## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Depth | Cover Size | Internal Size | |
|---|---|---|---|---|---|---|
| FWIC 0 | 101.35 | 99.795 | 1.555 | 600x600 | tba | |
| FWIC 1 | 101.300 | 100.225 | 1.075 | 600x600 | tba | |
| FWIC 2 | NOT IN USE | | | | | |
| FWIC 3 | 99.850 | 98.410 | 1.440 | 600x600 | tba | Packaged pump waste system |
| FWIC 4 | 99.700 | 98.600 | 1.100 | 430 dia | 450 dia | |
| FWIC 1-1 | 99.950 | 99.473 | 0.473 | 430 dia | 450 dia | |
| FWIC 1-2 | 100.150 | 99.587 | 0.563 | 430 dia | 450 dia | |
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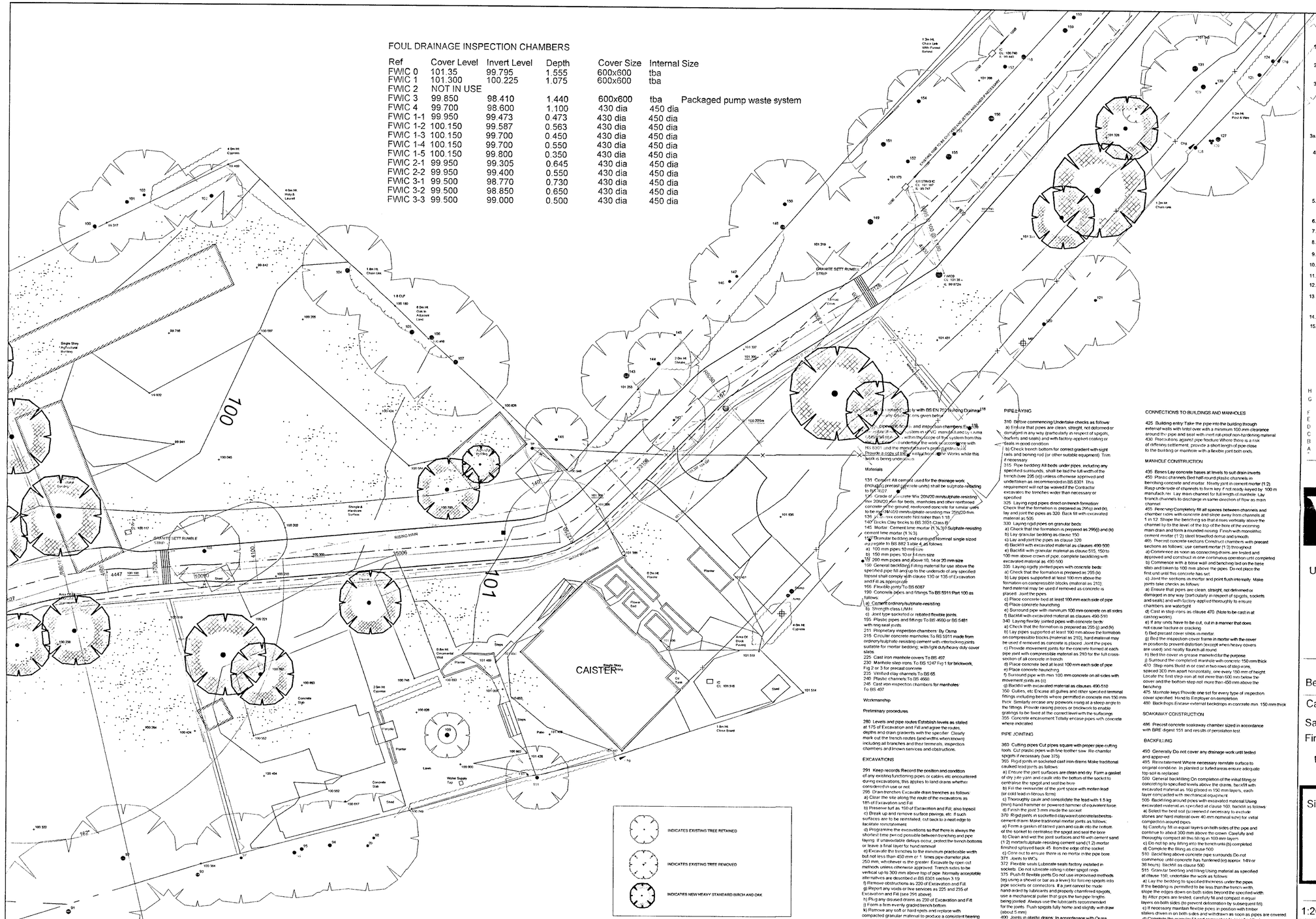
CAISTER
GRANITE SETT RUMBLE STRIP
EXISTING ROW OF YEW CHRISTMAS TREES AND HEDGE TO BE CUT AND MAINTAINED AS NECESSARY
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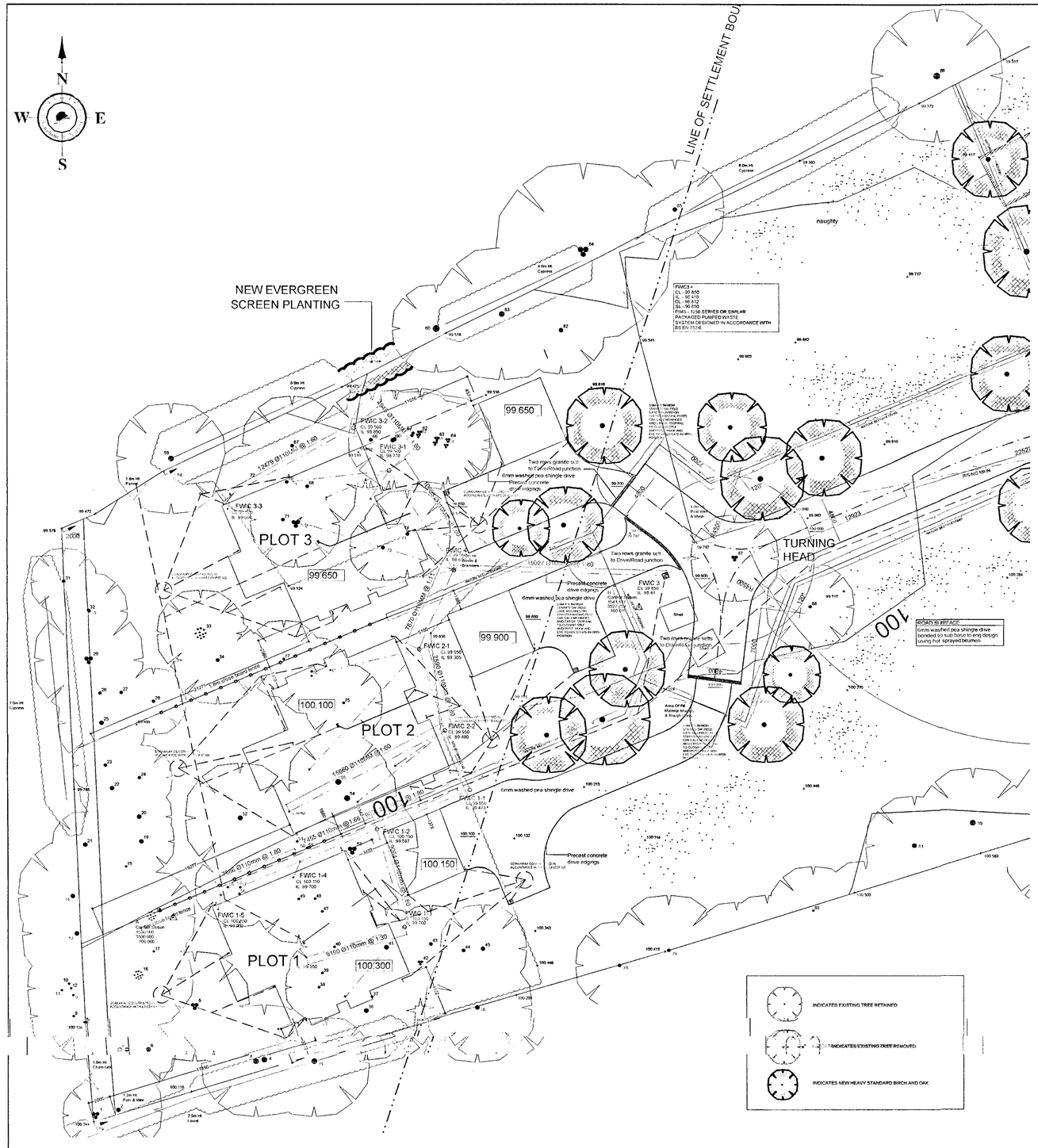
RISING MAIN
WATER MAIN
Single Storey Agricultural Building
Shingle & Hardcore Surface
Concrete Slab
Timber Frame
Planter
Lawn
Water Supply Tap
Steps
Patio
Flower Bed
Pergola
Shed
Oil Tank
Timber Fence
Close Board Fence
Chain Link Fence
Post & Wire Fence
Hedge
Tree
Bollard
Lamp
Gate
Kerb
Edge
Manhole
Inspection Chamber
Rodding Eye
Gully
Soil Pipe
Down Pipe
Gas Valve
Water Stop Valve
Electric Meter
Telephone Point
Electric Point
Aerial
Satellite Dish
Flood Light
Bench
Litter Bin
Cycle Rack
Sign
Post
Fence
Wall
Retaining Wall
Kerb
Edge
Road
Footpath
Verge
Boundary

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Code of practice Comply with BS EN 752 Building Drainage subject to any qualifications given below

Plastic pipework, fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken

Materials

131 Cement All cement used for the drainage work (including precast concrete units) shall be sulphate-resisting to BS 4027.
135 Grade of concrete Mix 20N/20 mm/sulphate-resisting mix 20N/20 mm for beds, manholes and other reinforced concrete in the ground, reinforced concrete for similar uses to be mix 25N/20 mm/sulphate-resisting mix 25N/20 mm
136 Lean mix concrete Not richer than 1:18
140 Bricks Clay bricks to BS 3921 Class B.
145 Mortar: Cement lime mortar (1 ¼:3) / Sulphate-resisting cement lime mortar (1 ¼:3)
150 Granular bedding and surround Nominal single sized aggregate to BS 882 Table 4, as follows:
a) 100 mm pipes 10 mm size
b) 150 mm pipes 10 or 14 mm size
c) 200 mm pipes and above 10, 14 or 20 mm size
160 General backfilling Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate
166 Flexible joints: To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows:
a) Cement ordinary/sulphate-resisting
b) Strength class UNM
c) Joint type socketed or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
211 Proprietary inspection chambers: By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate-resisting cement with interlocking joints suitable for mortar bedding; with light duty/heavy duty cover slabs.
225 Cast iron manhole covers To BS 497
230 Manhole step irons: To BS 1247 Fig 1 for brickwork, Fig 2 or 3 for precast concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes: To BS 497

Workmanship

Preliminary procedures

260 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drain gradients with the specifier. Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations; this applies to land drains whether considered in use or not
295 Drain trenches Excavate drain trenches as follows:
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill; also topsoil.
c) Break up and remove surface pavings, etc. If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement.
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying. If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal
e) Excavate the trenches to the minimum practicable width [the net pipe clearances (minimum 150 mm) specified plus 200 mm (225 mm where there is the greater) Excavate by open cut methods unless otherwise approved Trench sides to be vertical up to 1.50 m from the pipe invert Any deeper excavations alternatives are described in BS 8301 section 3.19
f) Remove obstructions as 220 of Excavation and Fill
g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
j) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable blinding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
p) Keep excavations safe as 260 of Excavation and Fill
Remove any trench supports progressively as compaction proceeds.
305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself.
306 Buttresses Concrete with the Brickwork and Blockwork

PIPE LAYING

310 Before commencing Undertake checks as follows:
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating or seals in good condition
b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary
315 Pipe bedding All beds under pipes, including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified
325 Laying rigid pipes direct on trench formation:
Check that the formation is prepared as 295(j) and (k), lay and joint the pipes as 320. Back fill with excavated material as 505
330 Laying rigid pipes on granular beds:
a) Check that the formation is prepared as 295(j) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490-506
e) Backfill with granular material as clauses 515: 150 to 100 mm above crown of pipe; complete backfilling with excavated material as 490-506
335 Laying rigidly jointed pipes with concrete beds:
a) Check that the formation is prepared as 295 (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes
c) Place concrete bed at least 100 mm each side of pipe
d) Haunching as 340
e) Surround pipe with minimum 100 mm concrete on all sides
f) Backfill with excavated material as clauses 490-510
340 Laying flexibly jointed pipes with concrete beds:
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210); hard material may be used if removed as concrete is placed. Joint the pipes
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490-510
350 Gullies, etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surfacings
355 Concrete encasement Totally encase pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw. Re-chamfer spigots if necessary (see 375).
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows:
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Fill the remainder of the joint space with molten lead (or cold lead in thixos form)
c) Thoroughly caulk and consolidate the lead with 1.5 kg (min) hand hammer or powered hammer of eq.uivalent face
d) Finish the joint 3 mm inside the socket
370 Rigid joints in socketed clay/vitrified concrete/fibre/asbestos-cement drains Make traditional mortar joints as follows:
a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Clean and wet the joint surfaces and fill with cement:sand (1:2) mortar/suitable resulting cement:sand (1:2) mortar finished splayed back 45° from the edge of the socket
c) Give cast iron pipes that are to be mortar-jointed a coating of bitumen paint to BS 3416 Type 1 or 2
375 Flexible seals Substitute seals factory-installed in sockets/spigots. Do not lubricate rolling rubber ring seals
380 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm)
400 Joints in plastic drains: In accordance with Osma instructions
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension), mark the location at ground level with a 50 : 100 mm oversided softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post.
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintol over with a minimum 100 mm clearance around the pipe and seal with inert rot-proof non-hardening material.
430 Precautions against pipe fracture Where there is a risk of differing settlement, provide a short length of pipe close to the building or manhole with a flexible joint both ends

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts.
450 Plastic channels Elect half-round plastic channels in benching concrete and mortar. Neatly joint in cement mortar (1:2). Rasp underside of channels to form key if not ready-keyed by 100 m manufacturer. Lay main channel for full length of manhole. Lay branch channels to discharge in same direction of flow as main channel
455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12. Shape the benching so that it rises vertically above the channel top to the level of the top of the bore of the incoming main drain and form a rounded nosing. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth
465 Precast concrete sections Construct chambers with precast sections as follows: use cement mortar (1:3) throughout
a) Commence as soon as concrete/brick drains are finished and approved and construct in one continuous operation until completed
b) Commence with a base wall and benching laid on the base slab and taken to 600 mm above the pipes. Do not place the first unit until this concrete has set
c) Joint the sections in mortar and point flush internally. Make joints fake-checks as follows:
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied thoroughly to ensure chambers are watertight
d) Cast in step irons as clause 470 (Note to be cast in at casting works)
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking
f) Bed precast cover slabs in mortar
g) Bed the inspection cover frame in mortar with the cover in position to prevent distortion (except when heavy covers are used) and neatly flaunch all round
h) Bed the cover in grease marketed for the purpose
j) Surround the completed manhole with concrete 150 mm thick
470 Step irons Build in or cast in two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm of height. Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching
475 Manhole keys Provide one set for every type of inspection cover specified. Hand to Employer on completion
480 Backdrops Encase external backdrops in concrete min. 150 mm thick

SOAKAWAY CONSTRUCTION

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

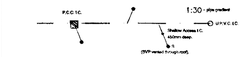
490 Generally Do not cover any drainage work until tested and approved
495 Reinstatement Where necessary reinstate surface to original condition. In planted or turfed areas ensure adequate top soil is replaced
500 General backfilling On completion of the initial filling or concreting to specified levels above the drains, backfill with excavated material as 160 placed in 150 mm layers, each layer compacted with mechanical equipment
505 Backfilling around pipes with excavated material Using excavated material as specified at clause 160, backfill as follows:
a) Select the best soil (screened if necessary to exclude stones and hard material over 40 mm nominal size) for initial compaction around pipes.
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown. Carefully and thoroughly compact all this filling in 100 mm layers
c) Do not tip any filling into the trench until (d) completed
d) Complete the filling as clause 500
510 Backfilling above concrete pipe surrounds Do not commence backfilling concrete surrounds until the concrete has attained 36 hours' hardness as clause 500
515, 10, 515 Granular bedding and filling Using material as specified at clause 150, backfill over the pipe as follows:
a) Lay the bedding to specified thickness under the pipes. If the bedding is permitted to be less than the trench width, slope the edges down on both sides beyond the specified width
b) After pipes are tested, carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill)
c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered
d) Complete the granular fill and compaction to specified thickness.
e) Backfill with excavated material as clause 500.
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling.

SEWER CONNECTION

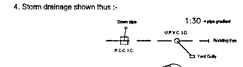
555 Location Excavate with care in the vicinity of the local authority's sewer

## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the rise.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-



6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 48.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.
15. Line of Electrical Intakes shown thus

Contractor to excavate a trench 500 deep s+s to lay mains cable

Contractor to lay 32mm dia black plastic service tube from mains cable position to meter position at depth of 450mm

| | | |
|---|---|---|
| H | 20/05/03 | ROAD POSITIONING AMENDED |
| G | 14/05/03 | FWC 1-2 AMENDED |
| F | 11/05/03 | ELECTRICAL ROUTE INDICATED AND ROADWIDTH AMENDED |
| E | 07/05/03 | DRAINAGE LAYOUT UPDATED |
| D | 24/04/03 | DRAINAGE LAYOUT UPDATED |
| C | 03/03/03 | DRAINAGE UPDATED |
| B | 17/02/03 | BOUNDARY TREATMENTS INDICATED |
| A | 16/12/02 | TENDER ISSUE |

WADP
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e mail wadp@btclick.com

Beckbridge Ltd

Caister

Sandhurst Road

Finchampstead

PLANS TO MEET CONDITIONS

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Site Layout WEST

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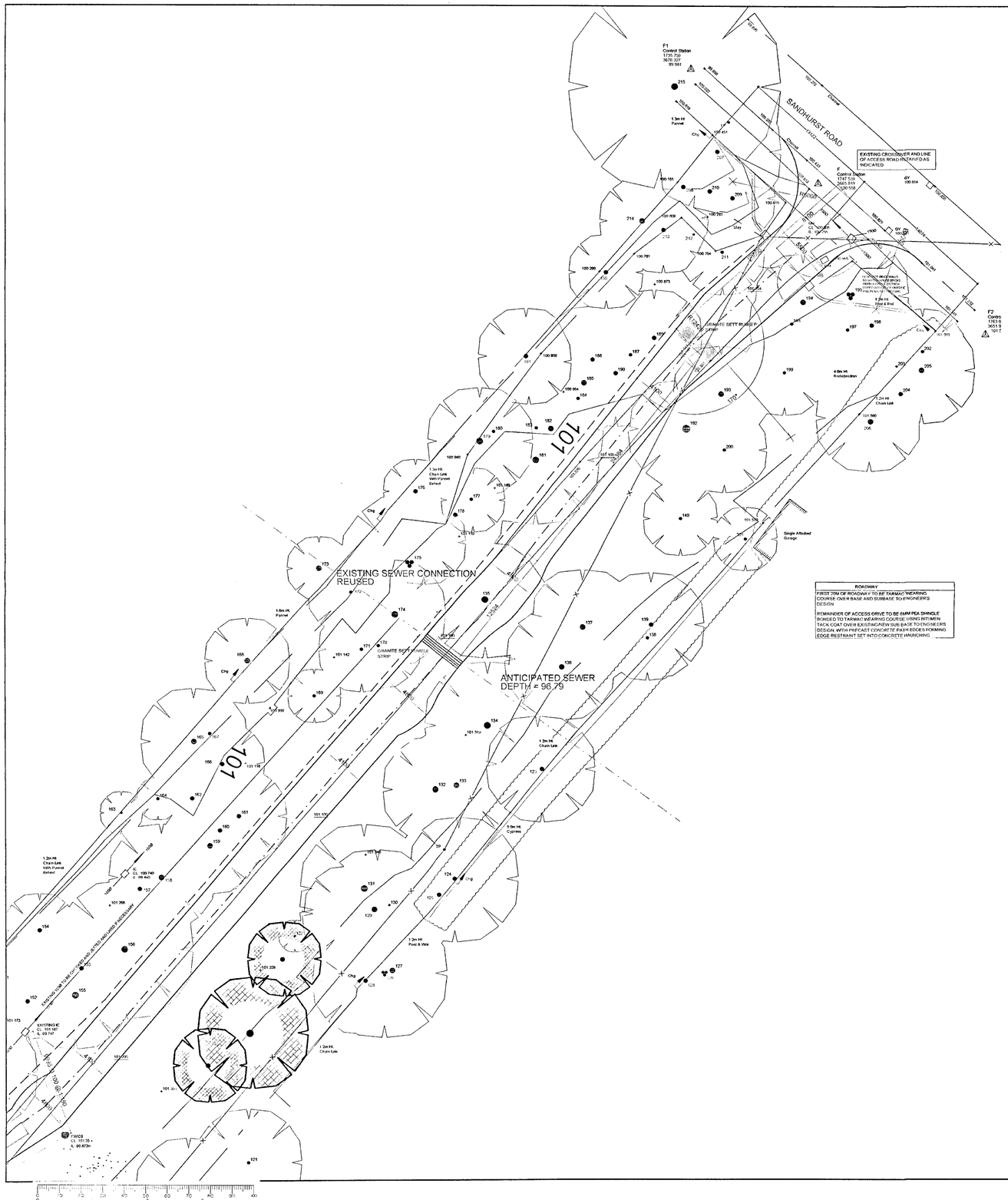


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INDICATES EXISTING TREE RETAINED

INDICATES EXISTING TREE REMOVED

INDICATES NRW/HEAVY STANDARD BIRCH AND OAK

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c) Break up and remove surface pavings, etc. If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement.
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e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm, whichever is the greater. Excavate by open cut methods unless otherwise approved. Trench sides to be vertical up to 300 mm above top of pipe. Normally acceptable alternatives are described in BS 8301 section 3.19
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d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490-510
350 Gullies, etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to ensure gratings to be fixed at the correct level with the surfacings.
355 Concrete encasement Totally encase pipes with concrete where indicated.

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toother saw. Re-chamfer spigots if necessary (see 375).
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows:
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore.
b) Fill the remainder of the joint space with molten lead (or cold lead in bitrous form).
c) Thoroughly caulk and consolidate the lead with 1.5 kg (min) hand hammer or powered hammer of equivalent force.
d) Finish the joint 3 mm inside the socket.
370 Rigid joints in socketted claywarelironcrete/asbestos-cement drains Make traditional mortar joints as follows:
a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore.
b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/sulphate-resisting cement sand (1:2) mortar finished splayed back 45 from the edge of the socket.
c) Care out to ensure there is no mortar in the pipe bore.
371 Joints to WCs
372 Hepvhe-seals Lubricate seals factory installed in sockets. Do not lubricate rolling rubber spigot rings.
375 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm).
400 Joints in plastic drains In accordance with Osma instructions.
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension), mark the locations at ground level with a 50 100 mm oversided softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post.
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints.

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintol over with a minimum 100 mm clearance around the pipe and seal with inert rot proof non-hardening material.
430 Precautions against pipe fracture Where there is a risk of differing settlement, provide a short length of pipe close to the building or manhole with a flexible joint both ends.

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts.
450 Plastic channels Bed half round plastic channels in benching concrete and mortar. Neatly joint in cement mortar (1:2). Rasp underside of channels to form key if not ready keyed by 100 m manufacturer. Lay main channel for full length of manhole. Lay branch channels to discharge in same direction of flow as main channel.
455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12. Shape the benching so that it rises vertically above the channel lip to the level of the top of the bore of the incoming main drain and form a rounded nosing. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth.
465 Precast concrete sections Construct chambers with precast sections as follows: use cement mortar (1:3) throughout.
a) Commence as soon as connecting drains are tested and approved and construct in one continuous operation until completed.
b) Commence with a base wall and benching laid on the base slab and taken to 100 mm above the pipes. Do not place the first unit until the concrete has set.
c) Joint the sections in mortar and point flush internally. Make joints take checks as follows:
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied thoroughly to ensure chambers are watertight.
d) Cast in step irons as clause 470. (Note to be cast in at casting works).
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking.
f) Bed precast cover slabs in mortar.
g) Bed the inspection cover frame in mortar with the cover in position to prevent distortion (except when heavy covers are used) and neatly flaunch all round.
h) Bed the cover in grease marketed for the purpose.
j) Surround the completed manhole with concrete 150 mm thick.
470 Step irons Build in or cast in two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm of height. Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching.
475 Manhole keys Provide one set for every type of inspection cover specified. Hand to Employer on completion.
480 Backdrops Encase external backdrops in concrete min. 150 mm thick.

SOAKAWAY CONSTRUCTION

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test.

BACKFILLING

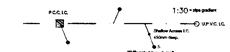
490 Generally Do not cover any drainage work until tested and approved.
495 Reinstatement Where necessary reinstate surface to original condition. In planted or turfed areas ensure adequate top soil is replaced.
500 General backfilling On completion of the initial filling or concreting to specified levels above the drains, backfill with excavated material as 160 placed in 150 mm layers, each layer compacted with mechanical equipment.
505 Backfilling around pipes with excavated material Using excavated material as specified at clause 160, backfill as follows:
a) Select the best soil (screened if necessary to exclude stones and hard material over 40 mm nominal size) for initial compaction around pipes.
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown. Carefully and thoroughly compact all this filling in 100 mm layers.
c) Do not tip any filling into the trench until (b) completed.
d) Complete the filling as clause 500.
510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx 14N or 36 hours). Backfill as clause 500.
515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows:
a) Lay the bedding to specified thickness under the pipes. If the bedding is permitted to be less than the trench width, slope the edges down on both sides beyond the specified width.
b) After pipes are tested, carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill).
c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered.
d) Complete the granular fill and compaction to specified thickness.
e) Backfill with excavated material as clause 500.
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling.

SEWER CONNECTION

555 Location Excavate with care in the vicinity of the local authority's sewer.

## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-
6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.
15. Line of Electrical intakes shown thus

Contractor to excavate a trench 500 deep s+s to lay mains cable

Contractor to lay 32mm dia black plastic service tube from mains cable position to meter position at depth of 450mm

| | | |
|---|---|---|
| G | 20/05/03 | ROAD POSITIONING AMENDED |
| F | 11/05/03 | ELECTRICAL ROUTE INDICATED AND ROADWIDTH AMENDED |
| E | 07/05/03 | DRAINAGE ROUTE UPDATED |
| D | 23/04/03 | DRAINAGE ROUTE UPDATED |
| C | 03/03/03 | DRAINAGE UPDATED |
| B | 14/02/03 | BOUNDARY TREATMENTS INDICATED |
| A | 16/12/02 | TENDER ISSUE |

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PLANS TO MEET CONDITIONS

5327 1

Site Layout EAST

1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01E | G

N
W E
S

LINE OF SETTLEMENT BOU

NEW EVERGREEN
SCREEN PLANTING

MATERIALS STORAGE
COMPOUND

PARKING FOR SITE
PERSONNEL (TEMP)

SITE OFFICE AND
WELFARE

TEMPORARY SITE ACCOMODATION
FOR PERIOD OF THE WORKS ONLY ON
COMPLETION ALL HARD STANDINGS, TEMPORARY
BUILDINGS AND SURFACES ARE TO BE REMOVED
AND GROUND MADE GOOD AND LANDSCAPED
TO MATCH SURROUNDING AREA

TEMPORARY HARDSTANDING
AND ACCESS ROAD

SPEED HUMP

TURNING
HEAD

PLOT 3

PLOT 2

PLOT 1

99.650

99.650

99.900

100.100

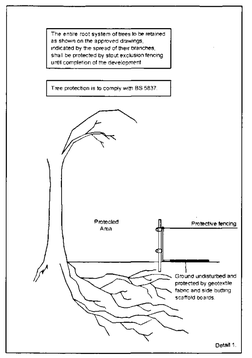
100.150

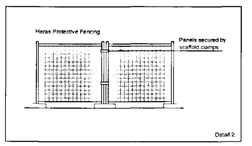
100.300

1.8m chain linked fence

PLANS TO MEET CONDITIONS
5327

TREE PROTECTION TO BS 5837
USE DETAIL 1 OR 2 AS APPROPRIATE

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TEMPORARY SITE WORKS

1:200 @ A1

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DP/280/SITE/02 | -




EAST ELEVATION




SOUTH ELEVATION

DRAWINGS NOT TO BE SCALED.
WORK TO FIGURED DIMENSIONS ONLY.
ALL DIMENSIONS TO BE CHECKED ON SITE, AND ANY DISCREPANCIES REPORTED TO THE ARCHITECT IMMEDIATELY

ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CURRENT BUILDING REGULATIONS and CODES OF PRACTICE.
IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL WORKS ARE CARRIED OUT IN ACCORDANCE WITH THE SAME.

