

**BASEMENT FLOOR PLAN**  
SCALE 1:50

**NOTE: - WATERPROOFING**  
TYPICALLY DELTA MS500 TO BE USED TO INTERNAL FACES OF BASEMENT WALLS AND DELTA MS20 TO BE USED TO INTERNAL FACE OF CONCRETE FLOOR SLAB. ALL TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS DETAILS.  
NEW PUMPED SYSTEM MAY BE REQUIRED SUBJECT TO EXISTING DRAINAGE LEVELS & IF SANITARYWARE IS TO BE INSTALLED WITHIN THE PROPOSED BASEMENT AREA.  
DELTA (OR APPROVED EQUIVALENT) MEMBRANE SYSTEM & ASSOCIATED PUMPS TO BE AS SPECIFIED BY SPECIALIST

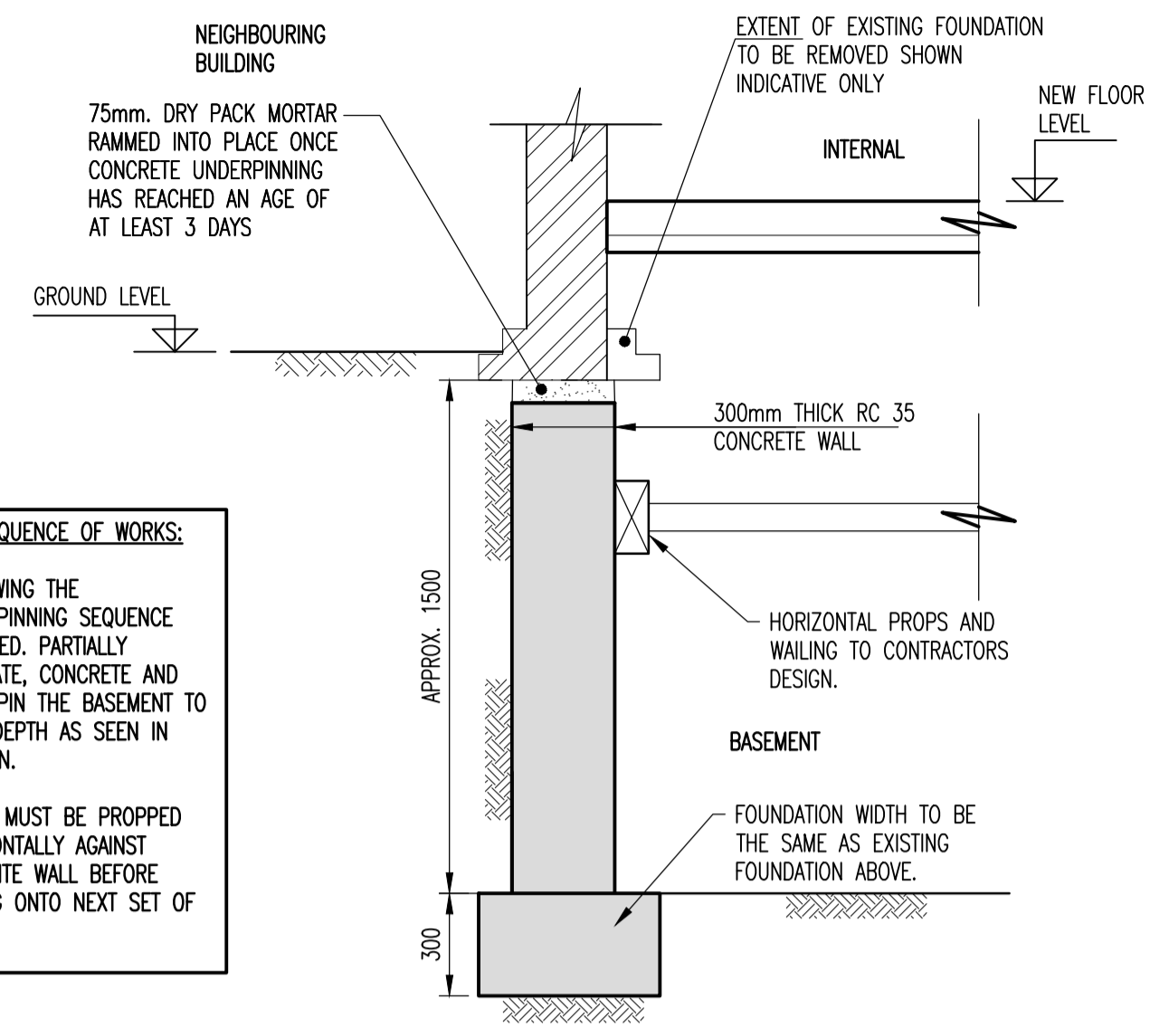
- TYPICAL SEQUENCE OF UNDERPINNING**
- A. EXCAVATE BAYS MARKED ①
  - B. CONCRETE BAYS MARKED ①
  - C. 24hrs. TO ALLOW CONCRETE UNDERPINNING TO SET & SHRINK
  - D. DRY PACK BETWEEN UNDERPINNING & ORIGINAL FOUNDATION
  - E. 48hrs. TO ALLOW DRY PACK MORTAR TO GAIN STRENGTH
  - F. EXCAVATE BAYS MARKED ②
  - G. PROCEED AS FOR B. - E. ABOVE FOR BAYS MARKED ②
  - H. REPEAT PROCESS F. - G. FOR REMAINING BAYS IN SEQUENCE MARKED ON PLAN

