



NX100
Main-Standby Transmitter
System

All India Radio (AIR)

APPENDIX A

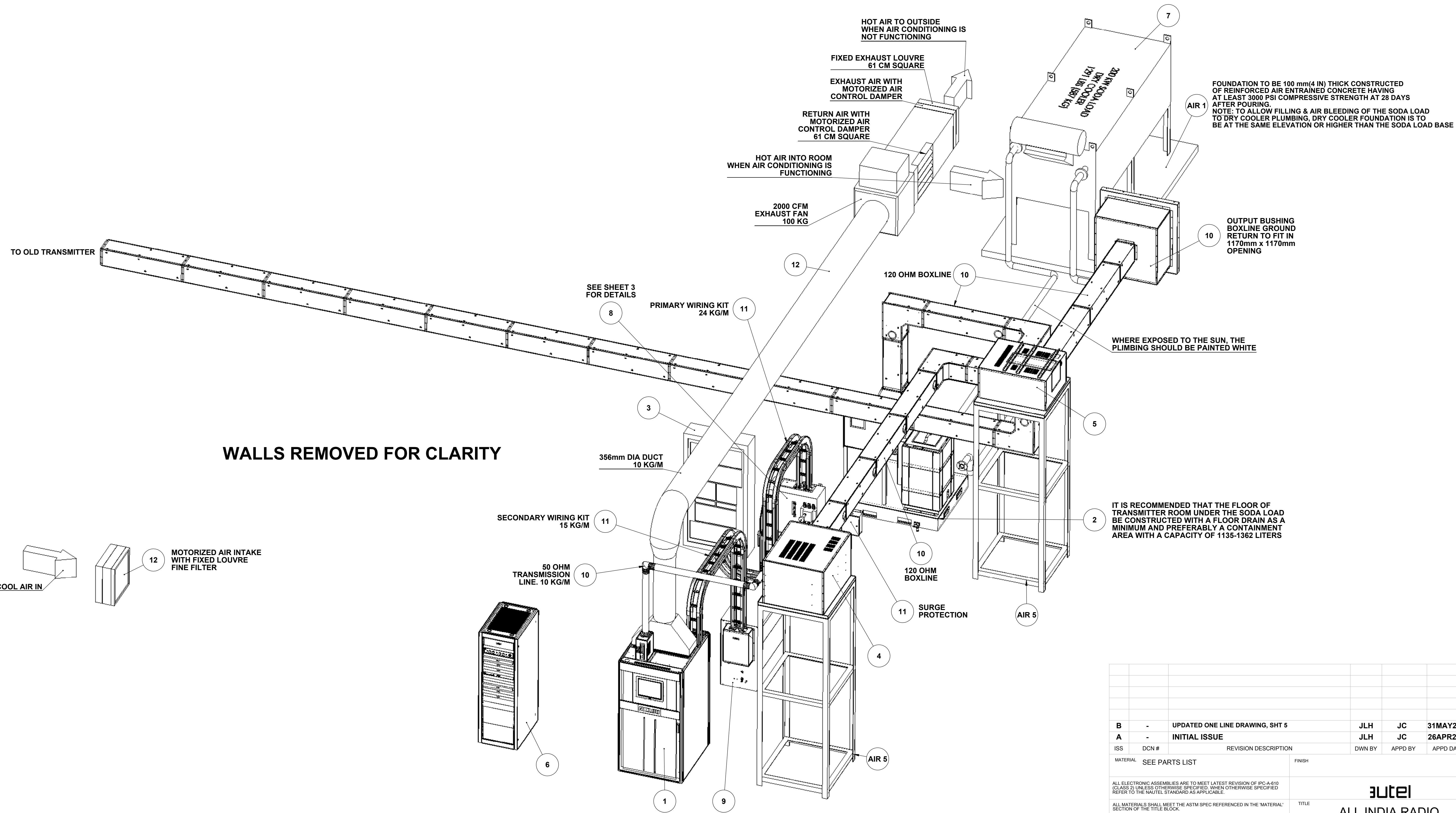
SYSTEM LAYOUT DRAWINGS

Issue 0.1 03 April 2013

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WALLS REMOVED FOR CLARITY

FOUNDATION TO BE 100 mm(4 IN) THICK CONSTRUCTED OF REINFORCED AIR ENTRAINED CONCRETE HAVING AT LEAST 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS AFTER POURING.
NOTE: TO ALLOW FILLING & AIR BLEEDING OF THE SODA LOAD TO DRY COOLER PLUMBING, DRY COOLER FOUNDATION IS TO BE AT THE SAME ELEVATION OR HIGHER THAN THE SODA LOAD BASE

OUTPUT BUSHING BOXLINE GROUND RETURN TO FIT IN 1170mm x 1170mm OPENING

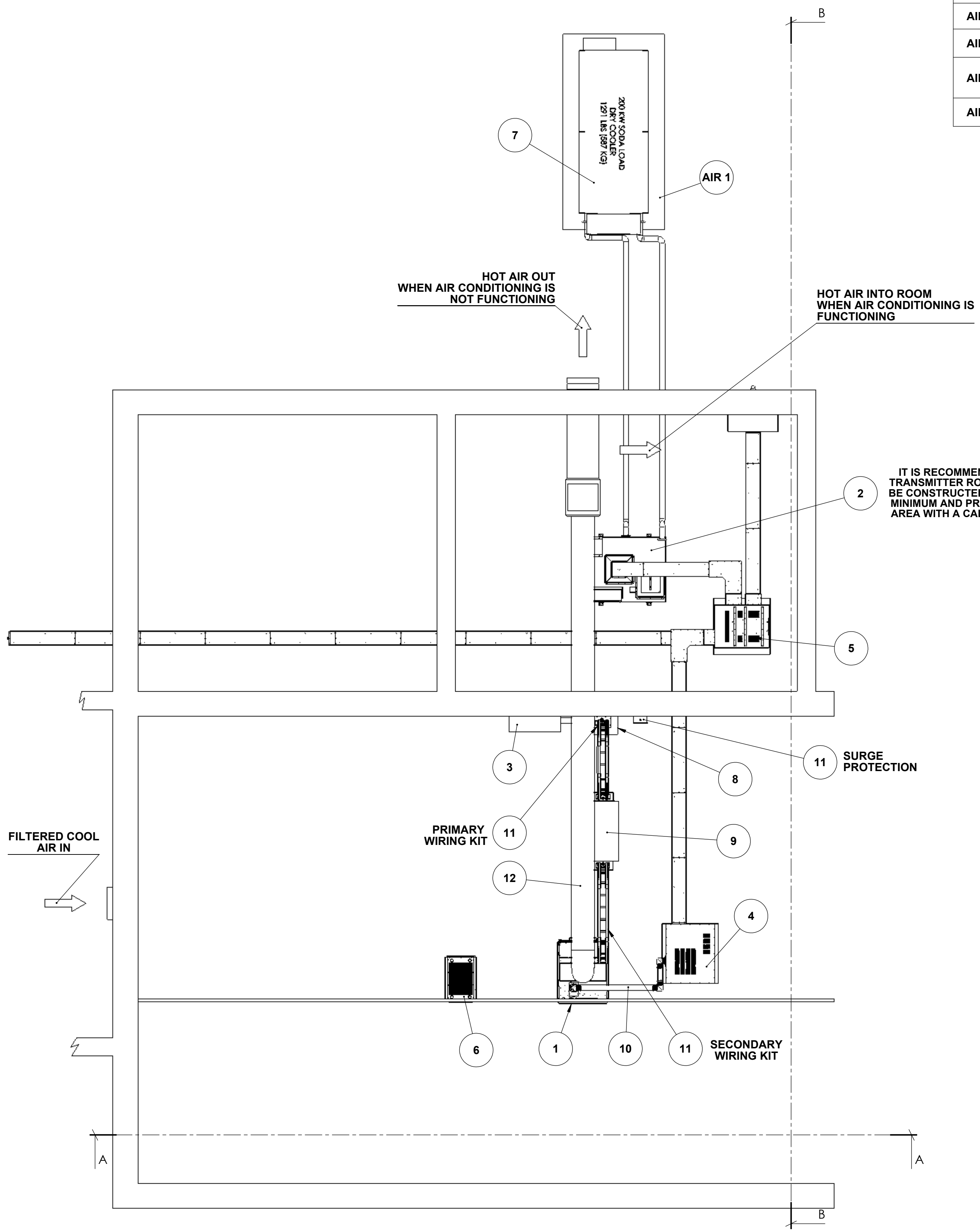
WHERE EXPOSED TO THE SUN, THE PLUMBING SHOULD BE PAINTED WHITE

IT IS RECOMMENDED THAT THE FLOOR OF TRANSMITTER ROOM UNDER THE SODA LOAD BE CONSTRUCTED WITH A FLOOR DRAIN AS A MINIMUM AND PREFERABLY A CONTAINMENT AREA WITH A CAPACITY OF 1135-1362 LITERS

