

ASSOCIATION OF CONSULTING STRUCTURAL ENGINEERS **VICTORIA**

REVISED: 22nd SEPTEMBER 2008

PLEASE BE ADVISED THAT THE ACSEV ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR THE ACCURACY OR USE OF THE FOLLOWING GENERAL NOTES. THESE ARE INTENDED AS A GUIDE ONLY. USERS SHOULD SATISFY THEMSELVES OF THEIR APPROPRIATENESS FOR INTENDED USE.

GENERAL NOTES

G GENERAL

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE DRAWINGS, THE SPECIFICATION, AND CURRENT RELEVANT AUSTRALIAN STANDARDS, THE BUILDING CODE OF AUSTRALIA AND OTHER STATUTORY REQUIREMENTS
2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS, THE SPECIFICATION AND ALL OTHER WRITTEN INSTRUCTIONS THAT ARE ISSUED DURING THE COURSE OF THE WORKS.
3. THE BUILDER SHALL CONFIRM ALL RELEVANT DIMENSIONS BEFORE COMMENCING CONSTRUCTION/FABRICATION.
4. ALL DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT/ENGINEER FOR CLARIFICATION BEFORE PROCEEDING. NOTIFY THE ARCHITECT/ENGINEER OF ALL VARIATIONS ARISING FROM THE CLARIFICATION OF THE DISCREPANCY BEFORE PROCEEDING WITH THE WORKS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT NOTED ON THE ENGINEERING DRAWINGS
6. DO NOT SCALE DRAWINGS.
7. ALL DIMENSIONS ARE IN MILLIMETRES OR METRES UNLESS NOTED OTHERWISE (U.N.O.).
8. NO SUBSTITUTIONS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
9. THE BUILDER SHALL MAINTAIN THE WORKS IN A SAFE, STABLE CONDITION AND ENSURE THAT NO PART IS OVER-STRESSED DURING CONSTRUCTION.
10. ALL PROPS AND FORMWORK TO A BEAM OR SLAB SHALL BE REMOVED BEFORE ANY MASONRY IS CONSTRUCTED ON THAT BEAM OR SLAB.
11. ALL NON LOAD BEARING WALLS SHALL BE CONSTRUCTED 20MM CLEAR OF SLAB AND BEAM SOFFITS U.N.O.
12. THE ENGINEER ACCEPTS NO RESPONSIBILITY FOR THE WORKS UNLESS THE WORKS ARE INSPECTED AND APPROVED BY THE ENGINEER DURING CONSTRUCTION.

13. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED FOR ALL ENGINEERING INSPECTIONS U.N.O.
14. THE STRUCTURAL WORKS HAVE BEEN DESIGNED FOR THE FOLLOWING LIVE LOADS AND CRITERIA:

LOADS

<u>AREA</u>	<u>LIVE LOAD</u> (kPa)
GROUND FLOOR	
SUSPENDED FLOOR	
SUSPENDED FLOOR PARTITION	
LOAD	
HEAVY LOAD AREAS	
STAIRS AND BALCONIES	
ROOF	

LOAD CRITERIA

WIND

REGION
 TERRAIN CATEGORY
 TOPOGRAPHIC MULTIPLIER (MT)
 SHIELDING MULTIPLIER (MS)
 STRUCTURAL IMPORTANCE MULTIPLIER (MI)

SEISMIC

STRUCTURE TYPE
 IMPORTANCE FACTOR
 ACCELERATION COEFFICIENT
 SITE FACTOR
 EARTHQUAKE DESIGN CATEGORY

SNOW

F FOUNDATIONS AND FOOTINGS

1. WORK AND MATERIALS MUST COMPLY WITH AS2870 & AS 3798.
2. ALL EXCAVATIONS SHALL BE INSPECTED ON SITE AND THE ENGINEER NOTIFIED IMMEDIATELY IF CONDITIONS OTHER THAN THOSE DESCRIBED IN THE SOIL REPORT ARE ENCOUNTERED.
3. FOOTINGS SHALL BE FOUNDED IN MATERIALS AND AT THE DEPTHS SHOWN ON THE DRAWINGS OR, WHEN NOT ON THE DRAWINGS, AS SHOWN IN THE SITE GEOTECHNICAL REPORT NO..... DATED, PREPARED BY
4. THE SITE HAS BEEN CLASSIFIED AS CLASS.....IN ACCORDANCE WITH AS 2870.
5. STRIP FOOTINGS ARE TO BE FOUNDED IN ORIGINAL UNDISTURBED GROUND WITH AN ALLOWABLE BEARING PRESSURE OF kPa.
6. PAD FOOTINGS ARE TO BE FOUNDED IN ORIGINAL UNDISTURBED GROUND WITH AN ALLOWABLE BEARING PRESSURE OF kPa.
7. FOUNDATION MATERIAL SHALL BE INSPECTED AND APPROVED BEFORE LYING MEMBRANES, FIXING REINFORCEMENT OR ORDERING CONCRETE.

