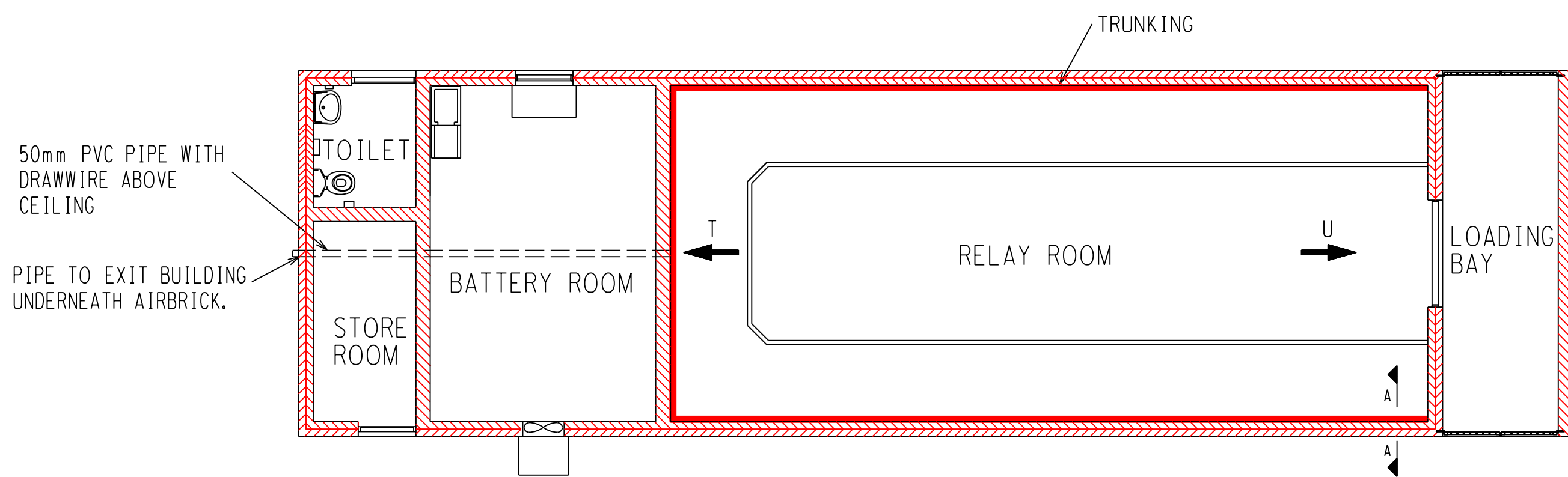
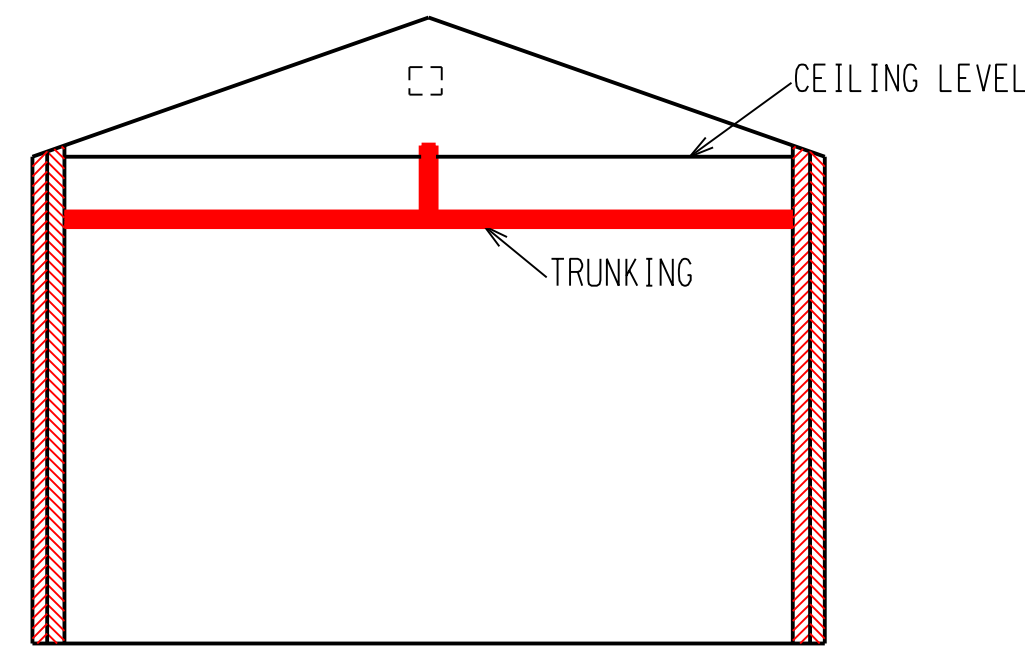


