



FLOOR NOTES:

- THE EXISTING FLOOR FINISHES OF WHICH MOST WILL BE REMOVED CONSISTS MAINLY OF VINYL SHEETING IN WARDS AND PASSAGES. THE EXISTING ABLUTIONS AND SLUICE ROOMS ARE MAINLY TILES, TO BE REPLACED WITH PORCELAIN TILES. THE COMBINATION BETWEEN VINYL SHEETING AND PORCELAIN TILES WILL REMAIN AS TO AVOID AND MINIMIZE THE USE OF SELF LEVELING SCREED TO GET FLOOR FINISHES ON THE SAME LEVEL.

FLOOR FINISHES LEGEND



- this drawing is copyright and remains with the architect, any unauthorized reproduction, publication, transmission and/or inclusion of any media is an infringement.
- figured dimensions to be taken in preference to scaled dimensions.
- report any discrepancies direct to the architect before commencing work.
- all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1

HEALTH DEPARTMENT SIGNATURES

FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.

DATE	NAME	SIGNATURE	PR NUMBER
28.10.2024	NATHAN F SUNDAYI		Pr. Arch 7074

REV.	INIT.	DESCRIPTION	DATE
00	M.M	FIRST ISSUE	28.10.2024

GENERAL NOTES:

- THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
- CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
- CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
- CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
- THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/OR ANY OTHER CONSULTANT / s DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
- REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS
- BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED
- MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH
- QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK

client

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

architect

dgirt
architects

DURBAN
MESMAC BUILDING, 146 Mahama Gandhi Road
Durban 4001 - Tel: 031 268 2133

JOHANNESBURG
225 SOUTH CROSS AVENUE, CHARTERSHILL, SA 2001
TEL: 011 622 49423

BLUMENFONTEIN
54 GENERAL STRAAT, DAN PRAKAR, 51
BLUMENFONTEIN - Tel: 085 819 4952

EAST LONDON
No. 110 WESTERN AVENUE, VINCENT
EAST LONDON, 3047 - Tel: 043 732 2075

PROJECT:
**LADYSMITH HOSPITAL
LADYSMITH
UPGRADE & REFURBISHMENT PROJECT**

DRAWING:
**MAIN LAUNDRY LAYOUT
FINISHES FLOOR PLAN
BLOCK E**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	M.M	1:100	E.K.T	A1

PROJECT	DRAWING No.	REV
22-22	E-103	A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

■ this drawing is copyright and remains with the architect, any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.

DATE	NAME	SIGNATURE	PR NUMBER
11.10.2024	NATHAN F SUNDAYI		Pr. Arch 7074

REVISIONS

REV.	INIT.	DESCRIPTION	DATE
00	E.K.T	FIRST ISSUE	23.10.2024

GENERAL NOTES:

THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/ OR ANY OTHER CONSULTANT / S DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS
 BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK.



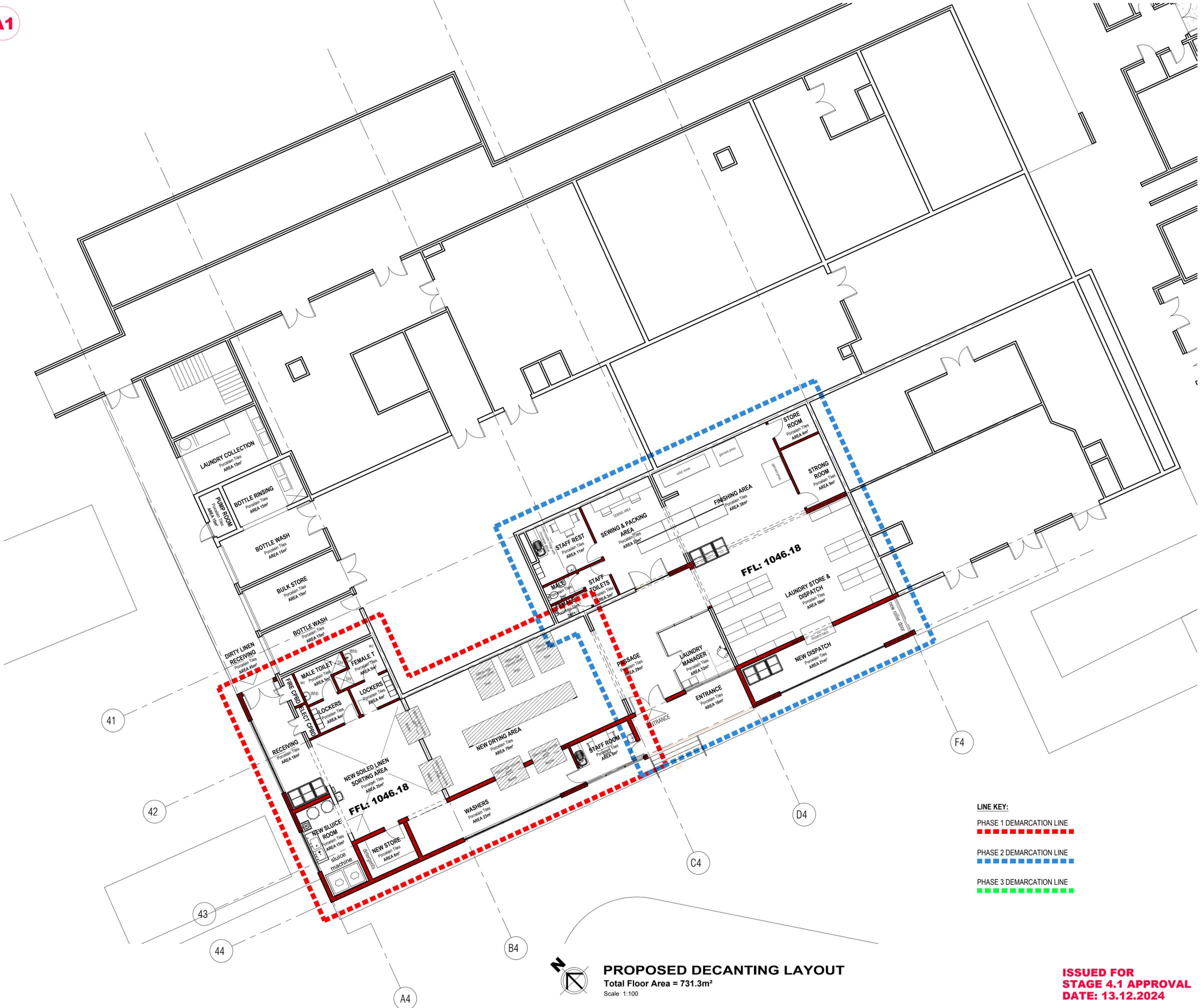
PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**MAIN LAUNDRY BLOCK E
 DECANTING LAYOUT**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	E.K.T	1:100	E.K.T	A1

PROJECT	DRAWING No.	REV
22-22	E-104	A

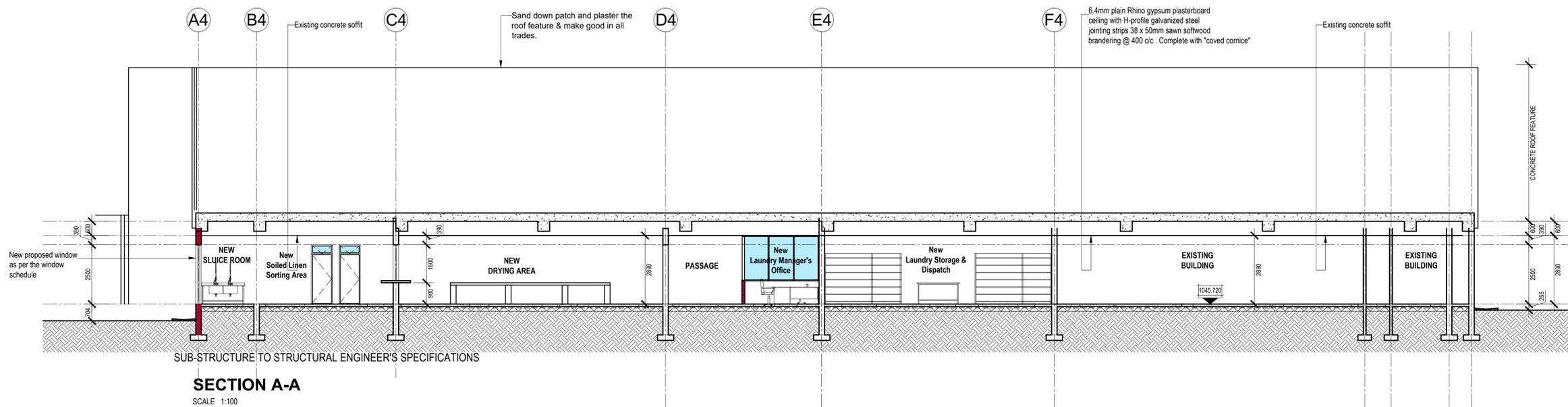
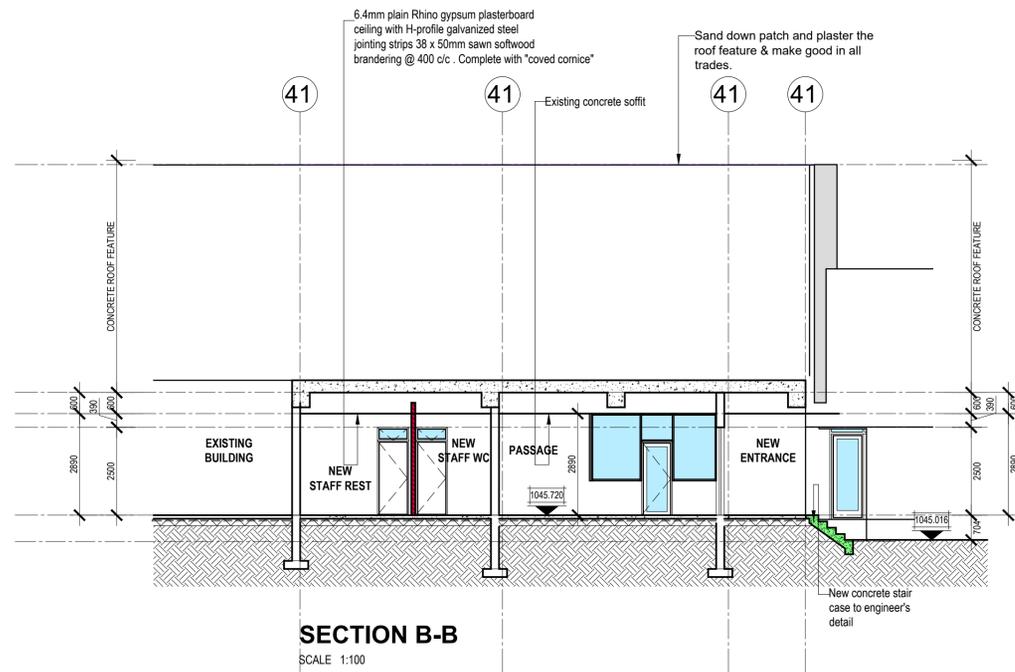
STAMPED BY HEALTH PLANS APPROVAL COMMITTEE



LINE KEY:
 PHASE 1 DEMARCATION LINE
 PHASE 2 DEMARCATION LINE
 PHASE 3 DEMARCATION LINE

PROPOSED DECANTING LAYOUT
 Total Floor Area = 731.3m²
 Scale 1:100

**ISSUED FOR
 STAGE 4.1 APPROVAL
 DATE: 13.12.2024**



- this drawing is copyright and remains with the architect. any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
- figured dimensions to be taken in preference to scaled dimensions.
- report any discrepancies direct to the architect before commencing work.
- all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNATURES

FACILITY MANAGER _____

DISTRICT MANAGER _____

DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.

DATE	NAME	SIGNATURE	PR NUMBER
11.10.2024	NATHAN F SUNDAYI		Pr. Arch 7074

REVISIONS			
REV.	INIT.	DESCRIPTION	DATE
00	S.M.T.	FIRST ISSUE	11.10.2024

GENERAL NOTES:

THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.

CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.

CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK

CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/ OR ANY OTHER CONSULTANT / s DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION

REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS

BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED

MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH

QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.

THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK



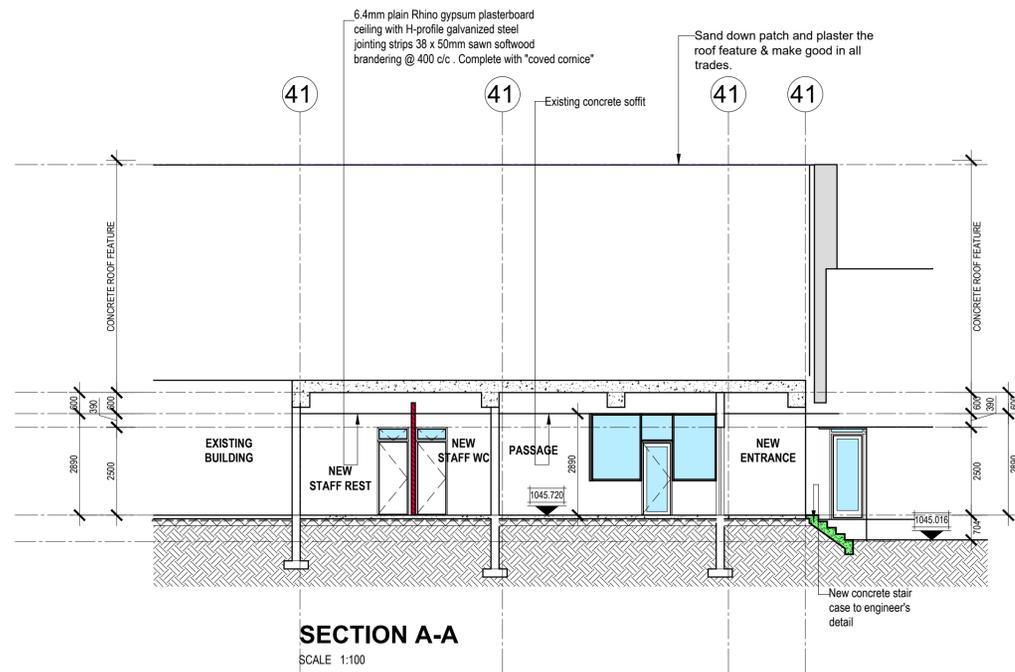
PROJECT:
**LADYSMITH HOSPITAL
LADYSMITH
UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**NEW LAUNDRY
BLOCK E
SECTION A-A & B-B**

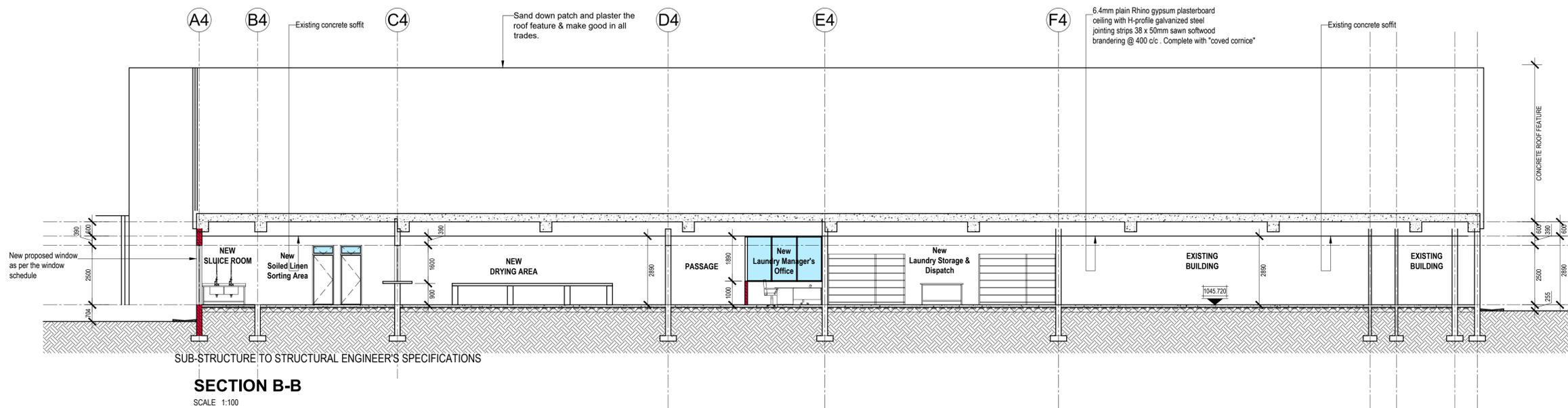
DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	S.M.T.	1:100	E.K.T	A1
PROJECT	DRAWING No.			REV
22-22	E-200			A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

**ISSUED FOR STAGE 4.1
APPROVAL
11.10.2024**



SECTION A-A
SCALE 1:100



SECTION B-B
SCALE 1:100

- this drawing is copyright and remains with the architect. any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
- figured dimensions to be taken in preference to scaled dimensions.
- report any discrepancies direct to the architect before commencing work.
- all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.
 DATE NAME SIGNATURE PR NUMBER
 11.10.2024 NATHAN F SUNDAYI Pr. Arch 7074

REVISIONS			
REV.	INIT.	DESCRIPTION	DATE
00	S.M.T.	FIRST ISSUE	11.10.2024

GENERAL NOTES:
 THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.

CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/ OR ANY OTHER CONSULTANT / s DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION

REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS

BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED

MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH

QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.

THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK



PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**NEW LAUNDRY
 BLOCK E
 SECTION A-A & B-B**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	S.M.T.	1:100	E.K.T	A1

PROJECT	DRAWING No.	REV
22-22	E-200	A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

**ISSUED FOR STAGE 4.1
 APPROVAL
 11.10.2024**

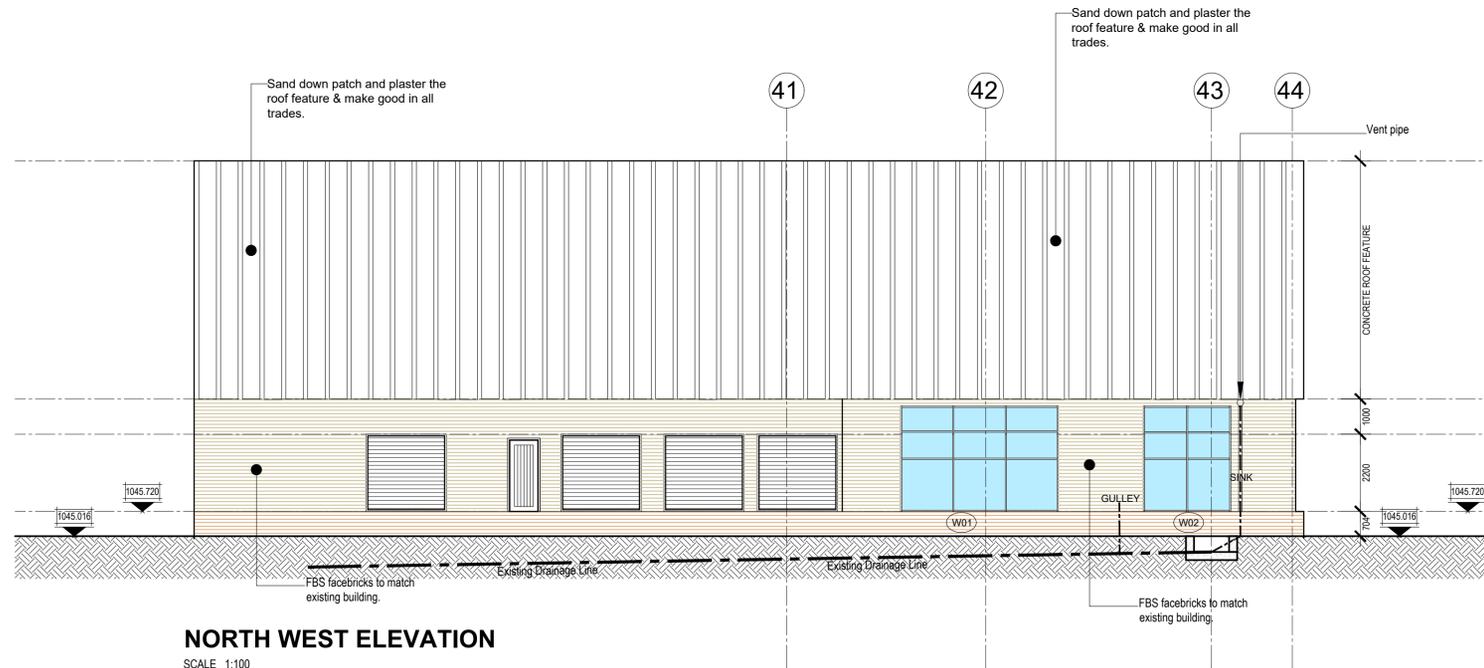
■ this drawing is copyright and remains with the architect. any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1. APPROVAL

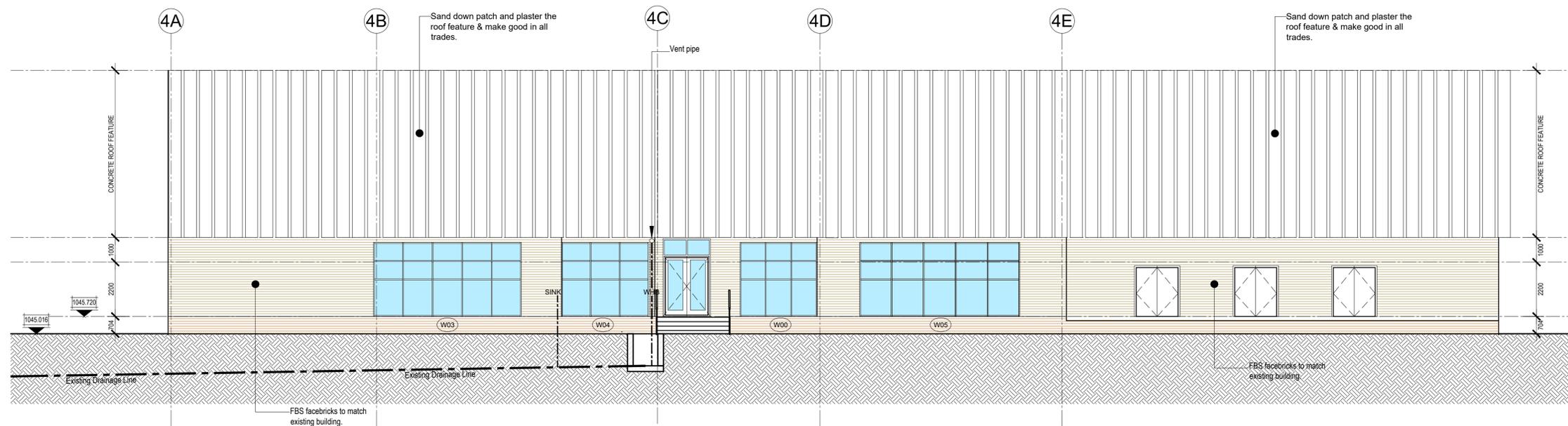
HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.
 DATE: 11.10.2024 NAME: NATHAN F SUNDAYI SIGNATURE: [Signature] PR NUMBER: Pr. Arch 7074

REVISIONS			
REV.	INIT.	DESCRIPTION	DATE
00	S.M.T.	FIRST ISSUE	11.10.2024



NORTH WEST ELEVATION
 SCALE 1:100



SOUTH WEST ELEVATION
 SCALE 1:100

GENERAL NOTES:

THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/ OR ANY OTHER CONSULTANT / s DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS
 BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK



PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**NEW LAUNDRY
 BLOCK E
 SECTION A-A & B-B**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	S.M.T.	1:100	E.K.T	A1
PROJECT	DRAWING No.			REV
22-22	E-300			A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

**ISSUED FOR STAGE 4.1
 APPROVAL
 11.10.2024**



■ this drawing is copyright and remains with the architect, any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.

