DETAILED ELECTRICAL SPECIFICATION

This specification has been revised as indicated below. Please destroy all previous revisions.

REVISION NO.	DATE	PREPARED BY NAME AND INITIALS	REVIEWED/CHECKED BY NAME AND INITIALS	PAGES

APPROVALS	SIGNATURE	DATE
Engineer		
Client		

DETAILED ELECTRICAL SPECIFICATION

TABLE OF CONTENTS

DETAILED ELECTRICAL SPECIFICATION

A. PREAMBLE

Ngolela Engineering was appointed by Bhadama Projects on behalf of the Development Bank of Southern Africa (DBSA) to offer professional electrical engineering services to re-design and oversee the implementation of the electrical infrastructure upgrade inside the Khandisa Primary School. The scope of the electrical activities entails the installation of new energy efficient lighting, new power skirting, small power supply, essential supply circuits and finally Lightning Protection and Earthing Equipment.

The overall scope of the renovation work to be done inside the Khandisa Primary School building will entail the following,

- Supply and Installation of new LV distribution and sub distribution boards within various blocks forming part of Khandisa Primary School,
- Supply and installation of small power and lighting within various blocks forming part of the school buildings,
- Supply and installation of a fully-fledged public address system,
- Supply and installation of a fully-fledged intruder detection alarm system,
- Commissioning and handover of the new infrastructure and finally
- Removal and disposal of old infrastructure

The electrical installation work would further entail a supply and installation of lightning protection and earthing equipment in selected blocks.

DETAILED ELECTRICAL SPECIFICATION

1.0 GENERAL

The Standard Specification shall apply unless otherwise indicated in this section.

The drawings issued herewith and listed in the relevant section are to be read in conjunction with the specification and all items mentioned, together with all ancillary equipment necessary for the correct installation, operation and full compliance with the Standards and Codes must be provided.

The Tenderer shall, at all times of tendering, draw the Employer's attention to any omission or discrepancy between the specification and the drawings and request from him clarification of details and responsibilities.

It is the responsibility of the Tenderer to ensure that all quotations obtained from the manufacturers and suppliers are complete in their entirety and must include all equipment and accessories necessary for compliance with the current practice and the efficient and proper functioning of the installation.

If any such items of equipment, brackets and accessories, etc., have been omitted from a supplier's quotation, or incidental work is necessary, the Tenderer must include for all such items and work in the tender.

1.1 STANDARDS AND REGULATIONS

The entire installation shall be completed to the satisfaction of the Engineer and shall be carried out in accordance with the following:

- The current edition of Code of Practice for the Wiring of Premises as issued by the South African Bureau of Standards (SANS 10142)
- The Standard Electrical Specification included in this document.
- The Occupational Health and Safety Act No. 85 of 1993.
- The Municipal by-laws and any special requirements of the Supply Authorities of the area or district concerned.
- Local Fire Regulations

1.2 SCOPE OF WORK

The scope of the electrical section of this contract shall cover the supply, delivery, storage, fabrication, erection, installation, replacement, removal and commissioning of the electrical equipment as indicated.

All equipment offered and installed shall comply in all respect with the standard requirements of the SANS 10142 for the wiring of premises and all other relevant SANS or statutory regulations and/or specification as well as the OHSA Act, Act 35, 1993.

The contractor shall supply and install fully functional systems. All items necessary to complete the installation shall be deemed to be included in the price even though the principle item has been included in the bill **i.e.** fasteners, brackets, bolts, screws, terminals, glands, contactors timers etc.

The electrical contractor shall be the main contractor. The electrical contractor shall provide his detailed resume and credentials for acceptance by the Engineer/client. Such details shall include all relevant licenses i.e. installation license, contractors registration as well as proof of good standing with workmen compensation, industrial council etc.

DETAILED ELECTRICAL SPECIFICATION

The contractor's responsibility shall include however not be limited to the following principle items:

- New LV Distribution Boards,
- Small Power and interior and exterior Lighting, and finally
- Lightning Protection and Earthing.

The work to be done will be done whilst the Khandisa Primary School building site is occupied and as such should be done with minimum disruptions to the day to day activities within the Khandisa Primary School premises.

