BPTP CAPITAL CITY
AT NOIDA

ELECTRICAL SCHEMATIC PRESENTATION (17/10/2011)

Architect:
RSP DESIGN CONSULTANT (INDIA) PVT. LTD.
Suite No. 507, Time Towers,
M.G Road, Gurgaon,
Haryana – 122001, India
☎ : 0124-4706868

Consultant:
ELECTRICAL CONSULTING ENGINEERS
A-96, Malviya Nagar,
New Delhi-110017
☎ : 011-26682054, 26680092

INTRODUCTION

☞ The project consists of the following :

- Retail.
- Office Block – I.
- Office Block – II.
- Office Block – III.
- Common Basement for Retail as well as Office Block.
- Residential Block.

DESIGN CRITERIA

➢	Lighting and Power Load		
•	Office	:	5 W / Sq. Ft.
•	Hyper Market	:	9 W / Sq. Ft.
•	Food Court	:	5 W / Sq. Ft.
•	Retail	:	5 W / Sq. Ft.
•	Basement Lighting	:	0.1 W / Sq. Ft.
➢	A/C Load (As per HVAC Consultant)	:	9750.00 KW
➢	Plumbing Load (As per Plumbing Consultant)	:	200.00 KW
➢	Fire Fighting Load (As per Plumbing Consultant)	:	(200.00 KW)
➢	Incoming Power Supply	:	33 KV (Assumed)
➢	LT Metering (in Offices)	:	Dual type (Grid and Standby reading in the same meter)
➢	LT Power Distribution	:	Through Rising Mains

HT POWER DISTRIBUTION SYSTEM

- Power shall be received at 33 KV (2 connections) / 132 KV from UPPCL.
- 132 KV power supply is not feasible due to lack of right of way to the site.
- 33 KV metering room housing metering cubicle and 33 KV VCB's located at Ground Level accessible to Electricity authorities.
- 33 KV 6 panel board (one incoming and five outgoings) installed at ground level for 33 KV power distribution.
- 33 KV incoming cable cost from nearest PSEB Substation to the proposed 33 KV meter room has not been included in the estimate as the length of the cable is not know.

