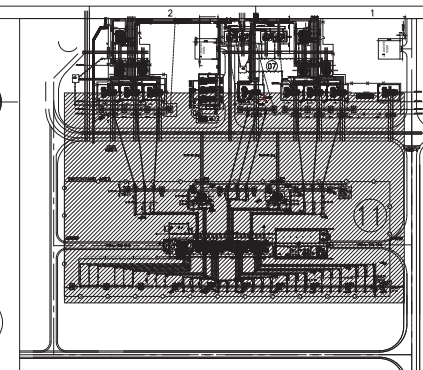
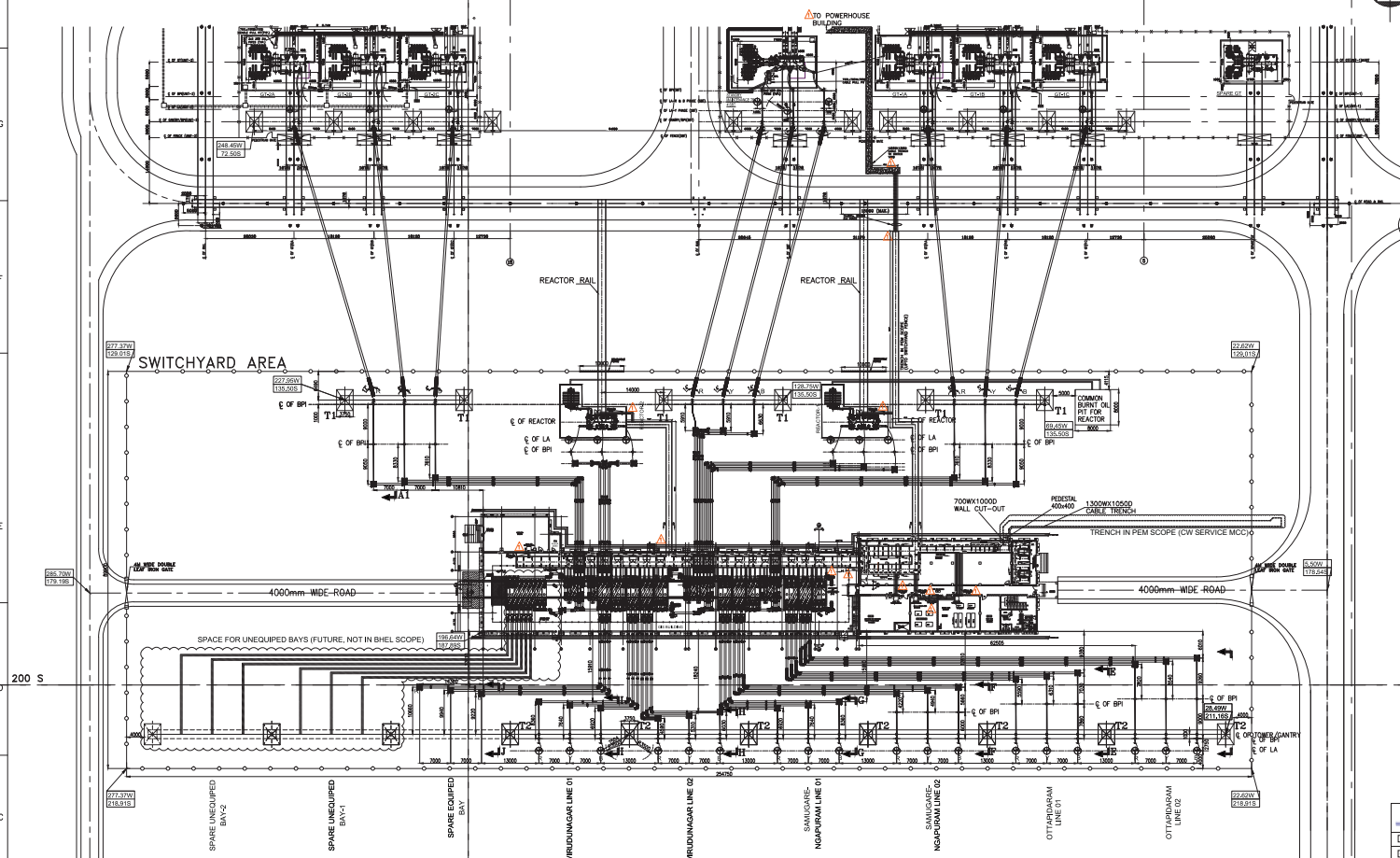


DRAWING NO. TB-2-400-316-010



KEY PLAN



TRENCH LAYOUT FOR 400KV SWITCHYARD (PLAN)

REFERENCE DRAWINGS

SINGLE LINE DIAGRAM DWG. NO. TB-1-400-316-001-REV 09
ARCHITECTURAL DRAWING CONTROL ROOM BUILDING (PLAN) DWG. NO. TB-1-400-607-620-1-REV 01
CONCEPTUAL GIS BUILDING LAYOUT DWG. NO. TB-1-400-315-005-R2
GIS LAYOUT DWG. NO. 1HYG900056-2-REV AD
PLOT PLAN DWG. NO. PE-DG-435-100-M001-REV 04
INSTALLATION DETAILS FOR CABLE SUPPORT SYSTEM (BOLTABLE TYPE) DWG. NO. PE-DG-435-507-E006 REV 01
TYPICAL DETAILS OF CABLE TRAYS AND ACCESSORIES GS AND FRP TYPE DWG. NO. PE-DG-435-507-E005 REV 02, SHEET 1 TO 14 OF 34

NOTE:

THIS DRAWING SHOULD BE REFERRED ONLY FOR TRENCH/CONDUIT ROUTING/DETAIL IN SWITCHYARD, GIS BUILDING & CONTROL ROOM BUILDING.

	UDANGSIK SUPER CRITICAL THERMAL POWER PROJECT (2 X 680 MW)	
☒	CAT-1 Drawings/notes approved for final distribution. BMDs will proceed manufacturing/implementation.	
☒	CAT-2 Approved drawings/notes for manufacturing. Manufacturing team will implement the statements given. BMDs will conduct the drawing for Approval.	
☒	CAT-4 Drawing/ drawing of this category are for information only and not for implementation.	

Approval of work and/or implementation of the items, completion of the contractual obligations and the implementation of the project shall be subject to the approval of the relevant authorities. The approval of the relevant authorities shall be subject to the approval of the relevant authorities and conditions as per the specifications and performance requirements not less than 5 (five) days prior to the start of the contract.

NOTES

1. It is mandatory to carry documents with Code 2 / 3 to Code 1 in agreed status either printed or scanned.
2. It is mandatory to carry documents with Code 2 / 3 to Code 1 in agreed status either printed or scanned.

