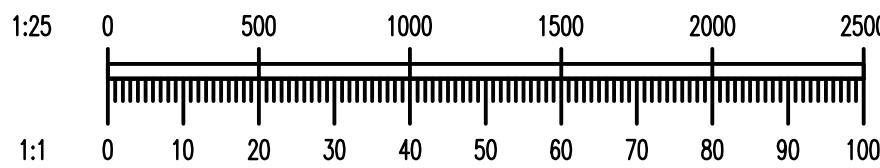


Stepoc block retaining wall  
Retaining maximum 1300mm  
Scale 1:25

Stepoc block retaining wall  
Retaining maximum 2000mm  
Scale 1:25



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B	Retaining wall added	CM	NN	2019
	Retaining max 2.0m			01.08
A	For Building	CM	NN	2018
	Regulations approval			12.11
rev	description	by	chk'd by	date

DO NOT SCALE All dimensions and levels must be checked on site and verified prior to construction

date: Dec-18  
drawn by: Sav chk'd by: NN  
cad dir.: file name:

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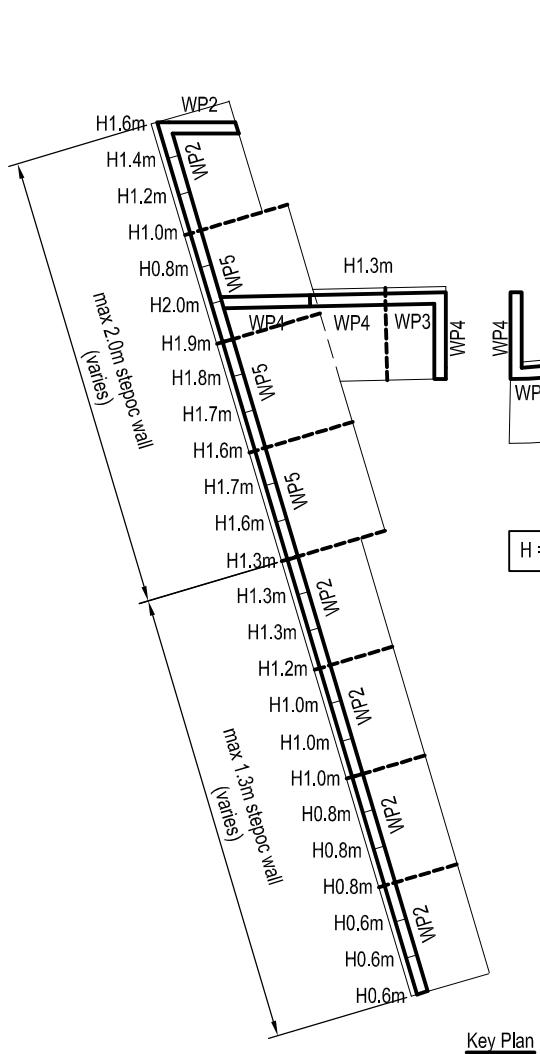
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Stepoc block retaining walls  
GA

