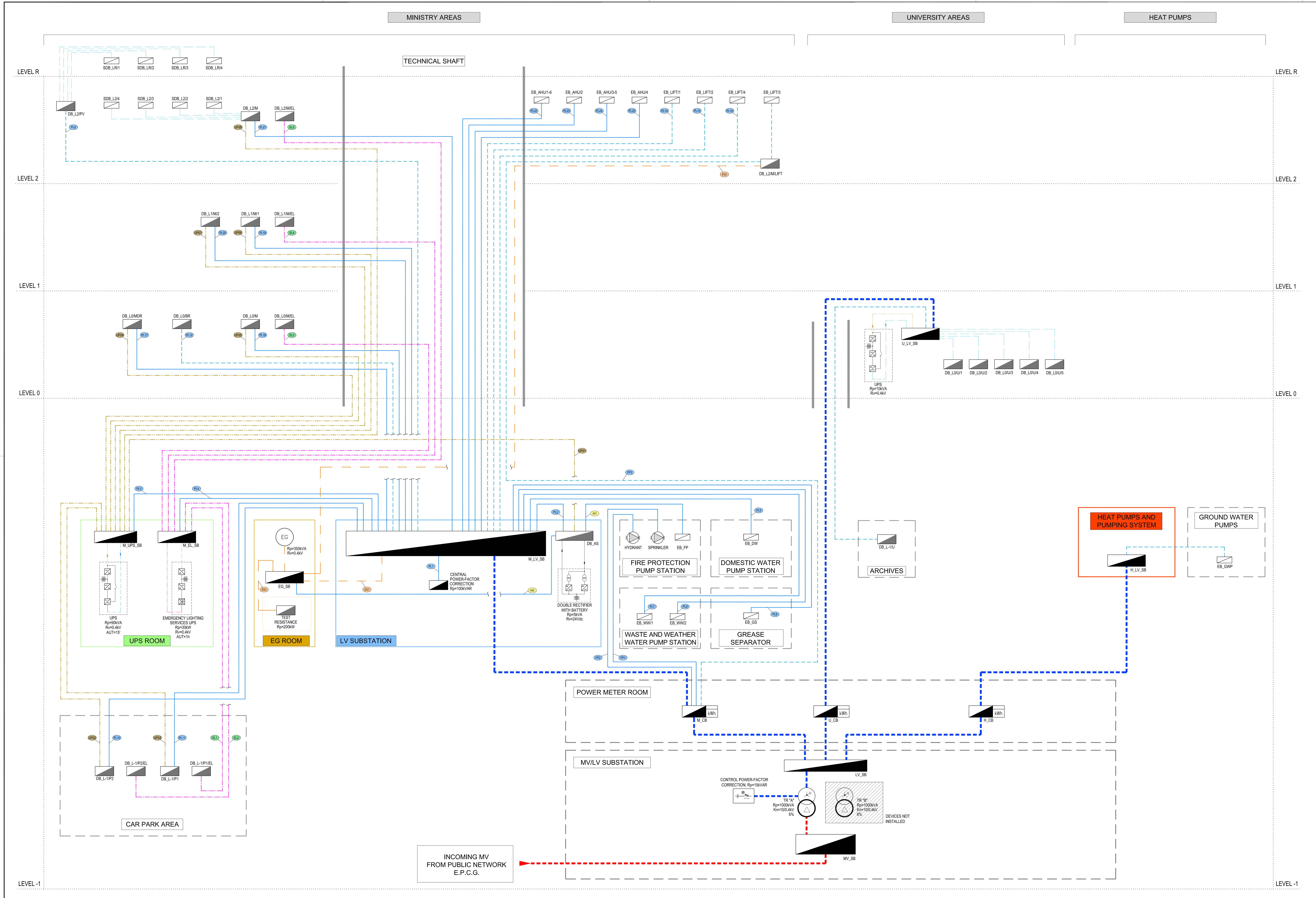

LEGEND

Symbol	Code	Meaning
Switchboard	...._...._SB	SWITCHBOARD
	LV:	MAIN LOW VOLTAGE SWITCHBOARD
	UPS:	MAIN UPS SWITCHBOARD
	EL:	MAIN EMERGENCY LIGHTING SWITCHBOARD
	M:	DEDICATED TO MINISTRY AREAS
	U:	DEDICATED TO UNIVERSITY AREAS
	H:	DEDICATED TO HEAT PUMPS AND PUMPING SYSTEM
Main switchboard	...._SB	MAIN SWITCHBOARD
	MV:	MEDIUM VOLTAGE (10kV)
	LV:	LOW VOLATAGE (0.4kV)
	EG:	EMERGENCY GENERATOR (0.4kV)
Distribution board	DB_L..../..../..../....	DISTRIBUTION BOARDS
	LV:	MAIN LOW VOLTAGE SWITCHBOARD
	UPS:	MAIN UPS SWITCHBOARD
	n.:	PROGRESSIVE NUMBER
	....:	SEE DISTRIBUTION BOARD CODE
	-1:	BASEMENT LEVEL
	0:	GROUND LEVEL
	1:	FIRST LEVEL
	2:	SECOND LEVEL
Secondary distribution board	..../..../....	SECONDARY DISTRIBUTION BOARDS
	n.:	PROGRESSIVE NUMBER
	L ...(LEVEL): -1:	BASEMENT LEVEL
	0:	GROUND LEVEL
	1:	FIRST LEVEL
	2:	SECOND LEVEL
	R:	ROOF LEVEL
	...:	SEE ELECTRICAL BOARD DEDICATED TO MECHANICAL CODE
	EB:	ELECTRICAL BOARD DEDICATED TO MECHANICAL PLANTS DEVICES
	SDB:	SUB - DISTRIBUTION BOARD

- MV NETWORK (10 kV)
- GENERAL LV NETWORK (0.4 kV)
- NETWORK "A" - MAIN LV DISTRIBUTION FED BY DIESEL GENERATOR (IN CASE OF EMERGENCY)
- NETWORK "B" - MAIN LV DISTRIBUTION NOT FED BY DIESEL GENERATOR (IN CASE OF EMERGENCY)
- UPS DISTRIBUTION NETWORK (0.4kV)
- EMERGENCY GENERATOR NETWORK (0.4kV)
- EMERGENCY LIGHTING DISTRIBUTION NETWORK (0.4kV)
- HORIZONTAL DISTRIBUTION NETWORK (LIGHTING AND POWER LOAD - 0.4kV)
- LV SUBSTATION
- UPS ROOM
- EMERGENCY GENERATOR ROOM
- HEAT PUMPS AND PUMPING SYSTEM ROOM
- IDENTIFICATION OF TECHNICAL ROOM OR LOCAL AREA
- POWER TRANSFORMER
- kWh — ELECTRICAL ENERGY METER
- EG — EMERGENCY GENERATOR
- ELECTRIC MOTOR DRIVEN PUMP

DISTRIBUTION BOARD CODE

Code	Meaning	Code	Meaning
AS	AUXILIARY SERVICE SWITCHBOARD	MR...	MEETING ROOM
EG	EMERGENCY DIESEL GENERATOR	PV	PHOTOVOLTAIC SYSTEM
BR	BAR AREAS	M	MINISTRY AREAS
MDR	MINISTRY MAIN DATA ROOM	U	UNIVERSITY AREAS
L...	LEVEL	P	PARKING AREAS
		CB	CONNECTION BOARD

ELECTRICAL BOARD DEDICATED TO MECHANICAL CODE

Code	Meaning	Code	Meaning
FP...	FIRE PROTECTION PUMP STATION	LIFT	LIFT
W...	DOMESTIC WATER PUMP STATION	AHU	AIR HANDLING UNIT
GS	GREASE SEPARATOR	ASU...	AIR SUPPLY UNIT
WW/...	WASTE AND WEATHER WATER PUMP STATION		

DISTRIBUTION BOARD CODE

Code	Meaning
PLn / FPn	NUMBER OF CIRCUIT - POWER SUPPLY FROM MAIN LV SWITCHBOARD
UPSn	NUMBER OF CIRCUIT - POWER SUPPLY FROM UPS SWITCHBOARD
ELn	NUMBER OF CIRCUIT - POWER SUPPLY FROM SAFETY SERVICES SWITCHBOARD
EGn	NUMBER OF CIRCUIT - POWER SUPPLY FROM EMERGENCY DIESEL GENERATOR
ASn	NUMBER OF CIRCUIT - POWER SUPPLY FROM AUXILIARY SERVICE SWITCHBOARD

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ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

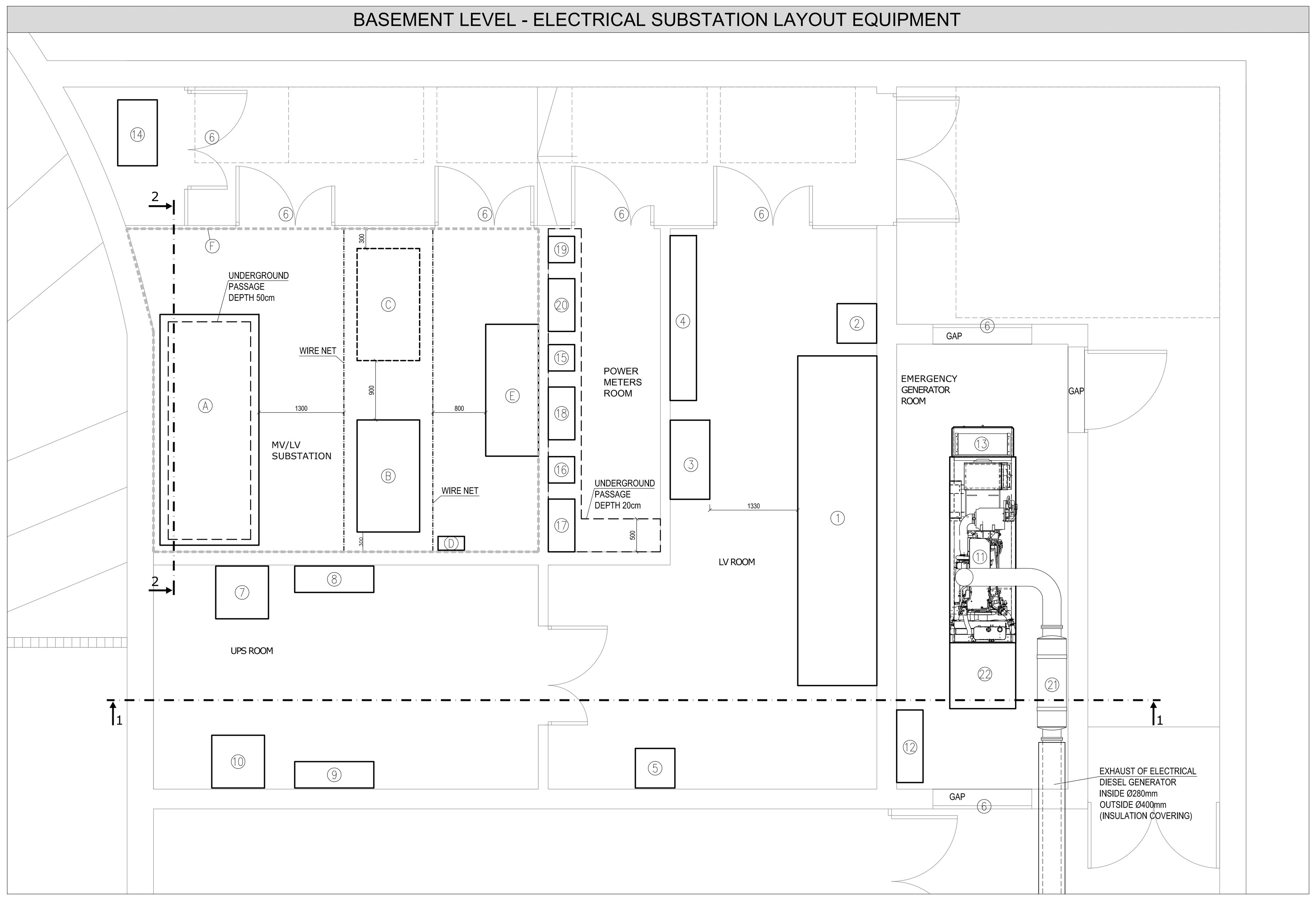
MV/LV NETWORK GENERAL DIAGRAM

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

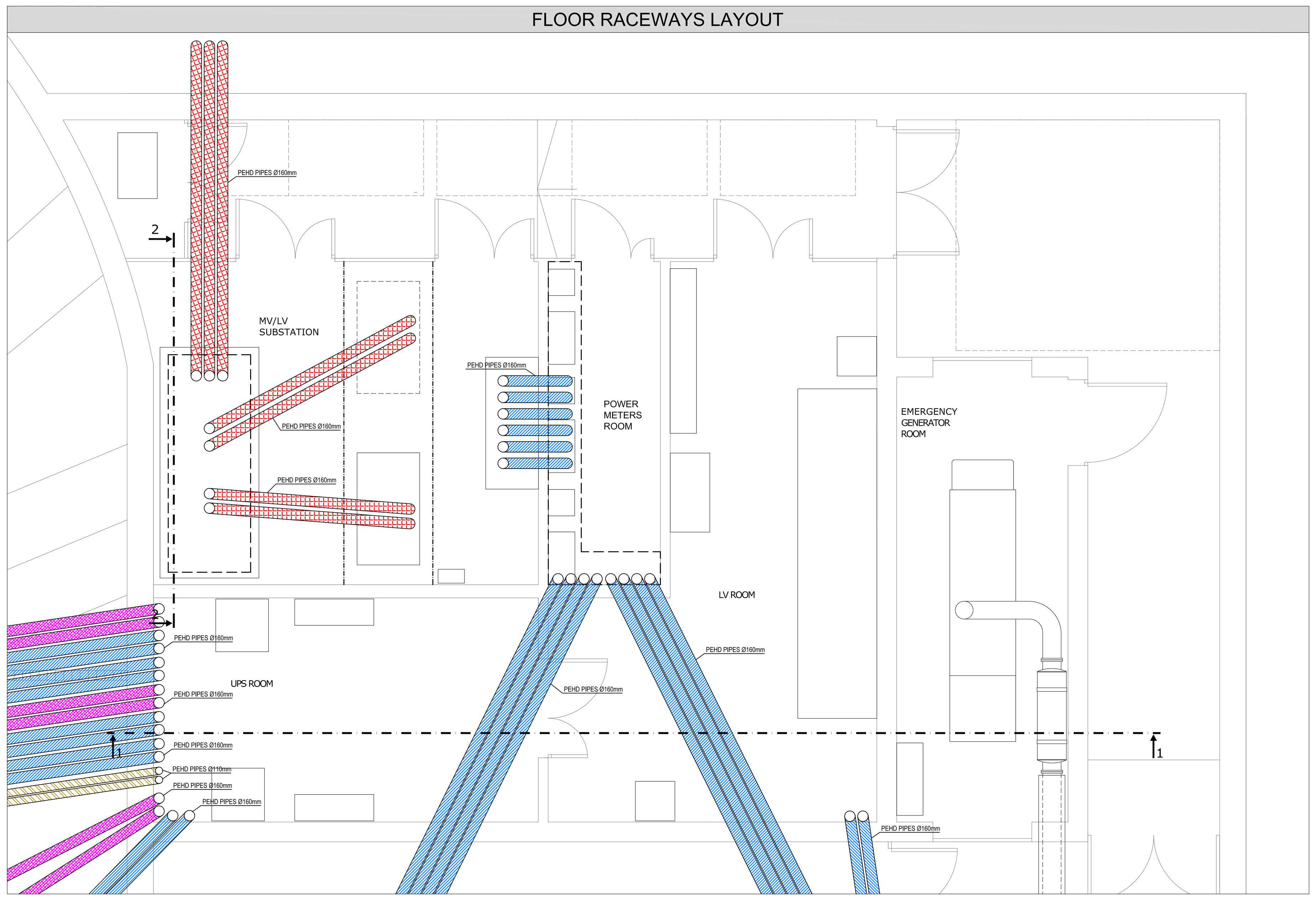
ISSUE NR. **Ee_001**

DATE: 30/11/2010	SCALE: -	FILE: 926_Ee_001.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.

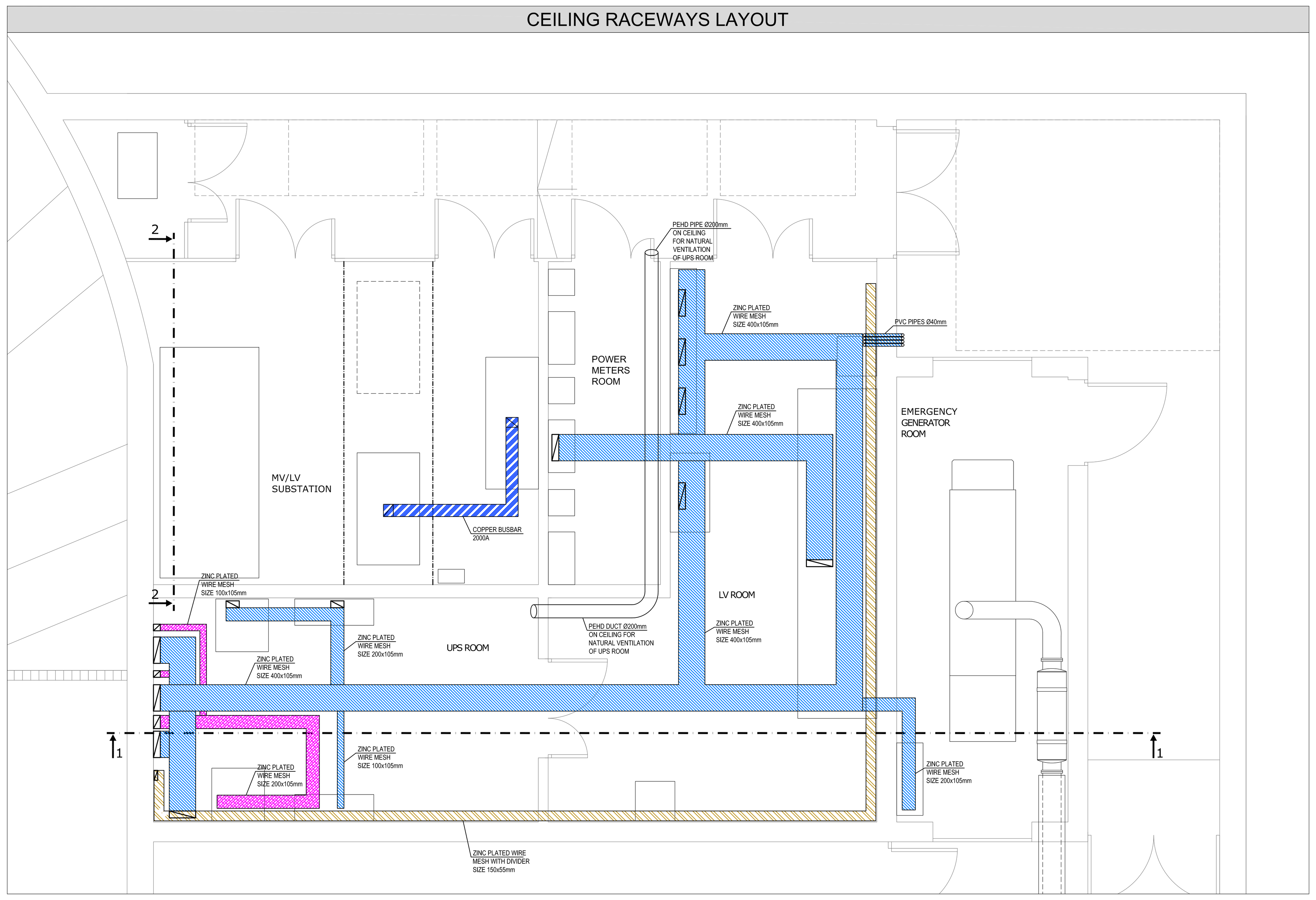
BASEMENT LEVEL - ELECTRICAL SUBSTATION LAYOUT EQUIPMENT



FLOOR RACEWAYS LAYOUT



CEILING RACEWAYS LAYOUT



LEGEND

MV/LV SUBSTATION

- (A) MEDIUM VOLTAGE MAIN SWITCHBOARD MV_SB (SIZES 3500x1500xh2000mm)
- (B) CAST RESIN DRY TRANSFORMER (SIZES 1700x950x1900mm)
  RATED POWER Rp=1000kVA; RATED PRIMARY VOLTAGE Rv1=10kV; RATED SECONDARY VOLTAGE Rv2=400V
- (C) ENLARGEMENT FOR FUTURE CAST RESIN DRY TRANSFORMER
- (D) TRANSFORMER CENTRAL POWER-FACTOR CORRECTION; Rp=15kVAR (SIZES 400x210xh650mm)
- (E) LOW VOLTAGE MAIN SWITCHBOARD LV_SB (SIZES 2000x800xh2000mm)
- (F) MAGNETIC FIELD SCREEN GRID

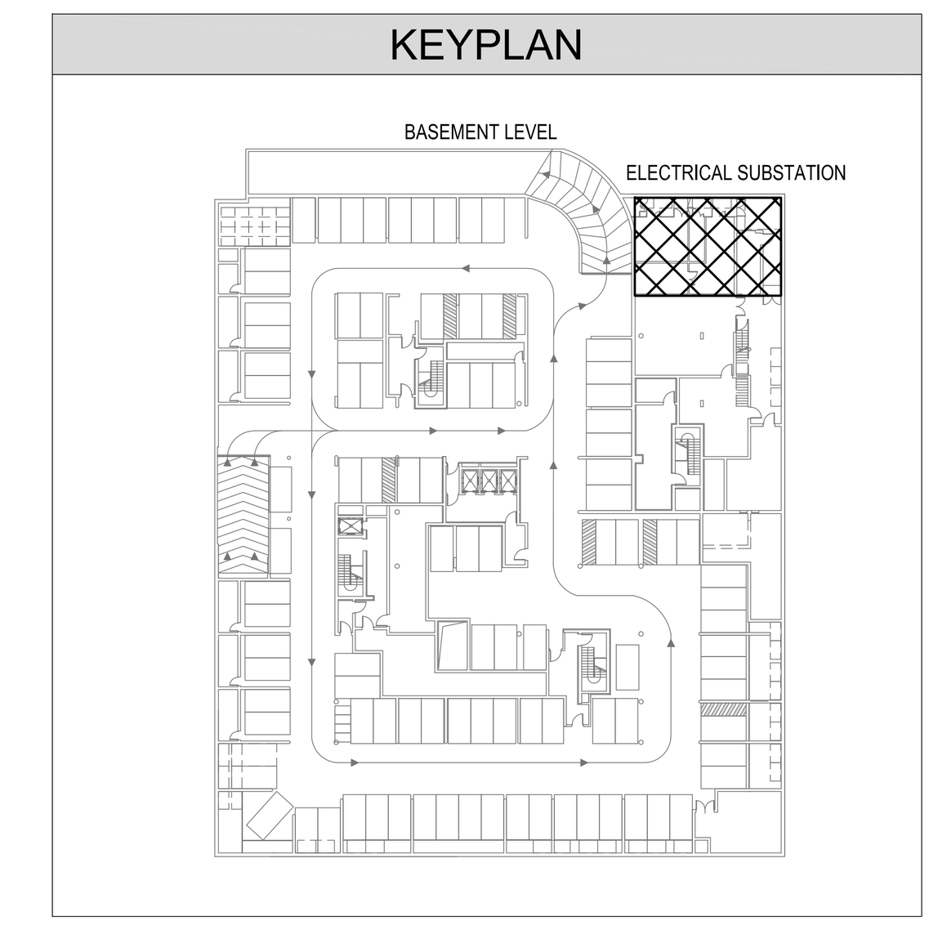
LV ROOM, UPS ROOM, EMERGENCY GENERATOR ROOM

- (1) MINISTRY LOW VOLTAGE SWITCHBOARD (SIZES 5000x1200xh2200mm)
- (2) CENTRAL POWER-FACTOR CORRECTION WITH AUTOMATIC CONTROL SYSTEM; Rp=100kVAR (SIZES 600x600xh2200mm)
- (3) DOUBLE BRANCH RECTIFIER WITH BATTERY; Rp=5kVA; RATED VOLTAGE Rv=24Vdc (SIZES 1200x600xh2000mm)
- (4) AUXILIARY SERVICE DISTRIBUTION BOARD (SIZES 2000x400xh2000mm)
- (5) RACK FOR BUILDING MANAGEMENT SYSTEM PLC (SIZES 600x600xh2000mm)
- (6) METALLIC GRATING DOOR FOR VENTILATION
- (7) UPS WITH BATTERY; Rp=100kVA; RATED VOLTAGE Rv=0.4kV; AUTONOMY=15' (SIZES 800x800xh2200mm)
- (8) UPS SWITCHBOARD (SIZES 1200x400xh2000mm)
- (9) EMERGENCY LIGHTING SWITCHBOARD (SIZES 1200x400xh2000mm)
- (10) EMERGENCY LIGHTING UPS Rp=10kVA; RATED VOLTAGE Rv=0.4kV; AUTONOMY=60' (SIZE 800x800xh2000mm)
- (11) ELECTRICAL DIESEL GENERATOR; Rv=0.4kV; Rp=350kVA (SIZES 3300x1000xh1900mm)
- (12) ELECTRICAL DIESEL GENERATOR SWITCHBOARD (SIZES 1100x400xh2200mm)
- (13) DIESEL TANK RESERVE (INTEGRATED ON DIESEL GENERATOR)
- (14) TEST RESISTANCE FOR ELECTRICAL DIESEL GENERATOR
- (15) MINISTRY ELECTRICAL ENERGY METER
- (16) UNIVERSITY ELECTRICAL ENERGY METER
- (17) UNIVERSITY LOW VOLTAGE SWITCHBOARD U_CB
- (18) MINISTRY MAIN LOW VOLTAGE SWITCHBOARD M_CB
- (19) HEAT PUMPS ELECTRICAL ENERGY METER
- (20) HEAT PUMPS MAIN LOW VOLTAGE SWITCHBOARD H_CB
- (21) MUFFLER WITH ANTIVIBRATION MOUNTNGS
- (22) ACOUSTIC FILTER

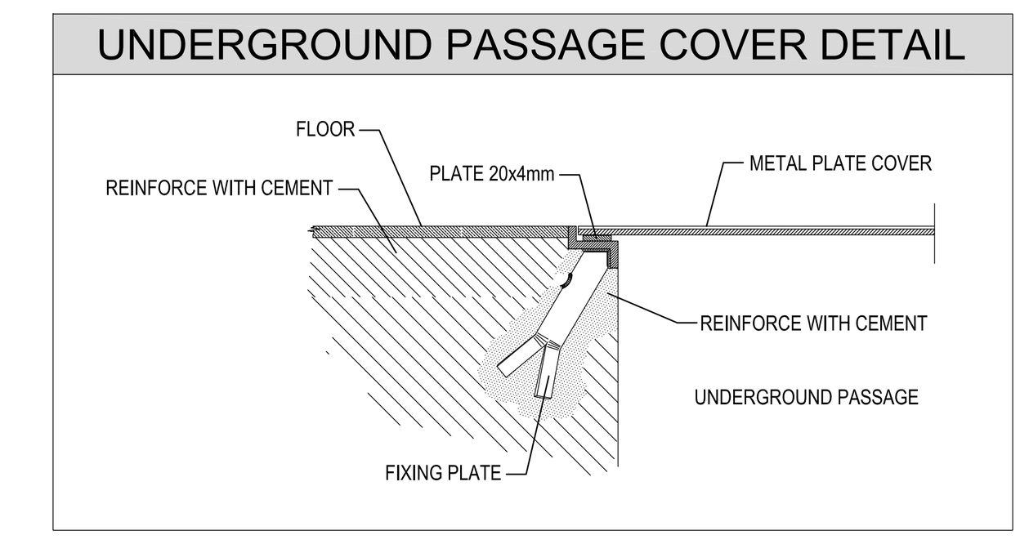
RACEWAYS

- VERTICAL RACEWAY
- MEDIUM VOLTAGE SYSTEM RACEWAYS
- LOW VOLTAGE SYSTEM BUSBAR
- LOW VOLTAGE SYSTEM RACEWAYS
- EMERGENCY LIGHTING SYSTEM RACEWAYS
- EXTRA LOW VOLTAGE SYSTEMS RACEWAYS

KEYPLAN



UNDERGROUND PASSAGE COVER DETAIL



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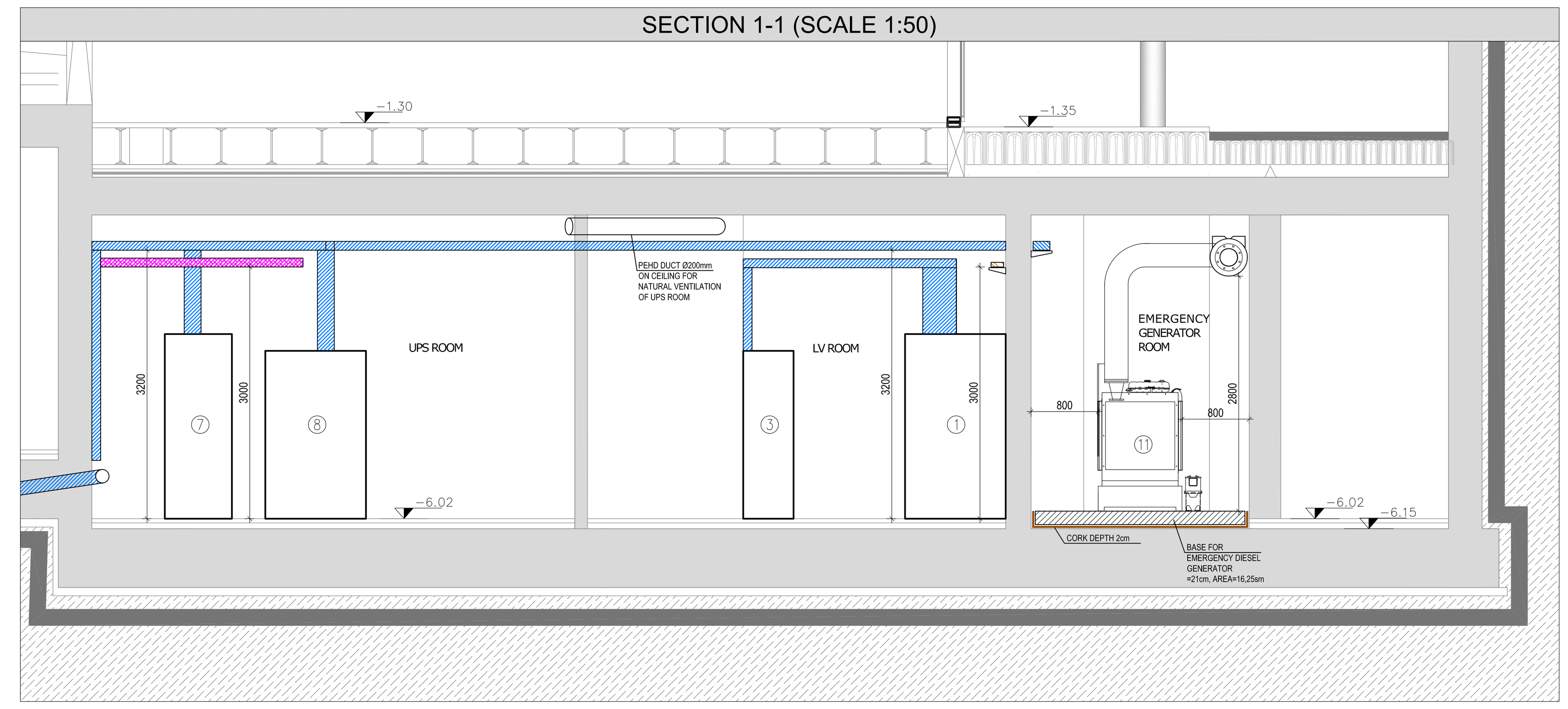

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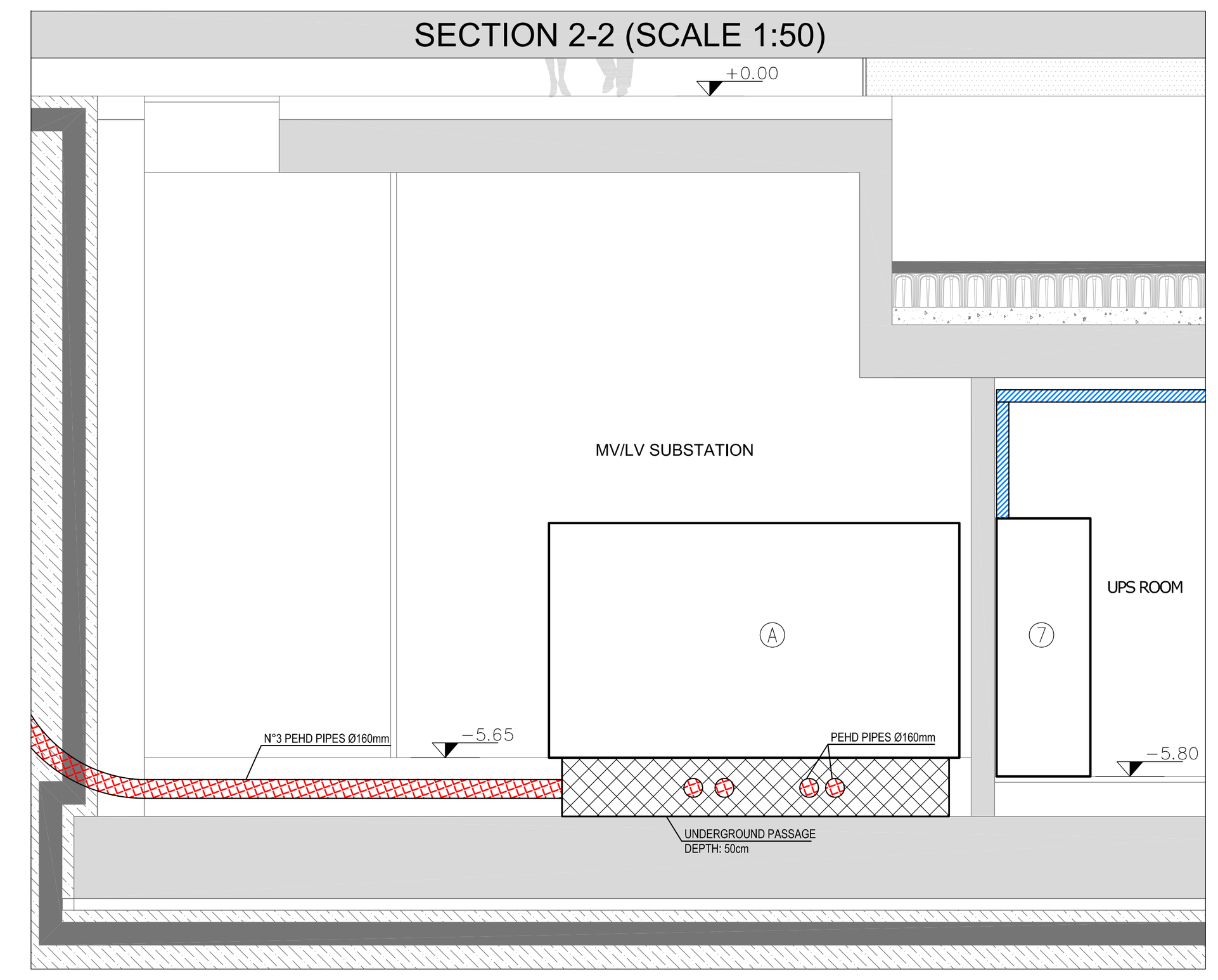

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ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

ELECTRICAL SUBSTATION LAYOUT EQUIPMENT

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	27/07/2011	926_Ee_101_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR. **Ee_101**

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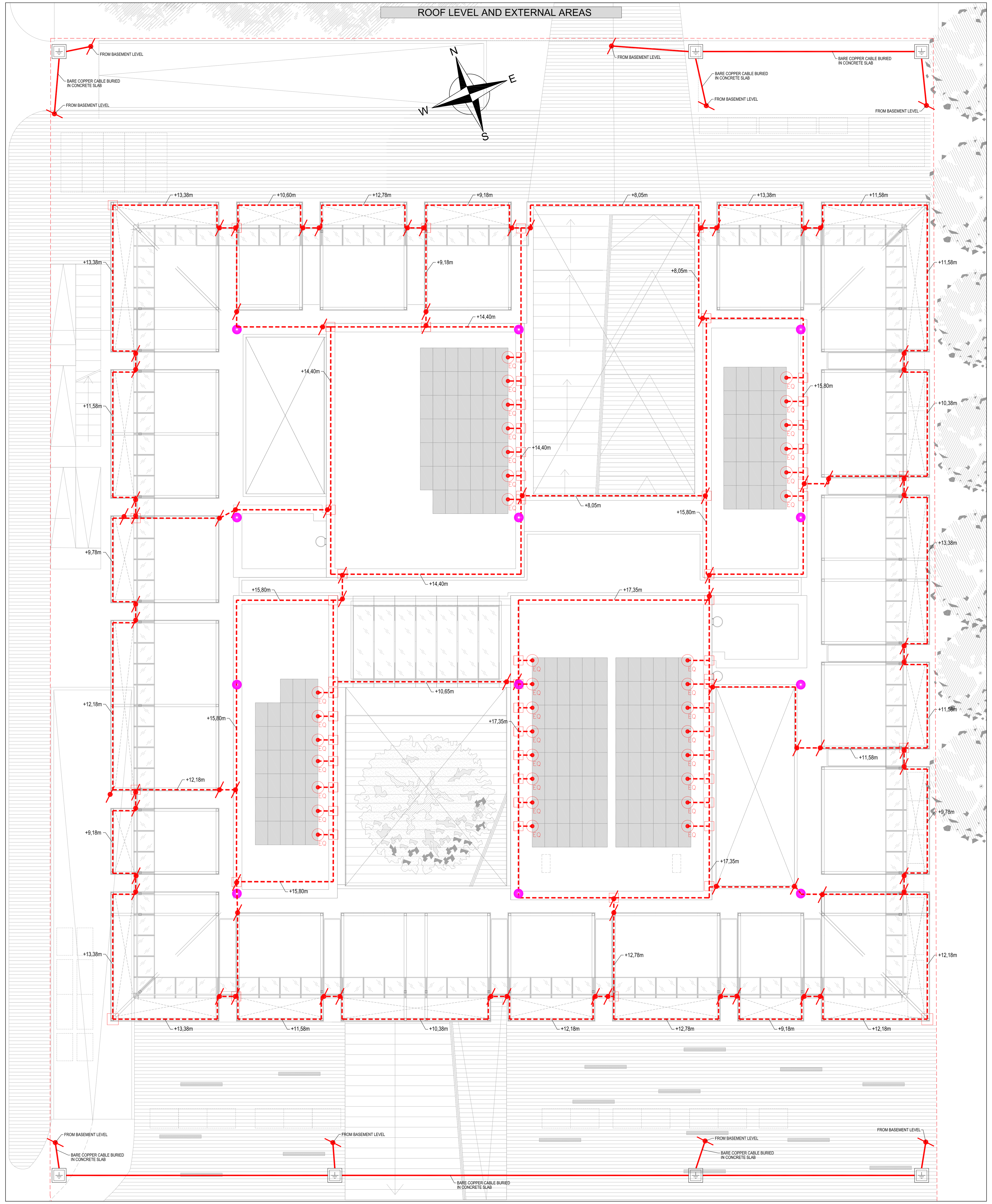

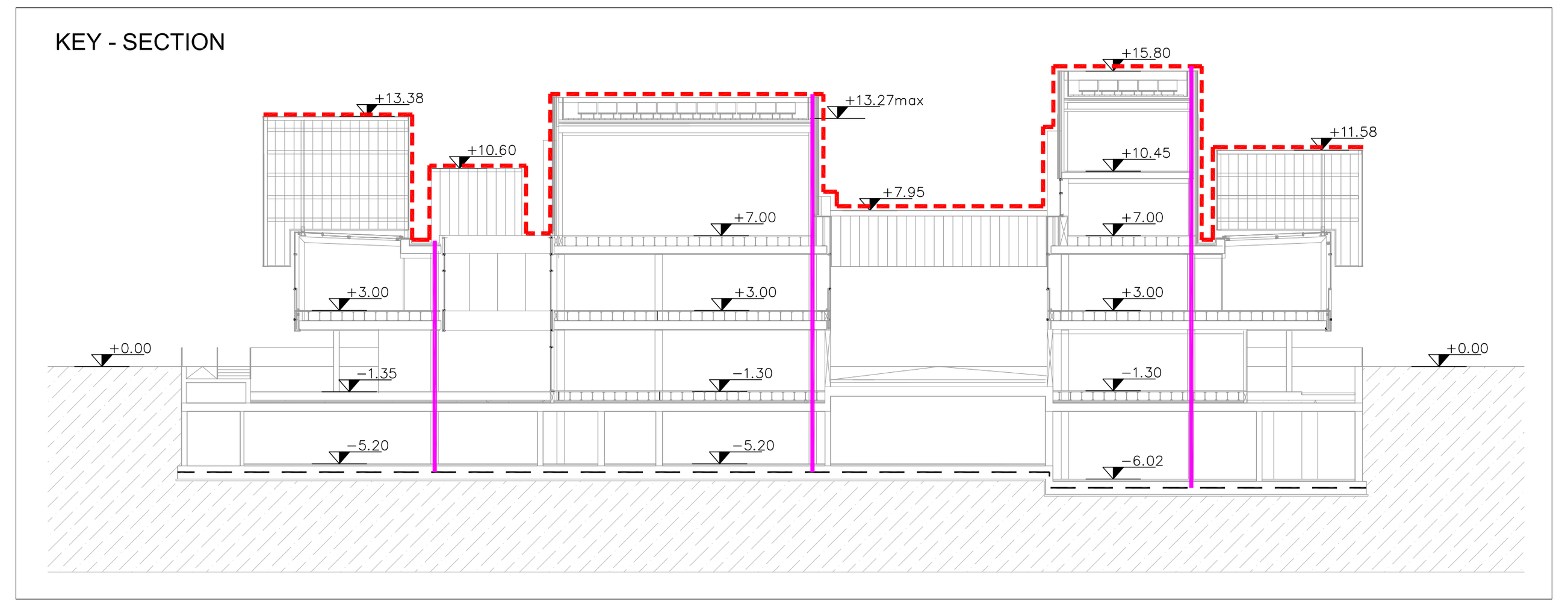

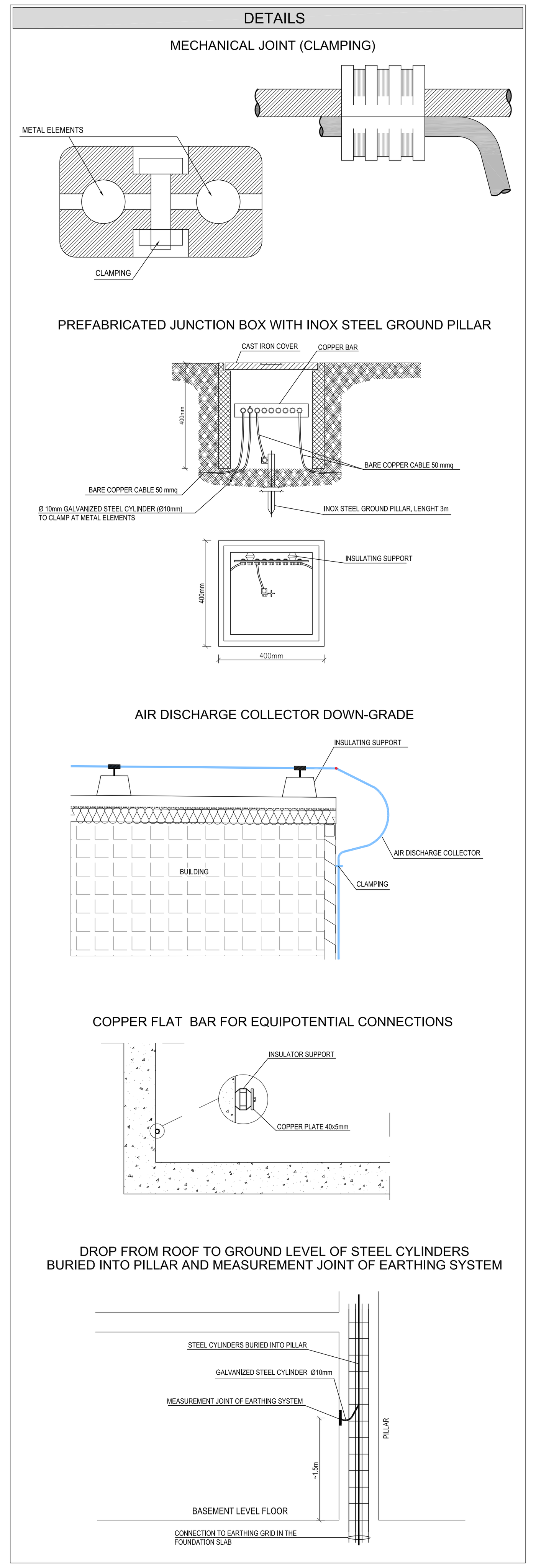

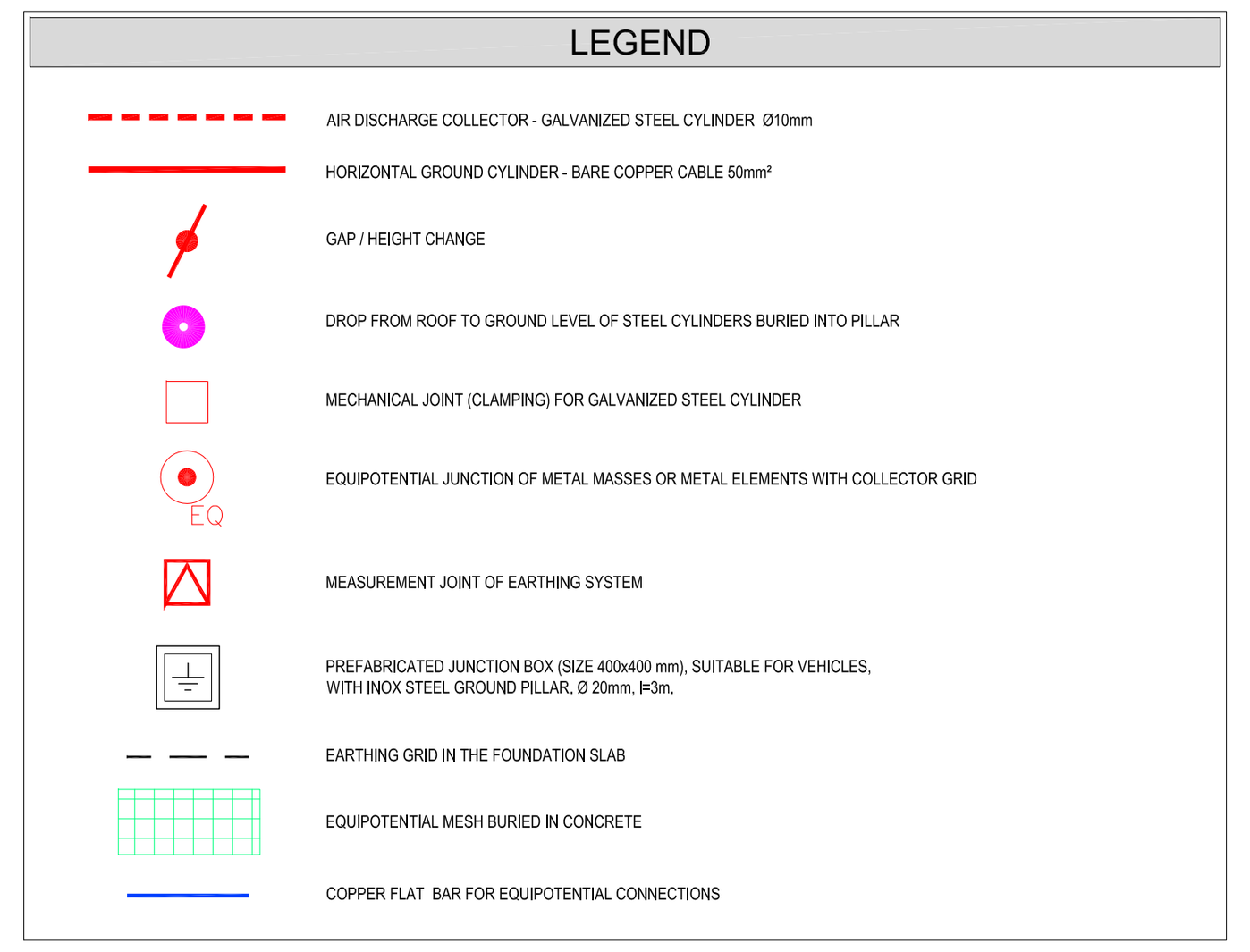

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ISSUE

MAIN PROJECT — ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

LIGHTNING PROTECTION SYSTEM AND EARTHING PLANT

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR. **Ee_102**

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Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

MEDIUM VOLTAGE SWITCHBOARD
WIRING DIAGRAM MV_SB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_201_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

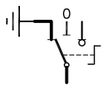
ISSUE NR. Ee_201

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_201_a.dwg
J.N.	**DRAW:**	**APPROVED:**
926	L. R.	M. C.

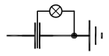
LEGEND


CIRCUIT BREAKER


INSULATOR MANOEUVRE SWITCH


THREE–POSITION LINE–EARTHING SWITCH


EARTHING SWITCH


VOLTAGE DETECTOR


SPRING–LOADING GEARMOTOR


SHUNT OPENING/CLOSING RELAY


KEYLOCK


LOGICAL PROTECTION UNIT WITH MICROPROCESSOR–BASED OVERCURRENT RELAY


CURRENT TRANSFORMER


VOLTAGE TRANSFORMER

OVERTEMPERATURE CONTROL DEVICES


TRANSFORMER HEAT PROBES

MECHANICAL/ELECTRICAL INTERLOCK

CABLE TERMINAL

PROTECTION FUNCTIONS

(50) PROTECTION OF INSTANTANEOUS OVERCURRENT

(51) PROTECTION OF DEFINITE TIME OVERCURRENT

(51N) PROTECTION OF DEFINITE TIME EARTH FAULT

CONDITIONS FOR MV CONNECTION

EEB BUILDING AVAILABLE PEAK POWER:	~300kVA
VOLTAGE CONNECTION:	10kV
ALLOWABLE POWER FACTOR:	0.98
FAULT CURRENT:	300A
POWER SHORT CIRCUIT AS FOLLOWS:	18MVA
CONNECTION:	CABLE

Annotations

Manens-Tifs INGEGNERIA

Title
MV_SB
DESCRIPTION OF SYMBOL

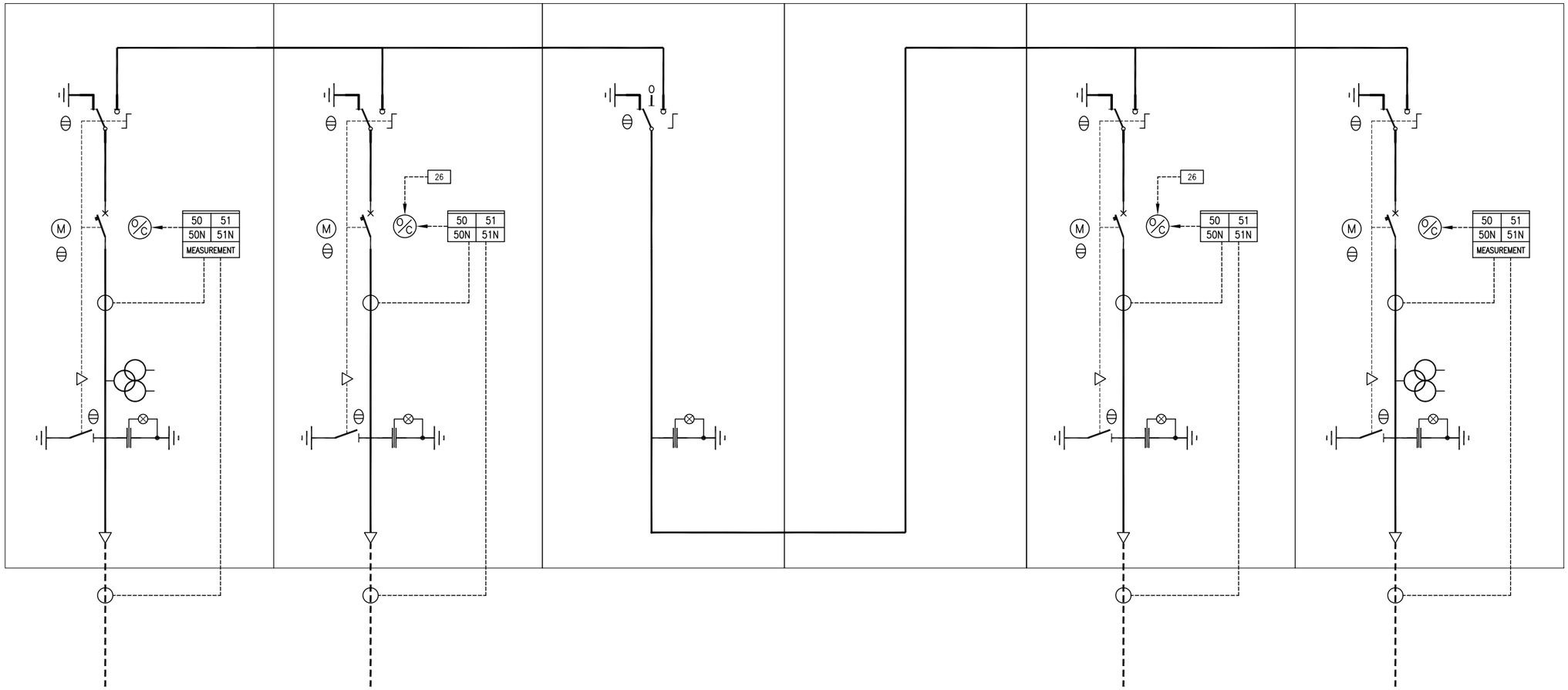
Reference n.
-

Drawing n.
Ee_201

Rev.
0

Sheet n.
Pag.01 seg. 02

UNIT 1 | UNIT 2 | UNIT 3 | UNIT 4 | UNIT 5 | UNIT 6



Annotations	Manens-Tifs INGEGNERIA	Title MV_SB MV MAIN SWITCHBOARD ELECTRIC SCHEME	Reference n. -	Drawing n. **Ee_201** Rev. **0** / Sheet n. Pag.02 seg. 03

TO LV SWITCHBOARD

VENTILATED BUSBAR TRUNKING
(ALUMINIUM)

CONTROL POWER–FACTOR
CORRECTION. Rp=7.5kVAR

VENTILATION SYSTEM AND
SWITCHGEAR CONTROL
26
n°6

TR "A"
RATED POWER Rp=1000kVA
Ku=10/0.4kV
SHORT CIRCUIT VOLTAGE =6%
△y n 11

FROM MV SWITCHBOARD
CABLE RG7H1R 12/20kV
3x1x95mmq
(SEE SHEET n.2)

DEVICE NOT INSTALLED

VENTILATION SYSTEM AND
SWITCHGEAR CONTROL
26
n°6

TR "B"
RATED POWER Rp=1000kVA
Ku=10/0.4kV
SHORT CIRCUIT VOLTAGE =6%
△y n 11

Annotations

Manens-Tifs
INGEGNERIA

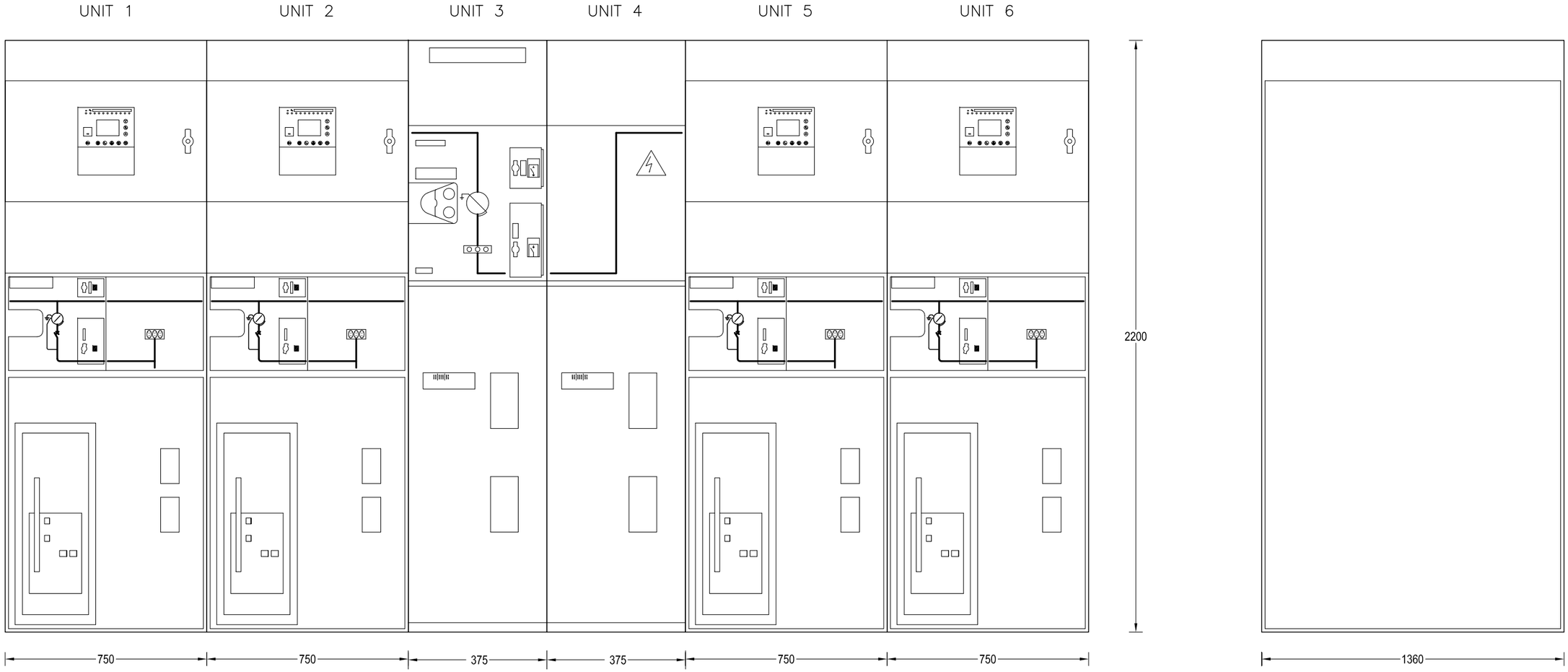
Title
MV_SB
TRANSFORMERS ELECTRIC SCHEME

Reference n.
-

Drawing n.
Ee_201

Rev.
0

Sheet n.
Pag.03 seg. 04



Annotations

Manens-Tifs INGEGNERIA

Title
MV_SB
FRONTAL LAYOUT

Reference n.
-

Drawing n.
Ee_201

Rev.
0

Sheet n.
Pag.04

INVESTITOR:

JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

MAIN LOW VOLTAGE SWITCHBOARD
WIRING DIAGRAM LV_SB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	27/07/2011	926_Ee_202_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR.

