

1.0 GENERAL NOTES 1.1 DO NOT SCALE ANY DRAWINGS. 1.2 WHERE THE TERM ENGINEER IS USED, THEN THIS SHALL MEAN CSP. 1.3 ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SERVICE CONSULTANTS AND ALL ENGINEERS DETAILS AND SPECIFICATIONS. FOR THE PURPOSES OF CONSTRUCTION ALL DRAWINGS MUST NOT BE SCALED AND ONLY WRITTEN OR CALCULATED DIMENSIONS USED. LEVEL DATUMS TO BE CONFIRMED BY THE ARCHITECT. 1.4 DRAWINGS ARE GENERALLY BASED ON AN ARCHITECT'S OVERLAY DRAWING AND THEREFORE ALL SETTING OUT DETAILS SHOWN ARE TO BE THOROUGHLY CHECKED / APPROVED BY THE ARCHITECT PRIOR TO COMMENCEMENT OF ANY WORKS. 1.5 ANY DISCREPANCIES FOUND ON THE DRAWINGS OR FROM SITE CONDITIONS, SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORKS. 1.6 SITE AND BUILDING SETTING-OUT DETAILS ARE TO BE PREPARED AND SUPPLIED BY THE ARCHITECT. 1.7 ALL LEVELS SHOWN ON DRAWINGS ARE TO BE CHECKED ON SITE AND VERIFIED PRIOR TO COMMENCING ANY CONSTRUCTION WORKS. 1.8 ALL WATERPROOFING (DPM & DPC) WORKS ARE TO BE TO ARCHITECTS DETAILS, WHERE CSP DRAWING MEMBRANES ARE NOT SPECIFIED, THE MEMBRANES HAVE BEEN DESIGNED, SPECIFIED AND DETAILED BY THE ARCHITECT OR THE MANUFACTURERS AND ARE TO BE INSTALLED AS SHOWN ON THEIR DRAWINGS. 1.9 ALL FIRE PROTECTION DETAILS ARE TO BE SPECIFIED BY AND INDICATED ON ARCHITECT'S DETAILS UNLESS SPECIFICALLY NOTED OTHERWISE. 1.10 ALL EXTERNAL WORKS, LANDSCAPING, PAVING, FINISHES ETC. ARE TO ARCHITECTS DETAILS. 1.11 ALL PROPRIETARY PRODUCTS ARE TO BE USED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS DETAILS AND REQUIREMENTS. 1.12 THE CONTRACTOR SHALL ENSURE THAT TEMPORARY LOADS ONTO THE NEW STRUCTURES SHALL BE LESS THAN THOSE FOR WHICH IT HAS BEEN DESIGNED. THE CONTRACTOR SHALL ALSO ENSURE ANY TEMPORARY LOADS PLACED ON THE EXISTING STRUCTURE (WHETHER IT IS TO BE RETAINED OR DEMOLISHED) ARE ALSO WITHIN THE CAPACITY OF THESE EXISTING ELEMENTS. 1.13 THE FOLLOWING ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS: i) LOCATION OF ANY CAST-IN SERVICES ii) HOLES LESS THAN 250x250mm iii) MANHOLES AND UNDERSLAB DRAINAGE iv) DUCTS UNDER AND CAST INTO THE GROUND FLOOR v) STEELWORK CONNECTIONS REFERENCE SHOULD BE MADE TO THE RELEVANT ARCHITECTURAL, SERVICES OR SUB-CONTRACTORS DRAWINGS FOR THIS INFORMATION. 1.14 THE MAIN STRUCTURAL GRID AND STRUCTURAL SLAB LEVELS ARE TO BE AGREED ON SITE WITH THE ARCHITECT PRIOR TO PERMANENT WORKS COMMENCING. 1.15 THE CONTRACTOR SHALL CARRY OUT A DETAILED GEOMETRIC SURVEY TO ACCURATELY LOCATE THE EXISTING RETAINED ELEMENTS ON THE SITE AND SUBMIT DETAILS TO THE ARCHITECT FOR HIS INFORMATION. FORMAT OF RESULTS TO BE AGREED WITH ARCHITECT PRIOR TO WORK COMMENCING. 1.16 THE STRUCTURE IS DESIGNED AND DETAILED FOR THE PERMANENT CONDITION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING ITS TEMPORARY CONDITION AND ANY TEMPORARY WORKS REQUIRED DURING CONSTRUCTION. IF THE CONTRACTOR WISHES TO USE THE PERMANENT STRUCTURE AS TEMPORARY WORKS (E.G. CRANE SUPPORT) HE MUST DEMONSTRATE WITH DRAWINGS AND CALCULATIONS THAT THE TEMPORARY LOADS ARE WITHIN THE CAPACITY OF THE PERMANENT WORKS AND THAT THIS WILL NOT AFFECT THE FUTURE PERFORMANCE OF THE PERMANENT WORKS. THE CONTRACTOR WILL BE REQUIRED TO PREPARE AND SUBMIT THE NECESSARY DRAWINGS AND CALCULATIONS FOR ALL TEMPORARY WORKS TO THE ENGINEER FOR AGREEMENT. 1.17 THE CONTRACTOR IS TO BE AWARE THAT EXPOSED ELEMENTS OF STRUCTURE WILL BE REQUIRED TO BE OF THE HIGHEST QUALITY OF FINISH. ALL DUE ALLOWANCE SHALL BE MADE IN PRICING OF THE WORKS. THESE ELEMENTS INCLUDE FAIR FACED CONCRETE AND EXPOSED STEELWORK. THE CONTRACTOR IS REQUIRED TO DEMONSTRATE THEIR ABILITY TO ACHIEVE THESE REQUIREMENTS AND GIVE EXAMPLES OF PREVIOUS WORK WHERE THE ARCHITECT CAN VISIT TO SATISFY THEMSELVES OF THIS ABILITY. 1.18 THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THAT NOISE, VIBRATION AND DUST RESULTING FROM THE WORKS ARE KEPT WITHIN REASONABLE AGREED LIMITS. 1.19 WORKS COVERED BY PROVISIONAL SUMS SHOULD NOT BE UNDERTAKEN UNTIL DETAILED PROPOSALS HAVE BEEN RECEIVED FROM THE CONTRACTOR INCLUDING, COSTS, AND ACCEPTED BY THE CONTRACT ADMINISTRATOR (CA). THE CONTRACTOR SHALL ENSURE THAT SUFFICIENT TIME IS ALLOWED TO ACHIEVE THE ABOVE WHILST MAINTAINING THE OVERALL PROGRAMME. 1.20 THE CONTRACTOR MUST ALLOW FOR GROUND INVESTIGATION WORKS IN ORDER FOR CSP TO COMPLETE SUB-STRUCTURAL DESIGN, WHICH IS CURRENTLY SHOWN INDICATIVELY SUBJECT TO PROJECT SPECIFIC GROUND INVESTIGATION DETAILING SOIL STRATUM TO MINIMUM 10m DEPTH, SPT VALUES, CONTAMINATION SUITE, WAC ANALYSIS, CBR, GROUND BEARING PRESSURES, HEAVE CHARACTERISTICS, ETC. 1.21 TO COMPLETE HIS DESIGN OF TEMPORARY WORKS PLUS CONSTRUCTION SEQUENCE AND ALLOW THE DESIGN TEAM TO CONFIRM THEIR ASSUMPTIONS AND/OR INCORPORATE ANY CHANGES NECESSARY TO THE PERMANENT WORKS, THIS INFORMATION SHALL BE PROVIDED TO THE CA SIX WEEKS PRIOR TO THE FIRST ISSUE OF CONSTRUCTION INFORMATION. 