

Job: MCBURNIE GROUP

Date:

FEB 17
NOV 14Job No.: 15233

Sheet No.:

FACENOTES

- A) COMPUTATIONS BASED ON A
MODULE OF 6M.
IE MAXIMUM SPACING OF PILE
SYSTEMS TO BE 6M,
WITH BEARERS LOCATED
AT 1.5M SPACING. REFER SHEET 1.
- B) MAY BE UTILIZED FOR LONGER
JETTY'S eg 9M, PROVIDED
THE 6M MODULE CONSTRUCTION
AS DESCRIBED ABOVE IS
NOT EXCEEDED.
- C) SIDE BEAM MAY CANTILEVER
1.5M PAST PILES

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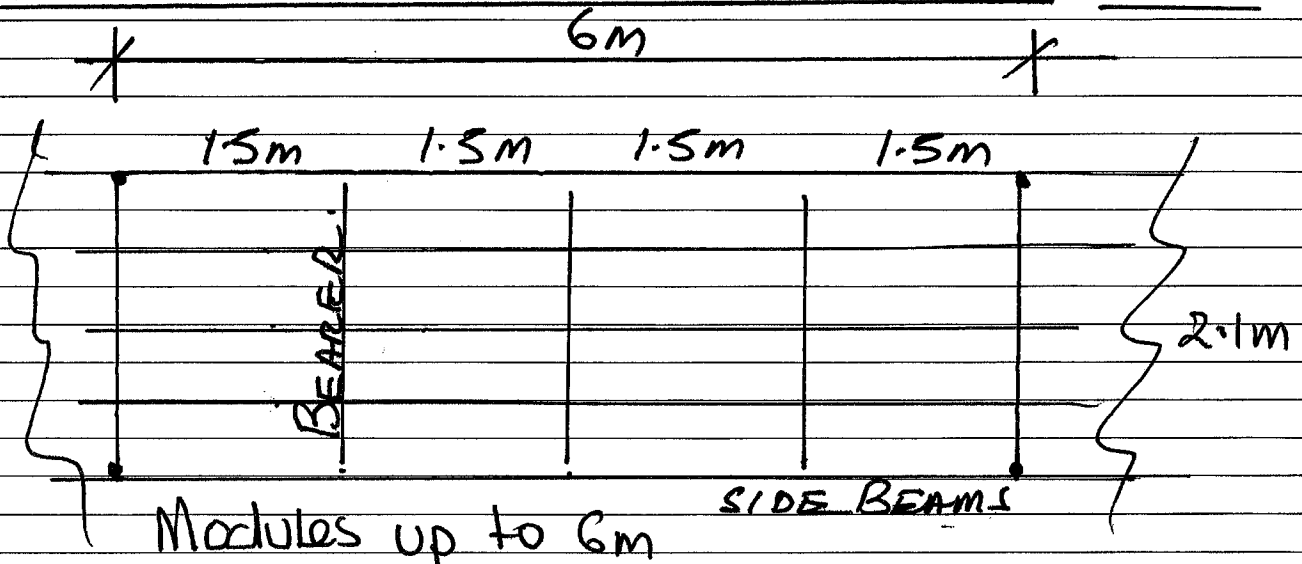
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CLIENT