1.3 NATURE OF CONTRACTS

This contract will be a "sub-contract" and will run in parallel with other installation contracts. The building contractor will be the Principal Contractor.

1.4 NATURE OF BUILDING CONSTRUCTION

GENERAL

The site comprises of a number single level buildings. The installation work will affect most of the existing buildings found within the Khandisa Primary School site.

SITE

Due care must be taken to ensure that any existing services within the surroundings, are not disturbed or disrupted. Access is freely available subject to the client's strict security arrangements.

1.5 CO-OPERATION

The Electrical Contractor shall co-operate with other suppliers and installers of other services insofar as concerns the supply of all information required by the installers of such services, and shall assist such other installers in the event any difficulties which they may experience with drawing in of their cables into conduit or channel provided for their contract installations.

NOTICES

The Electrical Contractor shall issue all notices and make the necessary arrangements with KwaZulu Natal, Provincial Department of Education, Eskom, City of uMhlathuze Municipality, Telkom, and other Authorities as may be required with respect to the installation. The Relevant Contractor will be held responsible for damage to any existing services brought to his attention by the relevant authorities and will be responsible for the cost of repairs.

1.6 ELECTRICAL EQUIPMENT

All equipment and fittings supplied must be in accordance with this specification, suitable for the relevant supply voltage and frequency and must be approved by the client's representative.

1.7 DRAWINGS

The drawings generally show the scope and extent of the proposed work and shall not be held as showing every minute detail of the work to be executed.

DETAILED ELECTRICAL SPECIFICATION

The position of power points, switches and light points that may be influenced by built-in furniture or equipment must be established on site, prior to these items being built in.

1.8 BALANCING OF LOAD

The Electrical Contractor is required to balance the load as equally as possible over the multiphase supply.

1.9 WORK SEQUENCE

The sequence, in which the work must be carried out, must be established in consultation with the client's representative and with the engineer.

1.10 SUPERVISION

The Electrical / Electronics works shall at all times, for the duration of the contract be carried out under the supervision of a skilled and competent Accredited Installation Technician representing the contractor, who will be able and authorized to receive and carry out instructions on behalf of the contractor. A sufficient number of workmen shall be employed at all times to ensure satisfactory progress of the work.

1.11 SUPPLY OF MATERIAL

DBSA reserves the right to supply any item of material or equipment required for this service.

The contractor shall take delivery and install such material or equipment.

1.12 SERVICE CONDITIONS

All plant shall be designed for the climatic conditions applicable to the site.

2.0 TECHNICAL SPECIFICATION
2.1. LOW VOLTAGE DISTRIBUTIONS SYSTEM
2.1.1 LV SUB-DISTRIBUTION BOARDS

The reticulation system that has been adopted for the main power distribution from the main LV board to the different sub-distribution boards is a centralized one. There are a number of new distribution and sub-distribution boards that will be installed inside the Khandisa Primary School site.

The electricity supply authority for the Khandisa Primary School is Eskom. The new Khandisa Primary School building will receive electrical power via a 400 V, 3-phase, 4-wire, and 50Hz supply.

The components of the distribution and sub distribution boards found inside renovated Khandisa Primary School site are as detailed below,

2.1.1.0 MAIN LV DISTRIBUTION BOARD - DB–ADMIN

This main low voltage kiosk will be floor mounted with a fiberglass enclosure and with doors and will army khaki in color. This board shall feed to eight (8) sub-distribution boards which will be white in color. Three of the new sub-distribution boards will further feed six (6) more sub-distribution boards. All new LV distribution board shall be labeled accordingly with a correct legend card mounted on its surface.

