NX300 Main-Standby
Transmitter System

All India Radio (AIR)

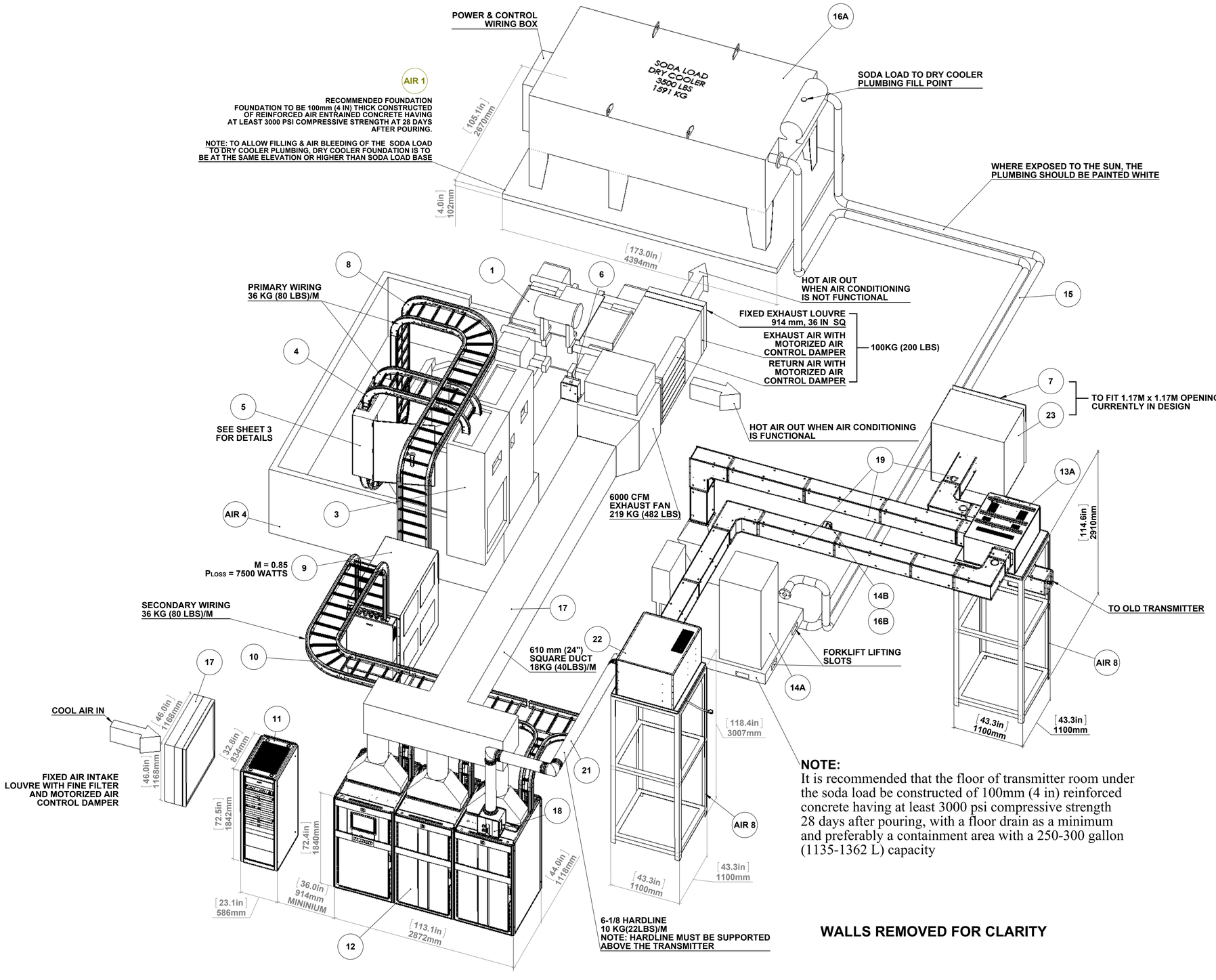
APPENDIX A
SYSTEM LAYOUT DRAWINGS

Issue 0.1 ..... 03 April 2013

Nautel Limited
10089 Peggy's Cove Road,
Hackett's Cove, NS, Canada B3Z 3J4
T.877 6 nautel (628835) or +1.902.823.2233
F.+1.902.823.3183 info@nautel.com

U.S. customers please contact:
Nautel Inc.
201 Target Industrial Circle, Bangor ME 04401
T.877 6 nautel (628835) or +1.207.947.8200
F.+1.207.947.3693 info@nautel.com

e-mail: support@nautel.com
www.nautel.com



NOTE:
It is recommended that the floor of transmitter room under the soda load be constructed of 100mm (4 in) reinforced concrete having at least 3000 psi compressive strength 28 days after pouring, with a floor drain as a minimum and preferably a containment area with a 250-300 gallon (1135-1362 L) capacity

