



# INDEPENDENT DEVELOPMENT TRUST

Contract No.: DOEEC/01/2022/2023

A Tender for Category 7GB or higher CIDB Registered Contractors

## CONSTRUCTION OF ADDITIONAL CLASSROOMS AT PROSPECT JSS

LOCATED IN MALUTI IN MATATIELE, ALFRE NZO DISTRICT, EASTERN CAPE PROVINCE

Name of Tenderer : \_\_\_\_\_

NAME OF DULY AUTHORIZED PERSON: \_\_\_\_\_

ADDRESS : \_\_\_\_\_

TEL. NUMBER : \_\_\_\_\_

CELL NUMBER : \_\_\_\_\_

FAX NUMBER : \_\_\_\_\_

E-MAIL : \_\_\_\_\_

CRS NUMBER : \_\_\_\_\_

CSD NUMBER : \_\_\_\_\_

**ISSUED BY:**

**Independent Development Trust**  
Palm Square Business Centre  
Silverwood House, Bonza Bay  
Beacon Bay, Eastern London  
5241  
Mr. Nyameko  
Tel: 043 711 6000

**PREPARED BY:**

**Paradox Young and Associates**  
2 Merriman Road  
Unit 8 CK Business Centre  
Mthatha  
5100  
Mr. B Gororo  
Tel: 047 535 0052

**BID No: DOEEC/01/2022/2023**



## **INDEPENDENT DEVELOPMENT TRUST**

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

**AT**

## **PROSPECT JUNIOR SECONDARY SCHOOL**

**LOCATED IN MALUTI IN MATATIELE, ALFRED NZO DISTRICT, EASTERN CAPE PROVINCE**

**TENDER NO: DOEEC/01/2022/2023**

**CLOSING DATE: 23<sup>rd</sup> May 2022 @ 11H00**

### **ISSUED**

**Independent Development Trust**

INDEPENDENT DEVELOPMENT TRUST  
Palm Square Business Centre  
Silverwood House  
Bonza Bay Road  
Beacon Bay  
EAST LONDON

Name: Sam Makhura  
Telephone: 043 711 6000

**BID No: DOEEC/01/2022/2023**

### **PREPARED**

**PARADOX YOUNG AND ASSOCIATES**

2 Merriman Road  
Unit 8 CK Business Centre  
Mbuqe  
MTHATHA

Blessing Gororo  
Tel: 047 535 0052





## INDEPENDENT DEVELOPMENT TRUST

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# INDEPENDENT DEVELOPMENT TRUST

**BID NOTICE NO: DOEEC/01/2022/2023**

**Note: BID closes on Monday 23<sup>rd</sup> May 2022 @ 11:00**

## **T1.1 Tender Notice and Invitation to Tender**

The Independent Development Trust on behalf of the Provincial Department of Education (DoE) hereby invites prospective service providers to submit bids for construction works on the projects in the Eastern Cape Province as listed below.

CIDB tender value range grading as reflected in the Register of Contractors will be used as indicated below:

<b>Name of Projects</b>	<b>Town</b>	<b>IDT Project Number</b>	<b>EMIS Number</b>	<b>Compulsory Site Briefing Meeting</b>	<b>CIDB Grading</b>	<b>Principal Agent</b>
<b>Prospect JSS</b>  <b>-30.23682833 South, 28.88016833 East</b>	<b>Matatiele</b>	<b>DOEEC/01/2022/2023</b>	<b>200501034</b>	<b>12<sup>th</sup> May 2022 @ 11h00</b>	<b>7GB or Higher</b>	<b>Helm - Marius Helm</b>  <b>082 807 1029</b>

**Compulsory Site Briefing Meeting on the 12<sup>th</sup> May 2022 @ 11h00** will take place on site at Prospect JSS, Mademong, EC441- Matatiele, DC44 - Alfred Nzo District Municipality with GPS coordinates **-30.23682833 South, 28.88016833 East**

Bid Documents which must be completed and submitted are available for download on IDT website: [www.idt.org.za/business-opportunities/current-tender-bulletin](http://www.idt.org.za/business-opportunities/current-tender-bulletin), iTender, tenders or National Treasury eTender on: [www.treasury.gov.za](http://www.treasury.gov.za) from **22<sup>nd</sup> April 2022**. All documents must be downloaded and printed by the bidders from the abovementioned sites.

**Bidders shall meet the following compulsory requirements before being evaluated further on functionality, price and B-BBEE:**

Tender T1

### **Mandatory Requirements/Documents:**

Valid copy of a Letter of Good Standing (Workman's Compensation, COIDA) or FEM Letter of Good Standing; If a Joint Venture, then all partners must submit their own (COIDA) Registration Certificate.

- ☐ **Fully Completed and Signed Standard Bidding Documents:**
  - ✓ Invitation to Bid (SBD 1)
  - ✓ Declaration of Interest (SBD 4)
  - ✓ Preference Points Claim Forms (SBD 6.1)
  - ✓ Local Production and Content (SBD 6.2) (including all the annexures C. Bidders must return Annexure C. All blank spaces must be completed. Bidders to indicate items that are not applicable.)
- ☐ Signed and fully completed Original Certificate/Affidavit of Authority for Signatory ( Only if there is more than one Director)
- ☐ Signed Joint Venture or consortium Agreement Between Parties showing project sharing percentage (where applicable) signed by all parties.
- ☐ Proof of valid and active CIDB grading 7GB designation certificate (Joint Ventures Must submit valid and active consolidated CIDB grading registration certificate)
- ☐ Fully priced and completed Bills of Quantities, Electrical and Mechanical Installations.
- ☐ Attendance of compulsory tender briefing meeting and signing of the attendance register.
- ☐ Completion of form of offer in the tender document **in full & signed.**
- ☐ No Copies, no correctional fluids, erasable pen or a lead pencil will be used on any of the submitted forms. Only black ink must be used to complete documents. Any mistakes must be neatly crossed out and countersigned by all relevant parties
- ☐ Proof of Central Supplier Database (CSD) registration – CSD Number (Joint Ventures must submit CSD both JV partners)

**NB: Failure to comply with any of the above-mentioned requirements will result in automatic disqualification of the bid response.**

### **Non-Mandatory Returnable Documents:**

1. Tax Compliance Letter with a unique pin
2. A detailed CIPC document with all the original certified (not older than 3 months) ID's of all directors listed in CIPC.
3. Acknowledgement of Addenda to the tender document.

### **STAGE 2– Functionality**

Bidders are to obtain a minimum of **70** points of the total functionality points to be considered for the next stage

#### **FUNCTIONALITY**

<b>Functionality area</b>	<b>Points</b>
Experience on similar scale projects	35points
Qualifications & competencies of key staff	20 points
Project Specific Programme schedule and cash flow	20 points
Client References	25 points
<b>Total</b>	<b>100 Points</b>

**Similar Nature of work for evaluation-** (Points will be allocated for similar nature and value of works for Construction and or renovation of Hospitals, Clinics, Schools, Libraries, Hotels, Malls, Shopping Complex, Courts, Office blocks, Town Houses

NB: Minimum qualifying functionality threshold is **70 points out 100**

### **STAGE 3 – Price**

Only bidders who obtain 70 points or higher on the functionality threshold will be evaluated further on price only.

**For enquiries, please contact:**

**Technical enquiries:** Marius Helm

**Tel no:** 082 807 1029

**Email address:** Marius@ghelmarch.co.za

**SCM enquiries:** Sam Makhura

**Tel no:** 082 600 9086

**Email address:** SamM@idt.org.za

**RETURN OF BID DOCUMENTS:**

- Telegraphic, telephonic, telex, facsimile, electronic and/or late bids will not be accepted
- Requirements for sealing, addressing, delivery, opening and assessment of bids are stated in the Bid Data document
- All bids must be submitted on the official forms – (not to be re-typed)
- Bids will not be opened in public

<b>BID DOCUMENTS MAY BE POSTED TO:</b>	<b>OR</b>	<b>DEPOSITED IN THE BID BOX AT:</b>
<b>N/A</b>		<b>INDEPENDENT DEVELOPMENT TRUST, PALM SQUARE BUSINESS PARK, SILVERWOOD HOUSE, BONZA BAY ROAD, BEACON BAY, EAST LONDON</b>

## INDEPENDENT DEVELOPMENT TRUST

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### T1.2 Tender Data

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement. (See [www.cidb.org.za](http://www.cidb.org.za)) which are reproduced without amendment or alteration for the convenience of tenderers as an Annex to this Tender Data.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

**The additional conditions of tender are:**

Clause number	Tender Data for BID NO: BID No: DOEEC/01/2022/2023
F.1.1	The employer is the <b>Independent Development Trust, Eastern Cape Region</b>
F.1.2	The tender documents issued by the employer comprises: T1.1 Tender notice and invitation to tender T1.2 Tender data T2.1 List of returnable documents T2.2 Returnable schedules <b>Part 1: Agreements and contract data</b> C1.1 Form of offer and acceptance C1.2 Contract data C1.3 Form of Guarantee C1.4 Adjudicator's appointment <b>Part 2: Pricing data</b> C2.1 Pricing instructions C2.2 Activity schedules / Bills of Quantities <b>Part 3: Scope of work</b> C3 Scope of work <b>Part 4 : Site information</b> C4 Site information

F.1.4 The employer's agent is:

HELM ARCHITECTS  
69 Prince Alfred Street  
QUEENSTOWN

Tel: 045 838 3544

E-mail: [marius@helmarch.co.za](mailto:marius@helmarch.co.za)

F.2.1 Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **Grade 7GB or higher class** of construction work, are eligible to submit tenders.

Joint ventures are eligible to submit tenders provided that:

1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation in the Grade 7GB or higher class of construction work; and
3. the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **(7GB or higher) General Building** class of construction work.

F.2.7 There shall be a compulsory briefing with representatives of the employer

F.2.12 No alternative tender offers will be considered

F.2.13.3 Parts of each tender offer communicated on paper shall be submitted as one original (i.e. no copies should be submitted).

F.2.13.5 The employer's address for delivery of tender offers and identification details to be shown on each tender  
F2.15.1 offer package are:

**Location of tender box: Physical address: -**

INDEPENDENT DEVELOPMENT TRUST OFFICES

Palm Square Business Centre  
Silverwood House  
Bonza Bay Road  
Beacon Bay  
EAST LONDON

**Identification details:**

**Project no: BID No: DOEEC/01/2022/2023**

**Title:** Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater



reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

F.2.15 The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

**Closing date: 23<sup>rd</sup> May 2022**

**Closing time: 11h00**

F.2.15 Telephonic, Telegraphic, Telex, Facsimile or E-mailed tender offers will not be accepted.

F.2.16 The tender offer validity period is **90 (Ninety) days**.

F.2.17 The contract duration is **24 Months** from date of Site Handover.

F.2.23 The tenderer is required to submit with his tender a Certificate of Contractor Registration issued by the Construction Industry Development Board; Compensation of Injury Diseases Act certificate (COIDA) and a valid Tax Clearance Certificate issued by the South African Revenue Services. Where a tenderer tenders through joint venture formation, such tenderers should include a joint venture agreement duly signed by each partner and stamped by commissioner of oath.

F.3.4 Tenders will not be opened immediately after the closing time; they will be posted on the IDT Website within 7 days of closure.

### F.3.11 Tender offers will only be accepted if the following are submitted

No	Gate Keeper (Compulsory) Criteria	Gate Keeper Criteria Description
1	Proof of authority to sign the document must be submitted e.g. company resolution. ( Only if the company has more than one Director)	Proof of authority to sign the document must be submitted on Company Letterhead e.g. company resolution.
2	Letter of good standing/Copy of registration (COIDA/FEM) from the Department of Labour	Valid Letter of Good Standing (Workman's Compensation, COIDA) or FEM Letter of Good Standing. If JV all partners must submit
3	CIDB Grading Certificate.	Required valid and active CIDB Grading equivalent for the works. JV's to submit consolidated CIDB Grading.
4	Fully & Duly Completed Detailed Bill of Quantities (BOQ), Written In Black Ink	All items in the original Bill of Quantities must be priced (rates and amounts and totals) with the exception of preliminaries (contractor can select options in line with the PBA JBCC March 2005 Edition 4.1), written in Ink. No Copies, no correctional fluids, erasable pen or a lead pencil must be used in the BOQ. Only black ink must be used to complete documents. Any mistakes must be neatly crossed out and countersigned by all relevant parties. All blanks spaces to be completed.
5	Consortium / Joint Venture Agreement	<b>If Applicable</b> , JV Agreement signed by all parties of the JV. and signed & stamped by the commissioner of oaths.
6	Duly Completed Form of Offer	Fully & Duly Completed and Signed form of offer and witnessed. All blanks spaces must be completed.
7	Duly completed and signed Invitation to BID, Part A and B (SBD 1)	Fully & Duly Completed and signed Invitation to BID, Part A and B (SBD 1). All blank spaces must be completed. Bidders to indicate items that are not applicable.
8	Duly completed Declaration of Interest (SBD 4)	Fully & Duly Completed and Signed Declaration of Interest Form (SBD 4). All blank spaces must be completed. Bidders to indicate items that are not applicable.
9	Duly Completed and Signed Local content form (SBD 6.2)	Fully & Duly Completed and Signed Local content form (SBD 6.2) including all the annexures C, D & E. Bidders must return Annexure C. Annexure D & E to be kept by the bidder for verification/audit upon appointment. All blanks spaces must be completed. Bidders to indicate items that are not applicable.  Only locally (South Africa) manufactured product that meet the stipulated minimum threshold for local content will be considered (Preferential Procurement Regulations 2017).  A Bid that fails to meet the stipulated threshold for local production and content is unacceptable and will be disqualified
10	No Copies, no correctional fluids, erasable pen or a lead pencil will be used on any of the submitted forms. Only black ink must be used to complete documents. Any mistakes must be neatly crossed out and countersigned by all relevant parties.	No Copies, no correctional fluids, erasable pen or a lead pencil will be used on any of the submitted forms. Only black ink must be used to complete documents. Any mistakes must be neatly crossed out and countersigned by all relevant parties.
11	Subcontracting proposal and methodology on how the Contractor is going to deal with community unrest and dynamics.	IDT has decided to apply pre-qualifying criteria for this bid in to ensure that the project is implemented without any material challenges relating to community unrest and dissatisfaction.

		<p>Tenderers or contractors must submit a proposal and methodology on how they are going to challenges on site relating to subcontracting and community empowerment.</p> <p>NB: The Tenderers who fail to comply with this requirement would be considered as being not acceptable and will be disqualified and will not be considered for further evaluation or award</p>
12	Lead Project Manager	Tenderer to provide proof of professional registration of the lead project contracts manager as Pr. Construction Manager or any relevant professional registration in built environment to match the tender advert

**Instruction notes:**

- All blanks' spaces must be completed on the SBD forms.
- Bidders to indicate items that are not applicable to them on all the forms.
- Bidders are advised to fill in the correct information on all the SBD forms.
- Bidders are encouraged to familiarize themselves with the project site in order to assist them in planning, pricing and executing the project.
- All Bidders are required to be registered on CSD (Central Supplier Database) with National Treasury.
- Please Provide CSD Registration report with supplier number with your Bid.

**4.3.3 Functionality Criteria**

The quality criteria and maximum score in respect of each of the criteria are as follows: Scoring Quality (Functionality)

A maximum equal to **100 tender evaluation points** will be awarded for quality. Only bidders who score 70% and above (i.e. 70 points and above out of a total of 100 points) will be further evaluated in terms of the 90/10 price/preference points system in line with Preferential Procurement Policy Framework Act (Act No.5 of 2000).

The functionality will be scored using the following values

Functionality area	Points
Experience on similar scale projects	35points
Qualifications & competencies of key staff	20 points
Project Specific Programme schedule and cash flow	20 points
Client References	25 points
<b>Total</b>	<b>100 Points</b>

:

**Notes:**

1. Bidders are required to score minimum points of 70 (70%) for Functionality stated in tender data.
2. Bidders who fail to meet the required minimum number of points for functionality stated in the tender data will not be evaluated further.
3. Bidders who fail to submit information as per the returnable schedules will not be allocated points.

## ALLOCATION OF FUNCTIONALITY POINTS

### Relevant Experience on Similar Construction Projects (35 points):

Points are allocated for relevant experience on similar construction projects completed in the past 5 years. The similarity references to project of similar kind, complexity and value in terms of the CIDB categorization. In support tenderers are to complete the "Project Experience" returnable schedule.

Evaluation points will be awarded in terms of the following table:

Number of Similar Construction Projects completed in the last 10 years	Number of points
5	35
4	28
3	21
2	14
1	7
0	0

### Qualifications and Key Personnel (20 points):

Points are allocated for educational qualifications and professional registration of allocated key personnel for the project under consideration. For each key personnel allocated to the project, the bidders shall submit for following: Curriculum Vitae together with certified proof of qualifications and professional registration (as per returnable schedule B 3.1 and B 3.2)

Evaluation points will be awarded in terms of the following table

#### Highest qualifications and Professional Registration (8 points)

Category	Qualification		Professional Registration		Total Points
	Degree	Diploma	Yes	No	
Contract Director	3	2	1	0	
Site Agent/Manager	3	2	1	0	
<b>Subtotal number of points</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>0</b>	

### Competence of Key Personnel (Subtotal 12 Points)

Category	Experience			
	Between 1- 4 years	Between 4-8years	Between 8-12 years	Over 12 years
Contract Director	2	4	5	6

Site Agent/Manager	2	4	5	6
<b>Subtotal number of points</b>	<b>4</b>	<b>8</b>	<b>10</b>	<b>12</b>

#### **Project Schedule (20 points):**

Points are awarded for project duration undertaking as per returnable activity schedule B1.2. This represents only key project deliverables and runs from the assumed start date indicated, for purposes of uniformity and ease of comparison. Failure to populate returnable schedule B1.2 in full will result in zero points awarded (NB: Bidders reminded that penalty clause is applicable in the event that bidders offer unrealistically short duration just to score higher points) The shortest realistic project duration will receive 20 points, with comparative duration awarded points in line with the formula below:

$$\text{PrSc} = 20 \times (\text{Dm}/\text{D})$$

**Where:**

**PrSC** = No. of points scored for project schedule  
**Dm** = lowest acceptable comparative project duration in Days  
**D** = Comparative project duration in Days of tender under consideration

#### **Client References (25 points)**

Points are allocated for performance on previous projects executed in terms of the respective completed "Client Reference Scorecards" (see returnable schedules) for the projects listed on the abovementioned "Relevant Project Experience" returnable schedule and attach thereto copies of relevant completion certificates (appointment letter, practical completion or works completion or final completion or an original certified letter from the client confirming completion of such a project).

Evaluation points will be awarded in terms of the following table:

Description / Performance	Very poor (1)	Poor (2)	Fair (3)	Good (4)	Excellent (5)
Quality of office administration					
Quality of site management					
Competence of foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of materials					
Labour relations					

## 1. LIST OF RETURNABLE SCHEDULES

Returnable Schedules required only for tender evaluation purposes (certified copies not older than six months or originals of the following documents):

No	Non-Statutory (Non Compulsory) Requirements	Non-Statutory (Non Compulsory) Requirements Description
1	Checklist for Tender Submission	Checklist for Tender Submission
2	Details of Tender	Details of Tender
3	Letter of Intent to Provide Security / Guarantee	Letter of Intent to Provide Security/ Guarantee from accredited financial institution
4	Contractor's Health and Safety Declaration	Contractor's Health and Safety Declaration
5	Litigation History	Litigation History – bidder to disclose all the pending litigations against their company
6	<b>Past Projects undertaken by the Tenderer in the last 10 years</b>	Past Completed Projects undertaken by the Tenderer in the last 10 years
8	<b>Tenderer's Competence &amp; Performance on Similar Projects</b>	Tenderer's Competence & Performance on Similar Projects
9	Record of Addenda to Tender Documents	Record of Addenda to Tender Documents
10	Proposed amendments and Qualifications	Proposed amendments and Qualifications
11	<b>Detailed Construction Programme</b>	Detailed Construction Programme
12	Detailed Cash-Flow	Detailed Cash-Flow
13	<b>Key Personnel</b>	Curriculum Vitae of Key Personnel and Certified Qualifications that are not older than 6 months
14	Proposed Project Organogram	Proposed Project Organogram
15	Detailed Resourcing schedule	Detailed Resourcing schedule
16	Schedule of Proposed Domestic Sub-Contractors	Schedule of Proposed Domestic Sub-Contractors
17	Contractor's Safety Record	Contractor's Safety Record
18	Tax Clearance certificate	Submission of valid Tax compliance status form (PIN)

### Notes:

1. Tenderers are required to score minimum points of 70 for Functionality stated in tender data.
2. Tenderers who fail to meet the required minimum number of points for functionality stated in the tender data will not be evaluated further.
3. Tenderers who fail to submit information as per the returnable schedules will not be allocated points.

## T2.1.20 EVALUATION SCHEDULE: CLIENT REFERENCES

The Tenderer shall provide details of his performance on each of the previous projects listed in the "Relevant Experience" returnable schedule. "Client Reference Scorecards" will be completed by each of the respective Clients for the projects listed in the "Relevant Experience" returnable schedule.

The following are to be **completed by the Client or the Principal Agent** and is to be supported in each case by a letter of award and the works completion certificate. Either the Client or the Principal Agent must sign and stamp the documents, failure to obtain both signatures and stamps will result in no allocation of points.

**PROJECT NAME and SCOPE OF WORK:**

**Principal agent:** .....

**Client:** .....

**Contract Amount:** .....

**Contract Duration:** .....

**Actual Contract Duration:** .....

Description / Performance	Very poor (1)	Poor (2)	Fair (3)	Good (4)	Excellent (5)
Quality of office administration					
Quality of site management					
Competence of foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Project management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of materials					
Labour relations					

Any other remarks considered necessary to assist in evaluation of the contractor?

.....  
.....

**Principal Agent Firm:**.....

.....

**Telephone:**.....

.....

**PA Signature:**.....

**Date:**.....

**Stamp**

**Client Signature:**.....

**Date:**.....

**Stamp**



## T2.1.20 EVALUATION SCHEDULE: REPORT ON CONTRACTOR'S COMPETANCE & PERFORMANCE ON A SIMILAR PROJECT FOR TENDER RECOMMENDATION PURPOSES

The following are to be **completed by the Client or the Principal Agent** and is to be supported in each case by a letter of award and the works completion certificate. Either the Client or the Principal Agent must sign and stamp the documents, failure to obtain both signatures and stamps will result in no allocation of points.

**PROJECT NAME and SCOPE OF WORK:**

**Principal agent:**.....

**Client:** .....

**Contract Amount:** .....

**Contract Duration:** .....

**Actual Contract Duration:** .....

Description / Performance	Very poor (1)	Poor (2)	Fair (3)	Good (4)	Excellent (5)
Quality of office administration					
Quality of site management					
Competence of foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of materials					
Labour relations					

Any other remarks considered necessary to assist in evaluation of the contractor?

.....  
 .....

**Principal Agent Firm:** .....

**Telephone:**.....

**PA Signature:**.....

**Date:** .....

**Stamp**

**Client Signature:**.....

**Date:** .....

**Stamp**

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**PROJECT NAME and SCOPE OF WORK:**

**Principal agent:** .....

**Client:** .....

**Contract Amount:** .....

**Contract Duration:** .....

**Actual Contract Duration:** .....

Description / Performance	Very poor (1)	Poor (2)	Fair (3)	Good (4)	Excellent (5)
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Quality of site management					
Competence of foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of materials					
Labour relations					

Any other remarks considered necessary to assist in evaluation of the contractor?

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**Principal Agent Firm:** .....

**Telephone:** .....

**PA Signature:** .....

**Date:** .....

**Stamp**

**Client Signature:** .....

**Date:** .....

**Stamp**

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**Principal agent:**.....

**Client:** .....

**Contract Amount:** .....

**Contract Duration:** .....

**Actual Contract Duration:** .....

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Quality of site management					
Competence of foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of materials					
Labour relations					

Any other remarks considered necessary to assist in evaluation of the contractor?

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 .....

**Principal Agent Firm:** .....

**Telephone:**.....

**PA Signature:** .....

**Date:** .....

**Stamp**

**Client Signature:** .....

**Date:** .....

**Stamp**

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The following are to be **completed by the Client or the Principal Agent** and is to be supported in each case by a letter of award and the works completion certificate. Either the Client or the Principal Agent must sign and stamp the documents, failure to obtain both signatures and stamps will result in no allocation of points.

**PROJECT NAME and SCOPE OF WORK:**

**Principal agent:** .....

**Client:** .....

**Contract Amount:** .....

**Contract Duration:** .....

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Description / Performance	Very poor (1)	Poor (2)	Fair (3)	Good (4)	Excellent (5)
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Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of materials					
Labour relations					

Any other remarks considered necessary to assist in evaluation of the contractor?

.....  
 .....

**Principal Agent Firm:** .....

**Telephone:** .....

**PA Signature:** .....

**Date:** .....

**Stamp**

**Client Signature:** .....

**Date:** .....

**Stamp**

## T2.1.20 EVALUATION SCHEDULE: REPORT ON CONTRACTOR'S COMPETENCE & PERFORMANCE ON A SIMILAR PROJECT FOR TENDER RECOMMENDATION PURPOSES

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**PROJECT NAME and SCOPE OF WORK:**

**Principal agent:** .....

**Client:** .....

**Contract Amount:** .....

**Contract Duration:** .....

**Actual Contract Duration:** .....

Description / Performance	Very poor (1)	Poor (2)	Fair (3)	Good (4)	Excellent (5)
Quality of office administration					
Quality of site management					
Competence of foreman					
Co-operation during contract					
Quality of workmanship					
Quality of materials					
Programme management					
Rectification of condemned work					
Tidiness of site					
Adequacy of equipment					
Adequacy of labour force					
Procurement of materials					
Labour relations					

Any other remarks considered necessary to assist in evaluation of the contractor.

.....  
.....

**Principal Agent Firm:** .....

**Telephone:** .....

**PA Signature:** .....

**Date:** .....

**Stamp**

**Client Signature:** .....

**Date:** .....

**Stamp**



<b>B1.2 (c) Finishing</b>				
<b>Item No.</b>	<b>Description of activity</b>	<b>Start Date</b>	<b>Finish Date</b>	<b>No. of Calendar days</b>
		<b>H</b>	<b>I</b>	<b>J</b>
22	Commissioning of Services; water, sewer, electricity and HAND OVER			
<b>B1.2 (d) Summary: Project Duration: 24 Months</b>				
	<b>Project Start Date</b>	<b>Project Finish / Hand Over Date (P)</b>	<b>Total Number of Calendar Days (I - A)</b>	
	<b>A</b>	<b>I</b>	<b>K</b>	
	25-Jul-22			

**Relevant Experience (Returnable schedule)**

The Tenderer shall provide details of his performance on each of the previous relevant projects. Failure to complete the table below will result in no points allocated. No “see attached” will be accepted

LIST THE FIVE LARGEST PROJECTS COMPLETED BY YOUR FIRM IN THE LAST TEN YEARS			
<i>Name of Project Completed and Scope of work</i>	<i>Name of Project Manager &amp; Telephone no</i>	<i>Name of Client &amp; Telephone no.</i>	<i>Value of Project</i>



<b><i>Name of Project Completed and Scope of work</i></b>	<b><i>Name of Project Manager &amp; Telephone no</i></b>	<b><i>Name of Client &amp; Telephone no.</i></b>	<b><i>Value of Project</i></b>

### **Record of Addenda to tender documents**

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	<b>Date</b>	<b>Title or Details</b>
<b>1.</b>		
<b>2.</b>		
<b>3.</b>		
<b>4.</b>		
<b>5.</b>		
<b>6.</b>		
<b>7.</b>		
<b>8.</b>		

Attach additional pages if more space is required.

Signed

Date

Name

Position

Identity  
number

Tenderer

## **SCHEDULE OF PLANT AND EQUIPMENT**

The following are lists of major items of relevant equipment that I / we presently own or lease and will have available for this contract if my / our tender is accepted. **(Please attach proof of ownership of plant owned)**

**(a) Details of major equipment owned by me / us and immediately available for this contract.**

<b>PLANT AND EQUIPMENT</b>	<b>DESCRIPTION (type, size, capacity etc)</b>	<b>LICENSE NUMBER</b>	<b>YEAR OF MANUFACTURE</b>
<i>Plant and Equipment 1</i>			
<i>Plant and Equipment 2</i>			
<i>Plant and Equipment 3</i>			
<i>Plant and Equipment 4</i>			
<i>Plant and Equipment 5</i>			
<i>Plant and Equipment 6</i>			

***Attach additional pages if more space is required***

**(b) Details of major equipment that will be hired, or acquired for this contract if my / our tender is accepted**

<b>PLANT AND EQUIPMENT</b>	<b>DESCRIPTION (type, size, capacity etc)</b>	<b>LICENSE NUMBER</b>	<b>HOW ACQUIRED</b>	
			<b>HIRE/BUY</b>	<b>SOURCE</b>
<i>Plant and Equipment 1</i>				
<i>Plant and Equipment 2</i>				
<i>Plant and Equipment 3</i>				
<i>Plant and Equipment 4</i>				
<i>Plant and Equipment 5</i>				
<i>Plant and Equipment 6</i>				

***Attach additional pages if more space is required***

The Tenderer undertakes to bring onto site without additional cost to the Employer any additional plant not listed but which may be necessary to complete the contract within the specified contract period.

***Failure to complete this form properly and correctly, will lead to the conclusion that the tenderer does not have the necessary plant and equipment resources at his disposal, which will prejudice his tender.***

SIGNATURE: ..... IDENTITY NUMBER: .....

*(of person authorised to sign on behalf of the Tenderer)*

DATE: .....

## REFERENCES

The following is a statement of traceable, current References (suppliers and/or plant hire):

[illegible]

SIGNATURE: ..... IDENTITY NUMBER: .....

(of person authorised to sign on behalf of the Tenderer)

DATE:.....

## KEY PERSONNEL

In terms of the Project Specification and the Conditions of Tender, unskilled workers may only be brought in from outside the local community if such personnel are not available locally.

The Tenderer shall list below the personnel which he intends to utilize on the Works, including key personnel which may have to be brought in from outside if not available locally.

CATEGORY OF EMPLOYEE	NUMBER OF PERSONS					
	KEY PERSONNEL, PART OF THE CONTRACTOR'S ORGANISATION		KEY PERSONNEL TO BE IMPORTED IF NOT AVAILABLE LOCALLY		UNSKILLED PERSONNEL TO BE RECRUITED FROM LOCAL COMMUNITY	
	HDI	NON-HDI	HDI	NON-HDI	HDI	NON-HDI
Site Agent, Project Managers						
Foremen, Quality Control and Safety Personnel						
Technicians, Surveyors, etc						
Artisans and other Skilled workers						
Plant Operators						
Others:..... ..... ..... ..... ...						

The Tenderer shall attach hereto the *curricula vitae*, in the form included hereafter, of at least the site agent and the project manager. The information is necessary for evaluation of the tender.

SIGNATURE: ..... IDENTITY NUMBER: .....

(of person authorised to sign on behalf of the Tenderer)

DATE:.....

***This section must be completed in full and aligned to attachments, organogram submitted failure to do so will result in no allocation of points***

**CURRICULUM VITAE OF KEY PERSONNEL (COMPULSORY)**

***(CVs and Certified Qualifications that are not older than 6 months are required only for site agent and contract or project manager).***

**CV FOR CONTRACT OR PROJECT MANAGER**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

SIGNATURE: ..... IDENTITY NUMBER: .....

*(of person authorised to sign on behalf of the Tenderer)*

DATE:.....

**CV FOR SITE AGENT**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....  
SIGNATURE OF THE INCUMBANT IN THE SCHEDULE

.....  
DATE

.....  
INCUMBANT'S IDENTITY NUMBER

**CV FOR TECHNICIAN / ARTISAN**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....  
SIGNATURE OF THE INCUMBANT IN THE SCHEDULE

.....  
DATE

.....  
INCUMBANT'S IDENTITY NUMBER



**CV FOR FOREMAN**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....  
SIGNATURE OF THE INCUMBANT IN THE SCHEDULE

.....  
DATE

.....  
INCUMBANT'S IDENTITY NUMBER

## **PRELIMINARY PROGRAMME**

The Tenderer shall **attach a preliminary programme reflecting the proposed sequence and tempo of execution of the various activities comprising the work for this Contract.** The programme shall be in accordance with the information supplied in the Contract, requirements of the Project Specifications and with all other aspects of his Tender.

**NOTE: ONLY COMPUTIRSED PRELIMINARY PROGRAM WILL BE CONSIDERED**

### **PROGRAMME (EXAMPLE ONLY)**

ACTIVITY	MONTHS									
	1	2	3	4	5	6	7	8	9	10

*[Note: The programme must be based on the completion time as specified in the Contract Data. No other completion time that may be indicated on this programme will be regarded as an alternative offer, unless it is listed in Table (b) of Form I hereafter and supported by a detailed statement to that effect, all as specified in the Tender Data]*

The following aspects of the preliminary programme will be considered:

- Programme Heading
- The programme is specific and tailored for the execution of the project, is comprehensive and is logically correct
- The activities are well articulated with headings and sub headings and show relevant milestones
- The activities that occur simultaneously are showing
- The activities that depend on each other are linked
- The activities that required stages are indicated
- Milestones are shown
- There are resources aligned / embedded to the programme
- Cause and effect of the programme can be determined such that the critical path is shown
- The lead times and lag times are clear and being considered for ordering of materials and staffing requirements
- Non-Working Days and Been Taken Into Consideration
- Has the Programme been divided into Phases
- The Cash Flow to Relate to the Programme
- The programme to show resource histogram
- The Resource Histogram to Show Unskilled Labour

SIGNATURE: ..... IDENTITY NUMBER: .....

(of person authorised to sign on behalf of the Tenderer)

DATE:.....

## PART A

## INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE INDEPENDENT DEVELOPMENT TRUST					
BID NUMBER:	DOEEC/01/2022/2023	CLOSING DATE:	23 <sup>rd</sup> May 2022	CLOSING TIME:	11h00
DESCRIPTION	Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED					
Palm Square Business Centre, Silverwood House, Bonza Bay Road, Beacon Bay					
East London					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
CONTACT PERSON	Sam Makhura		CONTACT PERSON	Marius Helm	
TELEPHONE NUMBER	043 711 6000		TELEPHONE NUMBER	045 838 3544	
FACSIMILE NUMBER			FACSIMILE NUMBER	087 160 0651	
E-MAIL ADDRESS	<a href="mailto:SamM@idt.org.za">SamM@idt.org.za</a>		E-MAIL ADDRESS	<a href="mailto:Marius@ghelmarch.co.za">Marius@ghelmarch.co.za</a>	
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					

SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA
<b>a) ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		<b>b) ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?</b>		<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]
<b>QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? <input type="checkbox"/> YES <input type="checkbox"/> NO					
DOES THE ENTITY HAVE A BRANCH IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO					
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO					
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO					
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? <input type="checkbox"/> YES <input type="checkbox"/> NO					
<b>IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.</b>					

## PART B

### TERMS AND CONDITIONS FOR BIDDING

<b>1. BID SUBMISSION:</b>
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2. <b>ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED– (NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.</b>
1.3. THIS BID IS SUBJECT TO THE JOINT BUILDING CONTRACT COMMITTEE (JBCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4. <b>THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A JBCC AGREEMENT.</b>
<b>2. TAX COMPLIANCE REQUIREMENTS</b>
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.**

SIGNATURE OF BIDDER:

.....

CAPACITY UNDER WHICH THIS BID IS SIGNED:

.....

(Proof of authority must be submitted e.g. company resolution)

DATE:

.....

## BIDDER'S DISCLOSURE

### 1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

### 2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise, employed by the state?

YES / NO

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

**2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution?**

**YES / NO**

**2.2.1 If so, furnish particulars:**

.....

.....

**2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?**

**YES / NO**

**2.3.1 If so, furnish particulars:**

.....

.....

### **3 DECLARATION**

**I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:**

**3.1 I have read, and I understand the contents of this disclosure.**

**3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect.**

**3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor.**

However, communication between partners in a joint venture or consortium will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

**I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.**



**I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.**

.....

**Signature**

**Date**

.....

**Position**

**Name of bidder**

**1. DECLARATION WITH REGARD TO COMPANY/FIRM**

1.1 Name of company/firm:.....

1.2 VAT registration number:.....

1.3 Company registration number:.....

**1.4 TYPE OF COMPANY/ FIRM**

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

**1.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES**

.....  
 .....  
 .....  
 .....  
 .....

1.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional service provider
- ☐ Other service providers, e.g. transporter, etc.

[*TICK APPLICABLE BOX*]

1.7 Total number of years the company/firm has been in business: .....

i) The information furnished is true and correct;

WITNESSES

1. ....

2. ....

.....  
SIGNATURE(S) OF BIDDERS(S)

DATE: .....

ADDRESS .....

## **DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS**

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

### **1. General Conditions**

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.
- 1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = [1 - x / y] * 100$$

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) on the date of advertisement of the bid as indicated in paragraph 3.1 below.

**The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.**

1.6 A bid may be disqualified if –

- (a) this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation; and

**2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:**

3.

Item	Description of Service	Stipulated Threshold	Minimum
A	Roof Sheeting	100%	
B	Reinforcing bars	100%	
C	Window Frames	100%	
D	Door Frames	100%	
E	Gutters and Downpipes	100%	
F	Wire Products	100%	
G	Fasteners	100%	
H	School Furniture	100%	

3. Does any portion of the services, works or goods offered have any imported content?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

- 3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on [www.reservebank.co.za](http://www.reservebank.co.za).

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

**LOCAL CONTENT DECLARATION**  
**(REFER TO ANNEX B OF SATS 1286:2011)**

**LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)**

**IN RESPECT OF BID NO. ....**

**ISSUED BY:** (Procurement Authority / Name of Institution):

.....  
NB

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on <http://www.thdti.gov.za/industrialdevelopment/ip.jsp>. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ..... (full names),

do hereby declare, in my capacity as .....

of .....(name of bidder entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that:

- (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (ii) the declaration templates have been audited and certified to be correct.

(c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

**If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.**

**The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.**

- (d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.
- (e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

**SIGNATURE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**WITNESS No. 1** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**WITNESS No. 2** \_\_\_\_\_

**DATE:** \_\_\_\_\_

### Local Content Declaration - Summary Schedule

(C6)	Tender Exchange Rate:
(C7)	Specified local content %

GBP

**Note:** VAT to be excluded from all calculations

[illegible]

(C25) Average local content % of tender	
---	--

Date: \_\_\_\_\_

## Annex D

## Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. DOEEC/01/2022/2023  
 (D2) Tender description: CONSTRUCTION OF ADDITIONAL CLASSROOMS AT PROSPECT JSS  
 (D3) Designated Products:  
 (D4) Tender Authority:  
 (D5) Tendering Entity name:  
 (D6) Tender Exchange Rate:

Note: VAT to be excluded from all calculations

Pula

EU R 9,00

GBP R 12,00

## A. Exempted imported content

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of Imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	
This total must correspond with Annex C - C 21											

## B. Imported directly by the Tenderer

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of Imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

## C. Imported by a 3rd party and supplied to the Tenderer

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of Imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

## D. Other foreign currency payments

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						

Signature of tenderer from Annex B

(D53) Total of imported content &amp; foreign currency payments - (D32), (D45) &amp; (D52) above R 0

Date:

This total must correspond with Annex C - C 23



## Annex E

## Local Content Declaration - Supporting Schedule to Annex C

(E1) **Tender No.** DOEEC/01/2022/2023

(E2) **Tender description:** CONSTRUCTION OF ADDITIONAL CLASSROOMS AT PROSPECT JSS

(E3) **Designated products:**

(E4) **Tender Authority:**

(E5) **Tendering Entity name:**

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10) **Manpower costs** (Tenderer's manpower cost)

R 0

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.)

R 0

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.)

R 0

(E13) Total local content R 0

This total must correspond with Annex C - C24

Signature of tenderer from Annex B

Date: \_\_\_\_\_

## INDEPENDENT DEVELOPMENT TRUST

### C1.1 Form of Offer and Acceptance

#### Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Electrical Installation, Mechanical Installation & associated external works at Prospect JSS.

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

#### THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

.....

..... Rand (in words);

R ..... (in figures)

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature ..... Date .....

Name ..... Identity number .....

Capacity .....

#### for the tenderer

(Name and .....  
address of .....  
organization) .....

Name and

signature  
of witness .....

**NOTE: Failure of a Bidder to complete and sign this part of the tender form (offer) in full including witnessing will invalidate the tender. Any blank spaces left will invalidate this offer.**

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1: Agreements and contract data, (which includes this agreement)  
Part C2: Pricing data  
Part C3: Scope of work.  
Part C4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Signature ..... Date .....

Name ..... Identity number .....

Capacity .....

**for the  
Employer** INDEPENDENT DEVELOPMENT TRUST

Palm Square Business Centre  
Silverwood House  
Bonza Bay Road  
Beacon Bay  
East London

Name and  
signature .....

of witness ..... Date .....

## Schedule of Deviations

- 1 Subject .....  
Details .....  
.....  
.....  
.....
- 2 Subject .....  
Details .....  
.....  
.....  
.....
- 3 Subject .....  
Details .....  
.....  
.....
- 4 Subject .....  
Details .....  
.....  
.....
- 5 Subject .....  
Details .....  
.....

By the duly authorized representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

## INDEPENDENT DEVELOPMENT TRUST

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

### C1.2 Contract Data for BID NO: DOEEC/01/2022/2023

The Conditions of Contract are clauses 1 to 41 of the **JBCC Series 2000 Principal Building Agreement (Edition 4.1 March 2005)** published by the Joint Building Contracts Committee.

Copies of these conditions of contract may be obtained from the Association of South African Quantity Surveyors (011-3154140), Master Builders Association (011-205-9000; 057-3526269) South African Association of Consulting Engineers (011-4632022) or South African Institute of Architects (051-4474909; 011-4860684; 053-8312014;)

The JBCC Principal Building Agreement makes several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the JBCC Principal Building Agreement.

Each item of data given below is cross-referenced to the clause in the JBCC Principal Building Agreement to which it mainly applies.

**The additions, deletions and alterations to the JBCC Principal Agreement are:**

Clause	Additions, deletions and alterations
--------	--------------------------------------

- |     |  |
|-----|--|
| 1.1 | <p>Replace the following definitions in <b>DEFINITIONS AND INTERPRETATIONS</b> with the following wording:</p> <p><b>AGREEMENT</b> means the agreement arising from the signing of the Form of Offer and Acceptance by the parties.</p> <p><b>BILLS OF QUANTITIES</b> means the document drawn up in accordance with the Pricing Instructions contained in the Pricing Data.</p> <p><b>CONSTRUCTION PERIOD</b> means the period commencing on the date of site hand over and ending on the date of practical completion.</p> <p><b>CONTRACT DOCUMENTS</b> means the Agreement and all documents referenced therein.</p> <p><b>CONTRACT DRAWINGS</b> means the drawings listed in the Scope of Work.</p> <p><b>CONTRACT SUM</b> means the total of prices in the Form of Offer and Acceptance.</p> <p><b>SCHEDULE</b> means the variables listed in the Contract Data.</p> <p><b>CORRUPT PRACTICE</b> means the offering, giving, receiving and soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution</p> <p><b>FRAUDULENT PRACTICE</b> means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practice among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.</p> <p><b>INTEREST</b> means the interest rates applicable to this contract, whether specifically indicated in the</p> |
|-----|--|

relevant clauses or not, will be the rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999).

**SECURITY** means the form of security provided by the **employer** or **contractor**, as stated in the **schedule**, from which the **contractor** or **employer** may recover expense or loss.

1.6 Any notice given may be delivered by hand, sent by prepaid registered post or telefax. Notice shall be presumed to have been duly given when:  
Delete sub-clause 1.6.4

3.5 Delete sub-clause 3.5

3.6 Delete sub-clause 3.6.

3.7 Add to the end thereof:

The **contractor** shall supply and keep a copy of the **JBCC Series 2000 Principal Building Agreement** and Preliminaries applicable to this contract on the site, to which the **employer**, **principal agent** and **agents** shall have access at all times.

3.9 Delete sub-clause 3.9

3.10 Replace the second reference to "**principal agent**" with the word "**employer**".

4.3 No clause

5.1.2 Under clause 41 – include reference 32.6.3; 34.3; 34.4 and 38.5.8 in terms of which the **employer** has retained its authority and has not given a mandate to the **principal agent** and in terms of which the **employer** shall sign all documents.

9 Clause 9.0 is amended by adding Clause 9.1.4:

The **contractor** indemnifies and holds harmless the **employer** against all liability, losses, claims, damages, penalties, actions, proceedings or judgments (collectively referred to as "Losses") arising from any infringement of letters, patent design, trademark, name, copyright or other protected rights in respect of any machine, plant, work, materials, thing, system or method of using, fixing, working or arrangement used or fixed or supplied by the **contractor**, but such indemnity shall not cover any use of the equipment of part thereof otherwise than in accordance with the provisions of the specification. All payments and royalties payable in one sum or by installments or otherwise shall be included by the **contractor** in the price and shall be paid by him to those to whom they may be payable. The **contractor** shall reimburse the **employer** for all legal and other costs and expenses, including without limitation attorney's fees on attorney-client scale incurred by the **employer** in connection with investigation, defending or settling any Losses in connection with pending or threatening litigation in which the **employer** is a party.

10.5 Add the following as 10.5:

**Damage to the works**

(a) Without any way limiting the **contractor's** obligations in terms of the contract, the **contractor** shall

bear the full risk of damage to and/or destruction of the **works** by whatever cause during construction of the **works** and hereby indemnifies and holds harmless the **employer** against any such damage. The **contractor** shall take such precautions and security measures and other steps for the protection and security of the **works** as the **contractor** may deem necessary.

(b) The **contractor** shall at all times proceed immediately to remove or dispose of any debris arising from damage or destruction of the **works** and to rebuild, restore, replace and/or repair the **works**.

(c) The **employer** shall carry the risk of damage to or destruction of the **works** and materials paid for by  
The **employer** that is the result of the expected risks as set out in 10.6.

(d) Where the **employer** bears the risk in terms of this contract, the **contractor** shall, if requested to do so, reinstate any damage or destroyed portions of the **works** and the costs of such reinstatement shall be measured and valued in terms of 32.0 hereof.

10.6 Add the following as 10.6:

**Injury to Persons or loss of or damage to Properties**

- (a) The **contractor** shall be liable for and hereby indemnifies the **employer** against any liability, loss, claim or proceeding whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever arising out of or in the course of or caused by the execution of the **works** unless due to any act or negligence of any person for whose actions the **employer** is legally liable.
- (b) The **contractor** shall be liable for and hereby indemnifies the **employer** against any liability, loss, claim or proceeding consequent upon loss of or damage to any moveable, or immoveable property or personal property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person, arising out of or in the course of or by reason of the execution of the **works** unless due to any act or negligence of any person for whose actions the **employer** is legally liable.
- (c) The **contractor** shall upon receiving a **contract instruction** from the **principal agent** cause the same to be made good in a perfect and workmanlike manner at his own cost and in default thereof the **employer** shall be entitled to cause it to be made good and to recover the cost therefore from the **contractor** or to deduct the same from amounts due to the **contractor**.
- (d) The **contractor** shall be responsible for the protection and safety of such portions of the premises placed under his control by the **employer** for the purpose of executing the **works** until the issue of the **certificate of practical completion**.
- (e) Where the execution of the **works** involves the risk of removal of or interference with support to adjoining properties including land or structures or any structures to be altered or added to, the **contractor** shall obtain adequate insurance and will remain adequately insured or insured to the specific limit stated in the contract against the death of or injury to persons or damage to such property consequent on such removal or interference with the support until such portion of the **works** has been completed.
- (f) The **contractor** shall at all times proceed immediately at his own cost to remove or dispose of any debris and to rebuild, restore, replace and / or repair such property and to execute the **works**.

10.7 Add the following as 10.7:

**HIGH RISK INSURANCE**

In the event of the project being executed in a geological area classified as a "High Risk Area", that is an area which is subject to highly unstable subsurface conditions which might result in catastrophic ground movement evident by sinkhole or doline formation the following will apply:

10.7.1 **Damage to the works**

The **contractor** shall, from the **commencement date** of the **works** until the date of the **certificate of practical completion**, bear the full risk of and hereby indemnifies and hold harmless the **employer** against any damage to and/or destruction of the **works** consequent upon a catastrophic ground movement as mentioned above. The **contractor** shall take such precautions and security measures and other steps for the protection of the **works** as he may deem necessary.

When so instructed to do so by the **principal agent**, the **contractor** shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the **works** and to rebuild, replace and/or repair the **works**, at the **contractor's** own costs.

10.7.2 **Injury to persons or loss of or damage to property**

The **contractor** shall be liable for and hereby indemnifies and holds harmless the **employer** against any liability, loss, claim or proceeding arising at any time during the period of the contract whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of or caused by a catastrophic ground movement as mentioned above.

The **contractor** shall be liable for and hereby indemnifies the **employer** against any and all liability, loss, claim or proceeding consequent upon loss of or damage to any moveable, or immovable property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned above, which occurred during the period of construction.

10.7.3 It is the responsibility of the **contractor** to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.7.1 and 10.7.2. Without limiting the **contractor's** obligations in terms of the contract, the **contractor** shall, within twenty-one (21) **calendar days** of the **commencement date** but before commencement of the **works** submit to the **employer** proof of such insurance policy, if requested to do so.

10.7.4 The **employer** shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred subsequent upon the **contractor's** default of his obligations as set out in 10.7.1, 10.7.2 and 10.7.3. Such losses or damages may be recovered from the **contractor** or by deducting the same from any amounts still due under this contract or under any other contract presently or hereafter existing between the **employer** and the **contractor** and for this purpose all these contracts shall be considered on indivisible whole.

15.1.4 Add 15.1.4 as follows:

An acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), within twenty-one (21) **calendar days** of date of acceptance of the tender.

15.2.1 Under 41: Amend to read as follows:

Give the **contractor** possession of the **site** within ten (10) **working days** of the **contractor** complying with the terms of 15.1

20.1.3 No clause.

21 Replace sub-clauses 21.1.2 to 21.1.4 and 21.2 to 21.6 with the following:

The **contractor** and **principal agent** shall appoint a **selected subcontractor** in accordance with the provisions of the Scope of Work.

29 Clause 29.0 is amended by: -

i) The addition of the following clauses: -

Clause 29.9

"Revision to the date for **practical completion** shall only be considered when work on the critical path of the agreed programme for the works is delayed."

ii) Clause 29.10 – Acceleration

Clause 29.10.1

Irrespective of whether or not the **principal agent** rules that the **contractor** is entitled to an extension of time or a revision of the date for **practical completion**, the **principal agent** shall nevertheless, at any time, be entitled to instruct the **contractor** in writing to accelerate the progress of the remaining **works** to ensure that the **works** are completed by the original date for **practical completion** or revised date as the case may be.

Clause 29.10.2

Upon receipt of such instruction, the **contractor** shall take all necessary steps to ensure that the **works** are completed timeously including the provision by him of additional resources, plant, manpower, etc. and the working overtime or additional overtime beyond that contemplated at the time of tender (at all times adhering to the regulations and requirements of all authorities) and by all other adequate and proper means and methods. The **contractor**



shall prove that such steps are being taken if called upon to do so.

Clause 29.10.3

The **contractor's** entitlement to compensation arising out of or in respect of any revision to the date for **practical completion** that may have been granted by the **principal agent** or alternatively where the **principal agent** has instructed the **contractor** to accelerate, shall be adjudicated strictly in terms of clause 32.

- 30.1 Replace reference to 36.3 at end of sentence with 36.0
- 31.12 Delete "Payment shall be subject to the **employer** giving the **contractor** a **tax** invoice for the amount due."
- 32.5.1 Add the following to the end of each of these clauses: "... due to no fault of the **contractor**."  
32.5.4  
32.5.7
- 32.12 Delete sub-clause
- 34.2 Add # next to 34.2
- 34.13 Replace "seven (7) **calendar days**" with "thirty-one (31) **calendar days**" and delete the words "subject to the **employer** giving the **contractor** a **tax** invoice for the amount due"
- 36.1 Add the following clauses 36.1.3 to 36.1.5 under 36.1 to read as follows:
- 36.1.3 The **contractor's** refusal or neglect to comply strictly with any of the conditions of contract.
- 36.1.4 The **contractor's** estate being sequestrated, liquidated or surrendered in terms of the insolvency laws in force with the Republic of South Africa.
- 36.1.5 The **contractor**, in the judgment of the **employer**, has engaged in **corrupt** or **fraudulent practices** in competing for or in executing the contract.
- 36.3 Replace "**principal agent**" with "**employer**".
- 37.3.5 Replace "ninety (90)" with "one hundred and twenty (120)".  
38.5.4
- 39.3.5 Add the following words at the end thereof: "within one hundred and twenty (120) **working days** of completion of such a report."
- 1.1 Delete in the Substitute Provisions (41.0 State Clauses) clause 41.1.3 the definitions for  
(41.1.3) **CONSTRUCTION PERIOD** and **INTEREST**. Sub-clause 1.1 definitions will apply (see contract data)
- 10.1 Delete in the Substitute Provisions (41.0 State Clauses) clauses 10.1, 10.2 and 10.4 so that the  
10.2 provisions of sub-clauses 10.1, 10.2 and 10.4 of the non-**state** clauses will apply to the **state**.  
10.4  
(41.0)
- 11.1 Delete in the Substitute Provisions (41.0 State Clauses) clause 11.1 so that the provisions of clause  
(41.0) 11.1 of the non-**state** clause will apply to the **state**.
- 12.1 Delete in the Substitute Provisions (41.0 State Clauses) clause 12.1 so that the provisions of clause  
(41.0) 12.1 of the non-**state** clause will apply to the **state** and replace "**contractor**" in clause 10.1 in the Substitute Provisions (41.0 State Clauses) with "The party responsible in terms of 12.1"
- 12.2 Amend the first part of the first sentence in clause 12.2 of the Substitute Provisions (41.0 State  
(41.0) Clauses) to read "Where the **contractor** is responsible for insurances, the **contractor** shall ....."
- 31.11.1 Delete in the Substitute Provisions (41.0 State Clauses) sub-clauses 31.11.1 and 31.11.2 so that the  
31.11.2 provisions of sub-clause 31.11.1 of the non-**state** clause will apply to the **state**.  
(41.0)

- 36.7 Add in the Substitute Provisions (41.0 State Clauses) as clauses 36.7, 37.5 and 39.5, the following:  
 37.5 Notwithstanding any clause to the contrary, on cancellation of this agreement either by the **employer**  
 39.5 or the **contractor**, or for any reason whatsoever, the **contractor** shall on written instruction,  
 (41.0) discontinue with the **works** on a stated date and withdraw himself from the **site**. The contractor shall not be entitled to refuse to withdraw from the **works** on the grounds of any lien or right of retention or on the grounds of any other right whatsoever.
- 40.2.1 Delete in the Substitute Provisions (41.0 State Clauses) clauses 40.2.1, 40.2.2, 40.3, 40.4, 40.5 and  
 40.2.2 40.6 and replace with the following:  
 40.3  
 40.4  
 40.5  
 40.6  
 (41.0)
- 40.1 Should any dispute between the **employer**, his **agents** or **principal agent** on the one hand and the contractors on the other arise out of this **agreement**, such dispute shall be referred to adjudication.
- 40.2 Adjudication shall be conducted in accordance with the edition of the JBCC Rules for Adjudication current at the time when the dispute is declared. The party, which raises the dispute, shall select three adjudicators from the panel of adjudicators published by the South African Institution of Civil Engineering or Association of Arbitrators (Southern Africa), determine their hourly fees and confirm that these adjudicators are available to adjudicate the dispute in question. The other party shall then select within 7 days one of the three nominated adjudicators, failing which the chairman for the time being of the Association of Arbitrators (Southern Africa) shall nominate an adjudicator. The **adjudicator** shall be appointed in terms of the Adjudicators Agreement set out in C1.4.
- 40.3 If provided in the **schedule**, a dispute shall be finally settled by a single Arbitrator to be agreed on between the parties or, failing such agreement within 28 days after referring the dispute to Arbitration, an Arbitrator nominated by the chairman for the time being of the Association of Arbitrators (Southern Africa). Any such reference shall be deemed to be a submission to the arbitration of a single arbitrator in terms of the Arbitration Act (Act No 42 of 1965, as amended), or any legislation passed in substitution therefore. In the absence of any other agreed procedure, the arbitration shall take place in accordance with the Rules for the Conduct of Arbitrations issued by the Association of Arbitrators (Southern Africa) which are current at the time of the referral to arbitration. The Arbitrator shall, in his award, set out the facts and the provisions of the contract on which his award is based.
- 40.4 If the **schedule** provides for court proceedings to finally resolve disputes, disputes shall be determined by court proceedings.

**The additions to the JBCC Principal Agreement are:**

Clause	Additions	
A1	<b>A1.0</b>	<b>Labour intensive component of the works</b>
	<b>A1.1</b>	<b>Payment of labor-intensive component of the works.</b> Payment for works identified in the Scope of Work as being labor-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.
	<b>A1.2</b>	<b>Applicable labour laws</b> The Ministerial Determination, Special Public Works Programme, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° 35310 04 May 2012, as reproduced below, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.
	<b>1</b>	<b>Introduction</b>
	1.1	This document contains the standard terms and conditions for workers employed in elementary occupations on a Special Public Works Programme (SPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a SPWP.
	1.2	In this document – (a) “department” means any department of the State, implementing agent or contractor; (b) “employer” means any department, implementing agency or contractor that hires workers to work in elementary occupations on a SPWP; (c) “worker” means any person working in an elementary occupation on a SPWP; (d) “elementary occupation” means any occupation involving unskilled or semi-skilled work; (e) “management” means any person employed by a department or implementing agency to administer or execute an SPWP; (f) “task” means a fixed quantity of work; (g) “task-based work” means work in which a worker is paid a fixed rate for performing a task; (h) “task-rated worker” means a worker paid on the basis of the number of tasks completed (i) “time-rated worker” means a worker paid on the basis of the length of time worked.
	<b>2</b>	<b>Terms of Work</b>
	2.1	Workers are employed on a temporary basis or contract basis.
	<b>3</b>	<b>Normal Hours of Work</b>
	3.1	An employer may not set tasks or hours of work that require a worker to work– (a) more than forty hours in any week; (b) on more than five days in any week; and (c) for more than eight hours on any day.
	3.2	An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.
	<b>4</b>	<b>Meal Breaks</b>
	4.1	A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
	4.2	An employer and worker may agree on longer meal breaks.
	4.3	A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be

		performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.
	4.4	A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.
	<b>5</b>	<b>Special Conditions for Security Guards</b>
	5.1	A security guard may work up to 55 hours per week and up to eleven hours per day.
	5.2	A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.
	<b>6</b>	<b>Daily Rest Period</b>
		Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.
	<b>7</b>	<b>Weekly Rest Period</b>
		Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").
	<b>8</b>	<b>Sick Leave</b>
	8.1	Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
	8.2	A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.
	8.3	A worker may accumulate a maximum of twelve days' sick leave in a year.
	8.4	Accumulated sick-leave may not be transferred from one contract to another contract.
	8.5	An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
	8.6	An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
	8.7	An employer must pay a worker sick pay on the worker's usual payday.
	8.8	Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –
		(a) absent from work for more than two consecutive days; or (b) absent from work on more than two occasions in any eight-week period.
	8.9	A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorized to issue medical certificates indicating the duration and reason for incapacity.
	8.10	A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.
	<b>9</b>	<b>Maternity Leave</b>
	9.1	A worker may take up to four consecutive months' unpaid maternity leave.
	9.2	A worker is not entitled to any payment or employment-related benefits during maternity leave.
	9.3	A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
	9.4	A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
	9.5	A worker may begin maternity leave –

		<ul style="list-style-type: none"> <li>(a) four weeks before the expected date of birth; or</li> <li>(b) on an earlier date – <ul style="list-style-type: none"> <li>(i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or</li> <li>(ii) if agreed to between employer and worker; or</li> </ul> </li> <li>(c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.</li> </ul>
	9.6	A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.
	<b>10</b>	<b>Family responsibility leave</b>
	10.1	Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -
		<ul style="list-style-type: none"> <li>(a) when the employee's child is born;</li> <li>(b) when the employee's child is sick;</li> <li>(c) in the event of a death of – <ul style="list-style-type: none"> <li>(i) the employee's spouse or life partner;</li> <li>(ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.</li> </ul> </li> </ul>
	<b>11</b>	<b>Statement of Conditions</b>
	11.1	<p>An employer must give a worker a statement containing the following details at the start of employment –</p> <ul style="list-style-type: none"> <li>(a) the employer's name and address and the name of the SPWP;</li> <li>(b) the tasks or job that the worker is to perform; and</li> <li>(c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;</li> <li>(d) the worker's rate of pay and how this is to be calculated;</li> <li>(e) the training that the worker will receive during the SPWP.</li> </ul>
	11.2	An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
	11.3	An employer must supply each worker with a copy of these conditions of employment.
	<b>12</b>	<b>Keeping records</b>
	12.1	Every employer must keep a written record of at least the following –
		<ul style="list-style-type: none"> <li>(a) the worker's name and position;</li> <li>(b) in the case of a task-rated worker, the number of tasks completed by the worker;</li> <li>(c) in the case of a time-rated worker, the time worked by the worker;</li> <li>(d) payments made to each worker.</li> </ul>
	12.2	The employer must keep this record for a period of at least three years after the completion of the SPWP.
	<b>13</b>	<b>Payment</b>
	13.1	An employer must pay all wages at least monthly in cash or by cheque or into a bank account.
	13.2	A worker may not be paid less than the minimum wage rate of R95 per day or per task. This will be adjusted annually on the 1 <sup>st</sup> of November in line with inflation (available CPI as provided by Stats SA six (6) weeks before implementation)
	13.3	A task-rated worker will only be paid for tasks that have been completed.

	13.4	An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.
	13.5	A time-rated worker will be paid at the end of each month.
	13.6	Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
	13.7	Payment in cash or by cheque must take place –
		(a) at the workplace or at a place agreed to by the worker; (b) during the worker's working hours or within fifteen minutes of the start or finish of work; (c) in a sealed envelope which becomes the property of the worker.
	13.8	An employer must give a worker the following information in writing –
		(a) the period for which payment is made; (b) the numbers of tasks completed or hours worked; (c) the worker's earnings; (d) any money deducted from the payment; (e) the actual amount paid to the worker.
	13.9	If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.
	13.10	If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.
	<b>14</b>	<b>Deductions</b>
	14.1	An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
	14.2	An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
	14.3	An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.
	14.4	An employer may not require or allow a worker to –
		(a) repay any payment except an overpayment previously made by the employer by mistake; (b) state that the worker received a greater amount of money than the employer actually paid to the worker; or (c) pay the employer or any other person for having been employed.
	<b>15</b>	<b>Health and Safety</b>
	15.1	Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
	15.2	A worker must –
		(a) work in a way that does not endanger his/her health and safety or that of any other person; (b) obey any health and safety instruction; (c) obey all health and safety rules of the SPWP; (d) use any personal protective equipment or clothing issued by the employer; (e) report any accident, near-miss incident or dangerous behavior by another person to their employer or manager.
	<b>16</b>	<b>Compensation for Injuries and Diseases</b>

	16.1	It is the responsibility of the employers (other than a contractor) to arrange for all persons employed to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
	16.2	A worker must report any work-related injury or occupational disease to their employer or manager.
	16.3	The employer must report the accident or disease to the Compensation Commissioner.
	16.4	An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.
	<b>17</b>	<b>Termination</b>
	17.1	The employer may terminate the employment of a worker for good cause after following a fair procedure.
	17.2	A worker will not receive severance pay on termination.
	17.3	A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
	17.4	A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
	17.5	A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
	<b>18</b>	<b>Certificate of Service</b>
	18.1	On termination of employment, a worker is entitled to a certificate stating-
		(a) the worker's full name; (b) the name and address of the employer; (c) (d) the work performed by the worker; (e) any training received by the worker as part of the SPWP; (f) the period for which the worker worked on the SPWP; (g) any other information agreed on by the employer and worker.
<b>A2</b>	<b>A2.0</b>	<b>Mandatory Sub-Contracting (Only for projects above R 30 Million)</b>
	<b>A2.1</b>	The Contractor must sub-contract 30% of the work to Domestic Sub-Contractors. The Sub-Contractors shall have a CIDB grading.
		The Contractor shall, directly after appointment and without delay, enter into domestic sub-contracts with the Domestic Sub-Contractors and forward a copy of these agreements to the Principal Agent. The Contractor shall remain responsible for providing the subcontracted portion of the works as if the work had not been subcontracted.
		The Contractor will be responsible for all assistance and training required by the Sub-Contractor/s to complete the Project successfully. Irrespective of the mandatory sub-contracting requirement of this contract, the Contractor will at all times be the responsible party in accordance with the conditions of contract.
<b>A3</b>		
<b>A4</b>	<b>A4.0</b>	<b>Attendance to Domestic Sub-Contractors in terms of clauses A2 above</b>
	<b>A4.1</b>	The attendance of to the Domestic Sub-Contractor appointed in terms of clauses A2 above shall be

		priced under the relevant specific preliminaries item in the Preliminaries Section of the Bills of Quantities.
<b>A5</b>	<b>A5.0</b>	
	<b>A5.1</b>	
<b>A6</b>	<b>A6.0</b>	<b>Expanded Public Works Programme</b>
	<b>A6.1</b>	The Contractor will be required to employ staff which satisfies the EPWP requirements as per the Guidelines for the implementation of labor-intensive infrastructure projects.



## Part 1: Contract Data Completed by the Employer

Clause	Item and data
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1.2	The Employer is THE INDEPENDENT DEVELOPMENT TRUST
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The address of the Employer is: Palm Square Business Centre, Silverwood House, Bonza Bay Road  
Beacon Bay, EAST LONDON

Telephone: 043-711 6000

Facsimile: 086-529 7749

Address (physical): INDEPENDENT DEVELOPMENT TRUST  
Palm Square Business Centre, Silverwood House, Bonza Bay Road  
Beacon Bay, EAST LONDON

5.1	The Principal Agent is HELM ARCHITECTS
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Telephone: 045 838 3544

Facsimile: 087 160 0651

Address (physical):

69 Prince Alfred Street

QUEENSTOWN

5320

5.2	Agent (1) is HELM ARCHITECTS
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Agent's service: Architectural Services

Telephone: 045 838 3544

Facsimile: 087 160 0651

Address (physical):

69 Prince Alfred Street

QUEENSTOWN

5320

5.3	Agent (2) is PARADOX YOUNG AND ASSOCIATES
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Telephone: (047) 535 0052

Facsimile: 086 663 3104

Address (physical):

2 Merriman Road

Unit 8 CK Business Centre

Mbuqe

MTHATHA

5100

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- 5.4 Agent (3) is: BALLENDEN & ROBB  
Agent's service: Electrical and Mechanical Engineering  
Telephone: 043 743 3809  
Facsimile:  
Address (physical): Unit 2 Arundel Park, Arundel Crescent  
Stirling  
EAST LONDON  
5241
- 5.5 Agent (4) is: Sawgrass Consulting  
Agent's service: Civil and Structural Works  
Telephone: 043 721 2185  
Cell Number: 072 609 3723  
Address (physical): 13 Kennington Road  
Nahoon  
EAST LONDON
- 5.6 Agent (5) is: Buaturn Consulting  
Agent's service: Health and Safety Agent  
Thorn tree Estate  
Beacon Bay  
EAST LONDON  
Tel: 043 738 5028

- 1.1 **The Works comprises** of the Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom
- 1.1 THE **SITE** IS LOCATED AT PROSPECT JUNIOR SECONDARY SCHOOL, IN MALUTI IN ELIM, ALFRED NZO DISTRICT, EASTERN CAPE PROVINCE
- 1.1 The **Works** or installations to be undertaken by **direct contractors** comprises
- 22.2 School Furniture.
- 41.0 The Employer is an organ of **State**
- 31.11.2
- 11.2
- The interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No 1 of 1999) will apply.
  - Lateral support insurance is to be effected by the **contractor**
  - Payment will be made for materials and goods
  - Extended **defects** liability period will apply to the following elements:  
NOT APPLICABLE
- 31.4.2
- 26.1.2
- 15.2.1 Possession of the **site** is to be given on the date in the schedule providing the **employer** with **construction guarantees** in accordance with the provisions of 14.0.
- 15.3 The period for the commencement of the **works** after the **contractor** takes possession of the site is ten (10) **working days**.
- For the **works** as a whole:  
The date for **practical completion** is 24 months after contractual commencement date  
The **penalty per calendar day** is 0.0125 per R100 of the contract value
- 1.2 The law applicable to the agreement shall be that of the Republic of South Africa.
- 10.1; 10.2 and 12.1 Contract insurance is to be effected by the **contractor**.
- 10.1 Contract works insurance is to be effected by the **contractor** for a sum not less than the **contract sum plus 20%** with a deductible in an amount that the **contractor** deems appropriate.
- 10.2
- 12.1
- 10.1 Supplementary insurance is required. Such insurance shall comprise a Coupon Policy for Special Risks issued by the South African Special Risk Insurance Association.
- 10.2
- 12.1
- 11.1, 12.1 Public liability insurance to be effected by the **contractor** for an amount of **R10, 000,000.00** **with** a deductible in an amount as determined by the contractor's insurance company.
- 11.2, 12.1 Support insurance to be effected by the **contractor** for the sum of **NOT APPLICABLE** with a deductible in an amount that the **contractor** deems appropriate.

- 3.3, 15.1.3, 31.16.2 A waiver of the **contractor's** lien or right of continuing possession is not required.
- 3.7 Three copies of the construction documents are to be supplied to the **contractor** free of charge.
- 3.4 JBCC Engineering General Conditions are not to be included in the contract document.
- 31.5.3 The contract value is to be adjusted using CPAP indices. The base month for the application of CPAP is the month of the closing of the tender and the following alternative indices are applicable:
- 31.3 There is no latest day of the month for the issue of an interim payment certificate.
- 14.5 The employer will not provide advanced payments against an advanced payment guarantee.
- 14.2 and 14.4 The **construction guarantee** is to be a fixed guarantee in an amount of 10% of the contract sum and payment reduction
- 40.0 Dispute resolution shall be by adjudication

## Part 2: Contract Data completed by the Contractor

### Clause Item and data

- 1.2 The name of the Contractor is. ....
- The address of the contractor is:
- Telephone: .....
- Facsimile: .....
- Address (physical): .....
- .....
- .....
- Address (postal): .....
- .....
- .....

## INDEPENDENT DEVELOPMENT TRUST

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

### C1.3 Construction Guarantee

#### GUARANTOR DETAILS AND DEFINITIONS

Guarantor means .....

...

Physical address .....

...

.....

...

Guarantor's signatory 1 ..... Capacity .....

...

Guarantor's signatory 1 ..... Capacity .....

...

Employer means **The Independent Development Trust**

Contractor means .....

...

Agent means **HELM ARCHITECTS**

Works means **bid no: DOEEC/01/2022/2023**– Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

Site means **The designated site to be shown to the contractor is at PROSPECT JUNIOR SECONDARY SCHOOL, IN MALUTI, ALFRED NZO DISTRICT, EASTERN CAPE PROVINCE**

Agreement means **the JBCC Series 2000 Principal Agreement Edition 4.1 Code 2101 March 2005**

Contract Sum i.e. the total of prices in the Form of Offer and Acceptance inclusive of VAT

Amount in figures R .....

Amount in words .....

(Rand)

Guaranteed Sum means the maximum aggregate amount of R .....

...

Amount in words .....

(Rand)

**1** The Guarantor's liability shall be limited to the amount of the Guaranteed Sum as follows:

<b>GUARANTOR'S LIABILITY</b>	<b>PERIOD OF LIABILITY</b>
Maximum Guaranteed Sum (not exceeding 10 % of the contract sum) in the amount of: ..... ..... (Rands) (R .....	From and including the date of issue of this Construction Guarantee and up to and including the date of the only practical completion certificate or the last practical completion certificate where there are sections, upon which this Construction Guarantee shall expire.

**2** The Guarantor hereby acknowledges that:

**2.1** Any reference in this Guarantee to the Agreement is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a surety ship.

**2.2** Its obligation under this Guarantee is restricted to the payment of money.

- 3** Subject to the Guarantor's maximum liability referred to in clauses 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in sub-clauses 3.1 to 3.3:
- 3.1** A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Principal Agent in an interim or final payment certificate has not been made in terms of the Agreement and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of sub-clause 3.2
- 3.2** A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) calendar days has elapsed since the first written demand in terms of sub-clause 4.1 and that the sum certified has still not been paid therefore the Employer calls up this Guarantee and demands payment of the sum certified from the Guarantor.
- 3.3** A copy of the said payment certificate, which entitles the Employer to receive payment in terms of the Agreement of the sum certified in clause 3.
- 4** Subject to the Guarantor's maximum liability referred to in clause 1, the Guarantor undertakes to pay the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Guarantee stating that:
- 4.1** The Agreement has been cancelled due to the Contractor's default and that the Guarantee is called up in terms of clause 4. The demand shall enclose a copy of the notice of cancellation; or
- 4.2** A provisional sequestration or liquidation court order has been granted against the Contractor and that the Guarantee is called up in terms of clause 4. The demand shall enclose a copy of the court order.
- 5** It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of clauses 3 and 4 shall not exceed the Guarantor's maximum liability in terms of clause 1.
- 6** Where the Guarantor is a registered insurer and has made payment in terms of clause 4, the Employer shall upon the date of issue of the final payment certificate submit an expense account to the Guarantor showing how all monies received in terms of the Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
- 7** Payment by the Guarantor in terms of clause 3 or 4 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 8** The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer deems fit and the Guarantor shall not have the right to claim his release from this Guarantee on account of any conduct alleged to be prejudicial to the Guarantor
- 9** The Guarantor chooses the physical address as stated above for all purposes in connection herewith.
- 10** This Guarantee is neither negotiable nor transferable and shall expire in terms of clause 1, or payment in full of the Guaranteed Sum or on the guaranteed expiry date, whichever is the earlier, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired

- 11** This Guarantee, with the required demand notices in terms of clauses 3 or 4, shall be regarded as a liquid document for the purpose of obtaining a court order.
- 12** Where this Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at ..... Date .....  
...

Guarantor's  
Signatory 1 ..... Guarantor's  
Signatory 2 .....  
...

Identity number ..... Identity number .....  
...

Witness 1 ..... Witness 2 .....  
...

Guarantor's seal or stamp



## INDEPENDENT DEVELOPMENT TRUST

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## ADJUDICATOR'S AGREEMENT

This agreement is made on the . . . . . day of . . . . . between:

..... (name of company / organisation)

of .....

..... (address)

and

..... (name of company / organisation)

of .....

..... (address)

(the Parties) and

..... (name)

of .....

..... (address)

(the Adjudicator).

Disputes or differences may arise/have arisen\* between the Parties under a Contract dated . . . . .

. . . and known as. ....

and these disputes or differences shall be/have been\* referred to adjudication in accordance with the JBCC 2000 Adjudication Rules, (hereinafter called "the Procedure") and the Adjudicator may be or has been requested to act.

\* Delete as necessary

**IT IS NOW AGREED** as follows:

- 1 The rights and obligations of the Adjudicator and the Parties shall be as set out in the JBCC 2000 Adjudication Rules.
- 2 The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in accordance with the JBCC 2000 Adjudication Rules..
- 3 The Parties bind themselves jointly and severally to pay the Adjudicator's fees and expenses as set out in the Contract Data.
- 4 The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save with the consent of the other Parties which consent shall not be unreasonably refused.
- 5 The Adjudicator shall inform the Parties if he intends to destroy the documents which have been

sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.

<p>SIGNED by: _____</p> <p>Name: _____</p> <p>ID: _____</p> <p>who warrants that he / she is duly authorized to sign for and on behalf of the first Party in the presence of _____</p>	<p>SIGNED by: _____</p> <p>Name: _____</p> <p>ID: _____</p> <p>who warrants that he / she is duly authorized to sign for and behalf of the second Party in the presence of _____</p>	<p>SIGNED by: _____</p> <p>Name: _____</p> <p>ID: _____</p> <p>the Adjudicator in the presence of _____</p>
<p>Witness _____</p> <p>Name: _____</p> <p>Address: _____</p>	<p>Witness: _____</p> <p>Name _____</p> <p>Address: _____</p>	<p>Witness: _____</p> <p>Name: _____</p> <p>Address: _____</p>
<p>Date: _____</p>	<p>Date: _____</p>	<p>Date: _____</p>

### Contract Data

1	The Adjudicator shall be paid at the hourly rate of R. . . . . in respect of all time spent upon, or in connection with, the adjudication including time spent traveling.
2	The Adjudicator shall be reimbursed in respect of all disbursements properly made including, but not restricted to: (a) Printing, reproduction and purchase of documents, drawings, maps, records and photographs. (b) Telegrams, telex, faxes, and telephone calls. (c) Postage and similar delivery charges. (d) Travelling, hotel expenses and other similar disbursements. (e) Room charges. (f) Charges for legal or technical advice obtained in accordance with the Procedure.
3	The Adjudicator shall be paid an appointment fee of R . . . . . This fee shall become payable in equal amounts by each Party within 14 days of the appointment of the Adjudicator, subject to an Invoice being provided. This fee will be deducted from the final statement of any sums which shall become payable under item 1 and/or item 2 of the Contract Data. If the final statement is less than the appointment fee the balance shall be refunded to the Parties.
4	The Adjudicator is/is not* currently registered for VAT.
5	Where the Adjudicator is registered for VAT it shall be charged additionally in accordance with the rates current at the date of invoice.
6	All payments, other than the appointment fee (item 3) shall become due 31 days after receipt of invoice,

\* Delete as necessary

## INDEPENDENT DEVELOPMENT TRUST

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### C2.1 Pricing Instructions

- 1 The Bills of Quantities have been drawn up in accordance with the Standard System of Measuring Building Work (as amended) published and issued by the Association of South African Quantity Surveyors (Sixth Edition (Revised)), 1999. Where applicable the:
  - a) Civil engineering work has been drawn up in accordance with the provisions of the latest edition of SABS 1200 Standardized Specifications for Civil Engineering Works.
  - b) Mechanical work has been drawn up in accordance with the provisions of the Model Bills of Quantities for Refrigeration, Air-Conditioning and Ventilation Installations, published by the South African Association of Quantity Surveyors, July 1990).
  - c) electrical work has been drawn up in accordance with the provisions of the Model Bills of Quantities for Electrical Work, published by the South African Association of Quantity Surveyors, (July, 2005).
- 2 The agreement is based on the JBCC Series 2000 Principal Building Agreement, prepared by the Joint Building Contracts Committee, Edition 4.1, and March 2005. The additions, deletions and alterations to the JBCC Principal Building Agreement as well as the contract specific variables are as stated in the Contract Data. Only the headings and clause numbers for which allowance must be made in the Bills of Quantities are recited.
- 3 Preliminary and general requirements are based on the various parts of the JBCC Series 2000 Preliminaries as prepared by the Joint Building Contracts Committee, Edition 4.1, and March 2005. The additions, deletions and alterations to the various parts of the JBCC Series 2000 Preliminaries as well as the contract specific variables are as stated in the Specification Data in the Scope of Work. Only the headings and clause numbers for which allowance must be made in the Bills of Quantities are recited.
- 4 It will be assumed that prices included in the Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to [www.stanza.org.za](http://www.stanza.org.za) or [www.iso.org](http://www.iso.org) for information on standards).
- 5 The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of

	Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.
6	The drawings listed in the Scope of Works used for the setting up of these Bills of Quantities are kept by the quantity surveyor and can be viewed at any time during office hours up until the completion of the works.
7	Reference to any particular trademark, name, patent, design, type, specific origin or producer is purely to establish a standard for requirements. Products or articles of an equivalent standard may be substituted.
8	The rates contained in the Bills of Quantities will apply irrespective of the final quantities of the different classes and kinds of work actually executed.
9	Rates for work of similar description occurring in different sections of the Bills of Quantities shall be identical.
10	An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.
11	Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")
12	The Contract Data and the standard form of contract referenced therein must be studied for the full extent and meaning of each and every clause set out in Section 1 (Preliminary and General) of the Bills of Quantities
13	The Bills of Quantities is not intended for the ordering of materials. Any ordering of materials, based on the Bills of Quantities, is at the Contractor's risk.
14	The amount of the Preliminary and General Section to be included in each monthly payment certificate shall be assessed as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the total of prices excluding any contingency sum, the amount for the Preliminary and General Section and any amount in respect of contract price adjustment provided for in the contract.
15	Where the initial contract period is extended, the monthly charge shall be calculated on the basis as set out in 14 but taking into account the revised period for completing the works.
16	<p>The amount or items of the Preliminary and General Section shall be adjusted to take account of the theoretical financial effect which changes in time or value (or both) have on this section. Such adjustments shall be based on adjustments in the following categories as recorded in the Bills of Quantities:</p> <ul style="list-style-type: none"> <li>a) an amount which is not to be varied, namely Fixed (F)</li> <li>b) an amount which is to be varied in proportion to the contract value, namely Value Related (V); and</li> <li>c) an amount which is to be varied in proportion to the contract period as compared to the initial construction period excluding revisions to the construction period for which no adjustment to the contractor is not entitled to in terms of the contract, namely Time Related (T).</li> </ul>
17	Where no provision is made in the Bills of Quantities to indicate which of the three categories in

12 apply or where no selection is made, the adjustments shall be based on the following breakdown:

- a) 10 percent is Fixed.
- b) 15 percent if Value Related
- c) 75 percent is Time Related.

- 18 The adjustment of the Preliminary and General Section shall apply notwithstanding the actual employment of resources in the execution of the works. The contract value used for the adjustment of the Preliminary and General Section shall exclude any contingency sum, the amount for the Preliminary and General Section and any amount in respect of contract price adjustment provided for in the contract. Adjustments in respect of any staged or sectional completion shall be prorated to the value of each section.
- 19 All work is to be constructed using labor-intensive methods. The use of plant to provide such works, other than plant specifically provided for in the scope of works, is a variation order to the contract
- 20 Payment for items, which are designated to be constructed under labour-intensively, will not be made unless they are constructed using labor-intensive methods. Any unauthorized use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.
- 21 The tenderer is to acquaint himself as to the specific requirements of this tender as contained in additional clauses A1 to A6 to the JBCC Principal Agreement as incorporated in the Contract Data. These clauses may be priced under the relevant Preliminaries items in SECTION C: SPECIFIC PRELIMINARIES of the Preliminaries Bill. No claim will be entertained due to the failure of the tenderer to allow for these requirements

## **INDEPENDENT DEVELOPMENT TRUST**

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### **Prospect Junior Secondary School**

## **C2.2 Bills of Quantities**

Item No	Quantity	Rate	Amount
<p><b><u>SECTION 1</u></b></p> <p><b><u>BILL No. 1</u></b></p> <p><b><u>PRELIMINARIES</u></b></p> <p><b><u>MEANING OF TERMS "TENDER / TENDERER"</u></b></p> <p>Any reference to the words "Tender" or "Tenderer" herein and/or in any other documentation shall be construed to have the same meaning as the words "Bid" or "Bidder"</p> <p><b><u>PRELIMINARIES</u></b></p> <p>The JBCC Preliminaries Code 2103, May 2005 edition for use with the JBCC Principal Building Agreement Edition 4.1 Code 2101, March 2005 is taken to be incorporated herein. The tenderer is deemed to have referred to these documents for the full intent and meaning of each clause. These clauses are referred to by number and heading only. Where standard clauses or options are not applicable to the contract such modifications or corrections as are necessary are given under each relevant clause. Where an item is not relevant to this specific contract such item is marked. "N/A" signifying "Not Applicable".</p> <p><b><u>DEFINITIONS</u></b></p> <p><b>A1      DEFINITIONS AND INTERPRETATION</b></p> <p>Clause 1.0 Clause</p> <p>1.1 Definition of "<b>Commencement Date</b>" is added:</p> <p><b>"COMMENCEMENT DATE"</b> means the date that the site is handed over to the Contractor.</p> <p>Clause 1.1 Definition of "Construction Guarantee" is amended by replacing it with the following:</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 1 Bill No. 1 Preliminaries</p>			

**"CONSTRUCTION GUARANTEE"** means a guarantee at call obtained by the **contractor** from an institution approved by the **employer** in terms of the **employer's** construction guarantee form as selected in the **schedule**

### **PRICING OF PRELIMINARIES**

Should Option A, as set out in clause B10.3.1 hereinafter be used for the adjustment of preliminaries then each item priced is to be allocated to one or more of the three categories Fixed(F), Value Related(V) or Time Related(T) and the respective amounts entered in the spaces provided under each item

Items not priced in these Preliminaries shall be deemed to be included elsewhere in these Bills of Quantities.

### **SECTION A: JBCC PRINCIPAL BUILDING AGREEMENT**

Clause 1.1 Definition of **"Construction Period"** is amended by replacing it with the following:

**"CONSTRUCTION PERIOD"** means the period commencing on the commencement date and ending on the date of practical completion

Clause 1.1 Definition of **"Corrupt Practice"** is added

**"CORRUPT PRACTICE"** means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

Clause 1.1 Definition of **"Fraudulent Practice"** is added:

**"FRAUDULENT PRACTICE"** means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practice among tenderers (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.

**Carried to Collection**

Section 1  
Bill No. 1  
Preliminaries

R



Clause 1.1 Definition of "**Interest**" is amended by replacing it with the following:

**"INTEREST"** means the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be the rate determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance management Act, 1999 (Act No. 1 of 1999).

Clause 1.1 Definition of "**Principal Agent**" is amended by replacing the following:

**"PRINCIPAL AGENT"** means the person or entity appointed by the **employer** and named in the **schedule**. In the event of a **principal agent** not being appointed, then all the duties and obligations of a **principal agent** as detailed in the **agreement** shall be fulfilled by a representative of the **employer** as named in the **schedule**.

Clause 1.1 Definition of "**Security**" is amended by replacing it with the following:

**"SECURITY"** means the form of security provided by the **employer** or **contractor**, as stated in the **schedule**, from which the **contractor** or **employer** may recover expense or loss.

Clause 1.6 is amended by replacing the words "prepaid registered post, telefax or e-mail" with "prepaid registered post or telefax"

Clause 1.6.4 is amended by replacing it with the following:

No clause

### **OBJECTIVE AND PREPARATION**

## **1 A2 OFFER, ACCEPTANCE AND PERFORMANCE**

Clause 2.0

F: \_\_\_\_\_ V: \_\_\_\_\_ T: \_\_\_\_\_

Item

**Carried to Collection**

R

Section 1  
Bill No. 1  
Preliminaries

2	<p><b>A3 DOCUMENTS</b></p> <p>Clause 3.0</p> <p>Clause 3.2.1 is amended by replacing "14.1" with "14.0"</p> <p>Clause 3.7 is amended by the addition of the following:</p> <p>The <b>contractor</b> shall supply and keep a copy of the <b>JBCC</b> Series 2000 Principal Building Agreement and Preliminaries applicable to this contract on the site, to which the <b>employer, principal agent</b> and <b>agents</b> shall have access at all times</p> <p>Clause 3.10 is amended by replacing the second reference to "<b>principal agent</b>" with the word "<b>employer</b>"</p> <p>F:_____ V:_____ T:_____</p>	Item	
3	<p><b>A4 DESIGN RESPONSIBILITY</b></p> <p>Clause 4.0</p> <p>Clause 4.3 is amended by replacing it with the following: No clause</p> <p>F:_____ V:_____ T:_____</p>	Item	
4	<p><b>A5 EMPLOYER'S AGENTS</b></p> <p>Clause 5.0 (See notes to Tenders)</p> <p>Clause 5.1.2 is amended to include clauses 32.6.3, 34.3, 34.4 and 38.5.8</p> <p>F:_____ V:_____ T:_____</p>	Item	
5	<p><b>A6 SITE REPRESENTATIVE</b></p> <p>Clause 6.0</p> <p>F:_____ V:_____ T:_____</p>	Item	
<p><b>Carried to Collection</b></p>			R
<p>Section 1 Bill No. 1 Preliminaries</p>			

[illegible]

#### 10.5 Damage to the Works

- (a) Without in any way limiting the **contractor's** obligations in terms of the contract, the **contractor** shall bear the full risk of damage to and/or destruction of the **works** by whatever cause during construction of the **works** and hereby indemnifies and holds harmless the **employer** against any such damage. The **contractor** shall take such precautions and security measures and other steps for the protection and security of the **works** as the **contractor** may deem necessary
- (b) The **contractor** shall at all times proceed immediately to remove or dispose of any debris arising from damage to or destruction of the **works** and to rebuild, restore, replace and/or repair the **works**
- (c) The **employer** shall carry the risk of damage to or destruction of the **works** and material paid for by the **employer** that is the result of the excepted risks as set out in 10.6
- (d) Where the **employer** bears the risk in terms of this contract, the **contractor** shall, if requested to do so, reinstate any damage or destroyed portions of the **works** and the costs of such reinstatement shall be measured and valued in terms of 32.0 hereof

#### 10.6 Injury to Persons or loss of or damage to Properties

- (a) The **contractor** shall be liable for and hereby indemnifies the **employer** against any liability, loss, claim or proceeding whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever arising out of or in the course of or caused by the execution of the **works** unless due to any act or neglect of any person for whose actions the **employer** is legally liable

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- (b) The **contractor** shall be liable for and hereby indemnifies the **employer** against any liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person, arising out of or in the course of or by reason of the execution of the **works** unless due to any act or neglect of any person for whose actions the **employer** is legally liable
  
- (c) The **contractor** shall, upon receiving a **contract instruction** from the **principal agent**, cause the same to be made good in a perfect and workmanlike manner at his own cost and in default thereof the **employer** shall be entitled to cause it to be made good and to recover the cost thereof from the **contractor** or to deduct the same from amounts due to the **contractor**
  
- (d) The **contractor** shall be responsible for the protection and safety of such portions of the premises placed under his control by the **employer** for the purpose of executing the **works** until the issue of the **certificate of practical completion**
  
- (e) Where the execution of the works involves the risk of removal of or interference with support to adjoining properties including land or structures or any structures to be altered or added to, the **contractor** shall and will remain adequately insured or insured against the death of or injury to persons or damage to such property consequent on such removal or interference with the support until such portion of the **works** has been completed
  
- (f) The **contractor** shall at all times proceed immediately at his own cost to remove or dispose of any debris and to rebuild, restore, replace and/or repair such property and to execute the **works**

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### 10.7 High risk insurance

In the event of the project being executed in a geological area classified as a "High Risk Area", that is an area which is subject to highly unstable subsurface conditions that might result in catastrophic ground movement evident by sinkhole or doline formation the following will apply:

#### 10.7.1 Damage to the works

The **contractor** shall, from the commencement **date** of the **works** until the date of the **certificate of practical completion** bear the full risk of and hereby indemnifies and holds harmless the **employer** against any damage to and/or destruction of the **works** consequent upon a catastrophic ground movement as mentioned above. The **contractor** shall take such precautions and security measures and other steps for the protection of the **works** as he may deem necessary

When so instructed to do so by the principal agent, the contractor shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the works and to rebuild, restore, replace and/or repair the works, at the contractor's own costs

#### 10.7.2 Injury to persons or loss of or damage to property

The **contractor** shall be liable for and hereby indemnifies and holds harmless the **employer** against any liability, loss, claim or proceeding arising at any time during the period of the contract whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of or caused by a catastrophic ground movement as mentioned above

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The **contractor** shall be liable for and hereby indemnifies the **employer** against any and all liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned above, which occurred during the period of the contract

**10.7.3** It is the responsibility of the **contractor** to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.7.1 and 10.7.2. Without limiting the **contractor's** obligations in terms of the contract, the **contractor** shall, within twenty one (21) **calendar days** of the **commencement date** but before commencement of the **works**, submit to the **employer** proof of such insurance policy, if requested to do so

**10.7.4** The **employer** shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred consequent upon the **contractor's** default of his obligations as set out in 10.7.1; 10.7.2 and 10.7.3. Such losses or damages may be recovered from the **contractor** or by deducting the same from any amounts still due under this contract or under any other contract presently or hereafter existing between the **employer** and the **contractor** and for this purpose all these contracts shall be considered one indivisible whole

F:\_\_\_\_\_ V:\_\_\_\_\_ T:\_\_\_\_\_

**10 A11 LIABILITY INSURANCES**

Clause 11.0

F:\_\_\_\_\_ V:\_\_\_\_\_ T:\_\_\_\_\_

**11 A12 EFFECTING INSURANCES**

Clause 12.0

F:\_\_\_\_\_ V:\_\_\_\_\_ T:\_\_\_\_\_

**12 A13.0 No clause**

Item

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N/A

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## Clause 14.0

Clauses 14.1 - 14.8 are amended by replacing them with the following:

14.1 In respect of contracts with a **contract sum** up to R1 million, the **security** to be submitted by the **contractor** to the **employer** will be as a payment reduction of five per cent (5%) of the value certified in the **payment certificate** (excluding VAT)

14.1.1 The payment reduction of the value certified in a **payment certificate** shall be *mutatis mutandi* in terms of 31.8(A)

14.1.2 The **employer** shall be entitled to recover expense and loss from the payment reduction in terms of 33.0 provided that the **employer** complies with the provisions of 33.4 in which event the **employer's** entitlement shall take precedence over his obligations to refund the payment reduction security or portions thereof to the **contractor**

14.2 In respect of contracts with a **contract sum** above R1 million, the **contractor** shall have the right to select the **security** to be provided in terms of 14.3, 14.4, 14.5, 14.6, or 14.7 as stated in the **schedule**. Such **security** shall be provided to the **employer** within twenty one (21) **calendar days** from **commencement date**. Should the **contractor** fail to select the **security** to be provided or should the **contractor** fail to provide the **employer** with the selected **security** within twenty one (21) **calendar days** from **commencement date**, the **security** in terms of 14.7 shall be deemed to have been selected.

14.3 Where **security** as a cash deposit of ten per cent (10%) of the **contract sum** (excluding VAT) has been selected:

14.3.1 The **contractor** shall furnish the **employer** with a cash deposit equal in value to ten per cent (10%) of the **contract sum** (excluding VAT) within twenty one (21) **calendar days** from **commencement date**

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14.3.2 Within twenty-one (21) **calendar days** of the date of **practical completion** of the **works** the **employer** shall reduce the cash deposit to an amount equal to three per cent (3%) of the **contract value** (excluding VAT), and refund the balance to the **contractor**

14.3.3 Within twenty-one (21) **calendar days** of the date of **final completion** of the **works** the **employer** shall reduce the cash deposit to an amount equal to one per cent (1%) of the **contract value** (excluding VAT) and refund the balance to the **contractor**

14.3.4 On the date of payment of the amount in the final **payment certificate**, the **employer** shall refund the remainder of the cash deposit to the **contractor**

14.3.5 The **employer** shall be entitled to recover expense and loss from the cash deposit in terms of 33.0 provided that the **employer** complies with the provisions of 33.4 in which event the **employer's** entitlement shall take precedence over his obligations to refund the cash deposit **security** or portions thereof to the **contractor**

14.3.6 The parties expressly agree that neither the **employer** nor the **contractor** shall be entitled to cede the rights to the deposit to any third party

14.4 Where **security** as a variable construction guarantee of ten percent (10%) of the **contract sum** (excluding VAT) has been selected:

14.4.1 The **contractor** shall furnish the **employer** with an acceptable variable construction guarantee equal in value to ten per cent (10%) of the **contract sum** (excluding VAT) within twenty-one (21) **calendar days** from **commencement date**

14.4.2 The variable construction guarantee shall reduce and expire in terms of the Variable Construction Guarantee form included in the invitation to tender

14.4.3 The **employer** shall return the variable construction guarantee to the **contractor** within fourteen (14) **calendar days** of it expiring

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14.4.4 Where the **employer** has a right of recovery against the **contractor** in terms of 33.0, the **employer** shall issue a written demand in terms of the variable construction guarantee

14.5 Where **security** as a fixed construction guarantee of five per cent (5%) of the **contract sum** (excluding VAT) and a five per cent (5%) payment reduction of the value certified in the payment certificate (excluding VAT) has been selected:

14.5.1 The **contractor** shall furnish a fixed construction guarantee to the **employer** equal in value to five per cent (5%) of the **contract sum** (excluding VAT)

14.5.2 The fixed construction guarantee shall come into force on the date of issue and shall expire on the date of **practical completion**

14.5.3 The **employer** shall return the fixed construction guarantee to the **contractor** within fourteen (14) **calendar days** of it expiring

14.5.4 The payment reduction of the value certified in a **payment certificate** shall be in terms of 31.8 (A) and 34.8

14.5.5 Where the **employer** has a right of recovery against the **contractor** in terms of 33.0, the **employer** shall be entitled to issue a written demand in terms of the fixed construction guarantee or may recover from the payment reduction or may do both

14.6 Where **security** as a cash deposit of five per cent (5%) of the **contract sum** (excluding VAT) and a payment reduction of five per cent (5%) of the value certified in the **payment certificate** (excluding VAT) has been selected:

14.6.1 The **contractor** shall furnish the **employer** with a cash deposit equal in value to five per cent (5%) of the **contract sum** (excluding VAT) within twenty-one (21) **calendar days** from **commencement date**

14.6.2 Within twenty-one (21) **calendar days** of the date of **practical completion** of the **works** the **employer** shall refund the cash deposit in total to the **contractor**

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14.6.3 The payment reduction of the value certified in a **payment certificate** shall be *mutatis mutandi* in terms of 31.8(A)

14.6.4 Where the **employer** has a right of recovery against the **contractor** in terms of 33.0, the **employer** may issue a written notice in terms of 33.4 or may recover from the payment reduction or may do both

14.7 Where **security** as a payment reduction of ten per cent (10%) of the value certified in the **payment certificate** (excluding VAT) has been selected:

14.7.1 The payment reduction of the value certified in a **payment certificate** shall be *mutatis mutandi* in terms of 31.8(B)

14.7.2 The **employer** shall be entitled to recover expense and loss from the payment reduction in terms of 33.0 provided that the **employer** complies with the provisions of 33.4 in which event the **employer's** entitlement shall take precedence over his obligations to refund the payment reduction or portions thereof to the **contractor**

14.8 Payments made by the guarantor to the **employer** in terms of the fixed or variable construction guarantee shall not prejudice the rights of the **employer** or **contractor** in terms of this **agreement**

14.9 Should the **contractor** fail to furnish the **security** in terms of 14.2, the **employer**, in his sole discretion and without notification to the **contractor**, is entitled to change the **contractor's** selected form of **security** to that of a ten per cent (10%) payment reduction of the value certified in the payment certificate (excluding VAT), whereafter 14.7 shall be applicable

F: \_\_\_\_\_ V: \_\_\_\_\_ T: \_\_\_\_\_

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	<b><u>EXECUTION</u></b>			
14	<p><b>A15 PREPARATION FOR AND EXECUTION OF THE WORKS</b></p> <p>Clause 15.0</p> <p>Clause 15.1.1 is amended by replacing it with:</p> <p>No Clause</p> <p>Clause 15.1 is amended by the addition of the following clause: 15.1.4 An acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), within twenty-one (21) <b>calendar days of commencement date</b></p> <p>Clause 15.2.1 is amended by replacing it with the following clause:</p> <p>Give the <b>contractor</b> possession of the <b>site</b> within ten (10) <b>working days</b> of the <b>contractor</b> complying with the terms of 15.1.2 and 15.1.4</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>			
15	<p><b>A16 ACCESS TO THE WORKS</b></p> <p>Clause 16.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
16	<p><b>A17 CONTRACT INSTRUCTIONS</b></p> <p>Clause 17.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
17	<p><b>A18 SETTING OUT OF THE WORKS</b></p> <p>Clause 18.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
	<p style="text-align: right;"><b>Carried to Collection</b></p> <p>Section 1 Bill No. 1 Preliminaries</p>		R	

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18	<p><b>A19 ASSIGNMENT</b></p> <p>Clause 19.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
19	<p><b>A20 NOMINATED SUB-CONTRACTORS</b></p> <p>Clause 20.0</p> <p>Clause 20.1.3 is amended by replacing it with the following:</p> <p>No Clause</p> <p>Note: See item B9.1 hereinafter for adjustment of attendance on nominated subcontractors executing work allowed for under provisional sums</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
20	<p><b>A21 SELECTED SUBCONTRACTORS</b></p> <p>Clause 21.0</p> <p>Clause 21 is amended by replacing it with:</p> <p>No Clause</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
21	<p><b>A22 EMPLOYER'S DIRECT CONTRACTORS</b></p> <p>Clause 22.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
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22	<b>A23 CONTRACTOR'S DOMESTIC SUBCONTRACTORS</b>  Clause 23.0  Fixed: _____ Value related: _____ Time related: _____  <b><u>COMPLETION</u></b>	Item		
23	<b>A24 PRACTICAL COMPLETION</b>  Clause 24.0  Fixed: _____ Value related: _____ Time related: _____	Item		
24	<b>A25 WORK'S COMPLETION</b>  Clause 25.0  Fixed: _____ Value related: _____ Time related: _____	Item		
25	<b>A26 FINAL COMPLETION</b>  Clause 26.0  Fixed: _____ Value related: _____ Time related: _____	Item		
26	<b>A27 LATENT DEFECTS LIABILITY PERIOD</b>  Clause 27.0  Fixed: _____ Value related: _____ Time related: _____	Item		
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27	<p><b>A28 SECTIONAL COMPLETION</b></p> <p>Clause 28.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
28	<p><b>A29 REVISION OF DATE FOR PRACTICAL COMPLETION</b></p> <p>Clause 29.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
29	<p><b>A30 PENALTY FOR NON-COMPLETION</b></p> <p>Clause 30.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p> <p><b><u>PAYMENT</u></b></p>	Item		
30	<p><b>A31 INTERIM PAYMENT TO THE CONTRACTOR</b></p> <p>Clause 31.0</p> <p>Clause 31.8 is amended by replacing it with the following two alternative clauses:</p> <p><b>Alternative A</b></p> <p>31.8(A) Where a <b>security</b> is selected in terms of 14.1; 14.5 or 14.6, the value of the <b>works</b> in terms of 31.4.1 and <b>materials and goods</b> in terms of 31.4.2 shall be certified in full. The value certified shall be subject to the following percentage adjustments:</p> <p>31.8(A).1 Ninety-five per cent (95%) of such value in interim <b>payment certificates</b> issued up to the date of <b>practical completion</b></p> <p>31.8(A).2 Ninety-seven per cent (97%) of such value in interim <b>payment certificates</b> issued on the date of <b>practical completion</b> and up to but excluding the date of <b>final completion</b></p> <p style="text-align: right;"><b>Carried to Collection</b></p>	Item		
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31.8(A).3 Ninety-nine per cent (99%) of such value in interim **payment certificates** issued on the date of **final completion** and up to but excluding the final **payment certificate** in terms of 34.6

31.8(A).4 One hundred per cent (100%) of such value in the final **payment certificate** in terms of 34.6 except where the amount certified is in favour of the **employer**. In such an event the payment reduction shall remain at the adjustment level applicable to the final **payment certificate**

**Alternative B**

31.8(B) Where **security** is a payment reduction in terms of 14.7 the value of the **works** in terms of 31.4.1 and **materials and goods** in terms of 31.4.2 shall be certified in full. The value certified shall be subject to the following percentage adjustments:

31.8(B).1 Ninety per cent (90%) of such value in interim **payment certificates** issued up to the date of **practical completion**

31.8(B).2 Ninety-seven per cent (97%) of such value in interim **payment certificates** issued on the date of **practical completion** and up to but excluding the date of **final completion**

31.8(B).3 Ninety-nine per cent (99%) of such value in interim **payment certificates** issued on the date of **final completion** and up to but excluding the final **payment certificate** in terms of 34.6

31.8(B).4 One hundred per cent (100%) of such value in the final **payment certificate** in terms of 34.6 except where the amount certified is in favour of the **employer**. In such an event the payment reduction shall remain at the adjustment level applicable to the final **payment certificate**

Clause 31.12 is amended by deleting the following:

Payment shall be subject to the **employer** giving the **contractor** a tax invoice for the amount due

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

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**31 A32 ADJUSTMENT TO THE CONTRACT VALUE**

Clause 32.0

Clauses 32.5.1, 32.5.4 and 32.5.7 are amended by the addition of the following at the end of the sentence:

"due to no fault of the **contractor**"

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

Item

**32 A33 RECOVERY OF EXPENSE AND LOSS**

Clause 33.0

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

**33 A34 FINAL ACCOUNT AND FINAL PAYMENT**

Clause 34.0

Clause 34.1 is amended by removing "#" next to 34.1

Clause 34.2 is amended by removing "#" next to 34.2

Clause 34.8 is amended by deleting the words "where security as a fixed construction guarantee in terms of 14.4 has been selected or where payment reduction has been applied in terms of 14.7.1"

Clause 34.13 is amended by replacing "seven (7) calender days" with "twenty one (21) calender days" and deleting the words "subject to the employer giving the contractor a tax invoice for the amount due."

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

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34	<p><b>A35 PAYMENT TO OTHER PARTIES</b></p> <p>Clause 35.0</p> <p>Fixed: _____ Value related: _____ Time related: _____</p> <p><b><u>CANCELLATION</u></b></p> <p><b>A36 CANCELLATION BY EMPLOYER - CONTRACTOR'S DEFAULT</b></p> <p>Clause 36.0</p> <p>Clause 36.3 is amended by removing the reference to "No clause" and replacing the words "<b>principal agent</b>" with "<b>employer</b>"</p> <p>Clause 36.0 is amended by the addition of the following clause:</p>	Item		
35	Clause 36.1.3 refuses or neglects to comply strictly with any of the conditions of contract.			
36	Clause 36.1.4 estate being sequestrated, liquidated or surrendered in terms insolvency laws in force within the Republic of South Africa.			
37	36.1.5 in the judgement of the employer, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.			
38	Clause 36.3 is amended by removing the reference to "No clause" and replacing the words "principal agent" with "employer".			
39	Clause 36.0 is amended by the addition of the following clause:			
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	<p>36.7 Notwithstanding any clause to the contrary, on cancellation of this <b>agreement</b> either by the <b>employer</b> or the <b>contractor</b>; or for any reason whatsoever, the <b>contractor</b> shall on written instruction, discontinue with the <b>works</b> on a date stated and withdraw himself from the <b>site</b>. The <b>contractor</b> shall not be entitled to refuse to withdraw from the <b>works</b> on the grounds of any lien or right of retention or on the grounds of any other right whatsoever</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
40	<p><b>A37 CANCELLATION BY EMPLOYER – LOSS AND DAMAGE</b></p> <p>Clause 37.0</p> <p>Clause 37.0 is amended by the addition of the following clause:</p> <p>37.5 Notwithstanding any clause to the contrary, on cancellation of this <b>agreement</b> either by the <b>employer</b> or the <b>contractor</b>; or for any reason whatsoever, the <b>contractor</b> shall on written instruction, discontinue with the <b>works</b> on a date stated and withdraw himself from the <b>site</b>. The <b>contractor</b> shall not be entitled to refuse to withdraw from the <b>works</b> on the grounds of any lien or right of retention or on the grounds of any other right whatsoever</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
41	<p><b>A38 CANCELLATION BY CONTRACTOR - EMPLOYER'S DEFAULT</b></p> <p>Clause 38.0</p> <p>Clause 38.0 is amended by the addition of the following clause:</p>			<p style="text-align: center;"><b>Carried to Collection</b></p> <p>Section 1 Bill No. 1 Preliminaries</p>

38.7 Notwithstanding any clause to the contrary, on cancellation of this **agreement** either by the **employer** or the **contractor**; or for any reason whatsoever, the **contractor** shall on written instruction, discontinue with the **works** on a date stated and withdraw himself from the **site**. The **contractor** shall not be entitled to refuse to withdraw from the **works** on the grounds of any lien or right of retention or on the grounds of any other right whatsoever

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

Item

**42 A39 CESSATON - CANCELLATION OF THE WORKS**

Clause 39.0

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

Item

**43 A40 DISPUTE SETTLEMENT**

Clause 40.0

Clause 40.2.2 is amended by replacing "one (1) year" with "three (3) years"

Clause 40.6 is amended by removing the reference to:

No clause

Clause 40.7.1 is amended by replacing "(10)" with "(15)" and by the addition of the following:

Whether or not mediation resolves the dispute, the parties shall bear their own cost concerning the mediation and equally share the costs of the mediator and related costs

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

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	<b><u>SUBSTITUTE PROVISIONS</u></b>			
44	<b>A41 STATE CLAUSES</b>  Clause 41.0  Fixed: _____ Value related: _____ Time related: _____	Item		
	<b><u>CONTRACT VARIABLES</u></b>			
	<b><u>THE SCHEDULE (F Contract data)</u></b>			
45	<b>A42 PRE-TENDER INFORMATION</b>  Clause 42.0  Tenderers are referred to the document C1.2 refer to Notes to Tenderers (EC) for variables pertaining to this contract  Fixed: _____ Value related: _____ Time related: _____	Item		
	<b><u>SECTION B: JBCC PRELIMINARIES</u></b>			
	<b><u>DEFINITIONS AND INTERPRETATION</u></b>			
46	<b><i>Definitions and interpretation</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item		
	<b><u>DOCUMENTS</u></b>			
47	<b><i>Checking of documents</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item		
48	<b><i>Provisional bills of quantities</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item		
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49	<b>Availability of construction documentation</b>  Fixed: _____ Value related: _____ Time related: _____	Item
50	<b>Interests of agents</b>  Fixed: _____ Value related: _____ Time related: _____	Item
51	<b>Priced documents</b>  Fixed: _____ Value related: _____ Time related: _____	Item
52	<b>Tender submission</b>  Clause 2.6 is amended by replacing "JBCC Form of Tender" with "Form of Offer and Acceptance (see Returnable Schedules)" Fixed: _____ Value related: _____ Time related: _____	Item
<b><u>THE SITE</u></b>		
53	<b>Defined works area</b>  Fixed: _____ Value related: _____ Time related: _____	Item
54	<b>Geotechnical investigation</b>  Fixed: _____ Value related: _____ Time related: _____	Item
55	<b>Inspection of the site</b>  Tenderers shall complete the Site Inspection Certificate (as per Returnable Schedules) included in the tender documents and return the same with the tender submission. Fixed: _____ Value related: _____ Time related: _____	Item
56	<b>Existing premises occupied</b>  Fixed: _____ Value related: _____ Time related: _____	Item

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**57 Previous work – dimensional accuracy**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**58 Previous work – defects**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**59 Services – known**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**60 Services – unknown**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**61 Protection of trees**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**62 Articles of value**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**63 Inspection of adjoining properties**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**MANAGEMENT OF CONTRACT**

**64 Management of the works**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**65 Programme for the works**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

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66 **Progress meetings**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

67 **Technical meetings**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

68 **Labour and plant records**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**SAMPLES, SHOP DRAWINGS AND  
MANUFACTURERS' INSTRUCTIONS**

69 **Samples of materials**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

70 **Workmanship samples**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

71 **Shop drawings**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

72 **Compliance with manufacturer's instructions**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

**TEMPORARY WORKS AND PLANT**

73 **Deposits and fees**  
Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

Item

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74	<b>Enclosure of the works</b>	Fixed: _____ Value related: _____ Time related: _____	Item
75	<b>Advertising</b>	Fixed: _____ Value related: _____ Time related: _____	Item
76	<b>Plant, equipment, sheds and offices</b>	Fixed: _____ Value related: _____ Time related: _____	Item
77	<b>Main notice board</b>	Fixed: _____ Value related: _____ Time related: _____	Item
78	<b>Subcontractors' notice board</b>	Fixed: _____ Value related: _____ Time related: _____	Item
<b><u>TEMPORARY SERVICES</u></b>			
79	<b>Location</b>	Fixed: _____ Value related: _____ Time related: _____	Item
80	<b>Water</b>	Fixed: _____ Value related: _____ Time related: _____	Item
81	<b>Electricity</b>	Fixed: _____ Value related: _____ Time related: _____	Item

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82	<b>Telecommunication facilities</b>  Fixed: _____ Value related: _____ Time related: _____	Item
83	<b>Ablution facilities</b>  Fixed: _____ Value related: _____ Time related: _____	Item
<b><u>PRIME COST AMOUNTS</u></b>		
84	<b>Responsibility for prime cost amounts</b>  Fixed: _____ Value related: _____ Time related: _____	Item
<b><u>ATTENDANCE ON N/S SUBCONTRACTORS</u></b>		
85	<b>General attendance</b>  The schedule rates providing for attendance on <b>nominated subcontractors</b> and other <b>contractors</b> , will be adjusted only if the scope of the work has changed Fixed: _____ Value related: _____ Time related: _____	Item
86	<b>Special attendance</b>  Fixed: _____ Value related: _____ Time related: _____	Item
87	<b>Commissioning – fuel, water and electricity</b>  Fixed: _____ Value related: _____ Time related: _____	Item
<b><u>FINANCIAL ASPECTS</u></b>		
88	<b>Statutory taxes, duties and levies</b>  Fixed: _____ Value related: _____ Time related: _____	Item

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89	<b><i>Payment for preliminaries</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item
90	<b><i>Adjustment of preliminaries</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item
91	<b><i>Payment certificate cash flow</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item
	<b><u>GENERAL</u></b>	
92	<b><i>Protection of the works</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item
93	<b><i>Protection / isolation of existing / sectionally occupied works</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item
94	<b><i>Security of the works</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item
95	<b><i>Notice before covering work</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item
96	<b><i>Disturbance</i></b>  Fixed: _____ Value related: _____ Time related: _____	Item

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97	<b>Environmental disturbance</b>  Fixed: _____ Value related: _____ Time related: _____	Item
98	<b>Works cleaning and clearing</b>  Fixed: _____ Value related: _____ Time related: _____	Item
99	<b>Vermin</b>  Fixed: _____ Value related: _____ Time related: _____	Item
100	<b>Overhand work</b>  Fixed: _____ Value related: _____ Time related: _____	Item
101	<b>Instruction manuals and guarantees</b>  Fixed: _____ Value related: _____ Time related: _____	Item
102	<b>As built information</b>  Fixed: _____ Value related: _____ Time related: _____	Item
103	<b>Tenant installations</b>  Fixed: _____ Value related: _____ Time related: _____	Item
<b><u>SCHEDULE OF VARIABLES</u></b>		
104	<b>Pre-tender information</b>  Fixed: _____ Value related: _____ Time related: _____	Item
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This schedule contains all variables referred to in this document and is divided into pretender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of these Preliminaries.

Spaces requiring information must be filled in, shown as "not applicable" or deleted and not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross-referenced to the applicable clause of the schedule. Key cross reference clauses are italicised in [ ] brackets

**12.1 PRE TENDER INFORMATION**

**12.1.1 Provisional Bills of Quantities**

[2.2] The quantities are provisional

**NO**

**12.1.2 Availability of construction documentation**

[2.3] *Construction of documentation is complete*

**YES**

**12.1.3 Interest of agents**

[2.4] Details:

It must be noted that the Principal Agent/ Architect, Quantity Surveyor, Electrical/ Mechanical Engineers, and Civil/Structural Engineers are commercially related to the Client

**12.1.4 Defined works area**

[3.1] Details: Existing Prospect Junior Secondary School in Maluti.

**12.1.5 Geotechnical investigation**

[3.2] Details: Investigations have been conducted and reports are available to be viewed at the Principal Agent's offices.

**12.1.6 Existing premises occupied**

[3.4] Specific requirements: All existing buildings are currently occupied, hence adequate protection is required.

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12.1.7 **Previous work - dimensional accuracy**  
[3.5] Details: N/A

12.1.8 **Previous work - defects**  
[3.6] Details: N/A

12.19. **Services - known**  
[3.7] Details: All known services will be pointed out at the handover of site.

12.1.10 **Protection of trees**  
[3.9] Specific requirements: All trees are to be protected and may only be removed, trimmed or otherwise interfered with, with the specific written approval of the principal agent.

12.1.11 **Inspection of adjoining properties**  
[3.11] Specific requirements: N/A

12.1.12 **Enclosure of the works**  
[6.2] Specific requirements: Contractor is to ensure the safety of the public during building operations and provide timber barricades to prevent learners or others to access areas of building activity.

12.1.13 **Offices**  
[6.4.3] Specific requirements:  
The contractor shall provide, maintain and remove on completion of the works office accommodation for meetings held on site, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times.

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12.1.14	Main notice board			
[6.5]	Specific requirements: The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m as type Drawing GEN 063, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick round outer edges and projecting 12mm from face of boarding and rounded on front edge. The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines dark green. All wording shall be inscribed in dark green as per the coat of arms for SA. All wording shall be inscribed in dark green painted sans serif lettering.			
12.1.15	<b>Subcontractors' notice board</b>			
[6.6]	Specific requirements:	<b><u>NO</u></b>		
12.1.16	<b>Water</b>			
[7.2]	<u>Option A (by contractor)</u>	<b><u>YES</u></b>		
	Option B (by employer - free of charge)	<b><u>NO</u></b>		
	Option C (by employer - metered)	<b><u>NO</u></b>		
12.1.17	<b>Electricity</b>			
[7.3]	<u>Option A (by contractor)</u>	<b><u>YES</u></b>		
	Option B (by employer - free of charge)	<b><u>NO</u></b>		
	Option C (by employer - metered)	<b><u>NO</u></b>		
12.1.18	<b>Telecommunications</b>			
[7.4]	<u>Telephone</u>	<b><u>YES</u></b>		
	<u>Facsimile</u>	<b><u>YES</u></b>		
	<u>E-mail</u>	<b><u>YES</u></b>		
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12.1.19 <b>Ablution facilities</b> [7.5] Option A (by contractor)	<u><b>YES</b></u>			
Option B (by employer)	<u><b>NO</b></u>			
12.1.20 <b>Protection of existing/sectionally occupied works</b>				
[11.2] Protection is required	<u><b>YES</b></u>			
12.1.21 <b>Special attendance</b>				
[9.2] <b>Subcontractor</b> (1) details: N/A				
12.1.22 <b>Protection of works</b>				
[11.1] Specific requirements:				
12.1.23 <b>Disturbance</b>				
[11.5] Specific requirements: The contractor shall keep the site, structures, etc well watered during operations to prevent dust and shall provide and erect and remove on completion of the works all necessary temporary dust screens, all to the satisfaction of the principal agent				
12.1.24 <b>Environmental disturbance</b>				
[11.6] Specific requirements:				
<b>12.2 POST-TENDER INFORMATION</b>				
12.2.1 <b>Payment of preliminaries</b>				
[10.2] Option A (prorated)	<u><b>YES</b></u>			
Option B (calculates)	<u><b>NO</b></u>			
12.2.2 <b>Adjustment of preliminaries</b>				
[10.3] Option A (three categories)	<u><b>YES</b></u>			
Option B (detailed breakdown)	<u><b>NO</b></u>			
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12.2.3 *Additional agreed preliminaries items*  
Details: N/A

### **SECTION C: SPECIFIC PRELIMINARIES**

**Section C contains specific preliminary items which apply to this contract except where N/A (Not Applicable) appears against an item**

105 **C1 CONTRACT DRAWINGS**

The drawings issued with the tender documents do not comprise the complete set but serve as a guide only for tendering purposes and for indicating the scope of the work to enable the tenderer to acquaint himself with the nature and extent of the **works** and the manner in which they are to be executed

Should any part of the drawings not be clearly intelligible to the tenderer he shall, before submitting his tender, obtain clarification in writing from the **principal agent**

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_  
Time related: \_\_\_\_\_

Item

106 **C2 GENERAL PREAMBLES**

The document "Specification of Materials and Methods to be used (PW371)" is obtainable on request from the head office and all regional offices of the Department, and shall be read in conjunction with the **bills of quantities** and be referred to for the full descriptions of work to be done and materials to be used

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_  
Time related: \_\_\_\_\_

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107	<p><b>C3 TRADE NAMES</b></p> <p>Wherever a trade name for any product has been described in the <b>bills of quantities</b>, the tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the <b>principal agent</b> being obtained prior to the closing date for submission of tenders</p> <p>If prior written approval for an alternative product is not obtained, the product described shall be deemed to have been tendered for</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
108	<p><b>C4 IMPORTED MATERIALS AND EQUIPMENT</b></p> <p>Where imported items are listed in the tender documents, the tenderer shall provide all the information called for, failing which the price of any such item, materials or equipment shall be excluded from currency fluctuations. (refer to Schedule of Imported Materials and Equipment to be completed by tenderer)</p> <p>Notwithstanding any provisions elsewhere regarding the adjustment of contract prices, the price of any item, material or equipment listed in terms of this clause shall be excluded from the Contract Price Adjustment Provisions (if applicable)</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
109	<p><b>C5 VIEWING THE SITE IN SECURITY AREAS</b></p> <p>The <b>site</b> is situated in a security area and the tenderer must arrange with the unit commander or other responsible officer to obtain permission to enter the <b>site</b> for tendering purposes</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	N/A		
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**110 C6 COMMENCEMENT OF WORKS IN SECURITY AREAS**

As the **works** falls within a security area the **contractor** must give the unit commander or other responsible officer notice before commencement of the **works**. Should the **contractor** fail to make such arrangements, admission to the **site** may be refused and any additional costs will be for the **contractor's** account.

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

N/A

**111 C7 ENTRANCE PERMITS TO SECURITY AREAS**

As the **works** falls within a security area the **contractor** shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under the control of the Defence Force, Police or chief security officer.

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

N/A

**112 C8 SECURITY CHECK OF PERSONNEL**

The **principal agent** may require the **contractor** to have his personnel and workmen, or a certain number of them, security classified.

In the event of the **principal agent** requesting the removal of a person or persons from the **works** for security reasons, the **contractor** shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the **works** and the **site** and/or to any document or information relating to the **works**.

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

N/A

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**C9 PROHIBITION ON TAKING OF  
PHOTOGRAPHS**

In terms of article 119 of the Defence Act, 44 of 1957, it is prohibited to sketch or to take photographs of any military site or installation or any building or civil works thereon or to be in possession of a camera or other apparatus used for taking of photographs except when authorized thereto by or on behalf of the Minister.

The same prohibition is also applicable to all correctional institutions in terms of article 44.1(e) of the Correctional Services Act 8 of 1959.

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time  
related: \_\_\_\_\_

N/A

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**C10 OCCUPATIONAL HEALTH AND SAFETY ACT**

The contractor shall comply with the requirements set out in the Construction Regulations, 2014 and as ammended, issued under the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and ammendments.

It is required of the contractor to thoroughly study the Project-Specific Health and Safety Specification, and Annexures which must be read together with, and is deemed to be incorporated under this Section of the bills of quantities/lump sum document. The contractor should take special precaution so as to not duplicate provisions from another section of the bill of quantities, as the client will not be responsible for such additional unnecessary pricing.

The contractor must take note that compliance with the Occupational Health and Safety Act, Construction Regulations, other Regulations and the Project-Specific Health and Safety Specification is compulsory. The Legal Responsibilities pertaining to the Occupational Health & Safety Act, and all its regulations are therefore applicable in every aspect, and are not limited to the above reference. In the event of partial or total non-compliance, the principal agent, notwithstanding the provisions of clause A3.10 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress payment certificate until the contractor provides satisfactory proof of compliance. The contractor shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment.

Provision for pricing of the Occupational Health and Safety Act, Construction Regulations, Project-Specific Health and Safety Specification and the Baseline Risk Summary & Assessment is made under this clause and it is explicitly pointed out that all requirements of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained.

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114	Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act, Construction Regulations 2014, Other Regulations, Project-Specific Health & Safety Specification and Baseline Risk Assessment Summary  Fixed: _____ Value related: _____ Time related: _____			SUM
115	Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act, Construction Regulations 2014, Other Regulations, Project-Specific Health & Safety Specification and Baseline Risk Assessment Summary including all administrative processes hereunder not itemised  Fixed: _____ Value related: _____ Time related: _____			SUM
<b><u>Project-Specific Health &amp; Safety Management Plan</u></b>				
116	Preparation and Submission of the Principal Contractor's project specific Health and safety Management Plan & Health & Safety File, inclusive of intent of award obligations  Fixed: _____ Value related: _____ Time related: _____			SUM
117	Principal Contractors internal and on-site preparation, submissions, management, implementation, compliance, record-keeping & review of the Contractor's project-specific Health and safety Management Plan & Supporting Health & Safety File, inclusive of ammendments to designs, and further other ammendments  Fixed: _____ Value related: _____ Time related: _____			SUM
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	<b><u>Compensation Fund Legal Liability</u></b>			
118	Principal Contractors Obligations and legal responsibilities in terms of registration and renewals with the Compensation Fund, Claims and Return of Earnings, including time-related obligations  Fixed:_____ Value related:_____ Time related:_____		SUM	
119	<b><u>Notification of Construction Work</u></b>  Principal Contractors initial obligation, submission, compliance and reviews, including time and disbursement obligations. Initial and one per annual / renewal on extended time  Fixed:_____ Value related:_____ Time related:_____		SUM	
	<b><u>Principal Contractors Health &amp; Safety Management Organisational Structure &amp; Responsibilities</u></b>  <u>Principal Contractors obligations in Part 3 of the project-specific Health &amp; Safety Specification where provision is not made elsewhere in the bill of quantities. This must include competency and or skill considerations / requirements where else not inclusive in the bill of quantities</u>			
120	Construction Health & Safety Officer Pr.CHSO  Fixed:_____ Value related:_____ Time related:_____	Item		
121	Construction Health & Safety Manager Pr.CHSM  Fixed:_____ Value related:_____ Time related:_____	Item		
122	Construction Work Supervisor  Fixed:_____ Value related:_____ Time related:_____	Item		
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123	Fall Protection Planner and Supervisor			
	Fixed: _____ Value related: _____ Time related: _____	Item		
124	Emergency Specialised: First Aider Level 2/3, Life Saver, cherry picker operator for fall arrest, etc			
	Fixed: _____ Value related: _____ Time related: _____		SUM	
125	Specialised: Work at Heights, High Risk requirements, steel works, demolition, asbestos, etc			
	Fixed: _____ Value related: _____ Time related: _____		SUM	
126	PC's obligations in terms of specified and identified resources required for the above appointees and furthermore identified capacities, which must be all inclusive of the resources required, used, consumed, expired and administered for the full duration of the project, where the items are not elsewhere within the bill of quantities			
	Fixed: _____ Value related: _____ Time related: _____		SUM	
127	<u>Sub-Contractor SHEQ Management</u>			
	Principal Contractors legal obligations, sub-contractor management obligations, risk management obligations, time and administrative related obligations inclusive of agreements			
	Fixed: _____ Value related: _____ Time related: _____		SUM	
128	<u>Provision of Project Risk Management</u>			
	Principal Contractors obligations in Part 4 and or Part 5 of the project-specific Health & Safety Specification for identification, establishment, implementation, resources, control & review where provision is not made elsewhere in the bill of quantities			
	Fixed: _____ Value related: _____ Time related: _____		SUM	
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129	Principal Contractors Health & Safety Management system obligations and time obligations in respect of Risk Assessments inclusive of preliminary, baseline, scope / activity -specific and residual				
	Fixed:_____ Value related:_____ Time related:_____			SUM	
130	Risk Assessment Analysis: Implementation, Review & Control Measures				
	Fixed:_____ Value related:_____ Time related:_____			SUM	
131	Emergency Contingency Plan, Procedures & Equipment				
	Fixed:_____ Value related:_____ Time related:_____			SUM	
132	Temporary Structures & Existing facilities				
	Fixed:_____ Value related:_____ Time related:_____			SUM	
133	Traffic, Plant & Noise monitoring Management				
	Fixed:_____ Value related:_____ Time related:_____			SUM	
134	Systems & Controls: Weather, Communication radios, etc				
	Fixed:_____ Value related:_____ Time related:_____			SUM	
135	Shoring / Edge Protection management (Edge & Load bearing)				
	Fixed:_____ Value related:_____ Time related:_____			SUM	
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136	<p><b><u>Health &amp; Safety Facilities &amp; Establishment(s)</u></b></p> <p>Principal Contractors obligations including time obligations and allowances to identify, plan, source, supply, deliver, install, manage, control and monitor facilities required in the project-specific Health &amp; Safety Specification, where excluded from any other item in the bill of quantities</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>				SUM
137	<p>Obligations of special facilities, bays, workplace areas, existing facilities, establishments and other where identified in the PC's H&amp;S management plan and excluded in other items in the bill of quantities</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>				SUM
138	<p>Establishment of noise zones (plant)</p> <p>Fixed: _____ Value related: _____ Time related: _____</p> <p><b><u>Occupational Health &amp; Safety Signage</u></b></p>				SUM
139	<p>To supply, source, erect and monitor signage as per the PC's project-specific health &amp; safety specification, and Health &amp; Safety Management system, where no other allowances and or pricing has been allocated in the bill of quantities</p> <p>Fixed: _____ Value related: _____ Time related: _____</p> <p><b><u>General Information Boards</u></b></p>				SUM
140	<p>Identification &amp; Classification and Warning Signage including traffic management</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>				SUM
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**Provision of Personal Protective Equipment (PPE) & Others**

Provision of PPE for and on behalf of the PC's obligations to all employees, public, visitors and sub-contractors and or others, which must be for the full duration of the project, and for the prescribed works where not allowed or priced elsewhere in the bill of quantities

141 General: Overalls, Safety Shoes, Ear Protection, Hand Protection, Eye Protection, Head Protection, Health & Hygiene Protection, Water Protection, Heat Protection, Weather Protection, etc

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

SUM

142 Reflective & Visibility

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

SUM

143 Plant, Machinery & Traffic Accommodation

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

SUM

144 Excavations, Shoring, Barricading

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

SUM

145 Work at Heights: Fall arrest systems, harnesses, etc

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

SUM

146 Specialised: Ergonomic protection, Life Jackets, positioning belts, kidney belts, night work, etc

Fixed: \_\_\_\_\_ Value related: \_\_\_\_\_ Time related: \_\_\_\_\_

SUM

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<b><u>EMERGENCY &amp; OTHER PPE</u></b>				
147	Rescue Plan Equipment, Fall arrest & other Fixed: _____ Value related: _____ Time related: _____		SUM	
148	Medical Equipment & Accessories Fixed: _____ Value related: _____ Time related: _____		SUM	
149	Fire Equipment & Accessories Fixed: _____ Value related: _____ Time related: _____		SUM	
150	Hazardous Chemical Substance Equipment: spill kit, etc Fixed: _____ Value related: _____ Time related: _____		SUM	
151	Other Emergency & Warning Equipment & Accessories: eg amber lights, orange nets, barricading, scaffolding tags, flags, etc Fixed: _____ Value related: _____ Time related: _____		SUM	
152	Wellness & Welfare: barrier cream, toilet paper, etc Fixed: _____ Value related: _____ Time related: _____		SUM	
<b><u>Occupational Health &amp; Safety Training</u></b>				
153	Internal Training - Induction, safe work procedures, toolbox talks, policies, risk management & general Fixed: _____ Value related: _____ Time related: _____		SUM	
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154	External Training - External: Scaffold Inspector, SHE Representative, operator competency, work at heights etc. This must include all outsourced training and must include any refresher training identified. No additional allowances will be allowed.  Fixed: _____ Value related: _____ Time related: _____  <b><u>Provision of Medical Surveillance Programme</u></b>  <b><u>Management, General Workers &amp; Others not categorised</u></b>		SUM	
155	Pre-Medical examinations: prior to commencement of work  Fixed: _____ Value related: _____ Time related: _____		SUM	
156	Periodic, Interim and Review Medical examinations: during, whereafter, annually, and where necessary  Fixed: _____ Value related: _____ Time related: _____		SUM	
157	Exit-Medical examinations: nil-man hours to termination/end of work  Fixed: _____ Value related: _____ Time related: _____		SUM	
158	Audiograms and additional requirements  Fixed: _____ Value related: _____ Time related: _____  <b><u>Plant Operators &amp; Specialised Appointees</u></b>		SUM	
159	Pre-Medical examinations: prior to commencement of work  Fixed: _____ Value related: _____ Time related: _____		SUM	
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160	Periodic, Interim and Review Medical examinations: during, whereafter, annually, and where necessary  Fixed:_____ Value related:_____ Time related:_____			SUM
161	Audiograms, PDP and other recommended specialist occupational testing  Fixed:_____ Value related:_____ Time related:_____			SUM
162	Exit-Medical examinations: nil-man hours to termination/end of work  Fixed:_____ Value related:_____ Time related:_____			SUM
<b><u>Accident/Incident Management</u></b>				
163	Accident / Incident Management, investigations, claims, reviews and all obligations including time, record- keeping and reporting in terms of Part 5 of the PSHSS  Fixed:_____ Value related:_____ Time related:_____			SUM
<b><u>COMPLIANCE WITH REQUIREMENTS OF THE ENVIRONMENTAL MANAGEMENT</u></b>				
164	Provision and appointment of an Environmental Control Officer for the site and carrying out of monitoring, compliance and audits of the Environmental Management Plan and Specification, at fortnightly intervals and reporting at monthly meetings (12 x compulsory monthly meeting)  Fixed:_____ Value related:_____ Time related:_____			SUM
165	Providing information and Method Statements as directed by the Project Environmental Control Officer (PECCO) or Engineer  Fixed:_____ Value related:_____ Time related:_____			SUM
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166	<p>Provisioning of training to contract staff on environmental compliance, practice and risk management within the Principal Contractors Environmental Management Plan</p> <p>Fixed:_____ Value related:_____ Time related:_____</p>			SUM
167	<p>Rehabilitation and review of risk management in terms of the PC's obligation to the PSHSS and the PC's EMP where elsewhere not allowed and or priced for in the bill of quantities</p> <p>Fixed:_____ Value related:_____ Time related:_____</p> <p><b><u>WASTE MANAGEMENT</u></b></p>			SUM
168	<p>The PC's obligation to collect, monitor, separate, demarcate, remove, dispose and control waste, which must be all inclusive, including time and logistics where else not included in the bill of quantities, This shall be inclusive of administrative and storage considerations</p> <p>Fixed:_____ Value related:_____ Time related:_____</p> <p><b><u>COVID-19 COMPLIANCE</u></b></p>			SUM
169	<p>The Contractor is required to study in detail the Covid-19 specification which is included as an attachment to this tender document and the pricing thereof against this item shall be deemed to include all the specified mandatory requirements.</p> <p>Fixed:_____ Value related:_____ Time related:_____</p> <p><b><u>CLOSE OUT REPORTING RESPONSIBILITIES</u></b></p>			SUM
170	<p>To prepare, consolidate, report and transfer to a close out report detailed and must be submitted on a re-writable CD, filed in order, and must include to final process</p> <p>Fixed:_____ Value related:_____ Time related:_____</p>			SUM
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171	Occupational Health & Safety, HIV/Aids and Welfare Close Out Process & Reporting including Sub-Contractors, including submission and reviews				
	Fixed: _____ Value related: _____ Time related: _____			SUM	
172	Environmental Management & Rehabilitation Close Out Process & Reporting including sub-contractors, where applicable and included onto the Health & Safety, HIV/Aids and Welfare re-writable CD including submission and reviews				
	Fixed: _____ Value related: _____ Time related: _____			SUM	
<b>C11 HIV/AIDS AWARENESS</b>					
<p>It is required of the <b>contractor</b> to thoroughly study the HIV/AIDS Specification (PW 1544) of the Department that must be read together with and is deemed to be incorporated under this Section of the Bills of Quantities. Provision for pricing of HIV/AIDS awareness is made under items C10.1 to C10.5 hereafter and it is explicitly pointed out that all requirements of the aforementioned specification are deemed to be priced hereunder, as the said items represent the only method of measurement and no additional items or extras to the contract in this regard shall be entertained</p> <p>The <b>contractor</b> must take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the <b>principal agent</b>, notwithstanding the provisions of Clause A 31 of "Section 1: Preliminaries (Section A)" or any other clause to the contrary, reserves the right to delay issuing any progress <b>payment certificate</b> until the <b>contractor</b> provides satisfactory proof of compliance. The <b>contractor</b> shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment</p>					
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173	<p><b>C11.1 AWARENESS CHAMPION</b></p> <p>Selection, appointment, briefing and making available of an Awareness Champion including provision of all relevant services, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
174	<p><b>C11.2 AWARENESS WORKSHOPS</b></p> <p>Selection and appointment of a competent Service Provider approved by the <b>principal agent</b>, provision of a Service Provider Workshop Plan and a suitable venue, conducting of awareness workshops by means of traditional and/or modern multi-media techniques, including follow-up courses, making available all tuition material and performing assessment procedures, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
175	<p><b>C11.3 POSTERS, BOOKLETS, VIDEOS, ETC.</b></p> <p>Provision, displaying, maintaining and replacing when necessary of four plastic laminated posters, booklets and educational videos, etc. for the duration of the <b>construction period</b>, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item		
<b>Carried to Collection</b>			R	
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176	<p><b>C11.4 ACCESS TO CONDOMS</b></p> <p>Provision and maintenance of condom dispensers fixed in position, including male and female condoms, replenishing male and female condoms on a daily basis as required for the duration of the <b>construction period</b>, all in accordance with the HIV/AIDS Specification</p> <p>Fixed:_____ Value related:_____ Time related:_____</p>	Item		
177	<p><b>C11.5 MONITORING</b></p> <p>Monitoring HIV/AIDS awareness of workers, providing the <b>principal agent</b> with access to information including making available all reports, thoroughly completed and reflecting the correct information, for the duration of the <b>construction period</b> and close out, all in accordance with the HIV/AIDS Specification</p> <p>Fixed:_____ Value related:_____ Time related:_____</p>	Item		
178	<p><b>C12 EMPLOYMENT OF LOCAL LABOUR, TRAINING ETC</b></p> <p><b>C12.1</b></p> <p>Contractor to allow for the employment of local labour to be trained by the employer during the contract period in various trades.</p> <p>All trainees to be placed by the successful tenderer in the trades they will be trained in.</p> <p>Fixed:_____ Value related:_____ Time related:_____</p>	Item		
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179	<p>Community Liason Officer (Clause C10)</p> <p>It is a requirement of this Contract that a Community Liaison officer (CLO) be appointed for the area represented by the Tender. The function of the CLO shall be to represent the local community in matters concerning the use of local labour on the works and to assist with and facilitate communication between the Contractor, the Principal Agent and the local communities. The period of appointment of the CLO shall be as stated in the Contract for Temporary Employment as a Community Liaison officer referred to below. It must be noted that the date of commencement of temporary employment of the CLO shall be no later than the date of commencement of the Contract. The identification of the approved CLO to be appointed by the Contractor under the Contract shall be resolved by the Contractor, the particular Ward Councillors in collaboration with the Local Communities and reported to Principal Agent.</p> <p>It will be required, therefore, that the successful Tenderer (i.e. the Contractor) enter into a contract for the employment of the above-mentioned CLO.</p> <p>The contract will be between the Contractor and the CLO, all costs involved shall be borne by the Contractor and the tender shall be deemed to include for this</p> <p><b>(NOTE: There is a Budgetary Allowance to cater for the Employment of a CLO).</b></p> <p><b><u>TRAINING ALLOWANCE</u></b></p>				
180	<p><b>C12.2</b></p> <p>Contractor to allow for loss of productivity due to employment of local trainees.</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item			
181	<p><b>C12.3</b></p> <p>Contractor to allow for provision of contractor's monthly report as annexure A.</p> <p>Fixed: _____ Value related: _____ Time related: _____</p>	Item			
<b>Carried to Collection</b>					
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182	<p><b>C13 INACCURATE AND DEFECTIVE WORK EXECUTED UNDER A PRECIOUS CONTRACT</b></p> <p>The Contractor shall, after taking possession of the Site and before commencing the work, check the existing levels, lines, profiles and the like and satisfy himself as to the dimensional accuracy of all work executed under the previous contract which may affect work</p> <p>Should any inaccurate or defective work be found the Contractor shall immediately notify the Representative/Agent in writing requesting his instructions with regard thereto and afford every facility to those rectifying such inaccurate or defective work</p> <p>F:_____ V:_____ T:_____</p>			
183	<p><b>C14 HIGH RISK INSURANCE</b></p> <p><b>C14.1 HIGH RISK AREA</b></p> <p>The execution of this Contract involves work in a geological area classified as a "High Risk Area" that is subject to highly unstable subsurface conditions that might result in catastrophic ground movement evident by sinkhole or doline formation</p> <p>F:_____ V:_____ T:_____</p>	<p>N/A</p> <p>N/A</p>		<p>R</p>

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## C14.2 DAMAGE TO THE WORKS

The Contractor shall, from the date of the letter of acceptance until date of the issue of the First Delivery Certificate, bear the full risk of and hereby indemnifies and holds harmless the Employer against any damage to and/or destruction of the Works consequent upon a catastrophic ground movement as mentioned in sub clause C14.1 above. The Contractor shall take such precautions and security measures and other steps for the protection and security measures and other steps for the protection and security of the Works as he may deem necessary

When so instructed by the Principal Agent, the Contractor shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the Works and to rebuild, restore, replace and/or repair the Works, at the Contractor's own costs

F: \_\_\_\_\_ V: \_\_\_\_\_ T: \_\_\_\_\_

Item

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185 **C14.3 INJURY TO PERSONS OR LOSS OF OR  
DAMAGE TO PROPERTIES**

The Contractors shall be liable for ad hereby indemnifies and holds harmless the Employer against any and all liability, loss, slaim or proceeding arising at any time during the Contract Period whether arising in common law or by Statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of or caused by a catastrophic ground movement as mentioned in sub clause C14.1 above

The Contractor shall be liable for and hereby indemnifies the Employer against any liability, loss claim or proceeding consequent upon loss of or damage to any moveable, or immovable or personal property or property contingious to the Siet, whether belonging to or under the control of the Employer or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned in subclause C14.1 above, which occurred during the Contract Period

F:\_\_\_\_\_ V:\_\_\_\_\_ T:\_\_\_\_\_

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186 **C14.4 ADEQUATE INSURANCE**

It is the responsibility of the Contractor to ensure that he has adequate insurance to cover his risk and liability as mentioned in subclauses C14.2 and C14.3 above. Without limiting his obligations in terms of the Contract, the Contractor shall, within 21 days of the Letter of Acceptance and before commencement of the Works, submit to the Employer proof of such insurance policy

F:\_\_\_\_\_ V:\_\_\_\_\_ T:\_\_\_\_\_

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187	<p><b>C14.5 RECOVERY OF LOSSES OR DAMAGES</b></p> <p>The Employer shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred consequent upon the Contractor's default of his obligations as set out in sub clauses C14.2, C14.3 and C14.4. Such losses or damages may be recovered from the Contractor or by deducting the same from any amounts due under this Contractor or under any other contract presently or hereafter existing between the Employer and the Contractor and for this purpose all these contracts shall be considered one indivisible whole</p> <p>F:_____ V:_____ T:_____</p> <p><b><u>SCHEDULE OF SUPPLEMENTARY INFORMATION</u></b></p> <p><b><u>NOTE:</u></b></p> <p>The information listed below is in respect of certain clauses in the Preliminaries, requiring the supplementary information</p> <p><b><u>CLAUSE NO A1</u></b> - Clause A1 has been amended to read that construction period means the period commencing on the date on which possession of site is given to the contractor</p> <p><b><u>CLAUSE NO A24</u></b></p> <p>The date for site handover :- TO BE ANNOUNCED</p> <p>The contractual practical completion date is : <b><u>24 (Twenty Four) months</u></b> after the date of site handover including public holidays and statutory builders holidays.</p> <p><b><u>CLAUSE NO A30</u></b> - Amount of penalty: 0.0125/R100 of the contract value excluding VAT per calendar day.</p> <p><b><u>CLAUSE NO A31</u></b> - Clause A31 has been amended to read that payment be made within 30 days.</p> <p style="text-align: right;"><b>Carried to Collection</b></p> <p>Section 1 Bill No. 1 Preliminaries</p>	Item	
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	<b><u>BILL No. 1</u></b>			
	<b><u>ALTERATIONS (PROVISIONAL)</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Existing Furniture, Equipment, etc</u></b>			
	The Contractor shall not remove or damage any furniture, equipment or similar items that belong to the Department except when specifically described in the items to follow: The Contractor must give the Principal Agent sufficient notice if the removal of these items are required before any prescribed alterations can be done			
	<b><u>Damage to existing finishes</u></b>			
	The Contractor will be held responsible for all damage however caused to existing finishes and fittings, etc. and he must make good all damage at his own expense to the approval of the Principal Agent.			
	Breaking down, demolition and alteration activities and tasks, hacking off of existing plaster, etc. is to be executed with care so as to prevent damage to remaining floor and wall surfaces and finishes (where these are to be retained). Tenders will be deemed to include allowance for any necessary protection of existing surfaces and structures as may be necessary to effect the above, as the cost of repairing damage to existing surfaces and structures will be solely for the Contractors account			
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**Responsibility for site**

The Contractor is to note that upon possession of the site by himself, and extending until practical completion is achieved, he is solely responsible for the site, site security, general upkeep and cleaning of the site and all other responsibilities in maintaining a construction site in conformance with but not limited to, the Construction Regulations 2014, all local by-laws, all user client regulations, and all Client regulations and procedures. Tenderers are therefore urged to study all available material and to investigate the site fully and areas contiguous to the site, in order to determine the range and extent of responsibility. No additional monetary and/or time claims will be entertained in respect of the above

**Explosives**

No explosives whatsoever may be used for demolition purposes unless otherwise stated

**General**

The Contractor shall carry out the whole of the works with as little mess and noise as possible and with a minimum amount of disturbance to adjoining classroom blocks and their students. He shall provide proper protection of the works and provide, erect and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent

Water supply pipes and other piping that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the Principal Agent

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Doors, fanlights, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and re-hanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately

**"Taking out and removing doors, windows, etc"**

implies that the door, etc is to be carefully taken down together with the frame, linings, architraves, window sills, etc complete and where brick lintels occur, it must be supported and propped until the openings are built up or new doors or windows built in position

Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc. and making good floor and wall finishes to match existing

**"Forming openings"** for doors or windows, etc implies that the plaster or any other covering is to be hacked off and an opening formed sufficient in size to receive the building in of the frame and cramps, and the forming of new dampproof courses, lintels, sills, etc. After building in of the new frame, the opening is to be built against the frame, plaster or faced brickwork to be made good both sides and reveals and floor screeds prepared for finishings to match existing

**"Making good"** implies that all necessary repairs are to be made to reinstate articles that may be damaged through the removal or otherwise, and the supplying of any new materials to match existing work, and is to include any necessary repairs to adjacent finishings such as floors, skirtings, plaster, painting, etc and such making good is to match adjoining work in all respects and in all trades

The Contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)

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The Contractor to acknowledge that sequencing of the work will be necessary to accommodate the operational aspects of the school. The Contractor to accordingly factor the above requirement in the construction programme and pricing

**"Breaking down and removing"** walls, etc implies that the wall is to be taken down to the extent shown on the drawings or as may be described and that all necessary shoring is to be provided and allowed for to ensure the safety of the building during the pulling down or until new walls are erected and all portions of the remaining walls where disturbed or affected by the removal are to be made good and left ready for plaster or other finishings as described

Where removal is included in the heading, sub-heading or item description, prices shall be deemed to include for the necessary costs of removal and appropriate disposal of materials including but not limited to labour, transportation and disposal costs. No further claims in this regard will be entertained

**"Building up openings"** implies that after the removal of any doors, windows or screens that may be described to be taken down, the opening is to be filled up solid (or to the thickness as shown) with new brickwork and is to include all necessary cutting away to form openings to thoroughly bond to the new work and new finishes to both sides as described.

**Removal of asbestos material**

All preparatory work, alterations, etc., to existing asbestos cement roof sheeting, gutters, rainwater pipes, etc., is to be carried out strictly by an approved and certified specialist company and in accordance with statutory requirements (Occupational Health and Safety Act, 1993 - Asbestos Regulations 2001) and all necessary precautions must be taken when working with and disposing of asbestos cement products and the disposal of waste water resulting from cleaning operations, etc.

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**The following shall apply in respect of asbestos removal**

The removal of asbestos shall be carried out by a certified entity, registered in accordance with the Occupational Health and Safety Act, 1993 and the Asbestos Regulations 2001

Asbestos in all forms/building elements that is to be removed, shall be carried out in strict accordance with aforementioned regulation and a certificate issued by the entity as contemplated in the above, shall be provided per block for the removal thereof, where the term block shall in this context refer to any single, free standing building structure, regardless of size or purpose

Corresponding disposal certificates shall be issued by the facility at which the asbestos is disposed off, with said facility to, prior to the disposal of any asbestos material provide satisfactory proof that the facility is duly registered and fully compliant in terms of the act, to receive the asbestos material

Under no circumstances is the Contractor nor any of his duly authorised representatives to sell and/or give away asbestos material to any member/s of the school community, the community in general or the public at large. Should this be found to be occurring, the Contractor will be held responsible contractually and may further be prosecuted criminally

The cost for complying with the above, and all requirements of regulation as reflected above is to be priced for in terms for removal of asbestos material. No further claims in this regard will therefore be entertained

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**TEMPORARY BARRIERS, SCREENS, ETC**

**Temporary barriers, screens, etc including removal and allow for re-use**

1	SANS approved weld mesh type temporary barrier fencing 1,8m high covered with a net fixed to and including 100mm diameter gum poles set securely min 300mm deep in ground at max 3m spacing including excavation, backfilling, etc	m	364
2	Extra over mesh fence for pedestrian gate size 0,9 x 1,8m high.	No	6

**DEMOLISH**

**Demolish & remove existing**

3	Single storey ablution building comprising brickwork under metal roof sheeting including filling in pits (desludging measured elsewhere), overall size 4,0 x 3,5m	No	1
4	Single storey ablution building comprising brickwork under metal roof sheeting including filling in pits (desludging measured elsewhere), overall size 5,5 x 1,2m	No	1
5	Single storey ablution building comprising brickwork under metal roof sheeting including filling in pits (desludging measured elsewhere), overall size 6,0 x 1,3m	No	1
6	Single storey building comprising brickwork under corrugated metal roof sheeting, size 4.0 x 4.0m and grub up foundations and remove from site and fill hole with clean earth well watered and compacted in 150mm layers.	No	1
7	Single storey building comprising brickwork under corrugated metal roof sheeting, size 39.42 x 7.41m and grub up foundations and remove from site and fill hole with clean earth well watered and compacted in 150mm layers.	No	1

**Carried to Collection**

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Section 2  
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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8	Single storey building comprising brickwork under corrugated metal roof sheeting, size 31.00 x 7.04m and grub up foundations and remove from site and fill hole with clean earth well watered and compacted in 150mm layers.	No	1		
9	Single storey building comprising brickwork under corrugated metal roof sheeting, size 39.47 x 7.38m and grub up foundations and remove from site and fill hole with clean earth well watered and compacted in 150mm layers.	No	1		
10	Single storey building comprising brickwork under corrugated metal roof sheeting, size 15.00 x 4.84m and grub up foundations and remove from site and fill hole with clean earth well watered and compacted in 150mm layers.	No	1		
11	Structure built of corrugated iron sheets, approximately size 4.1 x 3.43m and grub up foundations and remove from site and fill hole with clean earth well watered and compacted in 150mm layers.	No	1		
12	Structure built of corrugated iron sheets, approximately size 6.0 x 4.26m and grub up foundations and remove from site and fill hole with clean earth well watered and compacted in 150mm layers.	No	1		
	<b><u>Break down and remove brickwork etc</u></b>				
13	Half brick walls	m2	19		
	<b><u>Take out and remove doors, windows, etc from brickwork to remain</u></b>				
14	Steel windows in brick wall size 1,2 x 0,9m high	No	11		
15	Timber door only 1.87 x 2.03m high	No	1		
	<b><u>Taking out and removing sundry joinery work</u></b>				
16	Worktop 0,75m wide x 0,90m high	m	8		
	<b><u>Take down and remove roofs, floors, panelling, ceilings, partitions, etc</u></b>				
17	Fascia boards and fixings	m	34		
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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18	Ceilings	m2	102		
19	Cornice	m	75		
20	Barge boards and fixings	m	23		
21	Rainwater gutters and fixings	m	34		
22	Rainwater downpipes and fixings	m	7		
23	Water storage tank including concrete tank stand size 2,0 x 2,0 x 0,5m high	No	2		
<b><u>STRUCTURAL REPAIRS</u></b>					
<b><u>Repairs to structural cracks, etc</u></b>					
24	Rake out existing minor structural crack in brickwork, remove all debris/loose material including four times shot fixing 32 x 1,6mm thick strap x 500mm long at 500mm centres and plaster over (plaster measured elsewhere)	m	55		
25	Patch prime bare areas with solution of 1 part Cembond: 4 parts clean water by volume and allow to dry.	m	30		
26	Surface to be hard, dry and clean, apply two coats Cemcrete Concrete Sealer or similar approved with an overcoating time of one hour, all in accordance with manufacturer's recommendations	m	30		
<b><u>SERVICE</u></b>					
<b><u>Steel Windows</u></b>					
27	Service window size 0,65 x 0,4m high including lubricating ironmongery and leave in workable condition (replacement of damaged/ missing ironmongery measured elsewhere)	No	26		
<b>Carried to Collection</b>				R	
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**MAKING GOOD OF FINISHES ETC**

**Cemcrete or similar approved Green Thermoplastic coating to floors previously coated:**

28	Remove loose and flaky paint, organic growths, etc., scrape and wire brush surface to a firm foundation. Patch prime bare areas with solution of 1 part Cembond: 4 parts clean water by volume and allow to dry. Apply two coats of Cemcrete or similar approved Green Thermoplastic coating with an overcoating time of 6 hours	m2	73
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**SUNDRIES**

**Desludging**

Debris and rubble covering the access to the pit latrine must be cleared and disposed of at a registered landfill site. The pit latrine is to be accessed by the removable cover or removal of the access concrete slab. The solids that cannot be pumped out must be dug out by mechanical means. When the contents of the pit or tank are to be pumped out and the sludge is too firm or dry it must be jetted with a high pressure hose and agitate the mixture of sludge and water with the end of the suction hose before pumping begins. After pumping out the contents of the pit, the tanker must be driven to a legally authorised safe-disposal site, such as an off-site sewage treatment works, where the contents can be emptied. Dry pits or pits containing large quantities of solid materials including stones, sticks, plastic bags, debris, etc. must be cleaned by individuals with hand held mechanical machinery with the appropriate protective gear in terms of the OHS Act as well as certified to work in confined spaces. Contractors are to ensure that the vacuum tankers are suitable to manoeuvre close to latrines without compromising the integrity of the pit latrine

29	Clean out pit latrine by desludging. Contractor to price per toilet seat approximately 2Kl in volume	No	15.00
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**Carried to Collection**

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Section 2  
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### **TEMPORARY ACCOMMODATION**

Supply and Install Pre-fabricated Modular Parkhome Units, as per Parkhome Modular Units' Specifications or equal approved, comprising of:

- Walls made of 40mm thick polystyrene panels clad with 0.4mm thick pre-painted Aluzinc sheeting on both sides
- 1.1 x 1.2m high (7no. in total) Casement type Anodised aluminium window frames with 4mm clear glass with one top hung opener; Windows are to be secured with aluminium profile burglar proofing
- 0.9 x 1.8m high (1no. in total) External door manufactured from the same materials as the walls and fitted with 3 lever mortice lock, weather boards, door stoppers and retaining hooks
- Vinyl Sheeting on floors
- The chassis to be manufactured from cold rolled lipped channel welded or bolted together into a rigid ladder frame. Joists are to be manufactured from steel lipped channel. All steel to be hot dip galvanised.
- The roof is to be a dual pitched roof constructed from the same insulated panels used for the walls on single wide units and units up to 7m wide (using a king truss system)
- Gutters and Downpipes
- Exterior Chromadeck Skirting
- 2no. Chalkboards each size 2.4 x 1.2m and 1no. Pinning Board size 1.8 x 1.2m
- 1no. Teacher Cupboard
- Steps at Entrances
- Electrical Installation and Connection (Surface mounted DB, Earth Leakage, 4no. SGL Flourescent lights - 1.2m, 2no. SGL Plugs -

**Carried to Collection**

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Alterations

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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Item No	Quantity	Rate	Amount
<p><b><u>SECTION 3</u></b></p> <p><b><u>BILL No. 1</u></b></p> <p><b><u>EARTHWORKS (PROVISIONAL)</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>Proprietary products in descriptions:</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.</p> <p><u>Nature of material to be excavated:</u></p> <p>The material to be excavated is assumed to be predominantly of a composition that will allow excavation in "earth" as specified, but including a percentage of excavation in "soft rock" and "hard rock".</p> <p><u>Carting away of excavated material:</u></p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations, or alternatively, from stock piles situated on the building site.</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 3 Bill No. 1 Earthworks (Provisional)</p>			



Dewatering of excavations:

The Contractor shall allow for removing seepage and other water from subterranean sources from the excavations by pumping, baling or otherwise. Accurate records of all such dewatering shall be kept to determine the total volume of water so removed and a clear distinction shall be made between water from subterranean sources and other water

Imported fill:

"Filling and bedding to trenches etc. to be in compliance with SABS 1200 DB and LB respectively"

**EXCAVATION OTHER THAN BULK**

**Excavation in earth not exceeding 2m deep:**

1	Trenches.	m3	742
2	Holes.	m3	122

**Excavation in earth exceeding 2m but not exceeding 4m deep:**

3	Holes.	m3	34
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**Extra over trench and hole excavations in earth for excavation in:**

4	Soft rock.	m3	90
5	Hard rock.	m3	45

**Extra over all excavations for carting away:**

6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	610
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**Risk of collapse of excavations:**

7	Sides of trench and hole excavations not exceeding 1,5m deep.	m2	2 390
8	Ditto, but from ground level to exceeding 1,5m	m2	39

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Bill No. 1  
Earthworks (Provisional)

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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<b><u>Keeping excavations free of water:</u></b>					
9	Keeping excavations free from mud and all water including subterranean sources.		Item		
<b><u>EARTH FILLING, ETC.</u></b>					
<b><u>Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod. AASHTO density:</u></b>					
10	Backfilling to trenches, holes, etc.	m3	352		
<b><u>Earth filling (G7 material) supplied by the contractor compacted to 95% Mod AASHTO density:</u></b>					
11	Under floors, steps, pavings, footings, etc.	m3	342		
<b><u>Coarse river sand filling supplied by the contractor:</u></b>					
12	Under floors etc. (Provisional).	m3	121		
<b><u>Compaction of surfaces:</u></b>					
13	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density.	m2	2 270		
<b><u>Prescribed density tests on filling:</u></b>					
14	Allow for compaction tests by an approved laboratory to determine density of filling material.	No	132		
<b><u>SOIL POISONING</u></b>					
<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>					
15	Under floors, etc., including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming.	m2	2 270		
16	To bottoms and sides of trenches, holes, etc.	m2	3 354		
<b>Carried to Collection</b>				R	
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Bill No. 1					
Earthworks (Provisional)					

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Item No	Quantity	Rate	Amount
<p><b><u>BILL No. 2</u></b></p> <p><b><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>Proprietary products in descriptions:</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.</p> <p><u>Cost of tests:</u></p> <p>The costs of making, storing and testing of concrete test cubes as required under clause 7 'Tests' of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the Architect. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Architect. (Test cubes are measured separately).</p> <p><u>Formwork:</u></p> <p>Descriptions of formwork shall be deemed to include use and waste only (except where described as left in or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 3 Bill No. 2 Concrete, Formwork and Reinforcement</p>			

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.