SG SLABS ON GROUND

1. RESIDENTIAL SLABS-ON-GROUND SHALL BE IN ACCORDANCE WITH AS2870.
2. THE SITE OF THE WORKS SHALL BE STRIPPED OF ALL GRASS, ROOTS, VEGETABLE MATTER AND COMPRESSIBLE TOPSOIL.
3. THE GROUND BELOW SLABS SHALL BE PROOF ROLLED WITH AN APPROVED HEAVY COMPACTOR. ALL "SOFT SPOTS" ENCOUNTERED SHALL BE REMOVED AND REPLACED WITH COMPACTED CRUSHED ROCK OR APPROVED FILL IN ACCORDANCE WITH AS2870 & AS3798.
4. CLEAN GRANULAR FILLING UP TO 600MM MAY BE PLACED UNDER THE SLAB IN ACCORDANCE WITH THE PROVISIONS OF AS 2870 PART 6.4. FILLING SHALL BE COMPACTED IN 150MM THICK LAYERS BY MECHANICAL ROLLER.
5. TERMITE PROTECTION SHALL BE PROVIDED AS REQUIRED BY AUSTRALIAN STANDARD AS3990 AND THE LOCAL STATUTORY AUTHORITY.
6. SLABS SHALL BE LAID ON A 0.2 MM POLYTHENE MEMBRANE, CONTINUOUS, LAPPED 200MM MINIMUM AND TAPED AT PUNCTURES AND SERVICE AND PIPE PENETRATIONS. MEMBRANE TO EXTEND UNDER AND TO THE SIDES OF ALL SLABS, BEAMS AND THICKENINGS.
7. BEAM AND STRIP FOOTING REINFORCEMENT SHALL HAVE A NOMINAL COVER OF 50MM.
8. TRENCH MESH SHALL BE LAID CONTINUOUSLY AND SHALL BE SPLICED WHERE NECESSARY WITH A LAP OF 500MM.
9. TRENCH MESH SHALL BE OVERLAPPED BY THE WIDTH OF FABRIC AT CORNERS AND INTERSECTIONS AND THE ENDS OF TRENCH MESH SHALL TERMINATE WITH A CROSSBAR.
10. FABRIC SHALL BE PLACED NEAR THE TOP OF THE SLAB AND SHALL HAVE A NOMINAL COVER OF 25MM, UNO. FABRIC SHALL BE LAPPED A MINIMUM OF TWO WIRES PLUS 25MM AND SHALL BE SET OUT SUCH THAT NO MORE THAN THREE THICKNESSES OF FABRIC OCCUR AT ANY LOCATION.
11. HOT WATER HEATING PIPES MAY BE EMBEDDED IN THE SLAB IF THE THICKNESS IS INCREASED BY 25MM AND PIPES ARE LAID ON SL52 MESH.
12. THE GROUND SURROUNDING THE SLAB SHALL HAVE ITS SURFACE AT LEAST 150MM LOWER THAN THE SLAB SURFACE AND BE GRADED AWAY FROM THE SLAB EDGE TO THE SITE DRAINAGE SYSTEM.
13. OWNERS SHALL MAINTAIN THE SLAB AS NOTED IN APPENDIX B OF AS2870 AND IN THE CSIRO PUBLICATION "BTF16 FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE – A HOMEOWNERS GUIDE." IT IS THE BUILDERS RESPONSIBILITY TO ENSURE THAT THE OWNER IS INFORMED OF THESE REQUIREMENTS.

C CONCRETE

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600.
2. CONCRETE SHALL HAVE A CHARACTERISTIC COMPRESSIVE STRENGTH AS FOLLOWS UNO:

3.

