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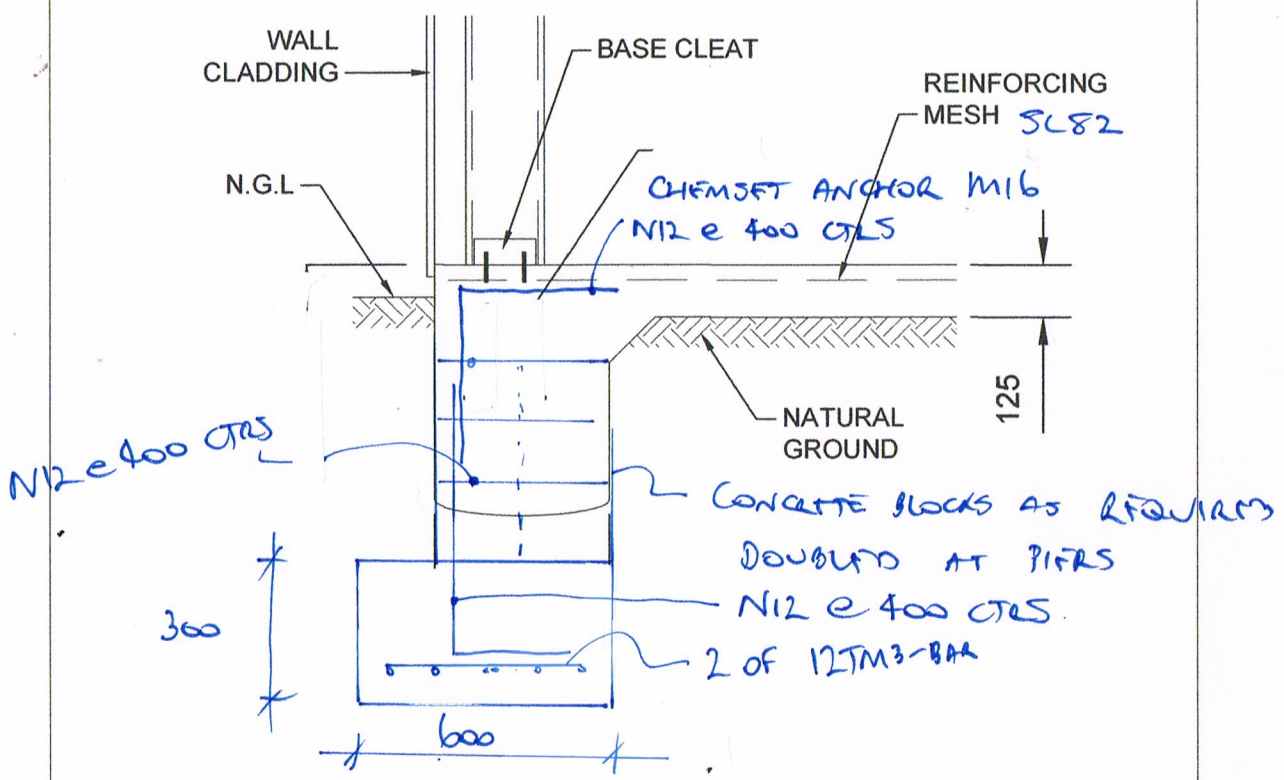


