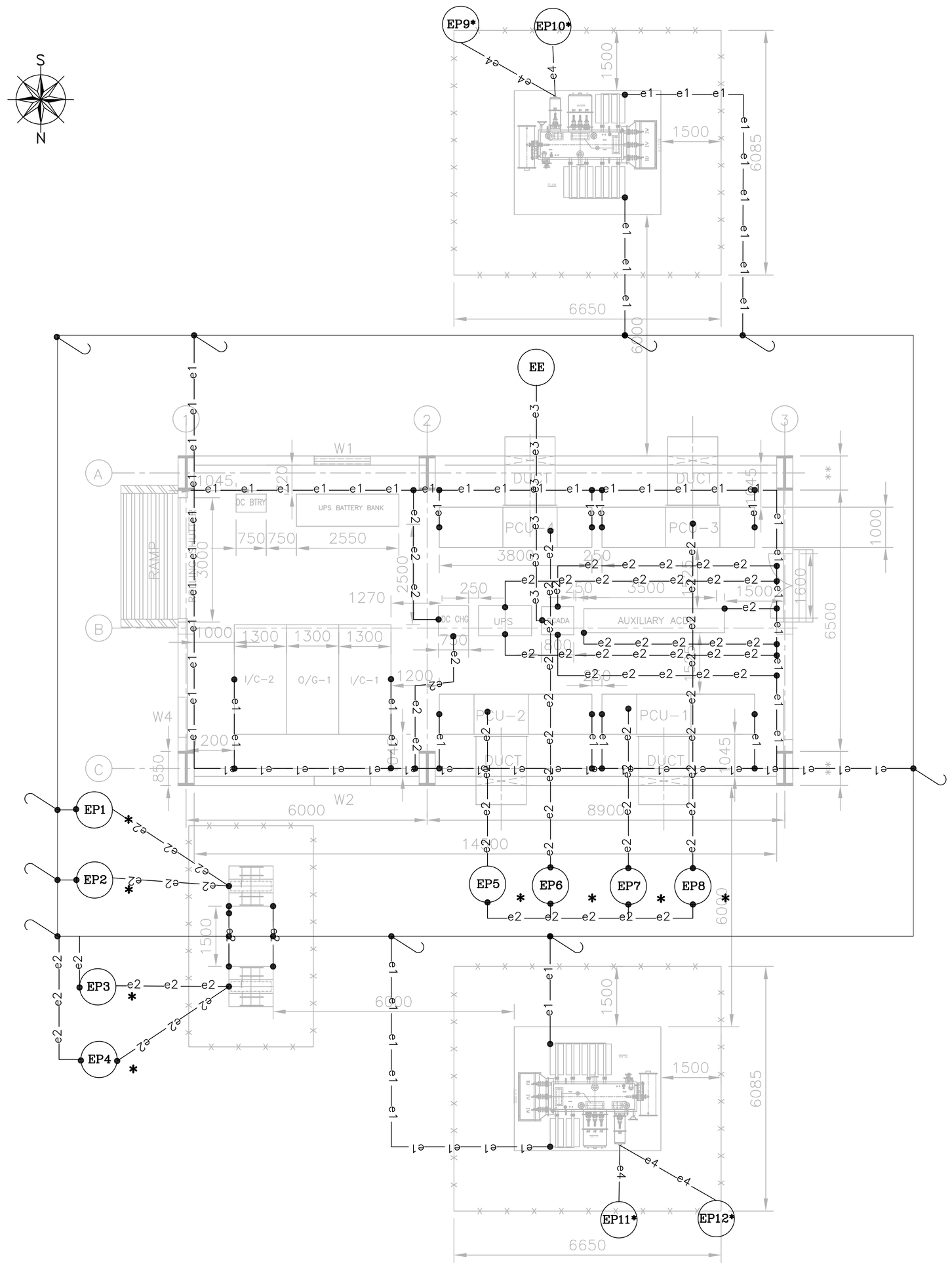
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 1-381-21-xxxx

