

**CONTENTS**

SL NO	DOCUMENT TITLE	DOCUMENT REF NO.	PAGES	DATE
1	GIS online PD monitoring system	'TB-382-316-35-14_R4	55	05.02.2025


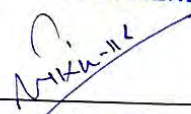



**NOTE:**

- As per the discussion held with BHEL/Siemens/Qualitrol 10% of input/data cards of each type used in OCV/PD sensors shall be supplied as spare.
- Internal Component details (with instructions for cards) of OCV shall be <sup>added</sup> in Partial discharge monitoring system hardware manual.
- In line with reply received on 05.02.25 Radial Control Cabinet (with HMI) shall be placed in Central Control Room in control block of power house. No cabinet is available for RCC as of now and placement of RCC in control block layout shall be also -looked into by BHEL.
- Items & Quantities mentioned in document are noted. However any additional item/quantity whether mentioned or not shall be in BHEL'S scope to complete the system and functionality.
- Location of PD sensors & OCV shall be marked in layout drawing of G75/TH floor.
- Sensitivity test for attenuation shall be verified at project site in line with reply dated 05.02.25.

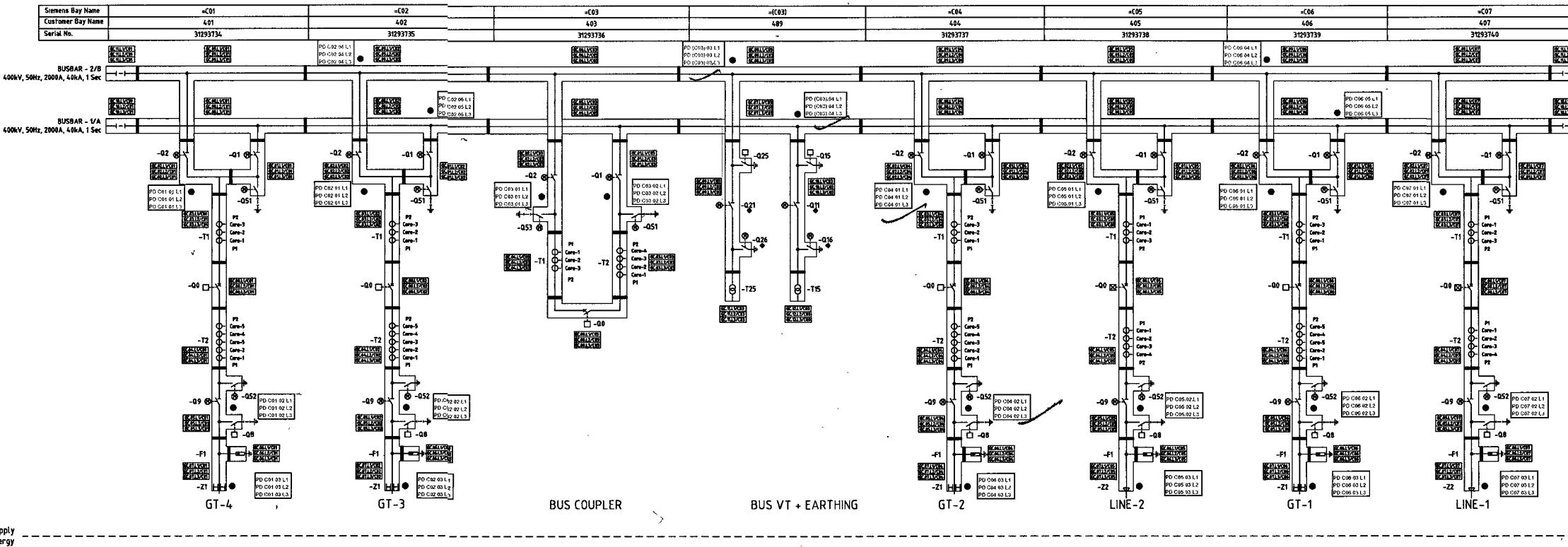
Removal of this drawing/document from site is the contractor's responsibility. The contractor shall ensure the accuracy of the equipment as per IEC for the achievement of designed performance at site and completeness of the equipment.

**जाँची गई  
CHECKED**

*जाँची गई*  
*Ankur*

<b>PROJECT</b>	<b>4X111 MW VISHNUGAD PIPALKOTI HEP</b>
<b>PACKAGE</b>	<b>400 kV GIS</b>
 <b>टीएचडीसी इंडिया लिमिटेड THDC INDIA LIMITED</b>	<b>CUSTOMER</b> <b>THDC India Limited</b>  <b>संस्तुत RECOMMENDED</b> शैलेन्द्र सिंह पंवार Shailendra Singh Panwar उपमहासंचालक (विद्युत यंत्रिक-परिकल्प) Dy. General Manager (EM-Design) टीएचडीसी इंडिया लिमिटेड, रीशिकेश THDC INDIA LTD., RISHIKESH
 <b>बीएच ई एल BHEL</b>	<b>CONTRACTOR</b> <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>यथा टिप्पणी अनुमोदित APPROVED AS NOTED</b>
 <b>SIEMENS ENERGY</b>	<b>SUPPLIER</b> <b>SIEMENS LTD.</b>  <b>आर. आर. सेमवाल R. R. Semwal</b> मुख्य महासंचालक (विद्युत-परिकल्प) CGM (EM-Design) टीएचडीसी इंडिया लिमिटेड, रीशिकेश THDC INDIA Ltd., Rishikesh

### GAS SINGLE LINE DIAGRAM



Equipment	Legend	Symbol
Circuit breaker (without CSD)	-00	
Circuit breaker (with CSD)	-00	
Disconnector	-01, -09	
Disconnector (Single Pole)	-01, -09	
WP Earthing switch (non-insulated)	-052	
WP Earthing switch (non-insulated) (Single Pole)	-01, -052	
WP Earthing switch (insulated)	-051, -053	
High speed earth switch (insulated)	-08	
High speed earth switch (non-insulated)	-05, -05	
Current transformer	-T1, -T2	
Voltage transformer	-T5, -T5	
Surge Arrester	-F1	
Transformer termination module	-Z1	
Cable termination module	-Z2	
Gas tight bushing		
UHF PD Detection Sensor		
Manual Isolating Link		

System Rating	
Rated voltage	420 kV
Rated frequency	50 Hz
Rated lightning impulse withstand voltage	1425 kV
Rated short-duration power frequency withstand voltage	650 kV
Rated switching impulse withstand voltage	1050 kV
Rated normal current Busbar @45 Deg.C.	2000 A
Rated normal current Bus Coupler @45 Deg.C.	2000 A
Rated normal current Feeder @45 Deg.C.	2000 A
Rated shorttime withstand current	1s 40kA
Rated shortcircuit breaking current	40 kA
Rated control voltage	220 V DC
Rated control voltage circuit breaker	220 V DC
Rated control voltage isolator/earthing switch	220 V DC
Auxiliary supply voltage	415/240 V AC

CURRENT TRANSFORMER DETAILS											
Field Type	CT	Core No.	Application	Current Ratio	Accuracy Class as per IEC 61869	VA Burden	ISF	ALF	Knee point voltage V <sub>k</sub> (V) (+/-)	Rct in Ohm (+/-)	Magnetizing current in at V <sub>k</sub> (mA) (+/-)
C05 & C07	-T1	1	Protection	2000-1000-500/1	SP	10	-	20	-	-	-
		2	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
		3	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
C05 & C07	-T2	1	Metering	2000-1000-500/1	0.2S	20	5 with choke coil	-	-	-	-
		2	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
		3	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
C01, C02, C04 & C06	-T1	1	Protection	500/1	SP	10	-	20	-	-	-
		2	Protection	500/1	PX	-	-	-	(160Rct+280)	120	2.5
		3	Protection	500/1	PX	-	-	-	(200Rct+470)	120	2.5
C01, C02, C04 & C06	-T2	1	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
		2	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
		3	Metering	500/1	0.2	20	5 with choke coil	-	-	-	-
C03	-T1	1	Protection	2000-1000-500/1	SP	10	-	20	-	-	-
		2	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
		3	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
C03	-T2	1	Metering	2000-1000-500/1	0.2	20	5 with choke coil	-	-	-	-
		2	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5
		3	Protection	2000-1000-500/1	PX	-	-	-	2000-1000-500	30-60-120	10-5-2.5

Extended primary current : 120 % at all taps

GAS PRESSURE LEVELS				
Gauge pressures @20°C	Nominal pressure	Loss of SF6	CB block level	Minimum SF6 density
	bar	bar	bar	bar
Circuit breaker compartment	5.6	5.2	5.0	5.0

Density monitor shall be hybrid type with 6.5-20mA output to indicate SF6 gas pressure in HMI.

GAS PRESSURE LEVELS				
Gauge pressures @20°C	Nominal pressure	Loss of SF6	SF6 low level	Zone trip level
	bar	bar	bar	bar
Voltage transformer compartment	5.6	5.2	5.0	5.0
Switchgear compartments except CB and VT	5.2	4.9	4.7	4.7

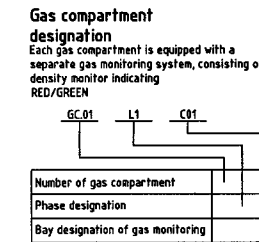
Density monitor shall be hybrid type with 6.5-20mA output to indicate SF6 gas pressure in HMI.

**EXTERIOR COLOUR SHADES**  
 GIS COLOUR SHADE : RAL 7032  
 LCC COLOUR SHADE : RAL 7032

Device designation to  
 DIN EN 81346 / IEC 81346 (2009)

**Phase assignment**  
 Client designation  
 L1 = C = R  
 L2 = B = Y  
 L3 = A = B

Device designation according to  
 DIN 40719 part 2 / IEC publication no. 750/(1983)



Environmental factors	
Ambient Temperature (indoor)	min. -7°C max. +40°C

Reference Drawing:	
1 TB-3-382-510-001-REV-07	SINGLE LINE DIAGRAM OF 400kV GIS & POTHEAD

- Notes:**
- Each gas compartments is equipped with Static Filter, Filling Valve with NRV, density monitors & safety diaphragm rupture discs.
  - The maximum leakage rate of SF6 gas shall not be exceeded by more than 0.5% per year.

VOLTAGE TRANSFORMER DETAILS						
Field Type	VT	Winding No.	Voltage Ratio	Accuracy Class as per IEC 61869	Burden (VA)	Application
C03) BHM	-T15, -T25	1	400kV/√3 : 110 V/√3	0.2	100	Metering
		2	400kV/√3 : 110 V/√3	3P	75	Protection
		3	400kV/√3 : 110 V/√3	3P	75	Protection

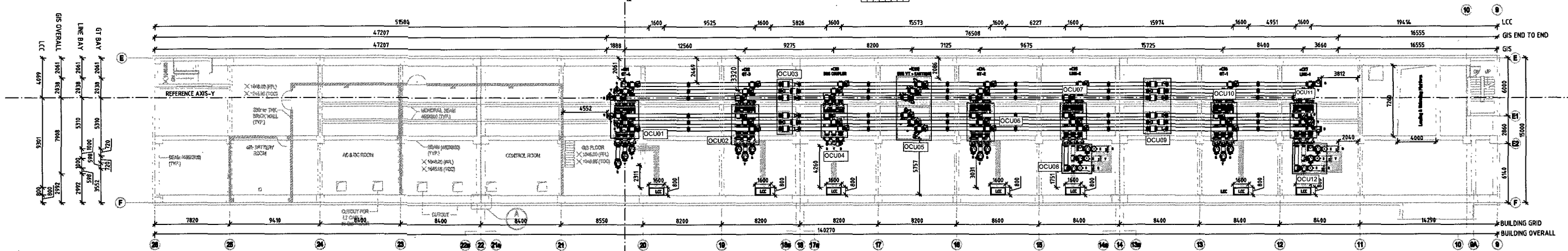
Rated Voltage Factor / Rated time - 1.2Un / Continuous, 1.5Un / 30 sec

GIS MANUFACTURER: SIEMENS LTD. AURANGABAD DRAWING NO. : (0)-G71770-AC750-S005-01-01		<b>ADDITIONAL INFORMATION</b> STATUS OF DRAWING DISTRIBUTION OF PRINTS		PROJECT : 4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT CUSTOMER : THDC INDIA LTD. SUBSTATION : 400kV GIS SUBSTATION AT VISHNUGAD PIPALKOTI	
		DRN : NAME / SIGN / DATE / NO. OF VAR KG / 06.06.24 CKD : GS / 06.06.24 APPD : GQ / 06.06.24		CONTRACTOR :  BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP	
SUB-SUPPLIER/VENDOR		ISSUED BY : UNTOLO.DIMS. GR. ANGLE SCALE WEIGHT (KG) NTS		REF. TO ASSY. DRG. : TB-3-382-510-001 ITEM NO. OF ITEM : -	
REV. DATE ALTERED CHECKED APPROVED 03 27.08.24 APPROVED GO		REV. DATE ALTERED CHECKED APPROVED 02 12.07.24 APPROVED GO		REV. DATE ALTERED CHECKED APPROVED 01 24.06.24 APPROVED GO	
ZONE AS PER CUSTOMER COMMENTS.		ZONE AS PER CUSTOMER COMMENTS.		ZONE AS PER TENDER DRAWINGS.	
TITLE : GIS GAS SINGLE LINE DIAGRAM (SLD) AND GAS SCHEMATICS		DRAWING NO. : TB-382-316-35-01		REV. : 03	

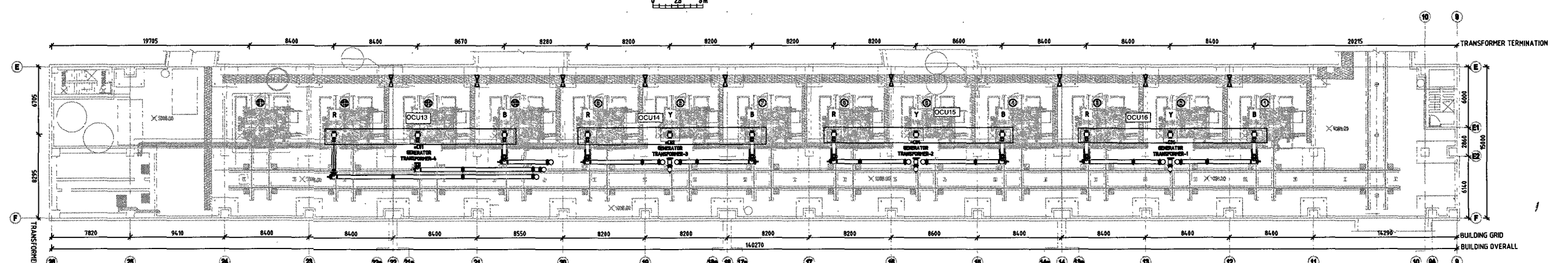
COMPUTER DRG. PATH NAME :  
 SIGN. & DATE :  
 INVENTORY No. :

# 400kV GIS SUBSTATION PLAN LAYOUT

PLAN AT EL 1046.00 GIS BAY FLOOR PLAN VIEW  
(GIS FLOOR)  
(SCALE 1:150)



PLAN AT EL 1036.00 TRANSFORMER FLOOR PLAN VIEW  
(TRANSFORMER FLOOR)  
(SCALE 1:150)



SPUR1 OCU08 OCU04 OCU02 OCU01	SPUR2 OCU07 OCU06 OCU05 OCU03 OCU01	SPUR3 OCU14 OCU13	SPUR4 OCU15 OCU16
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Note: OCU's 13, 14, 15, 16 on same level as transformers

- Note:
- Please refer to document no. PE-V0-413-501-A105-3 for detailed information on crane accessibility, dead space, and crane coverage.
  - Structure location and foundation details shall be furnished in the civil drawing.
  - Earthing details shall be furnished in the earthing drawing separately.
  - Structure, Walkway Drawings & ladder details shall be furnished separately.
  - SF6 gas quantity shall be shared separately.
  - Each gas compartment is equipped with static filter, filling valve with NRV, density switches, safety diaphragm rupture disc.
  - Location of PD sensors are tentative and will be finalized after finalization of GIS layout.

Reference Drawing	
1	71-2754-08-381-REV-03 TRANSFORMER FLOOR PLAN LAYOUT
2	71-2754-08-382-REV-03 GIS FLOOR PLAN LAYOUT
3	71-2754-08-385-REV-03 GIS & TRAPD. BUILD. SECTION LAYOUT
4	TB-382-316-35-01-REV.01 400KV GIS SINGLE LINE DIAGRAM
5	PE-V0-413-501-A105-3 GENERAL ARRANGEMENT FOR EGT CRANE

DO NOT SCALE WORKING DIMENSIONS

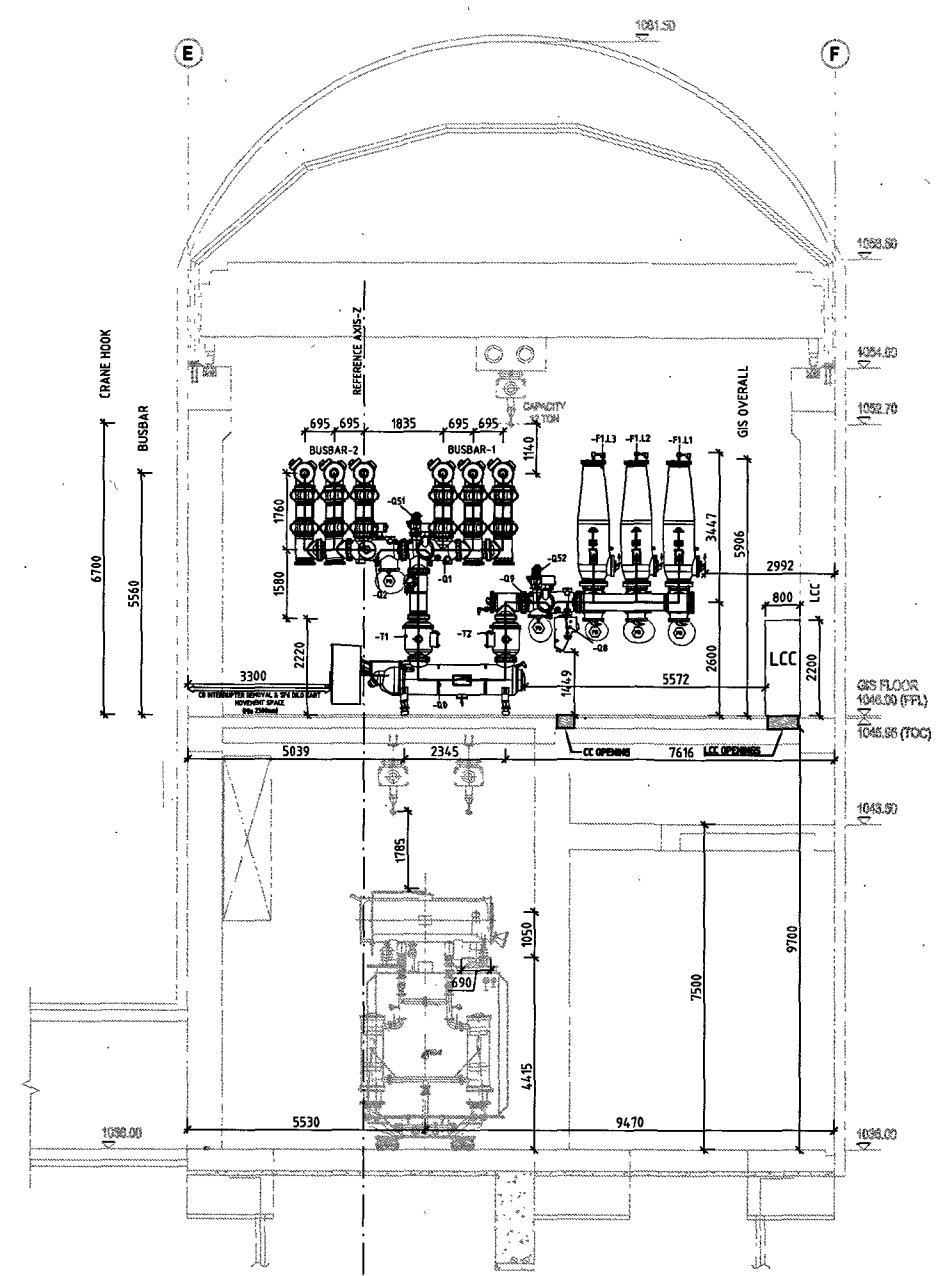
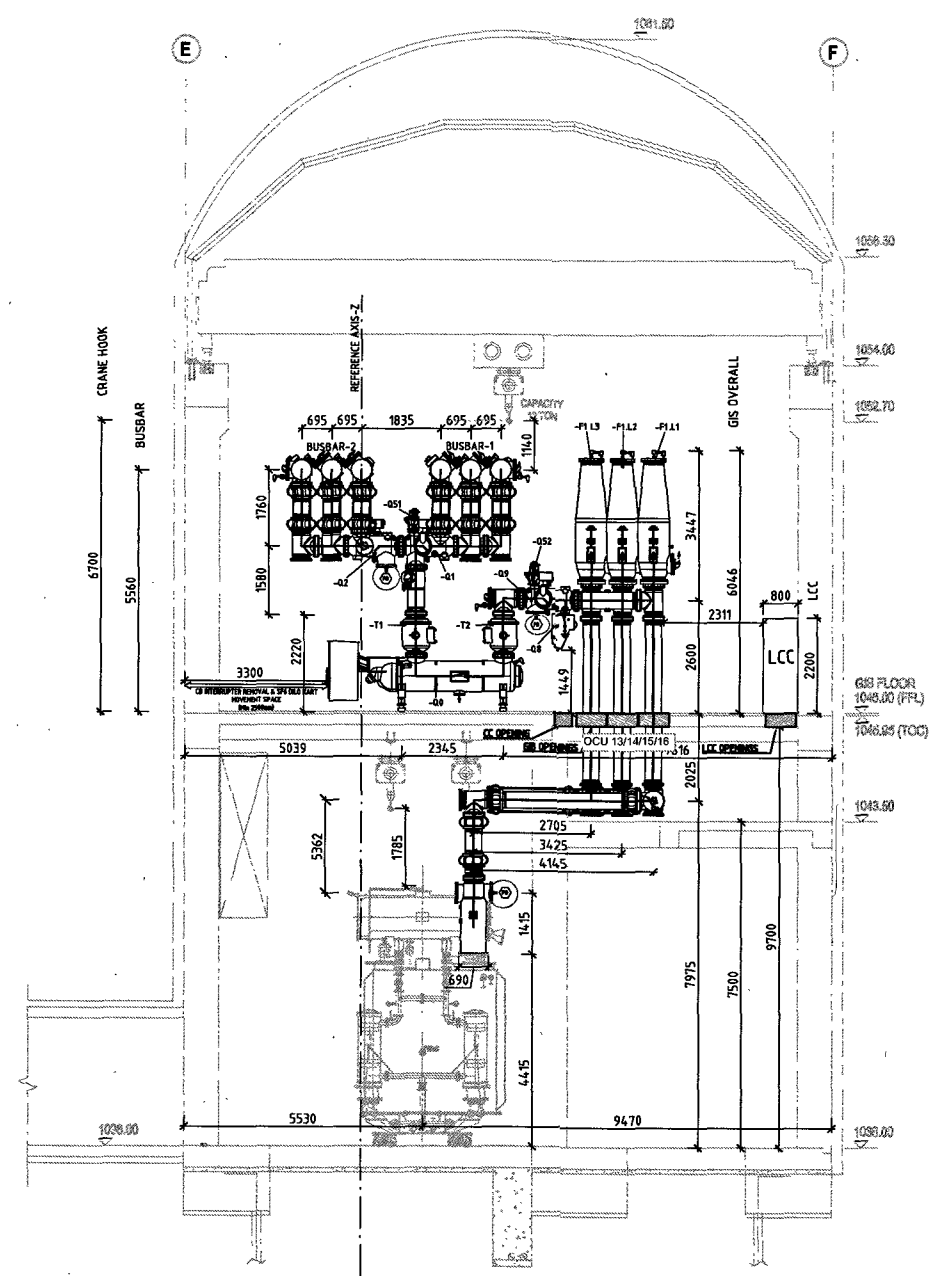
GIS MANUFACTURER: SIEMENS LTD AURANGABAD		ADDITIONAL INFORMATION		PROJECT		4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT		
DRAWING NO. : (0)-G71770-AC750-V021-00-02		STATUS OF DRAWING		CUSTOMER		THDC INDIA LTD.		
		DISTRIBUTION OF PRINTS		SUBSTATION		400kV GIS SUBSTATION AT VISHNUGAD PIPALKOTI		
		DRN	NAME	SIGN	DATE	NO. OF VAR	CONTRACTOR BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP	
CHKD	GS		21.06.24					
APPRD	GQ		21.06.24					
SUB-SUPPLIER/VENDOR		ISSUED BY		UNTOLO.DIMS. GR.	ANGLE	SCALE	WEIGHT (KG)	
		DEPT. TERNM				NOTED		
		OPT. CODE 316		REF. TO ASSY. DRG.		ITEM NO.	NO. OF ITEM	
TITLE		DRAWING NO.		REV.				
GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)		TB-382-316-35-02		02				
SHT. No. 2		NO. OF SHT. 3 OF 3						

INVENTORY No. \_\_\_\_\_  
 SIGN. & DATE \_\_\_\_\_  
 REF. DRG. No. \_\_\_\_\_  
 COMPUTER DIR. PATH NAME : \_\_\_\_\_  
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# 400kV GIS SECTION LAYOUT

SECTION VIEW (A-A)  
=C01 GENERATOR TRANSFORMER#4 BAY  
ALSO APPLICABLE FOR =C02 =C04 & =C06 BAY  
(SCALE 1:60)

SECTION VIEW (D-D)  
=C05 LINE#2 BAY  
ALSO APPLICABLE FOR =C07 BAY  
(SCALE 1:60)



Equipment	Legend
Circuit breaker(with CSD)	-08
Circuit breaker(without CSD)	-09
Disconnecter	-11 -02 -03
WP Earthing switch (non-insulated)	-052
WP Earthing switch (insulated)	-051
High speed earth switch (insulated)	-08
Current transformer	-11 -12
Surge Arrester	-F1
Transformer termination module	-21
Cable termination module	-22

GIS BAY	3300	799	1265	2020	1581	720	720	4151
BUSBAR	2709	695	695	1265	695	695	7676	
GIS OVERALL	2061	2038	570	7348			3552	
LCC	4099		9301				800	800
BUILDING OVERALL	4099		10901					
GIS CONTROL CABLE & LCC OPENING	4099		4460	700	700	700	2251	700

GIS BAY	3300	799	1265	2020	1581	1000	1000	3591
BUSBAR	2709	695	695	1835	695	695	7676	
GIS OVERALL	2371	1729		7909			2992	
LCC	4099		9301				800	800
BUILDING OVERALL	4099		10901					
CONTROL CABLE & LCC OPENING	4099		4460	700	700	700	2251	700

- Note:
- Please refer to document no. PE-V0-413-501-A105-3 for detailed information on crane accessibility, dead space, and crane coverage.
  - Structure location and foundation details shall be furnished in the civil drawing.
  - Earthing details shall be furnished in the earthing drawing separately.
  - Structure, Walkway Drawings & ladder details shall be furnished separately.
  - SF6 gas quantity shall be shared separately.
  - Each gas compartment is equipped with static filter, filling valve with NRV, density switches, safety diaphragm rupture disc.
  - Location of PD sensors are tentative and will be finalized after finalization of GIS layout..

Reference Drawing:	
1	71-2754-08-381-REV-03 TRANSFORMER FLOOR PLAN LAYOUT
2	71-2754-08-382-REV-03 GIS FLOOR PLAN LAYOUT
3	71-2754-08-385-REV-03 GIS & TRAP ROOM SECTION LAYOUT
4	TB-382-316-35-01-REV-01 MAINV GIS SINGLE LINE DIAGRAM
5	PE-V0-413-501-A105-3 GENERAL ARRANGEMENT FOR GGT CRANE

DO NOT SCALE WORKING DIMENSIONS

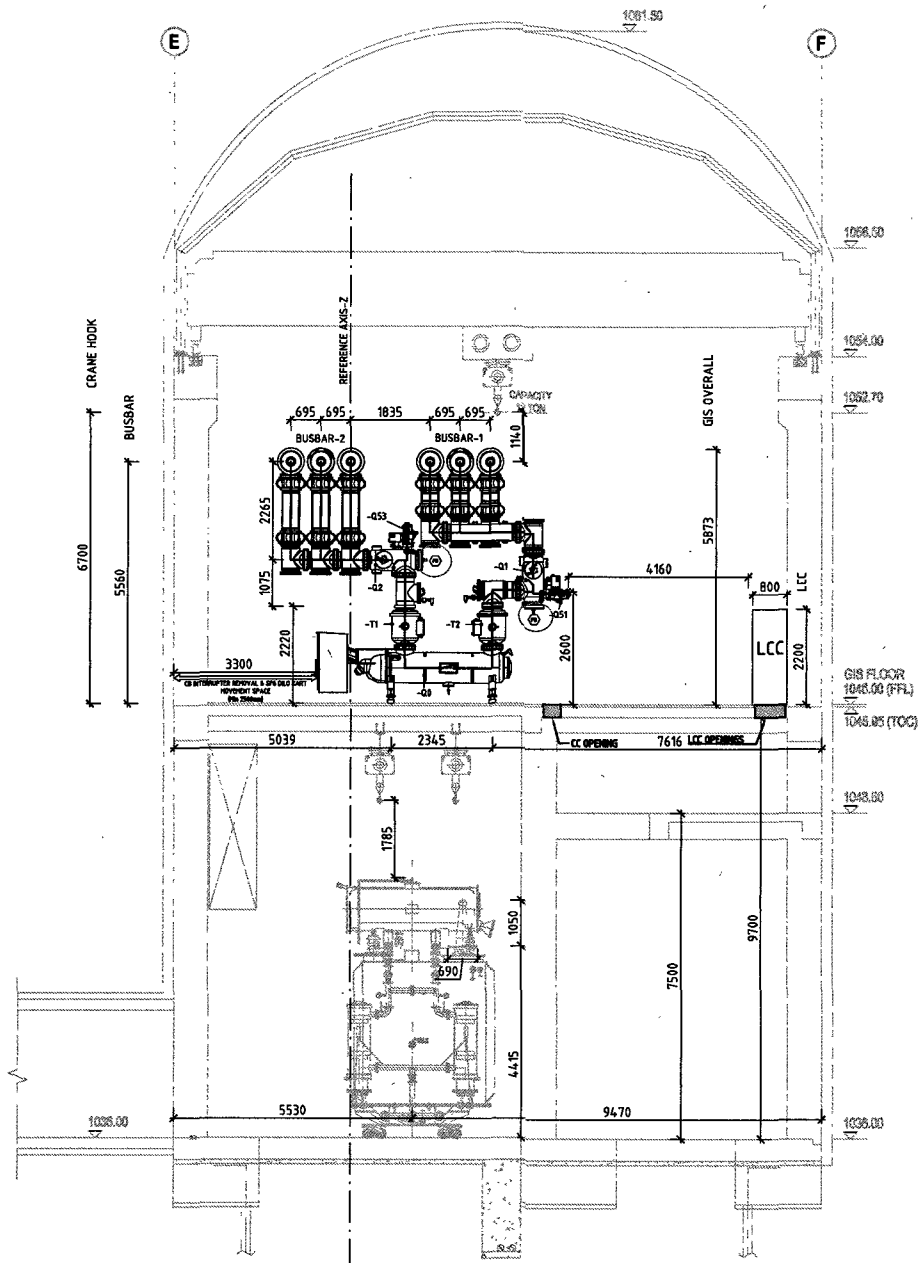
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REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED			CHECKED			CHECKED			CHECKED
		APPROVED	02	19.07.24	CHECKED	01	12.07.24	CHECKED	00	21.06.24	CHECKED			CHECKED
ZONE			ZONE			ZONE			ZONE			ZONE		
					AS PER CUSTOMER MEETING HELD AT THDC			AS PER CUSTOMER COMMENTS			AS PER CUSTOMER TENDER DRAWINGS.			

GIS MANUFACTURER:SIEMENS LTD. AURANGABAD DRAWING NO. : (0)-G71770-AC750-V023-00-02		ADDITIONAL INFORMATION STATUS OF DRAWING DISTRIBUTION OF PRINTS		PROJECT CUSTOMER SUBSTATION																					
		<table border="1"> <tr> <th>DRN</th> <th>NAME</th> <th>SIGN</th> <th>DATE</th> <th>NO. OF VAR</th> </tr> <tr> <td>KG</td> <td></td> <td></td> <td>21.06.24</td> <td></td> </tr> <tr> <td>GS</td> <td></td> <td></td> <td>21.06.24</td> <td></td> </tr> <tr> <td>APPD</td> <td>GO</td> <td></td> <td>21.06.24</td> <td></td> </tr> </table>		DRN	NAME	SIGN	DATE	NO. OF VAR	KG			21.06.24		GS			21.06.24		APPD	GO		21.06.24		CONTRACTOR BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP	
		DRN	NAME	SIGN	DATE	NO. OF VAR																			
KG			21.06.24																						
GS			21.06.24																						
APPD	GO		21.06.24																						
SUB-SUPPLIER/VENDOR		UNTOLO.DIMS. GR. ANGLE SCALE WEIGHT (KG) REF. TO ASSY. DRG. ITEM NO. NO. OF ITEM		TITILE GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)																					
		NOTED		DRAWING NO. TB-382-316-35-02 REV. 02																					

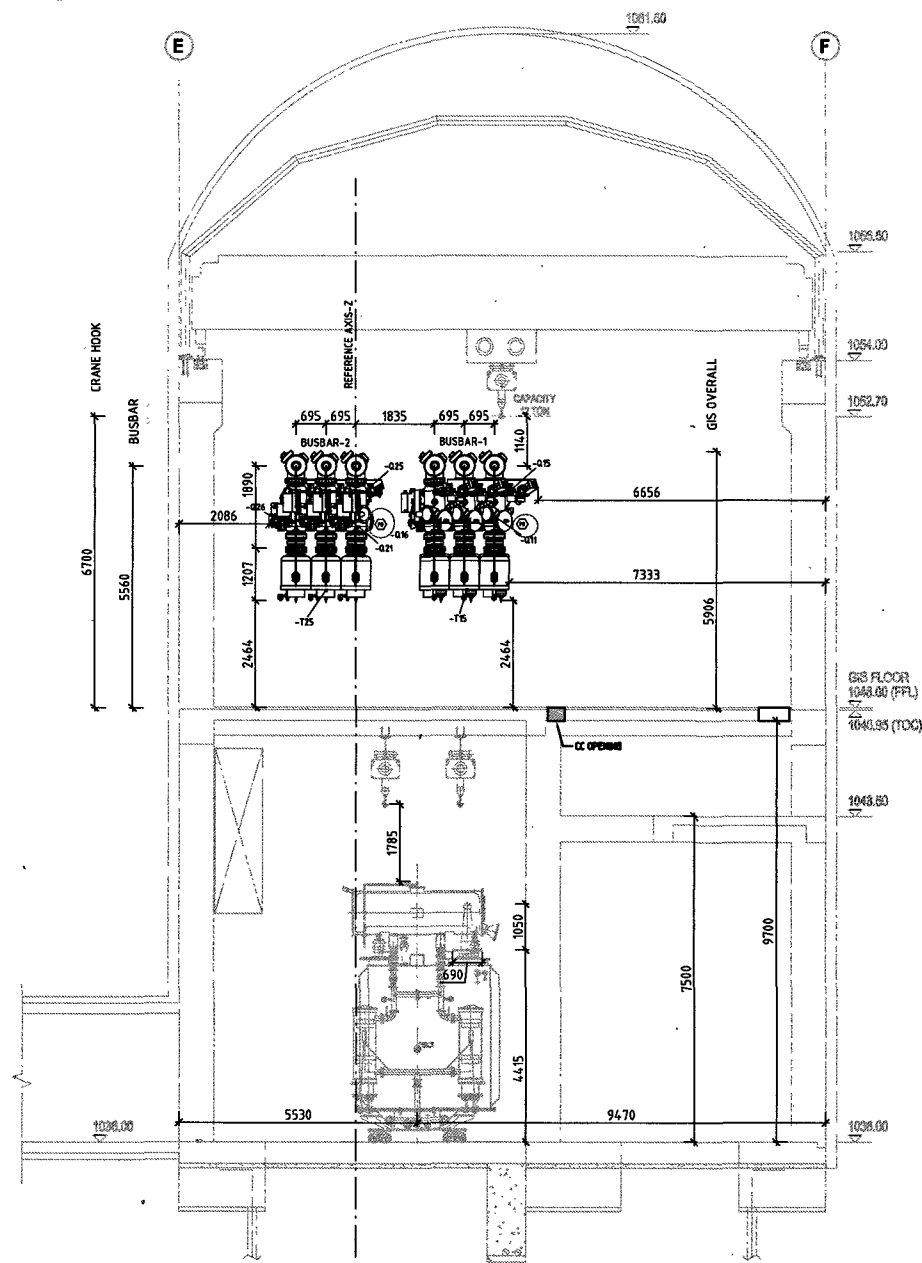
# 400kV GIS SECTION LAYOUT

SECTION VIEW (B-B)  
=C03 BUS COUPLER# BAY  
(SCALE 1:60)



GIS BAY	3300	799	1265	2020	1756	5860
BUSBAR	2709	695	695	1835	695	7676
GIS OVERALL	3300	799	3729	1312	5860	
LCC	4099		9301	800	800	
BUILDING OVERALL	4099		10901			
CONTROL CABLE & LCC OPENING	4099	4460	400	4490	1700	850

SECTION VIEW (C-C)  
=(C03) BUS VT+ EARTHING# BAY  
(SCALE 1:60)



GIS BAY	2086	2013	4245	6656				
BUSBAR	2709	695	695	1265	570	695	695	7676
GIS OVERALL	2086	6258	6656					
BUILDING OVERALL	4099	4460	400	6040				
CONTROL CABLE OPENING								

Equipment	Legend
Circuit breaker (without CSD)	-08
Disconnector	-01, -02 -01L, -02L
WP Earthing switch (non-insulated)	-04, -026
WP Earthing switch (insulated)	-051, -053
High speed earth switch (non-insulated)	-06, -025
Current transformer	-T1, -T2
Voltage transformer	-T5, -T6

- Note:
- Please refer to document no. PE-V0-413-501-A105-3 for detailed information on crane accessibility, dead space, and crane coverage.
  - Structure location and foundation details shall be furnished in the civil drawing.
  - Earthing details shall be furnished in the earthing drawing separately.
  - Structure, Walkway Drawings & ladder details shall be furnished separately.
  - SF6 gas quantity shall be shared separately.
  - Each gas compartment is equipped with static filter, filling valve with NRV, density switches, safety diaphragm rupture disc.
  - Location of PD sensors are tentative and will be finalized after finalization of GIS layout.

Reference Drawing:	
1	75-2754-00-381-REV-03 TRANSFORMER FLOOR PLAN LAYOUT
2	75-2754-00-382-REV-03 GIS FLOOR PLAN LAYOUT
3	75-2754-00-385-REV-03 GIS & TRAF. BLDG. SECTION LAYOUT
4	TB-382-316-35-01-REV-01 LAYOUT GIS SINGLE LINE DIAGRAM
5	PE-V0-413-501-A105-3 GENERAL ARRANGEMENT FOR EOT CRANE

DO NOT SCALE WORKING DIMENSIONS

GIS MANUFACTURER: SIEMENS LTD. AURANGABAD  
DRAWING NO.: (0)-G71770-AC750-V023-00-03

**SIEMENS**  
Energy Sector

ADDITIONAL INFORMATION: STATUS OF DRAWING: DISTRIBUTION OF PRINTS

DRN	NAME	SIGN	DATE	NO. OF VAR
KG			21.06.24	
CKD	GS		21.06.24	
APPD	GQ		21.06.24	

PROJECT: 4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT  
CUSTOMER: THDC INDIA LTD.  
SUBSTATION: 400kV GIS SUBSTATION AT VISHNUGAD PIPALKOTI

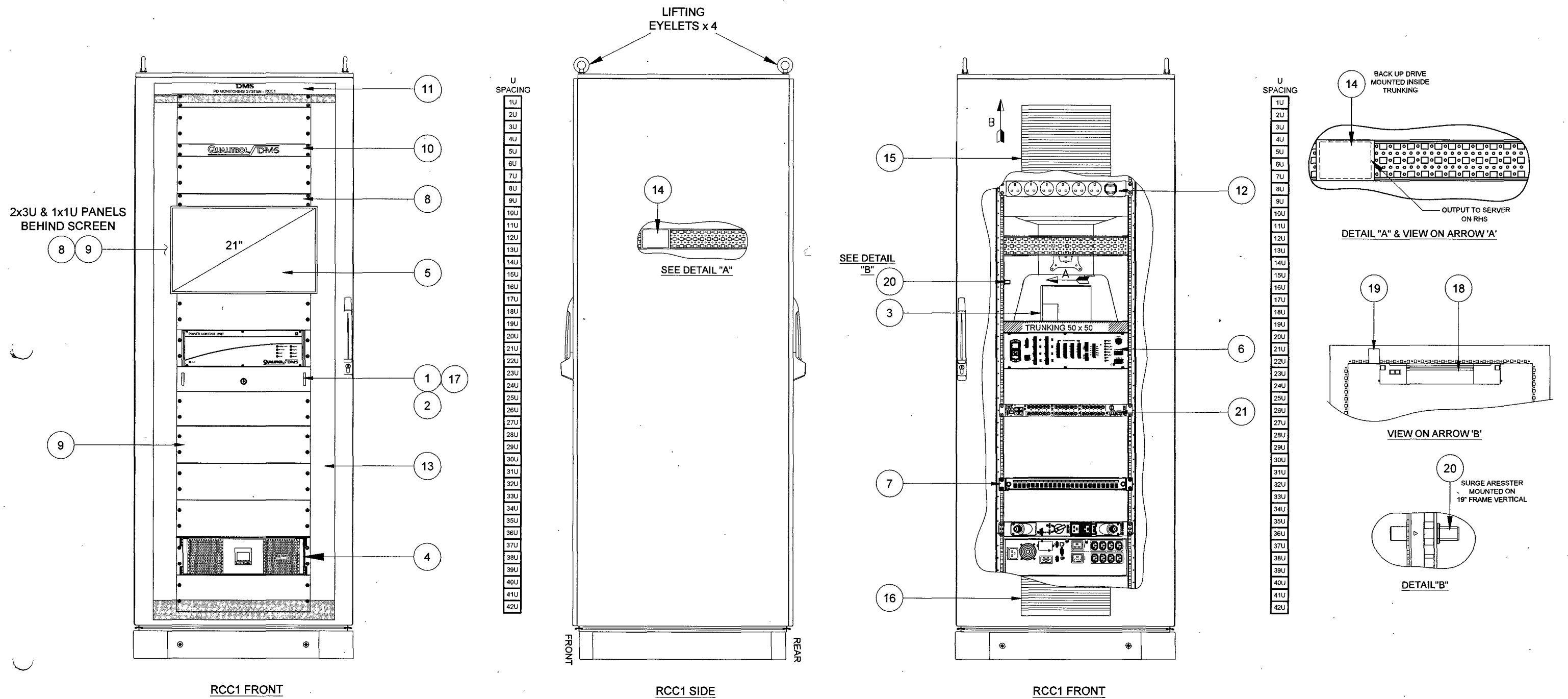
CONTRACTOR: **bh** BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP

REV.	DATE	ALTERED	REV.	DATE	ALTERED	KG	REV.	DATE	ALTERED	KG	REV.	DATE	ALTERED	KG	REV.	DATE	ALTERED	KG	
		CHECKED			CHECKED	GS	01	12.07.24	CHECKED	GS	00	21.06.24	CHECKED	GS					
		APPROVED			APPROVED	GQ			APPROVED	GQ			APPROVED	GQ					
ZONE			ZONE				ZONE		AS PER CUSTOMER MEETING HELD AT THDC		ZONE		AS PER CUSTOMER COMMENTS		ZONE		AS PER CUSTOMER TENDER DRAWINGS.		

ISSUED BY: DEPT. TERNM	UNTO. DIMS. GR.	ANGLE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEM	
CODE 318			NOTED					
TITLE: GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)						DRAWING NO. TB-382-316-35-02		REV. 02
						DRW. No. 3	NO. OF SHEET 3 OF 5	

COMPUTER DIR. PATH NAME :  
 REF. DRG. No.  
 SIGN. & DATE  
 INVENTORY No.

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ITEM	PART NUMBER	DESCRIPTION	QTY
1	CEK00224-01	KEYBOARD	1
2	CEK00225-01	MOUSE	1
3	CEK00600	MXC-6401D/M8G DEBADGED, Win 10, 1TB SSD	1
4	CEK00407	UPS EATON 9PX 3000VA, WITH BYPASS SWITCH	1
5	CEK00419	21" LCD MONITOR	1
6	AE02845	POWER CONTROL UNIT (PCU) ASSEMBLY	1
7	CMA00409	FIBRE TERMINATION BOX, 48 WAY LC DUPLEX, BLACK	1
8	CMD00297-02	1U BLANKING PLATE, RAL 7035	3
9	CMD00298-02	3U BLANKING PLATE, RAL 7035	10
10	CMD01473-02	1U QUALITROL NAMEPLATE	1
11	CMP00050-01	RCC LABEL	1
12	CEH00707	SOCKET (6) STRIP - UK	1

ITEM	PART NUMBER	DESCRIPTION	QTY
13	21-11681-00	19" CABINET RACK SKIRT	2
14	CEK00462	EXTERNAL BACK UP	1
15	CEI00007	FAN	1
16	CMA00281	FILTER	1
17	CMA00452	2U SHELF	1
18	CEK00235	LIGHT 11W, 100-230V, 50/60Hz, 110-48mA, 11W.	1
19	CEK00108	DOOR OPERATED SWITCH	1
20	CEK00065	SURGE VOLTAGE PROTECTOR, N-TYPE	1
21	AE08064	ETHERNET SWITCH	1
22	-	-	-
23	-	-	-
24	-	-	-

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

Scale: NTS Drawn by: CC Date: 24/10/24  
Standard: Checked: KP Date: 24/10/24

Title: Layout of Radial Control Cabinet 1  
Vishnugad Pipalkoti 400kV System

Drawn: Sheet

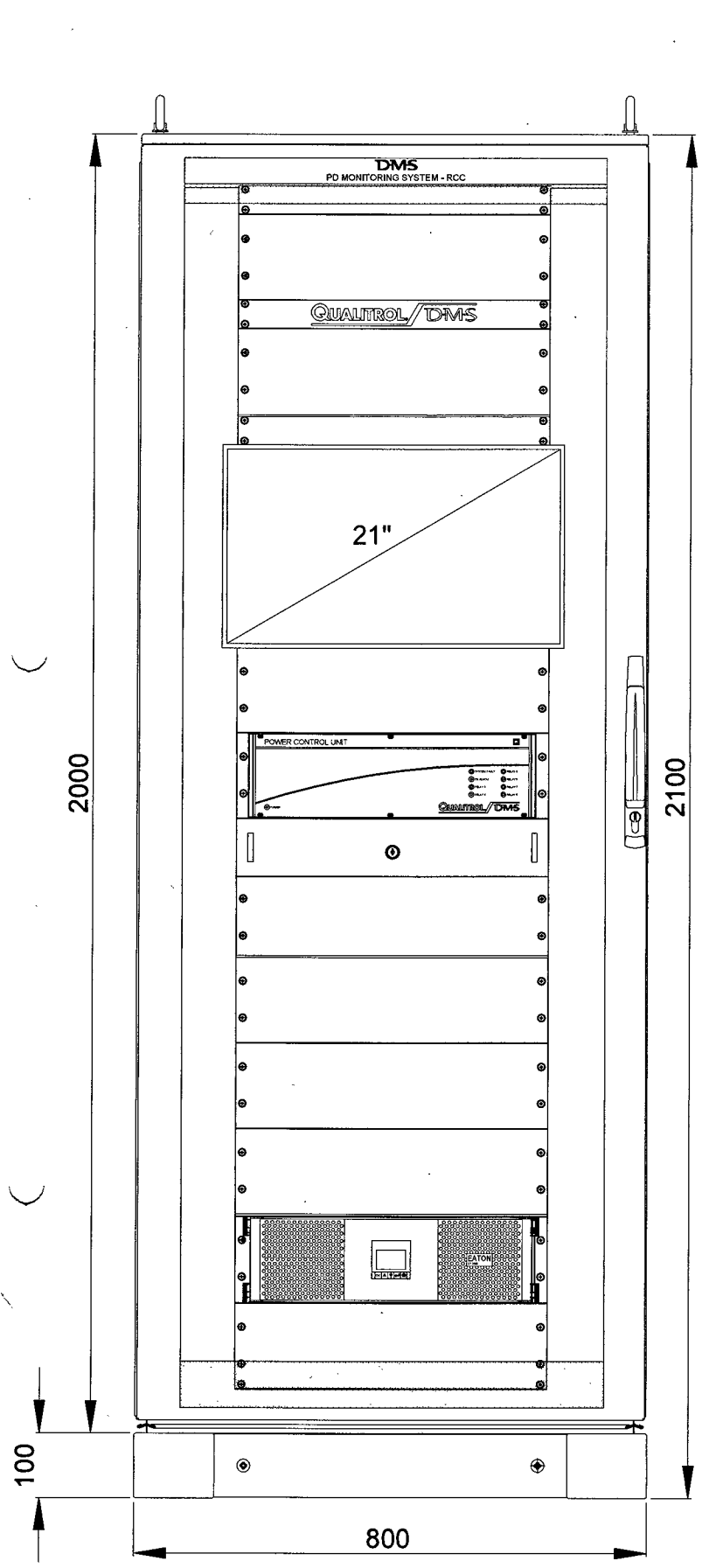
PROPRIETARY AND CONFIDENTIALITY

UNLESS OTHERWISE STATED

DIMENSIONS ARE IN mm  
TOLERANCES LINEAR ± 0.2mm  
ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

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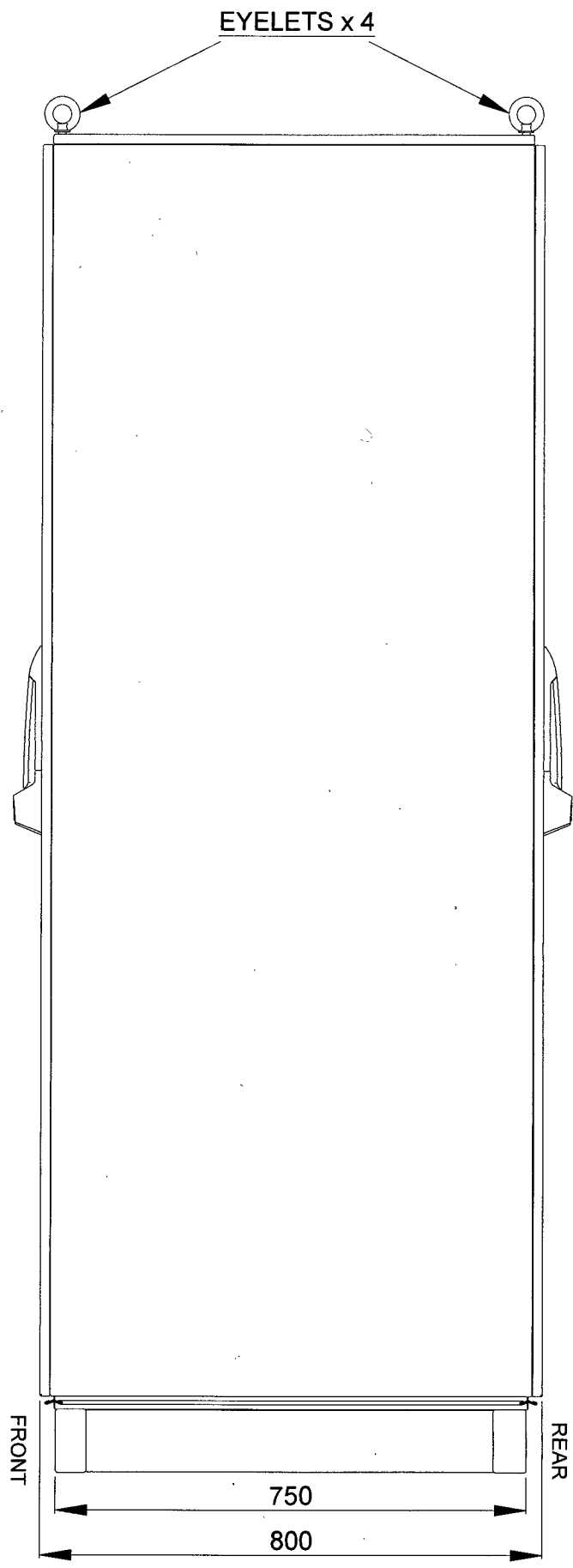
24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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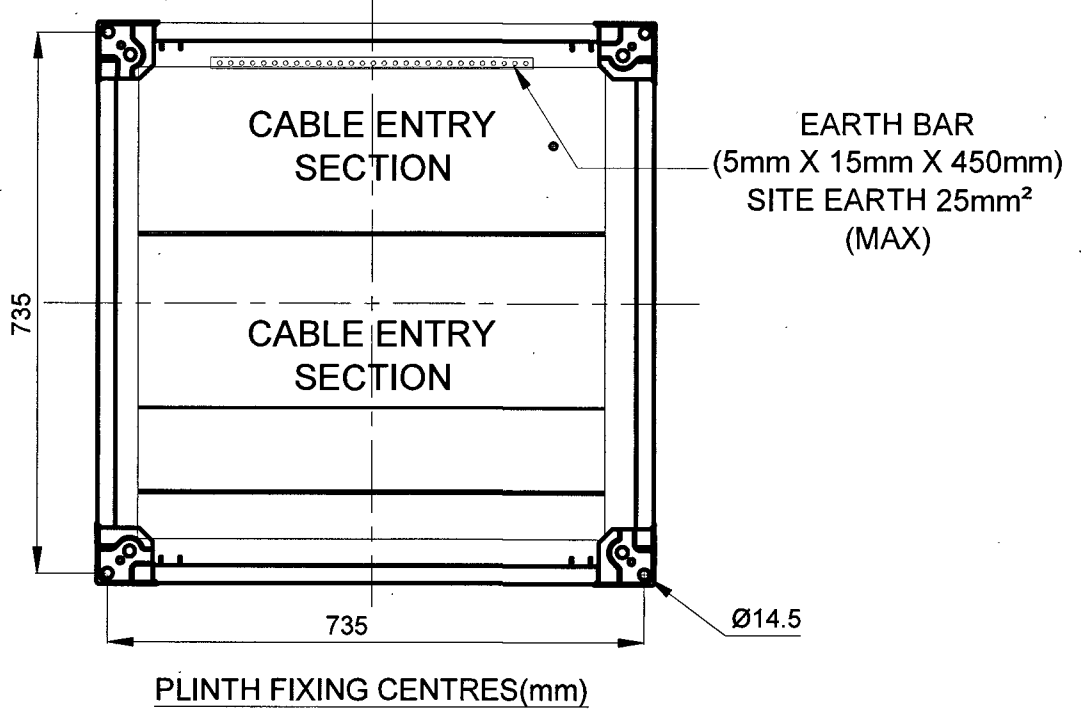
RCC1 FRONT

U SPACING

1U
2U
3U
4U
5U
6U
7U
8U
9U
10U
11U
12U
13U
14U
15U
16U
17U
18U
19U
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28U
29U
30U
31U
32U
33U
34U
35U
36U
37U
38U
39U
40U
41U
42U



RCC1 SIDE



- NOTES:-**
- TYPICAL LAYOUT OF CONTROL CABINET AS SUPPLIED BY DMS.
  - FOR CABINET EQUIPMENT DETAILS, SEE PREVIOUS SHEET.
  - MATERIAL:- SHEET STEEL.**  
ENCLOSURE:- 16-FOLD PROFILED.  
FRONT DOOR:- ALUMINIUM FRAME, 3mm SINGLE PANE SAFETY GLASS.  
REAR DOOR, ROOF & SIDE PANELS:- 1.5mm THICK.
  - FINISH:-**  
**EXTERNAL SURFACES:**  
PLINTH - RAL 9005 DEEP BLACK  
TOP TRIM - RAL 7035 PALE GREY  
REAR DOOR AND SIDE PANELS - RAL 7035 PALE GREY  
GLAZED FRONT DOOR - ALUMINIUM, SMOOTH NATURAL FINISH  
**INTERNAL SURFACES:**  
TOP TRIM AND CABINET FRAME - RAL 7035 PALE GREY  
INTERNAL MOUNTING PLATES AND SHELVES - RAL 7035 PALE GREY  
SIDE PANELS - RAL 7035 PALE GREY  
REAR DOOR - RAL 7035 PALE GREY
- NOTE:-** SOME VERTICALS, GLAND PLATES AND MOUNTING PLATES WILL BE GALVANIZED STEEL AND THESE TO REMAIN NATURAL UNPAINTED.
- ACCESS FRONT AND REAR. 850mm CLEARANCE FRONT AND REAR REQUIRED FOR DOOR OPENING.
  - LIFTING ARRANGEMENT:- 4 LIFTING EYES.
  - INTERNAL EARTHING 6mm<sup>2</sup> TRI-RATED CU/PVC.
  - CABINET INGRESS PROTECTION RATING IP54.