1.22 WHERE THE ENGINEER IS REQUIRED TO PRODUCE RECORD DRAWINGS, THESE SHALL BE THE LAST ISSUE OF CONSTRUCTION DRAWINGS ONLY. 1.23 WHERE THE ENGINEER IS REQUIRED TO REVISIT CONSTRUCTION DRAWINGS AFTER THEIR FIRST ISSUE TO REFLECT INFORMATION RECEIVED FROM OTHERS AFTER THE AGREED DATES, AS SET OUT IN THE MUTUALLY AGREED ENGINEERS CONSTRUCTION DRAWING RELEASE PROGRAMME AND INFORMATION REQUIRED SCHEDULE, THIS WILL CONSTITUTE ADDITIONAL WORK AND SUBJECT TO AN ADDITIONAL FEE. 1.24 THE CONSTRUCTION DRAWINGS REFLECT DRAWN POSITIONS AND DO NOT INCLUDE ANY AS BUILT SURVEY INFORMATION AND/OR CONSTRUCTION TOLERANCES AND/OR DEVIATIONS, ANY INFORMATION PROVIDED BY THE ENGINEER ON THE EXTENT AND LOCATION OF ANY EXISTING STRUCTURES, SERVICES, UTILITIES, FEATURES ETC SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORKS ON SITE. 1.25 ABBREVIATIONS SSL - STRUCTURAL SLAB LEVEL FFL - FINISHED FLOOR LEVEL SOP - SETTING OUT POINT MJ - MOVEMENT JOINT UNO - UNLESS NOTED OTHERWISE IP - INTERSECTION POINT US - UNDERSIDE RC - REINFORCED CONCRETE MC - MASS CONCRETE PC - PRECAST CONCRETE MS - MILD STEEL	2.0 STANDARDS 2.1 EUROCODES REFERENCE TO A EUROCODE OR TO AN EXECUTION OR A MATERIAL STANDARD REFERENCED IN ANY DOCUMENTS SHALL BE DEEMED TO INCLUDE THE APPROPRIATE UNITED KINGDOM NATIONAL ANNEX TO THE EUROCODE OR REFERENCE STANDARD. NATIONALLY DETERMINED PARAMETERS SHALL APPLY. NON-CONTRACTORY COMPLEMENTARY INFORMATION SHALL BE APPLIED WHEN REFERENCED IN THE NATIONAL ANNEX. 2.2 WHERE REFERENCE IS MADE TO BRITISH STANDARDS, EUROCODES AND OTHER STANDARDS AND GUIDANCE DOCUMENTATION, THEN THESE SHALL BE THE LATEST VERSION OF THESE DOCUMENTS. 3.0 GROUND CONDITIONS 3.1 THE FORMATION LEVEL OF THE FOUNDATIONS IS TO BE TO THE SATISFACTION OF THE ENGINEER AND LOCAL AUTHORITY, MINIMUM PERMISSIBLE GROUND BEARING PRESSURE IS TO BE 100N/m² UNDER FOUNDATIONS AT FORMATION LEVEL. 3.2 ALL EXCAVATIONS ARE TO BE LINED WITH BLINDING CONCRETE OR SIMILAR APPROVED BELOW SPECIFIED FORMATION LEVELS OR BOTTOMED OUT IN ACCORDANCE WITH THE SPECIFICATIONS. 3.3 THE INTEGRITY OF THE EXCAVATIONS IS TO BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES IN LINE WITH SOIL INVESTIGATION REPORT ONCE AVAILABLE. 3.4 ALL DISTURBED GROUND TO BE REINSTATED WITH GRANULAR FILL TO THE APPROVAL OF THE ENGINEER. 3.5 WHERE EXISTING DRAINS AND FOUNDATIONS OCCUR UNDER NEW FOUNDATIONS THEY ARE TO BE GRUBBED OUT AND BACK FILLED WITH MASS CONCRETE TO THE APPROVAL OF THE ENGINEER. 3.6 SOFT SPOTS AT FOUNDATION LEVELS ARE TO BE EXCAVATED AND BACK FILLED WITH BLINDING CONCRETE TO THE APPROVAL OF THE ENGINEER. 3.7 THE REMOVAL OF EXCESS WATER FROM THE SITE IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST SATISFY HIMSELF WITH RESPECT TO THE GROUND WATER CONDITIONS ON SITE AND TAKE MEASURES TO DEAL WITH THE LIKELY PERCHED GROUND WATER CONDITIONS WHICH EXIST ABOVE CLAY OR ANY SHALLOW COHESIVE MATERIAL. THE CONTRACTOR IS TO SEEK PERMISSIONS FROM RELEVANT STATUTORY BODIES TO DISCHARGE TREATED EXCESS WATER INTO PUBLIC SEWER SYSTEM OR WATER COURSES, AS REQUIRED TO COMPLETE THE WORKS ON SITE. 3.8 WHERE EXISTING FOUNDATIONS OCCUR UNDER THE GROUND SLAB OR GROUND BEAMS, THE TOPS OF THE FOUNDATIONS ARE TO BE CUT DOWN TO 600mm BELOW THE US OF THE GROUND SLAB GROUND BEAMS AND BACKFILLED WITH THE SPECIFICATION UNLESS NOTED OTHERWISE. 3.9 SOFT SPOTS UNDER THE GROUND SLAB ARE TO BE EXCAVATED AND BACKFILLED WITH HARD CORE IN ACCORDANCE WITH THE SPECIFICATION, SUBJECT TO THE APPROVAL OF THE ENGINEER. 4.0 EARTHWORKS 4.1 BEFORE THE WORKS ARE STARTED, THE CONTRACTOR SHALL SUBMIT DETAILS OF HIS PROPOSALS FOR SUPPORTING THE SIDES OF ALL EXCAVATIONS WHICH HAVE SLOPES STEEPER THAN 1:2, OR LESS IF POOR CONDITIONS EXIST, OR EXCEEDING 1.2m IN DEPTH WHICH WILL BE FORMED DURING THE COURSE OF THE WORKS. THE CONTRACTOR SHALL PROVIDE INFORMATION TO JUSTIFY THE ADEQUACY OF HIS PROPOSALS, IF SO REQUESTED. 4.2 THE CONTRACTORS ATTENTION IS DRAWN THAT SITE SPECIFIC GROUND INVESTIGATION SHALL BE REQUIRED TO FINALISE SUB-STRUCTURAL DESIGN INDICATED ON CSP DRAWINGS. 4.3 THE CONTRACTOR SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE LOCAL AUTHORITY/BLINDING CONTROL REGARDING THE NOTIFICATION, INSPECTION AND APPROVAL OF ALL EXCAVATIONS AND FORMATION LEVELS. 4.4 TYPE 1 OR TYPE 2 GRANULAR MATERIALS OR HARD-CORE SHALL BE USED FOR FILLING AS SHOWN ON THE DRAWINGS. EXCAVATED MATERIALS MAY BE USED FOR FILLING ONLY IF THEY COMPLY WITH THE TYPE OF GRANULAR MATERIAL SHOWN ON THE DRAWINGS/SPECIFICATIONS. 