



मंगलूर रिफाइनरी एण्ड पेट्रोकेमिकल्स लिमिटेड
MANGALORE REFINERY & PETROCHEMICALS LTD.
(ऑयल एण्ड नेचुरल गैस कॉर्पोरेशन लिमिटेड की सहायक कंपनी)
(A Subsidiary of Oil and Natural Gas Corporation Ltd.)



**PRE-TENDER MEET (PTM) FOR
MAIN EPC PACKAGE FOR AROMATIC COMPLEAX
POWER SYSTEM UPGRADATION PROJECT
(LSTK BASIS)**



**Document NO.:
MRPL/PROJECTS/01/2023**

Mangalore Refinery and Petrochemicals Limited (MRPL) is a subsidiary of M/s. Oil and Natural Gas Corporation Limited (ONGC). Presently, MRPL is planning to upgrade its electrical power system for both Aromatic Complex and Refinery Complex, for which Tractebel Engineering Private Limited (TEPL) has been appointed as the Project Management Consultant (PMC). On behalf of MRPL, Tractebel is inviting competent bidders having experience in constructing 110/33 kV substations on EPC LSTK basis, to attend the PRE-TENDER MEET for the MRPL Aromatic Complex power system upgradation work.

Pre tender Details as follows:

Pre Tender No.	MRPL/Projects/01/2023
Pre Tender on Website	From 04.04.2023 to 11.04.2023
Closing date for submission of any documents if applicable.	Upto 10:30 hrs (IST) on 11.04.2023
Pre Tender Meet For	PRE-TENDER MEET FOR MRPL AROMATIC COMPLEX POWER SYSTEM UP GRADATION WORK
Pre Tender Meet Timing	11.04.2023 at 11:30 AM (IST)
Date of Meeting Through VC	<p>Option-A: Through the following link whoever is having Microsoft TEAMS</p> <p>https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZDRhYzYzcwY2UtZTk2NS00MDkxLTkxOGItNWQ4MmFhOWE0ZGY1%40thread.v2/0?context=%7b%22Tid%22%3a%2224139d14-c62c-4c47-8bdd-ce71ea1d50cf%22%2c%22Oid%22%3a%22f96aea47-336f-45b4-ba20-878d102e4c2b%22%7d</p> <p>Option-B: Through the following link whoever is NOT having Microsoft TEAMS</p> <p>Click here to join the meeting</p> <p>Meeting ID: 326 471 640 491 Passcode: mFawzw</p>
Pre tenders documents available at	www.mrpl.co.in/eoi

Please contact below mentioned personnel for further details:

Designation	Contact No.	Email id
Project Manager	+91-124 469 8500 +91-99997 79796	Subha.biswas@tractebel.engie.com

All Credentials/ Documents shall be addressed to

General Manager (Projects)
Projects Department,
Netravati Building
Mangalore Refinery & Petrochemicals Ltd
Kuthethoor PO, Via Katipalla, Mangalore – 575 030
Karnataka- India

The envelope containing the documents shall be super scribed **“MAIN EPC PACKAGE FOR AROMATIC COMPLEAX POWER SYSTEM UPGRADATION WORK (LSTK BASIS)”**

**MAIN EPC PACKAGE FOR AROMATIC
COMPLEAX POWER SYSTEM UPGRADATION
WORK (LSTK BASIS)**



PRE TENDER MEET (PTM)

**MANGALORE REFINERY AND
PETROCHEMICALS LIMITED**

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1.0 INTRODUCTION

- 1.1 Mangalore Refinery & Petrochemicals Limited (MRPL) a government of India schedule 'A' CPSE and a subsidiary of ONGC is a State of Art Grassroots Petroleum Refinery located in a beautiful hilly terrain, north of Mangalore city, in Dakshina Kannada region, Karnataka State. The Refinery has got a versatile design with high flexibility to process Crudes of various API and with high degree of Automation. MRPL has high standards in refining and environment protection matched by its commitments to society. MRPL has also developed a Green Belt around the entire Refinery with plant species specially selected to blend with the local flora.
- 1.2 MRPL has an Aromatics Complex, which is a downstream unit of the refinery which processes naphtha for the production of high quality Px & Bz. MRPL has high standards in refining and environment protection matched by its commitments to society.
- 1.3 MRPL calls for a Pre Tender Meet for the Main EPC Package for Aromatic Complex Power System Upgradation Work at MRPL (LSTK Basis).