N.G.L - NATURAL GROUND LINE

| | | |
|---|---|---|
| Y | CONCRETE RETAINING WALL SECTION | DWG NO: SBOLB |

TO REAR OF BUILDING AS REQUIRED

## STRUCTURAL GENERAL NOTES

1. **GOVERNING CODE** : NATIONAL CONSTRUCTION CODE (NCC), LOADING TO AS1170 - ALL SECTIONS. BUILDING SUITABLE AS EITHER A PRIVATE GARAGE CLASS 10A, OR A FARM SHED (CLASS 7 OR 8),UNLESS OTHERWISE SPECIFICALLY NOTED. FOR USE AS A FARM SHED, IT MUST MEET THE FOLLOWING REQUIREMENTS:
   - BE LESS THAN 2000 SQM IN AREA (INCLUSIVE OF ANY MEZZANINE FLOOR AREA).
   - MUST BE LOCATED ON A FARM AND USED IN CONNECTION WITH FARMING PURPOSES.
   - BUILDING IS NOT TO BE OCCOUPIED FREQUENTLY NOR FOR EXTENDED PERIODS BY PEOPLE, WITH A MAXIMUM OF 1 PERSON PER 200 SQM OR 2 PERSONS MAXIMUM IN TOTAL WHICHEVER IS THE LESSER.
2. **DRAWING OWNERSHIP** :
   THESE DRAWINGS REMAIN THE PROPERTY OF FBHS (AUST) PTY LIMITED. ENGINEERING SIGNATURE AND CERTIFICATION IS ONLY VALID WHEN BUILDING IS SUPPLIED BY A DISTRIBUTOR OF FBHS. DRAWINGS ARE PROVIDED FOR THE DUAL PURPOSE OF OBTAINING BUILDING PERMITS AND AIDING CONSTRUCTION. ANY OTHER USE OR REPRODUCTION IS PROHIBITED WITHOUT WRITTEN APPROVAL FROM FBHS.
3. **DRAWING SIGNATURE REQUIREMENTS** :
   THESE DRAWINGS ARE NOT VALID UNLESS SIGNED BY THE ENGINEER. THE ENGINEER ACCEPTS NO LIABILITY OR RESPONSIBILITY FOR DRAWINGS WITHOUT A SIGNATURE. EACH TITLE BLOCK CONTAINS A WATER MARK UNDER THE CUSTOMERS NAME CONTAINING THE DATE OF PRODUCTION OF THE DRAWINGS; THE DRAWINGS ARE TO BE SUBMITTED TO COUNCIL WITHIN 21 DAYS OF THIS DATE. THIS IS TO ENSURE THAT ONLY CURRENT DRAWINGS ARE IN CIRCULATION.
4. **CONTRACTOR RESPONSIBILITIES** :
   CERTIFIER AND CONTRACTOR TO CONFIRM [ON SITE] THAT THE WIND LOADINGS APPLIED TO THIS DESIGN ARE TRUE AND CORRECT FOR THE ADDRESS STATED IN THE TITLE BLOCK.
   CONTRACTOR SHALL VERIFY AND CONFIRM ALL EXISTING CONDITIONS AND DIMENSIONS. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN DRAWINGS AND EXISTING CONDITIONS PRIOR TO START OF WORK.
   CONTRACTOR MUST NOT MAKE ANY DEVIATION FROM THE PROVIDED PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM ONE THE UNDERSIGNING ENGINEERS. THE ENGINEER / FBHS TAKE NO RESPONSIBILITY FOR CHANGES MADE WITHOUT WRITTEN APPROVAL.
   CONTRACTOR IS RESPONSIBLE FOR ENSURING NO PART OF THE STRUCTURE BECOMES OVERSTRESSED DURING CONSTRUCTION.
   BUILDING IS NOT STRUCTURALLY ADEQUATE UNTIL THE INSTALLATION OF ALL COMPONENTS AND DETAILS SHOWN IS COMPLETED IN ACCORDANCE WITH THESE DRAWINGS.
   THE INDICATED DRAWING SCALES ARE APPROXIMATE. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES.
   FOR FUTHER DIRECTIONS ON CONSTRUCTION THE CONTRACTOR SHOULD CONSULT THE APPROPRIATE INSTRUCTION MANUAL.
5. **ENGINEERING** :
   THE ENGINEER / FBHS ARE NOT ACTING AS PROJECT MANAGERS FOR THIS DEVELOPMENT, AND WILL NOT BE PRESENT DURING CONSTRUCTION.
   THE UNDERSIGNING ENGINEERS HAVE REVIEWED THIS BUILDING FOR CONFORMITY ONLY TO THE STRUCTURAL DESIGN PORTIONS OF THE GOVERNING CODE. THE PROJECT MANAGER IS RESPONSIBLE FOR ADDRESSING ANY OTHER CODE REQUIREMENTS APPLICABLE TO THIS DEVELOPMENT.
   THESE DOCUMENTS ARE STAMPED ONLY AS TO THE COMPONENTS SUPPLIED BY FBHS. IT IS THE RESPONSIBILITY OF THE PURCHASER TO COORDINATE DRAWINGS PROVIDED BY FBHS WITH OTHER PLANS AND/OR OTHER COMPONENTS THAT ARE PART OF THE OVERALL PROJECT. IN CASES OF DISCREPANCIES, THE LATEST DRAWINGS PROVIDED BY FBHS SHALL GOVERN.