4.5 TYPE 1 AND TYPE 2 FILL MATERIALS SHALL CONSIST OF ANY COMBINATION OF:- i) CRUSHED ROCK ii) CRUSHED CONCRETE iii) CRUSHED GRAVEL iv) NATURAL SAND v) NATURAL GRAVEL 4.6 HARD-CORE SHALL CONSIST ONLY OF TYPE 1 OR TYPE 2 MATERIAL OR BROKEN BRICK FREE FROM PLASTER, DUST, LOAM, WOOD, RUBBISH OR ORGANIC MATERIALS. ALL PIECES SHALL BE LESS THAN 75mm AND PASSED THROUGH A SIEVE. 4.7 THE BACK FILLING TO WORKING SPACES GENERALLY SHALL BE FILLED WITH TYPE 2 GRANULAR MATERIALS AS PREVIOUSLY DESCRIBED UNLESS OTHERWISE INSTRUCTED. 4.8 A LAYER OF CONCRETE BLINDING, SHALL BE PLACED ON EVERY FOUNDATION FORMATION AS SOON AS POSSIBLE AND NOT MORE THAN 4 HOURS AFTER BEING UNCOVERED AND OFFERED FOR INSPECTION. 4.9 ANY WORKS WITHIN TREE ROOT PROTECTION AREAS (RPA) SHOULD BE COMPLETED IN ACCORDANCE WITH METHODS AS APPROVED BY THE SPECIALIST AND COMPLY WITH NUGGD GUIDELINES. 5.0 PREPARATION OF FORMATION LEVELS AND SUB-BASES FOR ROAD AND CAR PARK AREAS 5.1 FORMATION LEVELS MUST NOT BE LEFT EXPOSED OR UNPROTECTED FOR A SIGNIFICANT PERIOD OF TIME TO PREVENT DAMAGE FROM CONSTRUCTION TRAFFIC OR INCIDENT WEATHER. EXCAVATIONS SHOULD BE KEPT FREE FROM WATER UNTIL THE FORMATION HAS BEEN COVERED. 5.2 IF THE EXCAVATED FORMATION LEVEL BECOMES DAMAGED THE FORMATION SHOULD BE EXCAVATED UNTIL SOUND MATERIAL IS ENCOUNTERED. ANY DIFFERENCE IN LEVEL DUE TO THIS SHOULD BE BACKFILLED WITH THE SAME SUB-BASE MATERIAL SPECIFIED FOR THE BUILD-UP. 5.3 AS SOON AS IS PRACTICABLE, THE FORMATION MUST BE COVERED WITH THE GEOTEXTILE AND SUB-BASE SPECIFIED. THE SUB-BASE MUST THEN BE PROTECTED FROM CONSTRUCTION TRAFFIC, CONSTRUCTION OPERATIONS AND INCIDENT WEATHER. 6.0 BELOW + ABOVE GROUND DRAINAGE - BY OTHERS 7.0 MASONRY 7.1 BRICKS ARE TO HAVE FOLLOWING CHARACTERISTICS: FROST RESISTANCE CLASS F TO BS3921, SOLUBLE SALT CONTENT CLASS L TO BS3921. FOR FULL BRICKWORK SPECIFICATION, REFER TO ARCHITECTS DRAWINGS. 7.2 BRICKWORK ABOVE DPC LEVEL IS TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 20N/mm². 7.3 ALL NEW BRICKWORK BELOW DPC LEVEL IS TO BE IN CLASS B ENGINEERING BRICKS. 7.4 BLOCKS ARE TO HAVE THE FOLLOWING CHARACTERISTICS: DENSE CONCRETE BLOCKS MINIMUM COMPRESSIVE STRENGTH 17.3N/mm² ARE TO BE USED WHERE BLOCKWORK IS INDICATED ON THE DRAWINGS. 7.5 BRICKS AND BLOCKS ARE TO BE MANUFACTURED AT LEAST 28 DAYS PRIOR TO USE IN THE WORKS. 7.6 MORTAR IN MASONRY WALLS IS TO BE GENERAL PURPOSE CLASS M6 TO BS EN 306. 7.7 WALL TIES SHALL COMPLY WITH BS1243 OR MEET THE RECOMMENDATIONS OF DD140: PART 2, NEW CAVITY WALL TIES TO BE OF THE FORM WHICH ACCOMMODATES DIFFERENTIAL MOVEMENT BETWEEN SKINS, SUCH AS, PLAIN FLAT UNTWISTED TIES. 7.8 REFER TO ARCHITECTS DRAWINGS FOR FACING BRICK REQUIREMENTS & FULL SPECIFICATION. 7.9 ALL BLOCKWORK WALLS ARE TO BE RESTRAINED AT UNDERSIDE OF ROOF AND AT SIDES OF PANEL USING MASONRY TIES. 7.10 ALL MASONRY MOVEMENT JOINTS TO BE IN ACCORDANCE WITH ARCHITECT LAYOUT AND SPECIFICATION. GENERALLY IT IS NORMAL PRACTICE TO HAVE BRICKWORK JOINTS AT 1012m AND IN BLOCKWORK EVERY 6m, SUBJECT TO MANUFACTURERS RECOMMENDATION. 7.11 HORIZONTAL SPACING IS TO BE 900mm FOR 50-75mm CAVITIES, AND 750mm HORIZONTALLY FOR 76-100mm CAVITIES. 8.0 LINTELS 8.1 CONTRACTOR IS TO PROVIDE A FULL LINTEL SCHEDULE FROM THE PROPOSED LINTEL MANUFACTURER, THIS IS TO BE FORWARDED AND APPROVED BY THE ENGINEER AND ARCHITECT PRIOR TO INSTALLATION ON SITE. 8.2 WHERE TWO ADJACENT LINTELS ARE BOTH BEARING ONTO A SINGLE PIER, ONE CONTINUOUS LINTEL IS TO BE USED INSTEAD IF THE PIER IS 450mm WIDE OR LESS. 8.3 FEATURES TO BE RESTRAINED/ SUPPORTED BY STAINLESS STEEL CLAMPS/ FIXINGS TO SPECIALIST DESIGN SPECIFICATION	9.0 CONCRETE 9.1 READ IN CONJUNCTION WITH THE GENERAL CONCRETE SPECIFICATION. 9.2 ALL STRUCTURAL CONCRETE TO BE GRADE C25/30, U.N.O. BLINDING & MASS FOUNDATIONS TO BE GRADE PN2 (SUBJECT TO GROUND INVESTIGATION REPORT). CONCRETE TO EXTERNAL PATHS TO BE GRADE C16/20. ALL CONCRETE TO BE IN ACCORDANCE WITH THE SPECIFICATION. REINFORCEMENT, IF REQUIRED, WILL BE SHOWN ON THE RELEVANT DRAWINGS. 9.3 COVER TO REINFORCEMENT TO BE COMPATIBLE WITH EXPOSURE CONDITIONS NOTED IN THE SPECIFICATIONS. 9.4 UNLESS NOTED OTHERWISE, THE CONCRETE FINISHES ARE TO BE AS TYPE A (BS8110 6.2.7.3). THE CONTRACTOR IS TO NOTE THE STANDARD OF FINISH REQUIRED TO SOME EXTERNAL WALLS. 9.5 THE PERFORMANCE AND SPECIFICATION OF SPACERS AND CHAIRS IS TO COMPLY WITH BS 7973. 9.6 NO CUTTING OR REMOVAL OF PLACED CONCRETE IS PERMITTED WITHOUT PRIOR AGREEMENT OF THE ARCHITECT/ENGINEER. 9.7 THE POSITION AND DETAILS OF ALL CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS ARE TO BE AGREED WITH THE ARCHITECT AND ENGINEER BEFORE WORK COMMENCES. REFER TO SPECIFICATION FOR MAXIMUM SPACING OF CONSTRUCTION JOINTS. 