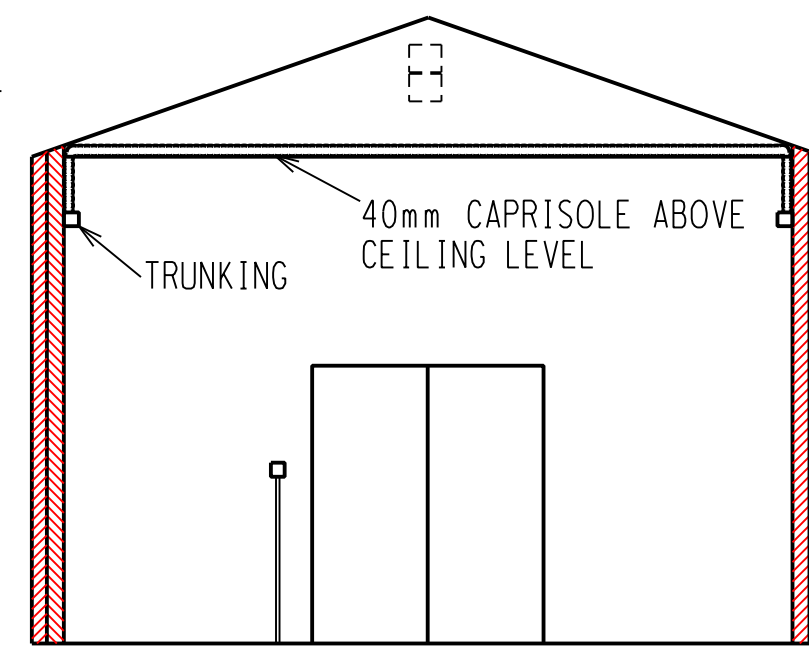
ELECTRICAL CONNECTIONS AND LIGHT FITTING SWITCHES LAYOUT



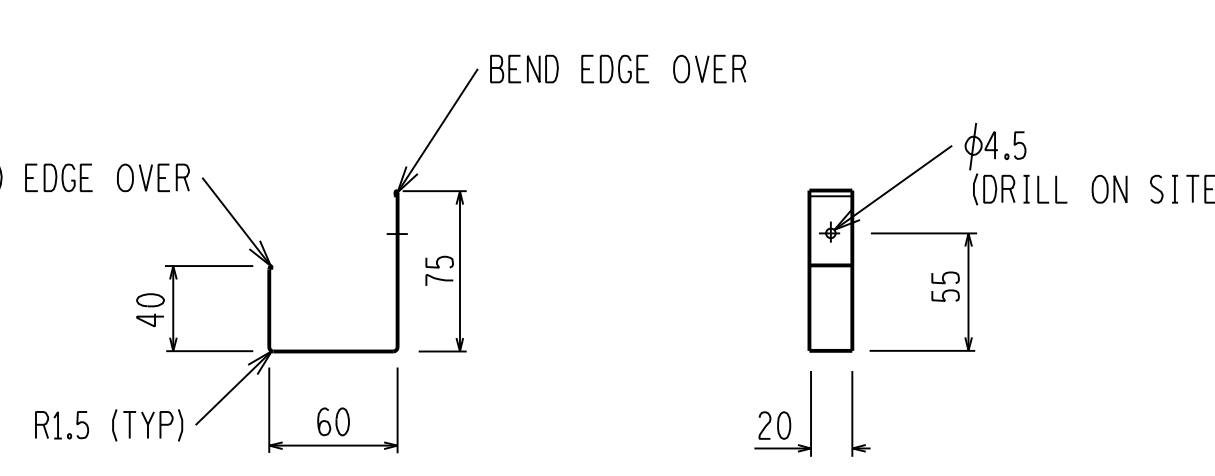
TRUNKING PLAN LAYOUT (NTS)



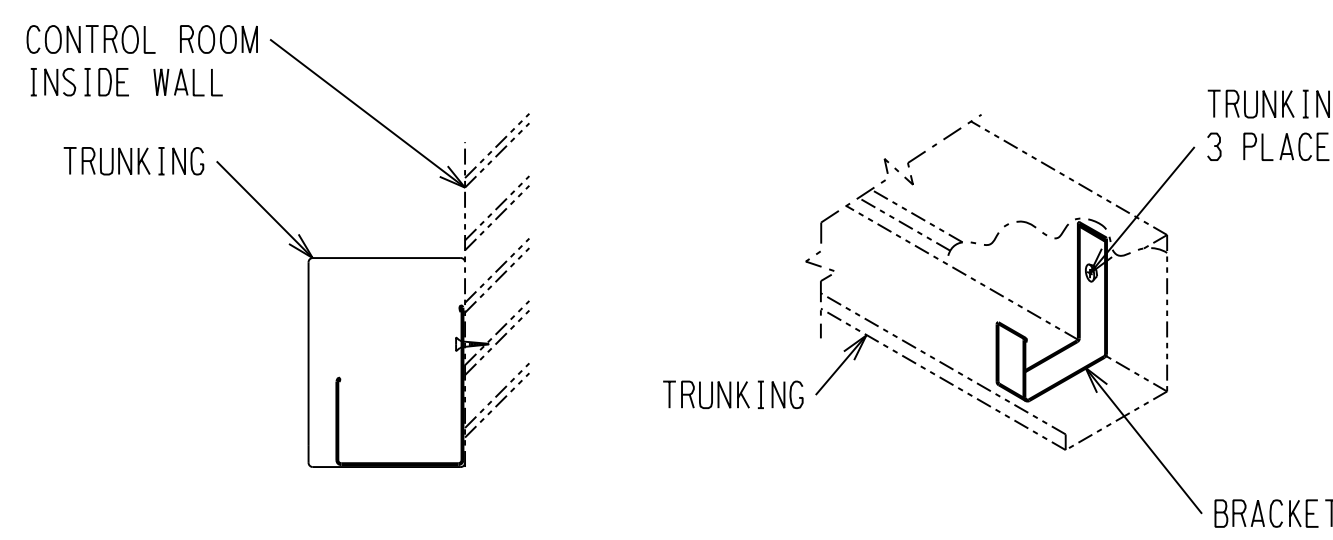
VIEW ON ARROW T (NTS)



