Appendix 14

CDM Information

Coopers

General Design Risk Assessment for Typical Foundation Options

Coopers
Consulting Engineers

Client : TBA
Project : Trough Laithe Farm, Barrowford
Project No : 5883

DESIGN RISK ASSESSMENTS FOR FOUNDATION OPTIONS

ACTIVITY/ELEMENT OF DESIGN	HAZARD (ie slips, trips, falls, manual handling, use of mobile plant, chemicals etc.)	RISK ASSESSMENT								HAZARD AVOIDANCE MEASURES (specify measures required to avoid or minimize risk using hierarchy of controls)
		Construction Phase				Operational/Maintenance Phase				
		High	Med	Low	N/A	High	Med	Low	N/A	
Foundations <1200mm deep and House Drainage (ie Traditional & Nominally Reinforced Strip Footings)	Falls/slips/trips		✓						✓	Provide information and training on working in excavations. Use daily inspections by competent person prior to entry into trench and recording on Excavation Register
	Trench Collapse			✓					✓	Ensure excavation sides battered back to a safe angle of repose. Provide information and training on working in excavations. Use daily inspections by competent person.
Breaking out existing foundations	Noise /vibration		✓						✓	Identify existing foundations and dig out using mechanical excavator. If not possible break out using hand held breakers. Minimise vibration in breakers by maintenance. Ensure use of thick gloves/appropriate PPE
	Contamination			✓					✓	Removal of contaminated material to a licensed landfill site or use of inert cover over contaminated strata . Use of PPE by groundworkers. Enforcement of good hygiene rules and provision of welfare facilities.
Handling of blocks/bricks and steel mesh	Musculo-Skeletal Injury		✓						✓	Use of mechanical handling plus manual handling risk assessment. Certificate required for mechanical handling. Designer to specify use of blocks/bricks and mesh of suitable unit weight for manual handling. Contractor to ensure mesh lengths take into account manual handling. Mechanical handling where possible.
Concrete pouring/mortars	Skin Irritation/Eczema		✓						✓	Contractor to ensure proper use of barrier cream/PPE. Designer to ensure suitable mortar additives. Contractor to carry out COSHH assessments.
	Existing services		✓						✓	Contact utilities management companies to confirm existence or absence of live services. Provide utilities plans to Contractor. Use of Cat and Genny during excavation and proceed with care. Hand dug excavations where necessary.
Foundations >1200mm deep and Drains/Services (ie Deep Strip footings or Mass Concrete Trench Fill	Trench collapse	✓							✓	Ensure excavation sides supported by propping/trench sheeting, or battered back to a safe angle of repose. Provide information and training on working in excavations. Use daily inspections by competent person. Added risk in areas of groundwater. Ensure that excavation pumped dry at all times.
	Slips/trips/falls	✓							✓	Provide information and training on working in excavations. Use daily inspections by competent person prior to entry into trench and recording on Excavation Register
	Contamination			✓					✓	Removal of contaminated material to a licensed landfill site or use of inert cover over contaminated strata. Use of PPE by groundworkers. Enforcement of good hygiene rules and provision of welfare facilities.
	Existing Services			✓					✓	Contact utilities management companies to confirm existence or absence of live services. Provide utilities plans to Contractor. Use of Cat and Genny during excavation and proceed with care. Hand dug excavations where necessary.

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Project : Trough Laithe Farm, Barrowford
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DESIGN RISK ASSESSMENTS FOR FOUNDATION OPTIONS

ACTIVITY/ELEMENT OF DESIGN	HAZARD (ie slips, trips, falls, manual handling, use of mobile plant, chemicals etc.)	RISK ASSESSMENT								HAZARD AVOIDANCE MEASURES (specify measures required to avoid or minimize risk using hierarchy of controls)
		Construction Phase				Operational/Maintenance Phase				
		High	Med	Low	N/A	High	Med	Low	N/A	
Foundations >1200mm deep and Drains/Services	**Continued**									
Installation of polystyrene sheets for heave protection requiring manned entry to unsupported excavations	Trench collapse Slips/trips/falls	✓							✓	Install inaccordance with approved method statement and to include edge protection and adequate cross over points. Alternatively consider integral raft foundation with stone blanket.
Concrete pouring/mortars	Skin Irritation/Eczema	✓							✓	Contractor to ensure proper use of barrier cream/PPE. Designer to ensure suitable mortar additives. Contractor to carry out COSHH assessments.
Handling of blocks/bricks and steel mesh	Musculo-Skeletal injury		✓						✓	Use of mechanical handling plus manual handling risk assessment. Certificate required for mechanical handling. Designer to specify use of blocks/bricks and mesh of suitable unit weight for manual handling. Contractor to ensure mesh lengths take into account manual handling. Mechanical handling where possible.
	Asphyxia and confirmed space working	✓							✓	Confined space procedures for working in deep excavations/manholes. Ensure fumes from mechanical plant, such as pumps, are well controlled.
Breaking out existing foundations	Noise/Vibration			✓					✓	Identify existing foundations and dig out using mechanical excavator. If not possible break out using hand held breakers. Minimise vibration in breakers by maintenance. Ensure use of thick gloves/appropriate PPE
Raft Foundations with Integral floor slab	Slips/trips/falls		✓						✓	Provide information and training on working in excavations. Use daily inspections by competent person prior to entry into trench and recording on Excavation Register
Strip existing fill material and remove to approved bearing strata. Backfill with approved consolidated granular fill.	Trench collapse	✓							✓	Ensure excavationsides supported by propping/trench sheeting, or battered back to a safe angle of repose. Provide information and training on working in excavations. Use daily inspections by competent person. Added risk in areas of groundwater. Ensure that excavation pumped dry at all times.
	Contamination			✓					✓	Removal of contaminated material to a licensed landfill site or use of inert cover over contaminated strata. Use of PPE by groundworkers. Enforcement of good hygiene rules and provision of welfare facilities.

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Client : TBA
Project : Trough Laithe Farm, Barrowford
Project No : 5883

DESIGN RISK ASSESSMENTS FOR FOUNDATION OPTIONS

ACTIVITY/ELEMENT OF DESIGN	HAZARD (ie slips, trips, falls, manual handling, use of mobile plant, chemicals etc.)	RISK ASSESSMENT								HAZARD AVOIDANCE MEASURES (specify measures required to avoid or minimize risk using hierarchy of controls)
		Construction Phase				Operational/Maintenance Phase				
		High	Med	Low	N/A	High	Med	Low	N/A	
Raft Foundations with Integral floor slab	**Continued**									
Construction of granular blanket beneath raft for heave precautions, depth <1200mm.	Trench collapse Slips/trips/falls			✓					✓	Ensure excavations sides battered back to a safe angle of repose. Provide information and training on working in excavations. Use daily inspections by competent person. Use daily inspections by competent person prior to entry into trench and recording on Excavation Register.
Breaking out existing foundations	Noise/Vibration			✓					✓	Identify existing foundations and dig out using mechanical excavator. If not possible break out using hand held breakers. Minimise vibration in breakers by maintenance. Ensure use of thick gloves/appropriate PPE
	Existing Services			✓					✓	Contact utilities management companies to confirm existence or absence of live services. Provide utilities plans to Contractor. Use of Cat and Genny during excavation and proceed with care. Hand dug excavations where necessary.
	Backfilling			✓					✓	Use mechanical excavators to place approved granular fill in layers and lightly compact. Geotex wrap fills in 1m max. lift heights and use graded granular material with good self compacting properties. Compaction with plant only when excavation depth <1200mm deep.
Steel Fixing	Musculo-Skeletal injury		✓						✓	Designer to schedule bars to take into account manual handling. Avoid long large diameter bars. Use of mechanical handling where possible plus manual handling risk assessment. Certificate required for machanical handling
Concrete pouring/mortars	Skin Irritation/Eczema	✓							✓	Contractor to ensure proper use of barrier cream/PPE. Designer to ensure suitable mortar additives. Contractor to carry out COSHH assessments.
Foundations-piled										
Mobilisation of plant	Sequencing of piling work with other construction to avoid unsafe conditions		✓						✓	Tender documents to include site investigation report and current services information. Contrac to plan site access. Provision of stone support blanket where required to protect buried services. Design of piling platform to BR470. Agree working clearances with highway authority
	Damage to buried services		✓						✓	
	Rig overturning		✓						✓	

