

## **SECTION 1**

### **1.1.1 Bill of Materials**

The following table contains the areas, the estimated distances, trenching requirements and number of amplifiers for the areas where additional PA system is required for the works. Please note the following:

- Horn1 :– LBC 3482/00
- Horn2– LBC 3428/00
- Cabinet:– LBC 3018/01
- Amplifier: – PRS-1P500

### **1. FED FROM SOR AMPLIFIER CUBICLES**

#### **1.1 South Gate**

<b>From</b>	<b>To</b>	<b>Distance (m)</b>	<b>Trenching (m)</b>	<b>Conduit</b>	<b>Speakers @ destination</b>	<b>Mounting Poles</b>
<b>SOR Amplifier A</b>	<b>2 Parkhomes</b>	362		362	4 Cabinet 2 horn1	-
<b>2 Parkhomes</b>	<b>Howden Workshops</b>	238	50	238	4 horn1	2
<b>Howden Workshops</b>	<b>South Gate</b>	100	100	-	2 horn1	2

#### **1.2 Units 1-5 Basement**

<b>From</b>	<b>To</b>	<b>Distance (m)</b>	<b>Trenching (m)</b>	<b>Conduit (m)</b>	<b>Speakers @ destination</b>	<b>Mounting Poles</b>
<b>SOR Amplifier B</b>	<b>Basement Midway</b>	40	-	40	-	-
<b>Basement Midway</b>	<b>Unit 1 (unit 5, unit 4, unit 3, unit 2 &amp; unit 1)</b>	260	-	260	1 Cabinet (toilet) 10 horn2	-
<b>Unit 3&amp;4 North transformer wall</b>	<b>North Ash Pump Cabin</b>	80	-	80	1 Cabinet 1 horn2	-
<b>North transformer wall</b>	<b>Condenser SPO Cabins (5 off) (1 cabin / unit)</b>	45 x 5 = 225m	-	45 x 5 = 225m	(1 cabinet & 1 horn2) x 5	-

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### 1.3 Unit 6-10 Basement

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers @ destination	Mounting Poles
SOR Amplifier C	Basement Midway	40	-	40	-	-
Basement Midway	Unit 10 (Units 6-10)	260	-	260	1 Cabinet (toilet) 10 horn2	-
Unit 7&8 South transformer wall	South Ash Pump Cabin	80	80	80	1 Cabinet 1 horn2	-
South transformer wall	Condenser SPO Cabins (5 off) (1 Cabin /unit)	45 x 5 = 225m	-	45 x 5 = 225m	(1 cabinet & 1 horn2) x 5	-

### 1.4 Unit 1-5 Coal Bunkers, North Incline & Turbine Floor Toilets 1-5

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers @ destination	Mounting Poles
SOR Amplifier D	Coal bunkers Midway	150	-	150	-	-
Coal bunkers Midway	Unit 1 (Units 1-5)	200	-	200	10 horn2	-
Turbine Floor Midway (Next to U6)	U1-5 Turbine Floor Toilets	275	-	275	6 horn2 ( BT6, BT3, BT2, OilBrn, Babcock)	-
Turbine Floor Midway (Next to U6)	Shift Supervisor CW Plant Offices	100	-	100	5 Cabinets (Offices)	-
South wall middle	Bottom North Incline conveyors	230	-	230	5 horn2 (Incl FO Pmphse)	-

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### 1.5 Unit 6-10 Coal Bunkers, South Inclines & Turbine Floor Toilets 6-10

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers @ destination	Mounting Poles
SOR Amplifier E	Coal bunker Midway	150	-	150	-	-
Coal bunker Midway	Unit 10 bunker	200	-	200	10 horn2	-
Turbine Floor Midway	Station Cleaner rooms (Next to U6)	80	-	80	3 horn2	-
Station Cleaner Rms (Next to U6)	U6-10 Turbine Floor Toilets	80	-	80	2 horn2 (BT8, BT12)	-
South wall middle	Bottom South Incline conveyors	230	-	230	5 horn2	(incl FO Pmphse)

## 2. FED FROM STORES AMPLIFIER CUBICLES

### 2.1 South Contractor's Yard

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers @ destination	Mounting Poles/comment
Amplifier (Existing)	Stores Building Exit	100		100		-
Building Exit	Njabula Hall	150	100	50		-
Njabula Hall	Sandblasting Building	60	60	-	2 Horn1 (South helipad)	-
Njabula Hall	Contractor's site	300 +100	300+100	-	12 Horn1	-