2.0 BRIEF DESCRIPTION OF THE SYSTEM

- 2.1 MRPL has gone through three phases of expansion and over time has added power generation facilities in each of the three phases. The power generation facility in each phase was supported by associated cooling water and De-Mineralization water system. In addition, as an emergency backup, connectivity to the grid was also provided for start-up and emergency. While Phase 1 & 2 power plants are well integrated, Phase 3 and Aromatic complexes are, geographically separated and the interconnection between each of these power plants is limited.
- 2.2 The design intent of the setting up of own Captive generation facilities was to ensure that the poor reliability of the grid prevalent (and inability of machines to operate at the low frequencies of the grid) at the time of conceptualization of the refinery expansions (1992, 1998 & 2006) does not cause frequent upsets in the complex which would have resulted in production interruptions and high costs. It was also design intent that the utilization of the internal refinery fuel would be cost effective compared to the purchase of power from external source, considering co-generation of steam required for the process. It is also to be noted that Phase-3 was conceptualized without grid connectivity and subsequently connectivity was provided through one feeder.
- 2.3 In the past decade, there have been significant changes to the power generation and transmission infrastructure in the country. Availability of power has stabilized. Operational experience also indicates the same on evidence of grid frequencies that rarely

fall below 50Hz (even at lower levels of 110kV). Further the availability of cheap renewable power has also drastically reduced the cost of power available for long term supplies.

3.0 OBJECTIVES

Based on this study, it is decided to focus on the up gradation of facilities of Steam and Power network as the major area for energy saving potential as given below:

- 3.1 Aromatics Complex intends to augment its grid infrastructure to 110kV from current 33kV in order to draw increased power to the tune of 35MVA. Carrying out detailed study of the requirement for carrying out the Grid Augmentation works along with detailed cost estimation. Carry out detailed route survey in consultation with MSEZ & MRPL – Aromatic Complex. Interact with MSEZ for getting any details for the project requirement in consultation with MRPL.

4.0 SCOPE OF WORK

- 4.1 The scope includes but not limited to Design, Engineering, Procurement, Construction, Testing, Commissioning and putting into successful operation of a new 110/33 kV Substation (SS-10) and modification work in an existing Substation (SS-01A) as per the attached drawings.

5.0 DATA TO BE FURNISHED BY THE BIDDER

1. General Information		
1.1	Name of the BIDDER / Firm	
1.2	Nature or legal status of the Firm	
1.3	Name and address of associated companies to be involved in the project with relationship and role, if any.	
1.5	Registered Address of Firm	
1.6	Contact Person	
1.7	Designation and address of Contact person	
1.8	E.mail	

1.9	Turnover & Net worth of the Firm during last three financial years (Please enclose copy of audited annual reports)	Year	Turn Over (INR)	Net Worth (INR)
		2019-20		
		2020-21		
		2021-22		
2. Past experience of the bidder.				
2.1	<ul style="list-style-type: none"> • Design, Engineering and Construction management of Switch yard of at least 110kV level. • Design, Engineering and Construction Management of GIS sub-station. Details of above activities in last ten (10) year term.			
2.2	Bidder should provide necessary documents staining the above clauses. The bidder shall give copies of signed Agreement/ Work order/ Purchase order/ acknowledged final report or any other document to prove the scope of completed works against the order to the satisfaction of MRPL.			

