

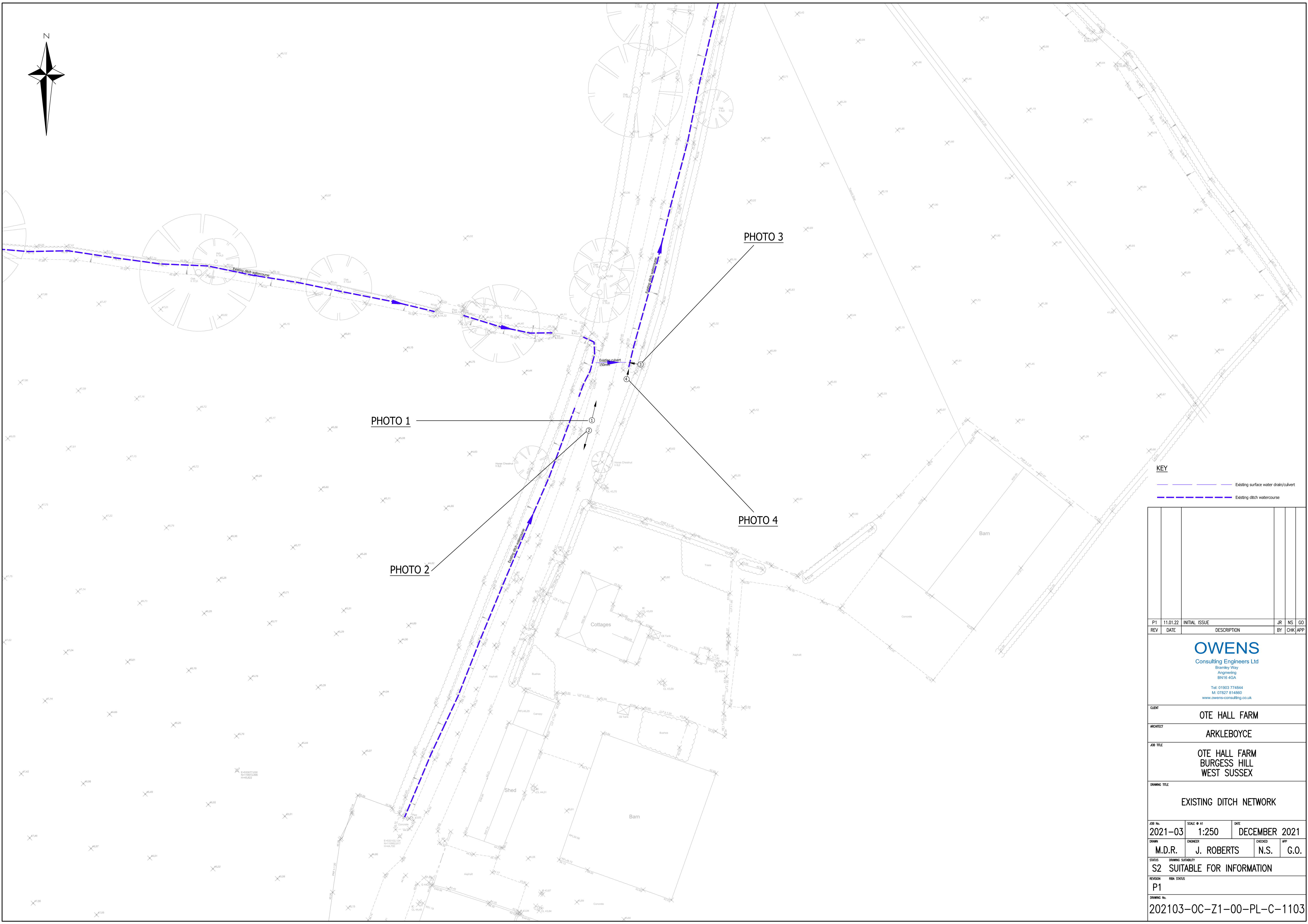


PHOTO 4

PHOTO 1

PHOTO 2

— Existing surface water drain/culvert

— Existing ditch watercourse

11.01.22		INITIAL ISSUE		J.R.		NS	GO
REV	DATE	DESCRIPTION				BY	CHK APP
OWENS Consulting Engineers Ltd Bramley Way Angmering BN16 4GA Tel: 01903 774844 M: 07827 814860 www.owens-consulting.co.uk							
CLIENT		OTE HALL FARM					
ARCHITECT		ARKLEBOYCE					
JOB TITLE		OTE HALL FARM BURGESS HILL WEST SUSSEX					
DRAWING TITLE							
EXISTING DITCH NETWORK							
JOB No.		SCALE @ A1		DATE			
2021-03		1:250		DECEMBER 2021			
DRAWN		ENGINEER			CHECKED		APP
M.D.R.		J. ROBERTS			N.S.		G.O.
STATUS DRAWING SUITABILITY							
S2 SUITABLE FOR INFORMATION							
REVISION		RBA STATUS					
P1							
DRAWING No.							
202103-OC-Z1-00-PL-C-1103							

SPECIFICATION NOTES

All drainage shall be constructed and commissioned in accordance with BS EN 295 & BS EN 752, Building Regulations Doc. H and any particular requirements of the Building Control Officer.

Drainage pipelines shall be in PVC-u below ground as Marley or similar approved, or vitrified clay.

This drawing shall be read in conjunction with all other relevant drainage drawings, architectural drawings and structural drawings.

For manhole details, gully details, bedding etc, refer to gta detail sheets.

All foul water drain runs shall have a fall of 1:40 or steeper, unless noted otherwise.

All cement used for concrete drainage installations shall be sulphate resistant class 50/55 (Grade S75).