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## 2.2 Compressors

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers @ destination	Mounting Poles
Stores Building Amp (existing)	Compressors & Toilets	60	30	30	3 Horn1	-

## 3. FED FROM OUTAGES AMPLIFIER CUBICLES

### 3.1 Coal Under-Staithes 1, 2, 3 & 4 & Rotek Ash Workshop

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers @ destination	Mounting Poles/comments
Amplifier AA	Building exit	25	-	-	-	-
Building exit	Pipe trench	16	16	-	-	-
Pipe trench	Incline	30	30	-	-	-
Incline	Under staithe entrance	83+4	-	83+4	-	-
Under staithe entrance	Staithe 1 & 3	100	-	100	4 horn2	-
Under staithe entrance	Staithe 2 & 4	160	-	160	5 horn2	Incl Toilets
Staithe 3	Rotek Ash Workshop	200	100	-	4 horn2	-

### 3.2 Coal Over-Staithes & Coal Workshops

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers @ destination	Mounting Poles
Amplifier BB	Building exit	25	-	-	-	-
Building exit	Pipe trench	16	- same as above	-	-	-
Pipe trench	Incline	30	- same as above	-	-	-

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Incline	Under staithe entrance	87	-	83+4	-	-
Under staithe entrance	Staithe 2 & 4	80+100	-	180	4 horn2	-
Under staithe entrance	Staithe 1 & 3	80+150	-	230	4 horn2	-
Staithe 3 (eos3)	Rotek – Coal Workshop	200	100	100	4 horn1	-
Roshcon Workshops	Coal truck gate	300	300	-	2 horn1	1

#### 4. FED FROM Gigawatt Park AMPLIFIER CUBICLES

From	To	Distance (m)	Trenching (m)	Conduit	Speakers destination @	Mounting Poles
Building exit West (existing)	Car Wash	110	110	-	2 horn1	1
Building exit North	Tech & Ops	310	310	-	4 horn1	-

#### 5. FED FROM PROBUY AMPLIFIER CUBICLES

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers destination @	Mounting Poles
Engineering Offices Bldg (existing)	Mill Maintenance Workshop	20	3	10	2 horn1	-

#### 6. FED FROM OUTAGES AMPLIFIER CUBICLES

From	To	Distance (m)	Trenching (m)	Conduit	Speakers destination @	Mounting Poles
Canteen (existing)	ERI offices	50	50	-	2 horn1	1

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## 7. FED FROM OUTAGES AMPLIFIER CUBICLES

From	To	Distance (m)	Trenching (m)	Conduit	Speakers destination @	Mounting Poles
Welding & Fabrication W/S (existing)	MMD Tea room	20	20	-	1 cabinet 1 horn1	-

## 8. FED FROM GWP AMPLIFIER CUBICLES

From	To	Distance (m)	Trenching (m)	Conduit (m)	Speakers destination @	Mounting Poles
Safety Island Building (existing)	North Assembly Point	110	83	11	4 horn1	-

## SECTION 2

### Additional project specifications:

#### 1.1.2 Power Supply & Stand-by Batteries

The following amplifier cubicles do not have amplifier back-up power supplies.

- Probuy
- SOR
- Boiler Eng
- Stores

So, the Contractor must supply and install the UPS and standby batteries to meet the following criteria:

- The amplifier cubicles shall be equipped with a UPS to supply power to the cubicle amplifiers to cater for a standby period of 24 hours and for a continuous broadcast of 30 minutes at full power.
- The UPS type shall be rack mounted and preferably be made by Tescom.
- An additional battery bank, preferably by Tescom to be connected to the UPS to ensure that the standby time is archived as mentioned in (a) above.
- The minimum life-span of the batteries shall be 5-10 years.
- The system must be capable of keeping the standby batteries in an optimal condition.

#### 1.1.3 Equipment Housing

If an additional housing is required, that new housing must meeting the following requirements:

- All system equipment shall be housed in 600mm x 600mm floor-standing cabinets.
- The housing shall be constructed of steel and be powder coated.
- The housing shall include the option of castors with braking mechanisms on all wheels.