WALLS REMOVED FOR CLARITY

THE FOLLOWING ITEMS NEED TO BE SUPPORTED:

1) ALL PRIMARY & SECONDARY WIRING AND CABLE TRAYS, ITEMS 4, 8 & 17, 36 KG(80 LBS)/M
2) ALL 6-1/8 HARDLINE BETWEEN TRANSMITTER & IMU, ITEM 21, 10 KG (22 LBS)/M
3) 610MM SQUARE AIR EXHAUST DUCT, PART OF ITEM 17, 18 KG(40 LBS)/M
4) 6000 CFM EXHAUST FAN, PART OF ITEM 17, 219 KG (482 LBS)
5) 914 MM SQUARE DUCT WITH EXHAUST & RETURN AIR MOTORIZED CONTROL DAMPERS PART OF ITEM 17, 100 KG(220 LBS)

ISS	DCN #	REVISION DESCRIPTION	DWN BY	APPD BY	APPD DATE
D	-	ADDED 60 A BREAKER, SHT 5	JLH	JC	01MAY2013
C	-	ADDED DIMENSIONS, DETAILS & SHEETS 4 & 5	JLH	JC	26FEB2013
B	-	UPDATED PARTS LIST	JLH	JC	31JAN2013
A	-	INITIAL ISSUE	JLH	JC	25JAN2013

MATERIAL: SEE PARTS LIST

FINISH

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1 PLACE DECIMAL ± .030
FRACTIONAL ± 1/32

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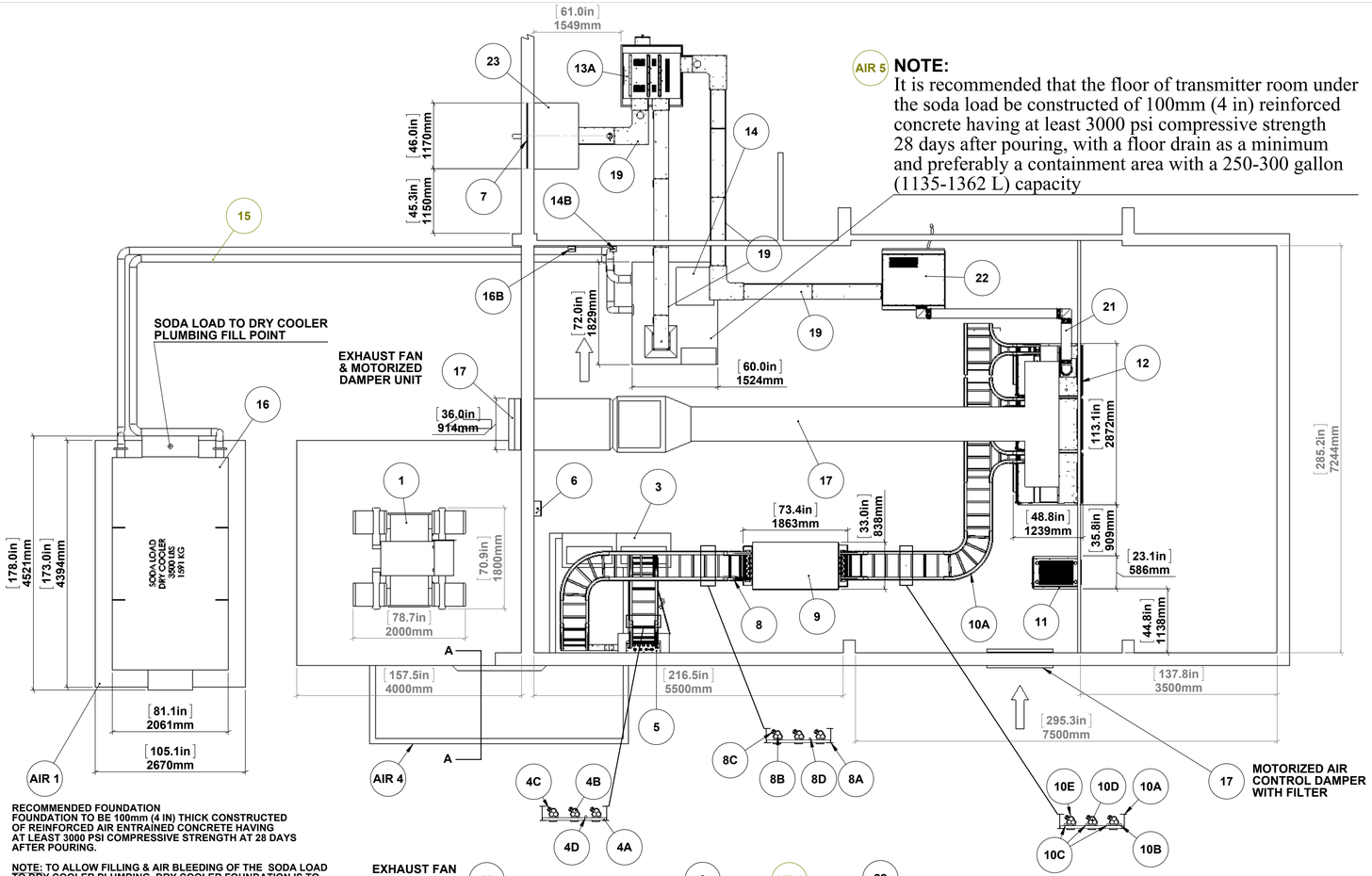
TITLE: ALL INDIA RADIO NX300 LAYOUT