SHT. 1 OF 3



PCSS BUILDING EARTHING LAYOUT FOR 65MW SITE

BILL OF MATERIAL FOR EACH INVERTER ROOM

SYMBOL	TYPE OF EQUIPMENT TO BE EARTHED	EARTH SIZE	QTY.
(BURIED IN SOIL) / (EMBEDDED IN CONCRETE)	MAIN EARTH GRID	75X10 GI strip	80 MTRS.
—e1—e1—	AUXILIARY MAT, AUX & INVERTER TRANSFORMER BODY EARTHING, HT PANEL EARTHING	75x10 G.I. STRIP	120 MTRS.
—e2—e2—	EARTHING OF LT PANEL (UPSDB, BATTERY CHAREGR, ACDB, PCU), AUX TRAFO NEUTRAL	50x6 G.I. STRIP	180 MTRS.
—e3—e3—	EARTHING OF SCADA SYSTEM	Cu 1Cx16 sq.mm	10 MTRS.
—e4—e4—	EARTHING OF INVERTER TRANSFORMER SHIELD	50x6 CU STRIP	15 MTRS.
—(EP)—	40mm DIA, 3000mm LONG MS ROD ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)	–	4 NOS.
—(EE)—	65mm DIA, 3000mm LONG GI PIPE ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)#	–	1 NO.
—(EP)—	65mm DIA, 3000mm LONG GI PIPE ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)#	–	8 NOS.
\	RISERS	75X10 GI strip	10 NOS.

Electrode sizes are indicative, shall be as per the final vendor.

* EP1, EP2, EP3, EP4 ARE CONNECTED TO NEUTRAL OF AUX. TRANSFORMER.
EP5, EP6, EP7, EP8 ARE FOR PCU SYSTEM EARTHING.
EP9, EP10, EP11, EP12 ARE CONNECTED TO SHIELD OF INVERTER TRANSFORMER.

For Tender Purpose Only

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

GENERAL DIMENSIONAL LIMITS,FITS & TOLERANCES AS PER HY0230261

INVENTORY NO | SIGN. AND DATE | REF. DRG. NO. | COMPUTER FILE NAME

REV.	DATE	ALTERED	CHD/APPD	ZONE

PROJECT : 65MWp SOLAR POWER PLANT

CUSTOMER : NEYVELI LIGNITE CORPORATION LTD.
CONSULTANT : NEYVELI-TAMILNADU

BHARAT HEAVY ELECTRICALS LTD.
UNIT : PE&SD-HYDERABAD

	NAME	SIGN.	DATE	NO.OF VAR.
DRN.	K.V.NAGENDRA		08.08.16	
CHD.	P SURESH		08.08.16	N.A.
APPD.	J K PATTANAIK		08.08.16	

DEPT.	UNTOL. DIMS.	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO.OF ITEMS
PE&SD	GR.	1:70	N.A.	N.A.	N.A.	N.A.
CODE 450	g/m/f					