JETTYS



JOISTS

$$LL = 5kPa \times 0.5 = \underline{2.5 \text{ kN/m}}$$

$$I_{reqd} = \frac{2.5 \times 1.5 \times 1.5^2}{30}$$

$$= \underline{0.28 \times 10^6}$$

100 x 50 x 4 Adopt Rolled Channel

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BEARERS

LOADING

1) DL Floor

$$.4 \text{ kN/m}^2 \times 1.5 = .6 \text{ kN/m}$$

2) Selfwt Scy = .12 kN/m

$$\text{Sub Total} = \underline{.72 \text{ kN/m}}$$

3) LL $5 \times 1.5 = 7.5 \text{ kN/m}$

$$\text{TOTAL} = \underline{8.25 \text{ kN/m}}$$

DL+LL

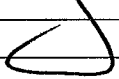
MOMENT

$$M = \frac{wL^2}{8}$$

$$= \frac{8.25 \times 2^2}{8}$$

$$= \underline{4.12 \text{ kNm}}$$

try 150 x 75 x 5 Channel



$$f_b = \frac{4.12 \times 10^6}{52.9 \times 10^3}$$

$$= \underline{77.9 \text{ MPa}}$$

VIBRATION $\frac{L}{D} \ll 25$

$$D = 80.$$

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DEFLECTION

$$I = \frac{8.25 \times 2 \times 2^2}{4 \times 2.67}$$

$$= 1.55 \times 10^6$$

Adopt

150x75x5.0 Channel

SIDE BEAMS

LOADING

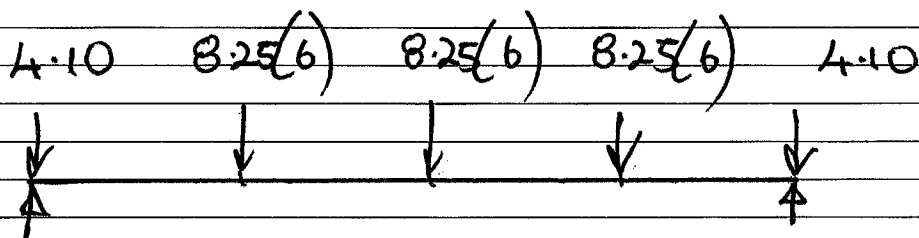
1) DL FLOOR

$$.75 \text{ kNm/m} \times 1 = .75 \text{ kNm}$$

2) LL FLOOR

$$7.5 \times 1 = 7.5 \text{ kNm}$$

$$\underline{\text{TOTAL } 8.25 \text{ kNm}}$$



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CLIENT

** DMC SOFTWARE - 'ARIES 2000' STRUCTURAL ENG-
REG. USER: LEN PRICE & Associates P/L - Shep

** DMC SOFTWARE - 'ARIES 2000' STRUCTURAL E-
REG. USER: LEN PRICE & Associates P/L - Sh

Deflection

SPANS AND EI'S
0.000 6.000 0.000
200E-03 200E-03 200E-03

SPANS AND EI'S
0.000 6.000 0.000
200E-03 200E-03 200E-03

LOADS
1 1 4.1 0.0
1 1 4.1 6.0
1 1 8.3 1.5
1 1 8.3 2.9
1 1 8.3 4.3
1 2 0.2

LOADS
1 1 4.1 0.0
1 1 4.1 6.0
1 1 6.0 1.5
1 1 6.0 2.9
1 1 6.0 4.3
1 2 0.2

TOTAL SPAN LOADS (kN) for Int. SPANS
34.2

TOTAL SPAN LOADS (kN) for Int. SPANS
27.4

Unreduced MOMENTS @ Support Centre Lines
0.0 0.0

Unreduced MOMENTS @ Support Centre Lines
0.0 0.0

Points of Contraflexure in Each Internal Span
LH End 0.000
RH End 6.000
CRITICAL SECTIONS FROM C/L OF SUPPORTS (M)
MOMENT 0.010 0.010
SHEAR 0.020 0.020

Points of Contraflexure in Each Internal Sp
LH End 0.000
RH End 6.000
CRITICAL SECTIONS FROM C/L OF SUPPORTS (M)
MOMENT 0.010 0.010
SHEAR 0.020 0.020

DESIGN +VE & -VE MOMENTS, REACTIONS & SHEARS
+VE MOMENTS 26
SUPP MOMENTS 0 0
REACTIONS 17 17
SHEAR LEFT 0 13
SHEAR RIGHT -13 0

DESIGN +VE & -VE MOMENTS, REACTIONS & SHEAR
+VE MOMENTS 19
SUPP MOMENTS 0 0
REACTIONS 14 13
SHEAR LEFT 0 9
SHEAR RIGHT -10 0

DEFLECTIONS (M) at MID SPANS - ELASTIC
4.64E+02

DEFLECTIONS (M) at MID SPANS - ELASTIC
3.42E+02

VIBRATION $L = 22.25$
 $D = 232 \checkmark$

MOMENT ty 250 x 90 x 6 RC
 $f_b = \frac{26 \times 10^6}{158}$
 $= 164 \text{ MPa} \checkmark$

DEFLECTION
 $I = \frac{3.42 \times 10^2}{10}$
 $= 20 \times 10^6$
250 x 90 x 6 RC \checkmark

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SCREW PILES

Reaction from SIDE BEAM 34 kN.