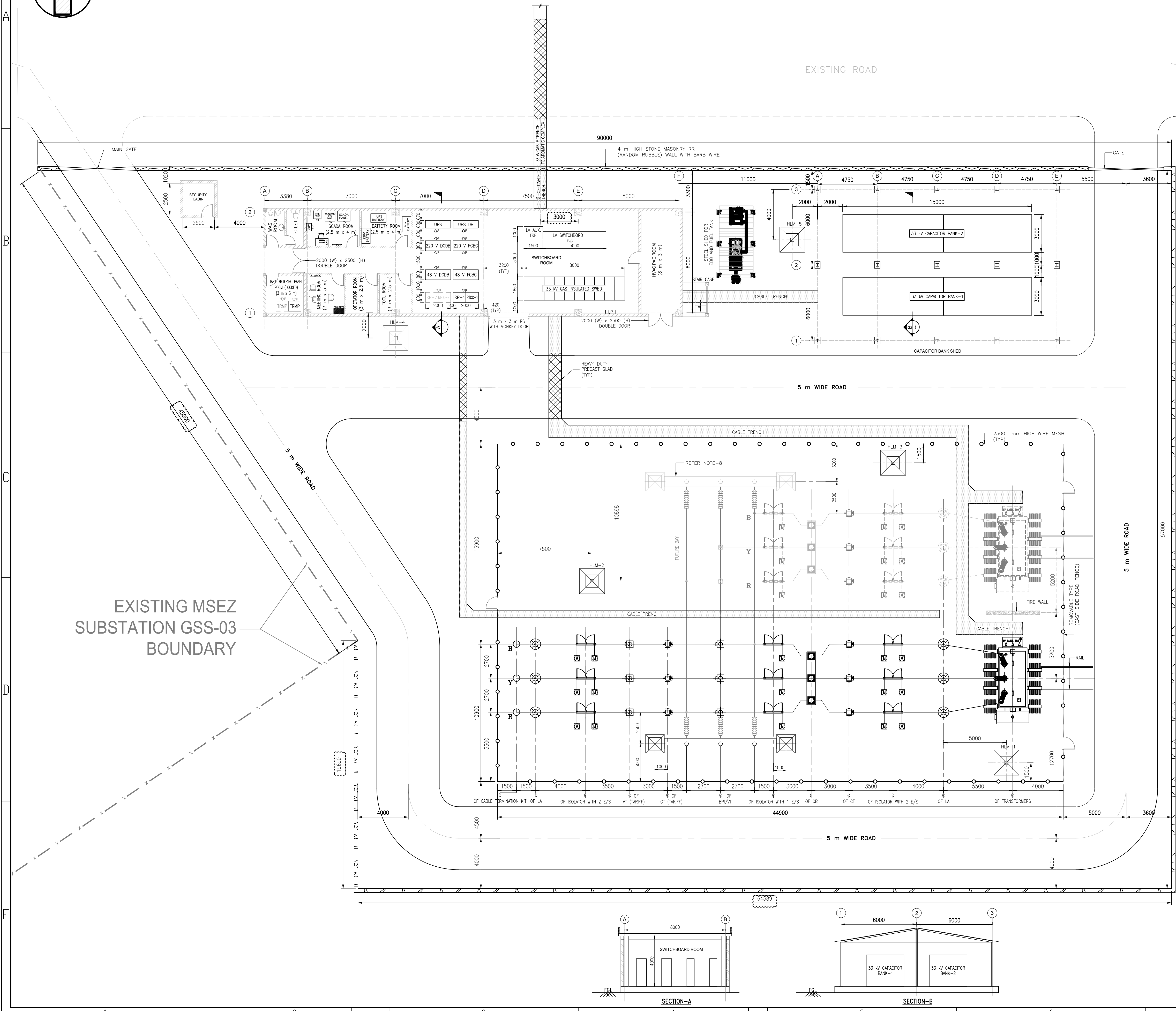
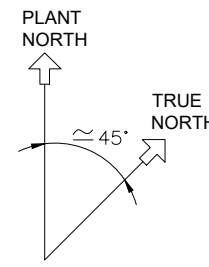
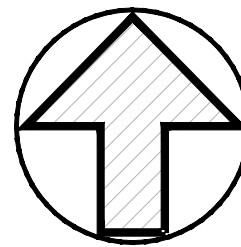
6.0 DISCLAIMER

MRPL has prepared this document to give interested parties background information on the project. While MRPL has taken due care in the preparation of the information contained herein and believes it to be accurate, neither MRPL nor any office authorities, officers, employees, agents/and advisors gives any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information contained in this document or any information which may be provided in connection therewith.

Interested parties are required to make their own inquiries and respondents will be required to confirm in writing that they have done so and they do not rely on the information provided in the Pre Tender document in submitting their response. The information is provided on the basis that it is non-binding on MRPL or any of its authorities or agencies or any of their respective officers, employees, agents or advisors.

MRPL reserves the right not to proceed with the project, to alter the timetable reflected in this document or to change the process or procedure to be applied for listing of enquiry partners. It also reserves the right to decline to discuss the project further with any party expressing interest. No reimbursement of cost of any type whatsoever will be paid to persons, or entities, expressing interest in the project.

