General Notes. 01

This drawing is the confidential property of Calibre Consulting CC, and may not be disclosed to a third party, copied or reproduced without permission.

The contractor is to keep a full set of drawings on site. These are to be kept updated as per the latest drawing register issued.

This drawing is to be read in conjunction with all relevant Architectural, Civil and Structural drawings.

Construction is to be as per this drawing, the general notes, project specifications, or SANS 2001 Series of specifications.

The contractor is responsible for the correct setting out of buildings on site with respect to boundary pegs and building lines.

The contractor is to verify all levels and dimensions on site.

Any errors or discrepancies are to be reported prior to construction.

The contractor is to identify and where relevant, expose and protect all underground services on site.

Do not scale drawings, but use figured dimensions on large scale details where applicable. If in doubt, ask.

Should the Engineer be required on site 24 hours notice is required.

Material Handling and Storage Notes. 06

Units shall be unloaded and handled to prevent chipping and breakage. They shall be stacked on prepared level areas to ensure the stack is stable. The top of each stack shall be kept covered during rainy weather and the whole protected from staining and marking.

Cement stored on site shall be adequately protected against moisture and other factors that may cause it to deteriorate.

Fine and course aggregates from different sources shall be stored separately. Contamination by foreign matter shall be avoided.

Reinforcement, metal ties, anchors and masonry accessories shall be protected from contact with the soil and before placing shall be free from loose millscale and other coatings that will adversely affect bond. Reinforcement shall not be permanently distorted.

Material that has deteriorated, or has been contaminated or does not comply with the specifications shall not be used in the construction of the works.

Demolition Notes. 11

1. Before breaking any structural elements the contractor is to ensure that all affected structure is adequately propped and stable.

2. Cutting of reinforcing may only be done under the direction of the Engineer unless specifically noted on the drawings.

3. Over breaking shall be repaired as directed by the Engineer.

4. The contractor is to provide adequate propping to the structure for access onto suspended slabs with heavy demolition equipment.

5. The Engineer is to approve all propping before access is allowed.

6. Adequate protection must be provided to remaining structure before demolitions may proceed.

7. Demolition method statements to be approved by the Engineer before commencement of works.

8. The perimeter of all proposed openings in suspended slabs to be propped during demolitions.

9. Saw cutting, within cover depth, is required to all elements to be made good so as to provide neat joins between new and old concrete, (i.e. suspended slabs).

10. Rubble from demolitions to be used as fill only as directed by the Engineer, else all excess rubble from demolitions is to be removed from site.
No stockpiling of rubble will be allowed on suspended slabs or against walls without the Engineer's approval and adequate temporary support.

11. Explosives may not be used unless local authority regulations are complied with. Post- tensioned slabs are to be demolished by a specialist contractor or under the Engineer's supervision.

12. A photo survey is to be done on all surrounding properties and structures prior to the commencement of demolitions if explosives are to be used.

13. Adequate protection and barriers must be erected to protect the public and public property. This is to comply with all local authority regulations.

14. Electricity, gas and water mains are to be disconnected prior to demolitions. All other services are to be identified and adequately protected (i.e. the plugging of sewer and storm water drains).

15. The local authority demolition permit must be obtained prior to demolition.

General Civil Notes. 02

Services:

1. All existing services shown on the drawings are to be located and identified, and where necessary, exposed and protected to suit.

2. The contractor is to keep all piping free of rubble and building materials.

3. All services shall be connected into the existing service runs or new provided by others.

4. Pipes are to be bedded to class B (SANS 2001-DP1) and trenches back-filled to 93% mod AASHTO.

5. Pipes that will be built over are to be exposed and encased in concrete as shown.

6. Refer to the architect's notes w.r.t. drainage requirements.

Storm water:

1. Storm water drainage shall be as indicated on stormwater drawing otherwise be such that run-off drains away from the building perimeter and that no ponding is possible on this stand.

2. The grade of fall for Storm Water is to be a minimum of 1:50 (2,0%) for paved areas.

Concrete Notes. 07

All concrete work shall comply with the requirements of SANS 2001-CC1, i.e. placing, curing, stripping, etc., and specific notes for finishes, tolerances, strengths and cover.

Curing to be done for 3 days minimum.

No loading i.e. brick walls, shall be imposed on floor slabs until the slabs have reached their 14 day strength.

