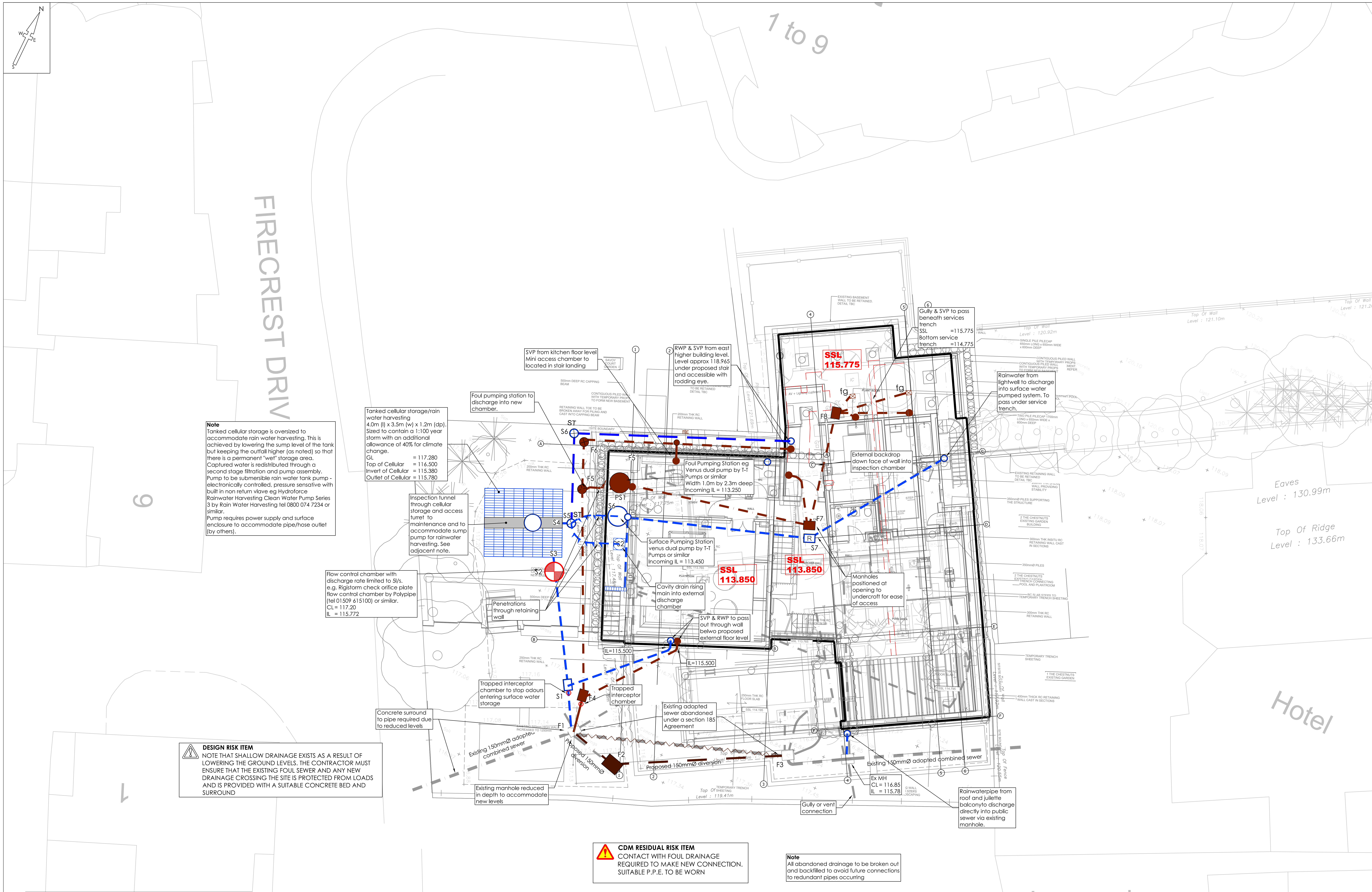

SVP from kitchen floor level Mini access chamber to located in stair landing

RWP & SVP from east higher building level. Level approx 118.965 under proposed stair and accessible with rodding eye.

Gully & SVP to pass beneath services trench
SSL =115.775
Bottom service trench =114.775

Foul pumping station to discharge into new chamber.

Rainwater from lightwell to discharge into surface water pumped system. To pass under service trench.

Note
Tanked cellular storage is oversized to accommodate rain water harvesting. This is achieved by lowering the sump level of the tank but keeping the outfall higher (as noted) so that there is a permanent "wet" storage area. Captured water is redistributed through a second stage filtration and pump assembly. Pump to be submersible rain water tank pump - electronically controlled, pressure sensative with built in non return vlave eg Hydroforce Rainwater Harvesting Clean Water Pump Series 3 by Rain Water Harvesting tel 0800 074 7234 or similar.
Pump requires power supply and surface enclosure to accommodate pipe/hose outlet (by others).

Tanked cellular storage/rain water harvesting
4.0m (l) x 3.5m (w) x 1.2m (dp).
Sized to contain a 1:100 year storm with an additional allowance of 40% for climate change.
GL = 117.280
Top of Cellular = 116.500
Invert of Cellular = 115.380
Outlet of Cellular = 115.780

Foul Pumping Station eg Venus dual pump by T-T Pumps or similar
Width 1.0m by 2.3m deep
Incoming IL = 113.250

External backdrop down face of wall into inspection chamber

Inspection tunnel through cellular storage and access turret to maintenance and to accommodate sump pump for rainwater harvesting. See adjacent note.

Surface Pumping Station venus dual pump by T-T Pumps or similar
Incoming IL = 113.450

Manholes positioned at opening to undercroft for ease of access

Flow control chamber with discharge rate limited to 5l/s. e.g. Rigistorm check orifice plate flow control chamber by Polypipe (tel 01509 615100) or similar.
CL = 117.20
IL = 115.772

Penetrations through retaining wall

Cavity drain rising main into external discharge chamber

SVP & RWP to pass out through wall belwo proposed external floor level

Trapped interceptor chamber to stop odours entering surface water storage

Trapped interceptor chamber

Existing adopted sewer abandoned under a section 185 Agreement

Concrete surround to pipe required due to reduced levels

DESIGN RISK ITEM
NOTE THAT SHALLOW DRAINAGE EXISTS AS A RESULT OF LOWERING THE GROUND LEVELS. THE CONTRACTOR MUST ENSURE THAT THE EXISTING FOUL SEWER AND ANY NEW DRAINAGE CROSSING THE SITE IS PROTECTED FROM LOADS AND IS PROVIDED WITH A SUITABLE CONCRETE BED AND SURROUND

Existing manhole reduced in depth to accommodate new levels

Ex MH
CL = 116.85
IL = 115.78

Gully or vent connection

Rainwaterpipe from roof and juilette balconyto discharge directly into public sewer via existing manhole.