SIZE	CODE IDENT NO	DRAWING NO
D	37338	201-1320-02 SHT 1

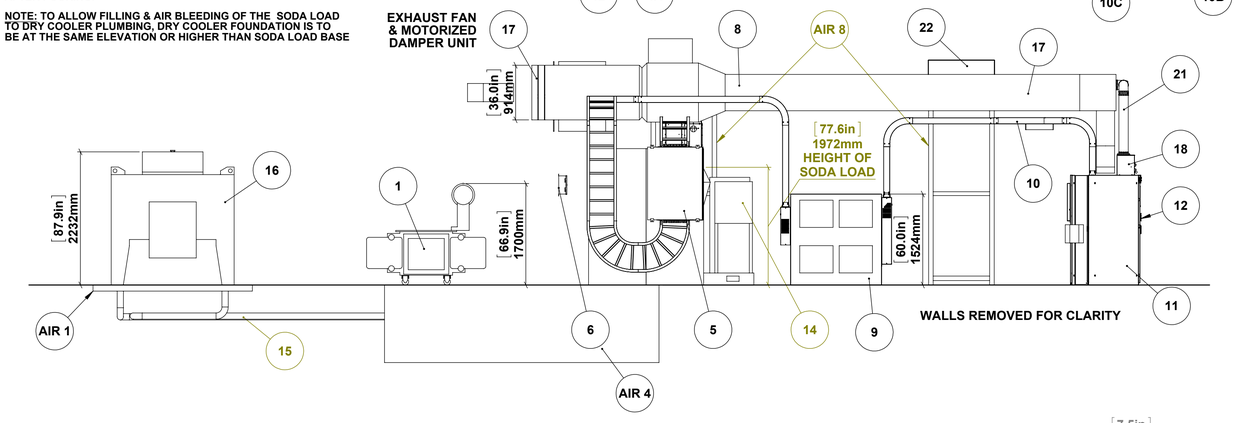
SCALE 1:30 SHEET 1 OF 6

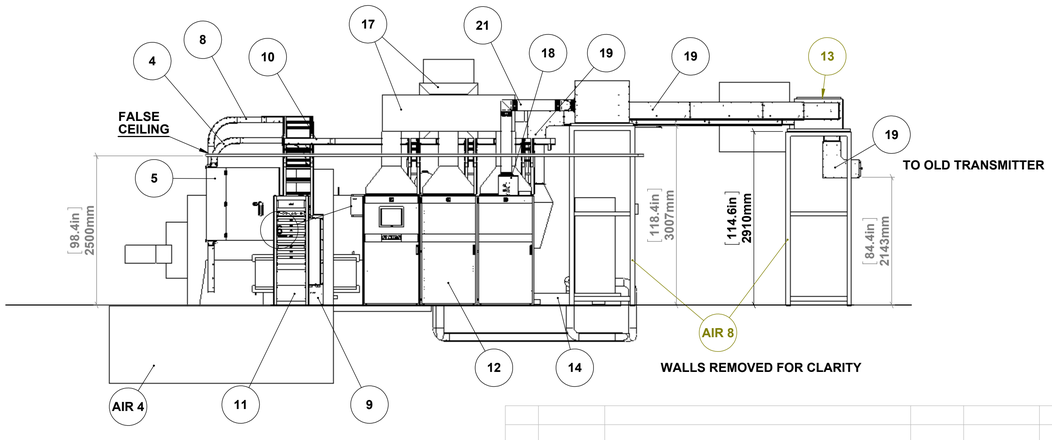


AIR 5 **NOTE:**
It is recommended that the floor of transmitter room under the soda load be constructed of 100mm (4 in) reinforced concrete having at least 3000 psi compressive strength 28 days after pouring, with a floor drain as a minimum and preferably a containment area with a 250-300 gallon (1135-1362 L) capacity

RECOMMENDED FOUNDATION
FOUNDATION TO BE 100mm (4 IN) THICK CONSTRUCTED OF REINFORCED AIR ENTRAINED CONCRETE HAVING AT LEAST 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS AFTER POURING.

