

ALL ELEMENTS ARE INDICATIVELY SET OUT. CONTRACTOR TO DETERMINE ALL SETTING OUT ON SITE IN CONJUNCTION WITH ARCHITECTURAL PROPOSALS AND EXISTING STRUCTURE. ALL LEVELS ARE ASSUMED.

General Notes

All floor finishes, insulation, dpm and ventilation voids to Architects details.
All wall finishes, insulation, DPC, cavity trays and flashings to Architects details.
Acoustic isolation to Architects details.
External works not indicated on BDI drawings, by others.
Landscaping works not indicated on BDI drawings, by others.
All finishes to Architects details unless otherwise stated.

Temporary Works

Temporary works is the responsibility of the principal contractor and should be managed in accordance with BS 5975.
Contractor to design and implement all temporary works as required to complete the project. Install, maintain and dismantle temporary works. Ensure adequate strength of new works prior to removal of temporary works.

Foundations

Saw cut existing floors, paths, etc and break out sufficient area to install proposed foundations. Agree extent of breaking out and reinstatement of the same with the client. Excavate and install foundations as detailed. Minimum depth and width of new foundations noted upon plan and sections. Foundations to bear onto undisturbed natural ground free from organic matter.
Where known, the ground conditions are noted in the foundation overview table. Bearing strata to be inspected by BCO and to achieve required Bearing Capacity as detailed in foundation overview table.
Increase foundation width and length to exceed pier and wall returns by at least 200mm. Concrete to unreinforced footings to be to Grade C25/30 designed concrete to BS EN 206-1:2000. Concrete to reinforced foundations to be min Grade C28/35 designed mix to BS EN 206-1:2000. Minimum cover to reinforcement 75mm unless otherwise stated.
Where foundations are trench filled top of concrete to be minimum 225mm below ground level or greater if required to accommodate drainage, gullies, etc. Concrete to all foundations to be vibrated into position with 50mm poker vibrator to achieve full compaction.
Where reinforcement (loose bar or mesh) is specified, this is to be installed with minimum cover (as above) ensuring adequate laps (minimum 40 times bar diameter) are provided.
Where strip footings or trench fill foundations are within 1000mm of below ground drainage the depth of foundations should exceed the depth to invert. Where drains are required to pass through foundations provide isolation material around drain and provide concrete lintels in wall construction over or reinforce foundations as required. Foundations must not encroach boundary to adjacent property.

Floor Slabs

If required import and lay compacted MOT1 fill to floor slab area. Compact in layers not exceeding 150mm as directed by BCO. Where existing floor slabs are locally broken out to install new foundations ensure DPM is lapped and reinstated to existing. Install dowel bars between existing slab and new areas as required. Dowel bars should be R16 bars at 300mm c/c unless specified otherwise. Concrete to ground bearing or cast in-situ spanning RC Floor Slabs to be to grade C28/35 designed concrete to BS 8500 and EN 206-1. Slump to be 50mm. All concrete to be vibrated in to position using poker vibrator.
Reinforcement to floors to be fixed as specified. Adequately cure the finished floor slab for at least 7 Days from placing concrete. Curing to consist of covering with wet Hessian or the application of a suitable spray cure membrane. Cover to reinforcement to be min 40mm. Use suitable Spacers to achieve required cover. Provide insulation and damp proof membrane to Architects details. Provide tamped or floated finish to slab as directed by Architect or as dictated by proposed finishes.