FOOTINGS	f'c = MPa
SLAB-ON-GROUND	f'c = MPa
COLUMNS	f'c = MPa
SUSPENDED SLABS & BEAMS	f'c = MPa
MASS CONCRETE	f'c = MPa

4. CONCRETE SHALL BE CURED BY AN APPROVED METHOD FOR AT LEAST 7 DAYS AFTER PLACEMENT.
5. CONCRETE SHALL BE COMPACTED USING MECHANICAL VIBRATION.
6. VIBRATION OF FORMS IS NOT ACCEPTABLE AND CONCRETE SHALL NOT BE SPREAD BY VIBRATING.
7. CONCRETE SECTIONS SHOWN ARE MINIMUM SIZES AND DO NOT INCLUDE FINISHES. SIZES SHALL NOT BE REDUCED IN ANY WAY OR HOLES FORMED OR MADE IN ANY MEMBER WITHOUT THE APPROVAL OF THE ENGINEER.
8. DEPTH OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.
9. SLABS AND BEAMS ARE TO BE POURED TOGETHER UNO.
10. MINIMUM COVER (MM) TO ALL REINFORCEMENT INCLUDING FITMENTS SHALL BE AS FOLLOWS, UNO:

ELEMENT	SURFACES IN CONTACT WITH GROUND	SURFACES IN INTERIOR ENVIRONMENT	ABOVE GROUND EXTERIOR ENVIRONMENT
INSITU COLUMNS AND PEDESTALS	45	30	40
INSITU BEAMS	45	20	40
FOOTINGS	75	-	-
BORED PIERS	70	-	-
SLABS ON GROUND	50	25	40
SUSPENDED SLAB	45	20	40
INSITU WALLS	45	25	30
PRECAST*	40	30	30
UNDERPINNING	40	40	10

* (REFER TO PRECAST DETAILS)

11. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT IN TRUE PROJECTION.
12. SYMBOLS ON THE DRAWING FOR REINFORCEMENT ARE AS FOLLOWS :

13. SL - HARD DRAWN DEFORMED GRADE 550 STEEL WIRE REINFORCING FABRIC TO AS4671.
N - GRADE 500 MPa DEFORMED REINFORCING BARS TO AS4671.
R - GRADE 250 MPA PLAIN REINFORCING BARS TO AS4671.
S - STRUCTURAL GRADE DEFORMED BARS TO AS4671.
W - HARD DRAWN STEEL WIRE REINFORCING WIRE TO AS4671.
TM - HARD DRAWN STEEL TRENCH MESH TO AS4671.
14. ALL REINFORCEMENT AND INSERTS SHALL BE SUPPORTED AND HELD IN THE DESIGN LOCATION BY APPROVED CHAIRS, SPACERS OR TIES. BAR CHAIRS SHALL BE PLACED AT MINIMUM 1000 CENTRES IN TWO DIRECTIONS, UNO
15. WELDING AND THREADING OF REINFORCEMENT IS NOT PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.
16. REINFORCEMENT SHALL BE EVENLY DISTRIBUTED OVER THE WIDTHS SHOWN UNO.
17. PROVIDE 2 NO. N12 X 1200 DIAGONALLY ACROSS RE-ENTRANT CORNERS OF SLABS, TIED UNDER TOP FABRIC.
18. AT SLAB EDGES INCLUDING CONSTRUCTION AND OTHER JOINTS AT LEAST ONE REINFORCING BAR OR FABRIC WIRE SHALL BE LOCATED PARALLEL TO AND WITHIN 75 OF THE SLAB EDGE.
19. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE APPROVED OR PERMITTED BY THE ENGINEER.
20. SAWN JOINTS SHALL BE MADE AT A TIME APPROPRIATE TO THE CONCRETE MIX AND CLIMATIC CONDITIONS - GENERALLY WITHIN 10 AND 20 HOURS OF PLACING THE CONCRETE.
21. STRIPPING OF FORMS AND REMOVAL OF FORMWORK SHALL TAKE PLACE IN ACCORDANCE WITH A PROCEDURE AGREED WITH THE ENGINEER.
22. CONCRETE MUST BE SEPARATED FROM SUPPORTING BRICK WORK BY TWO LAYERS OF A SUITABLE DEBONDING MEMBRANE.
23. SUSPENDED SLABS SHALL BE GIVEN AN UPWARD MID SPAN CAMBER OF 3MM PER 1000MM. BEAMS SHALL BE CAMBERED AS SHOWN ON DRAWINGS.
24. SPLICES IN REINFORCEMENT SHALL BE MADE IN THE POSITIONS SHOWN ON THE DRAWINGS OR AS OTHERWISE APPROVED BY THE ENGINEER.
25. HOLDING DOWN BOLTS SHALL BE SUPPLIED TO THE CONCRETOR FOR CASTING INTO THE CONCRETE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE STEEL HOLDING DOWN BOLT PLAN SUPPLIED BY STEEL FABRICATOR.