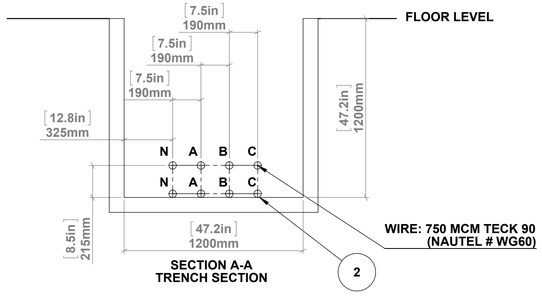
NOTE: TO ALLOW FILLING & AIR BLEEDING OF THE SODA LOAD TO DRY COOLER PLUMBING, DRY COOLER FOUNDATION IS TO BE AT THE SAME ELEVATION OR HIGHER THAN SODA LOAD BASE





FLOOR LEVEL

A/R: AS REQUIRED
TBD: TO BE DETERMINED



ITEMS SUPPLIED BY NAUTEL

ITEM		DESCRIPTION	NAUTEL #	QTY
1		TRANSFORMER, 3PH, 11KV/415, 750KVA, OIL FILLED	TZ131	1
2		11 KV SECONDARY WIRING KIT (750 MCM x 2)	228-8329	1
3		SWITCH BOARD 1200A, W/SHUNT TRIP MULTI BREAKER, 2 RACKS, NX300	UE153	1
4 & 8		PRIMARY WIRING KIT (300 MCM x 3)	228-8322	1
5		1200 AMP DISCONNECT ASSY	228-8420	1
6		SURGE PROTECTION	NAX188/02	1
7		PLATE STYLE FEED THRU		1
9		NX300 POWER SUPPLY ASSY, INDIA (3520 LBS, 1600 KG)	207-8389-03	1
10		SECONDARY WIRING KIT (535 MCM x 3)	228-8323	1
11		DRM RACK	228-8370	1
12		FINAL ASSY, NX300- RLS 3	NARA54B	1
13	13A	4 PORT SWITCH ASSEMBLY	228-6010	1
	13B	4 PORT CONTROL/MONITOR ASSY, INDIA	228-2100	1
14	14A	LOAD, SODA, 500KW, 120 OHM, 400V 3-PH, 50Hz (2700 LBS, 1227 KG)	UP133	1
	14B	SODA LOAD WIRING KIT	228-2321	1
15		PLUMBING KIT (UP133)	228-8360	1
16	16A	500 KW DRY COOLER (3500 LBS, 1591 KG)	PART OF UP133	1
	16B	DRY COOLER WIRING KIT	228-8320	1
17	17A	AIR HANDLING KIT, NX300, INDIA	UE181	1
	17B	AIR HANDLING WIRING KIT, NX300, INDIA	228-8328	1
18		INTERLOCK KIT, 6-1/8, GROUND SWITCH	228-8380	1
19		BOXLINE KIT	228-6045	7
20		SODIUM CARBONATE		20 L
21		HARDLINE KIT, 6-1/8, NX300, INDIA	228-8520	1
22		IMU ASSEMBLY, 200/300 KW, INDIA	228-6050-XX	1
23		OUTPUT BUSHING BOXLINE GROUND RETURN	228-6046	1

ITEMS SUPPLIED BY ALL INDIA RADIO

ITEM	DESCRIPTION	QUANTITY
AIR 1	DRY COOLER FOUNDATION	1
AIR 2	SUPPORT HANGERS FOR CABLE TRAYS, BOX LINES & IMU/4 PORT SWITCH	A/R
AIR 3	SUPPORTS FOR DRY COOLER COOLING PIPES	A/R
AIR 4	1200mm WIDE x 1200mm DEEP CABLE TRENCH BETWEEN 11KV TX & BREAKER PANEL	1
AIR 5	FLOOR DRAIN & 250-350 GAL CONTAINMENT UNDER SODA LOAD (SEE NOTE ABOVE)	1
AIR 6	VACUUM SWITCH	1
AIR 7	VACUUM SWITCH TO 11 KVA TRANSFORMER (ITEM 1) WIRING	A/R
AIR 8	1100mm x 1100mm x 3007mm & 2910mm HIGH, 76mm STEEL ANGLE STAND FOR IMU & 4 PORT SWITCH	1 EACH

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ISS	DCN #	REVISION DESCRIPTION	DWN BY	APPD BY	APPD DATE

MATERIAL **SEE PARTS LIST** FINISH

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FRACTIONAL ±1/32

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TITLE
ALL INDIA RADIO NX300 LAYOUT

SIZE D | CODE IDENT NO 37338 | DRAWING NO **201-1320-02 SHT 2**
SCALE 1:50 | SHEET 2 OF 6

Notes for New Layout 25 Jan 2013 NX300 Sites rev 1

1. The NX300 transformer assy (228-8389-03) was moved away from the wall to allow access to the connection side

2. The plumbing kit (228-8360) consists of the necessary components required to implement what is shown on drawing 228-1320-02.