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Client : TBA
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Project No : 5883

DESIGN RISK ASSESSMENTS FOR FOUNDATION OPTIONS

ACTIVITY/ELEMENT OF DESIGN	HAZARD (ie slips, trips, falls, manual handling, use of mobile plant, chemicals etc.)	RISK ASSESSMENT								HAZARD AVOIDANCE MEASURES (specify measures required to avoid or minimize risk using hierarchy of controls)
		Construction Phase				Operational/Maintenance Phase				
		High	Med	Low	N/A	High	Med	Low	N/A	
Foundations-piled	**Continued**									
Pile driving - CFA	Hearing loss		✓						✓	Contractor to establish closed working zone inside which PPE to be mandatory (ear defenders, etc)
	Contamination		✓						✓	Any arisings from pile excavation to be segregated and disposed of as controlled waste. Operatives to be provided with adequate welfare provisions for washing and eating.
-CFA auger changes	Musculo-skeletal injury		✓						✓	Limit number of pile sizes to struicture.
- Steel fixing	Musculo-skeletal injury		✓						✓	Schedule bars to take into account manual handling. Avoid long large diameter bars who weight would exceed 20kgs. Consider automated cage reinforcement equipment.
-Reinforcement lifting	Injury from falling stee bars		✓						✓	Design of reinforcement cages to be robust enough for lifting.
- Concrete pouring	Skin irritation/ eczema		✓						✓	Contractor to ensure proper use of barrier cream/ PPE
Pile driving - precast concrete segmental	Hearing loss	✓							✓	Contractor to establish closed working zone inside which PPE to be mandatory (ear defenders, etc)
	Musculo-skeletal injury Trapping/ crushing	✓							✓	Contractor to prepare Method Statement. Provide information and training in handling and joint piles. COSHH assessment of adhesives used in pile jointing.. Use of PPE.
Pile trimming to cut-off level and expose reinforcement. - Scabbling pile surface	Noise/Vibration Musculo-skeletal injury Trapping/ crushing Cuts & abrasions		✓						✓	Correct use of mechanical pile croppers or other means of trimming that do not involve excessive use of hand held tools. Minimise vibration in hand held breakers by maintenance. Ensure use of thick gloves/appropriate PPE. Use protection caps on exposed bars after trimming.
Ground Beams										
Retained ground "fill": excavation < 1.2m	Trench collapse		✓						✓	Ensure excavation sides battered back to angle of safe repose. Provide information and traini on working in excavations. Use "permit to work" system and daily inspections by competent person.
Retained ground "fill": excavation > 1.2m	Trench collapse/ trips/ falls	✓							✓	Ensure excavation sides supported by propping/ trench sheeting, or battered back to angle safe repose. Provide information and training on working in excavations. Use "permit to work" system and daily inspections by competent person.
Steel fixing	Musculo-skeletal injury		✓						✓	Schedule bars to take into account manual handling. Avoid long large diameter bars whose weight would exceed 20kgs.
Concrete pouring	Skin irritation/ eczema		✓						✓	Contractor to ensure proper use of barrier cream/ PPE

Appendix 15

Reference Drawings

Drawing No.	Revision	Title
5883/L1	-	Site Location Plan
5883/AP	-	Aerial Photograph.
5883/01	-	Site Plan
5883/DSP	-	Drift Strata Plan
5883/Ts/01	-	Typical Details for traditional Strip Footing in Clay Bearing Strata with Suspended and Ground Supported Slab
5883/Rn/01	-	Typical Details for Nominally Reinforced Strip Footing in Sand Bearing Strata with Suspended and Ground Supported Slab
5883/Rs/01	-	Typical Details for Designed Reinforced Strip Foundation with Suspended and Ground supported Slab.
5883/WRs/01	-	Typical Foundation Details for Wide Reinforced Strip Foundation with Suspended and Ground Supported Slab.
5883/TfH/01	-	Typical Details for Trenchfill Foundation Affected by Existing Trees Requiring Heave Precautions
5883/RfH/01	-	Typical Section/Detail Thro' Raft Foundation for Possible Heave Conditions

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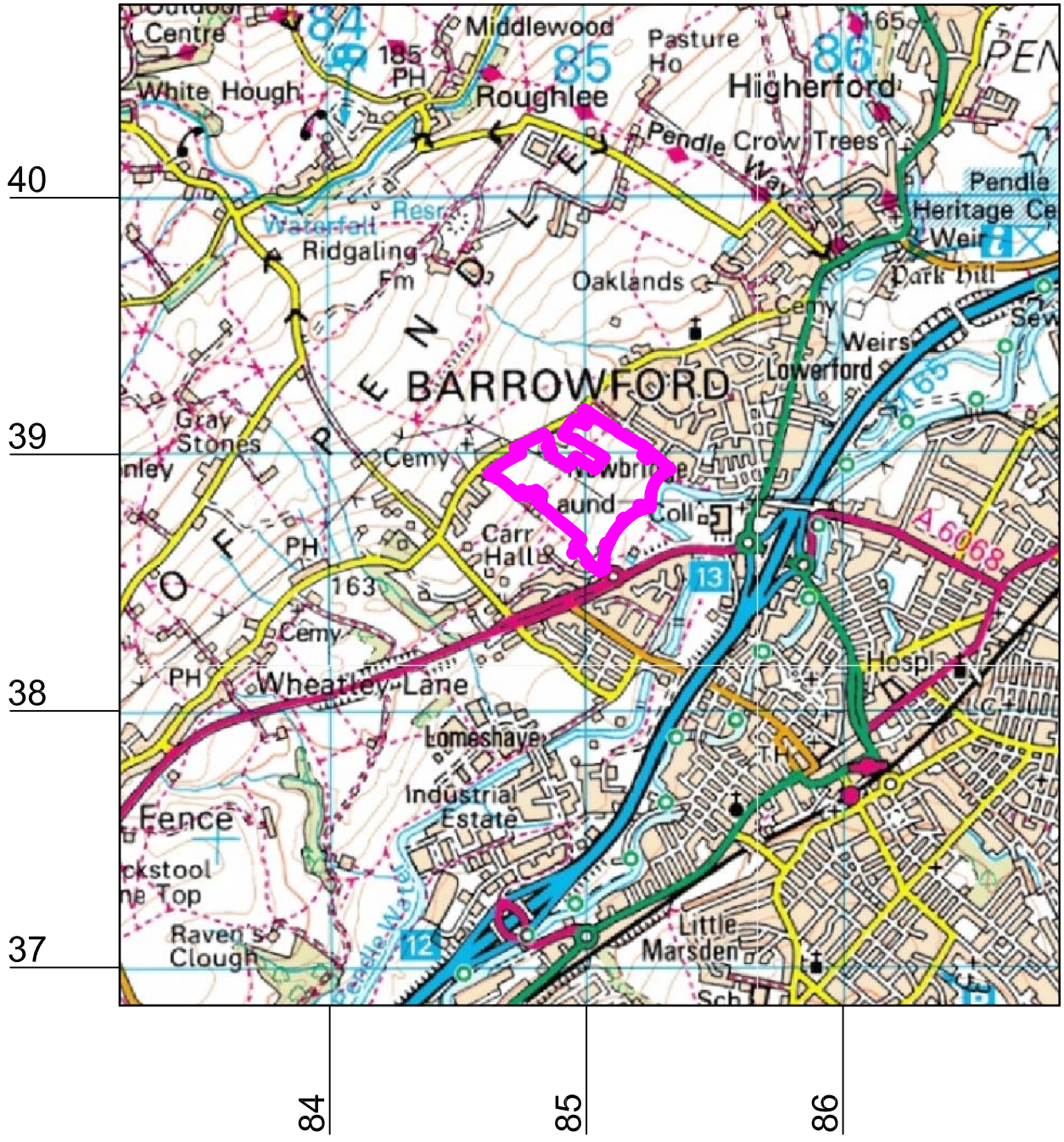
SCALE	1:25000@A4	Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.	
DATE	17.09.14		
DRAWN	AH	SITE LOCATION PLAN	
CHEK'D	-	Drg No:	5883 / L1

NORTH

National Grid reference of the proposed site.	SD 851 388



This drawing is to be read in conjunction with the following:-

a) Coopers Site Investigation Report 5883si.