DATE	NAME	SIGNATURE	PR NUMBER
11.10.2024	NATHAN F SUNDAYI		Pr. Arch 7074

REVISIONS

REV.	INIT.	DESCRIPTION	DATE
00	E.K.T	FIRST ISSUE	11.10.2024

GENERAL NOTES:
 THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.

CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/ OR ANY OTHER CONSULTANT / S DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS

BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED

MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH

QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.

THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK



client
 health Department: Health PROVINCE OF KWAZULU-NATAL

architect
 dgir architects
 DURBAN: 140 Mahatma Gandhi Road, Durban 4001 - Tel: 031 268 2133
 JOHANNESBURG: 22 SIVOLELO AVENUE, CHARTWELL, GP 2001, TEL: 011 822 4942
 CAPE TOWN: 34 GENERAL STRIKE, SAN PEARL, BLOEMFONTEIN: TEL: 082 819 4932
 EAST LONDON: 16 WINDERMERE AVENUE, VENTUR, EAST LONDON, 6047 - TEL: 043 722 2875

PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**MAIN PHARMACY BLOCK A
 FLOOR PLAN**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	E.K.T	1:100	E.K.T	A1

PROJECT	DRAWING No.	REV
22-22	A-100	A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

PROPOSED FLOOR PLAN
 Total Floor Area = 731.3m²
 Scale 1:100

FLOOR NOTES:
 THE EXISTING FLOOR FINISHES OF WHICH MOST WILL BE REMOVED CONSISTS MAINLY OF VINYL SHEETING IN WARDS AND PASSAGES. THE EXISTING ABLUTIONS AND SLUICE ROOMS ARE MAINLY TILES. TO BE REPLACED WITH PORCELAIN TILES. THE COMBINATION BETWEEN VINYL SHEETING AND PORCELAIN TILES WILL REMAIN AS TO AVOID AND MINIMIZE THE USE OF SELF LEVELING SCREED TO GET FLOOR FINISHES ON THE SAME LEVEL.

FIRE NOTES:
 FIRE ENGINEER TO CONFIRM CORRECT POSITIONING OF FIRE EXITS, FIRE EXTINGUISHERS, FIRE HOSE REELS, FIRE HYDRANTS AND FIRE DOORS

- 20 mmøCW domestic water reticulation
- PH 30 Fire Rated Cable
- Internal Drainage Pipe (110mm Dia)
- Internal Drainage Pipe (56mm Dia)

■ this drawing is copyright and remains with the architect, any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1

HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.
 DATE: 14.10.2024 NAME: NATHAN F SUNDAYI SIGNATURE: [Signature] PR NUMBER: Pr. Arch 7074

REV.	INIT.	DESCRIPTION	DATE
00	M.M	FIRST ISSUE	14.10.2024

GENERAL NOTES:
 THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/OR ANY OTHER CONSULTANT / s DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS
 BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK

client

 Department: Health
 PROVINCE OF KWAZULU-NATAL
 architect

 DURBAN: MEDUNGA BUILDING, 146 Mahama Gandhi Road, Durban 4001 - Tel: 031 268 2133
 JOHANNESBURG: 225 SOUTH CROSS AVENUE, CHARTWELL, SA 2001, TEL: 011 622 40423
 BLOEMFONTEIN: 54 GENERAL STREET, DAN PRAKAS, BLOEMFONTEIN - Tel: 085 819 4952
 EAST LONDON: 76, 110 WESTERN AVENUE, VINCENT EAST LONDON, 3047 - Tel: 043 732 2075

PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**
 DRAWING TITLE:
**MAIN PHARMACY BLOCK A
 FLOOR FINISHES PLAN**

DATE OCT. 2024	DRAWN BY M.M	SCALE 1:100	ISSUED BY E.K.T	PAPER A1
PROJECT 22-22	DRAWING No. A-100	REV A		

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE



FLOOR NOTES:

- THE EXISTING FLOOR FINISHES OF WHICH MOST WILL BE REMOVED CONSISTS MAINLY OF VINYL SHEETING IN WARDS AND PASSAGES. THE EXISTING ABLUTIONS AND SLUICE ROOMS ARE MAINLY TILES, TO BE REPLACED WITH PORCELAIN TILES. THE COMBINATION BETWEEN VINYL SHEETING AND PORCELAIN TILES WILL REMAIN AS TO AVOID AND MINIMIZE THE USE OF SELF LEVELING SCREED TO GET FLOOR FINISHES ON THE SAME LEVEL.

FLOOR FINISHES LEGEND

	VINYL FLOOR SHEETING 2.0mm Thick PVC (2.0mm min) OR 2.0mm EQUAL DIMENSIONAL STABILIZED, WITH AN ANTI-STATIC ADHESIVE. FINISH TO BE DETERMINED BY ARCHITECT
	NEW CONCRETE PAVING NEW 100mm THICK BRICK PAVING
	NON SLIP PORCELAIN TILE FLOOR 1000x1000mm THICK POLYURETHAN COUSING ULTRA PEARL

**ISSUED FOR
 STAGE 4.1
 14.10.2024**

PROPOSED MAIN PHARMACY FLOOR FINISHES PLAN
 Total Floor Area = 731.3m²
 Scale 1:100



PROPOSED CEILING PLAN
Scale 1:100

BLOCKS "F" - MAIN PHARMACY

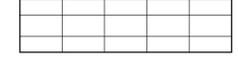
■ this drawing is copyright and remains with the architect, any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.			
DATE	NAME	SIGNATURE	PR NUMBER
11.10.2024	NATHAN F SUNDAYI		Pr. Arch 7074

REVISIONS			
REV.	INIT.	DESCRIPTION	DATE
00	E.K.T	FIRST ISSUE	11.10.2024



SUSPENDED 600x1200 VINYL CEILING TILES

12.5mm thick white vinyl gypsum tiles on 1200mm x 600mm T38V white ceiling grid including hangers. Laid on pre-painted exposed Tee suspension system including galvanized main tees, cross tees, etc. all strictly in accordance with the manufacturer's instructions.



1X RHINOBOARD® MOISTURERESISTANT™ 12.5 MM (locally manufactured, ISO 9001 & 14001 certification, recycled paper content, Greentag Level B) fixed to Gyproframe® D32K Cross Tee (Locally manufactured, recycled content, ISO 9001 & 14001 certification) using Gyproc Sharp-point Screws 25 mm at maximum 150 mm centres.
 Gyproframe® D37K Main Tee installed at 1200 mm centres and suspended using Gyproc Galvanised Angle 25 mm x 25 mm hangers at 1000 mm centres. Gyproframe® D32K Cross Tee at 600 mm centres. Hangers to be maximum 400 mm from perimeter wall. Apply Gyproc RhinoTape® to all joints and internal corners. Install Gyproframe® Corner Bead to all external corners. Cover Gyproc RhinoTape® with 1 layer of Gyproc RhinoLite® Multipurpose/ RhinoLite® Natural Plus® (locally manufactured), Wall Angle - Fix Gyproc Plaster Trim 12.5 mm (locally manufactured) to the wall using fixings at 300 mm centres. Install 135 mm thick flexible, non-combustible, lightweight Aerolite® insulation material between the roof trusses and over branding/purlins in a completed roof and ceiling system. Install in accordance with the manufacturers detail and specification with Gyproc 20mm aluminium plaster trim fixed to wall at 300 mm centres



1X RHINOBOARD® 9 MM (locally manufactured, ISO 9001 & 14001 certification, recycled paper content, Greentag Level B) fixed to Gyproframe® D32K Cross Tee (Locally manufactured, recycled content, ISO 9001 & 14001 certification) using Gyproc Sharp-point Screws 25 mm at maximum 150 mm centres.
 Gyproframe® D37K Main Tee installed at 1200 mm centres and suspended using Gyproc Galvanised Angle 25 mm x 25 mm hangers at 1200 mm centres. Gyproframe® D32K Cross Tee at 400 mm centres. Hanger to be maximum 400 mm from perimeter wall. Apply Gyproc RhinoTape® to all joints. Cover Gyproc RhinoTape® with 1 layer of Gyproc RhinoLite® Multipurpose/ RhinoLite® Natural Plus®/ RhinoLite® CreteStone® (locally manufactured, Greentag Level B). Install Gyproframe® Corner Bead to all external corners. Gyproc Plaster Trim 9.5 mm (locally manufactured) to the wall using fixings at 300 mm centres. Install 135 mm thick flexible, non-combustible, lightweight Aerolite® insulation material between the roof trusses and over branding/purlins in a completed roof and ceiling system. Install in accordance with the manufacturers detail and specification with Gyproc 20mm aluminium plaster trim fixed to wall at 300 mm centres.



OFF-SHUTTER CONCRETE CEILING SMOOTH FINISH as per SANS 2001-CC1:2007 table 1. Imperfections, such as small fins, bulges, irregularities, surface honeycombing and slight surface discolourations shall be made good and repaired as per agreed sample panel. Degree Of Accuracy (DOA) 1. Degrease / remove all traces of release agent before treated with one coat Dulux Trade Ecosure plaster primer and two coats Dulux Trade 65 matt pva

GENERAL NOTES:

THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/ OR ANY OTHER CONSULTANT / S DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS
 BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK



client
 health Department: Health PROVINCE OF KWAZULU-NATAL
architect
 dg|t architects
 DURBAN: HERMAN ROAD BUILDING, 140 Mahatma Gandhi Road, Durban 4001 - Tel: 031 368 2133
 JOHANNESBURG: 222 SIKHOLELA AVENUE, CHARTWELL, GP, 2001, TEL: 011 822 4942
 BLOEMFONTEIN: 54 BLOEMFONTEIN AVENUE, DAN PRAKAS, BLOEMFONTEIN, TEL: 085 819 4932
 EAST LONDON: 16, 17 WOODSTOCK AVENUE, VENTUR, EAST LONDON, 6047, TEL: 043 732 2875

PROJECT:
LADYSMITH HOSPITAL
LADYSMITH
UPGRADE & REFURBISHMENT PROJECT

DRAWING TITLE:
MAIN PHARMACY BLOCK F
CEILING PLAN

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	E.K.T	1:100	E.K.T	A1

PROJECT	DRAWING No.	REV
22-22	F-101	A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

ISSUED FOR STAGE 4.1 APPROVAL DATE: 11.10.2024

A1



■ this drawing is copyright and remains with the architect, any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1

HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.

DATE	NAME	SIGNATURE	PR NUMBER
14.10.2024	NATHAN F SUNDAYI		Pr. Arch 7074

REVISIONS

REV.	INIT	DESCRIPTION	DATE
00	M.M	FIRST ISSUE	14.10.2024

GENERAL NOTES:

THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/OR ANY OTHER CONSULTANT / s DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS
 BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK



PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**MAIN PHARMACY BLOCK F
 FLOOR FINISHES PLAN**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	M.M	1:100	E.K.T	A1
PROJECT	DRAWING No.			REV
22-22	F-103			A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

FLOOR NOTES:

- THE EXISTING FLOOR FINISHES OF WHICH MOST WILL BE REMOVED CONSISTS MAINLY OF VINYL SHEETING IN WARDS AND PASSAGES. THE EXISTING ABLUTIONS AND SLUICE ROOMS ARE MAINLY TILES, TO BE REPLACED WITH PORCELAIN TILES. THE COMBINATION BETWEEN VINYL SHEETING AND PORCELAIN TILES WILL REMAIN AS TO AVOID AND MINIMIZE THE USE OF SELF LEVELING SCREED TO GET FLOOR FINISHES ON THE SAME LEVEL.

FLOOR FINISHES LEGEND

	VINYL FLOOR SHEETING <small>20mm 100% POLYURETHANE (PU) OR 12mm 100% POLYURETHANE (PU) WITH 100% POLYURETHANE ADHESIVE</small>		NON SLIP PORCELAIN TILE FLOOR <small>600x600x12mm POLYURETHANE ADHESIVE</small>
	GRANO <small>PORCELAIN FLASKED GRANO FLOOR</small>		CONCRETE FLOOR <small>PORCELAIN FLASKED CONCRETE FLOOR FINISH</small>
	CONCRETE PLINTH <small>CONCRETE FLOOR</small>		

PROPOSED MAIN PHARMACY FLOOR FINISHES PLAN
 Total Floor Area = 731.3m²
 Scale 1:100

**ISSUED FOR
 STAGE 4.1
 14.10.2024**



LINE KEY:
 PHASE 1 DEMARCATION LINE
 PHASE 2 DEMARCATION LINE
 PHASE 3 DEMARCATION LINE

PROPOSED DECANTING LAYOUT
 Total Floor Area = 731.3m²
 Scale 1:100

■ this drawing is copyright and remains with the architect, any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

DATE	NAME	SIGNATURE	PR NUMBER
11.10.2024	NATHAN F SUNDAYI		Pr. Arch 7074

REV.	INIT.	DESCRIPTION	DATE
00	E.K.T	FIRST ISSUE	11.10.2024

GENERAL NOTES:

THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/ OR ANY OTHER CONSULTANT / S DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS
 BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK.



architect
 dgitt architects
 DURBAN: HERMAN ROAD BUILDING, 140 Mahatma Gandhi Road, Durban 4001 - Tel: 031 268 2133
 JOHANNESBURG: 22 GIBSON ROAD, JARDINE, CHARTWELL, GP, 2001, TEL: 011 822 4942
 BLOEMFONTEIN: 54 KEMPA ROAD, DAN PRAKAS, BLOEMFONTEIN, TEL: 082 819 4932
 EAST LONDON: 16 WILSONS AVENUE, VINCENT, EAST LONDON, 6041 - TEL: 043 722 2875

PROJECT:
LADYSMITH HOSPITAL
LADYSMITH
UPGRADE & REFURBISHMENT PROJECT

DRAWING TITLE:
MAIN PHARMACY BLOCK F
DECANTING LAYOUT

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	E.K.T	1:100	E.K.T	A1

PROJECT	DRAWING No.	REV
22-22	F-104	A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

BLOCKS "F" - MAIN PHARMACY

ISSUED FOR STAGE 4.1 APPROVAL
DATE: 13.12.2024

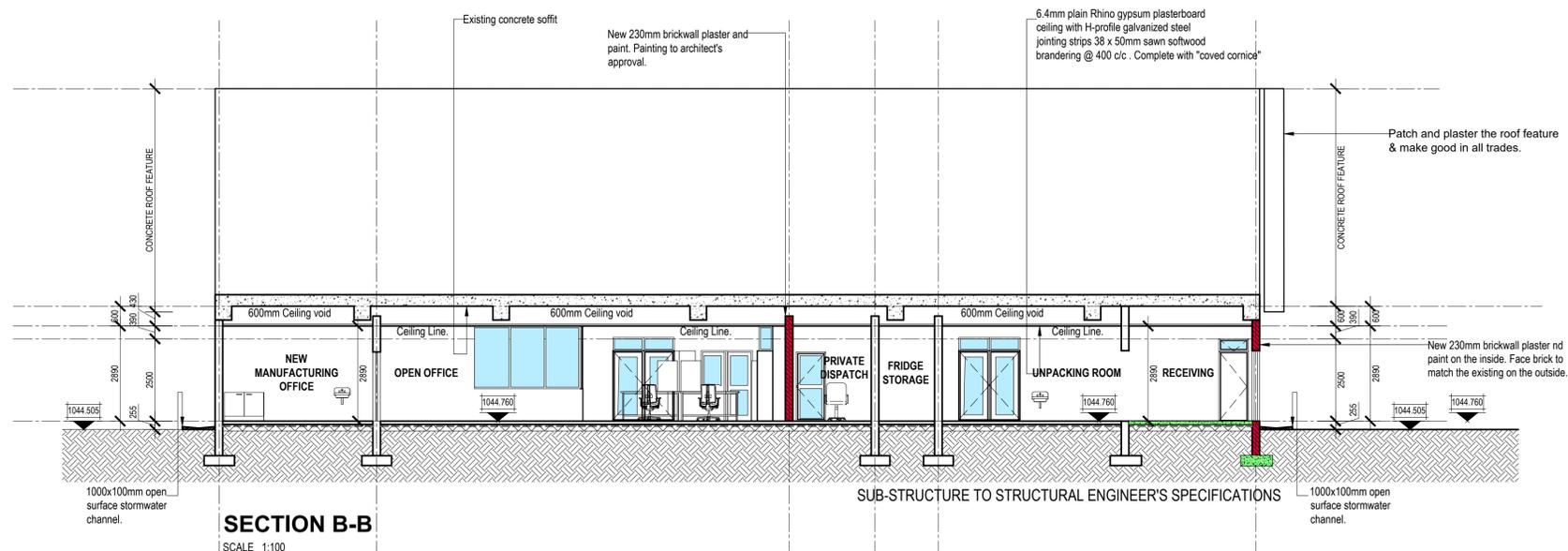
- this drawing is copyright and remains with the architect. any unauthorized reproduction, publication, transmission and/or inclusion of any media is an infringement.
- figured dimensions to be taken in preference to scaled dimensions.
- report any discrepancies direct to the architect before commencing work.
- all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNATURES
 FACILITY _____
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.
 DATE NAME SIGNATURE PR NUMBER
 11.10.2024 NATHAN F SUNDAYI  Pr. Arch 7074

REVISIONS			
REV.	INIT.	DESCRIPTION	DATE
00	S.M.T.	FIRST ISSUE	11.10.2024

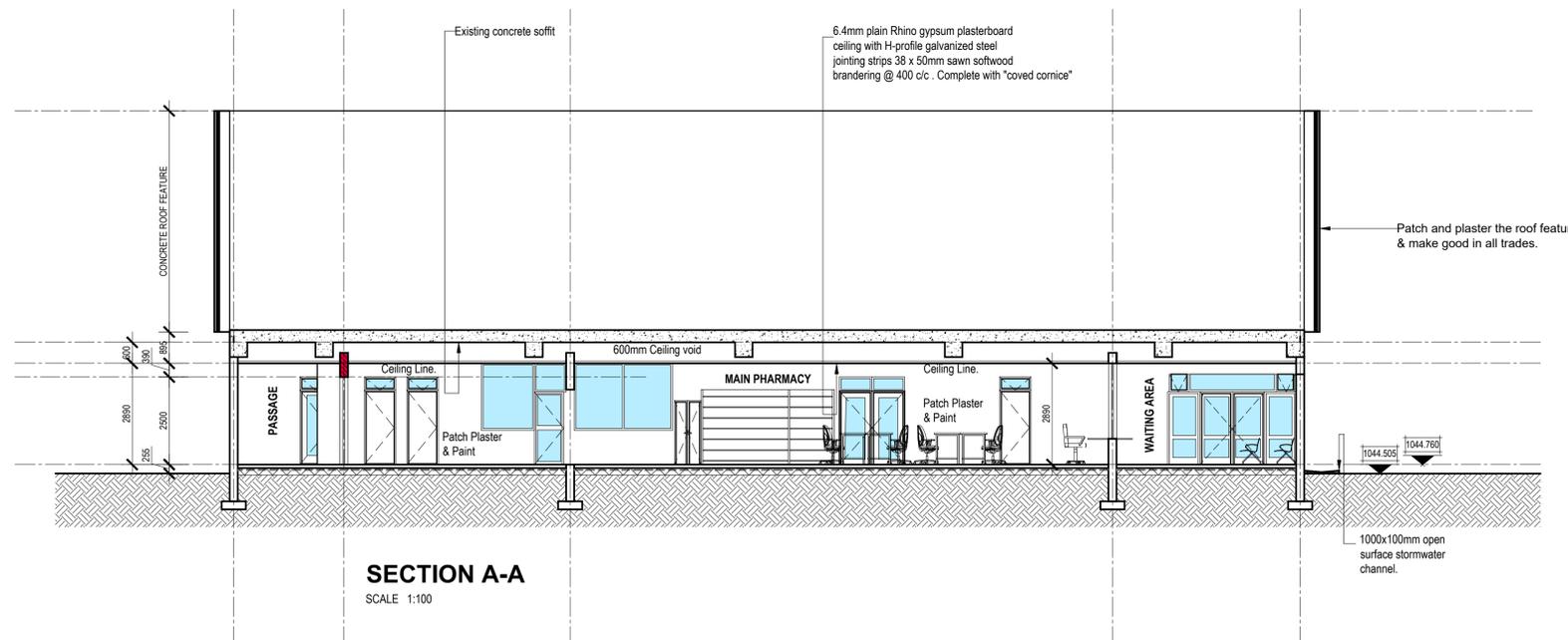


SECTION B-B
SCALE 1:100

SUB-STRUCTURE TO STRUCTURAL ENGINEER'S SPECIFICATIONS

All floor finishes as indicated on plan to conform to SANS Part-J and as per finishing schedule with 25mm cement screed 3:1 on 100mm thick class U3 steel trowel finished concrete slab (20 Mpa) reinforced with mesh Ref 193 set 25mm below top on 250 microns GUNPLAS USB GREEN waterproofing on 25mm river sand bed on fill compacted to MOD AASHTO 95%. Soil to be poisoned in accordance with SABS 1165. (Certificate must be provided). 150mm well compacted hardcore under.

Foundation wall to be NFX bricks extra hard burnt bricks (14MPa compressive strength) in Class 1 mortar, Below NGL.



SECTION A-A
SCALE 1:100

Patch and plaster the roof feature & make good in all trades.



GENERAL NOTES:

THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.

CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.

CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK

CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/OR ANY OTHER CONSULTANT / S DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORKS AND ITS DURATION

REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS

BEFORE TENDERING, EXAMINE THE SITE AND ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY HAVE TO BE PROTECTED, REMOVED OR RELOCATED

MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT/ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH

QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S & B.S.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE OFFICES OF THE ARCHITECT.

THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND / OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COVERING UP OR PROCEEDING WITH SUBSEQUENT WORK

client



architect



PROJECT: **LADYSMITH HOSPITAL LADYSMITH UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE: **MAIN PHARMACY BLOCK F SECTIONS A-A & B-B**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	S.M.T.	1:100	E.K.T	A1
PROJECT	DRAWING No.			REV
22-22	F-200			A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

ISSUED FOR STAGE 4.1 APPROVAL 11.10.2024

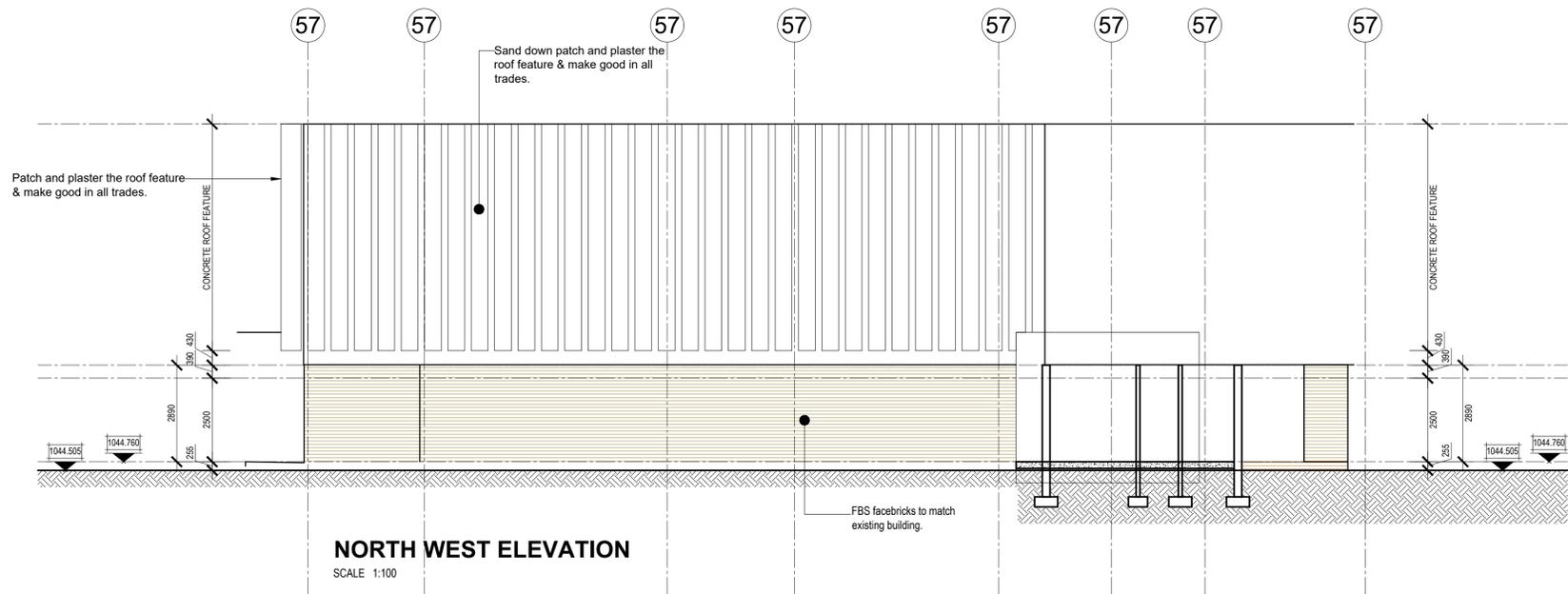
■ this drawing is copyright and remains with the architect. any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
 ■ figured dimensions to be taken in preference to scaled dimensions.
 ■ report any discrepancies direct to the architect before commencing work.
 ■ all work to be done in accordance with the SANS 10400

ISSUED FOR STAGE 4.1 APPROVAL

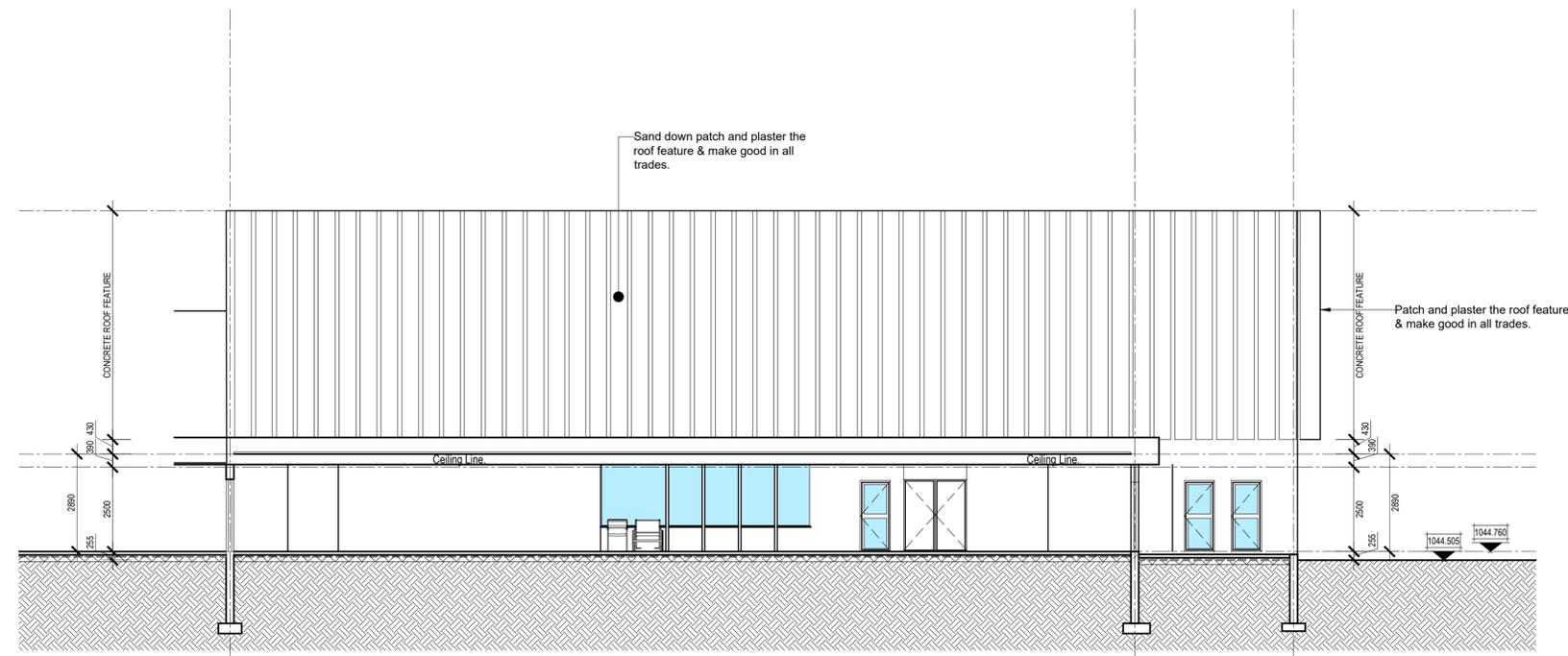
HEALTH DEPARTMENT SIGNATURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.
 DATE NAME SIGNATURE PR NUMBER
 11.10.2024 NATHAN F SUNDAYI  Pr. Arch 7074

REVISIONS			
REV.	INIT.	DESCRIPTION	DATE
00	S.M.T.	FIRST ISSUE	11.10.2024



NORTH WEST ELEVATION
 SCALE 1:100



SOUTH EAST SECTIONAL ELEVATION
 SCALE 1:100



GENERAL NOTES:
 THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING. ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO ROOM MARKERS, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK.
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND INTERPRETED IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/OR ANY OTHER CONSULTANT'S DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORK. ARCHITECT'S SIGNATURE.
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEVIATIONS FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS.
 BEFORE TENDERING, EXAMINE THE SITE AND ACCEPT THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT EXCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY PROVE TO BE PROTECTED, REVERSED OR REDUCED.
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH.
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & S.E.S. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PRESENTED IN THE BILL OF QUANTITIES OR IN THE ABSENCE OF A BILL OF QUANTITIES AVAILABLE FOR REFERENCE AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND/OR THE FIRE PREVENTION OFFICER FOR ANY WORKS UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COMMENCING OR PROCEEDING WITH SUBSEQUENT WORK.

■ client



■ architect



BLUFEMFONTEIN
 54 Central Circle, Dan Pienaar,
 Bloubaan - Tel: 032 919 4922

JOHANNESBURG
 222 SOUTH CROSS AVENUE, CHARTWELL, AN GP, 2024,
 TEL: 011 822 48433

DURBAN
 HIGHWAY BUILDING, 148 Mahatma Gandhi Road,
 Durban 4001 - Tel: 031 368 2133

EAST LONDON
 No. 89 WESTERN AVENUE, VINCENT
 EAST LONDON, 3247 - Tel: 043 722 2876

PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**MAIN PHARMACY
 BLOCK F
 ELEVATIONS**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	S.M.T.	1:100	E.K.T	A1
PROJECT	DRAWING No.			REV
22-22	F-300			A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

**ISSUED FOR STAGE 4.1
 APPROVAL
 11.10.2024**

- this drawing is copyright and remains with the architect. any unauthorized reproduction, publication, transmission and or inclusion of any media is an infringement.
- figured dimensions to be taken in preference to scaled dimensions.
- report any discrepancies direct to the architect before commencing work.
- all work to be done in accordance with the SANS 10400

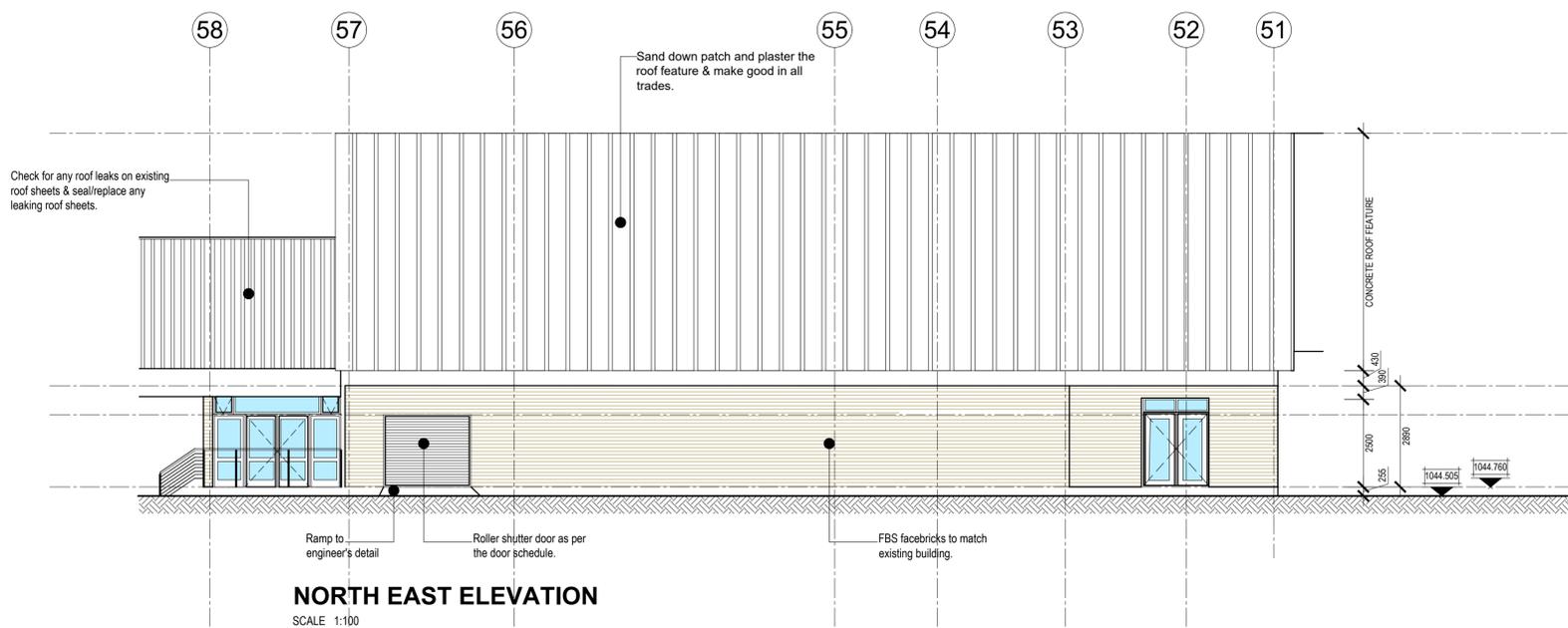
ISSUED FOR STAGE 4.1 APPROVAL

HEALTH DEPARTMENT SIGNITURES
 FACILITY MANAGER _____
 DISTRICT MANAGER _____
 DOH PROJECT LEADER _____

RESPONSIBLE PROFESSIONAL: ARCHITECT.
 DATE NAME SIGNATURE PR NUMBER
 11.10.2024 NATHAN F SUNDAYI  Pr. Arch 7074

REVISIONS			
REV.	INIT.	DESCRIPTION	DATE
00	S.M.T.	FIRST ISSUE	11.10.2024

GENERAL NOTES:
 THIS DRAWING IS NOT TO BE SCALED. FIGURE DIMENSIONS TO BE USED ALL THE TIME.
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING. ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO ROOMS, BUILDING LINES ETC.
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS BEFORE PUTTING ANY WORK.
 CONTRACTOR TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO START OF WORKS OR DURING THE CONSTRUCTION PHASE.
 THIS DRAWING IS TO BE READ AND INTERPRETED IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL AND/OR ANY OTHER CONSULTANT'S DOCUMENTATION AS MAY BE APPLICABLE TO THE PROJECT PRIOR TO START OF WORK AND ITS COMPLETION.
 REPORT TO THE ARCHITECT ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM GOOD PRACTICE DISCOVERED IN THE DRAWINGS.
 BEFORE TENDERING, EXAMINE THE SITE AND ACCEPT THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE WORK, NOT INCLUDING THE LOCATION OF ALL BURIED SERVICES WHICH MAY PROVE TO BE PROTECTED, REVERSED OR REDUCED.
 MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS DESCRIBED ON THE DRAWINGS AND THE CONTRACTOR SHALL WHERE REQUIRED HEREIN OR UPON REQUEST OF THE ARCHITECT ENGINEER FURNISH VOUCHERS TO PROVE THAT THE MATERIALS COMPLY HEREWITH.
 QUALITY OF MATERIALS & WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.B.S & S.C. SPECIFICATION & SHALL CONFORM TO THE MINIMUM STANDARD PREAMBLES IN THE BILL OF QUANTITIES OR IN THE ABSENCE OF A BILL OF QUANTITIES AVAILABLE FOR REFERENCE AT THE OFFICES OF THE ARCHITECT.
 THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE PLANNING DEPARTMENT AND/OR THE FIRE PREVENTION OFFICER FOR ANY WORK UNDER THEIR RESPECTIVE JURISDICTION REQUIRING INSPECTIONS PRIOR TO COMMENCING.
 UP OR PROCEEDING WITH SUBSEQUENT WORK.



client  health Department: Health PROVINCE OF KWAZULU-NATAL

architect  **dgit** architects

BLOEMFONTEIN: 54 General Camp, Dan Pienaar, Bloemfontein - Tel: 052 819 4982
 JOHANNESBURG: 222 DOORNDRIPS AVENUE, CHARTWELL, AN GP, 2024, TEL: 011 882 48433
 DURBAN: HIGHWAY BUILDING, 148 Mahatma Gandhi Road, Durban 4001 - Tel: 031 368 2133
 EAST LONDON: 90, 92 WESTERN AVENUE, VINCENT EAST LONDON, 6047 - Tel: 043 722 2876

PROJECT:
**LADYSMITH HOSPITAL
 LADYSMITH
 UPGRADE & REFURBISHMENT PROJECT**

DRAWING TITLE:
**MAIN PHARMACY
 BLOCK F
 ELEVATIONS**

DATE	DRAWN BY	SCALE	ISSUED BY	PAPER
OCT. 2024	S.M.T.	1:100	E.K.T	A1
PROJECT	DRAWING No.			REV
22-22	F-301			A

STAMPED BY HEALTH PLANS APPROVAL COMMITTEE

**ISSUED FOR STAGE 4.1
 APPROVAL
 11.10.2024**



**LADYSMITH HOSPITAL: CONVERSION OF EXISTING SPACE INTO PAEDIATRIC OPD ROOM,
RECONFIGURATION OF LAUNDRY AND MORTUARY, CONVERSION OF GARAGE TO STORAGE
AREA**

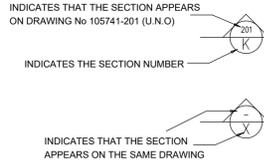
**ANNEXURE 15
STRUCTURAL AND CIVIL SPECIFICATIONS**

THE FOLLOWING GENERAL NOTES ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS WHERE APPLICABLE :

1. PILING
2. PLAIN AND REINFORCED CONCRETE
3. LOAD-BEARING MASONRY
4. STRUCTURAL STEELWORK
5. STRUCTURAL TIMBER
6. STORMWATER / SEWER

GENERAL:

G1. LEGEND INDICATING SECTIONS AND DETAILS :



G2. ALL BASES AND COLUMNS ARE SYMMETRICAL ON GRIDLINES UNLESS OTHERWISE INDICATED.

G3. ALL LEVELS ON DRAWINGS REFER TO THE TOP OF CONCRETE UNLESS OTHERWISE INDICATED.

G4. DIMENSIONS OF BEAMS ARE SHOWN AS DEPTH x WIDTH.

G5. NO BASES ON BACKFILL - USE MASS CONCRETE / SELECTED MATERIAL BELOW BASES UNLESS OTHERWISE SPECIFIED. REFER TO NOTE G10

G6. ALL BEAMS AND STRUCTURAL SLABS MUST BE PROVIDED WITH AN UPWARD CAMBER AS SHOWN BELOW UNLESS INDICATED OTHERWISE :
CANTILEVERS SPAN DIVIDED BY 200
ALL OTHER SPANS SPAN DIVIDED BY 500

G7. JOINTS INDICATED IN SURFACE BEDS, SLABS AND BEAMS ARE ALSO TO BE CONSTRUCTED IN BRICK WALLS, SCREEDS AND FINISHES.

G8. THE CONTRACTOR MUST ENSURE THAT ALL EMBEDDED ITEMS AND PENETRATIONS FOR SERVICES HAVE BEEN PROVIDED FOR AND POSITIONED ACCORDING TO THE LATEST DRAWINGS OF ALL DISCIPLINES BEFORE CASTING CONCRETE.

G9. ALL CEMENT TO COMPLY WITH RELEVANT SANS STANDARDS.

G10. ENGINEER TO CONFIRM FOUNDATION EXCAVATION LEVELS ON SITE. EXTRA EXCAVATION DOWN TO ACCEPTABLE MATERIAL SHALL BE BACKFILLED WITH MASS CONCRETE / SELECTED MATERIAL, UNLESS OTHERWISE SPECIFIED.

G11. REFER TO ARCHITECTS DRAWINGS FOR CONCRETE FINISHES, GROOVES, CHAMFERS, ETC UNLESS OTHERWISE SHOWN. ALL SMOOTH SURFACE CONCRETE CORNERS ARE TO BE PROVIDED WITH 20x20mm CHAMFERS. ALSO REFER TO NOTE C12

G12. STORAGE OF CEMENT : CEMENT SHALL NOT BE STORED FOR LONGER PERIODS THAN 6 WEEKS WITHOUT THE APPROVAL OF THE ENGINEER.

G13. SYMBOLS DENOTING LAYERS OF REINFORCEMENT IN SLABS :

G14. ALL CONCRETE MIX DESIGNS, FORMWORK STRIPPING TIMES AND CURING PROCEDURES TO BE APPROVED BY THE ENGINEER BEFORE COMMENCING WITH CONSTRUCTION OF ANY CONCRETE WORK.

G15. ALL CONTRACTORS QA DOCUMENTATION TO BE FORWARDED TO THE ENGINEER FOR APPROVAL BEFORE COMMENCING WITH CONSTRUCTION OF ANY STRUCTURAL WORK.

G16. CONTRACTOR TO CHECK ALL DIMENSIONS AND LEVELS ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER.

G17. THE TOP OF ALL VERTICAL CONCRETE ELEMENTS THAT SUPPORT CONCRETE ELEMENTS TO BE WELL SCABBLED AND CLEANED PRIOR TO CASTING CONCRETE.

CONCRETE:

C1. MATERIALS AND MIX PROPORTIONS :
1.1 THE GRADES FOR CONCRETE, UNLESS OTHERWISE INDICATED SHALL BE AS FOLLOWS :

COLUMNS	CLASS 30/19 30MPa AT 28 DAYS
R.C WALLS	CLASS 30/19 30MPa AT 28 DAYS
SLABS/BEAMS	CLASS 30/19 30MPa AT 28 DAYS
PRECAST SLABS	CLASS 30/19 30MPa AT 28 DAYS
FOUNDATIONS	CLASS 30/19 30MPa AT 28 DAYS
GROUND BEAMS	CLASS 30/19 30MPa AT 28 DAYS
RETAINING WALLS	CLASS 30/19 30MPa AT 28 DAYS
STRIP FOOTINGS	CLASS 25/19 25MPa AT 28 DAYS
SURFACE BEDS	MIN TENSILE STRENGTH 3.8MPa
STAIRS	CLASS 30/19 30MPa AT 28 DAYS
UPSTANDS/BALUSTRADES	CLASS 30/19 30MPa AT 28 DAYS
BLINDING LAYERS	CLASS 15/19 10MPa AT 28 DAYS
MASS CONCRETE	CLASS 20/19 20MPa AT 28 DAYS
PILE CAPS	CLASS 30/19 30MPa AT 28 DAYS

1.2 TEST CUBES ARE TO BE TAKEN ON SITE WHILST CASTING IN ACCORDANCE WITH SANS REQUIREMENTS.
1.3 RESULTS OF CUBE TESTS TO BE SUBMITTED TO ENGINEER FOR APPROVAL.

C2. CONCRETE COVER OVER REINFORCEMENT UNLESS SHOWN DIFFERENTLY :

SLABS	= 25mm (BOTTOM) = 25mm (TOP) = 25mm (SIDES)
STAIRS	= 30mm
BEAMS (ABOVE GROUND)	= 25mm (TO LINKS) = 30mm (TO LINKS)
COLUMNS	= 30mm
GROUND SLAB	= 30mm (WALLS - FAR FACE) = 40mm (WALLS - EARTH FACE)
RETAINING WALLS	= 50mm (BASE TOP, BOTTOM & SIDES)
PILE CAPS/FOUNDATIONS	= 75mm (BOTTOM) = 50mm (TOP) = 50mm (SIDES)
GROUND BEAMS	= 50mm (TO LINKS)

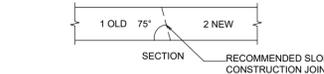
C3. CASTING OF CONCRETE IN EXCESS OF 3.5m HIGH IS NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

C4. REINFORCEMENT SHALL BE INSPECTED BY THE ENGINEER ONLY AFTER IT HAS BEEN COMPLETELY FIXED IN POSITION, FORMWORK IS CLEAN, SPACERS ARE PLACED IN POSITION AND AFTER THE CONTRACTOR HAS INSPECTED IT HIMSELF AND ALL QA DOCUMENTATION HAS BEEN SIGNED OFF BY THE MAIN CONTRACTOR AND RELEVANT SUB-CONTRACTORS.

C4.1. ENGINEER TO BE GIVEN HOURS NOTICE PRIOR TO WHEN INSPECTION IS REQUIRED.

C5. WELDING OF REINFORCEMENT IS NOT ALLOWED UNLESS IT HAS BEEN APPROVED BY THE ENGINEER IN WRITING.

C6. CONSTRUCTION JOINTS IN SLABS/BEAMS : THE POSITION OF ALL CONSTRUCTION JOINTS TO BE APPROVED BY THE ENGINEER IN WRITING. BEFORE COMMENCING TO CAST NEW CONCRETE (AS INDICATED BY 2) THE SURFACE OF THE OLD CONCRETE (INDICATED BY 1) SHALL BE CLEANED AND CHIPPED TO EXPOSE THE AGGREGATE AND SHALL BE KEPT WET FOR 2 HOURS BEFORE CASTING. THE OLD CONCRETE MUST BE SLUSHED WITH CEMENT BEFORE CASTING.



C7. 50mm BLINDING LAYER IS TO BE PROVIDED UNDER ALL BASES UNLESS INDICATED OTHERWISE.

C8. SHRINKAGE STRIPS IN CONCRETE FLOORS SHALL NOT BE CAST WITHIN 21 DAYS OF CASTING THE LAST SURROUNDING SLAB. NOTE THAT THE BAY CONTAINING THE SHRINKAGE STRIP MUST REMAIN PROPPED UNTIL ALL CONCRETE HAS REACHED THE THE REQUIRED AGE.