9.8 UNLESS NOTED OTHERWISE, ALL FORM WORK TO SUSPENDED SLABS (IF REQUIRED) AND BEAMS TO BE CONSTRUCTED TO PROVIDE UPWARD CAMBERS IMMEDIATELY BEFORE STRIKING, IN ACCORDANCE WITH THE SPECIFICATION. 9.9 ALL EXTERNAL CORNERS TO STRIP FOOTINGS, EDGE BEAMS, SLAB PERIMETER THICKENINGS ETC, WHERE MEMBRANE IS TO BE USED, ARE TO HAVE 25mm x 25mm CHAMFER. 9.10 ALL PENETRATIONS THROUGH ALL CONCRETE IN THE GROUND ARE TO BE SEALED WITH A HYDROPHILIC STRIP. 9.11 REINFORCEMENT GRADES:- HIGH YIELD - GRADE 500N/mm² (DEFORMED TYPE 2) PLAN BARS - GRADE 250N/mm² FABRIC - GRADE 500N/mm² 9.12 THE MINIMUM LAP LENGTHS TO BE AS FOLLOWS, (U.N.O.) A133 MESH - 300mm A252 MESH - 400mm A393 MESH - 500mm LAPS IN MESH FABRIC ARE TO BE KEPT TO A MINIMUM AND THE SHEETS STAGGERED TO ENSURE AT THE CORNERS A MAXIMUM OF 3 LAYERS IS NOT EXCEEDED LOOSE BAR REINFORCEMENT - 50 TIMES THE SMALLER BAR DIAMETER OR LAPS TO BE IN ACCORDANCE WITH BS EN 19922 WHICH EVER IS THE GREATER. LAPPING BAR ARRANGEMENT TO BE IN ACCORDANCE WITH BS EN 1992. 9.13 LAPPING OF REINFORCEMENT BARS SHALL BE STAGGERED AS RECOMMENDED BY BS EN 1992 9.14 ALL CONCRETE ENCASED STEEL SECTIONS TO HAVE D96 WRAPPING FABRIC AROUND SECTIONS. REINFORCEMENT TO BE PLACED CENTRALLY WITHIN COVER. 9.15 FINISHES TO INSITU CONCRETE SURFACES: TOP SURFACE OF SLAB - TROWELLED STEEL FINISH (TO PROVIDE WEARING SURFACE) THE ABOVE FINISH IS TO BE CONFIRMED BY THE ARCHITECT PRIOR TO CONCRETING OPERATIONS COMMENCING. 9.16 CAREFUL CONSIDERATION WILL BE REQUIRED FROM THE CONTRACTOR AS TO THE CONSTRUCTION SEQUENCE OF THE REINFORCED CONCRETE FRAME. PARTICULAR ATTENTION SHOULD BE GIVEN BY THE CONTRACTOR TO THE POSSIBLE SHRINKAGE AND RESTRAINT EFFECTS CAUSED BY THE EXTENT OF RC WALLS. CONTRACTOR TO FOLLOW RECOMMENDATIONS OF CONCRETE SOCIETY TECHNICAL REPORT 67 'MOVEMENT, RESTRAINT AND CRACKING IN CONCRETE STRUCTURES' WHEN PLANNING HIS POUR SEQUENCE. ALL RC WALLS PROVIDED LATERAL STABILITY TO THE FRAMES AND THIS MUST BE ACCOUNTED FOR IN THE SEQUENCE OF CONSTRUCTION. 9.17 THE CONTRACTOR SHALL PROVIDE FORMWORK DRAWINGS TO ALL AREAS OF THE EXPOSED CONCRETE STRUCTURE AND OBTAIN THE CA'S APPROVAL 4 WEEKS PRIOR TO THE WORKS COMMENCING ON SITE. THE DRAWINGS SHOULD BE AT MINIMUM SCALE OF 1:100 AND DESCRIBE ALL SERVICE HOLES, CAST IN SERVICES, CAST IN FIXINGS, AND OTHER ITEMS, REBATES, CHAMFERS, TYPE OF FINISH, CONSTRUCTION JOINTS, SHUTTERING ROLT HOLES, ETC. IT SHOULD BE NOTED THAT THE STRUCTURAL GAS ONLY SHOW MAIN SERVICE HOLES. REFERENCE SHOULD BE MADE TO THE ARCHITECTS AND SERVICE ENGINEERS DRAWINGS AND ALL RELEVANT SUB-CONTRACTORS DRAWINGS FOR ITEMS AFFECTING THE CONCRETE SECTIONS AND PROFILES. 9.18 THE CONTRACTOR WILL BE REQUIRED TO PROVIDE DETAILED METHOD STATEMENTS DESCRIBING FULLY HOW HE INTENDS TO CONTROL THE QUALITY OF ALL STRUCTURAL ELEMENTS, ESPECIALLY THE EXPOSED CONCRETE WORKS. PRELIMINARY METHOD STATEMENTS SHOULD BE SUBMITTED AT TENDER STAGE. NO PERMANENT WORKS WILL BE PERMITTED ON SITE UNTIL THESE METHOD STATEMENTS HAVE BEEN APPROVED BY THE CA. THE CONTRACTORS ATTENTION IS BROUGHT TO THE IMPORTANCE OF ACHIEVING TOLERANCES DEFINED; THIS ISSUE MUST BE FULLY ADDRESSED IN THE SUBMITTED METHOD STATEMENT. 9.19 POUR SIZES ARE TO BE DETERMINED BY THE CONTRACTOR AND TO THE APPROVAL OF ENGINEER. INFILL POURS BETWEEN RIGID RESTRAINTS SHOULD BE AVOIDED OR MINIMISED WHERE POSSIBLE. THE CONTRACTOR MUST PROVIDE A DETAILED SEQUENCE FOR THE APPROVAL OF THE CA TAKING INTO ACCOUNT PROGRAMME, SPECIFICATION, FORMWORK USAGE, CRANAGE, DELIVERIES, PROTECTION, CURING AND CONTINUITY OF WORK. 9.20 CONTRACTOR TO SUBMIT PROPOSED LAYOUT OF CONSTRUCTION JOINTS AND WATER BAR DETAILS IN ADVANCE FOR THE ENGINEERS COMMENT/APPROVAL 6 WEEKS PRIOR TO WORKS BEING UNDERTAKEN ON SITE. IN ADDITION TO THE RELEVANT CODES OF PRACTICE, THE CONTRACTOR MUST SATISFY THE REQUIREMENTS OF THE FOLLOWING DOCUMENTS AND REFERENCES THERE IN i) REINFORCED CONCRETE COUNCIL - LARGE AREA POURS FOR SUSPENDED SLABS AND DESIGN GUIDE ii) CONCRETE SOCIETY DIGEST No 2 - MASS CONCRETE 9.21 WHERE CONCRETE IS BEING POURED INTO AREAS WITH RESTRICTED ACCESS THE CONTRACTOR SHALL GIVE CONSIDERATION TO THE USE OF A CONCRETE MIX USING REDUCED SIZED AGGREGATES TO ENSURE FULL AND ADEQUATE COMPACTION IS ACHIEVED TO ALL AREAS WITHIN THE SHUTTERS AND AROUND ALL REINFORCEMENT. WHERE A PRE-CAST CONCRETE PRIMARY STRUCTURE IS PROPOSED THE ENGINEER WILL PREPARE TYPICAL INTENT INTERFACE AND CONNECTION DETAILS. THE FINAL DESIGN AND DETAILING WILL REMAIN WITH THE CONTRACTOR.	