Formwork to soffits of solid slabs etc., shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described.

Formwork to sides of bases, pile caps, ground beams, etc., will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks.

**UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**

**15Mpa/19mm Concrete**

1	Surface blinding under footings and bases.	m3	57	
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**REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**

**25MPa/20mm concrete:**

2	Footings to walls.	m3	402	
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3	Bases.	m3	26	
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**REINFORCED CONCRETE**

**25MPa/20mm concrete:**

4	Surface beds on waterproofing.	m3	258	
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5	Surface beds cast in panels on waterproofing.	m3	56	
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6	Cavity walls.	m3	243	
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7	Suspended Slabs.	m3	12	
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Concrete, Formwork and Reinforcement

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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8	Isolated beams	m3	42		
<b><u>TEST BLOCKS</u></b>					
<b><u>Test blocks:</u></b>					
9	Making and testing set of three 150x150x150mm concrete strength test cubes (Provisional).	No	269		
<b><u>FINISHING TOP SURFACE OF CONCRETE</u></b>					
<b><u>Finishing top surfaces of concrete smooth with a wood float:</u></b>					
10	Surface beds, slabs, etc	m2	2 319		
<b><u>ROUGH FORMWORK (DEGREE OF ACCURACY III)</u></b>					
<b><u>Rough Formwork to Sides:</u></b>					
11	Isolated beams	m2	22		
12	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	25		
<b><u>Smooth Formwork to Sides:</u></b>					
13	Isolated beams	m2	287		
14	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	75		
<b><u>Smooth Formwork to Soffits:</u></b>					
15	Beams propped up exceeding 1.5m and not exceeding 3.5m high	m2	80		
16	Suspended Slabs propped up exceeding 1.5 but not exceeding 3.5m high	m2	31		
<b><u>Permanent Formwork:</u></b>					
17	Soffit of slab over pit.	m2	27		
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Concrete, Formwork and Reinforcement					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Extra on permanent formwork for boxing or blocking in or boxing out to form:</u></b>				
18	340mm Diameter opening through 170mm thick slab.	No	7		
19	700 x 900 mm opening through 170mm thick slab.	No	1		
	<b><u>SUNDRIES</u></b>				
	<b><u>Under Slab Insulation</u></b>				
20	Isoboard® high density 32-36kg/m³ rigid extruded polystyrene 100% closed cell insulation boarding 50mm thick x 600mm wide, with tongue and groove joints laid on plastic sheeting under concrete surface beds	m2	1 633		
	<b><u>MOVEMENT JOINTS ETC</u></b>				
	<b><u>Expansion joints with bitumen impregnated softboard between vertical concrete or brick surfaces:</u></b>				
21	12mm Joints not exceeding 300mm high (Provisional).	m	785		
	<b><u>Saw cut joints:</u></b>				
22	6 x 40mm Saw cut joints in top of concrete.	m	840		
	<b><u>REINFORCEMENT (PROVISIONAL)</u></b>				
23	Steel reinforcement to structural concrete work.	t	46.77		
	<b><u>Fabric reinforcement:</u></b>				
24	REF. 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	2 409		
25	REF. 617 fabric reinforcement in cavity walls, etc.	m2	30		
	<b>Carried to Collection</b>			R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No		Quantity	Rate	Amount
	<b>BILL No. 3</b>			
	<b>MASONRY</b>			
	<b>MODEL PREAMBLES</b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b>SUPPLEMENTARY PREAMBLES</b>			
	<u>Proprietary products in descriptions:</u>			
	Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.			
	<u>Sizes in descriptions:</u>			
	Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick.			
	<u>Face bricks:</u>			
	Bricks shall be ordered timeously to obtain uniformity in size and colour.			
	<u>Pointing:</u>			
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, and cleaning etc.			
	<u>Samples, etc:</u>			
	Rates for brickwork, faced brickwork, etc shall include for all required samples.			
	<b>Carried to Collection</b>		R	
	Section 3 Bill No. 3 Masonry			

Concrete masonry units:

Blocks are to be either solid or hollow modular dense concrete masonry units having a compressive strength of 7 MPa

Wall ties for blockwork:

Wall ties shall be polypropylene "Permaties" complying with BS 76377. Ties for hollow walls shall be of sufficient length to allow not less than 75mm of each end to be built into the blockwork. Ties are to be spaced at intervals of not more than 1m in the horizontal direction and not more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other

Blockwork:

Blockwork shall comply with SABS 0145 "Concrete Masonry Construction"

Surfaces shall have joints raked out to a depth of at least 10mm and pointed on exposed surfaces. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole.

Standard complementary blocks:

Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary

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**BRICKWORK IN FOUNDATIONS  
(PROVISIONAL)**

**Brickwork of NFX bricks (14 MPa nominal  
compressive strength) in Class I mortar:**

1	One brick walls.	m2	726
2	275mm thick cavity brick Walls made of two leafs of 110mm wall with 65mm reinforced concrete fill and including wire ties (concrete elsewhere measured).	m2	803
3	Mass brickwork in piers.	m3	6

**BRICKWORK IN SUPERSTRUCTURE**

**Brickwork of NFP bricks (14 MPa nominal  
compressive strength) in Class II mortar:**

4	Half brick walls.	m2	133
5	One brick walls.	m2	419
6	275mm thick cavity brick Walls made of two leafs of 110mm wall with 50mm isoboard in between (isoboard elsewhere measured).	m2	1 326
7	Mass brickwork in piers.	m3	28

**BRICKWORK AND BLOCKWORK SUNDRIES**

**Cavity Insulation**

8	Isoboard® high density 32-36kg/m³ rigid extruded polystyrene 100% closed cell insulation boarding 50mm thick x 600mm wide with tongue and groove joints fixed to inner skin of brick cavity wall such to shed moisture, with galvanised mild steel once bent support and holdback ties size 20 x 1,6 x 130mm girth with fishtailed ends built into horizontal joints in wall at maximum 600mm centres along top and bottom edges, including neatly notching board edges around wall ties, window and door frames.	m2	1 573
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Bagging and sealing the outer face of the inner skin of walls with 1:3 cement and sand mixture and seal with two coats "Brixal" bitumen emulsion waterproofing coating:</u></b>				
9	To walls (Provisional).	m2	2 110		
	<b><u>Brickwork reinforcement:</u></b>				
10	115mm Wide reinforcement built in horizontally.	m	25 876		
11	Ditto, but in foundations (Provisional).	m	5 540		
12	230mm Wide reinforcement built in horizontally.	m	3 394		
13	Ditto, but in foundations (Provisional).	m	1 399		
	<b><u>Prestressed fabricated concrete lintels including necessary temporary supports</u></b>				
14	140 x 140mm Lintels in lengths not exceeding 3m	m	357		
	<b><u>Turning pieces:</u></b>				
15	200mm Wide turning piece to lintels etc.	m	158		
	<b><u>Cramps, ties, etc:</u></b>				
16	30 x 2mm Galvanized roof tie 1500mm long with one end fixed to timber and other built into brickwork or concrete (Provisional)	No	456		
	<b><u>Air bricks etc:</u></b>				
17	230 x 160 x 35mm high terracotta clay vermin proof air brick	No	3		
	<b><u>Miscellaneous:</u></b>				
18	Fair raking cutting.	m	64		
<b>Carried to Collection</b>				R	
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<b><u>FACE BRICKWORK</u></b>					
<b><u>"Corobrik Mopani Travertine Imperial FBS" clay face brick or equal approved, size 222 x 106 x 73mm, bedded and jointed in Class II mortar and pointed with recessed vertical and recessed horizontal joints, suitable for exposure zones 1-2:</u></b>					
19	Extra over brickwork for face brickwork externally.	m2	1 470		
20	Ditto, but in foundations (Provisional).	m2	250		
21	Extra over brickwork for face brickwork internal.	m2	23		
22	Extra over brickwork to piers for face brickwork	m2	292		
23	Half brick wall in face brick pointed both sides.	m2	18		
24	Half brick wall in beam filling pointed one side including cutting and fitting around roof timbers and bedding roofing solid on top in cement mortar.	m2	882		
25	275mm thick cavity face brick walls pointed both sides, made of two leafs of 110mm wall with 50mm isoboard infill (isoboard elsewhere measured).	m2	592		
26	One brickwall pointed on both sides.	m2	311		
27	Fair raking cutting.	m	6		
<b><u>Brick-on-edge header course copings, sills, etc, of "Corobrik Mopani Travertine Imperial FBS" or equal approved clay face brick size 222 x 106 x 73mm, pointed with recessed joints on all exposed faces:</u></b>					
28	220mm Wide header course to top of one brick wall bedded and jointed in cement mortar and pointed on top and both sides as described.	m	9		
29	220mm Wide lintel pointed on face and 110mm soffit.	m	141		
30	220mm Brick on edge sill bedded sloping and jointed in cement mortar and pointed on top, edge and projecting soffit including cutting and fitting between reveals and splay cutting brickwork under.	m	141		
<b>Carried to Collection</b>				R	
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**FIBRE-CEMENT WINDOW SILLS**

**Natural grey Nutec sills in single lengths bedded in class II mortar including metal fixing lugs etc**

31	175 x 15mm Wide sills set flat and slightly projecting	m	169	
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**BRICK AND CONCRETE BENCHES, ETC**

**Set out and construct brick and concrete bench comprising 115mm brick stub walls 415mm high supporting a 600mm wide x 85mm thick precast concrete slab including mesh 617, 2 sheets DPC smooth side together and chamfered edges,etc, and finishing off outer bench faces with 15mm grano plaster all as per drawing no. S-07-1 attached to these bills of quantities:**

32	Bench 600mm wide x 500mm high.	m	22	
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**Carried to Collection**

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No		Quantity	Rate	Amount
	<b><u>BILL No. 4</u></b>			
	<b><u>WATERPROOFING</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Proprietary products in descriptions:</u>			
	Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.			
	<b><u>DAMPPROOFING OF WALLS AND FLOORS</u></b>			
	<b><u>One layer of 250 micron 'USB GREEN' waterproof sheeting sealed at laps with 'Gunplas Pressure Sensitive Tape':</u></b>			
1	Under surface beds.	m2	2 409	
	<b><u>One layer of 375 micron embossed dampcourse waterproof sheeting below walls, sills, etc:</u></b>			
2	Below walls, sills, etc.	m2	351	
	<b><u>JOINT SEALANTS ETC</u></b>			
	<b><u>Clear Neutral silicone sealant:</u></b>			
3	In joint sealing and pointing all round external window and door frames.	m	1 020	
	<b>Carried to Collection</b>			
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	<p><u><b>Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc</b></u></p>				
4	<p>10 x 12mm In movement joints in floors or walls including raking out expansion joint filler as necessary (Provisional).</p>	m	1 625		
	<b>Carried to Collection</b>			R	
<p>Section 3 Bill No. 4 Waterproofing</p>					

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**Amount**

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Item No	Quantity	Rate	Amount
<p><b><u>BILL No. 5</u></b></p> <p><b><u>ROOF COVERINGS ETC.</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>Proprietary products in descriptions:</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.</p> <p><u>Fixing:</u></p> <p>Fixing shall be done according to SABS 1200HB with minimum 225mm end laps.</p> <p><u>Guarantee:</u></p> <p>The contractor will be required to provide a written guarantee, stating that :1. The roof sheeting is of the specified thickness.2. The client is indemnified against any defects, including colour deterioration for a minimum period of 15 years.</p> <p><u>Pricing:</u></p> <p>Prices for roof covering and cladding are to include for all necessary drive screws, hook bolts, sheet bolts, nuts, washers, etc., for drilling holes for screws and bolts including removing all swarf from the sheeting and all right angle cutting and waste (Measured net).</p>			
<p style="text-align: right;"><b>Carried to Collection</b></p>		R	
<p>Section 3</p> <p>Bill No. 5</p> <p>Roof Coverings Etc.</p>			

**PROFILED METAL SHEETING AND ACCESSORIES**

**0.8mm galvanised Chromadeck IBR sheets (G4 Clolourtech finish, Charcoal Grey) on 50 x 76 SA pine purlins at maximum 1200mm centre spacing on Sisalation, with a pitch of 30 degrees:**

1	Roof covering with a 30 degree pitch.	m2	3 379		
	<b><u>0.8mm Flashings pre-painted to match roof sheeting and fixed in strict accordance with manufacturer's instructions:</u></b>				
2	Ridge 550mm girth with minimum 225mm laps, fixed to roof sheeting (measured net).	m	163		
3	Hip capping 550mm girth, three times bent along girth and notched on site to suit roof profile.	m	327		
4	Raking valley gutter 550mm girth and six times bent along girth.	m	23		
5	Standard narrow and broad flute closers.	m	348		

**ROOF INSULATION**

**Reflective foil insulation or equal approved 420 Heavy industrial grade reinforced aluminium foil insulation double sided, heavy grammage reflective foil laminate incorporating eight layers of aluminium foil, reinforcing scrim, Kraft paper and polyethylene, tested for conformance with SABS 1381: Part IV- 1985, with a Class 1 fire rating in accordance with SABS 0177: part III - 1981 and BS 476 part 5, 6 and 7, secured to each truss/rafter with 38mm x 3,2mm x 1100mm hardboard counter batten strips positioned flush with the bottom edge of the material thus leaving 150mm overlap exposed at the top for the next layer and 150mm overlap thereafter on each 1250mm width roll. All to be fixed in accordance with manufactures specification**

6	Insulation laid taut over timber purlins (approximately 900mm centres) and fixed concurrent with purlins, etc	m2	3 322		
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Item No	Quantity	Rate	Amount
<b><u>BILL No. 6</u></b>			
<b><u>CARPENTRY AND JOINERY</u></b>			
<b><u>MODEL PREAMBLES</u></b>			
The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<b><u>ROOFS ETC</u></b>			
<b><u>MONOPLANAR PREFABRICATED METAL CONNECTED TIMBER ROOF TRUSSES</u></b>			
All trusses to be fabricated in a factory by a truss fabricator who holds a current Certificate of Competence awarded by the Institute for Timber Construction			
TR1 & TR2 Certificates are to be issued for each Block before occupation may take place			
<b><u>PREFABRICATED ROOF TRUSSES HAVING A PITCH NOT EXCEEDING 25 DEGREES</u></b>			
NOTE: All timber roof trusses including nail-plated trusses and bolted trusses with lapped members must comply with SABS 0243 : THE DESIGN, MANUFACTURE AND ERECTION OF TIMBER TRUSSES			
Prices for roof trusses are to include for all temporary bracing and supports and for all necessary top and bottom chord bracing, wind bracing and runners where required and TR1 and TR2 Certificates			
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### TIMBER

Timber for trusses to be South African softwood structural timber and shall be at least of grade 4 and in accordance with SABS Specification No.'s 563 or 1245 or laminated timber in accordance with SABS 1460

### METAL CONNECTOR PLATES

Metal truss connector plates shall be made from galvanised steel of at least 1mm nominal thickness, with a minimum yield strength of 250MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be 0,275Kg/m<sup>2</sup> commercial class hot dipped galvanising

The connector plates shall have been tested by the CSIR and be a size capable of transmitting the forces between the members of a truss without exceeding the design values given in the CSIR report

### BOLTS

Bolts shall be to BS 4190 or SABS 135 with appropriate washers. (See below)

### WASHERS

Square or round washers of the following minimum dimensions shall be used with all bolts:

#### WASHER DIMENSIONS

Bolts Size	Width (mm)	Thickness
up to M8	25	2,5
up to M12	36	4,0
up to M20	60	5,0

### SHEAR PLATES, TOOTH CONNECTORS AND SPLIT RINGS

These shall be as specified in BS 1579 and installed in accordance with the CSIR Publication : HOUT 468, "The Design, Manufacture and Erection of Timber Trusses".

### NAILS

These shall be in accordance with SABS 820 : 1974

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**TRUSS CONSTRUCTION**

The trusses shall be constructed to ensure the correct profile, overhangs and cambers

All joints are to be close fitting butt joints made by precision pressing of the metal connector plates into each side of the joint

**TRUSS DESIGN**

All trusses shall be designed by a registered Professional Engineer employed by the Contractor in accordance with the SABS Code of Practice for the Design of Timber Structures SABS 0163 and the Code of Practice for General Procedures and Loadings SABS 0160

**TRUSS SPACING**

The truss centres shall be less than or equal to that described in the Bills for each respective truss type

**DRAWINGS**

*Prints shall be provided to the consulting engineer/ architect for approval. These drawings shall be signed by a Professional Engineer*

The following minimum information shall be supplied:

- \* Details of the roof system with the positions of all trusses and beams clearly indicated
- \* Bracing details
- \* All truss details, including valley trusses where applicable, with the following clearly detailed:-
  - All member sizes and grades
  - Connector plate sizes for all truss joints. Code numbers are deemed sufficient
- \* All connection and hold down details between trusses, girders, beams and supports
- \* The type of roof covering, ceiling and any other loads taken into account in the design

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The dimensions in the descriptions of trusses are nominal and verification measurements are to be obtained from site before design or fabrication commences, and must be designed in accordance with the environmental conditions of the area

#### GENERAL

The following schedule of prices includes all timber of the required grade and type shown on the designs, all cutting and waste, cutting to exact length and end angles necessary to manufacture the respective truss types, the supply of all connector plates, fabrication of the trusses, checking the completed truss for quality, as well as loading, transporting to the site and offloading

The trusses must be suitable stored and protected on site as directed by the Secretary or his Representative

#### ERECTION

The trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the Manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research of as detailed by the designer of the SABS Code of Practice: "The Design, Manufacture and Erection of Timber Roof Trusses"

#### TRUSS LOADING

The trusses shall be designed for:

- \* Roof Cover: 0,80mm Metal roof sheeting
- \* Max Purlin centres: 1200mm
- \* Ceilings: Plasterboard ceilings
- \* Overhang: Min 600mm

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**TRUSSES**

- a. All the roof trusses to be at average 1 200mm centres and constructed for approximable 30deg pitch unless otherwise stated
  
- b. All the roof trusses to be designed and constructed with softwood structural timber to include for live loads, wind loads and to take corrugated roof covering, purlins and fibre cement or plasterboard ceilings with brandering. Each roof truss shall have all its members accurately cut and close butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, fixed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions
  
- c. Unless otherwise described all rafter feet are to extend 600mm beyond the length of the tie beam, with ends twice splay cut
  
- d. Upon completion of the contract the Registered Professional Engineer must issue to the Principal Agent a certificate to the effect that the roof has been erected in accordance with his approved design, under his supervision and that the entire roof is structurally stable. The lump sum price of the roof trusses and purlins or battens (bottom purlin or tilting fillet to be wrought) shall include for the design and supervision by a Registered / Professional Engineer and for all necessary runners, overhangs wrought all round and trimmed and splay cut as required, braces, hoisting and fixing, etc.,but shall exclude fixing brackets and hurricane clips, wall plates, fascia, barge boards, roof coverings, purlins, etc. which are all separately measured
  
- e. The tenderer's attention is drawn to the fact that the description of the trusses only represents the overall size (fascia to fascia) and not the required design
  
- f. Erection must be carried out as described in "The Erection and Bracing of Timber Roof Trusses" published by the Truss Plate Association of South Africa Ltd. and the National Timber Research Institute, CSIR
  
- g. Descriptions of roof trusses shall be deemed to include for design, manufacture, supply, hoisting and fixing in position, trimming ends, notching, etc. and for any temporary bracing

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**PREFABRICATED ROOF TRUSSES, ETC.**

**Plate nailed pitched timber roof construction**

**Sawn Softwood**

1	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 474m <sup>2</sup> (measured on flat floor area inclusive of overhangs, etc) - See Block A roof plan drawing number 00-09; A-10-01-2 & A-10-01-3 attached.	Item
2	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 482m <sup>2</sup> (measured on flat floor area inclusive of overhangs, etc) - See Block B roof plan drawing number 00-09; B-10-01-2 & B-10-01-3 attached.	Item
3	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 401m <sup>2</sup> (measured on flat floor area inclusive of overhangs, etc) - See Block C roof plan drawing number 00-09; C-10-01-2 & C-10-01-3 attached.	Item
4	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 238m <sup>2</sup> (measured on flat floor area inclusive of overhangs, etc) - See Block D roof plan drawing number 00-09; D-10-01-2 & D-10-01-3 attached.	Item
5	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 387m <sup>2</sup> (measured on flat floor area inclusive of overhangs, etc) - See Block E roof plan drawing number 00-09; E-10-01-2 & E-10-01-3 attached.	Item
6	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 416m <sup>2</sup> (measured on flat floor area inclusive of overhangs, etc) - See Block F roof plan drawing number 00-09; F-10-01-2 & F-10-01-3 attached.	Item

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7	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 249m2 (measured on flat floor area inclusive of overhangs, etc) - See Block G roof plan drawing number 00-09; G-10-01-2 & G-10-01-3 attached.		Item		
8	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 158m2 (measured on flat floor area inclusive of overhangs, etc) - See Block H roof plan drawing number 00-09; H-10-01-2 & H-10-01-3 attached.		Item		
9	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 40m2 (measured on flat floor area inclusive of overhangs, etc) - See Block K roof plan drawing number 00-09; K-10-01-1 & K-10-01-2 attached.		Item		
10	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 82m2 (measured on flat floor area inclusive of overhangs, etc) - See Grade R Ablution Block roof plan drawing number 00-09; L-10-01-1 & L-10-01-2 attached.		Item		
11	Design, supply and install roof truss system complete in accordance with the Standard Building Regulations to suit roof area approximate size 28m2 (measured on flat floor area inclusive of overhangs, etc) - See Gate House roof plan drawing number 00-09 & 00-04 attached.		Item		
<b><u>Sawn softwood:</u></b>					
12	38 x 114mm Wall plate.	m	992		
13	50 x 76mm Purlins.	m	4 278		
14	50 x 228mm Rafters.	m	54		
<b><u>Sundries:</u></b>					
15	TRI FIX or equal hurricane clip fixed using 10 x 32mm galvanised clout nails (Provisional).	No	5 935		
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**EAVES, VERGES, ETC**

**Pressed fibre-cement:**

16	12 x 125mm Fascia board three times drilled, and brass screwed to and including 38 x 50 x 114mm long S.A. Pine cleats twice brass screwed to rafter foot including galvanised steel H-profile jointing strips, screws, holes etc.	m	838
17	Extra on last for splay cut end.	No	58
18	Extra for 90 degree bend.	No	58
19	80 x 200 x 6mm Barge board drilled and brass screwed to purlin ends including galvanised steel H-profile jointing strips, screws, holes etc.	m	23
20	Extra on last for splay cut end.	No	8

**DOORS ETC**

**Solid Core MERANTI hardwood Flush panel door, edged with 5mm MERANTI edging on all sides:**

21	Door size 44 x 813 x 2032mm high.	No	19
22	Door size 44 x 914 x 2032mm high.	No	1
23	Door size 44 x 820 x 2032mm high with framed opening size 620 x 925mm high fitted with 6.38mm safety glazing to SABS 1263 and SANS 10400 specifications with safety glass edging in bottom right corner.	No	1

**SANS approved meranti:**

24	44mm Solid MERANTI hardwood framed, ledged, and braced batten door panel 813 x 2032mm high with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 100mm diagonal bracing with 2x screws into each T&G (19mm V-Tongue & Grooved vertical boarding).	No	29
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25	44mm Solid MERANTI hardwood framed, ledged, and braced batten door panel 914 x 2032mm high with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 100mm diagonal bracing with 2x screws into each T&G (19mm V-Tongue & Grooved vertical boarding).	No	1		
26	44mm Solid MERANTI hardwood Double door 1614 x 2032mm high with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 2x glass panes per leaf size 617 x 978mm and 617 x 688mm (See Door Type B Drawing number 45-02 attached).	No	4		
27	44mm Solid MERANTI hardwood framed, ledged, and braced batten door panel 1614 x 20132mm high with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 100mm diagonal bracing with 2x screws into each T&G (19mm V-Tongue & Grooved vertical boarding) and 1 x glass pane per leaf size 607 x 813mm - See Door Type D Drawing number 45-04 attached.	No	6		
<b><u>FRAMED FRAMES, ETC</u></b>					
28	100 x 65mm Meranti frames	m	310		
<b><u>TIMBER SKIRTING</u></b>					
29	76mm x 19mm Hardwood skirting, screwed and plugged to wall at 400mm centres, including 19mm x 19mm hardwood quadrant, nailed to skirting at 400mm centres	m	934		
<b><u>JOINERY FITTINGS</u></b>					
30	32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges (Admin Block - Drawing no. 50-12)	m	7		
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31	32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges, fix 235x1150mm x20mm thick chipboard from the top to the wall. Then fix the formica top from the bottom to this chipboard exposed (Admin Block - Drawing no. 50-12)	m	1		
32	32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges, fixed to 20x20x2mm STEEL square tubing frame welded together sitting on adjustable STEEL legs to be srcew and fixed to floor (Admin Block - Drawing no. 50-14)	m	5		
33	32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges, fixed to 20x20x2mm STEEL square tubing frame welded together sitting on adjustable STEEL legs to be srcew and fixed to floor (Four Classroom Block - Drawing no. 50-06)	m	4		
34	32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges, fixed to 20x20x2mm STEEL square tubing frame welded together sitting on adjustable STEEL legs to be srcew and fixed to floor (Two Classroom Block - Drawing no. 50-07)	m	4		
35	32mm FORMICA postform worktops with 3mm FORMICA high impact edging on exposed sides, with 16mm thick MELAMIN faced partical board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging 16x50mm MELAMIN strip for supports, fitted with screws and cold glue ( Nutrition Block - Drawing no. 50-11)	m	3		
36	32mm FORMICA postform worktops with 3mm FORMICA high impact edging on exposed sides, with 16mm thick MELAMIN faced partical board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging 16x50mm MELAMIN strip for supports, fitted with screws and cold glue ( Multi - Purpose Classroom - Drawing no. 60-02)	m	3		
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37	32mm FORMICA postform worktops with 3mm FORMICA high impact edging on exposed sides, with 16mm thick MELAMIN faced partical board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging 16x50mm MELAMIN strip for supports, fitted with screws and cold glue ( Multi - Purpose Classroom - Drawing no. 60-02)	m	12		
38	32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges, fixed to 20x20x2mm STEEL square tubing frame welded together sitting on adjustable STEEL legs to be srcew and fixed to floor (Two Classroom Block - Drawing no. 50-07)	m	5		
39	Pigeon Hole overall size 450mm wide x 720mm high comprising 32mm thick FORMICA (Cappuccino) clad postform top, 16mm thick white MELAMINE clad chipboard shelves with 3mm impact edging to all exposed front edges, 16mm thick white MELAMINE clad chipboard panels, 19mm MERANTI quadrant and 75 x 22mm MERANTI base, as per attached joinery details (Grade R Classroom - Drawing number 50-03)	m	7		
40	32mm FORMICA postform worktops with 3mm FORMICA high impact edging on exsposed sides, with drawer front panel, with 16mm thick MELAMIN faced partical board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging with 16x100mm Melamin kick plate, kick plate edge to be finished with minimum 6mm impact edging all round, fixed on 16x50mm MELAMIN strip for supports, fitted with screws and cold glue with stainless steel drop on lab sink elsewhere measured ( Science Lab - Drawing no. 60-03)	m	28		
41	32mm FORMICA postform worktops with 3mm FORMICA high impact edging on exsposed sides, with 16mm thick MELAMIN faced partical board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging with 16x100mm Melamin kick plate, kick plate edge to be finished with minimum 6mm impact edging all round, fixed on 16x50mm MELAMIN strip for supports, fitted with screws and cold glue with stainless steel drop on 2 lab sink elsewhere measured ( Science Lab - Drawing no. 60-03)	m	3		
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42	32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges, fixed to 20x20x2mm STEEL square tubing frame welded together sitting on adjustable STEEL legs to be srcew and fixed to floor (Security Guardhouse - Drawing no. 50-01)	m	6		
43	L-Shaped Teacher's desk overall size 900mm wide x 782mm high comprising 32mm thick FORMICA worktop with 16 x 40mm MERANTI hardwood coverstrips on exposed ends/edges, 20 x 20 x 2mm STEEL square tubing frame welded together, adjustable steel legs, 16mm thick MELAMINE faced partical board panel fitted with screws to steel frame and finish exposed edges with 3mm impact edging. Coverstrips to be sanded down and finished with 2 coats approved varnish. All as per attached joinery details (Grade R Classroom - Drawing number 50-04)	m	3		
44	L-Shaped Teacher's desk overall size 900mm wide x 782mm high comprising 32mm thick FORMICA worktop with 16 x 40mm MERANTI hardwood coverstrips on exposed ends/edges, 20 x 20 x 2mm STEEL square tubing frame welded together, adjustable steel legs, 16mm thick MELAMINE faced partical board panel fitted with screws to steel frame and finish exposed edges with 3mm impact edging. Coverstrips to be sanded down and finished with 2 coats approved varnish. All as per attached joinery details (Grade R Classroom - Drawing number 50-18)	m	3		
45	Teacher's lab desk overall size 787mm wide x 868mm high comprising 32mm thick FORMICA worktop with 16 x 40mm MERANTI hardwood coverstrips on exposed ends/edges, fully galvanised 20 x 20 x 2mm STEEL square tubing frame welded together, adjustable steel legs, 16mm thick MELAMINE faced partical board panel fitted with screws to steel frame and finish exposed edges with 3mm impact edging. Coverstrips to be sanded down and finished with 2 coats approved varnish. All as per attached joinery details (Grade R Classroom - Drawing number 60-03)	m	2		
46	Stainless steel hat, coat hook with Stainless Steel finish screwed onto 76mm x 19mm meranti molding with 20mm countersunk screws and fixed onto walls with 40mm screws and appropriate wall plugs	m	30		
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47	Book shelving 16mm thick Supawood board, back and bottom panels, with 22mm thick Supawood board side panel, 16x100mm strip footing, adjustable steel hanger at 100mm spacing fixed with chipboard screws to be finished with 2 coats varnish and 19x76mm Meranti hardwood skirting with 19mm quadrant all round, finish to match wall skirting ( Multi - Purpose Classroom - Drawing no. 60-02)	m	10		
48	600 x 900 x 782mm high Cabinet comprising of 32mm formica worktop with 3mm high impact edging coverstrips on exposed ends/edges with 16mm Thick MELAMIN faced partial board panels (back, top, sides, shelves) fitted with screws and cold glue finish exposed edges with 3mm high impact edging, standing on 16x50mm MELAMIN strip for supports, fitted with screws and cold glue, Stainless Steel Satin finish handles and cylinder type cabinet lock to Architect's approval (Admin Block - Drawing no. 50-12)	No	2		
49	600 x 900 x 782mm high Cabinet with 600 x 450 x 782mm high Drawer comprising of 32mm formica worktop with 3mm high impact edging coverstrips on exposed ends/edges with 16mm Thick MELAMIN faced partial board panels (back, top, sides, shelves) fitted with screws and cold glue finish exposed edges with 3mm high impact edging, standing on 16x50mm MELAMIN strip for supports, fitted with screws and cold glue, Stainless Steel Satin finish handles and cylinder type cabinet lock fixed together. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws to Architect's approval (Admin Block - Drawing no. 50-15)	No	1		
50	600 x 900 x 782mm high Cabinet with 600 x 450 x 782mm high Drawer comprising of 32mm formica worktop with 3mm high impact edging coverstrips on exposed ends/edges with 16mm Thick MELAMIN faced partial board panels (back, top, sides, shelves) fitted with screws and cold glue finish exposed edges with 3mm high impact edging, standing on 16x50mm MELAMIN strip for supports, fitted with screws and cold glue, Stainless Steel Satin finish handles and cylinder type cabinet lock fixed together. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws to Architect's approval (Admin Block - Drawing no. 50-15)	No	1		
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51	600 x 900 x 900mm high Cabinet comprising of 32mm formica worktop with 3mm high impact edging coverstrips on exposed ends/edges with 16mm Thick MELAMIN faced partial board panels (back, top, sides, shelves) fitted with screws and cold glue finish exposed edges with 3mm high impact edging, standing on 16x50mm MELAMIN strip for supports, fitted with screws and cold glue, Stainless Steel Satin finish handles and cylinder type cabinet lock to Architect's approval (Grade R Kitchen - Drawing no. 50-02)	No	1		
52	600 x 450 x 782mm high Drawer comprising of 32mm Formica worktop with 3mm high impact edging coverstrips on exposed ends/edges with 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws standing on 16x50mm MELAMIN strip for supports, fitted with screws and cold glue, Stainless Steel Satin finish handles and cylinder type cabinet lock to Architect's approval ( Admin Block - Drawing no. 50-12	No	1		
53	Sink cupboard Unit size 600mm wide x 900mm high with top, sides, bottom, division, shelf, back, 76mm x 16mm Hardwood skirting, including double hinged doors and 16mm Melamin finish drawers front panel, including cut out for drop-on sink (Sink elsewhere measured) complete with all the necessary Ironmongery and fixing as per attached joinery drawings (Grade R Kitchen - Drawing number 50-02)	m	4		
54	Sink cupboard Unit size 600mm wide x 900mm high with top, sides, bottom, division, shelf, back, 76mm x 16mm Hardwood skirting, including double hinged doors and 16mm Melamin finished drawers front panel, including cut out for drop-on sink (Sink elsewhere measured) complete with all the necessary Ironmongery and fixing as per attached joinery drawings (Admin Block - Drawing no. 50-15)	m	1		
55	Sink cupboard Unit size 600mm wide x 900mm high with top, sides, bottom, division, shelf, back, 76mm x 16mm Hardwood skirting, including double hinged doors and drawers, including cut out for drop-on sink (Sink elsewhere measured) complete with all the necessary Ironmongery and fixing as per attached joinery drawings (Security Guardhouse - Drawing no. 50-01)	m	1		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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56	Sink cupboard Unit size 600mm wide x 900mm high with top, sides, bottom, division, shelf, back, 76mm x 16mm Hardwood skirting, including double hinged doors and drawers, including cut out for drop-on sink (Sink elsewhere measured) complete with all the necessary Ironmongery and fixing as per attached joinery drawings (Science Lab - Chemical Store)	m	2		
57	Sink cupboard Unit size 600mm wide x 900mm high with top, sides, bottom, division, shelf, back, 76mm x 16mm Hardwood skirting, including double hinged doors and drawers, including cut out for drop-on sink (Sink elsewhere measured) complete with all the necessary Ironmongery and fixing as per attached joinery drawings (Multi - Purpose - Workroom)	m	3		
58	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Admin Block - Drawing number 50-14)	m	2		
59	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Grade R Classroom - Drawing no. 50-05)	m	5		
60	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Admin Block - Drawing no. 50-17)	m	10		
61	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Grade R Classroom - Drawing no. 50-19)	m	10		
62	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Four Classroom Block - Drawing no. 50-06)	m	4		
<b>Carried to Collection</b>				R	
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63	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Two Classroom Block - Drawing no. 50-07)	m	4		
64	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Nutrition Block - Drawing no. 50-08)	m	2		
65	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Nutrition Block - Drawing no. 50-09)	m	4		
66	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Nutrition Block - Drawing no. 50-10)	m	2		
67	5 tier Shelving comprising 1830mm Wallbands Code WB6 to receive wall barckets, adjustable brackets for steel shelving 305mm wide (Code WBR12) and 305 x 22mm thick SA pine shelving, all as per attached joinery details (Science Lab - Drawing no. 60-01)	m	8		
68	Bulk shelving comprising of 40x40x3mm STEEL square tube welded frame and 40x80x3mm STEEL flat, welded to STEEL frame and bolted to floor, bolts to be spot welded and sitting on 32mm Thick SA PINE Plywood shelving, fixed with 75mm long M6 Bolt & Nut @ 150mm centres to steel frame. All steel to be finished with 1x coat steel Primer and 2x coats low-gloss Enamel paint, colour to match frame or equally Architect approved (Nutrition Block - Drawing no. 50.08)	m	2		
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69	Bulk shelving comprising of 40x40x3mm STEEL square tube welded frame and 40x80x3mm STEEL flat, welded to STEEL frame and bolted to floor, bolts to be spot welded and sitting on 32mm Thick SA PINE Plywood shelving, fixed with 75mm long M6 Bolt & Nut @ 150mm centres to steel frame. All steel to be finished with 1x coat steel Primer and 2x coats low-gloss Enamel paint, colour to match frame or equally Architect approved (Nutrition Block - Drawing no. 50.09)	m	2		
70	Bulk shelving comprising of 40x40x3mm STEEL square tube welded frame and 40x80x3mm STEEL flat, welded to STEEL frame and bolted to floor, bolts to be spot welded and sitting on 32mm Thick SA PINE Plywood shelving, fixed with 75mm long M6 Bolt & Nut @ 150mm centres to steel frame. All steel to be finished with 1x coat steel Primer and 2x coats low-gloss Enamel paint, colour to match frame or equally Architect approved (Nutrition Block - Drawing no. 50.10)	m	1		
71	Bench comprising 8no 50x30mm hardwood batten, bolted to steel frame, sanded down and varnish with 2 coats weather resistant varnish fixed to 40x40mm STEEL hollow square tube welded frame with adjustable feet bolted to wall, finished with 1 coats steel primer and 2 coats enamel, to Architect's approval to Architect's approval (Admin Block - Drawing no. 50-16)	m	8		
72	Bench comprising 8no 38x50mm hardwood slats with 10mm radius rounded edges, fixed to frame with concealed fixing screws, finished with varnish coats fixed to 38x38x2.5mm MILD STEEL square tubing support structure, fixed to wall and floor with M12 RAWL BOLTS finished with powder coats and plastic endand floor plugs, with a 22x252mm hardwood back section, fixed to timber supports with brass screws, plugged , fixed to wall with HILTI anchors and finished varnish to Architect's approval (Admin Block - Drawing no. 50-13)	m	1		
73	Bench comprising 8no 38x50mm hardwood slats with 10mm radius rounded edges, fixed to frame with concealed fixing screws, finished with varnish coats fixed to 38x38x2.5mm MILD STEEL square tubing support structure, fixed to wall and floor with M12 RAWL BOLTS finished with powder coats and plastic endand floor plugs, with a 22x252mm hardwood back section, fixed to timber supports with brass screws, plugged , fixed to wall with HILTI anchors and finished varnish to Architect's approval (Admin Block - Drawing no. 50-13)	m	2		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No	Quantity	Rate	Amount
<p><b><u>BILL No. 7</u></b></p> <p><b><u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>Proprietary products in descriptions:</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.</p> <p><u>Descriptions:</u></p> <p>Items described as nailed shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete.</p> <p>Items described as plugged shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as bolted the bolts have been given.</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 3 Bill No. 7 Ceilings, Partitions and Access Flooring</p>			

**NAILED UP CEILINGS**

**6mm "Everite Nutec" or equal similar Architect approved fibre-cement boards with 40 x 10mm hardwood cover strips**

- |   |  |    |       |
|---|--|----|-------|
| 1 | Ceilings including 38 x 38mm sawn softwood brandering at 400mm centres   | m2 | 2 264 |
| 2 | Extra over ceiling for forming trap door size 635 x 635mm in clear formed with 38 x 50mm sawn S.A. pine framing covered with ceiling boarding and set in 38 x 76mm wrought S.A. pine rebated kerb, including trimmers. | No | 11    |

**Cornice**

- |   |  |   |       |
|---|--|---|-------|
| 3 | Everite Nucornice Nu-Cornice Plain 75 or equal Architect approved, overall size 55 x 55mm high, fixed to wall and ceiling using Nucornice water-based adhesive, leaving 2mm vertical joints between sections. All vertical joints to be sealed with Nucornice adhesive prior to painting, all in accordance with the manufacturer's recommendations. | m | 1 528 |
|---|--|---|-------|

**130mm thick non-combustible light weight ceiling insulation 12kg/m<sup>3</sup> closely fitted with ends butted firmly between tie beams and laid loose on top of brandering between roof timbers, all in accordance with manufacturer's recommendations.**

**• R-value: 2,50m<sup>2</sup> K/W**

**• Thermal conductivity: 0,04 W/m<sup>2</sup>/K**

- |   |   |    |       |
|---|---|----|-------|
| 4 | 130mm Insulation laid between roof trusses and on top of brandering, etc. | m2 | 1 747 |
|---|---|----|-------|

**Carried to Collection**

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Section 3  
Bill No. 7  
Ceilings, Partitions and Access Flooring

**TOILET PARTITIONS**

**Cube Exclusive or equal Architect approved toilet cubicle:**

- 5 Cubicle comprising 16mm colour White melamine faced particle board, with partition 1830mm high, wall panel size 125 x 1830mm high and mid panel size 250 x 1830mm high with partitions supported by stainless steel overhead bracing with 60 x 150mm high grade 304 stainless steel hanging clamp, 48mm diameter x 170mm high grade 304 stainless steel adjustable supporting feet plugged and screwed to floor and fixed into position by means of grade 304 stainless steel wall mounting brackets plugged and screwed to walls (See drawing number 50-31 attached).

m

6

**Partition doors:**

- 6 740 x 1780mm high door including standard ironmongery, comprising grade 316 indicator bolts (Code: CSTIN01/316), grade 304 stainless steel hat and coat hooks with buffer stopper (Code: CSSH&C02/304)

No

3

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No	Quantity	Rate	Amount
<p><b><u>BILL No. 8</u></b></p> <p><b><u>FLOOR COVERINGS, WALL LININGS, ETC</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>Proprietary products in descriptions:</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.</p> <p><u>Cleaning:</u></p> <p>Rates for floor covering shall include for proper cleaning on completion.</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 3 Bill No. 8 Floor Coverings, Wall Linings, Etc.</p>			

### VINYL FLOOR COVERINGS

Polyflor MYSTIQUE PuR or equal Architect approved heavy-duty polyurethane reinforced fully flexible vinyl floor sheeting laid in patterns, size 2m wide x 2,0 mm thick, fixed with approved adhesive, joints welded with a fully flexible coloured Polyflor Welding Rod to provide a smooth, hygienic sealed finish, complete with skirting as indicated elsewhere, on Ardex K 15 self-leveling screed to ensure a level installation, on well prepared cement screed to match required level – all installed strictly to manufactures specifications

1	On floors	m2	1 553
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Polyflor Vogue Ultra or equal Architect approved heavy-duty safety polyurethane reinforced fully flexible vinyl floor sheeting laid in patterns, size 2m wide x 2,0 mm thick, fixed with approved adhesive, joints welded with a fully flexible coloured Polyflor Welding Rod to provide a smooth, hygienic sealed finish, complete with skirting as indicated elsewhere, on Ardex K 15 self-leveling screed to ensure a level installation, on well prepared cement screed to match required level – all installed strictly to manufactures specifications

2	Polyflor Vogue Ultra PuR heavey-duty On floors	m2	57
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POLYFLOR Ejecta or equal Architect approved MC18c 50mm x 100mm set in skirting joints welded with a fully flexible coloured Polyflor Welding Rod to provide a smooth, hygienic sealed finish, – all installed strictly to manufacturer's specifications

3	Polyflor ejecta MC18c 50mm x 100mm set skirting	m	87
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### POLISH, SEALERS, ETC

Scrub with a diluted neutral detergent complying with SABS 825 and thoroughly rinse, Apply three coats of a water based floor dressing complying to SABS 1042 on:

4	Vinyl sheet flooring	m2	1 607
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Carried to Collection

R

Section 3  
Bill No. 8  
Floor Coverings, Wall Linings, Etc.

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No			Quantity	Rate	Amount
	<b><u>BILL No. 9</u></b>				
	<b><u>IRONMONGERY</u></b>				
	<b><u>MODEL PREAMBLES</u></b>				
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates				
	<b><u>Dorma or equal approved Hinges:</u></b>				
1	Dorma 102 x75 x 3mm Two Ball Bearing Butt Hinge (Stainless Steel) - Code DBB-SS-009	Pairs	106.5		
	<b><u>Dorma or equal approved Locks:</u></b>				
2	Dorma Cylinder Deadlock (Stainless Steel) - Code D037D SS	No	5		
3	Dorma Rebate Kit for D036S, D037D (Nickel Plated) - Code D038R NP	No	9		
4	Dorma 66mm five pin Euro-profile Double Cylinder Grand Master Keyed (Satin Nickel) - Code DDC106601 GMK	No	50		
5	Dorma Bathroom Deadlock (Stainless Steel) Code - DMWC-SS-008	No	8		
6	Dorma Cylinder Sash Lock (Stainless Steel) Code - D036S SS	No	48		
7	Dorma Disabled WC indicator (Red & White) and turnknob for physically impaired (Stainless Steel) Code - DWC-006	Sets	2.0		
	<b>Carried to Collection</b>				R
	Section 3 Bill No. 9 Ironmongery				



**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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<b><u>Dorma or equal approved Door Closers:</u></b>					
8	Dorma TS83 EN 3-6 Parallel Arm NON HOLD OPEN Door Closer - Adjustable Strenght, Hydraulic Speed Control. Push Side Fixing (Silver) (Parallel Arm Bracket Included) - Code TS83 PA + Parallel Arm Bracket	Sets	2.0		
9	Dorma TS73V EN 2-4 Regular Arm NON HOLD OPEN Door Closer - Adjustable Strenght, Hydraulic Speed Control. Pull Side Fixing (Silver) Code - TS73V	No	4		
10	Dorma TS73V EN 2-4 Parallel Arm DELAYED ACTION Door Closer. Push Side Fixing (Silver) (Parallel Arm Bracket Included) Code - TS73V PA DC + Parallel Arm Bracket	Sets	2.0		
<b><u>Dorma or equal approved Handles:</u></b>					
11	Dorma 382 x 32mm D Shaped Offset Tubular Pull Handle BTB (Stainless Steel) (BTB Fixing Sets included) - Code DPH215 BTB	Pairs	4.0		
12	Dorma 382 x 32mm Straight Tubular Pull Handle BTB (Stainless Steel) (BTB Fixing Sets included) Code - DPH213 BTB	Pairs	2.0		
13	Dorma Lever handle on plate with Cylinder cutout (Satin Chrome) - Code - CB30 Cyl S.C	Sets	48.0		
14	Dorma 149 x 19mm Straight Tubular Pull Handle BT (Stainless Steel) Code - DPH301C BT	Pairs	2.0		
15	Dorma 149 x 19mm Straight Tubular Pull Handle BTB (Stainless Steel) (BTB Fixing Sets included) Code - DPH301CBTB	Pairs	8.0		
<b><u>Dorma or equal approved Sign indicator</u></b>					
16	Dorma Bathroom WC indicator (Red and White) and turnknob (Stainless Steel) Code - DWC-005	Sets	6.0		
17	Dorma 150 x 150mm MALE sign (Stainless Steel) Code - DSS-130 M	No	2		
18	Dorma 150 x 150mm FEMALE sign (Stainless Steel) Code - DSS-131 F	No	2		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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19	Dorma 150 x 150mm DISABLED PERSONS sign (Stainless Steel) Code - DSS-133 P	No	2		
	<b><u>Dorma or equal approved Door Stop</u></b>				
20	Dorma Floor Mounted Door Stop (Stainless Steel) Code DDS-SS-017	No	38		
21	Dorma Wall Buffer (Stainless Steel) Code - DDH-SS- 020	No	6		
22	Floor Mounted Door Holder (Satin Chrome on Brass) Code - 401	No	20		
	<b><u>Dorma or equal approved Kick Plate</u></b>				
23	DORMA Door Width Kick Plate WX200X1.2mm grade 430 Code - DKP-SS-200	No	6		
	<b><u>Dorma or equal approved Push Plate</u></b>				
24	DORMA 150 X 300 X 1,2mm grade 430 blank push plate - Brushed Stainless Steel Code - DPP-SS- BL150X300	No	2		
	<b><u>Dorma or equal approved Flush Bolt</u></b>				
25	Dorma 153mm Flush Bolt With heel (Satin Chrome) Code - DFB-SC-180	No	18		
	<b><u>Dorma or equal approved Master Keyed</u></b>				
26	Dorma 66mm five pin Euro-profile Double Cylinder Grand Master Keyed (Satin Nickel) Code DDC106601GMK	No	50		
27	Dorma Satin Nickel 50mm Padlock - Grand Master Keyed Code - DPL1000 GMK	No	2		
28	Dorma 43mm five pin Euro-profile Single Cylinder Grand Master Keyed (Satin Nickel) Code - DSC104301GMK	No	4		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b>Dorma or equal approved Cylinder Escutcheon</b>			
29	Dorma Round Cylinder escutcheon (Stainless Steel) Code - DCE-002	Pairs	3.5	
	<b>Dorma or equal approved Dust Proof Strike</b>			
30	Dorma Dust Proof Strike (Stainless Steel) Code - DPS-SS032	No	2	
	<b>Dorma or equal approved Hat and Coat Hook</b>			
31	Dorma Hat and Coat Hook (Stainless Steel) Code - DHC-SS-030A	No	6	
32	HALCAST 166 150mm satin chrome on brass cabin hook. Code 166	No	7	
	<b><u>PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC</u></b>			
	<b><u>Wall mounted pinning board by CONTINENTAL ENAMELLING (PTY) Ltd, or equal Architect approved, complete with concealed brackets and fixings, and mounted in accordance with the manufacturer's instructions:</u></b>			
33	Conti-Standard Grey Premier Pinning board of size: 1000mm high x 1500mm wide [turn on side for Gr. R Classrooms] having natural anodized aluminium edgings and penrail	No	15	
34	Conti-Standard Grey Premier Pinning board of overall size 6000mm wide x 1000mm high consisting of: two boards 1000mm high x 3000mm wide having natural anodized aluminium edgings	No	15	
	<b>Carried to Collection</b>			R
	Section 3 Bill No. 9 Ironmongery			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Standard magnetic vitreous enameled chalkboard by CONTINENTAL ENAMELLING (PTY) Ltd, or equal Architect approved, surfaces complying with specification CKS 36 of 1994, complete with wall mounting brackets and fixings. Where described with hinged swinging boards (swing leaves), the double sided writing surfaces shall be mounted in a powder coated, tubular steel frame having intergral hinge bracket at top and pivot pin at the bottom. Chalkboards must be fixed to brickwork in strict accordance with the manufacturer's instructions.</u></b>				
35	Standard Conti-Classic green chalkboard set of 4 pieces, with permanent intergral chalkrail and having an overall size of 1140mm high x 4800mm wide. The set shall be comprised of: two wall mounted boards 2400mm wide, and two double sided swing leaves each measuring 1200mm wide.	No	17		
	<b><u>Wall mounted white writing board by CONTINENTAL ENAMELLING (PTY) Ltd, or equal Architect approved, complete with concealed brackets and fixings, and mounted in accordance with the manufacturer's instructions</u></b>				
36	Conti-Office, Perm Fit non magnetic white writing board of size: 1000mm high x 1500mm wide having natural anodized aluminium edgings and penrail	No	15		
	<b><u>BATHROOM FITTINGS</u></b>				
	<b><u>Franke or equal Architect approved:</u></b>				
37	Wall mounted toilet paper holder 140 x 128 x 295mm [CHRX672 359808] manufactured from 0.8mm thick 18/10 Stainless Steel with a single piece pressed lid, welded container and cylinder lock with a Franke standard key – satin finish	No	11		
38	Wall mounted paper towel dispenser 115 x 290 x4 38mm [BS600P 359790] manufactured from 18/10 Stainless Steel with a single piece deep drawn lid, welded container, Stainless Steel continuous piano hinge and cylinder lock with Franke standard key - satin finish	No	8		
	<b>Carried to Collection</b>			R	
	Section 3				
	Bill No. 9				
	Ironmongery				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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39	Perforated Wall mounted Waste Container 410 x 205 x 380mm [BS610 359825] manufactured from 18/10 Stainless Steel, satin finish; with a material thickness of 1,25mm with a 180degree radius front and perforated fascia pattern	No	8		
40	Wall mounted liquid soap dispenser 200 x 130 x 85mm [BS618 359800] manufactured from 18/10 Stainless Steel with a deep drawn lid, welded body and cylinder lock with standard Franke key – satin finish.	No	8		
	<b><u>Franke or equal approved Paraplegic grab rails:</u></b>				
41	Paraplegic Grab Rail 32mm diameter 300 x 300 x 300mm [CNTXPAR 359885] with FFG-surface [Franke Fine Grip] manufactured from 18/10 Stainless Steel, fitted with epoxy anchors	No	2		
42	Cistern Back Grab Rail 31,8mm diameter x 750 x 206mm [CNTXBR 359910] with FFG-surface [Franke Fine Grip] manufactured from 18/10 Stainless Steel, fitted with epoxy anchors	No	2		
	<b><u>VERTICAL BLINDS</u></b>				
	<b><u>ALUVERT or equal Architect approved Aluminium Venetian blind system, complete with standard 25mm wide blinds (In Standard colours). Strictly fitted in accordance with the Manufacturer's specifications. Note: Blinds for opening greater than 3000mm high window panels is to be broken into 2 blinds</u></b>				
43	Window size 850 x 1290mm high.	No	37		
44	Window size 850 x 860mm high.	No	26		
45	Window size 600 x 860mm high.	No	1		
46	Window size 1700 x 860mm high.	No	2		
47	Window size 1300 x 1225m high.	No	1		
	<b>Carried to Collection</b>				R
	Section 3				
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	Ironmongery				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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**REFUSE CANS**

48	240 Litre Plastic (Wheeled) paper refuse can, colour green or similar Architect approved.	No	4
49	240 Litre Plastic (Wheeled) glass refuse can, colour red or similar Architect approved.	No	4
50	240 Litre Plastic (Wheeled) plastic refuse can, colour brown or similar Architect approved.	No	4

**Carried to Collection**

R

Section 3  
Bill No. 9  
Ironmongery

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No	Quantity	Rate	Amount
<b><u>BILL No. 10</u></b>			
<b><u>METALWORK</u></b>			
<b><u>MODEL PREAMBLES</u></b>			
The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
Descriptions			
Descriptions of bolts shall be deemed to include nuts and washers			
Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete			
Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
NOTE: All steel will be Hot dipped galvanised unless otherwise stated.			
<b>Carried to Collection</b>			R
Section 3 Bill No. 10 Metalwork			



### **ALUMINIUM WINDOWS**

All aluminium windows, doors, etc are to be manufactured by manufacturers who are members of AAAMSA. All aluminium systems to be approved by AAAMSA.

All aluminium work is to be protected by covering with plastic sheeting fixed with low tack adhesive prior to leaving the factory. Plastic sheeting is to remain in place during construction.

All glazing shall be in accordance with SABS 0400 - 1990, SABS 1263 - 1. All safety flazing materials (individual panes) shall be permanently marked. Such marking shall be visible after glazing process. If it is not marked, it is not safety glass.

#### **White powder coated aluminium windows glazed with 6.38mm safety laminated glass, plugged to brickwork:**

1	Window Size 850 x 1290mm high complete, including ironmongery etc, all as per Window Type A on Drawing No 40-01 attached to these Bills of Quantities.	No	101
2	Window Size 850 x 860mm high complete, including ironmongery etc, all as per Window Type B on Drawing No 40-02 attached to these Bills of Quantities.	No	78
3	Window Size 600 x 860mm high complete, including ironmongery etc, all as per Window Type C on Drawing No 40-03 attached to these Bills of Quantities.	No	13
4	Window Size 1200 x 850mm high complete, including ironmongery etc, all as per Window Type D on Drawing No 40-04 attached to these Bills of Quantities.	No	1
5	Window Size 1700 x 860mm complete, including ironmongery etc, all as per Window Type E on Drawing No 40-05 attached to these Bills of Quantities.	No	2
6	Window Size 600 x 1200mm high complete, including ironmongery etc, all as per Window Type F on Drawing No 40-06 attached to these Bills of Quantities.	No	2

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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7	Window Size 1500 x 1200mm high complete, including ironmongery etc, all as per Window Type G on Drawing No 40-07 attached to these Bills of Quantities.	No	2		
<b><u>ALUMINIUM DOORS</u></b>					
<b><u>Solid Aluminium Slate door</u></b>					
8	Matt Black finish powder coated Push-up operational door panel to suit opening size 2000 x 1682mm high manufactured from 60mm x 1.6mm light extruded, solid Aluminium slats, to the Architect's approval (See Door Type F Drawing number 45-06 attached)	No	1		
9	Matt Black finish powder coated Push-up operational door panel to suit opening size 1000 x 1930mm high manufactured from 60mm x 1.6mm light extruded, solid Aluminium slats, to the Architect's approval (See Door Type H Drawing number 45-08 attached)	No	1		
<b><u>ALUMINIUM FOLDING DOOR</u></b>					
<b><u>SA Sliding Door Sales or equal Architect approved Aluminium folding door:</u></b>					
10	Top hung folding partition to suit opening 6000mm wide x 2400mm high with 5+5 end folding leaves to each side, complete with 1 x track MAGALIESBERG white 6000mm, 1 x guide channel alum 6000mm, 4 x hanger end fold MAGALIESBERG black, 4 x guide end fold brass, 30 x hinge alum white p/coat - sinkless, 1 x MAGALIESBERG removable track joint white, 8 x flush pull alum - white and 6 x flush bolt flat shoot - white 150mm, all as per drawing number 45-11 attached.			Item	
<b>Carried to Collection</b>					R
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**HOT DIP GALVANIZED STEEL WINDOW FRAMES**

**Mild steel window frame formed of 50 x 50 x 3mm square frame and 20 x 20 x 3mm infill bars spaced at approximately 100mm centres, hang with one pair of galvanised mild steel fixed to brickwork:**

11	Window size 2054 x 811mm high.	No	2	
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**STEEL STRONGROOM DOORS, VENTILATORS, ETC.**

**Mutual SABS Cat 2 Strongroom Door or equal Architect approved**

12	Strongroom door size 914 x 2032mm (Ref: MSRDS3)	No	3	
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**HOT DIP GALVANIZED STEEL GATES**

Note: The contractor is to check on site measurements before placing of order.

**Security Gate formed of 40 x 40 x 3mm square tube frame and 16mm round infill bars spaced at approximately 94mm centres, including 5mm flat welded to 40 x 40 x 3mm square tube frame, hang with purpose made hinge welded to 150x150x10mm anchor plate bolted to wall with M10 bolts including locks, handles, ironmongery complete and fixed to brickwork:**

13	Security Gate to suit opening size 915 x 2082mm high as per Drawing No 50-10 attached to these Bills of Quantities.	No	25	
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14	Security Gate to suit opening size 1015 x 2082mm high as per Drawing No 50-10 attached to these Bills of Quantities.	No	1	
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15	Security Gate to suit opening size 3250 x 2012mm high as per Drawing No 50-13 attached to these Bills of Quantities.	No	1	
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16	Security Gate to suit opening size 1715 x 2032mm high as per Drawing No 00-04 attached to these Bills of Quantities.	No	7	
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17	Security Gate to suit opening size 1715 x 2032mm high as per Drawing No 45-12 attached to these Bills of Quantities.	No	1		
18	Security Gate to suit opening size 2000 x 2032mm high as per Drawing No 00-04 attached to these Bills of Quantities.	No	5		
19	Security Gate to suit opening size 2335 x 2032mm high as per Drawing No 00-04 attached to these Bills of Quantities.	No	1		
<b><u>GALVANIZED STEEL BURGLAR GATES</u></b>					
<b><u>Burglar bars gate formed of 25 x 25 x 3mm MS Channel fillet welded onto 25 x 25 x 3mm MS frame.</u></b>					
20	Burglar Gate size 845 x 1285mm high as per Window Type A Drawing no. 40-01	No	101		
21	Burglar Gate size 845 x 855mm high as per Window Type B Drawing No. 40-02	No	78		
22	Burglar Gate size 595 x 855mm high as per Window Type C Drawing No. 40-03	No	13		
23	Burglar Gate size 1595 x 855mm high as per Window Type E Drawing No. 40-05	No	2		
24	Burglar Gate size 595 x 1195mm high as per Window Type F Drawing No. 40-06	No	2		
25	Burglar Gate size 1495 x 1195mm high as per Window Type G Drawing No. 40-07	No	1		
<b><u>4.7 x 19mm wide galvanised mild steel burglar bar welded to wall and fixed to window horizontally</u></b>					
26	Bars to suit window 850 x 860mm high on Window Type A Drawing no. 40-01	m	5		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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**WIRE MESH**

**Expanded metal mesh:**

27	Flatex 352/VEM 6318F 15x40x3mm or equal approved mild steel expanded metal mesh secured to roof timbers in ceiling (Computer lab)	m2	85
28	50 x 50 x 3mm Galvanised mild steel square hollow vertical frame section fixed to brick work size 2 054 x 761mm high, with 50 x 50 x 3mm thick galvanised mild steel square hollow vertical section and galvanised mesh wire of 50 x 50 x 3mm thick fixed to the frame.	No	1

**FLAG POLES (Refer to drawing number 50-32 attached)**

29	7500mm high galvanised post in concrete base 600 x 600 x 700mm deep (bases elsewhere measured) with 450 x 450 x 10mm galvanised steel plate welded to concrete base and comprising 1 000mm high 50 x 100 x 5mm galvanised channels, 2 200mm high 76 x 3mm galvanised steel round tube and 4 300mm high 50 x 3mm galvanised steel round tube. All welding to be carried out by a qualified person.	No	2
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**MANHOLE COVERS**

30	700 x 900mm Type 2A Heavy duty cast iron manhole cover and frame to SABS 558.	No	1
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**Carried to Collection**

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Section 3  
Bill No. 10  
Metalwork

[illegible]

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

Item No		Quantity	Rate	Amount
	<b><u>BILL No. 11</u></b>			
	<b><u>PLASTERING</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Proprietary products in descriptions:</u>			
	Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.			
	<b><u>SCREEDS</u></b>			
	<b><u>1:3 Cement and sand screeds steel trowelled on concrete:</u></b>			
1	30mm thick on floors.	m2	2 172	
	<b><u>GRANOLITHIC</u></b>			
	<b><u>Untinted granolithic on concrete:</u></b>			
2	30mm Thick on floors.	m2	26	
	<b><u>INTERNAL PLASTER</u></b>			
	<b><u>Cement plaster on brickwork:</u></b>			
3	On walls.	m2	1 803	
4	In narrow widths.	m2	75	
	<b>Carried to Collection</b>			
			R	
	Section 3			
	Bill No. 11			
	Plastering			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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**Cement plaster on concrete:**

5	On soffits of suspended slabs.	m2	38		
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**EXTERNAL PLASTER**

**Cement plaster on brickwork:**

6	On walls.	m2	304		
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7	In narrow widths.	m2	3		
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**Carried to Collection**

**R**

Section 3  
Bill No. 11  
Plastering



**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

Section 3

Bill No. 11

Plastering

**COLLECTION**

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Bill No. 11  
Plastering

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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**PORCELAIN FLOOR TILES**

**300 x 300mm Selected Porcelain tiles (allow Prime Cost amount R200.00 per square metre for material ONLY), with 6mm straight joints fixed with tile adhesive and tile grout as per Manufacturer's recommendations:**

4	Porcelain floor tiles	m2	158
5	Porcelain floor tile cut to form 150mm high skirting to match existing	m	136

**Carried to Collection**

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Section 3  
Bill No. 12  
Tiling

CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Section 3

Bill No. 12

Tiling

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**Amount**

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Bill No. 12  
Tiling

Item No	Quantity	Rate	Amount
<p><b><u>BILL No. 13</u></b></p> <p><b><u>PLUMBING AND DRAINAGE</u></b></p> <p><b><u>(PROVISIONAL)</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>Proprietary products in descriptions:</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.</p> <p><u>Copper pipes:</u></p> <p>Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be 'Cobra Watertech' type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground.</p> <p><u>Chasing:</u></p> <p>Chasing pipes into new walls shall be regarded as "building in" and is not measured separately. The cost of chasing, wrapping in suitable bown paper and making good shall be included in the rates for pipes.</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 3</p> <p>Bill No. 13</p> <p>Plumbing and Drainage (Provisional)</p>			

Holes for pipes through new walls:

No allowance for holes and drilling for pipes through new walls has been made in these bills of quantities, the price for all holes and making good shall be deemed to be included in the description of pipes.

Reducing fittings:

Where fittings have reducing ends or branches they are described as 'reducing'. In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained.

Description of pipes laid in trenches:

Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.

Excavations:

No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.

'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB: Earthworks (Pipe trenches) Clause 5.7.2 will only be applicable if authorised by the Engineer in writing.

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Plumbing and Drainage (Provisional)

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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Flush pans:

Flush pans shall have straight or side outlets and 'P' or 'S' traps as necessary.

Stainless steel basins, sinks, wash troughs, urinals, etc:

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.

Fixing:

Descriptions of wall mounted, floor standing, drop-in, etc type sanitary fittings shall be deemed to include fixing in position and all fixing accessories.

Descriptions of proprietary items shall include fixing in position and all fixing accessories as specified by the manufacturer.

Waste unions:

Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

Sleeve pipes:

Electrical sleeve pipes to be Class 34 and are to include for draw wires.

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Bill No. 13  
Plumbing and Drainage (Provisional)

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

**RAINWATER DISPOSAL:**

**"Watertite" aluminium**

1	125 x 125 x 0.8mm aluminium gutters	m	790
2	Extra eaves gutter for stopped end.	No	4
3	Extra over eaves gutter for outlet for 100mm diameter PVC downpipe	No	46
4	100mm Diameter PVC downpipe fixed to wall with straps at 1500mm centres using nail plugs, with pvc downpipes riveted and silicone sealed to gutter outlets	m	147
5	Extra over rainwater downpipe for bend	No	46

**SANITARY FITTINGS**

**Vaal or equal Architect approved:**

6	Hibiscus White Vitreous china 510 x 405mm rounded basin [code: 7050] with one tap hole on left hand side, including integrated overflow, bolted to wall with two 8mm bolts [code 8448Z0], to manufacturer's specification	No	10
7	Lavatera White Vitreous china wall mounted bowl urinal with top inlet [code: 704001] 610x385mm, supplied with 38mm chromium plated domical grating [code: 8787], chromium plated spreader [code: 8543], and two hanger brackets [code: 8127]	No	1
8	Orchid back inlet white vitreous china wall hung pan [code 439016] with floor bracket [code 8082Z0] fitted as per manufacturer's specifications and combined with: GEBERIT Kombifix UP172 for wall hung WC, [G110.150.00.1], front actuated with Delta21 dual flush actuator [G115.125.46.1] in matt finish, including flushpipe and Pan connector, water supply connection with angle stop valve, Netting for direct plastering, protection cover for service opening and protection cover for flushpipe, fixed with included fastening materials inside a single solid wall [80mm]	No	8

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Plumbing and Drainage (Provisional)



**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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**'Franke (t/a Citimetal)' grade 304 (18/10) or equal  
Architect approved stainless steel catering ware:**

9	Tredline Drop-on Sinke model 711 – 900x535 SEB [code: 310450] manufactured from Austenitic Stainless Steel with a satin finish, and supplied with a 38mm PVC waste fitting and plug [code: 302021]. Sink to be mounted onto kitchen counter as per joinery details (elsewhere measured) or to be mounted onto wall with a pair of Falcon Brackets for drop-on sinks [code: 300322]	No	3
10	S1 Stainless Steel Catering Sink center bowl size 1500 x 650mm [code: 353154] manufactured from Grade 304 (18/10) Stainless Steel 1,2mm thick with a 150mm high integral splash back to the rear and 50x10mm turndown with a beaded edge to remaining sides. Sink with pressed 500 x 500 x 230mm deep bowl with a 40mm waste outlet. The underside sprayed with vermin proof bitumastic sound deadening and supported with a 30x30x3mm framework and galvanised mild steel backing sheet. Unit fixed 900mm high from the top of the front apron to the finish floor level with anchor bolts.	No	1
11	P1 Stainless Steel Pot Sink single center bowl size 900 x 650mm [code: 350001] manufactured from Grade 304 (18/10) Stainless Steel 1,2mm thick with a 150mm high integral splash back at rear and 50x10mm turndown with a beaded edge to remaining sides. Sink with a fabricated 760 x 460 x 380mm deep bowl with a 40mm waste outlet. The underside sprayed with vermin proof bitumastic sound deadening and supported with a 30x30x3mm framework and galvanised mild steel backing sheet. Unit fixed 900mm high from the top of the front apron to the finish floor level with anchor bolts.	No	1

**WASTE UNIONS ETC**

**Cobra or equal approved Waste unions etc:**

12	32mm Code 301 chrome plated basin waste union.	No	10
13	40mm Code 316 chrome plated unslotted bath or sink waste union.	No	5

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**TRAPS ETC**

**Marley uPVC or equal and approved:**

14	110mm P trap with side outlet.	No	4
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**Cobra or equal approved traps etc:**

15	32mm Cobra Watertech chrome plated deep seal bottle trap with outlet for 50mm PVC (Code 345/50).	No	6
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**TAPS, VALVES, ETC**

**Brushed finish brass steel:**

16	15mm Bibcock with hose union.	No	4
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17	22mm Stopcock.	No	3
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**Cobra or equal approved taps:**

18	15mm chrome plated pillartap No.214.	No	22
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19	15mm 516/21CP elbow action mixer with connections, backplate, etc.	No	2
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20	Cobra 15mm Chrome plated carina wall -type sink mixer with overarm swivel outlet (266/041/10CA) with adjustable concealed connections.	No	18
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**SANITARY PLUMBING**

**uPVC piping (SABS 967-1987):**

21	50mm Waste pipe.	m	25
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22	110mm Ditto.	m	16
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23	110mm Pipe and laying in ground or filling not exceeding 2m deep including excavation, filling in and ramming.	m	20
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24	150mm Vent Pipe fixed to walls.	m	22
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**Extra over uPVC piping for:**

25	50mm Bend.	No	15
26	110mm Ditto.	No	8
27	110mm Pan connector.	No	5
28	110mm Access bend.	No	5
29	Plastic or copper wire gauze fly screen glued to top of 150mm pipe as directed on site.	No	4
30	Whirleybird with insect-proof netting inside, fixed to black PVC vent pipe	No	7

**Testing:**

31	Testing waste water pipe system.		Item
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**WATER SUPPLIES**

**Copper pipes:**

Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be 'Cobra Watertech' type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground.

**Fixing of pipes**

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include for fixing to walls etc. casting in, building in or suspending not exceeding 1m below suspension level

**Copper pipes chased in walls:**

Where pipes have been chased in walls, the price for making good of plaster and paint etc shall be deemed to be included in the discription of pipe chased in walls.

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**Reducing fittings:**

Where fittings have reducing ends or branches they are described as 'reducing'. In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained.

**Class 2 copper pipes:**

32	15mm Pipe chased into brick walls.	m	33
33	22mm Ditto.	m	10

**Extra over class 2 copper pipes for capillary fittings:**

34	15mm Fittings.	No	26
35	22mm Fittings.	No	17

**Extra over class 2 copper pipes for compression fittings:**

36	15mm Fittings.	No	17
37	22mm Fittings.	No	15

**FIRE APPLIANCES ETC.**

38	4.5kg DCP [Dry Chemical Powder] 180 x 425mm extinguisher to comply with SANS 1910, installed at location as shown on plans, complete wall mounted hangers on 250 x 500 x 16mm Meranti hardwood board screwed to wall at 1200mm from floor to underside of board. Including signage 190x190mm SABS type FB2 plugged and skrewed above / next to door or above as indicated on site	No	14
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No		Quantity	Rate	Amount
	<b><u>BILL No. 14</u></b>			
	<b><u>GLAZING</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Proprietary products in descriptions:</u>			
	Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.			
	<b><u>GLAZING TO STEEL WITH PUTTY</u></b>			
	All glazing shall be in accordance with SABS 0400 - 1990, SABS 1263 - 1. All safety flazing materials (individual panes) shall be permanently marked. Such marking shall be visible after glazing process. If it is not marked, it is not safety glass.			
	<b><u>MIRRORS, ETC</u></b>			
	<b><u>Franke or equal approved Mirrors:</u></b>			
1	Stainless Steel Mirror 1mm thick x 500 x 600mm [CHRH601 359902] manufactured from 18/10 Stainless Steel and polished finish, fitted to wall with 4 x chromed screws and screw caps	No	8	
	<b>Carried Forward to Summary of Section No. 3</b>			
	Section 3 Bill No. 14 Glazing			R

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No		Quantity	Rate	Amount
	<b><u>BILL No. 15</u></b>			
	<b><u>PAINTWORK</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Proprietary products in descriptions:</u>			
	Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent.			
	All work to be executed in strict accordance with the specifications of the paint manufacturer.			
	Where surfaces of plaster etc are sandy / friable, the first coat must be replaced with plaster primer thinned 10% with turpentine.			
	<b><u>PAINTWORK TO PREVIOUSLY PAINTED WORK</u></b>			
	<u>Previously painted plastered surfaces</u>			
	Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
	<u>Previously painted metal surfaces</u>			
	Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
	<b>Carried to Collection</b>		R	
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	Paintwork			

Previously painted wood surfaces

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

**ON FLOATED PLASTER**

**Prepare and brush surface to remove all loose contaminants and apply one coat PP700 gypsum and plaster primer and two coats "Plascon Polvin" or equal approved emulsion paint for interior use**

1	On internal walls	m2	467	
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**Prepare and brush surface to remove all loose contaminants and apply one coat alkali resistant primer, and two coats "Plascon Wall 'n All" or equal approved emulsion paint for external use**

2	On external walls	m2	304	
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**ON METAL**

**Clean entire surface with Sugar soap using bristle brooms or brushes or scotch pads to remove all surface contaminants, rinse with tap water and allow to dry, remove loose and flaky paint and sand surface to a firm edge, feather edges and dust off, emery paper any rust areas to bright metal and remove dust, spot prime bare areas with red oxide primer, allow one hour to dry and prepare and apply two coats pure acrylic roof paint on:**

3	Corrugated iron roof sheeting.	m2	154	
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**PAINTWORK ETC TO NEW WORK**

**ON FLOATED PLASTER**

Prepare surface and remove all loose material, and rinse. apply Polycell Mendall 90 flexible crack filler to holes and cracks, one coat undercoat, one coat tinted Micatex and two coats PLASCON WALL & ALL or equal Architect approved, to cover surface sufficiently. All to manufacturer's specifications. Colour and type to Architect's approval:

4	On internal walls	m2	1 856
5	On soffits of suspended slabs	m2	38

**ON FIBRE-CEMENT BOARD SURFACES**

Prepare surface and remove all loose material, apply one coat PLASCON Wall & All Pure Acrylic paint, thinned 20%, two coats PLASCON Wall & All Pure Acrylic paint or equal Architect approved. Colour to Architects Approval.

6	Ceilings and cornices.	m2	2 264
7	Fibre-cement cills 175mm wide	m	169

Prepare and apply two coats pure acrylic roof paint on:

8	Fascias and barge boards.	m2	108
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**ON METAL**

Prepare surfaces and remove all loose material, dust, grease, salts and contamination with a degreaser, rinse and apply one coat Calcium Plumbate Primer, one coat Universal Undercoat and two coats High Gloss Enamel paint on galvanised steel:

9	Exterior gates, grilles, burglar screens, balustrades, etc. (both sides measured over the full flat area).	m2	614
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**ON WOOD**

**Stop, sand down and prepare wood surfaces and apply one universal undercoat and two coats approved enamel paint (Colour to Architect's approval):**

10	On doors	m2	105
11	General surfaces of timbers at eaves.	m2	564
12	Door frames not exceeding 300mm girth	m	22

**Two coats superior quality clear gloss varnish on smooth sanded down surfaces:**

13	On doors.	m2	162
14	Skirtings, door frames, etc not exceeding 300mm girth	m	974

**ON BRICK SURFACES**

**Clean down with spirits of salts solution and apply two coats silicone-based brick dressing on:**

15	Facings (Internally).	m2	356
16	Facings (Externally).	m2	1 221

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CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No	Quantity	Rate	Amount
<b><u>SECTION 4</u></b>			
<b><u>BILL No. 1</u></b>			
<b><u>PLATFORMS</u></b>			
<b><u>MODEL PREAMBLES</u></b>			
<p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p>			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>Proprietary products in descriptions:</u>			
<p>Wherever a trade name for any product has been described in the bills of quantities, the tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the principal agent being obtained prior to the closing date for the submission of tenders.</p>			
<u>Nature of material to be excavated:</u>			
<p>The material to be excavated is assumed to be predominantly of a composition that will allow excavation in earth as specified, but including a percentage of excavation in soft rock and hard rock.</p>			
<u>Carting away of excavated material:</u>			
<p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations, or alternatively, from stock piles situated on the building site.</p>			
<u>Dewatering of excavations:</u>			
<p>The Contractor shall allow for removing seepage and other water from subterranean sources from the excavations by pumping, baling or otherwise.</p>			
<b>Carried to Collection</b>			R
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Accurate records of all such dewatering shall be kept to determine the total volume of water so removed and a clear distinction shall be made between water from subterranean sources and other water.

Density testing on filling:

Rates for filling, etc. shall include for all density and soil type testing to prove that the specified compaction is achieved.

When additional testing is done on instruction of the Principal Agent and these tests are successful, they will be paid for additionally.

**SITE CLEARANCE ETC**

- |   |   |    |       |
|---|---|----|-------|
| 1 | Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scoffling up as required and cart away all vegetation and debris. | m2 | 9 620 |
| 2 | Stripping average 200mm thick layer of topsoil and stockpiling on site.   | m2 | 9 620 |

**BULK EXCAVATION**

Open face excavation in earth over sloping site:

- |   |   |    |       |
|---|---|----|-------|
| 3 | Excavate to cut in open face, not exceeding 2m deep to reduce levels and grade to fill and compact to 93% mod AASHTO density at optimum moisture content. | m3 | 4 329 |
|---|---|----|-------|

**Extra over bulk excavation in earth for excavation in:**

- |   |            |    |     |
|---|------------|----|-----|
| 4 | Soft rock. | m3 | 217 |
| 5 | Hard rock. | m3 | 109 |

**Keeping excavations free of water:**

- |   |                                    |  |      |
|---|------------------------------------|--|------|
| 6 | Keeping excavations free of water. |  | Item |
|---|------------------------------------|--|------|

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Platforms

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**CARTING AWAY**

**Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):**

7	Off site to a dumping site to be found by the Contractor.	m3	5 003		
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**EARTH FILLING, ETC.**

**Earth filling from excavated material**

8	Dig, load and remove filling selected from spoil heaps on site and deposit as filling in platforms including spreading and compacting to cambers and falls in layers not exceeding 150 mm thick to a minimum of 95% Modified AASHTO dry density.	m3	1 250		
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**Filling supplied by the contractor from commercial sources**

9	Over site of G7 gravel-soil material compacted to 95% Mod AASHTO density.	m3	1 732		
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10	Over site of G5 base course material compacted to 98% Mod AASHTO density.	m3	1 732		
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**Compaction of surfaces.**

11	Compaction of ground surface including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material from excavated material where necessary and compacting to 87% Mod AASHTO density.	m2	5 772		
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**Prescribed density tests on filling**

12	Modified AASHTO Density test.	No	35		
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Item No		Quantity	Rate	Amount
	<b><u>BILL No. 2</u></b>			
	<b><u>ROADWORKS AND PARKING</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Precast concrete block road surfacing</u>			
	Paving shall be laid in accordance with SABS 1200 MJ, SANS 1058 and the Concrete Masonry Association's specifications			
	<b><u>EARTH FILLING, PAVING, ETC.</u></b>			
	<b><u>Filling supplied by the contractor under parking areas, roadways, etc</u></b>			
1	G5 Base course material compacted to 98% Mod AASHTO density	m3	353	
2	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m3	177	
	<b><u>Compaction of surfaces.</u></b>			
3	Compaction of ground surface under roads, parkings, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material from excavated material where necessary and compacting to 93% Mod AASHTO density.	m2	1 178	
	<b><u>Prescribed density tests on filling:</u></b>			
4	In-situ dry density test.	No	15	
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	Section 4			
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	Roadworks and Parking			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>				
5	Treat filling under paving with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	1 178		
	<b><u>Paving of 80mm Class 25 interlocking concrete blocks on and including 20mm thick sand bed with dry filler sand swept and vibrated into joints all laid on subgrade (elsewhere measured) conforming to SABS 1058:2006:</u></b>				
6	Paving to roads and parking areas, etc laid to falls.	m2	1 178		
7	Extra over ordinary paving for 200mm wide block-on-flat header course edging circular on plan on 100mm thick mortar bed including unreinforced concrete haunching along outside edge.	m	195		
	<b><u>Precast concrete kerbing (complying with SANS 927) in 1m lengths, wet presses, placed in position, bedded and jointed in (3:1) cement mortar and flush pointed on exposed faces, including 150 x 150 x 300mm 15MPa/19mm unreinforced concrete haunching at back of each joint, excavation, backfilling, ramming, etc.(Refer to drawing number C-5-01 attached):</u></b>				
8	Kerb Fig 4 (150 x 250mm).	m	65		
9	Kerb Fig 4 (150 x 250mm) with fig 14 Combination Channel (300 x 125mm).	m	195		
10	Ditto but circular on plan.	m	15		
	<b><u>Road marking:</u></b>				
11	Road marking paint 100mm wide on paved road surface.	m	120		
12	Characters, symbols and lines painted as standard 'ARROW' marking.	No	6		
13	Characters, symbols and lines painted as standard 'DISABLED' marking.	No	2		
<b>Carried to Collection</b>				R	
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Item No		Quantity	Rate	Amount
	<b><u>BILL No. 3</u></b>			
	<b><u>ASSEMBLY, PLAY AND SEATING AREAS</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>EARTH FILLING, PAVING, ETC.</u></b>			
	<b><u>Filling supplied by the contractor under paving, etc</u></b>			
1	G5 Base course material compacted to 98% Mod AASHTO density	m3	165	
2	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m3	83	
	<b><u>Compaction of surfaces.</u></b>			
3	Compaction of ground surface under roads, parkings, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material from excavated material where necessary and compacting to 93% Mod AASHTO density.	m2	550	
	<b><u>Prescribed density tests on filling:</u></b>			
4	In-situ dry density test.	No	10	
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>			
5	Treat filling under paving with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	550	
	<b>Carried to Collection</b>		R	
	Section 4 Bill No. 3 Assembly, Play and Seating Areas			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**Paving of 60mm Class 25 interlocking concrete blocks on and including 20mm thick sand bed with dry filler sand swept and vibrated into joints all laid on subgrade (elsewhere measured) conforming to SABS 1058:2006:**

6	Paving to roads and parking areas, etc laid to falls.	m2	550		
7	Extra over ordinary paving for 200mm wide block-on-flat header course edging circular on plan on 100mm thick mortar bed including unreinforced concrete haunching along outside edge.	m	130		

**Precast concrete kerbing (complying with SANS 927) in 1m lengths, wet presses, placed in position, bedded and jointed in (3:1) cement mortar and flush pointed on exposed faces, including 150 x 150 x 300mm 15MPa/19mm unreinforced concrete haunching at back of each joint, excavation, backfilling, ramming, etc.(Refer to drawing number C-5-01 attached):**

8	Kerb Fig 4 (150 x 250mm).	m	130		
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**THE FOLLOWING IN PLAY AREAS**

**Filling supplied by the contractor under concrete pavement, etc**

9	G5 Base course material compacted to 98% Mod AASHTO density	m3	90		
10	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m3	45		

**Coarse river sand filling supplied by the contractor:**

11	Under floors etc.	m3	15		
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**Compaction of surfaces:**

12	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m2	300		
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Prescribed density tests on filling:</u></b>				
13	In-situ dry density test.	No	8		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>				
14	Treat filling under concrete floor with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	300		
	<b><u>Reinforced 25Mpa/19mm Concrete:</u></b>				
15	Surface beds cast in panels on waterproofing.	m3	45		
	<b><u>Finishing top surfaces of concrete smooth with a wood float:</u></b>				
16	Surface beds, slabs, etc to falls and currents.	m2	300		
	<b><u>Smooth Formwork (Degree of Accuracy II)</u></b>				
17	Edges, risers, ends and reveals not exceeding 300mm high.	m	120		
	<b><u>Test blocks:</u></b>				
18	Making and testing set of three 150x150x150mm concrete strength test cubes.	No	25		
	<b><u>Expansion joints with bitumen impregnated softboard between vertical concrete or brick surfaces:</u></b>				
19	10mm Joints not exceeding 300mm high.	m	440		
	<b><u>Approved polysulphide sealing compound including backing cord, bond breaker, primer etc.:</u></b>				
20	10 x 10mm In vertical expansion joints between concrete and brick surfaces, including raking out expansion joint filler as necessary (Provisional).	m	440		
	<b><u>Fabric reinforcement:</u></b>				
21	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	300		
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Waterproofing under Surface beds</u></b>				
22	350 Micron USB orange polyethylene dampproof membrane in accordance with SABS 952 Type C laid on sand bed (elsewhere measured).	m2	300		
	<b><u>Set out and construct brick and concrete bench comprising 115mm brick stub walls 415mm high supporting a 600mm wide x 85mm thick precast concrete slab including mesh 617, 2 sheets DPC smooth side together and chamfered edges,etc, and finishing off outer bench faces with 15mm grano plaster all as per drawing no. S-13-1 attached to these bills of quantities:</u></b>				
23	Bench 600mm wide x 500mm high.	m	44		
<b>Carried to Collection</b>					
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No		Quantity	Rate	Amount
	<b><u>BILL No. 4</u></b>			
	<b><u>WALKWAYS, RAMPS, STAIRS, ETC</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>THE FOLLOWING IN UNCOVERED WALKWAYS</u></b>			
	<b><u>Excavation in earth not exceeding 2m deep:</u></b>			
1	Reduced levels under floors.	m3	98	
	<b><u>Extra over all excavations for carting away:</u></b>			
2	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	98	
	<b><u>Filling supplied by the contractor under concrete pavement, etc</u></b>			
3	G5 Base course material compacted to 98% Mod AASHTO density	m3	98	
4	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m3	49	
	<b><u>Coarse river sand filling supplied by the contractor:</u></b>			
5	Under floors etc.	m3	16	
	<b><u>Compaction of surfaces:</u></b>			
6	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m2	325	
	<b>Carried to Collection</b>			
	Section 4			
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	Walkways, Ramps, Stairs, etc			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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	<b><u>Prescribed density tests on filling:</u></b>				
7	In-situ dry density test.	No	18		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>				
8	Treat filling under concrete floor with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	325		
	<b><u>Reinforced 25Mpa/19mm Concrete:</u></b>				
9	Surface beds cast in panels on waterproofing.	m3	49		
	<b><u>Finishing top surfaces of concrete smooth with a wood float:</u></b>				
10	Surface beds, slabs, etc to falls and currents.	m2	325		
	<b><u>Smooth Formwork (Degree of Accuracy II)</u></b>				
11	Edges, risers, ends and reveals not exceeding 300mm high.	m	368		
	<b><u>Test blocks:</u></b>				
12	Making and testing set of three 150x150x150mm concrete strength test cubes.	No	25		
	<b><u>Expansion joints with bitumen impregnated softboard between vertical concrete or brick surfaces:</u></b>				
13	10mm Joints not exceeding 300mm high.	m	108		
	<b><u>Approved polysulphide sealing compound including backing cord, bond breaker, primer etc.:</u></b>				
14	10 x 10mm In vertical expansion joints between concrete and brick surfaces, including raking out expansion joint filler as necessary.	m	108		
	<b><u>Fabric reinforcement:</u></b>				
15	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	325		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Waterproofing under Surface beds</u></b>				
16	350 Micron USB orange polyethylene dampproof membrane in accordance with SABS 952 Type C laid on sand bed (elsewhere measured).	m2	325		
	<b><u>Excavation in earth not exceeding 2m deep:</u></b>				
17	Trenches.	m3	164		
	<b><u>Extra over trench and hole excavations in earth for excavation in:</u></b>				
18	Soft rock.	m3	16		
19	Hard rock.	m3	8		
	<b><u>Extra over all excavations for carting away:</u></b>				
20	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	85		
	<b><u>Risk of collapse of excavations:</u></b>				
21	Sides of trench excavations not exceeding 1,5m deep.	m2	546		
	<b><u>Keeping excavations free of water:</u></b>				
22	Keeping excavations free from mud and all water including subterranean sources.		Item		
	<b><u>Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod. AASHTO density:</u></b>				
23	Backfilling to trenches, etc.	m3	79		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>				
24	To bottoms and sides of trenches, etc.	m2	702		
	<b><u>15Mpa/19mm Concrete</u></b>				
25	Surface blinding under footings.	m3	8		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>25MPa/20mm concrete:</u></b>				
26	Footings to walls	m3	59		
	<b><u>Test blocks:</u></b>				
27	Making and testing set of three 150x150x150mm concrete strength test cubes (Provisional).	No	15		
	<b><u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u></b>				
28	One brick walls in foundations	m2	312		
	<b><u>Brickwork reinforcement:</u></b>				
29	230mm Wide reinforcement built in horizontally, but in foundations	m	815		
	<b><u>THE FOLLOWING IN COVERED WALKWAYS</u></b>				
	<b><u>Excavation in earth not exceeding 2m deep:</u></b>				
30	Reduced levels under floors.	m3	235		
	<b><u>Extra over all excavations for carting away:</u></b>				
31	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	168		
	<b><u>Filling supplied by the contractor under concrete pavement, etc</u></b>				
32	G5 Base course material compacted to 98% Mod AASHTO density	m3	168		
33	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m3	151		
	<b><u>Coarse river sand filling supplied by the contractor:</u></b>				
34	Under floors etc.	m3	28		
	<b>Carried to Collection</b>			R	
	Section 4 Bill No. 4 Walkways, Ramps, Stairs, etc				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Compaction of surfaces:</u></b>				
35	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m2	1 008		
	<b><u>Prescribed density tests on filling:</u></b>				
36	In-situ dry density test.	No	15		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>				
37	Treat filling under concrete floor with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	1 008		
	<b><u>Reinforced 25Mpa/19mm Concrete:</u></b>				
38	Surface beds cast in panels on waterproofing.	m3	126		
	<b><u>Finishing top surfaces of concrete smooth with a wood float:</u></b>				
39	Surface beds, slabs, etc to falls and currents.	m2	560		
	<b><u>Smooth Formwork (Degree of Accuracy II)</u></b>				
40	Edges, risers, ends and reveals not exceeding 300mm high.	m	636		
	<b><u>Test blocks:</u></b>				
41	Making and testing set of three 150x150x150mm concrete strength test cubes.	No	30		
	<b><u>Expansion joints with bitumen impregnated softboard between vertical concrete or brick surfaces:</u></b>				
42	10mm Joints not exceeding 300mm high.	m	188		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 4					
Walkways, Ramps, Stairs, etc					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Approved polysulphide sealing compound including backing cord, bond breaker, primer etc.:</u></b>				
43	10 x 10mm In vertical expansion joints between concrete and brick surfaces, including raking out expansion joint filler as necessary (Provisional).	m	188		
	<b><u>Fabric reinforcement:</u></b>				
44	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	560		
	<b><u>Waterproofing under Surface beds</u></b>				
45	350 Micron USB orange polyethylene dampproof membrane in accordance with SABS 952 Type C laid on sand bed (elsewhere measured).	m2	560		
	<b><u>Paving of 60mm Class 25 precast concrete paving blocks on and including 20mm thick sand bed with dry filler sand swept and vibrated into joints all laid on subgrade (elsewhere measured) conforming to SABS 1058:2006:</u></b>				
46	Paving to walkways, etc laid to falls.	m2	672		
	<b><u>Cast in-situ Ref 193 mesh reinforced concrete (20MPa) open stormwater channels having V-shaped waterway formed in top, finished smooth on all exposed surfaces in 3:1 cement plaster trowelled smooth and with angles rounded, cast in suitable lengths not exceeding 3m, including all formwork, moulds, shallow excavation, filling and ramming, laying to falls, bedding and pointing in 3:1 cement mortar (See drawing no. C-5-02 attached)</u></b>				
47	25MPa concrete 700 x 150mm V' channel 80mm deep in centre laid in position in ground in 3000mm sections including all excavations, ramming, trimming, formwork, reinforcement, expansion joints, floating etc.	m	672		
	<b><u>Excavation in earth not exceeding 2m deep:</u></b>				
48	Trenches.	m3	282		
49	Holes.	m3	158		
<b>Carried to Collection</b>				R	
Section 4					
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Extra over trench and hole excavations in earth for excavation in:</u></b>				
50	Soft rock.	m3	30		
51	Hard rock.	m3	15		
	<b><u>Extra over all excavations for carting away:</u></b>				
52	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	211		
	<b><u>Risk of collapse of excavations:</u></b>				
53	Sides of trench and hole excavations not exceeding 1,5m deep.	m2	1 571		
	<b><u>Keeping excavations free of water:</u></b>				
54	Keeping excavations free from mud and all water including subterranean sources.		Item		
	<b><u>Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod. AASHTO density:</u></b>				
55	Backfilling to trenches, holes, etc.	m3	229		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>				
56	To bottoms and sides of trenches, holes, etc.	m2	1 990		
	<b><u>15Mpa/19mm Concrete</u></b>				
57	Surface blinding under footings and bases.	m3	21		
	<b><u>25MPa/20mm concrete:</u></b>				
58	Footings to walls	m3	67		
59	Bases.	m3	53		
	<b>Carried to Collection</b>			R	
	Section 4				
	Bill No. 4				
	Walkways, Ramps, Stairs, etc				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Test blocks:</u></b>				
60	Making and testing set of three 150x150x150mm concrete strength test cubes.	No	40		
	<b><u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u></b>				
61	One brick walls in foundations	m <sup>2</sup>	358		
62	Mass brickwork in piers.	m <sup>3</sup>	12		
	<b><u>Brickwork of NFP bricks (7 MPa nominal compressive strength) in Class II mortar:</u></b>				
63	Mass brickwork in piers.	m <sup>3</sup>	40		
	<b><u>Brickwork reinforcement:</u></b>				
64	230mm Wide reinforcement built in horizontally, but in foundations	m	1 403		
	<b><u>"Corobrik Mopani Travertine Imperial FBS" clay face brick or equal and approved, size 222 x 106 x 73mm, bedded and jointed in Class II mortar and pointed with recessed vertical and recessed horizontal joints, suitable for exposure zones 1-2:</u></b>				
65	Extra over brickwork for face brickwork externally.	m <sup>2</sup>	116		
66	Extra over brickwork to piers for face brickwork	m <sup>2</sup>	471		
	<b><u>0.8mm galvanised Chromadeck IBR sheets (G4 Cloulourtech finish, Charcoal Grey) on 50 x 76 SA pine purlins at maximum 1200mm centre spacing:</u></b>				
67	Roof covering with a 2 degree pitch.	m <sup>2</sup>	672		
	<b><u>0.8mm Flashings pre-painted to match roof sheeting and fixed in strict accordance with manufacturer's instructions:</u></b>				
68	Cover flashings 550mmm girth	m	94		
69	Side wall flashings 550mm girth	m	94		
	<b>Carried to Collection</b>			R	
	Section 4 Bill No. 4 Walkways, Ramps, Stairs, etc				



**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Laminated S. A. pine:</u></b>				
70	50 x 76mm Purlins.	m	896		
71	38 x 114mm Rafters.	m	558		
72	75 x 152mm beam.	m	448		
	<b><u>Sundries:</u></b>				
73	100 x 100mm x 1mm thick Mitek eCo galvanised steel long truss hanger, fixed to tie beam with 35mm x 3,15mm diameter MiTek eCo Permafix mild steel collar nails and fixed to brickwork with 4 x M12 rawl bolts	No	78		
	<b><u>Pressed fibre-cement:</u></b>				
74	12 x 125mm Fascia board three times drilled, and brass screwed to and including 38 x 50 x 114mm long S.A. Pine cleats twice brass screwed to rafter foot including galvanised steel H-profile jointing strips, screws, holes etc.	m	448		
	<b><u>"Watertite" aluminium</u></b>				
75	125 x 125mm x 0.8mm aluminium Gutters	m	224		
76	100mm Diameter PVC downpipe fixed to wall with straps at 1500mm centres using nail plugs, with pvc downpipes riveted and silicone sealed to gutter outlets	m	67		
	<b><u>THE FOLLOWING IN RAMPS. STAIRS, ETC</u></b>				
	<b><u>Filling supplied by the contractor under concrete pavement, etc</u></b>				
77	G5 Base course material compacted to 98% Mod AASHTO density	m3	338		
78	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m3	338		
	<b><u>Coarse river sand filling supplied by the contractor:</u></b>				
79	Under floors etc.	m3	38		
	<b>Carried to Collection</b>			R	
	Section 4				
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	Walkways, Ramps, Stairs, etc				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Compaction of surfaces:</u></b>				
80	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m2	750		
	<b><u>Prescribed density tests on filling:</u></b>				
81	In-situ dry density test.	No	18		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>				
82	Treat filling under concrete floor with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	750		
	<b><u>Reinforced 25Mpa/19mm Concrete:</u></b>				
83	Surface beds cast in panels on waterproofing.	m3	158		
	<b><u>Finishing top surfaces of concrete smooth with a wood float:</u></b>				
84	Surface beds, slabs, etc to falls and currents.	m2	750		
	<b><u>Smooth Formwork (Degree of Accuracy II)</u></b>				
85	Edges, risers, ends and reveals not exceeding 300mm high.	m	850		
	<b><u>Test blocks:</u></b>				
86	Making and testing set of three 150x150x150mm concrete strength test cubes.	No	46		
	<b><u>Expansion joints with bitumen impregnated softboard between vertical concrete or brick surfaces:</u></b>				
87	10mm Joints not exceeding 300mm high.	m	250		
<b>Carried to Collection</b>				R	
Section 4					
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Approved polysulphide sealing compound including backing cord, bond breaker, primer etc.:</u></b>				
88	10 x 10mm In vertical expansion joints between concrete and brick surfaces, including raking out expansion joint filler as necessary.	m	250		
	<b><u>Fabric reinforcement:</u></b>				
89	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	750		
	<b><u>Waterproofing under Surface beds</u></b>				
90	350 Micron USB orange polyethylene dampproof membrane in accordance with SABS 952 Type C laid on sand bed (elsewhere measured).	m2	750		
	<b><u>Excavation in earth not exceeding 2m deep:</u></b>				
91	Trenches.	m3	378		
	<b><u>Extra over trench and hole excavations in earth for excavation in:</u></b>				
92	Soft rock.	m3	22		
93	Hard rock.	m3	11		
	<b><u>Extra over all excavations for carting away:</u></b>				
94	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	196		
	<b><u>Risk of collapse of excavations:</u></b>				
95	Sides of trench excavations not exceeding 1,5m deep.	m2	1 260		
	<b><u>Keeping excavations free of water:</u></b>				
96	Keeping excavations free from mud and all water including subterranean sources.		Item		
	<b><u>Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod. AASHTO density:</u></b>				
97	Backfilling to trenches, etc.	m3	182		
<b>Carried to Collection</b>				R	
Section 4					
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>				
98	To bottoms and sides of trenches, etc.	m2	1 620		
	<b><u>15Mpa/19mm Concrete</u></b>				
99	Surface blinding under footings.	m3	18		
	<b><u>25MPa/20mm concrete:</u></b>				
100	Footings to walls	m3	90		
	<b><u>Test blocks:</u></b>				
101	Making and testing set of three 150x150x150mm concrete strength test cubes (Provisional).	No	32		
	<b><u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u></b>				
102	One brick walls in foundations	m2	480		
	<b><u>Brickwork reinforcement:</u></b>				
103	230mm Wide reinforcement built in horizontally, but in foundations	m	1 882		
	<b><u>"Corobrik Mopani Travertine Imperial FBS" clay face brick or equal and approved, size 222 x 106 x 73mm, bedded and jointed in Class II mortar and pointed with recessed vertical and recessed horizontal joints, suitable for exposure zones 1-2:</u></b>				
104	Extra over brickwork for face brickwork externally.	m2	156		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 4					
Walkways, Ramps, Stairs, etc					

**STEEL BALUSTRADING**

**Welded balustrading to walkways and stairs, all as per drawing number A101 attached to these bills of quantities**

105	Horizontal balustrading 1000mm high, of 50mm diameter brushed STAINLESS STEEL handrail, 40 x 5mm galvanised steel flat section continuous top and bottom rails, 40 x 20mm and 2.5mm thick galvanised STEEL rectangular tube at approximately 900mm centres bolted to 185 x 65mm and 5mm thick galvanised STEEL plate cut at approximately 14 degree angle welded to 310 x 70mm and 5mm thick galvanised STEEL plate cut at approximately 9 degree angle welded to 125 x 100 x 8mm and 100mm long galvanised STEEL angels and bolted to concrete or top of brickwork (bolts elsewhere) and 12 x 12mm galvanised STEEL intermediate vertical square rods at approximately 110mm centres between top and bottom rails.	m	194
106	Raking balustrading 1000mm high, of 50mm diameter brushed STAINLESS STEEL handrail, 40 x 5mm galvanised steel flat section continuous top and bottom rails, 40 x 20mm and 2.5mm thick galvanised STEEL rectangular tube at approximately 900mm centres bolted to 185 x 65mm and 5mm thick galvanised STEEL plate cut at approximately 14 degree angle welded to 310 x 70mm and 5mm thick galvanised STEEL plate cut at approximately 9 degree angle welded to 125 x 100 x 8mm and 100mm long galvanised STEEL angels and bolted to concrete or top of brickwork (bolts elsewhere) and 12 x 12mm galvanised STEEL intermediate vertical square rods at approximately 110mm centres between top and bottom rails.	m	199
107	Extra over for L-intersection of horizontal balustrades	No	16
108	Extra over for junction of end of horizontal with end of raking balustrades	No	34
<b><u>Bolts, plates to columns, beams, etc:</u></b>			
109	M16 Bolts	No	1 752
110	M20 Holding down bolts	No	1 752

**Carried to Collection**

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Walkways, Ramps, Stairs, etc

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Walkways, Ramps, Stairs, etc

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Item No		Quantity	Rate	Amount
	<b><u>BILL No. 5</u></b>			
	<b><u>RETAINING WALLS</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Density testing on filling:</u>			
	Rates for filling, etc. shall include for all density and soil type testing to prove that the specified compaction is achieved. When additional testing is done on instruction of the Principal Agent and these tests are successful, they will be paid for additionally.			
	<b><u>THE FOLLOWING IN BRICK RETAINING WALLS</u></b>			
	<b><u>Excavation in earth not exceeding 2m deep:</u></b>			
1	Trenches.	m3	463	
	<b><u>Extra over trench and hole excavations in earth for excavation in:</u></b>			
2	Soft rock.	m3	20	
3	Hard rock.	m3	10	
	<b><u>Extra over all excavations for carting away:</u></b>			
4	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	158	
	<b><u>Risk of collapse of excavations:</u></b>			
5	Sides of trench excavations not exceeding 1,5m deep.	m2	945	
	<b>Carried to Collection</b>			R
	Section 4			
	Bill No. 5			
	Retaining Walls			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Keeping excavations free of water:</u></b>				
6	Keeping excavations free from mud and all water including subterranean sources.		Item		
	<b><u>Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod. AASHTO density:</u></b>				
7	Backfilling to trenches, etc.	m3	173		
8	Behind retaining walls.	m3	138		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>				
9	To bottoms and sides of trenches, etc.	m2	1 260		
	<b><u>15Mpa/19mm Concrete</u></b>				
10	Surface blinding under footings.	m3	16		
	<b><u>25MPa/20mm concrete:</u></b>				
11	Footings to walls.	m3	66		
	<b><u>Test blocks:</u></b>				
12	Making and testing set of three 150x150x150mm concrete strength test cubes.	No	18		
	<b><u>High tensile steel reinforcement to structural concrete work:</u></b>				
13	Steel Reinforcement bars in concrete work	kg	1 974		
	<b><u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u></b>				
14	One brick walls.	m2	536		
15	One and half brick walls.	m2	428		
	<b><u>Brickwork reinforcement:</u></b>				
16	230mm Wide reinforcement built in horizontally.	m	2 700		
<b>Carried to Collection</b>				R	
Section 4					
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>"Corobrik Mopani Travertine Imperial FBS" clay face brick or equal and approved, size 222 x 106 x 73mm, bedded and jointed in Class II mortar and pointed with recessed vertical and recessed horizontal joints, suitable for exposure zones 1-2:</u></b>				
17	Extra over brickwork for face brickwork externally.	m2	965		
	<b><u>Brick-on-edge header course copings, sills, etc, of "Corobrik Mopani Travertine Imperial FBS" or equal and approved clay face brick size 222 x 106 x 73mm, pointed with recessed joints on all exposed faces:</u></b>				
18	220mm Wide header course to top of one brick wall bedded and jointed in cement mortar and pointed on top and both sides as described.	m	450		
	<b><u>Openings in Walls etc.</u></b>				
19	Leave or form 32mm weephole through one and half brick wall	No	450		
	<b><u>Membranes</u></b>				
20	"Bidem U14" geotextile lining to walls with 220 mm end laps	m2	965		
	<b><u>19mm Stone filling wrapped in "Bidem U14" membrane</u></b>				
21	300 x 300mm	m	450		
	<b><u>INTERLOCKING PLANTER BLOCKS</u></b>				
	<b><u>Terraforce or equal Engineer approved precast concrete interlocking planter blocks (Refer to drawing no. S-13-1 attached to these bills of quantities)</u></b>				
22	Terraforce "V8-400" or equal Engineer approved block retaining wall with stepped face and curves as required to suit slopes laid with horizontal bed joints to min 5 degree slope and average 400mm wide backfilling with pervious granular sand/stone drainage layer, approved geofabric layer and backfill of excavated material compacted in 150mm layers to 95% Mod AASHTO density and filling the units with material lightly compacted as the work proceeds	m2	644		
<b>Carried to Collection</b>				R	
Section 4					
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Retaining Walls					

**AT PROSPECT JSS, MALUTI  
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CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**COLLECTION**

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Section 4  
Bill No. 5  
Retaining Walls

Item No	Quantity	Rate	Amount
<b><u>BILL No. 6</u></b>			
<b><u>STORMWATER RETICULATION</u></b>			
<b><u>MODEL PREAMBLES</u></b>			
The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>Concrete pipes:</u>			
Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings.			
<u>Exposed concrete surfaces:</u>			
Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster.			
<u>Excavations:</u>			
No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.			
Soft rock and hard rock shall be as defined in Earthworks.			
<u>Laying, backfilling, bedding, etc of pipes:</u>			
Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.			
<b>Carried to Collection</b>			R
Section 4 Bill No. 6 Stormwater reticulation			

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following:

SABS 1200

L : Medium pressure pipelines

LD : Sewers

LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches) Clause 5.7.2 will only be applicable if authorised by the Engineer in writing.

Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB: Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding.

Descriptions of pipes laid in trenches:

Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor. Note minimum width of trench is 500mm on either side of pipe.

Descriptions of catchpits, junction boxes, manholes, etc:

Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.

**Carried to Collection**

Section 4  
Bill No. 6  
Stormwater reticulation

R

<b><u>STORMWATER APRONS</u></b>				
<b><u>Filling supplied by the contractor under concrete pavement, etc</u></b>				
1	G5 Base course material compacted to 98% Mod AASHTO density	m3	198	
2	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m3	99	
<b><u>Coarse river sand filling supplied by the contractor:</u></b>				
3	Under floors etc. (Provisional).	m3	33	
<b><u>Compaction of surfaces:</u></b>				
4	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m2	661	
<b><u>Prescribed density tests on filling:</u></b>				
5	In-situ dry density test.	No	15	
<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>				
6	Treat filling under concrete floor with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	661	
<b><u>Reinforced 25Mpa/19mm Concrete:</u></b>				
7	Surface beds cast in panels on waterproofing.	m3	99	
<b><u>Finishing top surfaces of concrete smooth with a wood float:</u></b>				
8	Surface beds, slabs, etc to falls and currents.	m2	661	
<b><u>Smooth Formwork (Degree of Accuracy II)</u></b>				
9	Edges, risers, ends and reveals not exceeding 300mm high.	m	962	
<b>Carried to Collection</b>				R
Section 4				
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Stormwater reticulation				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Test blocks:</u></b>				
10	Making and testing set of three 150x150x150mm concrete strength test cubes (Provisional).	No	22		
	<b><u>Expansion joints with bitumen impregnated softboard between vertical concrete or brick surfaces:</u></b>				
11	10mm Joints not exceeding 300mm high (Provisional).	m	641		
	<b><u>Approved polysulphide sealing compound including backing cord, bond breaker, primer etc.:</u></b>				
12	10 x 10mm In vertical expansion joints between concrete and brick surfaces, including raking out expansion joint filler as necessary (Provisional).	m	641		
	<b><u>Fabric reinforcement:</u></b>				
13	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	661		
	<b><u>Waterproofing under Surface beds</u></b>				
14	350 Micron USB orange polyethylene dampproof membrane in accordance with SABS 952 Type C laid on sand bed (elsewhere measured).	m2	661		
	<b><u>STORMWATER CHANNELS</u></b>				
	<b><u>Cast in-situ Ref 193 mesh reinforced concrete (20MPa) open stormwater channels having V-shaped waterway formed in top, finished smooth on all exposed surfaces in 3:1 cement plaster trowelled smooth and with angles rounded, cast in suitable lengths not exceeding 3m, including all formwork, moulds, shallow excavation, filling and ramming, laying to falls, bedding and pointing in 3:1 cement mortar (See drawing no. C-5-02 attached)</u></b>				
15	Channel size 500 wide with 250mm thick base raking to 150mm deep to form V-shaped waterway to top of retaining walls	m	675		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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16	25MPa concrete 700 x 150mm V' channel 80mm deep in centre laid in position in ground in 3000mm sections including all excavations, ramming, trimming, formwork, reinforcement, expansion joints, floating etc.	m	1 104		
17	Extra for 700mm angle	No	66		
18	Extra for 700mm T-intersection	No	24		
19	Extra for Bridge Over Channel 2000mm long x 700mm wide but not exceeding 1m deep with 150mm thick concrete 'V' channel and 150mm thick concrete slab cast in-situ on 6mm thick fibre cement permanent shuttering and brick on edge support, concrete to be wood floated and edges to be rounded and smooth with steel corner trowel, including all excavations, trimming, formwork, mesh reinforcement, etc	No	12		
20	Extra for forming 200mm thick 700mm wide spreader with 200mm high edges fanning out to 1 960mm width at furthest end with hard burnt bricks pitching cast in ass diffusers including working off concrete to a smooth finish and draining onto natural ground with 150 - 200mm diameter loose stones	No	7		
21	Extra for S.A.B.S Fig 3 Kerb Type 2000mm wide x 150mm high above channel edge at T-junction	No	7		
<b><u>STORMWATER DRAINAGE</u></b>					
<b><u>Class 100D concrete pipes:</u></b>					
22	375mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	363		
23	450mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	177		
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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<b><u>Sumps, catchpits, inspection chambers, etc.</u></b>			
24	Kerb inlet chamber size 1220 x 880mm exceeding 1m and not exceeding 2,0m deep internally to invert level formed of hard burnt one brick sides in 1:3 cement mortar on and including 150 mm thick mass concrete (class 20 /19 concrete at 28 days) bottom projecting 150 mm beyond sides and mass concrete (class 20/19 concrete at 28 days) benching, rendered internally in 1:3 cement plaster with 100 x 100 x 8mm Galvanised angle iron support to top cover and 150 mm thick Precast Concrete cover slab reinforced with Y10 bars at 100c/d kerb on top, rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow, including all necessary channels and fittings, excavations, formwork, holes through sides for pipes and 25mm dia mild steel support with 100 x 100 x 8mm galvanised bearing plate at 1000mm c/c at front of kerb inlet, all as per drawing C-5-02 attached)	No	13
25	Inspection chamber size 1 370 x 1 070mm exceeding 1m and not exceeding 2,0m deep internally, formed of one brickwall built on 150mm base (20 MPa) reinforced with mesh ref 193 and benching latter finished with 25mm thick grano sloped at 1:6, half round vitrified clay or other approved channel inverts, including 150mm cover slab and Type 2A heavy duty manhole cover and frame to SABS 558.	No	11
<b><u>Gratings, covers, etc:</u></b>			
26	450 x 760mm Heavy duty Cast Iron grating to SABS 1115.	No	8
27	Lifting key for manhole cover.	No	8
<b><u>The following in 3no headwalls:</u></b>			
28	Excavation not exceeding 2m deep	m3	3
29	Risk of collapse not exceeding 1,5m deep	m2	6
30	Keeping excavations free from water		Item
31	Carting away surplus excavated material	m3	3
<b>Carried to Collection</b>			R
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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32	150mm layer of G7 material compacted to 95% MOD AASHTO under Concrete slab.	m3	2
33	20Mpa/19mm Reinforced concrete in bottom slabs and footings	m3	2
34	Formwork to edges, risers, ends and reveals not exceeding 300mm wide or high.	m	12
35	Weld Mesh Ref 193 in Concrete bottom slab.	m2	7
36	One brick wall in superstructure (7 MPa NFP bricks) with reinforcement	m2	9
37	Plaster on brick walls.	m2	18
	<b><u>High tensile steel reinforcement to structural concrete work:</u></b>		
38	Steel reinforcement to structural concrete work.	kg	54
	<b><u>Sundries:</u></b>		
39	Create earth berm for stormwater control with in situ material 1,5m wide at base x 500mm high	m	220
40	Construct shaped earth V-drain 2m wide with grass runners	m	215
	<b><u>Testing:</u></b>		
41	Testing drainage system.		Item
<b>Carried to Collection</b>			R
Section 4 Bill No. 6 Stormwater reticulation			

CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Section 4

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Stormwater reticulation

**COLLECTION**

Total Brought Forward from Page No.

**Page  
No**

**Amount**

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Bill No. 6

Stormwater reticulation

Item No	Quantity	Rate	Amount
<p><b><u>BILL No. 7</u></b></p> <p><b><u>SEWER RETICULATION</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SOIL DRAINAGE</u></b></p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>uPVC pipes and fittings</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>Soft rock and hard rock shall be as defined in Earthworks.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 4 Bill No. 7 Sewer Reticulation</p>			

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following:

**SABS 1200**

- L : Medium pressure pipelines  
LD : Sewers  
LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200  
DB: Earthworks (Pipe trenches) Clause 5.7.2 will only be applicable if authorised by the Engineer in writing.

Descriptions of pipes laid in trenches:

Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.

Descriptions of catchpits, junction boxes, manholes, etc:

Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.

Density testing on filling:

Rates for filling, etc. shall include for all density and soil type testing to prove that the specified compaction is achieved. When additional testing is done on instruction of the Principal Agent and these tests are successful, they will be paid for additionally.

**BULK SEWER RETICULATION**

**Earthworks for soil drainage:**

1	Excavation in earth exceeding 1m and not exceeding 2m deep for pipe trenches	m3	567
2	Extra over excavation in soft rock.	m3	21
3	Extra over excavation in hard rock.	m3	11
4	Unreinforced concrete bedding under pipes	m3	28

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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5	Selected granular filling in bedding under and filling around pipes	m3	56		
6	Imported backfilling supplied by the Contractor compacted to 98% Mod ASSHTO density (class A material) to pipe trenches.	m3	83		
7	Selected Backfill material from excavations to drain pipes compacted to 93% Mod ASSHTO density.	m3	250		
8	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk) to a dumping site to be found by the Contractor.	m3	167		
<b><u>Heavy duty (Class 34) PVC-U sewer and drain pipes</u></b>					
9	110mm Pipes vertically or ramped to cleaning eyes etc (no excavation)	m	10		
10	110mm Pipes laid in trenches (trenches elsewhere)	m	563		
<b><u>Extra over heavy duty (Class 34) PVC-U sewer and drain pipes for fittings</u></b>					
11	110mm Bend	No	13		
12	110mm Junction	No	7		
13	110mm Rodding eye	No	5		
<b><u>uPVC gulleys:</u></b>					
14	200mm Precast concrete gully dish and uPVC lowback assembly complete with 110mm P trap gulley (code UGB 40) including 190mm diameter head (code UGA 40) and grate (code UGG 40), not exceeding 750mm deep, jointed to 110mm drain pipe, including excavations for and encasing in concrete (15MPa crushing strength after 28 days) worked up to form kerb, finished smooth on top in 1:3 cement mortar.	No	9		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**The following in precast concrete manholes.**

15	Inspection chamber 1 000mm diameter exceeding 1 000mm and not exceeding 2 000mm deep internally, formed of standard precast walling sections to suite height built on 20 MPa base and benching latter finished with 25mm thick grano sloped at 1:6, half round vitrified clay or other approved channel inverts, including 150mm medium duty precast concrete cover slab in 1:2 mortar and Type 4 light duty cover and medium duty cast iron frame (refer to drawing C-5-03 attached).	No	17
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**Sundries:**

16	Unreinforced concrete encasing to 110mm vertical bend.	m3	3
17	300 x 300 x 75mm Precast concrete inspection eye marker slab set in ground.	No	5
18	100mm Cast iron ABC cleaning eye.	No	5

**Testing**

19	Testing sewer pipe system	Item	
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**THE FOLLOWING IN SEPTIC TANK**

**EXCAVATION, FILLING, ETC**

20	Excavation in earth exceeding 2m and not exceeding 4m deep for holes	m3	86
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**Extra over all excavations for carting away**

21	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor within 5km from the building site	m3	74
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**Risk of collapse of excavations**

22	Sides of trench and hole excavations exceeding 1,5m deep but not exceeding 3,0m deep	m2	64
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**Keeping excavations free of water**

23	Keeping excavations free of all water other than subterranean water	Item	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density</u></b>				
24	Backfilling to holes	m3	12		
	<b><u>Compaction of surfaces:</u></b>				
25	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density.	m2	30		
	<b><u>Prescribed density tests on filling:</u></b>				
26	Allow for compaction tests by an approved laboratory to determine density of filling material.	No	4		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>				
27	To bottoms and sides of trenches, holes, etc.	m2	94		
	<b><u>UNREINFORCED CONCRETE</u></b>				
	<b><u>15Mpa/19mm Concrete</u></b>				
28	Surface blinding under base.	m3	2		
	<b><u>REINFORCED CONCRETE</u></b>				
	<b><u>25MPa/19mm concrete</u></b>				
29	Base	m3	5		
30	Suspended slab	m3	4		
31	Cavity walls	m3	6		
	<b><u>TEST BLOCKS</u></b>				
	<b><u>Test blocks:</u></b>				
32	Making and testing set of three 150x150x150mm concrete strength test cubes (Provisional).	No	6		
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**ROUGH FORMWORK (DEGREE OF ACCURACY III)**

**Rough Formwork to Sides:**

33	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	42
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**Rough Formwork to Soffits:**

34	Suspended Slabs propped up exceeding 1.5 but not exceeding 3.5m high	m2	9
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**Extra on permanent formwork for boxing or blocking in or boxing out to form:**

35	600 x 900 mm opening through 150mm thick slab.	No	2
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**REINFORCEMENT**

**High Strength Steel reinforcement:**

36	Steel reinforcement to structural concrete work.	kg	1 080
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**BRICKWORK IN FOUNDATIONS (PROVISIONAL)**

**Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:**

37	One brick walls.	m2	12
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38	330mm thick cavity brick Walls made of two leafs of 110mm wall with 110mm reinforced concrete fill and including wire ties (concrete elsewhere measured).	m2	52
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**SCREEDS**

**1:3 Cement and sand screeds steel trowelled on concrete:**

39	30mm thick on floors.	m2	9
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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<b><u>EPOXY</u></b>					
<b><u>6mm "abescreed" Epoxy and sealed with one coat "abecote 436" clear epoxy sealer</u></b>					
40	On plastered walls internally	m2	76		
<b><u>INTERNAL PLASTER</u></b>					
<b><u>Cement plaster on brickwork:</u></b>					
41	On walls.	m2	76		
<b><u>EXTERNAL PLASTER</u></b>					
<b><u>Cement plaster on brickwork:</u></b>					
42	On walls.	m2	52		
<b><u>MANHOLE COVERS</u></b>					
43	600 x 900mm Type 2A Heavy duty cast iron manhole cover and frame to SABS 558.	No	2		
<b><u>THE FOLLOWING IN GREASE TRAP</u></b>					
<b><u>EXCAVATION, FILLING, ETC</u></b>					
44	Excavation in earth exceeding 1m and not exceeding 2m deep for holes	m3	5		
<b><u>Extra over all excavations for carting away</u></b>					
45	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor within 5km from the building site	m3	4		
<b><u>Risk of collapse of excavations</u></b>					
46	Sides of trench and hole excavations exceeding 1,5m deep but not exceeding 3,0m deep	m2	7		
<b><u>Keeping excavations free of water</u></b>					
47	Keeping excavations free of all water other than subterranean water			Item	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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<b><u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density</u></b>							
48	Backfilling to holes	m3	1				
<b><u>Compaction of surfaces:</u></b>							
49	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density.	m2	4				
<b><u>Prescribed density tests on filling:</u></b>							
50	Allow for compaction tests by an approved laboratory to determine density of filling material.	No	2				
<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>							
51	To bottoms and sides of trenches, holes, etc.	m2	11				
<b><u>REINFORCED CONCRETE</u></b>							
<b><u>20MPa/19mm concrete</u></b>							
52	Base	m3	1				
<b><u>TEST BLOCKS</u></b>							
<b><u>Test blocks:</u></b>							
53	Making and testing set of three 150x150x150mm concrete strength test cubes (Provisional).	No	2				
<b><u>REINFORCEMENT</u></b>							
<b><u>Fabric reinforcement:</u></b>							
54	REF. 193 fabric reinforcement in surface beds, etc.	m2	4				
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<b><u>PLASTIC GREASE TRAP</u></b>				
<b><u>Calcamite's or equal Engineer approved plastic Industrial Grease Trap:</u></b>				
55	Calcamite's plastic industrial grease trap DB2 & SJB Sampling – 800LT	No	2	
<b><u>THE FOLLOWING IN SOAK AWAYS</u></b>				
<b><u>EXCAVATION, FILLING, ETC</u></b>				
56	Excavation in earth not exceeding 2m deep for trenches	m3	72	
<b><u>Extra over all excavations for carting away</u></b>				
57	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor within 5km from the building site	m3	60	
<b><u>Extra over bulk excavation in earth for excavation in</u></b>				
58	Soft rock	m3	6	
59	Hard rock	m3	3	
<b><u>Risk of collapse of excavations</u></b>				
60	Sides of trench and hole excavations not exceeding 1,5m deep.	m2	72	
<b><u>Keeping excavations free of water</u></b>				
61	Keeping excavations free of all water other than subterranean water		Item	
<b><u>Stone filling</u></b>				
62	40 to 80mm diameter stone filling	m3	4	
<b><u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density</u></b>				
63	Backfilling to trenches, holes, etc	m3	12	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**Imported filling supplied by the contractor  
compacted to 95% Mod AASHTO density:**

64 Selected granular filling on galvanised or fibre cement sheets

m3

2

**Compaction of surfaces:**

65 Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density.

m2

60

**Prescribed density tests on filling:**

66 Allow for compaction tests by an approved laboratory to determine density of filling material.

No

4

**Approved brand of anti-termite soil poison applied  
by a Registered Pest Control company and  
guaranteed against termite infestation for ten years:**

67 To bottoms and sides of trenches, holes, etc.

m2

132

**"Geopipe" perforated PVC pipes**

68 110mm Pipes laid in trenches (trenches elsewhere)

m

15

**Carried to Collection**

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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Item No	Quantity	Rate	Amount
<p><b><u>BILL No. 8</u></b></p> <p><b><u>WATER RETICULATION</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><u>uPVC pressure pipes and fittings:</u></p> <p>Pipes for water supply shall be of the class stated.</p> <p>Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings.</p> <p>Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints.</p> <p><u>Copper pipes:</u></p> <p>Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be Cobra Watertech type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground.</p>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 4 Bill No. 8 Water Reticulation</p>			

Reducing fittings:

Where fittings have reducing ends or branches they are described as reducing. In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained.

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.

Where no manufacturer's instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SAB.

Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB: Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding.

Excavations:

No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.

Soft rock and hard rock shall be as defined in Earthworks.

Descriptions of pipes laid in trenches:

Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.

**Carried to Collection**

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**Descriptions of catchpits, junction boxes, manholes, etc:**

Descriptions of catchpits, junction boxes, manholes, etc, shall be deemed to include for compaction, disposal of surplus excavated material to a dumping site located by the contractor, risk of collapse and keeping excavations free from water.

**Thrust Blocks:**

Thrust blocks for pressure pipes to be formed of Class B concrete shaped for fittings with notchings of suitable size to take fittings and with sinkings and flanges of short collar detachable joints of suitable size to allow for removing of coupling when necessary including necessary formwork, excavation, etc

**Density testing on filling:**

Rates for filling, etc. shall include for all density and soil type testing to prove that the specified compaction is achieved. When additional testing is done on instruction of the Principal Agent and these tests are successful, they will be paid for additionally.

**WATER SUPPLY IN GROUND**

**Class 10 HDPe type IV pipes**

1	32mm Pipes laid in and including trenches not exceeding 1m deep	m	1 205
2	40mm Pipes laid in and including trenches not exceeding 1m deep	m	386
3	50mm Pipes laid in and including trenches not exceeding 1m deep	m	403
4	75mm Pipes laid in and including trenches not exceeding 1m deep	m	15

**Extra over Class 10 HDPe type IV pipes for fittings**

5	32mm Fittings	No	86
6	40mm Fittings	No	69

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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7	50mm Fittings	No	43	
8	50 x 40mm Reducer	No	13	
9	50 x 40mm Reducing Tee	No	11	
10	40 x 32mm Reducer	No	11	
11	50mm Tee	No	17	
12	75mm Tee	No	5	
13	75 x 50mm Reducer	No	5	
<b><u>Class 16 uPVC pressure pipes:</u></b>				
14	110mm Pipes laid in and including trenches.	m	87	
<b><u>Extra over Class 16 uPVC pressure pipes for cast iron pressure fittings, treated for corrosion protection, corrosive soil as set out in supplementary preambles to this Bill:</u></b>				
15	110mm Elbows.	No	48	
16	110mm Tee.	No	24	
17	110 x 110 x 50 mm Reducing tee.	No	24	
<b><u>TAPS, VALVES, ETC</u></b>				
18	50mm Brass stopcock	No	3	
19	50mm Brass non-return valve	No	3	
20	50mm Brass fullway gate valve	No	4	
21	75mm Brass fullway gate valve	No	2	
22	100mm Brass fullway gate valve	No	3	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**Stopcock boxes, etc.**

- 23 Excavate in earth for and build Connection valve Chamber size 500 x 500 x 500mm deep internally with one brick wall to sides in cement mortar with 225 x 225 x 100mm regulation pattern cast iron hinged box Type 11B light duty cover and frame set in and including Grade 20 mass concrete surround size 1140mm wide x 100mm deep all round including Ref 311 mesh.

No

1

**Drinking fountains**

- 24 Construct drinking fountain approximately 1 400mm high, complete with 25D Pre-cast stormwater pipe as supplied by "Southern Pipeline Contractor's" or similar approved, of outer 360mm diameter and wall thickness of 30mm, set on and including 200mm thickness 20MPa reinforced insitu concrete slab, with 25 diameter HDPE Pipe and 110mm diameter uPVC outlet pipe all cast into and including 20MPa mass concrete and including fittings, all as per Architect drawing number 00-16 attached to these bills of quantities.

No

2

**Sundries:**

- 25 Provide Inline Chlorinator with Chlorine tablets for a maximum flow of 0.4l/s as supplied by Filtershop South Africa or equal approved

Item

- 26 Extra over backfilling to pipe trenches, chambers, etc for selected backfilling from site as directed by the Engineer compacted to 93% Mod AASHTO density.

m3

45

- 27 Unreinforced concrete in thrust blocks at bends, tees, etc including necessary extra excavations, formwork , etc.

No

3

**ELEVATED WATER SUPPLY TANK.**

**Excavation in earth not exceeding 2m deep:**

- 28 Holes.

m3

18

**Risk of collapse of excavations other than bulk:**

- 29 Sides of trench and hole excavations not exceeding 1,5m deep.

m2

1

**Carried to Collection**

R

Section 4  
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Water Reticulation

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93%:</u></b>				
30	Backfilling to holes, etc.	m3	4		
	<b><u>Earth filling (G7 material) supplied by the contractor compacted to 98% Mod AASHTO density:</u></b>				
31	Under holes.	m3	1		
	<b><u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u></b>				
32	Off site to a dumping site to be found by the Contractor.	m3	14		
	<b><u>25Mpa/19mm Concrete:</u></b>				
33	Stand Bases	m3	10		
34	Stub Columns	m3	1		
	<b><u>25Mpa non shrink grout:</u></b>				
35	Bedding approximately 20mm thick under 320 x 320mm base plate including chamfered edges all round.	No	4		
	<b><u>High tensile reinforcement to structural concrete work:</u></b>				
36	Steel reinforcement to structural concrete work	kg	660		
	<b><u>Hot Dip Galvanised Tank Stand</u></b>				
37	150 x 150 x 10mm Equal Angle	kg	460		
38	90 x 90 x 8mm Equal Angle	kg	704		
39	203 x 133 x 25kg/m Universal Beam	kg	703		
40	406 x 178 x 60kg/m Universal Beam	kg	902		
41	100 x 50 Parallel Flange Channel	kg	275		
	<b><u>Sawn softwood:</u></b>				
42	38 x 150mm rafters for decking	m	154		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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<b><u>Bolts, plates to columns, beams, etc:</u></b>					
43	M10 Bolts	No	25		
44	M16 Bolts	No	14		
45	M20 Holding down bolts	No	16		
46	320 x 320 x 20mm Flat section base plate including drilling of holes for bolts	No	4		
<b><u>Plastic water tanks etc:</u></b>					
47	5000 Litre roto molded or equal approved plastic tank complete with lid, side inlet and outlet, and 4 No. galvanised 4mm stay wires 2.5m each long connected to tank, and including fixing to elevated steel level platform.	No	2		
<b><u>TRANSFER PUMP AND PIPE WORK</u></b>					
<b><u>SUPPLEMENTARY PREAMBLES</u></b>					
The items scheduled below to be built-in to a security brick structure (measured elsewhere)					
<b><u>Transfer Pump</u></b>					
48	DAB Model JETCOM 82M Self priming pump fitted with a 0,8 Kw 220 volt single close coupled electric motor, being capable of delivering 3,0 M³ per hour to a 20 metre head	No	1		
<b><u>Suction Pipe Work</u></b>					
49	32mm diameter Galvanised pipe 1000mm long and screwed both sides complete with 32 x 32 x 25mm galvanised tee piece fitted 500mm from one end		Item		
50	2 x 32mm diameter Female to Female Galvanised 90 degree elbows joined with a 32mm galvanised barrel nipple with elbows facing in opposing directions		Item		
51	1 x 25mm diameter galvanised union fitted with 2 - 25mm barrel nipples, one each side with a 32 x 25mm galvanised reducing socket fitted to one		Item		
<b>Carried to Collection</b>				R	
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<b><u>Delivery Pipe Work</u></b>					
52	1 x 25mm diameter galvanised union fitted with 2 - 25mm barrel nipples and a 25mm galvanised 90 degree elbow		Item		
53	1 X 25mm flap type brass non return valve with nipples		Item		
54	1 x 25mm equal tee complete with 25 x 1/4" reducing bush		Item		
55	25mm delivery pipe complete with 2 - 25mm Female / female 90 degree elbows with pipe lengths to suit the site installation for connecting to the rising main		Item		
<b><u>Electrical Equipment</u></b>					
<b><u>Electrical Control Panel Specification</u></b>					
<p>The electrical control panel shall be pressed mild steel painted electrical orange and of a splash proof type construction.</p> <p>The panel shall house, but not limited to :-</p> <p>a) 1 No. Mains incoming 5 amp circuit breaker.</p> <p>b) 1 No. Earth Leakage Unit.</p> <p>c) 1 No Duty selector switch (Manual / Off / Auto ) operation.</p> <p>d)1 No. Suitably rated motor protection circuit breaker.</p> <p>e) 1 No. Electromagnetic contactors suitably sized for the motor.</p> <p>f) 1 No. Set Manual Stop/Start push buttons per motor</p> <p>g) 1 No. Green RUN indication LED per motor.</p> <p>h) 1 No. Red MOTOR STOPPED indication LED per motor.</p> <p>i) 1 No. Amber CLEAR RESERVOIR FULL indication LED per motor.</p> <p>j) 1 No. Amber RAW RESERVOIR EMPTY indication LED per motor.</p> <p>k) 1 No. Non-reversible hour-meter per motor.</p> <p>l) 1 No. Set of all schematics to be place in holder on inside of panel door</p>					
<b><u>The following in Control Panel:</u></b>					
56	Electrical control panel as detailed above complete with anchor bolts for wall mounting	No	1		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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57	25 mm diameter flap type flow switch fitted to the suction pipe tee piece complete with sufficient cab tyre 3 core cable connecting to the control panel	No	1		
58	150 to 450 kPa adjustable pressure switch fitted to the tee complete with sufficient cab tyre 3 core cable connecting to the control panel	No	1		
<b><u>Chlorine Dosing</u></b>					
59	220 volt EMAC Model 05/05 chemical dosing pump capable of delivering 0,75 litres per hour against a 5,0 bar back pressure complete with all necessary small bore pipe work and non return valves connecting between the 50 litre mixing tank, the pump and the delivery point to the rising main	No	1		
60	Natural colour 50 litre polyethylene mixing complete with close fitting lid and suitable PVC mixing paddle	No	1		
61	Measuring jug calibrated in 100 gram increments to 500 gram for measurement of the HTH granules	No	1		
<b><u>Filtration Equipment</u></b>					
62	2 number 10" Slimline Blue filter cartridges connected in parallel and fitted into the reticulation outlet of the elevated storage at an elevation allowing for ease of cartridge replacement	No	2		
63	10 - 5 micron PP filter cartridge for installation into the filter cartridge housings	No	2		
<b><u>The following in Pump House:</u></b>					
64	Excavation not exceeding 2m deep to reduce levels under floors	m3	1		
65	Excavation not exceeding 2m deep for trenches	m3	6		
66	Risk of collapse not exceeding 1,5m deep.	m2	16		
67	Keeping excavations free from water		Item		
68	Backfilling to trenches, holes, etc using excavated material	m3	3		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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69	Carting away surplus excavated material	m3	4		
70	Scarifying and compaction under surface beds	m2	7		
71	G5 Filling under surface beds including compaction in 150mm layers	m3	2		
72	8mm Jointex expansion joint between horizontal concrete and brick surfaces including sealant	m	17		
73	Damp proof membrane under surface beds	m2	7		
74	One layer of 375 micron Consol Plastics Brikgrip DPC embossed damp proof course in walls	m2	7		
75	Weld Mesh Ref 193 in surface beds	m2	7		
76	Surface blinding under footings	m3	0.3		
77	25Mpa/19mm Reinforced concrete in footings	m3	1		
78	25Mpa/19mm Reinforced concrete in surface beds	m3	0.3		
79	25Mpa/19mm Reinforced concrete in aprons	m3	1		
80	One brick wall in foundations (14 MPa NFX bricks) with reinforcement	m2	6		
81	One brick wall of "Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved face brickwork, pointed on both sides	m2	14		
82	Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved header course	m	6		
83	0.8mm Thick IBR roof sheeting with silicone polyester top finish colomet or equal approved colour to one side and standard grey backing coat to the other side, to 5 degree slope	m2	3		
84	0.8mm thick Stainless Steel finish headwall flashing, consisting of 200 mm purposemade wide flashing sealed with continuous broad fluted moulded poly closure strips with minimum 150mm end laps. Apron flashing to have minimum 150mm sealed end laps and fixed through broad flute aluminium closures at every crest	m	6		
<b>Carried to Collection</b>				R	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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85	38 x 114mm Wall plate	m	6		
86	76 x 50mm Purlins	m	3		
87	76 x 50mm Rafters	m	6		
88	42mm thick door in single leaf, size 1 000 x 1 875mm high with Grey White powdercoated galvanised steel sheet and 625 x 425mm high steel ventilation grille including 1No. construction hinge with ball bearings, 1No. spring hinge with hinge sleeve without automatic closing, mortice lock, 1No. Black plastic lever handle set and 1No. security bolt fitted with 2,0mm thick Grey White powdercoated galvanised steel frame with 4 sided seal, installed in accordance with the manufacturer's instructions.	No	1		
89	30mm thick Screed on floors	m2	2		
90	30mm Thick Grano on floors.	m2	2		
	<b><u>Testing:</u></b>				
91	Testing water pipe system.		Item		
<b>Carried to Collection</b>					R
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Water Reticulation					

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

Item No	Quantity	Rate	Amount
<b><u>BILL No. 9</u></b>			
<b><u>RAINWATER HARVESTING</u></b>			
<b><u>MODEL PREAMBLES</u></b>			
The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
<u>Density testing on filling:</u>			
Rates for filling, etc. shall include for all density and soil type testing to prove that the specified compaction is achieved. When additional testing is done on instruction of the Principal Agent and these tests are successful, they will be paid for additionally.			
<b><u>THE FOLLOWING IN INTERCONNECTING TANKS AND STANDS</u></b>			
<b><u>EARTHWORKS</u></b>			
<b><u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u></b>			
<b><u>Excavation in earth not exceeding 2m deep:</u></b>			
1	Trenches. m3	71	
<b><u>Extra over trench and hole excavations in earth for excavation:</u></b>			
2	Soft rock. m3	4	
3	Hard rock. m3	2	
<b>Carried to Collection</b>			R
Section 4 Bill No. 9 Rainwater Harvesting			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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<b><u>Extra over all excavations for carting away:</u></b>					
4	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the Contractor.	m3	45		
<b><u>Risk of collapse of excavations:</u></b>					
5	Sides of trench and hole excavations not exceeding 1,5m deep.	m2	237		
<b><u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93%:</u></b>					
6	Backfilling to trenches, holes, etc.	m3	25		
<b><u>Earth filling supplied by the Contractor compacted to 95% MOD AASHTO:</u></b>					
7	Under floors, steps, pavings, etc.	m3	63		
<b><u>Compaction of surfaces</u></b>					
8	Compaction of ground surface under floors, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m2	125		
<b><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></b>					
<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>					
<b><u>25Mpa/19mm Concrete</u></b>					
9	Strip footings.	m3	28		
<b><u>REINFORCED CONCRETE</u></b>					
<b><u>25 MPa/19mm Concrete:</u></b>					
10	Tank concrete slab.	m3	25		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 9					
Rainwater Harvesting					

**FINISHING TOP SURFACE OF CONCRETE**

**Finishing top surfaces of concrete smooth with a steel trowel including adding additional cement while concrete is still green to attain a smooth, hard surface:**

11	Surface beds, slabs, etc.	m2	169	
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**ROUGH FORMWORK (DEGREE OF ACCURACY III)**

**Rough Formwork to Sides:**

12	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	260	
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**REINFORCEMENT**

**Allens Meshco Square Mesh Fabric reinforcement:**

13	Type 245 fabric reinforcement in concrete surface beds, slabs, etc.	m2	169	
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**MASONRY**

**BRICKWORK IN FOUNDATIONS (PROVISIONAL)**

**Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:**

14	One brick walls.	m2	71	
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**BRICKWORK IN SUPERSTRUCTURE**

**Brickwork of NFP bricks (7 MPa nominal compressive strength) in Class II mortar:**

15	One brick walls.	m2	130	
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**BRICKWORK AND BLOCKWORK SUNDRIES**

**Brickwork reinforcement:**

16	230mm Wide reinforcement built in horizontally.	m	490	
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**Carried to Collection**

Section 4  
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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17	Ditto, but in foundations (Provisional).	m	294
<b><u>FACE BRICKWORK</u></b>			
<b><u>"Corobrik Fireside Travertine Imperial FBA" clay face brick or equal and approved, size 222 x 106 x 73mm, bedded and jointed in Class II mortar and pointed with recessed vertical and recessed horizontal joints, suitable for exposure zones 1-2:</u></b>			
18	Extra over brickwork for face brickwork externally.	m <sup>2</sup>	125
<b><u>PLUMBING AND DRAINAGE</u></b>			
<b><u>TANKS ETC</u></b>			
<b><u>Plastic water tanks etc:</u></b>			
19	5000 Litre light duty cylindrical tank complete with lid, 15mm brass bibtap with handle suitable for locking and 4 No. galvanised stay wires 2.5m each long connected to tank, with and including 4 No. eye bolts cast into concrete.	No	25
20	Hole top of tank for 100mm pipe.	No	25
<b><u>THE FOLLOWING IN RAINWATER HARVESTING STORAGE AREA</u></b>			
<b><u>Excavation in earth not exceeding 2m deep:</u></b>			
21	Reducing levels.	m <sup>3</sup>	72
<b><u>Filling supplied by the contractor under concrete pavement, etc</u></b>			
22	G5 Base course material compacted to 98% Mod AASHTO density	m <sup>3</sup>	72
23	G7 Natural subbase material, compacted to 95% Mod AASHTO density	m <sup>3</sup>	36
<b><u>Coarse river sand filling supplied by the contractor:</u></b>			
24	Under floors etc.	m <sup>3</sup>	10
<b>Carried to Collection</b>			
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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	<b><u>Compaction of surfaces:</u></b>				
25	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density.	m2	240		
	<b><u>Prescribed density tests on filling:</u></b>				
26	In-situ dry density test.	No	6		
	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control Company and guaranteed against termite infestation for ten years:</u></b>				
27	Treat filling under concrete floor with 'Chlordane Heptachlor Aldrin' or equal approved.	m2	240		
	<b><u>Reinforced 25Mpa/19mm Concrete:</u></b>				
28	Surface beds cast in panels on waterproofing.	m3	29		
	<b><u>Finishing top surfaces of concrete smooth with a wood float:</u></b>				
29	Surface beds, slabs, etc to falls and currents.	m2	192		
	<b><u>Smooth Formwork (Degree of Accuracy II)</u></b>				
30	Edges, risers, ends and reveals not exceeding 300mm high.	m	160		
	<b><u>Test blocks:</u></b>				
31	Making and testing set of three 150x150x150mm concrete strength test cubes.	No	15		
	<b><u>Expansion joints with bitumen impregnated softboard between vertical concrete or brick surfaces:</u></b>				
32	10mm Joints not exceeding 300mm high.	m	64		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 9					
Rainwater Harvesting					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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	<b><u>Approved polysulphide sealing compound including backing cord, bond breaker, primer etc.:</u></b>				
33	10 x 10mm In vertical expansion joints between concrete and brick surfaces, including raking out expansion joint filler as necessary.	m	64		
	<b><u>Fabric reinforcement:</u></b>				
34	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	192		
	<b><u>Waterproofing under Surface beds</u></b>				
35	350 Micron USB orange polyethylene dampproof membrane in accordance with SABS 952 Type C laid on sand bed (elsewhere measured).	m2	192		
	<b><u>Plastic water tanks etc:</u></b>				
36	5000 Litre roto molded or equal approved plastic tank complete with lid, side inlet and outlet, and 4 No. galvanised 4mm stay wires 2.5m each long connected to tank, and including fixing to ground level concrete platform.	No	48		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 9					
Rainwater Harvesting					



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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

Item No	Quantity	Rate	Amount
<b><u>BILL No. 10</u></b>			
<b><u>BOUNDARY WALL AND SECURITY FENCING</u></b>			
<b><u>MODEL PREAMBLES</u></b>			
The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
<b><u>BOUNDARY WALL</u></b>			
<b><u>Excavation in earth not exceeding 2m deep:</u></b>			
1	Trenches.	m3	11
<b><u>Extra over all excavations for carting away:</u></b>			
2	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	5
<b><u>Risk of collapse of excavations:</u></b>			
3	Sides of trench and hole excavations not exceeding 1,5m deep.	m2	32
<b><u>Keeping excavations free of water:</u></b>			
4	Keeping excavations free from mud and all water including subterranean sources.	Item	
<b><u>Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod. AASHTO density:</u></b>			
5	Backfilling to trenches, etc.	m3	6
<b>Carried to Collection</b>			R
Section 4 Bill No. 10 Boundary Wall and Security Fencing			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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	<b><u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u></b>				
6	To bottoms and sides of trenches, etc.	m2	42		
	<b><u>15Mpa/19mm Concrete</u></b>				
7	Surface blinding under footings.	m3	1		
	<b><u>25MPa/20mm concrete:</u></b>				
8	Footings to walls	m3	3		
	<b><u>Test blocks:</u></b>				
9	Making and testing set of three 150x150x150mm concrete strength test cubes (Provisional).	No	2		
	<b><u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u></b>				
10	One brick walls in foundations	m2	12		
	<b><u>Brickwork of NFP bricks (7 MPa nominal compressive strength) in Class II mortar:</u></b>				
11	One brick walls in superstructure	m2	27		
	<b><u>Brickwork reinforcement:</u></b>				
12	230mm Wide reinforcement built in horizontally.	m	106		
13	Ditto, but in foundations (Provisional).	m	47		
	<b><u>Precast coping:</u></b>				
14	400 x 50mm precast concrete coping	m	15		
	<b><u>Cement plaster on brickwork:</u></b>				
15	On walls.	m2	54		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 10					
Boundary Wall and Security Fencing					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

	<b><u>Prepare surface and remove all loose material, and rinse. apply Polycell Mendall 90 flexible crack filler to holes and cracks, one coat undercoat, one coat tinted Micatex and two coats PLASCON WALL &amp; ALL or equal Architect approved, to cover surface sufficiently. All to manufacturer's specifications. Colour and type to Architect's approval:</u></b>				
16	On external walls	m2	54		
	<b><u>SECURITY FENCING AND GATES (SEE DRAWING NUMBERS 408 &amp; 70-01 ATTACHED)</u></b>				
	<b><u>Take down and remove:</u></b>				
17	Existing fence from site	m	514		
	<b><u>Site clearance</u></b>				
18	Clear site for a width 1000mm where new fencing is to be erected including removal of tree shrubs, etc not exceeding 200mm, grubbing up and roughly levelling (new fence measured elsewhere)	m	833		
	<b><u>Straining wires, fencing and razor wire:</u></b>				
19	Four strands of 4mm fully galvanised straining wires secured to fencing posts with doubled 2mm galvanised wire inserted through hole in post and turned a minimum of four times.	m	145		
20	Flatwrap 500 razor barbed tape galvanised fixed vertically to and including two rows of fully galvanised double strand 1.6mm barbed wire secured to fencing posts with 2mm fully galvanised wire.	m	145		
21	Fencing formed of 100 x 50 x 3.15mm Class C galvanised weldmesh 1 800mm high with vertical wires facing outwards, secured with 22mm howgrings at 300mm centres to straining wires (straining wires elsewhere measured).	m	145		
22	Allow for collection and transportation of Class A fence (including posts, straining wires, etc) from Qheberha to site (approximately 700km) and installation of the same as per marked boundaries on the Site Layout.	m	689		
	<b>Carried to Collection</b>			R	
	Section 4				
	Bill No. 10				
	Boundary Wall and Security Fencing				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**Posts for 1 800mm high security fence:**

23	60mm Diameter x 3mm hot dip galvanised steel intermediate fencing post 2700mm long fitted with a pressed steel mushroom cap one end and 150 x 150 x 3 mm baseplate at bottom and embedded in and including 450 x 450 x 650mm mass concrete (15 MPa) base.	No	49
24	100mm Diameter x 3m Ditto as straining post 2700mm high, fitted with two 60mm diameter galvanised steel stay set raking and with top end flattened and bolted through post. Stay and posts with 150 x 150 x 5mm baseplates and all embedded in and including mass concrete (15 MPa) bases as last.	No	5
25	100mm Diameter x 3m Ditto as corner post 2700mm high, fitted with two 60mm diameter galvanised steel stay set raking and with top end flattened and bolted through post. Stay and posts with 150 x 150 x 5mm baseplates and all embedded in and including mass concrete (15 MPa) bases as last.	No	3
26	100mm Diameter x 3mm Ditto as gate post 2700mm long, fitted with one 60mm diameter galvanised steel stay set raking and with top end flattened and bolted through post. Stay and post with 150 x 150 x 5mm baseplates and both embedded in and including mass concrete (15 MPa) bases as last.	No	6

**Gates:**

27	Allow for collection and transportation of single gate size 1.2 x 1.8m from Qheberha to site (approximately 700km) and installation of the same as per the Site Layout.	No	6
28	Allow for collection and transportation of double gate size 3.8 x 1.8m from Qheberha to site (approximately 700km) and installation of the same as per the Site Layout.	No	1

**Carried to Collection**

R

Section 4  
Bill No. 10  
Boundary Wall and Security Fencing

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

29 Security fence single gate, size 1200 mm wide x 1 800 mm high, formed of 60mm diameter x 3mm hot dip galvanised gate tube frame all round with 40 x 40 x 3mm galvanised square tube brace, the gate covered with 100 x 50 x 3,15 mm weld mesh with three strands of 4mm galvanised straining wires, including 500mm flatwrap as before described, leaf fitted with three 24mm diameter x 300 mm long eyebolt hinges and stops including all holes, etc., welded or bolted to adjoining galvanised gatepost with and including 16mm round bars fitted to 100 x 2mm mild steel padlock plate with 10mm hole for padlock welded to frame and union padlock No 3122.

No

1

30 Security fence double gate, size 3 800mm wide x 1 800 mm high, in equal leaves each leaf formed of 60mm diameter x 3mm hot dip galvanised gate tube frame all round with 40 x 40 x 3mm galvanised square tube brace, the gate covered with 100 x 50 x 3,15 mm weld mesh with three strands of 4mm galvanised straining wires, including 500mm flatwrap as before described, each leaf fitted with three 24mm diameter x 300mm long eyebolt hinges and stops including all holes, etc., welded or bolted to adjoining galvanised gatepost with and including 16mm round bars fitted to 100 x 2mm mild steel padlock plate with 10mm hole for padlock welded to frame and union padlock No 3122.

No

2

**Carried to Collection**

R

Section 4  
Bill No. 10  
Boundary Wall and Security Fencing

Section 4

Bill No. 10

Boundary Wall and Security Fencing

Total Brought Forward from Page No.

Amount

232

R

-233-

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

Item No		Unit	Quantity	Rate	Amount
	<b><u>BILL No. 11</u></b>				
	<b><u>LANDSCAPING</u></b>				
	<b><u>MODEL PREAMBLES</u></b>				
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates				
	<b><u>Excavate in earth and dispose on site</u></b>				
1	Not exceeding 150mm deep to remove humps, form shallow ditches, etc	m2	3 760		
	<b><u>Ground preparation:</u></b>				
2	Cultivation and preparation of areas to be planted.	m2	3 760		
	<b><u>Topsoil, compost, lime and fertilizer:</u></b>				
3	Topsoil supplied by the Contractor in plant beds, grassed areas and holes for trees, shrubs, etc.	m3	564		
4	Fertilize garden soil with 3:2:1 super phosphate spread at a rate of 1kg/10m2 including working evenly into top 20mm depth of soil.	m2	3 760		
	<b><u>Trees</u></b>				
5	Celtis Africana (White Stinkwood) 200 Litre size or equal Architect approved	No	16		
	<b><u>Grassing, ground covers, etc</u></b>				
6	"Kikuyu" roots in rows at 250mm centres	m2	3 760		
	<b><u>Pebble covering</u></b>				
7	White covering of pebbles varying from 10mm to 30mm diameter	m2	285		
	<b>Carried to Collection</b>			R	
	Section 4				
	Bill No. 11				
	Landscaping				



**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

**Litter Bins**

**Precast bins or equal Architect approved**

8 Litter Bin size 550 x 550 x 1 000mm high with aggregate finish

No

12

**Maintenance Period:**

9 Maintenance of grassed and ground covered areas for a period of 3 months (total area approximately 3760m2) including regularly weeding and irrigating as necessary.