C9. CONSTRUCTION JOINTS :
9.1 NO HORIZONTAL JOINTS SHALL BE ALLOWED IN BASES OR OTHER DEEP ELEMENTS.
9.2 CONSTRUCTION/JUNCTION JOINTS ARE TO BE FORMED ACCORDING TO SPECIFICATION.

9.3 ALL PIPES THROUGH JOINTS SHALL BE PROVIDED WITH AN EXPANSION JOINT OR FLEXIBLE COUPLING - THIS INCLUDES ALL CABLE SLEEVES, CONDUITS AND PIPES.
9.4 NO VERTICAL CONSTRUCTION JOINTS SHALL BE MADE IN ELEMENTS DIRECTLY EXPOSED TO THE WEATHER EXCEPT WHERE INDICATED OTHERWISE.

C10. REFER TO PROJECT SPECIFICATION FOR CONSTRUCTION TOLERANCES OR AS SPECIFIED ON DRAWINGS.

C11. ALL SLAB PANELS WITH UPSTAND BEAMS TO REMAIN PROPPED UNTIL THE UPSTANDS HAS BEEN CAST AND IS 14 DAYS OLD. THE TOP OF THE SLAB TO BE WELL SCABBLED AND CLEANED AND A WET TO DRY EPOXY TO BE PROVIDED TO THE ENGINEER'S APPROVAL.

C12. ALL EXPOSED CONCRETE (EXTERNAL AND INTERNAL) TO BE SMOOTH CLASS F3 (OFF SHUTTER). REFER TO ARCHITECTS DRAWINGS.

SURFACE BED:

S81. SAWN JOINTS TO BE PROVIDED WITHIN 24 HOURS AFTER CASTING OF CONCRETE.

S82. FOR DETAILS OF DAMP PROOF COURSE UNDER SURFACE BEDS SEE TYPICAL SURFACE BED DETAILS ON RELEVANT DRAWINGS.

S83. BACKFILL AROUND COLUMNS AND WALLS TO BE PLACED EVENLY.

S84. CONSTRUCTION JOINTS IN FLOOR CHANNELS TO LINE UP WITH SURFACE BED JOINTS.

S85. ALL PIPED SERVICES AND CABLES MUST BE LAID DURING OR SOON AFTER THE CONSTRUCTION OF COLUMN AND SHAFT BASES.

S86. UNLESS OTHERWISE SPECIFIED, ALL FILL UNDER SURFACE BEDS SHALL BE APPROVED SELECTED MATERIAL, COMPACTED IN LAYERS NOT EXCEEDING 150mm THICK TO 95% MOD AASHTO DENSITY.

S87. MINIMUM LAP LENGTH OF MESH REINFORCEMENT IS 400mm UNLESS NOTED OTHERWISE.

S88. REFER TO ARCHITECTS DETAILS FOR TOP SURFACE FINISH, UNLESS OTHERWISE SHOWN.

S89. ALL DOWEL BARS ARE TO BE 100% STRAIGHT, LEVEL AND AT RIGHT ANGLES TO THE JOINT DIRECTION. THE ENDS OF DOWEL BARS SHALL BE CUT, GROUND SMOOTH AND NOT SHEARED.

S810. SAWN JOINTS TO BE CUT AT RIGHT ANGLES TO CONSTRUCTION JOINTS UNLESS INDICATED OTHERWISE.

S811. SOILCRETE TO BE CAST IN CONFINED BACKFILLING SPACES BELOW SURFACE BEDS WHERE THE WIDTH IS LESS THAN 600mm.

MASONRY:

B1. ALL BRICK WALLS TO BE OF SOLID HARD BURNED CLAY BRICKS WITH A COMPRESSIVE STRENGTH OF NOT LESS THAN 7MPa LAID ON A CLASS II MORTAR WITH A 28 DAY COMPRESSIVE STRENGTH OF 7MPa AS SPECIFIED IN SANS 10164-1 (CODE OF PRACTICE FOR MASONRY), UNLESS NOTED OTHERWISE.

B2. NFX BRICKS TO BE USED FOR RETAINING WALLS, FOUNDATIONS, AND ANY BRICKWORK BELOW GROUND.

B3. BRICKFORCE :
MINIMUM DIAMETER OF BRICKFORCE TO NHBC STANDARD = 2.8mm
YIELD STRENGTH = 485 MPa
LAP LENGTH = 400mm MIN
ALL BRICKFORCE TO BE GALVANISED TO SANS STANDARDS.

B4. ALL WALL TIES TO BE GALVANISED TO SANS-28. MINIMUM 5 TIES PER SQm. GALVANISED COATING OF MILD STEEL TO HAVE A MINIMUM MASS OF 750 g/m² OF ZINC.

B5. BRICKFORCE TO BE PLACED IN THE FIRST FIVE LAYERS OF BRICKWORK ON FOOTINGS, THEREAFTER TO BE PLACED IN EVERY 4th LAYER IN ALL BRICK WALLS. PLACE BRICKFORCE IN THE FIRST 5 LAYERS OF BRICKWORK OVER ALL WINDOW AND DOOR OPENINGS. BRICKFORCE TO BE PROVIDED IN TOP FIVE LAYERS OF BRICKWORK BELOW SLAB SOFFITS FOR ALL LOAD BEARING BRICK WALLS AND WALLS SUPPORTING ROOF TRUSSES.

B6. ALL BRICKWORK SHOWN IS LOAD BEARING BRICKWORK UNLESS OTHERWISE NOTED.

B7. PLACE 10mm SOFTBOARD ON TOP OF ALL NON-LOAD BEARING WALLS.

B8. TOP OF BRICKWORK TO BE LEVEL AND SMOOTH WITH 1 : 1 CEMENT SAND MIX.

B9. LOAD BEARING BRICK WALLS ARE SHOWN AS FOLLOWS :



B10. ALL 110mm BRICK WALLS REST ON SURFACE BED UNLESS OTHERWISE SHOWN. ALL 220mm BRICK WALLS REST ON GROUND BEAMS OR STRIP FOOTINGS.

B11. PROVIDE 10mm JOINT IN ALL BRICKWORK AT MAXIMUM SPACING AS SHOWN ON DRAWINGS.

B12. ALL LINTOLS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

B13. NO LAYING OF BRICKWORK TO COMMENCE ON PROPPED SLABS.

B14. REFER TO SLAB / WALL CONNECTION DETAILS ON THIS DRAWING

STRUCTURAL TIMBER:

T1. PREFABRICATED TIMBER ROOF TRUSSES AND PURLINS ARE TO BE DESIGNED AND SUPPLIED BY AN APPROVED SUPPLIER.

T2. TIMBER ROOF TRUSSES ARE TO BE DESIGNED IN ACCORDANCE WITH SANS 10163-1 (CODE OF PRACTICE FOR TIMBER STRUCTURES). LOADS ARE TO COMPLY WITH SANS 10160 (CODE OF PRACTICE FOR GENERAL PROCEDURES AND LOADING FOR THE DESIGN OF BUILDINGS).

T3. WORKSHOP DETAIL DRAWINGS SHALL BE CHECKED BY INDONSA PROJECTS BEFORE COMMENCING WITH MANUFACTURING OF TIMBER ROOF TRUSSES.

T4. ALL TRUSSES TO BE FABRICATED IN A FACTORY BY A TIMBER TRUSS FABRICATOR WHO HAS BEEN AWARDED A "CERTIFICATE OF COMPETENCE" BY THE INSTITUTE FOR TIMBER CONSTRUCTION.

T5. FABRICATOR TO SUPPLY GRADE AND TREATMENT OF TIMBER TO ENGINEER FOR COMMENT PRIOR TO COMMENCEMENT OF WORKS.

T6. FABRICATOR TO SITE MEASURE AND CHECK ALL DIMENSIONS PRIOR TO COMMENCEMENT OF FABRICATION.

T7. ALL NEW TIMBER IN THE WORKS TO BE SELECTED STRUCTURAL TIMBER FREE FROM WANE AND SHAKES WITH A STRENGTH CLASS NOT LESS THAN SA PINE GRADE 5.

T8. ALL TIMBER TO BE CCA TREATED

PILES:

1. ALL LOADS INDICATED ARE SERVICE (WORKING) LOADS.
2. LOADINGS GIVEN ARE PER PILE
3. SCHEME PILE DIA = 400mm BASED ON AN END BEARING STRESS OF 5.5mPa i.e. MAXIMUM PILE CAPACITY = 700kN

4. ALL LEVELS REFER TO MSL.
5. PILE DESIGN IS THE RESPONSIBILITY OF THE PILING CONTRACTOR. MAXIMUM ALLOWABLE ECCENTRICITY OF PILE = 50mm.
6. ALL ADDITIONAL COSTS INCURRED DUE TO PILES OUT OF TOLERANCE, ARE FOR PILING CONTRACTOR'S ACCOUNT.

7. GEOTECHNICAL INVESTIGATION FOR PILING DESIGN IS THE RESPONSIBILITY OF THE PILING CONTRACTOR. GEOTECHNICAL REPORT TO BE SUBMITTED TO ENGINEER. REFER PILING SPECIFICATION.
8. INTEGRITY TESTING TO BE CARRIED OUT ON 100% OF PILES
9. PILING CONTRACTOR TO INSTALL ONE ADDITIONAL PILE FOR LOAD TESTING. TEST PILE TO BE LOADED TO FAILURE. ALL TEST RESULTS TO BE ISSUED TO ENGINEER.

11. DESIGN PILE SPACING BASED ON 3.0 x PILE DIAMETER UNLESS NOTED ON DRAWINGS.
12. ALL PILE CO-ORDINATES GIVEN ARE BASED ON WG 29 SYSTEM.
13. ALL PILES ARE CONTINUOUS FLIGHT AUGERED (CFA) U.N.O.
14. THE CONTRACTOR MUST ENSURE THAT ALL PILE REINFORCING PROJECTS 50 x BAR DIAMETER INTO THE PILE CAP.

15. WHERE 50 x BAR DIAMETER EXCEEDS PILE CAP/BASE DEPTH, BARS TO BE BENT INTO PILE CAP/BASE.
16. ALL LEVELS REFER TO FINISHED CONCRETE LEVEL UNLESS OTHERWISE SHOWN.

17. DETAILS OF THE PILES ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL (TYPE, REINFORCEMENT, GROUT AND SPACERS).
18. PILE GROUT STRENGTH 30MPa AT 28 DAYS. CUBE AND SLUMP TESTS TO BE CARRIED OUT IN ACCORDANCE WITH SANS REQUIREMENTS. RESULTS TO BE SUBMITTED TO ENGINEER.

19. REINFORCEMENT BARS WITH SPIRAL REINFORCEMENT TO BE PROVIDED RIGHT THROUGH THE WHOLE LENGTH OF PILES.
20. LAP LENGTH OF REINFORCEMENT IN PILES TO BE MINIMUM OF 40 TIMES REINFORCEMENT BAR DIAMETER.

21. COVER OF REINFORCEMENT STEEL IN PILES TO BE 50mm TO LONGITUDINAL REINFORCEMENT.
22. THE CONTRACTOR TO APPOINT AN INDEPENDENT REGISTERED LAND SURVEYOR TO SURVEY AND VERIFY THE AS BUILT POSITIONS OF THE PILES PRIOR TO COMMENCEMENT OF SUBSTRUCTURE WORKS.
23. MINIMUM VERTICAL REINFORCEMENT IN PILE TO BE 6Y16 AND SHALL BE CONTINUOUS THROUGHOUT THE PILE LENGTH.

24. PILES TO BE SOCKETED 1500mm INTO THE PMB SHALES.
25. IN ADDITION TO THE LOADS TABULATED ON THE PILE SUMMARY TABLE, ALL PILES TO BE DESIGNED FOR A NOMINAL MOMENT OF THE VERTICAL LOAD x 75mm.

PILE LIMITS	
MAXIMUM VERTICAL SETTLEMENT:	3mm
MAXIMUM LATERAL DEFLECTION:	5mm
[VALUES ARE UNDER WORKING LOAD CONDITIONS]	

STRUCTURAL STEEL:

S1. ALL STEELWORK SHALL BE FABRICATED IN ACCORDANCE WITH INDONSA PROJECTS PROJECT SPECIFICATION.

S2. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2 M16 BOLTS UNLESS NOTED OTHERWISE.

S3. ALL GUSSET PLATES SHALL BE 8mm THK UNLESS NOTED OTHERWISE.

S4. ALL FILLET WELDS SHALL BE 6mm (MIN.) AND SHALL BE SEALED UNLESS NOTED OTHERWISE.

S5. FOR FULL PENETRATION FIELD WELDS, BACKING PLATES SHALL BE USED. TACK WELD BACKING PLATE TO APPROPRIATE MEMBER FOR SHIPMENT.

S6. FOR FULL PENETRATION SHOP WELDS, BACKING PLATES MAY BE USED OR BACK-UP FILLET WELD MAY BE USED AT FABRICATION OPTION UNLESS NOTED OTHERWISE.

S7. SLOTTED HOLES ALLOWING 25mm TOTAL HORIZONTAL ADJUSTMENT (12mm EACH SIDE) SHALL BE PROVIDED WHEN ONE OR BOTH ENDS OF A STEEL MEMBER CONNECTS INTO CONCRETE OR MASONRY.

S8. DRILLED HOLES FOR BOLTED CONNECTIONS SHALL BE 2mm LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE.

S9. HOLES IN STRUCTURAL BASE PLATES SHALL BE 4mm LARGER THAN THE ANCHOR BOLT DIAMETER FOR M20 BOLTS AND SMALLER, AND 6mm LARGER FOR M24 BOLTS AND LARGER.

S10. EDGE DISTANCE FOR CONNECTIONS SHALL BE IN ACCORDANCE WITH SANS 10162 UNLESS NOTED OTHERWISE.

S11. OMIT PAINT WITHIN 50mm OF FIELD WELDED CONNECTIONS.
S12. SHOP SPACING 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. FABRICATOR TO SUPPLY CALCULATIONS AND DETAILS OF SPLICE FOR APPROVAL BY ENGINEER PRIOR TO COMMENCEMENT OF FABRICATION.

S13. BURRS AND ROUGH EDGES SHALL BE GROUND PRIOR TO WELDING END PLATES CLEATS, BRACKETS OR PAINTING.
S14. ALL FIELD WELDS SHALL BE SHOWN THUS:

S15. HOLD OUT-TO-OUT DIMENSIONS EXACT FOR ALL CONTINUOUS RUNS OF BEAMS TO AVOID AN ACCUMULATIVE ERROR.

S16. ALL RELEVANT CONCRETE, BRICK AND STEEL DIMENSIONS SHALL BE CHECKED ON SITE BEFORE MANUFACTURE OF STRUCTURAL STEEL COMMENCES.

S17. ALL WELDING AND SURFACE PREPARATION SHALL BE DISCUSSED, INSPECTED AND APPROVED BY INDONSA PROJECTS IN CONJUNCTION WITH THE SANS, OR OTHER APPROVED INSPECTION AGENCY.

S18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL ALL ELEMENTS HAVE BEEN ERRECTED AND FIXED IN POSITION.

S19. WORKSHOP DETAIL DRAWINGS SHALL BE CHECKED BY INDONSA PROJECTS BEFORE MANUFACTURE OF STRUCTURAL STEEL COMMENCES.

S20. ALL STEEL TO BE GRADE S50W FOR PROFILED SECTIONS (e.g. I, H, C, L) AND HOLLOW SECTIONS. MINIMUM YIELD STRESS (fy) OF 200MPa STRUCTURAL STEEL FOR ALL OTHER STRUCTURAL ELEMENTS (e.g. CFLC, CFLZ, GRATING, VASTRAP PLATE). REFER TO STRUCTURAL STEEL DETAILS FOR STEEL GRADE SPECIFICATION APPLICABLE TO EACH INDIVIDUAL STEEL ELEMENT.

S21. PAINT SPECIFICATION: SEE INDONSA PROJECTS PROJECT SPECIFICATION WITH FINAL PAINT COLOUR TO ARCHITECTS SCHEDULES.
S22. GROUT :
a) NON METALIC, NON SHRINK GROUT, TO BE APPROVED BY ENGINEER BEFORE USE. MINIMUM COMPRESSIVE STRENGTH REQUIRED AT 28 DAYS IS 60 MPa, APPLICATION AS PER APPROVED PRODUCT SPECIFICATIONS.
b) ALL GROUTING UNDER MECHANICAL EQUIPMENT IS TO BE DONE BY OTHERS. GROUTING UNDER STRUCTURAL STEEL PLATES BY MAIN CONTRACTOR.

S23. HOT-DIP GALVANIZING OF STRUCTURAL STEEL SHALL BE DONE ACCORDING TO THE REQUIREMENTS OF SANS 121-2000 (HEAVY DUTY : 610g/m² / 70um) UNLESS NOTED OTHERWISE.

S24. ALL STRUCTURAL STEEL UNDER GROUND LEVEL TO BE PAINTED WITH 2 LAYERS EPOXY-TAR.
S25. ALL BOLTS TO BE GRADE 8.8 UNLESS NOTED OTHERWISE.

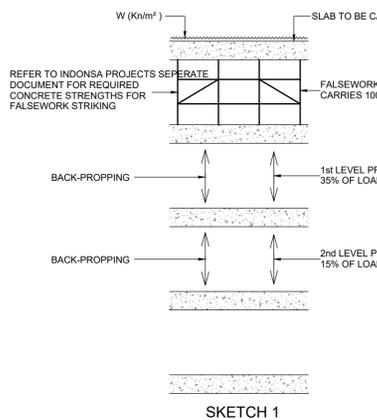
BACKPROPPING OF REINFORCED CONCRETE SLABS:

1) ALL SLABS TO BE BACKPROPPED THROUGH TWO FLOORS. FOR FURTHER DETAILS SEE SKETCH 1.
2) ON ANY GIVEN FLOOR, PROPS OF DIFFERENT MATERIALS (e.g. STEEL AND ALUMINIUM) MUST NOT BE MIXED.

3) PROPS MUST BE SET OUT IN SUCH A WAY THAT A UNIFORM LOAD IS PRODUCED ON ANY SUPPORTING SLAB.
4) PROPS ARE TO BE INSTALLED WITH ZERO PRE-LOAD.
5) THE MAXIMUM ALLOWABLE CONSTRUCTION LOAD ON ANY FLOOR IS 1.5kN/m²

6) NO BACKPROPPING IS TO BE REMOVED UNTIL THE FORMWORK TO THE NEW SLAB HAS BEEN STRUCK.
7) DESIGN OF THE BACKPROPPING AND OTHER RELATED TEMPORARY WORKS TO SPECIALIST DETAILS AND PROFESSIONAL RESPONSIBILITY.

8) TEMPORARY WORKS SPECIALIST TO SUBMIT PROPPING DETAILS TO ENGINEER FOR COMMENT PRIOR TO COMMENCEMENT OF WORKS.



SPECIFICATION FOR SOILCRETE:

SC1. SOILCRETE SHALL CONSIST OF AN APPROVED SOIL OR GRAVEL MIXED WITH 5% BY MASS OF PORTLAND CEMENT AND ONLY SUFFICIENT WATER TO GIVE IT A CONSISTENCY THAT WILL PERMIT THE SOILCRETE TO BE PLACED, USING VIBRATORS.

SC2. THE AGGREGATE USED FOR SOILCRETE SHALL PREFERABLY BE A SANDY MATERIAL BUT MAY CONTAIN LARGER PARTICLES UP TO 38mm AND SHALL HAVE A PLASTICITY INDEX OF LESS THAN 10.

SC3. SILT AND CLAY MUST NOT BE USED AND THE AGGREGATE SHALL BE OBTAINED FROM AN APPROVED SOURCE.

SC4. THE SOILCRETE SHALL BE MIXED ON SITE USING SUITABLE CONCRETE MIXERS AND THE WATER AND CEMENT CONTENTS SHALL BE CAREFULLY CONTROLLED.

SC5. SOILCRETE SHALL BE PLACED AND THOROUGHLY COMPACTED BY MEANS OF CONCRETE VIBRATORS SO THAT ALL VOIDS ARE FILLED.

SC6. LAYERS TO BE PLACED & VIBRATED TO A UNIFORM HORIZONTAL THICKNESS NOT EXCEEDING 500mm. SUBSEQUENT LAYERS SHALL ONLY BE PLACED ONCE THE PREVIOUS LAYERS HAS HARDENED.

EARTHWORKS / LAYERWORKS:

L1. THE FOLLOWING SANS 1200 SPECIFICATIONS WILL APPLY:
BULK EARTHWORKS AND ROADS EARTHWORKS SANS 1200 DM
ROAD SUBGRADE SANS 1200 DM
SUB-BASE SANS 1200 ME
SEGMENTED PAVING SANS 1200 MJ
KERB AND CHANNELLING SANS 1200 MK
ROAD MARKING AND SIGNAGE SANS 1200 MM

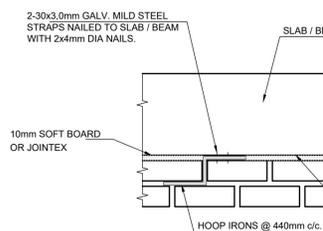
L2. MATERIAL CLASSIFICATION IN ACCORDANCE WITH TRH MANUALS
L3. REFER TO BULK EARTHWORKS DRAWINGS FOR LAYERWORKS UNDER ALL SURFACE BEDS.

BACKFILLING:

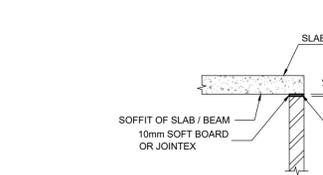
BF1. ALL BACKFILL BEHIND RETAINING WALLS, BELOW SURFACE BEDS, UNDER STAIRS ON FILL AND ALL JOCKEY SLABS SHALL BE G7 MATERIAL COMPACTED IN 150mm THICK LAYERS TO 95% MOD AASHTO DENSITY, UNLESS OTHERWISE SHOWN.

BF2. ALL MATERIAL USED FOR BACKFILLING IS TO BE TESTED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER, UNLESS OTHERWISE SHOWN.

BF3. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPACTION TEST PER LAYER FOR EVERY 25 LINEAR METERS (OR PART THEREOF) OF BACKFILLED TRENCH. THIS REQUIREMENT MAY BE ALTERED AT THE ENGINEERS DISCRETION.