Ee_202

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_202_a.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.

	DISCONNECTOR SWITCH	I D / I SR / II O/C	SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED		
	AUTOMATIC SWITCH	⊗	LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE	nR	AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
Id	RESIDUAL CURRENT RELEASE	V A kW kVAR	DIGITAL INDICATOR INSTRUMENTS		
Id	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL	M_0_A	SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH	B	OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR	M----	GEARED MOTOR FOR SPRING LOAD		
	PLUG-IN AND DRAW-OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES	△	CABLE TERMINAL		
d b	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE	I/O	DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL	E7	EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL		MULTI INSTRUMENT MEASUREMENT		
RA	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)				
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
LV_SB
DESCRIPTION OF SYMBOL

Reference n.
-

Drawing n.
Ed_202

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH

ⓑ COMMUTATOR WITH 3 POSITIONS

ⓒ MODULAR DISCONNECTOR SWITCH

ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓔ POWER CONTACTOR

ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES

ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER

ⓗ RESIDUAL CURRENT RELEASE

ⓘ OVER VOLTAGE DUMPER/LIMITER

ⓛ MOULDED CASE MAGNETIC THERMAL CIRCUIT BREAKER

ⓜ AIR CIRCUIT BREAKER WITH ELECTRONIC RELEASE

Annotations

Manens-Tifs INGEGNERIA

Title
LV_SB
DEVICE LEGEND

Reference n.
-

Drawing n.
Ed_202

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

LV SWITCHBOARD

INITIALS

DB_LV

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~297kVA – I~428.6A (Kc=0.7)

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>36kA

PANEL STRUCTURE

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

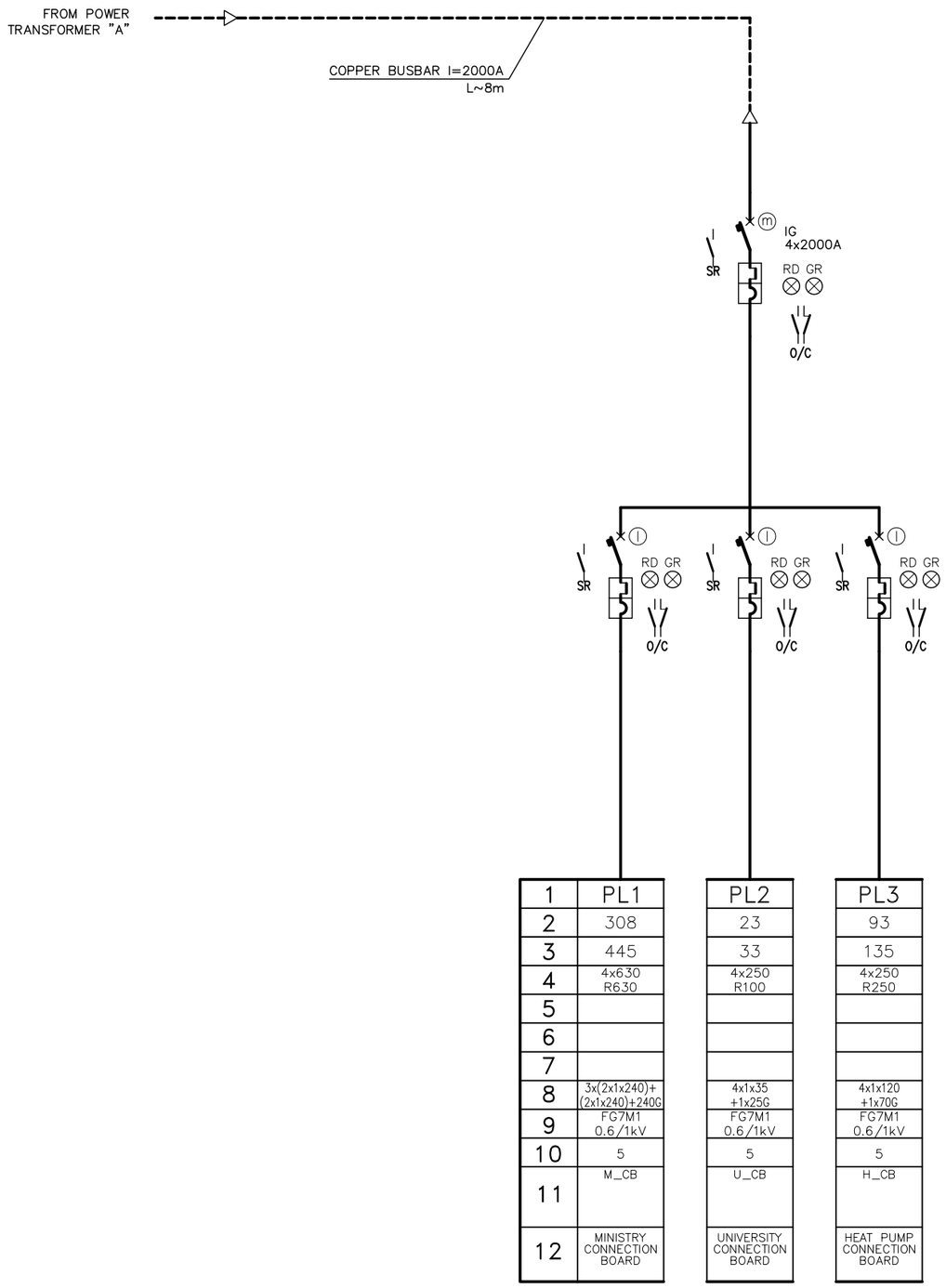
Title
LV_SB
MAIN CHARACTERISTICS

Reference n.
-

Drawing n.
Ed_202

Rev.
0

Sheet n.
Pag.03 seg. 04



1	PL1	PL2	PL3
2	308	23	93
3	445	33	135
4	4x630 R630	4x250 R100	4x250 R250
5			
6			
7			
8	3x(2x1x240)+ (2x1x240)+240G	4x1x35 +1x25G	4x1x120 +1x70G
9	FG7M1 0.6/1kV	FG7M1 0.6/1kV	FG7M1 0.6/1kV
10	5	5	5
11	M_CB	U_CB	H_CB
12	MINISTRY CONNECTION BOARD	UNIVERSITY CONNECTION BOARD	HEAT PUMP CONNECTION BOARD

Annotations

Manens-Tifs INGEGNERIA

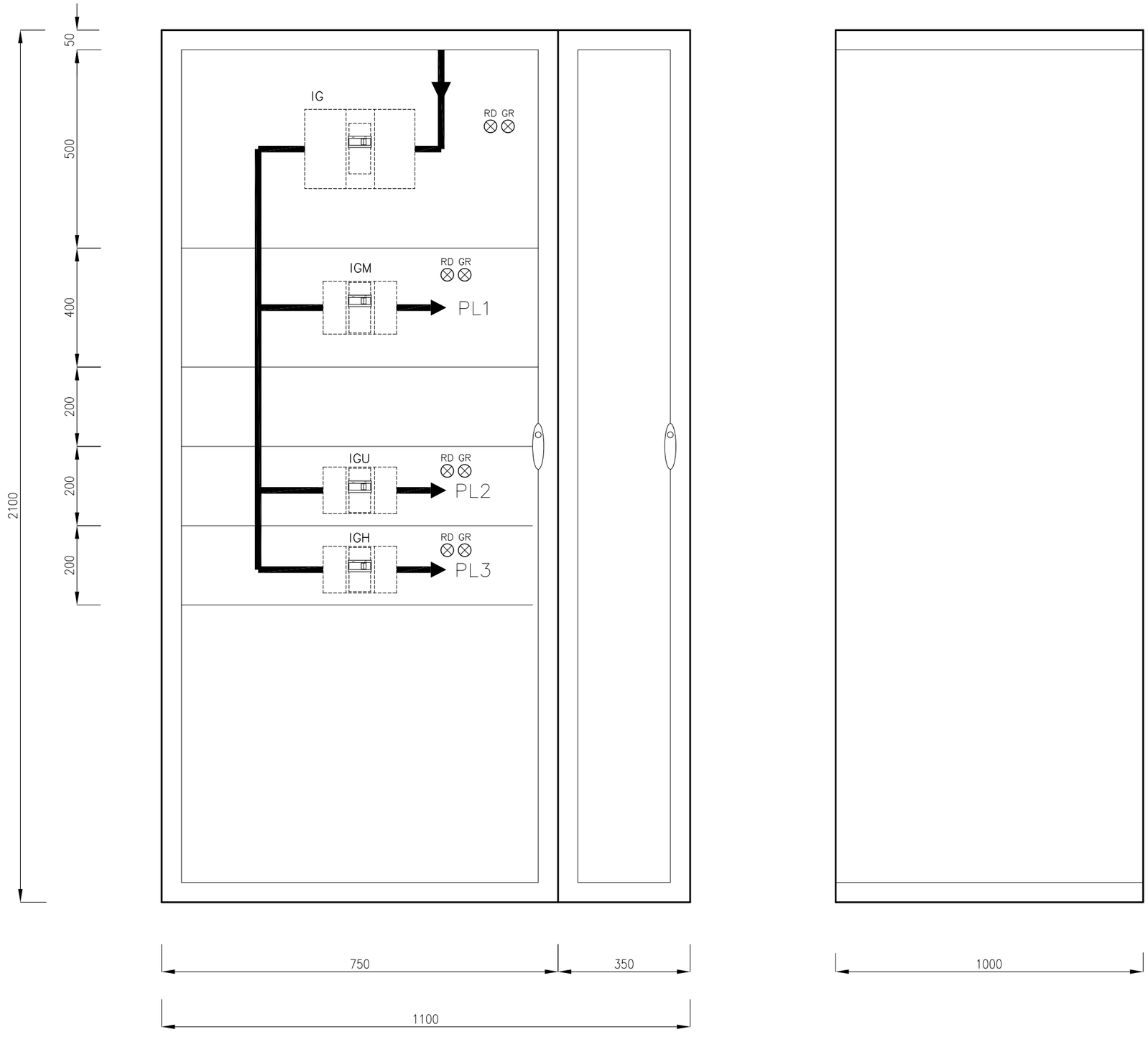
Title
LV_SB
WIRING DIAGRAM

Reference n.
-

Drawing n.
Ed_202

Rev.
0

Sheet n.
Pag.04 seg. 05



Annotations	Manens-Tifs INGEGNERIA	Title LV_SB FRONTAL LAYOUT	Reference n. -	Drawing n. **Ed_202** Rev. **0** / Sheet n. Pag.05

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JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT,
LAND AND SEA
OF THE REPUBLIC OF ITALY

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ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

MINISTRY MAIN LOW VOLTAGE SWITCHBOARD
WIRING DIAGRAM M_LV_SB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR.

Ee_203

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_203.dwg
J.N.: 926	DRAW: L. R.	APPROVED: M. C.

	DISCONNECTOR SWITCH	SR O/C D FB LO	SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH		LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE	nR	AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
Id	RESIDUAL CURRENT RELEASE	V A kW kVAR	DIGITAL INDICATOR INSTRUMENTS		
Id	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL	M_O_A	SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH	B	OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR	M----	GEARED MOTOR FOR SPRING LOAD		
	PLUG-IN AND DRAW-OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES		CABLE TERMINAL		
d b	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE	I/O	DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL	E7	EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL		MULTI INSTRUMENT MEASUREMENT		
RA	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)		LED INDICATORS FOR STATE DEVICES		
	AUXILIARY CONTACT NORMALLY OPEN	SMDU	SWITCHGEAR MICROPROCESSOR DIALOG UNIT		
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
M_LV_SB
DESCRIPTION OF SIMBOL

Reference n.
-

Drawing n.
Ee_203

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH

ⓑ COMMUTATOR WITH 3 POSITIONS

ⓒ MODULAR DISCONNECTOR SWITCH

ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓓj MOULDED CASE THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓔ POWER CONTACTOR

ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES

ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER

ⓗ RESIDUAL CURRENT RELEASE

ⓘ OVER VOLTAGE DUMPER/LIMITER

ⓛ MOULDED CASE MAGNETIC THERMAL CIRCUIT BREAKER

ⓜ MOULDED CASE ONLY MAGNETIC CIRCUIT BREAKER

Annotations

Manens-Tifs INGEGNERIA

Title
M_LV_SB
DEVICE LEGEND

Reference n.
-

Drawing n.
Ee_203

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MINISTRY MAIN LOW VOLTAGE SWITCHBOARD

INITIALS

M_LV_SB

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

POWER LOAD NETWORK: Rp~307.6kVA – I~443.8A (Kc=0.7)

FIRE PROTECTION

POWER LOAD NETWORK: Rp~76.5kVA – I~110.4A (Kc=1)

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

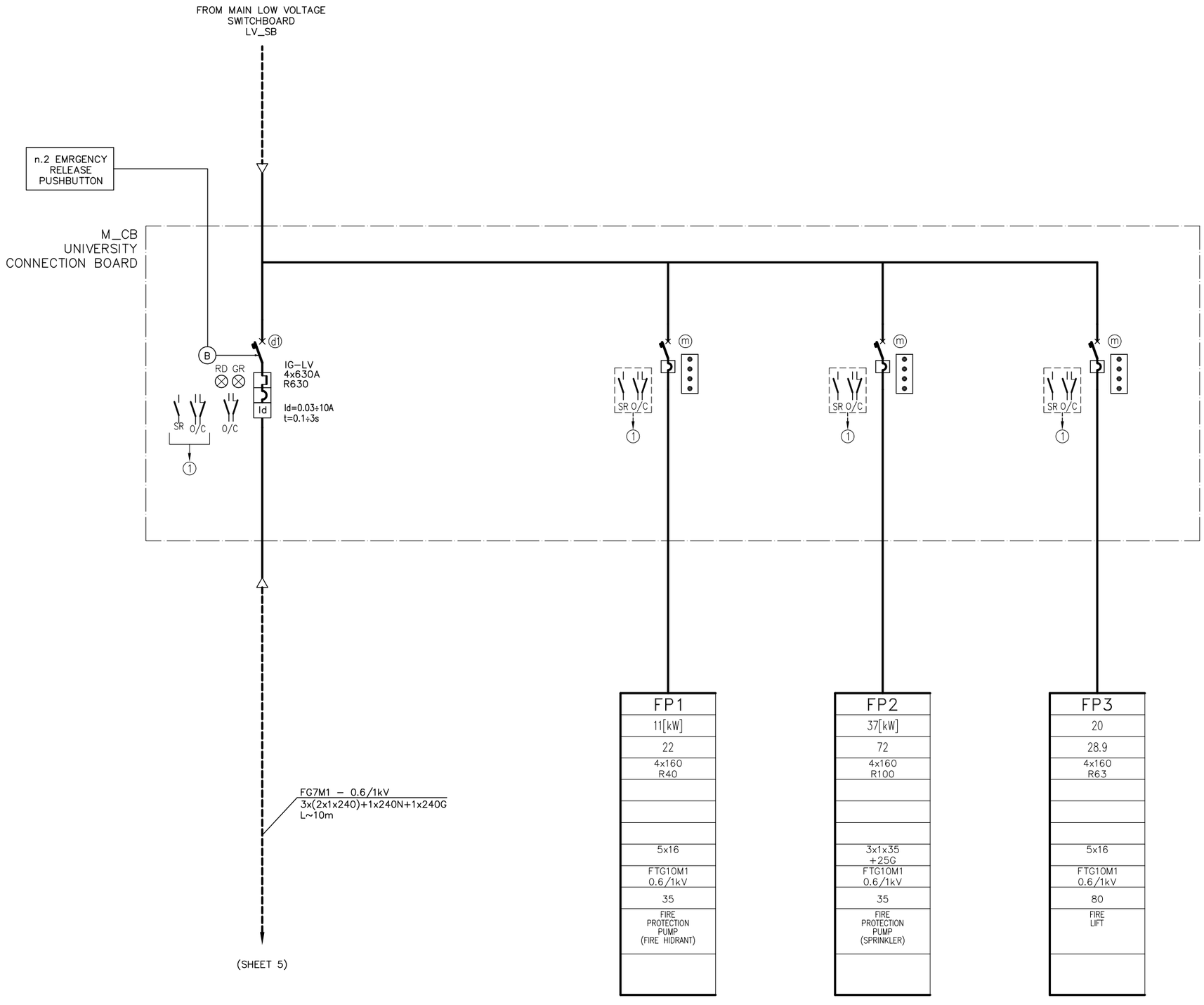
Icn=>24kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs
INGEGNERIA

Title
M_CB
WIRING DIAGRAM

Reference n.
-

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(SHEET 4)

FG7M1 – 0.6/1kV
3x(2x1x240)+1x240N+1x240G
L~10m

TO BUILDING MANAGEMENT SYSTEM PLC

SMDU

IG–LV1
4x630A

IG–LV/GE
4x630A

FROM EMERGENCY DIESEL GENERATOR

2A 7 pos n°1 V 500 V f.s. cl. 1.5

RD GR

FB

4x400A

LO

Id=0.03÷10A
t=0÷3sec

TYPE 1&2
Up=1.5kV
Iimp=20kA

2A

n° 3TA 630/5A
Cl 0.5

(SHEET 6)

SR O/C

kWh

1	PL1	PL2	PL3	PL4	PL5	PL6	PL7	PL8	PL9	PL10	PL11	PL12	PL13
2	100[kVAR]	14.0	90.0	30.0	15.0	2.1[kW]	2.2[kW]	15[kW]	45.0	8.3	9.3	18.3	
3	145	20.2	129.9	43.3	21.6	5.1	4.5	24.5	64.9	12.0	13.4	26.4	
4	4x250 R250	4x160 R50	4x250 R250	4x250 R100	4x160 R50	4x160 R25	4x160 R25	4x160 R50	4x160 R160	4x160 R25	4x160 R25	4x160 R50	
5													
6	Ith=250		Ith=250	Ith=90					Ith=128				
7													
8	3x1x120	5x16	4x1x120+ 1x70G	4x1x35+ 1x25G	5x16	5x10	5x10	5x16	4x1x50+ 1x25G	5x10	5x10	4x1x16+ 1x16G	
9	FG7M1 0.6/1KV	FG7OM1 0.6/1KV	FG7M1 0.6/1KV	FG7M1 0.6/1KV	FG7OM1 0.6/1KV	FG7OM1 0.6/1KV	FG7OM1 0.6/1KV	FG7OM1 0.6/1KV	FG7M1 0.6/1KV	FG7OM1 0.6/1KV	FG7OM1 0.6/1KV	FG7OM1 0.6/1KV	
10	5	10	20	20	35	80	80	80	85	70	110	80	
11	CONTROL POWER FACTOR	DB_AS	M_UPS_SB	M_EL_SB	EB_DW	EB_GS	EB_WW/1	EB_WW/2	DB_L2/PV	DB_L–1/P1	DB_L–1/P2	DB_L0/BR	RESERVE
12		AUXILIARY SERVICE DISTRIBUTION BOARD	MINISTRY UPS SWITCHBOARD	MINISTRY EMERGENCY LIGHTING SWITCHBOARD	DOMESTIC WATER PUMP STATION DISTRIBUTION BOARD	GRASE SEPARATOR DISTRIBUTION BOARD	WASTE AND WEATHER WATER PUMP STATION 1 DISTRIBUTION BOARD	WASTE AND WEATHER WATER PUMP STATION 2 DISTRIBUTION BOARD	PHOTOVOLTAIC SYSTEM DISTRIBUTION BOARD	PARKING AREA DISTRIBUTION BOARD	PARKING AREA DISTRIBUTION BOARD	BAR AREA DISTRIBUTION BOARD	

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title
M_LV_SB
WIRING DIAGRAM

Reference n.
-

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Ee_203

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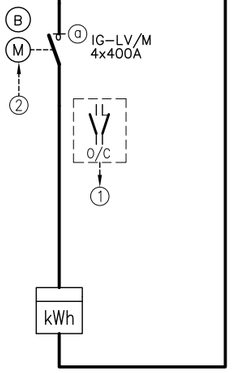
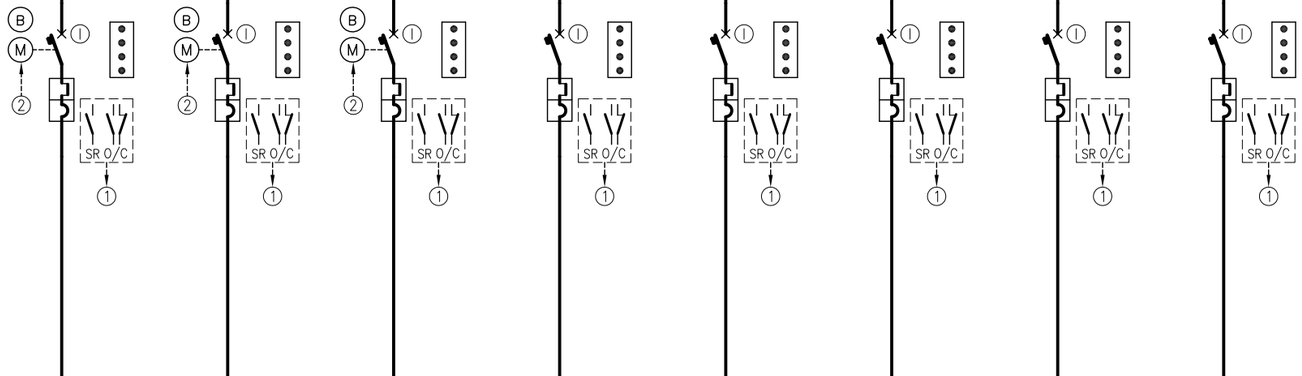
(SHEET 5)

(SHEET 7)





1	PL14	PL15	PL16	PL17	PL18	PL19	PL20	PL21
2	20.0	20.0	20.0	18.6	7.8	30.2	32.6	16.3
3	28.9	28.9	28.9	26.8	11.3	43.6	47.1	23.5
4	4x160 R63	4x160 R63	4x160 R63	4x160 R63	4x160 R25	4x160 R80	4x160 R80	4x160 R50
5								
6								
7								
8	5x16	5x16	5x16	5x16	5x10	4x1x25+ 1x25G	4x1x25+ 1x25G	4x1x16+ 1x16G
9	FG70M1 0.6/1KV	FG70M1 0.6/1KV	FG70M1 0.6/1KV	FG70M1 0.6/1KV	FG70M1 0.6/1KV	FG7M1 0.6/1KV	FG7M1 0.6/1KV	FG7M1 0.6/1KV
10	80	80	90	90	100	75	75	85
11	LIFT 1	LIFT 2	LIFT 4	DB_L0/MDR	DB_L0/M	DB_L1/M/1	DB_L1/M/2	DB_L2/M
12				MAIN DATA ROOM DISTRIBUTION BOARD	MINISTRY LEVEL 0 DISTRIBUTION BOARD	MINISTRY LEVEL 1 DISTRIBUTION BOARD	MINISTRY LEVEL 1 DISTRIBUTION BOARD	MINISTRY LEVEL 2 DISTRIBUTION BOARD

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM

Manens-Tifs
INGEGNERIA

Title
M_LV_SB
WIRING DIAGRAM

Reference n.
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Drawing n.
Ee_203

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0

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Pag.06 seg. 07

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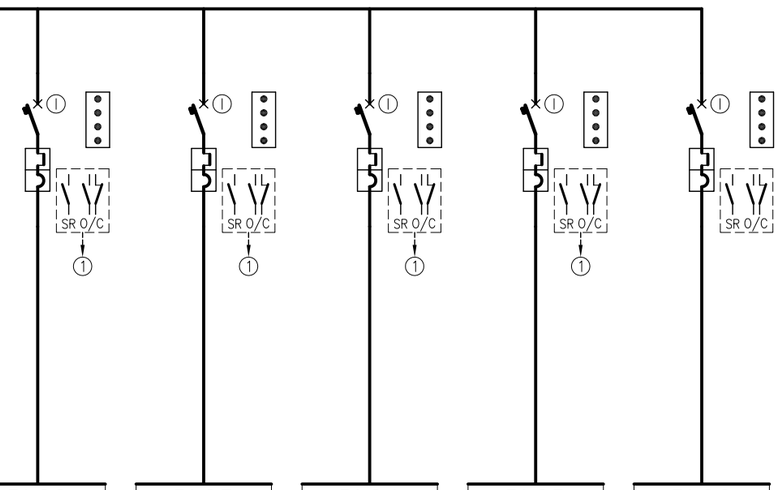
(SHEET 6)



1	PL22	PL23	PL24	PL25	PL26
2	7.5	6.6	7.8	4.6	
3	10.9	9.6	1.2	6.7	
4	4x160 R25	4x160 R25	4x160 R25	4x160 R25	4x160
5					
6					
7					
8	5x16	5x16	5x16	5x16	
9	FG70M1 0.6/1KV	FG70M1 0.6/1KV	FG70M1 0.6/1KV	FG70M1 0.6/1KV	
10	95	105	115	105	
11	EB_AUH/1-6	EB_AUH/2	EB_AUH/3-5	EB_AUH/4	RESERVE
12	AIR HANDLING UNITS 1 - 6	AIR HANDLING UNIT 2	AIR HANDLING UNITS 3 - 5	AIR HANDLING UNIT 4	

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title
M_LV_SB
WIRING DIAGRAM

Reference n.
-

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Ee_203

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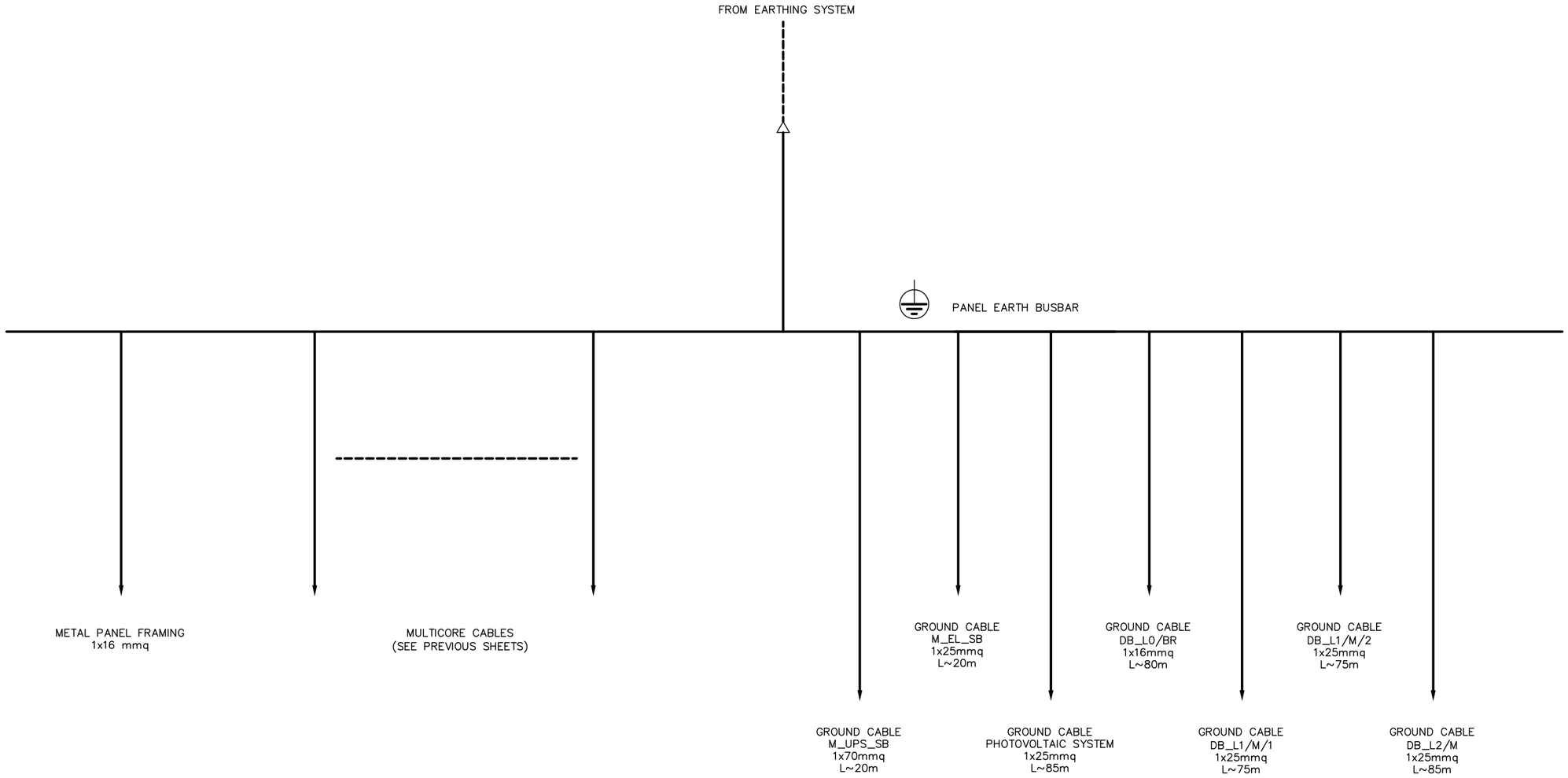

Annotations		Title	Reference n.	Drawing n.
	Manens-Tifs INGEGNERIA	M_LV_SB EARTH CONNECTION LAYOUT	-	Ee_203
			Rev. 0	Sheet n. Pag.08 seg. 09

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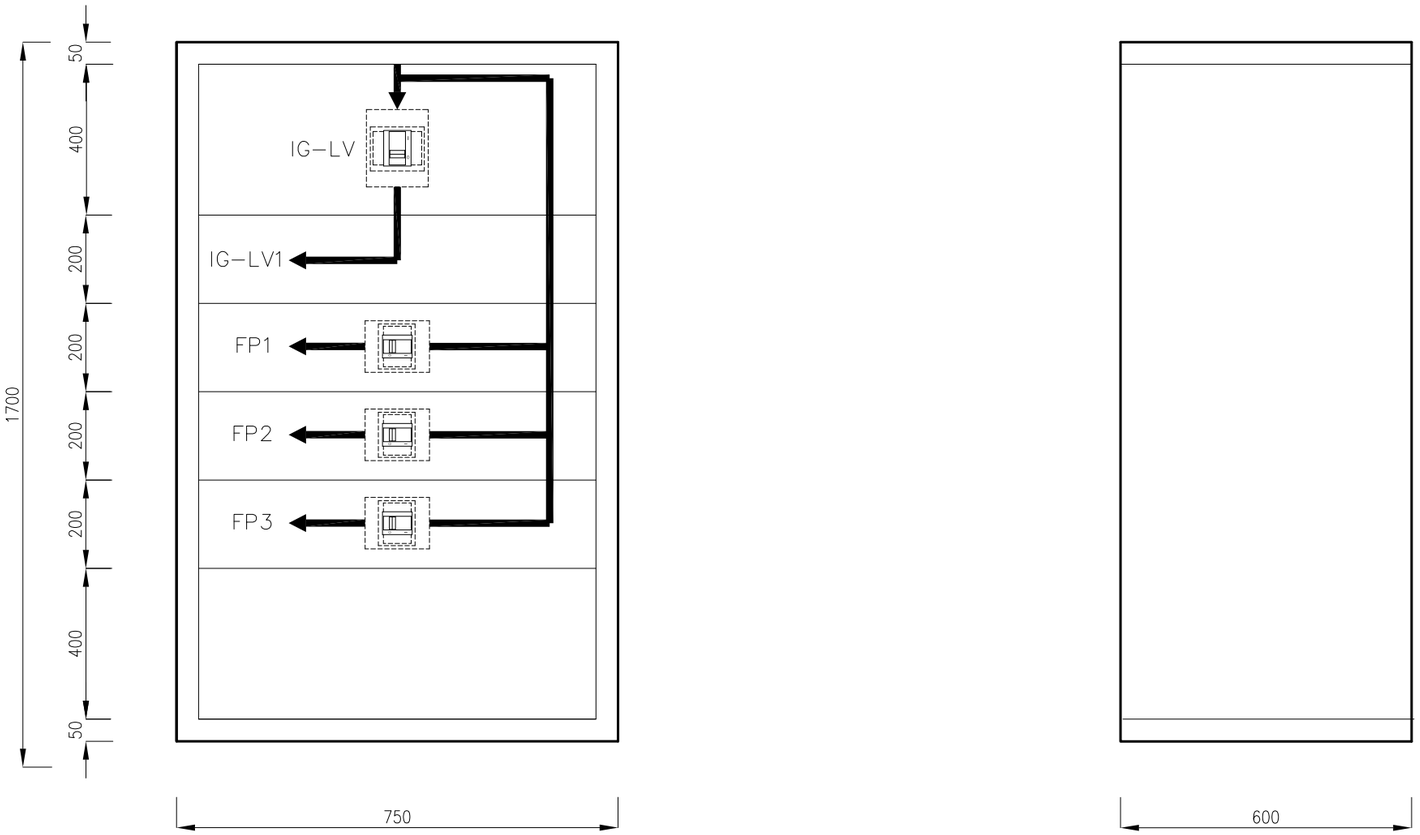

Annotations	Manens-Tifs INGEGNERIA	Title M_CB FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_203** Rev. **0** / Sheet n. Pag.9 seg. 10

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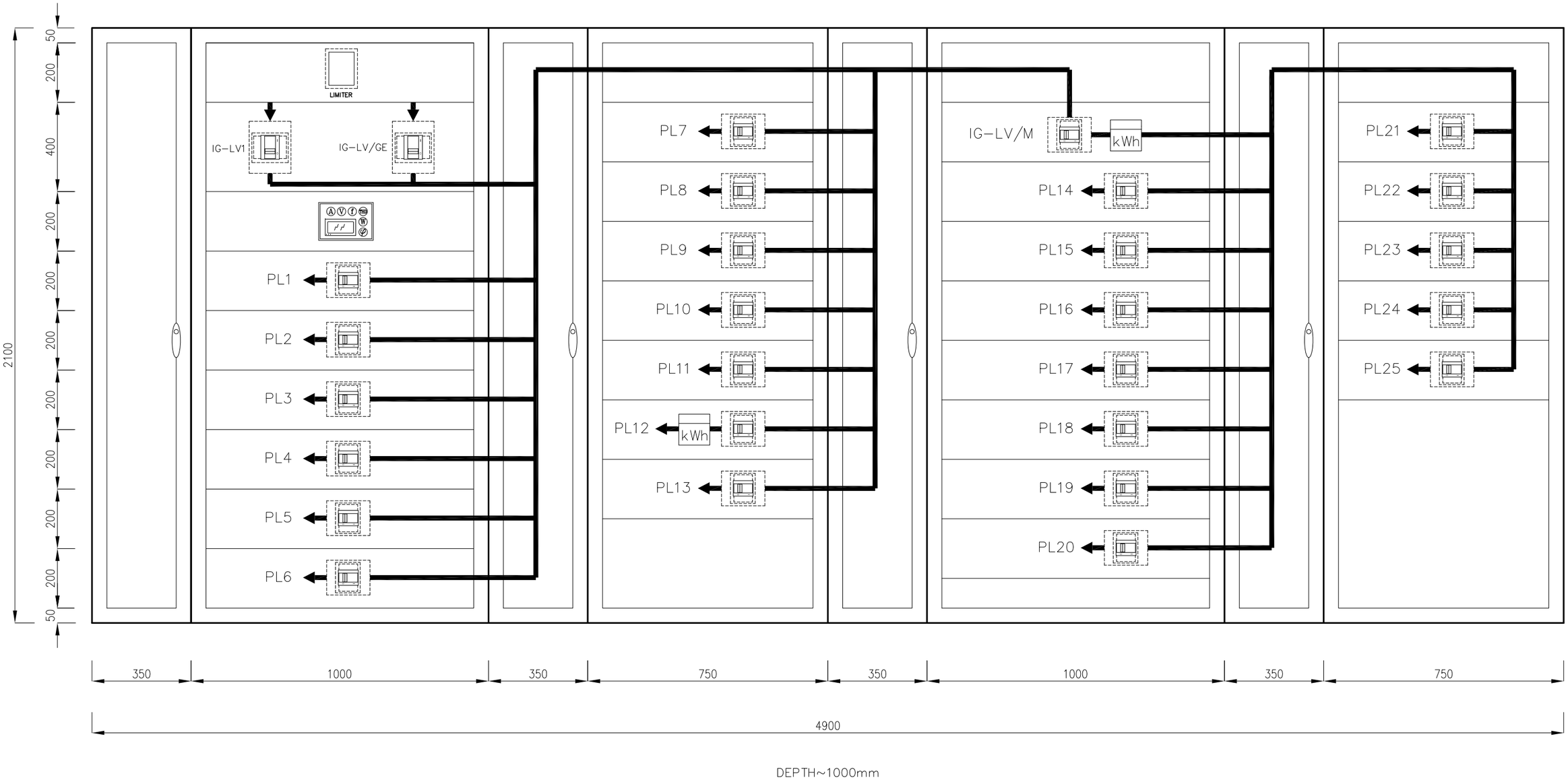

Annotations	Manens-Tifs INGEGNERIA	Title M_LV_SB FRONTAL LAYOUT	Reference n. -	Drawing n. Ee_203	
				Rev. 0	Sheet n. Pag.10

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INSTITUT za protivpožarnu zaštitu, Zaštitu na radu i Zaštitu životne sredine

Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

UNIVERSITY MAIN LOW VOLTAGE SWITCHBOARD
WIRING DIAGRAM U_LV_SB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR.

Ee_204

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_204.dwg
J.N.: 926	DRAW: L. R.	APPROVED: M. C.

	DISCONNECTOR SWITCH	SR O/C D FB LS	SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH	⊗	LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE	nP	AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
Id	RESIDUAL CURRENT RELEASE	V A kW kVAR	DIGITAL INDICATOR INSTRUMENTS		
Id	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL	M O A	SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH	B	OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR	M----	GEARED MOTOR FOR SPRING LOAD		
	PLUG-IN AND DRAW-OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES	△	CABLE TERMINAL		
d b	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE	I/O	DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL	E7	EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL	A V f Hz W Φ	MULTI INSTRUMENT MEASUREMENT		
RA	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)				
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
U_LV_SB
DESCRIPTION OF SIMBOL

Reference n.
-

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ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH

ⓑ COMMUTATOR WITH 3 POSITIONS

ⓒ MODULAR DISCONNECTOR SWITCH

ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓓj MOULDED CASE THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓔ POWER CONTACTOR

ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES

ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER

ⓗ RESIDUAL CURRENT RELEASE

ⓘ OVER VOLTAGE DUMPER/LIMITER

ⓛ MOULDED CASE MAGNETIC THERMAL CIRCUIT BREAKER

Annotations

Manens-Tifs INGEGNERIA

Title
U_LV_SB
DEVICE LEGEND

Reference n.
-

Drawing n.
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Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

UNIVERSITY GROUND LEVEL DISTRIBUTION BOARD

INITIALS

DB_LO/U

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~3.4kVA	– I~4.9A	(Kc=1)
POWER LOAD NETWORK:	Rp~18.7kVA	– I~27.0A	(Kc=0.3)
UPS NETWORK:	Rp~10.5kVA	– I~15.2A	(Kc=0.7)
TOTAL:	Rp~32.6kVA	– I~47.1A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

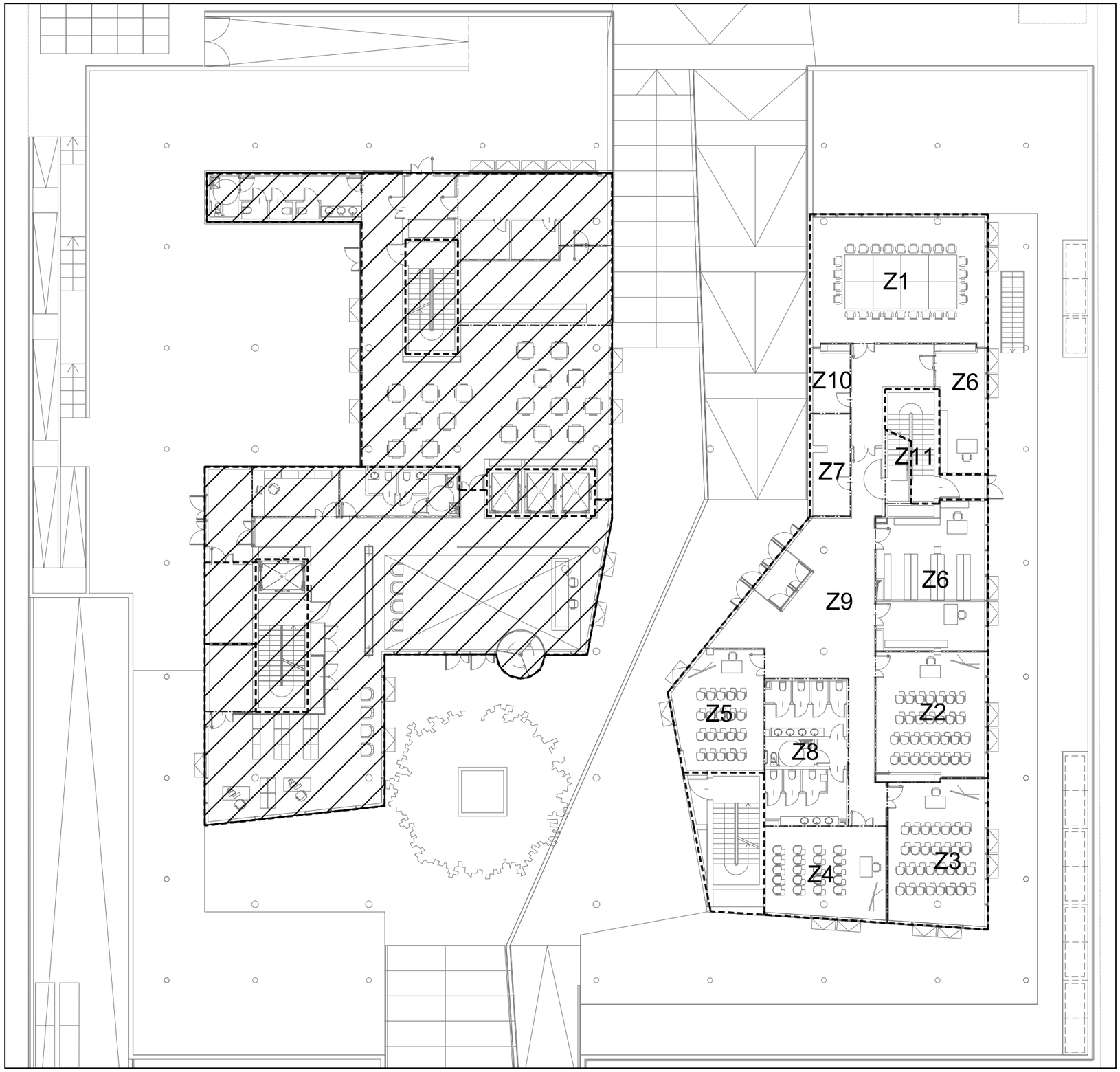
Icn=>10kA

PANEL STRUCTURE

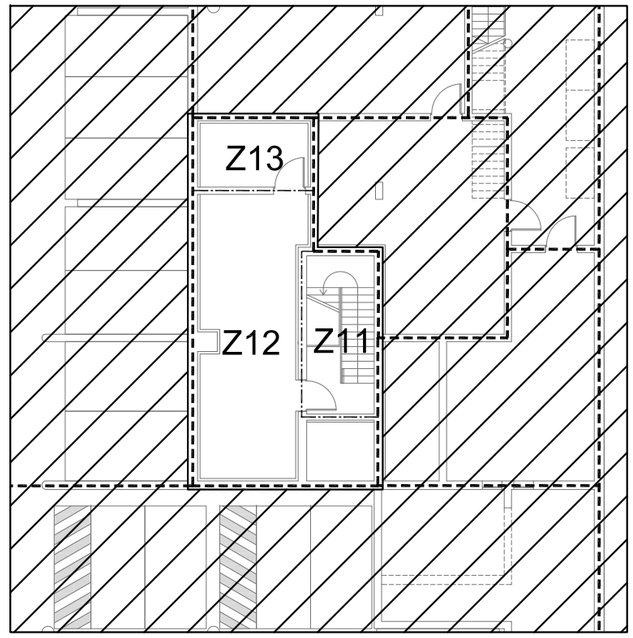
METAL DISTRIBUTION BOARD

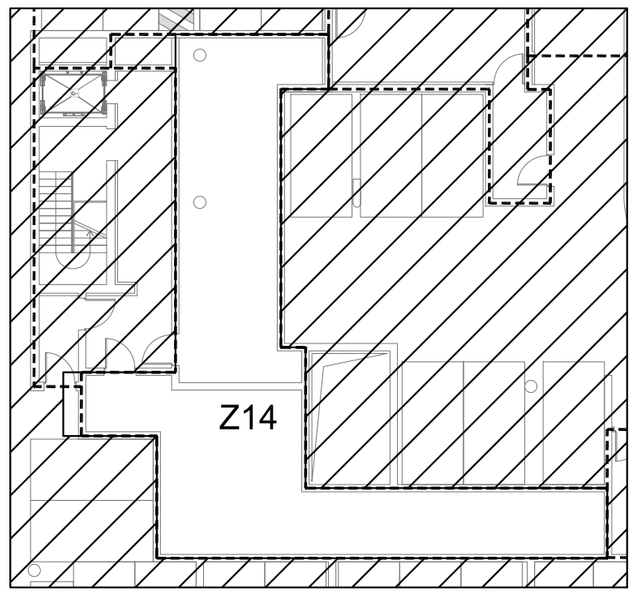
MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



BASAMENT LEVEL





Annotations

Manens-Tifs INGEGNERIA

Title
U_LV_SB
ELECTRICAL ZONES

Reference n.
-

Drawing n.
Ee_204

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0

Sheet n.
Pag.04 seg. 05

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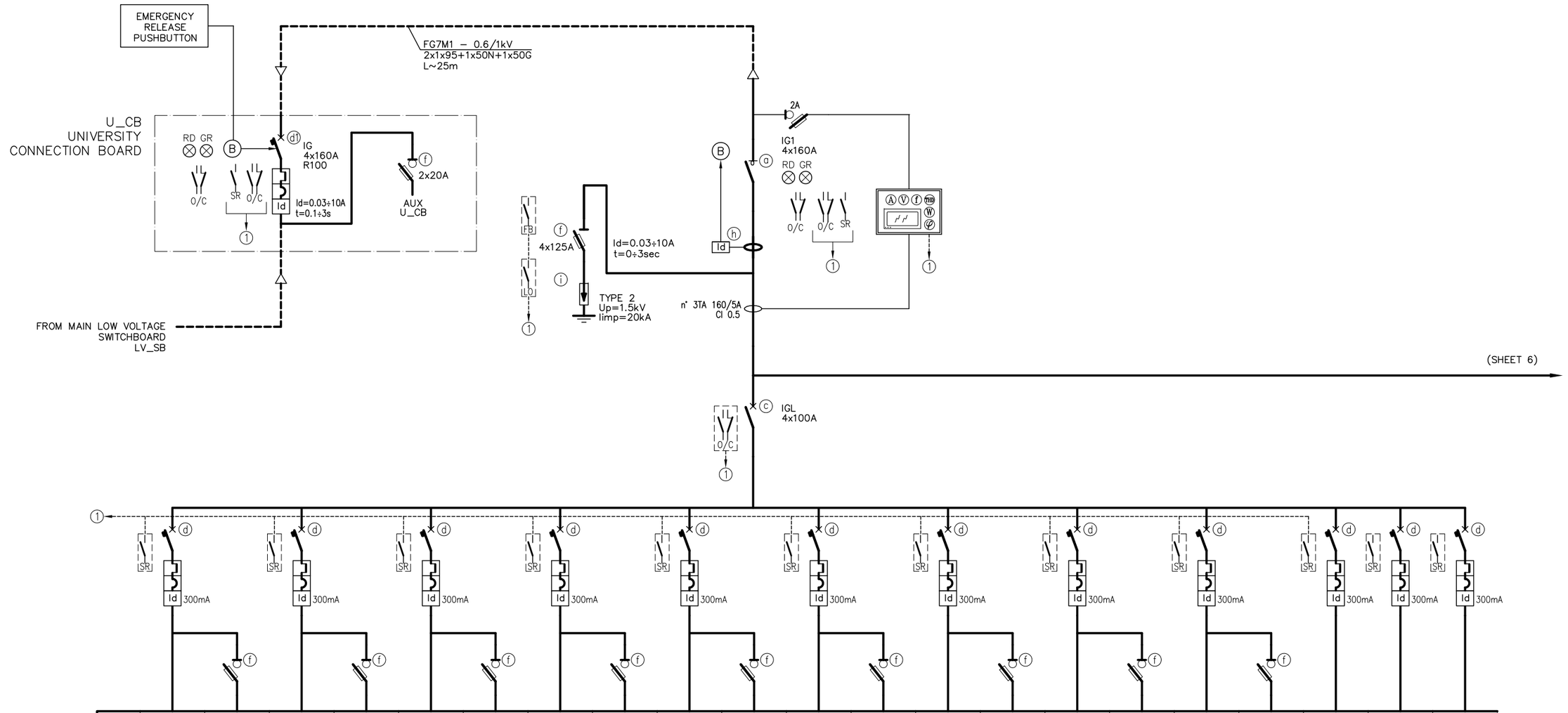

1	LS1	LS1–S	LS2	LS2–S	LS3	LS3–S	LS4	LS4–S	LS5	LS5–S	LS6	LS6–S	LS7	LS7–S	LS8	LS8–S	LS9	LS1–S	LS10	LS11	LS12
2	0.6		0.1		0.7		0.5		0.5		0.1		0.2		0.4		0.1		0.2		
3	2.6		0.4		3.1		2.2		2.2		0.4		0.9		1.8		0.4		0.9		
4	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x10+N	1x10+N
5																					
6																					
7		2A–gG		2A–gG		2A–gG		2A–gG		2A–gG		2A–gG		2A–gG		2A–gG		2A–gG			
8	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x1x2.5	2x1x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5		
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		
10	25	25	10	10	35	35	35+10	35+10	35+10	35+10	5	5	15	15	20	20	10	10	35+10		
11	OFFICES LIBRARY	EMERGENCY LIGHTING	STORAGE	EMERGENCY LIGHTING	WC	EMERGENCY LIGHTING	HALL CORRIDOR CIRCUIT 1	EMERGENCY LIGHTING	HALL CORRIDOR CIRCUIT 2	EMERGENCY LIGHTING	TECHNICAL ROOM	EMERGENCY LIGHTING	STAIRS	EMERGENCY LIGHTING	PC ROOM	EMERGENCY LIGHTING	I.T. ROOM	EMERGENCY LIGHTING	EXIT EMERGENCY LIGHTING	RESERVE	RESERVE
12	ZONE Z6	ZONE Z6	ZONE Z7	ZONE Z7	ZONE Z8	ZONE Z8	ZONE Z9	ZONE Z9	ZONE Z9	ZONE Z9	ZONE Z10	ZONE Z10	ZONE Z11	ZONE Z11	ZONE Z12	ZONE Z12	ZONE Z13	ZONE Z13			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

U_CB AND U_LV_SB
WIRING DIAGRAM

Reference n.

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Drawing n.

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0

Sheet n.

Pag.05 seg. 06

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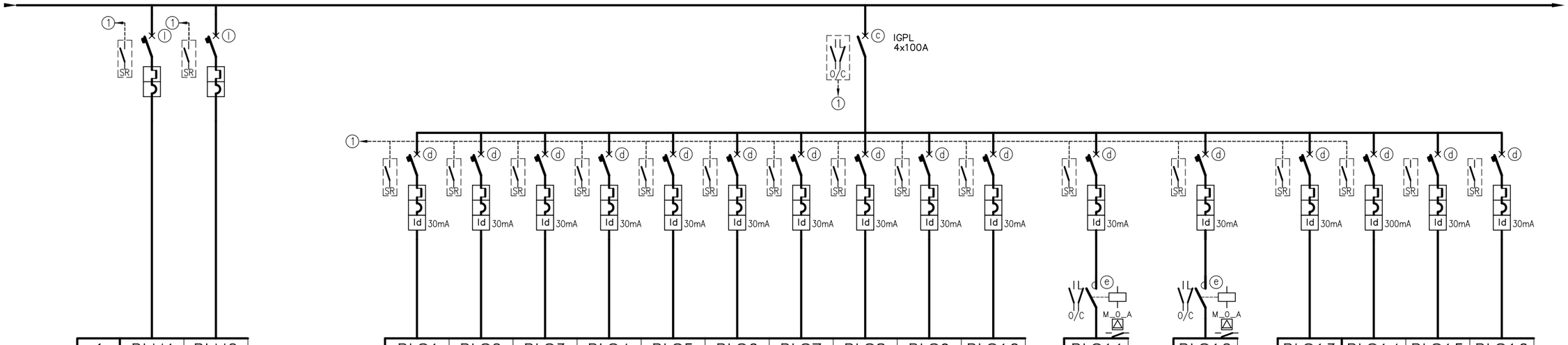
(SHEET 5)

(SHEET 7)



1	PLM1	PLM2
2	5.1	1.4
3	7.4	2.1
4	4x160 R63	4x160 R63
5		
6		
7		
8	5x25	5x25
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	35	40+45
11	DB_LO/U/1 DB_LO/U/2 DB_LO/U/3	DB_LO/U/4 DB_LO/U/5 DB_L-1/U
12	ZONE Z1, Z2 AND Z3	ZONE Z4, Z5 AND Z14

PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9	PLS10
2.4	0.5	3.0	0.2	1.8	2.6	1.5	1.7	2.5	0.4
10.4	2.2	13.1	0.9	7.8	3.8	6.5	7.4	10.9	1.8
1x16+N	1x16+N	1x25+N	1x16+N	1x16+N	4x16	1x16+N	1x16+N	1x25+N	1x16+N
3x4	3x4	3x6	3x4	3x4	5x1x4	3x4	3x4	3x6	3x4
FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1-K 0.45/0.75kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
25	10	35	35	35+10	5	20	20	10	10
OFFICES LIBRARY	STORAGE	WC	AIR SAMPLING SMOKE DETECTION	CORRIDOR SOCKETS	TECHNICAL ROOM	PC ROOM CIRCUIT 1	PC ROOM CIRCUIT 2	I.T. ROOM	DATA RACK
ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z8	ZONE Z9	ZONE Z10	ZONE Z12	ZONE Z12	ZONE Z13	ZONE Z13

PLS11	PLS12	PLS13	PLS14	PLS15	PLS16
0.5	0.4	4.8	10.0		
2.2	1.8	20.9	14.5		
1x16+N	1x16+N	1x32+N	4x32	1x16+N	4x16
3x17-AC3	3x17-AC3				
3x4	3x4	3x6	5x10		
FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		
25	35+10	35	5		
FAN COIL	FAN COIL	HAND DRYER	UPS	RESERVE	RESERVE
ZONE Z6	ZONE Z9	ZONE Z8	SEE SHEET 7		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

U_LV_SB
WIRING DIAGRAM

Reference n.