PT. PALM OIL & CO., LTD.
 151, Jalan Kuningan, Kuningan, Indonesia
 Telp. (0378) 5311000
 Email: info@palmoil.co.id
 Website: www.palmoil.co.id

REPRESENTATIVE,
 TO THE CONTRACT DOCUMENTS
 OF THE PROJECT

Signature: _____
 Name: _____
 Title: _____

Signature: _____
 Name: _____
 Title: _____

PROJECT	2X660 MW UDANGUDI SUPERCRITICAL TPS, STAGE-I
CUSTOMER	 TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	 TATA CONSULTING ENGINEERS LIMITED BENGALURU
	BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP ...NOIDA

APFD AG	Bharat Heavy Electricals Limited	COPY RIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED it must not be used directly or indirectly in any way detrimental to the interest of the company.	DEPT CODE	NAME	SIGN	DATE
			DRN	SY		01.02.20
			DESIN	SS		01.02.20
			CHD	SKS		01.02.20
			APFD	AG		01.02.20

TRENCH LAYOUT FOR 400KV SWITCHYARD									
					DEPT.	SCALE 1:300	DRAWING NO.		
					SIGN		TB-2-400-316-010		
							SHEET 01 OF 04	REV.	01

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD

REVISED AS PER THE COMMENTS
VED: 114A33A-EL-V01-62
DATED: 12.03.2020

INDOOR 

TRENCH DETAIL
2400WX1650D



TRENCH DETAIL
2100WY10501



DETAIL
3500

TRENCH DETAIL
1300NY750

TRENCH DETAIL
1200WY1350D

[illegible]

DRAWING NO. 18-2-400-316-010



12	11
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12	11
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12	11
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12	11
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12	11
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[illegible]

LEGEND :-	
FGL	FINISHED GROUND LEVEL
FFL	FINISHED FLOOR LEVEL
TOC	TOP OF CONCRETE
FC	FALSE CEILING
UDI	UNDER DECK INSULATION
RS	ROLLING SHUTTER
D	DOOR
W	WINDOW
V	VENTILATOR
EF	EXHAUST FAN
WB	WASH BASIN

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. ALL WINDOWS AND VENTILATORS ON GROUND FLOOR OF ALL BUILDINGS SHALL BE PROVIDED WITH SUITABLE MS GRILL.
3. ALL DOOR-WINDOW, ETC. HEIGHT SHALL BE CONSIDERED FROM FINISH FLOOR LEVEL.

JOB NO.	
STATUS	CONTRACT
DISTRIBUTION	

PROJECT	2X660 MW UDANGUDI SUPERCRITICAL TPS, STAGE-I		
CUSTOMER		TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)	
CONSULTANT		TATA CONSULTING ENGINEERS LIMITED BENGALURU	
		BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA	

COPY RIGHT AND CONFIDENTIAL		SEPT	NAME	SEM	DATE
The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED it must not be used directly or indirectly in any way detrimental to the interest of the company.		CRN	TKR		20.01.20
		DESN	SS		20.01.20
		CHD	DKU		20.01.20
		APPS	AG		20.01.20

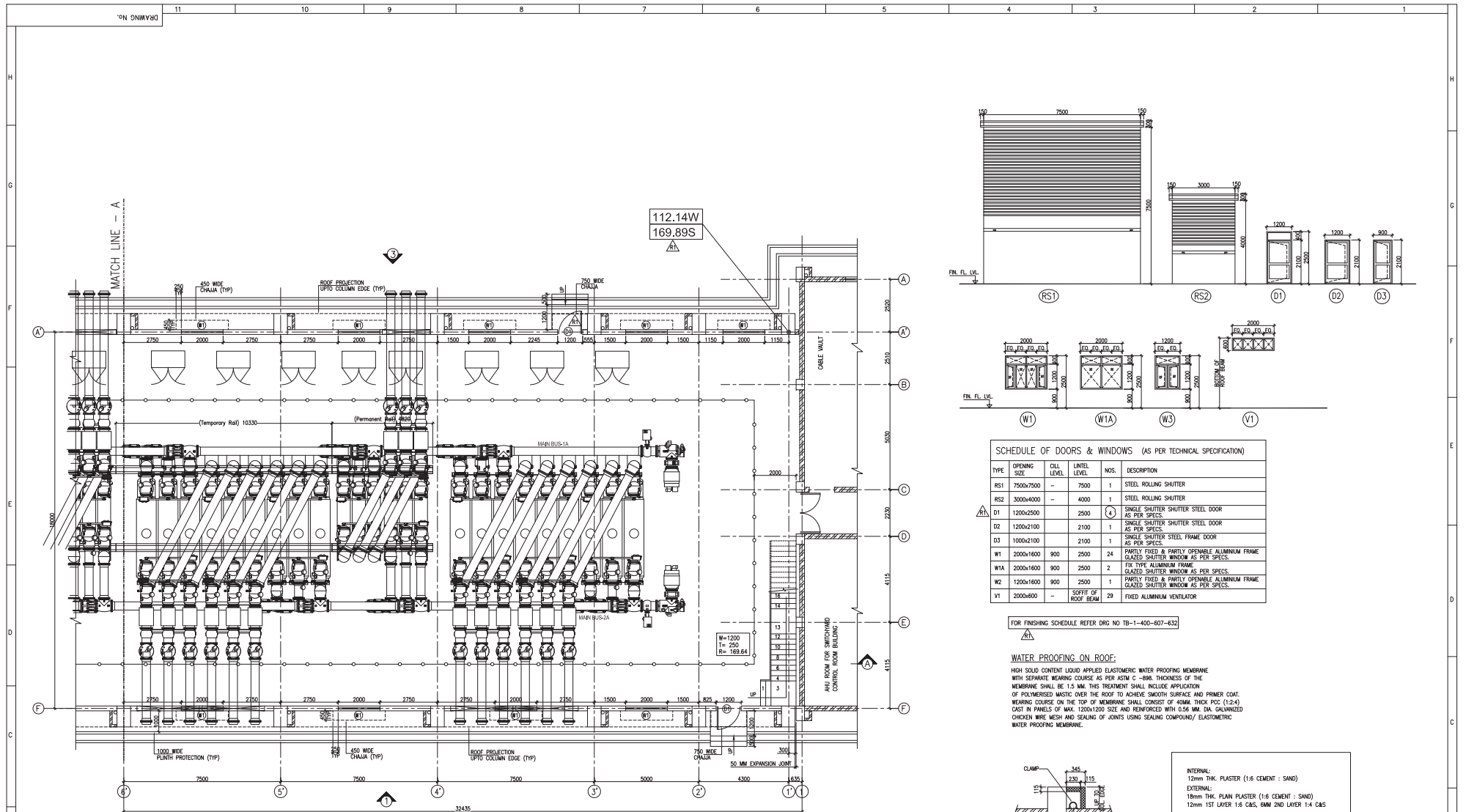
TITLE ARCHITECTURAL DRAWING GIS BUILDING (PLAN)									
					DEPT.	SCALE 1:75	DRAWING NO.		
					SGR		TB-1-400-607-640-1		
							SHEET 01 OF 06	REV. 01	

JOB NO.	
STATUS	CONTRACT
DISTRIBUTION	

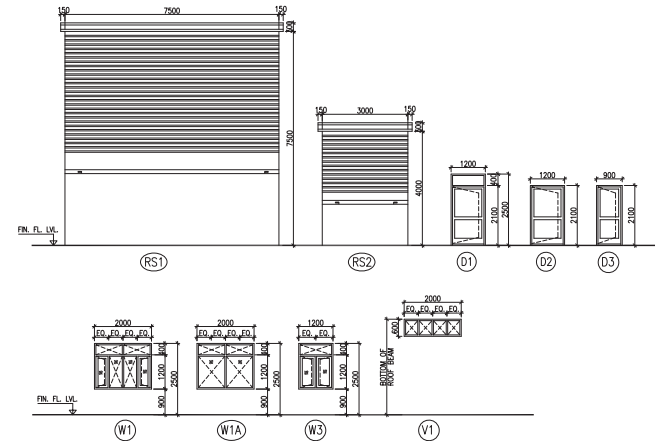
REV.	DATE	ALTD	CRD
01	19.04.20	THR	DRU

	REVISED AS PER COMMENTS
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FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM.)