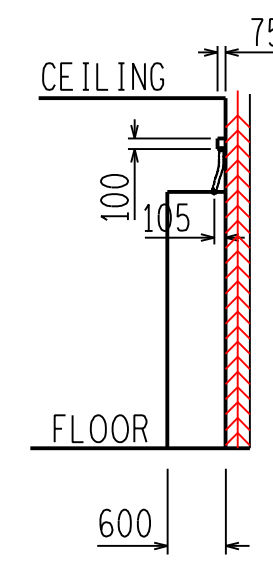
VIEW ON ARROW U (NTS)



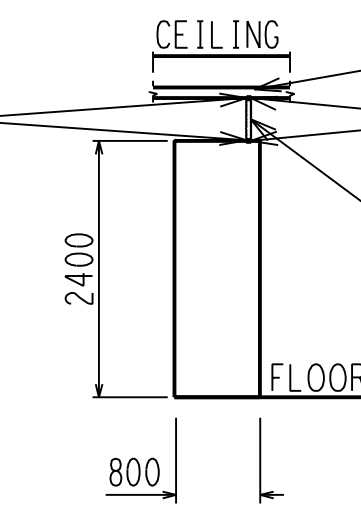
CABLE RETAINING BRACKET DETAIL (NTS)



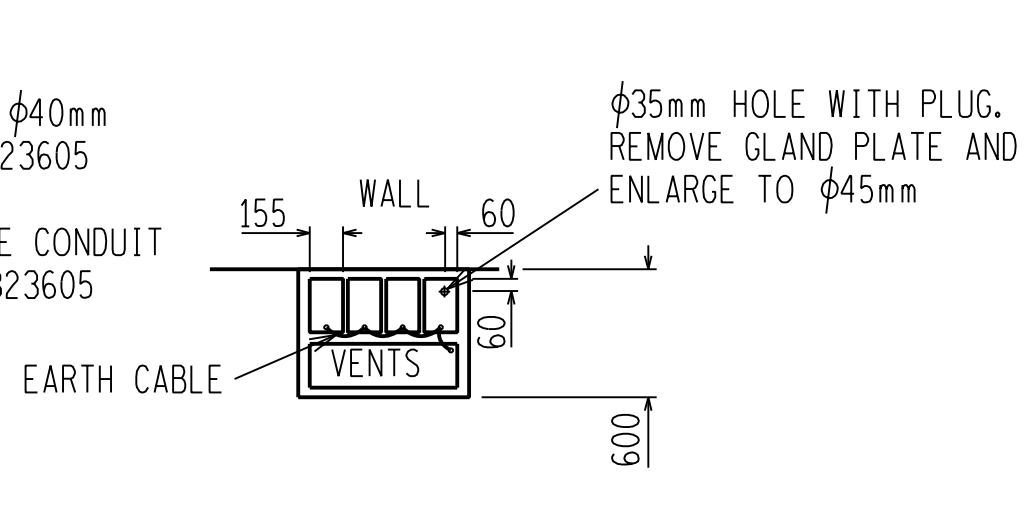
TRUNKING DETAIL (NTS)