- COLUMN LEVELS KEY**
- COLUMN STARTS AT THIS LEVEL
  - ◇ COLUMN FINISHES AT THIS LEVEL

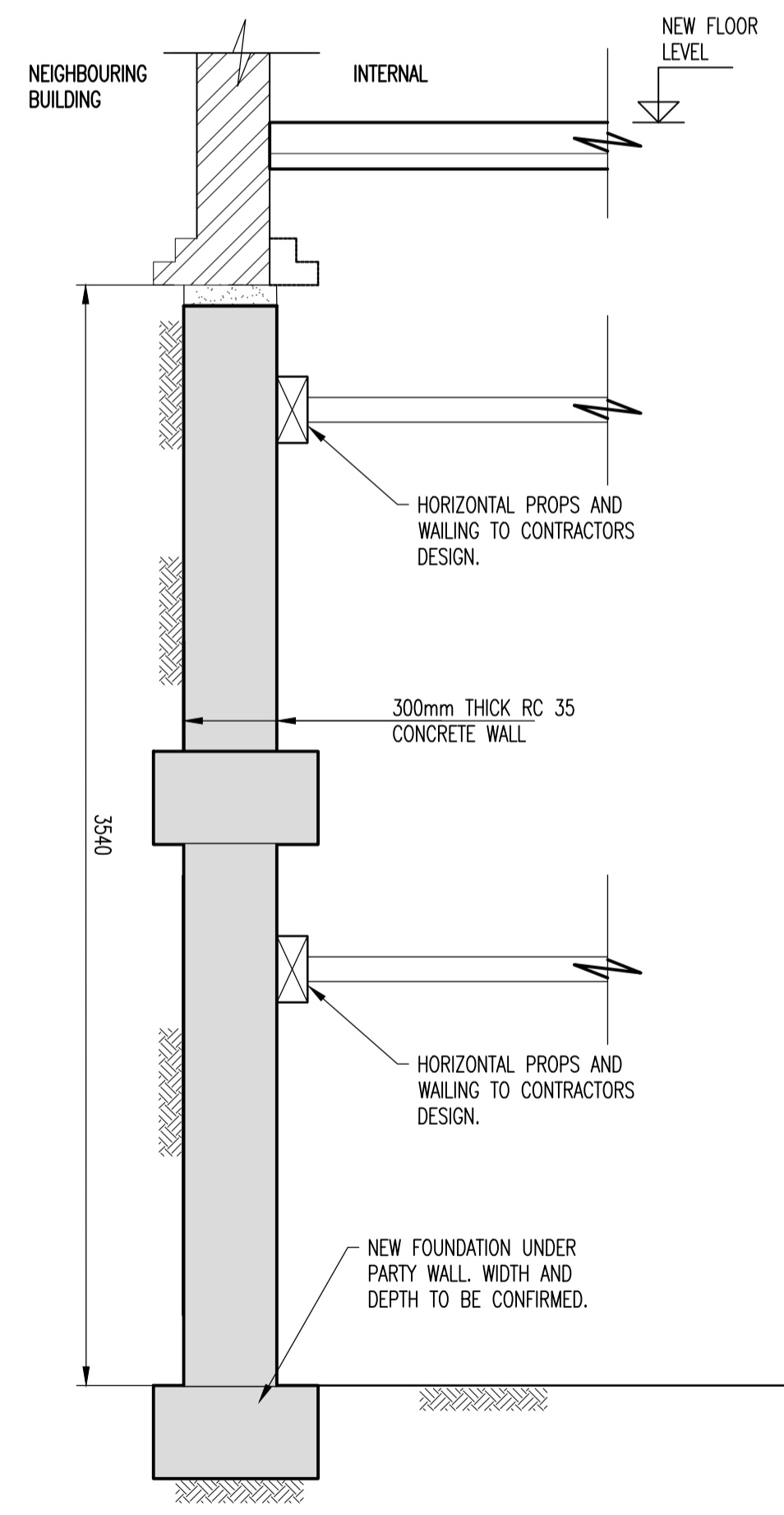
**NOTE:**  
NATURE & EXTENT OF FOUNDATIONS TO EXISTING WALL UNKNOWN. ALL TO BE CONFIRMED UPON COMPLETION OF TRIALHOLES/PARTIAL EXCAVATION BY CONTRACTOR ON SITE.  
ENGINEERS TO BE NOTIFIED AND UNDERPINNING MAY NEED TO BE REVISED TO SUIT.

