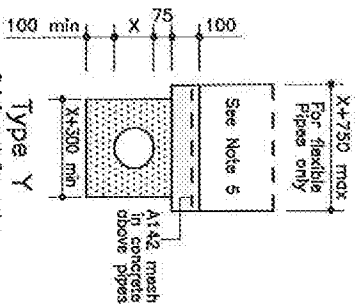
Type M



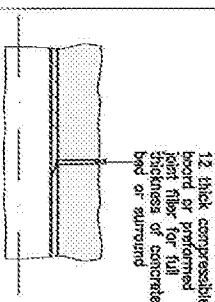
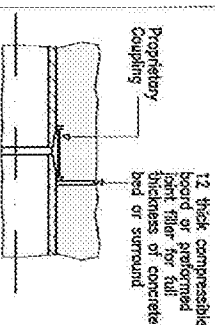
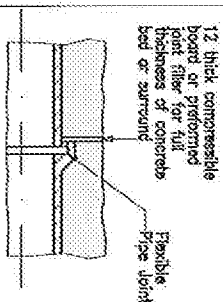
Type T



Type X
Paving Slab
Bridging
(fields/gardens)



Type Y
Reinforced Concrete
Bridging
(carrageway)



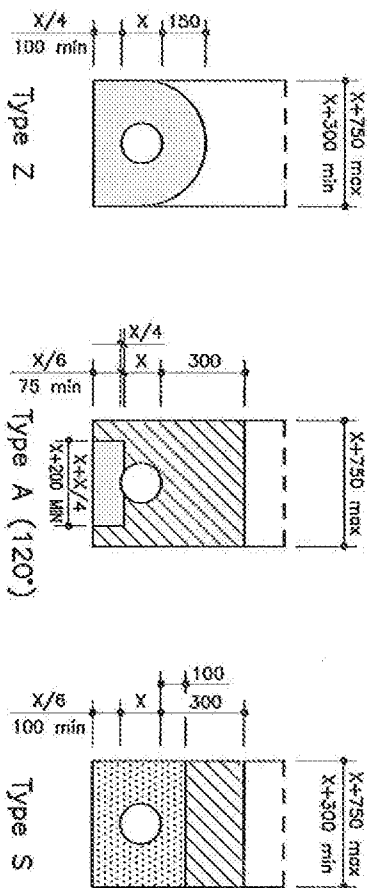
Notes

1. All dimensions are in millimetres.
2. Dimension X is the external diameter of the pipe.
3. The minimum or maximum width of the trench applies on and below a line 500mm above the outside top of the pipe, above the 500mm line the backfill material shall be as described in the contract.
4. The concrete bed or surround may extend to the sides of the trench or be of minimum width, class B material shall be used to fill any voids so formed.
5. For Type Z bed and surround the concrete cover may be formed to a radius bottom or horizontal surface, minimum cover of concrete shall be 150.
6. Types X & Y are special protection details to be used for building drainage only ~ non absorbable sewers.

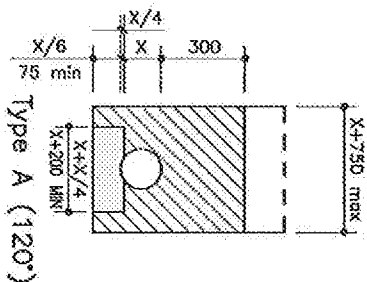
Key

- | | |
|---|--|
|  | Granular Material to S.H.W.
Clause 503.3 (i) |
|  | Concrete to S.H.W.
Clause 503.3 (iii) |
|  | Material to S.H.W.
Clause 503.3 (ii) eg. Sand |
|  | Class 6 Material to S.H.W.
Clause 503.3 (iv) |