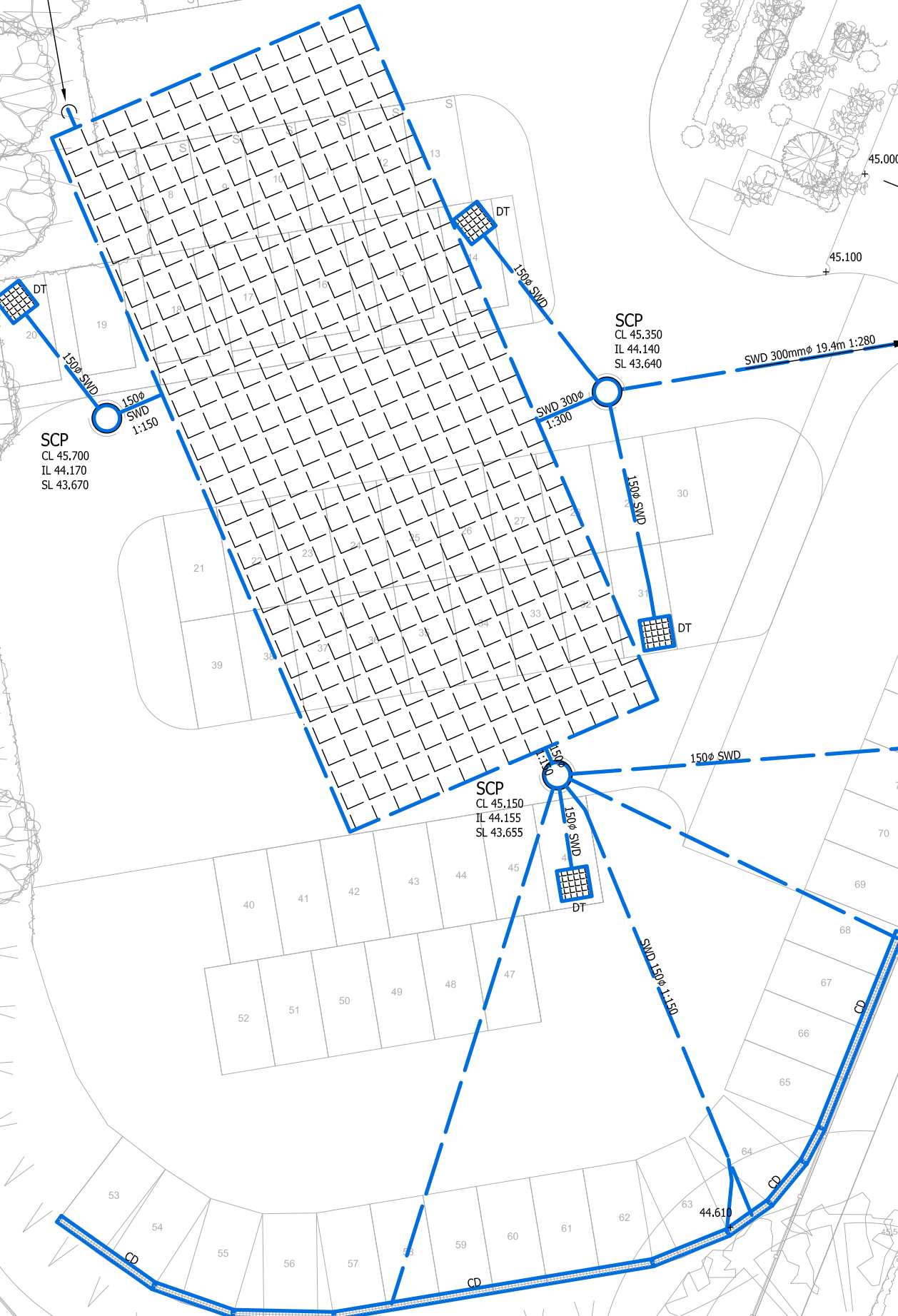
The use of short radius or 90° bends for changes in direction is permitted, only long or medium radius 45° bends shall be used. All junctions shall be 45°.

All drains shall have granular bed and surround as class 'S' bedding, unless noted otherwise.

All drainage works shall commence from the downstream end first unless agreed otherwise. Outfall level to be checked by contractor prior to any works commencing and any discrepancy identified to engineer prior to laying and drainage.

CELLULAR STORAGE
CL 45.200 - 46.800
Top level 44.650
Base level 44.150
Plan dims 35m x 15.5m
Depth 500mm
Volume 257.69m³ (95% voids)
Steel for the 1 in 100 year event + 45% for climate change
Tank to be laid with slight fall towards outlet and wrapped in impermeable membrane
Heavy duty tank for minimum cover of 550mm

1000 vent pipe to terminate at low level in landscaping. Location to be agreed with architect.



KEY

- Existing combined sewer
- Existing ditch watercourse
- Surface water drain
- Foul drain
- RWP Rainwater pipe
- FGP/FG Foul gully
- PPCP Surface water catchpit, plastic, 600⁺
- FIC Foul inspection chamber, plastic, 450⁺
- SCP Surface water catchpit, PCC, 1200⁺
- FMH Foul manhole, PCC, 1200⁺
- TXCD Drainage channel
- DT Distribution Tank

ABBREVIATIONS

- BG BIN STORE GULLY
- CD CHANNEL DRAIN
- CL COVER LEVEL
- DT DISTRIBUTION TANK
- FEL FINISHED FLOOR LEVEL
- FG Foul GULLY INTERNAL
- FIC FOUL INSPECTION CHAMBER
- FMH FOUL MANHOLE
- FWD FOUL DRAIN
- G Foul GULLY EXTERNAL
- IL INVERT LEVEL
- LLFA LEAD LOCAL FLOOD AUTHORITY
- PCC PRE CAST CONCRETE
- PPCP POLYPIPE CATCHPIT
- RWP RAINWATER PIPE
- SCP SURFACE WATER CATCHPIT
- SL SUMP LEVEL
- SS STUB STACK
- SSL STRUCTURAL SLAB LEVEL
- SVP SOIL VENT PIPE
- SWD SURFACE WATER DRAIN
- TD THRESHOLD DRAIN
- TOP TOP OF FOUNDATION
- USSL UNDERSIDE OF STRUCTURAL SLAB LEVEL

DESIGN NOTES

- ATTENUATION STORAGE SIZED FOR 1 IN 100 YEAR STORM + 45%.
- PROPOSED HEADWALL OUTFALL INTO DITCH WILL REQUIRE ORDINARY WATERCOURSE CONSENT FROM LLFA.
- PROPOSED CONNECTION TO EXISTING FOUL DRAIN REQUIRES SECTION 106 CONSENT FROM SOUTHERN WATER.
- CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
- EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.

P2	27.11.24	REVISED TO FEH2022 DATA AND +45% CC. TANK SIZE INCREASED.	JR	NS	GO
P1	21.12.21	STAGE 4 ISSUE - FOR INFORMATION	JR	NS	GO
REV	DATE	DESCRIPTION	BY	CHK	APP

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CLIENT	OTE HALL FARM
ARCHITECT	ARKLEBOYCE
JOB TITLE	OTE HALL FARM BURGESS HILL WEST SUSSEX
DRAWING TITLE	SITE DRAINAGE

JOB No.	2021-03	SCALE	1:250	DATE	DECEMBER 2021
DRAWN	J.R.	ENGINEER	J. ROBERTS	CHECKED	M.R.
STATUS	DRAWING SUITABILITY				
REVISION	REVISION STATUS				
	P2 STAGE 4 - TECHNICAL DESIGN				
DRAWING No.	202103-OC-Z1-00-PL-C-1101A				

Diagram illustrating the construction of a 1000mm diameter manhole. The structure is shown in cross-section, embedded in a concrete wall. The manhole is 1000mm in diameter. The construction layers are as follows:

- GROUND LEVEL** (indicated by a dashed line)
- 250 mm** (indicated by a dimension line)
- SELECTED FILL (see specification) COMPACTED IN LAYERS NOT EXCEEDING 250 mm** (indicated by a dimension line)
- 1000mm MIN. UNLESS ADDITIONAL PROTECTION IS PROVIDED ON MAIN SITE TRAFFIC ROUTES** (indicated by a dimension line)
- SELECTED GRANULAR FILL (see specification) COMPACTED BY HAND** (indicated by a dimension line)
- 300mm MIN** (indicated by a dimension line)
- SELECTED FILL (see specification) WELL COMPACTED** (indicated by a dimension line)
- GRANULAR BED WELL COMPACTED** (indicated by a dimension line)
- TEMPORARY DRAIN IF REQUIRED** (indicated by a dimension line)

The diagram also shows a concrete wall with a thickness of 300mm MIN and a depth of 600 mm OR GREATER. The manhole is labeled with 'Bc' and 'Bd' dimensions.