provide screw piles

with minimum 60 kN SWL Capacity

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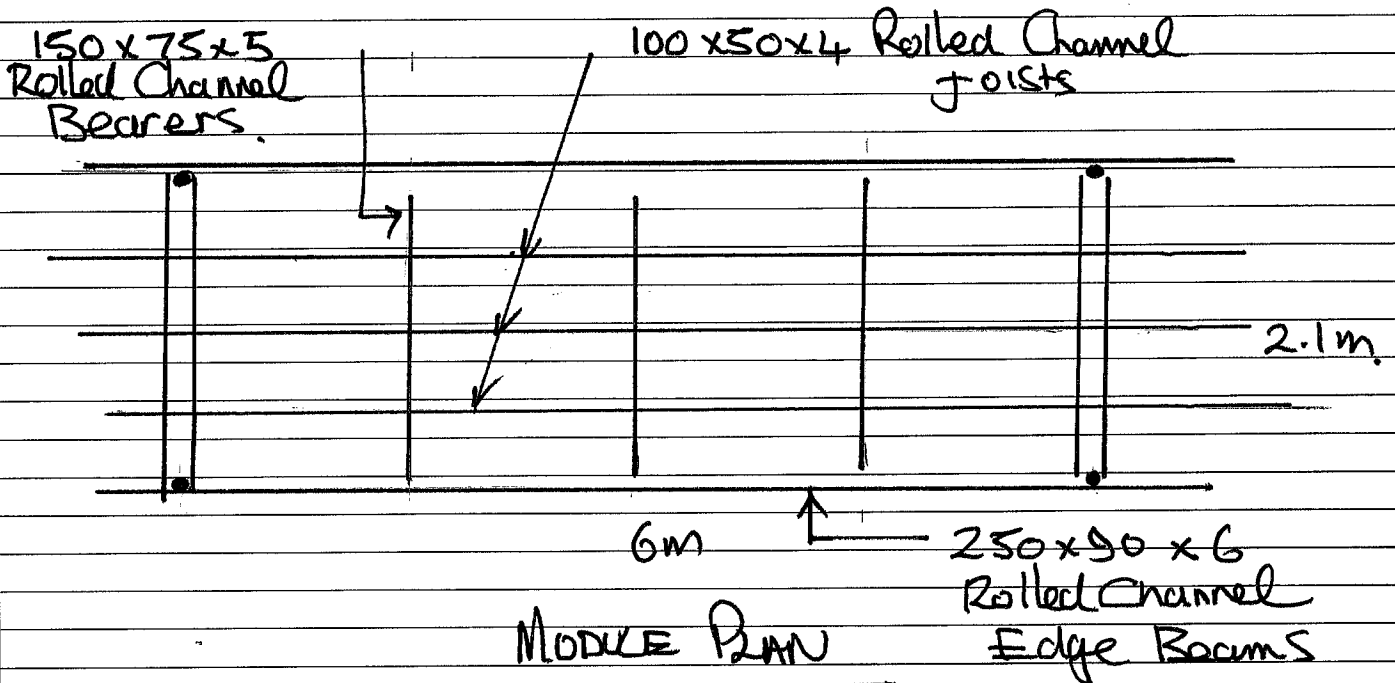
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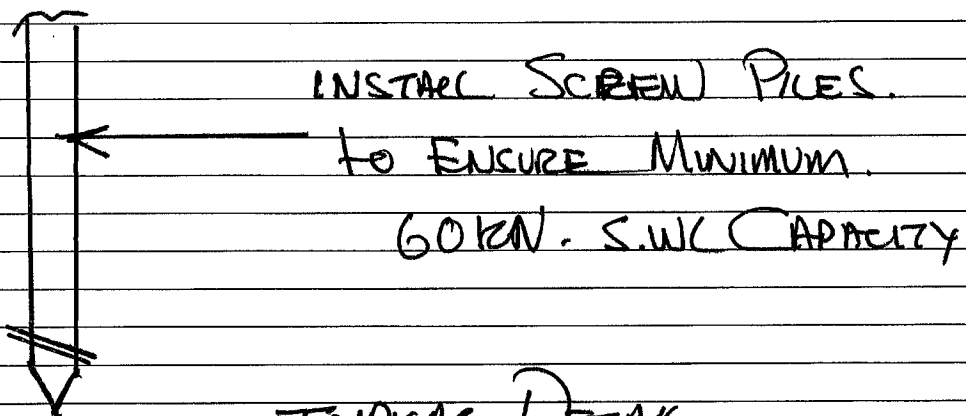
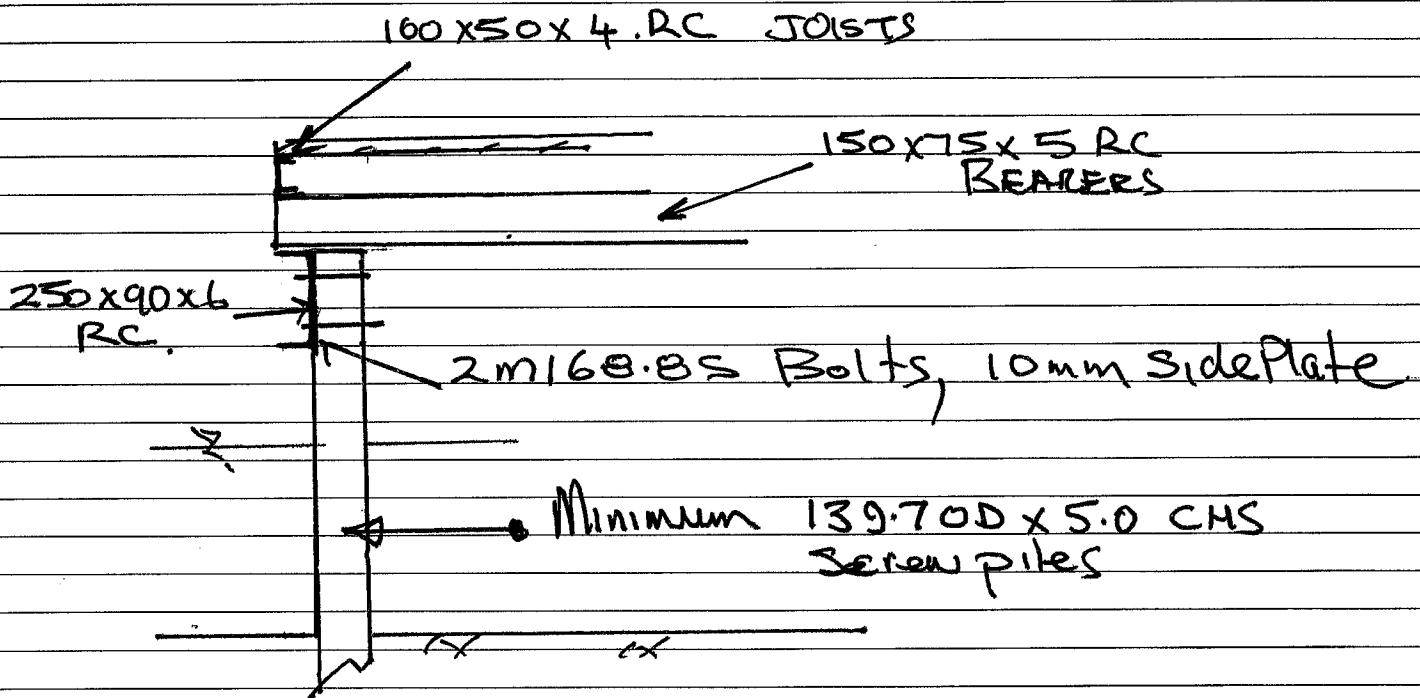
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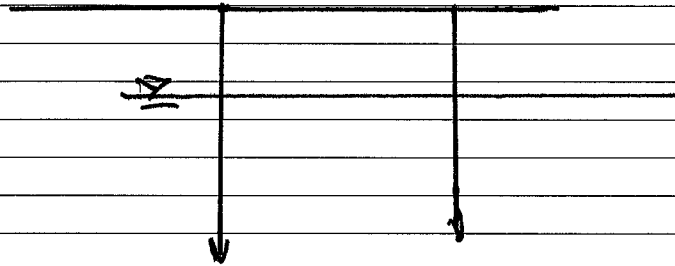
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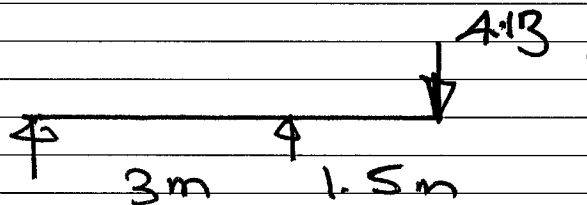
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CHECK CASE OF CANTILEVER BEAM