Masonry

Bricks from 225mm below ground level to DPC to be class B engineering or facing bricks grade F2S2. Where required provide new air bricks to provide cross flow ventilation to new floor voids to the satisfaction of the BCO. New cavity walls above DPC level to be constructed in brick/block to Architects details. Bricks to be min compressive strength of 15N/mm². Cavity and insulation to Architects details. Blockwork to Architects details with minimum compressive strength of 7N/mm². Masonry ancillary items such as cavity closers, DPC, cavity trays and flashings to Architects details.
Wall ties should be provided in all new cavity walls. Wall ties to be safety pattern stainless steel ties to BS 1243:1978 to be set at staggered centres max 750mm horizontally and max 450mm vertically.
Where new floor joists span parallel to external walls provide lateral restraint between two elements by fixing 1200mm long 30x3mm galvanised ms straps at 1.2m centres across outer 3 joists & into inner leaf of wall.
Where masonry is used in an exposed location such as parapets, chimney stacks or below DPC, brick with low soluble salts and high frost resistance should be used (F2S2). Where required, drawings show min size masonry piers required to accommodate load from steel beams or to provide required buttressing. Where existing internal and external walls are to be used to support new steel beams, confirm condition of masonry on site with BCO. If existing masonry walls not suitable rebuild as directed by the BCO.
Where a pier abuts a new or existing wall, the pier should be adequately bonded or tied to enhance stability and provide load transfer.
Where required, movement joints should be provided in masonry to minimise cracking due to deflection, differential settlement, temperature change and shrinkage and expansion. Where masonry intersects steel / concrete it should be restrained to the steel / concrete whilst allowing for differential movement between the two elements. Movement joints to be provided as below:
Clay Bricks - 16mm joint every 12m and not greater than 6m from corners
Calcium Silicate Bricks - 10mm joint every 7.5m
Concrete Blocks - 10mm joint every 7m and not greater than 3m from corners

Structural Steelwork

Setting out of steelwork, lengths, etc to be determined on site.
All internal steelwork to be Shop blasted to SA 2.5 and painted with 2 coats of zinc phosphate epoxy primer. Touch up paint following installation of steelwork. All external or exposed steelwork (and those in contact or within 25mm of external leaf masonry) to be hot dip galvanised to BS EN ISO 1461. All Steel Sections Specified to be Grade S275 unless otherwise stated.
Contractor to design and detail exact connections dependent upon site restrictions, dimensions and parameters. All connections to have a minimum 2No M16 grade 8.8 bolts and comply with the relevant standards for workmanship and materials.
Provide fire protection to new steelwork to requirements of building regulations. Hot works are to be avoided onsite where possible.

Padstones

Provide mass concrete padstones where steel beams bear upon new and existing masonry. Approximate size of padstone detailed upon floor plans. Confirm exact size required on site. Do not reduce padstone size unless referred to bdi Structural Solutions. Padstones to be cast from concrete Grade C28/35 designed mix to BS EN 206-1:2000. Steel beam to be seated centrally on padstone and an 8mm thick steel bearing plate should be placed between the u/s of the beam and the top of the padstone.

Lintels

Install new lintels in new and existing walls as specified. Lintels to be insulated and galvanised steel to external cavity walls. Internal lintels to be proprietary as specified. All lintels to be provided with min bearing of 150mm as detailed to existing and new masonry. Fire protection to be provided to all elements of structure to be in accordance with the building regulations. Where required replace existing lintels with new lintels, size as specified. All external lintels to have cavity tray and weepholes as directed by the Architect.

Structural Timber

Install floor joists, roof joists and rafters as specified on drawings. Where new stud walls run parallel to existing and new joists span provide additional joist to provide double up joists below stud walls.
All new timber within the roof space and ground floors to be treated timber. Joists ends or ends of other timber members bearing on an external wall should also be treated. Minimum bearing of floor joists at support to be 90mm.
Floor and ceiling finishes to architects details.
Provide Herringbone strutting to new floors at maximum centres not exceeding six times the depth of the joist specified. Avoid notching joists, excessive notching to be advised to engineer for approval. General rules as directed by LABO for notching and holes in joists and rafters should be observed at all times, proposals outside this guidance to be submitted to engineer for approval.
Inspect existing floor joists for condition, etc prior to retaining. All new timber to be strength graded to BS EN 518 and 519. Timber should display grading. Use only structural grade timber for structural elements. The required minimum strength class is indicated upon the relevant plans details and notes. Keep new and existing timber dry during storage and during construction. Protect from inclement weather.