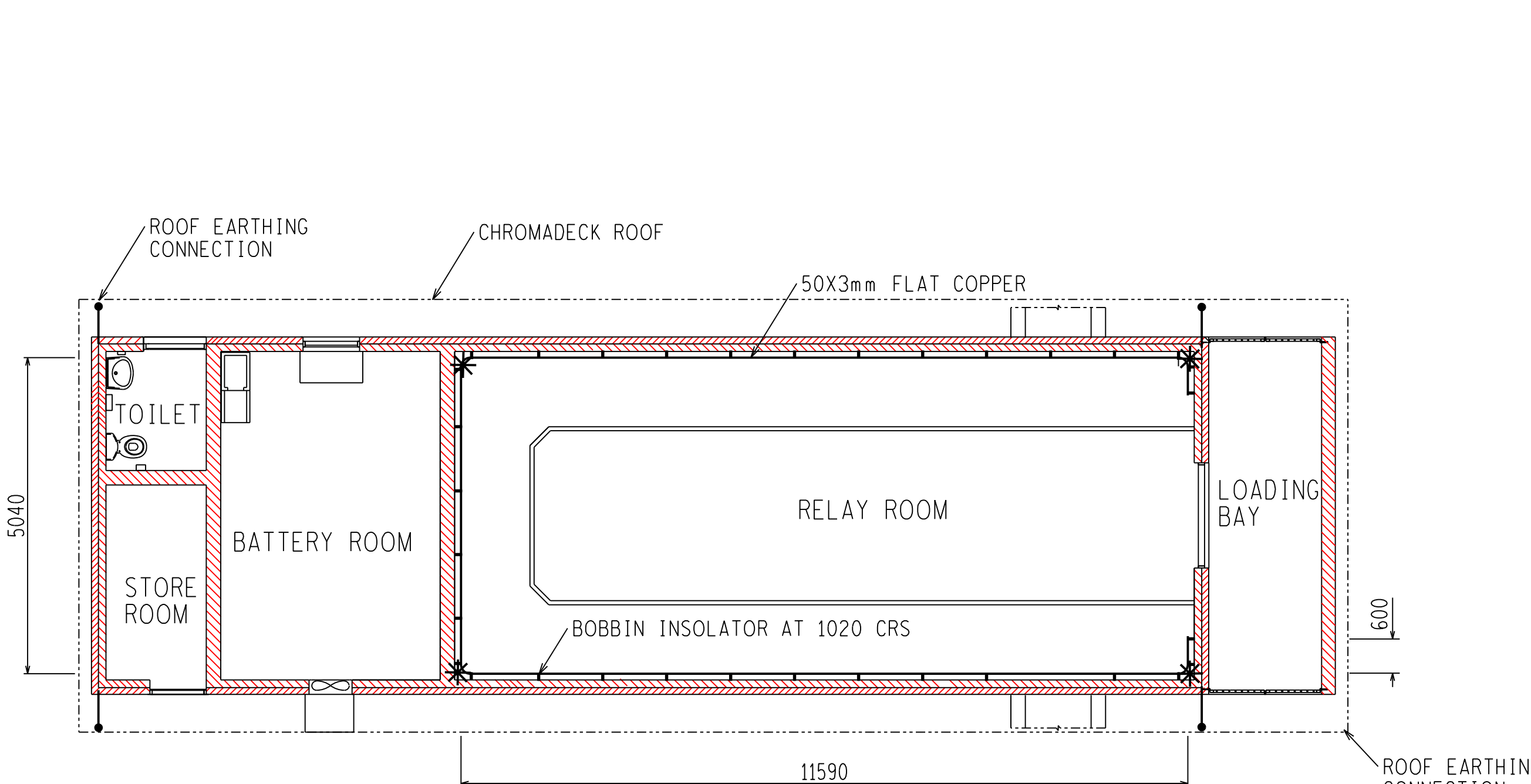
SECTION A-A SWING FRAME CABINET (NTS)



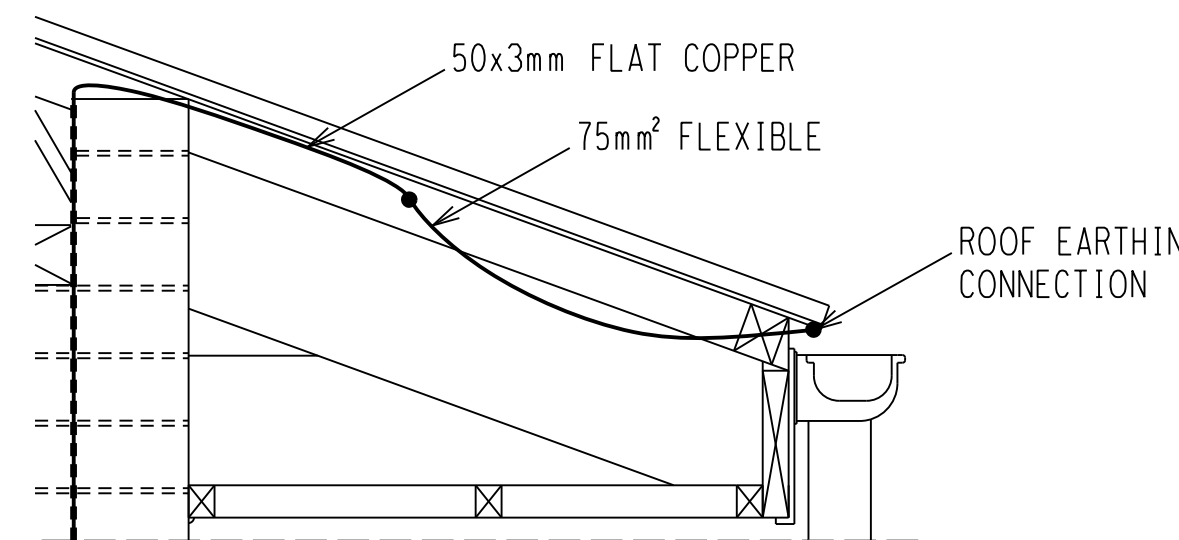
FRONT VIEW SWING CABINET (NTS)