Unless otherwise indicated all reinforced (except post-tensioned) concrete members are to have the following upward camber:
Cantilevers Span / 180
Beams at Midspan Span / 400

All slabs are to be propped through two floors during casting. Construction loads are not to exceed design live loads. The supports of the lower floor slab are to be depropped to allow slab to deflect, and retightened before casting of the upper floor slab.
Roof slabs to be propped through to ground floor.

Extenders, i.e. PFA and slagment, or other admixtures may only be used if approved by the engineer.

Where a slab and down stand beam are cast monolithically, beams must be cast and vibrated first, and then re-vibrated when casting the slab to avoid differential shrinkage.

Test cubes must be made for every new pour, and results must be submitted to the engineer. A minimum of 6 test cubes must be made, 3 to be crushed at 7 days and 3 at 28 days.

No concrete shall be cast before reinforcement has been checked and approved by the engineer. The minimum splice length is to be 50 x bar diameter.

Prior to any inspection, a minimum of 24hrs written notice shall be given to the engineer.

Also refer to Project Specific Concrete Notes, and Reinforcing Notes.

Contractor to provide method statement for surface bed curing.

Project Specific Concrete Notes. 12

Concrete layout drawings must be read in conjunction with architectural drawings and any discrepancies must be brought to the attention of the engineer immediately.

Concrete cube strengths at 28 days shall be as follows (u.o.s.):
Blinding 10 MPa / 19mm
Foundations 25 MPa / 19mm
Surface Bed 25 MPa / 19mm
Suspended Slab 25 MPa / 19mm
Staircase 25 MPa / 19mm

All columns are to be placed symmetrically on grid lines unless otherwise shown.

The applicable degree of accuracy is Degree II. SANS 2001 CC1.

All exposed concrete work to have a smooth off shutter finish.

For reinforcing details see bending schedules and fixing layouts.

All slabs finishes to be smooth steel float u.o.s.

For details of waterproofing of roof slabs see Architects specifications.

Reinforcement cover is 50mm u.o.s.. Minimum splice length is 50 x bar diameter.

Propping to be to the engineers' approval, but propping / scaffolding remains the responsibility of the contractor.

Structural drawings must be read in conjunction with the Architectural drawings and any discrepancies must immediately be brought to the attention of the Engineer.

Foundation Notes. 03

Depth of foundations to be a minimum of 600mm below natural ground level (or bulk platform, as shown) u.o.s. .

All foundation excavations must be inspected and approved in writing by the Engineer before any concrete or blinding is cast.

Deeper excavation instructed by the Engineer for founding purposes is to be backfilled with mass concrete (10 MPa / 19mm) up to underside of foundations.

Foundations which are over-excavated are to be filled with mass concrete mass concrete (10 MPa / 19mm) at contractor's expense.

All excavated soil is to be removed and stockpiled away from the excavations.

A 50mm thick blinding layer of mass concrete (10MPa / 19mm) shall be cast under all reinforced bases, unless otherwise approved. No blinding layer need be cast for mass concrete strip footings for brickwork.

All excavations are to be level. Steps in level to be approved by the engineer on site.

All footings are to be placed symmetrically below columns and brickwork unless otherwise shown.

Concrete for strip footings to be 20 MPa minimum at 28 days u.o.s. .

Reinforcement cover is to be 50mm minimum. An extra 25mm cover is to be provided when reinforced concrete is cast against excavations.

No concrete shall be cast before reinforcement has been checked and approved by the engineer.

Trenches to be kept clean of loose soil and other material.

Excavations are to be kept free of standing water, and re-inspected in the event of these being saturated.

Brickwork Notes. 08

The minimum crushing strength of all load-bearing brickwork shall be 17MPa.

The mortar shall be Class II, and have a minimum crushing strength in accordance with table 1 SANS 0164 Part I - 1980; ie minimum of 5 MPa for site tests.

Load bearing brickwork shall be reinforced with an approved brick-force in every fourth layer. Brick force in every course for four courses above lintels.

All brickwork shown is non load bearing unless otherwise indicated.

All brick anchors, wall ties and straps shall be hot dipped galvanized. All supporting angles and brackets to be hot dip galvanized otherwise treated to specifications for structural steel.