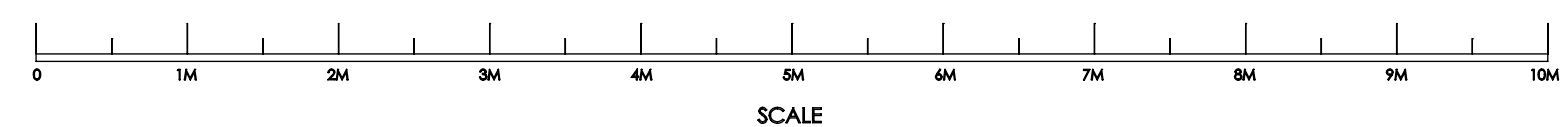
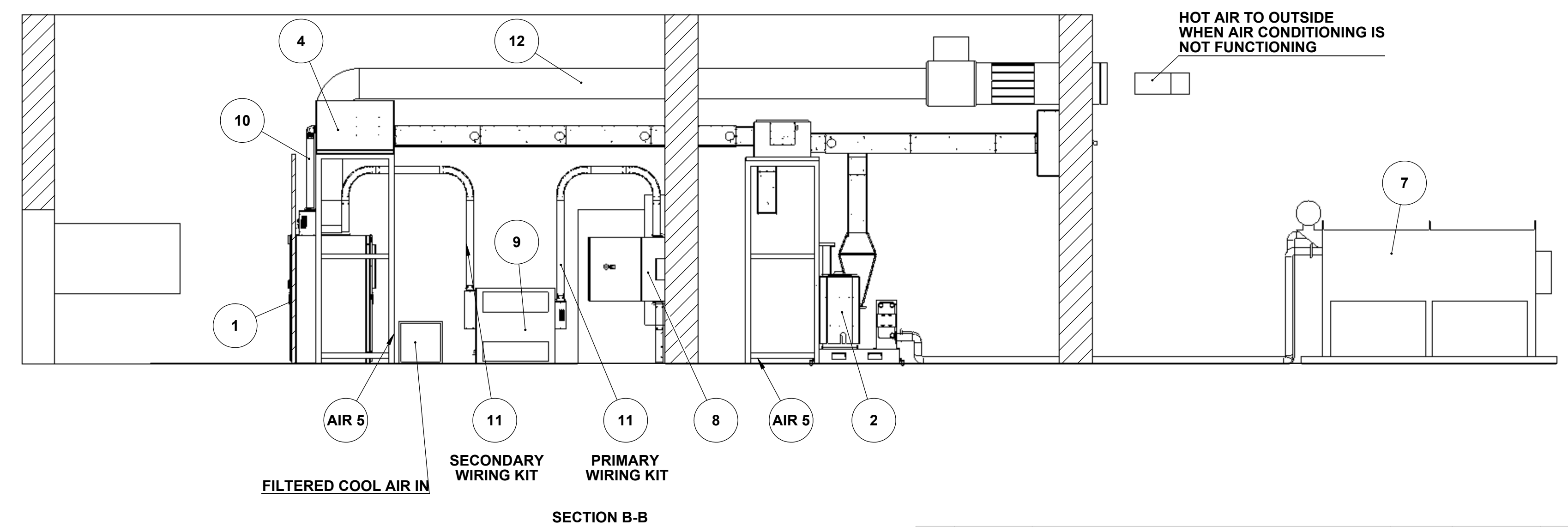
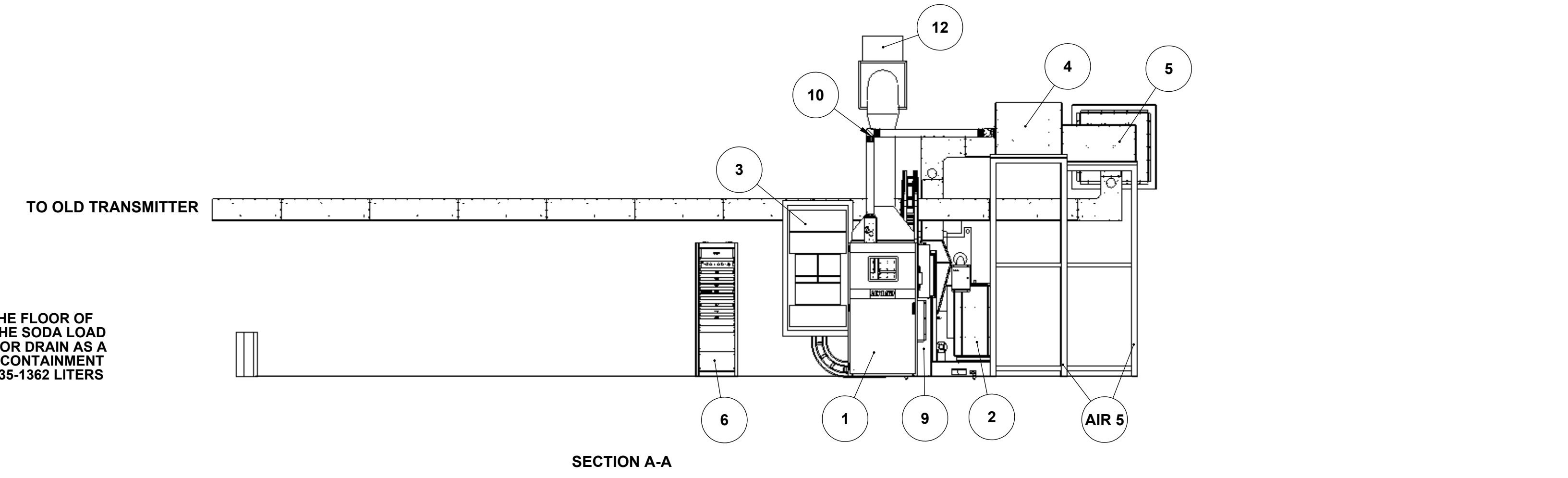
B		-	UPDATED ONE LINE DRAWING, SHT 5	JLH	JC	31MAY2013
A		-	INITIAL ISSUE	JLH	JC	26APR2013
ISS	DCN #		REVISION DESCRIPTION	DWN BY	APPD BY	APPD DATE
MATERIAL	SEE PARTS LIST					FINISH
ALL ELECTRONIC ASSEMBLIES ARE TO MEET LATEST REVISION OF IPC-A-610 (CLASS 2) UNLESS OTHERWISE SPECIFIED. WHEN OTHERWISE SPECIFIED REFER TO THE NAUTEL STANDARD AS APPLICABLE.						
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UNLESS OTHERWISE STATED: DIMENSIONS ARE IN INCHES. INSIDE BEND RADIUS = MAT'L THK. FOR TOLERANCE INTERPRETATION SEE 00001 WS (FINISHES & FABRICATION). 3 PLACE DECIMAL ± 0.10 < 24. 2 PLACE DECIMAL ± 0.20 > 24. 1 PLACE DECIMAL ± 0.30. FRACTIONAL ± 1/32.						
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TITLE		ALL INDIA RADIO NX100 LAYOUT				
SIZE	CODE IDENT NO	DRAWING NO		SHEET		
D	37338	201-1322-01 SHT 1		1 OF 6		
SCALE: NTS						

ITEMS SUPPLIED BY ALL INDIA RADIO		
ITEM	DESCRIPTION	QTY
AIR 1	DRY COOLER FOUNDATION	1
AIR 2	SUPPORT HANGERS/STANDS FOR CABLE TRAYS, 120 OHM BOXLINES IMU, CHANGEOVER SWITCH & 50 OHM HARDLINE	A/R
AIR 3	SUPPORTS FOR LOAD HEAT EXCHANGER PIPING	A/R
AIR 4	FLOOR DRAIN & 1135-1362 (250-350 GAL) CONTAINMENT UNDER SODA LOAD (SEE NOTE)	1
AIR 5	3005 H x 1060 W x 1120 D mm (75x75x6 mm) ANGLE IRON FRAME FOR IMU 2908 H x 1060 W x 1060 D mm (75x75x6 mm) ANGLE IRON FRAME FOR 4 PORT CHANGEOVER SWITCH	1 EACH
AIR 6	ATU HUT (NOT SHOWN)	1