CDM RESIDUAL RISK ITEM
CONTACT WITH FOUL DRAINAGE REQUIRED TO MAKE NEW CONNECTION. SUITABLE P.P.E. TO BE WORN

Note
All abandoned drainage to be broken out and backfilled to avoid future connections to redundant pipes occurring

Foul Water (FW) Manhole Schedule

MANHOLE REF	INVERT LEVEL	COVER LEVEL	CHAMBER TYPE	COVER TYPE	GRADE 1 in	PIPE Ø (mm)	LENGTH
F1	115.390	115.920	Existing	Existing	40.0	150	2.5
F2	115.457	115.920	Type D 900 x 675	B125 900 x 675	40.0	150	9.0
F3	115.690	116.840	Existing	Existing			
F1	115.390	115.920	Existing	Existing	40	100	1.5
F4	115.428	115.920	600 x 450	B125 600 x 450	18	100	10.5
F5	116.013	117.280	PPIC	B125 480Ø	40	100	2.5
F6	116.080	117.280	PPIC	B125 480Ø			
F5	116.013	117.280	600 x 450	B125 600 x 450	Rising Main	Rising Main	5.0
PS1	113.025	114.105	FW Pumping Station	B125	40.0	100	9.0
F7	113.500	114.105	600 x 450	Recessed 600 x 450	5.6	100	6.0
F8	114.575	115.775	600 x 450	Recessed 600 x 450			

Surface Water (SW) Manhole Schedule

MANHOLE REF	INVERT LEVEL	COVER LEVEL	CHAMBER TYPE	COVER TYPE	GRADE 1 in	PIPE Ø (mm)	LENGTH
F4	115.428	115.92	600 x 450	B125 600 x 450	60.0	100	1.5
S1	115.503	115.92	600 x 450	B125 600 x 450	18.0	100	5.0
S2	115.772	117.20	Flow Control Chamber	T.B.A.	60.0	100	0.5
S3	115.780	117.20	Tanked Cellular Storage	N/A	-	Cellular Storage	-
S4	115.780	117.20	Tanked Cellular Storage	N/A	60	100	1.0
S5	116.000	117.20	480Ø silt trap	B125 480Ø	Rising Main	Rising Main 80mm	4.0
PS2	113.450	114.105	SW Pumping Station	T.B.A.	40.0	100	1.0
S6	113.475	114.105	600 x 450	Recessed 600 x 450	40.0	100	9.5
S7	113.713	114.105	600 x 450	Recessed 600 x 450			

2236 Lower Ground

NOTE:

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Drainage Key

Sewers

— · —	Foul water drain (private/non adoptable)
- - -	Surface water drain (private/non adoptable)
— · —	Foul water sewer (Adoptable)
- - -	Surface water sewer (Adoptable)
◢ ◢ ◢	Foul rising main
— · —	Existing combined water sewer (Adopted)

Chamber Key

FW	**SW**	
● mac	○ mac	Mini access chamber (mac) - 300mmØ *
⊗	⊗	PPIC - 475mmØ *
■	□	P.C.C. units/brick *
●	○	Manhole Depth 1.25 to 1.5m * Depth 1.55 to 3.0m *

* General note
(Refer to standard details & long sections for chamber sizes.
Size may need to increase dependant on number of incoming pipes/size of incoming pipes)

○	Rain water down pipe (roddable access)
●	Soil vent pipe/soil stack
▥	Linear drainage channel
▦	Cellular storage (refer to drawing for sizes)
FFL XX.XX	Finished Floor Level (FFL)
▼	Building Access - Primary

Rev.	Date	Amendments	By	Chk'd
T02	16/01/2016	Drainage updated	NJ	DJ
T01	03/11/2016	Drainage updated to tender issue	DJ	-
P03	19/10/2016	Sewer diversion and cavity sump pump detailed	DJ	-
P02	21/09/2016	Invert levels to existing foul added	DJ	-
P01	20/01/17	Initial issue	ATD	DJ

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Project:
17 Branch Hill,
Hampstead

Drawing title:
Proposed Drainage Plan
Lower Ground Floor

Scale at A1:	Drawn by:	Date:	Chk'd by:
1:100	ATD	20/01/2017	DJ

TENDER

Project Number:	Drawing Type:	Drawing No:	Revision:
1281	DR	050	T02

Surface Water Manhole Schedule							
MANHOLE REF	INVERT LEVEL	COVER LEVEL	CHAMBER TYPE	COVER TYPE	GRADE 1 in	PIPE Ø (mm)	LENGTH
S5	116.487(BD IN) 115.800(OUT)	117.20	1050Ø Chamber	B125 600x600	40.0	100	4.5
S8	116.600	117.20	480Ø Silt Trap	B125 480Ø	3.6	100	9.5
S9	119.200	119.40	Channel Drain Sump	As Supplied			

NOTE:

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Drainage Key

Sewers

— · —	Foul water drain (private/non adoptable)
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— · —	Foul water sewer (Adoptable)
— — —	Surface water sewer (Adoptable)
⊿ ⊿ ⊿	Foul rising main
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Chamber Key

FW	SW	
● mac	○ mac	Mini access chamber (mac) - 300mmØ *
⊗	⊗	PPIC - 475mmØ *
■	□	P.C.C. units/brick *
●	○	Manhole Depth 1.25 to 1.5m * Depth 1.55 to 3.0m *

* General note
(Refer to standard details & long sections for chamber sizes.
Size may need to increase dependant on number of incoming pipes/size of incoming pipes)

○	Rain water down pipe (roddable access)
●	Soil vent pipe/soil stack
▥	Linear drainage channel
▦	Cellular storage (refer to drawing 050 for information)
FFL XX.XX	Finished Floor Level (FFL)
▼	Building Access - Primary

Rev.	Date	Amendments	By	Chk'd
T01	03/11/16	Tender issue	NJ	DJ

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Project:
17 Branch Hill,
Hampstead