S STRUCTURAL STEELWORK

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100.
2. FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AS 4100 AND SAA/SNZ HB62
3. HOT ROLLED AND WELDED PRODUCTS SHALL BE BHP – 300PLUS AND PLATE SHALL BE GRADE 250 MATERIAL TUBULAR MEMBERS SHALL COMPLY WITH AS1163 (UNO).
4. ALL WELDS SHALL BE CONTINUOUS FILLET WELD, SIZE 6MM, GP CATEGORY USING E41XX/W40X CONSUMABLES U.N.O.
5. ALL WELDING SHALL BE IN ACCORDANCE WITH AS1554.
6. BOLTS SHALL BE M20 – 4.6/S U.N.O.
7. HOLDING DOWN BOLTS SHALL BE M20 –4.6/S, GALVANISED U.N.O
8. CONNECTIONS NOT SPECIFICALLY DETAILED SHALL BE IN ACCORDANCE WITH THE APPROPRIATE CONNECTION DETAILED IN THE AISC STANDARDISED STRUCTURAL CONNECTIONS MANUAL.
9. ALL CLEAT PLATES AND STIFFENERS SHALL BE 10MM THICK U.N.O.
10. THE ENDS OF ALL TUBULAR MEMBERS SHALL BE SEALED WITH A 3MM PLATE U.N.O.
11. TUBULAR MEMBERS TO BE GALVANISED SHALL BE ADEQUATELY VENTED.
12. PURLINS AND GIRTS SHALL BE IN ACCORDANCE WITH AS/NZS 4600, GALVANISED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
13. BEFORE COMMENCING FABRICATION 3 COPIES OF THE SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THIS REVIEW DOES NOT REMOVE THE RESPONSIBILITY FOR THE INTERPRETATION OF THE DRAWINGS, DIMENSIONAL ACCURACY AND THE STEEL FABRICATION FROM THE STEEL FABRICATOR/BUILDER.
14. CAMBER SHALL BE AS NOTED ON THE DRAWINGS.
15. STRUCTURAL STEEL TO BE CONCRETE ENCASED SHALL BE WRAPPED WITH SL41 MESH. THE GAP BETWEEN THE STRUCTURAL STEEL AND THE MESH AND THE EXTERNAL COVER TO THE MESH SHALL BE 25MM AND 50MM RESPECTIVELY.
16. ALL BOLTS AND STRUCTURAL STEEL EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANISED U.N.O.
17. ALL STEEL LINTELS SUPPORTING MASONRY EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANISED.
18. PROVIDE ALL NECESSARY CLEATS AND HOLES REQUIRED TO FIX TIMBER AND OTHER MATERIALS AND FINISHES TO THE STEELWORK.
19. LINTELS SHALL NOT BE PROPPED DURING LOAD APPLICATION (UNO)
20. PROVIDE MINIMUM 150MM END BEARING AND LEVELLING GROUT FOR STEELWORK SEATED ON MASONRY U.N.O.

22. PROTECTIVE COATINGS

PREPARATION	CLASS 2A ABRASIVE BLAST	
FIRST COAT	INORGANIC ZINC SILICATE	125 DFT
SECOND COAT	INORGANIC ZINC SILICATE	125 DFT
THIRD COAT	INORGANIC ZINC SILICATE	125 DFT