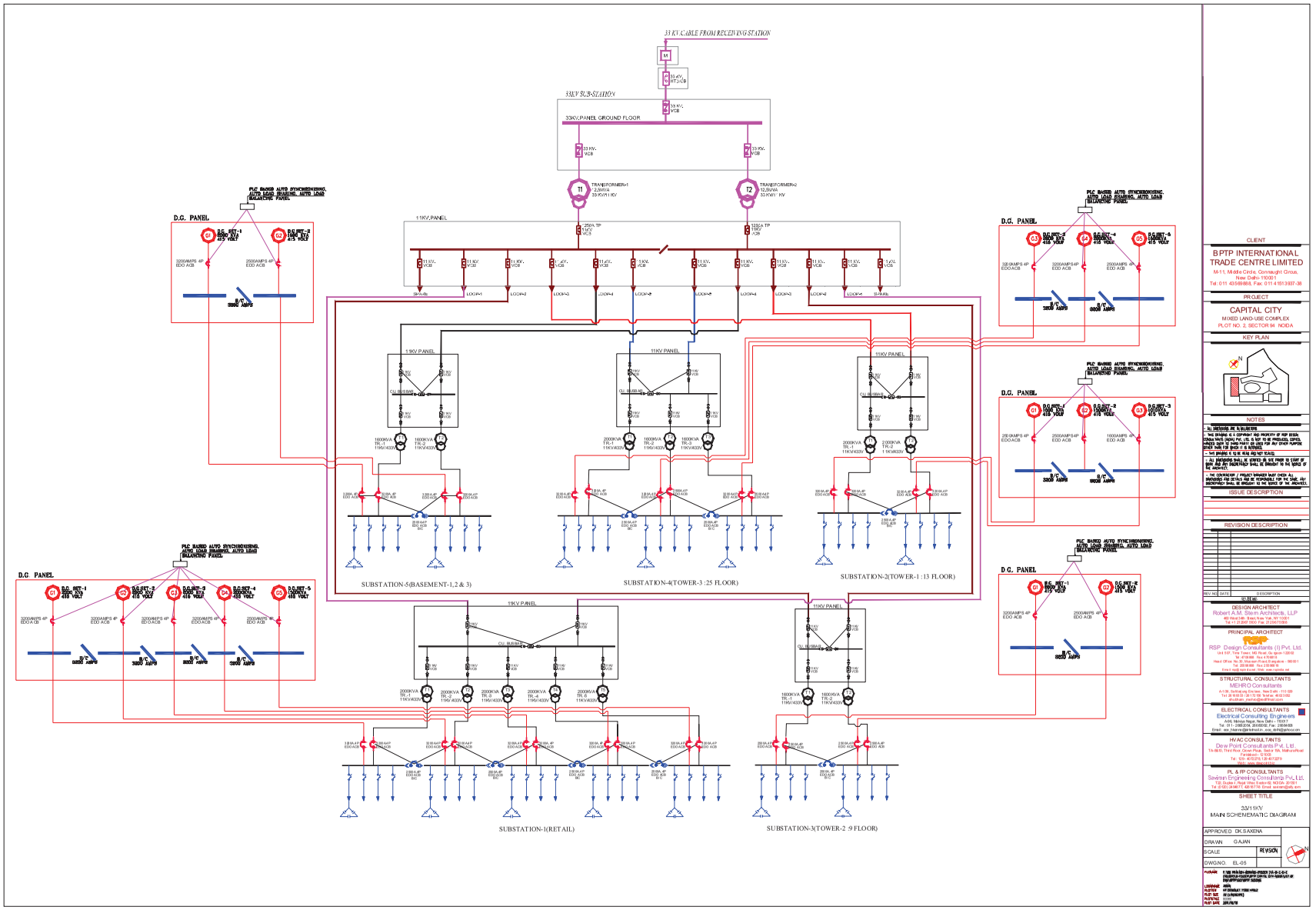
☞ SUB-STATION

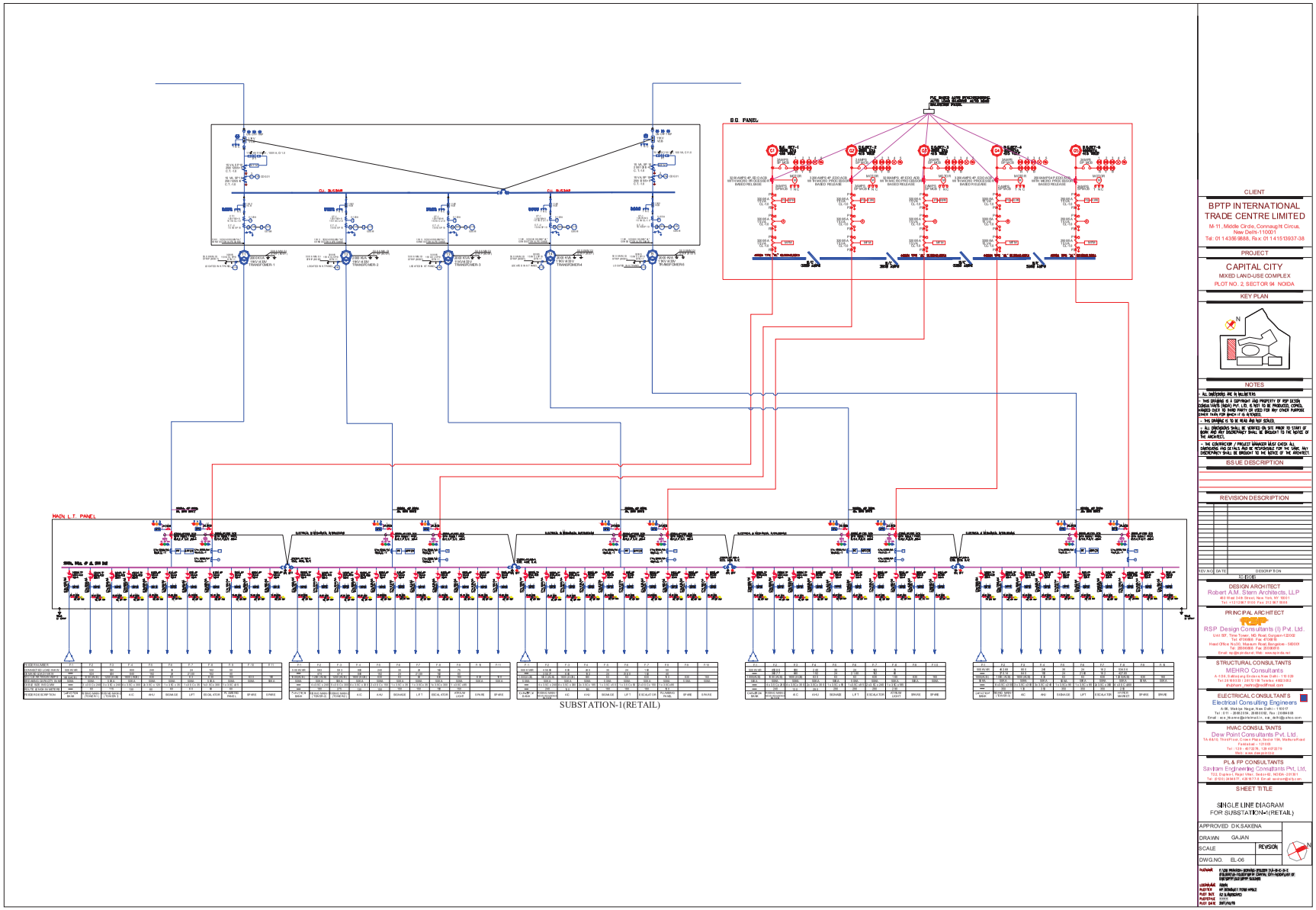
- 33 KV power supply will be stepped down to 11 KV with 2 Nos. 12.5 MVA, 33 KV / 11 KV, Oil filled Transformers.
- 11 KV supply will be stepped down to 433 volts with required Number of 11 KV / 433 Volt Dry type Transformers installed in the Basement at five locations.
- The power factor considered at 0.9 lag.
- Transformer loading shall be 85%.
- Transformers and LT Panel shall be connected through Bus Duct / Cables.