ALL CONCRETE WORK TO BE CARRIED OUT IN ACCORDANCE WITH BS 8110:PART 1.

ALL BRICKWORK AND BLOCKWORK TO BE CARRIED OUT IN ACCORDANCE WITH BS5628:PART 3.

ALL STRUCTURAL STEELWORK TO BE CARRIED OUT IN ACCORDANCE WITH BS5950:PART 2.

ALL STRUCTURAL TIMBER TO BE USED IN ACCORDANCE WITH BS 5268:PART 2 AND IS TO BE PRESERVATIVE TREATED IN ACCORDANCE WITH BS4072.

ALL PLUMBING TO BE IN ACCORDANCE WITH BS6700, BS5572, BS6465:PART 1 AND BS6367.

ALL GLASS FALLING WITHIN CRITICAL ZONES AS DEFINED BY PART N OF THE BUILDING REGULATIONS IS TO BE TOUGHENED OR SAFETY GLASS IN ACCORDANCE WITH BS6206.

B 14/02/03 PLANNING CONDITIONS

[redacted]

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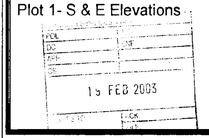
PLANS TO MEET CONDITIONS

5327

Plot 1- S & E Elevations

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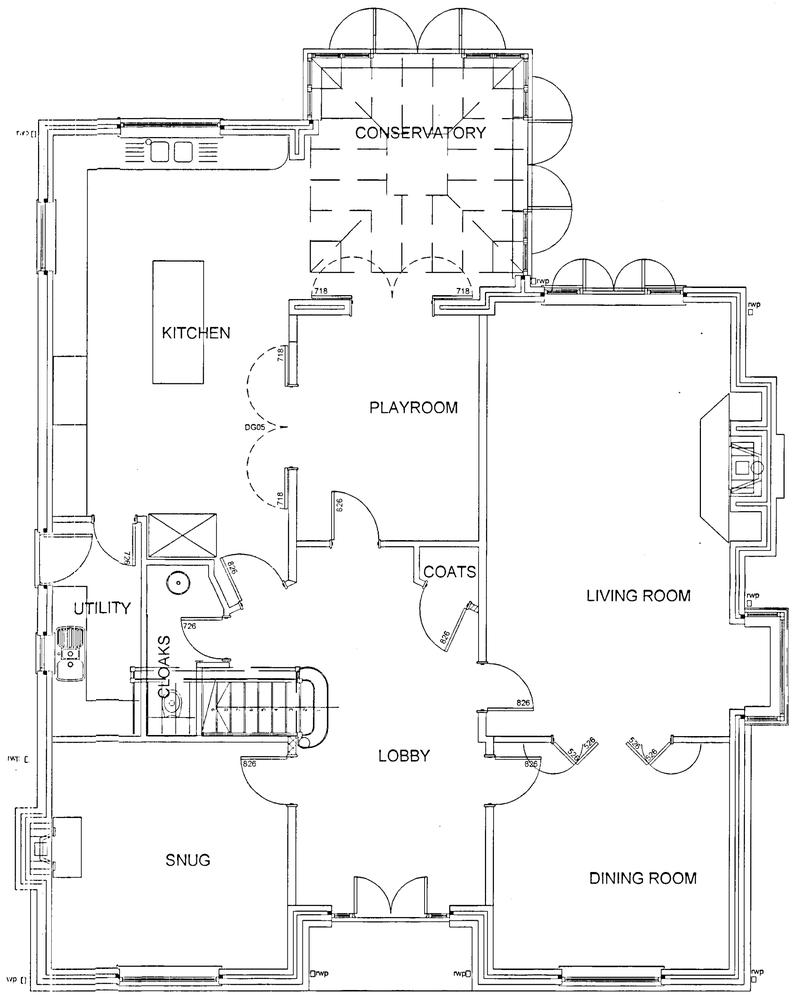
DP/280/PL1/W/04 | B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KITCHEN
PLAYROOM
DG05
COATS
LIVING ROOM
UTILITY
CLOAKS
LOBBY
SNUG
DINING ROOM
718
726
826
826
826




EAST ELEVATION




NORTH ELEVATION

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C 14/02/03 PLANNING CONDITIONS
B DEC 02 TENDER ISSUE

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PLANS TO MEET CONDITIONS
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PLOT 2-N & E Elevations

PLANNING
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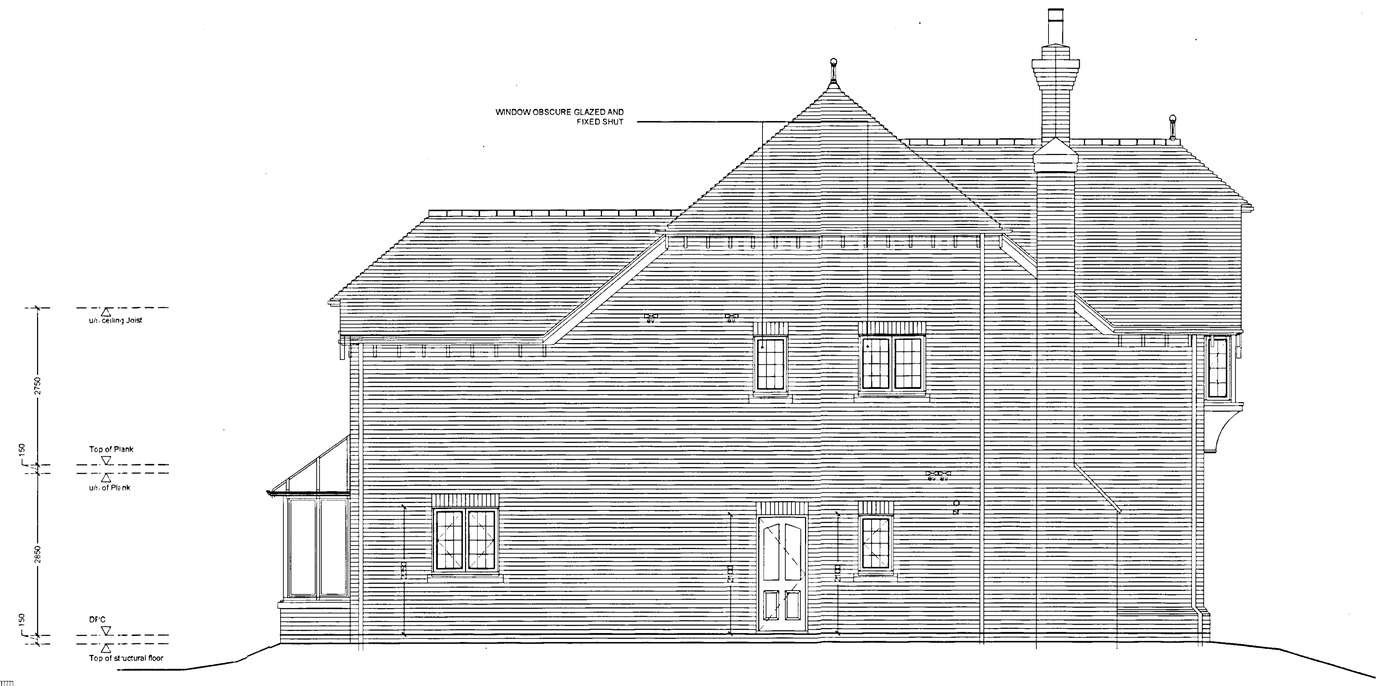
NB | May 02

DP/280/PL2/W/04 | C




WEST ELEVATION




SOUTH ELEVATION

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D 14/02/03 PLANNING CONDITIONS
C 07/02/03 WG01 AMENDED
B DEC 02 TENDER ISSUE

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PLANS TO MEET CONDITIONS

5327 #1

PLOT 2-S & W Elevations

19 FEB 2003

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NB | May 02

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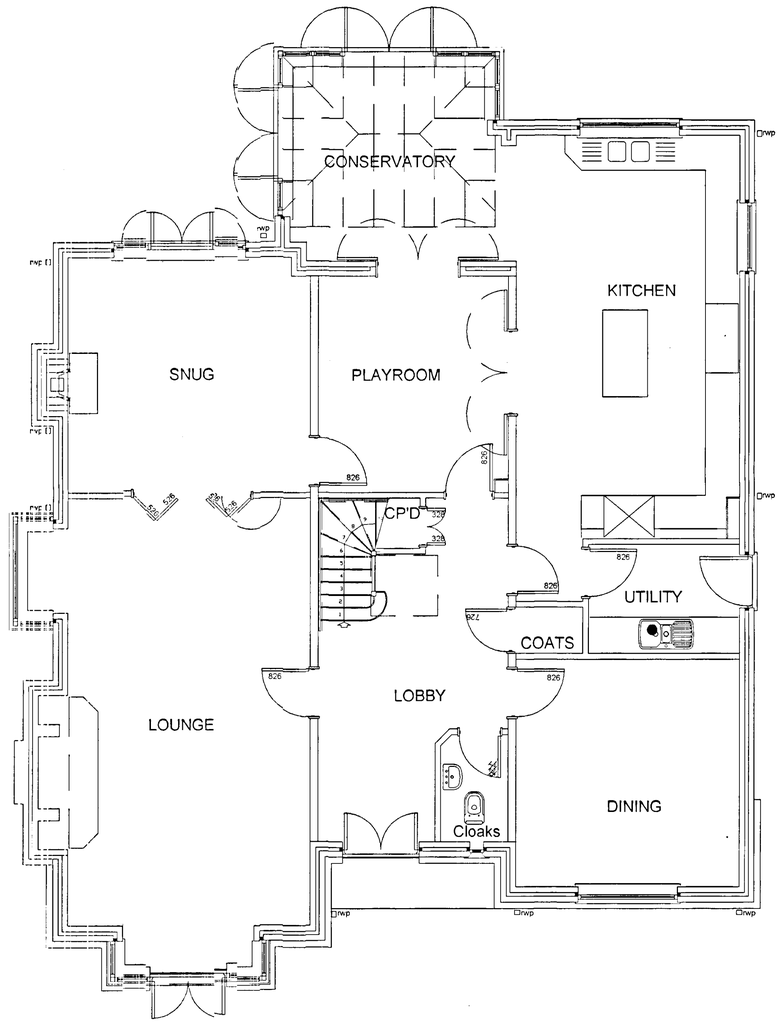
CONSERVATORY
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Cloaks
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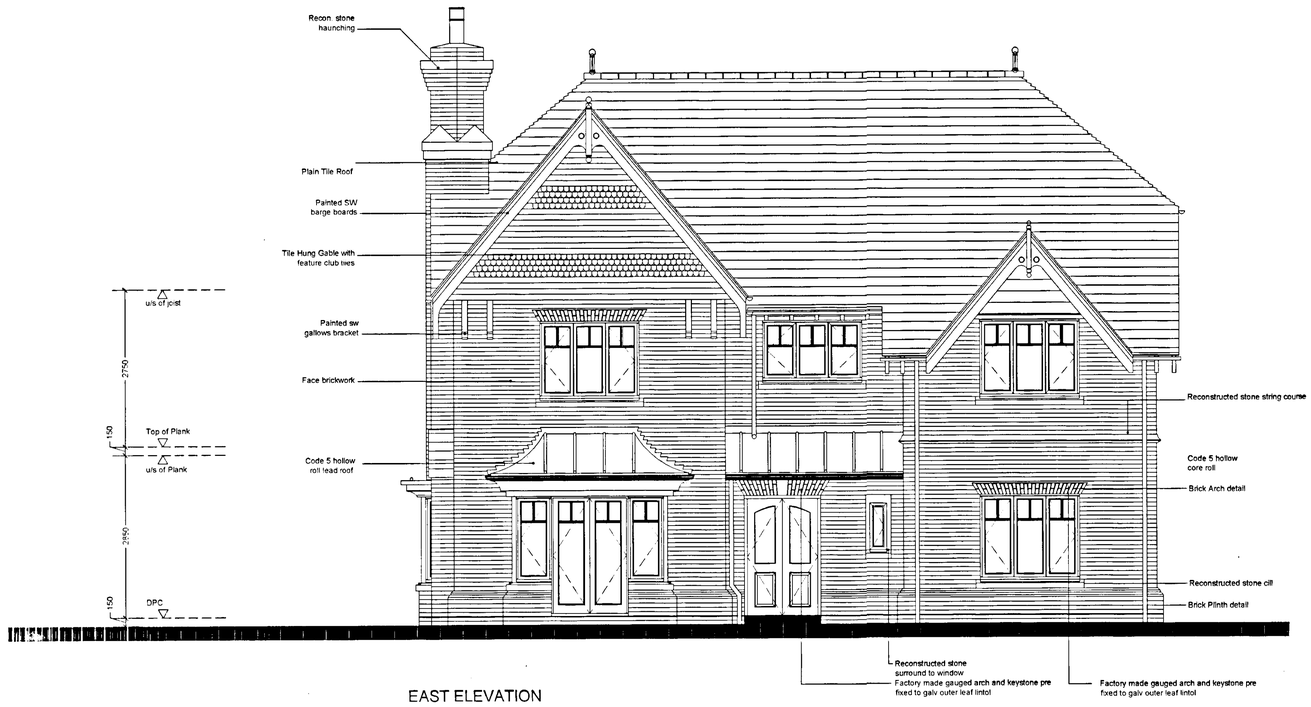


EAST ELEVATION




NORTH ELEVATION

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All structural steelwork to be carried out in accordance with BS5950:Part 2.

All structural timber to be used in accordance with BS 5268:Part 2 and is to be preservative treated in accordance with BS4072.

All plumbing to be in accordance with BS6700, BS5572, BS6465:Part 1 and BS6367.

All glass falling within critical zones as defined by Part N of the Building Regulations is to be toughened or safety glass in accordance with BS6206.

C 14-02-03 PLANNING CONDITIONS
B 16-12-02 TENDER ISSUE
A Dec 02 Generally Updated

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PLANS TO MEET CONDITIONS
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PLOT 3-N & E Elevations

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1:50 @ A1

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DP/280/PL3/W/04 | C




WEST ELEVATION




SOUTH ELEVATION

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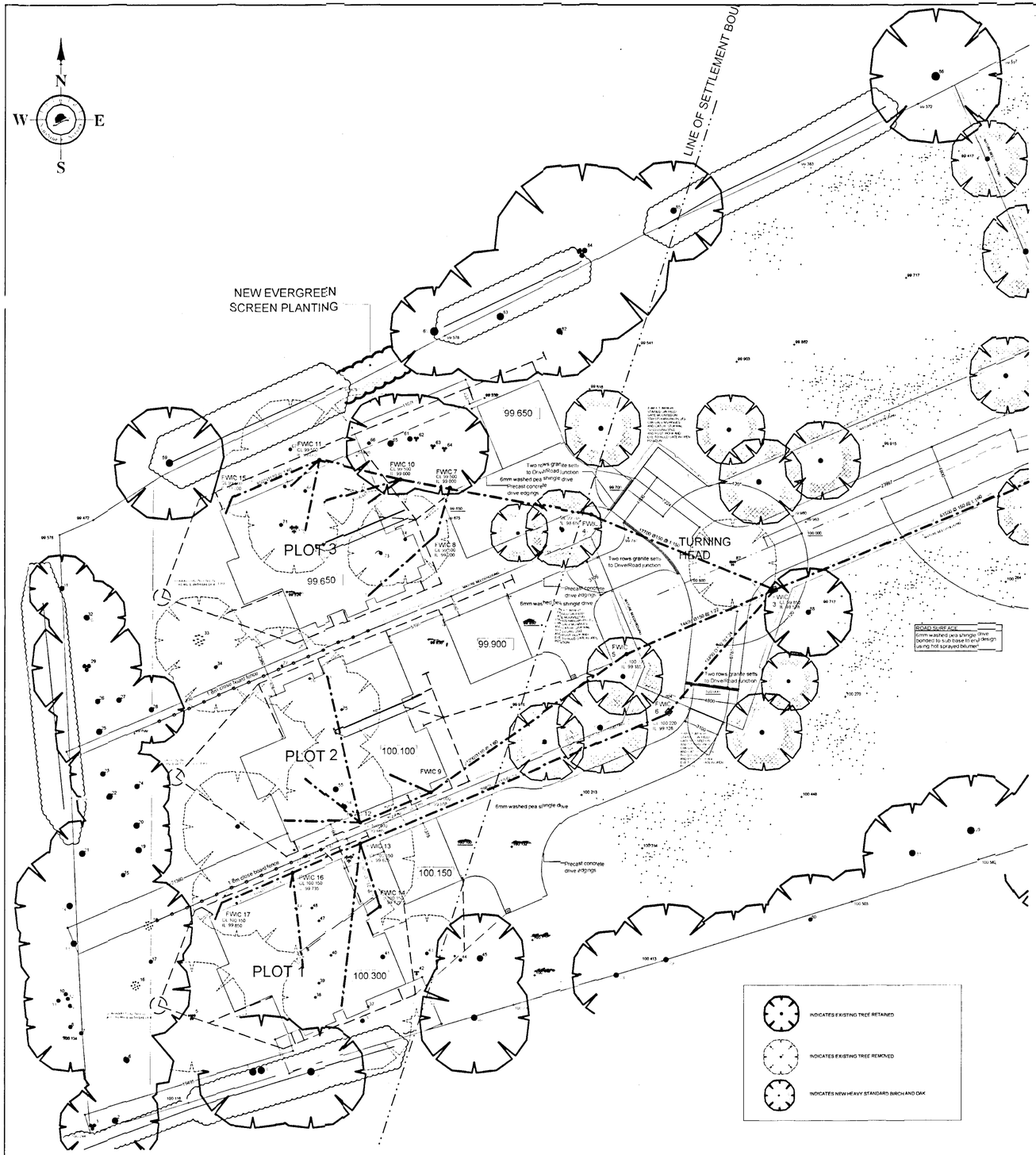



## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x500 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x500 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x500 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x500 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

Code of practice Comply with BS 8301 Building Drainage subject to any qualifications given below

Plastic pipework, fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken.

**Materials**

131 Cement All cement used for the drainage work (including precast concrete units) shall be sulphate-resisting to BS 4027.
135 Grade of concrete Mix 20N/20 mm/sulphate resisting mix 20N/20 mm for beds, manholes and other reinforced concrete in the ground; reinforced concrete for similar uses to be mix 25N/20 mm/sulphate-resisting mix 25N/20 mm.
136 Lean mix concrete Not richer than 1:18
140 Bricks Clay bricks to BS 3921 Class B.
145 Mortar Cement lime mortar (1¼:3) / Sulphate resisting cement lime mortar (1¼:3).
150 Granular bedding and surround Nominal single sized aggregate to BS 882 Table 4, as follows
a) 100 mm pipes 10 mm size
b) 150 mm pipes 10 or 14 mm size
c) 200 mm pipes and above 10, 14 or 20 mm size
160 General backfilling Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 130 of Excavation and Fill as appropriate
165 Flexible joints To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows.
a) Cement ordinary/sulphate-resisting
b) Strength class LM/H
c) Joint type socketted or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
211 Proprietary inspection chambers By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate resisting cement with manholing joints suitable for mortar bedding with light duty/heavy duty cover slabs
225 Cast iron manhole covers To BS 497
230 Manhole step irons To BS 1247 Fig 1 for brickwork, Fig 2 or 3 for poured concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes To BS 497

**Workmanship**

**Preliminary procedures**

280 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drain gradients with the specifier. Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions.

**EXCAVATIONS**

291 Keep records Record the position and condition of any existing trenching pipes or cables etc encountered during excavations. This applies to land drains whether connected in use or not.
295 Drain trenches Excavate drain trenches as follows
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill, also topsoil
c) Break up and remove surface pavings, etc if such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying. If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal
e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm, whichever is the greater. Excavate by open cut methods unless otherwise approved. Trench sides to be vertical up to 300 mm above top of pipe. Normally acceptable alternatives are described in BS 8301 section 3.19.
f) Remove obstructions as 229 of Excavation and Fill
g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
j) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable binding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
p) Keep excavations safe as 260 of Excavation and Fill. Remove any trench supports progressively as compaction proceeds.
305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself.

**PIPE LAYING**

310 Before commencing Undertake checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating or seals in good condition
b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary
315 Pipe bedding All beds under pipes, including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified
325 Laying rigid pipes direct on trench formation Check that the formation is prepared as 295(j) and (k), lay and joint the pipes as 320. Back fill with excavated material as 505.
330 Laying rigid pipes on granular beds
a) Check that the formation is prepared as 295(j) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490-500
e) Backfill with granular material as clause 515. 150 to 100 mm above crown of pipe, complete backfilling with excavated material as 490-500
335 Laying rigidly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes.
c) Place concrete bed at least 100 mm each side of pipe
d) Place concrete haunching
e) Surround pipe with minimum 100 mm concrete on all sides
f) Backfill with excavated material as clauses 490-510
340 Laying flexibly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes.
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490-510
350 Gullies, etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surfacings.
355 Concrete encasement Totally encase pipes with concrete where indicated.

**PIPE JOINTING**

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw. Re-chamfer spigots if necessary (see 375).
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form)
c) Thoroughly caulk and consolidate the lead with 1·5 kg (5ml) hand hammer or powered hammer of equivalent force
d) Finish the joint 3 mm inside the socket
370 Rigid joints in socketted clay/asbestos-cement/concrete drains Make traditional mortar joints as follows
a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/alphate resisting cement sand (1:2) mortar finished splayed back 45 from the edge of the socket
c) Core out to ensure there is no mortar in the pipe bore
371 Joints to WCs
372 Flexible seals Lubricate seals (factory installed) in sockets. Do not lubricate ribbed rubber spigot rings.
375 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or couplings. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical tool such as a pipe grip two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm).
400 Joints in plastic drains In accordance with Osma instructions.
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension), mark the location at ground level with a 50 · 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post.
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints.

**CONNECTIONS TO BUILDINGS AND MANHOLES**

425 Building entry Take the pipes into the building through external walls with, unless over with a minimum 100 mm clearance around the pipe. Any seal with must not cause non-hardening material
430 Precautions against pipe failure Where there is a risk of differential settlement, provide a short length of pipe close to the building of inspection with a flexible joint both ends.

**MANHOLE CONSTRUCTION**

435 Base Lay concrete bases as levels to suit drain inverts
450 Plastic channels Bed half-round plastic channels in benching concrete, and mortar benally joint in cement mortar (1:3), Keep unsightside of channels to 10 mm key if not ready-keyed by 190 m manufacturer. Lay main channel for full length of manhole. Lay branch channels to discharge in same direction of flow as main channel.
460 Benching Complete/ fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12. Slope the benching so that it rises vertically above the channel up to the level of the soffit of the socket of the incoming main drain and form a rounded recess. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth.
465 Precast concrete sections Construct chambers with precast sections as follows. Use cement mortar (1:3) throughout
a) Commence as soon as concreting plants are tested and approved and construct in one continuous operation until completed to cover slab and taken to 100 mm above the pipes. Do not place the first unit on the concrete has set.
c) Joint the sections in cement mortar and point flush internally. Make joints take checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged (any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating only to ensure chambers are watertight
d) Cast in step irons as clause 470 (note to be cast in as casting works)
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking
f) Bed precast cover slabs in mortar
g) Bed off inspection cover frame in mortar with the cover in position to prevent discharge (except where heavy covers are used) and neatly flaunch all round
h) Bed the cover in grease manufactured for the purpose
j) Surround the completed manhole with concrete, 150 mm thick
470 Step irons Build in of cast iron two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm of height. Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching.
475 Manhole keys Provide one set for every type of inspection cover specified. Hand to employer on completion.
480 Backdrops Encase external backdrops in concrete, min. 150 mm thick.

**SOAKAWAY CONSTRUCTION**

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test.

**BACKFILLING**

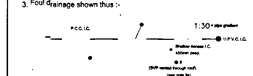
490 Generally Do not cover any drainage work until tested and approved.
495 Remove unsuitable Where necessary remove unsuitable surface or original consolidation in backfilled trenches ensure adequate top soil is replaced.
500 General backfilling On completion of the initial filling of concreting to specified levels above the drains, backfill with excavated material as 160 placed in 150 mm layers, each layer compacted by mechanical equipment.
505 Backfilling around pipes with excavated material Use excavated material as specified in clause 160. Backfill as follows
a) Select the best soil (screened if necessary) to exclude stones and hard lumps over 40 mm nominal size) for initial compaction around pipes.
b) Carefully fill in equal layers on both sides of the pipe and continue in about 150 mm above the crown. Carefully and thoroughly compact at this filling in 100 mm layers.
c) Do not tip any filling into the trench until (b) completed.
d) Complete the filling as clause 500.
510 Backfilling above concrete Pipe surrounds Do not commence until concrete has hardened sufficiently (say 24 or 36 hours). Backfill as clause 500.
515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows
a) Lay the bedding to specified thickness under the pipes. If the bedding is permitted to be less than the trench width, slope the edges down on both sides beyond the specified width
b) After pipes are tested, carefully fill and compact in equal layers on both sides, to prevent displacement by subsequent fill.
c) If necessary maintain trench pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered.
d) Complete the granular fill and compaction to specified thickness.
e) Backfill with excavated material as clause 500.
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling.

**SEWER CONNECTION**

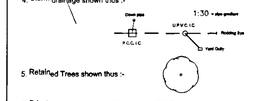
555 Location Excavate with care in the vicinity of the local authority's sewer.