scale:	1:25 @ A3
drawing no.:	1839 / 01
revisions	A B

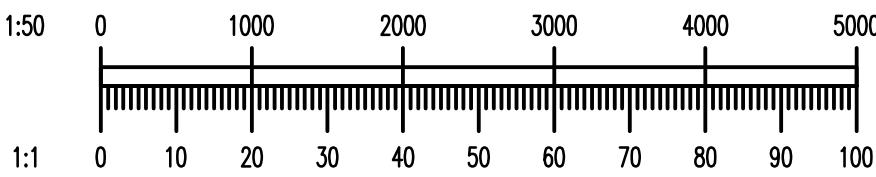




Key Plan  
Scale 1:200

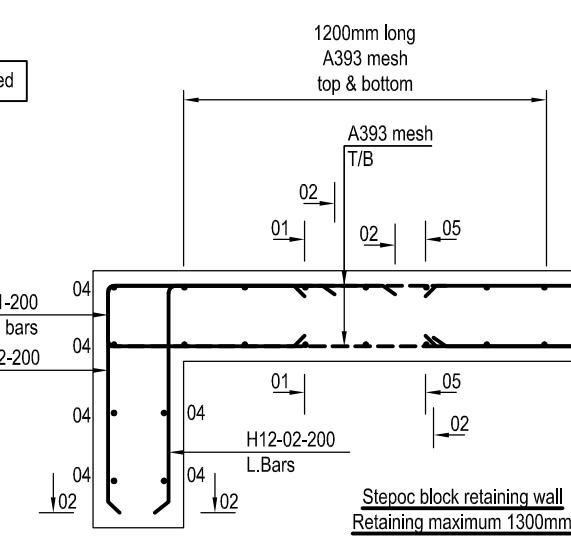
Wall Panel Key Length	
WP1	@ L=3.6m
WP2 & WP5	@ L=3.0m
WP3	@ L=1.6m
WP4	@ L=2.0m

Note:  
All other walls panel are similar with WP1,  
only length and the bar bending schedule are  
different.  
Apply the bar bending schedule for each type of wall  
panel as example WP1.

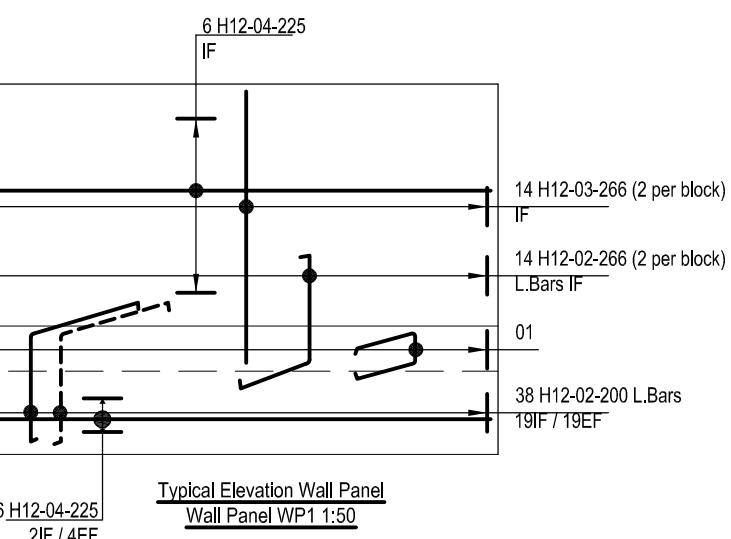


Sign Key	
IF	- inner face
EF	- external face
T	- top
B	- bottom

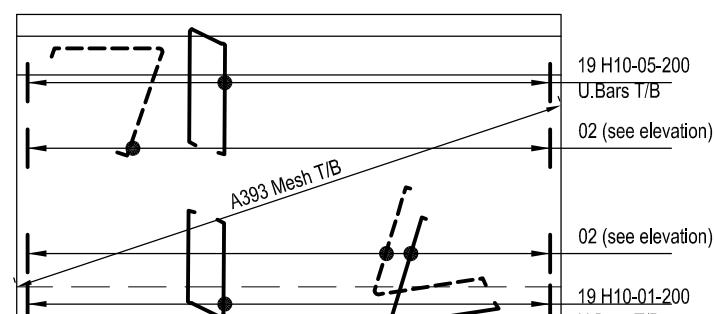
H = Height retained



Stepoc block retaining wall  
Retaining maximum 1300mm  
Reinforcement details 1:25