ELEVATION - TYPICAL BRICKWORK CONNECTION DETAIL TO UNDERSIDE OF CONCRETE SLABS FOR NON -LOAD BEARING WALLS



SECTION - TYPICAL CONNECTION DETAIL FOR NON-LOAD BEARING WALLS

Rev.	Date.	Description.	Rev by.
A	20-04-2023	ISSUED FOR REVIEW	A.M
Lead Consultant.			
Name: Indonsa Engineers			
Signature & Number. _____ Date.			
Responsible Professional Engineer			
Name: K. MTHETHWA			
Signature & Number. _____ Date.			
Engineers			
Architect			
146 Mahatma Gandhi Road Durban 4001 Tel: 031 368 2133 Fax: 031 368 2197			
diverse group of independent thinkers			
Client			

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 2 of 48</p> <p>REV : 01</p>
--	---	---

CONTENTS

1. GENERAL
2. FOUNDATIONS
3. BRICKWORK & BLOCKWORK
4. CONCRETE
5. SURFACE BEDS
6. REINFORCEMENT
7. STRUCTURAL STEELWORK
8. TIMBER
9. ELECTRICAL SLEEVES
10. SUSTAINABILITY
11. PILING
12. TESTING SPECIFICATIONS
13. LEVEL TOLERANCES
14. EARTHWORKS GENERAL NOTES
15. SEWER NOTES
16. STORM WATER
17. WATER RETICULATION
18. QUALITY CONTROL / REFERENCES
19. PAVING
20. ROAD MARKING NOTES
21. ELECTRICAL SLEEVES

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 3 of 48</p> <p>REV : 01</p>
--	---	---

1. GENERAL

- 1.1. These notes to be read in conjunction with the drawings and project specifications.
- 1.2. All structural drawings to be read in conjunction with the relevant architectural, mechanical & electrical engineers drawings and the specifications in the Bill of Quantities and any errors, omissions & discrepancies to be brought to the attention of the engineer immediately in writing, before any construction work commences.
- 1.3. It remains the main contractor's responsibility to compare drawings and notify the relevant parties of any discrepancies within a reasonable time frame in writing.
- 1.4. Where conflicting specifications between the drawings & bill of quantities occur, the drawing specifications will take preference over the specifications in the bill of quantities.
- 1.5. Where conflicting specifications occur between this **General Notes & Specifications** document and more recent detailed drawings; the specifications on the more recent detailed drawings will supersede those contained in this document. The contractor is to inform the engineer in writing of any such occurrence.
- 1.6. All work shall be executed in strict accordance with the latest **SANS 0400** or applicable part of **SANS 1200**; **OHS Act** and the project specifications in the contract documentation.
- 1.7. The contractor shall check all project dimensions on site beforehand. All dimensions are also to be checked against the architect's drawings. Any discrepancies shall immediately be reported to the engineer in writing.
- 1.8. No scaling off drawings allowed.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 4 of 48</p> <p>REV : 01</p>
--	---	---

- 1.9. The contractor shall check the dimensions of all the adjacent structures at the positions where the new structure joins them. Any discrepancies shall immediately be brought to the engineer's attention to enable him to plan revised details.
- 1.10. An isolation joint must be provided between all new and existing structures, unless indicated otherwise on drawings. Stability requirements of elements over joints must be met.
- 1.11. Unless otherwise indicated on drawings all waterproofing, drainage falls & finishes are according to the architect's details and specifications.
- 1.12. All SANS specifications mentioned in the notes, on the drawings and in the project specifications shall be available on site at all times.
- 1.13. All instructions from the engineer shall be written in the site instruction book, which will be provided by the contractor
- 1.14. Products different to those specified may only be used with written approval from the engineer. Such approval is to be requested in writing.
- 1.15. The contractor shall ensure that waterproofing materials are not damaged during backfilling operations and fixing of steel. Any repair work for the contractor's account.
- 1.16. The contractor is responsible to control storm water and dewatering on the site to prevent damage to the structure, banks, excavations, or any other works for the duration of the contract period.
- 1.17. The contractor is responsible for the design and maintenance of all temporary structures.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 5 of 48</p> <p>REV : 01</p>
--	---	---

- 1.18. The contractor is responsible for protecting completed elements from damage until completion of the project at hand-over. Sub-contractors working on roofs & tiled surfaces shall have strict access control and shall carry insurance for the repair of any damaged completed element. A detailed protecting strategy shall be disclosed at tender stage.
- 1.19. The contractor shall disclose his proposed building sequence in broad terms at tender stage. Any substitutions of in-situ elements with pre-cast shall be proposed in writing at tender stage and separate pricing for the proposed alternatives are to be provided.
- 1.20. The position of construction joints; special reinforcing requirements; and temporary splice positions for structural steel shall be submitted to the engineer in writing for discussion. The proposals are to be discussed and agreed on to suit both the design- & construction programmes.
- 1.21. All dimensions are in millimetres (mm) and all elevations and coordinates are in metres (m).

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 6 of 48</p> <p>REV : 01</p>
--	---	---

2. FOUNDATIONS AND EARTHWORKS

- 2.1. All earthworks shall be in accordance with the **SANS 2001-BE1:2008** specifications.
- 2.2. All excavations must be inspected and approved by the geotechnical engineer before placing of any concrete foundation, blinding, and waterproofing or geofabric membrane.
- 2.3. Levels of bases as shown are preliminary and have to be confirmed by the geotechnical engineer on site to obtain the specified bearing pressure. Where excavation levels have to be lowered, the top level of the base should be kept as shown and the blinding layer thickened to a maximum of 300mm. Any voids in excess of 300mm shall be filled with mass concrete. Raising the founding level may be permitted, on approval from the engineer. Such approval shall be requested prior to any blasting of rock proceeds.
- 2.4. Founding levels determined on site are to be forwarded to the engineer in good time for reinforcing detailing
- 2.5. No foundation or ground beam shall be cast on either non-engineered fill or backfill material. Portions that are over-excavated beyond the depth required by the geotechnical engineer, to be filled with mass concrete (15MPa / 19mm) at contractor's expense.
- 2.6. A 50mm thick blinding layer of 15MPa/19mm shall be cast under all reinforced foundations. No blinding layer needs to be cast for unreinforced brickwork and mass concrete foundations.
- 2.7. All foundations are placed symmetrically below columns and brickwork unless otherwise shown.
- 2.8. Retaining wall, strip and column foundations shall be cast directly against the vertical faces of the excavation, unless indicated otherwise on drawings.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 7 of 48</p> <p>REV : 01</p>
--	---	---

- 2.9. No backfilling behind retaining walls is to be done before the engineer gives written approval. Where applicable, backfilling shall be done simultaneously on both sides of walls to minimize the relative height difference in soil levels.

- 2.10. All backfilling behind retaining walls to be compacted to 98% MOD AASHTO density in layers not exceeding 150mm in thickness.

- 2.11. Imported gravel for backfilling is to comply with SANS 1200DM clause 3.2.4. Approved cohesion less backfill to be compacted to minimum 93% mod AASHTO. (u.n.o.) in layers not exceeding 150mm in thickness. (For fill under surface beds refer to the relevant section of this document)

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 8 of 48</p> <p>REV : 01</p>
--	---	---

3. BRICKWORK & BLOCKWORK

- 3.1. All masonry walling shall be constructed according to the specifications & details of **SANS 2001-CM1:2007, SANS 10164 and SANS 10400**.
- 3.2. All building work to be carried out in accordance with the National Building Regulations.
- 3.3. Masonry units shall comply with the following specifications:
 - 3.3.1. SANS 227: burnt clay masonry units
 - 3.3.2. SANS 285: calcium silicate masonry units
 - 3.3.3. SANS 1215: concrete masonry blocks
- 3.4. All brickwork, block work, anchors, wall ties and straps shall be in accordance with the latest **SANS 2001-CM1:2007, SANS 10164 and SANS 10400** specifications.
- 3.5. The minimum crushing strength of all load bearing brickwork shall be 14 MPa u.n.o.
- 3.6. The minimum crushing strength of all loads bearing block work shall be 7 MPa u.n.o.
- 3.7. The minimum crushing strength of mortar shall be as for Class II mortar in accordance with Table 1 SANS 10164 Part I unless indicated otherwise on drawings.
- 3.8. Brickforce
 - 3.8.1. Load bearing brickwork shall be reinforced with an approved brickforce every fourth layer unless otherwise specified on drawings.
 - 3.8.2. Load bearing blockwork shall be reinforced with an approved brickforce every second layer unless otherwise specified on drawings.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 9 of 48</p> <p>REV : 01</p>
--	---	---

- 3.8.3. In addition, continuous brick force is required in every layer for the first four layers above and below the top of foundations & slabs, as well as windows and over door openings. Minimum laps to be 300mm.
- 3.9. All brickwork / blockwork shown on engineer's drawings is load bearing unless otherwise indicated.
- 3.10. Cavity walls to have stepped DPC's.
- 3.11. See architect's drawings for general layout of brickwork / block work. All setting out to be done from architect's drawings.
- 3.12. All inside levels refer to raw concrete and not to finished floor except where otherwise indicated.
- 3.13. All brick anchors, wall ties and straps shall be hot-dipped galvanized.
- 3.14. V-joints are to be made right through plasterwork where brickwork / blockwork and concrete or pre-cast elements join.
- 3.15. Non-load bearing brickwork / blockwork may not be built closer than 20mm from the soffits and sides of beams and slabs unless otherwise shown. The joint shall be filled with "Jointex" or similar approved, and sealed on both sides with a single component polyurethane sealant. Any specific waterproofing requirements to architect's details. Any specific fire requirements to fire consultant's detail
- 3.16. Refer to architect's drawings for positions of expansion joints in brickwork / blockwork. Vertical joints to be at maximum 8m c/c for external walls. Control joints for internal walls to be @ max 9m c/c.
- 3.17. All brickwork shall be fixed to concrete & steel columns by means of 30 x 1,6mm x 400 long galvanised mild steel ties every fourth course and block work every second course. Fix the ties to the columns with 2 Hilti shot studs each.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 10 of 48</p> <p>REV : 01</p>
--	---	--

- 3.18. Unless required otherwise by the architect or fire consultant, provide 10 mm jointex with a tear-off strip between masonry walls & concrete elements. The joint is to be sealed with an approved single component polyurethane sealant – colour selection by architect.
- 3.19. 12mm vertical soft board to be placed where the slab abuts against a wall.
- 3.20. Slip joint consisting of 2 layers of 3 ply malthoid with plastic in between to be formed on top of all walls supporting a concrete slab.
- 3.21. Lintels over openings to have a minimum of 230mm bearing each end.
- 3.22. In cavity walls, wall ties shall join the leaves and shall be embedded in masonry joints at right angles to the leaves as the work progresses.
- 3.23. The number of wall ties per m² of walling shall be:
 - 3.20.1. 75mm > Cavity: 2.5 ties/m²
 - 3.20.2. 75mm < Cavity < 100mm: 3.0 ties/m²
 - 3.20.3. 100mm < Cavity < 150mm: 5.0 ties/m²
- 3.21. Additional ties shall be provided at openings, discontinuities (eg. control joints) spaced at intervals not exceeding 300mm vertically, or, where deemed necessary or as shown on the drawings such as at external angles.
- 3.22. Modified PWD galvanized ties of 3,15mm diameter shall be used unless otherwise stated.
- 3.23. For high-lift grouted walls, ties complying with the requirements of SANS 10164 Part 2 Annex A (14) shall be spaced at intervals not exceeding 500mm horizontally and not exceeding 300mm vertically, with each layer staggered by 450mm.
- 3.24. Ensure that each tie is embedded to a depth of at least 50mm in the mortar joint of each leaf.
- 3.25. Wall joints must be repeated in all tiled finishes.
- 3.26. Brick balustrades on roof to have joints at max. 6m c/c.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 11 of 48</p> <p>REV : 01</p>
--	---	--

3.27. All planters built in brickwork are to be provided with 25mm dia. weep holes above finished paving levels and at 1000 c/c. U.O.N

3.28. For cavity widths not exceeding 75mm. Ensure that the wall ties used comply with the relevant requirements of SANS 28 subject to the provision that ties of the single wire type shall not be used.

3.29. For cavity widths exceeding 75mm but not exceeding 150mm. Ensure that wall ties used are of the vertical twist type, or any similar type having at least the equivalent strength and stiffness.

3.30. Tops of cavity walls to be ventilated for as long as possible.

3.31. Clay bricks to be wetted before being used.

3.32. Concrete bricks and blocks to be kept dry before being used.

3.33. Load bearing brickwork shall be reinforced with an approved brickforce every fourth layer and for three courses above all wall openings.

3.34. Load-bearing cavity walls to be filled solid with concrete for the top 4 courses.

3.35. Chasing into walls

3.35.1. Vertical chasing

3.35.1.1. In solid masonry units vertical chasing shall be limited to a third (T/3) of the thickness of the leaf in question

3.35.1.2. Chasing to be avoided in hollow or voided masonry unit construction. Where unavoidable, chasing will be limited to a depth of 15mm and the cores or voids in the masonry units shall be filled with infill concrete

3.35.2. Horizontal or diagonal chasing

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 12 of 48</p> <p>REV : 01</p>
--	---	--

3.35.2.1. In solid masonry units the chasing shall be limited to a sixth (T/6) of the thickness of the leaf in question

3.35.2.2. For hollow or voided masonry unit construction it will not be permitted. No exceptions will be made.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 13 of 48</p> <p>REV : 01</p>
--	---	--

4. CONCRETE

- 4.1. All concrete work shall be carried out strictly in accordance with **SANS 2001-CC1:2007 and SANS 1200**
- 4.2. The concrete strength of all elements is 30 MPa / 19 mm maximum unless otherwise specified.
- 4.3. Concrete Batching shall be carried strictly in accordance with **SANS 1200 G**
- 4.4. All casting procedures, construction methods and positions of construction joints shall be submitted to the engineer prior to the commencement of the project.
- 4.5. All exposed concrete work to be off-shutter grade II finish unless noted otherwise.
- 4.6. Cement extenders to be used only if approved by the Engineer.
- 4.7. Mix design to be submitted for approval to meet requirements for green star rating.
- 4.8. Revibrate top 300mm of columns approx. one hour after casting. (or before initial settling takes place)
- 4.9. All slabs to be surveyed on a 1,5m x 1,5m grid before & after props have been removed, to confirm level tolerances.
- 4.10. The strength of concrete cover blocks shall at least be equal to the concrete strength of the structural element in which they are used. The size and fixing method of cover blocks shall be discussed in advance with the engineer.
- 4.11. A 25 mm x 25 mm chamfer shall be provided on all visible corners of concrete.
- 4.12. All exposed concrete overhangs shall be constructed with a drip groove 50mm back from the edge of the concrete.
- 4.13. Curing
 - 4.13.1. Curing of concrete shall be carried out strictly in accordance with SANS 2001-CC1 and SANS 1200.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 14 of 48</p> <p>REV : 01</p>
--	---	--

- 4.13.2. “High Temperature Accelerated Curing” shall not be permitted.
- 4.13.3. All columns shall be cured with a plastic membrane.
- 4.13.4. Wet curing to be applied to top of element (excluding columns) within 8 hours of start of casting. Element to be wet-cured for 3 days and thereafter covered with DPC for a further 4 days
- 4.14. Curing compounds shall not be allowed unless expressly authorized by the Engineer. Authorization is to be requested in writing in good time. Water based curing compounds will not be accepted.
- 4.15. Formwork & formwork removal
- 4.15.1. Stripping times of shuttering and propping shall be in accordance with SANS 2001-CC1 clauses 4.3.8 and Table 2 as well as SANS 1200.
- 4.15.2. The following elements or parts of the structure are to remain fully propped until the required design concrete strength has been reached:
- Beams
- Cantilevers
- Slabs supporting hanging structures (Note that the portions being suspended cannot support the floor directly above)
- Note:** Formwork / propping design to account for any loads imposed on the propped structure
- 4.16. The specification, for the removal of propping under beams, are also applicable to concrete walls which are not continuous to bases and are thus acting as beams.
- 4.17. The main contractor is to appoint a competent person to design all formwork and support work. The engineer is to be contacted if any loading requirements are unclear.
- 4.18. Formwork layout drawings prepared by the competent person are to be kept on site for inspection at any time.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 15 of 48</p> <p>REV : 01</p>
--	---	--

- 4.19. Back-propping to be discussed with the engineer. The contractor to submit a back-propping method and/or method-statement for acceptance. Note that typical back-propping information does not supersede formwork design as required of the Contractor.
- 4.20. Specification for concrete mix design
- 4.20.1. Stone aggregate: 19/9mm. To comply with **SANS 1083:2006**
- 4.20.2. Sand: To comply with **SANS 1083:2006**. Admixtures: None, except as agreed with the Engineer.
- 4.20.3. 30% reduction in OPC usage as project discuss with engineer.
- 4.21. Concrete cube crushing tests as per SANS 2001-CC1 Clause 5.2
- 4.22. The live loads for which the structures have been designed for are as follows:
- 4.22.1 2.5kPa for Offices
- 4.22.2 3.0kPa for Passages
- 4.22.3 5.0kPa for Areas Susceptible to Crowding
- 4.22.4 5.0kPa for Staircases
- 4.22.5 0.25kPa for Inaccessible Roofs
- 4.23. All casting procedures, construction methods and positions of construction joints shall be submitted to the engineer prior to the commencement of the project.
- 4.24. The contractor must co-ordinate all services drawings for details and positions of openings and sleeves required for stormwater, sewerage, drainage, electrical, mechanical and other services. Only openings larger than 150 mm dia or 150 x 150 mm are shown on structural drawings.
- 4.25. The contractor must obtain permission from the engineer before any openings or services, which are not indicated on the drawings, may be introduced through any structural element or close to any column.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 16 of 48</p> <p>REV : 01</p>
--	---	--

- 4.26. Penetrations not indicated on drawings may not be introduced within a distance of 4 (four) times the slab depth from any column
- 4.27. No chasing of services into concrete elements are allowed
- 4.28. Defective concrete work shall be reported to the engineer without delay. The contractor may not proceed with any remedial work or patching unless approved by the engineer in writing.
- 4.29. No brick or block walls are to be built on floor slabs before the slabs have reached their 14-day strengths. Propping underneath slabs and beams shall be completely removed before brickwork is built. All bricks required for brick walls on a specific slab panel should be stacked evenly onto that specific slab panel before walls are being built.
- 4.30. Beam dimensions are given as a x b where:
a = width of beam
b = total overall depth of beam
- 4.31. No kickers allowed.
- 4.32. See architect's drawings for detail and positions of v-joints and drip joints in concrete.
- 4.33. See architect's drawings for detail and positions of rain water pipes in concrete and other cast-in items.
- 4.34. All columns are placed symmetrically on grid lines unless otherwise shown.
- 4.35. Concrete tolerance to be as follows:
Internal concrete: Degree of accuracy No. II (SANS 2001-CC1, clause 5.2)
- 4.36. All special concrete finishes including screeds, toppings, etching, colouring, hardening and inlays by others.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 17 of 48</p> <p>REV : 01</p>
--	---	--

- 4.37. All concrete drawings to be read in conjunction with the relevant architectural and structural steel drawings and any discrepancy to be brought to the attention of the engineer in writing.
- 4.38. All cast-in items to be hot-dipped galvanized, clean and free of oil, dirt or any other material which may impair the bond with concrete. Tolerance for placing according to SANS 2001-CC1 clause 5.2.
- 4.39. Areas with congested cast-in items, such as electrical conduits, are to be approved by the engineer
- 4.40. All grouts and epoxies to be used strictly in accordance with the manufacturer's specification.
- 4.41. Defective concrete to be brought to the engineer's immediate attention in writing.
- ✓ No remedial work may be done without written consent from the engineer.
 - ✓ Visible honeycombing will not be permitted.
 - ✓ All concrete forming part of the pour containing visible honeycombing will be demolished and rebuilt at the contractor's expense.
 - ✓ No protruding reinforcement will be permitted.
 - ✓ All blow holes are to be filled using DURAREP FC (by ABE construction chemicals, or similar approved), if deemed necessary by the engineer.
- 4.42. Construction Joints
- 4.47.1. All horizontal and vertical construction joints shall be cleaned of all dirt and loose particles. All intersections of construction joints with concrete surfaces, which will be exposed to view, shall be made straight and level or plumb.
- 4.47.2. The surface of the concrete to be prepared shall be between 6h and 12h old after completion of placing and shall be 'blown off' using a high pressure water jet until all dirt and laitance is removed, and

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 18 of 48</p> <p>REV : 01</p>
--	---	--

particles of clean coarse aggregate are exposed sufficiently to produce a rough keyed surface. (The success of this method of preparation is dependent on selection of the correct time and equipment to suit the cement type and atmospheric conditions)

4.47.3. The prepared surfaces shall be saturated with fresh clean water for a period of 4 hours prior to the adjoining pour.

4.47.4. Prior to placement of concrete the surface condition shall be saturated, yet surface dry - no pooling or standing of water.

4.48. Formwork tie holes

4.48.1. For conventional concrete all tie holes are to be plugged with an approved non-shrink grout – Sikagrout 212, or similar equivalent strictly in accordance with the manufacturer’s details & specifications.

4.48.2. For concrete designated as waterproof (with Xypex or similar admixtures and/or post-applied slurry coats) the details & specifications for plugging as provided by the relevant product supplier must be strictly adhered to.

4.49. Concrete Surfaces

4.49.1. When a wood-floated finish is specified, the surface shall first be treated as follows:

4.49.1.1. Immediately after placing and compaction, the concrete shall be screeded with true straight edged equipment working between forms or other guides set accurately to line and level.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 19 of 48</p> <p>REV : 01</p>
--	---	--

4.49.1.2. No mortar shall be added to depressions and proud aggregate shall be tamped level.

4.49.1.3. After the concrete has hardened sufficiently it shall be floated to a uniform surface free from trowel marks with a wooden float.

4.49.1.4. Within 2hrs of final set curing of the concrete shall commence.

4.49.2. When a steel-floated finish is specified, the surface shall be treated as specified for a wood-floated finish above. In addition the following is to be done:

4.49.2.1. When the bleed water has disappeared and the concrete has hardened sufficiently to prevent the migration of laitance foam to the surface, the levelled surface shall be floated with a steel trowel

4.49.2.2. Firm uniform pressure shall be applied to provide a dense, smooth, uniform surface free from any irregularities

4.49.3. When a power-floated finish is specified, the surface shall be treated as specified for a wood-floated finish above. In addition the following is to be done:

4.49.3.1. The levelled concrete surface shall be power-floated to provide a dense surface.

4.49.3.2. After the bleed water has disappeared and the concrete has hardened sufficiently the float-blades shall be replaced with trowel-blades

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 20 of 48</p> <p>REV : 01</p>
--	---	--

4.49.3.3. The surface will be power-trowelled with a single pass to provide a dense, smooth, uniform surface free from irregularities.