ITEMS SUPPLIED BY NAUTEL			
ITEM	DESCRIPTION	NAUTEL #	QTY
1	100 KW TRANSMITTER	NARA52B	1
2	SODA LOAD SYSTEM	228-8305-03	1
3	BREAKER PANEL (WALL MOUNT)	UE187	1
4	IMPEDANCE MATCHING UNIT	228-8060-**	1
5	4 PORT SWITCH SYSTEM (CHANGE OVER SWITCH)	228-8306-**	1
6	DRM SYSTEM	228-8390	1
7	DUMMY LOAD HEAT EXCHANGER	228-8305-03 (UP139)	1
8	800A DISCONNECT SWITCH	228-8424	1
9	TRANSFORMER	207-8080-03	1
10	TRANSMISSION LINE KIT	228-8307-02	1
11	MAINS EQUIPMENT	228-8309-03	1
12	VENTILATION SYSTEM KIT	228-8311-03	1



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B	-	UPDATED ONE LINE DRAWING, SHT 5	JLH	JC	31MAY2013
A	-	INITIAL ISSUE	JLH	JC	26APR2013
ISS	DCN #	REVISION DESCRIPTION	DWN BY	APPD BY	APPD DATE
MATERIAL	SEE PARTS LIST		FINISH		
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		ALL INDIA RADIO NX100 LAYOUT			
SIZE	CODE IDENT NO	DRAWING NO			
D	37338	201-1322-01 SHT 2			
SCALE: SEE SCALE		SHEET	2 OF 6		

Notes for NX100 Sites rev 1

1. The NX100 transformer assy (item 9) was re-oriented to allow for connection access & wire & cable tray bend radius.
2. The plumbing kit for between Soda Load & Heat Exchanger consists of the necessary components required to implement what is shown on drawing 228-1322-01.
3. All wiring kits consist of appropriate lengths and sizes of wire along with cable trays, cleats, and terminations.
4. The IMU and 4 port switch have been equipped with mounting base plates for easy attachment to AIR supplied mounting frames.
5. The ventilation system allows for either closed loop air conditioning as well as venting to the outside when aircon fails. An inlet air vent (with supplied filter) must be installed to allow sufficient air (2000 CFM) to enter the room when external exhaust is in use. Suggested location shown on drawing 201-1322-01.
6. Correct soda load dimensions have been used in our layout, with the load oriented to allow viewing of the control panel and allow convenient plumbing.
7. The dry cooler is shown in the area your dwg suggested. Plumbing to be completed by AIR. The plumbing kit supplied is 2 inch.
8. The ATU will be fitted with shorting switches on both the 120 ohm input and on the antenna feed. These will be interlocked with the transmitter and the ATU caged door. An additional brass lock will be provided to allow the "old" transmitter to be incorporated into the ATU safety scheme. It is AIR's responsibility to install and create lock out instructions to ensure safe operation. Two sets of keys are provided-BUT ONLY ONE SET SHOULD BE USED while the other set is locked away in case of loss of the original set.
9. A complete description of the interlock scheme is included, see below.
10. Nautel will supply the DOW SR-1 glycol heat transfer fluid (UE149) via COMCON. The coolant solution should be mixed 30% by weight with clean water to avoid freezing. Total system volume must be calculated including the pipes. The load plus dry cooler need 120 liters of the mixture.
11. DRM Rack must be a minimum of 36" (915 mm) from side of NX100 transmitter to accommodate NX100 combiner maintenance.
12. The ventilation system allows for local circulation in an air conditioned space under normal operation. When air conditioning fails, dampers need to change state to allow outdoor air to enter/exit the building.

Typical NX100 Interlock Key Sequence

29APR2013

The following sequence of Interlock key steps is to be followed to ensure safe access into the NX100 & ATU Tuning Hut(s).

NX100 Access Only

Step 1: Switch AC power off at the NX100 Main AC Cut off Switch. Turn Interlock Key 'A' to lock AC power handle in the 'Off' position, releasing the 'A' key.

Step 2: Insert the 'A' key into the 'A' lock in the Nautel Antenna Ground Switch on top of the NX100 Output Cabinet. Turn the 'A' key, engage the antenna grounding handle, turn the 'B' key, locking the ground handle in place and pull out the 'B' key. This locks the antenna grounding switch in the grounded position and captures the 'A' key.

Step 3: Insert the 'B' key into the four key transfer case in the output cabinet of the NX100 which releases the three 'C' keys. Two 'C' keys allow access into N100 through the rear door and into the filter through the front inner door. The third 'C' is required to unlock the ATU Tuning Hut(s).

Full System Access

Follow steps 1 thru 3

Step 4: Switch off AC power to old the transmitter at the Main AC Cutoff Switch.

Install 'D' keyed padlock and lock AC power handle in the 'Off' position. This releases the 'D' key.

Step 5:

Insert a 'C' key from the NX100 four key transfer case and the 'D' key from the Old Transmitter Main AC Cut off Switch padlock into the four key transfer case (mounted on a wall). Turn the two 'C' & 'D' keys which captures them in place and releases the 'E' key.

Step 6:

At the ATU Tuning Hut, insert & turn the 'E' key in ATU Grounding Switch '1' which releases the grounding arm mechanism. Operate the grounding arm. Once in position, engage bolt of key mechanism 'F' locking the grounding arm in the grounded position. This releases the 'F' key.

Step 7:

Insert & turn the 'F' key in ATU Grounding Switch '2' which releases the grounding arm mechanism. Operate the grounding arm. Once in position, engage bolt of key mechanism 'G' locking the grounding arm in the grounded position. This releases the 'G' key.

Step 8:

Insert & turn the 'G' key in ATU Access Door, releasing the door. The 'G' key will be captured in the key mechanism until the door is closed and locked.