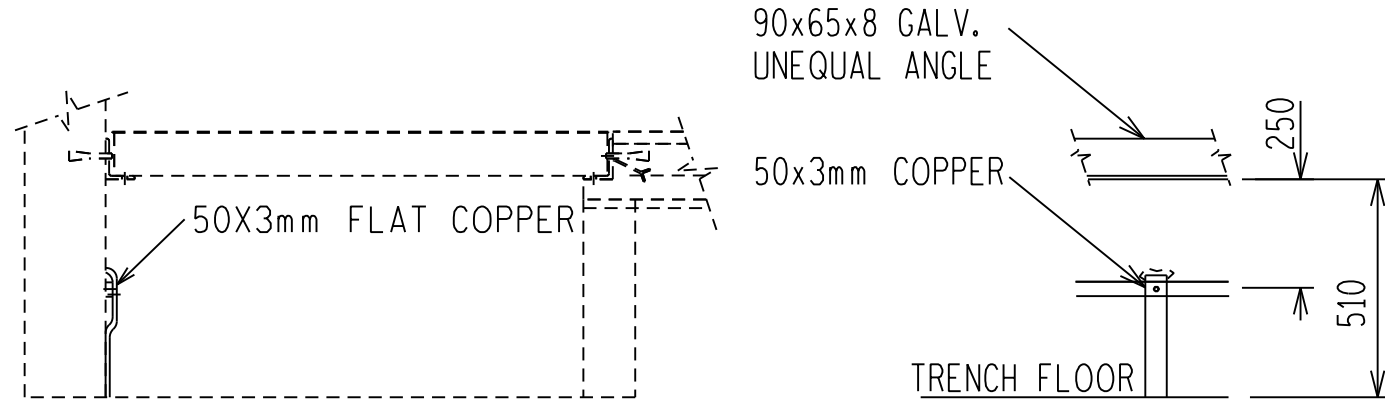
TOP VIEW SWING FRAME CABINET (NTS)



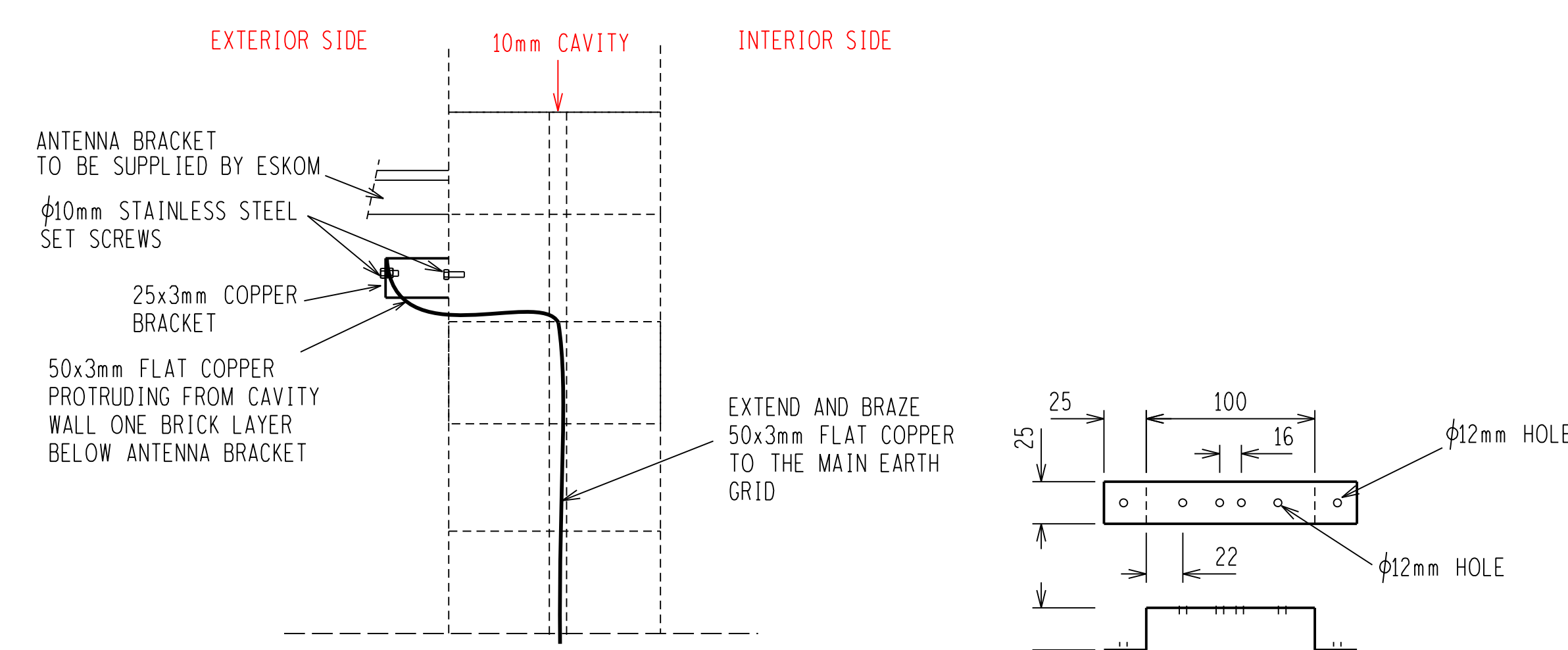
EARTHING LAYOUT (NTS)



DETAIL A ROOF EARTHING CONNECTION DETAIL (NTS)



DETAIL B TRENCH EARTH CONNECTION DETAIL (NTS)



DETAIL C ANTENNA BRACKET EARTHING (NTS)