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- (d) Housing shall have a smoked glass door in front and a steel access door at the rear.
- (e) Both, front and rear access doors must be lockable and be supplied with spare keys.
- (f) Housing shall have a 4-WAY fan tray on the inside of the roof of the housing
- (g) The height of the equipment housing shall be adequate to ensure that there is a minimum ventilation space of 1U between the components housed in it.

#### **1.1.4 Cabling**

- (a) All fire-rated speaker equipment must comply with EN54-54 specifications.
- (b) Speakers should have ceramic terminal blocks, thermal fuses, and metal fire-dome where applicable.
- (c) Speaker cabling shall be a minimum PH120 class as per EN50200/SANS10139.
- (d) Cabling may be of the indoor and outdoor use application and must have a minimum cross-sectional core of 1.5mm.

#### **3.4.11.1 General Cabling Requirements**

- (a) As a minimum, both indoor and outdoor, PH120 speaker cables shall be used.
- (b) All cabling is required to be protected against mechanical damage, chemicals, dust build-up and heat as per Eskom Standard Document: 240-56227443 Requirements for Control and Power Cables for Power Stations Standard. This cable standard will also apply to Eskom Facilities other than Power Stations.
- (c) Cables are required to only be terminated in instruments, junction boxes or other approved equipment.
- (d) No intermediate cable joints are permitted.
- (e) For the coal staithes and coal bunker areas, there will be suspended coal dust in environment. Proper sealing of speakers and junction boxes (must be IP65) shall be observed as not to cause fires from the exposed circuits.
- (e) Cables are required to be routed separately from electrical power cables and crossovers that bring signal and power cables into close proximity shall be made at right angles.
- (f) Where possible, existing cable racking and routes shall be re-used else new racking and conduits are provided for by the *Contractor*.
- (g) On Eskom premises where specific cable numbering conventions are in force, the *Contractor* follows these conventions otherwise the *Contractor* proposes a coding system/structure for the approval of the *Employer*

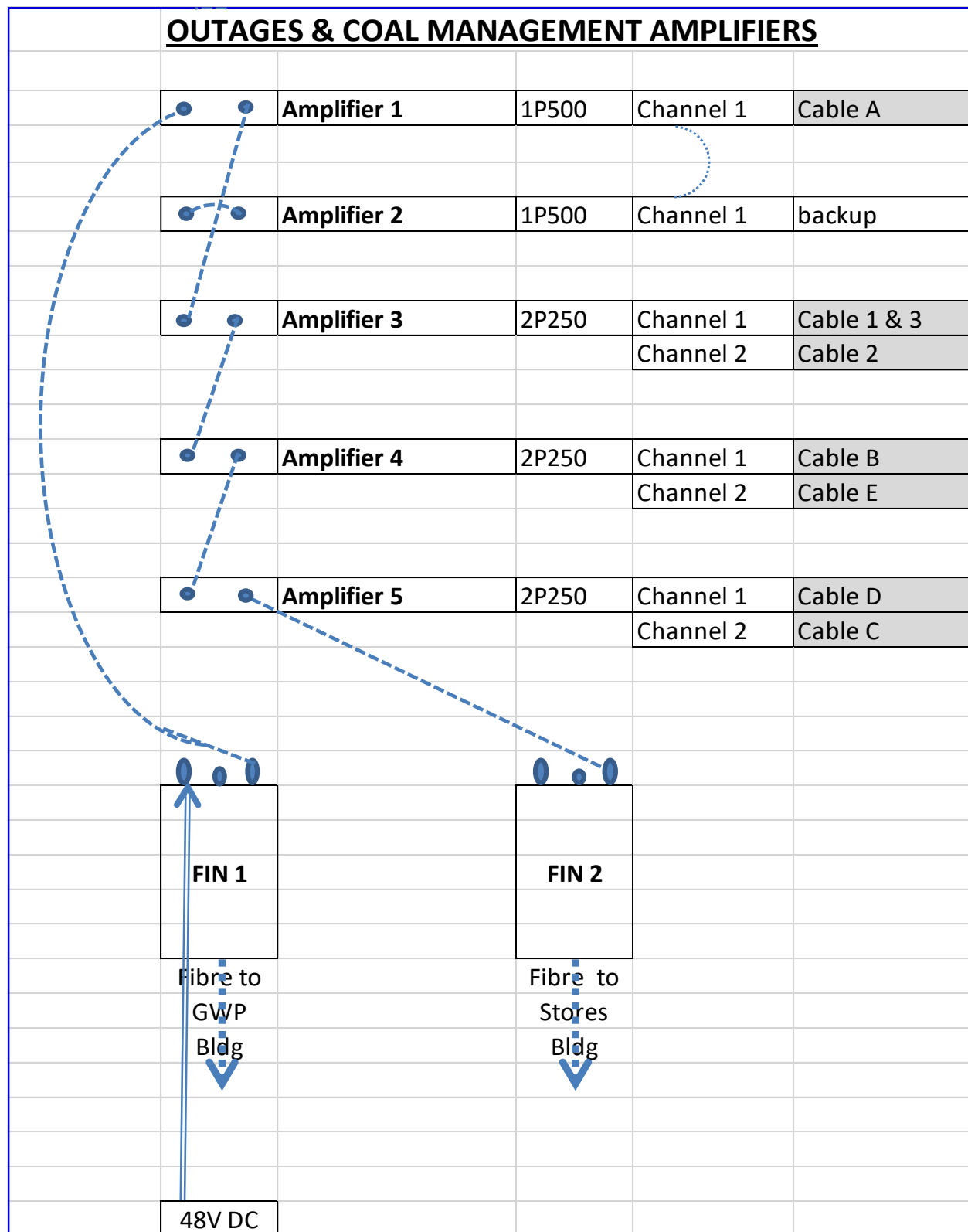
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## SECTION 3