☞ STANDBY POWER SUPPLY

- 100% power backup shall be provided with required number of 2000 KVA and 1500 KVA, 415 V, heat exchange type DG sets in the Basement.
- For DG Calculation power factor considered as 0.8.
- DG set loading shall be 85%.
- DG sets and Main LT Panel shall be interconnected with LT XLPE cable laid on Cable Tray.
- DG's shall be heat exchanger type with cooling towers.
- Generators shall be synchronized using DG controller mounted on DG sets.
- Micro PLC shall be provided for sequential interlocking and load management.
- DG AMF panel shall be provided separately and connected to LT Panel.
- PLC panel shall be provided for auto start / stop, synchronisation, auto load sharing, interlocking and load management to achieve optimum use of DG sets and fuel efficiency.
- Manual over ride facility shall be inbuilt in the PLC system.

- DG exhaust stack shall be taken inside external DG fume shaft 6 meter above terrace level as per CPCB norms.
- Diesel requirement is expected to be 21,000 Ltrs. / day for 4 Hours operation.
- Diesel underground storage tank capacity of 60 KL (i.e. 2 x 30 KL tanks) would support DG fuel requirement of about 3.5 days.
- Water Requirement for DG cooling would be around 100 KL/Day for 4 Hrs operation.


33 KV CABLE FROM RECEIVING STATION
33KV SUB-STATION
33KV PANEL GROUND FLOOR
T1
T2
11KV PANEL
D.G. PANEL
SUBSTATION-5(BASEMENT-1,2 & 3)
SUBSTATION-4(TOWER-3 :25 FLOOR)
SUBSTATION-2(TOWER-1 :13 FLOOR)
SUBSTATION-1(RETAIL)
SUBSTATION-3(TOWER-2 :9 FLOOR)
CLIENT
BPTP INTERNATIONAL TRADE CENTRE LIMITED
PROJECT
CAPITAL CITY
MIXED LAND-USE COMPLEX
PLOT NO. 2, SECTOR 94, NOIDA
KEY PLAN
NOTES
ISSUE DESCRIPTION
REVISION DESCRIPTION
DESIGN ARCHITECT
Robert A.M. Stern Architects, LLP
PRINCIPAL ARCHITECT
RSP Design Consultants (I) Pvt. Ltd.
STRUCTURAL CONSULTANTS
MEHRO Consultants
ELECTRICAL CONSULTANTS
Electrical Consulting Engineers
HVAC CONSULTANTS
Dew Point Consultants Pvt. Ltd.
PL & FP CONSULTANTS
Sevinn Engineering Consultants Pvt. Ltd.
SHEET TITLE
33/11KV
MAIN SCHEMEMATIC DIAGRAM
APPROVED DK.SAXENA
DRAWN GAJAN
SCALE
REVISION
DWG.NO. EL-05


