

# PROPOSED RESIDENTIAL DEVELOPMENT

## 261–263 BALWYN ROAD, BALWYN NORTH

### DESIGN DATA

<b>WIND ACTIONS - AS/NZS 1170.2</b>	
TERRAIN CATEGORY	- TO AS/NZS 1170.2
REGIONAL WIND SPEED	- V1000 = 14m/s - V20 = 37m/s
<b>EARTHQUAKE LOADING - AS/NZS 1170.0 &amp; AS 1170.4</b>	
SITE FACTOR	- 1.0
ACCELERATION COEFFICIENT	- 0.08
IMPORTANCE LEVEL	- 3.0
PROBABILITY FACTOR K <sub>p</sub>	- 1.0
EARTHQUAKE DESIGN CATEGORY	- B
<b>FLOOR LIVE LOADS</b>	
APARTMENTS:	INTERNAL: 2.0 kN/m <sup>2</sup> EXTERNAL: 4.0 kN/m <sup>2</sup>
GENERAL:	CORRIDORS, LIFTS ETC. 4.0 kN/m <sup>2</sup>

### GENERAL

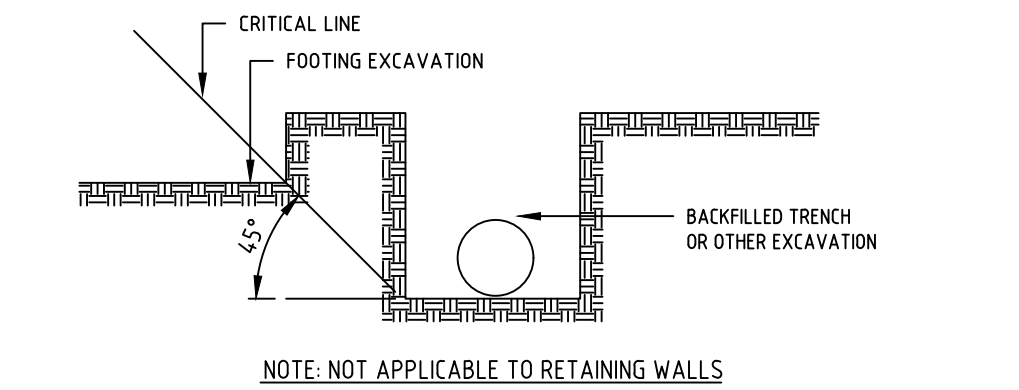
- G1 STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION, ARCHITECTURAL, CIVIL AND ENGINEERING SERVICES DOCUMENTS.
- G2 FOR SETTING OUT DIMENSIONS REFER TO ARCHITECTURAL DRAWINGS. NO DIMENSIONS ARE TO BE OBTAINED FROM SCALING DRAWINGS. DO NOT SCALE DRAWINGS.
- G3 UNLESS OTHERWISE NOTED ALL LEVELS ARE IN METRES AND ALL DIMENSIONS IN MILLIMETRES.
- G4 THE BUILDER SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE STRUCTURE UNTIL ITS COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED BY EXCESSIVE LOADING.
- G5 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT CODES OF PRACTICE EXCEPT WHERE VARYED BY THE SPECIFICATION AND / OR DRAWINGS.
- AS 3600 CONCRETE STRUCTURES CODE.
- AS/NZS 4671 STEEL REINFORCING MATERIALS
- AS 1170 (P1 1-4) SAA LOADING CODE
- AS 1170 (P1 0) STRUCTURAL DESIGN ACTION
- AS/NZS 3679 HOT ROLLED AND WELDED SECTIONS
- AS 4100 STEEL STRUCTURES CODE.
- AS/NZS 1163 STRUCTURAL STEEL HOLLOW SECTIONS.
- AS/NZS 1554 STRUCTURAL STEEL WELDING
- AS 1684 NATIONAL TIMBER FRAMING CODES
- AS 1720 TIMBER STRUCTURES CODE.
- AS 1289 METHODS OF TESTING SOILS FOR ENGINEERING PURPOSES.
- AS 3700 MASONRY CODE.
- AS/NZS 4498 COLD FORMED STEEL STRUCTURES
- AS 1657 FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS CODE
- AS/NZS 4455 MASONRY UNITS AND SEGMENTAL PAVERS
- G6 ALL DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT / SUPERINTENDENT FOR DECISIONS BEFORE PROCEEDING WITH THE WORK.
- G7 **ABBREVIATIONS:**
- NTS - NOT TO SCALE
- UNO - UNLESS NOTED OTHERWISE
- EF - EACH FACE
- FF - FAR FACE
- G8 PROVIDE CLAY 'PLUG' TO ALL SERVICE TRENCHES WHERE ANY PIPE, DUCT OR CABLE ENTERS THE BUILDING TO PREVENT INGRESS OF WATER UNDER BUILDING
- G9 UNDER PART 4 OF THE BUILDING ACT 1993 THE BUILDER IS REQUIRED TO NOTIFY THE RELEVANT BUILDING SURVEYOR OF EACH MANDATORY INSPECTION STAGE. PLEASE ENSURE THAT THEY ARE NOTIFIED.
- G10 THE BUILDER SHALL GIVE AT LEAST 48 HOURS NOTICE PRIOR TO INSPECTION OF ALL STRUCTURAL WORKS.
- G11 BUILDER TO ALLOW HIS TENDER FOR ALL ADDITIONAL COST ASSOCIATED WITH THE PROPOSED LOCATION OF CRANE(S) AND RELATED SUPPORT STRUCTURES.
- G12 **FIXING POINTS & SUPPORTS FOR BUILDING MAINTENANCE EQUIPMENT:**
- BUILDER TO MAKE DUE ALLOWANCE IN HIS TENDER FOR ALL CAST-IN INSERTS, STEEL CONNECTION PLATES, ACCESS HOOPS, SAFETY HARNESSES PLATES, STATE LINE SUPPORTS ETC. REQUIRED AS ASSEMBLING FIXING POINTS TO THE PERIMETER OF THE ROOF, EXTERNAL WALLS AND GROUND SLABS.
- WHERE IT IS PROPOSED TO ALSO USE A SWING-STAGE THE BUILDER IS TO MAKE ADDITIONAL ALLOWANCE FOR DAVIT ARMS, KEEGLES AND ASSOCIATED RESTRAINT SYSTEMS ETC TO THE PERIMETER OF THE ROOF AND ALSO ANY FIXING POINTS REQUIRED ALONG THE EXTERNAL WALLS AND GROUND SLAB.
- ALL STRUCTURAL FIXING REQUIREMENTS ASSOCIATED WITH BUILDING MAINTENANCE ARE TO BE DESIGNED AND DOCUMENTED BY A SPECIALIST ENGINEER ENGAGED BY THE BUILDER. BUILDER TO ALLOW IN HIS TENDER FOR ALL COSTS AND FEES ASSOCIATED WITH THIS ENGINEERING WORK. BUILDER TO MAKE THE ABOVE ALLOWANCES FOR ALL BUILDINGS.
- G13 SUBSTITUTION SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.
- G14 PROVIDE 10mm ARBIFLEX OR APPROVED EQUIVALENT AROUND COLUMNS, EDGE THICKENINGS & EXTERNAL PAVEMENTS. PROVIDE CALCULUS AS REQUIRED.
- G15 THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND OBTAIN THE SERVICE OF AN INDEPENDENT TEMPORARY WORKS ENGINEER AS NECESSARY FOR THE PREPARATION AND EXECUTION OF A COMPREHENSIVE SAFE ERECTION PROCEDURE THAT WILL AT ALL TIMES ENSURE THE STABILITY OF THE WORKS, SAFETY OF ALL PERSONNEL AND PROTECTION OF SURROUNDING PROPERTY INCLUDING THE DESIGN, CERTIFICATION AND PROVISION OF ALL NECESSARY TEMPORARY BRACING AND SUPPORT.
- G16 **EXTERNAL INSULATION AND FINISHING SYSTEMS, WALL PANNELLING, CLADDING OR FACADE MATERIAL**
- FMG ENGINEERING HAS NOT CARRIED OUT A REVIEW WITH RESPECT TO COMBUSTIBILITY, FIRE RESISTANCE OR FIRE SAFETY PROVISIONS OF THE EXTERNAL INSULATION AND FINISHING SYSTEM, WALL PANNELLING, CLADDING OR FACADE MATERIAL OR ANY ASSOCIATED FIXING SYSTEM THAT IS TO BE OR THAT MAY BE APPLIED TO THIS PROJECT.
- CLADDING SYSTEMS MUST COMPLY WITH THE BUILDING CODE OF AUSTRALIA, THE NCC, RELEVANT AUSTRALIAN STANDARDS AND ANY OTHER APPLICABLE REGULATIONS AND TEST REQUIREMENTS. FMG ADVISES THAT PROJECT SPECIFIC ADVICE WITH RESPECT TO FITNESS FOR PURPOSE AND STATUTORY COMPLIANCE, OF ANY PROPOSED CLADDING MATERIALS SHALL BE SOUGHT FROM A SUITABLY QUALIFIED AND EXPERIENCED MATERIALS OR FIRE SERVICES ENGINEER.