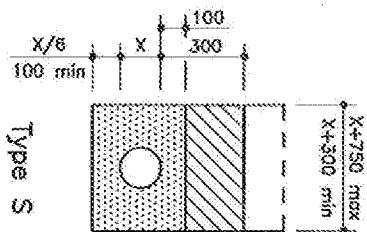
REV	DESCRIPTION	DATE
A	TYPE S RED REVISION TO SHOW 100mm GRANULAR MATERIAL ABOVE PIPE	11-12-02-61
Standard Detail Cantile Drains Bed Details		
CHANGING	CHANGING	REVISION
REV	VC	VC
SCALE	AS SHOWN	AS SHOWN
N.T.S.	AS SHOWN	AS SHOWN
STATION	STATION	STATION
STD.01.65		A



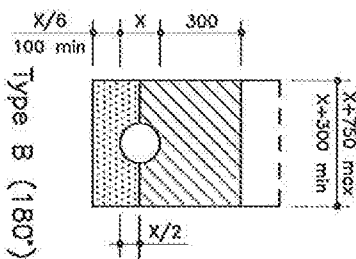
Type Z



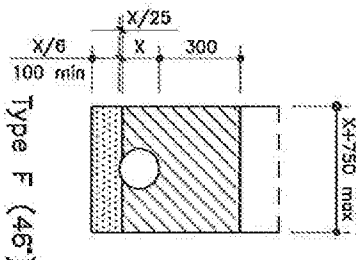
Type A (120°)



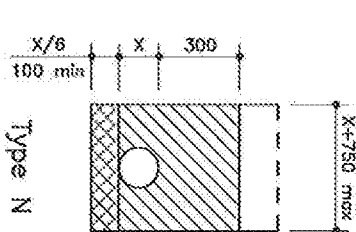
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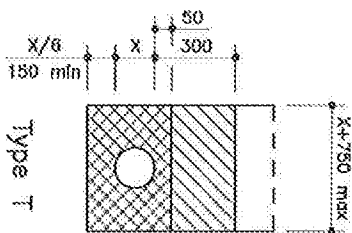
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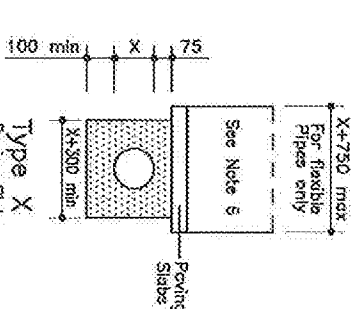
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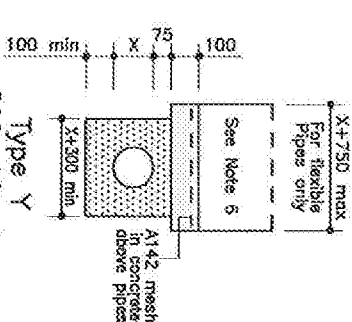
Type N



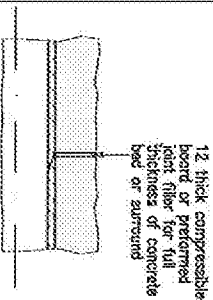
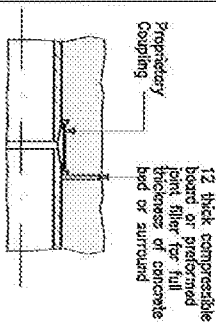
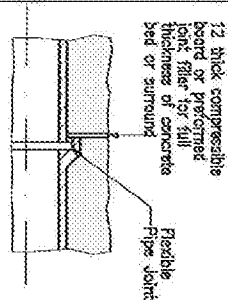
Type 1



Type X



Type Y



Notes

- 1 All dimensions are in millimetres.
- 2 Dimension X is the external diameter of the pipe.
- 3 The minimum or maximum width of the trench depends on one below a line 300mm above the outside top of the pipe, above the 300mm line the backfill material shall be as described in the contract.
- 4 The concrete bed or surround may extend to the sides of the trench or be of minimum width, class 3 material shall be used to fill any voids so formed.
- 5 For Type Z bed and surround the concrete cover may be formed to a radius bottom or horizontal surface, minimum cover of concrete shall be 150.
- 6 Types X & Y are special protection details to be used for building drains only – non adoptable sewers.