GROUND FLOOR PLAN



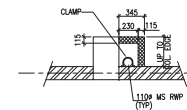
SCHEDULE OF DOORS & WINDOWS (AS PER TECHNICAL SPECIFICATION)

TYPE	OPENING SIZE	CHILL LEVEL	UNIT LEVEL	NOS.	DESCRIPTION
RS1	7500x7500	-	7500	1	STEEL ROLLING SHUTTER
RS2	3000x4000	-	4000	1	STEEL ROLLING SHUTTER
D1	1200x2500	-	2500	1	SINGLE SHUTTER SHUTTER STEEL DOOR AS PER SPECS.
D2	1200x2100	-	2100	1	SINGLE SHUTTER SHUTTER STEEL DOOR AS PER SPECS.
D3	1000x2100	-	2100	1	SINGLE SHUTTER STEEL FRAME DOOR AS PER SPECS.
W1	2000x1600	900	2500	24	PARTLY FIXED & PARTLY OPENABLE ALUMINUM FRAME GLAZED SHUTTER WINDOW AS PER SPECS.
W1A	2000x1600	900	2500	2	FIX TYPE ALUMINUM FRAME GLAZED SHUTTER WINDOW AS PER SPECS.
W2	1200x1600	900	2500	1	PARTLY FIXED & PARTLY OPENABLE ALUMINUM FRAME GLAZED SHUTTER WINDOW AS PER SPECS.
V1	2000x600	-	SOFFIT OF ROOF BEAM	29	FIXED ALUMINUM VENTILATOR

FOR FINISHING SCHEDULE REFER DRG NO TB-1-400-607-632

WATER PROOFING ON ROOF:

HIGH SOLID CONTENT LIQUID APPLIED ELASTOMERIC WATER PROOFING MEMBRANE WITH SEPARATE WEARING COURSE AS PER ASTM C-898. THICKNESS OF THE MEMBRANE SHALL BE 1.5 MM. THIS TREATMENT SHALL INCLUDE APPLICATION OF POLYMERISED MASTIC OVER THE ROOF TO ACHIEVE SMOOTH SURFACE AND PRIMER COAT. WEARING COURSE ON THE TOP OF MEMBRANE SHALL CONSIST OF 10MM THICK PCC (1:2:4) CAST IN PANELS OF MAX. 1200x1200 SIZE AND REINFORCED WITH 0.56 MM DIA. GALVANIZED CHICKEN WIRE MESH AND SEALING OF JOINTS USING SEALING COMPOUND/ ELASTOMERIC WATER PROOFING MEMBRANE.



TYP. RWP FIXING DETAIL

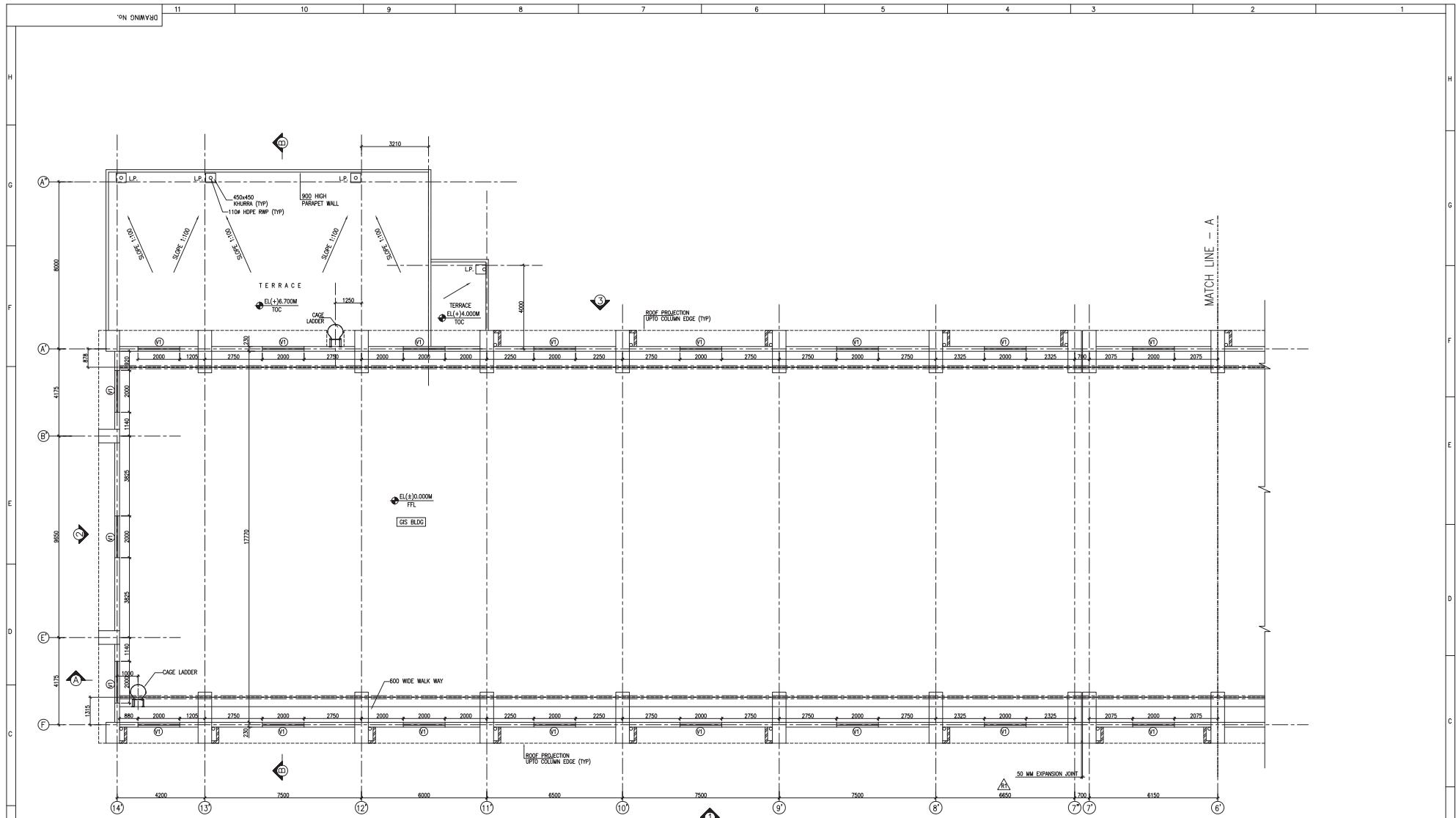
INTERNAL:
12mm THK. PLASTER (1:6 CEMENT : SAND)
EXTERNAL:
18mm THK. PLASTER (1:6 CEMENT : SAND)
12mm 1ST LAYER 1:6 CAS, 6MM 2ND LAYER 1:4 CAS
CEILING EXCEPT FOR WHERE FALSE CEILING WILL BE PROVIDED.
6mm THK. PLAIN PLASTER (1:4 CEMENT : SAND)

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. ALL WINDOWS AND VENTILATORS ON GROUND FLOOR OF ALL BUILDINGS SHALL BE PROVIDED WITH SUITABLE MS GRILL.
3. ALL DOOR-WINDOW, ETC. HEIGHT SHALL BE CONSIDERED FROM FINISH FLOOR LEVEL.

