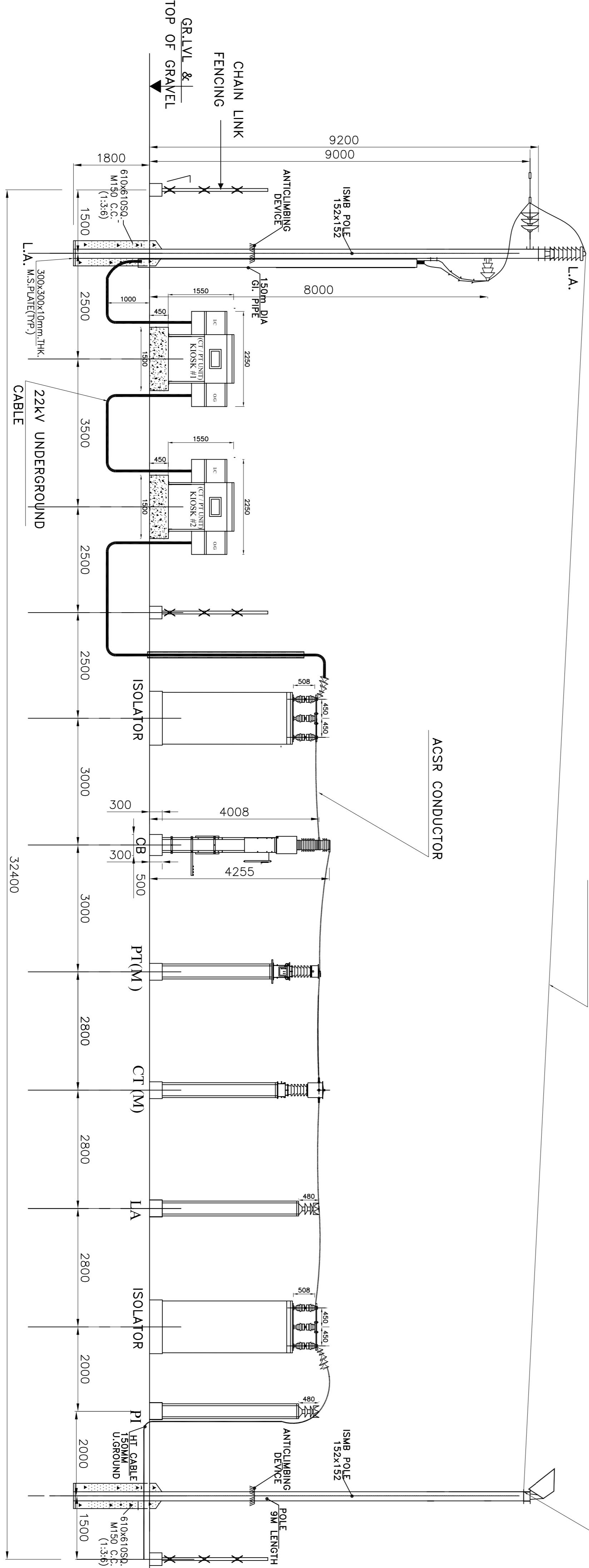


SYSTEM PARTICULARS FOR 13.2kV SYSTEM		
S.NO.	DESCRIPTION	PARAMETERS
01	NOMINAL SYSTEM VOLTAGE	13.2 kV
02	HIGHEST SYSTEM VOLTAGE	15 kV
03	RATED FREQUENCY	60 Hz
04	NO. OF PHASES	3
05	BASIC INSULATION LEVEL (PEAK)	170 kV
06	POWER FREQUENCY WITHSTAND VOLTAGE (RMS)	70 kV
07	SHORT CIRCUIT LEVEL	26.24 kA
08	FAULT DURATION	1 SEC
09	MINIMUM CREEPAGE DISTANCE	31mm/kV
10	MIN. CLEARANCE: i) PHASE TO PHASE ii) PHASE TO EARTH iii) SECTIONAL CLEARANCE iv) GROUND CLEARANCE	320 MM 320 MM 2800 MM 3700 MM

PLAN

7/8 SWG SHIELD WIRE

ELEVATION



NOTES

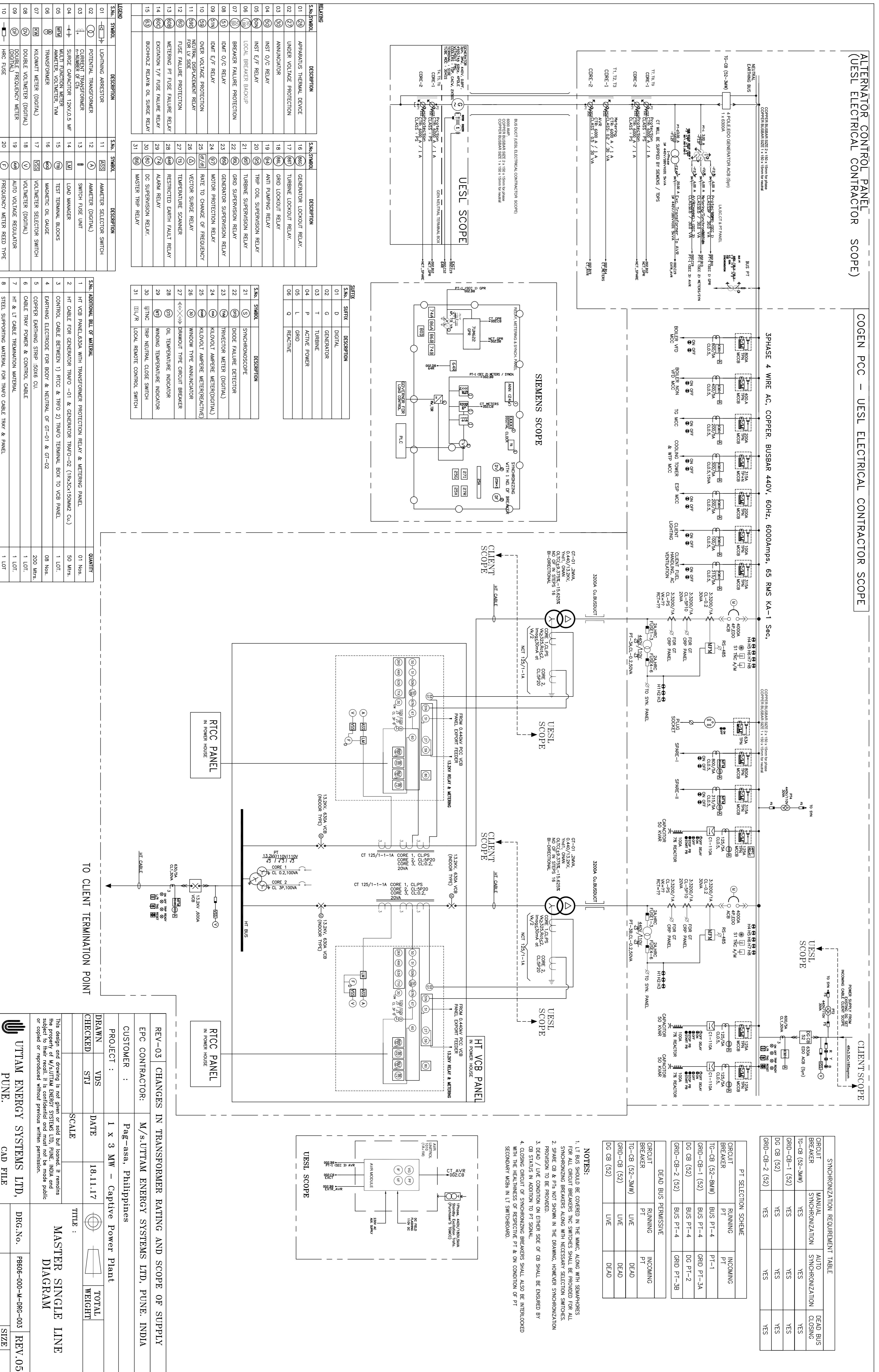
01. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 02. EQUIPMENT INTERCONNECTION : ACSR PANTHER CONDUCTOR
 03. GRAVEL LEVEL TO BE MAINTAINED 150 MM ABOVE FINISH GROUND LEVEL.
 04. PEDESTAL LEVEL FOR ALL 22KV STRUCTURES SHALL BE MIN. +400MM ABOVE FINISHED GRAVEL LEVEL (FGrL).