DETAILED ELECTRICAL SPECIFICATION

2.1.1.1 SCHEDULE OF EQUIPMENT OF MAIN LOW VOLTAGE KIOSK

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 120 A TP 5kA isolator	(Main 400 V)

Distribution Section

1 x 60 A TP 5 kA MCB	(DB-COMPUTER)
1 x 60 A TP 5 kA MCB	(DB-ADMIN)
1 x 40 A TP 5 kA MCB	(DB-INTER)
1 x 40 A TP 5 kA MCB	(DB-MP02)
1 x 40 A SP 5 kA MCB	(DB-GRADE R)
1 x 40 A SP 5 kA MCB	(DB-TTR)
1 x 60 A SP 5 kA MCB	(DB-KITCHEN)
1 x 40 A SP 5 kA MCB	(DB-GUARD)

2.1.1.2 SCHEDULE OF EQUIPMENT OF DB-ADMIN (EXISTING)

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 100 A TP 5kA isolator	(Main 400 V)

Distribution Section

1 x 60 A DP 5 kA MCB	(Local Main)
3 x 60 A DP EL	
7 x 20 A SP 5 kA MCB	(Plugs Circuits 1, 2, 3, 4,5 and 6)
3 x 15 A SP 5 kA MCB	(Lighting Circuit 1, 2, 3 and 4)
6 x 20 A SP 5 kA MCB	(Air-conditioning Equipment)

Prefitted Space

2 x SP MCB’s

2.1.1.3 SCHEDULE OF EQUIPMENT OF DB-GUARD

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60A DP 5kA isolator	(Main 230 V)

Distribution Section

1 x 60 A DP EL	(Local Main)
2 x 20 A SP 5 kA MCB	(Plugs Circuit 1 and 2)
2 x 15 A SP 5 kA MCB	(Lighting Circuit 1 and 2)
2 x 20 A SP 5 kA MCB	(Field Lighting)

DETAILED ELECTRICAL SPECIFICATION

Prefitted Space

1 x SP MCB's

2.1.1.4 SCHEDULE OF EQUIPMENT OF DB-MP02 (MULTIPURPOSE BLOCK 02)

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60 A TP 5 kA isolator	(Main 400 V)

Distribution Section

1 x 40 A SP 5 kA MCB	(DB-MP01)
1 x 40 A SP 5 kA MCB	(DB-5 CLASS)
1 x 60 A DP 5 kA isolator	(Local Main)
1 x 60 A DP EL	
3 x 20 A SP 5 kA MCB	(Plugs Circuit 1 and 2)
2 x 15 A SP 5 kA MCB	(Lighting Circuit 1 and 2)

Prefitted Space

2 x SP MCB's

2.1.1.4.1 SCHEDULE OF EQUIPMENT OF DB-MP01 (MULTIPURPOSE BLOCK 01)

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60A DP 5kA isolator	(Main 230 V)

Distribution Section

1 x 30 A SP 5 kA MCB	(DB-HOD)
1 x 60 A DP EL	
3 x 20 A SP 5 kA MCB	(Plugs Circuit 1 and 2)
2 x 15 A SP 5 kA MCB	(Lighting Circuit 1 and 2)

Prefitted Space

2 x SP MCB's

2.1.1.4.2 SCHEDULE OF EQUIPMENT OF DB-HOD

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60A DP 5kA isolator	(Main 230 V)

Distribution Section

1 x 60 A DP EL

DETAILED ELECTRICAL SPECIFICATION

2 x 20 A SP 5 kA MCB	(Plugs Circuit 1 and 2)
2 x 15 A SP 5 kA MCB	(Lighting Circuit 1)

Prefitted Space

2 x SP MCB's

2.1.1.5 SCHEDULE OF EQUIPMENT OF DB-INTER

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60A TP 5kA isolator	(Main 400 V)

Distribution Section

1 x 40 A SP 5 kA MCB	(DB-4 CLASS)
1 x 40 A SP 5 kA MCB	(DB-HOD 02)
1 x 60 A DP EL	
4 x 20 A SP 5 kA MCB	(Plugs Circuit 1 and 2)
3 x 15 A SP 5 kA MCB	(Lighting Circuit 1, 2 and 3)

Prefitted Space

2 x SP MCB's

2.1.1.5.1 SCHEDULE OF EQUIPMENT OF DB-4 CLASS

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60A DP 5kA isolator	(Main 230 V)

Distribution Section

1 x 60 A DP EL	
3 x 20 A SP 5 kA MCB	(Plugs Circuit 1,2 and 3)
3 x 15 A SP 5 kA MCB	(Lighting Circuit 1, 2 and 3)

Prefitted Space

2 x SP MCB's

2.1.1.5.2 SCHEDULE OF EQUIPMENT OF DB-HOD 02

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60A DP 5kA isolator	(Main 230 V)