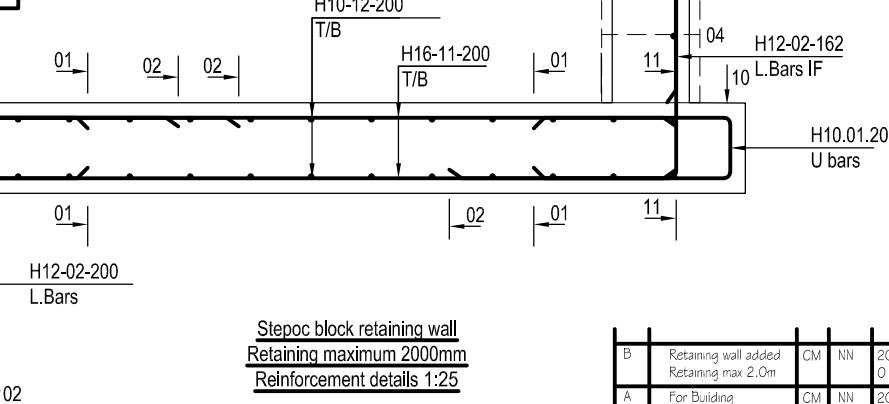
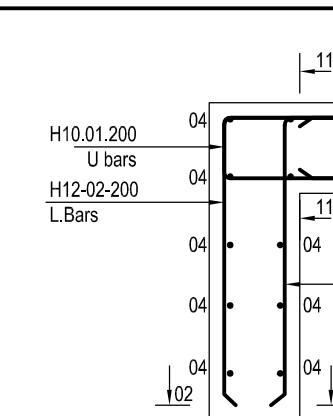


Typical Elevation Wall Panel  
Wall Panel WP1 1:50



Typical Plan Wall Panel  
Wall Panel WP1 1:50

Note:  
1.) Read with schedule No. 1839.03.01  
2.) Cover to reinforcement to be:  
in Walls & Base - 50mm top  
- 50mm on sides  
- 50mm bottom  
3.) Minimum laps to reinforcement to be :-  
H8 - 350mm,  
H10 - 400mm,  
H12 - 500mm,  
H16 - 650mm  
H20 - 800mm  
H25 - 1000mm  
4.) On no account should holes or other  
openings be cut or any reinforcement be  
cut or displaced in any part of the structure  
without prior approval of the Consulting  
Engineer.  
5.) Concrete FND3



Stepoc block retaining wall  
Retaining maximum 2000mm  
Reinforcement details 1:25

B	Retaining wall added	CM	NN	2019
A	Retaining max 2.0m	CM	NN	01.06
	For Building	CM	NN	2018
	Regulations approval	cad dir.	chk'd by	12.11
rev.	description	by	chk'd by	date

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Stepoc block retaining walls  
RC details & Walls Panels

scale:	1:50 @ A3
drawing no.:	1839 / 03
revisions	A B

## NOTES

G1. These drawings should be read in conjunction with all Engineers, Architectural and other Consultants' drawings and specifications and with such other written instructions as may be issued during the course of contract. All discrepancies shall be referred to the Contract Administrator for decision before proceeding with the work.

G2. All dimensions relevant to the setting out and off - site work shall be verified by the contractor before construction and fabrication is commenced. The Engineer's drawings shall not be scaled.

G3. During construction the Contractor shall be responsible for maintaining the structure and adjoining structures in a stable condition and ensuring no part shall be overstressed under construction activities.

G4. Workmanship and materials are to be in accordance with the relevant current British Standard Codes of Practice and including all amendments, and the local statutory Authorities requirements, except where varied by the contract documents.

G5. The approval of a substitution shall be sought from the Engineer but is not an authorisation for an extra. Any extra involved must be taken up with the Contract Administrator before the work commences.

G6. All dimensions are in millimetres unless stated otherwise. All levels are expressed in metres.

G7. The Structural work shown on these drawings has been designed for the following live loads:-

Area	Live Load KN/m <sup>2</sup>
Flat Roof	0.75
Pitched Roof	0.75
Floors (Generally)	1.50
Corridors / Stairs	1.50

G8. All props and formwork for beams and slabs shall be removed before construction of any walls or other permanent loading on this slab.

G9. All non-loadbearing walls shall be kept clear of the underside of slabs and beams by 20mm unless otherwise shown.

## FOOTINGS / FOUNDATIONS

F1. Footings to be founded in natural undisturbed ground having a safe bearing capacity of 100 kN/m<sup>2</sup>. Before concrete is placed the safe bearing capacity shall be inspected by The Engineer and to the Approval of the Local Authority.

Where the safe bearing capacity is not achieved at the depths indicated, i.e. local soft spots, the Engineer is to be informed immediately.

F2. Foundations are to be symmetrical about walls over unless otherwise stated.

F3. Expose existing foundations for Building Control's inspection & approval prior to commencing any other work.  
New foundations - Mass conc trench fill depth as plans - depth dependant on site conditions..