FOUNDATION UNDERPINNING

- UNDERPINNING TO BE COMPLETE IN SEQUENCE AS INDICATED ON GA AND IN ACCORDANCE WITH THE UNDERPINNING METHOD STATEMENT.
- FOR UNDERPINNING DEPTH REFER LAYOUT PLAN AND SECTIONS. CONTRACTOR TO DETERMINE SETTING OUT ON SITE. DO NOT EXCEED LENGTH OF UNDERPINNING SPECIFIED.
- FORMATION LEVEL AND BEARING STRATA TO BE INSPECTED BY BUILDING CONTROL OFFICER PRIOR TO PLACING CONCRETE.
- UNDERPINNING TO BE INSTALLED TO DEPTH MINIMUM AS SHOWN. LENGTH OF UNDERPINNING BLOCKS NOT TO EXCEED 900mm AS SHOWN ON PLAN UNLESS STATED OTHERWISE.
- PROVIDE ADEQUATE TEMPORARY SUPPORT TO EXCAVATION AND EXISTING STRUCTURE WITH SHORES AND PROPPING TO ENSURE STABILITY OF BUILDING AND EXCAVATIONS AT ALL TIMES. IF REQUIRED ALLOW FOR INSTALLING SACRIFICIAL PROPS WITHIN UNDERPINNING AND WALL. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE ADEQUACY OF ALL TEMPORARY WORKS.
- CLEAN UNDERSIDE OF EXISTING FOUNDATIONS AND REMOVE ANY LOOSE SECTIONS OF BRICK SPREAD FOOTINGS.
- CONCRETE TO UNDERPINNING TO BE GRADE C28/35 CONCRETE TO UNDERPINNING TO BE VIBRATED IN POSITION WITH MIN 50MM DIA POKER VIBRATOR. TO ACHIEVE FULL COMPACTION.
- ALLOW 72HRS BETWEEN POURING CONCRETE TO ONE UNDERPINNING BLOCK AND EXCAVATING THE ADJACENT BLOCK. SEQUENCE OF UNDERPINNING SHOWN TO BE FOLLOWED. REFER CHANGE OF SEQUENCE TO BDI STRUCTURAL SOLUTIONS

Basis of Foundation guidance provided for approval

The foundation design we have completed indicates the required foundations where actual on site soil conditions achieve an allowable bearing capacity as noted in the foundation overview table and is typical of a non saturated medium sand or firm clay subsoil.

The depths indicated are the minimum we consider appropriate to satisfy the requirements of the building regulations.

The foundations indicated should be considered a guide, the suitability of the proposed has been verified on site by site investigations in the form of trial holes/boreholes.

Where ground conditions on site do not achieve the criteria of the design with a bearing capacity as noted in the foundation overview table, then the proposed design is likely to be unsuitable and not adequate and an alternative design will be required.

Ground water/water table implications

If on site water tables are above the foundation depth then the preliminary foundation design will be inappropriate and further investigation and design will be required.