### DEMOLITION

- D1 PRIOR TO DEMOLISHING ANY WALLS CHECK THAT THE WALLS ARE NON LOADBEARING OR THE WALLS ARE TO BE SUPPORTED BY A NEW Lintel/BEAM. REFER PROCEDURES FOR DEMOLITION OF WALLS.
- D2 ALL DEMOLITION WORK IS TO BE IN ACCORDANCE WITH AS2601. THE CONTRACTOR IS TO ENGAGE A COMPETENT PERSON TO PREPARE A DEMOLITION WORK PLAN IN ACCORDANCE WITH AS 3601.
- D3 SHOP DRAWINGS INDICATING THE LOCATION OF SERVICES PENETRATIONS ARE TO BE SUBMITTED AND APPROVAL OBTAINED PRIOR TO ANY PENETRATIONS BEING MADE.
- D4 THE CONTRACTOR IS TO ENSURE THE STRUCTURE IS IN A STABLE CONDITION AT ALL TIMES
- D5 REFER TO SECTIONS AND PLANS ON DRAWINGS FOR SUGGESTED DEMOLITION PROCEDURES FOR CERTAIN AREAS.
- D6 WHERE TEMPORARY PROPPING IS SPECIFIED, PROPS ARE TO BE TIGHTENED SUFFICIENTLY TO SUPPORT DEAD LOADS FROM ABOVE. TRANSFER ALL PROPPING FORCES INTO THE GROUND AND PROVIDE ADEQUATE SOLEPLATES OR FOOTINGS TO SAFELY SUPPORT THESE FORCES WITHOUT EXCESSIVE SETTLEMENT UNLESS CALCULATIONS ARE PROVIDED TO SHOW THE STRUCTURE IS CAPABLE OF SUPPORTING THE LOADS.
- D7 PROVIDE NEW WALL BRACING OF THE SAME TYPE AND LENGTH, TO REPLACE ANY THAT IS REMOVED DURING THE DEMOLITION OF WALLS.
- D8 ALL BRACING TO BE DESIGNED FOR WIND CLASSIFICATION N1 TO AS1684 PART 4.