Drawing title:
Proposed Drainage Plan
Ground Floor

Scale at A1:	Drawn by:	Date:	Chk'd by:
1:100	NJ	03/11/2016	DJ

TENDER

Project Number:	Drawing Type:	Drawing No:	Revision:
1281	DR	051	T01

2236 Ground

DRAINAGE NOTES

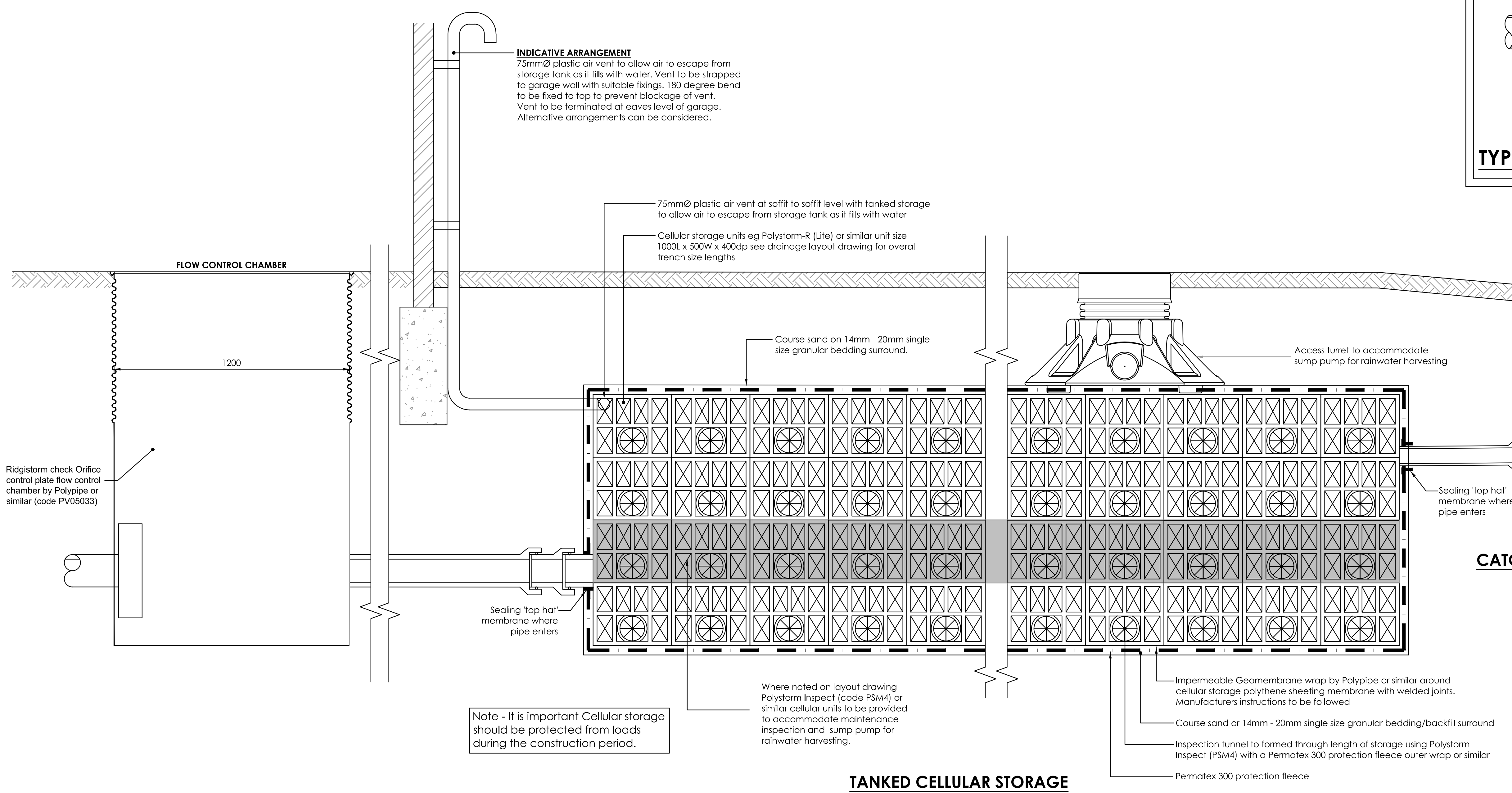
1. All private drainage must comply with the current edition of DTLR Building Regulations approved document H.
2. Where drainage is to be adopted it should meet with the requirements of Sewers for Adoption 7th edition.
3. Drainage design to be to BS EN 752-3 1996
4. Any intended changes to the drainage design must be discussed with the Engineer. If changes are made the Engineer must be supplied with as-constructed information to enable drawings to be suitably updated for the Health & safety file.
5. Before works commence the contractor should satisfy themselves that the details of the drainage system to be connected into are correct i.e. cover, invert levels, line, condition and type of sewer.
6. Private access chambers are to be appropriate to the depths and loadings as follows:-

Depth to invert	Access size
Up to 600mm	Mini access chamber 300mmØ
Up to 1200mm	Inspection chamber 475mm Ø (PPIC) 600mmx450mm Brick/P.C.C units
1200 to 1500mm	P.C.C ring manhole 1050mmØ
1500 to 3000mm	P.C.C. ring manhole 1200mmØ (ring diameter increased if sewer greater than 475mmØ).

7. All manholes shall have a flexible joint within 150mm of the face of the structure and a "rocker pipe " which should not exceed 600mm in length.
8. Pipe materials shall be -
   Vitrified clayware to BS EN 295
   Cast iron to BS EN 545:2010
   UPVC - BS EN 1401 PP - BS EN 1852
   Structure wall -BS EN 13476
9. For private sewers having 900mm or less cover beneath carriageways & hardstanding or 600mm in landscape areas then they shall have concrete surround or slab protection. Slab protection to be 100mm thick C20concrete slab with mesh reinforcement and a bearing of 150mm each side of the trench. Concrete surround to be 150mm C20 with flexible joints.
10. Trenches within 1.2m of load bearing walls should be filled with concrete at least to the underside of the foundation. Where the distance is more than 1.2m from the foundations the concrete should be taken at least up to a 45degree line from the bottom of the foundations. Alternatively, the foundations could be taken to a deeper level to avoid undermining by the drainage trench (check with the Engineer where this is required).
11. Pipe bed and surround to be granular Type S unless otherwise noted.
12. Drains passing through walls or foundations should have either an arched or lintelled opening to give 50mm clearance around the pipe. The opening shall be masked both sides with a rigid non-perishable material, or alternatively a short length of pipe may be built in solid if it is connected within 150mm to rocker pipes (max 600mm long) with flexible joints.
13. Drainage under buildings should be bedded and surrounded by at least 100mm of granular material.
14. Unless otherwise stated on the drawings or in the schedules then all private drainage shall be 100mmØ.
15. All road gully connections to be 150mmØ and surrounded with 150mm C20 concrete surround.
16. Where schemes require soakaways they shall not be positioned closer than 5m from the nearest dwelling or structure. Where solution features can occur in the underlying strata such as chalk then this distance will need to be increased to 10m.
17. New connections to existing public sewers should be carried in accordance with appropriate Section 106 (Water Industry Act) 'connection consent' and also under the supervision of the Water Authority.
18. Covers shall be to B.S. EN 124:1994