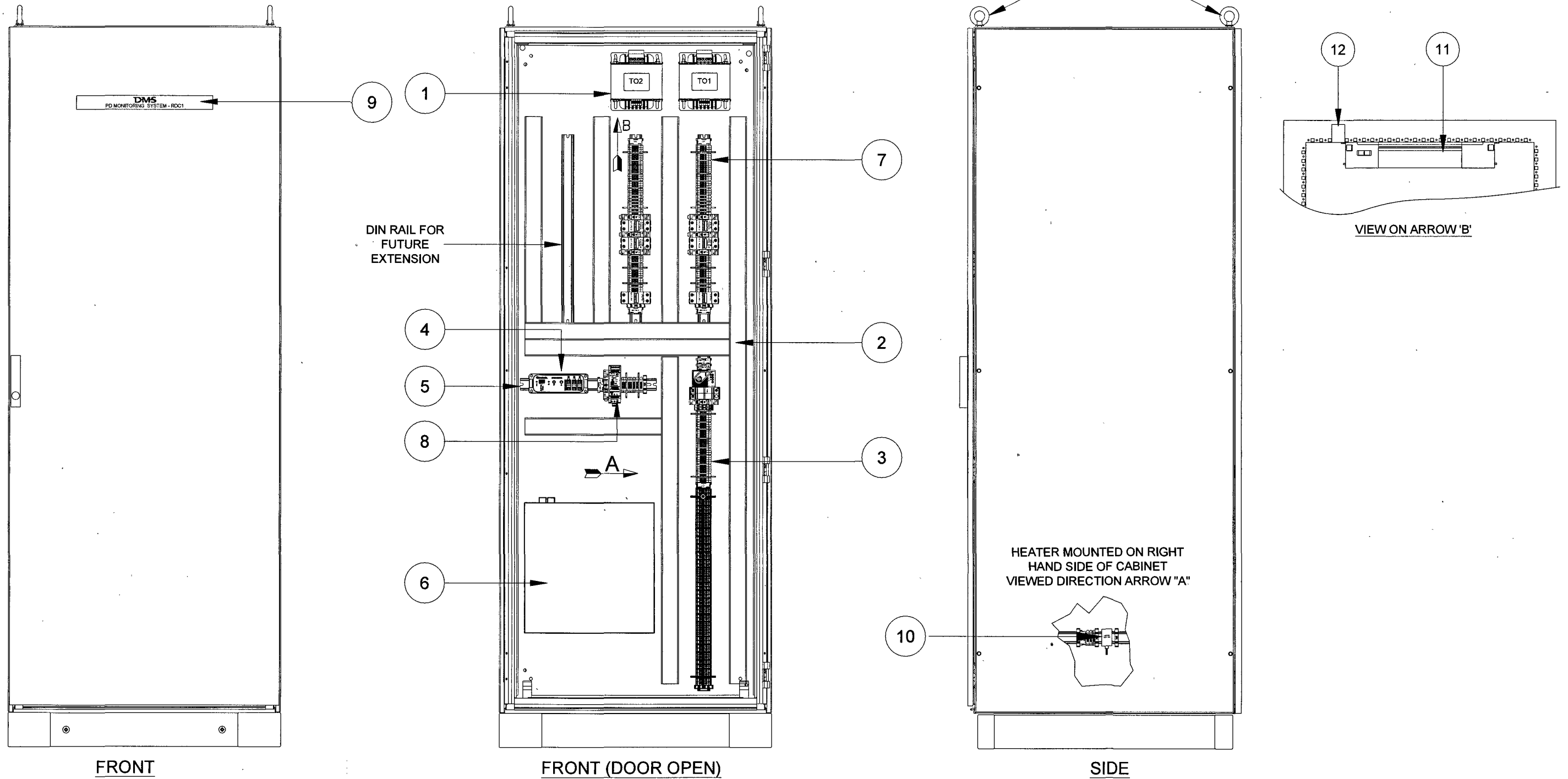
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Scale: NTS	Drawn by: CC	Date: 24/10/24	Standard:
	Checked: KP	Date: 24/10/24	
<b>Title</b> Layout of Radial Control Cabinet 1 Vishnugad Pipalkoti 400kV System		<b>Drawn</b> 0504510	<b>Sheet</b> 1 of 1

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

LIFTING EYELETS x 4



ITEM	PART NUMBER	DESCRIPTION	QTY
1	CEC00023	ISOLATING TRANSFORMER	2
2	CEQ00019	TRUNKING GREY, OPEN SLOT, 50 WIDE x 50 HIGH	A/R
3	AE03496	RDC DIN RAIL 1 ASSEMBLY (MAINS)	1
4	AE02359	SYNC. DRIVER ASSEMBLY	1
5	CMQ00005	DIN. RAIL - TS 35 x 15 X 200 LG.	1
6	CMD01739	FIBRE DISTRIBUTION BOX	1
7	AE03281	RDC DIN RAIL 2-3 ASSEMBLY (SPUR SUPPLY)	2
8	AE04852	RDC DIN RAIL 5(SYNC DRIVER SUPPLY)	1
9	CM000058-01	RDC1 NAMEPLATE	1
10	CEJ00032	HEATER, CONNECTION, 30W, 100-240VAC	1
11	CEK00235	LIGHT 11W, 100-230V, 50/60Hz, 110-48mA, 11W.	1
12	CEK00108	DOOR OPERATED SWITCH	1
13	-	-	-

Project No:- 5053023

**DMS** Diagnostic Monitoring Systems I  
A QUALTRON Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24
Title	Layout of Radial Distribution Cabinet 1 Vishnugad Pipalkoti 400kV System	
Drawn by: CEC00058	Sheet	

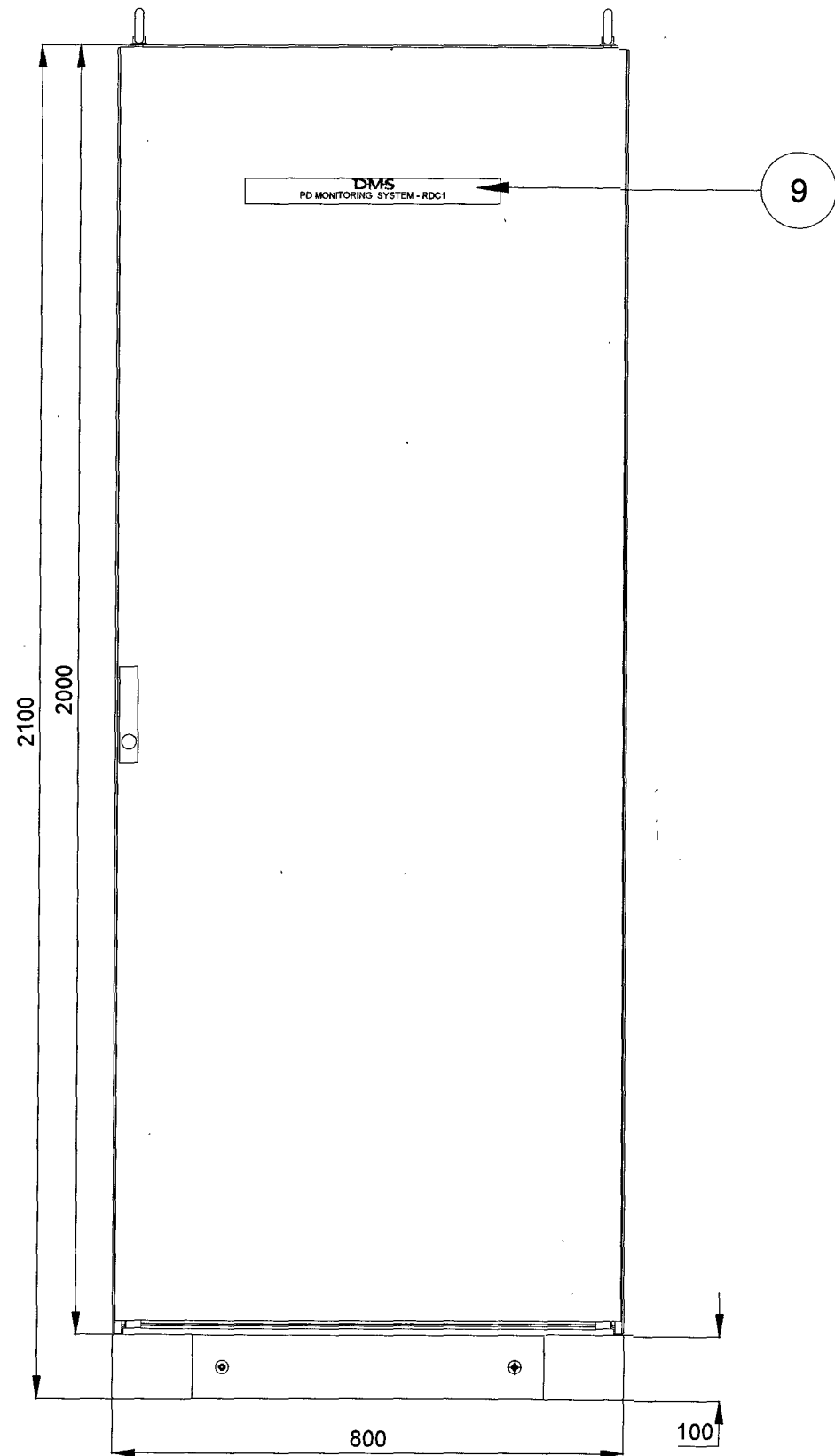
PROPRIETARY AND CONFIDENTIALITY

UNLESS OTHERWISE STATED

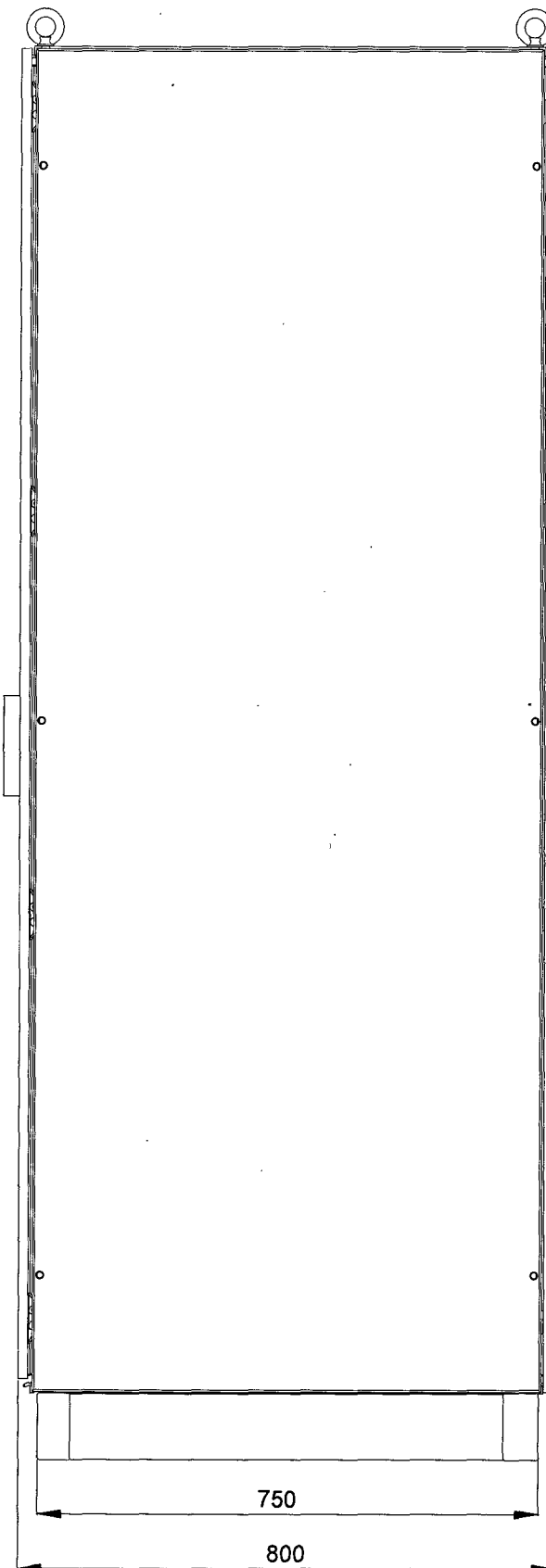
DIMENSIONS ARE IN mm  
TOLERANCES LINEAR ± 0.2mm  
ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

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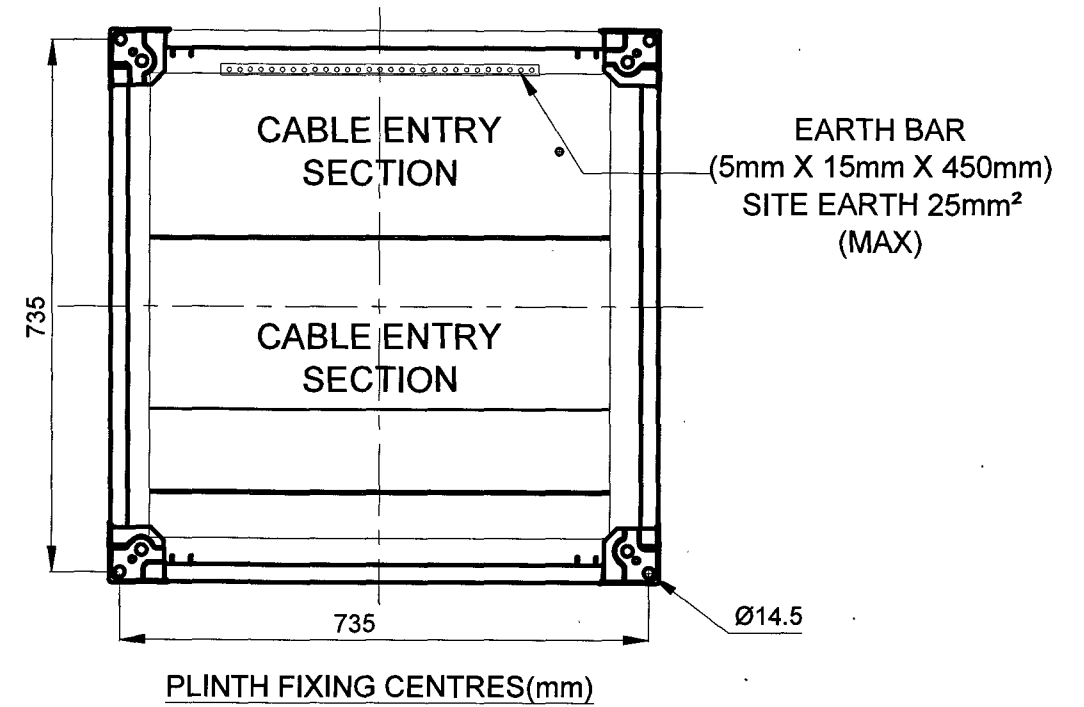
24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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FRONT



SIDE



NOTES:-

1. FOR CABINET EQUIPMENT DETAILS SEE DRAWING SHEET 1.
2. MATERIAL:- SHEET STEEL.  
ENCLOSURE: 16-FOLD PROFILED.  
FRONT DOOR: 1.5mm THICK.  
SIDE PANEL: 1.5mm THICK.  
REAR PANEL: 1.5mm THICK.  
ROOF: 1.5mm THICK.
3. FINISH:-  
EXTERNAL SURFACES:  
ALL EXTERNAL SURFACES - RAL 7035 PALE GREY  
PLINTH - RAL 9005 DEEP BLACK  
INTERNAL SURFACES:  
ALL PAINTED INTERNAL SURFACES - RAL 7035 PALE GREY  
NOTE:- SOME VERTICALS, MOUNTING PLATES AND GLAND PLATES WILL BE GALVANISED STEEL AND THESE TO REMAIN NATURAL UNPAINTED.
4. ACCESS FRONT ONLY.
5. LIFTING ARRANGEMENT:- 4 LIFTING EYES.
6. PRIMARY DIMENSIONS IN mm.
7. INTERNAL EARTHING 6mm<sup>2</sup> TRI-RATED CU/PVC.
8. STANDARD:- IP54

Project No:- 50530234

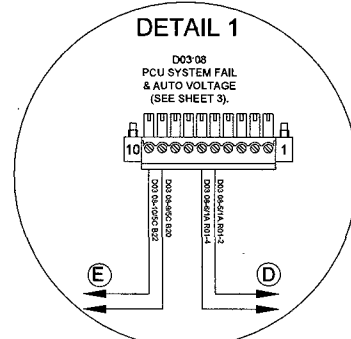
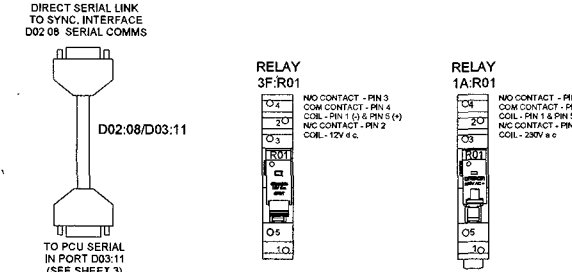
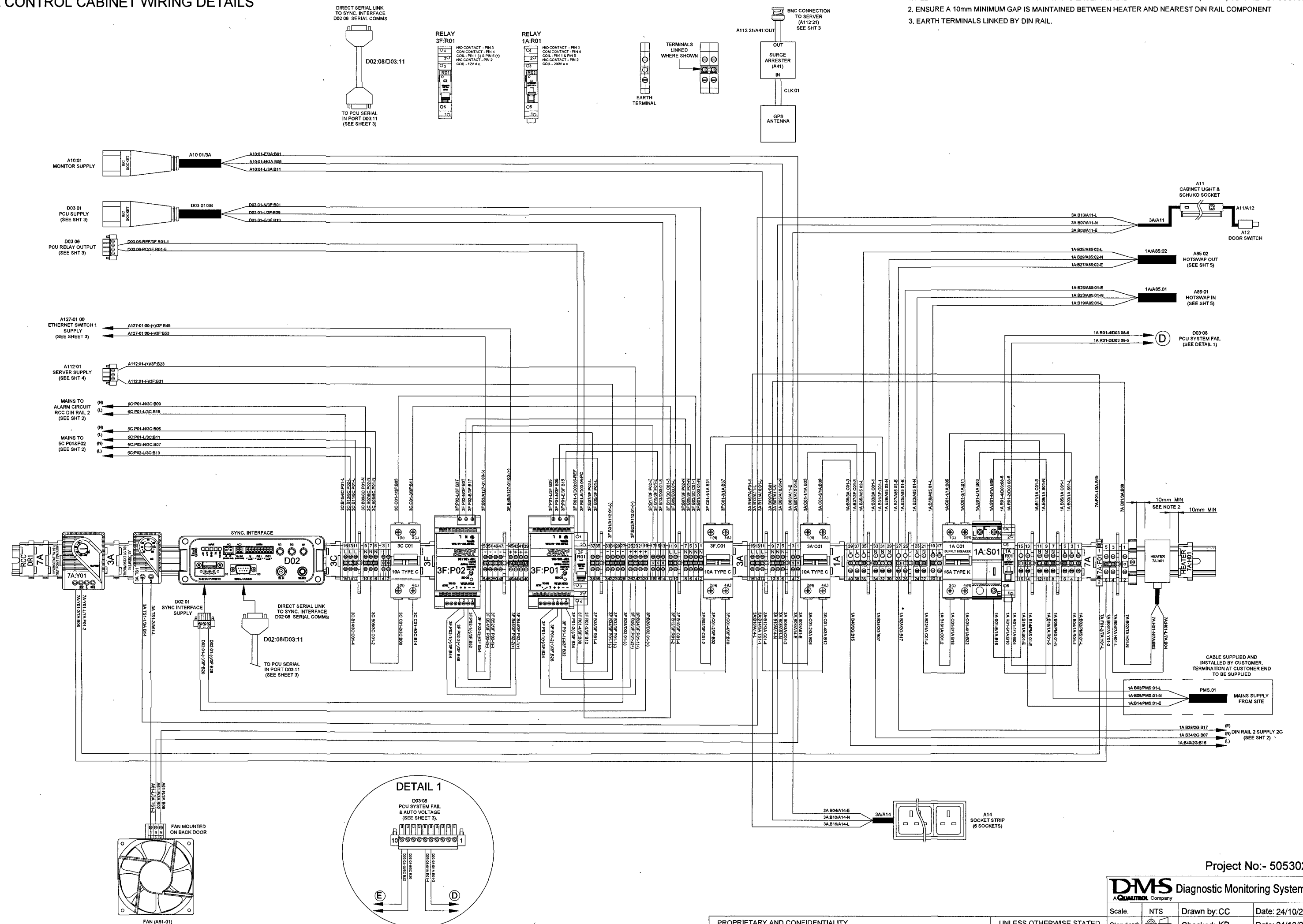
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Scale: NTS	Drawn by: CC	Date: 24/10/24	
Standard:	Checked: KP	Date: 24/10/24	
Title: Layout of Radial Distribution Cabinet 1 Vishnugad Pipalkoti 400KV System		Drawing: 0504512 Sheet: 1 of 1	

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

# RADIAL CONTROL CABINET WIRING DETAILS

1. ALL WIRING SHOWN IS DMS INTERNAL WIRING EXCEPT MAINS SUPPLY FROM SITE (PMS.01) SUPPLIED BY CUSTOMER.
2. ENSURE A 10mm MINIMUM GAP IS MAINTAINED BETWEEN HEATER AND NEAREST DIN RAIL COMPONENT
3. EARTH TERMINALS LINKED BY DIN RAIL.



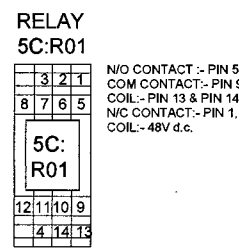
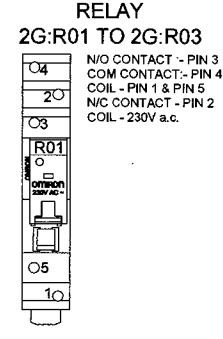
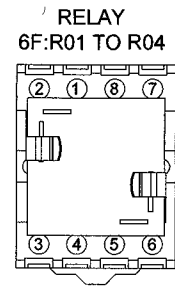
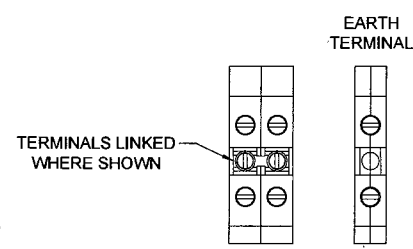
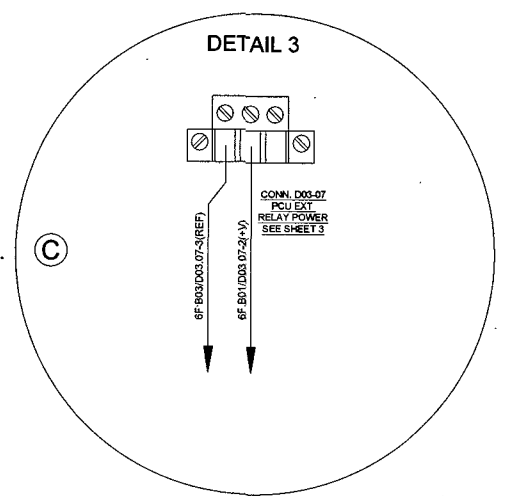
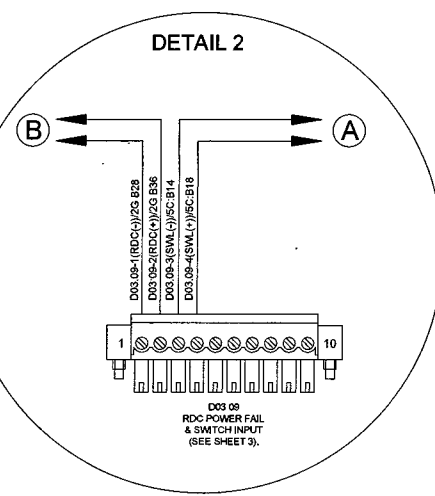
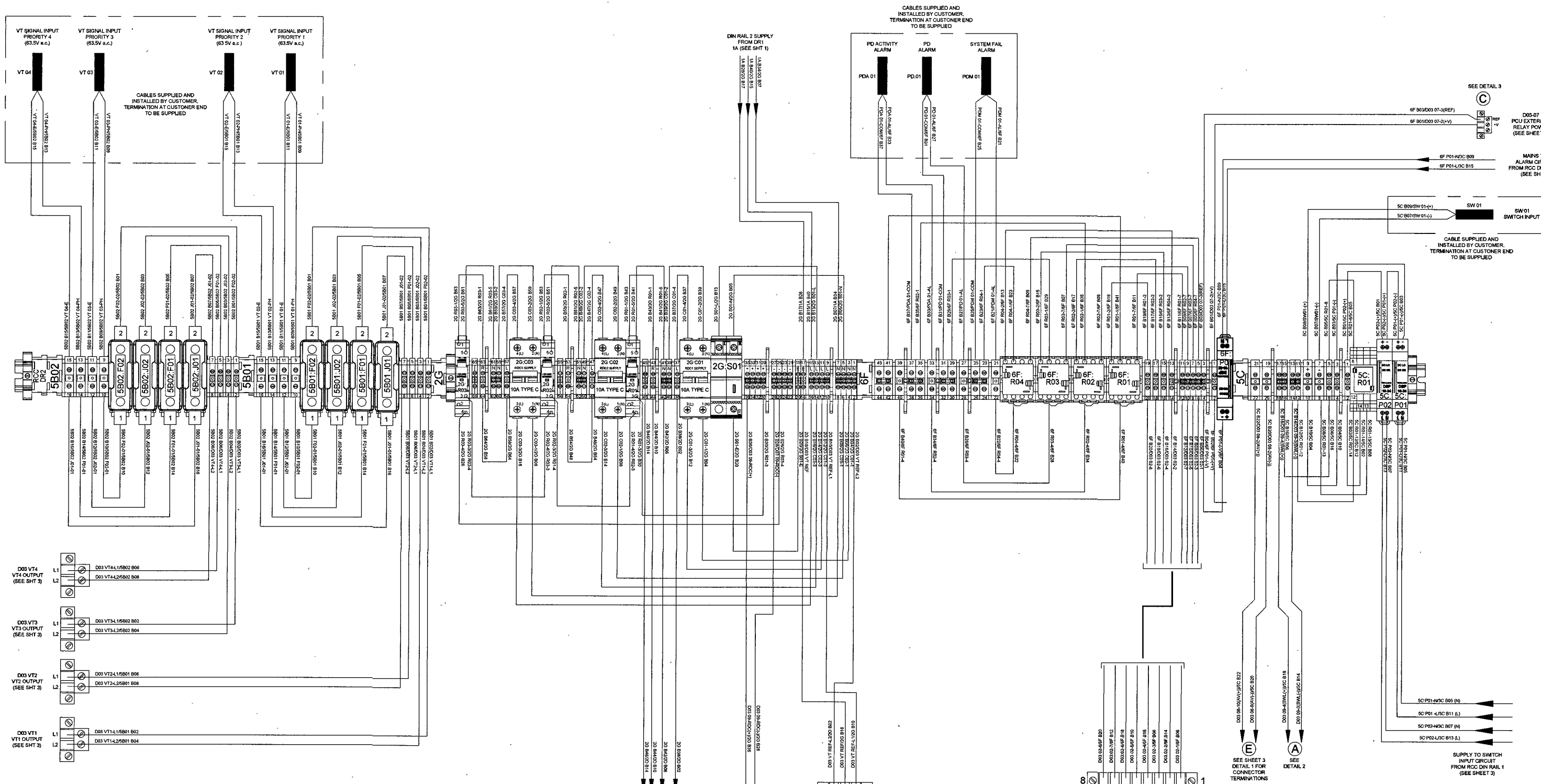
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ANY REPRODUCTION USE OR DISCLOSURE IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF DIAGNOSTIC MONITORING SYSTEMS IS PROHIBITED		TOLERANCES LINEAR ± 0.2mm ANGULAR ± 0.5°	
		ALL THREADS ARE ISO METRIC COURSE PITCH, MEDIUM FIT	
Scale: NTS	Drawn by: CC	Date: 24/10/24	Standard:
	Checked: KP	Date: 24/10/24	
Title	Radial Control Cabinet 1 Vishnugad Pipalkoti 400kV System		
Drawing	1101200	Sheet	A

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITY Company

# RADIAL CONTROL CABINET WIRING DETAILS



24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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- ALL WIRING SHOWN IS DMS INTERNAL WIRING EXCEPT :- SW:01, VT:01 - VT:02, PD:01, PDM:01 & PDA:01 SUPPLIED BY CUSTOMER.
- EARTH TERMINALS LINKED BY DIN RAIL.

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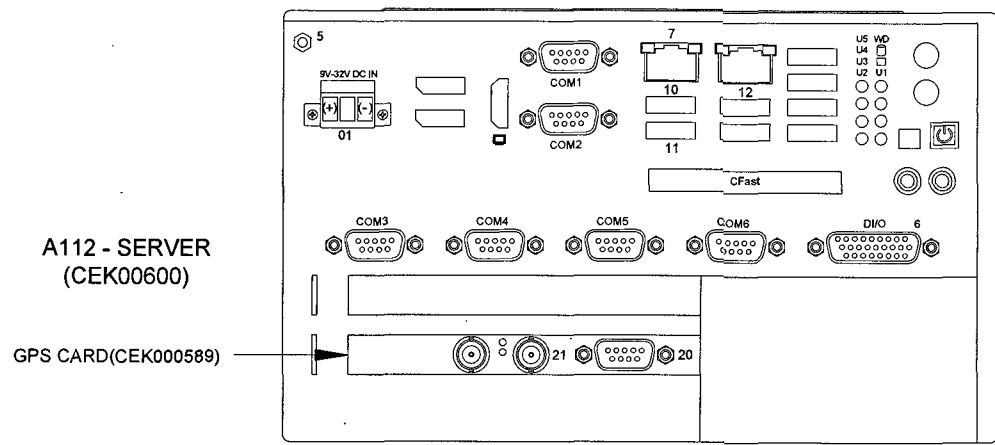
UNLESS OTHERWISE STATED  
 DIMENSIONS ARE IN mm  
 TOLERANCES LINEAR ±0.2mm  
 ANGULAR ±0.5°  
 ALL THREADS ARE ISO METRIC  
 COURSE FIT, MEDIUM FIT

Project No:- 50530234

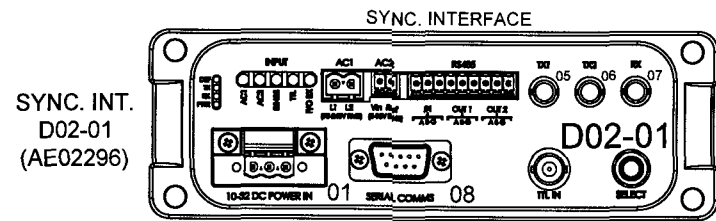
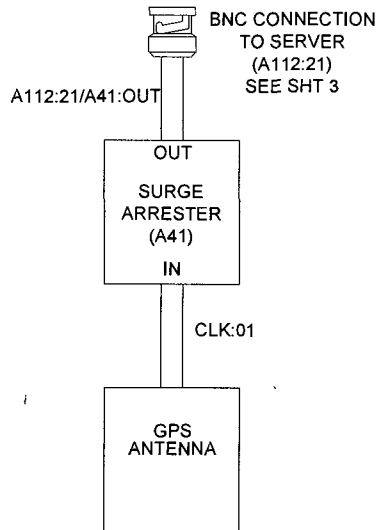
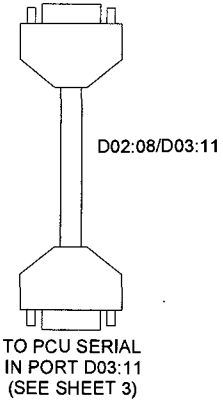
**DMS** Diagnostic Monitoring Systems L  
 A QUALITROL Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24
Title: Radial Control Cabinet 1 Vishnugad Pipalkoti 400kV System	Drawing No: 100000 Sheet: 1	

RADIAL CONTROL CABINET WIRING DETAILS



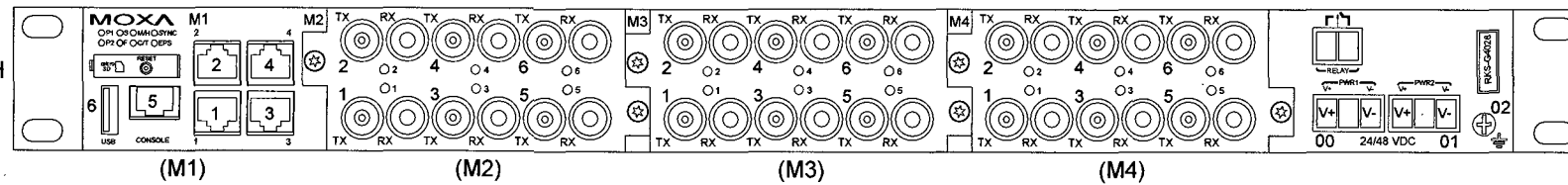
DIRECT SERIAL LINK TO SYNC. INTERFACE D02:08 SERIAL COMMS



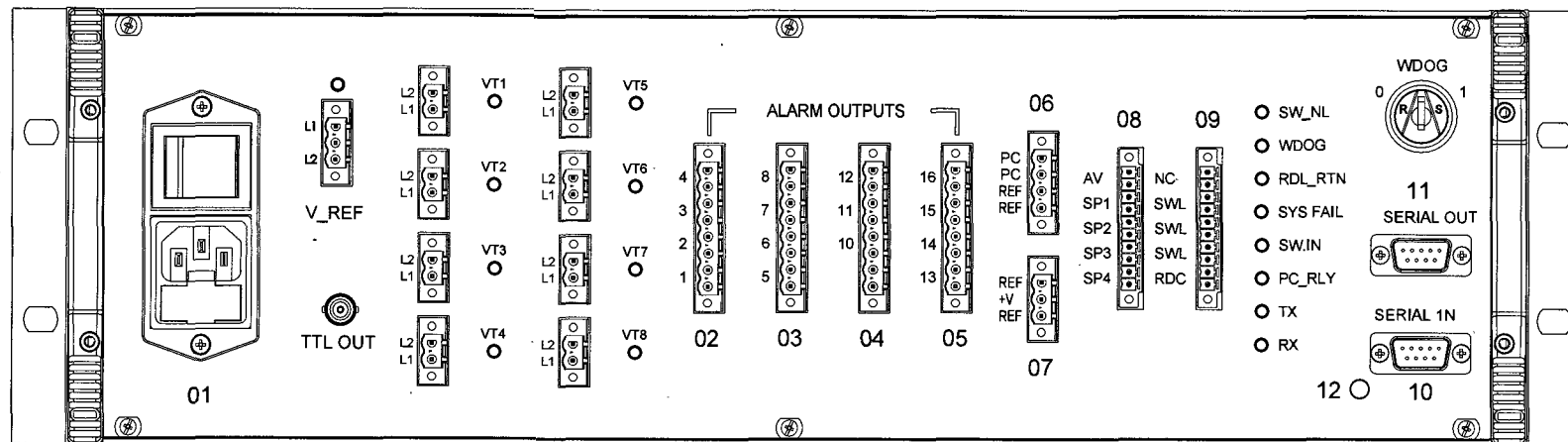
EXTERNAL BACK UP A29 (CEK00462)



ETHERNET SWITCH A127-01 (AE08064)



POWER CONTROL UNIT (PCU) D03(AE02845)



CABLE REF	FROM	TO
A112-10/A29:01	SERVER (A112:10)	EXTERNAL BACK UP DRIVE (A29:01)
A112:01	SERVER (A112:01)	RCC DIN RAIL 1 (SEE SHEET 1- BLOCK 3F)
A112:06/A10:02	SERVER (A112:06)	MONITOR (A10:02)
A112:07/A127-01:M1-1	SERVER (A112:07)	ETHERNET SWITCH
A112:COM1/D03:10	SERVER (A112:COM1)	POWER CONTROL UNIT (D03:10)
A112:11/A85:06	SERVER (A112:11)	UPS (A85:06) (SEE SHEET 5)
A112:05/A15	SERVER (A112:05)	CABINET EARTH RAIL (A15:06)
A112:10/A17	SERVER (A112:10)	KEYBOARD (A17)
A112:12/A16	SERVER (A112:12)	MOUSE (A16)
A127-01:00-(v+)	ETHERNET SWITCH (A127-01)	RCC DIN RAIL 1 (SEE SHEET 1 BLOCK 3F)
A127-01:00-(v-)	ETHERNET SWITCH (A127-01)	RCC DIN RAIL 1 (SEE SHEET 1 BLOCK 3F)
A127-01:02	ETHERNET SWITCH (A127-01)	CABINET EARTH RAIL (A15)
D03:01	POWER CONTROL UNIT (D03:01)	RCC DIN RAIL 1 (SEE SHEET 1 BLOCK 3F)
D03:VT REF	POWER CONTROL UNIT (D03:VT REF.)	RCC DIN RAIL 2 (SEE SHEET 2 BLOCK 2G)
D03:VT1	POWER CONTROL UNIT (D03:VT 1.)	RCC DIN RAIL 2 (SEE SHEET 2 BLOCK 5B01)
D03:VT2	POWER CONTROL UNIT (D03:VT 2.)	RCC DIN RAIL 2 (SEE SHEET 2 BLOCK 5B01)
D03:VT3	POWER CONTROL UNIT (D03:VT 3.)	RCC DIN RAIL 2 (SEE SHEET 2 BLOCK 5B02)
D03:VT4	POWER CONTROL UNIT (D03:VT 4.)	RCC DIN RAIL 2 (SEE SHEET 2 BLOCK 5B02)
D03:02	POWER CONTROL UNIT (D03:02)	RCC DIN RAIL 2 (SEE SHEET 2 BLOCK 6F)
D03:06	POWER CONTROL UNIT (D03:06)	RCC DIN RAIL 1 (SEE SHEET 1 BLOCK 3F)
D03:07	POWER CONTROL UNIT (D03:07)	RCC DIN RAIL 2 (SEE SHEET 2 BLOCK 6F)
D03:08	POWER CONTROL UNIT (D03:08)	RCC DIN RAIL 1 (SEE SHEET 1/2 BLOCK 1A/5C)
D03:09	POWER CONTROL UNIT (D03:09)	RCC DIN RAIL 2 (SEE SHEET 1/2 BLOCK 5C/2G)
D03:11	POWER CONTROL UNIT (D03:11)	RCC DIN RAIL 1 SYNC INTERFACE (D02-01:08) (SEE SHEET 1)
D03:12/A15:16	POWER CONTROL UNIT (D03:12)	CABINET EARTH RAIL (A15)
A112:21/A41:OUT	SURGE ARRESTER(A41:OUT)	SERVER (A112:21)

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems Ltd  
A QUALITROL Company

Scale: NTS Drawn by: CC Date: 24/10/24  
Standard: Checked: KP Date: 24/10/24

Title: Radial Control Cabinet 1  
Vishnugad Pipalkoti 400KV System

Drawing No: W01329 Sheet: Rev: A

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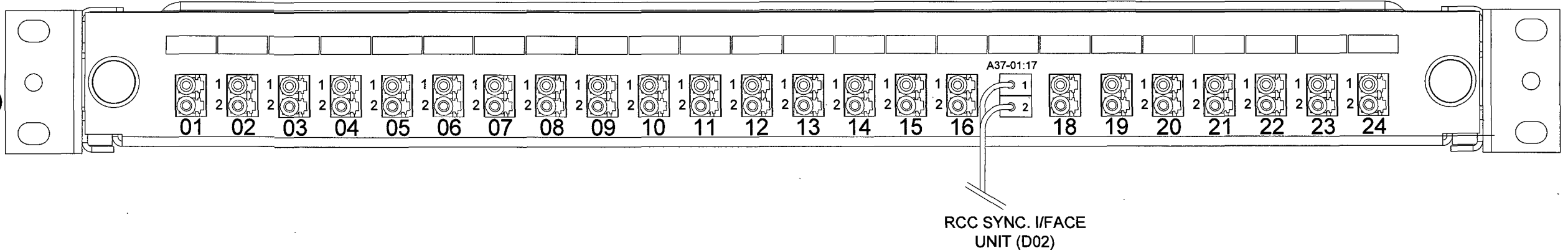
DIMENSIONS ARE IN mm  
TOLERANCES LINEAR ±0.2mm  
ANGULAR ±0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT  
REMOVE ALL SHARP EDGES

A	24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
DATE	DRAWN	APPROVED	FOR NAME	

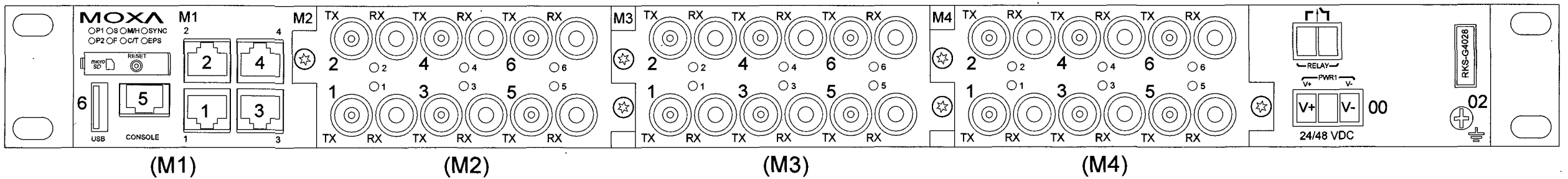
RADIAL CONTROL CABINET WIRING DETAILS

CABLE REF	FROM	TO	CABLE REF	FROM	TO
A127-01:M1-1/A112:07	ETHERNET SWITCH (A127-01:M4-1)	SERVER (A112:07)	PATCH CORD : PC10-TX	FIBRE TRAY (A37-01:10-1)	ETHERNET SWITCH (A127-01:M3-4-TX)
PATCH CORD : PC01-TX	FIBRE TRAY (A37-01:01-1)	ETHERNET SWITCH (A127-01:M2-1-TX)	PATCH CORD : PC10-RX	FIBRE TRAY (A37-01:10-2)	ETHERNET SWITCH (A127-01:M3-4-RX)
PATCH CORD : PC01-RX	FIBRE TRAY (A37-01:01-2)	ETHERNET SWITCH (A127-01:M2-1-RX)	PATCH CORD : PC11-TX	FIBRE TRAY (A37-01:11-1)	ETHERNET SWITCH (A127-01:M3-5-TX)
PATCH CORD : PC02-TX	FIBRE TRAY (A37-01:02-1)	ETHERNET SWITCH (A127-01:M2-2-TX)	PATCH CORD : PC11-RX	FIBRE TRAY (A37-01:11-2)	ETHERNET SWITCH (A127-01:M3-5-RX)
PATCH CORD : PC02-RX	FIBRE TRAY (A37-01:02-2)	ETHERNET SWITCH (A127-01:M2-2-RX)	PATCH CORD : PC12-TX	FIBRE TRAY (A37-01:12-1)	ETHERNET SWITCH (A127-01:M3-6-TX)
PATCH CORD : PC03-TX	FIBRE TRAY (A37-01:03-1)	ETHERNET SWITCH (A127-01:M2-3-TX)	PATCH CORD : PC12-RX	FIBRE TRAY (A37-01:12-2)	ETHERNET SWITCH (A127-01:M3-6-RX)
PATCH CORD : PC03-RX	FIBRE TRAY (A37-01:03-2)	ETHERNET SWITCH (A127-01:M2-3-RX)	PATCH CORD : PC13-TX	FIBRE TRAY (A37-01:13-1)	ETHERNET SWITCH (A127-01:M4-1-TX)
PATCH CORD : PC04-TX	FIBRE TRAY (A37-01:04-1)	ETHERNET SWITCH (A127-01:M2-4-TX)	PATCH CORD : PC13-RX	FIBRE TRAY (A37-01:13-2)	ETHERNET SWITCH (A127-01:M4-1-RX)
PATCH CORD : PC04-RX	FIBRE TRAY (A37-01:04-2)	ETHERNET SWITCH (A127-01:M2-4-RX)	PATCH CORD : PC14-TX	FIBRE TRAY (A37-01:14-1)	ETHERNET SWITCH (A127-01:M4-2-TX)
PATCH CORD : PC05-TX	FIBRE TRAY (A37-01:05-1)	ETHERNET SWITCH (A127-01:M2-5-TX)	PATCH CORD : PC14-RX	FIBRE TRAY (A37-01:14-2)	ETHERNET SWITCH (A127-01:M4-2-RX)
PATCH CORD : PC05-RX	FIBRE TRAY (A37-01:05-2)	ETHERNET SWITCH (A127-01:M2-5-RX)	PATCH CORD : PC15-TX	FIBRE TRAY (A37-01:15-1)	ETHERNET SWITCH (A127-01:M4-3-TX)
PATCH CORD : PC06-TX	FIBRE TRAY (A37-01:06-1)	ETHERNET SWITCH (A127-01:M2-6-TX)	PATCH CORD : PC15-RX	FIBRE TRAY (A37-01:15-2)	ETHERNET SWITCH (A127-01:M4-3-RX)
PATCH CORD : PC06-RX	FIBRE TRAY (A37-01:06-2)	ETHERNET SWITCH (A127-01:M2-6-RX)	PATCH CORD : PC16-TX	FIBRE TRAY (A37-01:16-1)	ETHERNET SWITCH (A127-01:M4-4-TX)
PATCH CORD : PC07-TX	FIBRE TRAY (A37-01:07-1)	ETHERNET SWITCH (A127-01:M3-1-TX)	PATCH CORD : PC16-RX	FIBRE TRAY (A37-01:16-2)	ETHERNET SWITCH (A127-01:M4-4-RX)
PATCH CORD : PC07-RX	FIBRE TRAY (A37-01:07-2)	ETHERNET SWITCH (A127-01:M3-1-RX)			
PATCH CORD : PC08-TX	FIBRE TRAY (A37-01:08-1)	ETHERNET SWITCH (A127-01:M3-2-TX)			
PATCH CORD : PC08-RX	FIBRE TRAY (A37-01:08-2)	ETHERNET SWITCH (A127-01:M3-2-RX)			
PATCH CORD : PC09-TX	FIBRE TRAY (A37-01:09-1)	ETHERNET SWITCH (A127-01:M3-3-TX)			
PATCH CORD : PC09-RX	FIBRE TRAY (A37-01:09-2)	ETHERNET SWITCH (A127-01:M3-3-RX)			

FIBRE TRAY  
A37-01(CMA00409)



ETHERNET SWITCH  
A127-01 (AE08064)



Project No:- 5053023-

**DMS** Diagnostic Monitoring Systems L  
A Quality Company

Scale: NTS Drawn by: CC Date: 24/10/24  
Standard: Checked: KP Date: 24/10/24

Title: Radial Control Cabinet 1  
Vishnugad Pipalkoti 400kV System  
Drawing: Sheet

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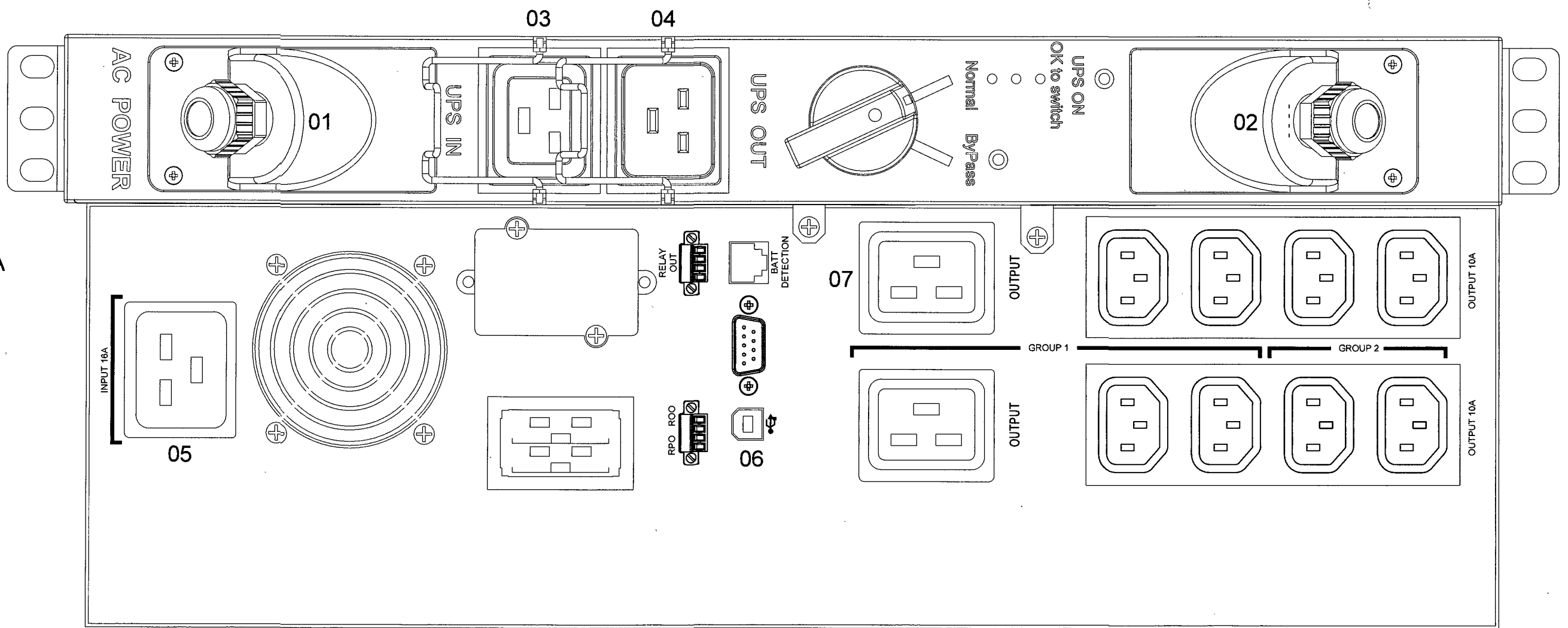
UNLESS OTHERWISE STATED  
DIMENSIONS ARE IN mm  
TOLERANCES LINEAR ± 0.2mm  
ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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RADIAL CONTROL CABINET WIRING DETAILS

CABLE REF	FROM	TO
A85:01	HOTSWAP (A85:01)	RCC DIN RAIL 1 (SEE SHEET 1 BLOCK 1A)
A85:02	HOTSWAP (A85:02)	RCC DIN RAIL 1 (SEE SHEET 1 BLOCK 1A)
A85:03/A85:05	HOTSWAP (A85:03)	UPS (A85:05)
A85:04/A85:07	HOTSWAP (A85:04)	UPS (A85:07)
A85:06/A112:11	UPS (A85:06)	SERVER(A112:11) (SEE SHEET 3)

UPS/HOTSWAP - 3kVA  
A85



24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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 ALL THREADS ARE ISO METRIC  
 COURSE PITCH, MEDIUM FIT

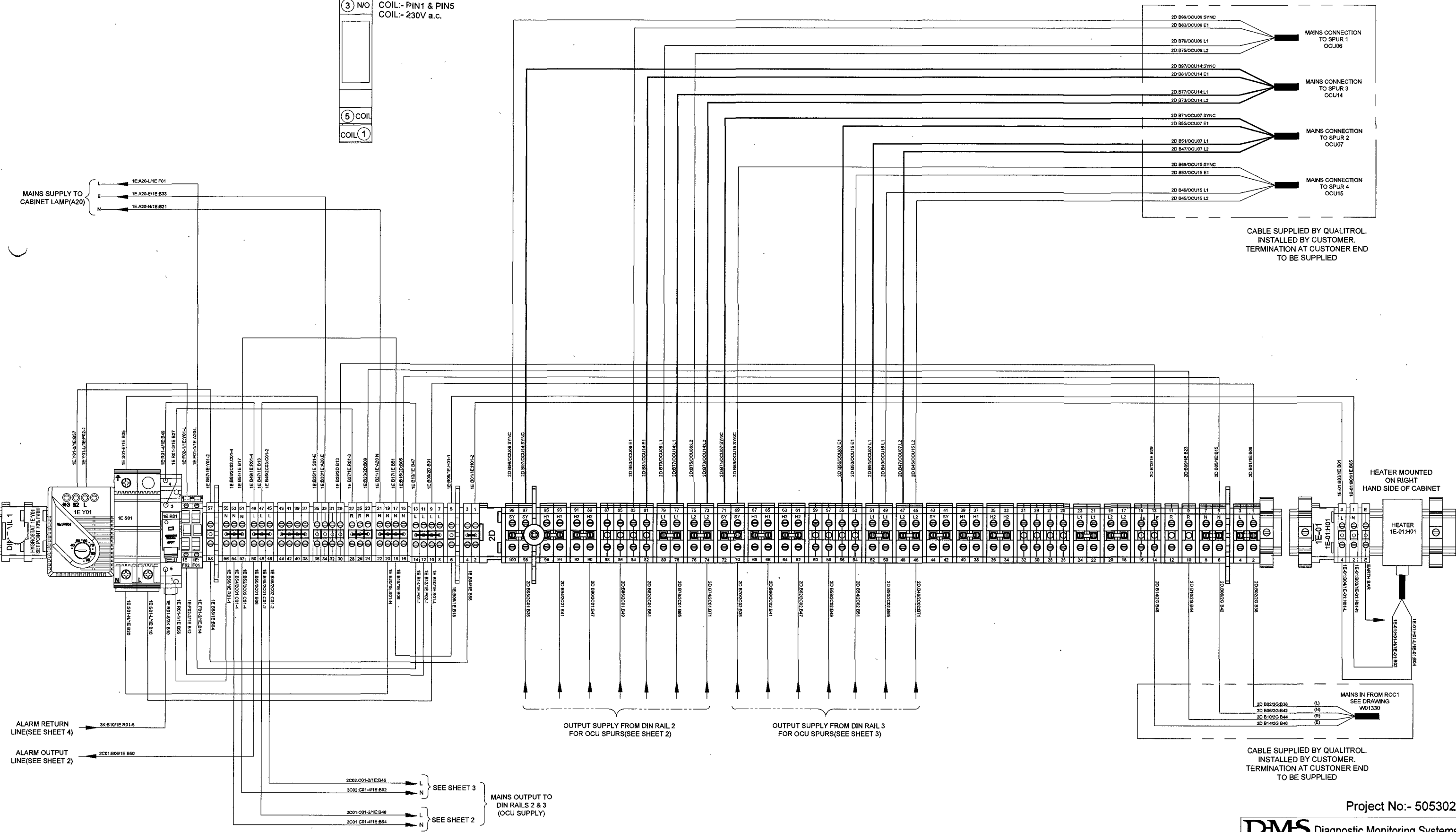
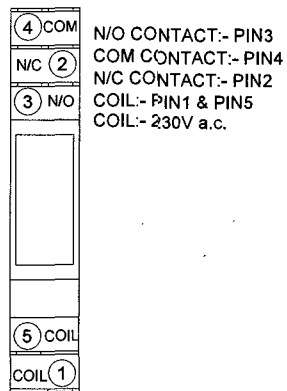
Project No:- 5053023

**DMS** Diagnostic Monitoring Systems I  
A QUALITROL Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24
Title	Radial Control Cabinet 1 Vishnugad Pipalkoti 400kV System	
Drawn	Sheet	

**RADIAL DISTRIBUTION CABINET 1 WIRING DETAILS**

1E:R01



CABLE SUPPLIED BY QUALITROL. INSTALLED BY CUSTOMER. TERMINATION AT CUSTOMER END TO BE SUPPLIED

CABLE SUPPLIED BY QUALITROL. INSTALLED BY CUSTOMER. TERMINATION AT CUSTOMER END TO BE SUPPLIED

24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
----------	----	----	--------------------------

1. ALL WIRING SHOWN IS DMS INTERNAL WIRING EXCEPT MAINS SUPPLY FROM RCC.
2. ENSURE A 10mm MINIMUM GAP IS MAINTAINED BETWEEN HEATER AND NEAREST DIN RAIL COMPONENT
3. EARTH TERMINALS LINKED BY DIN RAIL.

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UNLESS OTHERWISE STATED

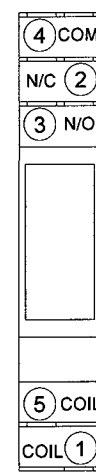
DIMENSIONS ARE IN mm  
 TOLERANCES LINEAR ± 0.2mm  
 ANGULAR ± 0.5°  
 ALL THREADS ARE ISO METRIC  
 COURSE FITCH, MEDIUM FIT

Project No:- 50530234

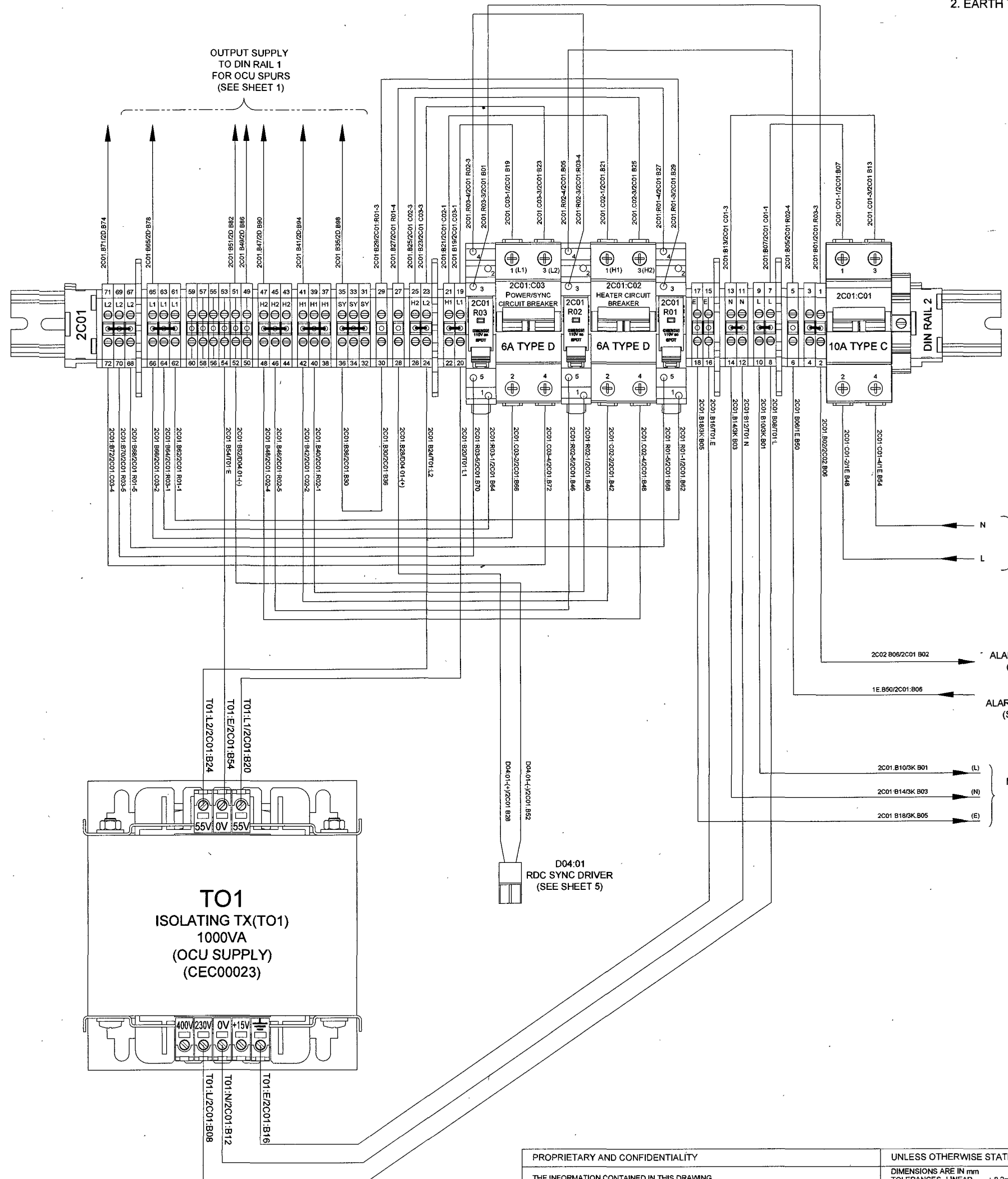
**DMS** Diagnostic Monitoring Systems L  
 A QUALITROL Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24
Title	Radial Distribution Cabinet 1 Vishnugad Pipalkoti 400kV System	
Drawing	W01330	Sheet

R01, R02 & R03



N/O CONTACT:- PIN3  
COM CONTACT:- PIN4  
N/C CONTACT:- PIN2  
COIL:- PIN1 & PIN5  
COIL:- 110V a.c.