### FOUNDATIONS & EARTHWORKS UNDER STRUCTURES

- F1 FOUNDATIONS AND EARTHWORKS FOR BUILDINGS AND STRUCTURES SHALL COMPLY WITH THE SPECIFICATION, LATEST EDITIONS OF THE RELEVANT SAA CODES AND THE BCA.
- F2 BUILDER SHALL MAKE REFERENCE TO THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY HARDROCK GEOTECHNICAL REPORT No 10334 DATED 14/3/2017, FOR RECOMMENDATIONS AND GUIDANCE INCLUDING BELOW THE EXISTING GROUND SURFACE. SITE PREPARATION, TEMPORARY WORKS, DESIGN REQUIREMENTS, ETC.
- F3 ALL EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCEMENT OR BLINDING. THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT HE HAS OBTAINED THE APPROVED BEARING CAPACITY BEFORE INSPECTIONS A MINIMUM OF 48 HOURS NOTICE IS REQUIRED FOR AN INSPECTION.
- F4 FOUNDATION MATERIAL TO BE APPROVED BY THE GEOTECHNICAL ENGINEER BEFORE POURING CONCRETE, ALL FOUNDING MATERIAL SHALL HAVE A MINIMUM SAFE BEARING CAPACITY OF:
- PAD FOOTINGS - 700 kPa
- STRIP FOOTINGS - 700 kPa
- F5 ANY OVER EXCAVATION UNDER FOOTINGS SHALL BE FILLED UP TO LEVEL WITH BLINDING CONCRETE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL ALLOW FOR ALL OVER EXCAVATIONS TO FOUNDATIONS DUE TO HIS CONSTRUCTION TECHNIQUES AND FROM ACCESS TO SITE AND WEATHER CONDITIONS.
- F6 EXCAVATIONS SHALL BE CARRIED OUT IN THE DRY. WATER ENTERING AN EXCAVATION SHALL BE REMOVED AND ANY RESULTING SLUDGE SCRAPPED FROM THE BASE IN ORDER TO RESTORE A FIRM BEARING SURFACE.
- F7 ALL FOOTINGS, INCLUDING GROUND AND EDGE BEAMS, PAD AND STRIP FOOTINGS, RETAINING WALLS, ETC SHALL HAVE A MINIMUM OF 50mm BLINDING CONCRETE (U.N.O.).
- ALL BACKFILLING AROUND FOOTINGS TO BE OF A GRANULAR MATERIAL AND THOROUGHLY COMPACTED PRIOR TO THE ERECTION OF STEELWORK.
- ALL FOOTINGS TO BE TRUE AND FREE OF ALL LOOSE, SOFT OR FOREIGN MATERIAL.
- F8 UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT/ENGINEER ALL FOOTINGS ARE TO BE CENTRALLY LOCATED UNDER COLUMNS UNO. THE LIMITATIONS OF EXCAVATIONS NEAR FOOTINGS SHALL BE AS FOLLOWS:



- F9 SUBGRADE PREPARATION AND BACKFILLING OF TRENCHES UNDER CONCRETE SLABS ON GROUND AND STIFFENED RAFTS SHALL BE AS IN SPECIFICATION. ALL PIPEWORK TRENCHES UNDER GROUND SLABS SHALL BE BACKFILLED WITH 5% STABILISED SANDS UNLESS APPROVED OTHERWISE BY ENGINEER. BUILDER TO ALLOW FOR ADDITIONAL REINFORCEMENT TO GROUND SLABS AROUND ALL SERVICES TRENCHES (ie. HYDRAULIC, DRAINAGE, MECHANICAL, ELECTRICAL ETC).
- F10 **SLAB ON GROUND PREPARATIONS**
- STRIP ALL ORGANIC MATERIAL AND TOP SOIL AND OTHER RUBBISH AND PROOF ROLL SUBGRADE.
- EXCAVATE ANY SOFT SPOILS OR THE ROOTS AND BACKFILL WITH APPROVED GRANULAR MATERIAL EG. CRUSHED ROCK LAY FILL DOWN IN 150 THICK LAYERS AND COMPACT TO 98% STANDARD COMPACTION.
- LAY FILL MATERIAL AS REQUIRED TO OBTAIN FLOOR LEVEL. FILL TO BE AN APPROVED GRANULAR MATERIAL LAID DOWN IN 150 THICK LAYERS AND COMPACTED TO 98% STANDARD COMPACTION.
- THE SUBGRADE MATERIAL AT THE UNDERSIDE OF THE SLAB SHALL BE CAPABLE OF SUSTAINING A MINIMUM OF 50kPa AND AT THE UNDERSIDE OF EDGE AND INTERNAL BEAMS 100kPa. REFER TO SOIL REPORT. ALL BEAM FOUNDING DEPTHS TO BE VERIFIED ON SITE.
- LAY A CONTINUOUS 0.2mm POLYTHENE MEMBRANE UNDER SLAB, LAP 200mm, AND TAPE ALL JOINS, SERVICE PENETRATIONS AND PUNCTURES.
- REINFORCEMENT LAPS SHALL BE (U.N.O.):
- SLAB - 225 LAPS
- BEAMS - 500 LAPS
- PROVIDE 20% BARS x 1200 LONG ACROSS RE-ENTRANT CORNERS AND CORNERS OF PITS, PENETRATIONS, etc.
- ALL REINFORCEMENT IS TO BE SECURELY SUPPORTED ON BAR CHAIRS LOCATED ON PLASTIC DISHES TO PREVENT PUNCTURING OF THE MEMBRANE.
- BAR CHAIRS ARE TO BE LOCATED AT 1200 MAX. CTS. IN BOTH DIRECTIONS OR CLOSER CENTRES AS REQUIRED TO ENSURE NO SAG OF THE REINFORCEMENT, WHERE NECESSARY PROVIDE BARROW PLANKS OVER REINFORCEMENT TO PREVENT DISPLACEMENT DURING CONCRETE POUR.
- WET CURE CONCRETE FOR 7 DAYS AFTER POURING (OR BY SOME OTHER METHOD APPROVED BY THE ENGINEER).
- GRADE SURROUNDING AREA AWAY FROM THE SLAB EDGE. NO TREES ARE TO BE PLANTED CLOSER TO THE SLAB EDGE THAN THEIR HEIGHT WHEN FULLY GROWN.
- F11 LOOSE FILL IF REQUIRED FOR SUSPENDED SLABS SHALL BE SUFFICIENT TO SUPPORT CONSTRUCTION OF SLABS IN A STABLE CONDITION AND TO ENSURE THAT NO MOVEMENT WILL OCCUR DURING THE CURING PROCESS.
- F12 **TESTING**
- TEST EACH LAYER OF FILLING FOR DRY DENSITY RATIO EXCEPT WHEN FILL DEPTH IS LESS THAN 600mm. THE CONTRACTOR SHALL EMPLOY A NATA REGISTERED LABORATORY TO CARRY OUT ALL TESTING.
- TESTING REQUIRED ALONG THE EXTERNAL WALLS AND GROUND SLAB:
- MINIMUM 3 TESTS PER LAYER OR
- MINIMUM 1 TEST PER 250 SQUARE METRES OR
- 3 TESTS PER VISIT.
- WHICHEVER REQUIRES THE MOST TESTS.
- F13 THE BUILDER IS TO ENGAGE THE SERVICES OF A GEOTECHNICAL ENGINEER TO INSPECT AND APPROVE THE FOOTING EXCAVATIONS, FOUNDING DEPTH AND MATERIAL, PRIOR TO THE PLACEMENT OF ANY REINFORCEMENT, VAPOUR BARRIER AND/OR POURING OF ANY CONCRETE AND BLINDING.