4.49.4. When a power-trowelled finish is specified, the surface shall be treated as specified for power-floated finish above. In addition the following is to be done:

4.49.4.1. After fitting the trowel-blades the surface shall be continually burnished to provide a dense, smooth, high quality polished surface free from any irregularities.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 21 of 48</p> <p>REV : 01</p>
--	---	--

5. SURFACE BEDS

- 5.1. Provide 10mm isolation joints (I.J.) around all concrete columns and against brick walls. After concrete has set, Jointex to be raked out 10mm deep and sealed with approved joint sealant – refer to Standard Details.
- 5.2. Saw-cut joints are to be done as soon as concrete is firm enough not to damage the edges. Usually between 6 to 16 hours. Joints to be repeated in finishes.
- 5.3. See standard details for specifications for saw-cut, isolation & construction joints.
- 5.4. All backfill to be compacted in layers not exceeding 150mm to 98% MOD. AASHTO u.n.o.
- 5.5. In areas of cut the surface beds are to be placed on treated in situ soil. The upper 150mm is to be ripped and re-compacted to 93% MOD AASHTO at optimum moisture content.
- 5.6. Method statement for pouring of surface bed panels to be approved by the engineer.
- 5.7. Engineers' drawings to be read in conjunction with Architects drawings.
- 5.8. All services and sleeves to be positioned prior to casting surface beds.
- 5.9. Layout of panels to be strictly adhered to. Construction procedure, sequence and location of construction joints to be discussed with the engineer prior to casting of surface bed.
- 5.10. Surface bed to be power floated to just short of being polished. Method to be approved by engineer prior to implementation.
- 5.11. Slabs to be cured for min. 7 days after casting of concrete i.e. kept wet or covered with plastic membrane.
- 5.12. Saw-cut sequence to be based on 'halving' all panels discuss with engineer prior to implementation.
- 5.13. Cement type to be used in 25MPa surface bed :

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 22 of 48</p> <p>REV : 01</p>
--	---	--

CEM I : 42.5 or higher

CEM II : A-U, W, L or S, 32.5 or higher

- 5.14. Unless otherwise specifically noted, all joints shown are either saw cut or construction joints.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 23 of 48</p> <p>REV : 01</p>
--	---	--

6. REINFORCEMENT

- 6.1. Reinforcement shall be manufactured and fixed to comply with the tolerances as specified in **SANS 2001-CC1:2007** and/or the project specification.
- 6.2. Bending of reinforcement shall be in accordance with **SANS 282**
- 6.3. No reinforcing may be cut without written approval from the engineer
- 6.4. Should starter bars move during the preceding cast; they may not be bent back into position. The engineer is to be informed in writing – the correspondence is to include sufficient digital photographs to show the problem
- 6.5. The contractor shall inspect and approve the fixed reinforcement before the engineer is notified of a required inspection. The engineer is to be notified, in writing, at least 24-hours in advance for the required inspection.
- 6.6. All reinforcement shall be inspected and approved by the engineer before casting of concrete may commence.
- 6.7. Reinforcing steel shall be clean from oil, rust, dirt and other contaminants
- 6.8. No slab will be inspected unless the reinforcing and cables (if present) have been fully fixed; all other services have been installed and the deck has been cleaned properly.
- 6.9. No heat treatment, welding or cutting of steel without the written approval of the engineer shall be allowed.
- 6.10. Bend-out bars at construction joints shall be bent out with a suitable pipe so that no kink is formed in the bar.
- 6.11. Minimum concrete cover to reinforcing to be allowed for to be as follows U.O.N:
 - Foundations - 50mm
 - Pile Caps - 50mm
 - Columns (internal) - 30mm

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 24 of 48</p> <p>REV : 01</p>
--	---	--

Columns (exposed)	-	30mm
Beams	-	30mm
Slabs	-	30mm
Retaining walls	-	30mm non-fill side / 40mm fill side

6.12. No tie-wire shall encroach on the specified minimum cover by more than a strand thickness

6.13. Concrete cover blocks shall be manufactured in accordance with the requirements of SANS 10100 Part 2 (8.4.1.2). Fixing wire shall be fully galvanised Class A in accordance with SANS 675. All cover blocks used shall be of a semi-spherical shape. Blocks shall be fully cured in water for 14 days before use.

6.14. Plastic 'Snap-On' positioners may be used provided they are of sufficient strength and quality such that they do not distort, and that they shall be securely wired at cross-rebar junctions.

6.15. The following grouts may be used for dowel bars. Grouts to be used strictly in accordance with the manufacturers' specifications:

Y10 up to Y20 bars (u.n.o.)	-	Fischer FIS-V or Hilti HIT-HY 200
Y25 up to Y40 bars (u.n.o.)	-	Fischer FIS-EM or HILTI HIT-RE 500
Moist substrate (u.n.o.)	-	Fischer FIS-EM or Hilti HIT-RE 500

6.16. Should the contractor wish to use an alternative product, it is to be requested in writing. The request is to include valid European Technical Approval (ETA) certificates for the anchor's intended use.

6.17. Sufficient reinforcing is to be from recycled sources in order to satisfy Greenstar requirements. (structural steel & rebar)

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 25 of 48</p> <p>REV : 01</p>
--	---	--

7. STRUCTURAL STEELWORK

- 7.1. All structural steelwork shall be fabricated and erected in accordance with SANS 2001-CS1.
- 7.2. Welding
- 7.2.1. Welds shall conform to SABS 0167 – 1984, 044 and AWS D 1.1 specifications.
- 7.2.2. Where no weld sizes are shown, the minimum weld size shall be that of the thickest plate of the connecting plates/elements. Unless otherwise shown the intention of connections are to transfer the full force that can be developed in connecting members through the connection.
- 7.2.3. When using electric arc welding, all electrodes shall be E70 18. For any other welding process to be used, the contractor shall apply, in writing, for the approval from the engineer for the electrodes to be used.
- 7.2.4. All butt welds shall develop the full strength of the elements joined.
- 7.2.5. All splices shall develop the full strength of the elements joined.
- 7.2.6. Welding shall only be performed by coded welders.
- 7.2.7. Site welding: To material grade S355JR:
- Welding to be performed by qualified (certified) and experienced welders using proper equipment in a good condition.
- Weld areas should be free from impurities and be protected against climatic efforts.
- Weld areas should be free from impurities and be protected against climatic efforts.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 27 of 48</p> <p>REV : 01</p>
--	---	--

Hollow sections Grade S355 Tube (Minimum yield stress of 355MPa)

Cold formed open sections Commercial grade (Minimum yield stress of 240MPa)

- 7.10. Tensile strength testing results must be provided for each batch of steel from which cold-formed sections are sourced.
- 7.11. A certificate from the steel manufacturer in which the grade of the structural steel is verified shall be handed to the engineer for approval.
- 7.12. All structural bolts shall be grade 8.8 unless otherwise noted (hot-dipped-galvanized).
- 7.13. The proposed method and sequence of erection of the structure shall be submitted to the engineer for written approval. Such submission is to take place at time of shop drawing submittal. The contractor shall indicate the proposed method of propping to ensure stability of the structure during erection. Such stability during erection remains the contractor's responsibility. Where temporary bracing or propping is required, the contractor shall be responsible for the design, erection, maintenance and removal (where necessary) thereof. Proposal of such bracing or propping shall be submitted to the engineer at an early stage for his perusal.
- 7.14. Setting-out points (S.O.P's) at member centroids shall conform to those shown on general arrangement drawings. No eccentricities, except those shown on the engineer's drawings, shall be allowed.
- 7.15. Welding of stainless steel shall be done according to the MMA process and stainless steel 316l welding rods shall be used. Welds shall be pickled and passivated on completion

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 28 of 48</p> <p>REV : 01</p>
--	---	--

- 7.16. All structural steel drawings to be read in conjunction with the relevant architectural, concrete drawings as well as the Bill of Quantities and any discrepancy to be brought to the attention of the engineer in writing.
- 7.17. Quality control on welding shall be as follows:
- ✓ All welds shall be inspected using visual aids.
 - ✓ All butt welds : 100% ultrasonic NDT
 - ✓ All fillet welds : 20% MPI
- 7.18. Welding procedures and welders' performance qualifications shall conform to the requirements of AWS D 1.1. The supporting documentation is to be submitted to the engineer and approved prior to the start of welding.
- 7.19. Where applicable, cementitious non-shrink grout shall be provided under base plates before any primary loads are applied to the structure. Laminated finger shaped packing to be provided under base plates (hot-dip galvanized).
- 7.20. Where HSFG bolts are specified, the following shall apply:
- 7.20.1. All contact surfaces at HSFG bolt splices shall be free from oil, grease, rust, scale, paint or any other impurities at the time of bolting
- 7.20.2. The tightening of high strength friction-grip bolts shall be done according to the turn-of-the-nut method as specified in clause 5.3.1(a) of SABS 094-1982 Or
- Where HSFG bolts have been specified, the contractor shall use "coronet"-type load indicating washers in conjunction with such bolts.
- 7.21. The contractor shall, at the commencement of the project, acquaint himself with the availability and delivery time of the products and steel profiles specified on the drawings so that such material can be ordered ahead of time.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 29 of 48</p> <p>REV : 01</p>
--	---	--

- 7.22. Where slotted holes for bolts occur, the nut shall be hand tightened and a lock-nut be provided unless noted otherwise.
- 7.23. The contractor shall request inspections by the engineer at the following stages:
- ✓ After preparation of individual steel elements for butt welding, but before welding has commenced.
 - ✓ During welding of elements.
 - ✓ After welding has been completed, but before application of corrosion protection, to allow testing of welds.
 - ✓ After core-drilling of anchor bolts on site, but before installation of bolts.
 - ✓ After installation of anchor bolts to allow testing of bolts by bolt supplier.
 - ✓ During erection of structural steelwork. At completion of erection.
- 7.24. The contractor may not commence with a stage before the previous stage has been inspected, approved and signed off by the engineer. The contractor shall submit the following to the engineer:
- ✓ Certificates of coded welders.
 - ✓ Weld procedure specification (WPS).
 - ✓ Procedure planning specification (PPS) indicating inspection benchmarks.
- 7.25. One chemical anchor bolt shall be installed as a test bolt and be tested to the ultimate tensile capacity of the bolt, by the bolt manufacturer. Further bolts may only be installed after successful completion of the test.
- 7.26. Paint Specification for the bolts: 3 days before the erection of the structural steelwork, all bolts are to be cleaned and degreased. Within 2 days of erection, all bolts are to be coated with 1 coat of Sigmadur Gloss or equivalent
- 7.27. See architectural drawings for final colour of structural steelwork and corrosion protection.
- 7.28. Carefully inspect each coat for misses and carry out dry film thickness (DFT) testing. No single DFT reading may be less than the minimum or greater than the

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 30 of 48</p> <p>REV : 01</p>
--	---	--

maximum. The mean of the readings shall equal or exceed the nominal. All critical areas, edges, weld, etc. to be given extra stripe coats. All coats to be in contrasting shades. All work to comply with the project quality requirements and the general preamble.

- 7.29. All angle irons supporting brickwork to be galvanized
- 7.30. Fireproofing of steelwork to comply with the requirements of SABS 0400 Part T. The fireproofing method must be submitted to the Engineer for approval.
- 7.31. Corrosion protection shall consist of:
 - 7.33.1. All structural steel to be shot-blast or wire brushed clean to SA 2.5 of SIS-05-59-00. Quantity Surveyor to confirm.
 - 7.33.2. Apply one coat (75 micron) primer, Interzinc 233 ex; Plascon or Sigma Tornusil MC 60 ex Dulux in accordance with manufacturers' data sheets and SABS 681.
 - 7.33.3. Apply one coat (100 micron) intermediate coat Interseal 010-MIO ex Plascon or Sigmacover CM MIO ex Dulux in accordance with manufacturers' data sheets and SABS 681.
 - 7.33.4. Apply one finishing coat (50 to 75 micron) to Architects' colour specification of Interthane 990 ex Plascon or Sigmadur Gloss ex Dulux in accordance with manufacturers' data sheets and SABS 681. Damaged areas of paint shall be made good on site in accordance with SABS 0120.
 - 7.33.5. For steelwork below surface bed apply one coat of alkyd base enamel (70 micron).
 - 7.33.6. For exposed steelwork 1 to 4 applies. For concealed roof trusses only 1 and 2 apply (only in ceiling voids where there is no light). For steelwork below surface bed only 1, 2, 3 & 5 apply.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 31 of 48</p> <p>REV : 01</p>
--	---	--

- 7.34. Corrosion protection of gutters to be as follows:
- 7.34.1. Prepare and patch surface & clean with galvanize iron cleaner - Plascon GILI
 - 7.34.2. Apply one coat PLASCON epoxy tar EPD 112 with a dry film thickness of 75 microns and one coat PLASCON epoxy tar EPD 100 with dry film thickness of 75 microns to give a total dry film thickness of 150 microns. All work must be done in accordance with the manufacturer's instructions.
- 7.35. HD Bolts to be hot-dipped galvanized and threads must be undercut after galvanizing.
- 7.36. Sufficient structural steel is to be from recycled sources in order to satisfy Greenstar requirements. 60% of all steel by mass to have minimum of 90% recycled content & certificates to validate this shall be provided to the engineer.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 32 of 48</p> <p>REV : 01</p>
--	---	--

8. TIMBER

- 8.1. All structural timber shall be in accordance with SABS 1245 laminated timber SABS 1460.
- 8.2. All structural timber delivered to the project should be marked with the relevant timber grade stress.
- 8.3. The contractor is to cover all materials against the weather if stored for long periods.
- 8.4. Truss hold-down is to be in accordance with standard details or designers details.
- 8.5. All connections, hangers and cleats to be in accordance with design specification.
- 8.6. The contractor is to check that all bracing specified has been fixed in the correct position.
- 8.7. All timber used on site to be procured from FSC approved sources.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 33 of 48</p> <p>REV : 01</p>
--	---	--

9. ELECTRICAL SLEEVES

- 9.1. All Telecommunication and electrical sleeves are to be 100mm diameter kableflex (HDPE) or similar approved and laid 600m below final road level unless otherwise shown.
- 9.2. All Telecommunication and electrical sleeves to extend 1000mm behind the kerb, complete with rust free draw wires.
- 9.3. Refer to electrical Engineer's drawings for location of sleeves.
- 9.4. All existing services to be located by the Contractor before excavations commence.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 34 of 48</p> <p>REV : 01</p>
--	---	--

10. SUSTAINABILITY

- 10.1. Concrete mix designs to be designed to provide an overall 30% reduction in cement from 100% OPC mixes.

- 10.2. For total volume of concrete on project, all reinforcing to be from recycled sources.

- 10.3. All pipes to be HDPE. No PVC pipes will be permitted.

- 10.4. All timber used on this project, both temporary and permanent is to be FSC certified.

- 10.5. No products or materials using formaldehydes or VOC's are permitted. Contact engineer for list of VOC's

- 10.6. Where reasonable and practical, all materials to be sourced from local regions (50km or less from site) to minimum transport costs.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 35 of 48</p> <p>REV : 01</p>
--	---	--

11. PILING

- 11.1 The contractor shall allow in his price for the removal of spoil and/or breaking up of boulders.
- 11.2 Geotechnical profiles: refer to the geotechnical investigation report by REPORT REF:
- 11.3 The lap length of vertical and spiral reinforcement in piles shall be at least 40 times bar dia. A minimum of 35 times bar diameter need to extend above the pile cut-off level to be cast into the pile cap.
- 11.4 The installation of piles shall be in accordance with SANS 1200 F-1983, SANS 0161 and SANS 088.
- 11.5 All sizing and design of piles, including concrete grade (minimum grade of 25mpa) and reinforcement, to be carried out by the piling contractor (unless otherwise specified).
- 11.6 Piles shall be cast to a level higher than the cut-off level and then cut back down to the listed cut-off level to ensure top concrete is free of debris.
- 11.7 The maximum permissible deviation of piles in any direction on plan shall be 75mm regardless of the pile diameter. The cast piles are to be surveyed by the piling contractor
- 11.8 All pile holes greater than 550 diameter shall be thoroughly cleaned and inspected by the geotechnical engineer prior to placing of reinforcing steel and casting of concrete.
- 11.9 The piling contractor is to submit details of his pile performance guarantee prior to acceptance of his tender.
- 11.10 Pile types are cast-insitu augered piles, designed on end-bearing and friction. Unless otherwise indicated

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u> <u>LADYSMITH HOSPITAL</u> PROJECT NOTES AND SPECIFICATIONS i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21 Page: 36 of 48 REV : 01</p>
--	--	--

11.11 Any pile refusal at an unexpected depth is to be reported to the engineer. The obstruction is to be exposed for inspection prior to further work being done in this area.

11.12 The piles are to withstand axial loads only, unless noted otherwise, and are to be suitably restrained at pile head level.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 37 of 48</p> <p>REV : 01</p>
--	---	--

12. TESTING SPECIFICATIONS

12.1 All earthworks to be tested in accordance with the following specification:

- Fill material from site: 3 x Road indicator with CBR values per 5000m³
- Fill material from borrow pit: 3 x Road indicator with CBR values per 2500m³
- Compaction in platforms: 1 x Nuclear density test per 1500m² per layer
- Compaction of road bed: 1 x Nuclear density test per 1500m² per layer
- Compaction of berm: 1 x Nuclear density test per 2000m² per layer

Compactor to keep accurate records the exact position and levels of density tests and will submit copies to the engineer on a weekly basis.

All test results will be evaluated in accordance with SANS 1200

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 38 of 48</p> <p>REV : 01</p>
--	---	--

13 LEVEL TOLERANCES

- 13.1 All level tolerances for earthworks to be degree II (SANS 1200 D) but the smoothness tolerance on the excavation/filled up terrace platforms shall be such that no unevenness will be greater than 50mm over 4m except for areas to receive surface beds where no unevenness must be greater than 15mm over 4m.

- 13.2 Tolerances in accordance with SANS 1200 D (degree II) are:
 - ± 50mm - all areas except surface bed areas.
 - ± 15mm - surface bed areas.

- 13.3 All level tolerances for building to be in accordance with SANS 1200G and SANS 0155

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 39 of 48</p> <p>REV : 01</p>
--	---	--

14 EARTHWORKS GENERAL NOTES

- 14.1 All earthworks to be carried out in accordance with SANS 1200 D - 1988.
- 14.2 Selected layer (on reduced bulk excavation bed) in accordance with SANS 1200 DM.
- 14.3 Small works in accordance with SANS 1200 DB.
- 14.4 Pipe trenches in accordance with SANS 1200 DB.
- 14.5 Site clearance and grubbing operations shall be carried out in accordance with SANS 1200 C.
- 14.6 The contractor to identify and expose, where relevant, all underground services on site. He should liase with all relevant authorities for the location and protection of these services.
- 14.7 Positions of existing services indicated on this drawing are approximate and must be located by means of hand excavation to establish their exact location. The location of existing services to take place prior to construction.
- 14.8 All unsuitable materials i.e. roots, concrete pipes, old foundations, building rubble shall be disposed of to a suitable dumping site.
- 14.9 150mm Top soil to be stockpiled on site for later use unless otherwise specified.
- 14.10 All approved material to be stockpiled separately, and later be reused as
- 14.11 The contractor to use only approved fill material as specified by the engineer.
- 14.12 All the exposed reduced excavation beds and areas to receive fill shall be cleared, ripped and compacted to 90% MOD. AASHTO to a depth of 150mm unless otherwise noted.
- 14.13 All areas in cut shall be ripped, scarified to a depth of 150mm and recompacted to 90% mod. AASHTO at 1% to 2% below OMC.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 40 of 48</p> <p>REV : 01</p>
--	---	--

- 14.14 The contractor shall timeously submit field and laboratory test results of relative compaction densities, CBR indicator tests or any other test results as required, to the engineer.
- 14.15 The contractor should make provision for stormwater control.
- 14.16 Maximum cut slopes to be 1:1 and fill slopes to be 1:2 unless otherwise stated.
- 14.17 As built survey levels to be handed to the engineer after the completion of earthworks.
- Field density tests should be carried out at a rate of 1 test per 150 m² per layer.
 - The position of tests and layers to be indicated on a key plan and submitted with the results to the engineer.
 - Tests to be done by an independent laboratory approved by the engineer.
 - Positions of tests to be approved by the engineer.
 - One of the density tests should be a sand replacement test /10 TROXLER tests and evenly spread over all layers.
- 14.19 The engineer shall be notified if the excavation or subgrade is in rock. The type of rock will be classified according to SANS 1200.
- 14.20 The existing ground levels as per the land surveyor's dwg. Must be confirmed before construction commences.
- 14.21 Extent of earthworks is restricted to the inside of the erf boundary. (uno)
- 14.22 Permissible deviation (pd) for terraces and excavation face are as follows:
- Away from excavation face +40mm
 - Towards excavation face ±0mm
 - Final excavation floor level +0mm & -100mm

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 41 of 48</p> <p>REV : 01</p>
--	---	--

15 SEWER NOTES

- 15.1. Manholes are to be finished with final road, paving, etc. Levels unless otherwise noted.
- 15.2. Sewer reticulation network to be pressure tested to the engineers specification.
- 15.3. All pipes to be 160 mm dia. UPVC class 34 heavy duty drain pipes unless otherwise shown.
- 15.4. Backfill around manholes to be cement stabilised to engineer’s specification.
- 15.5. Compaction of backfill trenches to be confirmed by in-situ compaction tests at a rate of 1 test / layer / 25 m of trench.
- 15.6. Backfill around manholes and in trenches to be done with selected fill material in layers not exceeding 300 mm in thickness. This material should be carefully and uniformly placed and compacted to 93% MOD AASHTO.

	<p style="text-align: center;"><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p style="text-align: center;"><u>LADYSMITH HOSPITAL</u></p> <p style="text-align: center;">PROJECT NOTES AND SPECIFICATIONS</p> <p style="text-align: center;">i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 42 of 48</p> <p>REV : 01</p>
--	---	--

16. STORMWATER

- 16.1. Top of concrete surround to grid inlets to be 20mm below top of adjoining paving blocks.
- 16.2. Backfill around manholes and in trenches to be done with selected fill material in layers not exceeding 300mm in thickness. This material should be carefully and uniformly placed and compacted to 93% MOD. AASHTO.
- 16.3. All pipes to be of concrete ogree joint type except for underneath buildings, which are to be of the concrete spigot and socket type.
- 16.4. All pipes to be inspected by the engineer before backfilling.
- 16.5. Compaction of backfill to trenches to be confirmed by in-situ compaction tests at a rate of one test / layer / 25m of trench.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 43 of 48</p> <p>REV : 01</p>
--	---	--

17. WATER RETICULATION

- 17.1. Thrust blocks to be provided at all T-pieces, valves and bends.
- 17.2. All mild steel fittings to be treated with a copon coating or similar approved protective coating.
- 17.3. Pipe bedding to comply with SANS 1200 LB.
- 17.4. All backfill material to be compacted to 93% MOD. ASSHTO.
- 17.5. Pipe fittings and thrust blocks to be inspected by the engineer before backfilling commences.
- 17.6. Water reticulation network to be pressure tested to the engineers specifications.
- 17.7. All pipes to be class 16UPVC unless otherwise shown.
- 17.8. All bends to the UPVC unless otherwise shown.
- 17.9. All flanges to be mild steel, welded on and drilled to SANS 1123 : TABLES 10, 15 & 25.
- 17.10. The position of existing services as shown are schematic. The contractor is responsible for the location of all existing services.
- 17.11. Assistance should be obtained from the various authorities to ensure that no other services exist.
- 17.12. All pipes and invert levels to be cut and suited on site to ensure pipe invert levels are 1m below bulk earth works level.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 44 of 48</p> <p>REV : 01</p>
--	---	--

18. QUALITY CONTROL / REFERENCES:

CONCRETE:

- 18.1. 6 cubes for every 50 m or every independent pour (ie. 3 cubes at 7 days and 3 cubes at 28 days).
- 18.2. Refer to drawings for concrete strengths required. Provide concrete mix designs for approval. All to SANS 1200 G and SANS 0155.

STRUCTURAL BRICKWORK (LOAD BEARING BWK):

- 18.3. Required theoretical compressive strength to be 14 MPa at 28 days of strength.
- 18.4. Test to carried out as per SANS 0164.
- 18.5. Test 3 bricks per 10 000 batches, or truckload.
- 18.6. Refer to structural drawings for further specifications.

CLASS / MORTAR REQUIREMENTS:

- 18.7. Minimum strength required for 10 MPa at 28 days.
- 18.8. Test to be carried out once a week.
- 18.9. Tests to be carried out as per SANS METHOD 749.

CIVIL WORKS:

- 18.10. Refer to specifications on drawing

WATERPROOFING:

- 18.11. All to specialists / architects specifications and to comply with waterproofing: SANS 021 1988 and SANS 248 1996.

ARCHITECTURAL BRICKWORK:

- 18.12. All to comply with the national building regulations and respective SANS (SANS) codes of practice; SANS 0400 and 0164.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 45 of 48</p> <p>REV : 01</p>
--	---	--

18.13. Provide "tibond" straps surface fixed to steel columns
(at every 4th course).

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 46 of 48</p> <p>REV : 01</p>
--	---	--

19. PAVING

- 19.1. Construction of roads and paving to comply with the specification of SANS 1200 M.
- 19.2. All horizontal dimensions are to paving face of kerbs.
- 19.3. All concrete block and brick paving to be laid in a herring bone pattern unless otherwise noted.
- 19.4. All levels indicated thus 00,000 are too top of paving.
- 19.5. All edges of block paving to be cut to suit line of kerbs and grouted solid.
- 19.6. Haunching behind kerbs to be inspected by the engineer prior to backfilling.
- 19.7. Each layer of road construction to be tested by an independent laboratory at the rate of one test per 1500 per/m².
- 19.8. Concrete paving surface to be steel power floated with a broom finish unless otherwise noted.