10.0 STEELWORK 10.1 ALL MATERIALS, FABRICATION, WORKMANSHIP AND ERECTION OF STEELWORK SHALL BE IN ACCORDANCE WITH THE NATIONAL STRUCTURAL STEELWORK SPECIFICATION FOR BUILDING CONSTRUCTION, 9th EDITION AS PUBLISHED BY THE BRITISH CONSTRUCTIONAL STEELWORK ASSOCIATION. 10.2 STEELWORK CONNECTIONS SHALL COMPRISE NOT LESS THAN: 2 No. M16 DIA. G/8.8 BOLTS FOR MEMBERS UP TO 25 kg/m, 4 No. M16 DIA. G/8.8 BOLTS FOR ALL OTHER MEMBERS, EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS. THE STEELWORK CONTRACTOR SHALL DESIGN CONNECTIONS WHICH WILL BE SUBJECT TO COMMENT BY THE ENGINEER. (INCLUDING BASEPLATES) 10.3 STEEL COLUMNS SHALL BE RAISED OR LOWERED TO THE CORRECT LEVELS OFF FOUNDATIONS. GROUT SHALL TAKE THE FORM OF NEAT CEMENT SLURRY WITH A NON-SHRINK ADDITIVE AND SHOULD BE JUST FLUID ENOUGH TO POUR. GROUT HOLES ARE TO BE PROVIDED IN BASE PLATES BY STEELWORK MANUFACTURER TO ENSURE AN EVEN DISTRIBUTION OF GROUT. 10.4 SITE MODIFICATIONS TO STRUCTURAL STEELWORK SHALL NOT BE CARRIED OUT UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. 10.5 ALL STRUCTURAL STEELWORK SHALL BE BLAST CLEANED TO BS 7079: PART A1 PREPARATION GRADE S475 AND EXCEPT WHERE SPECIFIED AS GALVANISED, SHALL BE PAINTED WITH A SUITABLE GOOD QUALITY HIGH BUILD ZINC PHOSPHATE PRIMER TO PROVIDE A DRY FILM THICKNESS OF NOT LESS THAN 75 MICRONS WITHIN 4 HOURS OF CLEANING. A PREFABRICATION PRIMER MAY BE USED AT THE FABRICATOR'S DISCRETION. THE CONTRACTOR SHALL ENSURE THAT THE PRIMER USED IS COMPATIBLE WITH SUBSEQUENT COATINGS SPECIFIED BY OTHERS. (E.G. FLUORESCENT PAINT). 10.6 STEELWORK IN THE WALL CAVITY IS TO BE PAINTED WITH 2 COATS OF BITUMINOUS PAINT TO A MINIMUM THICKNESS OF 150 MICRONS. 10.7 STEELWORK FOR EXTERNAL AREAS SHOULD BE GALVANISED OR PAINTED WITH A PAINT COAT SYSTEM EQUIVALENT TO GALVANISING. THE CONTRACTOR IS TO FORWARD PROPOSALS TO THE ENGINEER PRIOR TO COMMENCING ANY FABRICATION. 10.8 ALL STEELWORK BELOW DPC LEVEL AND TO A MINIMUM OF 3m ABOVE DPC LEVEL SHALL BE PAINTED WITHIN 4m - TWO ROWS EQUALLY SPACED ALONG THE SPAN AND AT EACH END AT SUPPORTS. SPANS LONGER THAN 4m - TWO ROWS EQUALLY SPACED ALONG THE SPAN AND AT EACH END AT SUPPORTS. SOLID TIMBER BLOCKINGS TO BE PROVIDED AT THIRD POINTS AND WITHIN WEBS OF STEELWORK MEMBERS TO BOTH FLOORS AND ROOFS. 10.9 THE ENGINEER IS NOT RESPONSIBLE FOR DIMENSIONAL INFORMATION EXCEPT WHERE SHOWN ON THE DRAWINGS. ALL SETTING OUT INFORMATION, DIMENSIONS ETC. SHALL BE CALCULATED FROM THE ARCHITECT'S DRAWINGS. 10.10 ALL STRUCTURAL STEELWORK TO BE FIRE PROTECTED TO ARCHITECT'S DETAILS. 10.11 SCRATCHED PAINTWORK AND ALL BOLTS ARE TO BE TOUCHED UP AFTER ERECTION, WITH A PAINT SPECIFICATION TO MATCH THE PAINTED STEELWORK. 10.12 THE CONTRACTOR SHALL BE CERTIFIED TO UNDERTAKE WORKS EQUAL OR ABOVE THE EXECUTION CLASS FOR THE PROJECT. 10.13 ALL FABRICATED STRUCTURAL STEELWORK SHALL BE CE MARKED. 10.14 THE CONTRACTOR MUST IDENTIFY IN HIS TENDER SUBMISSION ANY STEELWORK ITEMS WHICH HAVE ANY LONG LEAD-IN PERIODS FOR WHICH THE MATERIALS WOULD NEED TO BE PRE-ORDERED PRIOR TO THE AWARD OF THE CONTRACT. 10.15 IF INFORMATION IS MISSING FROM THE ENGINEER'S DRAWINGS, RAISE QUERIES IN GOOD TIME FOR ENGINEER TO RESPOND WITHOUT CAUSING DELAYS IN WORK. 10.16 FINAL CONSTRUCTION DRAWINGS FOR ALL STRUCTURAL STEEL ELEMENTS WILL BE ISSUED 10 WEEKS PRIOR TO COMMENCEMENT OF ERECTION DATE FOR THE RESPECTIVE ELEMENT, UNLESS AGREED OTHERWISE BETWEEN THE CA AND CONTRACTOR. 10.17 WHERE REQUESTED BY THE ENGINEER, THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS FOR REVIEW IN DIGITAL FORMAT (PDF FILES). 10.18 PRIOR TO PROCEEDING WITH THE PRODUCTION OF FABRICATION DRAWINGS THE CONTRACTOR SHALL SUBMIT AND OBTAIN THE ENGINEERS AND ARCHITECTS AGREEMENT OF FRAMING PLANS/ELEVATION SHOWING THE OVERALL LAYOUT AND SETTING OUT OF ALL STEELWORK ELEMENTS. 10.19 DUE CONSIDERATION MUST BE GIVEN TO THE FABRICATION PROCESS TO MINIMISE RESIDUAL STRESS IN THE WORK PIECES WHICH COULD CAUSE DISTORTION DURING HOT DIP GALVANISING PROCESS, WHERE SPECIFIED. FABRICATOR TO CONSULT AND WORK TO 'GALVANISING ASSOCIATION' GUIDELINES WHERE NECESSARY. 10.20 DESIGN OF ALL CONNECTIONS IS THE RESPONSIBILITY OF THE STEELWORK SUB-CONTRACTOR. THIS SHALL INCLUDE ALL BASE PLATES, GUSSET PLATES, STIFFENER PLATES, SPREADER BEAMS, CORBELS AND ANY OTHER MINOR STEEL ELEMENTS WHICH ARE NOT SHOWN OR SKETCHED BUT NOT SIZED ON THE TENDER DRAWINGS, WHICH ARE NECESSARY TO ACHIEVE THE CONNECTION INCLUDING ALL WELDS AND BOLTS. THIS COVERS BOTH STEEL-TO-STEEL PLUS STEEL TO CONCRETE/MASONRY CONNECTIONS WHICH INCLUDES CONFIRMING ADEQUACY OF 'SUBSTRATE' THE CONTRACTOR SHALL PROVIDE PLAN AND DETAILED DRAWING SHOWING ALL THESE CONNECTIONS. 