D.G. PANEL
MAIN L.T. PANEL
SUBSTATION-1(RETAIL)
CLIENT
BPTP INTERNATIONAL TRADE CENTRE LIMITED
M-11, Middle Circle, Connaught Circus, New Delhi-110001
Tel: 01 14356 9888, Fax: 01 1415 13937-38
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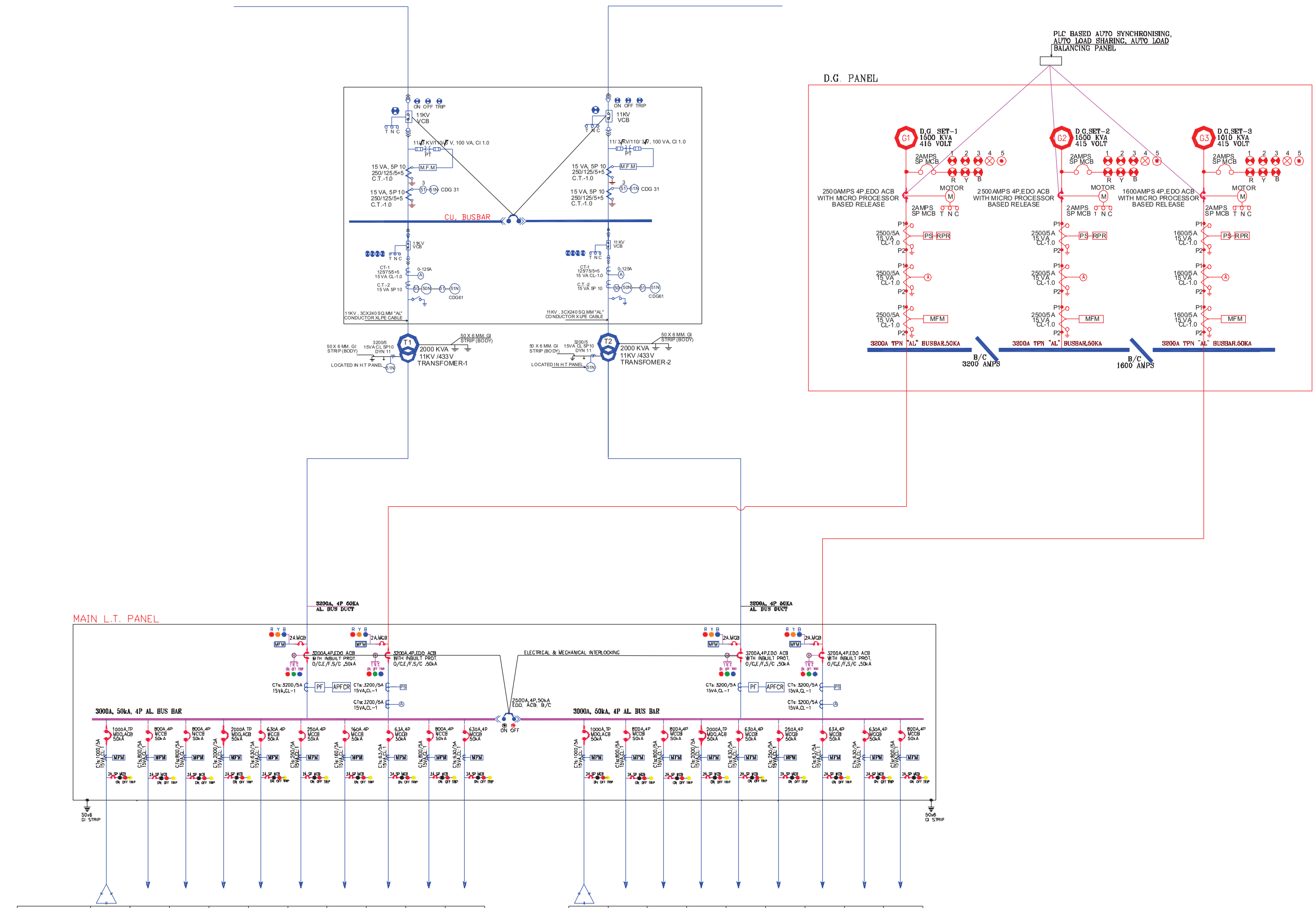
Dew Point Consultants Pvt. Ltd.
PLA FP CONSULTANTS
Savlam Engineering Consultants Pvt. Ltd.
SHEET TITLE
SINGLE LINE DIAGRAM FOR SUBSTATION-1(RETAIL)
APPROVED D K SAXENA
DRAWN GAJAN
SCALE
REVISION
DWG NO. EL-06



FEEDER NUMBER	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10
CONNECTED LOAD IN KW	500 KVAR	390	390	862	225	105	50			
DEMAND LOAD IN KW	—	312	312	689.60	180	94.50	40			
M.C.C.B.RATING IN AMPS	1000(ACB)	800	800	2000(ACB)	630	250	160	63	800	630
BREAKING CAPACITY IN KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA
CABLE SIZE IN SQ.MM	—	2 x 3.5C x 240	2 x 3.5C x 240	4x 3.5C x 300	2 x 3.5C x 120	1 x 3.5C x 120	1x 3.5C x 35	1x 3.5C x 95		
ROUTE LENGH IN METERS	—	60	90	70	70	70	70	70		
FEEDER DESCRIPTION	CAPACITOR BANK	RISING MAIN-1	RISING MAIN-2	A/C	AHU	LIFT	PLUMBING PANEL	MDB COMMON AREA	SPARE	SPARE