0 200 400 600 800 1000 1500 2000

SCALE BAR (m)

NORTH

KEY

Site Boundary

© Copyright
The original of this drawing contained coloured symbols and/or features.
Any black and white reproduction should not be relied upon.

DO NOT SCALE

SCALE	NTS @ A3					
DATE	10.07.14					
DRAWN	PN					
CHEK'D		Rev	Drwn	Date	App'd	Comments

Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

AERIAL PHOTOGRAPH

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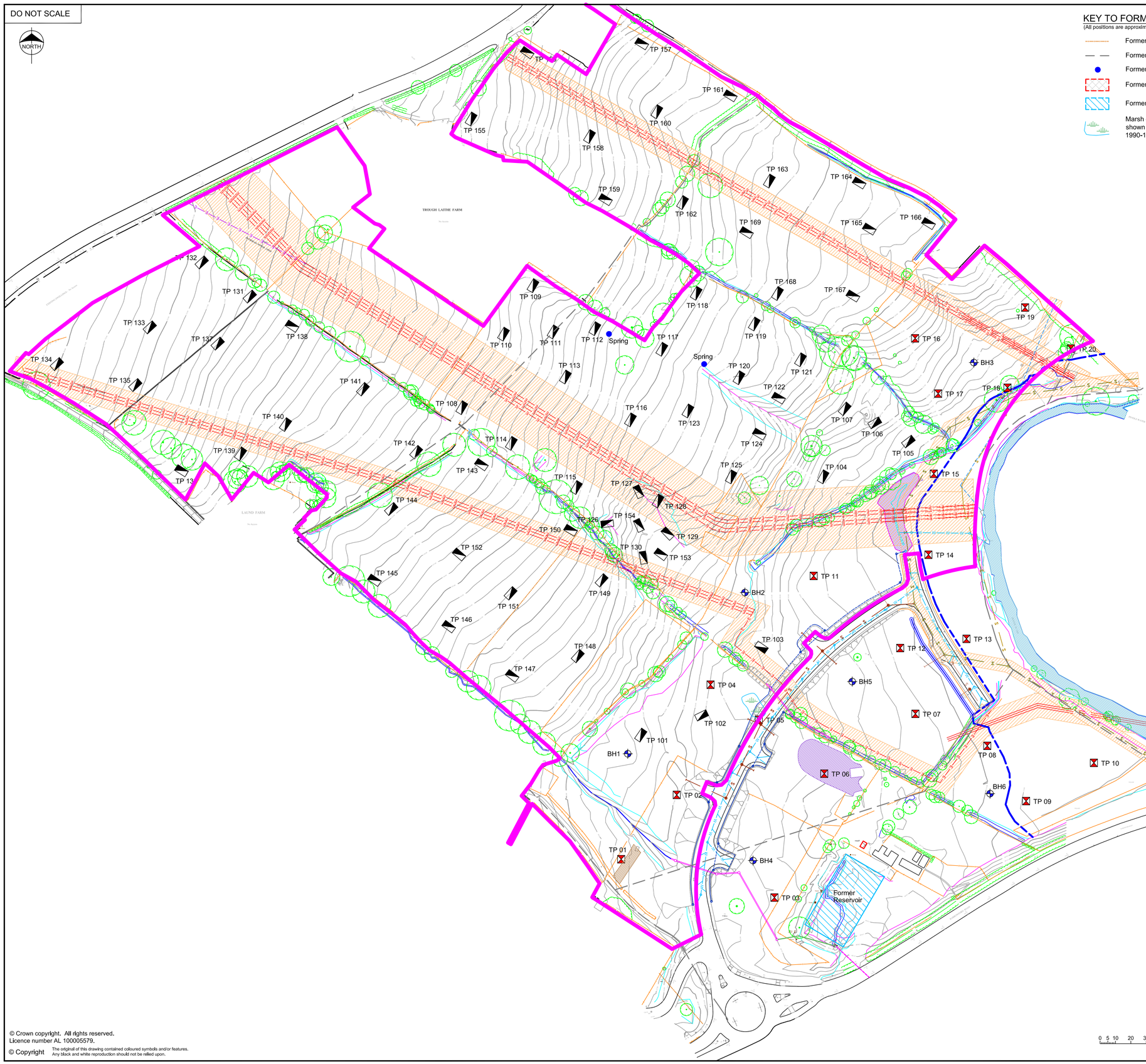
Drawing No. 5883 / AP

Rev. -

DO NOT SCALE



KEY TO FORMER FEATURES

(All positions are approximate unless otherwise stated)

- Former fencelines (taken from ref. e)
- Former footpath positions (taken from ref. e)
- Former spring/well (taken from ref. e)
- Former buildings (taken from ref. e)
- Former reservoir (taken from ref. e)
- Marsh - possible former pond as shown on National Grid Map 1990-1993 edition (taken from ref. e)

KEY TO EXISTING FEATURES

(All positions are approximate unless otherwise stated)

- Surveyed trees (taken from ref. a)
- Surveyed hedges (taken from ref. a)
- Surveyed tree canopy (taken from ref. a)
- Surveyed water edge (taken from ref. a)
- Surveyed ditch line (taken from ref. a)
- Surveyed bank top (taken from ref. a)
- Surveyed bank bottom (taken from ref. a)
- Surveyed fenceline (taken from ref. a)
- Surveyed overhead cables (taken from ref. a)
- Easements (taken from ref. d)
- Existing septic tank (taken from ref. d)
- Attenuation pond (taken from ref. d)
- River (taken from ref. d)
- Survey contours (taken from ref. d)
- Extent of Flood Plain Flood Risk Zone 3 (1 in 100 year + 20% allowance for Climate Change)
- Site boundary (taken from ref. b)

KEY TO EXPLORATORY HOLES

(All positions are approximate unless otherwise stated)

- Trial Pits excavated by Coopers: TP 101 - 169 between 24 April & 01 May 2014
- Trial Pits excavated by Capita Symonds (taken from ref. c): TP1 - 8 on 14 October 2005; TP 9 - 20 on 18 October 2005
- Boreholes BH1 - BH6 drilled by HB Boring for Capita Symonds during October 2005 (taken from ref. c)

KEY TO CONJECTURED SERVICES

(All positions are approximate unless otherwise stated)
(Taken from ref, d)

- S104 Foul Water Drains
- S38 Highway Surface Water Drainage
- Filter Drain S38 Pipework
- Filter Drain S38 Trench
- Abandoned Combined Public Sewer
- Combined Public Sewer
- Existing Culverts
- Existing Culvert Assumed Alignment
- Existing Surface Water Public Sewer
- Conjectured overhead electricity lines
- New Culverts

This drawing is to be read in conjunction with the following:-

a) Frank Hodgkinson Associates, Land at Barrowford Road, Nelson, [Topographical Survey], dated May 2003.
b) Peel, Land at Trough Laith Farm & Riverside Business Park, [site boundary], dated July 2013.
c) Capita Symonds, Land off Barrowford Road, Nelson, Lancashire, ref. M23701/GEIA-1/December 2005.
d) BWB Consultancy, Trough Laith Farm, Constraints Masterplan, ref. MCH/2011/HD/100, rev. P1, dated 22 July 2013.
e) GroundSure Environmental Insight, Historical Maps - Barrowfield Road, Barrowford, Nelson, ref. GS-1509640_LS, dated 17 June 2014.