PROJECT	2X660 MW UDANGUDI SUPERCRITICAL TPS, STAGE-I
CUSTOMER	TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	TATA CONSULTING ENGINEERS LIMITED BENGALURU
DESIGNER	BARHAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA
DATE	19.04.20
REVISED AS PER COMMENTS	
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TITLE ARCHITECTURAL DRAWING GIS BUILDING (PLAN)	
SCALE	1:75
DRAWING NO.	TB-1-400-607-640-1
SHEET NO.	06
REV.	01

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM.)



PLAN AT CRAIN GIRDER LEVEL @ EL(+)-9.500M

- NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
 2. ALL WINDOWS AND VENTILATORS ON GROUND FLOOR OF ALL BUILDINGS SHALL BE PROVIDED WITH SUITABLE MS GRILL.
 3. ALL DOOR-WINDOW, ETC. HEIGHT SHALL BE CONSIDERED FROM FINISH FLOOR LEVEL.

REV	DATE	BY	CHKD	APPD	REV	DATE	BY	CHKD	APPD	REV	DATE	BY	CHKD	APPD

JOB NO.	
STATUS	CONTRACT
DISTRIBUTION	

PROJECT	2X660 MW UDANGUDI SUPERCRITICAL TPS, STAGE-1
CUSTOMER	TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	TATA CONSULTING ENGINEERS LIMITED BENGALURU
DESIGNED BY	BHARAT HEAVY ELECTRICALS LTD
CHECKED BY	TRANSMISSION BUSINESS GROUP
APPROVED BY	NOIDA
DATE	19.04.20
TIME	1:30
SCALE	1:75
DRAWING NO.	TB-1-400-607-640-1
REV	01

Architectural floor plan of a building section, showing a long rectangular structure with a central corridor and various rooms. The plan includes dimensions, grid lines (A-F, 1-6), and a match line. Key features include a cable vault, a platform, and a room for a switchboard control room building. A section line 3-3 is indicated.

Dimensions:

- Overall width: 18000
- Overall length: 43000
- Room dimensions (from left to right): 2750, 2000, 2750, 2750, 2000, 2750, 2750, 2000, 2750, 1500, 2000, 1500, 1500, 2000, 1150
- Room dimensions (from top to bottom): 2500, 2510, 5800, 2230, 4115, 4115

Grid Lines:

- Horizontal: 1, 2, 3, 4, 5, 6
- Vertical: A, B, C, D, E, F

Match Line - A

Section Line 3-3

Room Details:

- Room 1: 1000 HIGH REMOVAL HAND RAIL
- Room 2: ELEVATOR PLATFORM
- Room 3: ROOM FOR SWITCHBOARD CONTROL ROOM BUILDING
- Room 4: 50 MM EXPANSION JOINT

Room Schedule:

Room No.	Room Name	Area (sq. m)
1	Room 1	1000
2	Room 2	250
3	Room 3	169.64

PLAN AT CRAIN GIRDER LEVEL @ EL(+79.500M)

12	11	10	9	8	7	6	5	4	3	2	1	SEN	SWITCH OF SS	REV. 01
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PROJECT	2X660 MW UGANDUHI SUPERCRITICAL TPS, STAGE-1				
CUSTOMER	 TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)				
CONSULTANT	 TATA CONSULTING ENGINEERS LIMITED BENGALURU				
	BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA				
					
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TITLE	ARCHITECTURAL DRAWING GIS BUILDING (PLAN)				
	DESIGNED BY 	SCALE 1:75	DRAWING NO TP-1-400-807-640-1	SHEET NO OF 06	
	CHECKED BY 	REV 01			

Architectural drawing of a roof plan for a building. The drawing shows a large rectangular area with a grid of columns and rows. The columns are labeled 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 from left to right. The rows are labeled A, B, C, D, E, F, G, H from bottom to top. The drawing includes various annotations such as 'TERRACE', 'ROOF LINE', '900 HIGH PARAPET WALL', and '450x450 KHURRA (TYP)'. It also shows dimensions and a match line on the right side.

Key features and annotations:

- Grid Lines:** Columns 14 to 1 and Rows A to H.
- Terrace:** Multiple terrace areas are indicated, with elevations such as EL(+14.000M TOC) and EL(+15.500M TOC).
- Roof Line:** The boundary of the roof is marked with a dashed line.
- Parapet Wall:** 900 HIGH PARAPET WALL is shown along the edges of the roof.
- Khurra:** 450x450 KHURRA (TYP) are shown as small squares on the roof.
- Slope:** Slopes are indicated with arrows and values such as 0.01:1.3675 and 0.01:1.100.
- Dimensions:** Various dimensions are shown, including 3210, 4000, 1250, 4175, 9650, 4200, 7500, 6000, 6500, 7500, 6650, 700, and 6150.
- Match Line:** A match line is shown on the right side, labeled 'MATCH LINE - A'.

12	11	10	9	8	7	6	5	4	3	2	1	REV. 01
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PROJECT		2X660 MW UDANGUDI SUPERCRITICAL TPS, STAGE-I	
CUSTOMER		 TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)	
CONSULTANT		 TATA CONSULTING ENGINEERS LIMITED BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA	
JOB NO. STATUS CONTRACT DISTRIBUTION		 TAMIL NADU GOVT. GOVERNMENT OF INDIA	
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TITLE		ARCHITECTURAL DRAWING GS BUILDING (PLAN) 1	
3		2	
1		1	

Architectural floor plan of a building. The plan shows a central terrace area with a staircase on the right side. The building is bounded by grid lines 1 through 11 horizontally and A through H vertically. Key features include:

- Dimensions:** Overall width is 18000 units, and overall depth is 18000 units. The terrace area is 15000 units wide and 15000 units deep.
- Grid Lines:** Horizontal grid lines are labeled 1 through 11. Vertical grid lines are labeled A through H.
- Annotations:**
 - 900 HIGH PARAPET WALL:** Located along the perimeter of the terrace.
 - 800 HIGH PARAPET WALL:** Located along the perimeter of the staircase area.
 - 50 MM EXPANSION JOINT:** Located near the staircase.
 - W=1200, F=250, Re=171.42:** Staircase specifications.
 - EL(+15.500M) TOC:** Terrace level and top of concrete.
 - EL(+9.500M) TOC:** Staircase level and top of concrete.
- Staircase:** Located on the right side of the terrace, with a width of 1200 units and a depth of 250 units.
- Match Line:** Indicated on the left side of the plan.