   NO ALTERATIONS TO THIS STRUCTURE (INCLUDING REMOVAL OF CLADDING) ARE TO BE UNDERTAKEN WITHOUT THE CONSENT OF THE CERTIFYING ENGINEER.
   OPENINGS SUCH AS WINDOWS AND DOORS NEED TO BE INSTALLED AS PER THE PRODUCT MANUFACTURER'S INFORMATION/DETAILS.
6. **INSPECTIONS** :
   NO SPECIAL INSPECTIONS ARE REQUIRED BY THE GOVERNING CODE ON THIS JOB. ANY OTHER INSPECTIONS REQUESTED BY THE LOCAL BUILDING DEPARTMENT SHALL BE CONDUCTED AT THE OWNER'S EXPENSE.
7. **SOIL REQUIREMENTS** :
   SITE CLASSIFICATION TO BE A, S OR M ONLY. SOIL SAFE BEARING CAPACITY VALUE INDICATED ON DRAWING SHEET 4 OCCURS AT 100mm BELOW FINISH GRADE, EXISTING NATURAL GRADE, OR AT FROST DEPTH SPECIFIED BY LOCAL BUILDING DEPARTMENT, WHICHEVER IS THE LOWEST ELEVATION. REGARDLESS OF DETAIL Y ON SHEET 4 THE MINIMUM FOUNDATION DEPTH SHOULD BE 100MM INTO NATURAL GROUND OR BELOW FROST DEPTH SPECIFIED BY LOCAL COUNCIL. ROLLED OR COMPACTED FILL MAY BE USED UNDER SLAB, COMPACTED IN 150mm LAYERS TO A MAXIMUM DEPTH OF 900mm. CONCRETE FOUNDATION EMBEIMENT DEPTHS DO NOT APPLY TO LOCATIONS WHERE ANY UNCOMPACTED FILL OR DISTURBED GROUND EXISTS OR WHERE WALLS OF THE EXCAVATION WILL NOT STAND WITHOUT SUPPLEMENTAL SUPPORT, IN THIS CASE SEEK FURTHER ENGINEERING ADVICE.
8. **CLASS 10a or Class 7 FOOTING DESIGNS:**
   THE FOUNDATION DOCUMENTED IS ALSO APPROPRIATE FOR CLASS 10a or CLASS 7 BUILDING DESIGNS ON 'M-D', 'H', 'H-D' OR 'E' CLASS SOILS, IF TOTAL SLAB AREA IS UNDER 100m SQUARE AND THE MAXIMUM SLAB DIMENSION (LENGTH AND WIDTH) IS LESS THAN OR EQUAL TO 12m.
   PLEASE BE AWARE THAT THE SLAB DESIGN FOR H & E CLASS SOILS IN THESE INSTANCES ARE DESIGNED TO EXPERIENCE SOME CRACKING. THIS CRACKING IS NOT CONSIDERED A STRUCTURAL FLAW OR DESIGN ISSUE, AND IS SIMPLY COSMETIC IN NATURE. IF THIS IS A CONCERN TO THE CLIENT IT IS ADVISED THEY DISCUSS OTHER OPTIONS WITH THE RELEVANT DISTRIBUTOR PRIOR TO THE POURING OF THE SLAB.
9. **CONCRETE REQUIREMENTS** :
   ALL CONCRETE DETAILS AND PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH AS2870 AND AS3600.
   CONCRETE SHALL HAVE A MIN. 28-DAY STRENGTH OF 20MPa FOR EXPOSURE A1 & B1, 25MPa FOR EXPOSURE A2 & B2 AND 32MPa FOR EXPOSURE C, IN ACCORDANCE WITH SECTION 4, AS3600. CEMENT TO BE TYPE A. MAX AGGREGATE SIZE OF 20mm. SLUMP TO BE 80mm +-15mm. SLABS TO BE CURED FOR 7 DAYS BY WATERING OR COVERING WITH A PLASTIC MEMBRANE, AFTER WHICH CONSTRUCTION CAN BEGIN, DUE CARE GIVEN NOT TO OVER-TIGHTEN HOLD DOWN BOLTS. GIVEN ALLOWABLE SOIL TYPES 1 LAYER OF SL72 REINFORCING MESH IS TO BE INSTALLED ON STANDARD SLABS WITH A MINIMUM 30MM COVER FROM CONCRETE SURFACE. CONCRETE REINFORCING TO CONFORM TO AS 1302, AS1303 & AS 1304. ALL REINFORCING COVER TO BE A MINIMUM OF 30mm.
10. **STRUCTURAL STEEL REQUIREMENTS** :
    ALL STRUCTURAL STEEL, INCLUDING SHEETING THOUGH EXCLUDING CONCRETE REINFORCING, SHALL CONFORM TO AS 1397 (GAUGE <= 1mm fy = 550MPa, GAUGE > 1mm < 1.5mm fy = 500MPa, GAUGE >= 1.5mm fy = 450MPa).
    NO WELDING IS TO BE PERFORMED ON THIS BUILDING.
    ALL STRUCTURAL MEMBERS AND CONNECTIONS DESIGNED TO AS4600. ALL BOLT HOLE DIAMETERS TO STRAMIT GENERAL PUNCHINGS.
11. **FOOT TRAFFIC** :
    FOR ERECTION AND MAINTENANCE PLEASE NOTE THE FOLLOWING DEFINED FOOT TRAFFIC ZONES:
    - CORRUGATED: WALK ONLY WITHIN 200MM OF SCREW LINES. FEET SPREAD OVER AT LEAST TWO RIBS.
    - MONOCLAD: WALK ONLY IN PANS, OR ON RIBS AT SCREW LINES.