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 47 of 48</p> <p>REV : 01</p>
--	---	--

20. ROAD MARKING NOTES

- 20.1. All road markings and signboards are to be in accordance with the SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL.
- 20.2. Road paint is to be to sans 731 specifications.
- 20.3. Road paint application is to be 0.42 litre/m²

	<p><u>DEPARTMENT OF HEALTH PROVINCE OF KZN</u></p> <p><u>LADYSMITH HOSPITAL</u></p> <p>PROJECT NOTES AND SPECIFICATIONS</p> <p>i0224 -01-STR-0001</p>	<p>DATE: 2024-06-21</p> <p>Page: 48 of 48</p> <p>REV : 01</p>
--	---	--

21. ELECTRICAL SLEEVES

- 21.1. All telecommunication and electrical sleeves are to be 100mm dia. kabelflex (HDPE) or similar approved and laid 600mm below the final road level unless otherwise noted.
- 21.2. All telecommunication and electrical sleeves to extend 1000 mm behind the kerb complete with rust free draw wires.
- 21.3. Refer to electrical engineer's drawings for location of sleeves and cast-in elements. No reinforcement is to be re-positioned or removed for cast-in elements smaller than 300 mm unless agreed with the structural engineer.
- 21.4. All existing services to be located by the contractor before excavations commence.

CIVIL

1. Design Rational

- The Design Rational/ Criteria used as a Guideline in the Design of the services as mentioned above is the publication “Guideline for the Provision of Engineering Services and Amenities in Township Development”.

This criterion is widely used as the guideline for the design of Public Infrastructure & Municipal Services and adopted appropriate practices and technologies in the built environment;

- TRH 4: Structural Design of Flexible Pavements for interurban and Rural Roads;
- TRH 3: Surfacing Seals for Rural and Urban Roads, etc.

Technical specifications and engineering principles applicable for the respective elements were considered and factored to attain the required designs and sustainable output or product. The design criterion, also drew reference to the following Codes of Practice:

- Loading - SANS 10160-1989;
- Concrete - SANS 10100 and SABS 10161;
- Structural Steel - SANS 10162;
- Timber Design - SANS 10163;
- Masonry Design - SANS 10164;
- South African Steel Construction Handbook, etc.

3.1.1 Sewer Network Design Criteria

The following design criteria are applicable to the design of the internal network for the proposed sewer reticulation.

a) Mains:

Minimum cover:

- In servitudes 600mm;
- In sidewalks 1,400mm below final kerb level;
- In road carriageway 1,400mm below final road level;

Trenching and bedding

SABS 1200LB

Bedding

Drawing LB-2 (SABS 1200LB, p10)

b) Collector Sewers:

Flow formulae: Friction loss factor (n) = 0.012 (Manning)

Minimum size of sewers: 100mm dia.

The minimum sewer will be 160mm PVC, 400kPa structured wall pipe.

Table 9.6: Limiting Gradients:

Minimum sewer gradients

Sewer diameter (mm)	Minimum gradients (mm)
100	1 : 120
150	1 : 200
200	1 : 300
225	1 : 350
250	1 : 400
300	1 : 500

Velocities: Minimum (full bore): 0.5m/s

c) Manholes:

Position At all junctions, at all changes of grade
At all changes of direction

Maximum interval 150m

Minimum interval Determine by site conditions and buildings layout

Minimum manhole sizes:

Table 9.7: Minimum Gradients:

Minimal internal dimensions of manhole chambers and shafts

SHAPE	CHAMBER	SHAFT
Circular	1000mm	750
Rectangular	910mm	610

Slope of benching in manholes:

Maximum 1 : 5

Minimum 1 : 25

Design requirements SABS 1200LD

Steep drop

- c) In road carriageway 1,400mm below final constructed road level

Where the depth of cover in roads or sidewalks is less than 500mm or where the depth of cover in servitude is less than 300mm, the pipe should be protected from damage by means of:

- a) The placement of cast in-situ or precast concrete slabs(s) over the pipe, isolated from the pipe crown by a soil cushion of 100mm minimum thickness. The protecting slab(s), to be wide enough to prevent excessive superimposed loads being transferred directly to the pipes.
- b) The use of structurally stronger pipes able to withstand superimposed loads at the depth concerned.
- c) The placement of additional earth filling over the existing ground level in isolated cases where this is possible.

The encasement of pipes in concrete is not recommended. Where encasement had to be employed these were made discontinuous at pipe joints so as to maintain joint flexibility.

Manholes are of precast concrete manufactured with high alumina cement. All in-situ concrete in the manhole that comes into contact with sewage will likewise have to be manufactured with high alumina cement.

Maximum spacing of manholes is 150m.

Structural

4 Design Philosophy

The New Paediatric Unit and complex of extensions and upgraded buildings, i.e. Mortuary, Laundry & Pharmacy, has been modelled and analysed using a combination of First Principles and Computer Aided Design (CAD) & Structural Design programs.

The drawings were produced using a combination of Revit for all concrete and steel drawings and AutoCAD for reinforcement drawings.

Structural elements design were considered under Ultimate Limit State (ULS) simulating the most critical & adverse, realistic, loading combination of dead loads, live loads, and wind loads where applicable. These designs were carried out to the following standards and codes that are outlined below.

4.1 Loading

- Loading for the building, self-weight and imposed loads, were obtained from SANS 10160-2:2011 and the wind loading was obtained from SANS 10160-3:2019.

4.2 Reinforced Concrete (RC) Structures

- The structures and foundations of the building were designed using the Limit State method, method, both by first principles and Prokon software;
- All RC structures were designed according to SANS 10100 – 1: 2000 and SANS 10100 – 2: 2014;
- Lateral stability of the building is provided by shear walls.

4.3 Steel Structures

- All steel structures (located on the roof of the building) were designed using SANS 10162-1:2011 and SANS 10162-2:2011;
- Column bases were considered as pinned or partially fixed at the top of the RC bases;
- Frames were designed as moment resisting or braced on a case-to-case basis;
- Bracing members were considered as truss members;
- Structural steelwork design was carried out using grade S355JR steel, with a yield stress of 350 MPa.
- Fabrication and erection of steelwork shall be in accordance with the National Building Regulations and SANS 2001: CS1 – Standardised Specification for Civil Engineering Construction: Structural Steelwork;
- All steel shall be hot dip galvanized in accordance with SANS 121 for corrosion protection, and
- Bolts are to be a minimum of grade 8.8.

4.3.1 Roof System

Timber Roof System

An economical timber roof truss system when considered, will be designed to rest on perimeter load bearing masonry walls, which had to transfer the load down onto foundations. The trusses are designed taking into account dead load such as self-weight, roof cover, purlins, ceiling, wind load and inaccessible live load.

The Roof System and the pedestrian shelters were designed and sized in accordance with:

- SABS 0160;
- CP110-1972;
- SABS 0162-1984, and
- SABS 0163.

5 Site and Ground Conditions

From the Geotechnical Engineering Specialist “GeoSure” commissioned an investigation, undertaking this service.

At the instance of concluding our design approach and consideration, we have made reference to their Report including associated Laboratory Results as contained in Report No.: 130_23.R01, dated 26 July 2023 herein Annexed

6 Civil and Structural Infrastructure Design Life and Durability

The civil infrastructure (pipes and isolation valves) is designed for 30 years life span and the mechanical components are designed for 15 years life span with regular maintenance.

Quality check and testing are recommended during construction.

This building structure is designed for a 100-year design life, and durability was considered during design phase by:

- Provision of adequate cover to reinforcement based on the concrete’s environmental exposure conditions;
- Good structural design and reinforcement detailing, and
- Durable and improved materials science for all support elements, etc.

The cover to reinforcement that was used for each of the reinforced concrete elements was as follows:

Component	Top (mm)	Bottom (mm)	Side (mm)
Ground beams	50	50	50
Columns	40	40	40
Walls	40	40	40

At construction phase, durability shall be ensured through:

- Suitable concrete mix design;
- The use of a concrete mix that has been designed for the environmental conditions that the finished concrete will be exposed to;
- Good construction practice and workmanship including correct placement procedures, adequate compaction, correct finishing and curing, and
- Durability testing on the concrete for quality management, etc.

7 Standards

The civil engineering and infrastructure design codes, standards and reference documentation has been listed below:

- SANS 10400 – P: Drainage
- SABS 1200
- eThekweni Stormwater Management Design Guidelines and Policy for The Design of Stormwater Drainage And Stormwater Management Systems (Vade Mecum)
- eThekweni Foul Water Design Guidelines
- Guidelines For Human Settlement Planning and Design (Red Book)

The Structural design codes, standards and reference documentation has been listed below:

- SANS 10100 – 1: 2000: The structural use of concrete – Design

- SANS 10100 – 2: 2014: The structural use of concrete – Materials and execution of work
- SANS 10160 – 1: 2011: Basis of structural design and actions for buildings and industrial structures – Basis of structural design
- SANS 10160 – 2: 2011: Basis of structural design and actions for buildings and industrial structures – Self weight and imposed loads
- SANS 10160 – 3: 2011: Basis of structural design and actions for buildings and industrial structures – Wind actions
- SANS 10162 – 1: 2011: The structural use of steel – Limit-state design of hot-rolled steelwork
- SANS 10162 – 2: 2011: The structural use of steel – Cold-formed steel structures
- SANS 10400: 1990: The application of the National Building Regulations
- SANS 10400 – A: 2010: The application of the National Building Regulations – General principles and requirements
- SANS 10400 - C: 2010: The application of the National Building Regulations – Dimensions
- SANS 121:2000: Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods.
- SANS 2001: CS1 – Standardized Specification for Civil Engineering Construction: Structural Steelwork
- SANS 10104:1991: Handrailing and balustrading safety aspects

8 Structural Rational Fire Design

The fire resistance of reinforced concrete is largely dependent on the cover to reinforcement. Clause 4.11.2 as well as Section 7 of SANS 10100-1: 2000 Edition 2 were used as a guide to ensure fire resistance requirements were met.

For the coffer slabs, a 50 mm layer of screed and a 75 mm reinforced concrete topping that has been specified allows for a 1.5 hour fire rating.

Structural steel used for construction should be treated with an appropriate surface treatment to achieve a suitable fire rating, the specific treatment is to be confirmed by the mechanical/fire engineer.



**LADYSMITH HOSPITAL: CONVERSION OF EXISTING SPACE INTO PAEDIATRIC OPD ROOM,
RECONFIGURATION OF LAUNDRY AND MORTUARY, CONVERSION OF GARAGE TO STORAGE
AREA**

**ANNEXURE 17
MECHANICAL SPECIFICATION**



KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA



TECHNICAL SPECIFICATION

FOR THE

HEATING, VENTILATION AND AIR CONDITIONING
INSTALLATION

FOR

LADYSMITH HOSPITAL

Prepared By:

SPK Engineers
P.O. Box 2089
Empangeni, 3880

21 Via Verbena Street
Veld en Vlei
Richards Bay, 3901

Tel.: 035 – 789 7161
Fax: 035 – 786 4970
Email: admin@spkengineers.co.za

REV A

11 June 2024

TABLE OF CONTENTS

Contents

1.	GENERAL.....	3
2.	SITE AND SITE CONDITIONS	3
3.	SCOPE OF WORK.....	3
4.	TENDER DEVIATIONS	4
5.	STANDARDS, REGULATIONS AND BY-LAWS.....	4
6.	GUARANTEE OF EQUIPMENT.....	4
7.	DESIGN CONDITIONS	5
8.	DRAWINGS.....	5
9.	SERVICES BY OTHERS	6
10.	SITE VISIT.....	7
11.	SPLIT AIR-CONDITIONING SYSTEMS.....	7
12.	PIPEWORK.....	8
13.	DUCTING AND DUCT FITTINGS.....	9
	General.....	9
	SQUARE DUCTS – EXTERNALLY INSULATED.....	10
	FLEXIBLE DUCTS	11
14.	GRILLES, DIFFUSERS AND LOUVRES	11
15.	FANS	13
16.	CONTROLS.....	14
16.1	Air Conditioner.....	14
16.2	Control of Ducted Supply and Exhaust Air Fans.....	14
17.	SCHEDULE OF CAPACITIES.....	14
17.1	Split AC Units.....	14
17.2	Fans	15
18.	COMMISSIONING.....	16
19.	GUARANTEE AND FREE MAINTENANCE.....	16
20.	NOTE TO TENDERERS	17

1. GENERAL

The project entails development and refurbishment of a Ladysmith Smith Hospital.

This specification covers the provision of the HVAC installation.

2. SITE AND SITE CONDITIONS

Site conditions are as follows:

Altitude	:	103m above sea level
Summer outside conditions	:	38°C db, 28°C wb
Winter outside conditions	:	3°C db, 0°C wb
Site water pressure	:	Approximately 400kPa

3. SCOPE OF WORK

This contract shall include the following:

Supply, delivery, erection, installation, commissioning, and testing of a mid-wall units, Under ceiling units and ducted hide away split air conditioning system.

Supply, delivery, erection, installation, commissioning, and testing of extraction air systems serving ablution areas consisting of inline fans and controls.

Supply, delivery, erection, installation, commissioning, and testing of fresh air supply systems serving Ducted hide away units.

12 months guarantee and free maintenance of the entire installation, commencing on the date of Practical Completion of the upgrades of the restaurant.

4. TENDER DEVIATIONS

The specification, whilst intended to indicate the extent of the contract works involved, does not necessarily describe every detail of the works, such details are left to the discretion of the Sub-Contractor provided the complete equipment is in accordance with the relevant clauses and true intention of the specification.

Any discrepancies, conflicting statements, or queries regarding the specification, and/or drawings, or the Standard Specifications, must, however, be brought to the attention of the Engineer for clarification.

The Sub-Contractor must check the latest dimensions of the equipment offered with all suppliers and ensure that in the event of any alteration of dimensions, the installation would still be acceptable.

5. STANDARDS, REGULATIONS AND BY-LAWS

All equipment offered shall, where such standards exist, comply with the latest SANS Standard Specifications and Codes of Practice.

The installation shall also comply with SANS 10400: The Application of the National Building Regulations, as well as all applicable local municipal by-laws.

Any variation from the above shall be brought to the Engineer's attention immediately.

6. GUARANTEE OF EQUIPMENT

The successful Tenderer shall guarantee all materials and workmanship as set out in The Conditions of Contract for a period of 12 months.

This period of 12 months shall also apply to all items of plant of capital nature or otherwise irrespective of when it was supplied or delivered to site. Tenderers are advised to clarify this item with their suppliers prior to tendering as no claims relating to suppliers or other warranties will be considered during this period.

7. DESIGN CONDITIONS

Design conditions shall be as follows:

External Conditions

Summer outside conditions	:	38°C db, 28°C wb
Winter outside conditions	:	3°C db, 0°C wb
Site water pressure	:	Approximately 400kPa

Internal Conditions

Internal design temperatures	:	22.5°C DB ± 1.5°C, 50% RH
------------------------------	---	---------------------------

Noise Levels

The installation shall be capable of meeting the following noise levels: -

Waiting Areas, Stores	:	NC 45
Ablutions	:	NC 45
External noise level 15 meters from HVAC Equipment:		NC 40

All noise levels will apply 1,5m above floor level.

External noise levels, at ground level 3 meters from the building must not exceed NC50.

Should equipment offered not be capable of achieving the specified noise levels, sound attenuation measures must be implemented by the sub-contractor at his own cost.

8. DRAWINGS

The following drawing relates to the project and shall be read in conjunction with this specification:

Drawing No.	Description
ME-HVAC-152-01	Bulk Pharmacy Store -HVAC Layout
ME-HVAC-152-01	Ground floor POPD -HVAC Layout
ME-HVAC-152-02	First floor POPD -HVAC Layout
ME-HVAC-152-01	Mortuary -HVAC Layout

ME-HVAC-152-01	Outsource Laundry -HVAC Layout
ME-HVAC-152-01	New Main Laundry -HVAC Layout
ME-HVAC-152-01	Main Pharmacy -HVAC Layout

The drawing will be made available in electronic format to the sub-contractor, for preparation of shop drawings.

9. SERVICES BY OTHERS

The following services will be provided by others:

By the Main Contractor

Provision of all openings in the structure, roof and ceilings for duct, pipe and other equipment penetrations, including waterproofing enclosures, where applicable.

The opening positions and dimensions shall be to drawings provided by the Sub-Contractor. If timber frames are required these shall also be detailed.

Provision of plantrooms, plant slabs, and plant enclosures.

Equipment support plinths to details provided by the Sub-Contractor.

Provision of undercuts to doors to areas provided with exhaust ventilation.

By the Electrical Contractor

Power supply cable, of sufficient free length to the HVAC outdoor plant enclosure, suitably rated for the required load. Connection of the cables to the control panels, as well as all further electrical and control elements to the systems and particularly to the evaporating units, fall under this sub-contract.

Suitably rated isolators within 1 metre of each continuous operation air extract fan, to exact details supplied by the HVAC Sub-Contractor. Connections to fans fall under this contract.

The wiring in of stop/start stations (provided by this Sub-Contractor) in the electrical supply to the waiting area exhaust fan.

Conduit links between HVAC system remote control points, remote sensors, and the ceiling spaces directly above them. Remote control stations, as well as all wiring between them and the relevant equipment via the ceiling spaces, fall under this sub-contract.

All other electrical work falls under this contract, as described later.

10. SITE VISIT

It is a specific requirement of this contract that Tenderers visit the site prior to submitting a tender to familiarize themselves with the exact nature and scope of the work to be done.

No claims stemming from the non-compliance with this requirement will be entertained.

The site visit shall take place at a time to be confirmed by the Engineer.

11. SPLIT AIR-CONDITIONING SYSTEMS

The positions, of the air-conditioning units are indicated on the drawings.

Equipment shall in all instances be installed according to manufacturer's requirements.

The units shall defrost automatically during the heating cycle.

The units shall be controlled from the infrared remote stations installed on the wall of the area served by that unit at the same level and adjacent the light switch. The controls shall include on/off, heat/cool switch, temperature adjustment and evaporator fan speed control. Infra red type remote controls shall be fixed to the wall in positions from which the machines can be controlled without removing the remote-control panels from their mounting brackets.

No joints will be allowed in the control wiring.

Each evaporator, condensing unit and remote-control station shall be clearly labelled with a matching identification number, in 6mm high black letters engraved on a 10mm high white plastic background, epoxy glued to the casing of the respective unit.

12. PIPEWORK

General

The Contractor shall read the drawings in conjunction with those for other services to be aware of their requirements and piping shall be laid in conjunction with these. Failure to do so resulting in rework shall be for the account of the Contractor.

Materials

Pipe work shall be from the following materials: -

- Refrigerant piping: Refrigerant grade hard or soft drawn copper
- Condensate drain lines within the buildings: PVC.

Copper Piping

Refrigerant piping shall be carried out in standard hard drawn refrigeration quality tubing, employing capillary fittings and approved silver solder, in accordance with SABS 23.

Installation

Condensate drainpipes shall be fixed to a maximum “fall” and minimum bends and fittings to aid draining. Condensate piping shall discharge over suitable gully, floor drain or another wastewater outlet.

Where pipes or ducting pass-through walls and floors, sleeves or box-outs shall be fitted to allow free axial movement of the pipes, Sleeves shall be of a material compatible to the pipe it protects and of a minimum bore to allow such movement and of sufficient length to finish flush with the finished wall.

Refrigerant piping run in ceiling voids shall run on cable trays fixed to the roof structure in positions as shown on our drawings and where exposed to the weather shall run in GMS trunking of adequate dimensions with a removable cover.

Pipe support spacing must be in accordance with the following table:

Nominal Pipe Size	Horizontal		Vertical	
	uPVC	Copper	uPVC	Copper
15	-	1000	-	2500
20	-	1400	-	2500
25	750	2000	1000	3000
32	850	2000	1200	3000
40	900	2500	1200	3000
50	1100	2500	1500	3500
65	1100	2500	1500	3500
80	1200	3000	1500	4500
100	1400	3600	1500	4500
150	1500	-	1800	-
200	1500	-	1800	-

Multiple pipes support for pipes of differing sizes shall be spaced at intervals required for the pipe requiring the shortest support spacing.

Refrigerant Pipe Insulation

Refrigerant lines to the split units shall be insulated by means of Armourflex or equal foamed neoprene rubber insulation. Joints shall be wrapped in insulated tape. Insulated pipes exposed to the elements shall be run in galvanized steel trunking.

13. DUCTING AND DUCT FITTINGS

General

All ductwork indicated on drawings is schematic. Therefore, changes in duct sizes and/or location must be made where necessary to conform to space conditions without additional cost to the owner. Dimensions given on drawings, including all acoustically lined ducts shall be actual sheet metal sizes.

Galvanised and stainless steel ductwork shall not be fitted with any copper or copper alloy parts unless the junctions between ductwork and such parts are so insulated that electrolytic inter-action is prevented.

Contractors shall ensure that maximum head room is obtained, especially in plant rooms.

SQUARE DUCTS – EXTERNALLY INSULATED

A. Ductwork classification

1. Application: Commercial and Industrial Air Distribution Systems
2. Low Pressure – Class A

B. Materials

1. Zinc Coated Steel

C. Hangers

1. Horizontal
 - a) Suspended with Screwed Rod on Duct Bearing Member. Knock-in Stud anchors in concrete for screwed rod.
2. Vertical
 - a) Angle Iron frame fixed to concrete wall with anchors and to ducts with Rivets. Ducts supported in middle of section, not on flanges

D. Insulation

1. FRK, External.
2. Thickness: 25 mm.

E. Vapour Sealing

1. Yes – Aluminium Tape

F. Seam Sealing

1. Longitudinal Seams: Liquid Sealant to be applied internally at factory
2. Cross Joints: Gasket Roll
3. Flanges: Gasket Roll

G. Turning Vanes

1. Square Bends: Yes
2. Radius Bends: Yes

H. Access Panels:

1. Fire Dampers : Yes. One side.
2. Volume control Dampers: Yes. One side.
3. Inline Fans: No

- 4. Attenuators: No
- I. Test Holes – system Commissioning**
- 1. Horizontal main ducts at shaft exit: Yes

FLEXIBLE DUCTS

A. Materials

- 1. Aluminium with Helical wound wire coil

B. Maximum Length

- 1. 1.5m

C. Insulation

- 1. External Insulation

D. Seam Sealing

- 1. Flat Metal Strap

14. GRILLES, DIFFUSERS AND LOUVRES

A. Section Includes

- 1. Diffusers
- 2. Supply Air Grilles
- 3. Door Grilles
- 4. Disc Valves

B. Supply Air Diffusers – Constant Volume

1. Manufacturer
2. Brian Rickard, CCD
3. Substitutions allowed
4. Material: Galvanised Sheet Steel
5. Finish: White Powder Coated
6. Face Plate: Round
7. Mounting Style: Ceiling, 600x600 Grid
8. Nominal Neck Size: \varnothing 150mm, \varnothing 200mm, and \varnothing 250mm
9. Pressure Drop Diffuser: 30 Pa

C. Grilles – Fresh Air Supply

1. Type: Slotted Aluminium Flat Sheet, CNC Cut
2. Material: 1,2mm Aluminium, Mill Finish.
3. Colour: Paint Colour of wall
4. Flange Size: 25mm
5. Pressure Drop: 30 Pa at indicated flow rate
6. Substitutions for fixed blade Aluminium grilles allowed

D. Examination

1. Do not begin installation until ceiling grids have been prepared.
2. If preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.
3. Provide weather louvers of the dimensions as shown on the drawings.