DETAILED ELECTRICAL SPECIFICATION

Distribution Section

1 x 60 A DP EL	
3 x 20 A SP 5 kA MCB	(Plugs Circuit 1, 2 and 3)
3 x 15 A SP 5 kA MCB	(Lighting Circuit 1, 2 and 3)

Prefitted Space

2 x SP MCB's

2.1.1.6 SCHEDULE OF EQUIPMENT OF DB-COMPUTER (COMPUTER BLOCK)

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60 A TP 5kA isolator	(Main 400 V)

Distribution Section

1 x 100 A DP 5kA Isolator	(Local Main)
1 x 40 A SP 5 kA MCCB	(DB-MEDIA)
2 x 60 A DP EL	
10 x 20 A SP 5 kA MCB	(Plugs Circuit 1 to 10)
3 x 15 A SP 5 kA MCB	(Lighting Circuit 1 and 2)
2 x 20 A SP 5 kA MCB	(Air-conditioning Equipment)

Prefitted Space

2 x SP MCB's

2.1.1.6.1 SCHEDULE OF EQUIPMENT OF DB-MEDIA (MEDIA BLOCK)

Incoming Section

1 x Set of Surge Arrestors	(5 kA)
1 x 60A DP 5 kA isolators	(Main 230 V)

Distribution Section

1 x 60 A DP EL	
3 x 20 A SP 5 kA MCB	(Plugs Circuit 1, 2 and 3)
2 x 15 A SP 5 kA MCB	(Lighting Circuit 1 and 2)

Prefitted Space

2 x SP MCB's

2.1.1.6 SCHEDULE OF EQUIPMENT OF DB-KITCHEN (KITCHEN BLOCK)

Incoming Section

1 x Set of Surge Arrestors	(5 kA)

DETAILED ELECTRICAL SPECIFICATION

1 x 60A DP 5 kA isolators (Main 230 V)

Distribution Section

1 x 60 A DP EL
3 x 20 A SP 5 kA MCB (Plugs Circuit 1, 2 and 3)
2 x 15 A SP 5 kA MCB (Lighting Circuit 1 and 2)
1 x 30 A SP 5kA MCB (Geyser)

Prefitted Space

2 x SP MCB's

2.1.1.7 SCHEDULE OF EQUIPMENT OF DB-TTR

Incoming Section

1 x Set of Surge Arrestors (5 kA)
1 x 60A DP 5 kA isolators (Main 230 V)

Distribution Section

1 x 40 A SP 5 kA MCB (DB-TOILET)
1 x 60 A DP EL
5 x 20 A SP 5 kA MCB (Plugs Circuit 1, 2 and 3)
2 x 15 A SP 5 kA MCB (Lighting Circuit 1 and 2)
2 x 15 A SP 5 kA MCB (Ceiling Fans 1 and 2)

Prefitted Space

2 x SP MCB's

2.1.1.7 SCHEDULE OF EQUIPMENT OF DB-GRADE R

Incoming Section

1 x Set of Surge Arrestors (5 kA)
1 x 60A DP 5 kA isolators (Main 230 V)

Distribution Section

1 x 60 A DP EL
5 x 20 A SP 5 kA MCB (Plugs Circuit 1, 2 and 3)
2 x 15 A SP 5 kA MCB (Lighting Circuit 1 and 2)

Prefitted Space

2 x SP MCB's

DETAILED ELECTRICAL SPECIFICATION

2.2 CABLES AND WIRING

The contractor shall allow for the supply and installation of all copper cored PVC/SWA/ECC/PVC cables in accordance with latest SANS 1507. The contractor shall further allow for supply and installation of all cable termination in accordance with the latest and revised SANS 0142 code of practice for the wiring of premises.

All installed cables shall be tested by the contractor in accordance with the latest SANS 1507. Where cables sleeves are used the contractor shall ensure that a draw wire is installed as part of the supplied and installed cable sleeves. Where trenching is done the contractor shall allow for the trenching and backfilling of soil surface as well as the installation of cable markers as discussed and agreed with the Engineer.