TITLE: PCSS &PESS ROOM EARTHING LAYOUT

CARD CODE: NA

DRAWING NO.: PY-LJ-1M088-2037-01

REV.: 00

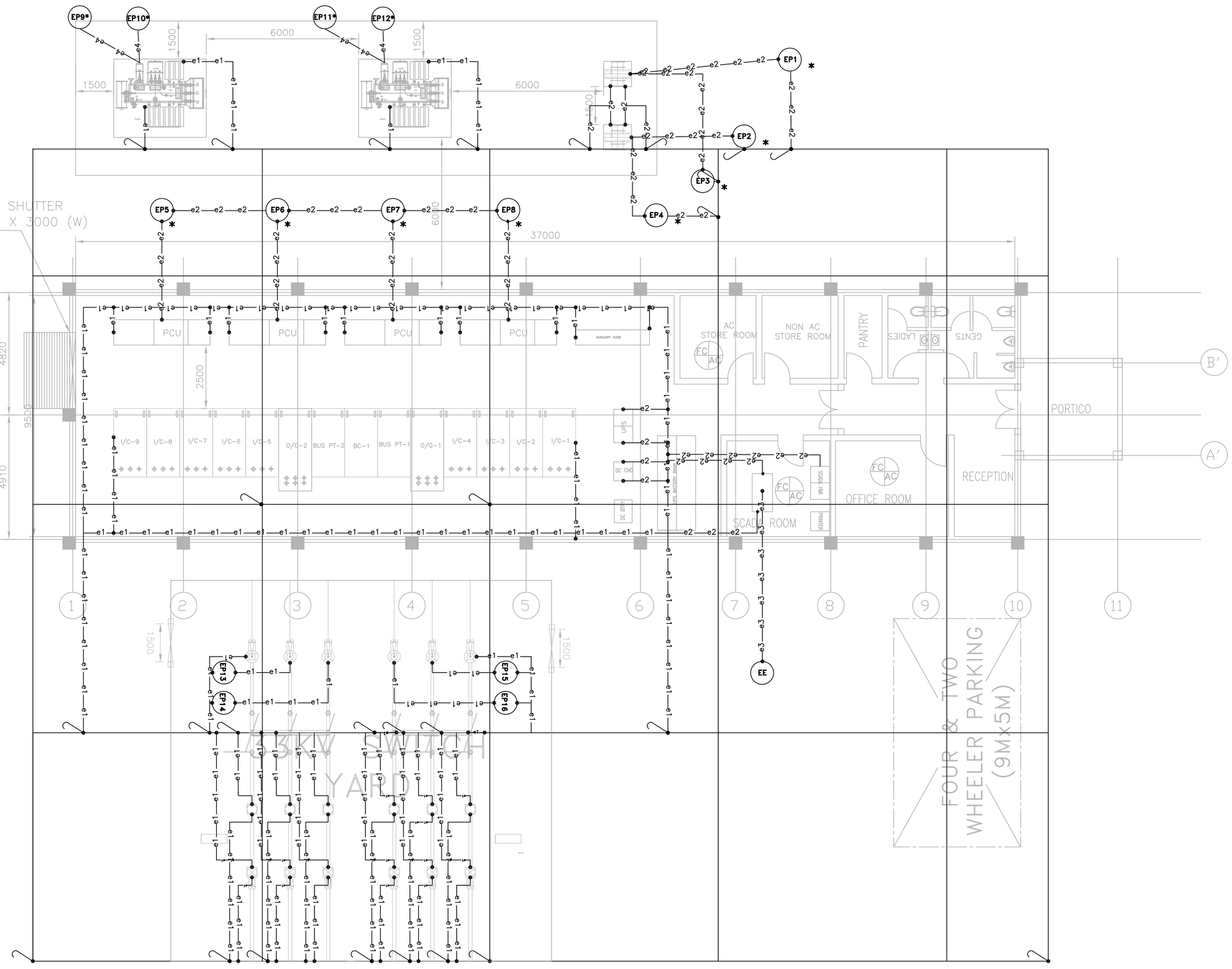
SHT. No 01 NO. OF SHT. 03

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

SHT. 2 OF 3

DRG. NO. .



PESS BUILDING CUM SWITCH YARD EARTHING LAYOUT FOR 40MW SITE

BILL OF MATERIAL FOR EACH INVERTER ROOM

SYMBOL	TYPE OF EQUIPMENT TO BE EARTHED	EARTH SIZE	QTY.
(BURIED IN SOIL) / (EMBEDDED IN CONCRETE)	MAIN EARTH GRID	75X10 GI strip	450 MTRS.
—e1—e1—	AUXILIARY MAT, AUX & INVERTER TRANSFORMER BODY EARTHING, HT PANEL EARTHING	75x10 G.I. STRIP	420 MTRS.
—e2—e2—	EARTHING OF LT PANEL (UPSDB, BATTERY CHAREGR, ACDB, PCU), AUX TRAFO NEUTRAL	50x6 G.I. STRIP	125 MTRS.
—e3—e3—	EARTHING OF SCADA SYSTEM	Cu 1Cx16 sq.mm	10 MTRS.
—e4—e4—	EARTHING OF INVERTER TRANSFORMER SHIELD	50x6 CU STRIP	15 MTRS.
—(EP)—	40mm DIA, 3000mm LONG MS ROD ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)	–	8 NOS.
—(EE)—	65mm DIA, 3000mm LONG CU PIPE ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)#	–	1 NO.
—(EP)—	65mm DIA, 3000mm LONG GI PIPE ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)#	–	8 NOS.
\	RISERS	75X10 GI strip	27 NOS.