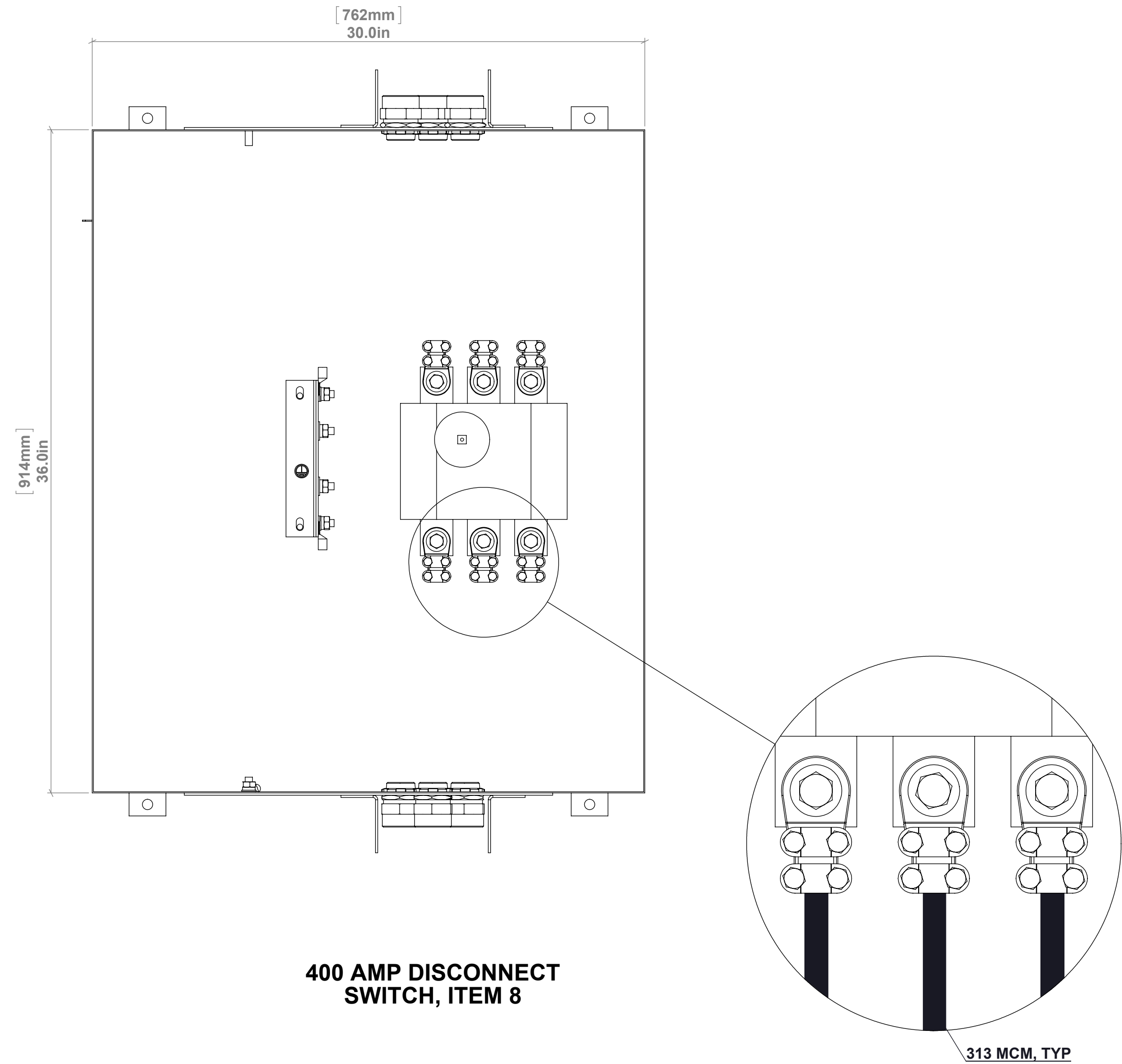
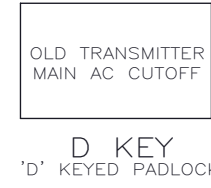
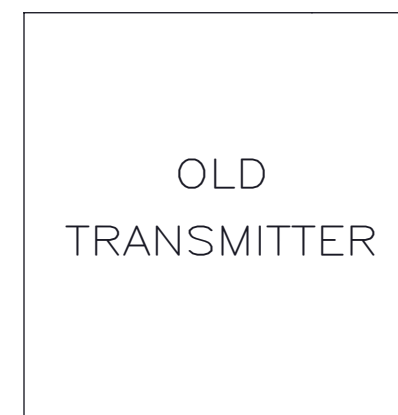
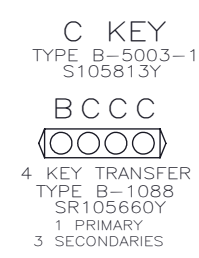
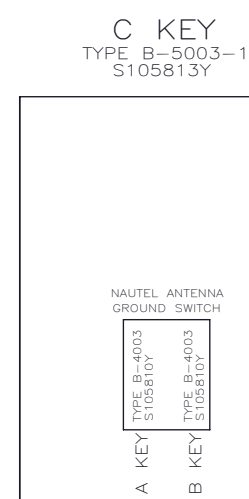
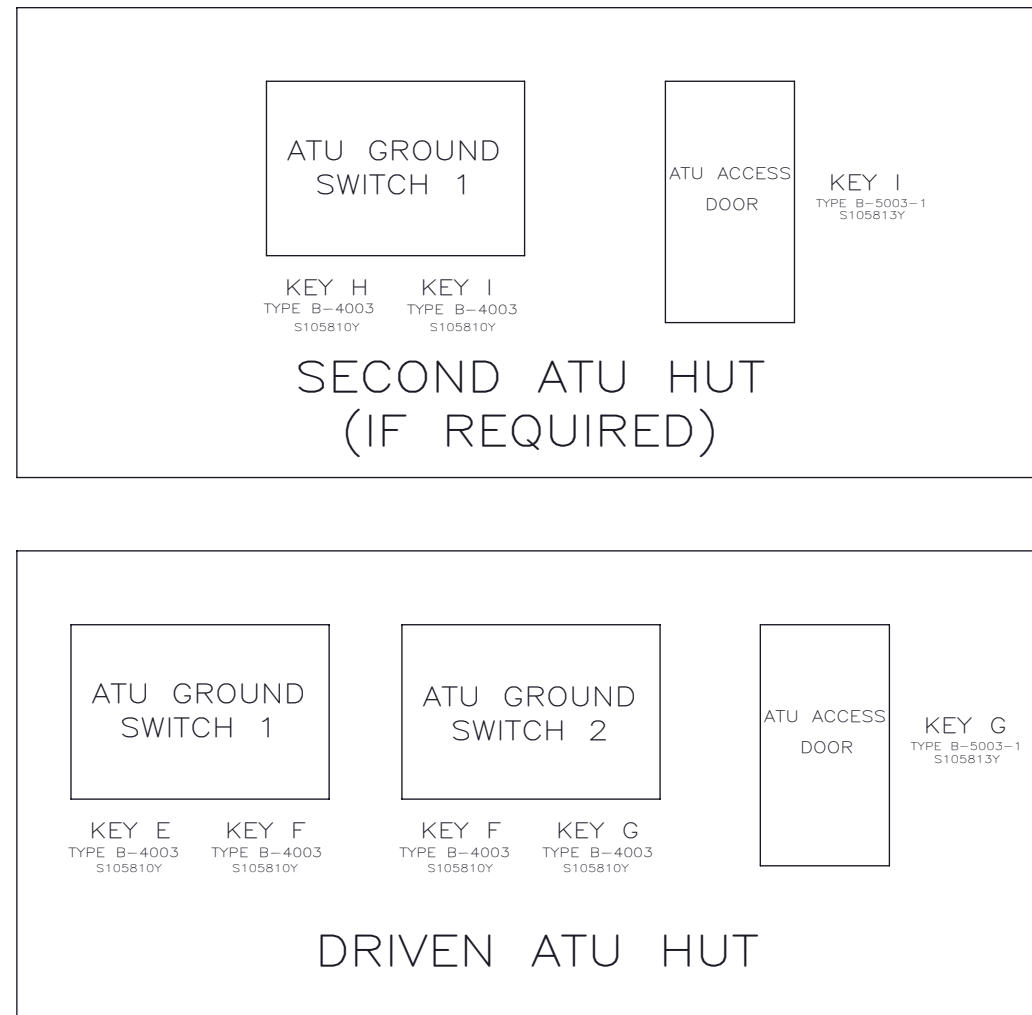
Step 9:

If required, insert & turn the 'H' key in Second ATU Hut ATU Grounding Switch '1' which releases the grounding arm mechanism. Operate the grounding arm. Once in position, engage bolt of key mechanism 'I' locking the grounding arm in the grounded position. This releases the 'I' key.

Step 10:

Insert & turn the 'I' key in ATU Access Door, releasing the door. The 'I' key will be captured in the key mechanism until the door is closed and locked.

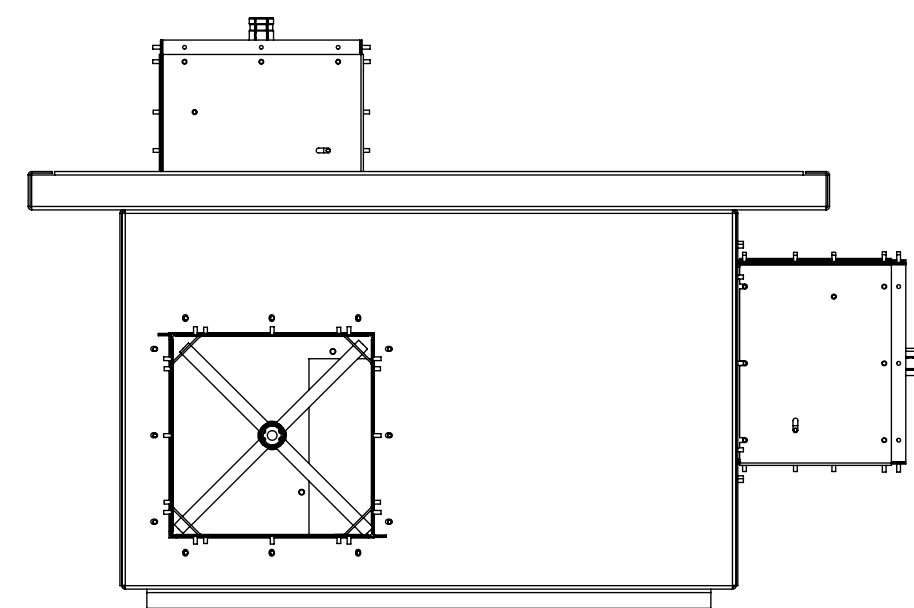
To power up requires the reverse of the above steps.