PLANT NORTH



NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
 2. BASIC INSULATION LEVEL AND MINIMUM ELECTRICAL CLEARANCES ARE GIVEN BELOW:
- | S.N. | DESCRIPTION | VALUE |
|------|--|-------------|
| 1 | NOMINAL VOLTAGE | 110 kV |
| 2 | HIGHEST VOLTAGE | 123 kV |
| 3 | POWER FREQ. WITH STAND VOLTAGE | 230 kV rms |
| 4 | LIGHTNING IMPULSE WITHSTAND VOLTAGE | 550 kV peak |
| 5 | PHASE TO PHASE CLEARANCE (PP) | 1100 mm |
| 6 | PHASE TO EARTH CLEARANCE (PE) | 1100 mm |
| 7 | SECTION CLEARANCE (SC) | 3700 mm |
| 8 | GROUND CLEARANCE (LIVE PART TO GROUND) | 4600 mm |
3. THE ENTIRE ELECTRICAL BUILDING EXCEPT THE BATTERY ROOM SHALL BE AIR-CONDITIONED. OUTDOOR UNIT OF AIR CONDITIONING SYSTEM SHALL BE LOCATED AT BUILDING ROOF.
 4. THE WATER CONNECTION FOR THE SUBSTATION USE SHALL BE FROM THE MSEZ GSS-3 LOCATED ADJACENT TO THIS PREMISES. THE SCOPE OF WORK OF THE PACKAGE SUPPLIER ENDS AT THE SS BOUNDARY. THERE WILL BE OVERHEAD STORAGE TANK.
 5. THE HEIGHT OF HLM SHALL BE 30 METRE.
 6. THE ELECTRICAL BUILDING SHALL HAVE CABLE TRENCHES INSIDE FOR CABLING PURPOSES.
 7. THE TARIFF METERING ROOM, TOILET, MEETING ROOM, SCADA ROOM, OPERATOR ROOM, TOOL ROOM SHALL HAVE FALSE CEILING AT A HEIGHT OF 3 m FROM THE FLOOR LEVEL.
 8. THIS GANTRY SHALL BE CONSTRICTED WHEN THE SECOND BAY COMES.
 9. THE TOTAL LAND AREA OF THIS NEW 110/33 kV SUBSTATION IS 4220 Sq. m (OUTER TO OUTER.)

LEGEND :-

NOMINAL VOLTAGE	SYMBOL
SURGE ARRESTOR	
110 kV OUTDOOR TERMINATION KIT SUITABLE FOR 110kV	
VOLTAGE TRANSFORMER	
CIRCUIT BREAKER	
CURRENT TRANSFORMER	
ISOLATOR WITH MOTOR + TWO E/S	
BUS POST INSULATOR	
HIGH LIGHTNING MAST	

ABBREVIATION :-

- TRMP: TARIFF METERING PANEL
- DCDB: DIRECT CURRENT DISTRIBUTION BOARD
- FCBC: FLOAT CUM BOOST CHARGER
- RP: RELAY PANEL
- RTCC: REMOTE TAP CHANGING CUBICLE

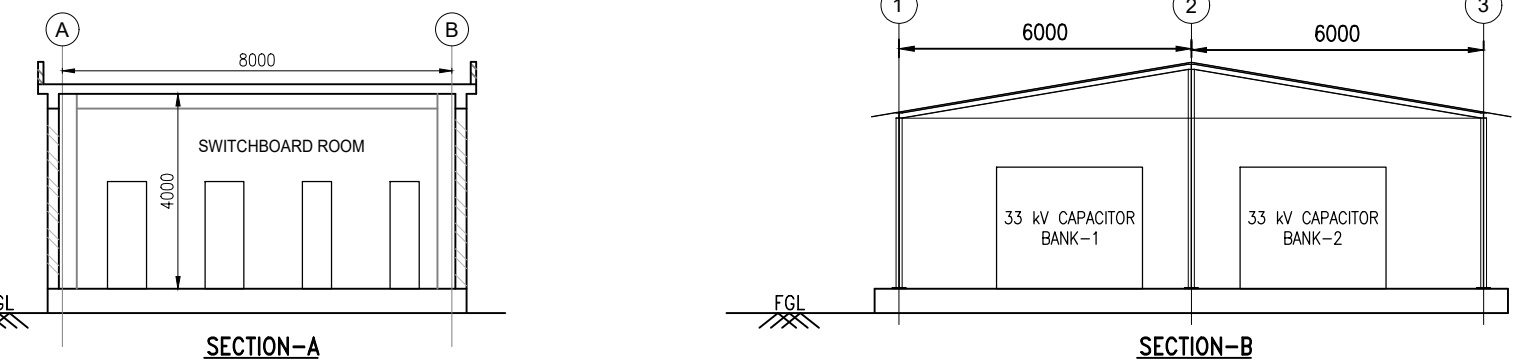
Rev.	D	M	Y	Modifications	Drawn	Checked	Validated	Approved
D	19/01/2023			REVISED AS MARKED	NPD	TMA	SSB	SSB
C	23/12/2022			GENERALLY REVISED DUE TO CHANGE IN LAND PROFILE, 33 kV CAPACITOR BANK ADDED; ISSUED FOR APPROVAL	APH	TMA	SSB	SSB
B	15/11/2022			GENERALLY REVISED TO INCORPORATE MRPL COMMENTS; ISSUED FOR APPROVAL	APH	TMA	SSB	SSB
A	01/11/2022			ISSUED FOR APPROVAL	APH	TMA	SSB	SSB