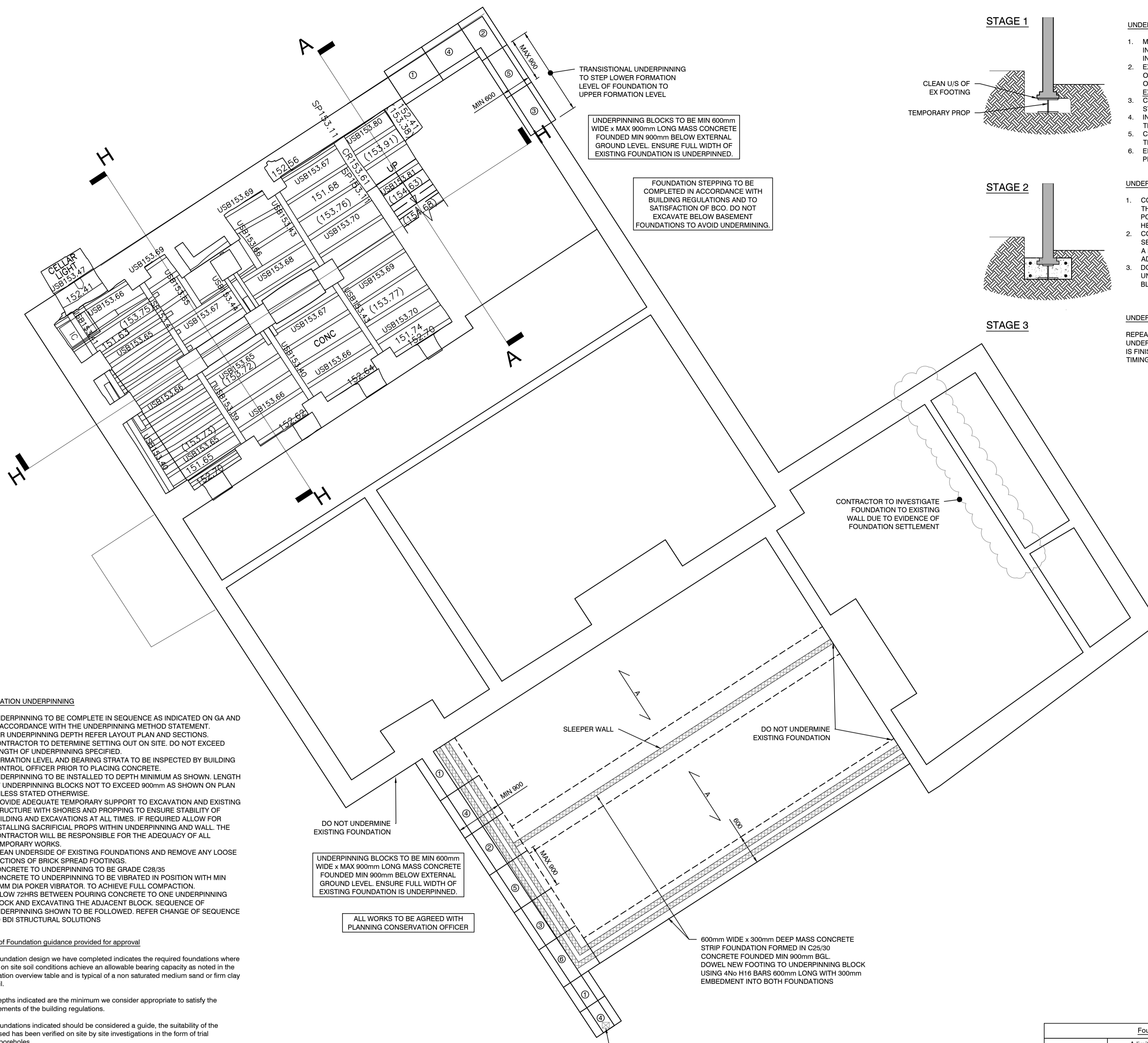
Foundations near drains and services

Where existing services/below ground drains exist on site the foundations installed should be of adequate depth to avoid surcharging the drains. This will entail deepening the foundations in accordance with building regulations approved document A. Where drains are required to pass through the foundations a bridging detail should be adopted.

Building near trees/vegetation

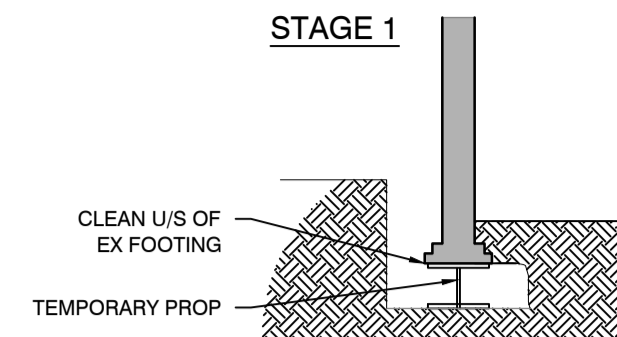
When building near trees, bushes, etc and clay subsoils exists, a more rigorous investigation of the clay soils and effect of the vegetation is required. The clay soils found via the investigation have been sampled by a laboratory for shrinkage and swell potential.

The foundation depth/design requirements have been assessed based on species/type of vegetation present, distance from foundations to vegetation and shrinkage/swell potential of clay soils on site. This has been completed in accordance NHBC Guidance 6.2 Building Near Trees