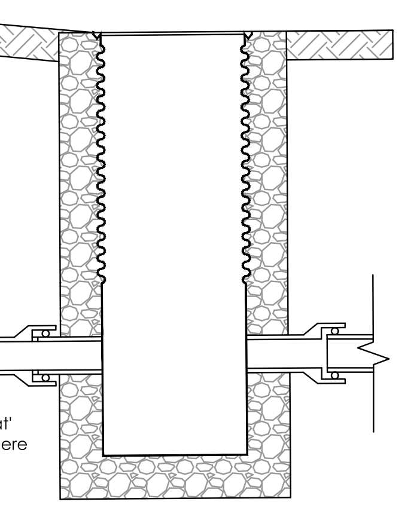
Class A15 - areas where only pedestrians have access.
Class B125 - for use in car parks and pedestrian areas where occasional vehicular access is likely.
Class C250 - areas where not extending more than 500mm from kerb face into the carriageway
Class D400 - areas where cars and lorries have access including carriageways, hard shoulders.
Cover and frames to be 150mm deep except residential cul-de-sacs

19. It is recommended that drainage works should be constructed from the outfall particularly where the outfall depth is relatively shallow. If it is not possible to commence works from the outfall the contractor should satisfy themselves that the invert, line, position and type of existing outfall are correct.
20. Drainage works should be protected from possible damage by construction traffic loadings during the construction period. Protection may be provided by barriers. materials should not be stored over drainage works.
21. Buildings up to 3 storeys shall have a rest bend at the base of the soil stack 450mm min below the invert of the lowest incoming drain. Buildings over 3 storeys must be a minimum of 750mm below the lowest incoming drain. Buildings over 5 storeys then the ground floor drainage connections should have their own connections to the external drain.
22. Where piling works are undertaken the positions of existing sewers must be accurately located before piling takes place.

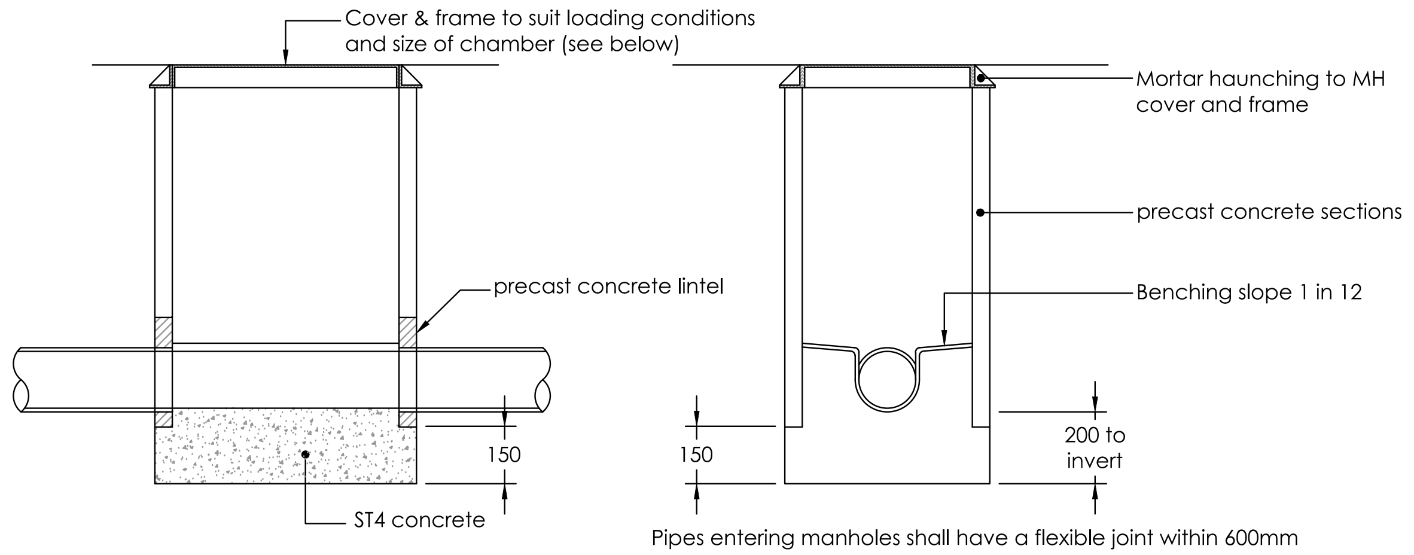


Note - It is important Cellular storage should be protected from loads during the construction period.

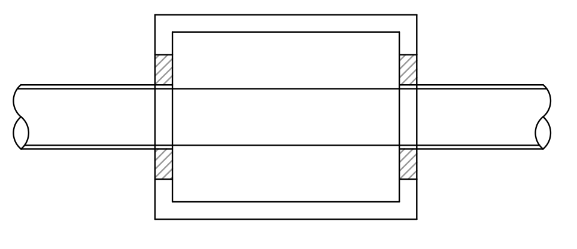
TANKED CELLULAR STORAGE



CATCHPIT INSPECTION CHAMBER



Pipes entering manholes shall have a flexible joint within 600mm of the inside face of the manhole joining with a short rocker



DEPTH	CHAMBER SIZE
up to 0.65m	300mm diameter
0.60 to 1.20m	450mm diameter or 600 x 450
1.2-2m	1200x750
	1050mm diameter below 1.5m deep
	1200mm diameter over 1.5m deep

or as governed by no. of connections and Code of Practice BS 8301

All 100mmØ pipework to be Marley Plastic or Supersleve laid in 150mm surround. If cover to pipe is less than 1200mm in carriageway or 900mm in verges/soft landscaping then bed and surround to be flexibly jointed concrete. If cover is greater than the above then 10mm pea shingle is to be used. Concrete bed and surround to be used if chambers are within the likely mature canopies of existing or proposed trees.