The cables to be installed are the following

Start Point	End Point	Cable Size
Eskom CDU Box	LV KIOSK	70 mm^2 4 Core PVC/SWA/PVC/ECC
LV KIOSK	DB –DB-ADMIN	16 mm^2 4 Core PVC/SWA/PVC/ECC
LV KIOSK	DB-COMPUTER	16 mm^2 4 Core PVC/SWA/PVC/ECC
LV KIOSK	DB-MP02	10 mm^2 4 Core PVC/SWA/PVC/ECC
LV KIOSK	DB-GRADE-R	10 mm^2 2 Core PVC/SWA/PVC/ECC
LV KIOSK	DB-KITCHEN	16 mm^2 2 Core PVC/SWA/PVC/ECC
LV KIOSK	DB-GUARD	10 mm^2 2 Core PVC/SWA/PVC/ECC
LV KIOSK	DB-TRAINING	10 mm^2 2 Core PVC/SWA/PVC/ECC
DB-MP02	DB-MP01	6 mm^2 2 Core PVC/SWA/PVC/ECC
DB-MP02	DB-5 CLASS	10 mm^2 2 Core PVC/SWA/PVC/ECC
DB-COMPUTER	DB-MEDIA	6 mm^2 2 Core PVC/SWA/PVC/ECC
LV KIOSK	DB-INTER	10 mm^2 4 Core PVC/SWA/PVC/ECC
DB-INTER	DB-HOD 02 CLASS	6 mm^2 2 Core PVC/SWA/PVC/ECC
DB-INTER	DB-MEDIA	6 mm^2 2 Core PVC/SWA/PVC/ECC

TABLE 2 -1: Schedule of cables to be installed

2.2.1 CABLE TERMINATIONS

The Contractor shall allow to supply and install cable terminations in with the latest and revised SANS 0142 Code of Practice for the Wiring of Premises.

2.2.2 CABLE TESTS

The Contractor shall allow for the testing of all cables in accordance with the latest SANS 1507.

2.3. WIRING CHANNEL AND SLEEVES

The Contractor shall allow for the supply and installation of cable sleeves buried in the ground to carry cables across built up areas like floor slabs, paved areas and road surfaces. The sleeves shall be buries at a depth 800 mm below ground.

DETAILED ELECTRICAL SPECIFICATION

2.4 CONDUITS

All conduit work shall conform to the Code of Practice for Wiring of Premises SANS 0142 as amended and to SANS 950 for PVC conduit and metal conduits shall comply with SANS IEC 60614-2-1 Part 2 of SANS 1065 Parts 1 and 2. All conduits are to be installed flush and the Contractor shall ensure that all wiring and draw wires are installed timorously, prior to final building finishes being applied. Rectification of any damage caused by building finishes arising out of blocked conduits will be for the Contractor's account

No wires shall be drawn into the conduit until the conduit has been installed. Conduits should be at least 20 mm in diameter.

2.5 POWER SKIRTING

The Contractor shall allow to supply and install metal, 3 compartments 2 cover power skirting as Cabstrut Series 8 or similar and approved. The color of the power skirting shall be specified by the Engineer during the contract period. The power skirting shall be installed in the positions as shown on the drawings.

The rates for the power skirting in the Bills of Quantities shall include any internal or external bends, end caps, covers and blank cover plates and cradles.

It shall be noted that the specified color may not correspond to the manufacturer's standard color range.

2.6 POWER
2.6.1 SWITCHES AND SOCKET OUTLETS AND COVERPLATES

The Contractor shall allow supplying and installing commercial light switches, sockets and isolators in accordance with the general specification .All switches, sockets and other outlet cover plates shall have their respective distribution boards and circuit numbers engraved on the cover in an approved manner.

All cover plates shall be plastic, however, stainless steel screws shall be utilized and not plastic screws. All the new plug sockets to be used shall be the standard 16 A SSO and these shall be either be mounted on power skirting as indicated in respective drawings or on wall surface as indicated. All the new plug sockets and switches shall conform to SANS IEC 60669 and SANS IEC 60884.

All socket outlets for general use in new electrical installations shall include at least one socket that complies with dimensions of SANS 164-2.