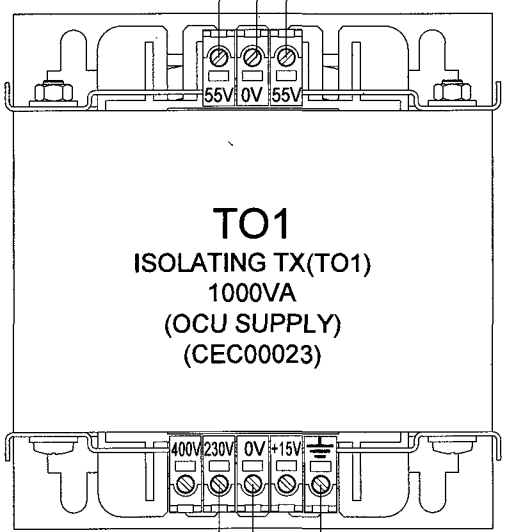


MAINS INPUT TO DIN RAIL 2 FROM DIN RAIL 1 (SEE SHEET 1)

ALARM RETURN LINE (SEE SHEET 3)

ALARM RETURN LINE (SEE SHEET 1)

MAINS INPUT TO 24Vdc CIRCUIT (SEE SHEET 4)



D04:01 RDC SYNC DRIVER (SEE SHEET 5)

24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT  
REMOVE ALL SWARFACES

Project No:- 50530234

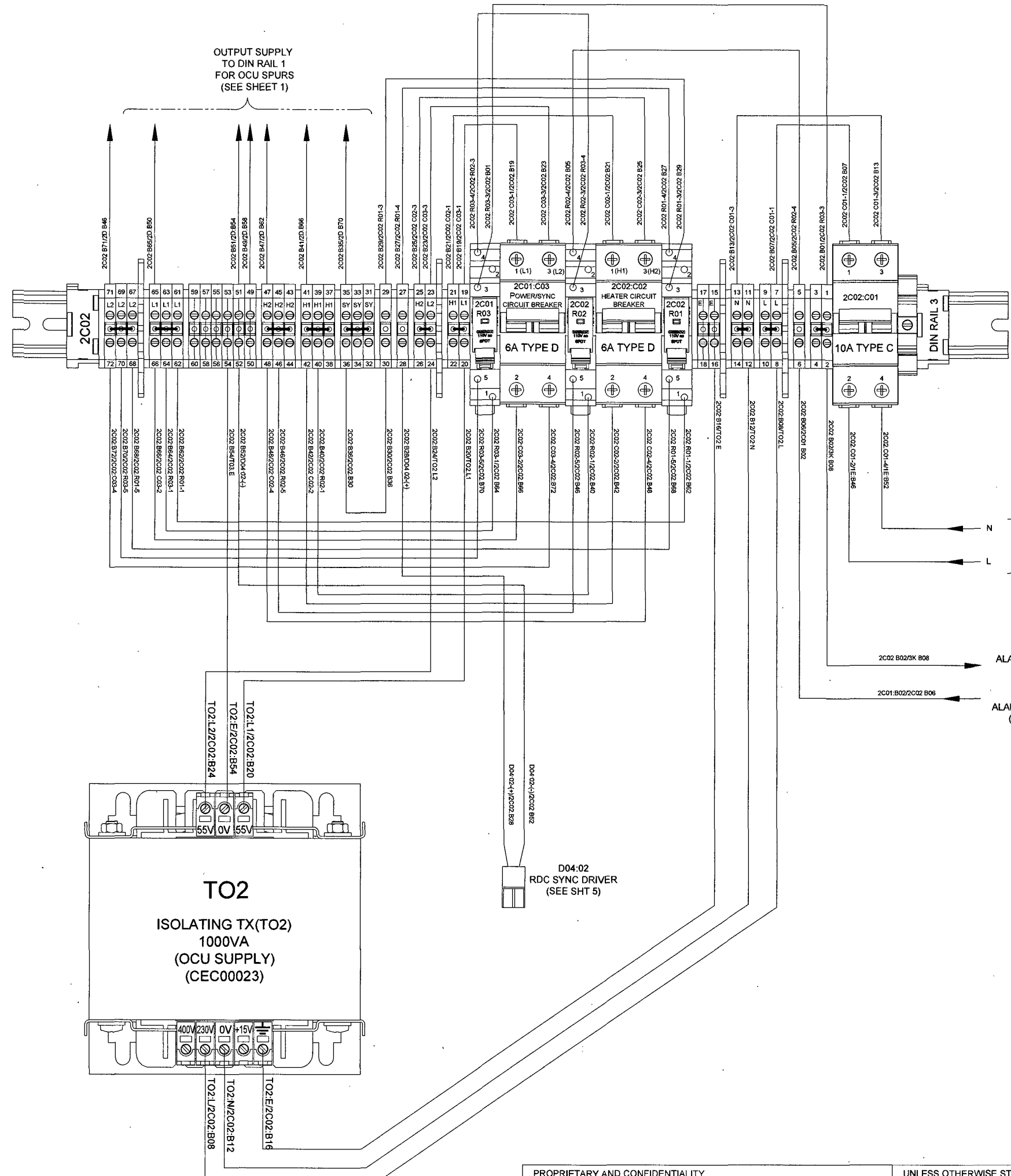
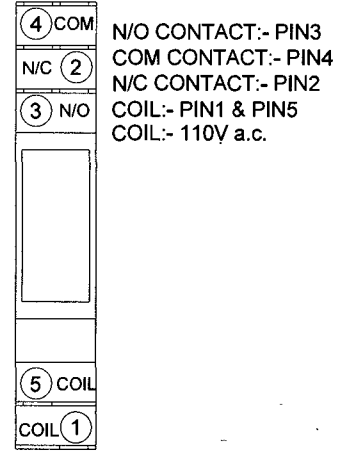
**DMS** Diagnostic Monitoring Systems L  
A QUALITY Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24

Title: Radial Distribution Cabinet 1  
Vishnugad Pipalkoti 400kV System

Drawing: W/A 220 Sheet: 1 of 1

R01, 02 & 03

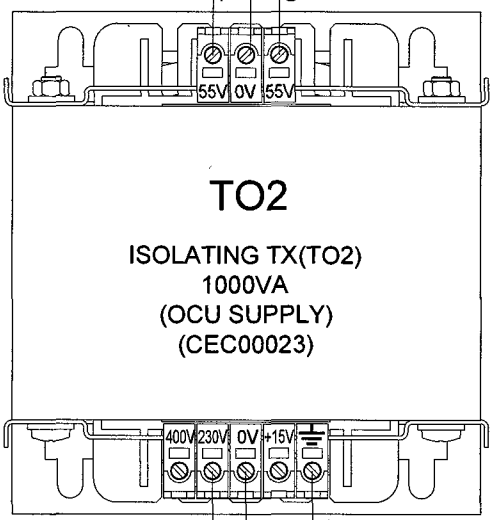


OUTPUT SUPPLY  
TO DIN RAIL 1  
FOR OCU SPURS  
(SEE SHEET 1)

MAINS INPUT  
TO DIN RAIL 3  
FROM DIN RAIL 1  
(SEE SHEET 1)

ALARM RETURN LINE  
(SEE SHEET 4)

ALARM RETURN LINE  
(SEE SHEET 2)



D04:02  
RDC SYNC DRIVER  
(SEE SHT 5)

A	24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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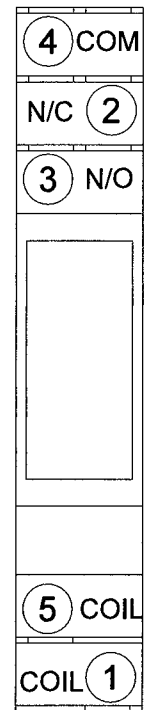
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TOLERANCES LINEAR ± 0.2mm  
ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

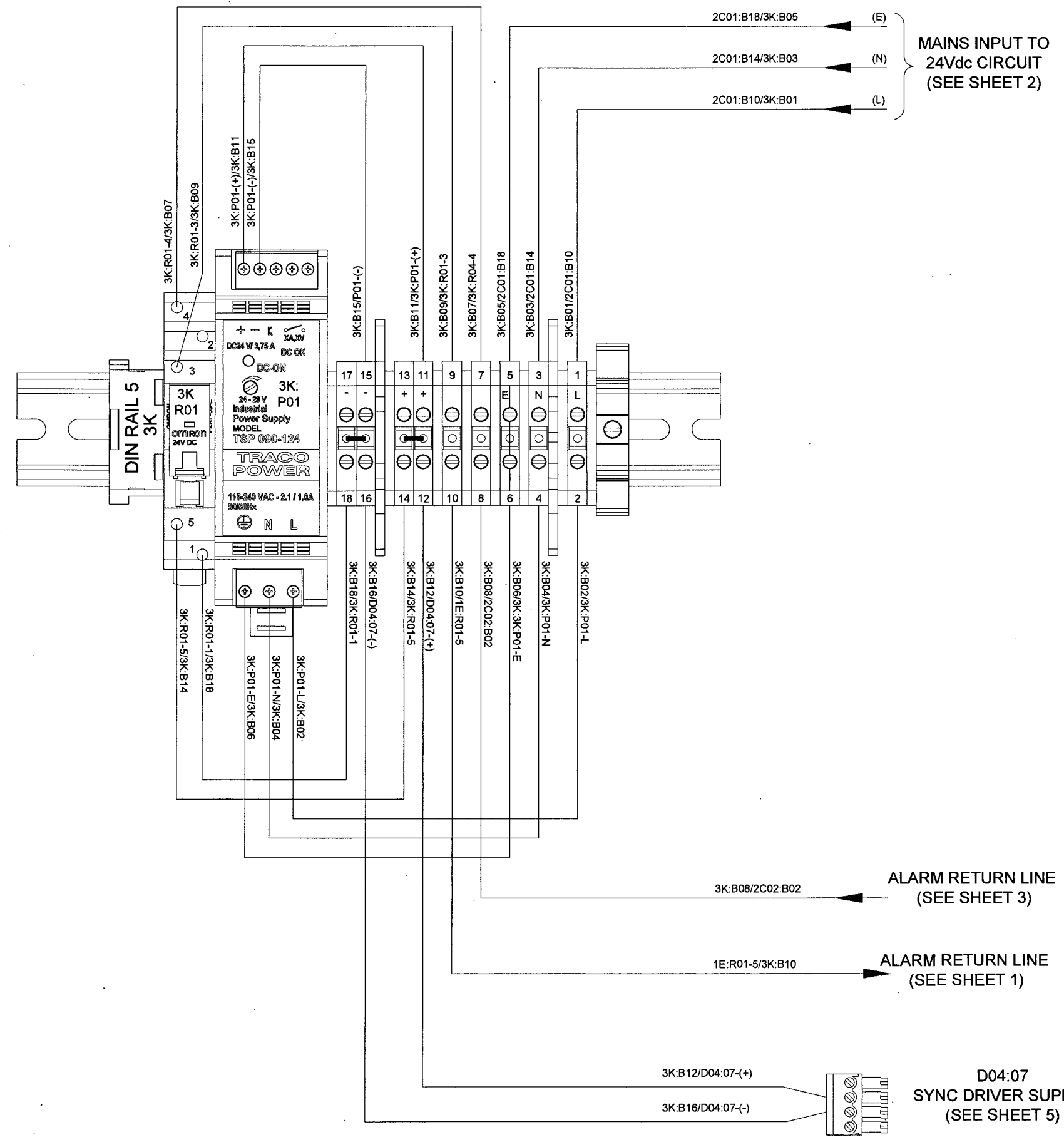
Project No:- 5053023-  
**DMS** Diagnostic Monitoring Systems L  
A Cummins Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24
Title	Radial Distribution Cabinet 1 Vishnugad Pipalkoti 400kV System	
Drawn	Sheet	

**R01**



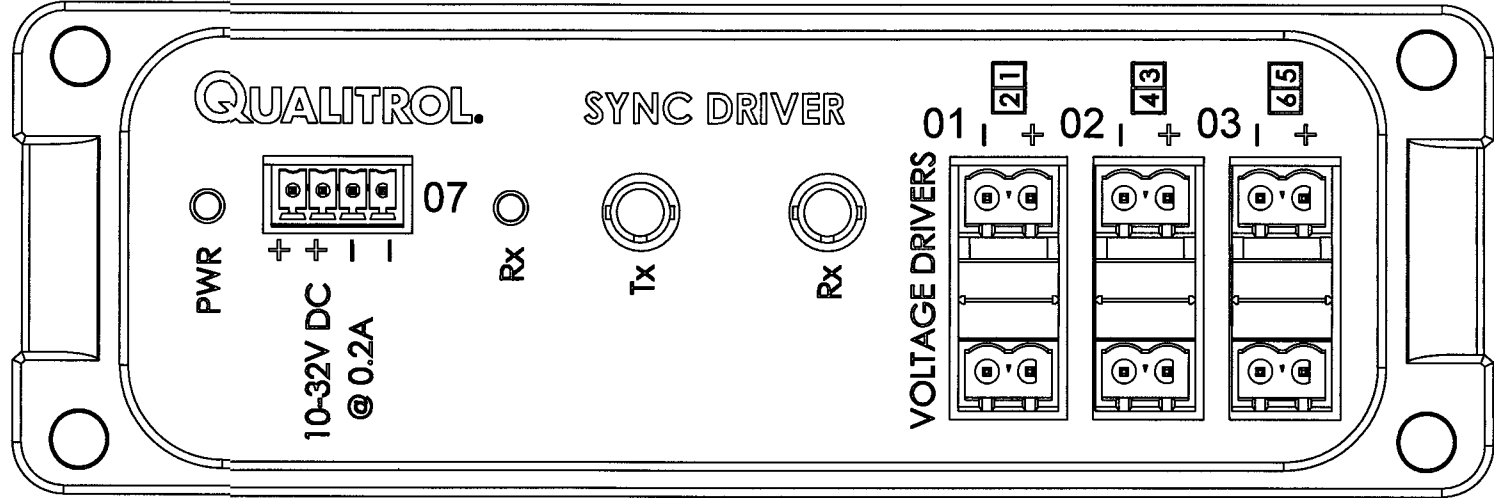
N/O CONTACT:- PIN3  
COM CONTACT:- PIN4  
N/C CONTACT:- PIN2  
COIL:- PIN1 & PIN5  
COIL:- 24V d.c.



24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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ANY REPRODUCTION USE OR DISCLOSURE IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF DIAGNOSTIC MONITORING SYSTEMS IS PROHIBITED		ALL THREADS ARE ISO METRIC COURSE PITCH, MEDIUM FIT	
Scale: NTS	Drawn by: CC	Date: 24/10/24	Standard:
Checked: KP	Date: 24/10/24	Title: Radial Distribution Cabinet 1 Vishnugad Pipalkoti 400kV System	
Drawing: W04220		Sheet: 1	Project No:- 50530234

SYNC DRIVER  
D04



CABLE REF	FROM	TO
D04:01	SYNC DRIVER (D04:01)	RDC DIN RAIL 2 (SEE SHEET 2)
D04:02	SYNC DRIVER (D04:02)	RDC DIN RAIL 3 (SEE SHEET 3)
D04:07	SYNC DRIVER (D04:07)	RDC DIN RAIL 4 (SEE SHEET 4)

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

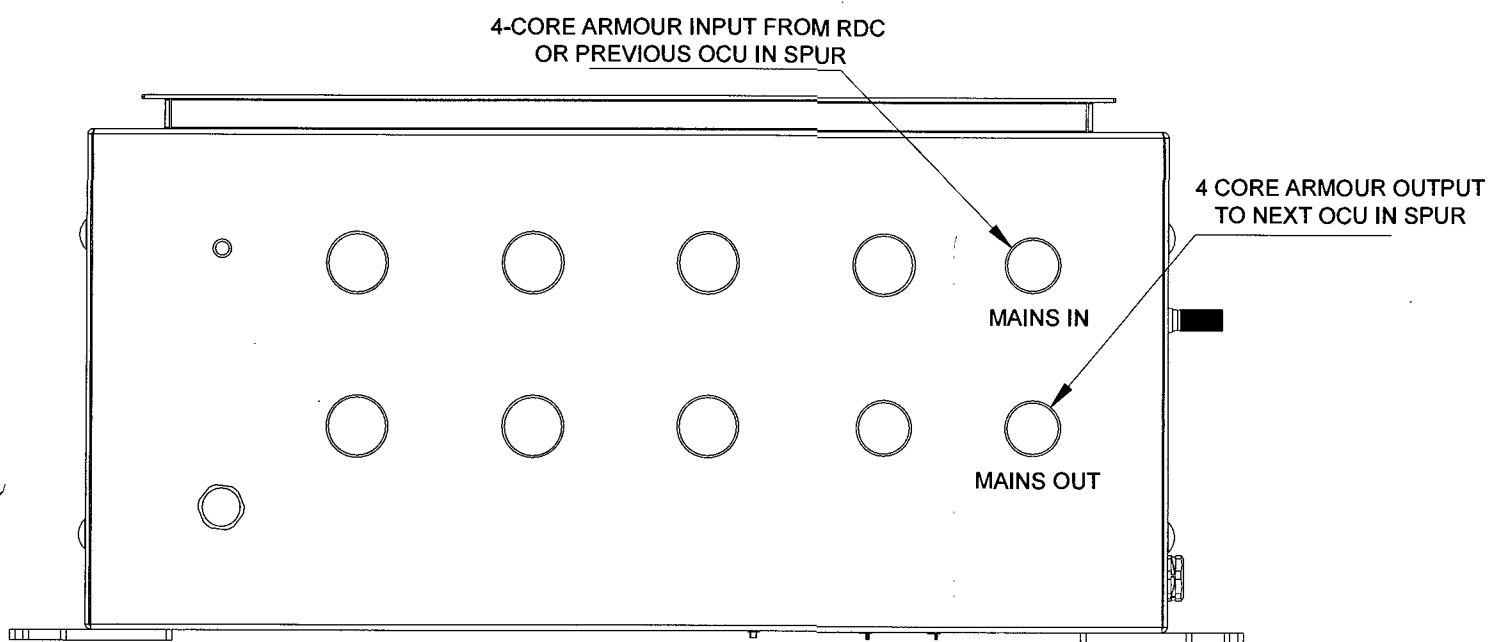
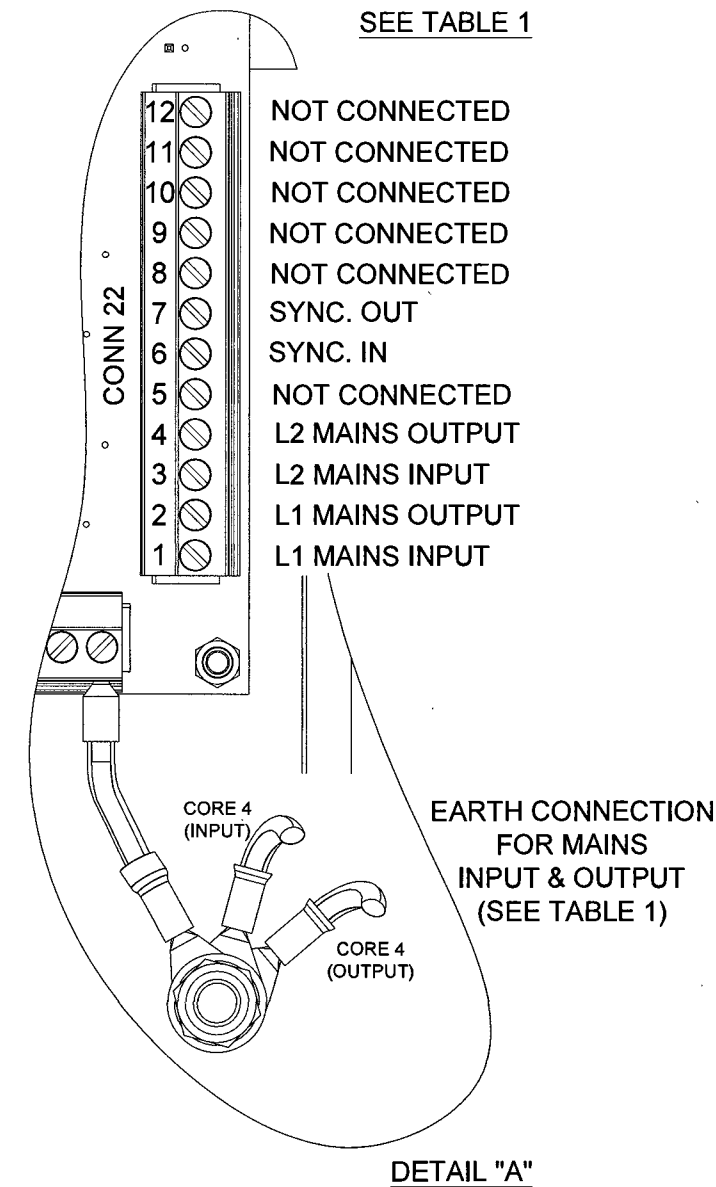
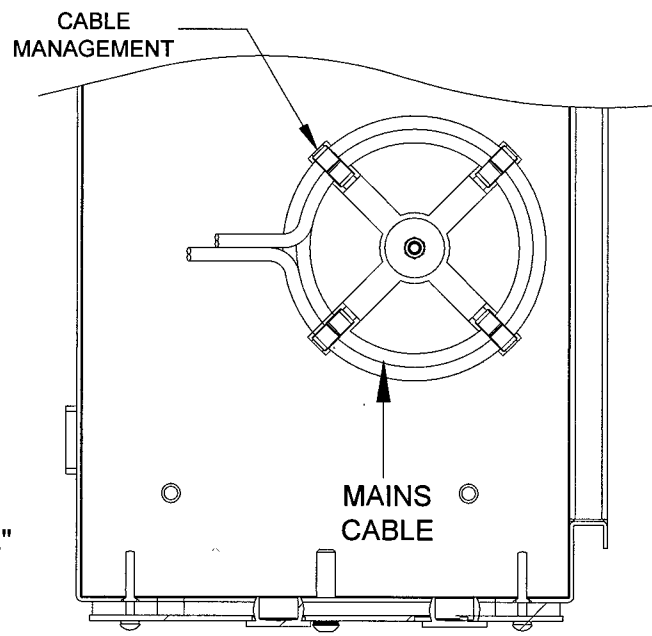
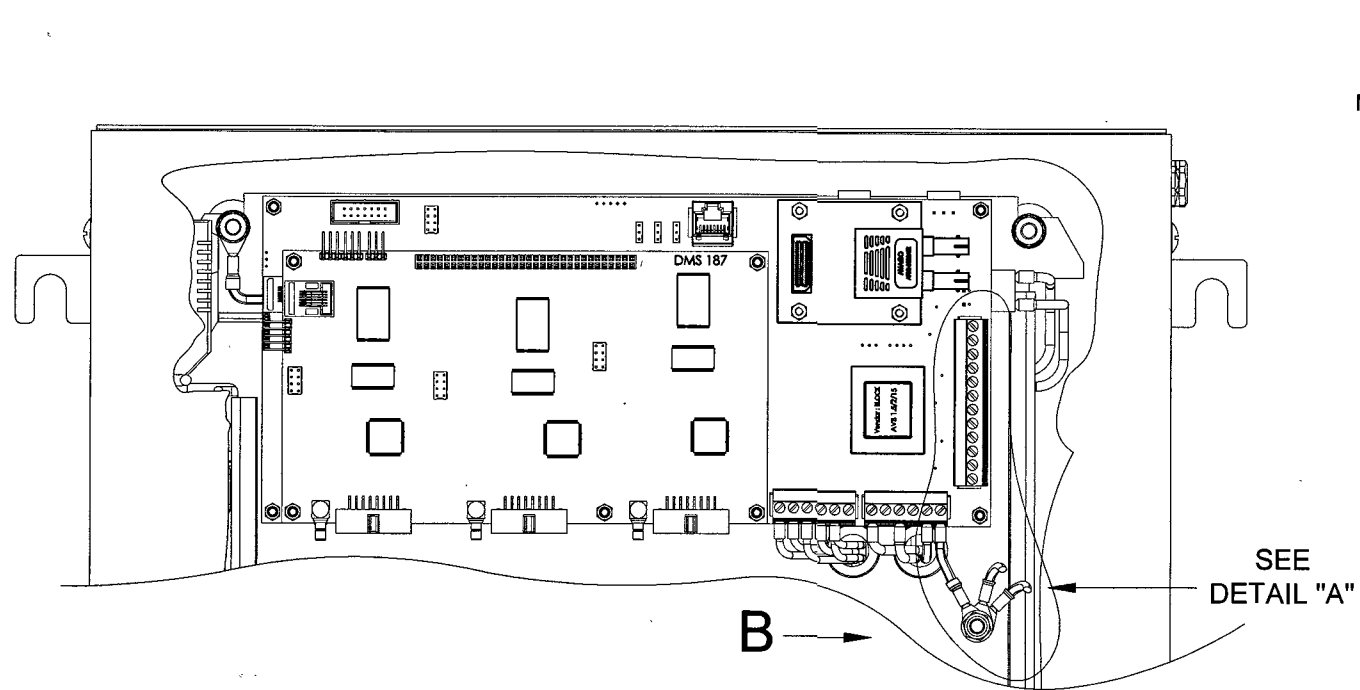
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Standard:		Checked:	KP	Date:	24/10/24
<b>Title</b>	Radial Distribution Cabinet 1 Vishnugad Pipalkoti 400kV System				
Drawing:	11/01220	Sheet			

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ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT  
REMOVE ALL SHARP EDGES

A	24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL



**NOTES**

- 1) CABLE TO BE TERMINATED IN ACCORDANCE WITH TABLE 1.
- 2) ALL CORES TO BE COILED NEATLY ROUND CABLE MANAGEMENT SYSTEM AS SHOWN IN PART VIEW "B" (REF ONLY) OBSERVE CABLE BEND RADIUS DURING TERMINATION.
- 3) WIRING SHOWN FOR ALL OCU'S EXCEPT FINAL OCU IN EACH SPUR.
- 4) REFER TO OCU INSTALL-MANUAL FOR CABLE TERMINATION DETAIL.

MAINS INPUT TO OCU  
 MAINS OUTPUT TO NEXT OCU

**TABLE 1**

4 CORE ARMOUR CABLE CONNECTIONS			
CORE	SIGNAL	TERMINATION	CONN 22
1	L1(IN)	BOOTLACE FERRULE	PIN 1
2	L2(IN)	BOOTLACE FERRULE	PIN 3
3	SYNC(IN)	BOOTLACE FERRULE	PIN 6
4	E	M5 RING TERMINAL	N/A
1	L1(OUT)	BOOTLACE FERRULE	PIN 2
2	L2(OUT)	BOOTLACE FERRULE	PIN 4
3	SYNC(OUT)	BOOTLACE FERRULE	PIN 7
4	E	M5 RING TERMINAL	N/A

SEE TABLE 1

12 NOT CONNECTED  
 11 NOT CONNECTED  
 10 NOT CONNECTED  
 9 NOT CONNECTED  
 8 NOT CONNECTED  
 7 SYNC. OUT  
 6 SYNC. IN  
 5 NOT CONNECTED  
 4 L2 MAINS OUTPUT  
 3 L2 MAINS INPUT  
 2 L1 MAINS OUTPUT  
 1 L1 MAINS INPUT

EARTH CONNECTION FOR MAINS INPUT & OUTPUT (SEE TABLE 1)

**DETAIL "A"**

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems Ltd  
 A QUALTRON Company

Scale: NTS Drawn by: CC Date: 24/10/24  
 Standard: Checked: KP Date: 24/10/24

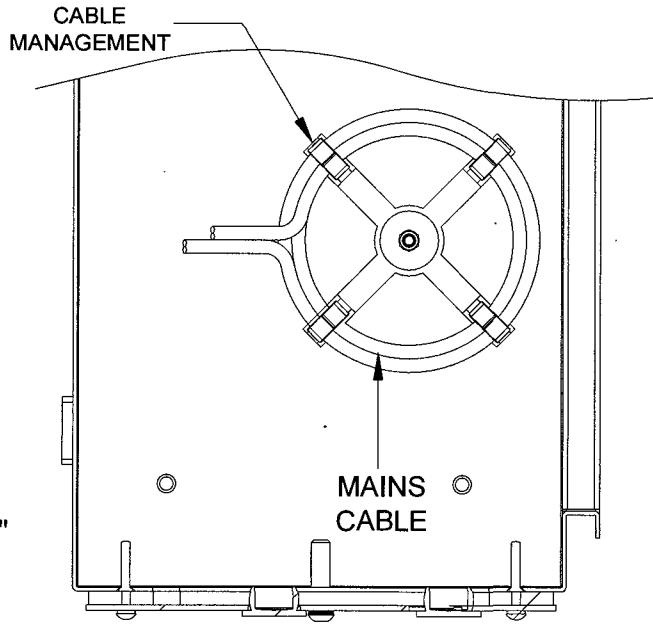
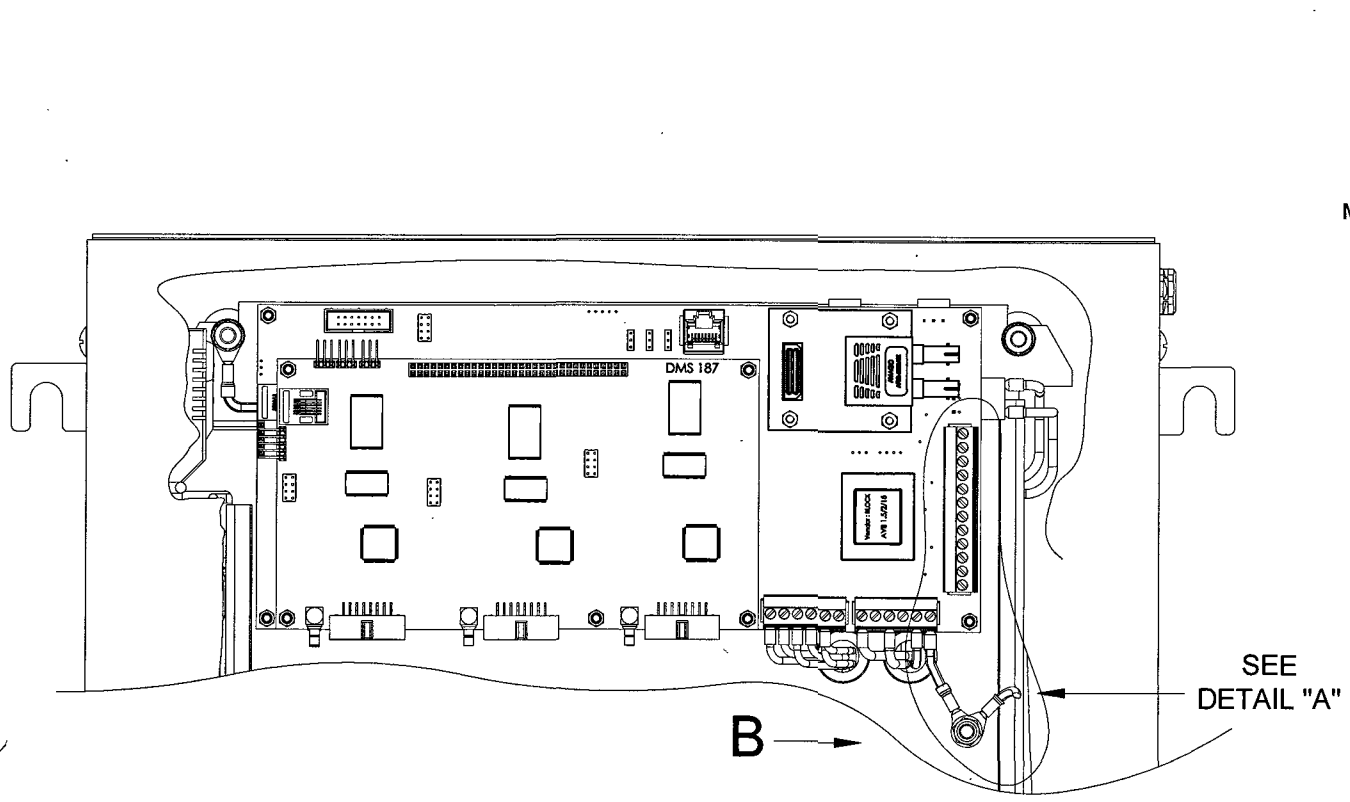
Title: OCU Mains Cable Installation Details  
 Vishnugad Pipalkoti 400kV System

Drawing: A500226 Sheet: 1 of 1

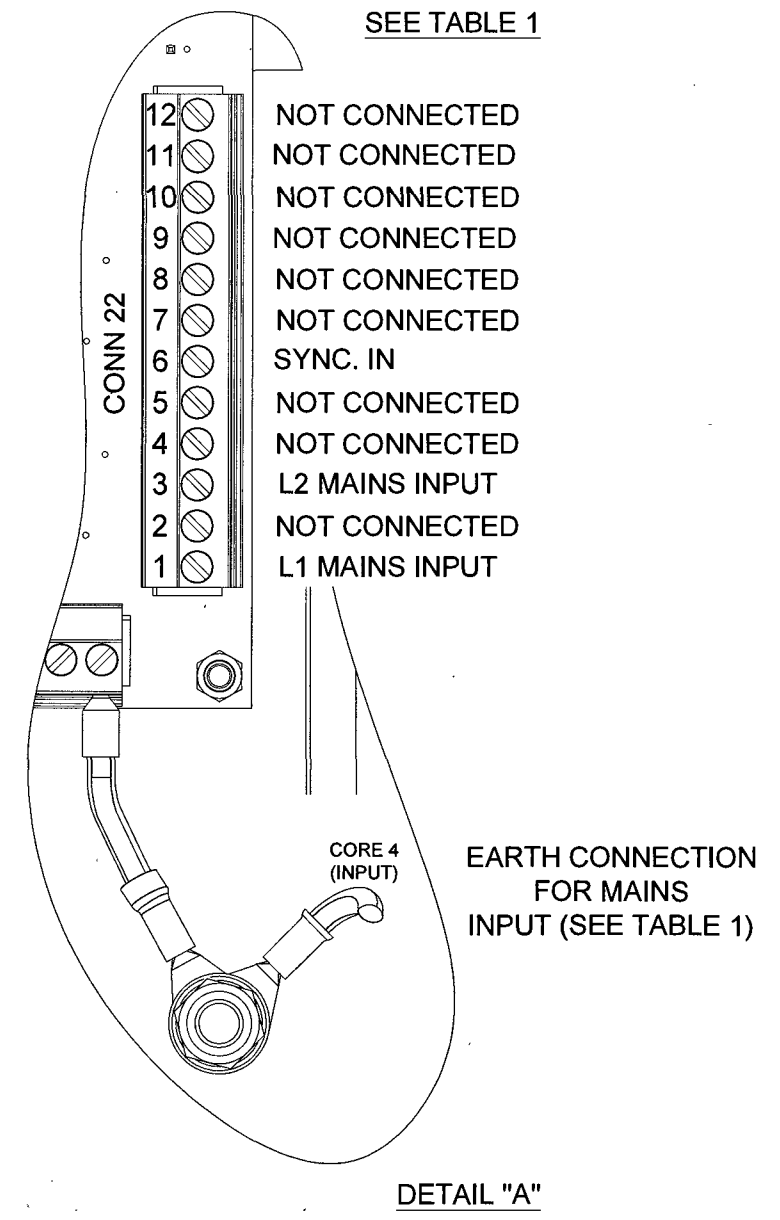
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 ALL THREADS ARE ISO METRIC  
 COURSE PITCH, MEDIUM FIT  
 REMOVE ALL SHARP EDGES

24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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PART VIEW IN DIRECTION OF ARROW "B"

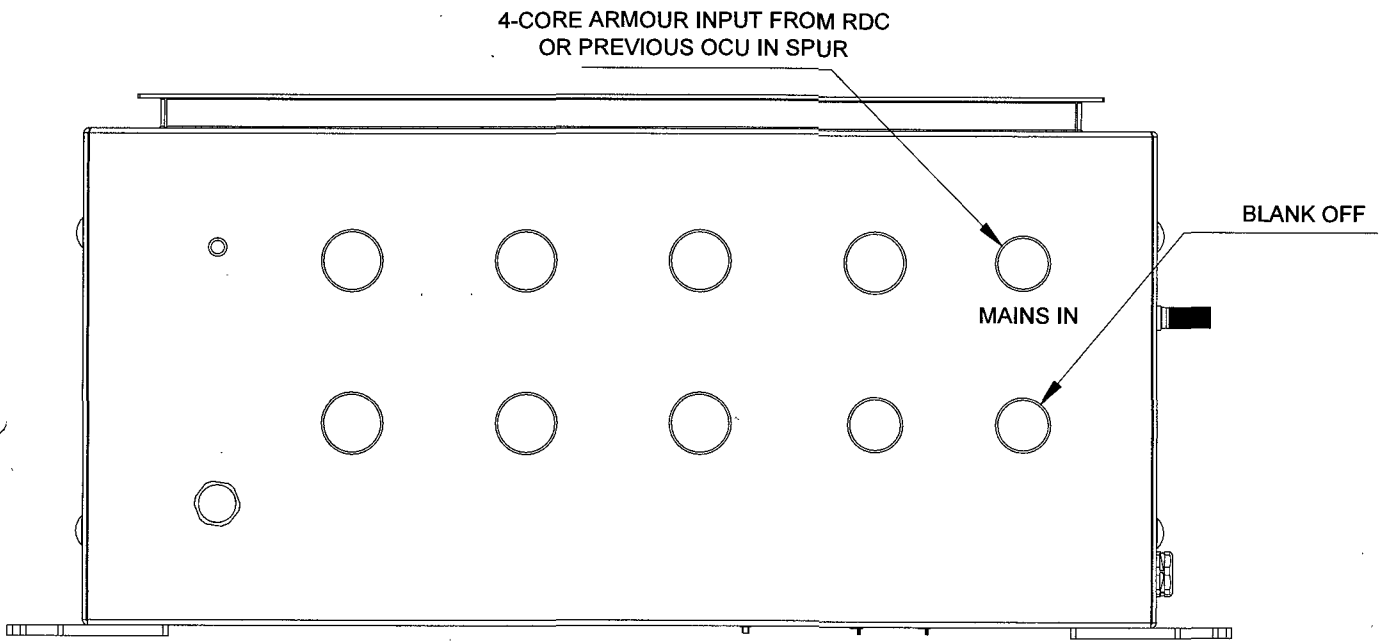


SEE TABLE 1

- 12 NOT CONNECTED
- 11 NOT CONNECTED
- 10 NOT CONNECTED
- 9 NOT CONNECTED
- 8 NOT CONNECTED
- 7 NOT CONNECTED
- 6 SYNC. IN
- 5 NOT CONNECTED
- 4 NOT CONNECTED
- 3 L2 MAINS INPUT
- 2 NOT CONNECTED
- 1 L1 MAINS INPUT

EARTH CONNECTION FOR MAINS INPUT (SEE TABLE 1)

DETAIL "A"



MAINS INPUT TO OCU

TABLE 1

4 CORE ARMOUR CABLE CONNECTIONS			
CORE	SIGNAL	TERMINATION	CONN 22
1	L1(IN)	BOOTLACE FERRULE	PIN 1
2	L2(IN)	BOOTLACE FERRULE	PIN 3
3	SYNC(IN)	BOOTLACE FERRULE	PIN 6
4	E	M5 RING TERMINAL	N/A

NOTES

- 1) CABLE TO BE TERMINATED IN ACCORDANCE WITH TABLE 1.
- 2) ALL CORES TO BE COILED NEATLY ROUND CABLE MANAGEMENT SYSTEM AS SHOWN IN PART VIEW "B" (REF ONLY) OBSERVE CABLE BEND RADIUS DURING TERMINATION.
- 3) WIRING SHOWN FOR FINAL OCU IN EACH SPUR.
- 4) REFER TO OCU INSTALL-MANUAL FOR CABLE TERMINATION DETAIL.

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

Scale: NTS Drawn by: CC Date: 24/10/24  
Standard: Checked: KP Date: 24/10/24

Title: OCU Mains Cable Installation Details  
Vishnugad Pipalkoti 400kV System

Drawing: AFD0000 Sheet: 1 of 1

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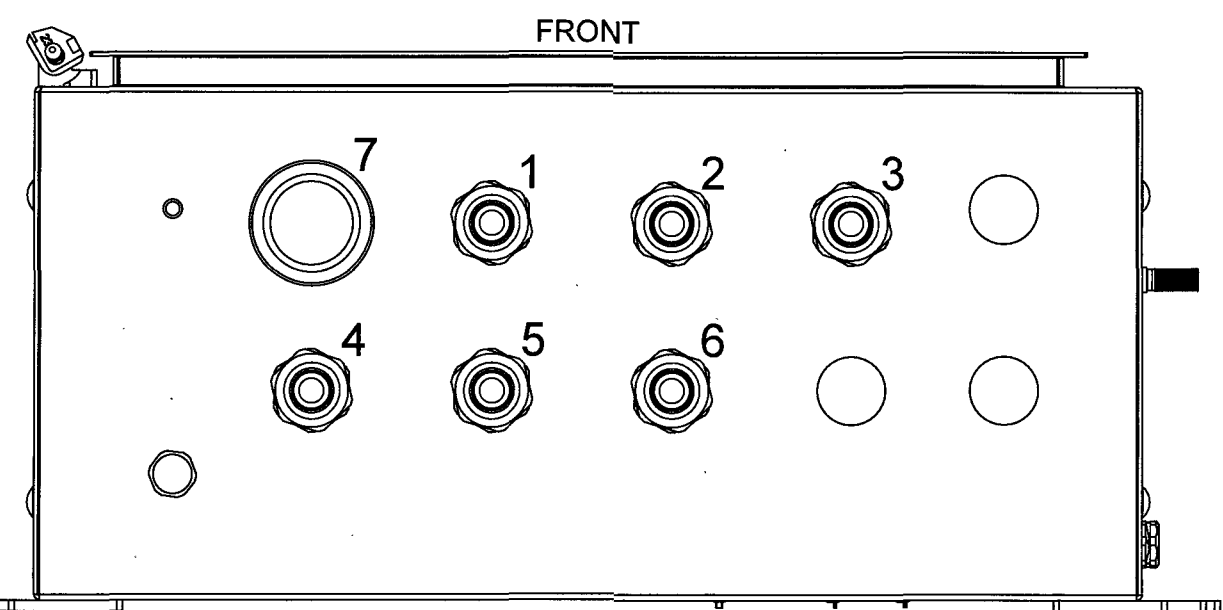
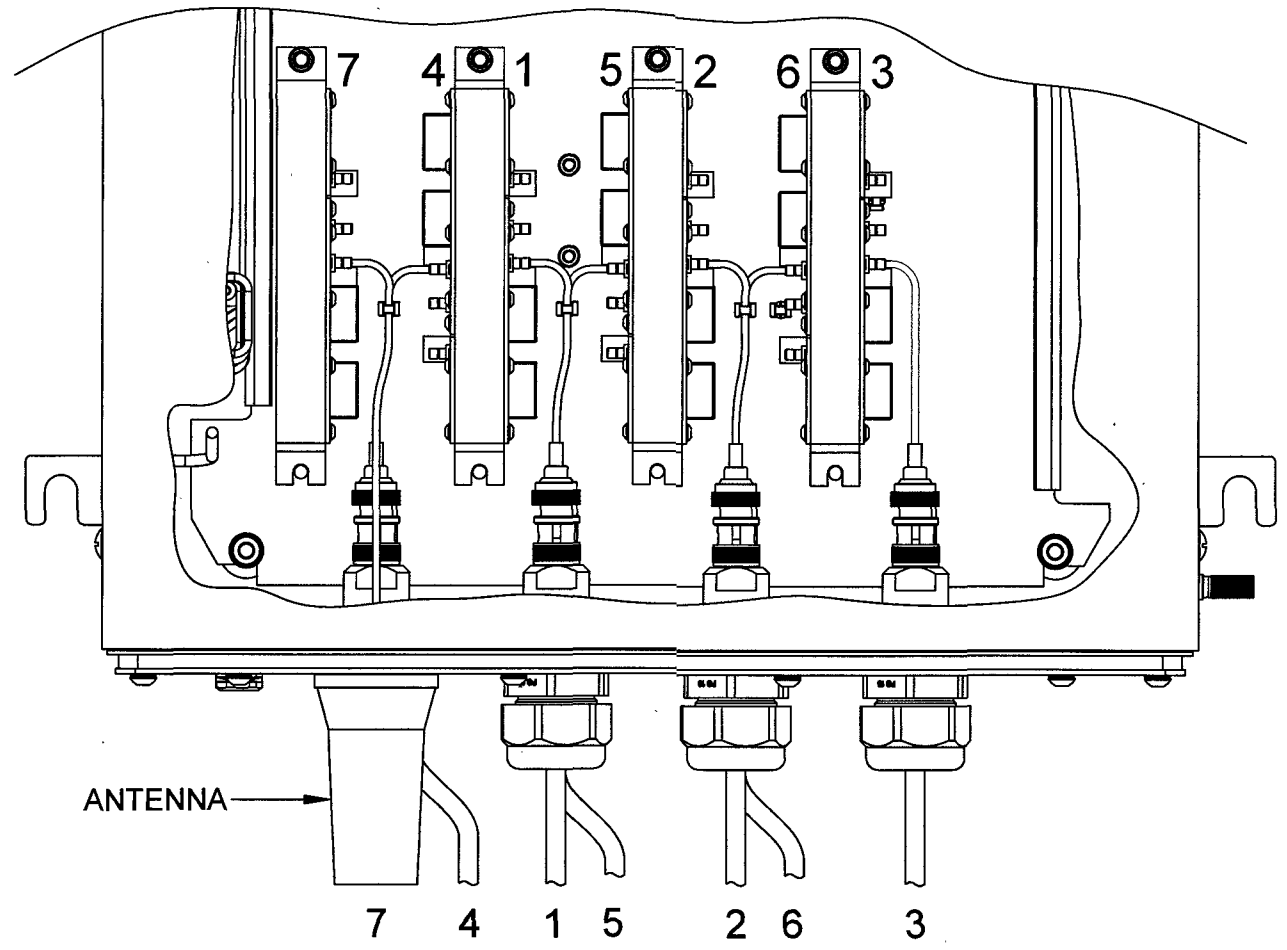


FIGURE 1

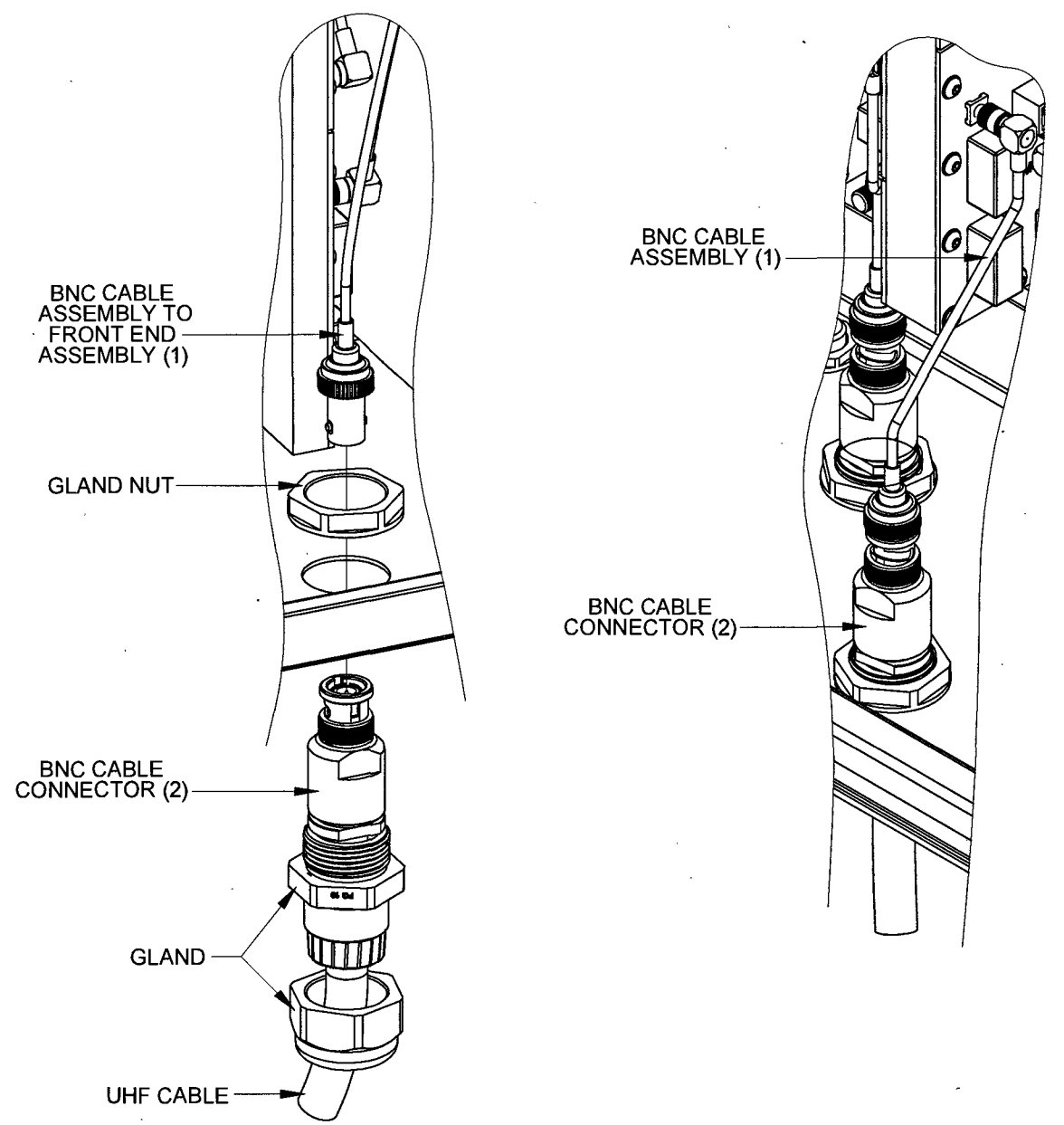


FIGURE 2

**NOTE**  
 1. UHF CONNECTIONS AND CABLE ENTRY ARE AS SHOWN IN FIGURE 1.  
 2. UHF CABLE TO BE THREADED THROUGH GLAND AND ENCLOSURE PRIOR TO TERMINATION TO BNC TYPE CABLE CONNECTOR.(SEE FIGURE 2)  
 3. ONCE TERMINATED AND GLAND SECURED TO ENCLOSURE THE CABLE ASSEMBLY SHOULD BE PULLED BACK SO THAT THE CONNECTOR RESTS ON THE GLAND.(SEE FIGURE 2)  
 4. THE BNC CABLE ASSEMBLY( 1 ) SHOULD BE CONNECTED TO THE UHF INPUT BNC TYPE CONNECTOR ( 2 ).

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 ANGULAR ± 0.5°  
 ALL THREADS ARE ISO METRIC  
 COURSE PITCH, MEDIUM FIT

Project No:- 5053023

**DMS** Diagnostic Monitoring Systems I  
 A QUALTRON Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24
Title	OCU UHF Cable Installation Details Vishnugad Pipalkoti 400KV System	
Drawing No: 4500007	Sheet	

OPTICAL CONVERTER UNIT:- UHF CABLE INSTALLATION DETAILS(3 CHANNEL)

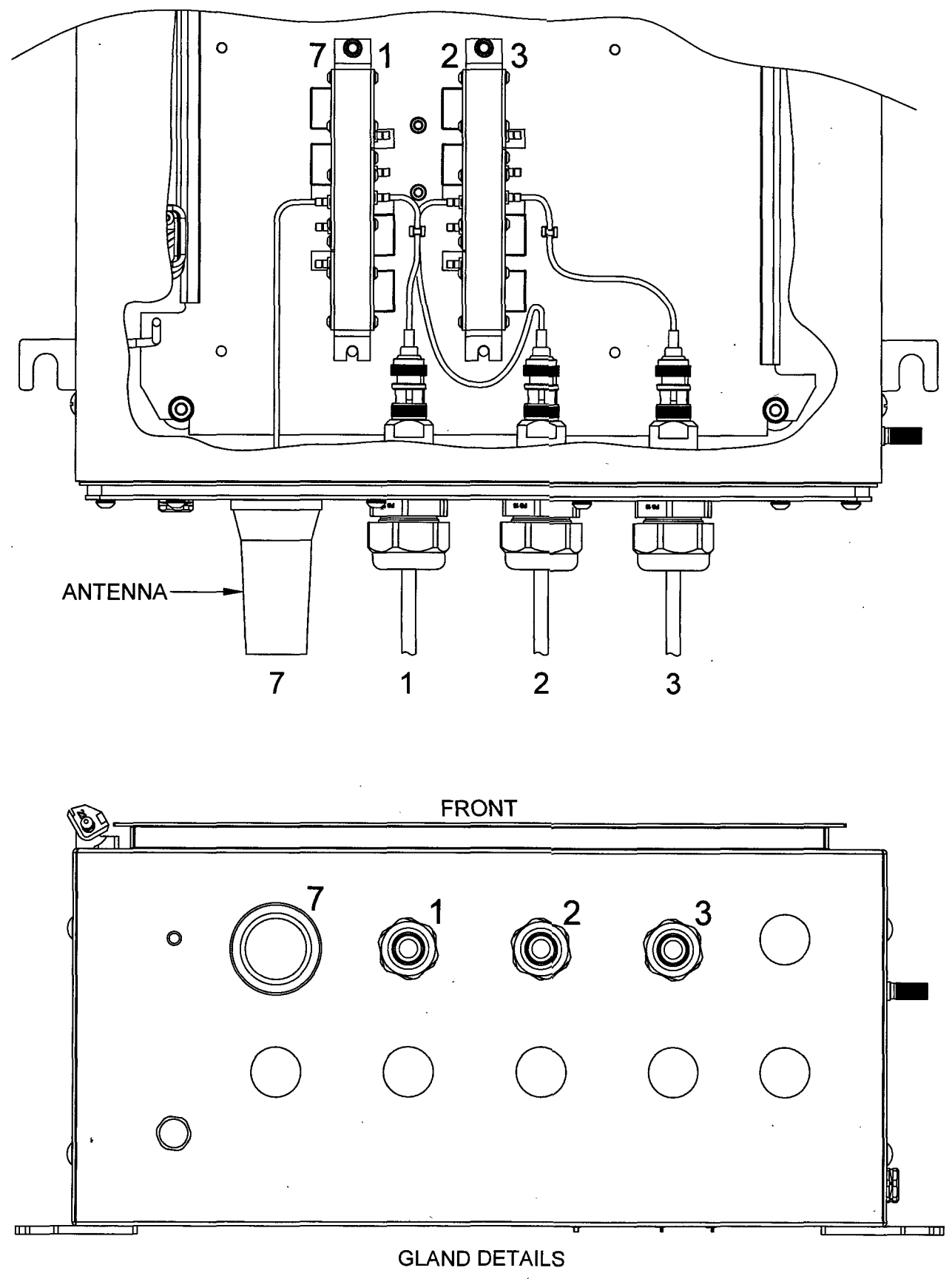


FIGURE 1

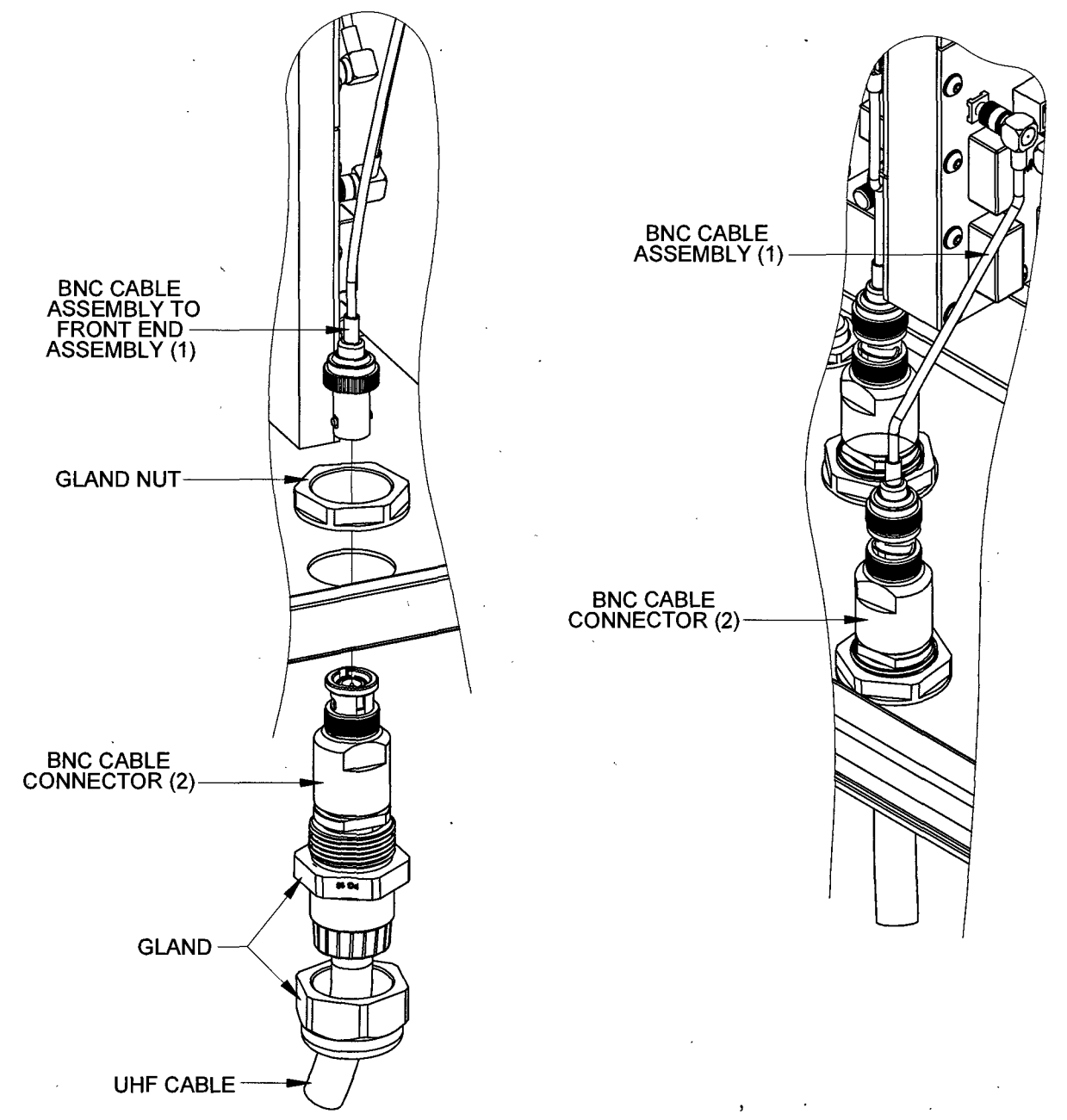


FIGURE 2

NOTE

1. UHF CONNECTIONS AND CABLE ENTRY ARE AS SHOWN IN FIGURE 1.
2. UHF CABLE TO BE THREADED THROUGH GLAND AND ENCLOSURE PRIOR TO TERMINATION TO BNC TYPE CABLE CONNECTOR.(SEE FIGURE 2)
3. ONCE TERMINATED AND GLAND SECURED TO ENCLOSURE THE CABLE ASSEMBLY SHOULD BE PULLED BACK SO THAT THE CONNECTOR RESTS ON THE GLAND.(SEE FIGURE 2)
4. THE BNC CABLE ASSEMBLY( 1 ) SHOULD BE CONNECTED TO THE UHF INPUT BNC TYPE CONNECTOR ( 2 ).