**NOTES.**

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP vented through the roof are annotated thus :- S. other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-



6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

B 17/02/03 BOUNDARY TREATMENTS INDICATED
A 16/12/02 TENDER ISSUE

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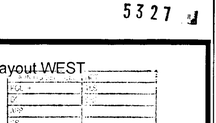
PLANS TO MEET CONDITIONS
5327

Site Layout WEST

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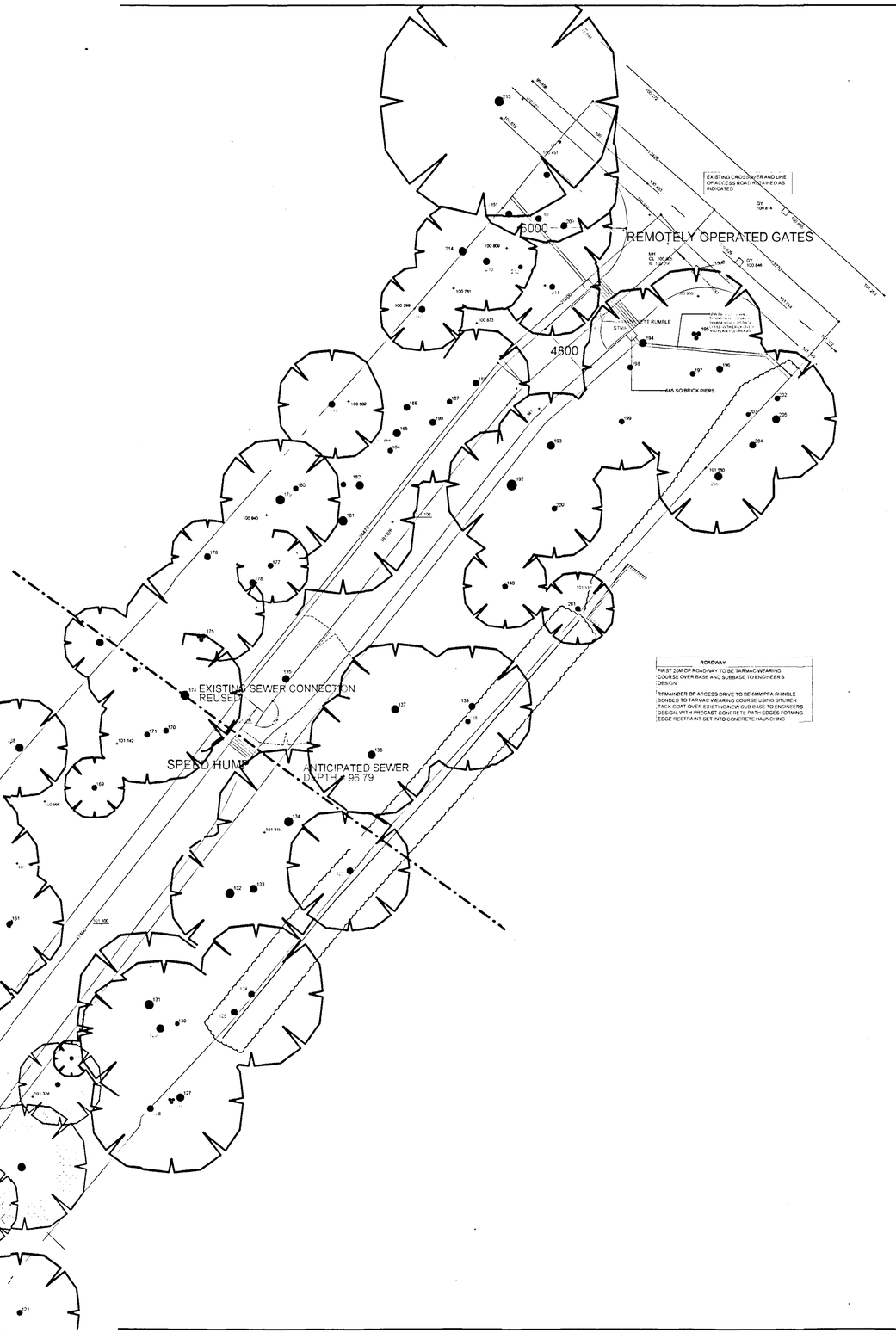



## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x600 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x600 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x600 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x600 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

INDICATES EXISTING TREE RETAINED

INDICATES EXISTING TREE REMOVED

INDICATES NEW HEAVY STANDARD BIRCH AND OAK

Code of practice Comply with BS 8301 Building Drainage subject to any qualifications given below

Plastic pipework: fittings and inspection chambers Execute the entire drainage system in uPVC: manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken.

Materials

131 Cement All cement used for the drainage work (including precast concrete units) shall be sulphate-resisting to BS 4027.
135 Grade of concrete Mix 20N/20 mm/sulphate-resisting mix 20N/20 mm for beds, haunches and other reinforced concrete in the ground; reinforced concrete for similar uses to be mix 25N/20 mm/sulphate-resisting mix 25N/20 mm
136 Lean mix concrete Not richer than 1:18
140 Bricks Clay bricks to BS 3921 Class B
145 Mortar Cement lime mortar (1 ¼ 3) / Sulphate-resisting cement lime mortar (1 ¼ 3)
150 Granular bedding and surround Nominal single sized aggregate to BS 882 Table 4 as follows
a) 100 mm pipes 10 mm size
b) 150 mm pipes 10 or 14 mm size
c) 200 mm pipes and above 10, 14 or 20 mm size
160 General backfilling Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate
166 Flexible joints To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows
a) Cement ordinary/sulphate-resisting
b) Strength class / MPa
c) Joint to be socketed or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
211 Proprietary inspection chambers By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate-resisting cement with interlocking joints suitable for mortar bedding with light duty/heavy duty cover slate
225 Cast iron manhole covers To BS 497
230 Manhole step irons To BS 1247 Fig 1 for brickwork Fig 2 or 3 for precast concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

280 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drainage gradients with the specifier. Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions.

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations: this applies to land drains whether considered in use or not
295 Drain trenches Excavate drain trenches as follows
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill also topsoil
c) Break up and remove surface pavings etc. If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying. If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal.
e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm, whichever is the greater. Excavate by open cut methods unless otherwise approved. Trench sides to be vertical up to 300 mm above top of pipe. Normally acceptable alternatives are described in BS 8301 section 3.19
f) Remove obstructions as 220 of Excavation and Fill
g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
i) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable blinding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
p) Keep excavations safe as 260 of Excavation and Fill Remove any trench supports progressively as compaction proceeds.
305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself.
306 Brickwork Comply with the Brickwork and Blockwork section. Unless otherwise stated execute all brickwork in bricks and mortar as specified at clause 140 and 145

PIPE LAYING

310 Before commencing Undertake checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory applied coating or seals in good condition
b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary.
315 Pipe bedding All beds under pipes including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified.
325 Laying rigid pipes direct on trench formation Check that the formation is prepared as 295(j) and (k), lay and joint the pipes as 320. Back fill with excavated material as 505.
330 Laying rigid pipes on granular beds
a) Check that the formation is prepared as 295(j) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490 500
e) Backfill with granular material as clause 515, 150 to 100 mm above crown of pipe, complete backfilling with excavated material as 490-500
335 Laying rigidly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (k)
b) Lay pipers supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes.
c) Place concrete bed at least 100 mm each side of pipe
d) Place concrete haunching
e) Surround pipe with minimum 100 mm concrete on all sides
f) Backfill with excavated material as clauses 490-510
340 Laying flexibly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipers supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes.
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490-510
350 Gullies etc Ensure all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surfacings.
355 Concrete encasement Totally enclose pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw. Re-chamfer spigots if necessary (see 375).
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form)
c) Thoroughly caulk and consolidate the lead with 1.5 kg (min) hand hammer or powered hammer of equivalent force
d) Finish the joint 3 mm inside the socket
370 Rigid joints in socketted clay/wate/concrete/asbestos-cement drains Make traditional mortar joints as follows
a) Form a gasket of jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/sulphate-resisting cement sand (1:2) mortar finished splayed back 45 from the edge of the socket
c) Core out to ensure there is no mortar in the pipe bore
371 Joints to WCs
372 Flexible seals Lubricate seals factory installed in sockets. Do not lubricate roling rubber spigot rings
375 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-added by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm)
400 Joints in plastic drains In accordance with Osma instructions
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension) mark the location at ground level with a 50 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintol over with a minimum 100 mm clearance around the pipe and seal with inert not proof non hardening material
430 Precautions against pipe fracture Where there is a risk of differing settlement, provide a short length of pipe close to the building or manhole with a flexible joint both ends.

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts
450 Plastic channels Bed half round plastic channels in benching concrete and mortar. Neatly point in cement mortar (1:2)
Rasp underside of channels to form key if not ready-keyed by 100 m manufacturer. Lay main channel for full length of manhole. Lay branch channels to discharge in same direction of flow as main channel.
455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12. Shape the benching so that it rises vertically above the channel up to the level of the top of the bore of the incoming main pipe and form a rounded key. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth.
465 Precast concrete sections Construct chambers with precast sections as follows. Use cement mortar (1:3) throughout
a) Commence as soon as connecting drains are tested and approved and construct in one continuous operation until completed
b) Commence with a base wall and benching laid on the base slab and taken to 100 mm above the pipes. Do not place the first unit until this concrete has set
c) Joint the sections in mortar and point flush internally. Make joints take checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory applied coating to ensure chambers are watertight
d) Cast in step irons as clause 470 (Note to be cast in at casting works)
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking
f) Bed precast cover slabs in mortar
g) Bed the inspection cover frame in mortar with the cover in position to prevent distortion (except when heavy covers are used) and neatly flaunch all round
h) Bed the cover in grease marketed for the purpose
j) Surround the completed manhole with concrete 150 mm thick
470 Step irons Build in or cast in two lines of step irons, spaced 300 mm apart horizontally, one every 150 mm of height. Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching
475 Manhole keys Provide one set for every type of inspection cover specified. Hand to Employer on completion
480 Backdrops Enclose external backdrops in concrete min 150 mm thick

SOAKAWAY CONSTRUCTION

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

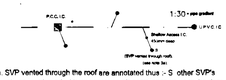
490 Generally Do not cover any drainage work until tested and approved
495 Reinstatement Where necessary reinstate surface to original condition. In planted or turfed areas ensure adequate top soil is replaced
500 General backfilling On completion of the initial filling or concreting to specified levels above the drains, backfill with excavated material as 160 placed in 150 mm layers, each layer compacted with mechanical equipment
505 Backfilling around pipes with excavated material Using excavated material as specified at clause 160, backfill as follows
a) Select the best soil (screened if necessary to exclude stones and hard material over 40 mm nominal size) for initial compaction around pipes
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown. Carefully and thoroughly compact all this filling in 100 mm layers
c) Do not top any filling into the trench until (b) completed
d) Complete the filling as clause 500
510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx. 14N or 36 hours). Backfill as clause 500.
515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows
a) Lay the bedding to specified thickness under the pipes. If the bedding is permitted to be less than the trench width, slope the edges down on both sides beyond the specified width
b) After pipes are tested, carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill)
c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered
d) Complete the granular fill and compaction to specified thickness
e) Backfill with excavated material as clause 500
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling

SEWER CONNECTION

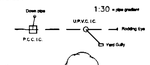
555 Location Excavate with care in the vicinity of the local authority's sewer

## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-



6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

| | | |
|---|---|---|
| B | 14/02/03 | BOUNDARY TREATMENTS INDICATED |
| A | 16/12/02 | TENDER ISSUE |

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PLANS TO MEET CONDITIONS
5327

Beckbridge Ltd

Caister

Sandhurst Road

Finchampstead

1 FEB 2003

Site Layout EAST

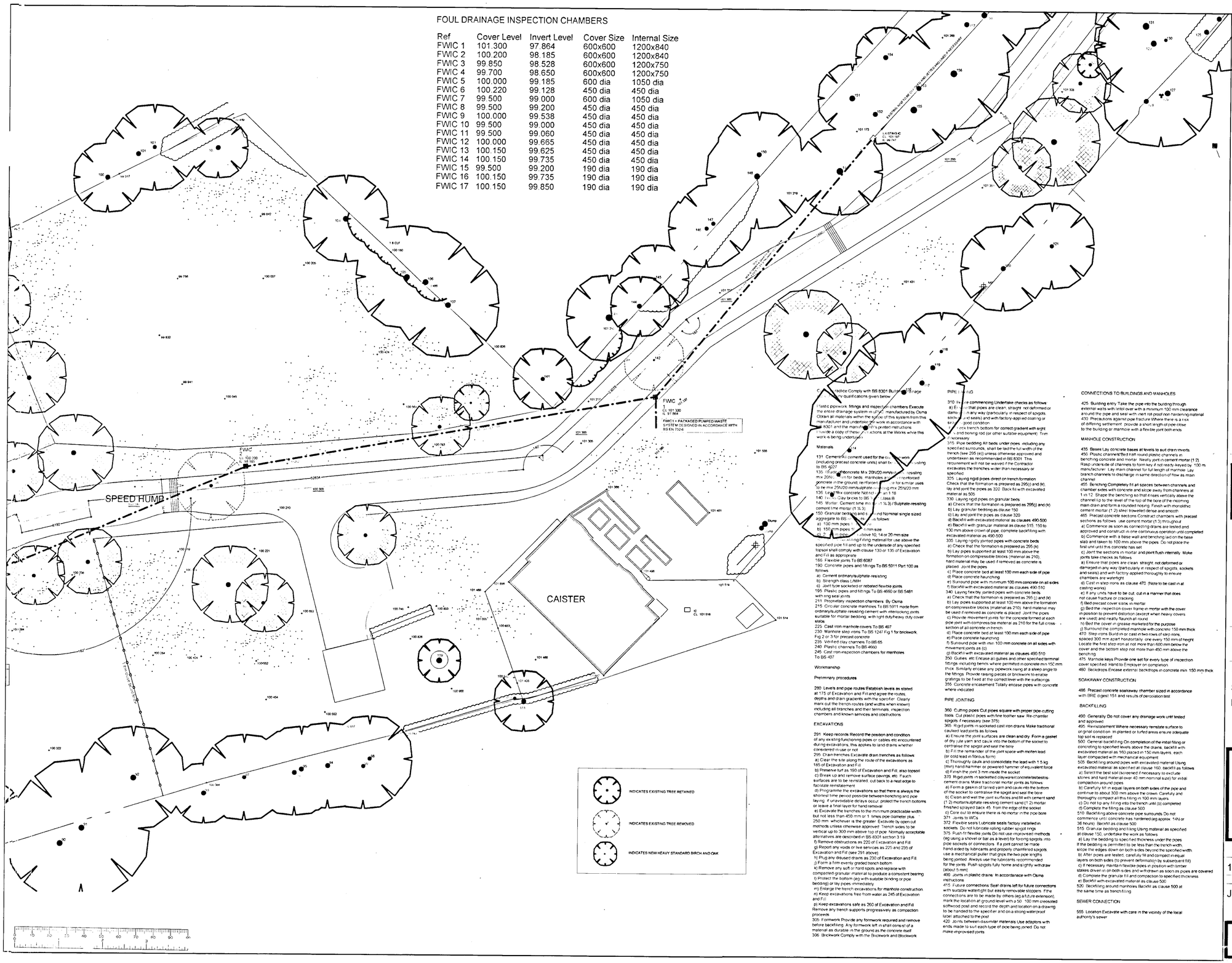
1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01E | B

## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x600 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x600 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x600 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x600 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |




Practice Comply with BS 8301 Building drainage
ly qualifications given below.

Plastic pipework fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Ltd obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken

Materials

131 Cement: All cement used for the concrete work (including precast concrete units) shall be ordinary Portland cement to BS 12.
135 Foundation concrete Mix 20N/20 mm aggregate unless otherwise specified
mix 20N/20 mm aggregate for beds, manholes and reinforced
concrete in the ground, reinforced concrete for similar uses
to be mix 25N/20 mm/sulphate resisting mix 25N/20 mm
136 Lean mix concrete Not less than 1:18
140 Bricks: Clay bricks to BS 3921 Class B
145 Mortar: Cement lime mortar (1:½:3) / Sulphate-resisting cement lime mortar (1:½:3)
150 Granular bedding and surround Nominal single sized aggregate to BS
151 Fill (below roadways) as follows
a) 100 mm pipes
b) 150 mm pipes
c) 225 mm pipes
Excavated Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate
166 Flexible joints To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows
a) Cement ordinary/sulphate resisting
b) Strength class (UM)
c) Joint type socketed or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
211 Proprietary inspection chambers By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate-resisting cement with interlocking joints suitable for mortar bedding, with light duty/heavy duty cover slabs
225 Cast iron manhole covers To BS 497
230 Manhole step irons To BS 1247 Fig 1 for brickwork Fig 2 or 3 for precast concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

280 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drain gradients with the specifier. Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions.

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations, this applies to land drains whether considered in use or not
295 Drain trenches Excavate drain trenches as follows
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill, also topsoil
c) Break up and remove surface pavings, etc. If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying. If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal
e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm whichever is the greater. Excavate by open cut methods unless otherwise approved. Trench sides to be vertical up to 300 mm above top of pipe. Normally acceptable alternatives are described in BS 8301 section 3.19
f) Remove obstructions as 220 of Excavation and Fill
g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
j) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable binding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
p) Keep excavations safe as 260 of Excavation and Fill
Remove any trench supports progressively as compaction proceeds
305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself
306 Brickwork Comply with the Brickwork and Blockwork

PIPE LAYING

310 Before commencing Undertake checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating or sealing in good condition
b) Trench bottom Trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary
315 Pipe bedding All beds under pipes, including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified
325 Laying rigid pipes direct on trench formation Check that the formation is prepared as 295(i) and (k), lay and joint the pipes as 320. Back fill with excavated material as 505
330 Laying rigid pipes on granular beds
a) Check that the formation is prepared as 295(i) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490,500
e) Backfill with granular material as clause 515, 150 to 100 mm above crown of pipe, complete backfilling with excavated material as 490,500
335 Laying rigidly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes
c) Place concrete bed at least 100 mm each side of pipe
d) Place concrete haunching
e) Surround pipe with minimum 100 mm concrete on all sides
f) Backfill with excavated material as clauses 490,510
340 Laying flexibly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490,510
350 Gullies etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surroundings
355 Concrete encasement Totally encase pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw. Re-chamfer spigots if necessary (see 375)
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form)
c) Thoroughly caulk and consolidate the lead with 1.5 kg (min) hand hammer or powered hammer of equivalent force
d) Finish the joint 3 mm inside the socket
370 Rigid joints in socketed clay/vitrified concrete/asbestos-cement drains Make traditional mortar joints as follows
a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Clean and wet the joint surfaces and fill with cement sand (1: 2) mortar/sulphate-resisting cement/sand (1: 2) mortar finished splayed back 45 from the edge of the socket
c) Core out to ensure there is no mortar in the pipe bore
371 Joints to WCs
372 Flexible seals Lubricate seals factory installed in sockets. Do not lubricate rolling rubber spigot rings
375 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm)
400 Joints in plastic drains In accordance with Osma instructions.
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension), mark the location at ground level with a 50 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintol over with a minimum 100 mm clearance around the pipe and seal with inert rot-proof non-hardening material
430 Precautions against pipe fracture Where there is a risk of differing settlement provide a short length of pipe close to the building or manhole with a flexible joint both ends

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts
450 Plastic channels Bed half round plastic channels in benching concrete and mortar. Neatly joint in cement mortar (1:2) Raise under side of channels to form key if not neatly levied by 100 m manufacturer. Lay main channel for full length of manhole. Lay branch channels to discharge in same direction of flow as main channel
455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12. Shape the benching so that it rises vertically above the channel up to the level of the top of the bore of the incoming main drain and form a rounded nosing. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth
465 Precast concrete sections Construct chambers with precast sections as follows use cement mortar (1:3) throughout
a) Commence as soon as connecting drains are tested and approved and construct in one continuous operation until completed
b) Commence with a base wall and benching laid on the base slab and taken to 100 mm above the pipes. Do not place the first unit until this concrete has set
c) Joint the sections in mortar and point flush internally. Make joints take checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with applied thoroughly to ensure chambers are watertight
d) Cast in step irons as clause 470. (Note to be cast in at casting works)
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking
f) Bed precast cover slabs in mortar
g) Bed the inspection cover frame in mortar with the cover in position to prevent distortion (when heavy covers are used) and neatly flaunch all round
h) Bed the cover in grease marketed for the purpose
j) Surround the completed manhole with concrete 150 mm thick
470 Step irons Build in or cast in two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm of height. Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching
475 Manhole keys Provide one set for every type of inspection cover specified. Hand to Employer on completion
480 Backdrops Encase external backdrops in concrete min. 150 mm thick

SOAKAWAY CONSTRUCTION

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

490 Generally Do not cover any drainage work until tested and approved
495 Reinstatement Where necessary reinstate surface to original condition. In planted or turfed areas ensure adequate top soil is replaced
500 General backfilling On completion of the initial filling or concreting to specified levels above the drains, backfill with excavated material as 160 placed in 150 mm layers, each layer compacted with mechanical equipment
505 Backfilling around pipes with excavated material Using excavated material as specified at clause 160, backfill as follows
a) Select the best soil (screened if necessary to exclude stones) and hand material over 40 mm nominal size) for initial compaction around pipes
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown. Carefully and thoroughly compact all this filling in 100 mm layers
c) Do not by any filling into the trench until (b) completed
d) Complete the filling as clause 500
510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx. 14d or 36 hours). Backfill as clause 500
515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows
a) Lay the bedding to specified thickness under the pipes if the bedding is permitted to be less than the trench width, slope the edges down on both sides beyond the specified width
b) After pipes are tested, carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill)
c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered
d) Complete the granular fill and compaction to specified thickness
e) Backfill with excavated material as clause 500.
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling

SEWER CONNECTION

555 Location Excavate with care in the vicinity of the local authority's sewer

## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-
3a. SVP vented through the roof are annotated thus :- S. other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-
5. Retained Trees shown thus :-
6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

| | | |
|---|---|---|
| B | 14/02/03 | BOUNDARY TREATMENTS INDICATED |
| A | 16/12/02 | TENDER ISSUE |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PLANS TO MEET CONDITIONS
5327

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Finchampstead

Site Layout MID

15 FEB 2003

1:200 @ A1

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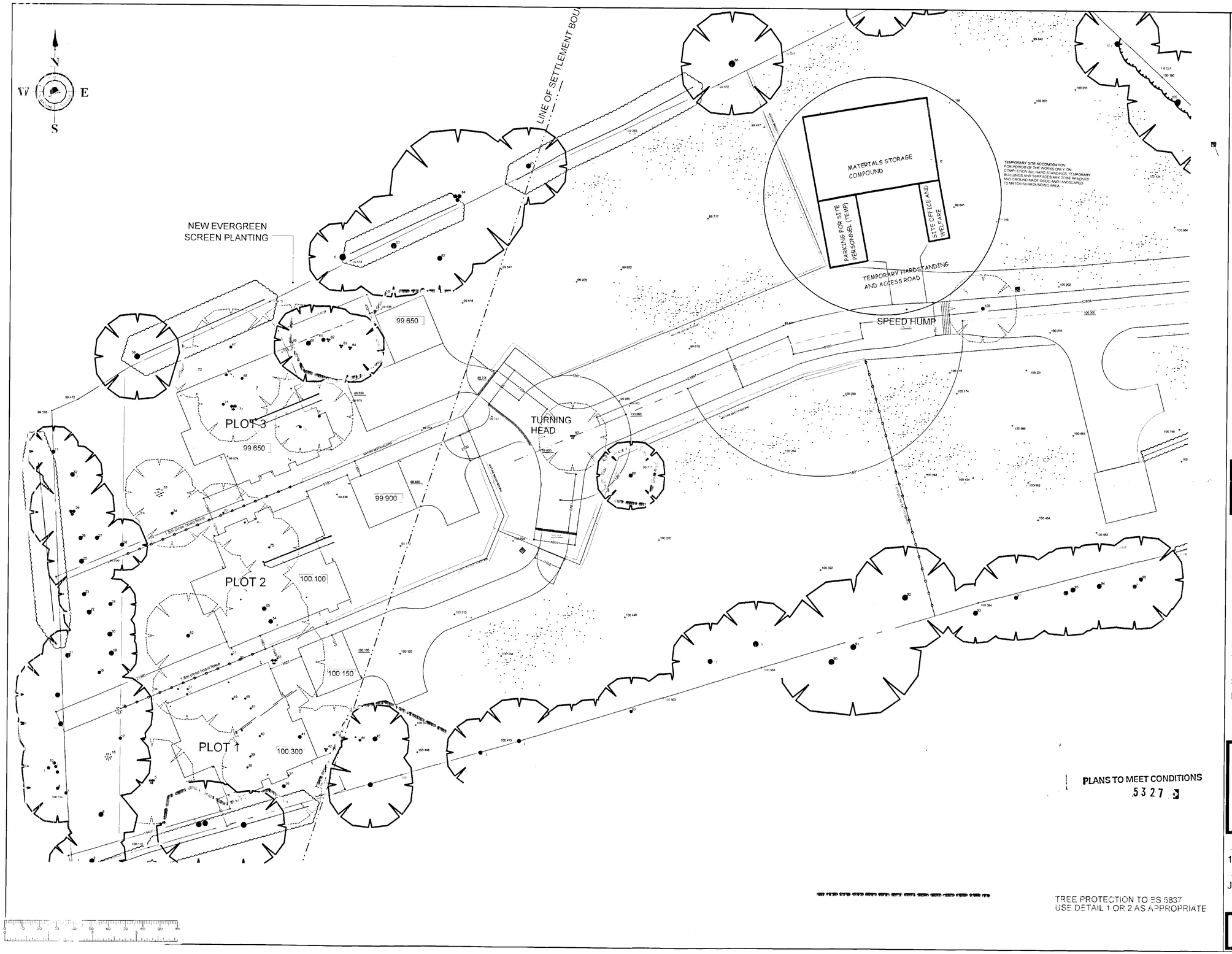
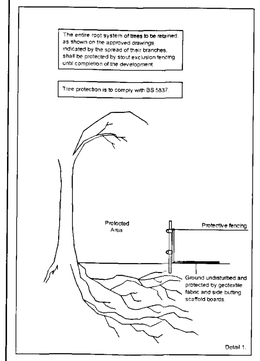
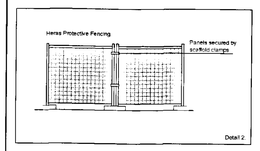
DP/280/SITE/01MID | B

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Beckbridge Ltd

Caister

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Finchampstead

15 FEB 2003

COPIES TO

TEMPORARY SITE WORKS

1:200 @ A1

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DP/280/SITE/02 | -

N
W E
S

LINE OF SETTLEMENT BOU

NEW EVERGREEN
SCREEN PLANTING

MATERIALS STORAGE
COMPOUND

PARKING FOR SITE
PERSONNEL (TEMP)

SITE OFFICE AND
WELFARE

TEMPORARY SITE ACCOMODATION
FOR PERIOD OF THE WORKS ONLY ON
COMPLETION ALL HARD STANDINGS, TEMPORARY
BUILDINGS AND SURFACES ARE TO BE REMOVED
AND GROUND MADE GOOD AND LANDSCAPED
TO MATCH SURROUNDING AREA

TEMPORARY HARDSTANDING
AND ACCESS ROAD

SPEED HUMP

TURNING
HEAD

PLOT 3

PLOT 2

PLOT 1

99.650

99.900

100.100

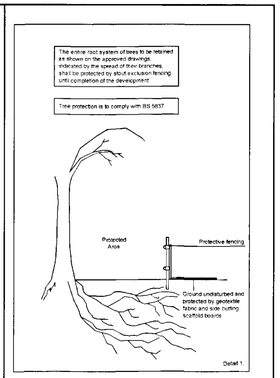
100.150

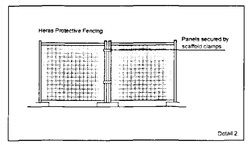
100.300

1.8m close board fence

PLANS TO MEET CONDITIONS
5327

TREE PROTECTION TO BS 5837
USE DETAIL 1 OR 2 AS APPROPRIATE





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TEMPORARY SITE WORKS

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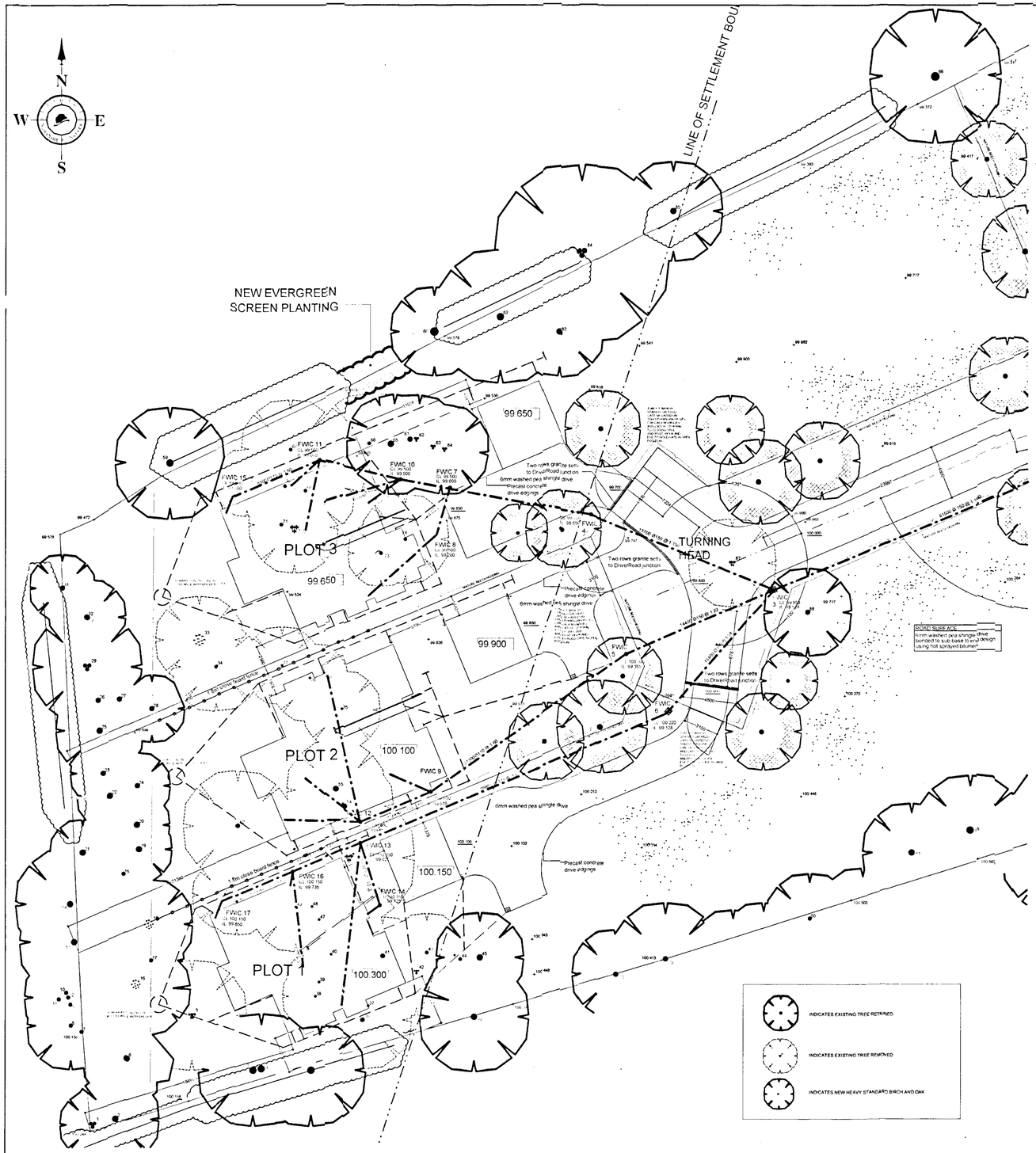


## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x500 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x500 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x500 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x500 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
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| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

Code of practice Comply with BS 8301 Building Drainage subject to any qualifications given below

Plastic pipework, fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken.