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. Height specified in item AIR 9 on drawing 201-1320-02 sht 2. If built to the dimensions we suggest the base plates will mount successfully.

5. The trench from the medium voltage transformer (AIR preferred style) to the main LV breaker is detailed for a 1200 amp connection using dual strands of 750 MCM (380 mm^2) per phase. Layout and ampacity determined by Canadian consulting engineering firm.

6. 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 (6000 CFM) to enter the room when external exhaust is in use. Suggested location shown on drawing 201-1320-02.

7. 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.

8. The dry cooler is shown in the area your dwg suggested-plumbing to be completed by AIR. For a run longer than 60 feet (18 m) each way, the pipe diameter will need to increase to 3 inch to limit pressure drop and allow full coolant flow with the pump provided. The plumbing kit supplied is 2.5 inch.

9. 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.

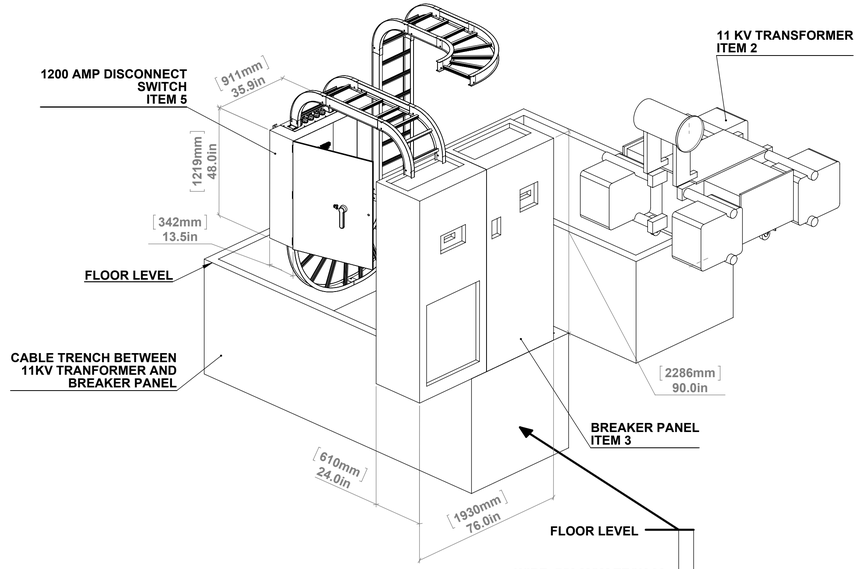
10. A complete description of the interlock scheme is included, see below.

11. 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 75 US gallons of the mixture.

12. DRM Rack must be a minimum of 36" (915 mm) from side of NX300 transmitter to accommodate NX300 combiner maintenance.

13. Actual location of feed through is unknown relative to left reference wall of the new transmitter hall. Width of New Transmitter Hall was not given on drawing of 14Jan 2013. Hall width on 201-1320-02 was scaled from drawing of 14Jan 2013.

14. 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.



1200 AMP DISCONNECT SWITCH, ITEM 5

Typical NX300 Interlock Key Sequence 17Jan2013

The following sequence of Interlock key steps is to be followed to ensure safe access into the NX300 & ATU Tuning Hut.

NX300 Access Only

Step 1: Switch AC power off at the NX300 Main AC Cutoff 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 NX300 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 eight key transfer case in the middle cabinet of the NX300 which releases the seven 'C' keys. Six 'C' keys allow access into NX300 through the rear doors and into the filter through the front inner doors. The seventh 'C' is required to unlock the ATU Tuning Hut.

Full System Access

Follow steps 1 thru 3

Step 4: Switch off AC power to old the transmitter at the Main AC Cutoff Switch. Turn Interlock Key 'D' to engage the key mechanism bolt and lock AC power handle in the 'Off' position. This releases the 'D' key.

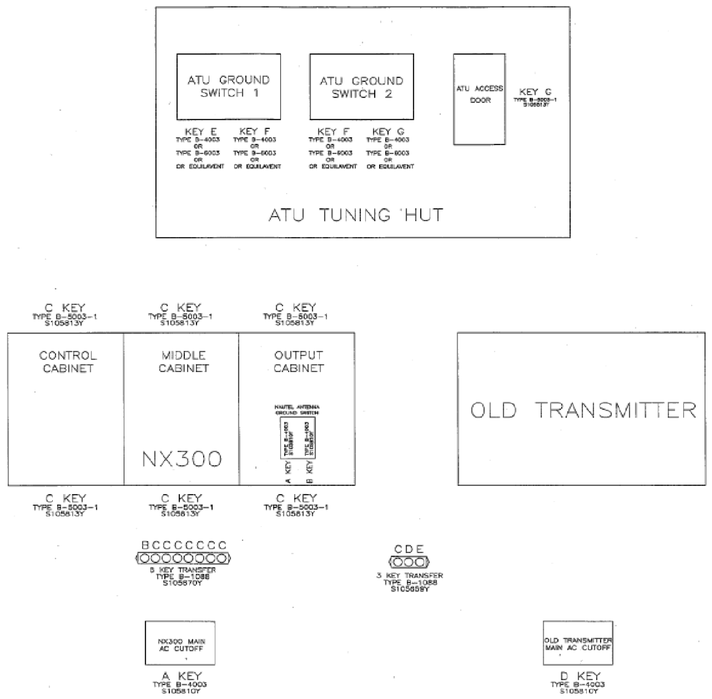
Step 5:
Insert a 'C' key from the NX300 eight key transfer case and the 'D' key from the Old Transmitter Main AC Cutoff Switch into the three key transfer case (mounted on a wall). Turn the two 'C & D' keys which captures them in place and releases the 'E' key.