### MASONRY

- M1 ALL MASONRY SHALL COMPLY WITH AS 3700 AND ARCHITECT'S SPECIFICATION.
- M2 ALL BLOCKWORK WALLS SHALL BE CONSTRUCTED IN GRADE 15 BLOCKS (15 MPa) IN ACCORDANCE WITH AS/NZS 4455. THE MAXIMUM UNRESTRAINED 5 YEAR EXPANSION OF BRICKS SHALL BE 0.7mm/m IN ACCORDANCE WITH NATA TEST B01.
- M3 UNLESS NOTED OTHERWISE THE NOMINAL PROPORTIONS BY VOLUME OF MORTAR SHALL BE 1:16 OF CEMENT:LEMSAND. NO PLASTERERS SHALL BE USED IN THE WORK.
- M4 GROUT USED TO FILL CAVITIES AND CORES IN REINFORCED MASONRY IS TO BE IN ACCORDANCE WITH CLAUSE 2.4 AS 3700 USING 10mm AGGREGATE AND HAVING A F<sub>c</sub> GREATER THAN 12 MPa.
- M5 HORIZONTAL JOINT REINFORCEMENT SHALL BE PROVIDED AT MAXIMUM 400 VERTICAL SPACING FOR ALL CONCRETE BLOCKWORK, CONCRETE BRICKWORK AND CALCULUM SILICATE BRICKWORK.
- M6 FULLY BED FACE SHELLS AND CROSS WEBS IN HOLLOW BLOCK WALLS.
- M7 HOLLOW BLOCKWORK OPENINGS GREATER THAN 600mm VERTICALLY OR HORIZONTALLY SHALL BE TRIMMED AT THE SIDES AND BOTTOM BY FILLING ONE CORNER AND REINFORCE WITH 11% BAR EXTENDING 600mm PAST OPENING. THE TOP OF OPENINGS SHALL HAVE A REINFORCED Lintel, BEAM, ARCH BAR OR STEEL ANGLE SUPPORT AS DETAILED.
- M8 ALL TIES AND REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 50mm TO EXTERNAL FACE OF MASONRY.
- M9 ALL WALLS SHALL BE BONDED OR TIED AT THEIR INTERSECTIONS.
- M10 NO CAVITY OR CORE SHALL BE FILLED TO A HEIGHT GREATER THAN 1200mm WITHOUT SUITABLE SHORING.
- M11 NO CHASES OR HOLES SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- M12 MASONRY SHALL BE TIED TO ALL COLUMNS, BEAMS AND TIES WITHIN OR ADJACENT TO THESE WALLS WITH HEAVY DUTY TIES BRUNSWICK SALES MF43/3 OR SIMILAR APPROVED TO THE FOLLOWING CENTRES:
- CLAY BRICKS - HORIZONTALLY EVERY 600mm, VERTICALLY EVERY 4 COURSES
- CONCRETE BLOCKS - HORIZONTALLY EVERY 800mm, VERTICALLY EVERY 2 COURSES
- M13 NO MASONRY SHALL BE CONSTRUCTED ON PROPPED SLABS OR BEAMS.
- M14 PROVIDE ARTICULATION TO ALL MASONRY WALLS IN ACCORDANCE WITH CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA - TECHNICAL NOTE #1 ARTICULATED WALLING. REFER TO ARCHITECT'S DRAWINGS FOR LOCATIONS OF CONTROL JOINTS.
- M15 THE SOFFITS OF CONCRETE BEAMS AND SLABS SHALL BE SEPARATED FROM SUPPORTING MASONRY BY TWO LAYERS OF SUITABLE BOND BREAKER, SUCH AS 'MALTRON' OR SIMILAR APPROVED PRODUCT. THE TOP OF THE WALL UNDER THE BOND BREAKER SHALL HAVE A SMOOTH AND REGULAR SURFACE DEPRESSIONS OR IRREGULARITIES SHALL BE FILLED WITH MORTAR.

### CONCRETE

C1 CONCRETE SHALL COMPLY WITH THE SPECIFICATION UNLESS OTHERWISE NOTED. ALL CONCRETE SHALL BE AS FOLLOWS UNLESS NOTED ON DRAWINGS.				
ELEMENT	GRADE (MPa)	SLUMP (mm)	MAX. AGG. (mm)	
BLINDING	M15	80	20	
STRIP FOOTINGS AND PAD FOOTINGS	N25	80	20	
SLAB ON GROUND	N32	80	20	
BORED PIERS	N32	80	20	
COLUMNS AND PEDESTALS	N40	80	20	
SUSPENDED SLABS/BEAMS	N32	80	20	
WALLS	N32	80	20	