-

Drawing n.

Ee_204

Rev. **0**

Sheet n. Pag.06 seg. 07

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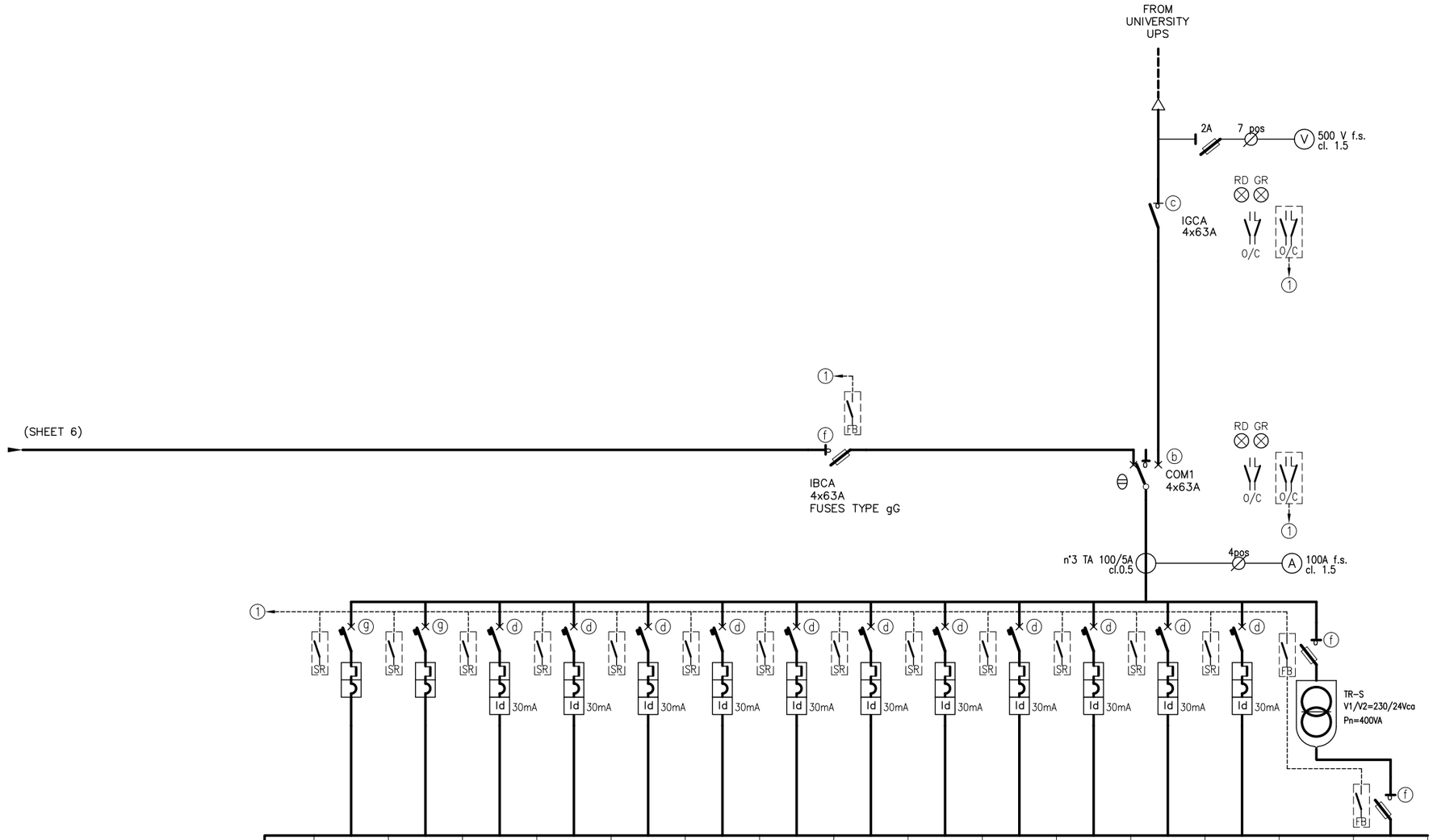

1	US1	US2	US3	US4	US5	US6	US7	US8	US9	US10	US11	US12	US13	TR-S	AUX
2	4.5	3.5				0.9	0.3	1.5	1.2	0.1	0.2	2.0	0.4	0.4	
3	6.5	5.1				3.9	1.3	6.5	5.2	0.4	0.9	8.7	1.8	1.8	
4	4x63 B CURVE	4x63 B CURVE	1x16+N B CURVE	1x16+N B CURVE	4x16 B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x20+N	1x20+N
5															
6															
7														4A-aM	16A-gG
8	4x25	4x25				3x4	3x4	3x4	3x4	3x1x4	3x2.5	3x4	3x2.5	3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV				FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1-K 0.45/0.75kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FTG10OM1 0.6/1kV	H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	35	35+10				25	35+10	20	20	5	5	10	35+10	5	5
11	DB_LO/U/1 DB_LO/U/2 DB_LO/U/3	DB_LO/U/4 DB_LO/U/5	RESERVE	RESERVE	RESERVE	OFFICES LIBRARY	CORRIDOR SOCKETS	PC ROOM CIRCUIT 1	PC ROOM CIRCUIT 2	TECHNICAL ROOM	DOOR CONTROL MODULE	DATA RACK	EXTRA LOW VOLTAGE SYSTEME		
12	ZONE Z1, Z2 AND Z3	ZONE Z4 AND Z5				ZONE Z6	ZONE Z9	ZONE Z12	ZONE Z12	ZONE Z10	ACCESS CONTROL SYSTEM	ZONE Z13	ZONE Z9		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs
INGEGNERIA

Title
U_LV_SB
WIRING DIAGRAM

Reference n.
-

Drawing n.
Ee_204

Rev.
0

Sheet n.
Pag.07 seg. 08

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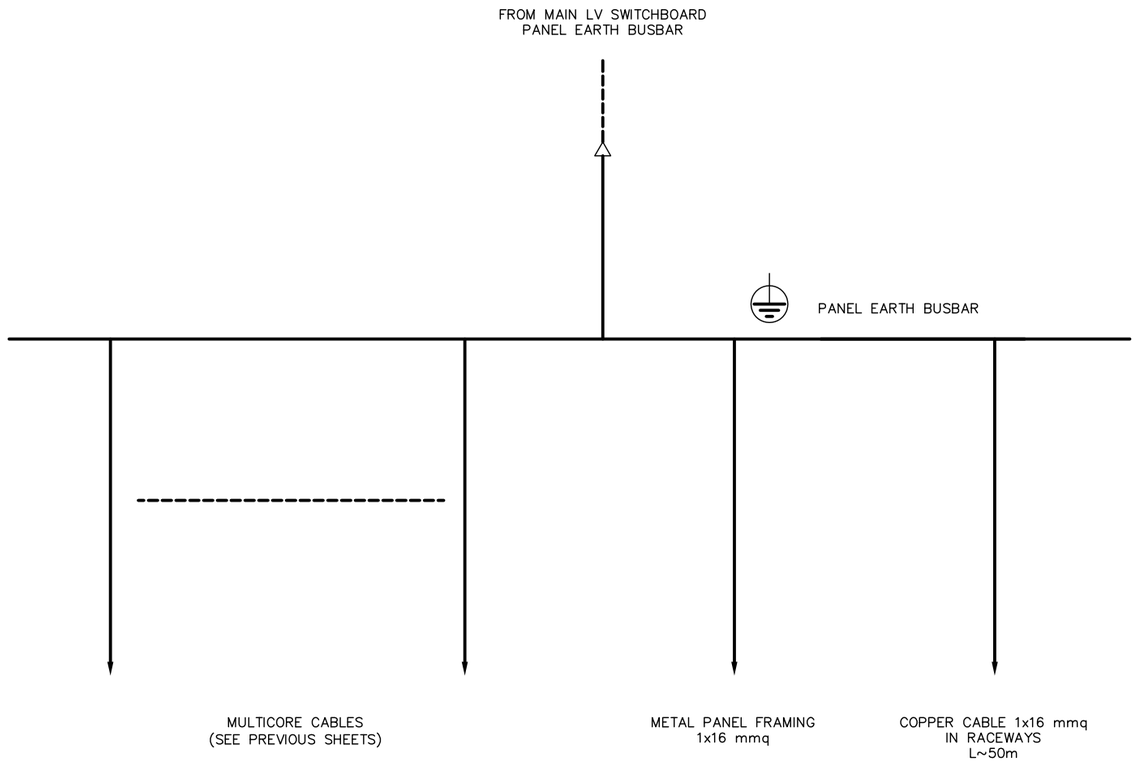

Annotations	Manens-Tifs INGEGNERIA	Title U_LV_SB EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_204** Rev. **0** / Sheet n. Pag.08 seg. 09

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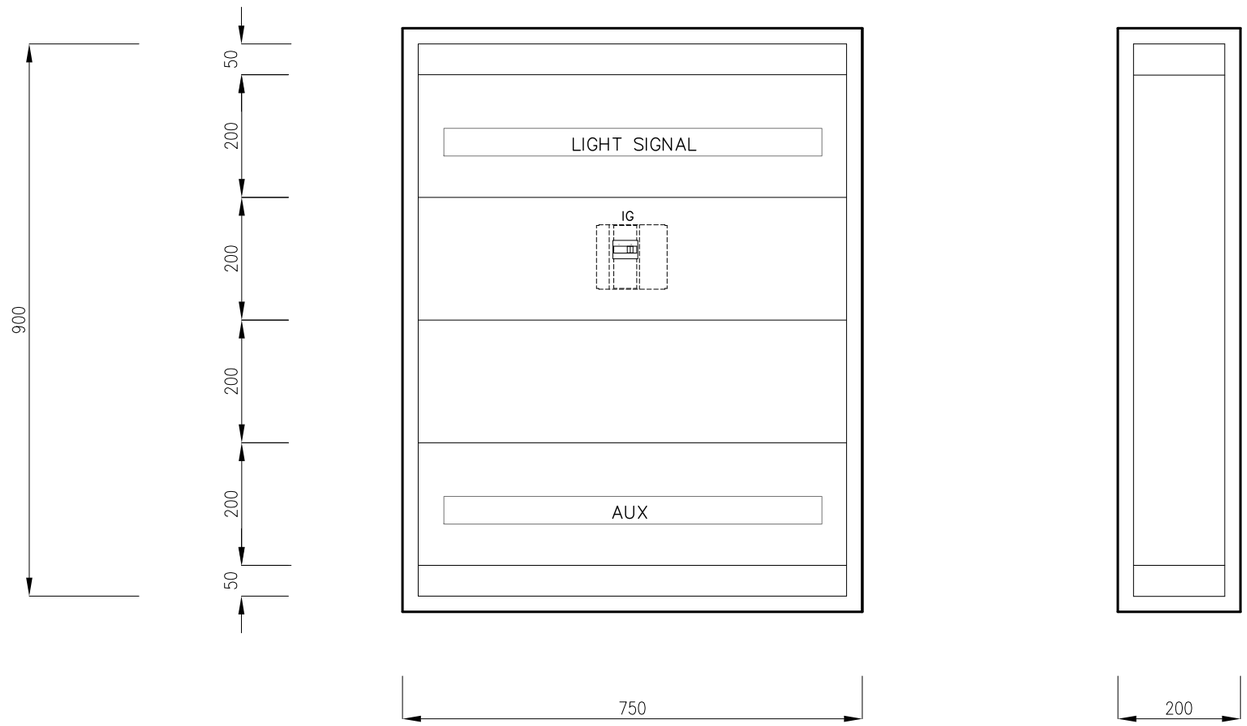

Annotations	Manens-Tifs INGEGNERIA	Title U_CB FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_204** Rev. **0** / Sheet n. Pag.09 seg. 10

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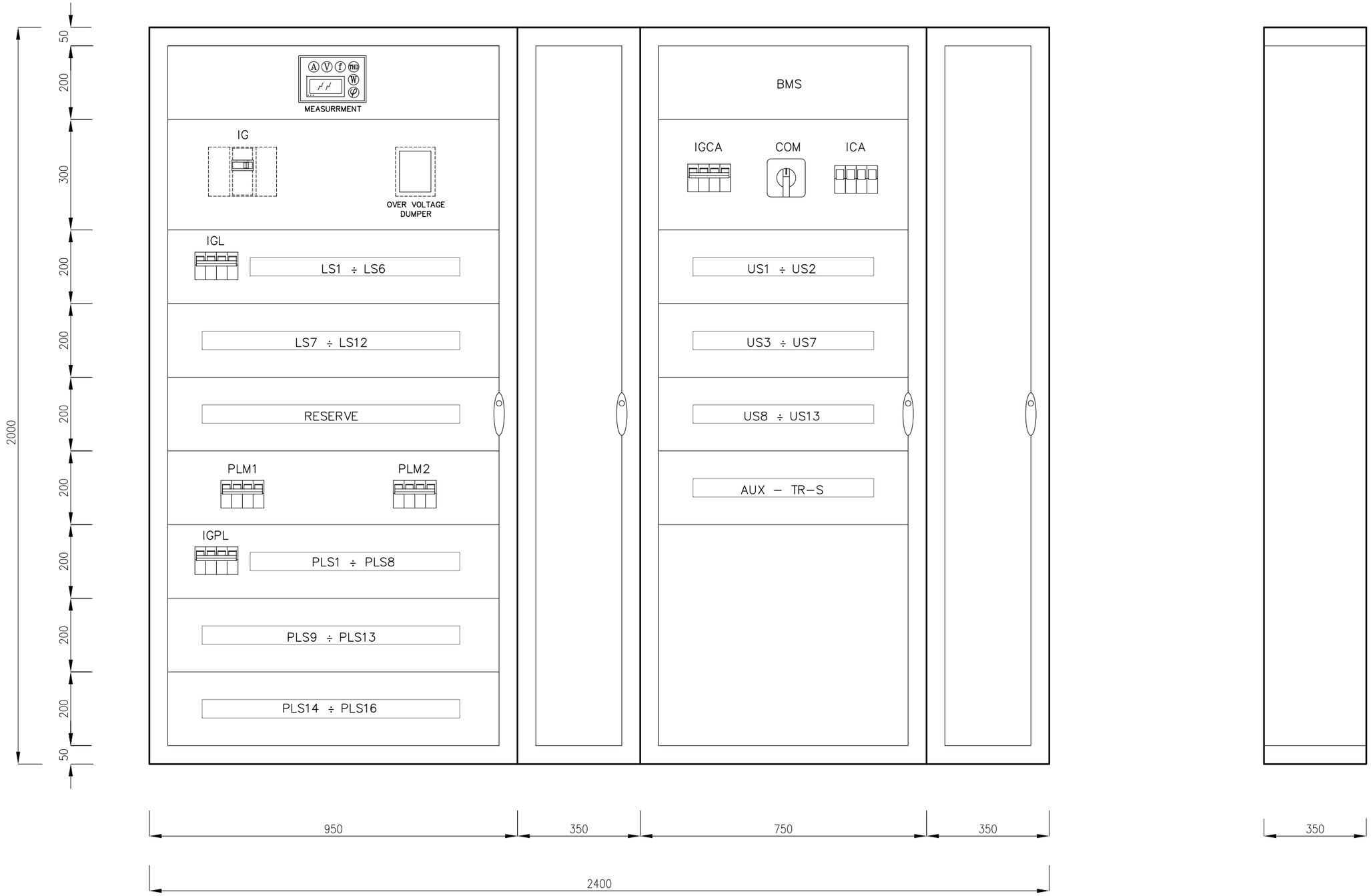

Annotations	Manens-Tifs INGEGNERIA	Title U_LV_SB FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_204**	
				Rev. **0**	Sheet n. Pag.10

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INVESTITOR:

JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT,
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ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

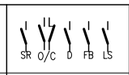
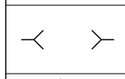
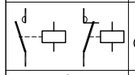
HEAT PUMPS CONNECTION BOARD
WIRING DIAGRAM H_CB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	27/07/2011	926_Ee_205_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR.

Ee_205

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_205_a.dwg
J.N.	**DRAW:**	**APPROVED:**
926	L. R.	M. C.

	DISCONNECTOR SWITCH		SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH		LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE		AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
	RESIDUAL CURRENT RELEASE		DIGITAL INDICATOR INSTRUMENTS		
	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL		SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH		OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR		GEARED MOTOR FOR SPRING LOAD		
	PLUG–IN AND DRAW–OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES		CABLE TERMINAL		
	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE		DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL		EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL		MULTI INSTRUMENT MEASUREMENT		
	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)				
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
H_CB
DESCRIPTION OF SIMBOL

Reference n.
-

Drawing n.
Ee_205

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH

ⓑ COMMUTATOR WITH 3 POSITIONS

ⓒ MODULAR DISCONNECTOR SWITCH

ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓓj MOULDED CASE THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓔ POWER CONTACTOR

ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES

ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER

ⓗ RESIDUAL CURRENT RELEASE

ⓘ OVER VOLTAGE DUMPER/LIMITER

ⓛ MOULDED CASE MAGNETIC THERMAL CIRCUIT BREAKER

Annotations

Manens-Tifs INGEGNERIA

Title
H_CB
DEVICE LEGEND

Reference n.
-

Drawing n.
Ee_205

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

HEAT PUMPS CONNECTION BOARD

INITIALS

H_CB

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~93kVA – I~135A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>24kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

Title

H_CB
MAIN CHARACTERISTICS

Reference n.

-

Drawing n.

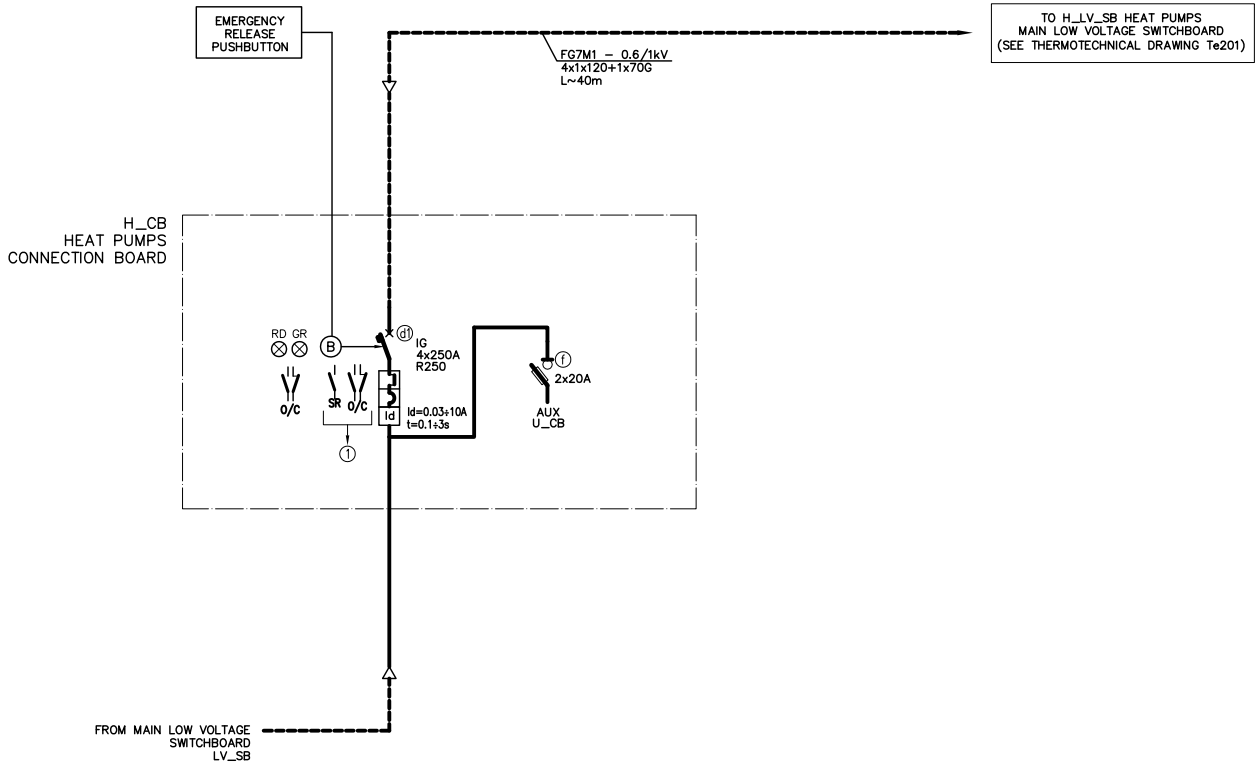
Ee_205

Rev.

0

Sheet n.

Pag.03 seg. 04



Annotations

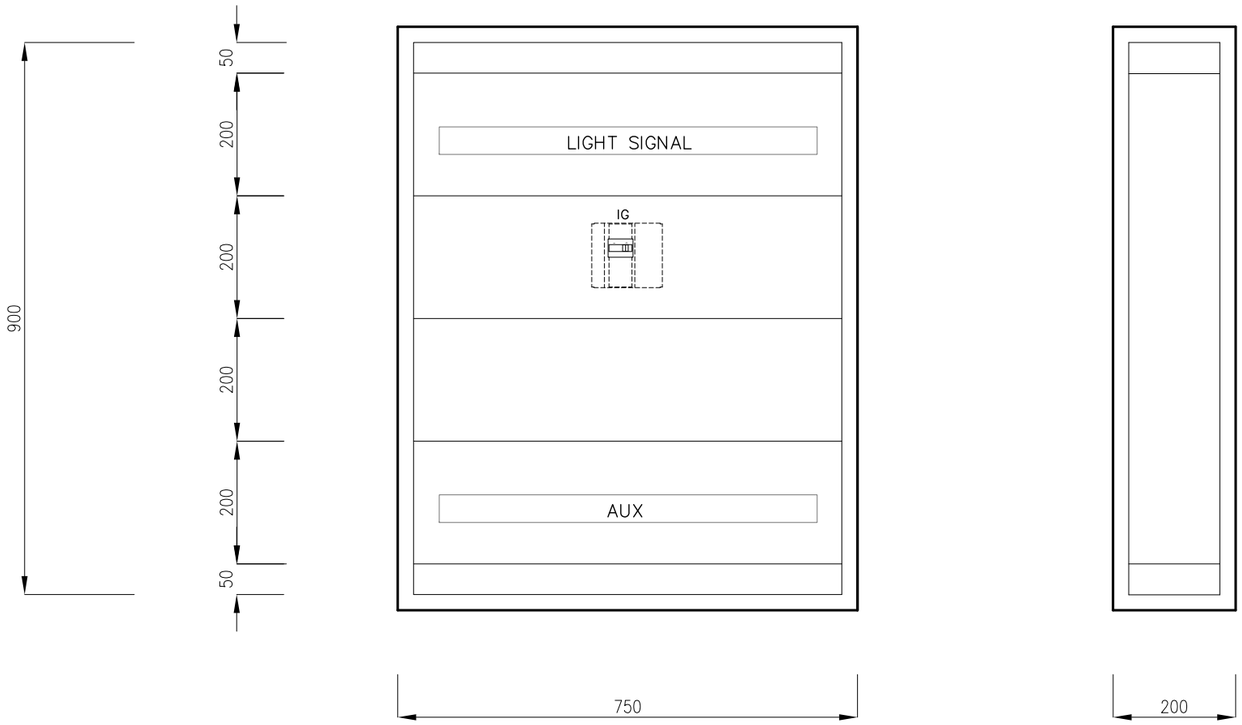
① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

H_CB
WIRING DIAGRAM

Reference n.	Drawing n.
-	Ee_205
Rev. 0	Sheet n. Pag.04 seg. 05



Annotations	Manens-Tifs INGEGNERIA	Title H_CB FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_205**	
				Rev. **0**	Sheet n. Pag.05

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INVESTITOR:

JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT,
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http://www.studiosynthesis.me

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Preduzeće za projektovanje i inženjering
Bulevar Džordža Vašingtona bb
Podgorica

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Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

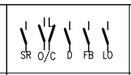
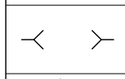
MINISTRY UPS SWITCHBOARD
WIRING DIAGRAM M_UPS_SB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR.

Ee_206

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_206.dwg
J.N.: 926	DRAW: L. R.	APPROVED: M. C.

	DISCONNECTOR SWITCH		SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH		LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE		AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
	RESIDUAL CURRENT RELEASE		DIGITAL INDICATOR INSTRUMENTS		
	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL		SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH		OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR		GEARED MOTOR FOR SPRING LOAD		
	PLUG–IN AND DRAW–OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES		CABLE TERMINAL		
	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE		DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL		EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL		MULTI INSTRUMENT MEASUREMENT		
	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)		LED INDICATORS FOR STATE DEVICES		
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
M_UPS_SB
DESCRIPTION OF SIMBOL

Reference n.
-

Drawing n.
Ee_206

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH

ⓑ COMMUTATOR WITH 3 POSITIONS

ⓒ MODULAR DISCONNECTOR SWITCH

ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓓj MOULDED CASE THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓔ POWER CONTACTOR

ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES

ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER

ⓗ RESIDUAL CURRENT RELEASE

ⓘ OVER VOLTAGE DUMPER/LIMITER

ⓛ MOULDED CASE MAGNETIC THERMAL CIRCUIT BREAKER

Annotations

Manens-Tifs INGEGNERIA

Title
M_UPS_SB
DEVICE LEGEND

Reference n.
-

Drawing n.
Ee_206

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MINISTRY UPS SWITCHBOARD

INITIALS

M_UPS_SB

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~76.3kVA – I~110.1A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

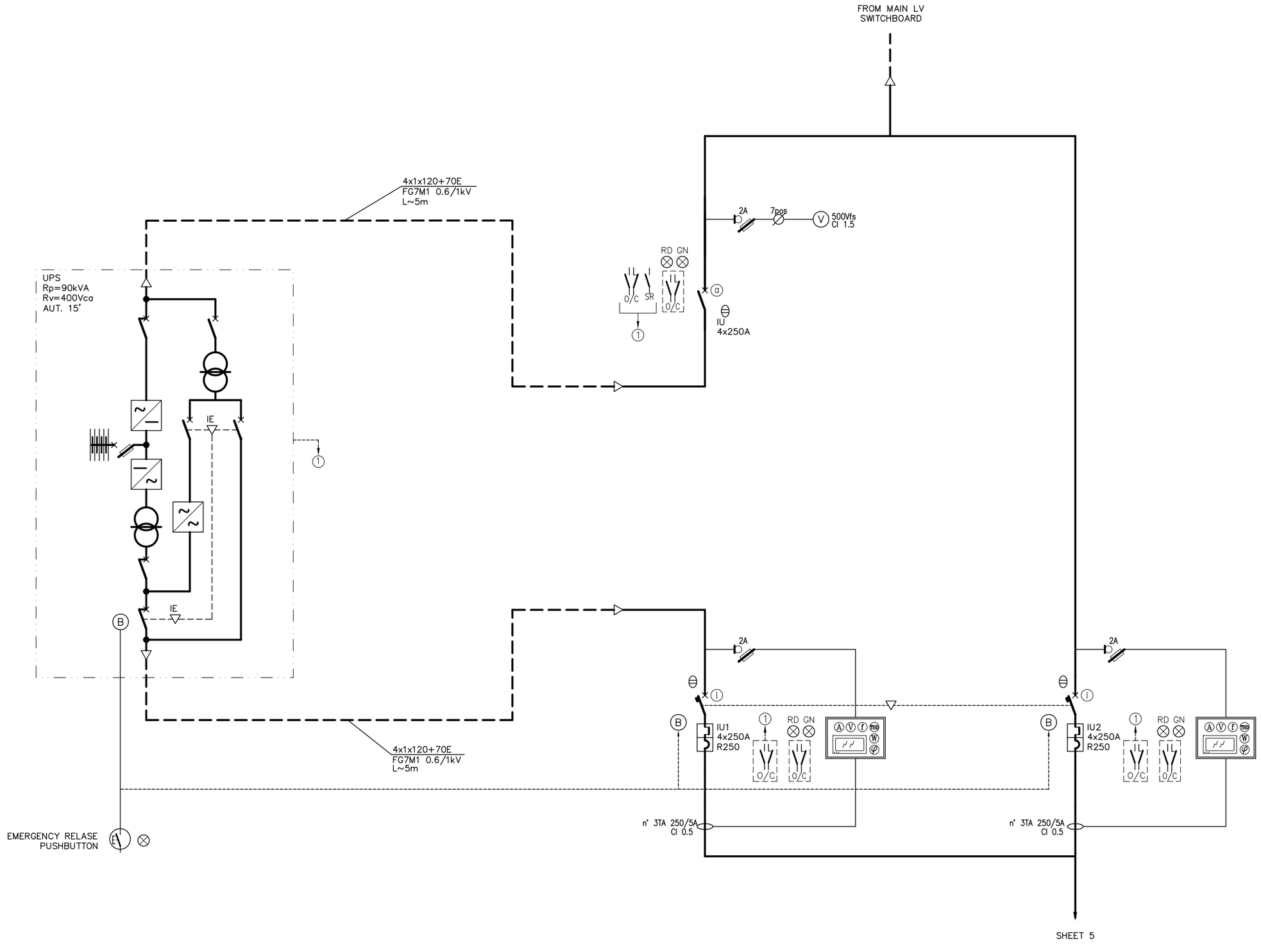
Icn=>24kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs
INGEGNERIA

Title
M_UPS_SB
WIRING DIAGRAM

Reference n.
-

Drawing n.
Ee_206

Rev.
0

Sheet n.
Pag.04 seg. 05

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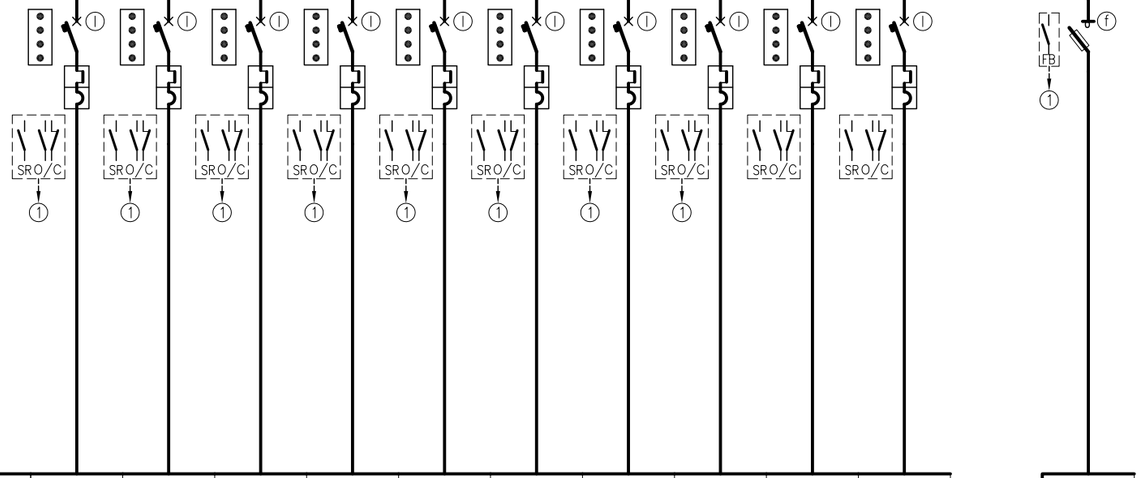
SHEET 4



1	UPS1	UPS2	UPS3	UPS4	UPS5	UPS6	UPS7	UPS8	UPS9	UPS10
2	2.6	2.3	1.0	6.0	4.2	25.0	24.0	11.0		
3	3.8	3.3	1.5	8.7	6.1	36.1	34.6	15.9		
4	4x160 R25	4x160 R25	4x160 R25	4x160 R25	4x160 R25	4x160 R63	4x160 R63	4x160 R25	4x160 R25	4x160 R63
5										
6										
7										
8	4x10	4x10	4x10	4x10	4x10	4x1x25	4x1x25	4x16		
9	FG70M1 0.6/1kV	FG07M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG7M1 0.6/1kV	FG7M1 0.6/1kV	FG70M1 0.6/1kV		
10	10	70	110	90	100	75	75	85		
11	DB_AS	DB_L-1/P1	DB_L-1/P2	DB_L0/MDR	DB_L0/M	DB_L1/M/1	DB_L1/M/2	DB_L2/M	RESERVE	RESERVE
12	AUXILIARY SERVICE DISTRIBUTION BOARD	PARKING AREA DISTRIBUTION BOARD	PARKING AREA DISTRIBUTION BOARD	MAIN DATA ROOM DISTRIBUTION BOARD	MINISTRY LEV.0 DISTRIBUTION BOARD	MINISTRY LEV.1/1 DISTRIBUTION BOARD	MINISTRY LEV.1/2 DISTRIBUTION BOARD	MINISTRY LEV.2 DISTRIBUTION BOARD		

UPS11
0.2
0.9
2x20
6A-gG
3x1x2.5
H07Z1-K 0.45/0.75kV
5
AUXILIARY SYSTEM

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

M_UPS_SB
WIRING DIAGRAM

Reference n.

-

Drawing n.

Ee_206

Rev. **0**

Sheet n. Pag.05 seg. 06

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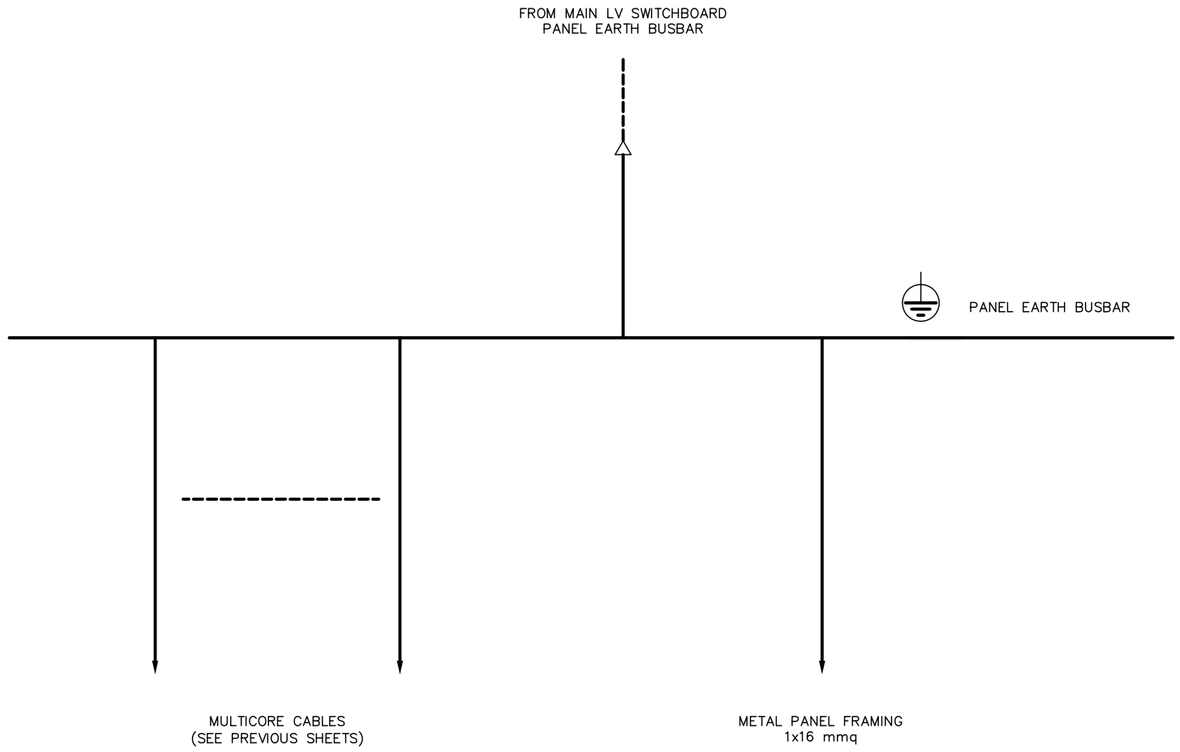

Annotations	Manens-Tifs INGEGNERIA	Title M_UPS_SB EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_206** Rev. **0** / Sheet n. Pag.06 seg. 07

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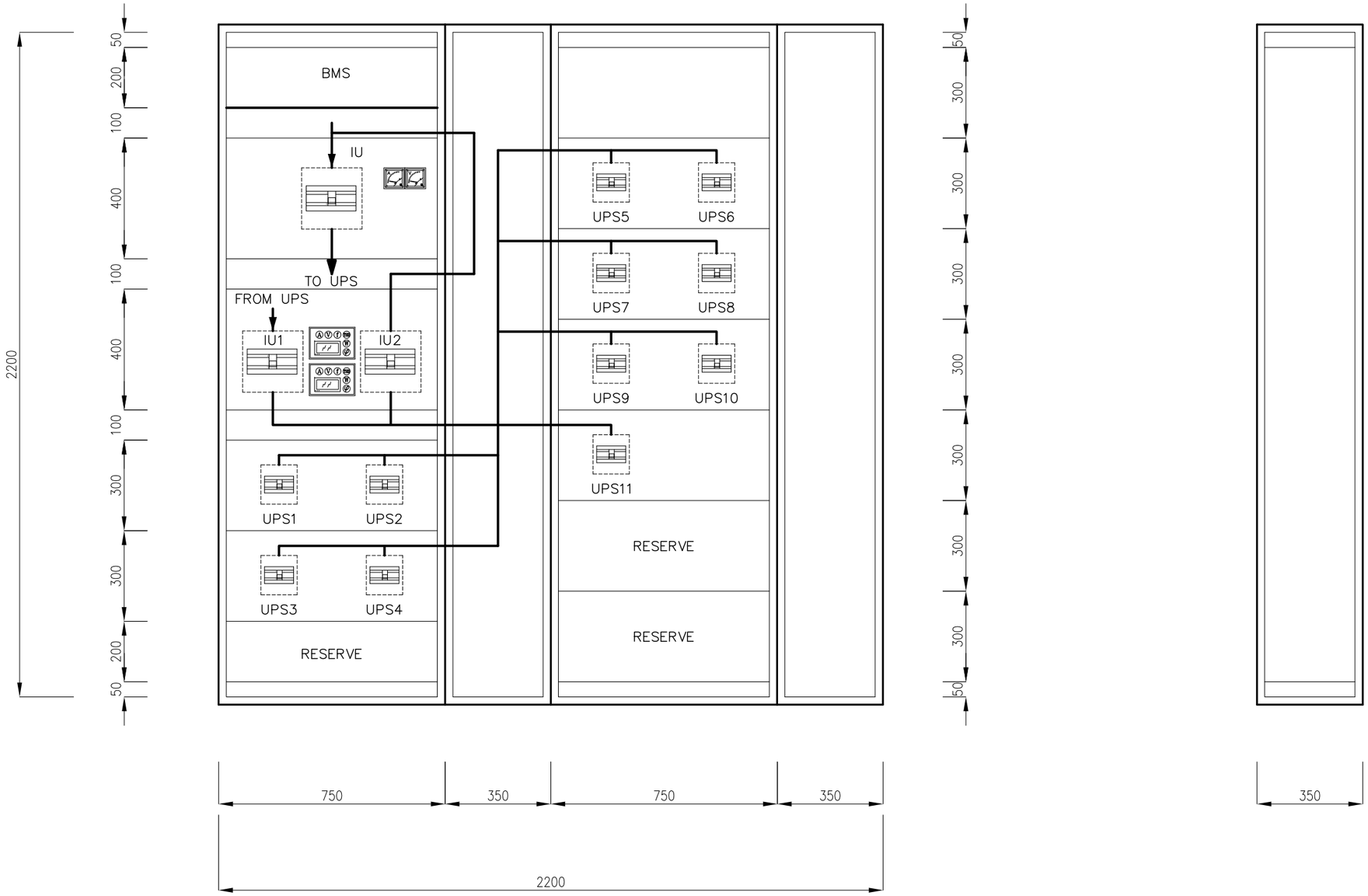

Annotations

Manens-Tifs INGEGNERIA

Title
M_UPS_SB
FRONTAL LAYOUT

Reference n.
-

Drawing n.
Ee_206

Rev.
0

Sheet n.
Pag.07

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INVESTITOR:

JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT,
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OF THE REPUBLIC OF ITALY

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fax. 020/602-391

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Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

MINISTRY EMERGENCY LIGHTING SWITCHBOARD
WIRING DIAGRAM M_EL_SB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR.

Ee_207

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_207.dwg
J.N.: 926	DRAW: L. R.	APPROVED: M. C.

	DISCONNECTOR SWITCH	SR O/C D FB LO	SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH	⊗	LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE	nP	AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
Id	RESIDUAL CURRENT RELEASE	V A kW kVAR	DIGITAL INDICATOR INSTRUMENTS		
Id	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL	M O A	SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH	B	OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR	M----	GEARED MOTOR FOR SPRING LOAD		
	PLUG–IN AND DRAW–OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES	△	CABLE TERMINAL		
d L	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE	I/O	DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL	E	EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL	A V f cos W Wh	MULTI INSTRUMENT MEASUREMENT		
RA	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)				
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
M_EL_SB
DESCRIPTION OF SIMBOL

Reference n.
-

Drawing n.
Ee_207

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH

ⓑ COMMUTATOR WITH 3 POSITIONS

ⓒ MODULAR DISCONNECTOR SWITCH

ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓓ1 MOULDED CASE THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓔ POWER CONTACTOR

ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES

ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER

ⓗ RESIDUAL CURRENT RELEASE

ⓘ OVER VOLTAGE DUMPER/LIMITER

ⓛ MOULDED CASE MAGNETIC THERMAL CIRCUIT BREAKER

Annotations

Manens-Tifs INGEGNERIA

Title
M_EL_SB
DEVICE LEGEND

Reference n.
-

Drawing n.
Ee_207

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MINISTRY EMERGENCY LIGHTING SWITCHBOARD

INITIALS

M_EL_SB

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~17.0kVA – I~24.5A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>12kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

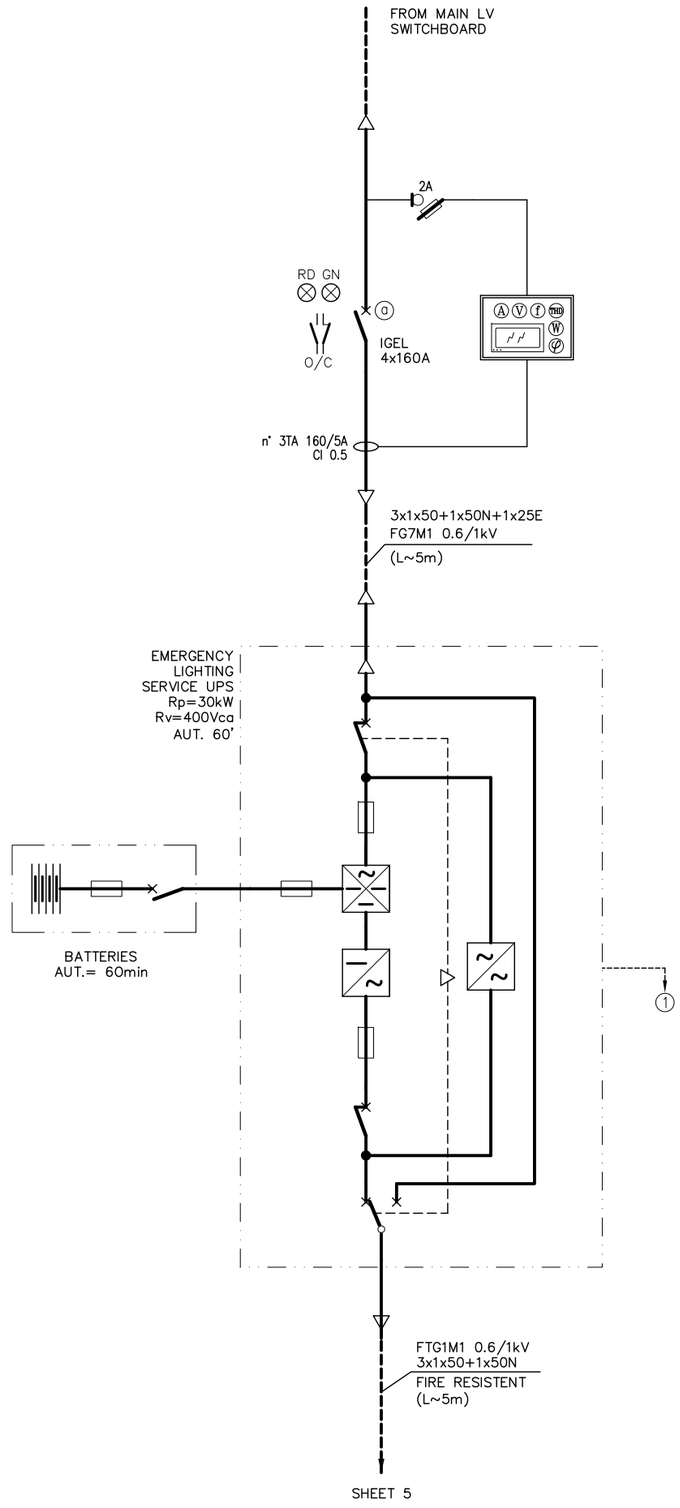
Title
M_EL_SB
MAIN CHARACTERISTICS

Reference n.
-

Drawing n.
Ee_207

Rev.
0

Sheet n.
Pag.03 seg. 04



Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs
INGEGNERIA

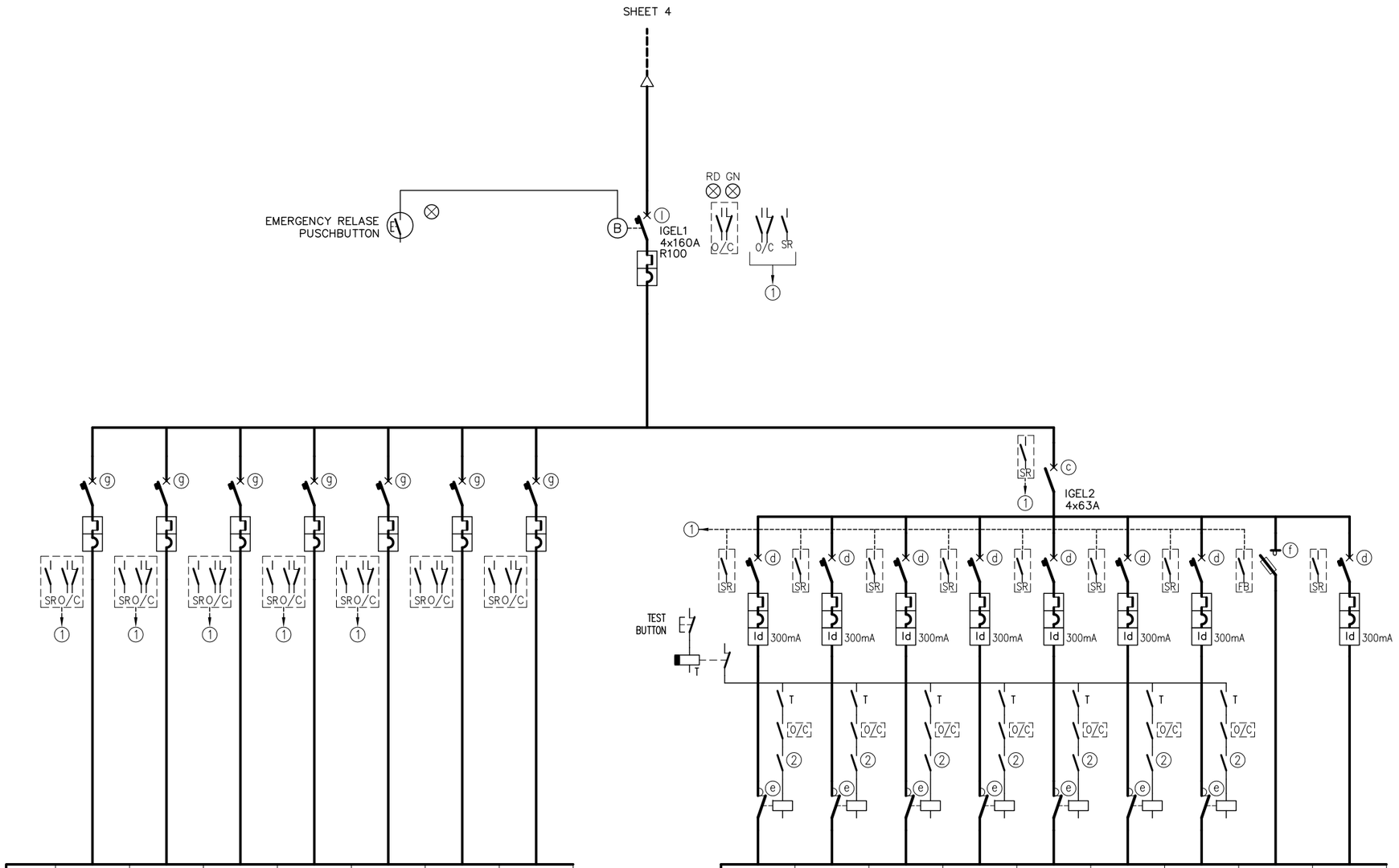
Title
M_EL_SB
WIRING DIAGRAM

Reference n.
-

Drawing n.
Ee_207

Rev.
0

Sheet n.
Pag.04 seg. 05



1	EL1	EL2	EL3	EL4	EL5	EL6	EL7
2	1.4	1.0	1.0	7.4	4.3		
3	6.1	4.4	4.4	10.7	6.2		
4	2x32 B CURVE	2x32 B CURVE	2x32 B CURVE	4x32 B CURVE	4x32 B CURVE		
5							
6							
7							
8	2x10	2x10	2x10	4x10	85		
9	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45		
10	70	110	100	75	85		
11	DB_L-1/P1/EL	DB_L-1/P2/EL	DB_L0/M/EL	DB_L1/M/EL	DB_L2/M/EL	RESERVE	RESERVE
12	PARKING AREA DISTRIBUTION BOARD	PARKING AREA DISTRIBUTION BOARD	MINISTRY LEV.0 DISTRIBUTION BOARD	MINISTRY LEV.1 DISTRIBUTION BOARD	MINICTRY LEV.2 DISTRIBUTION BOARD		

EL8	EL9	EL10	EL11	EL12	EL13	EL14	EL15	EL16
0.3	0.2	0.4	0.3	0.3	0.2	0.2	0.2	
1.3	0.9	1.8	1.3	1.3	0.9	0.9	0.9	
2x10	2x10	2X10	2X10	2x10	2x10	2x10	2x20	2x10
							6A-gG	
3x2.5	3X2.5	3X2.5	3X2.5	3x2.5	3x2.5	3x2.5	3x1x2.5	
FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	FTG10OM1 CEI 20-45	H07Z1-K 0.45/0.75kV	
45	35	85	55	50	30	15	5	
SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	AUXILIARY SYSTEM	RESERVE
STAIRCASE	LIFT LANDING	STAIRCASE	STAIRCASE	STAIRCASE	TECHNICAL ROOM CORRIDOR	TECHNICAL ROOM		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

M_EL_SB

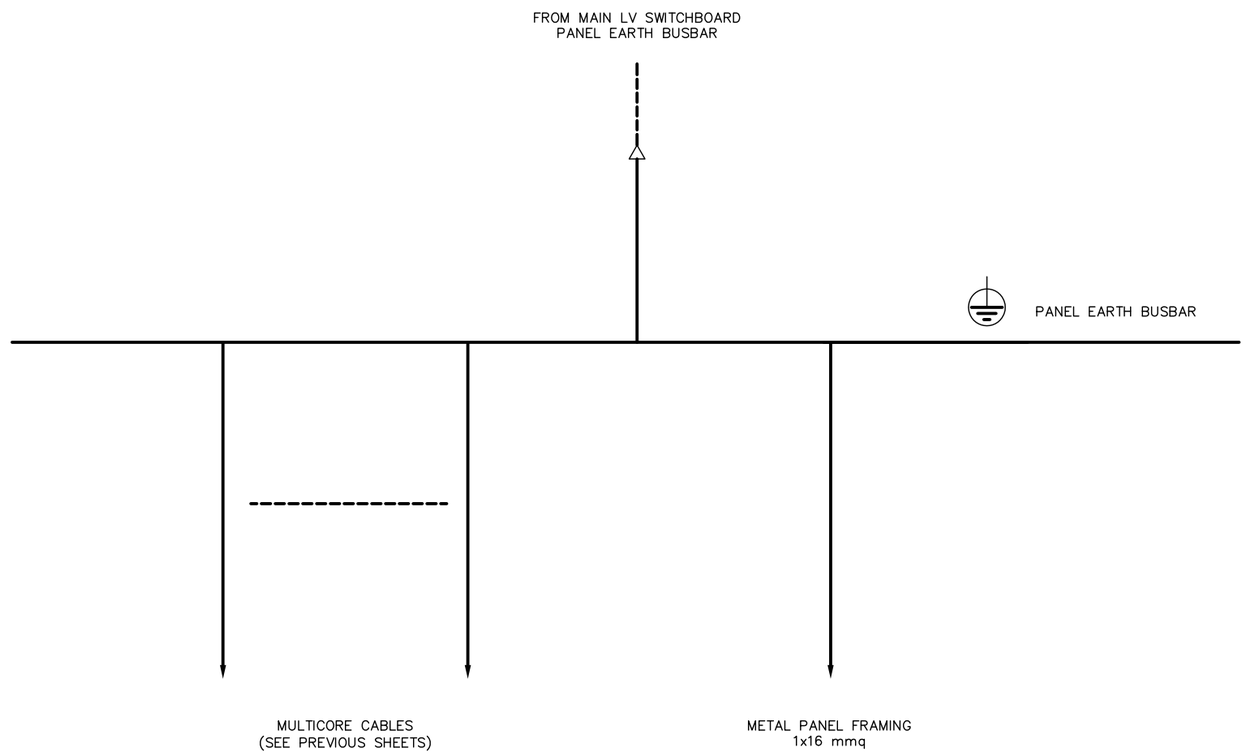
WIRING DIAGRAM

Reference n. -

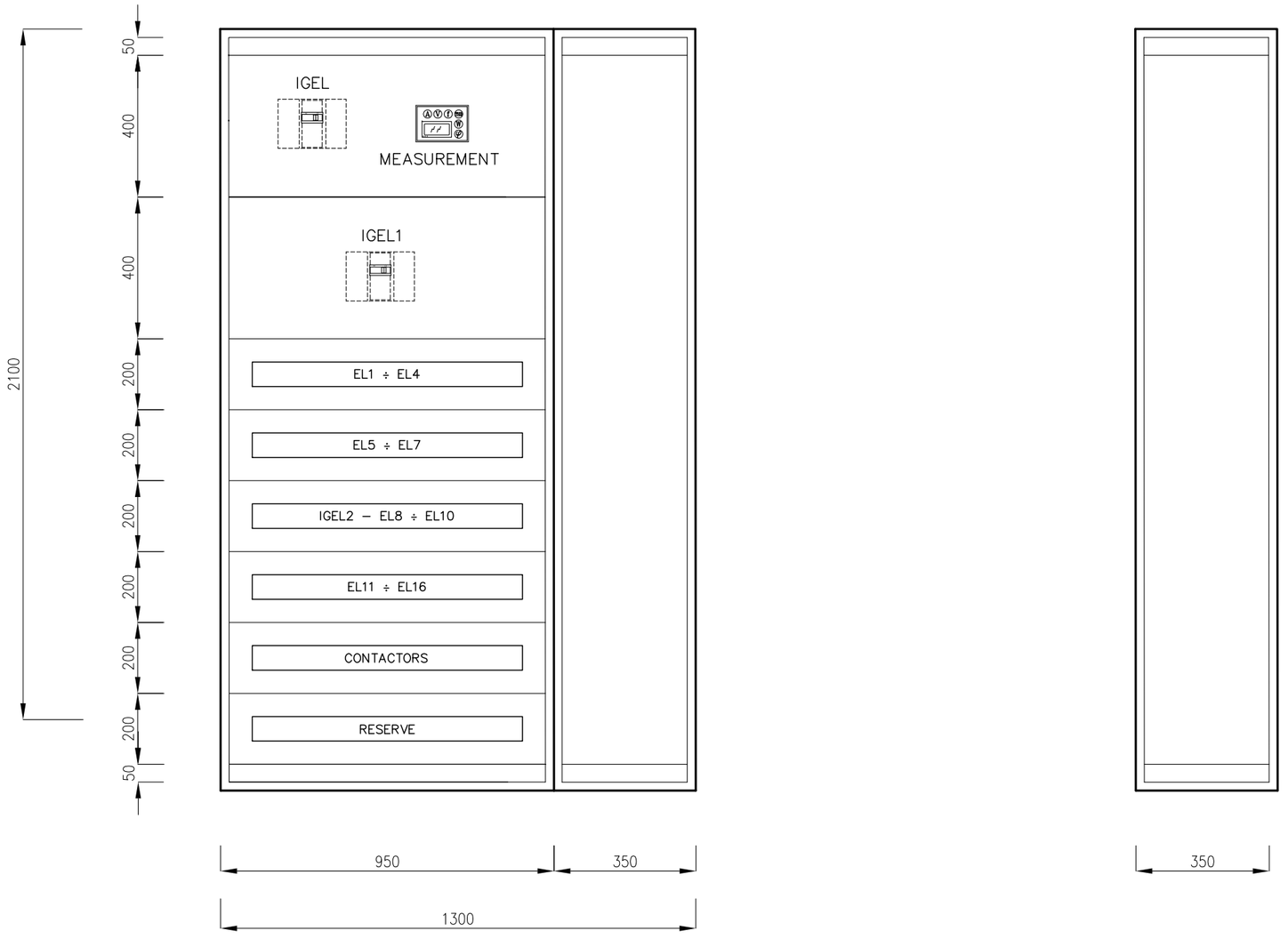
Drawing n. **Ee_207**

Rev. **0**

Sheet n. Pag.05 seg. 06



Annotations	Manens-Tifs INGEGNERIA	Title M_EL_SB EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_207** Rev. **0** / Sheet n. Pag.06 seg. 07



Annotations

Manens-Tifs INGEGNERIA

Title
M_EL_SB
FRONTAL LAYOUT

Reference n.
-

Drawing n.
Ee_207

Rev.
0

Sheet n.
Pag.07

INVESTITOR:

JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

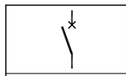
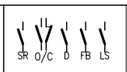
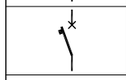
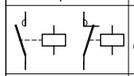
TITLE

EMERGENCY GENERATOR SWITCHBOARD
WIRING DIAGRAM EG_SB

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	27/07/2011	926_Ee_208_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR. Ee_208

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_208_a.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.