F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9
500 KVAR	390	390	862	225	105			
—	312	312	689.60	180	94.50			
1000(ACB)	800	800	2000(ACB)	630	250	63	630	800
50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA
—	2 x 3.5C x 240	2 x 3.5C x 240	4x 3.5C x 300	2 x 3.5C x 120	1 x 3.5C x 120	1x 3.5C x 95		
—	60	90	70	70	70	130		
CAPACITOR BANK	RISING MAIN-3	RISING MAIN-4	A/C	AHU	LIFT	MDB COMMON AREA	SPARE	SPARE

SUBSTATION-2(TOWER-1 :13 FLOOR)

CLIENT

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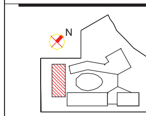
PROJECT

CAPITAL CITY

MIXED LAND-USE COMPLEX
PLOT NO. 2, SECTOR 94 NOIDA

KEY PLAN



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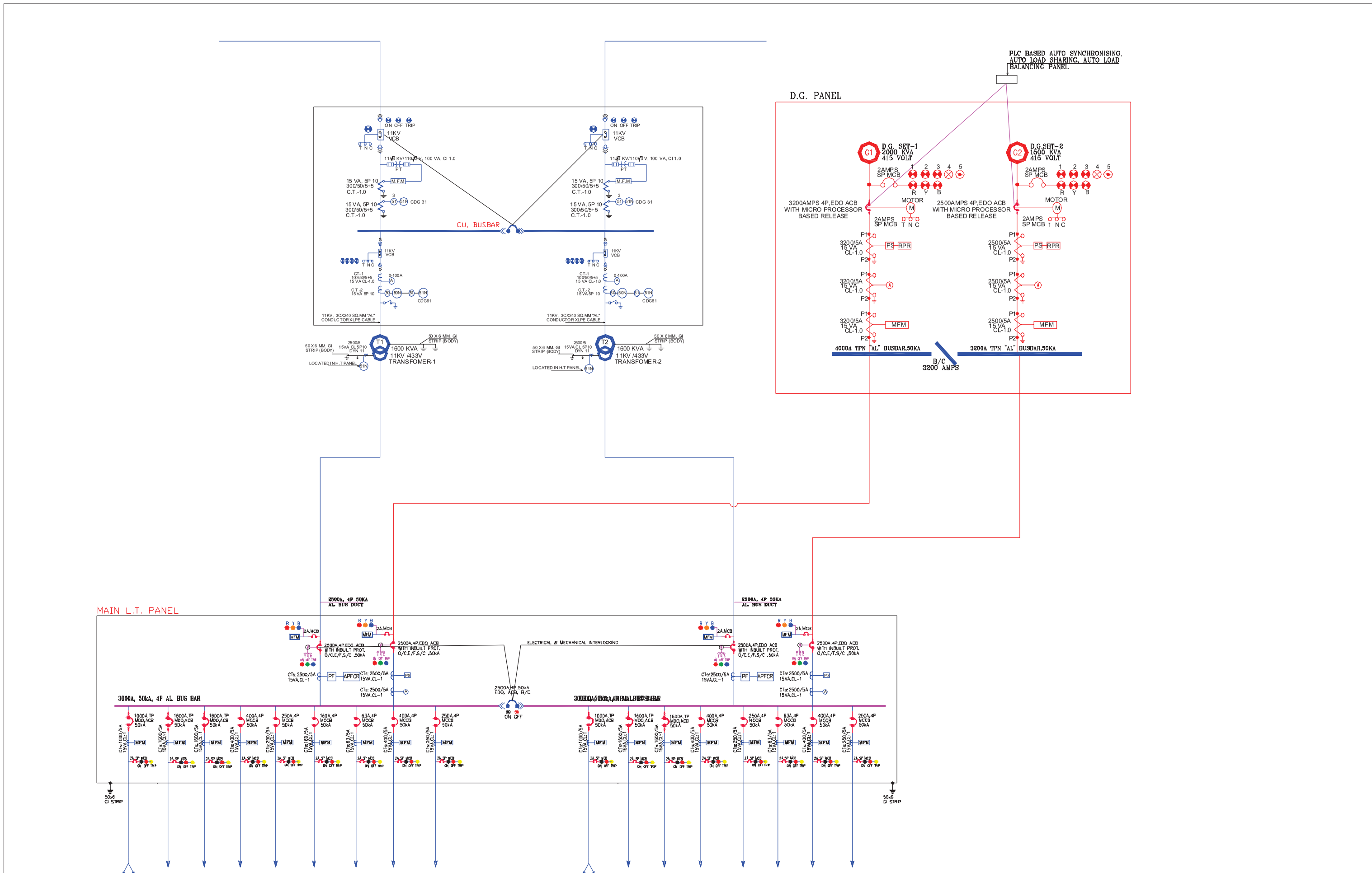
SHEET TITLE