The diagram shows a cross-section of a 300mm diameter pipe. The pipe is surrounded by a 150mm thick concrete layer. This concrete layer is further encased in a 375mm thick layer of reinforcement, consisting of 16mm diameter bars (D16) spaced at 200mm. The reinforcement is provided in both horizontal and vertical directions. The total width of the reinforcement layer is 600mm (300mm + 300mm). The total width of the concrete surround is 300mm (150mm + 150mm). The total width of the entire assembly is 900mm (600mm + 300mm). The diagram is labeled with dimensions and material specifications.

GROUND LEVEL

☐ 900mm MIN. UNLESS ADDITIONAL PROTECTION IS PROVIDED ON MAIN SITE TRAFFIC ROUTES.
 PROVIDE CONCRETE SURROUND TO PIPES IN AREAS LIABLE TO PENETRATION OF TREE ROOTS

150 mm SURROUNDED UP TO 300 mm Dia Pipe (200mm SURROUND ON 375 mm AND ABOVE OF CURB CONCRETE, SHARPED FORMERS OF 15 mm POLYSTYRENE OF FITCH IMPREGNATED FIBRE BOARD TO BE INSTALLED ON EACH JOINT ON ROCKER PIPES AT MANHOLES ETC. AND EVERY THIRD JOINT (NOT EXCEEDING 5 METRES) ON RUNS OF DRAIN

- IN ROCK, CONCRETE OR MIXED SOILS CONTAINING ROCK BANDS, BOULDERS, LARGE FLINTS OR STONES OR OTHER IRREGULAR HARD SPOTS THAT RESULT IN UNEVEN TRENCH BOTTOM $Y=1/4 B_c$ OR 200 mm WHICH EVER IS THE GREATER, BUT NOT LESS THAN 50mm UNDER COLLARS

- IN SOILS THAT PERMIT AN EVEN TRENCH BOTTOM TO BE EXCAVATED $Y=1/6 B_c$ OR 150 mm WHICH EVER IS GREATER, BUT NOT LESS THAN 50 mm UNDER COLLARS

- 1) FOR PIPES EXCEEDING 600 mm DIA REFER TO ENGINEER
- 2) IN WET OR SOFT GROUND SEEK GUIDANCE FROM ENGINEER
- 3) THE BEDDINGS MAY BE MODIFIED FOR CERTAIN SUB-SOIL CONDITIONS AT THE ENGINEERS DISCRETION
- 4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADDITIONAL PROTECTION IN AREAS SUBJECT TO LOADS FROM SITE TRAFFIC. THE CONTRACTOR SHALL IDENTIFY THESE ZONES AND RESTRICT TRAFFIC ELSEWHERE
- 5) SEE ALSO BS 8301
- 6) FOR GREATER TRENCH WIDTHS SEEK GUIDANCE FROM ENGINEER

GRANULAR MATERIAL	
PIPE SIZE	AGGREGATE
100 mm	10 mm SINGLE SIZE
150 mm	OR 14-5 mm GRADED
	10,14,20 SINGLE SIZE OR
150 mm-	20-25 mm GRADED
500 mm	10,14,20 OR 40 mm SINGLE
600 mm	CRUSHED ROCK OR 40-45 mm GRADED

Diagram illustrating the construction of a manhole structure, showing layers and dimensions:

- FINISH LEVEL**
- FORMATION LEVEL**
- SELECTED FILL COMPACTED IN LAYERS NOT EXCEEDING 250mm** (1000mm MIN. UNLESS ADDITIONAL PROTECTION IS PROVIDED ON MAIN SITE TRAFFIC ROUTES)
- SELECTED FILL COMPACTED BY HAND**
- GRANULAR BED WELL COMPACTED**
- TEMPORARY DRAIN (IF REQUIRED)**

Dimensions and Notes:

- 300mm MIN. (Well Diameter)
- 100mm (Bed Thickness)
- 100mm (Drain Thickness)

Pipe Size	Trench Width
100 mm	0.6 m
150 mm	0.6 m
225 mm	0.7 m
300 mm	0.8 m
375 mm	1.1 m

900 mm	1.2 ft
600 mm	1.4 ft

FINISH LEVEL

FORMATION LEVEL

SELECTED FILL COMPACTED IN LAYERS NOT EXCEEDING 250mm

100mm MIN. UNLESS ADDITIONAL PROTECTION IS PROVIDED ON MAIN SITE TRAFFIC ROUTES

GRANULAR SURROUND IN CONTROLLED LAYERS

GRANULAR MATERIAL

CONCRETE BED & SURROUND (C.B.S.)

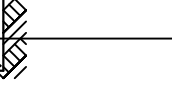
	150 mm	10 OR 14mm SINGLE SIZE OF 14 GRADED
	150 mm-500 mm	10,14,20 SINGLE SIZE OR 20-25 mm GRADED
	500 mm	40,44,20,20,40 SINGLE

600 mm

COMPACTED

CRUSHED ROCK OR 40-45 mm GRADED

600mm MIN. UNLESS ADDITIONAL PROTECTION IS

-  900mm HIGH, UNLESS ADDITIONAL PROTECTION IS PROVIDED ON MAIN SITE TRAFFIC ROUTES
- 150 mm SURROUNDED UP TO 300 mm DIA PIPE (±200mm SURROUND ON 375 mm AND ABOVE) OF C20P CONCRETE. SHAPED FORMERS OF 200 mm POLYSTYRENE OF PITCH IMPREGNATED FIBRE BOARD TO BE INSTALLED ON EACH JOINT ON ROCKER PILES AT MANHOLES ETC. AND EVERY THIRD JOINT (NOT EXCEEDING 5 METERS) ON RUNS OF DI
- IN ROCK, CONCRETE OR MIXED SOILS CONTAINING ROCK BANDS, Boulders, LARGE FLINTS OR STONES OR OTHER IRREGULAR HARD SPOTS THAT RESULT IN UNEVEN TRENCH BOTTOM $Y=1/4$ Bc OR 200 mm WHICH EVER IS THE GREATER, BUT NOT LESS THAN 50 mm UNDER COLLARS
- IN SOILS THAT PERMIT AN EVEN TRENCH BOTTOM TO BE EXCAVATED $Y=1/6$ Bc OR 150 mm WHICH EVER IS GREATER, BUT NOT LESS THAN 50 mm UNDER COLLARS
- 1) FOR PIPES EXCEEDING 600 mm DIA REFER TO ENGINEER
 - 2) IN WET OR SOFT GROUND SEEK GUIDANCE FROM ENGINEER
 - 3) THE BEDDINGS MAY BE MODIFIED FOR CERTAIN SUB-SOIL CONDITIONS AT THE ENGINEERS DISCRETION
 - 4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADDITIONAL PROTECTION IN AREAS SUBJECT TO LOADS FROM OVERHEAD TRAFFIC. THE CONTRACTOR SHALL IDENTIFY THESE ZONES AND RESTRICT TRAFFIC ELSEWHERE
 - 5) SEE ALSO BS 8301
 - 6) FOR GREATER TRENCH WIDTHS SEEK GUIDANCE FROM ENGINEER