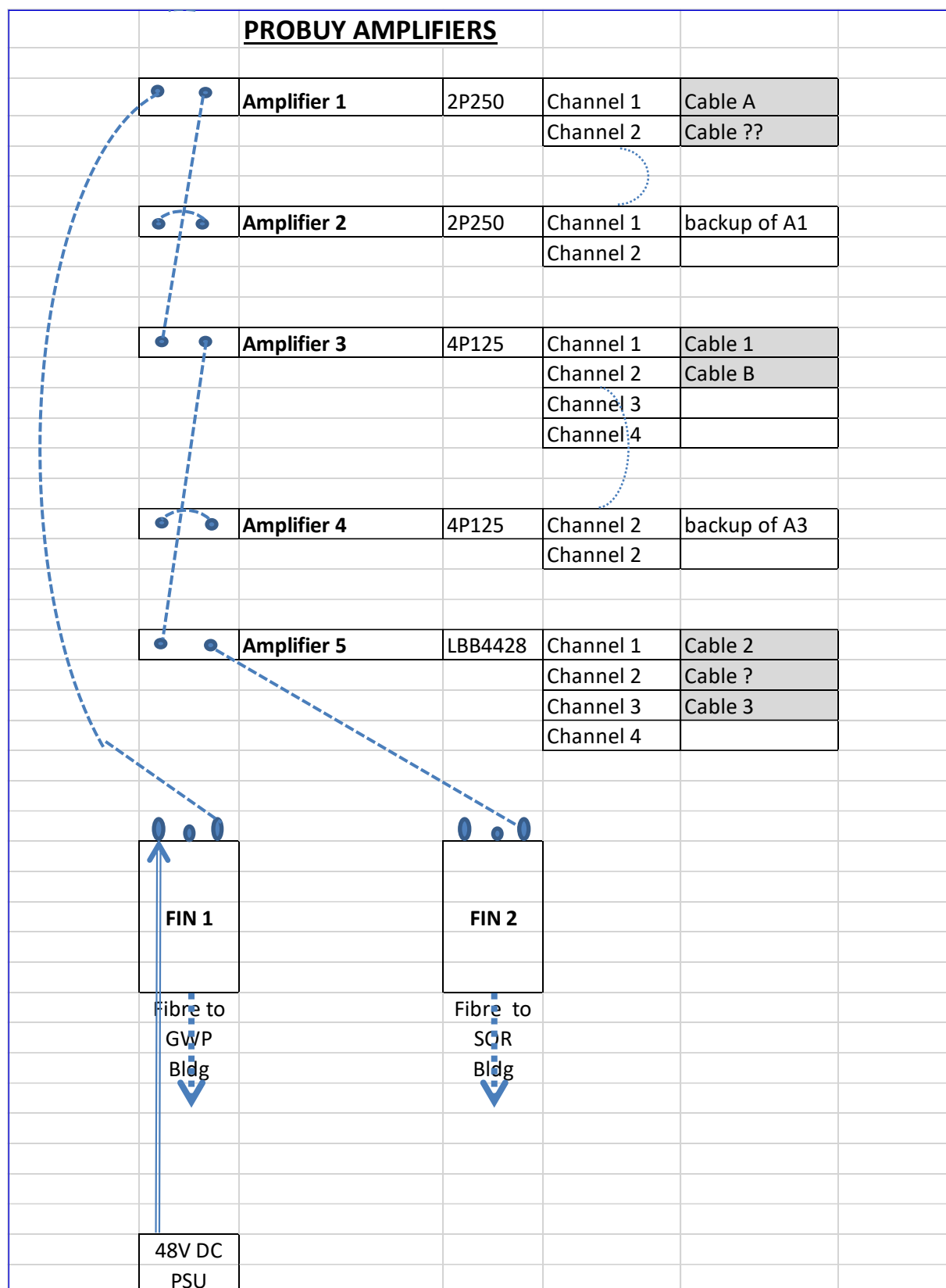
### SKETCH OF CURRENT AMPLIFIER CUBICLES