07		POLE	03 No.
08		BEAM	01 No.
09		13.2kV CT&PT KIOSK	02 No.
10		ACSR PANTHER CONDUCTOR	01 Lot
11		3C x ** Sq.mm, 33kV HT CABLE	01 Lot
12		7/8 SWG SHIELD WIRE	01 Lot

02. EQUIPMENT INTERCONNECTION : ACSR PANTHER CONDUCTOR 03. GRAVEL LEVEL TO BE MAINTAINED 150 MM ABOVE FINISH GROUND LEVEL. 04. PEDESTAL LEVEL FOR ALL 22KV STRUCTURES SHALL BE MIN. +400MM ABOVE FINISHED GRAVEL LEVEL (FGRL).					
05. COMPLETE CIVIL WORK IS IN CLIENT SCOPE.					
06. SWITCHYARD CONTROL AND RELAY PANEL SHALL BE LOCATED IN TG CONTROL ROOM.					
07. GT AND 13.2KV KIOSK DIMENSION SHALL BE RELEASED AFTER DRAWING APPROVAL.					
08. HEIGHT OF GI STRUCTURE REQUIRED FOR SWITCHYARD EQUIPMENT WILL BE FINALIZED AFTER APPROVAL OF EQUIPMENT DRAWING.					
REV-03 CHANGES IN TRANSFORMER RATING AND SCOPE OF SUPPLY					
EPC CONTRACTOR: M/s.UTTAM ENERGY SYSTEMS LTD, PUNE. INDIA					
CUSTOMER : Pag-asa, Philippines					
PROJECT : 1 x 3 MW – Captive Power Plant					
DRAWN	VDS	DATE	30.03.17		TOTAL WEIGHT
CHECKED	DK	SCALE			TITLE :