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 ANGULAR ± 0.5°  
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 COURSE PITCH, MEDIUM FIT

Project No:- 5053023.

**DMS** Diagnostic Monitoring Systems I  
A QUALITROL Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24

Title: OCU UHF Cable Installation Details  
 Vishnugad Pipalkoti 400kV System

Drawing: A50007 Sheet: 1

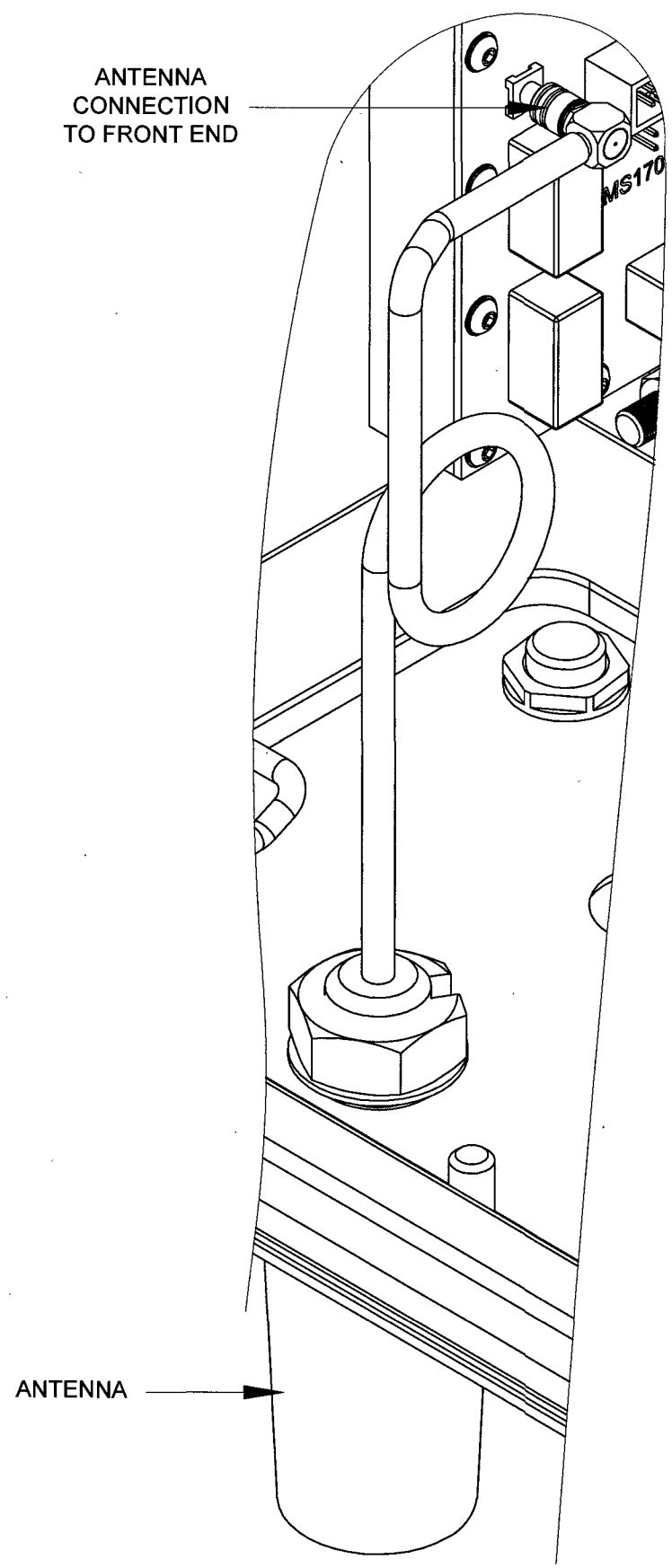
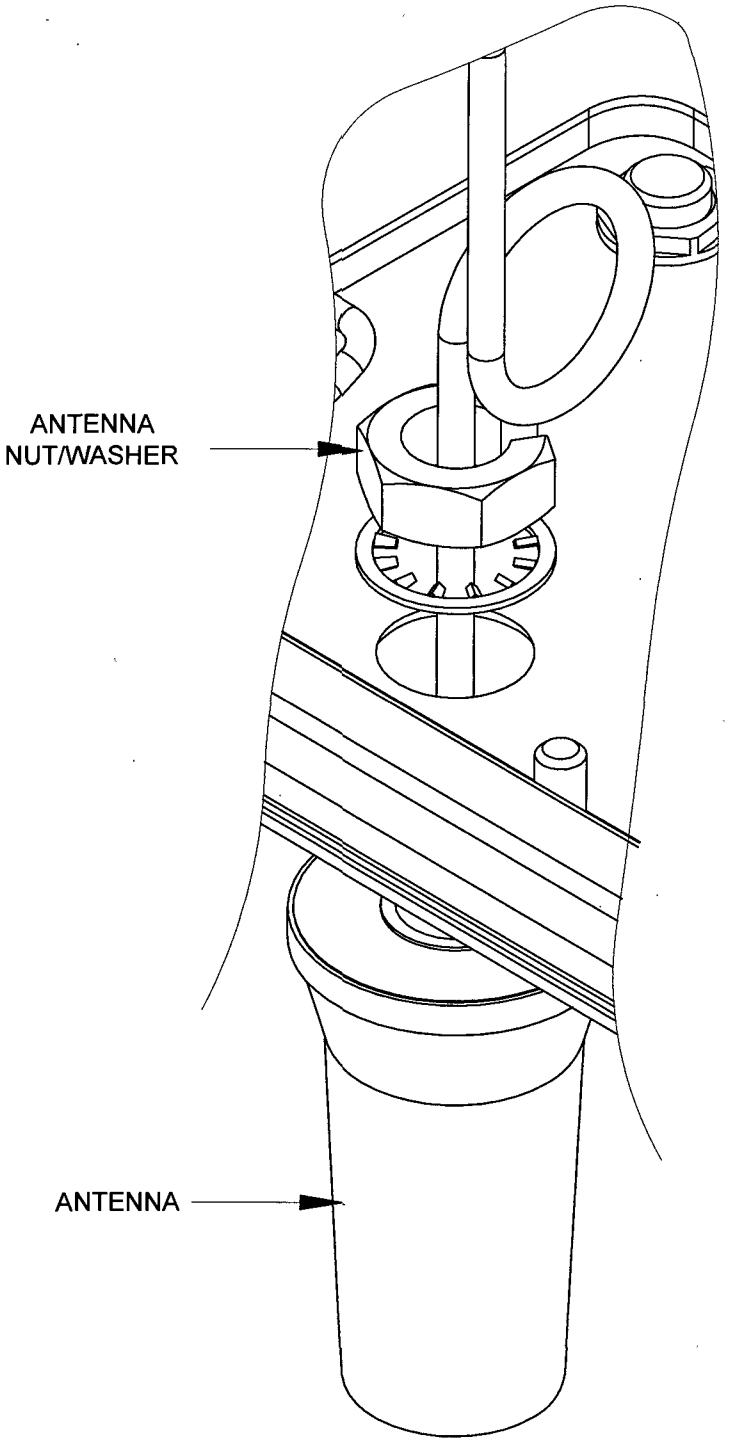


FIGURE 3

- NOTE**
1. ANTENNA CABLE ENTRY SHOWN IN FIGURE 1 SHEET 1.
  2. ANTENNA UHF CABLE TO BE THREADED THROUGH ENCLOSURE AND WASHER.(SEE FIGURE 3)
  3. SLIP ON ANTENNA NUT AND SECURE TO ENCLOSURE.
  4. CONNECT ANTENNA SMB TO FRONT END ASSEMBLY.(SEE FIGURE 3)

Project No:- 5053023

**DMS** Diagnostic Monitoring Systems I  
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Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24

<b>Title</b>	OCU UHF Cable Installation Details Vishnugad Pipalkoti 400kV System
Drawing No: A500007	Sheet 1 of 1

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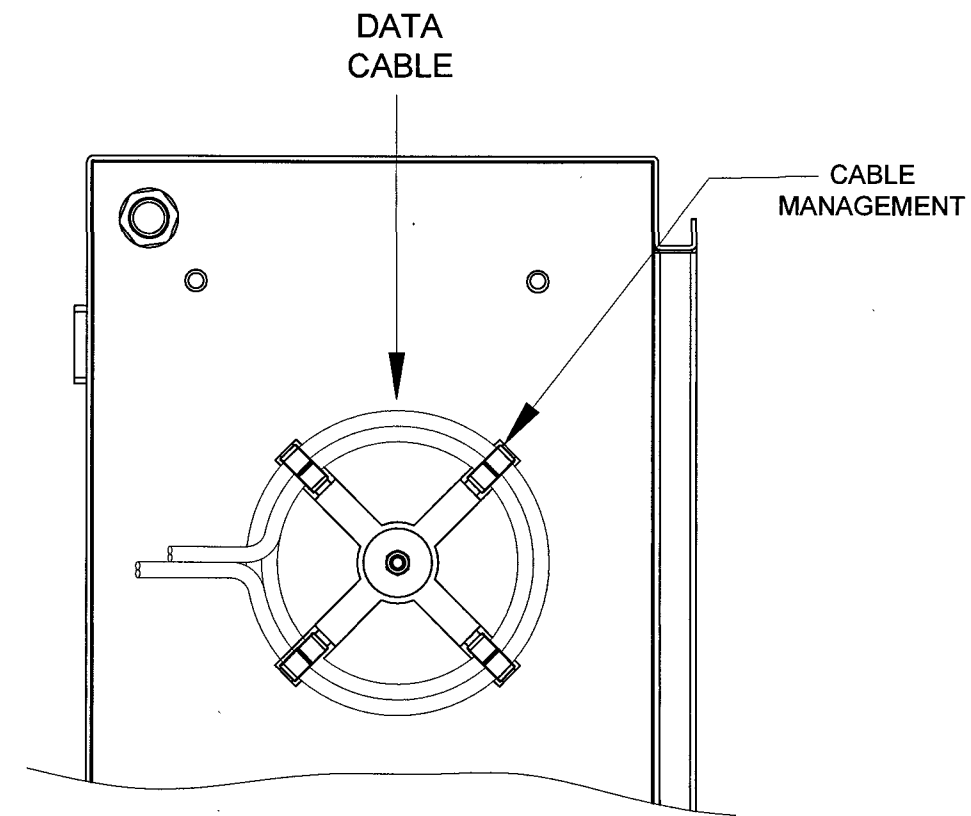
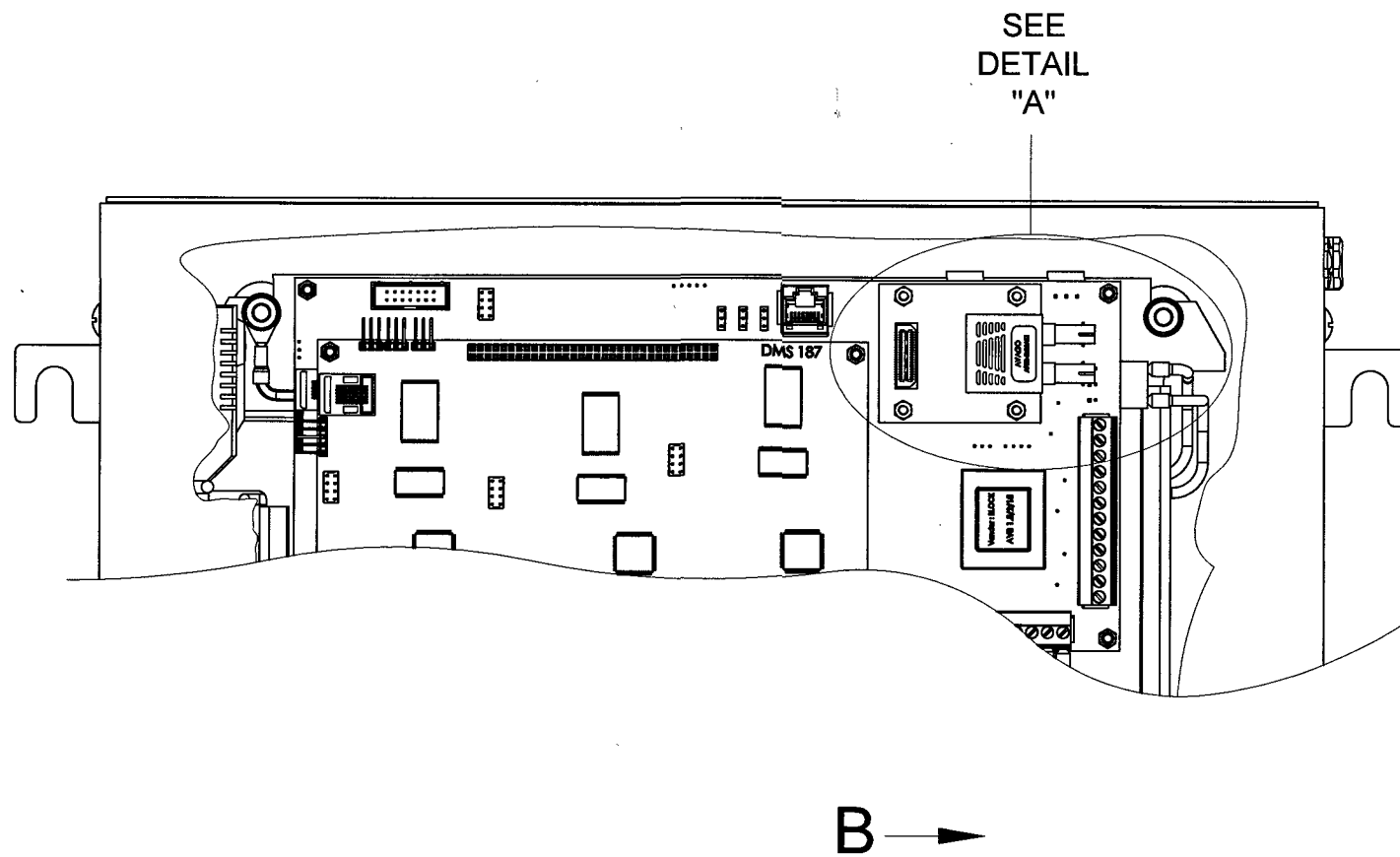
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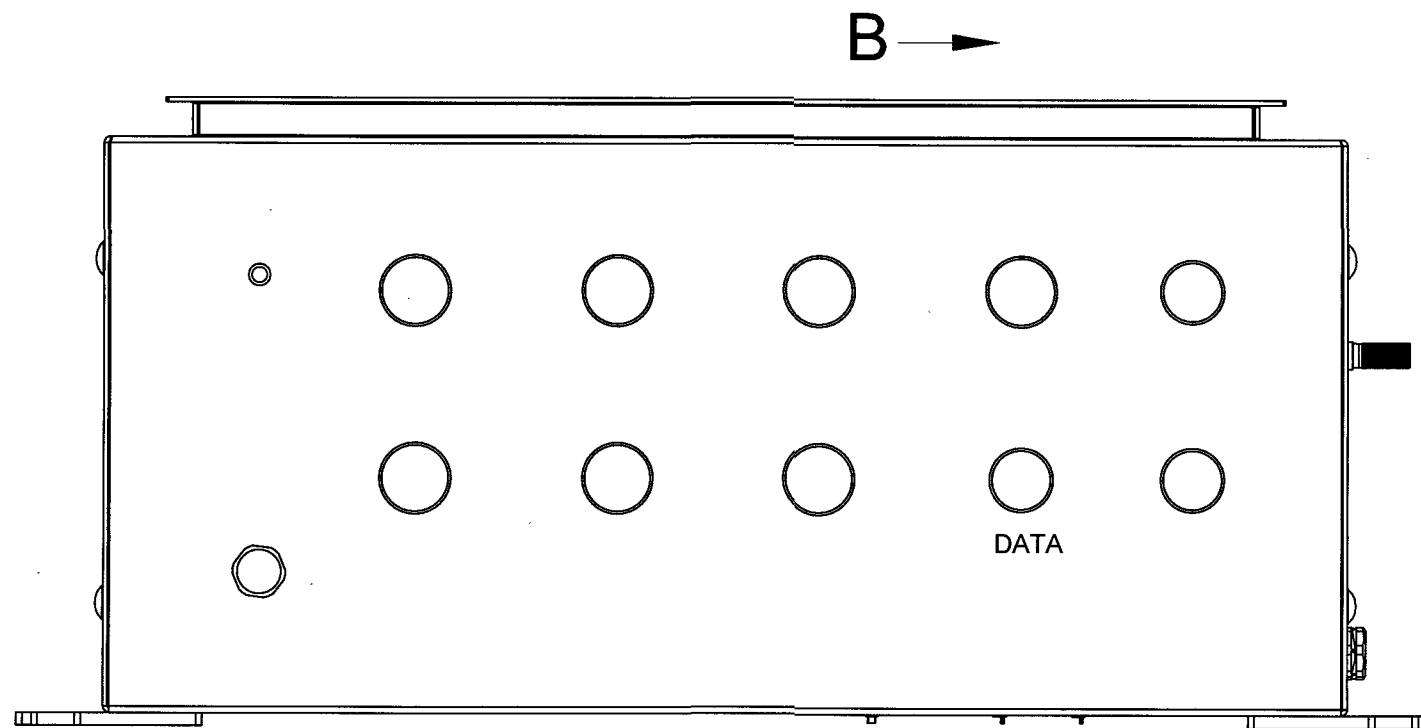
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ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

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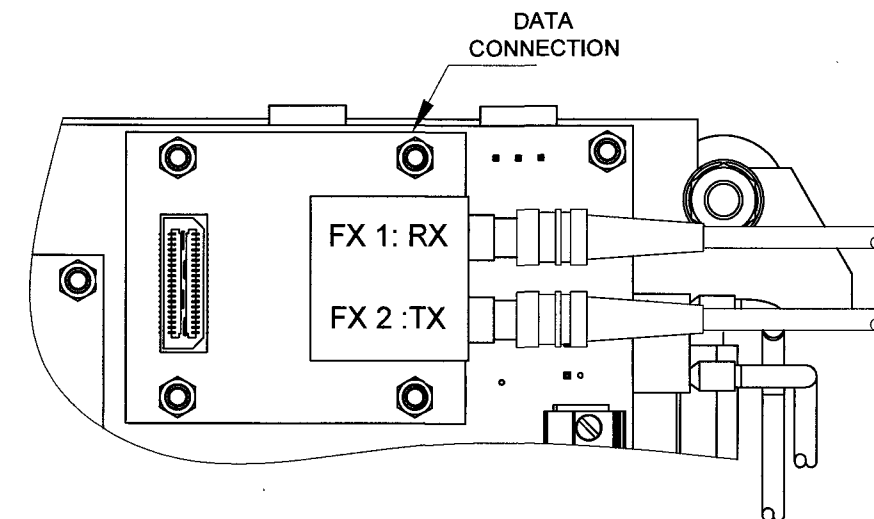
OPTICAL CONVERTER UNIT:- FIBRE OPTIC CABLE INSTALLATION DETAILS



PART VIEW IN DIRECTION OF ARROW "B"



GLAND DETAILS



DETAIL "A"

NOTES

- 1) FIBRE CONNECTIONS ARE AS FOLLOWS :- FX 1 TO RX ON PCB.  
FX 2 TO TX ON PCB.  
FX 3 AND FX 4 FIBRES ARE NOT USED BUT SHOULD BE CUT TO SAME LENGTH AS FX 1 AND FX 2 FIBRES (TO BE USED AS SPARES IF NECESSARY).
- 2) ALL CORES TO BE NEATLY COILED ROUND CABLE MANAGEMENT SYSTEM AS SHOWN IN VIEW "B"(REF ONLY). OBSERVE CABLE BEND RADIUS DURING TERMINATION.
- 3) REFER TO OCU INSTALLATION MANUAL FOR CABLE TERMINATION DETAIL.
- 4) ALL FIBRE TERMINATIONS MUST BE IDENTIFIED AND CONNECTED AS PER CABLE LISTS.

Project No:- 5053023-

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<b>Title</b>		OCU Fibre Cable Installation Details Vishnugad Pipalkoti 400kV System	
Drawing No: 150000	Sheet		

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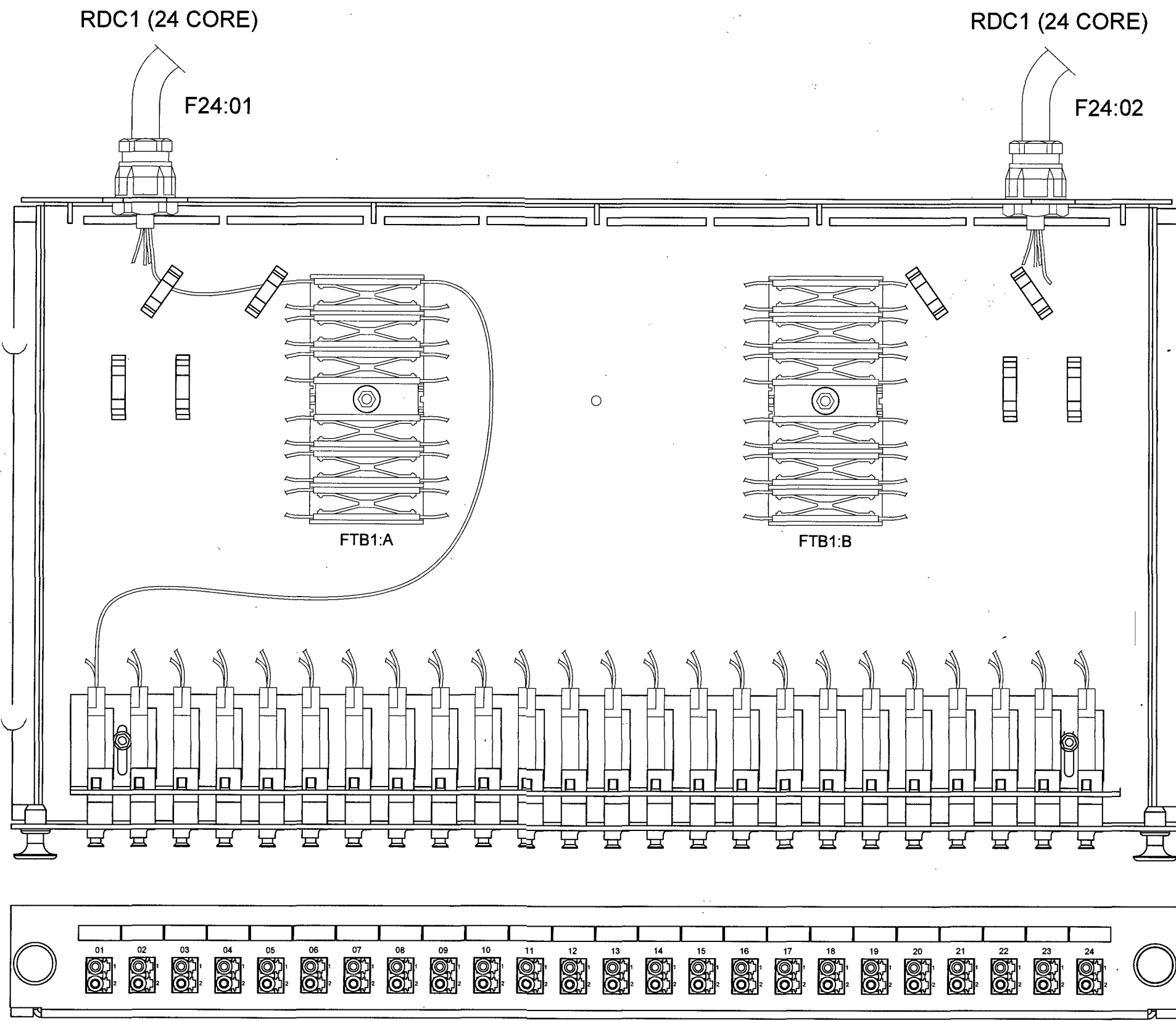
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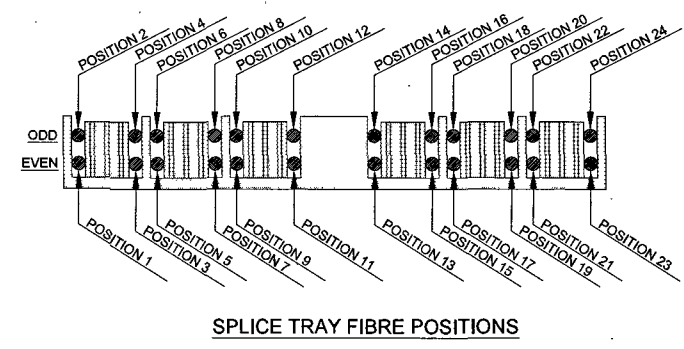
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FTB1:A SPLICE TRAY FTB1:A ODD NUMBERED POSITIONS		FTB1:B SPLICE TRAY FTB1:B ODD NUMBERED POSITIONS	
F24:01 - FX-1	A37-01:01-1	F24:02 - FX-1	A37-01:13-1
F24:01 - FX-3	A37-01:02-1	F24:02 - FX-3	A37-01:14-1
F24:01 - FX-5	A37-01:03-1	F24:02 - FX-5	A37-01:15-1
F24:01 - FX-7	A37-01:04-1	F24:02 - FX-7	A37-01:16-1
F24:01 - FX-9	A37-01:05-1	F24:02 - FX-9	A37-01:17-1
F24:01 - FX-11	A37-01:06-1	F24:02 - FX-11	A37-01:18-1
F24:01 - FX-13	A37-01:07-1	F24:02 - FX-13	A37-01:19-1
F24:01 - FX-15	A37-01:08-1	F24:02 - FX-15	A37-01:20-1
F24:01 - FX-17	A37-01:09-1	F24:02 - FX-17	A37-01:21-1
F24:01 - FX-19	A37-01:10-1	F24:02 - FX-19	A37-01:22-1
F24:01 - FX-21	A37-01:11-1	F24:02 - FX-21	A37-01:23-1
F24:01 - FX-23	A37-01:12-1	F24:02 - FX-23	A37-01:24-1

FTB1:A SPLICE TRAY FTB1:A EVEN NUMBERED POSITIONS		FTB1:B SPLICE TRAY FTB1:B EVEN NUMBERED POSITIONS	
F24:01 - FX-2	A37-01:01-2	F24:02 - FX-2	A37-01:13-2
F24:01 - FX-4	A37-01:02-2	F24:02 - FX-4	A37-01:14-2
F24:01 - FX-6	A37-01:03-2	F24:02 - FX-6	A37-01:15-2
F24:01 - FX-8	A37-01:04-2	F24:02 - FX-8	A37-01:16-2
F24:01 - FX-10	A37-01:05-2	F24:02 - FX-10	A37-01:17-2
F24:01 - FX-12	A37-01:06-2	F24:02 - FX-12	A37-01:18-2
F24:01 - FX-14	A37-01:07-2	F24:02 - FX-14	A37-01:19-2
F24:01 - FX-16	A37-01:08-2	F24:02 - FX-16	A37-01:20-2
F24:01 - FX-18	A37-01:09-2	F24:02 - FX-18	A37-01:21-2
F24:01 - FX-20	A37-01:10-2	F24:02 - FX-20	A37-01:22-2
F24:01 - FX-22	A37-01:11-2	F24:02 - FX-22	A37-01:23-2
F24:01 - FX-24	A37-01:12-2	F24:02 - FX-24	A37-01:24-2



FIBRE TRAY - A37-01  
(CMD00409)

Project No:- 5053023-

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Diagnostic Monitoring Systems L

Scale: NTS  
Standard: Drawn by: CC  
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Date: 24/10/24  
Date: 24/10/24

Title: RCC1 Fibre Cable Installation Details  
Vishnugad Pipakoti 400kV System

Drawing: A500220 Sheet: 1 of 1

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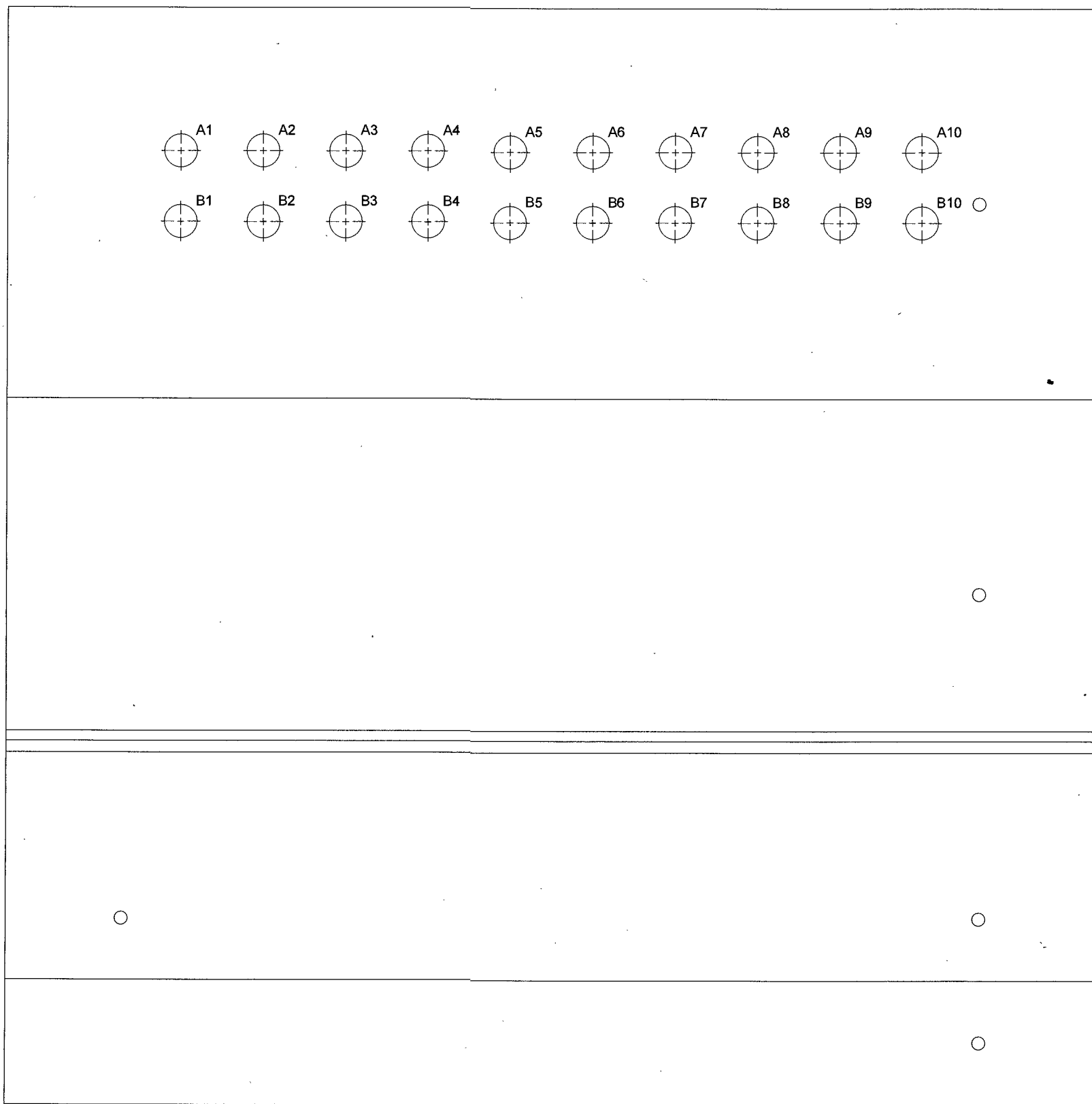
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CABINET REAR



CABINET FRONT

HOLE REF.	CABLE REF.	CABLE DESCRIPTION
A1	VT-01	VT SIGNAL INPUT (PRIORITY 1)
A2	VT-02	VT SIGNAL INPUT (PRIORITY 2)
A3	PDM-01	PDM SYSTEM FAIL ALARM
A4	PDA-01	PD ACTIVITY ALARM
A5	PD-01	PD ALARM
A6	SPARE	-
A7	F24-01	24 CORE FIBRE OUTPUT TO RDC 1
A8	F24-02	24 CORE FIBRE OUTPUT TO RDC 1
A9	SPARE	-
A10	PMS-01	MAINS SUPPLY FROM SITE
B1	VT-03	VT SIGNAL INPUT (PRIORITY 3)
B2	VT-04	VT SIGNAL INPUT (PRIORITY 4)
B3	SW-01	SWITCH INPUT
B4	CLK-01	GPS INPUT
B5	LAN-01	LAN CONNECTION
B6	-	CABINET EARTH
B7	SPARE	-
B8	SPARE	-
B9	P4-RDC1	MAINS SUPPLY TO RDC1
B10	SPARE	-

INTERNAL NOTE:-1. HOLE DETAIL(REAR) DRAWING No. CMD01646.

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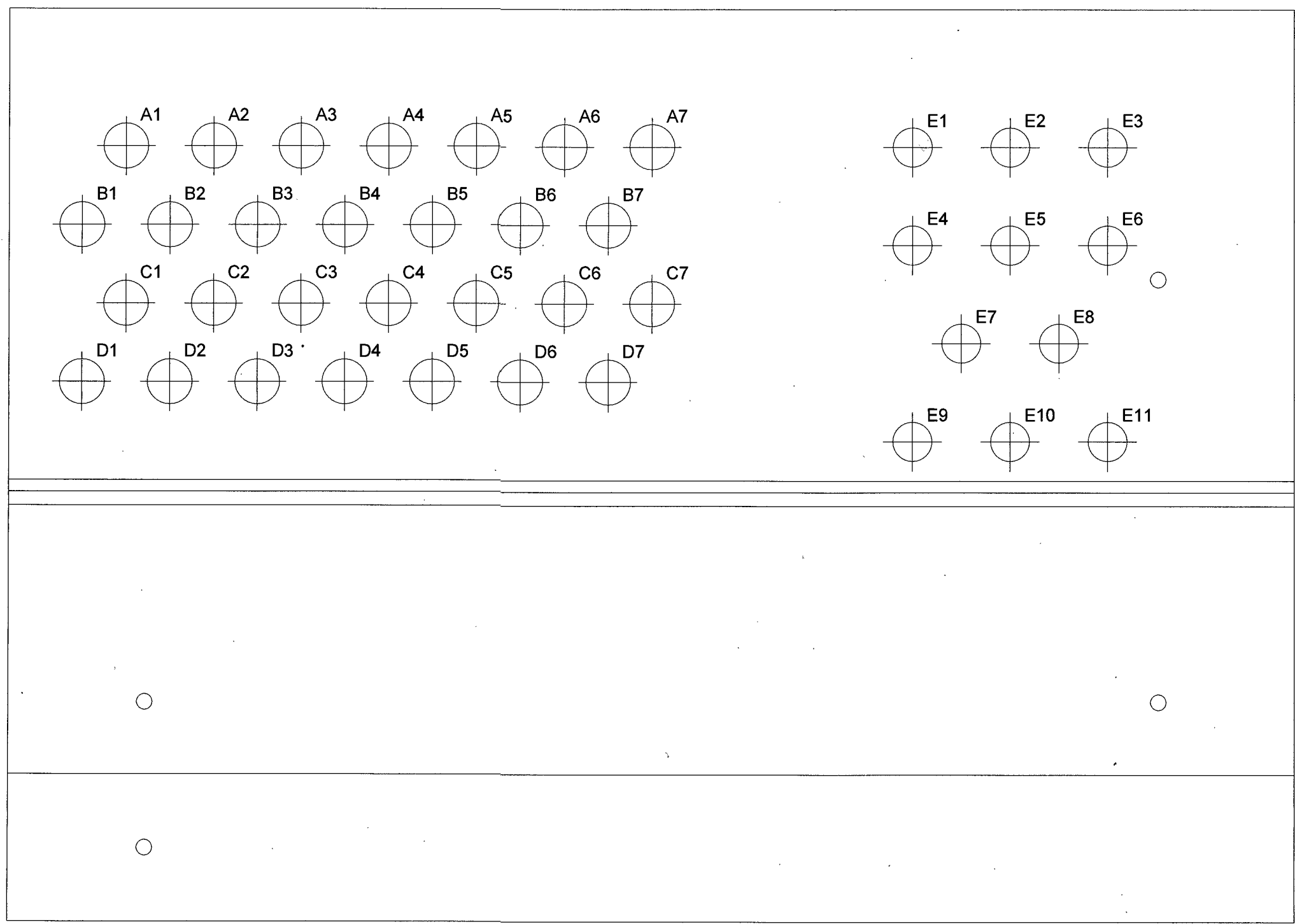
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Project No:- 50530234

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Standard:	Checked: KP	Date: 24/10/24
<b>Title</b>	RCC1 Cable Entry Details Vishnugad Pipalkoti 400kV System	
Drawing: A50000	Sheet: 1	A

CABINET REAR



CABINET FRONT

HOLE REF.	CABLE REF.	CABLE DESCRIPTION
A1	F01:01	DATA CABLE TO OCU 06
A2	F01:02	DATA CABLE TO OCU 05
A3	F01:03	DATA CABLE TO OCU 04
A4	F01:04	DATA CABLE TO OCU 03
A5	F01:05	DATA CABLE TO OCU 02
A6	F01:06	DATA CABLE TO OCU 01
A7	F02:01	DATA CABLE TO OCU 07
B1	F02:02	DATA CABLE TO OCU 08
B2	F02:03	DATA CABLE TO OCU 09
B3	F02:04	DATA CABLE TO OCU 10
B4	F02:05	DATA CABLE TO OCU 11
B5	F02:06	DATA CABLE TO OCU 12
B6	F03:01	DATA CABLE TO OCU 14
B7	F03:02	DATA CABLE TO OCU 13
C1	F04:01	DATA CABLE TO OCU 15
C2	F04:02	DATA CABLE TO OCU 16
C3	SPARE	-
C4	SPARE	-
C5	SPARE	-
C6	SPARE	-
C7	SPARE	-
D1	SPARE	-
D2	SPARE	-
D3	SPARE	-
D4	SPARE	-
D5	SPARE	-
D6	F24:01	24 CORE FIBRE OUTPUT TO RCC
D7	F24:02	24 CORE FIBRE OUTPUT TO RCC
E1	P01:01	OCU POWER OUT (SPUR 1)
E2	P02:01	OCU POWER OUT (SPUR 2)
E3	P4-RDC1	MAINS SUPPLY TO RDC
E4	P03:01	OCU POWER OUT (SPUR 3)
E5	P04:01	OCU POWER OUT (SPUR 4)
E6	SPARE	-
E7	SPARE	-
E8	SPARE	-
E9	SPARE	-
E10	SPARE	-
E11	SPARE	-

INTERNAL NOTE:-1. HOLE DETAIL(REAR) DRAWING No. CMD01753.

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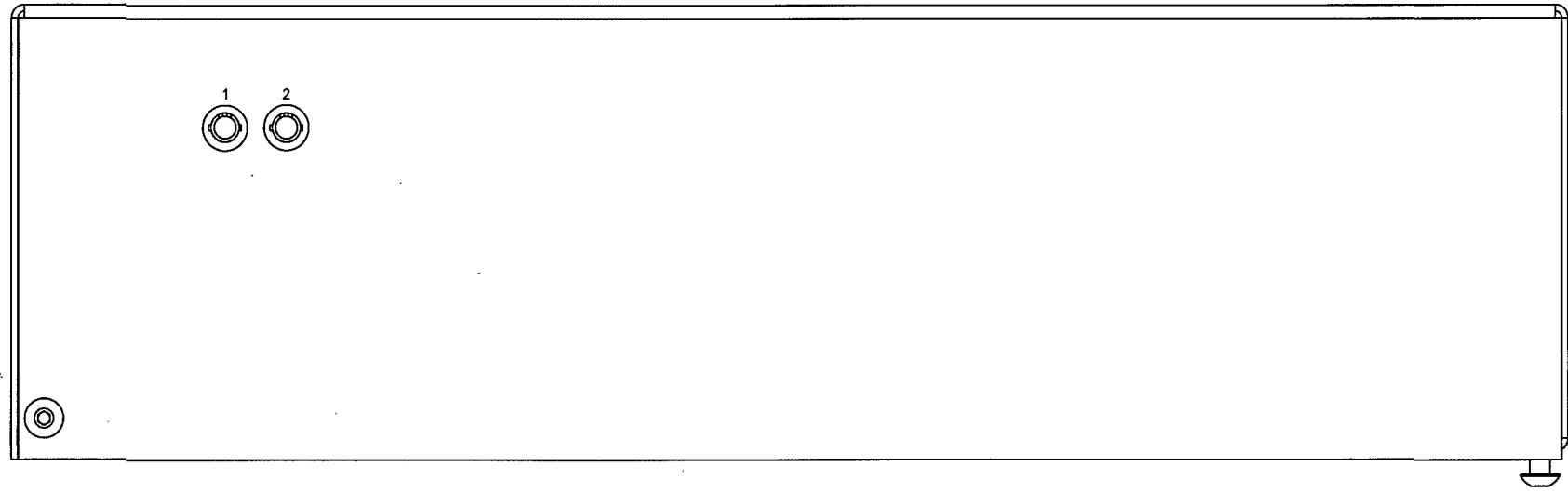
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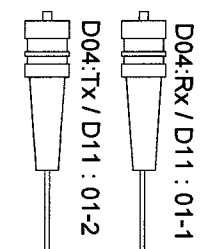
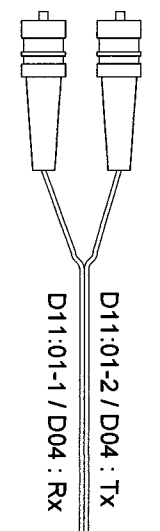
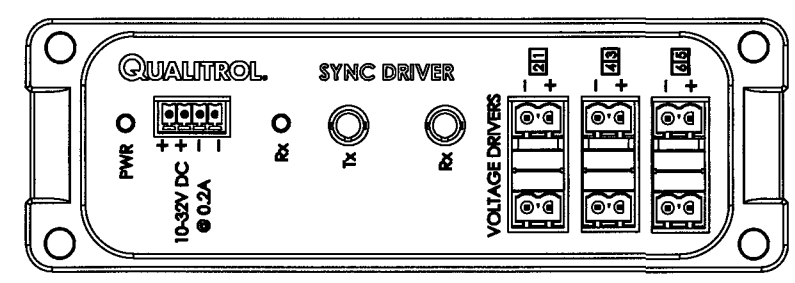
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Standard:	Checked: KP	Date: 24/10/24
Title	RDC1 Cable Entry Details Vishnugad Pipalkoti 400KV System	
Drawing No: A500004	Sheet	

**D11** FIBRE BOX



SYNC. DRIVER

**D04**



D11:01-2 / D04 : Tx  
D11:01-1 / D04 : Rx

Project No:- 50530234

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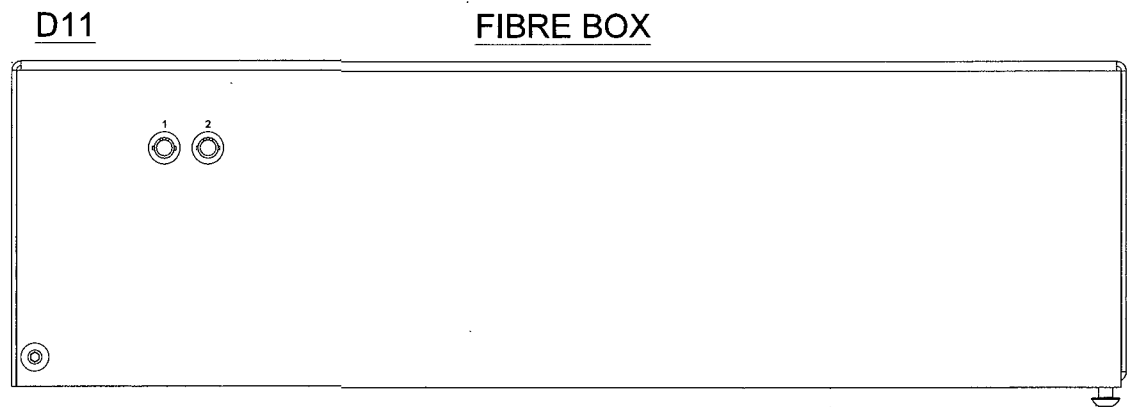
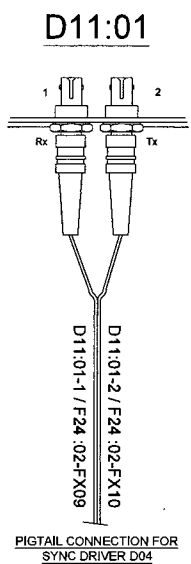
<b>Title</b>	RDC1 Fibre Cable Installation Details Vishnugad Pipalkoti 400kV System		
<b>Drawing</b>	A50000	Sheet	A

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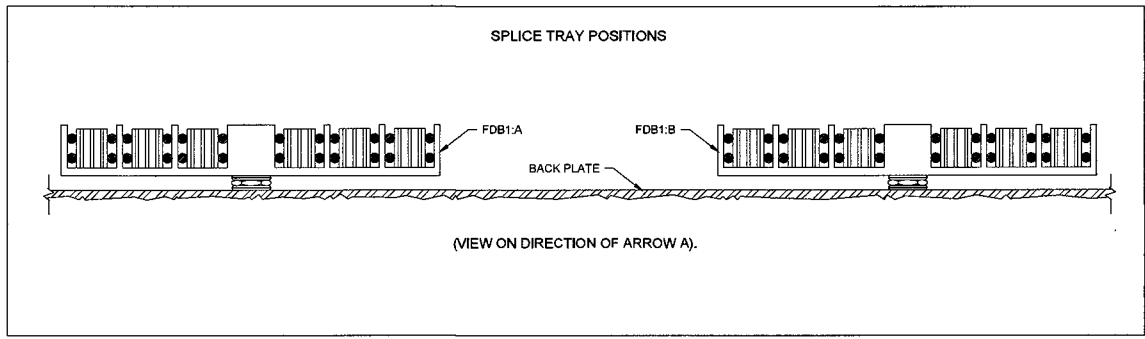
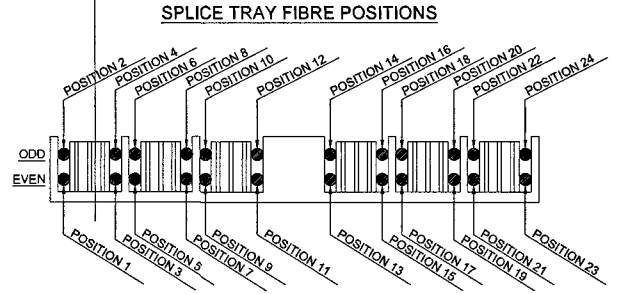
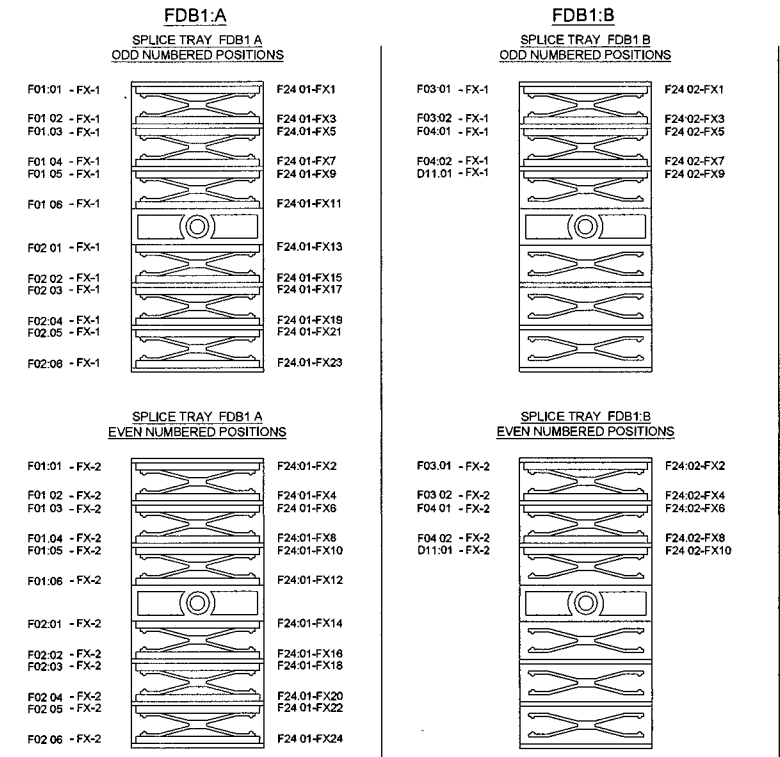
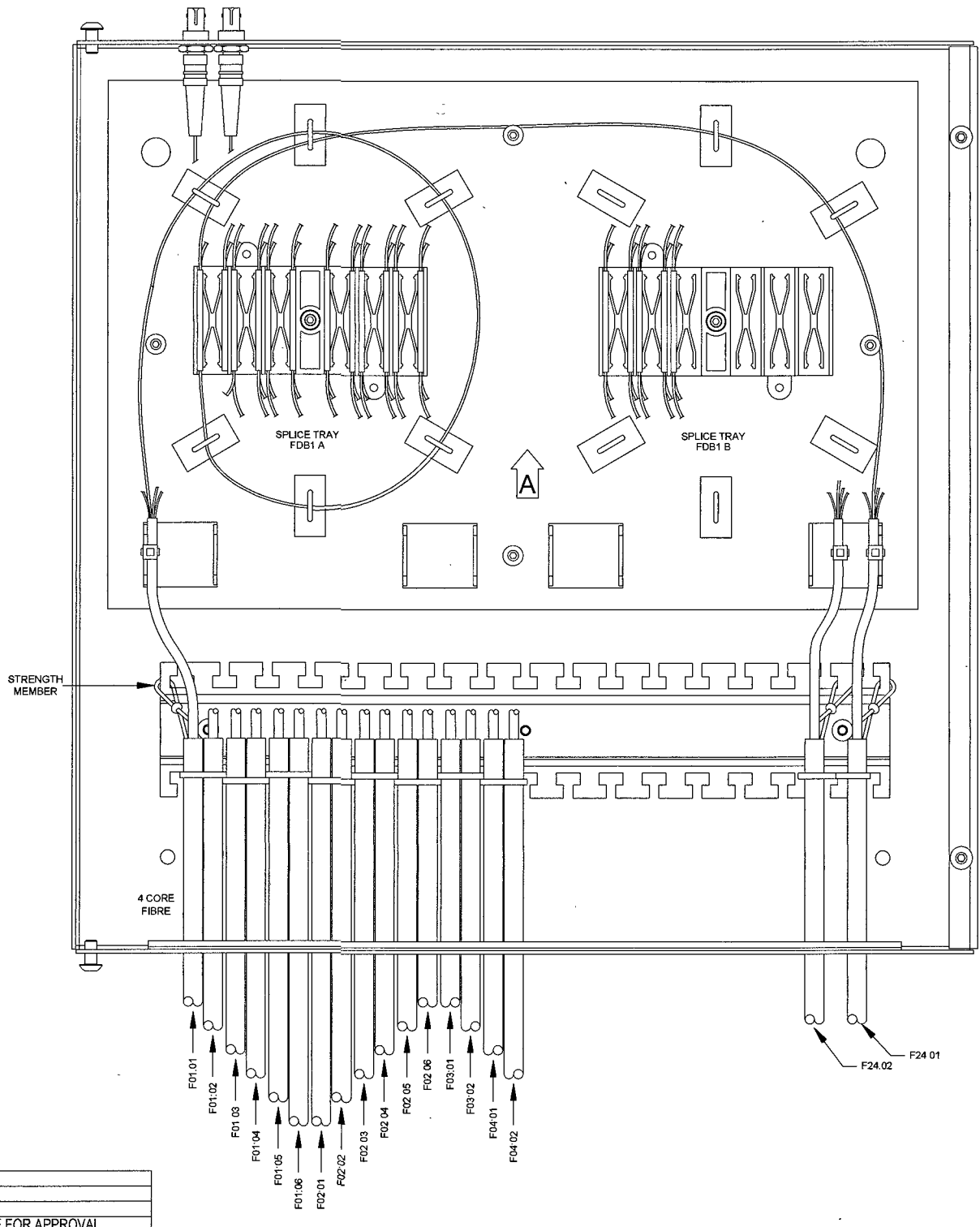
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RDC1:- FIBRE DISTRIBUTION BOX FIBRE INSTALLATION DETAILS



FIBRE DISTRIBUTION BOX (FDB):-D11



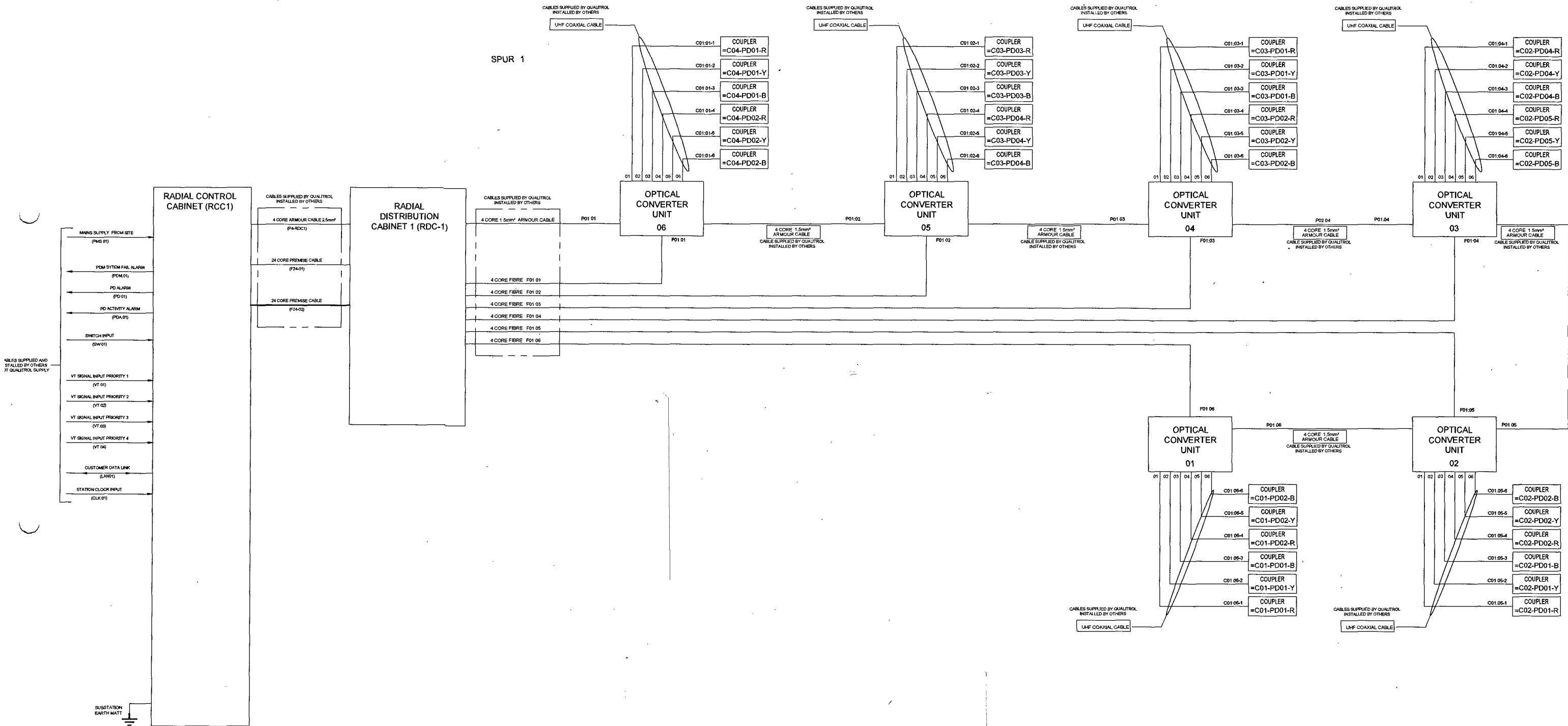
DETAIL 2

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Standard:	Checked: KP		
Title: RDC1 Fibre Cable Installation Details Vishnugad Pipalkoti 400kV System		Drawing: A50000	Sheet: 1 of 1