- C2 CONCRETE SHALL CONFORM TO THE FOLLOWING:
- a) CEMENT TYPE GP COMPLYING TO / WITH AS 1379 AND AS 3600
- C3 SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- C4 BEAM DEPTHS ARE NOTED FIRST AND INCLUDE THICKNESS OF SLAB IF ANY.
- C5 CONSTRUCTION JOINTS WHERE NOT SHOWN ON DRAWINGS SHALL BE LOCATED TO THE APPROVAL OF THE SUPERINTENDENT/ENGINEER. TENDERS SHALL ALLOW FOR ALL SUCH CONSTRUCTION JOINTS.
- C6 NO PENETRATIONS, CHASES OR EMBEDMENTS OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE SUPERINTENDENT/ENGINEER.
- C7 ALL FORMWORK AND PROPPING UNDER SUSPENDED CONCRETE WORKS SHALL BE REMOVED BEFORE ANY MASONRY WORK IS BUILT ABOVE.
- C8 CAMBERS, UNLESS NOTED OTHERWISE ON THE DRAWINGS AND EXCEPT FOR PRESTRESSED WORK SHALL BE PROVIDED IN BEAMS AND SLABS AS FOLLOWS:
- ii SPANS GENERALLY - 0.002 x SPAN.
- iii CANTILEVERS - 0.004 x CANTILEVER LENGTH.
- CAMBERS SHALL BE CHECKED BEFORE AND AFTER DEPROPPING TO DETERMINE THE DEFLECTION OF THE MEMBERS UNDER THEIR SELF WEIGHT. PROVISION SHALL BE MADE IN THE FORMWORK SYSTEM FOR THE STRUCTURAL ENGINEER TO VARY THE SPECIFIED CAMBERS ON THE BASIS OF THIS INFORMATION.
- C9 **SHRINKAGE:**
- MAXIMUM DRYING SHRINKAGE STRAIN MEASURED IN ACCORDANCE WITH AS 1012 PART 13 SHALL NOT EXCEED 650 x 10<sup>-4</sup> AT 8 WEEKS
- C10 **CAMBERS:**
- PROVIDE CAMBERS TO BEAMS WHERE SPECIFIED BY ARCHITECT
- C11 **SHE-BOLT LOCATIONS:**
- SHE-BOLT HOLE LOCATIONS IN EXPOSED (VISIBLE) SURFACES ARE TO BE POSITIONED IN ACCORDANCE WITH THE ARCHITECT'S INSTRUCTIONS.
- C12 ALL CONCRETE PLACED IN POSITION IS TO BE ADEQUATELY VIBRATED USING MECHANICAL VIBRATORS.
- C13 ALL CONCRETE SHALL BE CURED FOR AT LEAST 7 DAYS AFTER CONCRETING DURING CURING, ALL EXPOSED CONCRETE SURFACES SHALL BE PROTECTED AND KEPT MOIST BY PONDING, COVERING WITH WET Hessian OR SPRAYED WITH AN APPROVED CURING COMPOUND.
- C14 PROPPING INCLUDING STRIPPING AND BACKPROPPING SHALL IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS. AS A MINIMUM THE FOLLOWING SHALL APPLY:
- FORMWORK SHALL NOT BE STRIPPED UNTIL THE FOLLOWING NUMBER OF DAYS AFTER CONCRETING:
- BEAM SIDES, VERTICAL WALLS AND COLUMNS - 5 DAYS
- SLABS AND BEAM SOFFITS - 14 DAYS
- C15 ALL SUSPENDED SLABS AND BEAMS SHALL REMAIN PROPPED FOR THE FOLLOWING NUMBER OF DAYS AFTER CONCRETING:
- CONCRETE SLAB - 21 DAYS
- BEAMS - 28 DAYS
- C16 CONCRETE TESTING SHALL BE IN ACCORDANCE WITH AS 1379, METHOD OF TESTING AND ASSESSMENT SHALL BE "PROJECT ASSESSMENT" METHOD.

### TIMBER

- T1 MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE SPECIFICATION AND THE CURRENT EDITIONS OF THE FOLLOWING AUSTRALIAN STANDARD CODES AS APPLICABLE:
- AS1720 TIMBER STRUCTURES CODE
- AS1684 LIGHT TIMBER FRAMING CODE
- T2 HOLES FOR BOLTS, UNLESS OTHERWISE DETAILED, SHALL BE MADE OVERSIZE AS FOLLOWS:
- BOLT DIAMETER 16mm OR LESS - 2mm OVERSIZE
- BOLT DIAMETER GREATER THAN 16mm - 3mm OVERSIZE
- T3 SHANK AND THREAD OF BOLTS SHALL BE THOROUGHLY COATED WITH A HEAVY WATERPROOF GREASE BEFORE INSERTION INTO THE TIMBER.
- T4 SPECIALISED METAL FASTENERS SUCH AS "GANG-NAIL PLATES", "TRIP-L-GRIP", ETC., SHALL BE OF A PROVEN TYPE AND SHALL HAVE HAD WORKING LOADS DETERMINED IN ACCORDANCE WITH THE PROCEDURE SPECIFIED IN AS1649. FIX CONNECTORS TO THE MANUFACTURER'S INSTRUCTIONS.
- T5 AT THE PRACTICAL COMPLETION OF THE CONTRACT AND AGAIN AT THE END OF THE MAINTENANCE PERIOD AND IF NECESSARY DURING THAT PERIOD, RE-TIGHTEN ALL BOLTS TO APPROVAL. BOLTS THAT WILL BE INACCESSIBLE AFTER COMPLETION OF THE PROJECT SHALL BE RE-TIGHTENED IMMEDIATELY TO BEING BUILT-IN.
- T6 EDGE DISTANCES FOR FASTENERS IN TIMBER (FROM ENDS AND SIDES) SHALL BE IN ACCORDANCE WITH AS1720.
- T7 TIMBER TRUSSES TO BE TIED DOWN AT SUPPORTS TYPICAL.
- T8 ALL TIMBER FRAMING TO BE CONSTRUCTED TO AS1684 (U.N.O.)
- T9 CONNECTIONS BETWEEN TIMBER BEAMS TO STEEL COLUMNS SHALL BE:
- 2/10mm CLEAT PLATE, 6 CFW TO CAP PLATE, 2-M6 COACH BOLTS TYPICAL (U.N.O.)
- T10 PROVIDE DOUBLE STUDS (NAIL LAMINATED) AT SIDES OF ALL OPENINGS AND UNDER BEAM SUPPORTS U.N.O.
- T11 REFER TO TIMBER FRAMING MANUAL AND ALL ASSOCIATED CODES FOR MEMBERS NOT SHOWN.

### SHOP DRAWINGS

1. 14 DAYS PRIOR TO THE FABRICATION OF STEELWORK THE CONTRACTOR SHALL SUBMIT A COPY OF THE SHOP DRAWINGS. ACCEPTANCE OF THESE DRAWINGS DOES NOT INCLUDE CHECKING OF DIMENSIONS, NOR PRECLUDE THE CONTRACTOR FROM THE RESPONSIBILITY FOR THE CORRECTNESS OF THE WORK.
2. THE BUILDER SHALL SUBMIT TWO PAPER COPIES (ELECTRONIC COPIES NOT ACCEPTABLE) OF THE SHOP DRAWINGS, TO THE DESIGN ENGINEER FOR REVIEW.
3. ALL SHOP DRAWINGS SHALL BE SUBMITTED AT THE SAME TIME TO ENABLE A CHECK AND CO-ORDINATION REVIEW.
4. NO STRUCTURAL ELEMENTS SHALL BE FABRICATED PRIOR TO REVIEW OF THE SHOP DRAWINGS.