TYPICAL INSPECTION CHAMBER

NOTE:

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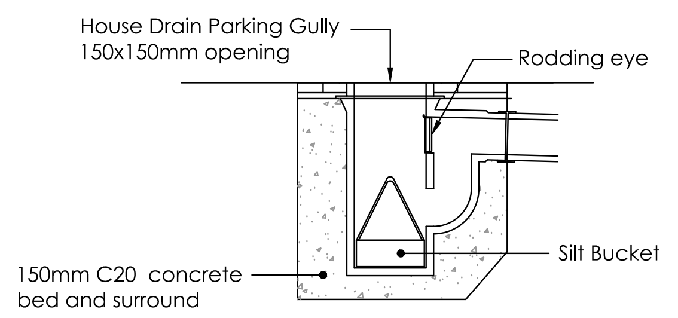
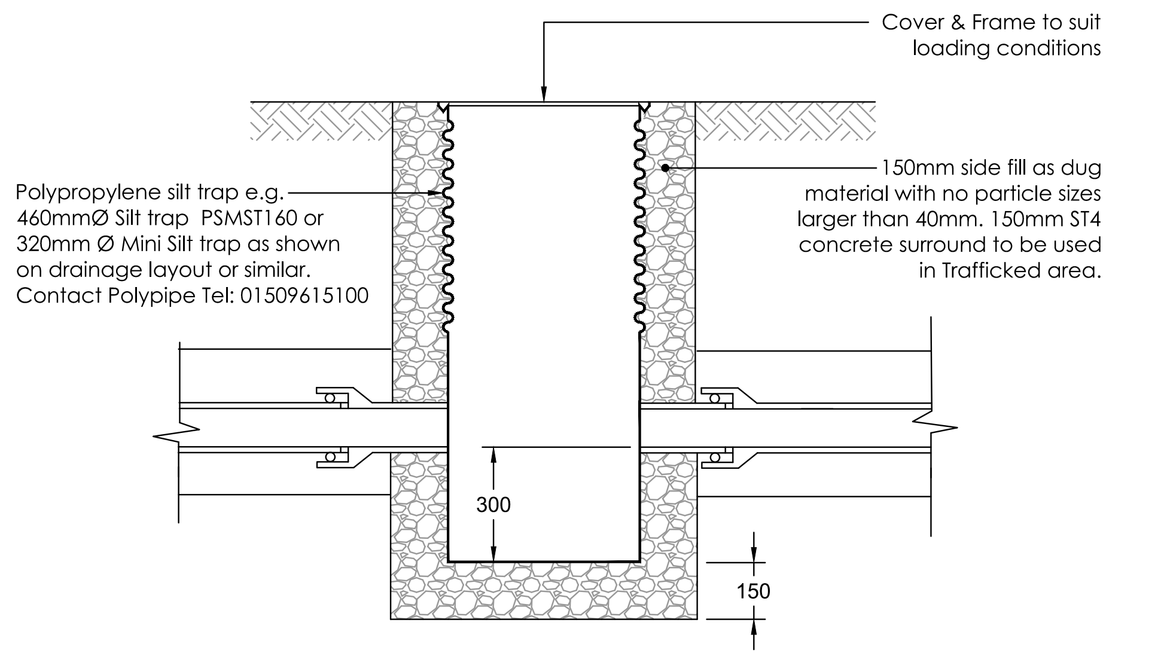
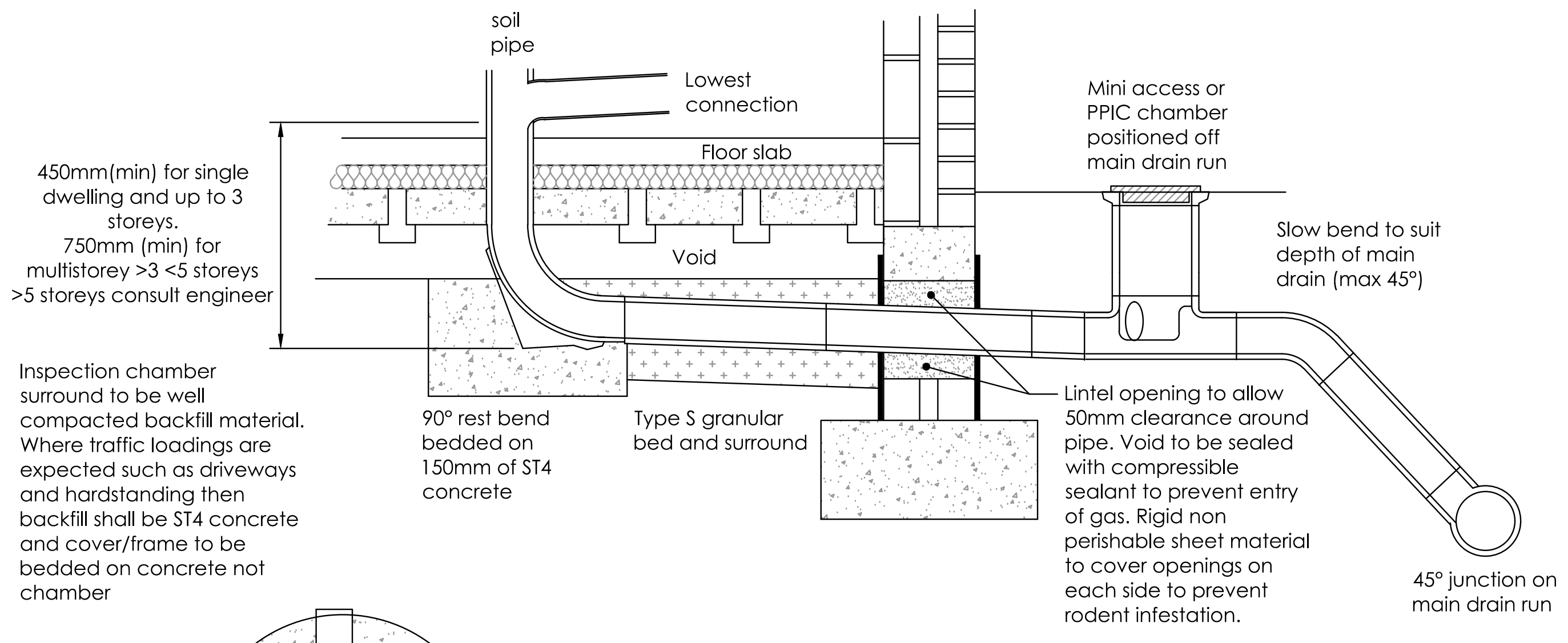
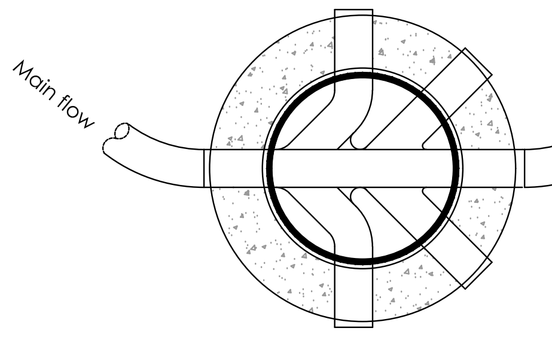