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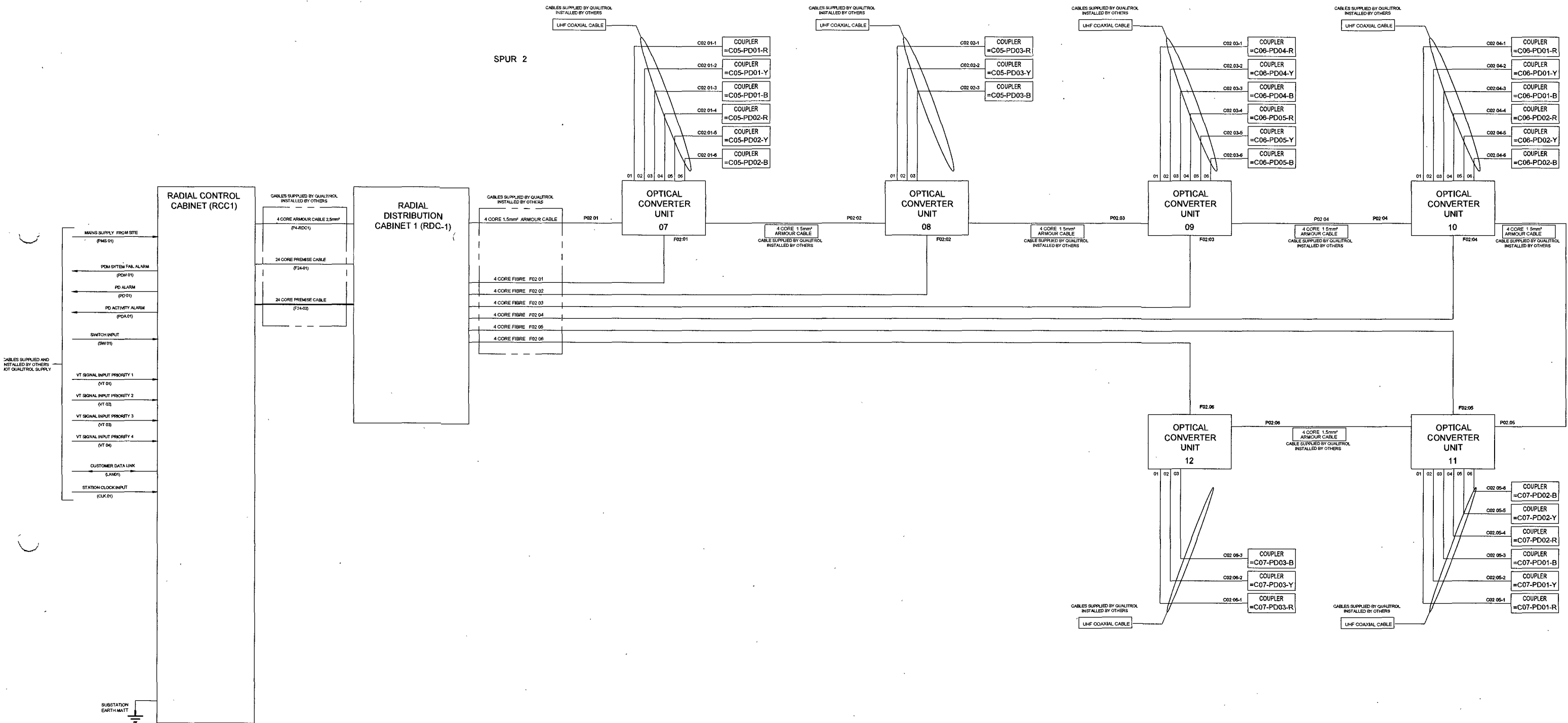
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Title	Cable Lists	
	Vishnugad Pipalkoti 400kV System	
Drawing: 01.00674	Sheet: 1	A



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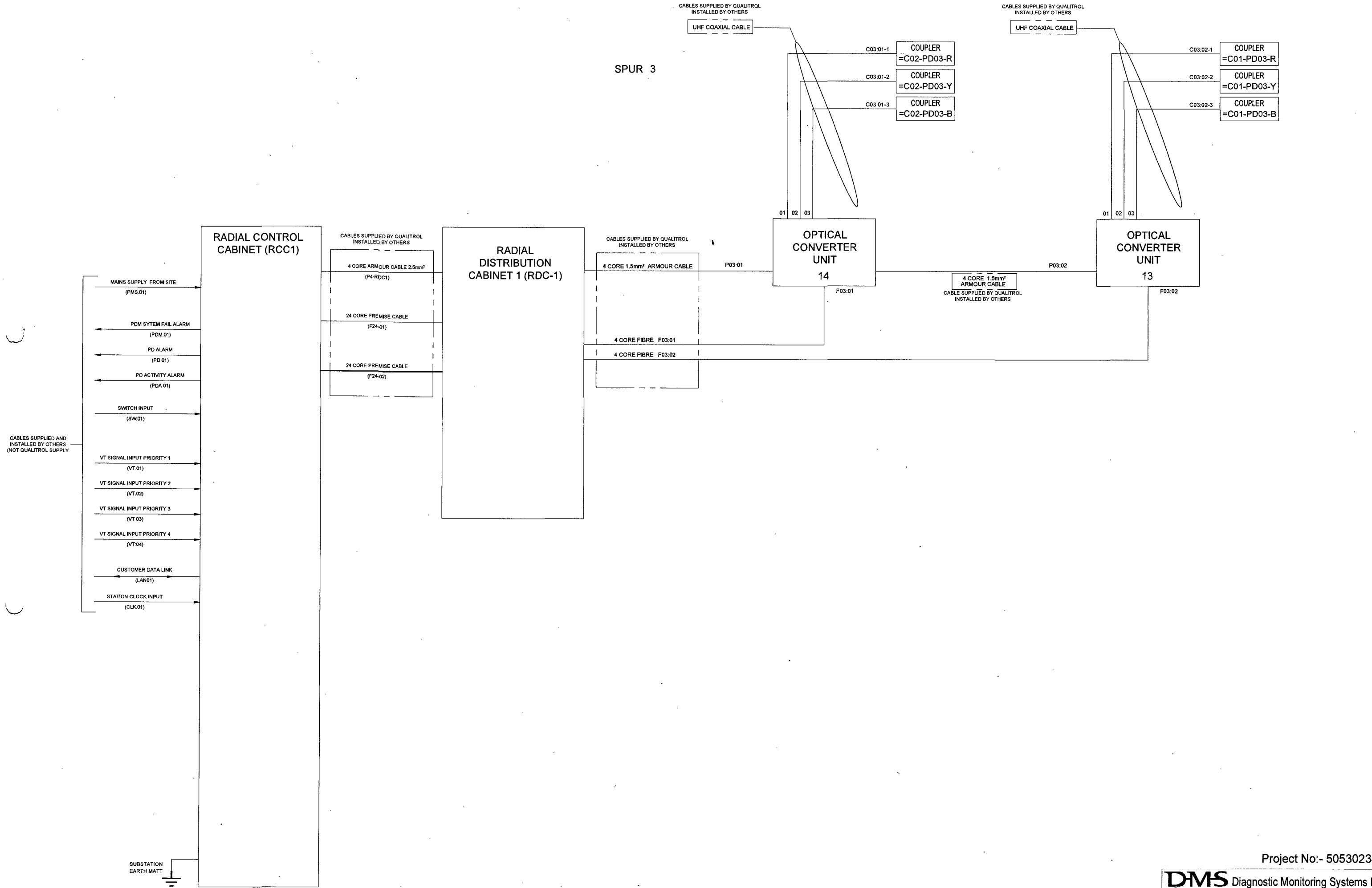
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Standard: Checked: KP Date: 24/10/24

Title: Cable Lists  
Vishnugad Pipalkoti 400kV System  
Drawing No: 0100674 Sheet: 1 of 1

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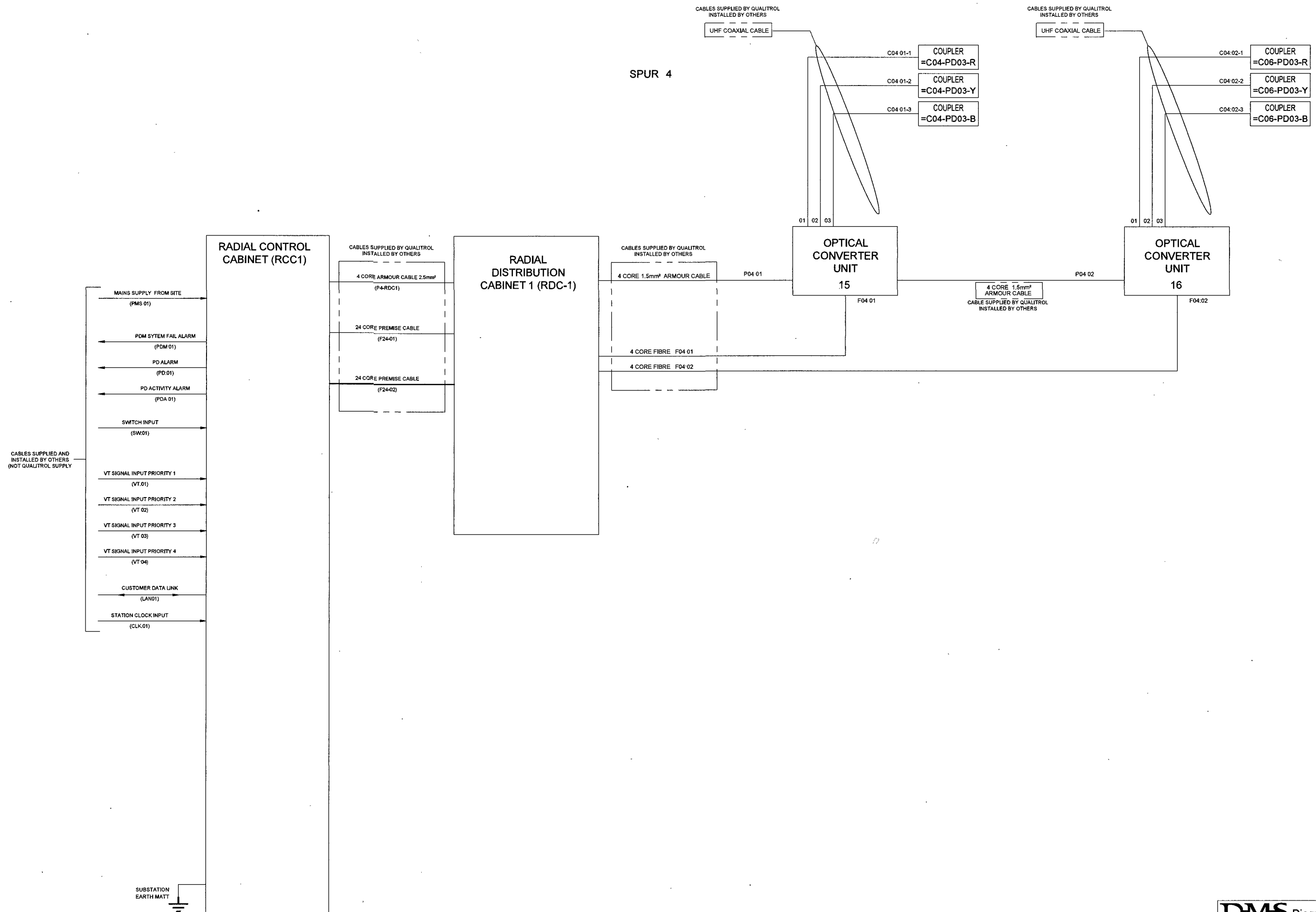
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<b>Title</b>	Cable Lists Vishnugad Pipalkoti 400kV System	
Drawing: 01.00274	Sheet: 1	Date: 24/10/24



SPUR 4

CABLES SUPPLIED AND INSTALLED BY OTHERS (NOT QUALITROL SUPPLY)

CABLES SUPPLIED BY QUALITROL INSTALLED BY OTHERS

CABLES SUPPLIED BY QUALITROL INSTALLED BY OTHERS

CABLES SUPPLIED BY QUALITROL INSTALLED BY OTHERS

CABLE SUPPLIED BY QUALITROL INSTALLED BY OTHERS

SUBSTATION EARTH MATT

Project No:- 50530234

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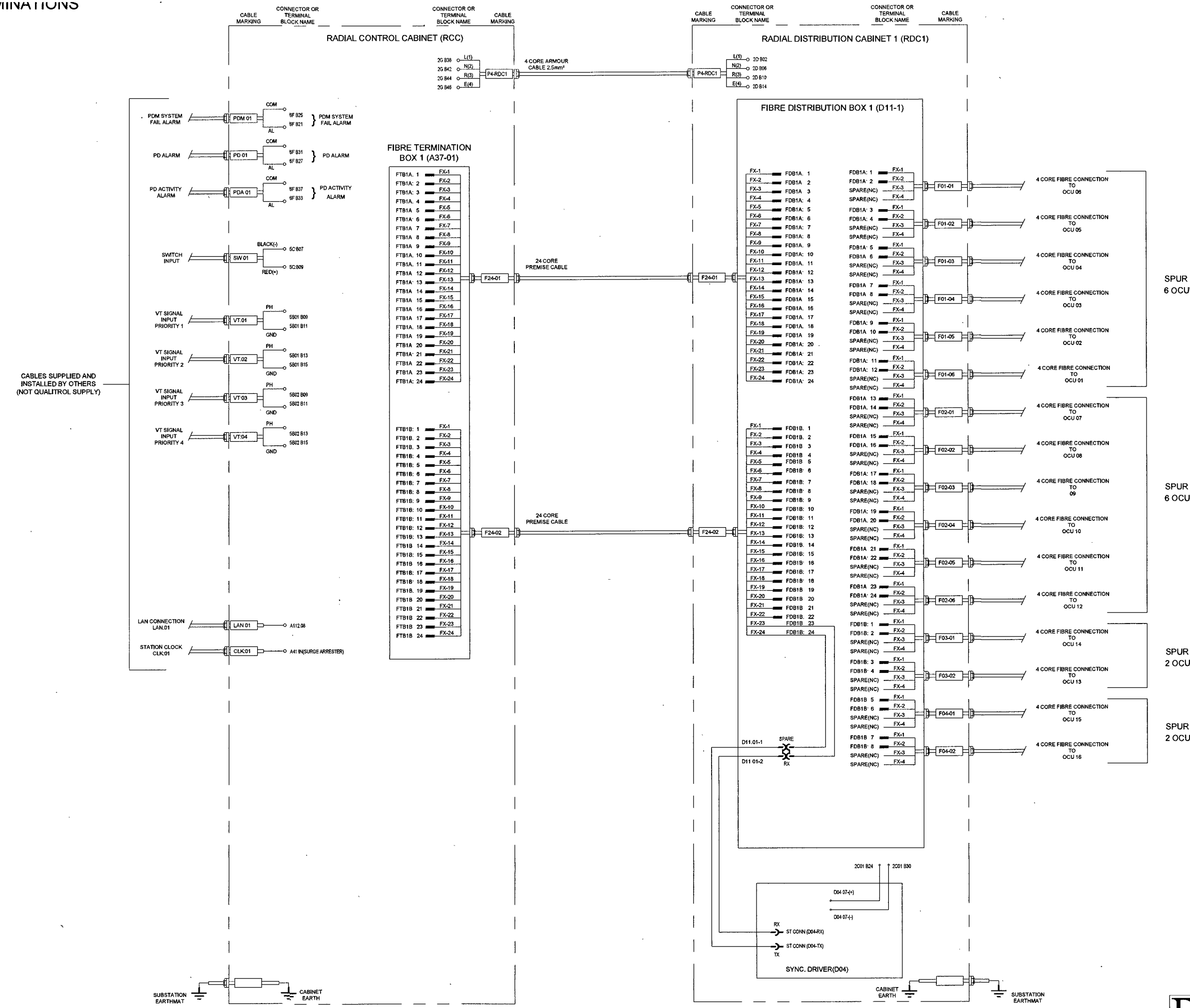
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Title	Cable Lists Vishnugad Pipalkoti 400kV System
Drawing No.	0100274
Sheet	1 of 1

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 ANGULAR ± 0.5°  
 ALL THREADS ARE ISO METRIC  
 COURSE PITCH, MEDIUM FIT  
 REMOVE ALL SURFACES

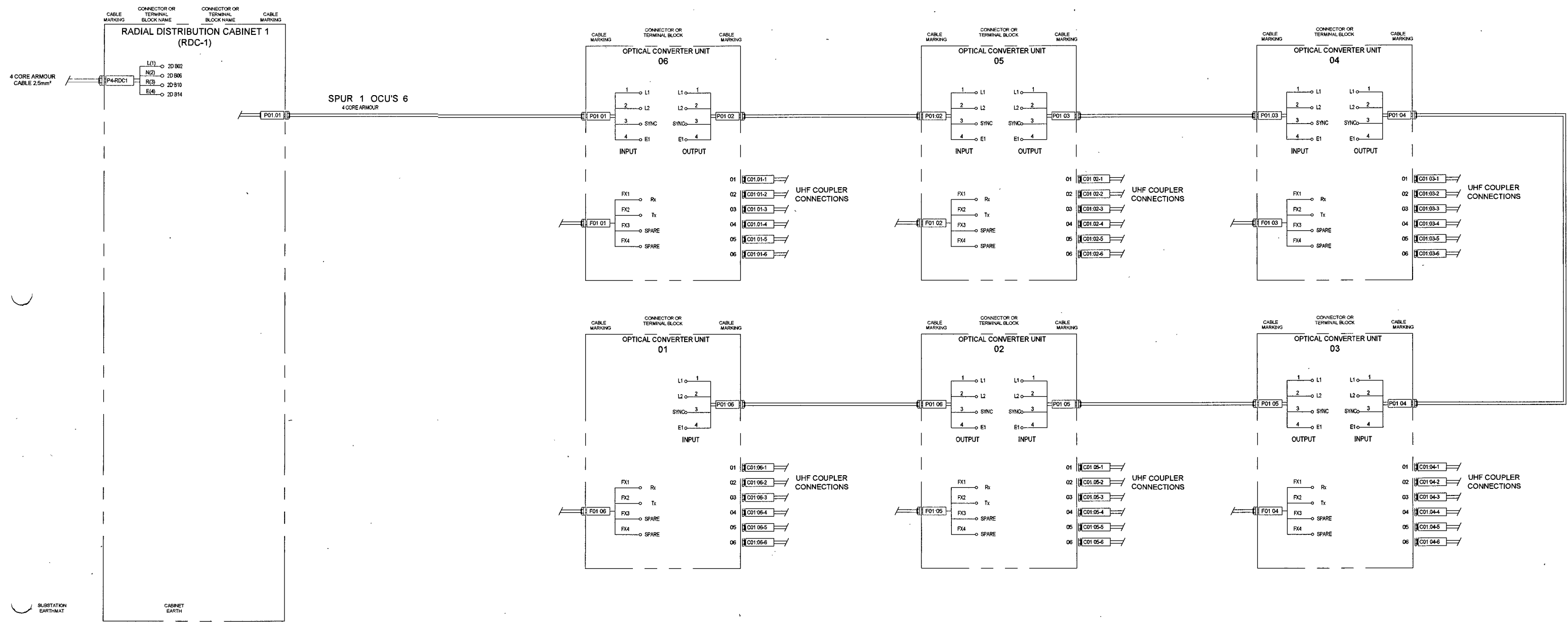
Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
 A QUALITROL Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24

Title: Cable Lists  
 Vishnugad Pipalkoti 400kV System

Drawing: 01 00274 Sheet: 1 of 1



**4 CORE ARMOUR KEY**

- L1:- CORE 1
- L2:- CORE 2
- SYNC:- CORE 3
- EARTH1:- CORE 4

**NOTE**  
4 CORE ARMOUR EARTH CONNECTIONS  
TO BE SLEEVED GREEN/YELLOW.

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ANGULAR ± 0.5°  
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COURSE PITCH, MEDIUM FIT  
REMOVE ALL SHARP EDGES

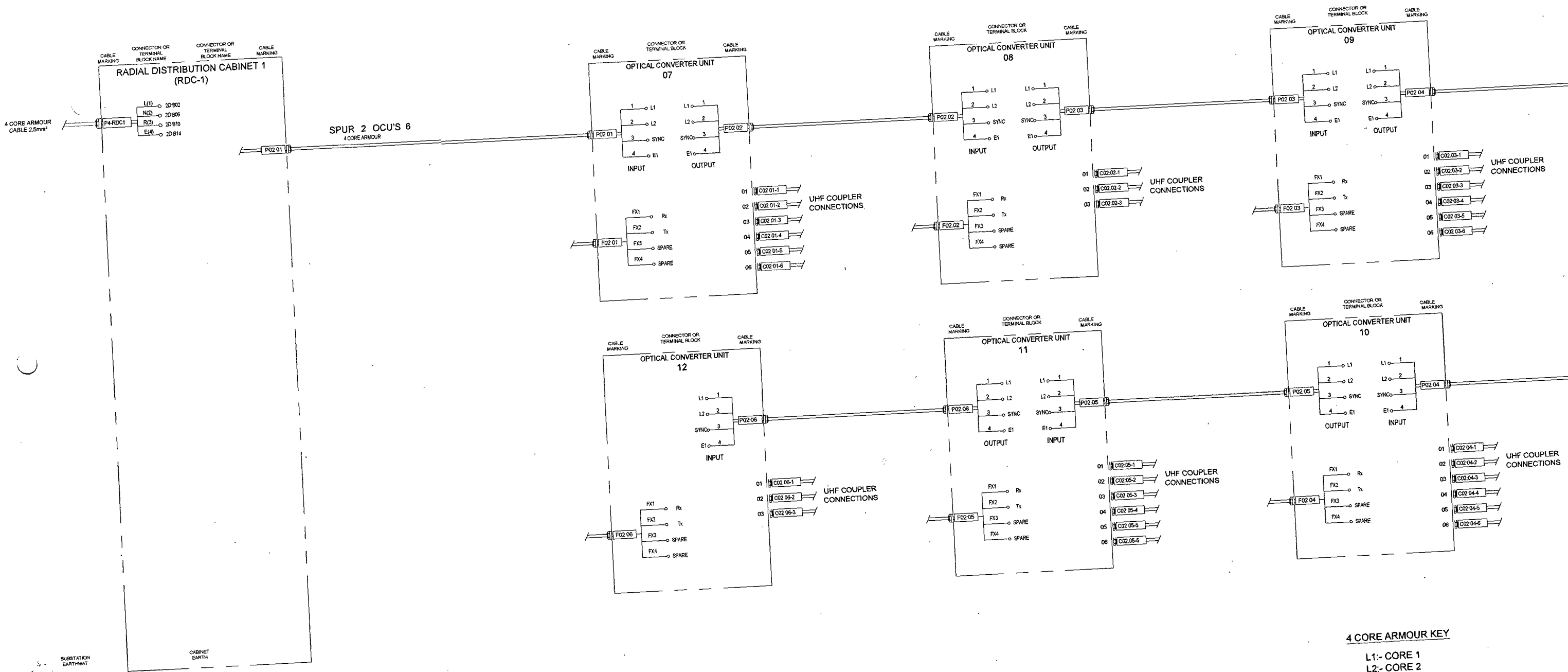
**DMS** Diagnostic Monitoring Systems L  
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Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24

<b>Title</b>	Cable Lists Vishnugad Pipalkoti 400kV System
<b>Drawing</b>	01.00074 Sheet 1 of 1

Project No:- 50530234

CABLE LISTS / TERMINATIONS



4 CORE ARMOUR KEY

- L1:- CORE 1
- L2:- CORE 2
- SYNC:- CORE 3
- EARTH1:- CORE 4

NOTE  
4 CORE ARMOUR EARTH CONNECTIONS  
TO BE SLEEVED GREEN/YELLOW.

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COURSE PITCH, MEDIUM FIT

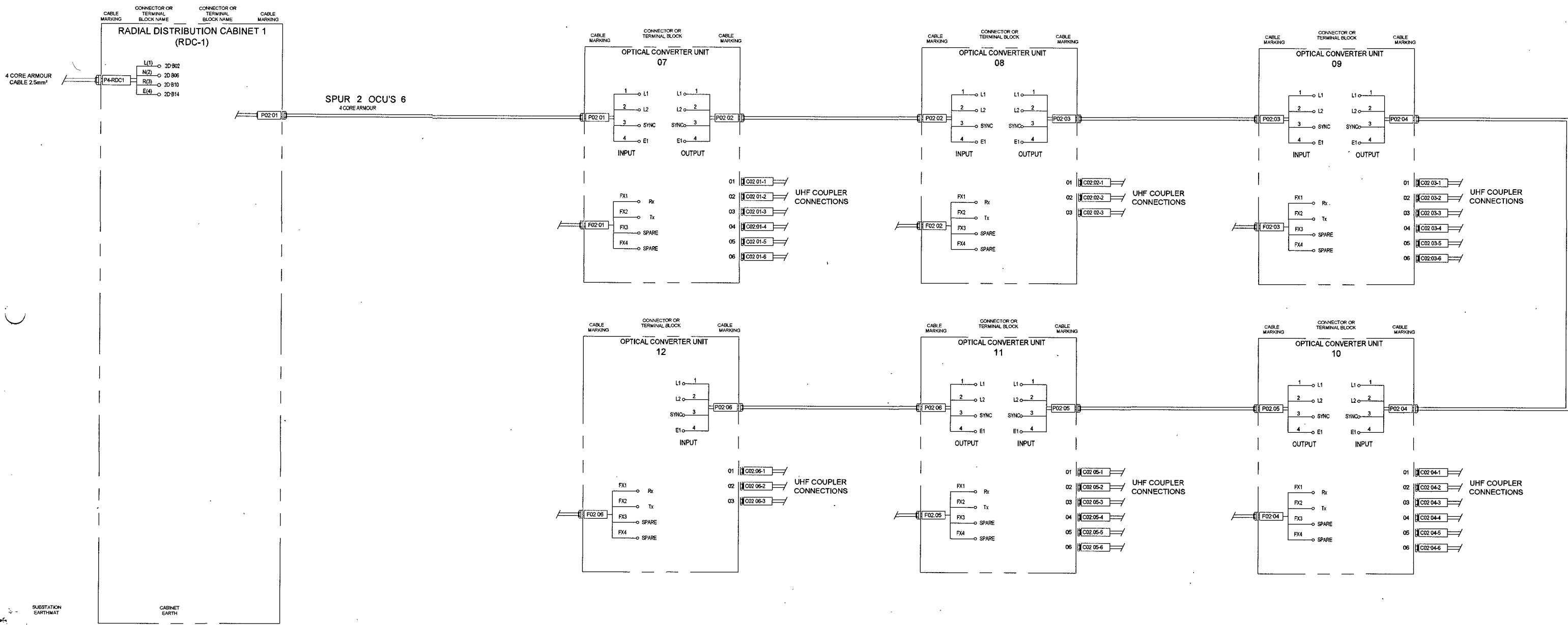
Project No:- 505  
DMS Diagnostic Monitoring Systems  
A QUALITY Company

Scale: NTS Drawn by: CC Date: 24/

Standard: Checked: KP Date: 24/

Title: Cable Lists  
Drawing: 010071 Sheet: 1

Vishnugad Pipakoti 400kV System



**4 CORE ARMOUR KEY**

- L1:- CORE 1
- L2:- CORE 2
- SYNC:- CORE 3
- EARTH:- CORE 4

**NOTE**  
4 CORE ARMOUR EARTH CONNECTIONS  
TO BE SLEEVED GREEN/YELLOW.

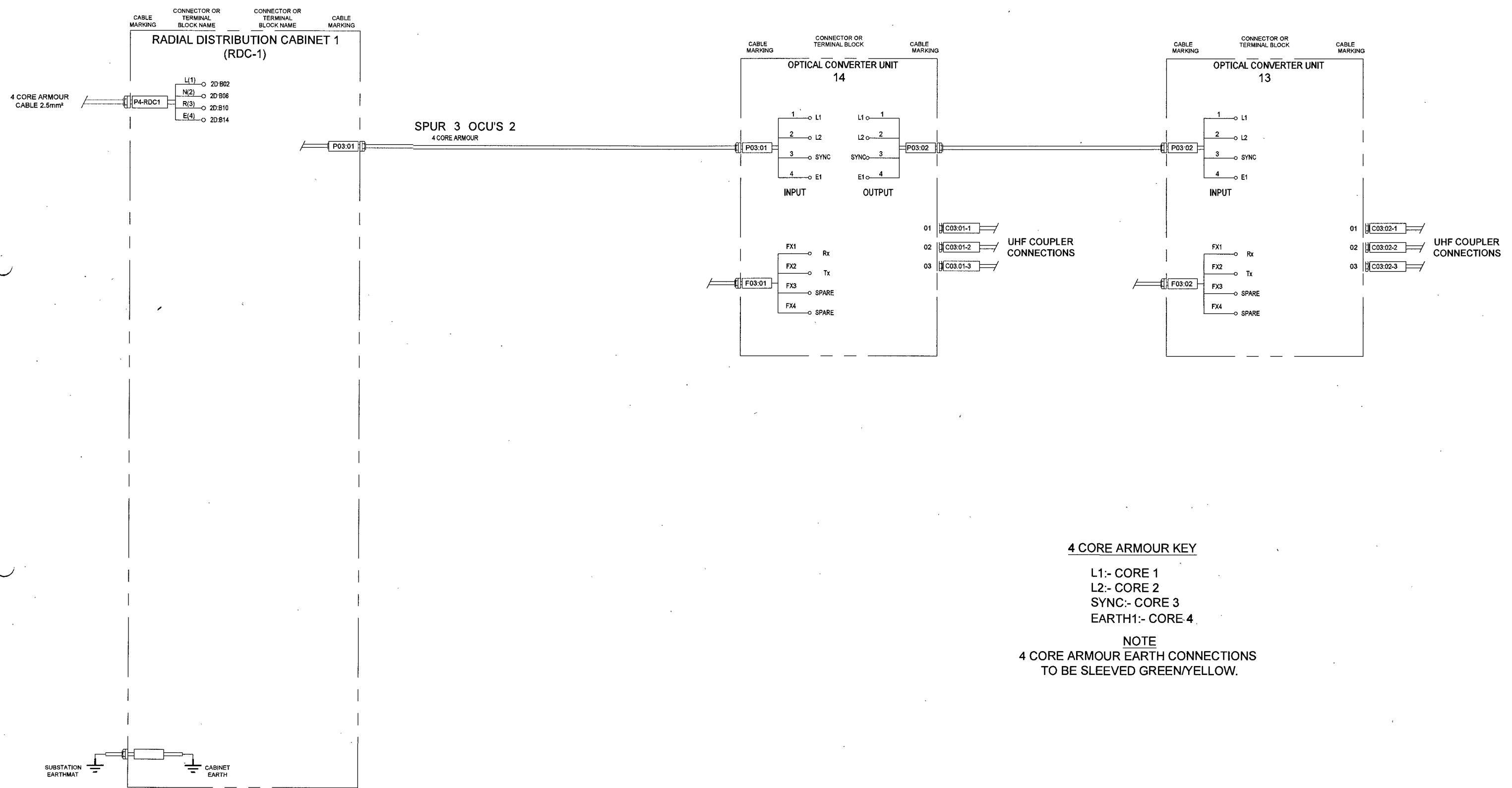
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COURSE PITCH, MEDIUM FIT

**DMS** Diagnostic Monitoring Systems L  
A QUALITY Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24
<b>Title</b>	Cable Lists Vishnugad Pipalkoti 400kV System	
Drawing: 0100274	Sheet: 1	



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ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

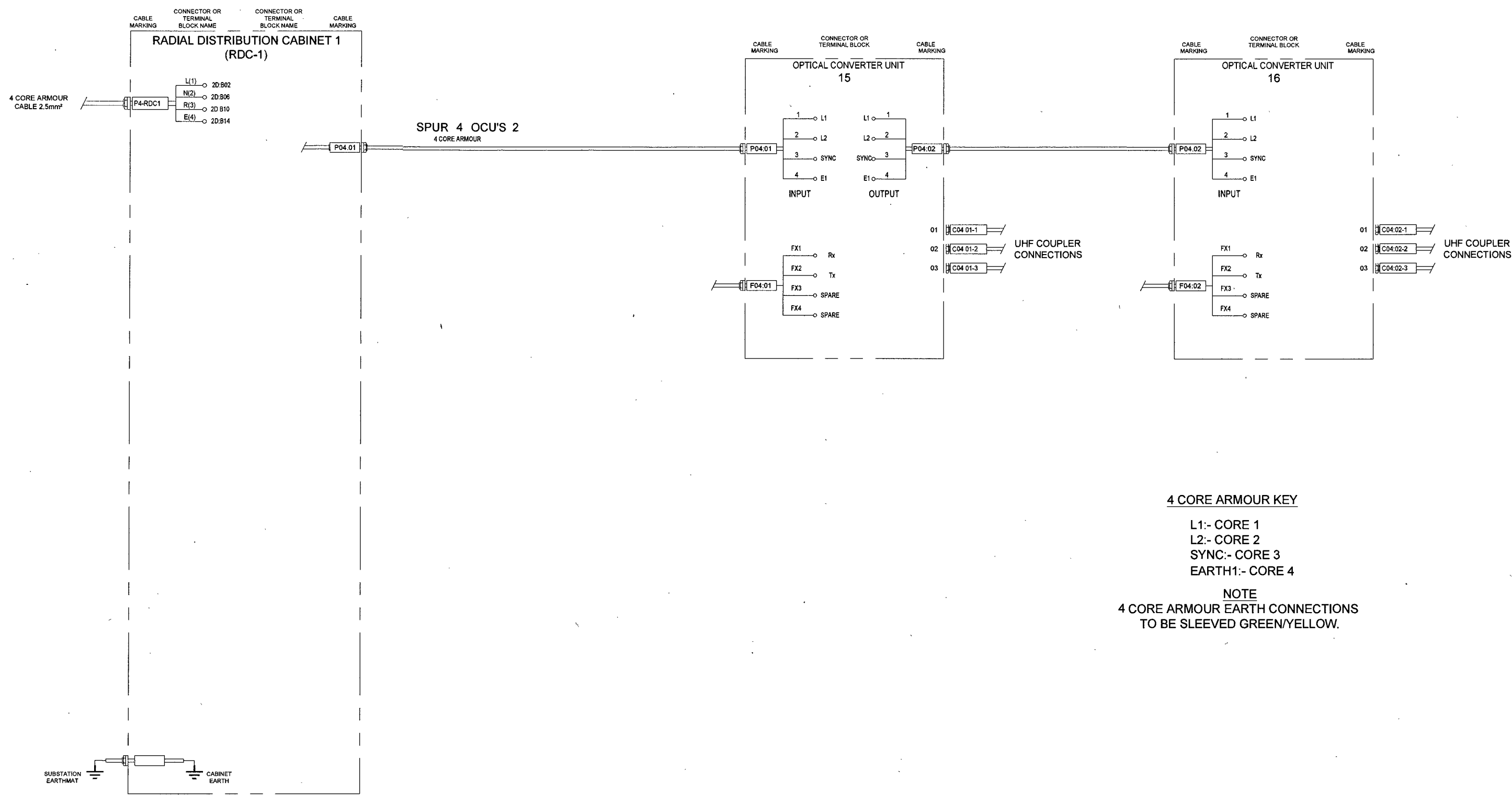
Project No:- 50530234

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Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24

**Title** Cable Lists  
Vishnugad Pipalkoti 400kV System

**Drawing** 01/00274 Sheet 1 of 1



**4 CORE ARMOUR KEY**

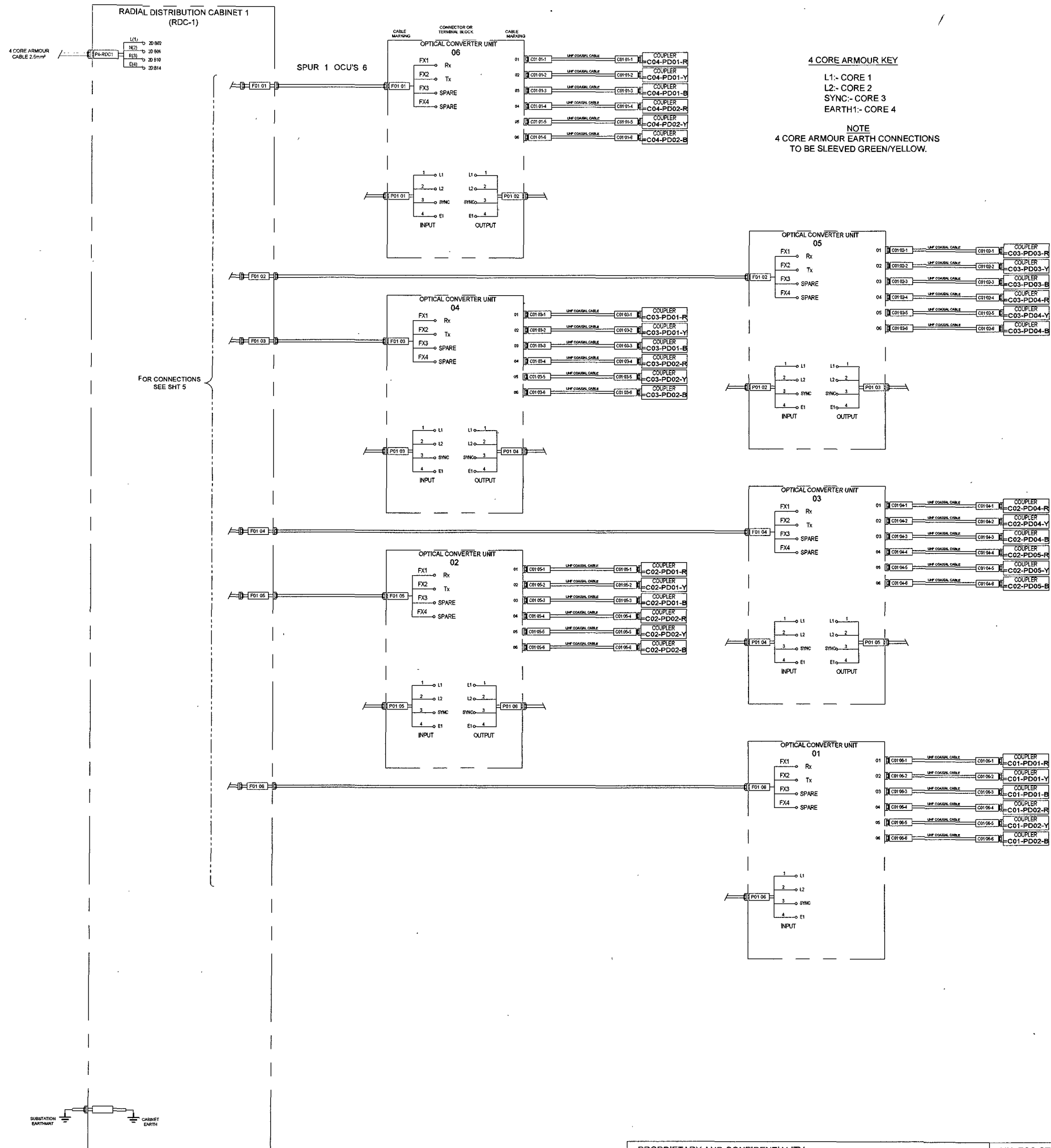
- L1:- CORE 1
- L2:- CORE 2
- SYNC:- CORE 3
- EARTH1:- CORE 4

**NOTE**  
4 CORE ARMOUR EARTH CONNECTIONS  
TO BE SLEEVED GREEN/YELLOW.

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Scale: NTS	Drawn by: CC	Date: 24/10/24	Project No:- 50530234
Standard:	Checked: KP	Date: 24/10/24	
Title Cable Lists Vishnugad Pipalkoti 400kV System		Drawing: 01.00074 Sheet: 1 of 1	

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company



Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
 A Quality Company

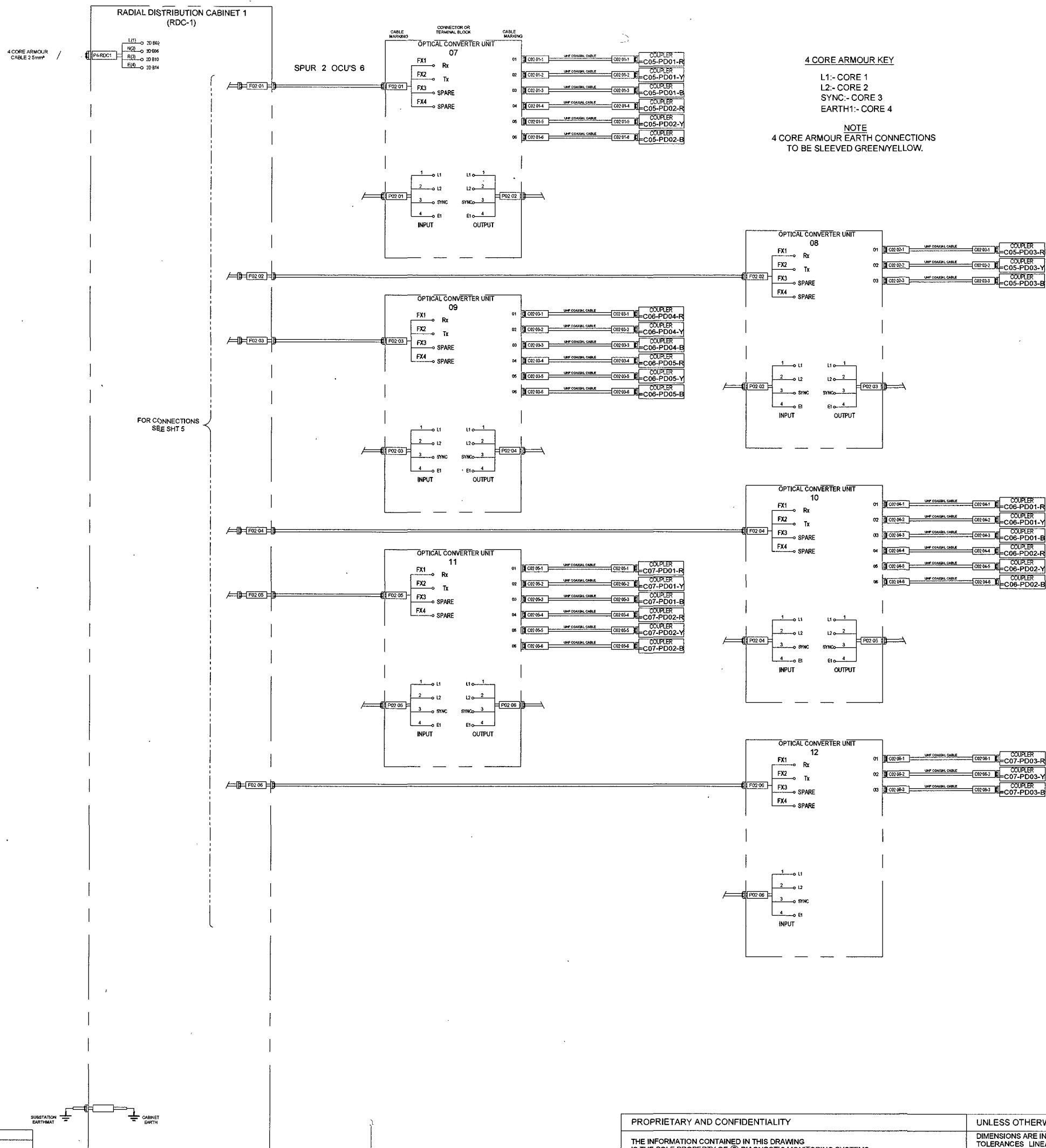
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 Standard: Checked: KP Date: 24/10/24

Title: Cable Lists  
 Vishnugad Pipalkoti 400kV System  
 Drawing: 01.00074 Sheet: 1 of 1

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Project No:- 50530234

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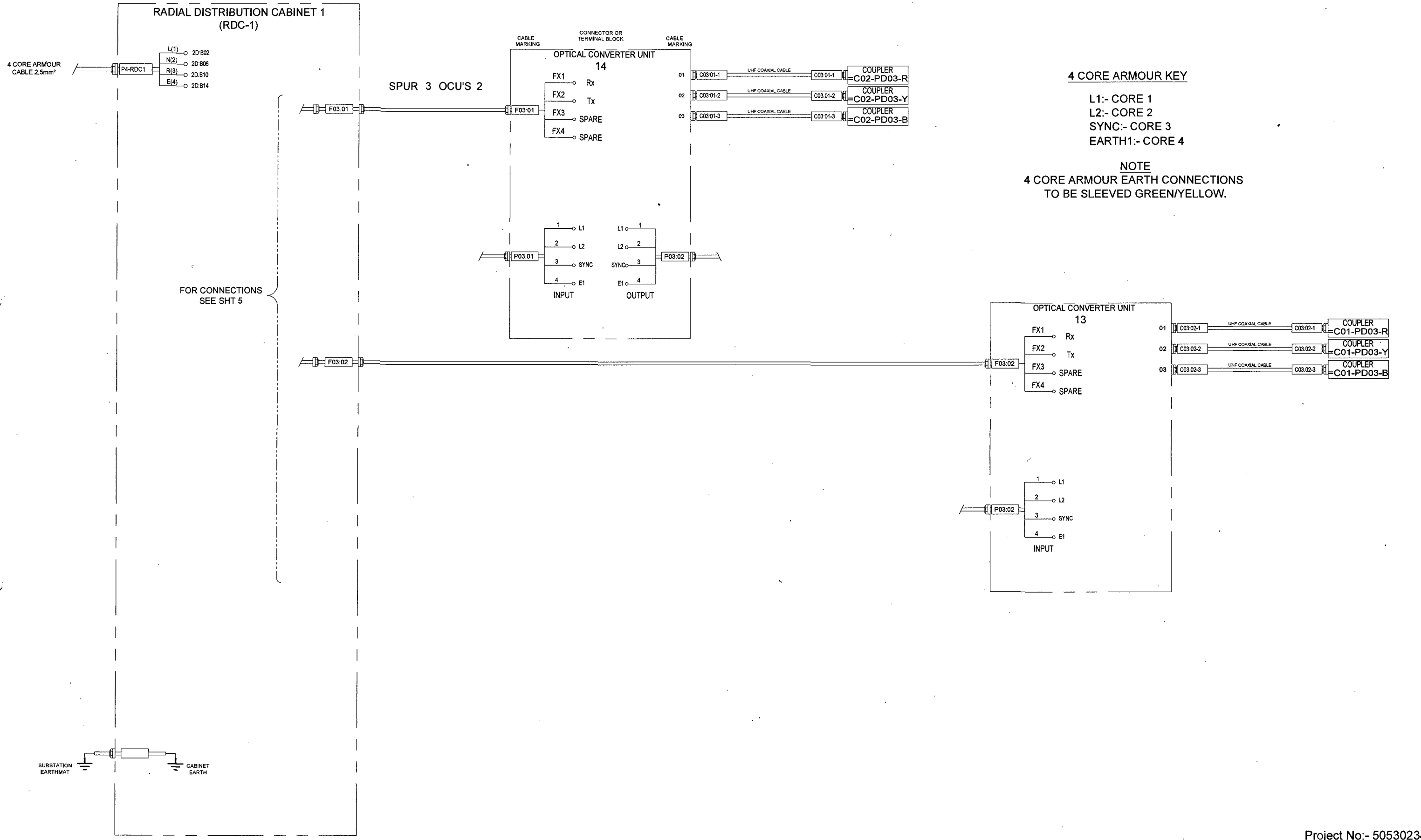
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Title: Cable Lists  
 Vishnugad Pipalkoti 400kV System  
 Drawing: Sheet

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**4 CORE ARMOUR KEY**

- L1:- CORE 1
- L2:- CORE 2
- SYNC:- CORE 3
- EARTH1:- CORE 4

**NOTE**  
4 CORE ARMOUR EARTH CONNECTIONS  
TO BE SLEEVED GREEN/YELLOW.

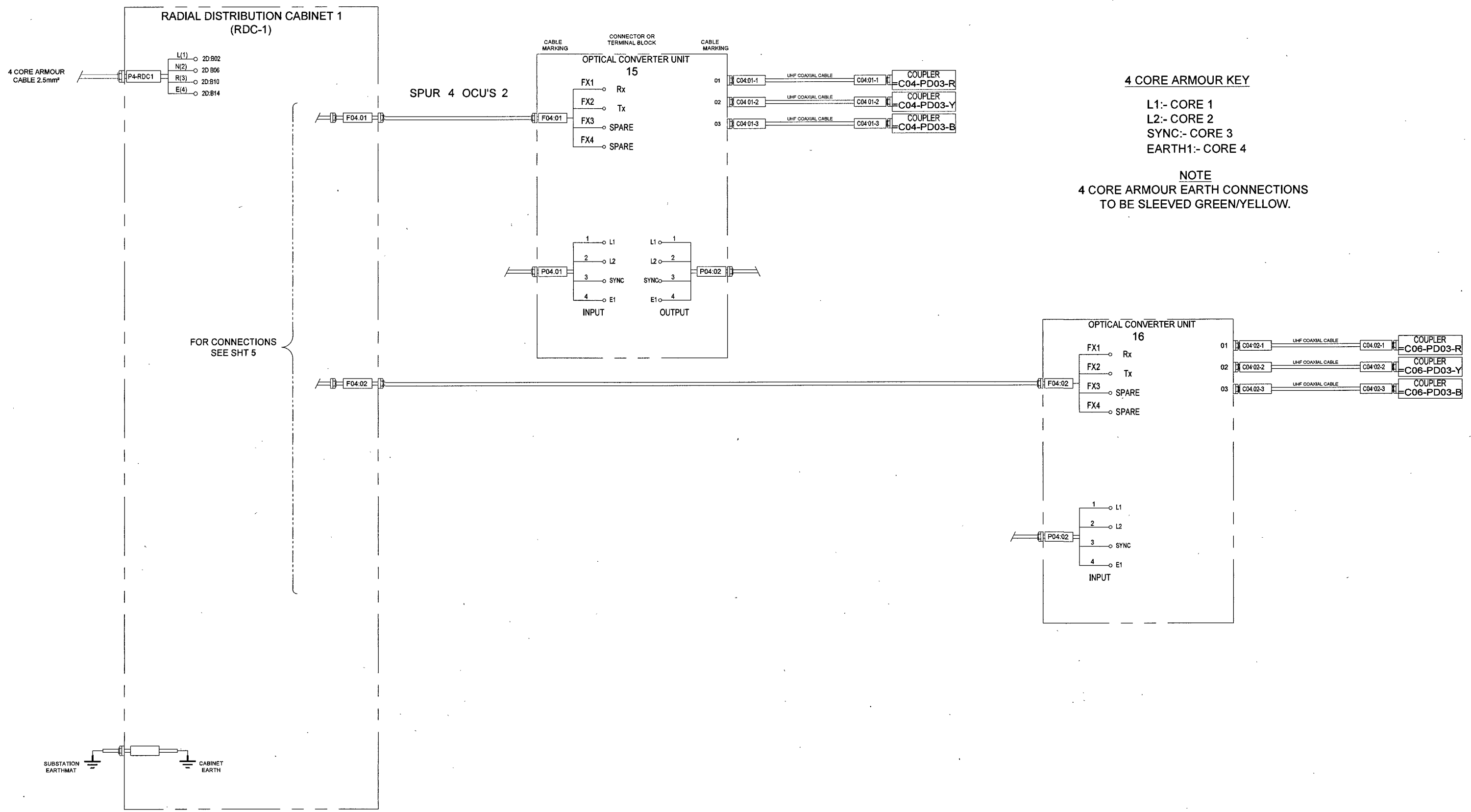
FOR CONNECTIONS  
SEE SHT 5

Project No:- 50530234

<b>DMS</b> Diagnostic Monitoring Systems L <small>A QUALTECH Company</small>			
Scale: NTS	Drawn by: CC	Date: 24/10/24	
Standard:	Checked: KP	Date: 24/10/24	
Title		Cable Lists Vishnugad Pipalkoti 400kV System	
Drawing: 01/0074	Sheet: 1	A	

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**4 CORE ARMOUR KEY**

- L1:- CORE 1
- L2:- CORE 2
- SYNC:- CORE 3
- EARTH1:- CORE 4

**NOTE**  
4 CORE ARMOUR EARTH CONNECTIONS  
TO BE SLEEVED GREEN/YELLOW.

FOR CONNECTIONS  
SEE SHT 5

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

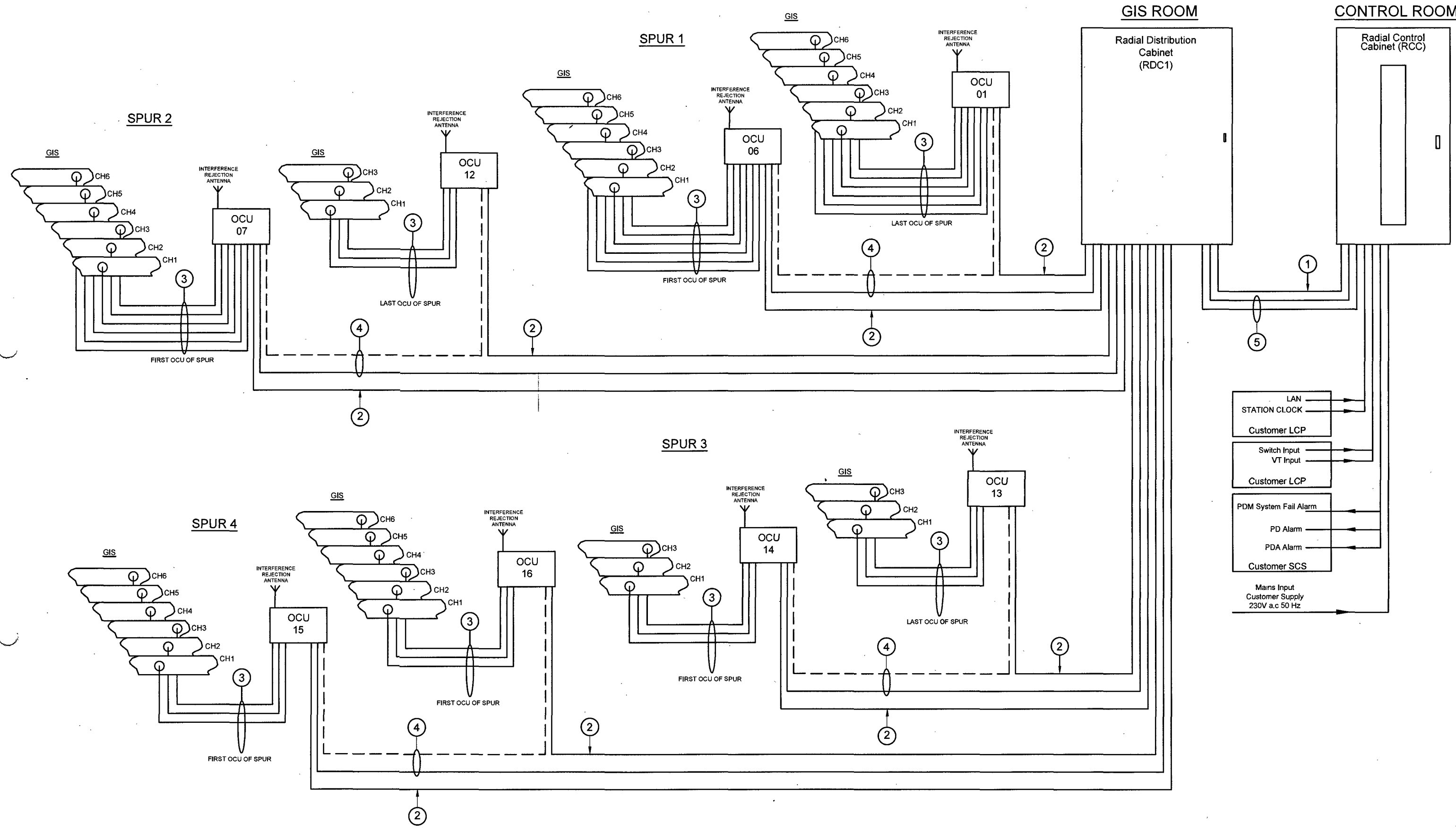
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ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

<b>Title</b>	Cable Lists Vishnugad Pipalkoti 400kV System
Drawing No:	01/00074
Sheet	1 of 1

24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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**NOTE:-**  
 1. FOR COMPLETE LIST OF OCU'S IN SPURS SEE SHEET 2.  
 2. FOR CUSTOMER INTERFACE, CABLE DETAILS SEE SHEET 3.