Materials

131 Cement All cements used for the drainage work (excluding precast concrete units) shall be sulphate-resisting to BS 4027.
135 Grade of concrete Mix 20N/20 mm/sulphate-resisting mix 20N/20 mm for beds, manholes and other reinforced concrete in the ground; reinforced concrete for lintelar uses to be mix 25N/20 mm/sulphate resisting mix 25N/20 mm
136 Lean mix concrete Not richer than 1:18
140 Bricks Clay Bricks to BS 3921 Class B
145 Mortar Cement lime mortar (1¼:3) / Sulphate resisting cement lime mortar (1¼:3)
150 Granular bedding and surround Nominal single sized aggregate to BS 882 Table 4, as follows
a) 100 mm pipes 10 mm size
b) 150 mm pipes 10 or 14 mm size
c) 200 mm pipes and above 10, 14 or 20 mm size
160 General backfilling Filling material for use above the specified pipe bed and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Execution and Fill as appropriate.
166 Flexible joints To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows
a) Cement ordinary/sulphate-resisting
b) Strength class LM4
c) Joint type socketed or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
210 Proprietary inspection chambers By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate-resisting cement with interlocking joints suitable for mortar bedding, with light duty/heavy duty cover slabs
225 Cast iron manhole covers To BS 497
230 Manhole step irons To BS 1247 Fig 1 for brickwork Fig 2 or 3 for precast concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

280 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes depths and drain gradients with the specifier. Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions.

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations, this applies to land drains whether considered in use or not.
295 Drain trenches Excavate drain trenches as follows
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill. also topsoil
c) Break up and remove surface pavings, etc. If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement.
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying. If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal.
e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm, whichever is the greater. Excavate by open cut methods unless otherwise approved. Trench sides to be vertical up to 300 mm above top of pipe. Normally acceptable alternatives are described in BS 8301 section 3.13
f) Remove obstructions as 220 of Excavation and Fill
g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
j) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable binding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
p) Keep excavations safe as 260 of Excavation and Fill. Remove any trench supports progressively as compaction proceeds
305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself.

PIPE LAYING

310 Before commencing Undertake checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating or seals in good condition
b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary
315 Pipe bedding All beds under pipes, including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified.
325 Laying rigid pipes direct on trench formation Check that the formation is prepared as 295(j) and (k), lay and joint the pipes as 320. Back fill with excavated material as 505.
330 Laying rigid pipes on granular beds
a) Check that the formation is prepared as 295(j) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490 500
e) Backfill with granular material as clause 515, 150to 100 mm above crown of pipe, complete backfilling with excavated material as 490 500
335 Laying rigidly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210); hard material may be used if removed as concrete is placed. Joint the pipes.
c) Place concrete bed at least 100 mm each side of pipe
d) Place concrete haunching
e) Surround pipe with minimum 100 mm concrete on all sides.
f) Backfill with excavated material as clauses 490 510
340 Laying flexibly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210); hard material may be used if removed as concrete is placed. Joint the pipes.
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete encasement.
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490 510
350 Gullies etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surfacings.
355 Concrete encasement Totally encase pipes with concrete where indicated.

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw. Re-chamfer spigots if necessary (see 375).
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows:
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore.
b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form).
c) Thoroughly caulk and consolidate the lead with 1.5 kg (mm) hand hammer or powered hammer of equivalent force.
d) Finish the joint 3 mm inside the socket.
370 Rigid joints in socketed clay/wrenconcrete/asbestos-cement drains Make traditional mortar joints as follows:
a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore.
b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/sulphate-resisting cement sand (1:2) mortar finished splayed back 45 from the edge of the socket.
c) Core out to ensure there is no mortar in the pipe bore.
371 Joints to WCs
372 Flexible seals Lubricate seals factory installed in sockets. Do not Lubricate rolling rubber spigot rings.
375 Push fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm).
400 Joints in plastic drains In accordance with Osma instructions.
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension), mark the location at ground level with a 50 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post.
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints.

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with unbroken bedding and jointing, and with a minimum 100 mm clearance around the pipe. Provide a flexible seal with mastic or non-hardening compound. Precautions required where there is a risk of differing settlement, provide a short length of pipe close to the building or manhole with a flexible joint both ends.

MANHOLE CONSTRUCTION

435 Base Lay concrete bases to levels to suit drain inverts.
450 Plastic channels Bed half-round plastic channels in benching concrete, and mortar. Neatly point in cement mortar (1:3). Keep underside of channels to formula very not less than 10 mm. Reduce thickness to formula very not less than 5 mm at manufacturer's discretion. Lay main channel for full length of manhole. Lay branch channels to discharge at same direction of flow as main channel.
455 Benching Completely fill all spaces between channels and chamber walls with concrete. Slope benching from channels at 1 in 12. Shape the benching so that it rises vertically above the channel to the level of the top of the pipe of the highest incoming main drain and forms a rounded haunching. Finish with mortar (1:3) steel trowelled and smooth.
465 Precast concrete benching/chamber Construct chambers with precast sections as follows: use cement mortar (1:3) throughout.
a) Commence as soon as concrete bedding grants are tested and approved and construct in one continuous operation and complete.
b) Commence with a base wall and benching laid on the base slab and taken to 150 mm above the pipes. Do not place the first unit until the concrete has set.
c) Joint the sections in mortar and point flush internally. Make joints take checks as follows:
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating to ensure chambers are watertight.
d) Cast in step irons as clause 470. (Note to be cast in at casting with the)
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking.
f) Bed precast cover slabs in mortar.
g) Bed inspection cover frame in mortar with the cover in position to prevent disturbance (except when heavy covers are used) and then fair finish around.
h) Bed inlet cover in grease laid over the purpose.
i) Surround the completed chamber with concrete 150 mm thick.
470 Step irons Build in, or cast in, two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm of height. Locate the first step not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching.
475 Manhole keys Provide one set for every type of inspection cover specified. Hand to engineer on completion.
480 Backdrops Encase external backdrops in concrete (min 150 mm thick).

SOAKAWAY CONSTRUCTION

496 Precast concrete soakaway chamber Size in accordance with BRE digest 151 and results of percolation test.

BACKFILLING

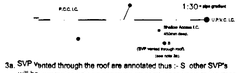
490 Generally Do not cover any drainage work until tested and approved.
495 Reinstatement Where necessary reinstate surface to original condition, as placed or 'fixed joints ensure adequate top soil is replaced.
500 General backfilling On completion of the initial filling of concreting to specified levels allow the drains, backfill with excavated material as 160 placed in 150 mm layers, each layer consolidated with mechanical equipment.
505 Backfilling around pipes with excavated material Using excavated material as specified in clause 160. Backfill as follows:
a) Select the best soil (screened if necessary to exclude stones and hard material over 40 mm nominal size) for initial compacted around pipes.
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown. Carefully and thoroughly compact all this filling in 100 mm layers.
c) Do not ram any timing into the trench until (b) completed.
d) Complete the filling as clause 500.
510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx 12hr or 36 hours). Backfill as clause 500.
515 Granular bedding and filling Using material as specified at clause 150, place the work as follows:
a) Lay the bedding to specified thickness under the pipes if the bedding is formed to be less than the trench wall slope the edges down on both sides beyond the specified width.
b) After pipes are tested, carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill).
c) If necessary maintain flexible pipes in position with temporary grubs which both sides and when pipes are laid as pipes are covered.
d) Complete the granular fill and compaction to specified thickness.
e) Backfill with excavated material as clause 500.
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling.

SEWER CONNECTION

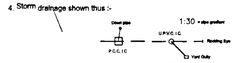
555 Location Excavate with care in the vicinity of the local authority's sewer.

## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP Vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-



6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

| | | |
|---|---|---|
| B | 17/02/03 | BOUNDARY TREATMENTS INDICATED |
| A | 16/12/02 | TENDER ISSUE |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PLANS TO MEET CONDITIONS
5327

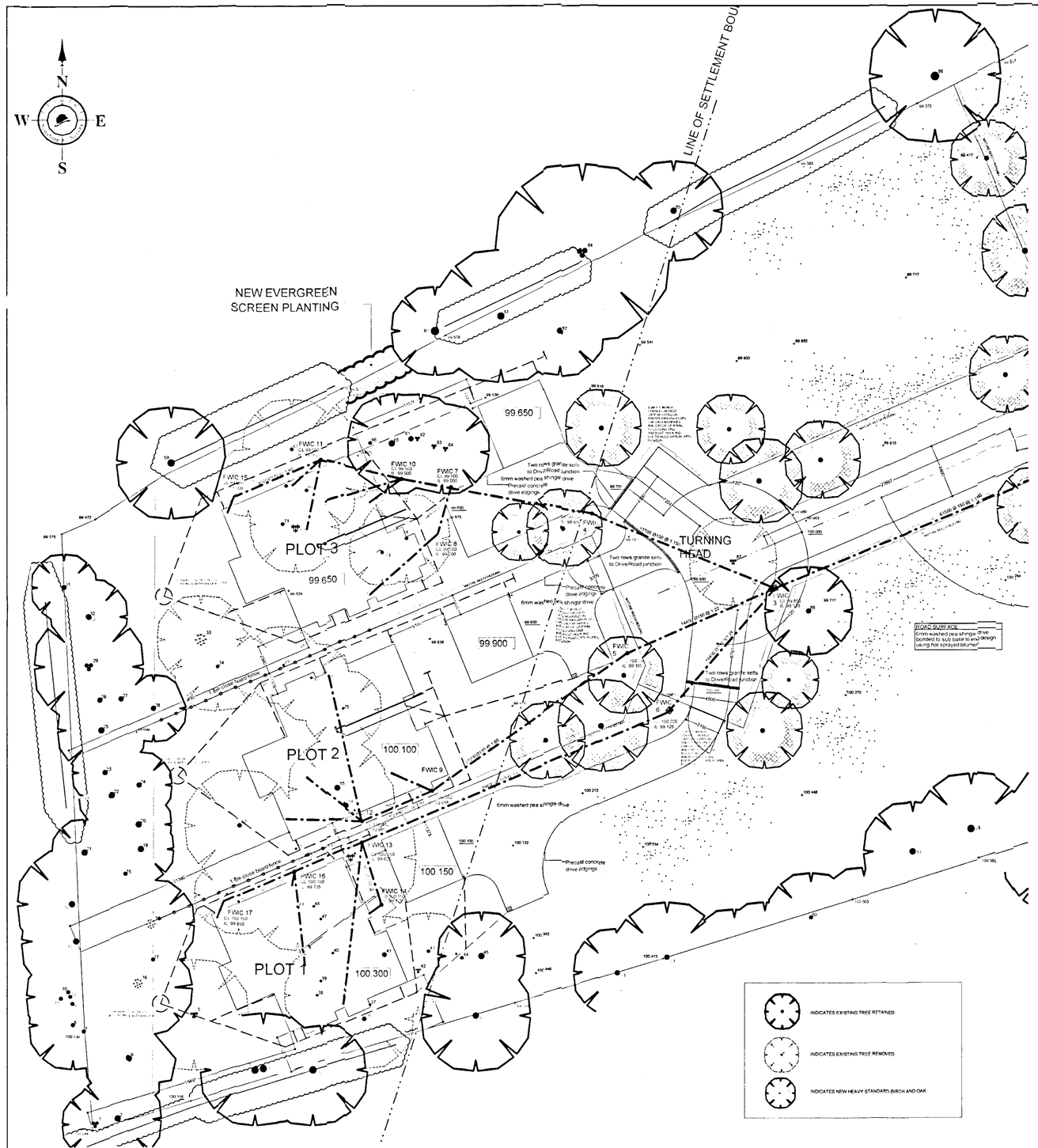
Site Layout WEST



1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01W | B




## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x600 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x600 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x600 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x600 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

Code of practice Comply with BS 8301 Building Drainage subject to any qualifications given below

Plastic pipework, fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions Provide a copy of these instructions at the Works while this work is being undertaken.

Materials

131 Cement All cement used for the drainage work (including precast concrete units) shall be sulphate-resisting to BS 4027

135 Grade of concrete Mix 20N/20 mm/sulphate-resisting mix 20N/20 mm for beds, manholes and other reinforced concrete in the ground, reinforced concrete for similar uses to be mix 25N/20 mm/sulphate-resisting mix 25N/20 mm

136 Lean mix concrete Not richer than 1:18

140 Bricks Clay bricks to BS 3921 Class B

145 Mortar Cement lime mortar (1 ¼ 3) /Sulphate-resisting cement lime mortar (1 ¼ 3)

150 Granular bedding and surround Nominal single sized aggregate to BS 882 Table 4 as follows

a) 10 mm pipes 10 mm size

b) 150 mm pipes 10 or 14 mm size

c) 200 mm pipes and above 10 14 or 20 mm size

160 General backfilling Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate

166 Flexible joints To BS 6087

190 Concrete cradles and fittings To BS 5911 Part 100 as follows

a) Cement ordinary/sulphate-resisting

b) Strength class LIMA

c) Joint type socketed or rebated flexible joints

195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints

211 Proprietary inspection chambers By Osma

215 Circular concrete manholes To BS 5911 made from ordinary/sulphate resisting cement with interlocking joints suitable for manhole bedding, with light duty/heavy duty cover slabs

225 Cast iron manhole covers To BS 497

230 Manhole step irons To BS 1247 Fig 1 for brickwork; Fig 2 or 3 for precast concrete

235 Vitrified clay channels To BS 65

240 Plastic channels To BS 4660

245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

280 Levels and pipe runs Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drain gradients with the specifier. Clearly mark out the trench routes (and widths where known) including all branches and their terminals, inspection chambers and known services and obstructions

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations. This applies to land drains whether considered in use or not

295 Drain trenches Excavate drain trenches as follows

a) Clear the site along the route of the excavations as 185 of Excavation and Fill.

b) Preserve turf as 190 of Excavation and Fill; also topsoil

c) Break up and remove surface pavings etc If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement

d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal

e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm whichever is the greater. Excavate by open cut methods unless otherwise approved. Trench sides to be vertical up to 300 mm above top of pipe. Normally acceptable alternatives are described in BS 8301 section 3.19.

f) Remove obstructions as 220 of Excavation and Fill.

g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above).

h) Plug any disused drains as 230 of Excavation and Fill

j) Form a firm evenly graded trench bottom

k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing

l) Protect the bottom (eg with suitable binding or pipe bedding) or lay pipes immediately

m) Enlarge the trench excavations for manhole construction

n) Keep excavations free from water as 245 of Excavation and Fill

p) Keep excavations safe as 260 of Excavation and Fill Remove any trench supports progressively as compaction proceeds.

305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself.

PIPE LAYING

310 Before commencing Undertake checks as follows

a) Ensure that pipes are clean, straight not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating or seals in good condition.

b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary.

315 Pipe bedding All beds under pipes including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified.

325 Laying rigid pipes direct on trench formation Check that the formation is prepared as 295(j) and (k).

330 Laying rigid pipes on granular beds

a) Check that the formation is prepared as 295(j) and (k)

b) Lay granular bedding as clause 150

c) Lay and joint the pipes as clause 320

d) Backfill with excavated material as clauses 490-500

e) Backfill with granular material as clause 515. 150 to 100 mm above crown of pipe, complete backfilling with excavated material as 490-500

335 Laying rigidly jointed pipes with concrete beds

a) Check that the formation is prepared as 295 (k)

b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes.

c) Place concrete bed at least 100 mm each side of pipe

d) Place concrete haunching

e) Surround pipe with minimum 100 mm concrete on all sides

f) Backfill with excavated material as clauses 490-500

340 Laying flexibly jointed pipes with concrete beds

a) Check that the formation is prepared as 295 (j) and (k)

b) Lay pipes supported at least 100 mm above the formation on compress-ible blocks (material as 210); hard material may be used if removed as concrete is placed. Joint the pipes

c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross section of all concrete in trench

d) Place concrete bed at least 100 mm each side of pipe

e) Place concrete haunching

f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c).

g) Backfill with excavated material as clauses 490 510

350 Gullies, etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surfacings.

355 Concrete encasement Totally encase pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw. Re-chamfer spigots if necessary (see 375).

365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows

a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore.

b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form).

c) Thoroughly caulk and consolidate the lead with 1.5 kg (mm) hand hammer or powered hammer of equivalent force

d) Finish the joint 3 mm inside the socket.

370 Rigid joints in socketed clayware/concrete/asbestos-cement drains Make mechanical rigid joints as follows

a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore

b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/suitable-resisting cement sand (1:2) mortar finished splayed back 45° from the edge of the socket

c) Core out to ensure there is no mortar in the pipe bore

371 Joints to WCs

372 Flexible seals Lubricate seals factory installed in sockets. Do not lubricate rolling rubber spigot rings.

375 Push to flexible joints Do not use unapproved methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-adjacent lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm).

400 Joints in plastic drains In accordance with Osma instructions

415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension), mark the location at ground level with a 50 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post

420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipes into the building through external walls with a unobstructed clearance around the pipe And seal with mortar not cured non-hardening material

430 Precautions against pipe failure Where there is a risk of differential settlement, provide a short length of flexible joint close to the building or manhole with at flexible joint both ends

MANHOLE CONSTRUCTION

435 Base Lay concrete bases at levels to suit drain invert

450 Plastic channels Bed half-round plastic channels in benching concrete and mortar Apply joint in cement mortar (1:2). Raise underside of channel to form sloping invert not richer than 1:10 m manufacturer. Lay main channel for full length of manhole. Lay branch channels to discharge in same direction or flow as main channel.

455 Benching Complete/ fill all spaces between channels and chamber walls with concrete benching to a slope away from channels at 1 in 12. Slope the benching so that it rises vertically above the channel up to the level of the top of the pipe of the incoming main drain and forms a rounded haunching. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth.

465 Precast concrete sections Construct chambers with precast sections as follows, use cement mortar (1:3) throughout

a) Commence as soon as concrete in any granular bed has been placed and cured such that one complete section can be laid.

b) Commence with a base of wall and benching laid on the base slab and taken to 100 mm above the pipes Do not place the first unit until the concrete has set.

c) Joint the sections in mortar And point flush internally. Make joints take checks as follows

a) Ensure that pipes are clean, straight not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory applied coating to ensure chambers are watertight

d) Cast in step irons as clause 470 (Note to be cast in at casting works)

e) If any joints have to be cut, cut in a manner that does not cause fracture or cracking

f) Bed pre-cast concrete cover in mortar

g) Bed pvc inspection cover frame in mortar with the cover in position to prevent absorption of water when heavy covers are used and neatly finish off in mortar

h) Bed pvc cover in grease as marketed for the purpose

j) Surround the completed manhole with concrete 150 mm thick

470 Step irons Build in at 300 mm centres, two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm in height Locate the first step not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching

475 Manhole keys Provide one set for every type of inspection cover specified Hand to Employer on completion.

480 Benching Enclose external backdrops in concrete min 150 mm thick

SOAKAWAY CONSTRUCTION

486 Pipe pit concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

490 Generally Do not cover any drainage work until tested and approved

495 Reinstatement Where necessary reinstate surface to original condition In grassed or turfed areas ensure adequate top soil is replaced

500 General fill Backfill to 0m consistent of the initial filling or compacting to specified levels above the drains. Backfill with excavated material as 160 placed in 150 mm layers, each layer compacted with mechanical equipment

505 Backfilling around pipes with excavated material Using excavated material as specified in clause 160 Backfill as follows

a) Select the best soil, screened if necessary to exclude stones and hard material over 40 mm nominal size for initial compaction around pipes.

b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown. Carefully and thoroughly compact all such filling in 100 mm layers.

c) Do not fill any filling into the trench until (b) completed

d) Complete the filling as Clause 500

510 Backfilling above concrete Pipe surrounds Do not commence until concrete has hardened as above, say 36 hours. Backfill as clause 500.

515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows

a) Lay the bedding to specified thickness under the pipes If the bedding is permitted to be less than the trench width slope the edges down on both sides beyond the specified width

b) After pipes are tested, carefully fill and compact in equal layers on each side to prevent displacement by hammering

c) If necessary maintain pipe/pipe joints in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered

d) Complete the granular fill and compaction to specified thickness

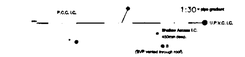
e) Backfill with excavated material as clause 500.

520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling

555 Sewer connection Location Excavate with care in the vicinity of the local authority's sewer.

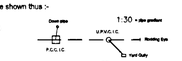
## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP's vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.