F4. Agree founding level with Building Control on site. Found below adjacent drains and min 600 below live roots.  
Found in natural undisturbed ground, sustaining min 100KN/m<sup>2</sup> bearing pressure.  
Mass concrete grade C25P unless stated otherwise  
Where drains pass through foundations provide pc lintol 100x150 dp for each leaf as bridge over  
Sub floor void - Provide 100 oversite concrete. Where this is lower than the external ground level lay the oversite to fall to a gully and link to the sw drainage system with a 100 dia upvc drain

## PILED FOUNDATIONS

P1. Piled foundations to be adopted to specialist piling designers details (to NN Engineering loads)

P2. See NN Engineering piling specification document for required piling procedures.

## CONCRETE

C1. All workmanship and materials shall be in accordance with BS 8110.

C2. Concrete grade at 28 days shall be as follows unless stated otherwise on the Engineering drawings :-

	Strength	Cement Type
Blinding	7N/mm <sup>2</sup>	OPC
Below Ground		
Mass Concrete	25N/mm <sup>2</sup>	SRPC
Below Ground RC	35N/mm <sup>2</sup>	OPC
Above Ground RC	35N/mm <sup>2</sup>	OPC

C3. Minimum Cover (mm) to all reinforcement (including links) to be as shown on the drawing.

C4. Sizes of concrete elements do not include thickness of applied finishes.

C5. Beam depths are written first and include slab thickness.

C6. No holes, chases or embedment of pipes other than those on the structural drawings shall be made in concrete without prior approval of the Engineer.

C7. Construction joints shall be formed in a manner band in locations agreed with the Engineer.

C8. Splices in reinforcement shall be made only in the positions shown or as otherwise instructed by the Engineer.

C9. Welding of reinforcements is not permitted.

C10. All reinforcement shall be supported in its correct position during concreting by approved bar chairs, spacers or support bars.

C11. Reinforcement Symbols:-Type and grade of reinforcement to comply with Clause 4 BS 8666

C12. All reinforcement bars and mesh to comply with BS 4449 and BS 4483 respectively and shall be from a "CARES" approved supplier.

## MASONRY

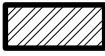
M1. All workmanship and material shall be in accordance with BS 5628

M2. Internal walls below ground floor level, except cavity walls, are to be constructed in 215mm thick brickwork symmetrical about centre lines of walls over unless otherwise stated.

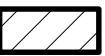
M3. Loadbearing walls below ground floor slab level to be constructed in class 4 (27.5 N/mm<sup>2</sup>) solid brickwork set in 1:1/4:3 mortar mix unless otherwise noted on the Engineer's drawings.  
M4. Refer to Architect Drawings for positions of walls over for setting out foundations unless otherwise shown on the Engineers drawings.

M5. All brick and block walls shown on the layouts are structural loadbearing walls and are to be constructed before commencing work on the floor or roof over.

M6. Structural brickwork is shown thus:-  
Compressive strength of 37.5 N/mm<sup>2</sup> solid brick set in 1:1:6 mortar mix, unless otherwise noted on the Engineers drawings.  
Density 2000 kg/m<sup>3</sup>



M7. Structural blockwork is shown thus:-  
Compressive strength of 3.6 N/mm<sup>2</sup> solid block set in 1:1:6 mortar mix, unless otherwise noted on the Engineers drawings.



M8. Vertical back to back chases will not be permitted in single skin loadbearing walls. Horizontal chases will not be permitted.

M9. Vertical joints in brickwork and blockwork are indicated thus:- MJ  
For joint details refer to architects drgs

M10. Wall ties shall be placed at 900mm horizontal and 450mm vertical staggered centres. At the vertical edges of openings and at vertical unreturned or unbound edges, for example, movement joints and up the sloping verge of gable walls, additional ties at 225mm vertical centres shall be placed within 225mm of the edge.

M11. Wall ties to be: stainless steel to architects details - stainless steel double triangle

M12. Lateral restraint to the building will be in accordance with requirements and guidance given in BS 5628 parts 1 and 3 as follows:

Lateral restraint is to be provided to all walls at floor and roof levels, including ceiling levels and to the tops of walls in roof voids using M30mm x 5mm galvanized mild steel straps, at 1.0m maximum centres, with 6 No fixings unless otherwise noted or shown on the drawings. Straps are to be displaced locally and equally spaced each side of any openings where these occur.