3m 1.5



Refer to ARIES attached.

$I_{reqd} = \frac{6.27 \times 10^6}{6}$

$\frac{11.6 \times 10^6}{6}$

250 x 250 x 6 RC

Cantilever 1.5m

76

Cantilever Bearer

09/02/17 13:20:28

SPANS AND EI'S

0.000 3.000 1.500

200E-03 200E-03 200E-03

LOADS

2 1 4.1 1.5

TOTAL SPAN LOADS (kN) for Int. SPANS, RH Cant

0.0 4.1

Unreduced MOMENTS @ Support Centre Lines

0.0 -6.2

Points of Contraflexure in Each Internal Span

LH End 0.000

RH End 3.000

CRITICAL SECTIONS FROM C/L OF SUPPORTS (M)

MOMENT 0.010 0.010

SHEAR 0.020 0.020

DESIGN +VE & -VE MOMENTS, REACTIONS & SHEARS

+VE MOMENTS -3

SUPP MOMENTS 0 -6

REACTIONS -2 6

SHEAR LEFT 0 2

SHEAR RIGHT 2 -4

DEFLECTIONS (M) at MID SPANS, RH Cant - ELASTIC

-1.74E+01 6.97E+01

GENERAL NOTES:

- G1 ALL DIMENSIONS RELEVANT TO SETTING OUT AND ON-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE ENGINEER'S DRAWINGS SHALL NOT BE SCALED.
- G2 DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART SHALL BE OVERSTRESSED UNDER CONSTRUCTION ACTIVITIES.
- G3 WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RELEVANT CURRENT S.A.A. CODES INCLUDING ALL AMENDMENTS AND THE LOCAL STATUTORY AUTHORITIES REQUIREMENTS.
- G4 THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCY TO BE REFERRED TO ENGINEER. ALL DIMENSIONS SHOWN ARE TO BE VERIFIED AT SITE. ENGINEERS DRAWING MUST NOT BE SCALED.

CONCRETE:

- C1 CONCRETE DESIGN STRENGTH (f'_c AT 28 DAYS) TO BE AS FOLLOWS -
 GRADE FOR
 GRADE FOR
 GRADE FOR
- C2 MAXIMUM SLUMP OF CONCRETE SHALL BE 65mm
- C3 REINFORCEMENT SYMBOLS:
 R DENOTES STRUCTURAL GRADE ROUND BARS
 S DENOTES STRUCTURAL GRADE DEFORMED BARS
 C DENOTES COLD WORKED BARS
 Y DENOTES DEFORMED TEMCORE BAR
 F DENOTES HARD DRAWN STEEL WIRE FABRIC
- C4 REINFORCEMENT SPLICES SHALL BE LAP SPLICES AS REQUIRED BY THE CURRENT CONCRETE CODE UNLESS NOTED IN THE DRAWINGS. FOR FABRIC, THE MINIMUM SPLICE SHALL BE 220mm MINIMUM WITH THE OVERLAP MEASURED BETWEEN THE OUTERMOST WIRES AND NOT LESS THAN THE PITCH OF THE SECONDARY WIRES.
- C5 CLEAR CONCRETE COVER TO REINFORCEMENT, UNLESS OTHERWISE NOTED, TO BE:
 BELOW GROUND: BEAMS, PEDESTALS AND STRIP FOOTINGS 65 WALLS 30 PAD FOOTINGS 75
 ABOVE GROUND: COLUMNS 40 BEAMS 25 INTERNAL SLABS 20 EXTERNAL SLABS 30
- C6 ALL REINFORCEMENT SHALL BE SUPPORTED IN ITS CORRECT POSITION SO AS NOT TO BE DISPLACED DURING CONCRETING ON APPROVED BAR CHAIRS AT 900mm MAXIMUM CENTRE BOTH WAYS.
- C7 PROVIDE 0.2mm POLYTHENE MOISTURE BARRIER THROUGHOUT UNDER ENTIRE SLAB ON GRADE.
- C8 CONCRETE SHALL BE PREVENTED FROM BONDING TO SUPPORTING BRICKWORK BY PROVIDING TWO LAYERS OF A SUITABLE MEMBRANE "MALTHOID" (OR SIMILAR). VERTICAL FACES OF CONCRETE SHALL BE KEPT FREE OF BRICKWORK BY PROVIDING 12mm THICKNESS OF BITUMINOUS IMPREGNATED "CANEITE", HIGH DENSITY CORK JOINT FILL, OR 3mm OF MALTHOID".
- C9 ALL CONCRETE SHALL BE PROPERLY COMPACTED BY MEANS OF APPROVED VIBRATORS.
- C10 CAMBER TO SUSPENDED SLABS AND BEAMS TO BE 5mm FOR EVERY 2500mm OF SPAN UNLESS OTHERWISE NOTED.
- C11 CONSTRUCTION JOINTS, WHERE NOT SHOWN, SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
- C12 FORMWORK SHALL NOT BE STRIPPED UNTIL 28 DAYS HAS ELAPSED FROM TIME OF POUR - UNLESS APPROVED OTHERWISE BY THE ENGINEER.
- C13 BRICKWORK MUST NOT BE BUILT ON CONCRETE SLABS OR BEAMS UNTIL FORMWORK, SUPPORTING SAME, HAS BEEN REMOVED.