Item

**Carried to Collection**

R

Section 4  
Bill No. 11  
Landscaping

[illegible]

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

Item No		Quantity	Rate	Amount
	<b><u>BILL No. 12</u></b>			
	<b><u>GRADE R PLAYGROUND</u></b>			
	<b><u>MODEL PREAMBLES</u></b>			
	The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates			
	<b><u>The following Jungle Gym as supplied by Rustics Jungle Gym or equal Architect approved, all as per drawing number 00-06 attached these bills of quantities:</u></b>			
1	Venter Residence consisting of:-  ·Two raised platforms (1.4m x 1.4m each), one with a 95% UV protected shade cloth roof and one without a roof ·Wooden railings around the platform, where possible, for additional safety ·A cargo net balance beam bridge between the two platforms ·An enclosed wendy house underneath the raised platform ·A glass fibre slide ·A rung ladder at an angle ·A cargo net ·A ramp climber with heavy duty knotted rope ·Two tyre swings ·Varnishing of the structures	Item		
2	Additional platform with shade cloth roof	Item		
3	Climbing Wall	Item		
4	Tyre Climber	Item		
5	Free standing swing set with three tyre swings	Item		
	<b>Carried to Collection</b>		R	
	Section 4 Bill No. 12 Grade R Playground			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

<b><u>The following in Two (2) Undercover Play Areas:</u></b>					
6	Excavation not exceeding 2m deep to reduce levels under floors	m3	9		
7	Excavation not exceeding 2m deep for trenches	m3	26		
8	Risk of collapse not exceeding 1,5m deep.	m2	64		
9	Keeping excavations free from water		Item		
10	Backfilling to trenches, holes, etc using excavated material	m3	15		
11	Carting away surplus excavated material	m3	20		
12	Scarifying and compaction under surface beds	m2	28		
13	G5 Filling under surface beds including compaction in 150mm layers	m3	9		
14	River sand filling under surface beds	m3	1		
15	8mm Jointex expansion joint between horizontal concrete and brick surfaces including sealant	m	30		
16	Damp proof membrane under surface beds	m2	28		
17	Two layers of 375 micron Consol Plastics Brikgrid DPC embossed damp proof course	m2	7		
18	Weld Mesh Ref 193 in surface beds	m2	28		
19	Surface blinding under footings	m3	2		
20	25Mpa/19mm Reinforced concrete in footings	m3	6		
21	25Mpa/19mm Reinforced concrete in surface beds	m3	3		
22	25Mpa/19mm Reinforced concrete in ring beam	m3	1		
23	Smooth formwork to sides and soffits of ring beam	m2	15		
24	One brick wall in foundations (14 MPa NFX bricks) with reinforcement	m2	32		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 12					
Grade R Playground					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

25	Extra over brickwork for "Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved face brickwork in foundations	m2	8		
26	"Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved bull-nose roller course	m	32		
27	One brick wall of "Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved face brickwork in superstructure	m2	53		
28	Half brick wall in beamfilling ditto	m2	8		
29	Design, supply and install roof truss system complete including wall plates, rafters, purlins, etc, to suit roof area approximate size 27m2 and 30 degree pitch.	No	2		
30	0.8mm Thick IBR roof sheeting with silicone polyester top finish colomet or equal approved colour to one side and standard grey backing coat to the other side, with 30 degree pitch, including all flashings and apex ridge cap.	m2	62		
31	125 x 125 x 0.8mm Aluminium gutters complete with fittings	m	42		
32	100mm Diameter PVC downpipes complete with fittings	m	12		
33	12 x 225mm Fibre-cement fascia boards	m	42		
<b><u>The following in Two (2) Sand Pits:</u></b>					
34	Excavation not exceeding 2m deep to reduce levels under floors	m3	15		
35	Excavation not exceeding 2m deep for trenches and bases	m3	29		
36	Excavation not exceeding 2m deep for trenches but circular on plan	m3	5		
37	Risk of collapse not exceeding 1,5m deep.	m2	46		
38	Keeping excavations free from water		Item		
39	Backfilling to trenches, holes, etc using excavated material	m3	31		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 12					
Grade R Playground					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

40	Carting away surplus excavated material	m3	18		
41	Scarifying and compaction under surface beds	m2	48		
42	G5 Filling under surface beds including compaction in 150mm layers	m3	17		
43	Surface blinding under footings and bases	m3	4		
44	25Mpa/19mm Reinforced concrete in footings and bases	m3	12		
45	One brick wall in foundations (14 MPa NFX bricks) with reinforcement	m2	35		
46	One brick wall in foundations (14 MPa NFX bricks) with reinforcement but circular on plan	m2	5		
47	Mass brickwork in piers.	m3	4		
48	Extra over brickwork for "Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved face brickwork in foundations	m2	11		
49	Extra over brickwork to piers for face brickwork, as above described	m2	39		
50	"Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved bull-nose roller course	m	44		
51	Ditto, but circular on plan	m	6		
52	One brick wall of "Corobrik Mopani Travertine Imperial FBS" clay face brick or equal Architect approved face brickwork in superstructure	m2	30		
53	50 x 50 x 4mm Thick galvanised mild steel square hollow section vertical frame, with 15 x 40 x 3mm galvanised wire mesh welded to the frame, size 1 610 x 2 295mm high fixed to brickwork	No	4		
54	120 x 60 x 5mm Hot dip galvanised hollow steel section beam	kg	507		
55	'Tanalith' treated 50mm diameter timber droppers including fixing to hollow steel section beam	m2	59		
<b>Carried to Collection</b>				R	
Section 4					
Bill No. 12					
Grade R Playground					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

56	Silica or equal Architect approved coarse grade playpen sand	m3	29
Carried to Collection		R	
Section 4 Bill No. 12 Grade R Playground			

[illegible]



## Section 4

**Bill  
No**

**Page  
No**

Amount

162

165

170

184

189

197

208

220

227

233

236

242

R

Section 4

Item No	Quantity	Rate	Amount
<p><b><u>SECTION 5</u></b></p> <p><b><u>BILL No. 1</u></b></p> <p><b><u>ELECTRICAL INSTALLATION</u></b> <b><u>(PROVISIONAL)</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>CERTIFICATES OF COMPLIANCE</u></b></p> <p>Prices are to include for testing, commissioning and issuing of Certificates of Compliance (CoCs) where required</p> <p><b><u>OPERATION MANUALS</u></b></p> <p>Prices are to include for provision of Operation and Maintenance Manuals including training where required</p> <p><b><u>SANS Standards:</u></b></p> <p>The following to be installed in strict accordance to the following SANS Standards:</p> <ul style="list-style-type: none"> <li>• Electrical Installations: SANS 10142</li> <li>• Gas Installations: SANS 10087</li> <li>• Lightning Protection: SANS 62305-1:2011 &amp; IEC 62305-1:2010</li> <li>• Kitchen Extraction Canopy Installations: SANS 1850</li> </ul>			
<p><b>Carried to Collection</b></p>			<p>R</p>
<p>Section 5 Bill No. 1 Electrical Installation</p>			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

**PRELIMINARIES AND GENERAL**

Allow for any amounts necessary for complying with the contract conditions including but not limited to site establishment, compliance with safety requirements, supervision and insurances

1	Fixed costs			SUM
2	Time related costs			SUM
3	Contract value related costs			SUM

**DISTRIBUTION BOARDS**

**Electrical DB's**

DB - A (As per Single Line Diagram)

4	Supply	No	1	
5	Install	No	1	

DB - B (As per Single Line Diagram)

6	Supply	No	1	
7	Install	No	1	

DB - C (As per Single Line Diagram)

8	Supply	No	1	
9	Install	No	1	

DB - D (As per Single Line Diagram)

10	Supply	No	1	
11	Install	No	1	

DB - E (As per Single Line Diagram)

12	Supply	No	1	
13	Install	No	1	

**Carried to Collection**

R

Section 5  
Bill No. 1  
Electrical Installation

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

28	Supply	No	1	
29	Install	No	1	
	<b><u>DB's for other services</u></b>			
	<b><u>Data DB</u></b>			
	450 x 450 x 150 with soft backing and lockable door			
30	Supply	No	1	
31	Install	No	1	
	<b><u>CABLES, WIRING &amp; ACCESSORIES</u></b>			
	<b><u>Allow for the following LV (1000V) cables (including Install/laying and backfilling)</u></b>			
	<b><u>All LV cables - PVC/PVC/SWA/PVC</u></b>			
	50 mm <sup>2</sup> x 4c			
32	Supply	m	80	
33	Install	m	80	
34	Terminate Supply	No	2	
35	Install	No	2	
36	16 mm <sup>2</sup> x 4c Supply	m	440	
37	Install	m	440	
38	Terminate Supply	No	6	
39	Install	No	6	
40	10 mm <sup>2</sup> x 4c Supply	m	100	
41	Install	m	100	
	<b>Carried to Collection</b>			R
	Section 5 Bill No. 1 Electrical Installation			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

42	Terminate Supply	No	2		
43	Install	No	2		
44	10 mm <sup>2</sup> x 3c Supply	m	640		
45	Install	m	640		
46	Terminate Supply	No	14		
47	Install	No	14		
48	10 mm <sup>2</sup> Airdac Supply	m	90		
49	Install	m	90		
50	Terminate Supply	No	2		
51	Install	No	2		
52	4 mm <sup>2</sup> x 2c Supply	m	60		
53	Install	m	60		
54	Terminate Supply	No	2		
55	Install	No	2		
<b><u>Wiring - PVC insulated copper wire of the following sizes:</u></b>					
	6,0 mm <sup>2</sup>				
56	Supply	m	35		
57	Install	m	35		
	4,0 mm <sup>2</sup>				
<b>Carried to Collection</b>				R	
Section 5 Bill No. 1 Electrical Installation					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

58	Supply	m	665
59	Install 2,5 mm <sup>2</sup>	m	665
60	Supply	m	9 290
61	Install 1,5 mm <sup>2</sup>	m	9 290
62	Supply	m	9 690
63	Install	m	9 690
	<b><u>Draw wire</u></b> 16 swg galvanised		
64	Supply	m	1 968
65	Install	m	1 968
	<b><u>BCE - Bare Copper Earth Wire</u></b> 25 mm <sup>2</sup>		
66	Supply	m	80
67	Install & Terminations 10 mm <sup>2</sup>	m	80
68	Supply	m	440
69	Install & Terminations 6 mm <sup>2</sup>	m	440
70	Supply	m	830
71	Install & Terminations 4 mm <sup>2</sup>	m	830
	<b>Carried to Collection</b>		R
	Section 5 Bill No. 1 Electrical Installation		

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

72	Supply	m	18
73	Install & Terminations	m	18
	2,5 mm2		
74	Supply	m	5 042
75	Install & Terminations	m	5 042
	1,5 mm2		
76	Supply	m	4 845
77	Install & Terminations	m	4 845

**MANHOLES FOR ELECTRICAL AND  
COMMUNICATION CABLES**

**Supply and install 1000mm X 1000mm x  
1000mm deep brick manholes**

**Junction box size 1000 x 1000mm x 1000mm deep internally to invert level formed of hard burnt one brick sides in 1:3 cement mortar on and including 150 mm thick mass concrete (class 20 /19 concrete at 28 days) bottom projecting 75 mm beyond sides rendered internally in 1:3 cement plaster with 100 mm thick mass concrete (class 20/19 concrete at 28 days) kerb on top, rebated for and fitted with cast iron double seal Cover 900mm x 900mm x 30mm, Frame 990mm x 990mm in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow including all necessary excavations, formwork, holes through sides for pipes, etc**

78	Supply	No	30
79	Install	No	30

**CONDUIT, WIREWAYS & ACC.**

SABS Approved PVC or Bosal conduit, complete with all couplings, saddles etc. (On surface, build- and cast-in)

**Carried to Collection**

Section 5  
Bill No. 1  
Electrical Installation

R



**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

80	20 mm dia. PVC Supply	m	10 621		
81	Install	m	10 621		
	25 mm dia. PVC				
82	Supply	m	1 596		
83	Install	m	1 596		
	20 mm dia. PVC Sprag				
84	Supply	m			<b>RATE ONLY</b>
85	Install	m			<b>RATE ONLY</b>
	20 mm dia. Bosal				
86	Supply	m	360		
87	Install	m	360		
	<b><u>Outlet boxes</u></b>				
	100 x 100 x 50 galvanised build/cast-in				
88	Supply	No	177		
89	Install	No	177		
	100 x 100 x 50 galvanised on surface				
90	Supply	No			<b>RATE ONLY</b>
91	Install	No			<b>RATE ONLY</b>
	100 x 100 x 50 galvanised chased in				
92	Supply	No			<b>RATE ONLY</b>
93	Install	No			<b>RATE ONLY</b>
	100 x 50 x 50 galvanised build/cast-in				
<b>Carried to Collection</b>				R	
Section 5					
Bill No. 1					
Electrical Installation					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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94	Supply	No	81	
95	Install 100 x 50 x 50 galvanised on surface	No	81	
96	Supply	No		RATE ONLY
97	Install 100 x 50 x 50 galvanised chased-in	No		RATE ONLY
98	Supply	No		RATE ONLY
99	Install Round PVC Box	No		RATE ONLY
100	Supply	No	592	
101	Install Round Galvanised Box	No	592	
102	Supply	No	72	
103	Install	No	72	
<b><u>SWITCHES AND SOCKET OUTLETS</u></b>				
<b><u>Light switches</u></b>				
	16 A 1 Lever 1 way fitted with cover plate			
104	Supply	No	43	
105	Install 16 A 2 Lever 1 way fitted with cover plate	No	43	
106	Supply	No	20	
107	Install 16 A 1 Lever 2 way fitted with cover plate	No	20	
<b>Carried to Collection</b>				R
Section 5 Bill No. 1 Electrical Installation				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

108	Supply	No	11		
109	Install	No	11		
	16 A 2 Lever 2 way fitted with cover plate				
110	Supply	No	2		
111	Install	No	2		
	16 A 2 Lever (1 x 1 way and 1 x 2 way) fitted with cover plate				
112	Supply	No	1		
113	Install	No	1		
	<b><u>Occupancy Sensors</u></b>				
	OS1 : Ceiling Mounted PIR - Recessed				
114	Supply	No	58		
115	Install	No	58		
	<b><u>Socket outlets</u></b>				
	16 A SSO fitted with cover plate				
116	Supply	No	71		
117	Install	No	71		
	16 A double SSO fitted with cover plate				
118	Supply	No	29		
119	Install	No	29		
	16 A SSO Normal on Power Skirting				
120	Supply	No	66		
121	Install	No	66		
<b>Carried to Collection</b>				R	
Section 5					
Bill No. 1					
Electrical Installation					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

<u>Provision for other services</u>			
	Data RJ45 outlet mounted to power skirting complete with cover plate		
122	Supply	No	65
123	Install	No	65
	Telephone RJ11 outlet mounted to wall complete with cover plate		
124	Supply	No	10
125	Install	No	10
	Data RJ45 outlet mounted to wall complete with cover plate		
126	Supply	No	11
127	Install	No	11
	Isolators 60 A Double pole surface mounted complete in weather proof box to feed air conditioners		
128	Supply	No	15
129	Install	No	15
	30 A Double pole surface mounted, lockable complete in weather proof box		
130	Supply	No	1
131	Install	No	1
	20 A Double pole flush mounted complete to feed Solar Geyser		
132	Supply	No	3
133	Install	No	3
	60 A Double pole flush mounted complete to feed Stove		
<b>Carried to Collection</b>			
Section 5			
Bill No. 1			
Electrical Installation			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

134	Supply	No	1		
135	Install	No	1		
	Cord Grip outlets				
136	Supply	No			<b>RATE ONLY</b>
137	Install	No			<b>RATE ONLY</b>
	<b><u>Other</u></b>				
	Round PVC Box covers				
138	Supply	No	116		
139	Install	No	116		
	Stove Connector				
140	Supply	No	1		
141	Install	No	1		
	<b><u>LUMINAIRES</u></b>				
	<b><u>Allow for a 3m cabtyre and 5A plugtop to all recessed lights</u></b>				
	F39 - 4ft, 39W, surface mounted, diffused LED luminaire as per specification				
142	Supply	No	123		
143	Install	No	123		
	F48 - 4ft, 48W, surface mounted, diffused LED luminaire as per specification				
144	Supply	No	60		
145	Install	No	60		
	F52 surface commercial open channel complete with 2 x 36W T8 lamps				
<b>Carried to Collection</b>				R	
Section 5					
Bill No. 1					
Electrical Installation					

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

146	Supply	No	60		
147	Install	No	60		
	F39(VP) - 4ft, 39W, surface mounted, vapour proof LED luminaire as per specification				
148	Supply	No	16		
149	Install	No	16		
	<b><u>Ammenity Lighting</u></b>				
	F17 round decorative bulkhead complete with 20W LED light source				
150	Supply	No	129		
151	Install	No	129		
	F02 Safe light with red lens				
152	Supply	No	3		
153	Install	No	3		
	Photocell Type P photocell in bulkhead of the same type as used elsewhere				
154	Supply	No	17		
155	Install	No	17		
	<b><u>MISCELLANEOUS</u></b>				
	<b><u>Power Skirting</u></b>				
	PC03 Two Tier Power skirting c/w end stops & duct dividers - to architect's colour specification				
156	Supply	m	40		
157	Install	m	40		
	Earthing				
	<b>Carried to Collection</b>				
	Section 5				
	Bill No. 1				
	Electrical Installation				

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

158	Earth resistivity test to SABS Earth spike at main DB	No	1
159	Supply	No	1
160	Install	No	1
	<b>Bells</b>		
	Programmable Bell 230 V complete installation as per bell detail (including all materials, siren, 60 A, isolator in York box, cable etc.)		
161	Supply	No	1
162	Install	No	1
	Intercom and Security Provisions - to be priced and installed by specialist installer		
163	Complete intercom system inclusive of microphone and all associated equipment with 2 way communication in all classrooms, offices .etc. as per layouts	No	1
	Complete Access control installation, incl weatherproof 2 way intercom, power supply and strike lock for Grade R entrance		
164	Supply	No	2
165	Install	No	2
	Lightning Protection - to be priced and intalled by specialist installer		
166	Complete Lightning protection installation to New Buildings	No	11
167	Complete Lightning protection installation to Existing Buildings	No	1
<b>Carried to Collection</b>			R
Section 5 Bill No. 1 Electrical Installation			

**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
PROJECT NO. DOE15ECAR001**

**EXCAVATION AND SLEEVES**

**Excavation of cable trench including backfill and compacting (see details)**

168	Soft, hand pickable soil	m	1 410
169	Intermediate soil requiring the use of pneumatic tools	m	400

**Sleeves**

110 mm dia flexible PVC sleeve

170	Supply	m	80
171	Install	m	80

50 mm dia flexible PVC sleeve

172	Supply	m	1 200
173	Install	m	1 200

**Miscellaneous**

Cable marker tape 320 mm wide

174	Supply	m	1 410
175	Install	m	1 410

Cable route markers

176	Supply	No	25
177	Install	No	25

**Carried to Collection**

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Section 5  
Bill No. 1  
Electrical Installation



**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
AT PROSPECT JSS, MALUTI  
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<b><u>INTERACTIVE WHITEBOARDS</u></b>				
<u>Supply and install Interactive Whiteboards to the Science Lab, Multi-Media Room and Multi Purpose Classroom</u>				
178	IW1000 Parrot Interactive Whiteboard System with IW1063 Parrot Non-reflective Whiteboard	No	3	
179	Acer Projector PJ X115H; DLP 3D; SVGA; 3300 lm; 20000/1; HDMI; Audio; Bag; 2.5kg	No	3	
180	Ceiling Mount Bracket 430-650mm lockable enclosure with padlock	No	3	
181	Pentray Eduboard 1200mm	No	3	
182	Power Cable IEC to 3 PIN 10 Meter	No	3	
183	White Trunking, 40 x 25mm 3m length	No	9	
184	Network Cable 10m Cat 6E	No	3	
<u>Installation and Labour</u>				
185	Installation costs inclusive of all labour, travelling and associated accessories and sundry items necessary for the complete installation	No	3	
<u>Training</u>				
186	Allow for proper Training to the end users	No	3	
<u>Operation and Maintenance Manuals</u>				
187	Provision of operation and maintenance manuals	No	3	
<b><u>Provisional Sum for Upgrade to Eskom Power Supply</u></b>				
188	Eskom Connection Fee		Item	350 000.00
189	Profit and attendance on above			%
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Electrical Installation

Item No	Quantity	Rate	Amount
<p><b><u>SECTION 6</u></b></p> <p><b><u>BILL No. 1</u></b></p> <p><b><u>MECHANICAL INSTALLATION</u></b> <b><u>(PROVISIONAL)</u></b></p> <p><b><u>MODEL PREAMBLES</u></b></p> <p>The tenderer is referred to the "Model Preambles for Trades 2008" for supplementary and comprehensive expansion of descriptions, appropriate provision for which shall be deemed to have been included in all relevant rates</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>CERTIFICATES OF COMPLIANCE</u></b></p> <p>Prices are to include for testing, commissioning and issuing of Certificates of Compliance (CoCs) where required</p> <p><b><u>OPERATION MANUALS</u></b></p> <p>Prices are to include for provision of Operation and Maintenance Manuals including training where required</p> <p><b><u>SANS Standards:</u></b></p> <p>The following to be installed in strict accordance to the following SANS Standards:</p> <ul style="list-style-type: none"> <li>• Electrical Installations: SANS 10142</li> <li>• Gas Installations: SANS 10087</li> <li>• Lightning Protection: SANS 62305-1:2011 &amp; IEC 62305-1:2010</li> <li>• Kitchen Extraction Canopy Installations: SANS 1850</li> </ul>			
<p><b>Carried to Collection</b></p>			<p>R</p>
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<b><u>PRELIMINARIES AND GENERAL</u></b>			
Allow for any amounts necessary for complying with the contract conditions including but not limited to site establishment, compliance with safety requirements, supervision and insurances			
1	Fixed costs	SUM	
2	Time related costs	SUM	
3	Contract value related costs	SUM	
<b><u>GAS INSTALLATIONS</u></b>			
All works to be carried out by a competent commercial gas installer and to be installed as per SANS 10087. Safety training and Training Schedule to be provided. COC must be supplied in accordance with law.			
<b><u>LIQUIFIED PETROLEUM (LP) GAS INSTALLATION</u></b>			
<b><u>LP Gas Cylinder Arrangement</u></b>			
Supply, Install, test, commission and provide 12 month guarantee for LP Gas cylinder c/w pressure gauges, regulators high and low pressure, connections, chains, additional isolating valve, as specified. (1 x 4 bottle arrangement for Nutrition Centre and 1 x 2 bottle arrangement for Grade R Nutrition Centre.) Include a galvanized gas cage as per drawings for the 2 bottle arrangement.			
4	Supply	SUM	
5	Install	SUM	
<b><u>LP Gas Outlet Points and Bunsen Burners</u></b>			
Supply, Install, test, commission and provide 12 month guarantee for 1 x 9kg bottle under teachers desk and a table top mounted Bunsen Burner complete with isolating valves and all associated equipment in Science Laboratory.			
6	Supply	SUM	
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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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7	Install		SUM	
<b><u>LP Gas Piping and Bends</u></b>				
Supply, Install, test, commission and provide 12 month guarantee for LP Gas piping and bends as required. High pressure Tracpipe equal or other approved between gas cubicle and kitchen				
8	Supply		SUM	
9	Install		SUM	
<b><u>Boiling Tables</u></b>				
<b><u>LP Gas Piping and Bends</u></b>				
Supply, Install, test, commission and provide 12 month guarantee for LP Gas piping and bends as required. High pressure Tracpipe equal or other approved between gas cubicle and kitchen				
10	Supply		SUM	
11	Install		SUM	
<b><u>Boiling Tables</u></b>				
12	Supply, delivery, installation and commissioning of 4 plate boiling Tables with burners not exceeding 8Mj per plate. The stoves to be able to take 400mm diameter pots.	No	3	
<b><u>Extraction</u></b>				
Supply, Install, test, commission and provide 12 month guarantee for Kitchen Extraction Canopy With extractor fans, attenuators, ducting and all other associated equipment as per the layout drawings				
13	Supply		SUM	
14	Install		SUM	
<b>Carried to Collection</b>				R
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**SOLAR GEYSERS**

**Solar Geyser installations to the Administration  
Block, Grade R and Nutrition Centre**

Supply, deliver and install Sustainable 100L Complete Direct Pumped Split System Solar Water Heating Kit SWHK-SUS-100L-CDP inclusive of sundry items, delivery, travelling, accommodation and all associated installation costs for the complete solar geyser installation. NOTE: Allowance to be made for liason with the Structural Engineer to confirm the load bearing capacity of the roof structures

15	The kit includes the following items: • 1 x 200L Direct Solatherm Geyser. • 1 x ITS 10 Evacuated Tube Collector. • 1 x ITS 4B Pump kit. • 1 x Valve Pack 2. • 1 x High Temperature Air Release Valve. • 2 x 22mm Ball Valves.	No	1		
16	The kit includes the following items: • 1 x 100L Direct Solatherm Geyser. • 1 x ITS 10 Evacuated Tube Collector. • 1 x ITS 4B Pump kit. • 1 x Valve Pack 2. • 1 x High Temperature Air Release Valve. • 2 x 22mm Ball Valves.	No	2		
	<u>Installation and Labour</u>				
17	Installation costs inclusive of all labour, travelling and associated accessories and sundry items necessary for the complete solar geyser installation			SUM	
	<u>Operation and Maintenance Manuals</u>				
18	Provision of operation and maintenance manuals			SUM	

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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**KITCHEN EQUIPMENT**

**Supply and deliver the following Kitchen Equipment to site inclusive of delivery costs**

**Administration Kitchenette**

19	Fridge Freezer ComboDefy C385 Fridge / Freezer DAC512 Metallic	No	2	
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**Nutrition Centre**

**Supply and deliver the following Kitchen Equipment to site inclusive of delivery costs**

20	220mm Plate Stainless Steel	No	750	
21	Type F Mug 8cm Stainless Steel	No	750	
22	Spoon Stainless Steel (1 doz)	No	34	
23	Stainless Steel Pots POT S/STEEL - CASSEROLE - 60Lt (500 x 310mm)	No	4	
24	Stainless Steel Pots POT S/STEEL - CASSEROLE - 30Lt (400 x 250mm)	No	4	
25	COLANDER S/STEEL - 340mm	No	4	
26	PAP STIRRER S/STEEL - 600mm	No	6	
27	POT FORK S/STEEL - 400mm	No	6	
28	PORTION SERVER SOLID - BLUE - 236ml / 8oz	No	6	
29	LADLE SOLID - 236ml / 8oz	No	4	
30	KNIVES - VICTORINOX - CLASSIC 3 PIECE PRISM PARING SET	No	4	
31	KNIFE GRUNTER - COOKS 200mm	No	4	
32	POTATO PEELER HAND PVC HANDLE - 170mm	No	4	
33	CAN OPENER HAND HELD - HEAVY DUTY	No	4	

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34	CUTTING BOARD PE - 500 x 380 x 13mm - GREEN	No	4
35	CUTTING BOARD PE - 500 x 380 x 13mm - RED	No	4
36	CUTTING BOARD PE - 500 x 380 x 13mm - YELLOW	No	4
37	CUTTING BOARD PE - 500 x 380 x 13mm - WHITE	No	4
38	STORAGE CONTAINER LARGE WITH LID - PLASTIC 35LT	No	4
39	OVEN MITT RED LEATHER - 400mm - PAIR	No	4
40	Fridge Freezer ComboDefy C385 Fridge / Freezer DAC512 Metallic	No	2
<b><u>GRADE R</u></b>			
<u>Supply and deliver the following Kitchen Equipment to site inclusive of delivery costs</u>			
41	220mm Plate Stainless Steel	No	140
42	Type F Mug 8cm Stainless Steel	No	140
43	Spoon Stainless Steel (1 doz)	No	12
44	Stainless Steel Pots POT S/STEEL - CASSEROLE - 60Lt (500 x 310mm)	No	2
45	Stainless Steel Pots POT S/STEEL - CASSEROLE - 30Lt (400 x 250mm)	No	4
46	COLANDER S/STEEL - 340mm	No	2
47	PAP STIRRER S/STEEL - 600mm	No	6
48	POT FORK S/STEEL - 400mm	No	6
49	PORTION SERVER SOLID - BLUE - 236ml / 8oz	No	6
50	LADLE SOLID - 236ml / 8oz	No	4
51	KNIVES - VICTORINOX - CLASSIC 3 PIECE PRISM PARING SET	No	4

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**CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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Section 6

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Mechanical Installation

Item No	Quantity	Rate	Amount
<b><u>SECTION No. 7</u></b>			
<b><u>BILL No. 1 : PROVISIONAL SUMS</u></b>			
<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
Tenderers are advised that no claim in respect of loss of profit or Preliminary charges based on the omission of these amounts will be considered and the said amounts will be omitted strictly without any financial compensation payable to the Contractor.			
Provisional sums and Budgetary allowances contained herein may be omitted or reduced at the Employer's discretion and the Contractor shall not be entitled to claim for any loss by way of reductions or omission of any discount, or percentage relating to Provisional amounts and Budgetary sums or any loss of profit related thereto.			
<b><u>The following amounts are for work to be carried out by Selected sub-contractors in terms of the Nominated/Selected Subcontract Agreement as prepared by the Joint Building Contracts Committee (JBCC):</u></b>			
<b><u>BUDGETARY ALLOWANCES</u></b>			
<b><u>The following budgetary allowances are for work to be executed at rates in the bills of quantities or to be agreed by the Principal agent:</u></b>			
1	Provide the sum of R579 964.00 for Movable Furniture to be supplied and installed by a Direct Contractor.	Item	579 964.00
2	Provide the sum of R156 000.00 for the employment of a Community Liaison Officer to be employed by the Main Contractor and be paid an allowance of R6 500.00 a month for the contract duration (24 months).	Item	156 000.00
3	Add: Mark-up	%	
<b>Carried to Collection</b>			R
Section 7 Bill No. 1 Provisional Sums			

CONSTRUCTION OF ADDITIONAL CLASSROOMS  
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4	Provide the sum of R240 000.00 for in-service training of 2 Students by the Main Contractor and each be paid an allowance of R5 000.00 a month for the contract duration (24 months).	Item	240 000.00
5	Add: Mark-up	%	
Carried to Collection		R	
Section 7			
Bill No. 1			
Provisional Sums			

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Bill No. 1

Provisional Sums

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Bill No. 1

Provisional Sums

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1 PRELIMINARIES	61	
2 ALTERATIONS (PROVISIONAL)	73	
3 BUILDING WORKS	158	
4 EXTERNAL WORKS (PROVISIONAL)	243	
5 ELECTRICAL INSTALLATION (PROVISIONAL)	260	
6 MECHANICAL INSTALLATION (PROVISIONAL)	268	
7 PROVISIONAL SUMS	271	
SUB-TOTAL		R
<b><u>CONTINGENCIES</u></b>		
Allow five per cent (5%) of the above sub-total for contingencies to be used as directed and deducted in whole or in part if not required.		
SUB-TOTAL		R
<b><u>ESCALATION</u></b>		
Allow five per cent (5%) of the above sub-total for escalation to be adjusted in terms of the JBCC Contract Price Adjustment Provisions.		
SUB-TOTAL:		R
Add Value Added Tax at the rate of 15%		R
Carried to Form of Offer and Acceptance		R

## INDEPENDENT DEVELOPMENT TRUST

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

### C3 Scope of Work

#### 1 DESCRIPTION OF THE WORKS

##### 1.1 Employer's objectives

The employer's objective is to provide:

Complete Administration Block, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

##### 1.2 Overview of the works

Administration Block (overall approximate size 245 square meters), Multi-Purpose Classroom, Library & Science Lab (overall approximate size 341 square meters) Four Classrooms (overall approximate size 269 square meters), Two Classrooms, HOD & Office (overall approximate size 153 square meters), Four Classrooms (overall approximate size 263 square meters), Four Classrooms, HOD & Office (overall approximate size 283 square meters), Nutrition Block (overall approximate size 180 square meters) Grade R Classroom (overall approximate size 100 square meters), Grade R Kitchen (overall approximate size 12 square meters), Grade R Ablution Block with 7 toilets including disabled toilet (overall approximate size 37 square meters), Renovations to Existing Grade R Classroom (overall approximate size 122 square meters), Renovations to Existing Female Learners Ablution Block (overall approximate size 37 square meters), Renovations to Existing Male & Female Staff Ablution Block (overall approximate size 30 square meters), Renovations to Existing Male Learners Ablution Block (overall approximate size 27 square meters), Recycle House (overall approximate size

20 square meters), Guard House (overall approximate size 12 square meters), Refuse Area (overall approximate size 13 square meters), Provision of new 5 temporary structures (each approximate size 120 square meters), Demolition of existing buildings to create space for new buildings, 2 x Undercover play area (each approximate size 16 square meters), 2 x Undercover sand pit (each approximate size 29 square meters), Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

## **AT PROSPECT JSS**

### **1.3 Extent of the works**

The works includes the Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

### **1.4 Location of the works**

The designated site to be shown to the contractor is at Prospect Junior Secondary School, Maluti, Alfred District of the Eastern Cape Province

#### **Temporary works**

To be communicated to the winning bidder before construction commences

## **2 DRAWINGS**

The drawings used for setting up the Bills of Quantities are attached on a compact disc at the back of this tender document.

- **Architectural drawings**

Three (3) sets to be provided to the successful tenderer at site hand over

## **3 PROCUREMENT**

### **3.1 Preferential procurement procedures**

The works shall be executed in accordance with the conditions attached to preferences granted in accordance with the preferencing schedule.



### 3.1.1 Requirements for the sourcing and engagement of labour.

3.1.1.1 Labour required for the execution of all labour intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

3.1.1.2 The rate of pay set for this project is as follows:

Description	Daily wage for 8 hour work day (Minimum)	Important Note to Bidders
Unskilled labour	R 120.00	<b>NB:</b> Bidders are to check and verify rates used in the area during compulsory briefing or before submitting bid document.
Semi-skilled labour	R 160.00	
Skilled labour	R 190.00	
Supervisor	R 230.00	

3.1.1.3 Tasks established by the contractor must be such that:

- a) the average worker completes 5 tasks per week in 40 hours or less; and
- b) the weakest worker completes 5 tasks per week in 55 hours or less.

3.1.1.4 The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 3.1.1.3.

3.1.1.5 The Contractor shall, through all available community structures, inform the local community of the labour intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

- a) where the head of the household has less than a primary school education;
- b) that have less than one full time person earning an income;
- c) where subsistence agriculture is the source of income;
- d) those who are not in receipt of any social security pension income

3.1.1.6 The Contractor shall endeavor to ensure that the expenditure on the employment of temporary workers is in the following proportions:

- a) 25 % women;
- b) 50% youth who are between the ages of 18 and 25; and
- c) 2% on persons with disabilities.

### 3.1.2 Specific provisions pertaining to SANS 1914-5

#### 3.1.2.1 Definitions

3.1.2.1.1 Targeted labour: Unemployed persons who are employed as local labour on the project.

#### 3.1.2.2 Contract Participation Goal

3.1.2.2.1 The minimum Contract Participation Goal applicable to the Contract is 30%.

3.1.2.2.2 The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes. The Person / days will be calculated in accordance with Addendum F: Contract Person / Days Calculation Format.

### **3.1.2.3 Terms and conditions for the engagement of targeted labour**

3.1.2.3.1 Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts to be signed between the Contractor and workers will be in accordance with the pro-forma contract, attached as Addendum D.

3.1.2.3.2 Further to the provisions of clause 5.2 of SANS 1914-5, the Contractor will use the pro-forma attendance register, attached as Addendum E, to record the required information as per said clause.

### **3.1.2.4 Variations to the SANS 1914-5**

None

### **3.1.2.5 Training of targeted labour**

3.1.2.5.1 The Employer will appoint a service provider that will provide training to the workers. The Contractor need not to provide for payment of said service provider.

3.1.2.5.2 Workers will receive 2 days training per every 22 working days for the duration of the Contract.

3.1.2.5.3 An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend training, in terms of 3.1.2.5.

3.1.2.5.4 Records pertaining to the attendance, progress and performance of trainees will be kept by the Contractor and made available to the Employer monthly. These records shall be attached to the monthly progress payment certificates to the Employer.

3.1.2.5.5 The Contractor shall do nothing to dissuade targeted labour from participating in training programmes.

## **3.2 Subcontracting**

### **3.2.1 Scope of mandatory subcontract work**

As per the mandatory sub-contracting clause, the Contractor must submit a proposal with methodology on how local businesses are going to be empowered.

The Contractor shall without delay enter into contracts with the Domestic Subcontractors as submitted on the returnable schedule and forward a copy of these agreements to the Principal Agent. The Contractor shall remain responsible for providing the subcontracted portion of the works as if the work had not been subcontracted.

The Contractor to take note of item 3.2.2 below

### **3.2.2 Preferred subcontractors / suppliers**

### **3.2.3 Subcontracting procedures**

See items 3.2.1 and 3.2.2 as well as tender data

### **3.2.4 Attendance on subcontractors**

Attendance to Domestic Sub-contractors as stated above should be priced under the relevant items in the Preliminaries section of the bills of quantities. Attendance to nominated sub-contractors should be priced under the relevant items in the Provisional Sums section of the bills of quantities.

## **4. MANAGEMENT**

### **4.1 Recording of weather**

The Contractor shall erect an effective rainfall gauge on the site and record the daily rainfall figures in a book. Such book shall be handed to the employer's representative for his signature no later than 12 days after rain that is considered to justify an extension of time occurs.

## **4.2 Unauthorized persons**

The Contractor shall keep unauthorized persons from the works at all times. Under no circumstances may any person except guards be allowed to sleep on the building site.

## **4.3 Management meetings**

The Employer's Representative and the Contractor shall hold meetings relating to the progress of the works at regular intervals and at other such times as may be necessary. The Contractor shall attend all site meetings and shall ensure that all persons under his jurisdiction are notified timeously of all site meetings should the Employer's Representative require their attendance at such meetings.

The Contractor shall keep on site a set of minutes of all site meetings, daily records of resources (people and equipment employed), a site instruction book, a complete set of contract working drawings and a copy of the procurement document and make these available at all reasonable times to all persons concerned with the contract.

## **4.4 Forms for contract administration**

The Contractor shall be required to submit an updated contractor monthly report during site meetings, which will be used by the consultant to update the client.

## **4.5 Payment certificates**

The Contractor to ensure that the VAT invoice required with each certificate is delivered timeously. The date of the certificate will be that of the date when the certificate is received by the consultant.

The Contractor to ensure timeous submission of all required documentation for the expedient processing of payment certificates, as required by the client, eg BAS entity forms, company registration details, VAT clearance certificates, etc. The Contractor is responsible for such documentation submission.

## **4.6 Addenda**

- 4.6.1 Occupational Health and Safety Regulations (*ADDENDUM A*)
- 4.6.2 Standard Occupational Health and Safety Specification (*ADDENDUM B*)
- 4.6.3 Environmental Management Plan (*ADDENDUM C*) (will be made available to the successful bidder)
- 4.6.4 Pro-forma contract between Contractor and Worker (*ADDENDUM D*)
- 4.6.5 Pro-forma Attendance Register (*ADDENDUM E*)
- 4.6.6 Contract Person / Days Calculation Format (*ADDENDUM F*)
- 4.6.7 Contractor monthly report format (see 4.4 above) also available in electronic format (*ADDENDUM G*)
- 4.6.8 Guidelines for the implementation of labour-intensive infrastructure projects under the Expanded Public Works Programme (*ADDENDUM H*) (available on the following [website www.epwp.gov.za](http://www.epwp.gov.za))
- 4.6.9 Drawings (*ADDENDUM I*)
- 4.6.10 IDT Addendum to the JBCC (*ADDENDUM J*)

## INDEPENDENT DEVELOPMENT TRUST

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

### C4.1 Site Information

#### The site

The designated site is located at Prospect JSS in Maluti. Co-ordinates are -30.23682833 South, 28.88016833 East.

## **C4.2 Project Health and Safety Specification**

# **PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION**

**GENERAL BUILDING  
MANAGED ON BEHALF OF  
INDEPENDENT DEVELOPMENT TRUST**

**(THE “CLIENT”)**

**PREPARED BY:**

**SHEHAWK CONSULTANTS CC**



**PROJECT:**

**ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT  
JUNIOR SECONDARY SCHOOL**

**KEY ROLE PLAYERS**

<b>Client</b>	<b>INDEPENDENT DEVELOPMENT TRUST</b>
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<b>Health &amp; Safety Agent</b>	<b>Shehawk Consultants CC</b>
<b>Contact</b>	Barinda Gretton
<b>Contact Number:</b>	082 460 9891
<b>Email address:</b>	<a href="mailto:Barinda@shehawk.co.za">Barinda@shehawk.co.za</a>

<b>Architects</b>	<b>Helm Architects</b>
<b>Contact</b>	Marius Helm
<b>Contact Number:</b>	082 807 1029
<b>Email address:</b>	<u>TBA</u>

<b>Quantity Surveyors</b>	<b>Paradox Young and Associates</b>
<b>Contact</b>	TBA
<b>Contact Number:</b>	083 397 9093
<b>Email address:</b>	<u>TBA</u>

<b>Architects</b>	<b>Sawgrass Consulting</b>
<b>Civil and Structural Engineer</b>	TBA
<b>Contact Number:</b>	TBA
<b>Email address:</b>	<u>TBA</u>

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## PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

### LIST OF ABBREVIATIONS

AIA	Approved Inspection Authority
BoQ	Bill of Quantities
CC	Compensation Commissioner
CHS	Construction Health and Safety
CHSA	Construction Health and Safety Agent
CHSO	Construction Health and Safety Officer
CR	Construction Regulations (Gazette 10113 of 07/02/2014)
IDT	Independent Development trust
DMR	Driven Machinery Regulations
DoL	Department of Labour
FEMA	Federated Employers Mutual Association
GAR	General Administration Regulations
GSR	General Safety Regulations
HCSR	Hazardous Chemical Substances Regulations
HIRA	Hazard Identification Risk Assessment
H&S	Health and Safety
ER	Engineer's Representative
LI	Labour Intensive
OH	Occupational Health
OHS	Occupational Health and Safety
OHSA	Occupational Health and Safety Act No. 85 of 1993 (as amended)
OHSS	Occupational Health and Safety Specification
PA	Principal Agent
PSHSS	Project Specific Health and Safety Specification
PC	Principal Contractor
PPE	Personal Protective Equipment
SANS	South African National Standards (Authority)
SDS	Safety Data Sheet
SMME	Small, Micro, Medium Enterprise
SWP	Safe Work Procedure

### DEFINITIONS

The definitions used will be those set out in the Regulation Gazette No 84 of 2014 7 February 2014 with the following additions:

**Client:** Independent Development Trust

**Construction Health and Safety Agent:**

A competent person appointed by the Client to carry out the duties of the Client in respect of Occupational Health and Safety on the Project in terms of Regulation 5 sub regs (5) and / or (6)

**IDT:** Independent Development Trust

**Designer:** Means a competent person appointed by the Client as Agent to design, supervise and monitor construction on their behalf.

**Hazard:** Source of exposure to danger

**Hazard Identification and Risk Assessment (HIRA) and Risk Control:**

Means a documented plan, which identifies hazards, assesses the risks and details the control measures and safe working procedures which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

**Health and Safety Agent:**

Means any person who acts as a representative for the Client in managing the overall health and safety work as their responsible person.

Health and Safety Specification ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL

**Health and Safety Plan:**

Means a documented plan which answers to the Site-Specific Health and Safety Specification; including all the supporting documentation that indicate how the Principal Contractor or Contractor plans to manage H&S for the duration of the Contract.

**Induction Training:**

Means once off introductory training on general health and safety issues given to all employees and visitors to the site before commencement of work on site.

**Principal Agent:**

Means a competent person appointed by the Client to design, supervise and monitor the construction on their behalf.

**Risk:**

Means the probability or likelihood that a hazard can result in injury or damage.

**Regulation/s:**

Shall mean the relevant regulation/s promulgated in terms of the Occupational Health and Safety Act, No. 85 of 1993.

**Site:**

Means the area in the possession of the Principal Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities for the Principal Contractor, and approved for such use by the Designer.

**The Act:**

Means, unless the context indicates otherwise, the Occupational Health and Safety Act, No. 85 of 1993 and Regulations promulgated thereunder, as amended

**KEY REFERENCES**

Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended)

Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)

Joint Building Conditions of Contract (JBCC)

South African Roads Traffic Safety Manual (SARTSM) Chapter 2, Volume 13 of 1999

Road Traffic Safety Act No. 93 of 1996 (as amended)

Construction Specifications & Standards 6.0 for Southern Africa. Hans Wegelin 6<sup>th</sup> Edition 2010

SANS Code 10400.

## **SCOPE OF WORK: ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL**

Part C3 identified as Description of Works, inclusive as part 2: Contract, is a fill reference to the Scope of Works of this project.

The C3 Description of Works part is part of the PSHSS and is incorporated as such. The Health and Safety Management Plan Compiled by the Contractor is to be inclusive and consider such information, but not limited to the Health and Safety Management Plan, but other applications as well i.e. Risk Assessment, Communication etc.

These specifications are applicable to the specific scope of work pertaining to the above-mentioned project as detailed in the tender documents, this amongst all includes for example:

- Earth Works
- Construction of the Structures/buildings
- Electricity – upgrade the current Eskom supply
- Storm water management – storm water channels, berm & cutthroat drain
- External works will include:  
Fencing, Entrance gate, Platform Assembly, Parking area, Landscaping – planting and relocation of existing trees.

### **1. PREAMBLE**

Each year fatalities, serious injuries and poor attitudes of Contractors mar the reputation of the Construction Industry. IDT has a responsibility to limit its risk by ensuring a zero tolerance and better practice approach to Contractors and those affiliated to a particular project. Thus a high premium is placed on the health and safety (H&S) of IDT stakeholders, which include its employees, professional service providers, public and its physical assets. The responsibilities that IDT and relevant stakeholders have toward its employees are captured in, but not limited to this document. The responsibilities stem from both moral, civil and a variety of legal obligations. The Principal Contractor is to take due cognisance of the above statement.

IDT, as the Client and the appointed CHS Agent SHEHAWK Consultants Cc on its behalf, shall provide a project specific Health & Safety Specification (PSHSS) for the project and provide the Principal Contractor/s making a bid or appointed to perform construction work for the project, or parts thereof.

#### **1.1 Purpose of the Project Specific Health and Safety Specification (PSHSS)**

The PSHSS is a performance specification to ensure that the Client and any bodies that enter into formal agreements with the Client viz. Agents, Professional Service Consultants (Engineers, Quantity Surveyors and Architects), Principal Contractors and Contractors achieve an acceptable level of OHS performance. No advice, approval of any document required by the PSHSS, such as hazard identification and risk assessments, or any other form of communication from the Client shall be construed as acceptance by the Client of any obligation that absolves the Principal Contractor from achieving the required level of performance and compliance with legal requirements. Furthermore, there is no acceptance of liability by the Client, which may result from the Principal Contractor failing to comply with the PSHSS, i.e. the Principal Contractor remains responsible for achieving the required performance levels.

A Mandatory Agreement in terms of Section 37.2 of the OHSA will be signed between parties prior to any works commencing.

The PSHSS highlights the aspects to be implemented over and above the minimum requirements of current legislation. Requirements may be changed should new risks or issues are identified that could not have been foreseen during the design phase of the project, or during the construction phase. Any new legislation or standards (legislated, or determined by IDT) that are promulgated or accepted during the contract will automatically be applied.

Environmental management shall receive due attention as per the requirements of the Environmental Control Officer (ECO), but will be managed by the ECO directly.

It should be noted that this OHSS in no way relieves the Contractor of any of his responsibilities set out in the Act and Regulations

## **1.2 Implementation of the Project Specific Occupational Health and Safety Specifications (PSHSS)**

The project specific H&S specification (PSHSS) forms an integral part of the Contract, and PCs are required to make it an integral part of their Contracts with Contractors and Suppliers. A PSHSS will be available for each level of Contract and Contractor, and must be complied with.

This specification must be read in conjunction with the OHSA, Regulations (as amended) and any other standards relating to work being done, and ensure compliance thereto. The information relative to the scope of the project, the works etc. are detailed in the tender, are to be considered when developing the H&S plan and associated documentation. The summary of risks is included in Section 2 of the PSHSS.

The OHSA S.37.2 Mandatory Agreement must be fully completed by the PC, supplied by the Client. These documents shall be deemed to form part of the returnable Contract Documents.

No work may commence without written approval of the H&S plan by the Health and Safety Agent – SHEHAWK Consultants Cc, or the responsible person in IDT.

Should there be design changes, or change in the scope of works, an amended PSHSS may be issued. Where amended PSHSSs are issued, the PC will be required to ensure a resubmission of an amended H&S plan for approval. Further to this, the PC must ensure that similar information must be provided as it applies to the works to all their Contractors, within 5 working days following notification thereof. Such design changes.

The CHS Agent SHEHAWK Consultants Cc will visit the project as deemed necessary IDT to ensure compliance and limit risk. All activities on the site and all appropriate documentation will be monitored and reported on to IDT and the Designer.

Non-conformances will be issued and penalties or work stoppage will be issued where appropriate. Communication between the CHS Agent and the PC will be through the Designer (or Client's responsible person) as determined at the commencement of the project.

## **1.3 Requirements at Tender Stage**

Tenderers are required to submit a project specific pre-tender H&S plan with their Tender submission. The documentation submitted will be used to assess the competence of the tenderer, as required in the CRs, therefore the information submitted needs to be complete and as close as possible to the final product. Failure to achieve the required score will render the tender non-responsive.

Adequate pricing for H&S is required, and the appropriate section in the BoQ is to be completed. Failure to do so could result in the Tender being regarded as non-responsive.

The PC shall ensure adequate information is submitted as supporting documentation with his completed Tender. Such information will be assessed against the criteria listed and a score provided to the Bid Award Committee (BAC) for consideration. Failure to provide such information could render the tender application non-responsive.

A project specific H&S Plan in response to this PSHSS will be subject to approval by the CHS Agent. This must include all supporting documentation as required to verify the H&S system:

- A declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Occupational Health and Safety Act and its Regulations;
- A valid Letter of Good Standing;
- Incident Investigation Reports for other projects of a similar nature undertaken by the tenderer
- Claims ratio receipt from FEM or the Compensation Commissioner for the previous review period;

- Detailed technical method statements for approval by the Designer and appropriate risk assessments and safe work procedures for approval by SHEHAWK Consultants Cc or IDT:
  - Site establishment including:
    - Clearing and grubbing;
    - Exposure of services, power, telecommunication etc.;
    - Arrangements for hoarding, traffic accommodation;
    - Dealing with existing structures
  - Demolishing existing structures;
  - Excavating
  - Access Control
  - Welding Work
  - Temporary Works
  - An emergency plan indicating how and where emergencies will be handled
  - Working at heights

Further method statements are to be submitted prior to, and during the project where changes or new work is required, and the approval of the Designer/ IDT is required before work on that aspect or activity can commence. The CHS Officer is to be included in production planning sessions/meetings to ensure that the appropriate risk assessments, safe work procedures and communication required are available and completed timeously. Penalties will be applied should this not be adhered to, and deemed a serious offence.

## 2. GENERAL REQUIREMENTS

### 2.1 Summary of Risks identified during Design

The intention of the summary of findings from the design risk assessment is to highlight the residual risks identified during the design phase. The full design risk assessment can be found in the tender document.

The summary of risks provided is to point the contractor towards some risks he may not be aware of during tendering stage and while developing his formal risk assessments for the project.

The design risks and the management thereof should be included in the Principal Contractors (PC) risk assessments. Where there are other Contractors appointed to do work, the PC is to ensure that Contractors include such information in their risk assessments.

***The summary is to be developed following the completion of the Design risk assessment, and to include the residual risks as they apply to the project. The items noted are for information only and must be expanded on as required by the project.***

ACTIVITY	HAZARD
Site establishment	Incorrect equipment, haphazard congestion
Roof works	Falling from heights Materials falling from heights
Demolishing	Objects falling Personnel falling Structure collapse Dust in vicinity of school children
Scaffolding	Personnel falling Equipment falling Structure collapse
Handling of material	Removing articles from delivery truck Waste material Incorrect storage of material
Ladders	Falling off ladders
Labor work on wet surfaces	Falling off or through elevated structures

Perform work outdoors in windy conditions	Falling off or through elevated structures
Storage of material and equipment	Cluttered and congested work areas due to poor/bad housekeeping
Waste	Accumulation of waste on site Poor/bad housekeeping
Site security after hours	Members of public entering the site after hours
Delivery of material Movement of construction plant and vehicles	Inadequate traffic control School children can enter
Working at heights	Inadequate fall arrest equipment
Barricading/ hording	School children, animals and members of the public can enter the construction site.
Plant and vehicles	Personnel struck by School children struck by Property damage
Site Office	Delivery with crane, no load test, no competency,

## 2.2 Specified Hazardous Chemical Substances

The following lists of products or substances are those which have been identified as likely to be used on the project. This list is not inclusive and other products may be considered. Where the PC is likely to supply the product as the product has not been specified, materials data sheets (MDSs) need to be considered prior to all selections.

PRODUCT	POTENTIAL HEALTH OR OTHER RISKS
Cement	Hand mixing may occur, will be used for structures, stabilizing. 50kg bags delivered on pallets, ergonomic risk from handling, dust exposure, chromates. Eye, skin and respiratory irritant
Shutter Oil	Usually hand application prior to placing formwork in position. Volatiles present. Skin and respiratory irritant.
Retro-reflective Road paint	High levels of volatiles, Products have narcotic effect
Lime	Dust, eye and respiratory irritation
Petrol/diesel/lubricants	Storage tanks/ bowsers on site. Fire, spillage, fumes
Superphosphate fertilizers	Eye, respiratory and skin irritant
Limestone ammonium nitrate fertilizer (LAN)	Prolonged skin or eye contact could cause irritation. Explosive and will release toxic fumes if heated
Formula 2:3:2 fertilizer	Prolonged skin or eye contact could cause irritation. Explosive and will release toxic fumes if heated.
Creosote (pre-treated poles)	Eye and skin irritation and minor burns, carcinogen

PRODUCT	POTENTIAL HEALTH OR OTHER RISKS
Herbicides and ant poison	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Epoxies and epoxy resins	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Coatings	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Grouts	Will be determined by the Principal Contractor; various grouts will be required, cementitious or other, may contain silica (crystalline - quartz), hexavalent chromium, respiratory, skin and eye irritant

### 3. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

#### 3.1 Structure and Organization of H&S Responsibilities

##### 3.1.1 Application for a Construction Work Permit

This project has an estimated value in excess of R 60 million. The Client (IDT) must acquire a “Construction Work Permit” from the Department of Labour as per CR3.

Work may not commence without the “Application for a Permit to do Construction Work” form being completed by IDT and accepted by the Department of Labour. This includes, inter alia, the Contractor’s Health and Safety Plan as accepted by IDT.

It should be noted that this OHSS in no way relieves the Contractor of any of his responsibilities set out in the Act and Regulations.

The Principal Contractor will ensure that the Site-Specific number is conspicuously displayed at the main entrance of the site for which that number is assigned.

### 4. HEALTH AND SAFETY PLAN FRAMEWORK

The H&S aspects related to the project outlined in the previous sections are to be taken into account when drawing up the H&S Plan. The PC is required to demonstrate competence by providing an H&S system that will address the requirements of the project.

The current legislative requirements, SANS codes, SANS 10400 and any other standards that may guide practice are to be taken into consideration. The following aspects must be addressed in the H&S Plan, as they have been identified in section 2, as playing a role in reducing the overall risk of a particular activity, or section of the project. The CHS Agent may from time to time request additions or systems as they relate to the works or legislative requirements at the time.

The PC is to prepare a site layout drawing to indicate at least the following:

- The positions of site offices of all Contractors, toilets, drinking water and worker rest areas;
- Indicate the positions of emergency personnel and equipment (fire, first aiders, first aid posts);
- Protection of plant and pedestrians, indicate parking, and
- Storage areas (materials and equipment, waste etc.)
- Access and egress to site for deliveries and intended temporary traffic management
- Emergency assembly point

Such layouts are to be updated regularly throughout the project.

## 4.1 Appointment of Competent Site Personnel

The CEO (OHSA S16.1) of the PC will take overall responsibility for the appointment of competent site staff for the duration of the project. Should the CEO not be personally involved in the project, the H&S responsibilities are to be delegated to the Site Agent (OHSA 16.2). Knowledge and training in H&S is required, and certificates indicating H&S training as well as experience to be included in CVs.

All other legal appointments are to be made with relevance to the type of work required and kept current with the project programme. The construction team is to ensure the appointed CHS Officer is kept up to date with all planned activities, to ensure all H&S requirements are met.

All construction/technical method statements are to be generated by senior site personnel, and the appropriate risk assessments developed therefrom in conjunction with the CHS Officer.

The Occupational Health and Safety Plan shall include the following, but is not limited to the following key appointments:

### 4.1.1 Construction Supervision

Competent Construction Managers (CR8.1) will be appointed to manage part or all of the works and have training and/or experience in the area of responsibility. All site supervisors must show evidence of appropriate training in H&S, and an understanding or training in areas of responsibility (i.e. risk assessments, method statements etc.).

Multiple competent Assistant Construction Managers (CR8.2) may be appointed where justified by the scope and complexity of the works.

Curriculum Vitae (CVs) are to be submitted for approval by the Designer, and/or Client. The Supervisor will be held responsible for the safety of working teams and subordinates, housekeeping and stacking and storage of materials.

### 4.1.2 Construction Health and Safety Officer

The PC will employ at least one competent, full-time CHS Officer (CR8.5) for the duration of the contract. The CHS Officer's CV is to be submitted for approval by the CHS Agent or the Client, at time of tender. The PC is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. mobile phone, computer and internet access, vehicle etc.) Qualifications shall include at least Grade 12 SAMTRAC/NEBOSH/Diploma in H&S qualifications or similar, with exposure to civil engineering and building that is appropriate given the level of project complexity preferably in an OHS capacity. He should also have undergone training in the Act and Regulations. In the case of a contract where contractors are employed, the CHS Officer must have a competence to evaluate the Contractors Health and Safety plans.

If proof of registration as a Construction Health and Safety Officer with SACPCMP is supplied, the above requirements will not be required.

This person may not hold any other position on the site staff.

The site supervisor may not act as the CHS Officer.

The CHS Officer/s will be held responsible for all H&S on the project.

- Senior site staff and supervision, Contractors are to follow systems, instructions etc. given by the CHS Officer at all times;
- No new workers or Contractors may commence work without approval or following the H&S plan as submitted, and
- No inductions of Contractor staff until the H&S documentation is approved by the CHS Officer.
- The CHS Officer/s may not be removed or replaced without the approval of the CHS Agent, nor may the site be left unattended for more than 1 day without adequate, competent cover.

A monthly report of all H&S activities and incidents is required by the end of the first week of each month, or at a date agreed to by the CHS Agent/Client and the CHS Officer. An example of the monthly report is attached as an Annexure D.



The CHS Officer will be responsible for collating the H&S documentation at the close out of the project in electronic format. A list of the typical aspects that should be provided is available as Annexure B to this document. The PC is to ensure that all Contractors documentation follows the same requirements and closed out H&S documentation must be completed and be available with the close out of the main contract.

Failure to do so will be considered a serious offence and penalties applied.

#### **4.1.3 Traffic Safety**

The CHS Officer will be responsible for ensuring that daily traffic management is adequately managed.

No worker may be transported in, or on the rear of construction vehicles (bakkies included), or with plant and materials to, on, or from site. The number of passengers in any vehicle is limited to what is stated on the license disc. Vehicles used to transport workers to, from, or on site, shall have secure seats and be covered. No canopies may be used.

Tenderers must indicate in their OHS plans what type of transport is envisaged and how this will be managed.

Where there is an interface between the works and any public thoroughfare, typical traffic accommodation drawings will be provided by the Designer for general traffic management. The PC is to draw up a traffic accommodation plan for approval by the Designer. The standards of the SARTSM Ch. 13 Vol. 2 will be used. Any changes suggested, or required are to be discussed and approved by the Designer or OHS Agent. Additional care must be taken where workers and public interface.

Penalties will be issued for non-compliances noted.

#### **4.2 Health and Safety Representatives and H&S meetings**

H&S Representatives representing workers and Contractors are to be appointed following the startup of the project, irrespective of the number of workers on site. The appointed H&S Representatives are to be actively involved with H&S and will assist the CHS Officer and site management in meeting legislative duties.

The CHS Officer shall further ensure that H&S is discussed at all internal production, progress and H&S Committee meetings. Issues arising from the CHS Agent audits are to be discussed, as well as all H&S related issues.

Minutes are to be kept for all H&S interventions and meetings. Failure to do so will be deemed to be a moderate offence.

#### **4.3 Appointment of Competent Contractors**

The Principal Contractor is to ensure compliance with IDT's minimum standards and all legislative requirements. The same H&S standards required of the PC are to be applied to all Contractors. An index of all Contractors and Suppliers is to be on file and kept updated at all times. The PC is to ensure there is sufficient funding for H&S compliance by each Contractor.

The following minimum aspects are applicable to any Contractor appointed:

- The CHS Officer is to ensure a Contractors appointment and approval of H&S documentation at least seven (7) working days prior to commencing work.
- No Contractor may work under the PC's Compensation registration number. If required the PC may assist SMMEs with their registration with the Compensation Commissioner. However, such Contractors will not be able to commence work until proof of registration or Letter of Good Standing has been received.
- No work may commence without Mandatory agreements between parties in place.

The following aspects are applicable to Suppliers or short-term works (surveying, repairs, servicing, deliveries etc). Cognisance is to be taken of the level of risk involved and the CHS Officer is to ensure the level of H&S documentation is appropriate:

- Mandatory agreements in place

- Letter of Good Standing
- Method statements and risk assessments
- Available information relative to:
  - Load testing and registers for cranes or lifting devices
  - Medical certificates of fitness
  - Safety data sheets (SDSs)

Failure to provide written approval of H&S documentation will be considered a serious offense, and could result in aspects of, or all the activities being stopped, and penalties implemented.

## **5. GENERAL RISK MANAGEMENT**

### **5.1 Health Risks and Medical Surveillance**

As some products use in the building work have not been identified, the PC is to ensure the CHS Officer and all supervision is responsible for ensuring the safe use of such products, and their inclusion into method statements and risk assessment. The appropriate SDSs are to be obtained for all products and used to develop the H&S documentation as they relate to the works.

Many of the processes may be labour intensive and ergonomic risks are to be noted. All workers (including Contractors) are to be included in the medical surveillance programme.

Workers will be exposed to noise, dust, and physical risks from extended periods of work of a repetitive nature, materials specified and the general nature of the works.

Environmental monitoring results and risk assessments are to be made available to the occupational health professionals doing the medical surveillance. The use of occupational risk exposure profiling (OREPS) and job descriptions are to be used to determine specific exposures for management.

All permanent workers (including those of Contractors) are required to be in possession of a medical certificate of fitness prior to commencing work.

Medical surveillance will commence at pre-employment. All workers (including Contractors) are required to be in possession of a medical certificate of fitness prior to commencing work. Annual medical surveillance is required (unless identified as being required more frequently), as well as an exit medical. Arrangements for keeping medical records for the required time are to be noted. It is preferable that the PC has a medical surveillance plan. Full medical records are not to be placed in the H&S file. A procedure for managing the medical records which require safekeeping for prescribed periods are to be addressed

. Given the potential health risks the following aspects are to be included in each medical surveillance intervention:

- Full medical, surgical and occupational history;
- Full physical examination of all systems; and
- Referral if required for the management of identified health issues that may affect the worker.

Specific testing for existing conditions and limitations relative to exposure could include, but are not limited to:

- Audiometry (hearing tests); and
- Any other tests identified as relevant from chemical or specifically identified risks of exposure

Failure to do so will be considered a serious offence.

#### **5.1.1 General Environmental Conditions**

Compliance with the Environmental Regulations (as amended), among others is required. Environmental monitoring of ventilation, lighting and dusts may be deemed to be required by the Approved Inspection Authority used to measure the environment. Copies of the relevant reports and actions taken in respect of these are to be placed in the H&S file.

Testing and reporting for airborne silica as required by the 2008 amendment to the HCS Regulations is required.

### 5.1.2 Noise Risks

All plant from plant hire companies (suppliers) or that of the PC is to be compliant with the Noise Induced Hearing Loss Regulations. Plant identified that has not been tested and marked for noise emissions will result in having to be tested at the Contractors or PCs expense. Failure to do so within a reasonable time period will result in such plant being removed from site.

Works executed after 5pm to 8am weekdays, work over weekends and public holidays shall be agreed with the Principal Agent prior to commencement. Noise to be kept at a minimum during normal working / School hours.

Audiometric testing of all workers is noted as required in the medical surveillance programme for all permanent workers prior to work commencing. Temporary labour working in identified noise areas will require testing if the noise levels are indicated on plant or through processes as greater than 85dB. Audiometry records are to be available in the H&S file.

Suitable SANS approved hearing protective equipment shall be issued and worn. Where several items of construction plant are in operation at or near to each other, the noise zone for the combined plant should be established and suitable hearing protective equipment used within this zone

Failure to do so will be considered a serious offence.

## 5.2 Emergency Procedures

An emergency plan and procedure that is appropriate to the risks is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The plan may be adapted should new information or risks are identified.

The procedure shall detail the response plan in relation to the works, and include at least (but are not limited to) the following key elements:

- Appointment of a competent emergency response co-ordinator
  - Fire;
  - Public injury, Motor vehicle accidents;
  - Falls from heights;
  - Serious injury to workers (medical or work-related); and
  - Any other major risks identified during risk assessments

The emergency plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project.

Local emergency telephone numbers must be displayed and made part of the emergency procedure.

The general principals of emergency management are to be applied as it applies to the hierarchy of control and management.

### 5.2.1 First Aiders and First Aid Equipment

At least 2 first aiders will be trained to Level 3. First aiders shall be available and accessible on site at all times, and be able to work as a team when responding to any emergency on the project.

Contractors are expected to ensure compliance and provide/manage their own first aiders and equipment. The number of First aiders will be determined by the complexity and exposed risks of the project, not numbers of workers

Appropriately stocked first aid kits, at least to the requirements of the Annexure to the GAR, are to be available at all times to assure continual availability and access on site.

### 5.2.2 Fires and Emergency Management

Attention to emergency planning and procedures is very important. The full emergency plan must form part of the supporting documentation with the H&S Plan. The CHS Agents approval of all emergency plans and procedures is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The plan may be adapted should new information or risks are identified.

First aiders shall be available in each working team, and be able to work as a team when responding to any emergency on the project.

The procedure shall detail the response plan in relation to the works, and include at least (but are not limited to) the following key elements:

Appointment of a competent emergency response co-ordinator and wardens;

- Lists of first aiders, and
- Requirement in terms of identified risks:
  - Fire;
  - Explosions;
  - Falls from heights, and
  - Motor vehicle accidents.

The emergency plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project.

The emergency plan is to include the risk of fire on site and related to any specific activities where gas, welding, cutting etc. occur.

Fire extinguishers will be appropriate for the risk and in sufficient numbers to deal with the type of fires that could occur. All mobile plant is to have appropriate, accessible fire extinguishers. Hot work permits are required for any such activities.

### **5.2.3 Incident Management and Compensation Claims**

All incidents and accidents are to be investigated. All serious incidents involving any form of disabling injury or fatality are to be reported to the Designer /Client /CHS Agent immediately. This shall be confirmed in writing following the incident. Full details are to be included in each site meeting or when the Client visits site. A summary of incidents is to be included in the monthly report.

Failure to comply with emergency provisions will be considered a serious offence, and the operation or project may be stopped if deemed inadequate for the work at the time of assessment or site inspection.

IDT views the reporting of near misses as a critical component in creating a positive health and safety awareness culture on site. IDT retains the right to enforce the reporting of near misses within 24 hours of occurrence.

## **5.3 Personal Protective Equipment (PPE) and Clothing**

The PC is to provide a procedure as an addendum to indicate how PPE is managed within the Company.

The wearing of the identified SANS approved PPE at all times is non-negotiable. The PC shall ensure that all workers (Including Contractors) are issued with and shall wear:

- Hard hats;
- Protective footwear;
- Overalls that ensure worker visibility.
- Eye protection (if required)
- Hearing protection;
- Reflective jackets (no bibs)
- Respiratory protection (minimum of FF2), and
- Any other necessary PPE identified from SDSs and/or risk assessments.

Adequate quantities of PPE shall be available. This shall include necessary PPE for visitors. The procedures for managing PPE are to be in a formal procedure submitted with the H&S plan for approval.

Any person (including Client, Designers etc.) found on site without the necessary PPE will be removed from site until the PPE is supplied and worn.

Failure to comply will result in penalties being applied.

## 5.4 Occupational Health and Safety Signage

On-site H&S signage is required. Signage shall be posted up at fixed or temporary working areas, or other potential risk areas/operations. These signs shall be in accordance with the requirements of the General Safety Regulations or SANS requirements as amended. Signage is to be noted on the site drawings indicating where fixed/temporary signage is required.

Temporary signage is to include (but not be limited to) the following:

- 'Report to site office' / 'Warning: Construction Site – Keep out' or similar;
- 'Site office' (if relevant);
- 'hard hat area' or other PPE requirements noted;
- First aid box positions (including vehicles); and
- Fire extinguishers.
- Assembly Area

Signs shall be posted at areas of work on site indicating that a construction site is being entered and that persons should take note of H&S requirements.

Note should be taken that “omnibus” signs indicating that the entire site requires PPE should not be used. Any areas where PPE is mandatory must be separately signed.

Failure to comply will result in penalties being applied.

## 5.5 Induction of Employees and Visitors, General H&S Training

### 5.5.1 Induction Training

A simple, formal induction programme is to be submitted as an addendum for approval with the H&S plan. Inductions must be carried out for all workers and visitors (including IDT, Designers) to the site.

Pre-task training is required to ensure workers are familiar with the risks and H&S measures of the work or tasks to be done. Such training is to be done at least daily. Records of inductions and pre-task training are to be kept in the H&S file.

All training must be closely aligned with the risk profile of the project, procedures must be in place to ensure that all workers are aware of the consequences of their work activities and benefits of improved H&S performance.

Any person found on site without proof of induction in the H&S File will be removed from site until the proof is supplied and, a penalty issued per non-compliance.

### 5.5.2 General Health and Safety Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training.

Training for all employees dealing with HIV & Aids and other related diseases record of training to be kept in the Health and Safety File.

## 5.6 Management of Construction Vehicles, Mobile Plant and Equipment

Close control of plant and equipment is required, including that of Contractors.

Daily monitoring of all plant and equipment is required prior to commencing work. Full lists of hired and own plant are to be available at the CHS Agent's/ IDT audit. All daily inspection records are to be kept in the H&S file. Plant Hire and Haulage Contractors are to comply with the requirements where plant and equipment is brought onto site. Registers are not to be more than 1 week behind.

Only competent, fit plant operators are to be used. Medical certificates of fitness are required for all operators. Any plant or slings used to lift plant or material require annual load testing by an AIA, and all certificates must have the testers LMI/E number. Operators are to be adequately trained and certified to operate mobile cranes or crane trucks. Certificates and registers are to be placed in the H&S file. Movement of plant in closures and in confined working areas is to be closely monitored and managed by the supervisors. The blind spots of plant are to be taken into account and workers and Contractors protected accordingly. Failure to do so will be considered a serious offence.

## **5.7 Excavations**

A procedure for managing excavations is to be provided as an addendum to the H&S plan describing how excavations are to be managed.

Excavation method statements are to be approved by the Designer and associated risk assessments are required. Designs by competent persons are required where ground conditions are deemed to require shoring.

A competent person is to be appointed for managing all excavations. A permit system is to be available and used for all excavations. All equipment and ground conditions to be checked daily, and prior to work commencing.

Excavations should preferably not be open beyond what can be closed daily. Where excavations need to remain open, all excavations are to be properly protected. Adequate stakes with 1m high demarcation and berms/spoil are required to be a safe distance from the edge of the angle of repose. Candy tape may not be used to demarcate excavations. Cognisance is required of the surrounding area and increased levels of protection are required where work is in communities, near schools and clinics.

Work will be stopped, and penalties applied to any work in excavations that is not compliant.

## **5.8 Working at heights**

A fall protection plan is to be available and supplied as an addendum to the H&S plan to include the installation of water reservoir tanks to the height of 10 meters. The fall protection plan must be appropriate for the project. Method statements, appropriate risk assessments, safe work procedures and training are to be available prior to work commencing.

Construction drawings shall be required for all temporary structures as they relate to the project. The drawings shall be accompanied by full calculations, design loads and any relevant test results as required by the SANS code, and ensure adequate allowance for the development of appropriate documentation and training. All drawings are to be checked and signed by a competent structural engineer (registered with ECSA).

The focus for working at height shall include fall restraint systems where possible except during assembling or dismantling top components or where it is not deemed safe. The relevant SANS codes are to be applied as they apply to the works and the project, such as:

- SANS 10085
- SANS 10333 (parts 1-3)

Should part of the works be contracted out, competent Contractors are to be appointed and submit documentation according to the project requirements. The PC is to note if such work is to be contracted to specialists in the H&S Plan. The plan is to be developed and work managed by a competent person for the duration of the project. The following aspects must be included:

- The public or users of buildings are to be protected at all times by way of hoarding, barricading or fencing
- Notices to be posted
- Restrictions or stoppage when weather conditions are deemed hazardous
- Permit system for working at heights
- Prevention of falling tools or equipment
- Link to emergency plan regarding rescue

All workers are to be in possession of valid certificates of fitness that extend for the duration of the works. Note the requirements in the section relating to medical surveillance.

Registers and all relevant documentation are to be placed in the H&S file.

Work will be stopped and penalties applied to any work at heights that is not compliant.

## **5.9 Cranes and lifting equipment**

This will be used at Site Establishment. Should any form of lifting device or crane (fixed or mobile) be used during the project for deliveries, moving of supplies or equipment, the appropriate documentation must be made available. Method statements, risk assessments, safe work procedures and training are to be available prior to work commencing. A procedure for managing loads and lifting must be made available as an addendum to the H&S Plan.

## **5.10 Temporary Works (Scaffolding, support work, formwork)**

Temporary works must be properly designed and signed off by a competent person. In these instances a competent person is defined as a Professional Engineer or Professional Technologist (registered with ECSA) who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Engineer and CHS Agent. Records and registers are to be properly completed and kept in the H&S file. If temporary works are to be erected by a Contractor, this must be notified to the Designer/CHS Agent. All necessary calculations and drawings of temporary works must be kept on site and available to the PA and CHSA

Failure to do so will be considered a serious offence.

## **5.11 Demolition**

The Contractor shall execute the activity as required according to the construction regulations and other applicable regulations of the Act.

Care is to be taken during demolition of walls; a stability survey should be carried out. All rubble to be disposed of at a controlled refuse site.

Demolition plan to be submitted for approval by the Principal Contractor before any demolition commences.

## **5.12 Mechanical installations**

All mechanical installations are to be carried out in conformity with the manufacturer's instructions. Method statements and risk analyses must be compiled for each type of installation. A competent person must be designated to supervise the work.

## **5.13 Auditing**

Frequency of external auditing by the CHS Agent or Client will be as agreed with the Client and Designer but will at least conform to the requirements of the Construction Regulations. The site will be inspected and the documentation audited relative to the activities and H&S plan. The CHS Officer of the PC must accompany the Client, or the CHS Agent, on all audits and inspections. Not all audits will be, or need be announced.

The PC will ensure that all their Contractors are audited at a frequency determined by the CHS Agent. Audit frequency may be increased if Contractors are not performing adequately. Audit results will be acted upon and non-conformances and penalties issued where deemed appropriate. The Client, Designer or CHS Agent may act or require further outcomes if non-compliances are noted or unsafe acts are noted on site.

Internal audits are to include site conditions as well as ensuring H&S files are appropriate, and compliant. Comprehensive audit reports are to be made available, the format of the audit reports must be acceptable by the CHS Agent.

The PC will be audited using a template as supplied in the tender document. The audit template will be adjusted from time to time relative to the activities on site. A similar process is to be used by the PC when auditing their Contractors on site. Compliance with legislative requirements and the systems provided by the PC to manage the H&S on site will be measured. Full compliance is required. Time limits for corrective actions will be set and must be adhered to.

Failure to address findings or non-conformances will be considered a serious offence.

#### **5.14 Communication on Site**

All H&S communication during the project between the CHS Agent and the PC will be done through the Architect/Clerk of Works/Client and be in writing, including the issue and responses to non-conformances and H&S audit results.

Failure to address issues timeously will be considered a serious offence.

#### **5.15 Care of Workers on Site (Welfare)**

Adequate toilets, clean, safe drinking water and decent shelter must be afforded workers at all times. Toilets will be within reasonable distance of workers, or placed with each working team in safe, with reasonable privacy. Hand washing facilities will be provided. The Contractor will make provision for adequate change rooms for his employees on site. Existing facilities may not be shared with existing users. No substances containing Formaldehyde may be used in Chemical Toilets.

Failure to ensure compliance will be considered a serious offence.

#### **5.16 Discipline, Alcohol and Substance Abuse**

All employees (management included) are to follow instructions given in the interest of H&S. Disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies.

No person is allowed to work or access site if under the influence of alcohol or other substances that could impact on their own or others safety. The PC is to have a drug and alcohol policy available to manage such instances.

These requirements are applicable to any employee of any organization providing services on site. Penalties may also be applied by the Client, OHS Agent or Engineer.

#### **5.17 Electrical Equipment**

In addition to the requirements of the Electrical Machinery Regulations and the General Machinery Regulations any electrical distribution board used for construction work shall be fitted with suitable earth leakage protection. Leads must be properly and firmly connected. Plugs and sockets shall be in good and safe condition.

All electrical apparatus, other than electrical hand tools, shall have a physical "lock out" system which will prevent any operation other than that authorized by a supervisor. A "lock out" sign shall be displayed when the apparatus is not in use.

Method statements and safe work procedures will be required for all work involving electrical apparatus.



### **5.18 Explosive Power tools**

The Principal Contractor to ensure that a competent person is appointed in writing to control the issuing of the Explosive Powered Tools & cartridges and the service, maintenance and cleaning. Register to be kept of all issuing, servicing, maintenance and cleaning. Empty cartridge cases/nails/fixing bolts returns recorded. Ensure that all tools are cleaned daily after use. Work areas must be demarcated.

### **5.19 Hazardous Chemical Substances**

The Principal Contractor to ensure that competent Person/s with specific knowledge and experience designated to Control the Storage & Usage of HCS (including Flammables). Written Proof of Competence of above appointee available on Site. Risk Assessment carried out. Register of HCS kept/used on Site. Separate, purpose made storage available for full and empty containers.

### **5.20 Pressure Equipment**

The Principal Contractor to ensure that competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections & testing of pressure equipment written Proof of Competence of above appointee available on Site.

Pressure Equipment identified/numbered/placed on register. Regular Inspections/maintenance carried out the pressure equipment. Results must be recorded and kept in the Health and Safety File.

### **5.21 Hot work**

The Principal Contractor to ensure that all operations will be carried out by authorised/trained persons to use the equipment. Permission to be obtained prior to work commencing from Supervisor. Principal Contractor to ensure that all work carried out be done so in designated Hot work area. All equipment must be good working condition check lists and registers must be available in the Health and Safety File. Sufficient PPE to be provided to employees working in the area. Sufficient signage must be erected to prevent unauthorised access into the area.

Gas welding equipment must have working flashback arrestors fitted at cylinders and gauges. Hoses in good condition/correct type/all connections with clamps. Cylinders stored, used and transported in upright position, secured in trolley / cradle / to structure. All cylinders regularly checked for leaks, leaking cylinders returned immediately.

Fire prevention/control methods applied/hot work permits

Principal Contractor to ensure that sufficient firefighting equipment is available in this area where work is done.

### **5.22 Security Arrangements / Access Control**

The Principal Contractor will establish site access rules and implement and maintain these rules throughout the construction period. Construction area must be sufficiently fenced off with semi-permanent barricading to ensure that no school children gain access into the construction site. Access control must include the rule that non-employees shall at all times be provided with fulltime supervision while on site.

The Principal Contractor will develop a set of security rules and procedures and maintain these throughout the construction period. If not already tasked to the OHS Officer, appointed in terms of Construction Regulation 8(5), the Principal Contractor will appoint a competent Emergency Controller whom must develop contingency plans for any emergency that may arise on site as indicated by the risk assessments. These plans must include at least a 3-month practice/testing Programme for the plans. These practices/test runs must include all persons on site at the time of the practices/test runs.

### **5.23 Housekeeping**

Good housekeeping will be maintained at all times as per Construction Regulation No. 27. Poor housekeeping contributes to three major problems, namely, costly or increased accidents, fire or fire hazards and reduction in production. Good housekeeping will enhance production time.

In promotion of environmental control all waste, rubble, scrap etc. will be disposed of at a registered dump site and records will be maintained. Where it is found to be impractical to use a registered dump site or it is not available, the Principal Contractor will ensure that the matter is brought to record with the client or his representative, after which suitable, acceptable alternatives will be sought and applied.

Dross and refuse from metals, and waste matters or by-products whose nature is such that they are poisonous or capable of fermentation, putrefaction or constituting a nuisance shall be treated or disposed of by methods approved of by an inspector.

#### **5.24 Barricading**

All barricading shall be of the rigid type unless the use of non-rigid barricading has been approved in writing by IDT Project Manager. The contractors' barricading standard shall be included in the Health and Safety Plan.

here more than one contractor is working on a site, the fixed barricading shall be clearly marked with the company's name, site contact person as well as the contact number/s.

### **6 HEALTH AND SAFETY FILE**

The documentation submitted and approved following the awarding of the contract will be used to form the H&S file. The H&S file is required to be laid out in a logical manner, and documentation filed within the file is to be easily accessible.

The following completed information shall be included (but not be limited to) as part of the index:

- The PSHSS;
- The H&S Plan and the approval by Client;
- Appointment by Client;
- Mandatory agreement with Client;
- Notification of construction work;
- A record of all working drawings, calculations and design where applicable;
- Detailed list of Contractors with contact details, appointments, Mandatories etc., H&S specifications issued;
- Record of Competencies (CVs) and appointments;
- Training Records;
- Permits;
- Method statements;
- Risk assessments;
- Safe work procedures;
- Emergency and injury management;
- Safety data sheets
- Medical surveillance records;
- Registers; and
- Records of audits, minutes etc.
- Plant lists
- Temporary electrical installations
- Employee records (who is on site)

### **7 NON-CONFORMANCES**

Should, at any time, the works, or part of the works, be stopped due to unsafe acts or non-compliance with the Clients or PCs H&S Plan; neither the PC nor any other Contractor shall have a claim for extension of time or any other compensation.

The following constitute examples of the types of non-conformances that will attract penalties:

<b>Minor: Penalty: R50/count</b>	<b>Medium: Penalty: R500/count and a non-conformance</b>	<b>Severe Penalty: R5000/count, a non- conformance and/or activity stoppage</b>
Non-use of PPE supplied	Toilets not supplied or regularly serviced; lack of drinking water	Contractors working without Health and Safety Plan approval
Non-completion of registers for plant and equipment on site	Contractors not audited	Workers transported in contravention of the OHS plan or legal requirements
Lack of H&S signage at work areas	Working without training or the appropriate, approved H&S method statements	Invalid Letters of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	Non-compliance with traffic accommodation requirements: layout or physical conditions
	No monthly OHS report at site meeting to report on	Any serious breach of legal requirements
	No certificates of fitness for workers as required	
	Working without approved method statements	

### 7.1 Failure to Comply with Provisions

Failure or refusal on the part of the PC or their Contractors to take the necessary steps to ensure the safety of workers and the general public in accordance with these specifications or as required by statutory authorities or ordered by the engineer, shall be sufficient cause for the engineer to apply penalties as follows:

- (i) A penalty as shown in the Table above shall be deducted for each and every occurrence of non-compliance with any of the requirements of the PSHSS.
- (ii) In addition, a time-related penalty of R500, 00 per hour over and above the fixed penalty may be deducted for non-compliance to rectify any non-conformance within the allowable time after a site instruction to this effect has been given by the Designer. The site instruction shall state the agreed time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

## 8 MEASUREMENT AND PAYMENT

The payment items for Occupational Health & Safety are contained in the Bill of Quantities. The same rules are applicable in respect of the pricing of these items as for every other payment item. Attention is drawn to the Pricing Instructions in this document.

### Item and Unit

#### C.01 Preparation of Contractor's Project Specific Health and Safety Plan. (Lump Sum (L.S))

The rate for this item must cover all expenses incurred in preparing the Contractor's project specific Health and Safety Plan as required by the Client's project specific Health and Safety Specification in this document

#### C.02 Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations. (Lump Sum (L.S))

The full amount will be paid in one instalment only when the Client's Agent has verified and approved the following

- (a) The Principal Contractor has notified the Provincial Director of the Department of Labour in writing of the project, Annexure A to the Regulations.
- (b) The Principal Contractor has made the required initial Appointments of Employees and Contractors.

Health and Safety Specification ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL

- (c) The Client has approved the Principal Contractor's project Health and Safety Plan.
- (d) The Principal Contractor has set up his Health and Safety File.

**C.03 Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations. (Month (Mth))**

The amount shall represent full compensation for that part of the Principal Contractor's general obligations in terms of the Occupational Health and Safety Act and Regulations which are mainly a function of time. Payment will be made when the Client's Agent has verified the Principle Contractor's compliance as part of the audit. This will include the updating and administration of the Health and Safety file.

**C.04 Provision of Personal Protective Equipment (PPE) as listed in the Bill of Quantities. (Number (No))**

The rates for these items shall include for the procurement, delivery, storage, distribution and all other actions required for the supply of PPE to the employees of the Principle Contractor, full or part time, requiring them. Sub-Contractors are responsible for their own costs in this regard. Any items of PPE not included on the list will be paid for only after the Engineer has agreed to their acquisition.

Items listed will include, among others which may be noted, are: hard hats, reflective vests, reflective bibs, high visibility overalls, protective foot wear, fall arrestor harness and tethers, gloves, ear muffs, earplugs and dust masks of appropriate type. Normal items such as standard overalls, waterproof clothing, gum boots and standard workshop safety equipment such as welding masks and goggles will not be paid for.

Payment will be based on the issues register for PPE as kept by the Construction Health and Safety Officer, backed up by paid invoices if requested.

**C.05 Provision of part-time or Full Time Construction Health and Safety Officer (Month)**

The Tender sum shall include for the cost of a Construction Health and Safety Officer on a fulltime if the Client should allow a part-time CHSO the amount tendered will be prorated according to the amount of time spent on the project.

**C.06 Costs of Medical Surveillance (Unit (No))**

This item shall cover all costs involved in the obtaining of baseline medical examinations of temporary labour, including operators for mobile plant as contemplated in CR 21(d) (ii); for temporary workers and workers exposed to noises at or above the limits given in the Noise-induced Hearing Loss regulations, as stipulated.

Workers in the permanent employ of the Contractor will only be paid for if their certificates require updating.

**C.06 a)** Initial (baseline) medical examinations, including audiometric and lung function testing.

**C.07 Induction Training (Unit (No))**

This item shall cover all costs incurred for the health and safety inductions as set out on Regulation 7 of the Construction regulations and the proof of induction required. Payment will be made on the figures contained in the induction section of the Health and Safety File.

**C.08 Provision of First Aid Boxes. (Unit (No))**

The rate for this item shall cover all costs incurred in the provision and maintaining of first aid boxes as outlined in Paragraph 7 above.

**C.09 Establishment of noise levels (Unit (No))**

- a) This item shall cover all costs involved in the establishment of noise zones, including any workshops, in terms of Regulation 9 of the Noise-induced Hearing Loss Regulations. Where a zone has previously been established for a particular item of plant within the last two years, the test need not be repeated but must be kept valid for the duration of the Contract.

**C.10 Submission of the Health and Safety File. (Lump Sum)**

Expenditure under this item shall be made in accordance with the general conditions of contract.

This amount will be paid only once the Principal Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction. This must be done prior to the issue of a Certificate of Completion.

## ANNEXURE A CLOSE OUT REQUIREMENTS

The H&S files for the Principal Contractors and all Contractors require closure and handover to the Client at the completion of the project. The following list is an example of what should be included, but is not exhaustive. The OHS Agent or the Client may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are met. Documentation would include all records from the start of the project. Daily or monthly plant inspection records are not required unless they are related to an accident. All records to be in electronic format and submitted to the OHS agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.

**Health and Safety close out file requirements include:**

- a) Client H&S Specification
- b) Principal Contractor's OHS Plan(s)
- c) Organograms
- d) Legal Appointments
- e) List of all employees employed on a permanent or contractual basis over the duration of the contract
- f) Application for Construction Work Permit to Department of Labour
- g) Letters of Good Standing for the Project
- h) Full files for all Contractors as well as their close out reports
  - List of Contractors
  - All employees employed on a permanent or contractual basis over the duration of the contract
  - Letters of Approval of Contractors
  - Mandatary Agreements
  - Letters of Good Standing
  - Appointments
- i) Incident Records
- j) Non- Conformance records
- k) Agent's Audits
- l) Method Statements
- m) Risk assessments
- n) Safe work procedures
- o) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended
- p) All drawings for temporary structures (suspended beams/scaffolds etc.)
- q) All operating manuals for any systems that require on-going maintenance
- r) Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)

### **Defect and Liability Period**

The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OCHS Agent prior to any work commencing.

A copy drawing records for the as-builts are to be placed on file by the Designers once complete.

**ANNEXURE B  
NON-CONFORMANCES**

HEALTH AND SAFETY SITE INSPECTION NON CONFORMANCE NO		
<b>AGENT:</b>	<b>PROJECT:</b>	
<b>Consultant:</b>	<b>Date and time:</b>	
<b>Client</b>	<b>Area:</b>	
<b>Contractor:</b>		
<b>ASPECTS NOTED:</b>	<b>COMMENTS:</b>	<b>COMPLETION REQUIRED BY (DATE):</b>
	•	
	•	
	•	
	•	
	•	
<b>PHOTOGRAPHIC EVIDENCE (if available):</b>		
<b>OTHER:</b>		
The following penalties are to be applied:		
<b>Signature of Designer</b>		
<b>Signature of CHS Officer/Site Agent</b>		
<b>Signature: of CHS Agent</b>		

## ANNEXURE C:

## CONTRACTORS MONTHLY HEALTH AND SAFETY REPORT

(To be submitted by the end of the first week of each month and be available with each audit)

CONTRACT NUMBER:		PROJECT NAME:	CONTRACT DETAILS:
1	GENERAL ACTIVITIES FOR THE MONTH  (detail each area of work)		
2	NUMBER OF WORKERS (permanent and local, contractors)		
3	TRAINING DONE (supplier, no of people, type)		
4	INCIDENTS / ACCIDENT  (list number and details, attach reports)		
6	NON-CONFORMANCES (closed out or active)		
7	CONTRACTORS (list, approval status)		
8	AUDITS COMPLETED (internal and external)		
9	CRITICAL ISSUES		
10	GENERAL		

CHS Officer \_\_\_\_\_ Signature \_\_\_\_\_ Date: \_\_\_\_\_  
 Site Agent \_\_\_\_\_ Signature \_\_\_\_\_ Date: \_\_\_\_\_



Baseline Risk Assessment ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL

The base line risk assessment is to highlight hazards emanating from project risks identified. This list of risks is therefore not the replacement of the contractor's risk assessment but rather to point the contractor towards some

low	med	high
1	4	12
2	6	18
3	8	27

Risk Rating multiplier: Low = 1; Medium = 2; High = 3

Note, this HIRA is a guide only and does not cover all risks. It must be read in conjunction with the Site Specific OHS Specification in the					Baseline risk				Residual risk					
REF where appropriate	Operation	Hazard	Design Risks identified as present	Describe the obvious control measures to be part of design	Likely consequences of an incident	Frequency of Exposure	Probability of harm	Risk rating and risk category	Extra control measures necessary to reduce risk / Redesign by Client and / or Designer	Likely consequences of an incident	Frequency of Exposure	Probability of harm	Risk rating and risk category	Accountability
SITE ESTABLISHMENT														
CR 24	Existing Services	Electrical	Contact with electrical cable overhead	Erect warning signs, inform workers	3	3	3	27	Experienced supervision by site staff and P A. Competent Inspection	3	2	2	12	Contractor, Construction Manager, CHSO
			Contact with underground cable	Erect warning signs, inform workers	3	3	3	27	Experienced supervision by site staff and P A. Competent Inspection	3	2	2	12	
			Use of equipment under HV cable	Erect warning signs, inform workers no work under cable without permission and compliance with ESCOM requirements	3	3	3	27	Experienced supervision by site staff and P A. Competent Inspection	3	2	2	12	
		Water	Underground pipes	Care in excavation	2	2	2	8	Experienced supervision by site staff and P A. Competent Inspection	2	2	1	4	Contractor, Construction Manager, CHSO
		Telephone	Overhead cables	Erect warning signs, inform workers	1	3	2	6	Experienced supervision by site staff and P A. Competent Inspection	1	1	1	1	Contractor, Construction Manager, CHSO

LIFTING EQUIPMENT														
CR22	Lifting Equipment	Uneven ground, loose soft soil, overhead power lines or other obstructions	Machine could tilt or become bogged down and causing a dangerous situation. Resulting in injury/property damage/Death	Correct inspection and evaluation of the working area. Ensure working area is clean and that the machine will be stable	3	3	3	27	Correct inspection and evaluation of the working areaEnsure working area is clean and that the machine will be stable.	3	2	2	12	Contractor, Construction Manager, CHSO, Lifting Operator, Lifting Inspector
		Checking out the machine to ensure that all is in good working order	Controls not functioning correctly, oil leaks. Machine failure causing damage and injury to employees	All operators & employees to be inducted.	3	2	3	18	Daily checklists and Tool Box Talks must be done	3	2	2	12	
		Correct positioning of equipment ensuring it is level before carrying out the lift	Machine could tip over in one particular direction. Property/equipment damage/employee injury	Ensure that the machine is correctly positioned and will not be over extended in any particular direction of operation. Barricade the area to prevent unauthorised entry.	3	2	3	18	Ensure competent operators to position machine correctly to ensure maximum usage at any one lift / Method statements/ Risk Assessments/Safe Work Procedures Tool Box Talks	3	2	2	12	

ROOFWORK														
	Roof Work	Use of scaffolding, working at heights, use of ladders	Roof structure collapse, fall from roof, part of structure falls on worker, fall from scaffold, tools or material falls on worker. Scaffold collapse. Injury to worker	<p>The Principal contractor will be required to submit with health and safety plan the fall prevention plan, including a risk assessment.</p> <p>Include in the fall prevention plan is also a process for the evaluation of the employee's medical fitness.</p> <p>No employee is permitted to work on roofs during inclement weather</p> <p>The plan is to be project specific and provide a systemic approach towards eliminating or reducing the risk of falling from heights and ensuring that all reasonable fall protection measures and methods have been taken prior to the commencement of work.</p> <p>Roof erectors are to be competent to carry the work</p> <p>Safe access to the roof must be carefully planned in order to select the most appropriate method and equipment.</p>	3	3	3	27	<p>The Principal contractor will be required to submit with health and safety plan the fall prevention plan, including a risk assessment.</p> <p>Include in the fall prevention plan is also a process for the evaluation of the employee's medical fitness.</p> <p>No employee is permitted to work on roofs during inclement weather</p> <p>The plan is to be project specific and provide a systemic approach towards eliminating or reducing the risk of falling from heights and ensuring that all reasonable fall protection measures and methods have been taken prior to the commencement of work.</p> <p>Roof erectors are to be competent to carry the work</p> <p>Safe access to the roof must be carefully planned in order to select the most appropriate method and equipment.</p>	3	2	2	12	Contractor, Construction Manager, CHSO

DEMOLISHING														
CR14	Demolishing	Breakdown structure	Break wall from top to bottom. Injury to all body parts can occur	Ensure to break structure from top to bottom. Employees to be trained.	3	3	3	27	Regular inspection and evaluation of the working area prior to work. Employees to be trained and regular tool box talks to be conducted.	3	2	2	12	Contractor, Construction Manager, CHSO
		Dust	Inhaling of dust causing sinus	All employees to be inducted correct PPE to be worn: Dust Masks.	3	2	3	18	Correct PPE, Daily checklists and Tool Box Talks must be done. Communication with the school to ensure minimum dust exposure during school hours	3	2	2	12	
		Working Area	Loose bricks laying around,Workers can fall over bricks - Injuries to all body part can occur	Ensure proper housekeeping is maintained at all times. Work area to be kept clear of loose materials	3	2	3	18	Ensure competent operators to position machine correctly to ensure maximum usage at any one lift / Method statements/ Risk Assessments/Safe Work Procedures Tool Box Talks	3	2	2	12	
EXCAVATIONS														
CR13	Excavations	Plant & Manual	Injury or death to employees, Public and School Children	Proper training of operator: Medicals, machine in good working order	3	2	3	18	Excavation barricaded/shored as required. Proper supervision	3	2	2	12	Contractor, Construction Manager, CHSO, Excavation Supervisor
BULK EARTHWORKS														
	Bulk Earthworks	Unauthorized entry	Injury/death of employees	Ensure that bulk earthwork area is out of bounds to unauthorized persons. PPE to be worn by all employees	3	3	3	27	Method statements/ Risk Assessments/Safe Work procedures must be adhered to. Control measures must be in place for all	3	2	2	12	Contractor, Construction Manager, CHSO, Earthworks Supervisor
		Unsafe working conditions	Injury/death of employees	All operators & employees to be inducted.	3	2	3	18	Daily checklists and Tool Box Talks must be done	3	2	2	12	
		Unsafe equipment	Property/equipment damage	Operating manual should be adhered to. Operators to be aware at all times	3	2	3	18	Daily checks list/ Method statements/ Risk Assessments/Safe Work Procedures Tool Box Talks	3	2	2	12	

**WORKING AT HEIGHTS SCAFFOLDING**

CR 10	Working at Heights Scaffolding	Scaffold not properly erected	Scaffold collapse	calculate load capacity of scaffold. Proper design of scaffold	3	3	3	27	Specification must ensure design is done by competent person. Method statements. Before work commences	3	2	2	12	Contractor, Scaffold Erector, Scaffold inspector
		Scaffold not properly erected	Fall from height	Fall protection Plan by a competent fall planner	3	3	3	27	Experienced supervision by site staff and P A / Scaffold erectors Competent Inspection. Method statements	3	2	2	12	Contractor, Scaffold Erector, Scaffold inspector
		Scaffold not properly erected	Falling objects	Use of toe boards, proper decking, catch nets	3	3	3	27	Experienced supervision by site staff and P A. Competent Inspection. Method statements	3	2	2	12	Contractor, Scaffold Erector, Scaffold inspector

**WORKING AT HEIGHTS LADDERS**

GSR 13A	Working at Heights Ladders	Use of ladders	Persons falling	Ladders conform to General Safety regulation 13a	2	3	3	18	Worker training. Experienced supervision by site staff and P A. Competent Inspection. Method statements	2	2	2	8	Contractor, Ladder Inspector
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**STACKING AND STORAGE**

CR28	Stacking and Storage	Storage of Materials and equipment	Physical injury –tripping and falling	Regular toolbox talks to be done. Stacking and storage is to be maintained at all times. Regular inspection of all stacking is to be conducted and record of this is to be made available in the H&S File.	3	2	2	12	Worker training. Experienced supervision by site staff and P A. Competent Inspection. Method statements	2	2	2	8	Contractor, stacking Supervisor, CHSO
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ENVIRONMENTAL														
Environmental and facilities regs	Weather is a factor to be considered, raised temperatures in summer, with high humidity levels. Very cold weather may be encountered with the possibility of frost	Working in wet, extreme hot conditions Temperature range 2 to 40 deg C	Possible hypo- or hyperthermia.low efficiency of workers	Work stoppage in rain or following rain that would affect the works. Cold weather protective clothing may become necessary. Hot weather may require work stoppage. Adequate supply of drinking water.	3	3	2	18	Use of weather stations to monitor temperature, Work to be assessed should discomfort index reach 100, work may be stopped at 105 if deemed problematic. Adequate water intake. Sheltered areas for rest and eating	2	3	2	12	Contractor, Construction Manager, CHSO
	Office facilities	Working in cramped unventilated or poor lighting conditions	Health issues	Office set-up to be checked for suitability	2	2	2	8	Avoid the use of containers for offices unless properly modified for use as offices	2	1	1	2	Contractor, Construction Manager, CHSO
	Waste Management	Use of temporary toilets	Health Issues	Use of chemical Toilets, at least one per 20 worker's male and female separated	2	2	3	12	No Formaldehyde in chemicals. Serviced and cleaned at least once weekly by competent service providers.	1	2	1	2	Contractor, Construction Manager, CHSO
		Waste disposal	Health and Environmental issues	All waste properly disposed of two certificated rubbish dump	2	2	3	12	No burning of cement bags or other refuse on site. Site to be kept tidy. Removal of all waste at regular intervals by competent service providers.	2	1	1	2	Contractor, Construction Manager, CHSO
ACCESS CONTROL														
	Public Access	Persons in dangerous areas. School Children gaining access to construction area	Injury to person's / School children / Teachers	Separate general public from construction site.Sufficient barricading to be erected. Extra care to be taken to ensure school children do not gain access to the construction activities	3	2	2	12	Spec to require: Access control. Induction for visitors. Security control. Safety Notices. Extra Observation. Sufficient Barricading.	3	1	1	3	Contractor, Construction Manager, CHSO
	Access Control	School Children, Public and employees may gain access to site	Fall into excavation, injury from plant, tools or at workplace / construction activities.	Access control to be in place, hoardings erected to separate site from public. Extra hoarding to be in place to ensure school kids are kept out of the construction site.	3	2	2	12	Strict access control, gates locked or manned at all times. Trained security staff on duty. Induction for all visitors. Special care to be taken to ensure pupils are safe.	3	1	1	3	Contractor, Construction Manager, CHSO, Security, Head Master

CONSTRUCTION PLANT AND EQUIPMENT														
CR 23	Use of Construction Plant and Equipment	Struck by vehicle	Injury to persons/School Children	Vehicle fitted with acoustic warning devices, hooter and reverse warning	3	3	3	27	Competent supervision and adequate pre-task training will be required. Competent medically fit operators	3	2	2	12	Contractor,Plant manager
		Vehicle overturns	Injury to persons/School Children. Damage to vehicle	Proper operation of vehicle	3	3	3	27	Competent supervision and adequate pre-task training will be required. Competent medically fit operators	3	2	2	12	Contractor,Plant manager
		Untrained operator	Injury to persons. Damage to vehicle	Only employ competent operators	3	3	3	27	Competent supervision and adequate pre-task training will be required. Competent medically fit operators	3	2	2	12	Contractor,Plant manager. CHSO
		Unsilenced plant	Noise induced hearing loss	Fit or repair silencer	2	3	3	18	Proper supervision, operator training, Establishment of noise zones by AIA. Correct PPE including ear defenders/plugs	2	2	1	4	Contractor,Plant manager. CHSO
N-IH I Regs	Exposure to Noise	Over 85 Db for long period:When activities are in process	Hearing Loss	Avoid exposure to noise where possible	2	3	3	18	Specification to require establishment of noise zones by AIA. Communication with the school to ensure minimum noise during school hours	2	2	2	8	Contractor,Plant manager. CHSO
	Exposure to Dust	If severe lack of clear vision; Breathing problems.When activities are in process	Loss of Lung Function	Dust prevention	2	3	3	18	Specification to include dust palliative requirements.Communication with the school to ensure minimum exposure to school children during school hours	2	2	2	8	Contractor,Plant manager. CHSO

**CONCRETE WORK**

CR 20	Outsourced supply	Delivery by truck	Person struck by truck	Reverse warning Driver training	3	2	2	12	Worker training. Experienced supervision	3	1	2	6	Contractor. Batch plant and Concrete Supervisor, CHSO
			Person struck by concrete poured into shuttering	Proper training of employees and supervision	2	2	2	8	Area to be kept clear of all but essential workers	2	1	2	4	
	Machine mixing	Batch Plant	Use of wheel barrows	Proper training	2	2	2	8	Adequate supervision. Well maintained equipment	2	1	2	4	Contractor. Batch plant and Concrete Supervisor, CHSO
			Trapped by machine	Check plant for pinch points	2	2	2	8	Pinch points guarded. Proper supervision	2	1	2	4	
			Use of access ramps	Proper construction of ramp / Worker training	3	2	3	18	Experienced supervision by site staff. Competent Inspection. Use of proper equipment	3	2	2	12	Contractor. Batch plant and Concrete Supervisor, CHSO
	Hand mixing	Use of small tools	Contact with cement	Care in opening cement bags	2	2	2	8	Ensure workers fit for work. Proper supervision	2	1	2	4	Contractor. Batch plant and Concrete Supervisor, CHSO
			Inhale cement dust	Care in opening cement bags	2	2	2	8	Ensure workers fit for work. Proper supervision	2	1	2	4	
			Ergonomic risks	Rotate work	2	3	3	18	Ensure workers fit for work. Proper supervision	2	3	1	6	

CR20	Steel fixing	Use of small tools	Bending; cramped position; injuries from slipping and fixing wire	Care in using tools	2	2	2	8	Experienced supervision by site staff. Competent Inspection. Use of proper equipment	2	1	2	4	Contractor. Concrete Supervisor, CHSO
		Ergonomic risks		Rotate work	2	2	3	12	Experienced supervision by site staff. Competent Inspection. Use of proper equipment	2	2	1	4	
	Use of concrete vibrator	Injury to persons	Noise, vibration, contact with vibrating head, contact with wet concrete	Operator training	2	2	3	12	Experienced supervision by site staff. Competent Inspection. Use of proper equipment	2	2	1	4	Contractor. Concrete Supervisor, CHSO

BRICK WORK														
	Delivery by truck	Struck by truck	Injury to persons	Vehicle fitted with acoustic warning devices, hooter and reverse warning. Vehicle checklists to be done	3	3	3	27	Experienced supervision by site staff and P A. Competent Inspection	3	2	2	12	Contractor, Building Supervisor, CHSO
	Moving bricks	Use of wheel barrow	Injury to person's ergonomic risks	Training of workers. Job rotation	2	2	3	12	Experienced supervision by site staff. Competent Inspection. Use of proper equipment	2	2	1	4	Contractor, Building Supervisor, CHSO
		Use of Brick lift	Injury to persons	Training of workers in use of equipment	3	2	2	12	Experienced supervision by site staff. Competent Inspection. Use of proper equipment	3	2	1	6	Contractor, Building Supervisor, CHSO
	Use of support work	Collapse of support work	Injury to persons	Training of workers in use of equipment Method statements	3	2	2	12	Experienced supervision by site staff. Competent Inspection. Use of proper equipment proper calculation of loads involved by competent person	3	2	1	6	Contractor, Building Supervisor, CHSO
	Use of access scaffolding and Ladders	Working with ladders and low scaffolds	Worker Falls, slips	Fall protection plan. Ladders to GSR13A	3	2	2	12	Training, proper supervision. Ladder inspection	3	1	2	6	Contractor, Building Supervisor,, Scaffolding Inspector CHSO
	Working with glass	Glass breaking	Cuts and other injuries	Training of workers in use of equipment	3	2	2	12	Experienced supervision by site staff and P A. Competent Inspection	3	2	1	6	Contractor, Building Supervisor,, Scaffolding Inspector CHSO

PLUMBING														
	Plumbing Contractor	Unregistered, incompetent contractor	Poor work, cost overruns, no municipal connection No Certificate of Compliance	Ensure appointment of registered, competent contractor	3	2	3	18	Project specific H&S Specification and HIRA in tender Document	3	2	2	12	Contractor, Construction Manager, CHSO
PAINTING														
GSR 13A	Painting	Working with ladders and low scaffolds	Worker Falls, slips	Fall protection plan. Ladders to GSR13A	3	2	2	12	Training, proper supervision. Ladder inspection	3	1	2	6	Contractor, Construction Manager, Ladder Inspector, CHSO
		Ingestion of Paint	Gastric irritation, nausea	Training; clean site	2	2	2	8	Tool box talks, proper supervision	1	2	2	4	Contractor, Painting Supevisor, CHSO
		Cleaning Brushes	Use of thinners, benzene, possible carcinogens; highly flammable	Supply MSDS Use alternative brush cleaner Keep away from open flames	2	2	2	8	Use of Turpentine, Proper supervision Training	1	2	2	4	Contractor, Painting Supevisor, CHSO
TILE CUTTER AND GRINDER														
		Use of Tile Cutter and grinder	Injury to worker	Ensure operator competent	2	2	2	8	Ensure Correct PPE, toolbox talks proper supervision	2	1	2	4	Contractor, Supevisor, CHSO



**ELECTRICAL INSTALLATION (see also Electrical installation regulations)**

	Electrical Contractor	Unregistered, incompetent contractor	Poor work, cost overruns, no municipal connection	Ensure appointment of registered, competent contractor	3	2	3	18	Project specific H&S Specification and HIRA in tender Document	1	2	2	4	Contractor, Construction Manager, CHSO, Electrical Supervisor
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**SMALL ELECTRICAL TOOLS**

	Use of small electrical tools	Contact with electricity	Electric shock	Certificate of Compliance for electrical supply	3	2	2	12	Ensure all connections secure, no breaks in cable. Proper routing of cables on site	3	2	1	6	Contractor, Construction Manager, CHSO, Electrical Supervisor
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**HAZARDOUS CHEMICALS (see also Hazardous Chemical Regulations)**

HCS Regulations	Use/supply of hazardous Chemicals	improper use/storage of hazardous Chemicals	Fire, explosion poisoning of persons	Supply appropriate materials safety data information (MSDS)	3	2	3	18	Competent person appointed to check stores. Proper storage. Provision of fire extinguishers. Emergency plan.	3	1	2	6	Contractor, Construction Manager, CHSO HCS supervisor, SMME Contractor(if employed)
	Plastering	Cement Mortar	Used across the project for a range of tasks,	Avoid contact with cement. Supply MSDS	3	3	2	18	Dust control, PPE (eye and respiratory) Use of distributor when stabilizing road. Rotation of workers	2	3	1	6	
	Tiling	Tile grouts and Adhesives	Contact with materials	Avoid contact with grouts and Adhesives. Supply SDS	2	2	2	8	Proper PPE. Worker training	2	1	2	4	
	Carpentry	Wood glue & Varnish	Health Risk to Workers	Avoid over exposure	2	2	2	8	Ensure proper ventilation	2	1	2	4	
	Plastering, Tiling, Carpentry	ergonomic risks	Working in confined areas, bending,	Rotate work	2	2	2	8	Proper supervision, competent trained workers	2	1	2	4	

**EXPLOSIVE POWER TOOLS**

	Use of Power Tools	Contact with electricity / Ricochet of object	Electric shock / Injury to persons	Only competent operators / Good working equipment / sufficient PPE	3	2	2	12	Ensure competent operators. / Method statements/ Risk Assessments/Safe Work Procedures Tool Box Talks	3	2	1	6	Contractor, Construction Manager, CHSO, Operator
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**HOTWORK**

	Welding operation	Contact with electricity / contact with gas	Incompetent operator / Defective Machinery . Burns / Injury to hand and eyes	Competent operators. Sufficient training to be provided to employees in the use thereof. Suitable Fire Extinguishers placed nearby. Employees to wear the correct PPE.	3	3	3	27	Ensure operation by competent welders. Hazardous awareness training. All vessels and equipment to be inspected regularly. Registers to be kept	3	2	2	12	Contractor, Construction Manager, CHSO.Operator
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PRESSURE EQUIPMENT														
	Pressure Equipment	Strike with uncontrolled hose or coupling.	Incompetent Operator: Impact <ul style="list-style-type: none"><li>• Pressurised content</li><li>• Electricity</li><li>• Ergonomics</li><li>• Slips/trips/falls</li></ul>	Competent operators. Ensure sufficient training for operators.Wear appropriate PPE (e.g. goggles and water proof clothing etc).Ensure equipment is not directed at people or animals. Ensure sufficient rest breaks are taken whilst operating the machiney.	3	3	3	27	Ensure operation by competent . Hazardous awareness training. Ensure equipment is operated and maintained in accordance with manufacturer's instructions. Ensure regular maintenance is maintained. Inspection records to be kept.	3	2	2	12	Contractor, Construction Manager, CHSO.Operator

**Part C3.2**  
**PROJECT-SPECIFIC**  
**HEALTH & SAFETY SPECIFICATION**

**ANNEXURE C**

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**CONTRACTORS PROVISION OF COSTINGS  
FOR HEALTH, SAFETY & ENVIRONMENTAL**

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**ADDITIONS, ALTERATIONS & NEW CONSTRUCTION  
PROSPECT JUNIOR SECONDARY SCHOOL**

**CONTRACT NO. DOE 15ECAR001**

## HEALTH AND SAFETY CONTRACTOR PROVISIONAL COSTING

ITEM	DESCRIPTION	UNIT	QUANTITY	MONTHS	RATE	AMOUNT
	Notify the provincial director in writing of the commencement of construction work with and including submission of a letter of receipt and acknowledgement of the aforementioned notice  By the director of his/her representative, and renewals thereto.					
	<b>TOTAL</b>					
	Allow for the necessary Workman's Compensation Fund or FEM contributions for the duration of the project with, including renewals					
	<b>TOTAL</b>					
	Allow for the preparation and approval of project-specific H&S Plan & File [CR 7(1)(a)]					
	<b>TOTAL</b>					
	Allow for the implementation and maintenance of project-specific H&S Plan & File. [CR 7]					
	<b>TOTAL</b>					
	<b>MEDICALS</b> Pre-employment medicals Psychological medical for working at heights Psychological medical for working with motorized equipment & construction machinery Medicals for working with asbestos Routine medicals as per requirement of job activities Re-medicals yearly Exit Medicals					
	<b>TOTAL</b>					
	<b>PERSONAL PROTECTIVE EQUIPMENT</b> Overalls(Blue) Specialized overalls (asbestos,chemicals etc) Hard hats & safety glasses Safety boots/shoes Gloves Breathing apparatus ( confined space ,asbestos & chemicals) Jackets Reflector vests Testing equipment( oxygen measuring , noise,lighting, lighting & wind) (centralized) Orange star netting- 1.2 m height Orange plastic road cones Plastic reinforcement caps(Rebar)					
	Dust Mask					

	Other Specialised PPE ( <b>Demolition</b> , emergency,kidney belts etc)					
	<b>TOTAL</b>					
	<b>EMERGENCY: FIRE FIGHTING &amp; GENERAL</b> Identified Fire Fighting Equipment™ (extinguishers, alarm, kits, blankets, hoses) Training Surveys Emergency Services Contact resource Others-Drip Trays <b>Demolition</b>					
	<b>TOTAL</b>					
	<b>HEALTH AND SAFETY PERSONNEL</b> Construction Safety manager Construction Safety officer Full-time Safety Representative Fire fighters / co-ordinators™ Emergency co-ordinators™ Specialised HIRA / Accident & Incident Investigators Work at Height Controllers™ Construction phase safety ,health, environmental and waste management plan Specialised consultants (Demolition?) Standby – additional appointments					
	<b>TOTAL</b>					
	<b>FACILITIES</b> Provision of ablution facilities Service and maintenance of ablution facilities Provision of eating areas Cleaning of Lay down and other storage areas Wash hand basin Hot and cold running water Degreasing and toilet soap Demolition Waste Area					
	<b>TOTAL</b>					
	<b>FALL PREVENTION / PROTECTION</b> Safety harness with double lanyards Lanyards extenders Scaffold hooks Lifelines and vertical fall arrest systems Scaffolding -material, erection and inspection (Estimate for project ) Temporary hand railing material and kick flats Inspection for approval of equipment (AIA)					

	Chin straps/tool bags/wrist straps					
	Other					
	<b>TOTAL</b>					
	<b>VEHICLE /MOBILE EQUIPMENT UPGRADE FOR USE ON SITE</b>					
	Raised lights					
	Rotating orange light					
	Flag as per procedure					
	Fire extinguisher- 4.5 kg					
	First aid box					
	Reflector tape					
	Danger tape					
	Signage					
	Load & edge protection™					
	Safety belts for all passengers (LDV)					
	Wheel chockers					
	<b>Demolition</b> considerations					
	<b>TOTAL</b>					
	<b>LIFTING MACHINERY AND EQUIPMENT</b>					
	Annual inspections and load testing as per legal requirement					
	Certification of all lifting gear during the course of the project					
	Third party inspections					
	Inspection for approval of equipment (AIA)					
	Slings					
	Chains					
	Hooks					
	Demolition consideration					
	<b>TOTAL</b>					
	<b>INSURANCE</b>					
	Compensation Fund					
	Liability insurances					
	<b>TOTAL</b>					
	<b>FIRST AID</b>					
	Setup First Aid/Emergency station/bay™					
	Rescue Equipment and stretchers					
	First Aid Box, First Aid Refill & Refill Kits™					
	Hazchem spill kits					
	Demolition Emergency Type Consideration					
	<b>TOTAL</b>					
	<b>TRAINING</b>					
	Refresher Training for Appointees™					
	(List below from the Needs analysis)					

	Competency Refresher & Expired Training renewal™					
	(List below from the Needs analysis)					
	<b>TOTAL</b>					
	<b>ELECTRICAL / NOMINATED SUB-CONTRACTOR OHS</b>					
	Locks required for lockouts					
	Tags					
	Permit books					
	Callipers					
	Key safes					
	<b>TOTAL</b>					
	<b>PLANT &amp; SCAFFOLDING</b>					
	Additional Procedure item™: _____					
	PDP renewal™					
	Permit system stationery™					
	<b>ENVIRONMENTAL CONSIDERATIONS</b>					
	Allow for the preparation and approval of project-specific H&S Plan					
	Provide for the adequate and safe collection and disposal of waste material from site by an approved method.					
	Provide for rehabilitation on completion of site areas and temporary access routes not covered by construction or landscaping specifications.					
	<b>TOTAL</b>					
	<b>GRAND TOTAL</b>					

### **C4.3 HIV/AIDS Specification**



# SPECIFICATION FOR HIV/AIDS AWARENESS

## 1. Scope

This generic specification contains requirements applicable to the reduction of the risk of transfer of the HIV virus between and among construction workers and the local community through the following four categories:

- a) Raising awareness about HIV/AIDS;
- b) Providing construction workers with access to condoms;
- c) HIV counseling, testing and referral services; and
- d) Sexually Transmitted Infection diagnosis and treatment.

## 2. Normative references

The following standard contains provisions that, through reference in this text, constitute provisions of this standard:

SANS 4074 ISO 4074, *Condom Rubbers*

## 3. Definitions and Abbreviations

### 3.1 Definitions

**Construction worker:** all persons in the employ of the contractor or in the employ of any of the subcontractors contracted by the contractor.

**Local community:** The communities' local to the site which are most likely to have contact with the construction worker and, in particular, sex workers in those communities.

**Service provider:** the natural or juristic person recognised by the South African Department of Roads and Public Works as specialist in conducting Aids Awareness Programmes.

### 3.2 Abbreviations

**STI:** Sexually transmitted infection

**HIV:** Human Immunodeficiency Virus

**AIDS:** Acquired Immune Deficiency Syndrome

## 4. Objectives

The objectives are to:

- a) Reduce the risk of transfer of the HIV virus between and among construction workers and the local community;
- b) Raise awareness amongst construction workers and the local community of the risk of infection with the HIV virus;
- c) Promote early diagnosis; and
- d) Assist affected individuals to access care and counseling.

## 5. Requirements

### 5.1 General requirements

The contractor shall, in order to satisfy the objectives stated in 4:

- a) Make condoms complying with the requirements of SABS ISO 4074 available to all construction workers at readily accessible points on the site, suitably protected from the elements, for the duration of the contract;
- b) Either place and maintain HIV/AIDS awareness poster of size of not less than A1 in areas which are highly trafficked by construction workers, or provide construction workers with a pamphlet, in languages largely understood by construction workers, which
- c) Encourage voluntary HIV/STI testing;
- d) Provide information concerning counseling, support and care of those that are infected services; and
- e) Comply with the requirements of 5.2

## **5.2 HIV awareness programme**

- 5.2.1 The contractor shall:
  - a) Once the contractor have established site, he/she must go to the local Community Health Centre and report the project and that he will be recruiting local labour and that he/she would want them to conduct the HIV training and awareness.
- 5.2.2 The contractor shall do nothing to dissuade construction workers from attending such an HIV Awareness Programme and shall take all reasonable steps to ensure that a minimum of 90% of construction workers engaged in the works attend such a programme, when it is conducted.
- 5.2.3 The outcomes of the HIV Awareness Programme shall as a minimum, result in contract workers exposed to such a programme being able to:
  - a) Communicate the existence of problems of HIV and be able to outline the consequences of transmission of HIV to or from the local community;
  - b) Recall and communicate the mode of HIV transmission and preventative measures including the proper use of the condom.

**The HIV/AIDS awareness programme described in 5.2 is to be done once off at the start of the contract.**

## **5.3 Reporting**

- 5.3.1 The contractor shall prepare and attach to his claims for payment a brief report which outlines how the actions taken by the contractor in the period for which payment is claimed satisfy the requirements and a schedule which lists the names, identity numbers, trade / occupation and name of employer of all construction workers exposed to the programme (see HIV/STI Compliance Report)
- 5.3.2 The employer's representative shall certify the report and schedule described in 5.3.1 whenever a claim for payment is issued to the employer.

**Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer may apply any of the sanctions provided for the contract. Sanctions may include the application of a financial penalty of 0.05% of the Contract Sum.**

The HIV/AIDS awareness programme described in 5.2 shall in addition be conducted for the benefit of the local community on one occasion in the community centre nearest to the building site. The contractor shall be responsible for inviting identifiable community-based institutions and organizations, churches, and schools to participate in the programme.

## **C4.4 Covid 19 Specification**

# **ADDENDUM TO PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION**

**FOR**

**GENERAL BUILDING  
MANAGED ON BEHALF OF  
INDEPENDENT DEVELOPMENT TRUST  
(THE “CLIENT”)**

**PREPARED BY:**

**SHEHAWK CONSULTANTS CC**



---

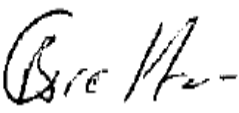
**PROJECT:**

**Management of the COVID 19 virus during the ADDITION, ALTERATION  
AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY  
SCHOOL**

---

## SIGNING OF THE ORIGINAL DOCUMENT

**We, the undersigned, accept this document as a stable work product to be placed under formal change control as described by the Change Control Procedure document.**

ORIGINAL	Prepared by	Reviewed by	Approved by
<b>Date:</b> <b>2<sup>nd</sup> of March 2022</b>	<b>Name:</b> Barinda Gretton Health and Safety Agent	<b>Name:</b> Marius Helm Agent for the Client	<b>Name:</b> Client's Representative
	<b>Signature:</b> 	<b>Signature:</b>	<b>Signature:</b>

REVISION	Prepared by	Reviewed by	Approved by
Date:	Signature:	Signature:	Signature:
<b>Document Title</b>	<b>ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL</b>		
Revision 0	Issue Date		

<i>Revision Number</i>	<i>Alteration</i>	<i>Date</i>
1		
2		
3		
4		
5		

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- COVID-19 PPE on Site
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##### **2.2 Ergonomics Regulation of 2019**

## 1. SPECIFIC PROJECT INFORMATION

### 1.1 INTRODUCTION AND DEFINITIONS

Legislation, with special reference to the Construction Regulations 2014, being in effect from the 7<sup>th</sup> August 2014 various improvements were made to Legislation to ensure that both Principal Contractors and Sub – Contractors are held liable for their relevant duties as specified in the Scope Works. The client's Project Health and Safety Specification includes a broad spectrum of the Regulations, it is still the duties of all Contractors to familiarise them with the requirements of the Occupational Health and Safety Act and all Relevant Acts applicable to Construction work (Thus include all Regulations with relevance to the Occupational Health and Safety Act and the Scope of works on site.) It is the Contractors responsibility to ensure that all regulations, and other associated health and safety regulations have been included in all the duties placed upon contractors and principal contractors in the tender. A copy of the regulations can be viewed on the department of labour's website and will need to be displayed at the active site area as well be included in the Health and Safety File.

The terms “contractor” and “principal contractor” have the same meaning as that in the construction regulations and are used interchangeably in this document, i.e., references to “contractor” refer to principal contractor and/or contractor as the regulations pertain to their functions.

The Client, and/or their agents, will monitor that all Contractors comply with the requirements as per the Occupational Health and Safety Act, relevant Regulations, Disaster Management act and finally the Project Health and Safety Specifications.

Definitions (as per the Construction Regulations 2014) applicable to this Health and Safety Specifications.

<b>DIRECTORY</b>	
<b>Department of Labour</b> <a href="http://www.labour.gov.za/Contacts/Labour-Centres/Pages/defaults.aspx">www.labour.gov.za/Contacts/Labour-Centres/Pages/defaults.aspx</a>	<b>Tel:</b> 043 702 7500 <b>e-mail:</b> <a href="mailto:Kulungile.Nkanjeni@labour.gov.za">Kulungile.Nkanjeni@labour.gov.za</a>
<b>National Department of Health</b>	<b>Tel:</b> 012 395 8000
<b>COVID – 19 Hotlines</b>	<b>Tel:</b> 0800 029 999
<b>National Coronavirus Hotline</b>	<b>Tel:</b> 021 928 4102
<b>Provincial Corona Hotline</b>	<b>Whatsapp:</b> 0600 12 34 56

### 1.2 PROJECT HEALTH AND SAFETY REQUIREMENTS

The provision for and the amendment of the existing Project Health and Safety Specification and Baseline Risk Assessment to include the Health and Safety Hazards and Risks as identified by the Client, Designers and Safety Agent to reduce, minimise and prevent exposure to COVID 19 during the Construction Phase.

DOCUMENTATION	<b>COVID 19 -</b> <ol style="list-style-type: none"> <li>1. Method Statements will be required for High Risk Activities on site.</li> <li>2. COVID 19 Readiness Plan</li> <li>3. Risk Assessments</li> <li>4. Mitigation and Prevention Plan</li> <li>5. Emergency Plan</li> <li>6. Training documents</li> <li>7. Relevant Registers and Inspection sheets</li> <li>8. Bill of Quantities</li> <li>9. Policy</li> <li>10. Safe Work Procedures</li> </ol>
PERSONAL PROTECTIVE EQUIPMENT	<ol style="list-style-type: none"> <li>1. Disposable Gloves (Security and Screening)</li> <li>2. 3 x sets of overalls ( to be changed on a daily basis)</li> <li>3. Respiratory Protection ( as per the DOL endorsed) 2 x Cloth Masks for each employee)</li> <li>4. Eye Protection (Face Shields and Goggles) to cover front and sides of face.</li> </ol>

## 2. **FURTHER REQUIREMENTS**

### 2.1 COVID 19 ( Due to the lack of knowledge on the COVID 19 and ever-changing conditions this section is constantly under review)

This section is based on the requirements of Government Gazette No 43257 dated 29<sup>th</sup> April 2020, and the Disaster Management Act 2002 as amended 29<sup>th</sup> April 2020.

#### ***DEFINITIONS (Disaster management Act of 2002 gazetted on 29/4/2020)***

‘adequate space’ means not more than one person per one and a half metres of floor space; ‘Alert Level’ means the determination made under sub regulation 3(2);

‘clinical case’ means a patient that presents with clinical signs and symptoms of COVID-19;

‘COVID -19’ means the Novel Coronavirus (2019- nCov2) which is an infectious disease caused by a virus that has previously not been scientifically identified in humans, which emerged during 2019 and was declared a global pandemic by the WHO in 2020;

‘Criminal Procedure Act’ means the Criminal Procedure Act, 1977 (Act No 51 of 1977);

‘enforcement officer’ includes a member of the South African Police Service, the South African National Defence Force. metro police. traffic officers, immigration inspectors; and a peace officer as defined in section 1 of the Criminal Procedure Act;

‘essential services’ means the services listed in Annexure D;

‘gathering’ means any assembly, concourse or procession in or on -

- (a) any public road, as defined in the National Road Traffic Act, 1996 (Act No. 93 of 1996); or
- (b) any other building, place or premises. including wholly or partly in the open air, and including, but not limited to, any premises or place used for any sporting, entertainment, funeral, recreational, religious, or cultural purposes; but excludes a workplace and a place of residence for those persons ordinarily residing at the residence;

‘health protocols’ means the COVID-19 health protocols determined by the Director General of Health;



'head of an institution' means the accounting officer of a public institution and the chief executive officer or the equivalent of a chief executive officer of a private institution;

'institution' means any public or private institution, including a sole practitioner and any other business owned and operated by a single person, that is engaged in the supply or distribution of a good or service as set out in the Table 1, or which regulates such supply or distribution, including professional regulatory bodies designated in directions made in terms of regulation 4 of the Regulations;

'isolation' means separating a sick individual with a contagious disease from healthy individuals that are not infected with such disease in a manner that aims to prevent the spreading of infection or contamination;

'lockdown' means the period between 23H59 on 26 March 2020, until 23H59 on 30 April 2020;

'national state of disaster' means the national state of disaster declared by Government Notice No. R. 313 of 15 March 2020;

'permit services' means the services permitted in Table 1;

'quarantine' means the restriction of activities or separation of a person, who was or may potentially have been exposed, to COVID-19 and who could potentially spread the disease to other non - exposed persons, to prevent the possible spread of infection or contamination to healthy individuals;

'the Act' means the Disaster Management Act 2002 (Act No. 57 of 2002); and

'WHO' means the World Health Organisation.

The Coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered Coronavirus causes Coronavirus disease COVID-19.

COVID 19 is a viral pandemic that has and is causing a great deal of damage to human health, countries' economies and health systems and has led to lock downs, work stoppages and restriction of movement that threatens the existence of many jobs, as well as the way we conduct our normal working and social lives.

In response to the pandemic the government has passed legislation and guidance for employers and employees in the work environment.

People can catch COVID-19 from others who have the virus. The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with COVID-19 coughs or exhales. These droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth. People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets. This is why it is important to stay more than one meter away from a person who is sick.

#### 2.1.1 CONTROL MEASURES TO BE INCLUDED IN HEALTH AND SAFETY PLAN:

The management and control of this virus by the Contractors on site is of the utmost importance.

No work will be allowed on site unless the lockdown restrictions were uplifted by Government.

No work will be allowed on site unless all documents required from contractors were submitted and approved by the Client/ Clients Agent.

Requirements that must be included by the contractor in their COVID-19 safety plan response should include arrangements for the following (please note that reference to contractors' employees / staff / workers / personnel on site must include control of their (sub)contractors, visitors and suppliers):

#### **Addendum to Health and Safety Plan (COVID 19 Plans) :**

Procedures as to how employees will be phased back on to site to be included in the COVID 19 Plan.(i.e. Permits with regards to the return of employees must be issued to the employees by the employer and these permits must be included in the file. Please refer to Annexure E of the Government Notice from Department of Cooperative Governance dated 29<sup>th</sup> April 2020. All persons who are able to work from home should do so.)

#### **Legal Appointments:**

The contractor must appoint a COVID 19 Manager to address employees concerns and keep them informed with regards to COVID 19 and the changes within the Disaster Management Act.

The contractor must appoint a COVID-19 Compliance Officer responsible for overseeing the following:

- implementation of the workplace plan; and adherence to the standards of hygiene and health protocols relating to COVID-19 at the workplace;
- developing a plan for the phased in return of their employees to the workplace, prior to reopening the workplace for business, which plan must correspond with Annexure E of the Disaster Management Act 2002 (as amended April 2020) and be retained for inspection and contain the following information:
  - which employees are permitted to work;
  - what the plans for the phased-in return of their employees to the workplace are;
  - what health protocols are in place to protect employees from COVID-19; and
  - the details of the COVID-19 compliance officer;
  - phase in the return of their employees to work to manage the return of employees from other provinces, metropolitan and district areas; and
  - developed measures to ensure that the workplace meets the standards of health protocols, adequate space for employees and social distancing measures for the public and service providers, as required.

#### **Transportation to Site**

Procedures for Transportation of Workers to Site –

- employees should be advised that if using transport, passengers must wear a cloth mask to be allowed entry into the vehicle.
- Hand sanitisers must be made available, and all passengers must sanitise their hands before entering.
- Public transport vehicles must be sanitised on a daily basis.

Government mandated limit on passengers per vehicle must be strictly adhered to.

### **Site access**

Entry to site may only be through pre-arranged security controlled access points. Contractor must detail how will members of public be prevented from accessing site (risk of cross contamination between persons working on site and members of public).

Provision of Visitors Book for signing in and out of site. Records of all personnel entering site and their contact details must be kept.

### **Screening on Site**

Contractor to advise how personnel on site will be screened on a daily basis for symptoms of COVID-19, including a symptom check as well as temperature assessment (digital thermometer). The contractor must describe their procedure for employees on site, suspected of having COVID-19 symptoms, refusing to undergo **medical** examination, prophylaxis, treatment, isolation, and quarantine. Sites with more than 500 employees must have testing facilities.

### **Risk assessment and safety procedure**

Contractor must provide a written policy concerning the protection of its staff from COVID-19. Contractor must compile a COVID-19 risk assessment and safety procedures for the site. How will it be communicated to all on site and records kept thereof. The Risk Assessments must include the identification of exposure levels, identification of "high contact" activities, the identification of vulnerable workers and special measures for their protection, including protection against unfair discrimination or victimization.

### **Safety Signage and Hotline Number**

Contractor to implement placement of COVID-19 safety signage and hotline number at site entrance and on site, warning of hazards and advising control measures (see samples in Annexure to this document). Please note that signage must be representative of the local languages.

### **Communication Procedures**

Contractor to describe comprehensive induction and toolbox talk procedures to include COVID-19. Toolbox talks should be conducted on a daily basis on COVID-19 control measures and risks on site, include personal hygiene - manner of controlling coughing and sneezing on site - in elbow.

### **Emergency Procedure**

Contractor must describe communication of COVID-19 symptoms and protocol that must be followed if person demonstrates symptoms, or is thought to have COVID-19 - symptoms of COVID-19 include cough, sore throat, shortness of breath or fever/chills (or  $\geq 38^{\circ}\text{C}$  measured temperature), redness of eyes, also additional symptoms – body aches, loss of smell or loss of taste, nausea, vomiting, diarrhoea, fatigue, weakness or tiredness. Contractor must advise personnel on site of the symptom reporting procedure to site management of COVID-19 symptoms, and referral protocol for screening or testing if showing symptoms.

Emergency COVID-19 protocol that must be put in place by Principal Contractor must include:

- Sick workers may not enter workplace.
- If sick worker already on site then worker must be isolated in designated area for isolation on site, provided with FFP1 surgical mask and transported for self-isolation or for medical examination or testing at identified testing site.
- Worker placed on sick leave.

- On receiving their results, the employee and/or health professional supporting the employee should notify their workplace so that the employee is managed accordingly. The workplace should proactively take steps to obtain this information to avoid any delays in reporting.
- Assess the risk of transmission, disinfect area and workers workstation, refer exposed workers for screening, etc.
- Lodge claim with Workman's Compensation if infection occupationally acquired.
- Worker may only return to work after undergoing a medical evaluation confirming worker has tested negative for COVID-19.
- Worker must be closely monitored for symptoms on return to work.
- If worker has been diagnosed with COVID-19 the employer must notify Department of Health and Department of Labour

NOTE THAT: personnel on site, or presenting themselves to site who appear sick, or have symptoms associated with COVID-19 may not be allowed on site.

### **Welfare and Washing Facilities, Sanitising and Disinfection**

Contractor must describe provision of soap and clean running water and sanitisers at site entrance and at other locations on site. Correct manner of washing / disinfecting hands, 20 second rule. Use of paper towels only. Disinfection of work surfaces and equipment control procedures required - carried out before work begins, regularly during day and after work ends. Toilets, common areas, door handles, shared electronic equipment and any other shared equipment must be regularly cleaned and disinfected, biometric systems disabled or made COVID-19 safe.

Hand sanitiser must contain 70% alcohol.

Employees working away from home should be provided with hand sanitiser by the employer.

### **COVID-19 PPE on Site**

Contractor must describe controls for wearing of PPE on site, including wearing of cloth masks on site - people working and visiting site must be instructed on the correct way of wearing cloth masks, procedure for maintenance and replacement of cloth masks. The wearing of disposable gloves and protective eye wear should be considered to reduce risk of contamination. Surgical masks and N95 masks should only be worn by frontline health workers, not site staff. Note that some surgical masks should be kept on site to give to persons exhibiting COVID-19 symptoms prior to being taken away for testing.

Employer is required to provide each employee with at least 2 cloth masks and must make appropriate arrangements for washing, drying and ironing of cloth masks.

### **Supervision and Monitoring on Site**

Monitoring systems must be in place by Contractor to ensure compliance with safety protocols and identify infections among employees - supervision monitoring and enforcement - how will it be done by the contractor?

### **Ventilation on Site**

How will ventilation and air quality be made safe on site.

### **Waste Management**

Sufficient refuse bins must be on site for disposal of tissues, used PPE.

Procedure for safe removal of contents of bins; used PPE, other detritus should be made in contractors safety plan.

### **Social Distancing Measures**

Contractor must describe, so far as practicable how can numbers of workers be minimised on site at any one time (e.g.: through staff rotation, staggered working hours, shift systems, remote working arrangements or similar to achieve social distancing? (1.5m). Note that contractor must minimise contact between workers themselves and workers and public.

Depending on what is reasonably practicable, site must be arranged so that there is distance of at least 1.5m between workers and members of public or put physical barriers in place or provide workers with face shields or visors.

### **COVID-19 Investigation procedure**

Contractor must describe how they will investigate the cause of COVID-19 infection (including control failure and risk assessment review, checking of PPE requirements, admin support to contact tracing implemented by Department of Health)

### **Important notes:**

If more than 500 employees in contractors employ the employer must submit this risk assessment and written policy re health and safety of employees from COVID-19 to Safety Committee and Department of Employment and Labour.

Monitoring by the Safety Agent will be strict - noncompliance with COVID-19 control measures will be reported immediately to the principal contractor for action purposes. If necessary, transgressors will be removed from site for re-induction, or a recommendation for permanent barring from site will be made.

As this is an on-going medical crisis it is likely that control measures to prevent the spread of the virus will be updated by the government on a regular basis. Hence the measures in this section of the safety specification will be reviewed on an on-going basis, as we receive updated information from the government.

## **2.2 ERGONOMICS REGULATION OF 2019**

'Competent person' in relation to ergonomics, means a person who—

(a) has in respect of the work or task to be performed the required knowledge, training and experience in ergonomics and, where applicable, qualifications specific to ergonomics: provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2008 (Act No. 67 of 2008), those qualifications and that training must be regarded as the required qualifications and training; and

(b) is familiar with the Act and the applicable regulations made under the Act;

'ergonomic risk' means a characteristic or action in the workplace, workplace conditions, or a combination thereof that may impair overall system performance and human well-being.

'ergonomic risk assessment' means a programme, process, or investigation to identify, analyse, valuate and prioritise any risk from exposure to ergonomic risks associated with the workplace.

'ergonomics' means the scientific discipline concerned with the fundamental understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimise human well-being and overall system performance;

The ergonomics regulations will apply to any employer or self-employed person who carries out work at the workplace who may expose any person to an ergonomic risk in the work place and any designer, manufacturer, importer or supplier of machinery, plant, or work systems for the work place.

An employer must, before the commencement of any work that may expose employees to ergonomic risks, have an ergonomic risk assessment performed by a competent person.

The ergonomic risk assessment must be done at intervals not exceeding two years and must include the following:

- a complete hazard identification and all persons who may be affected by the ergonomic risk.
- how employees may be affected by the ergonomic risks.
- the analysis and evaluation of the ergonomic risks.

- the prioritisation of ergonomic risks.

An employer must review the relevant ergonomic risk assessment if:

- such assessment is no longer valid;
- control measures are no longer effective;
- technological or scientific advances allow for more effective control methods;
- there has been a change in –
- the work methods;
- the type of work carried out; or
- the type of equipment used to control the exposure; and
- an incident occurs or medical surveillance reveals an adverse health effect, where ergonomic risks are identified as a contributing factor.

An employer must ensure that an employee is placed under medical surveillance, which is overseen by an occupational medicine practitioner, if –

- the ergonomic risk assessment referred to in regulation 6 indicates the need for the employee to be placed under medical surveillance; or
- an occupational health practitioner recommends that relevant employees must be under Medical surveillance, in which case the employer may call upon an occupational medicine practitioner to ratify the appropriateness of such recommendation.

An employer must ensure that the medical surveillance consists of –

- in the case of a new employee, an initial health examination before the employee commences employment or within 30 days of commencement of such employment.
- a periodic health examination informed by the ergonomic risk assessment, at intervals specified by an occupational medicine practitioner, but not exceeding two years; and
- an exit health examination informed by the ergonomic risk assessment.

Both the Client and the Contractor have a duty in terms of health and safety legislation to do all that is reasonably practicable to make members of the public and others being affected by the construction process aware of possible risks and put preventative measures in place to mitigate the risks. The public and/or visitors shall go through a brief health and safety induction detailing hazards and risks they may be exposed to and what measures are in place to control these hazards and risks.

#### **Acknowledgement:**

I, \_\_\_\_\_ representing

\_\_\_\_\_ Contractor / Agent have  
satisfied myself with the content of the Addendum to Occupational Health and Safety  
Specification (AOHSS) and shall ensure that the Contractor and his / her personnel comply with  
all relevant obligations in respect thereof.

\_\_\_\_\_  
Signature of Contractor

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Agent

\_\_\_\_\_  
Date

#### **Comments:**

INDEPENDENT DEVELOPMENT TRUST		ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL
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DRAFT BASE LINE RISK ASSESSMENT		Low	Med	High
Risk Rating Multiplier: Low = 1; Medium = 2; High = 3		1	4	12
Baseline Raw Design Risk - Typical behaviour given the design / factors present Residual Risk - The extra factors noted that must be in place to reduce the risk Low Risk - Does not mean that the activity is safe, or that potential injuries and / or fatalities are eliminated Key Risks will be assessed and reported on in the Site Specific H&S Specification New tasks require re-assessment as the project progresses		2	6	18
		3	8	27
		Prepared by SHEHawk Consultants CC – Barinda Gretton		
Note: This is a broad overview of the activities expected and available during the design stage of the project. Key issues will be addressed during the construction stage, and may be updated during this time. Consolidation of activities where overlap or applicable throughout the project (plant, material or other common activities). Compliance with all the applicable legislation is required. Penalties for non-compliances will be applied where issues not addressed as per the H&S Specification (as amended).				
REFERENCES/ABBREVIATIONS:  OHS Act Occupational Health and Safety Act (applies overall); GAR = General Administration Regulations; GSR = General Safety Regulations; HBR = Hazardous Biological Regulations; CR = Construction Regulations; HCSR = Hazardous Chemical Substances Regulations; FR = Facilities Regulations; EIR = Electrical Installation Regulations; DMR = Driven Machinery Regulations; PER = Pressure Equipment Regulations; RTA = Road Traffic Safety Act; SANS = 1200 (unless stated) SANS 10085 = Access Scaffolding; SANS 10083 = Audiometry standards; SANS 1300, 10142,10400 & 2001 = Building & Electrical Standards; SARTSM = South African Roads and Traffic Signs Manual; PC = Principal Contractor; National Disaster Management Act (Regulations) (NDMA)				

INDEPENDENT DEVELOPMENT TRUST		ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL
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GENERAL REQUIREMENTS AND PROVISIONS												
ALL DOCUMENTATION TO COMPLY WITH ALL LEGISLATED GUIDELINES RELATING TO COVID-19 UNTIL THE DISASTER MANAGEMENT ACT IS LIFTED				Baseline : Raw Risk					Baseline: Residual Risk			
Legislation Ref	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likelihood of Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category	Extra control measures necessary to reduce risk	Likelihood of Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
COVID 19												
DMA	Site Preparations	Yes	Contamination of the site over shut down time Spillage of waste/effluent	2	1	1	2	Joint inspection where possible by client, PrCHSA & PA, PC, CHSO/M to inspect the site pre site preparation to assess conditions. Revise any policies, method statements for risks and hazards identified for review by the PA. Decontaminate the site, in all areas; ensure the availability of hand washing facilities and sanitizers, through the site, and at entrances. Appropriate products as prescribed to decontaminate may be used, and all procedures re plans etc. must be followed. Ensure all decontamination stations, and other facilities are available at ablution areas, common eating areas, offices, canteens, security	1	1	1	1
		Yes	Unsafe temporary structures, excavations, bees, vermin, squatters, damaged services due to theft	3	2	1	6	Full inspections of all temporary structures, security and excavations by the PC (By CM and CHSO). Report to be available with method statements and HIRAs with corrective actions to be provided to the PA/Client. PA to review. Teams to make the site safe prior to work commencing. Limit numbers of teams, check competencies prior to commencing work. Safe removal of those from site	1	1	2	2



INDEPENDENT DEVELOPMENT TRUST		ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL
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	Occupational Health: Medical certificates of fitness	Yes	Workers symptom free but infected with Covid-19, older workers of 60+, workers with underlying auto-immune or chronic diseases	3	3	3	27	Policy and method statement to be available relating to medical surveillance. For review by the PA. All workers are to be screened and have a valid certificate of fitness on return to work. A full questionnaire to be completed prior to return, or on return, and those identified as high risk must be separated and possibly refused entry until deemed negative. Methodology to remove staff from site safely to a test facility.	2	3	2	12
	Demographics of Labour	Yes	Vulnerability due to age, underlying auto-immune or chronic diseases, socio-economic status, having to use public transport to get to work	3	3	3	27	The medical surveillance policy and method statement to be adhered to. A full questionnaire to be completed prior to return, or on return, and those identified as high risk must be separated and possibly refused entry until deemed negative. Daily temperature on entry to site; Induction, DSTIs and toolbox talks to be done daily on topics relating to covid, personal hygiene and PPE. Strict enforcement for use of PPE. Job substitution if possible for those who are affected. Must include catering and cleaning facilities	3	3	2	18
	Accommodation	Yes	Social density - inability to maintain social distancing in local communities, Cross contamination from the lack of social distancing, shared utilities and belongings, shared ablutions, cross infection among inhabitants and cleaning, catering staff	3	3	3	27	Policy and method statement for accommodation and to be reviewed by the PA. Sleeping and dining quarters to allow for minimum 1.5m space between persons; Dedicated bedding, towels, utensils, soaps etc.; Individual facilities for safe keeping; Individual, segregated facilities for storage of laundry; Procedures and rules of occupancy and cleaning; Induction and primary health promotion to be done regularly. Isolation area to be available should anyone display symptoms, and safe removal for testing. Food to be served wrapped and available individually.	2	3	2	12

INDEPENDENT DEVELOPMENT TRUST		ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL
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	Origin of labour	Yes	Transportation of employees/workers across borders and between towns and cities, districts and municipalities	3	3	3	27	Selection and provision of transport services compliant with gazetted requirements; Policy and procedures and rules for travel, where possible to limit the use of public transport, or to arrange selective methods of transport, on-going toolbox talks and if possible supply of cloth masks to be worn when travelling. Limitation of border crossing unless specialised contractors	3	3	2	18
	Transportation	Yes	Maximum allowed capacity exceeded; No facilities for sanitising vehicles and passengers; No additional protective measures available, e.g. Face masks; Unlicensed drivers and operators	3	3	3	27	Selection and provision of transport services compliant with gazetted requirements; Policy and procedures and rules for travel, where possible to limit the use of public transport, or to arrange selective methods of transport, on-going toolbox talks and supply of cloth masks to be worn when travelling or moving on and off site. Vehicles maintained at 70% capacity or less; Vehicles sanitised between trips; hand sanitiser provided for passengers.	2	3	2	12
	Social distancing	Yes	Many construction tasks require more than 1 worker; that will be required to work within the limit of 2m Access/Egress to and off site; Welfare facilities, Meeting areas	2	3	3	18	Policy and method statements for the provision of suitable and sufficient PPE; demarcation and spacing of queuing areas; segregation of queuing areas and public outside site perimeters; Meeting/eating areas large enough to maintain 2m distance at maximum occupancy, use of drones, security cameras to limit the need to spend time on site. Only essential workers to spend time on site. Staggered meeting/eating times, use of Zoom, Skype, teams for meetings where necessary. Individual, segregated facilities for safe keeping; Induction training and a programme for information and training.	2	3	2	12

INDEPENDENT DEVELOPMENT TRUST		ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL
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	Alcohol and substance abuse	Yes	Workers , visitors arriving at site under the influence of substances	3	3	2	18	Policy and method statement for substance abuse to be reviewed, management of visitors, workers under the influence of alcohol or other substances. No breathalysers unless individual testing units used, and appropriate disposal in hazardous waste.	2	3	2	12
	Waste management	Yes	Spreading of virus and contact with virus causing infection from hand washing, drying hands, cleaning equipment and other related aspects	3	3	2	18	Prepare a policy, method statements, HIRA and review by PA. Establish and follow protocols for disposal of hazardous waste (containers). Awareness through notices (posters) regarding correct procedures and classification of waste. Competent supervision and adequate awareness training required. Provide adequate supplies of material and consumables, provision of sealable disposal containers/bags through appropriate waste removal company. Establish and follow protocols for disposal of hazardous waste. Provide adequate supply of paper towels. If contractors used ensure appropriate management.	2	3	1	6
	Signage	Yes	Provision of sealable disposal containers/bags. Unintentional entry to site and work areas compromising workers being contaminated. Acts and behaviour that compromises workers	2	3	3	18	A policy and method statement to be prepared, and reviewed by the PA. Installation of posters and signage with the site rules and protocols that needs to be maintained at strategic points, Awareness through notices and posters regarding correct protocols to be maintained, Competent supervision and adequate awareness training required. Discipline to be applied to those not complying	2	3	1	6

INDEPENDENT DEVELOPMENT TRUST		ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL
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	Security access	Yes	Workers, visitors, site administration arriving on site via personal and public transportation	3	3	3	27	Policy and method statements to be revised and reviewed by the PA. All persons entering site to sanitize hands, prior to entry to site. Access controller trained on correct procedure to utilize no-contact hand-held thermometer. Back-up access controllers trained on same procedure. All persons entering site tested by trained access controller Periodic alcohol testing will continue however only when warranted through suspicion.	3	3	2	18
Lockdown NDM Act	Welfare facilities		Spreading of virus and contact with virus causing infection	3	3	3	27	Updating of policy, method statements and HIRA, limiting of personnel on site to minimum number required to maintain control and management. Implement and maintain cleaning and disinfecting programme Rules for social distancing to 1.5m. Stagger number of people attending induction and training sessions. Use technology to avoid close proximity between individuals where possible	1	3	2	6
	Emergency planning		Assembly points may have more than 50 people, limited space for social distancing when practice or actual sessions	2	3	1	6	Review emergency plan and method statements. DSTI's and toolbox talks. Competent supervision to be trained in the emergency arrangements. Updating of the emergency plan communicated to all personnel. Emergency Number List updated to include National Institute of Communicable Diseases (NICD) Emergency Hotline – 0800 029 999 and dedicated Isolation Hospital Details	1	3	1	3

INDEPENDENT DEVELOPMENT TRUST		ADDITION, ALTERATION AND NEW CONSTRUCTION OF PROSPECT JUNIOR SECONDARY SCHOOL
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	Personal protective equipment		Spread of droplet infection through coughing, sneezing when in close contact	3	3	3	27	Update the policy, method statements and HIRA for PPE. No employee and or visitor will be allowed on site without a face mask. N95 masks only for medical or high risk workers. Adequate training must be provided in the correct use and disposable of these masks. Cloth masks must be washed and ironed daily. Face shields protect mouth, nose and eyes. Daily cleaning of face shields No sharing of PPE will be permitted. Adequate supervision, inclusion induction, policy, method statements and HIRA's. Covid PPE does not replace conventional PPE	2	3	2	12
	Consequence management			2	3	2	12	Revision of policy, method statements and HIRA. PC must ensure that workers are updated daily with all the relevant COVID 19 information through DSTIS/Toolbox talks, notices etc... PC must ensure that site is updated daily with all the relevant COVID 19 information. Workers should be updated with new information daily. PC must ensure that company disciplinary procedures are in place. All employees should have knowledge of the company disciplinary procedures. Work stoppage/site closure where noncompliance exists	1	3	2	6

# COVID-19 BOQ : PROSPECT JSS

Tender No.					
Reference Number:					
ITEM NO	DESCRIPTION	UNIT	RATE	QUANTITY	AMOUNT
	<b>COVID 19</b>				
	<b>PRELIMINARY AND GENERAL</b>				
	Review of OHS Plan for each assignment. Rate to include for Risk Assessment specific to the COVID - 1 epidemic and other adjustments to ensure compliance for the assignment	Sum			
	Signage COVID - 19 related				
	<b>Provision for Personal Protective Equipment &amp; Protective Clothing</b>				
	Face Masks for COVID-19 (respiratory protection- as required)	Sum			
	Surgical Gloves (for security and cleaning staff)	Sum			
	Safety Goggles for Screening person	Sum			
	<b>Costs of medical certificate and medical surveillance</b>				
	Screening for Employees with COVID - 19 Symptoms				
	Re -induction training for COVID - 19	Sum			
	Non Contact Thermometer	Sum			
	<b>Fixed charge items</b>				
	Facilities for contractor including offices, storage, sheds, workshops, laboratories, living accommodation, ablution and latrine facilities, tools and equipment, water supply, electrical power, communication, setting out of works, security and dealing with water, traffic and access. Made COVID - 19 safe	Sum			
	<b>Other fixed charge obligations for Covid - 19</b>				
	Hand sanitizer - 500ml	No			
	Cleaning and detergents for cleaning everyday	No			
	Daily logbook for above	No			
	Extra cleaning staff	No			
	<b>Waste Management for COVID - 19</b>				
	Waste Bin	Sum			
	<b>Safety for COVID - 19</b>				
	Maintenance of a register for workers Contacts				
	<b>TOTAL SECTION</b>				
COVID 19 carried forward to Preliminaries Section:					
TOTAL FOR ALL INCLUSIVE HEALTH AND SAFETY (COVID included)					

## **C4.5 Treasury Guidelines for Covid 19**



## ANNEXURE A

### COVID-19 PERSONAL PROTECTIVE EQUIPMENT PRICE LIST

Prices as at:

28 April 2020

Product	Product description	WHO standards / description	Pack size		Unit Price per single item (Incl. VAT)	Price per Unit of Measure (Incl. VAT)
Surgical Mask - Patient	Mask, face, aseptic: Fluid Resistant, Molded, Blue (3 PLV), good breathability, internal and external faces should be clearly identified <b>Type I</b> , with ear loops or tie on	- EN 14683 any type including Type I - ASTM F2100 minimum level 1 or equivalent	Box of 50 pieces		R10,22 per mask	R511,00 per box of 50 pieces
Surgical Mask - Health Care Worker	Mask, face, aseptic: Fluid Resistant, Molded, Blue (3 PLV), good breathability, internal and external faces should be clearly identified <b>Type II or higher</b> , with ear loops or tie on	- EU MDD Directive 93/42/EEC Category III or equivalent - EN 14683 Type II, IR, IIR - ASTM F2100 minimum level 1 or equivalent	Box of 50 pieces	Only Health departments may procure this item	R12,48 per mask	R624,00 per box of 50 pieces
Mask Respirator	N95 or FFP2 - Mask Respirator / Dust Mask, or higher. Good breathability with design that does not collapse against the mouth (e.g. duckbill, cup-shaped)	- Minimum "N95" respirator according to FDA Class II, under 21 CFR 878.4040, and CDC NIOSH, or - Minimum "FFP2" according to EN 149, EU PPE • Regulation 2016/425 Category III, or equivalent	Box of 10 Pieces		R37,80 per mask	R378,00 per box of 10 pieces
Apron	Straight apron with bib, Fabric: 100% polyester with PVC coating, or 100% PVC, or 100% rubber, or other fluid resistant coated material. Waterproof, sewn strap for neck and back fastening. Minimum basis weight: 300 g/m <sup>2</sup> , Covering size: 70 - 90 cm (width) x 120 - 150 cm (height). Reusable (provided appropriate arrangements for decontamination are in place)	• EN ISO 13688 • EN 14126-B and partial protection (EN 13034 or EN 14605) • EN 343 for water and breathability or equivalent	Box of 100 Pieces		R2,97 per Apron	R297,00 per box of 100 Apron
Eye Protection	Goggles Good seal with the skin of the face, flexible PVC frame to easily fit with all face contours with even pressure, enclose eyes and the surrounding areas, accommodate wearers with prescription glasses, clear plastic lens with fog and scratch resistant treatments, adjustable band to secure firmly so as not to become loose during clinical activity, indirect venting to avoid fogging. May be re-usable (provided appropriate arrangements for decontamination are in place) or disposable.	• EU PPE Regulation 2016/425 • EN 166 • ANSI/ISEA Z87.1 or equivalent	Each		R100,44 per each	R 100,44 per each
Visor / Face Shield	Made of clear plastic and providing good visibility to both the wearer and the patient. Adjustable band to attach firmly around the head and fit snugly against the forehead, fog resistant (preferable). Completely cover the sides and length of the face. May be re-usable (made of robust material which can be cleaned and disinfected) or disposable.	• EU PPE Regulation 2016/425 • EN 166 • ANSI/ISEA Z87.1 or equivalent	Each		R108,00 per each	R108,00 per each
Gowns	Isolation gown Protective 3- layers of spunbond meltblown spunbound fabric( Top layer of spunbound polypropylene, a middle layer of meltdown polypropylene and a bottom layer of meltdown polypropylene for light fluid contact and contact Isolation, elastic cuff, Tape-tab neck closure, Tie waist, Non Sterile Dimensions: Large Length: (from shoulder to hem) 116cm Sleeve length: (from shoulder to wrist) 56cm Belt length: 167cm; Belt Width: 5cm; Belt place: (neck to top of belt) 38cm	• EU PPE Regulation 2016/425 and EU MDD Directive 93/42/EEC • FDA Class I or II medical device, or equivalent • EN 13795 any performance level, or • AAMI PB70 all levels acceptable, or equivalent	Each		R113,40 per each	R113,40 per each
Gowns	Gown, surgical, non-woven polypropylene body+ 54g/m sleeves + 66g/m. Long sleeves with cuffs. Reinforced in chest and forearm areas. Resistant to liquid penetration. Lint free, non flammable, Bacteria barrier efficiency, to comply with SANS 53795, Compliance certificate to be submitted, Sterile, individual double peel packed	• EU PPE Regulation 2016/425 and EU MDD Directive 93/42/EEC • FDA Class I or II medical device, or equivalent • EN 13795 any performance level, or • AAMI PB70 all levels acceptable, or equivalent	Each	Only Health departments may procure this item	R135,00 per each	R135,00 per each
Coveralls	Protective cover bodysuits, disposable MEDIUM, LARGE, X-LARGE, XX-LARGE, 3X LARGE	Tunic/tops, woven, scrubs, reusable or single use, short sleeved (tunic/tops), worn underneath the coveralls or gown. Trousers/pants, woven, scrubs, reusable or single use, worn underneath the coveralls or gown	Each		R286,20 per coverall	R286,20 per coverall
Boot Covers	Overshoe, non-woven, single use. To be made from durable, water-repellent, opaque material Seam free under sole. Elasticated opening. Suitable for all size shoes		Box of 100 pieces		R1,30 per one boot cover	R130,00 per box of 100 pieces
Digital Thermometer	Digital Body Thermometer INFRARED NON CONTACT		Each		R2527,20 per each	R2527,20 per each
Sanitisers and Disinfectants	Sanitizer, with not less than 70% alcohol must comply to WHO-recommended handrub formulations		Litre		R183,60 per litre	R186,60 per litre
Biohazard bags	Bright red colour PP bags are easy to open and are used to dispose used Micro tips, Tubes and other plastic products.	Disposal bag for bio-hazardous waste, 30x50cm, with "Bio Hazard" print, autoclavable polypropylene. 50 or 70 micron thickness	Each	Only Health departments may procure this item	R1,30 each	R1,30 each



Body Bags	Manufactured from 280 micron reinforced PVC, both ends are stitched and sealed to prevent any leakage, There must be 3 handles on each side with a full length curved zip, all handles must be box stitched using Polycotton Corespun Polished 36 Tex thread, and box stitching dimensions are all 4cm x 3cm. The dimensions are as follows: Length: 2.4 METERS Width: 1 METER, Zip: 1.8 METERS, Sizes:(Child, Small, Medium, Large, Extra-large)		Each	Only Health departments may procure this item	R210,60 per bag	R210,60 per bag
Examination Gloves, non-sterile	Gloves, examination, nitrile, powder-free, non-sterile, single-use. Gloves should have long cuffs, reaching well above the wrist, ideally to mid-forearm. Sizes: small, medium, large.	<ul style="list-style-type: none"> <li>• EU MDD Directive 93/42/EEC Category III</li> <li>• EU PPE Regulation 2016/425 Category III</li> <li>• EN 455</li> <li>• EN 374</li> <li>• ANSI/ISEA 105,</li> <li>• ASTM D6319, or equivalent</li> </ul>	Box of 100 gloves		R0,46 per single glove	R46,44 per box of 100 pieces
Gloves, examination or surgical, sterile	Gloves - surgical or examination - nitrile, powder-free, sterile, single-use. Gloves should have long cuffs, reaching well above the wrist, ideally to mid-forearm. Sizes: small, medium, large.	<ul style="list-style-type: none"> <li>• EU MDD Directive 93/42/EEC Category III,</li> <li>• EU PPE Regulation 2016/425 Category III,</li> <li>• EN 455,</li> <li>• ANSI/ISEA 105,</li> <li>• ASTM D6319 or equivalent</li> </ul>	Box of 100 gloves	Only Health departments may procure this item	R5,78 per single glove	R577,37 per box of 100 pieces
Cloth Mask	Mask - 2 layers of fabric (As per the DTIC guidelines & Specifications		Each		R20,00 per each	R20,00 per each
	Mask - 3 layers of fabric (As per the DTIC guidelines & Specifications		Each		R25,00 per each	R25,00 per each

**Relevant Experience (Returnable schedule)**

The Tenderer shall provide details of his performance on each of the previous relevant projects. Failure to complete the table below will result in no points allocated. No “see attached” will be accepted

LIST THE FIVE LARGEST PROJECTS COMPLETED BY YOUR FIRM IN THE LAST TEN YEARS			
<i>Name of Project Completed and Scope of work</i>	<i>Name of Project Manager &amp; Telephone no</i>	<i>Name of Client &amp; Telephone no.</i>	<i>Value of Project</i>

<b><i>Name of Project Completed and Scope of work</i></b>	<b><i>Name of Project Manager &amp; Telephone no</i></b>	<b><i>Name of Client &amp; Telephone no.</i></b>	<b><i>Value of Project</i></b>

### **Record of Addenda to tender documents**

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	<b>Date</b>	<b>Title or Details</b>
<b>1.</b>		
<b>2.</b>		
<b>3.</b>		
<b>4.</b>		
<b>5.</b>		
<b>6.</b>		
<b>7.</b>		
<b>8.</b>		

Attach additional pages if more space is required.