Electrode sizes are indicative, shall be as per the final vendor.
* EP1, EP2, EP3, EP4 ARE CONNECTED TO NEUTRAL OF AUX. TRANSFORMER.
EP5, EP6, EP7, EP8 ARE FOR PCU SYSTEM EARTHING.
EP9, EP10, EP11, EP12 ARE CONNECTED TO SHIELD OF INVERTER TRANSFORMER.

NOTES:

1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS & CO-ORDINATES ARE IN METRES, UNLESS OTHERWISE SPECIFIED ELSE WHERE IN THIS DRAWING.
2. THIS DRAWING SHALL BE REFERRED FOR EARTHING DETAILS ONLY. ROUTING OF EARTHING CONDUCTOR IS INDICATIVE ONLY AND SHALL SUIT SITE CONDITIONS TO CLEAR OTHER INTERFERENCES.
3. ENTIRE EARTHING INSTALLATION SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH I.S. 3043.
4. THE EARTHING SYSTEM SHALL ALSO COMPLY WITH THE REQUIREMENTS OF INDIAN ELECTRICITY RULES AND ACTS.
5. ALL JOINTS AND TAPPINGS OF G.I CONDUCTORS SHALL BE WELDED TYPE. ALL WELDED JOINTS SHALL BE PROTECTED BY TWO COATS OF BITUMEN AND COVERED WITH HESSIAN.
6. ALL RISERS FROM MAIN EARTH MAT SHALL BE OF 75x10mm G.I STRIP.
7. ALL RISERS OF 75x10mm G.I STRIP SHALL BE PROTECTED BY TWO COATS OF BITUMINOUS PAINT/BITUMEN ON THE EXPOSED PORTION.
8. MAIN EARTH GRID CONDUCTORS SHALL BE LAID AT A DEPTH OF 600mm BELOW GROUND LEVEL. WHERE THESE CONDUCTORS FOUL WITH UNDERGROUND PIPING, SAME SHALL BE LAID AT A DEPTH OF MINIMUM 300mm.
9. DISTANCE BETWEEN EARTHPIT TO EARTHPIT SHALL BE MAINTAINED NOT LESS THAN 6000mm OR TWICE THE LENGTH OF THE ELECTRODE AND 1500mm AWAY FROM WALL.
10. FOR EQUIPMENT, SUITABLE EARTH CONDUCTOR SHALL BE LAID FROM EARTH BAR TO INDIVIDUAL ELECTRICAL EQUIPMENT, EARTH CONDUCTOR SIZE AS DESCRIBED IN BOM.
11. QUANTITY OF GI STRIPS AND RISERS USED FOR EARTHING MAY VARY BY 20% BASED ON SITE CONDITIONS.
12. ALL STRUCTURAL COLUMNS SHALL BE CONNECTED TO AUXILIARY EARTH MAT THROUGH NEAREST RISERS.
13. EARTH BAR AND EARTH PIT LOCATION MAY BE SHIFTED BY SITE ENGINEER AS PER SITE CONDITIONS.

For Tender Purpose Only

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GENERAL DIMENSIONAL LIMITS,FITS & TOLERANCES AS PER HY0230261

INVENTORY NO | SIGN. AND DATE | REF. DRG. NO. | COMPUTER FILE NAME

REV.	DATE	ALTERED	CHD/APPD	ZONE

PROJECT : 65MWp SOLAR POWER PLANT

CUSTOMER / CONSULTANT : NEYVELI LIGNITE CORPORATION LTD. NEYVELI-TAMILNADU

BHARAT HEAVY ELECTRICALS LTD. UNIT : PE&SD-HYDERABAD

	NAME	SIGN.	DATE	NO.OF VAR.
DRN.	K.V.NAGENDRA		08.06.16	
CHD.	P SURESH		08.06.16	N.A.
APPD.	J.K.PATTANAIK		08.06.16	

DEPT.	UNTOL. DIMS.	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO.OF ITEMS
PE&SD	CL. g/m/f	1:105	N.A.	N.A.	N.A.	N.A.
CODE 450						