SINGLE LINE DIAGRAM
FOR SUBSTATION-2(TOWER-1)

APPROVED DK.SAXENA
DRAWN GAJAN
SCALE
REVISION
DWG.NO. EL-07



FEEDER NUMBER	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9
CONNECTED LOAD IN KW	500 KVAR	690	718.50	187.50	105	50			
DEMAND LOAD IN KW	—	552	574.80	150	94.50	40			
M.C.C.B.RATING IN AMPS	1000(ACB)	1600(ACB)	1600(ACB)	400	250	160	63	400	250
BREAKING CAPACITY IN KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA
CABLE SIZE IN SQ.MM	—	4 x 3.5C x 240	4 x 3.5C x 240	1x 3.5C x 185	1 x 3.5C x 120	1 x 3.5C x 35	1x 3.5C x 95		
ROUTE LENGH IN METERS	—	60	90	70	70	70	60		
FEEDER DESCRIPTION	CAPACITOR BANK	RISING MAIN-1	A/C	AHU	LIFT	PLUMBING PANEL	MDB COMMON AREA	SPARE	SPARE

SUBSTATION-3(TOWER-2 :9 FLOOR)

F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8
500 KVAR	690	718.50	187.50	105			
—	552	574.80	150	94.50			
1000(ACB)	1600(ACB)	1600(ACB)	400	250	63	400	250
50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA
—	4 x 3.5C x 240	4 x 3.5C x 240	1x 3.5C x 300	1 x 3.5C x 185	1x 3.5C x 95		
—	155	165	165	165	155		
CAPACITOR BANK	RISING MAIN-2	A/C	AHU	LIFT	MDB COMMON AREA	SPARE	SPARE

CLIENT

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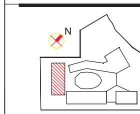
PROJECT

CAPITAL CITY
MIXED LAND-USE COMPLEX
PLOT NO. 2, SECTOR 94 NOIDA

KEY PLAN



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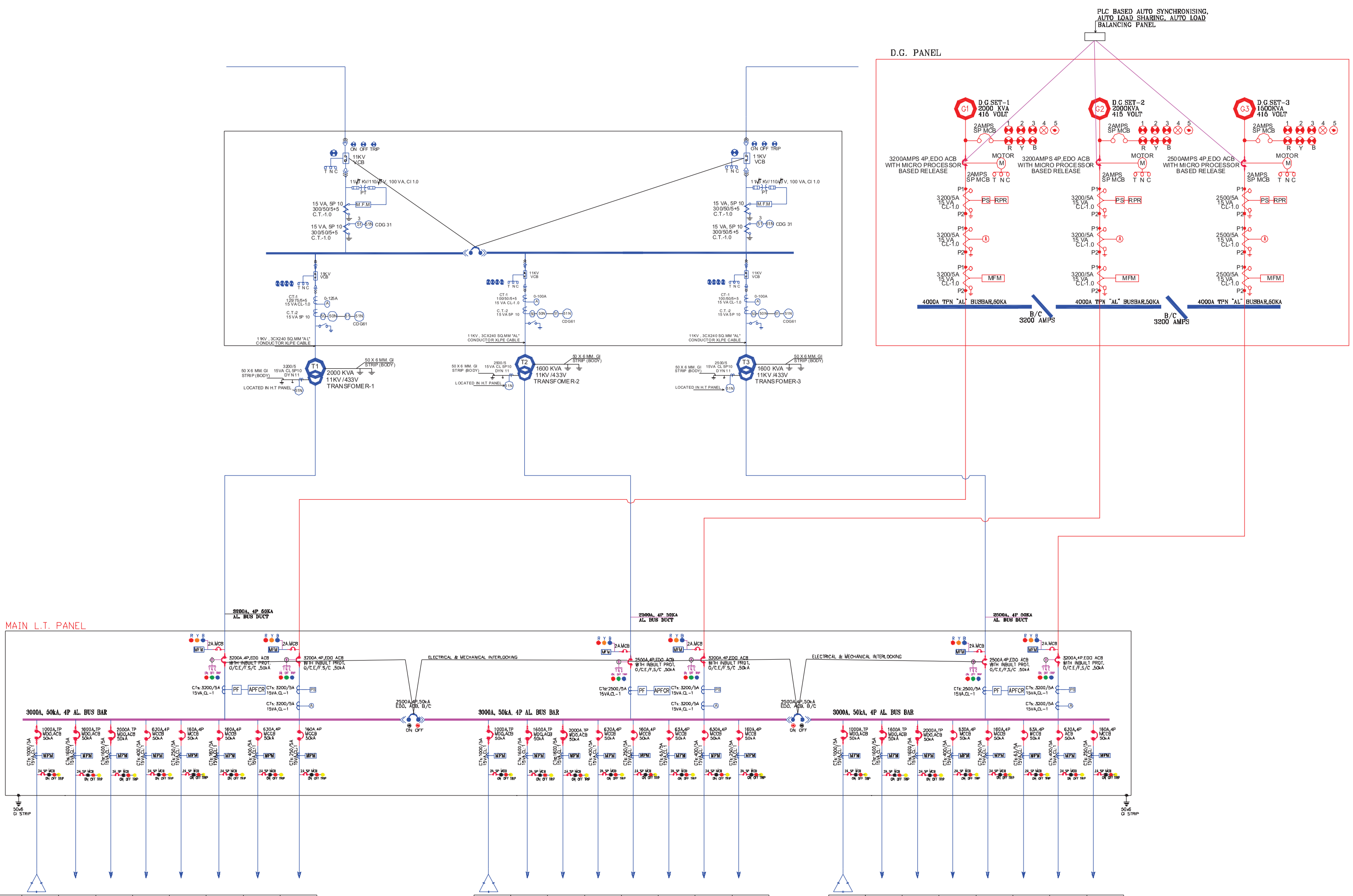
SHEET TITLE