4. Storm drainage shown thus :-




5. Retained Trees shown thus :-



6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 48.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

| | | |
|---|---|---|
| B | 17/02/03 | BOUNDARY TREATMENTS INDICATED |
| A | 16/12/02 | TENDER ISSUE |

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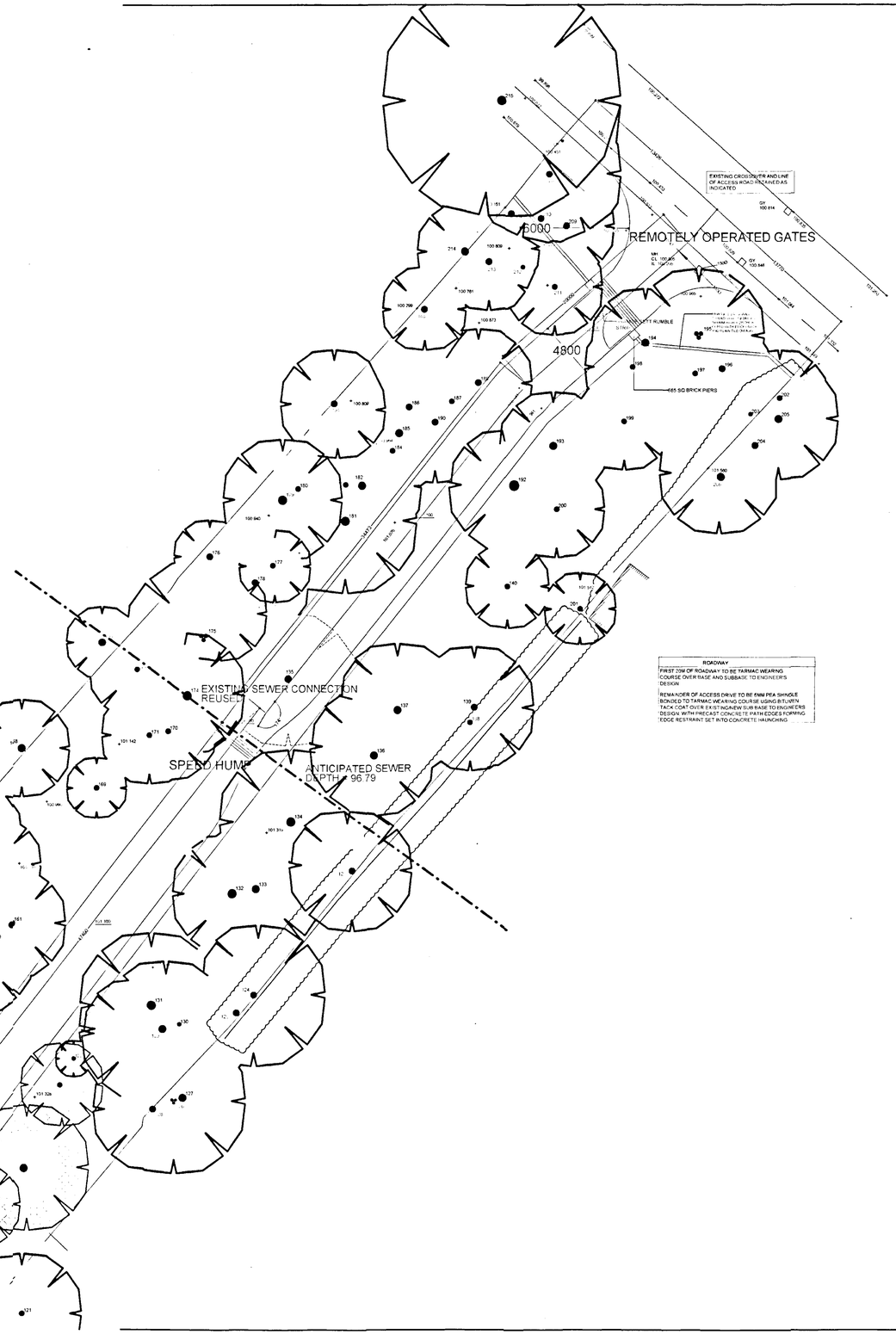
PLANS TO MEET CONDITIONS
5327

Site Layout WEST

1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01W | B




## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x600 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x600 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x600 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x600 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

INDICATES EXISTING TREE RETAINED

INDICATES EXISTING TREE REMOVED

INDICATES NEW HEAVY STANDARD BIRCH AND OAK

Code of practice Comply with BS 8301 Building Drainage subject to any qualifications given below

Plastic pipework fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken

Materials

131 Cement All cement used for the drainage work (including precast concrete units) shall be sulphate-resisting to BS 4027

135 Grade of concrete Mix 20N/20 mm/sulphate-resisting mix 20N/20 mm for beds, manholes and other reinforced concrete in the ground reinforced concrete for similar uses to be mix 25N/20 mm/sulphate-resisting mix 25N/20 mm

136 Lean mix concrete Not richer than 1:18

140 Bricks Clay bricks to BS 3921 Class B

145 Mortar Cement: lime mortar (1 ¼:3) / Sulphate-resisting cement lime mortar (1 ¼:3)

150 Granular bedding and surround Nominal single sized aggregate to BS 882 Table 4, as follows

a) 100 mm pipes 10 mm size

b) 150 mm pipes 10 or 14 mm size

c) 200 mm pipes and above 10, 14 or 20 mm size

160 General backfilling Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate

166 Flexible joints To BS 6087

190 Concrete pipes and fittings To BS 5911 Part 100 as follows

a) Cement ordinary/sulphate-resisting

b) Strength class LM/H

c) Joint type socketed or rebated flexible joints

195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints

211 Proprietary inspection chambers By Osma

215 Circular concrete manholes To BS 5911 made from ordinary/sulphate-resisting cement with interlocking joints suitable for mortar bedding with light duty/heavy duty cover slabs

225 Cast iron manhole covers To BS 497

230 Manhole step irons To BS 1247 Fig 1 for brickwork, Fig 2 or 3 for precast concrete

235 Vitrified clay channels To BS 65

240 Plastic channels To BS 4660

245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

260 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes. Depths and drain gradients with the specifier Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations, this applies to land drains whether considered in use or not

295 Drain trenches Excavate drain trenches as follows

a) Clear the site along the route of the excavations as 185 of Excavation and Fill

b) Preserve turf as 190 of Excavation and Fill also topsoil

c) Break up and remove surface pavings, etc If such surfaces are to be reinstated cut back to a neat edge to facilitate reinstatement

d) Programme the excavations so that there is always the shortest time between trenching and pipe laying If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal

e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm, whichever is the greater Excavate by open-cut methods unless otherwise approved Trench sides to be vertical up to 300 mm above top of pipe Normally acceptable alternatives are described in BS 8301 section 3.19

f) Remove obstructions as 220 of Excavation and Fill

g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)

h) Plug any deposed drains as 230 of Excavation and Fit

j) Form a firm evenly graded trench bottom

a) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing

l) Protect the bottom (eg with suitable binding or pipe bedding) or lay pipes immediately

m) Enlarge the trench excavations for manhole construction

n) Keep excavations free from water as 245 of Excavation and Fill

p) Keep excavations safe as 260 of Excavation and Fill Remove any trench supports progressively as compaction proceeds

305 Formwork Provide any formwork required and remove before backfilling Any formwork left in shall consist of a material as durable in the ground as the concrete itself

306 Brickwork Comply with the Brickwork and Blockwork section Unless otherwise stated, execute all brickwork in bricks and mortar as specified at clause 140 and 145

PIPE LAYING

310 Before commencing Undertake checks as follows

a) Ensure that pipes are clean, straight, not deformed or damaged in any way, particularly in respect of spigots, sockets and seals and with factory-applied coating or seals in good condition

b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary

315 Pipe bedding All beds under pipes, including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified

325 Laying rigid pipes direct on trench formation Check that the formation is prepared as 295(j) and (k) lay and joint the pipes as 320 Back fill with excavated material as 505

330 Laying rigid pipes on granular beds

a) Check that the formation is prepared as 295(j) and (k)

b) Lay granular bedding as clause 150

c) Lay and joint the pipes as clause 320

d) Backfill with excavated material as clauses 490-500

e) Backfill with granular material as clause 515. 150 to 100 mm above crown of pipe, complete backfilling with excavated material as 490-500

335 Laying rigidly jointed pipes with concrete beds

a) Check that the formation is prepared as 295 (j) and (k)

b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed Joint the pipes

c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench

d) Place concrete bed at least 100 mm each side of pipe

e) Place concrete haunching

f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)

g) Backfill with excavated material as clauses 490-510

350 Gullies, etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick Similarly encase any pipework rising at a steep angle to the fittings Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surfacings

355 Concrete encasement Totally encase pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools Cut plastic pipes with fine toothed saw Re-chamfer spigots if necessary (see 375)

365 Rigid joints in socketed clay/vitrified/concrete/asbestos-cement drains Make traditional mortar joints as follows

a) Form a gasket of gasket yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore

b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/sulphate-resisting cement sand (1:2) mortar finished splayed back 45 from the edge of the socket

c) Core out to ensure there is no mortar in the pipe bore

371 Joints to WCs

372 Flexible seals Lubricate seals factory installed in sockets Do not lubricate rolling rubber spigot rings

375 Push-fit flexible joints Do not use unproved methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors If a joint cannot be made hand-added by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed Always use the lubricants recommended for the joints Push spigots fully home and slightly withdraw (about 5 mm)

400 Joints in plastic drains In accordance with Osma instructions

415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers If the connections are to be made by others (eg a future extension) mark the location at ground level with a 50 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post

420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintol over with a minimum 100 mm clearance around the pipe and seal with inert rot proof non-hardening material

430 Precautions against pipe fracture Where there is a risk of differing settlement provide a short length of pipe close to the building or manhole with a flexible joint both ends

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts

450 Plastic channels Bed half-round plastic channels in benching concrete and mortar Neatly joint in cement mortar (1:2) Rasp underside of channels to form key if not ready-keyed by 100 m manufacturer Lay main channel for full length of manhole Lay branch channels to discharge in same direction of flow as main channel

455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12 Shape the benching so that it rises vertically above the channel lip to the level of the top of the bore of the incoming main drain and form a rounded nosing Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth

465 Precast concrete sections Construct chambers with precast sections as follows Use cement mortar (1:3) throughout

a) Commence as soon as connecting drains are tested and approved and construct in one continuous operation until completed

b) Commence with a base well and benching bed on the base slab and taken to 150 mm above the pipes Do not place the first unit until the concrete has set

c) Joint the sections in mortar and point flush internally. Make joints take checks as follows

a) Ensure that pipers are clean, straight not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory applied thoroughly to ensure chambers are watertight

d) Cast in step irons as clause 470 (Note to be cast in at casting works)

e) If any units have to be cut, cut in a manner that does not cause fracture or cracking

f) Bed precast cover slabs in mortar

g) Bed the inspection cover frame in mortar with the cover in position to prevent distortion (except when heavy covers are used) and neatly flaunch all round

h) Bed the cover in grease marketed for the purpose

j) Surround the completed manhole with concrete 150 mm thick

470 Step irons Build in or cast in two rows of step irons, spaced 300 mm apart horizontally one every 150 mm of height Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching

475 Manhole keys Provide one set for every type of inspection cover specified Hand to Employer on completion

480 Backdrops Encase external backdrops in concrete min 150 mm thick

SOAKAWAY CONSTRUCTION

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

490 Generally Do not cover any drainage work until tested and approved

495 Reinstatement Where necessary reinstate surface to original condition In planted or turfed areas ensure adequate top soil is replaced

500 General backfilling On completion of the initial filling or concreting to specified levels above the drains, backfill with excavated material as 160 packed in 150 mm layers, each layer compacted with mechanical equipment

505 Backfilling around pipes with excavated material Using excavated material as specified at clause 160 backfill as follows

a) Select the best soil (screened if necessary to exclude stones and hard material over 40 mm nominal size) for initial compaction around pipes

b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown Carefully and thoroughly compact all this filling in 100 mm layers

c) Do not to any filling into the trench until (b) completed

d) Complete the filling as clause 500

510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx 14h or 36 hours) Backfill as clause 500

515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows

a) Lay the bedding to specified thickness under the pipes If the bedding is permitted to be less than the trench width slope the edges down on both sides beyond the specified width

b) After pipes are tested, carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill)

c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered

d) Complete the granular fill and compaction to specified thickness

e) Backfill with excavated material as clause 500

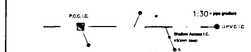
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling

SEWER CONNECTION

555 Location Excavate with care in the vicinity of the local authority's sewer

## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.

4. Storm drainage shown thus :-




5. Retained Trees shown thus :-
6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

B 11/02/03 BOUNDARY TREATMENTS INDICATED
A 16/12/02 TENDER ISSUE

WADP
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PLANS TO MEET CONDITIONS
5327

Beckbridge Ltd

Caister

Sandhurst Road

Finchampstead

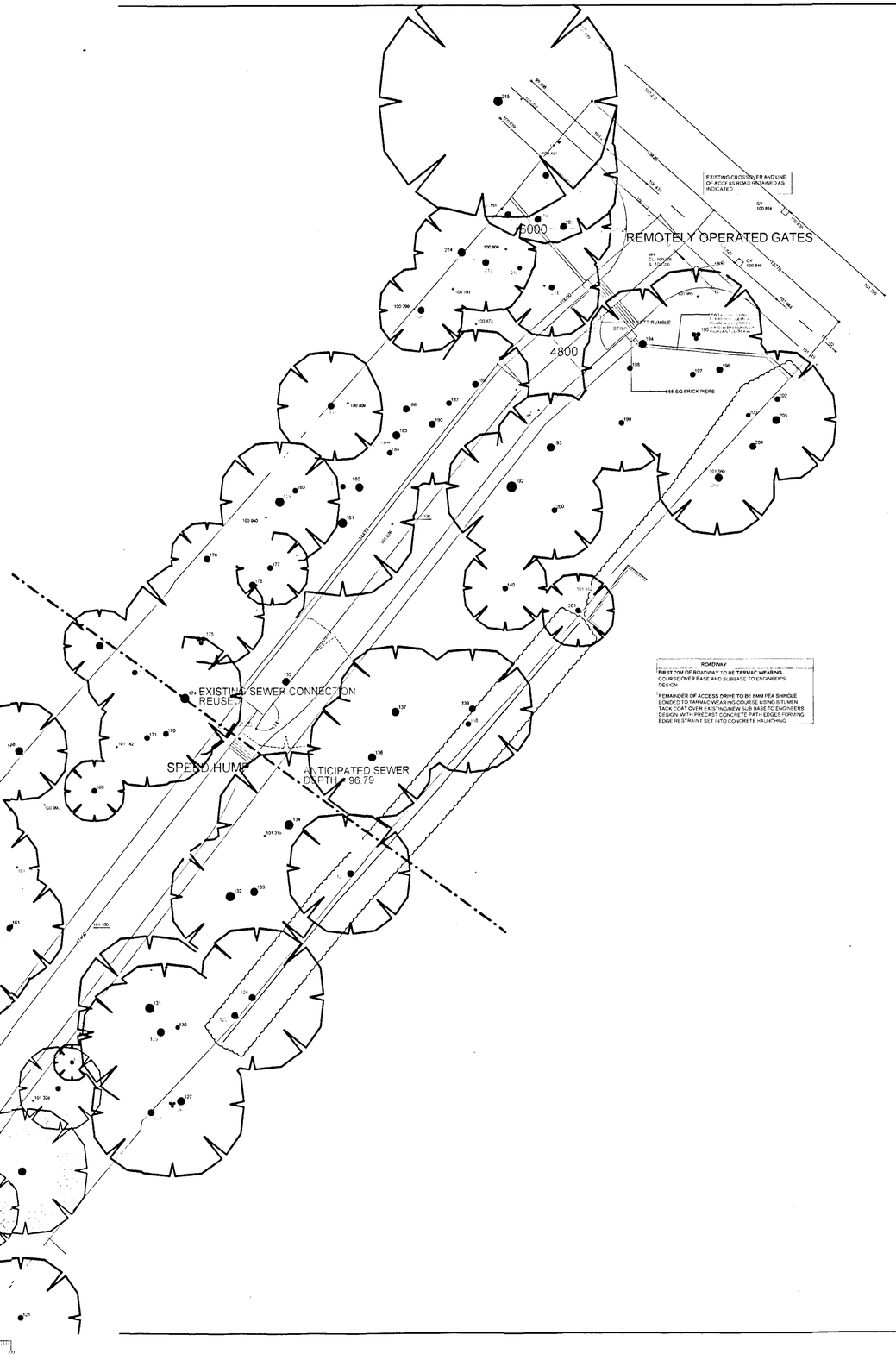
9 FEB 2003

Site Layout EAST

1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01E | B




## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x600 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x600 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x600 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x600 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

Code of practice Comply with BS 8301 Building Drainage subject to any qualifications given below

Plastic pipework fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Ozlam all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken

Materials

131 Cement All cement used for the drainage work (including precast concrete units) shall be sulphate-resisting to BS 4027
135 Grade of concrete Mix 20N/20 mm/sulphate-resisting mix 20N/20 mm for beds, manholes and other reinforced concrete in the ground reinforced concrete for similar uses to be mix 25N/20 mm/sulphate-resisting mix 25N/20 mm
136 Lean mix concrete Not richer than 1 18
140 Bricks Clay bricks to BS 3921 Class B
145 Mortar Cement lime mortar (1 ¼ 3) / Sulphate-resisting cement lime mortar (1 ¼ 3)
150 Granular bedding and surround Nominal single sized aggregate to BS 882 Table 4, as follows
a) 100 mm pipes 10 mm size
b) 150 mm pipes 10 or 14 mm size
c) 200 mm pipes and above 10 14 or 20 mm size
160 General backfilling Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate
166 Flexible joints To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows
a) Cement ordinary/sulphate-resisting
b) Strength class UNH
c) Joint type socketed or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
211 Proprietary inspection chambers By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate-resisting cement with interlocking joints suitable for mortar bedding with light duty/heavy duty cover slabs
225 Cast iron manhole covers To BS 497
230 Manhole step irons To BS 1247 Fig 1 for brickwork Fig 2 or 3 for precast concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

280 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drain gradients with the specifier Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations, this applies to land drains whether considered in use or not
295 Drain trenches Excavate drain trenches as follows
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill, also topsoil
c) Break up and remove surface pavings etc If such surfaces are to be reinstated cut back to a neat edge to facilitate reinstatement
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal
e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe diameter plus 250 mm whichever is the greater Excavate by open cut methods unless otherwise approved Trench sides to be vertical up to 300 mm above top of pipe Normally acceptable alternatives are described in BS 8301 section 3 19
f) Remove obstructions as 220 of Excavation and Fill
g) Support any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
j) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable blinding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
p) Keep excavations safe as 260 of Excavation and Fill Remove any trench supports progressively as compaction proceeds
305 Formwork Provide any formwork required and remove before backfilling Any formwork left in shall consist of a material as durable in the ground as the concrete itself
306 Brickwork Comply with the Brickwork and Blockwork section Unless otherwise stated execute all brickwork in bricks and mortar as specified at clause 140 and 145

PIPE LAYING

310 Before commencing Undertake checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating or seals in good condition
b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment) Trim if necessary
315 Pipe bedding All beds under pipes, including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301 This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified
325 Laying rigid pipes, direct on trench formation Check that the formation is prepared as 295(j) and (k), lay and joint the pipes as 320 Back fill with excavated material as 335
330 Laying rigid pipes on granular beds
a) Check that the formation is prepared as 295(j) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490-500
e) Backfill with granular material as clause 515 150 to 100 mm above crown of pipe complete backfilling with excavated material as 490-500
335 Laying rigidly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed Joint the pipes
c) Place concrete bed at least 100 mm each side of pipe
d) Place concrete haunching
e) Surround pipe with minimum 100 mm concrete on all sides
f) Backfill with excavated material as clauses 490 510
340 Laying flexibly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed Joint the pipes
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490 510
350 Gullies etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick Similarly encase any pipework rising at a steep angle to the fittings Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surfacings
355 Concrete encasement Totally encase pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools Cut plastic pipes with fine toothed saw Re-chamfer spigots if necessary (see 375)
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows
a) Ensure the joint surfaces are clean and dry Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form)
c) Thoroughly caulk and consolidate the lead with 1 5 kg (min) hand hammer or powered hammer of equivalent force
d) Finish the joint 3 mm inside the socket
370 Rigid joints in socketed clay/vitrified concrete/asbestos-cement drains Make traditional mortar joints as follows
a) Form a gasket of tarred hemp and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Clean and wet the joint surfaces and fill with cement sand (1 2) mortar/sulphate-resisting cement sand (1 2) mortar finished splayed back 45 from the edge of the socket
c) Core out to ensure there is no mortar in the pipe bore
371 Joints to WCs
372 Flexible seals Lubricate seals factory installed in sockets Do not lubricate rolling rubber spigot rings
375 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors If a joint cannot be made hand-tested by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed Always use the lubricants recommended for the joints Push spigots fully home and slightly withdraw (about 5 mm)
400 Joints in plastic drains In accordance with Osma instructions
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers If the connections are to be made by others (eg a future extension) mark the location at ground level with a 50 100 mm oversized softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintol over with a minimum 100 mm clearance around the pipe and seal with inert rot-proof non-hardening material
430 Precautions against pipe fracture Where there is a risk of differing settlement, provide a short length of pipe close to the building or manhole with a flexible joint both ends

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts
450 Plastic channels Bed half-round plastic channels in benching concrete and mortar Neatly joint in cement mortar (1 2)
Rasp underside of channels to form key if not ready keyed by 100 m manufacturer Lay main channel for full length of manhole Lay branch channels to discharge in same direction of flow as main channel
455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12 Shape the benching so that it rises vertically above the channel lip to the level of the top of the bore of the incoming main drain and form a rounded nosing Finish with monolithic cement mortar (1 2) steel trowelled dense and smooth
465 Precast concrete sections Construct chambers with precast sections as follows Use cement mortar (1 3) throughout
a) Commence as soon as connecting drains are tested and approved and construct in one continuous operation until completed
b) Commence with a base wall and benching laid on the base slab and taken to 100 mm above the pipes Do not place the final unit until the concrete has set
c) Joint the sections in mortar and point flush internally Make joints take checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied thoroughly to ensure chambers are watertight
c) Cast in step irons as clause 470 (Note to be cast in at casting works)
e) If any units have to be cut cut in a manner that does not cause fracture or cracking
f) Bed precast cover slabs in mortar
g) Bed the inspection cover frame in mortar with the cover in position to prevent distortion (except when heavy covers are used) and neatly fillet in all round
h) Rest the cover in grease marketed for the purpose
j) Surround the completed manhole with concrete 150 mm thick
470 Step irons Build in or cast in two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm of height Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching
475 Manhole keys Provide one set for every type of inspection cover specified Hand to Employer on completion
480 Backdrops Enclose external backdrops in concrete min 150 mm thick

SOAKAWAY CONSTRUCTION

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

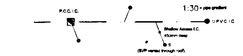
490 Generally Do not cover any drainage work until tested and approved
495 Reinstatement Where necessary reinstate surface to original condition In planted or turfed areas ensure adequate top soil is replaced
500 General backfilling On completion of the initial filling or concreting to specified levels above the drains, backfill with excavated material as 160 placed in 150 mm layers each layer compacted with mechanical equipment
505 Backfilling around pipes with excavated material Using excavated material as specified at clause 160, backfill as follows
a) Select the best soil (screened if necessary to exclude stones and hard material) over 40 mm nominal size) for initial compaction around pipes
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown Carefully and thoroughly compact all this filling in 100 mm layers
c) Do not tip any filling into the trench until (b) completed
d) Complete the filling as clause 500
510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx 14N or 36 hours) Backfill as clause 502
515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows
a) Lay the bedding to specified thickness under the pipes If the bedding is permitted to be less than the trench width slope the edges down on both sides beyond the specified width
b) After pipes are tested, carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill)
c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered
d) Complete the granular fill and compaction to specified thickness
e) Backfill with excavated material as clause 500
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling

SEWER CONNECTION

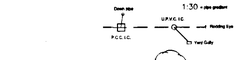
555 Location Excavate with care in the vicinity of the local authority's sewer

## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-
6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

B 14.05.03 BOUNDARY TREATMENTS INDICATED
A 10.12.02 TENDER ISSUE

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PLANS TO MEET CONDITIONS

5327 J

Beckbridge Ltd

Caister

Sandhurst Road

Finchampstead

PLANNING DEPARTMENT
RECEIVED
17 FEB 2003
ACKNOWLEDGED

Site Layout EAST

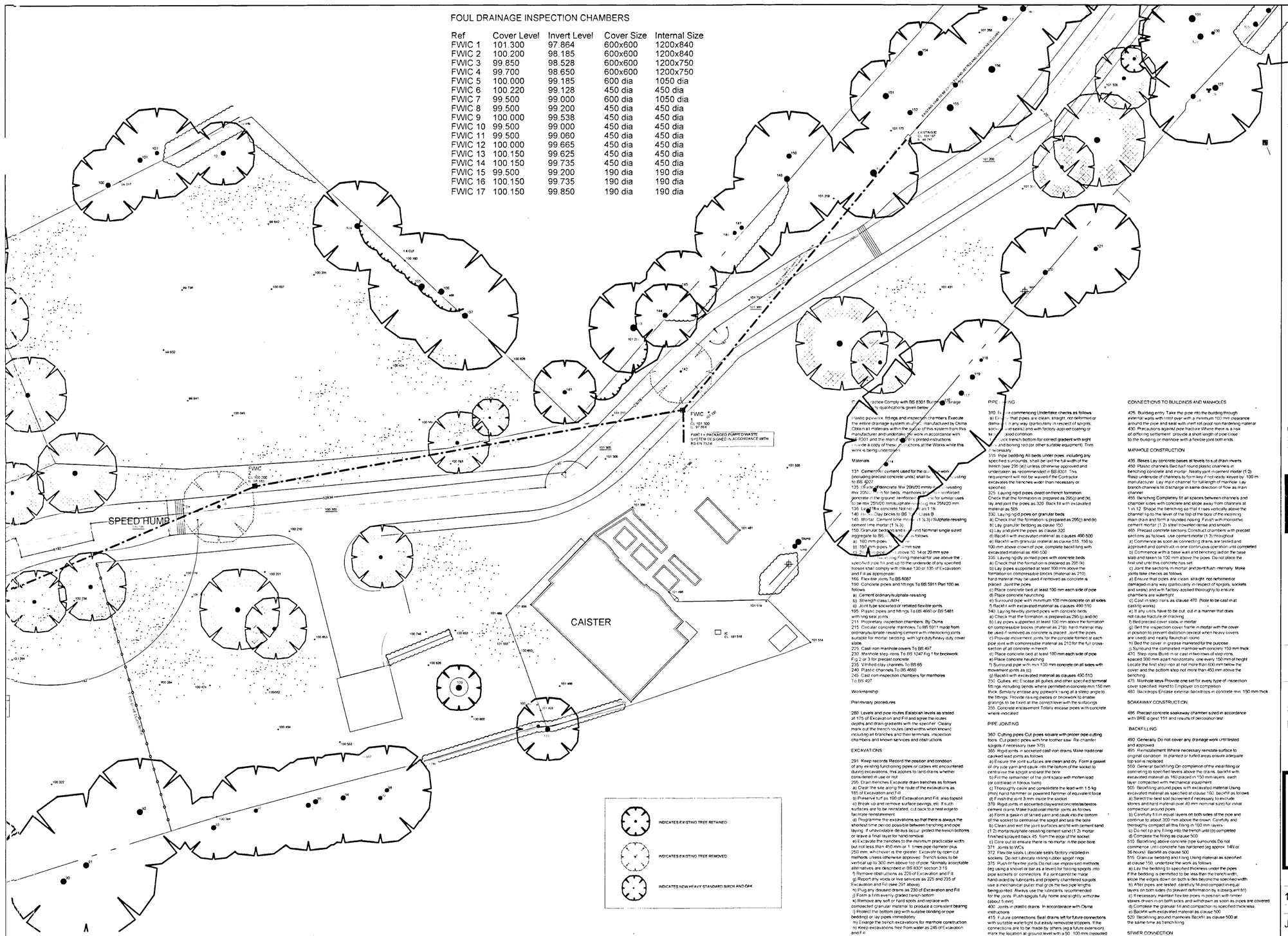
1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01E | B

## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x600 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x600 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x600 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x600 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

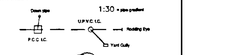



## NOTES.

1. No variation or amendment shall be made to the detail on this plan without the prior approval of the Estate Engineering Manager.
2. This Drawing is to be read in conjunction with all other relevant details and sections, as listed on the Drawing schedules.
3. Foul drainage shown thus :-




3a. SVP vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-



6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
11. Proposed final finished levels shown thus :- + 47.00
12. External Lighting shown thus :-
13. Front doors of all Ground Floor Plots to have flush thresholds, constructed in accordance with the approved Architects detail.
14. Full height kerb with 100mm face annotated thus :- F.H.K.

b 14/02/03 BOUNDARY TREATMENTS INDICATED
A 16/12/02 TENDER ISSUE

C... Machine Comply with BS 8301 Building drainage
... qualifications given below

Plastic pipework, fittings and inspection chambers Execute the entire drainage system in uPVC manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions. Provide a copy of these instructions at the Works while this work is being undertaken

Materials

131 Cement Ordinary cement used for the ... work (including precast concrete units) shall be ... sulting to BS 4027
135 Ready mixed concrete Mix 20N/20 mm/slump ... resisting mix 20N/20 mm for beds, manholes and ... reinforced concrete in the ground reinforced ... for similar uses to be mix 25N/20 mm/slump ... ing mix 25N/20 mm
136 Lean mix concrete Not ... than 1:18
140 Bricks Clay bricks to BS ... Class B
145 Mortar Cement lime mortar (1:¼:3) / Sulphate-resisting cement lime mortar (1:¼:3)
150 Granular bedding and ... and Nominal single sized aggregate to BS ... as follows
a) 100 mm pipes ... mm size
b) 150 mm pipes ... mm size
c) ... above 10, 14 or 20 mm size
160 Excavated selected ... Filling material for use above the ... specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate
166 Flexible joints To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows
a) Cement ordinary/sulphate-resisting
b) Strength class L/M/H
c) Joint type socketed or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
211 Proprietary inspection chambers By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate resisting cement with interlocking joints suitable for mortar bedding with light duty/heavy duty cover slabs
225 Cast iron manhole covers To BS 497
230 Manhole step irons To BS 1247 Fig 1 for brickwork Fig 2 or 3 for precast concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

280 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drain gradients with the specifier Clearly mark out the trench routes (and widths when known) including all branches and their terminals, inspection chambers and known services and obstructions

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations, this applies to land drains whether considered in use or not
295 Drain trenches Excavate drain trenches as follows
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill, also topsoil
c) Break up and remove surface pavings, etc If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal
e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe outside diameter plus 250 mm, whichever is the greater. Excavate by open cut methods unless otherwise approved. Trenches to be vertical up to 300 mm above top of pipe Normally acceptable alternatives are described in BS 8301 section 3.19
f) Remove obstructions as 220 of Excavation and Fill
g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
j) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable blinding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
p) Keep excavations safe as 260 of Excavation and Fill Remove any trench supports progressively as compaction proceeds
305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself
306 Brickwork Comply with the Brickwork and Blockwork

PIPE ... ING

310 ... commencing Undertake checks as follows
a) Ex... that pipes are clean, straight, not deformed or dama... in any way (particularly in respect of spigots, soc... and seals) and with factory-applied coating or ... good condition
... brick trench bottom for correct gradient with sight ... and boning rod (or other suitable equipment). Trim ... necessary
315 Pipe bedding All beds under pipes, including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified
325 Laying rigid pipes direct on trench formation Check that the formation is prepared as 295(j) and (k), lay and joint the pipes as 320 Back fill with excavated material as 505
330 Laying rigid pipes on granular beds
a) Check that the formation is prepared as 295(j) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490-500
e) Backfill with granular material as clause 515. 150 to 100 mm above crown of pipe, complete backfilling with excavated material as 490-500
335 Laying rigidly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed Joint the pipes.
c) Place concrete bed at least 100 mm each side of pipe
d) Place concrete haunching
e) Surround pipe with minimum 100 mm concrete on all sides
f) Backfill with excavated material as clauses 490-510
340 Laying flexibly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210) hard material may be used if removed as concrete is placed Joint the pipes.
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490-510
350 Gullies etc Encase all gullies and other specified terminal fittings including bends where permitted in concrete min 150 mm thick Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surroundings
355 Concrete encasement Totally encase pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw Re-chamfer spigots if necessary (see 375)
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form)
c) Thoroughly caulk and consolidate the lead with 1.5 kg (min) hand hammer or powered hammer of equivalent force
d) Finish the joint 3 mm inside the socket
370 Rigid joints in socketed clay ware/concrete/asbestos-cement drains Make traditional mortar joints as follows
a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/polymer resistant cement sand (1:2) mortar finished splayed back 45 from the edge of the socket
c) Core out to ensure there is no mortar in the pipe bore
371 Joints to WCs
372 Flexible seals Lubricate seals factory installed in sockets. Do not lubricate resting rubber spigot rings
375 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm)
400 Joints in plastic drains In accordance with Osma instructions
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension) mark the location at ground level with a 50 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintel over with a minimum 100 mm clearance around the pipe and seal with inert roll proof non-hardening material
430 Precautions against pipe fracture Where there is a risk of differing settlement provide a short length of pipe close to the building or manhole with a flexible joint both ends.