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
 A QUALTRON Company

Scale: NTS Drawn by: CC Date: 24/10/24  
 Standard: Checked: KP Date: 24/10/24

Title: General Layout Drawing  
 Vishnugad Pipalkoti 400kV System  
 Drawing: Sheet

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 COURSE PITCH, MEDIUM FIT

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OCU REF	No OF CHANNELS	Type	SPUR REF	COUPLER REFERENCE					
				CHANNEL 1	CHANNEL 2	CHANNEL 3	CHANNEL 4	CHANNEL 5	CHANNEL 6
06	6	INDOOR	SPUR 1	=C04-PD01-R	=C04-PD01-Y	=C04-PD01-B	=C04-PD02-R	=C04-PD02-Y	=C04-PD02-B
05	6	INDOOR		=C03-PD03-R	=C03-PD03-Y	=C03-PD03-B	=C03-PD04-R	=C03-PD04-Y	=C03-PD04-B
04	6	INDOOR		=C03-PD01-R	=C03-PD01-Y	=C03-PD01-B	=C03-PD02-R	=C03-PD02-Y	=C03-PD02-B
03	6	INDOOR		=C02-PD04-R	=C02-PD04-Y	=C02-PD04-B	=C02-PD05-R	=C02-PD05-Y	=C02-PD05-B
02	6	INDOOR		=C02-PD01-R	=C02-PD01-Y	=C02-PD01-B	=C02-PD02-R	=C02-PD02-Y	=C02-PD02-B
01	6	INDOOR		=C01-PD01-R	=C01-PD01-Y	=C01-PD01-B	=C01-PD02-R	=C01-PD02-Y	=C01-PD02-B
07	6	INDOOR	SPUR 2	=C05-PD01-R	=C05-PD01-Y	=C05-PD01-B	=C05-PD02-R	=C05-PD02-Y	=C05-PD02-B
08	3	INDOOR		=C05-PD03-R	=C05-PD03-Y	=C05-PD03-B	NA	NA	NA
09	6	INDOOR		=C06-PD04-R	=C06-PD04-Y	=C06-PD04-B	=C06-PD05-R	=C06-PD05-Y	=C06-PD05-B
10	6	INDOOR		=C06-PD01-R	=C06-PD01-Y	=C06-PD01-B	=C06-PD02-R	=C06-PD02-Y	=C06-PD02-B
11	6	INDOOR		=C07-PD01-R	=C07-PD01-Y	=C07-PD01-B	=C07-PD02-R	=C07-PD02-Y	=C07-PD02-B
12	3	INDOOR		=C07-PD03-R	=C07-PD03-Y	=C07-PD03-B	NA	NA	NA
14	3	INDOOR	SPUR 3	=C02-PD03-R	=C02-PD03-Y	=C02-PD03-B	NA	NA	NA
13	3	INDOOR		=C01-PD03-R	=C01-PD03-Y	=C01-PD03-B	NA	NA	NA
15	3	INDOOR	SPUR 4	=C04-PD03-R	=C04-PD03-Y	=C04-PD03-B	NA	NA	NA
16	3	INDOOR		=C06-PD03-R	=C06-PD03-Y	=C06-PD03-B	NA	NA	NA

**NOTE:-**

1. FOR DETAILS OF SPURS IN RDC1 SEE SHEET 1.
2. FOR CUSTOMER INTERFACE, CABLE DETAILS SEE SHEET 3.

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
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Scale:	NTS	Drawn by: CC	Date: 24/10/24
Standard:		Checked: KP	Date: 24/10/24

<b>Title</b>	General Layout Drawing Vishnugad Pipalkoti 400kV System		
Drawing No:	050414	Sheet	1 of 1

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DMS QUALITROL / CUSTOMER INTERFACE(QUALITROL DO NOT SUPPLY INTERFACE CABLES, SUPPLIED AND INSTALLED BY OTHERS)

INTERFACE	SIGNAL TYPE	CABLE/CONTACT RATING	TERMINATION PANEL	TERMINATION AT DMS PANEL
MAINS SUPPLY	230V a.c. 50Hz	230V a.c. @ 10A	RCC	DIN RAIL 1
PDM SYSTEM ALARM	DMS SUPPLY DRY RELAY CONTACTS	CONTACTS- MAX 220V d.c. @ 50 mA	RCC	DIN RAIL 2
PD ALARM	DMS SUPPLY DRY RELAY CONTACTS	CONTACTS- MAX 220V d.c. @ 50 mA	RCC	DIN RAIL 2
PDA ALARM	DMS SUPPLY DRY RELAY CONTACTS	CONTACTS- MAX 220V d.c. @ 50 mA	RCC	DIN RAIL 2
SWITCH INPUT	48V d.c.(PULSE MIN OF 10ms)	RELAY COIL MAX 48V d.c. @ 50 mA	RCC	DIN RAIL 2
VT INPUT	RANGE:- 10V ac TO 180V ac	57.5Vac @5mA, Nom per VT	RCC	DIN RAIL 2
LAN	TCP/IP	CAT 5E	RCC	RG45
STATION CLOCK	GPS	RG58	RCC	BNC CONNECTION AT PC

CABLE IN QUALITROL SUPPLY(INSTALLED BY OTHERS)

CABLE REF.	PART No.	DESCRIPTION	CONNECTION
1	CFL00117	4 CORE 2.5mm <sup>2</sup> ARMOUR CABLE (600/1000V)	MAINS SUPPLY FROM RCC TO RDC
2	CFL00243	DATA FIBRE MULTIMODE 4 CORE	DATA LINK FROM RDC TO OCU
3	CFL00335	UHF, COAXIAL, CABLE	FROM OCU TO PD SENSOR
4	CFL00246	4 CORE 1.5mm <sup>2</sup> ARMOUR CABLE (600/1000V)	MAINS SUPPLY FROM RDC TO OCU SPURS
5	CFL00244	DATA FIBRE MULTIMODE 24 CORE	DATA LINK FROM RCC TO RDC


ENCLOSURE COLOUR

ENCLOSURE	INTERNAL COLOUR	EXTERNAL COLOUR	REF DRAWING
RCC	PALE GREY RAL 7035	PALE GREY RAL 7035	GE04512
RDC1	PALE GREY RAL 7035	PALE GREY RAL 7035	GE04513
OCU	PALE GREY RAL 7035	PALE GREY RAL 7035	AE08233

NOTES :-

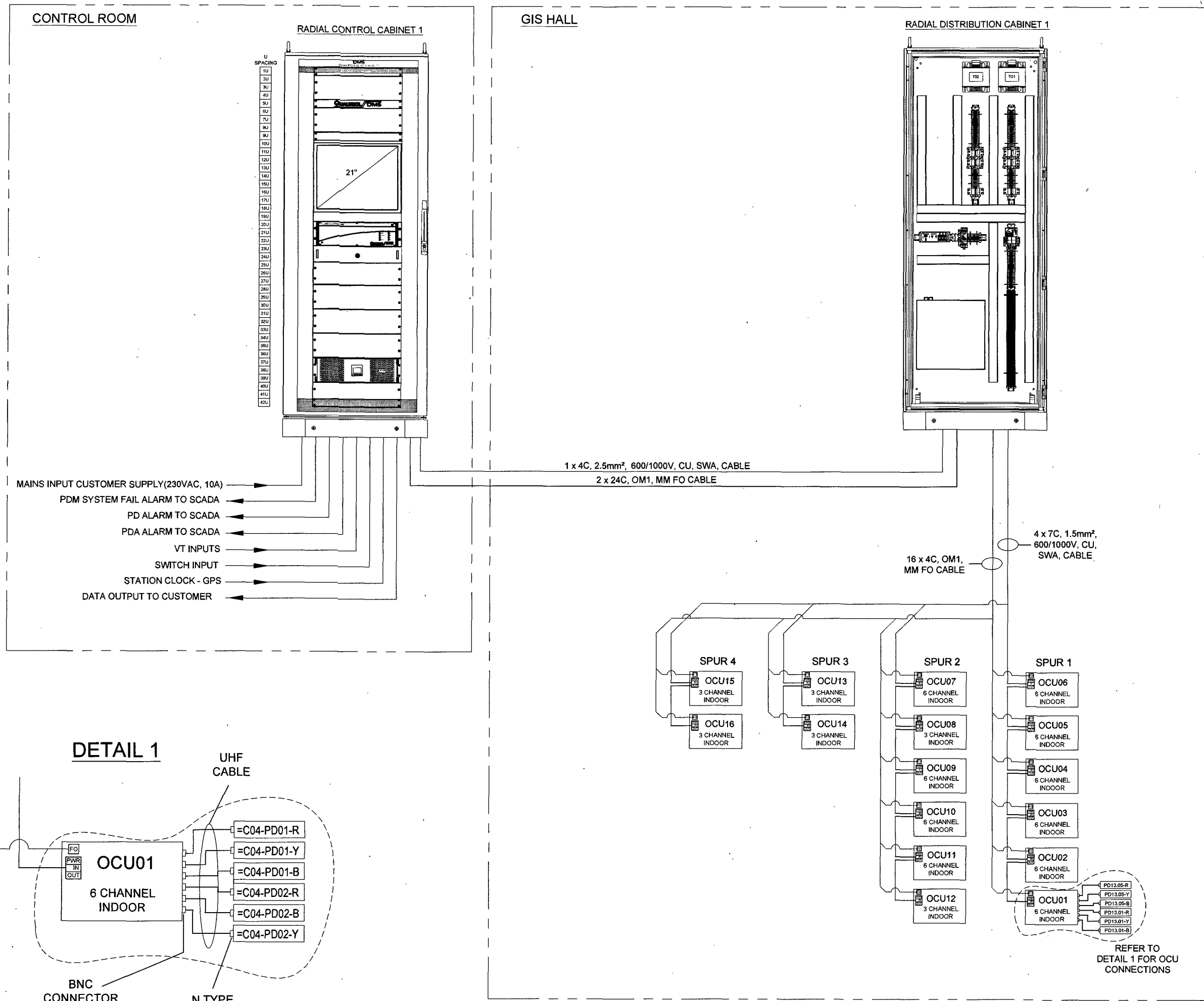
1. PDM SYSTEM AT VISHNUGAD PIPALKOTI 400KV SUBSTATION COMPRISES OF 16 OCUs IN 4 SPURS ACROSS 1 RDC.
2. THE SPUR IS SUPPLIED WITH POWER FROM THE DISTRIBUTION CABINET BY 4 CORE ARMOUR CABLE.
3. EACH OCU IS INDIVIDUALLY CONNECTED TO THE DISTRIBUTION CABINET BY FIBRE CABLE.
4. EACH CHANNEL OF THE OCU IS INDIVIDUALLY CONNECTED TO A PD SENSOR WITH UHF CABLE.
5. FOR RADIAL DISTRIBUTION CABINET 1 SPURS SEE SHEET 1.
6. FOR COMPLETE LIST OF OCU'S IN SPURS SEE SHEET 2.

Project No:- 5053023

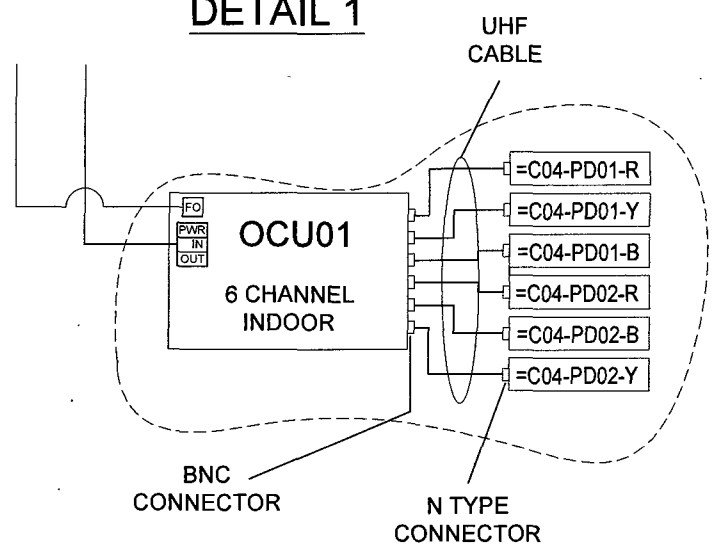
<b>DMS</b> Diagnostic Monitoring Systems I <small>A QUALITROL Company</small>			
Scale: NTS	Drawn by: CC	Date: 24/10/24	
Standard: 	Checked: KP	Date: 24/10/24	
<b>Title</b>	General Layout Drawing Vishnugad Pipalkoti 400kV System		
Drawing No: GE04511	Sheet		

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**DETAIL 1**



Project No:- 50530234

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Scale:	NTS	Drawn by:	CC	Date:	11/12/24
Standard:		Checked:	KP	Date:	11/12/24

Title: System Architecture  
Vishnugad Pipalkoti 400kV System  
Drawing: 0504505 Sheet: 1

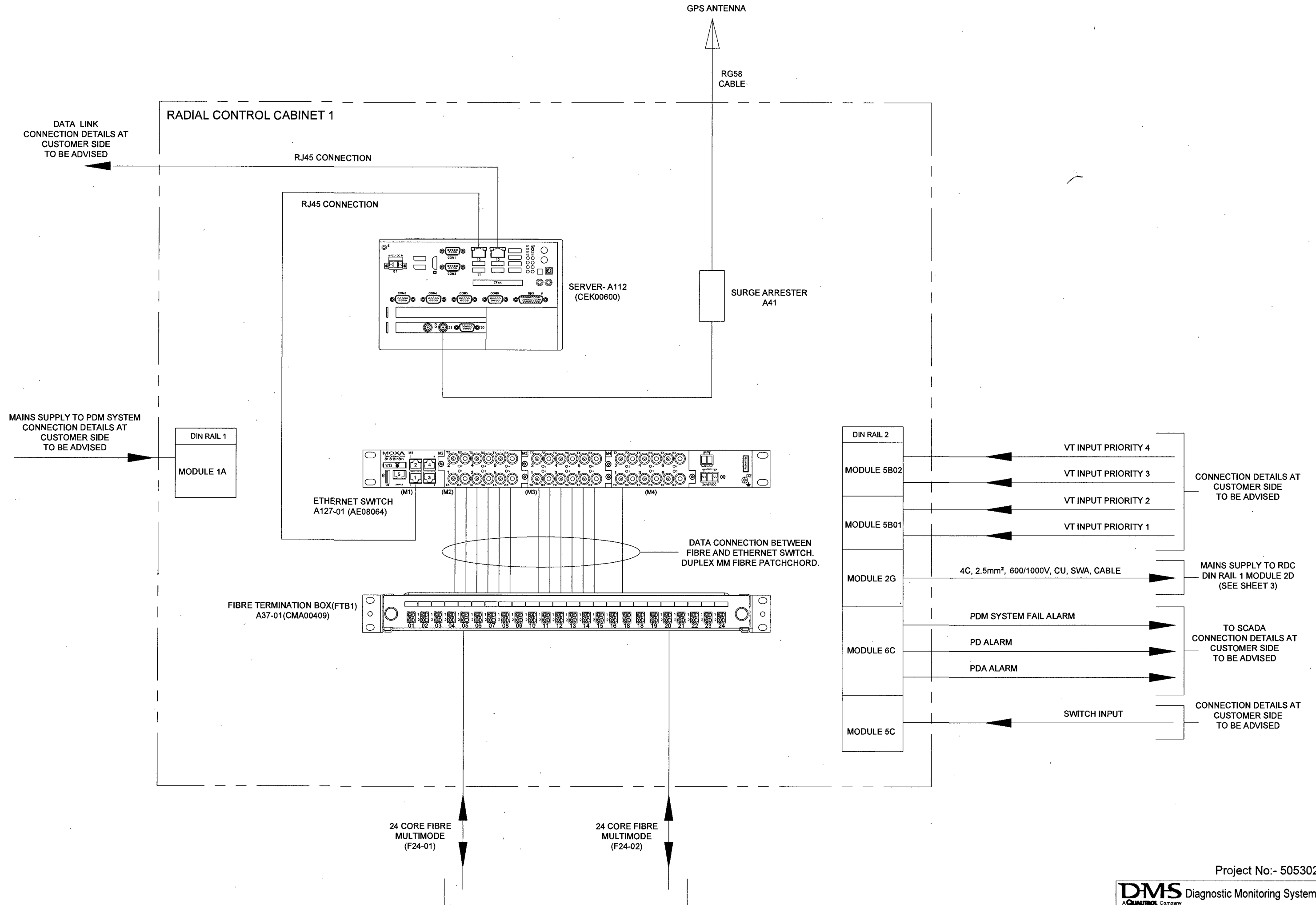
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COURSE PITCH, MEDIUM FIT

11/12/24	CC	KP	FIRST ISSUE FOR APPROVAL
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11/12/24	CC	KP	FIRST ISSUE FOR APPROVAL
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CONNECTION AT  
RADIAL DISTRIBUTION CABINET  
FIBRE DISTRIBUTION BOX (FDB1)  
(SEE SHEET 3)

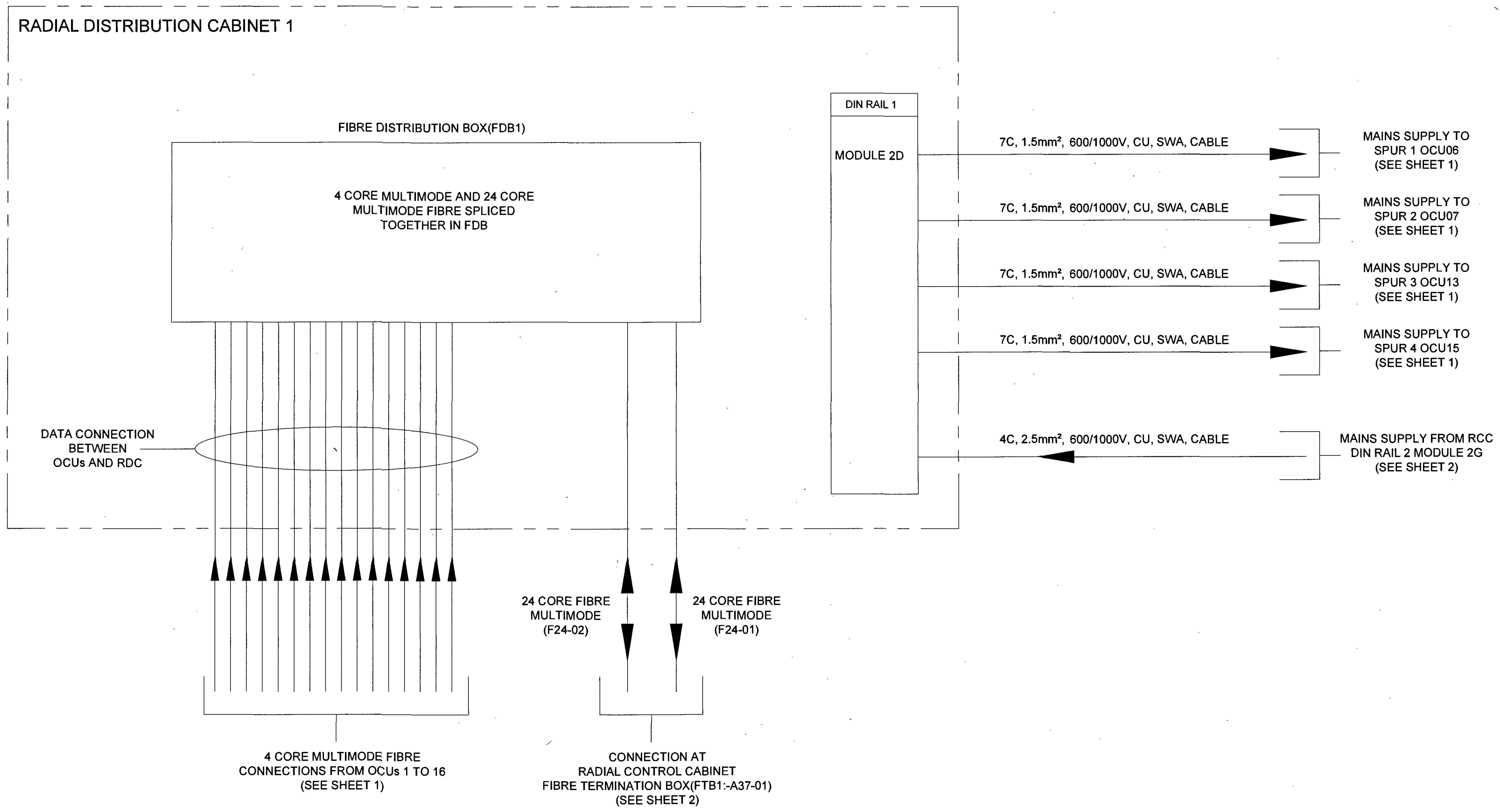
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Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALTRON Company

Scale: NTS	Drawn by: CC	Date: 11/12/24
Standard:	Checked: KP	Date: 11/12/24
Title	System Architecture Vishnugad Pipalkoti 400kV System	
Drawing	CE04505	Sheet 1 of 1



Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
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Scale: NTS	Drawn by: CC	Date: 11/12/24
Standard:	Checked: KP	Date: 11/12/24
<b>Title</b>	System Architecture Vishnugad Pipalkoti 400kV System	
Drawn:	Sheet: 1	of 1

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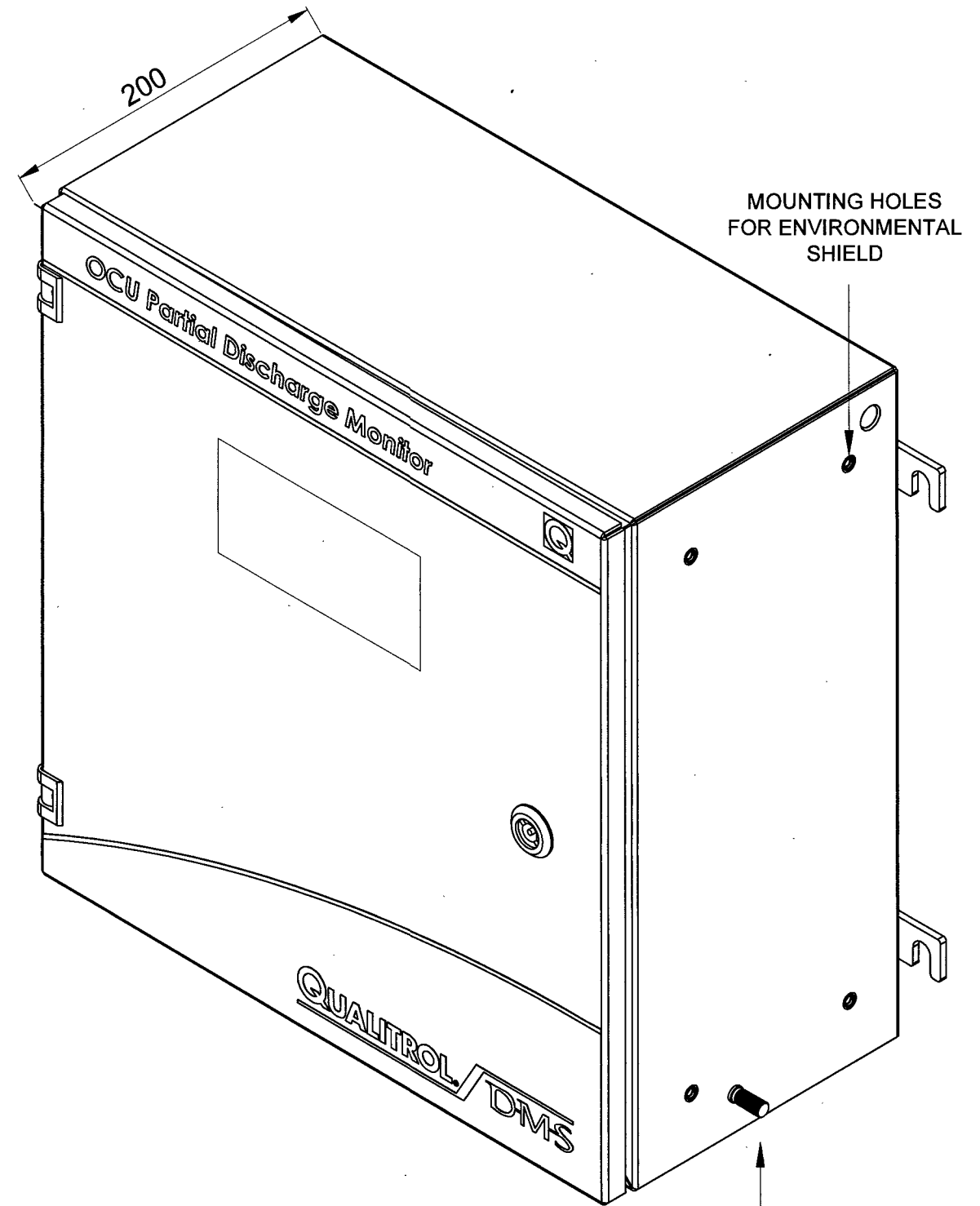
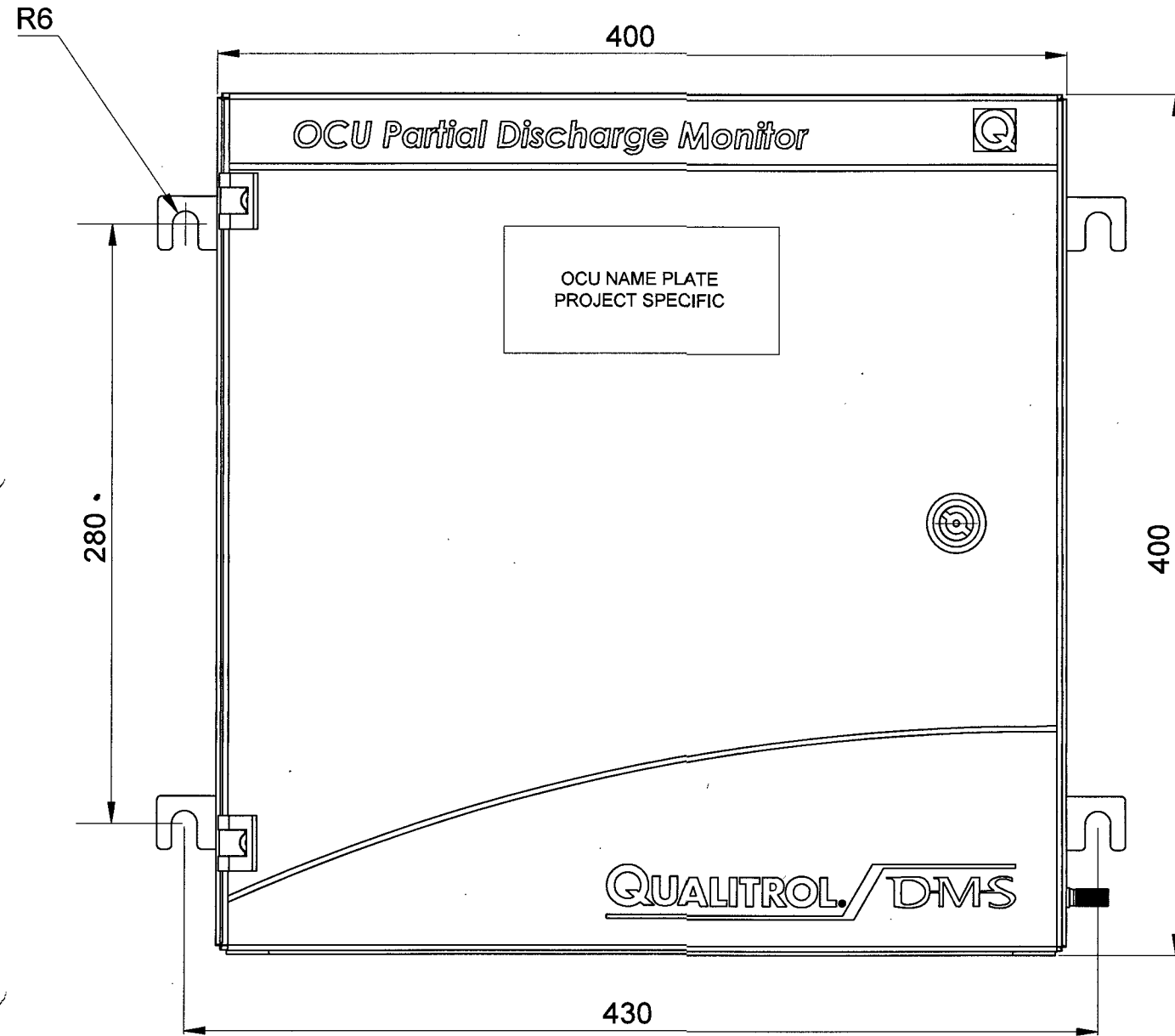
UNLESS OTHERWISE STATED

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ANGULAR ± 0.5°  
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11/12/24	CC	KP	FIRST ISSUE FOR APPROVAL
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OPTICAL CONVERTER UNIT:- MOUNTING DETAILS.

OCU SHOWN WITHOUT ENVIRONMENTAL SHIELD FOR CLARITY



NOTES:-

1. OCU MATERIAL STAINLESS STEEL, 1.5mm THICK.
2. RATING IP 66.
3. OCU COLOUR RAL 7035 PALE GREY.
4. PAINT THICKNESS MIN 60 MICRON.
5. FIXING CENTRES OF OCU SHOWN ON SHEET 1. M10 FIXINGS RECOMMENDED.
6. MINIMUM CLEARANCES AS SHOWN IN SHEET 2.
7. OCU MUST BE MOUNTED ON A WALL OR SUITABLE METAL FRAME (SUPPLIED BY CUSTOMER) TO BE EASILY ACCESSIBLE FOR SERVICE.
8. OCU MUST NOT BE DIRECTLY INSTALLED ON TRANSFORMER WALLS, GIS OR ON METALWORK SUPPORTING GIS CIRCUIT BREAKERS.
9. ALL DIMENSIONS IN MM.

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

Scale:	NTS	Drawn by: CC	Date: 24/10/24
Standard:		Checked: KP	Date: 24/10/24

Title	OCU Mounting Details Vishnugad Pipalkoti 400kV System		
Drawing No	A50000	Sheet	1 of 1

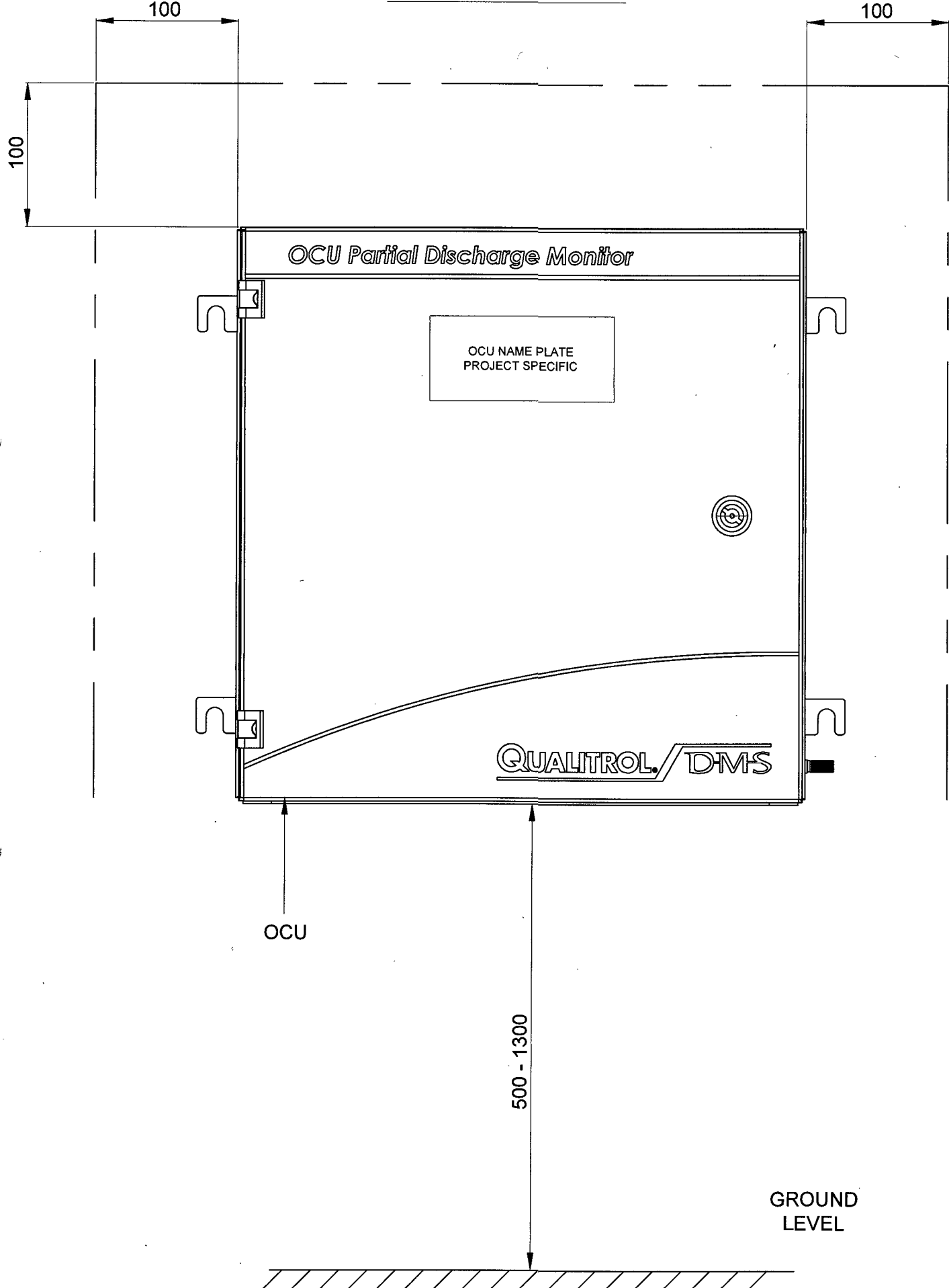
PROPRIETARY AND CONFIDENTIALITY  
UNLESS OTHERWISE STATED  
DIMENSIONS ARE IN mm  
TOLERANCES LINEAR ± 0.2mm  
ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT  
WITHOUT THE WRITTEN PERMISSION OF DIAGNOSTIC MONITORING SYSTEMS IS PROHIBITED

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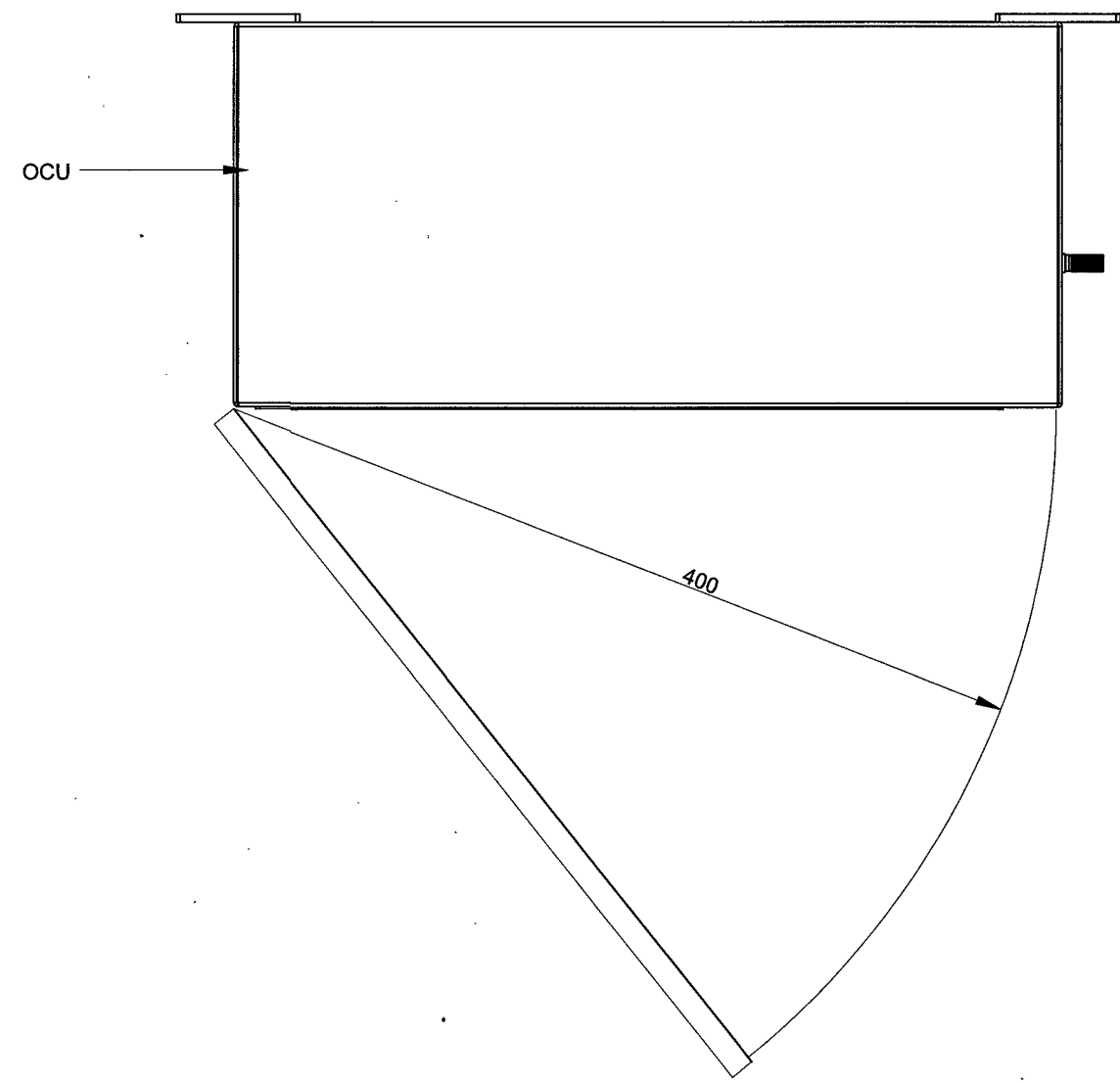
24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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OPTICAL CONVERTER UNIT:- MOUNTING DETAILS.

MINIMUM CLEARANCE REQUIRED AROUND OCU FOR INSTALLATION



MINIMUM CLEARANCE TO ALLOW ACCESS TO OCU



24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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PROPRIETARY AND CONFIDENTIALITY

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UNLESS OTHERWISE STATED

DIMENSIONS ARE IN mm  
TOLERANCES LINEAR ± 0.2mm  
ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT

Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

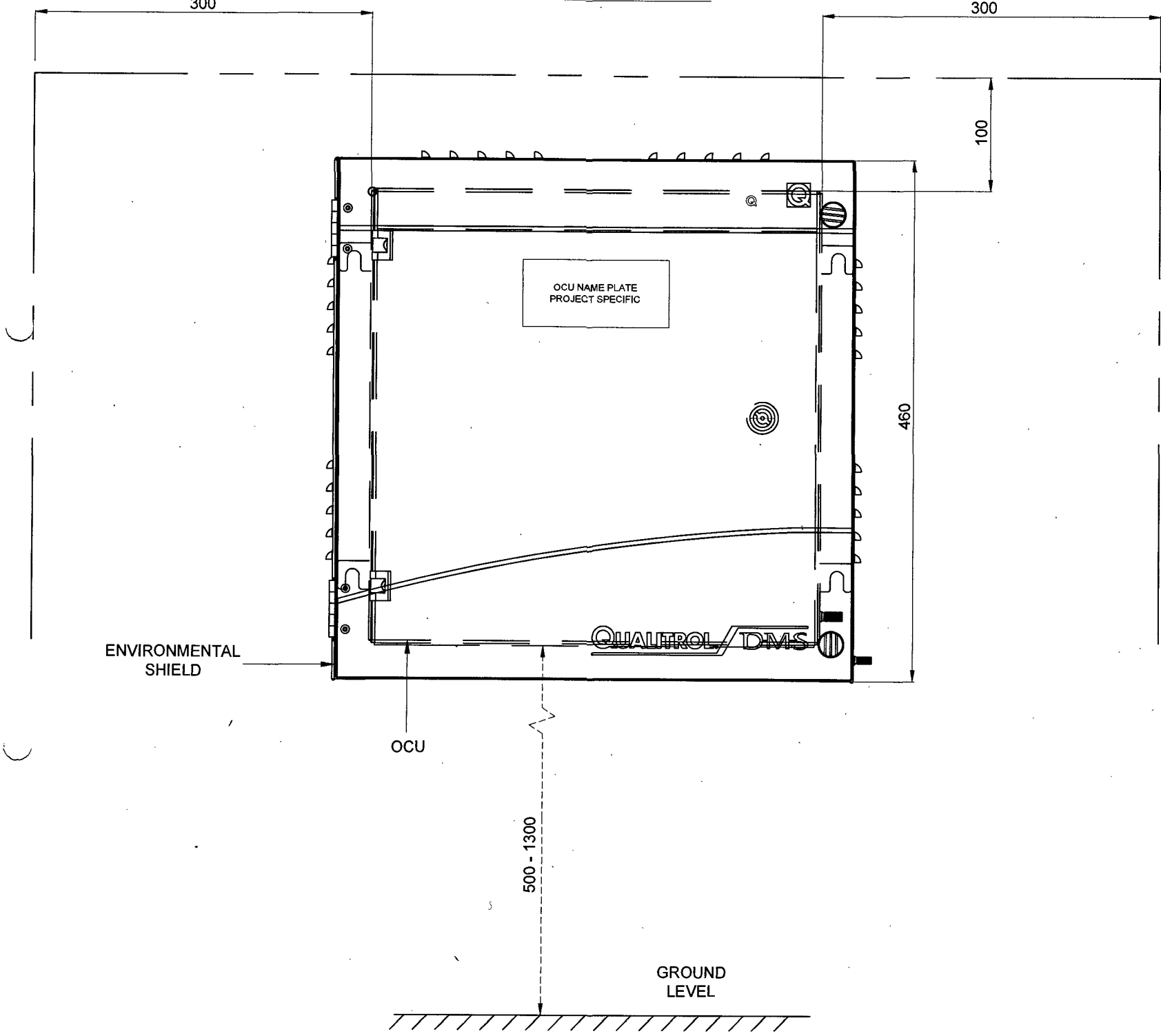
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Standard:	Checked: KP	Date: 24/10/24

Title: OCU Mounting Details  
Vishnugad Pipalkoti 400kV System

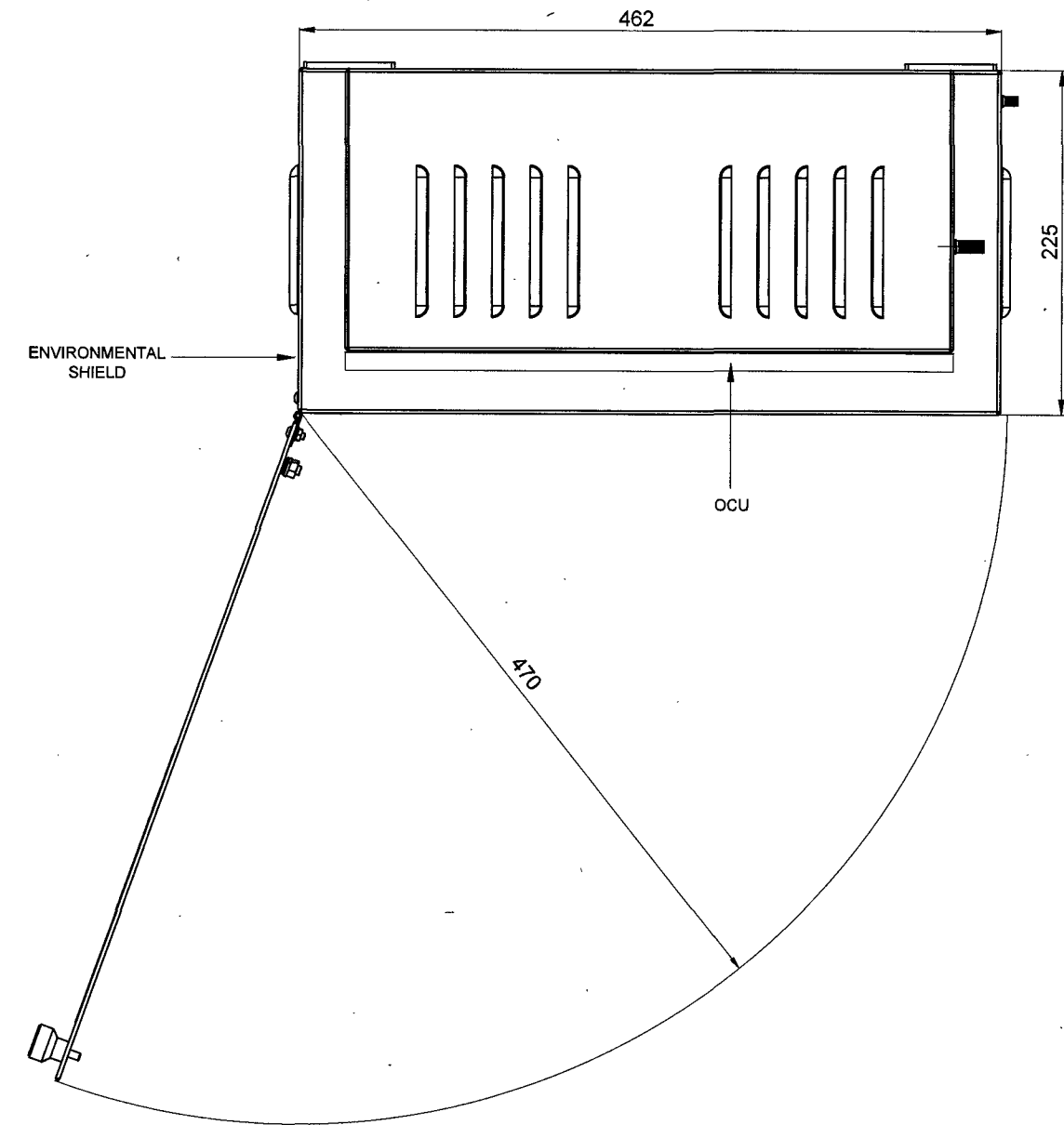
Drawing: A50000 Sheet: 1 of 1

OPTICAL CONVERTER UNIT:- MOUNTING DETAILS WITH ENVIRONMENTAL SHIELD.

MINIMUM CLEARANCE REQUIRED AROUND OCU FOR INSTALLATION



MINIMUM CLEARANCE TO ALLOW ACCESS TO OCU



Project No:- 50530234

**DMS** Diagnostic Monitoring Systems L  
A QUALITROL Company

Scale: NTS	Drawn by: CC	Date: 24/10/24
Standard:	Checked: KP	Date: 24/10/24

<b>Title</b>	OCU Mounting Details Vishnugad Pipalkoti 400kV System
<b>Drawing</b>	A50022 Sheet

PROPRIETARY AND CONFIDENTIALITY

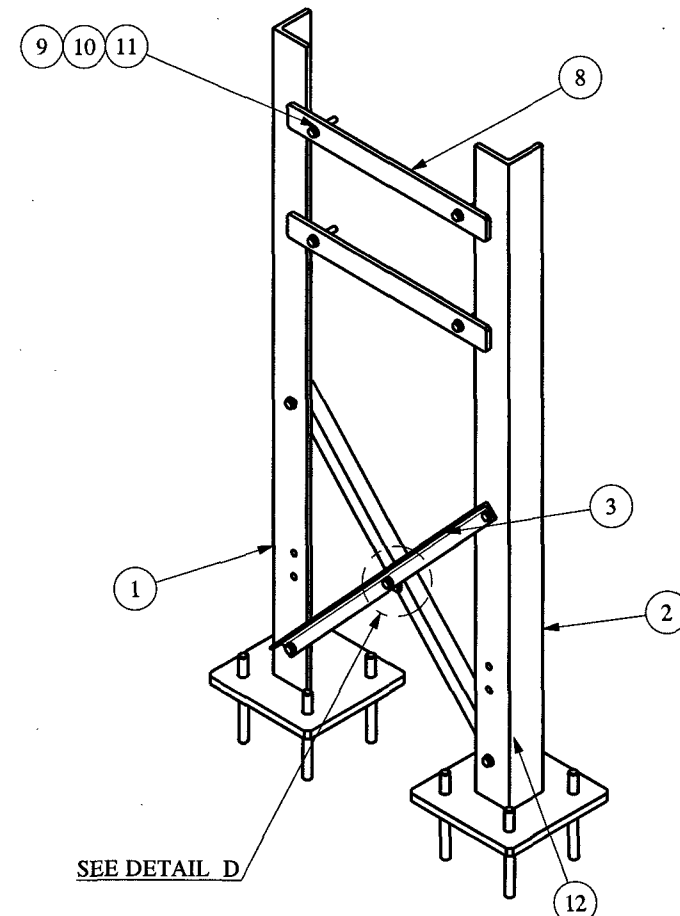
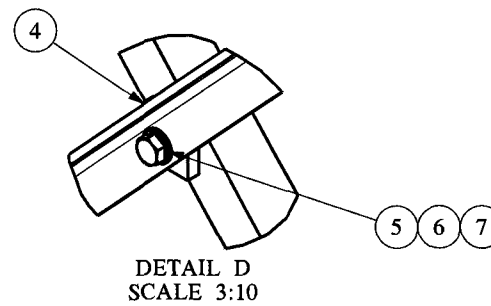
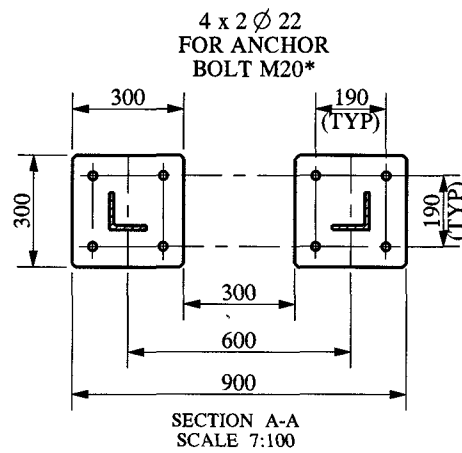
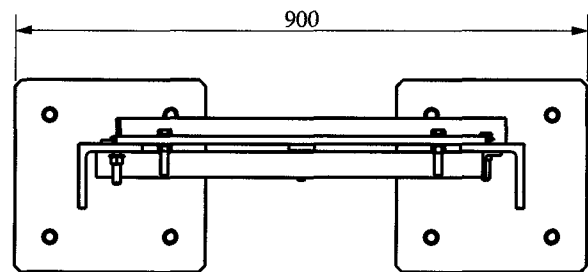
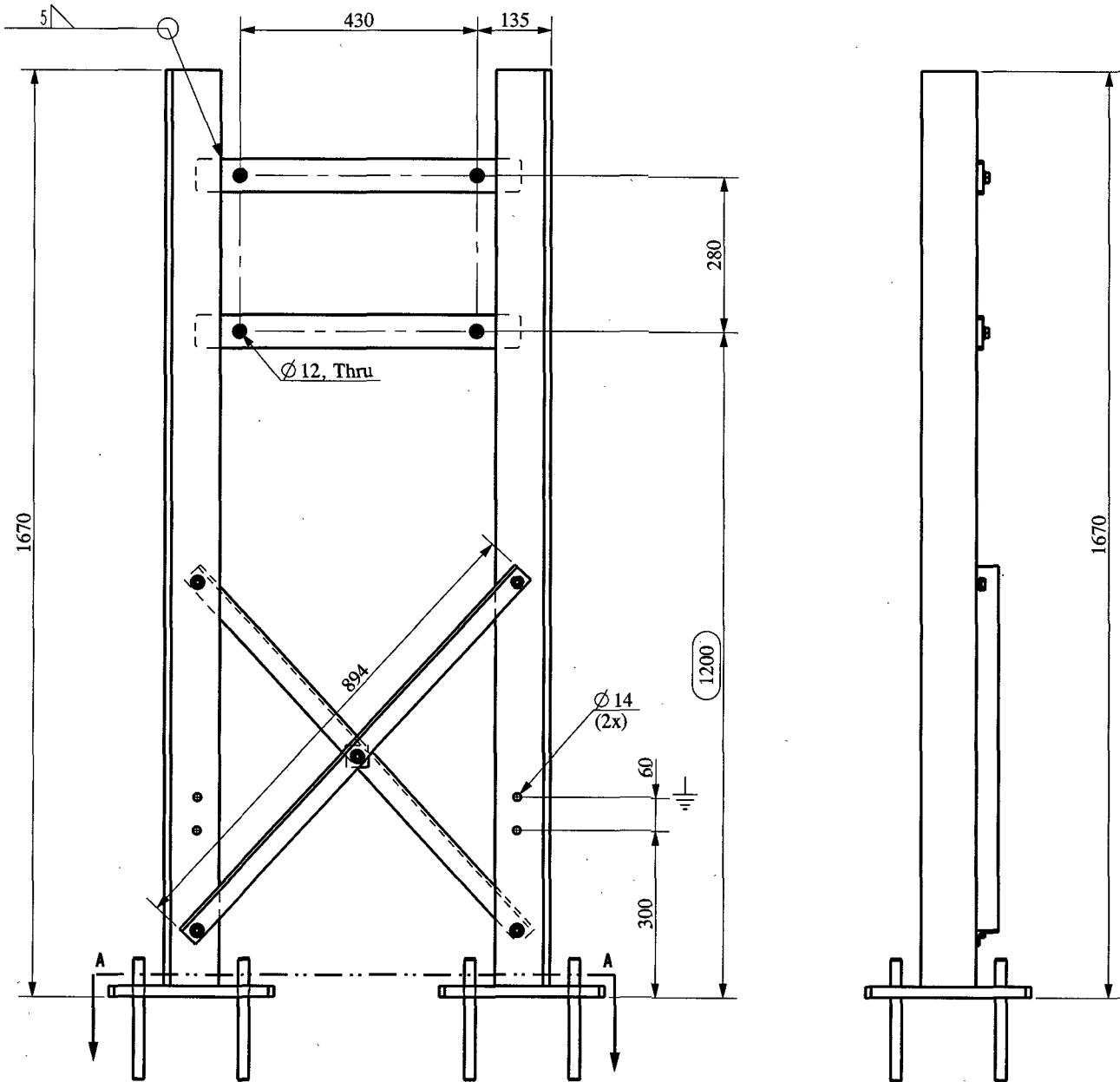
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UNLESS OTHERWISE STATED

DIMENSIONS ARE IN mm  
TOLERANCES LINEAR ± 0.2mm  
ANGULAR ± 0.5°  
ALL THREADS ARE ISO METRIC  
COURSE PITCH, MEDIUM FIT  
REMOVE ALL SHARP EDGES

24/10/24	CC	KP	FIRST ISSUE FOR APPROVAL
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OCU Structure details



SEE DETAIL D

\*OCU structure can be welded with minimum fillet seam size of 5 mm or anchored on-site with suitable size anchor bolts with appropriate washers since it does not function as a primary load-bearing structure of GIS ducts

Part No.	Drawing No.	Description	Quantity	Remark	Material	Weight (kg)
12	-	ANCHOR_BOLT_M20*	8		STEEL	0.539
11	-	NUT M10	4	ISO 4032 TZN 8.8	STEEL	0.017
10	-	BOLT M10 X 50	4	ISO 4017 TZN 8.8	STEEL	0.074
9	-	PLAIN WASHER M10	8	DIN 7989-2d TZN 8.8	STEEL	0.006
8	-	PLATE	2	PART	FE410W-IS 2062	1.836
7	-	NUT M12	5	ISO 4032 TZN 8.8	STEEL	0.017
6	-	BOLT M12 X 60	5	ISO 4017 TZN 8.8	STEEL	0.074
5	-	PLAIN WASHER M12	10	DIN 7989-2d TZN 8.8	STEEL	0.006
4	-	SPACER	1	PART	FE410W-IS 2062	0.114
3	-	*L* 40 x 40 x 6 , L= 894	2	IS 808:1989	FE410W-IS 2062	3.655
2	-	VERTICAL COLUMN RH ASSEMBLY	1	ASSEMBLY	-	60.648
1	-	VERTICAL COLUMN LH ASSEMBLY	1	ASSEMBLY	-	60.648

Corrosion Protection: Hot dip galvan. acc. DIN EN ISO 1461

All Welding Processes acc. to 135 ISO 4063 & ISO 05817

General Tolerances Acc: EN ISO 13920 - 3  
Hole Spacing Tolerances Acc: ISO 2768 - m  
Tolerances Cover Evenness: 2 mm  
Please refer tightening moments for the screws in Nm  
Moments for 10.9 and 8.8 acc. to DIN 18800 part 7. Moments for screws 4.6 and 5.6 are max approximate values and not a component of the DIN 18800

Material: FE410W-IS 2062

Scale: 1:20

Total Weight (kg): 202.761

Project Name: OCU STRUCTURE

**SIEMENS**

Index	Revision	Remark	Date	Name
01	Weld/Anchor bolt note updated		19.11.24	STJ
-	-		00.00.00	-
-	-		00.00.00	-
-	-		00.00.00	-
-	-		00.00.00	-
Drawn:			11.08.23	MAV
Edits:			00.00.00	-
Technical Proved:			11.08.23	GMK
Welding Practice Approved:			00.00.00	-

Drawing Name: OCU BOX SUPPORT

Drawing Number: C1B1124001106

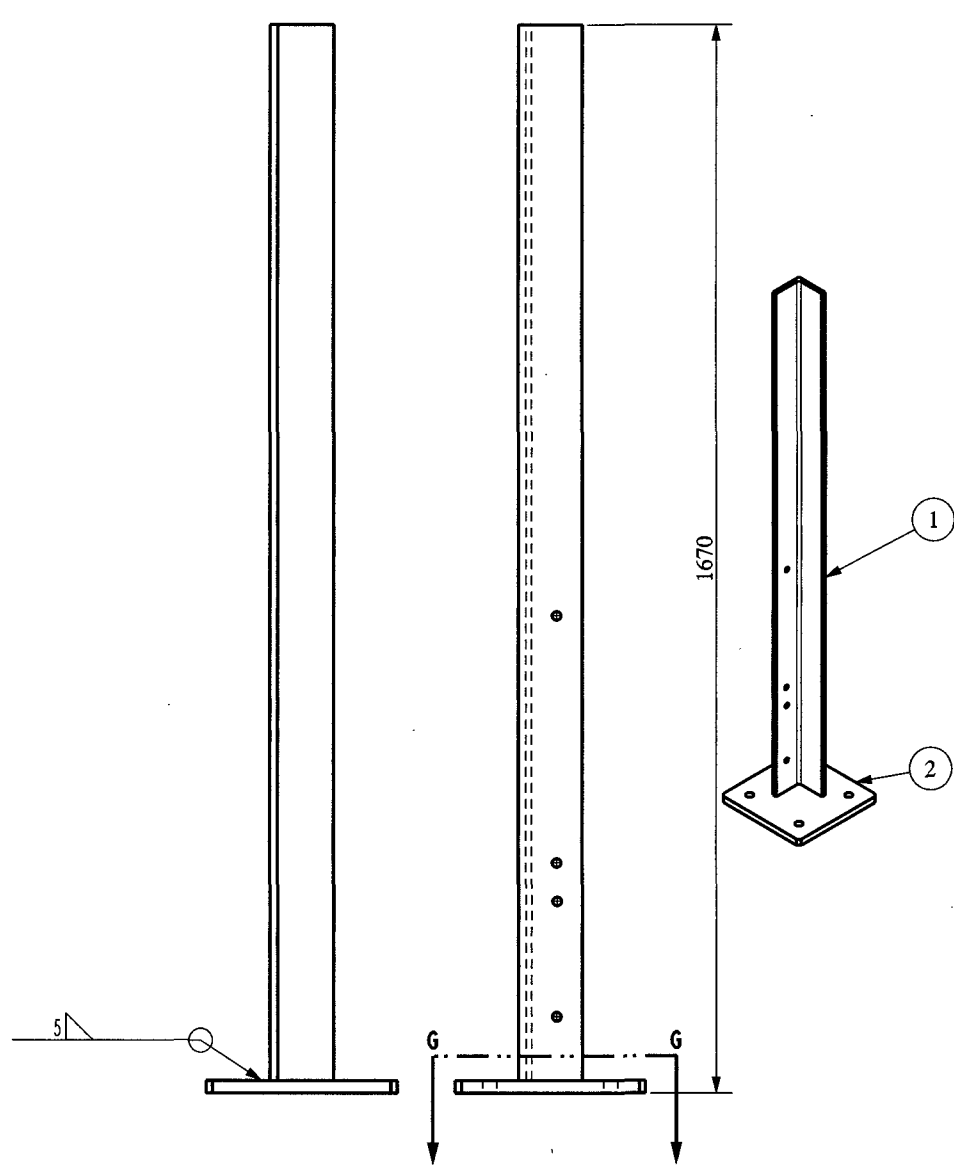
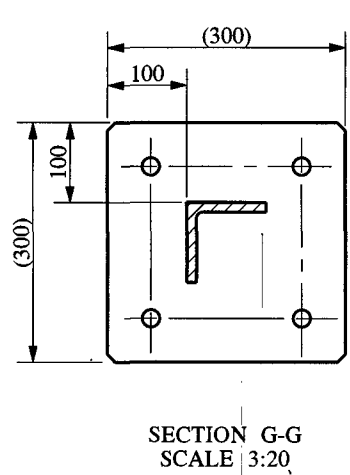
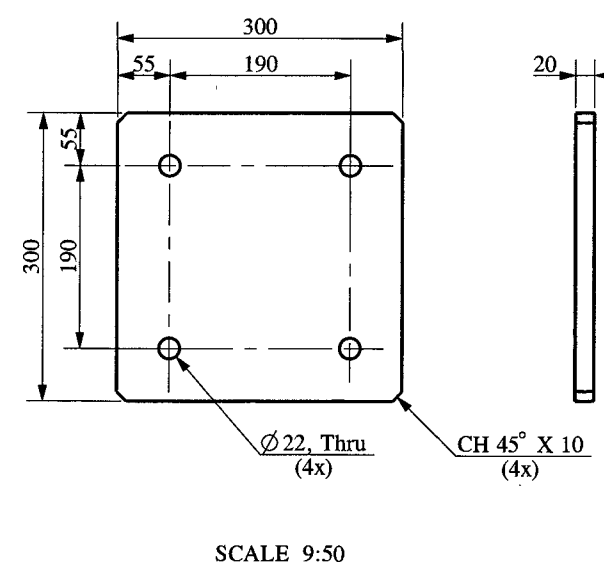
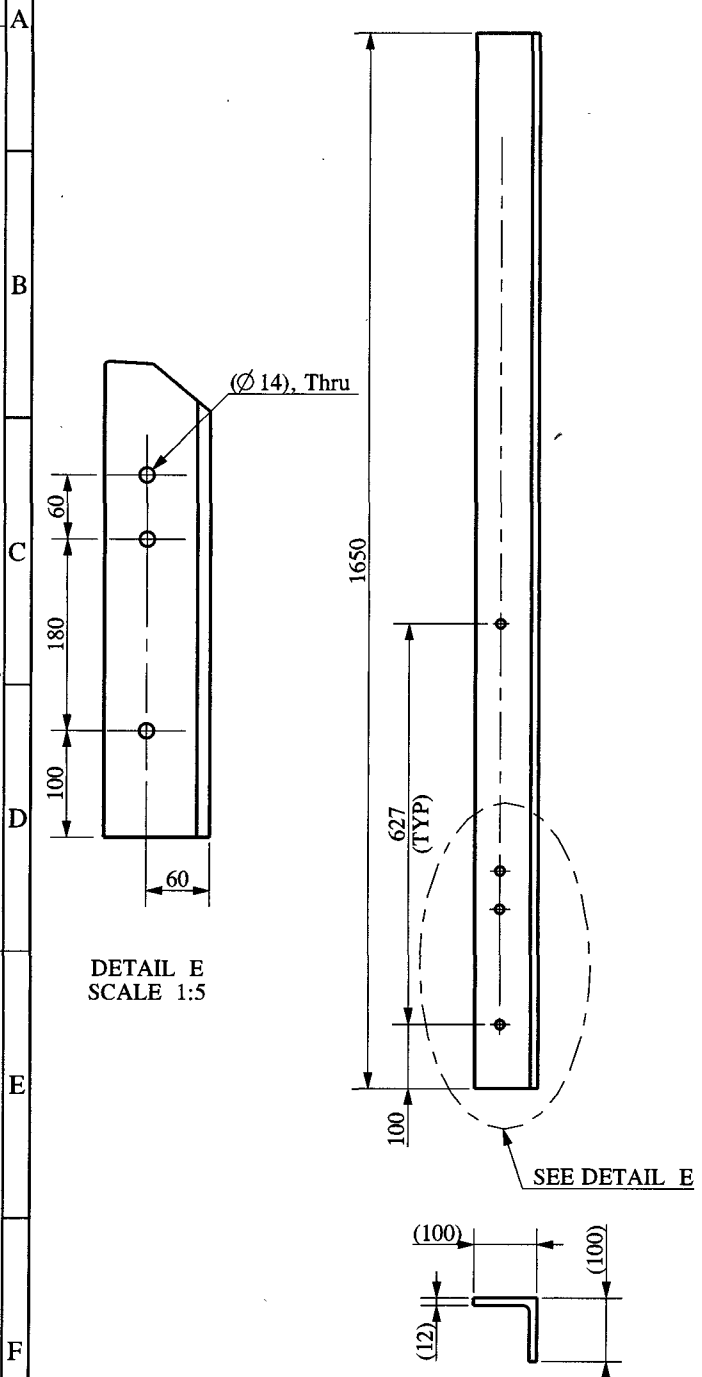
Rev: 01

Sheet: 1 of 3

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Part No.-1- "L" 100 X 100 X 12 , L= 1650

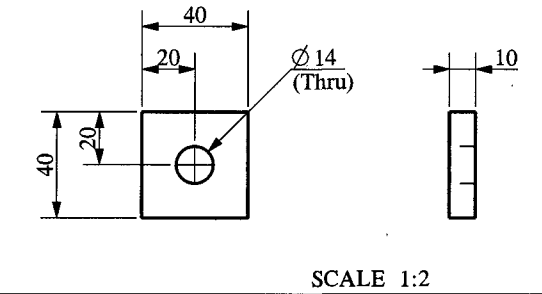
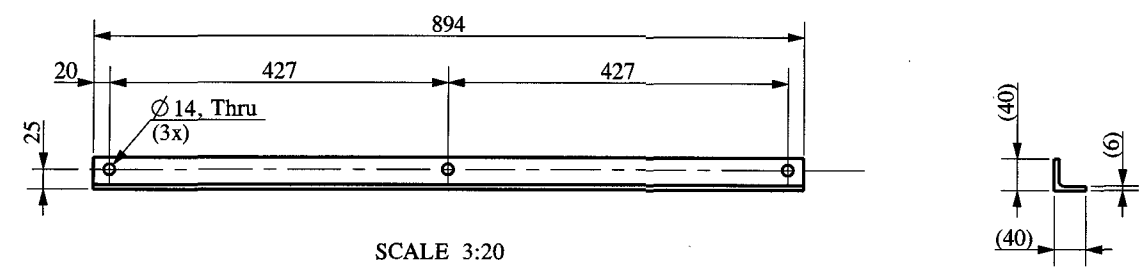
VERTICAL COLUMN LH ASSEMBLY



MAIN ASSEMBLY CHILD PART

Part No.-5- "L" 40 x 40 x 6 , L= 894

Part No.-6- SPACER



VERTICAL COLUMN LH ASSEMBLY

Part No.	Drawing No.	Description	Quantity	Remark	Material	Weight (kg)
2	-	FOOT PLATE	1	PART	FE410W-IS 2062	13.819
1	-	"L" 100 X 100 X 12 , L= 1650	1	IS 808:1989	FE410W-IS 2062	40.366

Corrosion Protection: Hot dip galvan. acc. DIN EN ISO 1461

All Welding Processes acc. to 135 ISO 4063 & ISO 5817

General Tolerances Acc: EN ISO 13920 - B    Hole Spacing Tolerances Acc: ISO 2768-m    Tolerances Cover Evenness: 2 mm

Please refer tightening moments for the screws in Nm  
Moments for 10.9 and 8.8 acc. to DIN 18800 part 7. Moments for screws 4.6 and 5.6 are max. approximate values and not a component of the DIN 18800.