- NOTE:
- GENERAL
1. REMOVE ALL SHARP EDGES ON CABLE RETAINING BRACKET.
  2. INSTALL A 40mm CAPRISOLE ABOVE SUSPENDED CABLE.
  3. 100mm HEIGHT x75mm WIDE PVC, DEEP GREY SOLID TRUNKING TO BE 400mm FROM TOP OF SWING FRAME CABINET AS PER TRUNKING PLAN LAYOUT.
  4. 50mm PVC PIPE WITH DRAWWIRE FROM THE TRUNKING ABOVE THE STORE ROOM CEILING.
  5. PIPE TO EXIT BUILDING UNDERNEATH AIRBRICK.
  6. 60 min MECHANICAL TIMER TO BE MOUNTED ON 100x100 BOX 1,2m HIGH NEXT TO THE DOOR, INSIDE THE RELAY ROOM.
  7. 25mm CONDUIT PIPE TO BE INSTALLED IN WALL FROM BOTTOM OF 100x100 MECHANICAL TIMER BOX TO TRENCH CONNECTION BOX WHICH IS MOUNTED ON SIDE OF TRENCH WALL. THIS IS TO FACILITATE THE DC SUPPLY FOR EMERGENCY LIGHTING TO MECHANICAL TIMER.
  8. MAX. SIZE BATTERY BANK THAT CAN BE INSTALLED.
  9. REFER TO D-DT-5281 SHEET 6F FOR DISTRIBUTION BOARD SPECIFICATION.
  10. GEN. BOX IS TO BE MOUNTED WITH STAINLESS STEEL BOLTS ONTO THE BUILDING WALL ABOVE CABLE DUCT TRENCH ENTRANCE.
- BATTERY SPECIFICATION
1. FCP21-23 280x8x10 24/25 CELLS DOUBLE ROW SINGLE TIER STEPPED ON LONGER BATTERY BANK.
  2. FCP15-19 462x8x10 52 CELLS DOUBLE ROW SINGLE TIER ON SHORTER BATTERY BANK.
- AIR CONDITIONING UNIT SPECIFICATION
1. THE AIR CONDITIONING UNIT WILL BE A 36 000 BTU SPLIT UNIT. THE UNIT MUST BE ABLE TO HEAT AND COOL IN CASE OF A POWER FAILURE. THE UNIT MUST RESTART WHEN THE POWER IS RESTORED. IT MUST HAVE A REMOTE CONTROL THAT IS HARD WIRED TO THE UNIT. ALLOW FOR AN EXTERNAL INPUT TO SWITCH THE UNIT ON.
  2. THE AIR CONDITIONING CONDENSER IS TO BE 2500mm ABOVE GROUND LEVEL. FINAL POSITION OF THE UNIT IS TO BE DETERMINED ON SITE, DEPENDING ON PREVAILING WINDS.
- ELECTRICAL SPECIFICATION
1. ALL ELECTRICAL WORK TO BE CARRIED OUT IN STRICT ACCORDANCE WITH THE LATEST REVISIONS OF S.A.B.S. 0142 1993 CODE OF PRACTICE FOR THE WIRING OF PREMISES DISTRIBUTION BOARD.
  2. DISTRIBUTION BOARD TO BE METAL CLAD SUITABLE FOR SURFACE MOUNTING ON WALL. KNOCKOUTS IN TOP AND BOTTOM TRAYS FOR 50, 25 AND 20mm CONDUITS.
  3. FRONT COVER TO ALLOW FOR OPERATION OF DOLLIES WITHOUT REMOVAL. 2 NO. 75mm P.V.C. SLEEVES TO TERMINATE ON FLOOR OF SERVICE TRENCH.
  4. TOP OF BOARD TO BE 2100mm ABOVE F.F.L.
  5. BOARD TO HAVE BAKED ENAMEL FINISH. COLOUR - WHITE.
  6. BOARD TO BE SUITABLE FOR DIN MOUNT EQUIPMENT WIRING.
  7. TO BE P.V.C. SHEATHED IN WHITE SEAMLESS PLASTIC CONDUIT (WITH S.A.B.S. MARK). CONDUIT TO BE RUN IN ROOF SPACE AND CHASED, M.C.B.'S TO BE 5KA RATING.
  8. ALL EQUIPMENT TO BE M&G SWITCHES.
  9. TO BE CRABTREE OR EQUAL APPROVED TOGGLE
  10. TYPE MOUNTED SOCKET OUTLETS.
  11. TO BE 16A THREE PIN ROUND FLUSH MOUNTED 300mm.
  12. ABOVE F.F.L. FACE PLATES TO HAVE BAKED ENAMEL FINISH.
  13. C.O.C. FOR CONTROL BUILDING TO BE ISSUED BY ELECTRICAL CONTRACTOR.
- EMERGENCY LIGHTING
- LIGHT AS INDICATED IS AN EMERGENCY FITTING:
- ONE TUBE IN THE FITTING TO HAVE AN ADDITIONAL CONDUIT RUN FROM THE DC SIDE OF THE DISTRIBUTION PANEL VIA A 60 MIN MECHANICAL TIMER. THIS CONDUIT WILL INCLUDE 1 POSITIVE AND 1 NEGATIVE WIRE.
- AFFECTED TUBE FITTING END CAPS TO BE PAINTED WITH RED PAINT TO IDENTIFY AFFECTED LIGHT TUBE.
- EXTRACTOR FANS
1. TOILET: LIFT FANS GX6, Ø150 FAN TO BE FITTED IN TOILET CEILING. ALL SPECIFICATION AND INSTALLATION TO SPECIALISTS DETAIL.
  2. BATTERY ROOM: LIFT FANS 'F' SERIES, CODE: LPA315/41F, 315Ø FAN. ALL SPECIFICATION AND INSTALLATION TO SPECIALISTS DETAIL. TO BE MOUNTED IN BATTERY ROOM WINDBLOK, TOP OF EXTRACTOR FAN TO BE 600mm FROM THE BATTERY ROOM CEILING.
- EARTHING NOTES:
1. FOR STANDARD EARTHING SPECIFICATION SEE DRAWING D-DT-5240 LATEST REVISION. SPECIFICATIONS MENTION CRIMPING BUT NO CRIMPING IS ALLOWED. ALL JOINTS TO BE SILBRALLOY BRAZING.
  2. ALL TINNED COPPER MUST BE TREATED AS DESCRIBED PRIOR TO MAKING A CONNECTION:  
a) WASH AND BRUSH TINNED AREAS IN WATER.  
b) APPLY THIN LAYER OF NON-OXIDE GREASE ONLY ON TINNED AREAS FACING GALV. STEELWORK.
  3. WHERE CONNECTION IS MADE TO GALVANIZED STEELWORK, THE SURFACE SHALL BE COATED WITH NON-OXIDE GREASE PRIOR TO BOLTING.
  4. THE BUILDING TRENCH EARTHING IS TO BE DONE AS FOLLOWS:  
a) 50x3mm COPPER MOUNTED TO THE TRENCH OUTER WALLS (BUILDING WALL) USING ELECTRICAL BOBBIN INSULATORS, 50x3mm FLAT COPPER TO BE SUPPLIED BY ESKOM DURING THE CONSTRUCTION OF ESKOM PROJECTS.  
b) 50x3mm FLAT COPPER IS TO EXTEND CONNECTED THE MAIN EARTH GRID TO THE RELAY ROOM TRENCH ON THE POSITIONS INDICATED AS \* ON THE EARTHING LAYOUT AND DETAIL B.
  5. ALL 50x3mm COPPER TAILS MUST BE CONTINUOUS AND MAY NOT BE EXTENDED BY MEANS OF WELDING.
  6. EACH PANEL IN THE RELAY ROOM MUST BE EARTHED WITH 2x 25x3mm FLAT COPPER TO RELAY ROOM TRENCH 50x3mm FLAT COPPER. EACH 25x3 FLAT COPPER MUST BE BOLTED WITH A STAINLESS BOLT, NUT AND 2 WASHERS TO THE CONTROL PANEL AND CABLE TRENCH EARTHING COPPER.
  7. THE CHROMEDECK ROOF MUST BE EARTHED BY FOUR 50x3mm COPPER, UP VIA THE CAVITY, LUGGED WITH B1-METAL LUG TO A 75mm FLEXIBLE BOLTED TO THE CHROMEDECK ROOF WITH STAINLESS STEEL BOLT, NUT AND 2 WASHERS ABOVE GUTTER AREA AS INDICATED ON DETAIL A.
  8. 50x3mm COPPER STRIPS TO BE INSTALLED INSIDE THE CAVITY OF THE FOR EARTHING OF THE TELECOMS EQUIPMENT AS INDICATED ON DETAIL C.
  9. 50x3mm FLAT COPPER TO BE BOLTED TO THE WALL WITH BOBBIN INSULATORS.