- IN ROCK, CONCRETE OR MIXED SOILS CONTAINING ROCK BANDS, BOULDERS, LARGE FLINTS OR STONES OR OTHER IRREGULAR HARD SPOTS THAT RESULT IN UNEVEN TRENCH BOTTOM $Y=1/4 B_c$ OR 200 mm WHICH EVER IS THE GREATER, BUT NOT LESS THAN 50mm UNDER COLLARS

- IN SOILS THAT PERMIT AN EVEN TRENCH BOTTOM TO BE EXCAVATED $Y=1/6 B_c$ OR 150 mm WHICH EVER IS GREATER, BUT NOT LESS THAN 50 mm UNDER COLLARS

- 1) FOR PIPES EXCEEDING 600 mm DIA REFER TO ENGINEER
- 2) IN WET OR SOFT GROUND SEEK GUIDANCE FROM ENGINEER
- 3) THE BEDDINGS MAY BE MODIFIED FOR CERTAIN SUB-SOIL CONDITIONS AT THE ENGINEERS DISCRETION
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- 5) SEE ALSO BS 8301
- 6) FOR GREATER TRENCH WIDTHS SEEK GUIDANCE FROM ENGINEER

Diagram illustrating the cross-section of a trench and well structure, showing various layers and dimensions.

Dimensions:

- Bd**: Trench width
- Bc**: Trench depth
- 1000 mm**: Layer thickness
- 1200 mm OR GREATER**: Layer thickness
- 300mm MIN**: Minimum trench depth

Layers (from top to bottom):

- FINISH LEVEL
- FORMATION LEVEL
- DOT TYPE 1 MATERIAL COMPACTED IN LAYERS NOT EXCEEDING 250mm
- DOT TYPE 1 MATERIAL COMPACTED BY HAND
- SELECTED FILL WELL COMPACTED (DOT TYPE 1 MAY BE USED)
- GRANULAR BED WELL COMPACTED
- TEMPORARY DRAIN (IF REQUIRED)

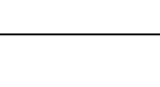
Table: Pipe Size vs. Trench Width

Pipe Size	Trench Width
100 mm	0.6 m
150 mm	0.6 m
225 mm	0.7 m
300 mm	0.8 m
375 mm	1.0 m

[illegible]

	FINISH LEVEL	150 mm	10 OR 14mm SINGLE SIZE OF 14-5 mm GRADED
	FORMATION LEVEL	150 mm- 500 mm	10,14,20 SINGLE SIZE OR 20-25 mm GRADED

	CRUSHED ROCK OR 40-45 mm GRADED
1. CRUSHED ROCK OR 40-45 mm GRADED	2. COMPACTED
3. 900 mm	4. LESS THAN 100 mm UNLESS ADDITIONAL PROTECTION IS REQUIRED

- 
- 1) 900mm MIN. UNLESS ADDITIONAL PROTECTION IS PROVIDED ON MAIN SITE TRAFFIC ROUTES
- 150 mm SURROUNDED UP TO 300 mm DIA PIPE (*200mm SURROUND ON 375 mm AND ABOVE) C20 CONCRETE. SHAPED FORMS OF 25 mm POLYSTYRENE OF PITCH IMPREGATED FIBRE BOARD TO BE INSTALLED ON EACH JOINT ON ROCKER PIES AT MANHOLES ETC. AND EVERY THIRD JOINT (NOT EXCEEDING 5 METRES) ON RUNS OF DRAIN
- IN ROCK, CONCRETE OR MIXED SOILS CONTAINING ROCK BANDS, Boulders, LARGE FLINTS or STONES or OTHER IRREGULAR HARD SPOTS THAT RESULT IN UNEVEN TRENCH BOTTOM $Y=1/4$ Bc OR 200 mm WHICH EVER IS THE GREATER, BUT NOT LESS THAN 50mm UNDER COLLARS
- IN SOILS THAT PERMIT AN EVEN TRENCH BOTTOM TO BE EXCAVATED $Y=1/6$ Bc OR 150 mm WHICH EVER IS GREATER, BUT NOT LESS THAN 50 mm UNDER COLLARS
- 1) FOR PIPES EXCEEDING 600 mm DIA REFER TO ENGINEER
 - 2) IN WET OR SOFT GROUND SEEK GUIDANCE FROM ENGINEER
 - 3) THE BEDDINGS MAY BE MODIFIED FOR CERTAIN SUB-SOIL CONDITIONS AT THE ENGINEERS DISCRETION
 - 4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADDITIONAL PROTECTION IN AREAS SUBJECT TO LOADS FROM SITE TRAFFIC. THE CONTRACTOR SHALL IDENTIFY THESE ZONES AND RESTRICT TRAFFIC ELSEWHERE
 - 5) SEE ALSO BS 8301
 - 6) FOR GREATER TRENCH WIDTHS SEEK GUIDANCE FROM ENGINEER

250mm LOCAL CONCRETE SURROUND

MANUFACTURER'S LIGHT DUTY

1.2m

CHAMBER RISER UCR2

110mm DRAIN

STANDARD COVER REFERENCE UC11 OR AS NOTED ON MANHOLE SCHEDULE OR LAYOUT

350mm REDUCER IF DEEPER THAN 1m TO SOFFIT

150mm C20 CONCRETE SURROUND & BASE

450mm INSPECTION CHAMBER BASE UCC3

NOTE: ANY 450mm INSPECTION CHAMBER WITH A DEPTH EXCEEDING 1.2m THE INSPECTION CHAMBER MUST REDUCE TO 350mm dia AT THE 1.2m DEPTH TO THE COVER LEVEL, AS DETAIL ABOVE.

Diagram illustrating the dimensions of a square manhole structure. The structure is square, with a width of 400 units and a height of 300 units. A circular opening is centered within the structure. The coping (top edge) is labeled "WIDTH DEPENDANT ON PIPE SIZE" and "B.O.E. COPING". The coping width is indicated as 225 units.

JOINTS

600

150

150

225 mm SEMI-ENGINEERING BRICKWORK, ON CONCRETE FOUNDATION.

PAVING SLABS TO PROTECT OPPOSITE BANK

SPIGOT OF DRAIN TO
TERMINATE 125MM BELOW FFL

PROVIDE TEMPORARY CAP TO
SEAL OFF DRAIN

75 100 150 200 DIA PIPE SEE GROUND
FLOOR LAYOUT (FOR 200 DIA RWP
CONNECTION TO DRAIN USE 225 X 200
DIMINISHING PIECE)

TRANSITIONAL COUPLING

STRUCTURAL
SLAB

MAKE UP PIECE IF REQUIRED

350X350X200 DEEP RECESS IN FLOOR TO BE
FILLED WITH CONCRETE AFTER CONNECTION TO
ABOVE GROUND PLUMBING IS MADE

FLOOR CONSTRUCTION MAY VARY REFER TO
ARCHITECTS AND STRUCTURAL ENGINEERS
DRAWINGS

90 DEGREE UPVC REST BEND

MIN DEPTHS OF INVERT FROM FFL

100 DIA	= -500MM
150 DIA	= -550MM
225 DIA	= -760MM

(SEE LAYOUT DRG FOR INVERT)

(SEE LAYOUT DRG FOR INVERT)

BUILDING SLAB

PIPE DIA. D_n mm	RECOMMENDED TRENCH WIDTH B_d mm
100 mm	550
150 mm	600
225 mm	700
300 mm	750

NOTE
 WHEN DIMENSION 'A' IS GREATER THAN 300mm
 GRANULAR BED SHALL APPLY. IF LESS THAN 300mm
 THEN CONCRETE SURROUND. THIS DETAIL IS FOR
 FOR PIPES LAID IN DRY UNIFORM SOILS ONLY. FOR WET
 SOILS ADD 75mm THICK LAYERS OF WEAK MIX
 CONCRETE UNDER BED.