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.

To power up requires the reverse of the above steps.



ALL KEY NUMBERS ARE FROM THE SUPERIOR INTERLOCK CORPORATION

D	-	ADDED 60 A BREAKER, SHT 5	JLH	JC	01MAY2013
C	-	ADDED DIMENSIONS, DETAILS & SHEETS 4 & 5	JLH	JC	26FEB2013
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MATERIAL

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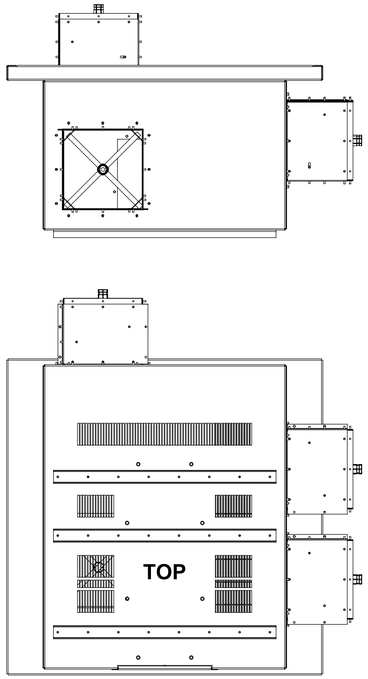
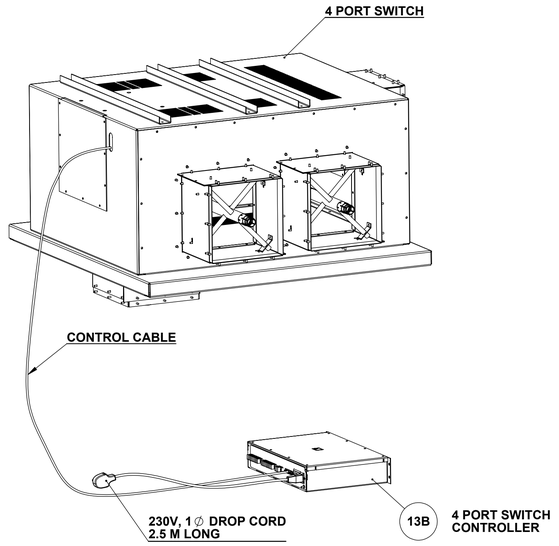
TITLE
ALL INDIA RADIO
NX300 LAYOUT NOTES

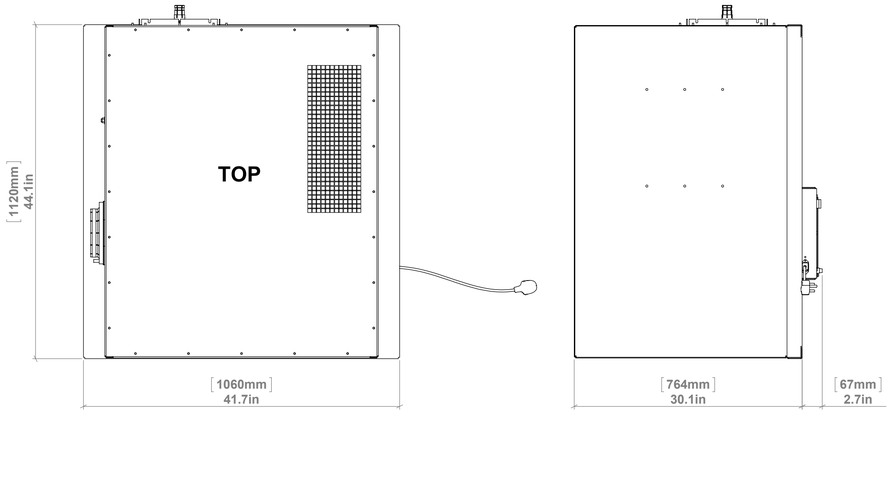
SIZE	CODE IDENT NO	DRAWING NO
D	37338	201-1320-02 SHT 3
SCALE	NTS	SHEET 3 OF 6