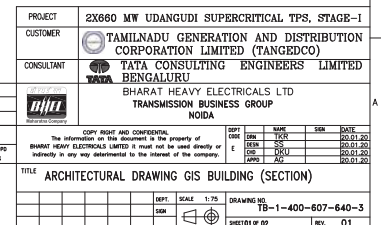
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JOB NO.					
STATUS			CONTRACT		
DISTRIBUTION					
REV.	DATE	ALTD	CHD	APPR	
01	19.04.20	TYR	DRJ	SG	
REVISED AS PER COMMENTS					

PROJECT	2X660 MW UDANUGUDI SUPERCRITICAL TPS, STAGE-1		
CUSTOMER	 TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)		
CONSULTANT	 TATA CONSULTING ENGINEERS LIMITED BENGALURU		
	BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA		
	 COPY RIGHT AND CONFIDENTIALITY The information on this drawing is the property of the company and is to be used only for the project or industry in any way detrimental to the interest of the company.		
TITLE	ARCHITECTURAL DRAWING GIS BUILDING (PLAN)		
	DPT. SCALE 1:5 	DRAWING NO. TB-1-400-807-640-01 SHEET NO. 01 OF 01	

Architectural section drawing of a building facade. The drawing shows a cross-section with various structural elements and openings. Key features include:

- Roof Treatment:** Indicated as "AS PER TECH. SPECS." with a dashed line.
- Openings:** Several rectangular openings are shown, some labeled "OPENING FOR PHS (TENTATIVE)".
- Handrails:** A "900 HIGH RAILING" is shown across the middle section. A "1200 HIGH REMOVAL HAND RAIL" is shown on the right side.
- Expansion Joint:** A "50 MM EXPANSION JOINT" is indicated near the right edge.
- OS Opening:** A small opening labeled "OS OPENING" is shown near the bottom center.
- Match Line:** A vertical line on the left is labeled "MATCH LINE - A".
- Flooring:** The bottom is labeled "FLOORING AS/SPECIFICATION".
- Elevations:** Several elevation points are marked:
 - EL(+115.500M) TOC
 - EL(+115.500M) TOP OF SCLT
 - EL(+118.500M) TOC
 - EL(+117.42M) TOC
 - EL(+117.000M) TOC
- Dimensions:** A dimension of "W=1200" is shown on the right side.
- Detail A:** A circular detail callout labeled "DETAIL A" is shown near the expansion joint.

[illegible]

SECTION B-B

SECTION C-C

PLINTH PROTECTION ALONG BUILDING WITH DRAIN-TYPICAL

DETAIL OF RAMP

TYP. DETAIL OF PARAPET

NOTES:-

- 1 ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- 2 ALL WINDOWS AND VENTILATORS ON GROUND FLOOR OF ALL BUILDINGS SHALL BE PROVIDED WITH SUITABLE MS GRILL.
3. ALL DOOR-WINDOW, ETC. HEIGHT SHALL BE CONSIDERED FROM FINISH FLOOR LEVEL.

PROJECT: 2X660 MW UDANGUDI SUPERCRITICAL TPS, STAGE-I

CUSTOMER: TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)

CONSULTANT: TATA CONSULTING ENGINEERS LIMITED BENGALURU

CLIENT: BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA

JOB NO.: 1804-2017-001

STATUS: CONTRACT

DISTRIBUTION:

REVISED AS PER COMMENTS

ARCHITECTURAL DRAWING GIS BUILDING (SECTION)

DEPT.: 1.75

SCALE: 1:75

DRAWING NO.: TB-1-400-607-640-3

SHEET NO. OF 02

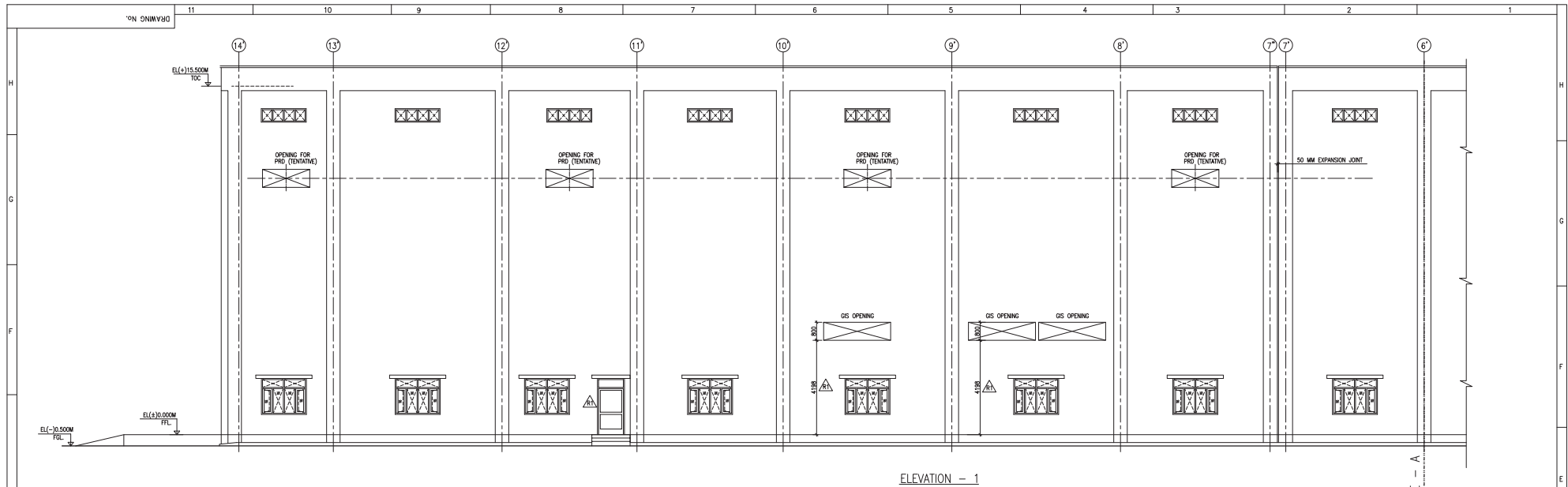
REV.: 01

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

PROJECT	2X660 MW UGUNDUHI SUPERCritical TPS, STAGE-1			
CUSTOMER	 TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)			
CONSULTANT	 ATA CONSULTING ENGINEERS' LIMITED BANGALURU			
CLIENT'S LOGO	 BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA			
WE ACCEPT THESE AND CONFIRMATIONS. The information on file forwarded to the authority of the client, shall be true and correct and shall not be used for any purpose other than that intended by or indirectly as may vary detrimental to the interest of the company.				
TITLE	ARCHITECTURAL DRAWING GIS BUILDING (SECTION)			
DEPT.	SCALE	DRAWING NO.	REV.	DATE
001	1 : 75	TSB - 1-400-607-640-3	01	
		SHEET 12 OF 02		