0 5 10 20 30 40 50 60 70 80 90 100
SCALE BAR (m)

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Client
PEEL HOLDINGS

Project
Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

Title
SITE PLAN

DRAWING NUMBER	SCALE at A1	1:1250	
5883_01	DATE	25.04.14	REVISION
	DRAWN	AH	-
	CHECKED	NR	

DO NOT SCALE

KEY TO FORMER FEATURES

(All positions are approximate unless otherwise stated)

- Former fencelines (taken from ref. e)
- Former footpath positions (taken from ref. e)
- Former spring/well (taken from ref. e)
- Former buildings (taken from ref. e)
- Former reservoir (taken from ref. e)
- Marsh - possible former pond as shown on National Grid Map 1990-1993 edition (taken from ref. e)

KEY TO EXISTING FEATURES

(All positions are approximate unless otherwise stated)

- Surveyed trees (taken from ref. a)
- Surveyed hedges (taken from ref. a)
- Surveyed tree canopy (taken from ref. a)
- Surveyed water edge (taken from ref. a)
- Surveyed ditch line (taken from ref. a)
- Surveyed bank top (taken from ref. a)
- Surveyed bank bottom (taken from ref. a)
- Surveyed fenceline (taken from ref. a)
- Existing septic tank (taken from ref. d)
- Attenuation pond (taken from ref. d)
- River (taken from ref. d)
- Survey contours (taken from ref. d)
- Extent of Flood Plain Flood Risk Zone 3 (1 in 100 year + 20% allowance for Climate Change)
- Site boundary (taken from ref. b)

KEY TO EXPLORATORY HOLES

(All positions are approximate unless otherwise stated)

- Trial Pits excavated by Coopers: TP 101 - 169 between 24 April & 01 May 2014
- Trial Pits excavated by Capita Symonds (taken from ref. c): TP1 - 8 on 14 October 2005; TP 9 - 20 on 18 October 2005
- Boreholes BH1 - BH6 drilled by HB Boring for Capita Symonds during October 2005 (taken from ref. c)

KEY TO CONJECTURED STRATA

(All positions are approximate unless otherwise stated)

- Clay only
- Clay over sand
- Sand only
- Sand over clay
- Alluvium

0.2 Depth of Topsoil
2.0 Thickness of strata / stratum unit
+2.3 Depth of trial pit when bedrock not encountered
4.8 Depth of bedrock

Note:
Due to the mixed stratum encountered in the alluvium deposits, a note when possible has been made on the depth of alluvium (interface with glacial till), as well as bedrock.

This drawing is to be read in conjunction with the following:-

a) Frank Hodgkinson Associates, Land at Barrowford Road, Nelson, [Topographical Survey], dated May 2003.
b) Peel, Land at Trough Laith Farm & Riverside Business Park, [site boundary], dated July 2013.
c) Capita Symonds, Land off Barrowford Road, Nelson, Lancashire, ref. M23701/GEIA-1/December 2005.
d) BWB Consultancy, Trough Laith Farm, Constraints Masterplan, ref. MCH/2011/HD/100, rev. P1, dated 22 July 2013.
e) GroundSure Environmental Insight, Historical Maps - Barrowfield Road, Barrowford, Nelson, ref. GS-1509640_LS, dated 17 June 2014.

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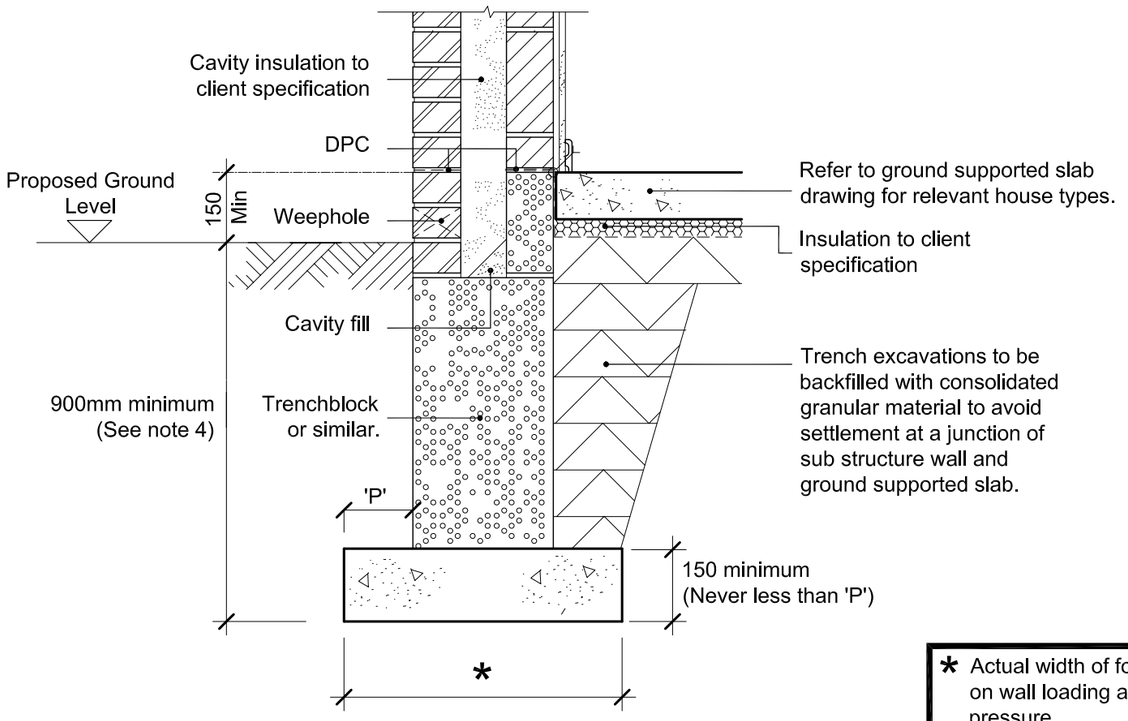
Client
PEEL HOLDINGS

Project
Trough Laithe Farm, Barrowford Road, Barrowford Road, Lancashire.

Title
DRIFT STRATA PLAN

DRAWING NUMBER	SCALE at A1	1:1250	
5883_DSP	DATE	03.09.14	REVISION
	DRAWN	PN	-
	CHECKED	NR	

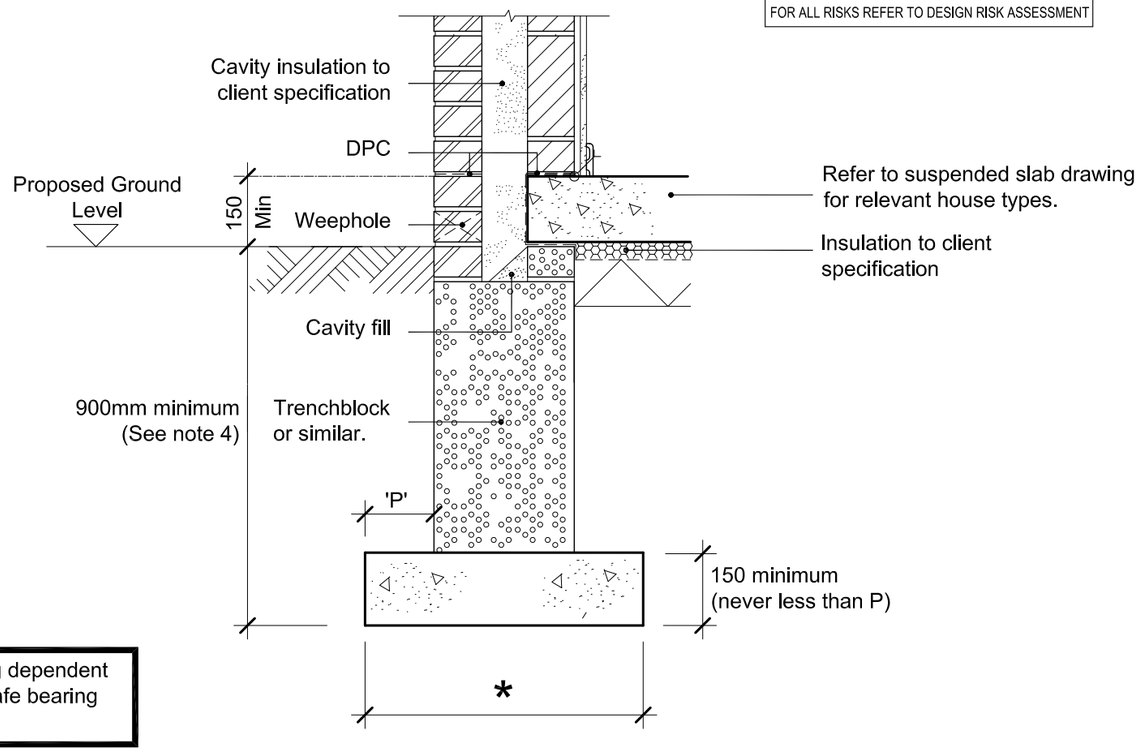
THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE RELEVANT HOUSE TYPE DRAWINGS, FOUNDATION PLAN & SCHEDULE AND THE SITE SPECIFIC SITE INVESTIGATION REPORTS



* Actual width of footing dependent on wall loading and safe bearing pressure.