Key

- | | |
|--|---|
| | Granular Material to S.H.W.
Clause 503.3 (i) |
| | Concrete to S.H.W.
Clause 503.3 (ii) |
| | Material to S.H.W.
Clause 503.3 (iii) eg. Sand |
| | Class B Material to S.H.W.
Clause 503.3 (iv) |

A TYPE 5 BED REMOVED TO SHOW 103mm GRANULAR MATERIAL ABOVE PIPE.

PK-12-002-087

RESULTS

Standard Detail Carrier Drains

Best Details

2022

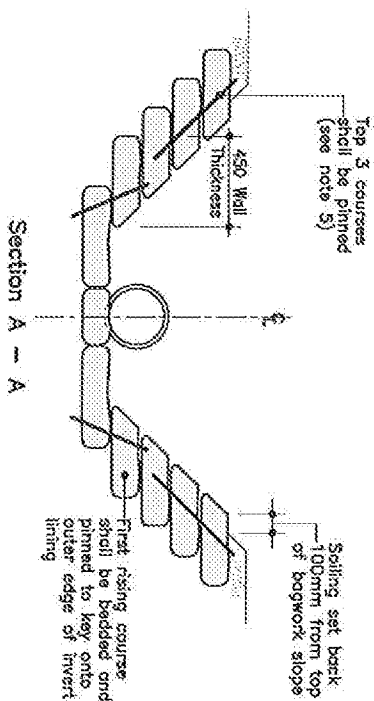
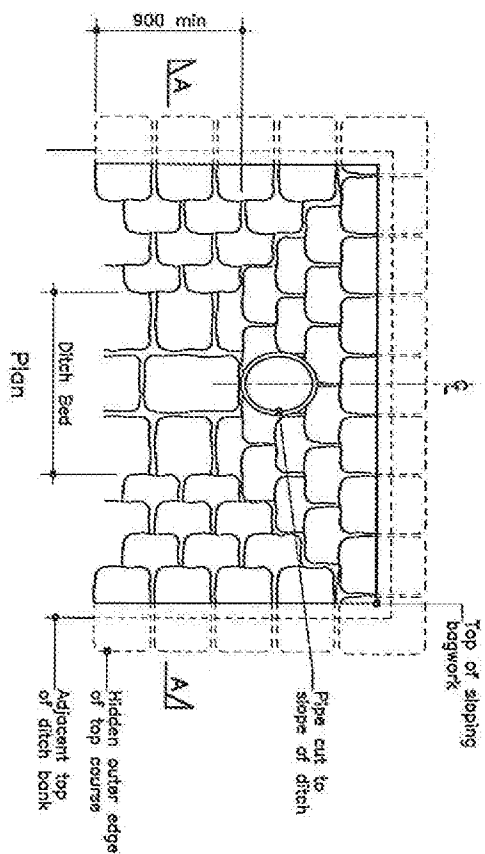
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NTS

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Notes

- 1 All dimensions are in millimetres.
- 2 Bags shall be of hezalon or convas and shall be of a size to provide a minimum wall thickness of 450mm.
- 3 The bags shall be not more than three quarters filled with mix S15 concrete immediately prior to placing and the ends sewn.
- 4 The bags shall be placed so as to 'break joint' with the mouth away from the surface and tamped into the position to form a rectangular block.
- 5 The top three courses of bags shall be spliced together with mild steel bar 10mm ϕ , 900 long at 500mm intervals along the top of the wall.

PROJECT

Standard Detail

Type S

DESIGNED BY	VC	DATE	10/05/2017
CHECKED BY	VC	DATE	10/05/2017
APPROVED BY	VC	DATE	10/05/2017

STD.04.110