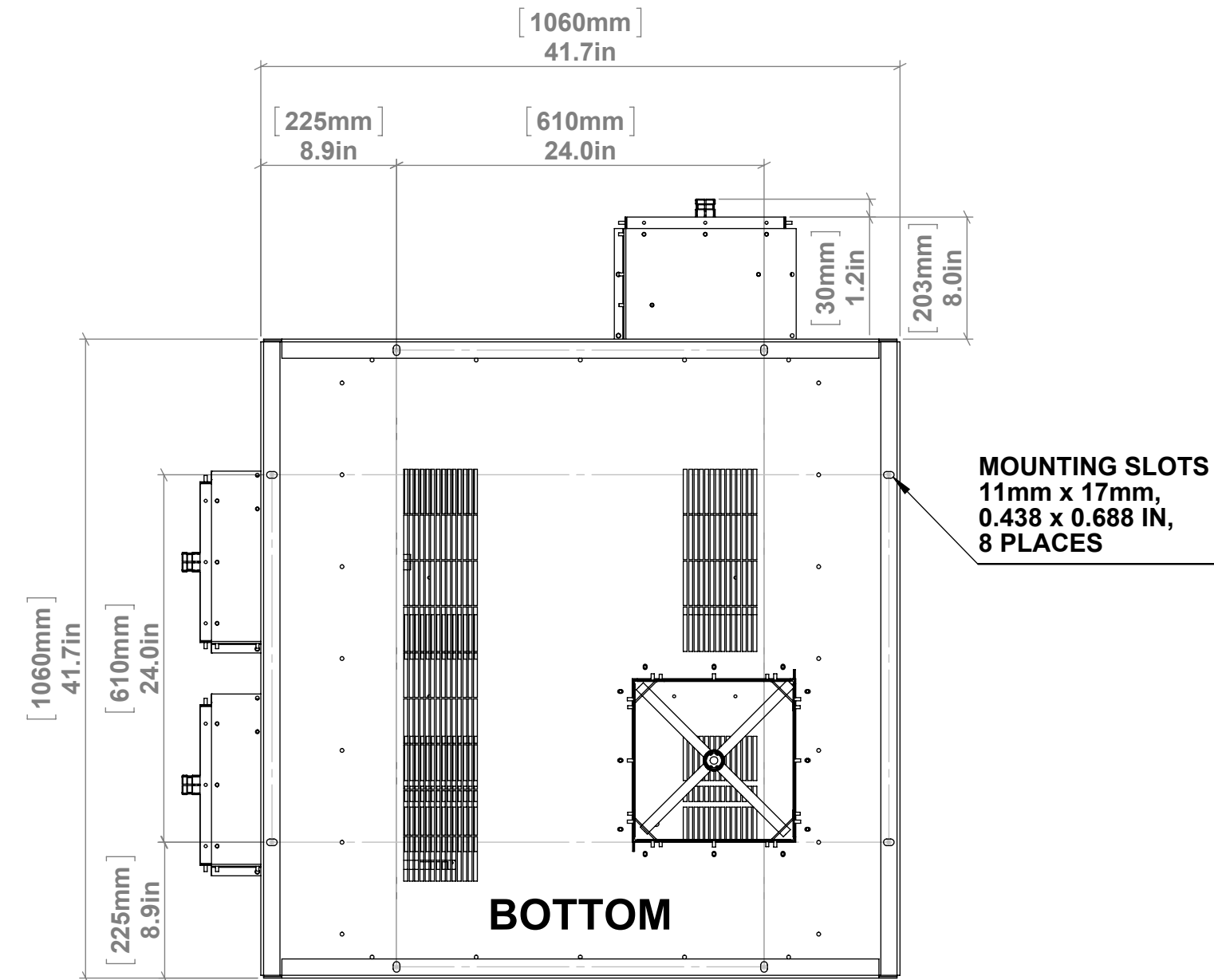
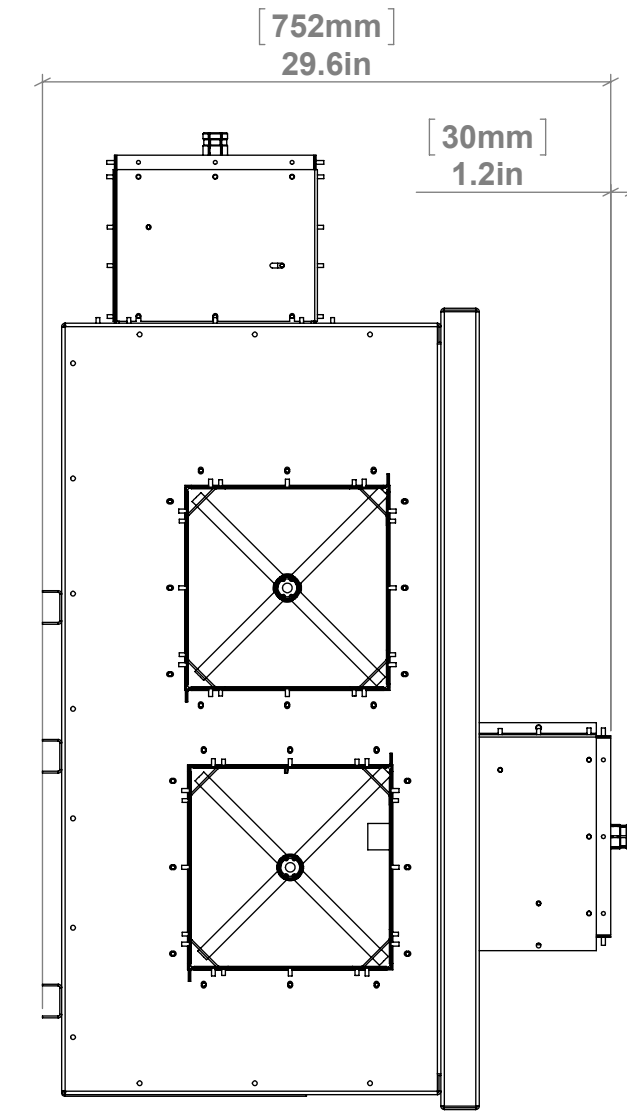
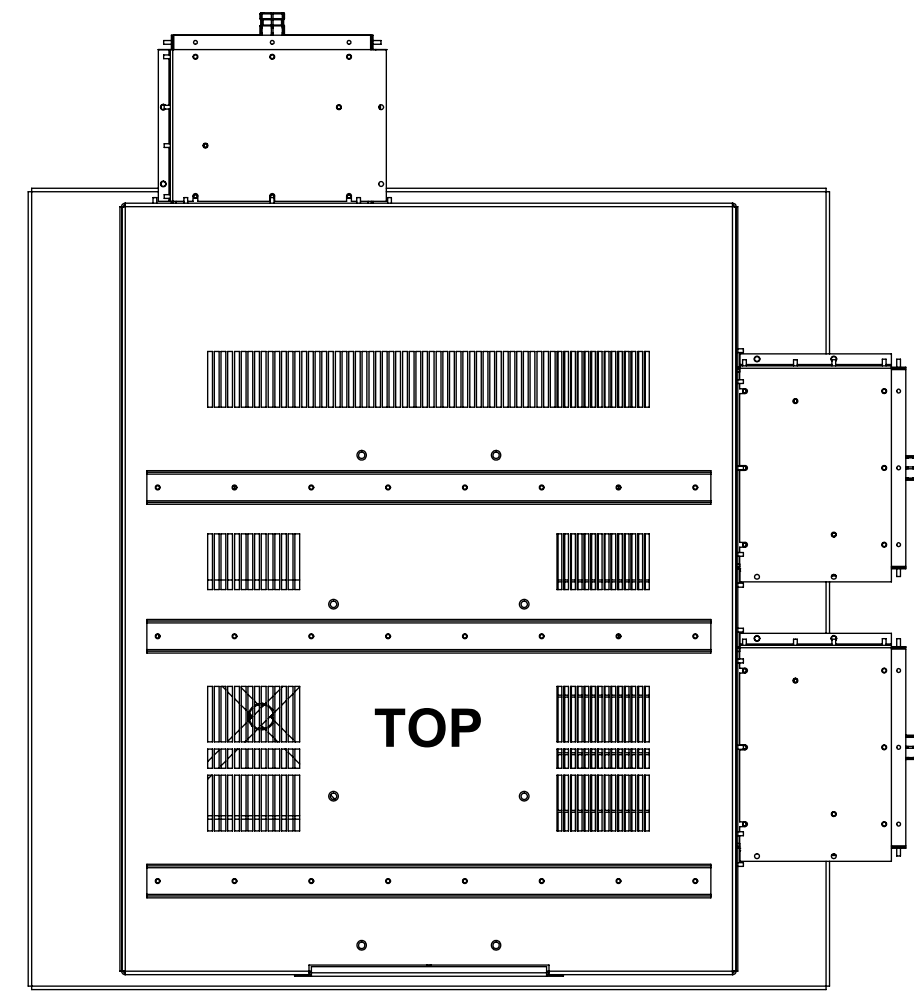
400 AMP DISCONNECT SWITCH, ITEM 8