DFT = DRY FILM THICKNESS

23. COATINGS DAMAGED DURING TRANSPORT AND ERECTION SHALL BE MADE GOOD.

PC PRECAST CONCRETE

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600, AS 3850.
2. MINIMUM CONCRETE STRENGTH GRADE – 32MPAE7. UNO
3. THE REINFORCEMENT SHOWN IS PROVIDED FOR THE IN-SERVICE CONDITIONS. THE BUILDER SHALL DESIGN AND DETAIL THE PANELS FOR MANUFACTURE, TRANSPORTATION ERECTION AND PROPPING. ALL ADDITIONAL REINFORCEMENT, LIFTING FITTINGS, STRONG BACKS ETC SHALL BE INCLUDED IN THE CONTRACT PRICE.
4. THE CONTRACTOR SHALL TRANSPORT, ERECT ON SITE, AND PROP THE PANELS USING A MINIMUM OF TWO PROPS PER PANEL.
5. PROPS SHALL BE USED IN ACCORDANCE WITH THE SUPPLIER OR MANUFACTURERS RECOMMENDATIONS AND LOAD LIMITS AND SHALL BE FIXED TO FOOTINGS DESIGNED BY THE CONTRACTOR.
6. ALL JOINTS SHALL BE PROPERLY CAULKED AND SEALED AS REQUIRED AND FIRE RATED WHERE NECESSARY.
7. LIFTING FIXINGS SHALL NOT BE LOCATED ON A FACE WHICH IS EXPOSED TO VIEW WHEN THE PANEL IS IN ITS FINAL ERECTED POSITION.
8. RECESSES FOR LIFTING AND OTHER FIXINGS SHALL BE GROUTED AND MADE GOOD TO THE REQUIRED SURFACE FINISH AND COVER.
9. COPIES OF THE SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW 72 HOURS BEFORE COMMENCING FABRICATION. THIS REVIEW DOES NOT REMOVE THE RESPONSIBILITY FOR THE INTERPRETATION OF THE DRAWINGS, DIMENSIONAL ACCURACY, MANUFACTURE AND ERECTION OF THE PANELS FROM THE CONTRACTOR
10. ALL PRECAST PANEL CORBELS SHALL BE CAST MONOLITHICALLY WITH THE PANEL.
11. GROUT SHALL BE NON-SHRINK, AND HAVE A 28 DAY CHARACTERISTIC STRENGTH OF 40MPA.
12. THE BUILDER SHALL REFER TO ALL RELEVANT DRAWINGS TO ENSURE THAT ALL OPENINGS, RECESSES, FIXINGS AND FITTINGS SPECIFIED ON THE DRAWINGS ARE INCORPORATED INTO THE PRECAST PANELS.

13. HIGH STRENGTH PLASTIC PACKERS USED FOR LEVELLING UNDER SUPPORT POINTS OF LOAD BEARING PRECAST PANELS AND MAY BE LEFT PERMANENTLY PROVIDED THEY ARE CENTRALLY LOCATED BETWEEN THE FACES OF THE PANELS, HAVE A MINIMUM OF 50MM GROUT COVER AND A BEARING PRESSURE LESS THAN 7 MPA. PACKERS USED BETWEEN NON-LOAD BEARING PANELS SHALL BE REMOVED IMMEDIATELY FOLLOWING THE INSTALLATION OF THE PANELS.
14. WHERE PACKERS ARE USED TO TAKE UP TOLERANCES, THE THICKNESS SHALL BE SUCH THAT NOT MORE THAN THREE PACKERS ARE USED,
15. THE GROUT BED UNDER A LOAD BEARING PANEL MUST ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 32MPA BEFORE THE PANEL IS LOADED.
15. BUILDER TO ENSURE THAT ALL PRECAST CONCRETE IS INSTALLED AS PER VICTORIAN WORKCOVER INDUSTRY STANDARD REQUIREMENTS. BUILDER TO ENSURE ERECTION ENGINEER IS ENGAGED. BUILDER TO ENSURE THAT "ENGINEER'S CERTIFICATE OF COMPLIANCE" IS OBTAINED PRIOR TO ERECTION OF ANY PRECAST. CERTIFICATE TO BE OBTAINED FROM ERECTION ENGINEER.

T TIMBER

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH AS1720 AND AS1684.
2. STRUCTURAL TIMBER AS SHOWN ON THE ENGINEER'S DRAWINGS SHALL HAVE A MINIMUM STRESS GRADE AS BELOW U.N.O.

KILN DRIED HARDWOOD	KDHW	F17
UNSEASONED HARDWOOD	H.W.	F8
OREGON		F7
SEASONED RADIATA PINE	S.R.P.	F5
3. TIMBER SIZES NOT CALLED UP SHALL BE IN ACCORDANCE WITH AS1684 OR THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCY SHALL BE REFERRED TO THE ARCHITECT.
4. ALL BOLTED CONNECTIONS SHALL USE WASHERS UNDER BOLT HEAD AND NUT. ALL EXTERNAL BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED. NO KNOTS OR DEFECTS SHALL OCCUR WITHIN 150 MM OF BOLT GROUP OR CONNECTORS. WHERE POSSIBLE, RE-TIGHTEN BOLTS AFTER 6 WEEKS AND AGAIN AT 12 MONTHS.
5. MAKE GOOD PRESERVATIVE TREATMENT WHERE CHECKOUTS, HOLES AND CUTS EXPOSE UNTREATED TIMBER.
6. ALL EXTERNAL TIMBERS SHALL BE DURABLE, SUITABLE FOR EXTERNAL USE AND COMPLY WITH THE APPROPRIATE HAZARD LEVEL FOR SPECIFIC SERVICE CONDITIONS.
7. GLUED LAMINATED BEAMS SHALL BE MANUFACTURED IN ACCORDANCE WITH AS1328 CAMBER SHALL BE AS NOTED ON THE DRAWINGS OR AS SPECIFIED, AND INSTALLED WITH HOG UP. BEAMS

FOR EXTERNAL USE SHALL BE FABRICATED USING RESORCINOL OR PHENOLIC ADHESIVE.