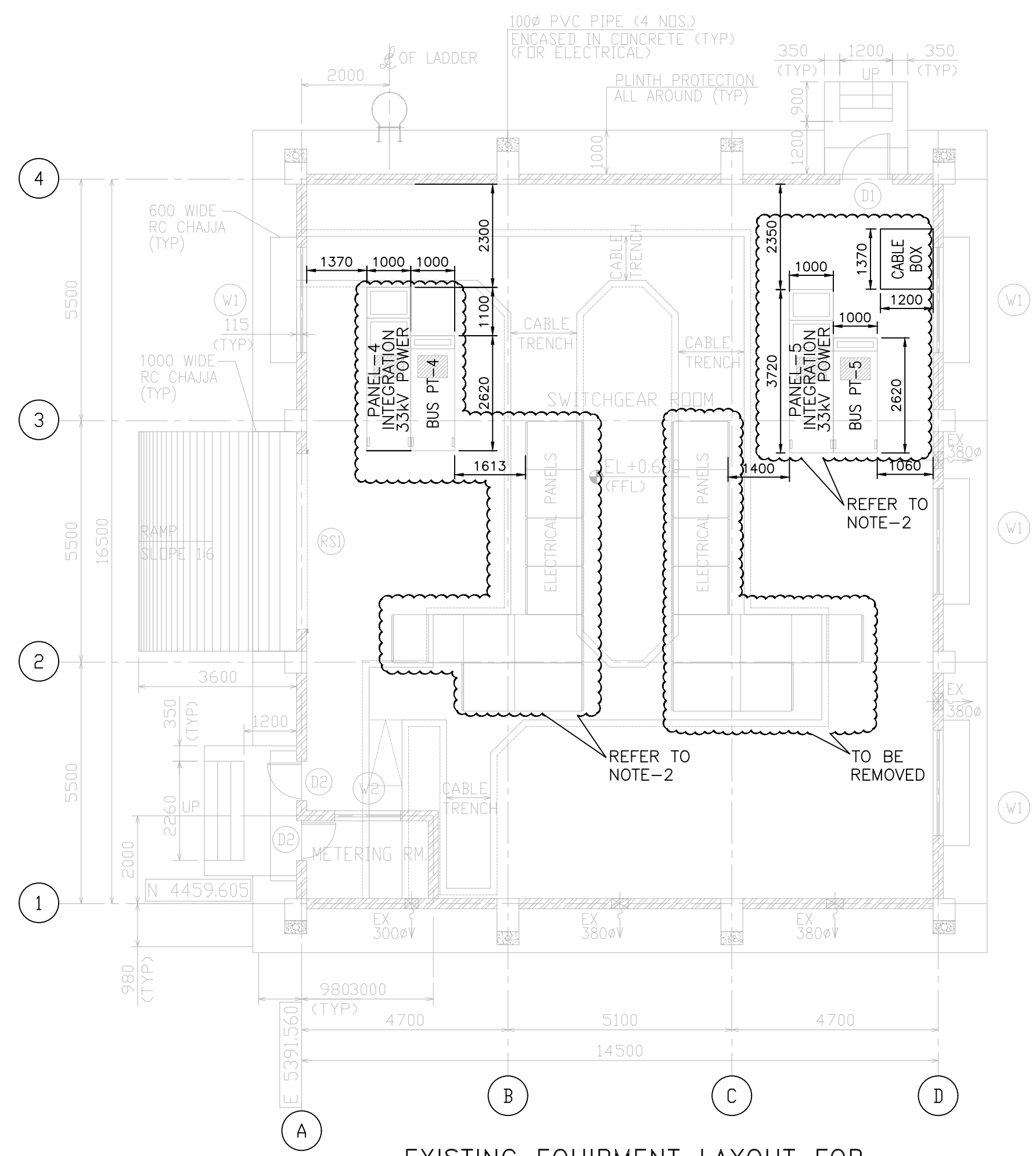
LOA NO. : 7420000125 Dated 01.10.2022 SAP PO number:
 OWNER / CLIENT: **MANGALORE REFINERY & PETROCHEMICALS LTD.**
 (A subsidiary of Oil & Natural Gas Corp. Ltd - ONGC)
 Regd. Office: Kuththoor P.O., Via: Kattipalla, Mangalore-575030 (India)
 Phone: 0091-824-2270400 Fax: 0091-824-2271239

PROJECT: POWER SYSTEM UPGRADATION PROJECT AT MRPL AROMATIC COMPLEX, MANGALORE
 SUBJECT: 110/33 kV SUBSTATION LAYOUT NEAR MSEZ GSS-3 FOR AROMATIC COMPLEX POWER SYSTEM UPGRADATION WORK