313 MCM, TYP

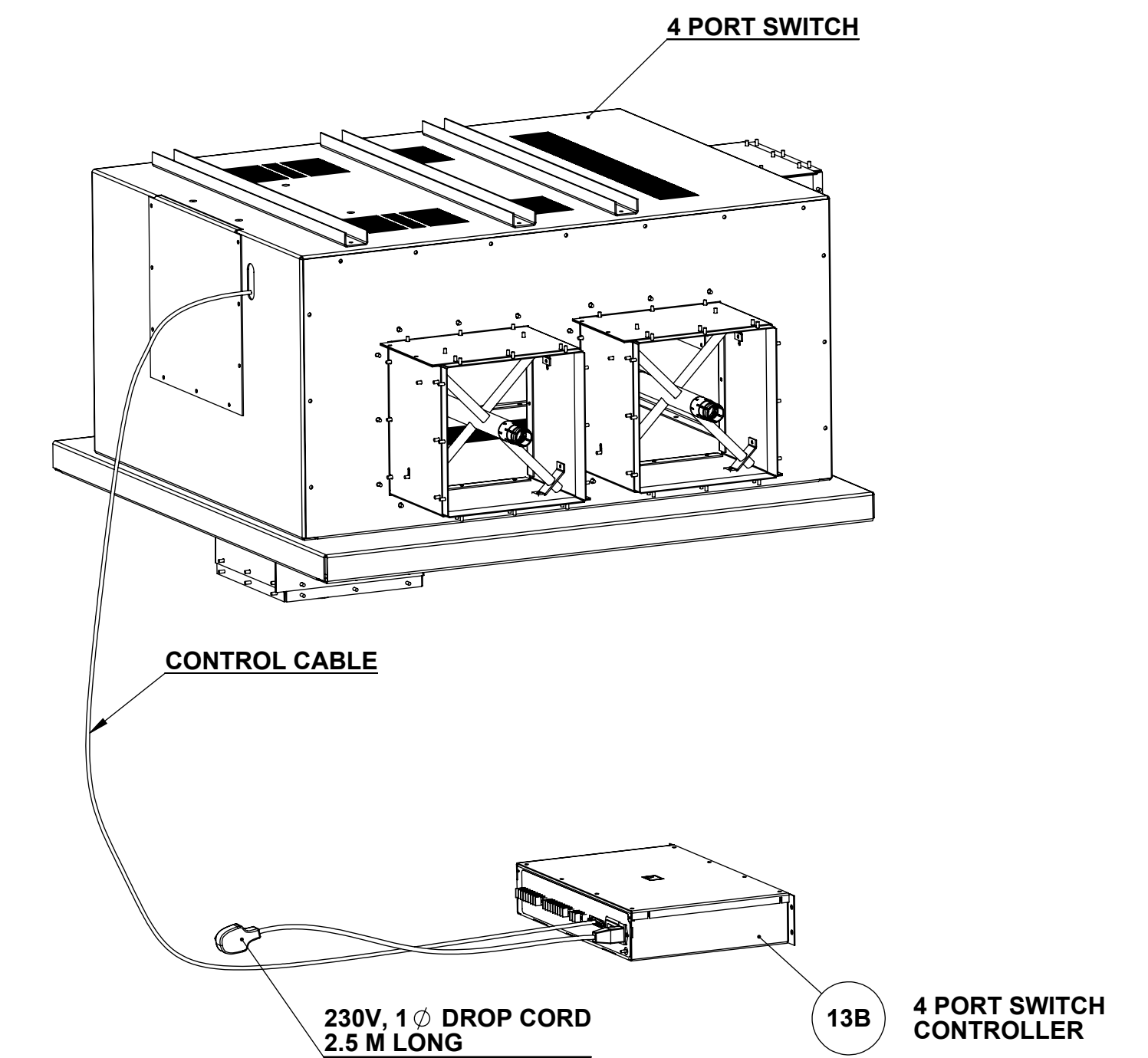
B	-	UPDATED ONE LINE DRAWING, SHT 5	JLH	JC	31MAY2013
A	-	INITIAL ISSUE	JLH	JC	29APR2013
ISS	DCN #	REVISION DESCRIPTION	DWN BY	APPD BY	APPD DATE
MATERIAL			FINISH		
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TITLE		ALL INDIA RADIO NX100 LAYOUT NOTES			
SIZE	CODE IDENT NO	DRAWING NO			
D	37338	201-1322-01 SHT 3			
SCALE	NTS	SHEET		3 OF 6	



4 PORT SWITCH (ITEM 5) DETAIL



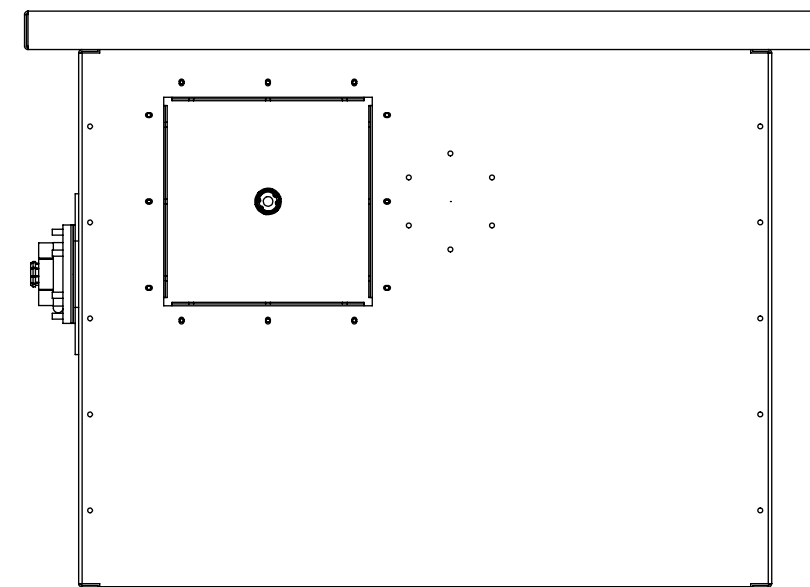
MOUNTING SLOTS
11mm x 17mm,
0.438 x 0.688 IN,
8 PLACES