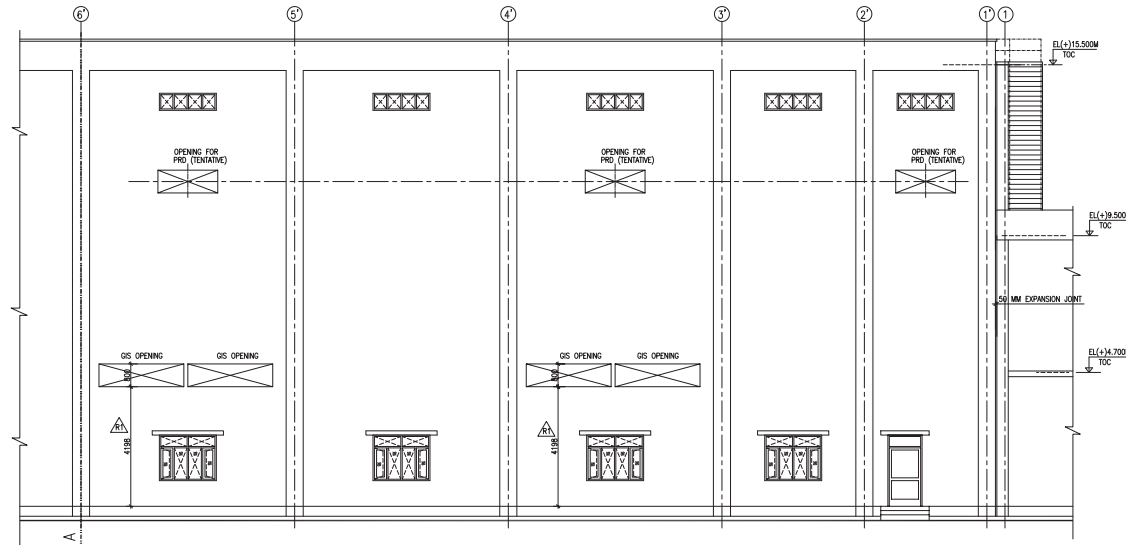
Architectural drawing of the 2X860 MW Udangudi Supercritical TPS, Stage-1, showing elevations of the GIS building. The drawing includes four elevations: Elevation - 3 (top left), Elevation - 2 (top right), Elevation - 3 (bottom left), and Elevation - 3 (bottom right). The elevations show the building's facade with various openings, windows, and structural details. A match line is indicated between the two Elevation - 3 drawings. The drawing is titled "ARCHITECTURAL DRAWING GIS BUILDING (ELEVATION)" and includes a project information block with details such as Project Name, Customer, Consultant, and Drawing Number.

FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN MM.)



ELEVATION - 1

MATCH LINE - A



ELEVATION - 1

MATCH LINE - A

- NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
 2. ALL WINDOWS AND VENTILATORS ON GROUND FLOOR OF ALL BUILDINGS SHALL BE PROVIDED WITH SUITABLE MS GRILL.
 3. ALL DOOR-WINDOW, ETC. HEIGHT SHALL BE CONSIDERED FROM FINISH FLOOR LEVEL.

REV	DATE	ALD	DD	APPO	REV	DATE	ALD	DD	APPO	REV	DATE	ALD	DD	APPO
01	19.04.20													

JOB NO.	CONTRACT
STATUS	DISTRIBUTION

PROJECT	2X660 MW UDAGUDI SUPERCRITICAL TPS, STAGE-1
CUSTOMER	TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	TATA CONSULTING ENGINEERS LIMITED BENGALURU
CLIENT	BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA
TITLE	ARCHITECTURAL DRAWING GIS BUILDING (ELEVATION)
DATE	19.04.20
SCALE	1:75
DRAWING NO.	TB-1-400-607-640-2
REV	01

REF. NO. NO. 65002-A-517-01
REF. DRG. NO. 3 469 00 01756
INVENTORY NO.
SIGN. DATE
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DRG. NO. 3 469 00 01756

102

103

104

105

106

107

108

NOTES:-

1. WHEN REFERRING THIS DRAWING PLEASE QUOTE MVAR & W.O. NO.

2. 320 DIA. TWIN BI-DIRECTIONAL ROLLERS MOUNTED AT 1676 mm RAIL GAUGE IN BOTH DIRECTION ARE PROVIDED FOR MOVEMENT OF REACTOR AT SITE AND ROLLERS ARE TO BE REMOVED BEFORE ERECTION

3. PAINTING AT OUTSIDE THE REACTOR TANK & COOLER CONTROL CABINET IS AS PER SHADE NO. 631 OF IS:5.

4. WIRING FROM INSTRUMENT CTS. ETC. ARE NOT SHOWN FOR CLARITY.

5. FOUNDATION BOLTS ARE IN THE SCOPE OF BHEL SUPPLY.

6. FOR PART LIST OF OGA REFER DRAWING NO. 3 469 00 02033.

7. DIMNS. SHOWN THUS ARE OVERALL SHIPPING DIMENSIONS EXCLUSIVE OF PACKING.

8. DIMENSIONS SHOWN ARE WITH REF. TO PLINTH LEVEL. PLEASE NOTE THAT PLINTH LEVEL IS 450 MM ABOVE THE GROUND LEVEL.

9. FOR TANK COVER BOLTED REFER DETAIL 'B' SHT. NO. 03.

IMPORTANT NOTE :-

1. THE DESIGN FEATURES SHOWN ON THIS DRAWING (GENERALLY INLINE WITH IEC : 60076-6 APPLICABLE STANDARD & AGREED CUSTOMER SPECIFICATION) MEETS THE STATUTORY, REGULATORY & SAFETY REQUIREMENTS WITH RESPECT TO EARTHING ARRANGEMENT, DANGER & OTHER LABELS, CLEARANCES IN AIR PROVISION FOR PRESSURE RELIEF DEVICE, GAS ACTUATED RELAY AND ANTI-EARTHQUAKE CLAMPING ARRANGEMENT.

MIN. AIR CLEARANCES (IN MM)

	420 KV	145 KV
PHASE TO PHASE	4000	NA
PHASE TO EARTH	3500	1050

TABLE

SUB ASSY. MK NOS.

SUB ASSY	MK-01	MK-02	MK-03	MK-04	MK-05	MK-06	MK-07	MK-08	MK-09	MK-10	MK-11	MK-12	MK-13	MK-14	MK-15	MK-16	MK-17	MK-18	MK-19	MK-20	MK-21	MK-22	MK-23	MK-24	MK-25
QTY.	002	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	002	001	001	001

REV

DATE

ALT.

REV

DATE

ALT.

REV

DATE

ALT.

MKP

REV

DATE

ALT.

MKP

-SD-

02

04.10.19

CKD.

KD/AJ

01

30.07.19

CKD.

KD/AJ

-SD-

ZONE

ZONE

ZONE

COMMENTS INCORPORATED AS PER LETTER NO.11403A-EL-VDT-186 DTD.07/08/19

ZONE

DESIGN BASIS AND SIZING (RATING) OF SHUNT REACTOR ALREADY SPECIFIED IN TECHNICAL SPECIFICATION. ENCLOSED HERewith.

BHEL DRAWING/DOCUMENT NO

BP-DG-435-305-0001

WO: 67023-A-517-01

STATUS OF DRAWING "PR"

DISTRIBUTION OF PRINTS

TRE-1, TRM-3

PO. NO.

CE/PROJ/ISE/C/UTPP/EE/EO/D.179/2017

DTD 07.12.2017.

TYPE OF PRODUCT

2 X 125 MVAR, 420KV, 3-PHASE, ONAN, SHUNT REACTOR.

PROJECT

2X660MW TANGEDCO UDANGUDI THERMAL POWER PROJECT STAGE-4.

OWNER

TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD

OWNER'S CONSULTANT

TATA CONSULTING ENGINEERS LIMITED, BENGALURU

भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल

BHARAT HEAVY ELECTRICALS LTD, BHOPAL

DRN.

MKP

07.01.2019

CHD.

KD/AJ

07.01.2019

APPD.

KD/AJ

07.01.2019

DEPT

CODE

WEIGHT(kg)

SCALE

TRE

406

COMP. SCALE:1:1

TITLE

OUTLINE GENERAL ARRANGEMENT

DRG. NO.

3 469 00 02032

REV.

02

SHEET

01

OF

04

LEVEL

10200

7400

100

REACTOR TANK

HV BUSHING

1500 KG

6210

100

4267

REACTOR TANK

UN-TANKING

UN-TANKING OF H.V. BUSHING

101

102

103

104

105

106

107

108

101

102

103

104

105

106

107

108

TATA CONSULTING ENGINEERS LIMITED

VENDOR DRAWING STATUS

CATEGORY	DESCRIPTION
☒ CAT-1	Drawing/documents approved for final distribution. BHEL will proceed with manufacturing/ fabrication/construction.
☐ CAT-2	Drawing/documents cleared for manufacturing/ fabrication/construction subject to incorporating the comments given. BHEL to resubmit the drawing for Approval in Category - 1. Comments will be marked on the drawing documents.
☐ CAT-3	Drawing document will be corrected as per comment and resubmitted by BHEL for further review/checking.
☐ CAT-4	Drawing document of this category are for information only and not for approval. Information furnished on the document is noted.

Note:

1. It is mandatory to close documents with Code 2 & 3 to Code 1 in agreed contract period or 2 weeks, whichever is lower.

2. Any design changes / modification required to be carried out in Code 4 Drawings / Documents shall be the responsibility of BHEL. BHEL to resubmit reflecting the Design Changes for information.

Approval conveyed herein neither releases the Vendor/Contractor of his contractual obligations and his responsibilities for correctness of dimensions, materials of construction, weights, quantities, design details, assembly fit, performance requirements and conformity of supplies with the Indian Statutory Laws as may be applicable, nor does it limit the purchaser's rights under the contract.

Reviewed by S.S. Geetha Date

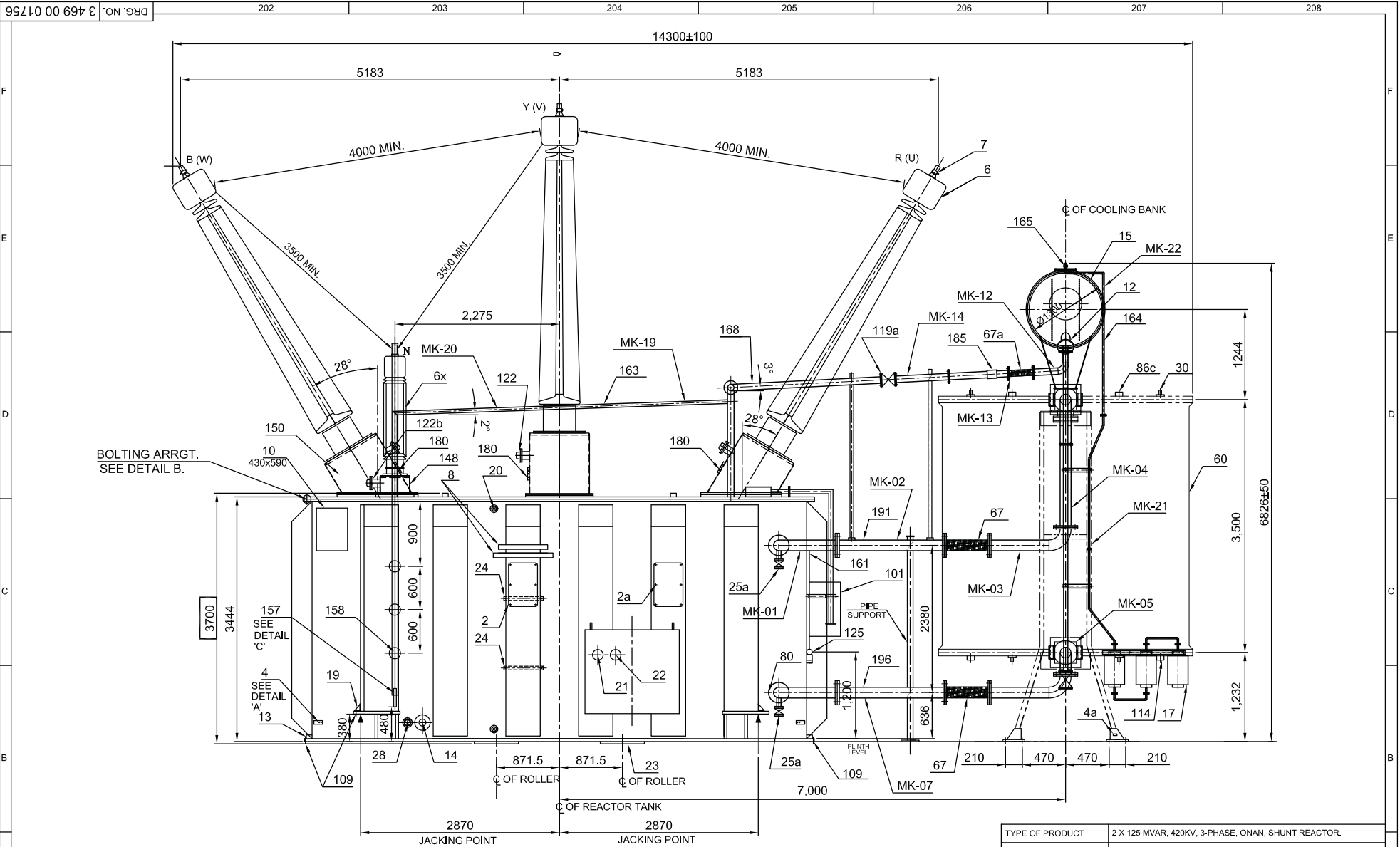
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

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IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.REF. WO. NO. 65002-A-517-01
REF. DRG. NO. 3 469 00 01756

SIGN/DATE

INVENTORY NO.



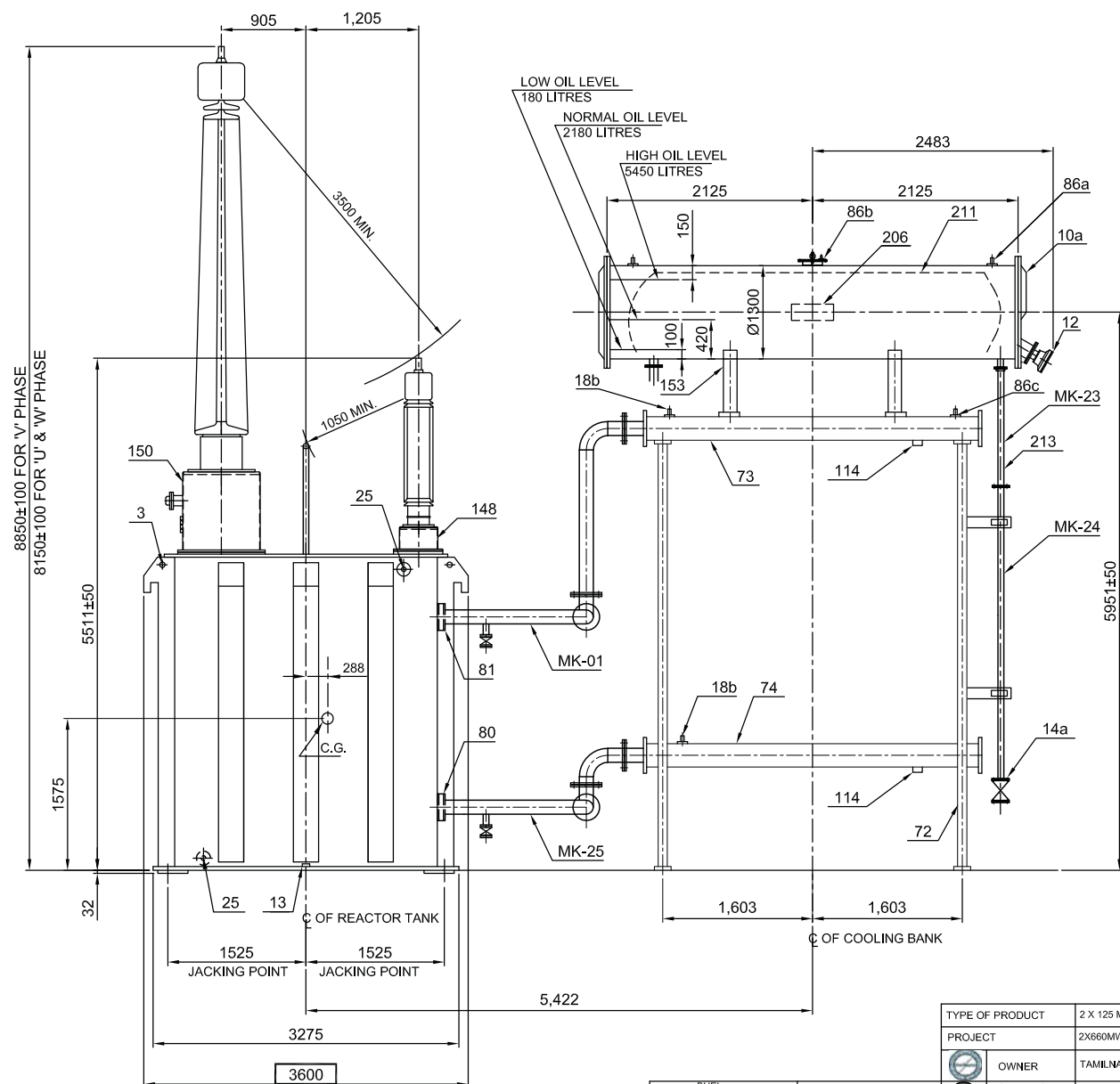
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		CKD.				CKD.		02	04.10.19	CKD.	KD/AJ		01	30.07.19	CKD.	KD/AJ	-SD-	
		APPD.				APPD.				APPD.	KD/AJ				APPD.	KD/AJ	-SD-	
ZONE				ZONE				ZONE	COMMENTS INCORPORATED AS PER LETTER NO. 11403A-EL-VDT- 186 DTD.07/08/19					ZONE	DESIGN BASIS AND SIZING (RATING) OF SHUNT REACTOR ALREADY SPECIFIED IN TECHNICAL SPECIFICATION. ENCLOSED HERewith.			

BHEL DRAWING/DOCUMENT NO	BP-DG-435-305-0001
WO: 67023-A-517-01	
STATUS OF DRAWING "PR"	
DISTRIBUTION OF PRINTS	
TRE-1, TRM-3	
PQ. NO.	CE/PROJ/ISE/C/UTPP/EE/E/LO/D.179/2017 DTD 07.12.2017.

TYPE OF PRODUCT	2 X 125 MVAR, 420KV, 3-PHASE, ONAN, SHUNT REACTOR,		
PROJECT	2X660MW TANGEDCO UDANGUDI THERMAL POWER PROJECT STAGE-I.		
OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD		
OWNER'S CONSULTANT	TATA CONSULTING ENGINEERS LIMITED, BENGALURU		
DEPT	406	SCALE	COMP. SCALE: 1:1
TRE	406	SCALE	COMP. SCALE: 1:1
TITLE	OUTLINE GENERAL ARRANGEMENT (ELEVATION VIEW)		
DRG. NO.	3 469 00 02032	REV.	02
SHEET	02	OF	04

INVENTORY NO.

TYPE OF PRODUCT		2 X 125 MVAR, 420KV, 3-PHASE, ONAN, SHUNT REACTOR,			
PROJECT		2X660MW TANGEDCO UDANGUDI THERMAL POWER PROJECT STAGE-I,			
	OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD			
	OWNER'S CONSULTANT	TATA CONSULTING ENGINEERS LIMITED, BENGALURU			
R ^N			भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल BHARAT HEAVY ELECTRICALS LTD. BHOPAL		
	NAME	SIGN	DATE		
	DRIN.	MKP	07.01.2019		
DEPT	CODE	WEIGHT(kg)	SCALE		
				CHD.	KD/AJ
TRE	406	----	COMP SCALE-1:1	APPD.	KD/AJ
					07.01.2019
TITLE/		OUTLINE GENERAL ARRANGEMENT (PLAN VIEW)		DRG. NO.	3 469 00 02032
				SHEET	03 OF 04
		307		308	
				REV. 02	



REV	DATE	ALT.			REV	DATE	ALT.			REV	DATE	ALT.	MKP		REV	DATE	ALT.	MKP	-SD
		CKD.					CKD.			02	04.10.19	CKD.	KD/AJ		01	30.07.19	CKD.	KD/AJ	-SD
		APPD.					APPD.					APPD.	KD/AJ				APPD.	KD/AJ	-SD
ZONE					ZONE					ZONE					ZONE				
										COMMENTS INCORPORATED AS PER LETTER NO. 11403A-EL-VDT- 186 DTD 07/08/19					DESIGN BASIS AND SIZING (RATING) OF SH REACTOR ALREADY SPECIFIED IN TECHNIO SPECIFICATION. ENCLOSED HEREWTH.				

BHEL		BP-DG-435-305-0001	
DRAWING/DOCUMENT NO		WO: 67023-A-517-01	
ADDITIONAL INFORMATION		STATUS OF DRAWING**PR	
		DISTRIBUTION OF PRINTS	
		TRE-1, TRM-3	
PO. NO.	CE/PROJ.II/SE/CUTPP/EE/E/LO/ID.179/2017 DTD 07.12.2017.		

TYPE OF PRODUCT		2 X 125 MVAR, 420KV, 3-PHASE, ONAN, SHUNT REACTOR.				
PROJECT		2X660MW TANGEDCO UDANGUDI THERMAL POWER PROJECT STAGE-4.				
		OWNER				
OWNER'S CONSULTANT		TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD				
		TATA CONSULTING ENGINEERS LIMITED, BANGALURU				
भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल BHARAT HEAVY ELECTRICALS LTD, BHOPAL		DRN.		NAME	SIGN	DATE
SR	DEPT	CODE	WEIGHT(kg)	SCALE	CHD, KID/AJ	07.01.2019
TRE	406	----	COMP.SCALE:1:1		APPD, KID/AJ	07.01.2019
TITLE		OUTLINE GENERAL ARRANGEMENT (END VIEW)			DRG. NO.	REV.
					3 469 00 02032	02

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

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REF.WO.NO. 65002-A-517-01
REF.DRG.NO. 3 469 00 01758

SIGN. DATE

INVENTORY NO.

