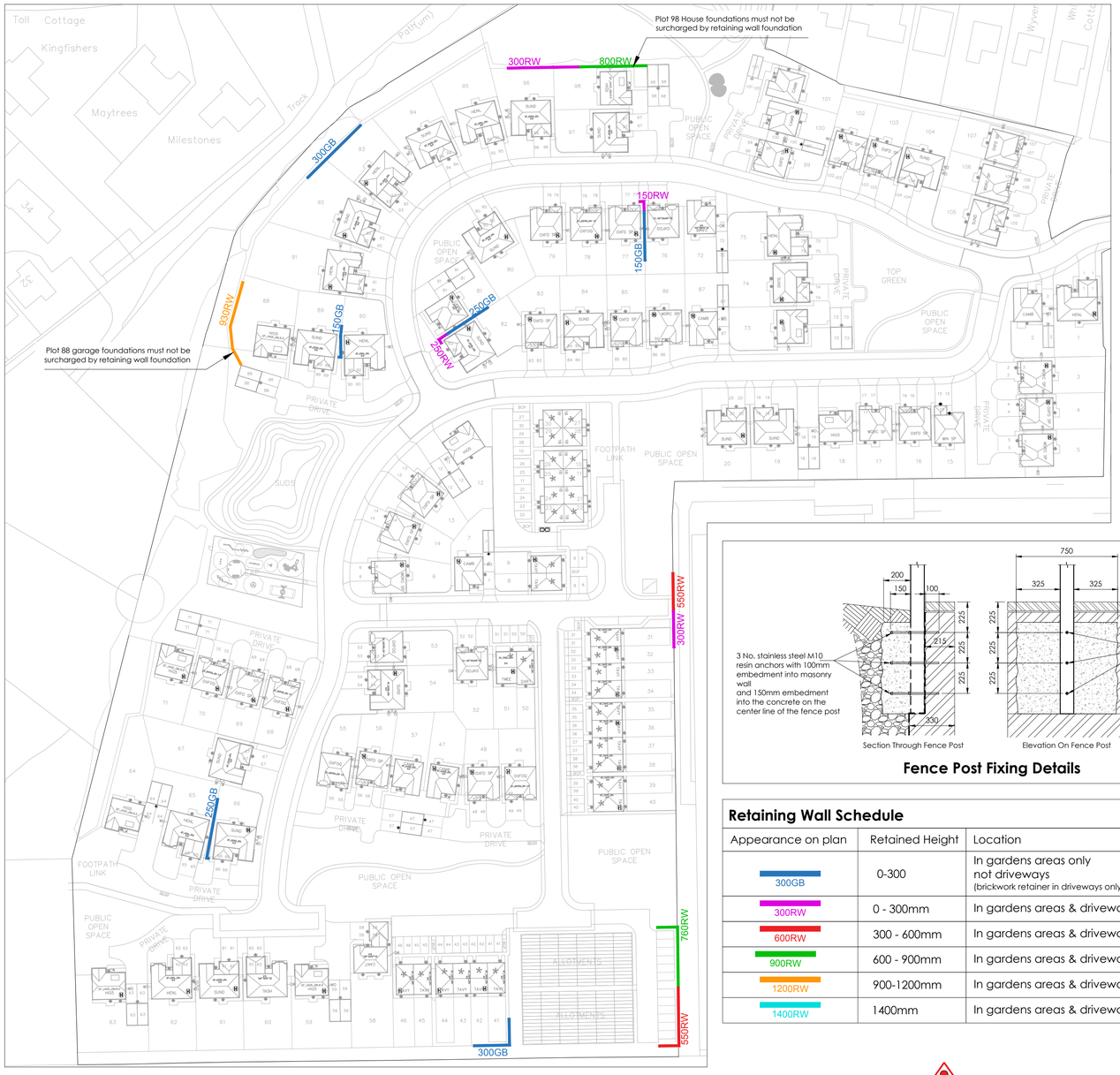


Wall Masonry

Bulk masonry unit can be dense concrete common bricks 22N/sq.mm compressive strength 800kg/m³ density Frost resistant to BS5628 Frost resistant facing brick to Redrow Homes specification

Refer also to adjacent Note 3. Brickwork and note 11. Masonry

Stretcher Bond Appearance To Front Of Wall

The wall thicknesses shown require full bonding.
If a stretcher bond appearance is required this must be formed using an additional, non-structural skin, tied to the structural wall with stainless steel ties at 450mm vertical c/c and 900mm horizontal c/c.