Signed

Date

Name

Position

Identity  
number

Tenderer

## **SCHEDULE OF PLANT AND EQUIPMENT**

The following are lists of major items of relevant equipment that I / we presently own or lease and will have available for this contract if my / our tender is accepted. **(Please attach proof of ownership of plant owned)**

**(a) Details of major equipment owned by me / us and immediately available for this contract.**

<b>PLANT AND EQUIPMENT</b>	<b>DESCRIPTION (type, size, capacity etc)</b>	<b>LICENSE NUMBER</b>	<b>YEAR OF MANUFACTURE</b>
<i>Plant and Equipment 1</i>			
<i>Plant and Equipment 2</i>			
<i>Plant and Equipment 3</i>			
<i>Plant and Equipment 4</i>			
<i>Plant and Equipment 5</i>			
<i>Plant and Equipment 6</i>			

***Attach additional pages if more space is required***

**(b) Details of major equipment that will be hired, or acquired for this contract if my / our tender is accepted**

<b>PLANT AND EQUIPMENT</b>	<b>DESCRIPTION (type, size, capacity etc)</b>	<b>LICENSE NUMBER</b>	<b>HOW ACQUIRED</b>	
			<b>HIRE/ BUY</b>	<b>SOURCE</b>
<i>Plant and Equipment 1</i>				
<i>Plant and Equipment 2</i>				
<i>Plant and Equipment 3</i>				
<i>Plant and Equipment 4</i>				
<i>Plant and Equipment 5</i>				
<i>Plant and Equipment 6</i>				

***Attach additional pages if more space is required***

The Tenderer undertakes to bring onto site without additional cost to the Employer any additional plant not listed but which may be necessary to complete the contract within the specified contract period.

***Failure to complete this form properly and correctly, will lead to the conclusion that the tenderer does not have the necessary plant and equipment resources at his disposal, which will prejudice his tender.***

SIGNATURE: ..... IDENTITY NUMBER: .....

*(of person authorised to sign on behalf of the Tenderer)*

*DATE:.....*

## REFERENCES

The following is a statement of traceable, current References (suppliers and/or plant hire):

[illegible]

SIGNATURE: ..... IDENTITY NUMBER: .....

(of person authorised to sign on behalf of the Tenderer)

DATE:.....

## KEY PERSONNEL

In terms of the Project Specification and the Conditions of Tender, unskilled workers may only be brought in from outside the local community if such personnel are not available locally.

The Tenderer shall list below the personnel which he intends to utilize on the Works, including key personnel which may have to be brought in from outside if not available locally.

CATEGORY OF EMPLOYEE	NUMBER OF PERSONS					
	KEY PERSONNEL, PART OF THE CONTRACTOR'S ORGANISATION		KEY PERSONNEL TO BE IMPORTED IF NOT AVAILABLE LOCALLY		UNSKILLED PERSONNEL TO BE RECRUITED FROM LOCAL COMMUNITY	
	HDI	NON-HDI	HDI	NON-HDI	HDI	NON-HDI
Site Agent, Project Managers						
Foremen, Quality Control and Safety Personnel						
Technicians, Surveyors, etc						
Artisans and other Skilled workers						
Plant Operators						
Others:..... ..... ..... ..... ...						

The Tenderer shall attach hereto the *curricula vitae*, in the form included hereafter, of at least the site agent and the project manager. The information is necessary for evaluation of the tender.

SIGNATURE: ..... IDENTITY NUMBER: .....

(of person authorised to sign on behalf of the Tenderer)

DATE:.....

***This section must be completed in full and aligned to attachments, organogram submitted failure to do so will result in no allocation of points***

**CURRICULUM VITAE OF KEY PERSONNEL (COMPULSORY)**

***(CVs and Certified Qualifications that are not older than 6 months are required only for site agent and contract or project manager).***

**CV FOR CONTRACT OR PROJECT MANAGER**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

SIGNATURE: ..... IDENTITY NUMBER: .....

*(of person authorised to sign on behalf of the Tenderer)*

DATE:.....



**CV FOR SITE AGENT**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....  
SIGNATURE OF THE INCUMBANT IN THE SCHEDULE

.....  
DATE

.....  
INCUMBANT'S IDENTITY NUMBER

**CV FOR TECHNICIAN / ARTISAN**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....  
SIGNATURE OF THE INCUMBANT IN THE SCHEDULE

.....  
DATE

.....  
INCUMBANT'S IDENTITY NUMBER

**CV FOR FOREMAN**

<b>Name:</b>	<b>Date of birth:</b>
<b>Profession:</b>	<b>Nationality:</b>
<b>Qualifications:</b>	
<b>Professional Registration Number:</b>	
<b>Name of Employer (firm):</b>	
<b>Current position:</b>	<b>Years with firm:</b>
<b><u>Employment Record:</u></b>	
<b><u>Experience Record Pertinent to Required service:</u></b>	

**Certification:**

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....  
SIGNATURE OF THE INCUMBANT IN THE SCHEDULE

.....  
DATE

.....  
INCUMBANT'S IDENTITY NUMBER

## **PRELIMINARY PROGRAMME**

The Tenderer shall **attach a preliminary programme reflecting the proposed sequence and tempo of execution of the various activities comprising the work for this Contract**. The programme shall be in accordance with the information supplied in the Contract, requirements of the Project Specifications and with all other aspects of his Tender.

<b>NOTE: ONLY COMPUTIRSED PRELIMINARY PROGRAM WILL BE CONSIDERED</b>
--

### **PROGRAMME (EXAMPLE ONLY)**

ACTIVITY	MONTHS									
	1	2	3	4	5	6	7	8	9	10

*[Note: The programme must be based on the completion time as specified in the Contract Data. No other completion time that may be indicated on this programme will be regarded as an alternative offer, unless it is listed in Table (b) of Form I hereafter and supported by a detailed statement to that effect, all as specified in the Tender Data]*

The following aspects of the preliminary programme will be considered:

- Programme Heading
- The programme is specific and tailored for the execution of the project, is comprehensive and is logically correct
- The activities are well articulated with headings and sub headings and show relevant milestones
- The activities that occur simultaneously are showing
- The activities that depend on each other are linked
- The activities that required stages are indicated
- Milestones are shown
- There are resources aligned / embedded to the programme
- Cause and effect of the programme can be determined such that the critical path is shown
- The lead times and lag times are clear and being considered for ordering of materials and staffing requirements
- Non-Working Days and Been Taken Into Consideration
- Has the Programme been divided into Phases
- The Cash Flow to Relate to the Programme
- The programme to show resource histogram
- The Resource Histogram to Show Unskilled Labour

SIGNATURE: ..... IDENTITY NUMBER: .....

(of person authorised to sign on behalf of the Tenderer)

DATE:.....

## PART A

## INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE INDEPENDENT DEVELOPMENT TRUST					
BID NUMBER:	DOEEC/01/2022/2023	CLOSING DATE:	23 <sup>rd</sup> May 2022	CLOSING TIME:	11h00
DESCRIPTION	Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED					
Palm Square Business Centre, Silverwood House, Bonza Bay Road, Beacon Bay					
East London					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
CONTACT PERSON	Sam Makhura		CONTACT PERSON	Marius Helm	
TELEPHONE NUMBER	043 711 6000		TELEPHONE NUMBER	045 838 3544	
FACSIMILE NUMBER			FACSIMILE NUMBER	087 160 0651	
E-MAIL ADDRESS	<a href="mailto:SamM@idt.org.za">SamM@idt.org.za</a>		E-MAIL ADDRESS	<a href="mailto:Marius@ghelmarch.co.za">Marius@ghelmarch.co.za</a>	
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					

SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA
<b>a) ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		<b>b) ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?</b>		<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]
<b>QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? <input type="checkbox"/> YES <input type="checkbox"/> NO					
DOES THE ENTITY HAVE A BRANCH IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO					
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO					
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO					
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? <input type="checkbox"/> YES <input type="checkbox"/> NO					
<b>IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.</b>					

## PART B

### TERMS AND CONDITIONS FOR BIDDING

<b>1. BID SUBMISSION:</b>
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2. <b>ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED– (NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.</b>
1.3. THIS BID IS SUBJECT TO THE JOINT BUILDING CONTRACT COMMITTEE (JBCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4. <b>THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A JBCC AGREEMENT.</b>
<b>2. TAX COMPLIANCE REQUIREMENTS</b>
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.**

SIGNATURE OF BIDDER:

.....

CAPACITY UNDER WHICH THIS BID IS SIGNED:

.....

(Proof of authority must be submitted e.g. company resolution)

DATE:

.....

## BIDDER'S DISCLOSURE

### 1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

### 2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise, employed by the state?

YES / NO

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution



**2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution?**

**YES / NO**

**2.2.1 If so, furnish particulars:**

.....  
.....

**2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?**

**YES / NO**

**2.3.1 If so, furnish particulars:**

.....  
.....

### **3 DECLARATION**

**I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:**

**3.1 I have read, and I understand the contents of this disclosure.**

**3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect.**

**3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor.**

However, communication between partners in a joint venture or consortium will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

**I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.**

**I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.**

.....

**Signature**

**Date**

.....

**Position**

**Name of bidder**

**1. DECLARATION WITH REGARD TO COMPANY/FIRM**

1.1 Name of company/firm:.....

1.2 VAT registration number:.....

1.3 Company registration number:.....

1.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

1.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....  
 .....  
 .....  
 .....  
 .....

1.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional service provider
- ☐ Other service providers, e.g. transporter, etc.

[*TICK APPLICABLE BOX*]

1.7 Total number of years the company/firm has been in business: .....

i) The information furnished is true and correct;

WITNESSES

1. ....

2. ....

.....  
SIGNATURE(S) OF BIDDERS(S)

DATE: .....

ADDRESS .....

## **DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS**

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

### **1. General Conditions**

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.
- 1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = [1 - x / y] * 100$$

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) on the date of advertisement of the bid as indicated in paragraph 3.1 below.

**The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.**

1.6 A bid may be disqualified if –

- (a) this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation; and

**2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:**

3.

Item	Description of Service	Stipulated Threshold	Minimum
A	Roof Sheeting	100%	
B	Reinforcing bars	100%	
C	Window Frames	100%	
D	Door Frames	100%	
E	Gutters and Downpipes	100%	
F	Wire Products	100%	
G	Fasteners	100%	
H	School Furniture	100%	

3. Does any portion of the services, works or goods offered have any imported content?

(Tick applicable box)

YES		NO	
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- 3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on [www.reservebank.co.za](http://www.reservebank.co.za).

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

**LOCAL CONTENT DECLARATION**  
**(REFER TO ANNEX B OF SATS 1286:2011)**

**LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)**

**IN RESPECT OF BID NO. ....**

**ISSUED BY:** (Procurement Authority / Name of Institution):

.....  
NB

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on <http://www.thdti.gov.za/industrialdevelopment/ip.jsp>. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ..... (full names),

do hereby declare, in my capacity as .....

of .....(name of bidder entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that:

- (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (ii) the declaration templates have been audited and certified to be correct.

(c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

**If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.**

**The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.**

- (d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.
- (e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPFA), 2000 (Act No. 5 of 2000).

**SIGNATURE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**WITNESS No. 1** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**WITNESS No. 2** \_\_\_\_\_

**DATE:** \_\_\_\_\_



### Local Content Declaration - Summary Schedule

(C6)	Tender Exchange Rate:
(C7)	Specified local content %

GBP

**Note:** VAT to be excluded from all calculations

[illegible]

(C25) Average local content % of tender	
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Date: \_\_\_\_\_

## Annex D

## Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. DOEEC/01/2022/2023  
 (D2) Tender description: CONSTRUCTION OF ADDITIONAL CLASSROOMS AT PROSPECT JSS  
 (D3) Designated Products:  
 (D4) Tender Authority:  
 (D5) Tendering Entity name:  
 (D6) Tender Exchange Rate:

Note: VAT to be excluded from all calculations

Pula

EU R 9,00

GBP R 12,00

## A. Exempted imported content

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of Imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	
This total must correspond with Annex C - C 21											

## B. Imported directly by the Tenderer

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of Imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

## C. Imported by a 3rd party and supplied to the Tenderer

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of Imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

## D. Other foreign currency payments

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						
(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above					R 0	
Signature of tenderer from Annex B					This total must correspond with Annex C - C 23	
Date:						

## Annex E

## Local Content Declaration - Supporting Schedule to Annex C

(E1) **Tender No.** DOEEC/01/2022/2023

(E2) **Tender description:** CONSTRUCTION OF ADDITIONAL CLASSROOMS AT PROSPECT JSS

(E3) **Designated products:**

(E4) **Tender Authority:**

(E5) **Tendering Entity name:**

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10) **Manpower costs** (Tenderer's manpower cost)

R 0

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.)

R 0

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.)

R 0

(E13) Total local content R 0

This total must correspond with Annex C - C24

Signature of tenderer from Annex B

Date: \_\_\_\_\_

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# **ADDENDUM A**

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## **Occupational Health and Safety Regulations**

GOVERNMENT NOTICE  
DEPARTMENT OF LABOUR

No. R. ....

7 February 2014

**OCCUPATIONAL HEALTH AND SAFETY ACT, 1993**

### ***CONSTRUCTION REGULATIONS, 2014***

The Minister of Labour has under section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), after consultation with the Advisory Council for Occupational Health and Safety, made the regulations in the Schedule.

*ADDENDUM A*

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993  
Regulation 3 of the Construction Regulations, 2014

NOTIFICATION OF CONSTRUCTION WORK

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1.(a) Name and postal address of principal contractor:

\_\_\_\_\_

(b) Name and tel. no of principal contractor's contact person:

\_\_\_\_\_

2. Principal contractor's compensation registration number: \_\_\_\_\_

3.(a) Name and postal address of client:

\_\_\_\_\_

(b) Name and tel no of client's contact person or agent:

\_\_\_\_\_

4.(a) Name and postal address of designer(s) for the project:

\_\_\_\_\_

(b) Name and tel. no of designer(s) contact person:

\_\_\_\_\_

5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 6.(1). \_\_\_\_\_

6. Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 6.(2). \_\_\_\_\_

7. Exact physical address of the construction site or site office:

\_\_\_\_\_

8. Nature of the construction work:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9. Expected commencement date: \_\_\_\_\_

10. Expected completion date: \_\_\_\_\_

11. Estimated maximum number of persons on the construction site.

\_\_\_\_\_

12. Planned number of contractors on the construction site accountable to principal contractor:

\_\_\_\_\_

13. Name(s) of contractors already chosen.

\_\_\_\_\_

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Principal Contractor

Date

Client

Date

- THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR **PRIOR TO COMMENCEMENT** OF WORK ON SITE.
- **ALL PRINCIPAL CONTRACTORS** THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.

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## ADDENDUM B

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### Occupational Health and Safety Specification

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

### INDEPENDENT DEVELOPMENT TRUST

(Hereinafter referred to as the Employer)

### OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

This specification shall be used in conjunction with all other applicable safety specifications, legislation and regulations in force at the time of the contract. Where unique site specifications are in force, those site specifications shall take precedence over this Specification.

INDEPENDENT DEVELOPMENT TRUST  
Palm Square Business Centre  
Silverwood House  
Bonza Bay Road  
Beacon Bay  
EAST LONDON

Contact:  
Name: Sam Makhura  
Telephone: 043 711 6000

## **ADDENDUM “A”**

### **PRO-FORMA AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT 1993**



## **PRO-FORMA AGREEMENT IN TERMS OF**

### **OCCUPATIONAL HEALTH AND SAFETY ACT 1993 – SECTION 37 (2)**

#### **NEW CONSTRUCTION SAFETY REGULATIONS**

The above-mentioned regulations were promulgated in the Govt. Gazette on Friday, 18 July 2014 under the Occupational Health & Safety Act (85 of 1993) and are now in force.

The Employer and the Contractor hereby agree, in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act 1993 (Act 85 of 1993, hereinafter referred to as the Act), that the following arrangements and procedures shall apply between them to ensure compliance by the Contractor with the provisions of the Act, namely:

- (a) The Contractor undertakes to acquaint the appropriate officials and employees of the Contractor with all the relevant provisions of the Act and the regulations promulgated in terms of the Act, and the Employer's Health and Safety Specifications included in the contract documents.
- (b) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations and the Employer's Health and Safety Specifications included in the contract documents will be complied with in all respects.
- (c) In relation to any work or activity performed by the Contractor, his workmen or any other person for whose acts or omissions the Contractor is responsible in terms of the Contract, the Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations and expressly absolves the Employer from itself being obliged to comply with any of the aforesaid duties, obligations and prohibitions.
- (d) The Contractor agrees that any duly authorised officials of the Employer shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the Contractor has complied with his undertakings as set out more fully in paragraphs (a) and (b) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or to inspect any appropriate records held by the Contractor.
- (e) The Contractor shall be obliged to report forthwith in writing to the Representative/Agent full details of any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and Regulations, pursuant to work performed in terms of this Contract.
- (f) Forward "safety meeting" minutes to the representative/Agent.

For the Employer: \_\_\_\_\_ Date: \_\_\_\_\_

Witnesses: 1) : \_\_\_\_\_ 2) : \_\_\_\_\_

For the Contractor: \_\_\_\_\_ Date: \_\_\_\_\_

Witnesses: 1) : \_\_\_\_\_ 2) : \_\_\_\_\_

**Contract**

102

**Occupational Health and Safety Specification**

**BID No: DOEEC/01/2022/2023**

## **ADDENDUM “B”**

### **NOTIFICATION OF CONSTRUCTION WORK**

**NOTIFICATION OF CONSTRUCTION WORK**  
(Regulation 3 of the Construction Regulations, 2014)

**1. CONTRACTOR**

1.1 Name and postal address of Contractor:

---

---

---

1.2 Name and telephone number of Contractor's contact person:

---

1.3 Contractor's compensation registration number:

---

1.4 Name and telephone number of Contractor's Construction Supervisor :

---

1.5 Physical address of the construction site or site office:

---

---

---

1.5 Estimated number of persons on the construction site:

---

1.6 Estimated number of Subcontractors on the construction site accountable to the Contractor:

---

**2. EMPLOYER**

2.1 Name and postal address of Employer :

---

---

---

2.2 Name and telephone number of Employer's Principal Agent:

---

### 3. DESIGN CONSULTANTS

#### 3.1 Name and postal address of design consultants:

##### 3.1.1 Construction project managers/ Principal Agents:

**Helm Architects**  
**69 Prince Alfred Street**  
**Queenstown**  
**0700**  
**Tel: 045 838 3544**  
**Fax: 087 160 0651**

##### 3.1.2 Architects:

**Helm Architects**  
**69 Prince Alfred Street**  
**Queenstown**  
**0700**  
**Tel: 045 838 3544**  
**Fax: 087 160 0651**

##### 3.1.3 Civil and Structural engineer :

**Sawgrass Consulting**  
**13 Kennington Road**  
**Nahoon**  
**5241**  
**Tel: 043 721 2185**

##### 3.1.4 Electrical and Mechanical engineer:

**Ballenden & Rob**  
**Unit 2 Arundel Park**  
**Arundel Crescent**  
**Stirling**  
**EAST LONDON**  
**5241**  
**Tel: 043 743 3809**  
**Fax: 015 296 4655**

##### 3.1.5 Health and Safety Agent:

**Buatern Consulting**  
**Thorntree Estate**  
**Beacon Bay**  
**EAST LONDON**  
**Tel: 043 738 5028**

3.1.6 Security engineer :

**To be appointed at a later stage if necessary**

3.1.7 Other (if any) :

3.2 Name and telephone number of design consultant's contact person :

3.2.1 Construction project managers/ Principal Agent :

**AS PER ABOVE 3.1**

3.2.2 Architects :

**AS PER ABOVE 3.1**

3.2.3 Structural engineer :

**AS PER ABOVE 3.1**

3.2.4 Electrical engineer :

**AS PER ABOVE 3.1**

3.2.5 Mechanical engineer :

**AS PER ABOVE 3.1**

3.2.6 Civil engineer :

**AS PER ABOVE 3.1**

3.2.7 Security engineer :

**To be appointed at a later stage if necessary**

3.2.8 Other (if any) :

#### 4. THE WORKS

Nature of the works:

Construction of Administration, Multi-Purpose Classroom, Library & Science Lab, Four Classrooms, Two Classrooms, HOD & Office, Four Classrooms, Four Classrooms, HOD & Office, Nutrition Block, Grade R Classroom, Grade R Kitchen, Grade R Ablution Block with 7 toilets including disabled toilet, Renovations to Existing Grade R Classroom, Renovations to Existing Female Learners Ablution, Renovations to Existing Male & Female Staff Ablution, Renovations to Existing Male Learners Ablution, Recycle House, Guard House, Refuse Area, Provision of new 10 Prefabricated Park homes, Demolition of existing buildings to create space for new buildings, 2 x Undercover play area, 2 x Undercover sand pit, Site works generally comprising of bulk earthworks, retaining walls, open concrete walkways, paved assembly slab, paved parking area & kerbs, stormwater concrete 'V' channels, sewer reticulation, water reticulation, stormwater reticulation, rainwater harvesting (73 x 5000L plastic water tanks, 2 x 5000L elevated rainwater plastic tanks on stand including pump and housing, jungle gym, security fencing and landscaping. Electrical site services, power supply cables, communication cables, electrical installations, lightning protection, power supply to temporary structures, intercom system and interactive whiteboards to Science Lab, Multi-Media Room and Multi-Purpose Classroom

Commencement date :

\_\_\_\_\_

Completion date :

\_\_\_\_\_

Contractor: \_\_\_\_\_ Date: \_\_\_\_\_

Employer: \_\_\_\_\_ Date: \_\_\_\_\_

THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR **PRIOR TO COMMENCEMENT OF WORK ON SITE.**

ALL CONTRACTORS THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER CONTRACTOR ON THE SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.

---

## **ADDENDUM C**

---

### **Environmental Management Plan**

TO BE PROVIDED BY THE SUCCESSFUL TENDERER

---

## **ADDENDUM D**

---

### **Drawings**

**See attached**



## ARCHITECTURAL DRAWINGS

1. DWG 101 – SDP
2. DWG 40 - 01 – WINDOW TYPE A
3. DWG 40 - 02 – WINDOW TYPE B
4. DWG 40 - 03 – WINDOW TYPE C
5. DWG 40 - 04 – WINDOW TYPE D
6. DWG 40 - 05 – WINDOW TYPE E
7. DWG 40 - 06 – WINDOW TYPE F
8. DWG 40 - 07 – WINDOW TYPE G
9. DWG 45 - 01 – DOOR TYPE A
10. DWG 45 - 02 – DOOR TYPE B
11. DWG 45 - 03 – DOOR TYPE C
12. DWG 45 - 04 – DOOR TYPE D
13. DWG 45 - 05 – DOOR TYPE E
14. DWG 45 - 06 – DOOR TYPE F
15. DWG 45 - 07 – DOOR TYPE G
16. DWG 45 - 08 – DOOR TYPE H
17. DWG 45 - 09 – DOOR TYPE J
18. DWG 45 - 10 – DOOR TYPE K
19. DWG 45 - 11 – DOOR TYPE L (FOLDING DOOR)
20. DWG 45 - 12 – SECURITY GATE
21. DWG 00 - 04 – SECURITY GATE
22. DWG 50 - 10 – SECURITY GATE
23. DWG 50 - 12 – SECURITY GATE
24. DWG – A 10 – 01 - 2 – BLOCK A ROOF PLAN
25. DWG – B 10 – 01 - 2 – BLOCK B ROOF PLAN
26. DWG – C 10 – 01 - 2 – BLOCK C ROOF PLAN
27. DWG – D C 10 – 01 - 2 – BLOCK D ROOF PLAN
28. DWG – E C 10 – 01 - 2 – BLOCK E ROOF PLAN
29. DWG – F C 10 – 01 - 2 – BLOCK F ROOF PLAN
30. DWG – G 10 – 01 - 2 – BLOCK G ROOF PLAN
31. DWG – H 10 – 01 - 2 – BLOCK H ROOF PLAN
32. DWG – K 10 – 01 - 2 – BLOCK K ROOF PLAN
33. DWG – 00 - 09 – GATE HOUSE ROOF PLAN
34. DWG – L 10 – 01 - 2 – GATE HOUSE PLAN
35. DWG – 00 – 06 – JUNGLE GYM DETAILS
36. DWG 405 – COVERED WALKWAYS
37. DWG 408 – SECURITY FENCING & GATES
38. DWG – 70 – 01 – SECURITY FENCING & GATES

## **CIVIL DRAWINGS**

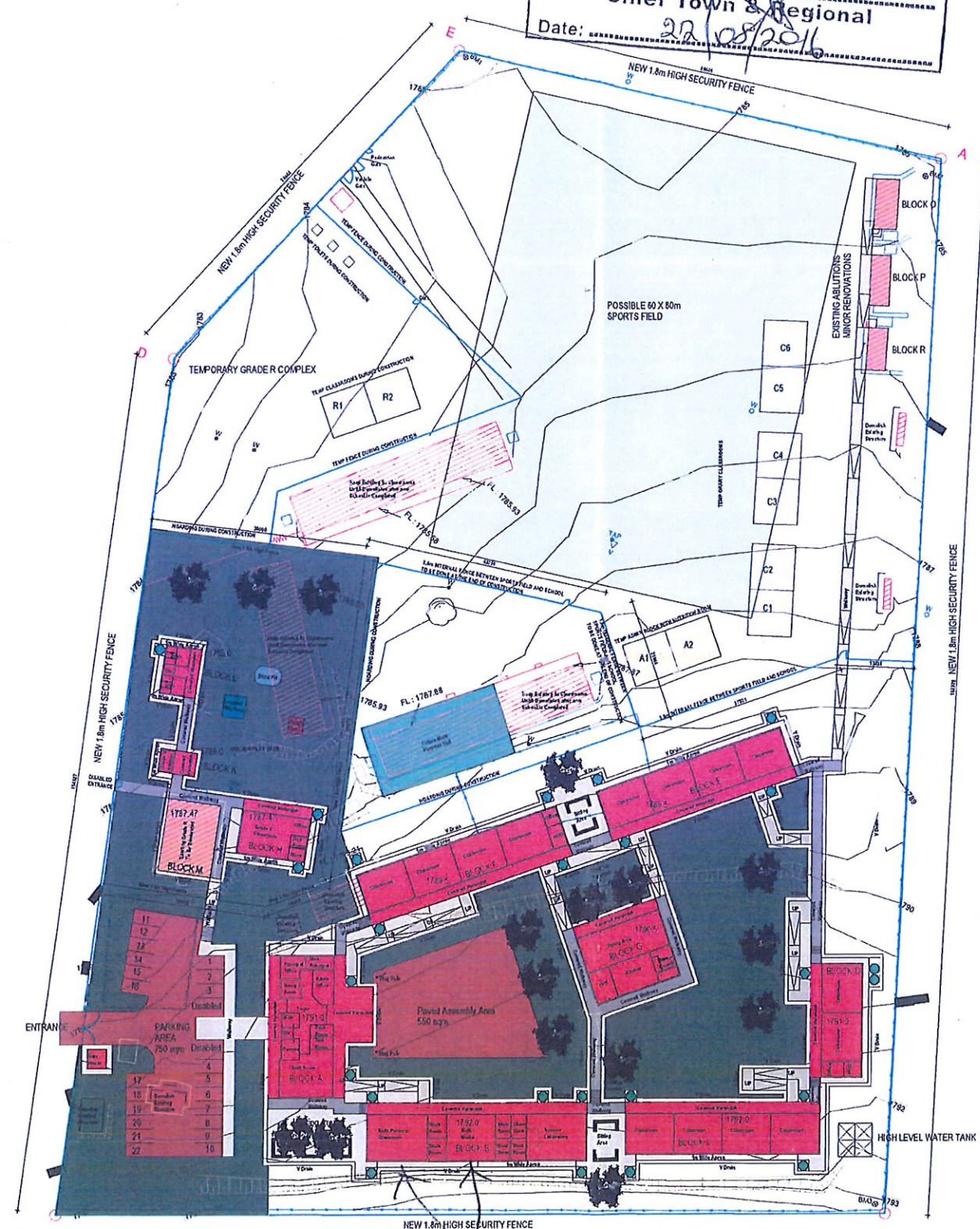
1. DWG - CD 1 - 01 – SITE CLEARANCE AND DEMOLITION PLAN
2. DWG - CE 1 - 01 – BULK EXCAVATION PLAN
3. DWG - CE 3 - 01 – BULK EARTH WORK CROSS SECTION
4. DWG - CU 1 - 01 – PROPOSED CIVIL SERVICES PLAN
5. DWG - CU 2 - 01 – PROPOSED CIVIL SERVICES PLAN
6. DWG - CU 3 - 01 – SANITARY SERVICES
7. DWG - CU 3 - 02 – STORM SEWER SECTION
8. DWG - CP 1 - 01 – PROPOSED SITE FINISHED LEVEL
9. DWG - C - 5 - 01 – CIVIL SERVICES CONSTRUCTION DETAILS
10. DWG - C - 5 - 02 – CIVIL SERVICES CONSTRUCTION DETAILS
11. DWG - C - 5 - 03 – CIVIL SERVICES CONSTRUCTION DETAILS

## **STRUCTURAL DRAWINGS**

1. DWG – S 01 -1 – BLOCK A – ADMIN LAYOUTS & DETAILS
2. DWG – S 02 - 1 – BLOCK B - LAYOUTS & DETAILS
3. DWG – S 03 – 1 – BLOCK C – LAYOUTS & DETAILS
4. DWG – S 04 - 1 – BLOCK D – LAYOUTS & DETAILS
5. DWG – S 05 - 1 – BLOCK E – LAYOUTS & DETAILS
6. DWG – S 06 -1 – BLOCK F – LAYOUTS & DETAILS
7. DWG – S 07 -1 – BLOCK G – LAYOUTS & DETAILS
8. DWG – S 08 -1 – BLOCK H – LAYOUTS & DETAILS
9. DWG – S 09 -1 – BLOCK K – LAYOUTS & DETAILS
10. DWG – S 10 -1 – BLOCK L – LAYOUTS & DETAILS
11. DWG – S 11 -1 – GATE HOUSE LAYOUTS & DETAILS
12. DWG – S 12 - 1 – RECYCLE HOUSE LAYOUTS & DETAILS
13. DWG – S 13 - 1 - TYPICAL CONSTRUCTION DETAILS
14. DWG – S 14 - 1 - ELAVETED TANK & STAND DETAILS
15. DWG – A101 – BALUSTRADES DETAILS



Province of the  
EASTERN CAPE  
Education  
This is to certify that this has been verified and  
it is acceptable.  
Signature: *[Signature]*  
Chief Town & Regional  
Date: 22/08/2016



NEW PROPOSED SDP- *Swamp Ramp*  
Prospect JSS  
1:500  
SITE AREA  
SITE AREA (INCL. SPORTS FIELD) 2.73 HECTARE

<u>HUMAN CAPITAL SCHEDULE</u>			
LEARNERS: GRADES	BOYS	GIRLS	TOTAL
GRADE R	30	26	56
GRADE 1	36	38	74
GRADE 2	36	27	63
GRADE 3	34	34	68
GRADE 4	31	35	66
GRADE 5	27	31	58
GRADE 6	38	30	68
GRADE 7	39	31	70
GRADE 8	34	27	61
GRADE 9	44	33	77
GRADE 10	-	-	-
GRADE 11	-	-	-
GRADE 12	-	-	-

TOTALS: 349 312 661

STAFF:	MALE	FEMALE
EDUCATORS	14	2
PRINCIPAL	1	-
TOTALS: 17		

ACCOMMODATION SCHEDULE

NAME	AREA	QTY	TOTAL
BLOCK A			404m² gross
STAFF ROOM	75m²	1	75m² nett
FEMALE TOILETS	12m²	1	12m² nett
DISABLED	3.5m²	1	3.5m² nett
MALE TOILET	8m²	1	8m² nett
FOYER and PASSAGE	46m²	1	46m² nett
ADMIN OFFICE	21m²	1	21m² nett
VICE PRINCIPAL	11m²	1	11m² nett
PRINCIPAL	15m²	1	15m² nett
STRONGROOM	10m²	1	10m² nett
PRINT ROOM	8m²	1	8m² nett
SICK ROOM	8m²	1	8m² nett
COVERED VERANDAH	153m²	1	153m² gross
BLOCK B			420m² gross
MULTI MEDIA	70m²	1	70m² nett
WORK ROOM	10m²	1	10m² nett
BOOKSTORE	10m²	1	10m² nett
SCIENCE	70m²	1	70m² nett
WORKROOM	10m²	1	10m² nett
STORE ROOM	10m²	1	10m² nett
MULTI PURPOSE	85m²	1	85m² nett
WORK ROOM	10m²	1	10m² nett
STORE ROOM	10m²	1	10m² nett
COVERED VERANDAH	79m²	1	79m² gross

BLOCK C

CLASSROOM	60m²	4	333m² gross
COVERED VERANDAH	70.5m²	1	240m² nett

BLOCK D

CLASSROOM	60m²	2	193m² gross
HOD	10m²	1	120m² nett
WORKROOM	10m²	1	10m² nett
COVERED VERANDAH	41m²	1	10m² nett

BLOCK E

CLASSROOM	60m²	4	333m² gross
COVERED VERANDAH	76m²	1	240m² nett

360283m² gross

CLASSROOM	60m²	4	240m² nett
HOD	10m²	1	10m² nett
WORKROOM	10m²	1	10m² nett
COVERED VERANDAH	76m²	1	76m² gross

BLOCK G

NUTRITION KITCHEN	42m²	1	234m² gross
DINING AREA	99m²	1	42m² nett
VEG STORE	6m²	1	99m² nett
DAY STORE	4m²	1	6m² nett
DRY STORE	6m²	1	4m² nett
YARD	21m²	1	6m² nett
COVERED VERANDAH	32m²	1	21m² gross

BLOCK H

CLASSROOM	59m²	1	125m² gross
SICK ROOM	6m²	1	42m² nett
STORE	6m²	1	59m² nett
OFFICE	9m²	1	6m² nett
COVERED VERANDAH	25m²	1	9m² nett

BLOCK K

GRADE R KITCHEN	12m²	1	29m² gross
COVERED VERANDAH	17m²	1	12m² gross

BLOCK L

BOYS TOILET	12.5m²	1	58m² gross
DISABLED TOILET	3.5m²	1	12.5m² nett
GIRLS TOILET	12.5m²	1	3.5m² nett
COVERED VERANDAH	18m²	1	12.5m² nett

RENOVATIONS

BLOCK M			123m² gross
CLASSROOM	123m²	1	123m² gross

BLOCK O

ABLUTION	40m²	1	40m² gross
----------	------	---	------------

BLOCK P

ABLUTION	32m²	1	32m² gross
----------	------	---	------------

BLOCK R

ABLUTION	27m²	1	27m² gross
----------	------	---	------------

GRASSED AREA

			5200m² gross
--	--	--	--------------

COVERED WALKWAYS

			412m² gross
--	--	--	-------------

WALKWAY RAMPS

			454m² gross
--	--	--	-------------

UNCOVERED WALKWAYS

			261m² gross
--	--	--	-------------

GATE HOUSE

			13m² gross
--	--	--	------------

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THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING  
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JOINERY, SITE AND EXTERNAL COMPONENTS INCLUDING  
FOUNDATIONS, INTERNAL & EXTERNAL WALLS, ETC., WITH  
PARTICULAR REFERENCE TO ERF BOUNDARIES, BUILDING LINES,  
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BUILDING MAY PROJECT BEYOND THE BOUNDARY OF THE PROPERTY.

REVISIONS

NO.	DATE	DESCRIPTION
-----	------	-------------

Province of the  
EASTERN CAPE  
Education  
This is to certify that this has been verified and  
it is acceptable.  
Signature: *[Signature]*  
Chief Town & Regional  
Date: 22/08/2016

Province of the  
EASTERN CAPE  
Education  
22/8/2016  
Date: Approved: *[Signature]*

ARCHITECT SIGNATURE CLIENT SIGNATURE

ARCHITECTURE  
ARCHITECTURE  
CREATE  
INNOVATION  
**HELM**  
ARCHITECTS  
TEL : +27 45 838 3544  
TEL : +27 82 807 1029  
PO Box 2296, Komani, 5322  
marion@helmarc.co.za  
SACAP 5713  
84 Prince Alfred Street  
Queenstown  
Eastern Cape, RSA, 5322  
SACAP 5713

DESIGNED BY: Designer

CHECKED BY: M. HELM
DATE: 2016/07/28 09:12:52 AM

PROJECT:  
Prospect JSS  
PROJECT ADDRESS:  
MALUTI, EASTERN CAPE

DRAWING TITLE  
SITE DEVELOPMENT PLAN

SCALE @ A1: 1:500

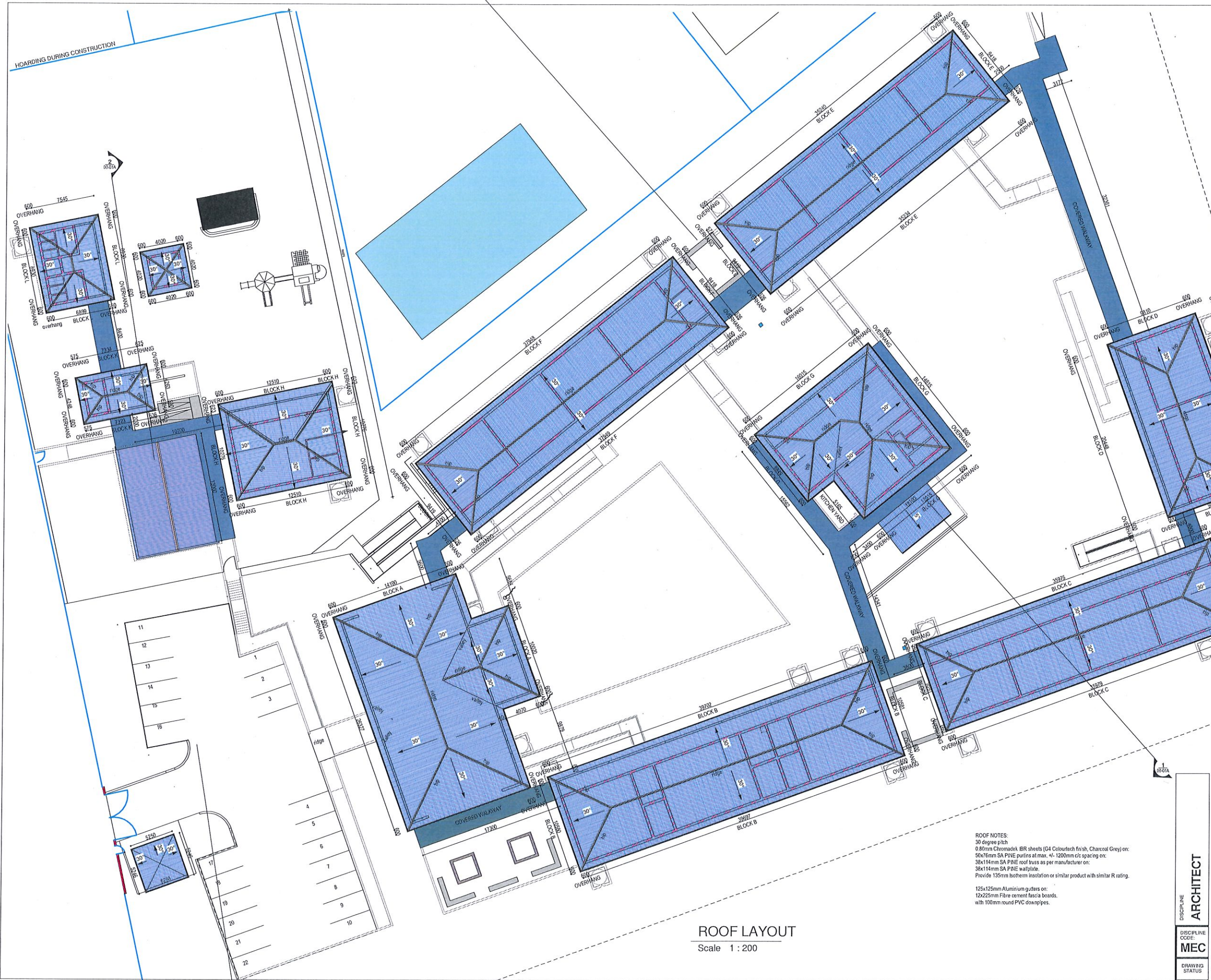
DATE ISSUED: 2016/07/28 09:12:52 AM	PROJECT REF: 1148
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DRAWING NUMBER: 101

REVISION: SK01
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DISCIPLINE  
ARCHITECT  
ARC  
DRAWING STATUS





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QUALITY OF ALL MATERIALS & WORKMANSHIP TO COMPLY WITH RELEVANT S.A.B.S AND B.S.S. SPECIFICATIONS & CODES OF PRACTICE, AND TO CONFORM TO MINIMUM STANDARDS Laid Down IN THE STANDARD PREAMBLES OF THE BILLS OF QUANTITIES OR IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE ARCHITECTS OFFICES.

THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF ALL ELEMENTS OF THE BUILDING OR BUILDINGS, OR ANY OTHER STRUCTURAL ARCHITECTURAL, INTERIOR, SHOP FITTING, JOINERY, SITE AND EXTERNAL COMPONENTS INCLUDING FOUNDATIONS, INTERNAL & EXTERNAL WALLS, SET AS: WITH PARTICULAR REFERENCE TO ERF BOUNDARIES, BUILDING LINES, SERVICE LINES, ETC. NO FOUNDATION OR ANY OTHER PART OF THE BUILDING MAY PROJECT BEYOND THE BOUNDARY OF THE PROPERTY.

REVISIONS		
NO.	DATE	DESCRIPTION

ARCHITECT

DISCIPLINE CODE: MEC

DRAWING STATUS

DESIGNED BY: Designer

CHECKED BY: Checker

DATE: 2017/03/23 10:22:10 AM

PROJECT: PROSPECT JUNIOR SECONDARY SCHOOL

PROJECT ADDRESS: EASTERN CAPE

DRAWING TITLE: ROOF LAYOUT (INC COVERED WALKWAYS)

SCALE @ A1: 1 : 200	DATE ISSUED: 2017/03/23 10:22:10 AM	PROJECT REF: 1148
DRAWING NUMBER: 00-09	REVISION	

PRE-TENDER

ARCHITECTURE  
ARCHITECTURE  
CREATE  
INNOVATION

**HELM**  
ARCHITECTS

TEL: +27 45 838 2544  
TEL: +27 82 807 1029  
PO Box 2290, Komani, 5322  
marlous@harmarch.co.za

84 Prince Alfred Street  
Queens town  
Easter Cape, RSA, 5322  
SACAP 5713

DESIGNED BY: Designer

CHECKED BY: Checker

DATE: 2017/03/23 10:22:10 AM

PROJECT: PROSPECT JUNIOR SECONDARY SCHOOL

PROJECT ADDRESS: EASTERN CAPE

DRAWING TITLE: ROOF LAYOUT (INC COVERED WALKWAYS)

SCALE @ A1: 1 : 200

DATE ISSUED: 2017/03/23 10:22:10 AM

PROJECT REF: 1148

DRAWING NUMBER: 00-09

REVISION

PRE-TENDER

ROOF LAYOUT  
Scale 1 : 200

ROOF NOTES:

30 degree pitch

0.80mm Chromadek BR sheets (G4 Colourtech finish, Charcoal Grey) on:

50x76mm SA PINE purlins at max. 4/- 1200mm c/c spacing on:

38x114mm SA PINE roof busses as per manufacturer on:

38x114mm SA PINE wallplate.

Provide 135mm Isotherm insulation or similar product with similar R rating.

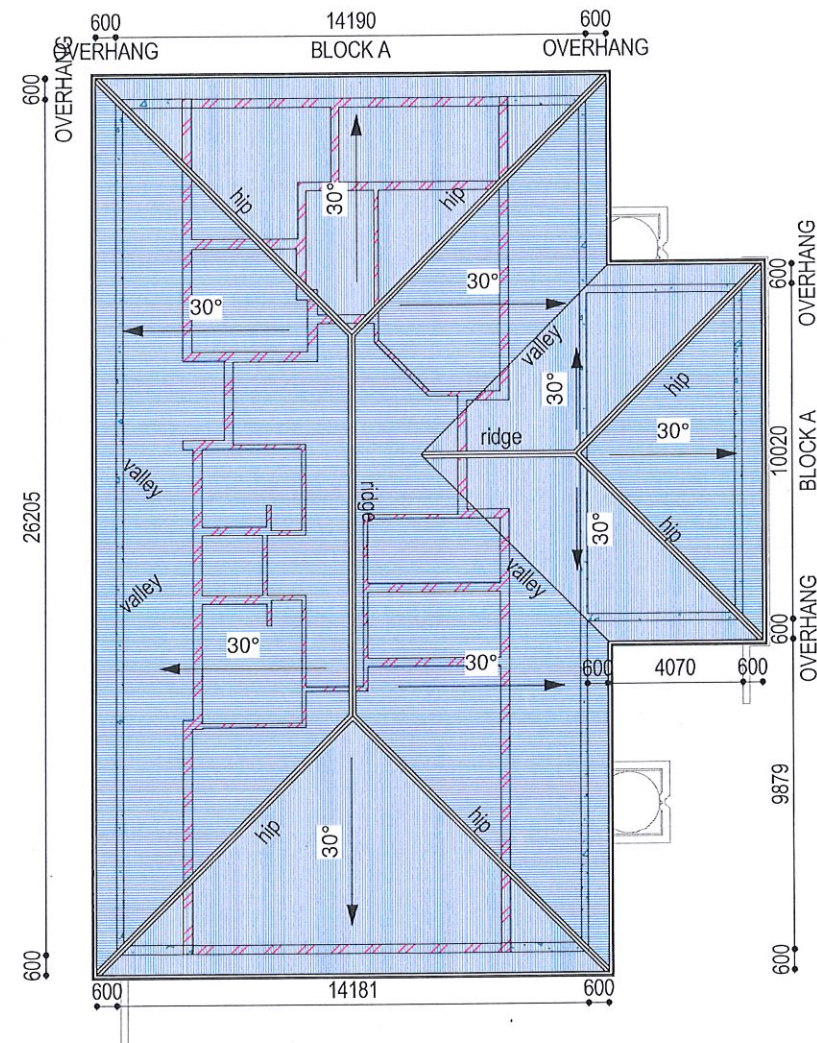
125x125mm Aluminium gutters on:

12x225mm Fibre cement fascia boards.

with 100mm round PVC downpipes.



**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



BLOCK A - ROOF PLAN  
Scale 1 : 200

SCALE	DRAWING DESCRIPTION	DRAWING NO
1 : 200	BLOCK A- ROOF PLAN	A-10-01-2
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver
DATE	2017/03/23 10:22:40 AM	PROJECT NR
DRAWN	MIR	1148
ISSUED	MH	

ARCHITECTURE  
ARCHITECTURE  
CREATE  
INNOVATION

HELM  
ARCHITECTS

69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: helmarch@vodamail.co.za



0.8mm Chromadek ridge plate supplied with IBR roof sheets.

# ROOF NOTES:

30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey)  
on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.

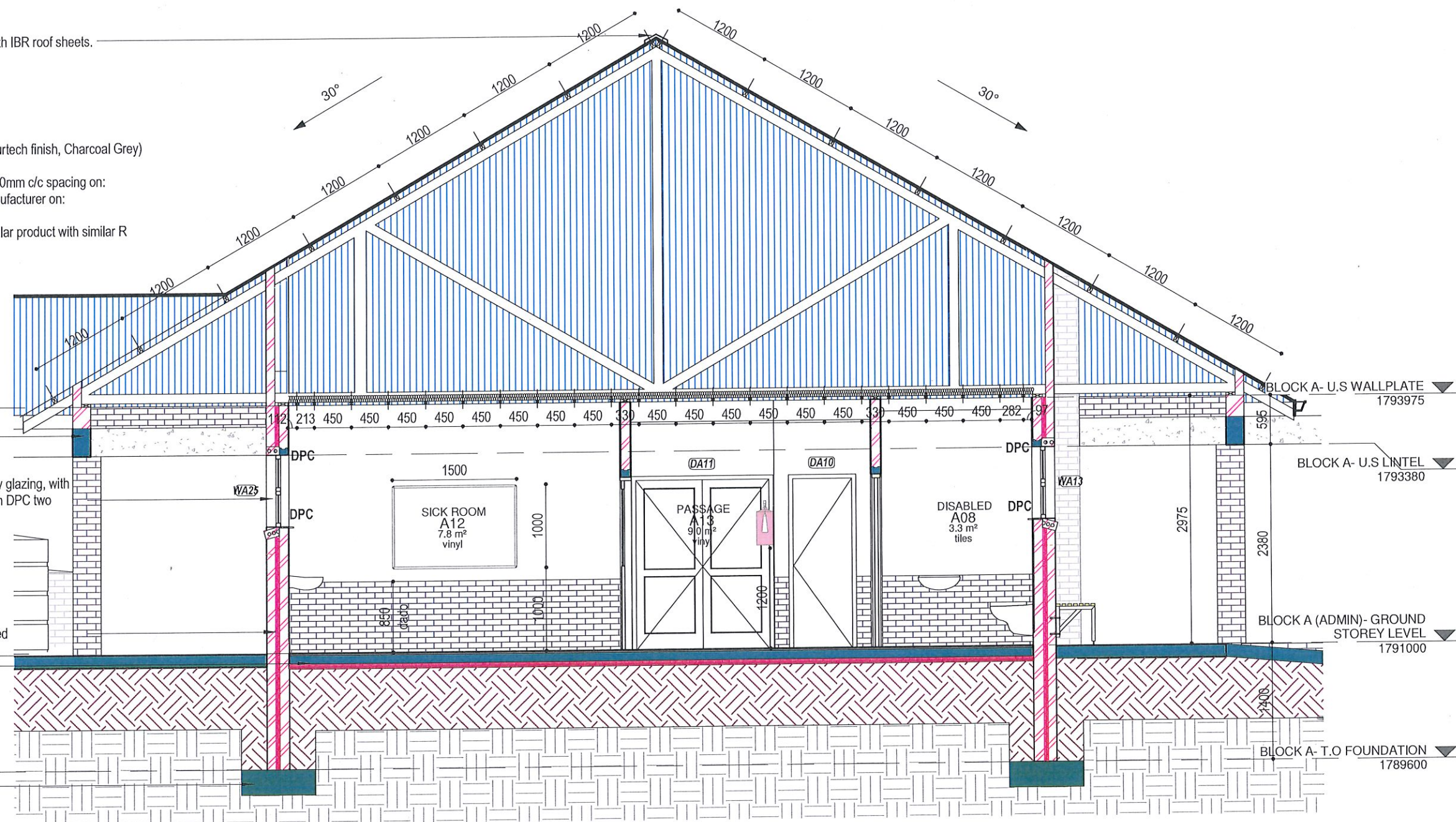
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.

340x230mm concrete beam by  
engineer's drawing

Aluminium window frames fitted with safety glazing, with  
Facebrick brick-on-edge sill and 250micron DPC two  
courses below sill.

50mm ISOBOARD to All external Walls  
and under Floor slabs (ISOBOARD installed  
strictly to manufacturer's specifications)

All foundations and  
retaining walls as per  
Engineer's Specification.



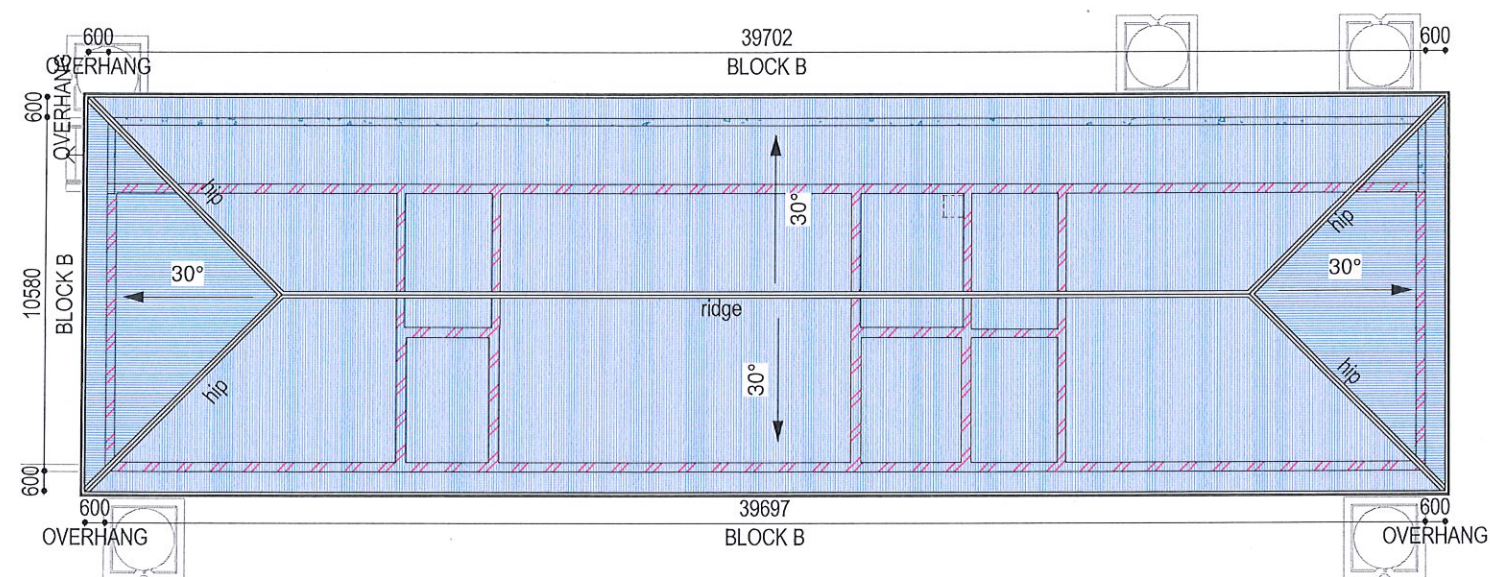
## BLOCK A- CROSS SECTION A-A

Scale 1 : 50

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div> <div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div> </div> <p>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</p>
1 : 50	BLOCK A- SECTION A-A	A-10-01-3	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:22:41 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		



**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



**BLOCK B- ROOF PLAN**  
Scale 1 : 200

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 200	BLOCK B- ROOF PLAN	B-10-01-2	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:23:16 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		



0.8mm Chromadek ridge plate supplied with IBR roof sheets.

#### ROOF NOTES:

30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:

38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.

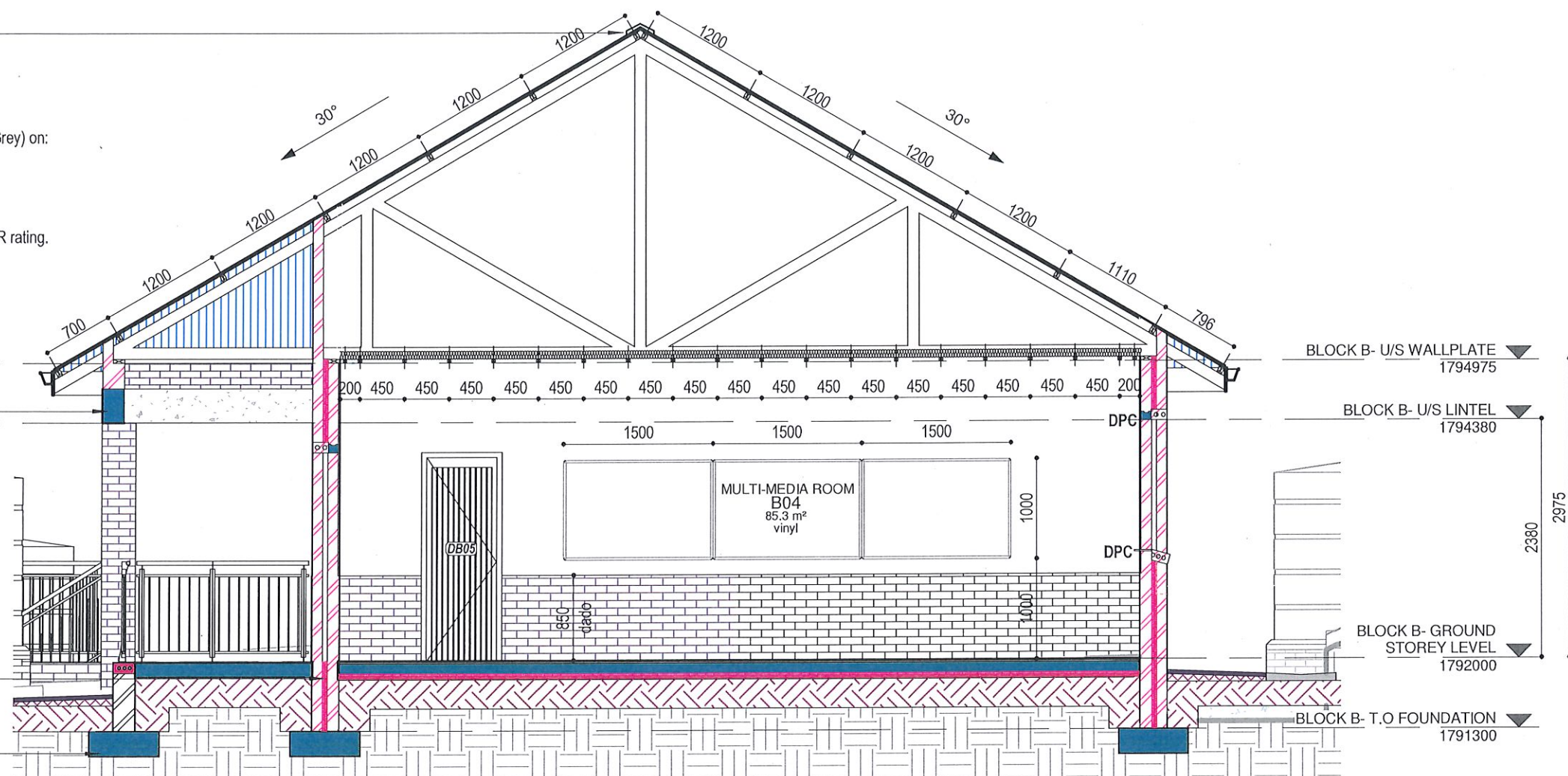
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.

340x230mm concrete beam by  
engineer's drawing

Aluminium window frames fitted with safety glazing,  
with Facebrick brick-on-edge sill and 250micron DPC  
two courses below sill.

50mm ISOBOARD to All external Walls  
and under Floor slabs (ISOBOARD installed strictly  
to Manufacturer's specifications)

All foundations and  
retaining walls as per  
Engineer's Specification.



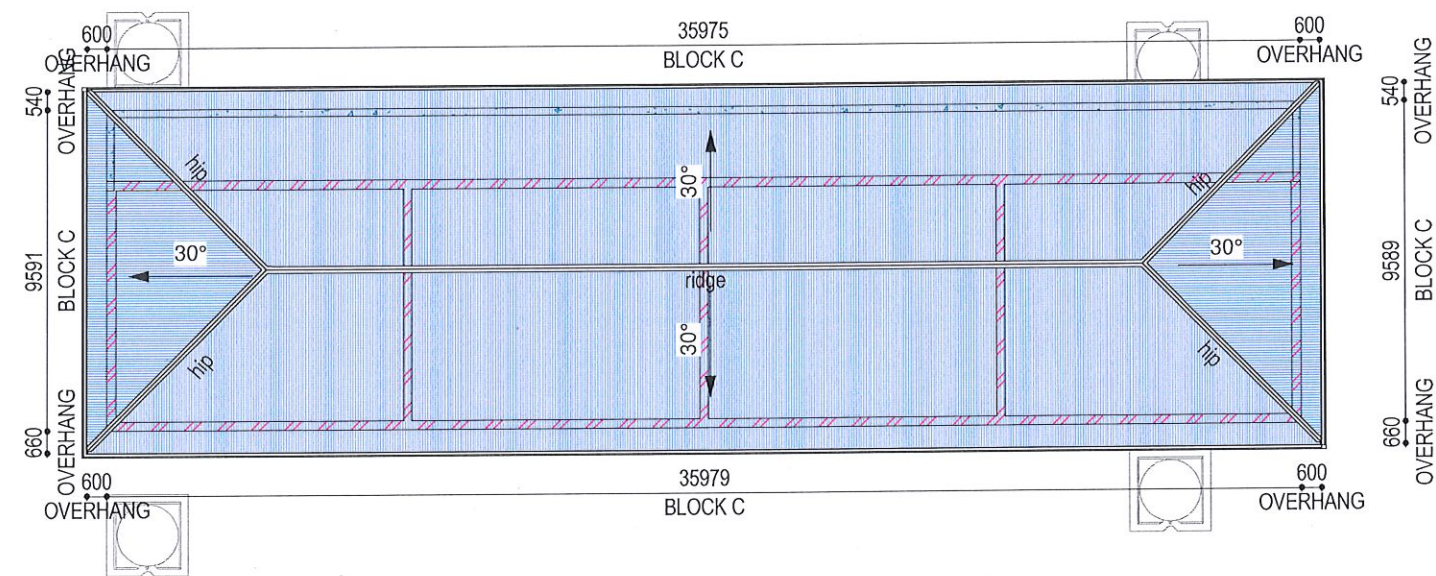
## CROSS SECTION B-B

Scale 1 : 50

SCALE	DRAWING DESCRIPTION	DRAWING NO	<b>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</b> <b>HELM ARCHITECTS</b>
1 : 50	BLOCK B- SECTION B-B	B-10-01-3	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:23:17 AM	PROJECT NR	
DRAWN	MIR	1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
ISSUED	MH		



**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



**BLOCK C- ROOF PLAN**

Scale 1 : 200

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 200	BLOCK C- ROOF PLAN	C-10-01-2	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:23:47 AM	PROJECT NR	1148
DRAWN	MIR		
ISSUED	MH		



0.8mm Chromadek ridge plate supplied with IBR roof sheets.

**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.

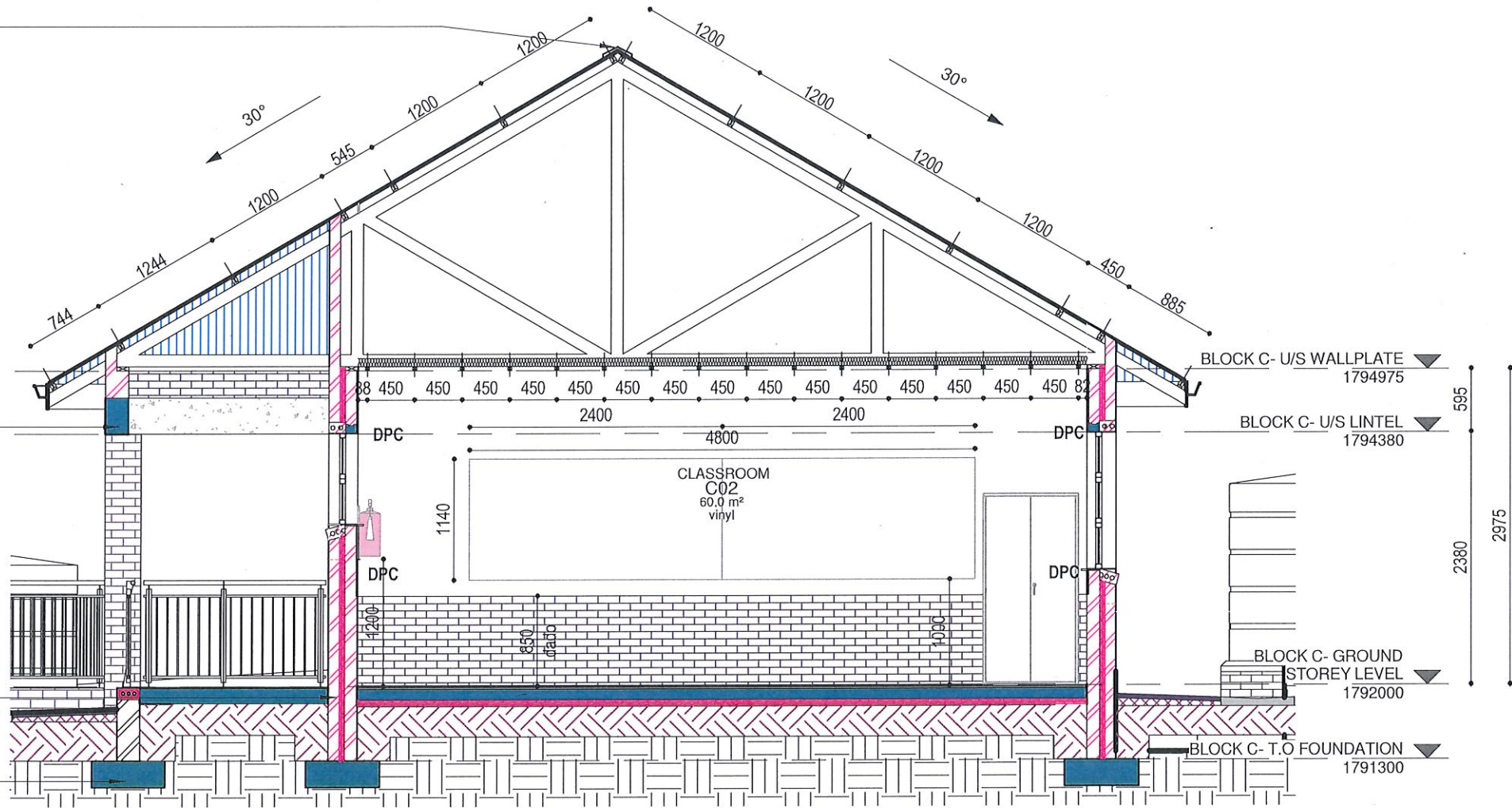
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.

340x230mm concrete beam by  
engineer's drawing

Aluminium window frames fitted with safety glazing, with  
Facebrick brick-on-edge sill and 250micron DPC two  
courses below sill.

50mm ISOBOARD to All external Walls  
and under Floor slabs (installed strictly to Manufacturer's  
specifications)

All foundations and  
retaining walls as per  
Engineer's Specification.



CROSS SECTION C-C

Scale 1 : 50

SCALE	DRAWING DESCRIPTION	DRAWING NO
1 : 50	BLOCK C- SECTION C-C	C-10-01-3
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver
DATE	2017/03/23 10:23:48 AM	PROJECT NR
DRAWN	MIR	1148
ISSUED	MH	

ARCHITECTURE  
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**HELM**  
ARCHITECTS

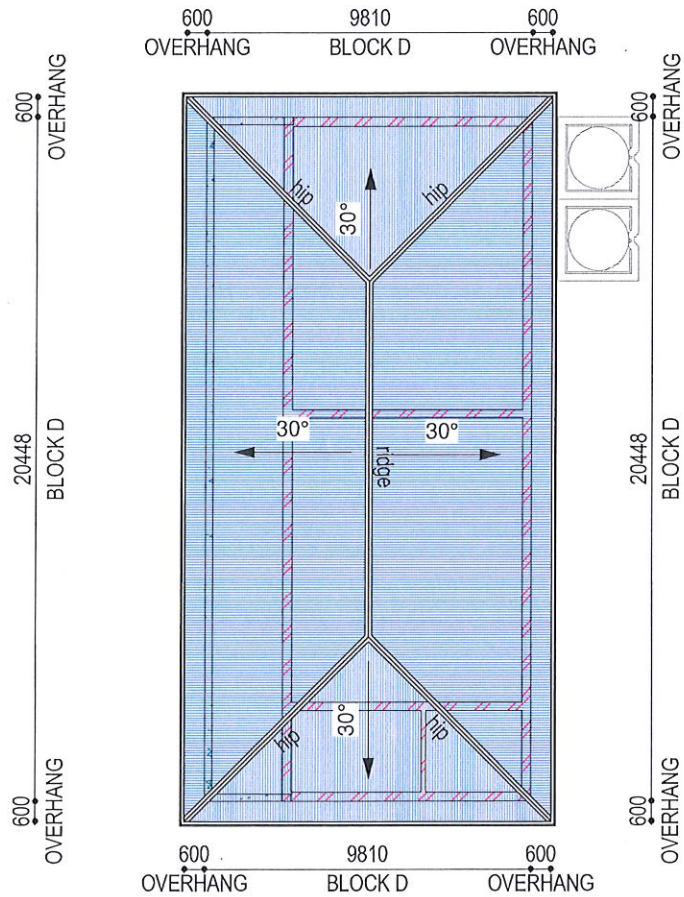
69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: helmarch@vodamail.co.za

ROOF NOTES:

30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:

38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.

125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



BLOCK D- ROOF PLAN

Scale 1 : 200

SCALE	DRAWING DESCRIPTION	DRAWING NO
1 : 200	BLOCK D- ROOF PLAN	D-10-01-2
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver
DATE	2017/03/23 10:24:18 AM	PROJECT NR
DRAWN	MIR	1148
ISSUED	MH	

ARCHITECTURE  
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69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: helmarch@vodamail.co.za



0.8mm Chromadek ridge plate supplied with IBR roof sheets.

#### ROOF NOTES:

30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey)  
on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.

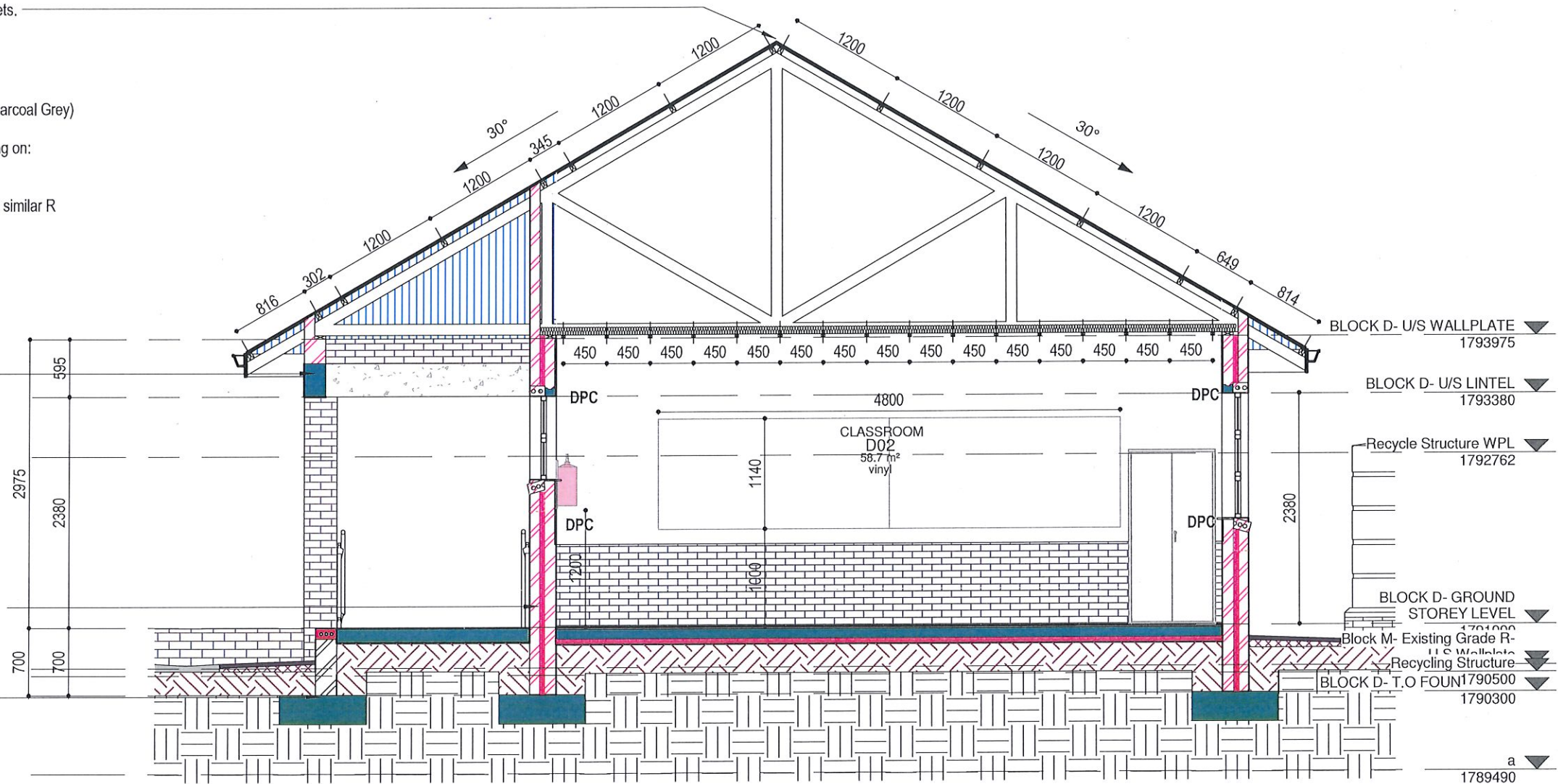
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.

340x230mm concrete beam by  
engineer's drawing

Aluminium window frames fitted with safety glazing, with  
Facebrick brick-on-edge sill and 250micron DPC two  
courses below sill.

50mm ISOBOARD to All external Walls  
and under Floor slabs (ISOBOARD installed strictly to  
Manufacturer's specifications)

All foundations and  
retaining walls as per  
Engineer's Specification.



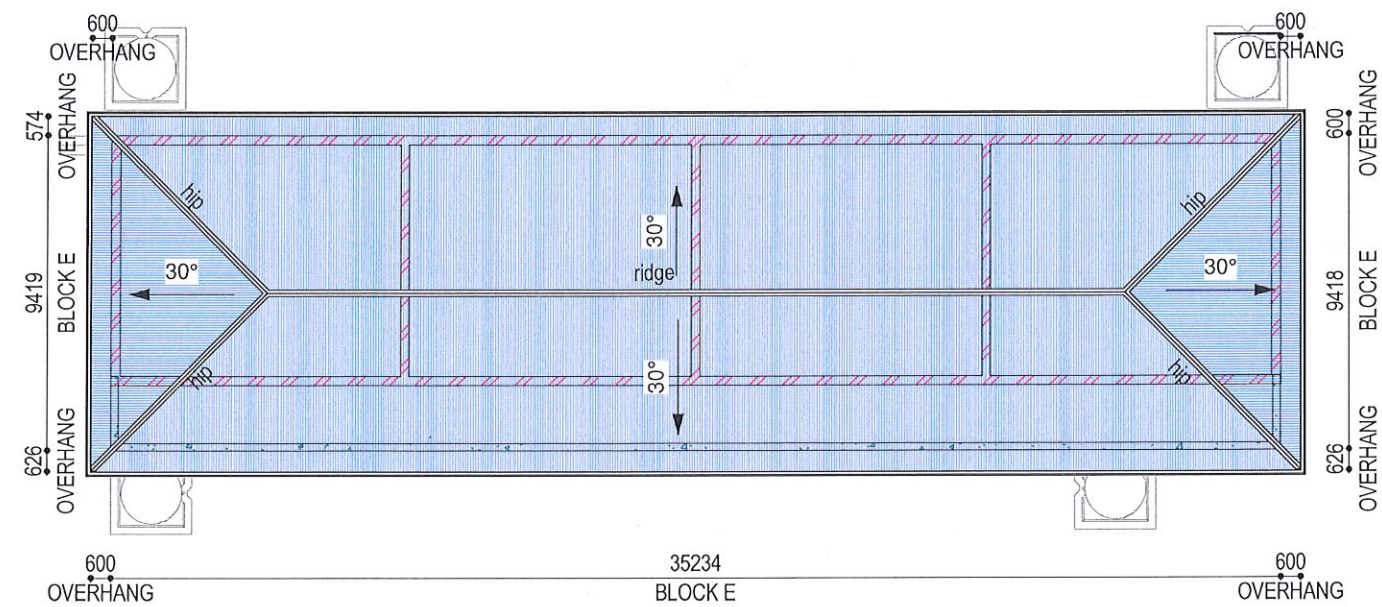
## CROSS SECTION D-D

Scale 1 : 50

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div> <div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div> </div>
1 : 50	BLOCK D- SECTION D-D	D-10-01-3	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:24:19 AM	PROJECT NR	
DRAWN	MIR	1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
ISSUED	MH		

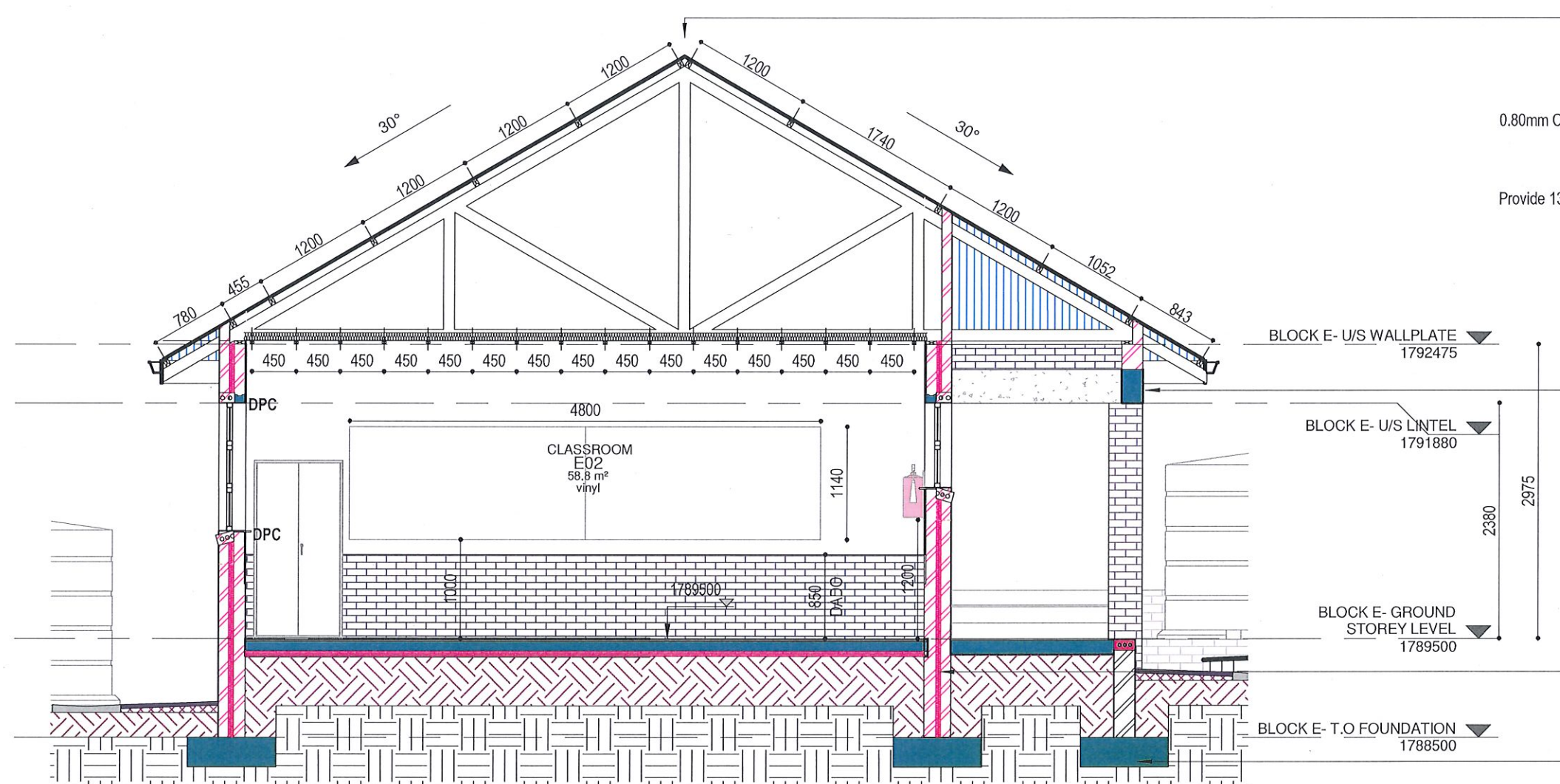


**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



**BLOCK E- ROOF PLAN**  
Scale 1 : 200

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 200	BLOCK E- ROOF PLAN	E-10-01-2	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:24:48 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		



0.8mm Chromadek ridge plate supplied with IBR roof sheets.

**ROOF NOTES:**  
 30 degree pitch  
 0.8mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
 50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
 38x114mm SA PINE roof truss as per manufacturer on:  
 38x114mm SA PINE wallplate.  
 Provide 135mm Isotherm insulation or similar product with similar R rating.

125x125mm Aluminium gutters on:  
 12x225mm Fibre cement fascia boards.  
 with 100mm round PVC downpipes.

340x230mm concrete beam by  
 engineer's drawing

Aluminium window frames fitted with safety glazing, with  
 Facebrick brick-on-edge sill and 250micron DPC two  
 courses below sill.

50mm ISOBOARD to All external Walls  
 and under Floor slabs  
 (ISOBOARD installed strictly to Manufacturer's  
 specifications)

All foundations and  
 retaining walls as per  
 Engineer's Specification.

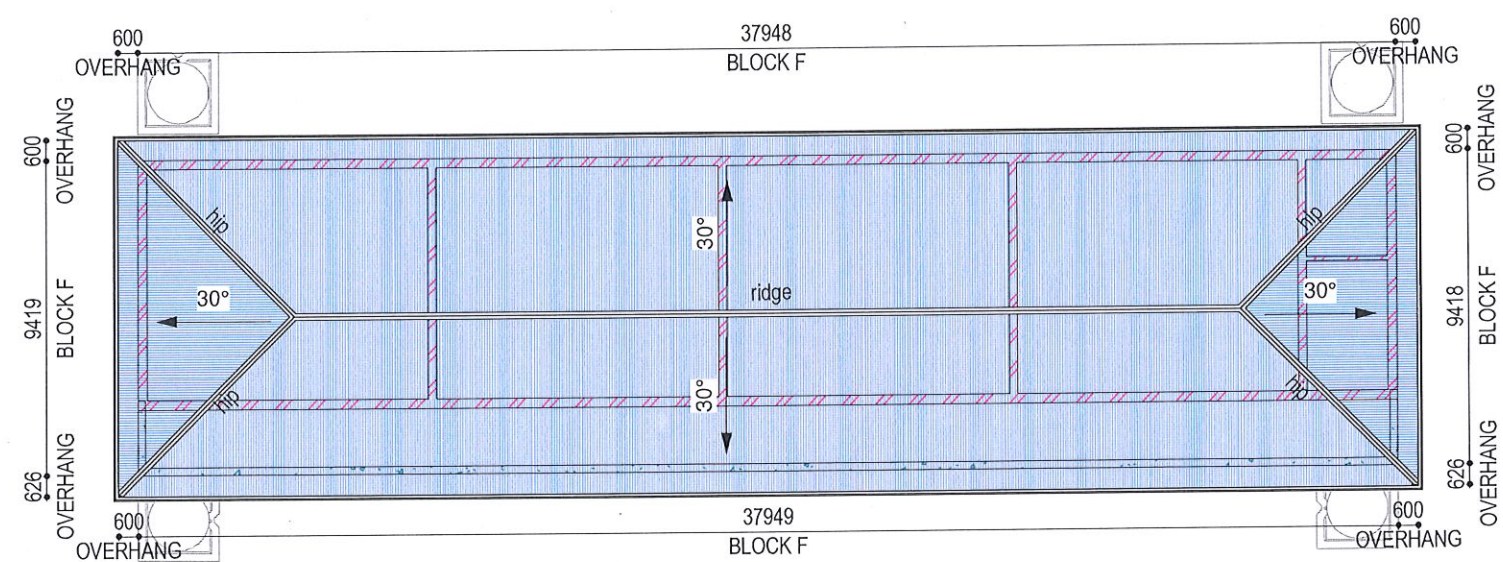
## CROSS SECTION E-E

Scale 1 : 50

SCALE	DRAWING DESCRIPTION	DRAWING NO	<b>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</b> <b>HELM ARCHITECTS</b> <p>69 Prince Alfred Street, Queenstown          PO Box 2296, Komani, 5322, South Africa          Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544          E-mail: helmarch@vodamail.co.za</p>
1 : 50	BLOCK E- SECTION E-E	E-10-01-3	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:24:49 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		



**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



**BLOCK F- ROOF PLAN**  
Scale 1 : 200

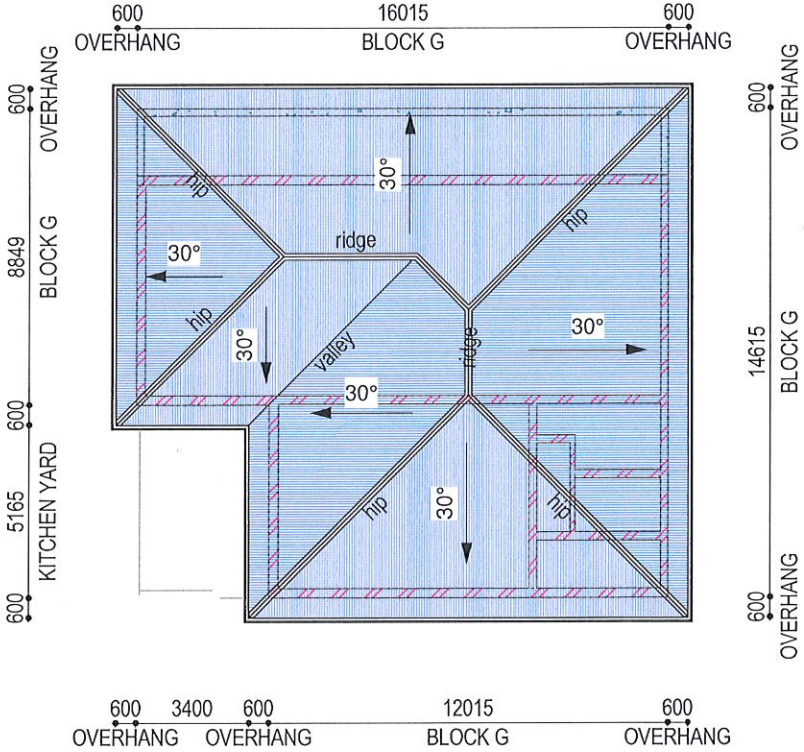
SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 200	BLOCK F- ROOF PLAN	F-10-01-2	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:25:13 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		







**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



**BLOCK G- ROOF PLAN**  
Scale 1 : 200

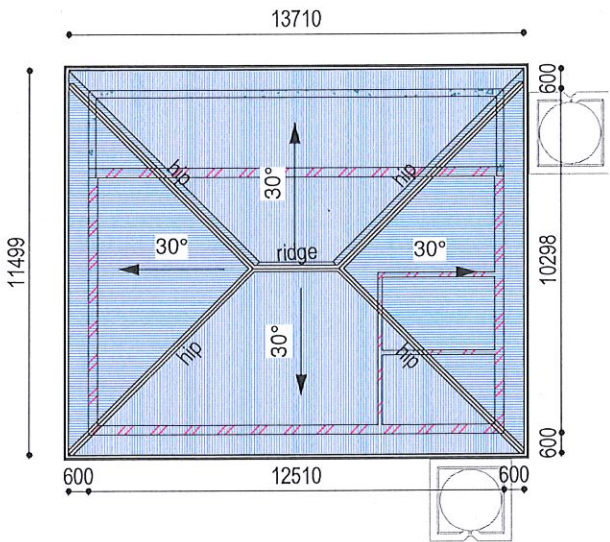
SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 200	BLOCK G- ROOF PLAN	G-10-01-2	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:25:20 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		







**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



BLOCK H- ROOF PLAN

Scale 1 : 200

SCALE	DRAWING DESCRIPTION	DRAWING NO
1 : 200	BLOCK H- ROOF PLAN	H-10-01-2
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver
DATE	2017/03/23 10:25:51 AM	PROJECT NR
DRAWN	MIR	1148
ISSUED	MH	

ARCHITECTURE  
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69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: helmarch@vodamail.co.za

0.8mm Chromadek ridge plate supplied with IBR roof sheets.

#### ROOF NOTES:

30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
SISALATION Residential HF2 on:  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.

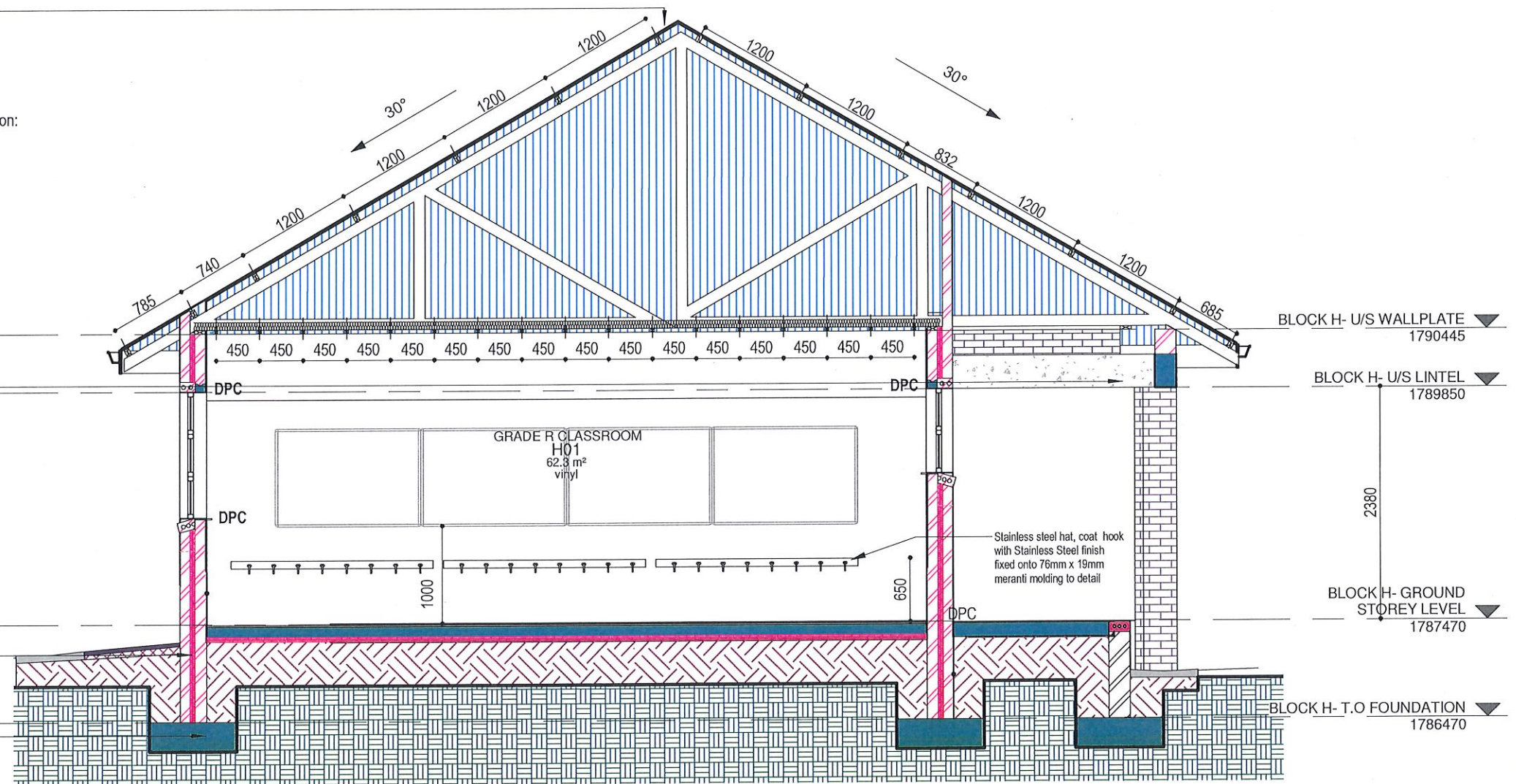
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 75x75mm PVC downpipes.

340x230mm concrete beam by  
engineer's drawing

Aluminium window frames fitted with safety glazing, with  
Facebrick brick-on-edge sill and 250micron DPC two  
courses below sill.

50mm ISOBOARD to All external Walls  
and under Floor slabs (ISOBOARD installed strictly  
to Manufacturer's specifications)

All foundations and  
retaining walls as per  
Engineer's Specification.

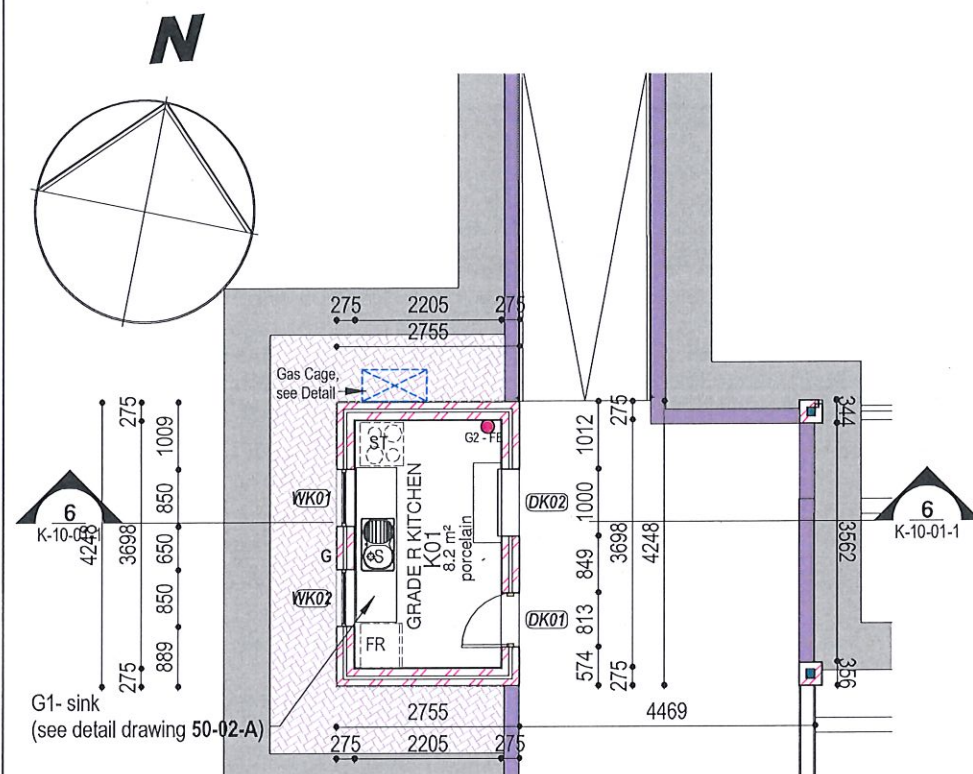


## CROSS SECTION H-H

Scale 1 : 50

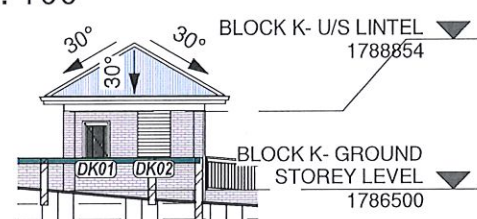
SCALE	DRAWING DESCRIPTION	DRAWING NO	<b>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</b> <b>HELM ARCHITECTS</b>
1 : 50	BLOCK H- SECTION H-H	H-10-01-3	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:25:52 AM	PROJECT NR	
DRAWN	MIR	1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
ISSUED	MH		





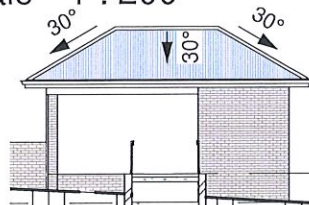
## BLOCK K- GROUND STOREY LEVEL

Scale 1 : 100



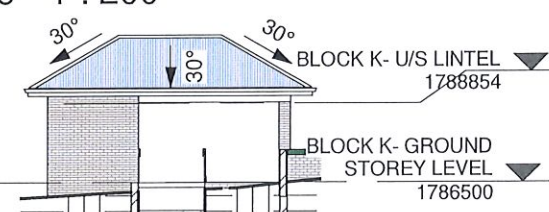
## BLOCK K- EAST ELEVATION

Scale 1 : 200



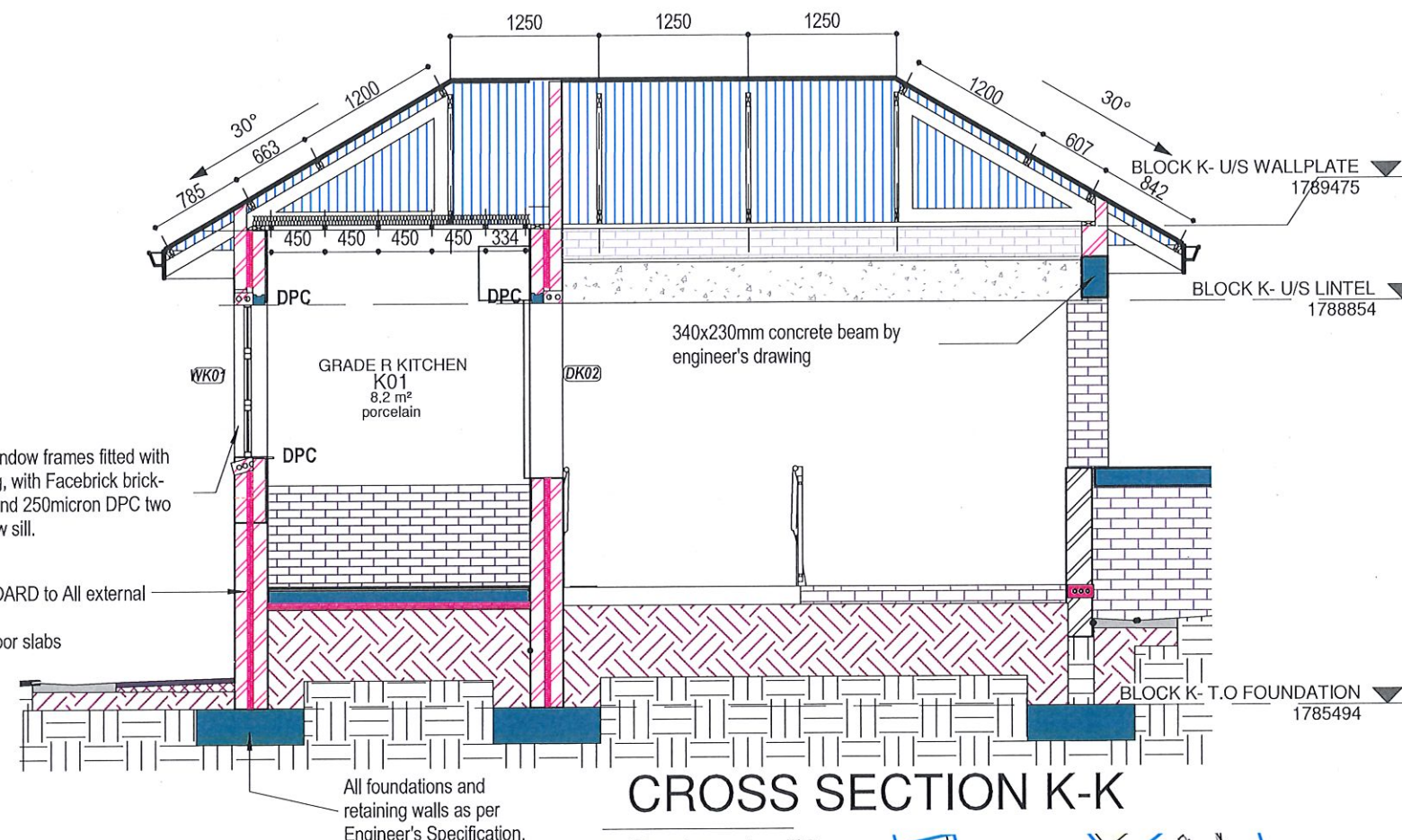
## BLOCK K- NORTH ELEVATION

Scale 1 : 200



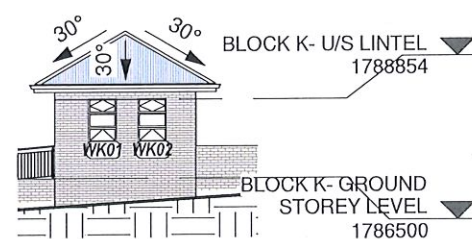
## BLOCK K- SOUTH ELEVATION

Scale 1 : 200



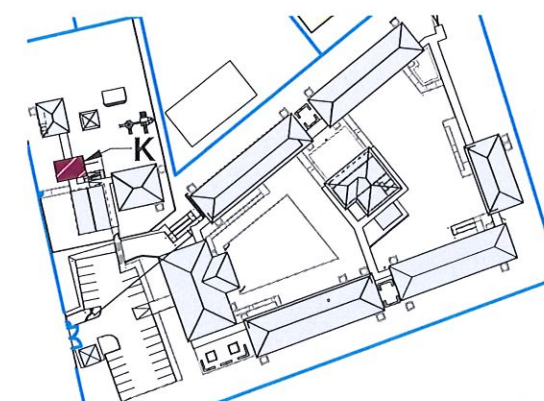
## CROSS SECTION K-K

Scale 1 : 50



## BLOCK K- WEST ELEVATION

Scale 1 : 200



## LOCALITY PLAN- BLOCK K

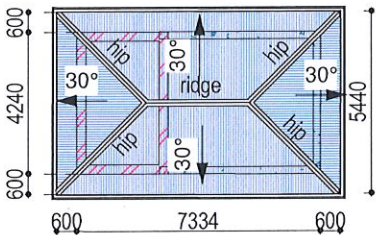
Scale 1 : 2000

**ROOF NOTES:**  
 30 degree pitch 0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
 50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
 SISALATION Residential HF2 on: 38x114mm SA PINE roof truss as per manufacturer on: 38x114mm  
 SA PINE wallplate. Provide 135mm Isotherm insulation or similar product with similar R rating.  
 125x125mm Aluminium gutters on: 12x225mm Fibre cement fascia boards, with 75x75mm PVC  
 downpipes.

SCALE As indicated	DRAWING DESCRIPTION BLOCK K- GRADE R KITCHEN	DRAWING NO K-10-01-1	<b>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</b> <b>HELM ARCHITECTS</b>
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:26:12 AM	PROJECT NR 1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
DRAWN ISSUED	MIR MH		



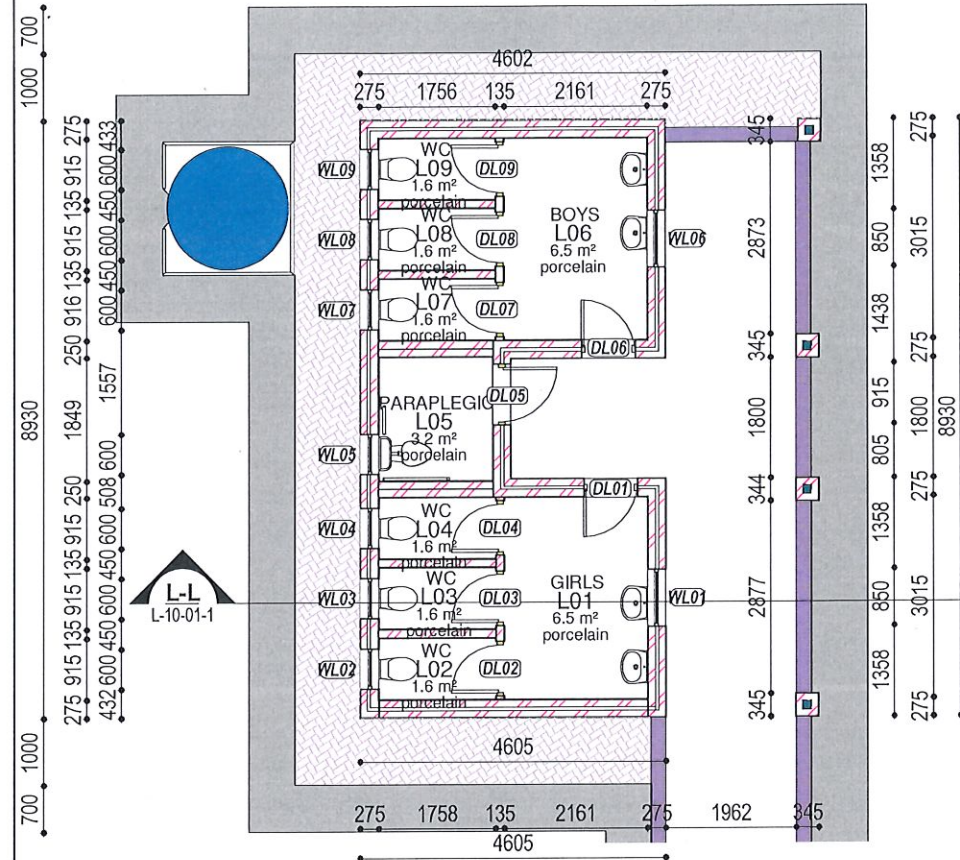
**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



BLOCK K- ROOF PLAN  
Scale 1 : 200

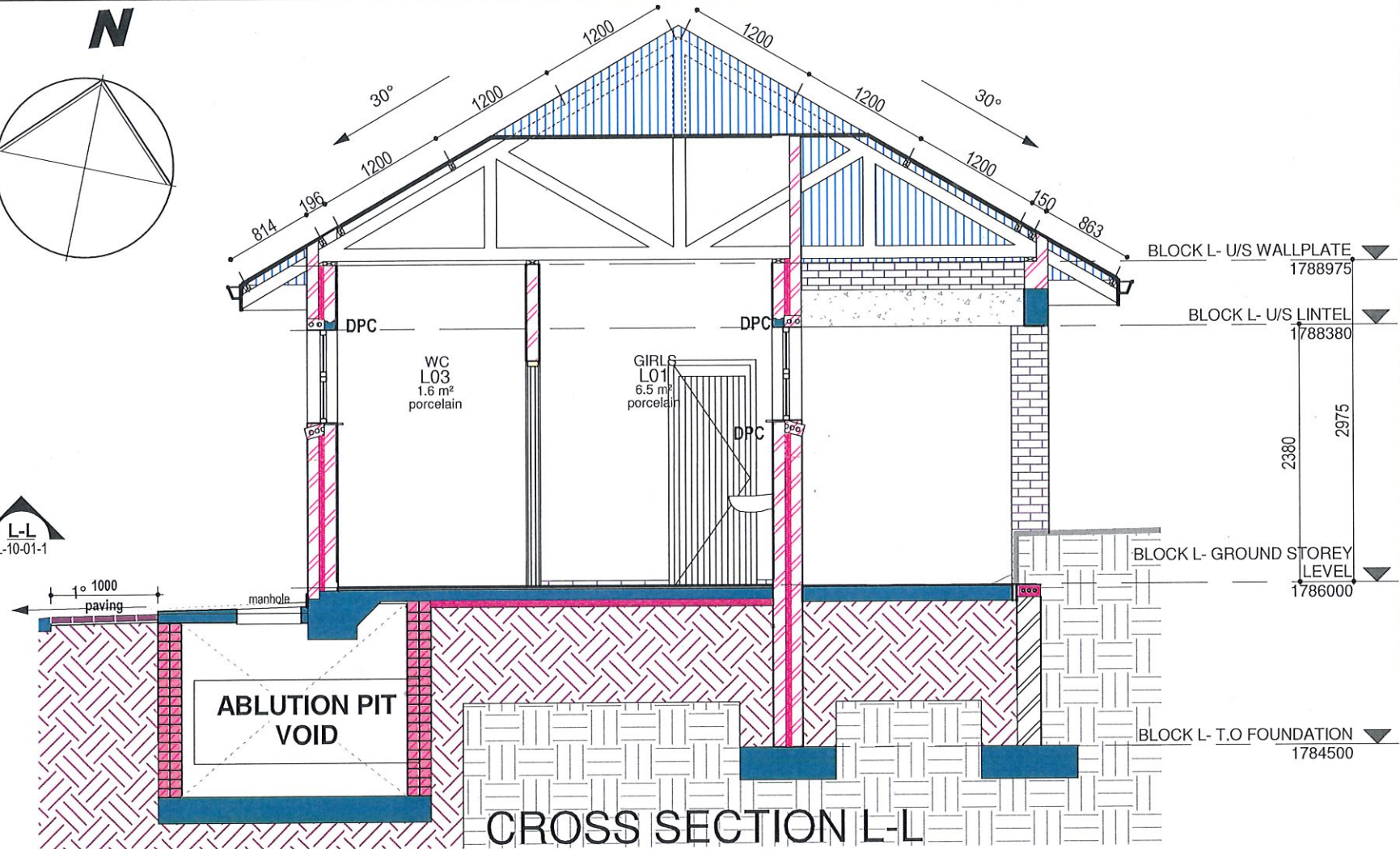
SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 200	BLOCK K- ROOF PLAN	K-10-01-2	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:26:12 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		





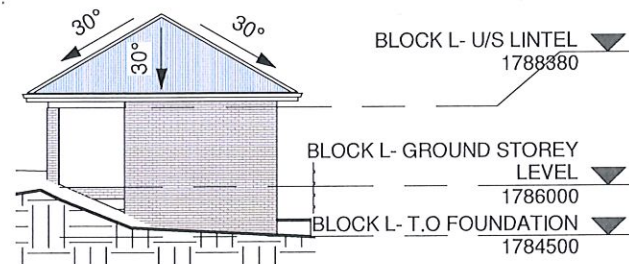
**BLOCK L- GROUND STOREY LEVEL**

Scale 1 : 100



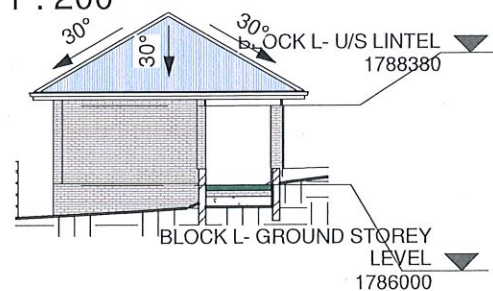
**CROSS SECTION L-L**

Scale 1 : 50



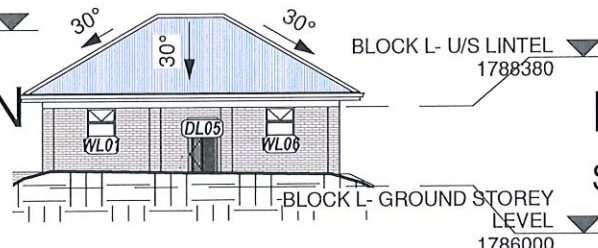
**BLOCK L- NORTH ELEVATION**

Scale 1 : 200



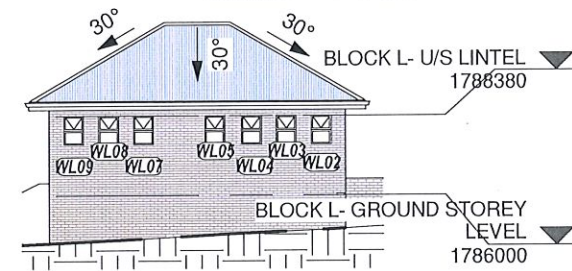
**BLOCK L- SOUTH ELEVATION**

Scale 1 : 200



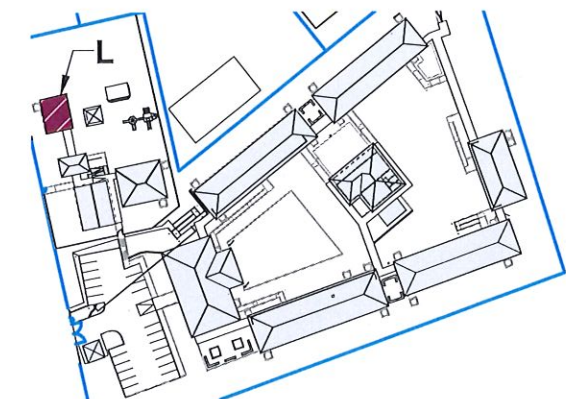
**BLOCK L- EAST ELEVATION**

Scale 1 : 200



**BLOCK L- WEST ELEVATION**

Scale 1 : 200



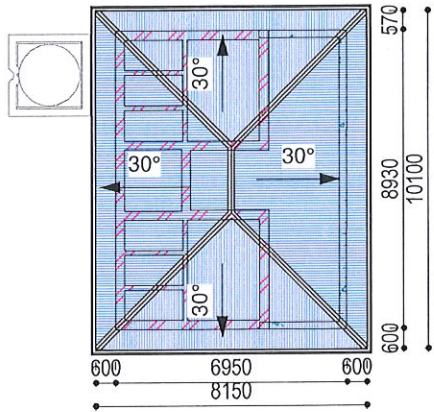
**LOCALITY PLAN- BLOCK L**

Scale 1 : 2000

SCALE As indicated	DRAWING DESCRIPTION BLOCK L (GRADE R ABLUTIONS)	DRAWING NO L-10-01-1	<b>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</b> <b>HELM ARCHITECTS</b>
PROJECT PROSPECT JUNIOR SECONDARY SCHOOL		REVISION Approver	
DATE 2017/03/23 10:26:33 AM		PROJECT NR 1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
DRAWN MIR			
ISSUED MH			



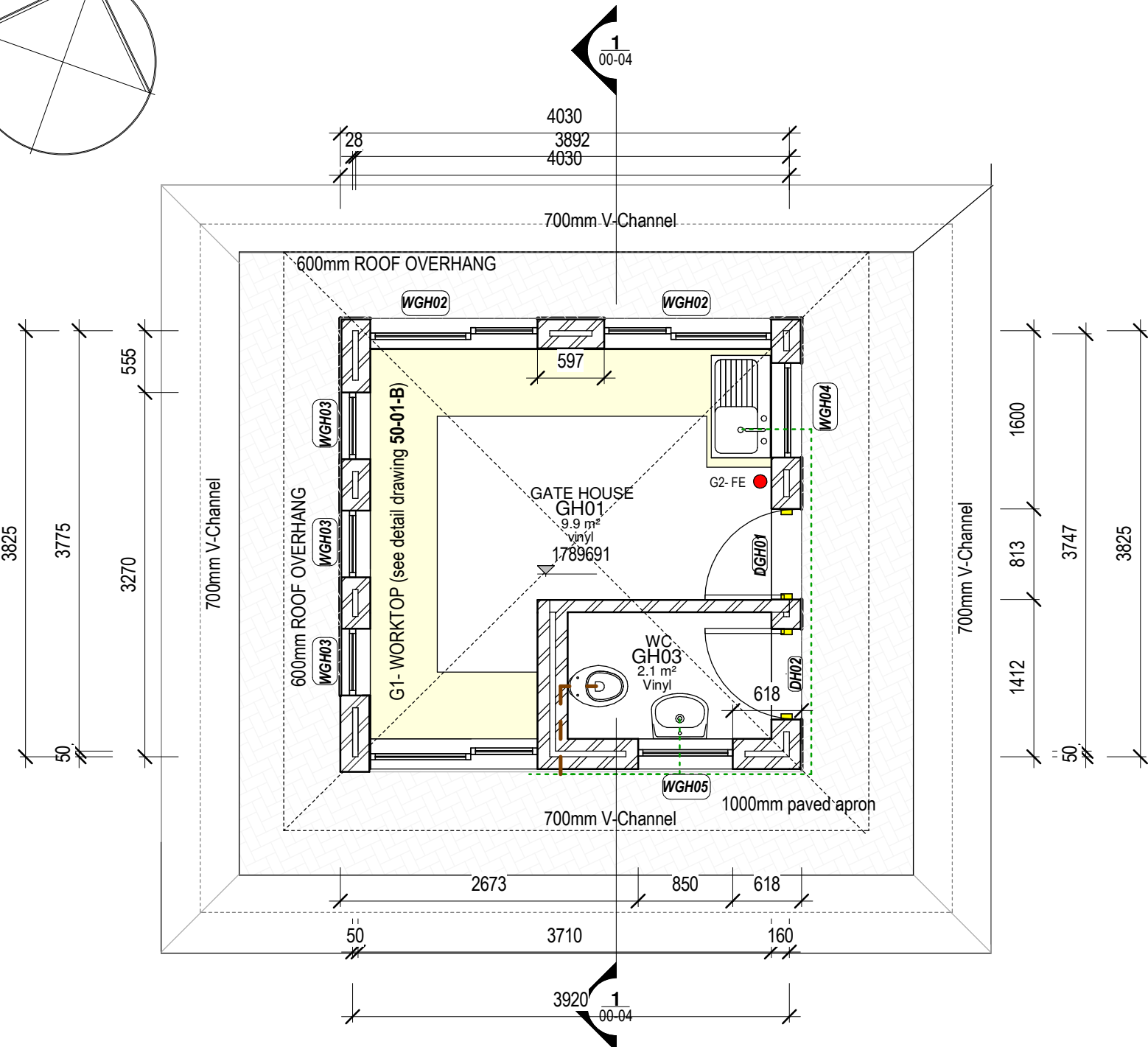
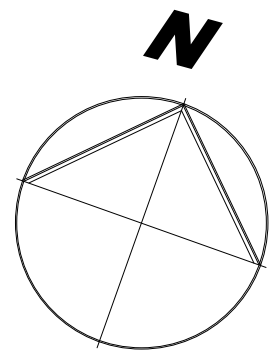
**ROOF NOTES:**  
30 degree pitch  
0.80mm Chromadek IBR sheets (G4 Colourtech finish, Charcoal Grey) on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.  
Provide 135mm Isotherm insulation or similar product with similar R rating.  
  
125x125mm Aluminium gutters on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.



**BLOCK L- ROOF PLAN**  
Scale 1 : 200

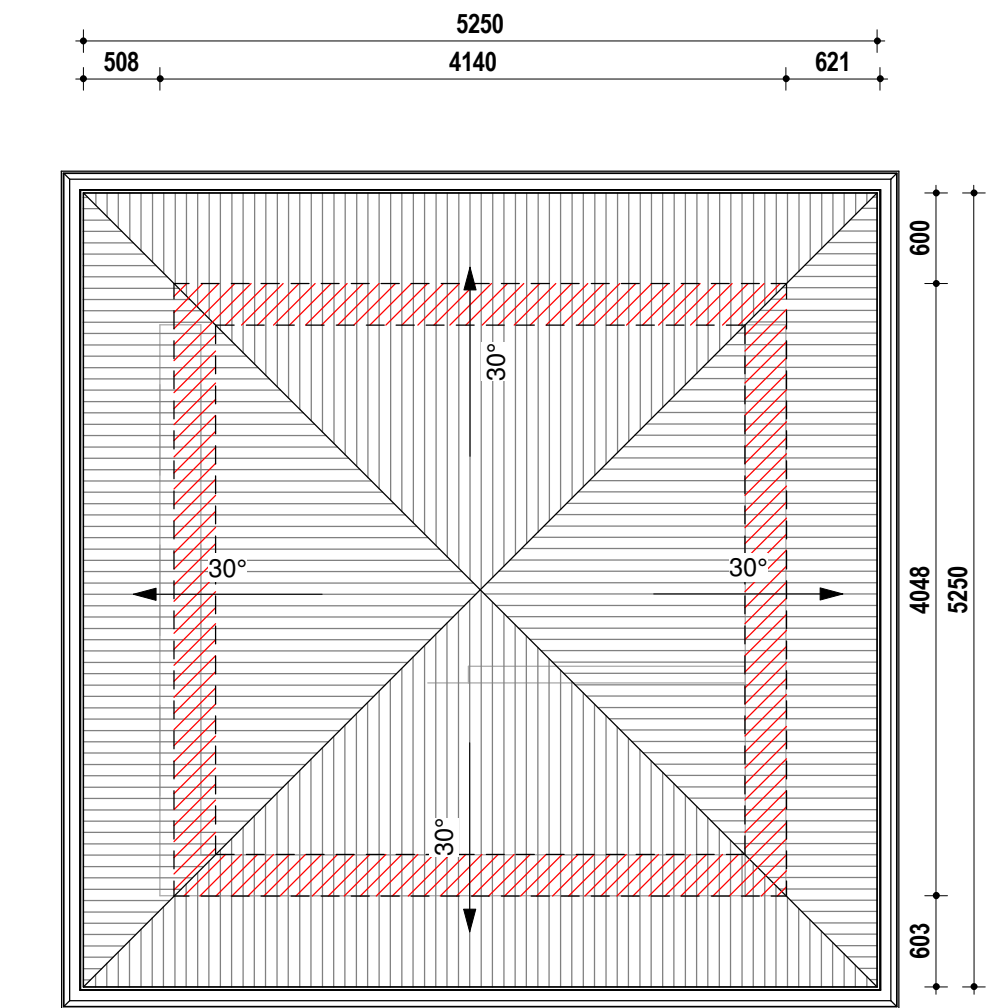
SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 200	BLOCK L- ROOF PLAN	L-10-01-2	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:26:33 AM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	MH		





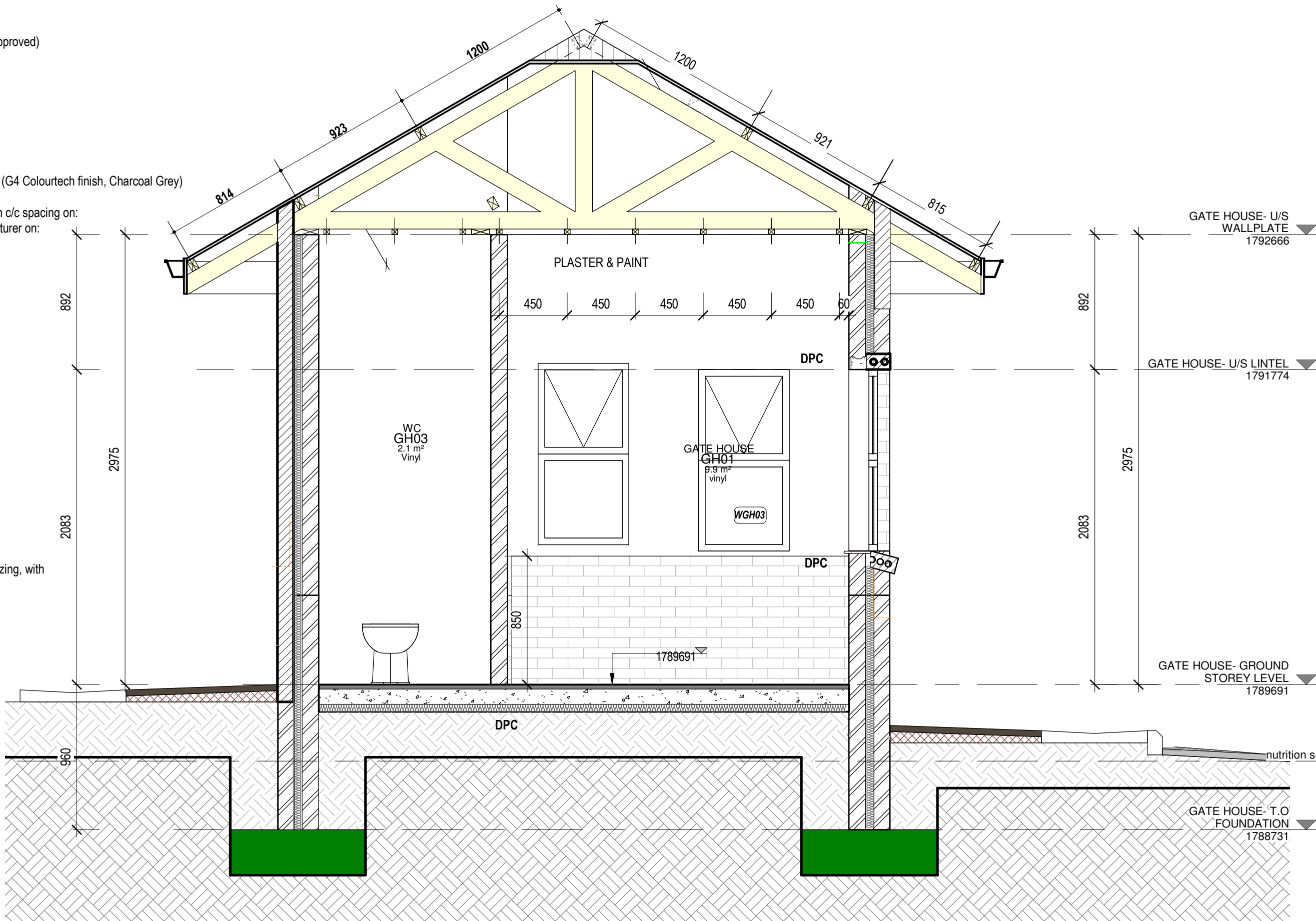
## GATE HOUSE- FLOOR PLAN

Scale 1 : 50



## GATE HOUSE- ROOF PLAN

Scale 1 : 50



## CROSS SECTION- GATE HOUSE

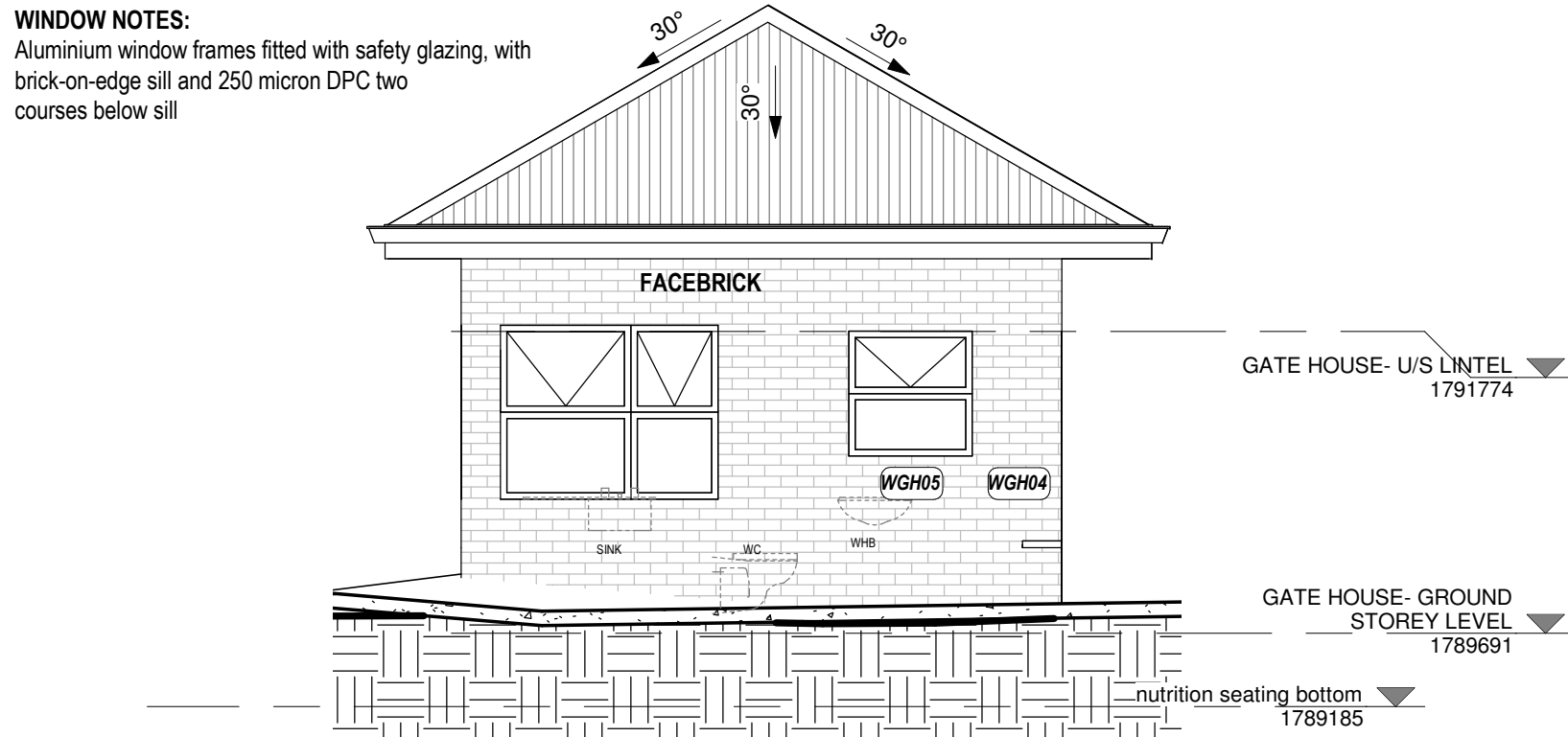
Scale 1 : 25

ROOF NOTES:  
30 degree pitch  
0.8mm Brownbuilt sheets (or similar approved) (G4 Colourtech finish, Charcoal Grey)  
on:  
50x76mm SA PINE purlins at max. +/- 1200mm c/c spacing on:  
38x114mm SA PINE roof truss as per manufacturer on:  
38x114mm SA PINE wallplate.

125x125mm Aluminium on:  
12x225mm Fibre cement fascia boards.  
with 100mm round PVC downpipes.

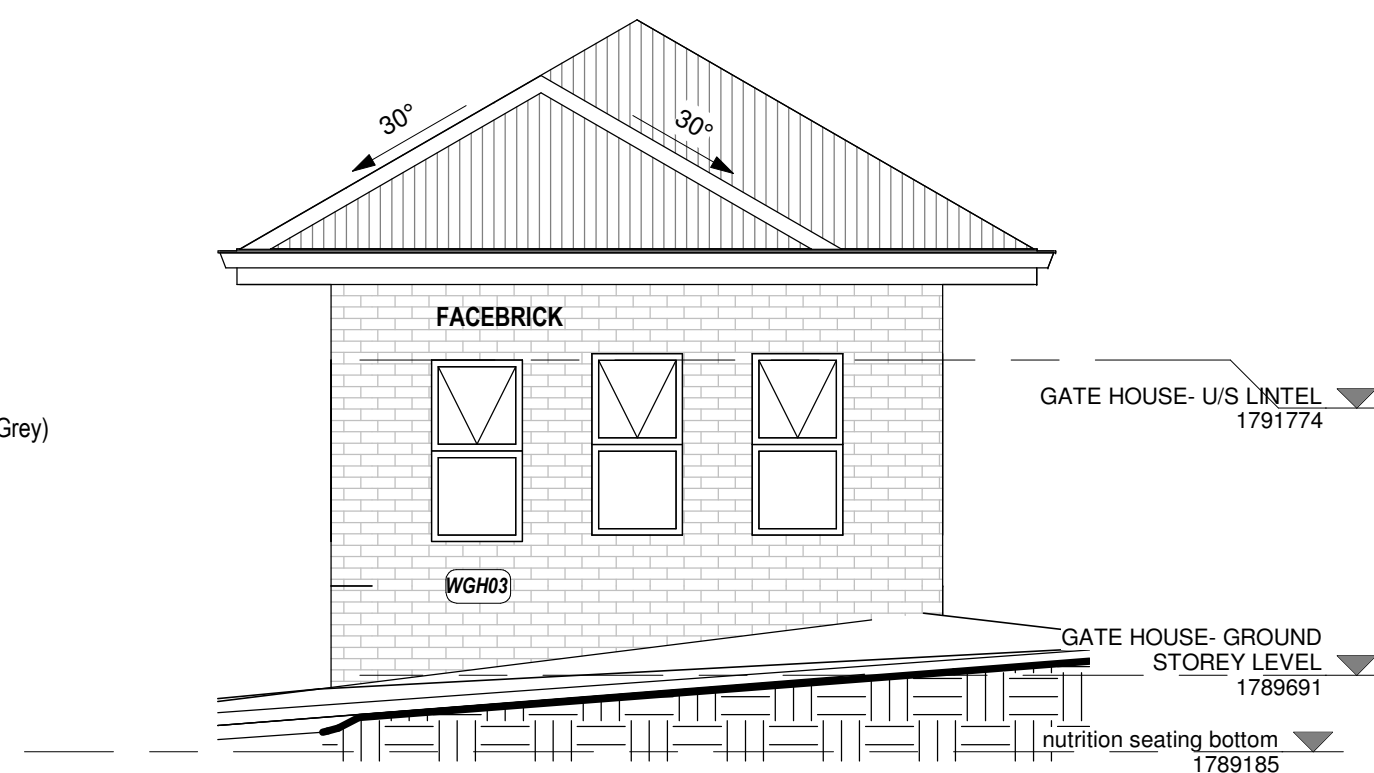
## GATE HOUSE- NORTH ELEVATION

Scale 1 : 50



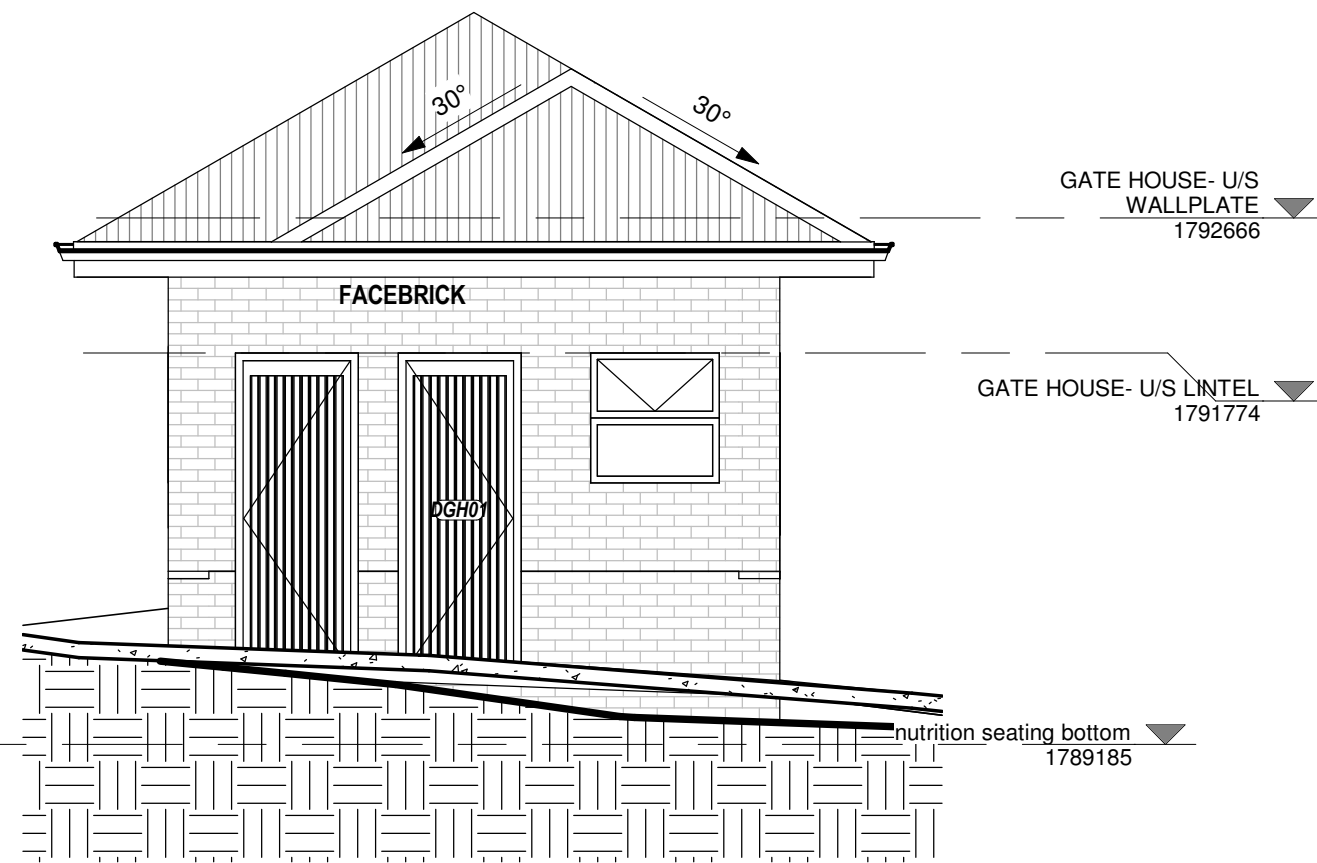
## GATE HOUSE- SOUTH ELEVATION

Scale 1 : 50



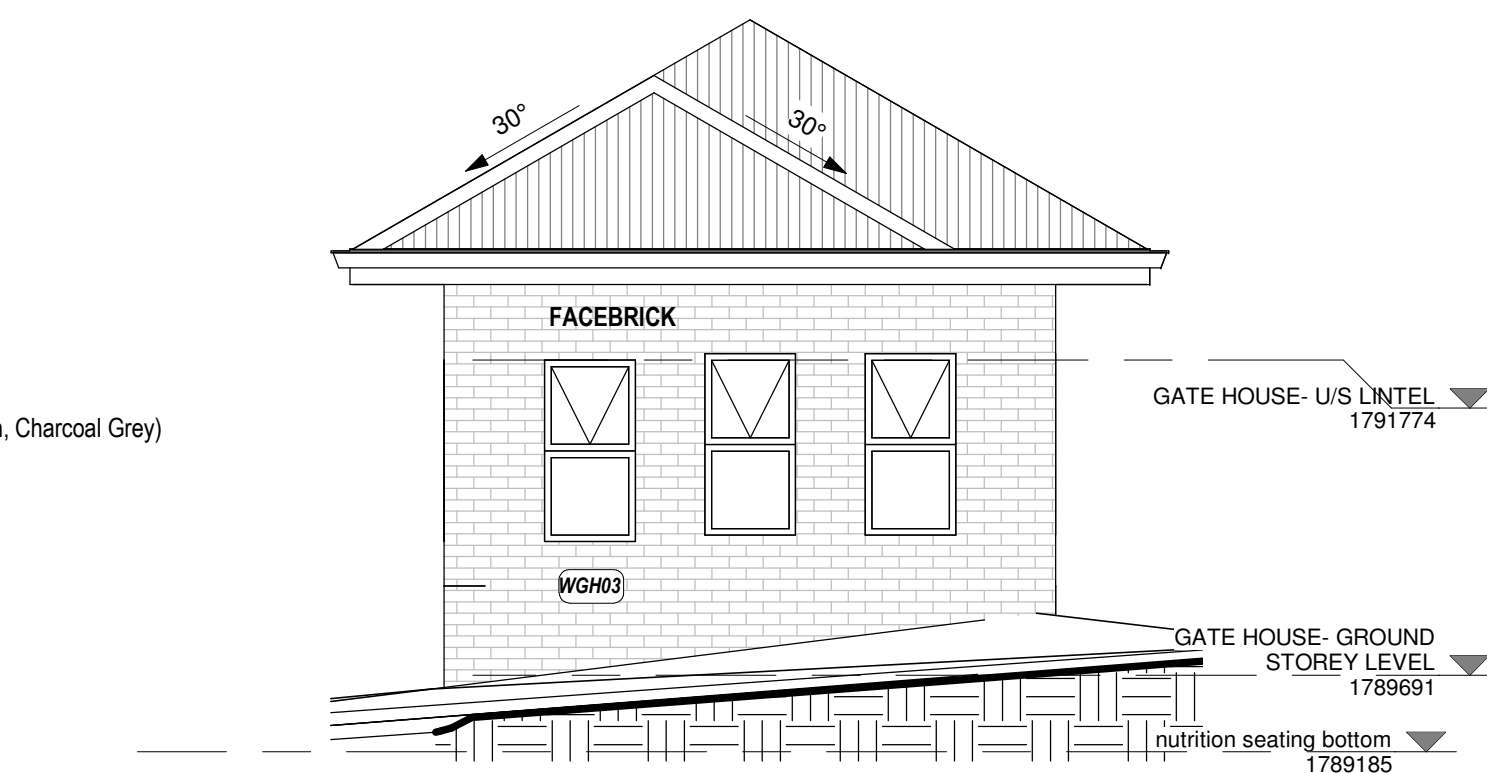
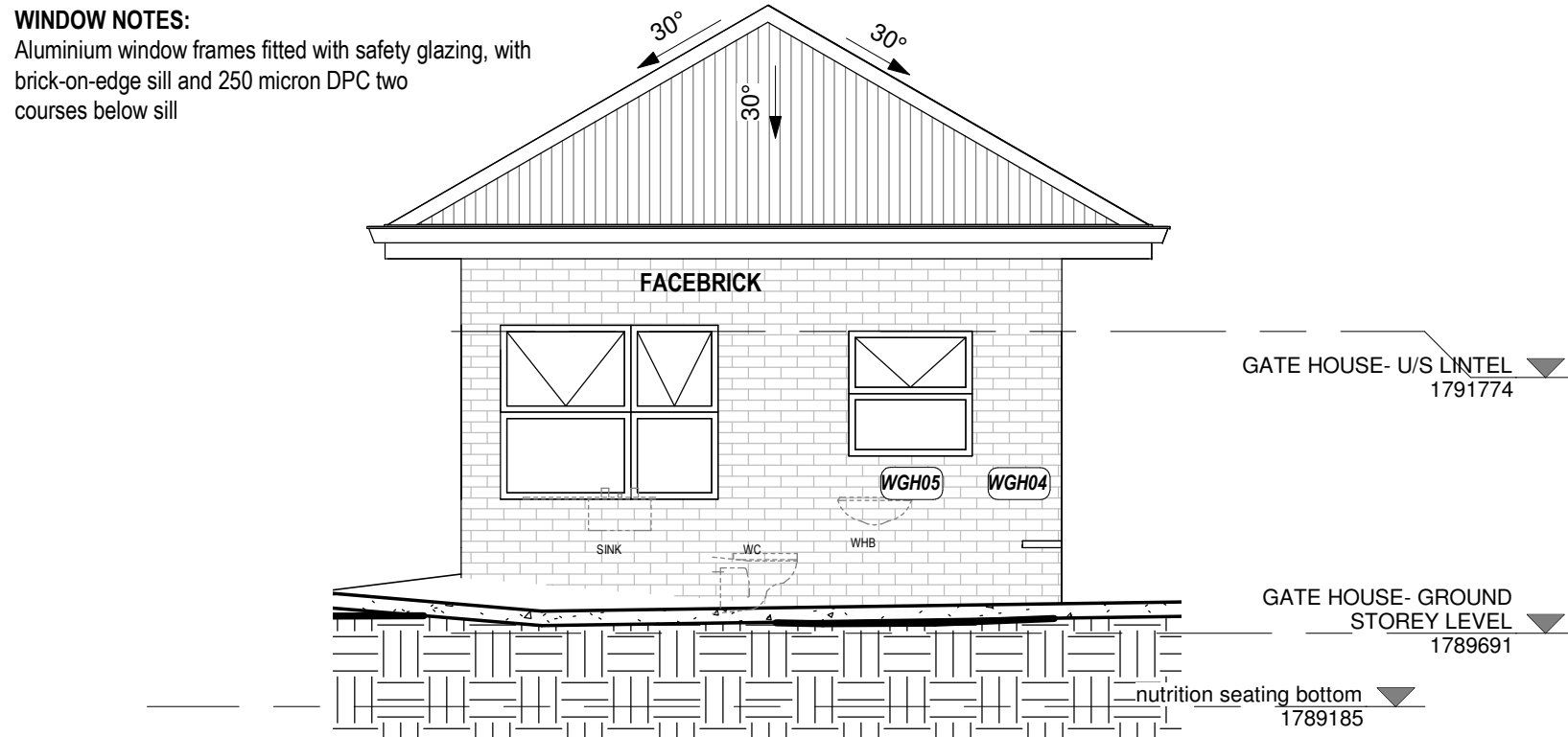
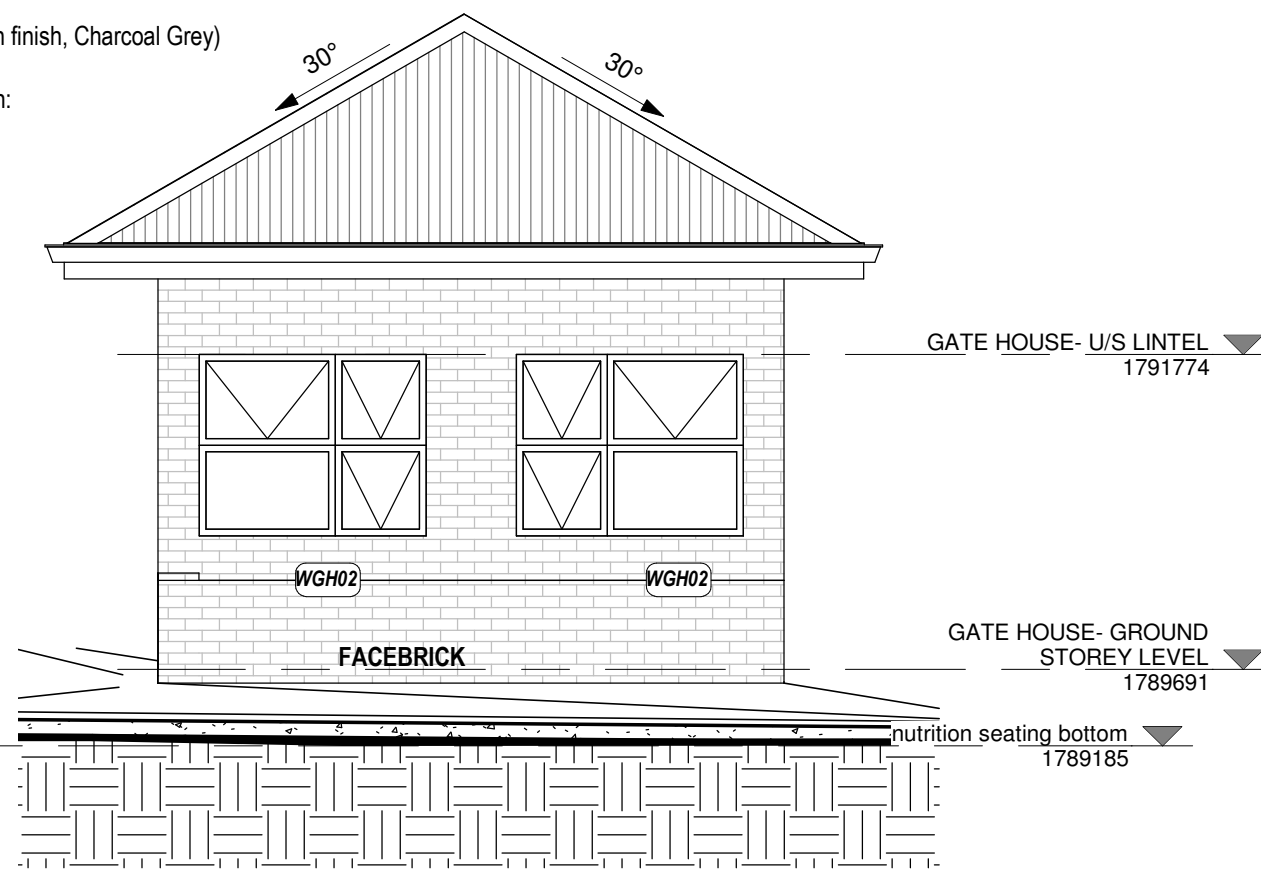
## GATE HOUSE- WEST ELEVATION

Scale 1 : 50



## GATE HOUSE- EAST ELEVATION

Scale 1 : 50



## GATE HOUSE- WEST ELEVATION

Scale 1 : 50

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THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF ALL ELEMENTS OF THE BUILDING, OR BUILDINGS, OR ANY OTHER STRUCTURAL ARCHITECTURAL, INTERIOR, SHOP FITTING, JOINERY, SITE AND EXTERNAL COMPONENTS INCLUDING FOUNDATIONS, INTERNAL & EXTERNAL WALLS, ET AL, WITH PARTICULAR REFERENCE TO ERF BOUNDARIES, BUILDING LINES, SERVITUDES, ETC. NO FOUNDATION OR ANY OTHER PART OF THE BUILDING MAY PROJECT BEYOND THE BOUNDARY OF THE PROPERTY.