V-joints are to be made in plaster where brickwork and concrete join.

Non-load bearing brickwork may not be built closer than 20mm from the soffit of beams or slabs unless otherwise shown.

Wall ties in cavity walls and brick retaining walls shall be of the vertical twisted type as in SANS 0164 Part 1 - 1980 Figure 1 or similar approved type, placed every fourth layer vertically and at 500 c/c horizontally.

Bricks to be wetted before use and placed in accordance with standard practice.

Wall joints must be repeated in all tiled finishes.

Brick movement joints to be formed at 6m centers for cement brickwork, and at 9m centers for clay brickwork, u.o.s

Brick walls are to be tied to the concrete columns with 30x1.0x500 long galvanized hoop iron ties at every 4th course. Fix the ties to the columns with two "Hilti" shot studs each.

For reinforced brickwork cavity walls see specifications.

Designer Notes Per Construction Regulations 13

1. Geotechnical Information:
None provided. Assume 200 kPa at shallow depth.

2. Design Loading:
Suspended slabs have been designed for the following live loads.
Offices 300 kg/m2.

3. Construction Sequence
The envisaged construction sequence is as follows:

a. Demolition.
b. Foundations.
c. Foundation Brickwork.
d. Surface Bed.
e. Brickwork.
f. Suspended slabs.
g. Brickwork.
h. Roof

Should this sequence be varied, the Engineer is to be notified for his consent.

Bulk Earthworks Notes. 04

All earthworks to be in accordance with SANS 2001-BE1 and 2001-BS1, including latest revisions.

The DATUM : levels are to tie in with existing & be finalized on site.
All new levels shown are finished levels & indicated as

Slope of mass excavation = 1 : 1 (vert : horiz), unless otherwise specified. Any excavation greater than 1.5m shall be shored or have adequate batters.

150mm Topsoil is to be stripped and stockpiled on site for reuse if required, else removed.

Fill in terrace to be compacted in 150mm layers to 93% Mod. AASHTO density at optimum moisture content.

Rock material, greater than 75mm diameter, will not be suitable as fill material.

The contractor shall submit indicator test results, i.e. grading analyses, Mod AASHTO moisture density compaction relationships, and untreated CBR tests, to the engineer for approval, prior to importation of material for filling.

All construction, testing, tolerances and materials as per SANS 2001 series of specifications.

An "As-Built" survey must be provided after completion of the bulk earthworks contract, before handover can be accepted.

The contractor shall submit density test results to the Engineer for approval.

The existing ground levels as indicated on the layout must be confirmed, by the contractor, before construction commences.

Contractor to confirm positions of Erf pegs with land surveyor before construction commences.

Extent of earthworks must be restricted to the inside of the Erf.

Bulk earthworks levels indicated are top of subgrade levels for platforms and roadways.

Structural Steel Notes. 09

All structural steelwork shall be fabricated and erected in accordance with SANS 2001-CS1.

Welds shall conform to SANS 0167 - 1984 and 044 Specifications.

All dimensions shall be checked on site before shop drawings commence. Any discrepancies shall be brought to the attention of the Engineer.

A complete set of shop drawings shall be submitted to the Engineer for approval before fabrication commences.

All hot rolled steelwork shall be Grade 350 W or S355J.
Cold formed sections can be Commercial Grade steel.
Hollow sections to have a minimum yield stress fy = 250 MPa.

All structural bolts shall be Grade 4.6 unless otherwise noted.
Holding Down Bolts and washer plate material to be Grade 43.
Holding down bolt shanks to be degreased before embedding in concrete.

All welding to be 6mm fillet weld unless otherwise shown.

No site flame-cutting or welding is permitted.

Where temporary bracing or propping is necessary, the contractor shall be responsible for the design, erection, maintenance and removal (where necessary) of such supports. If splices in trusses are required because of transport, proposal of this shall be submitted to the Engineer at an early stage for written approval.

Where applicable, grout shall be provided under base plates before any primary loads are applied to the structure.

Apply corrosion protection and painting to specification.

Damaged areas of paint shall be made good on site in accordance with SABS 0120

Structural steel below ground level should be painted two coats of epoxy coal tar before backfilling.

Precast Slabs. 15

Floors will be supplied on a design, supply and installation basis by the contractor.