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts
450 Plastic channels Bed half-round plastic channels in benching concrete and mortar Neatly point in cement mortar (1:2) Rake underside of channels to form key if not ready formed by 100 m manufacturer Lay main channel for full length of manhole Lay branch channels to discharge in same direction of flow as main channel
455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12 Shape the benching so that it rises vertically above the channel top to the level of the top of the bore of the incoming main drain and form a rounded nosing Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth
465 Precast concrete sections Construct chambers with precast sections as follows Use cement mortar (1:3) throughout
a) Commence as soon as connecting drains are tested and approved and construct in one continuous operation until completed
b) Commence on a base wall and benching cast on the base slab and taken to 100 mm above the pipes. Do not place the first unit until this concrete has set
c) Joint the sections in mortar and point flush internally Make joints take checks as follows
a) Ensure that pipes are clean, straight not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied thoroughly to ensure chambers are watertight
d) Cast in step irons as clause 470 (Note to be cast in at casting works)
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking
f) Bed precast cover slabs, or mortar
g) Bed the inspection cover frame in mortar with the cover in position to prevent distortion (except when heavy covers are used) and neatly flaunch all round
h) Bed the cover in grease marketed for the purpose
j) Surround the completed manhole with concrete 150 mm thick
470 Step irons Build in or cast in two rows of step irons, spaced 300 mm apart horizontally, one every 150 mm of height Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching
475 Manhole keys Provide one set for every type of inspection cover specified Hand to Employer on completion.
480 Backdrops Encase external backdrops in concrete min 150 mm thick

SOAKAWAY CONSTRUCTION

495 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

490 Generally Do not cover any drainage work until tested and approved
495 Reinstatement Where necessary reinstate surface to original condition In planted or turfed areas ensure adequate top soil is replaced
500 General backfilling On completion of the initial filling or concreting to specified levels above the drains Backfill with excavated material as 160 placed in 150 mm layers each layer compacted with mechanical equipment
505 Backfilling around pipes with excavated material Using excavated material as specified at clause 150 backfill as follows
a) Select the best soil (screened if necessary to exclude stones and hard material over 40 mm nominal size) for initial compaction around pipes
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown Carefully and thoroughly compact all this filling in 100 mm layers
c) Do not top any filling into the trench until (b) completed
d) Complete the filling as clause 500
510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx 140 or 36 hours) Backfill as clause 500
515 Granular bedding and filling Using material as specified at clause 150, undertake the work as follows
a) Lay the bedding to specified thickness under the pipes If the bedding is permitted to be less than the trench width, slope the edges down on both sides beyond the specified width
b) After pipes are tested carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill)
c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered
d) Complete the granular fill and compaction to specified thickness
e) Backfill with excavated material as clause 500
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling

SEWER CONNECTION

555 Location Excavate with care in the vicinity of the local authority's sewer

WADP

Architects-Designers
Unit 113b The Mayford Centre
Mayford Green Mayford
Woking Surrey GU22 0PP

01483 763028 Fax 01483 740463
e mail wadp@btclick.com

PLANS TO MEET CONDITIONS
5327 J

Beckbridge Ltd

Caister

Sandhurst Road
Finchampstead

Site Layout MID

16 FEB 2003

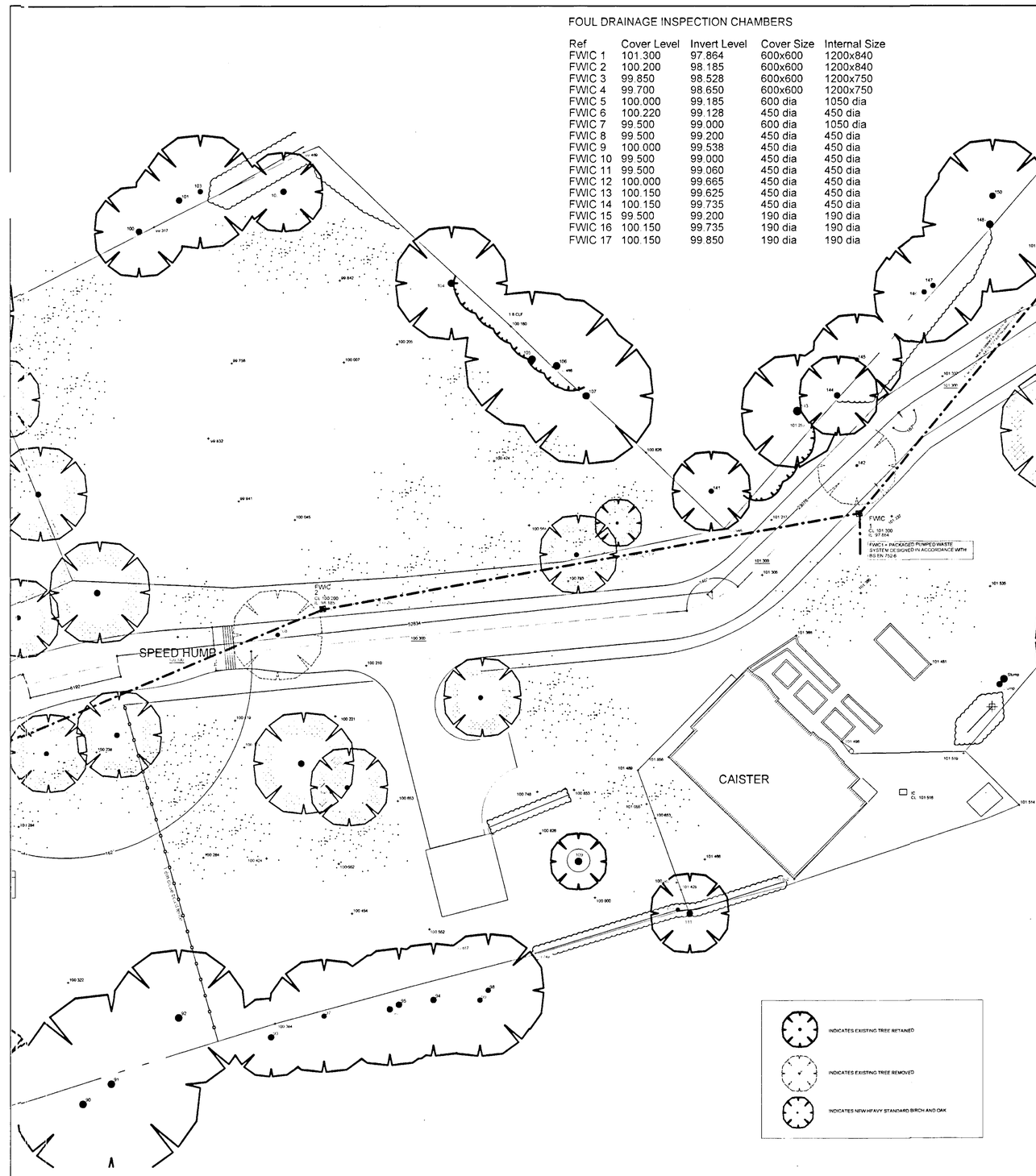
1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01MID | B

## FOUL DRAINAGE INSPECTION CHAMBERS

| Ref | Cover Level | Invert Level | Cover Size | Internal Size |
|---|---|---|---|---|
| FWIC 1 | 101.300 | 97.864 | 600x600 | 1200x840 |
| FWIC 2 | 100.200 | 98.185 | 600x600 | 1200x840 |
| FWIC 3 | 99.850 | 98.528 | 600x600 | 1200x750 |
| FWIC 4 | 99.700 | 98.650 | 600x600 | 1200x750 |
| FWIC 5 | 100.000 | 99.185 | 600 dia | 1050 dia |
| FWIC 6 | 100.220 | 99.128 | 450 dia | 450 dia |
| FWIC 7 | 99.500 | 99.000 | 600 dia | 1050 dia |
| FWIC 8 | 99.500 | 99.200 | 450 dia | 450 dia |
| FWIC 9 | 100.000 | 99.538 | 450 dia | 450 dia |
| FWIC 10 | 99.500 | 99.000 | 450 dia | 450 dia |
| FWIC 11 | 99.500 | 99.060 | 450 dia | 450 dia |
| FWIC 12 | 100.000 | 99.665 | 450 dia | 450 dia |
| FWIC 13 | 100.150 | 99.625 | 450 dia | 450 dia |
| FWIC 14 | 100.150 | 99.735 | 450 dia | 450 dia |
| FWIC 15 | 99.500 | 99.200 | 190 dia | 190 dia |
| FWIC 16 | 100.150 | 99.735 | 190 dia | 190 dia |
| FWIC 17 | 100.150 | 99.850 | 190 dia | 190 dia |

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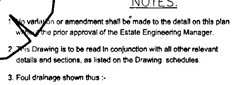
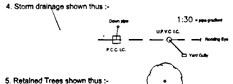



3a. SVP vented through the roof are annotated thus :- S other SVP's will be terminated with an approved air admittance valve in the riser.
4. Storm drainage shown thus :-




5. Retained Trees shown thus :-
6. Private drainage is to be 110mm dia U.P.V.C. unless shown otherwise.
7. Direction of fall shown thus :-
8. ACO drainage channels shown thus :- ACO
9. Final Finished Floor Levels shown thus :- 46.00
10. Existing levels shown thus :- + 46.00
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14. Full height kerb with 100mm face annotated thus :- F.H.K.

B 14/02/03 *BOUNDARY TREATMENTS INDICATED
A 16/12/02 TENDER ISSUE

Construction Comply with BS 8301 Building drainage
Only qualifications given below

Plastic pipework fittings and inspection chambers Execute the entire drainage system in UPVC manufactured by Osma Obtain all materials within the scope of this system from this manufacturer and undertake the work in accordance with BS 8301 and the manufacturer's printed instructions Provide a copy of these instructions at the Works while this work is being undertaken

Materials

131 Cementitious cement used for the drainage work (including precast concrete units) shall be ordinary Portland cement to BS 4027.
135 Mix of concrete Mix 20N/20 mm/slump for all bedding mix 20N/20 mm for beds manholes and reinforced concrete in the ground reinforced mix for surface slabs to be mix 25N/20 mm/sulphate-resisting mix 25N/20 mm
136 Lightweight concrete Not normally used
140 Bricks Clay bricks to BS 3921 Class B
145 Mortar Cement lime mortar (1:¼:3) / Sulphate-resisting cement lime mortar (1:¼:3)
150 Granular bedding and surround Nominal single sized aggregate to BS 882 as follows
a) 100 mm pipes 10 mm size
b) 150 mm pipes 14 mm size
c) 225 mm pipes and above 10, 14 or 20 mm size
Granular surrounding Filling material for use above the specified pipe fill and up to the underside of any specified topsoil shall comply with clause 130 or 135 of Excavation and Fill as appropriate
166 Flexible joints To BS 6087
190 Concrete pipes and fittings To BS 5911 Part 100 as follows
a) Cement ordinary/sulphate-resisting
b) Strength class / MPa
c) Joint type socketed or rebated flexible joints
195 Plastic pipes and fittings To BS 4660 or BS 5481 with ring seal joints
211 Proprietary inspection chambers By Osma
215 Circular concrete manholes To BS 5911 made from ordinary/sulphate-resisting cement with interlocking joints suitable for mortar bedding with light duty/heavy duty cover slabs
225 Cast iron manhole covers To BS 497
230 Manhole step irons To BS 1247 Fig 1 for brickwork, Fig 2 or 3 for precast concrete
235 Vitrified clay channels To BS 65
240 Plastic channels To BS 4660
245 Cast iron inspection chambers for manholes To BS 497

Workmanship

Preliminary procedures

280 Levels and pipe routes Establish levels as stated at 175 of Excavation and Fill and agree the routes, depths and drain gradients with the specifier. Clearly mark out the trench routes (and widths when known) including all branches and tree terminals. Inspection chambers and known services and obstructions

EXCAVATIONS

291 Keep records Record the position and condition of any existing functioning pipes or cables etc encountered during excavations, this applies to land drains whether considered in use or not
295 Drain trenches Excavate drain trenches as follows:
a) Clear the site along the route of the excavations as 185 of Excavation and Fill
b) Preserve turf as 190 of Excavation and Fill, also topsoil
c) Break up and remove surface pavings, etc. If such surfaces are to be reinstated, cut back to a neat edge to facilitate reinstatement
d) Programme the excavations so that there is always the shortest time period possible between trenching and pipe laying. If unavoidable delays occur, protect the trench bottoms or leave a final layer for hand removal
e) Excavate the trenches to the minimum practicable width but not less than 450 mm or 1 times pipe outside diameter plus 250 mm, whichever is the greater. Excavate by open cut methods unless otherwise approved. Trench sides to be vertical up to 300 mm above top of pipe. Normally acceptable alternatives are described in BS 8301 section 3.19
f) Remove obstructions as 220 of Excavation and Fill
g) Report any voids or live services as 225 and 235 of Excavation and Fill (see 291 above)
h) Plug any disused drains as 230 of Excavation and Fill
j) Form a firm evenly graded trench bottom
k) Remove any soft or hard spots and replace with compacted granular material to produce a consistent bearing
l) Protect the bottom (eg with suitable blinding or pipe bedding) or lay pipes immediately
m) Enlarge the trench excavations for manhole construction
n) Keep excavations free from water as 245 of Excavation and Fill
q) Keep excavations safe as 260 of Excavation and Fill
Remove any trench supports progressively as compaction proceeds
305 Formwork Provide any formwork required and remove before backfilling. Any formwork left in shall consist of a material as durable in the ground as the concrete itself
306 Brickwork Comply with the Brickwork and Blockwork

PIPE LAYING

310 Before commencing Undertake checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied coating or lining in good condition
b) Check trench bottom for correct gradient with sight rails and boning rod (or other suitable equipment). Trim if necessary
315 Pipe bedding All beds under pipes including any specified surrounds, shall be laid the full width of the trench (see 295 (e)) unless otherwise approved and undertaken as recommended in BS 8301. This requirement will not be waived if the Contractor excavates the trenches wider than necessary or specified
325 Laying rigid pipes direct on trench formation
Check that the formation is prepared as 295(j) and (k), lay and joint the pipes as 320 Back fill with excavated material as 505
330 Laying rigid pipes on granular beds
a) Check that the formation is prepared as 295(j) and (k)
b) Lay granular bedding as clause 150
c) Lay and joint the pipes as clause 320
d) Backfill with excavated material as clauses 490-500
e) Backfill with granular material as clause 515. 150 to 100 mm above crown of pipe, complete backfilling with excavated material as 490-500
335 Laying rigidly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes
c) Place concrete bed at least 100 mm each side of pipe
d) Place concrete haunching
e) Surround pipe with minimum 100 mm concrete on all sides
f) Backfill with excavated material as clauses 490-510
340 Laying flexibly jointed pipes with concrete beds
a) Check that the formation is prepared as 295 (j) and (k)
b) Lay pipes supported at least 100 mm above the formation on compressible blocks (material as 210), hard material may be used if removed as concrete is placed. Joint the pipes
c) Provide movement joints for the concrete formed at each pipe joint with compressible material as 210 for the full cross-section of all concrete in trench
d) Place concrete bed at least 100 mm each side of pipe
e) Place concrete haunching
f) Surround pipe with min 100 mm concrete on all sides with movement joints as (c)
g) Backfill with excavated material as clauses 490-510
350 Gullies, etc Encase all gullies and other specified terminal fittings including bends, where permitted in concrete min 150 mm thick. Similarly encase any pipework rising at a steep angle to the fittings. Provide raising pieces or brickwork to enable gratings to be fixed at the correct level with the surroundings.
355 Concrete encasement Totally encase pipes with concrete where indicated

PIPE JOINTING

360 Cutting pipes Cut pipes square with proper pipe-cutting tools. Cut plastic pipes with fine toothed saw. Re-chamfer spigots if necessary (see 375)
365 Rigid joints in socketed cast iron drains Make traditional caulked lead joints as follows
a) Ensure the joint surfaces are clean and dry. Form a gasket of dry jute yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Fill the remainder of the joint space with molten lead (or cold lead in fibrous form)
c) Thoroughly caulk and consolidate the lead with 1.5 kg (min) hand hammer or powered hammer of equivalent force
d) Finish the joint 3 mm inside the socket
370 Rigid joints in socketed clayware/concrete/asbestos-cement drains Make traditional mortar joints as follows:
a) Form a gasket of tarred yarn and caulk into the bottom of the socket to centralise the spigot and seal the bore
b) Clean and wet the joint surfaces and fill with cement sand (1:2) mortar/polymer resisting cement sand (1:2) mortar finished splayed back 45 from the edge of the socket
c) Core out to ensure there is no mortar in the pipe bore
371 Joints to WCs
372 Flexible seals Lubricate seals factory installed in sockets. Do not lubricate raising rubber spigot rings
375 Push-fit flexible joints Do not use improvised methods (eg using a shovel or bar as a lever) for forcing spigots into pipe sockets or connectors. If a joint cannot be made hand-aided by lubricants and properly chamfered spigots, use a mechanical puller that grips the two pipe lengths being jointed. Always use the lubricants recommended for the joints. Push spigots fully home and slightly withdraw (about 5 mm)
400 Joints in plastic drains In accordance with Osma instructions
415 Future connections Seal drains left for future connections with suitable watertight but easily removable stoppers. If the connections are to be made by others (eg a future extension), mark the location at ground level with a 50 100 mm creosoted softwood post and record the depth and location on a drawing to be handed to the specifier and on a strong waterproof label attached to the post
420 Joints between dissimilar materials Use adaptors with ends made to suit each type of pipe being joined. Do not make improvised joints

CONNECTIONS TO BUILDINGS AND MANHOLES

425 Building entry Take the pipe into the building through external walls with lintol over with a minimum 100 mm clearance around the pipe and seal with inert roll-proof non-hardening material
430 Precautions against pipe fracture Where there is a risk of differing settlement, provide a short length of pipe close to the building or manhole with a flexible joint both ends.

MANHOLE CONSTRUCTION

435 Bases Lay concrete bases at levels to suit drain inverts
450 Plastic channels Bed half-round plastic channels in benching concrete and mortar. Neatly joint in cement mortar (1:2). Rasp underside of channels to form key if not neatly keyed by 100 m manufacturer. Lay main channel for full length of manhole. Lay branch channels to discharge in same direction of flow as main channel
455 Benching Completely fill all spaces between channels and chamber sides with concrete and slope away from channels at 1 in 12. Shape the benching so that it rises vertically above the channel lip to the level of the top of the pipe of the incoming main drain and form a rounded nosing. Finish with monolithic cement mortar (1:2) steel trowelled dense and smooth
465 Precast concrete sections Construct chambers with precast sections as follows, use cement mortar (1:3) throughout
a) Commence as soon as connecting drains are tested and approved and construct in one continuous operation until completed
b) Commence with a base wall and benching laid on the base slab and taken to 100 mm above the pipes. Do not place the first unit until this concrete has set
c) Joint the sections in mortar and point flush internally. Make joints take checks as follows
a) Ensure that pipes are clean, straight, not deformed or damaged in any way (particularly in respect of spigots, sockets and seals) and with factory-applied thoroughly to ensure chambers are watertight
d) Cast in step irons as clause 470. (Note to be cast in at casting works)
e) If any units have to be cut, cut in a manner that does not cause fracture or cracking
f) Bed precast cover slabs in mortar
g) Bed the inspection cover frame in mortar with the cover in position to prevent disfiguration (except when heavy covers are used) and neatly flaunch all round
h) Bed the cover in grease marketed for the purpose
j) Surround the completed manhole with concrete 150 mm thick
470 Step irons Build in or cast in two rows of step irons, spaced 300 mm apart horizontally one every 150 mm of height Locate the first step iron at not more than 600 mm below the cover and the bottom step not more than 450 mm above the benching
475 Manhole keys Provide one set for every type of inspection cover specified. Hand to Employer on completion
480 Backdrops Encase external backdrops in concrete min 150 mm thick

SOAKAWAY CONSTRUCTION

486 Precast concrete soakaway chamber sized in accordance with BRE digest 151 and results of percolation test

BACKFILLING

490 Generally Do not cover any drainage work until tested and approved
495 Reinstatement Where necessary reinstate surface to original condition. In planted or turfed areas ensure adequate top soil is replaced
500 General backfilling On completion of the initial filling or concreting to specified levels above the drains, backfill with excavated material as 160 placed in 150 mm layers each layer compacted with mechanical equipment
505 Backfilling around pipes with excavated material Using excavated material as specified at clause 160 backfill as follows
a) Select the best soil (screened if necessary) to exclude stones and hard material over 40 mm nominal size) for initial compaction around pipes
b) Carefully fill in equal layers on both sides of the pipe and continue to about 300 mm above the crown Carefully and thoroughly compact all this filling in 100 mm layers
c) Do not lay any filling into the trench until (b) completed
d) Complete the filling as clause 500
510 Backfilling above concrete pipe surrounds Do not commence until concrete has hardened (eg approx 14N or 36 hours). Backfill as clause 500
515 Granular bedding and haunching Using material as specified at clause 150, undertake the work as follows
a) Lay the bedding to specified thickness under the pipes. If the bedding is permitted to be less than the trench width, slope the edges down on both sides beyond the specified width
b) After pipes are tested carefully fill and compact in equal layers on both sides (to prevent deformation by subsequent fill)
c) If necessary maintain flexible pipes in position with timber stakes driven in on both sides and withdrawn as soon as pipes are covered
d) Complete the granular fill and compaction to specified thickness
e) Backfill with excavated material as clause 500
520 Backfilling around manholes Backfill as clause 500 at the same time as trench filling

SEWER CONNECTION

555 Location Excavate with care in the vicinity of the local authority's sewer


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PLANS TO MEET CONDITIONS
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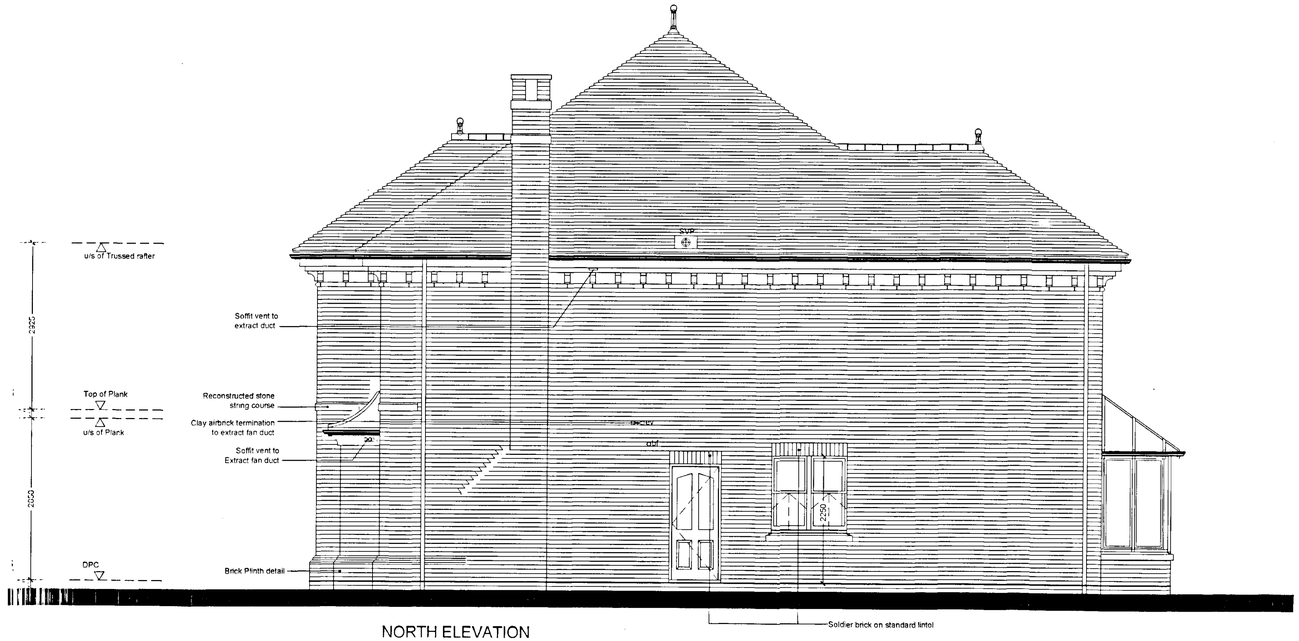
Site Layout MID

19 FEB 2003

1:200 @ A1

JT | JUNE 2002

DP/280/SITE/01MID | B




NORTH ELEVATION




WEST ELEVATION

0 10 20 30 40 50 60 70 80 90 100

DRAWINGS NOT TO BE SCALED.
WORK TO FIGURED DIMENSIONS ONLY.
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| | | |
|---|---|---|
| C | 14/02/03 | PLANNING CONDITIONS |
| B | 12/12/02 | TENDER ISSUE |
| A | NOV 02 | SCHEME UPDATED |