2.7 LIGHTING
2.7.1 INTERIOR AND EXTERIOR LIGHTING

All the new fluorescent fitting to be installed shall have electronic control gear. The details of light fittings to be installed are given below,

DETAILED ELECTRICAL SPECIFICATION

Item	Type	Description
1.0	a	LED 12 W, 6000 K, recessed flat panel downlight luminaire with a white trim and IP 65 rated, and aluminium body and glass lens. The fitting to be SANS approved.
2.0	b	1200mm X 600mm, 2 x 18 W, T8 LED tubes surface luminaire with a low brightness diffuser, supplied complete with electronic ballasts and lamps. The fitting to be SABS approved.
3.0	c	1200mm X 600mm, 2 x 18 W, T8 LED tubes, Invincible Dust, Corrosion and Moisture Proof luminaire. The fitting to be SANS approved.
4.0	SL	12 LED lamps, red emergency high impact and heat resistant lens strobe light, weather resistant IP 65 rated, with a high impact resistant case. The fitting to be SABS approved.
5.0	e	Round 20 W LED, 4000K bulkhead luminaire with black trim and aluminum body and glass lens, supplied complete with lamp, as Beka 31126 or other approved.
6.0	f	1500 mm, 2 x 24 W, T8 LED open channel fitting, supplied complete with electronic ballasts, lamp holders and lamps and SABS approved.

TABLE 2-2: Schedule of interior light fittings to be installed

All light fittings installed in external areas shall have weather seal gasket to IP 54 standard to minimize moisture ingress. The quality and finish to conform to the appropriate SABS specifications.

2.8 SCHEDULE OF HEIGHTS

	ITEM	HEIGHT (To centre of unit) AFFL
1.	Plugs above Counter	1200
2.	Extractor fan outlet (if required)	TBA
3.	Light Switches	1400
4.	Power skirting	FFL
5.	Switched Socket Outlets	300
6.	Exterior Lights	2200
7.	Sleeves	800
8.	Cables	800

2.9 LABELLING

The Contractor shall allow for the labeling of all circuits, apparatus, switchgears, equipment, etc. by means of engraved plastic labels (black lettering on white), which are to be either bolted or screwed to the equipment panel. The labeling is to be submitted, in detail, to the Electrical Engineer for

inspection and permission to proceed before the labels are installed. Outlets shall be labeled by engraving the plastic cover plates of switched socket outlets and light switches.

3.0 LIGHTNING PROTECTION AND EARTHING

The electrical contractor shall ensure that the installation is earthed and bonded in compliance with SANS 10142, SANS10313 and SANS IEC 62305 : (1-3) and / or SABS 03 as amended and as indicated in the relevant drawings.

4.0 SCRAP MATERIAL

All the scrap material shall be removed and kept at a location to be advised by the engineer and thereafter it would have to be disposed off by the contractor in an environmentally friendly manner.

5.0 DRAWINGS

The below list of drawings apply to the installation work associated with the upgrade and renovations to be done at Mzwillili Primary School.

DRAWING	DESCRIPTION	REVISION
1907-ESP-00	Site Plan	A
1907-LPE-00	Lightning Protection and Earthing	A
1907-ESCH-00	Electrical Schematics	A
1907-EL, EP-01	Combined lighting and small power layout (Guard Block)	A
1907-EL, EP-02	Combined lighting and small power layout (Kitchen Block)	A
1907-EL, EP-03	Combined lighting and small power layout (Grade R Block)	A
1907-EL, EP-04	Combined lighting and small power layout (Media Block)	A
1907-EL, EP-05 (sheet 1)	Combined lighting and small power layout (Ground Floor-TTR)	A
1907-EL, EP-05 (sheet 2)	Combined lighting and small power layout (First Floor - TTR)	A
1907-EL, EP-06 (sheet 1)	Combined lighting and small power layout (Ground Floor – Block D)	A
1907-EL, EP-06 (sheet 2)	Combined lighting and small power layout (First Floor – Block D)	A
1907-EL, EP-07 (sheet 1)	Combined lighting and small power layout (Ground Floor – Block E)	A
1907-EL, EP-07 (sheet 2)	Combined lighting and small power layout (First Floor – Block E)	A

TABLE 5-1: Schedule of drawings