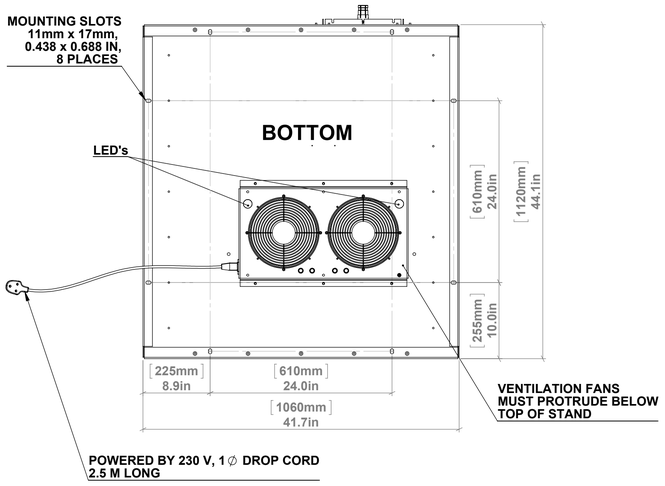
4 PORT SWITCH (ITEM 13) DETAIL





IMU (ITEM 22) DETAIL





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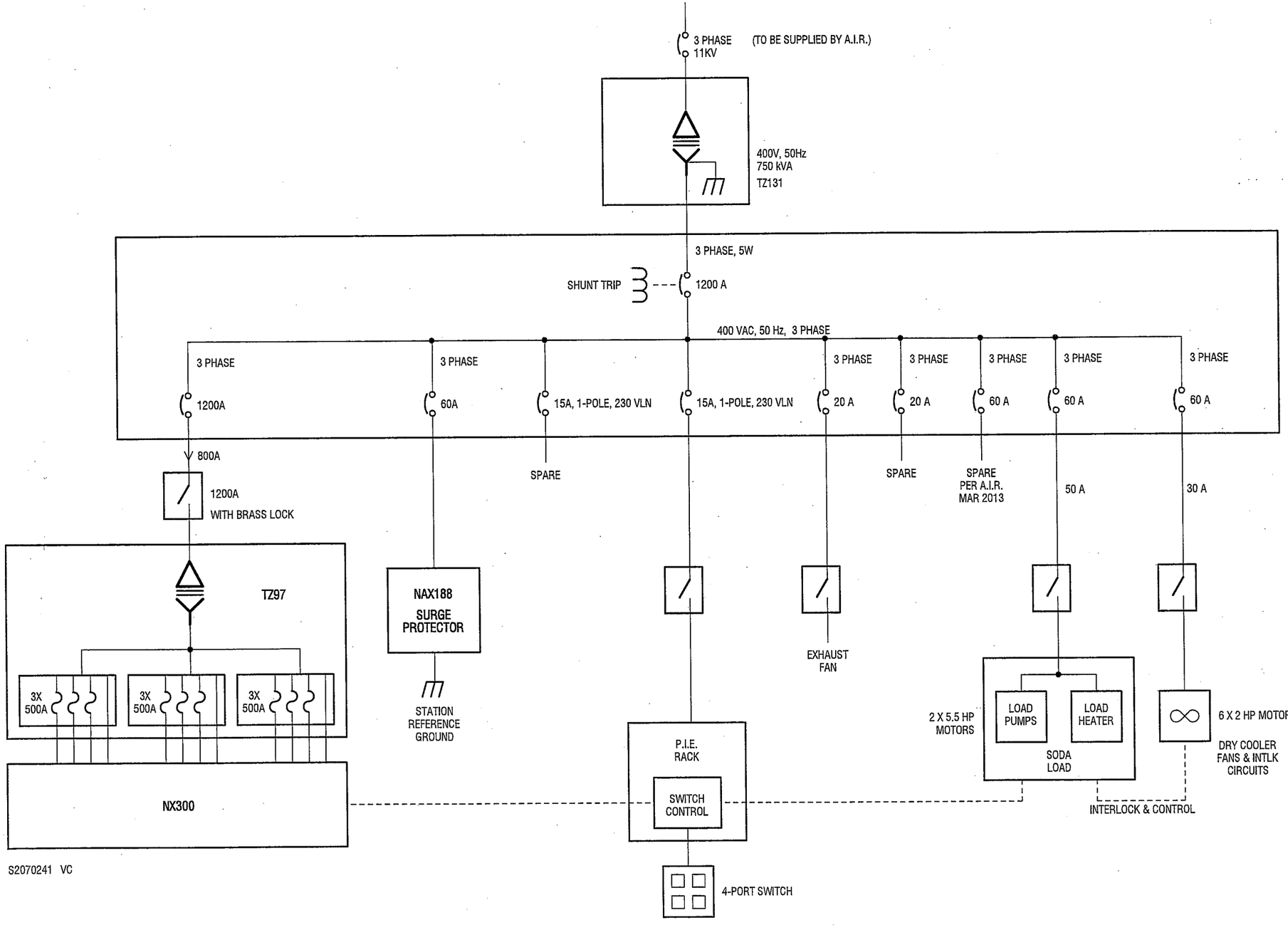
TITLE: ALL INDIA RADIO NX300 LAYOUT