10.21 IN THE DESIGN OF CONNECTIONS BETWEEN STEEL AND CONCRETE ELEMENTS THE CONTRACTOR MUST COMPLETE THE DETAILING 4 WEEKS PRIOR TO THE AGREED ISSUE DATE OF THE REINFORCEMENT DRAWINGS AND PROVIDE/AGREE THIS WITH THE ENGINEER OR ALTERNATIVELY IF FINALISED AFTER THIS DATE TAKE INTO ACCOUNT THE REINFORCEMENT ARRANGEMENT DETAILED BY OTHERS IN FINALISING HIS CONNECTION DESIGN. 10.22 FOR FACTORED DESIGN LOADS REFER TO DRAWINGS, WHERE NO FORCE IS SHOWN ON THE DRAWINGS RAISE THE QUERIES IN GOOD TIME FOR THE ENGINEER TO RESPOND TO ENSURE TENDER PRICES INCLUDE FOR ALL LOADS AND NO DELAYS OCCUR TO THE PROGRAMME. 10.23 AT BEAM TO COLUMN CONNECTIONS, THE CENTRE LINE OF THE COLUMN SHALL COINCIDE WITH THE CENTRE LINE OF THE BEAM UNLESS NOTED OTHERWISE. 10.24 WHERE POSSIBLE ALL CONNECTIONS DESIGNED BY THE CONTRACTOR SHALL BE ACHIEVED WITHIN THE DEPTH OF THE MEMBER UNLESS SHOWN OTHERWISE ON THE DRAWINGS OR AGREED WITH THE ARCHITECT AND ENGINEER. ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED TO AVOID FINISHES AND SERVICE ZONES. 10.25 WHERE CLOSED SECTIONS ARE DRILLED TO FORM CONNECTIONS TO OTHER STEEL OR BUILDING ELEMENTS THE CONNECTION SHALL BE DETAILED TO ENSURE THE HOLE IS SEALED IN A MANNER TO PROVIDE ADEQUATE CORROSION PROTECTION TO THE INSIDE OF THE CLOSED SECTION. 10.26 WHERE DIMENSIONS ARE NOT SHOWN ON THE ENGINEER'S DRAWINGS WHICH NEED TO BE OBTAINED FROM SURVEY INFORMATION, THE STEELWORK SUBCONTRACTOR SHALL OBTAIN/ESTABLISH THESE DIMENSIONS AND ADD THEM TO THEIR FRAMING PLANS, AS DESCRIBED BELOW, PRIOR TO SUBMITTING THESE FRAMING PLANS TO THE ENGINEER FOR REVIEW. 10.27 UNLESS SPECIFICALLY IDENTIFIED THE CHOICE OF FIRE PROTECTION MATERIAL IS THE RESPONSIBILITY OF THE SUB-CONTRACTOR TO SUIT THE LOCATION OF THE ELEMENT AND THE INTERFACE DETAILS WITH OTHER PACKAGES UNLESS DEFINED ON THE ARCHITECTS DRAWINGS OR SPECIFICATION. THE CONTRACTOR SHALL ENSURE THAT ALL RELEVANT CRITERIA SUCH AS DIMENSIONS, TOLERANCES, WEATHER RESISTANCE, DURABILITY, SUITABILITY, ETC ARE MET. REFERENCE SHOULD BE MADE TO THE RELEVANT ARCHITECTURAL SPECIFICATIONS. 10.28 FIXINGS TO STRUCTURAL STEELWORK TO BE TO AN AGREED METHOD, SUB-CONTRACTORS SHALL SUPPLY DETAILS TO CA FOR APPROVAL. 10.29 THE CONTRACTOR SHOULD REFER TO THE LIFT SUB-CONTRACTORS DRAWINGS FOR DETAILS OF ALL LIFT RELATED STEELWORK REQUIREMENTS. 10.30 THE DESIGN OF THE FOLLOWING SECONDARY STEELWORK ITEMS PLUS THEIR CONNECTIONS ONTO THE PRIMARY STEEL FRAME IS THE RESPONSIBILITY OF THE RELEVANT SUB-CONTRACTOR. i) SUPPORTS TO SERVICES ii) ALL OTHER GENERAL OR ARCHITECTURAL METALWORK 10.31 THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL STRUCTURAL STEELWORK IN THE TEMPORARY CONDITION DURING ERECTION AND THE DESIGN OF ANY TEMPORARY BRACING REQUIRED. REFERENCE SHOULD ALSO BE MADE TO THE ENGINEERS CONSTRUCTION SEQUENCE DRAWINGS.	11.0 STRUCTURAL TIMBER 11.1 THE DESIGN OF STRUCTURAL TIMBER SHALL BE IN ACCORDANCE WITH BS EN 1995. 11.2 ALL STRUCTURAL TIMBER IS TO BE STRENGTH CLASS C24 TO BS 4978 UNLESS NOTED OTHERWISE ON THE DRAWING. 11.3 ALL STRUCTURAL TIMBERS TO BE OF SUITABLE GRADE AS NOTED ON DRAWINGS AND WITH HIGH PRESSURE PRESERVATIVE TREATED FINISH. 11.4 FOR ALLOWABLE SIZES AND POSITIONS OF NOTCHES AND HOLES IN STRUCTURAL TIMBER REFER TO THE SPECIFICATION. 11.5 STRUCTURAL PLYWOOD DECKING IS TO BE CANADIAN DOUGLAS FIR GRADE C. 11.6 THE STRUCTURAL DRAWINGS SHOW MAIN STRUCTURAL ELEMENTS (ROOF JOISTS) FOR THE SIZES OF SECONDARY TIMBER ELEMENTS AND ALL SETTING OUT INFORMATION REFER TO THE ARCHITECT'S DRAWINGS. 11.7 THE DESIGN OF ALL CONNECTIONS IS THE RESPONSIBILITY OF THE TIMBER SUB-CONTRACTOR. THIS COVERS BOTH TIMBER TO TIMBER CONNECTIONS PLUS TIMBER TO STEEL, CONCRETE OR BLOCKWORK CONNECTIONS. CALCULATIONS SHALL BE SUBMITTED TO THE CA FOR REVIEW 4 WEEKS PRIOR TO ANY FABRICATION/SITE WORKS COMMENCING OF AFFECTED WORKS. 11.8 FOR FACTORED DESIGN LOADS REFER TO DRAWINGS, WHERE NO FORCES ARE SHOWN ON PLANS, RAISE QUERIES IN GOOD TIME FOR ENGINEER TO RESPOND TO ENSURE TENDERS INCLUDE FOR ALL CONNECTION LOADS AND NO DELAYS OCCUR TO THE PROGRAMMING. 11.9 NOGGIN'S - WHERE FLOOR OR ROOF JOISTS SHOWN ON DRAWINGS HAVE: SPAN BETWEEN 1m to 4m - MIDSPAN AND AT EACH END AT SUPPORTS SPANS LONGER THAN 4m - TWO ROWS EQUALLY SPACED ALONG THE SPAN AND AT EACH END AT SUPPORTS SOLID TIMBER BLOCKINGS TO BE PROVIDED AT THIRD POINTS AND WITHIN WEBS OF STEELWORK MEMBERS TO BOTH FLOORS AND ROOFS. 11.10 NOTCHED BEAM ENDS - FLOOR OR ROOF JOISTS SHOULD NOT HAVE BOTTOM NOTCHES DEEPER THAN HALF THEIR GROSS DEPTHS. WHERE BOTTOM NOTCHES HAVE DEPTHS BETWEEN 0.25 TO 0.5 X GROSS DEPTHS, CONTRACTOR IS TO ALLOW/PROVIDE FOR APPROPRIATE PROPRIETARY STEEL ANGLE STRENGTHENING NAIL PLATES TO DEAL WITH THE SHEAR STRESS CONSTRUCTION HIGHLIGHTED IN BS EN 1995. 