TRADITIONAL STRIP FOOTING
IN CLAY BEARING STRATA
WITH GROUND SUPPORTED SLAB

CDM HIGH RISK ASSESSMENT
FOR ALL RISKS REFER TO DESIGN RISK ASSESSMENT



TRADITIONAL STRIP FOOTING
IN CLAY BEARING STRATA WITH
SUSPENDED GROUND FLOOR SLAB

NOTES

1. This drawing is to be read in conjunction with Coopers Site Investigation Report Ref: 5883si.
2. The safe bearing pressure on clay strata limited to that indicated in the Site Investigation Report referred to in Note 1 above.
3. Foundation depths indicated assume that the proposed foundations are outside the zone of influence of former, existing and proposed trees (Refer to NHBC Standards Chapter 4.2).
4. Minimum foundation depth for footings founded in the Clay Bearing Strata are to be in accordance with the NHBC Standards Chapter 4.2, Clause D6(c) Table 5 and are as follows:-

SHRINKAGE POTENTIAL	MINIMUM DEPTH (mm)
MEDIUM	900

5. All backfill material to the foundation excavations and floor voids to be inert, non-biodegradable and free of all harmful contaminants in accordance with Approved Document C/1/2/3 of the Building Regulations (1992).
6. All wall cavities below ground to be filled with GEN 1 concrete to BS 5328 (max. agg. size 10mm). Wall cavities to be filled prior to the commencement of backfill to the foundation excavations and/or the floor voids. All backfilling to be completed in a uniform manner to prevent horizontal forces being applied to the foundation walls.
7. For Concrete, Blockwork/Brickwork and Mortar below DPC refer to the information contained in the Site Investigation Report referred to in Note 1 above.

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CLIENT

PEEL HOLDINGS

PROJECT

Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

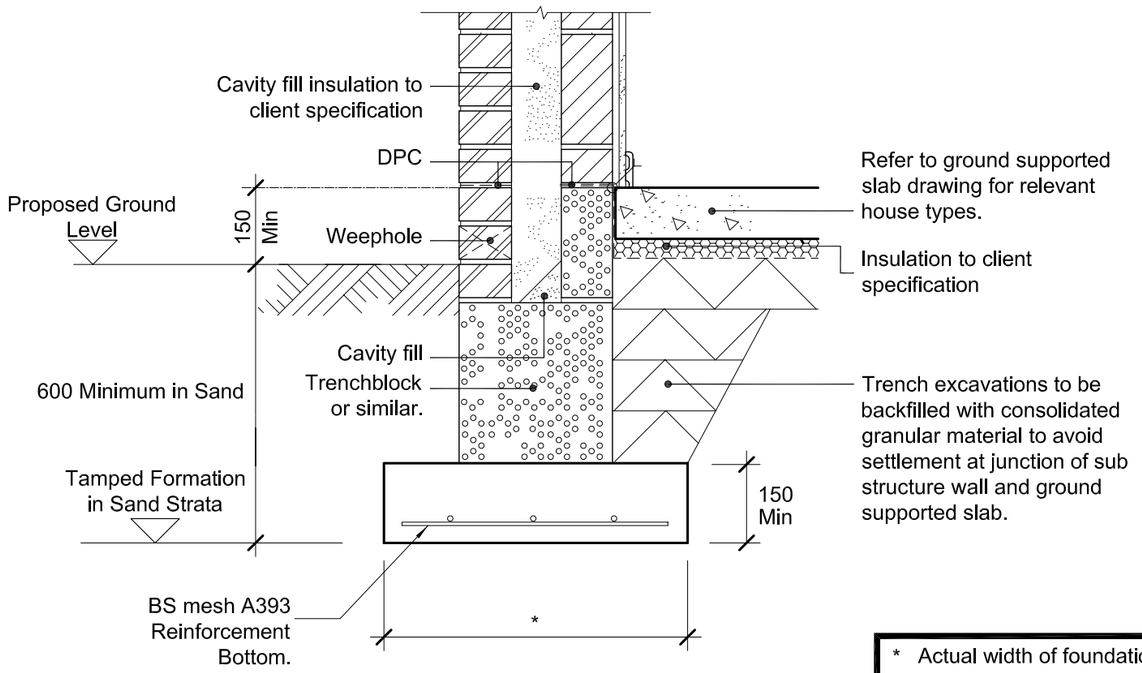
TITLE

Typical Details for Traditional Strip Footing in Clay Bearing Strata with Suspended and Ground Supported Slab

DRAWN BY	AH
DATE	17.09.14
SCALE(S)	NTS

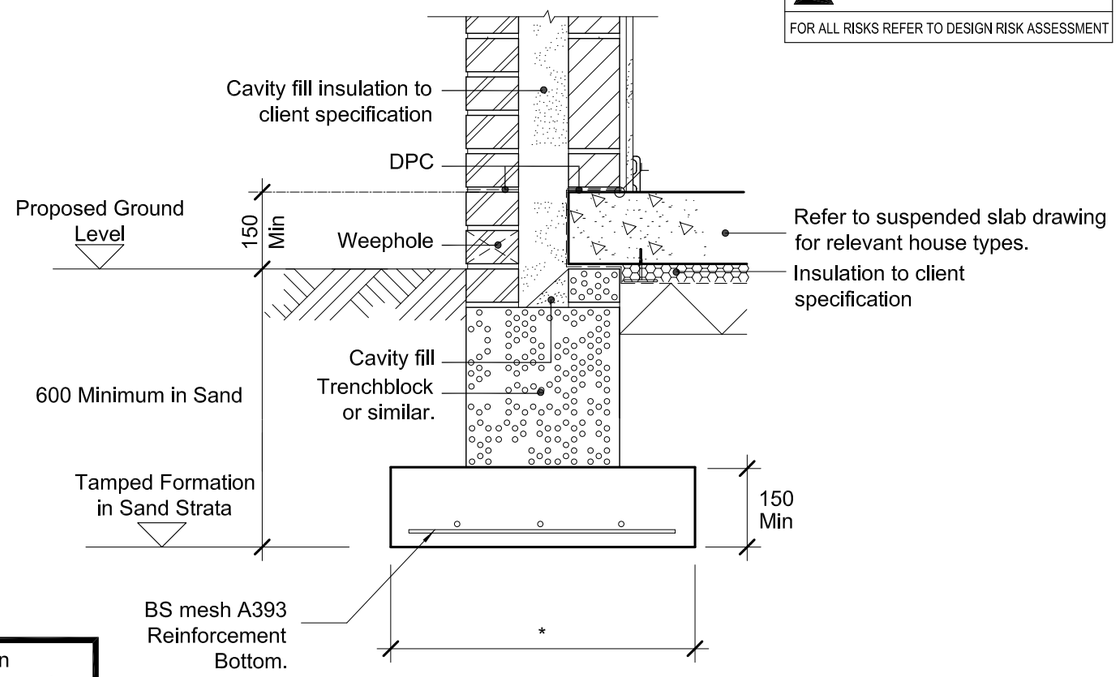
DRAWING NUMBER: 5883/Ts/01
REVISION: -

THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE RELEVANT HOUSE TYPE DRAWINGS, FOUNDATION PLAN & SCHEDULE AND THE SITE SPECIFIC SITE INVESTIGATION REPORTS



NOMINALLY REINFORCED FOOTING WITH GROUND SUPPORTED SLAB

* Actual width of foundation dependent on wall loading and safe bearing pressure.



NOMINALLY REINFORCED FOOTING WITH SUSPENDED GROUND FLOOR SLAB

CDM HIGH RISK ASSESSMENT

FOR ALL RISKS REFER TO DESIGN RISK ASSESSMENT

Notes

1. This drawing is to be read in conjunction with Coopers Site Investigation Report Ref: 5883si.

2. Reinforcement

   Bottom - BS Mesh A393
   Laps - 350mm minimum
   Cover - Bottom - 75mm Sides - 75mm

3. All backfill material to the foundation excavations and floor voids to be inert, non-biodegradable and free of all harmful contaminants in accordance with Approved Document C/1/2/3 of the building Regulations (1992).