	DISCONNECTOR SWITCH		SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH		LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE		AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
	RESIDUAL CURRENT RELEASE		DIGITAL INDICATOR INSTRUMENTS		
	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL		SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH		OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR		GEARED MOTOR FOR SPRING LOAD		
	PLUG–IN AND DRAW–OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES		CABLE TERMINAL		
	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE		DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL		EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL		MULTI INSTRUMENT MEASUREMENT		
	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)				
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
EG_SB
DESCRIPTION OF SYMBOL

Reference n.
-

Drawing n.
Ee_208

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH
ⓑ COMMUTATOR WITH 3 POSITIONS
ⓒ MODULAR DISCONNECTOR SWITCH
ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE
ⓔ POWER CONTACTOR
ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES
ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER
ⓗ RESIDUAL CURRENT RELEASE
ⓘ OVER VOLTAGE DUMPER/LIMITER
ⓛ MOULDED CASE MAGNETIC THERMAL CIRCUIT BREAKER
ⓜ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER WITH ADJUSTABLE THERMAL RELAY

Annotations

Manens-Tifs INGEGNERIA

Title
EG_SB
DEVICE LEGEND

Reference n.
-

Drawing n.
Ee_208

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

EMERGENCY GENERATOR SWITCHBOARD

INITIALS

EG_SB

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

FIRE LIFT:	Rp~20.0kVA – I~28.9A
AUXILIARY:	Rp~1.6kVA – I~2.3A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>12kA

PANEL STRUCTURE

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

Title
EG_SB
MAIN CHARACTERISTICS

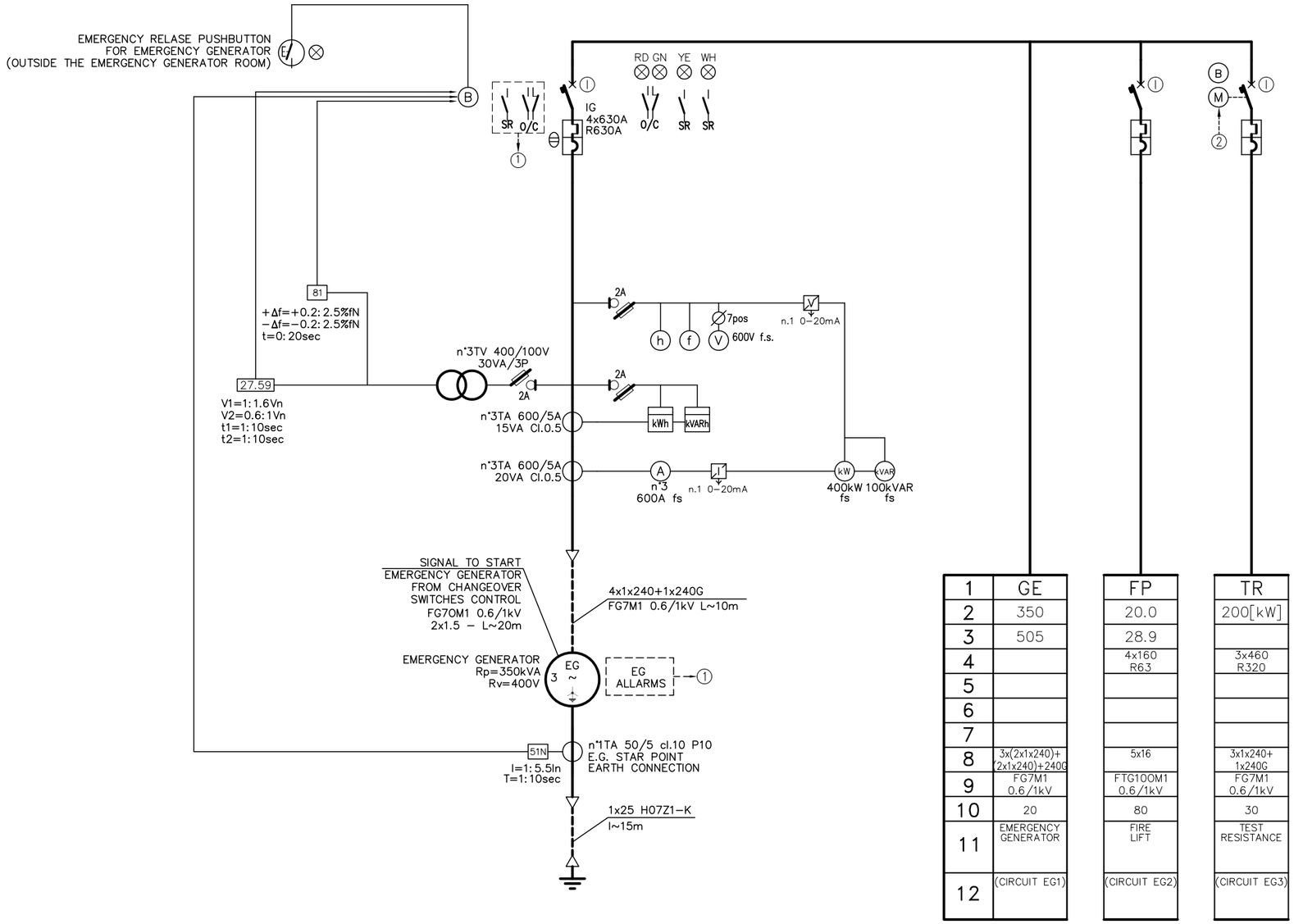
Reference n.
-

Drawing n.
Ee_208

Rev.
0

Sheet n.
Pag.03 seg. 04

MAN_AUT
SWITCH SELECTOR WITH KEY
TO SWITCH OFF BMS SIGNALS CONTROL
1



	GE	FP	TR
1			
2	350	20.0	200[kW]
3	505	28.9	
4		4x160 R63	3x460 R320
5			
6			
7			
8	3x(2x1x240)+ (2x1x240)+240G	5x16	3x1x240+ 1x240G
9	FG7M1 0.6/1kV	FTG10OM1 0.6/1kV	FG7M1 0.6/1kV
10	20	80	30
11	EMERGENCY GENERATOR	FIRE LIFT	TEST RESISTANCE
12	(CIRCUIT EG1)	(CIRCUIT EG2)	(CIRCUIT EG3)

Annotations
① TO BUILDING MANEGEMENT SYSTEM
② FROM BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title
EG_SB
WIRING DIAGRAM

Reference n.
-

Drawing n.
Ee_208

Rev.
0

Sheet n.
Pag.04 seg. 05

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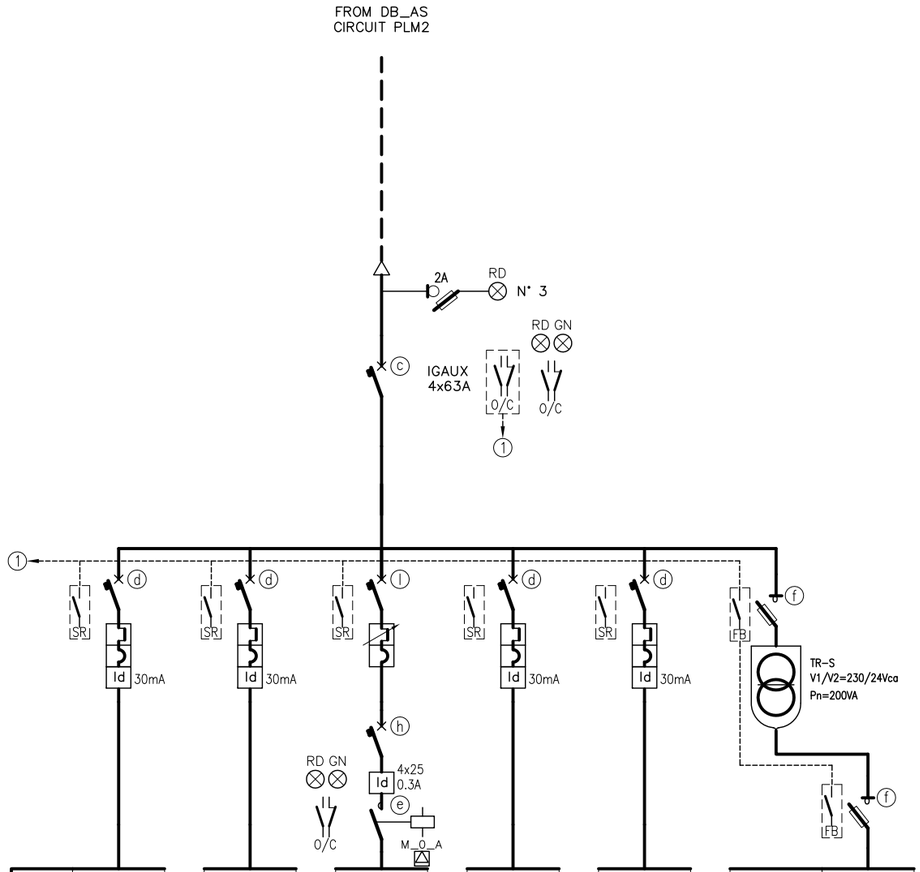
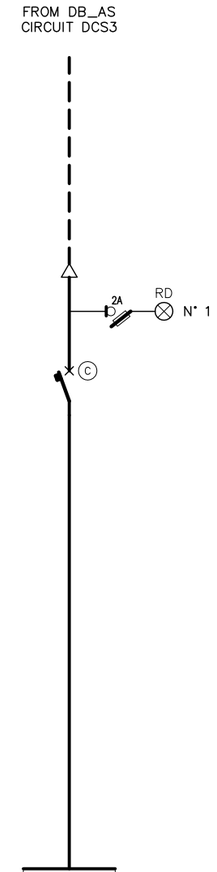




1	AUX1	AUX2	AUX3	AUX4	AUX5	TR–S	AUX6
2	0.3	0.3	0.8			0.2	
3	1.3	1.3	1.1			0.9	
4	2x16	2x10	3x9	2x16	2x16		2x20
5			3x20A/230V				
6			1÷1.4				
7						6A–aM	10A–gG
8	2x2.5	2x2.5	3x2.5			3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kW			H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV
10	5	5	5			5	5
11	RECTIFIER WITH BATTERY EMERGENCY GENERATOR	HEATER EMERGENCY GENERATOR	CHARGING TANK SERVICE PUMP	RISERVA	RISERVA		
12							

1	DC1
2	
3	
4	2x20
5	
6	
7	10A–gG
8	
9	
10	
11	AUXILIARY (24 Vcc)
12	

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

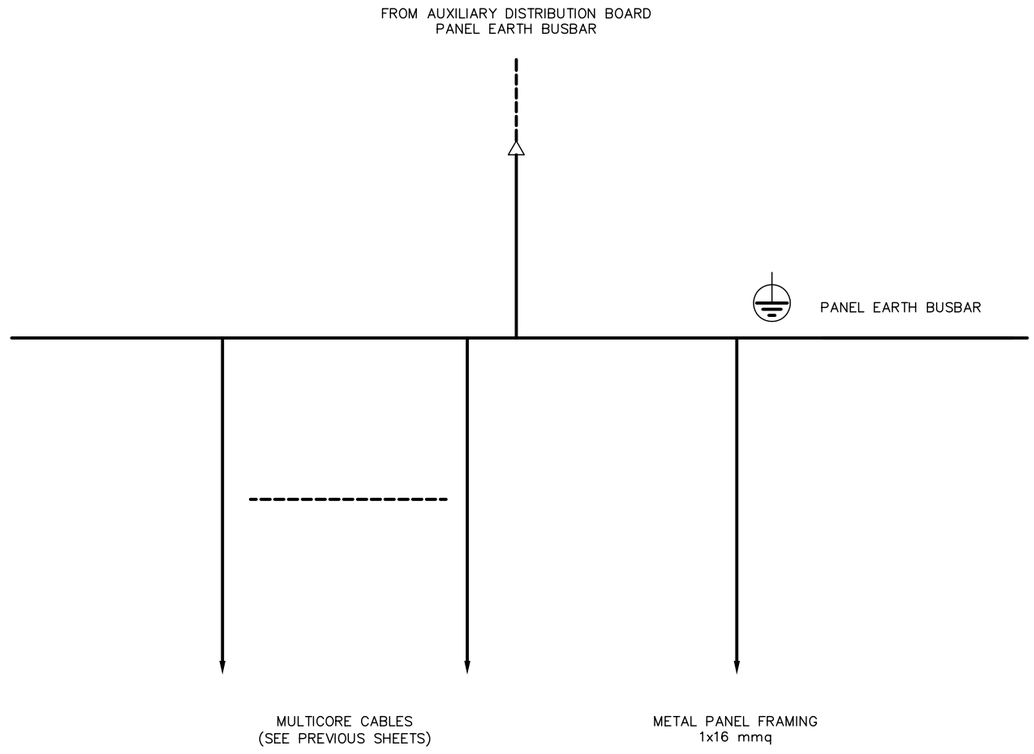
EG_SB
WIRING DIAGRAM

Reference n. -

Drawing n. **Ee_208**

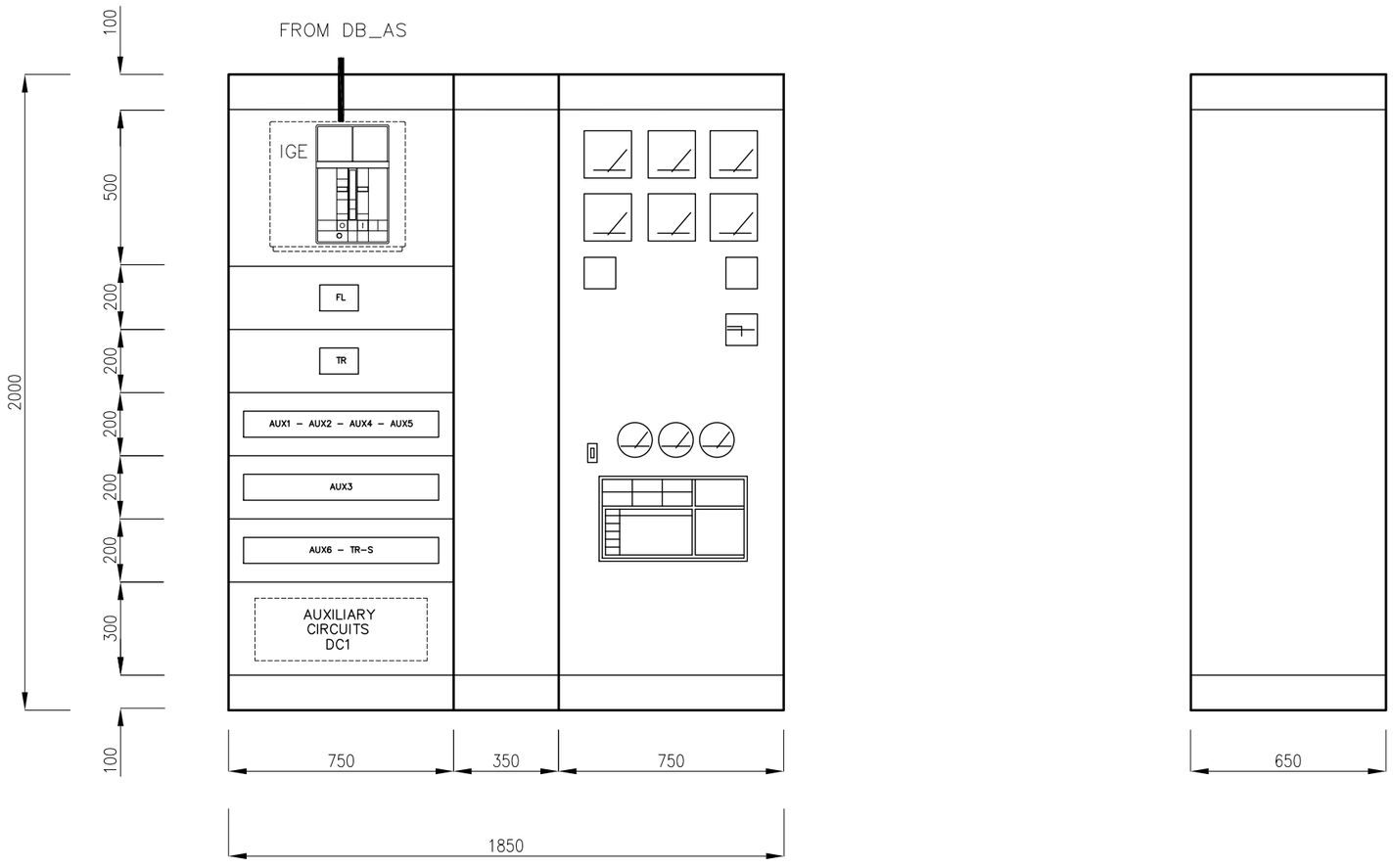
Rev. **0**

Sheet n. Pag.05 seg. 06



Annotations		Title EG_SB EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_208** Rev. **0** / Sheet n. Pag.06 seg. 07

Manens-Tifs INGEGNERIA



Annotations	Manens-Tifs INGEGNERIA	Title EG_SB FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_208** Rev. **0** / Sheet n. Pag.07

INVESTITOR:

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MINISTRY OF THE ENVIRONMENT,
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INSTITUT za protivpožarnu zaštitu, Zaštitu na radu i Zaštitu životne sredine

Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

AUXILIARY SERVICE DISTRIBUTION BOARD
WIRING DIAGRAM DB_AS

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_209_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR. Ee_209

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_209_a.dwg
J.N.	**DRAW:**	**APPROVED:**
926	L. R.	M. C.

	DISCONNECTOR SWITCH	SR O/C D FB LO	SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH	⊗	LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE	nP	AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
Id	RESIDUAL CURRENT RELEASE	V A kW kVAR	DIGITAL INDICATOR INSTRUMENTS		
Id	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL	M O A	SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH	B	OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR	M----	GEARED MOTOR FOR SPRING LOAD		
	PLUG–IN AND DRAW–OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES	△	CABLE TERMINAL		
d L	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE	I/O	DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL	E	EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL	A V f cos W Wh	MULTI INSTRUMENT MEASUREMENT		
RA	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)	S	SELECTIVE CIRCUIT BREAKER		
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
DB_AS
DESCRIPTION OF SYMBOL

Reference n.
-

Drawing n.
Ee_209

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH
ⓑ COMMUTATOR WITH 3 POSITIONS
ⓒ MODULAR DISCONNECTOR SWITCH
ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE
ⓔ POWER CONTACTOR
ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES
ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER
ⓗ RESIDUAL CURRENT RELEASE
ⓘ OVER VOLTAGE DUMPER/LIMITER

Annotations

Manens-Tifs INGEGNERIA

Title
DB_AS
DEVICE LEGEND

Reference n.
-

Drawing n.
Ee_209

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

AUXILIARY SERVICES DISTRIBUTION BOARD

INITIALS

DB_AS

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~6.3kVA	– I~9.1A	(Kc=1)
POWER LOAD NETWORK:	Rp~7.3kVA	– I~10.5A	(Kc=0.3)
UPS NETWORK:	Rp~2.6kVA	– I~3.8A	(Kc=1)
TOTAL:	Rp~16.2kVA	– I~23.4A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>12kA

PANEL STRUCTURE

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

Title

DB_AS
MAIN CHARACTERISTICS

Reference n.

-

Drawing n.

Ee_209

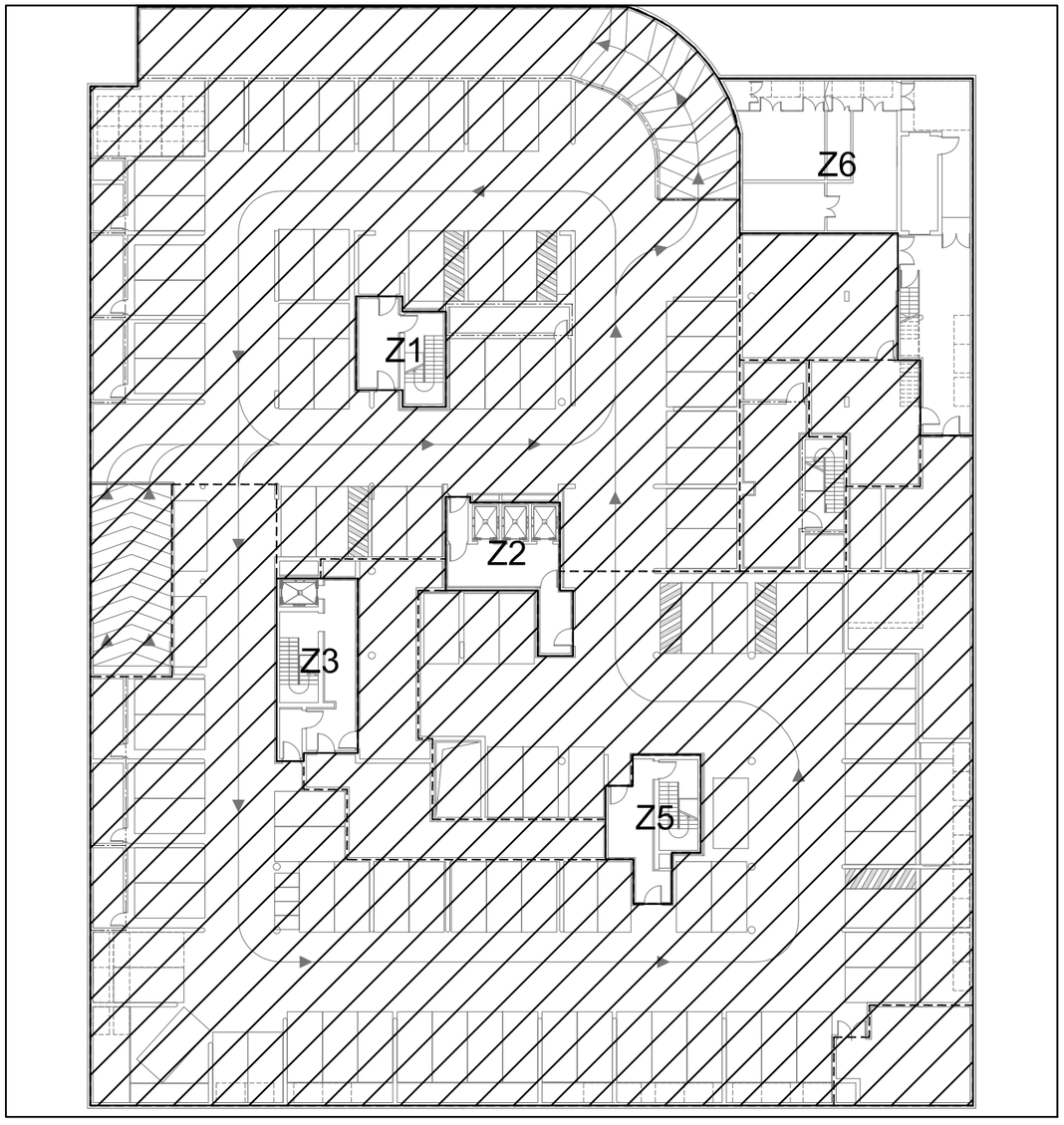
Rev.

0

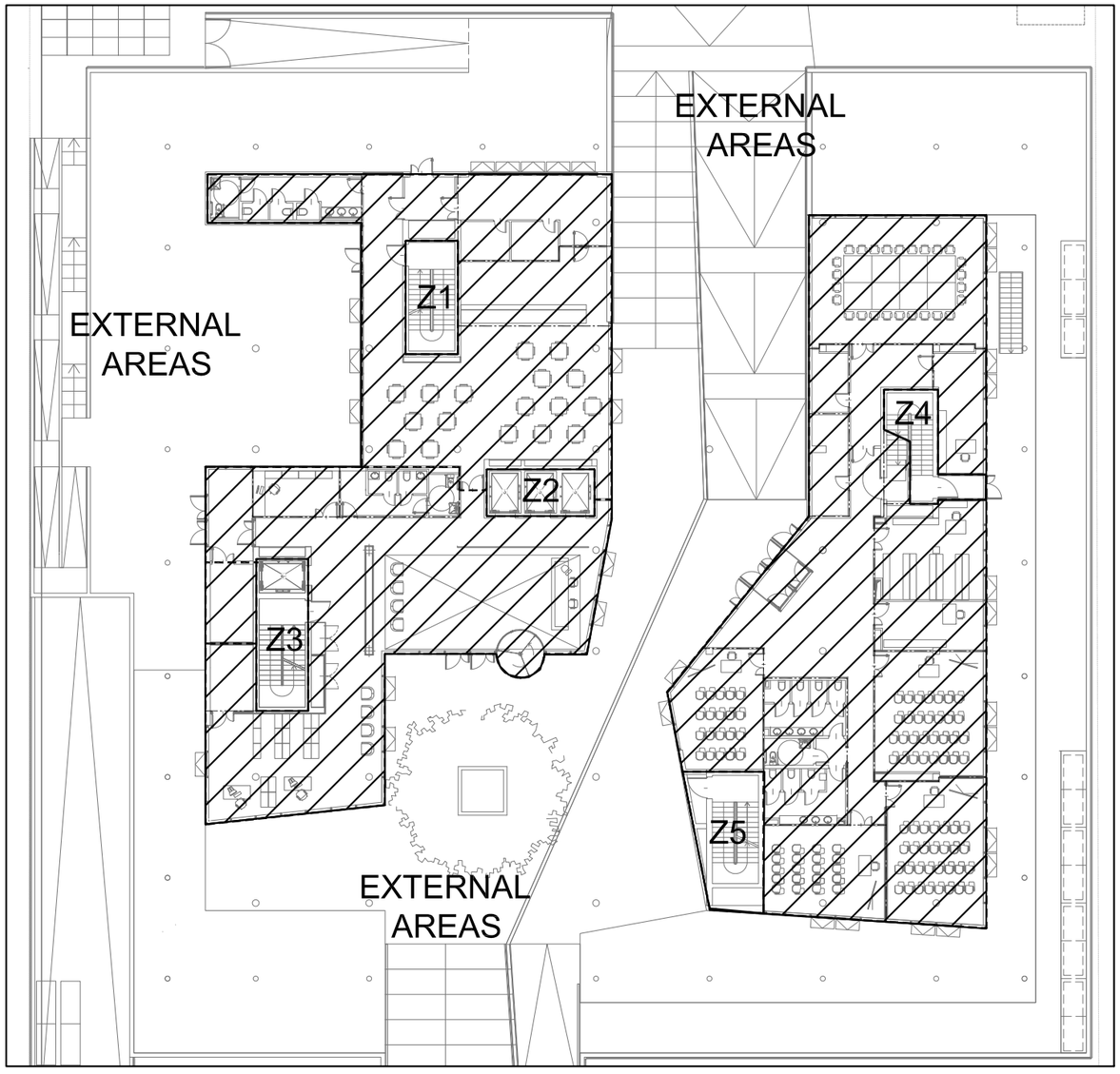
Sheet n.

Pag.03 seg. 04

BASAMENT LEVEL



GROUND LEVEL



Annotations

Manens-Tifs
INGEGNERIA

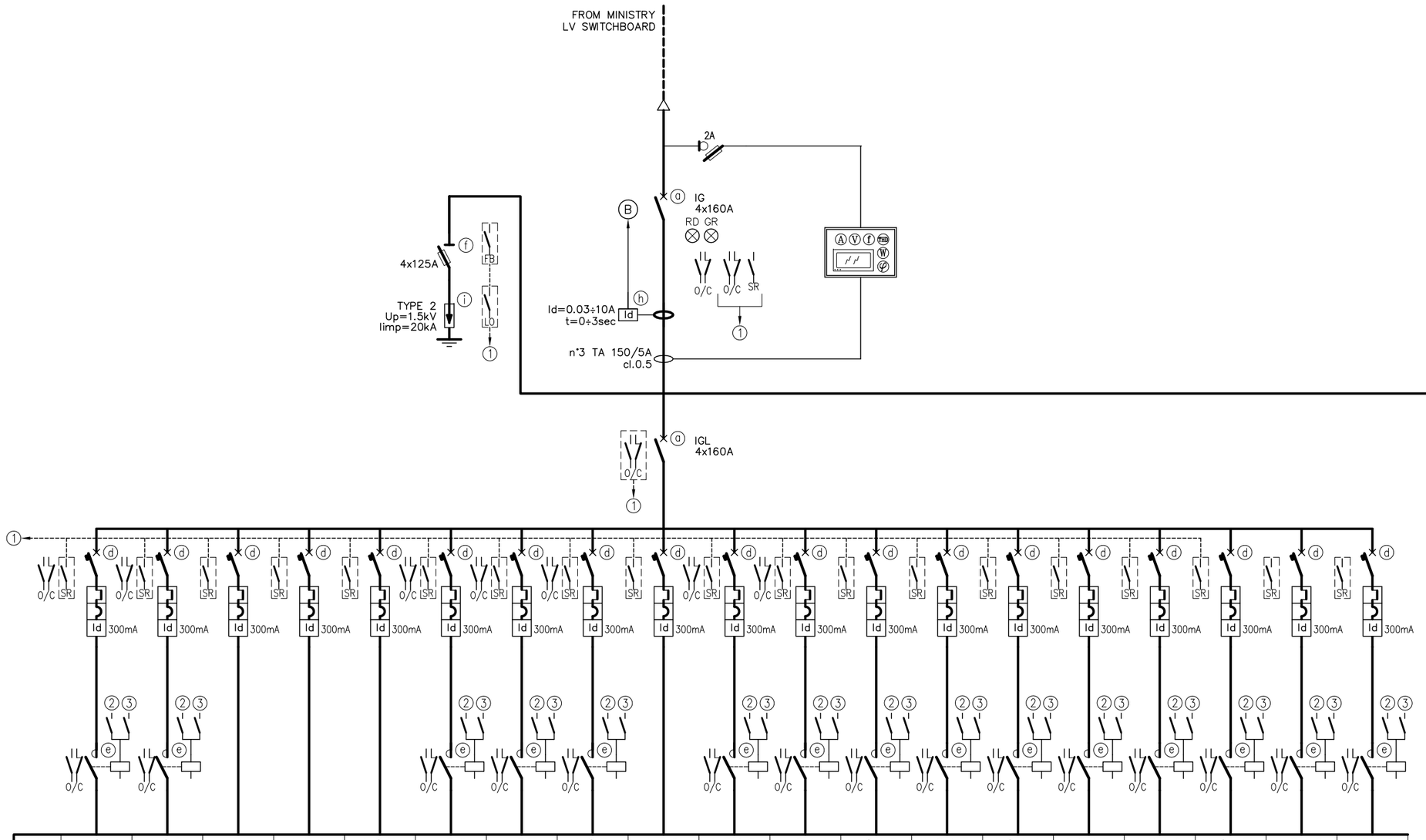
Title
DB_AS
ELECTRICAL ZONES

Reference n.
-

Drawing n.
Ee_209

Rev.
0

Sheet n.
Pag.04 seg. 05



1	LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	LS10	LS11	LS12	LS13	LS14	LS15	LS16	LS17	LS18	LS19
2	0.4	0.2	0.1	0.1	0.1	0.4	0.1	0.3	0.1	0.2	0.4	0.1	1.9	0.8	0.4	0.4	0.3		
3	1.4	0.9	0.5	0.5	0.5	1.4	0.5	1.3	0.5	0.9	1.4	0.5	2.8	3.5	1.8	1.8	1.3		
4	2x10	2x10	2x10	2x10	2x10	2x10	2x10	2x10	2x10	2x10	2x10	2x10	4x10	2x10	2x10	2x10	2x10	2x10	4x10
5												3x12−AC3	4x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	4x12−AC3
6																			
7																			
8	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	5x4	3x4	3x4	3x4	3x4		
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		
10	50+15	60	70	70	70	80+15	95	120	65	25	20	145	170+250	120	190+135	130+65	95+85		
11	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	WATER LIGHTING SYSTEM	OUTDOOR SKYLIGHT SCREENS	OUTDOOR PATHWAY	OUTDOOR SKYLIGHT SCREENS AND RAMP	OUTDOOR PATH	OUTDOOR SKYLIGHT	RESERVE	RESERVE
12	ZONE Z1	ZONE Z2	ZONE Z2	ZONE Z2	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z3	ZONE Z6	ZONE Z6	EXTERNAL AREAS	EXTERNAL AREAS	EXTERNAL AREAS	EXTERNAL AREAS	EXTERNAL AREAS	EXTERNAL AREAS		

Annotations
① TO BUILDING MANEGEMENT SYSTEM
② FROM BUILDING MANEGEMENT SYSTEM COMMAND
③ FROM ZONE COMMAND

Manens-Tifs INGEGNERIA

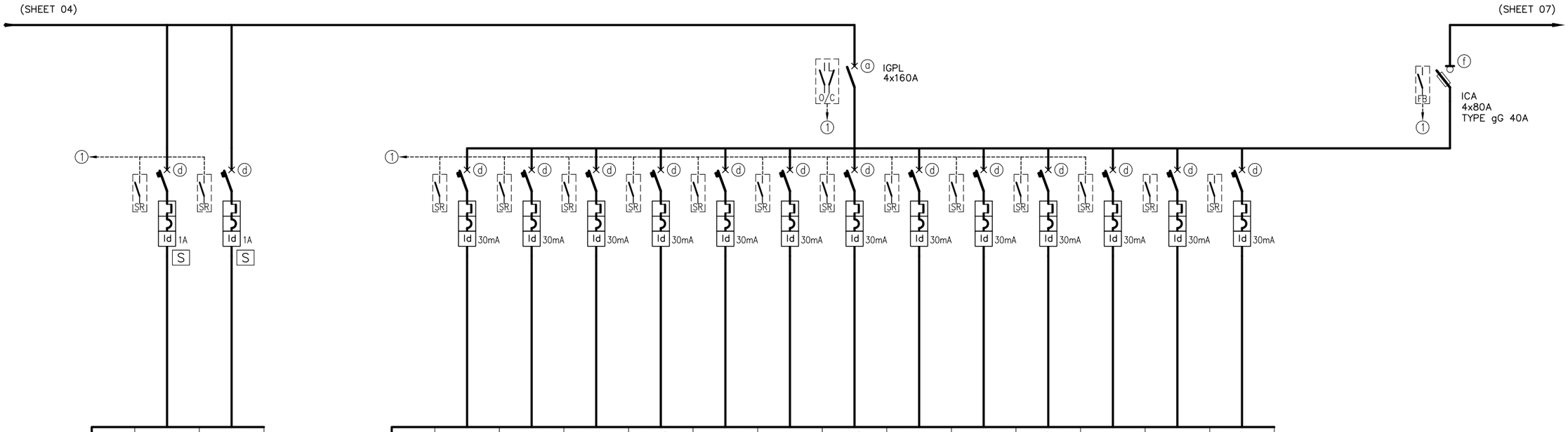
Title
DB_AS
WIRING DIAGRAM

Reference n.
-

Drawing n.
Ee_209

Rev.
0

Sheet n.
Pag.05 seg. 06



1	AS1	AS2
2	4.5	1.6
3	6.5	2.3
4	4x63	4x32
5		
6		
7		
8	5x16	5x10
9	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV
10	40	10
11	EB_FP	EMERGENCY GENERATOR SWITCHBOARD
12	FIRE PROTECTION PUMP STATION	

1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9	PLS10	PLS11	PLS12	PLS13
2	1.2	0.3	1.2	0.9	0.9	1.5	6.0	0.4	0.4	0.4	5.0	3	
3	5.3	1.3	5.3	4.0	4.0	6.5	8.5	1.8	1.8	1.8	7.2	4.3	
4	2x20	2x16	2x20	2x20	2x20	2x20	2x20	2x20	2x20	2x20	2x32	4x16	4x16
5													
6													
7													
8	3x6	3x4	3x6	3x6	3x6	3x6	3x6	3x2.5	3x2.5	3x2.5	3x6	5x6	
9	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	
10	50	60	80	120	25	25	25	50	80	120	5	25	
11	SERVICE SOKET OUTLET	SERVICE SOKET OUTLET	SERVICE SOKET OUTLET	SERVICE SOKET OUTLET	SERVICE SOKET OUTLET	SERVICE SOKET OUTLET	SPLIT UNITS	PRESSURIZATION FILTER	PRESSURIZATION FILTER	PRESSURIZATION FILTER	RECTIFIER WITH BATTERY	VENTILATION FAN	RESERVE
12	ZONE Z1	ZONE Z2	ZONE Z3	ZONE Z5	ZONE Z4–Z6	ZONE Z6	ZONE Z6	ZONE Z1	ZONE Z3	ZONE Z5	SEE SHEET 07	ZONE Z6	

Annotations
① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

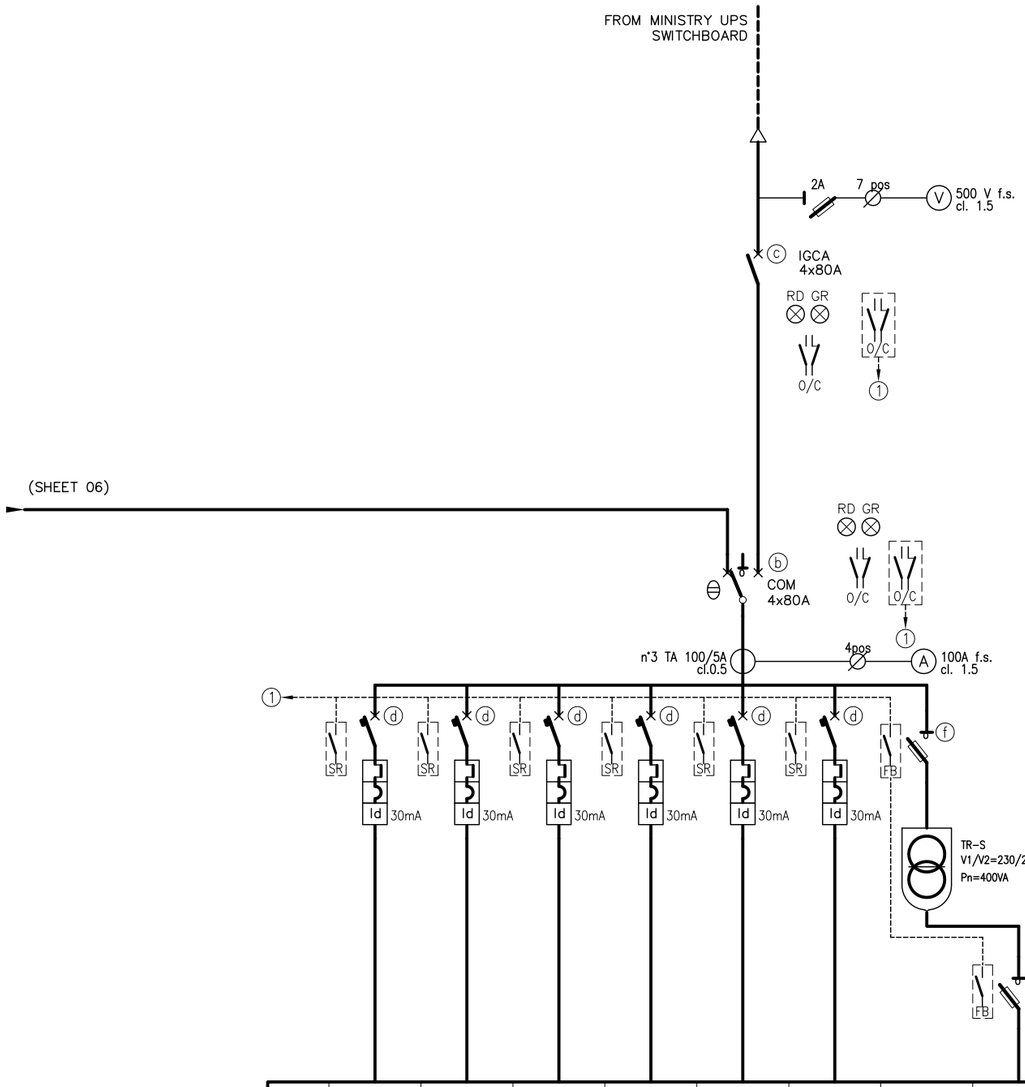
Title
DB_AS
WIRING DIAGRAM

Reference n.
-

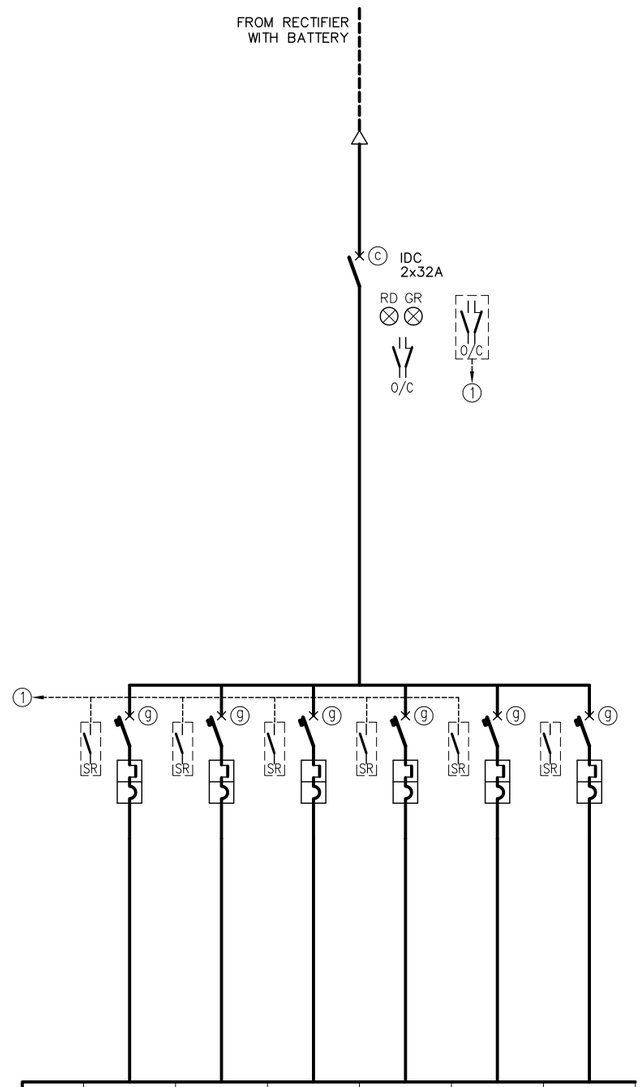
Drawing n.
Ee_209

Rev.
0

Sheet n.
Pag.06 seg. 07



1	US1	US2	US3	US4	US5	US6	TR-S	AUX
2	0.6	0.5	0.1	1.0			0.4	
3	2.6	2.2	0.5	1.5			1.8	
4	2x16 B CURVE	2x16 B CURVE	2x10 B CURVE	2x16 B CURVE	2x16 B CURVE	2x16 B CURVE	2x20	2x20
5								
6								
7							4A-aM	16A-gG
8	3x4	3x4	3x2.5	3x4			3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV			H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	100+200	120+230	120+230	10			5	5
11	DOOR CONTROL MODULE	FIRE DUMPERS AND SMOKE OUT	DOOR OPENER	RACK BMS	RESERVE	RESERVE		
12								



1	DCS1	DCS2	DCS3	DCS4	DCS5	DCS6
2	0.3	0.3	0.3	0.2	0.2	
3	12.5	12.5	12.5	8.3	8.3	
4	2x20	2x20	2x20	2x16	2x16	2x20
5						
6						
7						
8	2x4	2x4	2x4	2x4	2x4	
9	FTG100M1 0.6/1kV	FTG100M1 0.6/1kV	FTG100M1 0.6/1kV	FTG100M1 0.6/1kV	FTG100M1 0.6/1kV	
10		5	10	20	20	
11	MAIN MV SWITCHBOARD AUXILIARY	MAIN LV SWITCHBOARD AUXILIARY	EMERGENCY DIESEL SWITCHBOARD AUXILIARY	MAIN UPS SWITCHBOARD AUXILIARY	SAFETY SERVICES AUXILIARY	RESERVE
12	24Vcc	24Vcc	24Vcc	24Vcc	24Vcc	24Vcc

Annotations
① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title
DB_AS
WIRING DIAGRAM

Reference n.
-

Drawing n.
Ee_209

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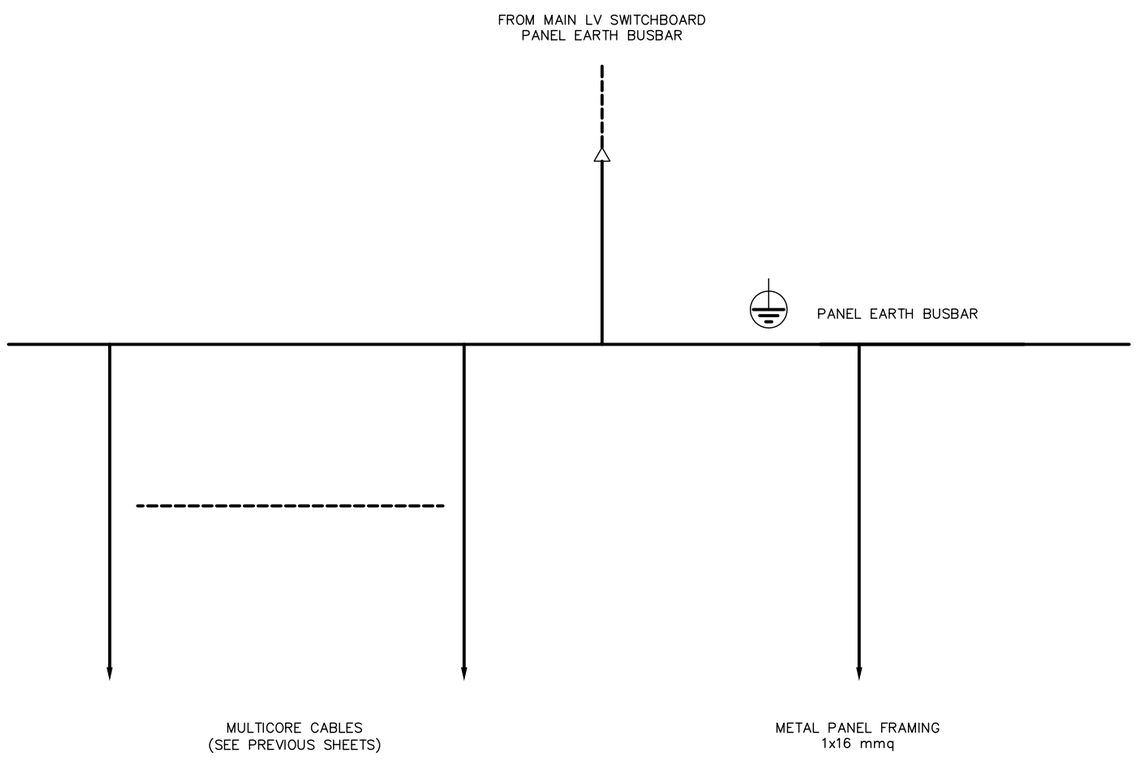
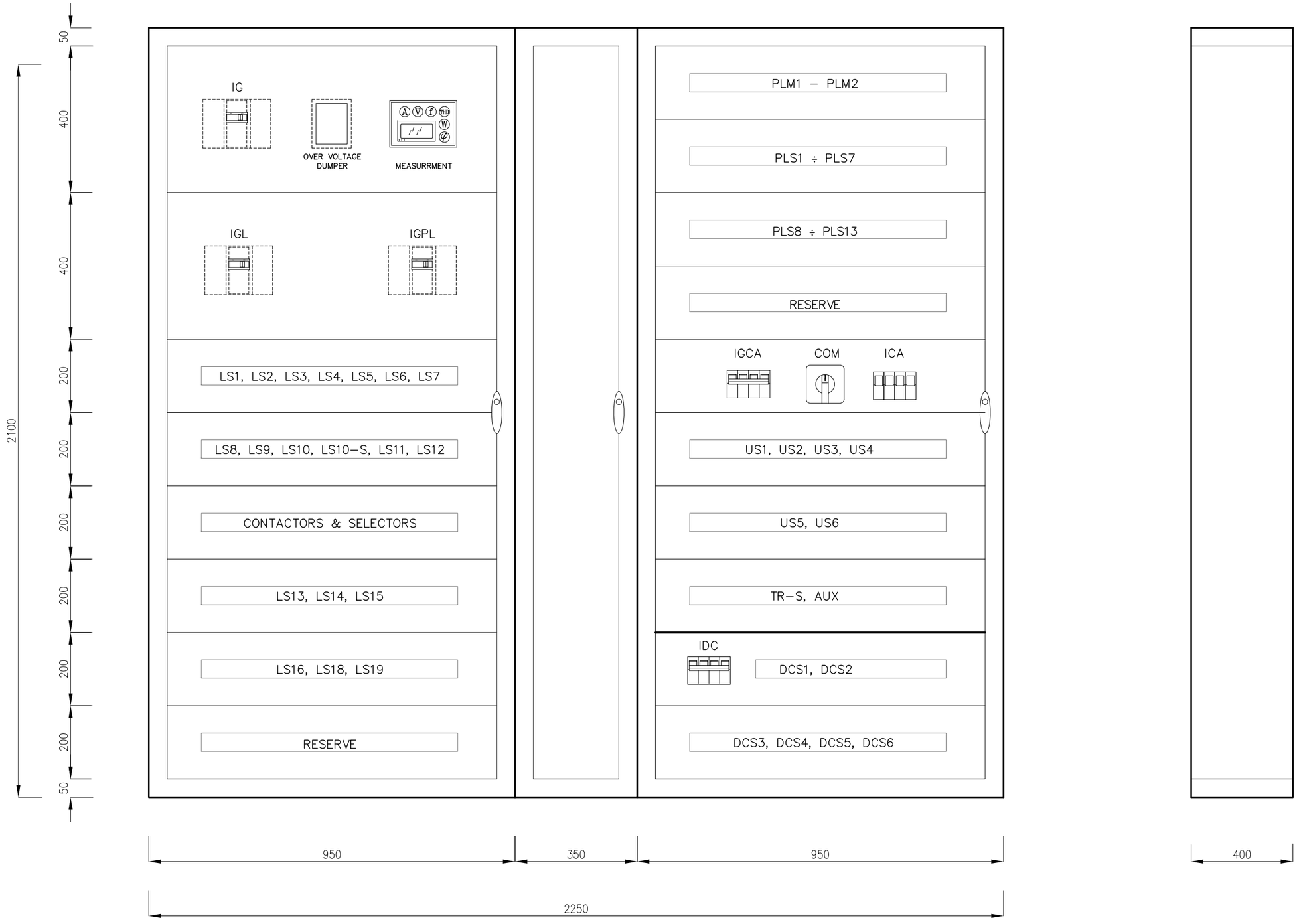
0

Sheet n.
Pag.07 seg. 08



Annotations		Title	Reference n.	Drawing n.
	Manens-Tifs INGEGNERIA	DB_AS EARTH CONNECTION LAYOUT	-	Ee_209
				Rev. 0 / Sheet n. Pag.08 seg. 09



Annotations	Manens-Tifs INGEGNERIA	Title: DB_AS FRONTAL LAYOUT	Reference n.: -	Drawing n.: Ee_209
				Rev.: 0
				Sheet n.: Pag.09

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JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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INSTITUT za protivpožarnu zaštitu, Zaštitu na radu i Zaštitu životne sredine

Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

DISTRIBUTION BOARDS
WIRING DIAGRAM DB_L.../.../...

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR.

Ee_210

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_210.dwg
J.N.	**DRAW:**	**APPROVED:**
926	L. R.	M. C.

	DISCONNECTOR SWITCH	SR O/C D FB LO	SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH	⊗	LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE	nP	AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
Id	RESIDUAL CURRENT RELEASE	V A kW kVAR	DIGITAL INDICATOR INSTRUMENTS		
Id	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL	M O A	SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH	B	OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR	M----	GEARED MOTOR FOR SPRING LOAD		
	PLUG–IN AND DRAW–OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES	△	CABLE TERMINAL		
d L	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE	I/O	DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL	E	EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL	A V f cos W Wh	MULTI INSTRUMENT MEASUREMENT		
RA	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)				
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
DB_L.../.../...
DESCRIPTION OF SYMBOL

Reference n.
-

Drawing
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Sheet n.
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ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH

ⓑ COMMUTATOR WITH 3 POSITIONS

ⓒ MODULAR DISCONNECTOR SWITCH

ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE

ⓔ POWER CONTACTOR

ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES

ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER

ⓗ RESIDUAL CURRENT RELEASE

ⓘ OVER VOLTAGE DUMPER/LIMITER

ⓛ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER WITH ADJUSTABLE THERMAL RELAY

Annotations

Manens-Tifs INGEGNERIA

Title
DB_L.../.../...
DEVICE LEGEND

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

PARKING AREAS DISTRIBUTION BOARD – BASAMENT LEVEL

INITIALS

DB_L–1/P1

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~3.9kVA	– I~5.6A	(Kc=1)
POWER LOAD NETWORK:	Rp~4.4kVA	– I~6.4A	(Kc=0.3)
UPS NETWORK:	Rp~1.5kVA	– I~2.2A	(Kc=0.7)
TOTAL:	Rp~9.8kVA	– I~14.2A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

Title

DB_L-1/P1
MAIN CHARACTERISTICS

Reference n.