SINGLE LINE DIAGRAM FOR SUBSTATION-3(TOWER-2)

APPROVED DK.SAXENA
DRAWN GAJAN
SCALE
REVISION
DWG.NO. EL-08

FILENAME F:\OM PRAKASH-WORKING-(FOLDER)\A-B-C-D-E (FOLDER)\B-FOLDER\BPTP CAPITAL CITY-NOIDA\LIST OF DWG\BPTP\SLD\BPTP SLD.DWG
LOGINNAME ADMIN
PLOTTER HP DESIGNJET T1200 HPGL2
PLOT SIZE A2 (LANDSCAPE)
PLOTSTYLE ----
PLOT DATE 2011/10/19



FEEDER NUMBER	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8
CONNECTED LOAD IN KW	500 KVAR	665	863	225	55	50		
DEMAND LOAD IN KW	—	532	690.40	180	44	40		
M.C.C.B.RATING IN AMPS	1000(ACB)	1600(ACB)	2000(ACB)	630	160	160	630	160
BREAKING CAPACITY IN KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA
CABLE SIZE IN SQ.MM	—	4 x 3.5C x 240	4 x 3.5C x 300	2x 3.5C x 150	1 x 3.5C x 70	1 x 3.5C x 70		
ROUTE LENGH IN METERS	—	130	140	140	140	140		
FEEDER DESCRIPTION	CAPACITOR BANK	RISING MAIN-1	A/C	AHU	LIFT	PLUMBING PANEL	SPARE	SPARE

F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8
500 KVAR	665	863	225	55			
—	532	690.40	180	44			
1000(ACB)	1600(ACB)	2000(ACB)	630	160	63	630	160
50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA
—	4 x 3.5C x 240	5 x 3.5C x 300	2x 3.5C x 185	1 x 3.5C x 95	1x 3.5C x 95		
—	170	180	180	180	130		
CAPACITOR BANK	RISING MAIN-2	A/C	AHU	LIFT	MDB COMMON AREA	SPARE	SPARE

F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8
500 KVAR	665	863	225	55			
—	532	690.40	180	44			
1000(ACB)	1600(ACB)	2000(ACB)	630	160	63	630	160
50KA	50KA	50KA	50KA	50KA	50KA	50KA	50KA
—	4 x 3.5C x 300	5 x 3.5C x 300	2x 3.5C x 240	1 x 3.5C x 95	1x 3.5C x 95		
—	210	200	220	220	170		
CAPACITOR BANK	RISING MAIN-2	A/C	AHU	LIFT	MDB COMMON AREA	SPARE	SPARE

SUBSTATION-4(TOWER-3 :25 FLOOR)

CLIENT

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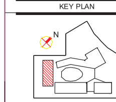
PROJECT

CAPITAL CITY
MIXED LAND-USE COMPLEX
PLOT NO. 2, SECTOR 94 NOIDA

KEY PLAN



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SHEET TITLE

SINGLE LINE DIAGRAM
FOR SUBSTATION-4(TOWER-3)