4. All wall cavities below ground to be filled with GEN 1 concrete to BS 5328 (max. agg. size 10mm). Wall cavities to be filled prior to the commencement of backfill to the foundation excavations and/or the floor voids. All backfilling to be complete in a uniform manner to prevent horizontal forces being applied to the foundation walls.

5. For concrete, Blockwork/Brickwork and Mortar below DPC refer to Coopers Specification appended to the Site Investigation Report in Note 1 above.

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CLIENT

PEEL HOLDINGS

PROJECT

Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

TITLE

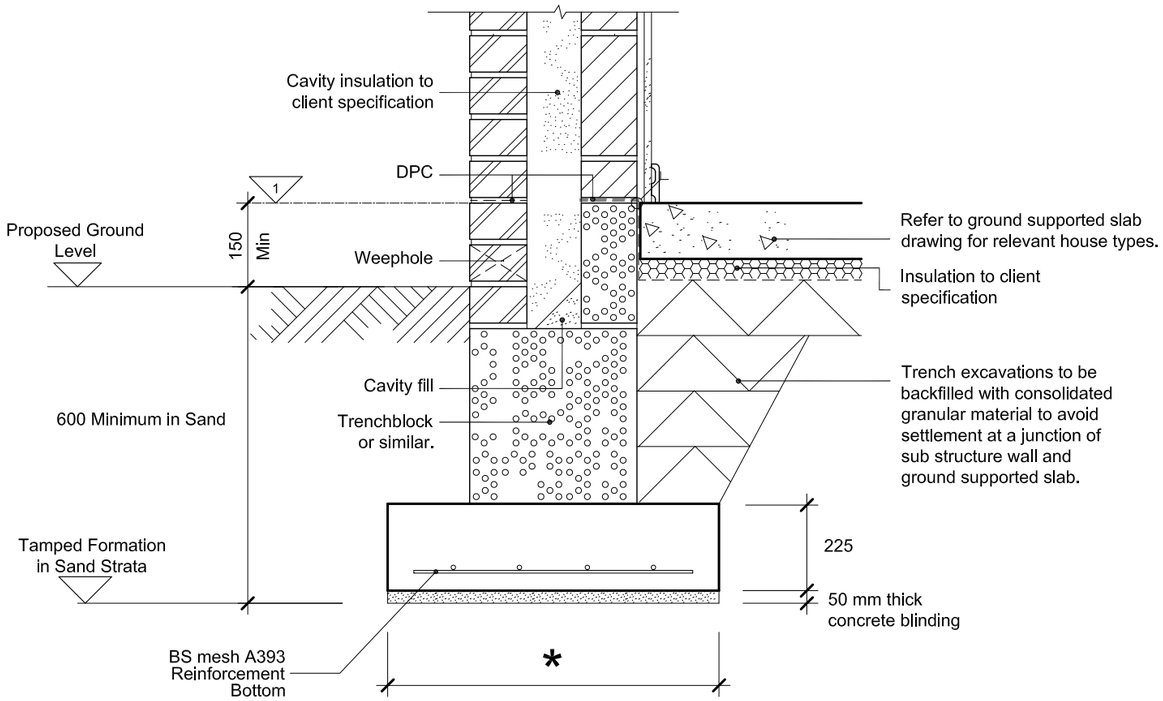
Typical Details for Nominally Reinforced Footing with Suspended and Ground Supported Slab

DRAWN BY	AH
DATE	17.09.14
SCALE(S)	NTS

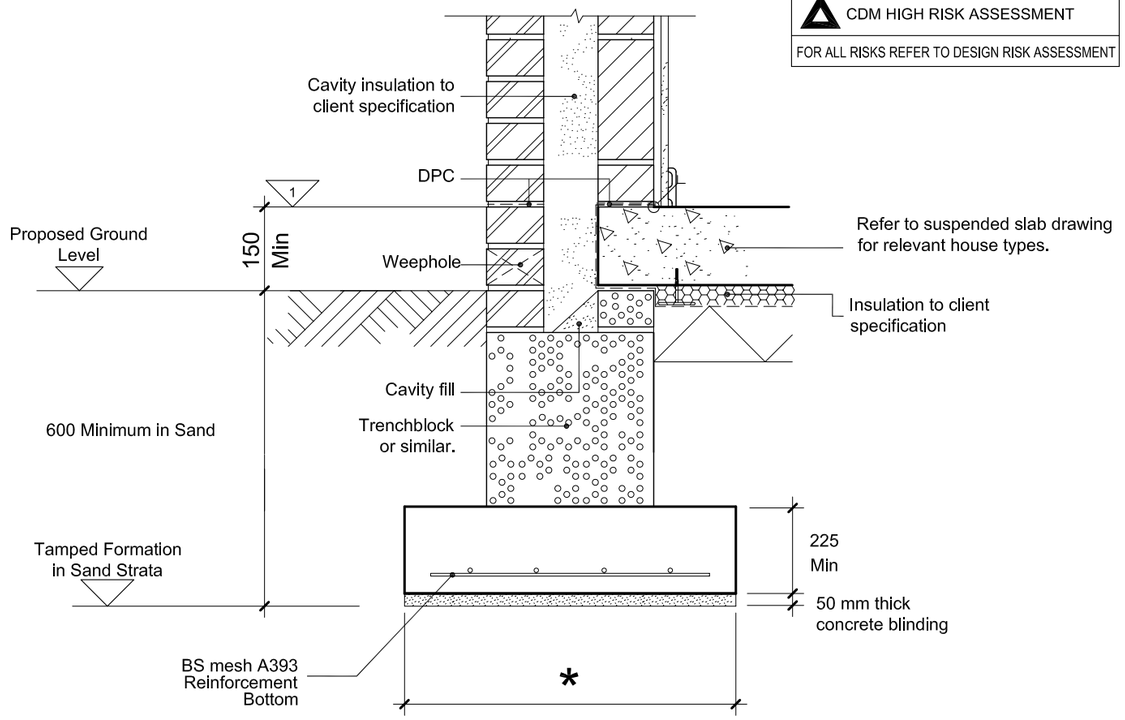
DRAWING NUMBER: 5883/Rn/01

REVISION: -

THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE RELEVANT HOUSE TYPE DRAWINGS, FOUNDATION PLAN & SCHEDULE AND THE SITE SPECIFIC SITE INVESTIGATION REPORTS



DESIGNED REINFORCED FOOTING
WITH GROUND SUPPORTED SLAB



DESIGNED REINFORCED FOOTING
WITH SUSPENDED GROUND FLOOR SLAB

NOTES

1. This drawing is to be read in conjunction with Coopers Site Investigation Report Ref: 5883si.

2. The safe bearing pressure on sand / clay strata limited to that indicated in the Site Investigation Report referred to in Note 1 above.

3. Reinforcement

   Bottom - BS Mesh A393
   Laps - 350mm minimum
   Cover - Bottom - 75mm Sides - 75mm

4. Minimum foundation depths for footings founded in the Clay Bearing Strata are to be in accordance with the NHBC Standards Chapter 4.2, clause D6(c) Table 5 and are as follows:-

SHRINKAGE POTENTIAL	MINIMUM DEPTH (mm)
MEDIUM	900

5. All backfilled material to the foundation excavations and floor voids to be inert, non-biodegradable and free of all harmful contaminants in accordance with Approved Document C/1/2/3 of the Building Regulations (1992).

6. All wall cavities below ground to be filled with GEN 1 concrete to BS 5328 (max. agg. size 10mm). Wall cavities to be filled prior to the commencement of backfill to the foundation excavations and/or the floor voids. All backfilling to be completed in a uniform manner to prevent horizontal forces being applied to the foundation walls.

7. For Concrete, Blockwork/Brickwork and Mortar below DPC refer to the information contained in the Site Investigation Report referred to in Note 1 above.