8. ALL PROPRIETARY FIXINGS SHALL BE INSTALLED TO DEVELOP THEIR MAXIMUM CAPACITY AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. ALL TIMBER FRAMEWORK SHALL BE ADEQUATELY TIED TO RESIST UPLIFT AND RACKING FORCES IN ACCORDANCE WITH AS1684.
10. THE BUILDER SHALL SUBMIT ONE SET OF TRUSS MANUFACTURER'S LAYOUT DRAWINGS AND COMPUTATIONS FOR REVIEW 48 HOURS PRIOR TO FABRICATION.
11. METAL FIXINGS SHALL BE COMPATIBLE WITH TIMBER GLUES AND PRESERVATIVE TREATMENTS.
12. BOLTING SYMBOL: 2M10-4.6/S
2 NUMBER OF BOLTS
M10 DIAMETER IN MM
4.6 STRENGTH GRADE
S SNUG TIGHT (BOLTING PROCEDURE)
13. NO PENETRATIONS OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN TIMBER MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

M MASONRY

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.
2. BRICKS SHALL HAVE A CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF 30 MPa U.N.O.
3. BLOCKS SHALL HAVE A CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF 15 MPa U.N.O.
4. MORTAR SHALL CONSIST OF 1 CEMENT, 1 HYDRATED LIME, 6 WELL GRADED SAND UNLESS REQUIRED OTHERWISE BY AS3700.
5. LOAD BEARING MASONRY SHALL HAVE FULL BED JOINTS, UNO.
6. MASONRY TIES FOR CAVITY WALLS SHALL BE MEDIUM DUTY CLASSIFICATION SPACED AT NOT MORE THAN 600 CENTRES VERTICALLY AND HORIZONTALLY. ADDITIONAL TIES SHALL BE PLACED ADJACENT TO LATERAL SUPPORTS, CONTROL JOINTS AND AROUND OPENINGS AT A SPACING OF NOT MORE THAN 300, AND LOCATED NOT MORE THAN 300 FROM THE LINE OF SUPPORT, CONTROL JOINT OR PERIMETER OF OPENING.
7. MASONRY SHALL BE TIED TO COLUMNS AT 400 MAXIMUM VERTICAL CENTRES.
8. NEW MASONRY SHALL BE TIED INTO EXISTING USING MEDIUM DUTY TIES AT 400 MAXIMUM VERTICAL CENTRES ALONG ALL VERTICAL EDGES AND AT 600 MAXIMUM HORIZONTAL CENTRES U.N.O.