TITLE: PCSS &PESS ROOM EARTHING LAYOUT

CARD CODE: NA

DRAWING NO.: PY-LJ-1M088-2037-01 REV.: 00

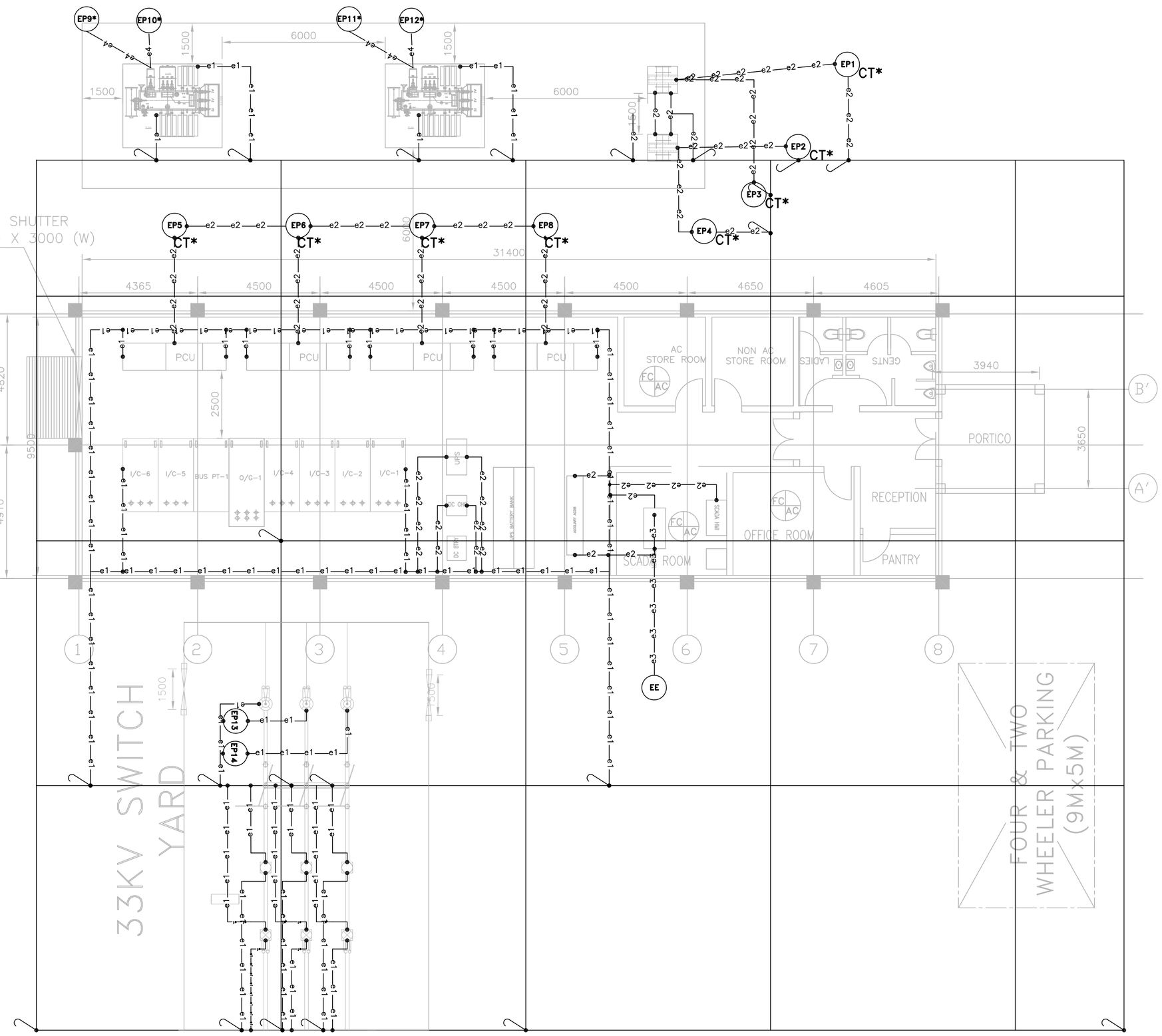
SHT. No 02 NO. OF SHT. 03

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

SHT. 3 OF 3

DRG. NO. .