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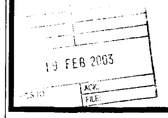
Plot 1- N & W Elevations

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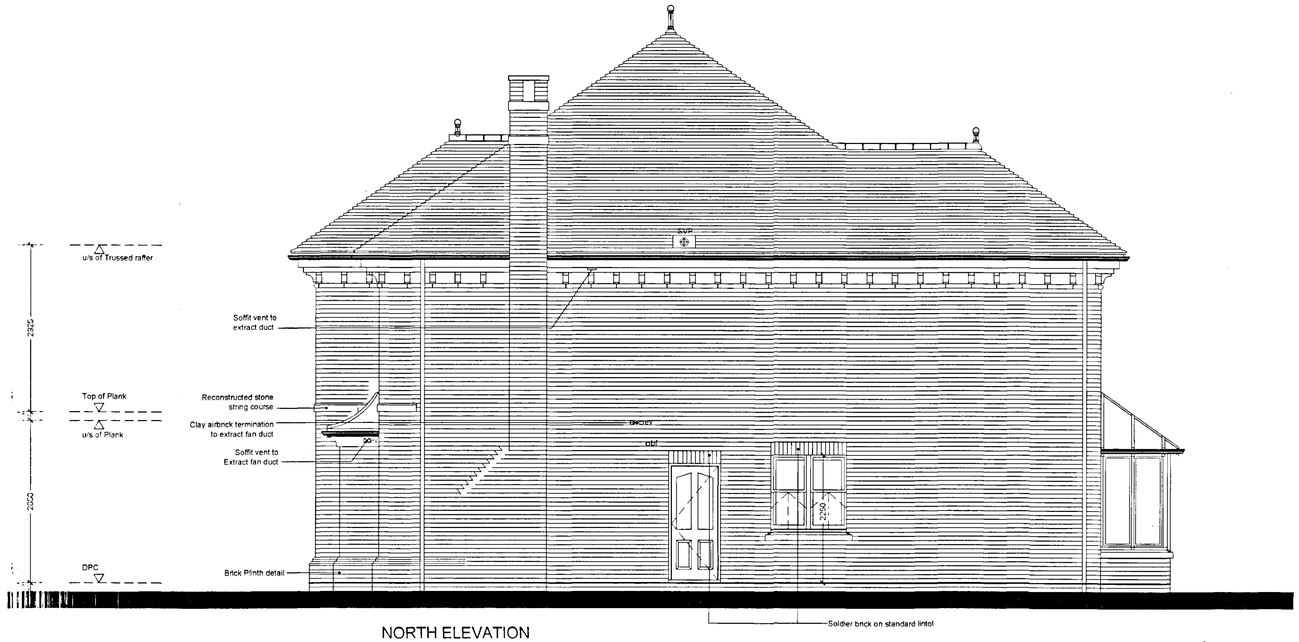


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EAST ELEVATION




SOUTH ELEVATION

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B 14/02/03 PLANNING CONDITIONS

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Plot 1- S & E Elevations

1:50 @ A1

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EAST ELEVATION




SOUTH ELEVATION

0 5 10 15 20 25 30 35 40 45 50

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Plot 1- S & E Elevations

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1:50 @ A1

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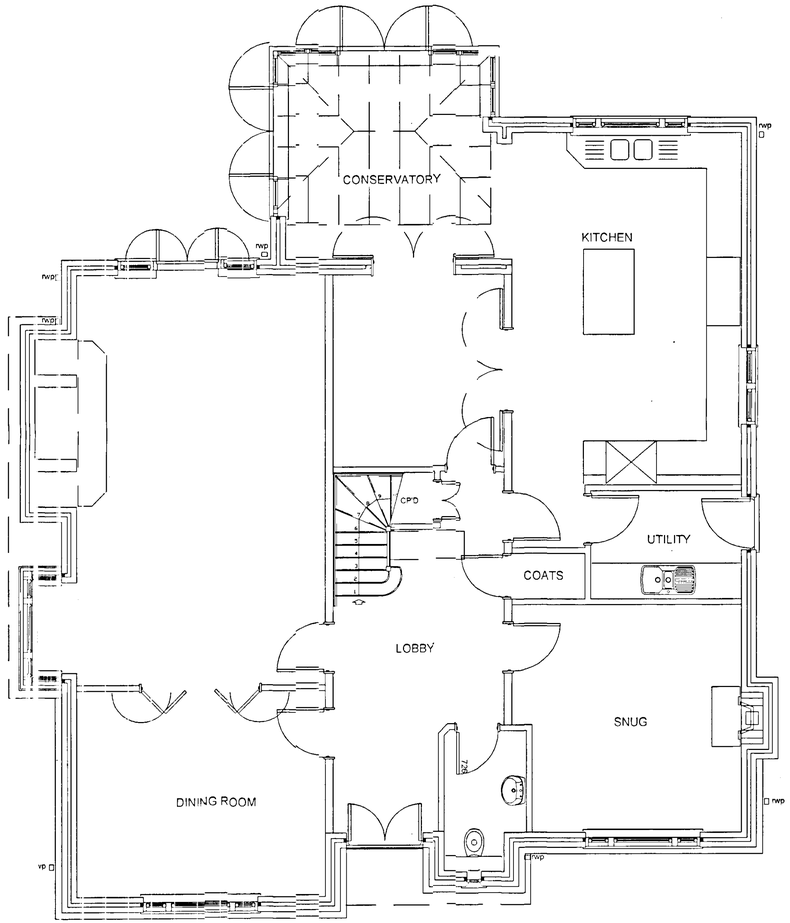


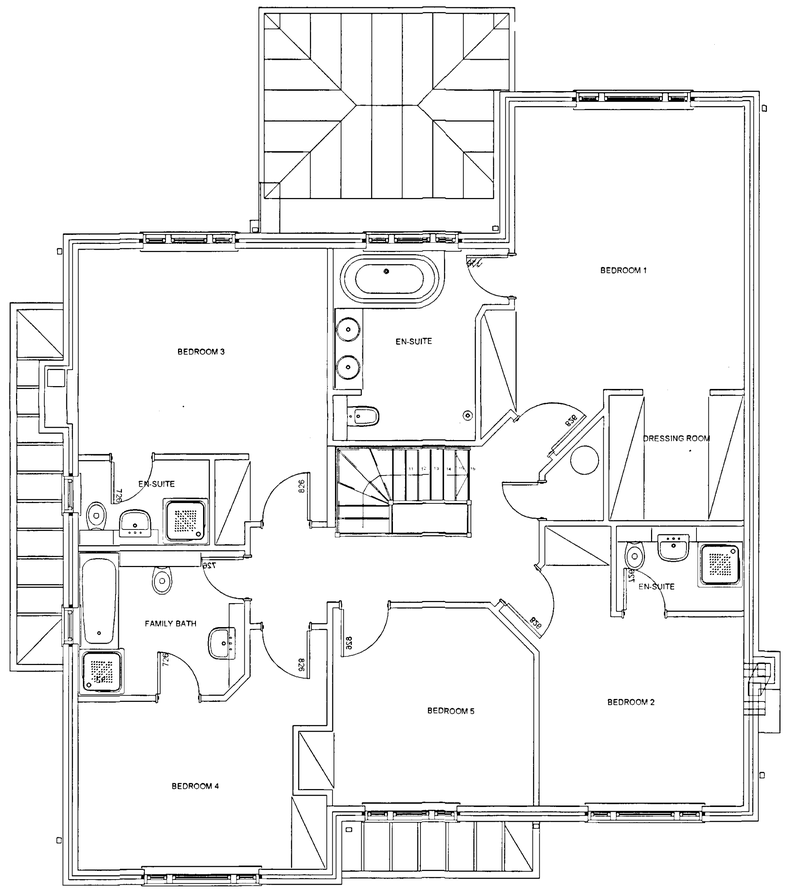


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PLOT 1-Planning Conditions

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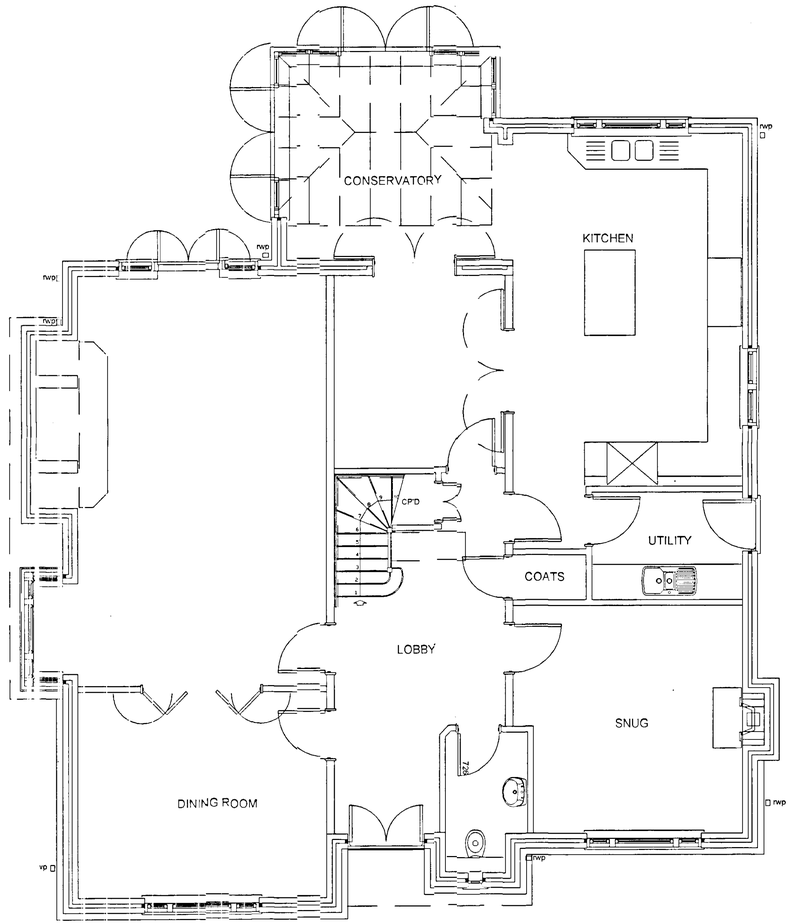


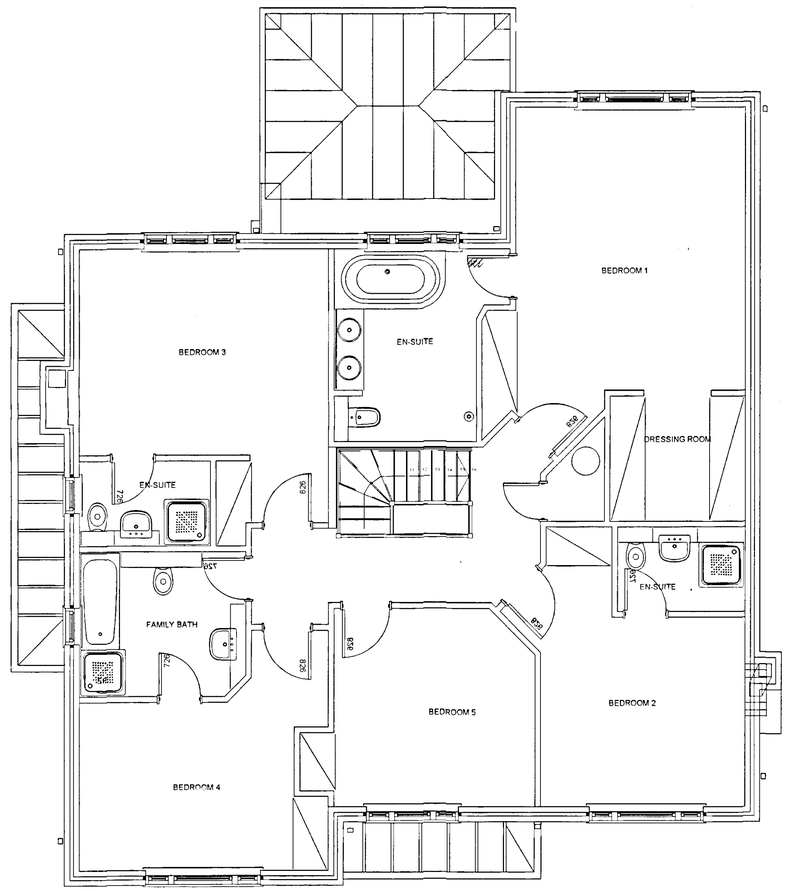


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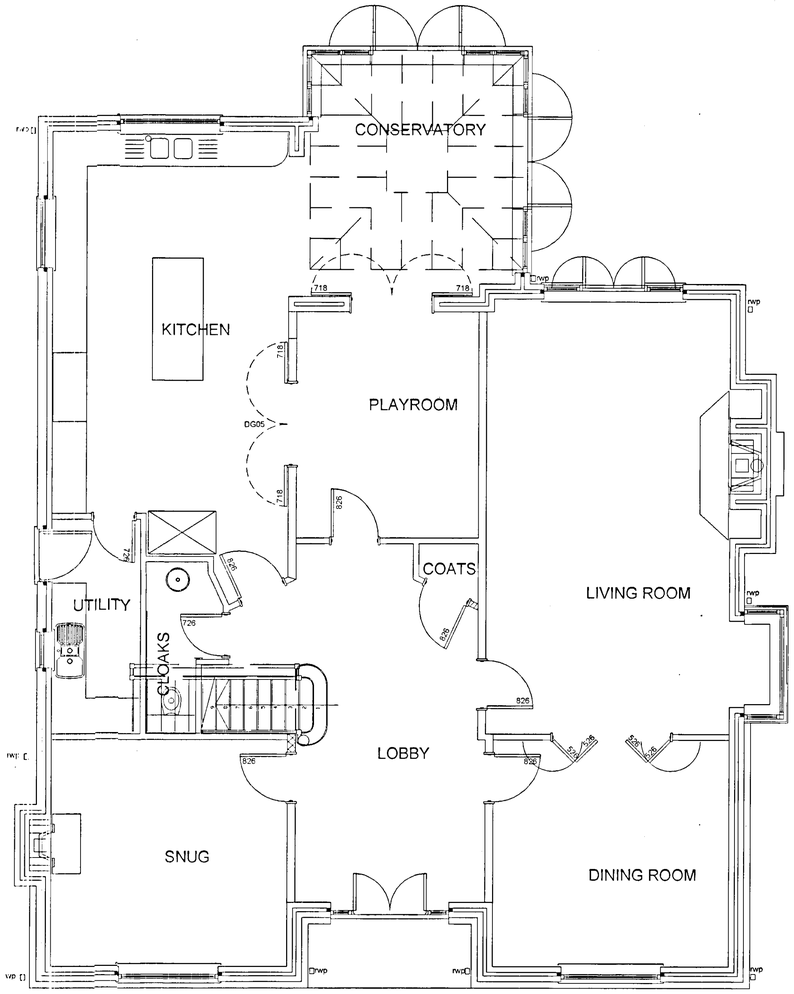


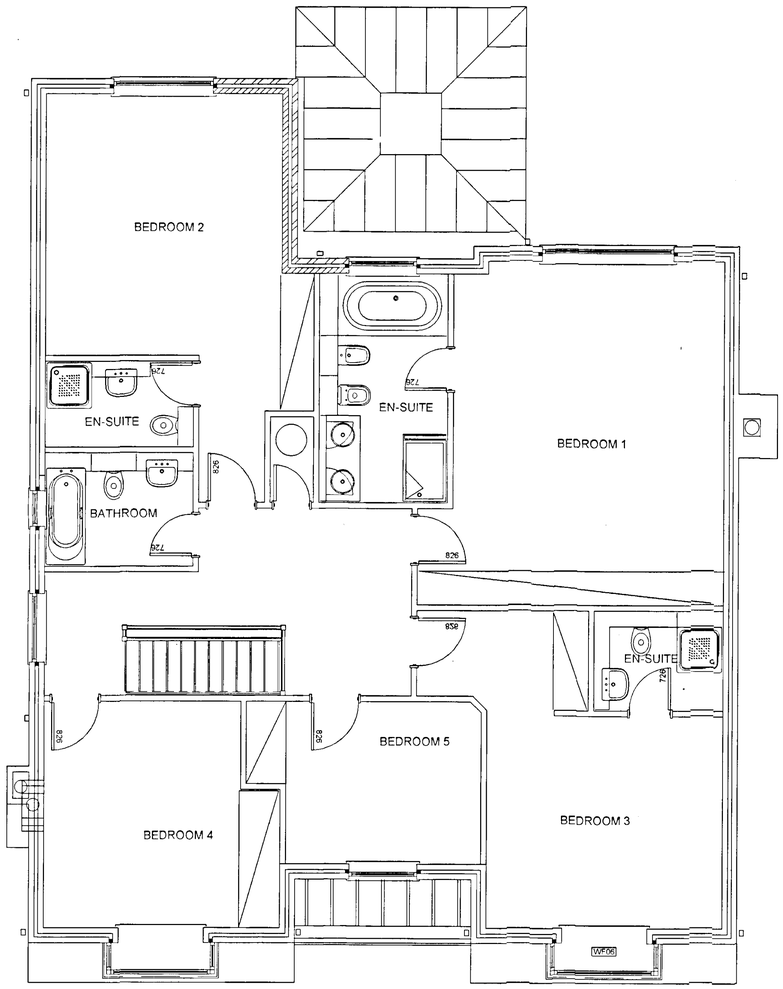


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PLOT 2-Planning Conditions

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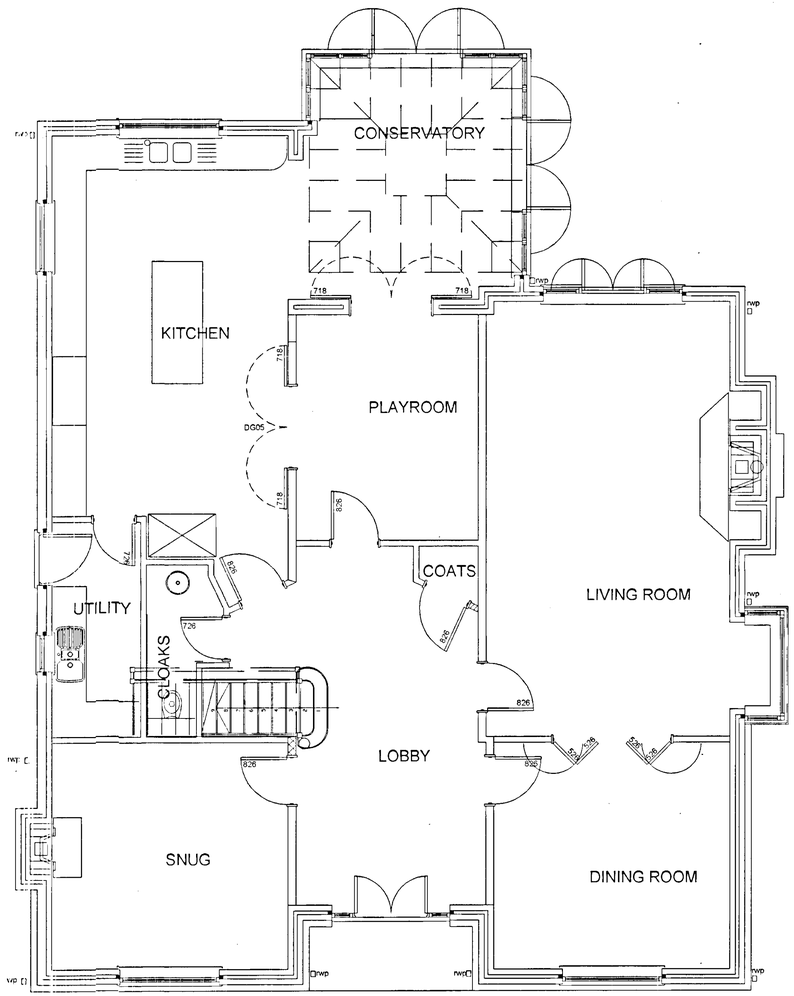


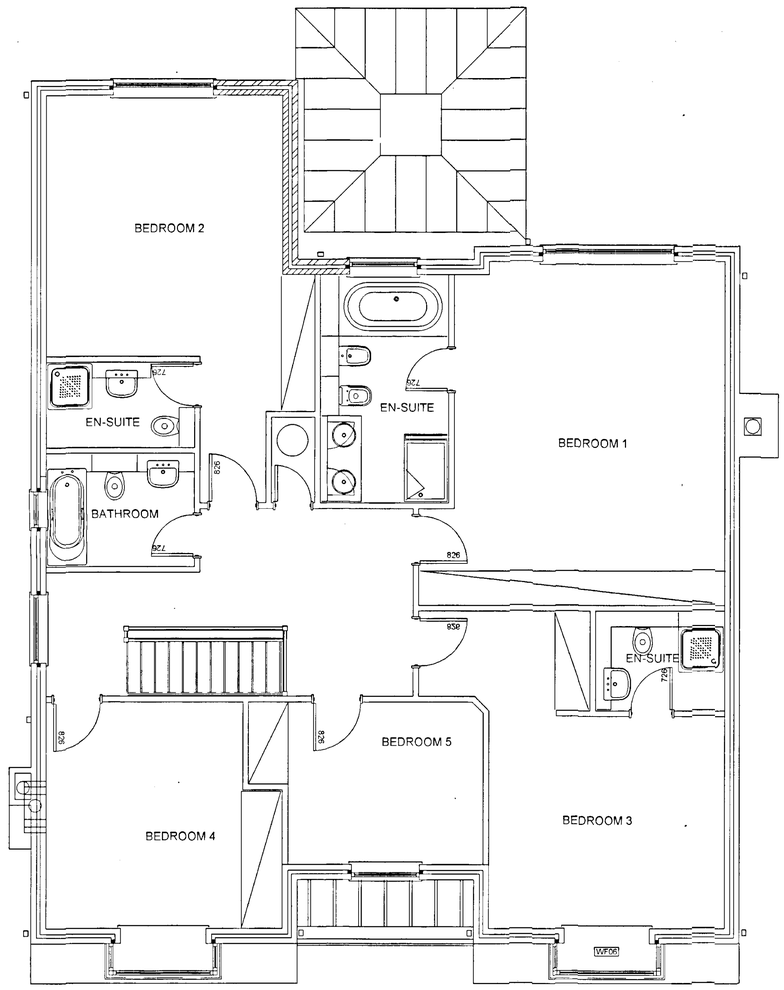


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PLOT 2-Planning Conditions

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EAST ELEVATION




NORTH ELEVATION

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C 14/02/03 PLANNING CONDITIONS
B DEC 02 TENDER ISSUE

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PLANS TO MEET CONDITIONS

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PLOT 2-N & E Elevations

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EAST ELEVATION




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PLOT 2-N & E Elevations

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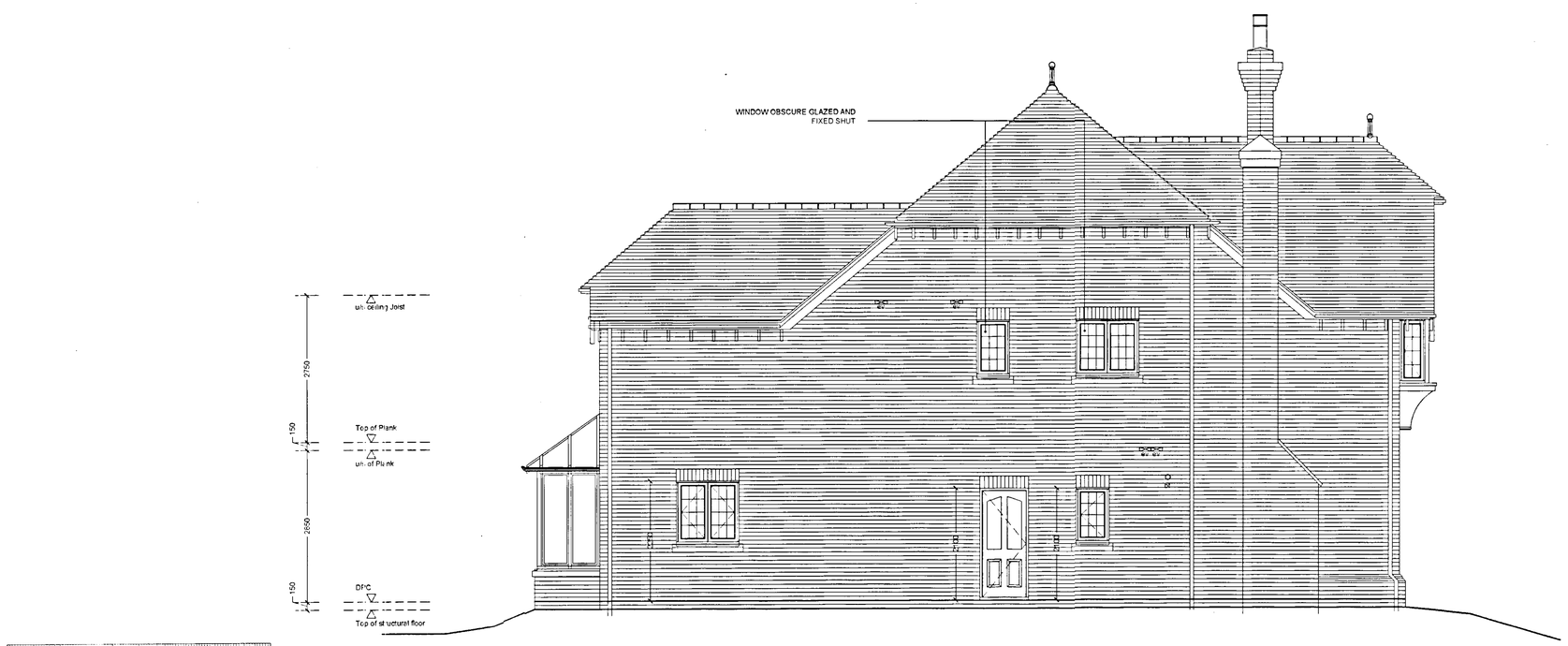
WEST ELEVATION




SOUTH ELEVATION

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D 14/02/03 PLANNING CONDITIONS
C 07/02/03 WG01 AMENDED
B DEC 02 TENDER ISSUE