REVISIONS		
NO.	DATE	DESCRIPTION

ARCHITECT SIGNATURE CLIENT SIGNATURE



TEL: +27 45 838 3544  
TEL: +27 82 807 1029  
PO Box 2296, Komani,  
5600  
SACAP 5713

84 Prince Alfred Street  
Queens town  
Easter Cape, RSA, 5322  
SACAP 5713

DESIGNED BY:	Designer	CHECKED BY:	Checker
		DATE:	2022-03-03 8:25:40 AM

PROJECT:  
PROSPECT JUNIOR SECONDARY  
SCHOOL

PROJECT ADDRESS:  
EASTERN CAPE

DRAWING TITLE  
**GATE HOUSE\_ FLOOR PLAN,  
SECTIONS & ELEVS**

SCALE @ A1:	DATE ISSUED:	PROJECT REF:
As indicated	2022-03-03 8:25:40 AM	<b>1148</b>

DRAWING NUMBER <b>00-04</b>	REVISION
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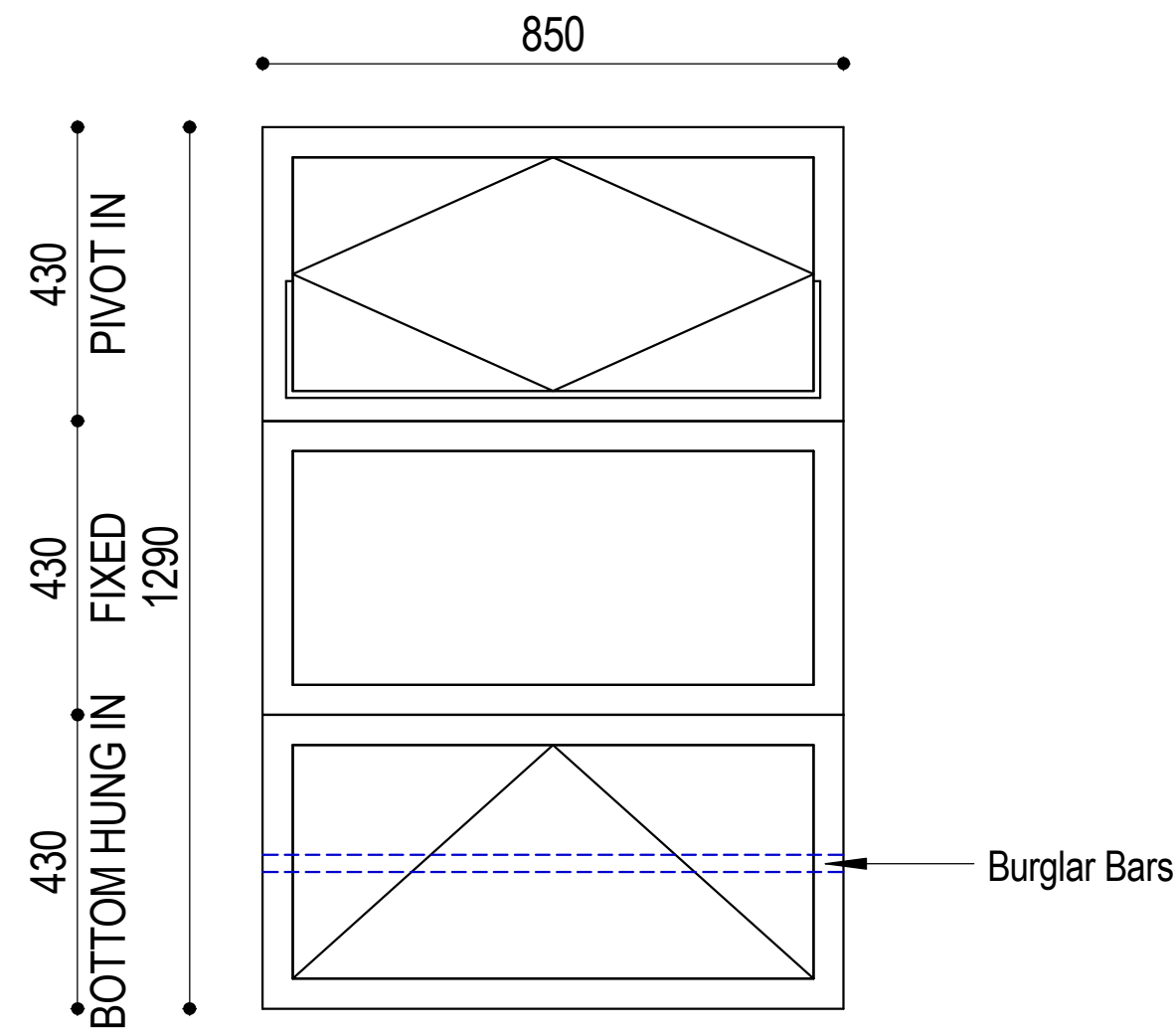
**PRE-TENDER**

DISCIPLINE  
**ARCHITECT**

DISCIPLIN  
E CODE:  
**MEC**

DRAWING  
STATUS

SPECIFIED TRADE NAMES OR SIMILAR APPROVED



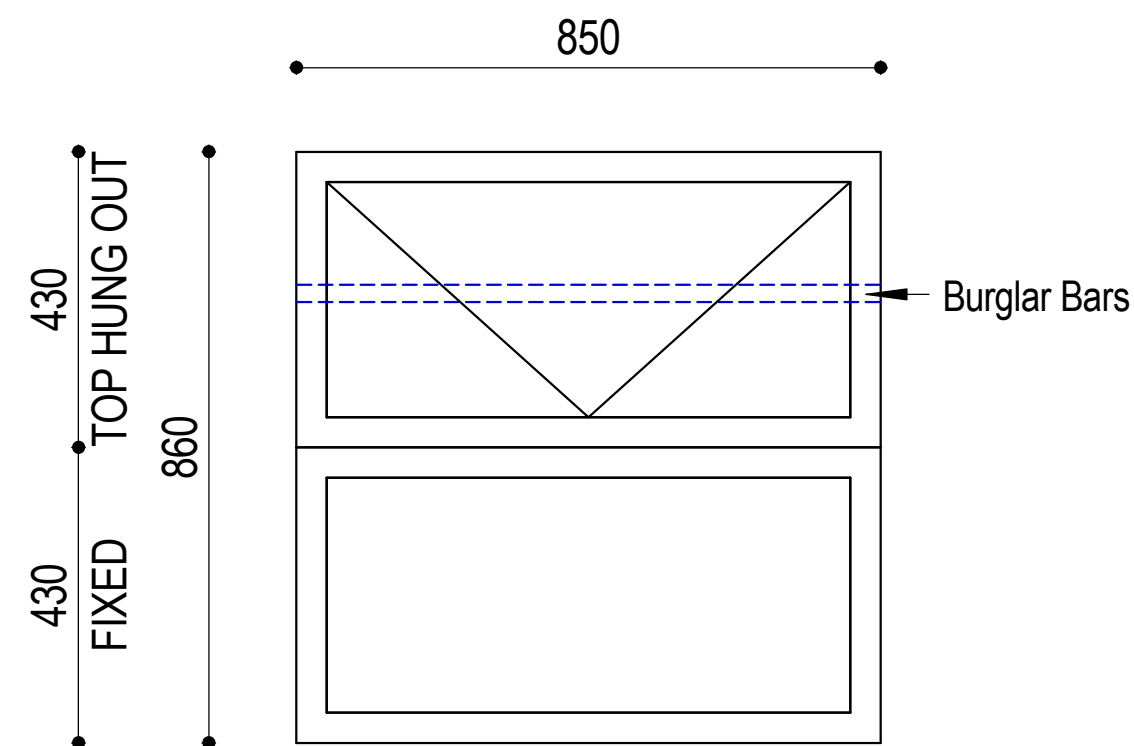
Fenestration area = 1.10m²

DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> Custom 850x1290mm Aluminium frame fitted with:  1x pivot-in panel, 1x fixed panel & 1x bottom hung-in panel.  Fitted to AAAMSA standard specifications.  <b>FINISH:</b> Powder coated White as per AAAMSA standard specifications & SANS 1796.	None. (Size: <b>850mm x 1290mm</b> )
	<b>GLAZING</b>
	6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.  25mm Wide burglar proof bar as indicated.
	<b>GENERAL</b>
	<b>ALL TO SANS 10400 &amp; AAAMSA REGULATIONS!</b>

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029    Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	WINDOW TYPE A	40-01	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:44:57 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		



SPECIFIED TRADE NAMES OR SIMILAR APPROVED

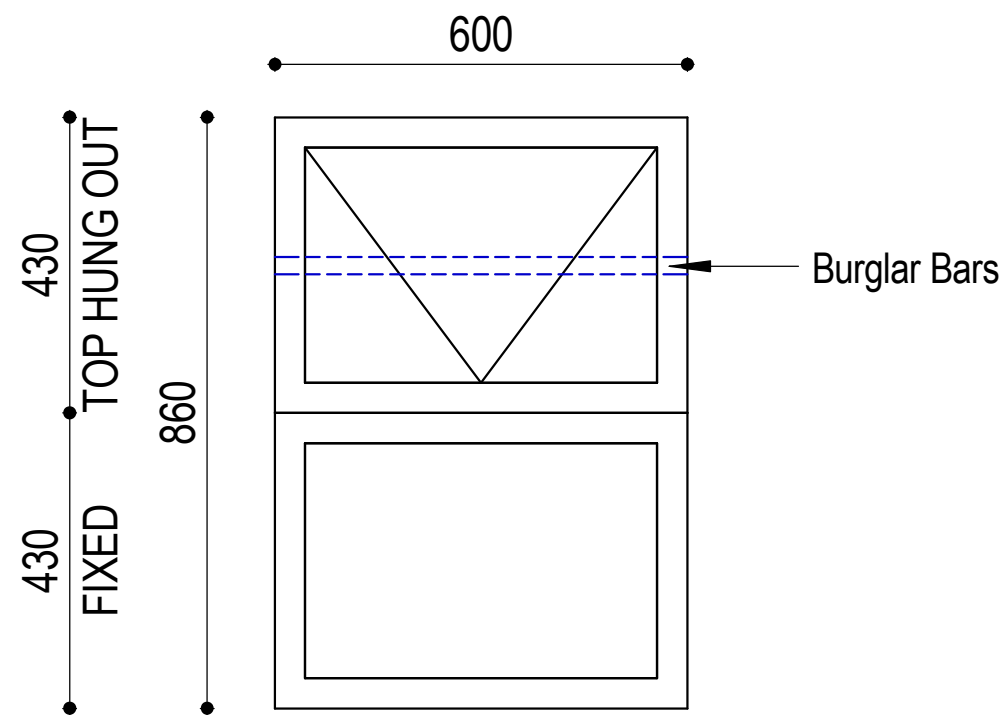


Fenestration area = 0.73m²

DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> Custom 850x860mm Aluminium frame fitted with:  1x top hung-out panel & 1x fixed panel.  Fitted to AAAMSA standard specifications.  <b>FINISH:</b> Powder coated White as per AAAMSA standard specifications & SANS 1796.	None. (Size: <b>850mm x 860mm</b> )
	<b>GLAZING</b>
	6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.
	<b>GENERAL</b>
	25mm Wide burglar proof bar as indicated.
	<b>ALL TO SANS 10400 &amp; AAAMSA REGULATIONS!</b>

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	WINDOW TYPE B	40-02	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:44:58 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		

SPECIFIED TRADE NAMES OR SIMILAR APPROVED

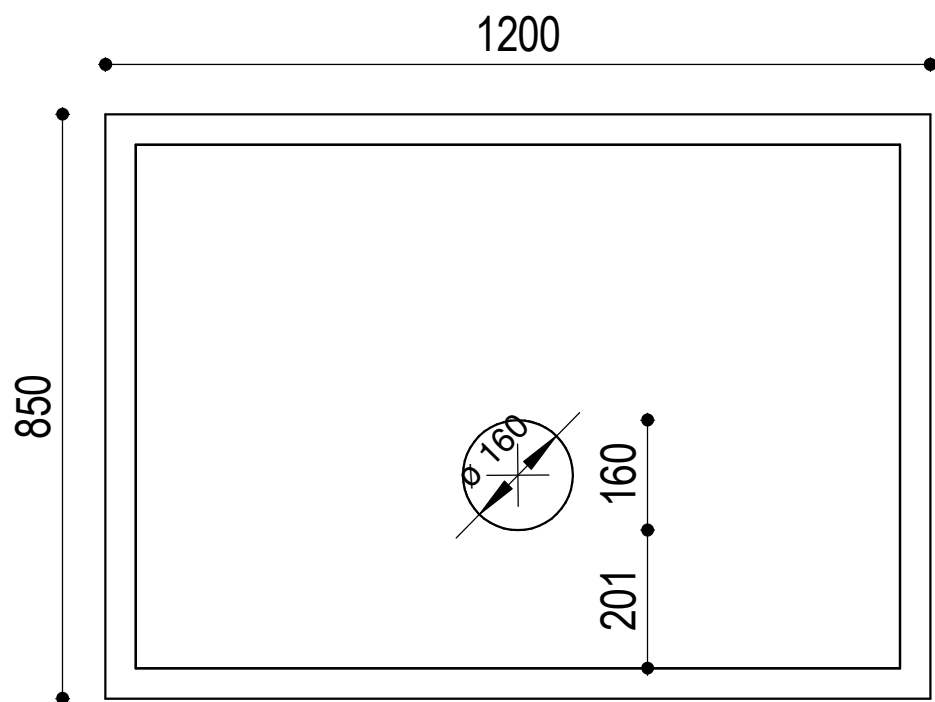


Fenestration area = 0.52m²

DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> Custom 600x860mm Aluminium frame fitted with:  1x top hung-out panel & 1x fixed panel.  Fitted to AAAMSA standard specifications.  <b>FINISH:</b> Powder coated White as per AAAMSA standard specifications & SANS 1796.	None. (Size: <b>600mm x 860mm</b> )
	<b>GLAZING</b>
	6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.
	<b>GENERAL</b> 25mm Wide burglar proof bar as indicated.
	<b>ALL TO SANS 10400 &amp; AAAMSA REGULATIONS!</b>

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029    Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	WINDOW TYPE C	40-03	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:44:58 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	

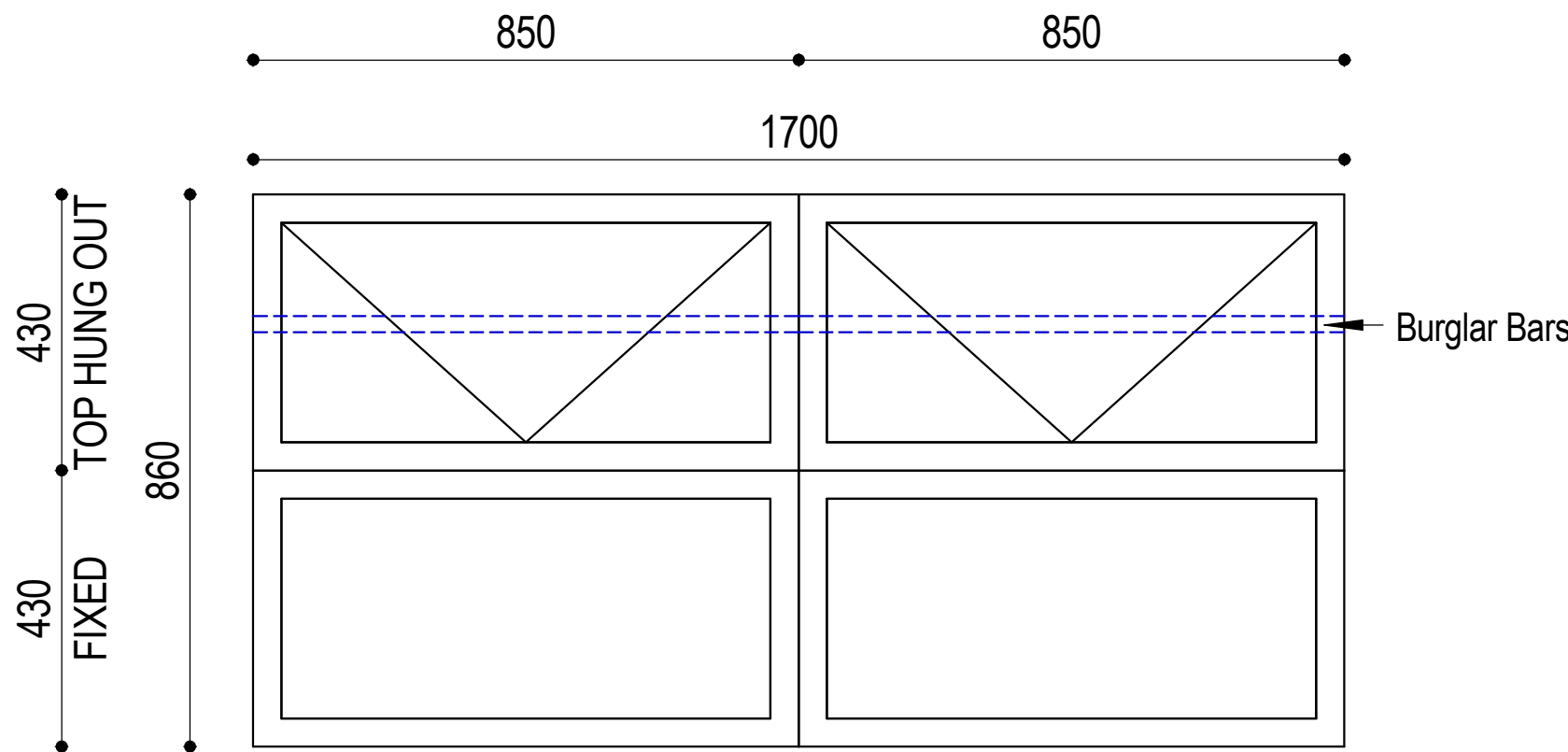
SPECIFIED TRADE NAMES OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> Custom 1200x850mm Aluminium frame (with 175mm opening between frame and counter) fitted with:  1x fixed panel with 80mm radius talking hole.  Fitted to AAAMSA standard specifications.  <b>FINISH:</b> Powder coated White as per AAAMSA standard specifications & SANS 1796.	None. (Size: <b>1200mm x 850mm</b> )
	<b>GLAZING</b>
	6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.
	<b>GENERAL</b>
	None.
	<b>ALL TO SANS 10400 &amp; AAAMSA REGULATIONS!</b>

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	WINDOW TYPE D	40-04	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:44:58 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	

SPECIFIED TRADE NAMES OR SIMILAR APPROVED

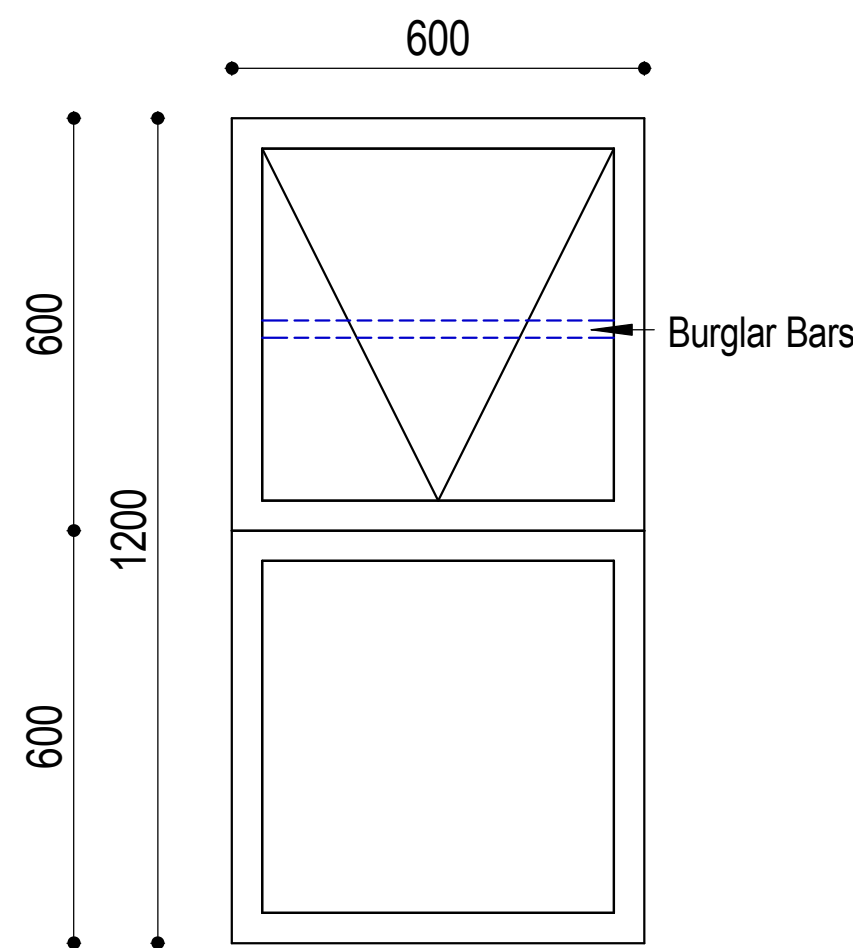


Fenestration area = 1.46m²

DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> Custom 860x1700mm Aluminium frame fitted with:  2x top hung-out panels & 2x fixed panels.  Fitted to AAAMSA standard specifications.  <b>FINISH:</b> Powder coated White as per AAAMSA standard specifications & SANS 1796.	None. (Size: <b>860mm x 1700mm</b> )
	<b>GLAZING</b>
	6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.
	<b>GENERAL</b>
	25mm Wide burglar proof bar as indicated.
	<b>ALL TO SANS 10400 &amp; AAAMSA REGULATIONS!</b>

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029    Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	WINDOW TYPE E	40-05	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:44:59 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	

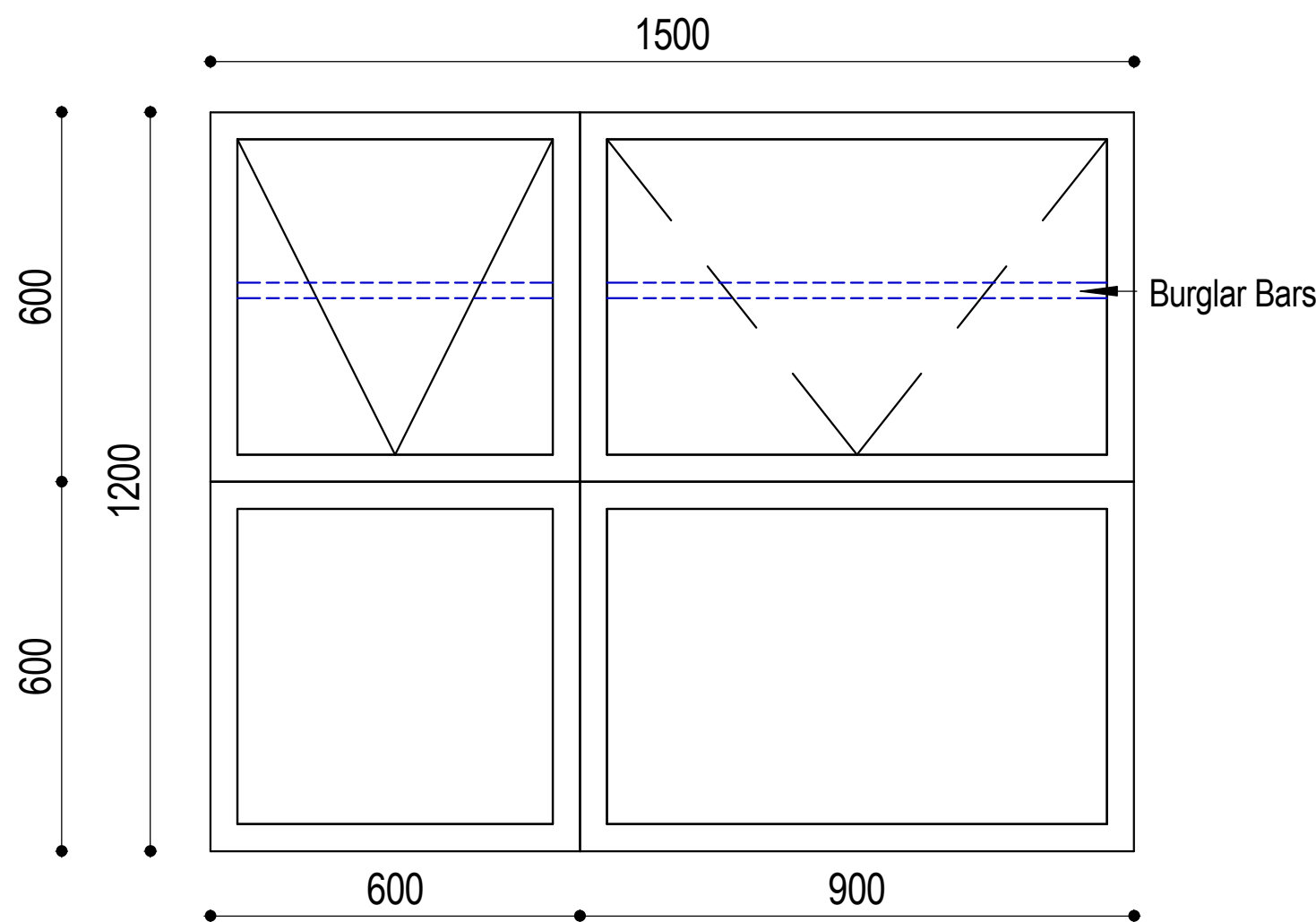
SPECIFIED TRADE NAMES OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> Custom 1200x600mm Aluminium frame fitted with:  1x top hung-out panel & 1x fixed panels.  Fitted to AAAMSA standard specifications.  <b>FINISH:</b> Powder coated White as per AAAMSA standard specifications & SANS 1796.	None. (Size: <b>1200mm x 600mm</b> )
	<b>GLAZING</b>
	6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.
	<b>GENERAL</b>
	25mm Wide burglar proof bar as indicated.
	<b>ALL TO SANS 10400 &amp; AAAMSA REGULATIONS!</b>

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029    Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	WINDOW TYPE F	40-06	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:44:59 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		

SPECIFIED TRADE NAMES OR SIMILAR APPROVED

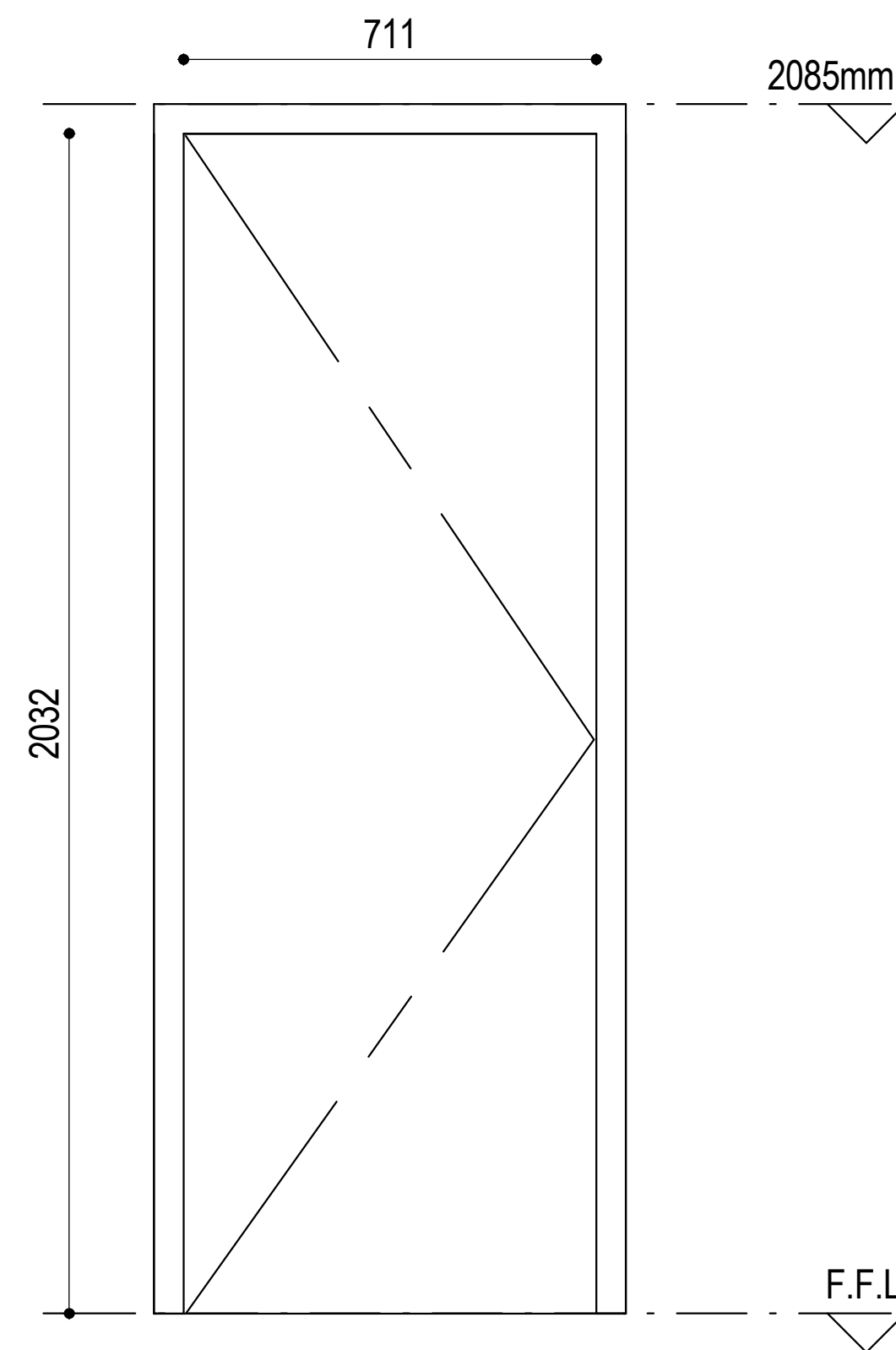


DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> Custom 1200x1500mm Aluminium frame fitted with:  2x top hung-out panel & 2x fixed panels.  Fitted to AAAMSA standard specifications.  <b>FINISH:</b> Powder coated White as per AAAMSA standard specifications & SANS 1796.	None. (Size: 1200mm x 1500mm)
	<b>GLAZING</b>
	6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.
	<b>GENERAL</b>
	25mm Wide burglar proof bar as indicated.
	<b>ALL TO SANS 10400 &amp; AAAMSA REGULATIONS!</b>


SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	WINDOW TYPE G	40-07	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:44:59 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		



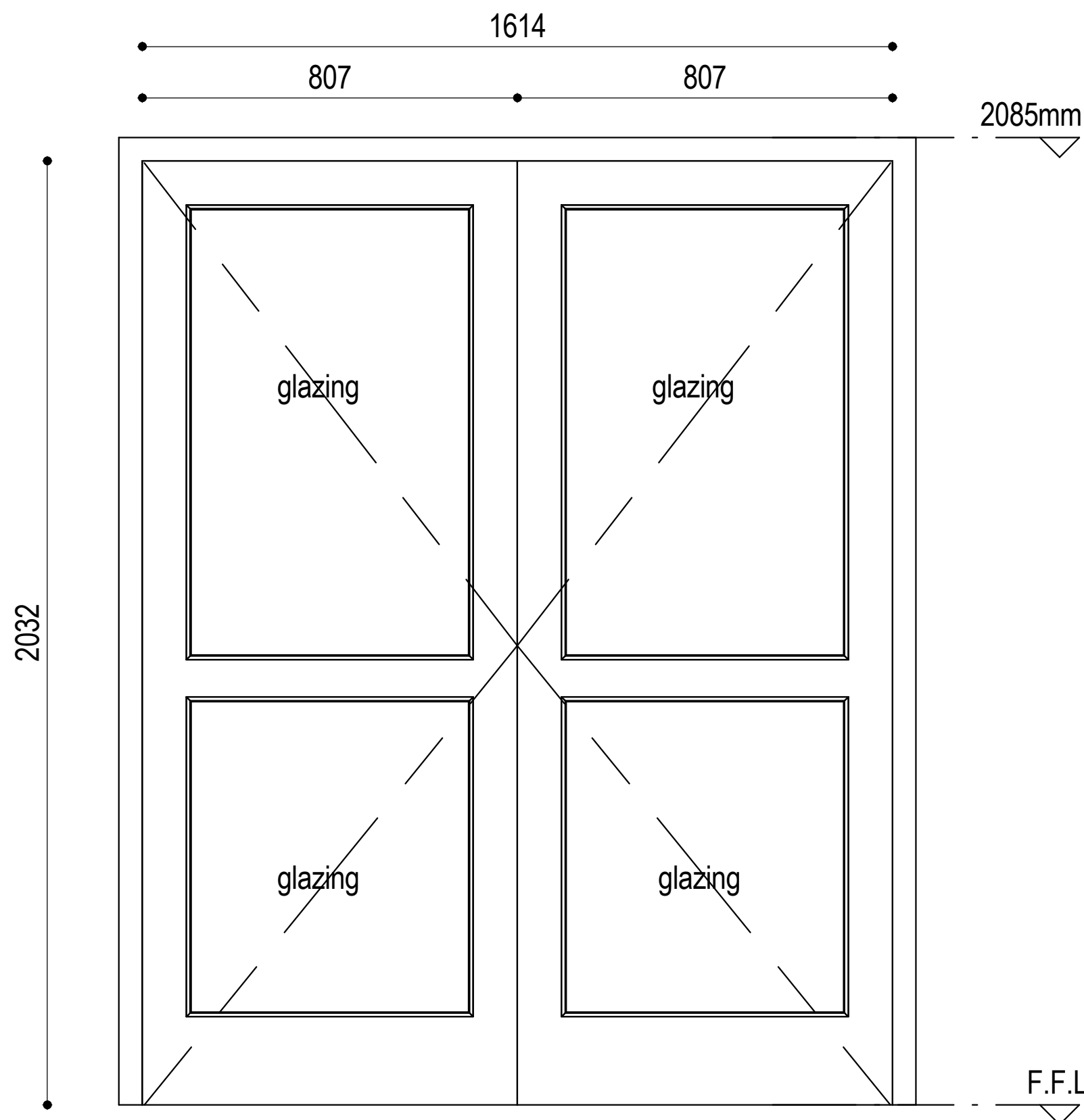
**SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED**



DESCRIPTION	MANUFACTURER CODE
<p><b>FRAME:</b> 100x65mm MERANTI hardwood frame, sanded down and prepare for paint. Finish with 1x universal undercoat and 2x coats approved enamel paint. (Colour as per Architects spec.)</p> <p><b>DOOR:</b> 44mm Solid Core MERANTI hardwood Flush panel door, edged with 5mm MERANTI edging on all sides. Sand down surface and prepare for paint. Finish with 1x universal undercoat and 2x coats approved enamel paint. (Colour as per Architects spec.)</p>	<p>None. (Panel size: <b>813 x 2032mm</b>)</p>
	<p><b>GLAZING &amp; GENERAL</b></p> <p><b>GENERAL:</b> 3x Solid BRASS hinges. Ironmongery as per Schedule.</p>

SCALE	DRAWING DESCRIPTION	DRAWING NO	 <p>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</p>
1 : 20	DOOR TYPE A	45-01	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:45:00 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		

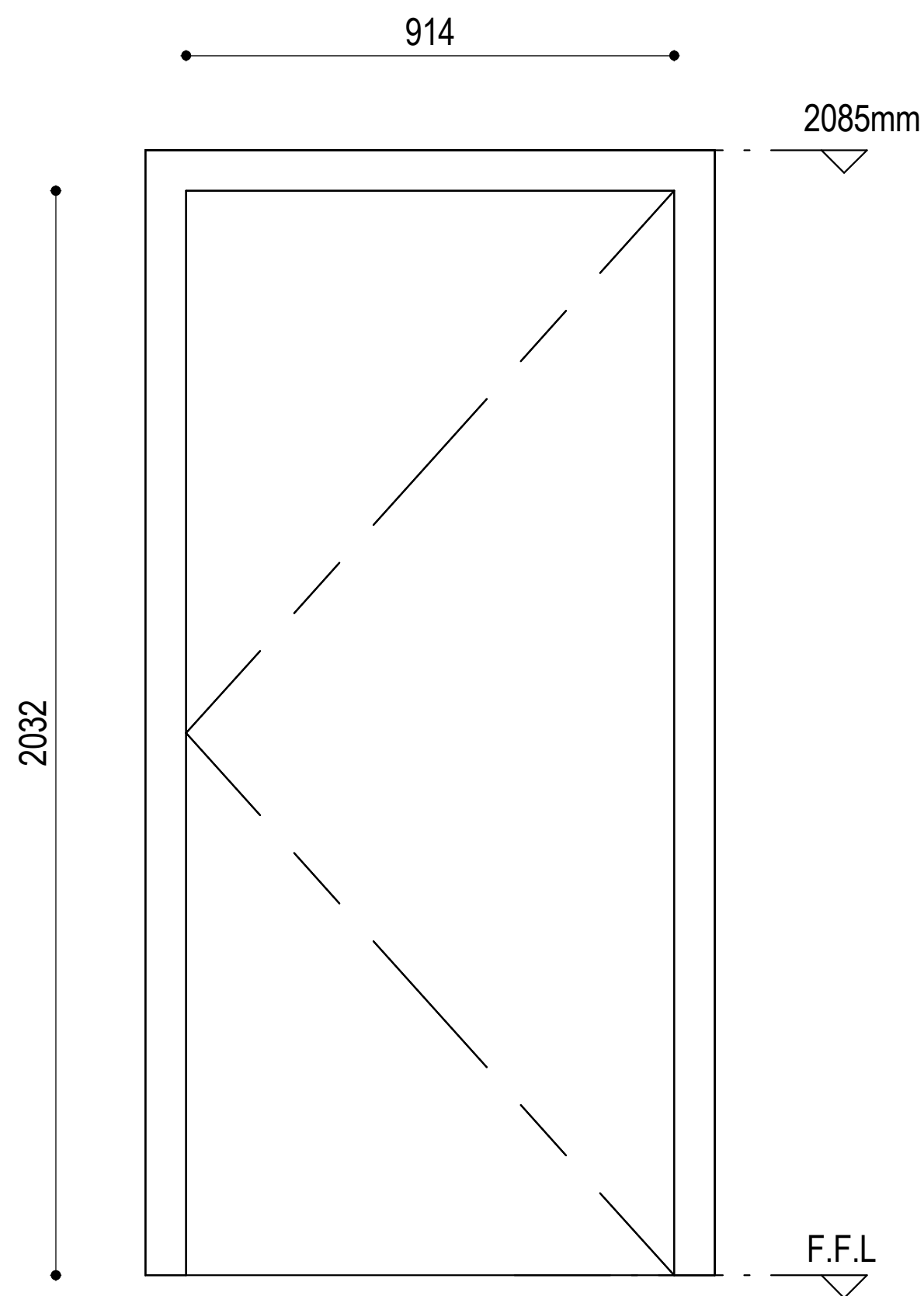
SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> 100x65mm MERANTI hardwood frame, sanded down and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surfaces.	None. (Panel size: <i>Two 813mm x 2032mm</i> ) Each 813mm panel to get 12mm center rebate = 801mm on one side.
<b>DOOR:</b> 44mm Solid MERANTI hardwood Double door as shown with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 2x glass panes per leaf. Sand down surface and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surface.	<b>GLAZING &amp; GENERAL</b>  <b>GLAZING:</b> 6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner. Timber beading for glazing to be fitted on the inside of the building.  <b>GENERAL:</b> 3x Solid BRASS hinges.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</div>
1 : 20	DOOR TYPE B	45-02	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:51:00 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	

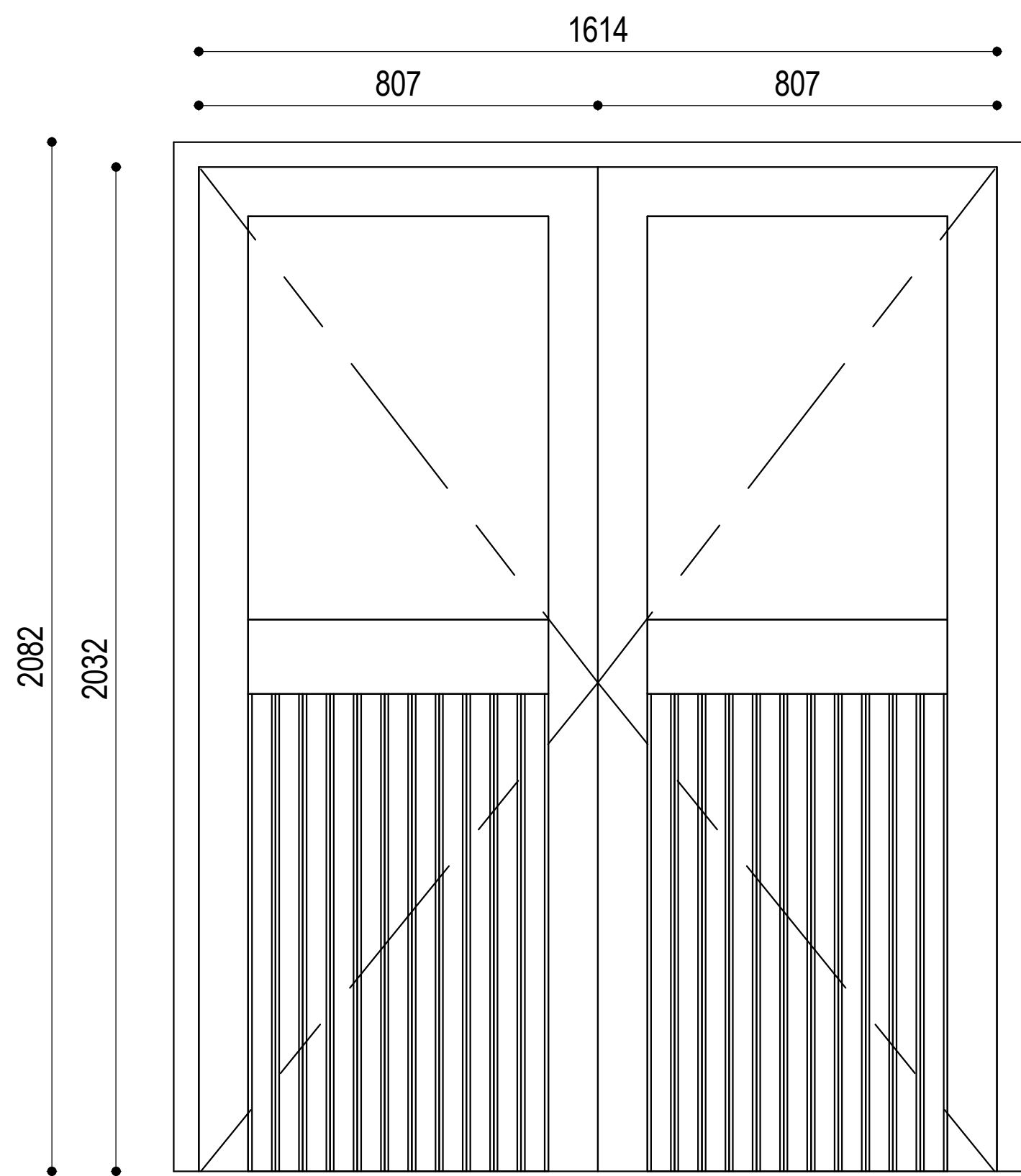
SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>DOOR:</b> Mutual SABS Cat 2 Strongroom door or similar approved. Door thickness = 106mm Over Plate = 12mm 7 lever security key lock,	Ref: MSRDS3
	<b>GLAZING &amp; GENERAL</b>
	<b>GENERAL:</b> None.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <p>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</p>
1 : 20	DOOR TYPE C	45-03	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:45:00 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		

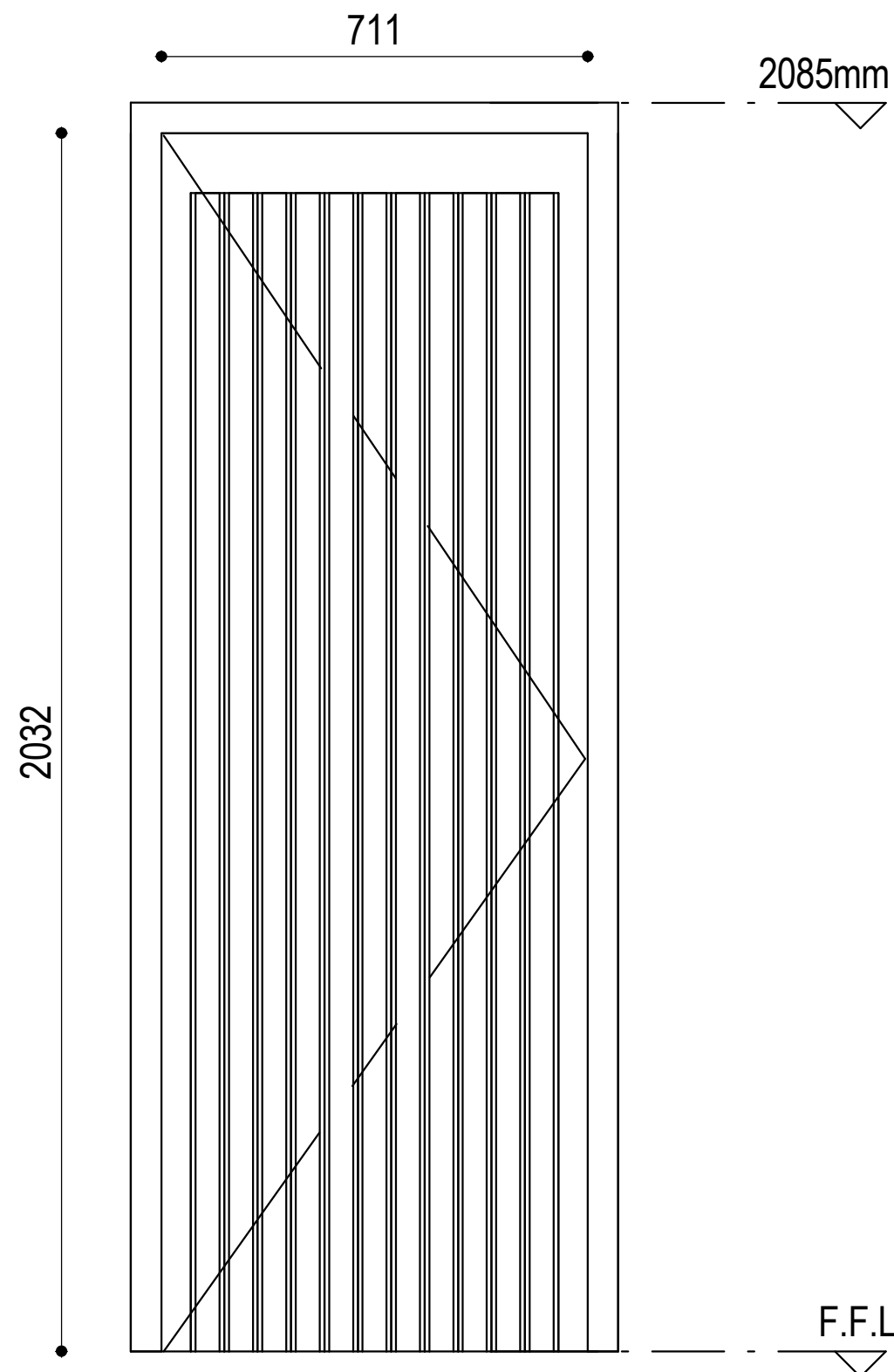
SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> 100x65mm MERANTI hardwood frame, sanded down and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surface.  <b>DOOR:</b> 44mm Solid MERANTI hardwood FL&B door panel with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 100mm diagonal bracing with 2x screws into each T&G (19mm V-Tongue & Grooved vertical boarding). Sand down surface and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surface.	None. (Panel size: <i>Two 813mm x 2032mm</i> ) Each 813mm panel to get 12mm center rebate = 801mm on one side.
	<b>GLAZING &amp; GENERAL</b>
	<b>GLAZING:</b> 6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner.  <b>GENERAL:</b> 3x Solid BRASS hinges. Ironmongery as per Schedule.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</div>
1 : 20	DOOR TYPE D	45-04	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:45:01 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	

SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> 100x65mm MERANTI hardwood frame, sanded down and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surface.  <b>DOOR:</b> 44mm Solid MERANTI hardwood FL&B door panel with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 100mm diagonal bracing with 2x screws into each T&G (19mm V-Tongue & Grooved vertical boarding). Sand down surface and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surface.	None. (Panel size: <b>813x2032mm</b> )
	<b>GLAZING &amp; GENERAL</b>  <b>GENERAL:</b> 3x Solid BRASS hinges. Ironmongery as per Schedule.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</div>
1 : 20	DOOR TYPE E	45-05	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:45:01 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	



1682

1225

457

2406

203

2000

203

DESCRIPTION

MANUFACTURER CODE

DOOR:

Push-up operational.

Manufacturered from 60mm x 1.6mm light extruded, solid Aluminium slats. (to be approved)

Powder coated Matt Black finish.

None. (Panel size: 2000 x 1225mm)

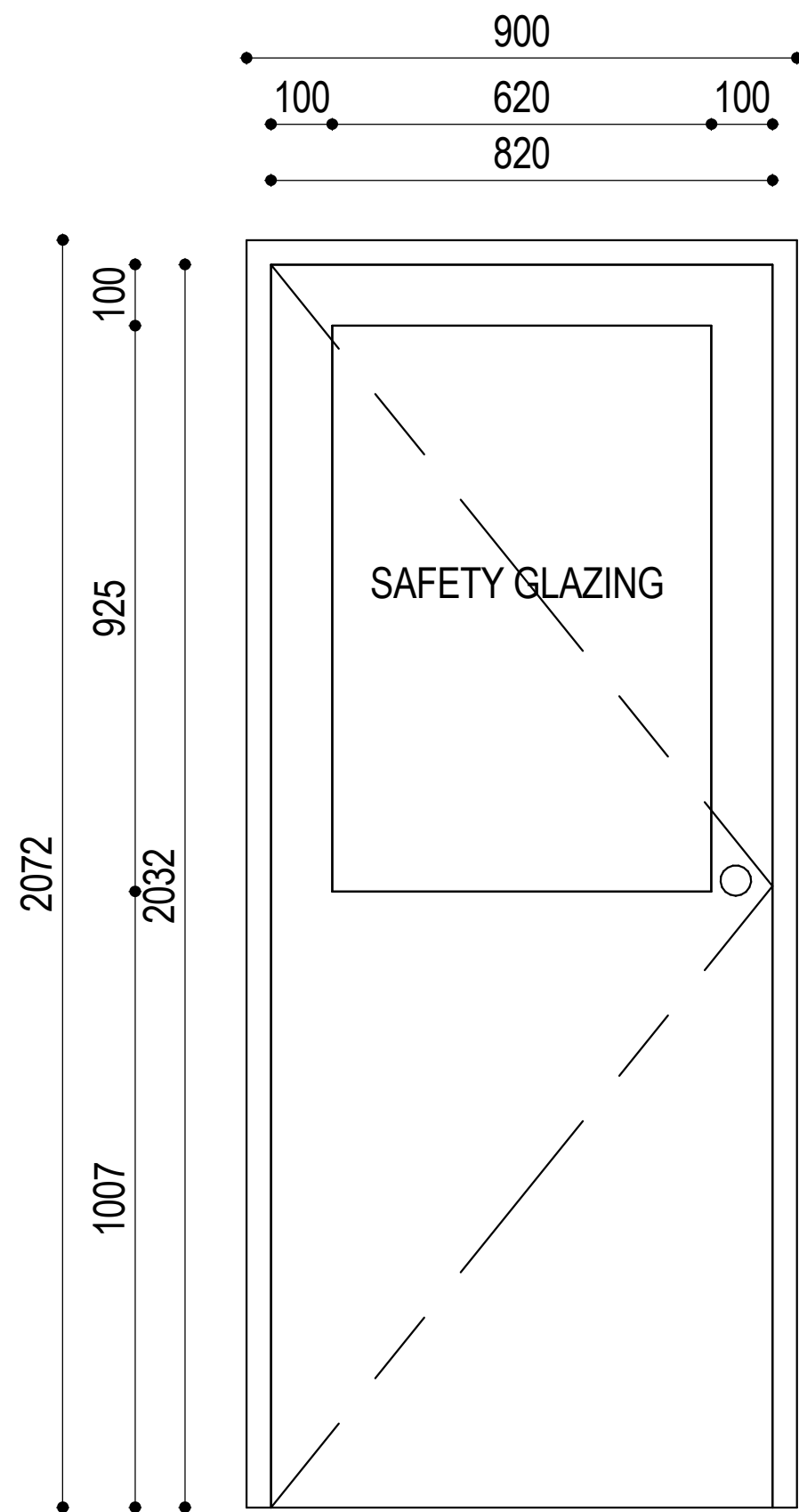
GLAZING & GENERAL

GENERAL:

None.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div><div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</div></div>
1 : 20	DOOR TYPE F	45-06	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:45:02 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	

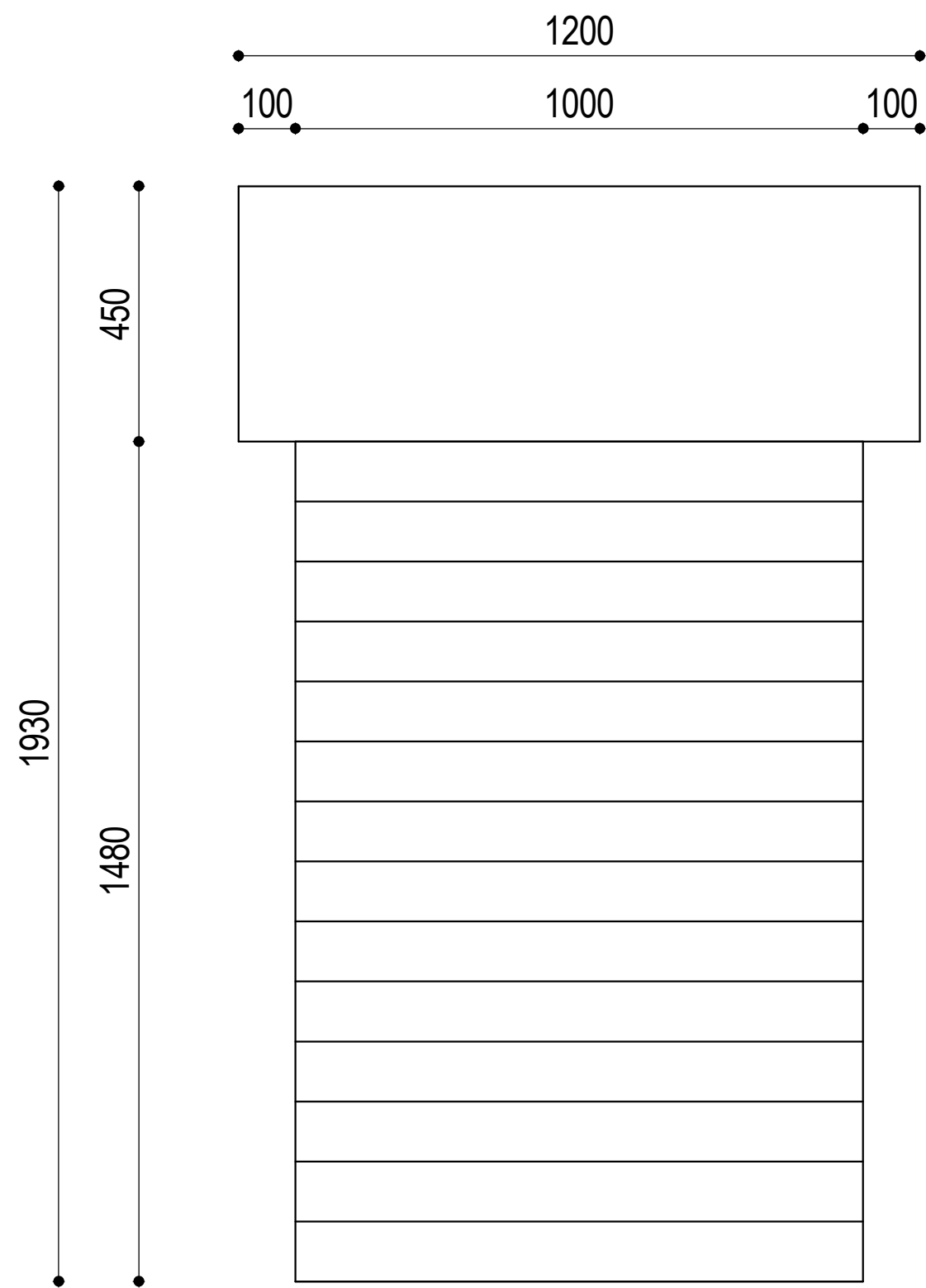
SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> 100x65mm MERANTI hardwood frame, sanded down and prepare for paint. Finish with 1x universal undercoat and 2x coats approved enamel paint. (Colour as per Architects spec.)  <b>DOOR:</b> 44mm Solid Core MERANTI hardwood Flush panel door, edged with 5mm MERANTI edging on all sides. Sand down surface and prepare for paint. Finish with 1x universal undercoat and 2x coats approved enamel paint. (Colour as per Architects spec.)	None. (Panel size: <b>813 x 2032mm</b> )
	<b>GLAZING &amp; GENERAL</b>  <b>GLAZING:</b> 6.38mm Safety Glazing fitted to SABS 1263 and SANS 10400 specifications, with safety glass edging in bottom right corner. Timber beading for glazing to be fitted on the inside of the building.  <b>GENERAL:</b> 3x Solid BRASS hinges.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <p>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</p>
1 : 20	DOOR TYPE G	45-07	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION	
DATE	2017/01/20 08:45:02 AM	PT00	
DRAWN	RN CARELSE	PROJECT NR	
ISSUED	M HELM	1148	

SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED

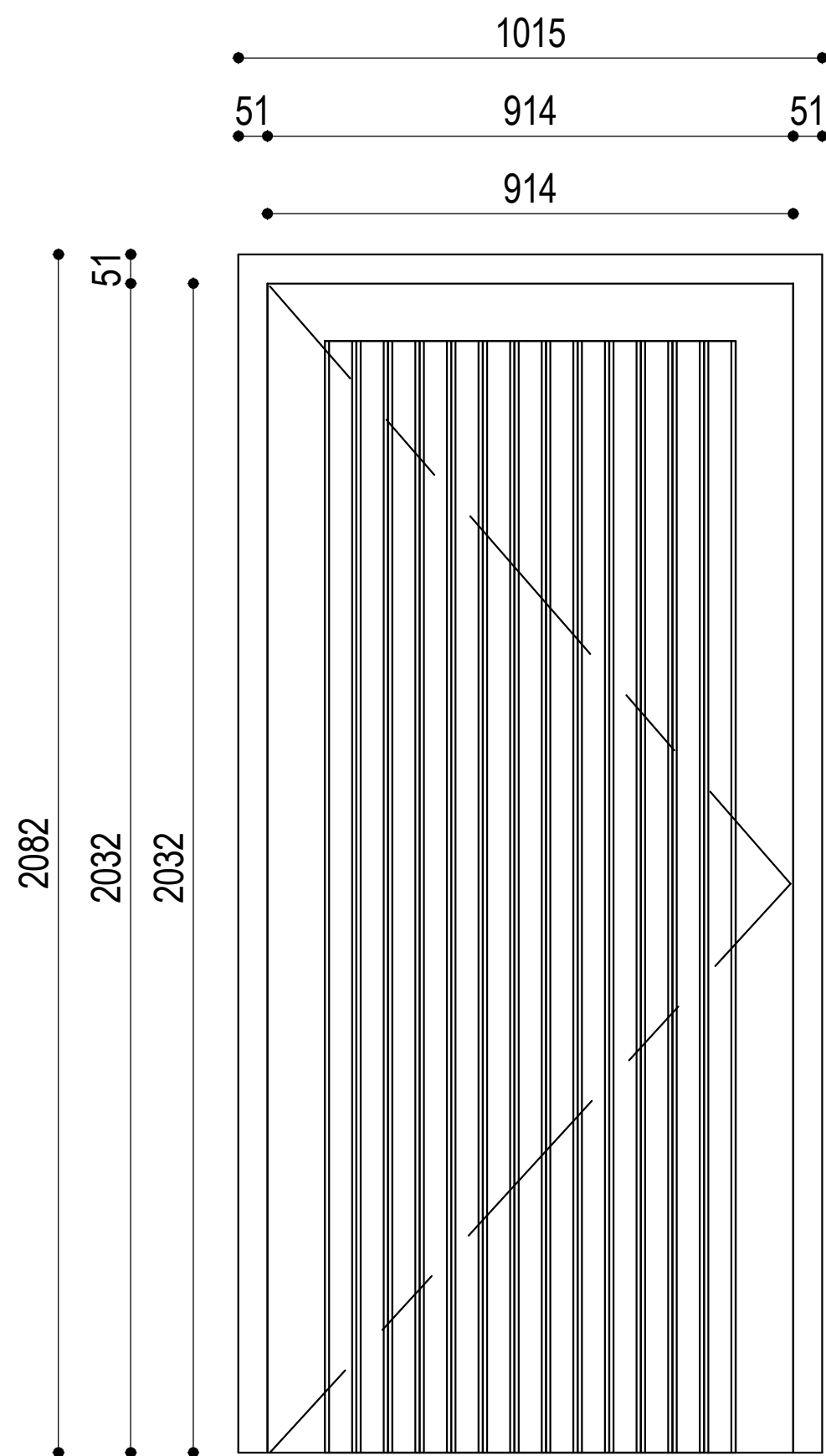


DESCRIPTION	MANUFACTURER CODE
<b>DOOR:</b> Push-up operational. Manufactured from 60mm x 1.6mm light extruded, solid Aluminium slats. (to be approved) Powder coated Matt Black finish.	None. (Panel size: <b>1930 x 1200mm</b> )
	<b>GLAZING &amp; GENERAL</b>
	<b>GENERAL:</b> None.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</div>
1 : 20	DOOR TYPE H	45-08	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:45:02 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		



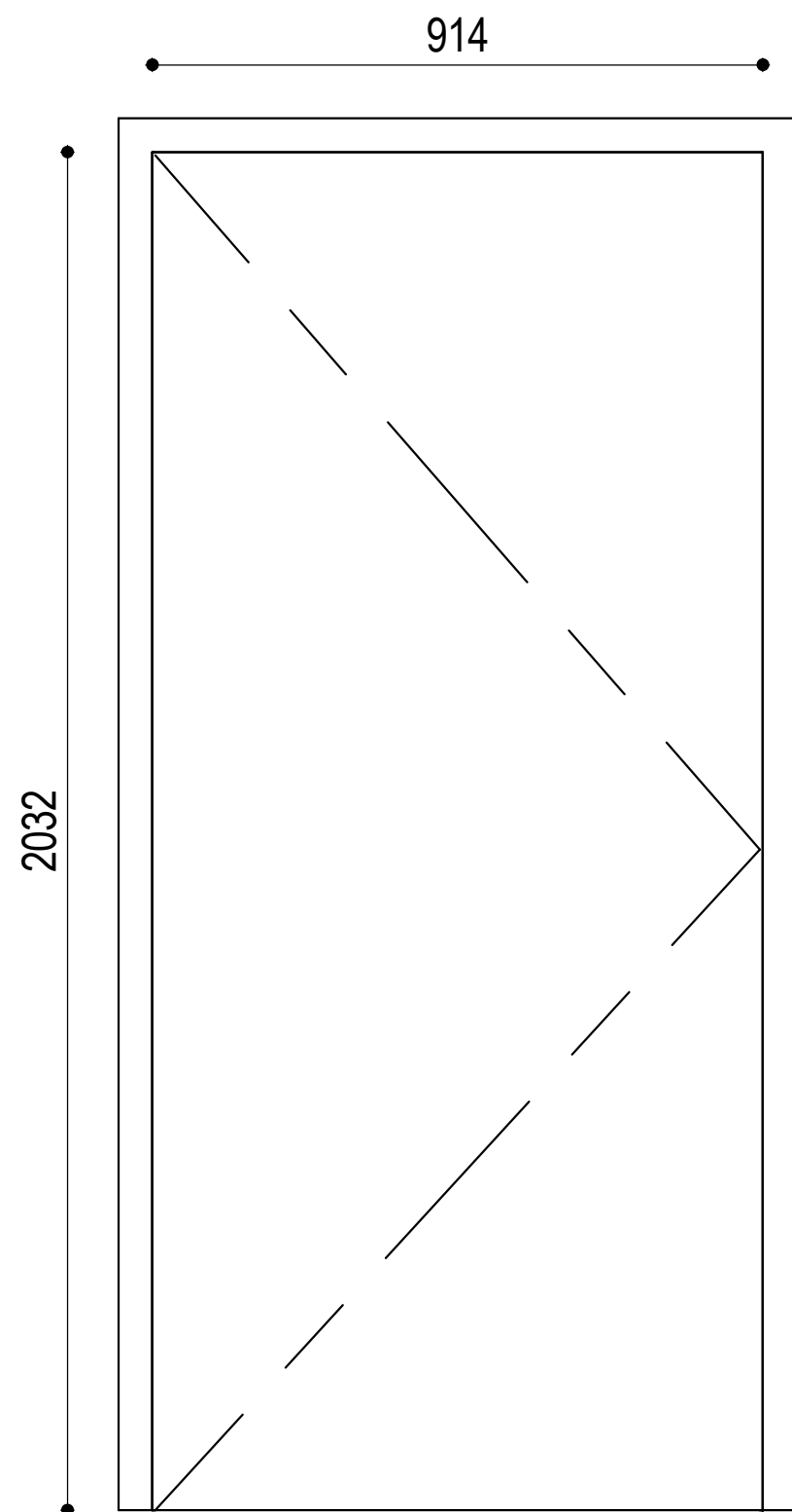
SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> 100x65mm MERANTI hardwood frame, sanded down and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surface.  <b>DOOR:</b> 44mm Solid MERANTI hardwood FL&B door panel with styles 100mm top and sides, 200mm bottom and 150mm middle, joined with Mortice & Tenon joints, where the tenons goes right through the styles and secured on the outside with two wedges each; and 100mm diagonal bracing with 2x screws into each T&G (19mm V-Tongue & Grooved vertical boarding). Sand down surface and prepare for varnish. Finish with 2x coats varnish on smooth sanded down surface.	None. (Panel size: <b>915x2032mm</b> )
	<b>GLAZING &amp; GENERAL</b>
	<b>GENERAL:</b> 3x Solid BRASS hinges. Ironmongery as per Schedule.  <b>ALL TO SANS 10400 REGULATIONS!</b>

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <div>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</div>
1 : 20	DOOR TYPE J	45-09	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:45:03 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		

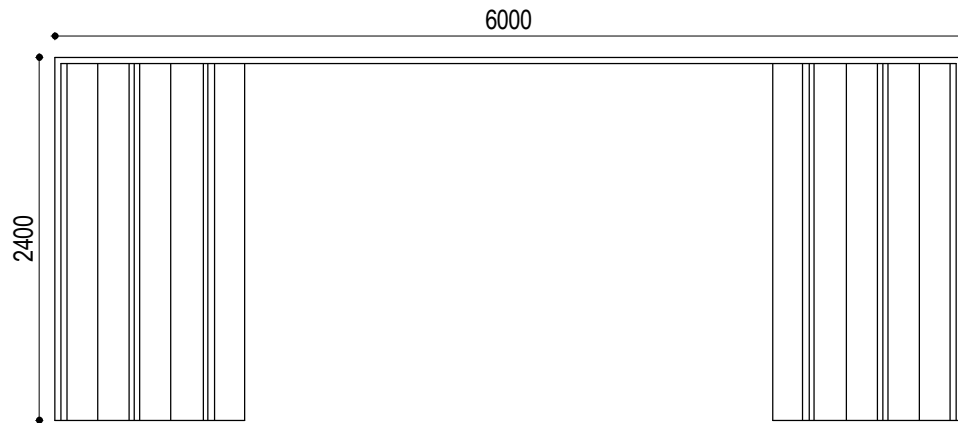
SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



DESCRIPTION	MANUFACTURER CODE
<b>FRAME:</b> 100x65mm MERANTI hardwood frame, sanded down and prepare for paint. Finish with 1x universal undercoat and 2x coats approved enamel paint. (Colour as per Architects spec.)  <b>DOOR:</b> 44mm Solid Core MERANTI hardwood Flush panel door, edged with 5mm MERANTI edging on all sides. Sand down surface and prepare for paint. Finish with 1x universal undercoat and 2x coats approved enamel paint. (Colour as per Architects spec.)	None. (Panel size: <b>914 x 2032mm</b> )
	<b>GLAZING &amp; GENERAL</b>  <b>GENERAL:</b> 3x Solid BRASS hinges. Ironmongery as per Schedule.

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div><div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div><div>HELM ARCHITECTS</div></div> <p>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</p>
1 : 20	DOOR TYPE K	45-10	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/01/20 08:45:04 AM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		


**SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED**

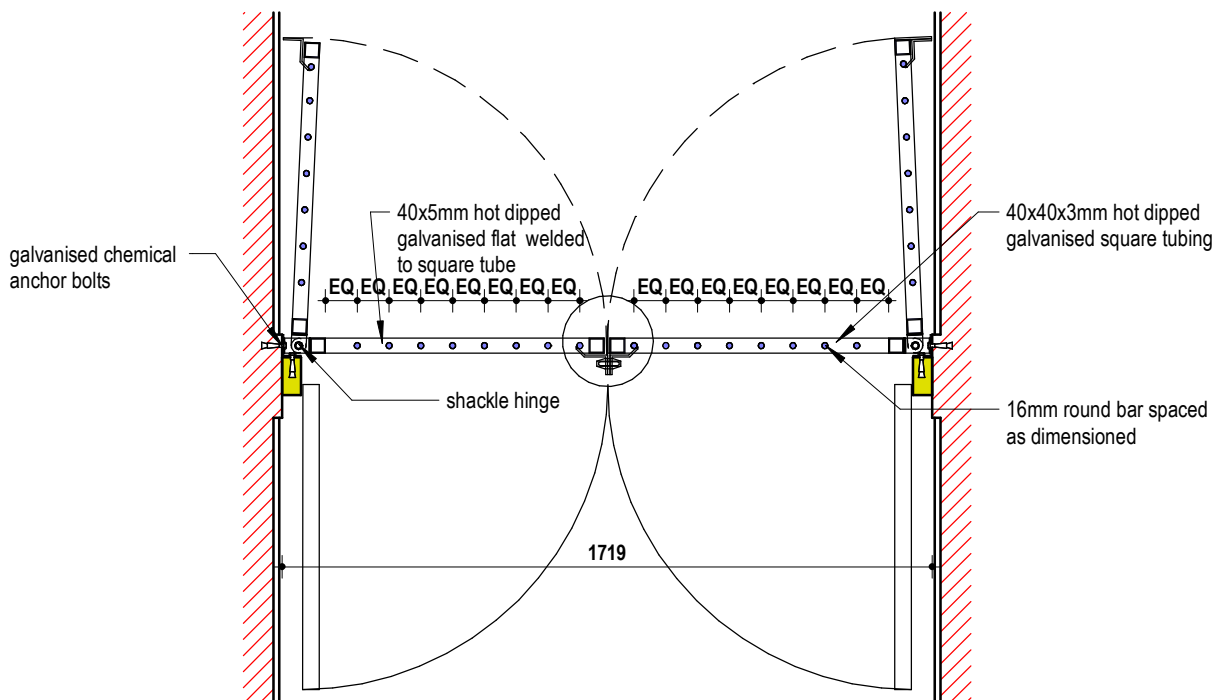
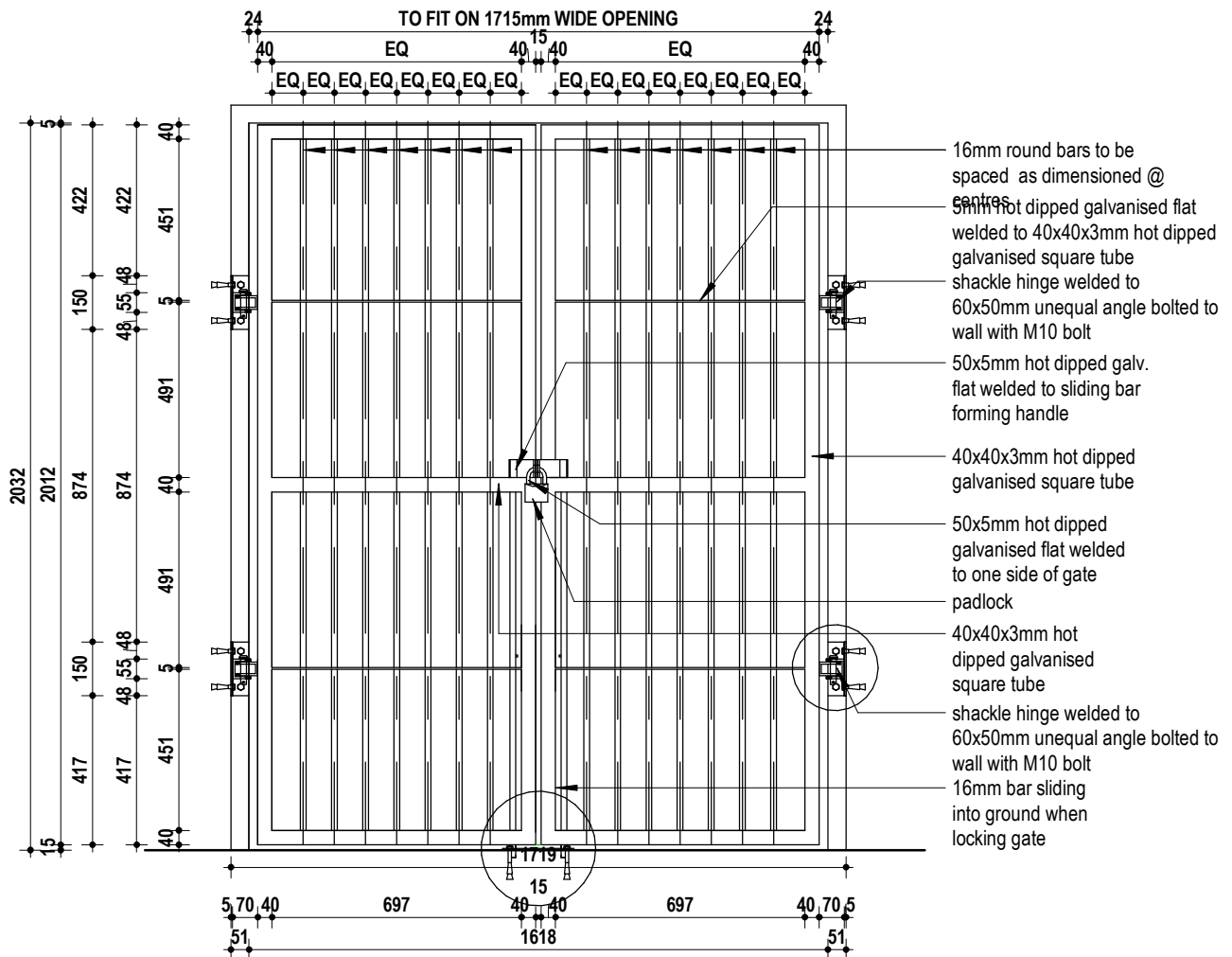



## DOOR TYPE L

Scale 1 : 50

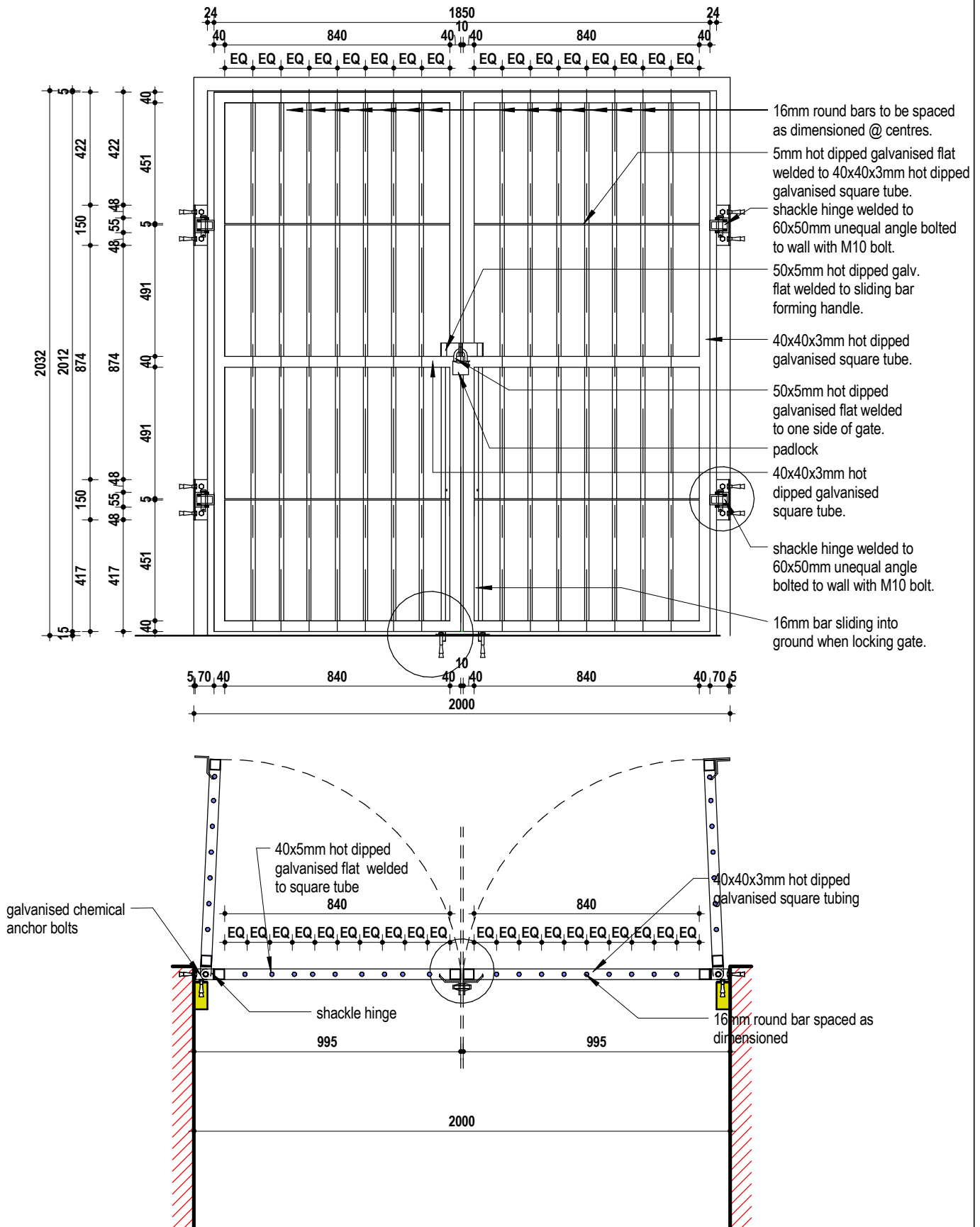
DESCRIPTION	MANUFACTURER CODE
<p>Door</p> <p>Two Bi-fold (5 panel) a side 76mm medium density board systems. Panel frames to be aluminium (powder coated). Writing board face finish.</p> <p>All to manufacturers specifications.(HUFCOR)</p>	<p>None.</p> <p>Opening lenght 6000mm, Opening height 2400mm. Total 10x door panels.</p>
<p>Door Frame</p> <p>Frame as by manufacturer. (Hillaldam)</p>	<p>GLAZING &amp; GENERAL</p> <p>Two Bi-fold doors to come together at center and to be lockable.</p>


SCALE	DRAWING DESCRIPTION	DRAWING NO	 <p>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</p>
1 : 50	DOOR TYPE L	45-11	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT02	
DATE	2017/03/07 02:24:56 PM	PROJECT NR	
DRAWN	MIR	1148	
ISSUED	M HELM		

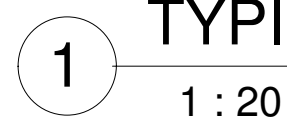
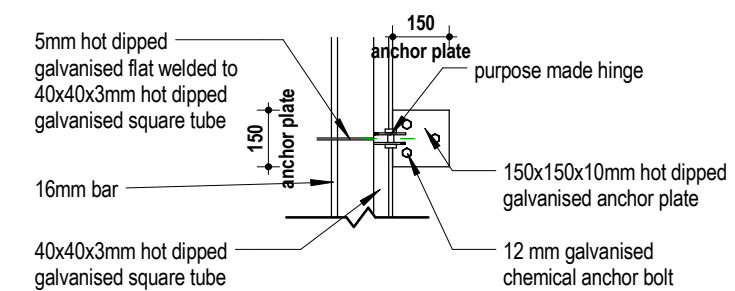


SCALE	DRAWING DESCRIPTION	DRAWING NO	 <p>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</p>
1 : 20	SECURITY GATE G01	45-12	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL(GENERIC JOINERY DETAILS).	REVISION	
DATE	2017/03/28 02:51:10 PM	PT02	
DRAWN	MIR	PROJECT NR	
ISSUE	M Helm (PrArch) MIA	1148	

# SPECIFIED TRADE NAMES OR SIMILAR APPROVED



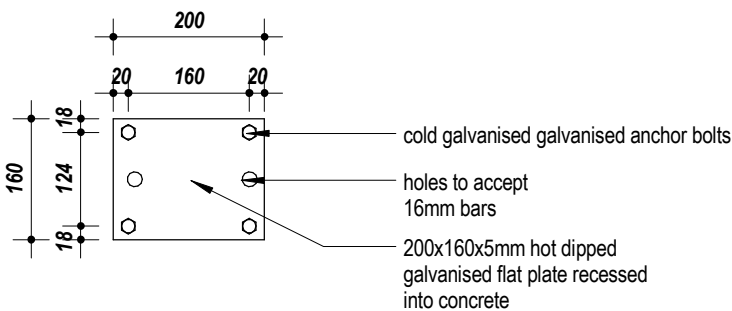
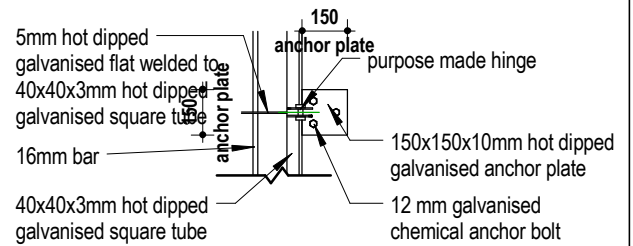
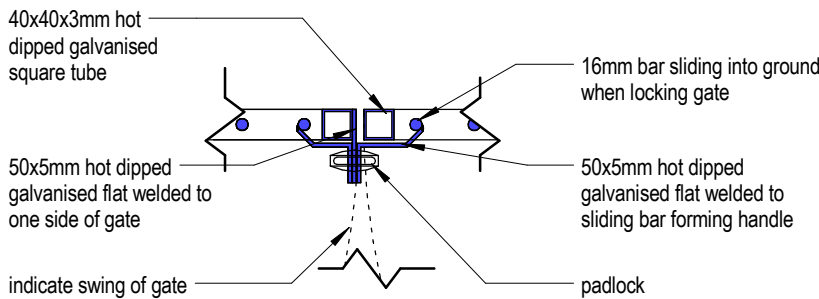
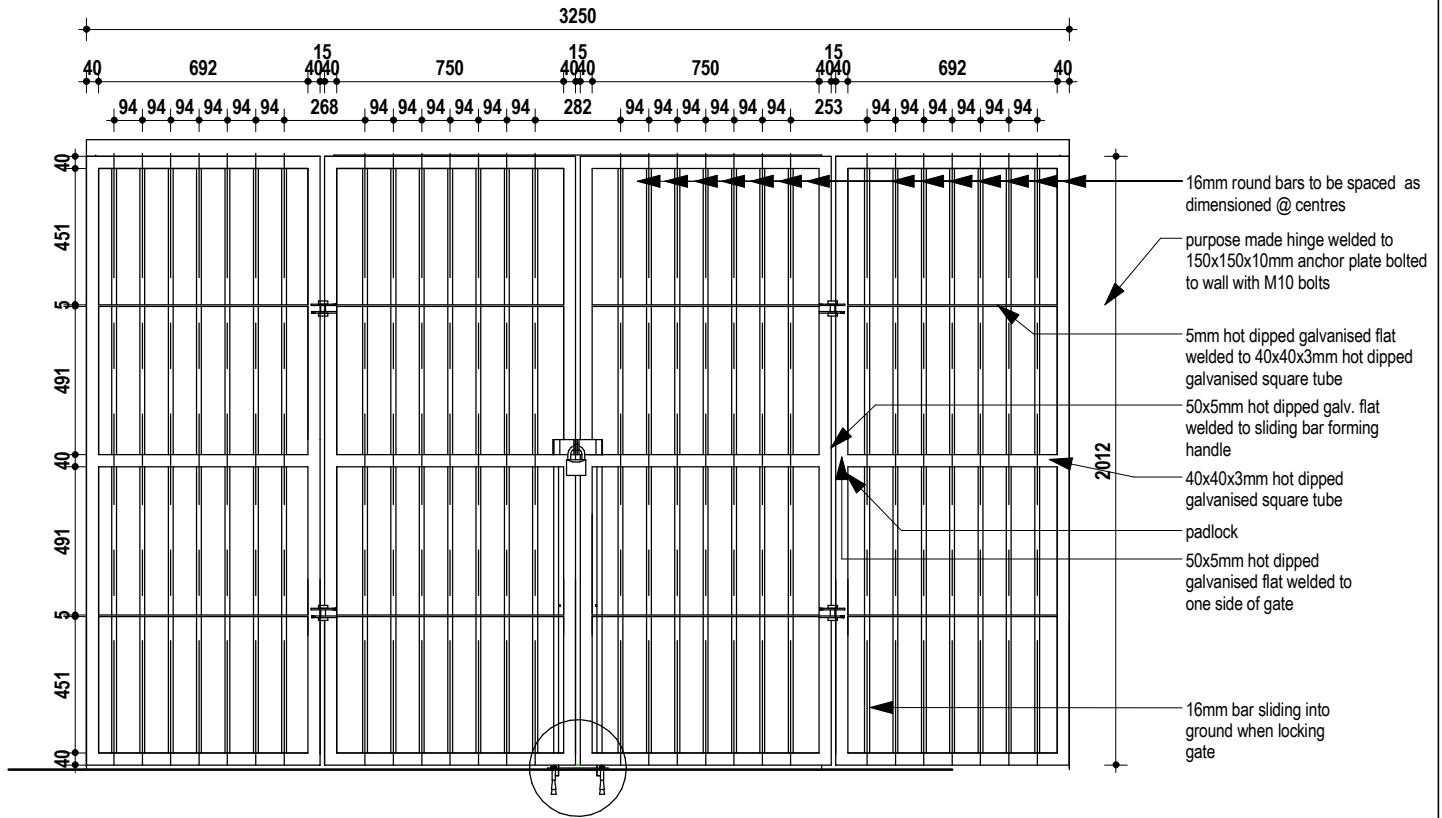
SCALE	DRAWING DESCRIPTION	DRAWING NO	 <p>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: marius@helmarch.co.za</p>
1 : 20	SECURITY GATE DN01, DNO2, DN03	00-04	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL (EMIS 200 501 034)	REVISION	
DATE	2017/03/06 11:13:58 AM	PT02	
DRAWN	MIR	PROJECT NR	
ISSUED	M Helm (PrArch) MIA	1148	




ARCHITECTURE  
ARCHITECTURE  
CREATE  
INNOVATION

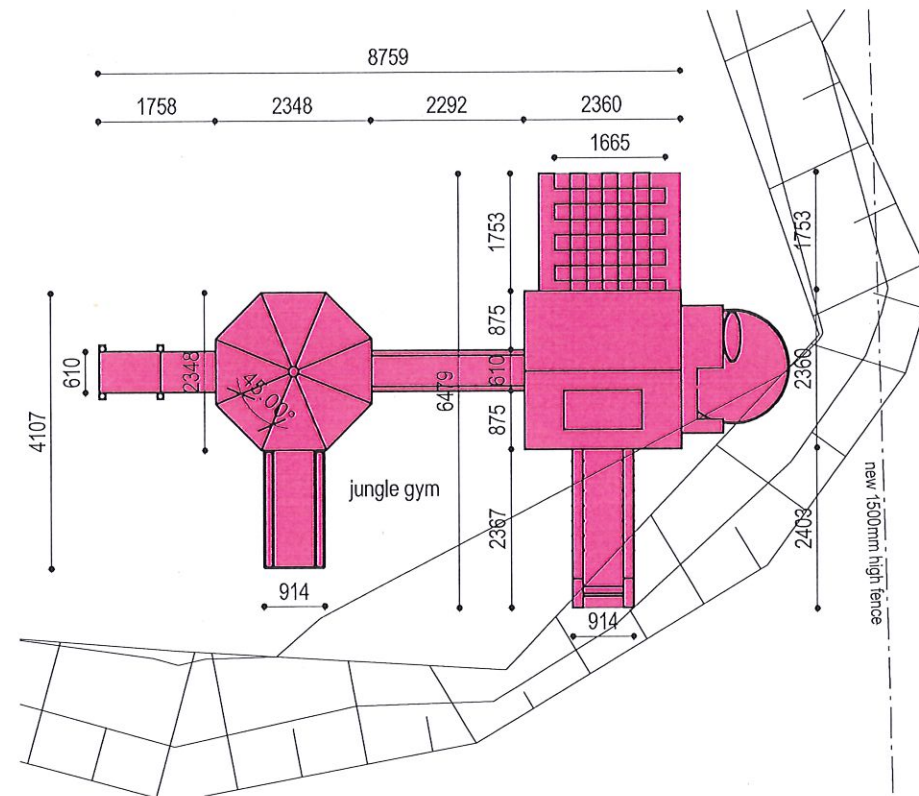
**HELM**  
ARCHITECTS

69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: [helmarch@vodamail.co.za](mailto:helmarch@vodamail.co.za)



SCALE As indicated	DRAWING DESCRIPTION <b>SECURITY GATE G03</b>	DRAWING NO <b>50-13</b>	 <p>84 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: mhelm@vodamail.co.za</p>
	PROJECT GENERIC JOINERY DETAILS	REVISION <b>PT02</b>	
DATE 2017/02/16 04:17:37 PM		PROJECT NR as per school	
DRAWN Author			
ISSUED M Helm (PrArch) MIA			





## JUNGLE GYM LAYOUT

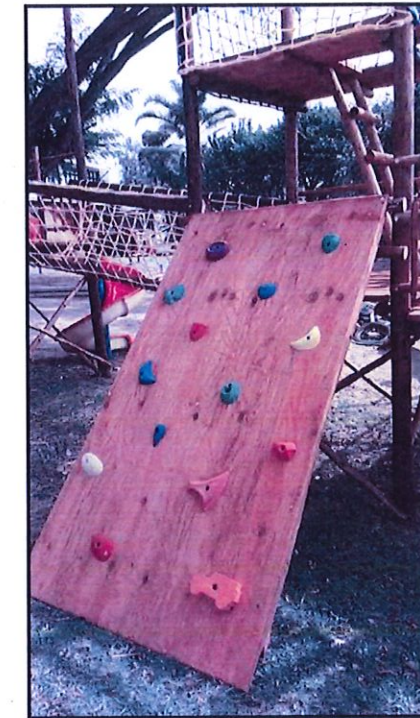
Scale 1 : 100



Platform with shade cloth roof



Tyre Climber



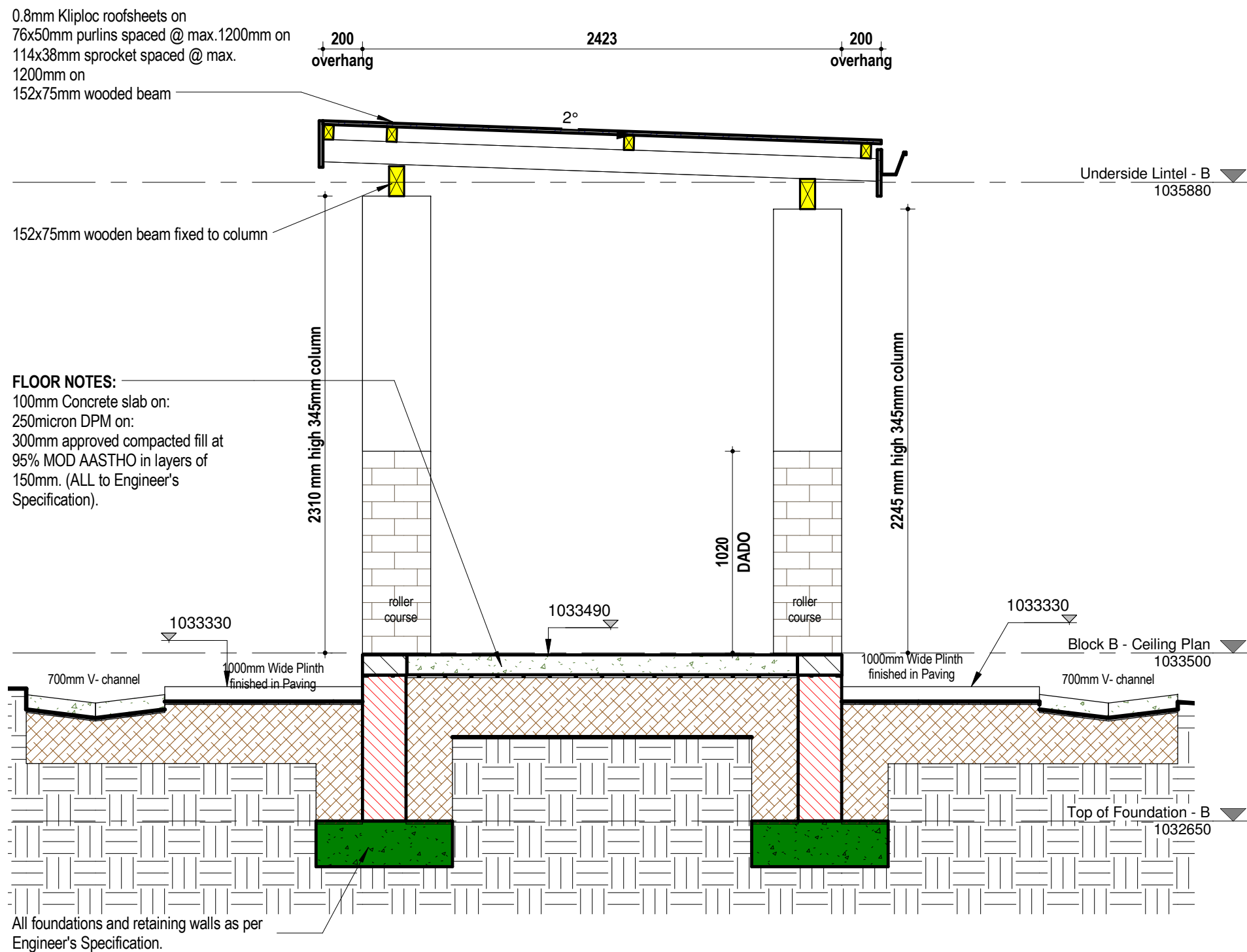
Climbing Wall



Free standing swing set with three tyre swings

SCALE	DRAWING DESCRIPTION	DRAWING NO	<b>HELM</b> ARCHITECTS ARCHITECTURE ARCHITECTURE CREATE INNOVATION
1 : 100	JUNGLE GYM	00-06	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/23 10:21:43 AM	PROJECT NR	
DRAWN	MIR	1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
ISSUED	MH		

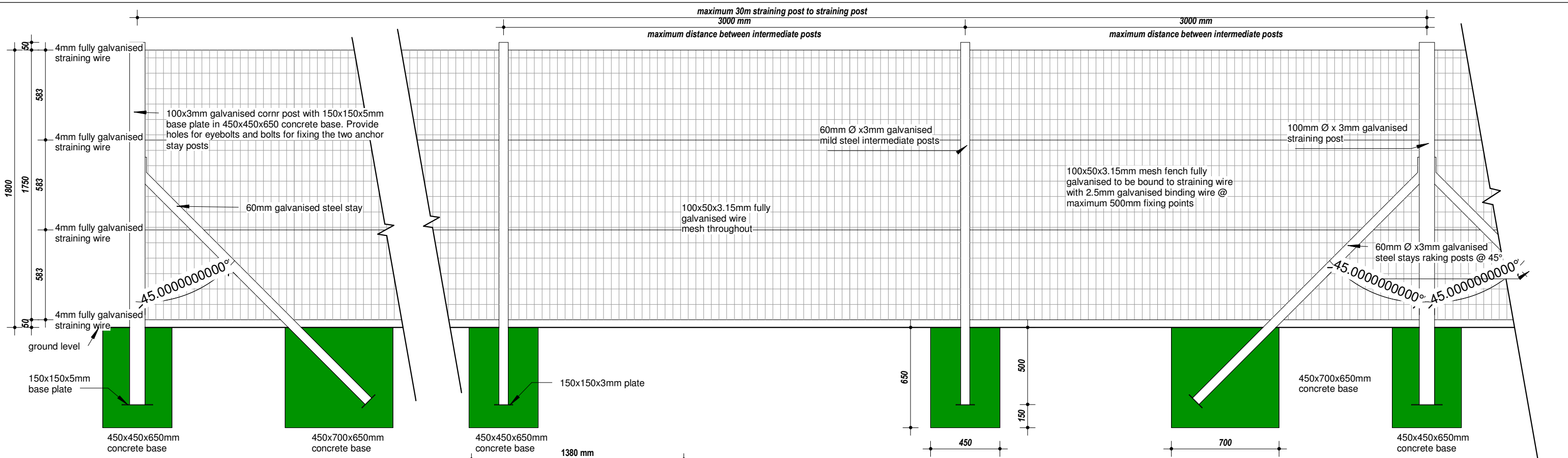




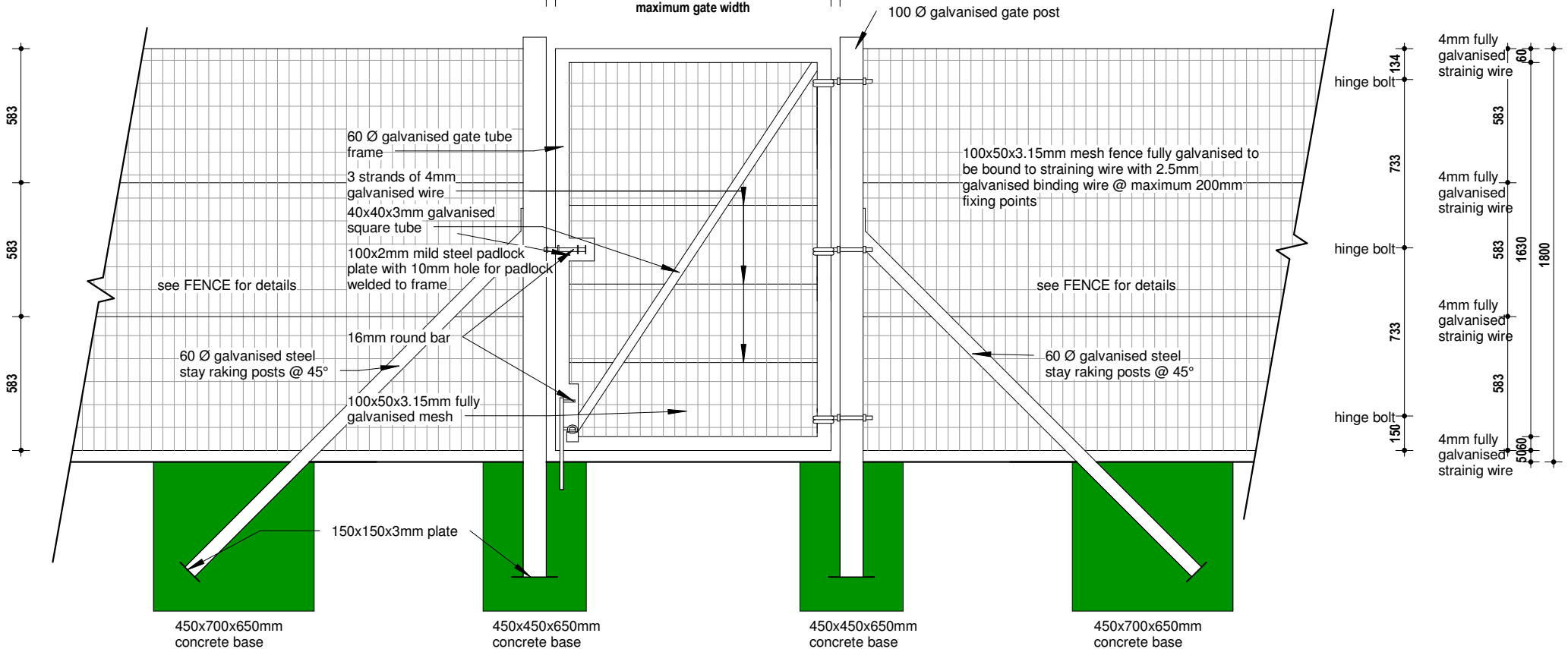
③ Covered Walkway Detail  
1 : 25

SCALE 1 : 25	DRAWING DESCRIPTION Construction Details 6 (Covered Walkway Detail)	DRAWING NO 405	<div> <div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div> </div>
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/17 02:33:21 PM	PROJECT NR 1148	
DRAWN	B Lentoor		
ISSUED	M Helm		

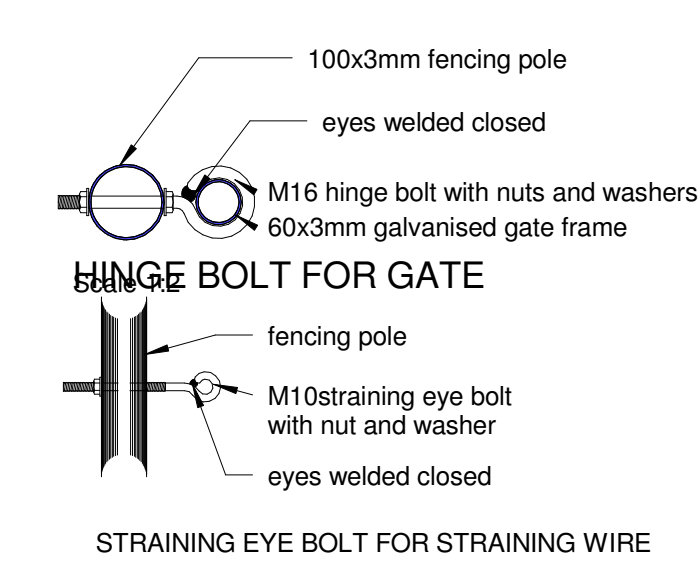
69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: helmarch@vodamail.co.za



MESH FENCE(ELEVATION)  
Scale 1:20



PEDESTRIAN GATE(ELEVATION)  
Scale 1:20



② Straining Eye Bolt For Straining Wire  
1 : 10

① Mesh Fence Detail  
1 : 25

SCALE As indicated	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>	
	Mesh Fence & Straining Eye Bolt for straining wire Detail	408		
	PROJECT	PROSPECT JSS		REVISION PT00
	DATE	2017/02/17 03:49:46 PM		PROJECT NR
	DRAWN	B Lentoor		1148
ISSUED	M Helm			

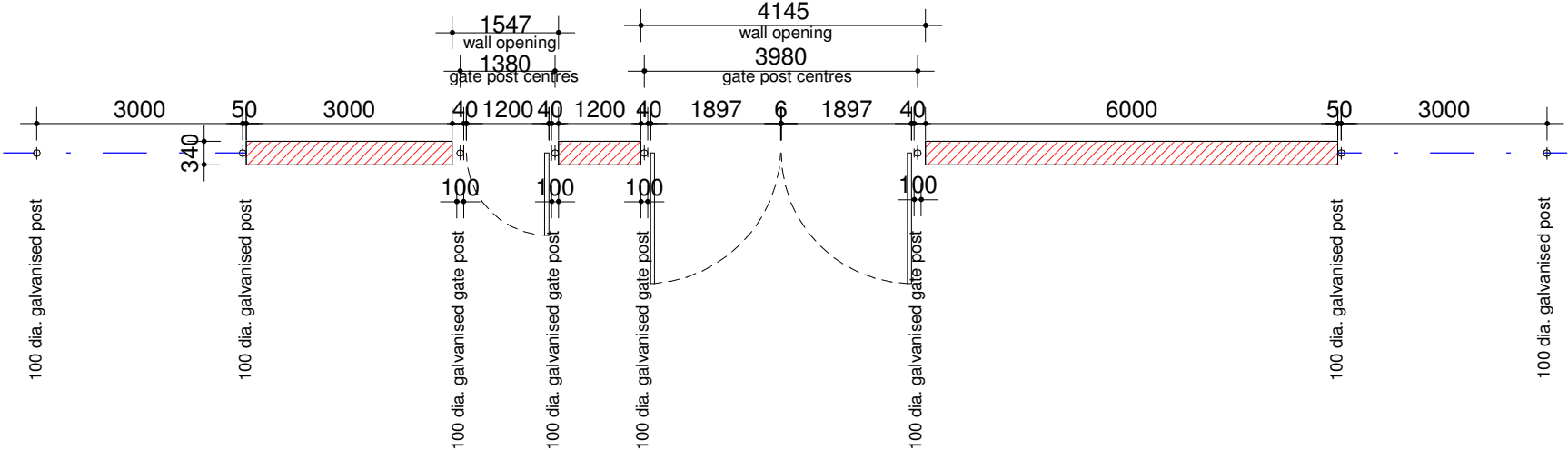
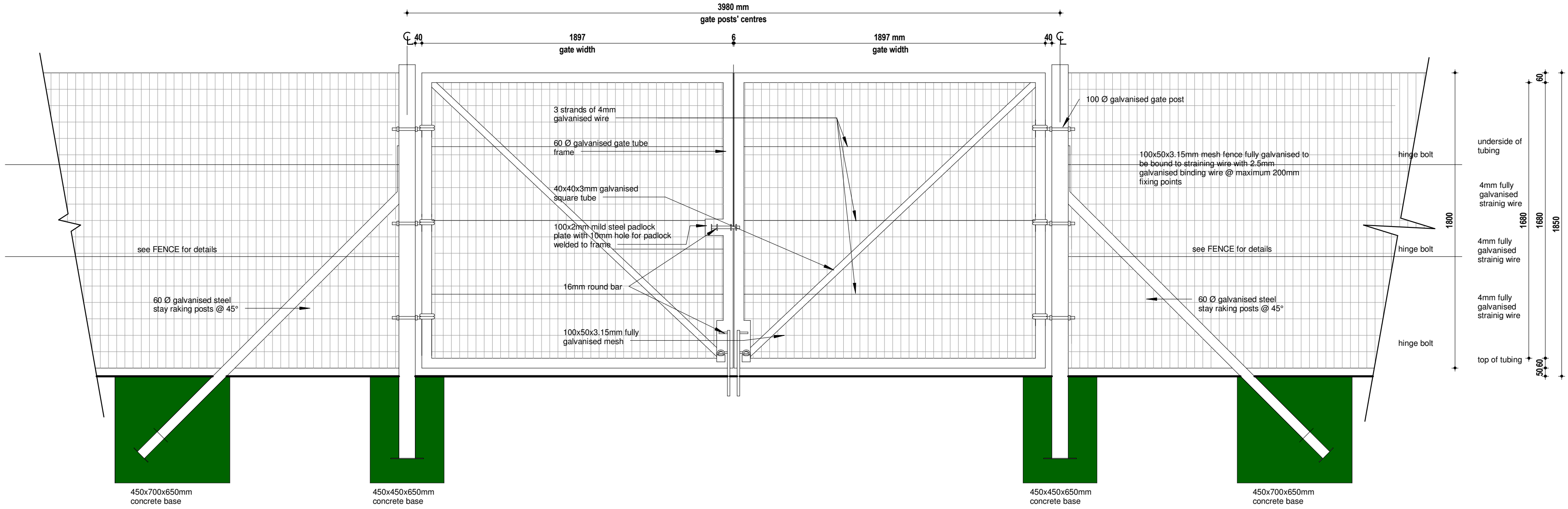
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GENERAL NOTES

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ALL DIMENSIONS ARE TO BE CHECKED ON SITE AND ANY DISCREPANCIES TO BE REPORTED TO THE ARCHITECT. NO DIMENSIONS TO BE SCALED. ALL ELECTRICAL AND DRAINAGE WORK TO BE CARRIED OUT BY REGISTERED ARTISANS.  
QUALITY OF ALL MATERIALS & WORKMANSHIP TO COMPLY WITH RELEVANT S.A.B.S AND B.S.S. SPECIFICATIONS & CODES OF PRACTICE, AND TO CONFORM TO MINIMUM STANDARDS LAID DOWN IN THE STANDARD PREAMBLES OF THE BILLS OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE ARCHITECTS OFFICES.

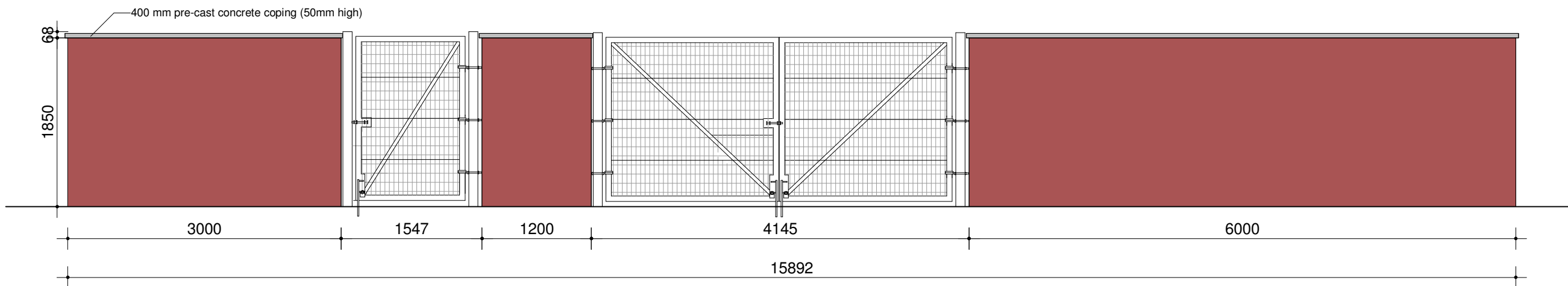
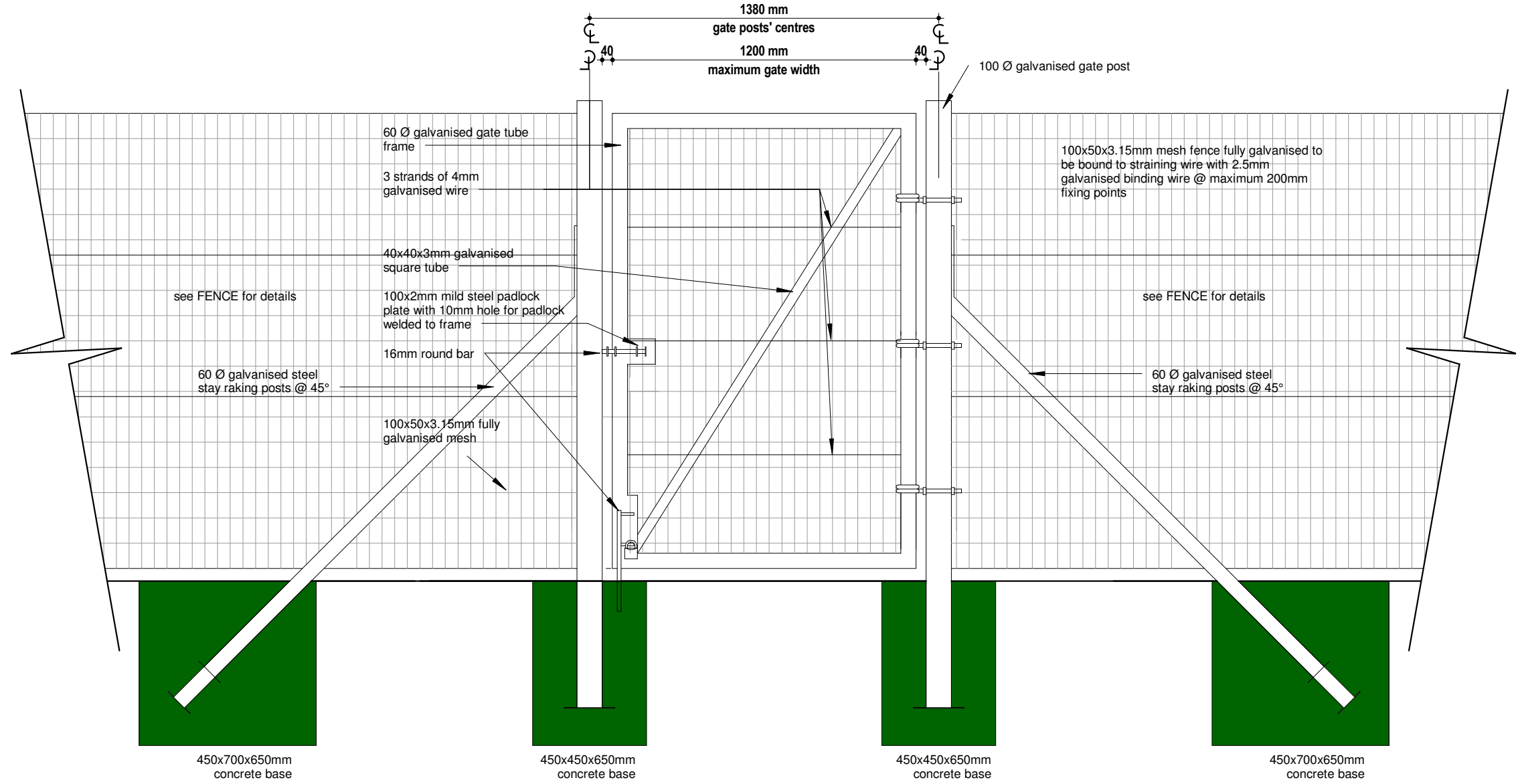
THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF ALL ELEMENTS OF THE BUILDING, OR BUILDINGS, OR ANY OTHER STRUCTURAL ARCHITECTURAL, INTERIOR, SHOP FITTING, JOINERY, SITING AND EXTERNAL COMPONENTS INCLUDING FOUNDATIONS, INTERNAL & EXTERNAL WALLS, ET AL, WITH PARTICULAR REFERENCE TO ERF BOUNDARIES, BUILDING LINES, SERVITUDES, ETC. NO FOUNDATION OR ANY OTHER PART OF THE BUILDING MAY PROJECT BEYOND THE BOUNDARY OF THE PROPERTY.

REVISIONS		
NO.	DATE	DESCRIPTION



2 PLAN- MESH FENCE  
1 : 100

VEHICLE GATE(ELEVATION)  
Scale 1:20



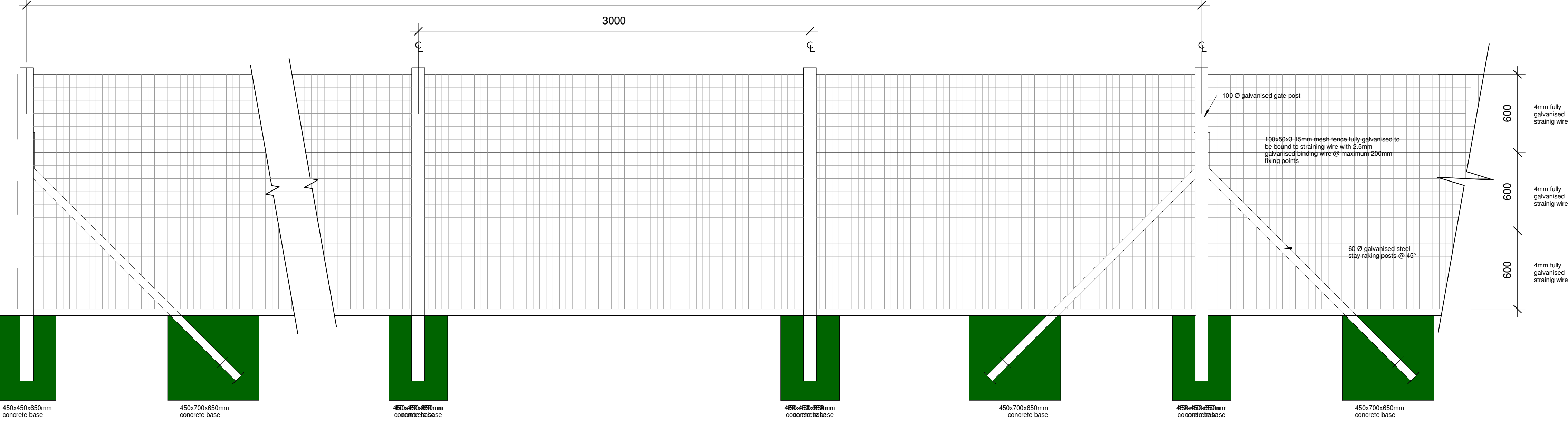
ELEVATION- MESH FENCE  
scale 1:50

PEDESTRIAN GATE(ELEVATION)

Scale 1:20

MAXIMUM 30M BETWEEN STAYS

3000



FENCE (ELEVATION)

Scale 1:20

ARCHITECT SIGNATURE	CLIENT SIGNATURE
---------------------	------------------



TEL: +27 45 838 3544  
TEL: +27 82 807 1029  
PO Box 2296, Komani, 5322  
marlus@helmarch.co.za  
84 Prince Alfred Street  
Queens town  
Easter Cape, RSA, 5322  
SACAP 5713

DESIGNED BY:	Designer	CHECKED BY:	Checker
		DATE:	2017/03/20 10:48:48 AM

PROJECT:  
PROSPECT JUNIOR SECONDARY SCHOOL

PROJECT ADDRESS:  
Maluti

DRAWING TITLE  
MESH FENCING and GATE  
DETAILS

SCALE @ A1:	DATE ISSUED:	PROJECT REF:
As indicated	2017/03/20 10:48:48 AM	1148

DRAWING NUMBER	REVISION
70-01	CR00

FOR CONSTRUCTION

DISCIPLINE  
ARCHITECT

DISCIPLINE  
CODE:  
ARC

DRAWING  
STATUS

# **PROSPECT JUNIOR SECONDARY SCHOOL**

## **WORKING DRAWINGS CIVIL AND STRUCTURAL**



**DEPARTMENT OF BASIC EDUCATION**



**INDEPENDENT DEVELOPMENT TRUST**



**SAWGRASS CONSULTING**



1. REFER TO THE ARCHITECTS DRAWINGS FOR THE LOCALITY PLAN.
2. THE CONTRACTOR IS TO REFER TO THE LAND SURVEYORS DRAWINGS FOR EXISTING LEVELS OF THE SITE, LOCATION OF EXISTING UTILITY LINES AND ALL OTHER CHECK-MARK INFORMATION.
3. LOCATION OF ALL EXISTING SERVICES IS APPROXIMATE AND IS TO BE FIELD VERIFIED ON SITE BY THE CONTRACTOR.
4. SPILL FROM TRENCHES TO BE CARTED OFF SITE UNLESS OTHERWISE DIRECTED.
5. ALL TRENCH BACKFILL TO BE COMPACTED TO 90% OF MODIFIED AASHTO DENSITY EXCEPT UNDER ROADS WHERE 93% IS REQUIRED TO UNDERSIDE OF ROAD LAYERWORK.
6. ALL TRENCHES UNDER ROADS AND BUILDINGS TO BE BACKFILLED WITH IMPROVED MATERIAL COMPLYING WITH CITY OF CHICAGO SPECIFICATIONS AND 93% MODIFIED AASHTO DENSITY. THIS MATERIAL SHALL BE PLACED OVER THE FULL ROAD OR BUILDING WIDTH, PLUS 1M EITHER SIDE.

1. THE AREA INDICATED FOR CLEARING IS TO BE STRIPPED OF ALL VEGETATION AND TOPSOIL TO AN AVERAGE DEPTH OF 150mm DEPENDING ON VARIATIONS ACROSS THE SITE.
2. ALL STRIPS OF VEGETATION IS TO BE REMOVED TO SIMILAR.
3. ALL STRIPPED TOPSOIL IS TO BE STOCKPILED IN THE AREA INDICATED ON THE PLAN. TOPSOIL TO BE STOCKPILED IN A LAYER NO DEEPER THAN 1.5m THICK AND TO BE ADEQUATELY SECURED WITH RESPECT TO BEING FREE DRAINING WATER AND WIND EROSION.
4. ALL BUILDING STRUCTURES ARE TO BE DEMOLISHED IN THEIR ENTIRETY, INCLUDING FOUNDATIONS, AND REMOVED TO SPOIL.
5. ALL EXISTING SERVICES WHERE THEY IMPACT ON THE WORKS ARE TO BE PROTECTED IN THEIR ENTIRETY.
6. PREVIOUS TRIAL HOLE EXCAVATIONS, BUILDING FOUNDATIONS AND AREAS PREVIOUSLY OCCUPIED BY TREES ARE TO BE COMPLETELY CLEARED, ALL LOOSE MATERIALS EXCAVATED FROM THE HOLE/EXCAVATIONS ARE TO BE STOCKPILED BACKFILLED IN 200MM LAYERS OF 67 MATERIAL COMPACTED TO A MINIMUM OF 90% MOD AASHTO AT OMC IN ORDER TO SIMULATE THE ORIGINAL IN SITU MATERIAL.
7. FILL MATERIAL SPECIFICATION:
  - 7.1. UNDER BUILDINGS, PATHWAYS, COURTYARDS, ETC.:

MATERIAL FROM ON SITE OF EXCAVATIONS IS TO BE USED AND COMPACTED TO 93% MOD AASHTO DENSITY. WHERE INSTRUCTED BY THE ENGINEER IN WRITING SELECTIVE EXCAVATION AND PLACING OF MATERIALS SHALL BE CARRIED OUT SO THAT SUCH MATERIALS CAN BE PLACED IN THE FILL IF NECESSARY. PLACED MATERIAL SHALL CONSIST OF A REPRESENTATIVE MIXTURE OF THE VARIOUS HORNS MAKING UP THE IN SITU MATERIALS.
  - 7.2. UNDER ROADS AND PARKING AREAS:

IMPORTED FROM COMMERCIAL SOURCES AND TO BE A MINIMUM G7 MATERIAL COMPACTED TO 93% MOD AASHTO DENSITY.
8. NO ROCKS IN EXCESS OF 50mm SHALL BE PLACED IN THE FILLS. ROCKS IN EXCESS OF 50mm SHALL BE BROKEN DOWN TO SIZE DURING EXCAVATION/BLASTING OR PLACING.
9. ALL CUT AND FILL BANKS TO BE AS FOLLOWS OR AS INDICATED ON THE PLANS:
  - 9.1. ACCESS ROAD AND PARKING AREA CUT AND FILL BANKS (NOT BEHIND RETAINING WALLS) TO BE 1V:3H
  - 9.2. BEHIND CONCRETE BLOCK RETAINING WALLS CUT AND FILL BANKS TO BE 1V:1H
10. NO CONCRETE OR REINFORCED CONCRETE TO BE REMOVED FROM BUILDINGS.
11. ALL WORK TO BE CARRIED OUT IN ACCORDANCE SANS 1200 SPECIFICATIONS, SECTIONS C, D AND DM AND THE AMENDMENTS THERETO AS CONTAINED IN THE CONTRACT DOCUMENTS.
12. DEMOLITION OF EXISTING ALBUTION BLOCKS AND REHABILITATION OF PITS:
  - 12.1. BUILDING STRUCTURES TO BE DEMOLISHED IN THEIR ENTIRETY, INCLUDING FOUNDATIONS. ALL DEMOLISHED MATERIALS TO BE CARTED TO AN APPROVED SPOIL AREA OF SITE.
  - 12.2. PIT UNDERNEATH BUILDINGS TO BE REHABILITATED AS FOLLOWS:
    - EXCAVATE LIMITS OF PIT PLUS AN ADDITIONAL 2m IN ALL DIRECTIONS (X+2, Y+2, Z+2). THE ENGINEER IS TO INSPECT AND APPROVE THE EXCAVATIONS PRIOR TO CONTINUING WITH THE WORKS.
    - EXCAVATED MATERIAL TO BE SPOILED AT AN APPROVED SPOIL AREA OF SITE.
    - EXCAVATION TO BE FILLED WITH SURPLUS CUT MATERIAL FROM BULK EARTHWORKS EXCAVATIONS.
    - FILL MATERIAL TO BE PLACED IN LAYERS 200mm THICK AND COMPACTED TO 90% MOD AASHTO DENSITY.
13. FINISHED SURFACE TO BE VEGETATED SIMILAR TO THE REMAINDER OF THE SITE.

1. PIPES TO BE AS FOLLOWS:
  - 1.1. PIPES GREATER THAN 50mm Ø TO BE CLASS 9 uPVC WITH SPIGOT AND SOCKET JOINTS UNLESS SHOWN OTHERWISE
  - 1.2. PIPES 50mm Ø AND SMALLER TO BE PE 100 (TYPE V) CLASS 10 HDPE WITH COMPRESSION FITTINGS AND JOINTS (PLASSON OR EQUAL)
2. PIPE BENDS FOR POLYETHYLENE AND HDPE PIPES TO BE FOR ALL FLEXIBLE PIPE (DRAWINGS LB-2 AND LB-3 IN SANS 1202 LB) UNLESS OTHERWISE SPECIFIED.
3. ALL HORIZONTAL AND VERTICAL BENDS IN HDPE PIPES TO BE WITHOUT BEND FITTINGS. BENDS ARE TO BE MADE BY FIELD CUTTING WITHIN THE RADIUS LIMITS OF THE PIPE SUPPLIERS SPECIFICATION.
4. PIPES TO BE LAID WITH THE FOLLOWING MINIMUM COVER TO FINISHED LEVEL EXCEPT WHERE INVERT LEVELS ARE GIVEN:
  - 4.1. UNDER ROADS AND PARKING AREAS: 1.0m
  - 4.2. ELSEWHERE: 0.7m
5. THE FOLLOWING PROJECT SPECIFICATIONS ARE RELEVANT TO THE WORKS:

PSL 3.7.1 uPVC Pipes

uPVC pipes shall comply with the requirements of ISO 9002 - 1987 and SABS 966(7).

Standard fittings such as tees, flange adaptors, reducers etc, for uPVC pipelines may be fabricated from aluminium alloy or cast iron. Unless otherwise shown on the drawings, all bends shall be uPVC, Class 16.

1.2 PSL 3.7.2 Polyethylene Pipes

Where High Density Polyethylene (HDPE) pipes have been specified, these shall be PE 100 pipes complying with the requirements of SABS ISO 4427 : 1996. All joints and couplings shall be of the compression type, Class 16.

1.3 PSL 3.4.4 Fittings and Specials

uPVC saddles must be manufactured according to a similar quality associated with Plasson fittings in terms of JASWIC R41:1987.

The female thread on the saddle must be tapered.

Nuts and bolts composing the saddle shall be stainless steel.

1.4 PSL 3.8.3 Flanges

Flanges shall comply with SABS 1123 Table 1600/3 unless otherwise scheduled.

1.5 PSL 3.9.2.1 Corrosion Protection

Steel specials shall be hot-dip galvanised after fabrication, in accordance with the requirements of SANS 121 (ISO 1461). Further machining, cutting or welding after hot-dip galvanizing will not be allowed.

A fusion bonded epoxy or a coal tar epoxy, as scheduled, will be applied to specials after the galvanising process, with the necessary cleaning and priming as required by the manufacturer of the epoxy.

The Engineer will be afforded the opportunity to inspect the specials before galvanising and before epoxy coating.

1.6 PSL 3.9.5 Joints, bolts, nuts and washers

All mild steel bolts, nuts and washers shall be hot-dip galvanized to SANS 121 (ISO 1461) after threading unless otherwise specified or indicated on the drawings or Schedule of Quantities. After galvanising all nuts will be re-tapped to an oversize thread as recommended by the Hot Dip Galvanising Association of South Africa. All nuts and bolts to be fitted with a full gasket.

1.7 PSL 3.8 Couplings for plain-ended fittings and specials

Epoxy coated steel or cast-iron Viking Johnson type couplings will be used for all plain ended galvanized mild steel pipe specials.

1.8 PSL 3.9.6 Corrosion protection for valves, flanges and steel pipes

In addition to the corrosion protection specified elsewhere with regard to valves, pipes, bolts and nuts, all buried flanges and those in chambers shall be treated with a "Densol" mastic putty applied to all bolt heads and nuts and the entire flange wrapped with mastic impregnated bandage overwrapped with plastic, all carried out according to the manufacturer's recommendations.

All buried steel pipes shall be wrapped in a mastic impregnated bandage overwrapped with plastic.

1.9 PSL 3.10 Gate valves

Gate valves of 80 mm ND or greater shall comply with SABS 664 (waterworks pattern) and rated Class 16 unless otherwise scheduled and shall be wedge type, be clockwise opening, with non-rising spindle, bronze trimming, with loose gland bolts, cap-top or handwheel and flanged as indicated on the drawings or schedules.

Corrosion protection; all valves to be fusion bonded, epoxy coated, internally and externally to SABS 1217-1984.

1.10 PSL 3.11.1 Bricks

Notwithstanding the requirements of Sub-clause 3.11.1, cement bricks complying with the requirements of Table 2 of SABS 1215 for units for nominal compressive strength 7 MPa will be accepted. The Contractor shall test samples of bricks in accordance with SABS 1215 and submit the test results to the Engineer and obtain his approval, before delivering any bricks to Site.

All cement brick manholes shall receive a 12 mm plaster layer on the inside and outside.

1.11 PSL 5 Storage of couplings and fittings and stacking of pipes

Add to item 5 the following:

"The Contractor shall provide adequate storage facilities for pipes, couplings and fittings to conform with the following:

a) Stacking of pipes

When stacking is necessary the Contractor shall make the necessary arrangements for stacking areas and shall stack as recommended by the manufacturer.

b) Coupling and fittings

Until required for use the rubber rings shall be stored in a cool, dark place, away from grease, oil or harmful chemicals. If rubber rings have been tied they shall be separated a few days before required for use in order to eliminate minor impressions which the ties may have caused.

Couplings into which rubber rings have been fitted, ready for use, shall be stored under cover.

Subject strictly to the requirements above pipes may be offloaded and strung out in the servitude."

1.12 PSL 5.2.5 Joints for PVC type pipes

Unless otherwise specified or shown on the drawings, all plain ended valves and specials shall be jointed into PVC pipelines using sleeve type couplings on both ends.

1.13 PSL 5.3 Location of valves

All valves shall be placed in positions approved by the Engineer's Representative.

1.14 PSL 5.10 Disinfecting Of Potable Water Mains

A chemical concentration of 20mg/l of Calcium Hypochloride is to remain in the pipeline for 24 hours before scouring to waste. This waste water is not allowed to be discharged into a watercourse but has to be diverted to a waste water treatment works.

1.15 PSL 7.3.1.2 Test pressure

The test pressure shall be:

For HDPE pipes: 1.5 times the maximum allowable working pressure for the class of pipe specified

For uPVC pipes: 1.5 times the maximum allowable working pressure for the class of pipe specified

1.16 PSL 8.1.1 Supply and lay pipes and specials

No extra payment will be made for testing (as per Clause 7), nor for temporary water supply connections for testing which will be held to be included in the price for the laying of pipes, valves and specials.

The rate tendered for specials will be held to include couplings necessary to fit the special to the associated pipeline and one set of bolts, nuts and gaskets per flange for flanged specials.

The rates for supplying, laying and bedding pipes shall also cover the cost of cleaning the pipeline as specified in Sub-clause 5.10.

The rates for supplying, laying and bedding pipes shall also cover the cost of testing in short sections.

1.17 PSL 8.2.11 Anchor/thrust blocks and pedestals

Notwithstanding Sub-clause 8.2.11 anchor/thrust blocks and pedestals will be measured only by volume of concrete to the net dimensions shown on the drawings or ordered.

The rate shall cover the cost of excavation, concrete and formwork.

1.18 PSL 8.2.13 & 8.2.14 Chambers and Manholes

The tendered rates shall include full compensation for the construction of the chamber, including all materials, labour, excavation, backfilling, covers and lids.

1.1 PSLE 3.1a Precast Concrete Pipes  
Unless otherwise stated on the drawings, precast reinforced concrete pipes with interlocking joints to SABS 677 will be used. Classes will be according to the drawings.

1.2 PSLE 3.1d Skewed Ends  
No cutting of skew ends on site will be allowed.

1.3 PSLE 5.2.2 Bedding Class  
Bedding will be Class C.

1.4 PSLE 5.5.2 Joint Wrapping  
Only Geofabric with pore sizes less than 250 µm will be used to wrap joints. All joints to be twice wrapped with filter fabric 200mm wide with a 200mm overlap.

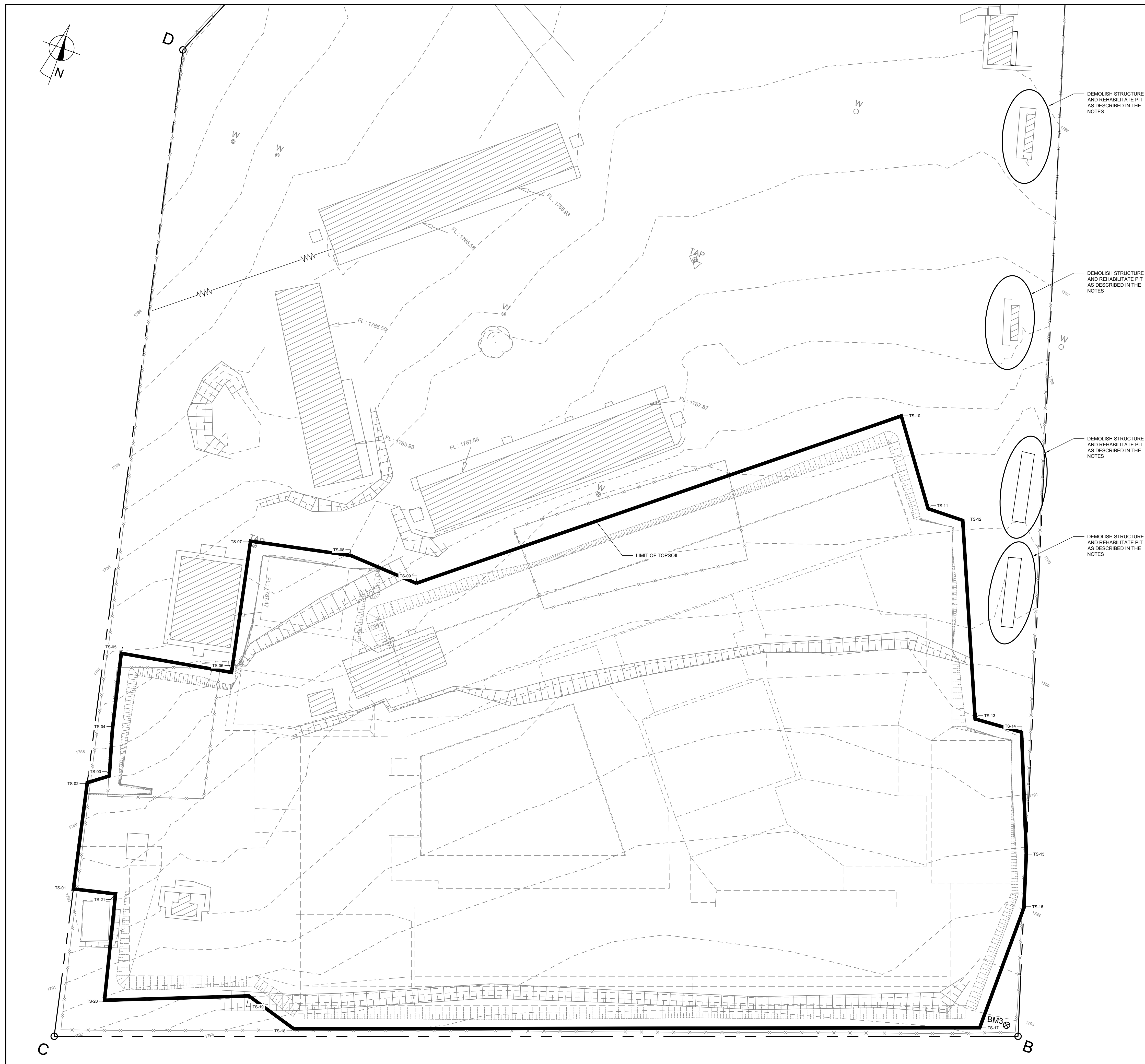
1.5 PLSE 5.5.3 Plastering  
All manholes and kerb inlets shall be plastered internally

1.6 PSLE 5.5.9 Backfilling to structures  
Add new clause 5.5.9  
"5.5.9 Backfilling to structures. Imported selected sub grade material will be used for backfilling of all structures within the trafficable area (outside of sidewalk to outside of sidewalk) up to top of sub grade, compacted to 93% Mod AASHTO density.

1.7 PSLE 8.2.8 Supply and install manholes, catchpits and the like  
Rate to include for excavation and backfilling of the structures.

1. REFER TO CONCRETE BLOCK RETAINING WALL PLANS AND DETAILS FOR SETTING OUT AND CONSTRUCTION DETAILS.
2. BRICK RETAINING WALLS TO STAIRS AND RAMPS TO BE CONSTRUCTED ACCORDING TO 'BRICK RETAINING WALL' DETAIL.

Scale N/A		Project No 17-HA-001	
Dwg. No G-1-01		Date Feb-17	
PROSPECT JUNIOR SECONDARY SCHOOL EASTERN CAPE CONSTRUCTION NOTES		Drawn: al Designed: tl Checked: tl Date: Feb-17	
Consultant Signature		Local Authority Approval	
		www.sgrass.com	
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A. 28 Feb. '17 Rev. Date		WORKING DRAWING APPROVAL By TL	



**NOTES:**  
1. REFER TO THE DRAWING WITH GENERAL CONSTRUCTION NOTES FOR NOTES PARTICULAR THE RELEVANT PORTION OF THE WORKS.

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[illegible]

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consulting

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Local Authority Approval
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Consultant Signature
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Drawn al	Designed tl	Checked tl	Date Feb'17
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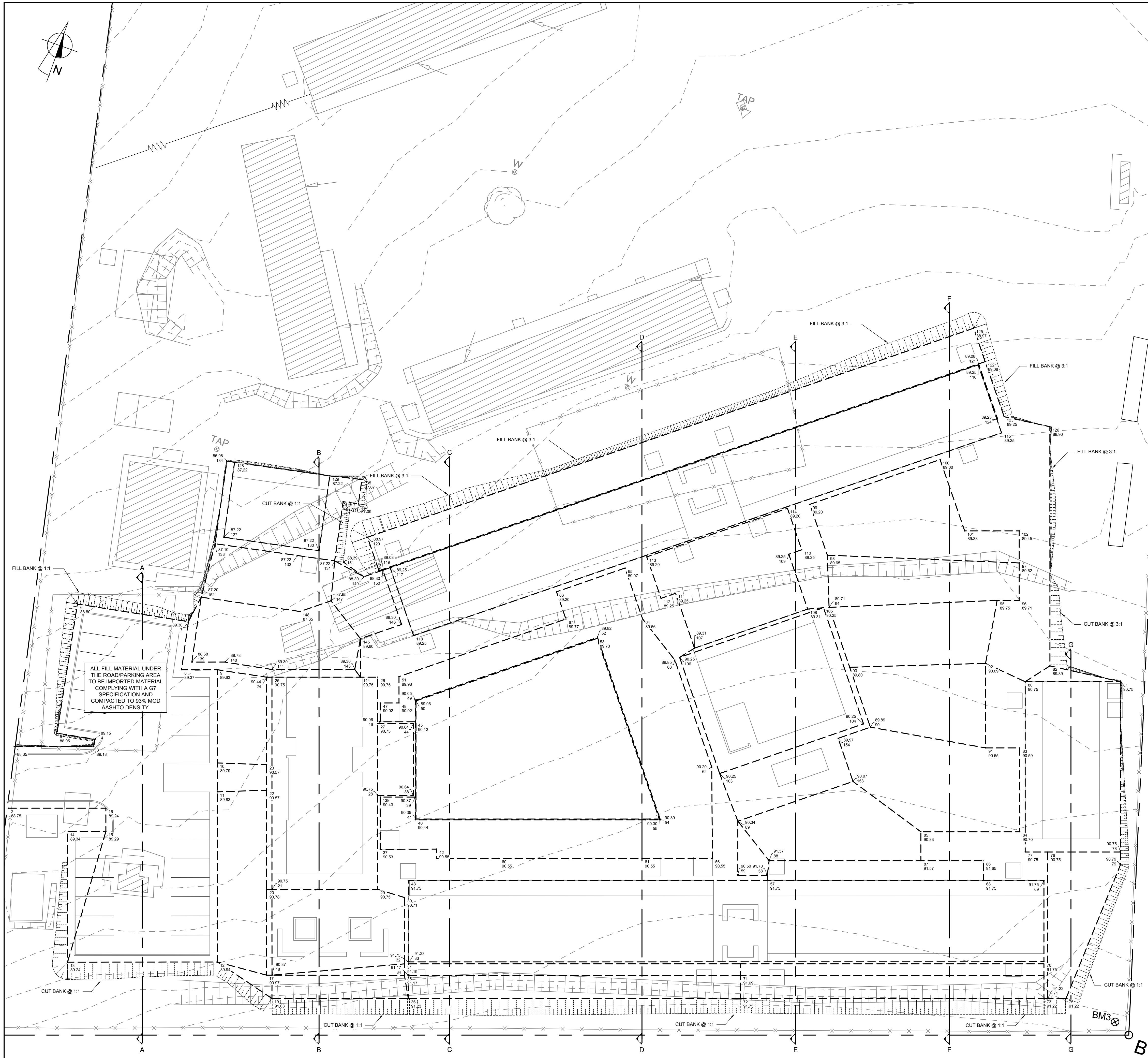
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5	TS-05		11568.02		3346424.71
6	TS-06		11550.89		3346421.72
7	TS-07		11555.00		3346401.53
8	TS-08		11539.58		3346398.37
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10	TS-10		11466.40		3346349.11
11	TS-11		11457.63		3346361.26
12	TS-12		11451.94		3346361.16
13	TS-13		11439.72		3346389.54
14	TS-14		11432.24		3346389.05
15	TS-15		11425.16		3346406.61
16	TS-16		11422.69		3346414.64
17	TS-17		11422.87		3346434.46
18	TS-18		11523.12		3346470.58
19	TS-19		11531.40		3346468.12
20	TS-20		11552.28		3346476.33
21	TS-21		11556.24		3346460.19

PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

SITE CLEARANCE AND DEMOLITION PLAN

Scale	1:250
Project No	17-HA-001
Drg. No	CD-1-01

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5	88.95	11561.28	3346443.80
6	88.80	11564.44	3346427.10
7	89.30	11550.08	3346424.38
8	89.37	11548.82	3346430.57
9	89.63	11544.44	3346429.00
10	89.79	11540.34	3346440.41
11	89.83	11539.07	3346443.94
12	89.94	11531.59	3346464.76
13	89.24	11549.94	3346471.36
14	89.34	11555.69	3346455.36
15	89.29	11550.98	3346453.67
16	89.24	11552.00	3346450.63
17	90.97	11525.00	3346464.22
18	90.87	11524.34	3346463.98
19	91.03	11523.34	3346466.63
20	90.78	11528.76	3346453.71
21	90.75	11528.10	3346453.47
22	90.57	11533.12	3346441.58
23	90.57	11534.24	3346438.45
24	90.44	11538.08	3346427.75
25	90.75	11537.42	3346427.51
26	90.75	11524.48	3346422.67
27	90.75	11522.45	3346428.54
28	90.75	11519.30	3346437.33
29	90.75	11515.18	3346448.84
30	90.71	11511.52	3346448.66
31	91.19	11508.61	3346456.78
32	91.75	11508.23	3346456.38
33	91.23	11508.14	3346456.61
34	91.17	11507.64	3346458.02
35	91.17	11508.11	3346458.19
36	91.23	11506.62	3346460.85
37	90.53	11516.62	3346443.82
38	90.64	11514.92	3346435.76
39	90.37	11514.62	3346435.89
40	90.44	11513.62	3346438.68
41	90.35	11513.56	3346438.55
42	90.55	11509.75	3346441.34
43	91.75	11511.80	3346446.41
44	90.64	11518.07	3346426.97
45	90.12	11517.92	3346426.68
46	90.06	11522.21	3346428.22
47	90.02	11523.04	3346425.92
48	90.02	11520.73	3346425.09
49	90.05	11518.86	3346424.05
50	89.96	11518.75	3346424.09
51	89.98	11521.89	3346421.86
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53	89.73	11499.32	3346408.50
54	90.39	11483.61	3346427.91
55	90.30	11483.77	3346427.87
56	90.55	11475.55	3346430.35
57	91.75	11467.84	3346430.65
58	91.70	11468.08	3346430.00
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93	89.80	11467.12	3346400.93
94	89.71	11472.28	3346394.51
95	89.75	11452.01	3346386.28
96	89.71	11449.31	3346385.31
97	89.62	11450.95	3346380.73
98	89.65	11474.78	3346388.19
99	89.20	11479.16	3346382.74
100	89.00	11465.16	3346371.55
101	89.38	11459.03	3346379.19
102	89.45	11452.36	3346376.80
103	90.25	11478.38	3346419.65
104	90.25	11462.94	3346407.25
105	90.25	11472.84	3346394.79
106	90.25	11488.38	3346407.19
107	89.31	11486.96	3346405.41
108	89.31	11474.82	3346395.66
109	89.25	11479.54	3346389.77
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135	87.07	11535.08	3346399.37
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ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK. CONTRACTOR TO CHECK DRAWINGS FOR INCONSISTENCY OF DESIGN LEVELS AND SPECIFICATIONS AND TO CLARIFY THIS WITH THE ENGINEER BEFORE PROCEEDING WITH THE WORKS.

