

A. GENERAL

1. THIS SET OF NOTES SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS OF THE ENGINEER. SPECIFIC NOTES AND DETAILS ON DETAILED DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES. THE ENGINEERS DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, CONSULTANTS AND SPECIALIST DRAWINGS. DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. ALL LEVELS ON DRAWINGS REFER TO THE TOP OF THE CONCRETE, STEEL ETC. UNLESS INDICATED OTHERWISE.
3. ALL FOUNDATIONS, FOOTINGS AND COLUMNS ARE SYMMETRICAL WITH RESPECT TO GRIDLINES, UNLESS INDICATED OTHERWISE.
4. DIMENSIONS OF BEAMS ARE GIVEN AS WIDTH x DEPTH (DEPTH OF BEAM INCLUDES SLAB THICKNESS WERE APPLICABLE.)
5. REFER TO RELEVANT SERVICES DRAWINGS FOR DRAINAGE DETAILS.
6. DESIGN LOADS: REFER TO DESIGN STATEMENT DESIGN DATA.
7. REFER TO MASS EARTHWORKS DRAWINGS FOR LAYERWORKS UNDER SURFACE BEDS.
8. ALL DIMENSIONS AND LEVELS TO BE CONFIRMED ON SITE BEFORE ERECTING OF FORMWORK OR CASTING OF CONCRETE.
9. DRAWINGS SHALL NOT BE SCALED, ONLY GIVEN DIMENSIONS TO BE USED.

10. JOINTS, INDICATED IN SLABS AND BEAMS, ARE ALSO TO BE CONSTRUCTED IN BRICK WALLS, SCREEDS AND FINISHES.

11. EXPANSION JOINTS FILLED WITH 10mm CLOSED CELL EXPANDED POLYETHYLENE STRIP UNLESS NOTED OTHERWISE.
12. PROVISIONS FOR PROPS UNDER SLABS AND BEAMS:
THE CONTRACTOR MUST ENSURE THAT BEAMS AND/OR SLABS HAVE SUFFICIENT STRENGTH AND/OR ARE ADEQUATELY PROPPED TO CARRY CONSTRUCTION LOADS FROM ABOVE- DISCUSS WITH ENGINEER.

13. STORAGE OF CEMENT: CEMENT SHALL NOT BE STORED FOR LONGER PERIODS THAN 6 WEEKS, WITHOUT THE APPROVAL OF THE ENGINEER.
14. WHERE EXISTING STEELWORK OR STRUCTURE IS BEING ADDED TO OR MODIFIED, ALL DIMENSIONS OF EXISTING STEELWORK OR STRUCTURE MUST BE CONFIRMED ON SITE.

B. EARTHWORKS

1. SITE TO BE CLEARED OF ALL VEGETATION AND TOPSOIL TO A MINIMUM DEPTH OF 200mm BELOW NATURAL GROUND LEVEL UNLESS NOTED OTHERWISE.
2. IN SITU MATERIAL TO BE COMPACTED AS PER CIVIL ENGINEER'S SPECIFICATIONS.
3. SEE SEPARATE INSTRUCTIONS FOR SOIL IMPROVEMENT WHERE REQUIRED.