**ALTERNATOR CONTROL PANEL
(UESL ELECTRICAL CONTRACTOR SCOPE)**

COGEN PCC – UESL ELECTRICAL CONTRACTOR SCOPE



BILL OF QUANTITIES

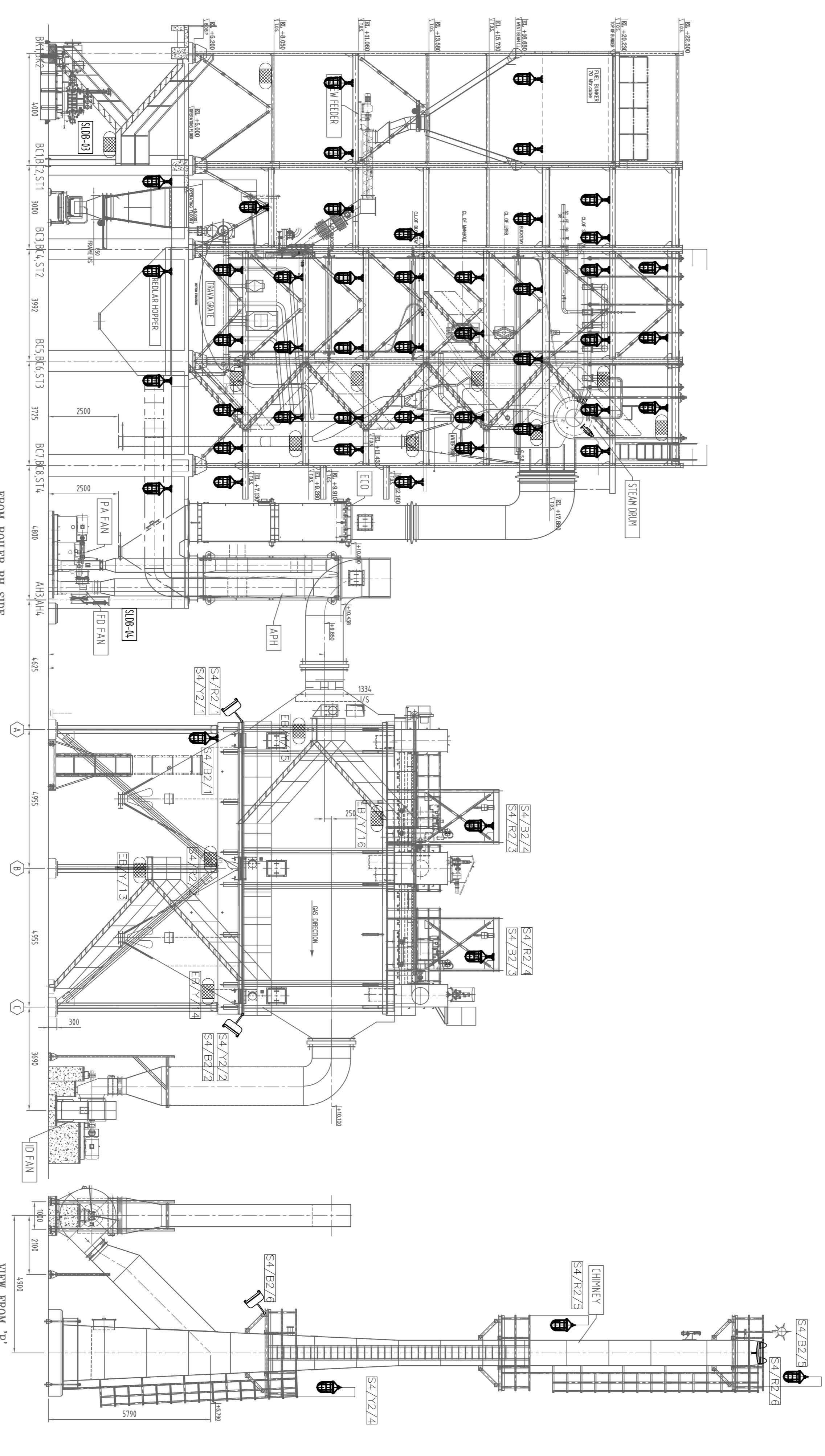
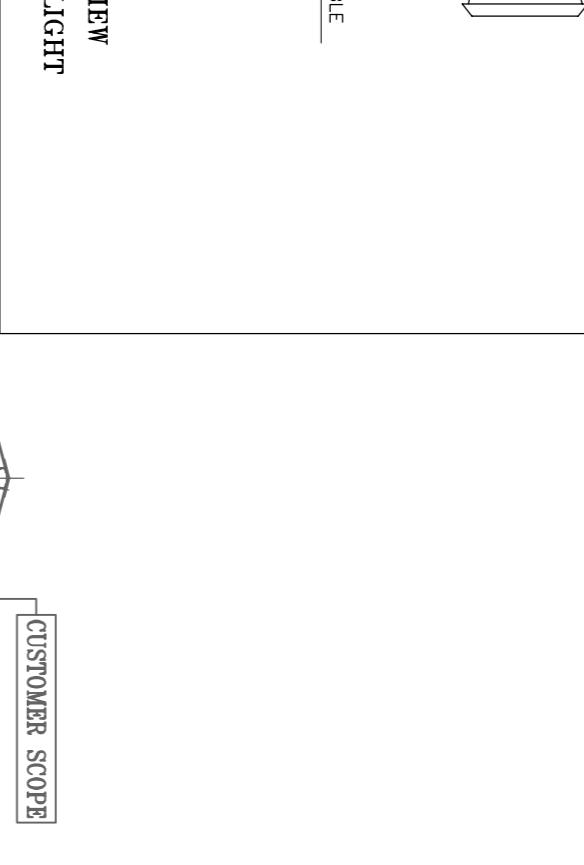
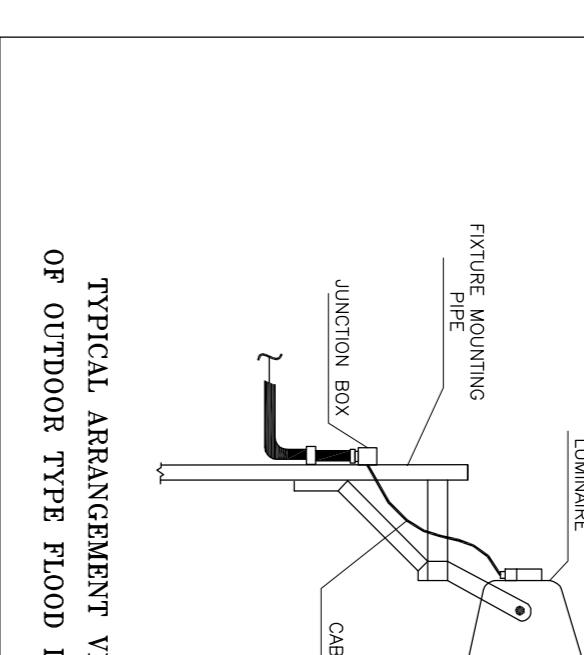
SYMBOL	DESCRIPTION	QUANTITY TOTAL Nos
	10W LED - LED BULKHEAD LUMINAIRE BIBWP 10W LED	14 Nos
	35W LED-INTEGRAL WELLGLASS LUMINARE BIWICP 35W LED	112 Nos
	120W LED FLOODLIGHT, BAJAJ BARFEG 120W LED	05 Nos
	AVIATION LAMP FOR CHIMNEY (10W) BGAV 302 LED	01 No

GENERAL NOTES OF LIGHTING INSTALLATIONSS

- 1.LOCATION OF LIGHTING FITTINGS, LIGHTING PANELS & CONDUIT ROUTINGS FURNISHED IN VARIOUS LAYOUT DRAWINGS ARE INDICATIVE AND FOR GUIDANCE DEPENDING ON THE LOCATION OF MAIN EQUIPMENT AND SITE CONDITIONS. THE LOCATION / ROUTING MAY BE CHANGED AS PER THE INSTRUCTION OF SITE ENGINEER / SITE IN-CHARGE TO SUIT SITE CONDITIONS.
- 2.ALL THE LIGHTING FIXTURES SHALL BE PROVIDED WITH LOOP IN LOOP OUT ARRANGEMENT AND THE CABLE ROUTING SHALL BE DECIDED IN SUCH A WAY THAT ALL THE FIXTURES CAN BE CONNECTED FROM / TO MAIN CIRCUIT.
- 3.CABLE / WIRES SIZES OF VARIOUS APPLICATIONS SHALL BE AS BELOW(3RD CORE 3CORE CABLE TO BE USED FOR EARTHING):

SIZE OF WIRE / CABLE	EQUIPMENT
2C X 1.5 Sq.mm PVC Cu.FLX.CABLE	LIGHTING FIXTURE
3C X 2.5 Sq.mm PVC/XLPE Cu.AR.CABLE	SLDB TO JB
3C X 1.5 Sq.mm PVC/XLPE Cu.AR.CABLE	JB TO JB /RECEPTICLE
4C X 16 Sq.mm PVC/XLPE Cu.AR.CABLE	MLDB TO SLDB