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1:250

Project No  
17-HA-001

Dwg. No  
CE-1-01

Scale

Project No  
17-HA-001

Dwg. No  
CE-1-01

Local Authority Approval

Consultant Signature

Drawn  
al

Designed  
ti

Checked  
ti

Date  
Feb/17

PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

BULK EARTHWORKS PLAN

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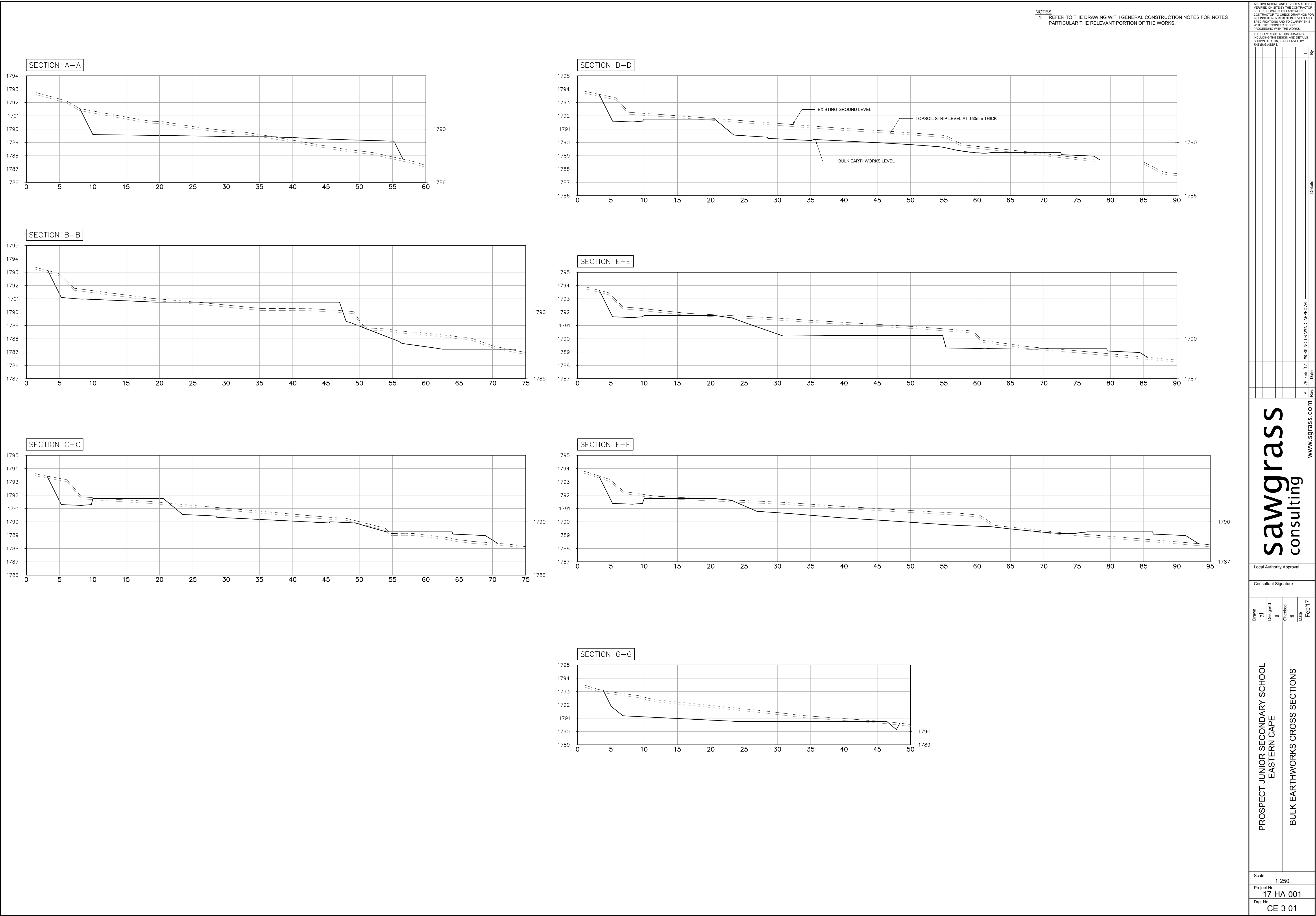
28 Feb 17  
Date

WORKING DRAWING - APPROVAL

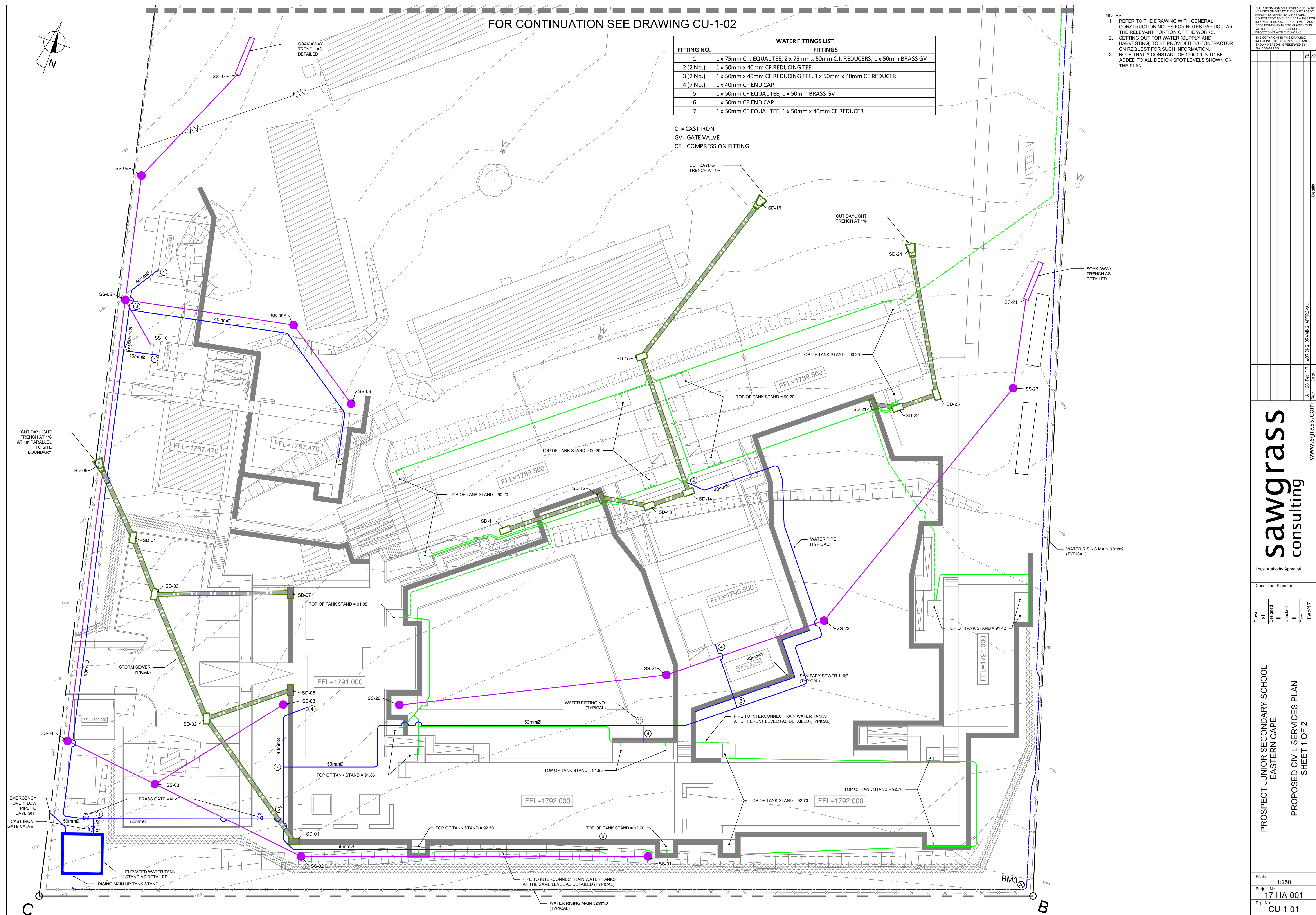
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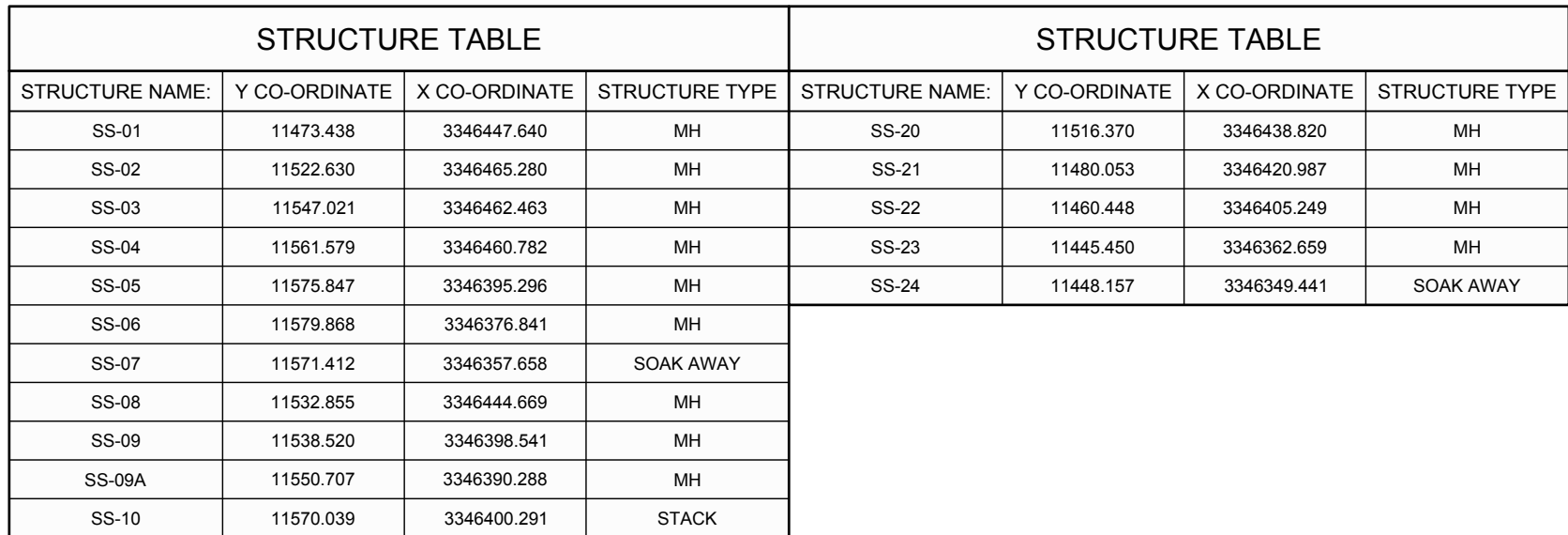






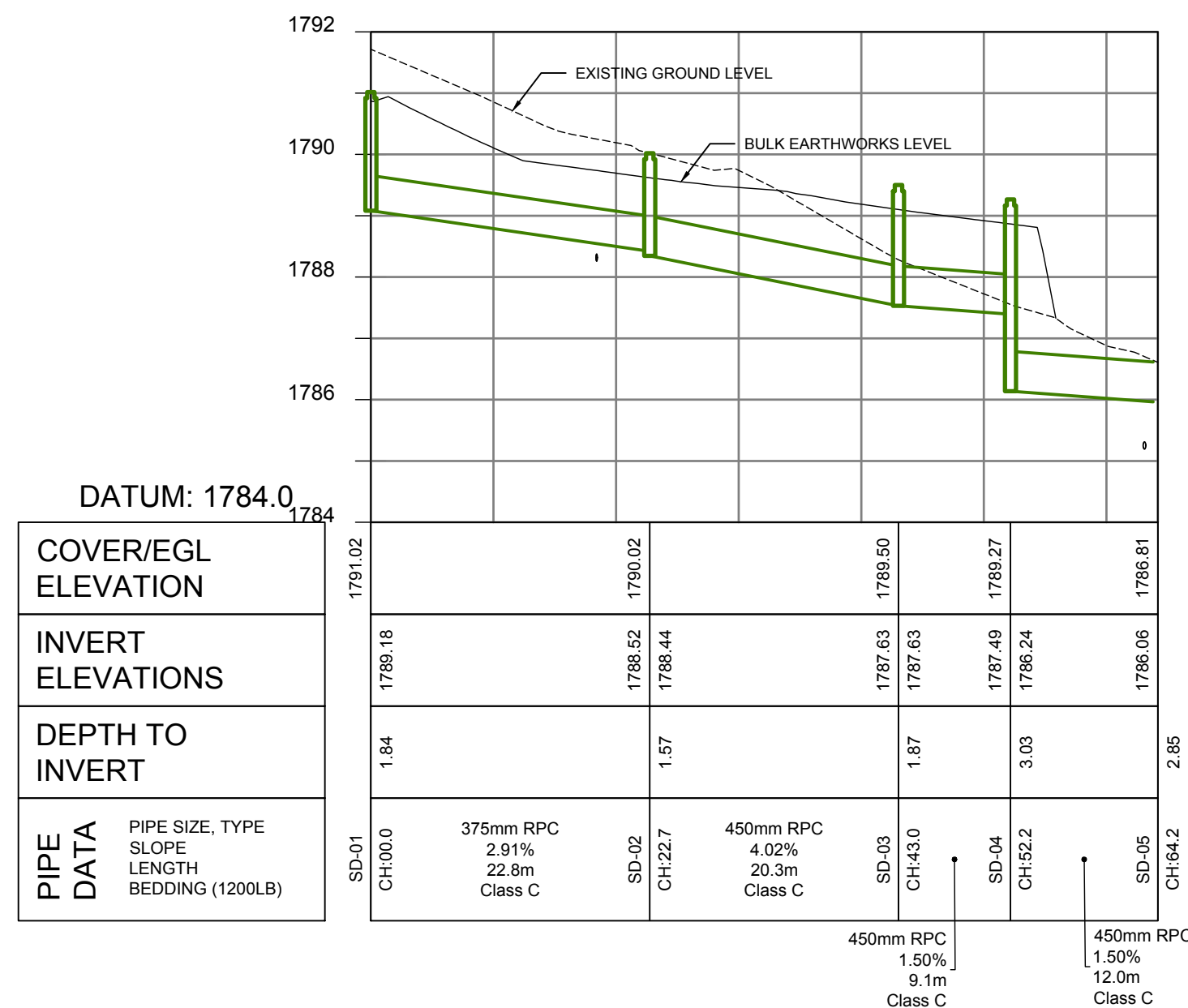






Drawn at	
Designed by	
Checked by	
Date	Feb'17
<p>PROSPECT JUNIOR SECONDARY SCHOOL EASTERN CAPE</p> <p>SANITARY SEWER LONGITUDINAL SECTIONS</p>	
<p>Scale H 1:500 V 1:50</p> <p>Project No <b>17-HA-001</b></p> <p>Dwg. No. <b>CU-3-01</b></p>	





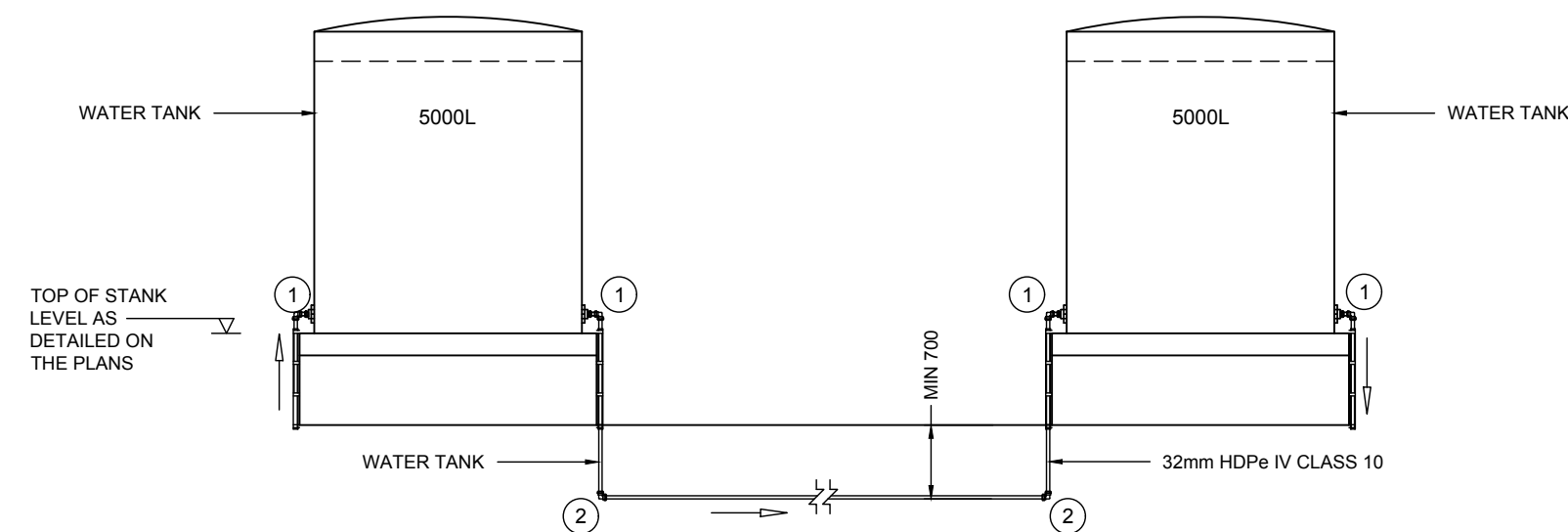






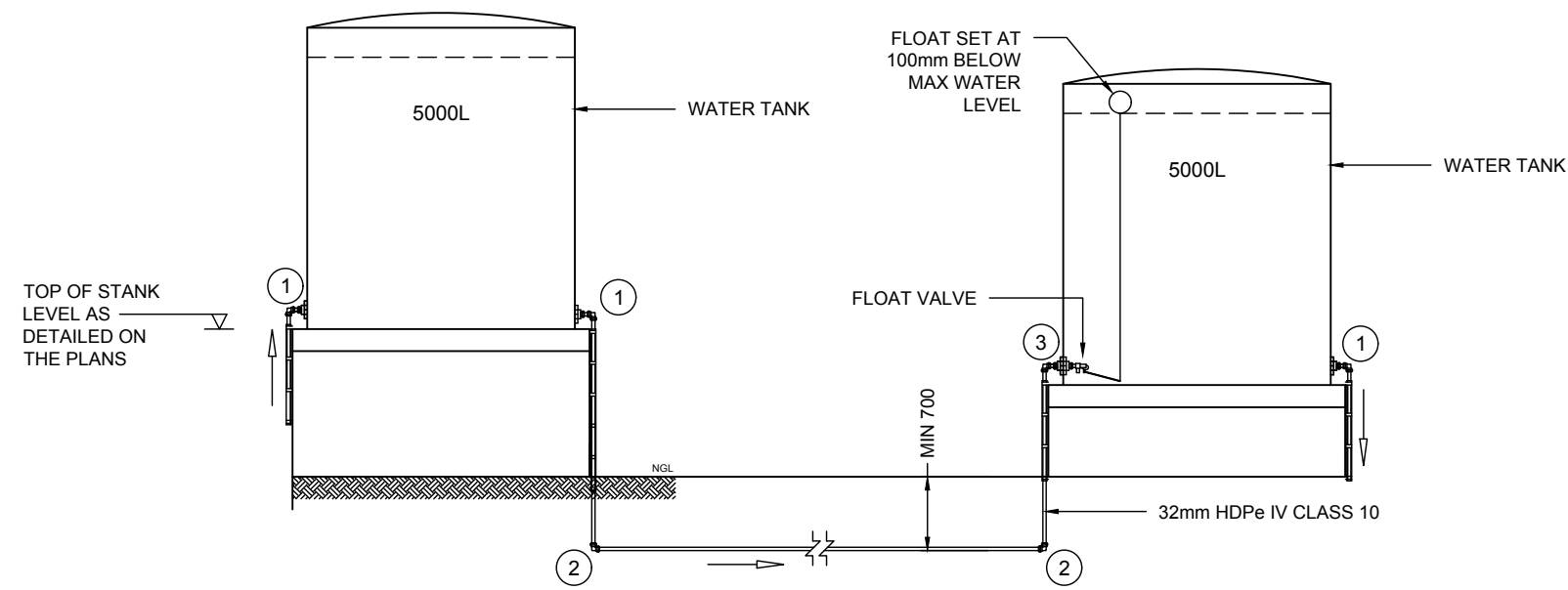


## RAIN WATER HARVESTING TANK INTER-CONNECTION DETAILS



INTER-CONNECTION OF TANKS ON  
SAME LEVELS

SCALE: NTS

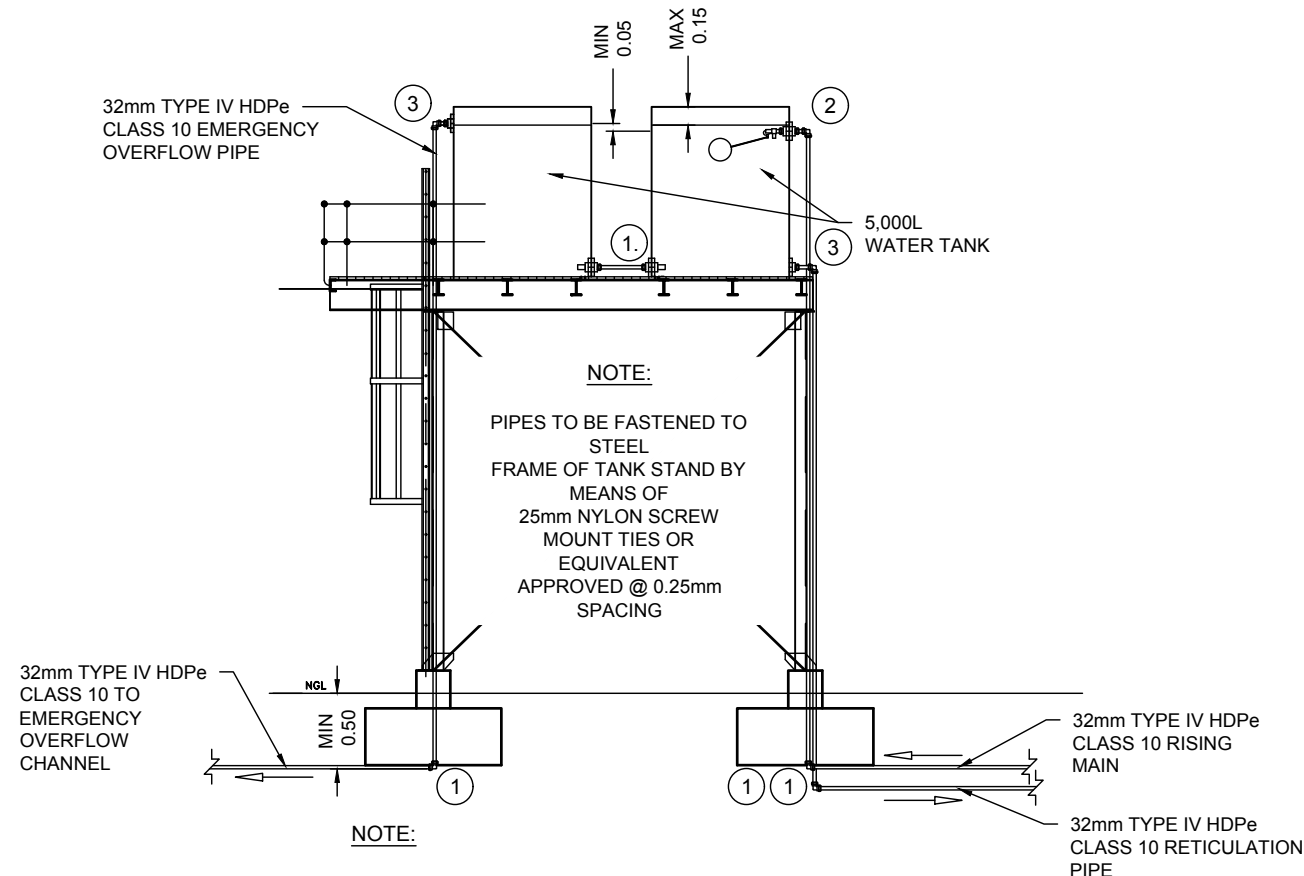


INTER-CONNECTION OF TANKS ON  
DIFFERENT LEVELS

SCALE: NTS

### NOTE:

- 40mm x 30mm NYLON INSERT BUSH  
32mm x 1.25" MALE THREADED 90° ELBOW (HDPe COMPRESSION)  
32mm HDPe TYPE IV CLASS 10 PIPE  
NYLON/PVC 40mm BRACKET OR SIMILAR APPROVED.
- 32mm x 90° HDPe COMPRESSION FITTING
- 40mmX30mm NYLON INSERT BUSH  
32mm x 1.25" MALE THREADED 90° ELBOW (HDPe COMPRESSION)  
32mm HDPe TYPE IV CLASS 10 PIPE  
NYLON/PVC 40mm BRACKET OR SIMILAR APPROVED.  
40mm SLEEVE
- 40mmX30mm NYLON INSERT BUSH  
32X1.1/4 HDPE COMPRESSION ADAPTOR BSP FEMALE 7036  
COBRA 700-32 HIGH PRESSURE BRASS FLOAT VALVE  
DUTTON FP70 ORANGE BALL FLOAT 150mm  
3mm STAINLESS STEEL CABLE

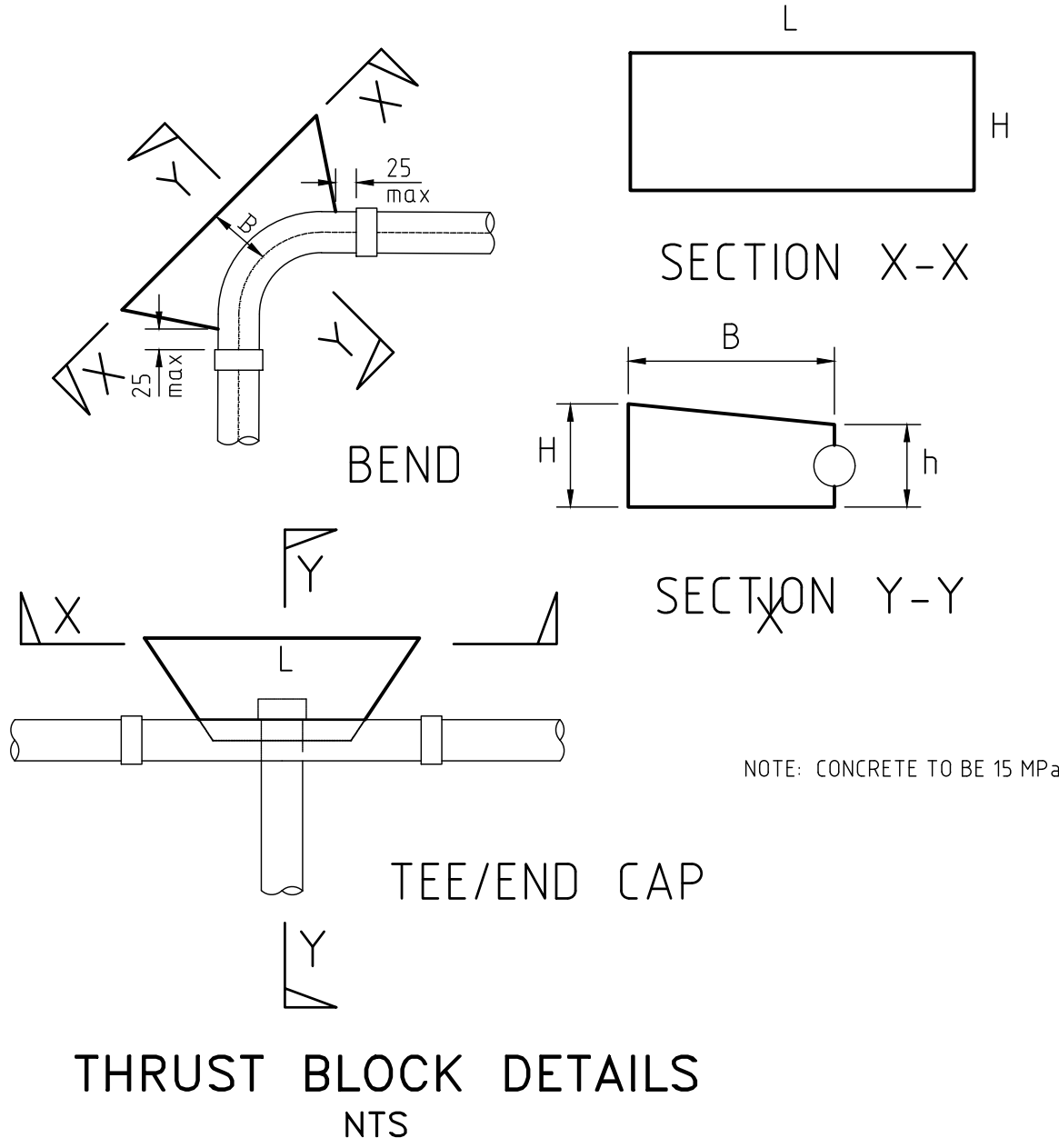


### NOTE:

- 32mm x 90° HDPe COMPRESSION FITTING
- 32mm x 1.25" MALE THREADED 90° ELBOW (HDPe COMPRESSION)  
40mmX30mm NYLON INSERT BUSH  
40mmX30mm NYLON INSERT BUSH  
32X1.1/4 HDPE COMPRESSION ADAPTOR BSP FEMALE 7036  
COBRA 700-32 HIGH PRESSURE BRASS FLOAT VALVE  
DUTTON FP70 ORANGE BALL FLOAT 150mm
- 40mm x 30mm NYLON INSERT BUSH  
32mm x 1.25" MALE THREADED 90° ELBOW (HDPe COMPRESSION)  
32mm HDPe TYPE IV CLASS 10 PIPE  
NYLON/PVC 40mm BRACKET OR SIMILAR APPROVED.
- 40mmX30mm NYLON INSERT BUSH  
32mm HDPe COMPRESSION STRAIGHT MALE COUPLER  
32mm HDPe TYPE IV CLASS 10 PIPE

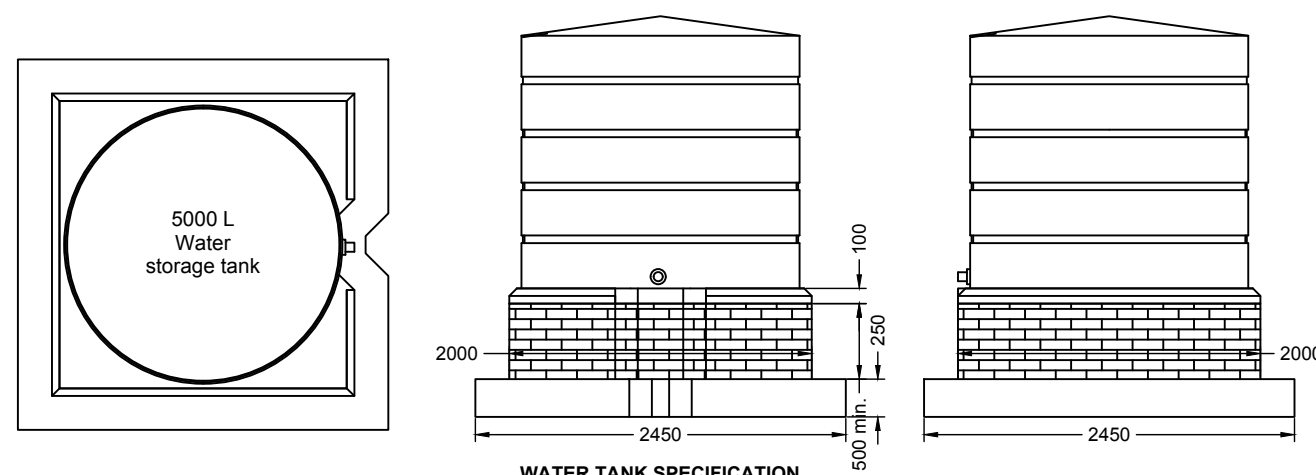
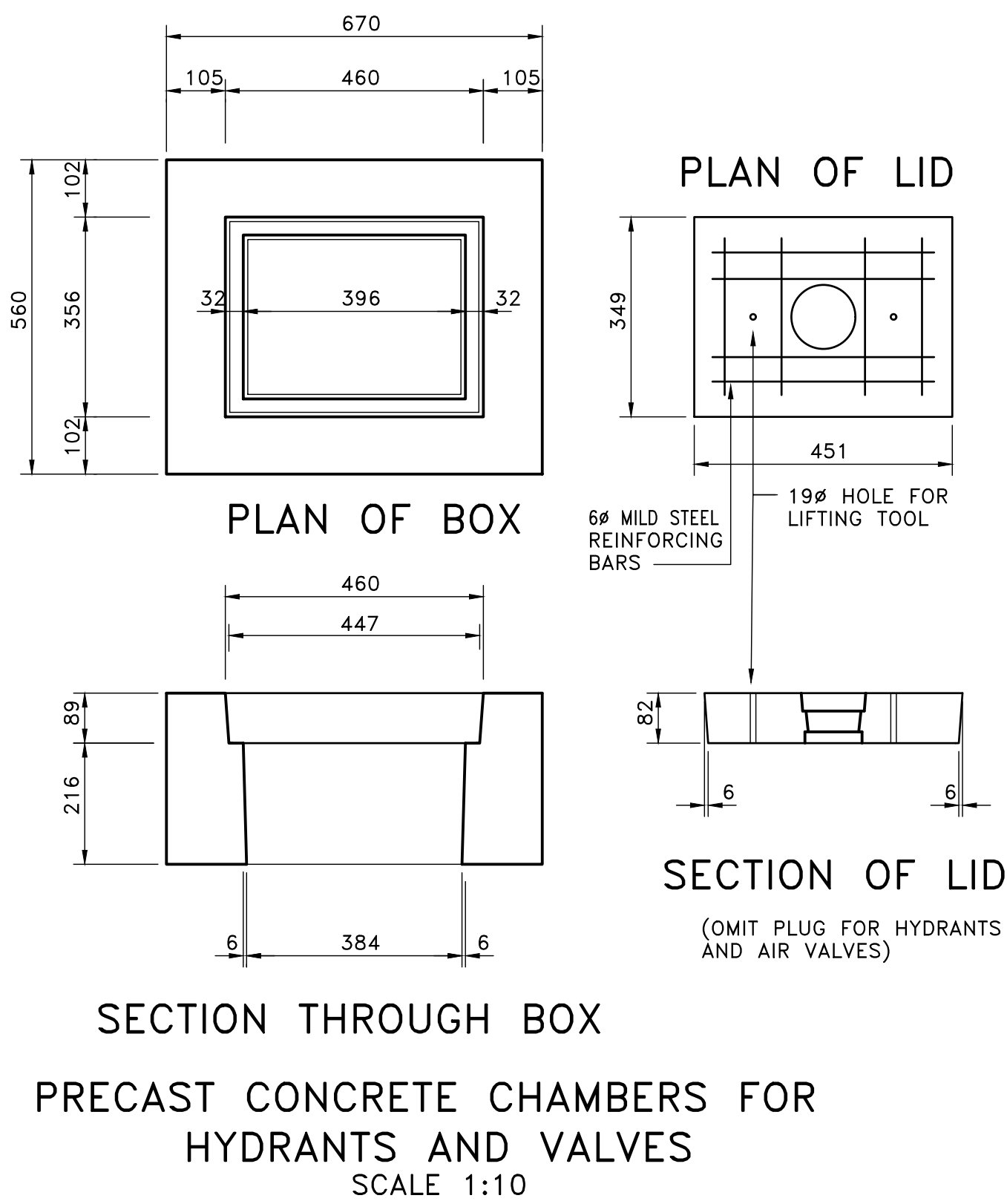
ELEVATED WATER TANK  
WATER FITTINGS DETAIL

SCALE: NTS



NOTE: CONCRETE TO BE 15 MPa

DIMENSIONS FOR THRUST BLOCK						
BENDS	PIPE SIZE	B	L	H	h	
11 1/4°	63	250	250	125	125	
	75	300	300	175	175	
	110	300	400	200	200	
	160	300	450	250	250	
	200	400	600	350	300	
22 1/2°	63	250	350	125	125	
	75	300	400	175	175	
	110	300	450	200	200	
	160	300	650	300	250	
	200	400	650	400	300	
45°	63	250	400	150	125	
	75	300	450	200	175	
	110	300	600	300	300	
	160	340	850	450	350	
	200	400	1000	550	350	
90°	63	250	550	300	225	
	75	300	600	350	275	
	110	320	800	450	300	
	160	440	1100	700	350	
	200	550	1300	700	350	
Tee/END CAP	63	250	650	300	225	
	75	300	700	350	275	
	110	360	900	450	300	
	160	560	1000	700	350	
	200	800	1200	750	350	
	250	900	1400	800	350	



### WATER TANK

Atlas Plastics rotomoulded polyethylene water tank (Code: 2105AP), size 1980mm x 1850mm diameter, 5,000 litre capacity, connected to 2 x 38mm threaded inlet, outlet and overflow tank connectors including 450mm diameter manhole lid with 3 self tapping screws.

### BRICKWORK

17MPa semi-face clay bricks, overall size 220 x 100 x 70mm high, manufactured in accordance with SANS 227:2007, bedded and jointed in Class II mortar and pointed with flush vertical and flush horizontal joints.

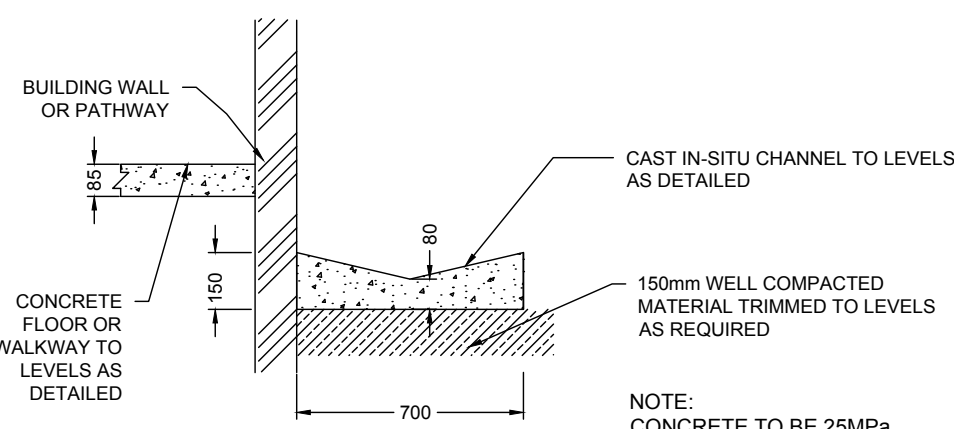
### PLINTH

100mm thick concrete plinth with chamfered edges on: 250micron DPM with 50mm SANDBED on: Approved compacted fill layers of 150mm, 95% MOD AASHTO. (Refer to Structural drawings for reinforcing details)

CONCRETE strip foundation (Refer to Structural drawings for foundation details)

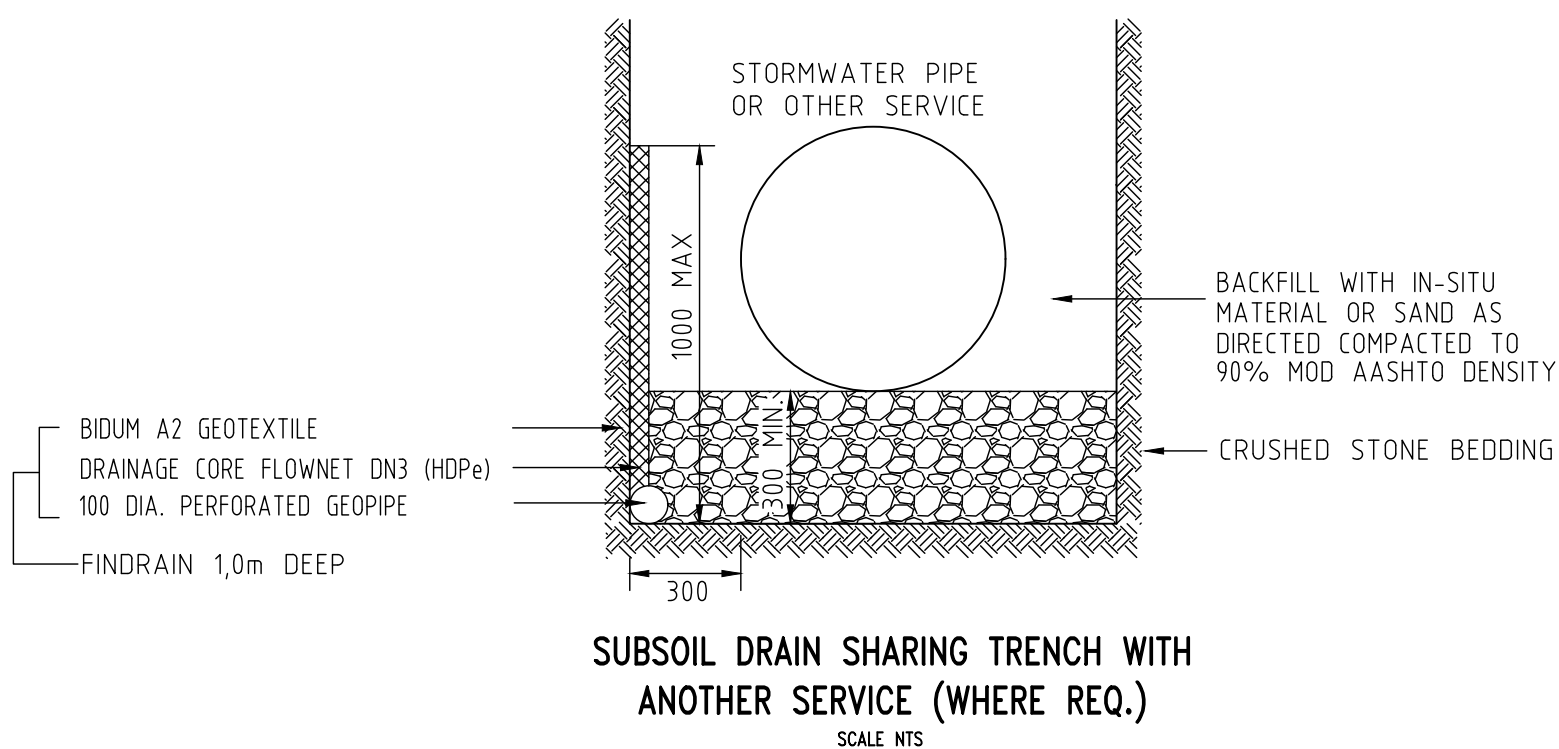
5000L TANK STAND DETAIL  
(AS PER ARCHITECT)

SCALE: NTS



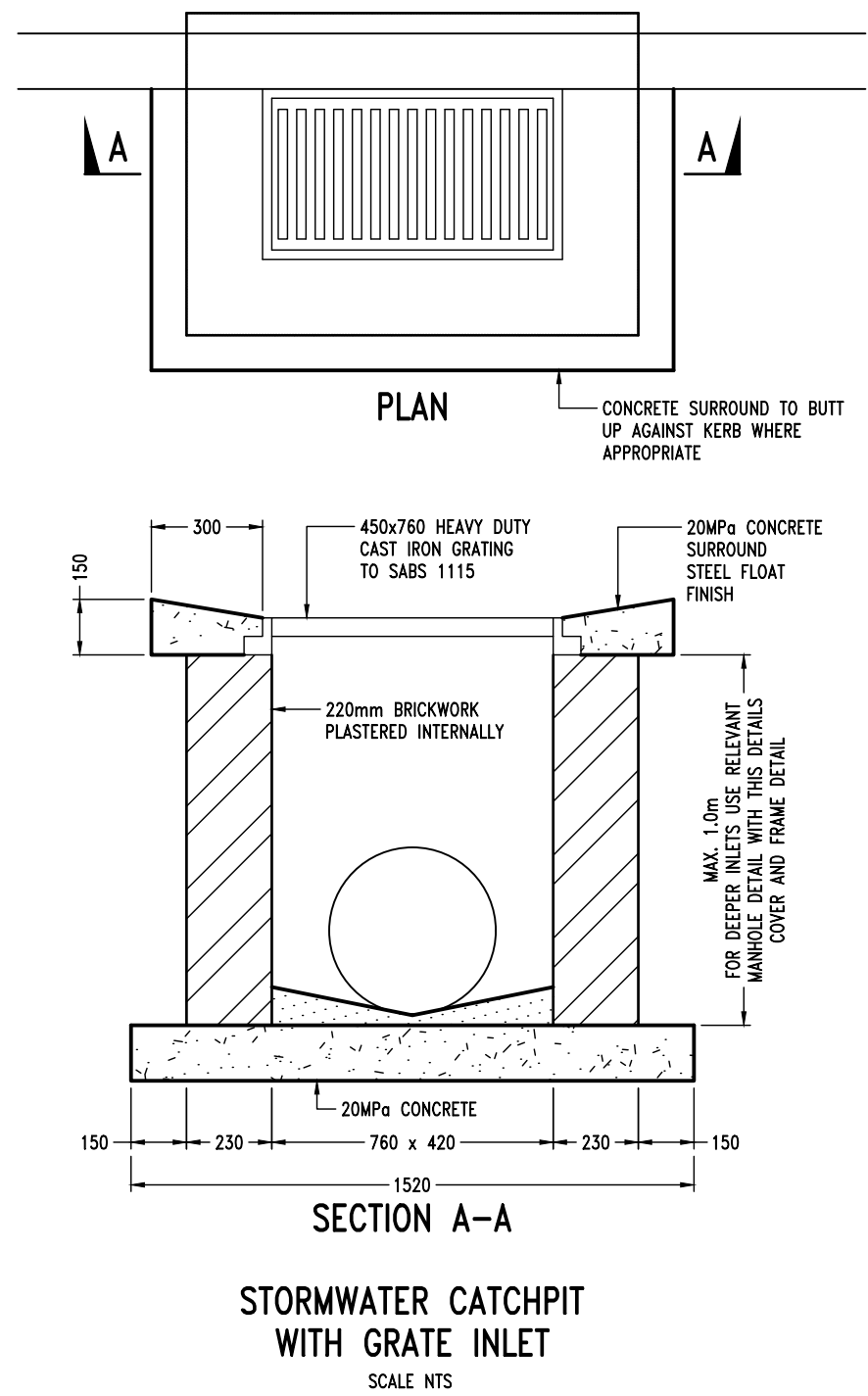
CAST-IN-SITU CONCRETE CHANNEL

SCALE NTS



SUBSOIL DRAIN SHARING TRENCH WITH  
ANOTHER SERVICE (WHERE REQ.)

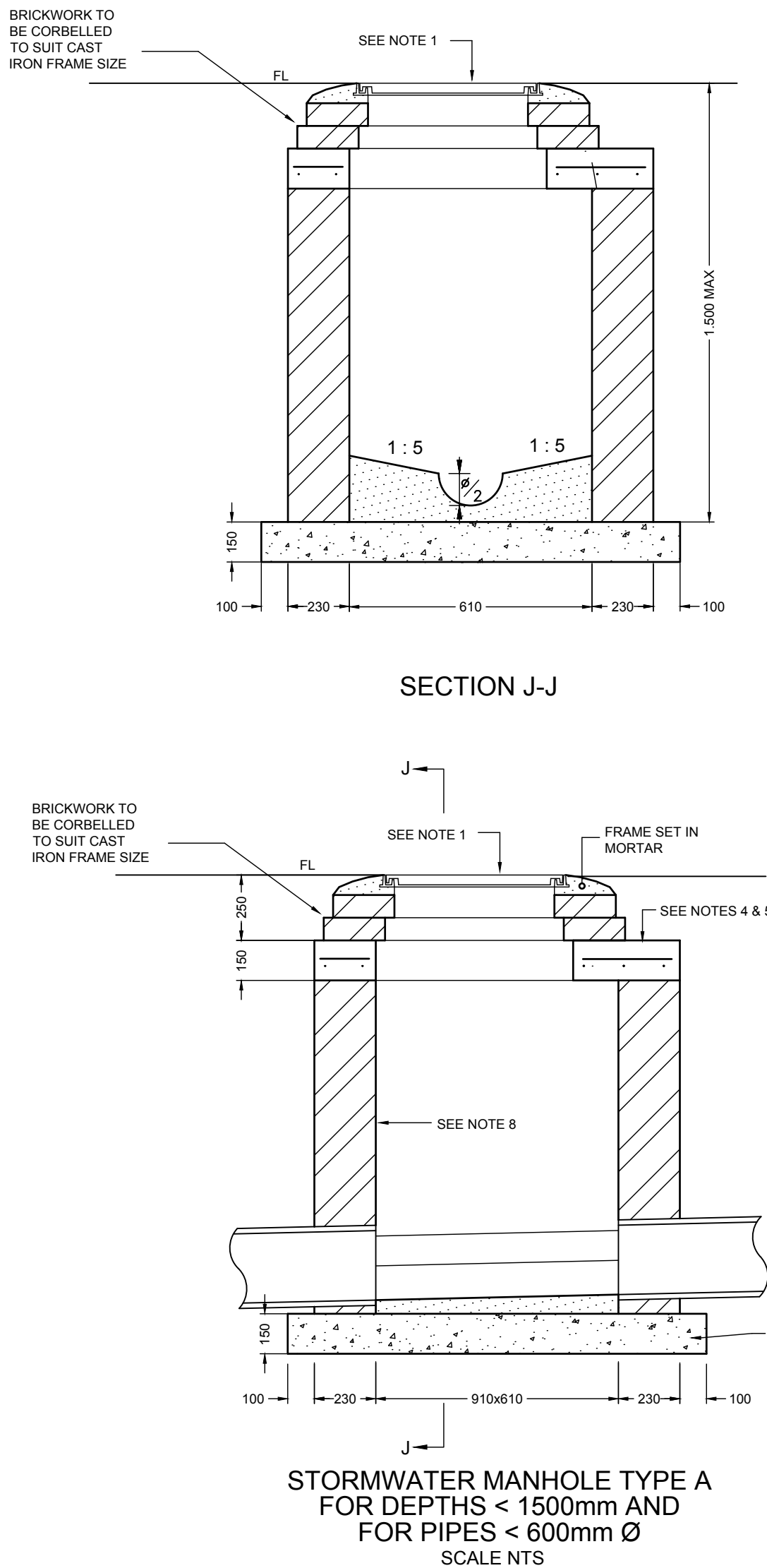
SCALE NTS



SECTION A-A

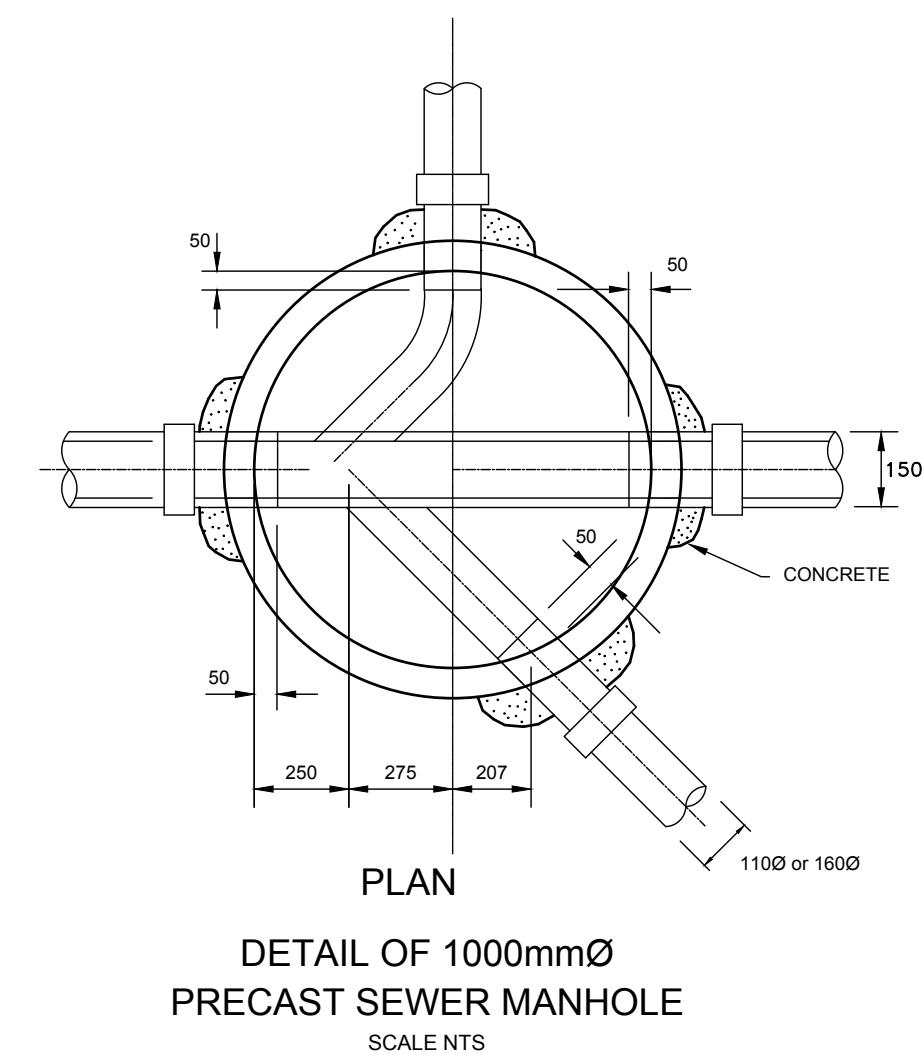
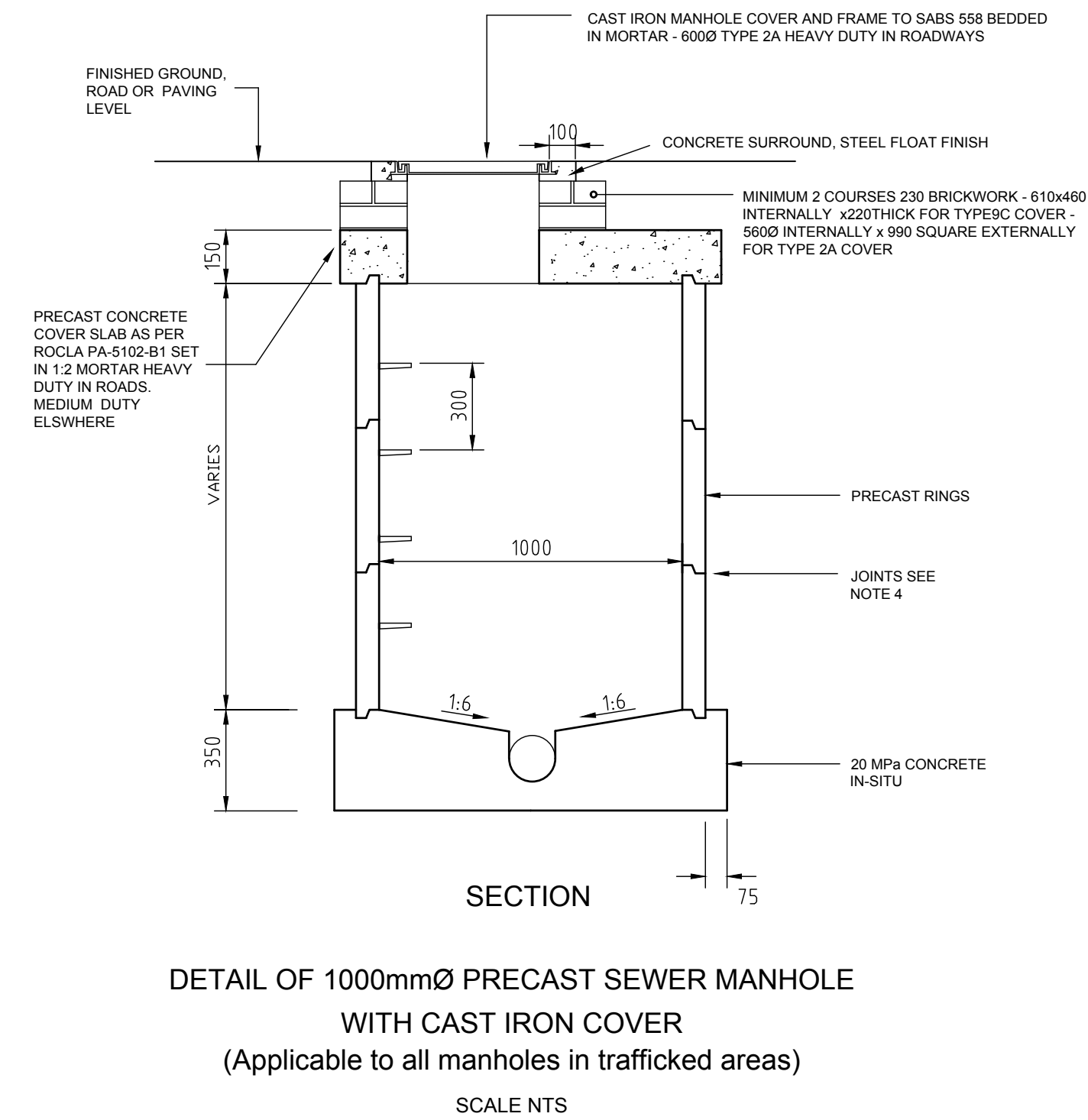
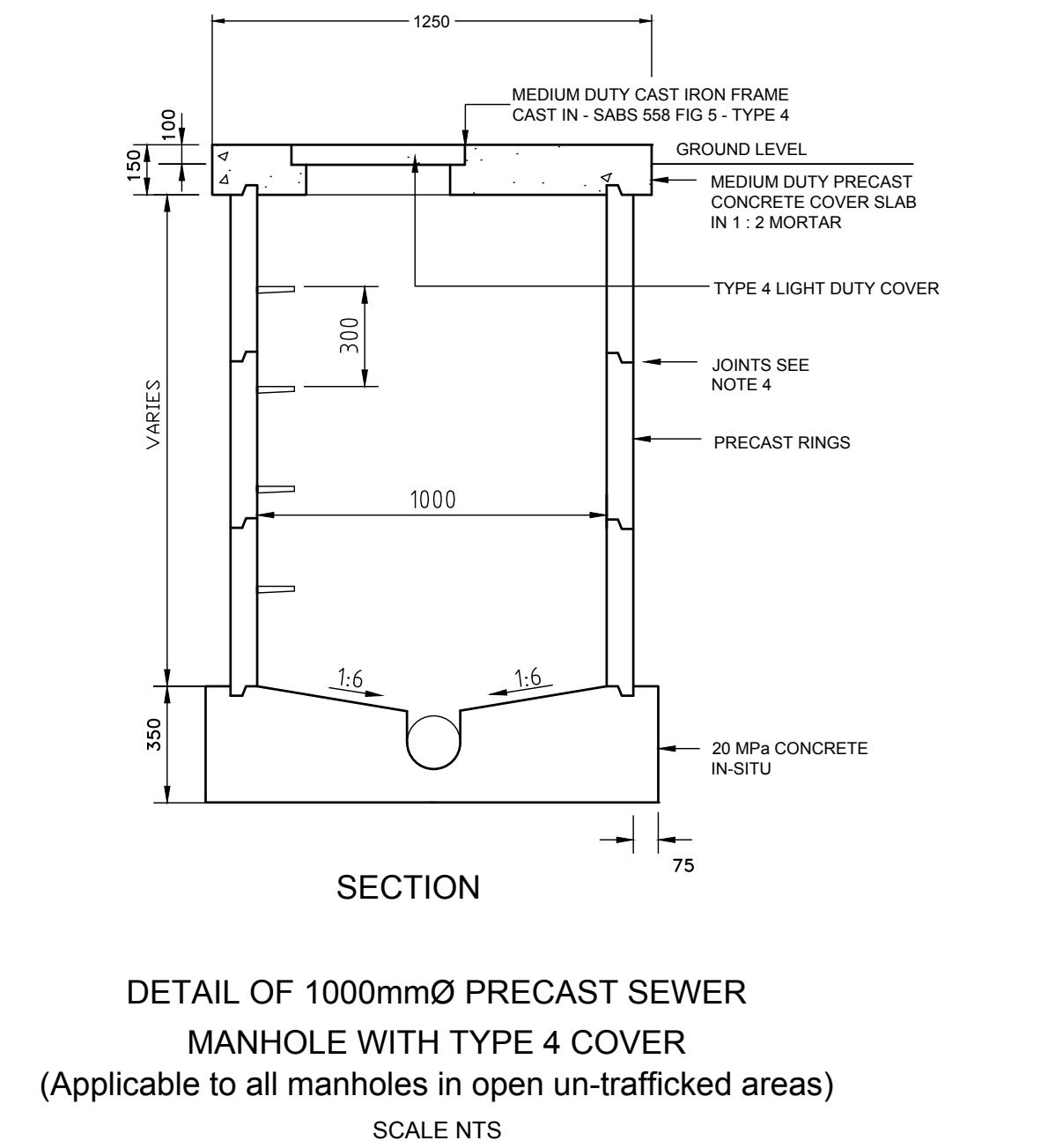
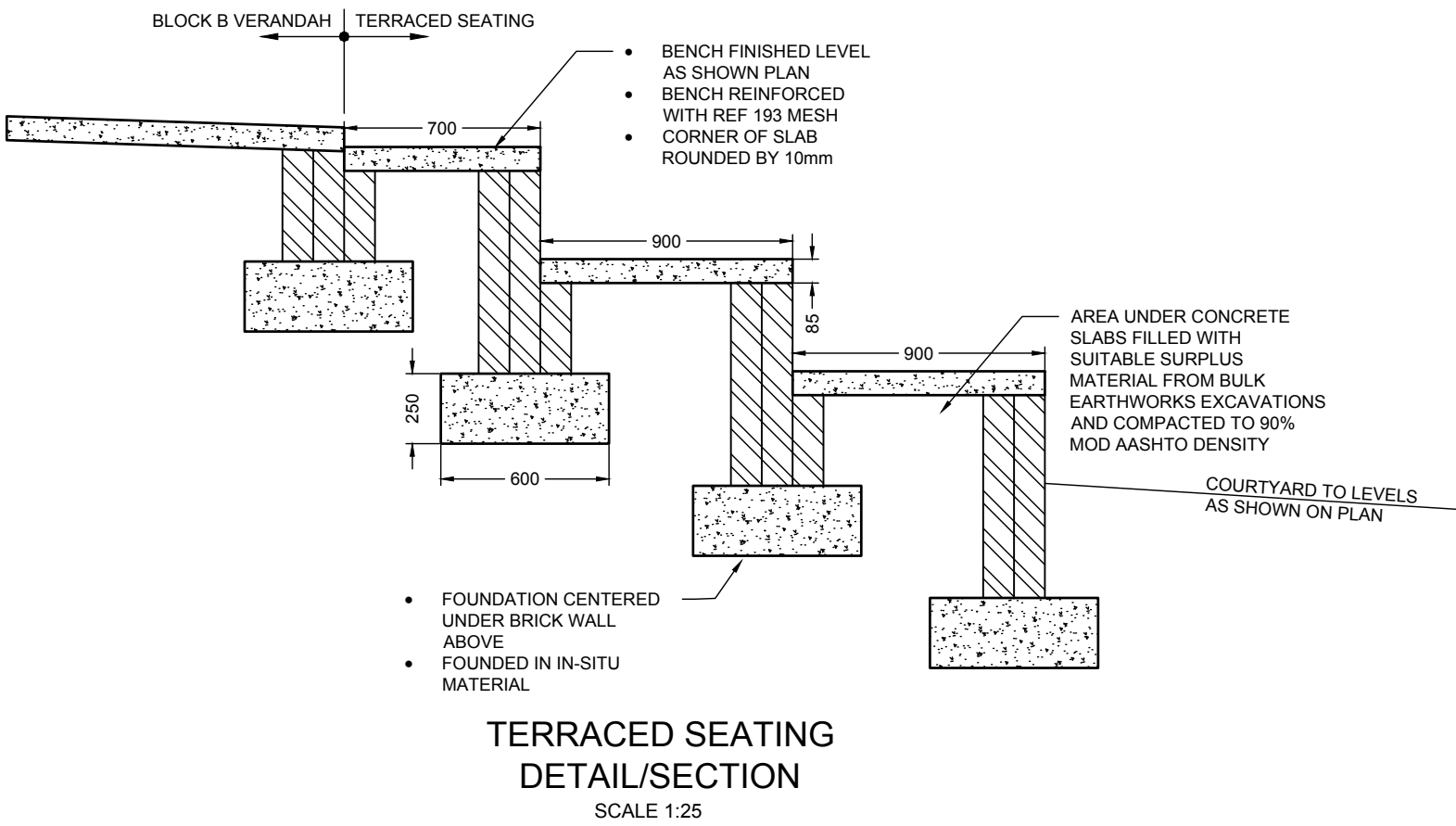
STORMWATER CATCHPIT  
WITH GRATE INLET

SCALE NTS



SECTION J-J

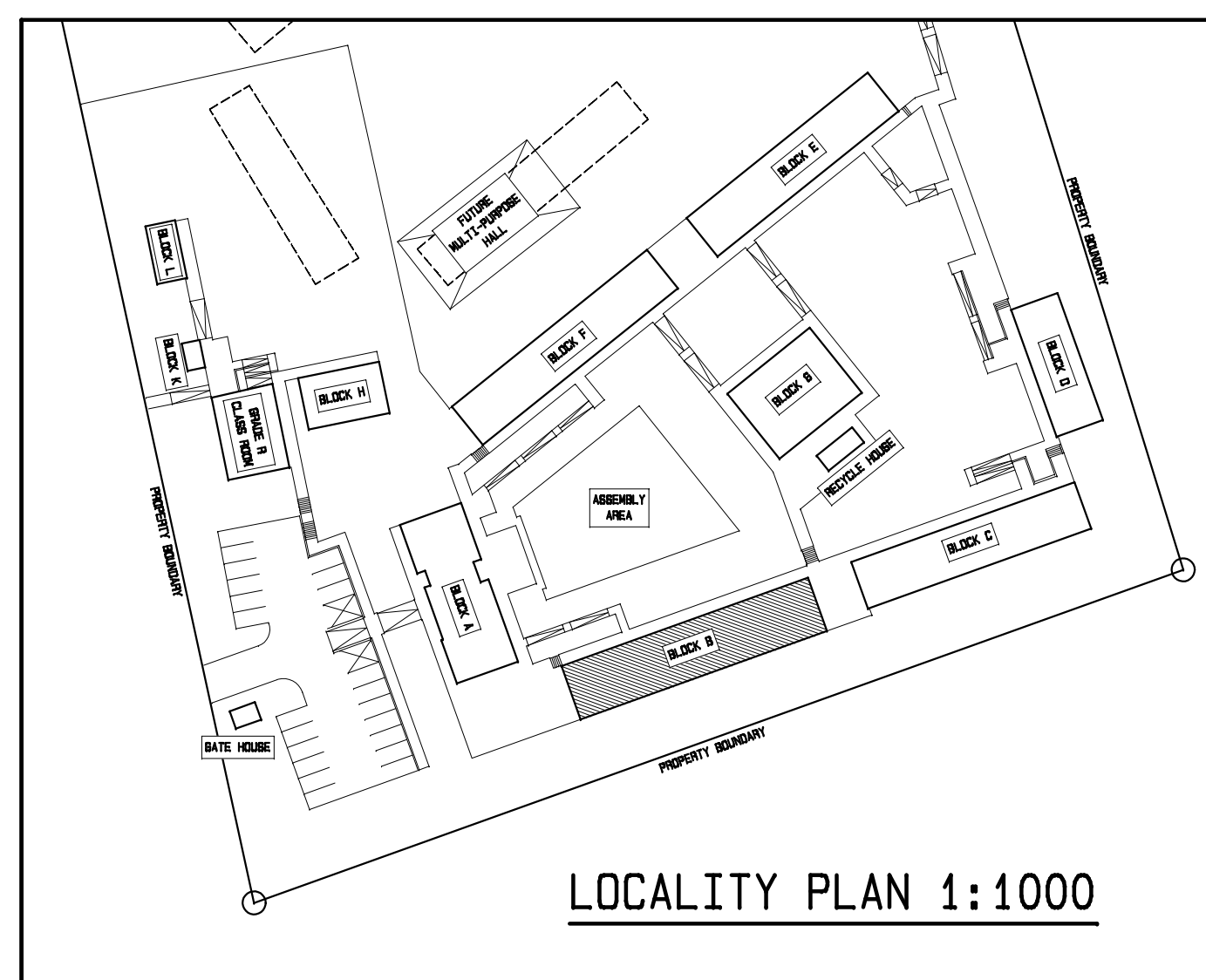
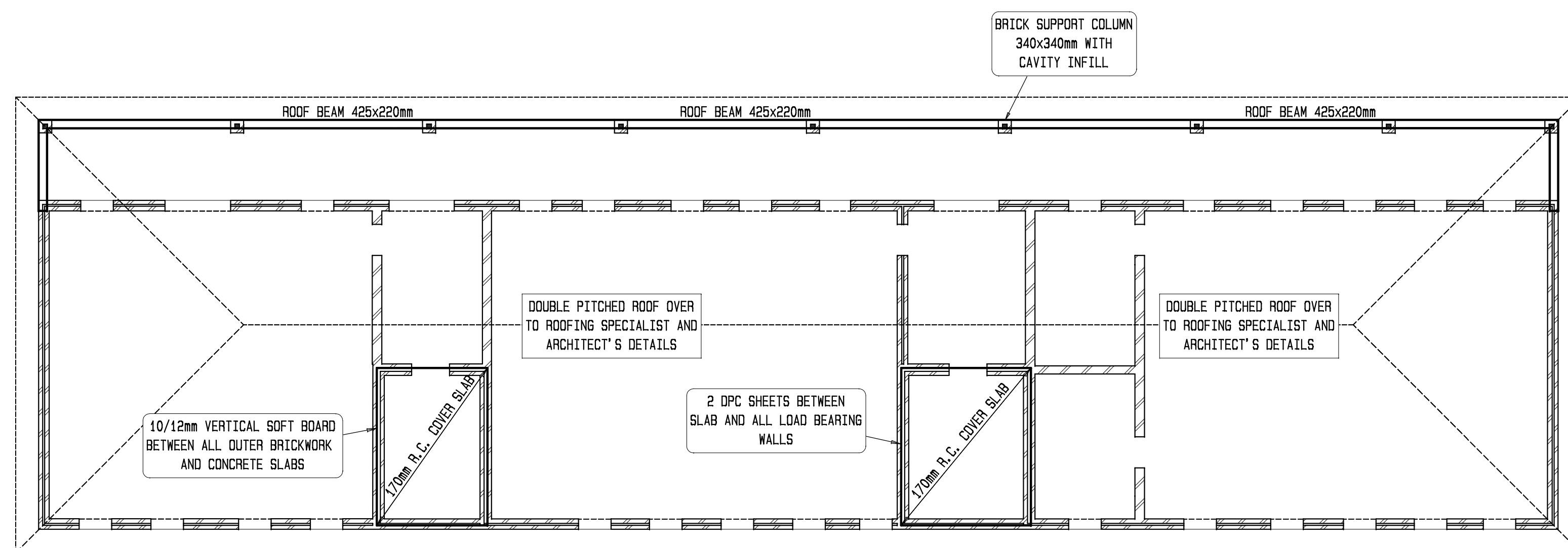
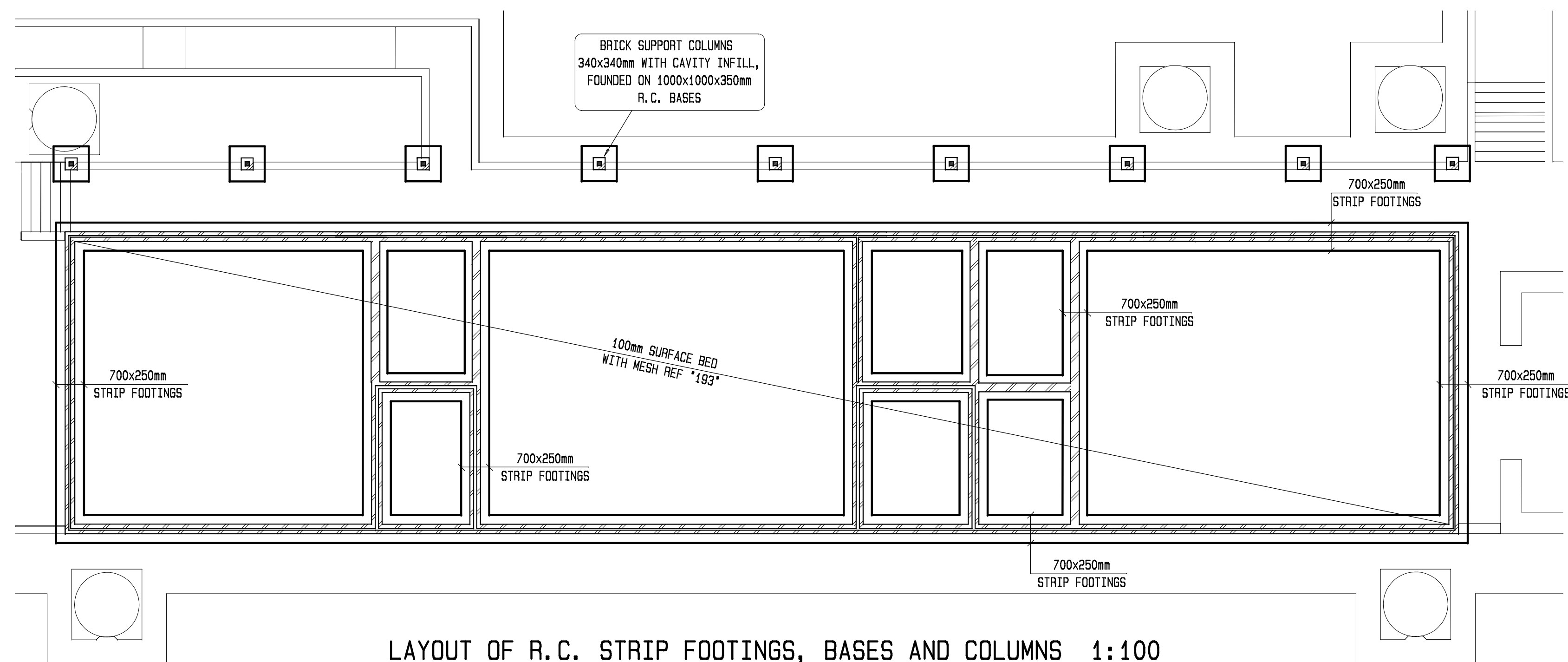
STORMWATER MANHOLE TYPE A  
FOR DEPTHS < 1500mm AND  
FOR PIPES < 600mm Ø  
SCALE NTS



PROSPECT JUNIOR SECONDARY SCHOOL EASTERN CAPE					
CIVIL SERVICES CONSTRUCTION DETAILS SHEET 3 OF 3					
Scale AS SHOWN					
Project No 17-HA-001					
Dwg No C-5-03					
Drawn al	Designed tl	Checked tl	Date Feb'17		
Consultant Signature				Local Authority Approval	
<div>sawgrass consulting</div> <div>www.sgrass.com</div>				A. 28 Feb. '17	
				Rev.	
				Working	
				Drawing	
				Approval	
				By	
				TL	
				Details	







- FOUNDATION NOTES

1. CONCRETE STRENGTH MIN 20 MPA AFTER 28 DAYS
2. CONCRETE COVER TO REINFORCEMENT 50 MM.
3. ALL CONCRETE TO BE VIBRATED WHEN PLACED.
4. NO CONCRETE TO BE PLACED WITHOUT THE APPROVAL OF THE ENGINEERS. 24 HRS NOTICE REQUIRED.
5. NO WALLS OR STRUCTURES NOT SHOWN ON THE ARCHITECT'S DRAWINGS TO BE BUILT ON SURFACE BED.
6. ALL FOUNDATION BRICKWORK MUST BE IN ACCORDANCE WITH SABS 6400-1987-KX 4.3-TABLE 1
7. FOUNDATION BRICKWORK TO HAVE BRICKFORCE EVERY 2ND BRICKCOURSE.
8. CONTRACTOR TO MAKE CONCRETE CUBES (X3) DURING CASTING OF FOUNDATIONS AND HAVE CUBES TESTED AT REGISTERED CIVIL ENG. LABORATORY AND SUBMIT RESULTS TO ENGINEER.
9. DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTS DRAWINGS.

- C O N C R E T E   N O T E S

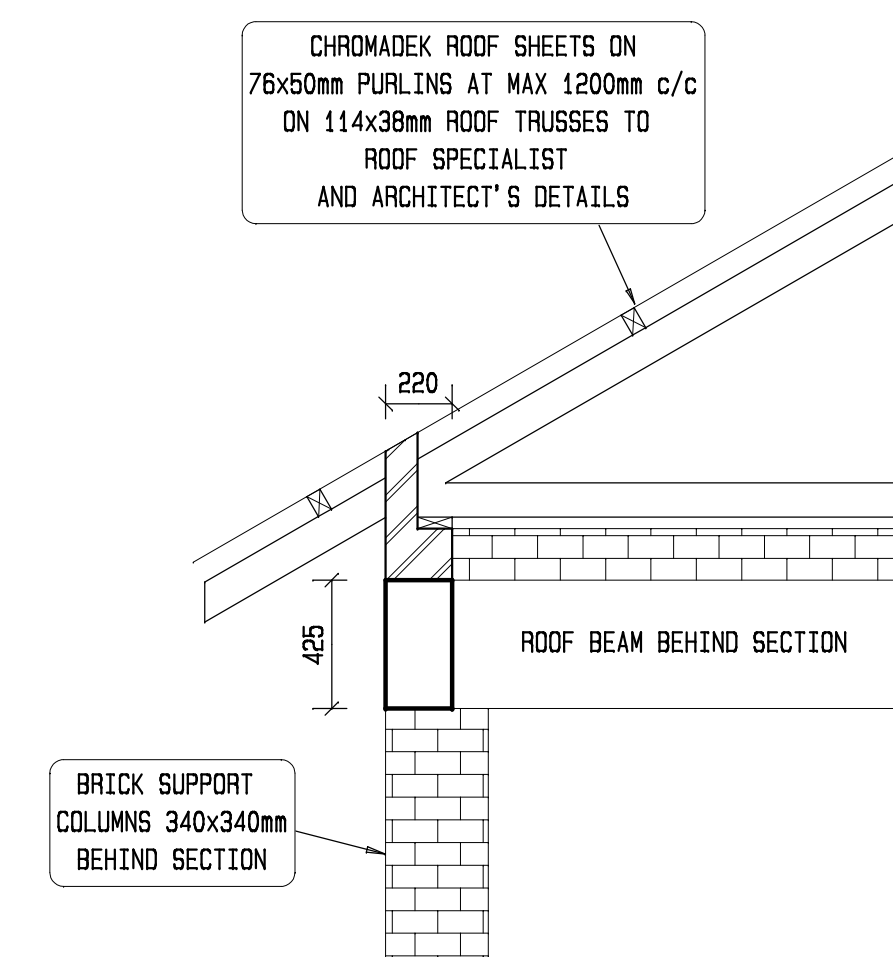
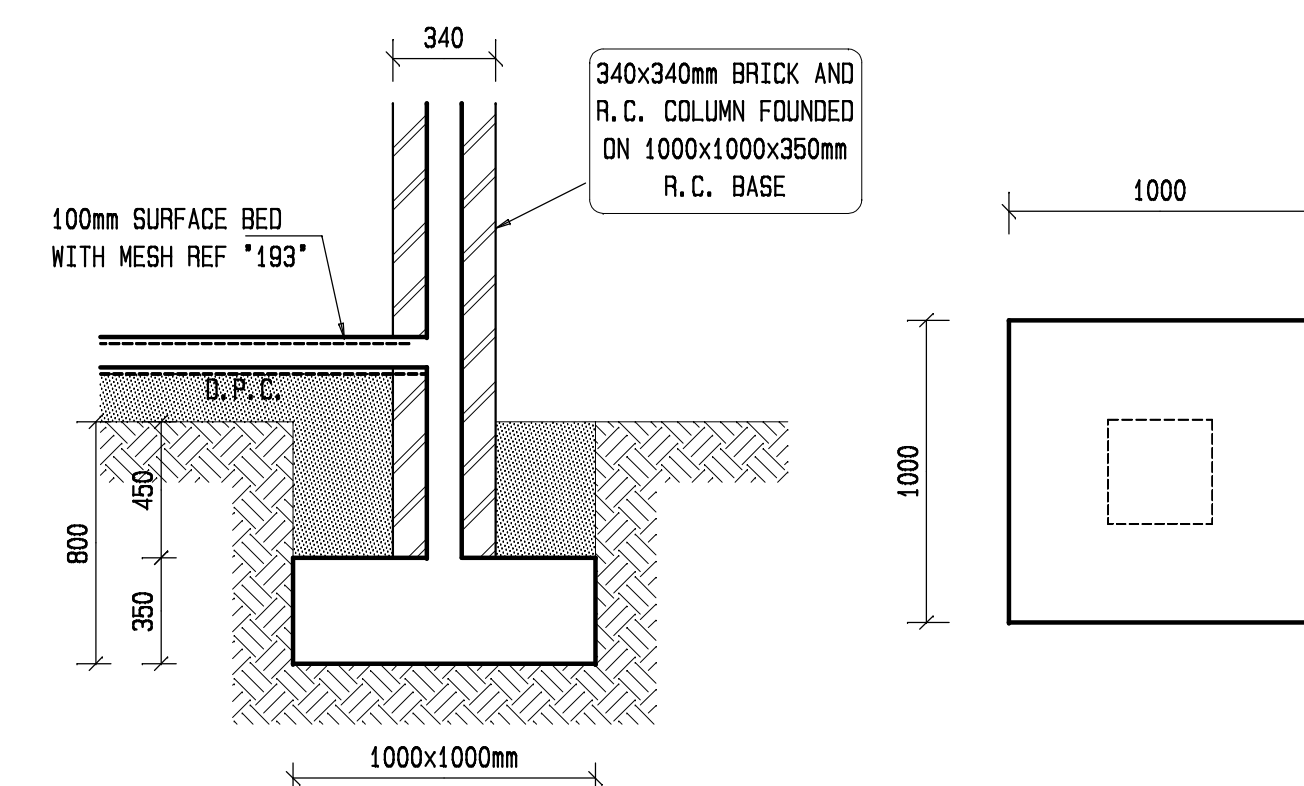
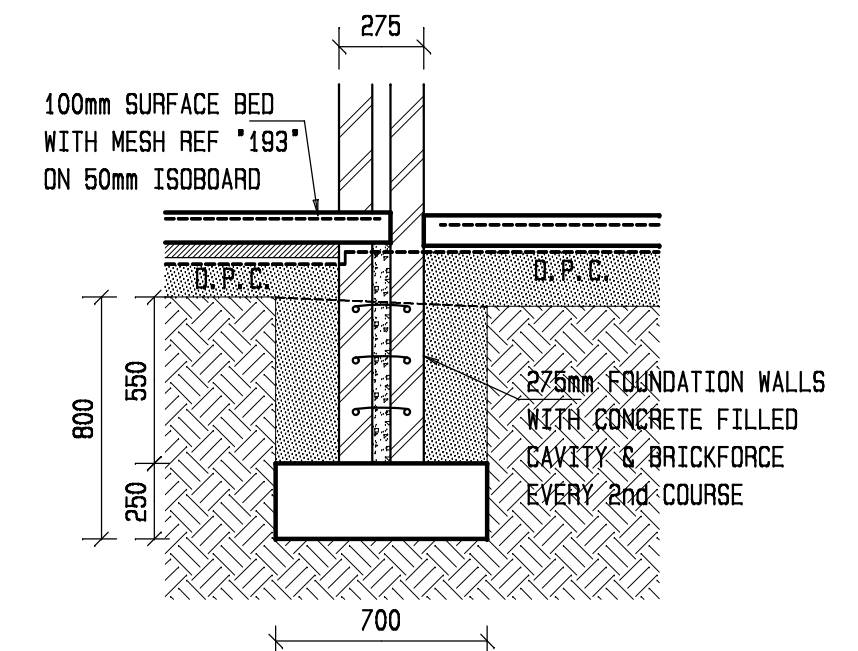
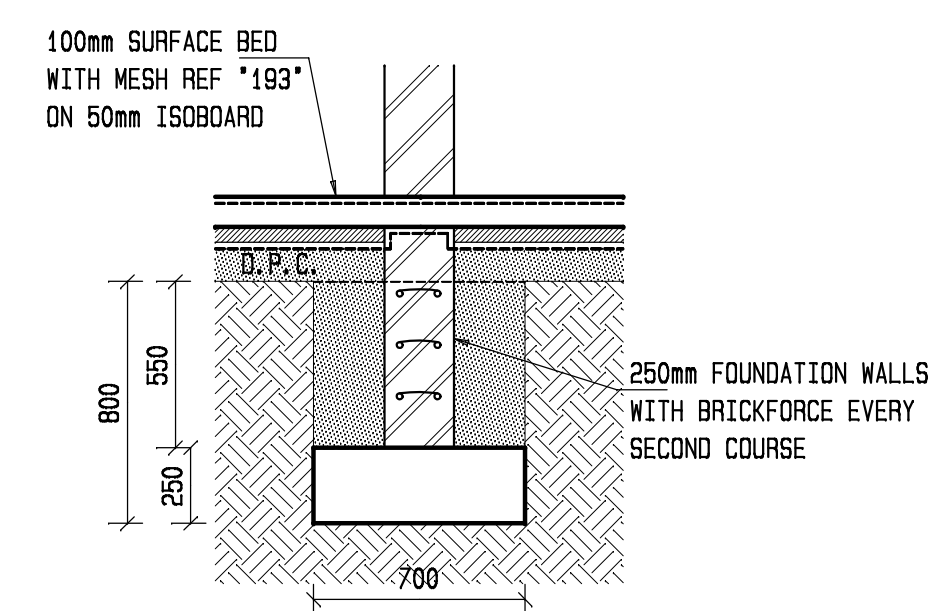
1. ROOF BEAM CONCRETE STRENGTH MIN 25 MPA AFTER 28 DAYS
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11. ALL WORK TO BE SET OUT AS PER ARCHITECTS DRAWINGS

## NOTES

IF ANY ITEM DETAILED ON THIS DRAWING  
RESULTS IN AN INCREASE IN COST TO THE  
CLIENT, THIS INCREASE MUST BE APPROVED  
BY THE ARCHITECT, PRIOR TO CONSTRUCTION

WALLS ABOVE SURFACE BED NOTES
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1. 2xR8 BARS TO BE BEDDED IN THE MORTAR ON TOP OF PRECAST CONCRETE LINTOLS IN EACH BRICK SKIN. THESE MUST EXTEND 1000mm BEYOND EACH END OF EVERY DOOR & WINDOW OPENING.
2. MENTIS PLASTER MESH AVAILABLE FROM IMPI FENCING (TEL: 044-874 5782) MUST BE BEDDED IN PLASTER OVER ALL CHASINGS IN WALLS.



FOUNDATION WALLS TO  
BE SET OUT AS PER  
ARCHITECTS DIMENSIONS

ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK. CONTRACTOR TO CHECK DRAWINGS FOR INCONSISTENCY IN DESIGN LEVELS AND SPECIFICATIONS AND TO CLARIFY THIS WITH THE ENGINEER BEFORE PROCEEDING WITH THE WORKS.

THE COPYRIGHT IN THIS DRAWING,  
INCLUDING THE DESIGN AND  
DETAILS SHOWN HEREON, IS  
RESERVED BY THE ENGINEERS.

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consulting

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Local Authority Approval

Consultant Signature

MS	Designed AW	Checked TL	Date FEB'17
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PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

Scale	AS SHOWN
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Project No 17-HA-001

Arg. No. S-02-1

## WORKING DRAWING APPROVAL





1. CONCRETE STRENGTH MIN 20 MPA AFTER 28 DAYS
2. CONCRETE COVER TO REINFORCEMENT 50 MM.
3. ALL CONCRETE TO BE VIBRATED WHEN PLACED.
4. NO CONCRETE TO BE PLACED WITHOUT THE APPROVAL OF THE ENGINEERS, 24 HRS NOTICE REQUIRED.
5. NO WALLS OR STRUCTURES NOT SHOWN ON THE ARCHITECT'S DRAWINGS TO BE BUILT ON SURFACE BED.
6. ALL FOUNDATION BRICKWORK MUST BE IN ACCORDANCE WITH SABS 6400-1987-KK 4.3-TABLE 1
7. FOUNDATION BRICKWORK TO HAVE BRICKFORCE EVERY 2ND BRICKCOURSE.
8. CONTRACTOR TO MAKE CONCRETE CUBES (X3) DURING CASTING OF FOUNDATIONS AND HAVE CUBES TESTED AT REGISTERED CIVIL ENG. LABORATORY AND SUBMIT RESULTS TO ENGINEER.
9. DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTS DRAWINGS.

1. ROOF BEAM CONCRETE STRENGTH MIN 25 MPA AFTER 28 DAYS
2. CONCRETE COVER TO REINFORCEMENT 30 mm min.
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8. CONCRETE WORK TO BE PROPPED AT 1500 C/F FOR 21 DAYS AFTER CASTING.
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1. 2xR8 BARS TO BE BEDDED IN THE MORTAR ON TOP OF PRECAST CONCRETE LINTOLS IN EACH BRICK SKIN. THESE MUST EXTEND 1000mm BEYOND EACH END OF EVERY DOOR & WINDOW OPENING.
2. MENTIS PLASTER MESH AVAILABLE FROM IMPI FENCING (TEL: 044-874 5782) MUST BE BEDDED IN PLASTER OVER ALL CHASINGS IN WALLS.

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THE COPYRIGHT IN THIS DRAWING,  
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DETAILS SHOWN HEREON, IS  
SERVED BY THE ENGINEERS.

[illegible]

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Local Authority Approval
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Consultant Signature
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MS	Designed AW	Checked TL	Date FEB'17
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PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

BLOCK C - CLASSROOMS (FOUR)  
LAYOUT AND DETAILS OF R.C. STRIP FOOTINGS, BASES, COLUMNS AND ROOF BEAMS

ale	AS SHOWN
-----	----------

Project No 17-HA-001

g. No S-03-1

WORKING DRAWING APPROVAL



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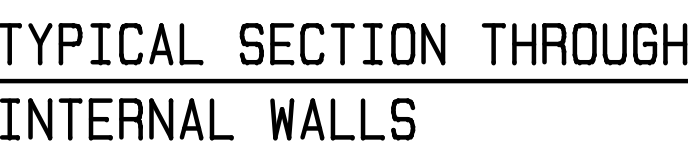
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THE COPYRIGHT IN THIS DRAWING,  
INCLUDING THE DESIGN AND  
DETAILS SHOWN HEREON, IS



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2. CONCRETE COVER TO REINFORCEMENT 50 MM.
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8. CONTRACTOR TO MAKE CONCRETE CUBES (X3) DURING CASTINGS OF FOUNDATIONS AND HAVE CUBES TESTED AT REGISTERED CIVIL ENG. LABORATORY AND SUBMIT RESULTS TO ENGINEER.
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WORKING DRAWING APPROVAL

**sawgrass**  
consulting

Local Authority Approval
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Consultant Signature
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Drawn MS	Designed AW	Checked TL	Date FEB'17
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PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

BLOCK E – CLASSROOMS (FOUR)  
LAYOUT AND DETAILS OF R.C. STRIP FOOTINGS, BASES, COLUMNS AND ROOF BEAMS

Scale	AS SHOWN
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Project No 17-HA-00

Drg. No S-05-1

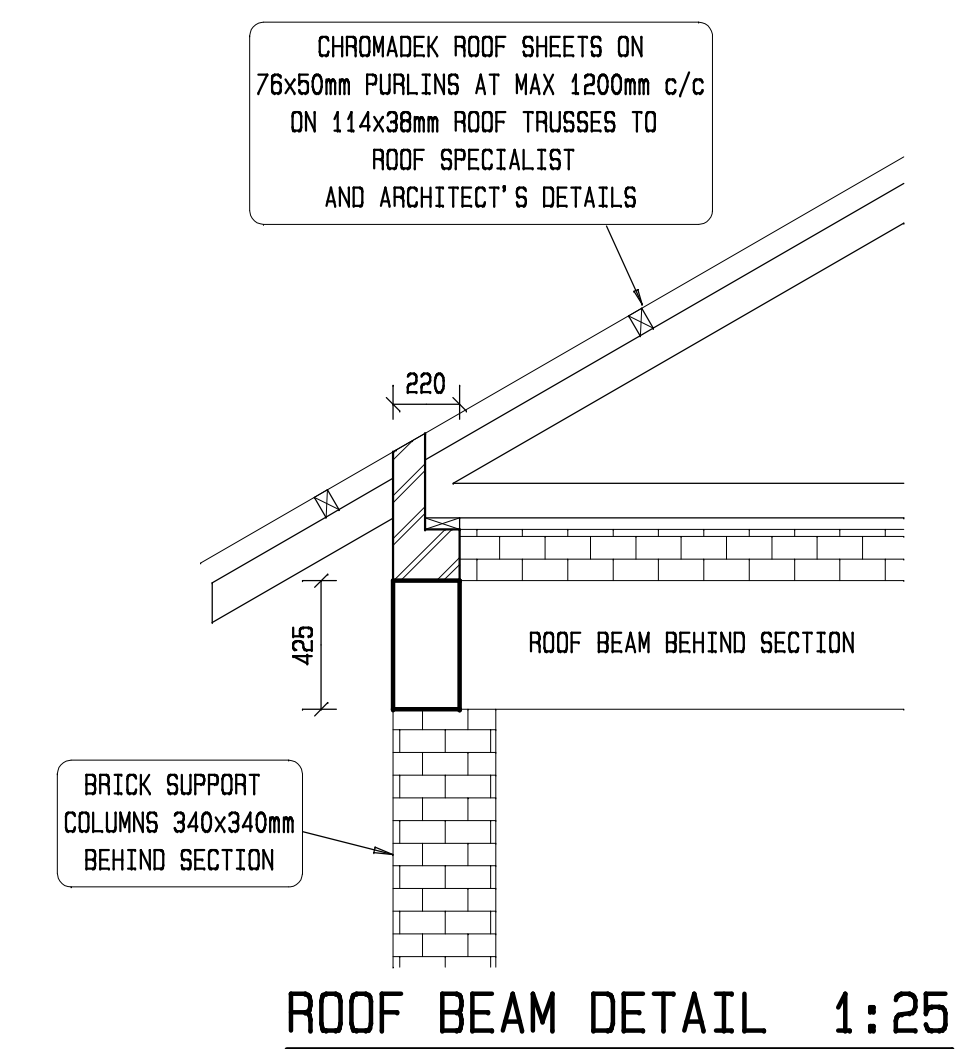
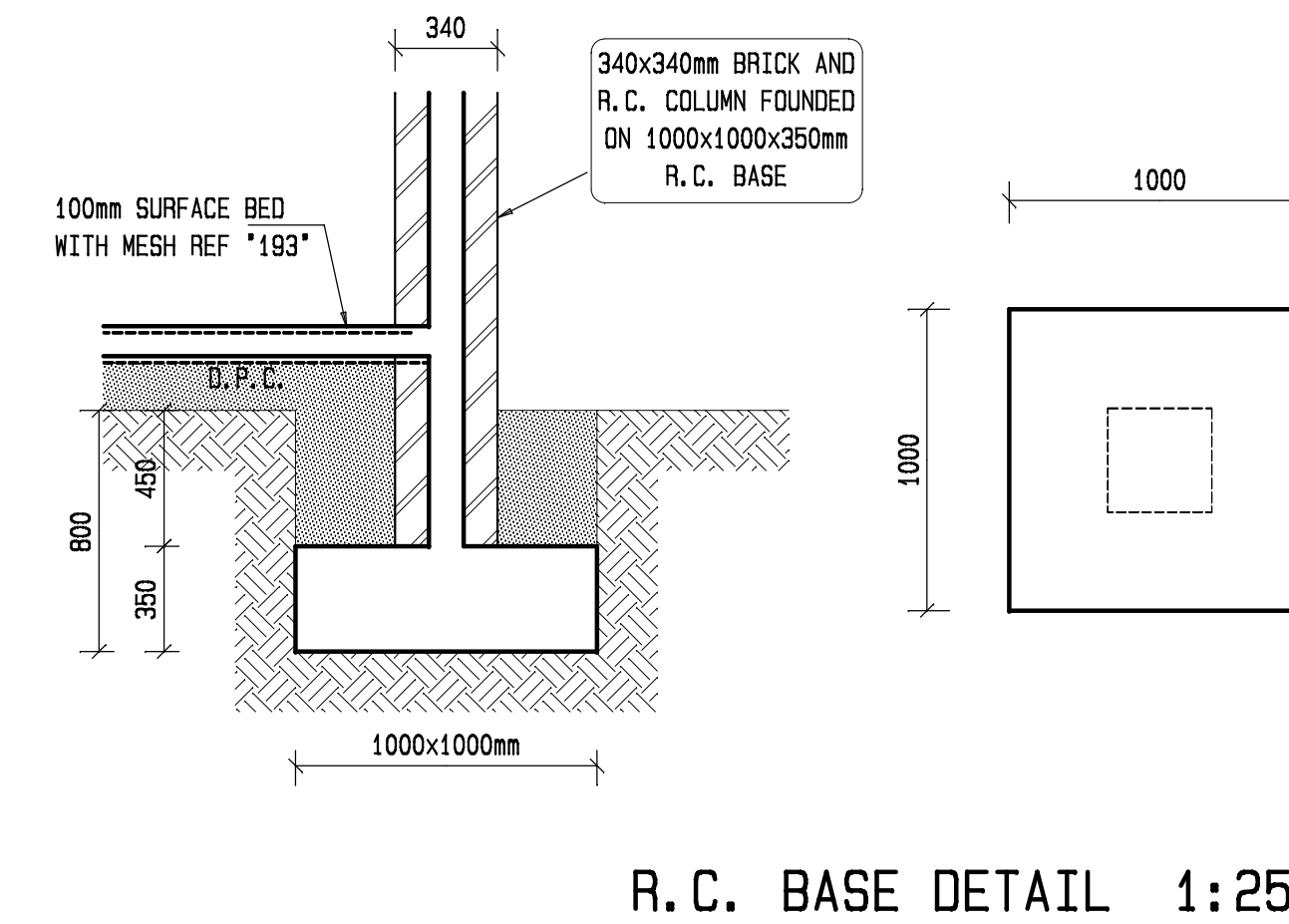
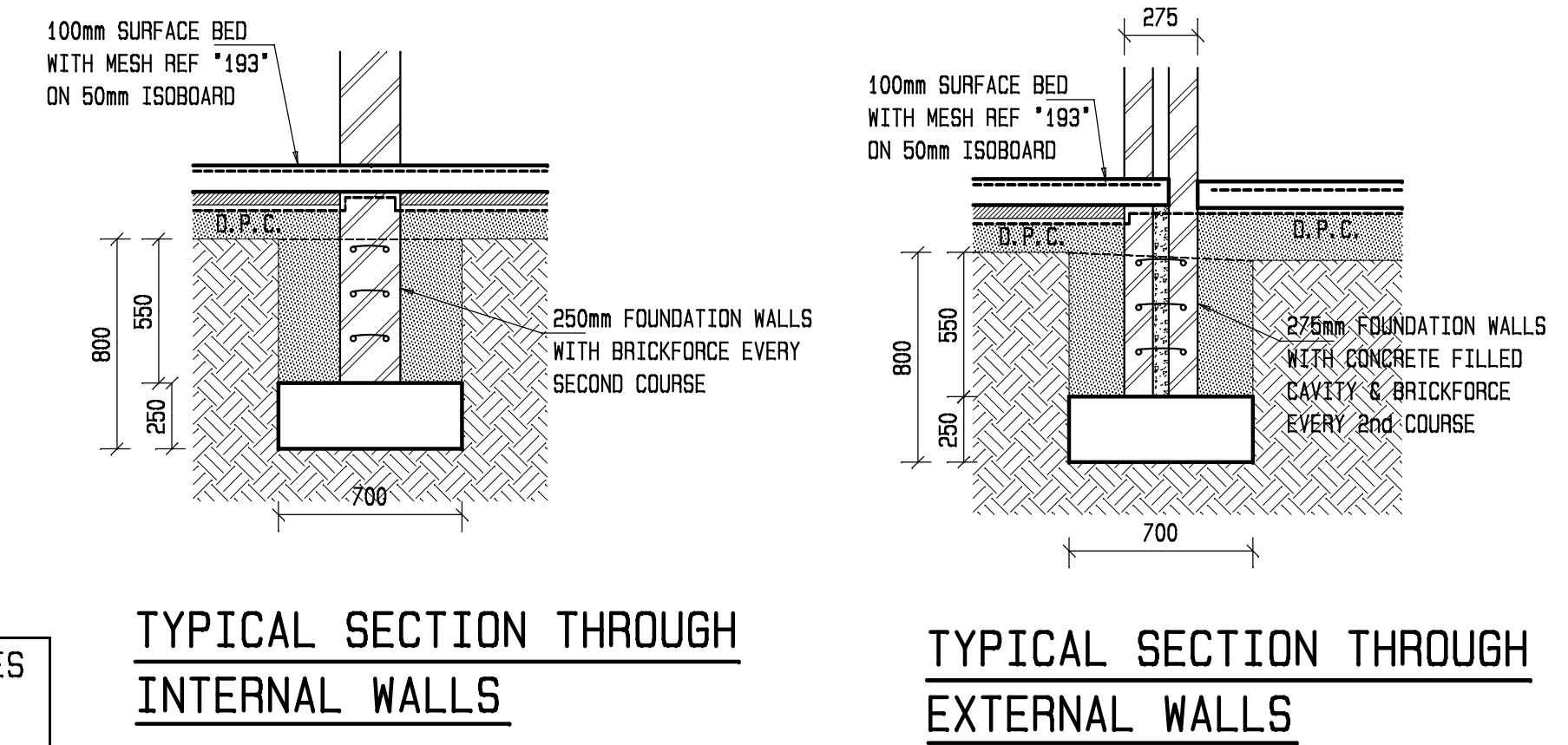
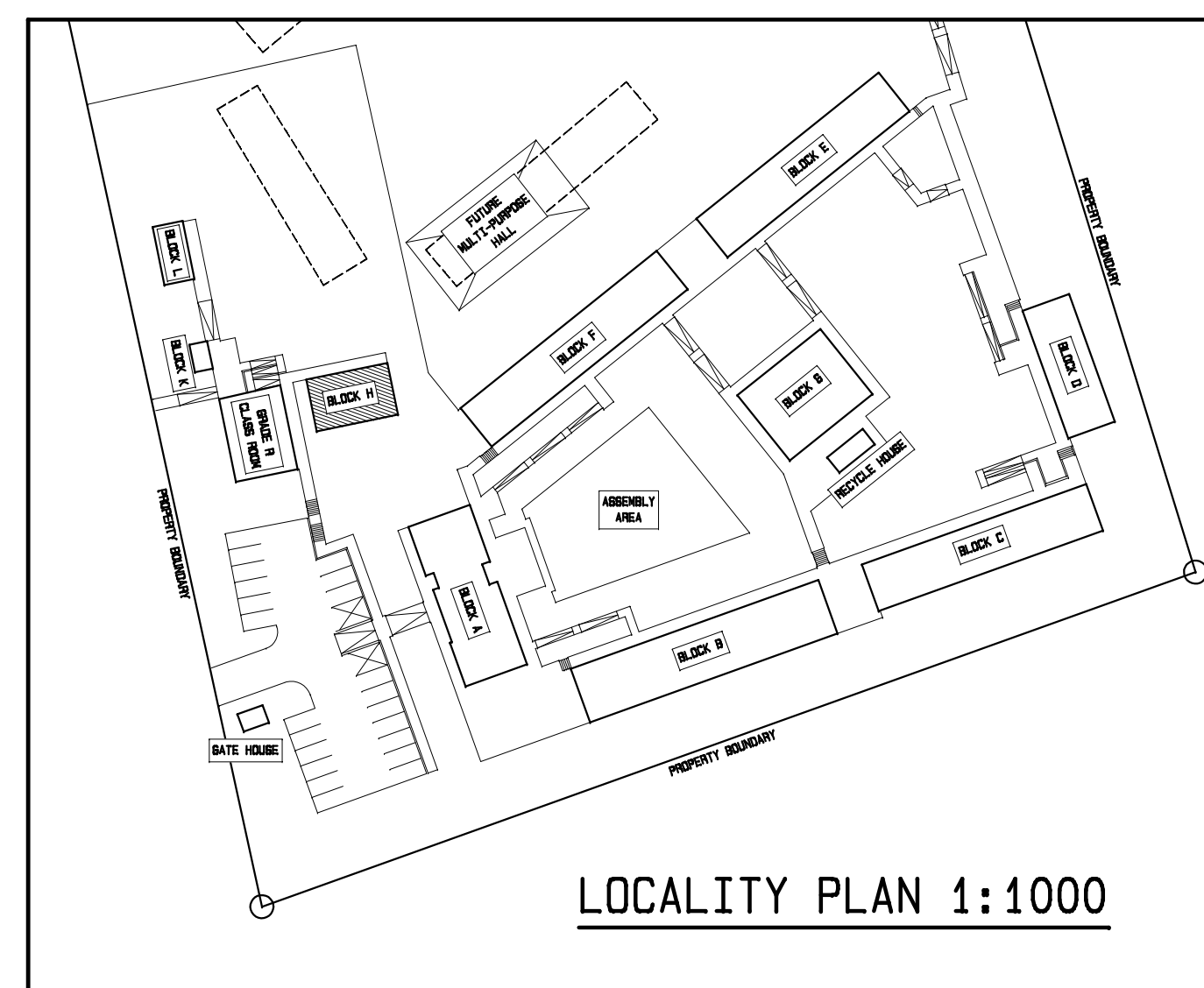
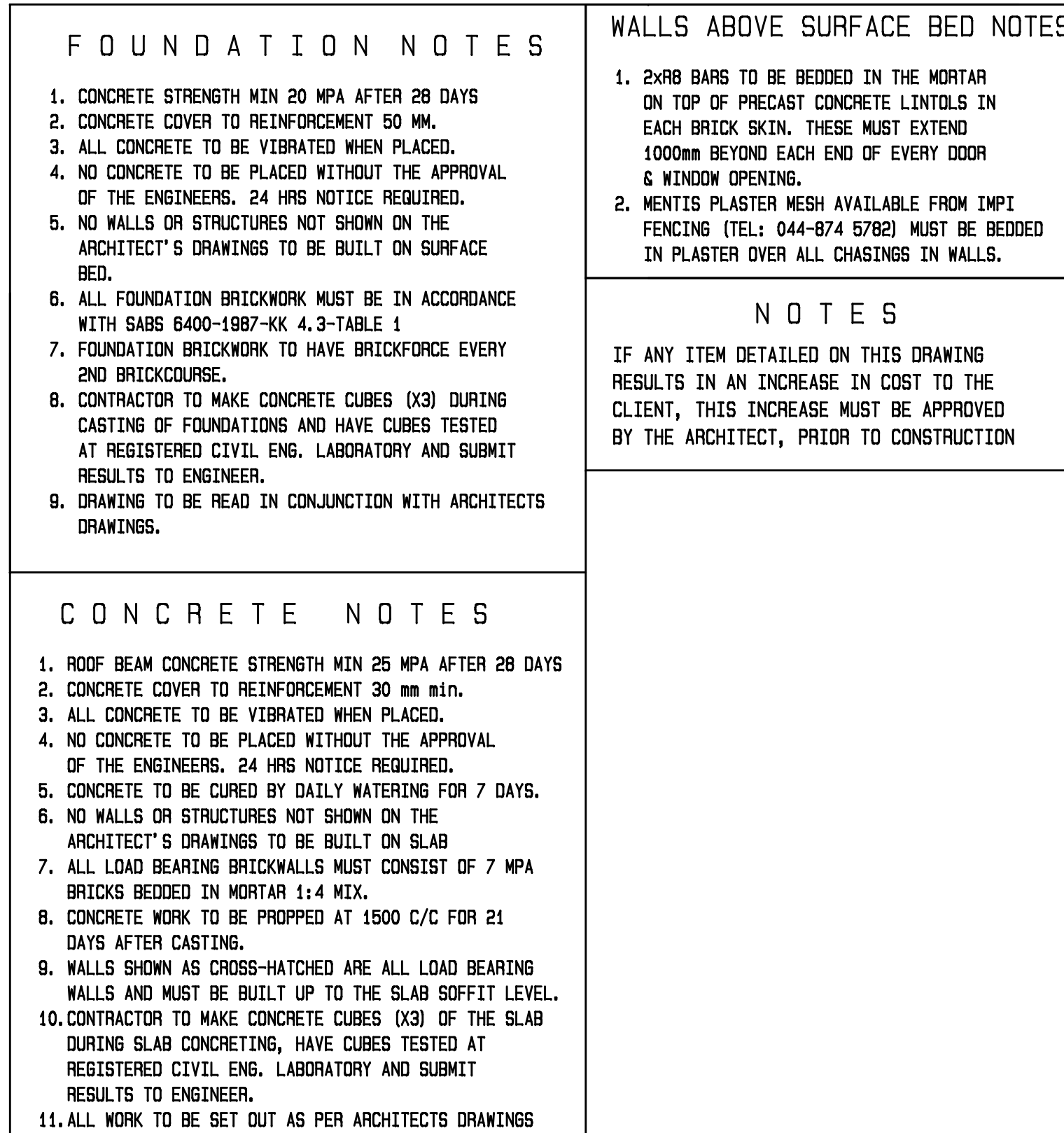
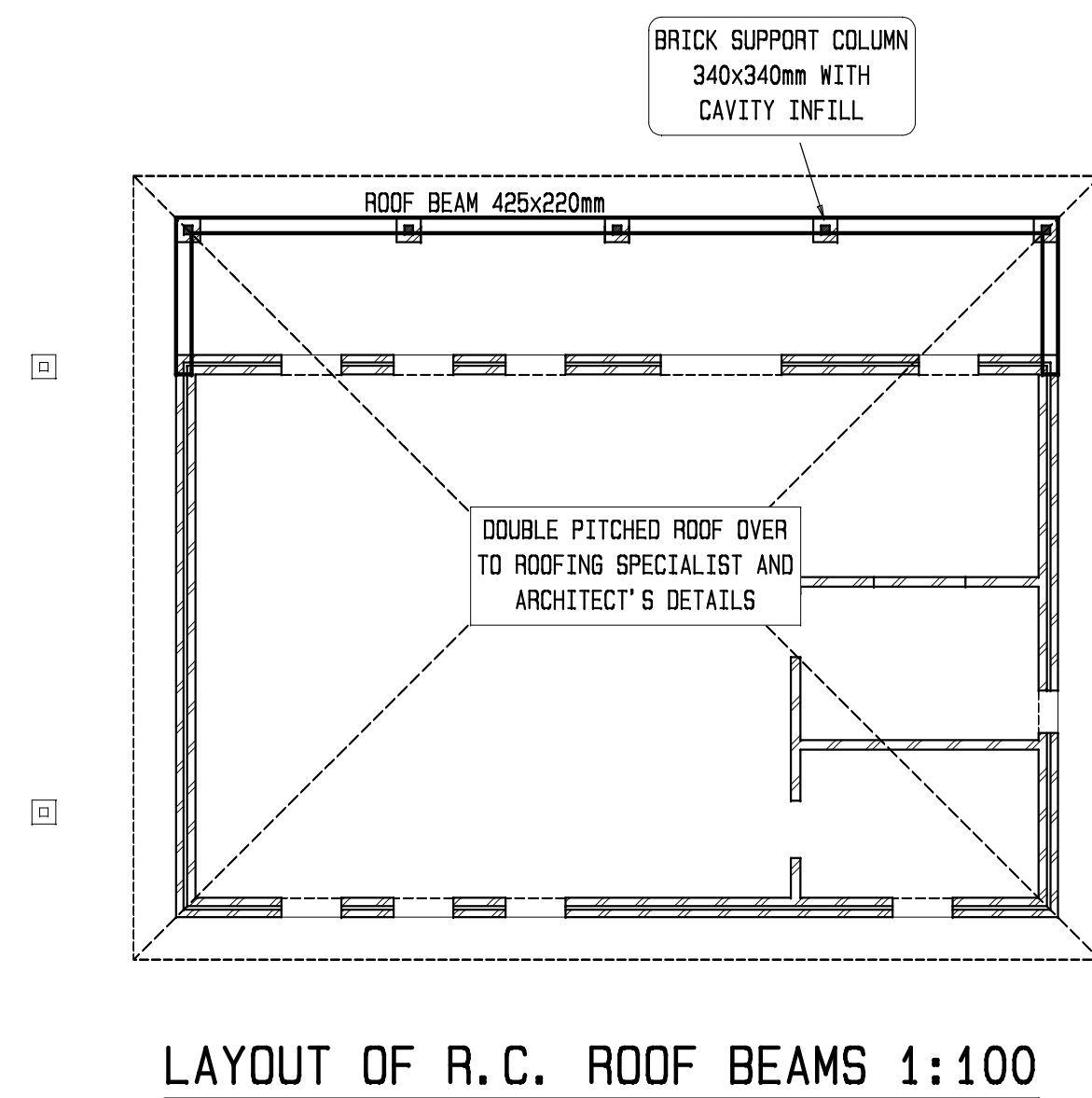
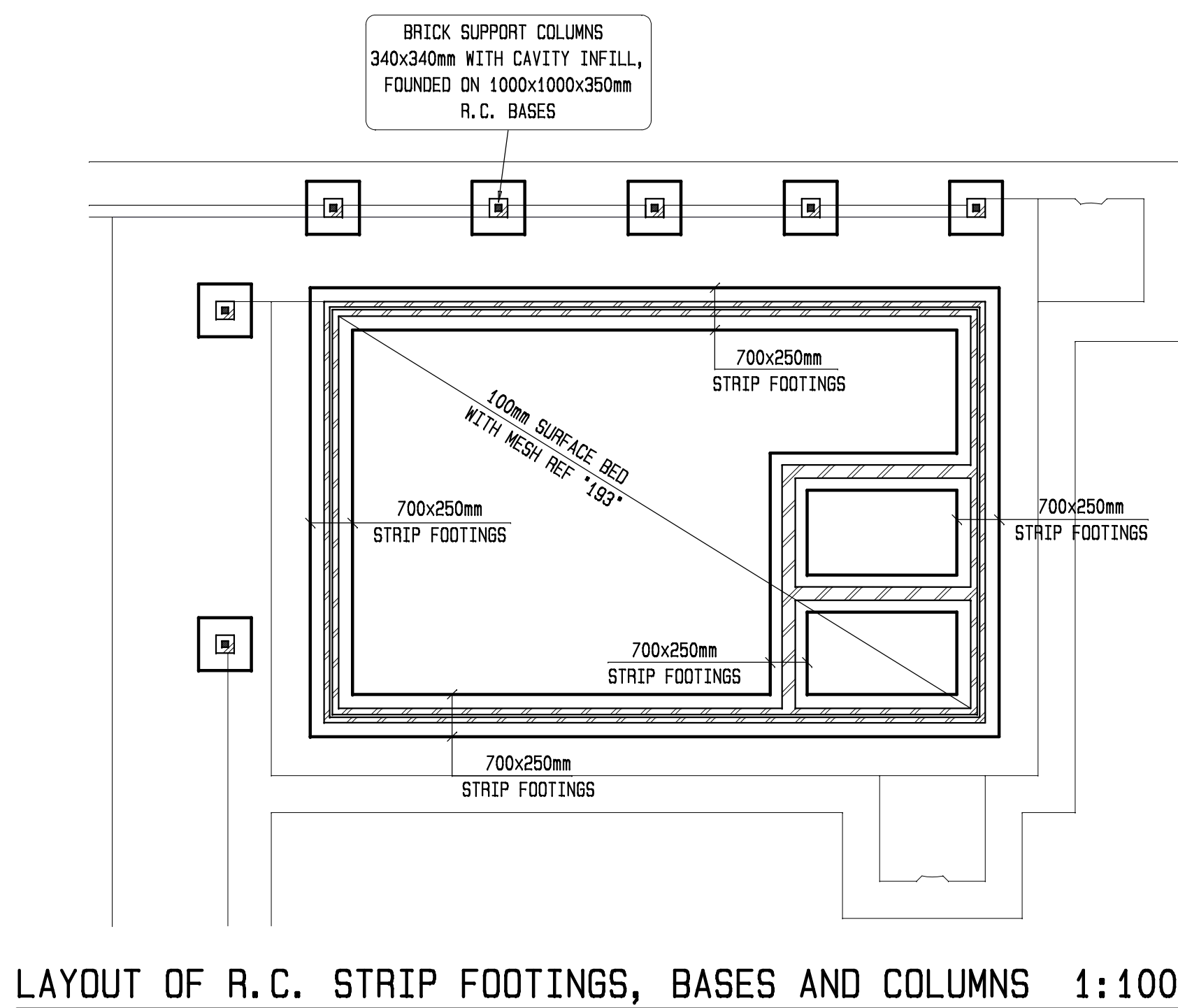












FOUNDATION WALLS TO  
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consulting

Local Authority Approval

Consultant Signature

MS	Designed AW	Checked TL	Date FEB'17
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PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

BLOCK H – GRADE R CLASSROOM  
LAYOUT AND DETAILS OF R.C. STRIP FOOTINGS, BASES, COLUMNS AND ROOF BEAMS

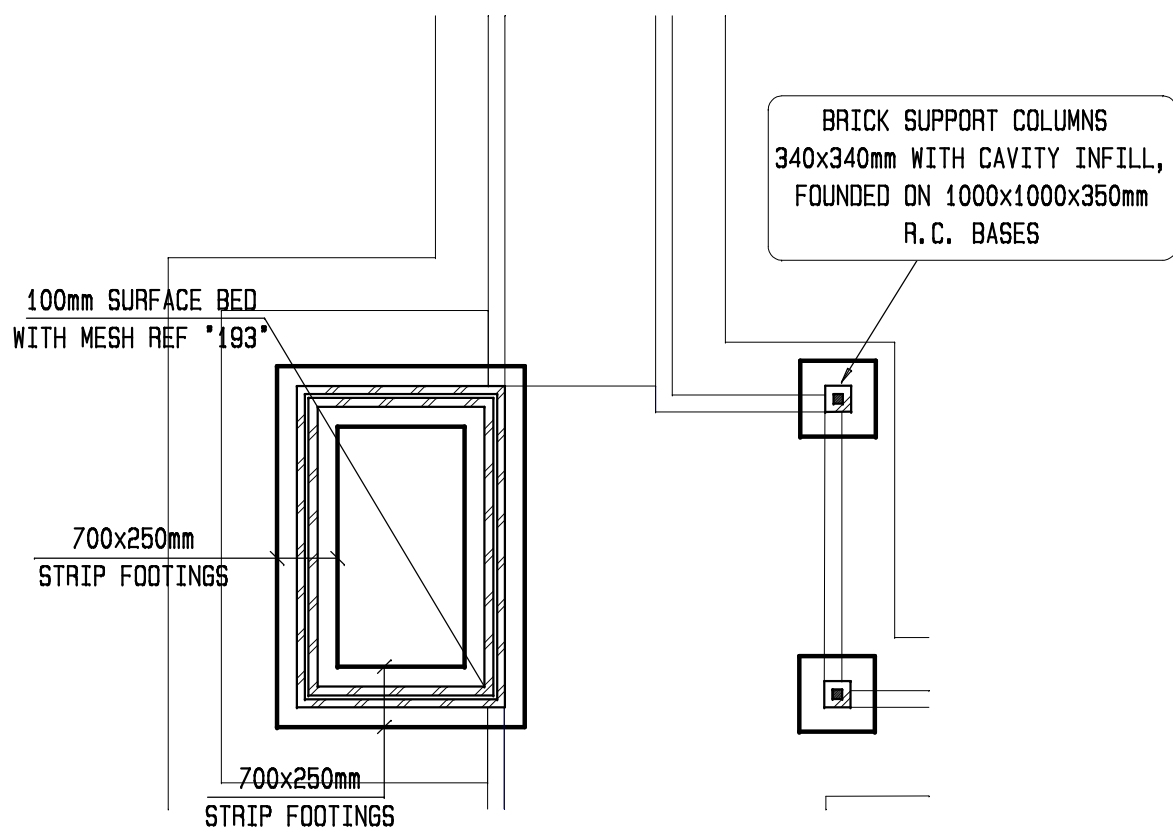
AS SHOWN

Project No 17-HA-001

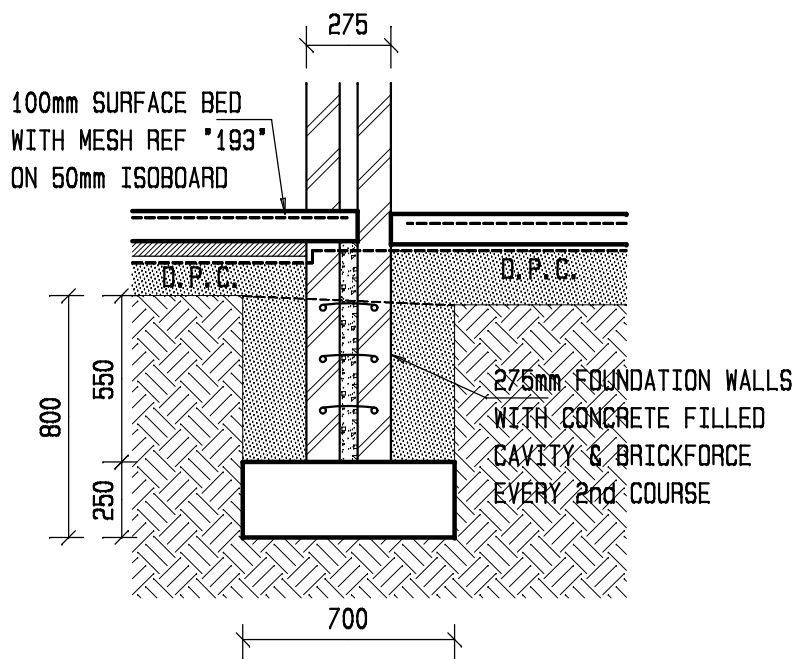
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## WORKING DRAWING APPROVAL

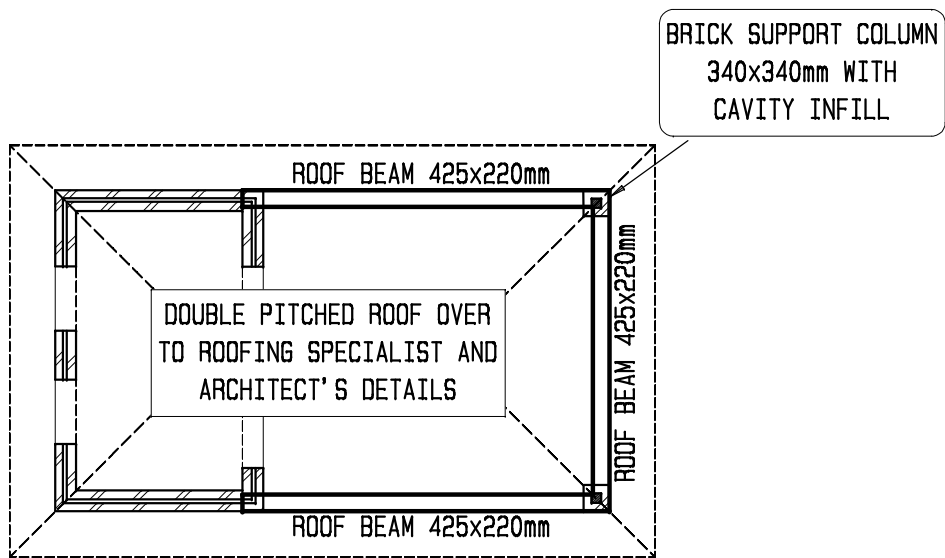




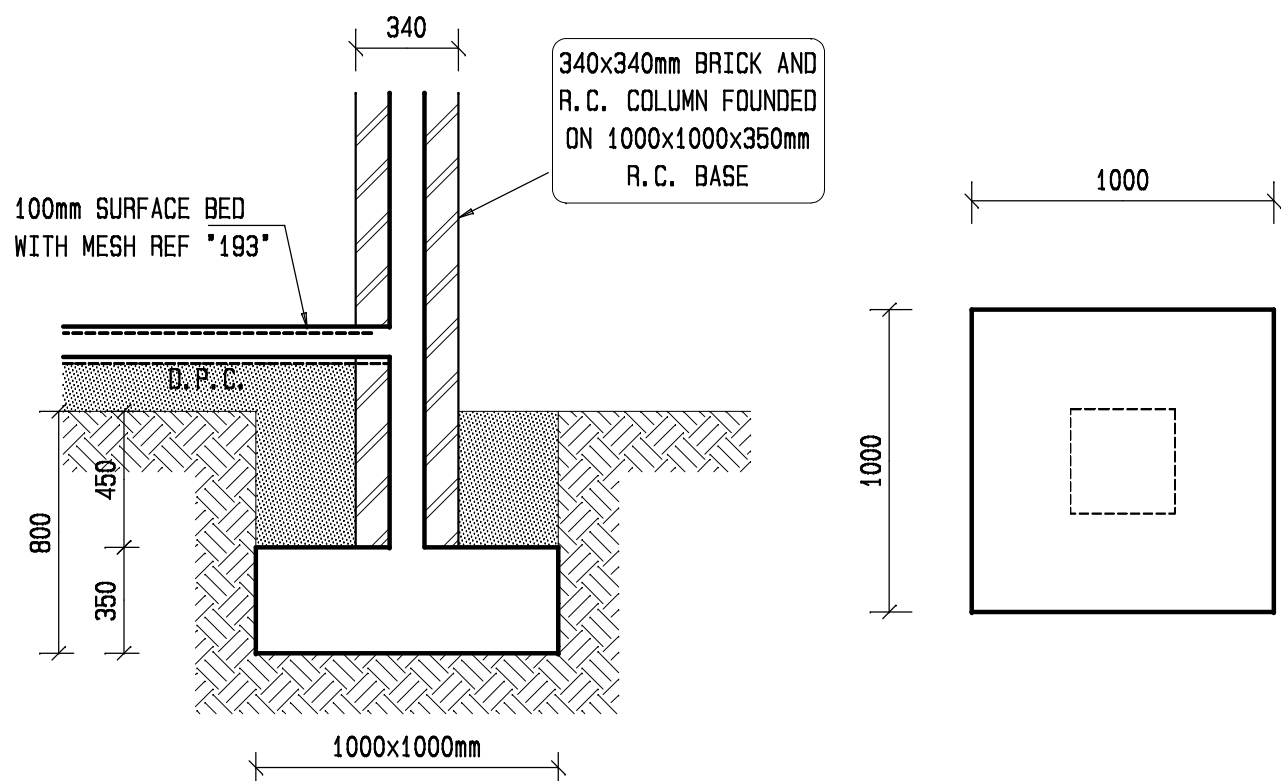
LAYOUT OF R.C. STRIP FOOTINGS, BASES AND COLUMNS 1:100



TYPICAL SECTION THROUGH EXTERNAL WALLS



LAYOUT OF R.C. ROOF BEAMS 1:100



R.C. BASE DETAIL 1:25

NOTES  
IF ANY ITEM DETAILED ON THIS DRAWING RESULTS IN AN INCREASE IN COST TO THE CLIENT, THIS INCREASE MUST BE APPROVED BY THE ARCHITECT, PRIOR TO CONSTRUCTION

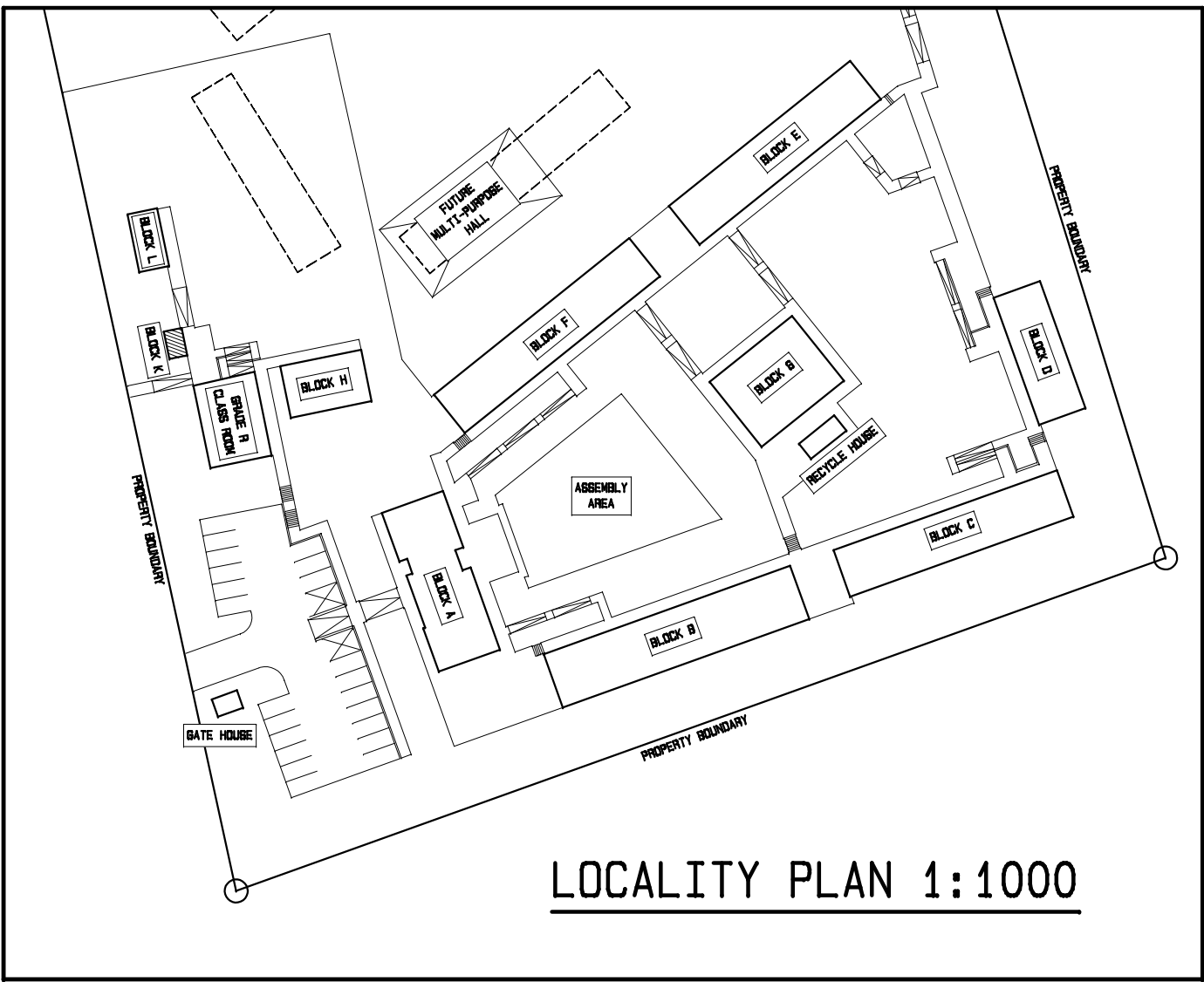
WALLS ABOVE SURFACE BED NOTES  
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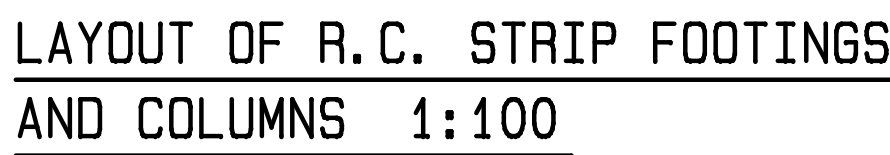


LOCALITY PLAN 1:1000

WORKING DRAWING APPROVAL

Drawn MS	Checked TL	PROSPECT JUNIOR SECONDARY SCHOOL EASTERN CAPE	sawgrass consulting		Scale AS SHOWN
Designed AW	Date FEB'17	BLOCK K - GRADE R KITCHEN LAYOUT AND DETAILS OF R.C. STRIP FOOTINGS, BASES, COLUMNS AND ROOF BEAMS	www.sgrass.com	Rev. A 28/02/2017 Date	Project No 17-HA-001
				WORKING DRAWING APPROVAL Details	Drg. No S-09-1





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1. ALL STEEL TO BE SABS 1431 GRADE 350 WA.
2. ALL WELDS TO BE 0.75 OF MINIMUM WALL THICKNESS UNLESS OTHERWISE STATED. ALL WELDS TO BE CONTINUOUS FILLET.
3. ALL STRUCTURAL STEEL TO BE COATED WITH A SUITABLE CORROSION PROTECTION RED OXIDE PAINT OR SIMILAR APPROVED PRIOR TO ERECTION.
4. ALL STRUCTURAL STEEL TO BE PAINTED WITH A SUITABLE FINISHING PAINT COAT TO THE ARCHITECT'S SPECIFICATION.
5. ALL NUTS AND BOLTS TO BE HOT DIP GALVANIZED TO SABS 121 (ISO 1461)

IF ANY ITEM DETAILED ON THIS DRAWING  
RESULTS IN AN INCREASE IN COST TO THE  
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[illegible]

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consulting

Local Authority Approval

Consultant Signature

MS	Designed AW	Checked TL	Date FEB'17
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PROSPECT JUNIOR SECONDARY SCHOOL  
EASTERN CAPE

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BLOCK L (GRADE R ABUTMENTS)  
LAYOUT AND DETAILS OF R.C. STRIP FOOTINGS, BASES, COLUMNS AND ROOF BEAMS

AS SHOWN

Project No 17-HA-001


Arg. No S-10-1

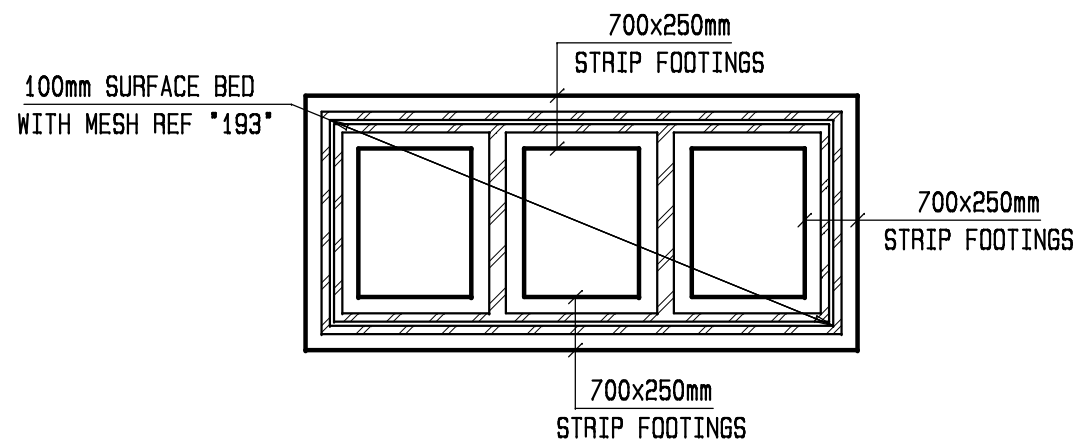
WORKING DRAWING APPROVAL



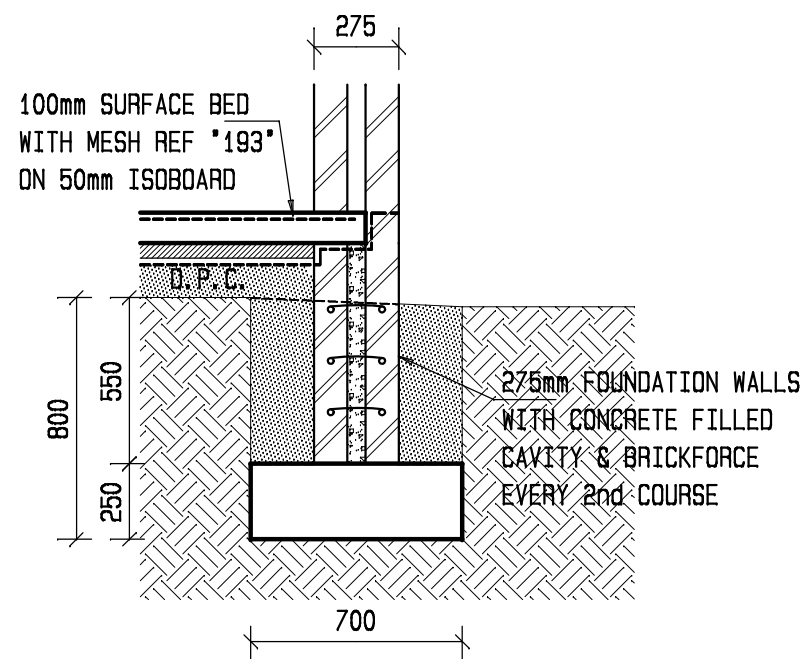
1. Concrete strength min 20 Mpa after 28 days
2. Concrete cover to reinforcement 50 mm.
3. All concrete to be vibrated when placed.
4. No concrete to be placed without the approval of the engineers. 24 hrs notice required.
5. No walls or structures not shown on the architect's drawings to be built on surface bed.
6. All foundation brickwork must be in accordance with SABS 8400-1987-KK 4.3-TABLE 1
7. Foundation brickwork to have brickforce every 2nd brickcourse.
8. Contractor to make concrete cubes (x3) during casting of foundations and have cubes tested at registered Civil Eng. Laboratory and submit results to Engineer.
9. Drawing to be read in conjunction with Architects drawings.



Drawn MS	Checked TL	PROSPECT JUNIOR SECONDARY SCHOOL EASTERN CAPE	 <b>sawgrass</b> consulting  www.sgrass.com						Scale AS SHOWN
Designed AW	Date FEB'17	GATE HOUSE LAYOUT AND DETAILS OF R.C. STRIP FOOTINGS		A	28/02/2017	WORKING DRAWING APPROVAL		MS	Project No 17-HA-001
				Rev.	Date	Details		By	Drg. No S-11-1



LAYOUT OF R.C. STRIP FOOTINGS 1:100

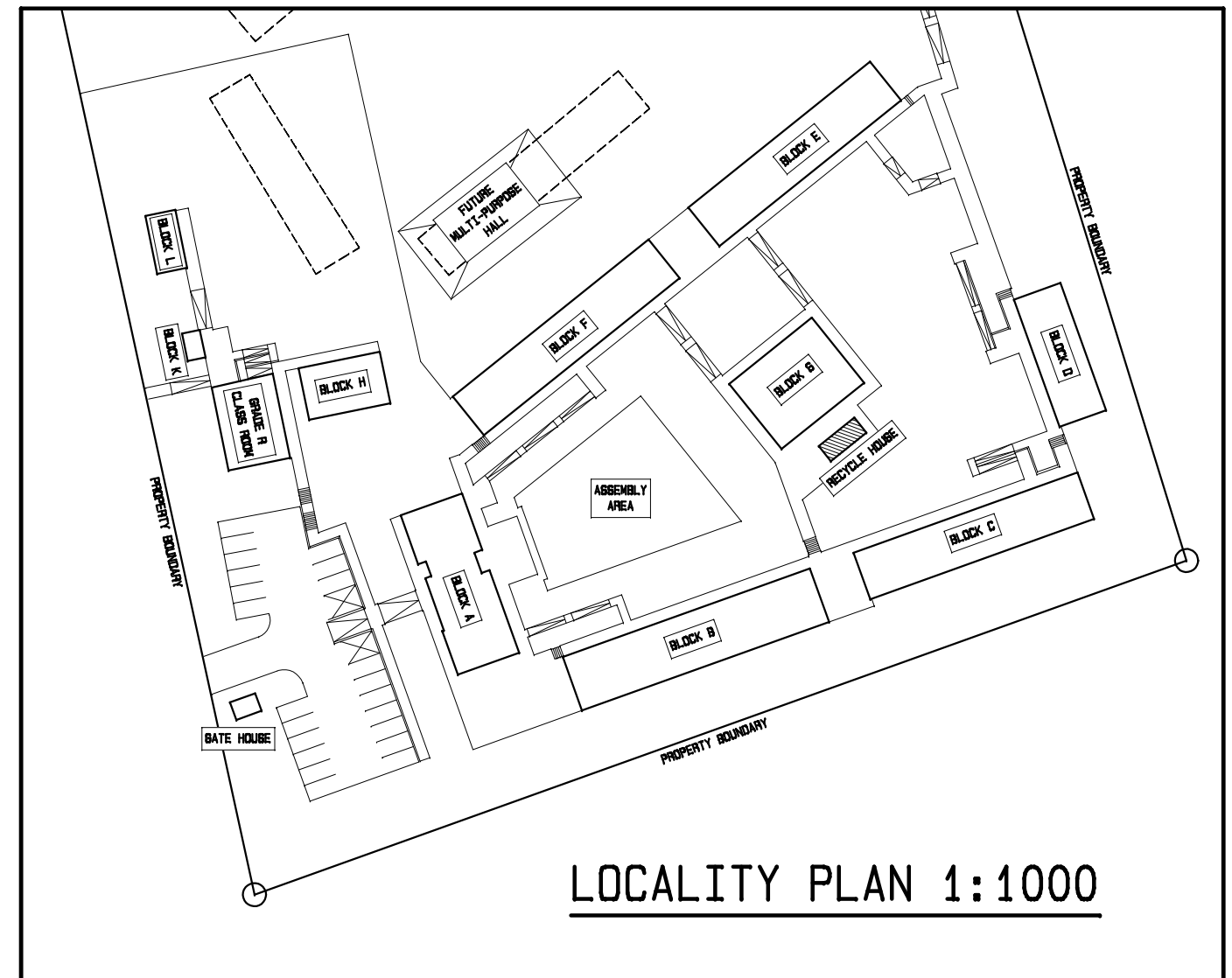


TYPICAL SECTION THROUGH EXTERNAL WALLS

WORKING DRAWING APPROVAL

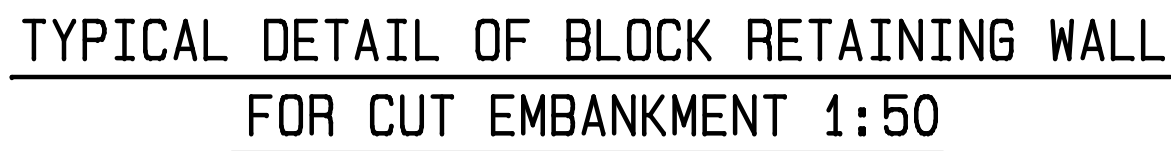
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Designed AW	Date FEB'17	RECYCLE HOUSE LAYOUT AND DETAILS OF R.C. STRIP FOOTINGS		A	02/03/2017	WORKING DRAWING APPROVAL	Project No 17-HA-001
				Rev.	Date	Details	Drg. No S-12-1





5.1. All setting out provisional and subject to on-site revision and approval by the Engineer.

5.2. Refer to the detailed section sheets for sections and construction details of the retaining walls.



Drg. No S-13-1



**BRICKWORK**  
17MPa semi-face clay bricks, overall size 220 x 100 x 70mm high, manufactured in accordance with SANS 227:2007, bedded and jointed in Class II mortar and pointed with flush vertical and flush horizontal joints.

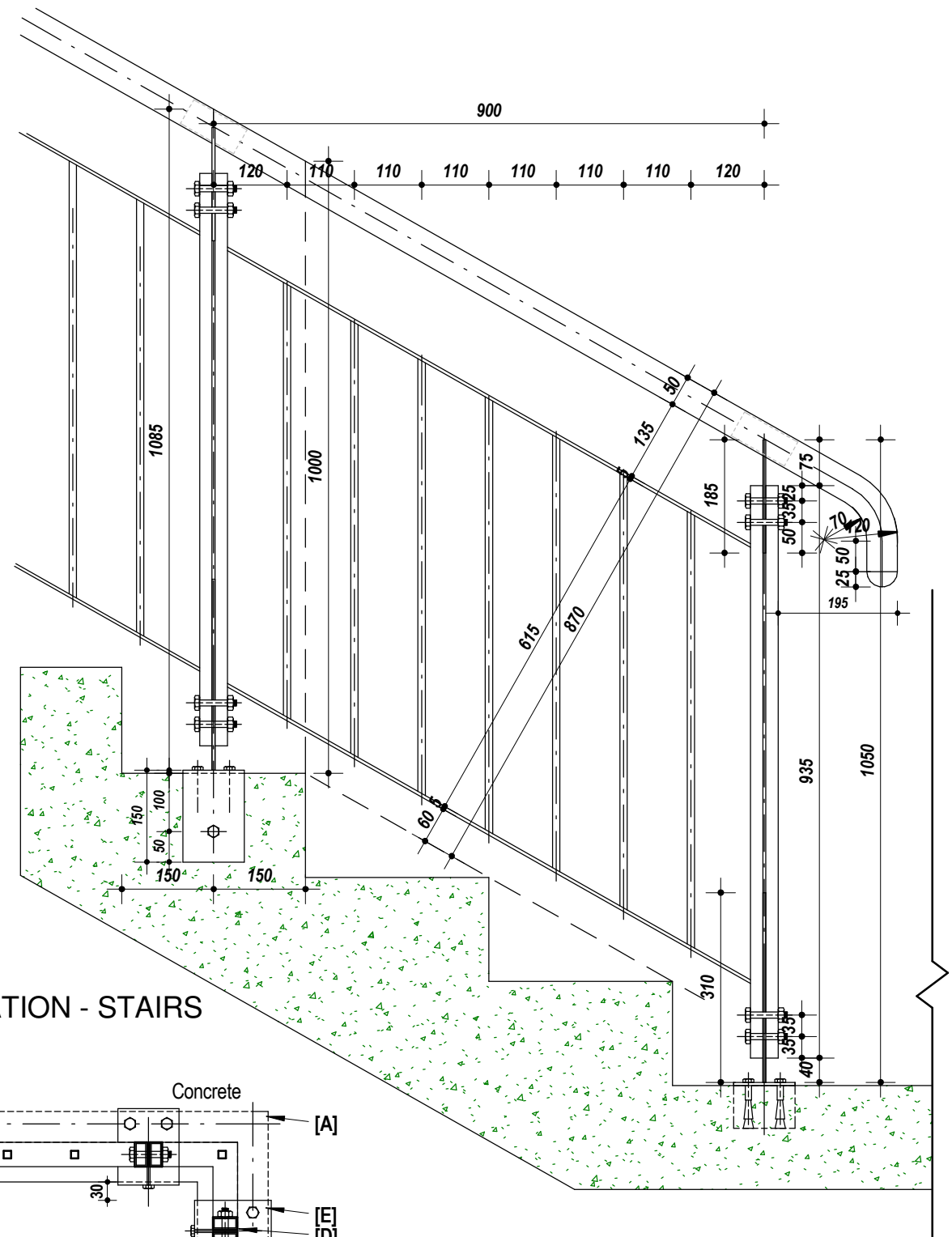
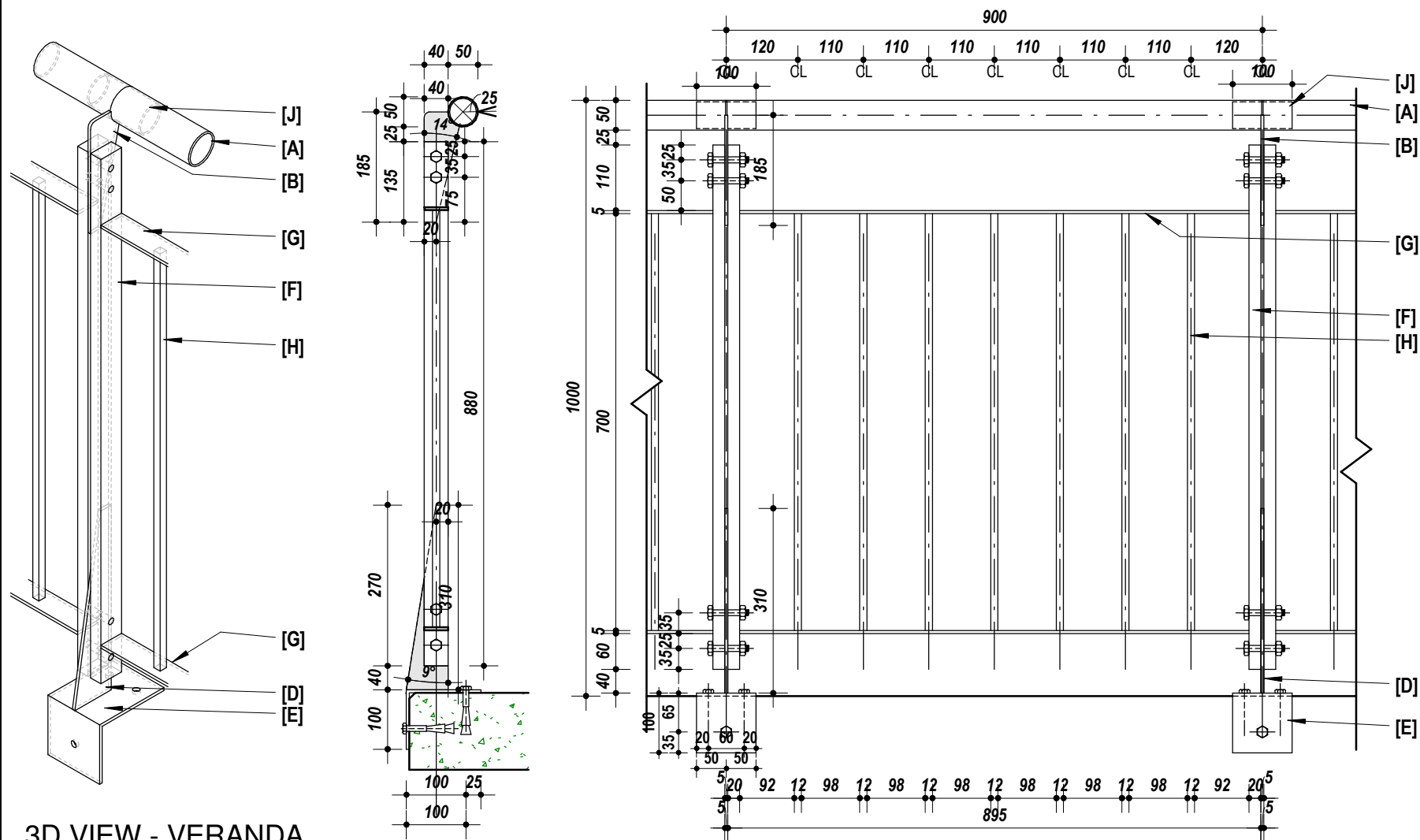


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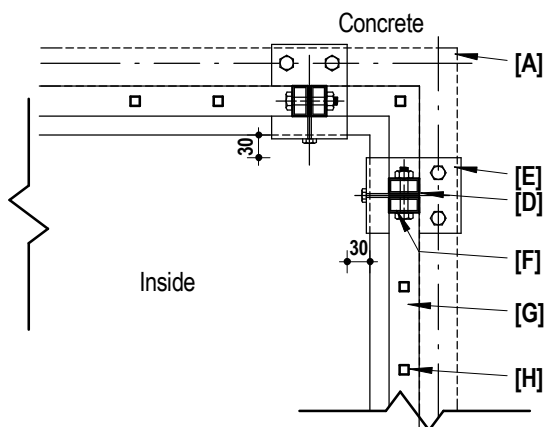
WORKING DRAWING APPROVAL







ELEVATION - STAIRS



PLAN - INSIDE CORNER

# 1 HANDRAIL DETAIL

1 : 10

## NOTES:

**WALL HANDRAILS**  
Parts [B] and [C] to be made and welded together before GALVANISED.

**VERANDA HANDRAILS/BALUSTRADES**  
Parts [F], [G] and [H] to be made and welded together before GALVANISED.

**BALUSTRADE BASE PART**  
Parts [D] and [E] to be made and welded together before GALVANISED.

All dimensions to be checked on site.

[A] - 50mm diameter Brushed STAINLESS STEEL handrail fixed at height to match balustrades/handrails on other side. Fixed with screws to part [J]. Ends to be rounded as shown in Elevation - Stairs.

[B] - 185x65mm and 5mm Thick Galvanised STEEL plate cut @ a +/- 14° angle. Exposed corner to be rounded with 10mm radius.

[C] - 100x100mm and 5mm Thick Galvanised STEEL plate welded to item [B], and fixed to the wall with galvanised bolts as shown.

[D] - 310x70mm and 5mm Thick Galvanised STEEL plate cut @ a +/- 9° angle and welded to base plate before galvanised..

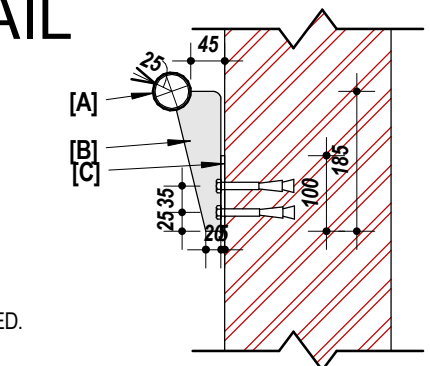
[E] - 125x100x8mm (125x100x8mm for stairs) and 100mm long STEEL Angels welded to STEEL plates [D], galvanised and fixed to concrete slabs with galvanised bolts as shown.

[F] - 40x20mm and 2.5mm Thick Galvanised STEEL rectangular tube, welded to STEEL flats [G], galvanised and fixed to other frames with galvanised bolts as shown.

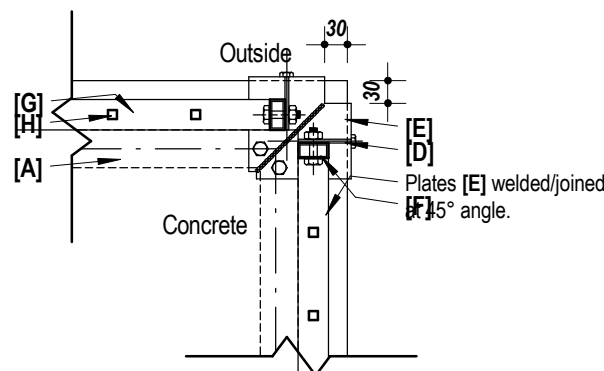
[G] - 40x5mm Galvanised STEEL flat bars, welded to STEEL posts [F] and Solid squares [H], and galvanised.

[H] - 12x12mm Galvanised STEEL square rod, welded to STEEL flats [G], galvanised and fixed to other frames with galvanised bolts as shown.

[J] - 44mm diameter Galvanised STEEL round tube fixed to part [B] before galvanised.



SECTION - Wall Handrails



PLAN - OUSIDE CORNER

SCALE 1 : 10	DRAWING DESCRIPTION GENERIC HANDRAIL DETAIL	DRAWING NO A101	<div> <div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div> <div>HELM</div> <div>ARCHITECTS</div> </div> </div>
PROJECT PROSPECT JSS		REVISION PT01	
DATE 2017/03/07 12:07:00 PM		PROJECT NR 1148	
DRAWN MIR			
ISSUED M. Helm			69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za

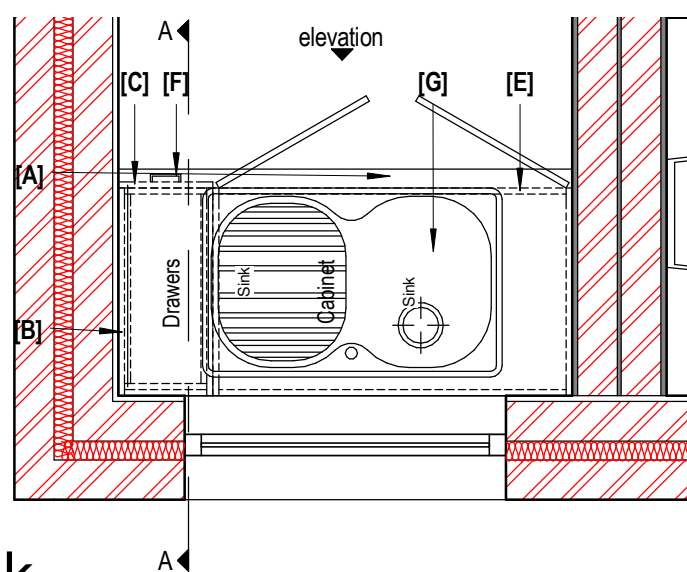
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## **ADDENDUM E**

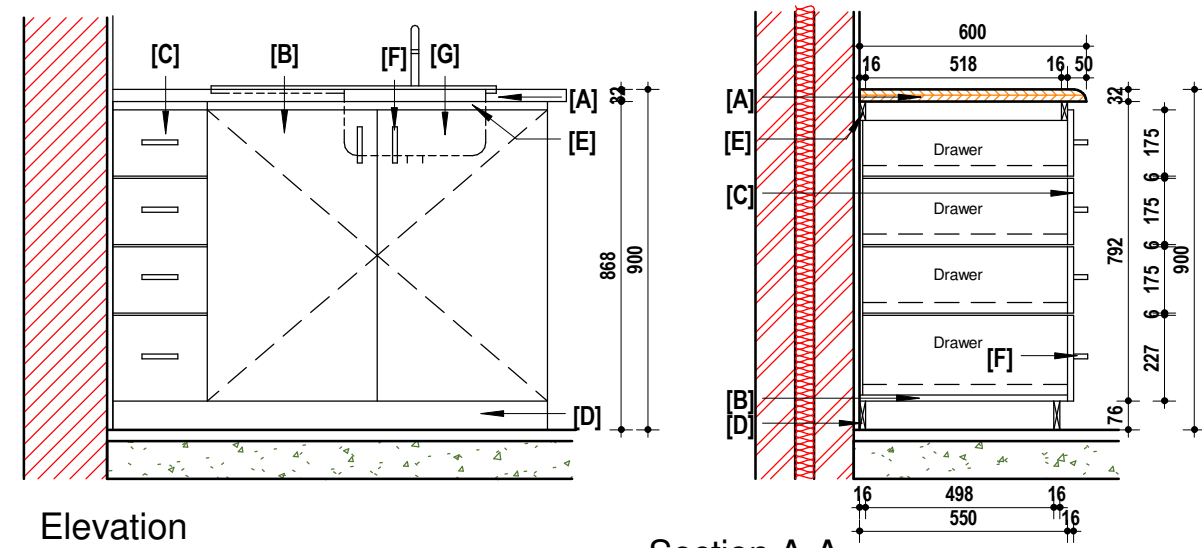
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### **Joinery Specifications**





Scale 1 : 20



Section A-A

All cupboards are to be screw fixed and glued and all cupboards to be fixed to the floor.  
All cleats fixed to wall with 8x65mm hammer drives and 6x41mm drywall screws used for fixing cleats to 32mm particle board.  
All dimensions to be checked on site.

**[B]** - 16mm Thick MELAMIN faced partical board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging.

**[C]** - 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws.

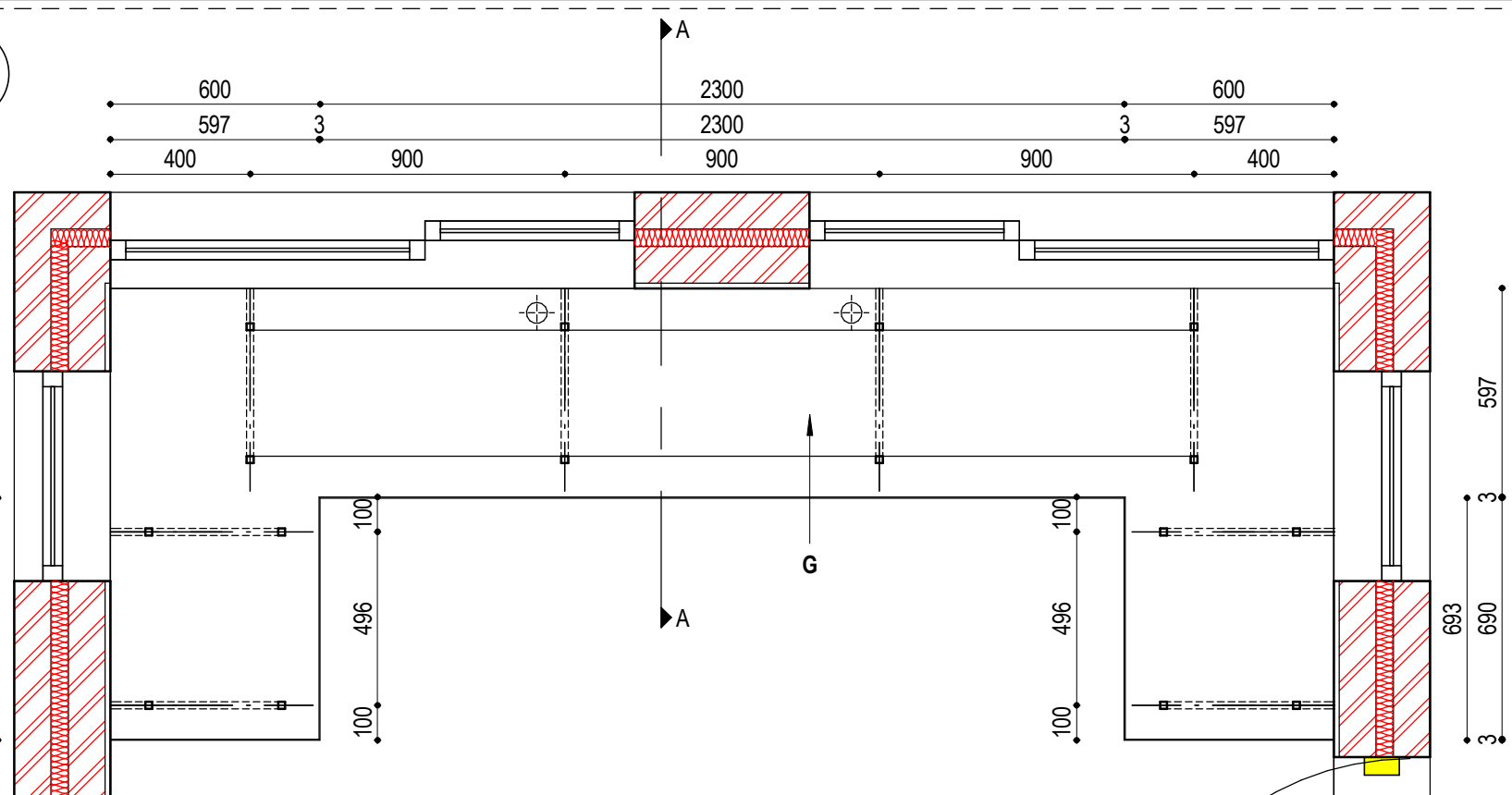
**[D]** - 16x76mm MELAMIN strip footing.

Scale 1 : 20

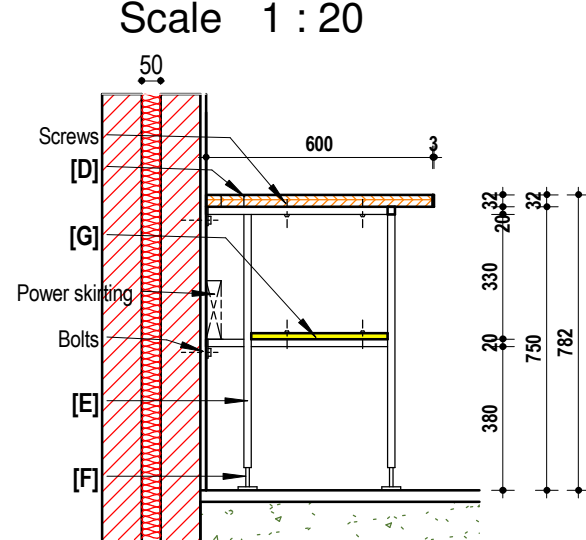
**[E]** - 16x50mm MELAMIN strip for supports, fitted with screws and cold glue.

[F] - Stainless Steel Satin finish handles to Architect's approval.

**[G] - STAINLESS STEEL DROP-ON SINK**  
FRANKE - TRENDLINE MODEL 711 (18/10) stainless steel single end bowl sink, size 900mm x 535mm wide. Complete with waste, plug, trap and tap as per finishing schedule.



Scale 1 : 20



SECTION A-A

## WORKTOPS

All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall.  
STEEL frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.

All dimensions to be checked on site.


**[D]** - 32mm FORMICA worktop with 3mm high impact edging coverstrips on exposed ends/edges.

[E] - 20x20x4mm STEEL square tubing frame welded together

[F] - Adjustable legs STEEL legs to be screw fixed to floor.

**[G] - 16mm Thick MELAMIN faced partial board shelves fitted with screws to steel frame. Finish exposed edges with 3mm high impact edging.**

Scale 1 : 20

SCALE	DRAWING DESCRIPTION	DRAWING NO	
1 : 20	Security Guardhouse- G1 Worktop & Sink	50-01	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 03:24:25 PM	PROJECT NR <b>1148</b>	
DRAWN	RN CARELSE		
ISSUED	M HELM		
		69 Prince Alfred Street, Queenstown PO Box 2236, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarchitects@gmail.co.za	

ARCHITECTURE  
ARCHITECTURE  
CREATE  
INNOVATION

HELM  
ARCHITECTS

69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: [helmarch@vodamail.co.za](mailto:helmarch@vodamail.co.za)

Technical drawing of the K01 kitchen unit, showing front and side views with dimensions and labels.

**Front View (Top):**

- Overall width: 743
- Top section: ST (Sink Top) with four circular cutouts.

**Front View (Bottom):**

- Overall width: 742
- Bottom section: FR (Front Panel) with a dashed outline.

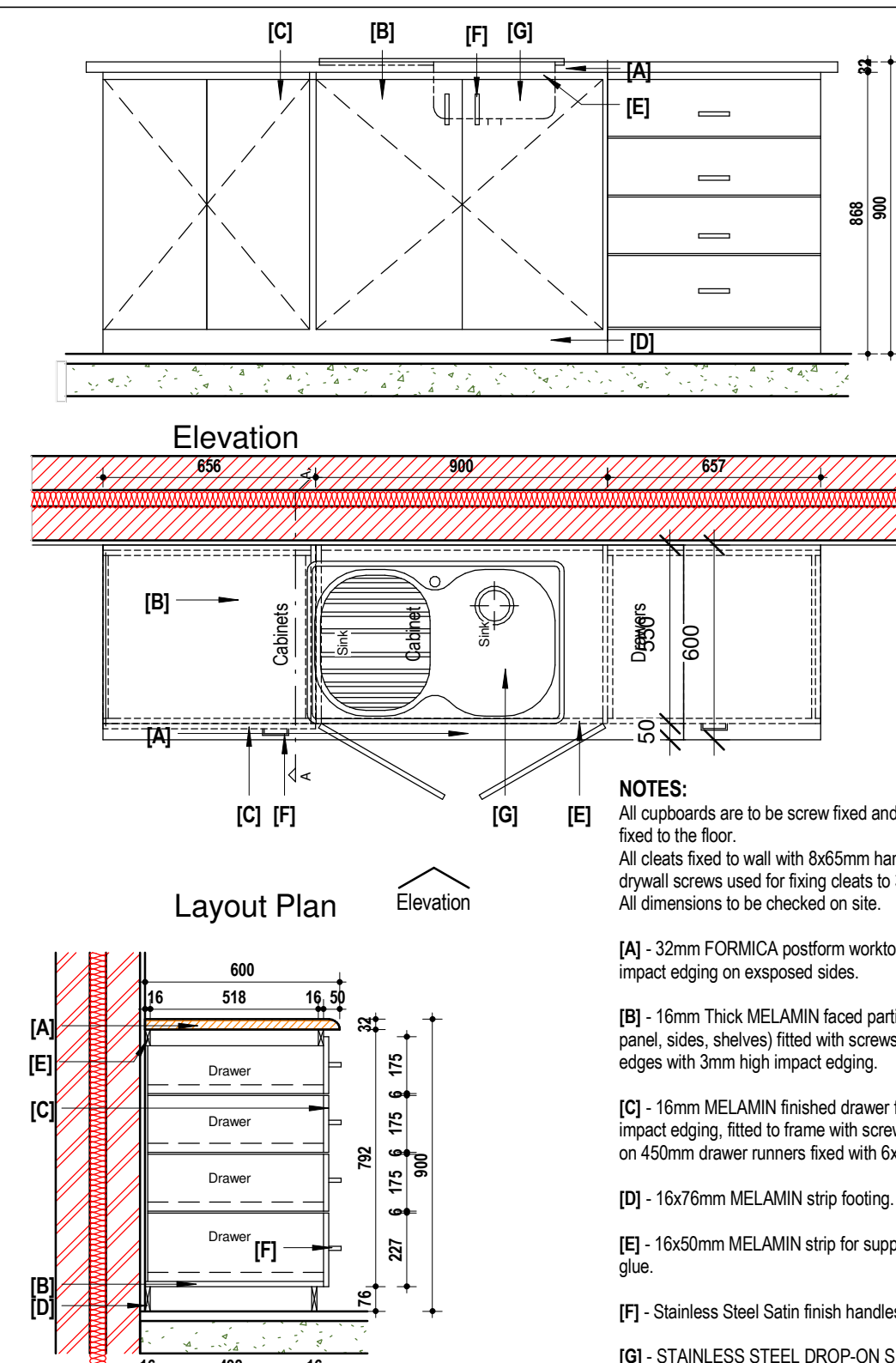
**Side View (Left):**

- Overall height: 1400
- Labels: [A], [B], [C], [D], [E], [F], [G]
- Components: Drawers, Sink, Cabinet, Cabinets.
- Dimensions: 1400 (total height), 1400 (height to top of cabinet), 1400 (height to top of drawers), 1400 (height to top of sink).