11.11 PROVIDE 30 x 5mm THICK GALVANISED M.S. HORIZONTAL WALL RESTRAINT STRAPS AT 1000mm CTRS PERPENDICULAR TO SPAN AND AT EVERY THIRD JOIST PARALLEL TO SPAN (TO A MAX SPACING OF 1000mm) TO PD 6697 11.12 PROVIDE 30 x 5mm THICK GALVANISED M.S. VERTICAL TWISTED ROOF RESTRAINT STRAPS AT 1000mm CTRS PERPENDICULAR TO SPAN AND AT EVERY THIRD JOIST PARALLEL TO SPAN (TO A MAX SPACING OF 1000mm) TO PD 6697 11.13 ALL NEW FLOOR/ROOF JOISTS TO BE SUPPORTED ON EXPANET BAT JOIST HANGERS AS FOLLOWS:- <table border="1"> <thead> <tr> <th>TIMBER TO TIMBER (NORMAL)</th> <th>SPEEDY</th> </tr> </thead> <tbody> <tr> <td>TIMBER TO TIMBER (HEAVY DUTY)</td> <td>MAXI SPEEDY</td> </tr> <tr> <td>TIMBER TO MASONRY</td> <td>SPH</td> </tr> </tbody> </table> 12.0 ROOF CONSTRUCTION 12.1 TIMBER WALL PLATES SHALL NOT BE LESS THAN 50 x100mm IN CROSS SECTION (EXCEPT WHERE OTHERWISE NOTED ON THE DRAWINGS) AND SHALL BE LAID TO LEVEL ON A MORTAR BED ON MASONRY WALLS OR SLABS BY SUITABLE POWDER-ACTUATED FASTENERS OR MIN. M8 DIA. BOLTS AT NOT MORE THAN 900mm CENTRES. 12.2 ALL MEMBERS SUPPORTED ON PROPRIETARY HANGERS SHALL BE ACCURATELY CUT TO PROVIDE A FULL CONTACT WITH THE BASE OF THE HANGER AND SHALL BE FIXED IN ACCORDANCE WITH THE HANGER MANUFACTURERS INSTRUCTIONS. 12.3 ALL LOOSE TIMBER RAFTERS, CEILING JOISTS, AND THE LIKE SHALL BE FIXED TO TIMBER WALL PLATES, WITH SUITABLE PROPRIETARY GALVANISED TRUSS CLIPS. ALL NAIL HOLES IN TRUSS CLIPS SHALL BE FILLED WITH 32 x 3.5mm GALVANISED OR SHERARDISED SQUARE TWISTED NAILS. 12.4 INTERNAL PARTITIONS EXTENDING INTO THE ROOF SPACE SHALL BE RESTRAINED AT TOP OF ANY CEILING JOISTS AND UNDERSIDE OF RAFTER LEVEL AT NO MORE THAN 2.0m CENTRES WITH GALVANISED 30 x 5.0mm STRAPS HAVING A SIZE OF NOT LESS THAN 100 x 900mm NOGGIN'S NOT LESS THAN 75mm DEEP AND TIMBER BLOCKING ADJACENT TO WALLS SHALL BE FIXED BETWEEN MEMBERS AT ALL STRAP LOCATIONS. STRAPS SHALL BE FIXED TO MEMBERS/NOGGIN'S WITH NOT LESS THAN 4 No. 22 x 3.5mm GALVANISED OR SHERARDISED SQUARE TWISTED NAILS. 12.5 TIMBER MEMBERS SHALL NOT PENETRATE FIRE STOP WALLS IN ROOFS. SUITABLE GALVANISED METAL HANGERS TO BE PROVIDED TO SUPPORT RAFTERS ETC. AS REQUIRED AVOIDING SUCH PENETRATIONS. FOR DETAILS OF FINISHES REFER TO ARCHITECTS DRAWINGS. 13.0 TEMPORARY WORKS/SUPPORTS 13.1 THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF ALL TEMPORARY WORKS TO ENSURE THE STRENGTH AND STABILITY OF THE BUILDING THROUGHOUT THE COURSE OF THE WORKS. DRAWINGS AND CALCULATIONS DETAILED ALL TEMPORARY WORKS SHALL BE SUBMITTED TO THE ENGINEER FOR COMMENT PRIOR TO COMMENCEMENT OF THE WORKS. FOR ALLOWABLE LOADS ON FLOORS FOR ALL TEMPORARY WORKS REFER TO THE CSP LOADING DRAWINGS/DOCUMENTATION. 13.2 THE CONTRACTOR IS TO ALLOW FOR APPOINTING A TEMPORARY WORKS ENGINEER TO PROVIDE CALCULATIONS AND DETAILED DRAWINGS FOR ALL TEMPORARY WORKS REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS TO NOTE THAT THE STRUCTURE HAS BEEN DESIGNED ONLY FOR THE IMPOSED LOADS SHOWN ON THE LOADING DRAWINGS. ADDITIONAL PROPPING LOADS WILL REQUIRE THE STRUCTURE TO BE ENHANCED. 14.0 HEAVE PROTECTION BELOW GROUND FLOOR SLABS 14.1 SUBJECT TO SITE GROUND INVESTIGATION REPORT. 15.0 CONTRACTOR DESIGN PORTIONS 15.1 THE FOLLOWING IS A LIST OF CONTRACTOR DESIGN PORTIONS (CDP) ITEMS WITH RESPECT TO THE STRUCTURAL ASPECTS OF THE PROJECT/PERMANENT WORKS:- i) STEELWORK CONNECTIONS (INCLUDING STEEL CONNECTIONS EMBEDDED INTO CONCRETE/MASONRY) ii) SITE SPECIFIC GROUND INVESTIGATION iii) CLADDING INCLUDING ALL FIXINGS AND FRAMEWORK REQUIRED TO CONNECT IT TO THE PRIMARY STRUCTURE iv) SECONDARY STEELWORK/GENERAL METALWORK INCLUDING ALL FRAMINGS/SUPPORTS TO THE FOLLOWING ELEMENTS INCLUDING THE CONNECTIONS ONTO THE PRIMARY STRUCTURE, AS SHOWN ON THE STRUCTURAL ENGINEER'S DRAWINGS. a. BUILDERSWORKS/SUPPORT TO SERVICES b. CLEANING CRADLES c. NON-LOADBEARING WALLS/PARTITIONS d. CEILINGS e. BRISE SOLEIL f. ROLLER SHUTTER DOORS v) PROPRIETARY FIRE PROTECTION SYSTEMS vi) SECONDARY TIMBER ELEMENTS WITHIN THE EXTERNAL ENVELOPE (ROOF & WALLS) AND ASSOCIATED FIXINGS ONTO THE PRIMARY STRUCTURE AS SHOWN ON THE STRUCTURAL ENGINEER'S DRAWINGS. vii) THE PERFORMANCE OF ANY WATERPROOF ADDITIVES (IF ANY) TO CONCRETE MIXES.	TIMBER TO TIMBER (NORMAL)	SPEEDY	TIMBER TO TIMBER (HEAVY DUTY)	MAXI SPEEDY	TIMBER TO MASONRY	SPH	16.0 INFORMATION REQUIRED FROM THE CONTRACTOR 16.1 IN ADDITION TO ALL THE OTHER REQUIREMENTS THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION AT TENDER STAGE. i) PRELIMINARY PROGRAMME ii) METHOD STATEMENT FOR THE INSTALLATION OF TEMPORARY WORKS (IF ANY) iii) GENERAL STATEMENT COVERING THE OVERALL ERECTION SEQUENCE FOR THE WORKS iv) DETAILS OF PROPOSED FIRE PROTECTION MATERIALS v) DETAILS OF PROPOSED PAINT PROTECTION MATERIALS vi) METHOD STATEMENTS COVERING THE QUALITY CONTROL PROCEDURES PROPOSED. vii) ITEMS THAT REQUIRE PRE-ORDERING viii) INFORMATION REQUIRED SCHEDULE ix) SITE SPECIFIC GROUND INVESTIGATION REPORT. 