### STEEL INSPECTION

THE BUILDER IS TO ENGAGE A STRUCTURAL STEEL INSPECTION SERVICE SUCH AS FLPSIDE WELDING SERVICES PH.0404042071 (OR APPROVED EQUIVALENT) TO INSPECT STEELWORK DURING FABRICATION AND AFTER ERECTION TO CONFIRM COMPLIANCE WITH THE STRUCTURAL DRAWINGS. THE BUILDER IS TO PROVIDE ENGINEERS WITH A COPY OF ALL REPORTS.

### HEALTH AND SAFETY

- H51 IT IS THE RESPONSIBILITY OF THE BUILDER TO ENSURE ALL WORKS ARE CARRIED OUT IN A SAFE MANNER, THE WORKS SHALL COMPLY WITH ALL APPLICABLE HEALTH AND SAFETY LEGISLATION INCLUDING CODES OF PRACTICE, AUSTRALIAN STANDARDS, GUIDANCE NOTES AND WORKSAFE REQUIREMENTS.
- H52 THE BUILDER SHALL ENSURE A RISK ASSESSMENT HAS BEEN CARRIED OUT AND DOCUMENTED FOR ALL ACTIVITIES PERFORMED ON THE SITE. SAFE WORK PROCEDURES MUST BE DOCUMENTED AS REQUIRED BY LEGISLATION AND RELEVANT AUTHORITIES. THE BUILDER MAY NEED TO ENGAGE SUITABLY EXPERIENCED CONSULTANTS TO PREPARE A SAFE WORK PROCEDURE IF THE BUILDER IS INEXPERIENCED IN THIS FIELD OR IF THEY ARE NOT SATISFIED WITH THE METHOD PROPOSED BY THE CONTRACTOR.

### REINFORCEMENT

R1	ALL REINFORCEMENT SHALL BE AS FOLLOWS:		
	SYMBOL	TYPE	DUCTILITY CLASS
	R	STRUCTURAL GRADE PLAIN BARS TO AS 1302 (250 MPa)	N
	N	DEFORMED BARS GRADE 500 TO AS/NZS 4671 (500 MPa)	N
	RN SN	FABRIC TO AS/NZS 4671 (500 MPa)	N
	RL SL	FABRIC TO AS/NZS 4671 (500 MPa)	L
	NOTE: THE NUMBER FOLLOWING R, S, Y, N AND RL/SL IS THE BAR DIAMETER IN MILLIMETRES		
R2	LOW DUCTILITY DEFORMED BARS (DUCTILITY CLASS L) SHALL NOT BE USED UNDER ANY CIRCUMSTANCES (EXCEPT FOR FABRIC)		
R3	U.N.O. TABLE OF MINIMUM CLEAR CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS:		

LOCATION	CLEAR COVER (mm)			
	TOP	BOTTOM	SIDES INTERNAL	SIDES EXTERNAL
SLAB INTERNAL	25	30	--	--
SLAB EXTERNAL	40	40	--	--
STRIP FOOTINGS	65	65	--	--
COLUMNS	--	--	40	40
GROUND BEAMS	30	40	40	40
BORED PIERS	--	--	50	50

- TOLERANCES TO FORMWORK AND CONCRETE SHALL BE IN ACCORDANCE WITH CLAUSE 4.4.2 OF AS 5199-1974, UNLESS NOTED OTHERWISE.
- R4 DISTRIBUTION BARS TO MAIN REINFORCEMENT IN SLABS SHALL BE N12 AT 300 mm CENTRES UNLESS NOTED OTHERWISE.
- R5 NO REINFORCEMENT SPLICES SHALL BE MADE, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, WITHOUT THE PRIOR APPROVAL OF THE SUPERINTENDENT/ENGINEER. MINIMUM LAP FOR FABRIC SHALL BE ONE SQUARE OF MESH PLUS 25 mm.
- R6 WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE SUPERINTENDENT/ENGINEER. DEFORMED BARS SHALL BE COLD ROLLED ONLY.
- R7 TOP AND BOTTOM REINFORCEMENT IN SLABS SHALL BE SUPPORTED IN BOTH DIRECTIONS AT MAXIMUM CENTRES OF 1000 mm IN BOTH DIRECTIONS, FOR EXTERNAL SURFACES, USE PLASTIC CHAIRS.
- R8 THE MINIMUM CLEAR SPACING BETWEEN CONDUITS, CABLES, PIPES AND BARS TO BE AS REQUIRED BY AS 3600 BUT NOT LESS THAN THREE DIAMETERS. CONDUITS IN SLABS TO BE PLACED ABOVE BOTTOM REINFORCEMENT AND BELOW TOP REINFORCEMENT.
- R9 HOOKS, LAPS, SPLICES AND BENDS TO BE IN ACCORDANCE WITH AS 3600.
- R10 ABBREVIATIONS USED FOR REINFORCEMENT LOCATION:
- |               |   |    |
|---------------|---|----|
| BOTTOM BOTTOM | - | BB |
| TOP TOP       | - | TT |
| BOTTOM        | - | B  |
| TOP           | - | T  |
- R11 ALL REINFORCEMENT BARS SHALL BE HANDLED ON SITE INCLUDING STORAGE, FIXING AND WELDING STRICTLY IN ACCORDANCE WITH RELEVANT MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS. BUILDER AND HIS CONTRACTORS TO OBTAIN ALL RELEVANT INFORMATION FROM MANUFACTURERS AND FAMILIARIZE WITH SUCH REQUIREMENTS.
- R12 BARS ARE DETAILED ON THE DRAWING IN THE FOLLOWING MANNER:-
- 20N12-300 - DENOTES 20No. 500M GRADE (500MPa) BARS OF 12mm DIA. AT 300mm CENTRES.
- R13 ALL FABRIC SHALL HAVE A MINIMUM LAP OF 300mm, UNLESS NOTED OTHERWISE.
- R14 REINFORCEMENT IN THE DIRECTION OF THE SPAN SHALL BE NEARER TO THE ADJACENT SURFACE, UNLESS NOTED OTHERWISE.
- R15 THE CONTRACTOR SHALL GIVE THE ENGINEER 48 HOURS NOTICE TO INSPECT REINFORCEMENT PRIOR TO PLACEMENT OF CONCRETE.
- R16 THE FOLLOWING CONNECTION EXPOSURE CLASSIFICATIONS FOR DURABILITY WERE USED IN THE DESIGN:-
- IN CONTACT WITH THE GROUND A2
- EXTERIOR A1
- R17 "BONDED" OR EQUIVALENT FORMWORK DECKING SHALL BE FIXED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. (U.N.O) ALL "BONDED" OR EQUIVALENT FORMWORK DECKING SLABS SHALL BE BACKPROPPED AT LEAST OVER TWO LEVELS WITH MINIMUM TWO ROWS OF PROPS.
- R18 PROVIDE 3N12 RE-ENTRANT CORNER BARS x 2000mm LONG TYPICAL AROUND COLUMNS & CORNERS.