GRANULAR BED
 ('A' IS GREATER THAN 300mm)

GRANULAR SUB-BED MATERIAL
 M.O.T. TYPE 2

10mm SINGLE SIZE GRANULAR MATERIAL WELL COMPACTED

BUILDING SLAB

CONCRETE SURROUND

UNDERSLAB PIPEWORK MATERIAL
 AS SPECIFICATION

100mm

18mm THICK COMPRESSIBLE BOARD TO BS 1142
 CUT TO PIPE PROFILE & INSERTED AT EACH JOINT

CONCRETE SURROUND
 ('A' IS LESS THAN 300mm)

CONCRETE SURROUND

('A' IS LESS THAN 300mm)

HEADWALL TO SMALL WATERCOURSE

P1	21.12.21	STAGE 4 ISSUE - FOR INFORMATION			JR NS GO
REV	DATE	DESCRIPTION			BY CHK APP

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JOB TITLE

OTE HALL FARM
BURGESS HILL
WEST SUSSEX

DRAWING TITLE

SITE DRAINAGE DETAILS
SHEET 1 OF 2

JOB No.	SCALE $\odot$ A1	DATE
2021-03		DECEMBER 2021

DRAWN	ENGINEER	CHECKED	APP
J.R.	J. ROBERTS	N.S.	G.O.

STATUS	DRAWING SUITABILITY
S2	SUITABLE FOR INFORMATION

REVISION	RIBA STATUS
P1	STAGE 4 – TECHNICAL DESIGN

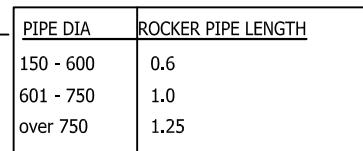
DRAWING No. 202103-OC-Z1-00-DT-C-5101



BIN STORE GULLY



ATTENUATION TANK DETAIL SDS



CIRCULAR PCC MANHOLE
MAXIMUM DEPTH FROM COVER TO SOFFIT OF PIPE = 3.0m



1. ROCKER PIPES 600mm LONG FOR 100 TO 450 DIA PIPEWORK (1000mm LONG UP TO 750 DIA) ON OUTLET AND EACH ENTRY STARTING 150mm FROM CONCRETE SURROUND.
2. FOR CHAMBERS DEEPER THAN 3000mm STEP IRONS TO BE REPLACED WITH GALVANISED LADDER TO B.S.4211 AND 729.

CATCHPIT CHAMBER POLYPROPYLENE CONSTRUCTION



1. ROCKER PIPES 600mm LONG FOR 100 TO 450 DIA PIPEWORK (1000mm LONG UP TO 750 DIA) ON OUTLET AND EACH ENTRY STARTING 150mm FROM CONCRETE SURROUND.
2. FOR CHAMBERS DEEPER THAN 3000mm STEP IRONS TO BE REPLACED WITH GALVANISED LADDER TO B.S.4211 AND 729.

CATCHPIT CHAMBER CONCRETE CONSTRUCTION



TYPICAL CONTROL MANHOLE

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CLIENT

ARCHITECT	ARKLEBOYCE
JOB TITLE	OTE HALL FARM BURGESS HILL WEST SUSSEX

DRAWING TITLE

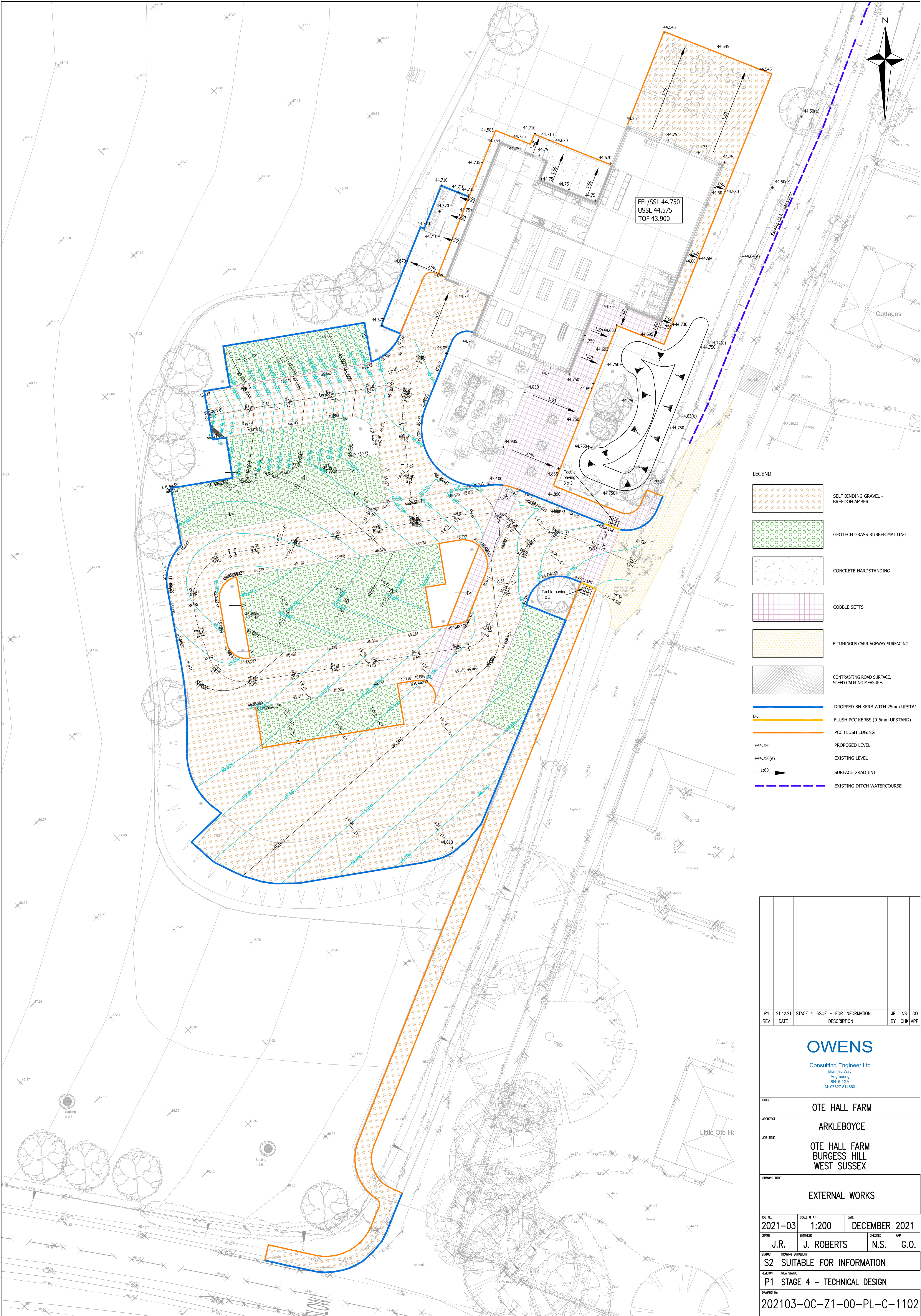
SITE DRAINAGE DETAILS
SHEET 2 OF 2

JOB No. 2021-03	SCALE • A1	DATE DECEMBER 2021	
DRWM J.R.	ENGINEER J. ROBERTS	CHECKED N.S.	APP G.O.