TYPIICAL ARRANGEMENT OF WELL GLASS

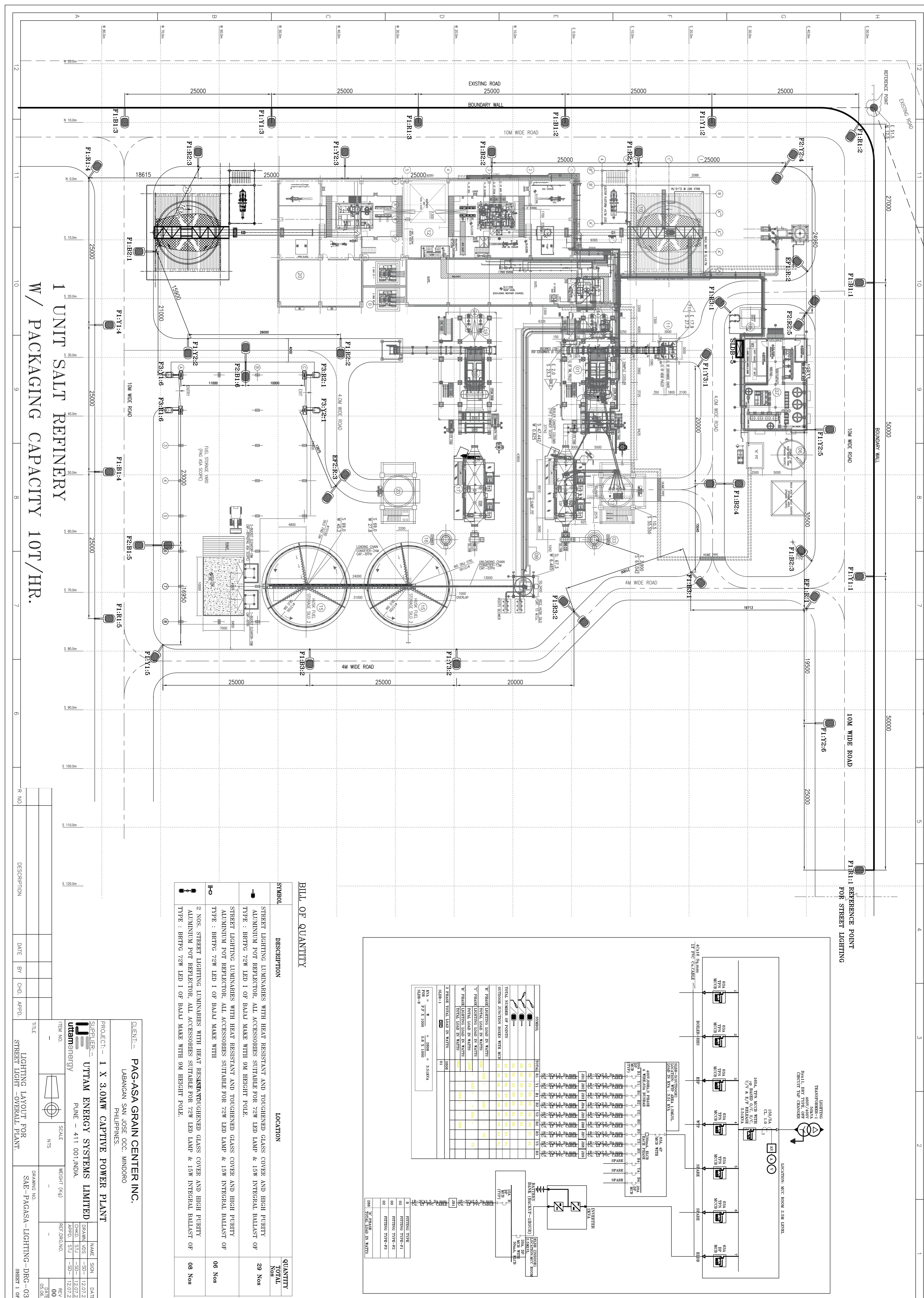


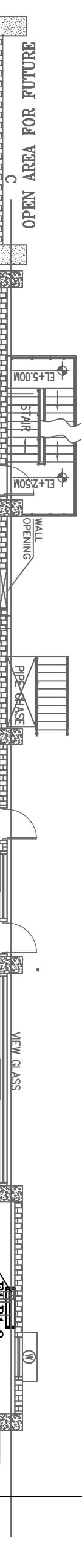
VIEW FROM 'H

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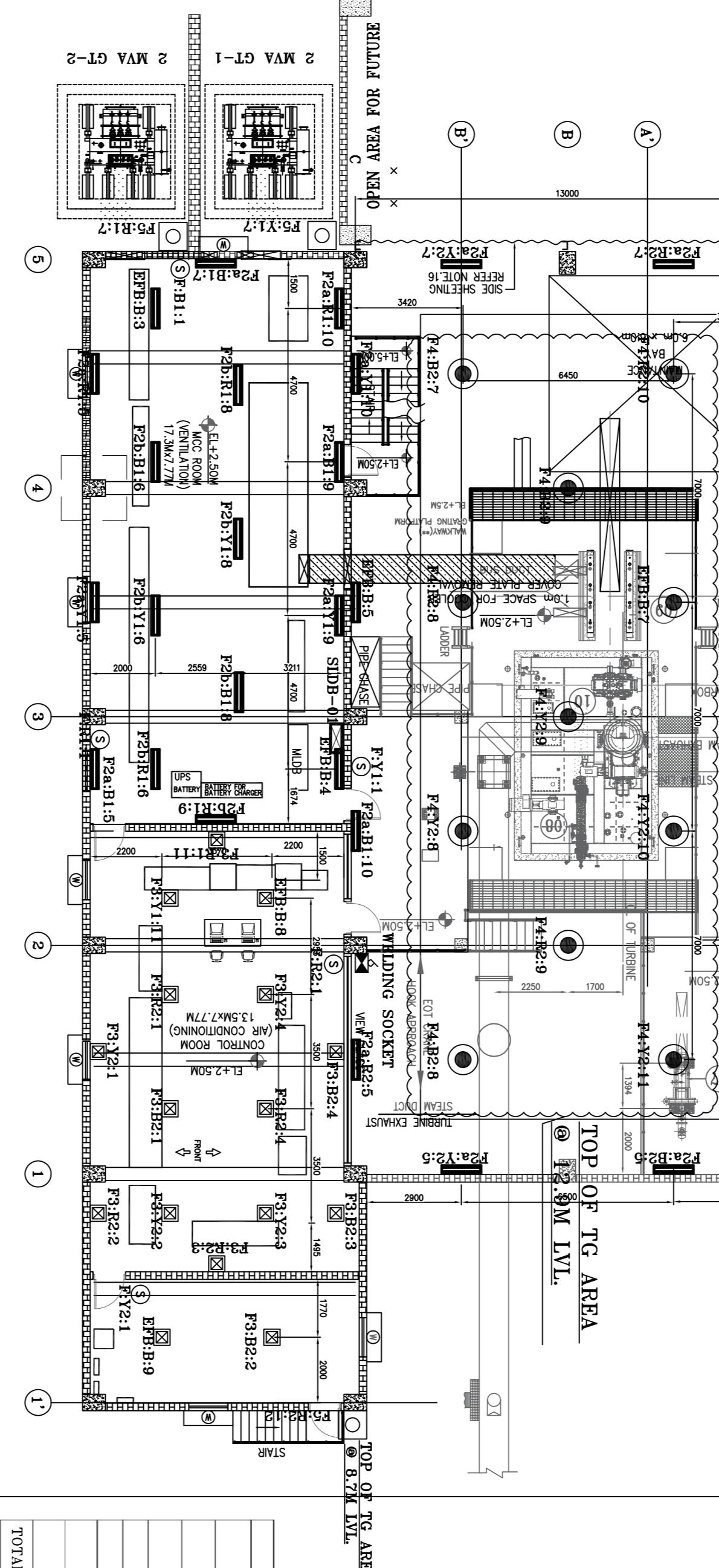
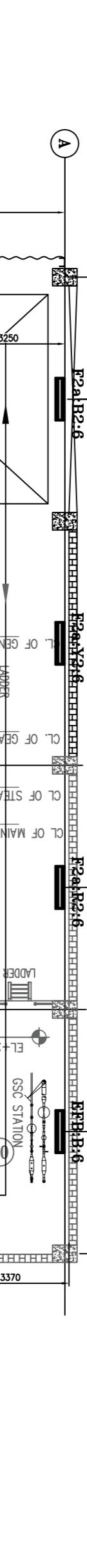
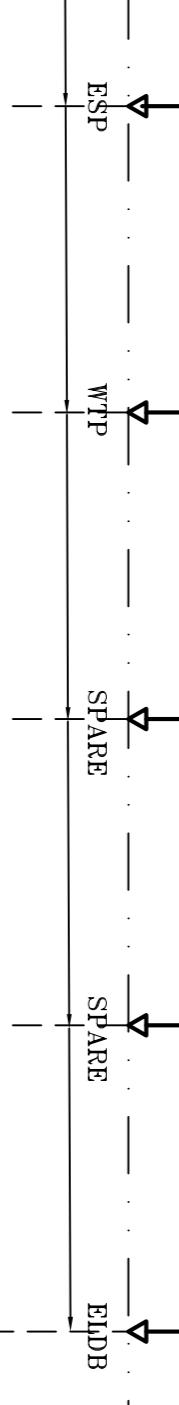
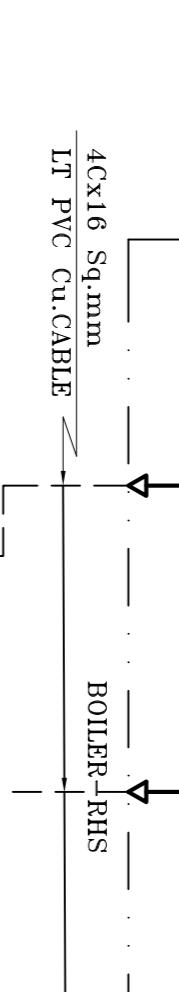
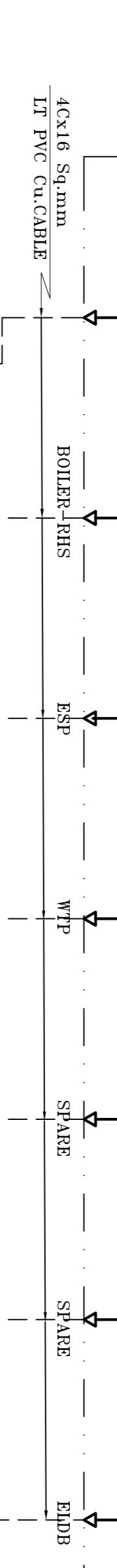
CLIENT: PAG-ASA GRAN CENTER INC