Wall Stability in The Temporary Condition

During the temporary state before the concrete embedment is placed the fence requires temporary measures

either a raking brace from top of post to ground level anchor

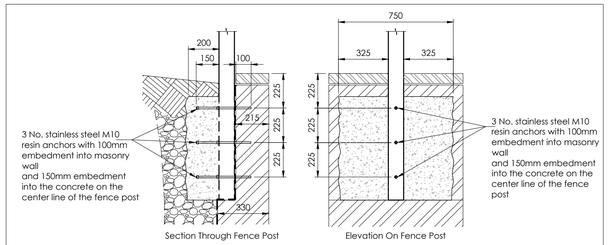
or

fence infill panel should not be installed until concrete is cured

Groundwater observed at shallow depths

Groundwater has been observed at shallow depths. Refer to Si report by Soils Limited. Report Ref: 141253/GIR.

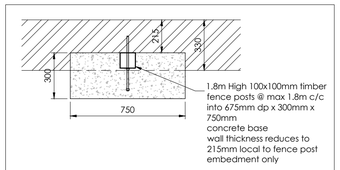
De-watering to be managed on site to prevent water ingress in to foundation excavations.



Fence Post Fixing Details

Retaining Wall Schedule

Appearance on plan	Retained Height	Location	Type Required
300GB	0-300	In gardens areas only not driveways (brickwork retainer in driveways only)	Gravel Board (Redrow homes details)
300RW	0 - 300mm	In gardens areas & driveways	B1- RW 300
600RW	300 - 600mm	In gardens areas & driveways	B2 - RW 600
900RW	600 - 900mm	In gardens areas & driveways	B3 - RW 900
1200RW	900-1200mm	In gardens areas & driveways	B4 - RW1125
1400RW	1400mm	In gardens areas & driveways	B5 - RW1400



Typical Plan on Post Embedment

Please note all gravel board retainers to be limited to max 300mm high.

This drawing is to be read in conjunction with Redrow Homes External Works drawing file ref (no drawing title block):

x_17071 - Engineering Base
dated: 14.09.18

If any changes are made to the external works, this drawing will need to be updated.

16. Excavations/Formation

Excavations/Formation to be inspected by the local authority BCO prior to concreting. Formation assumed to be natural Clays or sands with an allowable ground bearing pressure of at least 50 kN/m².

If abnormal ground conditions are discovered refer to Betts Associates for further instructions.

Over excavation/softened ground in front of wall to be back-filled with concrete.

17. Foundation

Foundations shall be to the sizes shown on this drawing.

Concrete to bases to be designated mix RC 35 in accordance with BS 8500.

Blinding concrete to be designated mix GEN 1

NB: concrete & mortar mixes assume non-hazardous conditions in accordance with the Site Investigation Report & Foundation Assessment Layout & Details for this Site.

Cover to reinforcement in base to be 40 mm bottom, 50 mm top.

18. Trees

Any excavations in the vicinity of trees or any new planting is to be carried out in accordance with BS 5837 : Trees In Relation To Construction

19. Workmanship

It should be noted that retaining walls carry a high risk of injury to the public if incorrectly constructed.

Workmanship should be to a high standard in accordance with the documents noted and the following:

BS 6031:1981	-	Code Of Practice For Earthworks
BS 8000	-	Workmanship On Building Sites
BS 8002:1994	-	Code Of Practice For Earth Retaining Structures
BS 8004:1986	-	Code Of Practice For Foundations
BS 5837	-	Trees In Relation To Construction

BRE Good Building Guides - 17, 18 & 19

7. Drainage

Weepholes should be formed at no more than 1200mm c/c formed with minimum 60mm dia outside diameter Class B polythene pipes to BS 1972.
Where possible land drainage should be provided behind the wall.

8. Waterproofing

Waterproof the back of the wall with either a bituminous membrane or two coats of bituminous emulsion. protect the waterproofing with board protection, or similar, before back-filling.

9. Backfilling

The retaining side of the wall should be back-filled with a minimum width of 450mm drainage layer comprising free-drainage granular material (course aggregate, clean gravel or crushed stone) lightly compacted. General filling should consist of lightly compacted non-cohesive material.

Should the general back fill consist of fine-grained material it should be separated from the drainage layer with a geotextile filter fabric.

No back-filling shall be carried out until at least 14 days after completion of the brickwork unless it is propped.

Should backfilling be carried out after 7 days then all masonry requires either:

(A) High Strength Mortar Designation (i) 12N/mm² mix.

Or

(B) Full propping design until 14 days strength achieved for Mortar Designation (ii).

10. Accuracy of Workmanship

The methods of controlling accuracy and setting out shall be in accordance with BS 5606 and BS 5628:part 3. Care shall be taken to ensure the accuracy and alignment of cavities containing reinforcement.

11. Masonry

Laying of masonry units shall be in accordance with BS 5628:part 3 or BS 5390 as appropriate. The maximum height of masonry built in any one day shall be 1500 mm with no one portion of any section of masonry more than 1200 mm above the level of the adjacent masonry. Clay bricks shall be laid as received except in very warm dry summer conditions when they shall be wetted prior to laying. Concrete bricks shall not be wetted.