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CLIENT

PEEL HOLDINGS

PROJECT

Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

TITLE

Typical Details for Designed Reinforced Strip Foundation with Suspended and Ground Supported Slab

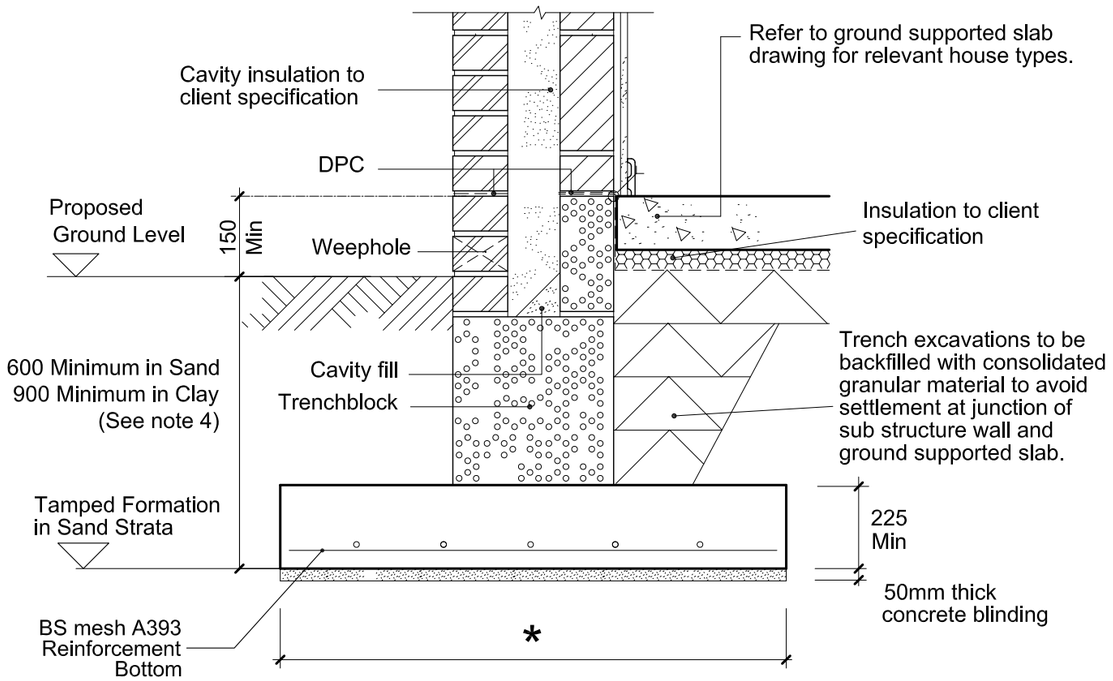
DRAWN BY	AH
DATE	17.09.14
SCALE(S)	NTS

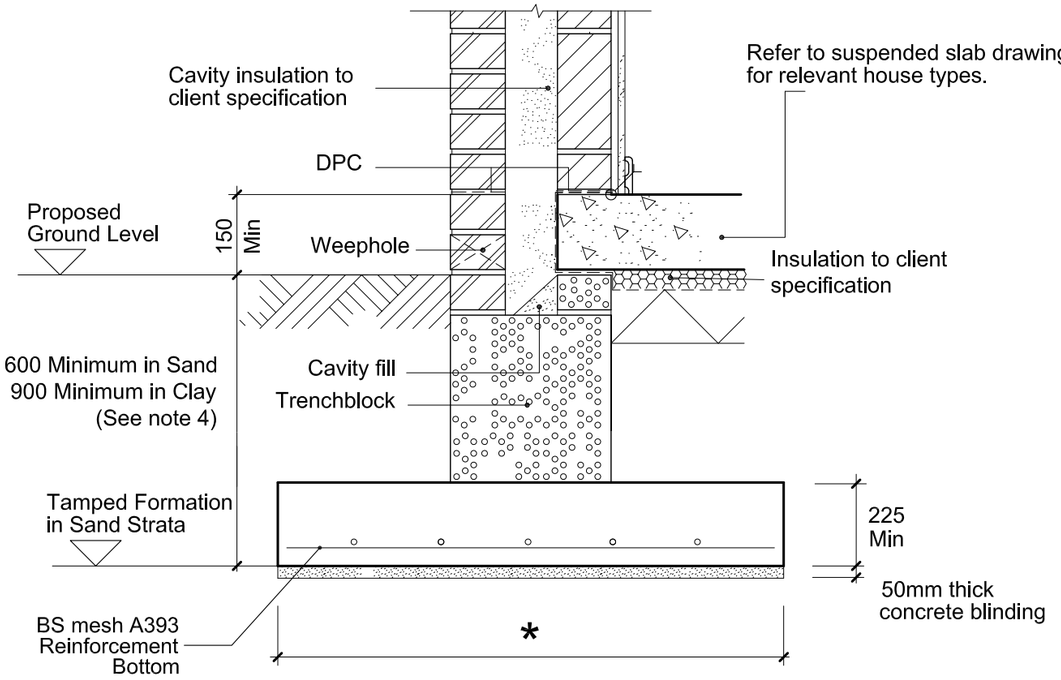
DRAWING NUMBER: 5883/Rs/01
REVISION: -

THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE RELEVANT HOUSE TYPE DRAWINGS, FOUNDATION PLAN & SCHEDULE AND THE SITE SPECIFIC SITE INVESTIGATION REPORTS

CDM HIGH RISK ASSESSMENT

FOR ALL RISKS REFER TO DESIGN RISK ASSESSMENT





* Actual width of footing dependent on wall loading and safe bearing pressure.

WIDE REINFORCED FOOTING WITH GROUND SUPPORTED SLAB

NOTES

1. This drawing is to be read in conjunction with Coopers Site Investigation Report Ref: 5883si.
2. The safe bearing pressure on sand / clay strata limited to that indicated in the report referred to in Note 1 above.
3. Reinforcement

   Bottom - BS Mesh A393
   Laps - 350mm minimum
   Cover - Bottom - 50mm Sides - 75mm
4. Minimum foundation depths for footings founded in the Clay Bearing Strata are to be in accordance with the NHBC Standards Chapter 4.2, Clause D6(c) Table 5 and are as follows:-

SHRINKAGE POTENTIAL	MINIMUM DEPTH (mm)
MEDIUM	900

WIDE REINFORCED FOOTING WITH SUSPENDED GROUND FLOOR SLAB

5. All backfill material to the foundation excavations and floor voids to be inert, non-biodegradable and free of all harmful contaminants in accordance with Approved Document C/1/2/3 of the Building Regulations (1992).
6. All wall cavities below ground to be filled with GEN 1 concrete to BS 5328 (max. agg. size 10mm). Wall cavities to be filled prior to the commencement of backfill to the foundation excavations and/or the floor voids. All backfilling to be completed in a uniform manner to prevent horizontal forces being applied to the foundation walls.
7. For Concrete, Blockwork/Brickwork and Mortar below DPC refer to the information contained in the Report referred to in Note 1 above.

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CLIENT

PEEL HOLDINGS

PROJECT

Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

TITLE

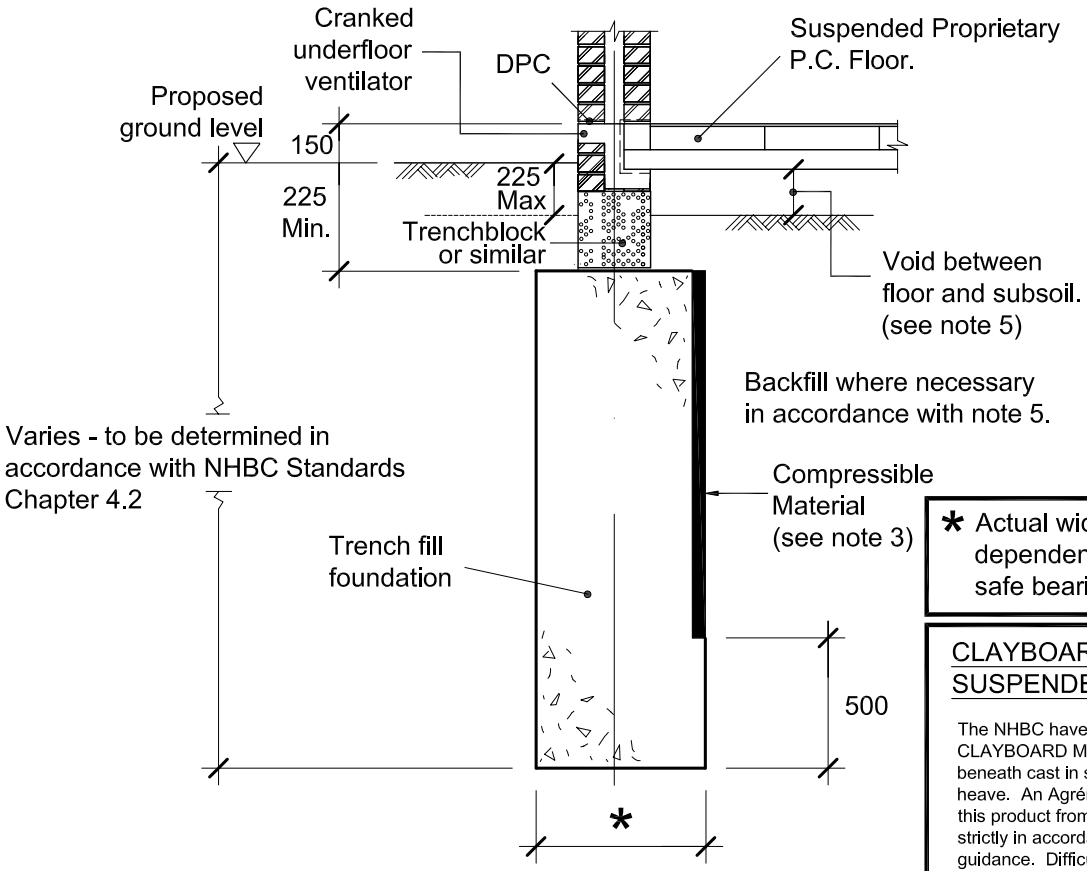
Typical Foundation Details for Wide Reinforced Strip Foundation with Suspended and Ground Supported Slab