9. ALL CAVITIES BELOW GROUND LEVEL SHALL BE MORTAR OR GROUT FILLED.
10. VERTICAL CONTROL JOINTS SHALL COMPLY WITH TECHNICAL NOTE NO 61 PUBLISHED BY THE CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA CEMENT AND SHALL BE LOCATED AS DESCRIBED IN THAT PUBLICATION OR AS SHOWN ON THE ARCHITECTURAL DRAWINGS. JOINTS SHALL BE KEPT FREE OF NON-COMPRESSIBLE MATERIAL. CONTROL JOINT SPACING SHALL NOT EXCEED 6m UNO.
11. NON LOAD BEARING WALLS SHALL BE KEPT 20 CLEAR OF THE UNDERSIDE OF FLOORS AND SHELF ANGLES.
12. ALL STEELWORK PROJECTING INTO CAVITIES SHALL BE HOT DIPPED GALVANISED U.N.O.
13. AT VERTICAL CONTROL JOINTS PROVIDE MASONRY FLEXIBLE ANCHORS MFA 3/3 (A) AT 600 CENTRES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TOGETHER WITH A SUITABLE BACKING ROD AND FLEXIBLE SEALANT APPLIED TO UNPAINTED SURFACES.
14. WHERE WALLS ABUT THE UNDERSIDE OF HORIZONTAL OR RAKING MEMBERS (SLABS, STEEL OR CONCRETE BEAMS) PROVIDE MASONRY FLEXIBLE ANCHORS TYPE MFA 4 EVERY THIRD PERPEND AND FIXED TO THE STRUCTURAL MEMBER WITH RAMSET 6 DIA. HEAD DRIVE PINS OR SIMILAR. PROVIDE 10MM CLOSED CELL POLYETHYLENE FOAM BACKING ROD BETWEEN WALL AND MEMBER.
15. WHERE MASONRY WALLS INTERSECT STRUCTURAL MEMBERS (STEEL OR CONCRETE) PROVIDE MASONRY FLEXIBLE ANCHORS MFA 7 AT 600 CENTRES EMBEDDED IN THE MASONRY WALL AND FIXED TO MEMBER WITH 6 DIA. HEAD RAMSET DRIVE PINS. MFA 7 TIES SHALL BE 200MM LONG X 50MM TURNDOWN. TIES TO OUTER SKIN SHALL INCORPORATE A DRIP GROOVE.
16. FOR WALLS WITH A CAVITY GREATER THAN 80MM, PROVIDE MASONRY FLEXIBLE ANCHORS 'ANCHOR-TIES' AT 430 VERTICAL AND 600 HORIZONTAL CENTRES.
17. CONCRETE BEAMS AND SLABS SHALL BE SEPARATED FROM SUPPORTING BRICKWORK BY 2 LAYERS OF MALTHOID OR SIMILAR APPROVED MEMBRANE ON TOP OF MORTAR LEVELLING SCREED.
18. BUILDER SHALL PROVIDE DETAILS AND PROCEDURES OF NEEDLE AND PROPPING TO OPENINGS IN MASONRY WALLS FOR APPROVAL BEFORE WORK COMMENCES.

RM REINFORCED MASONRY

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.
2. MASONRY UNITS SHALL BE SOLID OR HOLLOW AS DETAILED AND HAVE A CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF
 - (A) 30 MPa FOR BRICKS
 - (B) 15 MPa FOR CONCRETE BLOCKS.
3. MORTAR TO CLAY MASONRY SHALL CONSIST OF 1 CEMENT, $\frac{1}{4}$ HYDRATED LIME, 3 WELL GRADED SAND. CAVITY GROUT SHALL CONSIST OF 1 CEMENT, $2\frac{1}{2}$ SAND, $1\frac{1}{2}$ 10MM AGGREGATE.
4. THERE SHALL BE A MINIMUM OF 15MM COVER OF GROUT AROUND ALL REINFORCEMENT.
5. MASONRY SHALL BE LAID WITH FULL HEAD AND BED MORTAR JOINTS. MORTAR FINS SHALL NOT PROTRUDE INTO CAVITY GROUT SPACE.
6. THE TWO SKINS OF MASONRY SHALL BE BONDED TOGETHER WITH HEAVY DUTY MASONRY TIES AT MAXIMUM 600 CENTRES.
7. CLEAN OUT PORTS SHALL BE PROVIDED FOR EACH POUR BY LEAVING OUT TWO UNITS AT THE BOTTOM OF EACH SECTION TO BE GROUTED. DURING WORK, MORTAR FINS AND ANY OTHER MATERIAL SHALL BE REMOVED FROM THE CAVITY GROUT SPACE. THE PORTS SHALL BE SEALED WITH SIMILAR MASONRY UNITS AFTER INSPECTION AND BEFORE GROUTING.
8. THE REINFORCED CAVITY SHALL BE NOT LESS THAN 75MM IN WIDTH. U.N.O.
9. MORTAR SHALL CURE FOR AT LEAST THREE DAYS BEFORE POURING CAVITY GROUT.
10. CAVITY GROUT SHALL BE PLACED BY PUMPING OR OTHER APPROVED METHOD AND SHALL BE PLACED BEFORE INITIAL SET OCCURS, AND IN NO CASE MORE THAN 12 HOURS AFTER WATER IS ADDED.
11. CAVITY GROUTING SHALL BE DONE IN LIFTS NOT EXCEEDING 300MM PER 12 HOUR PERIOD AND RODDED INTO POSITION.
12. MORTAR TO REINFORCED BLOCK WORK SHALL BE M3 (1:5).
13. REINFORCING BARS SHALL BE PLACED BEFORE OR DURING THE BLOCK LAYING.
14. PROVIDE FULL HEIGHT VERTICAL CONTROL JOINTS IN WALL AT MAXIMUM 6M CENTRES U.N.O.
15. REINFORCEMENT, INCLUDING STARTER BARS AND WALL TIES, SHALL BE HOT DIPPED GALVANIZED U.N.O.