STATUS	DRAWING SUITABILITY
S2	SUITABLE FOR INFORMATION
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P1	STAGE 4 – TECHNICAL DESIGN

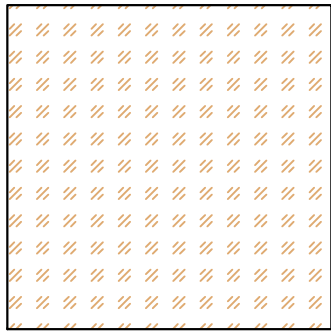
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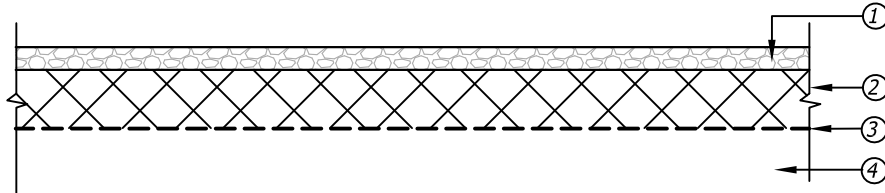


LEGEND	
	SELF BINDING GRAVEL - BREEDON AMBER
	GEOTECH GRASS RUBBER MATTING
	CONCRETE HARDSTANDING
	COBBLE SETTS
	BITUMINOUS CARRIAGEWAY SURFACING
	CONTRASTING ROAD SURFACE. SPEED CALMING MEASURE.
	DROPPED BN KERB WITH 25mm UPSTAN
	FLUSH PCC KERBS (0-6mm UPSTAND)
	PCC FLUSH EDGING
	PROPOSED LEVEL
	EXISTING LEVEL
	SURFACE GRADIENT
	EXISTING DITCH WATERCOURSE

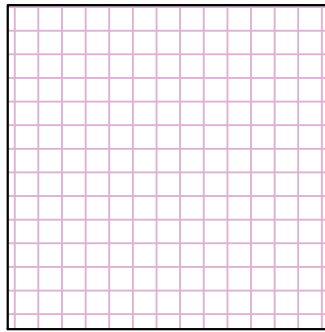
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OTE HALL FARM BURGESS HILL WEST SUSSEX									
DRAWING TITLE									
EXTERNAL WORKS									
JOB No.		SCALE @ A1		DATE					
2021-03		1:200		DECEMBER 2021					
DRAWN		ENGINEER			CHECKED		APP		
J.R.		J. ROBERTS			N.S.		G.O.		
STATUS		DRAWING SUFFICIENCY							
S2		SUITABLE FOR INFORMATION							
REVISION		RIBA STATUS							
P1		STAGE 4 - TECHNICAL DESIGN							
DRAWING No.									
202103-OC-Z1-00-PL-C-1102									



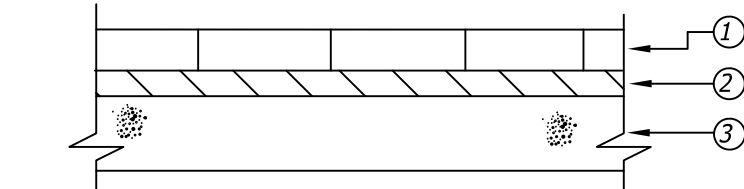
SELF-BINDING GRAVEL
BREEDON AMBER



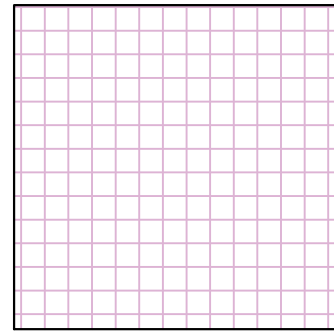
- 50mm thick self-setting gravel graded 0-12mm, Breedon gravel, to the architects specification, laid with min 1/60 crossfall, rolled and compacted in accordance with manufacturers instructions
- Vehicular areas: 325mm thick Sub-Base Type 1 material to Clause 803
Pedestrian areas: 150mm thick Sub-Base Type 1 material to Clause 803
- Terram 1000 geotextile over compacted Sub-grade
- In areas of fill use selected material to Class 2C in accordance with specification for highway works and compacted to Clause 612 Tab 6/4 method 2.



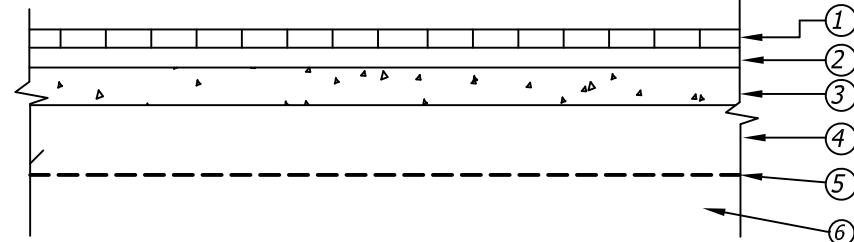
COBBLE SETTS
PEDESTRIAN ONLY TRAFFIC



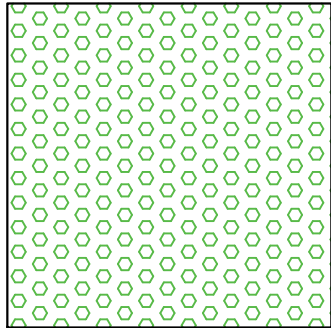
- Cobble Setts to architect's specification
- 30mm sand bed
- 150mm Sub-Base Type 1 material to Clause 803