C. FOUNDATIONS

1. FOUNDATION EXCAVATIONS TO BE INSPECTED BY THE ENGINEER PRIOR TO THE CASTING OF THE BLINDING LAYER. IF THE FOUNDING MATERIAL IS NOT APPROVED BY THE ENGINEER, THE CONTRACTOR IS TO EXCAVATE TO A LEVEL AS APPROVED BY THE ENGINEER. LEVELS ARE TO BE MADE UP WITH MASS CONCRETE, UNLESS OTHERWISE SPECIFIED.
2. THE ENGINEER SHALL BE NOTIFIED IN GOOD TIME (24 HOURS) TO INSPECT ALL FOUNDATIONS PRIOR TO CASTING OF FOOTINGS.
3. DESIGN ALLOWABLE BEARING PRESSURE AS PER GEOTECHNICAL REPORT RECOMMENDATIONS.
4. 50mm BLINDING LAYER TO BE PROVIDED UNDER ALL COLUMN FOUNDATIONS UNLESS INDICATED OTHERWISE.
5. LIGHTNING PROTECTION & EARTHING TO BE PROVIDED IN ACCORDANCE WITH ELECTRICAL ENGINEERS DETAILS, PRIOR TO THE PORING OF CONCRETE.
6. EXCAVATIONS SHALL BE BACKFILLED WITH G5 OR BETTER MATERIAL. COMPACTED IN 150mm THICK LAYERS TO 93% OF MOD AASHTO DENSITY @ -1% TO +1.5% OF OPTIMUM MOISTURE CONTENT OR SAND TO 100% MOD AASHTO.
7. BACKFILL AROUND COLUMNS AND WALLS TO COMMENCE EVENLY.
8. QUALITY CONTROL TESTS (DENSITY TESTS) SHALL BE CARRIED OUT IN THE COMPACTED FILL ABOVE THE FOOTINGS AND UNDER SURFACE BEDS.
9. SOIL POISONING TO ARCHITECTS SPECIFICATIONS.

D. BACKFILLING

1. ALL BACKFILLING BEHIND RETAINING WALLS, UNDER STAIRS, JOCKEY SLABS AND IN TRENCHES SHALL BE G5 MATERIAL COMPACTED IN 100mm LAYERS TO 93% MOD AASHTO DENSITY OR SAND TO 100% MOD AASHTO.
2. RETAINING WALLS ATTACHED TO CONCRETE SLABS AT THE TOP, TO HAVE BACKFILLING BEHIND THE WALL PLACED TO A MAXIMUM OF 1/3 THE HEIGHT PRIOR TO THE FLOOR BEING CAST, AND BACKFILLING COMPLETED ONLY 4 DAYS AFTER CASTING THE TOP SLAB.
3. ALL MATERIAL USED FOR BACKFILLING OR FILL IS TO BE TESTED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
4. THE CONTRACTOR SHALL PROVIDE AT LEAST ONE DENSITY TEST FOR 50m² WITH THE MINIMUM NUMBER OF TESTS PER AREA BEING 3.
5. DENSITY TESTS SHALL BE DONE FOR AT LEAST EVERY 900mm OF BACKFILLING.
6. ALL PIPED SERVICES AND CABLES MUST BE LAID DURING OR SOON AFTER THE CONSTRUCTION OF COLUMN AND SHAFT FOOTINGS.
7. SOILCRETE WITH 5% CEMENT CONTENT BY VOLUME TO BE CAST IN CONFINED BACKFILLING SPACES WHERE WIDTH IS LESS THAN 600mm.
8. UNLESS OTHERWISE SPECIFIED, ALL FILL UNDER SURFACE BEDS SHALL BE APPROVED CHOICE MATERIAL AS SPECIFIED BY CIVIL ENGINEER