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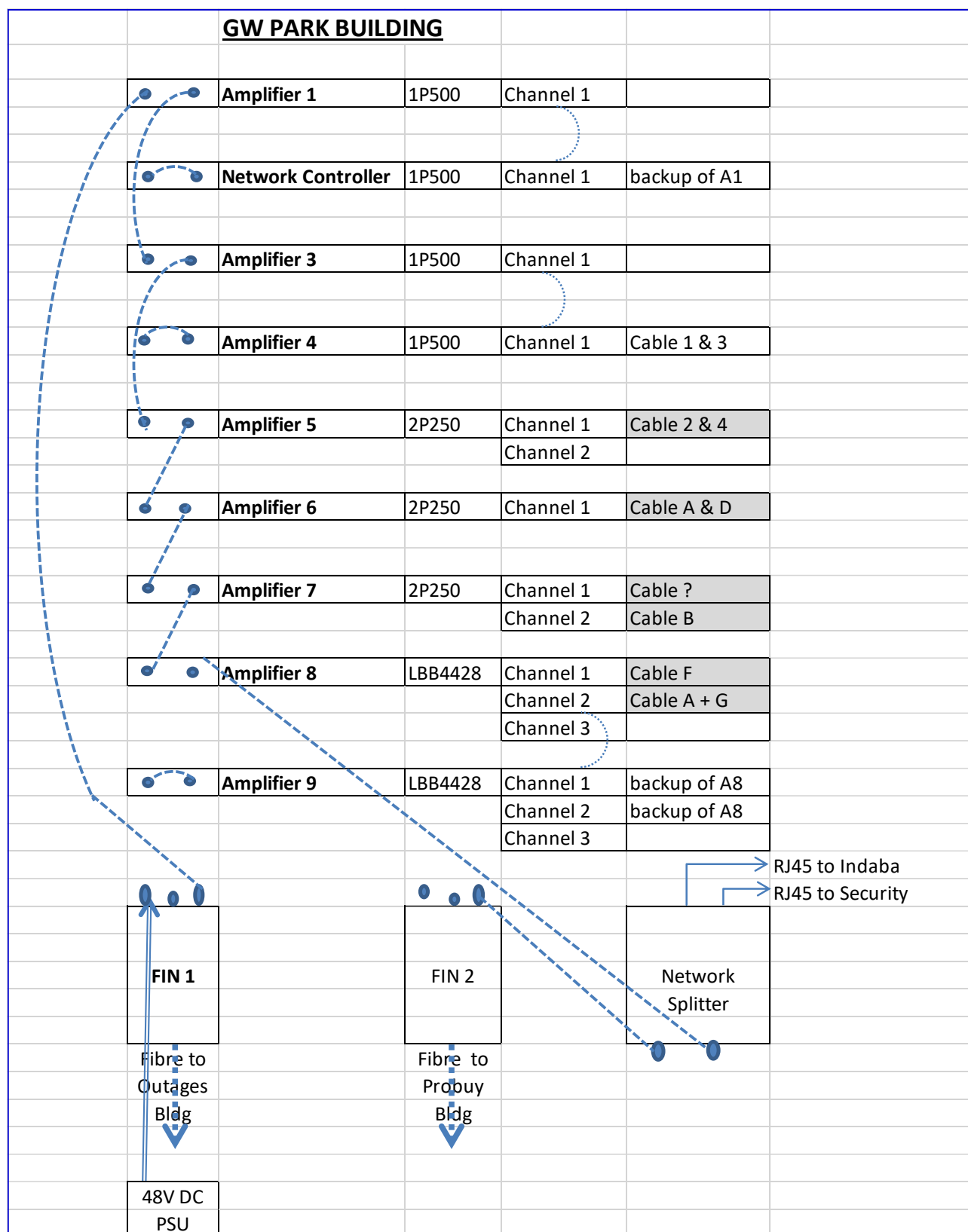