TRAPPED YARD GULLY

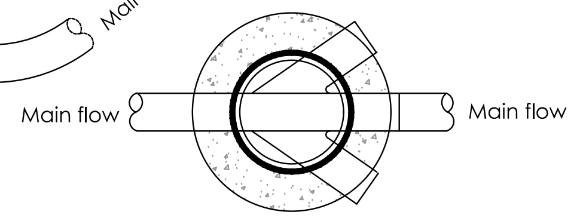


SILT-TRAP/CATCHPIT MANHOLE DETAIL





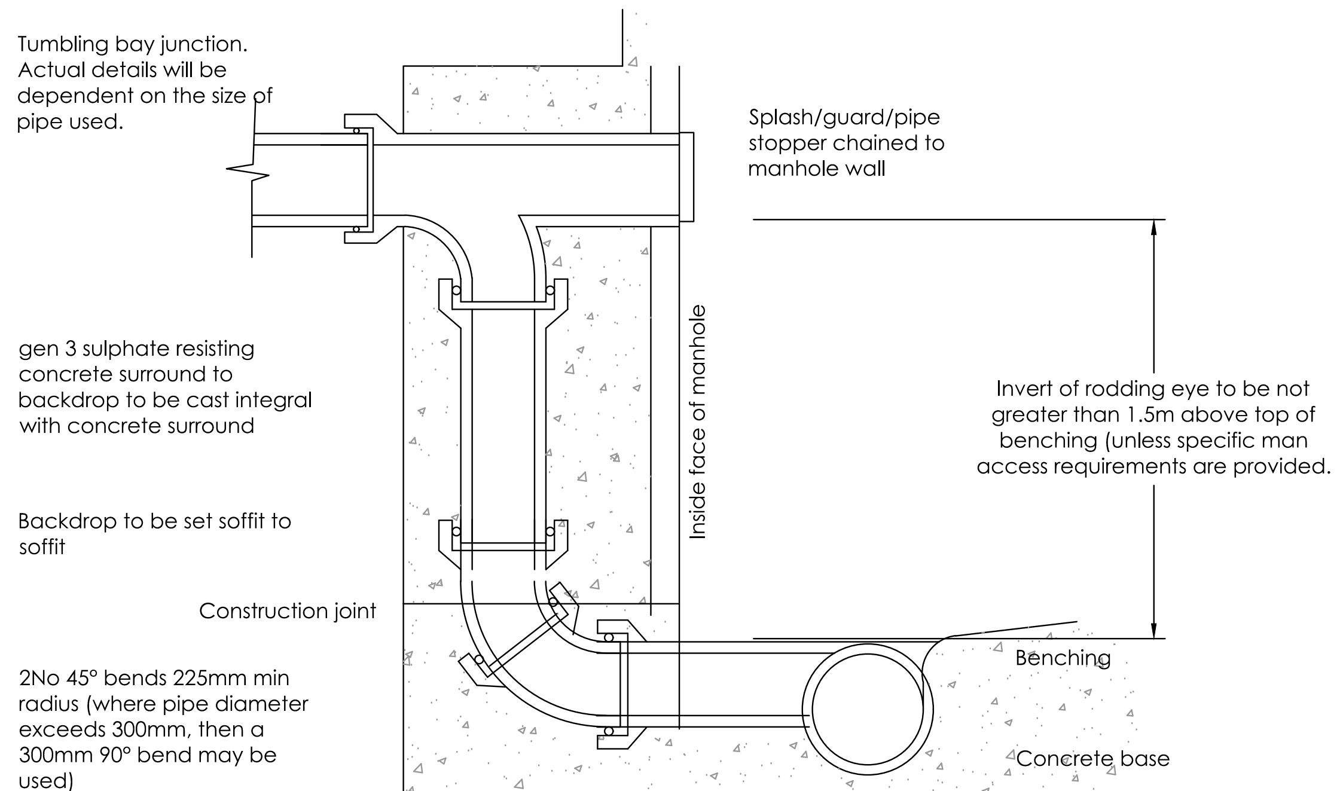
POLYPROPYLENE INSPECTION CHAMBER - PPIC



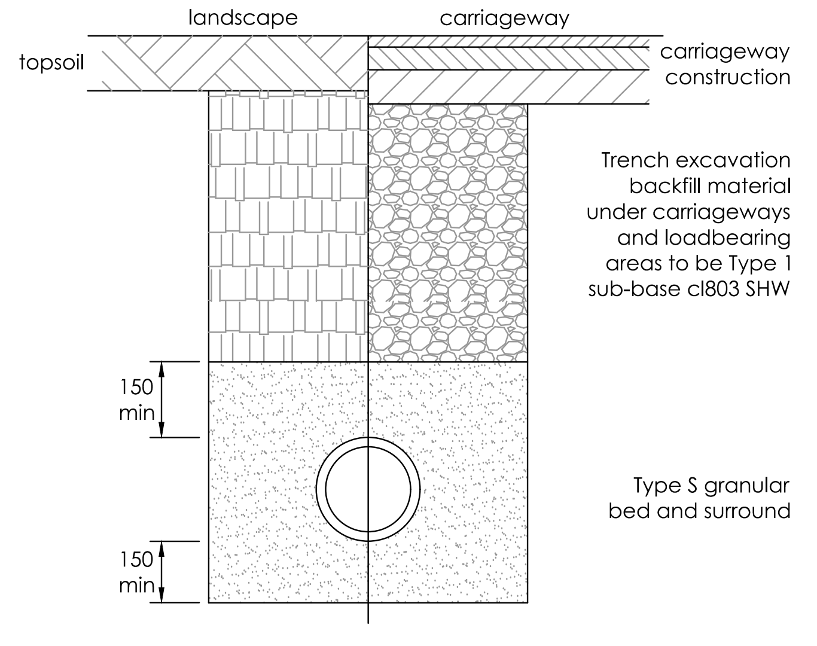
MINI ACCESS CHAMBER

Chamber Type	Internal Diameter (mm)	Max. No. Inlets	Max. Depth (mm)
Polypropylene Mini Access Chamber (mac)	300	3	600
Polypropylene Inspection Chamber (PPIC)	475	5	1250