-

Drawing

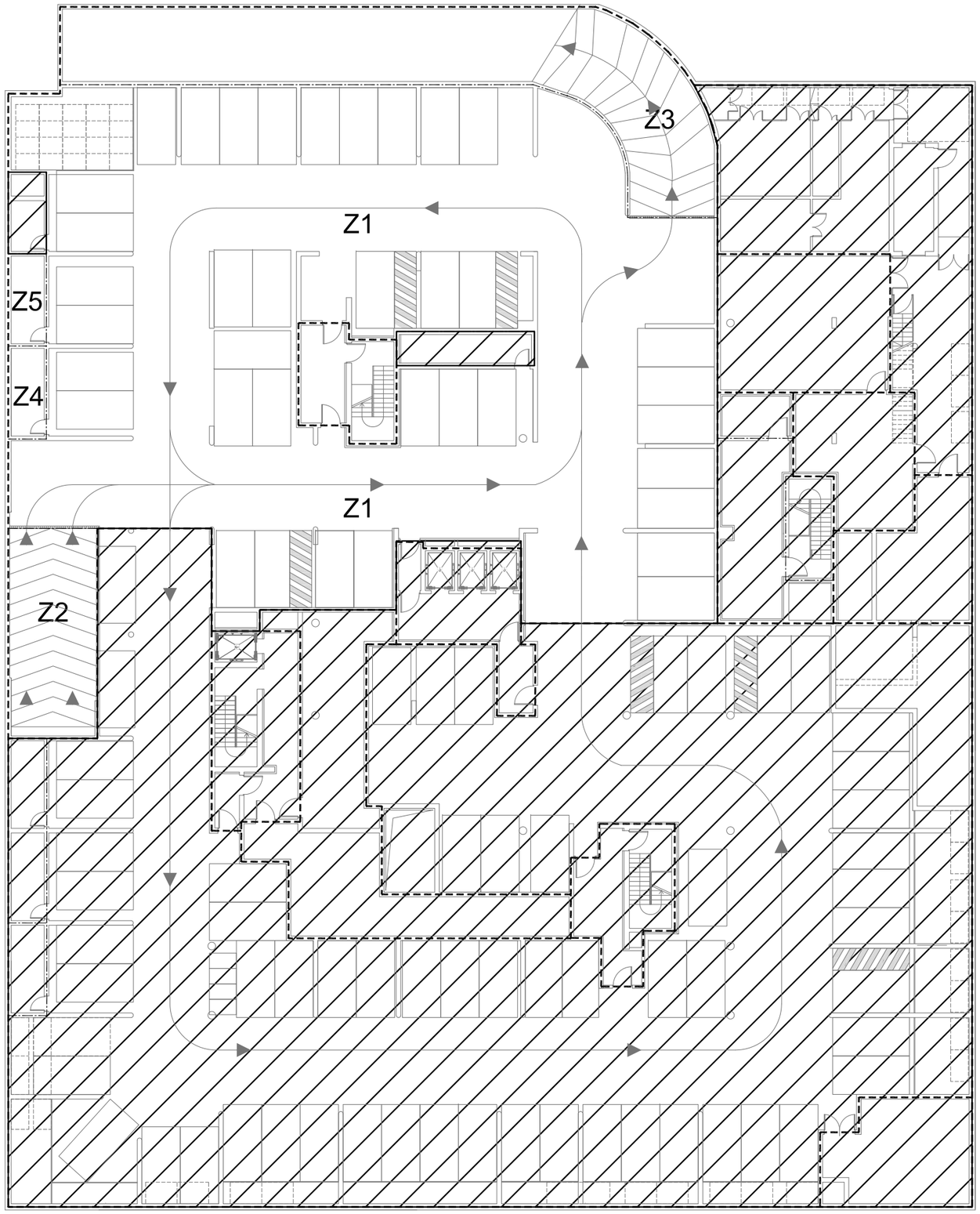
Ee_210

Rev.

0

Sheet n.

Pag.03 seg. 04



Annotations

Manens-Tifs INGEGNERIA

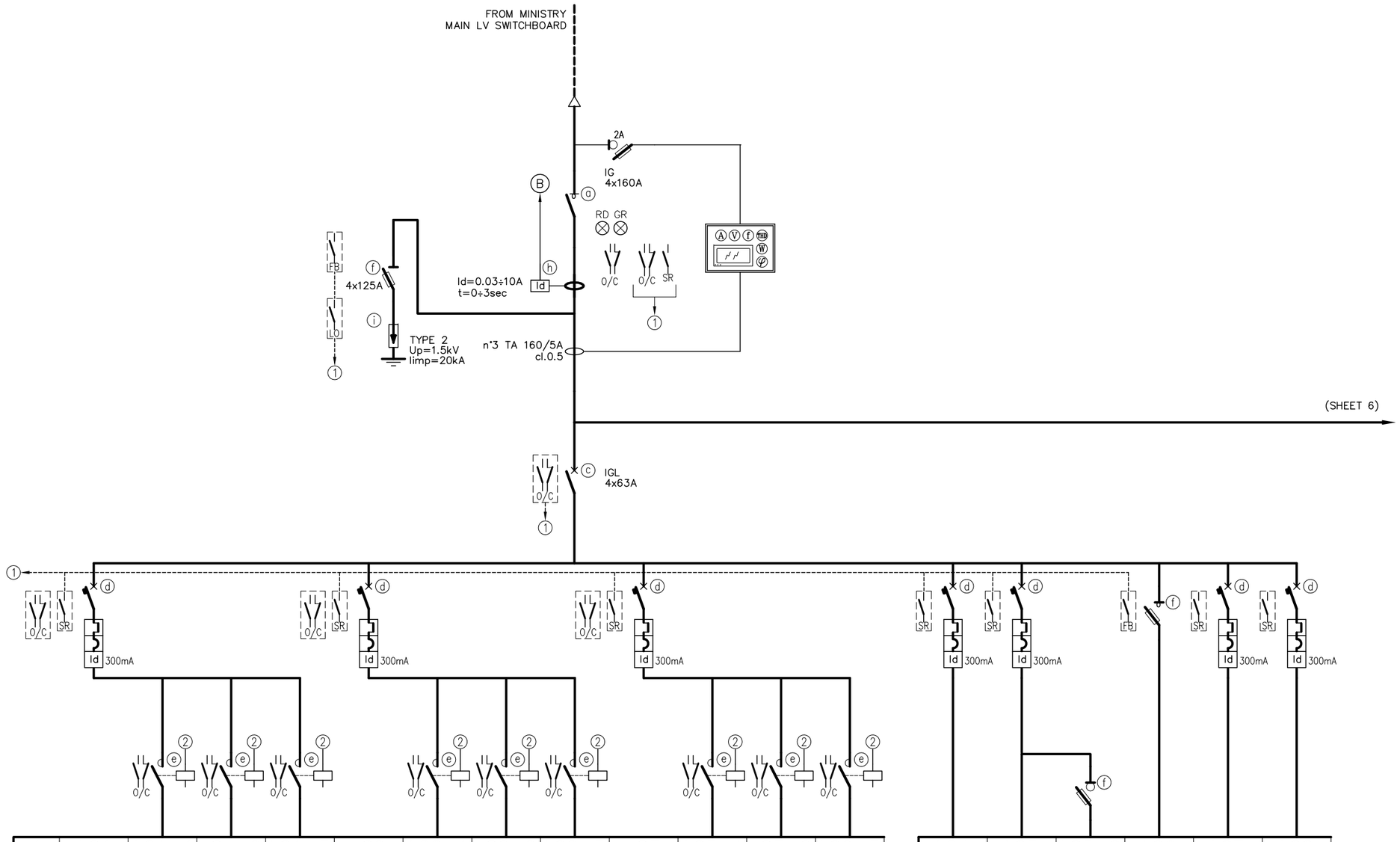
Title
DB_L-1/P1
ELECTRICAL ZONES

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.04 seg. 05



1	LS1	LS1−1	LS1−2	LS1−3	LS2	LS2−1	LS2−2	LS2−3	LS3	LS3−1	LS3−2	LS2−3
2		0.7	0.7	0.7		0.2	0.2	0.2		0.2	0.2	0.3
3		3.1	3.1	3.1		0.9	0.9	0.9		0.9	0.9	1.3
4	4x10				4x10				4x10			
5		3x12−AC3	3x12−AC3	3x12−AC3		3x12−AC3	3x12−AC3	3x12−AC3		3x12−AC3	3x12−AC3	3x12−AC3
6												
7												
8		3x4	3x4	3x4		3x2.5	3x2.5	3x2.5		3x2.5	3x2.5	3x2.5
9		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10		65+30	65+30	65+30		50	50	50		30	30	30
11	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM
12	ZONE Z1	ZONE Z1 CIRCUIT 1	ZONE Z1 CIRCUIT 2	ZONE Z1 CIRCUIT 3	ZONE Z2	ZONE Z2 CIRCUIT 1	ZONE Z2 CIRCUIT 1	ZONE Z2 CIRCUIT 1	ZONE Z3	ZONE Z3 CIRCUIT 1	ZONE Z3 CIRCUIT 1	ZONE Z3 CIRCUIT 1

LS4	LS5	LS5−S	LS6	LS7	LS8
0.2	0.2		0.1		
0.9	0.9		0.4		
1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	4x10
		2A−gG	6A−gG		
3x2.5	3x1x2.5	2x1x2.5	3x1x2.5		
FG70M1 0.6/1kV	H07Z1−K 0.45/0.75kV	H07Z1−K 0.45/0.75kV	H07Z1−K 0.45/0.75kV		
10	5	5	5		
STORAGE ROOM	TECHNICAL ROOM	EMERGENCY LIGHTING	LIGHTING AUXILIARY	RESERVE	RESERVE
ZONE Z4	ZONE Z5	ZONE Z5			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L-1/P1
WIRING DIAGRAM

Reference n.

-

Drawing

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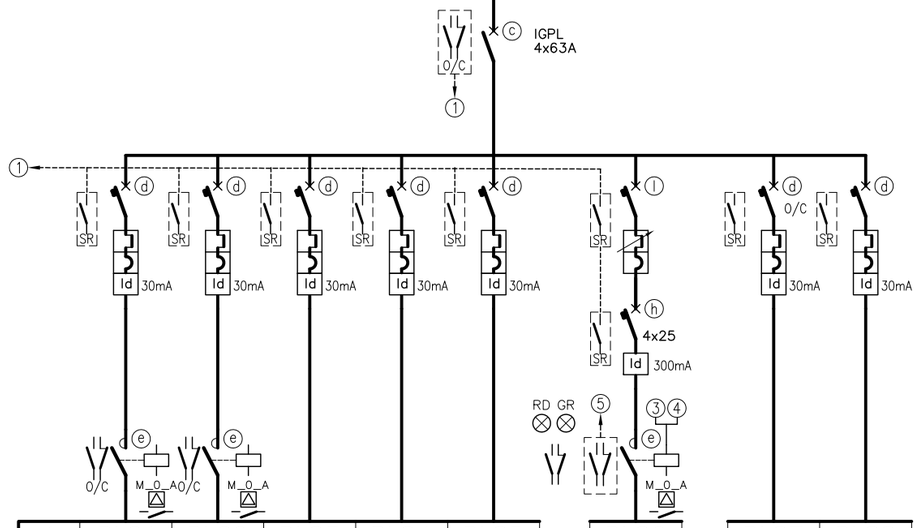
Rev. **0**

Sheet n. Pag.05 seg. 06

(SHEET 5)

(SHEET 7)



1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8
2	5.0	1.5	1.0	1.0	1.2	2.2		
3	7.2	6.5	4.4	4.4	5.2	5.0		
4	4x25	1x25+N	1x25+N	1x16+N	1x16+N	3x25	1x26+N	4x16
5	4x26–AC3	3x26–AC3				3x26–AC3		
6						4÷6.3A		
7								
8	5x6	3x6	3x6	3x4	3x4	4x4		
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FTG10OM1 CEI 20–45		
10	70+20	40+20	10	10	40	25		
11	SERVICE SOCKET OUTLET 3–FASES	SERVICE SOCKET OUTLET	SERVICE SOCKET OUTLET STORAGE ROOM	SPLIT UNIT	HEATER CABLE	EXAUST FAN	RESERVE	RESERVE
12			ZONES Z5					

Annotations
① TO BUILDING MANEGEMENT SYSTEM
② FROM BUILDING MANEGEMENT SYSTEM COMMAND
③ FROM GAS SYSTEM DETECTION
④ FROM FIRE SYSTEM DETECTION
⑤ TO FIRE AND GAS SYSTEM DETECTION

Manens-Tifs INGEGNERIA

Title
DB_L-1/P1
WIRING DIAGRAM

Reference n.
-

Drawing
Ee_210

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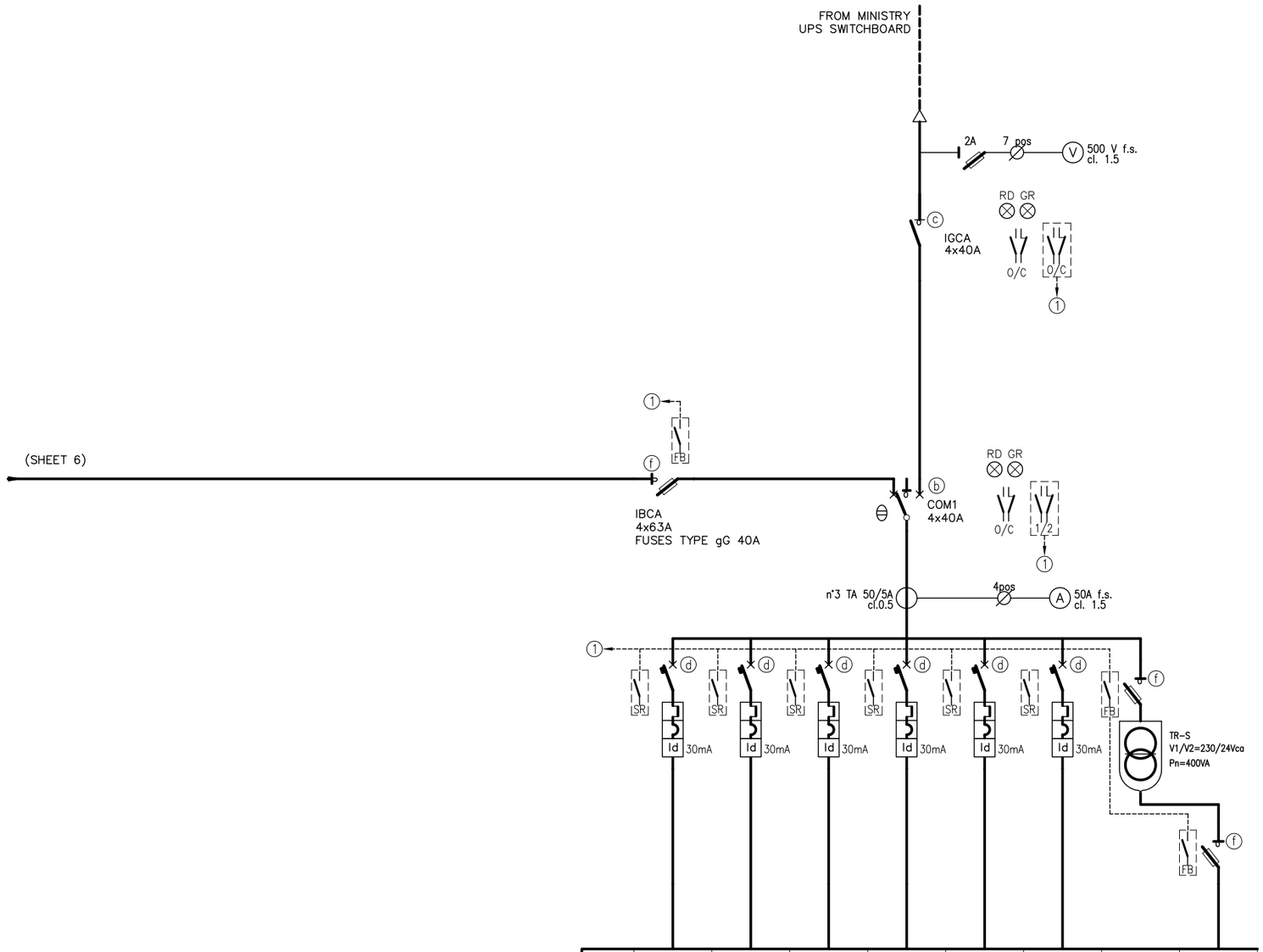
0

Sheet n.
Pag.06 seg. 07



1	US1	US2	US3	US4	US5	US6	TR-S	AUX
2	0.4	0.2	0.1	0.5	0.5		0.4	
3	1.8	0.9	0.5	2.2	2.2		1.8	
4	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x20+N	1x20+N
5								
6								
7							4A-aM	16A-gG
8	3x2.5	3x2.5	3x2.5	3x1x2.5	3x2.5		3x1x2.5	2x1x4
9	FTG10OM1 0.6/1kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	H07Z1-K 0.45/0.75kV	FG7OM1 0.6/1kV		H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	70	60	10	5	45		5	5
11	EXTRA LOW VOLTAGE SYSTEME	DOOR CONTROL MODULE	BMS	DATA RACK	EXIT BARRIER	RESERVE		
12		ACCESS CONTROL SYSTEM						

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs
INGEGNERIA

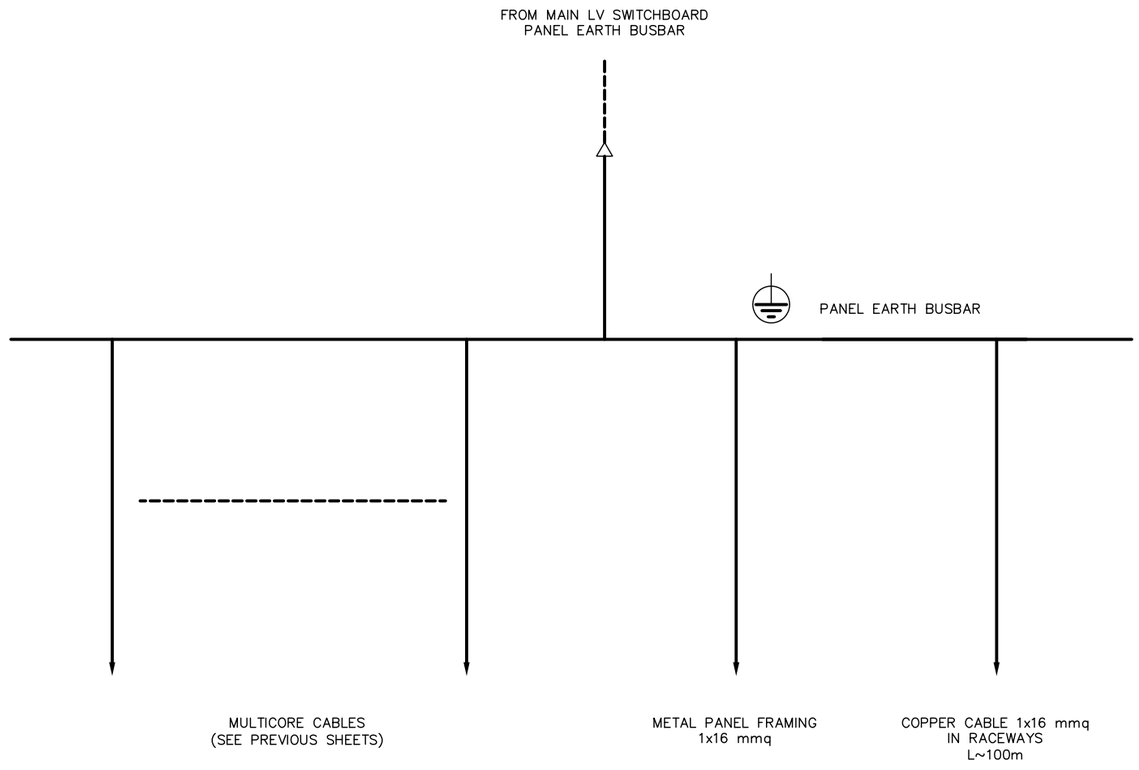
Title
DB_L-1/P1
WIRING DIAGRAM

Reference n.
-

Drawing
Ee_210

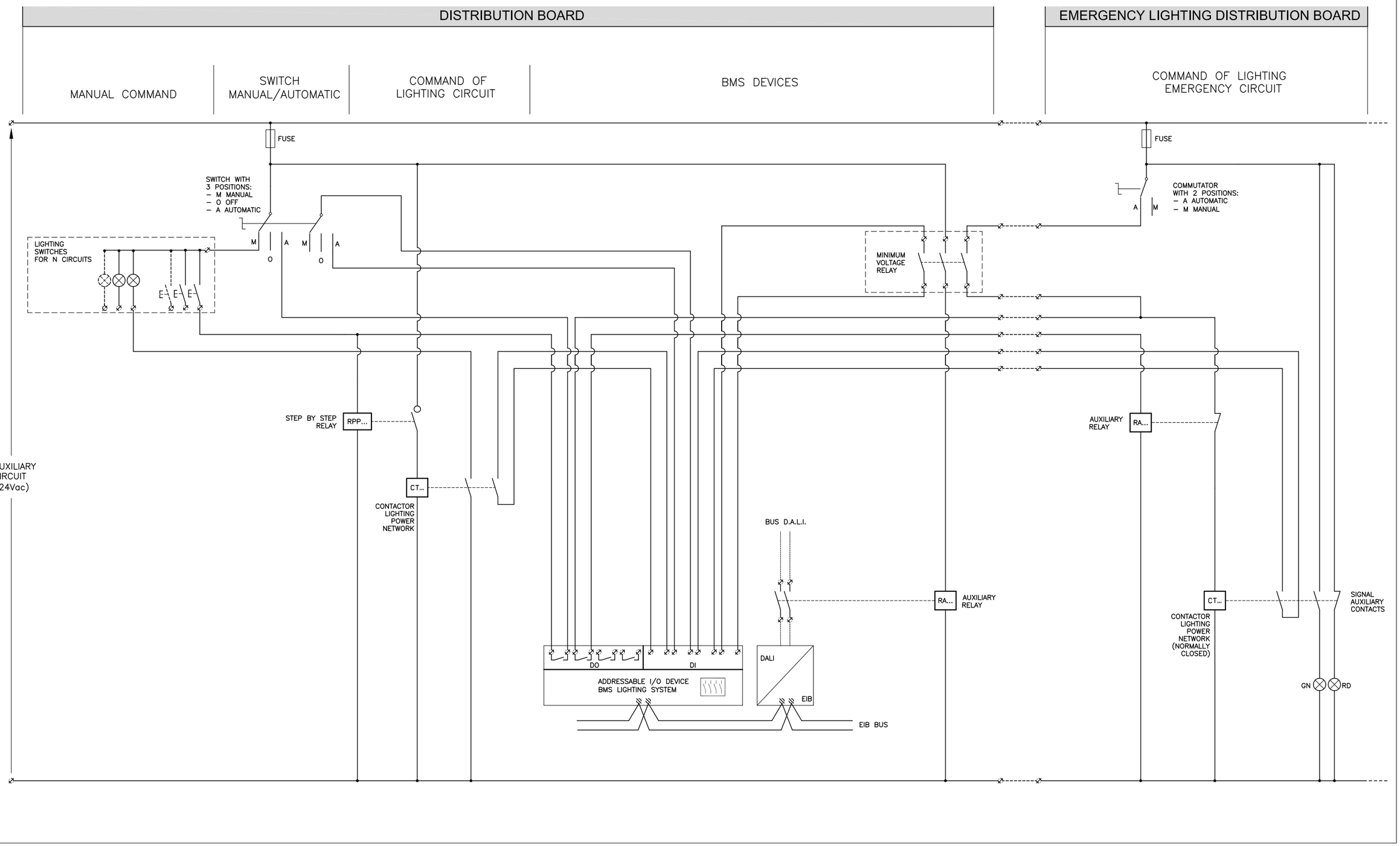
Rev.
0

Sheet n.
Pag.07 seg. 08

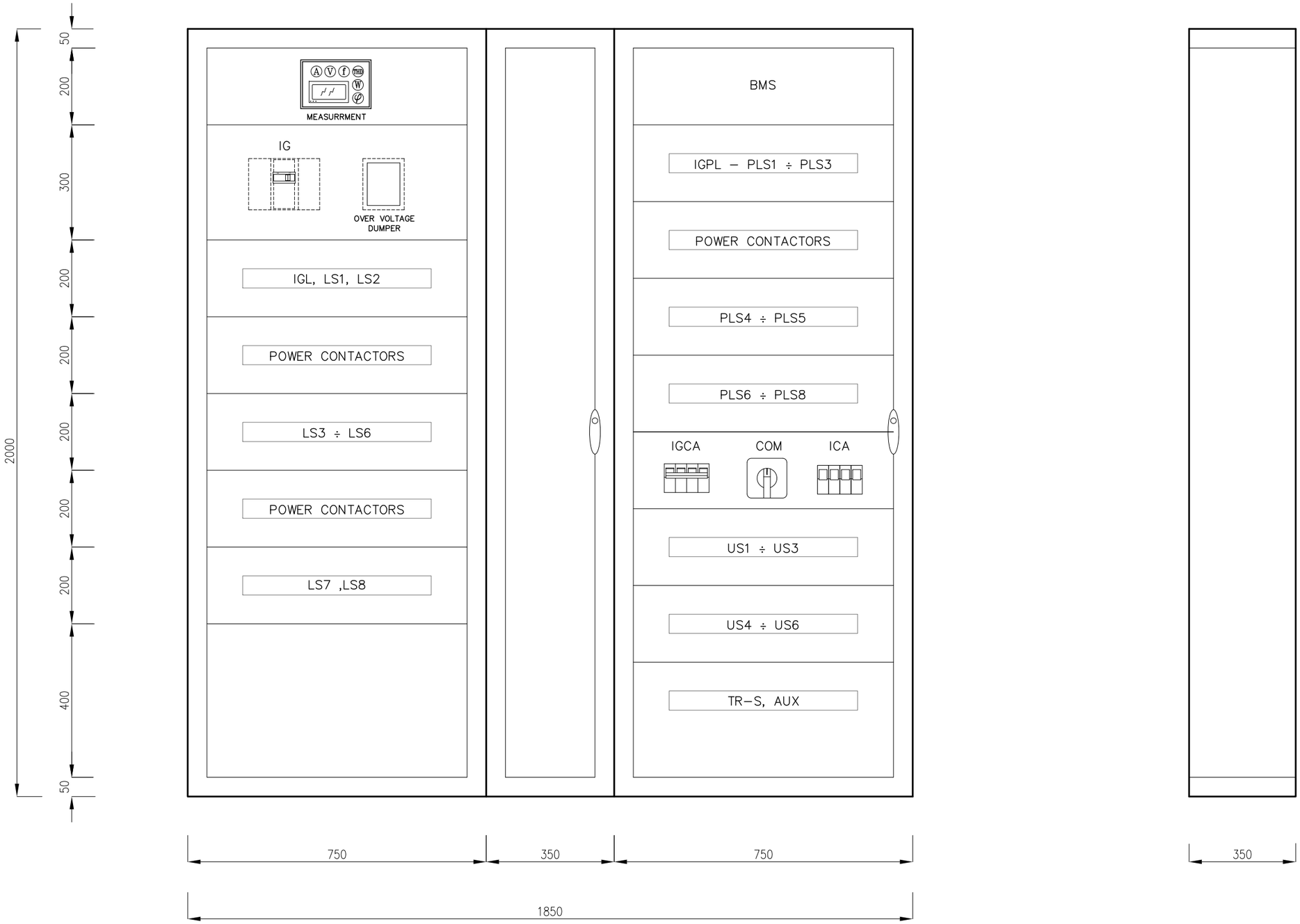


Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P1 EARTH CONNECTION LAYOUT	Reference n. -	Drawing **Ee_210** Rev. **0** · Sheet n. Pag.08 seg. 09

LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P1 TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	Reference n. -	Drawing Ee_210	
				Rev. 0	Sheet n. Pag.09 seg. 10



Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P1 FRONTAL LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 · Sheet n. Pag.10 seg. 11

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

PARKING AREAS DISTRIBUTION BOARD – BASAMENT LEVEL

INITIALS

DB_L–1/P2

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~3.8kVA	– I~5.5A	(Kc=1)
POWER LOAD NETWORK:	Rp~5.5kVA	– I~7.9A	(Kc=0.3)
UPS NETWORK:	Rp~1.8kVA	– I~2.6A	(Kc=0.7)
TOTAL:	Rp~11.1kVA	– I~16.0A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

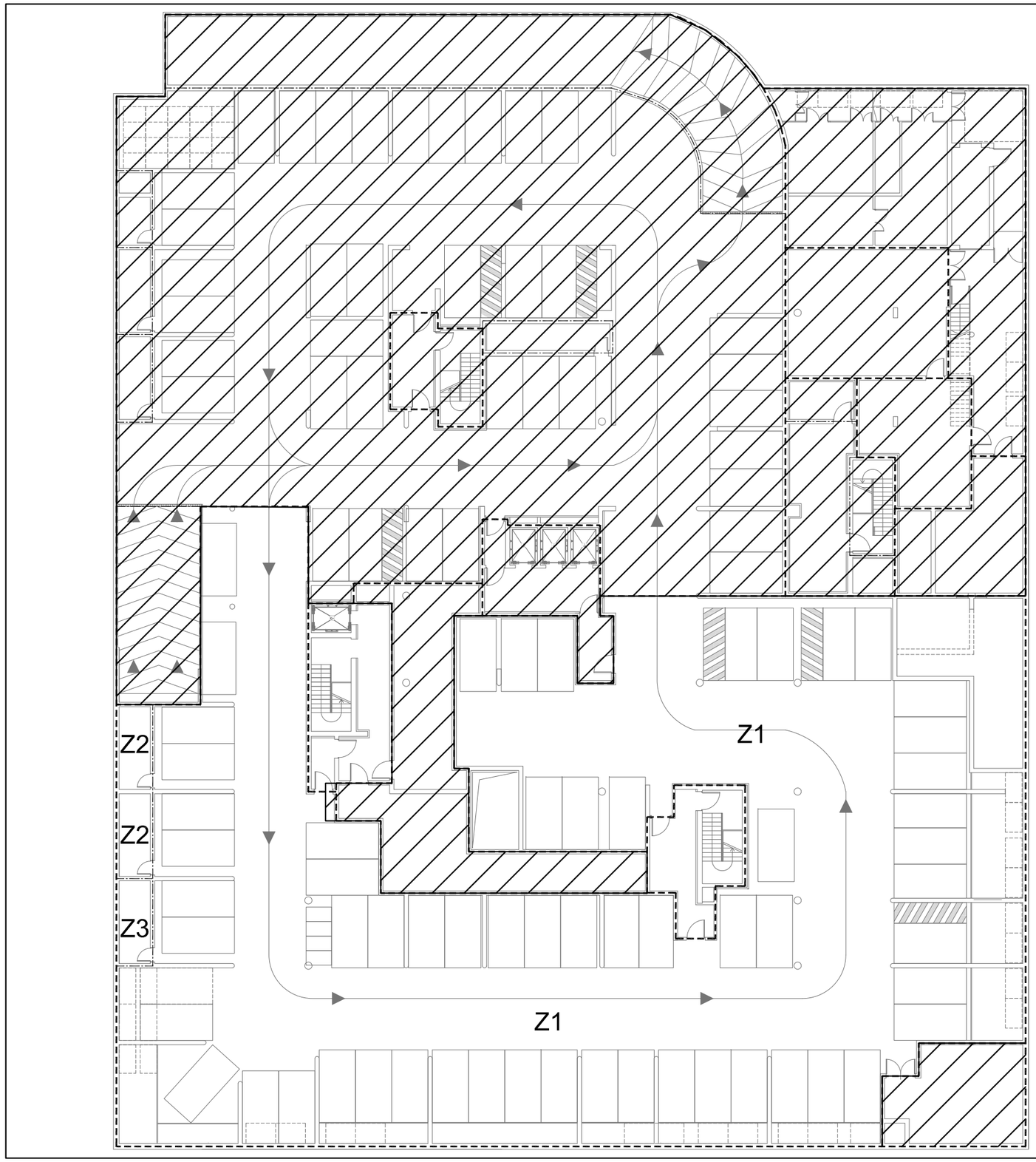
Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L-1/P2
ELECTRICAL ZONES

Reference n.
-

Drawing
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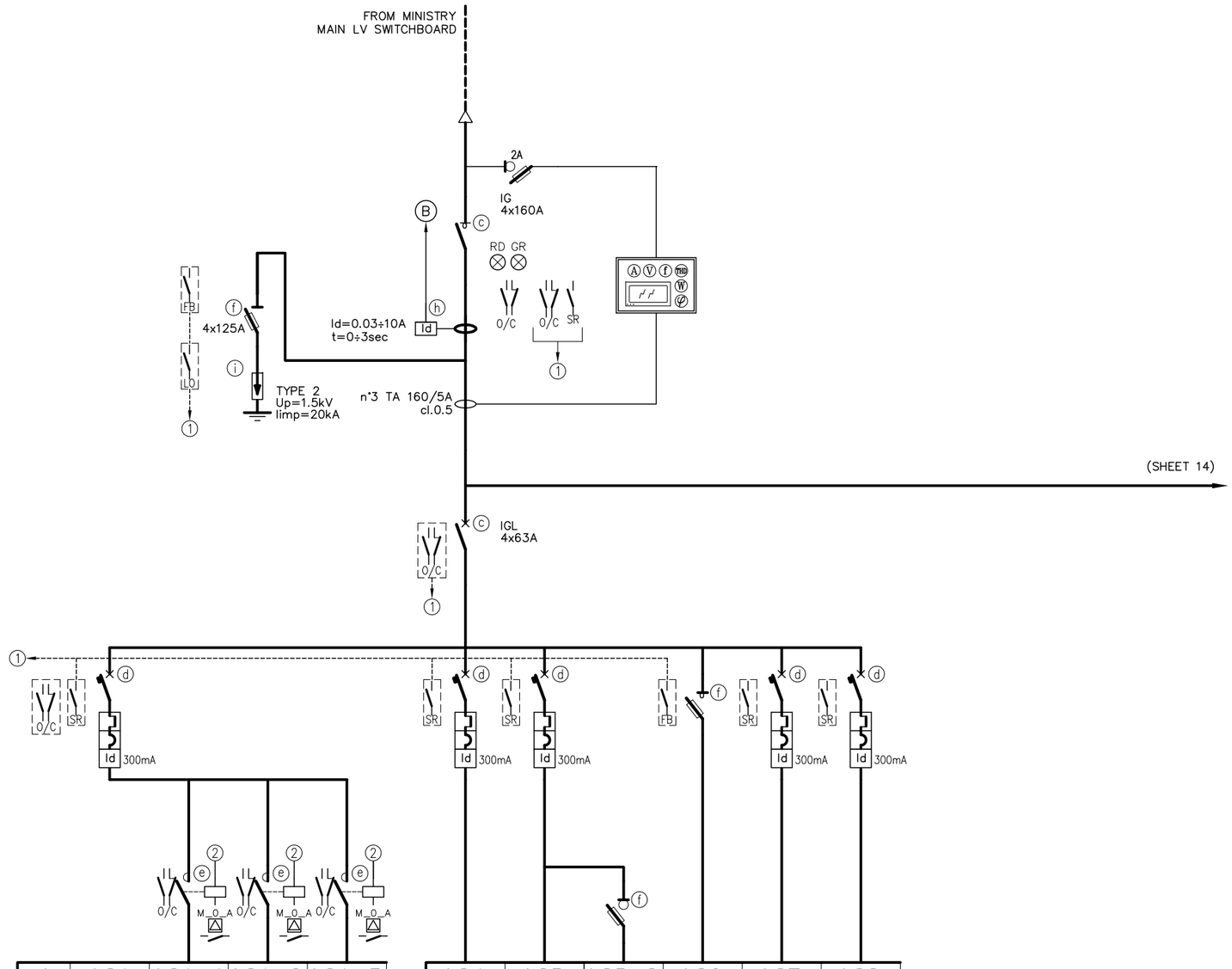
0

Sheet n.
Pag.12 seg. 13



1	LS1	LS1−1	LS1−2	LS1−3
2		1.1	1.1	1.1
3		4.8	4.8	4.8
4	4x10			
5		3x12−AC3	3x12−AC3	3x12−AC3
6				
7				
8		3x4	3x4	3x4
9		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10		80+50	80+50	80+50
11	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM
12	ZONE Z1	ZONE Z1 CIRCUIT 1	ZONE Z1 CIRCUIT 2	ZONE Z1 CIRCUIT 3

LS4	LS5	LS5−S	LS6	LS7	LS8
0.2	0.2		0.1		
0.9	0.9		0.4		
1x10+N	1x10+N	1x20+N	1x20+N	1x10+N	4x10
		2A−gG	6A−gG		
3x2.5	3x1x2.5	2x1x2.5	3x1x2.5		
FG70M1 0.6/1kV	H07Z1−K 0.45/0.75kV	H07Z1−K 0.45/0.75kV	H07Z1−K 0.45/0.75kV		
10	5	5	5		
STORAGE ROOM	TECHNICAL ROOM	EMERGENCY LIGHTING	LIGHTING AUXILIARY	RESERVE	RESERVE
ZONE Z2	ZONE Z3	ZONE Z3			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L-1/P2
WIRING DIAGRAM

Reference n.

-

Drawing

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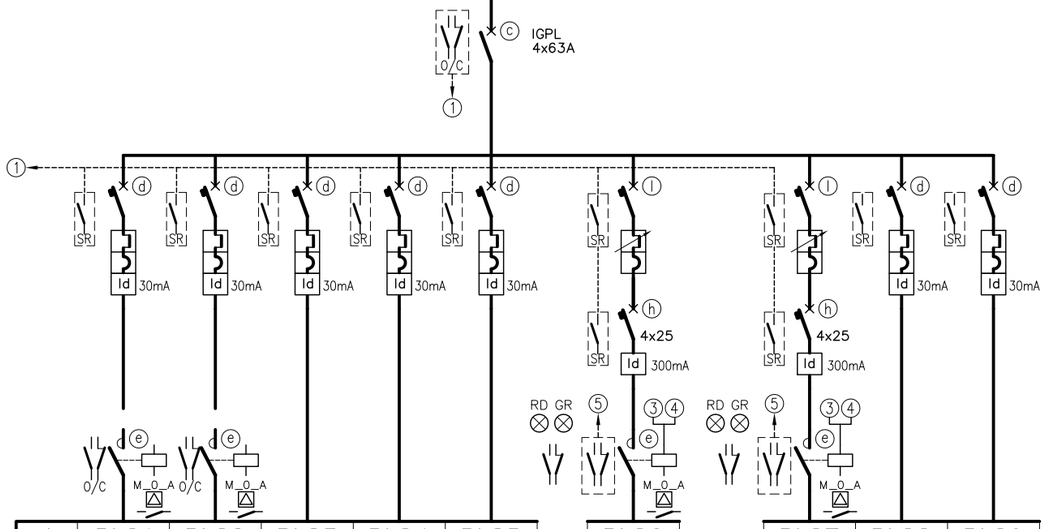
0

Sheet n.

Pag.13 seg. 14

(SHEET 13)

(SHEET 15)



1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9
2	7.5	2.0	1.5	1.0	1.2	2.2	2.2		
3	10.8	8.7	6.5	4.4	5.2	5.0	5.0		
4	4x25	1x25+N	1x25+N	1x16+N	1x16+N	3x25	3x25	1x16+N	4x16
5	4x26–AC3	3x26–AC3				3x26–AC3	3x26–AC3		
6						4÷6.3A	4÷6.3A		
7									
8	5x6	3x6	3x6	3x4	3x4	4x4	4x4		
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FTG100M1 CEI 20–45	FTG100M1 CEI 20–45		
10	60+50	50+30	10	10	40	25	65		
11	SERVICE SOCKET OUTLET 3–FASES	SERVICE SOCKET OUTLET	SERVICE SOCKET OUTLET STORAGE ROOM	SPLIT UNIT	HEATER CABLE	EXAUST FAN	EXAUST FAN	RESERVE	RESERVE
12			ZONES Z2						

Annotations
① TO BUILDING MANEGEMENT SYSTEM
② FROM BUILDING MANEGEMENT SYSTEM COMMAND
③ FROM GAS SYSTEM DETECTION
④ FROM FIRE SYSTEM DETECTION
⑤ TO FIRE AND GAS SYSTEM DETECTION

Manens-Tifs INGEGNERIA

Title
DB_L-1/P2
WIRING DIAGRAM

Reference n.
-

Drawing
Ee_210

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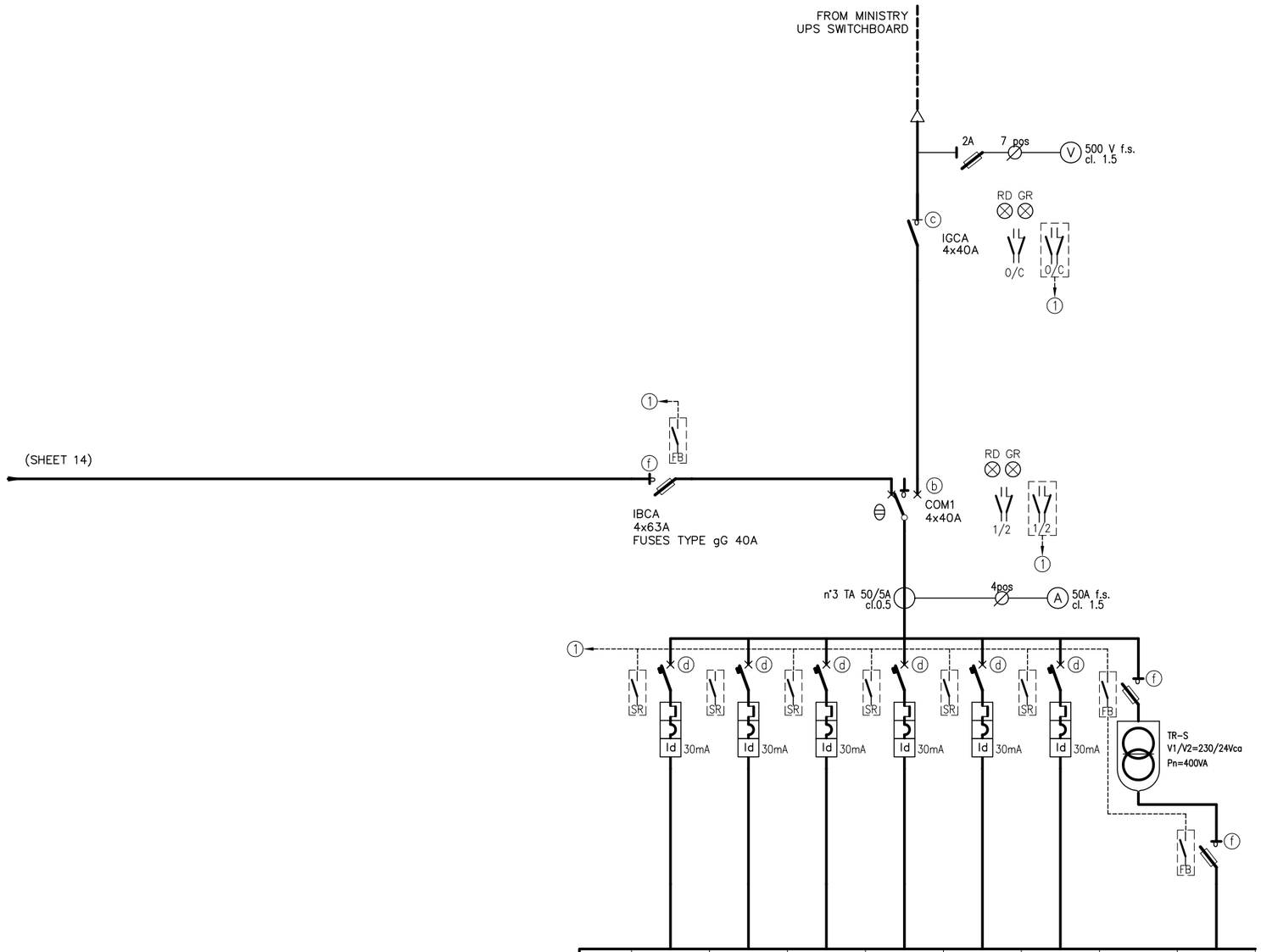
Sheet n.
Pag.14 seg. 15



1	US1	US2	US3	US4	US5	US2	TR-S	AUX
2	0.4		0.1	0.5	1.0	0.2	0.4	
3	1.8		0.5	2.2	4.4	0.9	1.8	
4	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x20+N	1x20+N
5								
6								
7							4A-aM	16A-gG
8	3x2.5		3x2.5	3x1x2.5	3x2.5	3x2.5	3x1x2.5	2x1x4
9	FTG10OM1 0.6/1kV		FG7OM1 0.6/1kV	H07Z1-K 0.45/0.75kV	FG7OM1 0.6/1kV	FG7OM1 0.6/1kV	H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	60+50		10	5	50	50	5	5
11	EXTRA LOW VOLTAGE SYSTEME	RESERVE	BMS	DATA RACK	ACCESS BARRIERS	DOOR CONTROL MODULE		
12						ACCESS CONTROL SYSTEM		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L-1/P2
WIRING DIAGRAM

Reference n.

-

Drawing

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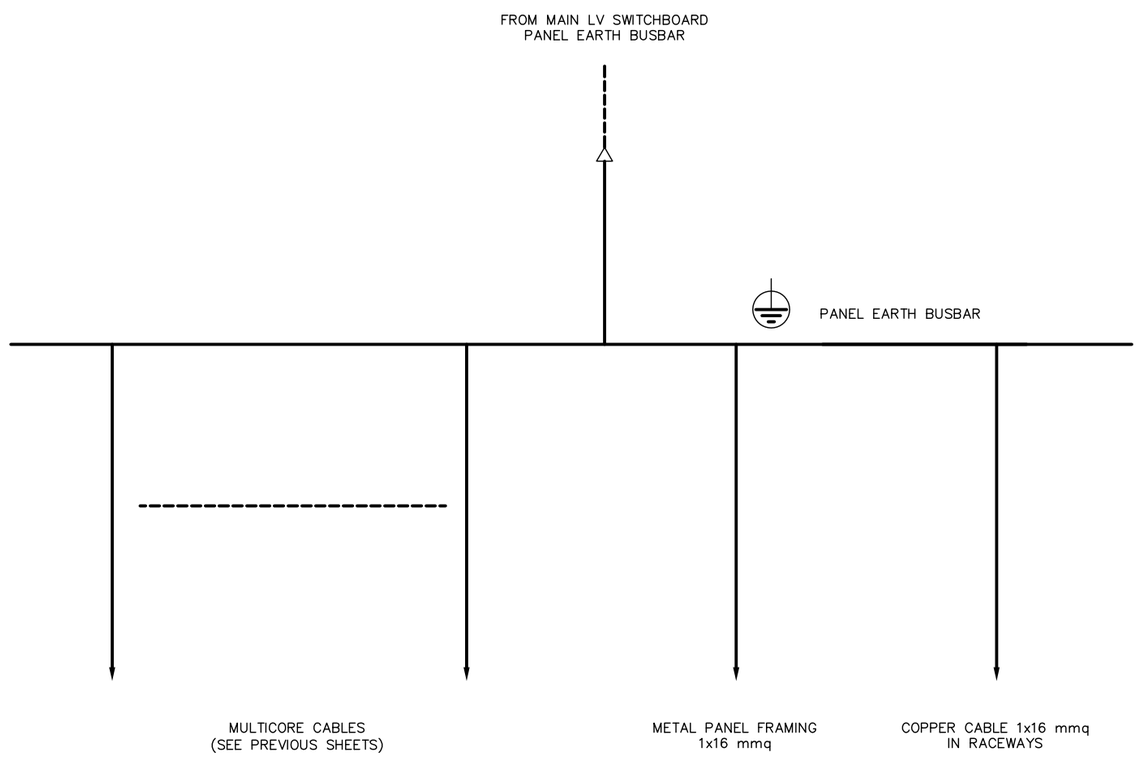
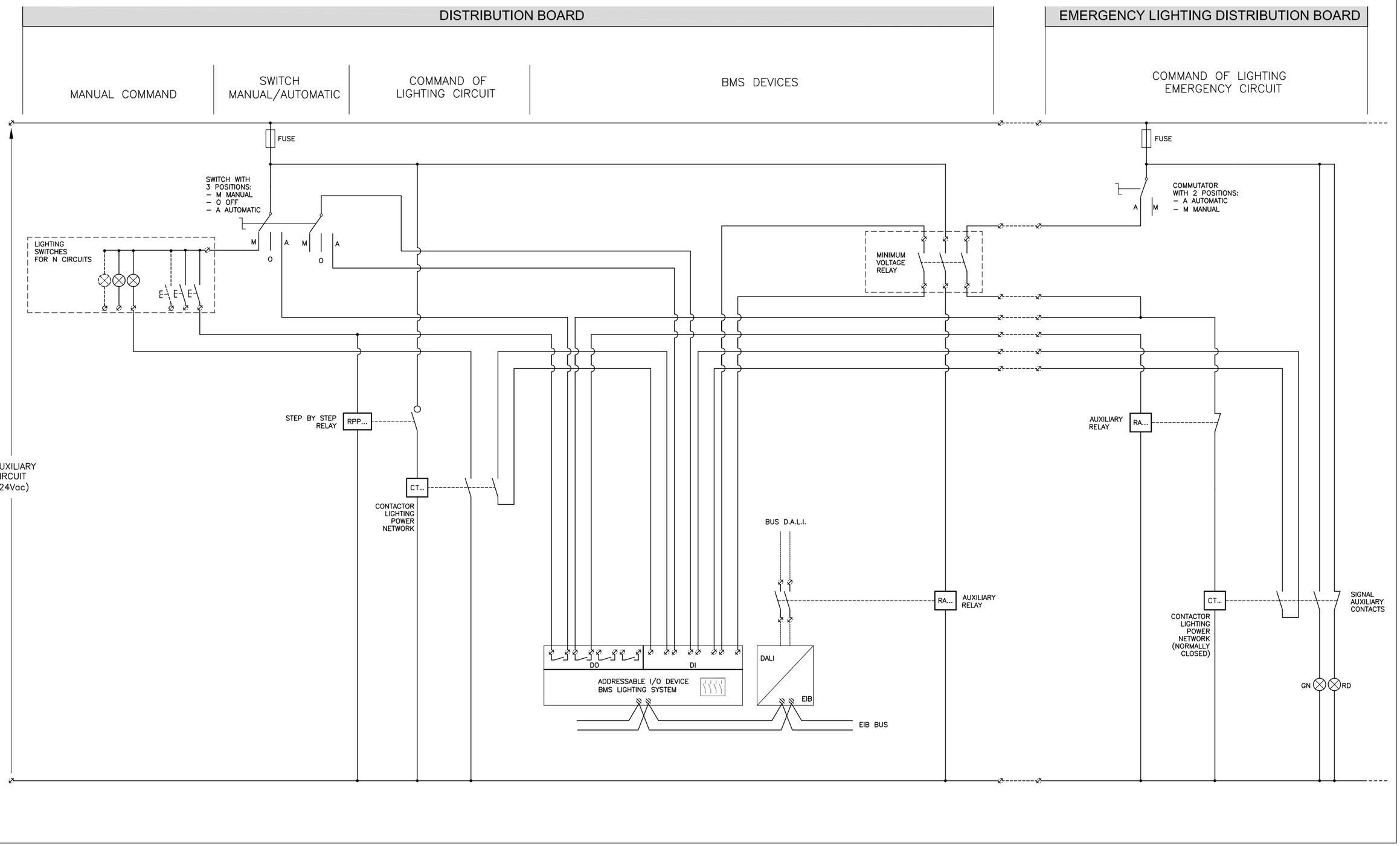
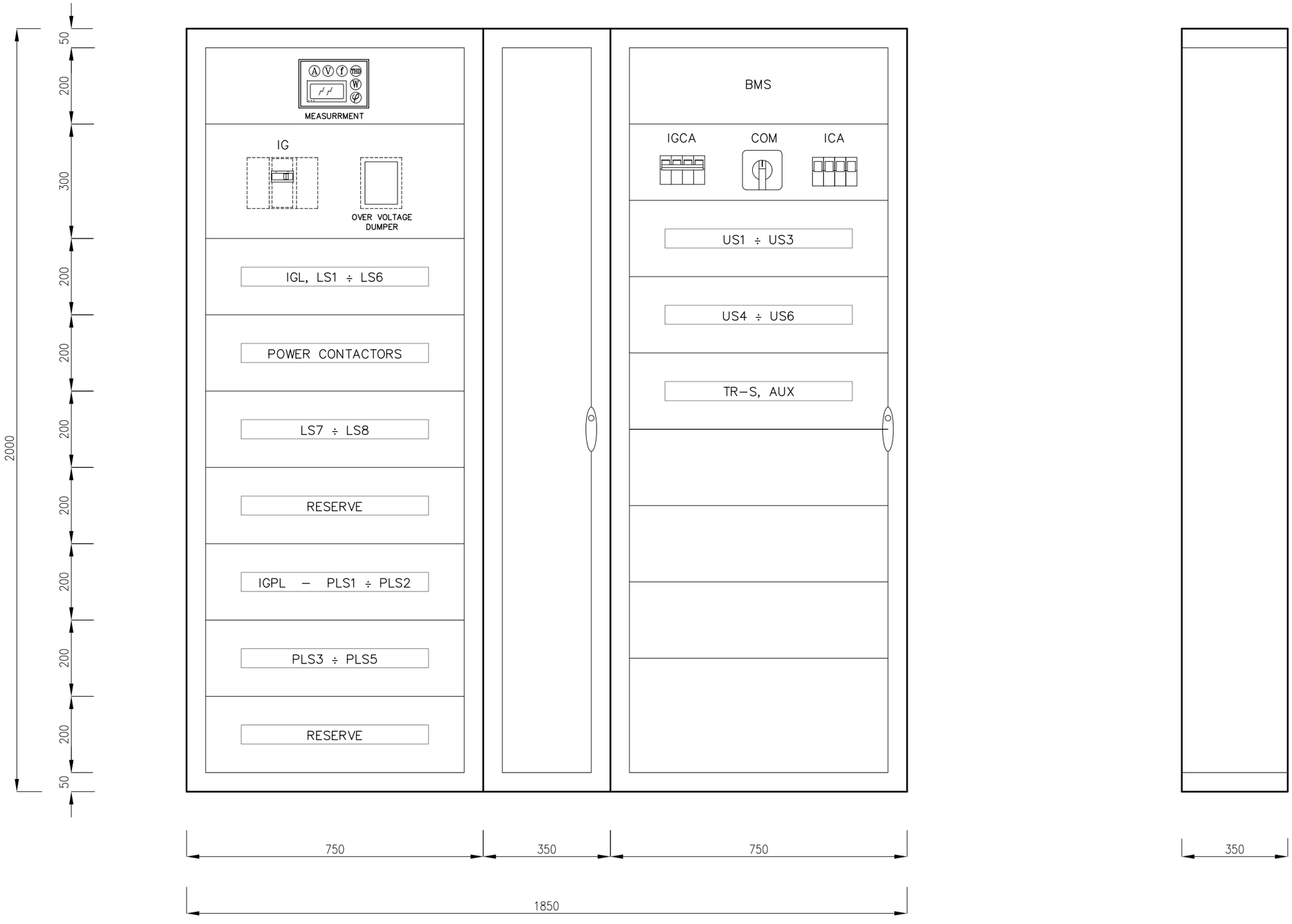


Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P2 EARTH CONNECTION LAYOUT	Reference n. -	Drawing **Ee_210** Rev. **0** · Sheet n. Pag.16 seg.17

LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P2 TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	Reference n. -	Drawing Ee_210	
				Rev. 0	Sheet n. Pag.17 seg.18



Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P2 FRONTAL LAYOUT	Reference n. -	Drawing **Ee_210** Rev. **0** · Sheet n. Pag.18 seg. 19

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MINISTRY AREAS DISTRIBUTION BOARD – GROUND LEVEL

INITIALS

DB_L0/M

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~3.0kVA – I~4.3A	(Kc=1)
POWER LOAD NETWORK:	Rp~4.8kVA – I~6.9A	(Kc=0.3)
UPS NETWORK:	Rp~4.2kVA – I~6.1A	(Kc=0.7)
TOTAL:	Rp~12.0kVA – I~17.3A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

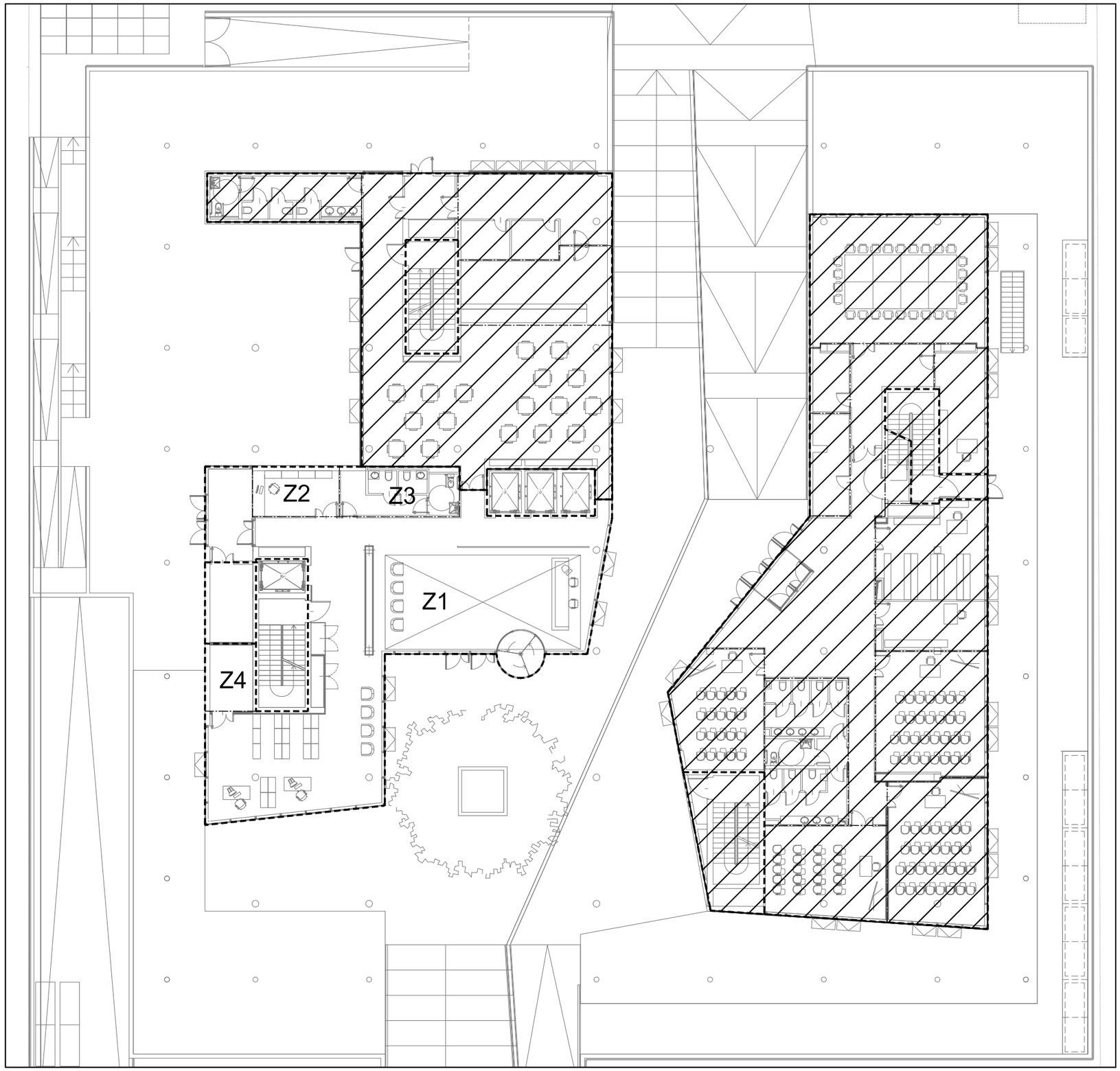
Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L0/M
ELECTRICAL ZONES

Reference n.
-

Drawing
Ee_210

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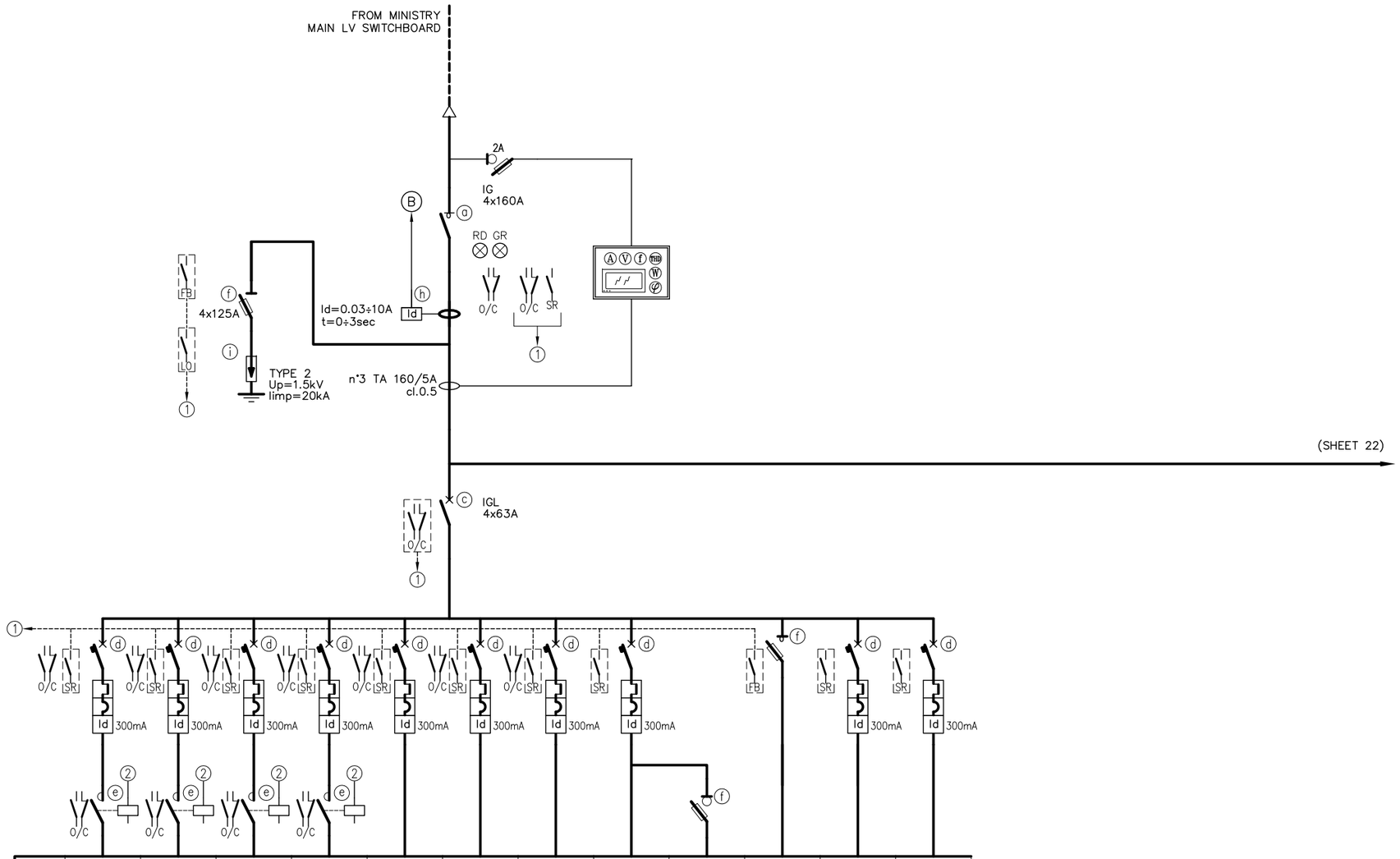
0

Sheet n.
Pag.20 seg. 21



1	LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS8–S	LS9	LS10	LS11
2	0.6	0.6	0.4	0.4	0.4	0.2	0.3			0.1		
3	2.6	2.6	1.8	1.8	1.8	0.9	1.3			0.4		
4	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x20+N	1x20+N	1x10+N	1x10+N
5	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3					
6												
7									2A–gG	6A–gG		
8	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x1x2.5	2x1x2.5	3x1x2.5		
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV		
10	50	50	50	50	20	40	40	5	5	5		
11	HALL CIRCUIT 1	HALL CIRCUIT 2	CORRIDOR CIRCUIT 1	CORRIDOR CIRCUIT 2	OPEN SPACE	GUARDROOM	WC	TECHNICAL ROOM	EMERGENCY LIGHTING	LIGHTING AUXILIARY	RESERVE	RESERVE
12	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z4			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L0/M

WIRING DIAGRAM

Reference n.