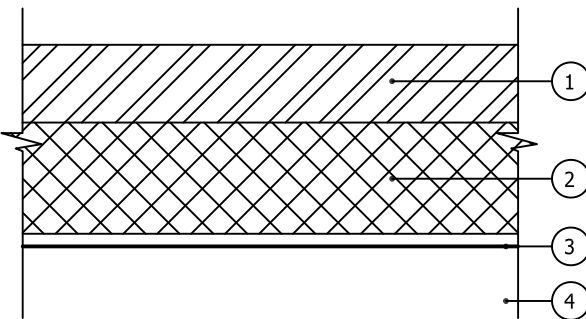
COBBLE SETTS
VEHICULAR ONLY TRAFFIC
OR SHARED SURFACE



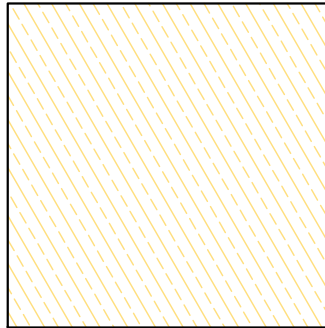
- Cobble Setts to architect's specification
- 50mm thick compacted sand to BS7533-3:2003 + A1:2009.
- 70mm thick Base, Dense Asphalt Concrete, AC32 Dense Base 40/60 to BSEN13108-1. To form temporary running surface during site construction. Surface to be sealed with bituminous grit, 50mm dia, drainage holes to be drilled at 2m centres and at low points prior to block laying. Holes to be filled with 6mm clean chippings. Drain hole to be covered with Terram 1000 geotextile material extending min 200mm either side.
- Sub-Base Type 1 material to Clause 803, and compacted to Specification for Highway Works Clause 802 and Table 8/4. See table opposite for depth.
- Terram 1000 geotextile over formation.
- In areas of fill use selected material to Class 2C in accordance with specification for highway works and compacted to Clause 612 Tab 6/4 method 2.



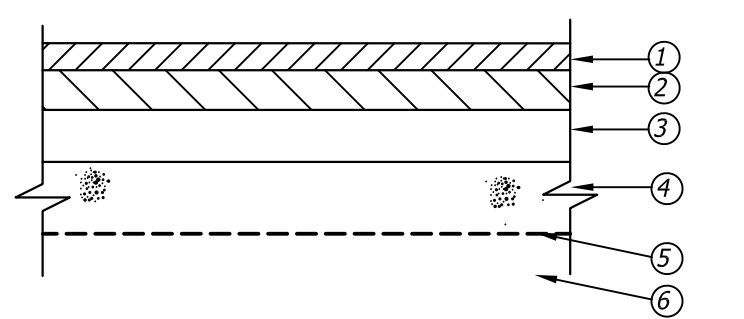
GEOTECH GRASS
RUBBER MATTING
(LINED SYSTEM)



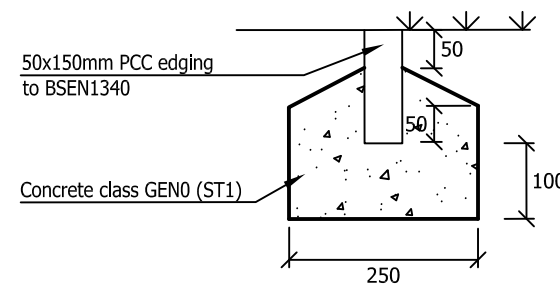
- GEOTECH GRASS RUBBER MATTING TO ARCHITECT'S SPECIFICATION
- 325mm THICK 4-20mm SUB-BASE CLEAN ANGULAR HARD STONE NO FINES.
- IMPERMEABLE GEOMEMBRANE
- IN AREAS OF FILL USE SELECTED MATERIAL TO CLASS 2C IN ACCORDANCE WITH SPECIFICATION FOR HIGHWAY WORKS AND COMPACTED TO CLAUSE 612 TAB 6/4 METHOD 2.



BITUMINOUS ROADWAY
CONSTRUCTION

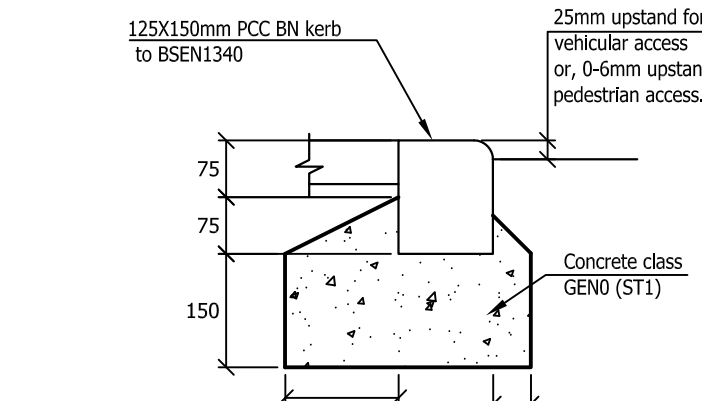


- 30mm Surface course, Dense Asphalt Concrete AC10 to BSEN13108-1. 100-150 Pen. PSV 55, AAV 14.
- 60mm thick Binder course, Dense Asphalt Concrete, AC20 dense bin 40/60 to BSEN13108-1.
- 100mm thick Base, Dense Asphalt Concrete, AC32 Dense Base 40/60 to BSEN13108-1.
- 325mm Sub-Base Type 1 material to Clause 803, and compacted to Clause 802 and Table 8/4. See table below for depth.
- Terram 1000 geotextile over formation.
- In areas of fill use selected material to Class 2C in accordance with specification for highway works and compacted to Clause 612 Tab 6/4 method 2.