APPROVED DK.SAXENA
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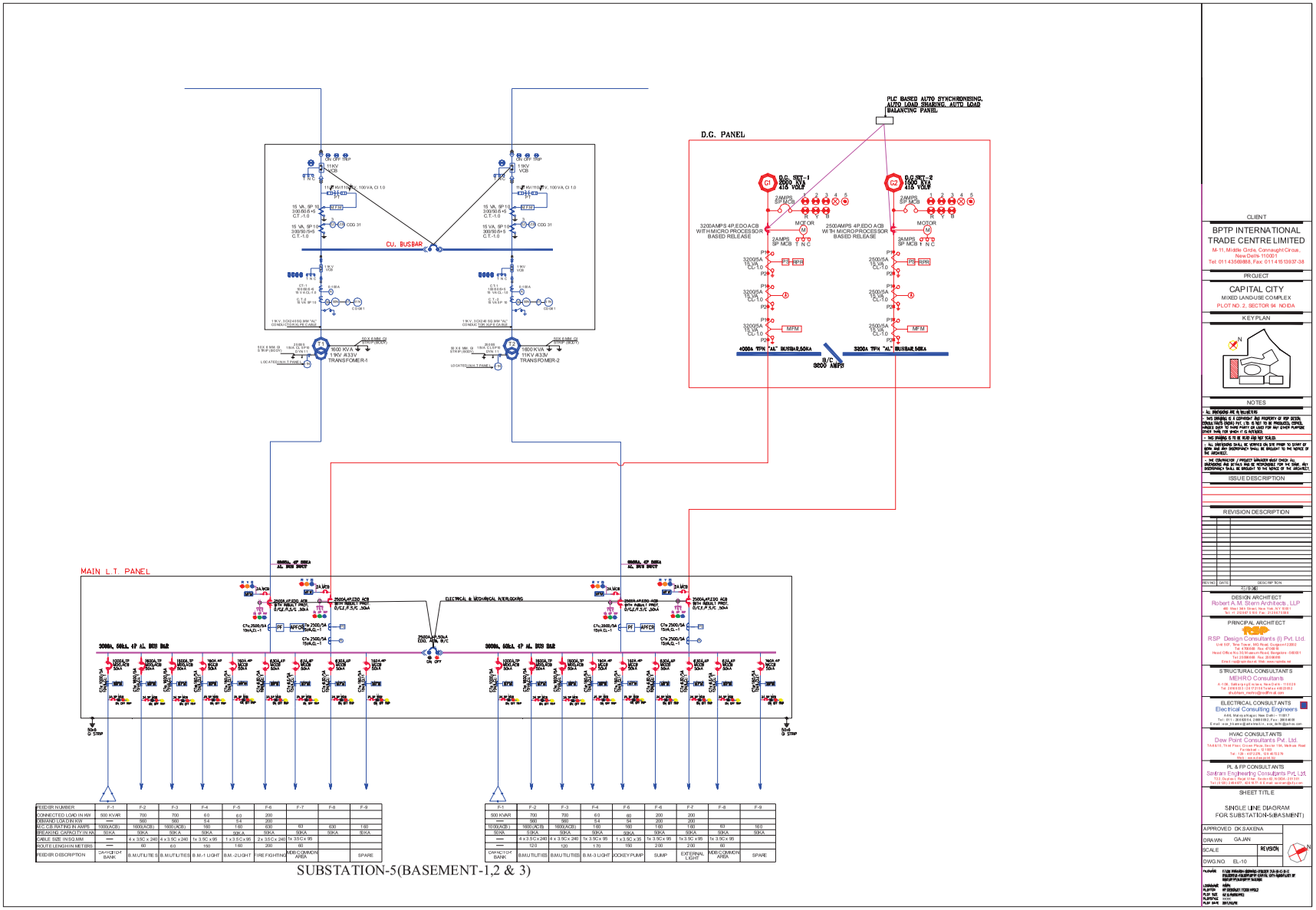
SCALE
REVISION
DWG.NO. EL-09


PLC BASED AUTO SYNCHRONISING, AUTO LOAD SHARING, AUTO LOAD BALANCING PANEL
D.G. PANEL
D.G. SET-1 2500 KVA 415 VOLT
D.G. SET-2 1500 KVA 415 VOLT
3200AMPS 4P,EDO ACB WITH MICRO PROCESSOR BASED RELEASE
2500AMPS 4P,EDO ACB WITH MICRO PROCESSOR BASED RELEASE
4000A TPN "AL" BUSBAR,50KA
3200A TPN "AL" BUSBAR,50KA
B/C 3600 AMPS
CU. BUSBAR
1600 KVA 11KV /433V TRANSFOMER-1
1600 KVA 11KV /433V TRANSFOMER-2
MAIN L.T. PANEL
ELECTRICAL & MECHANICAL INTERLOCKING
3000A, 50KA, 4P AL. BUS BAR
SUBSTATION-5(BASEMENT-1,2 & 3)
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Dew Point Consultants Pvt. Ltd.
PL & FP CONSULTANTS
Sanram Engineering Consultants Pvt. Ltd.
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SINGLE LINE DIAGRAM FOR SUBSTATION-5(BASMENT)
APPROVED DK.SAXENA
DRAWN GAJAN
SCALE
REVISION
DWG.NO EL-10