12. Stability

Precautions shall be taken to ensure the stability of the wall during construction, infilling and backfilling.

13. Weather

All newly constructed masonry shall be protected to prevent rain falling on its top surface or water being channeled onto it. Fair faced work shall be protected against striking or other damage resulting from the construction operation. The contractor shall be responsible for avoiding harmful effect of adverse weather on masonry and concrete during and immediately after construction. Frozen materials shall not be used.

14. Movement Joints

Wall lengths and movement joints shall be formed at approx. 4.8m centres and shall occupy the whole height of the wall (including the concrete base). Care shall be taken to ensure that joints are free from debris and on no account shall any joint be filled with mortar.

15. Quality Control

The construction of the brickwork shall be "**Special Category Construction Control**" in accordance with BS 5628:Parts 1 to 3. Trial mixes and site control of mortar shall be carried out following the procedures given in Appendix A of BS5628:Part 1.

Prior to commencing work the contractor shall submit the information required by BS 5328:PART 3 for the designated concrete mix.

Cappings & copings are to be specified by others in accordance with BS 4729 & BS 5642. If there is a risk of children playing on the walls or vandalism use an interlocking capping.

Print In Colour - Do Not Scale

Stepped Brick Retaining Wall Notes

General Notes & Design Assumptions

Setting out to be in accordance with Redrow drawings.
Refer to Redrow drawings for Proposed Ground Levels.

1. Cappings and copings- to Redrow details

Provide frost-resistant cappings or copings sized to BS 4729 or other copings to BS 5642. The cappings or copings should incorporate an overhang and drip if the wall is not in a very sheltered location . Before choosing a wall type, make sure that a suitable combination of coping and DPC is available for the site conditions (see BRE Good Building Guide 17).

2. Damp Proof Courses (see BS 8215)- to Redrow details

High-level and low-level DPC's are recommended in all walls that are not frost resistant. See Good Building Guides 14 and 17, and digest 380 for general advice on DPC selection.

High-level DPC
Always use a DPC beneath the coping and capping courses, which has the ability to adhere to the mortar (high bond polymer).

Low-level DPC
The preferred minimum solution is to build up from the foundation with DPC Type 1 or 2 clay bricks (or equivalent) to one course above the top of the weep-holes.

3. Brickwork

Brickwork should have a minimum density of 1800 kg/m³ and minimum compressive strength of 22 N/mm².

Use type MN or ML clay bricks to BS 3921 between the DPC's, but only if the coping/capping and high level DPC provide adequate protection to avoid saturation (see BRE Good Building Guide 17).

Use type FL or FN clay bricks throughout the wall if it is difficult to provide rain protection or where there is a high risk of frost attack - for example, in areas with a high driving rain index (see climate and brickwork construction notes).

Use frost resistant clay bricks above a high-level DPC, and from the top of the foundation to 200mm above finished ground level in front of the wall.

Masonry on the earth face can be, calcium silicate bricks of Class 3 or stronger to BS 187, and dense concrete blocks and concrete bricks to BS 6073.

Do not use bricks or blocks which do not provide moderate adhesion. See BS 5628:part 3 for advice on adjusting the moisture content of the mortar to achieve the required adhesion. Check after 7 days that using strong hand force only cannot dislodge the units from the wall. Always check with the building supply merchant or the brick or block supplier that the bricks or blocks to be used provide moderate adhesion.

4. Mortar

For most locations a Designation (ii) mortar mix is recommended for all levels in the wall (see BRE digest 362). If building in a very wet location, use a Designation (i) mortar below the low level DPC.

Use Mortar designation (i) if backfilling is to be carried out after 7 days. - Refer to Note 9.

If normal salt content clay bricks (Designation N) are used, or if sulphates in the soil exceed Class 1 (see Digest 363), the use of sulphate-resisting Portland cement (SRPC) is recommended.

Use Type S (coarser) sands to BS 1199/1200.

5. Reinforcement

All reinforcing steel shall comply with BS 4449 or BS 4483 and cut and bent to BS 4466.

6. Wall Ties

For low lift construction, stainless steel wall ties should be of the vertical twist type, in accordance with BS 1243, Clause 4(c)

For high lift construction wall ties should be austenitic stainless steel link type 6mm in diameter @ 900mm horizontal centres and 450mm vertical centres staggered by 450mm. Ties are to be @ 225mm vertical centres at any discontinuity (e.g. movement joint) or change in direction. The ties are **not to be** tied to or in contact with any reinforcing bars.