### PREFABRICATED TRUSS NOTES

1. PREFABRICATED TRUSSES ARE TO BE DESIGNED, MANUFACTURED AND ERECTED BY AN APPROVED FABRICATOR. THE FABRICATOR IS TO PROVIDE A CERTIFICATE OF COMPLIANCE-DESIGN BY A REGISTERED STRUCTURAL ENGINEER FROM PV10A. THE CERTIFICATE TOGETHER WITH THE DRAWINGS AND COMPUTATIONS IS TO BE SUBMITTED TO THE PROJECT DESIGN ENGINEER AND BUILDING SURVEYOR. THE DRAWINGS MUST BE CHECKED AND SIGNED AS BEING CORRECT BY THE CONTRACTOR AND THE ABOVE MENTIONED AUTHORITIES BEFORE ANY FABRICATION IS COMMENCED. UPON COMPLETION OF ERECTION THE BUILDER IS TO ENGAGE PV10A TO INSPECT AND CERTIFY THAT THE TRUSSES HAVE BEEN ERECTED IN ACCORDANCE WITH THE DRAWINGS.
2. ALL TIMBER TRUSS DESIGNS SHALL BE IN ACCORDANCE WITH ALL RELEVANT AUSTRALIAN STANDARD DESIGN CODES.
3. ALL TRUSS CONNECTIONS INCLUDING TRUSS TO TRUSS CONNECTIONS AND TRUSS TO SUPPORTING BEAM AND WALL CONNECTIONS ARE THE RESPONSIBILITY OF THE MANUFACTURER. ALL CONNECTIONS AND CONNECTING PLATES SHALL BE FULLY DESIGNED AND DETAILLED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION. ALL CONNECTION SYSTEMS SHALL COMPLY WITH AUSTRALIAN STANDARD DESIGN CODES.
4. TRUSS BRACING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. DETAILED CONNECTIONS SHALL BE SUBMITTED FOR APPROVAL.
5. PROVIDE TEMPORARY BRACING AS NECESSARY TO ERECT TRUSSES AND HOLD IN POSITION UNTIL PERMANENT BRACING IS INSTALLED.
6. THE MANUFACTURER SHALL PROVIDE BRACING AS REQUIRED TO TRANSFER WIND LOADS TO BRACED WALLS ETC.
7. TRUSSES SHALL BE DESIGNED FOR ALL INCIDENTAL LOADS SHOWN ON THE ARCHITECTURAL DRAWINGS SUCH AS OPERABLE WALLS, PLANT LOADS, SERVICE LOADS ETC.
8. THE BUILDER SHALL SATISFY HIMSELF AS TO THE ADEQUACY AND COMPLETENESS OF ALL OF STRUCTURAL WORK AND IF NECESSARY SHOULD ALLOW FOR ANY ADDITIONAL WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB WITHIN THE INTENT OF THE CONTRACT DOCUMENTS.
9. AFTER COMPLETION OF TRUSS FABRICATION ARRANGE FOR A QUALIFIED ENGINEER FROM THE TRUSS FABRICATOR OR THE TRUSS COMPONENT MANUFACTURER TO INSPECT THE TRUSS & PROVIDE A CERTIFICATE STATING THAT THE TRUSSES ARE FIT FOR THE PURPOSE & STRUCTURALLY ADEQUATE.
10. REFER TO STRUCTURAL DRAWINGS FOR SPECIAL DETAILS & LOCATION OF TRUSSES. ARRANGE TRUSS MEMBERS IN SUCH A MANNER AS TO PERMIT ACCESS OF DUCTS, FITTINGS & OTHER SERVICES SHOWN ON ARCHITECTURAL & SERVICES DRAWINGS.
11. UNLESS OTHERWISE DETAILED, USE MINIMUM TWO TOP-L-GRIP CONNECTORS AT EACH TRUSS/TOP PLATE CONNECTION.
12. GABLE END TRUSSES SHALL HAVE STUDS AT 600mm CENTRES.
- PREFABRICATED TIMBER TRUSSES AT 900 MAX. CTS. TO MANUFACTURERS DESIGN AND DETAIL - DESIGN WIND SPEED V40 46 m/sec - TERRAN CAT 3