U UNDERPINNING

1. THE BUILDER SHALL AT ALL TIMES PROVIDE PROTECTION TO THE STRUCTURE BEING UNDERPINNED AND ANY ADJACENT STRUCTURES, TO ENSURE NO DAMAGE OCCURS DURING CONSTRUCTION OR AFTER COMPLETION OF THE UNDERPINNING.
2. UNDERPINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS.
3. THE FOOTING TO BE UNDERPINNED SHALL BE EXPOSED FOR ONLY THE WIDTH OF THE PIN.
4. SECTIONS SHALL BE POURED TO WITHIN 75MM OF THE UNDERSIDE OF THE EXISTING FOOTING AND LEFT 24 HOURS (MIN.) BEFORE GROUTING COMMENCES. A FURTHER 24 HOURS (MIN.) AFTER GROUTING SHALL PASS BEFORE ADJACENT HOLES ARE EXCAVATED.
5. THE GROUND IN FRONT OF EACH UNDERPIN SHALL BE COMPACTED TO PROVIDE LATERAL SUPPORT TO THE UNDERPIN BEFORE PROCEEDING WITH THE ADJACENT UNDERPIN.
6. HARD RAMMED MORTAR SHALL BE 3:1 GRADED COARSE SAND TO CEMENT. THIS MIX SHALL BE PLACED NEAR DRY AND THOROUGHLY RAMMED INTO PLACE.
7. THE EXTERNAL FACE OF EACH UNDERPIN SHALL BE FORMED TO A TOLERANCE OF +/- 20MM OF A VERTICAL LINE FROM FRONT FACE OF THE EXISTING WALL OR FOOTING. THE INNER FACE NEED NOT BE FORMED IF THE EXCAVATED EARTH STANDS SATISFACTORILY, OTHERWISE ROUGH FORMWORK SHALL BE USED AND VOIDS BEHIND THE FORM PROPERLY BACKFILLED WITH COMPACTED CEMENT STABILISED SAND OR CONCRETE.
8. FACES OF CONCRETE IN ADJACENT UNDERPINNING SECTIONS SHALL BE THOROUGHLY CLEANED BEFORE CASTING ADJOINING SECTIONS.
9. BASE OF UNDERPINS SHALL BE FOUNDED 100 MM INTO UNDISTURBED GROUND. ALLOWABLE BEARING PRESSURE OF THE GROUND AT THE BASE OF THE UNDERPINS SHALL BEKPa.
10. ANY VARIATION IN THE EXISTING FOOTINGS FROM THOSE SHOWN ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
11. THE BUILDER SHALL PROVIDE ALL PROPPING, SHORING AND OTHER ASSOCIATED WORKS NECESSARY TO ENSURE SAFETY OF PERSONNEL.
12. CONCRETE STRENGTH FOR UNDERPINS SHALL BE F 'C = 25 MPa U.N.O.
13. ON COMPLETION OF THE WORK, THE BUILDER SHALL CLEAN THE SITE.

W SITE WORKS AND SITE MAINTENANCE

1. ADEQUATE DRAINAGE SHALL BE PROVIDED TO PREVENT WATER PONDING OR COLLECTING ADJACENT TO THE WORKS.
2. TRENCHES UNDER OR ADJACENT TO THE WORKS SHALL BE BACKFILLED WITH COMPACTED CLAY OR CONCRETE.
3. TRENCHES PARALLEL TO THE EDGE OF A STRUCTURE SHALL BE OFFSET A DISTANCE AT LEAST EQUAL TO THE DEPTH OF THE TRENCH EXCAVATION.
4. ROOF GUTTERS, DOWNPIPES, STORMWATER AND SEWERAGE DRAINAGE SHALL BE MAINTAINED TO PREVENT OVERFLOWS. ANY LEAKS SHALL BE PROMPTLY REPAIRED.
5. THE PLANTING OF TREES AND LARGE SHRUBS AND GENERAL SITE MAINTENANCE SHALL COMPLY WITH THE REQUIREMENTS OF AS2870 AND CSIRO PUBLICATION SHEET "BTF16 FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE – A HOMEOWNERS GUIDE." IT IS THE BUILDERS RESPONSIBILITY TO ENSURE THAT THE OWNER IS INFORMED OF THESE REQUIREMENTS.