LEGEND		
	(W)	16A FOUR POLE ISOLATOR MOUNTED 1200mm ABOVE F.F.L. FOR PRESSURE PUMP. WEATHERPROOF (IP65 RATING)
	(W)	16A DOUBLE POLE ISOLATOR MOUNTED 2800mm ABOVE F.F.L. FOR EXTRACTOR FAN. WEATHERPROOF (IP65 RATING)
	(W)	16A FOUR POLE ISOLATOR MOUNTED 1200mm ABOVE F.F.L. FOR AIRCONDITIONING UNIT. WEATHERPROOF (IP65 RATING)
		ISOLATOR
		MCB
	(D)	FLUORESCENT LIGHT FITTING. CEILING MOUNTED.
	(F)	FLUORESCENT LIGHT FITTING. WALL MOUNTED 2800mm ABOVE F.F.L. (ONLY METAL FRAMING TO BE USED) - (WATER PROOF FITTING)
	(A)	3x 36W (4 F) FLUORESCENT FITTING TO FIT INTO SUSPENDED CEILING SYSTEM. RECESSED FITTING 600x1200 LOW BRIGHTNESS DIFFUSER.
	(A)	2x 36W 220V/AC (4 F) + 1x 36W (4 F) 110V/DC FLUORESCENT FITTING (3 TUBE FITTING). (SEE EMERGENCY LIGHTING NOTES) TO FIT INTO SUSPENDED CEILING SYSTEM.
	(S/C)	2x 36W FLUORESCENT LIGHT FITTING TO SURFACE MOUNTED UNDER THE CEILING. CEILING FIXING METHOD TO BE CORROSION/SPARK PROOF.
	(C)	2x 36W FLUORESCENT FITTING SURFACE MOUNTED UNDER CEILING LEVEL.
		16A DOUBLE SOCKET OUTLET : 450mm A.F.F.L.
		DISTRIBUTION BOARD - SDBA (SURFACE MOUNTED)
	1, 2	16A TOGGLE LIGHT SWITCH. SINGLE/DOUBLE
		JSQUS OR EQUAL APPROVED 60 MIN. MECHANICAL TIMER MOUNTED ON BLANK PLATE OF 100x100 D BOX.
		WEATHER PROOF LIGHT SWITCH.
		DAY / NIGHT SWITCH - WATERPROOF FITTING.
		EXTRACTOR FAN - 3 PHASE, 'SQUIRREL CAGE' INDUCTION TYPE MOTOR TO BE AS CLASS 1 DIV. 2 'NON-SPARKING' MOTOR.
		PRESSURE PUMP INSTALLED IN POSITION ON FLOOR. PRESSURE UNIT PENTAX PM 45-0,37KW COMPLETE WITH A PC15 PRESS CONTROL (3 TAPS STAINLESS STEEL PUMP).
		BOTTOM OF A/C TO BE 2500 A.F.F.L.
		AIRCONDITIONING UNIT TO BE MOUNTED ABOVE THE RELAY ROOM DOOR.
		(SURFACE MOUNTED) SURFACE MOUNTED ELECTRICAL TRUNKING AS 'LEGEND' OR EQUAL AS PER ESKOM LATEST REVISION DRAWING