DRAWN BY	AH
DATE	17.09.14
SCALE(S)	NTS

DRAWING NUMBER: 5883/WRs/01

REVISION: -

THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE RELEVANT HOUSE TYPE DRAWINGS, FOUNDATION PLAN & SCHEDULE AND THE SITE SPECIFIC SITE INVESTIGATION REPORTS



TRENCH FILL FOUNDATION AFFECTED BY EXISTING TREES REQUIRING HEAVE PRECAUTIONS (MEDIUM SHRINKAGE POTENTIAL)

* Actual width of foundation dependent on wall loading and safe bearing pressure.

CLAYBOARD & CAST IN SITU SUSPENDED SLABS

The NHBC have permitted the use of the new CLAYBOARD MARK 2 KN30 VOID SYSTEM beneath cast in situ suspended slabs to cater for heave. An Agrément Certificate is available for this product from the BBA. Installation must be strictly in accordance with the manufacturers guidance. Difficulties in installation may be experienced and use of this product is at the house builders discretion. Minimum void former dimension beneath suspended slab in accordance with NHBC Standards Chapter 4.2 S4(d) Table 9.

NOTES

1. This drawing is to be read in conjunction with Coopers Site Investigation Report Ref: 5883si.
2. The safe bearing pressure on strata limited to that indicated in the Site Investigation Report referred to in Note 1 above.
3. Claymaster or similar approved to be provided against internal face of perimeter foundations.
4. All backfill material to the foundation excavations and floor voids to be inert, non-biodegradable and free of all harmful contaminants in accordance with Approved Document C/1/2/3 of the Building Regulations (1992).
5. The minimum clear void below the suspended precast concrete ground floor is to be 250mm and should be adequately ventilated in accordance with the Building Regulations (1992) and NHBC Standards Chapter 4.2 S4(d) table 10. The level of backfill to the floor voids is to be within 225mm of the adjoining outer ground level, with the backfill material being effectively drained.
6. All wall cavities below ground to be filled with GEN 1 concrete to BS 5328 (max. agg. size 10mm). Wall cavities to be filled prior to the commencement of backfill to the foundation excavations and/or the floor voids. All backfilling to be completed in a uniform manner to prevent horizontal forces being applied to the foundation walls.
7. Refer to proprietary precast concrete floor manufacturers specialist drawing for all P.C. floor details.
8. For Concrete, Blockwork/Brickwork and Mortar below DPC refer to the information contained in the Site Investigation Report referred to in Note 1 above.

CDM HIGH RISK ASSESSMENT

FOR ALL RISKS REFER TO DESIGN RISK ASSESSMENT

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CLIENT

PEEL HOLDINGS

PROJECT

Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

TITLE

Typical Details for Trenchfill Foundation Affected by Existing Trees Requiring Heave Precautions

DRAWN BY	AH
DATE	17.09.14
SCALE(S)	NTS

DRAWING NUMBER: 5883/TfH/01

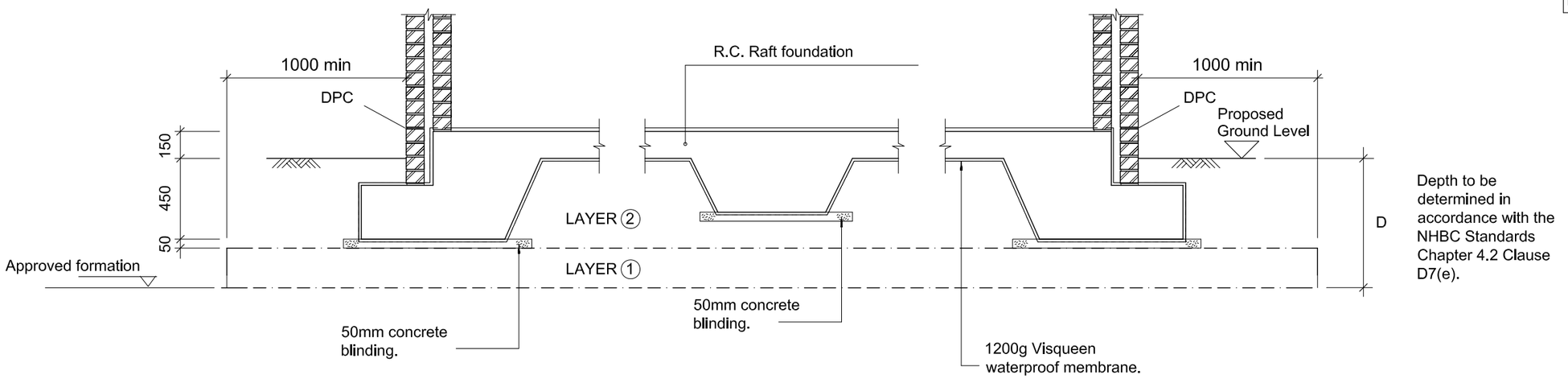
REVISION: -

THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE RELEVANT HOUSE TYPE DRAWINGS, FOUNDATION PLAN & SCHEDULE AND THE SITE SPECIFIC SITE INVESTIGATION REPORTS

FOR GENERAL NOTES REFER TO RELEVANT SEMI STIFF RAFT FOUNDATION DRAWING

CDM HIGH RISK ASSESSMENT

FOR ALL RISKS REFER TO DESIGN RISK ASSESSMENT



TYPICAL SECTION/DETAIL THRO' RAFT FOUNDATION FOR POSSIBLE HEAVE CONDITIONS

NOTES

1. This drawing is to be read in conjunction with the following:

   a) Client's house type drawing(s)

   b) Coopers Site Investigation Report Reference: 5883si.

2. For service connections, gullies and duct requirements refer to clients drawings. Allow for flexible pipework to all service connections/ducting.

3. The safe bearing pressure of the approved consolidated granular fill limited to that indicated in the report referred to in Note 1 above.

LAYER (1) -

HARDCORE BLANKET

Approved consolidated hardcore/ granular fill well compacted in layers not exceeding 225mm thick and compacted in accordance with the D.O.T specification for Highway Works Volume 1, Series 600. - Depth to be determined in accordance with NHBC Standards Chapter 4.2 Clause D7(e).

LAYER (2) -

SLAB SUB-BASE

Approved consolidated granular fill sand blinded and compacted in accordance with the D.O.T. Specifications for Highway Works Volume 1, Series 600. Refer to RC drawing for further details.

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CLIENT

PEEL HOLDINGS

PROJECT

Trough Laithe Farm, Barrowford Road, Barrowford, Lancashire.

TITLE

Typical Section/Detail Thro' Raft Foundation for Possible Heave Conditions

DRAWN BY	AH
DATE	17.09.14
SCALE(S)	NTS

DRAWING NUMBER: 5883/RfH/01

REVISION: -