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PLANS TO MEET CONDITIONS

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PLOT 2-S & W Elevations

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NB | May 02

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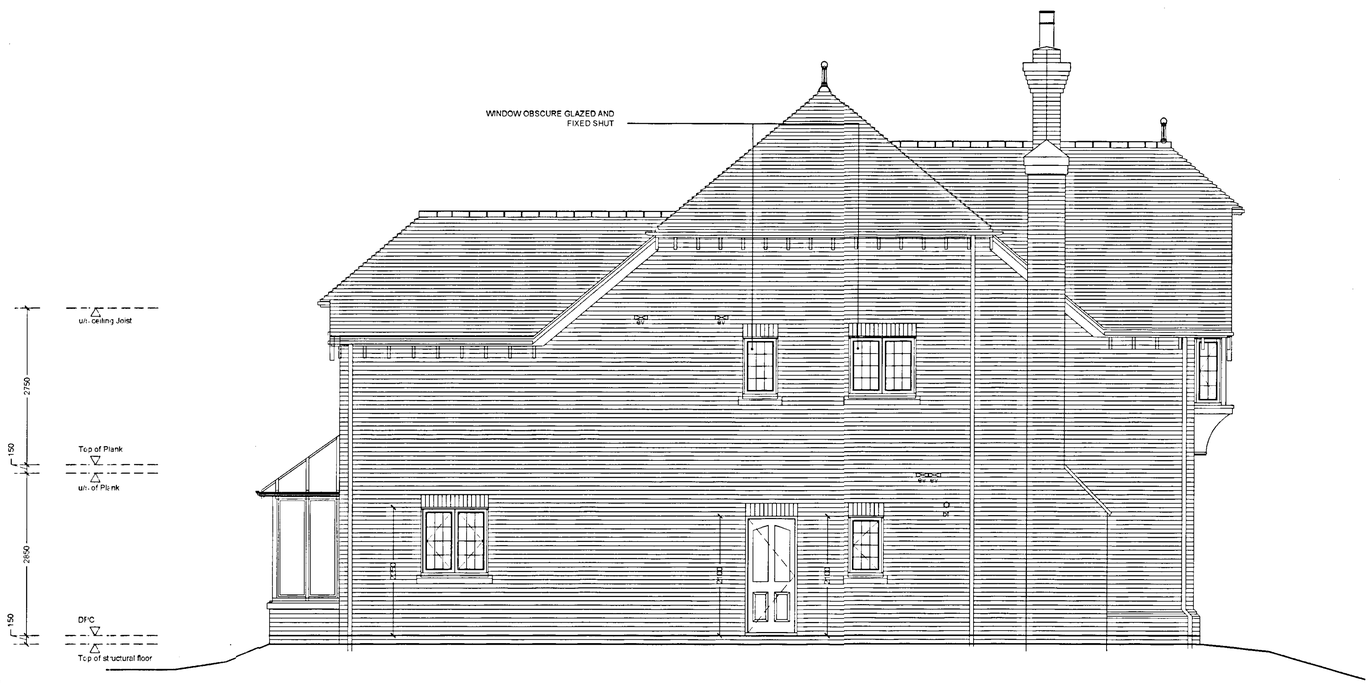
WEST ELEVATION

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D 14/02/03 PLANNING CONDITIONS
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B DEC 02 TENDER ISSUE

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PLANS TO MEET CONDITIONS

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PLOT 2-S & W Elevations

19 FEB 2003

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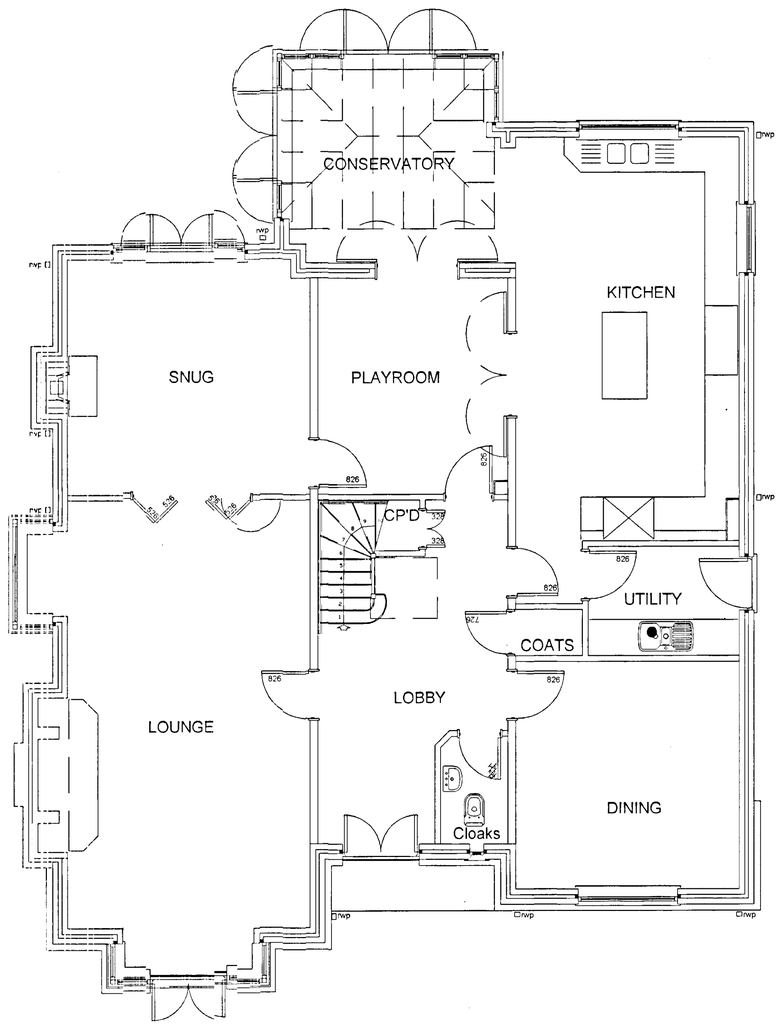


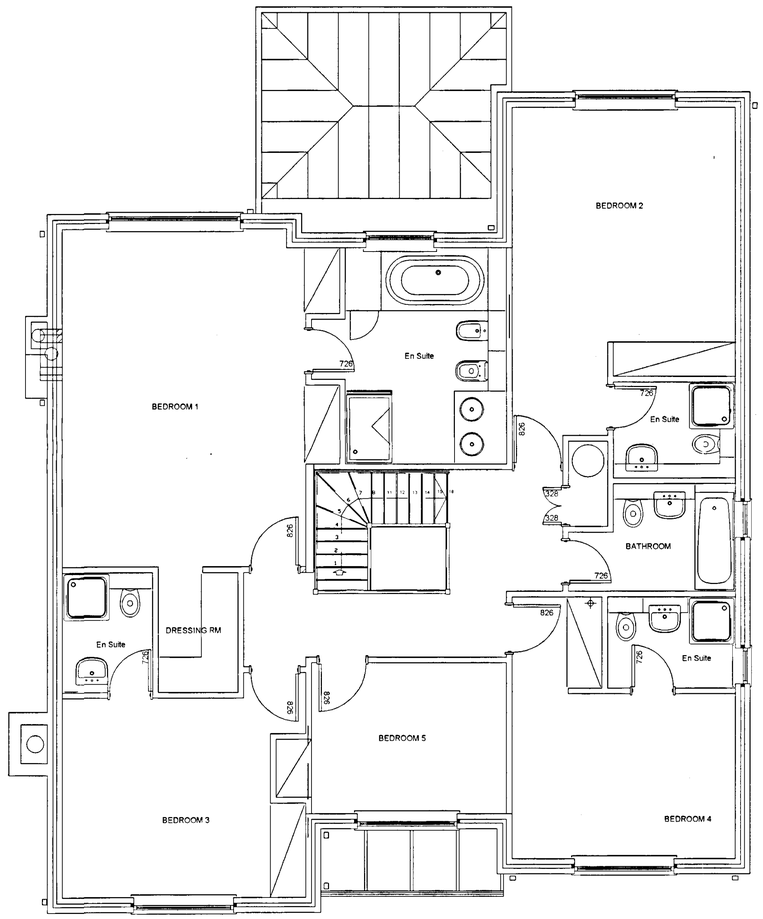


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PLANS TO MEET CONDITIONS

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PLOT 3-Planning Conditions

1:50 @ A1

JT | March 02

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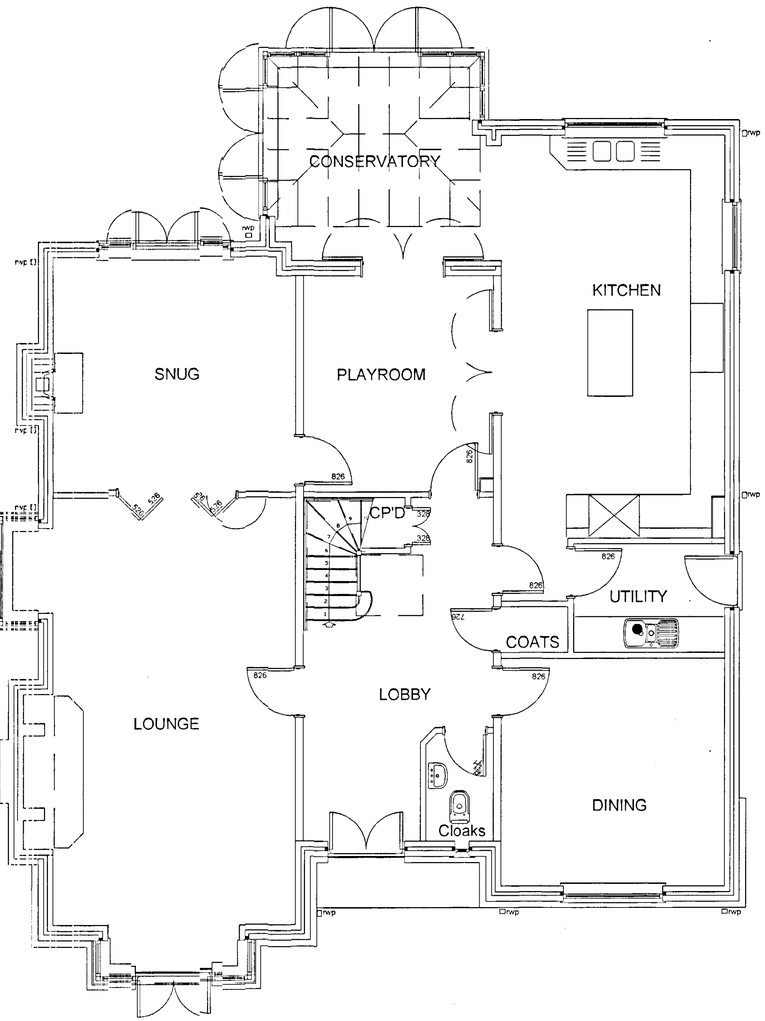
CONSERVATORY
KITCHEN
SNUG
PLAYROOM
CP'D
UTILITY
COATS
LOBBY
LOUNGE
DINING
Cloaks
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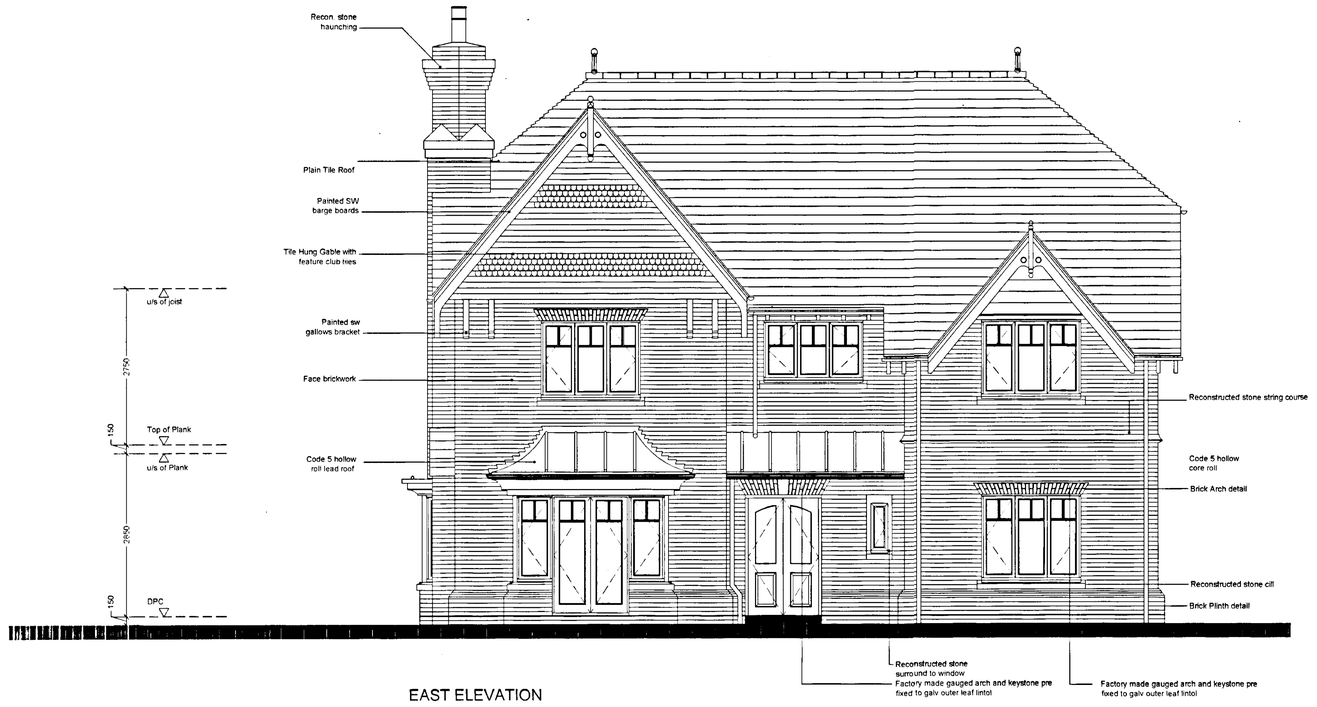
826




EAST ELEVATION




NORTH ELEVATION

Drawings not to be scaled.
Work to figured dimensions only.
All dimensions to be checked on site, and any discrepancies reported to the Architect immediately

All drawings are to be read in conjunction with the current Building Regulations and Codes of Practice. It is the Contractor's responsibility to ensure that all works are carried out in accordance with the same.

All Concrete work to be carried out in accordance with BS 8110:Part 1.

All brickwork and blockwork to be carried out in accordance with BS5628:Part 3.

All structural steelwork to be carried out in accordance with BS5950:Part 2.

All structural timber to be used in accordance with BS 5268:Part 2 and is to be preservative treated in accordance with BS4072.

All plumbing to be in accordance with BS6700, BS5572, BS6465:Part 1 and BS8367.

All glass falling within critical zones as defined by Part N of the Building Regulations is to be toughened or safety glass in accordance with BS6206.

C 14-02-03 PLANNING CONDITIONS
B 16-12-02 TENDER ISSUE
A Dec 02 Generally Updated

WADP
Architects-Designers
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e mail wadp@btclick.com

Beckbridge Ltd

Caister
Sandhurst Road
Finchampstead

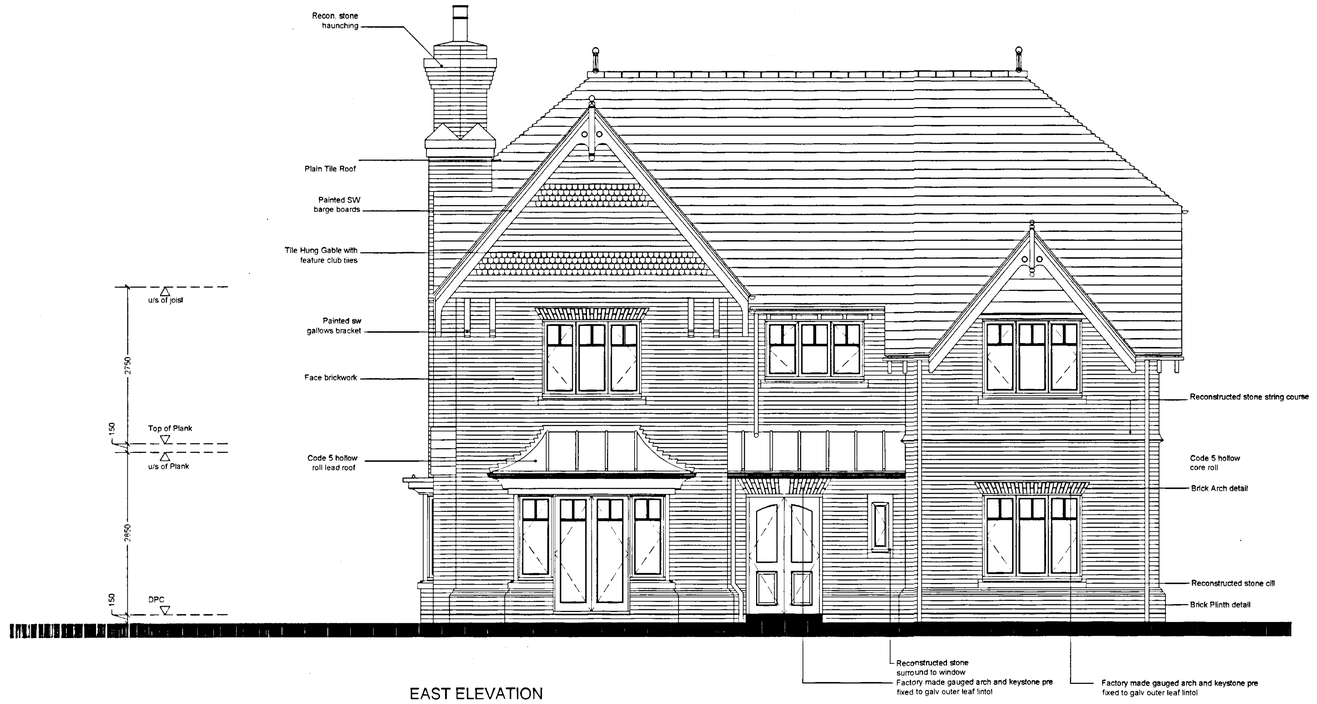
PLANS TO MEET CONDITIONS
5327

PLOT 3-N & E Elevations

1:50 @ A1

NB | May 02

DP/280/PL3/W/04 | C




EAST ELEVATION




NORTH ELEVATION

Drawings not to be scaled.
Work to figured dimensions only.
All dimensions to be checked on site, and any discrepancies reported to the Architect immediately

All drawings are to be read in conjunction with the current Building Regulations and Codes of Practice. It is the Contractor's responsibility to ensure that all works are carried out in accordance with the same.

All Concrete work to be carried out in accordance with BS 8110:Part 1.

All brickwork and blockwork to be carried out in accordance with BS5628:Part 3.

All structural steelwork to be carried out in accordance with BS5950:Part 2.

All structural timber to be used in accordance with BS 5268:Part 2 and is to be preservative treated in accordance with BS4072.

All plumbing to be in accordance with BS6700, BS5572, BS6465:Part 1 and BS6367.

All glass falling within critical zones as defined by Part N of the Building Regulations is to be toughened or safety glass in accordance with BS6206.

C 14-02-03 PLANNING CONDITIONS
B 16-12-02 TENDER ISSUE
A Dec 02 Generally Updated

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WEST ELEVATION




SOUTH ELEVATION

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B 16-12-02 TENDER ISSUE
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PLOT 3-S & W Elevations

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WEST ELEVATION




SOUTH ELEVATION

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22 NOV 2001

## LEGEND

- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- PROPOSED NEW TREES TO BE HEAVY STARDARD BIRCH AND OAK TREES
- BUILDINGS TO BE DEMOLISHED DOTTED

TINTAGEL ROAD

LINE OF SETTLEMENT BOUNDARY IDENTIFIED IN L A LOCAL PLAN

EXISTING TREES REMOVED

EXISTING BUILDINGS DEMOLISHED AND YARD TO BE REMOVED

NO NEW DEVELOPMENT BEYOND LINE INDICATED

PASSING BAY

CAISTER

EXISTING TREES

PASSING BAY

EXISTING TREES

EXISTING TREES REMOVED.

Fine Tree Cottage

22.NOV.2001 • 5327

| Date | Revision | By |
|---|---|---|

WATSON-WOODS
Architecture Design

Client
BECKBRIDGE LTD

Job Title :
CAISTER
SANDHURST ROAD
FINCHAMPSTEAD

Drawing Title :
PROPOSED SITE PLAN

Scale : 1:500 Date : may 00

Drawn : Checked :

Drawing No : 10030/08

25 Abbeville Mews, 88 Clapham Park Road,
London, SW4 7BX
Tel : 0171 720 9609 Fax : 0171 738 8924

0 10 20 30 40 50 60 70 80 90 100

OCE UK LTD 532

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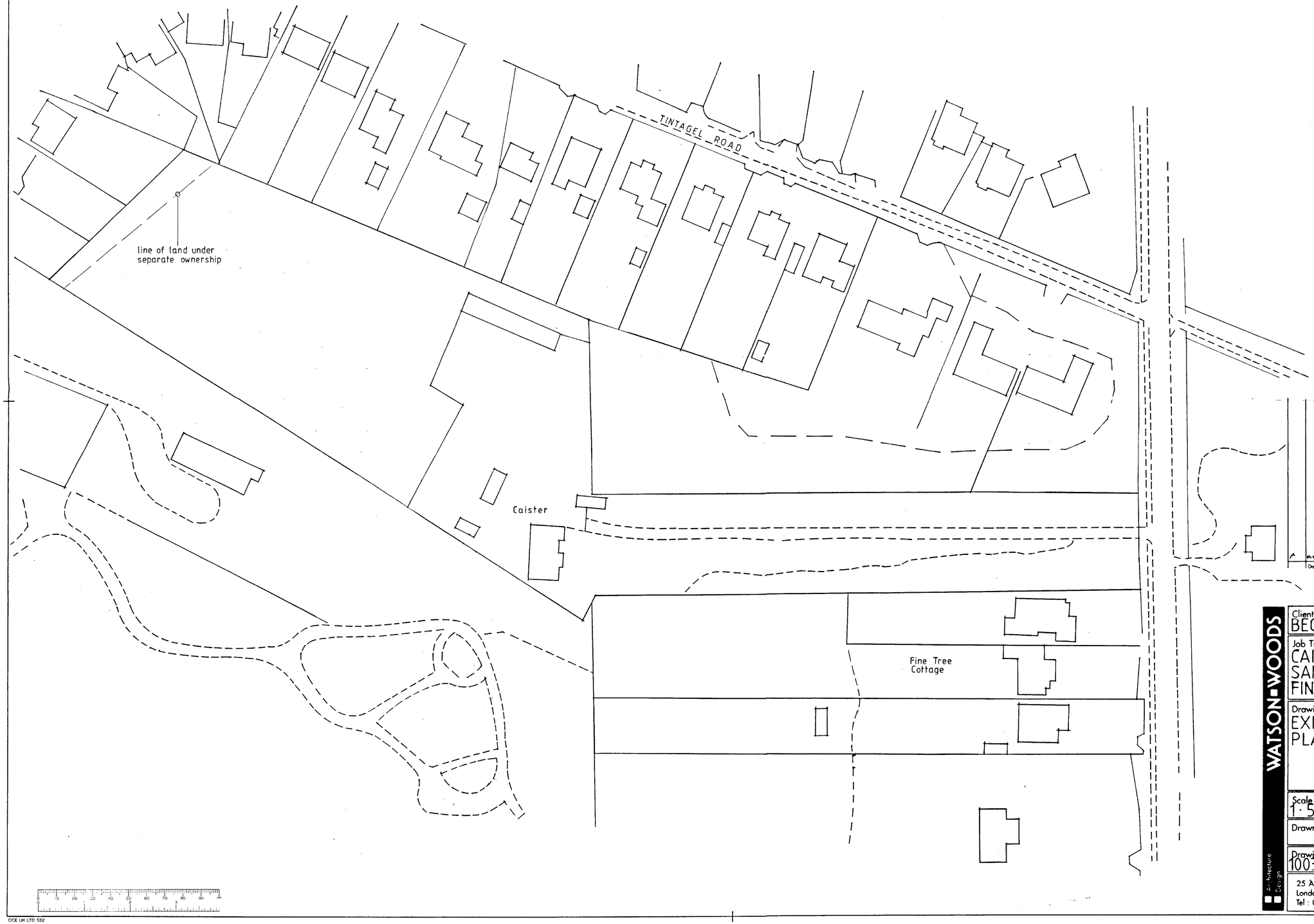


22.NOV.2001 5527

| Date | Revision | By |
|---|---|---|
| A MAY 00 | DRAWING UPDATED | |

WATSON-WOODS
Architecture Design

Client
BECKBRIDGE LTD

Job Title :
CAISTER
SANDHURST ROAD
FINCHAMPSTEAD

Drawing Title :
EXISTING SITE
PLAN

Scale : 1:500
Date : may 00

Drawn :
Checked :

Drawing No : 10030/02A

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London, SW4 7BX
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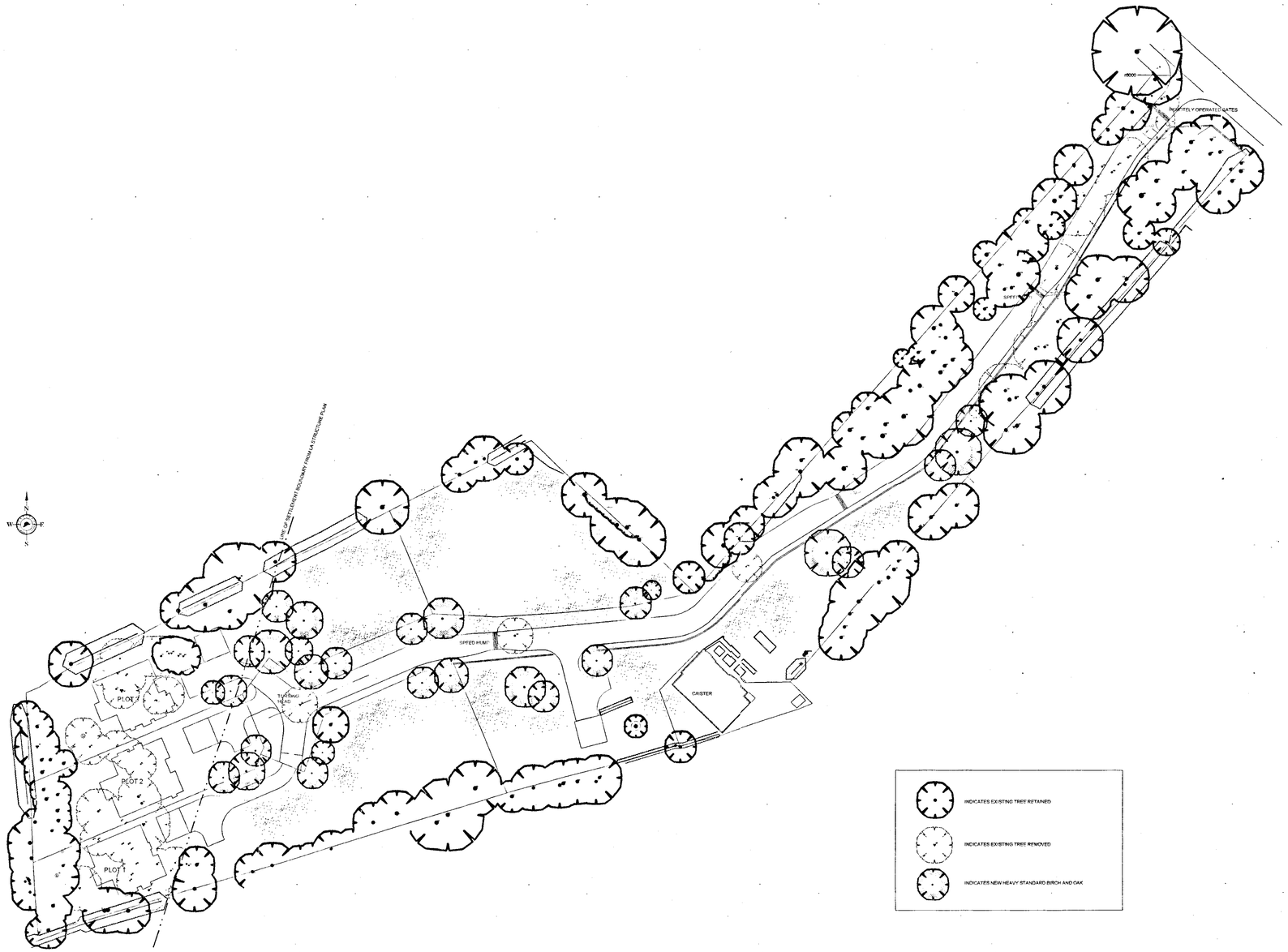


A 26/3/02 Plots Updated, access realigned

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Site Layout

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JT | March 2002

DP/280/SITE/01 | A

22.JUL.2002 6445