PESS BUILDING CUM SWITCH YARD EARTHING LAYOUT FOR 25MW SITE

BILL OF MATERIAL FOR EACH INVERTER ROOM

SYMBOL	TYPE OF EQUIPMENT TO BE EARTHED	EARTH SIZE	QTY.
(BURIED IN SOIL) / (EMBEDDED IN CONCRETE)	MAIN EARTH GRID	75X10 GI strip	450 MTRS.
—e1—e1—	AUXILIARY MAT, AUX & INVERTER TRANSFORMER BODY EARTHING, HT PANEL EARTHING	75x10 G.I. STRIP	260 MTRS.
—e2—e2—	EARTHING OF LT PANEL (UPSDB, BATTERY CHAREGR, ACDB, PCU), AUX TRAFO NEUTRAL	50x6 G.I. STRIP	125 MTRS.
—e3—e3—	EARTHING OF SCADA SYSTEM	Cu 1Cx16 sq.mm	10 MTRS.
—e4—e4—	EARTHING OF INVERTER TRANSFORMER SHIELD	50x6 CU STRIP	15 MTRS.
EP	40mm DIA, 3000mm LONG MS ROD ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)	–	6 NOS.
EE	65mm DIA, 3000mm LONG GI PIPE ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)#	–	1 NO.
EP CT	65mm DIA, 3000mm LONG GI PIPE ELECTRODE IN TREATED EARTH PIT (ELECTRICAL)#	–	8 NOS.
	RISERS	75X10 GI strip	20 NOS.

Electrode sizes are indicative, shall be as per the final vendor.
* EP1(CT), EP2(CT), EP3(CT), EP4(CT) ARE CONNECTED TO NEUTRAL OF AUX. TRANSFORMER.
EP5(CT), EP6(CT), EP7(CT), EP8(CT) ARE FOR PCU SYSTEM EARTHING.
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7. ALL RISERS OF 75x10mm G.I STRIP SHALL BE PROTECTED BY TWO COATS OF BITUMINOUS PAINT/BITUMEN ON THE EXPOSED PORTION.
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9. DISTANCE BETWEEN EARTHPIT TO EARTHPIT SHALL BE MAINTAINED NOT LESS THAN 6000mm OR TWICE THE LENGTH OF THE ELECTRODE AND 1500mm AWAY FROM WALL.
10. FOR EQUIPMENT, SUITABLE EARTH CONDUCTOR SHALL BE LAID FROM EARTH BAR TO INDIVIDUAL ELECTRICAL EQUIPMENT, EARTH CONDUCTOR SIZE AS DESCRIBED IN BOM.
11. QUANTITY OF GI STRIPS AND RISERS USED FOR EARTHING MAY VARY BY 20% BASED ON SITE CONDITIONS.
12. ALL STRUCTURAL COLUMNS SHALL BE CONNECTED TO AUXILIARY EARTH MAT THROUGH NEAREST RISERS.
13. EARTH BAR AND EARTH PIT LOCATION MAY BE SHIFTED BY SITE ENGINEER AS PER SITE CONDITIONS.

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GENERAL DIMENSIONAL LIMITS,FITS & TOLERANCES AS PER HY0230261

INVENTORY NO | SIGN. AND DATE | REF. DRG. NO. | COMPUTER FILE NAME

REV.	DATE	ALTERED CHD/APPD	ZONE

PROJECT : 65MWp SOLAR POWER PLANT

CUSTOMER : CONSULTANT — NEYVELI LIGNITE CORPORATION LTD. NEYVELI-TAMILNADU

BHARAT HEAVY ELECTRICALS LTD. UNIT : PE&SD-HYDERABAD

	NAME	SIGN.	DATE	NO.OF VAR.
DRN.	K.V.NAGENDRA		08.08.16	N.A.
CHD.	P SURESH		08.08.16	
APPD.	J.K.PATTANAIK		08.08.16	

DEPT.	UNTOL. DIMS.	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO.OF ITEMS
PE&SD	GR.	1:105	N.A.	N.A.	N.A.	N.A.
CODE 450	g/m/f					

TITLE: PCSS &PESS ROOM EARTHING LAYOUT

CARD CODE: NA

DRAWING NO.: PY-LJ-1M088-2037-01 REV. 00

SHT. No 03 NO. OF SHT. 03