PCC EDGING KERB

As denoted by

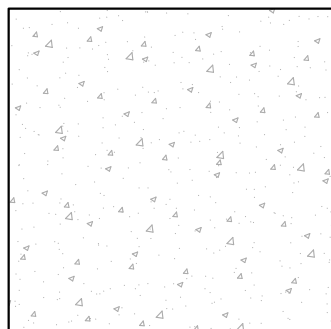


DROPPED BN KERB DETAIL

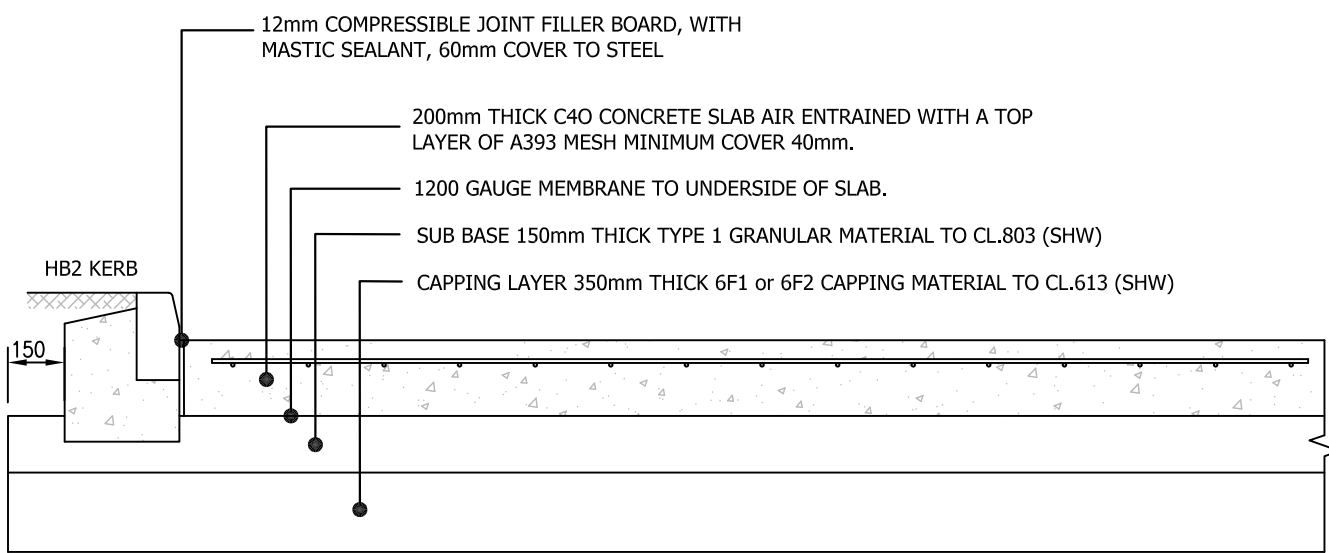
As denoted by

25mm upstand
DK 0-6mm upstand

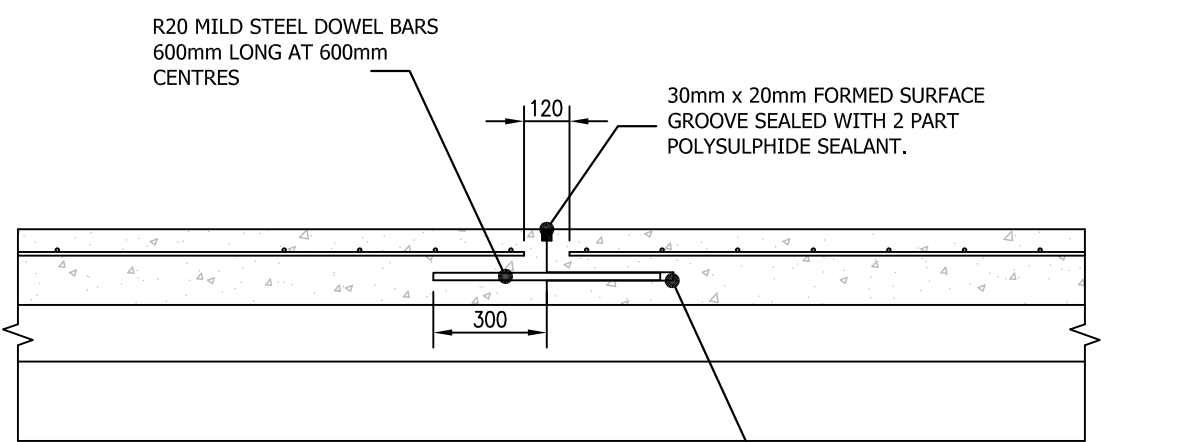
STRUCTURAL PAVEMENT LAYERS SIZED ON A CBR OF 2% AS PER MINIMUM RECORDED IN-SITU CBR TEST RESULT FROM GEOTECHNICAL GROUND INVESTIGATION REPORT BY AVZ GEOTECH LTD, PROJECT REFERENCE 1689-21 DATED NOVEMBER 2021



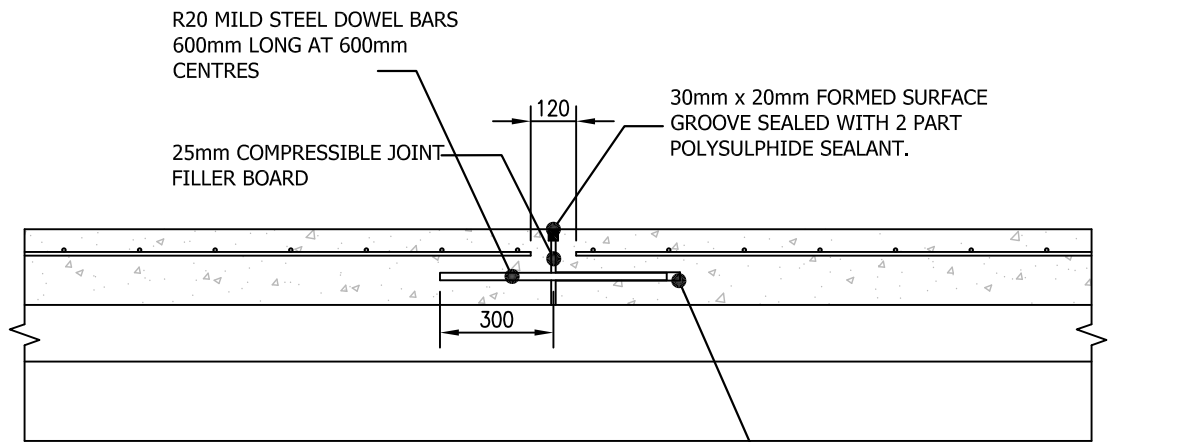
CONCRETE
HARDSTANDING



TRADITIONAL CONCRETE SLAB
ISOLATION JOINT



TRADITIONAL CONCRETE SLAB
CONTRACTION JOINT



TRADITIONAL CONCRETE SLAB
DEBONDED LONGITUDINAL JOINT

P1	21.12.21	STAGE 4 ISSUE – FOR INFORMATION	JR	NS	CO
REV	DATE	DESCRIPTION	BY	CHK	APP
OWENS Consulting Engineer Ltd Bramley Way Angmering BN16 4GA NE 078267 814880					
CLIENT	OTE HALL FARM				
ARCHITECT	ARKLEBOYCE				
JOB TITLE	OTE HALL FARM BURGESS HILL WEST SUSSEX				
DRAWING TITLE	EXTERNAL WORKS DETAILS				
JOB No.	2021-03	SCALE @ A1	DATE DECEMBER 2021		
DRAWN	J.R.	ENGINEER	J. ROBERTS	CHECKED	N.S.
				APP	G.O.
STATUS	DRAWING SUITABILITY S2 SUITABLE FOR INFORMATION				
REVISION	RBA STATUS P1 STAGE 4 – TECHNICAL DESIGN				
DRAWING No.	202103-OC-Z1-00-DT-C-5103				

GTA Civils Ltd		Page 1
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	10536 Ote Hall Farm Greenfield Runoff	
Date 07/10/2021 10:07 File attenuation system.SRCX	Designed by FVV Checked by JR	
Micro Drainage Source Control 2020.1		

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.450
Area (ha)	0.355	Urban	0.000
SAAR (mm)	841	Region Number	Region 7

Results 1/s

QBAR Rural	1.9
QBAR Urban	1.9
Q100 years	6.2
Q1 year	1.6
Q30 years	4.4
Q100 years	6.2

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Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	45	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Add Inflow (l/s)	Cover Level (m)	Diameter (mm)	Depth (m)
CONTROL M/HOLE	0.373	5.00	0.0	44.750	1200	0.700

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Node CONTROL M/HOLE Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	43.680	Product Number	CTL-SHE-0065-1900-1001-1900
Design Depth (m)	1.001	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	1.9	Min Node Diameter (mm)	1200

Node CONTROL M/HOLE Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	44.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	16.0	0.0	0.700	126.0	0.0	0.701	0.0	0.0

Node CONTROL M/HOLE Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	44.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	542.5	0.0	0.500	542.5	0.0	0.501	0.0	0.0

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 90.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	CONTROL M/HOLE	930	44.675	0.625	17.4	299.5728	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
960 minute winter	CONTROL M/HOLE	Hydro-Brake®	1.9	124.5