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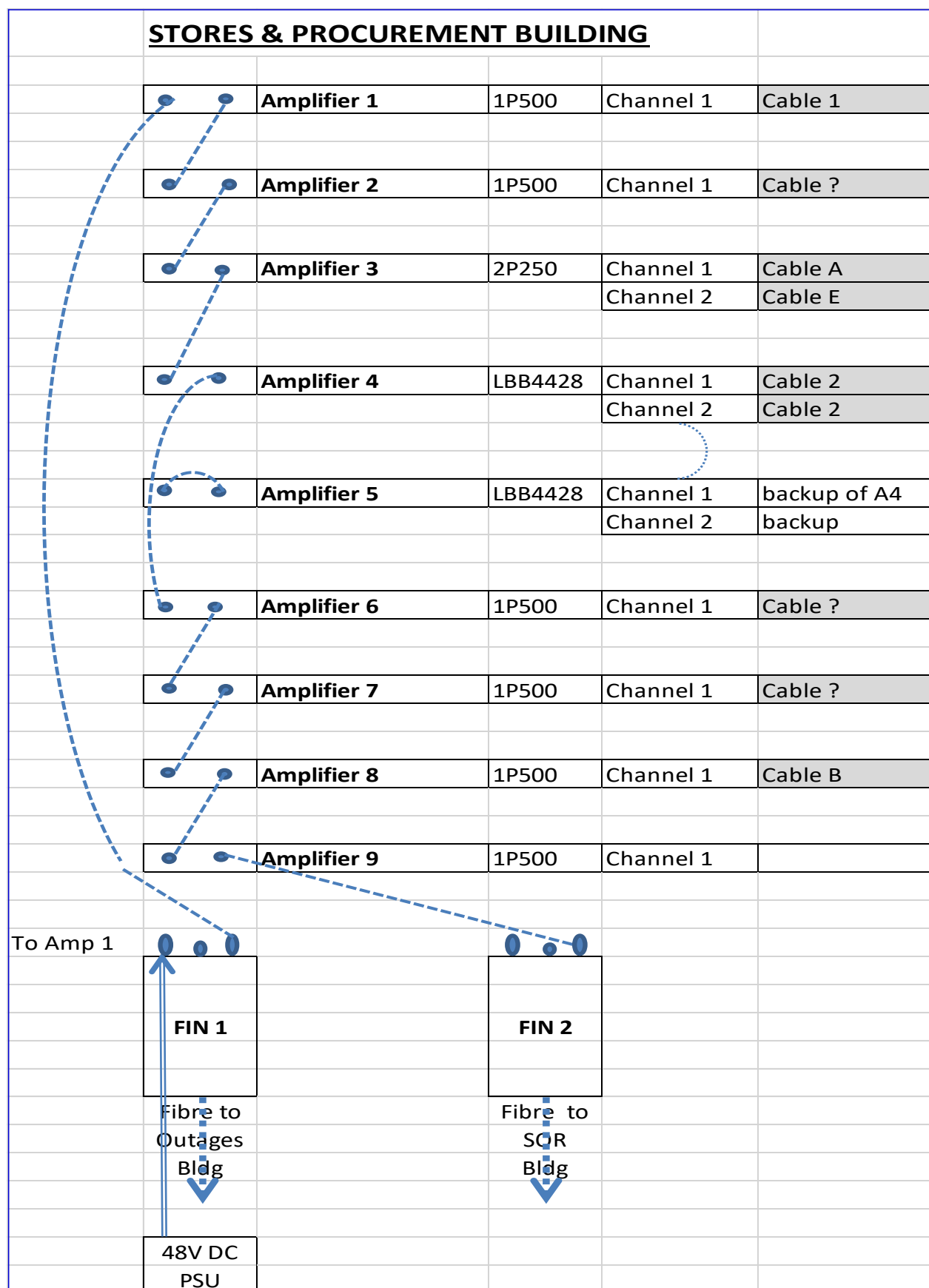
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