**Technical Specifications:**

- GRADE R KITCHEN
- K01
- 8.2 m<sup>2</sup> porcelain

Scale 1 : 20



**NOTES:**

All cupboards are to be screw fixed and glued and all cupboards to be fixed to the floor.  
All cleats fixed to wall with 8x65mm hammer drives and 6x41mm drywall screws used for fixing cleats to 32mm partical board.  
All dimensions to be checked on site.

**[A]** - 32mm FORMICA postform worktops with 3mm FORMICA high impact edging on exposed sides.

**[B]** - 16mm Thick MELAMIN faced partial board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging.

**[C]** - 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws.

[D] - 16x76mm MELAMIN strip footing.


**[E]** - 16x50mm MELAMIN strip for supports, fitted with screws and cold glue.

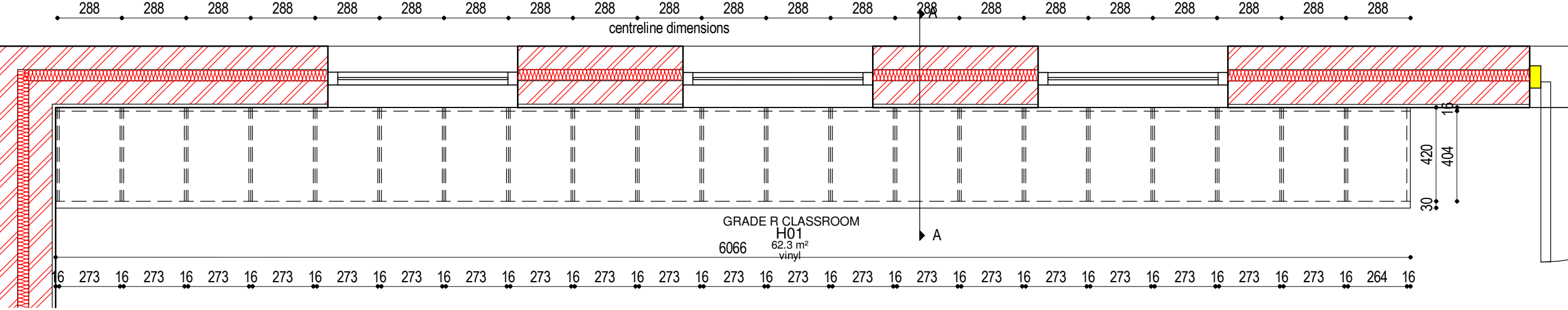
[F] - Stainless Steel Satin finish handles to Architect's approval.

**[G] - STAINLESS STEEL DROP-ON SINK**  
FRANKE - TRENDLINE MODEL 711 [18/10] stainless steel single end bowl sink, size 900mm x 535mm wide. Complete with waste, plug, trap and tap as per finishing schedule.

## Section A-A

Scale 1 : 20

SCALE 1 : 20	DRAWING DESCRIPTION Grade R Kitchen- G1 Sink & Cabinets	DRAWING NO 50-02	 <p>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarchitects@vodamail.co.za</p>
PROJECT PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	PROJECT NR 1148	
DATE 2017/02/16 03:24:28 PM			
DRAWN RN CARLEISE			
ISSUED M HELM			



A technical drawing of a table assembly. The drawing shows a side view of a table with a rectangular top and four legs. The top is labeled 'Screws' with a line pointing to the fasteners. The drawing is divided into four sections labeled A, B, C, and D. Section A is the top surface, B is the side rail, C is the leg, and D is the horizontal support bar. The drawing is a line drawing with hatching for the top surface.

**NOTES:**  
All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall.

STEEl frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.

All dimensions to be checked on site.

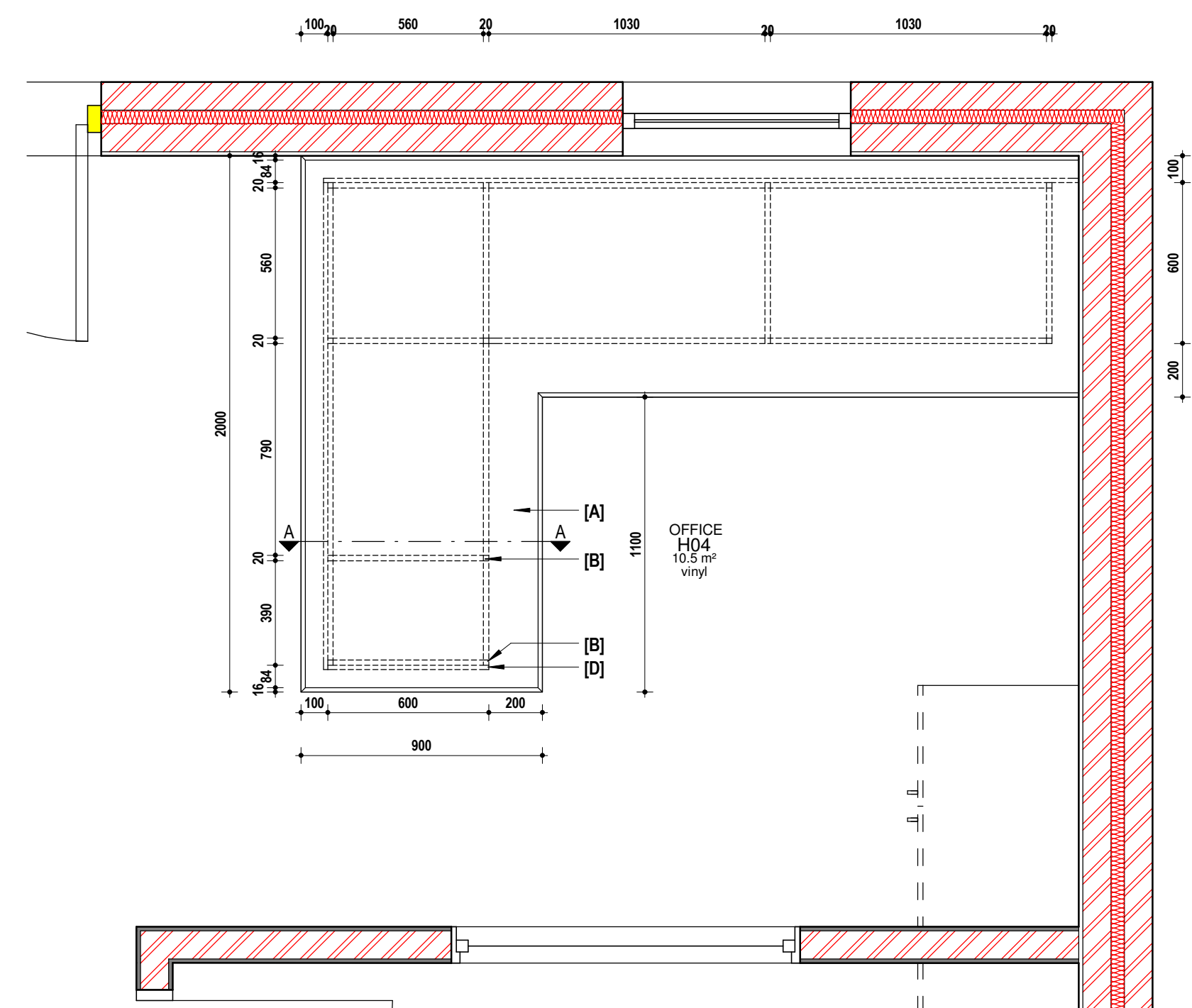
[A] - 32mm FORMICA worktop with 16x40mm MERANTI hardwood coverslips on exposed ends/edges. Coverslips to sanded down and finished with 2x coats approved Varnish.

[B] - 20x20x2mm STEEL square tubing frame welded together.

[C] - Adhesive JELLY STEEL legs.

[D] - 16mm Thick MEALAM facel partial board panel fitted w/ screws to STEEL frame. Finish exposed edges with 3mm high impact edging.

Scale 1 : 20



Scale 1 : 20

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div>
1 : 20	Grade R Classroom- G1 Teacher's Desk	50-04	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 03:24:30 PM	PROJECT NR <b>1148</b>	
DRAWN	RN CARLESE		
ISSUED	M HELM		
		69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 Email: helmarchitects@gmail.com	



©

**NOTES:**

**SHELVING (457)**

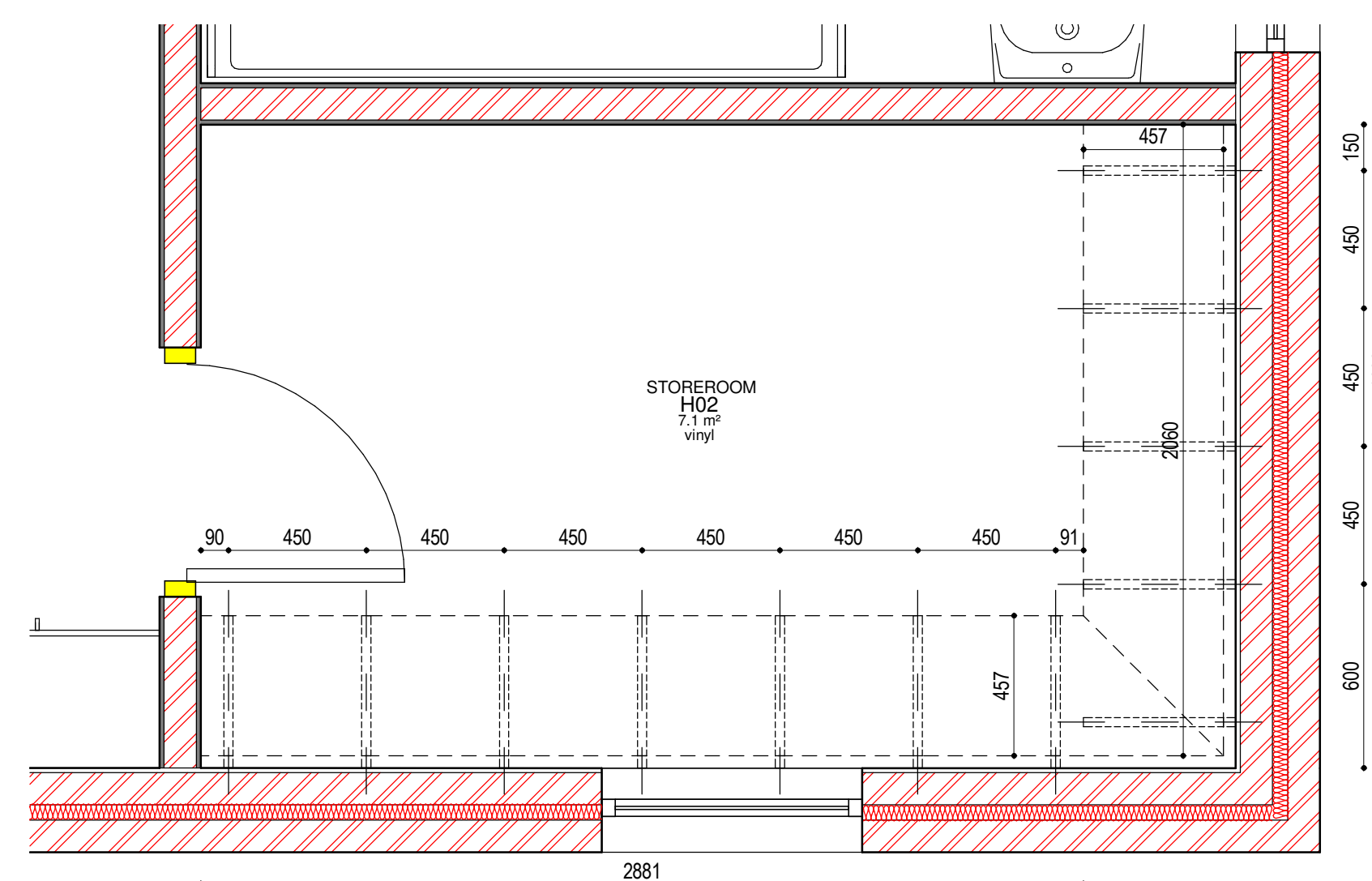
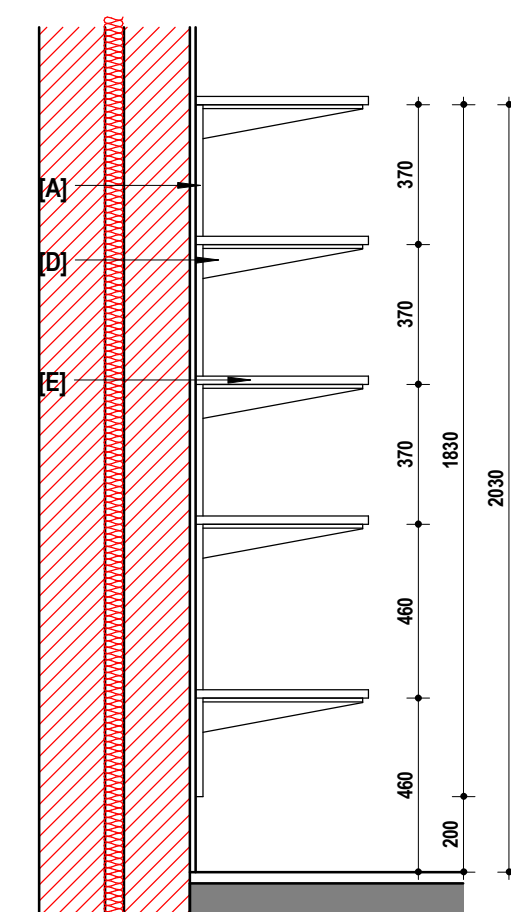
**SHELVING (457)**  
Steel shelving brackets and wallbands (1830mm) as by "SHELCO SHELVING". (5 tier) with 22mm laminated SA Pine shelves 457mm wide

All dimensions to be checked on site.

**[A] - 1830mm Wallbands Code WB6, to receive wall brackets. Fixing to wall to be done to Manufacturer's Specification.**

**[D]** - Adjustable Brackets for wood shelving 457mm wide, Code WBR18.

**[E] - 457x22mm Thick SA PINE shelving. Fixing to bracket to Architect's approval.**

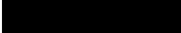



Grade R Classroom- G8 457mm Shelving Plan View

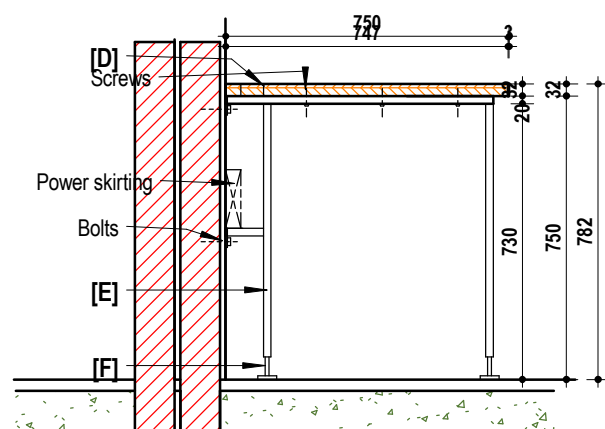
Scale 1 : 20

Grade R Classroom- G8 457mm Shelving

Scale 1 : 20

SCALE	DRAWING DESCRIPTION	DRAWING NO	 
1 : 20	Grade R Classroom- G8 457mm Shelving	50-05	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 09:24:30 PM	PROJECT NR	
DRAWN	RN CARLESE	1148	69 Prince Alfred Street, Queensland PO Box 2296, Komari, 3322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E: <a href="mailto:info@helfm.co.za">info@helfm.co.za</a>
ISSUED	NH.M.M		

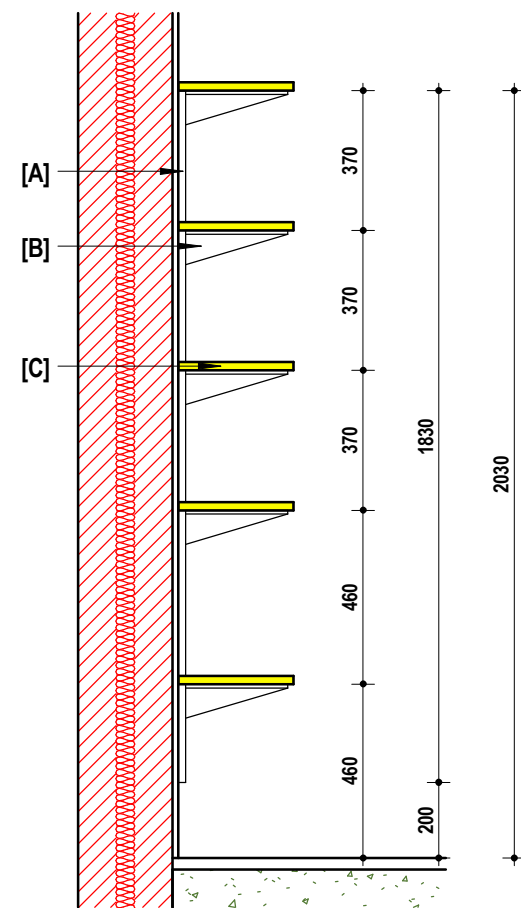
A



SECTION A-A

## Block F 750mm Worktop

Scale 1 : 20



SECTION B-B

## Block F 300mm Shelving

Scale 1 : 20

### NOTES:

All cupboards are to be screw fixed and glued and all cupboards to be fixed to the floor.  
All hinges to be PANOTYPE, full length for door panel.  
All cleats fixed to wall with 8x65mm hammer drives and 6x41mm drywall screws used for fixing cleats to 32mm partial board.

### WORKTOPS

All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall. STEEL frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.

All dimensions to be checked on site.

[A] - 16mm Thick MELAMIN faced partial board panels (back, top, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging.

[B] - 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws.

[C] - 16x100mm MELAMIN strip footing.

[D] - 32mm FORMICA worktop with 3mm high impact edging coverstrips on exposed ends/edges.

[E] - 20x20x2mm STEEL square tubing frame welded together.

[F] - Adjustable legs STEEL legs to be screw fixed to floor.

[G] - 16mm Thick MELAMIN faced partial board shelves fitted with screws to steel frame. Finish exposed edges with 3mm high impact edging.

[H] - 16x50mm MELAMIN strip for supports, fitted with screws and cold glue.

[J] - Stainless Steel Satin finish handles to Architect's approval.

[K] - Cylinder type cabinet lock. One key fits all.

### NOTES:

#### SHELVING (305)

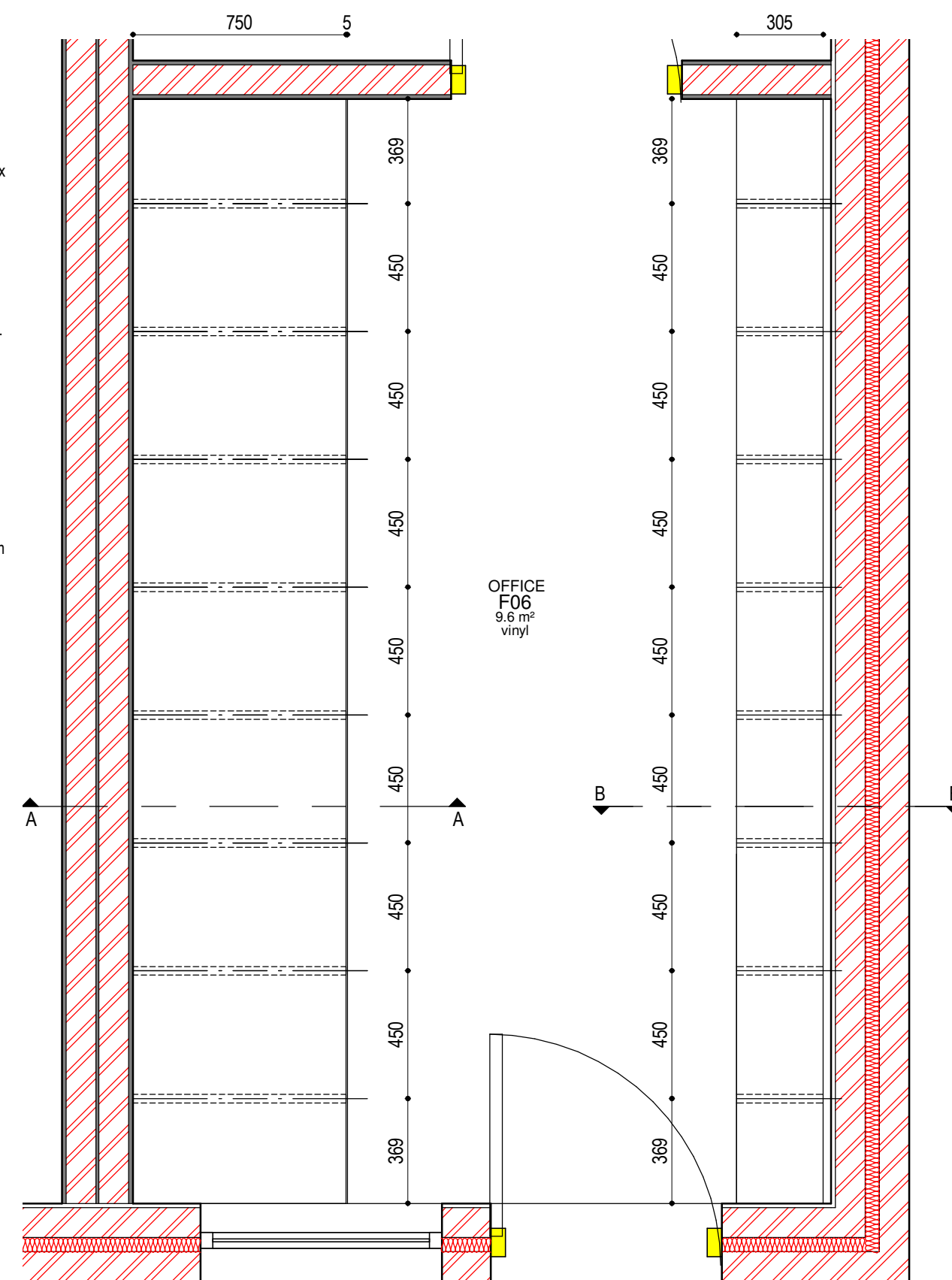
Steel shelving brackets and wallbands (1830mm) as by "SHELCO SHELVING", (5 tier) with 22mm laminated SA Pine shelves 305mm wide


All dimensions to be checked on site.

[A] - 1830mm Wallbands Code WB6, to receive wall brackets. Fixing to wall to be done to Manufacturer's Specification.

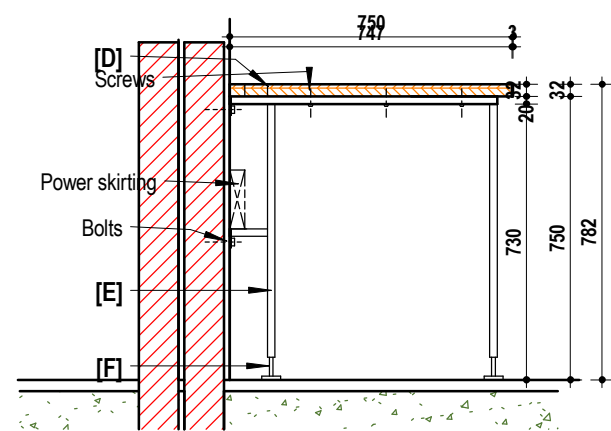
[B] - Adjustable Brackets for wood shelving 305mm wide, Code WBR12.

[C] - 305x22mm Thick SA PINE shelving. Fixing to bracket to Architect's approval.



SCALE 1 : 20	DRAWING DESCRIPTION Block F- Office	DRAWING NO 50-06	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE 2017/02/16 03:24:31 PM		PROJECT NR 1148	
DRAWN RN CARELSE			
ISSUED M HELM			

69 Prince Alfred Street, Queenstown  
PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: helmarch@vodamail.co.za



## Block D 750mm Worktop

[illegible]

## Block D 300mm Shelving

All cupboards are to be screw fixed and glued and all cupboards to be fixed to the floor.  
All hinges to be PIANOTYPE, full length for door panel.  
All cleats fixed to wall with 8x65mm hammer drives and 6x41mm drywall screws used for fixing cleats to 32mm partical board.

**WORKTOPS**  
All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall. STEEL frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.

**[A]** - 16mm Thick MELAMIN faced partial board panels (back, top, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging.

[B] - 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws.

[D] - 32mm FORMICA worktop with 3mm high impact edging coverstrips on exposed ends/edges.

[E] - 20x20x2mm STEEL square tubing frame welded together.

[F] - Adjustable legs STEEL legs to be screw fixed to floor.

**[G]** - 16mm Thick MELAMIN faced partical board shelves

High impact edging.

[1] - Toxson III MCLAMIN strip for supports, filled with screws &

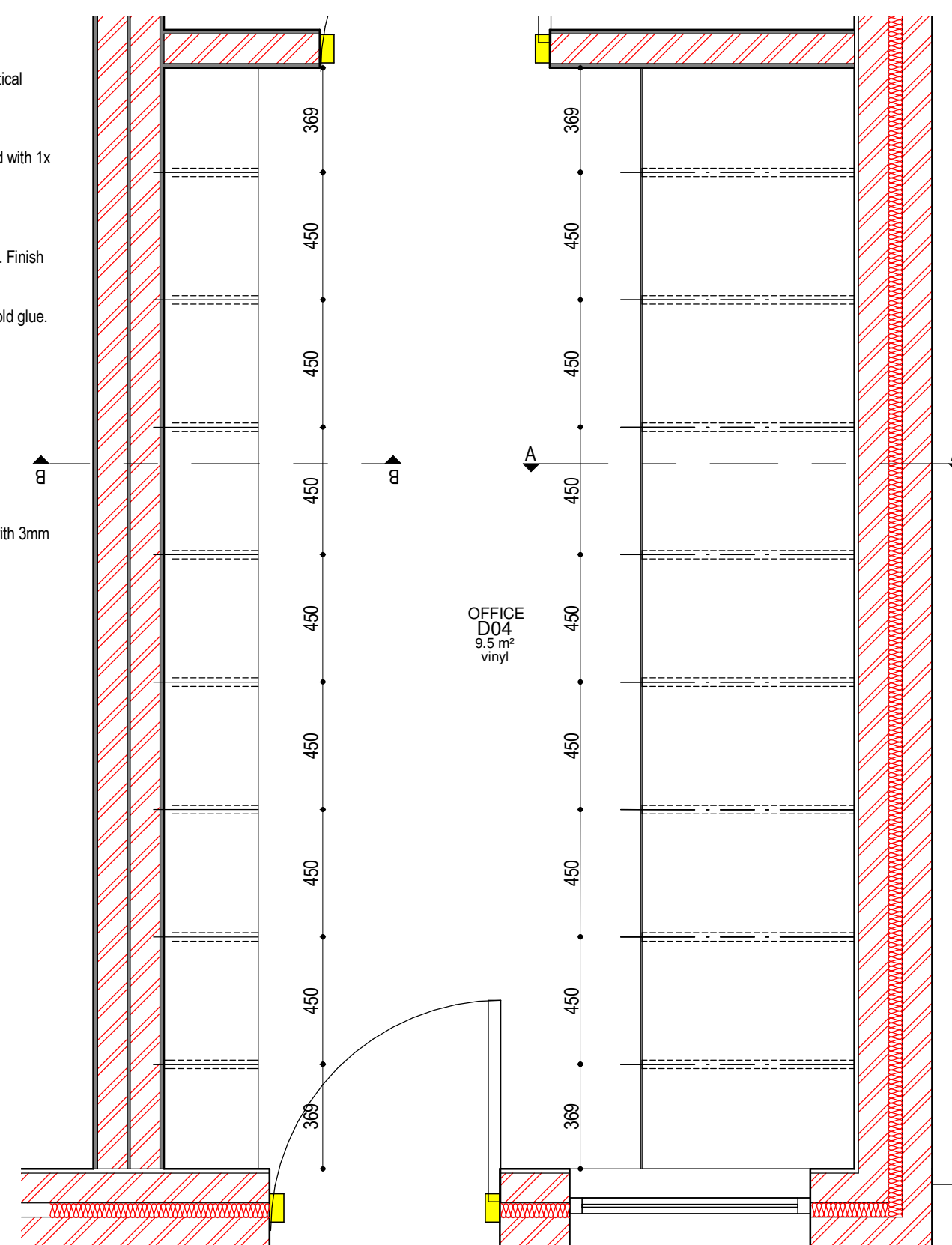
[5] - Stainless Steel Satin finish Handles to Architect's approval.


**SHELVING (305)**  
Steel shelving brackets and wallbands (1830mm) as by "SHELCO SHELVING". (5 tier) with 22mm laminated SA Pine shelves 305mm wide

**[A] - 1830mm Wallbands Code WB6, to receive wall brackets. Fixing to wall to be done to Manufacturer's Specification.**

**[B]** - Adjustable Brackets for wood shelving 305mm wide, Code WBR12.

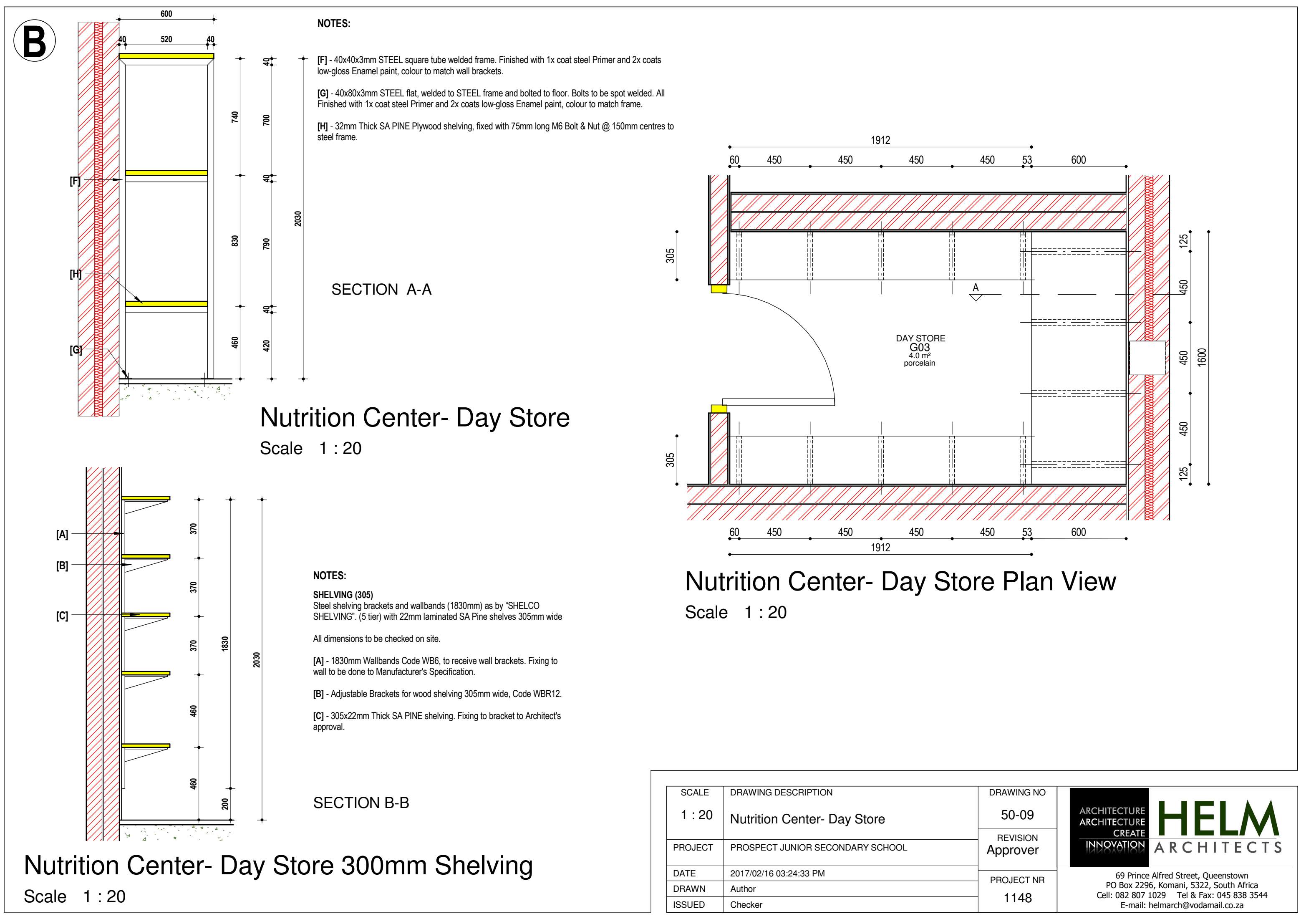
**[C]** - 305x22mm Thick SA PINE shelving. Fixing to bracket to Architect's approval.



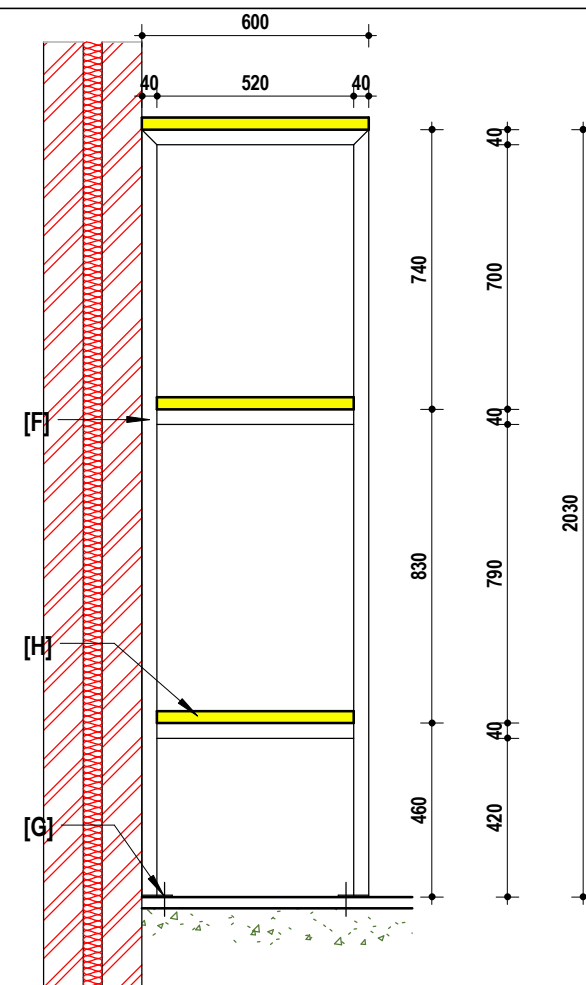
SCALE <b>1 : 20</b>	DRAWING DESCRIPTION <b>Block D- Office</b>	DRAWING NO <b>50-07</b>	
PROJECT <b>PROSPECT JUNIOR SECONDARY SCHOOL</b>	REVISION <b>PT00</b>		
DATE <b>2017/02/16 03:24:32 PM</b>	DRAWN <b>RN CARLESE</b>	PROJECT NR <b>1148</b>	
ISSUED <b>M HELM</b>	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za		







C

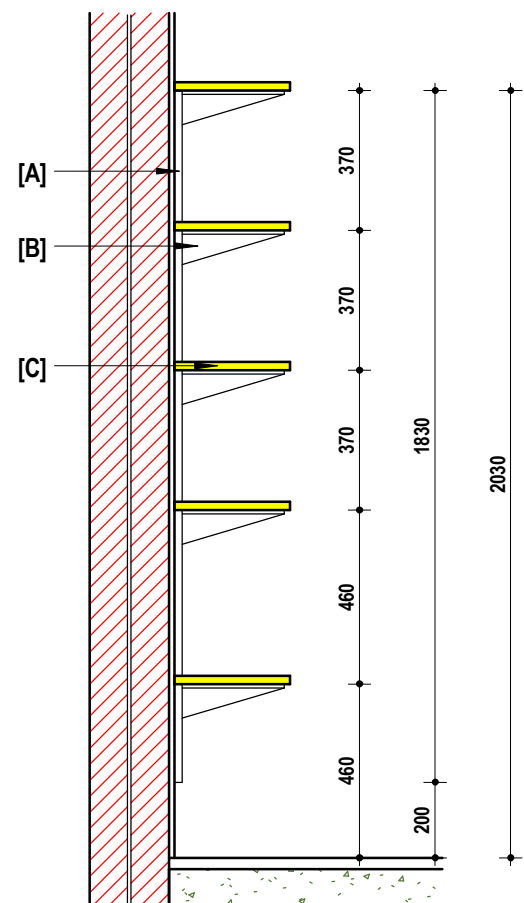


NOTES:

- [F] - 40x40x3mm STEEL square tube welded frame. Finished with 1x coat steel Primer and 2x coats low-gloss Enamel paint, colour to match wall brackets.
- [G] - 40x60x3mm STEEL flat, welded to STEEL frame and bolted to floor. Bolts to be spot welded. All Finished with 1x coat steel Primer and 2x coats low-gloss Enamel paint, colour to match frame.
- [H] - 32mm Thick SA PINE Plywood shelving, fixed with 75mm long M6 Bolt & Nut @ 150mm centres to steel frame.

SECTION A-A

Nutrition Center- Dry Store  
Scale 1 : 20

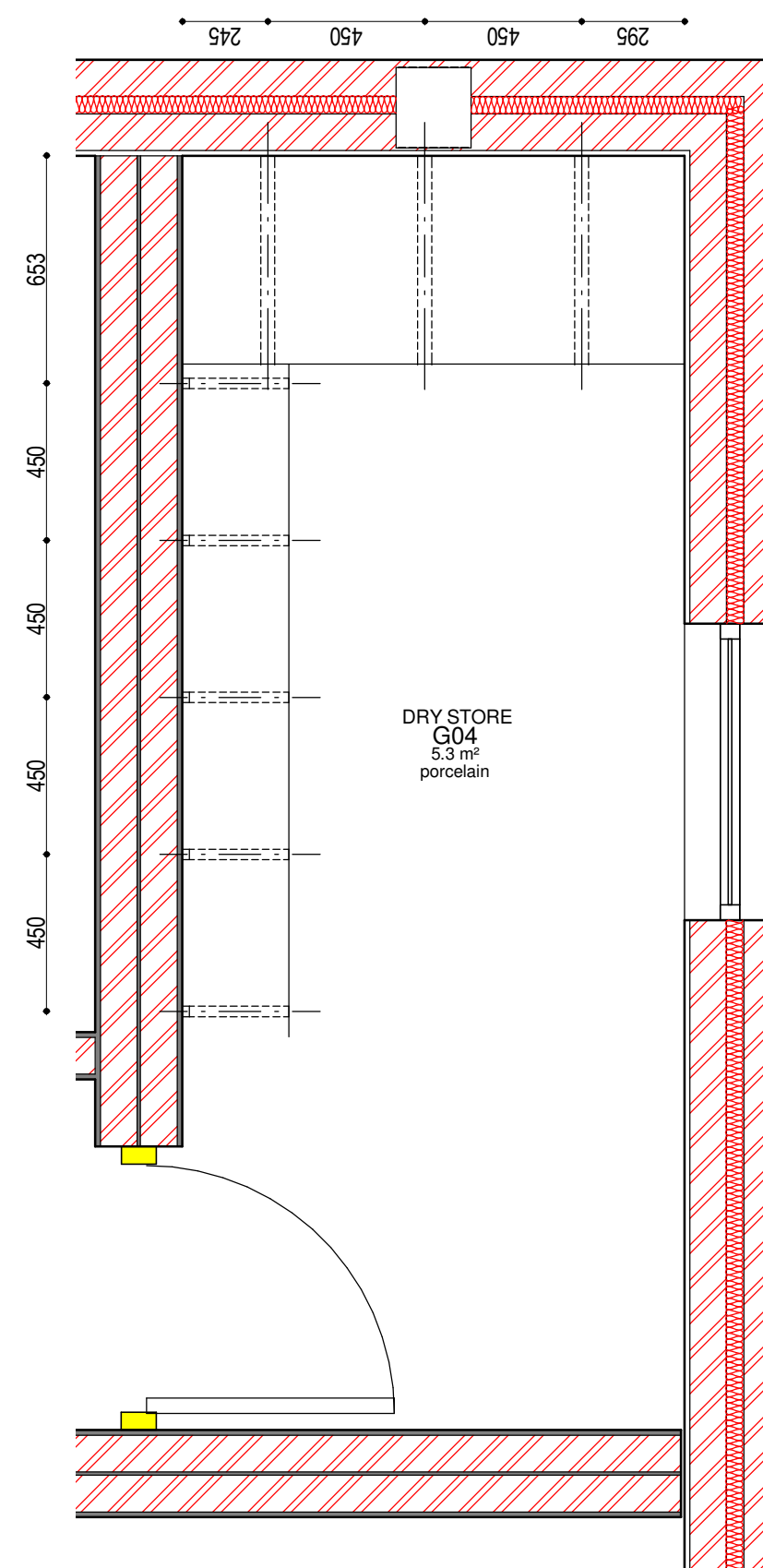


NOTES:

- SHELVING (305)**  
Steel shelving brackets and wallbands (1830mm) as by "SHELCO"  
SHELVING: (5 tier) with 22mm laminated SA Pine shelves 305mm wide
- All dimensions to be checked on site.
- [A] - 1830mm Wallbands Code WB6, to receive wall brackets. Fixing to wall to be done to Manufacturer's Specification.
- [B] - Adjustable Brackets for wood shelving 305mm wide, Code WBR12.
- [C] - 305x22mm Thick SA PINE shelving. Fixing to bracket to Architect's approval.

SECTION B-B

Nutrition Center- Dry Store 300mm Shelving  
Scale 1 : 20



SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	Nutrition Center- Dry Store	50-10	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/02/16 03:24:34 PM	PROJECT NR	1148
DRAWN	Author		
ISSUED	Checker		

D

**NOTES:**

All cupboards are to be screw fixed and glued and all cupboards to be fixed to the floor.

All cleats fixed to wall with 8x65mm hammer drives and 6x41mm drywall screws used for fixing cleats to 32mm partical board.

All dimensions to be checked on site.

[A] - 32mm FORMICA postform worktops with 3mm FORMICA high impact edging on exposed sides.

[B] - 16mm Thick MELAMIN faced partical board panels (bottom, door panel, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging.

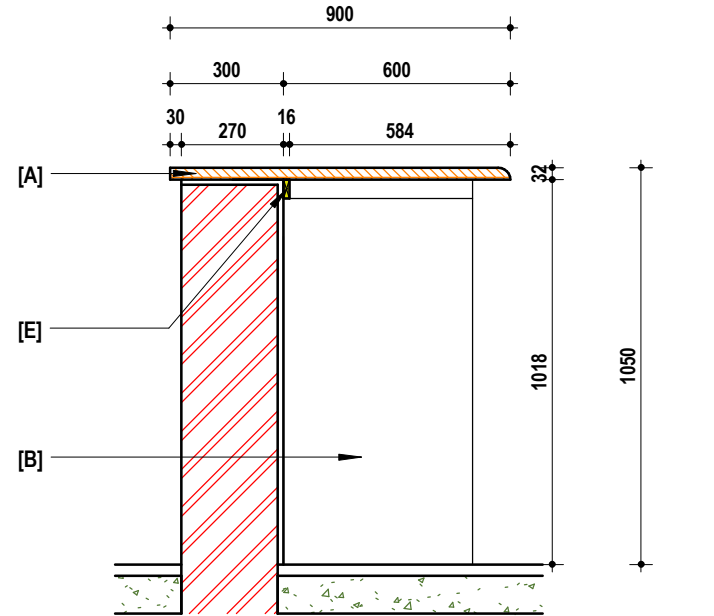
[C] - 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws.

[D] - 16x76mm MELAMIN strip footing.

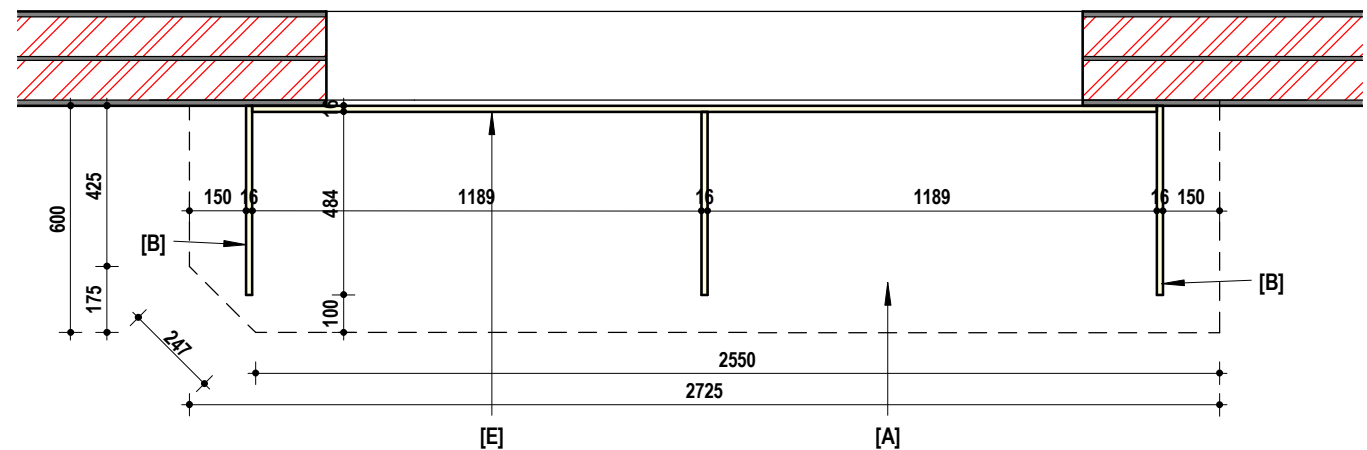
[E] - 16x50mm MELAMIN strip for supports, fitted with screws and cold glue.

[F] - Stainless Steel Satin finish handles to Architect's approval.

[G] - STAINLESS STEEL DROP-ON SINK  
FRANKE - TRENDLINE MODEL 711 [18/10] stainless steel single end bowl sink, size 900mm x 535mm wide. Complete with waste, plug, trap and tap as per finishing schedule.



SERVING COUNTER - SECTION



Nutrition Center- Serving counter

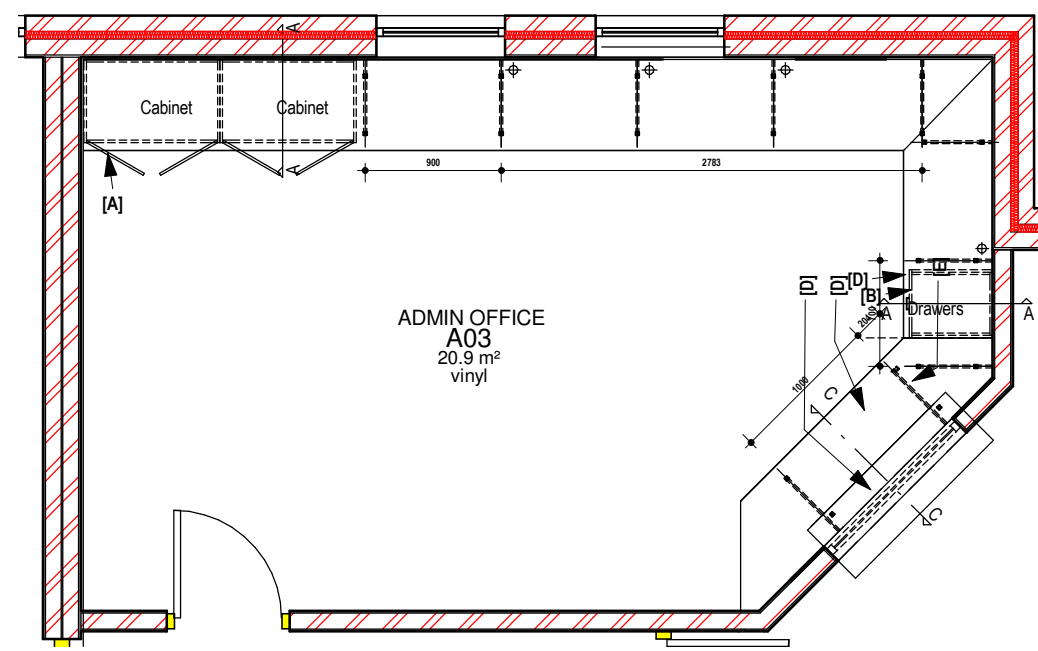
Scale 1 : 20

Nutrition Center- Serving Counter

Scale 1 : 20

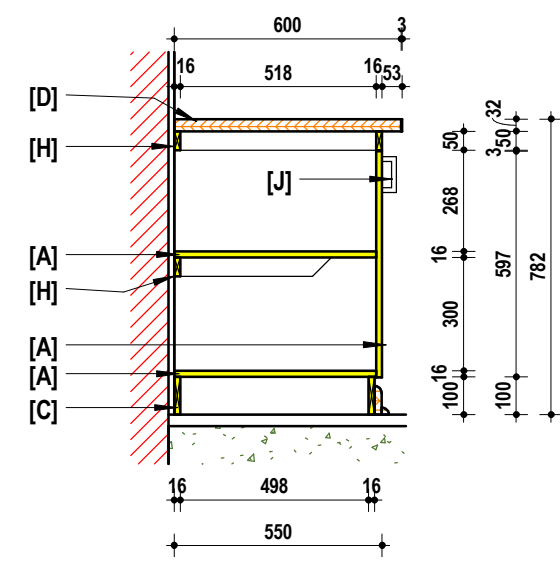
SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div><b>HELM</b> ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 20	Nutrition Center- Serving Counter	50-11	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 03:24:35 PM	PROJECT NR	1148
DRAWN	RN CARELSE		
ISSUED	M HELM		

A

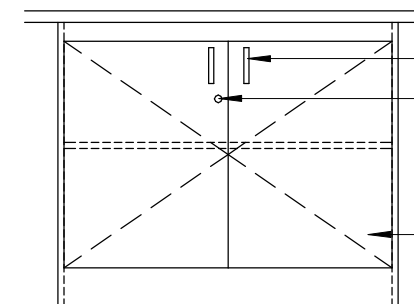


Admin Office Plan view

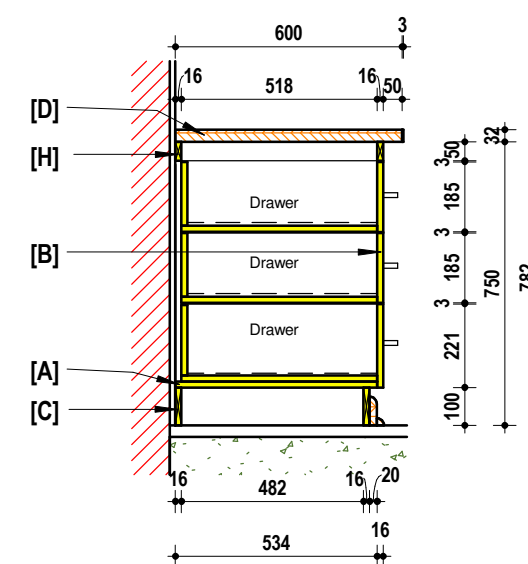
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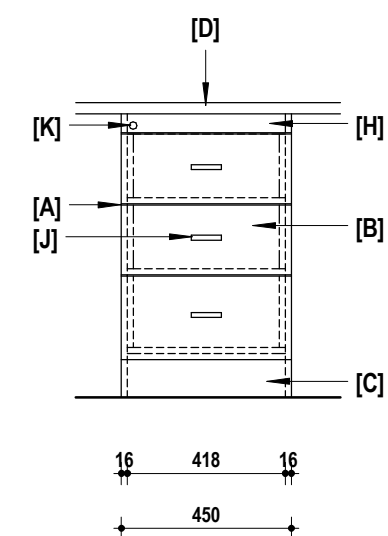
SECTION B-B



CABINET ELEVATION



SECTION A-A



DRAWERS ELEVATION

**NOTES:**

All cupboards are to be screw fixed and glued and all cupboards to be fixed to the floor.  
All hinges to be PIANOTYPE, full length for door panel.  
All cleats fixed to wall with 8x65mm hammer drives and 6x41mm drywall screws used for fixing cleats to 32mm partical board.

**WORKTOPS**

All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall.  
STEEL frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.

All dimensions to be checked on site.

[A] - 16mm Thick MELAMIN faced partical board panels (back, top, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging.

[B] - 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws.

[C] - 16x100mm MELAMIN strip footing.

[D] - 32mm FORMICA worktop with 3mm high impact edging coverstrips on exposed ends/edges.

[E] - 20x20x2mm STEEL square tubing frame welded together.

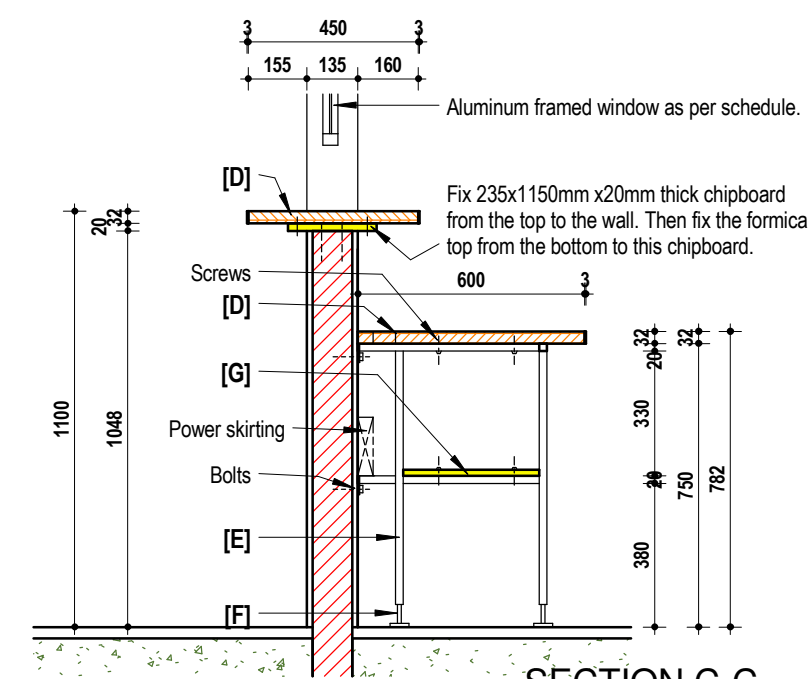
[F] - Adjustable legs STEEL legs to be screw fixed to floor.

[G] - 16mm Thick MELAMIN faced partical board shelves fitted with screws to steel frame. Finish exposed edges with 3mm high impact edging.


[H] - 16x50mm MELAMIN strip for supports, fitted with screws and cold glue.

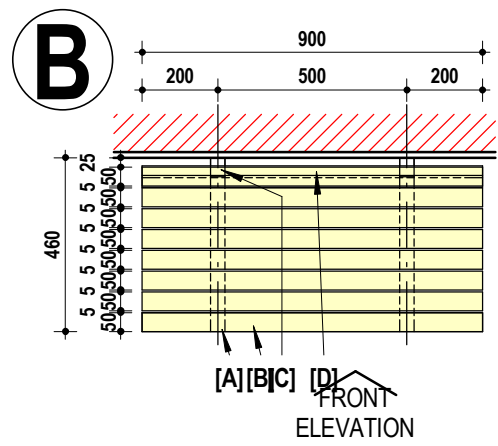
[J] - Stainless Steel Satin finish handles to Architect's approval.

[K] - Cylinder type cabinet lock. One key fits all.

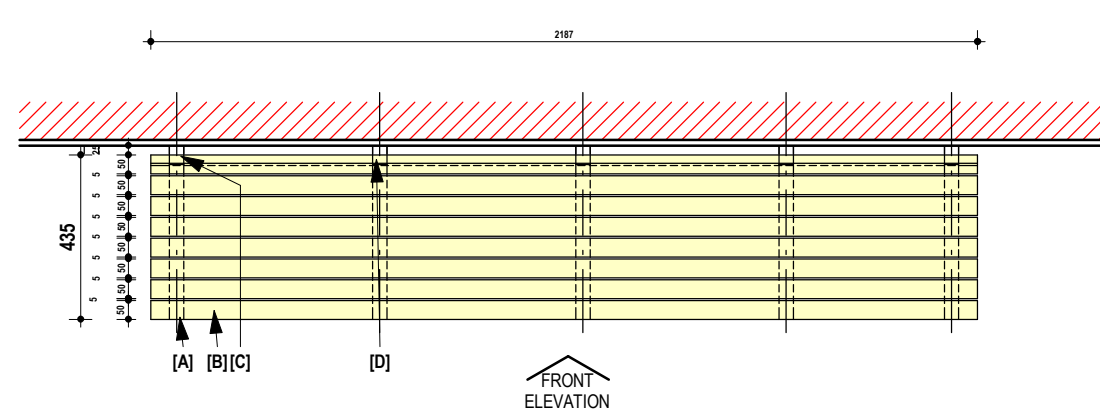


SECTION C-C

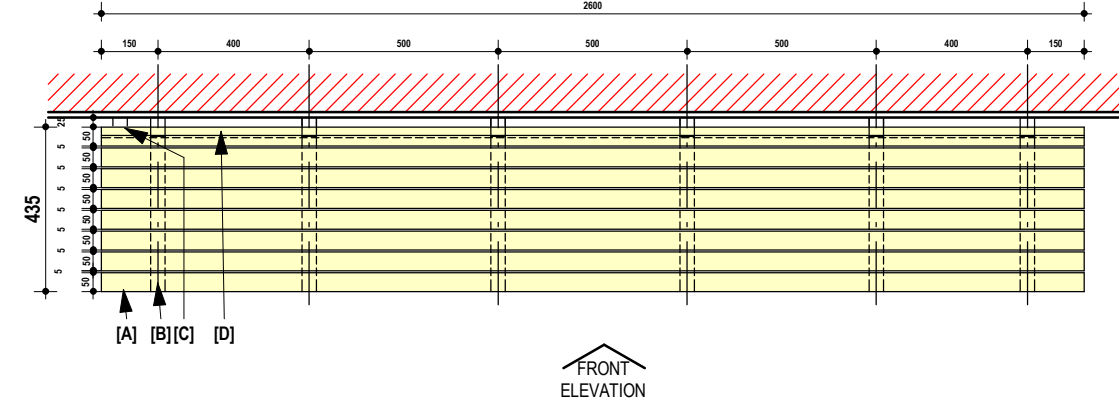
SCALE As indicated	DRAWING DESCRIPTION Admin Office	DRAWING NO 50-12	 69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 03:24:36 PM	PROJECT NR 1148	
DRAWN	RN CARELSE		
ISSUED	M HELM		



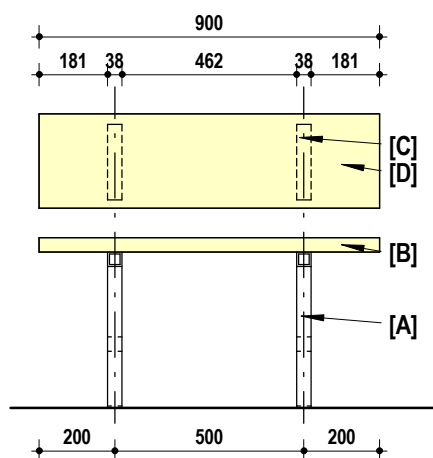
DETAIL PLAN - 900mm LONG



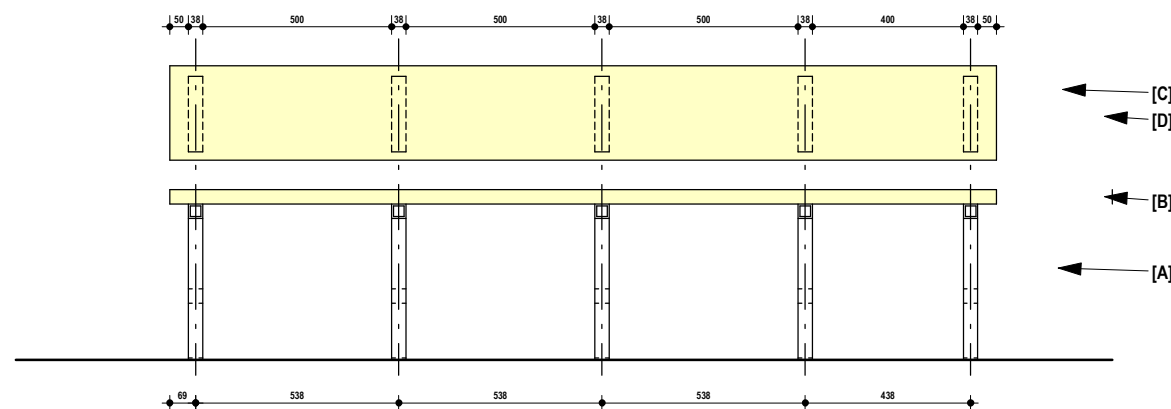
DETAIL PLAN - 2100mm LONG



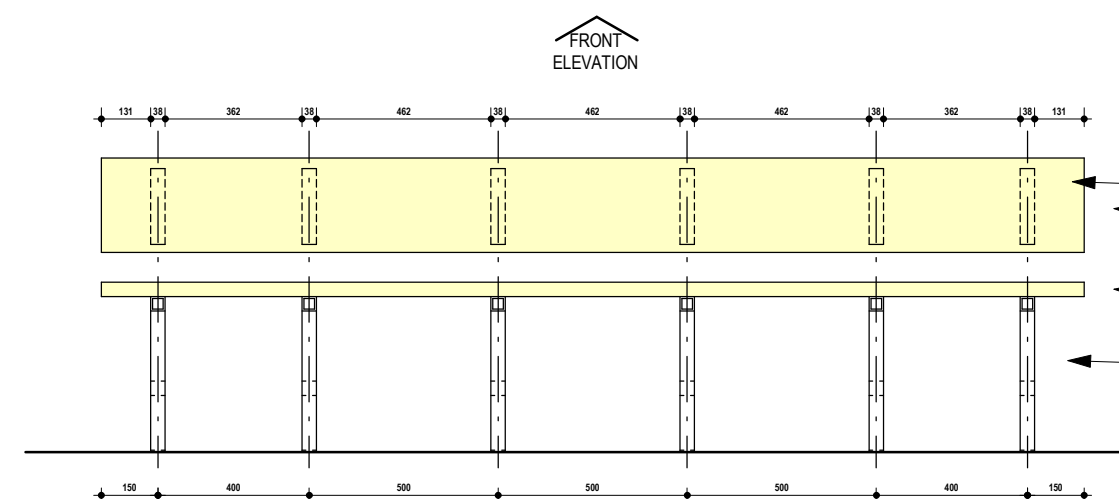
DETAIL PLAN - 2600mm LONG



FRONT ELEVATION - 900mm LONG



FRONT ELEVATION - 2100mm LONG



FRONT ELEVATION - 2600mm LONG

Bench 900mm  
Scale 1 : 20

Bench 2187mm  
Scale 1 : 20

Bench 2600mm  
Scale 1 : 20

NOTES:

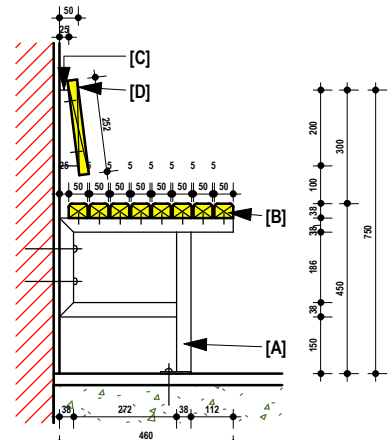
All dimensions to be checked on site.

[A] - 38x38x2.5mm MILD STEEL square tubing support structure with dimensions as shown, fixed to wall and floor with M12 RAWL BOLTS as indicated. Finished with powder coats and plastic end and floor plugs.

[B] - 38x50mm HARDWOOD slats with 10mm radius rounded edges as shown, fixed to frame with concealed fixing screws. Finished with approved VARNISH coats to Architect's approval.

[C] - 38mm HARDWOOD section timber support with dimensions as shown, fixed to wall with HILTI anchors. Finished with approved VARNISH coats to Architect's approval.

[D] - 22x252mm HARDWOOD back section, fixed to timber supports with brass screws, plugged and finished with approved VARNISH coats to Architect's approval.

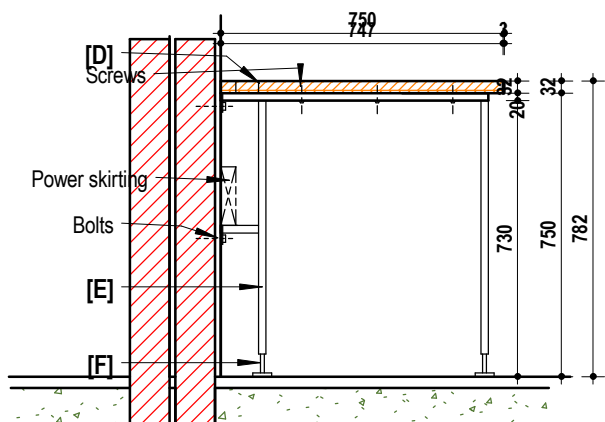


TYPICAL SECTION A-A

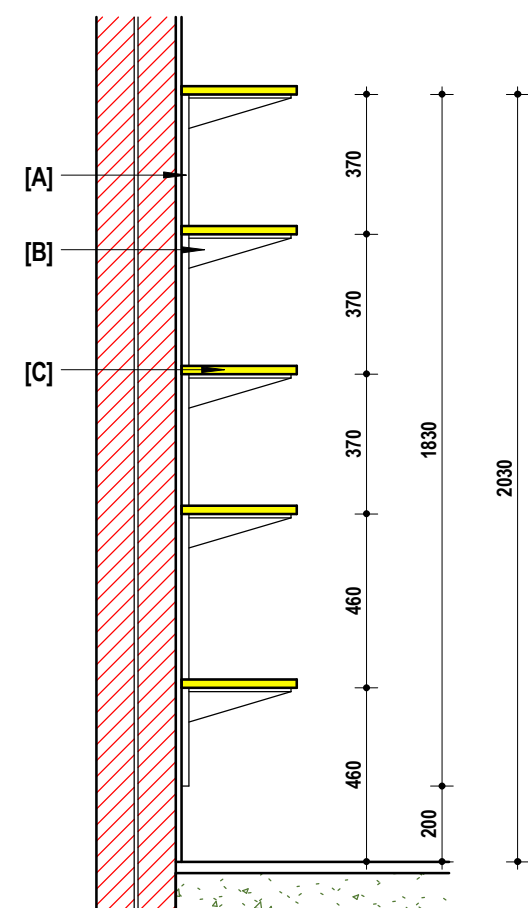
SCALE	DRAWING DESCRIPTION	DRAWING NO	ARCHITECTURE ARCHITECTURE CREATE INNOVATION <b>HELM</b> ARCHITECTS
1 : 20	Admin Entrance Foyer Benches	50-13	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
DATE	2017/02/16 03:24:36 PM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		



C



SECTION A-A



SECTION B-B

NOTES:

All cupboards are to be screw fixed and glued and all cupboards to be fixed to the floor.  
All hinges to be PIANO TYPE, full length for door panel.  
All cleats fixed to wall with 8x65mm hammer drives and 6x41mm drywall screws used for fixing cleats to 32mm partical board.

WORKTOPS

All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall. STEEL frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.

All dimensions to be checked on site.

[A] - 16mm Thick MELAMIN faced partical board panels (back, top, sides, shelves) fitted with screws and cold glue. Finish exposed edges with 3mm high impact edging.

[B] - 16mm MELAMIN finished drawer front panels with 3mm high impact edging, fitted to frame with screws and cold glue. Drawers to run on 450mm drawer runners fixed with 6x16mm chipboard screws.

[C] - 16x100mm MELAMIN strip footing.

[D] - 32mm FORMICA worktop with 3mm high impact edging coverstrips on exposed ends/edges.

[E] - 20x20x2mm STEEL square tubing frame welded together.

[F] - Adjustable legs STEEL legs to be screw fixed to floor.

[G] - 16mm Thick MELAMIN faced partical board shelves fitted with screws to steel frame. Finish exposed edges with 3mm high impact edging.

[H] - 16x50mm MELAMIN strip for supports, fitted with screws and cold glue.

[J] - Stainless Steel Satin finish handles to Architect's approval.

[K] - Cylinder type cabinet lock. One key fits all.

NOTES:

SHELVING (305)

Steel shelving brackets and wallbands (1830mm) as by "SHELOO SHELVING", (5 tier) with 22mm laminated SA Pine shelves 305mm wide

All dimensions to be checked on site.

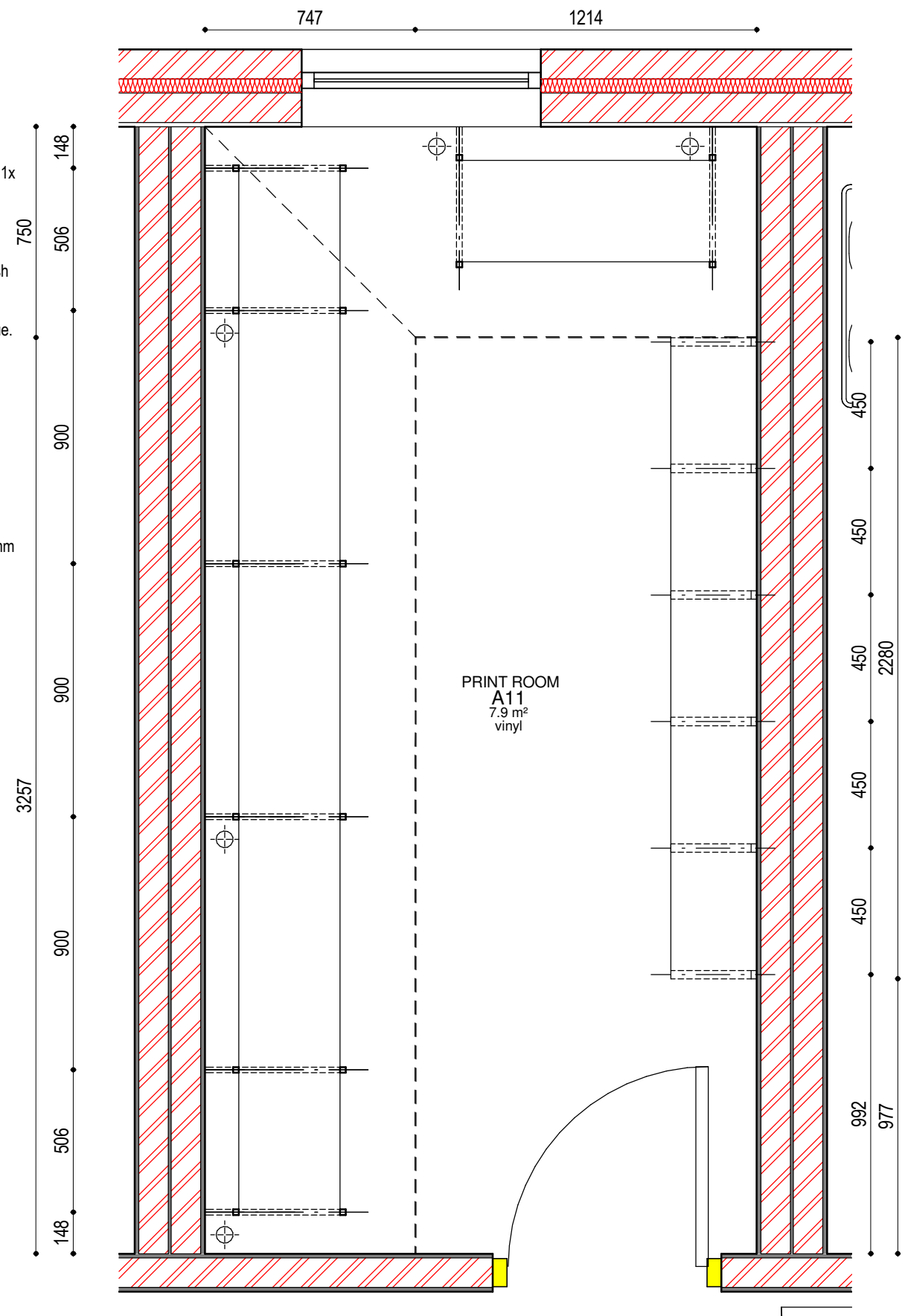
[A] - 1830mm Wallbands Code WB6, to receive wall brackets. Fixing to wall to be done to Manufacturer's Specification.


[B] - Adjustable Brackets for wood shelving 305mm wide, Code WBR12.

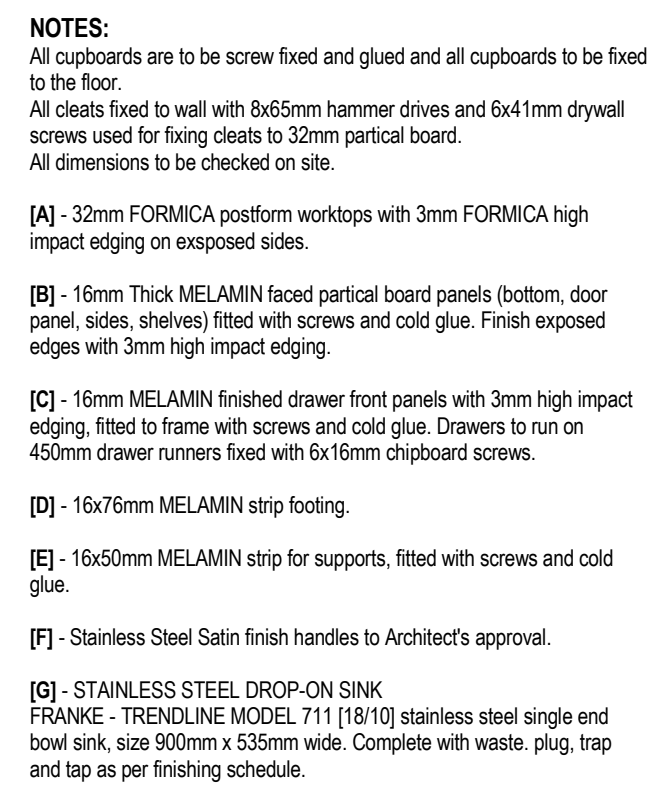
[C] - 305x22mm Thick SA PINE shelving. Fixing to bracket to Architect's approval.

Admin Print Room


Scale 1 : 20



SCALE 1 : 20	DRAWING DESCRIPTION Admin Print Room	DRAWING NO 50-14	 69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 03:24:37 PM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		



Scale 1 : 20

SCALE	DRAWING DESCRIPTION	DRAWING NO	
1 : 20	Admin Staff Room- Sink & Cabinets	50-15	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 03:24:38 PM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarchitects@vodamail.co.za



ARCHITECTURE  
ARCHITECTURE  
CREATE  
INNOVATION

**HELM**  
ARCHITECTS

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PO Box 2296, Komani, 5322, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: [helmarch@vodamail.co.za](mailto:helmarch@vodamail.co.za)



**F**

### SECTION B-B

## Admin Strongroom Shelving

Scale 1 : 20

**NOTES:**

- SHELVING (305)**  
Steel shelving brackets and wallbands (1830mm) as by "SHELCO SHELVING". (5 tier) with 22mm laminated SA Pine shelves 305mm wide.
- All dimensions to be checked on site.
- [A] - 1830mm Wallbands Code WB6, to receive wall brackets. Fixing to wall to be done to Manufacturer's Specification.
- [B] - Adjustable Brackets for wood shelving 305mm wide, Code WBR12.
- [C] - 305x22mm Thick SA PINE shelving. Fixing to bracket to Architect's approval.

**STRONGROOM A05**  
10.2 m²  
vinyl

SCALE	DRAWING DESCRIPTION	DRAWING NO
1 : 20	Admin- Strongroom	50-17
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00
DATE	2017/02/16 03:24:39 PM	PROJECT NR
DRAWN	RN CARELSE	1148
ISSUED	M HELM	

ARCHITECTURE  
ARCHITECTURE  
CREATE  
INNOVATION

**HELM**  
ARCHITECTS

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PO Box 2296, Komani, 5122, South Africa  
Cell: 082 807 1029 Tel & Fax: 045 838 3544  
E-mail: helmarch@vodamail.co.za

## Admin Strongroom Shelving

Scale 1 : 20

**NOTES:**

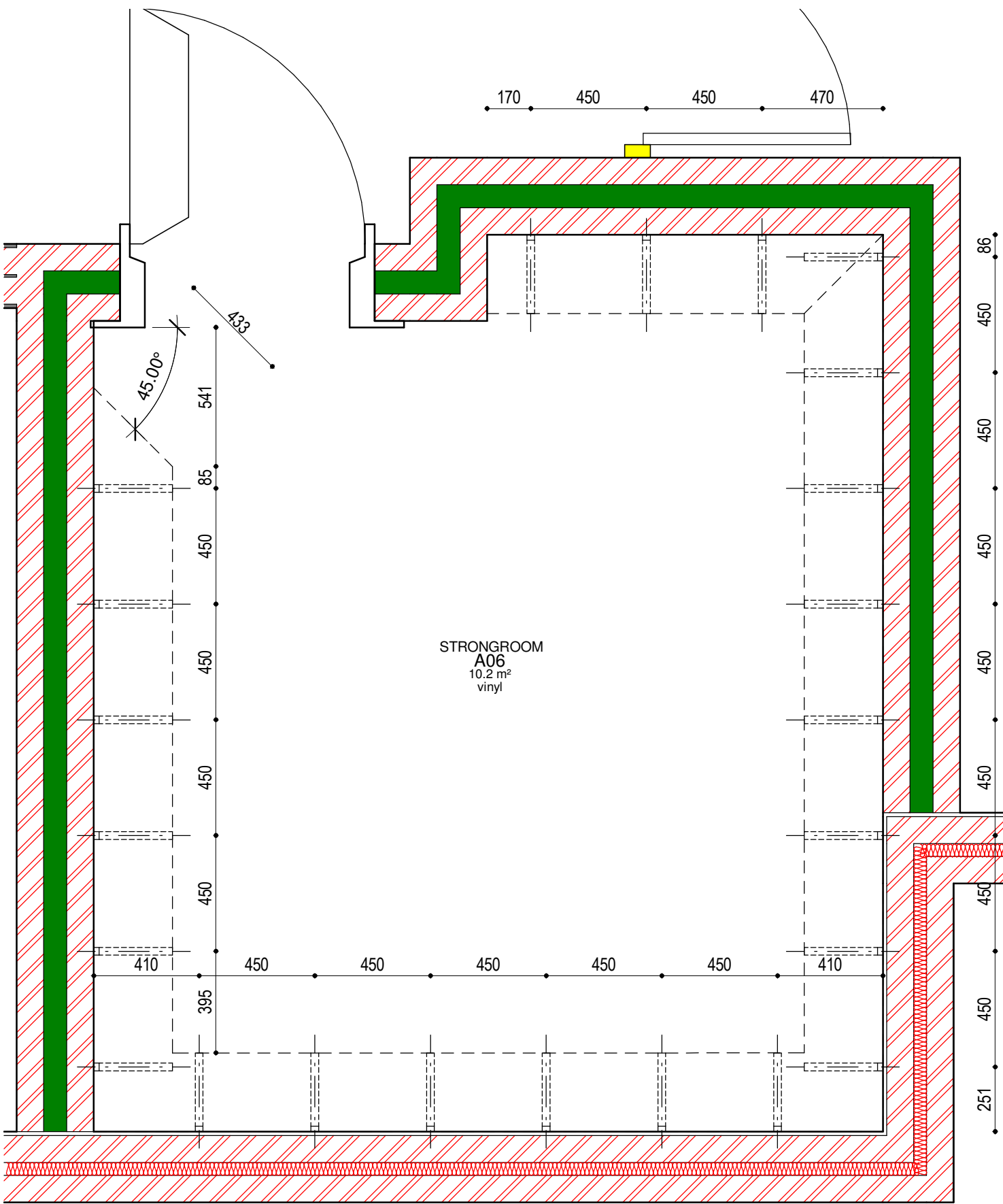
**SHELVING (305)**  
Steel shelving brackets and wallbands (1830mm) as by "SHELCO SHELVING". (5) tier with 22mm laminated SA Pine shelves 305mm wide.


All dimensions to be checked on site.

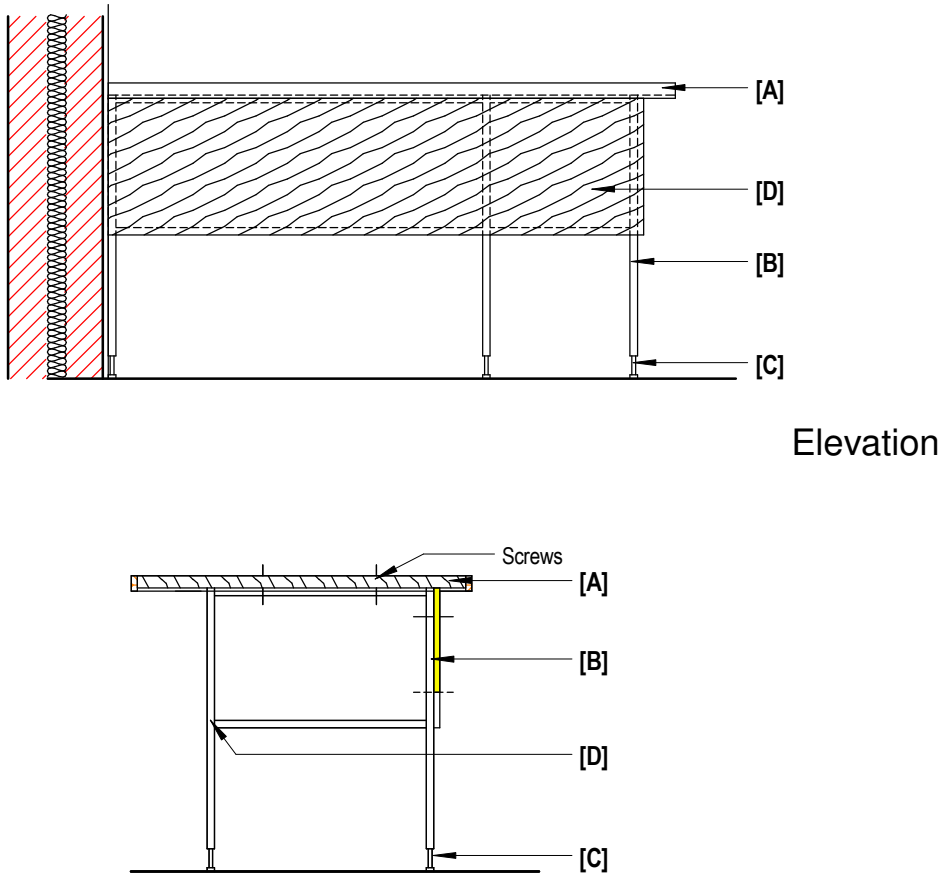
[A] - 1830mm Wallbands Code WB6, to receive wall brackets. Fixing to wall to be done to Manufacturer's Specification.

[B] - Adjustable Brackets for wood shelving 305mm wide, Code WB12

[C] - 305x22mm Thick SA PINE shelving. Fixing to bracket to Architect's approval.



SCALE	DRAWING DESCRIPTION	DRAWING NO	
1 : 20	Admin- Strongroom	50-17	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/02/16 03:24:38 PM	PROJECT NR	
DRAWN	RN CARELSE	1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 636 3544 E-mail: helmarch@vodanet.com
ISSUED	M HELM		

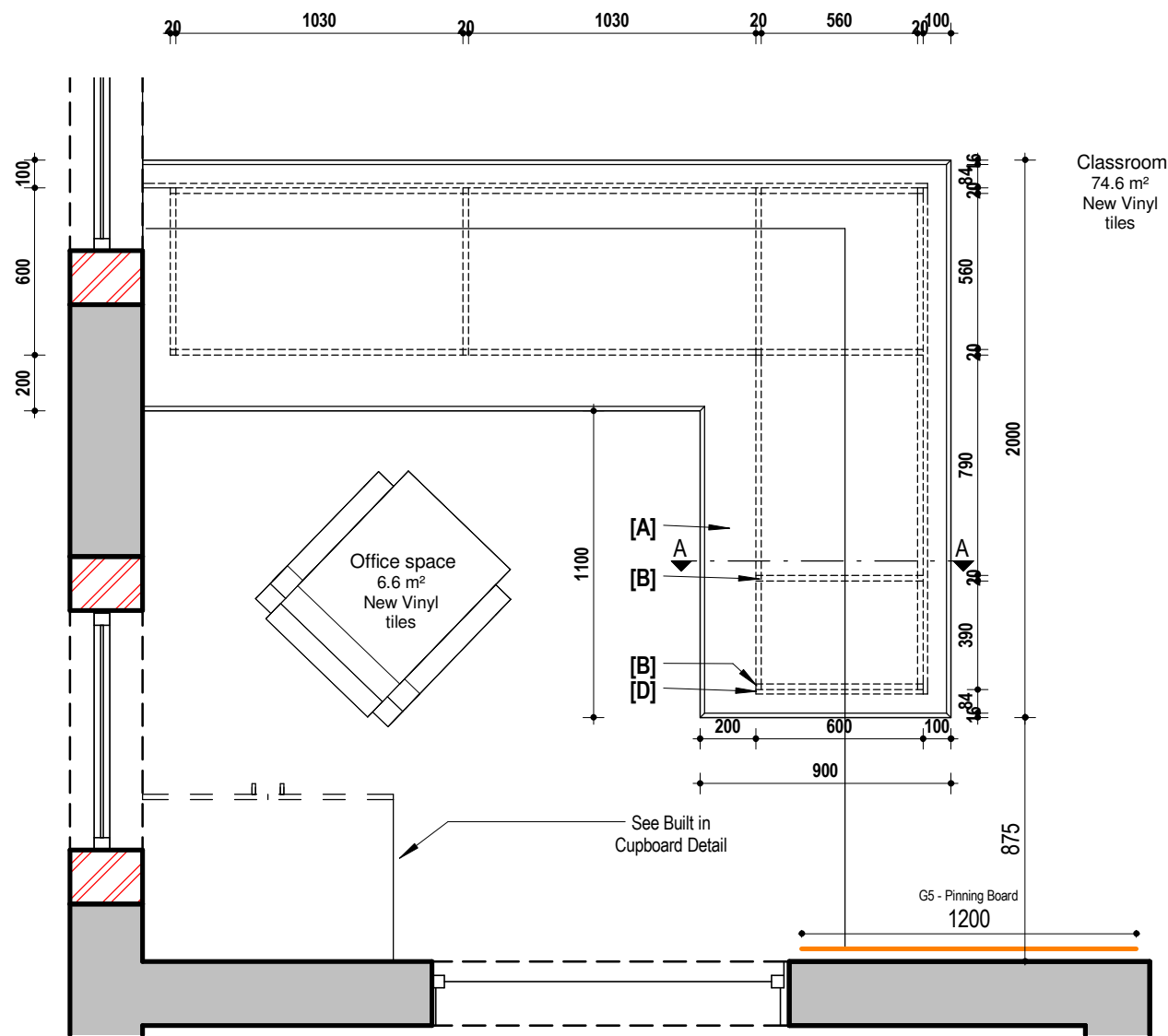


Section A-A

**NOTES:**  
All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall.  
STEEL frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.  
All dimensions to be checked on site.

[A] - 32mm FORMICA worktop with 16x40mm MERANTI hardwood coverstrips on exposed ends/edges. Coverstrips to be sanded down and finished with 2x coats approved Varnish.  
[B] - 20x20x2mm STEEL square tubing frame welded together.  
[C] - Adjustable legs STEEL legs.  
[D] - 16mm Thick MELAMIN faced particle board panel fitted with screws to STEEL frame. Finish exposed edges with 3mm high impact edging.

Block M- Grade R - Office desk  
Scale 1 : 20



Block M- Grade R - Office Space  
Scale 1 : 25

SCALE As indicated	DRAWING DESCRIPTION Grade R- Office space	DRAWING NO 50-18	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/02/16 03:24:40 PM	PROJECT NR	
DRAWN	Author	1148	
ISSUED	Checker		

NOTES:

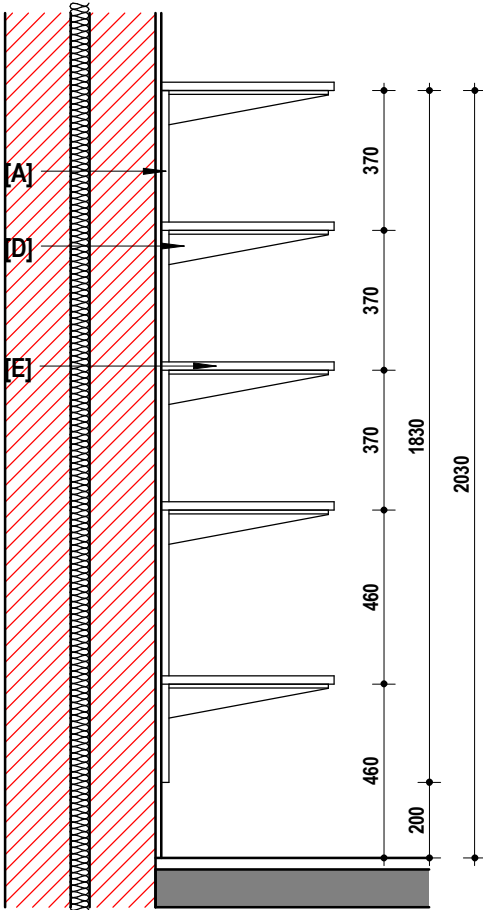
**SHELVING (457)**  
Steel shelving brackets and wallbands (1830mm) as by  
"SHELCO SHELVING" (5 tier) with 22mm laminated SA  
Pine shelves 457mm wide

All dimensions to be checked on site.

[A] - 1830mm Wallbands Code WB6, to receive wall  
brackets. Fixing to wall to be done to Manufacturer's  
Specification.

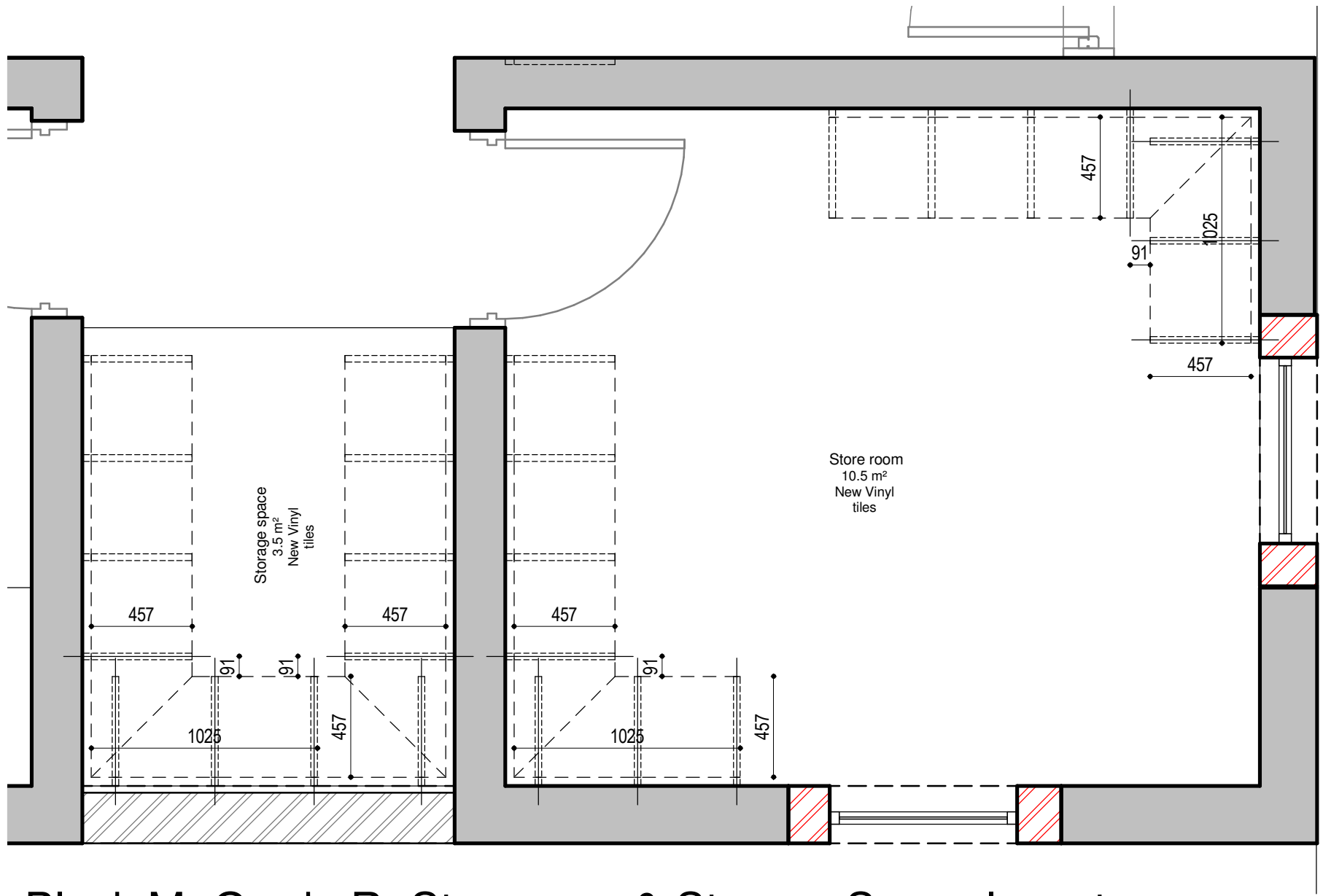
[D] - Adjustable Brackets for wood shelving 457mm  
wide, Code WBR18.

[E] - 457x22mm Thick SA PINE shelving. Fixing to  
bracket to Architect's approval.



Grade R Storeroom & Storage space Sheving detail

Scale 1 : 20

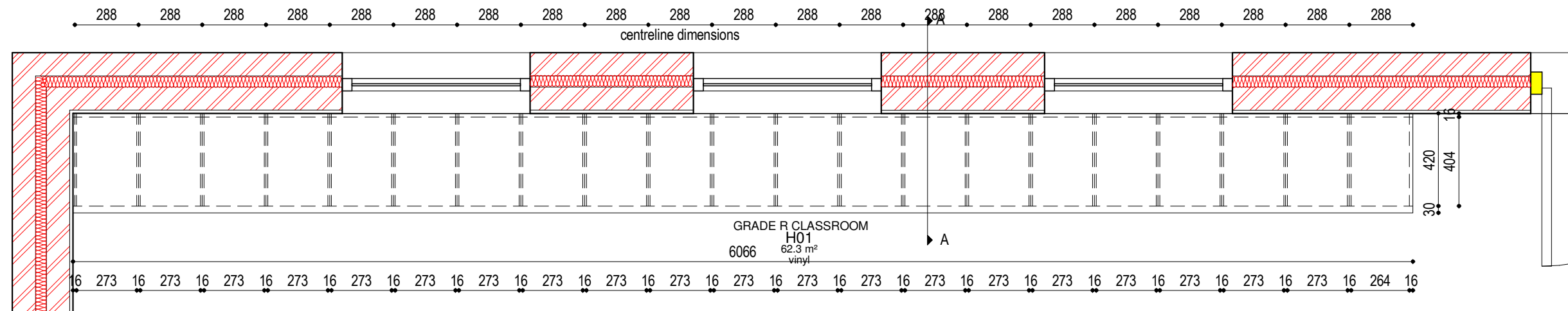


Block M- Grade R- Storeroom & Storage Space layouts

Scale 1 : 25

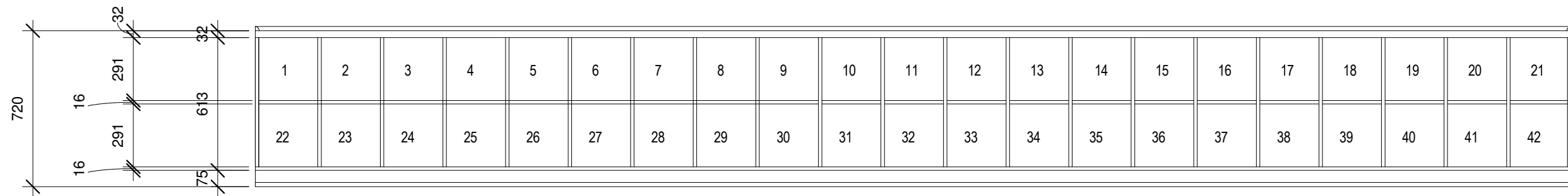
SCALE As indicated	DRAWING DESCRIPTION Grade R- Storage space	DRAWING NO 50-19	ARCHITECTURE ARCHITECTURE CREATE INNOVATION <b>HELM</b> ARCHITECTS
PROJECT PROSPECT JUNIOR SECONDARY SCHOOL		REVISION Approver	
DATE 2017/02/16 03:24:41 PM		PROJECT NR 1148	69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
DRAWN Author			
ISSUED Checker			

A

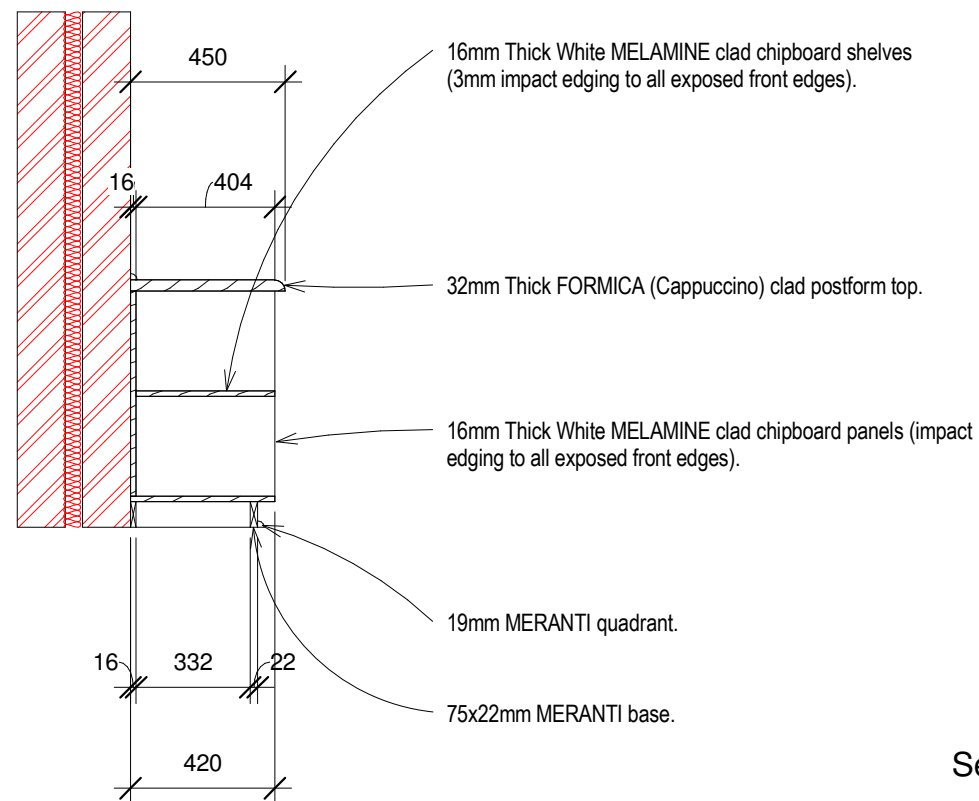


## Grade R Classroom- Pigeon Hole Plan View

Scale 1 : 20



Front Elevation

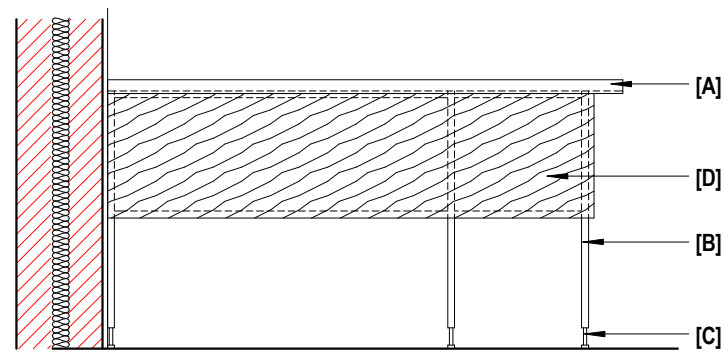


Section A-A

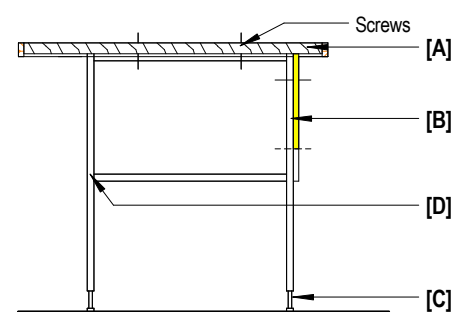
## Grade R Classroom- Pigeon Holes

Scale 1 : 20

SCALE	DRAWING DESCRIPTION	DRAWING NO	<b>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</b> <b>HELM ARCHITECTS</b> 69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel & Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za
1 : 20	Grade R Classroom- G1 Pigeon Holes	50-03	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION PT00	
DATE	2017/03/06 01:00:05 PM	PROJECT NR	
DRAWN	RN CARELSE	1148	
ISSUED	M HELM		



Elevation



Section A-A

#### NOTES:

All worktops are to be screw fixed to steel frame, and frames to be bolt fixed to the wall.

STEEL frame to be finished with 1x coat primer and 2x coats enamel, color to Architect's Approval.

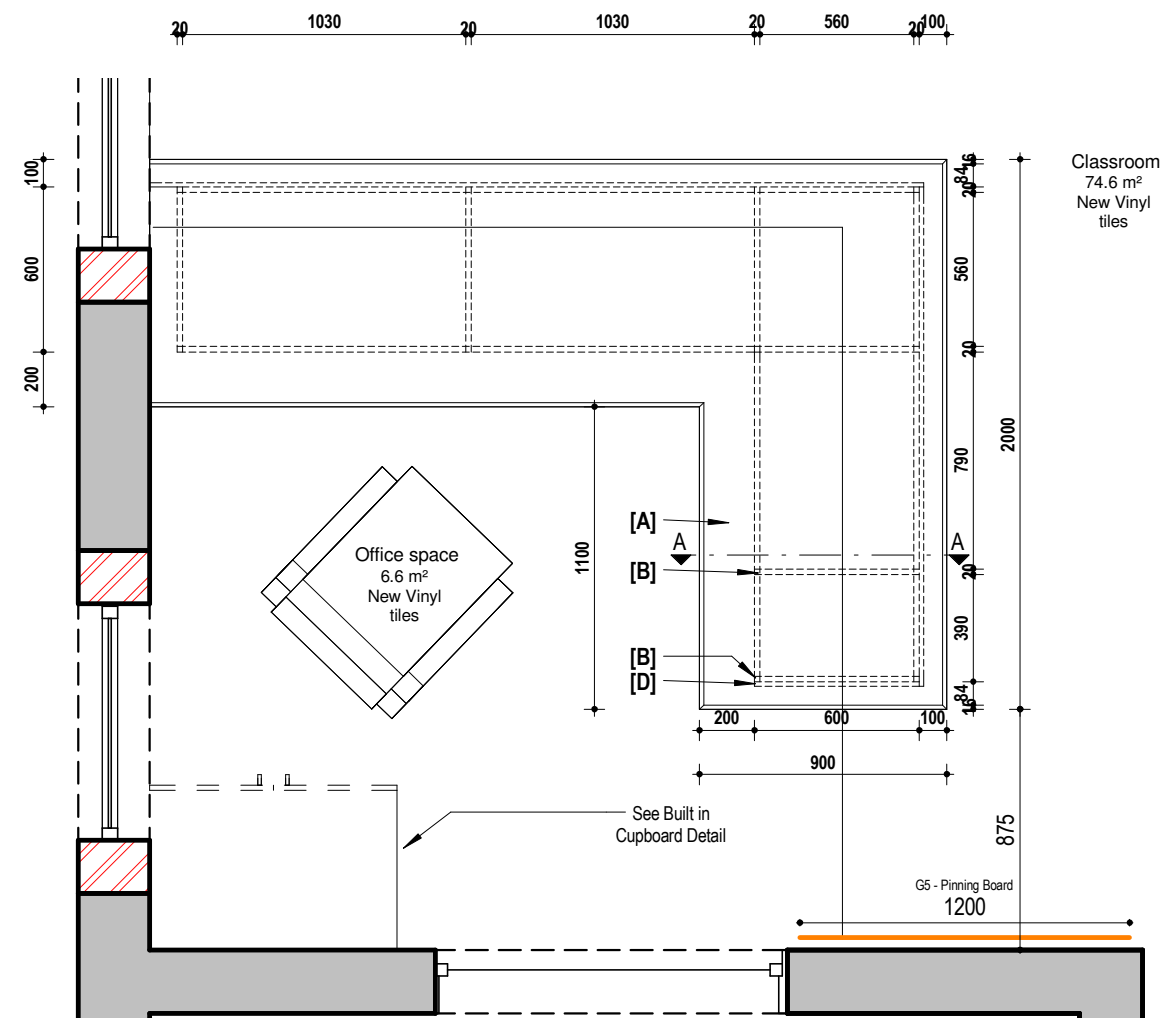
All dimensions to be checked on site.

**[A]** - 32mm FORMICA worktop with 16x40mm MERANTI hardwood coverstrips on exposed ends/edges. Coverstrips to be sanded down and finished with 2x coats approved Varnish.

**[B]** - 20x20x2mm STEEL square tubing frame welded together.

**[C]** - Adjustable legs STEEL legs.

**[D]** - 16mm Thick MELAMIN faced particle board panel fitted with screws to STEEL frame. Finish exposed edges with 3mm high impact edging.

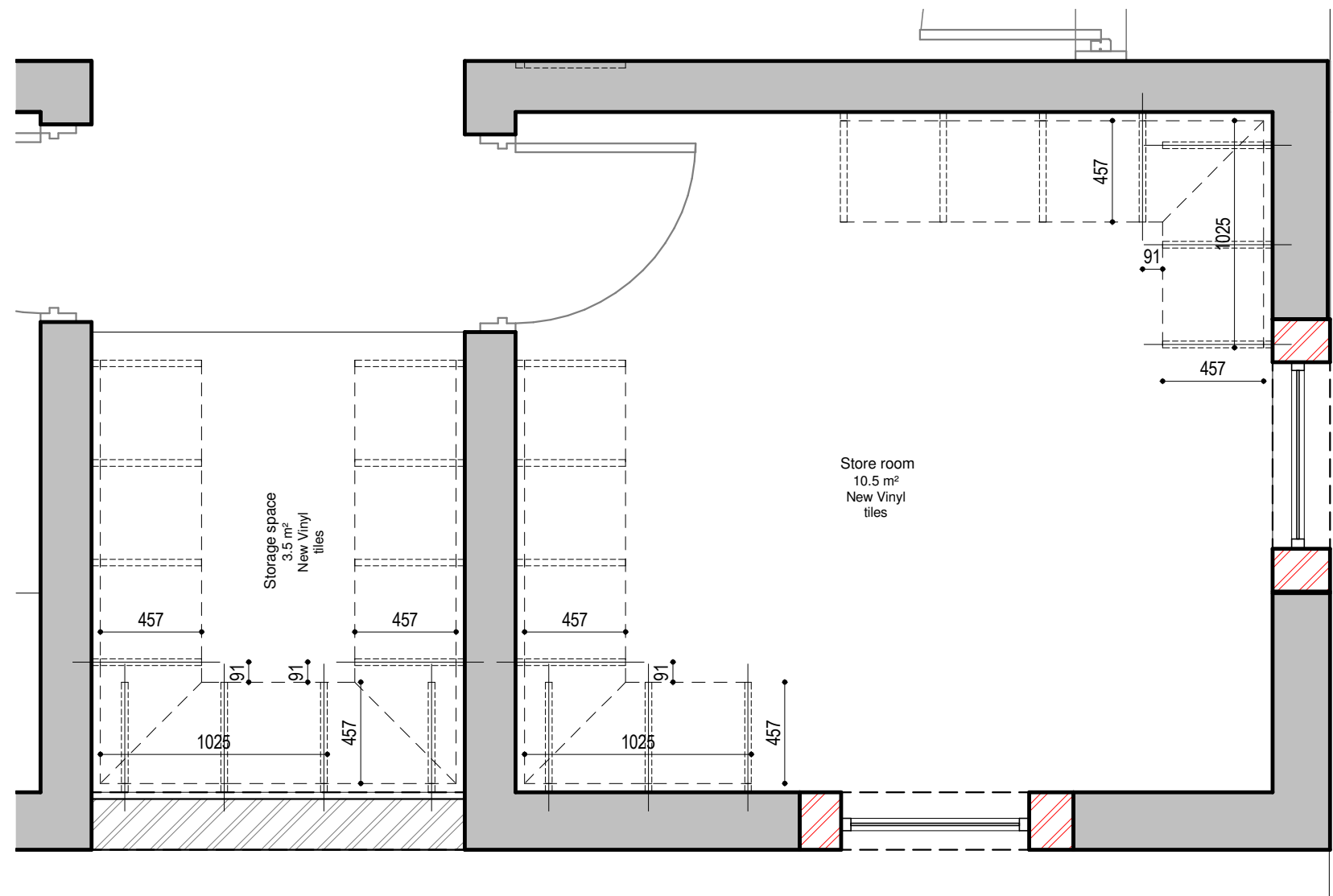



SCALE As indicated	DRAWING DESCRIPTION Grade R- Office space	DRAWING NO 50-18	<b>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</b> <b>HELM ARCHITECTS</b> <p>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</p>
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/06 01:00:05 PM	PROJECT NR 1148	
DRAWN	Author		
ISSUED	Checker		

## SHELVING (457)

All dimensions to be checked on site.

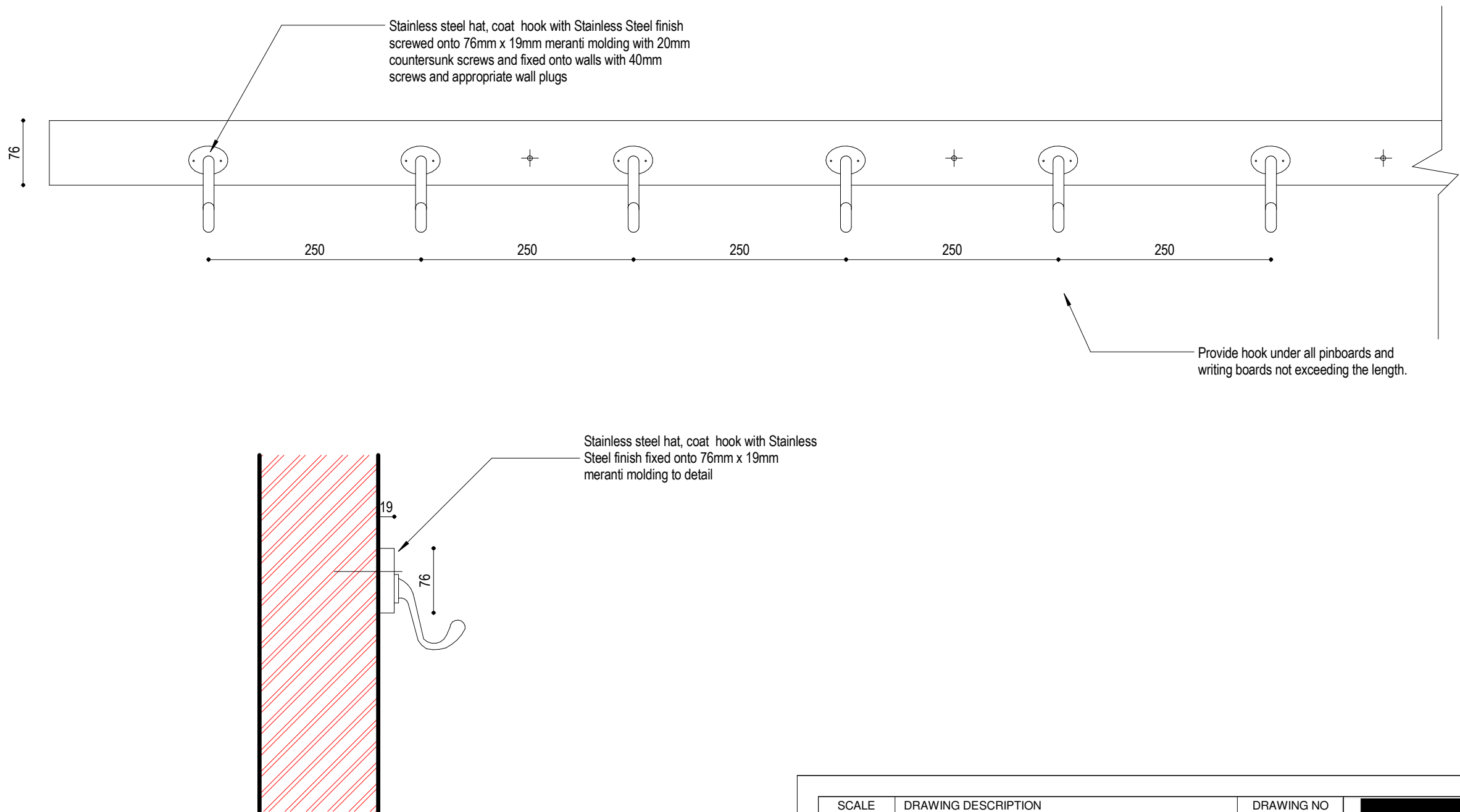
**[D]** - Adjustable Brackets for wood shelving 457mm wide, Code WBR18.



SCALE As indicated	DRAWING DESCRIPTION Grade R- Storage space	DRAWING NO 50-19	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/06 01:00:05 PM	PROJECT NR 1148	
DRAWN	Author		
ISSUED	Checker		

69 Prince Alfred Street, Queenstown  
 PO Box 2296, Komani, 5322, South Africa  
 Cell: 082 807 1029 Tel & Fax: 045 838 3544  
 E-mail: helmarch@vodamail.co.za

SPECIFIED TRADE NAMES  
OR SIMILAR APPROVED



NOTE: FOR NEW AND REFURBISHED GRADE- R CLASSROOMSN ONLY

SCALE	DRAWING DESCRIPTION	DRAWING NO	<div>ARCHITECTURE ARCHITECTURE CREATE INNOVATION</div> <div>HELM ARCHITECTS</div> <div>69 Prince Alfred Street, Queenstown PO Box 2296, Komani, 5322, South Africa Cell: 082 807 1029 Tel &amp; Fax: 045 838 3544 E-mail: helmarch@vodamail.co.za</div>
1 : 5	HOOK DETAILS	50-33	
PROJECT	PROSPECT JUNIOR SECONDARY SCHOOL	REVISION Approver	
DATE	2017/03/06 01:00:06 PM	PROJECT NR	
DRAWN	Author	1148	
ISSUED	Checker		

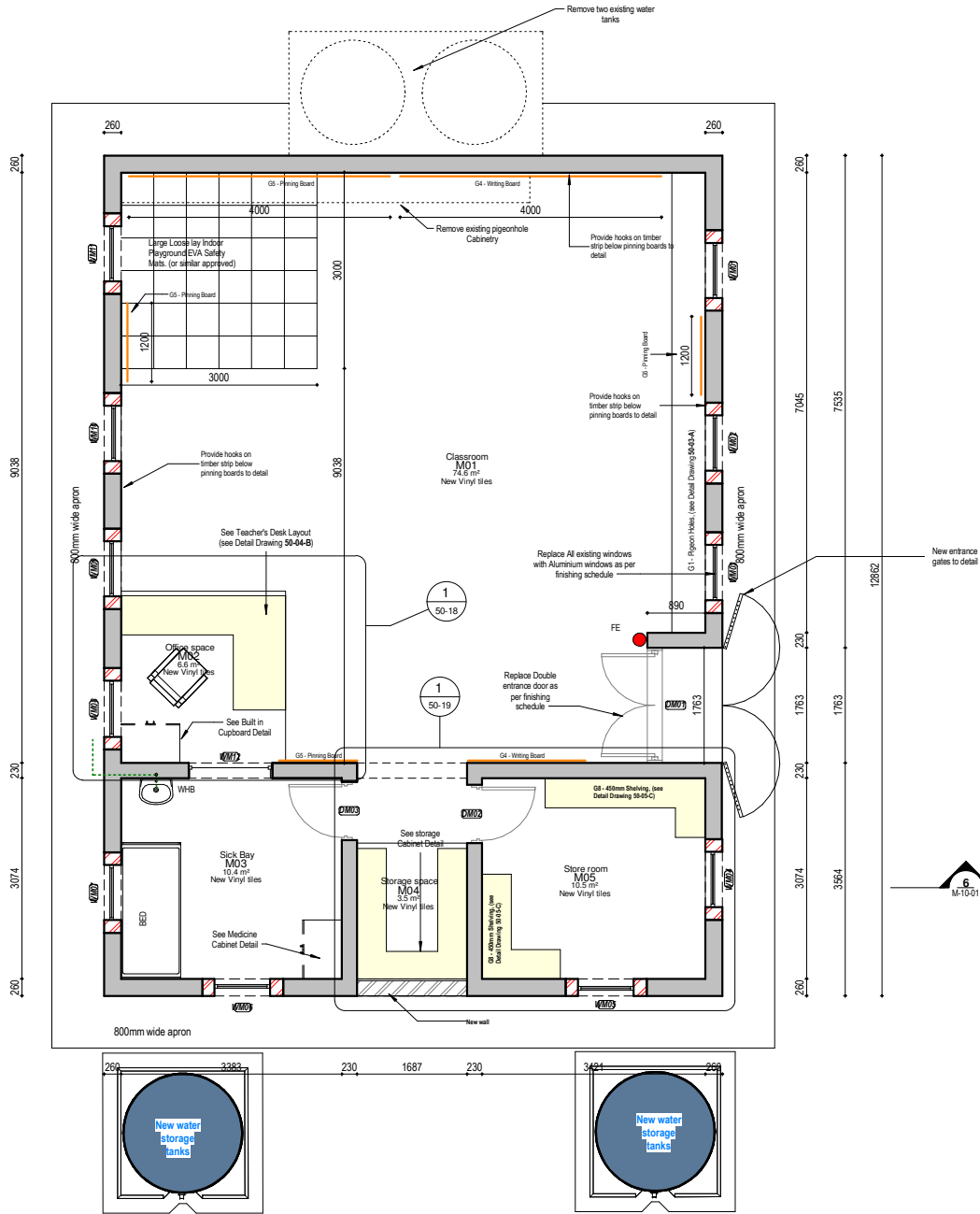


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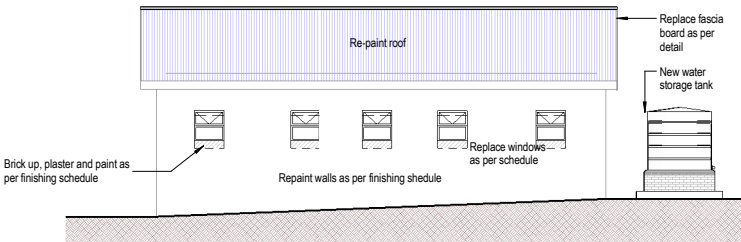
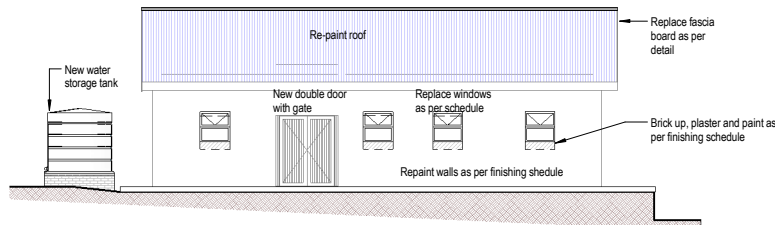
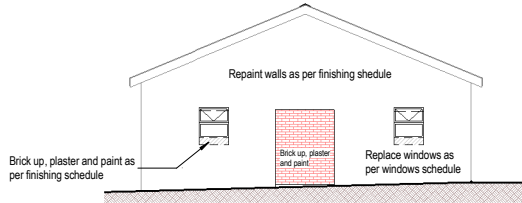
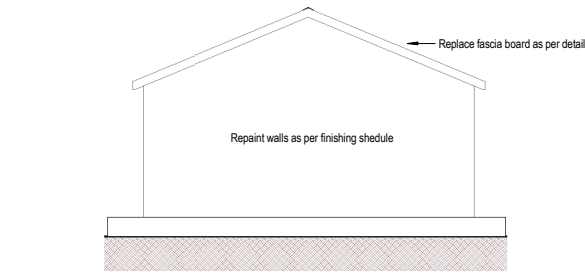
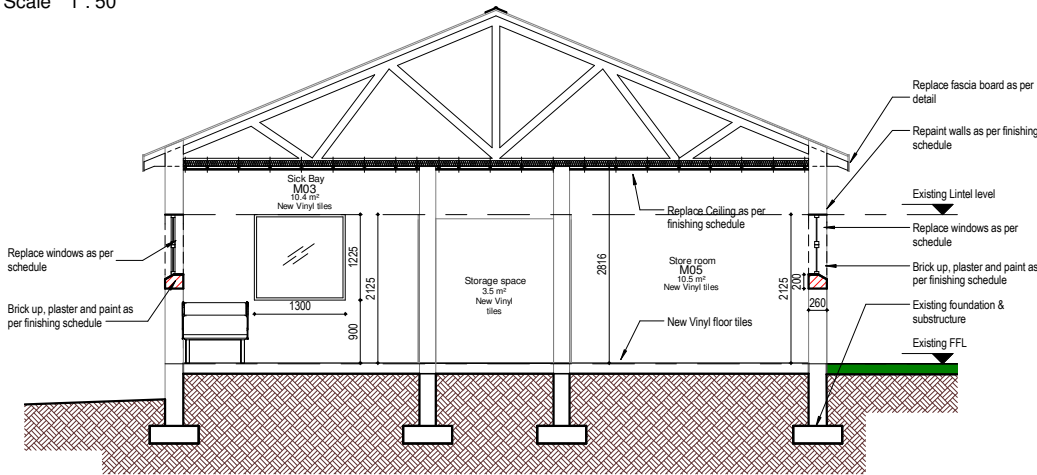
GENERAL NOTES

THIS DRAWING IS COPYRIGHT RESERVED AND REMAINS THE PROPERTY OF THE ARCHITECT.  
ALL DIMENSIONS ARE TO BE CHECKED ON SITE AND ANY DISCREPANCIES TO BE REPORTED TO THE ARCHITECT. NO DIMENSIONS TO BE SCALED. ALL ELECTRICAL AND DRAINAGE WORK TO BE CARRIED OUT BY REGISTERED ARTISANS.  
QUALITY OF ALL MATERIALS & WORKMANSHIP TO COMPLY WITH RELEVANT S.A.B.S AND B.S.S. SPECIFICATIONS & CODES OF PRACTICE, AND TO CONFORM TO MINIMUM STANDARDS LAD DOWN IN THE STANDARD PREAMBLES OF THE BILLS OF QUANTITIES OR, IN THE ABSENCE OF A BILL OF QUANTITIES, AVAILABLE FOR PERUSAL AT THE ARCHITECTS OFFICES.  
THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF ALL ELEMENTS OF THE BUILDING, OR BUILDINGS, OR ANY OTHER STRUCTURAL ARCHITECTURAL, INTERIOR, SHOP FITTING, JOINERY, SITE AND EXTERNAL COMPONENTS INCLUDING FOUNDATIONS, INTERNAL & EXTERNAL WALLS, ET AL, WITH PARTICULAR REFERENCE TO EPP BOUNDARIES, BUILDING LINES, SERVITUDES, ETC. NO FOUNDATION OR ANY OTHER PART OF THE BUILDING MAY PROJECT BEYOND THE BOUNDARY OF THE PROPERTY.

REVISIONS		
NO.	DATE	DESCRIPTION



Block M- Grade R- Ground Storey Level  
Scale 1 : 50



ARCHITECT SIGNATURE CLIENT SIGNATURE



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TEL: +27 82 807 1029  
PO Box 2296, Komani, 5322  
marlus@helmarch.co.za  
84 Prince Alfred Street  
Queens town  
Easter Cape, RSA, 5322  
SACAP 5713

DESIGNED BY:	Designer	CHECKED BY:	Checker
DATE:	2017/03/06 01:00:10 PM		

PROJECT: PROSPECT JUNIOR SECONDARY SCHOOL

PROJECT ADDRESS: EASTERN CAPE

DRAWING TITLE  
**BLOCK M- REFURBISHED GRADE R CLASSROOM**

SCALE @ A1: As indicated  
DATE ISSUED: 2017/03/06 01:00:10 PM  
PROJECT REF: 1148

DRAWING NUMBER  
**M-10-01**  
REVISION

**PRE-TENDER**

DISCIPLINE  
**ARCHITECT**

DISCIPLINE CODE  
**MEC**

DRAWING STATUS



---

## **ADDENDUM F**

---

### **Electrical Specification**

# **PROSPECT JSS**

## **ELECTRICAL SPECIFICATIONS**

## **1.1     Returnable Schedules**

## **1.1a Schedule of Materials Offered**

## SCHEDULE OF MATERIALS OFFERED

Bidders shall complete the following schedule of materials and equipment offered and undertake that the actual materials and equipment installed shall be in accordance with this schedule. Enter N/A if not applicable for that particular item / installation.

Bidders are to take note that if the material offered is not to specification, this may lead to the bid being disqualified.

Item	Item	Make or Trade Name	Model No. or I.D.	Material to Spec? (Give details if not)	SABS Mark Y/N	Country of Origin
1.0	<b>Distribution Boards</b>					
1.1	Manufacturer					
1.2	Place of Manufacture					
1.3	Switchgear utilised					
2.0	<b>Make of Switches &amp; Accessories</b>					
2.1	Light switches					
2.2	Switch socket outlets					
2.3	Isolators					
2.4	MCB's					
3.0	<b>LV Cables &amp; Accessories</b>					
3.1	Manufacturer					
3.2	Conforms to current schedule?					
3.3	Joints/Terminations utilised					
3.4	LV Metering Kiosks					

Item	Item	Make or Trade Name	Model No. or I.D.	Material to Spec? (Give details if not)	SABS Mark Y/N	Country of Origin
5.0	<b>SLEEVES</b>					
5.1	Manufacturer					
5.2	Material					
5.3	Class					
6.0	<b>LUMINAIRES</b>					
6.1	Type F39 – 39W LED fitting					
6.2	Type F48 – 48W LED fitting					
6.3	Type F39(VP) – 39W vapour proof LED fitting					
6.4	Type F52 – Fluorescent fitting					
6.5	Type F17 – 20W LED bulkhead					

## **1.1b Schedule of Contractors Testing Equipment**

---

**SCHEDULE OF CONTRACTOR'S TESTING EQUIPMENT**

---

ITEM	TEST	EQUIPMENT
1.	Insulation Resistance	
2.	Earth Continuity	
3.	Polarity	
4.	Earth Leakage Protection	



## **1.2     Standard Technical Specifications : Electrical – Low Voltage**

---

## STANDARD TECHNICAL SPECIFICATION: Electrical Low Voltage

---

### CONTENTS

SECTION		DESCRIPTION
1.0		PURPOSE
2.0		SCOPE
3.0		DEFINITIONS
4.0		SITE VISIT
5.0		COMPLIANCE WITH REGULATIONS
6.0		STANDARDS AND QUALITY OF WORK
7.0		REJECTION OF INFERIOR WORK AND MATERIALS
8.0		DRAWINGS AND SAMPLES
9.0		GUARANTEE
10.0		OPERATING AND MAINTENANCE DETAILS
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12.0		TECHNICAL AND INSTALLATION REQUIREMENTS
	12.1	MAIN ELECTRICAL SUPPLY
	12.2	MV EQUIPMENT AND CABLING
	12.3	MISCELLANEOUS EQUIPMENT AND INSTALLATIONS
	12.4	DISTRIBUTION BOARDS
	12.5	CABLEWORK
	12.6	BUS-BAR FEEDERS
	12.7	TUBULAR CONDUIT WIREWAYS
	12.8	TRUNKING WIREWAYS
	12.9	GENERAL WIRING
	12.10	GENERAL EARTHING
	12.11	LUMINAIRES
	12.12	LIGHTING SWITCHES
	12.13	BELL PUSHES
	12.14	SOCKET OUTLETS AND PLUG TOPS
	12.15	MISCELLANEOUS POWER CONNECTIONS
	12.16	PROVISIONS FOR ANCILLARY SERVICES
	12.17	FIXINGS AND SUPPORTS
	12.18	EARTHING AND LIGHTNING PROTECTION

## 1.0 **Purpose**

- 1.1 This Specification is intended to set out the general technical and procedural requirements for the installation of electrical lighting, power and ancillary services within and around premises largely as contemplated in The Code of Practice for the Wiring of Premises, South African Bureau of Standards SANS 10142-1:2003 (hereinafter called the Wiring Code, or SANS 10142-1:2003). Where the installation falls outside the scope of the Wiring Code, those portions of the installation (e.g.: MV switchgear and cabling, power transformers, and so forth) shall be covered in one or more supplementary specifications appended hereto or, alternatively, i) shall be detailed in the Detailed Specification/Particular Requirements (hereinafter referred to as 'Detailed Specification') forming part of this Document or, ii) shall be detailed within this Standard Specification.
- 1.2 This Specification shall be read in conjunction with the Contractual Conditions, Detailed Specification, Schedules, Bills of Quantities and Drawings pertaining to the particular project to which these Documents apply.
- 1.3 Clause separations and headings are given for guidance only and the Work may not necessarily be limited to any particular section(s) of this Specification and the project Documentation must be read as a whole.

## 2.0 **Scope**

- 2.1 This Specification covers the supply, delivery, off-loading, storage, installation, testing, commissioning and handing over in full working order, complete in all respects of lighting, power and ancillary services as outlined in the Detailed Specification and/or shown on the drawing(s). Unless specifically stated otherwise, any reference in the Documentation (see clause 3.1.2) to any material or service being provided, fixed, rendered etc, shall mean that such provision falls under the Contractor's contractual obligations.
- 2.2 The service/s installation/s shall comprise, but shall not be limited to: all notifications and applications to Authorities, including payment of fees, distribution boards, cables, bus-bars, wireways, wiring, controls, accessories, luminaires and lamps, earthing, static and lightning protection/bonding, facilities for other services, fixings and building-in, earthworks, painting, special power supplies, data services, fire alarms, access and intruder control, communication, TV and radio services, working and record drawings, maintenance manuals etc and all other things to form a complete and proper installation to the extent as contemplated in the Documentation.
- 2.3 The Tenderer shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the Works and of his rates and prices contained in the various schedules and that his offer shall cover all his obligations under the Contract for the full and proper completion of the Works.

## 3.0 **Definitions**

- 3.1 In addition to the definitions contained in Part 3 of the Wiring Code, and also in addition to definitions contained in the General Conditions of Contract, Electrical and Mechanical Engineering Works as issued by the South African Association of Consulting Engineers ('SAACE'), the following shall apply:-
  - 3.1.1 'Document' and 'Documentation' shall mean the complete set of contract Documents including any relevant government department's specifications and conditions (where applicable), supplementary standard specifications, the

Detailed Specification, schedules, bills, drawings and any variation orders or site instructions issued in terms of the Contract.

3.1.2 'Contractor' or 'Electrical Contractor' shall mean the person, partnership, company or firm appointed to undertake the electrical and or ancillary installation hereinafter called the electrical installation or Works in terms of this Contract. In this Document, 'Contractor' shall have the same meaning as nominated, selected or domestic sub-contractor where the electrical installation is in any form a sub contract to the Main Contract. For clarity, the builder or principal contractor shall be referred to as the 'Main Contractor'. The Contractor shall also be fully responsible under the contract for any of his sub-contractors, agents, assigns, suppliers etc.

3.1.3 'Tenderer' shall mean the person, partnership, company or firm who makes a bid to carry out the Works. The successful Tenderer will normally become the Contractor upon official award of the contract and the completion of contractual Documentation when all obligations under this Contract shall become the Contractor's liability.

#### 4.0 **Site Visit**

In instances where there may be no mandatory formal Tenderers' site visit, Tenderers nevertheless are advised to visit the Site of the Works, prior to the submission of any tender, to ascertain site conditions, accessibility, available facilities etc. No claim on the grounds of want of knowledge in these respects, or any others, will be entertained.

#### 5.0 **Compliance with Regulations**

5.1 The installation shall comply with the latest versions of the following standards and regulations except where more stringent requirements are laid down in the contract Documentation in which event the latter shall take precedence:-

- The Code of Practice for the Wiring of Premises, SANS 10142-1:2003.
- The latest issues of all SABS Standards and Codes of Practice (hereinafter called SABS standard/s) or, if such standards do not exist, then the latest versions of the appropriate international standard as issued by the British Standards Institute (BS) and/or the International Electrotechnical Commission (IEC).
- The Occupational Health and Safety Act 1993 (Act 85 of 1993), (OHSA) and the Construction Regulations R1010 dated 18 July 2003.
- The bye-laws and regulations of the Local Municipality and Authorities who are responsible for the area in which the Works are situated
- Telkom regulations and specifications

5.2 The Contractor shall issue all notices and pay all the required fees in respect of the installation to the authorities, and shall indemnify the Employer, Main Contractor and Engineer from all losses, claims, costs or expenditure which may arise as a result of the Contractor's failure to comply with these requirements and the regulations of any relevant Authority.

5.3 It shall be assumed that the Contractor is conversant with the requirements outlined in 5.2. Should any requirements, by-laws or regulation, which contradicts the requirements of this Document, apply or become applicable during the course of the Works, such requirements, by-law or regulation shall overrule this Document and the Contractor shall immediately inform the Engineer of such a contradiction. Under no circumstances shall the Contractor carry out any variations to the installation in terms of such contradictions without obtaining the written permission to do so from the Engineer.

## 6.0 **Standards and Quality of Work**

6.1 As the Wiring Code lays down strict requirements for complying with SABS standards, a compulsory specification published in a government gazette, or otherwise approved in terms of the Wiring Code, no detailed list of Standards will be scheduled herein. However, portions of the Works falling outside the scope of the Wiring Code shall comply fully with the latest versions of the applicable standards and codes issued by the SABS or, in the absence of such standard, with an acceptable international standard. Any reference to a particular standard may be given for guidance/clarification only; this shall not relieve the Contractor from complying with all relevant standards in their entirety.

6.2 All components shall be new and of the best available quality and of the class most suitable for the purpose and environment for which they are intended. The whole installation shall be extremely reliable and all parts shall be of such material as will ensure that they are capable of withstanding variations in temperature and humidity arising under working conditions without distortion or deterioration or setting up of undue strain on any part.

Any particular make or model of equipment referred to in the Documentation is for guidance purposes only in setting standards/types/performances required; equipment that is equal or superior in all respects, and to the approval of the Engineer, may be offered by Tenderers. No reference to any particular make of any equipment shall be construed as that equipment having been selected by the Engineer or Client and the Contractor shall be fully responsible for the guarantee and performance of such equipment.

Only equipment and materials with a proven track record in similar applications will be considered. A minimum service period of 100 equipment years is required.

6.3 Equipment and components of a similar class, such as wiring accessories, switch disconnector units etc, shall be of the same make, pattern, and where applicable, colour, throughout.

6.4 The Work shall comply with the requirements of the Documentation, but where it may become necessary to carry out the Work in a different manner, the Contractor shall first obtain the approval of the Engineer in writing.

In cases where items offered by Tenderers are not in accordance with the contract Documentation, the deviation/s must be **fully detailed**, irrespective of whether a special form is included for this purpose or not, and such details shall accompany the tender submission in the form of a covering letter, or on the form provided. Merely stating 'as (manufacturer's name / item)', or submission of manufacturer's pamphlets etc. is not acceptable, will not be considered part of any offer and will be ignored. Where no details are submitted, in a covering letter, or on a form provided, the offer shall be deemed to comply fully with the Works Documentation and the successful Tenderer/Contractor shall be liable for performance strictly in accordance with all specifications and conditions.

6.5 The complete Work shall be carried out by qualified, highly trained, skilled and competent operatives to the highest standard of workmanship. The minimum requirement is that a permanent on-site electrician whether working alone or leading the Contractor's workforce, and who must be an 'A' Grade artisan as determined by the Department of Labour, is to be the appointed artisan who shall be responsible for the day to day installation work. Alternatively, the grade/s and/or qualifications of operatives will be specified in the Detailed Specification.

An adequate number of workmen shall be employed at all times to ensure satisfactory progress of the Works in accordance with the overall pace of the project and/or in harmony with any Works programme set by the Architect, Main Contractor or Engineer, etc.

The Contractor shall liaise and cooperate with any other contractor(s) whose work is related to, close to or build into with the Works as detailed herein and shall coordinate the Work to avoid fouling, unsatisfactory setting out etc. Any failure by other contractors to collaborate with the Contractor herein shall be immediately reported in writing to the Engineer and Main Contractor.

The Work shall at all times and for the full duration of the Contract, be carried out under the management and supervision of a skilled and competent representative of the Contractor who will be authorised to receive and carry out instructions on behalf of the Contractor and to attend site meetings.

#### **7.0 Rejection of Inferior Work and Materials**

All inferior work or work containing inferior material shall be rejected by the Engineer whereupon the Contractor shall immediately remove and rectify the faulty work as necessary and bear all costs in connection therewith.

#### **8.0 Drawings and Samples**

- 8.1 Tenderers may be required to submit for approval, comment or records samples of materials, apparatus or components, and also drawings, schematic diagrams or technical details, including calculations, upon which their design and/or offer is based before any contract is awarded. Such details may also be called for during the course of the Contract prior to installation. Any approvals given or comments made shall be on the generality of the scheme and shall not relieve the Contractor of his responsibility to ensure full compliance with all performance and regulatory criteria.

**NOTE:** A request for submission of samples or drawings does not imply that the Tenderer's quotation will necessarily be accepted.

- 8.2 Drawings shall be clearly marked "WORKING DRAWINGS FOR APPROVAL", or as otherwise applicable. Samples shall be forwarded to and shall remain in the possession of the Engineer until completion and taking over of the Works or, with the Engineer's approval, the samples may be embodied within the installation.
- 8.3 All expenses in connection with the supply and return of the drawings and samples shall be borne by the Tenderer/Contractor.

#### **9.0 Guarantee**

- 9.1 All equipment supplied and all work performed shall be guaranteed against defective operation, poor design (where designed by the Contractor, or in components / assemblies with inherently poor design), and unacceptable / faulty workmanship, all as determined by the Engineer, for a period of 12 months after commissioning, handover and Client acceptance.

Any faults found during the guarantee period shall be timeously repaired or replaced by the Contractor, including peripheral damage/disturbance (e.g.: wall finishes etc damaged during the course of repairs), at his own expense, misuse and abuse by others and fair wear and tear excepted. Discharge type lamps shall be included in the 12 month guarantee period, however, incandescent lamps shall carry a 3 month guarantee.

The Contractor is required to carry out any remedial work under the guarantee at times and in a manner which will cause the least disruption to the Client's, or other occupant's, operations.

- 9.2 The Contractor shall ensure that he has access to sufficient spare components for all equipment readily available to forestall any delays in repairing the installation.

## 10.0 **Operating and Maintenance Details**

Two complete sets of technical manuals, complete with spares schedules, as-fitted layout drawings, schematic wiring diagrams and operating and general maintenance information, bound in hard-cover ring binders shall be prepared by the Contractor and delivered to the Client at or before final handover. A full 'as-fitted' set of drawings shall also be submitted to the Engineer for record purposes.

The main and individual distribution board (DB) single line diagrams shall be brought up to 'as-fitted' status and copies placed in the technical manual. A further copy of the main single line diagram shall be mounted in a glass-fronted frame and hung in a suitable position in the main LV room. Copies of the distribution board diagrams shall be folded (or reduced) to A4 size and placed in an A4 sized perspex fronted frame or document pocket in the applicable DB. Such frames or pockets shall be fabricated from 1,2mm pre-galvanised steel and spot welded to the DB (usually to the inside of the DB door).

This documentation shall be submitted to the Engineer for comment and approval prior to handing over to the Client. It is therefore advisable to submit the details in draft format so that any amendments/corrections can be easily incorporated.

## 11.0 **Inspection and Testing of Works**

- 11.1 The Contractor shall attend upon the Engineer as reasonably required for Work inspection. Normally, inspection of Work in progress will take place on the same day as the general site meeting, or such other times as the Engineer may reasonably require. Handing-over inspections will be done at the completion of the Contractor's testing, issuing of the Certificate of Compliance by the Contractor's accredited person, livening the installation by the Supply Authority, commissioning of the installation and upon making a written request for the Engineer to carry out an initial handover inspection.

Where the installation is to be switched on and taken over in portions, the Certificate of Compliance shall be limited to that particular part of the Work. New Certificates of Compliance shall be completed for remaining phases of the project as applicable and the Supply Authority's permission formally obtained to switch electricity to those areas.

The Contractor shall, prior to requesting the Engineer to undertake an initial handover inspection, do a full, complete and proper inspection of his Work to ensure that everything is absolutely complete and in accordance with the Documentation. Following this inspection, and rectification of any faults in parts of the installation that may be required, the Contractor shall make a written request to the Engineer for a handover inspection. Any faults still found in the installation shall be listed by the Engineer and handed to the Contractor who shall attend to all faults within a reasonable period as decided by the Engineer except that this period will in no circumstance exceed 14 days. Once all listed faults have been rectified, the Contractor shall again request the Engineer in writing to carry out a final handover inspection.

Upon the successful completion of a handover inspection and the issuing of a handover certificate by the Engineer, the responsibility for the security of the installation, or part thereof, shall be deemed to be with the Client.

Under no circumstances will any inspection by the Engineer and/or, if appointed, the Electrical Clerk of Works of Resident Engineer, relieve the Contractor of his obligations in terms of the Documentation.

- 11.2 On completion of the installation, or such part thereof as may be determined by the Engineer, the Contractor shall carry out installation testing and inspection in accordance with Part 8 of SANS 10142-1:2003 and/or any other relevant Standard.

The result of these tests, duly certified by the Contractor, shall be submitted to the Engineer in the form of a typed test-result certificate. No testing for acceptance purposes will be carried out by the Engineer until this is received.

Upon receipt of the test certificate, the Engineer will arrange to carry out acceptance tests and to witness commissioning procedures, including load-balance, phase rotation, bonding and labelling checks. If any faults are found in the installation, a list of those immediately noticed will be handed to the Contractor by the Engineer. The Contractor shall forthwith rectify such faults and issue a further test certificate endorsed "RE-TEST" with all reasonable despatch whereupon the Engineer will carry out further check-tests.

Any list of faults issued by the Engineer shall not be regarded as final, but given only for the assistance of the Contractor who will be bound to exercise all necessary diligence in their rectification and to check for any other faults and to rectify same.

The Contractor shall supply all necessary testing instruments for carrying out tests, including, but not limited to: insulation tester, earth loop-impedance tester, clip-on ammeter (e.g.: for load-balance testing), earth-leakage tester, etc. Where there is reason to doubt the accuracy of the instruments, the Contractor shall arrange for tests to check their accuracy.

- 11.3 Where cast-in conduit is installed, the Contractor shall thoroughly check his layout, fastness etc, well before any concrete is poured. The Engineer shall be informed by the Contractor in writing that he is ready for a check-inspection, giving the Engineer not less than 48 hours notice (usually by telefax). A qualified operative of the Contractor shall stand by at all times when concrete is being poured so that any conduits or boxes that may become loose, displaced etc can be refixed.
- 11.4 If it is necessary for the Engineer, his agents or assigns, to spend extraordinary time in respect of checking, testing, inspection or any other matter due to the Contractor's default or unsatisfactory attendance all costs of the Engineer in obtaining remedy shall be for the Contractor's account. For example, if the Contractor failed to carry out his own prior testing in a reasonable and diligent manner, or to check cast-in conduits properly before calling the Engineer to undertake a check-inspection, thus necessitating further visits and/or extra time incurred, costs of the Engineer will be charged to the Contractor. These costs will be deducted from the Contractor's claims, or shall be claimed by submission of an account. Engineer's claims for wasted time, including disbursements, shall be based on the applicable SAACE Form of Agreement for Consulting Services.

## 12.0 **Technical and Installation Requirements**

### 12.1 **Main Electrical Supply**

In instances where the incoming main supply from the Supply Authority is at low voltage (LV), requirements of the Supply Authority with regard to method of incomer connection, earthing, testing/approval of main circuit breaker etc, must be strictly adhered to. Where the main LV supply is obtained from a transformer installed by the Contractor, the method of connection shall be as specified in the Detailed Specification and/or drawings.

The Supply Authority's requirements for their metering must be complied with and all facilities, space, bus-bar links for current transformers (CTs), etc, as the case may be, shall be in accordance with their requirements. The Contractor shall be deemed to have made all allowances for the Supply Authority's requirements in their tender submission.



## 12.2 MV Equipment and Cabling

Medium voltage (MV) equipment falls outside the scope of this building services specification. Where required, MV cables, MV switchgear and power transformers etc. shall be specified in a supplementary specification and/or the Detailed Specification and/or drawings.

## 12.3 Miscellaneous Equipment and Installations

Miscellaneous items such as diesel generators, uninterruptable power supplies (UPSs), overhead lines etc. which fall outside the scope of this building services specification shall be specified in a supplementary specification and/or the Detailed Specification and/or drawings.

## 12.4 Distribution Boards

### 12.4.1 General

- a) Distribution Boards (DBs) shall be of the type as detailed in the single line diagrams, the Detailed Specification and, where applicable, the equipment schedules. Unless otherwise indicated, distribution boards shall be provided with prefitted space/s for a minimum 20% extra switchgear, subject to a minimum of one space for each class of circuit breaker, combination fuse switch (CFS), contactor etc, viz.: 3-pole, single pole etc, as the case may be.
- b) DBs shall comply fully with SANS 1765.
- c) Enclosures
  - i) Distribution boards for internal applications shall be constructed from folded pre-galvanised 2mm mild steel sheet suitably welded, bolted and braced to form a rigid construction and finished with an epoxy coating after fabrication. DBs for external applications shall be similar to internal DBs, but shall be fabricated from 2mm 3CR12, plus a suitable epoxy finish. Boards for special applications may be made from polished 2mm 316 stainless steel, fibreglass etc; these will be more fully described in the Detailed Specification where applicable.
  - ii) All equipment, except door mounted instruments, indicators and so forth, shall be mounted behind removable fascia plates with only the switchgear operating handles protruding.
  - iii) Normally, free standing boards shall not exceed 2,3m in height with operating handles, push-buttons etc not exceeding 1,8m from the floor nor lower than 600mm above floor level (subject to any equipment part not being lower than 300mm from the floor).
  - iv) Cabinet type boards used mostly for LV distribution shall be 'Form 1' degree of separation to IEC 439 while cubicle boards used mostly for Motor Control Centres (MCCs) shall be 'Form 4'.
  - v) The Contractor is to check all access routes for distribution boards. Where necessary, DBs are to be made in sections to allow access into their final position.

d) Protection

All boards shall be rendered moisture and vermin proof and shall be adequately ventilated. Unless otherwise specified, free standing and wall mounted DBs in a normal internal environment shall be protected to IP43. DBs in certain factories may have to have a higher degree of protection which will be stated in the Detailed Specification or single line diagrams. The complete DB and its components shall be suitable for coastal conditions.

e) Bus-Bars

i) The bus-bars shall be of high conductivity 99,9% pure copper of adequate cross section for the current and short circuit rating, mounted on edge (**not flat**). Multiple/laminated bars shall be appropriately derated as necessary and shall be spaced by a distance equal to the bar thickness. Bars shall be supported on resin type insulators suitable for mechanical stresses due to prospective fault currents and otherwise so arranged and braced as to obviate distortion under short circuit conditions. The material used for bracing, shielding etc must be tested and approved by SABS and shall be completely non-hygroscopic and non-tracking.

ii) Bus-bar current ratings for both phase and neutral shall be based on an internal temperature of 40°C with a maximum bar temperature rise of 60°C.

iii) As a guide, the following current densities should not be exceeded for single bars:

- 100 Amps and below : 3,50A/mm<sup>2</sup>
- 101 - 300 Amps : 2,65A/mm<sup>2</sup>
- 301 - 1000 Amps : 1,85A/mm<sup>2</sup>
- 1001 Amps and above : 1,20A/mm<sup>2</sup>

iv) **In addition to the current rating, the bars shall be sized to accommodate the prospective fault rating and the cross sectional area of the bars shall be the greater of the calculated sizes. Sizing for fault levels shall be based on the following:**

$a = 8,2 \times I_{sc} \times \sqrt{t}$ , where:

a = minimum cross section in mm<sup>2</sup>

I<sub>sc</sub> = prospective short circuit current in kA

t = maximum time in seconds to clear fault, subject to a minimum of 0,2s

v) **An earth bus-bar shall be installed at a convenient position, usually near the bottom, along the entire length of DBs with an incomer size of 200 Amps or more, or they may be of shorter but adequate length for smaller DBs. Earthbars need not be supported on insulators. The cross sectional area of the earthbars shall be equal or greater than half the cross sectional area of the incomer feeder cable. Earth terminal strips with screw connections may be used for boards with a maximum incomer size of 100 Amps.**

vi) Teed-off neutral bars are to have the same cross sectional area as the sub-feeder phase bars and shall be mounted in a suitable position adjacent to the switchgear, which they serve. The outgoing connections must match the sequence of the switchgear to which they relate. Neutral terminal strips

with screw connections may be used for boards with a maximum incomer/sub-feeder size of 100 Amps. These requirements shall also apply to smaller DBs where such neutral bars are also the main neutral bars.

- vii) A separate neutral bar shall be installed for circuits protected by adjacent single phase earth leakage breakers connected to the same phase.

f) Gland Plates

- i) Bottom entry boards shall be provided with minimum 2mm galvanised steel gland plates installed across the full width of each DB section at a minimum height of 300mm above the level of the bottom of the DB. Sufficient clearance for the bending of cable cores shall be provided between the lowest terminals of any equipment.
- ii) Where single core cables are to be terminated, 10mm non-hygroscopic Delaron, or similar material shall be used for the gland plate. Alternatively, gland plates for single core cables shall be made from 4mm thick aluminium.

g) Doors

Where called for, doors shall be fabricated from the same material as the main enclosure and shall be provided with closed-cell silicon gasketing to obtain the level of protection required (Refer also to 12.17.6). The doors shall be provided with catches, square-key turnbuckles, lockable catches or cylinder locks and handles, as specified in the Detailed Specification and/or drawings. All DB keys, where provided, shall be the same for all DBs on the particular project.

h) Paintwork

- i) Pre-galvanised sheet metal shall be cold galvanised at all exposed edges and welded surfaces, degreased, bonderised, etch-primed and then finished with baked epoxy enamel or powder coatings per SANS 51274, as applicable and to paint manufacturer's recommendations to achieve a dry film thickness (DFT) of 70 microns.
- ii) 3CR12 panels shall be pickled, passivated and etch-primed before being finished, similarly to pre-galvanised sheet steel boards, with baked epoxy enamel or powder coatings to achieve a DFT of 70 microns.
- iii) Colour finishes shall be as follows:
  - Normal Supply LV Distribution Boards: Light Orange, colour B26 of SANS 1091
  - The standby power sections of DBs shall be Signal Red, colour A11 of SANS 1091
  - Uninterruptable Power Supply (UPS) DBs, or such sections within composite boards shall be Dark Violet, colour F06 of SANS 1091
  - Small domestic and shop type DBs, and boards in open kitchen areas shall be finished white, colour G80 to SABS 1091 (unless the latter is of bright stainless steel)
- iv) A minimum of 1 litre of touch-up paint for each colour shall be provided.

i) Switchgear

- i) MCCBs, MCBs and switch-disconnectors shall be of the same make throughout. Similarly, CFS units shall be metalclad type and are to be of the same make throughout. Current ratings must be clearly indicated on the front of the units.
- ii) A suitably braced chassis for the mounting of moulded case type switchgear, including DIN type rails etc, shall be firmly secured to the frame of the switchboard. Large switchgear, such as ACBs, shall be secured directly to the framework using suitable structural/bracing members.
- iii) MCCBs, switch disconnectors and CFS units with a rating of 150 Amps and above shall be connected to the main bus-bars with bus-bar links. PVC insulated cable, neatly installed, shall generally be used for switchgear below 150 A. This latter requirement shall not preclude the use of small-section feeder bus-bar arrangements where available. Where long runs of PVC insulated cable are run within the DB, they shall be neatly laced together, or shall be installed in purpose made slotted PVC trunking. The smallest cable size for DB wiring shall be 2,5mm<sup>2</sup>.
- iv) Where necessary, stub bus-bars shall be fitted to the outgoing side of MCCBs and CFS units and the supply side of switch disconnector incomers to allow for lug connections to the cable cores.
- v) Incoming circuit breakers and bus-coupler breakers rated 800 Amps and above shall be of the withdrawable type air circuit breakers (ACBs) or large frame MCCBs, as specified.
- vi) Castell, or similar interlocks shall be provided for all main DBs which have bus-couplers. Alternatively, where detailed in the single line diagrams and/or Detailed Specification, the bus-coupler shall comprise a shuttered cradle only (no circuit breaker fitted) to match the incomer circuit breaker cradles. In the latter instance, bus-coupling will be effected by racking out the appropriate incomer ACB/MCCB, fitting it into the bus-coupler cradle and engaging the 'ON' position.
- vii) Where MCCBs and ACBs have been set to a lower rating (e.g. 400A MCCB set to 350A etc.), the setting arrangements shall be sealed off and rendered tamper-proof after adjustment.
- viii) Where instrument fuses or fused switchgear is used, spare fuses shall be housed in a small compartment built into the applicable board. 20% of each size of fuse, subject to a minimum of three, shall be provided and shall be mounted in stainless steel 'Terry' type clips inside the compartment. A label inside the spare fuse compartment shall indicate all part numbers for reordering. The outside of the compartment shall be labelled as follows:

**SPARE FUSES**

**THE FUSES ARE USED TO CONTROL DANGEROUS PROSPECTIVE FAULT CURRENTS – DO NOT BRIDGE OUT UNDER ANY CIRCUMSTANCES**

Reorder and replace any used-up fuses immediately

ix) Where fault limiting is employed, fuses or fault-limiter MCCBs shall be selected to limit down-stream faults to levels no higher than indicated in the single line diagrams or implied in the design.

j) Surge Arrestors

Surge arrestors, which comply with SANS 61643-1, may be installed in each distribution board. These shall be fitted at the load side of main incomers to each phase and the neutral.

k) Timeswitches

i) Timeswitches shall be suitable for single-phase operation at a minimum rating of 15 Amps. They shall be of the programmable electronic type complete with a minimum 24-hour back-up rechargeable battery. The battery shall be a locally available type and shall be arranged for easy removal and replacement. The characteristics of the timeswitch shall suit the requirements of the circuit as dictated by details in the single line diagrams (e.g.: day omitting etc). Solar type timeswitches shall be used for all outside lighting circuits unless photocells are employed for control purposes.

ii) A manual by-pass switch, mounted in the DB fascia, or as otherwise indicated, shall be provided to permit the circuit to be switched 'on' or 'off' manually for one switching cycle without affecting any other settings.

l) Contactors

i) Contactors shall be DP or TP electromagnetically operated air break, low noise type suitable for the rated supply voltage, circuit current. and prospective fault level current.

ii) Contactors for general lighting and power shall be AC1 category while AC3 category shall be used for motor starting.

iii) Where auxiliary contacts are not specified to be fitted initially, the contactor shall have provision for adding these contacts. Auxiliary contacts shall be rated at 6 Amps, 250V AC. Auxiliary contacts characteristics such as 'make-before-break', 'late break' etc must be inherent in the design and shall not be adapted from standard contacts.

iv) All contactors shall have the following features:

- Easily replaceable coil
- Permanent air-gap in the magnetic circuit
- Clearly marked main and auxiliary terminals
- Provision for easy inspection and changing of contacts

v) Contactors shall be electrically and mechanically interlocked for changeover arrangements and electrically interlocked only for star-delta starters.