E. SURFACE BEDS

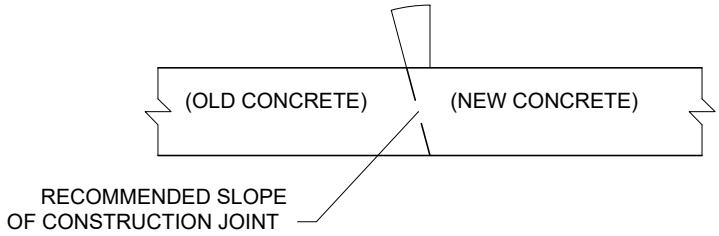
1. FOR DETAILS OF DAMP PROOF MEMBRANE UNDER ALL SLABS ON GROUND SEE ARCHITECTS DRAWING.
2. ALL CONCRETE SURFACE BEDS WITH MESH REINFORCING SHALL HAVE APPROVED SPACER BLOCKS OR STOOLS TO EFFECT THE SPECIFIED TOP AND BOTTOM COVER.
3. MESH TO SURFACE BED AS FOLLOWS (UNLESS NOTED OTHERWISE ON SURFACE BED DRAWING):
- SLAB THICK MESH REF. - U.N.O
<=100mm - 193
110-120 - 245
125-140 - 311
150-200 - 395
4. MINIMUM LAP LENGTH OF MESH REINFORCEMENT IS 300mm OR BAR DIAMETER X50 MM
5. REFER TO ARCHITECTS DETAILS FOR TOP SURFACE FINISH
6. SAWN JOINTS SHALL BE PROVIDED WITHIN 24 HOURS AFTER CASTING OF CONCRETE.
7. JOINTS NOT TO BE FURTHER APART THAN 30x THICKNESS OF SLAB IN EITHER DIRECTION.U.N.O
8. NO SAW JOINTS SHALL BE CUT IN TWO DIRECTIONS.
9. SAWN JOINTS SHALL BE CUT AT RIGHT ANGLES TO CONSTRUCTION JOINTS IN ALL CASES UNLESS NOTED OTHERWISE.

F. CONCRETE

1. ALL CONCRETE WORK TO BE CARRIED OUT IN ACCORDANC R WITH SABS 1200 G.
2. CONCRETE GRADES (UNLESS SHOWN OTHERWISE ON RELEVANT CONCRETE DRAWING):
- | | |
|----------------------------------|------------|
| MASS CONCRETE BLOCK | 25MPa/19mm |
| PILE CAPS, BASES & FOUNDATIONS | 30MPa/19mm |
| SURFACE BED | 30MPa/19mm |
| SUSPENDE SLABS, BEAMS & STAIRS | 35MPa/19mm |
| COLUMNS & WALLS | 35MPa/19mm |
| BASEMENT SLABS & RETAINING WALLS | 35MPa/19mm |
3. MINIMUM CONCRETE COVER OVER REINFORCEMENT (UNLESS SHOWN OTHERWISE ON RELEVANT CONCRETE DRAWING, REINFORCEMENT DRAWING OR BENDING SCHEDULES):
- | | |
|---------------------------------|---|
| GROUND FLOOR SLAB | - 40mm BOTTOM
30mm TOP |
| SLABS AND STAIRS | - 25mm TOP
25mm BOTTOM |
| BEAMS | - 30mm OVER STIRRUPS |
| COLUMNS | - 30mm OVER STIRRUPS OR
40mm OVER VERTICAL REINFORCEMENT |
| SHEAR WALLS | - 25mm |
| FOOTINGS / BASES | - 50mm BOTTOM & SIDES
50mm TOP |
| RETAINING WALLS | - 40mm EXTERNAL, UNDER GROUND LEVEL
25mm INTERNAL |
| SURFACE BEDS | - 30mm TOP |
| SUSPENDE GROUND FLOOR AND BEAMS | - 30mm INTERNAL,40mm EXTERNAL |
| MASSIVE CONCRETE WALL | - 60mm BOTH FACES |

NOTE: THE TERM EXTERNAL USED ABOVE DEFINES ALL CONCRETE ELEMENTS THAT ARE EXPOSED TO THE WEATHER OR SOIL, WHEREAS INTERNAL DEFINES ALL CONCRETE ELEMENTS WITHIN THE BUILDING THAT ARE NOT EXPOSED TO SOIL OR THE WEATHER.