STRUCTURAL STEELWORK:

- S1 THE CONTRACTOR SHALL PROVIDE AND LEAVE IN PLACE UNTIL PERMANENT BRACING ELEMENTS ARE CONSTRUCTED SUCH TEMPORARY BRACING AS IS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.
- S2 BUTT WELD END PLATES AND STIFFENERS TO SECTION FLANGES AND FILLET WELD TO WEBS. UNLESS OTHERWISE NOTED, ALL WELDS SHALL BE 6mm CONTINUOUS FILLET WELD, LAID DOWN WITH APPROVED COVERED ELECTRODE.
- S3 BOLTS SHALL BE BLACK BOLTS COMPLYING WITH RELEVANT CODE EXCEPT WHERE THE FOLLOWING DESIGNATIONS ARE MADE. H.S.B. HIGH STRENGTH BEARING BOLTS WITH THREAD EXCLUDED FROM THE SHEAR PLANE AND H.S.F.G. DENOTES HIGH STRENGTH, FRICTION GRIP BOLTS, BOTH COMPLYING WITH RELEVANT CODE.
- S4 CAMBER TO STRUCTURAL STEEL BEAMS, TRUSSES, PORTALS ETC. TO BE 5mm FOR EVERY 2000mm OF SPAN UNLESS OTHERWISE NOTED.
- S5 ALL STRUCTURAL STEELWORK BELOW GROUND TO BE ENCASED BY CONCRETE 75mm MIN ALL ROUND.
- S6 CONCRETE ENCASED STRUCTURAL STEEL TO BE ENCLOSED BY F41 MESH PLACED 25 CLEAR OF STEEL. ENCASING TO PROVIDE 50 MIN. COVER, 75 WHERE EXPOSED TO EARTH. ALL OTHER STEELWORK TO BE GIVEN ONE SHOP COAT OF APPROVED PAINT UNLESS OTHERWISE NOTED.

MASONRY:

- M1 MORTAR IN BRICKWORK SHALL BE 1:1:6 UNLESS OTHERWISE SPECIFIED.
- M2 MINIMUM COMPRESSIVE STRENGTH OF BRICK TO BE 30 MPa UNLESS OTHERWISE APPROVED.
- M3 MINIMUM COMPRESSIVE STRENGTH OF CONCRETE BLOCKS TO BE 12 MPa UNLESS OTHERWISE APPROVED.
- M4 ALL JOINTS IN BRICK AND/OR BLOCK WALLS TO BE IN ACCORDANCE WITH THE RELEVANT CODE AND GOOD TRADE PRACTICE.
- M5 CAVITY WALL TIES TO BE IN ACCORDANCE WITH THE CURRENT U.B.R. REQUIREMENTS.
- M6 ALL STEEL COLUMNS, MULLIONS AND HORIZONTAL SUPPORTS, PROVIDE 3.2 DIA TIES WELDED OR FIXED TO STEELWORK IN AN APPROVED MANNER AT 600 C/C.

FOUNDATIONS:

- F1 FOUNDATION MATERIAL TO BE APPROVED BEFORE POURING CONCRETE FOR SAFE BEARING CAPACITY OF:
 KPa FOR
 KPa FOR
- F2 ANY FILL USED SHALL BE A SELECT NON-EXPANSIVE MATERIAL CONTAINING NO PIECES LARGER THAN 75mm. FILL SHALL BE PLACED IN 150mm LAYERS AND UNIFORMLY COMPACTED USING PROPER EQUIPMENT AT LEAST 95% RELATIVE DENSITY AS PER