UNDERPINNING METHOD STATEMENT/PROCEDURE

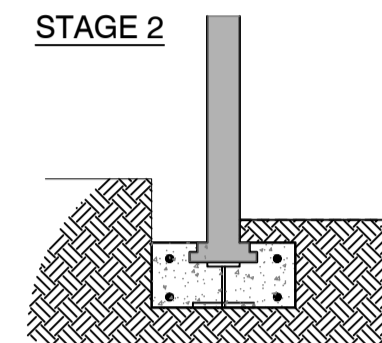
STAGE 1



UNDERPINNING METHOD STATEMENT

- MARK OUT THE UNDERPINNING BLOCKS ON SITE, INCLUDING THE UNDERPINNING SEQUENCE AS INDICATED ON PLAN.
- EXCAVATE IN THE REQUIRED SEQUENTIAL ORDER FOR INDIVIDUAL SEGMENTS AS SHOWN ON THE GA TO THE REQUIRED DEPTH. ONLY EXCAVATE ONE SEQUENCE AT ANY ONE TIME. CONFIRM THE ADEQUACY OF THE BEARING STRATA WITH BCO.
- INSTALL TEMPORARY PROPS AS REQUIRED. THESE PROPS SHOULD NOT BE TIMBER.
- CLEAN UNDERSIDE OF EXISTING FOOTING THOROUGHLY AND REMOVE ANY LOOSE BRICKS.
- ENSURE THE BASE IS CLEAN AND DRY PRIOR TO PLACING CONCRETE.

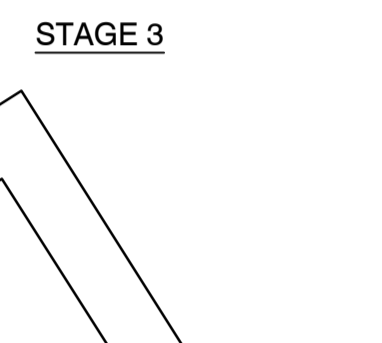
STAGE 2



UNDERPINNING METHOD STATEMENT

- CONCRETE UNDERPINNING BLOCK. THOROUGHLY VIBRATE CONCRETE INTO POSITION AND PROVIDE A POSITIVE HEAD OF CONCRETE.
- CONTINUE UNDERPINNING AS SEQUENCE SHOWN ON GA MAINTAINING A MINIMUM OF 72 HOURS BETWEEN ADJACENT EXCAVATIONS.
- DO NOT DIG TRENCH ADJACENT TO UNDERPINNING FOR ACCESS BEYOND 1 BLOCK WIDTH.

STAGE 3



UNDERPINNING METHOD STATEMENT

REPEAT STAGES 1 & 2 UNTIL ALL UNDERPINNING & BRICKWORK TO ALL WALLS IS FINISHED FOLLOWING SEQUENCE AND TIMING IN SPECIFICATION AND PLAN

This drawing is to be read in conjunction with all other relevant documentation.
Do not Scale
All setting out by contractor. Report all discrepancies to bdi Structural Solutions.
Drawing Copyright of BDI Structural Solutions ©
Client required to comply with requirements of Party Wall Act as required by nature of work.

NOTES

BDI Structural Solutions Drawing Numbering
Example: S1 01
S = Drawing Type 1 = Series Number 01 = Number in Series

Drawing Referencing	
Drawing Type:	Series Numbering:
S = Structural	1 = Structural Layouts
C = Civil (Drainage & Highways, etc).	2 = Structural Elevations
V = Survey	3 = Structural Sections
L = Landscaping	4 = Site Layouts
	5 = Structural Details
	6 = Structural Notes

Section and Detail Notation
Section S2 01C - S2 01C indicates section C on drawing no. S2 01
Detail S5 01F indicates detail F on drawing S5 01

Where a detail is denoted as 'typical', this is a general, non specific detail to inform established building methods and good practice. This type of detail can be varied onsite to account for site specific conditions.

Where a detail is denoted as 'indicative', this is a specific detail demonstrating critical project specific information. This type of detail has been determined to be the best of our ability with the site specific information we have, but will require full co-ordination onsite.

Setting Out
Due to the nature of working with existing buildings all levels, setting out and dimensions are to be derived onsite in accordance with the relevant architectural and structural details.

Manual Handling
Where block weights are in excess of 20kg, contractor is to either: - provide and ensure use of mechanical handling device. - make provision for two person teams to be employed in the lifting of blocks.

Residual Risks
A designer's risk assessment (DRA) has been completed by the structural engineer and should be referred to when reading this drawing.