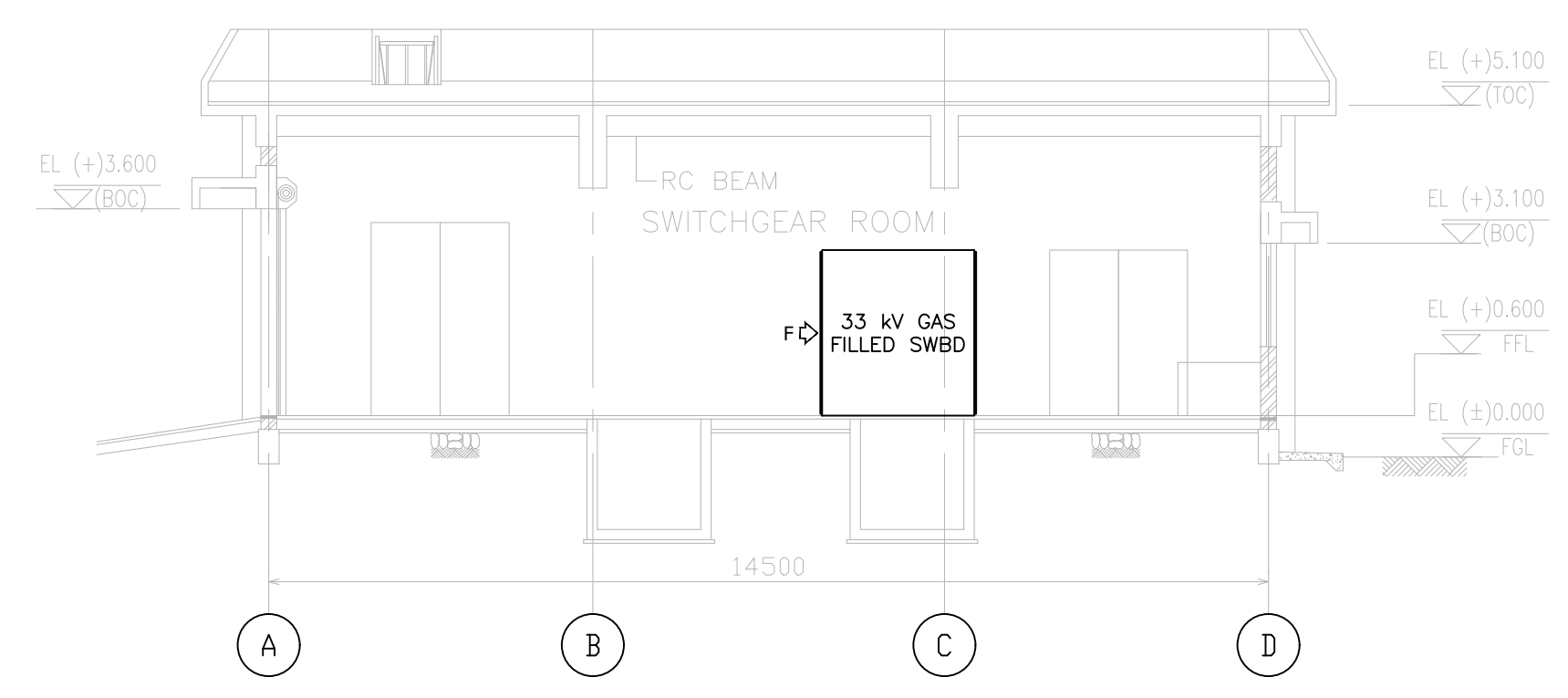
TRACTEBEL **Engineering pvt. Ltd.**

Scale: A1 1:150 Sheet: 1 OF 1 Rev: D
 Project No: P.020678 Discipline Code: M System Code: 44415 Serial No: E002

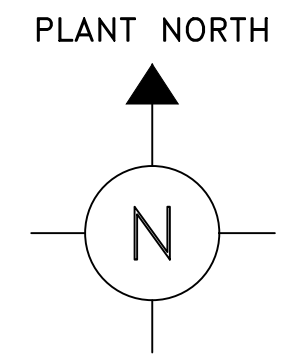




EXISTING EQUIPMENT LAYOUT FOR GROUND FLOOR PLAN AT EL+0.600 (FFL)