4. REINFORCEMENT SHALL BE INSPECTED BY THE ENGINEER ONLY AFTER IT HAS BEEN COMPLETELY FIXED IN POSITION, FORMWORK IS CLEAN, SPACES ARE PLACED IN POSITION AND AFTER THE CONTRACTOR HAS CERTIFIED IT CORRECT.
5. WELDING OF REINFORCEMENT IS NOT ALLOWED, UNLESS APPROVED BY THE ENGINEER IN WRITING.
6. CONSTRUCTION JOINTS:
(a) NO HORIZONTAL JOINTS ARE ALLOWED IN PILE CAPS, BEAMS OR SLABS.
(b) CONSTRUCTION JOINTS SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH THE SPECIFICATION.
(c) CONSTRUCTION JOINTS IN RETAINING WALLS AND SLABS SHALL BE DISCUSSED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
(d) CONSTRUCTION JOINT IN SLAB:
THE SURFACE OF THE OLD CONCRETE SHALL BE BRUSHED CLEAN WITHIN 24 HOURS AFTER CASTING TO EXPOSE THE AGGREGATE AND WETTED THOROUGHLY BEFORE PLACING NEW CONCRETE.



7. ALL PIPES, SLEEVES CONDUITS ETC. PASSING THROUGH AN EXPANSION JOINT SHALL BE PROVIDED WITH AN APPROVED FLEXIBLE COUPLING.
8. THE CONTRACTOR SHALL ENSURE THAT ALL SLEEVES, OPENINGS AND EMBEDDED ITEMS FOR SERVICES HAVE BEEN PLACED AND PROVIDED FOR ACCORDING TO THE LATEST DRAWINGS OF ALL DISCIPLINES PRIOR TO CASTING OF CONCRETE. RAINWATER DOWNPIPES TO BE CAST INTO CONCRETE STRUCTURE ARE TO COMPLY WITH SABS 967-1987.
9. DIMENSIONS OF BEAMS ARE INDICATED AS WIDTH x DEPTH. (DEPTH OF BEAM INCLUDES SLAB THICKNESS WHERE APPLICABLE).
10. NO KICKERS TO BE CAST FOR COLUMNS.
11. STRUCTURAL FLOOR SLABS AND BEAMS SHALL BE RESHORED FOR AT LEAST TWO LEVELS BELOW THE PROPPED SLAB, TO BE DISCUSSED WITH ENGINEER.
12. REFER TO ARCHITECT'S SPECIFICATIONS AND DRAWINGS FOR FINISHES, GROOVES, CHAMFERS, ETC. ALL SMOOTH SURFACE CONCRETE EDGES SHALL HAVE 25x25 CHAMFERS, UNLESS SPECIFIED OTHERWISE.
13. POURING HEIGHT OF CONCRETE MAY NOT EXCEED 3.5m UNLESS AUTHORIZED BY ENGINEER.
14. TWO SETS OF THREE 150mm CONCRETE CUBES TO BE TAKEN FROM EACH DAYS CASTING OF EACH TYPE OF CONCRETE. IF MORE THAN 40m³ OF A CONCRETE TYPE IS CAST PER DAY, TWO SETS OF THREE 150mm CONCRETE CUBES SHALL BE TAKEN FOR EVERY 40m³ OF CONCRETE, OR PART THEREOF, THESE CUBES SHALL BE TESTED BY AN APPROVED LABORATORY, THE FIRST SET AFTER 7 DAYS, THE SECOND AFTER 28 DAYS.

15. CURING AND PROTECTION OF CONCRETE SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH THE SPECIFICATION (REFER TO CLAUSE 5.5.8 OF SABS 1200 G).
16. NO BRICKWORK TO TAKE PLACE ON PROPPED SLABS.
17. REMOVAL OF FORMWORK IN NORMAL TO HOT CONDITIONS:
- | | |
|---|-----------------|
| BEAM SIDES, WALLS & UNLOADED COLUMNS: | 2 DAYS |
| SLABS & QUICKSTRIP COFFER SLABS WITH PROPS LEFT UNDER : | 4 DAYS |
| BEAM SOFFITS & COFFER SLAB WITH PROPS LEFT: | 7 DAYS |
| SLAB PROPS: | 10 DAYS |
| POST TENSIONED SLAB PROPS: | AFTER STRESSING |
18. CONCRETE FOR ANY WATER RETAINING TANKS, PIT, ETC SHALL COMPLY WITH SPECIFICATION FOR AQUEOUS LIQUID RETAINING STRUCTURES.