Rev	Date	By	Description	Chk
C4	10.06.2019	JG	Retaining walls updated as per Redrow comments	DR
C3	05.04.2019	JG	Backfilling notes, Mortar notes & general notes updated.	DR
C2	04.04.2019	JG	Construction Issue - weep hole details updated.	DR
C1	01.10.2018	MC	Construction Issue - Betts recommend gravel board retainers to not exceed 300mm.	DR

Drawing Status: CONSTRUCTION

BETTS ASSOCIATES
CONSULTING ENGINEERS
Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

REDROW

Project: POLLARDS NURSERY, BARNHAM

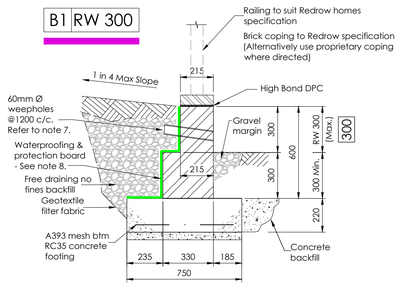
Title: RETAINING WALL LOCATION PLAN LAYOUT & DETAILS PHASE 2 PLOTS 6-14, 21-72 & 76-98

Date:	Scale @ size:	Drawn:	Checked:
OCT 2018	N.T.S. @ A1	MC	DR

Project No:	Drawing No:	Rev:
RED575	2000	C4

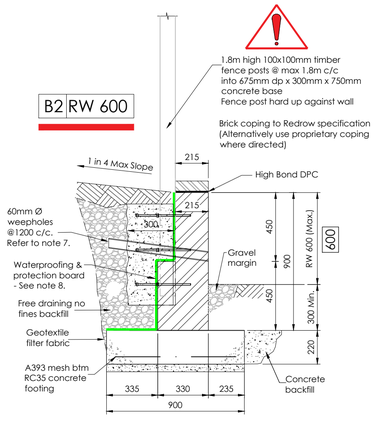
RETAINING WALL DETAILS

B1 | RW 300



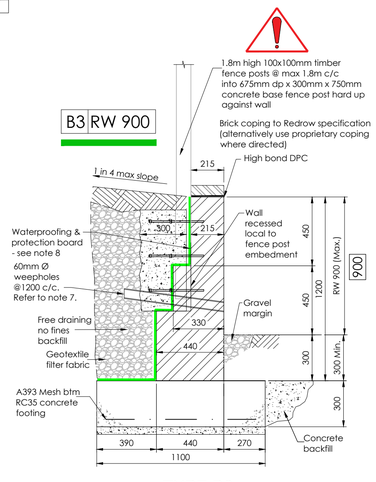
TYPE B1
DRIVE/ GARDEN WALL 0.600m HIGH
(DESIGN HEIGHT 0.900m)

B2 | RW 600



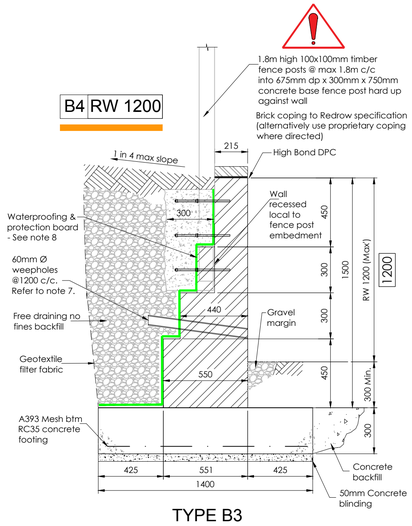
TYPE B1
DRIVE/ GARDEN WALL 0.600m HIGH
(DESIGN HEIGHT 0.900m)

B3 | RW 900



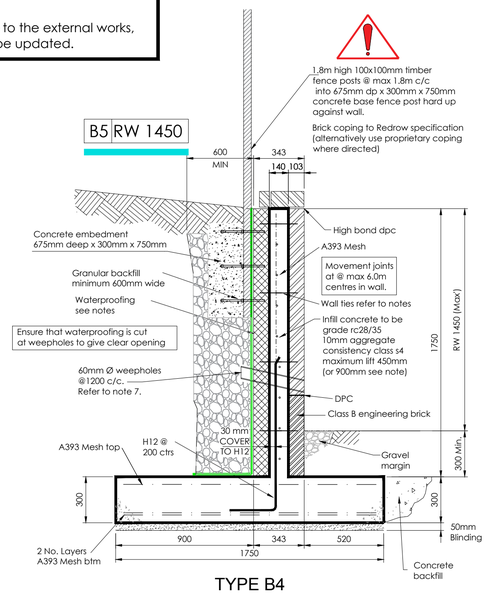
TYPE B2
GARDEN WALL 0.900m HIGH
(DESIGN HEIGHT 1.200m)

B4 | RW 1200



TYPE B3
GARDEN WALL 1.200m HIGH
(DESIGN HEIGHT 1.400m)

B5 | RW 1450



TYPE B4
1.45m HIGH RETAINING WALL
(1.75m Design Height)