#### m) Instruments and Controls

- i) Instruments, indicators and controls shall be provided as indicated in the single line diagrams. Where the components are to be actuated from the front of the DB door, they shall be rated to the appropriate IP level (e.g.: IP43). In instances where meters and the like are required, and where these cannot be protected to the level specified by themselves, suitably protection-rated impact resistant glass windows shall be provided in the door through which to view the dials and the instrument/s mounted in the inner fascia.
- ii) Doors in which instruments are installed shall be provided with a flexible woven copper earth link across the hinge side. Insulating shrouds or other suitable barriers shall be installed to prevent accidental contact with door mounted instrument terminals.
- iii) Fuses for the protection of instruments shall be of the HRC cartridge type mounted behind the DB fascia. All control fuses shall be clearly labelled.
- iv) Push-buttons for protection ratings of IP65/66 shall be provided with rubber 'boots' for enhanced protection. Any exposed rubber shall be further protected (e.g.: with silicon covers) where used in food factories containing sugars and other carbohydrates which may give rise to attack from bacteriological action when fine particles collect on or near the rubber.
- v) Only LED type indicator lamps shall be used. A set of spare LEDs (20% of each type, subject to a minimum of three) shall be supplied. These may be housed in the spare fuse compartment where provided, and the labelling suitably modified. Alternatively, the LEDs shall be housed in a small labelled compartment similarly to HRC fuses as aforementioned
- vi) Unless otherwise specified, ammeters, voltmeters, frequency meters and running-hour meters shall have a minimum dial size of 96mm x 96mm with anti-static impact resistant clear faces. Instruments shall be screened against magnetic interference.
- vii) Voltmeters shall be of the moving iron type with a class 1.5 accuracy as per IEC 51. A zero adjustment screw shall be provided. Voltmeters shall be scaled 0 - 250V or 0 - 500V as appropriate. Selector switches used in conjunction with a single voltmeter shall be of the cam-actuated or wiping air-break type. The switch shall be labelled with the 'OFF' position and other positions as specified (e.g.: 'N - R' for neutral to red phase, 'R - Y' for red to yellow phase etc.)
- viii) Ammeters shall have a moving iron element to indicate instantaneous values. Direct reading ammeters may be used up to 60 Amps. Current Transformer (CT) operated ammeters of 60 Amps and above shall be 5 Amps full scale, calibrated to read actual primary currents. The CT ratio shall be indicated on the faceplate.
- ix) Unless otherwise stated, ammeters shall be of the Maximum Demand (MD) reading type. The mean value over a fifteen minute period shall be indicated by a red pointer driven by a bimetal spiral element. Full load current shall be indicated with a distinctive line on the dial. The scale should indicate at least 25% over full-load rating.

- x) Instrumentation and control (I&C) wiring shall be segregated into LV and ELV wiring and installed in separate slotted plastic trunking within the main casing of the board. I&C wiring shall also be kept separate from power wiring. The smallest ELV conductor shall be 1mm<sup>2</sup>. Conductors connecting to components on hinged panels shall be shrouded in spiral plastic 'loom-former' and fixed on both sides of the hinge. A loop shall be formed in the wiring so that the loom produces a twisting motion away from the door jamb when it is closed.

n) Consumption Meters

- i) kWh meters shall be Direct on Line (DOL) type up to 80 Amp rating and CT operated above this amperage. Meters shall be calibrated for the specific application to obviate the use of multiplication factors.
- ii) Consumption meters shall have cyclometer dials with a six digit readout, the last digit indicating one-tenth of a unit.
- iii) Facilities for a security seal shall be provided on the fixing screws of the terminal cover.

o) Current Transformers

- i) Current transformers shall be epoxy resin encapsulated and comply with the requirements of SANS 60044-1 and IEC 185. Unless otherwise stated, the secondary current of CTs shall be 5 Amps and all instruments, meters etc shall be selected accordingly. The rated burden shall not be less than 10VA.
- ii) The following accuracy classes shall be adhered to:

<u>Application</u>	<u>Primary Current</u>	<u>Class</u>
Indication	A11	5
Protection	A11	3
Metering	Up to 250A	1
Metering	250 - 600A	0,5
Metering	600 - 800A	0,2
Metering	800A +	0,1

p) Power Factor Correction

- i) Where called for, power factor correction (PFC) capacitors shall be housed in a separate section of the DB, segregated from other sections by a metal barrier, and designed for extra ventilation. The PFC section shall have low-level vermin proofed inlet louvres and the top shall have a 12mm diamond mesh 'roof' with a solid flat section spaced at least 50mm above the mesh. Whilst the construction, paintwork etc, shall be similar to the DB casing, the level of protection shall be IP21.
- ii) PFC capacitors shall be protected and controlled by HRC fuses and contactors specially designed for PFC applications. Switchgear shall be rated 70% higher than the normal current rating of the capacitor, e.g.: for a 60kVAr capacitor, the rating of the protective fuses would be 150 Amps in a 400V system.

- iii) Where metalised plastic film capacitors are used, the board construction shall be such as to limit the temperature rise, with all capacitors switched-in, to 35°C above ambient. If necessary a fan, complete with switchgear, controls and failure alarm, shall be employed. This equipment will not normally be indicated in the single-line diagram/s and the Contractor shall make due allowance as necessary.
- iv) PFC controllers shall be electronic type giving 6 or 12 steps of control as specified. Digital indication of the power factor shall be built in, as well as 'auto, manual, off' controls and LED pilot lights indicating PFC steps.
- v) The separate capacitor section of the DB shall have a 'double skin' metal separating barrier with a 12mm air gap for all PFC loads of 250kVAr and above.
- vi) A discharge resistance system shall be provided for each capacitor to ensure effective discharge within 60 seconds after switch-off. A suitable barrier, complete with warning notice, shall be installed for all capacitor banks.

q) Anti-Condense Heaters

Where specified, 'black-heat' anti-condense heaters shall be fitted in the bottom sections of DBs in areas of high humidity or dampness. The heaters shall be fitted behind suitable screening to obviate accidental contact with persons or wiring. Anti-condense heaters shall be protected by dedicated MCBs or fuses and shall be sized to prevent condensation without giving rise to excessive temperature levels inside the DB housing.

r) Labels

- i) Before installation, the Contractor shall submit a fully detailed proposed labelling schedule to the Engineer for comment and approval.
- ii) Engraved plastic 'Ivoryne' or 'Traffolyte' type sandwiched labels shall be used for all labelling on DBs, control panels etc. Main labels on the outside of panels, and labels for individual components, switchgear etc shall be fixed to the panel or fascia face with brass bolts, nuts and washers. Labels for small grouped items such as a row of single pole MCBs may be securely fixed into slotted label holders. In the latter cases, the labels would normally identify the circuit number only and a typewritten legend card installed to the fascia front, or inside the DB door in a card holder, used to identify the circuit function.
- iii) Normal informative labels shall have black lettering on a white background while warning labels shall have white lettering on a red background.
- iv) Lettering sizes for labels shall generally be as follows:
  - Outdoor Panels, Minisubs etc: 50mm
  - Indoor Panels (main labels): 15mm
  - Bus-bar sections and sub-compartments: 10mm
  - Individual switchgear, indicators etc: 5mm



- v) Substations, minisubs, kiosks, transformer room & switchgear rooms, shall be provided with notices as required by the Occupational Health and Safety Act.
- s) Testing
- i) Unless otherwise specified, the Contractor shall make all arrangements and provide all instruments for inspection and testing by the Engineer of distribution boards at the manufacturer's premises. The Contractor shall give the Engineer at least 5 working days notice of any impending test/s.
  - ii) The tests shall comprise, but shall not be limited to:
    - Visual inspection, label checks etc
    - Polarity checks
    - 500V Megohm meter insulation resistance test
    - Injection tests for CTs etc
    - Function tests for all equipment, control and interlocking circuits, indicators, earth leakage relays etc
  - iii) In addition, these tests will be spot-checked at Site when phase rotation checks and installation commissioning will be carried out.
  - iv) After successful completion of tests, the Contractor shall provide the Engineer with duplicate test certificates for all DBs.
  - v) Extra time, travelling etc expended by the Engineer in repeating tests due to any failure shall be claimed from the Contractor in accordance with clause 11.4 herein.

#### 12.4.2 Free Standing Distribution Boards

In addition to the general requirements contained in clause 12.4.1, free standing DBs shall be as follows:

- a) Distribution boards shall have a 'U' channel baseframe designed to support all equipment and to span cable trenches etc.
- b) General power supply boards shall be of the cabinet type with sections no wider than 1,5m.
- c) Cubicle boards for the control of motors shall be of a modular cubicle design. The disconnecter for each cubicle shall be operated from the front and it shall not be possible to open the particular cubicle without switching off the disconnecter.
- d) Unless otherwise stated, free standing boards shall be of the front access, bottom and/or top entry type as dictated by installation requirements and/or stated in the single line diagrams. Where called for, rear panels shall be removable and shall be secured to the frame by means of square key turnbuckles.
- e) Where specified, boards shall be extensible to the left or right, as called for. This shall be accomplished by the installation of removable bus-bar cover plates in the side panels.

- f) Upon completion of cabling into the distribution board, the Contractor shall ensure that the board is rendered totally vermin proof, especially at the bottom of the board around the incoming cables.
- g) Distribution boards for external applications shall be fabricated from 2mm 3CR12 corrosion resistant steel sheets. External DBs shall be fitted with gasketed doors and shall be protected to IP55. These boards shall have sloped overhanging roofs for rain protection.
- h) Where boards exceed 2m in width, they shall be provided with suitable lifting bales to facilitate off-loading, emplacement etc using a crane or similar. Where no facilities are available at Site for off-loading heavy DBs, the Contractor is to ensure that the boards are delivered using a crane-lorry, or shall make such other arrangements as required.

#### 12.4.3 Surface Mounted Distribution boards

In addition to the general requirements contained in clause 12.4.1, surface mounted boards shall be as follows:

- a) Unless otherwise indicated, all DBs shall be provided with flush mounting doors secured with catch/es, lock/s etc, as specified.

Except where otherwise specified, DBs shall be installed so that the top of the board lines up with the top of door frames. Where no such reference line exists the tops of boards shall be at a height of 2m above finished floor level. The maximum permissible height of any switchgear handle, push-button, meter or instrument face shall be 1,8m.

- b) Suitable heavy duty lugs for securing the board to a vertical surface shall be provided.
- c) Boards for external applications shall be fabricated from 2mm 3CR12 corrosion resistant sheet steel and shall be protected to IP55. A sloped roof shall be provided for rain protection. **All** cables entering or leaving externally mounted DBs shall do so at the bottom only.

#### 12.4.4 Flush Mounted Distribution Boards

In addition to the general requirements contained in clause 12.4.1, flush mounted boards shall be as follows:

- a) Unless otherwise indicated, all DBs shall be provided with adjustable overlapping architraves and flush mounted doors complete with catch/es or lock/s as specified.

Except where otherwise specified, DBs shall be installed so that the top of the board lines up with the top of door frames. Where no such reference line exists the tops of boards shall be at a height of 2m above finished floor level. The maximum permissible height of any switchgear handle, push-button, meter or instrument face shall be 1,8m.

- b) The built-in tray may be fabricated from 1,6mm pre-galvanised steel without any further paint finish except for cold galvanising at exposed edges, weld joints etc.

- c) Small domestic type DBs may have the front panel and door made from 1,6mm pre-galvanised sheet steel. Such boards shall not exceed 500mm x 500mm and the framework shall be finished as per clause 12.4.1 h).
- d) Where called for, 'semi-recessed' boards shall be provided with a 35 to 50mm deep overlapping architrave surround into which the door/s and inner fascia are recessed. The portion of the architrave perpendicular to the wall shall be suitable for the future termination of surface conduits into the DB.
- e) DBs for fitting into 115mm single brick walls shall be provided with suitable 'keying' strips of expanded metal spot welded to the sides of the tray for building into the brick courses. In addition, expanded metal shall be spot-welded to the rear of the bonding trays to act as 'keying' for plaster etc. This mesh shall overlap the tray by 75mm on all sides to obviate cracks in plaster.
- f) At least ten 20mm diameter spare conduits shall be installed from each DB into the ceiling void where applicable.

#### 12.4.5 Layout Drawings for Approval

The Contractor shall timeously obtain detailed/dimensioned proposed layout drawings of distribution boards, including schematic wiring diagrams, bus-bar sizes, component details etc, from the board manufacturer prior to fabrication. The Contractor shall check all details, correct them where necessary and submit two sets to the Engineer for approval. No distribution board is to be fabricated until the Engineer's formal approval has been given.

### 12.5 Cablework

#### 12.5.1 General

The Contractor shall be responsible for all main, sub-main and final circuit cablework.

#### 12.5.2 Cable Types

Only the following types of cables shall be used for LV work:-

##### a) PVC Insulated, Armoured Copper Cables (PVC/SWA/PVC)

Polyvinylchloride insulated, armoured, copper cable shall be 600/1000V grade in accordance with SANS 1507, comprising PVC insulated stranded copper conductors with PVC bedding, galvanised steel wire armouring and PVC sheathing overall.

Mains voltage cables shall be at least 2,5mm<sup>2</sup> and no larger than 185mm<sup>2</sup> for ease of handling. Parallel cables of equal size shall be utilized where the current demand is greater than that rated for 185mm<sup>2</sup> cables.

Control cables shall be at least 1,5mm<sup>2</sup> unless otherwise specified.

##### b) PVC Insulated, Armoured Aluminium Cables (PVC/SWA/PVC) and PVCATAPVC Cable)

Polyvinylchloride insulated, armoured, aluminium cable shall be 600/1000V grade in accordance with SANS 1507 comprising PVC insulated solid

aluminium conductors with PVC bedding, galvanised steel wire or aluminium tape armouring and PVC sheathing overall.

The cables shall be at least 16mm<sup>2</sup> and no larger than 120mm<sup>2</sup>. Parallel cables shall be utilized where necessary.

Aluminium cables shall be used only when specifically specified.

c) PVC Insulated, Non-Armoured Cables (PVC/PVC)

Polyvinylchloride insulated non-armoured cable shall be 600/1000V grade in accordance with SANS 1507, comprising PVC insulated stranded copper conductors with PVC sheathing overall.

PVC/PVC mains cables shall only be used for trefoil configured applications.

For ease of handling the core size shall be limited to 240mm<sup>2</sup> except in special circumstances where space, routing etc. may allow for larger sizes.

Trefoil cables shall comprise 3 sets of three single core cables (R, Y & B), and one set of two cables for the neutral.

d) XLPE Insulated Cables

Where called for Cross-Linked Polyethylene (XLPE) insulated cables shall be used. These are similar to the specifications for the foregoing PVC insulated cables a) b) and c) except that the initial insulation shall be XLPE, thereafter PVC bedding and sheathing shall be used.

The Contractor must ensure early ordering of these cables as they are usually only made upon request and to a minimum quantity. For ease of identification, the Contractor shall insure that the manufacturer embosses the outer sheath: "XLPE insulated".

e) Flame Retardant and Halogen Reduced/Free Cables

Where called for in the Detailed Specification, low halogen (LH), halogen free (Non-halogenated, low smoke and fume, flame retardant - or "NHLSFR") or flame retardant (FR) PVC cables to SANS 1507 and BS6724 (latest issues) shall be used.

### 12.5.3 Cable Terminations

a) Cable Glands

Cable glands shall be used for armoured multi-core cables and are to be of the electroplated brass or bronze compression type and shall be matched to the type of cable used and shall be suitable for waterproof, flameproof or general installations, as required. PVC or neoprene shrouds and plated earthing washers shall be used in all instances.

#### b) Single Core Terminations

Termination of single core PVC/PVC cables in distribution boards, transformer cable boxes, etc. shall be undertaken by securely clamping the cables onto a fixed section of galvanised “Unistrut” type channel, or galvanised angle-iron, using nylon cable straps and then taking the individual cores through bushed holes in the non-ferrous gland plate, thence to the termination point. Alternatively, with the Engineer's approval, a treated hardwood cleat arrangement may be employed.

#### c) Cable Joints

- i) Because of the relatively short runs of cable utilized in industrial general lighting and power services, through-joints shall only be used in exceptional circumstances and only with written permission from the Engineer.
- ii) Where a tee-off is required in indoor circuit cabling, this shall be effected using a suitable cable junction box, as Pratley, or equal and approved. Such junction boxes shall be of the weatherproof type, complete with integral compression glands and DIN rail-mounted terminals of appropriate rating.
- iii) Joints in power cables shall only be allowed a) where the cable runs exceed a standard drum length, or, b) with the express permission of the Engineer in writing

#### d) Conductor Lugs

- i) Lugs for the termination of conductors onto busbars and equipment are to be of the compression type and of the correct size and type for the application.
- ii) For cables of size up to 16mm<sup>2</sup>, the locking type of handplier crimpers may be used. Above this size, the hydraulic type must be employed.
- iii) Where aluminium lugs, used for aluminium conductors, are bolted to a dissimilar metal (e.g. copper, tinned copper, etc.), suitable bonding compound shall be used to obviate the possibility of electrolytic action.
- iv) Shaped lugs shall be used in conjunction with shaped cable cores.

### 12.5.4 Handling of Cable Drums

- a) Drums of cable shall be delivered to Site with seals intact and shall be off-loaded and stored in an approved manner. Any drums, which show signs of damage or mishandling, shall at the Engineer's option, be replaced with fresh undamaged stocks. The Contractor shall bear all costs of replacing such unacceptable cables.
- b) Cable drums shall be supported on an axle and support jacks when the cable is unreeled. The arrow on the drum flanges showing the direction of rotation shall be observed. Rolling of drums along the ground will not be permitted.
- c) Empty cable drums shall be stored in a tidy and safe manner prior to their removal from the Work Site. The Contractor shall be responsible for the

removal and disposal of all empty drums at intervals dictated by Work progress, or upon instruction by the Engineer or the Main Contractor.

#### 12.5.5 Installation of Cables

##### a) Surface (Direct)

Where cables are run along horizontal or vertical building surfaces, structural steel members, in vertical ducts, etc., they shall be secured with approved means of fixing such as saddles, cleats, etc.

All cable runs shall be vertical or horizontal, or run parallel to building or structural members and shall at all times present a neat appearance.

##### b) Cable Trays

- i) Where a sheet steel cable tray is required, this shall consist of approved galvanised sheet-metal perforated medium duty tray supported with approved substantial brackets or hangers at suitable intervals to reduce sag to a maximum of 10mm. Where necessary to achieve this, the run of cable tray shall be reinforced along its length with angle iron or similar stiffening members, or shall be of the heavy duty type.
- ii) When wire mesh trays are required, these shall be of heavy duty hot-dipped galvanised type, or stainless steel, left bright as required. Mesh trays shall be installed in a similar manner to perforated tray.
- iii) All cable tray accessories such as bends, tees, etc., shall be as supplied by the tray manufacturer and made-up components will not normally be allowed.
- iv) Trays shall be installed vertically or opening-up horizontally as specified. Brackets and hangers shall be constructed to permit the easy removal of any cable from the tray. Flat horizontal runs of tray suspended from slabs shall be installed at least 200mm clear of the soffit. Trays crossing under beams shall be spaced off the beam soffit to allow the removal of the largest cable(s) in the group.
- v) Earth continuity shall be maintained throughout the complete run of cable tray.

##### c) Cable Ladder-Rack

- i) Where ladder-rack is called for, this shall consist of 2,0mm thick galvanised steel with side sections of 75mm and cross-rungs every 350 – 400mm.
- ii) Only manufacturer's accessories shall be used for ladder-rack.
- iii) Ladder-rack shall be installed in the same manner as cable trays (Refer to 12.5.5 (b)).
- iv) Where specified, cable trays and racks shall be finished in a light orange epoxy coating, colour B26, or other colour appropriate to the service, to SANS 1091, all as clause 12.4.1 h).

Epoxy coating damaged or removed during installation shall be made good.

d) Cable Installation on Racks and Trays

- i) Racks and trays shall be sized to afford at least 20% spare space. Control cables may be installed touching, but not bunched. Power cables shall be laid-up spaced apart not less than the diameter of the largest adjacent cable, unless otherwise specified.
- ii) Cables shall be fixed to racks and trays using stainless steel cable strap and buckles fixed every 500mm, or fixing-rung intervals for edge-on rack / tray installations and at 1000mm or every second fixing-rung interval for cables laid flat and also where installed vertically.
- iii) Different classes of services (e.g. power and instrumentation) shall not be installed on the same rack or tray.

e) Common Earthing for Racks and Trays

- i) Cables for final circuits installed on racks and trays shall, unless otherwise specified, be provided with an integral earth core or shall have a separate bare earth conductor per cable, or as indicated in the circuit diagram.
- ii) Multiple runs of heavy power feeder cables may share a common earth conductor comprising bare copper tape of at least 70mm<sup>2</sup> run along mesh type trays or ladder rack. (Perforated cable tray would normally carry light circuitry only and common earthing would not apply).
- iii) Earth tapes are to be fixed and bonded at regular intervals and the final earth connection shall comprise an appropriately sized bare copper earth-wire tail bonded to the common tape earth using a compression lug and high tensile bolt and nut arrangement.

f) Underground Cable

- i) Unless otherwise specified, cables installed earth trenches shall be buried at a depth of 750mm, multiple runs of cables shall be laid 150mm apart throughout the run.
- ii) Cables shall be drawn along the trench using rollers corner rollers, snatch blocks and skid plates as necessary.
- iii) Unless stated to the contrary, the Contractor shall carry out all excavations of cable trenching, including bedding, topping, backfilling and compaction, generally in accordance with SANS 1200 LC and SANS 1200 DA. Differing soil-type classifications shall be as specified in the bills of quantities, or Detailed Specification.
- iv) The Contractor shall allow for all necessary removal of vegetation, roots and tree branches, hazard protection, drainage, including pumping, watching, lighting, barriers, disposal of spoil and vegetation, supply of fill, levelling of subsidence and 10mm thick temporary steel plates to allow vehicles of 3 tonnes maximum axle load and pedestrians to pass over excavations where these cross roads, driveways etc.

- v) Where applicable, the Contractor shall comply fully with Traffic Ordinances, the Mines and Works Act 1956 (Act 27 of 1956) and all other requirements at or near public roads, bridges, buildings and other structures.
- vi) No excavations shall be backfilled until the Engineer has the opportunity to inspect cables and has given permission to backfill.
- vii) The floor of the trench shall be free of stones and sharp projections. A 75mm layer of –6 fines sifted soil or no-sharps sand shall be applied (bedding), onto which the cables shall be laid. A further layer of the same material shall be laid to a depth of at least 75mm above the top of the cable(s).
- viii) Dampened soil free from fibrous matter, rocks and large stones shall be backfilled on top of the cable(s) (or cable sleeve(s)), as follows:-
  - Two 150mm hand-rammed layers to 93 % AASHO compaction
  - Thereafter, well compacted power-rammed layers of not more than 150mm, to 93 % AASHO compaction.

The backfill shall be raised by approximately 50mm above the normal surface level to allow for settlement. Such raised surfaces shall be periodically levelled, as necessary, and finally levelled not less than 90 days after backfilling. Grassed surfaces shall be made good. Others will make good paved or concrete surfaces etc.

- ix) Cable trenches may be hand or machine excavated and shall be of such a width as to afford a minimum of 150mm clearance between the cable(s) and the trench walls. Excavation within 600mm of other services shall only be done by hand.
- x) Unsuitable soil and filthy material encountered during the execution of the Works shall not be deposited on the surface of any road or footpath, but shall immediately be carted away to a dumping site.
- xi) The Contractor shall take all necessary steps to avoid the pollution of streams, drainage systems etc. by excavated soil and its dust.
- xii) Where required, concrete protective cable tiles shall be installed 300mm over the tops of cables. These shall cover the full width of the layer of cables within the trench. Concrete cable protective tiles shall be of the interlocking type approximately 900mm long by 150mm wide with a suitable inscription on the upper side such as “Danger Electric Cables” or similar.
- xiii) Where unsleeved cables cross other services, they shall be taken at least 500mm under such service. Interlocking concrete cable tiles shall be laid 300mm above the cables and shall extend 900mm each side of the crossing point.

#### g) Cable Markers and Tape

- i) Cable markers shall be provided for all underground cable routes. Such markers shall be provided at each point of entry to any building, at either side of any road to rail crossing, at any change of direction of the cable, at intervals not exceeding 30m along any straight runs and over cable joints.



Cable markers shall be made of concrete and cast in the form of a truncated pyramid, approximately 250mm high, 100mm square at the top and 150mm square at the base. The markers shall be provided with brass plates complete with direction arrows and suitably inscribed.

- ii) Yellow 0,1mm thick cable marker tape with the words "Danger Electric Cable" printed continuously and depicting a skull and cross-bones, shall be laid at a depth of 300mm below the finished surface level and immediately above all cables and sleeve pipes. Should a roadway or paved area base layer exceed 300mm, the tape shall be laid immediately below the base.

#### h) Cable Sleeves

- i) Cables sleeves shall be provided wherever required or indicated on drawings and also for all cables entering or leaving any building, crossing a road or other services. Such sleeves shall be supplied and installed by the Contractor unless otherwise required. In all cases the Contractor shall ensure that all sleeves are installed in good time, in correct positions, and in the proper manner.
- ii) Where no details are given, the sleeves shall be of generous size and made of substantial material, which may be galvanised steel, ceramic, pitch fibre, high impact uPVC, corrugated high-density polyethylene (HDPE), etc., capable of withstanding any stresses to which they may be submitted, e.g. road compacting. Care shall be taken to ensure the easy passage of cable through the sleeves by providing large radius bends where necessary.
- iii) NB: For health reasons, the use of pipes containing asbestos is strictly forbidden.
- iv) The ends of all sleeves shall be sealed with non-hardening watertight compound after the installation of cables. All sleeves intended for future use shall likewise be sealed.

#### i) Earthworks by Others

Where trenches, sleeves etc. are provided by another contractor e.g., civils, the Contractor shall liaise and co-ordinate with such other party regarding general advices, sleeve positions, radii etc. Moreover, the Contractor shall stand by and ensure correct backfilling and the positioning of marker tape.

#### j) Cable Identification

A non-corrosive strap with the cable number, or circuit number, stamped or embossed upon it shall be provided at each end of the cable (and at joints, in cases where these are permitted).

## 12.6 Bus-Bar Feeders

### 12.6.1 General

- a) Bus-bar feeder systems shall comply with SABS 1195 or shall be authorised by SABS, and shall consist of metalclad copper bus-bars for voltages not greater than 1000V.

b) Bus-bar feeder systems shall be used for the following:

- Indoor and outdoor connections from transformer LV terminals to main LV switchboards
  - Horizontal indoor power distribution to workshop and factory machinery etc
  - Indoor lateral and vertical-riser feeders for distribution boards and MCCs
- c) All bends, accessories, take-off units, bus-bar sections/modules and so forth shall be a standard or pre-engineered component by the bus-bar trunking manufacturer; no site fabricated items will be allowed without the express permission of the Engineer in writing.

## 12.6.2

### Construction Details

a) Enclosures

- i) Bus-bar systems for indoor use shall be enclosed in hot-dipped or pre-galvanised sheet metal casings finished in epoxy coating similarly to distribution boards. (See clause 12.4.1 (h)). Alternatively the casing shall be of extruded aluminium. The bus-bar trunking shall be vermin proof, adequately ventilated and protected to IP30.
- ii) Outdoor, non-ventilated casings shall be constructed from 3CR12 corrosion resistant steel, finished as for indoor trunking, or alternatively, shall be of extruded aluminium, and protected to IP54 or better.
- iii) In all instances, metal enclosures shall be of adequate gauge and strength to withstand rough usage and the mechanical stresses of prospective fault conditions.
- iv) The casings shall be provided with heavy duty fixing lugs or similar suitable for M10 bolts or studding supports.
- v) Sections of bus-bar trunking shall be joined in an approved manner maintaining mechanical strength and protection levels.

b) Bus-Bars:

- i) Bus-bars shall be of high conductivity 99,9% pure copper of adequate section for the maximum current and short-circuit rating. Unless otherwise specified, the bars shall be mounted edge-wise (long side vertical).
- ii) The bars shall be supported in the casing by substantial high dielectric, non-tracking, non-hygroscopic members at sufficient intervals to allow for mechanical stresses due to prospective fault conditions.
- iii) Joints in bus-bars shall overlap by a minimum length equal to twice the bar width. Contact surfaces shall be tinned using non-acid based flux, and bolted together with high-tensile cadmium plated bolts, nuts and spring washers.
- iv) As well as sizing for current rating, the bars shall be sized to accommodate the prospective fault level rating in accordance with clause 12.4.1 e), whichever size is the higher.

- v) Where installed, neutral bars shall be the same cross section as phase bars.
- vi) An earthbar shall be installed along the entire length of the bus-bar trunking and shall be sized in accordance with IEC 439.

c) Bends

Horizontal (flat) bends in the trunking system shall house bus-bars bent at the correct angle with the supports and casings made to suit, while vertical internal or external bends shall have the bars bolted together at the correct angle. Alternatively, bus-bar bends may be of the flexible laminated type.

d) Take-Off and Feeder Points

- i) Take-off points shall be pre-engineered and located to specific requirements by the bus-bar trunking manufacturer in the case of power feeders for distribution boards in risers etc, or shall comprise shrouded plug-in arrangements at regular intervals for machine shops etc.
- ii) The take-off unit shall consist of a suitably rated MCCB with contacts to satisfy the requirements for a switch-disconnector, housed in a sheet steel or polycarbonate enclosure arranged for bolting directly to the bus-bar trunking in the case of tap-off type units, or permanently fixed in the case of pre-engineered take-offs.
- iii) Feeder end boxes shall be suitable for terminating feeder cables or feeder bus-bars, as applicable.

e) Expansion Joints

Expansion joints to allow for thermal expansion and contraction for a temperature range of between 0°C and 90°C in the bus-bars and 0°C and 45°C in the enclosure shall be provided at intervals per manufacturer's recommendation, but in any event, not exceeding every 10 metres. The full rating of all current carrying parts shall be maintained through the joint as well as casing integrity and level of protection.

f) Fire Barriers

Fire compartmentation shall be maintained at wall and floor penetrations of bus-bar trunking by the use of 4-hour rated fire barriers installed centre with the applicable partition wall or floor slab. The Contractor shall ensure that the main contractor is timeously informed of the need to make good around such penetrations; this information shall be put in writing with a copy to the Engineer.

### 12.6.3

#### Installation and Testing

a) Installation

Bus-bar trunking shall be fixed directly to walls or other structural members or shall be suspended on galvanised studding, supported on channels, angle iron etc as dictated by installation conditions and requirements, and as may be specified in the Detailed Specification or drawings.

b) Testing

Completed bus-bar systems shall be subjected to a test voltage of 2,5kV rms for one minute in accordance with SANS 1195.

12.6.4 Fabrication Drawings

- a) Where it is necessary to have bus-bar trunking prefabricated prior to delivery to Site, the Contractor shall liaise with all relevant parties to have fabrication drawings prepared (usually by the bus-bar trunking manufacturer), viz.: transformer supplier, main and sub-main LV board supplier, etc as the case may be.
- b) The Contractor shall check all drawing details, including on-site dimensions, coordination with other services etc, rectify where necessary and submit to the Engineer for approval. The Engineer will approve the general layout of the system only. The Contractor shall be fully responsible for the correctness of all dimensions etc.

12.7 Tubular Conduit Wireways

12.7.1 Types and Applications

a) Screwed Conduit

Heavy gauge screwed welded (HGSW) steel conduit and associated fittings shall be to SANS 1065-1 and shall be black enamelled or hot-dipped galvanised as specified. No conduit of less than 20mm diameter shall be used.

HGSW conduit shall be used for all general applications run either surface on walls, ceilings, on machinery etc, or else installed flush in walls, cast into concrete slabs etc.

b) Plain End Conduit

Plain end (non-screwed) steel conduit shall be to SANS 1065-1 with a minimum wall thickness of 0,9mm. Only hot-dipped galvanised conduit of 20mm diameter minimum size will be permitted.

Plain end conduit shall be used for all general applications, except heavy industrial environments or flameproof installations, run surface on walls and ceilings, or else installed flush in walls, cast into concrete slabs etc.

c) Non-Metallic Conduit

Plastic conduit shall be to SANS 950. No conduit smaller than 20mm diameter shall be used.

Plastic conduit shall be used for general applications, except any industrial or flameproof installation or any surface installation on walls, machinery etc. Non-metallic conduit shall be run surface only on ceilings or in ceiling voids, chased into walls, cast into concrete slabs etc.

#### d) Flexible Conduit

Flexible conduit shall be of the orange PVC covered spiral metal type, as Kopex, Adaptaflex or equal, with an internal diameter of at least 15mm. Flexible conduit connectors shall be of the gland or screw-in type manufactured from either brass or mild steel plated with zinc or cadmium.

Flexible conduit shall be used to form the final connection to equipment that has to be moved frequently to enable adjustments to be made, for the connection of motors or any other vibrating equipment, for the connection of thermostats and sensors on equipment, for stove and similar appliance connections etc.

### 12.7.2 General Installation Details

Insofar as relevant conduit types apply as per clause 12.7.1, the following general installation details shall apply:

- a) No manufactured bends less than 32mm diameter, or any inspection elbows or tees are to be used.
- b) Open ends of conduits for future extensions and conduit and accessory boxes shall, during the building process, be temporarily plugged to prevent the ingress of moisture, rubble etc.
- c) Where conduit crosses an expansion joint in a building or structure, the following method shall be used:
  - An adaptable box shall be installed at a suitable position within 2m of the expansion joint and a draw box and a conduit sleeve one size larger than the circuit conduit shall be installed from the draw box to the edge of the expansion joint on the draw box side
  - The circuit conduit shall pass across the joint and through the sleeve and project 30-35mm inside the box where the end shall be bushed
  - For metallic conduits, an earth clip shall be secured to the circuit conduit end in the draw box and this shall be bonded to the box with a minimum 2,5mm<sup>2</sup> jumper
  - In addition, for metallic conduits, an earth wire shall be installed between the fitting outlet boxes either side of the expansion joint
  - Adjacent multiple runs of conduit which is to cross expansion joints should preferably be taken via one large adaptable box, across the expansion joint, into a second large adaptable/draw box.
- d) All accessory boxes for switches and socket outlets etc shall be made of pressed galvanised steel and are to be provided with earth studs.
- e) No portion of the conduit installation may be installed closer than 150mm to any other service, including gas, water etc. No wireway carrying mains voltage cables shall be installed closer than 150mm to any communications/data wireway or cable etc, except in the case of multi-service power skirting or similar.

- f) 'Unwired' conduits for other services shall be provided with rustless steel draw wires.
- g) Where necessary, draw boxes shall be installed to facilitate the easy drawing-in of wiring and/or to avoid pulling wires through more than two right angled bends or the aggregate thereof. Adjacent multiple runs of conduit, which requires draw boxes should preferably be taken via one large draw-box. Where possible, draw boxes are to be installed at inconspicuous positions away from general view.
- h) 20% spare conduits, subject to a minimum of two, shall be installed from wall mounting distribution boards into the ceiling void for possible future additions. A coupling with a temporary plug shall be fitted to the ends of spare conduits.

### 12.7.3 Flush Conduit Installations

Insofar as the relevant conduit types apply as per clause 12.7.1, the following installation details shall apply to flush conduit installations:

- a) Where conduits are chased into brick walls or similar they shall be adequately secured with crampets or other approved devices driven into the wall fabric and shall further be secured at strategic points by mortar. The clearance between the finished wall surface and the conduit shall be not less than 12mm. Only power tool chasing machines shall be used for making chases. (E.g. : angle grinders).
- b) Accessory boxes shall be fixed square and mortared in. Concrete surfaces, columns and face brick surfaces shall not be chased without the written permission of the Engineer in each case.
- c) The building contractor will make good all normal chasing and cutting away except that the Contractor shall be held responsible for the cost of work done by the building contractor due to faulty setting out, redundant chases or late installation of conduits and accessories.
- d) Conduits installed within concrete slabs, beams, columns or walls shall be firmly fixed in position before the concrete is cast. Adequate fixings and/or spacer blocks shall be employed to prevent conduits 'creeping' to the surface. Conduit must not be fixed longitudinally together with reinforcement rods.
- e) The general disposition of conduits within the slabs shall be agreed upon before installation between the Engineer, structural engineer and the Contractor. Furthermore, where such conduits occur in large concentrations, or where large diameter conduits (32mm dia. or larger) are installed, the Contractor shall obtain the approval of the Engineer for the positioning of such conduits. Generally, however, conduits shall be installed in the middle or neutral axis of the slab thickness and extension boxes or extension rings shall be provided for as necessary.
- f) Where conduit runs occur in groups or in large concentrations (e.g. near distribution boards, draw-boxes or in similar situations), they shall be fixed with a clearance between adjacent conduits of not less than one conduit diameter to permit adequate penetration of concrete.
- g) Conduit may be installed in surface beds provided that the conduits are clear of contact with ground and are completely encased in mass concrete.

- h) Conduits may only be installed directly into floor screeds where a cover of at least 40mm can be effected. For clearances of 20-40mm, "chicken wire" shall be used as a cover over the conduit to act as a screed binder. For clearance less than 20mm, the conduit may be chased into the slab, provided the written permission of the Engineer is obtained in each case.
- i) Conduit crossings in screed shall be avoided as far as possible. Where this is unavoidable, one conduit may be set under the other one and chased into the slab, provided the written permission of the Engineer is obtained in each case.
- j) Conduits shall be firmly fixed to slabs intended to receive screed by means of half saddles or similar.
- k) Conduit boxes, draw-boxes etc. installed on shuttering decks or wall shutters shall be suitably sealed against the ingress of moisture and vibrated concrete with dampened paper rammed in them, and shall be securely fixed to the shuttering by means of lashing with galvanized steel wire (except in the case of off-shutter ceilings) or else by temporarily fixing the box to the shuttering by screws through the shuttering into the fixing lugs of the box. It is of the utmost importance that fixing screws or lashings be released immediately the concrete has been allowed to set and before the shuttering is struck.

Where fibreglass or other pre-formed plastic shuttering is used by the builder, equipment shall be fixed to the reinforcement steel only and the equipment/box shall be arranged to press firmly against the shuttering. No holes shall be made in the shuttering.

The Contractor shall stand by when concrete is being poured in order to rectify any defects that may occur such as loose boxes or displaced upright conduits (See also item 11.3).

- l) All conduit boxes and accessory boxes shall be finished flush with the finished plaster work and the Contractor shall co-operate with the building contractor to this end. Where necessary, extension plates or rings shall be fitted to meet this requirement.

#### 12.7.4 Surface Conduit Installations

Insofar as the relevant conduit types apply as per clause 12.7.1, the following details shall apply to surface conduit installations:

- a) Conduit run surface on walls, floors, ceilings, or in accessible ceiling voids, etc. shall be installed in a neat manner running generally with the building lines. The conduits shall be vertically plumb and horizontally level as applicable.
- b) Bends in multiple runs of conduit shall have following bends. Other right angle bends shall be standard machine made. In all instances the installation shall present a neat and workmanlike appearance.
- c) Evenly spaced spacer bar saddles shall effect fixing of tubing. Light gauge saddles may be used for general internal installation while heavy base saddles are to be used for external installations and industrial applications.
- d) Galvanized conduit shall be used for all surface installations, as follows: -

- In damp or external areas
  - Within 50 km of the coast
  - In kitchens, laundries and boiler rooms
  - Where exposed to humidity, such as plenum chambers
  - In buildings where animals are housed, e.g. : kennels, cattle/sheep pens etc.
- e) Unless otherwise specified, all surface mounted metallic conduits and accessories shall be painted after installation. Conduits shall be cleaned, degreased and de-rusted and finished with 2-coats of brush-applied enamel paint. Galvanised steel shall be bristle-scrubbed with solvent detergent complying with SABS 1344 and rinsed with clean water to achieve a water-break free surface prior to painting.

For industrial installations, the following colours shall be used :

SERVICE	COLOUR	SANS 1091 REF.
Electrical	Light Orange	B26
Instrumentation	Light Blue	
Fire Alarms	Red	A11
Communications and Data	White	G80

For non-industrial installations, the colours shall be specified in the Detailed Specification.

#### 12.7.5 Steel Conduit

Insofar as the relevant conduit types apply as per clause 12.7.1, the following installation details shall apply to steel conduit installations;

- a) HGSW conduit shall be cut square and clean before threading. Threads shall be made using suitable conduit thread dies and the liberal application of cutting grease or similar. The length of thread shall be such as to permit conduits to be firmly butted together in couplings and hard against the shoulders of threaded conduit box spouts. The ends of all cut lengths of conduit shall be reamed free from burrs and any loose swarf shall be removed from inside the conduit. Running joints in conduit shall be securely locked with a conduit lock nut.
- b) Terminations into non-threaded equipment and accessories shall be mechanically secure and electrically continuous. Terminations may be threaded and locknuttled on both sides of the termination point together with a brass female bush. Alternatively terminations shall be made with couplings and brass male bushes. All mating faces are to be thoroughly cleaned of paint, couplings being filed flat and free from unevenness at the mating face. All conduits shall be earth bonded at distribution boards using copper tape and wire.
- c) Exposed threads of screwed conduit and damaged paint or galvanised surfaces shall be painted with red-lead or zinc rich paint to prevent rust.



- d) Couplings and box entries of plain-ended conduit in cast-in situations shall be taped up with adhesive PVC tape to prevent the ingress of moisture or vibrated concrete.
- e) All bends and sets shall be undertaken using bending apparatus suited for the purpose. Plain-end conduit bends shall be made with benders recommended by the conduit manufacturer.

Any damaged conduit resulting from incorrect bending methods shall be completely removed and replaced, including any wiring installed, all at the Contractor's expense.

- f) Mechanical and electrical continuity shall be maintained throughout all steel conduit installations.
- g) Only HGSW conduit shall be used for :-
  - Flameproof installations
  - Load-bearing situations
  - Suspension pendants
  - Damp or exterior surface areas

#### 12.7.6 Non-metallic Conduit

The following installation details shall apply to non-metallic conduit as outlined in 12.7.1 c) :-

- a) Unless otherwise specified, only steel accessory boxes shall be used in conjunction with plastic conduit installations.
- b) Hand bending, using a bending spring, may be used for conduits up to and including 25mm diameter. Above this size, the appropriate manufactured bend/accessory must be used.
- c) Tubing is to be out square and clean using a fire-toothed hacksaw, and all burrs and loose material removed. The correct adhesive is to be used on clean and dry surfaces with all excess adhesive being wiped off after fitting together.
- d) Plastic conduit and accessories are not to be used for mechanical load-bearing, luminaires support etc. nor are they to be used where they could be subject to temperatures below -10°C or above 70°C.

#### 12.7.7 Flexible Conduit

The following installation details shall apply to flexible conduit as outlined in 12.7.1 d) :-

- a) In installations where the equipment has to be moved frequently to enable adjustment during normal operation, for the connection of motors or any other vibrating equipment, for the connection of thermostats and sensors on equipment, for stove connections and where otherwise required by the Engineer, flexible conduit shall be used for the final connection to the equipment.
- b) Flexible conduit shall preferably be connected to the final connection point from a local draw-box. The flexible conduit may be connected directly to the end of

a conduit if an existing draw-box is available within 2m of the junction and if the flexible conduit can easily be rewired.

- c) Flexible conduit shall be metal-reinforced plastic conduit (Kopex, Adaptaflex or equal) orange PVC-covered spiral metal conduit with an internal diameter of at least 15mm, unless approved to the contrary.
- d) Connectors for coupling to the flexible conduit shall be of the gland or screw-in type, manufactured of either brass or mild steel plated with either zinc or cadmium.

## 12.8 Trunking Wireways

### 12.8.1 Scope

This section describes the following types of wiring trunking :-

- Standard wiring trunking
- Lighting channel
- Power skirting, dado and bench-top trunking
- Underfloor trunking

### 12.8.2 Standard Wiring Trunking

- a) Wiring trunking and accessories shall be fabricated from folded or cold-rolled sheet steel. The trunking manufacturer shall supply all bends, tees, stop-ends etc. No accessory shall be made up where a manufactured accessory is available.
- b) Any made up accessories shall be neatly fabricated and shall be brazed or strongly pop-rivetted at joining edges.
- c) Accessories and sections of trunking shall be coupled with coupling pieces and earth bonded together with copper bonding links. In addition, the links shall be bonded to the trunking main earth or largest circuit earth wire with a jumper of at least 2,5mm<sup>2</sup>.
- d) The maximum number of circuit and earth wires that may be installed into any trunking shall be such that the total overall cross-sectional area of the wiring including the insulation does not exceed 45% of the free area of the trunking.
- e) With the exception of underfloor trunking and loosely filled "opening-up" trunking, wiring retainers shall be installed every metre of run and at other positions as required.
- f) The trunking shall be installed in a neat and workmanlike manner on ceilings, walls, plant machinery etc., as indicated in the drawings.
- g) All standard trunking used in industrial applications shall be finished in the colour code appropriate to the service (refer to 12.7.4 (e)).
- h) Where channel passes through a "fire-wall" the channel lid shall be cut 100mm either side of the penetration and the wall entry around the channel shall be sealed by the building contractor. The Contractor shall supply and install suitable fire-barriers inside the channel. These shall consist of intumescent or other approved fire resistant material, as supplied by PH Protection Plaster

Systems (Pty) Ltd of Johannesburg, Pyro-Cote cc of Durban, or equal and approved and installed in accordance with the supplier's recommendations.

### 12.8.3 Lighting Channel

#### a) General

- i) Lighting channel and accessories shall be "Cabstrut" or equal and approved, and shall be manufactured from cold-rolled steel sheet and galvanized. For industrial installations and elsewhere as specified the channel shall be epoxy coated light orange (colour ref. B26 according to SANS 1091).
- ii) Unless otherwise required the dimensions of the channel shall be 41,3mm x 41,3mm.
- iii) Lighting fittings or pendant drop conduits shall be fixed directly to "opening-down" channel using special connecting nipples as supplied by the channel manufacturer. Alternatively, fittings may be fixed to the solid underside of channel installed "opening-up" using bushed entries and screws, nuts and washers. Self-tapping screws shall not be used.
- iv) Conduit connections to wiring channels shall be terminated directly into the channel using a screwed and bushed entry. Alternatively, where channels are fixed surface directly to a soffit, entry may be effected from a flush conduit box through a bushed hole in the back of the channel.

#### b) Surface Installations

- i) Self-supporting lighting channel shall be manufactured from cold-rolled steel of thickness at least 2,5mm, and shall be fixed in such a manner that the maximum deflection recommended by the channel manufacturer is not exceeded with all wiring and fittings installed.
- ii) Fixings shall be by stirrups supported from structural members via threaded steel rod of at least 10mm diameter, or 20mm diameter conduit. Alternative or additional supports shall be effected by girder clamps etc. Cartridge pin fixings shall not be permitted without the prior written approval of the Engineer.
- iii) Where required, channel installed directly to a soffit shall be fixed at intervals not exceeding 1m subject to a minimum of two substantial fixings to every accessory or section of channel. Channel fixed in this fashion may be not less than 1,6mm thick.
- iv) Clip-in lidding of plastic or of zinc-coated metal, as specified, shall be installed over all faces of the channel left open after the installation of fittings etc.

#### c) Flush Installation

- i) Lighting channel installed flush, either in or forming an integral part of a suspended ceiling, shall be manufactured from minimum cold-rolled or folded sheet steel of thickness not less than 1,6mm.

- ii) Where the channel is cast into concrete, fastening straps shall be provided every 600mm as supplied by the manufacturer of the channel. The channel shall be firmly fixed to the shuttering by galvanized steel wire lashing or by screws fixed through the concrete insert lugs. The channel shall be suitably sealed against the ingress of vibrated concrete by the use of dampened paper or expanded polystyrene inserts.
- iii) Where the ceiling finish is “off-shutter”, narrow clip-in plastic or metal lid shall be used. This shall be grey for non-painted ceilings and white for painted ceilings. Wire lashings may not be used for fixing channels to shuttering in “off-shutter” areas.
- iv) Where plaster finish is to be applied, the plaster shall be taken up to the edges of the channel. Overlapping metal lidding finished white shall be used, fixed over the opening by means of special extension screws into fixing nuts installed in the channel.
- v) For suspended-ceiling lighting channels, the channels will be supplied and installed by the ceiling erector, unless otherwise specified.

White plastic clip-in lidding shall be used for all suspended-ceiling lighting channel. The Contractor shall supply and fit the lidding unless otherwise specified.

- vi) In the case of mullion partitioning the mullion may be utilized as a wiring channel where specified. For other types of partitioning, conduit switch-drops shall be used. Any entry into the lighting channel shall be suitably bushed to obviate abrasion of wiring.

#### 12.8.4 Power Skirting and Dado Height Trunking

##### a) General

- i) Power skirting and dado height trunking shall, unless otherwise specified, be formed from folded and welded pre-galvanized sheet steel of thickness not less than 1,2mm, to form two or three equal compartments designed for power services, socket outlets etc., (upper compartment) and communications/data services (lower compartment(s)). The power skirting shall be finished in baked enamel of colour(s) as stated in the Detailed Specification. The paintwork shall be in accordance with 12.4.1 (h) with due account being taken of the pre-galvanizing. The trunking shall be 150-225mm high x 50-55mm deep with fixed partitions to divide it into two or three compartments. The compartments shall each be provided with separate removable covers.
- ii) Where a building module is applicable, the power compartment shall have provision for 16 A switched socket outlets at the module interval, or where the module interval exceeds 2m, twice every module interval. Socket outlet positions shall be centred between the window mullion or column modules. At the mullion or column position, a permanently fixed 250mm wide cover shall be provided across all compartments to permit the erection of partitions etc., without interfering with accessibility into the power skirting.
- iii) Socket outlets shall be 16 A 3-pin and shall be attached to a fixing grid or mounting bracket in the trunking body. The cover shall be pre-punched to accept the socket outlet and shall be fixed both to the trunking body and

socket outlet fixing grid. Wiring terminals shall be of the recessed type, or alternatively fitted with an insulated cover, to prevent accidental contact with bare earth wiring that may be installed or disturbed while adjacent circuits are alive.

- iv) Where the trunking is a non-modular type, the punched socket outlet cover shall normally be 250mm long. Where it is of the modular type, the power section cover between the over-lapping covers shall be in one piece. Irrespective of whether socket outlets are indicated or not, full facilities including blanked off pre-punched covers shall be provided at the spacings specified herein.

Unless otherwise required, provisions for telephone and data outlets shall comprise a blank plate, or plates, mounted in line with socket outlets.

#### b) Installation

- i) Power skirting shall, unless otherwise required, be installed surface against the wall at finished floor level. Where vinyl tiles or other fixed finish is to be laid, the power skirting shall be laid on top of the tiles. Where carpeting is specified, the power skirting shall be installed onto the screed before the installation of carpets.
- ii) Dado trunking shall be installed surface on the wall at 900mm above finished floor level (to underside), or as otherwise specified.
- iii) Fixings, suitable for the particular application, shall be provided at intervals not exceeding 1m subject to a minimum of two substantial fixings to each accessory or section of trunking.
- iv) Conduit entry into power skirting installed along brick or concrete walling shall be effected via a bushed entry from a conduit box or standard 100mm x 50mm switch box mounted in the wall behind the respective compartment.
- v) Conduit entry into power skirting installed along sheet metal curtain walling or similar shall be effected via a bushed entry from a conduit box, or similar, mounted in the floor under the power skirting. Wiring to the upper compartment(s) shall pass through a short conduit link within the lower communication(s) compartment(s). The conduit links shall be installed towards the back of the lower compartment(s) to afford adequate space for wiring to pass.
- vi) The trunking main earth wire immediately adjacent to the socket outlet positions including the socket outlet earth jumper, shall be suitably sleeved at the tee-off to prevent accidental contact with live terminals.
- vii) All covers shall be adequately bonded to earth either through the fixing screws or a separate earth wire jumper fixed to an earthing stud brazed, at the manufacturers works, to the lid. Where necessary, power skirting covers shall be specially ordered to include earthing studs.

#### c) Bench-Top Trunking

Where called for, bench-top socket outlet trunking shall be installed along bench tops etc. in workshops and laboratories. The general construction,

socket outlet mounting and installation procedure shall be similar to power skirting or dado trunking. Details of compartments, sizes etc, shall be as detailed in the drawings or specified in the Detailed Specification.

#### 12.8.5 Underfloor Trunking

##### a) General

- i) Several types of underfloor trunking are available and in the main, the choice depends upon certain structural restraints as floor type, screed thickness etc. Therefore the exact type to be used will be specified in the Detailed Specification or drawings.
- ii) Unless otherwise specified, the trunking shall be manufactured from pre-galvanized folded sheet steel and shall be single, double or triple compartment as specified.
- iii) Pre-formed outlets, suitably blanked off, shall be provided at intervals to suit the particular application.
- iv) Flush floor level junction boxes shall have a removable trafficable cover and shall be designed to accept a portion of the floor tile, carpet or similar. The Contractor must liaise with the Main Contractor to determine the thickness of the floor finish.
- v) Multi-channel junction boxes shall be so designed that the compartmentalisation is continued through these accessories.
- vi) Socket outlets, telephone outlets and data outlets shall be provided where required in surface floor level pedestals or recessed floor boxes as specified. Suitable barriers shall be included to segregate different classes of services.

##### b) Installation

- i) Trunking designed to be fully built into the screed shall be fixed to the slab surface by suitable straps or clips. A topping of at least 50mm of screed cover the trunking shall be applied. Where a cover of less than 50mm, but exceeding 25mm occurs, expanded metal shall be applied over the trunking to act as a screed binder. Where less than 25mm of screed topping occurs, the trunking shall be installed into the concrete slab to achieve at least the minimum cover. The written permission of the Engineer shall be obtained in each case.
- ii) Trunking designed to be set flush with the screed surface shall be installed straight and level on a mortar bedding on the slab. The trunking shall be slightly dove-tailed in section or shall have other suitable means to ensure that the trunking will remain firmly fixed into the screed.
- iii) The Contractor shall obtain the screed finish datum line from the building contractor for levelling trunking and junction boxes.

## 12.9 General Wiring

### 12.9.1 General Applications

- a) For general applications, 600/1000 V PVC insulated single core stranded copper conductors shall be used. In situations where high ambient temperatures are likely to be encountered, such as the enclosures of certain types on incandescent lighting fittings, ceiling voids of metal roofed buildings, etc., silicon or butyl insulated single core stranded conductor cables shall be used. All wiring cables shall bear the appropriate SABS or SANS mark and shall be delivered to Site with seals intact.
- b) No cable of size smaller than 2,5mm<sup>2</sup> shall be used. The current carrying capacity of wiring shall comply with the requirements of SANS 10142-1:2003, particular regard being given to volt drop limitation and to derating due to bunching of cables and ambient temperatures.

### 12.9.2 Installation

- a) Wiring within conduit shall be by means of the looping-in system. Joints will only be permitted in special circumstances and where accessible, subject to the approval of the Engineer in writing. Wires shall not be allowed to become twisted or tangled within the conduit when drawing in, and lubricating agents shall not be used.
- b) Where earth conductors are looped between terminals of equipment, the conductor shall either remain unbroken in the terminal, or shall be twisted together and ferruled or soldered to ensure that earth continuity is maintained when the conductors are removed from the terminal(s).
- c) Unless otherwise indicated in the drawings, no more than one circuit shall be run in one conduit.
- d) Vertical runs of wiring shall be provided with a suitable stress relieving arrangement at intervals not exceeding 15m.
- e) Within wiring trunkings, each separate circuit of wiring shall be neatly strapped or laced together and shall be so disposed as to afford easy removal. Adhesive insulating tape or similar shall not be used for binding of circuit wires.

### 12.9.3 Wire Markers

All wires in industrial installations, and where otherwise specified, are to be provided with closed-sleeve markers at each feeder termination point, including each leg of looped wires. The markers shall indicate the relevant distribution board and circuit number, e.g.: "DB-AP/P9" etc.

## 12.10 General Earthing

### 12.10.1 General

The installation shall be effectively earthed in accordance with the requirements of SANS 10142-1:2003 and the local supply authority. All metallic hot and cold water pipes and waste pipes shall be bonded with copper tape clamped by means of a brass bolt and nut and earthed. Metal roofs, gutters, and downpipes shall be bonded together and earthed.

### 12.10.2 Earth Continuity Conductors

- a) Separate bare copper earth continuity conductors shall be run with all multi-core cables (where no earth core is incorporated), and green/yellow PVC insulated earth conductors, or bare earthwires, as specified, shall be installed with all mains circuits, sub-circuits and final circuits wired with PVC insulated conductors in conduit or trunking wireways.
- b) Only one earth conductor is required per group of conductors run in one wireway provided that such earth conductor is not less than half the cross sectional area of the largest conductor in the group (subject to a minimum area of 2,5mm<sup>2</sup>), and provided the earthing complies with the requirements of SANS 10142-1:2003. Teed off connections shall be undertaken using crimped tee-ferrules, or shall be soldered. **Under no circumstances shall the common earth be broken.**
- c) Where practicable, common earth continuity conductors shall be run as a "ring main".

## 12.11 Luminaires

### 12.11.1 General

- a) Luminaires shall, unless otherwise specified, be supplied by the Contractor in accordance with the Detailed Specification and / or luminaire schedule as applicable. All luminaires shall bear the SABS "S" safety mark and, where applicable, the SABS "A" approved performance mark also.
- b) All luminaires shall be fitted with the appropriate lamps.
  - i) Unless otherwise specified, fluorescent lamps shall be "cool white", colour temperature 4300°K with a minimum colour rendering index (Ra) of 64.
  - ii) Dichroic lamps shall be of the sealed type. Open reflectors will not be permitted.
  - iii) Unless otherwise agreed in writing by the Engineer, only the following makes of lamps will be permitted :-
    - Osram
    - Sylvania
    - Philips
    - GEC
- c) Linear tubular fluorescent lamps shall have bi-pin end cap arrangements. The lamp holders shall be of the telescopic or spring-mounted type.



d) Lenses

- i) Prismatic, opal and clear lenses shall be manufactured from UV stabilised high-impact acrylic material for general luminaires.
  - ii) Where specified, luminaires, floodlights and lanterns shall be fitted with clear glass or clear tempered glass lenses as required.
  - iii) All tungsten halogen fittings shall be complete with glass lenses.
- e) Streetlight and area lighting post-top lanterns shall be in accordance with the Detailed Specification and/or drawings.

Lantern ballasts shall have tapplings for 95% and 100% of the nominal voltage, unless otherwise specified.

- f) For ease of maintenance, luminaires and lamps in the following classes shall be from one single manufacturer / supplier per class ;
- i) Fluorescent luminaires and general incandescent fittings.
  - ii) Indoor decorative / display luminaires (downlighters, decorative spotlights etc.)
  - iii) Outdoor lanterns, bollards and floodlights
  - iv) Industrial high-bay luminaires
  - v) Operating theatre fittings
  - vi) Medical examination lamps
  - vii) Dark Room lights
  - viii) Other specialised luminaires as specified (E.g. : stage lighting etc.).

12.11.2 Installation of Luminaires

a) General

Where possible, all luminaire outlets shall terminate in standard round boxes to which the fitting shall be fixed in addition to other fixings that may be required. Where conduit is run in roof spaces, or where conduits are cast into screeds and not directly into the slab, back-entry conduit boxes are to be used which shall be so installed as to be flush with the finished ceiling.

b) Mounting

- i) Fluorescent fittings shall be fixed to one conduit box in the centre with two further independent fixings either side, one sixth of the fitting length from each end of the fitting. Fittings of 300mm or wider shall be fixed with two pairs of fixings.
- ii) Where fluorescent fittings are fixed in continuous rows, wiring may be carried out from one outlet and then wired through the channels of the

fittings. The entry from one channel to another shall be suitable bushed and the internal wiring shall be clipped to the insides of the channels.

- iii) Corrosion proof and explosion proof type fluorescent luminaires shall be fixed using external stirrups or brackets. The wiring entry must be made via the gland entry arrangement using suitable multicore wiring (e.g. "Cabtyre", PVC/PVC etc.) routed from an adjacent conduit box or Pratley type box, as appropriate. Under no circumstances shall the body of the fitting be pierced for any reason whatsoever.
- iv) In surface installations to incandescent bulkhead type fittings, the conduit shall not enter the fitting directly but shall terminate in an adjacent conduit box; one outgoing way of the conduit box being terminated in the fitting. A fixed porcelain or plastic terminal block within the conduit box and heat resisting wire, (e.g. silicon insulated), shall form the final connection to the fitting. Alternatively, the whole circuit wiring shall be heat resistant (See clause 12.9 1(a)).
- v) Where luminaires are mounted onto conduit boxes in external or potentially damp situations, a suitable neoprene gasket seal or other approved means shall be used at the junction of the fitting and the conduit box.
- vi) The mounting positions of the luminaires shall be verified on Site with the Engineer before installation commences. Fittings will normally be mounted in an even or symmetrical pattern in relation to the particular area having due consideration for architectural features, beams, ceiling tiles, etc.
- vii) Where fluorescent fittings are specified to be suspended on pendants the Contractor shall provide at least two pendants for each fitting, such pendants consisting of 20mm diameter conduit finished in white enamel for commercial and domestic installations and electrical standard light orange for industrial installations.

The wiring to the fitting shall be taken through one of these pendants. The pendants shall be secured to the outlet box or fixing surface by means of domelids. Where the length of the pendants exceeds 0,6m. Domelids shall be of the swivel type. The domelids shall be painted to match the pendants.

- viii) Luminaires shall not be mounted directly to ceiling boards and suitable wooden inserts are to be supplied and installed by the Contractor for this purpose. Alternatively, fixings may be made into branderling where convenient.
- ix) Heavy industrial high-bay luminaires, floodlights etc. shall be fixed to substantial steel brackets or "Cabstrut" type channel or as indicated in the drawings or Detailed Specification.
- x) Where specified, luminaires shall be fed via a 5 Amp socket outlet mounted close to the fitting. The Contractor is advised to procure luminaires with suitable 3-core flexible cords with rubber clad plug-tops attached, as necessary.

#### c) Mounting Facilities

Where no facilities exist for supporting fittings, the Contractor shall supply and install brackets, hangers, angle irons, wooden battens inside ceiling space or other means as approved by the Engineer.

d) Fixings

Fixings direct to conduit boxes shall consist of cadmium plated or sheradised steel screws screwed into the conduit box fixing lugs. Extra independent fixings into concrete or brick shall consist of suitable fibre or plastic fixing plugs and steel or brass wood screws. Wooden fixing plugs shall not be used. Fixings for fittings over 10kg in mass shall be of the self-drill anchor or expanding bolt-type. Fixings into hollow blocks etc. shall consist of steel screws secured into the hollow cavity with a spring loaded toggle-nut or other approved cavity fixing device.

Cartridge pin fixings shall not be used unless the prior approval of the Engineer is obtained in writing.

Refer also to clause 12.17 (Fixings and supports).

12.11.3 Poles and Masts

a) Street lighting and area-lighting poles and masts shall be supplied in accordance with the Detailed Specification and/or drawings.

b) All poles, masts, outreach arms etc. shall comply fully with all relevant SANS Specifications and Codes of Practice and shall be manufactured from :

- Galvanised Steel
- Self-Coloured fibre-glass
- Aluminium,

as detailed.

c) Poles and masts shall be suitable for fixing to a concrete surface (this method being restricted to post-top lanterns of no more than 4m height), or burying the “root” in soil.

Where buried, each pole must be provided with a suitable base-plate complete with drain hole. Baseplates shall be secured with a minimum of 2 off 20mm dia. hook bolts.

d) Spigots shall be provided to suit the specified lantern. Particular care shall be taken to establish the exact diameter and length of the spigot or spigots required such that the luminaire fits neatly up against the shoulder formed between the pole and the spigots. Care shall be taken to avoid damage to the spigots during transport, storage and erection.

e) Galvanised poles shall be provided with a “corrosion collar” which must extend at least 150mm below and above finished ground level.

Unless otherwise stated, galvanised poles will not require painting.

f) After galvanising, poles shall be stacked and transported in such a way as to minimise mechanical damage to the zinc coating. In particular, poles shall not be stored in direct contact with the ground and if stacked on top of each other,

wood spacers shall be used to prevent the formation of white rust. Poles shall be carefully handled at all times and shall not be dragged along the ground in such a way that the coating may be damaged.

Notwithstanding the foregoing, any small areas of the galvanised coating which have become damaged shall be repaired by shot blasting and zinc spraying to a nominal thickness of not less than 0,1mm. Care shall be taken to ensure that all loose flakes of coating around the area to be repaired are removed prior to zinc spraying. Any signs of substantial damage to the galvanised coating, as determined by the Engineer, will result in the pole being rejected.

- h) Poles and masts shall be provided with suitable cable entries and access openings with fixing chassis suitable for the connection of cables and the installation of MCBs. Access openings shall be provided with a cover plate of the same material as the pole. Covers shall be provided with suitable gaskets and means of fixing to the approval of the Engineer.
- i) Unless otherwise specified no cable glands or gland plates are required for the termination of PVC/SWA/PVC cables. The cable shall be brought up to a convenient position adjacent to the lower section of the access opening. The outer PVC sheath shall be stripped back and the steel wire armouring pulled away from around the cables, twisted into compact tails and bonded together by means of an adequately sized line tap.

A separate earth conductor shall be taken from this line tap to the earth stud in the pole base compartment. Phase and neutral conductors shall be jointed using shrouded line taps and the cables neatly secured to the bottom of the fixing chassis by means of saddles.

- j) Poles shall be planted in the positions indicated on the drawings. They shall be planted absolutely plumb with the outreach, where applicable, at right angles to the roadway edge. The root depth shall be as recommended by the manufacturer.

Should any pole position coincide with trees, building canopies, driveway entrances, overhead conductors or other obstacles, an alternative position is to be confirmed with the Engineer before excavation of the pole hole.

Poles shall be carefully aligned with each other to form straight lines or smooth curves generally following the alignment of the associated roads. The planting depth shall be carefully controlled to ensure that all luminaires will be at the same height above the level of the roadway, parking area etc.

- k) Care shall be taken when backfilling around the pole to ensure that compaction is even all around the pole and is to the requirements specified in sub-clause 12.5.5 f) viii). Where poles are to be planted in fill material, on ramps, etc., one pocket of dry cement shall be mixed with the backfill material before commencing backfilling and compaction. Subject to the prior approval of the Engineer, this technique shall also be applied wherever it is considered necessary to stabilise the pole due to unsuitable soils, etc. Where the Contractor feels that this situation exists, he must advise the Engineer immediately and obtain a decision.
- l) Where poles are to be anchored into rock, the base of the pole shall have a reinforced concrete block cast around it. The dimensions of this block shall be approximately 1,25m x 1,25m x 0,5m and the bottom face shall be reinforced

by R10 bars at 250mm centres in both horizontal axes. A Y20 bar shall be grouted into the rock for a distance of 300mm. The grouted end shall be straight while the end located in the concrete shall be provided with a hook around the reinforcing bars. Alternatively, 20mm "Rawplug" or similar duplex studs may be used in place of grouted bars.

## 12.12 Lighting Switches

### 12.12.1 General

Switches shall be of 15-20 A rating and shall comply with the requirements of SANS 60669-2-1. No switch shall be used to control more than 2000 W of incandescent, or 1500 W of discharge and fluorescent lighting.

All switch boxes shall be fitted with an earth stud.

### 12.12.2 Switch Types and Installation

#### a) Flush Switches

Flush switches with pressed steel or plastic overlapping coverplates shall be mounted into pressed steel rust-proofed boxes installed flush in the building fabric. The switch boxes shall be installed square and shall be flush with the wall finish. Boxes chased into walls shall be fixed square and mortared in position prior to plaster or other finish being applied.

#### b) Surface Switches

Surface switches shall be of the metal-clad type. Protected dollies shall be used for all industrial applications. The switch plate and box shall have a suitable rust resistant enamel finish.

#### c) Architrave Switches

- i) Architrave switches shall be used in partitioning mullions as required.
- ii) Unless otherwise specified, tapped holes for screws and outlet openings will be provided by others. The Contractor shall co-ordinate fully with the contractor providing the holes with regard to positions and switch screw templates. Fixing screws shall be provided by the Contractor.
- iii) Wiring to architrave switches may be run within the hollow mullion or other hollow metal structural members of the partitioning, but shall be run in conduit from the lighting outlet, terminating with a bush at the point when wiring enters the hollow mullion.
- iv) Where the wiring for lighting circuits is run in a ceiling channel which is situated directly over the hollow mullion or other wire carrying member, then the wiring to switches may be taken directly into the latter without the use of conduit or lead-in tubes. Under no circumstances shall the wire pass over sharp edges and suitable provisions shall be made to shield the wiring accordingly.

#### d) Watertight Switches

- i) Watertight switches shall be used for all external applications and in potentially damp areas.
- ii) Watertight switches shall have cast alloy or UV stabilised high-impact plastic enclosures.
- iii) The minimum protection rating shall be IP55.

#### 12.12.3 Mounting Heights

- a) Unless otherwise specified, switches shall generally be mounted at 1,4m above finished floor level to the underside of the switch.
- b) Where switches are located on walls near a change of wall finish, e.g. on tilted, face brick, or wood panelled dados, they shall be positioned so that the coverplates fall completely within one or other of the surfaces, but not on the junction line of the different finishes. The Contractor shall liaise with the relevant other trades to ensure that switches on surfaces present a neat appearance.
- c) Switches in locations meant for persons in wheelchairs (paraplegic toilets etc.) shall be mounted at 1,1m above finished floor level to underside.

#### 12.12.4 Dimmers

##### a) Standard Dimmers

- i) Dimmer units suitable for controlling 220/230 V incandescent and fluorescent luminaires shall be of the integral controller/dimmer unit type suitable for mounting in a standard switchbox, or else in a suitable box supplied with the unit. The units shall be rated at 250 V and sized according to the load.
- ii) Dimmer units used in conjunction with 12 V dichroic luminaire transformers shall be of the induction type.
- iii) All dimmers shall be provided with a mains on-off switch and a dimmer control knob. Multi-lever switches may be utilized where there is a combination of dimmed and non-dimmed circuits fed from the same position.
- iii) The correct pre-heat transformers and lamps shall be used for all dimmable fluorescent luminaires, in accordance with the supplier's details. Alternatively units suitable for use with electronic fluorescent ballasts shall be used where electronic ballasts are employed.
- iv) Dimmers shall be noise-free and fully suppressed for radio and fluorescent ballast interference.

##### b) Remote Dimmers

Dimmers for loads larger than 1200 W are to be of the two-part type, i.e. with a local controller and a remote dimmer.

#### 12.12.5 Photo-electric Controls

Where specified photocells shall be used to switch external lighting installations. Photo-electric switches shall be of the type comprising a photo-sensitive resistor, thermal actuator with an inherent operating delay to make it insensitive to short duration changes in light levels and a change-over switch mechanism, all housed within a tough, translucent, weather proof ultra violet stabilised cover. The operating level shall be factory preset to switch on at approximately 50 lux and off an approximately 100 lux. The response time after sudden changes in light level shall be not less than 15 seconds.

Integral protection against voltage surges shall be provided.

Photocells shall be positioned in such a way that they will not be affected by spill-light from the external lighting installation or by vehicle headlamps.

#### 12.12.6 Labelling

All switches in industrial applications, and elsewhere as specified shall be provided with a Traffolyte label screwed to the wall, or other fixed member, immediately adjacent to the switch. The label designation shall indicate the distribution board and circuit and outlet number, e.g.: "DB-AB/L4.3".

#### 12.13 Bell Pushes

Bell pushes shall be 250 V rating, even where used for low voltage bell installations. In all other respects the requirements for lighting switches given in 12.12 shall apply to bell pushes. Bell pushes shall be mounted in separate boxes to switches or other components.

#### 12.14 Socket Outlets and Plug Tops

##### 12.14.1 16 A Switched Socket Outlets (SSOs)

- a) 16 Amp SSOs shall be 250 V rating, shuttered 2 pin and earth type complying with the requirements of SANS 164-1.
- b) Outlets on circuits rated up to 20 A shall be of the normally switched type whilst outlets on 25-32 A circuits shall be provided with a class F0 SP MCB, or where especially detailed, a DP MCB. The ratings shall be 16A unless otherwise specified.
- c) Both single and twin flush wall mounting SSOs shall be housed in 100 x 100 x 50mm accessory boxes. Surface single-outlet sockets shall be housed in 83 x 119 x 50mm galvanised steel boxes. SSOs for mounting in power skirting, bench-top trunking, hospital bed-head channels etc. shall be mounted on cradles suitable for such applications. Unless otherwise required, flush wall mounting outlets shall have pressed steel coverplates finished white or ivory. Surface outlets shall be of the industrial protected-dolly type with grey pressed steel coverplates.
- d) Where SSOs complying with SANS 164-1 are to be used in exposed areas, they shall be housed in a York S15 weatherproof enclosure, or equal and approved.

## 12.14.2 Non-Standard Socket Outlets

### a) Data/Electronic Equipment Outlets

- i) Dedicated 16 Amp SSOs shall be similar in construction to normal SSOs but shall have flattened earth pins in the 10 o'clock or 12 o'clock position as specified. The earth socket shall be isolated from the chassis of the unit to allow for the connection of 'clean' earths.

Unless otherwise specified, the socket outlet plate shall be of a distinctive colour (usually red, or as specified in the Detailed Specification). Alternatively the socket pin shrouds and switch dolly shall be of the selected colour; the latter instances usually being applied to outlets in power skirting or hospital bed-head channel etc.

- ii) Where specially called for, dedicated SSOs are to be of the British Standard square pin, 13 Amp type. Similarly to 12.4.2 (a) (i), the earth socket shall be isolated from the chassis of the unit.

Wall mounting 13 Amp SSOs shall be suitable for mounting in a standard 100 x 100 x 50mm accessory box. Surface and power skirting mounted units shall generally be as detailed for 16A SSOs (12.14.1(c)).

- iii) 16 A dedicated plug tops, colour-matched to the respective plate or shrouds, and 13 A plug tops in ivory or white plastic, complete with 5 A cartridge fuses, at the rate of 60 % of all relevant outlets shall be provided and handed to the Client at Works handover.

### b) Luminaire Outlets

Where required luminaires shall be fed via a locally mounted 5A SP, N + E non-switched socket-outlet. In these instances, the luminaires shall be fitted with 3m of 3-core flex and a rubber-clad 5A plug-top.

## 12.14.3 220/240 V Plug-Tops

- a) When required to be supplied by the Contractor, 13 A plug-tops shall be white or ivory plastic. 16 A plug tops shall be white or ivory plastic for general office areas and rubber clad type for workshops, production areas, etc. or colour coded plastic for dedicated types
- b) When wired, a small loop shall be made in the earth core of the flex within the plug top so that in the event of undue stress upon the equipment flex, the earth connection will tend to remain intact even if the feed wires are pulled loose.

## 12.14.4 3-Phase Socket Outlets

### a) Existing Installations

420 V 3-Phase socket outlets for use in existing factories etc. shall generally match the units already installed, unless otherwise specified.

### b) New Installations



- i) Generally multi-phase sockets shall be BICC Marachel type DS 16/30A or 32/50A TP + N + E wall mounting decontactors, or equal and approved, or as otherwise specified.
- ii) Each decontactor or similar shall be supplied with a plug unit which shall be handed to the Client upon Works completion and handover. 16 A units shall be fed with cable not exceeding 6mm<sup>2</sup> and 32 A units with cable not exceeding 10mm<sup>2</sup>.

#### 12.14.5 Mounting Heights

Unless otherwise required SSOs shall be mounted at the following heights from finished floor/surface level to the bottom of the outlet.

Flush outlets, generally	:	0,3 m
Garages, factories and workshops	:	1,4m (SP & TP units)
Kitchens and tea rooms	:	1,0m
Above work surfaces (Kitchens and Offices)	:	0,2m (SP only)

#### 12.14.6 Labelling

Socket outlet labelling shall be as for switches, refer 12.12.5.

### 12.15 Miscellaneous Power Connections

#### 12.15.1 Geysers

- a) Domestic-type geysers will be supplied, installed and connected to water services by others. The Contractor shall undertake all electrical connections.
- b) For wall mounted geysers, flush supply conduit shall terminate in a flush round box conveniently close to the electrical entry to the water heater. A surface type metal clad or polycarbonate encased 30 A DP switch disconnecter shall be superimposed over the conduit box and the final connection shall be made using surface galvanised conduit, painted after installation.
- c) Where geysers are installed in concealed positions such as roof voids, the final connection from the local switch disconnecter may comprise PVC covered flexible steel conduit.
- d) Unless otherwise indicated in the single line diagrams, wiring for geyser circuits not exceeding 4 kW single-phase shall be carried out with conductors and earthwire at least 2,5mm<sup>2</sup> each.
- e) Connections to calorifiers and large type geysers shall be as specified.

#### 12.15.2 Kitchen Equipment

##### a) Domestic Stoves

Domestic stoves will be supplied and placed in position by others.

The Contractor shall provide a suitable electrical supply and final connection. A feed shall be taken to a flush mounted 60 A DP switch-disconnector positioned 300mm to one side of the stove and at a height determined by work surface,

kitchen cupboards etc. From the switch-disconnector, flush conduit shall be taken to a point 450mm above floor level, and centred to the rear of the stove, terminating in a round conduit box. The final connection shall be carried out using a superimposing spout-entry conduit box and PVC covered flexible conduit for permanently connected units and via a 'stove connector' socket for plug-in units.

b) General Kitchen Equipment

- i) Canteen kitchen equipment such as stoves, fryers etc. shall be connected up by the Contractor.
- ii) Unless otherwise specified, equipment shall be fed via a local polycarbonate encased switch-disconnector mounted at 1400mm on the wall behind the appliance. The switch-disconnector shall be single-phase DP, or 3-phase 4-pole as required. The final connection shall be taken from the switch-disconnector using flush conduit offset out of the wall at 450mm above floor level. Water-tight PVC covered flexible steel conduit shall connect directly to the end of the wall conduit and shall then connect to the particular item of equipment.
- iii) Where no wall exists, a stainless steel pedestal and switch-disconnector arrangement shall be supplied, as detailed in the Work drawings.

12.15.3 Air Conditioning Units

- a) Console, ceiling and wall-mounting air conditioners (ACs) will be supplied and installed by specialist contractors.
- b) The Contractor will undertake electrical and control connections to the extent outlined in the drawings.
- c) Unless otherwise specified, AC units shall be fed via a locally mounted 30 A DP switch-disconnector unit and the final connection shall comprise the 3-core flex supplied with the AC unit taken via a cord-outlet arrangement mounted on the switch-disconnector faceplate.

12.15.4 Fans

a) General

Where fans are required to be supplied by the Contractor, they shall be supplied complete with all necessary accessories as applicable, such as mounting brackets, diaphragm plates, wire guards where fan blades are liable to be touched by hand, weatherproof louvres where fans are mounted on an outside wall, etc.

Fans and all accessories supplied therewith, shall be bolted, screwed or secured to walls and other surfaces as required.

Holes in walls or windows will be provided by the building contractor to details to be supplied by the Contractor.

b) Connection to Lift Motor Room Fans

- i) Where a lift motor room fan connection is required, the Contractor shall, in addition to the fan, also provide and install a “close-on-rise” 20 A rating thermostat, having room temperature range, which shall be mounted near the fan unless otherwise indicated.
- ii) The wiring to the fan shall be taken from a SP MCB on the distribution board through a clearly labelled local 15/20A switch disconnect and through the thermostat to the fan motor terminals.
- iv) Final connections to the fan shall be carried out in flexible conduit.

c) Connection to Small Extract Fans

Where a small extract fan, such as is used in domestic kitchens toilets, etc., is specified, and when no facilities exist on the fan for conduit entry, connections may be made to the fan terminals by means of 3-core plastic-covered or “cabtyre” flexible cord, taken from a cord-outlet 15/20A switch disconnect unit in close proximity to the fan.

12.15.5 Plant and Motor Connections

a) General

Due to the many types of plant and/or motors that the Contractor may be called upon to connect up, specific details will be as described in the drawings or Detailed Specification.

b) Plant Supplies

- i) Generally the Contractor will be called upon to supply and install an incoming feeder cable to a motor control panel (MCC), or similar, supplied by others.
- ii) The Contractor shall liaise and co-operate with the plant vendor/contractor regarding program, correct location, testing – including phase rotation check, and switch-on.
- iii) Where the Contractor has any doubt regarding electrical and safety aspects of plant controls and equipment by others, he shall have the right to refuse to live up the system until the receipt of an indemnity from the Engineer.

c) Motor Connections

- i) Unless otherwise specified motors and associated machinery will be supplied and fixed by others. The Contractor will be required to provide an electrical supply and to connect the means of disconnection, starting and to the motor terminals and accessible to the machine operator where applicable.
- ii) Unless specified as being supplied by others, the Contractor shall supply and install a padlockable, local switch disconnect for each motor. A suitable starter (which will be provided with the motor) shall be fixed and connected by the Contractor.

- iii) Switch-disconnectors shall, unless otherwise specified, be wall mounted adjacent to the motor, or onto a suitable floor mounting pedestal or onto the framework of the machine or equipment. The switch disconnector shall be within 2,0m of the motor terminals.
- iv) Unit starters shall, where possible, be mounted adjacent to the switch disconnector provided that this position will afford easy control of the machine by the operator.
- v) The final connection to a motor shall comprise a multi-core armoured cable with a neatly strapped loop of slack at least 800mm long to allow adjustments to be made to the motor and/or its mountings. The multi-core cable shall contain an extra core for earthing purposes. The entry into the motor terminal box should preferably be from below/or alternatively from the side, but never from above.
- vi) The Contractor shall ensure the correct rotation of the motor and the settings of the starter in co-operation with the representative of the supplier of the motor.

#### 12.15.6 Labelling

All cables, cores, switch-disconnectors and other items of control equipment shall be labelled. Labels for controls shall be affixed to a non-removable member or wall, adjacent to the item.

Refer to items 12.9.3 and 12.12.5 for general requirements.

### 12.16 Provisions for Ancillary Services

#### 12.16.1 General

Where provision only for telephones and other systems of communication, fire defence, security, aerial, computer data or other services are specified, the Contractor shall supply and install all necessary conduit, wiring channel, cable tray, boards, outlet boxes, sleeves etc., as detailed.

#### 12.16.2 Junction Boards

Where called for, junction boards for telephone and data services shall be supplied as specified. The boards are to be similar in construction and finish to flush, surface or semi-flush distribution boards, as required (See clause 12.4). Boards shall generally be 100 – 115 mm deep with an internal 15 mm softwood backing. Doors shall be secured with square-key turnbuckles and provision for padlocking. Main distribution frames (MDFs) shall generally be similar to normal junction boards but are to be 150 mm deep.

#### 12.16.3 Cable Sleeves

- a) Unless otherwise specified or indicated on the drawings, the Contractor shall supply and install all sleeves for telephone and other service cables of sizes and in positions as detailed.
- b) Where sleeves are specified to be supplied and installed by others, the Contractor shall be responsible for ensuring that such sleeves are installed in

good time and in their correct positions. Suitable rustless draw wires are shall be provided in all sleeves.

#### 12.16.4 Conduit

All conduit for telephones and other services shall be provided and installed to the same requirements as for the electrical installation, and shall be fitted with rustless draw wires. Colour coding for industrial project and other installations where specified shall be in accordance with 12.7.4 (e).

Each class of service shall be kept entirely segregated from any other service.

#### 12.16.5 Outlets

- a) Unless otherwise specified all outlets for telephones and other services shall consist of standard 100 x 50mm flush type pressed steel boxes generally mounted a height of 0,3m from finished floor level to bottom of box.
- b) Where switch sockets or other outlets are mounted in the same room at nominally the same height above floor, care shall be taken to ensure that the undersides of all such outlets are accurately lined up.

#### 12.16.6 Coverplates

The Contractor shall supply and fit metal or plastic coverplates of the same material and finish to match flush switches and switched socket coverplates. A blank cradle shall be fitted in the outlet box to which the coverplate shall be screwed, allowing for proper alignment of the coverplate. Nickel or chromium plated screws shall be used to secure all blank coverplates.

#### 12.16.7 Co-operation

The Contractor shall co-operate with the suppliers and installers of other services in providing all information required, and shall assist such other installers in the event of difficulties which they may experience with drawing in of their cables into conduit or channel provided by the Contractor and where such difficulty arises because of want of knowledge of location, blockages broken draw-wires etc.

### 12.17 Fixings and Supports

#### 12.17.1 General

- a) The Contractor shall be responsible for all fixings in connection with his installation, including: brackets, suspensions, clamps, bolts, screws etc, and all accessories and fixing devices to effect a substantial and proper means of fixing equipment, components, wireways, cables etc.
- b) All items shall be selected to fully suit the application, due cognisance being taken of:
  - Weight of equipment and fixing media ('pullout strength')
  - Temperature and humidity
  - Effect of corrosive and damp environments
  - Weathering, UV degradation etc
  - Electrolytic effects

- c) The following details shall apply to all fixings irrespective of the various categories in which they are described.

## 12.17.2

### Concrete and Brickwork

#### a) Wall Plugs

- i) Fixings into concrete and brick surfaces for equipment with a maximum mass of 10kg may be undertaken with plastic or fibre 'wall-plugs'. Under no circumstances shall wooden inserts be used.
- ii) A masonry drill of the correct size shall be used, in conjunction with a suitable hammer drill or similar, to make holes into the brick or concrete fabric; fixings into mortar joints will not be allowed. The fixing plug length must match the threaded portion of the fixing screw; undersized plugs will not be allowed.
- iii) Round or cheese headed screws of the correct diameter to match the respective plug shall be used throughout.

#### b) Anchor Bolts

- i) Fixings into concrete and brick surfaces for equipment with a mass exceeding 10kg, or where the fixing holes are 10mm or larger, shall be undertaken using expanding anchor bolts, or by means of bolts cast into concrete.
- ii) For expanding anchor fixings, holes shall be made similarly to wall-plug holes (see 12.17.2 a) ii)).

#### c) Channel Fixings

- i) Where brackets, cable-rack support arms etc are to be fixed, the Contractor shall supply and install Cabstrut, or equal and approved, galvanised channel supports and associated clamps, cantilever arms and so forth. Surface channels for the support of various brackets, pendant studding etc shall be fixed into concrete ceilings or brick/concrete walls using anchor bolts.
- ii) In instances where cast-in support channels are to be used, the Contractor shall liaise with the building/civil contractor to ensure that inserts are installed timeously on to shuttering and that all openings are protected from the ingress of vibrated concrete.
- iii) Unless otherwise detailed in the Detailed Specification and/or drawings, the Contractor shall submit particulars, including sketch drawings, of proposed fixings to the Engineer for approval prior to installation. Such proposals shall be accompanied by design calculations of loadings and fixing spacings.

#### d) Cartridge Fixings

Shot or cartridge fixings, using fixing guns, percussion charges and fixing pins in accordance with the relevant manufacturer's recommended methods, shall only be used with the express written permission of the Engineer. Where used, the Contractor shall comply fully with the requirements of the Occupational

Health and Safety Regulations and shall ensure that warning signs are placed at all entrances where such work is in progress.

12.17.3 Hollow Partitions, Hollow Blocks and Ceiling Boards

- a) Fixings shall not be made using gypsum, fibre or similar ceiling boards or ceiling tiles as the supporting medium.
- b) For ceiling boards, the component shall be installed to a substantially fixed conduit box. In the case of linear fluorescent luminaires or other large components, further fixings shall be made into the support bracing. Where there is no bracing conveniently located, the Contractor shall supply and install independently fixed wooden inserts.
- c) Surface fixed items mounted to ceiling tiles within support tees shall be fixed similarly to the foregoing except that, with written permission of the Engineer, supplementary fixings may be made into the ceiling tee lips using approved self-tapping screws.
- d) Fixings into hollow partitioning material, or hollow building blocks, shall be done by means of spring-loaded 'toggle' fixings, or, where suitable, compression type cavity fixing devices may be used.

12.17.4 Fixings on Steelwork

- a) Support brackets, hangers etc shall be fabricated from galvanised angle iron or channel iron, or shall be made up using Cabstrut, or equal channel and associated accessories to suit the application.
- b) Brackets etc shall be fixed to the structural steelwork using purpose made galvanised beam clamps, Caddy clips or similar. Welding to structural steelwork may only be carried out with the written permission of the Engineer.

12.17.5 Painting

- a) All exposed steel shall be cold galvanised.
- b) Where specified, supports etc shall be primed and painted using an epoxy finish, colour: light orange, SANS 1091, ref. B26. Refer to clause 12.4.1 (h) for details of painting.

12.17.6 Adhesives

- a) Under no circumstance will any adhesive material be used for any fixing with the single exception of the fixing of door gaskets.
- b) The adhesive for use with gaskets shall be applied as per manufacturer's specifications, or self adhesive gasketing material shall be used. The adhesive shall be of the silicone based type suitable for use under extreme weathering and temperature ranges between -40°C and +70°C.

## 12.18 Earthing and Lightning Protection

### 12.18.1 General

- a) In instances where soil resistivity surveys have been carried out to determine the design of the earth electrode system/s, Tenderers shall submit their price in accordance with the Tender Documentation, including the bills of quantities where applicable.
- b) Where no resistivity survey has been conducted prior to calling for tenders, prices shall be based upon a provisional design and, where applicable, a provisional bill of quantities. The final design will be based upon a subsequent soil resistivity survey.
- c) All earthing and lightning protection surveys, installations and testing must be carried out by a recognised specialist. Unless the Tenderer is also the earthing specialist other Tenderers (e.g.: electrical contractors) must submit full details of their proposed specialist sub contractor.
- d) This section does not include switchyard earthing. Where necessary a supplementary specification: "Standard Specification for Substation Earthing" will be issued.

### 12.18.2 Earth Resistance Testing

- a) Soil resistivity tests shall be carried out at the proposed location of the electrode/s and following ground levelling by the civil/building contractor, where applicable.
- b) The Contractor must give at least 48 hours notice of impending tests to the Engineer to allow him to attend and witness them at his option.
- c) The tests must be carried out in accordance with SANS 10199 using a recognised method (e.g.: Wenner method) with a four terminal null balance 'megger' tester. A meter calibration certificate proving calibration within the last six months undertaken by a recognised testing authority must be submitted to the Engineer prior to carrying out earth readings. If there is any reason to suspect the accuracy of any instrument, the Engineer may call for confirmation testing at the Contractor's expense.
- d) The result of tests, including a specification for the electrode design, shall be submitted to the Engineer within seven days. The test results in tabulated and graphical form shall be accompanied by a copy of the meter test certificate.
- e) The following maximum resistances shall apply:
  - i) Transformers
    - up to 500kVA                      5 Ohms
    - 500 - 800kVA                    3 Ohms
    - 800 - 1000kVA                  2 Ohms
    - above 1000kVA                  1 Ohm



ii) Lightning Protection

- SANS 10313, category A structures: 30 Ohms overall, subject to a maximum of 200 Ohms for any single electrode (or per SANS 10313, whichever is the lower reading).
- SANS 10313, category B & C structures: 50 Ohms overall, subject to a maximum of 200 Ohms for any single electrode (or per SANS 10313, whichever is the lower reading).

iii) Plant Bonding – Hazardous Areas

Where specified to be bonded, the electrode reading for tanks, silos etc must not exceed 7 Ohms with the electrode disconnected from any other electrode system (See also item 12.18.6).

12.18.3 Earth Electrode

- a) The earth electrode shall consist of earth rods, bare copper wire, copper tape etc, or a combination of these, as specified in the Detailed Specification and/or drawings.
- b) Earth rods shall nominally be 1500mm long, 16mm diameter extensible type steel cored, copper jacketed where the copper cladding is at least 250 microns thick molecularly bonded to the steel rod, as 'Cadweld', or equal and approved.
- c) Mains earthing conductors ('trench earths') shall consist of 70mm<sup>2</sup> bare copper cable while conductors for lightning protection and static bonding shall be 50mm<sup>2</sup>.
- d) Trench earth conductors, as well as the tops of earth rods shall be not less than 600mm below finished ground level.
- e) Earth rods shall be driven into the soil utilising a purpose made driving head in conjunction with a mechanical hammer. In hard ground and in rock, the rods shall be installed into pre-drilled holes made with an earth-drilling rig. Whilst loose soil or a soil slurry may be used to back-fill holes in hard soil, carbonaceous conductive aggregate, such as 'Marconite' or equal and approved, shall be used for holes bored in rock.
- f) Rods longer than the nominal 1500mm shall be coupled using an external sleeve arrangement and the liberal application of silicon or hydrocarbon grease. Rods must butt against one another inside the coupling; gaps will not be allowed.
- g) Rods, tapes and cable conductor in highly corrosive soils shall be of stainless steel, or as otherwise specified.
- h) Joints in copper cable electrodes shall only be effected using an exothermic welding process as 'Cadweld', or equal and approved.
- i) Lightning protection trench earths shall not be run directly in soil under pathways. In these instances the conductor shall be run in 75mm diameter uPVC sleeving which shall be laid under the path and at least 1000mm clear of its edges.

#### 12.18.4 Mains Earthing

- a) The earth electrode resistance for mains earthing of transformers, switchgear etc. shall be in accordance with 12.18.2 (e) (i)
- b) A main earthing bar of high conductivity copper, at least 50mm x 6mm in section and 500mm long, (or as otherwise specified in the Detailed Specification and/or drawings) installed in the transformer room facing the LV side of the transformer/s shall be provided. This shall be mounted onto insulators at 500mm above finished floor level. The bar shall be pre-drilled with 12 No. M12 diameter holes for the connecting of earth leads.
- c) The earth electrode cable/s and all earth bonding leads shall be connected to the bar by means of brass or stainless steel bolts, nuts, washers and lock-washers. Earth cable terminations shall comprise hydraulically crimped tinned lugs. The point of origin of each conductor must be clearly indicated by means of an embossed or punched metal tag attached to the conductor near its lug or connection point.
- d) The following points shall be bonded to the earth bar with 70mm<sup>2</sup> conductor, or as otherwise specified:
  - i) Transformer star points (\*)
  - ii) LV switchboard neutral bar (\*)
  - iii) LV switchboard earth bar (\*)
  - iv) MV switchgear

(\*) : Subject to the earth conductor being not less than half the cross sectional area of the of the relevant phase conductor between the transformer and the LV switchboard.

- e) Minisubs shall be earthed in a similar fashion to main substations except that the earthing bar in the LV compartment shall take the place of the separate main earth bar.

#### 12.18.5 Lightning Protection

- a) Besides earth resistance testing, the Contractor shall arrange for the design of the lightning protection system, including air terminals, roof bonding, down conductors etc to be carried out by a reputable specialist. The Engineer will provide suitable drawings to the Contractor for this purpose either as transparencies or as DXF Computer Assisted Draughting (CAD) files.
- b) Following submission of the design to the Engineer for comment (modification where necessary) and approval, the Contractor shall submit the final design to the SANS for approval. Transparencies of the SANS approved drawing/s shall be submitted by the Contractor to the Engineer for record purposes prior to, or simultaneously with, the start of the installation.
- c) Air terminals may be of various designs. As a general guide, the following basic requirements shall be complied with:
  - i) All conductor material shall be electrical grade aluminium alloy in accordance with the requirements of BSS 1476/H/E9 or American Standards Specification 6063. Conductors shall be installed in such a way that no part of the system shall come into contact with concrete or plaster.

- ii) Circular conductors shall have a minimum cross sectional area of 50mm<sup>2</sup>. Flat conductors shall be 20mm x 3mm minimum.
  - iii) Joints in circular conductors shall be done using a hydraulic crimping machine. Flat conductors shall be joined with either two bolts, or else two aluminium rivets of 6mm diameter.
  - iv) Bonding to extraneous metallic surfaces shall be done by bolting or riveting.
  - v) Conductors must be mounted into aluminium alloy guides which in turn are seated on a suitable barrier material (plastic, or similar) and which allow free longitudinal movement of the conductor.
  - vi) Straight horizontal runs of conductor shall be provided with expansion loops every 30m or less.
  - vii) Electrically continuous metal roofs shall be used as the air termination. Where flat metallic roofs may be surrounded by non metallic parapet walls, conductors are to be installed on top of the wall and bonded to the metal roof sheeting at intervals not exceeding 20 metres.
  - viii) Non metallic roofing supported by steel trusses and purlins which are electrically continuous may be treated as for a complete metal construction.
  - ix) Where required 12mm diameter x 500mm long finials shall be installed at the outer corners of buildings of 15m to 30m in height and in addition at intervals of no more than 30m along exposed parapet walls. The finials, in turn must be bonded to the peripheral conductors.
  - x) Tall structures, as defined in SANS 10313, shall, where required, have 12mm diameter x 1000mm long finials. These shall be installed at an angle of 30° out from the structure and bonded to the peripheral air terminal system, all as required by the Code of Practice.
- d) Down conductors shall consist of aluminium alloy run surface down the outside of buildings, or, where suitable, shall comprise structural steel columns, or reinforcement steel in reinforced concrete columns all as described in the Detailed Specification and/or installation drawings and in accordance with the Contractor's SANS approved design.
- i) Down conductor spacing shall not exceed  $30 - 0,4h$  metres, where  $h$  = the maximum height of the structure. However the minimum separating distance need not be less than 10 metres except for tall slim structures (like chimney stacks) where a minimum of two down conductors must be installed.
  - ii) Large expanses of external metal wall cladding as well as external metal staircases, ductwork etc shall be bonded to ensure vertical electrical continuity and to the lightning protection system at their upper and lower extremities.
  - iii) Aluminium based down conductors shall terminate at 500mm above ground level where they shall be bonded to the earth electrode system.

Under no circumstances shall aluminium conductor come into contact with the ground.

- iv) The Contractor must liaise closely with the building contractor to ensure the timeous placement of cast-in threaded bonding sockets at the tops and bottoms of reinforced concrete columns.
- e) Test points shall be provided where specified. These shall be either mounted near the base of the down conductor in the lower part of the wall or else contained in a small cast iron inspection chamber installed in the ground, all as detailed in the installation drawing/s and/or Detailed Specification.

#### 12.18.6 Static Bonding

Static bonding of operating theatres, explosives magazines, petrochem installations, electronic workshops and the like fall outside the scope of this general specification and, where required, will be specified in supplementary specifications or the Detailed Specification.

#### 12.18.7 Testing and Maintenance Manuals

Upon completion of the earthing installation, testing in accordance with the relevant SANS specification/s shall be carried out by the Contractor and the results submitted to the Engineer. The Contractor shall also supply maintenance manuals, including as-fitted and SANS approved record drawings, test certificates etc, all as outlined in clause 10.0.

## **1.4 Detailed Specifications**

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## **DETAILED SPECIFICATION: Electrical Installation**

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### **1.0 Introduction & General**

This detail specification complements & qualifies the foregoing specifications of material & workmanship. The standard specification should be regarded as a basis and guideline, with this detailed specification taking preference where any ambiguity is concerned.

Should there be any conflict or ambiguity between sections of this enquiry, then the sections will be considered in the following order of priority:-

- Schedule of Quantities
- Project Specification including Equipment Schedules
- Drawings (loose and bound-in)
- Standard Specification

Should the Tenderer notice any inconsistencies between these sections, it is his responsibility to notify the Engineer in order to obtain clarification thereon.

### **2.0 Scope of Work**

This subcontract calls for the general LV electrical installation comprising lighting and power for the completion of the Prospect JSS near Matatiele.

The following sections of work are included in the contract:-

- LV distribution boards
- LV distribution cabling
- Telephone distribution board
- Earthing system
- Conduit and wireways for telephone and data
- Performing and submission of test records and certificates
- Issuing of Certificate of Compliance
- All other materials and labour necessary to complete the Works in full accordance with the specification and design contained or referred to in this document

The following sections of work are excluded:-

- Air-conditioning installation
- Water-heaters
- Telephone, communication and computer cabling and equipment
- Openings through floor slabs, etc.

### 3.0 **Site Conditions**

#### 3.1 **General**

This is a new building project.  
Design conditions are:-

- |                    |   |            |
|--------------------|---|------------|
| • Max. temperature | - | 42 C db    |
| • Min. temperature | - | -5 C db    |
| • Voltage          | - | 415 / 241V |
| • Frequency        | - | 50 Hz      |

### 4.0 **Builder's Work**

The following will be provided by the principal Contractor under the building works contract:-

- Openings through walls, floorslabs, etc.

The electrical subcontractor will be responsible for the following (if required):-

- Manholes and covers
- PVC sleeves 50mm dia. To 110mm dia.
- Trenching and backfilling for LV cables etc.

All excavation shall be executed in accordance with the Standard Specification.

### 5.0 **Excavation**

#### 5.1 **General**

Tenderers are to note that excavation shall be carried out in strict accordance with the Detailed Specification. The contractor may use any method he chooses to excavate any class of material, but his chosen method shall not determine the classification of the excavation.

The Engineer will decide on the classifications of the material based on the inspection of the excavated material and the criteria entailed in Clause 5.2 below.

**NOTE:** Before any cable(s) are installed in the trench or trenches, such trench or trenches shall be inspected by the Engineer at a site meeting agreed upon and once approval is given that such trench or trenches are acceptable, may the cable or cables be installed.

#### 5.2 **Measurement, Pricing & Payment**

For the purpose of this contract, only two classes of material have been measured, and comprise the following criteria :

##### 5.2.1 Soft excavation :

Excavation generally by pick and shovel in soft soil. Determining factors ruled by descriptions in Item 5.3.1, "Soft Excavation" above.

##### 5.2.2 Intermediate excavation :

Excavation deemed to be possible by pneumatic tools. Determining factors include descriptions in :

- Item 5.3.2 “Intermediate Excavation”
- Item 5.3.4 “Boulder Excavation Class A”
- Item 5.3.5 “Boulder Excavation Class B”

### 5.3 Classes of Excavation

The following criteria has been extracted from SANS 1200.

#### 5.3.1 Soft excavation :

- a) Soft excavation, other than in restricted excavation, shall be excavation in material that can be efficiently removed or loaded, without prior ripping, by any of the following plant :
  - i) a bulldozer of mass (including mass of ripper if fitted) approximately 22t and flywheel power approximately 145kW, or
  - ii) a tractor-scraper unit of total mass approximately 28t and flywheel power approximately 245kW, pushed during loading by a bulldozer equivalent to that specified in 5.3.1 a) below, or
  - iii) a track-type front-end loader of mass approximately 22t and flywheel power approximately 145kW.
- b) In the case of restricted excavation, soft excavation shall be excavation in material that can be efficiently removed by a back-acting excavator of flywheel power approximately 0,10kW for each millimeter of tinned bucket width, without the assistance of pneumatic tools such as paving breakers.

#### 5.3.2 Intermediate excavation :

- a) Intermediate excavation, other than in restricted excavation, shall be excavation (excluding soft excavation) in material that can be efficiently ripped by a bulldozer of mass approximately 35t, fitted with a single-tine ripper suitable for heavy ripping, and of flywheel power approximately 220kW.
- b) In the case of restricted excavation, intermediate excavation shall be excavation (excluding soft excavation) in material that requires a back-acting excavator of flywheel power exceeding 0,10kW for each millimeter of tinned-bucket width or the use of pneumatic tools before removal by equipment equivalent to that specified in 5.3.1 b) above.

#### 5.3.3 Hard rock excavation :

- a) Hard rock excavation, other than in restricted excavation, shall be excavation (excluding boulder excavation) in material that cannot be efficiently ripped by a bulldozer equivalent to that specified in 5.3.1 a) above before removal.

**NOTE :** Such excavation generally includes materials such as formations of unweathered rock that can be removed only after blasting.

- b) **In the case of restricted excavation, hard rock excavation shall be excavation in material (excluding boulder excavation) that cannot be efficiently removed without blasting or without wedging and splitting.**

#### 5.3.4 Boulder excavation Class A



Boulder excavation Class A shall be excavation in material containing more than 40 % by volume of boulders of size between 0,03m<sup>3</sup> and 20m<sup>3</sup>, in a matrix of soft material or smaller boulders.

Excavation in dolomite formations other than solid dolomite will be classed as boulder excavation Class A if the formation contains more than 40 % by volume if lumps of hard dolomite of size between 0,03m<sup>3</sup> and 20m<sup>3</sup>, in a matrix of soft material or smaller lumps of hard dolomite.

Excavation of solid boulders or lumps of size exceeding 20m<sup>3</sup> will be classed as hard rock excavation.

Excavation of fissured or fractured rock will not be classed as boulder excavation but as hard rock or intermediate excavation according to the nature of the material.

#### 5.3.5 Boulder excavation Class B :

Boulder excavation Class B shall be excavation of boulders only in a material containing 40 % or less by volume of boulders ranging in size between 0,03m<sup>3</sup> and 20m<sup>3</sup>, in a matrix of soft material or smaller boulders. Those boulders requiring individual drilling and blasting in order to be loaded by a track type front-end loader or back-acting excavator, as the case may be, as specified in 5.3.1 a) or 5.3.1 b) above, will each be separately measured as boulder excavation Class B. The excavation of the rest of the material will be classed as soft or intermediate excavation according to the nature of the material.

### 6.0 **Schedules of Information**

The schedules of information contained in this document consists of 2 sections :

- Information supplied by the Engineer (schedules of drawings, cables, distribution boards, etc. as applicable.)
- Information to be supplied by the Contractor at tender stage (tender form, information on the makes, types and ratings of equipment and materials offered, schedules of prices and rates for variations, schedules of quantities, etc. as applicable.)

Tenderers are required to enter, at the time of tendering, in the "Schedule of Equipment and Material Offered", sufficient details to enable the equipment concerned to be identified without ambiguity.

It is not sufficient for a tender to state "as specified" in the schedules.

Failure to complete these schedules (if applicable) may render a tender invalid.

### 7.0 **Samples and Alternatives**

Bidders may be required to submit for approval, comment or records samples of materials, apparatus or components, and also drawings, schematic diagrams or technical details, including calculations, upon which their design and/or offer is based before any contract is awarded. Such details may also be called for during the course of the Contract prior to installation. Any approvals given or comments made shall be on the generality of the scheme and shall not relieve the Contractor of his responsibility to ensure the full compliance with all performance and regulatory criteria.

**NOTE :** A request for submission of samples or drawings does not imply that the Bidders quotation will necessarily be accepted.

Any particular make or model of equipment referred to in the Documentation is for guidance purposes only in setting standards / types / performances required; equipment that is equal or superior in all respects, and to the approval of the Engineer, may be offered by Bidders. No reference to any particular make of any equipment shall be construed as that equipment having been selected by the Engineer or Client and the Contractor shall be fully responsible for the guarantee and performance of such equipment.

## **8.0 Supervision, Workmanship and Delays**

The work shall at all times, for the entire duration of the contract, be executed under the supervision of a skilled and competent representative of the contractor, who must be able and authorized to receive and execute instructions on behalf of the electrical contractor.

In the event that inferior materials or bad workmanship, on the part of the subcontractor, leads to remedial work requiring redesign by the Engineer, the cost of this work, including related professional fees, shall be borne by the contractor.

Similarly, should delays in the contract be caused by poor performance on the part of the Contractor causing the Engineer to spend extraordinary time on the project, the extra costs incurred shall be borne by the Contractor.

These costs will be based on the SAACE hourly rates and will be deducted from claims due or claims which will become due to the Contractor.

## **9.0 Making Good**

The contractor will carry out in all instances any work to be made good such as damage to, or disturbances of the building installations caused by himself or his employees during the execution of the contract, at his own cost.

## **10.0 Commissioning and Testing**

### **10.1 Commissioning**

A documented method shall be followed whereby the electrical subcontractor shall ensure that his installation is correctly constructed in accordance with the manufacturers' specifications, consultant's specification, consultant's design and all codes of practice and international design codes.

The commissioning procedure must allow for signing off of the major items of equipment by a qualified person in terms of the codes. These signed off documents will form part of the record drawings.

### **10.2 Performance Tests**

The electrical contractor shall be responsible for the physical testing, in the manufacturing works, or on site, of the items of plant or systems as required by the Engineer. These tests shall be performed by the electrical subcontractor or supplier of the equipment, and where called for, the Engineer shall witness such tests. The Engineer may also only witness a representative sample of the equipment tests. In any event, the electrical contractor will supply documentary proof of full performance tests of all relevant equipment.

### **10.3 Acceptance Tests**

Acceptance tests will be performed on site of the working system or sub system, to show that the works, as installed, is functioning according to the specifications and design. The onus for the correct functioning of the systems is still on the electrical subcontractor irrespective of whether the Engineer has witnessed the acceptance tests or not.

Prior to the system being connected, a test certificate must be issued by / given to the local electricity supply authorities.

#### **10.4 Testing Equipment**

Testing equipment required for the successful commissioning of the Works described herein is to be made available by the Contractor.

Details of the Contractor's testing equipment is to be stated in schedule Part A.1.1d "Schedule of Contractor's Testing Equipment". Should the Contractor not have suitable equipment for carrying out the tests at the time of testing, the Engineer will make the necessary arrangements for this equipment or instruct testing specialists to undertake this work. All arrangements for this equipment or instructing of testing specialists to undertake this work and all associated costs, including professional fees shall be deducted from money due to the Contractor.

#### **11.0 Compliance with Regulations, Standards and Codes**

The contractor will arrange for all inspections and testing of the installation after completion, including the issuing of the Certificate of Compliance. All notices, fees, including inspection and re-inspection are the responsibility of the subcontractor and all the relevant costs shall be borne by him.

The workmanship throughout the Works will be to the satisfaction of the Employer. Any materials or workmanship considered as faulty or incorrectly or inadequately erected or repaired, will be substituted, altered or rectified to the satisfaction of the Employer, without additional cost to the Employer.

The Works will be executed in strict accordance with the following:-

- All relevant by-laws and regulations of local authorities.
- All relevant SANS, BS and other international standards of the latest revision, where applicable.
- The Occupational Health and Safety Act of 1993 as amended.
- The Construction Regulations R1010 date July 2003 as amended.

#### **12.0 Programme**

The Contractor must conform to the programme as submitted by the principal Contractor. The cost of overtime, additional labour and plant for the completion of the works, in accordance with the programme, must be included in the Tenderer's price for the project. The cost of any work outside the requirements of the programme or necessary under exceptional circumstances will be for the Employers' account only if covered under a variation order.

#### **13.0 Drawings**

##### **13.1 General**

Generally, the term "detail" shall mean that the drawing is exact in all aspects to what shall be provided. Where the term "illustration" is used, however, it shall be construed that the drawing is to be regarded as a proposal or guideline as to what is to be provided, manufactured or supplied.

### 13.1 Bid Drawings

All drawings, those supplied loose, as well as those bound in, form part of this enquiry and are listed in Part A.1.14. It is the Bidder's responsibility to inform the Engineer as to the absence of any of these drawings.

### 13.2 Record / As-Built Drawings

The Contractor must prepare record/as-built drawings of the completed installation as constructed e.g. indicating actual cable runs, circuiting, distribution board details, final sleeve pipe positions, luminaire and power point layout details. The contract will not be deemed complete until these drawings have been submitted.

### 13.3 Construction / Workshop Drawings

Unless otherwise stated in the Standard Specification and / or the Detailed Specification the Contractor shall submit, in triplicate, installation drawings within 21 (twenty one) days after the signing of the Contract, to allow the Consulting Engineer to examine and approve them before equipment manufacture is started, or material delivered to site.

Should the Consulting Engineer require that any drawing be amended, the Contractor shall make the necessary alterations and re-submit the drawing within 2 (two) weeks.

The Contractor shall provide the Main Contractor and the Consulting Engineers with complete layout, installation and shop drawings, together with any necessary descriptions and specifications. Sufficient details shall be given to permit a full appraisal of all parts of the installation and their relation to the building structure.

Drawings shall give details of all foundations, ducts, chases, pits and openings and shall set out all lines and levels for the work (where applicable).

Delays caused by the submission of drawings or by an error, omission or inadequacy in these drawings, shall not be considered a reason for an extension of the Contract time.

The successful Bidder shall submit construction drawings of manufactured equipment, such as distribution boards, panels, etc., for consideration by the Engineer prior to manufacture thereof.

The Engineer's approval of construction or workmanship drawings does not relieve the contractor of his responsibility with regards to any of the deviations from the requirements of this contract unless the Engineer has been clearly informed, in writing, of such deviations at the time of submission and the Engineer subsequently gives written approval for the specific deviation. Similarly, the Engineer's approval shall not relieve the contractor of responsibility for errors or omissions in the construction / workmanship drawings.

## 14.0 Sufficiency of Bid

The Bidder's offer shall be for the supply, delivery, installation and commissioning of the complete installation as detailed, described or implied in this document and on the accompanying drawings.

The Bidder's offer shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the Works and that the rates and prices he has entered in the schedules shall cover all his obligations under the contract for the proper completion of the Works.

## **15.0 Measurement**

The Bidder shall not make any assumption regarding the installation. If there is any doubt or ambiguity, the Engineer must be consulted. The Tenderer shall take cognisance of the fact that the schedule of quantities is re-measurable and the quantities may be adjusted at the end of the contract.

All outlet boxes up to 100 x 100mm are measured as one item regardless of the number of entries.

Conduit boxes shall always include the fixing to the conduit with lock and bush nuts as specified.

All switches and plug units shall include the fixing to conduit as specified.

Outlet boxes shall be without covers and draw boxes shall include covers, screws, etc.

Light switches, switch plugs, etc. shall include screws, cover plates and other equipment specified.

All fittings and accessories always include the connections thereto. All light fittings shall be complete with lamps and tubes, unless otherwise stated in the Bill.

300mm additional length per conductor has been measured for conductors drawn into conduit, per termination point. Tenderers must allow in their rate for any conductor lengths required for his own purposes, in addition to the 300mm measured.

All measurements are nett, unless otherwise stated, and Tenderers must allow in the rate for wastage.

## **16.0 Monthly Certificates**

Pro forma claim forms are available from the Engineer. These are available in a blank copied format or as a computer file in Excel. This is the preferred method of submitting payment claims. Should the contractor have developed his own method of claiming, this may be submitted to the Engineer for consideration.

## **17.0 LV Distribution Boards**

All distribution boards will be supplied, wired and complete with all equipment of quantities, types, sizes and ratings as specified on the distribution board schematics, which are included in this document. The distribution boards shall be manufactured in accordance with the Standard Specification for Electrical Building Services, Part A.1.3.

The Contractor shall ensure on site and on the drawings, before commencing with any work that sufficient space and access is available to install the DB's as specified.

No additional claims for failure to check these details and rectify any default will be entertained.

Before handing over, the boards shall be thoroughly cleaned inside and outside. Finished surfaces shall be made good where necessary with identical paint to the original finish.

PVC sleeve pipes as indicated on the drawings shall be provided and built into the wall for incoming and outgoing cables.

#### **17.0 LV Distribution/Metering Kiosks**

All metering kiosks to be manufactured of 3CR12 and powder coated light grey.  
The door surrounds shall incorporate a splash proof lip around the entire perimeter and the door shall be mounted flush to the lip.  
The door shall be hinged with stainless steel hinges and allow the door to be opened for an angle of at least 90°.  
A 3-way lever lock shall be fitted to the door and all parts shall be of stainless steel.

The single phase kilo-watt hour meter is to be calibrated.  
The busbars are to be fixed behind a Perspex screen to prevent accidental contact.  
Standard danger signs will be fitted on the door and Perspex screen.

#### **18.0 LV Distribution Cables**

All cables shall be in accordance with the Standard Specification included in Part A.1.3. The cables shall be of sizes and construction as shown on the drawings.

The Contractor is advised to measure actual lengths of cable required on site before ordering as he will not be compensated for redundant cable or in fact any other material over supplied.

#### **19.0 Earthing**

It is the electrical subcontractor's responsibility to ensure that the complete earthing system of the building is in accordance with the code of practice.

To this end the subcontractor shall perform earth resistivity tests to ascertain which method of earthing is most suitable to ensure compliance with the code.

All metallic hot and cold water as well as waste pipes must be effectively bonded by 12,5 x 1,6 mm solid or perforated copper tape (not wire) clamped by means of brass screws at intervals not exceeding 150 mm.

The earth connection from the main earth bars of all the distribution boards must be made to the cold water mains and in the incoming service earth conductor or such conductor as the Engineer may direct. Where applicable all metallic roof sheeting as well metallic walkways and stairs shall be suitably earthed.

Furthermore, earth electrodes (earth spikes) of at least 1,5m long must be provided and driven in to the ground at least 1m from all the building's perimeter and shall clear all aprons and water channels. The earth spike must be driven into the ground at least 300mm below ground level. Only after final bonding and tests have been carried out must backfilling and compacting of same be executed.

The earth conductor must be bonded to the roof sheeting at intervals not exceeding 5m, ensuring that roof sheeting on both of the ridge are properly bonded.

The overall earth resistance at any distribution board shall not exceed 1 Ohm. The contractor shall access the soil and site conditions at the time of tendering and allow for this to enable him to perform the proper earthing and bonding of the installation.

## **20.0 Uninterruptible Power Supplies**

- i) Uninterruptible Power Supply (UPS) units shall be obtained from a reputable manufacturer such as H G Meissner & Co or other approved supplier and shall be sized as indicated in the single line diagrams. The units shall have built in fault alarms with provision for remote fault annunciation (sounder, mute and indicator lamps) if required. Remote status lamps are to be included.
- ii) The 5kVA units shall be single phase input, single phase output, nominally rated at 240V and incorporating a manual and static by-pass arrangement.
- iii) All UPS units shall be suitable for the available mains and generator supplies.
- iv) UPS batteries shall be of the sealed maintenance free type with the following minimum autonomy at full load:
  - 5 and 10kVA units – non-theatre areas 20 minutes
- v) Output Characteristics :

At the rated full power, the UPSs shall have the following characteristics:

Power Factor	:	0,8 (normal running conditions)
Output frequency	:	50 Hertz
Frequency tolerance	:	± 1% from nominal, slew rate: 0,5Hz/sec
Output waveform	:	Sinusoidal
Max harmonic content of output waveform	:	5%
Output voltage tolerance:		
■ Steady state full load	:	± 5%
■ 100% transient step load	:	± 5%
Full load efficiency	:	=> 85%

## **21.0 Conduit, Wireways and Accessories**

### **21.1 Conduit**

All conduit/outlet boxes and associated fittings for use in this installation will be SABS approved.

The electrical subcontractor must provide all conduit and accessories for the lighting, power, telephone, communications, computer and security systems, as shown on the drawings and as measured in the schedule of quantities.

Flexible metallic tubing of galvanized steel shall be used for connections to water heaters, fans and other similar equipment. The corrugations of the tubing shall have a rectangular cross section suitable to fit standard brass connections.

### **21.2 Power skirting**

Power skirting has been utilised and shall be of PVC manufacture with clip-on covers, structured light grey. The power skirting shall be as specified in Part A.1.6, "Conduit and Wireways Schedule".

## **22.0 Wiring**

Lighting and Power wiring in conduit and channel wireways shall comprise 600/1000V single core PVC insulated copper wire sized in accordance with the distribution board schematics. Conductor outer sheaths shall be of the following colours:-

- Phase Conductors : red, white, blue
- Neutral : black
- Earth : green

### **23.0 Wall Switches and Switch Socket Outlets**

All wall switches to be of the flush type complete with cover plates and screws in 100 x 50 x 50 extension outlet boxes mounted on the wall surfaces. Colours of outlet boxes and cover plates to match.

All surfaces mounted switch socket outlets to be in 100 x 100 x 50 extension outlet boxes mounted on the wall surfaces. Colours of outlet boxes and cover plates to match.

All switched socket outlets mounted in power skirting to have matching cover plates.

Further details of these outlets are listed in Part A.1.7, Switch, SSO and Isolator Schedule.

The electrical subcontractor will be responsible for the installation of power points to feed equipment such as water heaters, air-conditioners, fans, security equipment, etc. This equipment, if supplied and installed by others, will be connected by the electrical subcontractor.

The coverplates to all outlets shall be fixed **AFTER** the final coat of paint has been applied. The Tenderer shall allow for this in his programme and pricing of the Works.

### **24.0 Luminaires, Standards and Photocells**

The luminaires are detailed in Part A1.8, "Luminaire Schedule". The electrical subcontractor shall comply with the installation requirements of the luminaire manufacturer. The method of supporting the luminaires is to be approved by the Engineer prior to installation.

Photocells shall be installed in positions as indicated on the drawings. The photocell shall be mounted in a dummy luminaire as detailed in the luminaire schedule, or inside a kiosk behind a Perspex cover. The following specifics shall apply:-

- Activating Light Level : 50 lux
- De-activating Light Level : 90 lux
- Protection Rating : IP 44
- Rated Switching Load : 16 A

Protection against voltage surges will also be provided.



## **25.0 Occupancy Sensors**

### **OS1:**

- PIR and sound technology sensor
- Recessed Ceiling Mounted
- 360 degree coverage
- Adjustable time delay
- Green LED indicator
- Push-button programmable
- Self-contained relay switches line voltage
- No minimum load requirements
- Operating temperature : -10 to 71 Degree Celsius
- Relative humidity : 20 to 90% non-condensing
- 3 Year warranty
- Provide 8.5m radial coverage at 2.7m mounting height
- Maximum load 1200W
- White color

### **OS2:**

- PIR Motion sensor
- Recessed Ceiling Mounted
- 360 degree coverage
- Provide 9m radial coverage at 2.8m mounting height
- Time delay setting from 10sec to 35min
- 400W Lighting load
- Operating temperature : -20 to 40 Degree Celsius
- 3 Year warranty
- Daylight sensor can be set from 2-2000lux
- White color

### **OS3:**

- PIR Motion sensor
- Recessed Ceiling Mounted
- 360 degree coverage
- Provide 20m radial coverage at 2.8m mounting height
- Time delay setting from 5sec to 15min
- 600W Lighting load
- Operating temperature : -20 to 50 Degree Celsius
- 3 Year warranty
- Daylight sensor can be set from 2-2000lux
- White color

The electrical contractor will provide a wired on/off output from the sensor to the closest AC unit. The AC contractor will connect the wire to their AC units.

## **26.0 Telephone, Computer and Security Installations**

If required, the electrical contractor will be responsible for the installation for conduit only. This will include all distribution boards, outlet boxes with cover plates and draw wires, all as indicated on the layout drawings.

The equipment, cabling and wiring for these systems will be done by others.

## **27.0 Copyright**

Copyright on designs, specifications, patents (including pending), systems and processes contained in this document remain the reserve of the Author. Any transgressor shall be held responsible jointly and severally, in their personal and corporate capacities for any contravention of this right.

## **29.0 Schedule of Sub-Contractors**

The Bidder shall state in the Schedule of Proposed Sub-contractors (Part A.16.8 of this document) the name of any Sub-contractors he proposes to employ to assist him to complete the Works, and the proposed extent of the Sub-contractor's responsibilities.

## **30.0 Schedule of similar types of installations carried out by Bidder**

The Bidder shall list in the Schedule of Similar Types of Installations Carried Out By the Bidder (Part A.1.1b of this document) the name, year, value, etc. of any similar contract undertaken previously by the Tenderer.

## **31.0 Schedule of staff available**

The Tenderer shall list in the Schedule of Staff Available (Part A.16.5 of this document) the name, designation, years of relevant experience (i.e. similar type of work) of all staff (from senior personnel to labourers) who will be made to perform any duties for and on behalf of the Tenderer on this project.

## **32.0 Schedule of work in hand**

The Tenderer shall list (Part A.1.1b of this document) brief details of all projects which are currently in progress indicating Name of Project, Client, etc. including details of 3 projects where the quality of your workmanship can be inspected.

## **33.0 Progress Meetings**

Progress meetings will be held on site every month or as mutually arranged by all parties. The Contractor must arrange for his authorized representative, who must be approved by the Engineer, to attend these progress meetings when required to do so. All costs for these meetings, including testing, commissioning, snagging and handing over meetings, shall be deemed to have been covered by the Preliminary and General Costs.

## **1.5      Conduit & Wireways Schedule**

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## CONDUIT AND WIREWAYS SCHEDULE

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ITEM	DESCRIPTION	MANUFACTURER	MODEL
1.	Conduit for lighting circuits	Bosal or equal and approved	20mm dia. SABS approved PVC/Metal
2.	Conduit for power circuits	Bosal or equal and approved	20mm dia . SABS approved PVC/Metal
3.	Conduit for telephone, data and other services	Bosal or equal and approved	25mm dia. SABS approved PVC/Metal with 16SWG draw wire
5.	Sleeve pipes for Electrical and Telephone	uPVC or equal and approved	SANS 791 PVC-U Sewer pipe Class 51
6.	Cast iron manhole covers for Electrical and Telkom manholes, including frames		Type 4 to SANS 558

## **1.6 Switch, Switch Socket Outlet & Isolator Schedule**

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### SWITCH, SWITCH SOCKET OUTLET & ISOLATOR SCHEDULE

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ITEM	DESCRIPTION	MANUFACTURER
A.	1-way light switch flush mounted to 100 x 50 outlet box, including coverplate	CRABTREE CLASSIC or approved equal
B.	2-way light switch flush mounted to 100 x 50 outlet box, including coverplate	CRABTREE CLASSIC or approved equal
C.	Flush single switch socket outlet for normal power mounted to 100 x 100 outlet box, including coverplate	CRABTREE CLASSIC or approved equal
D.	Flush double switch socket outlet for normal power mounted to 100 x 100 outlet box, including coverplate	CRABTREE CLASSIC or approved equal
E.	Unswitched 5A, 3 pin socket with cover mounted to 60mm dia. Round box	CRABTREE CLASSIC or approved equal
F.	Double pole isolator, flush mounted, including standard dimension outlet box, complete with cover	CRABTREE CLASSIC or approved equal
G.	Double pole isolator, surface mounted, including standard dimension outlet box, complete with cover	CRABTREE CLASSIC or approved equal

## **1.7      Luminaire Schedule**

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## LUMINAIRE SCHEDULE

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ITEM	DESCRIPTION	MANUFACTURER	MODEL
F17	Round 20W LED decorative bulkhead with aluminium trim	BEKA original, or equal and approved	BEKA 31020 or similar approved
F39	39W, 4ft, surface mounted, diffused LED luminaire	Genlux original, or equal and approved	Genlux Alena 39W, 3750lm or similar approved
F48	48W, 4ft, surface mounted, diffused LED luminaire	Genlux original, or equal and approved	Genlux Alena 48W, 4670lm or similar approved
F39 (VP)	39W, 4ft, surface mounted, vapour proof LED luminaire	Genlux original, or equal and approved	Genlux MILA 39W, 4690lm or similar approved
F52	Surface mounted open channel fluorescent with 2 x 36W T8 lamps	Voltex original, or equal and approved	Voltex or similar approved



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## DETAILED LUMINAIRE SPECIFICATION

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### 1.0 **F17 – Round Bulkhead Luminaire**

The luminaire shall consist of a high pressure die cast aluminium base and trim ring, and an opal high impact acrylic diffuser. It shall be designed to operate a 20W LED light source.

*The luminaire shall bear the SANS 60598-1 safety mark.*

*The luminaire shall have a degree of protection that complies with SANS 60598-2-1:*

*Lamp compartment: IP65*

The IP rating shall be certified by a SABS test report.

All base castings shall be manufactured from high pressure die cast aluminium, finished both outside and inside in white epoxy powder coating for added protection and reflectivity. It shall be simple to install due to four mounting holes provided outside the lamp compartment through lugs that form part of the base casting. The trim ring casting shall be mounted onto the base casting by stainless steel M5 Allen head screws, located outside the lamp compartment. The fixing holes can be supplied with stainless steel helicoil inserts on request.

An opal non-discolouring high impact acrylic injection moulded diffuser shall be used throughout the range. It shall offer excellent vandal resistance, be highly translucent and shall not discolour even when subjected to the harshest UV environments. A silicon sponge gasket shall be fitted into a special groove in the diffuser to prevent damage to the gasket during installation and to achieve the certified ingress protection rating of IP65.

The trim ring casting shall be manufactured from high pressure die cast aluminium and shall be finished in a special multi-stage epoxy powder surface coating.

The control gear shall be mounted directly onto the base casting, ensuring cool operation. It shall be suitable for operation with the specified rating of the lamp on a 230V +3%/-10% 50Hz single phase system. All inter-connecting wiring shall be Teflon® insulated with protective sleeving to prevent damage by possible abrasion. All external screws, bolts and metals shall be stainless steel or non-corrosive material. Mains connections shall be by means of a suitable screw terminal block with a wire clamping contact. The luminaire shall be power factor corrected to a minimum of 0.9. In the LED version, the diffuser shall be permanently sealed to the aluminium base and shall be supplied with a 300mm supply lead.

### 2.0 **F39/48 – Surface Mounted, Diffused Luminaire**

The luminaire shall consist of a powder coated sheet steel body with an impact resistant, UV stabilised, translucent polycarbonate diffuser and shall be designed to operate either a 39W or 48W LED light source.

*The luminaire shall bear the SANS 60598-2-1 safety mark.*

*The luminaire shall have a degree of protection that complies with SANS 60598-1:*

*Lamp compartment: IP40*

### 3.0 **F39(VP) – Surface Mounted, Vapour Proof Luminaire**

The luminaire shall consist of a high pressure injection moulded, UV stabilised, polycarbonate body with an impact resistant, UV stabilised, translucent polycarbonate diffuser and shall be designed to operate a 39W LED light source.

*The luminaire shall bear the SANS 60598-2-1 safety mark.*  
*The luminaire shall have a degree of protection that complies with SANS 60598-1:*  
*Lamp compartment: IP65*

#### **4.0    F52 – Open Channel Luminaire**

BODY : Cold rolled mild steel with white epoxy powder coated finish

LAMP HOLDERS – Bi-pin, rota-lock lamp holders designed for use with LED lamps

LAMPS – The light fittings will consist of 2 x 36W T8 lamps.

CONTROL GEAR – The fitting will be equipped with electronic ballast

*The luminaire shall bear the SANS 60598-1 safety mark.*

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# **ADDENDUM G**

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## **Mechanical Specification**

# **PROSPECT JSS SCHOOL LP GAS INSTALLATION**

## **SPECIFICATIONS**

# **1      Returnable Schedules**

## **1.1      Schedule of Materials Offered**

## SCHEDULE OF MATERIALS OFFERED

Bidders shall complete the following schedule of materials and equipment offered and undertakes that the actual materials and equipment installed shall be in accordance with this schedule. Enter N/A if not applicable for that particular item / installation.

Bidders are to take note that if the material offered is not to specification, this may lead to the bid being disqualified.

Item	Item	Make or Trade Name	Model No. or I.D.	Material to Spec? (Give details if not)	SABS Mark Y/N	Country of Origin
1.0	<b>Gas Tubing</b>					
1.1	Manufacturer					
1.2	Place of Manufacture					
2.0	<b>High Pressure Regulator</b>					
2.1	Manufacturer					
2.2	Place of Manufacture					
2.3	Flow rate in L/sec					
3.0	<b>Low Pressure Regulator</b>					
3.1	Manufacturer					
3.2	Place of Manufacture					

## **1.2      Schedule of Contractors Testing Equipment**



SCHEDULE OF CONTRACTOR’S TESTING EQUIPMENT

ITEM	TEST	EQUIPMENT
1.	Pressure	
2.		
3.		
4.		

## **2 Detailed Specifications**

## 1 **KNOWLEDGE**

- 1.1 The installation shall be completed in a satisfactory manner and according to this specification and the latest revisions of the following standards and specifications:
- i) SANS 10087-1: The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial, and industrial installations
  - ii) SANS 10400: The Application of the National Building Regulations
  - iii) Occupational Health and Safety Act
  - iv) Specification of Materials and Methods to be used PW371
  - v) All specifications, standards and documents referenced in the above documents.

This specification is supplemental to the above and any conflicting information must be referred to the engineer for clarification.

- 1.2 The general layout and construction of the enclosure for LPG cylinders and manifold installation shall be made according to attached **drawing**.
- 1.3 The appointed contractor to do the installation shall be responsible for the proper and safe functioning of the installation and any claim on the grounds of want of knowledge will not be entertained.
- 1.4 Bidders are required to visit the site, check all data and satisfy themselves to the nature and extent of the work to be done and make allowance for any items omitted from the specification but obviously required and necessary for the completion of the work and proper functioning of the installation. Such additional allowances must be listed clearly in the schedule of prices that form part of this specification.

## 2. **LEGAL REQUIREMENTS**

- 2.1 The installer shall be registered as a *Commercial Installer* with the LPG Gas Association of South Africa as required by SANS 10087. Valid registration certificate and proof of SAQCC (Gas) registration must be submitted with the bid for evaluation.
- 2.2 During the installation all work shall be carried out according to the requirements of the Occupational Health and Safety Act and regulations.
- 2.3 Local authority approval for the location of the gas cylinders as well as the complete installation shall be obtained by the Installer.
- 2.4 All registration certificates, written local authority approvals, test certificates and certificate of compliance shall be submitted to the engineer before the installation will be accepted for first delivery.

## 1. **WARRANTY**

The contractor is to guarantee the complete installation, workmanship and all equipment for a period of twelve (12) months against any defects (latent or obvious), non-conformance and/or failure from date of first delivery. Any such defects and/or failure that may occur or become evident during the twelve month guarantee period shall be rectified within twenty four (24) hours after being notified of the occurrence of the defect. In the event that such failure and/or defect constitute a threat to the health and safety of the user and/or occupants, the contractor shall take ***immediate*** steps to rectify the fault. Any faulty item that becomes evident during the guarantee period shall be replaced with new and not repaired. The contractor shall also submit to the engineer and Engineer of Public Works a full report describing the nature of failure, cause of failure and possible methods to prevent failure in the future.

In the event that the contractor does not attend to such defects after being notified, the Engineer and/or user reserve the right to effect the rectification of the defect and recover the costs thus incurred from the contractor.

## **2. SCOPE OF WORK**

This specification is for the supply, delivery, installation, testing and commissioning of a complete LPG installation broadly consisting of the following: (quantities required are as shown in the schedule of prices and drawings)

- 4.1 **Gas cylinder cubicle as per attached drawing.**
- 4.2 Fully charged 48 kg LPG cylinders connected to each side of the manifold.
- 4.3 Cylinder manifold complete with isolating valves, high pressure hose connections and fittings to cylinders, manual change over valve and two pressure regulating valves, one on each high pressure side of the change over valve.
- 4.4 2<sup>nd</sup> Stage pressure regulating valve where the point of use is more than 9 meters from the LPG manifold and first stage pressure regulating valve.
- 4.5 Class 2 copper pipe reticulation to points of use as shown on the layout drawings. Drawings showing pipe routes to be produced by the installer and submitted for acceptance by engineer.
- 4.6 Isolating ball valves and braided flexible hose connections conforming to the requirements of SANS10087-1 at each point of use with the correct union type connection of the right size and thread for the equipment to which the hose will be connected.
- 4.7 Isolating ball valves for emergency use strategically placed for easy access in the case of emergency. As a minimum, one at the gas cubicle, one inside the building where the gas enters the building and one at the area of use.
- 4.8 All sleeves, properly installed, by core drilling and not demolishing brick, sealed and of the material and type required by SANS 10087
- 4.9 Painting, colour coding and marking of pipes, fittings, gas cubicle, valves and any other appurtenances.
- 4.10 One 9 kg dry chemical powder fire extinguisher fully serviced and installed in an enclosure within 6 meters from the gas cubicle. The extinguisher shall be mounted inside an approved lockable glass fiber cabinet with key inside a break glass box. The cabinet shall be mounted such that the fire extinguisher handle height is 1500 mm from ground. 190 X 190 mm SABS symbolic signs i.e. ARROW and EXTINGUISHER to be mounted in a visible position at the extinguisher.
- 4.11 Signage as per SANS 10087 and SANS 1004
- 4.12 Three sets of keys for the gas cubicle and fire extinguisher enclosure locks.
- 4.13 Testing and commissioning of the installation.
- 4.14 All test certificates, compliance certificates and local authority approvals.
- 4.15 Safety and operating instructions fitted to the door of the gas cubicle.
- 4.16 Three copies of a data book and combined operating and maintenance manual.
- 4.17 All other items and requirements, whether specifically mentioned or not, for a complete, functional and safe installation complying with all the relevant codes and specifications.

### **3. L.P GAS CUBICLE (IF APPLICABLE)**

- 5.1 The cubicle for the LP gas cylinders and manifold shall be manufactured according to the attached drawing.
- 5.2 All welding to mild steel shall be done according to the basic requirements of AWS D1.1 and may be done with MIG, MMAW or TIG.
- 5.3 Where welded joints have to be ground flat, a beveled weld preparation shall be introduced to ensure full penetration welding and prevent loss in strength by grinding away weld material.
- 5.4 All weld spatter, burs, sharp edges, flux and slag shall be removed before galvanizing and finishing.
- 5.5 Vent holes shall be provided on both ends of the brick and plastered cubicle..
- 5.6 The doors of the cubicle shall be fitted with a sliding bolt and barrel locking arrangement that accept a padlock. Access to the emergency shut off valve must however be possible without requiring a key to unlock the cubicle door.
- 5.7 The cubicle shall be build on a concrete base.
- 5.8 The bullet type hinges welded to the doors and frame shall be lined up along two axes using a straight edge, securely clamped, tack welded, checked for alignment and smooth operation with doors before finally welding together.
- 5.9 The doors shall be hot dipped galvanized after manufacture. All sharp edges and dross formed after galvanizing shall be removed before painting. A designated representative must inspect and accept the general quality of the complete unit **before** galvanizing.
- 5.10 The hinges shall be cleaned out after galvanizing before installing the doors. To ensure smooth operation, insert a small amount of water proof grease with consistency NLG3 into each hinge before assembly. The grease must not squeeze out of the hinges and prevent proper paint adhesion.
- 5.11 After installing the doors and verifying correct alignment and operation, small tack welds min. 2mm high shall be placed at the bottom sides of the hinge pins so that the doors cannot be lifted off when opened. Only the hinge pin must be exposed during the welding process to prevent damage to the other surfaces. The welded spots shall be painted with an organic zinc paint containing 96% zinc by weight when dry.
- 5.12 After galvanizing the unit shall be cleaned with an approved phosphate based cleaner before painting. The use of the cleaner shall be as per the manufacturer's requirements.

### **4. CUBICLE BASE**

- 6.1 The gas installation contractor shall provide the cubicle base as shown on the drawing. In some cases the cubicle will be installed on existing concrete where only the infill concrete base is required. Where no existing concrete is present, a 150 mm thick base shall be cast so that a 600 mm wide skirt level with the surrounding ground is formed around the cubicle.
- 6.2 The concrete strength shall be at least 20MPa after 28 days. Hand mixing is allowed provided the mixing ratios as recommended by the Portland Cement Institute are adhered to.
- 6.3 Straight and sturdy form work shall be used to box the concrete while placing and not set. Proper tamping shall be done during the placing of the concrete to ensure no honeycombing is formed.
- 6.4 The concrete shall be finished with a wood float and the edges rounded with a rounding tool with a minimum radius of 15 mm. Excessive floating that cause segregation is not allowed.

- 6.5 The concrete shall be kept damp for at least seven days during the curing process. Hessian cover or an approved sealer developed for the purpose may be used.

## **5. L.P. GAS CYLINDERS**

- 7.1 The L.P. gas cylinders shall conform to SANS 10019.
- 7.2 The number and size of cylinders to be installed, fully charged, is as per the price schedule.
- 7.3 The cylinders shall be properly secured with the safety chains as shown on the gas cubicle drawing. All connections to the gas manifold shall be done and properly checked for leaks.
- 7.4 Damaged cylinders will not be accepted.
- 7.5 The gas installation contractor shall provide the Engineer with a receipt and supporting documents as proof of payment for the cylinder deposits.

## **6. ISOLATING VALVES**

- 8.1 Ball valves with stainless steel body and ball, PTFE seals, capable of withstanding temperatures in excess of 200°C and approved for use on LPG shall be used. The valves shall be fitted with union connections and come complete with operating levers that is positioned 90° to the direction of the pipe when the valve is closed. Flimsy, aluminium, puter and handles less than 90mm long will not be accepted.

## **9. PRESSURE REGULATING VALVES**

- 9.1 Pressure regulating valves shall be approved for use with L.P.G. and shall be complete with safety relief valve, large size threaded vent for the relief valve, shield over the vent opening, mounting brackets and shall be approved according to SANS 1237.
- 9.2 Where a 2<sup>nd</sup> stage relief valve is installed inside a building, the vent shall be piped outside to a safe position and the opening shall be fitted with a shield to prevent dirt from accumulating and blocking the pipe.
- 9.3 The regulator shall be specific for LPG and shall be calibrated and adjusted to ensure an operating pressure less than or equal to 150 kPa for first stage regulation and less than or equal to 5 kPa for second stage regulation. Where the pipe length to the equipment is less than 9 meters, single stage regulation shall be used with a regulating pressure less than or equal to 5 k Pa. The type of regulation shall be determined by the gas flow requirement. The price schedule shows both systems for variation purposes.

## **10. PIPING – HIGH PRESSURE**

### **NOTE:**

**Should long pipe runs be required TracPipe, equal or other approved shall be used This high pressure pipe shall be in an encased concrete 110mm sleeve at least 200mm all around for the necessary protection against damage. Proper markings must be brought onto the route, indicate that a high pressure gas line is present.**

- 10.1 The high pressure piping between the manifold and gas cylinder shall be min. 8 mm diameter of the braided flex type, brass couplings, with hand wheel bull nose connection and shall be approved for use with LPG. The connecting pipes shall be at least 600 mm long but shall not exceed 1000 mm in length and shall be certified to withstand a minimum test pressure of 3000 k Pa.

- 10.2 The manifold shall be manufactured from seamless steel pipe, at least schedule 80, conforming to API Spec 5L. All pipe threads and fittings shall be NPT. Taper NPT and BSP threads shall under no circumstances be interchanged. The fittings shall be solid forged and the same schedule or better as the pipe. All fittings and pipes shall be with material certificates confirming conformance to the relevant specifications. These material certificates shall be included in the data book for the installation.
- 10.3 If the manifold is a welded construction, all welding and weld procedures shall be according to ASME IX. All welding shall be done by a certified welder qualified for the relevant weld procedure. Copies of the weld procedure and welder qualification for the procedure shall be included in the data book.
- 10.4 The manifold shall be manufactured according to SANS 10087; each leg shall be clearly marked with a serial number, allowable working pressure, test pressure and all other identification as required by SANS 10087.
- 10.5 If gas cylinders without a pressure relief valve are fitted to the manifold, each side of the manifold shall be connected to a safety relief valve sized to protect the system in the case of a fire.
- 10.6 Each section of the manifold shall be fitted with a pressure regulator with built in relief valve before the change over valve.
- 10.7 The manifold shall be mounted with approved fire proof brackets against the supporting structure. One bracket shall be used for each gas cylinder connected and if less than four cylinders are used, a minimum of four brackets shall be used.
- 10.8 The mounting height of the manifold shall be at least 150 mm above the highest point of a 48 kg gas cylinder.

## **11 PIPING – LOW PRESSURE**

- 11.1 All piping shall be done with class II phosphorus deoxidised copper as per SANS 460. The diameter shall be based on the required flow to the equipment but shall not be less than 12mm.
- 11.2 All joints shall be swaged at least one diameter deep and brazed with a BAg series self fluxing brazing filler as per AWS A5.8.
- 11.3 Where necessary to dismount equipment union joints shall be installed only in strategic, safe and easily accessible locations. Compression fittings will not be allowed.
- 11.4 Piping shall be surface mounted with galvanised brackets with insulation rings to prevent the copper tube touching the bracket thus preventing galvanic corrosion. The material of the insulating rings shall not deteriorate due to UV light, ozone other elements generally associated with external installations. The brackets shall be fixed with zinc plated masonry anchors with a minimum hole size of 6mm. Wooden wall plugs will not be accepted.
- 11.5 The pipe support bracket spacing shall be as specified in SANS 10087.
- 11.6 All holes into building structures shall be core drilled, sleeved and sealed. Where pipes pass through separation of occupancy and tenancy, only galvanised steel pipe sleeves shall be allowed. The cut ends of the galvanised sleeves shall be treated with organic zinc paint containing at least 96% zinc by weight when dry. The copper tube shall be centralized and sealed in the sleeve with a non corrosive material that have a fire rating better or equal to the wall through which it is installed. The copper shall be insulated from the sleeve and in no way make contact with the galvanized sleeve.
- 11.7 Pipe joints shall not be allowed inside sleeves.

## 12 **GENERAL REQUIREMENTS**

- 12.1 In addition to the signage required, a plastic laminated instruction cards showing the operation and safe use of LPG as well as actions to be taken during an emergency shall be fixed in a water proof frame with a clear polycarbonate face to the inside front of the cubicle door. This instruction card shall be visible from the outside of the cubicle as well as from the inside of the door when it is opened.
- 12.2 All builders rubble, un-used material and off cuts generated by the contractor shall be removed from the site. The installation shall be neat and tidy, to the requirements of the engineer, before hand over.
- 12.3 The complete installation shall be pressure tested with an inert gas according to the requirements of SANS 10087. After the successful completion of the pressure tests, an operational test lasting at least 30 minutes shall be done with LPG. The system shall however be bled to ensure that no air/gas mixture exist anywhere in and around the system. Test certificates shall be issued after the successful completion of the tests.
- 12.4 The contractor shall ensure that the pressure tests are witnessed by the engineer. The system shall however be fully compliant ant pre tested before informing the inspector at least seven days prior to the final pressure test.

## 13 **Extraction**

- 13.1 The extraction canopy shall be as per the attached layout drawing.



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## **ADDENDUM H**

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### **IDT Beneficial Reconciliation Form (BRF)**

### **IDT Addendum to the JBCC**

[illegible]

[illegible]



## ADDENDUM I

To the

### THE JBCC PRINCIPAL BUILDING AGREEMENT

NAME OF PROJECT: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## INTRODUCTION

**WHEREAS**, the Independent Development Trust (“IDT”) made an Offer of Appointment and the Contractor has accepted such appointment subject to the conditions stipulated in the aforesaid Offer of Appointment Letter, which conditions include signing of the JBCC Agreement, Edition ..... (hereinafter referred to as “Main Agreement”).

**AND WHEREAS**, this addendum shall form part of the Main Agreement between the Employer and the Contractor.

### 1. ADDENDUM TO THE MAIN AGREEMENT

- 1.1 This Agreement will constitute an Addendum to the Main Agreement as contemplated herein;
- 1.2 The Terms of Reference, Accepted Proposal or Tender, Standard Conditions of Tender, Special Conditions of Tender and adjusted Priced Bills of Quantities shall form part of the agreement between the Contractor and the Employer;
- 1.3 This Addendum will be deemed to incorporate, with or without variation, all the provisions of the Main Agreement, unless the context clearly requires otherwise;
- 1.4 All words and phrases used in this Addendum which are defined in the Main Agreement, will bear the same meaning assigned to them in the Main Agreement; and
- 1.5 All references in the Main Agreement to “the/this Agreement” itself, will be deemed to be references also to the Main Agreement duly amended by this Addendum.

## **1.6 Interpretations and Definition**

1.6.01 **Financial Implications** shall mean the variation amount over and above the awarded contract sum.

## **2. SPECIAL CONDITION**

If there is any conflict between the contents or any part of this Addendum and the contents or any part of the Main Agreement and other annexures, the content of this Addendum shall prevail.

## **3. WAIVER OF CONTRACTOR'S LIEN**

- 3.1 The Contractor hereby waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works to be executed on the Site.
- 3.2 The Employer, as an Organ of State, shall not be required to provide payment guarantees.

## **4. ASSIGNMENT OF RIGHTS OR OBLIGATIONS**

- 4.1 Neither **party** shall assign or cede rights or obligations without the written consent of the other **party**, which consent shall not be unreasonable withheld.
- 4.2 Where the Contractor intend to cede any right to monies due or to become due under this agreement as security in favour of a financial institution, a written consent in accordance with clause 4.1 above, shall be obtained from the Employer prior to entering into such cession.
- 4.3 Any cession entered into without the necessary written consent from the either party, shall be null and void.

- 4.4 The Employer shall not consent to a cession of monies due or to become due under this agreement as security in favour of a financial institution, unless such financial institution submitted to the IDT a Valid Tax Clearance Certificate, is registered as a credit provider in terms of the National Credit Act and as a vendor in the IDT's Vendor Management System.

## **5 INTERIM PAYMENT**

- 5.1 The **Employer** shall, in accordance with clause 8.2.3 of the treasury regulation of March 2005, pay to the **Contractor** the amount certified in an interim **payment certificate** within **thirty (30) calendar days** of the date of submission of the **payment certificate**".
- 5.2 Default interest, where applicable, shall only be effective after the 30 calendar days of the date of receipt of the interim **payment certificate from the Principal Agent**.
- 5.3 The Employer shall be entitled to apply a set-off against a legitimate and liquid claim against the Contractor from which a valid invoice has been received.

## **6 TAX COMPLIANCE MEASURES**

- 6.1 The Contractor hereby grant confirmation that SARS may, on on-going basis during the contract term, disclose the Contractor's tax compliance status to the employer.
- 6.2 Should the Contractor appoint a sub-contractor to execute a portion of a work in excess of the threshold (currently 25%) prescribed by the National Treasury, the Contractor must ensure that a sub-contractor is tax compliant and remains tax compliant for the full duration of the contract. The contractor shall obtain a written consent from its sub-contractors confirming that SARS may on on-going basis during the contract term, disclose the sub-contractor's tax compliance status to the employer.

- 6.3 The Contractor shall submit a valid tax clearance certificate within 10 working days from the date of expiry of the tax clearance certificate. The Employer reserve the right to demand a valid Tax Clearance Certificate prior to making any payment to the Contractor, should it become aware that the tax clearance corticated has expired.
- 6.4 Unless the Employer receive a written confirmation that the Contractor has challenged its tax compliance status with SARS, the Employer shall not process any payment to the Contractor, if 30 days has lapsed since the written notice by the Employer and the Contractor has failed to remedy its tax compliance status.
- 6.5 Employer's non-payment of the Contractor's invoice in accordance with clause 6.4 above shall not absolve the contractor from performing its obligation in terms of the contract.
- 6.6 Unless the Employer receives a written confirmation that the Contractor or sub-Contractor has challenged its tax compliance status with SARS, the Employer shall be entitled to cancel the contract with the Contractor or instruct the Contractor to cancel its contract with the Sub-Contractor.
- 6.7 Where a Contractor is a JV, each party to a JV must be tax complaint and remains tax compliant for the full duration of the contract, failing which, the Employer shall invoke paragraph 6.4 or 6.6 above.

## **7. APPROVAL OF VARIATION ORDERS**

- 7.1 Upon receipt of the Variation Order (VO), the Principal Agent must professionally consider the merits of the Variation Order and make a recommendation to the Employer.
- 7.2 The Principal Agent shall not have the power to approve any deviation or variation which has financial implications on the Employer without the necessary written approval of the Employer, except under emergency circumstances wherein failure to undertake the work may result in loss of life.



- 7.3 The Employer must communicate the approval of a Variation Order in writing to the Principal Agent and the Principal Agent shall, upon receipt of confirmation of the approval of the VO, issue the necessary Contract Instruction to the contractor to undertake the works.
- 7.4 The Contractor shall not commence with any Variation Order Works without the written approval of the Variation Order from the Employer, except under circumstances mentioned in paragraph 7.2 above.
- 7.5 Should the Contractor undertakes the Variation Order Works without the necessary written approval of the Variation Order from the Employer, the Contractor shall be entirely liable for any financial and any related implications and hereby indemnify and hold harmless the Employer from and against any and all claims, actions, damages, liabilities, injuries, costs, fees, expenses, or losses, including and without limitation, reasonable attorney's fees and costs of investigation and litigation, whatsoever which may be incurred by, or for which liability may be asserted against, the Employer arising out of the Contractor's performance or non-performance of unauthorized works, but only to the extent caused by the negligent acts, errors or omissions of the Contractor.
- 7.6 The Contractor shall not accept any instructions from any party, including beneficiary Department, other than the Principal Agent.

## **8. JOINT VENTURE AGREEMENT**

- 8.1 Should the Joint Venture Agreement be dissolved or any of the JV partner pull out the JV Agreement for any reasons whatsoever, the Employer hereby reserve its right to terminate the contract with immediate effect.
- 8.2 Should the Employer decide not to terminate the contract upon the dissolution of the JV Agreement and the replacement JV partner does not meet the

BBBEE threshold stipulated in the tender document, the IDT shall be entitled to cancel the contract with immediate effect.

- 8.3 Should the BBBEE status of the Joint Venture be changed to a lower rate than the bidding rate, based on legislation applicable at the closing date of the
- 8.4 tender, the IDT shall be entitled to cancel the contract.

## **9. BREACH**

9.1 In the event that the contractor: -

- 9.1.1 commits an act of insolvency; or
- 9.1.2 is placed under a provisional or final winding-up or judicial management order; or
- 9.1.3 is placed under or applied for business rescue; or
- 9.1.4 makes an assignment of more than 25% of either its right and/or its obligation for the benefit of the third party without the written consent of the employer; or
- 9.1.5 the Contractor is registered or fails to renew his registration with the CIDB or changes directorship during the course of the project, resulting in the contravention of BBBEE statutory requirement; or
- 9.1.6 fails to satisfy or take steps to have set aside any judgment taken against it within 14 (Fourteen) business days after such judgment has come to its notice,

then the other Employer will be entitled to terminate the Agreement on written notice.

Signed at ..... on this the ..... day of .....202..

**AS WITNESSES:**

1. \_\_\_\_\_  
For and on behalf of the **Employer:**  
(.....), in his/her  
capacity as the -----

2. \_\_\_\_\_  
For and on behalf of the **Employer:**  
(.....), in his/her  
capacity as the -----  
-----.

Signed at ..... on this the ..... day of .....202...

**AS WITNESSES:**

3. \_\_\_\_\_

4. \_\_\_\_\_  
For and on behalf of the **Contractor:**  
.....i  
n his/her capacity as  
.....,  
who hereby confirm that he/she is  
duly authorized.

**Contract**  
**BID No: DOEEC/01/2022/2023**