PROJECT:- 1 X 3.0MW CAPTIVE POWER PLANT						
SUPPLIER:-						GENERAL ARRANGEMENT
 UTTAM ENERGY SYSTEMS PUNE						PUNE - 411 001,INDIA.
R NO.						ITEM NO.
DATE	BY	CHD.	APPD.	DESCRIPTION	ITEM NO.	SCALE
					-	NTS
						WEIGHT (kg)
						-
						REF.DRG.NO.
						REV 00
						DATE 05.06.17
TITLE				DRAWING NO.		
LIGHTING LAYOUT FOR				SAE-PAGASA-LIGHTING-DRG-01		
BOILER,ESP AND ID FAN AREA.				SHEET-1 OF 2		

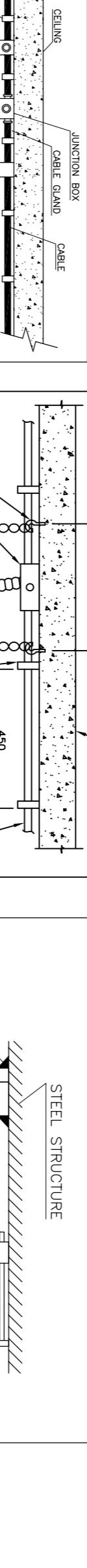




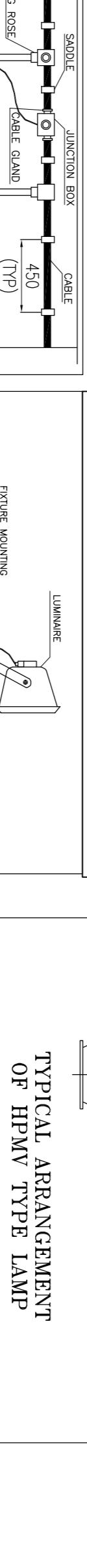
TG HALL - CABLE CELLER AREA @ EL+0.0m LEVEL



TG HALL FIRST FLOOR PLAN @ EL+2.500M & 12.90M TOP OF TG AREA



TYPICAL ARRANGEMENT OF FLUORESCENT TYPE FITTING
FLUORESCENT TYPE FITTING



TYPICAL ARRANGEMENT OF OUTDOOR TYPE FLOOD LIGHT



TYPICAL ARRANGEMENT OF OUTDOOR TYPE FLOOD LIGHT

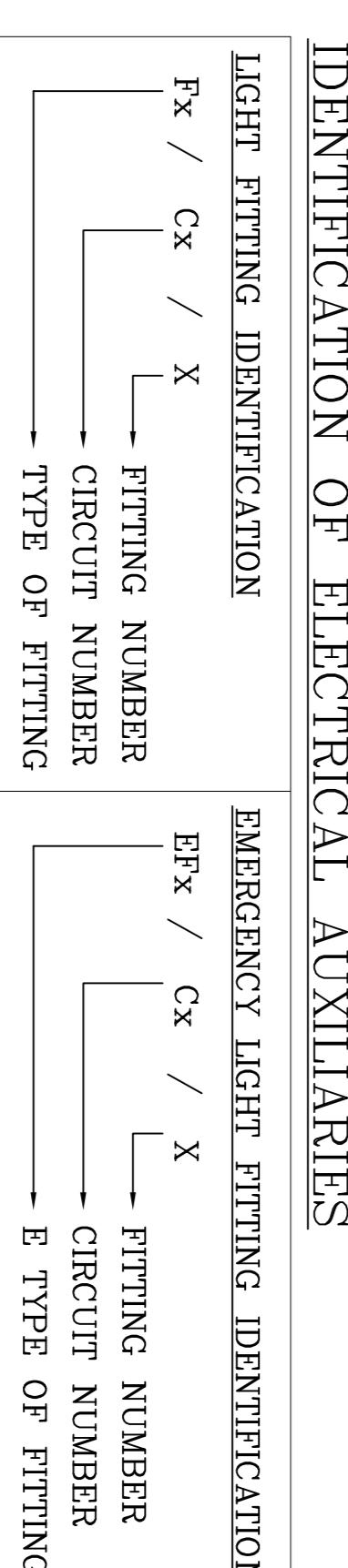
GENERAL NOTES OF LIGHTING INSTALLATIONS

- LOCATION OF LIGHTING FITTINGS, LIGHTING PANELS & CONDUIT ROUTINGS FURNISHED IN VARIOUS LAYOUT DRAWINGS ARE INDICATIVE AND FOR GUIDANCE DEPENDING ON THE LOCATION OF MAIN EQUIPMENT AND SITE CONDITIONS. THE LOCATION / ROUTING MAY BE CHANGED AS PER THE INSTRUCTION OF SITE ENGINEER / SITE IN-CHARGE TO SUIT SITE CONDITIONS.
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- CABLE / WIRES SIZES OF VARIOUS APPLICATIONS SHALL BE AS BELOW(3RD CORE 3CORE CABLE TO BE USED FOR EARTHING):-