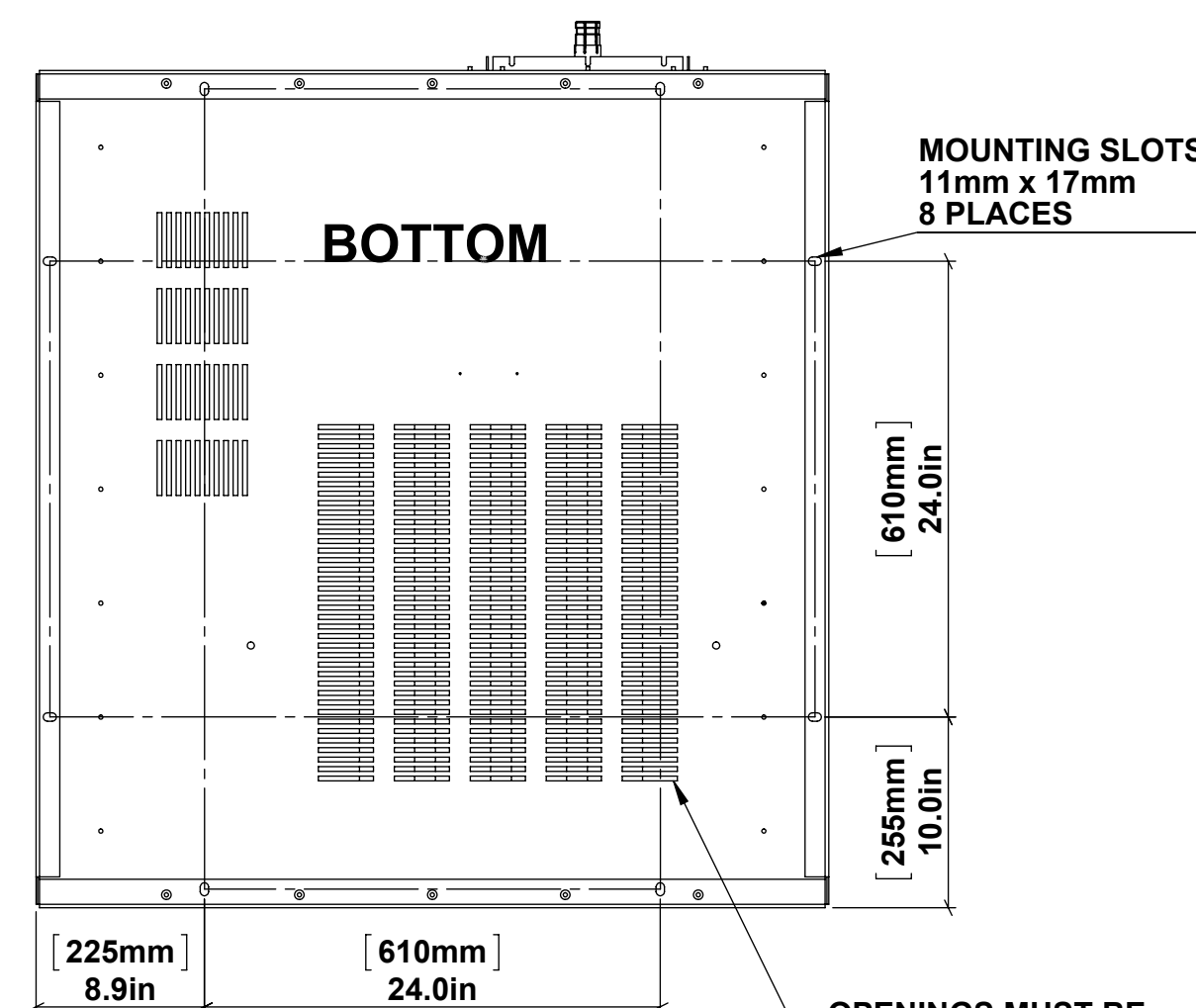
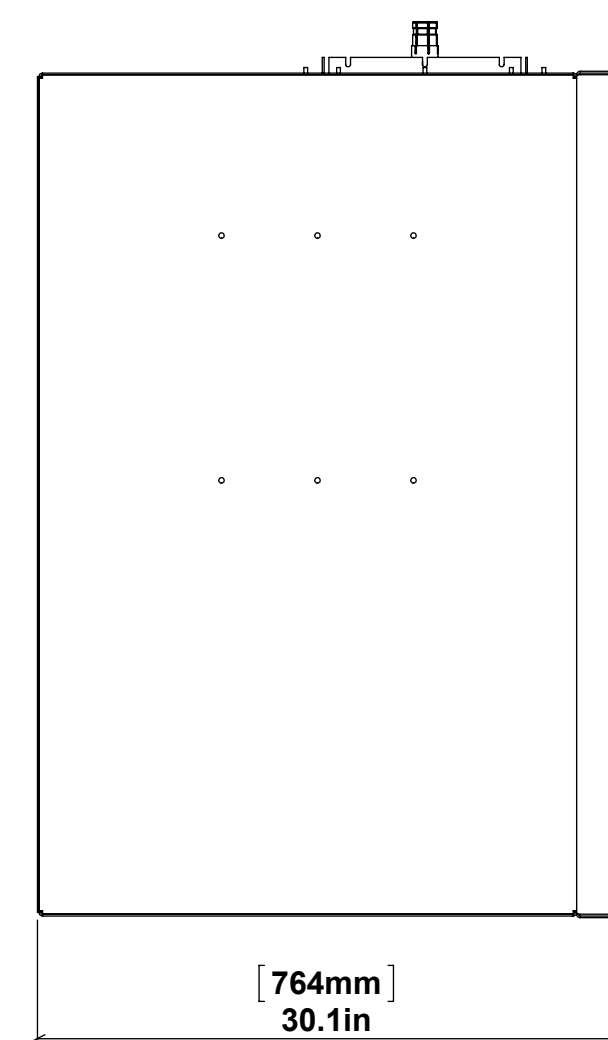
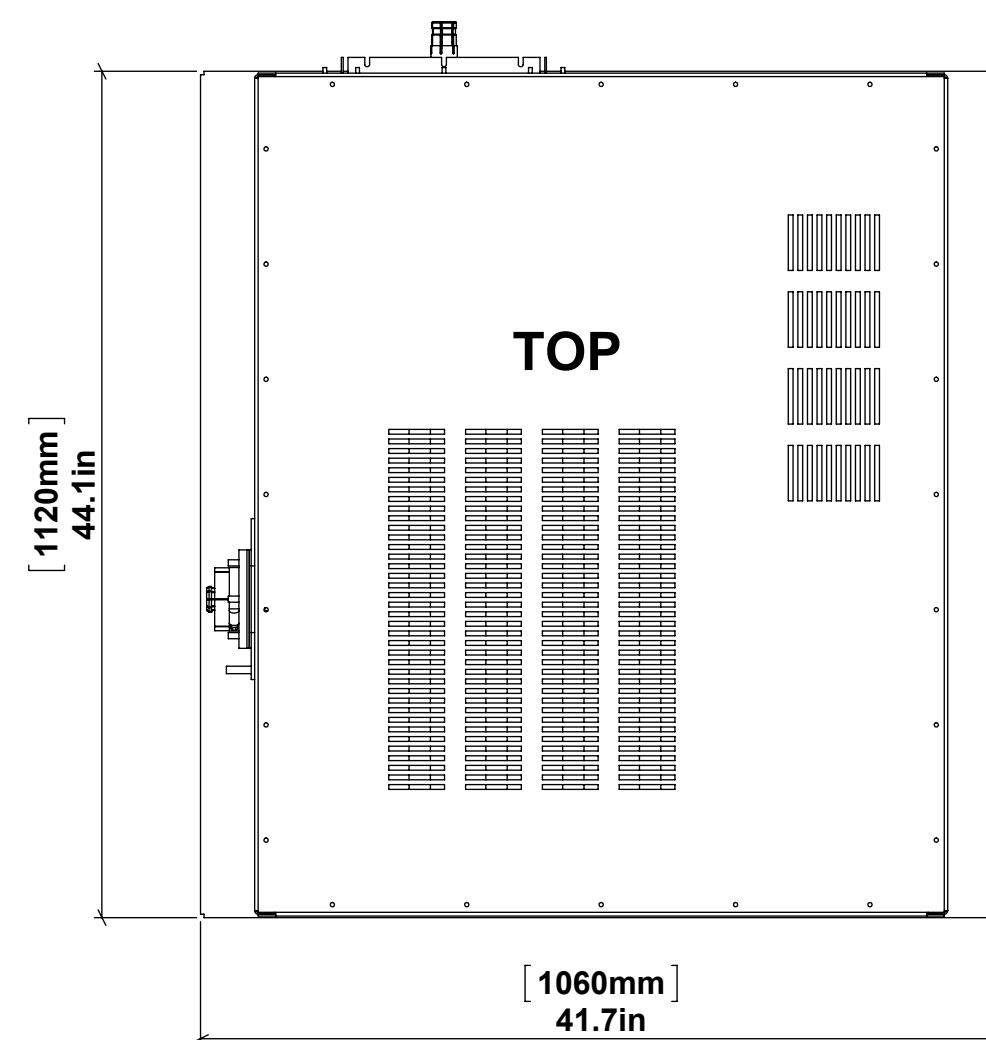
CONTROL CABLE