### STRUCTURAL STEELWORK

- S0 STEELWORK SHALL COMPLY WITH THE SPECIFICATION UNLESS OTHERWISE SHOWN ON THE DRAWINGS. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100.
- S1 THE STEELWORK SHOWN ON THESE DRAWINGS DOES NOT INCLUDE THE TOTAL EXTENT OF STEELWORK. NON STRUCTURAL STEELWORK SHOWN ON ARCHITECTURAL & SERVICES DRAWING IS NOT PART OF THE STRUCTURAL STEEL TENDER PACKAGE. HOWEVER SHOULD BE REFERRED TOO FOR CO-ORDINATION PURPOSES.
- S2 ALL STRUCTURAL STEELWORK SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
- HOT ROLLED SECTIONS
- ONESTEEL GRADE 300 OR APPROVED EQUIVALENT COMPLYING WITH AS/NZS 3679:2010
  - ONESTEEL GRADE 300 OR APPROVED EQUIVALENT COMPLYING WITH AS/NZS 3679:2:2010
- HOLLOW SECTIONS
- GRADE 350 MPa
  - COMPLYING WITH AS1163:2009
- ALL PLATE ELEMENTS
- UP TO 16 mm THICK - 300 MPa MIN.
  - OVER 16 mm THICK - 280 MPa MIN.
- S3 SURFACE PREPARATION AND CORROSION PROTECTION OF STEELWORK - UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS, OR IN OTHER PARTS OF THESE DRAWINGS THE MINIMUM REQUIREMENT SHALL BE TO CLEAN STEELWORK BY DEGREASING, WIRE BRUSHING AND OTHER SUITABLE MEANS TO PRODUCE A SURFACE FREE OF LOOSE MILL SCALE, DIRT AND GREASE. PRIME WITH ONE COAT OF RICH OXIDE ZINC CHROMATE PRIMER, MIN. DRY FILM THICKNESS TO BE BETWEEN 65um and 75um.
- S4 NO STEELWORK SHALL BE FABRICATED UNTIL FINAL REVIEW OF THE WORKSHOP DRAWINGS HAS BEEN COMPLETED.
- S5 ALL DIMENSIONS AND LEVELS (INCLUDING H.O. BOLTS AS CONSTRUCTED) AFFECTING NEW STEELWORK SHALL BE CHECKED ON SITE AND INCORPORATED IN WORKSHOP DRAWINGS.
- S6 WELDED CONNECTIONS BETWEEN STRUCTURAL MEMBERS SHALL HAVE 6mm CONTINUOUS FILLET WELDS UNLESS NOTED OTHERWISE. ALL BUTT WELDS TO BE QUALIFIED FULL PENETRATION BUTT WELDS.
- S7 BOLT TYPES (AND DESIGNATIONS, WHERE USED) SHALL BE AS FOLLOWS:-
- 4.6/S - COMMERCIAL BOLTS TO AS 111, SNUG TIGHTENED
- 8.8/S - HIGH STRENGTH STRUCTURAL BOLTS, NUTS AND HARDENED WASHERS - TO AS 1252, SNUG TIGHTENED ONLY.
- 8.8/TB - HIGH STRENGTH STRUCTURAL BOLTS AS ABOVE. FULLY TENSIONED TO - AS 1252 IN A BEARING TYPE JOINT.
- 8.8/TF - HIGH STRENGTH STRUCTURAL BOLTS AS ABOVE. FULLY TENSIONED TO - AS 1252 IN A FRICTION TYPE JOINT AND UNLESS NOTED OTHERWISE, WITH FACING SURFACES LEFT UNCOATED.
- S8 ALL BOLTS SHALL BE M20 HIGH STRENGTH (8.8/S) UNLESS NOTED OTHERWISE NO STEEL TO STEEL CONNECTIONS SHALL HAVE LESS THAN 2M6 8.8/S BOLTS. ALL BOLTS SHALL BE HOT DIP GALVANISED OR CADMIUM PLATED U.N.O.
- S9 ALL HOLDING DOWN BOLTS SHALL BE EITHER COMMERCIAL BOLTS OR BE MADE FROM BARS WITH MINIMUM f<sub>y</sub> 230 MPa. UNLESS NOTED ON DRAWING. ALL HOLDING DOWN BOLTS SHALL BE COGGED AND CAGED. HOLDING DOWN BOLTS SHALL BE HOT DIP GALVANISED.
- S10 AFTER TIGHTENING, EXPOSED FACES OF BOLTS, NUTS AND WASHERS SHALL BE PREPARED AND COATED AS SPECIFIED OR AS FOR ADJACENT STEELWORK.
- S11 ALL BOLTS SHALL BE OF SUCH LENGTH THAT AT LEAST ONE FULL THREAD IS EXPOSED BEYOND THE NUT AFTER THE NUT HAS BEEN TIGHTENED.
- S12 MINIMUM ONE WASHER SHALL BE USED UNDER THE NUT IN ALL SITUATIONS. IF TIGHTENING IS CARRIED OUT AT THE HEAD, AFTER THE NUT FOR ADDITIONAL, SHALL BE USED UNDER THE HEAD. FOR SLOTTED HOLES USE A HARDENED WASHER UNDER THE NUT AND BOLT HEAD.
- UNLESS SHOWN OTHERWISE:
- ABUTTING EDGES OF BOXED MEMBERS SHALL BE CONNECTED AND SEALED WITH A CONTINUOUS WELD.
- S13 THE ENDS OF ALL HOLLOW SECTIONS SHALL BE SEALED.
- S14 ALL PLATES SHALL BE 10 mm UNLESS NOTED OTHERWISE.
- S15 ALL WELDING TO BE SP WELD UNLESS NOTED OTHERWISE ON DRAWINGS. WELDING ELECTRODE SHALL BE "E41X"
- S16 ALL COLD FORMED SECTIONS TO CONFORM TO AS/NZS 4460 AND SHALL BE ROLL-FORMED FROM ZINC COATED HIGH STRENGTH STEEL STRIP. ZINC-HI-TEN MINIMUM YIELD STRESS 450 MPa. 2350 MINIMUM COATING MASS UNLESS OTHERWISE NOTED ON DRAWINGS.
- S17 **ABBREVIATIONS:**
- CFW - CONTINUOUS FILLET WELD
- FSBW - FULL PENETRATION BUTT WELD
- PPBW - PARTIAL PENETRATION BUTT WELD
- SBW - SINGLE BEVEL BUTT WELD
- S18 THE FOLLOWING AREAS OF WELD ARE TO HAVE NON DESTRUCTIVE TESTING AS PER SPECIFICATION - NIL
- S19 REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL STEELWORK, CLEATS ETC. NOT SHOWN ON STRUCTURAL DRAWINGS.
- S20 ALL STEELWORK EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANISED U.N.O.
- S21 THE BUILDER IS TO ENGAGE A QUALIFIED STEELWORK INSPECTION SERVICE TO CARRY OUT SHOP AND SITE INSPECTIONS TO CHECK THAT STEELWORK, BOLTS, WELDING ETC HAVE BEEN FABRICATED AND ERECTED IN ACCORDANCE WITH THE DOCUMENTS. WRITTEN REPORTS TO BE SUBMITTED TO FMG ENGINEERING.
- S22 BEFORE ANY STRUCTURAL STEEL IS ERECTED A SAFE WORK METHOD STATEMENT (SWMS) MUST BE PREPARED BY THE ERECTOR AND THEIR ERECTION ENGINEER AND REVIEWED BY THE BUILDER. AS3298-1998 GUIDELINES FOR THE ERECTION OF BUILDING STEELWORK MUST BE USED IN PREPARING THE SWMS.
- S