SIMO	SIZE OF WIRE / CABLE	EQUIPMENT
1.	2C x 1.5 Sq.mm PVC Cu.FLX.CABLE	LIGHTING FIXTURE
2.	3C x 2.5 Sq.mm PVC/XLPE Cu.AR.CABLE	SDB TO JB
3.	3C x 1.5 Sq.mm PVC/XLPE Cu.AR.CABLE	JB TO JB / RECEPTICLE
4.	4C X 16 Sq.mm PVC/XLPE Cu.AR.CABLE	MLDB TO SDB

IDENTIFICATION OF ELECTRICAL AUXILIARIES



LIGHT FITTING IDENTIFICATION

EMERGENCY LIGHT FITTING IDENTIFICATION

EFx / Cx / X → FITTING NUMBER

EFx / Cx / X → CIRCUIT NUMBER

E → TYPE OF FITTING

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

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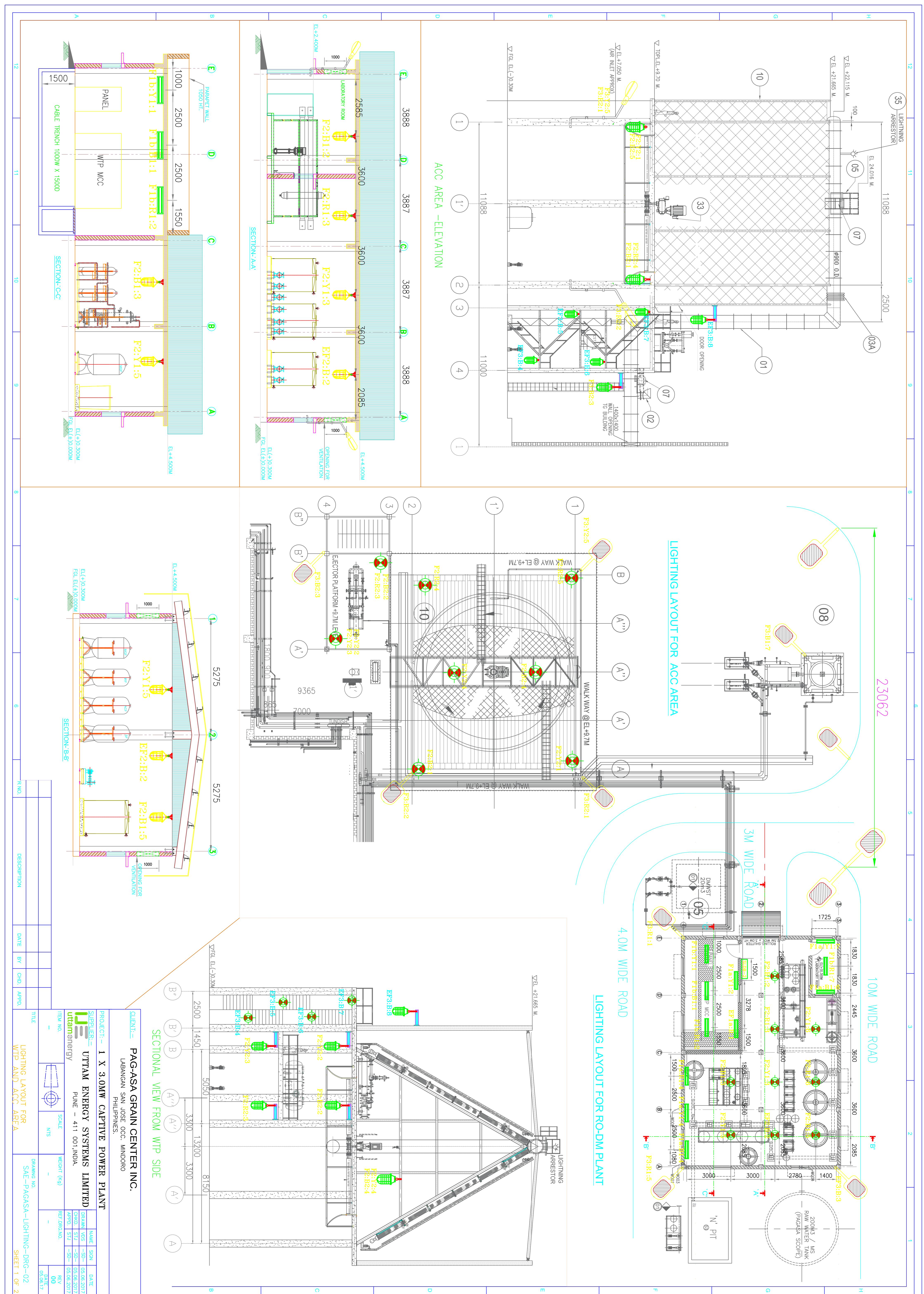
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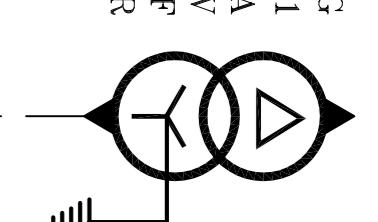
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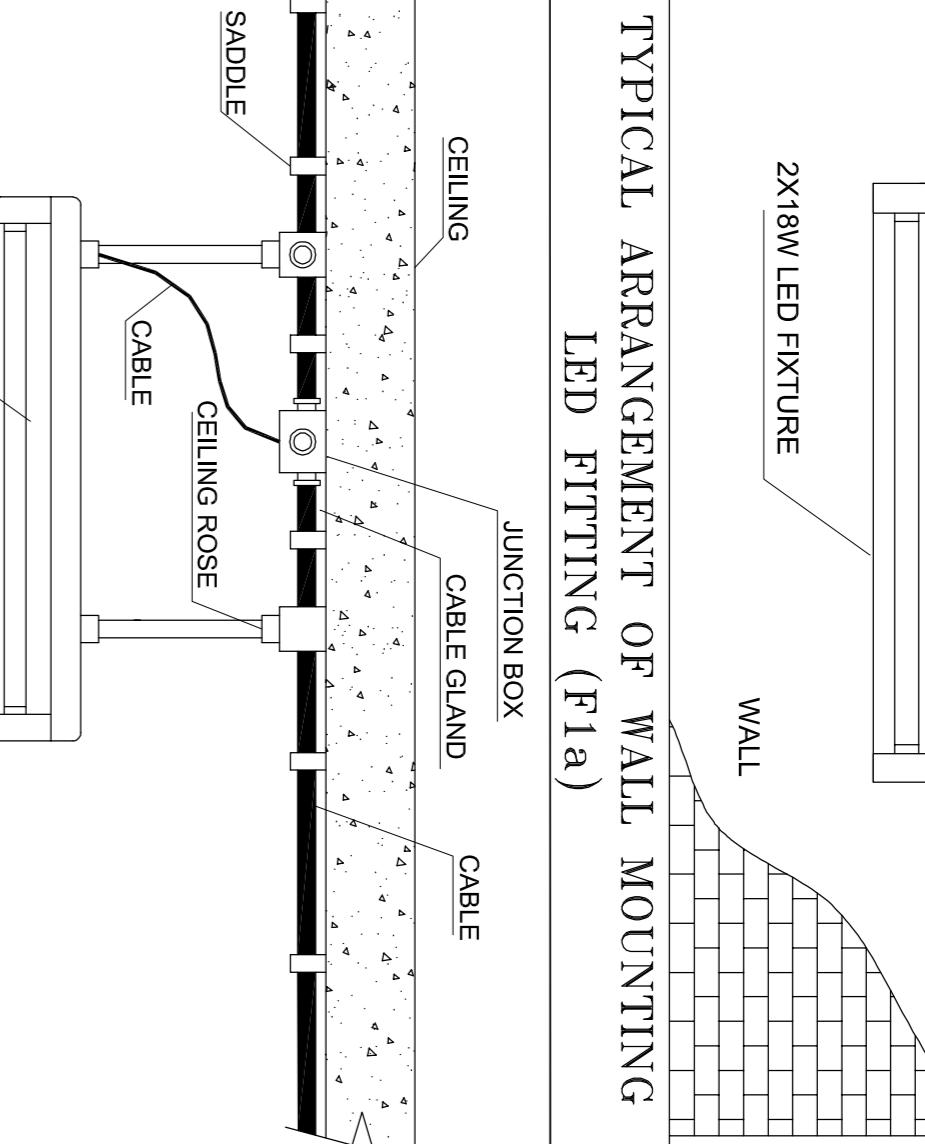
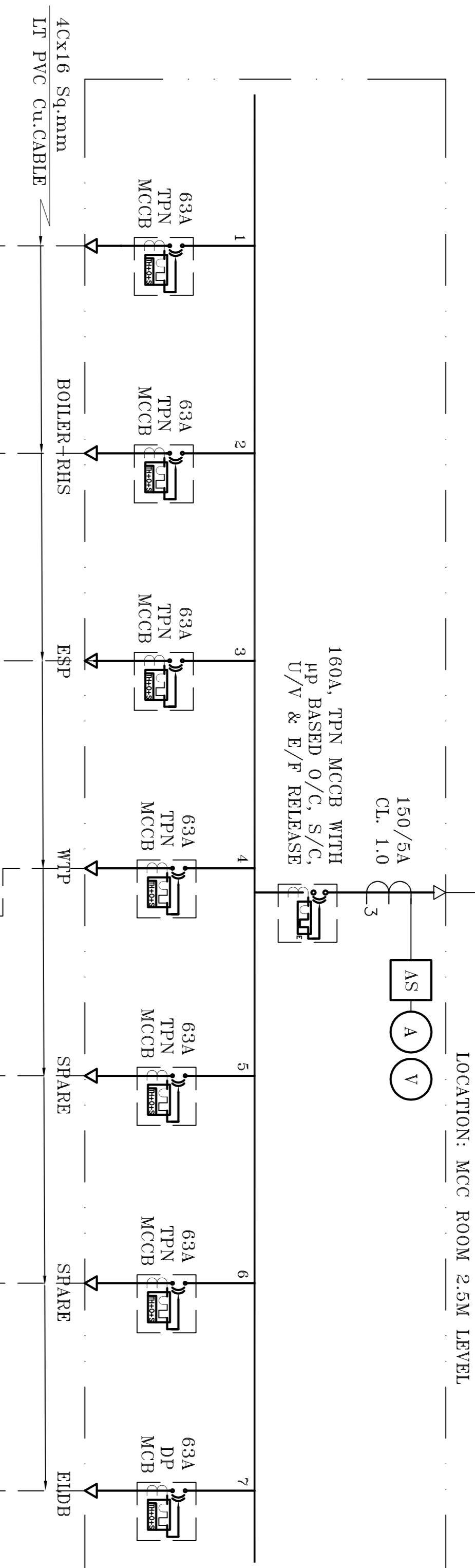
LIGHTING
TRANSFORMER-1
50kVA
460V/400V
DYN11, DRY TYPE, OFF
CIRCUIT TAP CHANGER
U/V & E/F RELEASE