- Where chambers are positioned on 90° corners always use the main channel by fitting a 45° angle bend on the inlet and outlet.
- Bends up to a max 45° angle can be used on any inlet
- Heaviest flow should always be directed through the main channel.
- Short steep connections should preferably be connected via a 45 ° inlet using a bend where necessary.
- In buildings up to 3 storey's the rest bend at the base of the soil stack should be 450mm below the invert of the lowest incoming drain.In buildings over 3 storey's this should be increased to 750mm.In buildings over 5 storey's the ground floor drainage connections should have their own connections to the external drain.

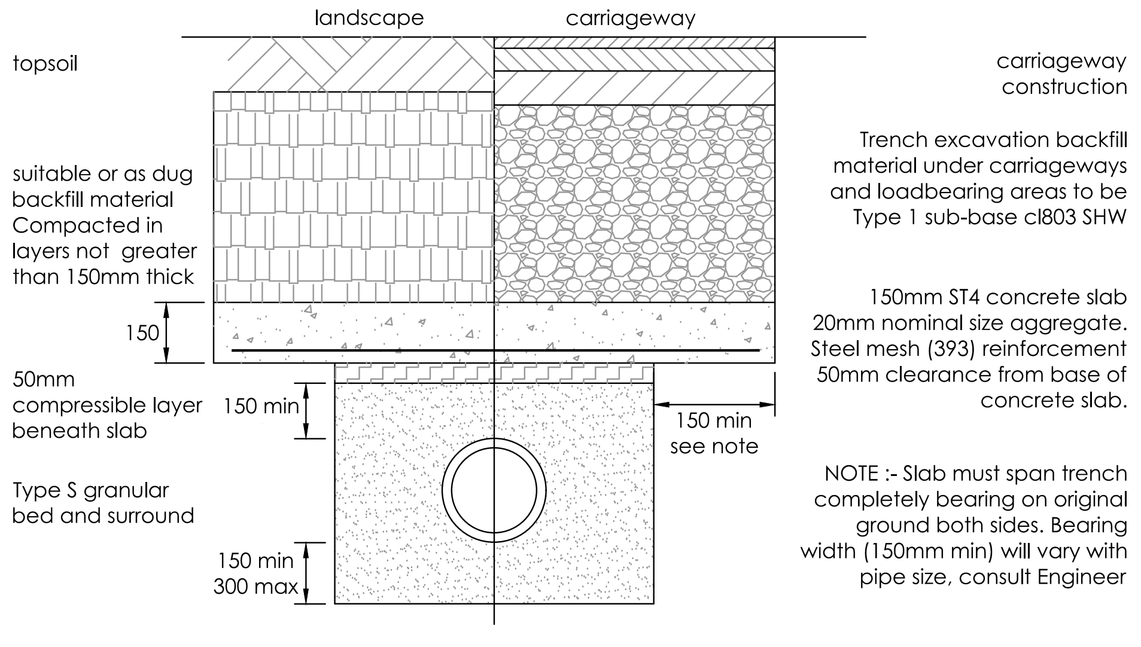


EXTERNAL VERTICAL BACKDROP DETAIL



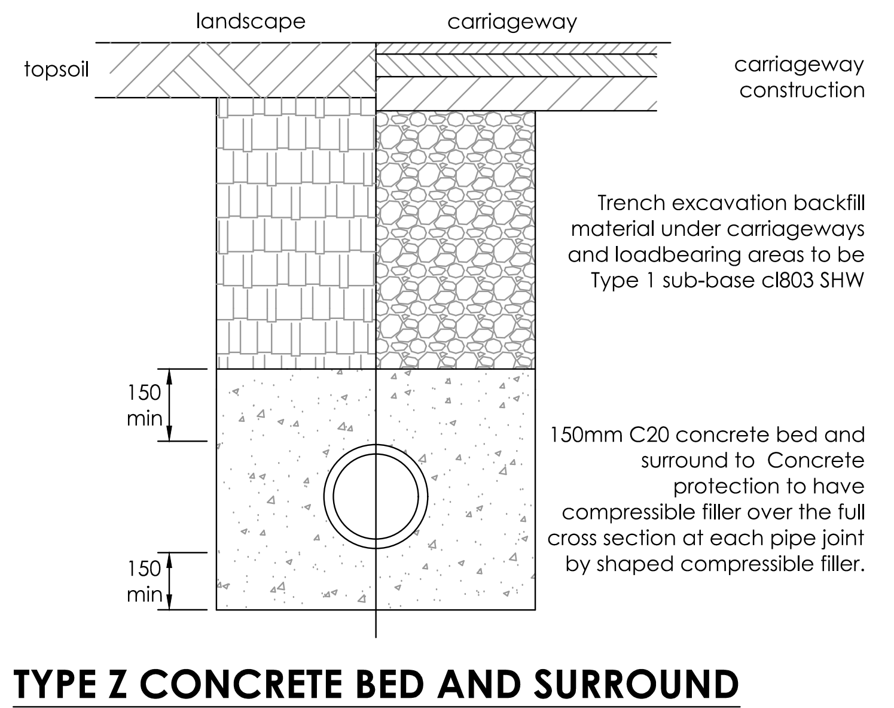
TYPE S GRANULAR SURROUND BED

To be used where cover to pipe soffit is greater than 1200mm in vehicular areas and greater than 900mm in non-trafficked areas (ie footpaths, verges, etc)



CONCRETE SLAB PROTECTION

To be used where cover to pipe soffit is less than 1200mm in vehicular areas and 900mm in non-trafficked areas (ie footpaths, verges, etc)



TYPE Z CONCRETE BED AND SURROUND

To be used where cover to pipe soffit is less than 1200mm in vehicular areas and 900mm in non-trafficked areas (ie footpaths, verges, etc)