## PROJECT DESIGN CRITERIA

ROOF LIVE LOAD: 0.25 kPa
BASIC WIND SPEED: VR 45 m/s
SITE WIND SPEED: VsitB 40.9 m/s
WIND REGION: Reg A
TOPOGRAPHY FACTOR, Mt: 1
SHIELDING FACTOR, Ms: 1
MAX GROUND SNOW LOAD: N/A
MAX ROOF SNOW LOAD: N/A
SITE ALTITUDE: N/A
TERRAIN CATEGORY: TCat 2.22
SOIL SAFE BEARING CAPACITY: 100 kPa
RETURN PERIOD: 1:500
LIMITING CPI 1: -0.65
LIMITING CPI 2: 0.7
IMPORTANCE LEVEL: 2

## DETAIL KEYS

| | |
|---|---|
| DK1 | ENDWALL VERTICAL MULLION (SEE DETAIL C/5 FOR TOP CONN. AND F/5 FOR BASE CONN.) |
| DK2 | FLYBRACING PER DETAIL L/5 |
| DK3 | X-BRACING IN ROOF ABOVE (SEE DETAIL M/5) |
| DK4 | DOUBLE X-BRACING IN ROOF ABOVE (SEE DETAIL M/5) |

## SCHEDULE OF OPENINGS

| DOOR | OPENING SIZE MAX WIDTH | OPENING SIZE MAX HEIGHT | OPENING TYPE | HEADER GIRT | OPENING JAMBS | WIND RATED |
|---|---|---|---|---|---|---|
| 1 | 5000 | 5500 | SLIDING DOOR | SINGLE | 2C40030 | |
| 2 | 5000 | 5500 | SLIDING DOOR | SINGLE | 2C40030 | |
| 3 | 5000 | 5500 | SLIDING DOOR | SINGLE | 2C40030 | |
| 4 | 5000 | 5500 | SLIDING DOOR | SINGLE | 2C40030 | |

NOTES: 1) SEE SHEET 5 FOR DOOR OPENING FRAMING INFORMATION.
2) ALL DOOR SCHEDULE MEASUREMENTS ARE ACTUAL DOOR/WINDOW SIZE NOT OPENING SIZE.
3) STEEL SLIDING DOORS INDICATE THE BAY SIZE. REFER TO INSTRUCTION MANUAL FOR OPENING SIZES. SLIDING DOORS CAN BE SPLIT IN HALF AT USERS DISCRETION.

NPER 24/3/22
MEMBER 1182580

| | | | | | |
|---|---|---|---|---|---|
| SHEET 4 OF 7 | JOB NO. MAST35209 | NCC 2019 | DATE 23/3/2022 | CHECKED TM | DRAWN FDS |

STEEL BUILDING BY (CONTACT)
M.A. STEEL PTY. LTD. (LIC 225516C)
02 6382 4387
FOR
WORKSHOP SHED MA STEEL
AT
3285 MOPPITY ROAD
YOUNG

NORTHERN CONSULTING engineers
Civil & Structural Engineers
50 Punari Street
Currajong, Qld 4812
Fax: 07 4725 5850
Email: design@nceng.com.au
ABN 341 008 173 56

| | |
|---|---|
| Registered Chartered Professional Engineer | Regn. No. 2558980 |
| Registered Professional Engineer (Civil & Structural) QLD | Regn. No. 9985 |
| Registered Certifying Engineer (Structural) N.T. | Regn. No. 116373ES |
| Registered Engineer - (Civil) VIC | Regn. No. EC36692 |
| Registered Engineer - (Civil) TAS | Regn. No. CC5648M |

Mr Timothy Roy Messer BE MIEAust RPEQ
Signature .....
Date .....23/3/2022.....
Registered on the NPER in the areas of practice of Civil & Structural National Professional Engineers Register