M13. At junction of new walls joining existing, unless shown otherwise provide movement joint formed with proprietary starter strip eg. Ancon Staifix QuickStart with slip ties at max 225mm ctrs fixed to each block & brick leaf.

Seal and finish junction to architects details. Do not plaster over or render across joint.

## STRUCTURAL STEELWORK

S1. All workmanship and material shall be in accordance with the current BS 449 or BS 5950 and shall be CE marked assuming Class 2 unless otherwise specified

S2. All steelwork to be Grade S275 unless otherwise noted.

S3. On site welding will not be permitted unless agreed by NN Engineering Consultants Ltd

S4. The grade of bolts used shall be 8.8

S5. The Contractor shall provide temporary bracing as necessary to stabilize the structure during erection.

S6. The ends of all tubular members are to be sealed with nominal thickness plates and continuous fillet welds unless otherwise noted.

S7. Steel to steel connections are to be designed by the contractor. If reactions are not given the Contractor shall request information to be provided. Connections calculations are to be submitted for comments from NN Engineering Consultant Ltd however the Contractor is responsible for obtaining all necessary approvals from Building Control, NHBC etc.

S8. Before fabrication is commenced the Contractor shall submit copies of the shop drawings to the Contract Administrator for inspection. Inspection does not include the checking of dimensions.

S9. Members encased in concrete or friction grip bolted connections must not be painted.

S10. All internal steelwork to be thoroughly wire brushed to remove loose rust and scale and shop painted with two coats of high build zinc phosphate primer with touch up on site after erection.  
Additionally all steelwork built into external walls or in the cavity of cavity walls to receive two coats of heavy duty bitumen paint. The cavity side of steelwork built into the inner leaf of cavity walls to similar additional protection

S11. Except where otherwise shown welds to be 6mm continuous fillet.

S12. Holding down bolts to be to BS 729 are to include nuts and washers, and to be set in place using E. M. L tolerance tubes. The use of other materials for tolerance tubes will not be permitted.

## TIMBER

T1. All workmanship and material shall be in accordance with BS 5268

T2. New timber to be minimum grade C16 or as specified on the drawing, with a moisture content not exceeding 18%

T3. All new timber to be treated against fungal and insect attack; with cut ends thoroughly treated before fixing.

T4. Where multiple joists are specified bolted together, use M10 bolts with double sided toothplate connectors @ 400 ctrs.

T5 Where stud partitions are supported parallel to the span of floor joist, these are to be supported on 2 No joists bolted together with M12 diameter bolts with large washers under head and nut at 600 c/c. Where stud partitions run at right angles to the floor joists, doubled-up blocking is to be provided between the joists beneath the partition, and nailed to the joists.

T6. Where floor joists clear span exceeds 2.5m provide full depth noggins in solid sw blocking or proprietary heeringbone strutting as follows :-

2.5m - none

2.5 - 4.5m - 1 row at mid span

over 4.5m - 2 rows at equal spacing

T7. Vertical restraint to timber roof construction will be in accordance with the guidance given in BS 5628 Parts 1 and 3 as follows:-

Vertical restraint is to be provided for rafters, trusses and roof joist at supports using M30 x 2.5 standard galvanized mild steel straps, at 1.2m maximum centres with 6 No fixings unless otherwise noted or shown on the drawings.

Straps are to be displaced locally and equally spaced each side of any openings where these occur.

T8. Timber construction to be securely fixed to structural steel timber plates bolted with min. M8 grade 4.6 bolts @ 600 max. c/c and/or specialist proprietary hangers shot-fired to the structural steelwork.

T9. Timber Shrinkage - Set timber joists supported on steel beams min 12mm clearance above beam and 2mm below as NHBC CI 6.4 - D11 to allow for timber shrinkage.

A	For Building Regulations approval	CM	NN	2018
rev.	description	by	chk'd by	date

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Structural Notes

scale:	@ A3
drawing no.:	1839 / 50
revisions:	A