Pipe nominal size (DN)	Pipe Bedding Requirement (mm)
100	10mm nominal shingle size
over 100-150	10mm or 14mm nominal shingle size or 14mm to 5mm graded
over 150-300	10, 14 or 20mm nominal shingle size or 14mm to 5mm graded or 20mm to 5mm graded
over 300-550	14, 20 or 40mm nominal shingle size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded
over 550	14, 20 or 40mm nominal shingle size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded

GRANULAR BEDDING AND SIDEFILL MATERIAL GRADINGS

Rev.	Date	Amendments	By	Chk'd
T01	03/11/16	Tender issue	NJ	DJ

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Project:
17 Branch Hill
Hampstead

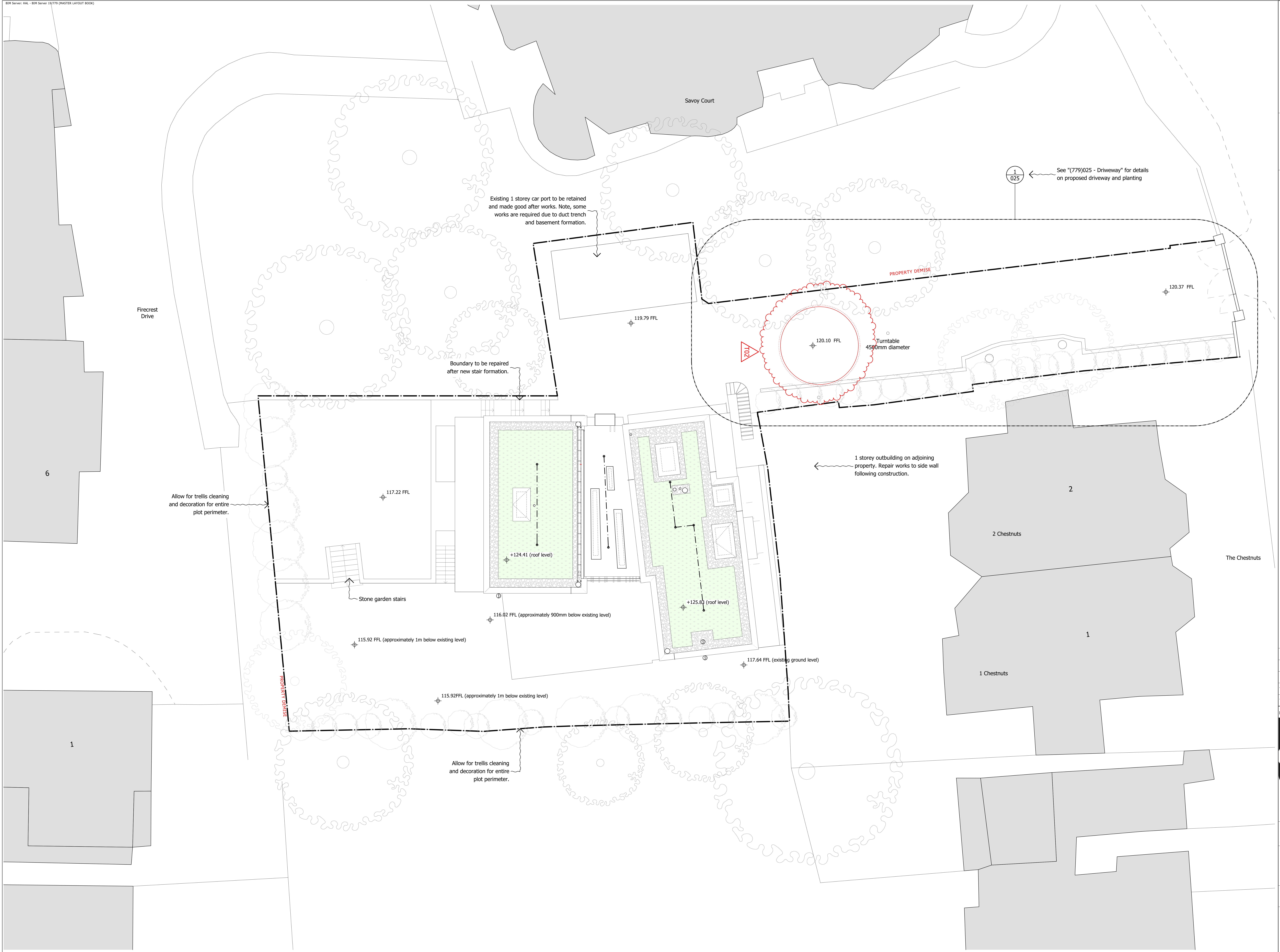
Drawing title:
Drainage Construction Details

Scale at A1:	Drawn by:	Date:	Chk'd by:
1:20	NJ	24/10/2016	DJ

TENDER

Project Number:	Drawing Type:	Drawing No:	Revision:
1281	DR	052	T01

BIM Server: HAL - BIM Server 19/779 (MASTER LAYOUT BOOK)



1 SCALE 1:200 @ A1

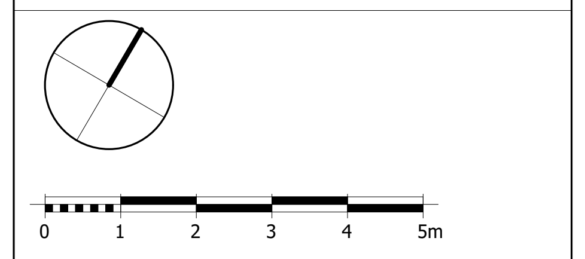
PROPOSED SITE PLAN

DO NOT SCALE FROM THIS DRAWING

Figured dimensions only are to be taken from this drawing. All dimensions are to be checked on site before any work is put in hand.
If in doubt, ask.

All SHH drawings to be read in conjunction with relevant SHH Finishes, Sanitaryware, Lighting & Ironmongery schedules.

Any discrepancies to be highlighted to SHH prior to procurement and in good time.



Legends & Notes:

Rev	Date	Descriptor	Athr.
T02	16.02.2017	Tender Issue. Turning table added	JH/PG
T01	07.11.2016	Tender Issue	JH/PG

SHHARCHITECTS|INTERIORDESIGNERS

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Project:

Branch Hill

17 Branch Hill, Hampstead
NW3 7NA

Client:

Private Client

Drawing Title:

Site Plan - Proposed

(Project number)DWG number_Revision:

(779)003_T02

Checked: