Bharat Heavy Electricals Limited
Material Management Division,
Transmission Business Group,
5th Floor, Advant Navis IT Business Park,
Plot No. 7, Sector-142, Expressway Noida, Noida-201305
Distt. Gautam Budh Nagar (U.P.)
Phones: 0120-6748487
Email: bkumawat@bhel.in

Subject- Corrigendum-2 TO NIT No.36714 **DATE :03.03.2018**

1.	Project	:	**UJVNL 2x60MW VYASI HYDRO ELECTRIC PROJECT(HEP)**
2.	Equipment / Item	:	**220kV GIS**
3.	Enquiry No. / Date	:	**277E319 , Dtd. 22/01/2018, Extended Due Date 13.03.2018**

With reference to the above tenders, kindly note the following and submit with tender;

(1) Revised BOQ in Price bid format
(2) Detailed Revised BOQ
(3) Corrigendum in Technical Specification and drg.

All other terms and conditions of tender shall remain same.

3/3/18

Bhagchand Kumawat
Mgr (TBMM)

Bharat Heavy Electricals Limited
Transmission Business Group
Noida

Dated: 28.02.2018

Customer: UJVNL
Project : 2X60 MW VYASI HEP

Corrigendum for Technical Specification for 220 kV Gas Insulated Substation

CORRIGENDUM

Sl. no.	Pg. no./Cl. no.	Item	Description	Corrigendum/Clarifications
1.	Technical Specification of 220kV GIS, Doc. No. TB-398-316-101, Rev. No.00, Section-2 Clause No. 9.04.00	Operating Mechanism of Circuit Breaker	Operating Mechanism of Circuit Breaker shall be operated by electric spring charged mechanism.	**Corrigendum**:-Operating Mechanism of Circuit Breaker shall be operated by electric spring charged mechanism or electro hydraulic mechanism or a combination of these. Please refer extract page of Technical specification (page no. 19 to 21 out of 65 of Section-2) for Technical details of Operating mechanism of Circuit Breaker.
2.	Item No. A9 of BOQ of Section-1 of TS	SF6 to Oil Bushing	As per BOQ of Section-1of Tender technical specification.	**Clarification:** - As per BOQ of Section-1of Tender technical specification. Bidder to note that connection interface (Connectors of both ends i.e. Transformer Bushing &GIS bushing & interconnector) between GIS and Transformer HV Bushing will in GIS manufacturer scope which also include hardware like Screws, washers, nuts etc. Required inputs from transformer manufacturer will be furnished during details engineering however tentative OGA, 245kV 1250 AMP (300CT) H.V. Bushing ASSY. is attached for tender purpose only.

28/02/2018

Rakesh

Bharat Heavy Electricals Limited
Transmission Business Group
Noida

Dated: 28.02.2018

Customer: UJVNL
Project : 2X60 MW VYASI HEP

Corrigendum for Technical Specification for 220 kV Gas Insulated Substation

Sl. no.	Pg. no./Cl. no.	Item	Description	Corrigendum/Clarifications
3.	Item No. E1 of BOQ of Section-1 of TS	Training for GIS to UJVN/BHEL engineers - Visit to manufacturer's works = 30 mandays	Training for GIS to UJVN/BHEL engineers -Visit to manufacturer's works = 30 mandays Unit:-Lot Quanitity-1	**Corrigendum** :- Training for GIS to UJVNL/BHEL engineers -Visit to manufacturer's works = Minimum 30 mandays Unit:-Lot Quanitity-1
4.	Item No. E2 of BOQ of Section-1 of TS	Lodging and boarding of Training participants for GIS to UJVN/BHEL engineers -at manufacturer's works = 30 mandays	Lodging and boarding of Training participants for GIS to UJVN/BHEL engineers -at manufacturer's works = 30 mandays Unit:-Lot Quanitity-1	**Corrigendum** :- Lodging and boarding of Training participants for GIS to UJVNL engineers at manufacturer's works = 30 mandays Unit:-Lot Quanitity-1
5.	Item No. E3 of BOQ of Section-1 of TS	To and Fro charges Training participants for GIS training to UJVN/BHEL engineers-at manufacturer's works	To and Fro charges Training participants for GIS training to UJVN/BHEL engineers-at manufacturer's works. Unit:-Lot Quanitity-1	**Corrigendum** :- To and Fro charges for Training of participants (for GIS training) of UJVNL engineers at manufacturer's works. Unit:-Lot Quanitity-10 (1lot equal 1Tarinee To and Fro charges by 2AC/Air fare from Dehradun to Manufacture works)
6.	Item No. E4 of BOQ of Section-1 of TS	Training for GIS to UJVN/BHEL engineers - ETC, Operation and maintenance of Plant (GIS) at site = 30 mandays	Training for GIS to UJVN/BHEL engineers -ETC, Operation and maintenance of Plant (GIS) at site = 30 mandays Unit :- Lot Quantity :-1	**Corrigendum** :- Training for GIS to UJVNL engineers -ETC, Operation and maintenance of Plant (GIS) at site =Minimum 30 mandays Unit :- Lot Quantity :-1

Ved 28/2/2018

Rakesh

Bharat Heavy Electricals Limited
Transmission Business Group
Noida

Dated: 28.02.2018

Customer: UJVNL
Project : 2X60 MW VYASI HEP

Corrigendum for Technical Specification for 220 kV Gas Insulated Substation

Sl. no.	Pg. no./Cl. no.	Item	Description	Corrigendum/Clarifications
7.	Item No. E5 of BOQ of Section-1 of TS	Lodging and boarding of Training participants for GIS to UJVN/BHEL engineers -at Site = 30 mandays	Lodging and boarding of Training participants for GIS to UJVN/BHEL engineers -at Site = 30 mandays Unit :- Lot Quantity :-1	**Corrigendum** :- Lodging and boarding of Training participants for GIS to UJVNL engineers -at Site = 30 mandays Unit :- Lot Quantity :-0(Zero)
8.	Point No.2 of Technical Requirement of Technical Specification	Point No.2 of Technical Requirement Technical Specification	The manufacturer should have functional service facility with all tools and tackles, trained manpower required for installation, commissioning and repair of GIS.	**Clarification :-** The manufacturer should have functional service facility with all tools and tackles, trained manpower required for installation, commissioning and repair of GIS **with in India.**

Note:

1. Item Sl. No. A1 to A7 of BOQ of Tender specification, Bidder should refer SLD documents no. TB-VYSAI-220kV GIS-01, Rev01 Dated 23/12/2017 which attached along with tender specification.

2. All other technical parameters of Technical Specification of 220kV GIS, Doc. No. TB-375-316-001 shall remain unchanged.

3. Drawing, layout of power house which is tentative only for tender purpose and will be finalized during detailed engineering

Ved 28/02/2018 Sr. Engineer / TBEM

Rakesh 28/02/2018 AGM / TBEM

b) 415 V A.C. 3-phase, 4-wire, 50Hz

c) 220 V DC from station battery banks for control ~~circuits.~~

9.04.00 **Operating Mechanism**

General requirements:

a) Circuit breaker shall be operated by ~~pneumatic mechanism~~ ~~or~~ electric spring charged mechanism or electro hydraulic mechanism or a combination of these. The mechanism shall be housed in a dust proof cabinet and shall have IP: 42 degree of protection.

b) The operating mechanism shall be anti-pumping and trip free (as per IEC definition) electrically and either mechanically or pneumatically under every method of closing. The mechanism of the breaker shall be such that the position of the breaker is maintained even after the leakage of operating media and/or gas

c) The operating mechanism shall be strong, rigid, not subject to rebound or to critical adjustments at site and shall be readily accessible for maintenance.

d) The operating mechanism shall be suitable for high speed re-closing and other duties specified. During re-closing the breaker contacts shall close fully and then open. The mechanism shall be anti-pumping and trip free (as per IEC definition) under every method of closing.

e) The mechanism shall be such that the failure of any auxiliary spring will not prevent tripping and will not cause trip or closing operating of the power operating devise.

f) A mechanical indicator shall be provided to show open and close position of the breaker. It shall be located in a position where it will be visible to a man standing on the ground level with the mechanism housing closed. An operating counter shall also be provided in the central control cabinet.

g) Working parts of the mechanism shall be of corrosion resisting material. Bearings which require grease shall be equipped with pressure type grease fittings. Bearing pin, bolts, nuts and other parts shall be adequately pinned or locked to prevent loosening or changing adjustment with repeated operation of the breaker.

h) The contractor shall furnish detailed operation and maintenance manual of the mechanism along with the operation manual for the circuit breaker.

i) The close and trip circuits shall be designed to permit use of momentary-contact switches and push buttons.

j) Each breaker pole shall be provided with two (2) independent tripping circuits, valves, pressure switches, and coils each connected to a different set of protective relays.

k) The breaker shall normally be operated by remote electrical control. Electrical tripping shall be performed by shunt trip coils. However, provisions shall be made for local electrical control. For this purpose a local/remote selector switch and close and trip control switch/push buttons shall be provided in the breaker central control cabinet.

l) The trip coil shall be suitable for trip circuit supervision during both open and close position of breaker.

m) Closing coil and associated circuits shall operate correctly at all values of voltage between 85% and 110% of the rated voltage. Shunt trip and associated circuits shall operate correctly under all operating conditions of the circuit breaker up to the rated breaking capacity of the circuit breaker and at all values of supply voltage between 70% and 110% of rated voltage. If additional elements are introduced in the trip coil circuit their successful operation and reliability for similar applications on circuit breakers shall be clearly brought out in the additional information schedules.

n) Densimeter contacts and pressure switch contacts shall be suitable for direct use as permissive in closing and tripping circuits. Separate contacts have to be used for each of tripping and closing circuits. If contacts are not suitably rated and multiplying relays are used then fail safe logic/schemes are to be employed. DC supplies for all auxiliary circuit shall be monitored and for remote annunciations and operation lockout in case of dc failures.

o) The auxiliary switch of the breaker shall be positively driven by the breaker operating rod.

9.05.00 **Spring operated Mechanism**

a) Spring operated mechanism shall be complete with motor, opening spring & closing spring with limit switch for automatic charging and other necessary accessories to make the mechanism a complete operating unit.

b) As long as power is available to the motor, a continuous sequence of the closing and opening operations shall be possible. The motor shall have adequate thermal rating for this duty. After failure of power supply to the motor, one close-open operation shall be possible with the energy contained in the operating mechanism.

c) Breaker operation shall be independent of the motor which shall be used solely for compressing the closing spring. Facility for manual charging of the closing spring shall also be provided. The motor rating shall be such that it required preferably not more than 30 seconds for full charging of the closing spring.

d) Closing action of circuit breaker shall compress the opening spring ready for tripping.

e) When closing springs are discharged after closing a breaker, closing springs shall automatically be charged for the next operation and an indication of this shall be provided in the local and remote control cabinet.

f) Provisions shall be made to prevent a closing operation of the breaker when the spring is in the partial charged condition.

g) The spring operating mechanism shall have adequate energy stored in the operating spring to close and latch the circuit breaker against the rated making current and also to provide the required energy for the tripping mechanism in case the tripping energy is derived from the operating mechanism.

9.06.00 **Hydraulically Operated Mechanism:**

a) Hydraulically operated mechanism shall comprise of operating unit with power cylinder, control valves, high and low pressure reservoir, motor etc.

b) The hydraulic oil used shall be fully compatible for the temperature range to be encountered during operation.

c) The oil pressure switch controlling the oil pump and pressure in the high pressure reservoir shall have adequate no. of spare contacts for continuous monitoring of low pressure, high pressure etc. at switchyard control room.

d) The mechanism shall be suitable for at-least two close open operations after failure of AC supply to the motor starting at pressure equal to the lowest pressure of auto re-close duty plus pressure drop for one close open operation.

e) The mechanism shall be capable of operating the circuit breaker correctly and performing the duty cycle specified under all conditions with the pressure of hydraulic operated fluid in the operating mechanism at the lowest permissible pressure before make up. The operating time at the lowest pressure for a particular operation shall not exceed the guaranteed operating time within any value of trip coil-supply voltage as specified

f) Trip lockout shall be provided to prevent operations of the circuit breaker below the minimum specified hydraulic pressure. Alarm contacts for lost of Nitrogen shall also be provided.

g) All hydraulic joints shall have no oil leakage under the site conditions and joints shall be tested at factory against oil leakage at a minimum of 1.5 times maximum working pressure.

h) Hydraulic controls are to be provided and such controls shall be interlocked to prevent the circuit breakers from being tripped under conditions which will not allow a complete and safe trip operation. A close operation shall also be blocked unless a complete close-open or trip-free operation can be safely carried out.

i) For hydraulic operated mechanism, auxiliary switches must be provided with a separate operating device working on the same mechanism. The operation of both the mechanisms should be simultaneous.

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING **SIZE A1**

ZONE	REV	DATE	ALTERED / CHECKED / APPROVED
1	01	00	
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

INVENTORY NO. | SIGN AND DATE | REF. DRG. NO.

OUTLINE GENERAL ARRGT.

TITLE

DRAWING NO. 14580050325 REV. 00

SHT NO 1 NO OF SHT 1

DEPT-TRF | UN TOL. DIM. C/M/F | SCALE | WEIGHT (KG) REF. TO ASSY. NO. | ITEM NO | NO. OF ITEM

CODE-406

BHARAT HEAVY ELECTRICALS LTD. JHANSI

VAR	NO. OF	DATE	SIGN	NAME
AP9	RKM	22.06.16		
DB	RKM	22.06.16	MSC	DRN
		22.06.16		MSC

NAME OF CUSTOMER/PROJECT M/S:-VJVNL (VYASI HEEP)

TYPE OF PRODUCT OR 75 MVA, 1/220 KV, 3-PHASE COOLER GENERATOR TRANSFORMER

PO NO:- 111/E&M DESIGN-I/VY-EPC(6) 26-03-2014

ADDITIONAL INFORMATION
W.O. 7111417300

STATUS OF DRAWING
U

DISTRIBUTION OF PRINTS

TRF	PFC	BAY 162	BAY 3,445	BAY 647	BAY 8	BAY 9	LNR	Others
01	01				04	0		

REV	DATE	ALTERED / CHECKED / APPROVED
01		

TABLE OF REFERENCE DRAWINGS

SL. NO.	DESCRIPTION	DRG.NO.
01	OUT LINE GENERAL ARRANGEMENT	14580050325
02	FOUNDATION PLAN OF TRANSFORMER	24580050496
03	RATING & DIAGRAM PLATE (HINDI & ENGLISH)	24581950508
04	245 KV, 1250 AMP. H.V. BUSHING	34580050834
05	17.5 KV 5000 AMP. L.V. BUSHING	34580050835
06	36 KV 2000 AMP. H.V.N. BUSHING	34580050836
07	Ø 320 BI-DERECTIONAL ROLLERS	34580050837
08	SHIPPING DIAGRAM	34580050838
09	COOLER P/W SCHEME PLATE	34581950113
10	OIL FILLING INSTRUCTION PLATE	34581950114
11	GA OF M. BOX	34586250346
12	WIRING DIAGRAM OF COOLER CONTROL	34586250347

APPROXIMATE WEIGHTS

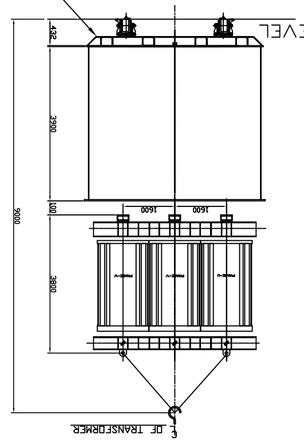
SL NO	DESCRIPTION	W.T.IN KG.
01	CORE & WINDING ASSY	62000
02	TANK AND FITTINGS	15000
03	TOTAL OIL (32000 LITRES)	28000
04	TOTAL WEIGHT	105000
05	SHIPPING WEIGHT (GAS FILLED)	80000
06	UN-TANKING WEIGHT	65000

NOTES:-

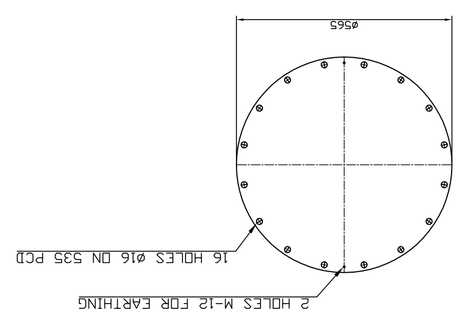
1. DIMENSIONS MARKED THUS □ ARE OVERALL SHIPPING DIMENSIONS EXCLUSIVE OF PACKING.
2. WHEN REFERRING THIS DRG. STATE 75 MVA & W.O. NO. 7111417300
3. FOUNDATION BOLTS,NUTS, & WASHERS ETC. WILL BE SUPPLIED BY BHEL JHANSI.
4. OUT SIDE PAINTING SHALL BE EPOXY TYPE TO SHADE NO 631 OF I.S. 5
5. ALL VALVES OPENING TO ATMOSPHERE SHALL BE PROVIDED WITH BLANKING PLATES.
6. CABLE WIRING UPTO MARSHALLING BOX ARE SUPPLIED BY BHEL JHANSI BUT NOT SHOWN IN THIS DRG. FOR CLARITY.

UNTANKING DETAIL

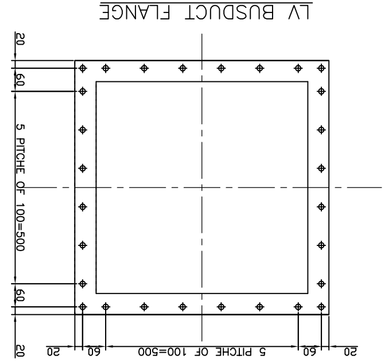
UNDER CARRIAGE SKETCH
REFER DRAWING 34580050755



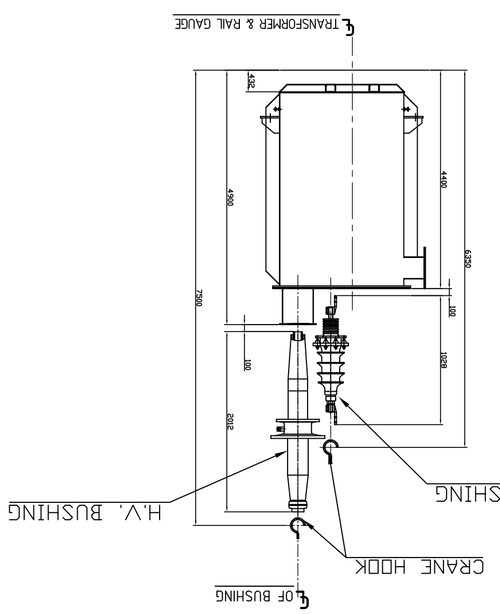
HV GIS BUSDUCT FLANGE



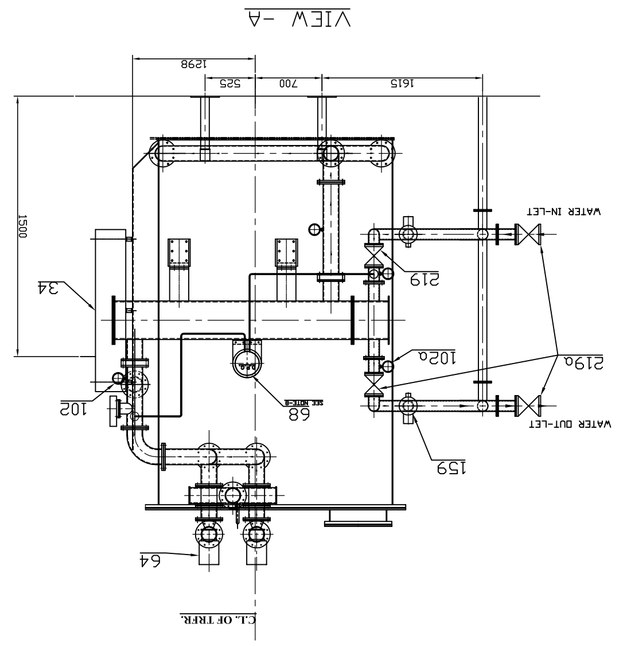
LV BUSDUCT FLANGE



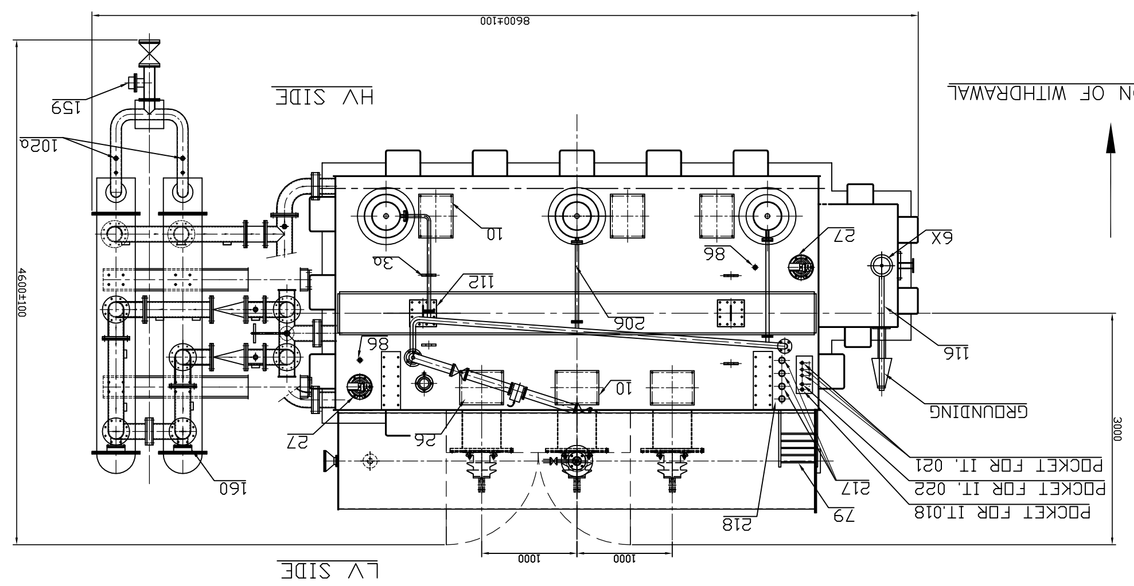
UNTANKING DETAIL H.V. & H.V.N. BUSHING



VIEW -A



HV SIDE



VIEW -A

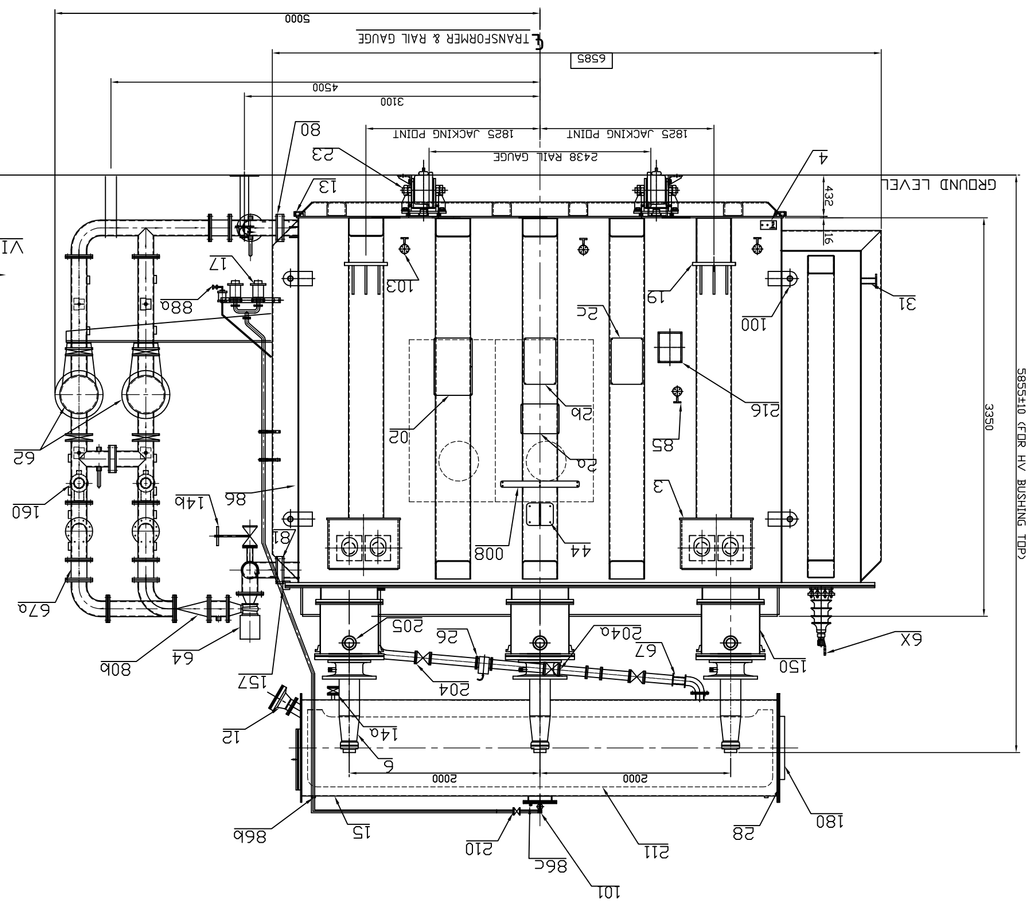


TABLE OF FITTINGS

IT.NO	DESCRIPTION	QTY.
2	COMBINED RATING & DIAGRAM PLATE (HINDI & ENGLISH)	01
2a	COOLER SCHEME PLATE	01
2b	OIL FILLING INSTRUCTION PLATE FOR AIR CELL TYPE CONSERVATOR	–
2c	VALVE SCHEDULE PLATE	01
3	LIFTING BOLLARD	04
3a	LIFTING LUGS ON TANK COVER	04
4	EARTHING TERMINALS	02
6	245 KV, 1250 AMP. H.V. LINE BUSHING (OIL-SF6)	03
6x	36 KV 2000 AMP. H.V. NEUTRAL BUSHING	01
7	17.5 KV 5000 AMP. L.V. LINE TERMINALS	03
8	NAME PLATE (ENGLISH)	01+01
10	INSPECTION COVERS ON (TANK AND COVER)	08
12	MAGNETIC OIL GAUGE	01
13	DRAIN PLUG (1" BSP) FOR OIL SLUDGE REMOVAL ON TANK BASE	02
14	DRAIN VALVE (100 N.B.) ON TANK	01
14a	DRAIN VALVE FOR CONSERVATOR (25 N.B.)	01
14b	DRAIN CUM FILTER VALVE (50 NB) FOR COOLER P/W	02
15	OIL CONSERVATOR (AIR CELL TYPE)	01
17	DEHYDRATING BREATHER FOR CONSERVATOR	02
18	THERMOMETER POCKET (WITH THERMOMETER)	01
18a	THERMOMETER POCKET ON OF/F COOLERS	08
19	JACKING LUGS WITH HAULAGE HOLES	04
21	OIL TEMPERATURE INDICATOR	01
22	WINDING TEMPERATURE INDICATOR (HV&LV)	02
23	ø320 VIN BI-DIRECTIONAL ROLLER WITH STOPPER ARRGT.	04
25	FILTER VALVE ON TANK (50 N.B.)	02
26	BUCHHOLZ RELAY	01
27	PRESSURE RELIEF VALVE (WITH TRIP CONTACTS)	02
28	END COVER FOR CONSERVATOR	01
31	OFF CIRCUIT TAP SWITCH OPERATING HANDLE WITH MICRO SWITCH (LOCKABLE TYPE)	01
34	MARSHALLING BOX (TANK MOUNTED)	01
44	COMPANY'S MONOGRAM ON TANL & CONSERVATOR	02
62	O/F COOLER	02
64	OIL PUMP & MOTOR	02
67	EXPANSION JOINT (80 NB)	01
67a	EXPANSION JOINT (100 NB)	02
68	DIFFERENTIAL PRESSURE GAUGE (WITH ALARM & TRIP CONTACT)	02
79	LADDER WITH SAFETY FLAP	01
80	OIL INLET VALVE (100 N.B.)	02
80a	NON RETURNING VALVE (100 N.B.)	02
81	OIL OUTLET VALVE (100 N.B.)	10
85	SAMPLING VALVE (15 N.B.)	02
86	AIR RELEASE PLUG (3/4"BSP) ON TANK COVER	04
86a	AIR RELEASE PLUG 3/4" BSP) ON CONSERVATOR	01
86c	AIR RELEASE PLUG (1/4" BSP) ON CONSERVATOR	01
88a	PET COCK	01
100	LASHING LUGS	08
101	PRESSURE GAUGE(RANGE 0.5 KG/CM)	01
102	PRESSURE GAUGE FOR COOLER (OIL) RANGE 1.5KG/CM	04
102a	PRASSURE GAUGE FOR COOLER (WATER) RANGE 0.5KG/CM	04
103	BOTTOM 25 NB VALVE FOR (FIRE FIGHTING ARRGT)	06
112	LOCKING ARRGT. (TRANSFORMER TO TANK)	02
116	H.V.NEUTRAL GROUNDING ARRGT.	01
150	TURRET FOR HV LINE TERMINAL	03
157	EARTHING CONNECTION BETWEEN TANK TO COVER	01
157a	EARTHING CONNECTION BETWEEN CORE TO E/F & E/F TO TANK	01
159	WATER FLOW INDICATOR (WITH ALARM CONTACT)	02
160	OIL FLOW INDICATOR (WITH ALARM CONTACT)	02
164	BREATHER PIPE 25 N.B.	01
168	CONSERVATOR PIPE 80 N.B.	01
180	PRISMATIC OIL GAUGE FOR CONSERVATOR	01
183	N2 GAS CYLINDER MTG.	01
204	CONSERVATOR SHUT-OFF VALVE 80 N.B.	02
204a	CONSERVATOR SHUT-OFF VALVE 80 N.B.(SOLENOID OPERATED)	01
205	PROTECTION CT TERMINAL BOARD ON H.V. TURRET (HV,HVN,LV)	03
206	EQUILISING PIPE (25 NB)	03
210	VALVE FOR AIR CELL CONSERVATOR 25 N.B.	01
211	FLEXIBLE SEPERATOR (AIR CELL)	01
213	CONSERVATOR SUPPORT	02
217	VIT RTD	02
218	OIT RTD	01
219	VALVE FOR COOLER WATER INLET (80 N.B)	02
219a	GATE VALVE (80 N.B)	04

All dimensions in 'mm'

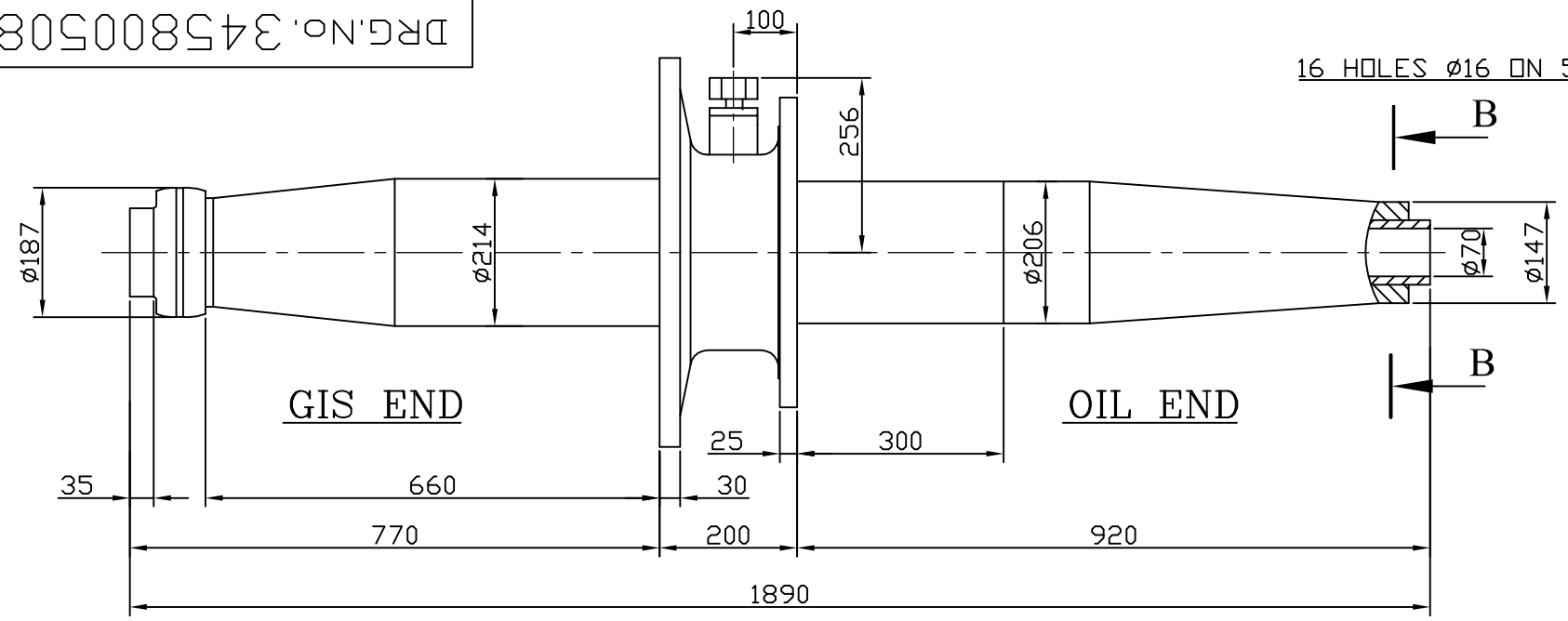
First Angle Projection

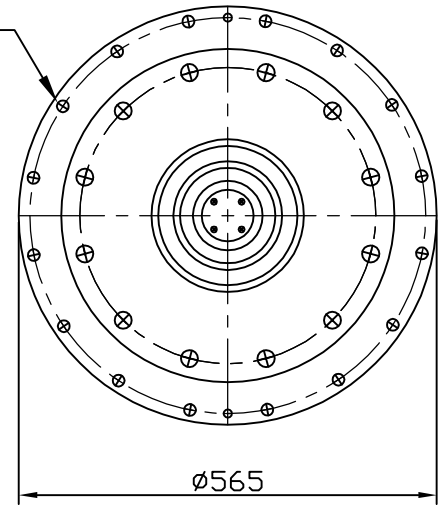
DRG.No.14580050325

First Angle Projection

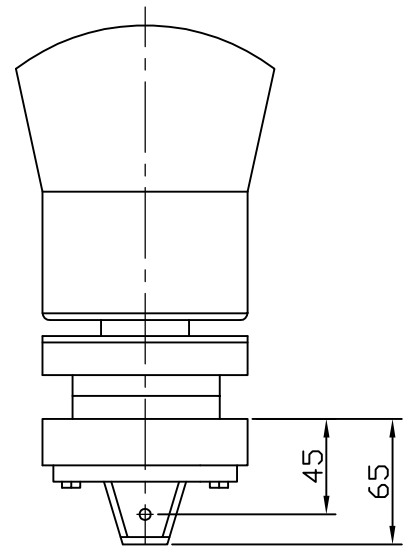
All dimensions in 'mm'

DRG.No. 34580050834

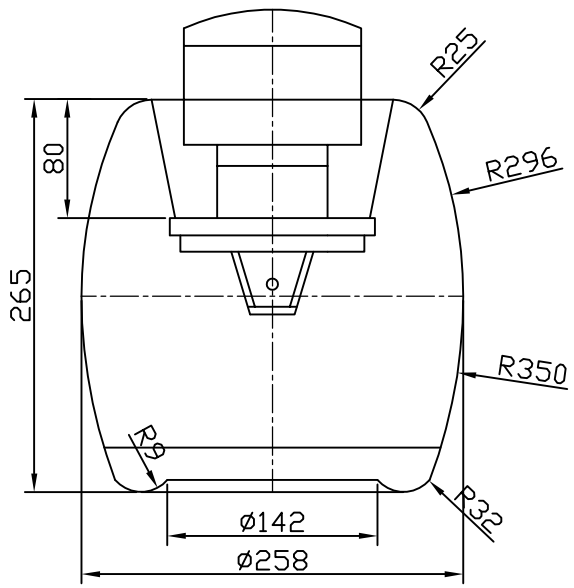




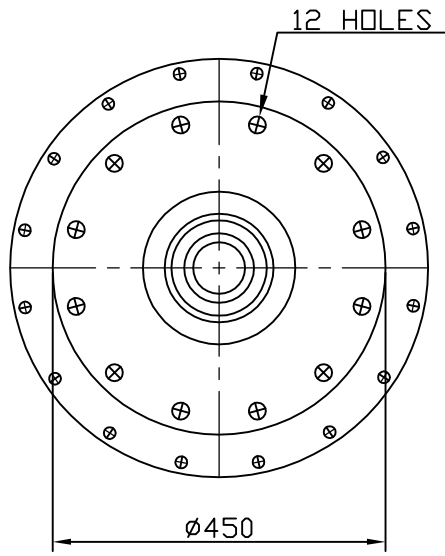
GIS DUCT FLANGE



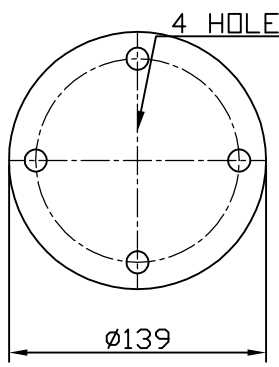
FIXED BOTTOM CONTACT



END SHIELD



SECTION–BB



TERMINAL STUD

TECHNICAL DETAILS

RATED VOLTAGE	245 KV
RATED CURRENT	1600 AMPS.
PHASE TO EARTH VOLTAGE	141 KV
LIGHTNING IMPULSE	1050 KVP
SWITCHING IMPULSE	850 KV
ROUTINE TEST I MIN 50 Hz	506 KV
MASS	110 Kg.

REF. DRG. NO.

SIGN AND DATE

INVENTORY NO.

REV	DATE	ALTERED / CHECKED / APPROVED	REV	DATE	ALTERED / CHECKED / APPROVED	REV	DATE	ALTERED / CHECKED / APPROVED
						00		
ZONE			ZONE			ZONE		

ADDITIONAL INFORMATION
W.O. 71114A17300

STATUS OF DRAWING
U

DISTRIBUTION OF PRINTS

TRE	PPC	BAY 1&2	BAY 3,4&5	BAY 6&7	BAY 8	BAY 9	LMM	Other
01	02					04		0

PO NO:- 111/E&M DESIGN-I/VY-EPC(6) 26-03-2014

TYPE OF PRODUCT OR 75 MVA, 1/220 KV, 3-PHASE COOLER GENERATOR TRANSFORMER

NAME OF CUSTOMER/PROJECT M/S:-VJVNL (VYASI HEEP)

BHARAT HEAVY ELECTRICALS LTD.
JHANSI

	NAME	SIGN	DATE	NO. OF VAR
DRN				
CHD				
APPD				

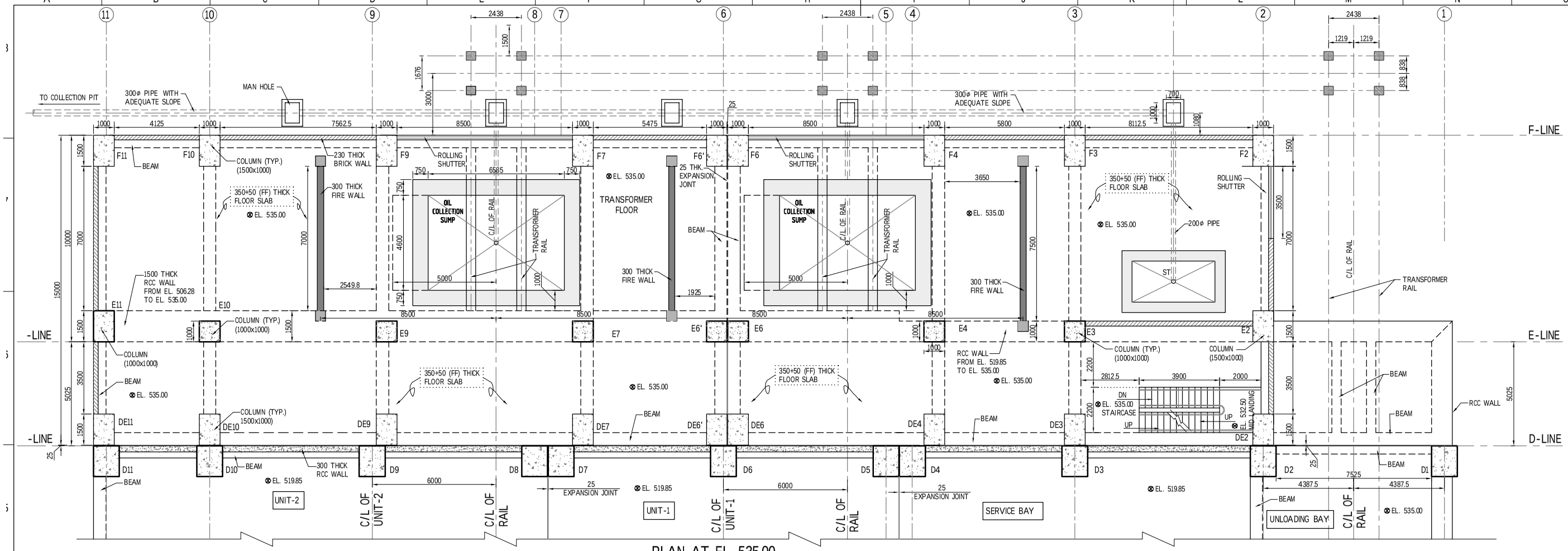
DEPT-TRE	UN. TOL. DIM. C/M/F		SCALE	WEIGHT [KG]	REF. TO ASSY. NO.	ITEM NO	NO. OF ITEM
CODE-406			1:10		14580050325		

TITLE
245 KV 1250 AMP(300CT)
H.V. BUSHING ASSY.

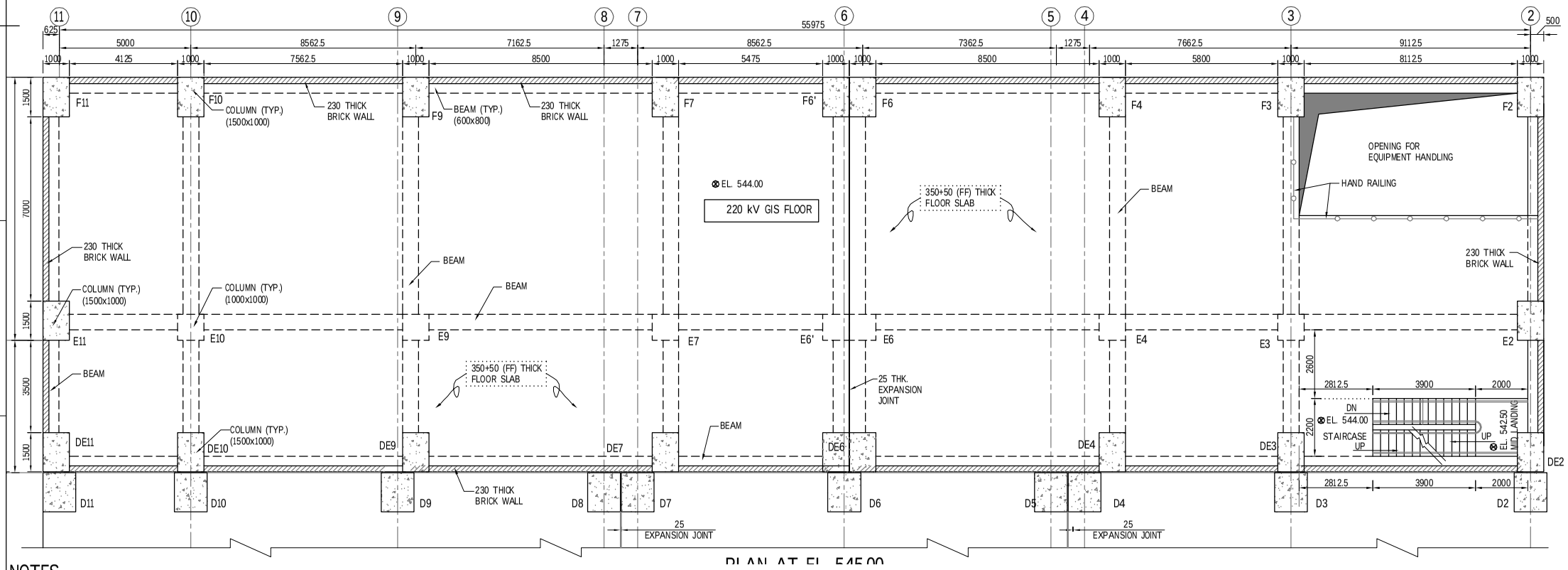
DRAWING NO. 34580050834 REV. 00

SHT NO 01 NO OF SHT 01

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING **SIZE A3**



PLAN AT EL. 535.00



PLAN AT EL. 544.00

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. DO NOT SCALE DIMENSION, IN CASE OF DOUBT PLEASE ASK.
3. FOR CRANE BEAM OUTLINE & REINFORCEMENT DETAILS REFER SEPARATE DRAWING.
4. FLOOR LEVEL SHOWN ARE FINISHED LEVEL WITH 50mm FLOOR FINISHED
5. THIS DRAWING SHALL BE USED ONLY FOR PLANING PURPOSE AND FOR FRAME & SLAB CONCRETING DETAILS REFER SEPARATE DRAWING.
6. GIS, TRANSFORMER & EOT CRANE DETAILS ARE NOT SHOWN AND DATA FOR THE SAME ARE AWAITED FROM VENDOR.
7. THE OIL SOAK PIT & ITS DRAINAGE ARRANGEMENT SHOWN IN THE DRG. ARE TENTATIVE AND SHALL BE FINALIZED AFTER RECEIVING E&M DRAWINGS.

BASED ON DRAWING / DOCUMENTS

DRG./DOCUMENT NO.	SUBJECT

REFERENCE DRAWINGS

DRG. NO.	SUBJECT
12057-H-20911-A01	POWER HOUSE AREA LAYOUT PLAN

SCALE 0 1.0 2.0 5.0 10.0 M

Autocad release : 2008

FOR APPROVAL

REV. No.	DATE	STAGE	DESCRIPTION	CIVIL	HM	E&M
				CHECKED		
D	08.08.2016	APPROVAL	MODIFIED AS PER MAIL DATED 27.07.2016 & 29.07.2016	-	-	-
C	25.07.2016	APPROVAL	MODIFIED AS PER MAIL DATED 22.07.2016	-	-	-
B	19.07.2016	APPROVAL	MODIFIED AS PER MOM DATED 05.07.2016	-	-	-

CLIENT UJVNL — UJVN LIMITED (A Govt. of Uttarakhand Enterprise)

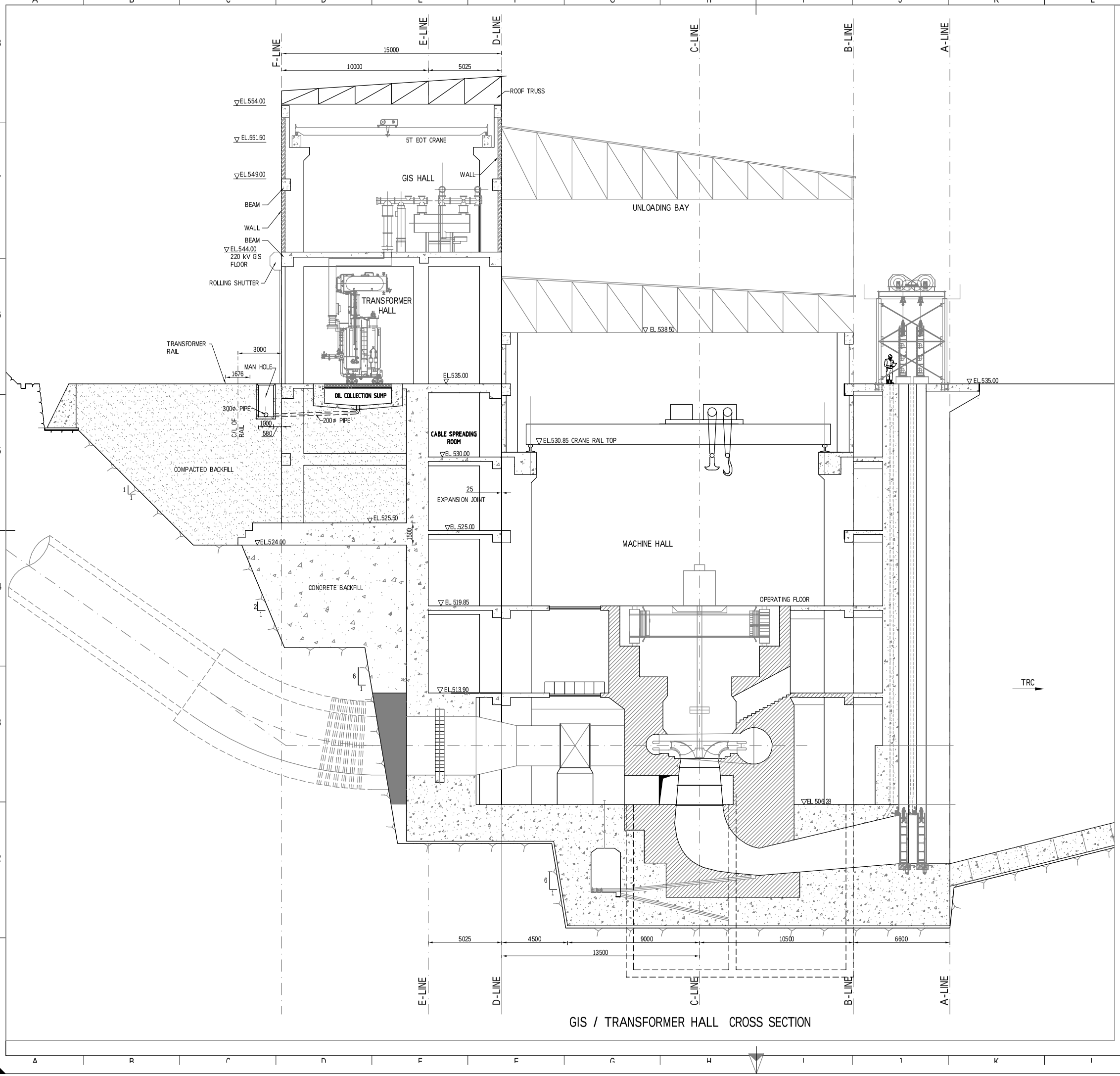
LAHMEYER INDIA — LAHMEYER INTERNATIONAL (INDIA) PVT. LTD. CONSULTING ENGINEERS, GURGAON

	NAME	SIGN
DESIGN BY/ DRAWN BY	MANI/SMS	
CHECKED BY	H GUPTA	
APPROVED BY	A K JHA	
DATE-	13-06-2016	
SHEET SIZE	A1	SCALE 1:100

PROJECT: VYASI H. E. PROJECT (2x60 MW)

DRAWING TITLE: POWER HOUSE GIS & TRANSFORMER HALL GENERAL ARRANGEMENT-PLAN

DRG NO. 12057-H-20911-A18 | REV. D | SHEET -



GIS / TRANSFORMER HALL CROSS SECTION

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. DO NOT SCALE DIMENSION, IN CASE OF DOUBT PLEASE ASK.
3. FOR CRANE BEAM OUTLINE & REINFORCEMENT DETAILS REFER SEPARATE DRAWING.
4. FLOOR LEVEL SHOWN ARE FINISHED LEVEL WITH 50mm FLOOR FINISHED
5. THIS DRAWING SHALL BE USED ONLY FOR PLANING PURPOSE AND FOR FRAME & SLAB CONCRETING DETAILS REFER SEPARATE DRAWING.
6. FOR MACHINE HALL GENERAL ARRANGEMENT DETAILS REFER DRG. NO. 12057-H-20911-A02.

Autocad release : 2008

FOR APPROVAL

REV. No.	DATE	STAGE	DESCRIPTION	CIVIL	HM	E&M
				CHECKED		
D	08.08.2016	APPROVAL	MODIFIED AS PER MAIL DATED 27.07.2016 & 29.07.2016	-	-	-
C	25.07.2016	APPROVAL	MODIFIED AS PER MAIL DATED 22.07.2016	-	-	-
B	19.07.2016	APPROVAL	MODIFIED AS PER MOM DATED 05.07.2016	-	-	-

CLIENT UJVNL — UJVN LIMITED (A Govt. of Uttarakhand Enterprise)

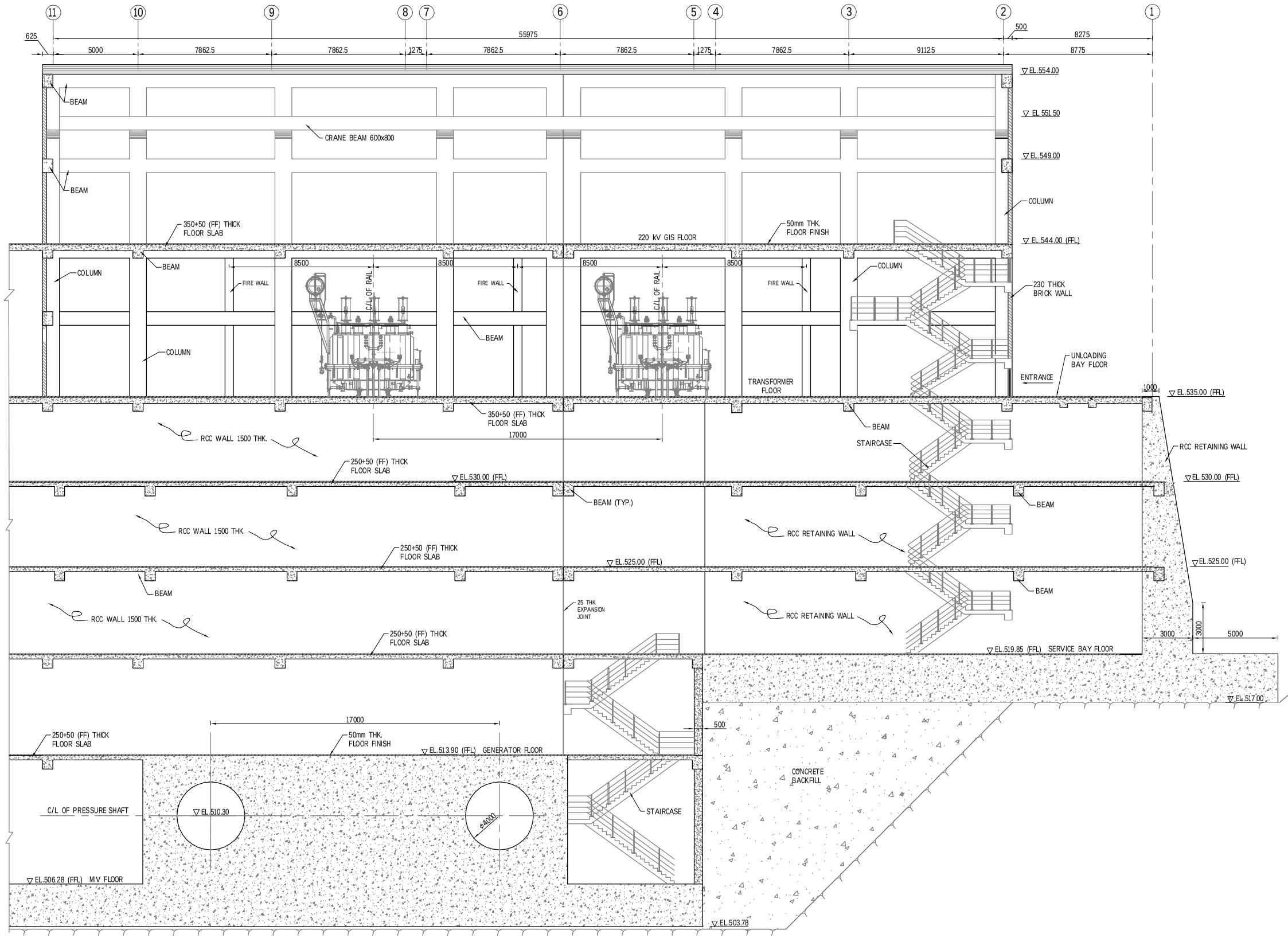
LAHMEYER INDIA — LAHMEYER INTERNATIONAL (INDIA) PVT. LTD. CONSULTING ENGINEERS, GURGAON

	NAME	SIGN
DESIGN BY/ DRAWN BY	MANI/MKK	
CHECKED BY	H GUPTA	
APPROVED BY	A K JHA	

PROJECT: VYASI H. E. PROJECT (2x60 MW)

DRAWING TITLE: POWER HOUSE GIS & TRANSFORMER HALL GENERAL ARRANGEMENT-CROSS-SECTION

DATE-	13-06-2016		DRG NO. 12057-H-20911-A19	REV. D	SHEET -
SHEET SIZE	A1	SCALE 1:25			



GIS & TRANSFORMER HALL L-SECTION
SECTION BETWEEN D & E LINE

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. DO NOT SCALE DIMENSION, IN CASE OF DOUBT PLEASE ASK.
3. FOR CRANE BEAM OUTLINE & REINFORCEMENT DETAILS REFER SEPARATE DRAWING.
4. FLOOR LEVEL SHOWN ARE FINISHED LEVEL WITH 50mm FLOOR FINISHED
5. THIS DRAWING SHALL BE USED ONLY FOR PLANING PURPOSE AND FOR FRAME & SLAB CONCRETING DETAILS REFER SEPARATE DRAWING.

BASED ON DRAWING / DOCUMENTS

DRG./DOCUMENT NO.	SUBJECT
-	-

REFERENCE DRAWINGS

DRG. NO.	SUBJECT
-	-

Autocad release : 2008

FOR APPROVAL

REV. No.	DATE	STAGE	DESCRIPTION	CIVIL	HM	E&M
				CHECKED		
D	08.08.2016	APPROVAL	MODIFIED AS PER MAIL DATED 27.07.2016 & 29.07.2016	-	-	-
C	25.07.2016	APPROVAL	MODIFIED AS PER MAIL DATED 22.07.2016	-	-	-
B	19.07.2016	APPROVAL	MODIFIED AS PER MOM DATED 05.07.2016	-	-	-

CLIENT UJVN LIMITED
(A Govt. of Uttarakhand Enterprise)

LAHMEYER INDIA
LAHMEYER INTERNATIONAL (INDIA) PVT. LTD.
CONSULTING ENGINEERS, GURGAON

	NAME	SIGN
DESIGN BY/ DRAWN BY	MANI/MKK	
CHECKED BY	H GUPTA	
APPROVED BY	A K JHA	

PROJECT: VYASI H. E. PROJECT (2x60 MW)

DRAWING TITLE: POWER HOUSE
GIS & TRANSFORMER HALL
GENERAL ARRANGEMENT-L-SECTION

DATE-	13-06-2016			DRG NO.	REV.	SHEET
SHEET SIZE	A1	SCALE	1:25	12057-H-20911-A20	D	-