MASONRY

1. LAYOUT OF ALL BRICKWORK TO ARCHITECT'S DRAWINGS.
2. ALL LOAD BEARING BRICK WALLS TO HAVE A MINIMUM CRUSHING STRENGTH OF NOT LESS THAN 14 MPa (NFX), LAID ON A CLASS II MORTAR AS SPECIFIED IN SABS 0164 PART 1-1980 (CODE OF PRACTICE FOR MASONRY). REFER TO DRAWINGS FOR SUPPORT DETAILS OF LOAD BEARING WALLS, ALL WALLS BELOW DPC TO BE NFX (14MPa).
3. BRICKFORCE:
MINIMUM DIAMETER OF BRICKFORCE - 2,8mm
YIELD STRENGTH - 485 N/mm²
LAP LENGTH - 250mm
4. BRICKFORCE PLACING:
LOCATED IN EVERY 3RD LAYER THROUGHOUT,
LOCATED IN EVERY LAYER FOR 5 COURSES
DIRECTLY OVER OPENINGS OR THE
TOP 5 COURSES DIRECTLY BELOW THE TOP
OF THE LOADBEARING WALL.
5. APPROVED BUTTERFLY WALL TIES TO BE USED AT THE FOLLOWING MAXIMUM SPACINGS IN CAVITY WALLS :
- | | |
|------------|---------|
| HORIZONTAL | : 750mm |
| VERTICAL | : 340mm |
6. ALL BEAMS AND LINTELS TO HAVE A MINIMUM 230mm BEARING. ALL LINTELS TO BE P5 OR GREATER STRENGTH.
7. NO BRICKWORK OTHER THAN THE DESIGNATED LOADBEARING SHALL BE TAKEN TO THE UNDERSIDE OF CONCRETE SLABS OR BEAMS UNTIL ALL FRAMEWORK PROPS HAVE BEEN REMOVED A LAYER OF 20mm EASILY COMPRESSIBLE MATERIAL IS PLACED BETWEEN THE TOP OF BRICK WALL AND CONCRETE SOFFIT.
8. 2 LAYERS OF DPC OR 2PLY MALTHOID TO BE PLACED ON TOP OF ALL LOAD BEARING BRICKWORK UNLESS SHOWN OR INSTRUCTED OTHERWISE.
9. ALL JOINTS FINISHED/SEALED TO ARCHITECTS DETAILS.
10. WHERE JOINTS ARE SHOWN IN CONCRETE, SIMILAR JOINTS SHALL BE CONSTRUCTED IN BRICK WALLS, SCREEDS AND FINISHES.
11. LOAD BEARING WALLS SHOWN AS FOLLOWS:



H. STRUCTURAL STEEL

1. APPLICABLE SPECIFICATION:
SPECIFICATION FOR STRUCTURAL STEELWORK
2. ALL RELEVANT CONCRETE DIMENSIONS SHALL BE CHECKED ON SITE BEFORE MANUFACTURING OF STRUCTURAL STEEL MAY COMMENCE.
3. ALL WELDING AND SURFACE TREATMENT SHALL BE DISCUSSED. INSPECTED AND APPROVED BY ENGINEER. ONLY CERTIFIED WELDERS SHALL BE USED.
4. WORKSHOP DETAIL DRAWINGS SHALL BE CHECKED BY ENGINEER BEFORE MANUFACTURING OF STRUCTURAL STEEL MAY COMMENCE.
5. ALL WELDS SHALL BE 6mm FILLET WELDS, UNLESS INDICATED OTHERWISE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL ALL ELEMENTS ARE FIXED. CONTRACTOR TO ENSURE THAT TRUSSES ARE PROPERLY BRACED AND ALIGNED DURING AND AFTER CONSTRUCTION.
7. SEE STRUCTURAL STEEL SPECIFICATION FOR MINIMUM PAINT SPECIFICATION.
8. ALL HOT-ROLLED AND COLD-FORMED STEEL SHALL HAVE A GUARANTEED MINIMUM YIELD STRESS OF 350 MPa and 225 MPa RESPECTIVELY. THE CONTRACTOR SHALL PROVIDE TEST CERTIFICATES TO VERIFY THE STEEL GRADE.
9. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS UNLESS NOTED OTHERWISE.
10. ALL GUSSET PLATES SHALL BE MINIMUM 8mm THICK UNLESS NOTED OTHERWISE.
11. EDGE DISTANCE FOR BOLTED CONNECTIONS SHALL BE IN ACCORDANCE WITH SABS 0162 UNLESS NOTED OTHERWISE.
12. OMIT PAINT WITHIN 50mm OF FIELD WELDED CONNECTIONS.