- STAGE 1 SEQUENCE OF WORKS:**
- FOLLOWING THE UNDERPINNING SEQUENCE OUTLINED, PARTIALLY EXCAVATE, CONCRETE AND UNDERPIN THE BASEMENT TO HALF DEPTH AS SEEN IN SECTION.
  - WALLS MUST BE PROPPED HORIZONTALLY AGAINST OPPOSITE WALL BEFORE MOVING ONTO NEXT SET OF BAYS.

- STAGE 2 SEQUENCE OF WORKS:**
- EXCAVATE AND UNDERPIN REMAINDER OF BASEMENT STILL FOLLOWING THE UNDERPINNING SEQUENCE.
  - INSTALL FURTHER PROPS AT A LOWER LEVEL TO RETAIN WALL BEFORE MOVING ONTO THE FOLLOWING SET OF BAYS. PROPS AND WALLING TO CONTRACTORS DESIGN.



**WALL-TYPE 1 SECTION**  
**STAGE 1**  
SCALE 1:20



**WALL-TYPE 1 SECTION**  
**STAGE 2**  
SCALE 1:20

**UNDERPINNING SPECIFICATION**

**1. CODES OF PRACTICE**  
ALL CONTINUOUS UNDERPINNING IS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH THE REQUIREMENTS OF B.S.8004, 1985, THE CODE OF PRACTICE FOR FOUNDATIONS. ALL MATERIALS USED IN THE WORKS SHALL COMPLY WITH THE RELEVANT CODES OF PRACTICE.

**2. SHORING AND PROPPING**  
IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE ALL NECESSARY STEPS TO ENSURE THAT THE STRUCTURE IS ADEQUATELY PROPPED, SHORED AND BRACED TO ENSURE THAT DURING THE PROGRESS OF THE WORKS EXCESSIVE DEFLECTIONS AND DEFORMATIONS OF THE STRUCTURE DO NOT OCCUR. THE CONTRACTOR SHALL DISCUSS WITH THE ENGINEER ANY PROPOSALS FOR TEMPORARY WORKS. THIS DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO ENSURE THAT THE STRUCTURE IS ADEQUATELY SUPPORTED AT ALL TIMES DURING THE PROGRESS OF THE WORKS. IT IS FREQUENTLY NECESSARY FOR THE CONTRACTOR TO BRACE OR PROP EXISTING OPENINGS SO THAT ISOLATED LOAD BEARING PIERS MAY BE UNDERPINNED. THE CONTRACTOR IS TO ALLOW IN HIS TENDER PRICE FOR ALL PROPPING, SHORING AND BRACING REQUIRED TO ENSURE THAT THE WORKS MAY BE SAFELY UNDERTAKEN WITH NO UNDUE DISRUPTION TO THE STRUCTURE.

**3. SEQUENCE OF WORKING**  
THE SEQUENCE OF WORKING IS TO BE SUBMITTED TO THE ENGINEER AND APPROVED BY THE LOCAL AUTHORITY. THIS SHALL BE BASED ON A MAXIMUM LEG LENGTH OF APPROXIMATELY 1.0M. THE AGREED SEQUENCE OF OPERATIONS SHALL BE STRICTLY ADHERED TO. THE CONTRACTOR MAY WISH TO ALTER THE EXCAVATION AND CONCRETING SEQUENCE BUT THIS MUST BE DISCUSSED WITH THE ENGINEER/LOCAL AUTHORITY REPRESENTATIVE, AND NO DEVIATION FROM THE SEQUENCE OF OPERATIONS SHALL BE PERMITTED UNLESS THE ENGINEER/LOCAL AUTHORITY REPRESENTATIVE CONFIRMS OTHERWISE IN WRITING.