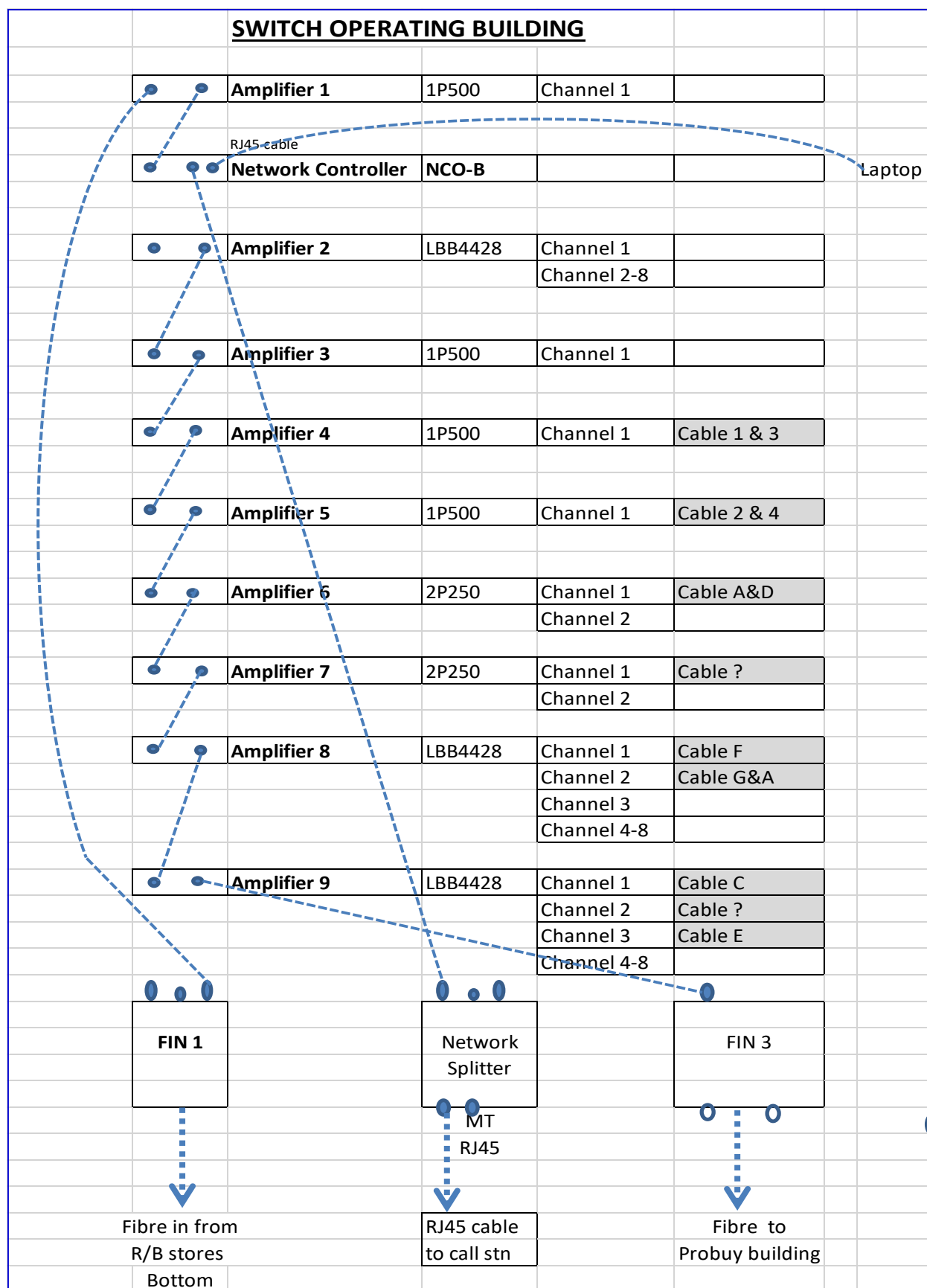


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