Material: FE410W-IS 2062

Scale: 1:10    Total Weight (kg): 202.761    Project Name: OCU STRUCTURE

**SIEMENS**

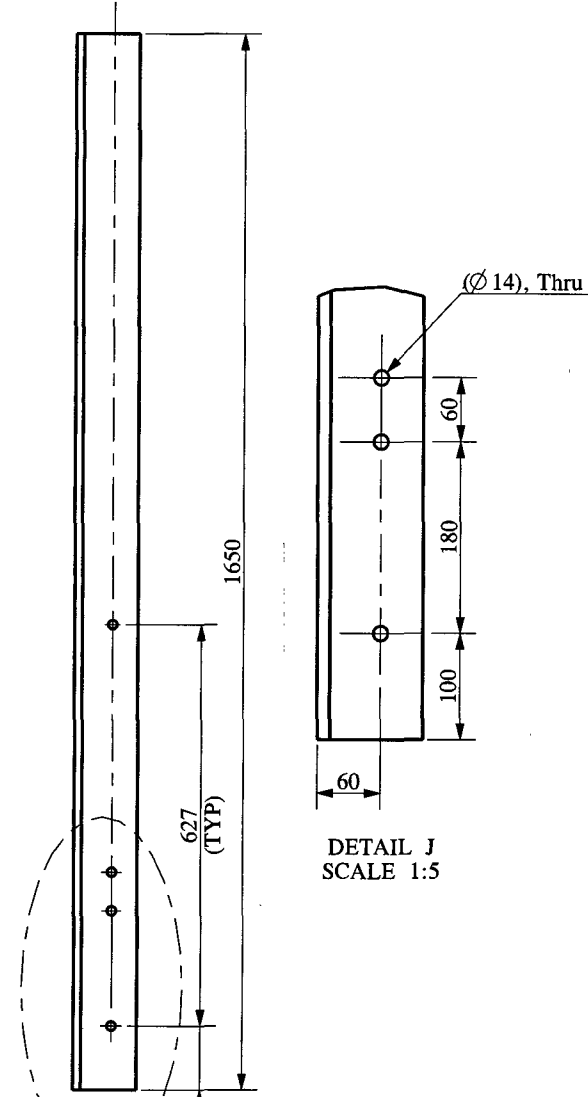
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Index	Revision Remark	Date	Name	Drawing Name:
01	Weld/Anchor bolt note updated	19.11.24	STJ	OCU BOX SUPPORT
-	-	00.00.00	-	
-	-	00.00.00	-	
-	-	00.00.00	-	
Drawn: 11.08.23 MAV Edits: 00.00.00 - Technical Proved: 11.08.23 GMK Welding Practice Approved: 00.00.00 -				Drawing Number: C1B1124001106 Rev: 01 Sheet: 2 of 3

Part No.-1- "L" 100 X 100 X 12 , L= 1650

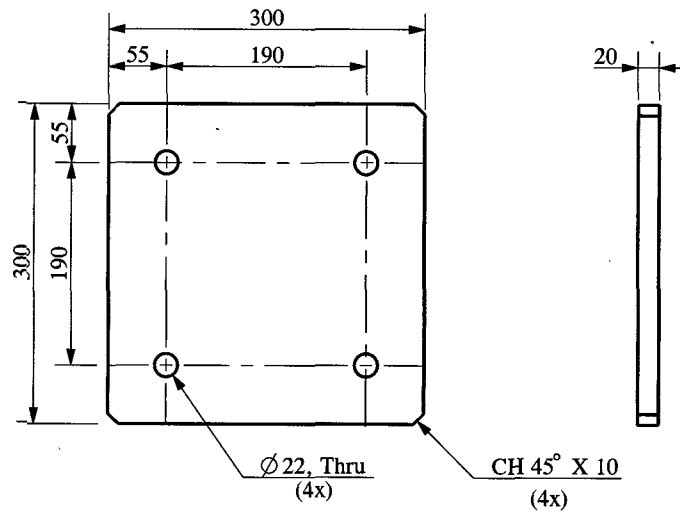
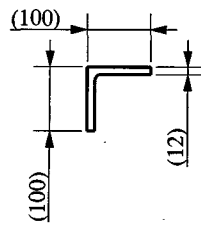
Part No.-2- FOOT PLATE

VERTICAL COLUMN RH ASSEMBLY



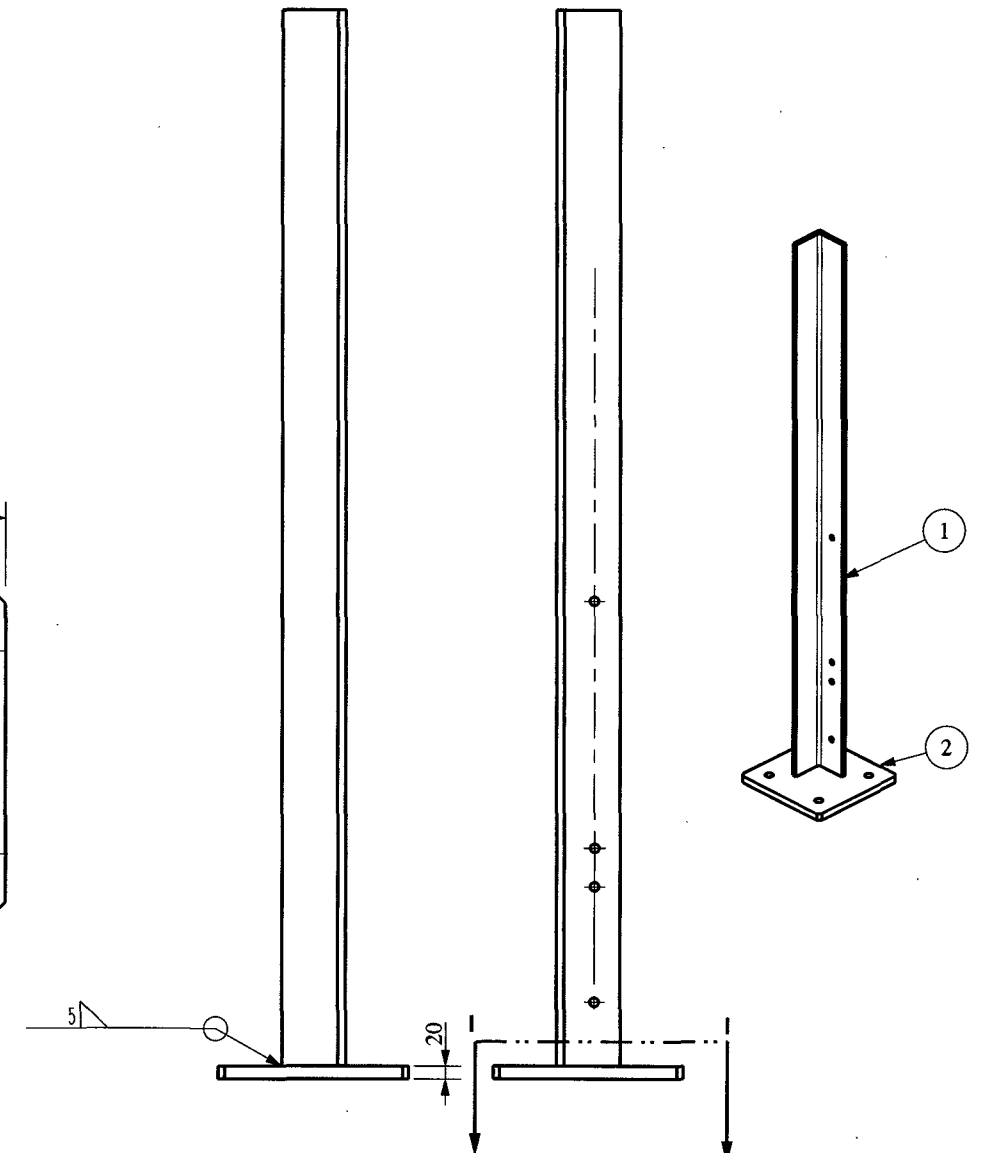
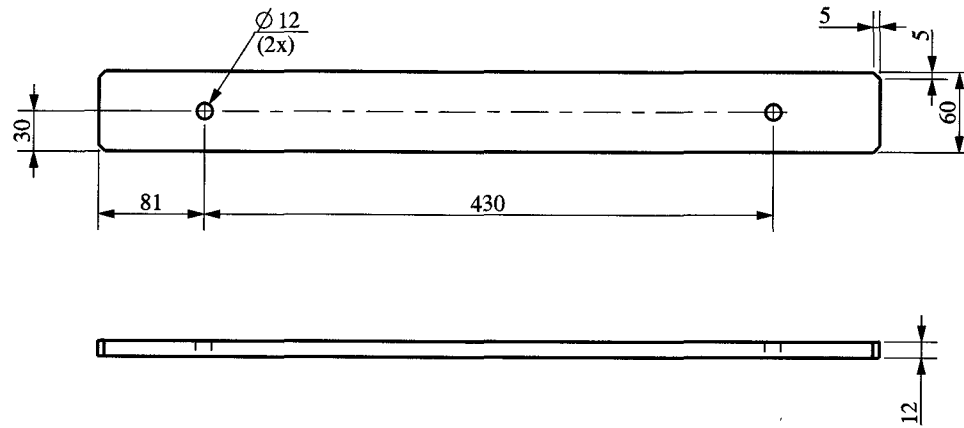
DETAIL J  
SCALE 1:5

SEE DETAIL J



SECTION I-I  
SCALE 1:5

Part No.-8-



VERTICAL COLUMN RH ASSEMBLY

2	-	FOOT PLATE	1	PART	FE410W-IS 2062	13.819
1	-	"L" 100 X 100 X 12 , L= 1650	1	IS 808:1989	FE410W-IS 2062	40.366
Part No.	Drawing No.	Description	Quantity	Remark	Material	Weight (kg)

Corrosion Protection: Hot dip galvan. acc. DIN EN ISO 1461

All Welding Processes acc. to 135 ISO 4063 & ISO 05817

General Tolerances Acc EN ISO 13920 - 3	Hole Spacing Tolerances Acc: ISO 2768 - m	Tolerances Cover Evenness: 2 mm	Please refer tightening moments for the screws in Nm Moments for 10.9 and 8.8 acc. to DIN 18800 part 7. Moments for screws 4.6 and 5.6 are max. approximate values and not a component of the DIN 18800.
--	--	------------------------------------	--

	Material: FE410W-IS 2062	<b>SIEMENS</b>
Scale: 1:10	Total Weight (kg): 202.761	Project Name: OCU STRUCTURE

Index	Revision	Remark	Date	Name	Drawing Name:
01	-	Weld/Anchor bolt note updated	19.11.24	STJ	OCU BOX SUPPORT
-	-	-	00.00.00	-	
-	-	-	00.00.00	-	
-	-	-	00.00.00	-	
Drawn:	Date	Name	Drawing Number:		
Edits:	11.08.23	MAV	C1B1124001106		
Technical Proved:	11.08.23	GMK	Rev: 01		
Welding Practice Approved:	00.00.00	-	Sheet: 3 of 3		

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Sent to Factory

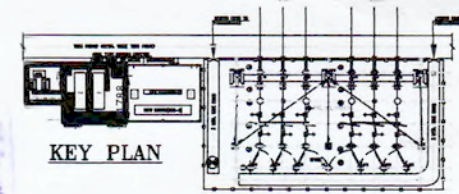
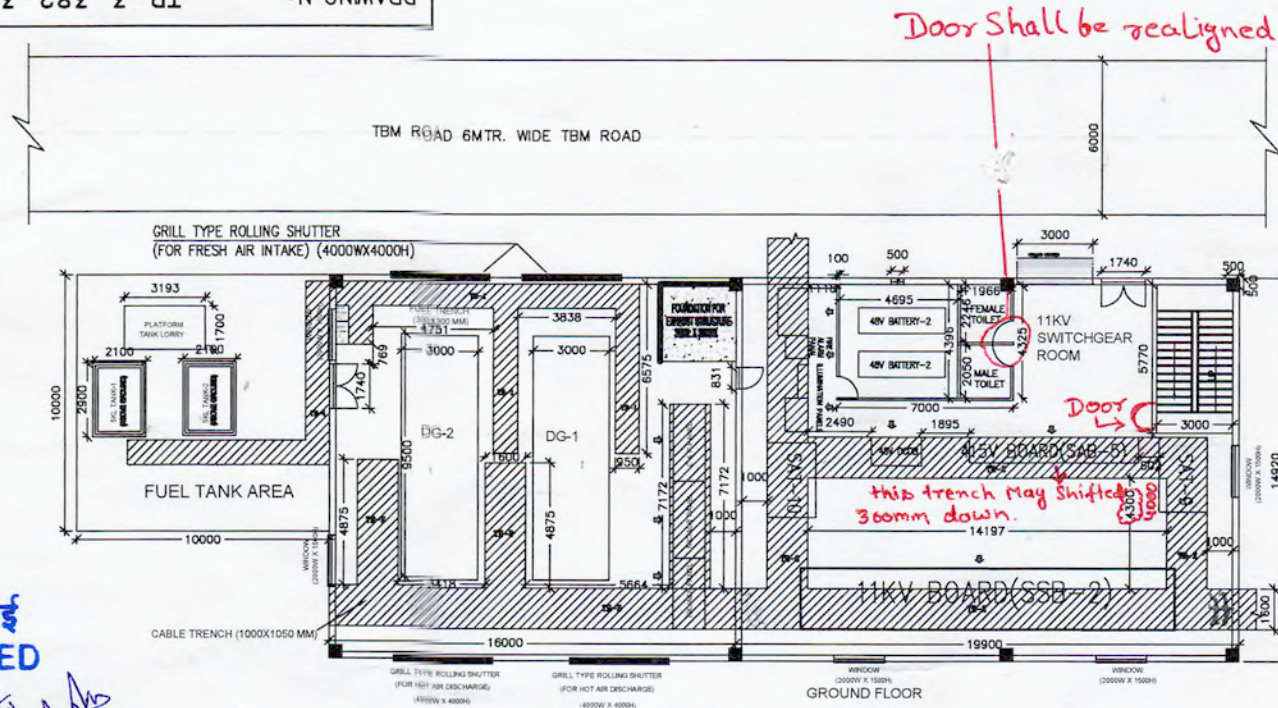
Job #

Qty Req'd:

Rev: 01

Sheet: 3 of 3

DRAWING No. TB-3-382-316-002A



Approval of this drawing/document does not absolve contractor of its responsibility of manufacturing of the equipment as per ER & GTP for the achievement of designed performance at site and completeness of the equipment.

PANEL/BOARDS DETAILS  
VISHNUGAD PIPALKOTI PROJECT

Designation	QTY	ACTUAL			Total			CUTOUT (mm)		
		W	D	H	Width	W	D	W	D	
<b>A. 11kV switchgear Panel Room ( Location: Pothead Yard)</b>										
<b>1. Control Room (First Floor)</b>										
AEMS PANEL	Bay-201, Bay-202	CAR41	1	No	800	800	2465	800		
PLCC PANEL	Bay-201, Bay-202	ANALOG PLCC	2	No	690	500	1900	1380		
	Bay-201, Bay-202	DPC PANEL	1	No	800	600	1800	800		
COMMUNICATION EQUIPMENT/ FOTE	Bay-201, Bay-202	FOTE	1	No	600	800	2200	600		
		FCDP	1	No	400	400	1100	400		
<b>2. Battery Room (Ground Floor)</b>										
48V BATTERY BANK			2	No	2000	950	1500	4000		
<b>B. 11kV switchgear Panel Room ( Location: Pothead Yard)</b>										
<b>1. 11kV Switchgear Room (Ground Floor)</b>										
11kV BOARD (SSB-2)			1	No	14790	2400	2000	14790		
415V BOARD (SAB-5)			1	No	6700	1000	2400	6700		
SAT-9			1	No	2900	1910	2500	2900		
SAT-10			1	No	2900	1910	2500	2900		
48V DCDB			1	No	2000	1100	2450	2000		
48V BATTERY CHARGER			2	No	750	850	1800	1500		
ILLUMINATION PANEL			1	No	1300	400	2275	1300		
FIRE ALARM PANEL			1	No	900	900	2200	900		

DETAILS OF COMPUTER FURNITURE & CONTROL DESK

Sl. No.	DESCRIPTION	QUANTITY/UNIT NO.	DIMENSION (MM) (W*H*D)	LOCATION
1.	AEMS PANEL	01 NO	800 x 800 x 2465	GIS FLOOR (EL. 1046.5)
2.	COMPUTER TABLE	01 NO	1500 X 735 X 750	CONTROL ROOM (EL. 1041.50)
3.	PRINTER TABLE	01 NO	900 X 740 X 650	CONTROL ROOM (EL. 1041.50)
4.	CHAIR	01 NO		CONTROL ROOM (EL. 1041.50)

NOTES FOR THE DG ROOM:-

- THIS IS A TYPICAL DRAWING. DIMENSIONS, SPACE, LAYOUT ARRANGEMENT & REQUIREMENT SHOWN IN THIS DRAWING ARE TENTATIVE.
- FINAL DETAILS/DIMENSIONS/REQUIREMENT SHALL BE FURNISHED DURING DETAILED ENGINEERING AFTER PLACEMENT OF P.O. BY BHEL ON THE SUB-VENDOR.
- A CLEAR AREA/ SPACE OF DIMENSION 10M x 10M IS TO BE LEFT FOR FUEL TANK & LORRY PLATFORM.
- DG ROOM HEIGHT SHALL BE APPROX. 10 METERS.
- FOUNDATION SUITABLE FOR APPROX. 15-20 TONNES OF POINTED LOAD OF EXHAUST TOWER STRUCTURE SHALL BE IN THDCIL SCOPE.
- A GILLED WINDOW SIZE 4MX4M SHALL BE PROVIDED AT A HEIGHT OF 5M FROM THE BOTTOM OF THE FLOOR FOR THE FRESH AIR LOUVERS OF THE DG SET. *Above Grill type rolling shutter.*
- GROUNDING OF THE COMPLETE BUILDING AND DG FUEL TANK SHALL BE SHOWN/NOTED IN THE LAYOUT
- LIGHTING ARRESTER OF THE DG FUEL TANK AND BUILDING SHALL BE SHOWN/NOTED IN THE LAYOUT.

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COMPUTER DRG. PATH NAME :

SIGN. & DATE REF. DRG. No.

INVENTORY No.

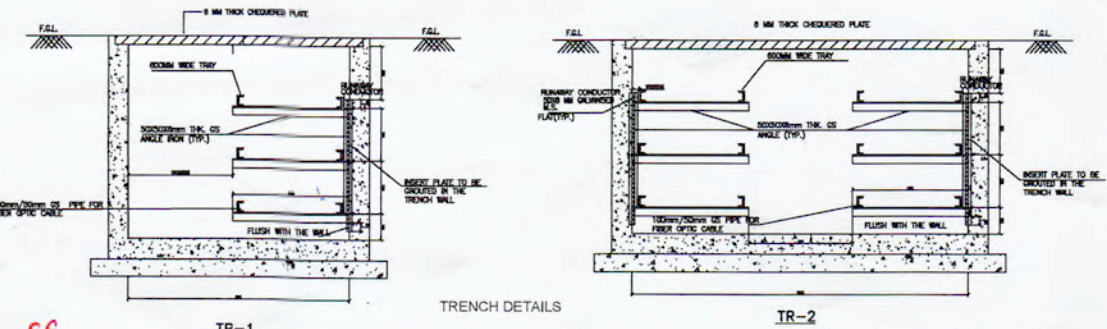
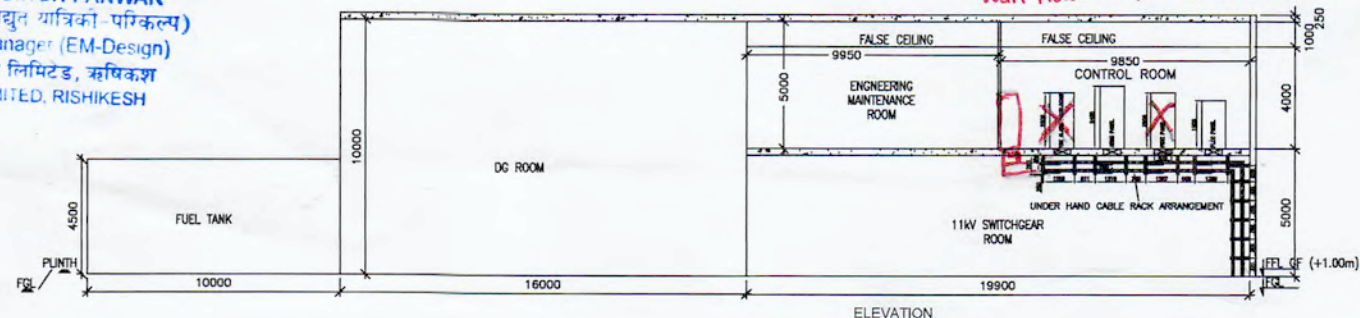
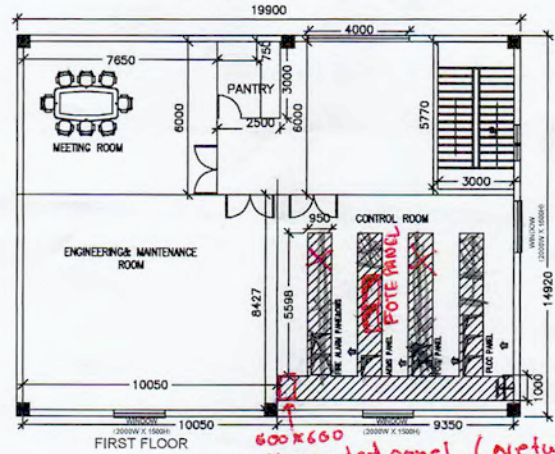
**जाँची गई  
CHECKED**

*01/09/2025*  
**संस्तुत  
RECOMMENDED**

**शैलेन्द्र सिंह पंवार  
SHAILENDRA SINGH PANWAR**  
अपर महाप्रबंधक (विद्युत यांत्रिकी-परिकल्प)  
Addl. General Manager (EM-Design)  
टीएचडीसी इंडिया लिमिटेड, रुषिकेश  
THDC INDIA LIMITED, RISHIKESH

**ACCEPTED AS INFORMATION AS NOTED  
यथा टिप्पणी सूचनार्थ हेतु स्वीकृत**

**आर. आर. सेमवाल  
R. R. Semwal**  
मुख्य महाप्रबंधक (विद्युत-परिकल्प)  
CGM (EM-Design)  
टीएचडीसी इंडिया लिमिटेड, रुषिकेश  
THDC INDIA Ltd., Rishikesh

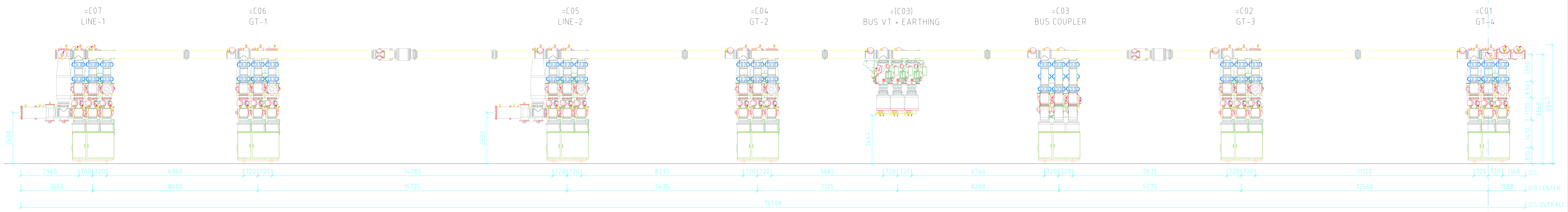


**NOTE: (1) OWS system shall be installed on the ground floor, in close proximity to fire Alarm Panel (FAP).**

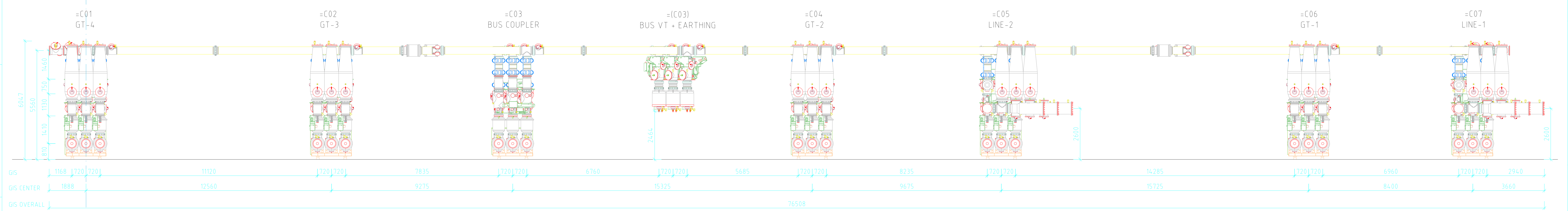
ADDITIONAL INFORMATION W.O.No.		ADDITIONAL INFORMATION W.O.No.		ग्राहक/परियोजना का नाम THDC INDIA LTD.				
STATUS OF DRAWING		STATUS OF DRAWING		NAME OF CUSTOMER/PROJECT 4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT				
DISTRIBUTION OF PRINTS		DISTRIBUTION OF PRINTS		भारत हेवी इलेक्ट्रिकल्स लिमिटेड पारंपरिक व्यापार समूह BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP				
REV. 02	DATE 23.08.25	ALTERED CHECKED APPROVED	BY DKS VK	REV. 01	DATE 07.08.25	ALTERED CHECKED APPROVED	BY DKS VK	डी.एम. TBEM DEPT. कोड 382 अनुपात / SCALE कार्ड कोड CARD CODE
ZONE Drawing revised as per customer comments.		ZONE Drawing revised as per customer comments.		शीर्षक/TITLE CONCEPTUAL LAYOUT FOR 11kV SWITCHGEAR ROOM ड्राइंग. नं./DRAWING NO. TB-3-382-316-002A पृष्ठ नं./SHEET No.				

# 400kV GIS SECTION LAYOUT

BUSBAR VIEW : SECTION (X-X)  
(SCALE 1:70)



REAR VIEW : SECTION (Y-Y)  
(SCALE 1:70)



Note:

- Please refer to document no. PE-V0-413-501-A105-3 for detailed information on crane accessibility, dead space, and crane coverage.
- Structure location and foundation details shall be furnished in the civil drawing.
- Earthing details shall be furnished in the earthing drawing separately.
- Structure, Walkway Drawings & ladder details shall be furnished separately.
- SF6 gas quantity shall be shared separately.
- Each gas compartment is equipped with static filter, filling valve with NRV, density switches, safety diaphragm rupture disc.
- Location of PD sensors are tentative and will be finalized after finalization of GIS layout.

Reference Drawing		
1	11-2154-08-381-REV-03	TRANSFORMER FLOOR PLAN LAYOUT
2	11-2154-08-382-REV-03	GIS FLOOR PLAN LAYOUT
3	11-2154-08-385-REV-03	GIS & TRAFD. BUILD SECTION LAYOUT
4	TB-382-316-35-01-REV-01	400KV GIS SINGLE LINE DIAGRAM
5	PE-V0-413-501-A105-3	GENERAL ARRANGEMENT FOR EOT CRANE

DO NOT SCALE WORKING DIMENSIONS

GIS MANUFACTURER SIEMENS LTD. AURANGABAD DRAWING NO. : (0)-G71770-AC750-V023-00-01		ADDITIONAL INFORMATION	PROJECT	4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT	
		STATUS OF DRAWING	CUSTOMER	THDC INDIA LTD.	
		DISTRIBUTION OF PRINTS	SUBSTATION	400KV GIS SUBSTATION AT VISHNUGAD PIPALKOTI	
		DRN	NAME	SIGN	DATE
	KG		21.06.24		
	GS		21.06.24		
	GQ		21.06.24		
CONTRACTOR		BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP			
DESIGNED BY	UNTOLD.DIMS. GR.	ANGLE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.
01	TBEM		NOTED	-	-
DRN NO.	316				
SUB-SUPPLIER/VENDOR			ITEM NO. NO. OF ITEM		
			-		
TITLE			DRAWING NO.		
GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)			TB-382-316-35-02		
			REV. 02		
SHT. No. 1			NO. OF SHT. 1 OF 5		

REV.	DATE	ALTERED	REV.	DATE	ALTERED
02	19.07.24	CHECKED APPROVED	01	12.07.24	CHECKED APPROVED
02	19.07.24	CHECKED APPROVED	01	12.07.24	CHECKED APPROVED
ZONE			ZONE		AS PER CUSTOMER MEETING HELD AT THDC
ZONE			ZONE		AS PER CUSTOMER COMMENTS
ZONE			ZONE		AS PER CUSTOMER TENDER DRAWINGS.

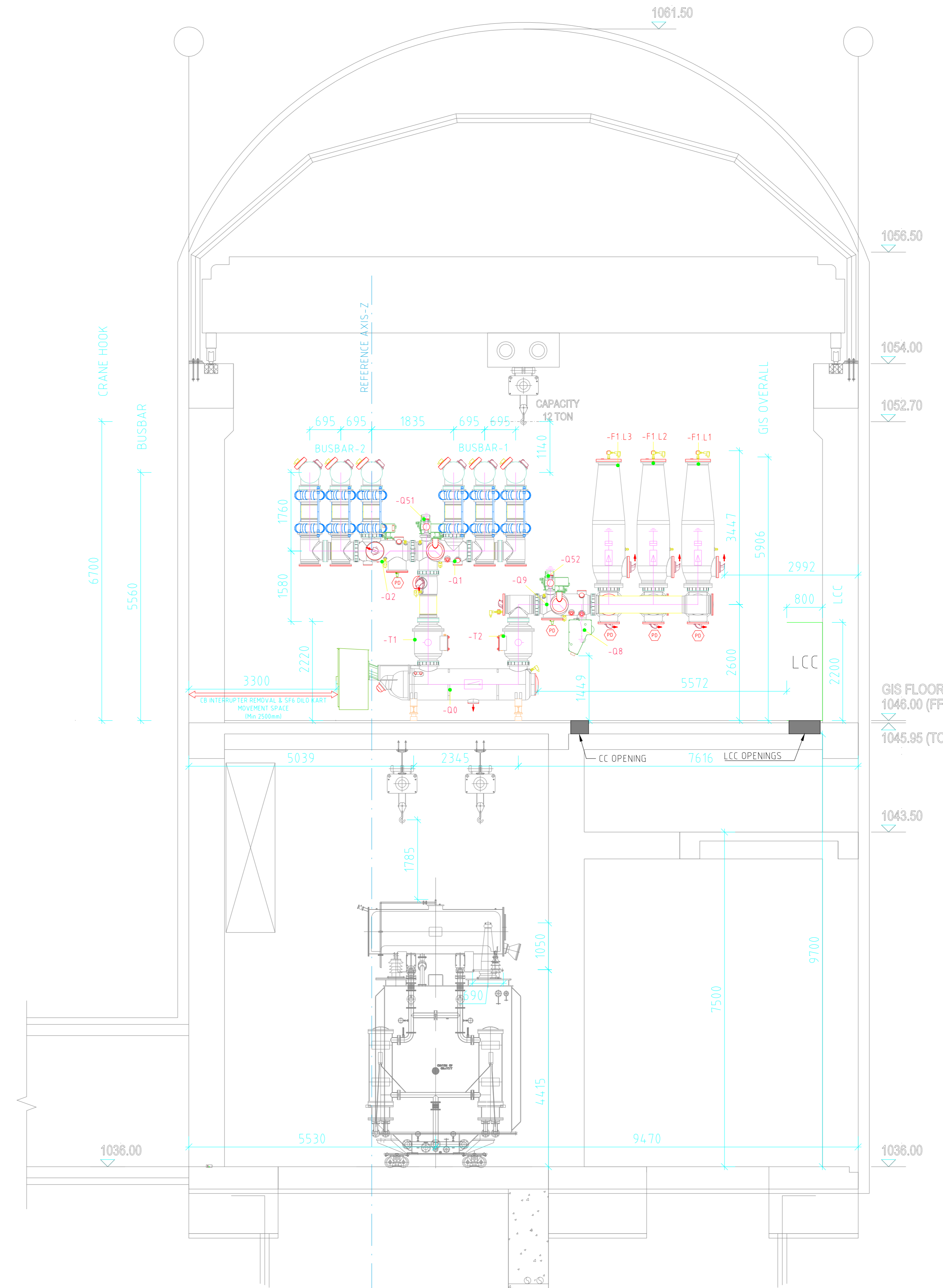
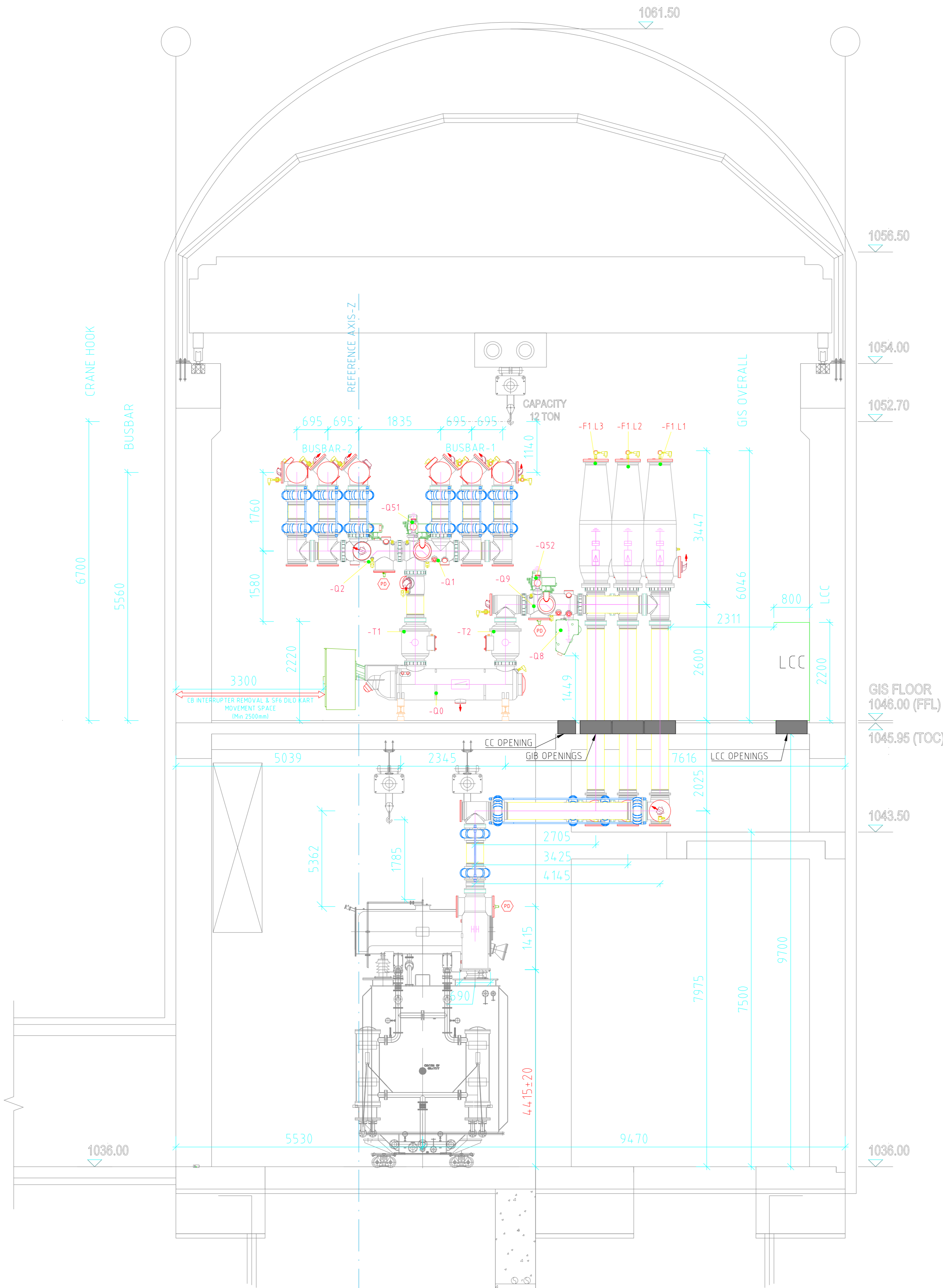
# 400kV GIS SECTION LAYOUT

SECTION VIEW (A-A)  
=C01 GENERATOR TRANSFORMER#4 BAY  
ALSO APPLICABLE FOR =C02 =C04 & =C06 BAY  
(SCALE 1:60)

SECTION VIEW (D-D)  
=C05 LINE#2 BAY  
ALSO APPLICABLE FOR =C07 BAY  
(SCALE 1:60)

### Legend

Equipment	Legend
Circuit breaker with CSDI	-00
Circuit breaker without CSDI	-00
Disconnecter	-01 -02 -09
WIP Earthing switch (non-insulated)	-052
WIP Earthing switch (insulated)	-051
High speed earth switch (insulated)	-08
Current transformer	-F1 -F2
Surge Arrester	-F1
Transformer termination module	-Z1
Cable termination module	-Z2



- Note:
- Please refer to document no. PE-V0-413-501-A105-3 for detailed information on crane accessibility, dead space, and crane coverage.
  - Structure location and foundation details shall be furnished in the civil drawing.
  - Earthing details shall be furnished in the earthing drawing separately.
  - Structure, Walkway Drawings & ladder details shall be furnished separately.
  - SF6 gas quantity shall be shared separately.
  - Each gas compartment is equipped with static filter, filling valve with NRV, density switches, safety diaphragm rupture disc.
  - Location of PD sensors are tentative and will be finalized after finalization of GIS layout.

Reference Drawing	
1	TS-215-DR-382-REV-03 TRANSFORMER FLOOR PLAN LAYOUT
2	TS-215-DR-382-REV-03 GIS FLOOR PLAN LAYOUT
3	TS-215-DR-382-REV-03 GIS & TRAFID BUILD SECTION LAYOUT
4	TB-382-316-35-01-REV-01 400KV GIS SINGLE LINE DIAGRAM
5	PE-V0-413-501-A105-3 GENERAL ARRANGEMENT FOR EOT CRANE

DO NOT SCALE WORKING DIMENSIONS

GIS BAY	3300	799	1265	2020	1581	720	720	4151
BUSBAR	2709	695	695	1265	695	695	7676	
GIS OVERALL	2061	2038	570	7348	3552			
LCC	4099			9301	800	800		
BUILDING OVERALL	4099			10901				
GIB, CONTROL CABLE & LCC OPENING	4099		4460	700	700	700	2251	700
				400	100	20	20	

GIS BAY	3300	799	1265	2020	1581	1000	1000	3591
BUSBAR	2709	695	695	1835	695	695	7676	
GIS OVERALL	2371	1729		7909	2992			
LCC	4099			9301	800	800		
BUILDING OVERALL	4099			10901				
CONTROL CABLE & LCC OPENING	4099		4460	700	700	700	2251	700
				400	100	20	20	

GIS MANUFACTURER SIEMENS LTD. AURANGABAD  
DRAWING NO. (0)-G71770-AC750-V023-00-02

**SIEMENS**  
Energy Sector

ADDITIONAL INFORMATION

STATUS OF DRAWING

DISTRIBUTION OF PRINTS

DRN	NAME	SIGN	DATE	NO. OF VAR
KG			21.06.24	
GS			21.06.24	
GO			21.06.24	

SUB-SUPPLIER/VENDOR

PROJECT

4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT

CUSTOMER

THDC INDIA LTD.

SUBSTATION

400KV GIS SUBSTATION AT VISHNUGAD PIPALKOTI

CONTRACTOR

BHARAT HEAVY ELECTRICALS LTD.

TRANSMISSION BUSINESS GROUP

DESIGNED BY

UNTOLD.DIMS. GR.

ANGLE

SCALE

WEIGHT (KG)

REF. TO ASSY. DRG.

ITEM NO. NO. OF ITEM

316

NOTED

-

-

-

-

-

TITLE  
GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)

DRAWING NO.

TB-382-316-35-02

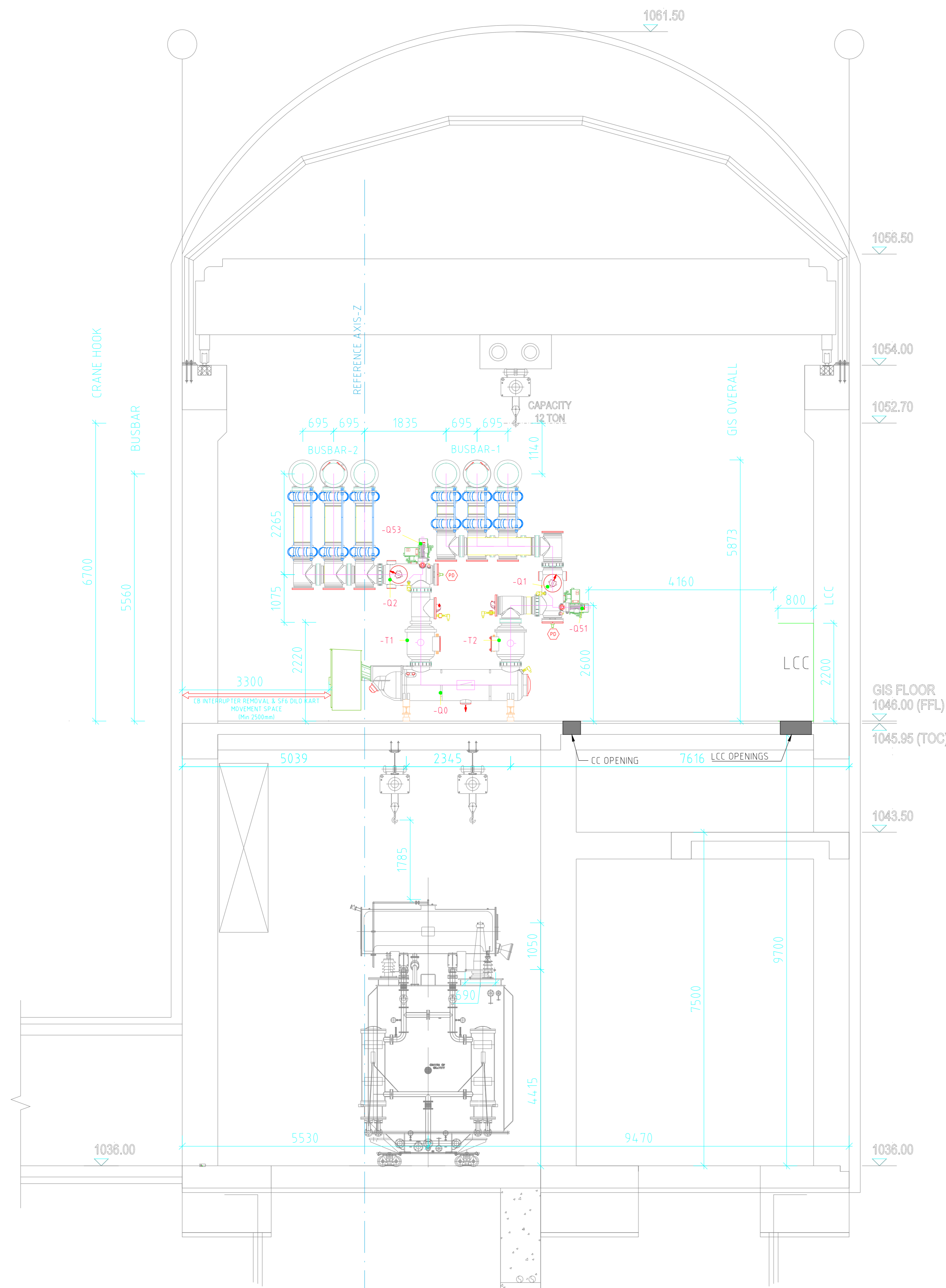
REV. 02

SHT. No. 2 NO. OF SHT. 2 OF 5

REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED	KG GS GO
			02	19.07.24		01	12.07.24		
ZONE			ZONE			ZONE			AS PER CUSTOMER TENDER DRAWINGS.
			ZONE			ZONE			AS PER CUSTOMER MEETING HELD AT THDC
			ZONE			ZONE			AS PER CUSTOMER COMMENTS

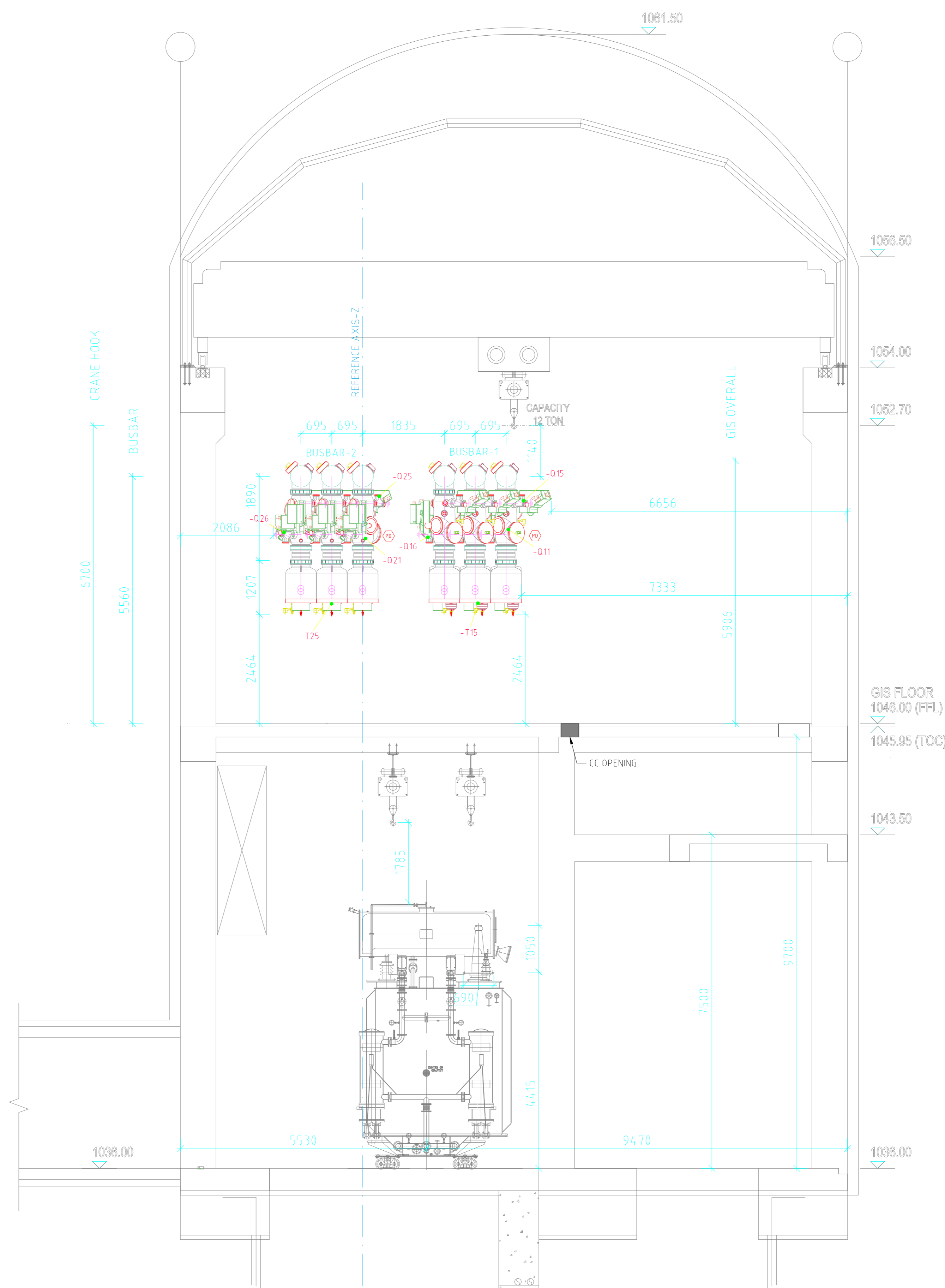
# 400kV GIS SECTION LAYOUT

SECTION VIEW (B-B)  
=C03 BUS COUPLER# BAY  
(SCALE 1:60)



GIS BAY	3300	799	1265	2020	1756	5860
BUSBAR	2709	695	695	1835	695	7676
GIS OVERALL	3300	799	3729	1312	5860	
LCC	4099			9301	800	800
BUILDING OVERALL	4099			10901		
CONTROL CABLE & LCC OPENING	4099		4460	400	4490	700
					850	

SECTION VIEW (C-C)  
=(C03) BUS VT+ EARTHING# BAY  
(SCALE 1:60)



GIS BAY	2086	2013	4245	6656				
BUSBAR	2709	695	695	1265	570	695	695	7676
GIS OVERALL	2086		6258	6656				
BUILDING OVERALL	4099			10901				
CONTROL CABLE OPENING	4099		4460	400	6040			

Equipment	Legend
Circuit breaker (without CSD)	-00
Disconnecter	-01 -02 -091 -021
WP Earthing switch (non-insulated)	-024 -025
WP Earthing switch (insulated)	-051 -053
High speed earth switch (non-insulated)	-015 -025
Current transformer	-111 -12
Voltage transformer	-115 -125

- Note:
- Please refer to document no. PE-V0-413-501-A105-3 for detailed information on crane accessibility, dead space, and crane coverage.
  - Structure location and foundation details shall be furnished in the civil drawing.
  - Earthing details shall be furnished in the earthing drawing separately.
  - Structure, Walkway Drawings & ladder details shall be furnished separately.
  - SF6 gas quantity shall be shared separately.
  - Each gas compartment is equipped with static filter, filling valve with NRV, density switches, safety diaphragm rupture disc.
  - Location of PD sensors are tentative and will be finalized after finalization of GIS layout.