SIZE: D | CODE IDENT NO: 37338 | DRAWING NO: 201-1320-02 SHT 4

SCALE: 1:10 | SHEET: 4 OF 6

A.I.R. NX300 SITE ONE LINE



S2070241 VC

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FRACTIONAL ±1/32

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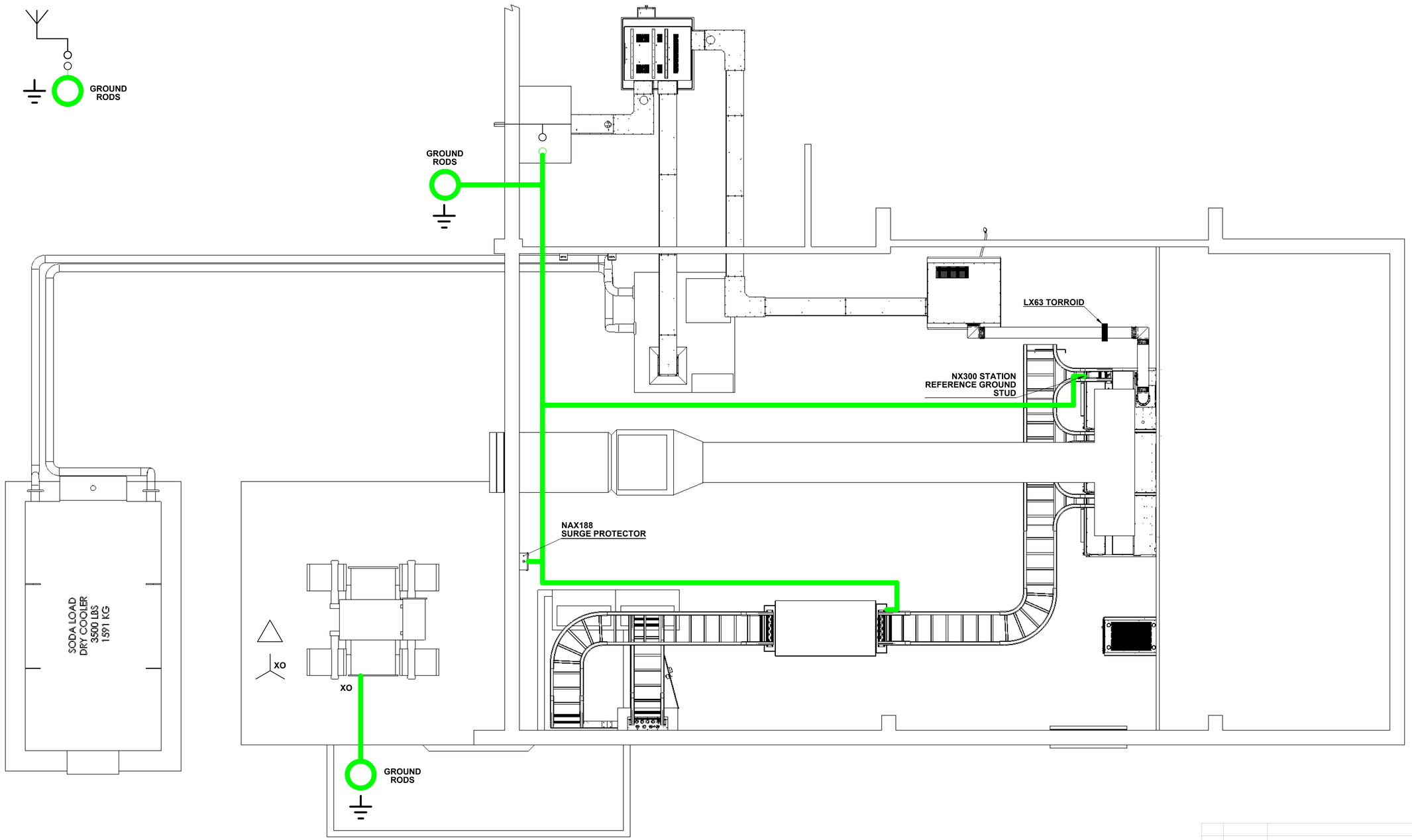
TITLE: ALL INDIA RADIO
NX300 ONE LINE DRAWING

SIZE	CODE IDENT NO	DRAWING NO
D	37338	201-1320-02 SHT 5

SCALE: NTS SHEET: 5 OF 6



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TITLE: ALL INDIA RADIO
NX300 EARTHING

SIZE: D | CODE IDENT NO: 37338 | DRAWING NO: 201-1320-02 SHT 6

SCALE: 1:30 | SHEET: 6 OF 6