15. FANS

A. Section Includes

1. Inline Duct Fans - Circular

B. Inline duct fan - Rectangular type

1. Inline duct fans shall be of the centrifugal, directly driven type by a 3-phase electrical motor. The fan impeller shall be of the double inlet type with forward curved blades. Fan efficiency shall be not less than 55%.
2. The fan and motor assembly shall be accommodated in a rectangular fan housing with access doors for servicing of the internal parts. The housing shall be mounted on a channel iron base on anti-vibration mountings. The fan shall be connected to the ducting with a flexible duct connector.
3. The fan casing shall be equipped with flanged duct connectors.
4. The fan motor shall be suitable for control through a hand operated speed control unit.

C. Inline duct fan - Circular duct type

1. These shall be of the Howden CDC or other equal approved type suitable for connection to round or rectangular ducting with circular duct connectors. The fan shall be of the centrifugal type driven direct with a 220 V electrical motor. The units shall be suitable for speed control. Unit casings shall be manufactured from plastic or aluminium.
2. Where indicated on the drawings, a matching silencer from the same manufacturer as the fan, shall be installed.

D. Ducted Exhaust Air Fans

1. These fans are shown on the drawings together with their related sound attenuators.
2. Fan duty is shown on the drawings.
3. Fans must comply with the specified noise levels.

16. CONTROLS

16.1 Air Conditioner

Equipment offered must match manufacturer of existing equipment on site for ease of maintenance.

The mid-wall units , Underceiling units and ducted hide away split unit must be remote controlled.

16.2 Control of Ducted Supply and Exhaust Air Fans

Fans shall be rated to run with a timer or lights.

17. SCHEDULE OF CAPACITIES

17.1 Split AC Units

ID	Total Cooling Capacity [kW]	Quantity
Bulk Pharmacy Store		
CU 1 & CU 2	14	2
ODU 1 & ODU 2	15	2
Paediatric Out Patient Department		
HAU 1 & HAU 2	9.5	2
HAU 3	9	1
HAU 4	22.4	1
HAU 5 & HAU 6	14	2
HAU 7	11.2	1
ODU 1,ODU 2 & ODU 3	10	3
ODU 4	28	1
ODU 5 & ODU 6	15.5	2
ODU 7	14	1
Mortuary		
HAU 1	18	1
MW 1	1.5	1

ODU 1	22	1
ODU 2	4	1
New Main Laundry		
MW 1	4.5	1
ODU	5	1
Main Pharmacy		
HAU 1	18	1
HAU 2	22.4	1
ODU 1	22.4	1
ODU 2	28	1

17.2 Fans

Fan ID	Type	POWER [W]	Current [Amps]	Quantity
Bulk Pharmacy Store				
EAF1	Inline fan, circular duct, insulated	80	0.36	1
Paediatric Out Patient Department				
EAF1	Inline fan, circular duct, insulated	236	1.03	1
Mortuary				
EAF1	Inline fan, circular duct, insulated	80	0.38	1
EAF2	Inline fan, circular duct, insulated	236	1.03	1
New Main Laundry				
EAF1	Inline fan, circular duct, insulated	326	1.74	1
EAF2	Inline fan, circular duct, insulated	332	1.76	1
EAF3	Inline fan, circular duct, insulated	1357	3.12	1
Outsource Laundry				
EAF1 & EAF2	Inline fan, circular duct, insulated	332	1.76	2
Main Pharmacy				
EAF1	Inline fan, circular duct, insulated	236	1.03	1

18. COMMISSIONING

The plants shall be commissioned and tested in the presence of the Engineer. All instruments and materials required for testing shall be provided by the Contractor.

Two copies of the complete test reports giving details of water temperatures attained, flow rate, power consumed, etc., shall be prepared and submitted to the Engineer prior to first delivery of the project.

19. GUARANTEE AND FREE MAINTENANCE

The Sub-Contractor shall guarantee the entire installation against faulty materials or workmanship for a period of 12 months from date of acceptance.

Individual items of equipment must be covered for the same period, from the same date, irrespective of when they were delivered. Sub-contractors must negotiate these conditions with their suppliers.

The date of acceptance shall be that appearing in the Acceptance Certificate issued by the Engineer and shall define the start of the guarantee period and free maintenance period.

The Sub-Contractor shall be responsible for all maintenance and servicing of the installation for the full 12-month guarantee period. During this period, the Sub-Contractor shall make good any defects due to inferior materials or workmanship and maintain all plant and equipment in perfect operating condition.

The Sub-Contractor shall be entirely responsible for carrying out regular inspections at intervals not greater than 4 months, and for full servicing of all components of the installation in accordance with the manufacturer's instructions. For this purpose, the Sub-Contractor shall prepare a detailed inspection and service report in the form of a checklist showing all functions to be carried out at each inspection and service. Copies of these service reports shall be regularly submitted to the Client's authorized representative after each service.



The Sub-Contractor shall allow for all expendable materials necessary for servicing, such as lubricating oils, grease, filters, and cleaning materials.

20. NOTE TO TENDERERS

Whenever an alternative, or equal make or type of equipment is offered at the tendering stage, the Chief Directorate Works shall on the acceptance of the tender inform the Contractor in writing as to the make and/or type of equipment accepted.

In-line Duct Fans

Make and model	_____
Country of origin	_____
Do units match specified duties?	_____
If "No", describe variances	_____

Ducting and Accessories

Supplier of rectangular GMS ducting	_____
Type of insulation (where applicable)	_____
Insulation thickness (mm)	_____
Supplier of flexible supply air ducting	_____
Type	_____
Fire rating	_____
Supplier of flexible attenuating return/ exhaust air ducting	_____
Type	_____
Fire rating	_____
Supplier of spiral wound round ducting	_____

Split AC Units

	Total Cooling kW	Total Heating kW
Make	-----	-----
Model	-----	-----
Country of origin	-----	-----
Total cooling capacity (kW)	-----	-----
Total heating capacity (kW)	-----	-----
Method of heating	-----	-----
Dimensions:	-----	-----
Evaporator unit (D) mm	-----	-----
Condensing unit (D) mm	-----	-----
Power supply (V)	-----	-----
Power consumption:	-----	-----
Heating (kW)	-----	-----
Cooling (kW)	-----	-----
Method of head pressure control	-----	-----

Piping

Manufacturer and grade of refrigerant piping	-----
Manufacturer of insulation	-----
Type and class of condensate drain piping in ceiling spaces	-----
Type and class of condensate drain piping in plant rooms	-----
Manufacturer of chilled water pipes	-----
Manufacturer of insulation	-----



Manufacturer of vapour barrier

KZN HEALTH – LADYSMITH HOSPITAL



KWAZULU-NATAL PROVINCE

HEALTH
REPUBLIC OF SOUTH AFRICA



TECHNICAL SPECIFICATION

FOR THE

INTERNAL DRAINAGE INSTALLATION

FOR

LADYSMITH HOSPITAL

Prepared By:

SPK Engineers
P.O. Box 2089
Empangeni, 3880

21 Via Verbena Street
Veldenvlei
Richards bay, 3901

Tel.: 035 – 789 7161
Fax: 035 – 786 4970
Email: admin@spkengineers.co.za

11 June 2024

Rev A

DP - DRAINAGE PIPES - 1

TABLE OF CONTENT

DP - DRAINAGE Pipes.....	3
PART .1 -PART 1 GENERAL.....	3
DP-.1.1section includes.....	3
DP-.1.2references.....	3
DP-.1.3submittals.....	3
DP-.1.4quality assurance.....	3
DP-.1.512-Month Warranty And Maintenance	3
PART .2 -PRODUCTS.....	3
DP-.2.1Piping.....	3
DP-.2.1.2Under Surface Bed.....	4
DP-.2.1.3Above Surface Bed.....	4
PART .3 -EXECUTION.....	5
DP-.3.1Examination.....	5
DP-.3.2Preparation.....	5
DP-.3.3Installation	5
DP-.3.4Protection.....	5
DP-.3.5Delivery, Storage and Handling.....	5

DP - DRAINAGE PIPES**PART .1 - PART 1 GENERAL****DP-.1.1 SECTION INCLUDES**

- . Waste Pipe Systems

DP-.1.2 REFERENCES

- . SANS 10400:2011 – National building regulations, Part P – Drainage
- . SANS 10252-2:1993 – Drainage installations for buildings

DP-.1.3 SUBMITTALS

- . Manufacturer's data sheets on each product to be used.
- . Preparation instructions and recommendations.
- . Storage and handling requirements and recommendations.
- . Typical recommended installation methods from the manufacturer.
- . Guarantee certificate from the manufacturer at the completion of the project.

DP-.1.4 QUALITY ASSURANCE

- . Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- . Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- . Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

DP-.1.5 12-MONTH WARRANTY AND MAINTENANCE

- . All machines will be warranted for 12 months from date of commissioning, regardless of start-up date.
- . A service/maintenance contract with the supplier of the equipment is required for a period of 12 months.

PART .2 - PRODUCTS**DP-.2.1 PIPING**

- . All Pipes shall be plastic. (GEBERIT HDPE)
- . Pipes shall be installed according to the specific instructions of the manufacturer.

KZN HEALTH – LADYSMITH HOSPITAL

- . The contractor shall coordinate with the civils contractor that bedding and compaction methods used, will suit the piping system offered.
- . All brackets and fittings shall be of the same system.

DP-.2.1.2 UNDER SURFACE BED

- . Type: GEBERIT HDPE
- . System: Waste Water
- . Hot water resistance: 80 °C unpressurised
- . Maximum Temperature: 100 °C in 1 minute cycles, maximum event 400 times per year.
- . Resistance to cold: -40 °C
- . The thermal expansion coefficient: 0.17 mm/m·K
- . Thermal conductivity: 0.43 W/m·K
- . Density: 955 kg/m³
- . Electrical conductivity: Dielectric
- . Chemical resistance: To be insoluble in all organic and inorganic solvents at 20°C. Soluble in aliphatic and aromatic hydrocarbons and their chlorination products at temperatures above 90°C.
- . Pressure Resistance: 1.5 bar at a maximum of 30 °C
- . Fittings: Butt Welded

DP-.2.1.3 ABOVE SURFACE BED

- . Type: Composite Silent Type
- . System: Waste Water
- . Hot water resistance: 60 °C unpressurised
- . Resistance to cold: -40 °C
- . The thermal expansion coefficient: 0.17 mm/m·K
- . Thermal conductivity: 0.43 W/m·K
- . Density: 1700 kg/m³
- . Electrical conductivity: Dielectric
- . Chemical resistance: Suitable for domestic range of water applications.
- . Pressure Resistance: 1.5 bar at a maximum of 30 °C
- . Fittings: Butt Welded
- .
- .
- .

PART .3 - EXECUTION

DP-.3.1 EXAMINATION

- Do not begin installation until wall openings and plinths have been prepared.
- Ensure that all water proofing to be applied under the units to be installed, is complete, tested and certified.
- If preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.

DP-.3.2 PREPARATION

- Clean surfaces thoroughly prior to installation.
- Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

DP-.3.3 INSTALLATION

- Install in accordance with manufacturer's instructions and the requirements of authorities having jurisdiction.
- Use manufacturer's guidelines for minimum clearances to combustibles, walls, and finishes.
- Anchor all components firmly in position.
- Upon completion of installation, visually inspect all exposed surfaces. Touch up scratches and abrasions with touch up paint recommended by the manufacturer; make imperfections invisible to the unaided eye from a distance of 1,5 m.
- Test for proper operation and adjust until satisfactory results are obtained.

DP-.3.4 PROTECTION

- Protect installed products until completion of project.
- Touch-up, repair or replace damaged products before Substantial Completion.

DP-.3.5 DELIVERY, STORAGE AND HANDLING

- Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- Protect from damage due to weather, excessive temperature, and construction operations.

KZN HEALTH- LADYSMITH HOSPITAL



KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA



TECHNICAL SPECIFICATION
FOR THE
FIRE PROTECTION INSTALLATION
FOR
LADYSMITH HOSPITAL

Prepared By:

SPK Engineers
P.O. Box 2089
Empangeni, 3880

21 Via Verbena Street
Veldenvlei
Richards bay, 3901

Tel.: 035 – 789 7161
Fax: 035 – 786 4970
Email: admin@spkengineers.co.za

11 June 2024

Rev A

TABLE OF CONTENTS

FP - FIRE PROTECTION3

 PART .1 -PART 1 GENERAL.....3

 FP-.1.1section includes3

 FP-.1.2references3

 FP-.1.3submittals3

 FP-.1.4quality assurance3

 FP-.1.512-Month Warranty And Maintenance.....3

 PART .2 -PRODUCTS.....4

 FP-.2.1Hydrants4

 FP-.2.2Fire Hose Reels4

 FP-.2.3Portable Fire Extinguishers4

 PART .3 -EXECUTION4

 FP-.3.1Examination4

 FP-.3.2Preparation4

 FP-.3.3Installation.....5

 FP-.3.4Protection5

 FP-.3.5Delivery, Storage and Handling5

FP - FIRE PROTECTION

PART .1 -PART 1 GENERAL

FP-.1.1 SECTION INCLUDES

- Fire Hydrants
- Fire Hose Reels
- Fire Extinguishers

FP-.1.2 REFERENCES

- SANS 1128-1:2010: Firefighting equipment Part 1: Components of underground and above-ground hydrant systems
- SANS 1128-2:2010: Firefighting equipment Part 2: Hose couplings, connectors and branch pipe and nozzle connections
- SANS 1151:2017: Portable rechargeable fire extinguishers - Halogenated hydrocarbon type extinguishers
- SANS 543:2019: Fire hose reels (with semi-rigid hose)

FP-.1.3 SUBMITTALS

- Manufacturer's data sheets on each product to be used.
- Preparation instructions and recommendations.
- Storage and handling requirements and recommendations.
- Typical installation methods.

FP-.1.4 QUALITY ASSURANCE

- Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

FP-.1.5 12-MONTH WARRANTY AND MAINTENANCE

- All machines will be warranted for 12 months from date of commissioning, regardless of start-up date.
- A service contract with the supplier of the equipment is required.
-

PART .2 -PRODUCTS

FP-.2.1 HYDRANTS

- . Type: Wet riser.
- . Size: DN 65 mm.
- . Orientation: Horizontal.
- . Mounting: Wall mounted.
- . Pressure rating: Low.
- . Standard: BS 5041 Part 1.

FP-.2.2 FIRE HOSE REELS

- . Reel diameter: 900 mm
- . Hose length: 30 m
- . Hose size: 25 mm
- . Nozzle Material: Brass
- . Cabinet: Glass Fibre

FP-.2.3 PORTABLE FIRE EXTINGUISHERS

- . Type: Portable Dry Chemical
- . Content Weight: 4.5 kg DCP
- . Pressure Gauge: Yes
- . Mounting Plate: Meranti Wood

PART .3 -EXECUTION

FP-.3.1 EXAMINATION

- . Do not begin installation until wall openings and plinths have been prepared.
- . Ensure that all water proofing to be applied under the units to be installed, is complete, tested and and certified.
- . If preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.

FP-.3.2 PREPARATION

- . Clean surfaces thoroughly prior to installation.
- . Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

KZN HEALTH- LADYSMITH HOSPITAL

FP-.3.3 INSTALLATION

- Install in accordance with manufacturer's instructions and the requirements of authorities having jurisdiction.
- Use manufacturer's guidelines for minimum clearances to combustibles, walls, and finishes.
- Anchor all components firmly in position.
- Upon completion of installation, visually inspect all exposed surfaces. Touch up scratches and abrasions with touch up paint recommended by the manufacturer; make imperfections invisible to the unaided eye from a distance of 1.5m.
- Test for proper operation and adjust until satisfactory results are obtained.

FP-.3.4 PROTECTION

- Protect installed products until completion of project.
- Touch-up, repair or replace damaged products before Substantial Completion.

FP-.3.5 DELIVERY, STORAGE AND HANDLING

- Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- Protect from damage due to weather, excessive temperature, and construction operations.

KZN HEALTH - LADYSMITH HOSPITAL



KWAZULU-NATAL PROVINCE

HEALTH
REPUBLIC OF SOUTH AFRICA



TECHNICAL SPECIFICATION

FOR THE

WATER SUPPLY INSTALLATION

FOR

LADYSMITH HOSPITAL

Prepared By:

SPK Engineers
P.O. Box 2089
Empangeni, 3880

21 Via Verbena Street
Veldenvlei
Richards bay, 3901

Tel.: 035 – 789 7161
Fax: 035 – 786 4970
Email: admin@spkengineers.co.za

11 JUNE 2024

Rev A

SP – PIPE SUPPLY SYSTEMS - 1

TABLE OF CONTENT

SP – Pipe Supply Systems	3
PART .1 -PART 1 GENERAL.....	3
SP-.1.1Section includes.....	3
SP-.1.2References	3
SP-.1.3Submittals.....	3
SP-.1.4Quality assurance	3
SP-.1.512-Month Warranty And Maintenance.....	3
PART .2 -PRODUCTS.....	3
SP-.2.1Piping	3
SP-.2.2Line Components	4
SP-.2.2.1Isolating Valves (<= 50mm).....	4
SP-.2.2.2Isolating Valves (> 50mm)	4
SP-.2.2.3Stop cocks	4
SP-.2.2.4Pressure Gauges	4
SP-.2.2.5Thermometers.....	4
SP-.2.2.6Strainers.....	4
SP-.2.2.7Check valves	5
SP-.2.2.8Vacuum breaker assembly	5
SP-.2.2.9Back flow prevention assembly	5
SP-.2.2.10Pressure reducing Valves.....	5
SP-.2.2.11Double regulating valve	5
PART .3 -EXECUTION.....	5
SP-.3.1Examination	5
SP-.3.2Preparation	5
SP-.3.3Installation.....	6
SP-.3.4Protection	6
SP-.3.5Delivery, Storage and Handling	6

SP – PIPE SUPPLY SYSTEMS**PART .1 - PART 1 GENERAL****SP-.1.1 SECTION INCLUDES**

- Supply Pipe Systems.

SP-.1.2 REFERENCES

- SANS 10252-1: 2018: Water supply installations for buildings
- Building Engineering Services Association: TR/20: Guide To The Use Of Plastic Pipework.

SP-.1.3 SUBMITTALS

- Manufacturer's data sheets on each product to be used.
- Preparation instructions and recommendations.
- Storage and handling requirements and recommendations.
- Typical installation methods.

SP-.1.4 QUALITY ASSURANCE

- Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

SP-.1.5 12-MONTH WARRANTY AND MAINTENANCE

- All machines will be warranted for 12 months from date of commissioning, regardless of start-up date.
- A service contract with the supplier of the equipment is required.

PART .2 - PRODUCTS**SP-.2.1 PIPING**

- Type: Multi-Layer, PE-RT II / Aluminium / PE-RT II
- Thermal expansion coefficient α at 20–100 °C: 0.026 mm/(m·K)
- Thermal conductivity λ at 20 °C: 0.43 W/(m·K)
- Surface roughness k: 7 μ m

KZN HEALTH - LADYSMITH HOSPITAL

- . Maximum Hot Water Temperature: Short-time exposure up to 95°C for a maximum of 100 hours in 50 years.
- . Pressure Resistance Cold Water: 16 bar (operating temperature 0–20°C).
- . Pressure Resistance Cold Water: 10 bar (operating temperature 20–80 °C).
- . Electrical conductivity: Dielectric (no uninterrupted metal connection).
- . Insulation Hot Water: Closed cell nitrile rubber insulation.
- . Insulation Cold Water: None.
- . Joining Method: Compression.
- . Fixing: On cable Tray, or chased in wall.
- . No straight joints allowed where pipes are chased into walls.

SP-.2.2 LINE COMPONENTS

SP-.2.2.1 ISOLATING VALVES (<= 50MM)

- . Type: Ball valve.
- . Material: Chrome plated copper alloy. PN25.

SP-.2.2.2 ISOLATING VALVES (> 50MM)

- . Type: Butterfly valve.
- . Material: Ductile iron body, bronze disc, EPDM rubber seals. PN16.

SP-.2.2.3 STOP COCKS

- . Type: Globe valve.
- . Material: Bronze. PN 20.

SP-.2.2.4 PRESSURE GAUGES

- . Size: 100mm.
- . Type: Dial.
- . Gauge Cock: Yes.

SP-.2.2.5 THERMOMETERS

- . Temperature Range: 0-80°C.
- . Material: Brass.

SP-.2.2.6 STRAINERS

- . Material: Cast Iron. PN 16.
- . Strainer : Stainless steel.

KZN HEALTH - LADYSMITH HOSPITAL

SP-.2.2.7 CHECK VALVES

- Body: Bronze. PN 25 for pipes \leq 50mm.
- Body: Cast iron. PN 16 for pipes $>$ 50mm.

SP-.2.2.8 VACUUM BREAKER ASSEMBLY

- Body: Bronze.
- Double guided spring loaded check valve complete with air inlet port, two ball valves, two test cocks.

SP-.2.2.9 BACK FLOW PREVENTION ASSEMBLY

- Body: Bronze. PN 12.
- Two independently operating check spring loaded valves, "Y" pattern type, inlet and outlet shut-off valves, four test cocks.

SP-.2.2.10 PRESSURE REDUCING VALVES

- Body: Bronze.
- Bell housing, maximum inlet pressure 21 bars, outlet pressure adjustable between 1,7 and 5,2 bars, threaded connections, flanged connections above 50 mm diameter pipe, stainless steel strainer, union, tap and plug for pressure gauge, pressure gauge, bypass with globe valve.

SP-.2.2.11 DOUBLE REGULATING VALVE

- Body: Bronze. PN 20 for pipes \leq 50mm.
- Body: Cast iron. PN 16 for pipes $>$ 50mm.
- Threaded or capillary ends up to 50mm diameter, epoxy coating, flanged or grooved ends from 65mm diameter and above. Size shall be selected and calculated based on required pressure drop and submitted for Engineer's approval.

PART .3 - EXECUTION

SP-.3.1 EXAMINATION

- Do not begin installation until wall openings and plinths have been prepared.
- Ensure that all water proofing to be applied under the units to be installed, is complete, tested and and certified.
- If preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.

SP-.3.2 PREPARATION

- Clean surfaces thoroughly prior to installation.

KZN HEALTH - LADYSMITH HOSPITAL

- Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

SP-.3.3 INSTALLATION

- Install in accordance with manufacturer's instructions and the requirements of authorities having jurisdiction.
- Use manufacturer's guidelines for minimum clearances to combustibles, walls, and finishes.
- Anchor all components firmly in position.
- Connect to power supply and control wiring in accordance with NFPA 70.
- Connect to power supply and control wiring in accordance with CSA C221.
- Upon completion of installation, visually inspect all exposed surfaces. Touch up scratches and abrasions with touch up paint recommended by the manufacturer; make imperfections invisible to the unaided eye from a distance of 5 feet.
- Test for proper operation and adjust until satisfactory results are obtained.

SP-.3.4 PROTECTION

- Protect installed products until completion of project.
- Touch-up, repair or replace damaged products before Substantial Completion.

SP-.3.5 DELIVERY, STORAGE AND HANDLING

- Store and handle in strict compliance with manufacturer's written instructions and recommendations.
-