Reference Drawing	
1	15-2154-DR-382-REV-03 TRANSFORMER FLOOR PLAN LAYOUT
2	15-2154-DR-382-REV-03 GIS FLOOR PLAN LAYOUT
3	15-2154-DR-382-REV-03 GIS & TRAFD BUILD SECTION LAYOUT
4	15-382-316-35-01-REV-01 400KV GIS SINGLE LINE DIAGRAM
5	PE-V0-413-501-A105-3 GENERAL ARRANGEMENT FOR EOT CRANE

DO NOT SCALE WORKING DIMENSIONS

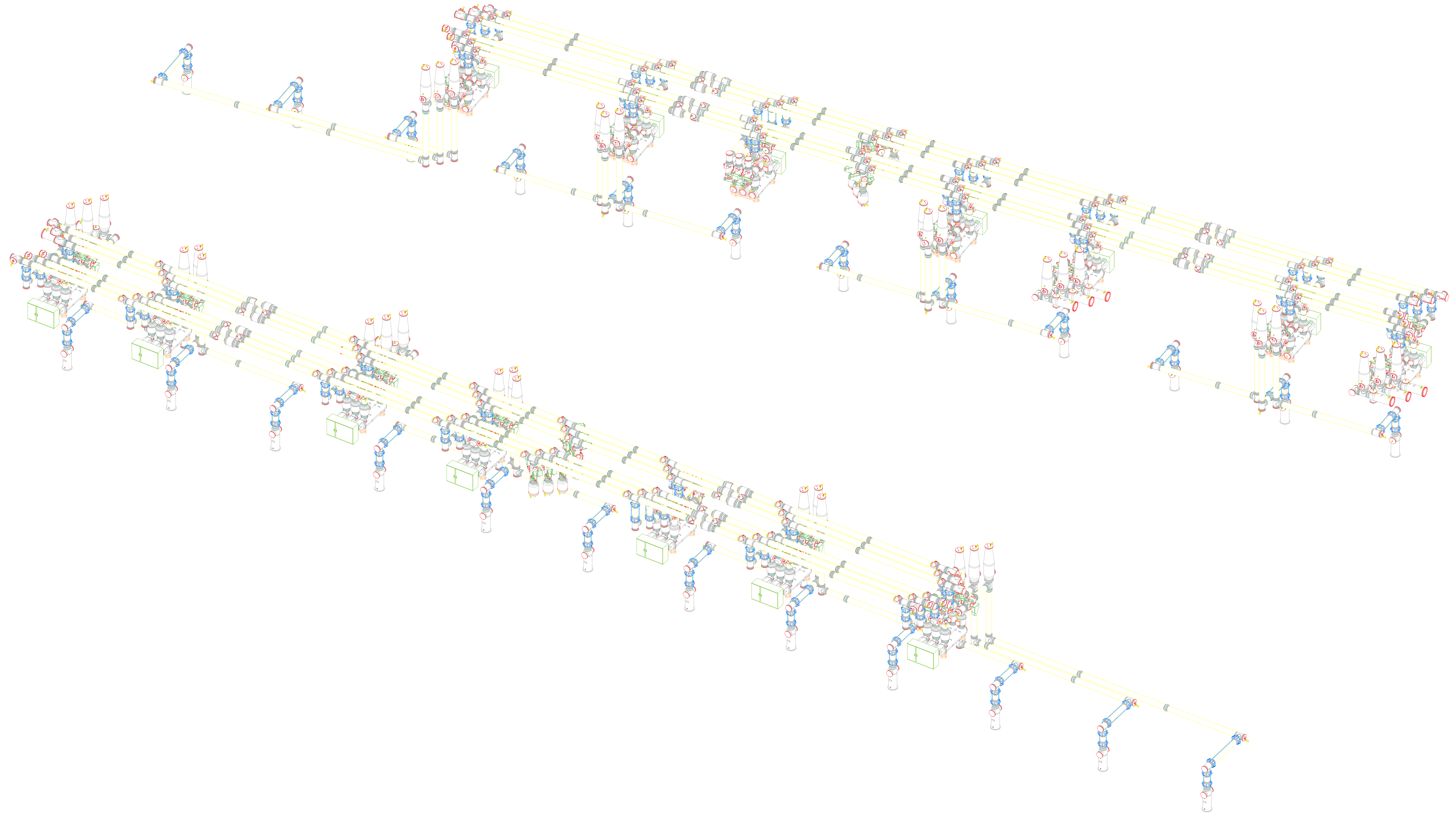
GIS MANUFACTURER SIEMENS LTD. AURANGABAD DRAWING NO. (0)-G71770-AC750-V023-00-03		ADDITIONAL INFORMATION	PROJECT	4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT	
		STATUS OF DRAWING	CUSTOMER	THDC INDIA LTD.	
		DISTRIBUTION OF PRINTS	SUBSTATION	400KV GIS SUBSTATION AT VISHNUGAD PIPALKOTI	
		DRN	NAME	SIGN	DATE
		KG			21.06.24
		CHD	GS		21.06.24
		APPD	GO		21.06.24
		SUB-SUPPLIER/VENDOR			
CONTRACTOR			BHARAT HEAVY ELECTRICALS LTD.		
		TRANSMISSION BUSINESS GROUP			
DESIGNED BY	UNTOLD.DIMS. GR.	ANGLE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.
DRN#	TBEM		NOTED	-	-
DRN#	316				
TITLE		DRAWING NO.		REV.	
GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)		TB-382-316-35-02		02	
		SHT. No. 3		NO. OF SHT. 3 OF 5	

REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED
02	19.07.24		01	12.07.24		00	21.06.24		00	21.06.24	
ZONE			ZONE			ZONE			ZONE		
				AS PER CUSTOMER MEETING HELD AT THDC						AS PER CUSTOMER COMMENTS	
										AS PER CUSTOMER TENDER DRAWINGS.	

COMPUTER DRG. PATH NAME :  
 REF. DRG. No.  
 SIGN. & DATE  
 INVENTORY No.

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# 400kV GIS ISOMETRIC VIEW



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COMPUTER DIRC. PATH NAME :  
REF. DRG. No.  
SIGN. & DATE  
INVENTORY No.

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		CHECKED			CHECKED	02	19.07.24	CHECKED	01	12.07.24	CHECKED
		APPROVED			APPROVED			APPROVED			APPROVED
ZONE			ZONE			ZONE	AS PER CUSTOMER MEETING HELD AT THDC		ZONE		AS PER CUSTOMER COMMENTS

GIS MANUFACTURER:SIEMENS LTD. AURANGABAD  
DRAWING NO. : (0)-G71770-AC750-V023-00-04



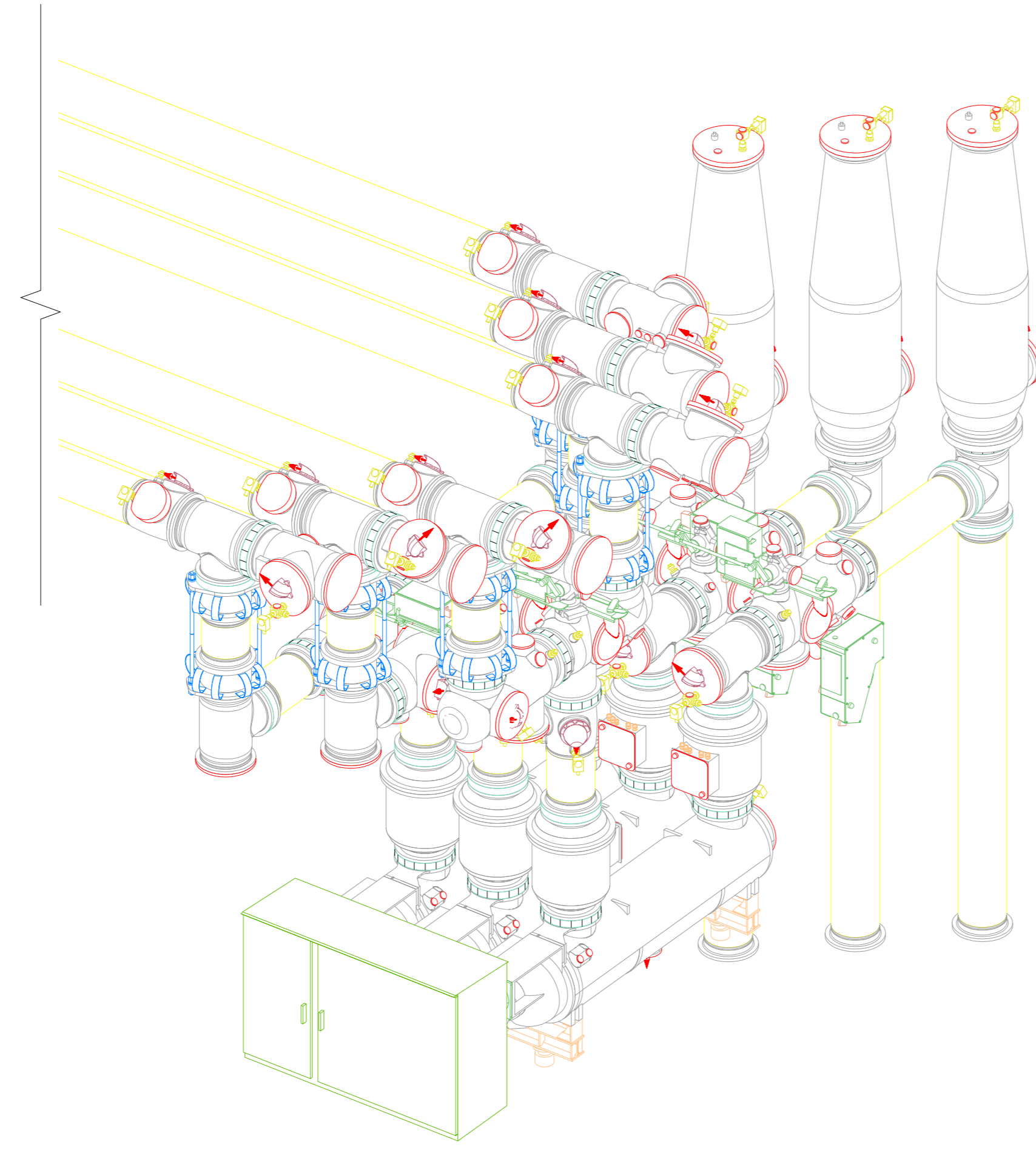
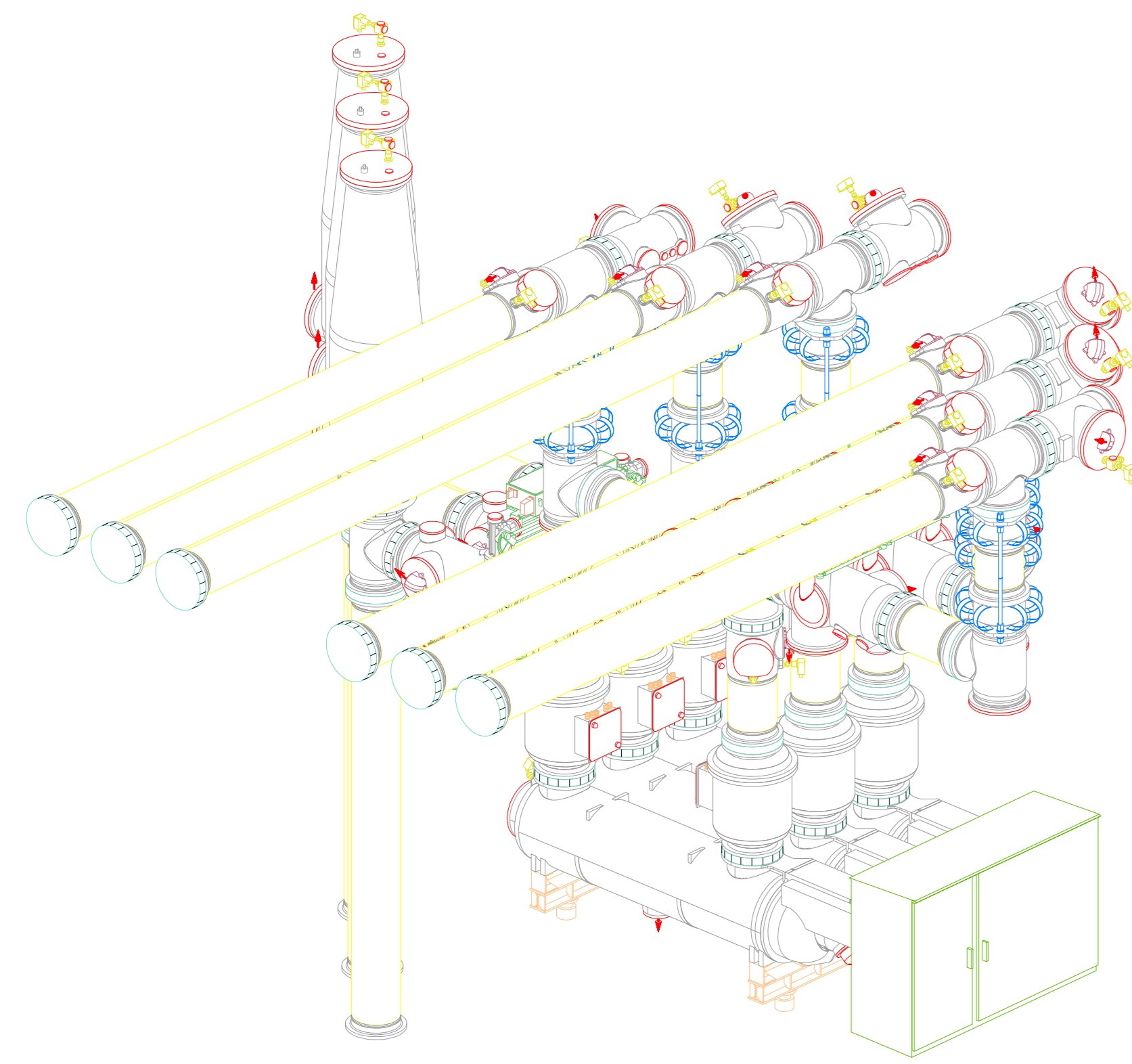
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STATUS OF DRAWING			
DISTRIBUTION OF PRINTS			
DRN	NAME	SIGN	DATE
KG			21.06.24
CHD	GS		21.06.24
APPD	GO		21.06.24

PROJECT	4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT		
CUSTOMER	THDC INDIA LTD.		
SUBSTATION	400kV GIS SUBSTATION AT VISHNUGAD PIPALKOTI		
CONTRACTOR	BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP		
DESIGNED BY	UNTOLD.DIMS. GR.	ANGLE	SCALE
TBEM			NOTED
DRN CODE	316		
REF. TO ASSY. DRG.		ITEM NO.	NO. OF ITEM

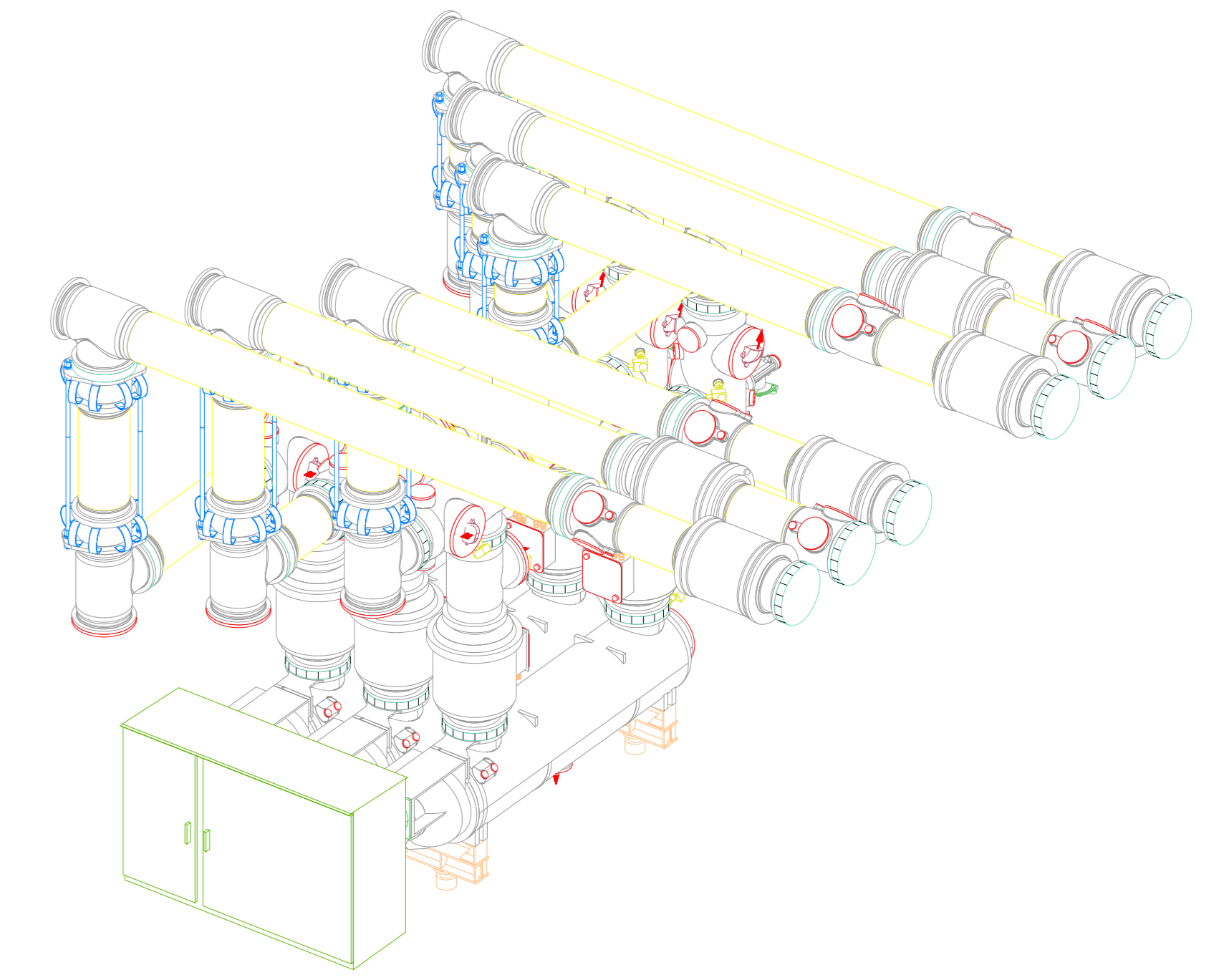
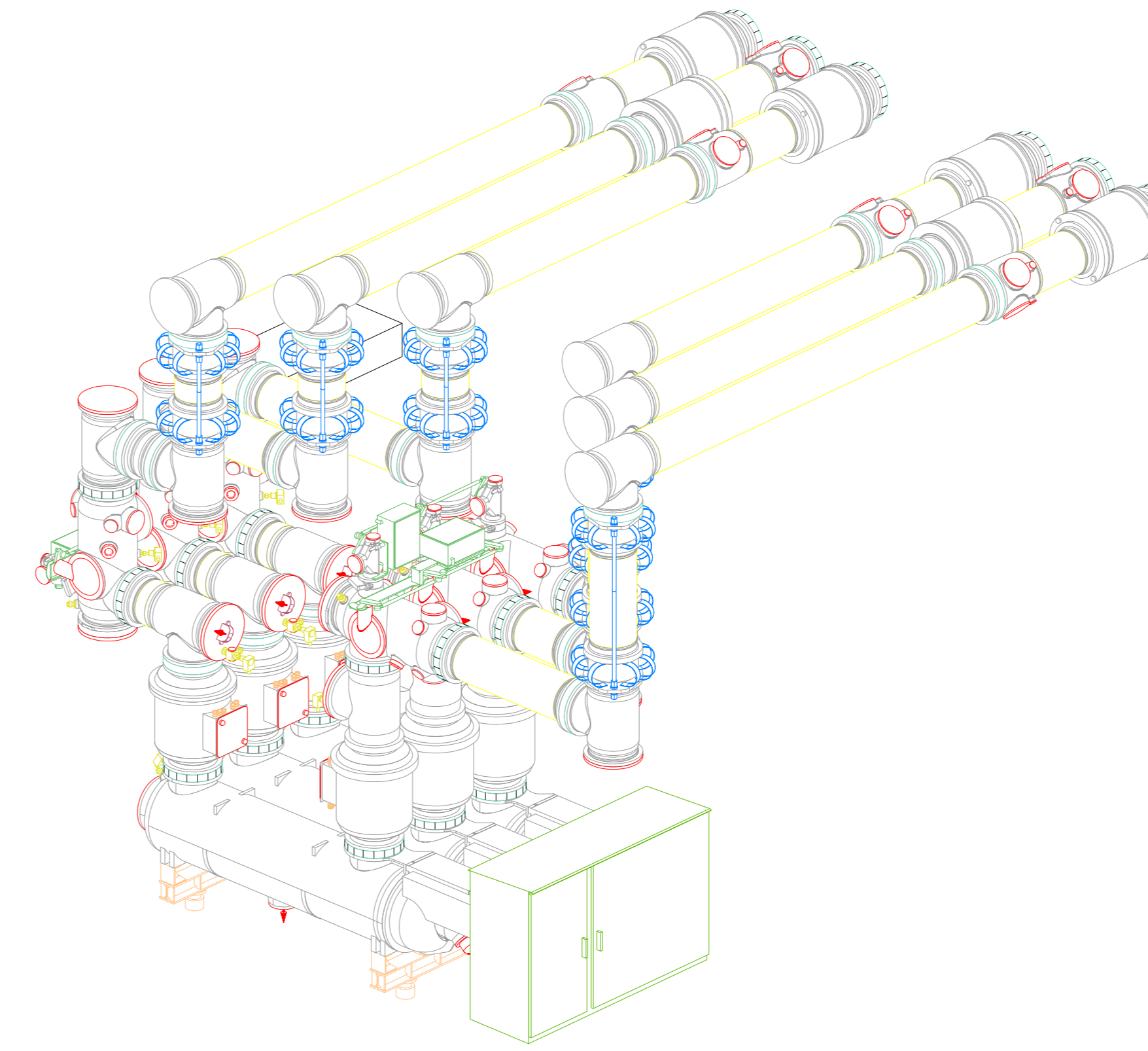
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TITLE		DRAWING NO.	REV.
GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)		TB-382-316-35-02	02
SHT. No.	4	NO. OF SHT.	4 OF 5

# 400kV GIS BAY ISOMETRIC VIEW

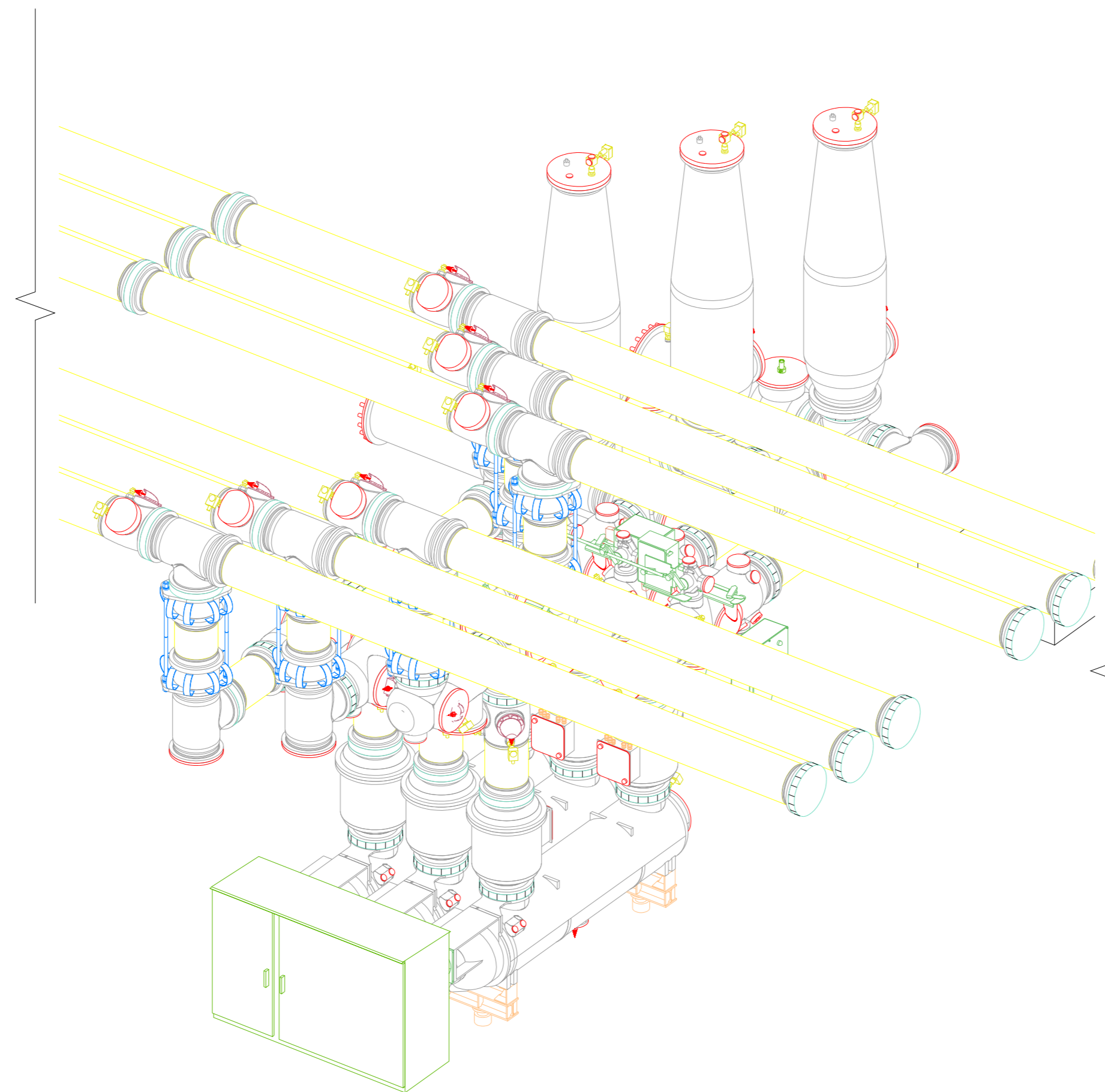
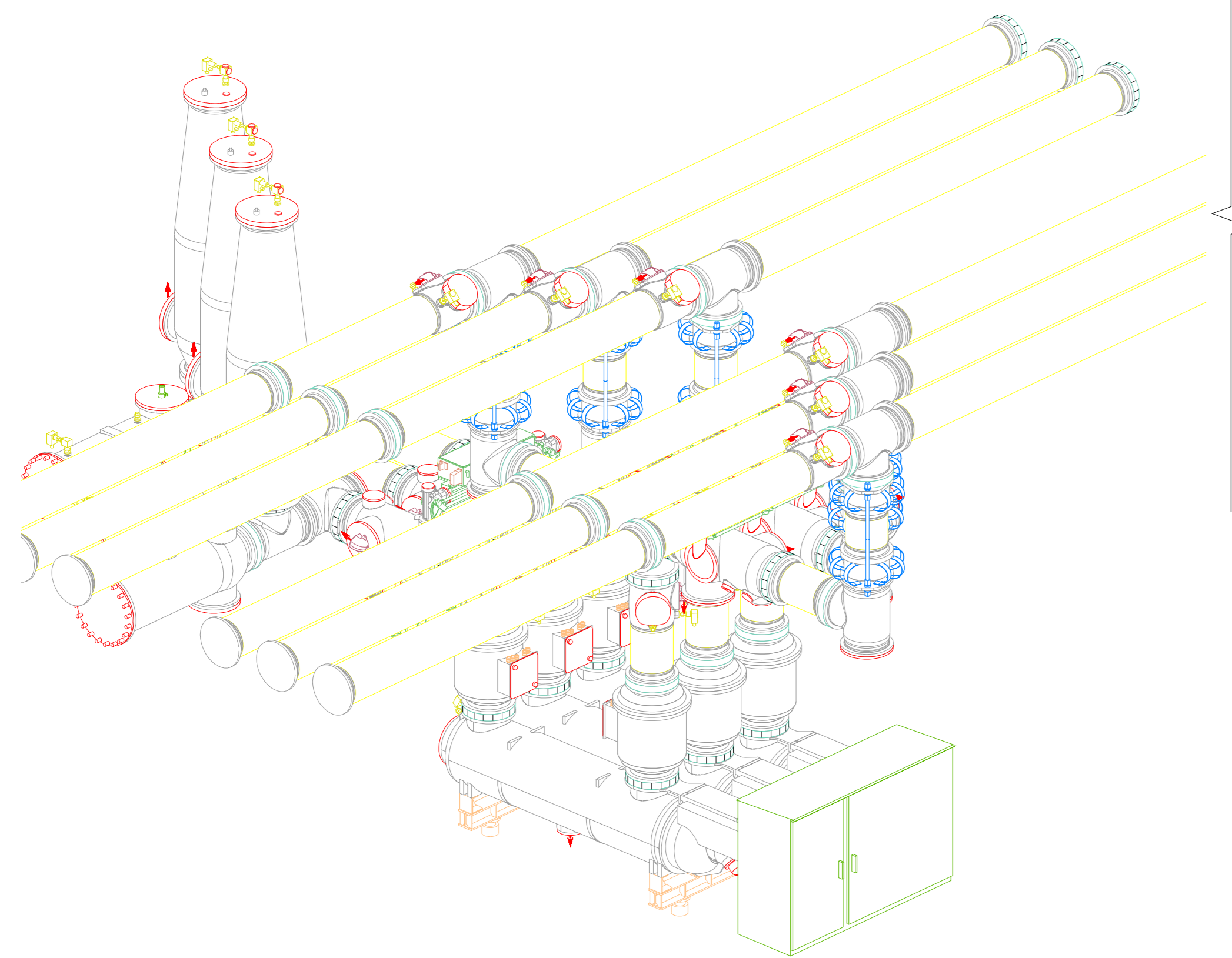
GENERATOR TRANSFORMER# BAY  
ISOMETRIC VIEW



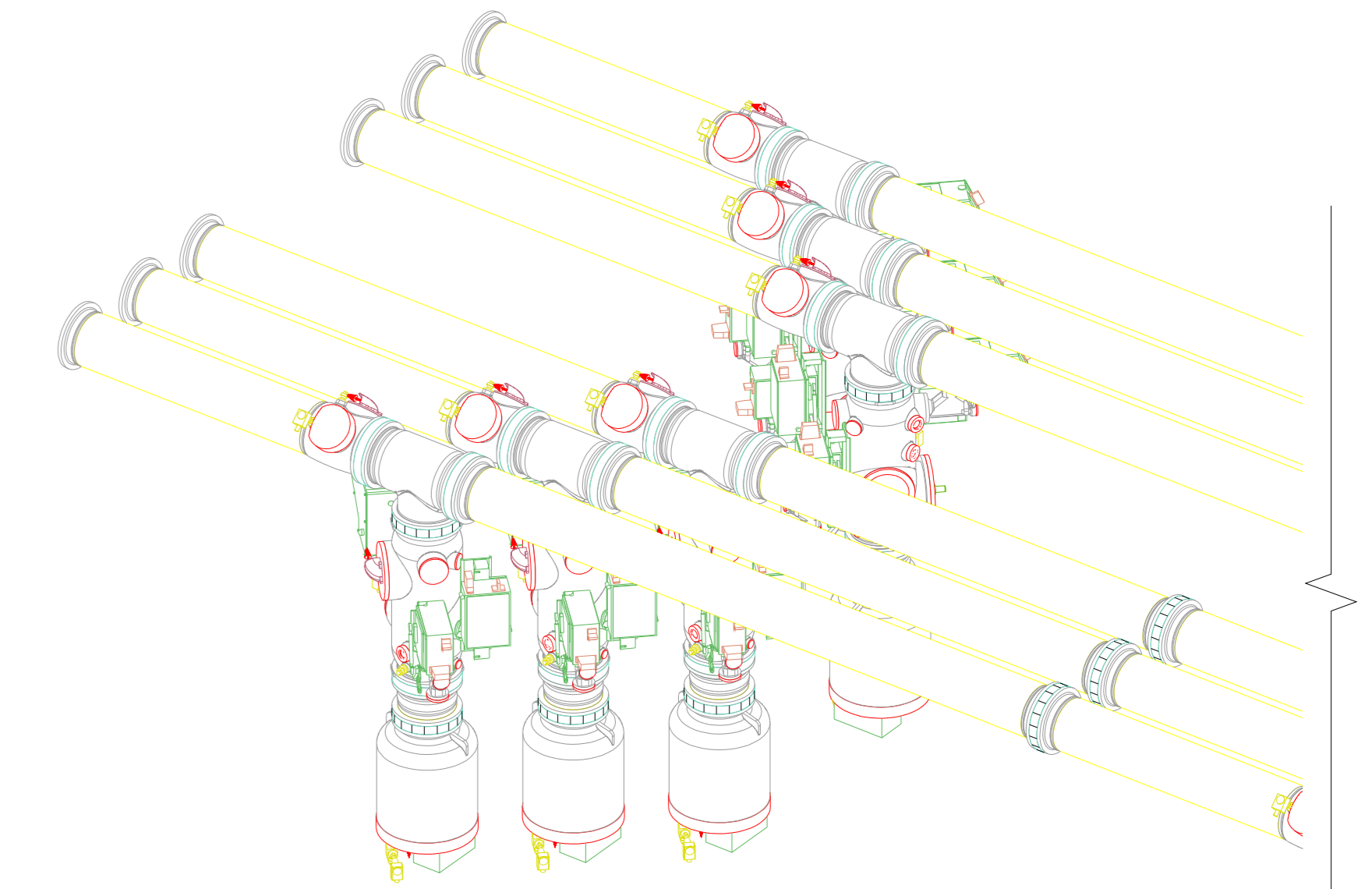
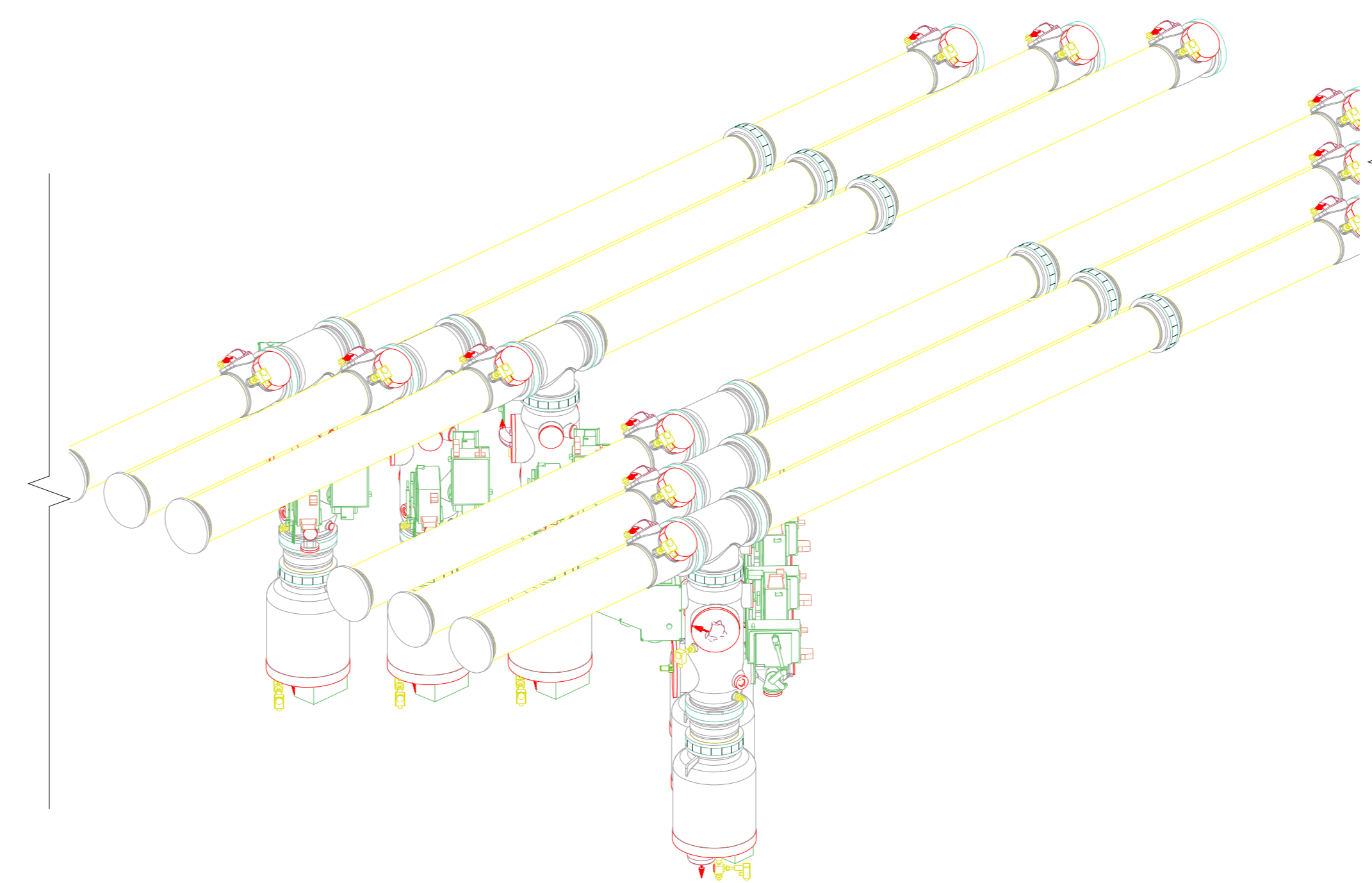
BUS COUPLER# BAY  
ISOMETRIC VIEW



LINE# BAY  
ISOMETRIC VIEW



BUS VT+EARTHING# BAY  
ISOMETRIC VIEW



GIS MANUFACTURER SIEMENS LTD. AURANGABAD  
DRAWING NO. (0)-G71770-AC750-V023-00-04

**SIEMENS**  
Energy Sector

ADDITIONAL INFORMATION

STATUS OF DRAWING

DISTRIBUTION OF PRINTS

DRN	NAME	SIGN	DATE	NO. OF VAR
KG		<i>[Signature]</i>	21.06.24	
CHD	GS	<i>[Signature]</i>	21.06.24	
APPD	GO	<i>[Signature]</i>	21.06.24	

SUB-SUPPLIER/VENDOR

PROJECT	4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT
CUSTOMER	THDC INDIA LTD.
SUBSTATION	400KV GIS SUBSTATION AT VISHNUGAD PIPALKOTI

CONTRACTOR	BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP
------------	--

DESIGNED BY	UNTOLD.DIMS. GR.	ANGLE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEM
DRN	TBEM		NOTED	-	-	-	-
DRN	316						
TITLE						DRAWING NO.	REV.
GIS LAYOUT, PLAN & SECTION AND ISOMETRIC VIEW (OVERALL GIS)						TB-382-316-35-02	02

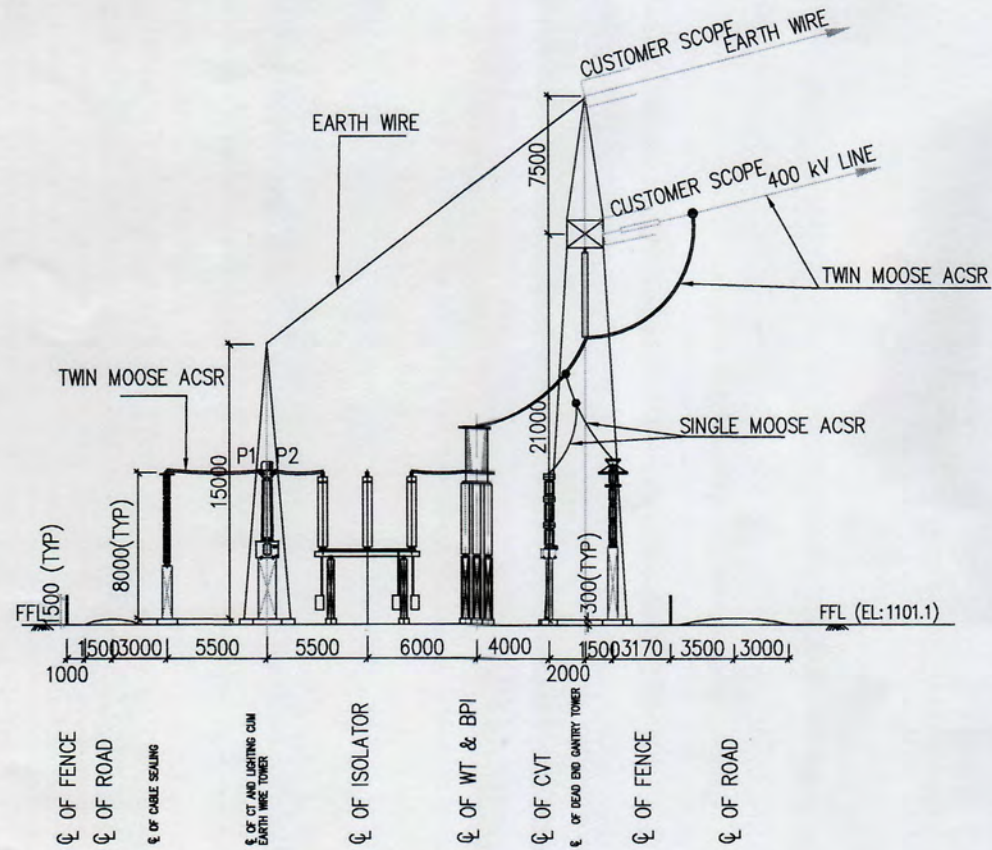
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00	21.06.24	ALTERED	CHECKED	APPROVED	AS PER CUSTOMER TENDER DRAWINGS.						



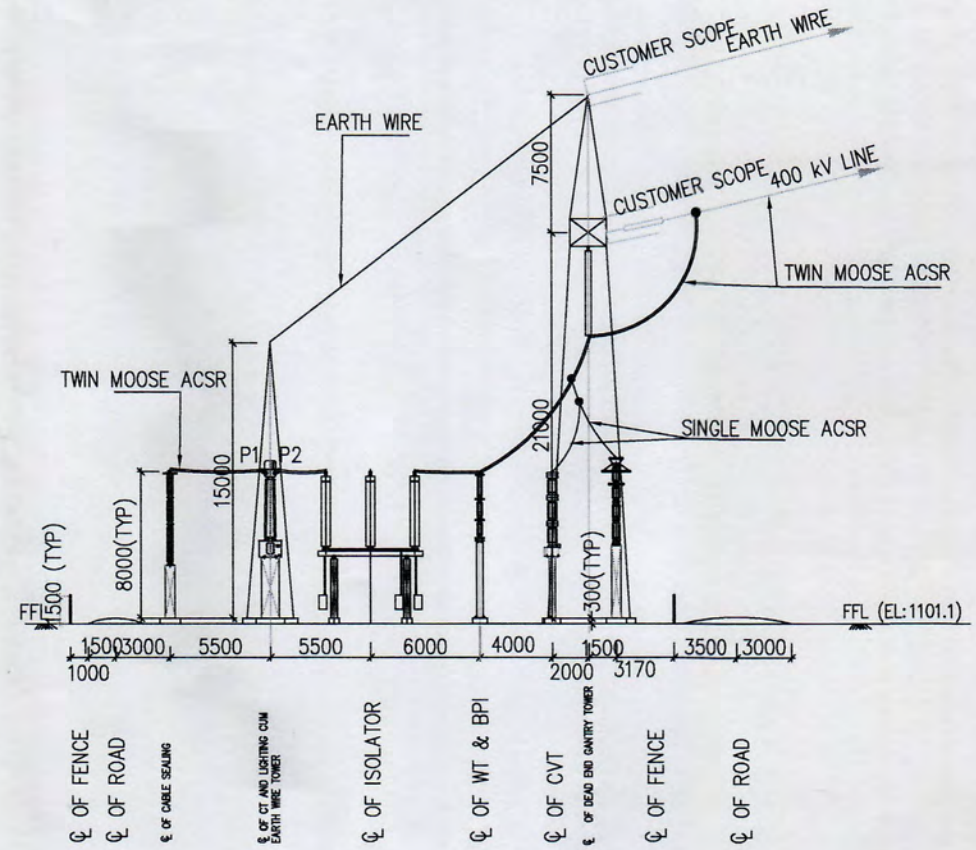


FIRST ANGLE PROJECTION ( ALL DIMENSIONS ARE IN MM. )

DRAWING No. TB-3-382-316-002



SECTION "A-A" & "B-B"



SECTION "C-C"

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COMPUTER DRG. PATH NAMES :

SIGN. & DATE REF. DRG. No.

INVENTORY No.

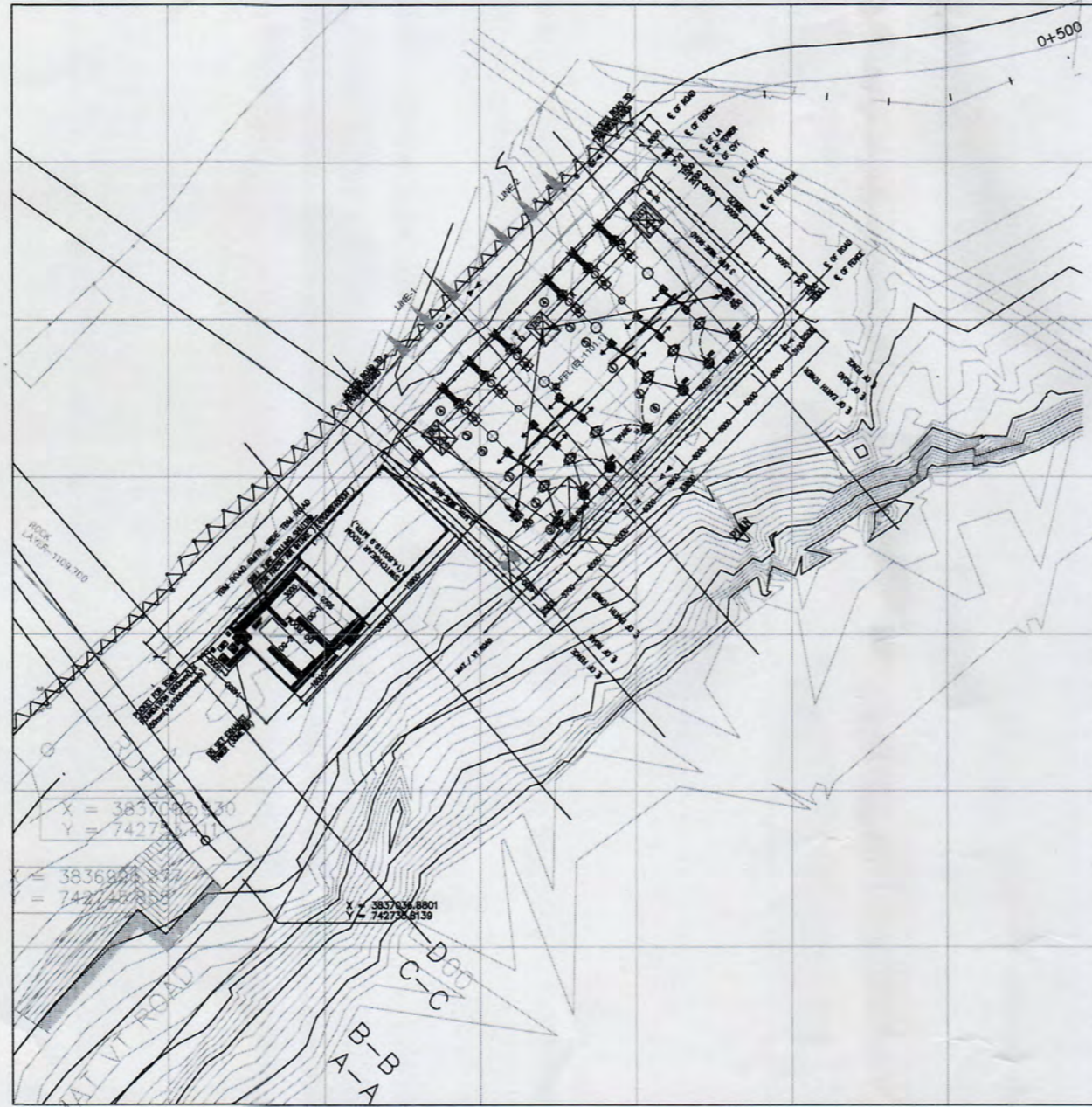
REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY
11	20.01.24	CHECKED DKS APPROVED VK	10	25.10.23	CHECKED DKS APPROVED VK	09	16.09.22	CHECKED DKS APPROVED VK	08	20.07.22	CHECKED DKS APPROVED VK	07					
ZONE	AS PER DISCUSSION WITH CUSTOMER OFFICE/ SITE ON 03.01.24.		ZONE	AS PER DISCUSSION WITH CUSTOMER OFFICE/ SITE ON 10.10.23		ZONE	AS PER CUSTOMER COMMENT DATED 05.08.22		ZONE	DUE TO CHANGE IN THE LOCATION OF THE SWITCHYARD AS PER CUSTOMER EMAIL DATED 27.06.2022		ZONE	DUE TO CHANGE IN THE LOCATION OF THE SWITCHYARD AS PER CUSTOMER EMAIL DATED 12.04.2022				
REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY
06		CHECKED JAI KUMAR APPROVED VK	05	06.11.19	CHECKED SK/SKS APPROVED AG	04	06.06.19	CHECKED SK/SKS APPROVED AG	03	01.01.19	CHECKED SK/DM APPROVED AG	02	09.11.17	CHECKED SK APPROVED RS/AS	01	19.01.17	CHECKED SK APPROVED RS/AS
ZONE	DUE TO CHANGE IN THE LOCATION OF THE SWITCHYARD AS PER CUSTOMER COMMENTS		ZONE	THE LAYOUT IS REVISED TO INCLUDE THE DETAILS FOR THE SPARE 400KV XLPE CABLE UTILISATION. COMMENTS WED LETTER No. THDC/RKSH/EMD/PPHP/401-5/2855 DATED - 23/07/2019.		ZONE	AS PER MOM DATED 20.05.19		ZONE	AS PER CUSTOMER COMMENT DATED 05.12.17		ZONE	AS PER CUSTOMER E-MAIL DATED 03.11.17		ZONE	AS PER CUSTOMER LETTER DATED 07.11.16	

ADDITIONAL INFORMATION W.O.No. STATUS OF DRAWING DISTRIBUTION OF PRINTS		ग्राहक/परियोजना का नाम THDC INDIA LTD. NAME OF CUSTOMER/PROJECT 4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT	
11/24 06/19 05/19 04/19 03/19 02/17 01/17		BHHE भारत हेवी इलेक्ट्रिकल्स लिमिटेड पारेषण व्यापार समूह BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP	
विभाग TBEM DEPT. 422 कोड 422		अनुपात / SCALE कार्ड कोड CARD CODE	
शीर्षक/TITLE LAYOUT PLAN & ELEVATION OF 400KV POTHEAD YARD		ड्राईंग. क्र./DRAWING NO. TB-3-382-316-002 पृष्ठ क्र./SHEET No. 03 समूह पृष्ठ/NEXT SHEET 04	



FIRST ANGLE PROJECTION ( ALL DIMENSIONS ARE IN MM. )

DRAWING No. TB-3-382-316-002



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COMPUTER DBC. PATH NAME :

SIGN. & DATE REF. DRG. No.

INVENTORY No.

REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY
11	20.01.24	CHECKED DKS APPROVED VK	10	25.10.23	CHECKED DKS APPROVED VK	09	16.09.22	CHECKED DKS APPROVED VK	08	20.07.22	CHECKED DKS APPROVED VK	07		
ZONE	AS PER DISCUSSION WITH CUSTOMER OFFICE/ SITE ON 03.01.24.		ZONE	AS PER DISCUSSION WITH CUSTOMER OFFICE/ SITE ON 10.10.23		ZONE	AS PER CUSTOMER COMMENT DATED 05.08.22		ZONE	DUE TO CHANGE IN THE LOCATION OF THE SWITCHYARD AS PER CUSTOMER EMAIL DATED 27.08.2022		ZONE	DUE TO CHANGE IN THE LOCATION OF THE SWITCHYARD AS PER CUSTOMER EMAIL DATED 12.04.2022	
REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY
06		CHECKED JAI KUMAR APPROVED VK	05	06.11.19	CHECKED SK/SKS APPROVED AG	04	06.06.19	CHECKED SK/SKS APPROVED AG	03	01.01.19	CHECKED SK/DM APPROVED AG	02	09.11.17	CHECKED DM APPROVED RS/DM
ZONE	DUE TO CHANGE IN THE LOCATION OF THE SWITCHYARD AS PER CUSTOMER COMMENTS		ZONE	THE LAYOUT IS REVISED TO INCLUDE THE DETAILS FOR THE SPARE 400KV XLPE CABLE UTILISATION . COMMENTS VED LETTER No. THDC/RSR/EMO/WRHP/401-6/2855 DATED - 25/07/2019.		ZONE	AS PER MOM DATED 20.05.19		ZONE	AS PER CUSTOMER COMMENT DATED 05.12.17		ZONE	AS PER CUSTOMER E-MAIL DATED 03.11.17	

ADDITIONAL INFORMATION W.O.No.					
STATUS OF DRAWING					
DISTRIBUTION OF PRINTS					
REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY
01	19.01.17	CHECKED SK APPROVED RS/AS	01	19.01.17	CHECKED SK APPROVED RS/AS
ZONE	AS PER CUSTOMER LETTER DATED 07.11.16		ZONE	AS PER CUSTOMER LETTER DATED 07.11.16	

<b>ग्राहक/परियोजना का नाम</b> THDC INDIA LTD. <b>NAME OF CUSTOMER/PROJECT</b> 4X111MW VISHNUGAD PIPALKOTI H.E. PROJECT	
	<b>भारत हेवी इलेक्ट्रिकल्स लिमिटेड</b> <b>पारिवहन व्यापार समूह</b> <b>BHARAT HEAVY ELECTRICALS LTD.</b> <b>TRANSMISSION BUSINESS GROUP</b>
<b>डिप्ट.</b> TBEM <b>कोड</b> 422	<b>अनुपात / SCALE</b> <b>कार्ड कोड</b> CARD CODE
<b>शीर्षक/TITLE</b> <b>LAYOUT PLAN &amp; ELEVATION</b> <b>OF 400KV POTHEAD YARD</b>	<b>ड्राइंग. नं./DRAWING NO.</b> TB-3-382-316-002 <b>पृष्ठ सं./REV.</b> 11 <b>पृष्ठ सं./SHEET No.</b> 05 <b>अगला पृष्ठ/NEXT SHEET</b> ---



# टीएचडीसी इंडिया लिमिटेड THDC INDIA LIMITED

(भारत सरकार एवं उ.प्र. सरकार का संयुक्त उपक्रम)  
(A joint venture of Govt. of India & Govt. of UP)

पत्रांक: टीएचडीसी / ऋषि / वि०परि० / वीपीएचईपी / 401-6 / 2308

दिनांक: 15.01.2019

प्रेषित,

- श्री ए एम गुप्ता ई-मेल: [amgupta@bhel.in](mailto:amgupta@bhel.in)  
महाप्रबंधक (हाइड्रो बिजनेस ग्रुप),  
बीएचईएल, फ्लोर-4, टावर-ए, एडवांट नेवीज बिजनेसपार्क,  
प्लॉट नं. 7, सेक्टर-142, एक्सप्रेसवे, नोएडा, गौतमबुद्ध नगर (उ.प्र.) 201305
- श्रीगौतम चक्लादर, ई-मेल: [gautam.chaklader@bhel.in](mailto:gautam.chaklader@bhel.in)  
महाप्रबंधक (टीबीईएम ग्रुप),  
भारत हेवी इलेक्ट्रिकल्स लि., फ्लोर-5, टावर-ए, एडवांट नेवीज बिजनेस पार्क,  
प्लॉट नं. 7, सेक्टर-142, एक्सप्रेस वे, नोएडा,  
गौतमबुद्ध नगर (उ.प्र.) 201305

**Subject: Contract Agreement (ICB No. THDCIL/RKSH/CC-297/AG-1, AG-2 & AG-3: Approval of "Conceptual layout for GIS floor (Drwg No. TB-0-382-316-014, Rev\_3)" of Vishnugad Pipalkoti HEP (444 MW).**

Dear Sir,

Please find enclosed herewith one set of approved drawing of "Conceptual layout for GIS floor (Drwg No. TB-0-382-316-014, Rev\_3)" of Vishnugad Pipalkoti HEP (444 MW) w.r.t. email dated 26.12.2018.

This approval does not absolve M/s BHEL from its responsibility for correctness of the documents, Manufacturing/supply of the equipment as per Employer's requirement & GTP, for the achievement of the desired performance at site & completeness of the equipment.

This is for your kind information and necessary action please.

Thanking You

Yours faithfully,

(एल पी जोशी)

महाप्रबंधक (विद्युत परिकल्प)

संलग्नक: उपरोक्तानुसार

## प्रतिलिपि:

- 1 अधिशाषी निदेशक (सिविल एवं विद्युत परिकल्प), ऋषिकेश।
- 2 महाप्रबंधक (ओएमएस, क्यूए एवं सेफ्टी), ऋषिकेश।
- 3 महाप्रबंधक (वीपीएचईपी), टीएचडीसीआईएल, पीपलकोटी।
- 4 महाप्रबंधक (एमपीएस), ऋषिकेश।
- 5 महाप्रबंधक (सिविल-परिकल्प एवं हाइड्रोमैकेनिकल), ऋषिकेश।
- 6 श्रीसरोजकुमार, वरिष्ठप्रबंधक (टीबीईएम), बीएचईएल, फ्लोर-5, टावर-ए, एडवांट नेवीज बिजनेस पार्क, प्लॉट नं. सेक्टर-142, एक्सप्रेस वे, नोएडा, गौतमबुद्ध नगर (उ.प्र.) 201305।



टीएचडीसी इंडिया लिमिटेड  
THDC INDIA LIMITED

(भारत सरकार एवं उ.प्र. सरकार का संयुक्त उपक्रम)  
(A joint venture of Govt. of India & Govt. of UP)

Letter No: THDCIL/RKSH/EMD/VPHEP/401-6/ 2308

Date: 15-01-2019

To,

- Mr. A.M. Gupta Email: amgupta@bhel.in  
GM (Hydro Business Group),  
Bharat Heavy Electricals Ltd., 4th floor, Tower-A,  
AdvantNavis Business Park, Plot No. 7,  
Sector-142, Expressway Noida, Gautam Buddh Nagar (U.P.)-201305
- Mr. Gautam Chaklader Email: gautam.chaklader@bhel.in  
GM (TBEM Group)  
BHEL, Floor-5, Tower-A, Advant Nevis Business Park  
Plot No. 7, Sector 142, Express way  
Noida 201301, UP

**Subject: Contract Agreement (ICB No. THDCIL/RKSH/CC-297/AG-1, AG-2 & AG-3: Approval of "Conceptual layout for GIS floor (Drwg No. TB-0-382-316-014, Rev\_3)" of Vishnugad Pipalkoti HEP (444 MW).**

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This approval does not absolve M/s BHEL from its responsibility for correctness of the documents, Manufacturing/supply of the equipment as per Employer's requirement & GTP, for the achievement of the desired performance at site & completeness of the equipment.

This is for your kind information and necessary action please.

Thanking You

**Encl.:** As above

Yours faithfully,

(L.P. Joshi)

GM (EM Design)

**Copy to:**

1. Executive Director (Civil and EM Design), Rishikesh
2. GM (OMS,QA&Safety),Rishikesh
3. GM (Project), VPHEP, Pipalkoti.
4. GM(MPS),Rishikesh
5. GM(Design-Civil&HM),Rishikesh
6. Shri Saroj Kumar, Sr. Mgr. (TBEM), PEMFloor-5, Tower-A, Advant Nevis Business Park, Plot No. 7, Sector 142, Express way, Noida 201301, UP