230V, 1 Ø DROP CORD
2.5 M LONG

13B 4 PORT SWITCH
CONTROLLER



IMU (ITEM 4) DETAIL

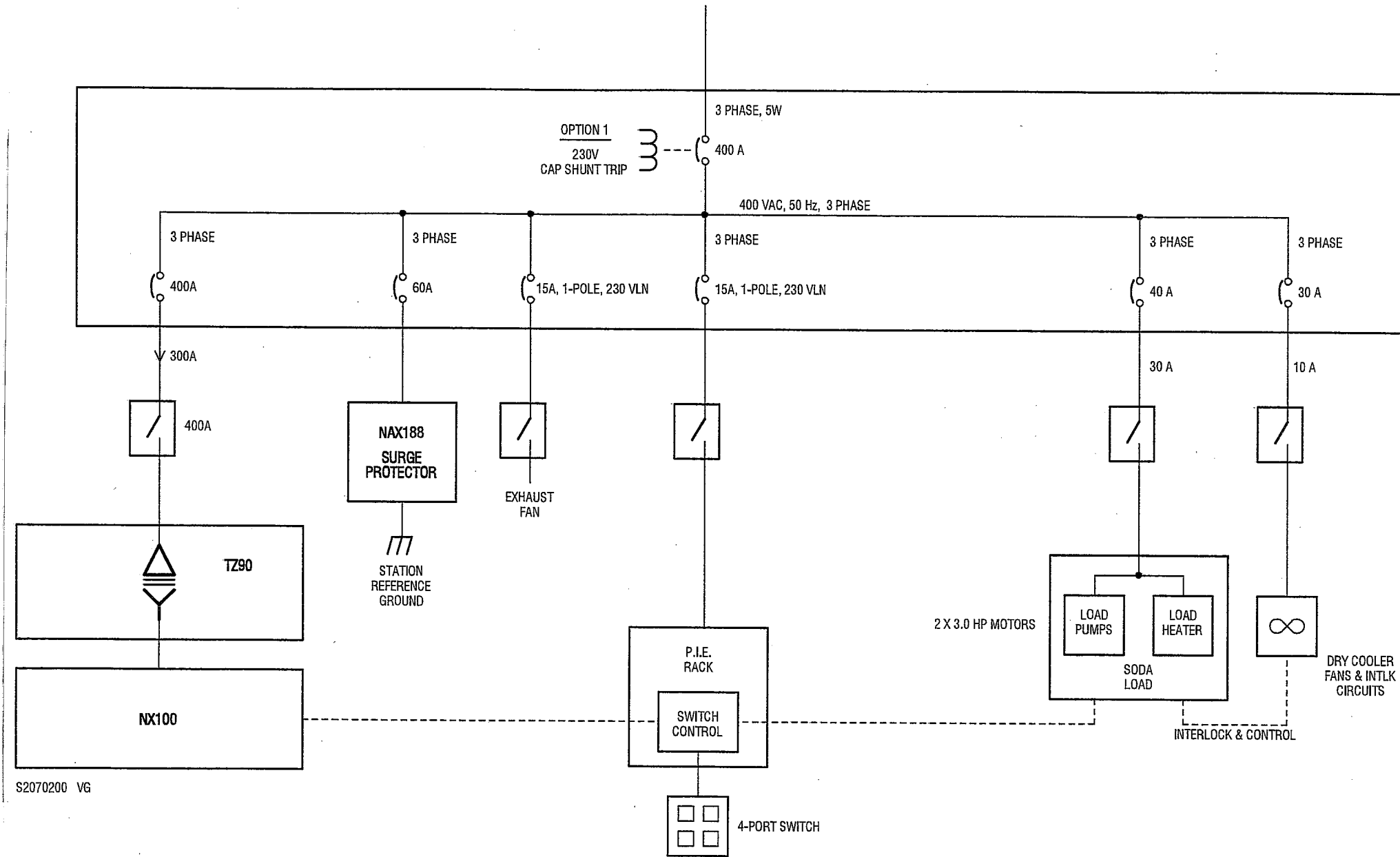


MOUNTING SLOTS
11mm x 17mm
8 PLACES

OPENINGS MUST BE
PROVIDED IN TOP OF STAND
TO ALLOW COOLING OF IMU

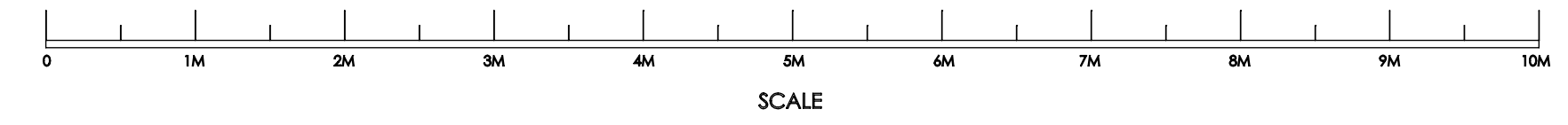
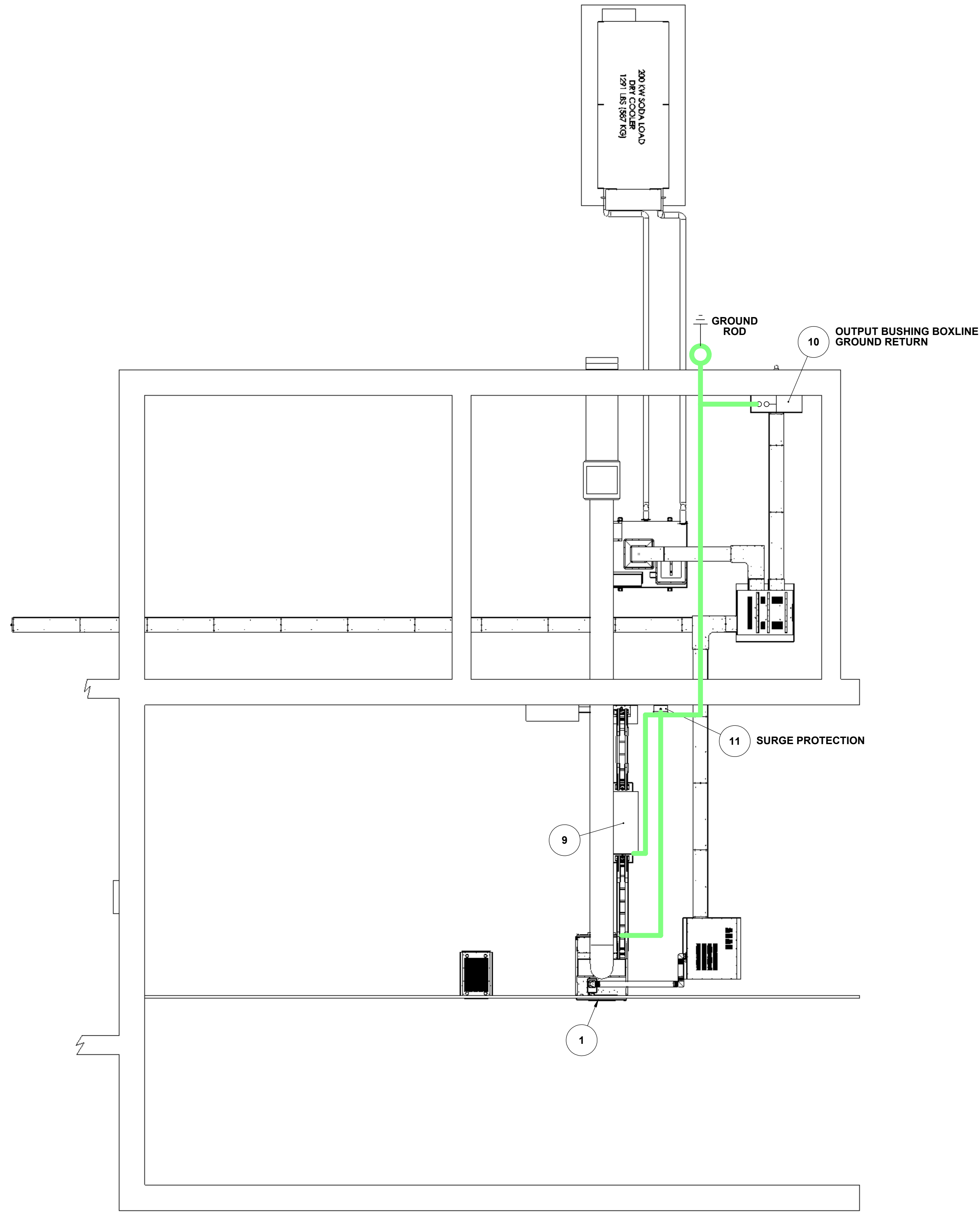
ISS	DCN #	REVISION DESCRIPTION	DWN BY	APPD BY	APPD DATE
B	-	UPDATED ONE LINE DRAWING, SHT 5	JLH	JC	31MAY2013
A	-	INITIAL ISSUE	JLH	JC	29APR2013
MATERIAL		SEE PARTS LIST	FINISH		
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TITLE		 ALL INDIA RADIO NX100 LAYOUT			
SIZE	CODE IDENT NO	DRAWING NO			
D	37338	201-1322-01 SHT 4			
SCALE	1:10	SHEET		4 OF 6	


A.I.R. NX100 SITE ONE LINE



S2070200 VG

B		-	UPDATED ONE LINE DRAWING, SHT 5	JLH	JC	31MAY2013
A		-	INITIAL ISSUE	JLH	JC	29APR2013
ISS	DCN #	REVISION DESCRIPTION		DWN BY	APPD BY	APPD DATE
MATERIAL SEE PARTS LIST				FINISH		
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nautel		TITLE				
		ALL INDIA RADIO NX100 ONE LINE DRAWING				
SIZE	CODE IDENT NO	DRAWING NO				
D	37338	201-1322-01 SHT 5				
SCALE	NTS	SHEET		5 OF 6		



B		-	UPDATED ONE LINE DRAWING, SHT 5	JLH	JC	31MAY2013	
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SCALE		1:1		SHEET		6 OF 6	