The floors must be able to carry the following loads:
Brickwork as per Architect's layouts
Imposed Finishes Load of 1,0 kPa.
Imposed Live Load of 3.0 kPa.

All loads shown above are service loads.

Surface Bed Notes. 05

Provide a 10mm isolation joint with Polyurethane sealant (10 x 10 mm) around all columns.

Surface beds to be saw-cut as shown. Saw-cut joints are to be done as soon as the concrete is firm enough not to be torn or damaged by the blade, usually between 6 to 12 hours after casting.

All joints must be repeated in the finishes.

Surface beds in the office building to be cast on 250micron plastic sheeting (d.p.m.) u.o.s.

Backfilling below surface beds is to be in granular material, evenly compacted to a minimum of 93% mod. AASHTO at optimum moisture content.

Surface beds are to be struck off to receive screed and finishes by architect or be finished to a smooth steel float finish where shown.

No additional joints will be allowed, but a keyed construction joint may be substituted at any given saw-cut position should there be an interruption in casting.

Curing is required for a minimum of 3 days. Contractor to provide method statement for surface bed curing.

Special care to be taken to avoid shrinkage cracks if casting in hot or windy conditions.

Standard welded mesh fabric: All mesh to comply with SABS 1024 & British Standard 4482 having a minimum yield point of 485MPa.

Reinforcing Notes. 10

Bending of reinforcement shall be in accordance with SANS 82.

Reinforcement shall be fixed to comply with the tolerances as specified in SANS 2001-CC1 and / or the project specification.

The minimum lap length shall be 50 diameters.

For reinforcing schedules refer to bending schedule register.

The contractor shall inspect and approve the fixed reinforcement before the engineer is notified. All reinforcement shall be inspected and approved in writing by the engineer before casting of concrete may commence. Prior to any inspection, a minimum of 24hrs written notice shall be given to the engineer.

No heat treatment or cutting of steel without the written approval of the engineer shall be allowed.

The contractor shall prevent damage to 'dpm' under surface beds during fixing of reinforcing or other operations. The cost to repair or replace waterproofing materials shall be at the contractor's expense.

Minimum concrete cover to reinforcing, except where noted otherwise on bending schedules, is as follows:
Foundations 50mm & 75mm
Bund walls 50mm
Plinths 50mm

Reinforcing is to be stored so as to prevent distortion and contamination.

Placed reinforcing is to be clean and free of oil, scale, concrete splash or other coatings.

Standard welded mesh fabric: All mesh to comply with SANS 1024 & British Standard 4482 having a minimum yield point of 485MPa.

Corrosion protection & painting. 15

Unless otherwise specified structural steelwork is to be treated as follows :
Red oxide primer to be applied on a clean, rust-free surface.
Apply 1-coat universal undercoat before erection.
Final coat of enamel, colour to Architect's specification.

Structural steel below ground level should be painted two coats of epoxy coal tar before backfilling.

The angle irons supporting brick walls must be H.D. Galv' or painted as follows:
Blast clean steelwork to SA 2.5 of SIS 05-59-00 (or alternative to be approved by Engineer).
- Apply 1-Coat PA 10 etch primer.
- Apply 1-Coat Alkyd undercoat.
- Apply 1-Coat Alkyd top coat.

RWDP's in steel posts to be etch primed inside and out, then a coat of epoxy tar internally. Externally to match elsewhere.
ie. 2 coats enamel colour to Architects specification.

Sheeting Specification.

All sheeting to architects specification.

GENERAL NOTES:-

No	Date	Revisions	Drawn
B	17/07/2018	PRECAST SLAB NOTES ADDED	P.A.S.
A	03/10/2017	FOR TENDER	P.A.S.

CALIBRE.
Civil and Structural Engineering
011 463 2393 :Tel info@calibrecse.co.za 011 463 2347 :Fax

Client
THE UNIVERSITY OF THE WITWATERSRAND.

Architect
LEMONpebble architects

Project
ADDITIONS TO SBIMB PHASE 2

Drawing Title
STANDARD NOTES

	Designed	Date	Dwg/Size
Designed	J.B.	03/10/2017	A1
Drawn	P.A.S.	03/10/2017	Scale NO SCALE
Checked			
Approved			Status T

0986 - DRG - STR - A - 099

Revision: A B

Copyright Reserved