FITTING No.	DESCRIPTION OF FITTING	No. REQ
1-1; 1-2; 1-3; 1-4; 1-5; 1-6.	3x 36W AC FLUORESCENT FITTING	6
2-1; 2-2; 2-3; 2-4.	2x 36W AC FLUORESCENT FITTING + 1x 36W 110V DC EMERGENCY CONVERSION INVERTER FOR AC/DC COMBINED 3 TUBE FITTING IN RELAY ROOM. CENTER TUBE TO BE DC (ECLAT 110V INVERTER 110V/DC - 220V/AC - PART No: ECLAT110V ) OR SIMILAR APPROVED BY ESKOM	4
3-1	150mm DIA SPHERICAL BOWL FITTING WITH 2x PL9 COMPACT FLUORESCENT LAMPS	1
4-1	16A FOUR POLE ISOLATOR MOUNTED 1200mm ABOVE F.F.L. FOR FUTURE (IF AIR CONDITIONING UNIT). WEATHERPROOF.	1
5-1	16A THREE POLE ISOLATOR MOUNTED 2800mm ABOVE F.F.L. FOR EXTRACTOR FAN. WEATHERPROOF. (IP65 RATING)	1
5-2	16A DOUBLE POLE ISOLATOR MOUNTED 1200mm ABOVE F.F.L. FOR PRESSURE PUMP. WEATHERPROOF. (IP65 RATING)	1
6-1; 6-2; 6-3; 6-4; 6-5; 6-6.	2x PL9 COMPACT FLUORESCENT LIGHT FITTING RATED AT IP65 FOR EXTERNAL USE.	6
7-1	2x 36W FLUORESCENT LIGHT FITTING TO SURFACE MOUNTED UNDER THE CEILING. CEILING FIXING METHOD TO BE CORROSION/SPARK PROOF.	2
8-1	2x 36W FLUORESCENT FITTING SURFACE MOUNTED UNDER CEILING LEVEL.	1
9-1; 9-2; 9-3; 9-4	16A DOUBLE SWITCH SOCKET OUTLET : 300mm A.F.F.L.	4
10-1; 10-2; 10-3; 10-4; 10-5; 10-6.	WEATHER PROOF LIGHT SWITCH.	6
11-1; 11-2.	16A TOGGLE LIGHT SWITCH. SINGLE/DOUBLE	2

STEEL SCHEDULE AND MASS - CABLE RETAINING BRACKET				
ITEM	QTY	DESCRIPTION	CUTTING LENGTH (mm)	TOTAL LENGTH (m)
BRK1	1	STAINLESS STEEL PLATE 20x1	175	0.18
				0.031

D-DT-5281

SHEET 6F

CONTROL ROOM BUILDING 400/230V AC DISTRIBUTION BOARD KEY DIAGRAM

DRG NO. SHEET NO. REFERENCE DRAWINGS

THIS DRAWING IS THE NEW OFFICIAL REVISION AND IT SUPERSEDES ALL OTHER PUBLISHED DRAWINGS

1	ADDED AIR CONDITIONING UNIT SPECIFICATION	BWH	NSH	NMM	09/04/2018	
0	NEW DRAWING					

REV REVISION DESCRIPTION BY CHD AUTH DATE PROJECT NO.

SUBSTATION  
CONTROL ROOM; TYPE A  
ELECTRICAL CABLING, TRUNKING AND  
EARTHING LAYOUT AND DETAILS

SAP No.

SCALE 1:50

THIS DRAWING IS THE PROPERTY OF ESKOM

DATE: 07/01/2015

DATE: 07/01/2015

DATE: 05/01/2015

AUTH: N WEBBER

DATE: 07/01/2015

CHKD: B HLOMENGLINI

DATE: 07/01/2015

DATE: 07/01/2015

DATE: 05/01/2015

SET

SHEET

REVISION

D-DT-5280

3A

1