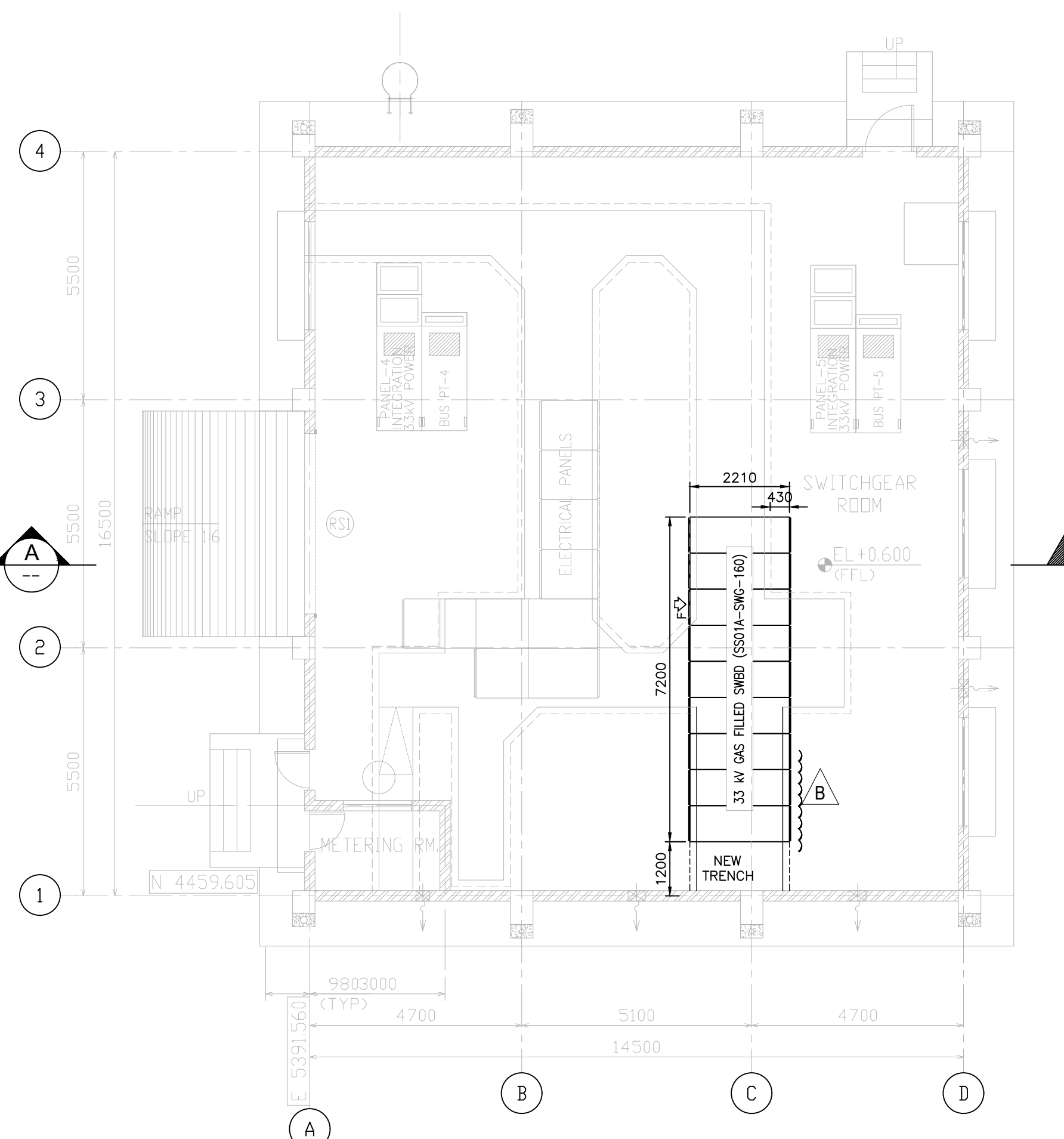
SECTION A-A



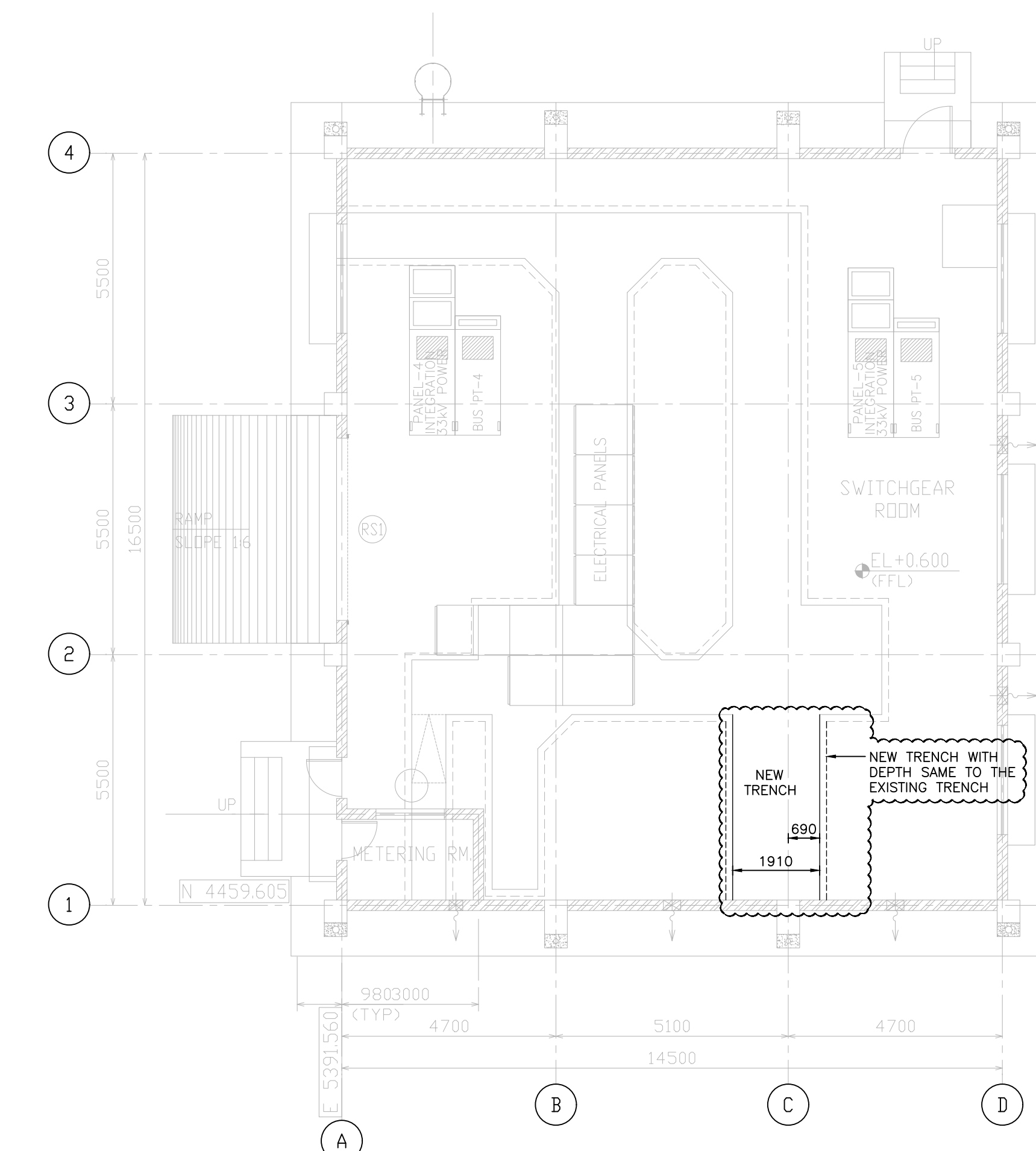
KEYPLAN

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES.
2. THESE PANELS SHALL BE REMOVED AFTER COMMISSIONING OF THE NEW 33 kV GAS FILLED SWBD (SS01A-SWG-160)
3. THIS DRAWING SHOWS THE LOCATION OF NEW 33 kV GAS FILLED SWITCHBOARD (SS01A-SWG-160) IN THE EXISTING BUILDING.
4. THE NEW CABLE TRENCH INSIDE THE EXISTING BUILDING IS IDENTIFIED IN THE DRAWING.



MODIFIED EQUIPMENT LAYOUT FOR GROUND FLOOR PLAN AT EL+0.600 (FFL)



MODIFIED CABLE TRENCH LAYOUT FOR GROUND FLOOR PLAN AT EL+0.600 (FFL)

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
EQUIPMENT LAYOUT FOR SS-01A	KEPL-1617-09 -EQX-202-R2

Rev.	D	M	Y	Modifications	Drawn	Checked	Validated	Approved
B	10/01/2023			REVISED AS MARKED; ISSUED FOR APPROVAL	APH	TMA	SSB	SSB
A	07/12/2022			ISSUED FOR APPROVAL	APH	TMA	SSB	SSB

LOA NO. : 742000125 Dated 01.10.2022 SAP PO number:

OWNER / CLIENT: **ONGC MANGALORE REFINERY & PETROCHEMICALS LTD.**
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 Phone: 0091-824-2270400 Fax: 0091-824-2271239

PROJECT: POWER SYSTEM UPGRADATION PROJECT AT MRPL AROMATIC COMPLEX, MANGALORE

SUBJECT: MODIFIED SUBSTATION SS-01A LAYOUT FOR AROMATIC COMPLEX POWER SYSTEM UPGRADATION WORK

TRACTEBEL engie TRACTEBEL Engineering pvt. ltd.	Size	Scale	Sheet	Rev.
	A1	NTS	1 OF 1	B
Project No.	Discipline Code	System Code	Serial No.	
P.020678	M	44515	E006	