13. SHOP SPLICING OF MEMBERS WILL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN ENGINEER. APPROVED SPLICES SHALL HAVE A CAPACITY OF 100% OF THE SPLICED MEMBER AND ACCEPTANCE SHALL BE SUBJECT TO THE RESULTS OF NON-DESTRUCTIVE TESTS. COST OF SPLICING AND TESTING SHALL BE BORNE BY THE FABRICATOR.
14. HOLD OUT-TO-OUT DIMENSIONS EXACT FOR ALL CONTINUOUS RUNS OF BEAMS TO AVOID AN ACCUMULATIVE ERROR.
15. GROUT:
(a) NON-METALLIC, NON-SHRINK GROUT TO BE APPROVED BY ENGINEER BEFORE USE.
(b) ALL GROUTING UNDER MECHANICAL EQUIPMENT IS TO BE DONE BY OTHERS.
GROUTING UNDER STRUCTURAL STEEL PLATES BY CIVIL CONTRACTOR.
16. HOT-DIP GALVANISING OF STRUCTURAL STEEL WHERE SPECIFIED SHALL BE DONE ACCORDING TO THE REQUIREMENTS OF SABS 763 (HEAVY DUTY: 610g/m²).
17. ALL STRUCTURAL STEEL UNDER UNFINISHED FLOOR LEVEL TO BE PAINTED WITH 2 LAYERS EPOXY TAR OR TO BE COVERED WITH 25MPa CONCRETE NOT LESS THAN 100mm THICK.

GENERAL NOTES:

1. THESE NOTES ARE SUPPLEMENTED BY AND SHALL BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS.
2. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL THE RELEVANT ENGINEERING AND ARCHITECTURAL DRAWINGS.
3. DRAWING MUST BE CHECKED FOR ANY ERRORS, OMISSIONS AND AMBIGUITIES AND REFERRED TO THE ENGINEER FOR CLARIFICATION PRIOR TO COMMENCING CONSTRUCTION.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. ALL LEVELS ARE IN METRES.
6. FIGURED DIMENSIONS TO BE USED IN PREFERENCE TO SCALING.

ASSOCIATED DRAWINGS

REVISION	DATE	INITIAL	COMMENT

EMPLOYER:



SOUTHERN AFRICAN
DEVELOPMENT COMMUNITY

PROJECT:

SADC STANDBY FORCE
REGIONAL LOGISTICS DEPOT
AT RASESA
BOTSWANA

ENGINEER:



Bothakga
Burrow

Engineering Solutions Today, For Tomorrow
Unit No. 24 Kgale Mews, Plot 115, Millenium Office Park, Gaborone
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BUILDING:

ADMINISTRATION BLOCK

DRAWING TITLE:

GENERAL NOTES

DESIGNED	L.M.	DRAWN	GN
DATE	JUNE 2021	DATE	JUNE 2021
CHECKED	L.M.		
DATE	JUNE 2021	SCALE	AS SHOWN

DRAWING No.

BL 813/02/S01

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