**4. EXCAVATION AND APPROVAL**  
DURING EXCAVATIONS THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO PREVENT SOFTENING OF THE EXCAVATION BASE BY GROUND WATER. WHERE NECESSARY THE CONTRACTOR SHALL KEEP EXCAVATIONS FREE FROM GROUND WATER BY PUMPING. THE CONTRACTOR SHALL ALSO ENSURE THAT THE BASE OF THE EXCAVATION SHALL NOT BECOME CONTAMINATED BY LOOSE MATERIAL FALLING INTO THE EXCAVATION. THE CONTRACTOR SHALL TAKE STEPS TO ENSURE THAT THE SIZE OF THE EXCAVATION CLOSELY MATCHES THE REQUIRED SIZE AGREED WITH THE ENGINEER/LOCAL AUTHORITY REPRESENTATIVE. EXCESSIVE OVERBREAK WILL NOT BE PERMITTED, AND THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRENCH SHEETING AND STRUTTING TO PREVENT OVERBREAK. THE CONTRACTOR MAY BE REQUIRED TO PROVIDE SHEETING AND STRUTTING TO PREVENT ANY INGRESS OF LOOSE MATERIAL BENEATH THE EXISTING SLAB. ALL UNDERPINNING EXCAVATIONS SHALL BE APPROVED BY THE LOCAL AUTHORITY REPRESENTATIVE BEFORE ANY CONCRETE IS PLACED.

**5. LINKING OF ADJACENT LEGS**  
PRIOR TO CONCRETING THE CONTRACTOR SHALL INCORPORATE SHEAR KEYS TO PERMIT SHEAR TRANSFER BETWEEN ADJACENT UNDERPINNING LEGS. WHERE NECESSARY PROJECTING DOWEL BARS SHOULD BE CLEANED OF ALL LOOSE DIRT PRIOR TO CONCRETING.

**6. CLEANING OF EXISTING FOOTINGS**  
THE UNDERSIDE OF ALL EXISTING FOOTINGS (WHERE EXPOSED BY EXCAVATION IN PREPARATION FOR UNDERPINNING) SHALL BE CLEANED OF ALL LOOSE SOIL AND FRAGMENTS.  
ANY MAJOR PROJECTIONS OR INCLUSIONS SUCH AS BRICKS BROKEN CONCRETE OR BOULDERS SHALL BE BROKEN AWAY FROM THE UNDERSIDE OF THE EXISTING FOOTING. PRIOR TO CONCRETING THE UNDERPINNING LEG THE EXISTING FOOTING SHOULD BE CLEAN FIRM AND LEVEL SO THE DRY PACKING MAY BE ACCOMPLISHED SATISFACTORILY.

**7. CONCRETING**  
ALL CONCRETE SHALL BE GRADE C20 AND MIXED, DELIVERED, PLACED AND VIBRATED STRICTLY IN ACCORDANCE WITH THE CONCRETE SPECIFICATION CONTAINED IN B.S.8110-PART 1:1985. SULPHATE RESISTING CEMENT TO BE USED SHOULD SITE CONDITIONS DICTATE OR AS DIRECTED BY LOCAL BUILDING CONTROL OFFICER.  
IT SHOULD BE NOTED THAT THE CONCRETE SHOULD BE ADEQUATELY COMPACTED WITH A VIBRATORY POKER TO ENSURE ADEQUATE DENSITY. THE CONCRETE FOR THE UNDERPINNING LEGS SHOULD BE BROUGHT UP TO 75MM FROM THE UNDERSIDE OF THE EXISTING FOOTINGS.

**8. DRY PACKING**  
ONCE THE CONCRETE IN THE UNDERPINNING LEGS HAS SET (AT LEAST 3 DAYS AFTER CONCRETE PLACEMENT) THE GAP BETWEEN THE UNDERSIDE OF THE EXISTING FOOTING AND THE TOP OF THE NEW FOOTING IS TO BE PACKED WITH DRY CONCRETE.  
MIX PROPORTIONS FOR THE DRY CONCRETE ARE TO BE BY WEIGHT 1:3 (CEMENT:ZONE 2 SHARP SAND) WITH COMBEX NON-SHRINK ADMIXTURE ADDED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION. THE CONSTITUENTS ARE TO BE MIXED DRY AND A SMALL VOLUME OF WATER IS TO BE ADDED SUCH THAT WHEN COMPRESSED, A SMALL BAR OF THE MIXTURE RETAINS ITS SHAPE.  
THE DRY PACKING CONCRETE IS THEN TO BE RAMMED SOLID INTO THE GAP BETWEEN THE UNDERSIDE OF THE EXISTING FOOTING AND THE TOP OF THE NEW FOOTING USING A STEEL BAR.