17.0 BUILDING INFORMATION MODELLING (BIM) 17.1 THESE NOTES ARE TO BE READ IN CONJUNCTION WITH PROJECT-SPECIFIC ENGINEER/DESIGN TEAM BIM PROTOCOL DOCUMENT. 17.2 WHERE DIGITAL MODELS/FILES ARE ISSUED, THESE ARE PROVIDED FOR INFORMATION ONLY TO ASSIST OTHER PARTIES TO DEVELOP THEIR DESIGNS/DRAWINGS AND DOCUMENTATION. THE ENGINEER ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF THE DIGITAL DATA SUPPLIED. 17.3 THE CONTRACTUAL DRAWINGS/INFORMATION PRODUCED BY ENGINEER UNDER OUR APPOINTMENT ARE LIMITED TO 2D PDF FORMAT DRAWINGS (ISSUED ELECTRONICALLY), WITH RESPECT TO DESIGN COORDINATION AND DIMENSIONAL SETTING OUT. 17.4 FOR CLARITY THE FOLLOWING ELEMENTS WILL NOT BE INCLUDED IN THE STRUCTURAL MODEL:- i) SMALL BUILDER WORK OPENINGS (250 x 250 OR LESS) ii) NON-STRUCTURAL UPSTANDS OR PLINTHS iii) SLAB RECESSES iv) STEELWORK CONNECTIONS v) PRECAST CONCRETE CONNECTIONS OR JOINTS vi) REINFORCEMENT vii) CAST-IN INSERTS/FIXINGS 17.5 THE CONTRACTOR IS NOT TO ISSUE OR MAKE THIS MODEL AVAILABLE TO SUB-CONTRACTORS WITHOUT THE SPECIFIC APPROVAL OF CSP, IN WRITING. 18.0 ELECTRONIC INFORMATION MANAGEMENT AND PROJECT CONTROL SYSTEM 18.1 THE CONTRACTOR IS TO IDENTIFY AT TENDER STAGE IF HE INTENDS TO USE AN ELECTRONIC MANAGEMENT SYSTEM ON THE PROJECT AND CONFIRM WHICH SYSTEM IS TO BE ADOPTED. A DRAFT PROTOCOL DOCUMENT SHOULD BE ISSUED WITH HIS TENDER SUBMISSION FOR REVIEW OF THE DESIGN TEAM. 18.2 IF AN ELECTRONIC MANAGEMENT SYSTEM IS TO BE EMPLOYED, ENGINEER WILL ONLY BE RESPONSIBLE FOR MONITORING OF EMAIL NOTIFICATIONS AND ANY NECESSARY RESPONSES. IT IS ASSUMED THAT THE CONTRACTOR/OTHERS WILL BE RESPONSIBLE FOR THE MANAGEMENT, MAINTENANCE AND ADMINISTRATION OF THE SYSTEM. 18.3 THE ISSUE AND RECEIPT OF ALL ELECTRONIC DRAWN INFORMATION IS TO BE IN PDF FORMATS. DWG FORMAT IS NOT TO BE USED. 18.4 THE USE OF AN ELECTRONIC MANAGEMENT SYSTEM IS ASSUMED FOR THE ISSUE AND REVIEW OF PRINCIPAL DOCUMENTATION ONLY AND NOT FOR DAY TO DAY CORRESPONDENCE. 18.5 THE ENGINEER WILL ONLY REVIEW INFORMATION WHICH IS PART OF THE PRIMARY STRUCTURE OR WITH RESPECT TO INTERFACES BETWEEN THE PRIMARY STRUCTURE AND OTHER ELEMENTS OF THE BUILDING. INFORMATION ISSUED THAT HAS NO SUCH INTERFERENCE WILL NOT BE RESPONDED TO AND THE ENGINEER SHOULD BE EXCLUDED FROM ANY DISTRIBUTION LIST FOR THIS INFORMATION. 18.6 IF AN ELECTRONIC MANAGEMENT SYSTEM IS TO BE USED THEN AN ADDITIONAL FEE MAYBE PAYABLE BY THE CONTRACTOR TO CSP. 19.0 HEALTH AND SAFETY 19.1 ENGINEER'S ROLE IN THIS PROJECT IS THAT OF DESIGNER AS DEFINED BY THE CDM REGULATIONS 2015. (REGULATION 10 - DUTIES OF DESIGNERS). 19.2 IN CARRYING OUT DESIGN WORK, ENGINEERING JUDGEMENT HAS BEEN APPLIED TO ELIMINATE OR WHERE NOT REASONABLY PRACTICABLE, TO REDUCE DESIGN HAZARDS AND RISKS ASSOCIATED WITH THE CONSTRUCTION AND SUBSEQUENT PHASES OF THE STRUCTURE. 19.3 THE CONTRACTOR IS REMINDED OF THEIR RESPONSIBILITIES UNDER THE CDM REGULATIONS 2015 AND THEIR OBLIGATIONS UNDER OTHER APPLICABLE HEALTH AND SAFETY LEGISLATION WHEN UNDERTAKING CONSTRUCTION OPERATIONS BOTH ON AND OFF SITE. THIS ALSO APPLIES TO ALL SUB-CONTRACTORS AND SUPPLIERS. 19.4 THE CONTRACTOR'S ATTENTION IS DRAWN TO THE PRE-CONSTRUCTION INFORMATION PROVIDED BY THE PRINCIPAL DESIGNER. 19.5 THE FOLLOWING SIGNIFICANT RESIDUAL RISKS HAVE BEEN IDENTIFIED IN THE DESIGN OF THE STRUCTURE. i) TEMPORARY WORKS SUPPORT ii) UNEXPLODED ORDNANCE iii) SECURITY DURING SITE WORKS iv) POTENTIAL UNSKILLED LABOUR AND LACK OF EXPERIENCE IN CONSTRUCTION TECHNIQUES v) CLEANING AND MAINTAINING STRATEGY vi) INSTALLATION OF STEELWORK vii) SUB-STRUCTURAL DESIGN/WORKS viii) SITE SPECIFIC GROUND INVESTIGATION ix) DEWATERING AND GROUND WATER INGRESS (IF ANY) x) NEARBY TREES SURVEY AND ROOT PROTECTION MEASURES 20.0 SURVEYING OF THE COMPLETED WORKS 20.1 ON COMPLETION OF EACH ELEMENT OF THE STRUCTURAL WORKS THE CONTRACTOR SHALL CARRY OUT AN AS BUILT SURVEY TO INCLUDE THE FOLLOWING. i) LEVEL SURVEY OF ALL HORIZONTAL SURFACES AT A MAXIMUM GRID OF 5m - ACCURACY +/-3mm. TO INCLUDE TOP AND BOTTOM SURFACES OF SUSPENDED SLABS AND BEAMS. ii) ALIGNMENT SURVEY OF ALL VERTICAL FACES AT MAXIMUM GRID OF 5m HORIZONTALLY AND 2m VERTICALLY - ACCURACY +/-3mm. iii) THE EXACT POSITION OF ALL DATUM POINTS - ACCURACY - +/-3mm
TIMBER TO TIMBER (NORMAL)	SPEEDY										
TIMBER TO TIMBER (HEAVY DUTY)	MAXI SPEEDY										
TIMBER TO MASONRY	SPH										