Masonry Notation
Existing Assumed 15N brickwork in M4 Mortar
100mm 7N concrete block in M6 mortar Density to Architects details
100mm 15N brickwork to Architects details in M6 mortar
Timber stud walls to Architects details

Floor Span Notation
Denotes span of 47x150mm C24 timber floor joists at 400c/c (Joists to be tanalised)
Denotes assumed span of existing timber floor joists

Roof Span Notation
Denotes span of 47x225mm C24 timber roof joists at 400c/c
Denotes assumed span of existing timber roof structure

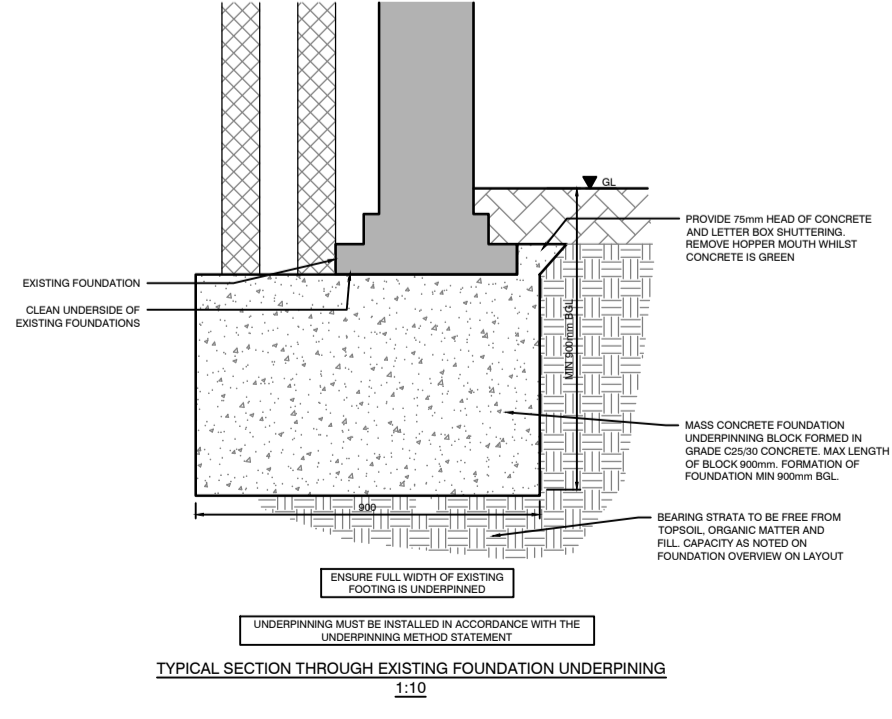
Steel / Timber Beam Notation
Steel Reference (See key for sizes)
Denotes moment connection
Steel References DO NOT represent actual section size
Moment connections are critical connections which must be fabricated and installed as detailed. The requirement for the column and connection is essential to the global stability of the structure. Under no circumstances should the column and connection be omitted.

Padstone Notation			
Ref	Size	Type	
PS01	215x100x150mm	Mass Concrete	
PS02	215xWOWx215mm	Mass Concrete	
PS03	330x100x215mm	Mass Concrete	

* WOW = Width Of Wall

PRELIMINARY

Foundation Overview				
Site Investigations	A limited site investigation has been completed consisting of auger / trial holes and the foundation scheme indicated is based on the findings.			
Bearing Capacity	The foundation guidance is based on an assumed bearing capacity of 100kN/m ² . The bearing capacity and suitability of the proposed foundations should be verified by building control.			
Anticipated Bearing Strata	See trial hole logs on SK02			
Anticipated Bearing Strata Depth	Unknown			
Minimum Bearing Strata Depth	900mm BGL			
Ground Water	Unknown			
Contamination	Unknown			



Rev	Date	Description	Drawn	Chkd	Rev'd
01	11.03.22	FIRST PRELIMINARY ISSUE	JDH	DA	NF

bdi Structural Engineering Solutions
Stafford Court, Washway Road, Site, M33 7PE
www.bdistructural.com
T: 0161 969 3886 F: 0161 969 3884 E: info@bdistructural.com

Client: Warren Kozera
Project: Fisher House

Drawing Title: Basement Layout Indicating Proposed Foundations

Scale: As shown at A1
Drawn: JDH
Checked: DA
Reviewed: NF

Originated Date: 11.03.22

Drng No.: 20218866
S1 01

Status/Rev: PO