**9. CURING TIME**  
A SUFFICIENT TIME SHOULD ELAPSE BETWEEN THE COMPLETION OF DRY PACKING AND THE EXCAVATION OF ANY UNDERPINNING LEGS IN THE VICINITY. THE CURING TIME SHALL BE 24 HOURS, THIS BEING DEPENDENT UPON THE PREVAILING WEATHER CONDITIONS.  
VICINITY IN THIS CONTEXT SHALL BE DEEMED TO INCLUDE ALL LEGS ADJACENT TO, OR NEXT BUT ONE TO THE LEG IN QUESTION.

**10. PROVISION FOR EXISTING SERVICES**  
UNDERPINNING LEGS MAY BE PUNCTURED BY THE SERVICES ENTERING THE BUILDING. THE MEANS OF "SLEEVING" THESE SERVICES SHALL BE AGREED WITH THE ENGINEER DURING THE PROGRESS OF THE WORKS. WHERE EXISTING SERVICES INTERFERE WITH OR AFFECT THE UNDERPINNING EXCAVATION THESE SERVICES SHOULD BE TEMPORARILY DIVERTED.

- GENERAL NOTES:**
- DO NOT SCALE THIS DRAWING OR MODEL. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERS AND ARCHITECTS DRAWINGS AND THE SPECIFICATION.
  - ALL WORK IS TO BE TO THE SATISFACTION OF THE ENGINEER AND LOCAL AUTHORITY BUILDING CONTROL.
  - THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF THE WORKS AT ALL TIMES DURING CONSTRUCTION.
  - ALL WORKMANSHIP AND MATERIALS ARE TO BE CURRENT BRITISH STANDARDS OR EUROCODES. ALL CONSTRUCTION PRODUCTS AND STRUCTURAL STEELWORK SHOULD BE CE MARKED IN ACCORDANCE WITH CURRENT LEGISLATION.
  - ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
  - ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.
- CONCRETE**
- CONCRETE IS TO BE GRADE RC35 DESIGN MIX USING A NOMINAL 20mm SIZE AGGREGATE AND A MINIMUM CEMENT CONTENT OF 330kg/m<sup>3</sup> OF ORDINARY PORTLAND CEMENT (O.P.C.).
  - BLINDING TO BE GRADE GEN1 CONCRETE MIX CONTAINING NOT LESS THAN 200kg/m<sup>3</sup> OF O.P.C. AND A NOMINAL 20mm SIZE AGGREGATE.
  - CONCRETE IS TO BE TO BS EN 206 Pt 1 TO 4: 2000 AND BS EN 8500 Pt 1 AND 2: 2002.
  - THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, SUPPORT AND ERECTION OF ANY FORM WORK REQUIRED.
  - FLEXIBLE PROTECTION IS TO BE PROVIDED AROUND ALL SERVICE WITH 50mm COMPRESSIBLE WRAPPING MATERIAL.
  - COVER TO ALL REINFORCEMENT IS TO BE 40mm TOP AND 40mm BOTTOM AND SIDES, UNLESS NOTED OTHERWISE.
  - THE CONTRACTOR IS TO SUPPLY STOOLS, SPACERS, COVER BLOCKS ETC. THESE ITEMS ARE NOT SCHEDULED.
  - REINFORCEMENT IS TO BE TO BS 4449: 2005, BS 4483: 2005 AND BS 8666: 2005 AS APPLICABLE.

Rev	Amendments	Drawn	Approved	Date
<p>Project <b>20-21 KING'S MEWS</b> LONDON, WC1N</p>				
<p>Drawing Title <b>PROPOSED BASEMENT FOUNDATION PLAN</b></p>				
Client				
Drawn by <b>INF</b>		Designed by <b>INF</b>		
Approved by <b>JMS</b>		Checked by <b>JMS</b>		
Scale <b>AS SHOWN</b>		Date <b>FEBRUARY 2016</b>		
Drawing No. <b>L15/284/12-500</b>				Rev. <b>P1</b>