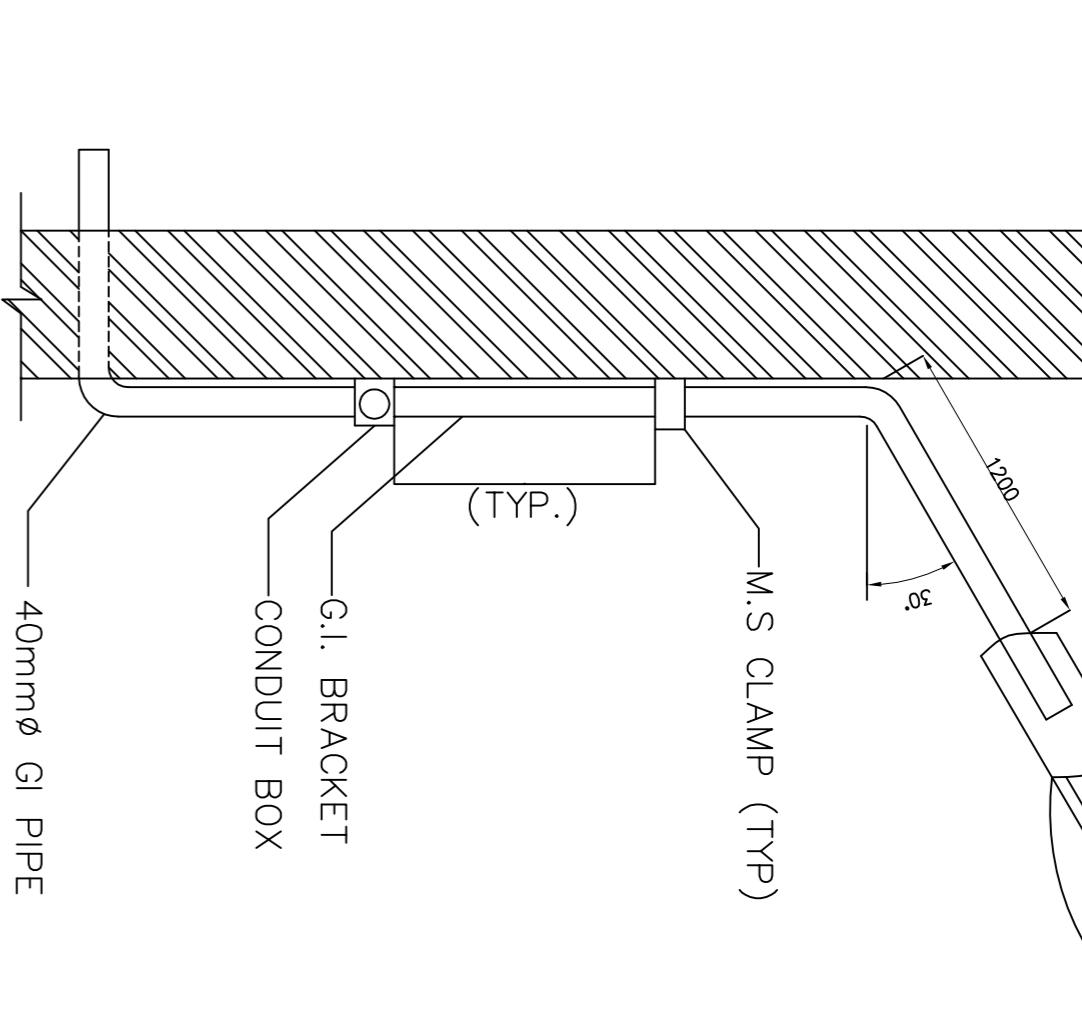
LOCATION: MCC ROOM 2.5M LEVEL
CL. 1.0

160A, TPN MCCB WITH
μP BASED O/C S/C,
U/V & E/F RELEASE

(TYP.)



TYPICAL ARRANGEMENT OF LED FITTING(F1a)



LED FITTING (F3)

IDENTIFICATION OF ELECTRICAL AUXILIARIES

LIGHT FITTING IDENTIFICATION		EMERGENCY LIGHT FITTING IDENTIFICATION	
FX / CX / X	FITTING NUMBER	FX / CX / X	FITTING NUMBER
	CIRCUIT NUMBER		CIRCUIT NUMBER
	E TYPE OF FITTING		E TYPE OF FITTING

- NOTES:
 1. JUNCTION BOX
 2. LIGHT FITTING
 3. IS A 50x50x6 (TO BE WELDED WITH STRUCTURE)
 4. SADDLE WITH CLAMP
 5. LIGHTING CABLE
 6. M10 NUT, BOLT WITH WASHER

TYPICAL WELL GLASS MOUNTING DETAILS

LED FITTING (F2)

BILL OF QUANTITY

SYMBOL	DESCRIPTION	TYPE OF MOUNTING	LOCATION/LUX LEVEL	QUANTITY TOTAL Nos
	2x18W, INDUSTRIAL LED FITTING OF TYPE BARR-DB 218 OF BAJAJ MAKE.	F1a ,F1b	WTP AREA	11 Nos
	35W, DIE CAST WALLGLASS LED LIGHT OF TYPE BWCH 35W LED OF BAJAJ MAKE.	F2	WTP AREA ACC AREA , COOLING TOWER AREA	19 Nos
	45W, LED STREET LIGHT FITTING OF TYPE BRTC 45W LED I OF BAJAJ MAKE.	F3	WTP AREA ACC AREA	08 Nos
JBI	SUB LIGHTING DISTRIBUTION BOARD(INDOOR)	SLDB-02	WTP AREA	01 No.

SYMBOL	DESCRIPTION	TYPE OF MOUNTING	LOCATION/LUX LEVEL	QUANTITY TOTAL Nos
	2x18W, INDUSTRIAL LED FITTING OF TYPE BARR-DB 218 OF BAJAJ MAKE.	F1a ,F1b	WTP AREA	11 Nos
	35W, DIE CAST WALLGLASS LED LIGHT OF TYPE BWCH 35W LED OF BAJAJ MAKE.	F2	WTP AREA ACC AREA , COOLING TOWER AREA	19 Nos
	45W, LED STREET LIGHT FITTING OF TYPE BRTC 45W LED I OF BAJAJ MAKE.	F3	WTP AREA ACC AREA	08 Nos
JBI	SUB LIGHTING DISTRIBUTION BOARD(INDOOR)	SLDB-02	WTP AREA	01 No.

GENERAL NOTES OF LIGHTING INSTALLATIONS
 1.LOCATION OF LIGHTING FITTINGS, LIGHTING PARTS & CONDUIT ROUTINGS FURNISHED IN VARIOUS LAYOUT DRAWINGS ARE INDICATIVE AND FOR GUIDANCE DEPENDING ON THE LOCATION OF MAIN EQUIPMENT AND SITE CONDITIONS. THE LOCATION / ROUTING MAY BE CHANGED AS PER THE INSTRUCTION OF SITE ENGINEER / SITE IN-CHARGE TO SUIT SITE CONDITIONS.
 2.ALL THE LIGHTING FIXTURES SHALL BE PROVIDED WITH LOOP IN LOOP OUT ARRANGEMENT AND THE CABLE ROUTING SHALL BE DECIDED IN SUCH A WAY THAT ALL THE FIXTURES CAN BE CONNECTED FROM / TO MAIN CIRCUIT.
 3.CABLE / WIRES SIZES OF VARIOUS APPLICATIONS SHALL BE AS BELOW(DC SCREW CABLE TO BE USED FOR EARTHING):
 4.SLDB SIZE OF WIRE / CABLE EQUIPMENT
 1. 20 x 1.5 Sq.mm PVC CABLE
 2. 3C x 1.5 Sq.mm PVC/XLPE Cu.CABLE
 3. 3C x 1.5 Sq.mm PVC/XLPE Cu.ARCABLE
 4. 4C X 16 Sq.mm PVC/XLPE Cu.CABLE MLDB TO SLDB

$$\text{KVA} = \frac{\text{W}}{\text{P.F} \times 1000} = \frac{1305}{0.8 \times 1000} = 1.63 \text{ KVA}$$

B	SYMBOL
01	—
06	—
01	—

1R-3Cx1.5 Sq.mm
Cu. LT PVC CABLE

SLDB SIZE OF WIRE / CABLE EQUIPMENT
 1. 20 x 1.5 Sq.mm PVC CABLE
 2. 3C x 1.5 Sq.mm PVC/XLPE Cu.CABLE
 3. 3C x 1.5 Sq.mm PVC/XLPE Cu.ARCABLE
 4. 4C X 16 Sq.mm PVC/XLPE Cu.CABLE MLDB TO SLDB

CLIENT:- PAGASA GRAIN CENTER INC.
 LABANGAN SAN JOSE OCC. MINDORO
 PHILIPPINES.

PROJECT:- 1 X 3.0MW CAPTIVE POWER PLANT

SUPPLIER:- UTTAM ENERGY SYSTEMS LIMITED
 uttamenergy
 PUNE - 411 001, INDIA.

ITEM NO.

SCALE

N/T

WEIGHT (kg)

-

REF.DRG.NO.

REV

00

DATE

BY

CHD

APPD.

05/06/17

DATE

SAE-PAGASA-LIGHTING-DRG-02

DRAWING NO.

SHET 2 OF 2

H

G

F

E

D

C

B

A

12

11

10

9

8

7

6

5

4

3

2

1