-

Drawing

Ee_210

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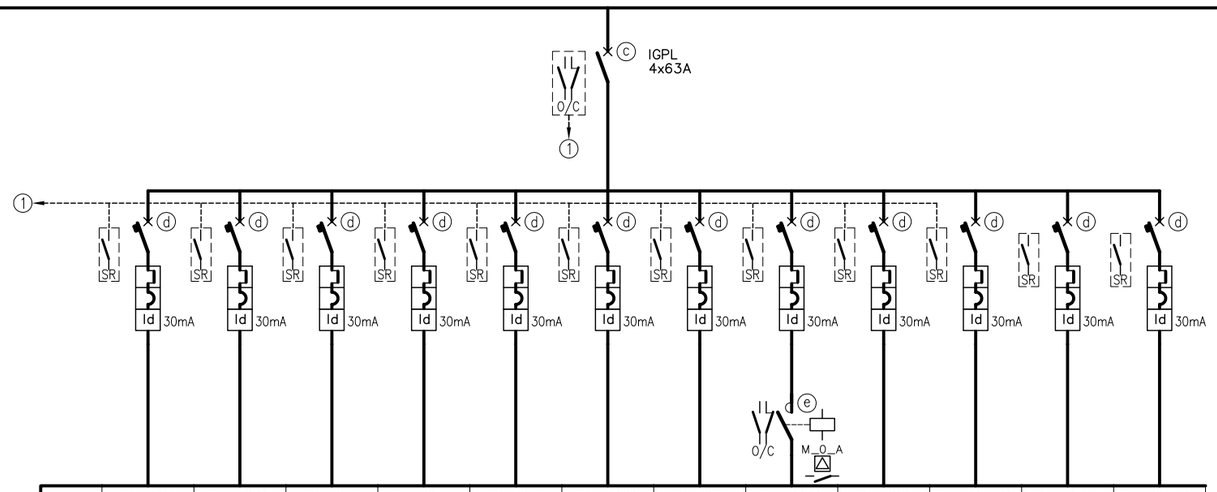
Sheet n. Pag.21 seg. 22

(SHEET 21)

(SHEET 23)



1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9	PLS10	PLS11	PLS12
2	1.5	1.0	0.7	0.9	1.1	2.0	2.5	1.2	0.1	4.8		
3	6.5	4.3	3.0	3.9	4.8	8.7	3.6	5.2	0.4	6.9		
4	1x16+N	1x25+N	1x25+N	1x16+N	1x16+N	1x25+N	4x16	1x16+N	1x16+N	4x25	1x16+N	4x16
5								3x17−AC3				
6												
7												
8	3x4	3x6	3x6	3x4	3x4	3x6	5x1x4	3x4	3x4	5x6		
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1−K 0.45/0.75kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		
10	50	50	50	20	40	40	5	45+10	30	30		
11	HALL DESKS	HALL SOKETS	CORRIDOR SOKETS	OPEN SPACE	GUARDROOM	WC	TECHNICAL ROOM	FAN COIL	AIR HANDLING UNIT	HAND DRYER	RESERVE	RESERVE
12	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z2	ZONE Z3	ZONE Z4		ZONE Z3	ZONE Z3		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/M

WIRING DIAGRAM

Reference n.

-

Drawing

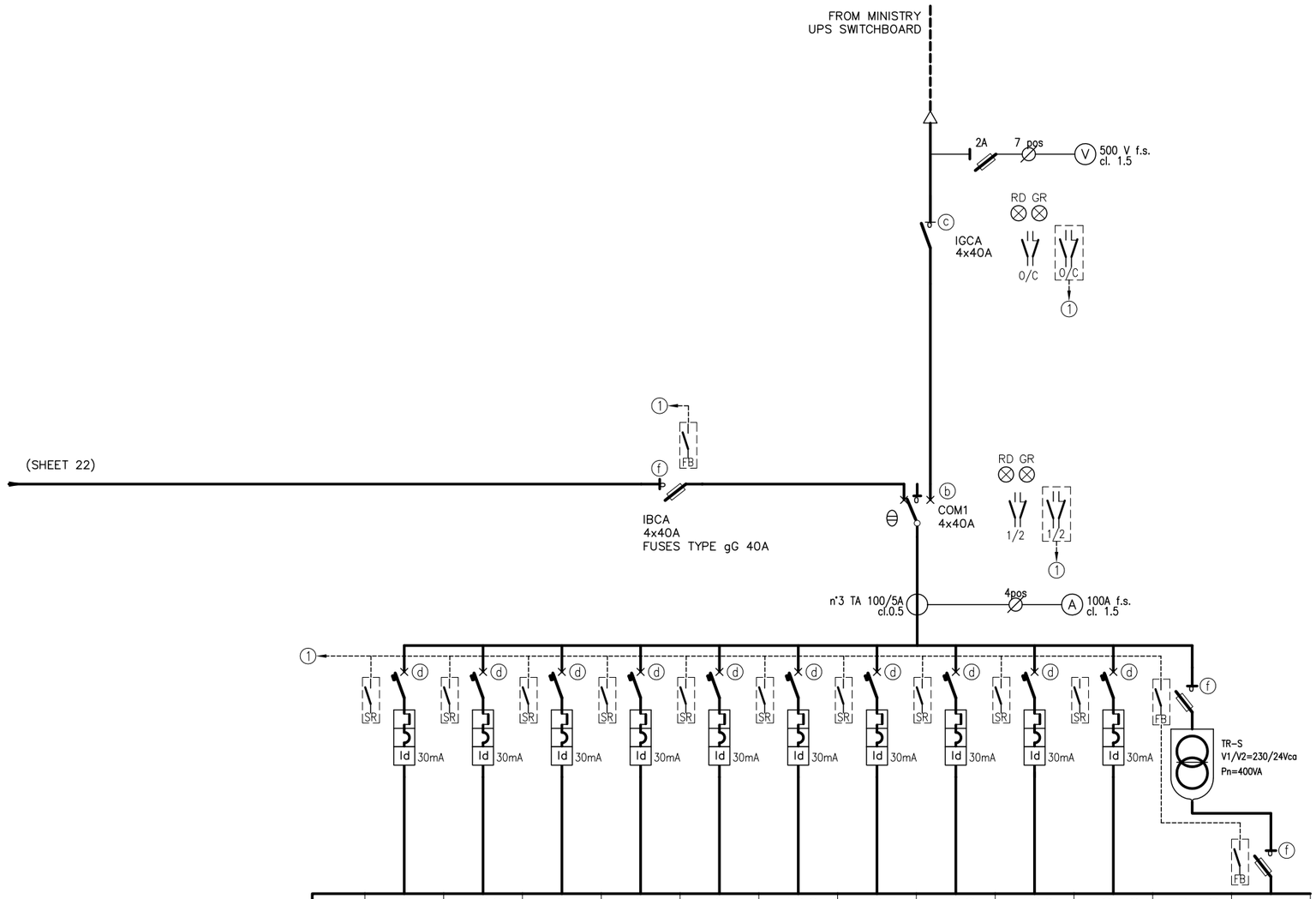
Ee_210

Rev.

0

Sheet n.

Pag.22 seg. 23



1	US1	US2	US3	US4	US5	US6	US7	US8	US9	US10	TR-S	AUX
2	1.5	0.9	0.5	0.5	0.6	0.8	0.4	0.2	0.2		0.4	
3	6.5	3.9	2.2	2.2	2.6	3.5	1.8	0.9	0.9		1.8	
4	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x20+N	1x20+N
5												
6												
7											4A-aM	16A-gG
8	3x4	3x4	3x2.5	3x2.5	3x4	3x4	3x4	3x2.5	3x4		3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FTG10OM1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	50	20	60	40	40	20	30	40	10		5	5
11	HALL	OPEN SPACE	EXTRA LOW VOLTAGE SYSTEM	FIRE DAMPERS AND SMOKE OUT	GUARDROOM	EVAC CONTROL UNIT	FIRE AND GAS CONTROL UNIT	DOOR CONTROL MODULE	AIR HANDLING UNIT	RESERVE		
12	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z2	ZONE Z2	ZONE Z2	ACCESS CONTROL SYSTEM	ZONE Z3			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/M
WIRING DIAGRAM

Reference n.

-

Drawing

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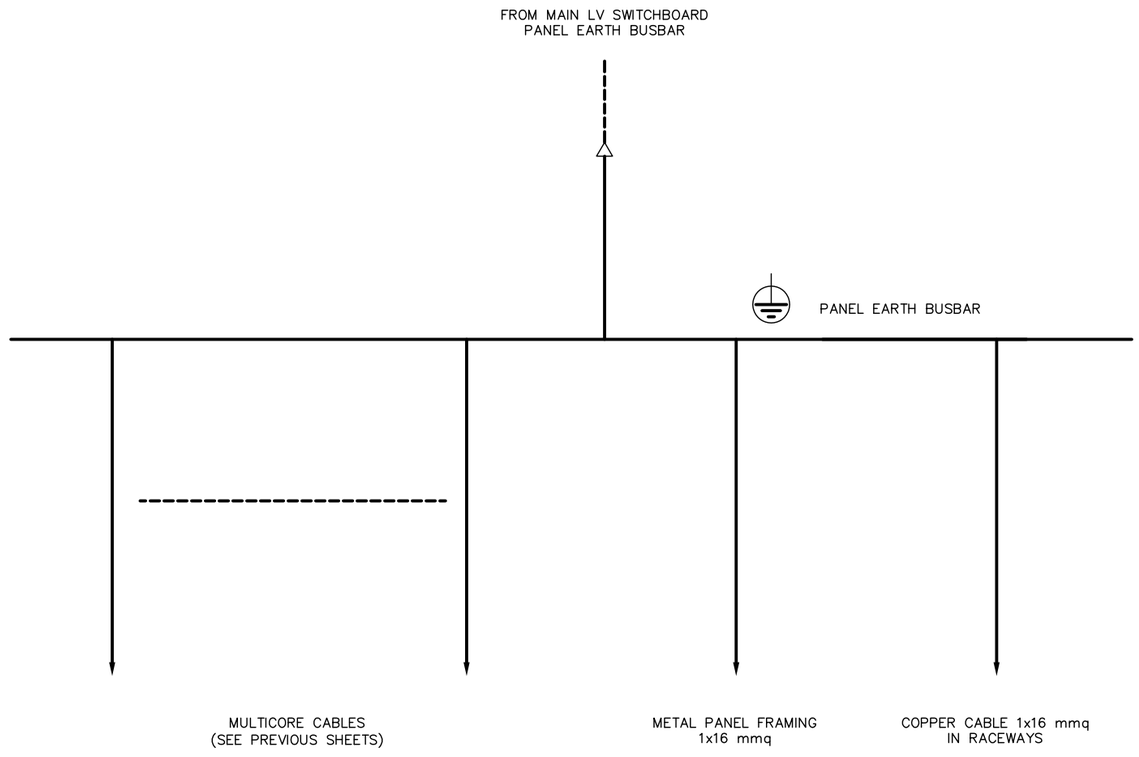
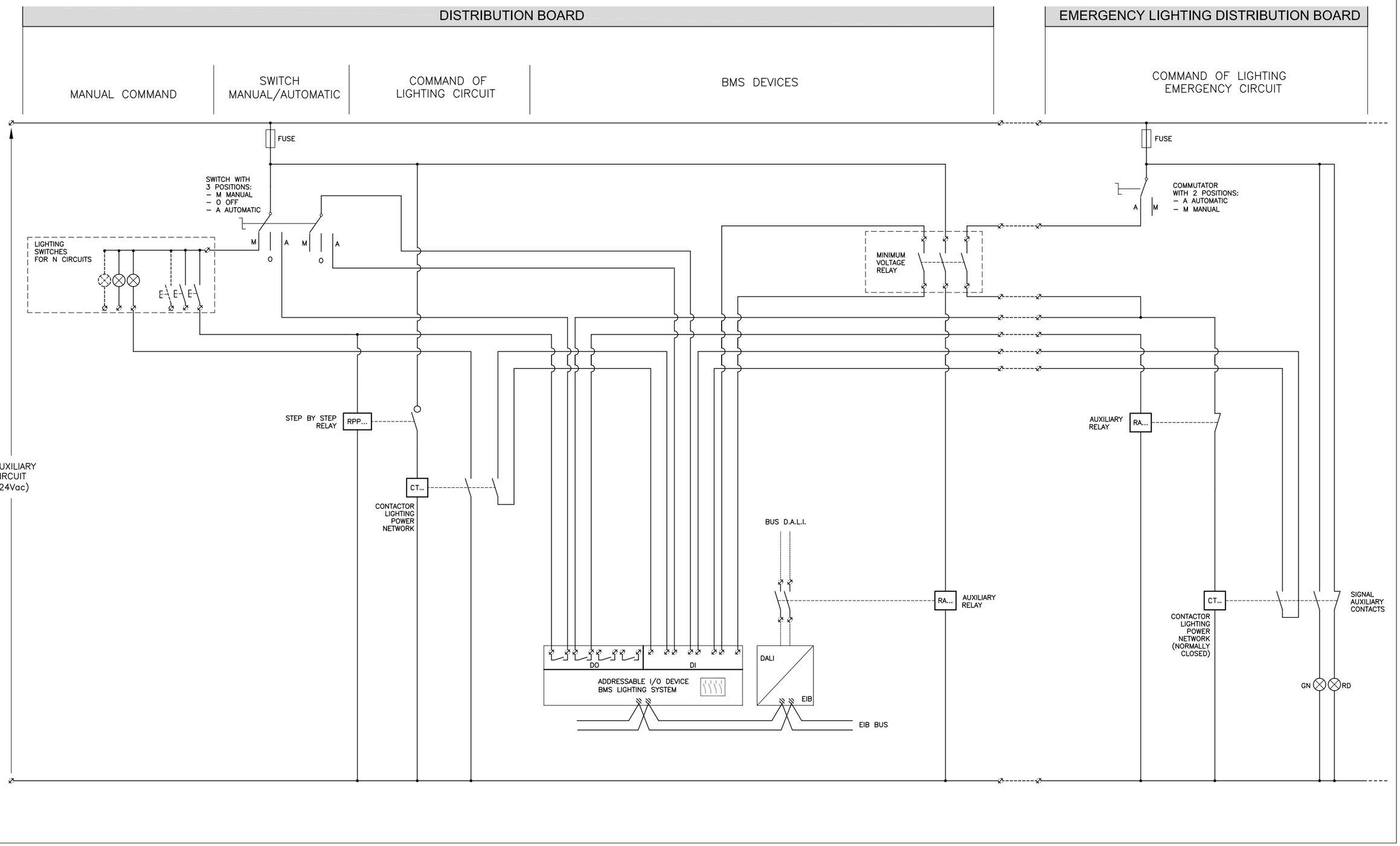
Sheet n. Pag.23 seg. 24

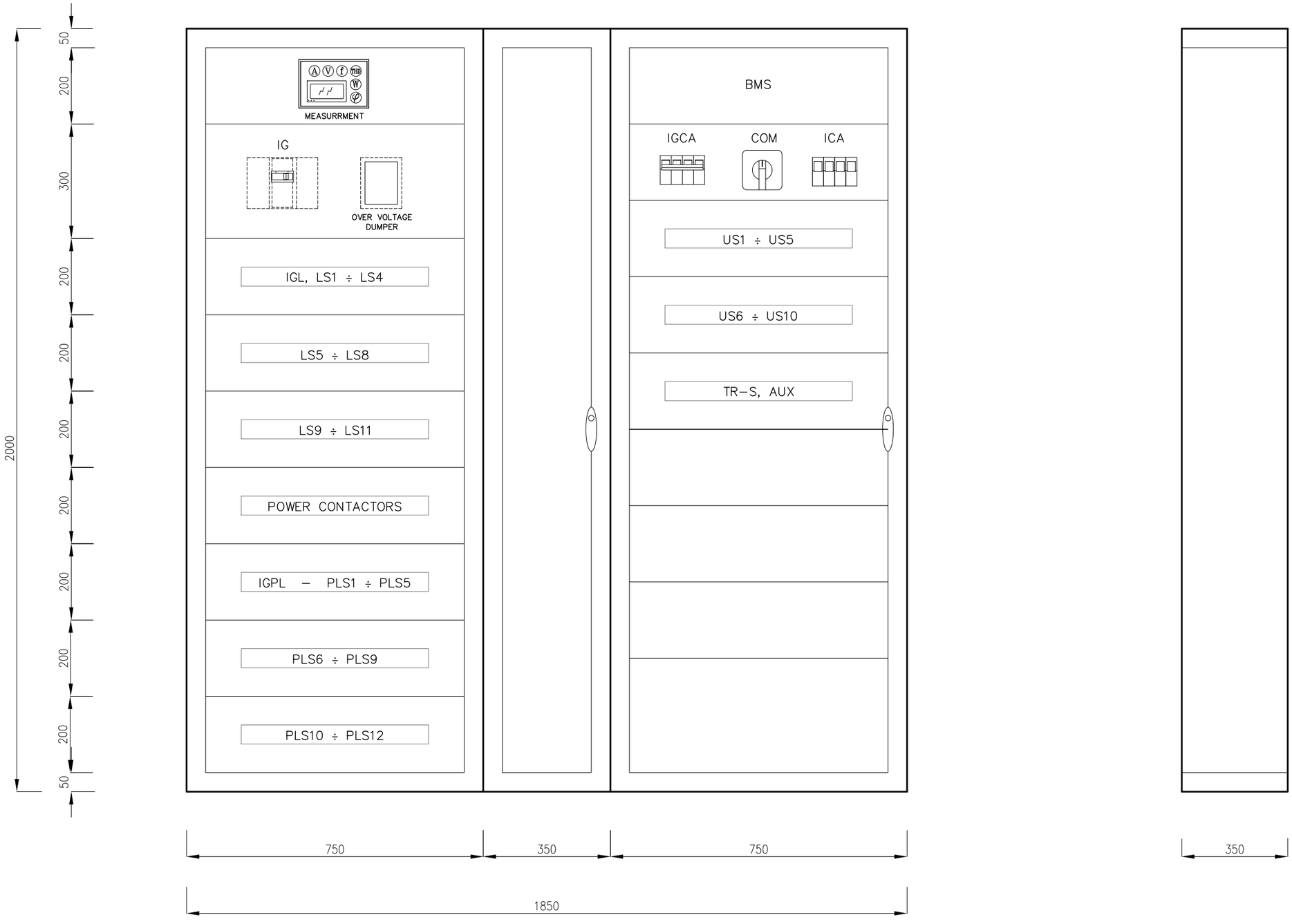


Annotations	Manens-Tifs INGEGNERIA	Title DB_L0/M EARTH CONNECTION LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 · Sheet n. Pag.24 seg. 25

LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations	Manens-Tifs INGEGNERIA	Title DB_L0/M TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	Reference n. -	Drawing Ee_210	
				Rev. 0	Sheet n. Pag.25 seg. 26



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L0/M
FRONTAL LAYOUT

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.26 seg. 27

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MINISTRY AREAS DISTRIBUTION BOARD – FIRST LEVEL

INITIALS

DB_L1/M/1

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~9.4kVA	– I~13.6A	(Kc=1)
POWER LOAD NETWORK:	Rp~20.8kVA	– I~30.0A	(Kc=0.3)
UPS NETWORK:	Rp~25.0kVA	– I~36.0A	(Kc=0.7)
TOTAL:	Rp~55.2kVA	– I~79.6A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

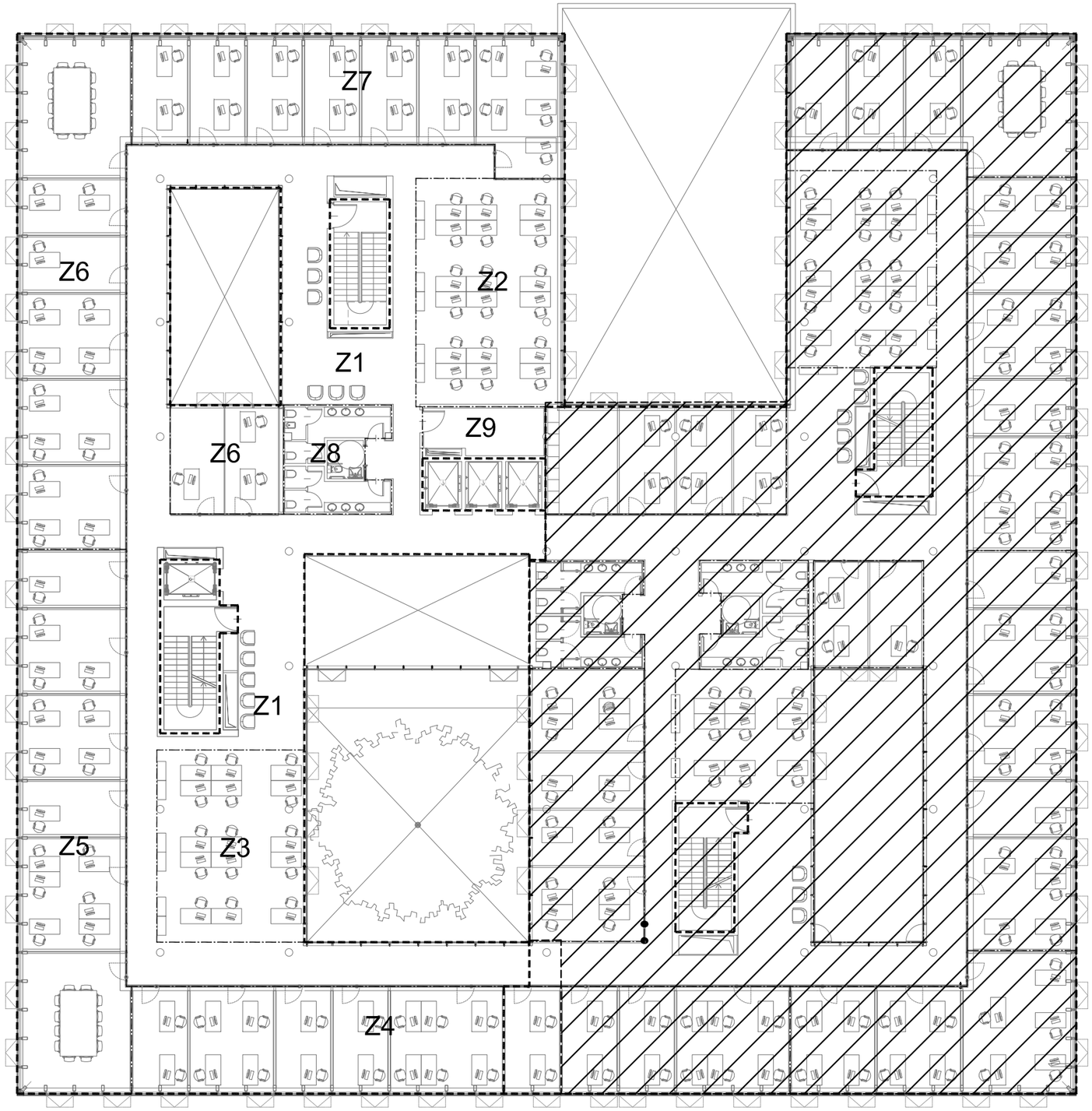
Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L1/M/1
ELECTRICAL ZONES

Reference n.
-

Drawing
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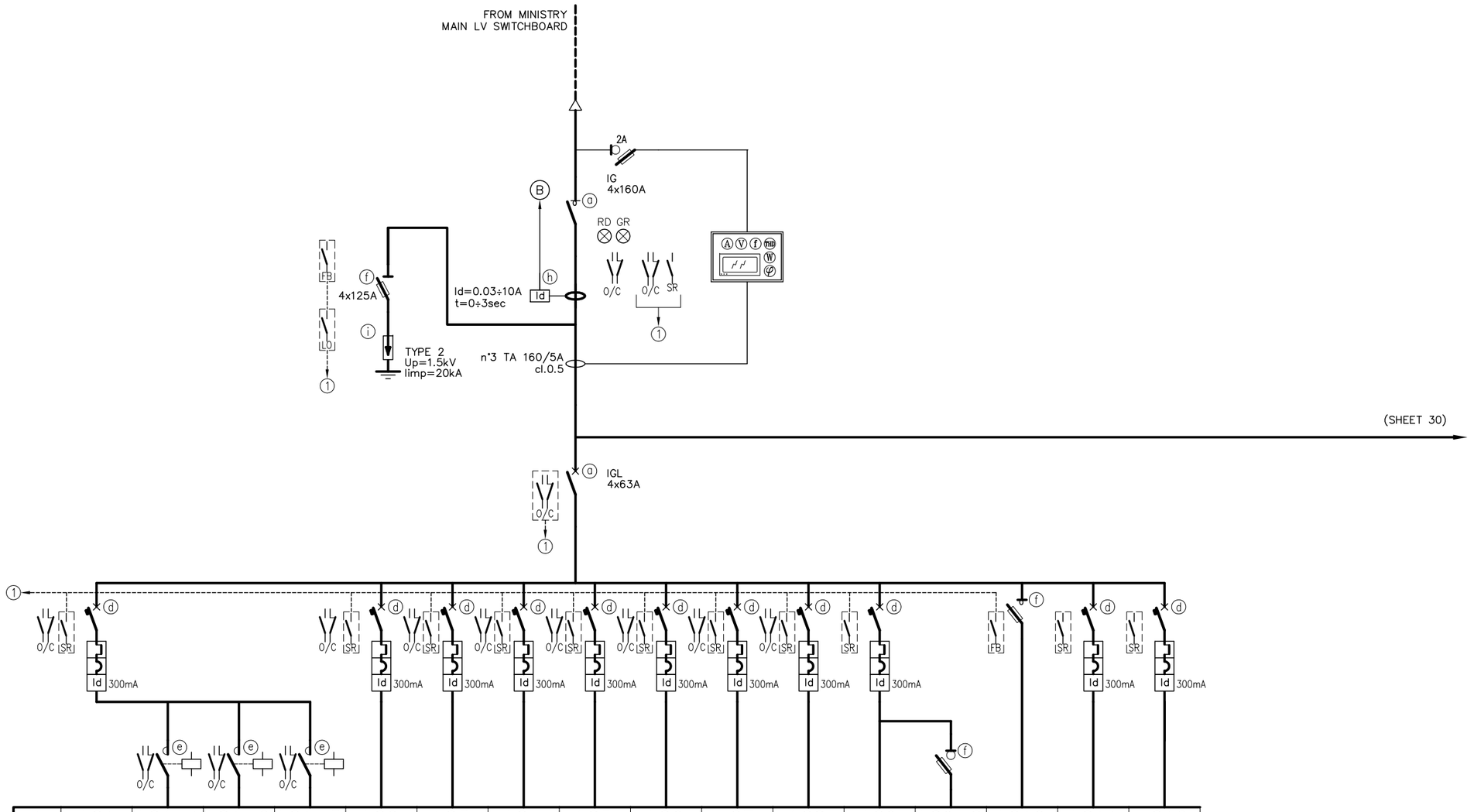
Pag.28 seg. 29



1	LS1	LS1−1	LS1−2	LS1−3	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	LS9−S	LS10	LS11	LS12
2		0.5	0.6	0.6	0.7	0.6	1.1	1.6	1.9	1.2	0.4	0.1		0.1		
3		2.2	2.6	2.6	3.1	2.6	4.7	2.3	2.7	5.3	1.8	0.5		0.4		
4	4x10				1x10+N	1x10+N	1x10+N	4x10	4x10	1x10+N	1x10+N	1x10+N	1x20+N	1x20+N	1x10+N	1x10+N
5		3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	4x12−AC3	4x12−AC3	3x12−AC3	3x12−AC3					
6																
7													2A−gG	6A−gG		
8		3x4	3x4	3x4	3x2.5	3x2.5	3x2.5	5x2.5	5x2.5	3x2.5	3x2.5	3x1x2.5	2x1x2.5	3x1x2.5		
9		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1−K 0.45/0.75kV	H07Z1−K 0.45/0.75kV	H07Z1−K 0.45/0.75kV		
10		80+50	80+50	80+50	15	45	65	50	50	40	10	5	5	5		
11	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	TECNICAL ROOM	EMERGENCY LIGHTING	LIGHTING AUXILIARY	RESERVE	RESERVE
12	ZONE Z1	ZONE Z1 CIRCUIT 1	ZONE Z1 CIRCUIT 2	ZONE Z1 CIRCUIT 3	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z9	ZONE Z9			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L1/M/1

WIRING DIAGRAM

Reference n.

-

Drawing

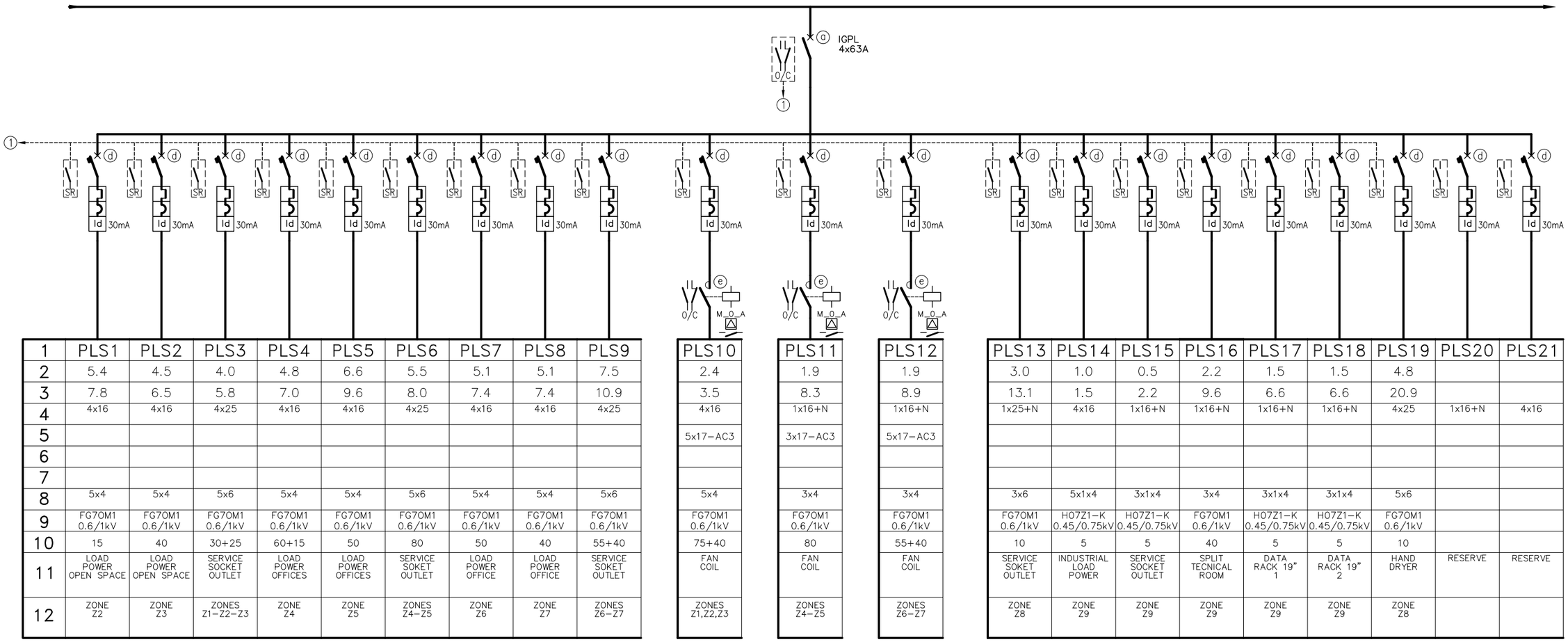
Ee_210

Rev. **0**

Sheet n. Pag.29 seg. 30

(SHEET 29)

(SHEET 31)



1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9
2	5.4	4.5	4.0	4.8	6.6	5.5	5.1	5.1	7.5
3	7.8	6.5	5.8	7.0	9.6	8.0	7.4	7.4	10.9
4	4x16	4x16	4x25	4x16	4x16	4x25	4x16	4x16	4x25
5									
6									
7									
8	5x4	5x4	5x6	5x4	5x4	5x6	5x4	5x4	5x6
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	15	40	30+25	60+15	50	80	50	40	55+40
11	LOAD POWER OPEN SPACE	LOAD POWER OPEN SPACE	SERVICE SOCKET OUTLET	LOAD POWER OFFICES	LOAD POWER OFFICES	SERVICE SOKET OUTLET	LOAD POWER OFFICE	LOAD POWER OFFICE	SERVICE SOKET OUTLET
12	ZONE Z2	ZONE Z3	ZONES Z1–Z2–Z3	ZONE Z4	ZONE Z5	ZONES Z4–Z5	ZONE Z6	ZONE Z7	ZONES Z6–Z7

1	PLS10	PLS11	PLS12
2	2.4	1.9	1.9
3	3.5	8.3	8.9
4	4x16	1x16+N	1x16+N
5	5x17–AC3	3x17–AC3	5x17–AC3
6			
7			
8	5x4	3x4	3x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	75+40	80	55+40
11	FAN COIL	FAN COIL	FAN COIL
12	ZONES Z1,Z2,Z3	ZONES Z4–Z5	ZONES Z6–Z7

1	PLS13	PLS14	PLS15	PLS16	PLS17	PLS18	PLS19	PLS20	PLS21
2	3.0	1.0	0.5	2.2	1.5	1.5	4.8		
3	13.1	1.5	2.2	9.6	6.6	6.6	20.9		
4	1x25+N	4x16	1x16+N	1x16+N	1x16+N	1x16+N	4x25	1x16+N	4x16
5									
6									
7									
8	3x6	5x1x4	3x1x4	3x4	3x1x4	3x1x4	5x6		
9	FG70M1 0.6/1kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	FG70M1 0.6/1kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	FG70M1 0.6/1kV		
10	10	5	5	40	5	5	10		
11	SERVICE SOKET OUTLET	INDUSTRIAL LOAD POWER	SERVICE SOCKET OUTLET	SPLIT TECNICAL ROOM	DATA RACK 19" 1	DATA RACK 19" 2	HAND DRYER	RESERVE	RESERVE
12	ZONE Z8	ZONE Z9	ZONE Z9	ZONE Z9	ZONE Z9	ZONE Z9	ZONE Z8		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L1/M/1
WIRING DIAGRAM

Reference n.

-

Drawing

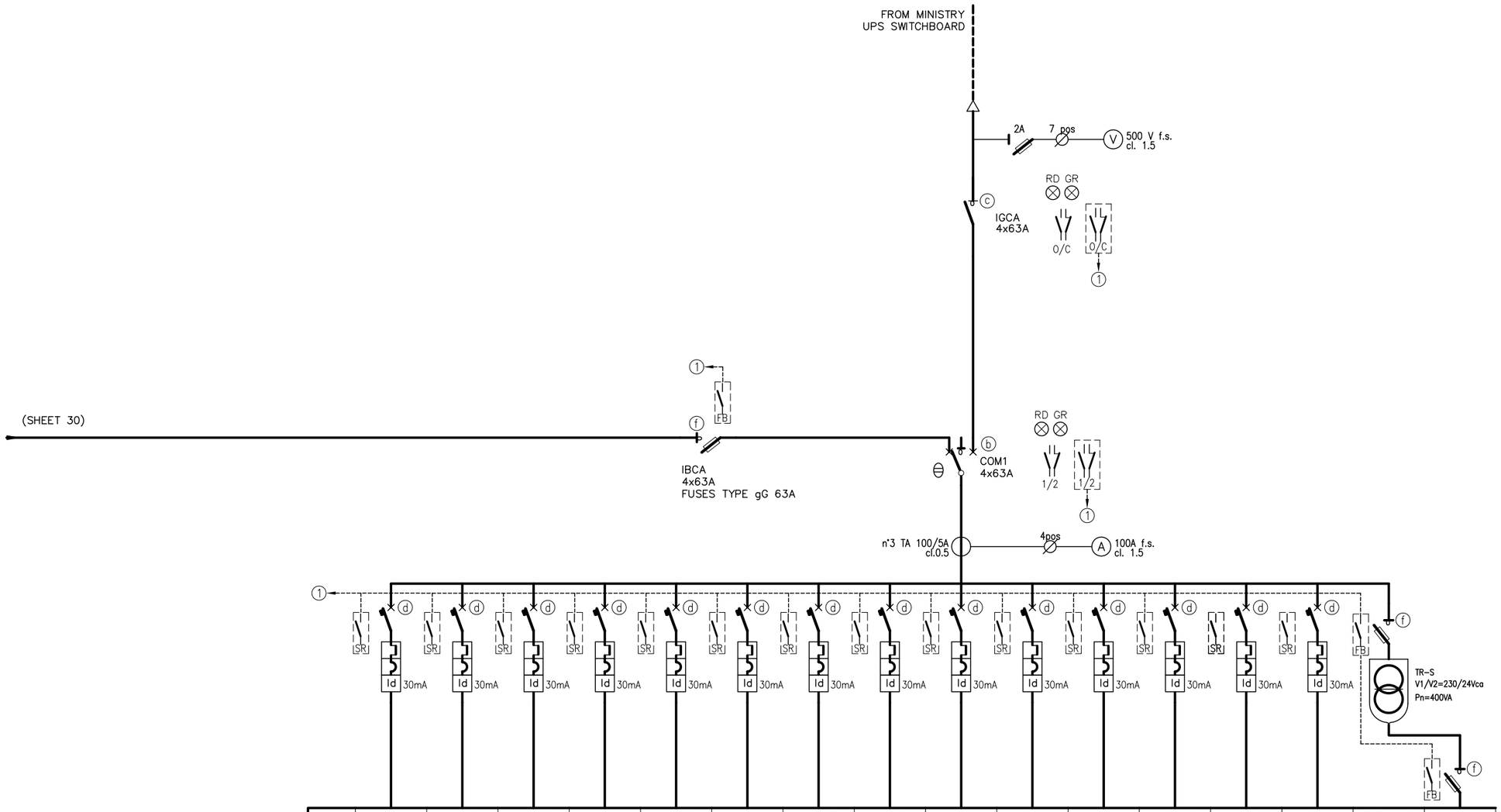
Ee_210

Rev.

0

Sheet n.

Pag.30 seg. 31



1	US1	US2	US3	US4	US5	US6	US7	US8	US9	US10	US11	US12	US13	US14	TR-S	AUX
2	5.4	4.5	4.8	6.6	5.1	5.1		0.2	0.2	1.5	1.5	0.1	0.2		0.4	
3	7.8	6.5	7.0	9.6	7.4	7.4		0.9	0.9	6.6	6.6	0.5	0.9		1.8	
4	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	4x10 B CURVE	1x20+N	1x20+N
5																
6																
7															4A–aM	16A–gG
8	5x4	5x4	5x4	5x4	5x4	5x4		3x2.5	3x2.5	3x1x4	3x1x4	3x1x2.5	3x2.5		3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		FTG100M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	FG70M1 0.6/1kV		H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV
10	15	40	60+15	50	50	40		60	5	5	5	5	10		5	5
11	LOAD POWER OPEN SPACE	LOAD POWER OPEN SPACE	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	RESERVE	OPTICAL ACOUSTIC WARNING FIRE PANELS	DOOR CONTROL MODULE	DATA RACK 19" 1	DATA RACK 19" 2	BMS	AIR SAMPLING SMOKE DETECTOR	RESERVE		
12	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7			ACCESS CONTROL SYSTEM							

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L1/M/1
WIRING DIAGRAM

Reference n.

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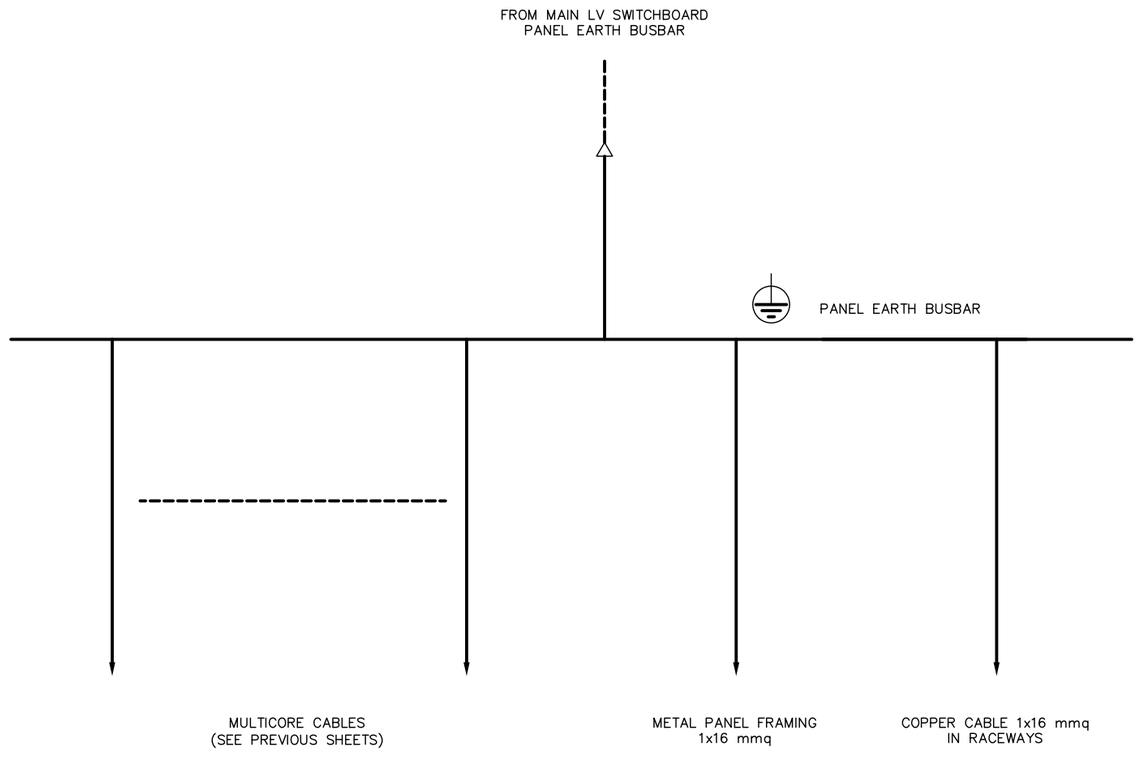
Drawing

Ee_210

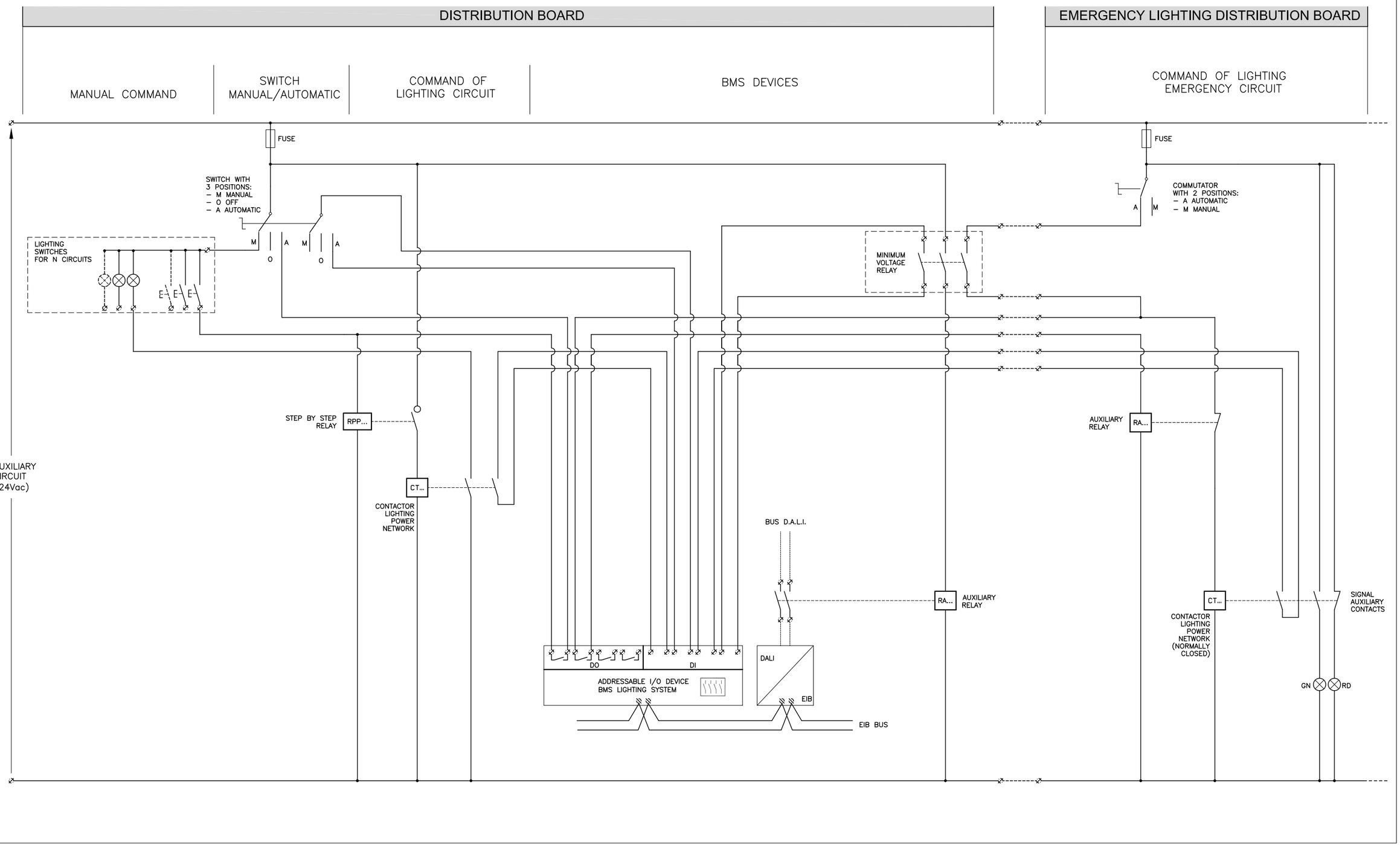
Rev. 0

Sheet n. Pag.31 seg. 32

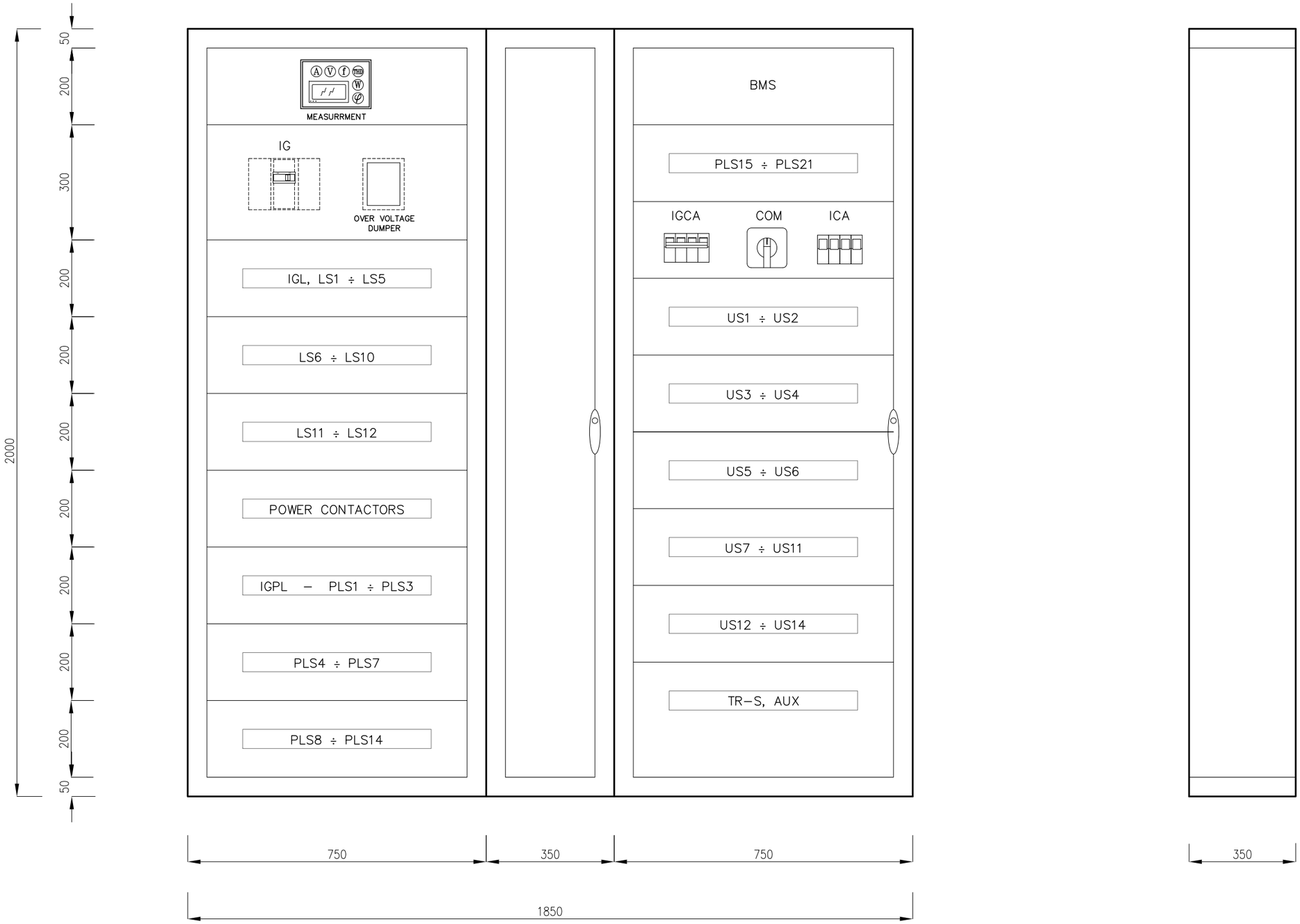


Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/1 EARTH CONNECTION LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 · Sheet n. Pag.32 seg. 33

LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/1 TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME SEE DB_L1/M/2	Reference n. -	Drawing Ee_210	
				Rev. 0	Sheet n. Pag.33 seg. 34



Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/1 FRONTAL LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 · Sheet n. Pag.34 seg. 35

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MINISTRY AREAS DISTRIBUTION BOARD – FIRST LEVEL

INITIALS

DB_L1/M/2

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~9.9kVA	– I~14.3A	(Kc=1)
POWER LOAD NETWORK:	Rp~22.7kVA	– I~32.8A	(Kc=0.3)
UPS NETWORK:	Rp~24.0kVA	– I~34.7A	(Kc=0.7)
TOTAL:	Rp~56.6kVA	– I~81.8A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

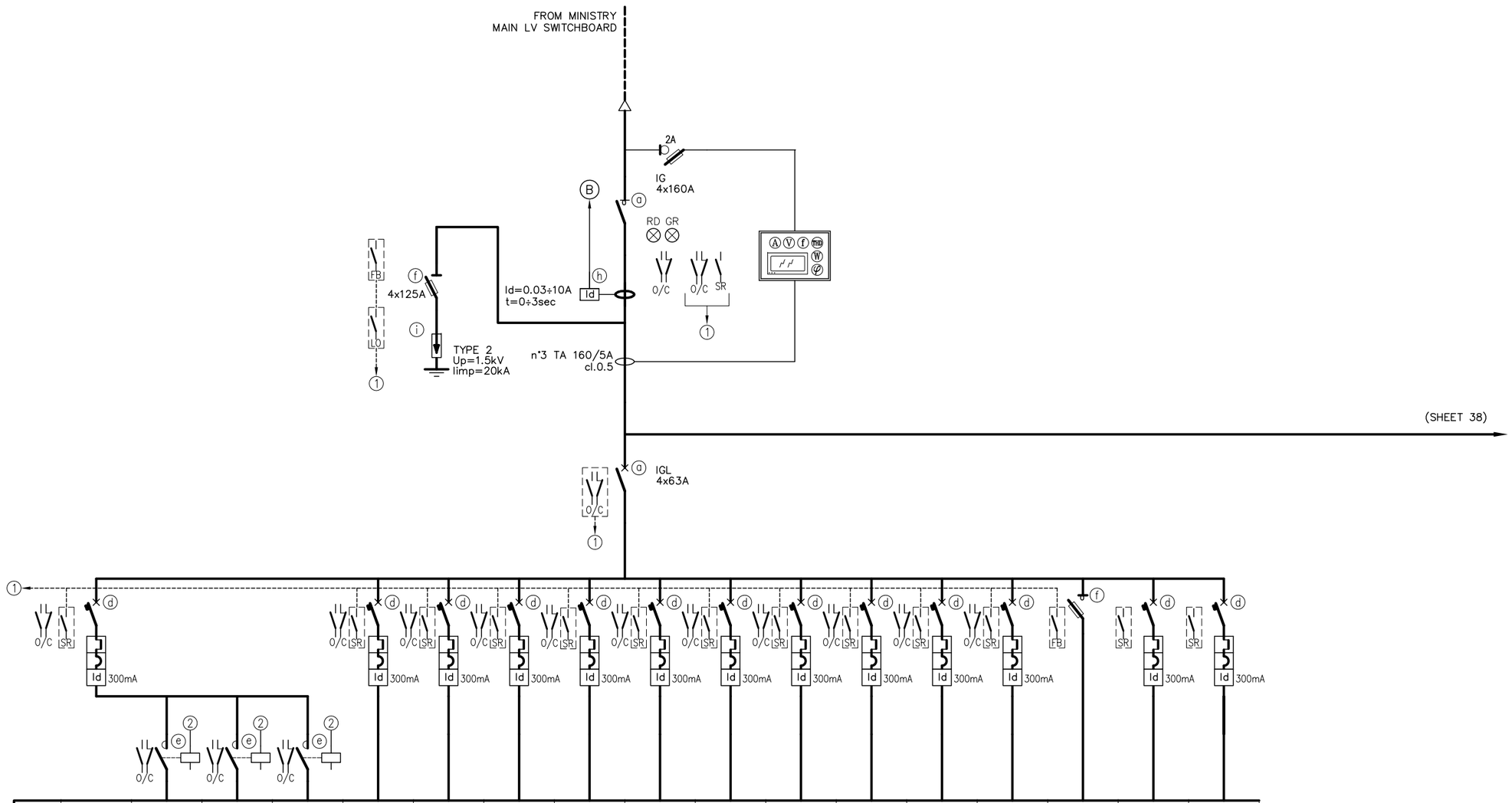
Title
DB_L1/M/2
ELECTRICAL ZONES

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.36 seg. 37



1	LS1	LS1−1	LS1−2	LS1−3	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	LS10	LS11	LS12	LS13	LS14
2		0.4	0.6	0.6	0.7	0.5	0.9	1.0	1.2	1.0	1.0	0.5	0.7	0.7	0.1		
3		1.8	2.6	2.6	3.1	2.2	3.9	4.4	5.2	4.4	4.4	2.2	3.1	3.1	0.4		
4	4x10				1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x20+N	1x10+N	1x10+N
5		3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3			
6																	
7															6A−gG		
8		3x4	3x4	3x4	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x1x2.5		
9		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1−K 0.45/0.75kV		
10		65+40	65+40	65+40	50	30	55	50	55	65	55	40	30	25	5		
11	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING AUXILIARY	RESERVE	RESERVE
12	ZONE Z1	ZONE Z1 CIRCUIT 1	ZONE Z1 CIRCUIT 2	ZONE Z1 CIRCUIT 3	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z9	ZONE Z10	ZONE Z11			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L1/M/2

WIRING DIAGRAM

Reference n. -

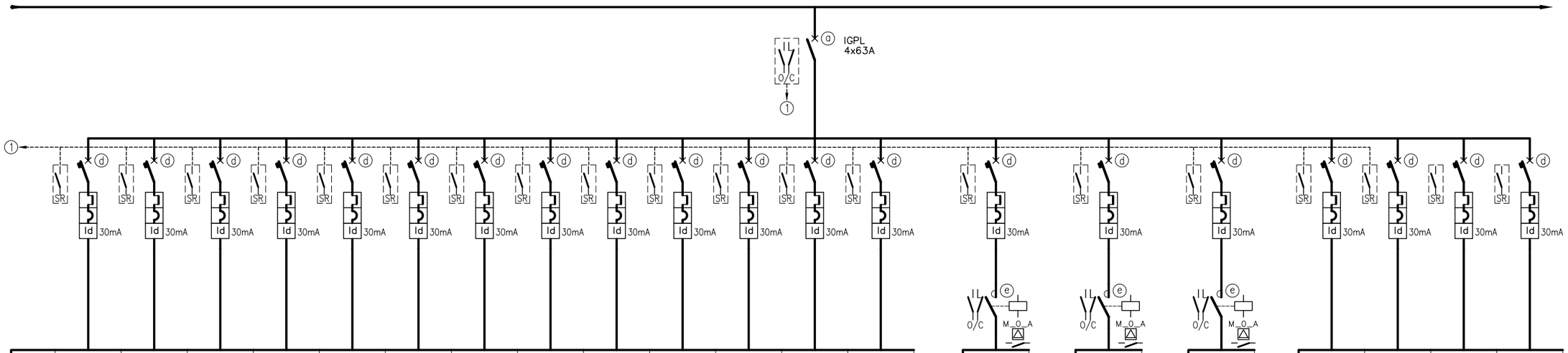
Drawing Ee_210

Rev. 0

Sheet n. Pag.37 seg. 38

(SHEET 37)

(SHEET 39)



1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9	PLS10	PLS11	PLS12	PLS13
2	4.0	4.5	2.8	3.0	4.8	4.5	3.9	3.6	3.6	3.3	6.0	7.0	8.5
3	5.8	6.5	4.1	4.4	7.0	6.5	5.7	5.2	5.2	4.7	8.7	10.1	12.3
4	4x25	4x16	4x16	4x16	4x16	4x16	4x16	4x16	4x16	4x16	4x25	4x25	4x25
5													
6													
7													
8	5x6	5x4	5x4	5x4	5x4	5x4	5x4	5x4	5x4	5x4	5x6	5x6	5x6
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	65+20	25	30	35	50	55	65	55	40	35	25	60	70
11	SERVICE SOCKET OUTLET	LOAD POWER OPEN SPACE	LOAD POWER OPEN SPACE	LOAD POWER OFFICE	LOAD POWER OFFICE	LOAD POWER OFFICE	LOAD POWER OFFICE	LOAD POWER OFFICE	LOAD POWER	LOAD POWER	SERVICE SOCKET OUTLET	SERVICE SOCKET OUTLET	SERVICE SOCKET OUTLET
12	ZONES Z1–Z2–Z3	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z9	ZONE Z10	ZONE Z11	ZONES Z4,Z5,Z6	ZONES Z7,Z8,Z9,Z10

1	PLS14	PLS15	PLS16	PLS17	PLS18	PLS19	PLS20
2	2.5	1.7	2.3	4.8	4.8		
3	3.6	7.4	3.3	6.9	6.9		
4	4x16	1x16+N	4x16	4x25	4x25	1x16+N	4x16
5	5x17–AC3	3x17–AC3	5x17–AC3				
6							
7							
8	5x4	3x4	3x4	5x6	5x6		
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		
10	70	65+20	60	25	25		
11	FAN COIL	FAN COIL	FAN COIL	HAND DRYER	HAND DRYER	RESERVE	RESERVE
12	ZONES Z7,Z8,Z9,Z10	ZONES Z1,Z2,Z3	ZONES Z4,Z5,Z6	ZONE Z11 WC 1	ZONE Z11 WC 2		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L1/M/2
WIRING DIAGRAM

Reference n.

-

Drawing

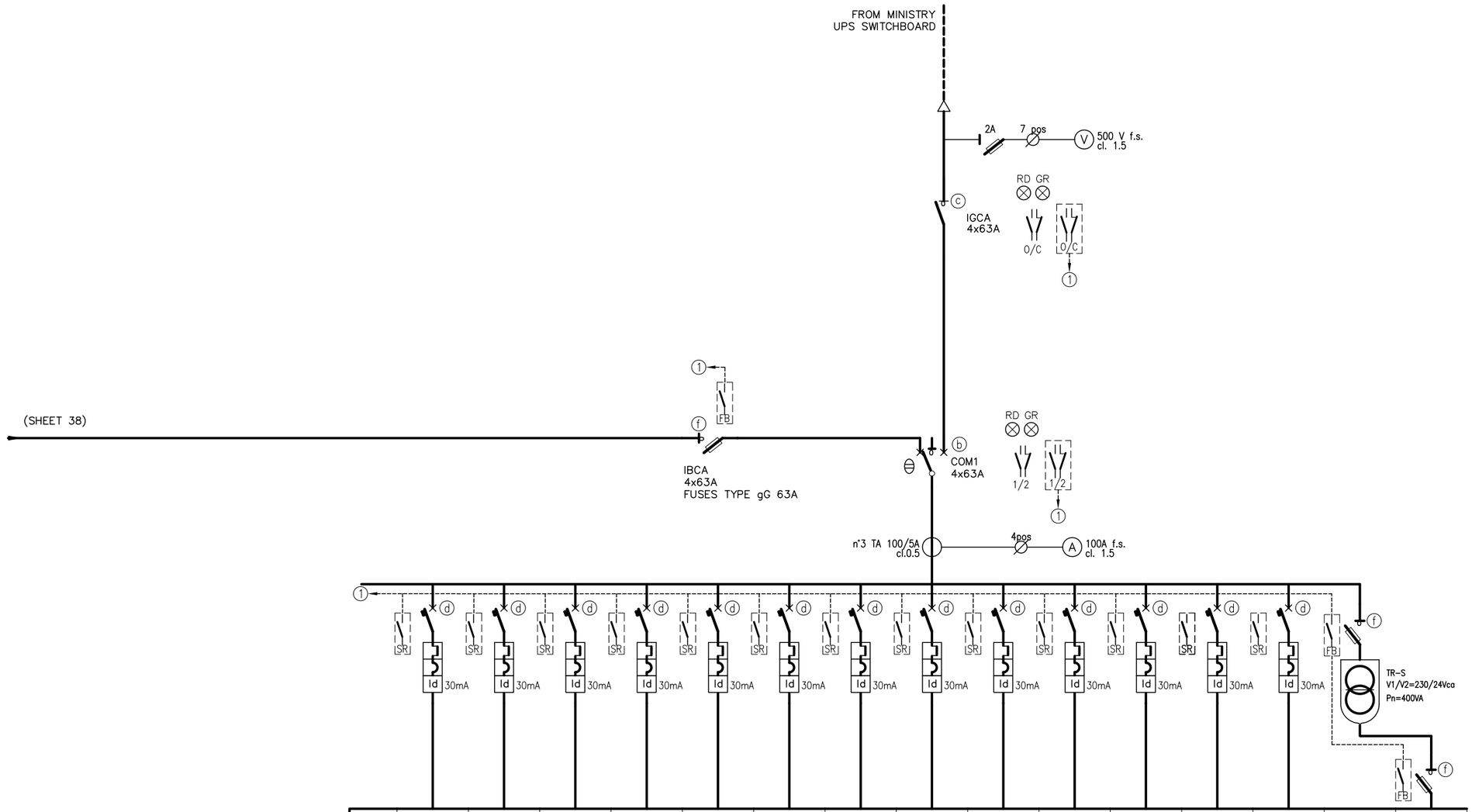
Ee_210

Rev.

0

Sheet n.

Pag.38 seg. 39



1	US1	US2	US3	US4	US5	US6	US7	US8	US9	US10	US11	US12	US13	TR-S	AUX
2	4.5	2.8	3.0	4.8	4.5	3.3	3.6	3.6	3.3		0.3	0.1		0.4	
3	6.5	4.1	4.4	7.0	6.5	5.7	5.2	5.2	4.7		1.3	0.4		1.8	
4	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	4x16 B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	4x16 B CURVE	1x20+N	1x20+N
5															
6															
7														4A-aM	16A-gG
8	5x4	5x4	5x4	5x4	5x4	5x4	5x4	5x4	5x4		3x2.5	3x2.5		3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV		FTG100M1 0.6/1kV	FG70M1 0.6/1kV		H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	30	25	50	55	65	55	40	40	35		20	15		5	5
11	LOAD POWER OPEN SPACE	LOAD POWER OPEN SPACE	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	RESERVE	OPTICAL ACOUSTIC WARNING FIRE PANELS	AIR SAMPLING SMOKE DETECTOR	RESERVE		
12	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z9	ZONE Z10			ZONE Z11			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L1/M/2
WIRING DIAGRAM

Reference n.

-

Drawing

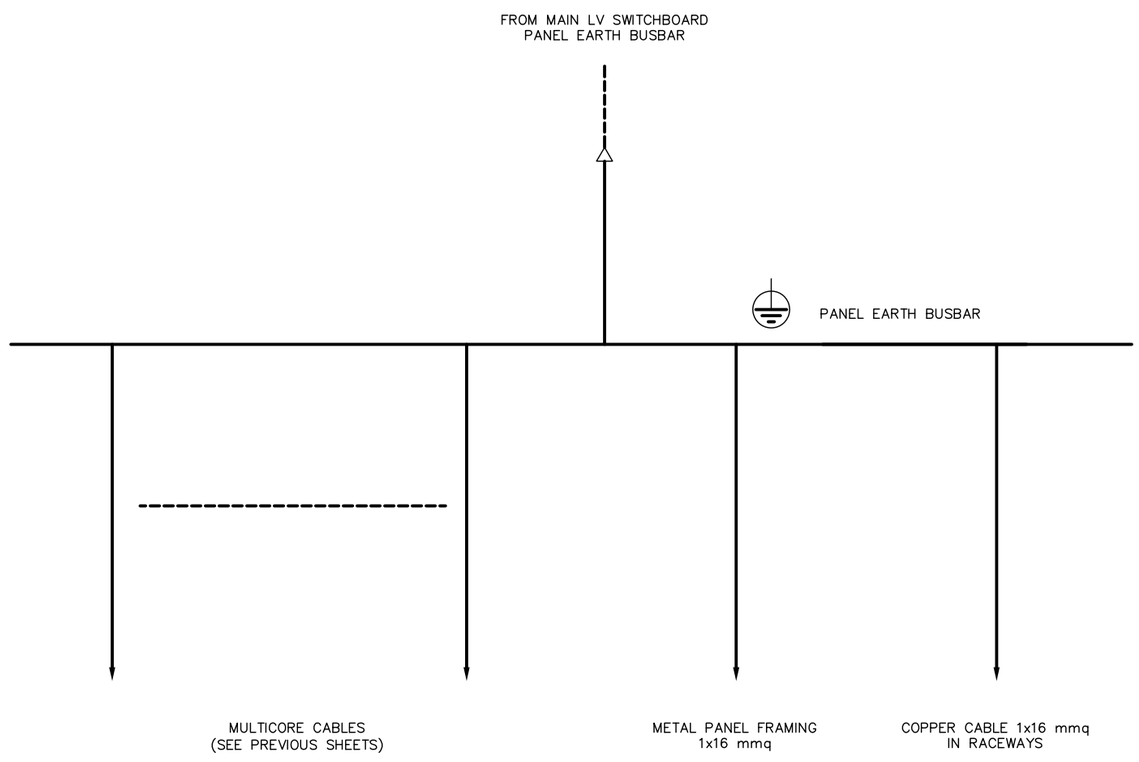
Ee_210

Rev.

0

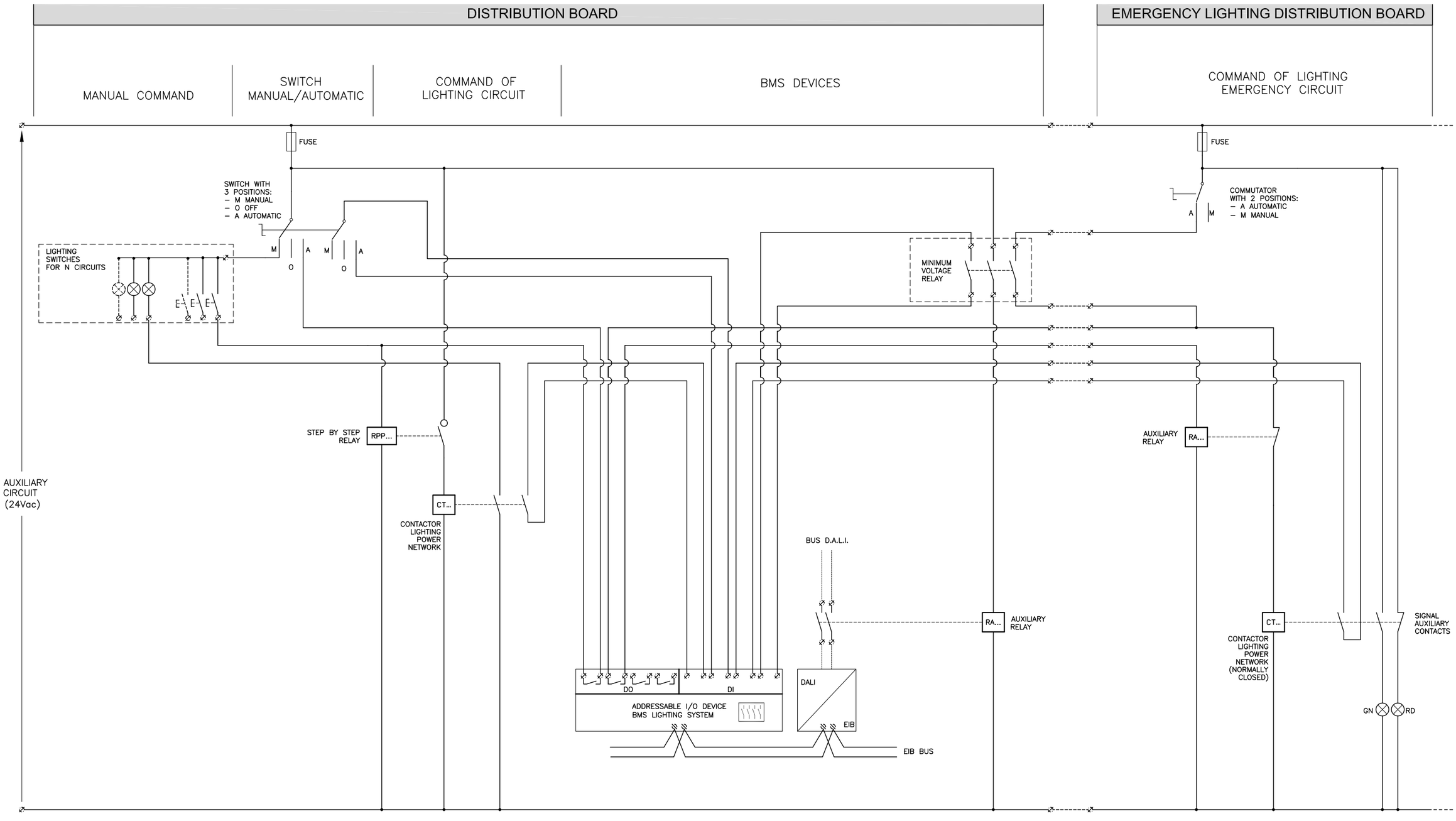
Sheet n.

Pag.39 seg. 40

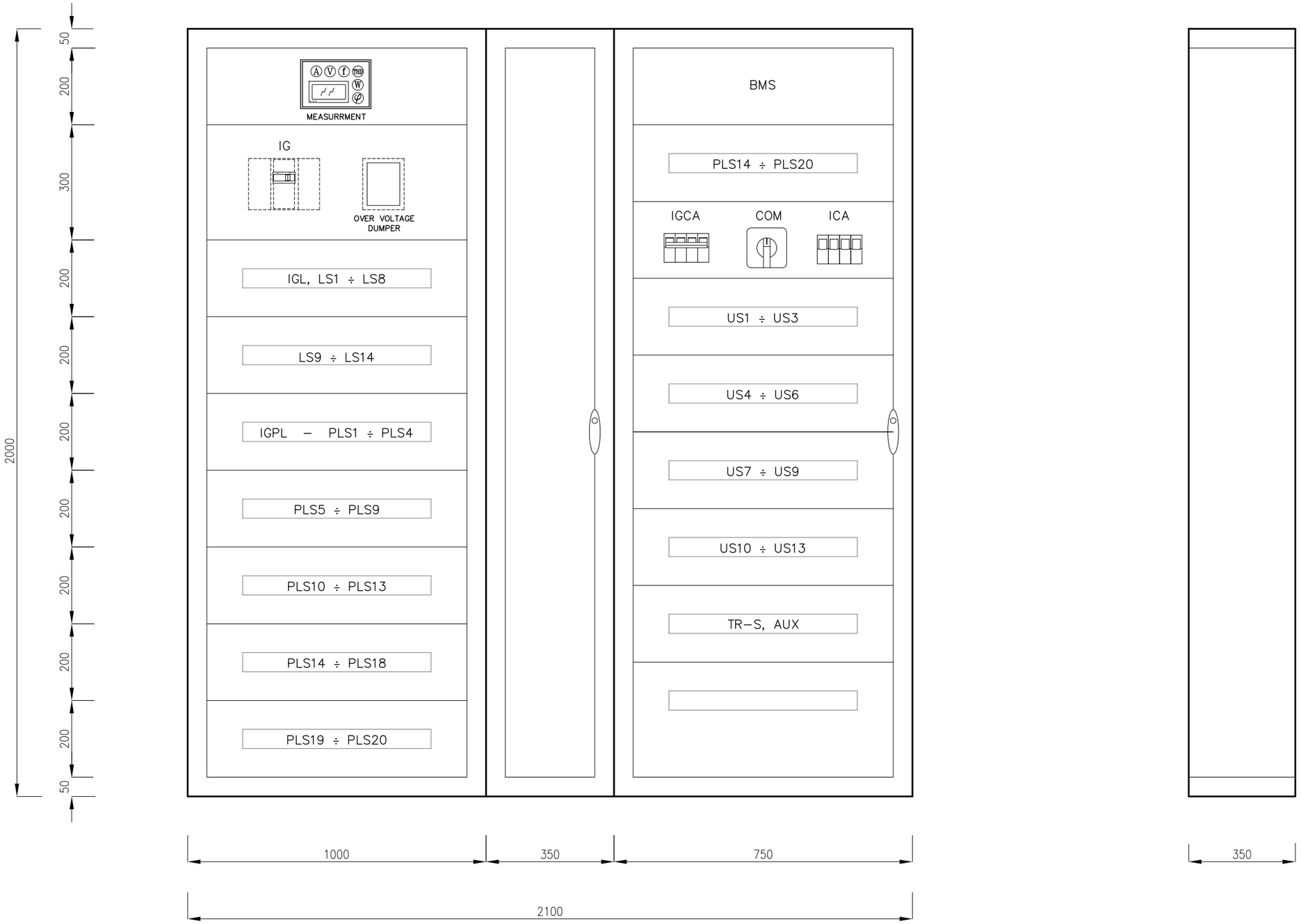


Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/2 EARTH CONNECTION LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 / Sheet n. Pag.40 seg. 41

LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/2 TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME SEE DB_L1/M/1	Reference n. -	Drawing Ee_210	
				Rev. 0	Sheet n. Pag.41 seg. 42



Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/2 FRONTAL LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 · Sheet n. Pag.42 seg. 43

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MINISTRY AREAS DISTRIBUTION BOARD – SECOND LEVEL

INITIALS

DB_L2/M

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~4.5kVA	– I~6.5A	(Kc=1)
POWER LOAD NETWORK:	Rp~11.8kVA	– I~17.0A	(Kc=0.3)
MAIN POWER LOAD:	Rp~8.2kVA	– I~11.8A	(Kc=0.7)
UPS NETWORK:	Rp~11.0kVA	– I~15.9A	(Kc=0.7)
TOTAL:	Rp~35.5kVA	– I~51.2A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

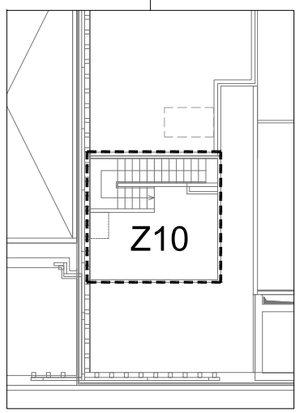
Icn=>10kA

PANEL STRUCTURE

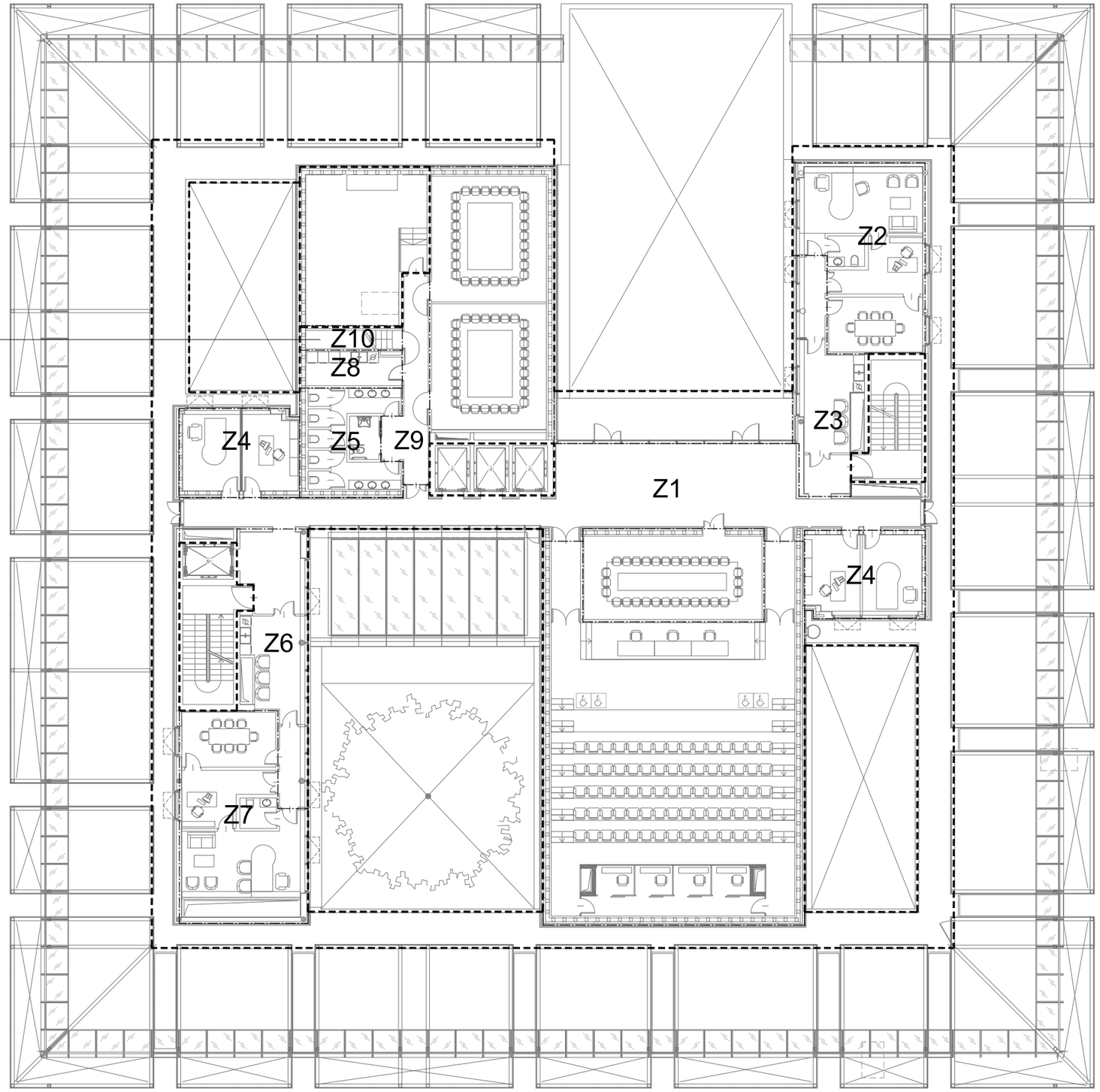
METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

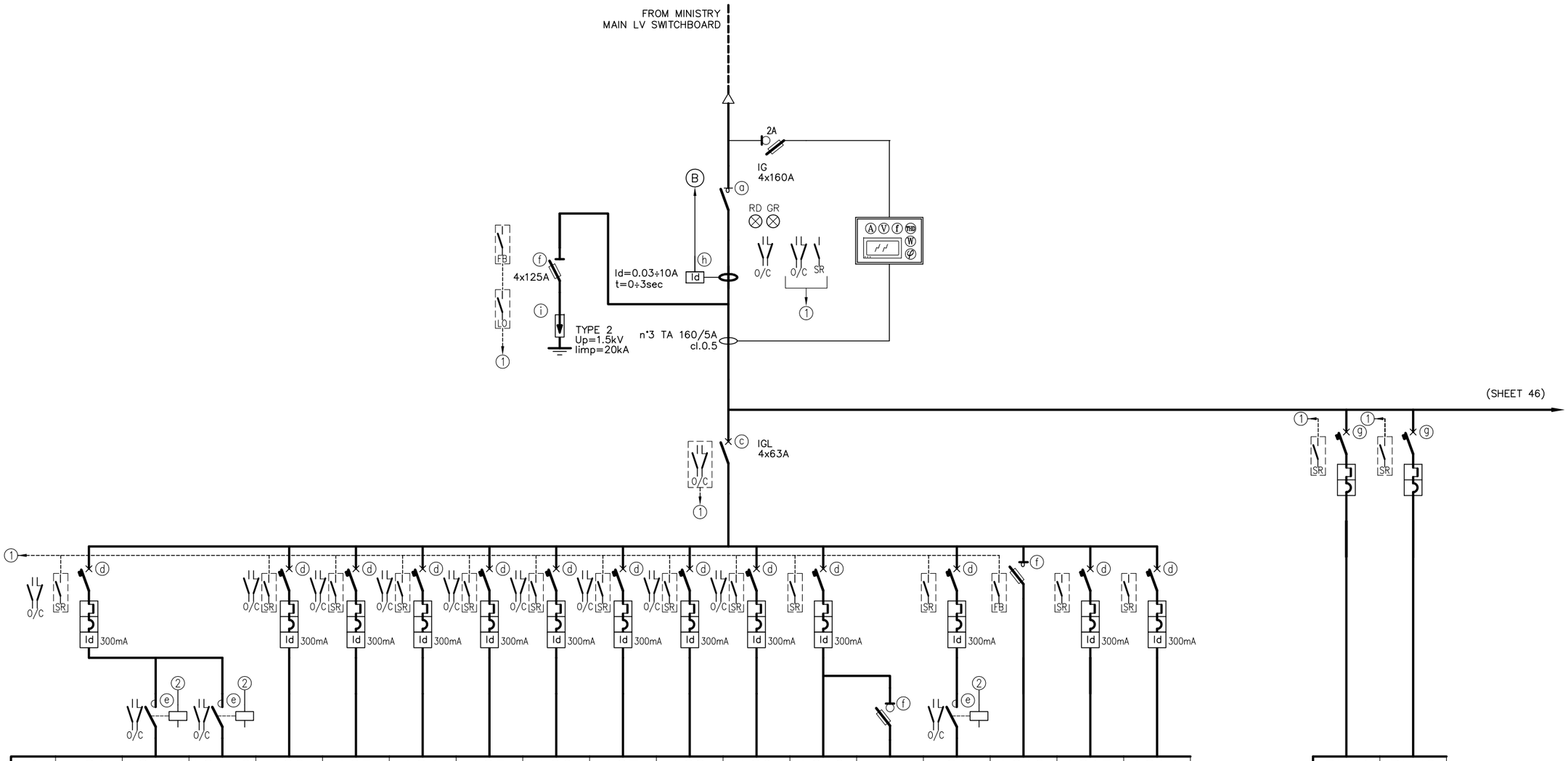
IP40 (IP20 TO OPEN PANEL)



TECHNICAL ROOM
UNDER ROOF LEVEL



Annotations	Manens-Tifs INGEGNERIA	Title: DB_L2/M ELECTRICAL ZONES	Reference n.: -	Drawing: Ee_210
				Rev.: 0
				Sheet n.: Pag.44 seg. 45



1	LS1	LS1−1	LS1−2	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	LS10	LS10−S	LS11	LS12	LS13	LS14
2		0.2	0.4	0.6	0.2	0.6	0.4	0.2	0.6	0.2	0.2	0.2		0.6	0.1		
3		0.1	1.8	2.6	0.9	2.6	1.8	0.9	2.6	0.9	0.9	0.9		2.6	0.4		
4	1x10+N			1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x10+N
5		3x12−AC3	3x12−AC3		3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3			3x12−AC3			
6																	
7													2A−gG		6A−gG		
8		3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x1x2.5	2x1x2.5	3x4	3x1x2.5		
9		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1−K 0.45/0.75kV	H07Z1−K 0.45/0.75kV	FG70M1 0.6/1kV	H07Z1−K 0.45/0.75kV		
10		45+15	40+10	55	50	45+15	15	40	45	10	15	10	10	105+145	5		
11	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	LIGHTING SYSTEM	TECNICAL ROOM	EMERGENCY LIGHTING	TERRACE	LIGHTING AUXILIARY	RESERVE	RESERVE
12	ZONE Z1	ZONE Z1 CIRCUIT 1	ZONE Z1 CIRCUIT 2	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z9	ZONE Z10	ZONE Z10				

PLM1	PLM2
5.4	6.2
7.8	9.0
4x160 R63	4x160 R63
5x25	5x25
FG70M1 0.6/1kV	FG70M1 0.6/1kV
30	35+5
SDB_L2/3 AUDITORIUM	SDB_L2/1, SDB_L2/2 AND SDB_L2/4

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L2/M

WIRING DIAGRAM

Reference n.

-

Drawing

Ee_210

Rev.

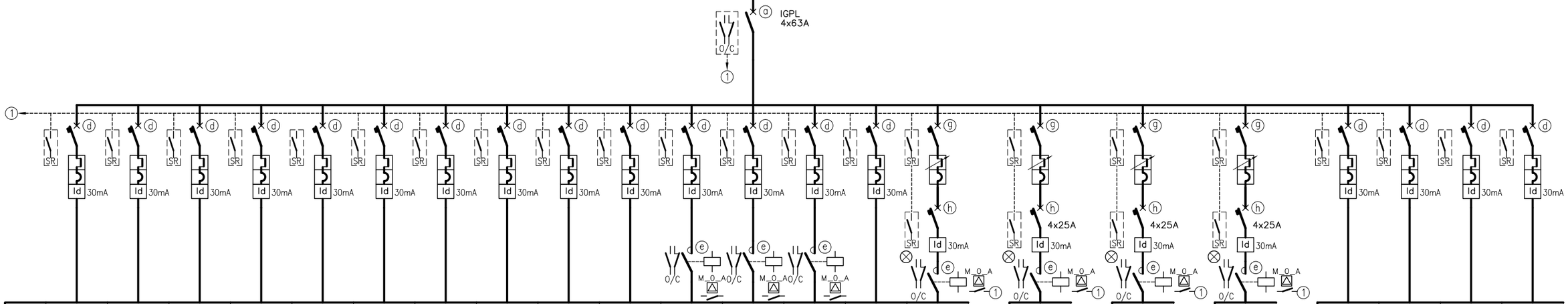
0

Sheet n.

Pag.45 seg. 46

(SHEET 45)

(SHEET 47)



1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9	PLS10	PLS11	PLS12	PLS13	PLS14	PLS15
2	5.0	1.6	3.6	0.8	2.0	3.0	3.6	0.8	1.0	0.5	0.8	0.7	0.8	2.2	1.5
3	7.2	7.0	15.7	3.5	8.7	13.1	15.7	3.5	1.5	2.2	3.5	3.1	3.5	9.6	3.5
4	4x25	1x16+N	1x25+N	1x16+N	1x16+N	1x25+N	1x25+N	1x16+N	4x16	1x16+N	1x16+N	1x16+N	1x16+N	1x16+N	3x25
5											3x17–AC3	3x17–AC3	3x17–AC3		3x12–AC3
6															2.5÷4.0
7															
8	5x6	3x4	3x6	3x4	3x4	3x6	3x6	3x4	5x1x4	3x1x4	3x4	3x4	3x4	3x4	4x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	45+15	55	55	45+15	10	10	45	45	5	5	45+15	55	45	50+30	20
11	SERVICE SOCKET OUTLET	LOAD POWER OFFICES	SERVICE SOCKET OUTLET AND HAND DRYER	LOAD POWER OFFICES	LOAD POWER	SERVICE SOCKET OUTLET	SERVICE SOCKET OUTLET AND HAND DRYER	LOAD POWER OFFICES	INDUSRIAL LOAD POWER	SERVICE SOCKET OUTLET	FAN COIL	FAN COIL	FAN COIL	SPLIT ROOF LEVEL	WC FAN 1
12	ZONES Z1–Z4 Z8–Z9	ZONES Z2–Z3	ZONES Z2–Z3	ZONE Z4	ZONE Z8	ZONE Z5	ZONES Z6–Z7	ZONE Z7	ZONE Z10	ZONE Z10	ZONES Z1–Z4	ZONES Z2–Z3	ZONES Z6–Z7	ZONE Z8	

1	PLS16	PLS17	PLS18
2	1.5	1.5	1.5
3	3.5	3.5	3.5
4	3x25	3x25	3x25
5	3x12–AC3	3x12–AC3	3x12–AC3
6	2.5÷4.0	2.5÷4.0	2.5÷4.0
7			
8	4x4	4x4	4x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	35	30	35
11	WC FAN 2	WC FAN 3	WC FAN 4
12			

1	PLS19	PLS20	PLS21	PLS22
2	2.0	4.8	0.5	
3	8.7	6.9	2.2	
4	1x16+N	4x25	1x16+N	4x16
5				
6				
7				
8	3x1x4	5x6	3x4	
9	H07Z1–K 0.45/0.75kV	FG70M1 0.6/1kV	FG70M1 0.3/1kV	
10	5	10	50+25	
11	DATA RACK 19"	HAND DRYER	EXAUST FAN ROOF LEVEL	RESERVE
12	ZONE Z10	ZONE Z5		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L2/M
WIRING DIAGRAM

Reference n.

-

Drawing

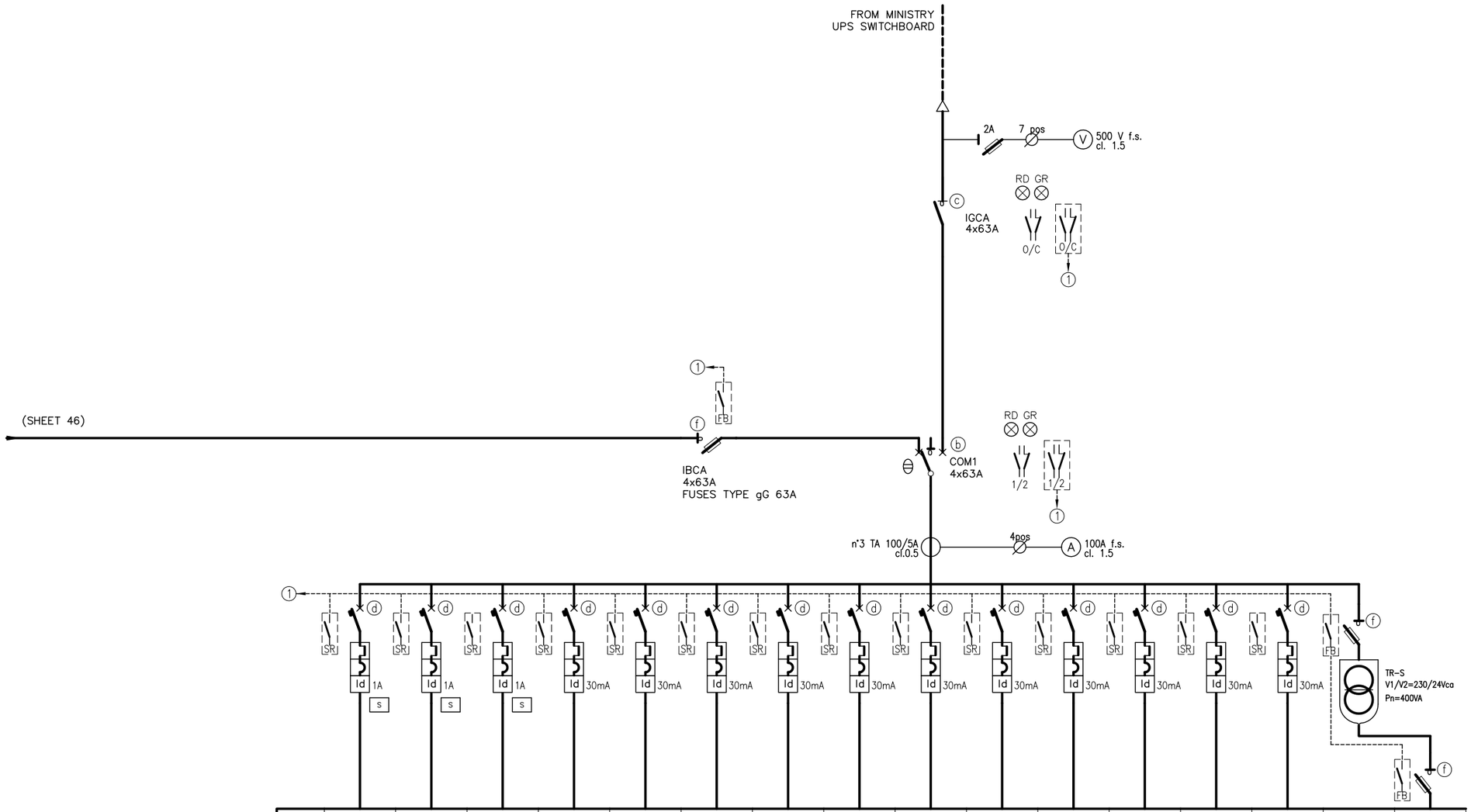
Ee_210

Rev.

0

Sheet n.

Pag.46 seg. 47



1	UM1	UM2	UM3	US1	US2	US3	US4	US5	US6	US7	US8	US9	US10	US11	TR-S	AUX
2	2.0	4.8		2.0	1.6	2.0	0.3	0.2	0.2	0.1	2.0	0.1			0.4	
3	2.9	7.0		8.7	7.0	8.7	1.3	0.9	0.9	0.4	8.7	0.5			1.8	
4	4x50 B CURVE	4x50 B CURVE	4x50 B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x10+N B CURVE	1x20+N	1x20+N
5																
6																
7															4A-aM	16A-gG
8	4x16	4x16		3x4	3x4	3x4	3x2.5	3x2.5	3x2.5	3x2.5	3x1x4	3x1x2.5			3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV		FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FTG100M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV			H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	30	35+5		55	45+15	45	45+30	45+30	45+30	10	5	5			5	5
11	SDB_L2/3 AUDITORIUM	SDB_L2/1, SDB_L2/2 AND SDB_L2/4	RESERVE	LOAD POWER OFFICES	LOAD POWER OFFICES	LOAD POWER OFFICES	FIRE DAMPERS AND SMOKE OUT	OPTICAL ACOUSTIC WARNING FIRE PANELS	DOOR CONTROL MODULE	AIR SAMPLING SMOKE DETECTOR	DATA RACK 19"	BMS	RESERVE	RESERVE		
12				ZONE Z2	ZONE Z4	ZONE Z7			ACCESS CONTROL SYSTEM	ZONE Z5						

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L2/M
WIRING DIAGRAM

Reference n.

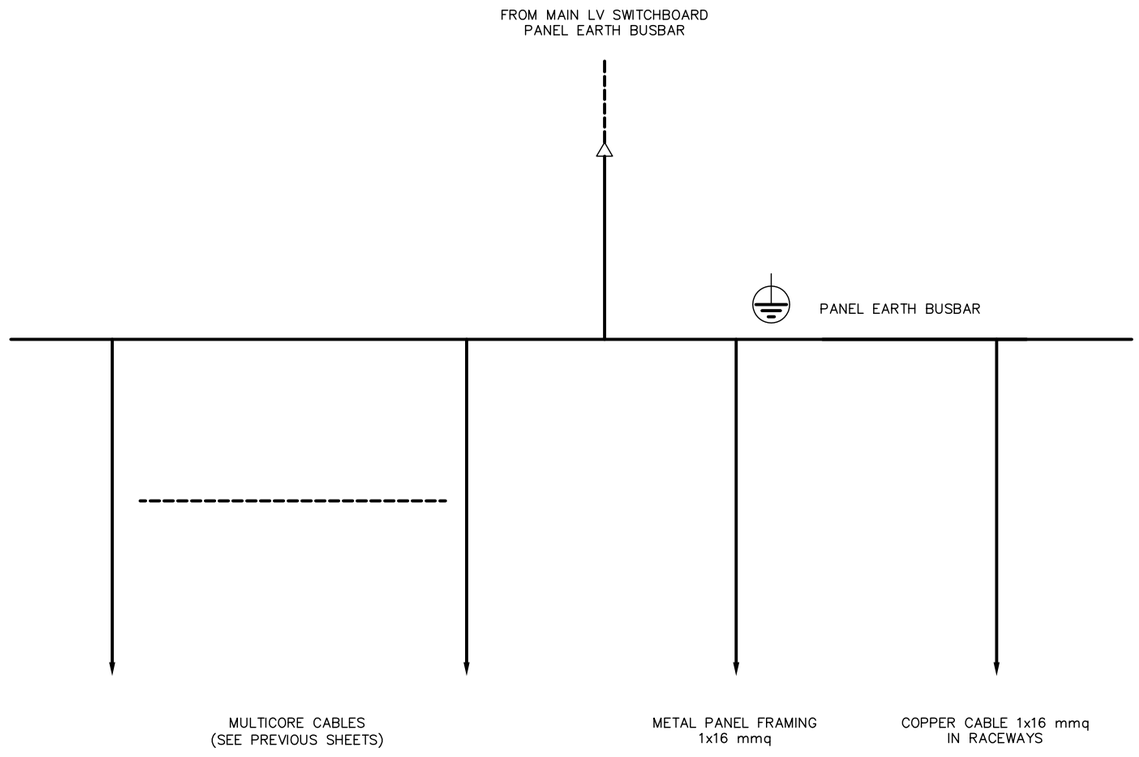
-

Drawing

Ee_210

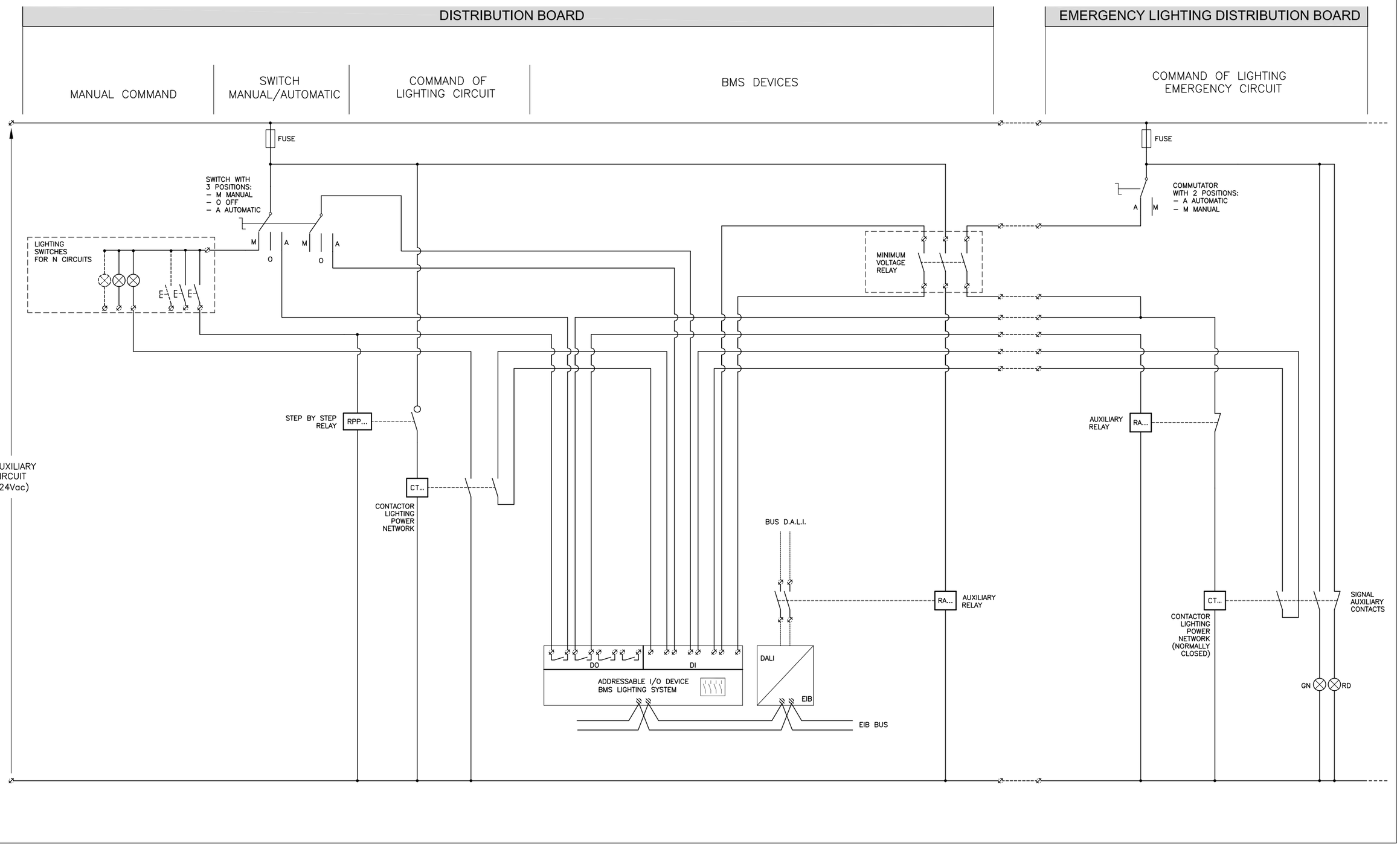
Rev. 0

Sheet n. Pag.47 seg. 48

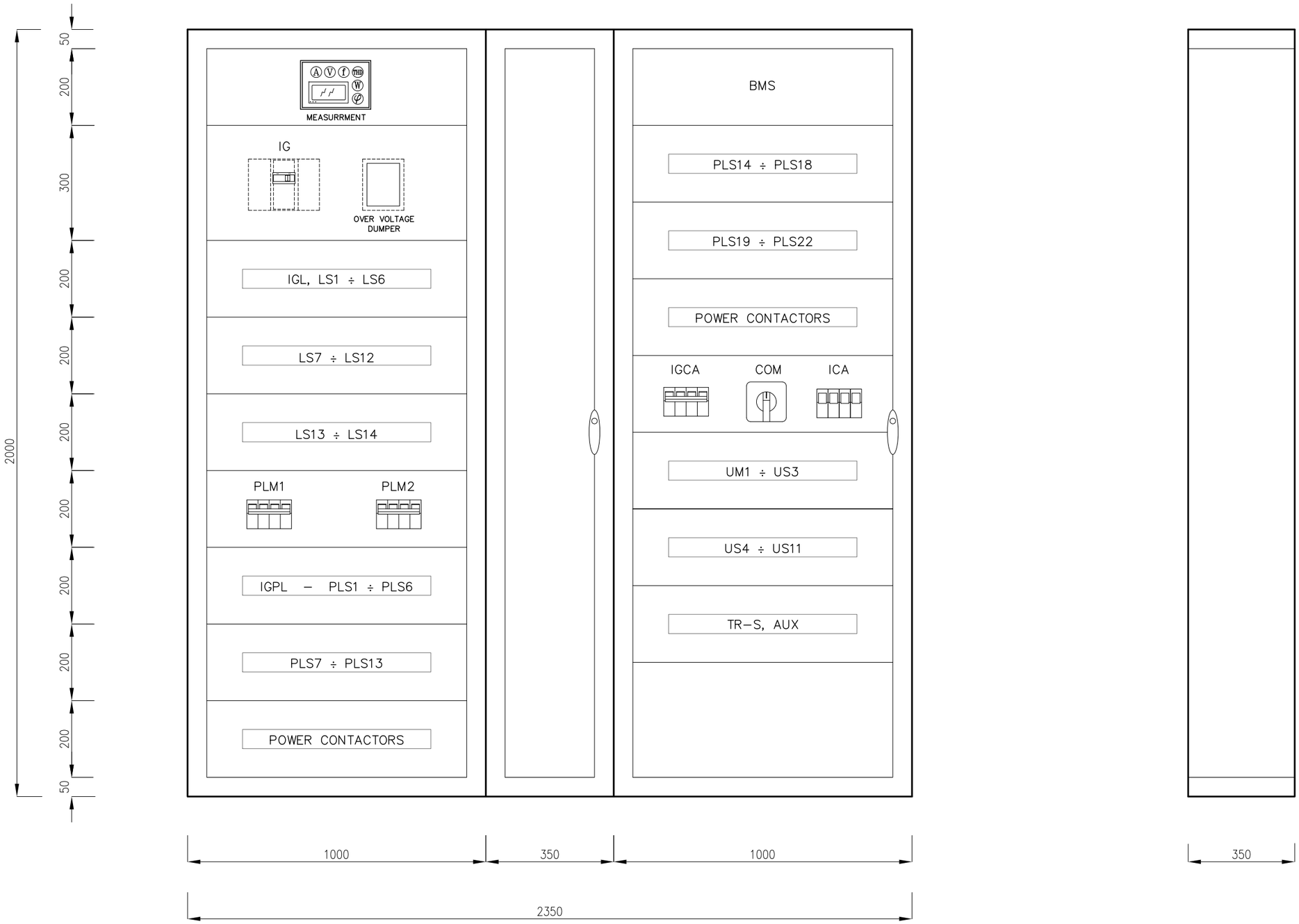


Annotations	Manens-Tifs INGEGNERIA	Title DB_L2/M EARTH CONNECTION LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 · Sheet n. Pag.48 seg. 49

LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations	Manens-Tifs INGEGNERIA	Title: DB_L2/M TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	Reference n.: -	Drawing: Ee_210
				Rev.: 0
				Sheet n.: Pag.49 seg. 50



Annotations	Manens-Tifs INGEGNERIA	Title: DB_L2/M FRONTAL LAYOUT	Reference n.: -	Drawing: Ee_210
				Rev.: 0
				Sheet n.: Pag.50 seg. 51

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

BAR AREAS DISTRIBUTION BOARD – GROUND LEVEL

INITIALS

DB_L0/BR

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~1.4kVA – I~2.0A	(Kc=1)
POWER LOAD NETWORK:	Rp~16.9kVA – I~24.4A	(Kc=0.7)
TOTAL:	Rp~18.3kVA – I~26.4A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

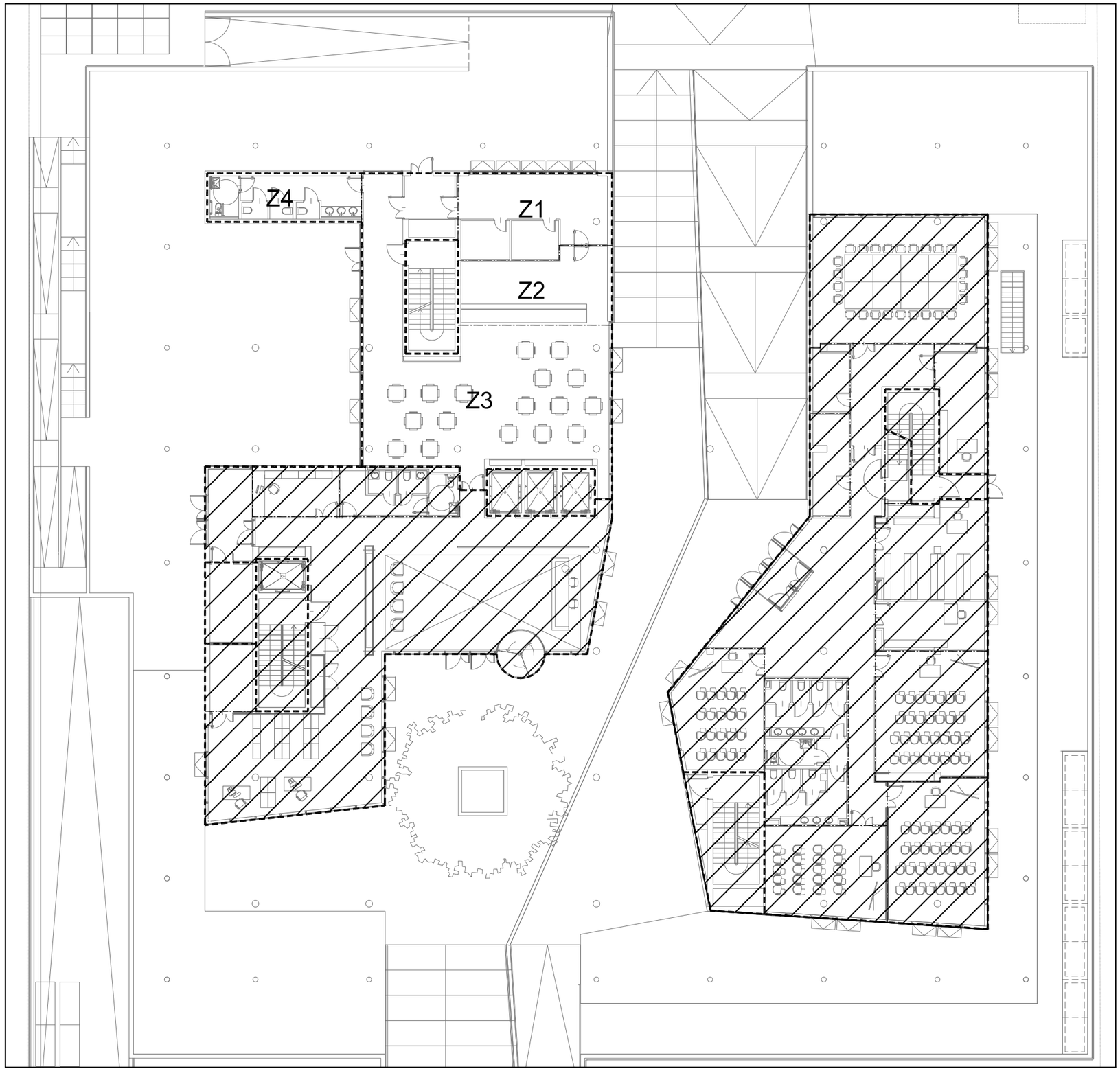
Title
DB_L0/BR
MAIN CHARACTERISTICS

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.51 seg. 52



Annotations

Manens-Tifs INGEGNERIA

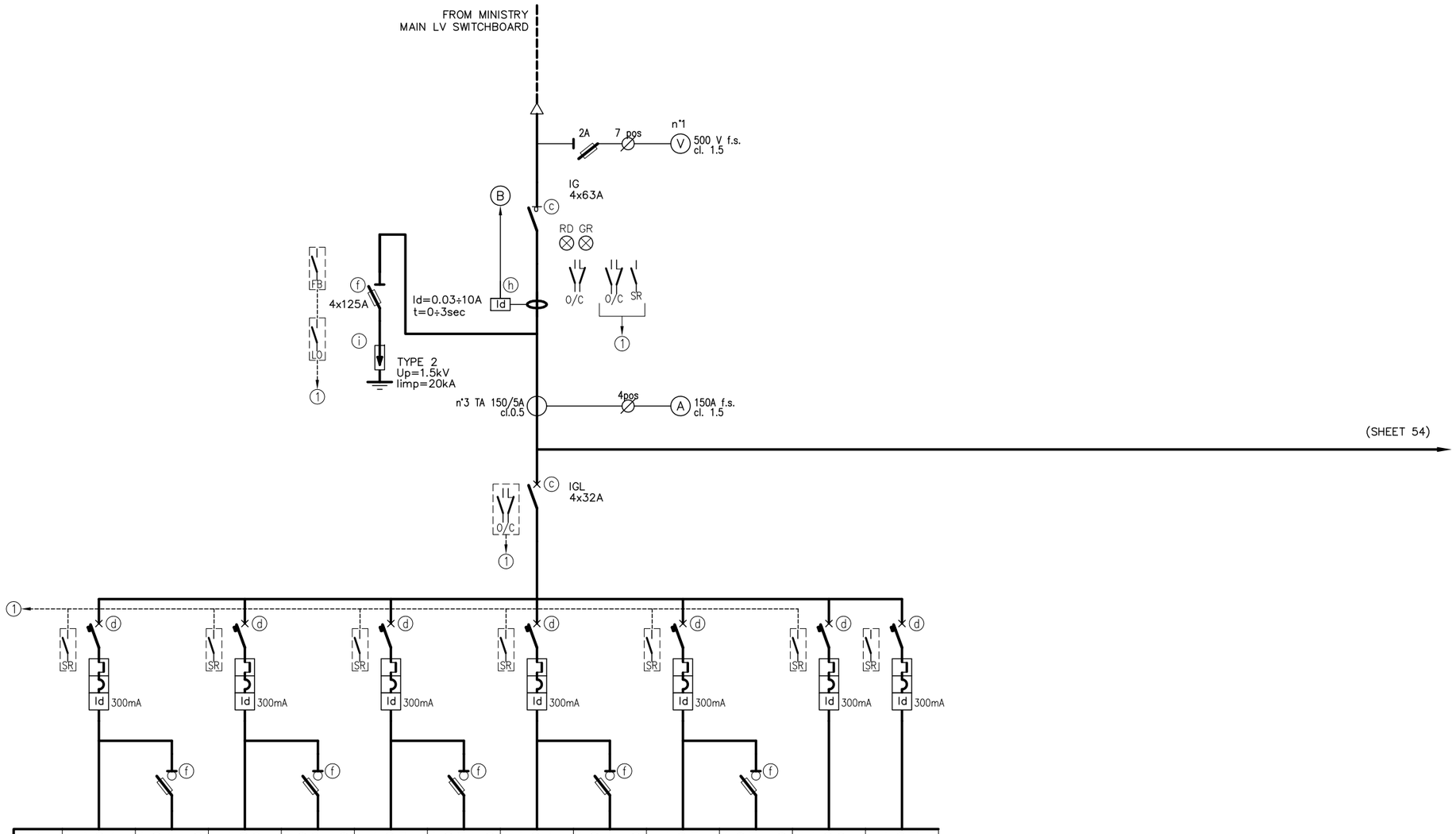
Title
DB_L0/BR
ELECTRICAL ZONES

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.52 seg. 53



1	LS1	LS1–S	LS2	LS2–S	LS3	LS3–S	LS4	LS4–S	LS5	LS5–S	LS6	LS7
2	0.2		0.2		0.5		0.3		0.1		0.1	
3	0.9		0.9		2.2		1.3		1.4		0.4	
4	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x20+N	1x10+N	1x10+N
5												
6												
7		2A–gG		2A–gG		2A–gG		2A–gG		2A–gG		
8	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	2x2.5	3x2.5	
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	
10	10	10	15	15	40	40	35	35	40	40	40	
11	PREPARATION	EMERGENCY LIGHTING	BAR	EMERGENCY LIGHTING	HALL CORRIDOR CIRCUIT 1	EMERGENCY LIGHTING	HALL CORRIDOR CIRCUIT 2	EMERGENCY LIGHTING	WC	EMERGENCY LIGHTING	EXIT EMERGENCY LIGHTING	RESERVE
12	ZONE Z1	ZONE Z1	ZONE Z1	ZONE Z2	ZONE Z3	ZONE Z3	ZONE Z4	ZONE Z4	ZONE Z5	ZONE Z5		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/BR
WIRING DIAGRAM

Reference n.

-

Drawing

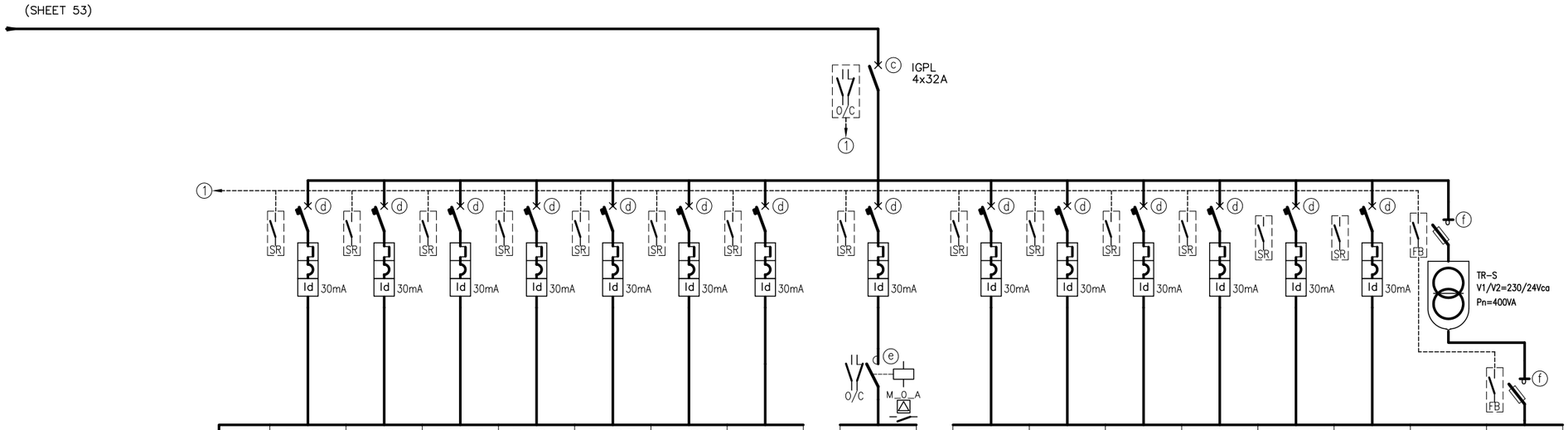
Ee_210

Rev.

0

Sheet n.

Pag.53 seg. 54



1	PLS1	PLS2	PLS3	PLS4	PLS5	PLS6	PLS7	PLS8	PLS9	PLS10	PLS11	PLS12	PLS13	PLS14	TR-S	AUX
2	2.0	6.0	1.4	1.8	1.8	1.8	1.9	0.5	0.2	3.0	0.1	3.2			0.4	
3	8.7	8.7	6.1	7.8	7.8	7.8	8.3	2.2	0.3	13.1	0.4	13.9			1.8	
4	1x16+N	4x16	1x16+N	1x16+N	1x16+N	1x16+N	1x16+N	1x16+N	1x16+N	1x25+N	1x16+N	1x25+N	1x16+N	4x16	1x20+N	1x20+N
5								3x17-AC3								
6																
7															4A-aM	16A-gG
8	3x4	5x4	3x4	3x4	3x4	3x4	3x4	3x4	3x2.5	3x6	3x4	3x6			3x1x2.5	2x1x4
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FTG10OM1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV			H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	10	10	15	15	15	15	40	60	40	40	20	40			5	5
11	PREPARATION SOKETS	PREPARATION INDUSTRIAL SOKETS	BAR SOKETS	BAR DESK SOKETS 1	BAR DESK SOKETS 2	BAR DESK SOKETS 3	HALL CORRIDOR	FAN COIL	EXTRA LOW VOLTAGE SYSTEME	WC	AIR SAMPLING SMOKE DETECTOR	HAND DRYER	RESERVE	RESERVE		
12	ZONE Z1	ZONE Z1	ZONE Z2	ZONE Z2	ZONE Z2	ZONE Z2	ZONE Z3	ZONE Z3	ZONE Z3	ZONE Z4	ZONE Z4	ZONE Z4				

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/BR
WIRING DIAGRAM

Reference n.

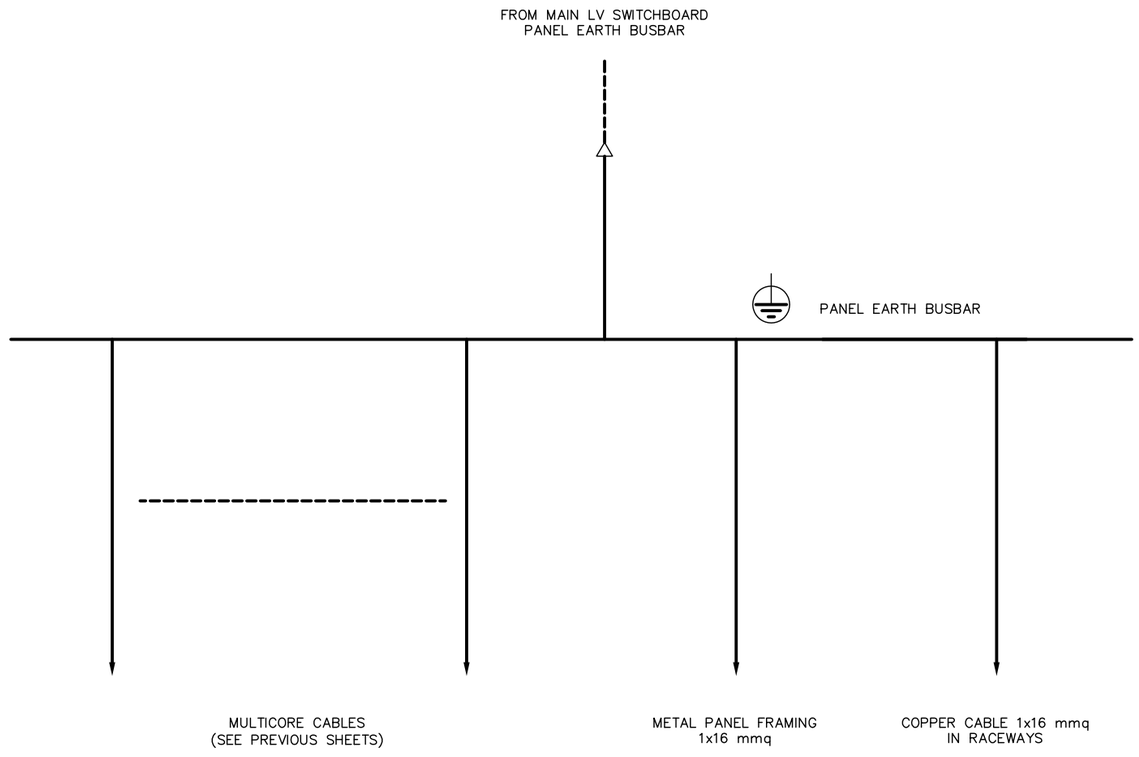
-

Drawing

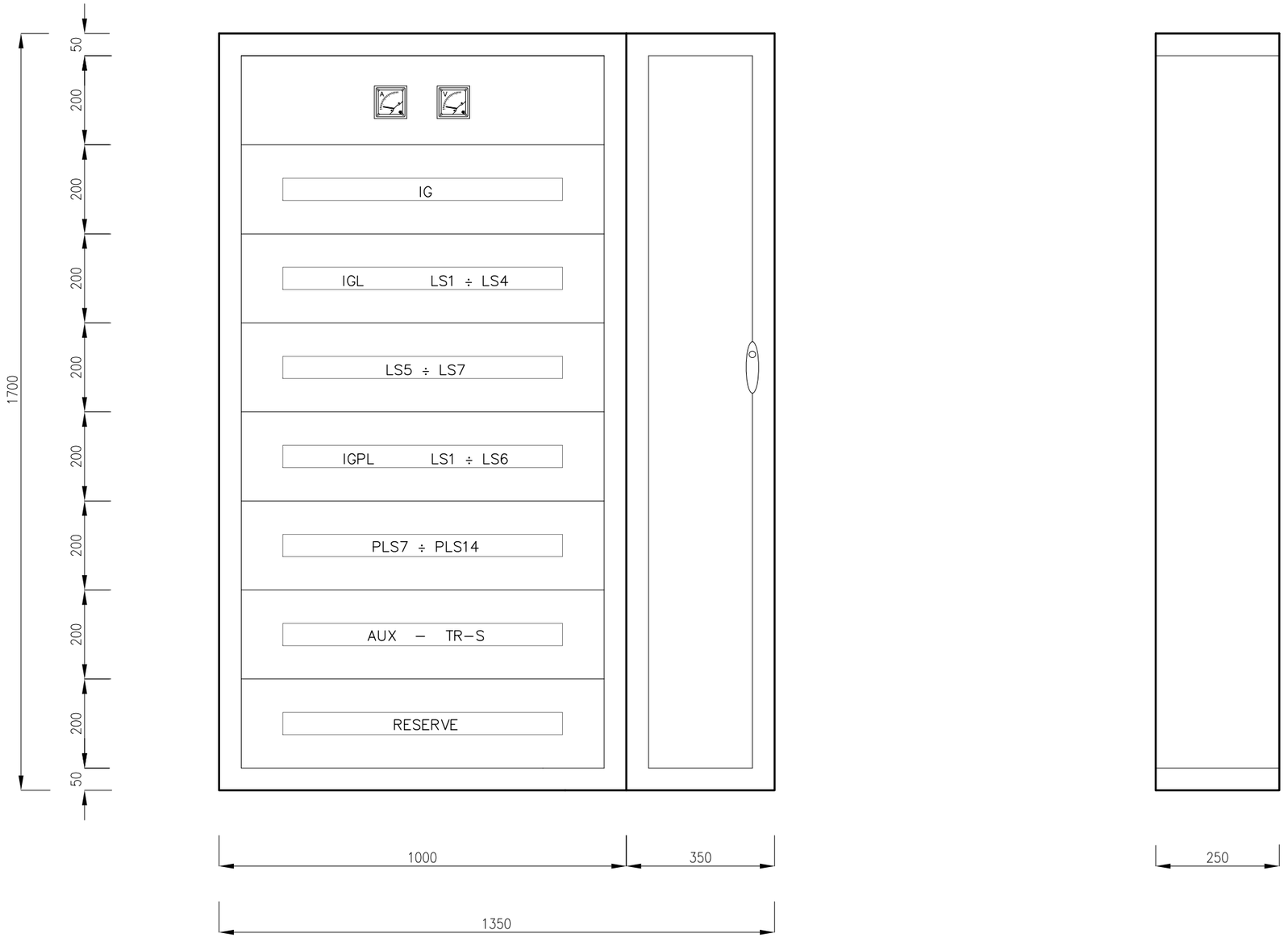
Ee_210

Rev. 0

Sheet n. Pag.54 seg. 55



Annotations	Manens-Tifs INGEGNERIA	Title DB_L0/BR EARTH CONNECTION LAYOUT	Reference n. -	Drawing **Ee_210** Rev. **0** · Sheet n. Pag.55 seg. 56



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L0/BR
FRONTAL LAYOUT

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.56 seg. 57

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

MAIN DATA ROOM DISTRIBUTION BOARD – GROUND LEVEL

INITIALS

DB_L0/MDR

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING AND:		
POWER LOAD NETWORK:	Rp~18.6kVA – I~26.8A	(Kc=1)
UPS NETWORK:	Rp~8.5kVA – I~12.3A	(Kc=1)
TOTAL:	Rp~27.1kVA – I~39.1A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

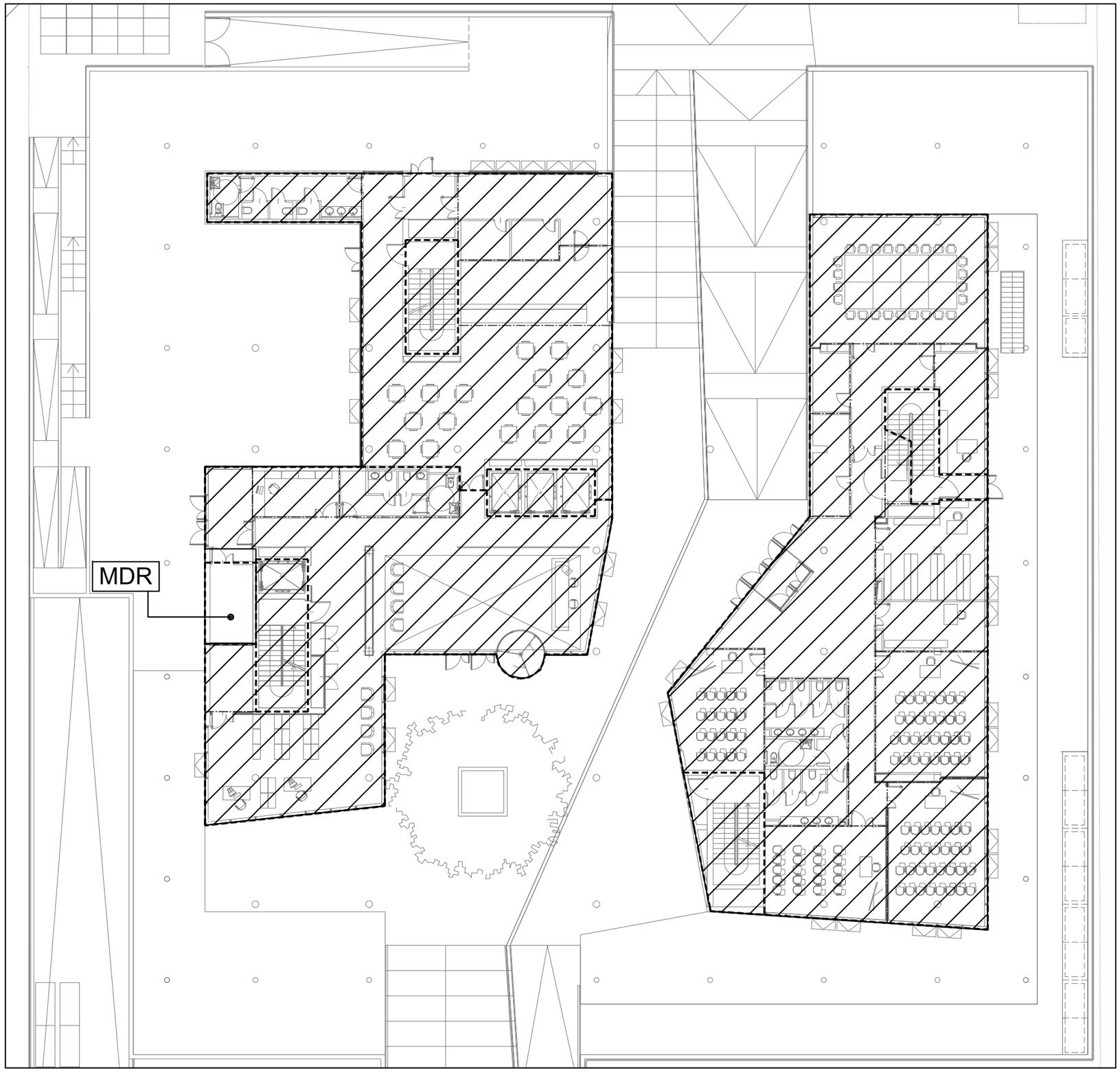
Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



Annotations

Manens-Tifs INGEGNERIA

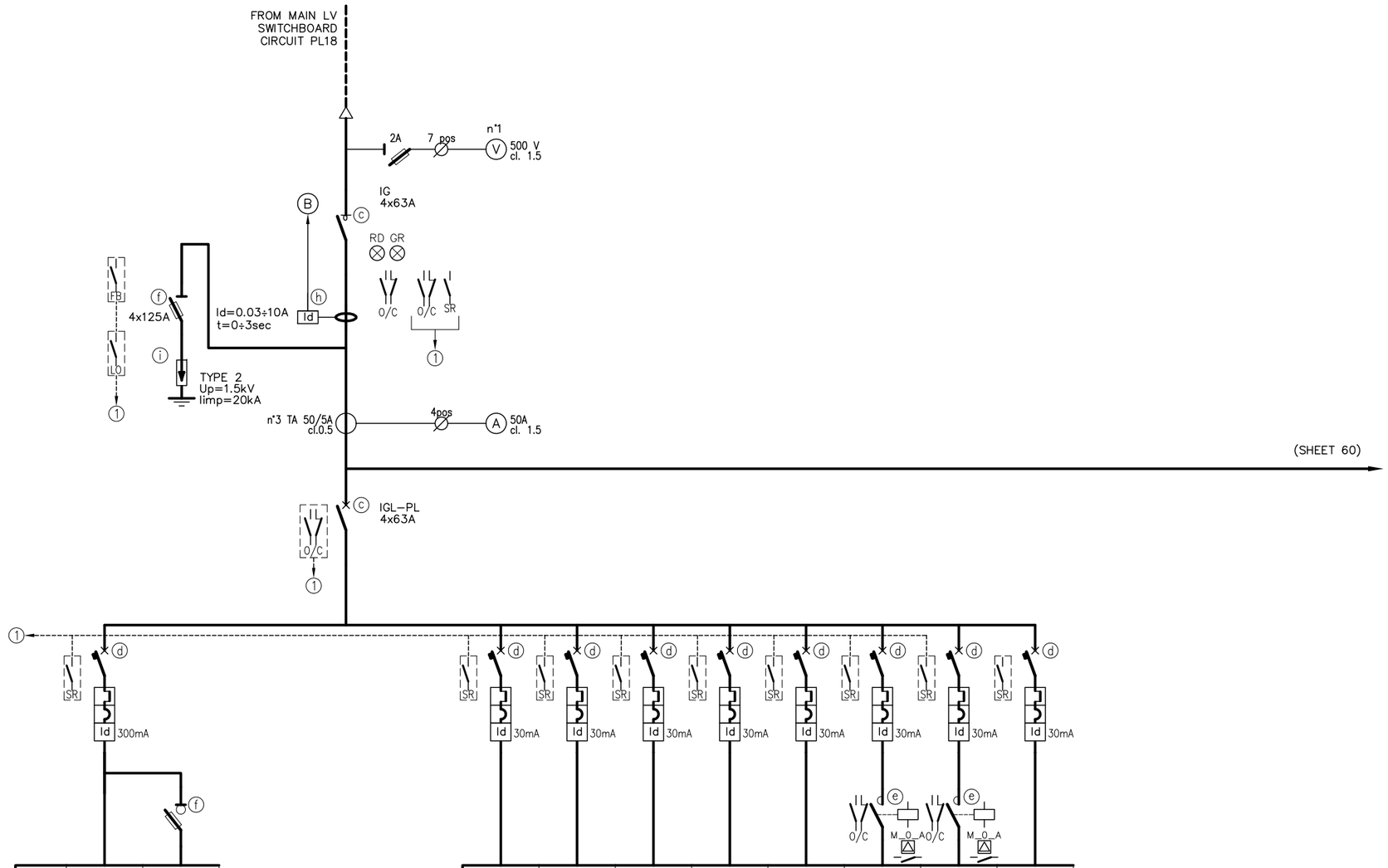
Title
DB_L0/MDR
ELECTRICAL ZONES

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.58 seg. 59



1	LS1	LS5–S
2	0.1	
3	0.4	
4	1x10+N	1x20+N
5	3x12–AC3	
6		
7		2A–gG
8	3x1x2.5	2x1x2.5
9	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV
10	5	5
11	MAIN DATA ROOM	EMERGENCY LIGHTING
12		

PLS1	PLS2	PLS3	PLS5	PLS6	PLS7	PLS8	PLS9
2.5	2.0	2.0	2.0	2.0	4.0	4.0	
3.6	8.7	8.7	8.7	8.7	5.8	5.8	
4x16	1x16+N	1x16+N	1x16+N	1x16+N	4x16	4x16	1x16+N
					5x17–AC3	5x17–AC3	
5x1x4	3x1x4	3x1x4	3x1x4	3x1x4	5x1x4	5x1x4	
H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	
5	5	5	5	5	5	5	
MAIN DATA ROOM	DATA RACK 1	DATA RACK 2	DATA RACK 3	DATA RACK 4	MONOBLOK CONDITIONIG UNIT 1	MONOBLOK CONDITIONIG UNIT 2	RESERVE

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/MDR
WIRING DIAGRAM

Reference n.

-

Drawing

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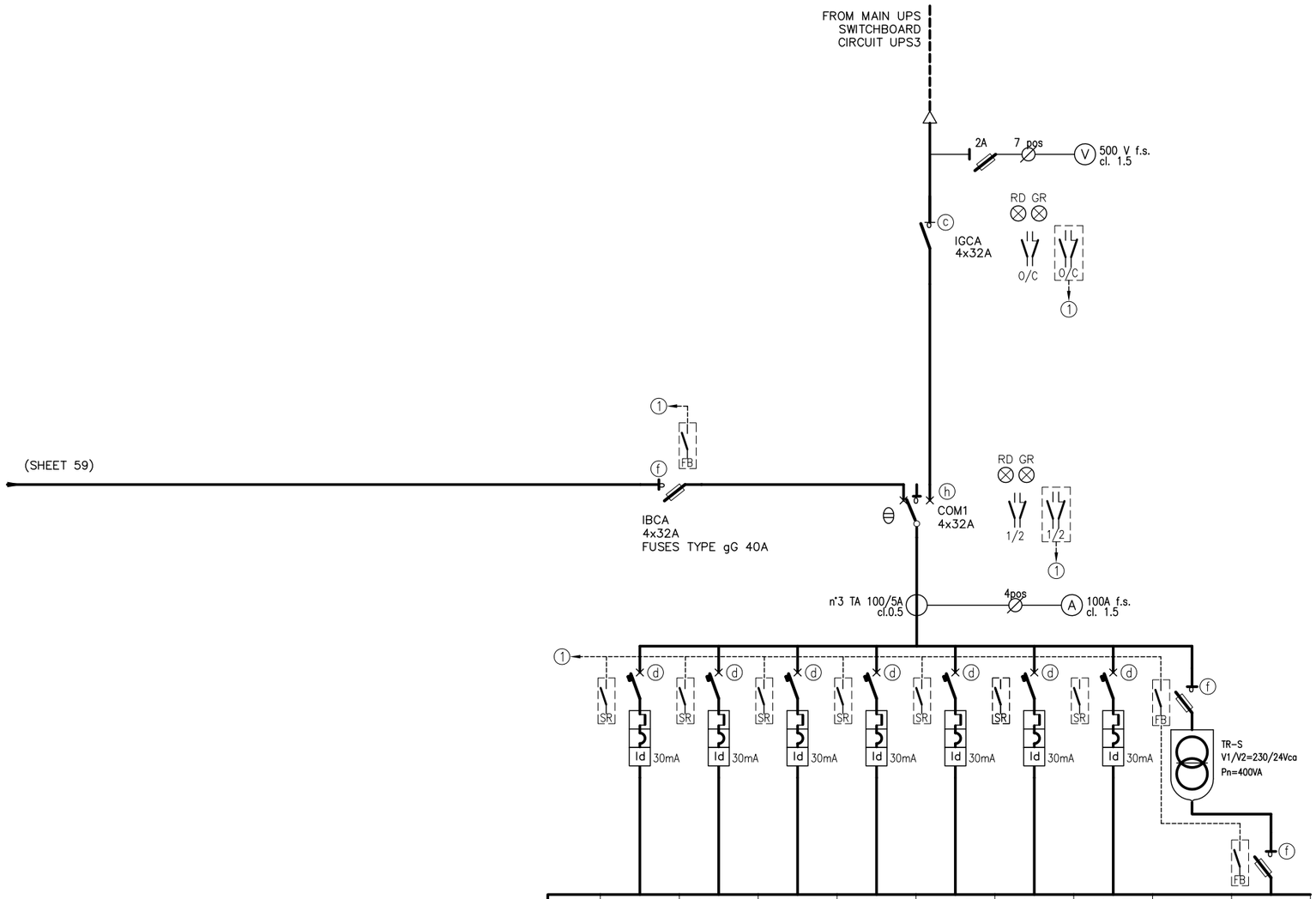
Sheet n. Pag.59 seg. 60



1	US1	US2	US3	US4	US5	US6	US7	TR-S	AUX
2	0.1	2.0	2.0	2.0	2.0			0.4	
3	0.4	8.7	8.7	8.7	8.7			1.8	
4	1x10+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x16+N B CURVE	1x10+N B CURVE	4x10 B CURVE	1x20+N	1x20+N
5									
6									
7								4A-aM	16A-gG
8	3x1x2.5	3x1x4	3x1x4	3x1x4	3x1x4			3x1x2.5	2x1x4
9	H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV			H07Z1-K 0.45/0.75kV	H07Z1-K 0.45/0.75kV
10	5	5	5	5	5			5	5
11	DOOR OPENER	DATA RACK 1	DATA RACK 2	DATA RACK 3	DATA RACK 4	RESERVE	RESERVE		
12									

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/MDR
WIRING DIAGRAM

Reference n.

-

Drawing

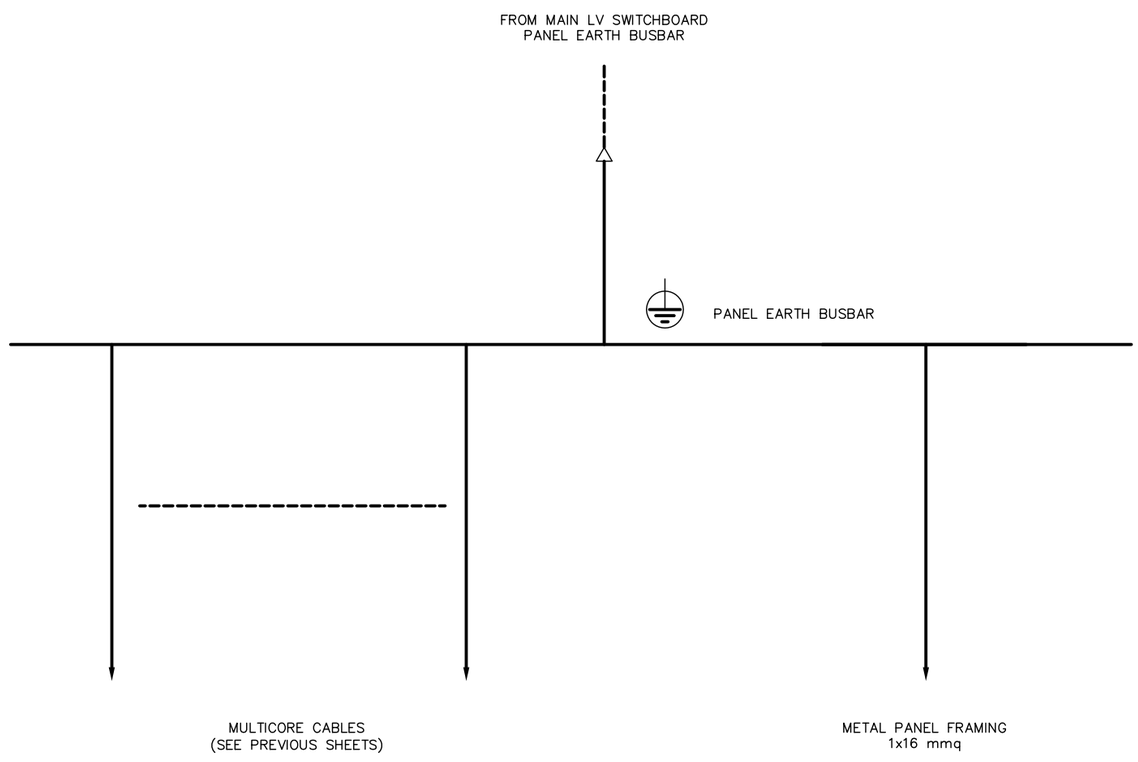
Ee_210

Rev.

0

Sheet n.

Pag.60 seg. 61



Annotations

Manens-Tifs INGEGNERIA

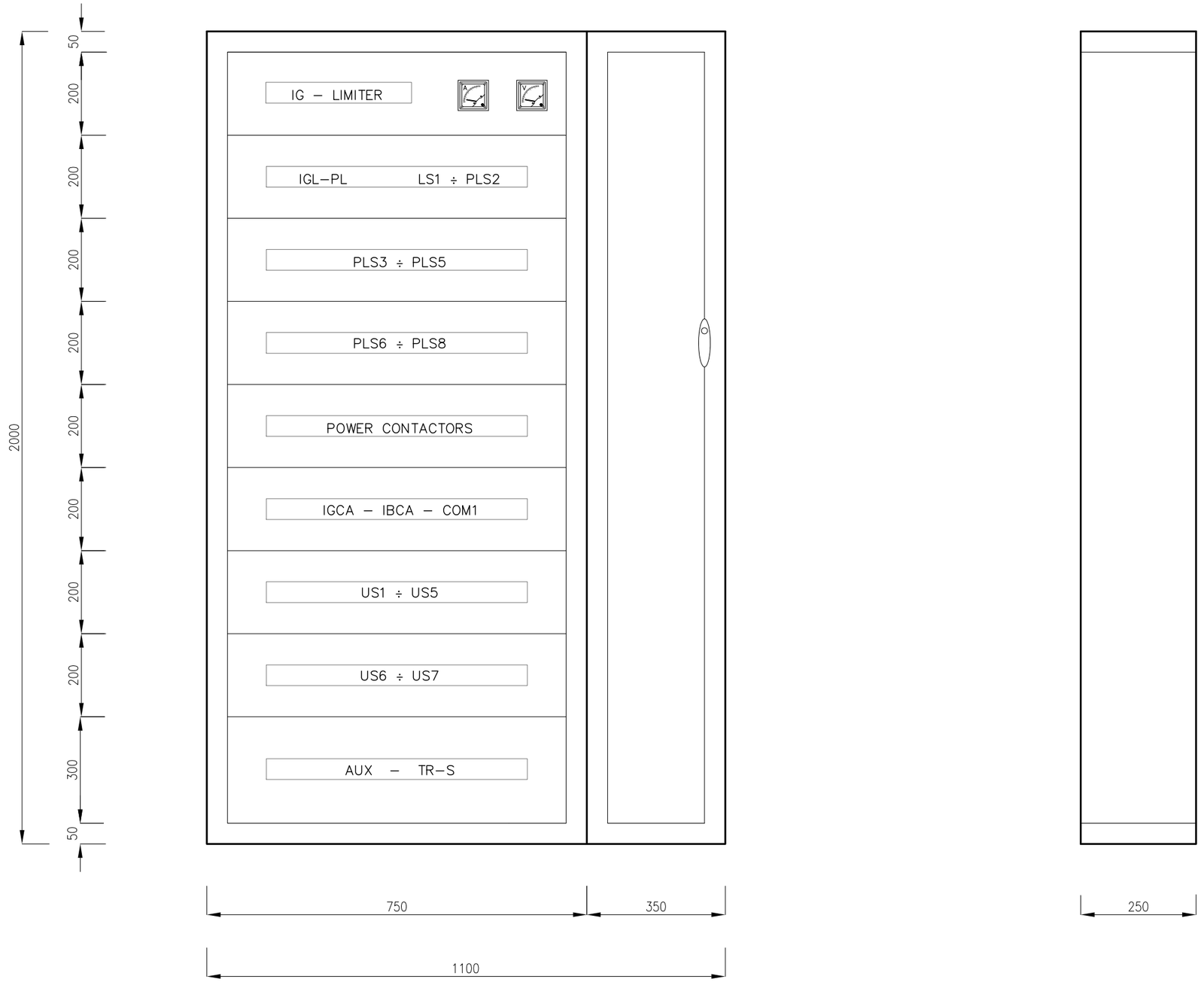
Title
DB_L0/MDR
EARTH CONNECTION LAYOUT

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.61 seg. 62



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L0/MDR
FRONTAL LAYOUT

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.62 seg. 63

LEGENDA TABELLA DEL QUADRO

1	SIGLA UTENZA	
2	POTENZA MASSIMA ASSORBITA	kVA
3	CORRENTE MASSIMA ASSORBITA	A
4	N.poli–I nom.–TARATURA INTERR.RE	A
5	I nominale CONTATTORE	A
6	TARATURA RELE' TERMICO	A
7	I nominale FUSIBILE	A
8	FORMAZIONE LINEA	mm²
9	TIPO CAVO	
10	LUNGHEZZA LINEA	m
11	DESTINAZIONE	
12	NOTA	

CARATTERISTICHE PRINCIPALI DEL QUADRO

DENOMINAZIONE DEL QUADRO

NETWORK SWICHING BOARD

SIGLA

Q_L2/M/LIFT

TENSIONE NOMINALE

Vn= 230/400V

FREQUENZA

f=50Hz

POTENZE E CORRENTI MASSIME CONTEMPORANEE

TOTALE: P~20.0kVA – I~28.9A

POTERE DI INTERRUZIONE NOMINALE LIMITE MINIMO INTERRUTTORI DERIVATI (A NORME CEI EN 60898)

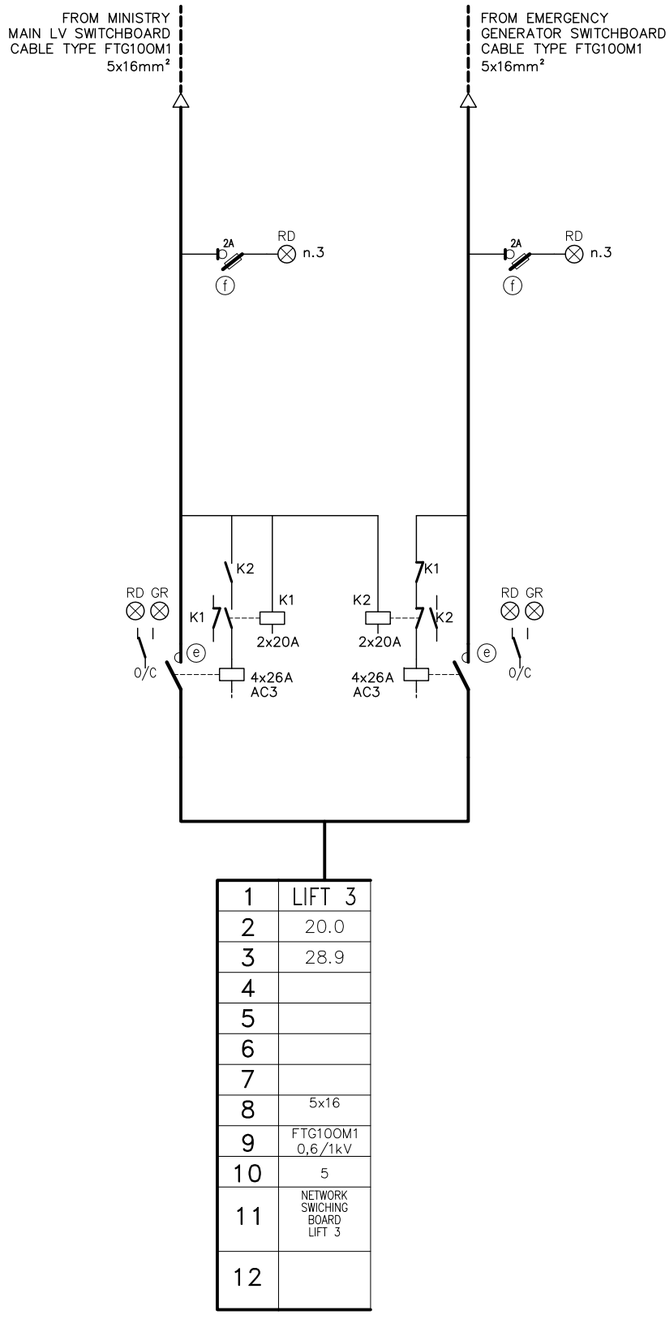
Ics $\geqslant$ 6kA

STRUTTURA DEL QUADRO

MODULARE, IN LAMIERA, CON PORTINA TRASPARENTE DI PROTEZIONE

GRADO DI PROTEZIONE MINIMO

IP40 (IP20 A PANNELLI APERTI)



1	LIFT 3
2	20.0
3	28.9
4	
5	
6	
7	
8	5x16
9	FTG10OM1 0,6/1kV
10	5
11	NETWORK SWICHING BOARD LIFT 3
12	

Annotations

Manens-Tifs INGEGNERIA

Title
DB_L2/M/LIFT
WIRING DIAGRAM AND FRONTAL LAYOUT

Reference n.
-

Drawing
Ee_210

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0

Sheet n.
Pag.64 seg. 65

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TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

UNIVERSITY DISTRIBUTION BOARD – ARCHIVES – BASAMENT LEVEL

INITIALS

DB_L–1/U

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING NETWORK:	Rp~1.1kVA	– I~1.6A	(Kc=1)
POWER LOAD NETWORK:	Rp~1.0kVA	– I~1.4A	(Kc=0.3)
TOTAL:	Rp~2.1kVA	– I~3.0A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

THERMOPLASTIC DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

Annotations

Manens-Tifs INGEGNERIA

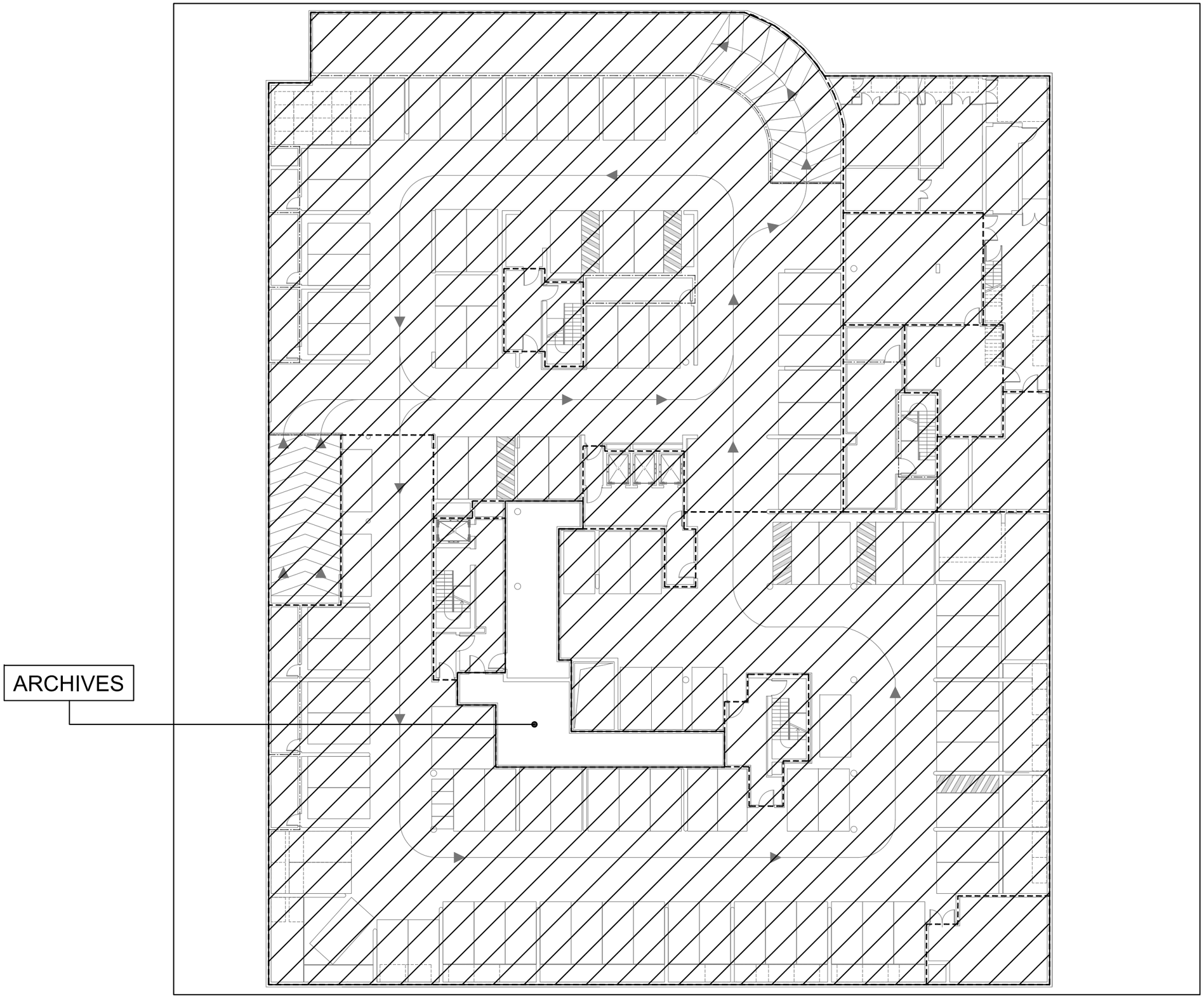
Title
DB_L-1/U
MAIN CHARACTERISTICS

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.65 seg. 66



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L-1/U
ELECTRICAL ZONES

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.66 seg. 67

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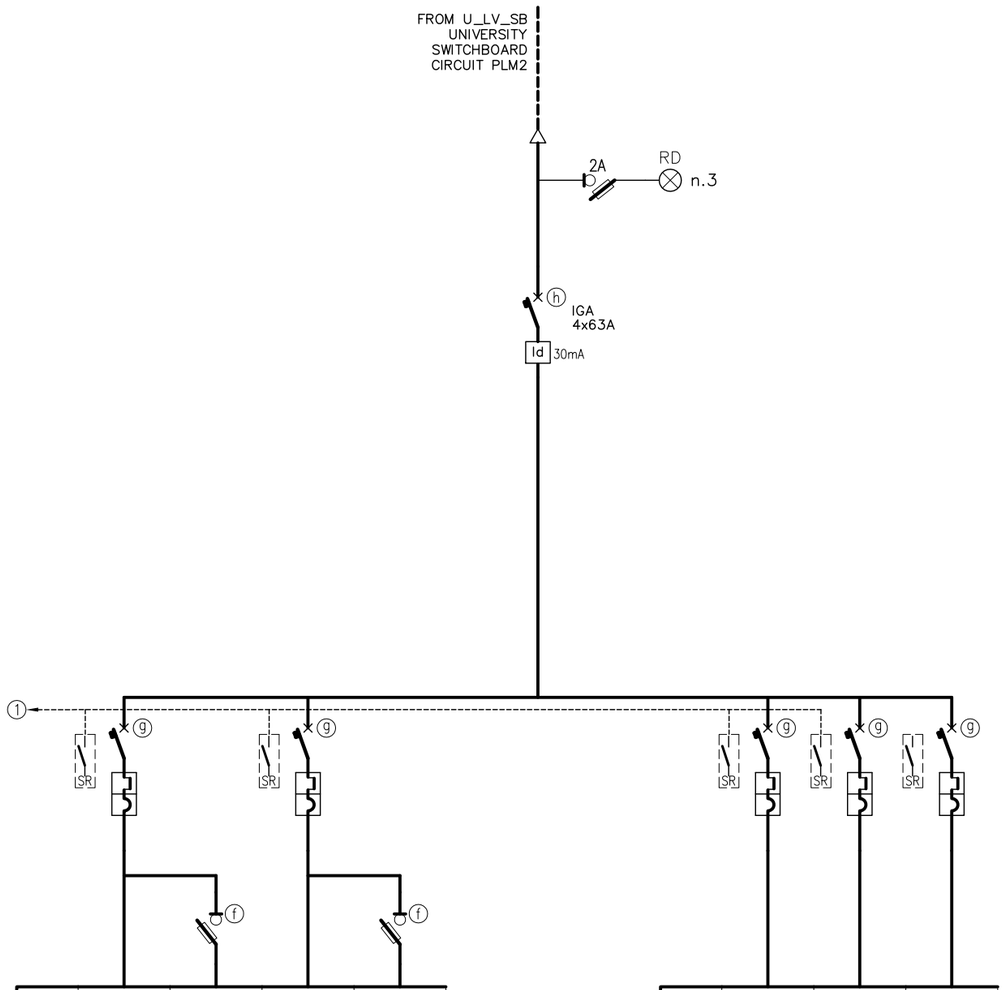

1	LS1	LS1–S	LS2	LS2–S
2	0.5	0.05	0.5	0.05
3	2.2	0.3	2.2	0.3
4	1x10+N	1x20+N	1x10+N	1x20+N
5				
6				
7		2A–gG		2A–gG
8	3x1x2.5	2x1x2.5	3x1x2.5	2x1x2.5
9	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV
10	20	20	35	35
11	LIGHTING SYSTEM	EMERGENCY LIGHTING	LIGHTING SYSTEM	EMERGENCY LIGHTING
12	ARCHIVE 1	ARCHIVE 1	ARCHIVE 2	ARCHIVE 2

1	PLS1	PLS2	PLS3
2	1.2	2.0	
3	5.3	2.9	
4	1x25+N	4x16	1x16
5			
6			
7			
8	3x1x6	5x1x4	
9	H07Z1–K 0.45/0.75kV	H07Z1–K 0.45/0.75kV	
10	35	35	
11	SERVICE SOCKET OUTLET	INDUSTRIAL LOAD POWER	RESERVE
12			

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L-1/U
WIRING DIAGRAM

Reference n.

-

Drawing

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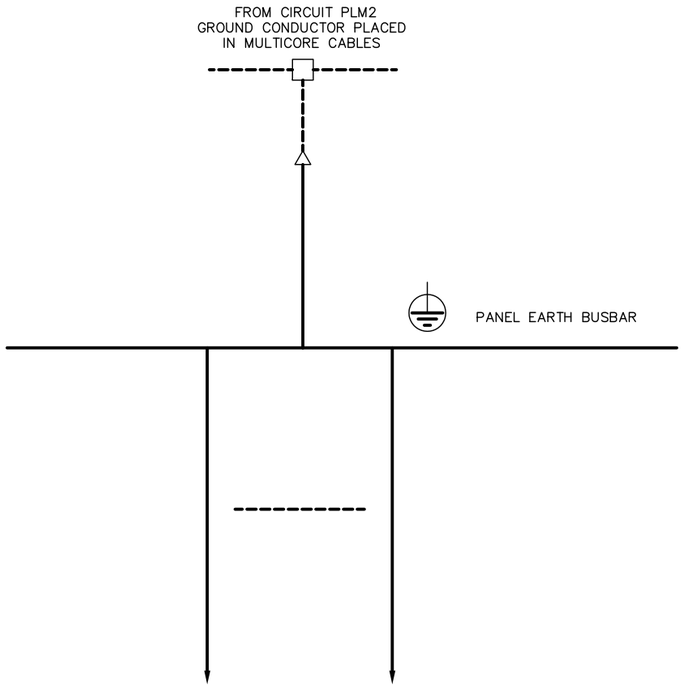
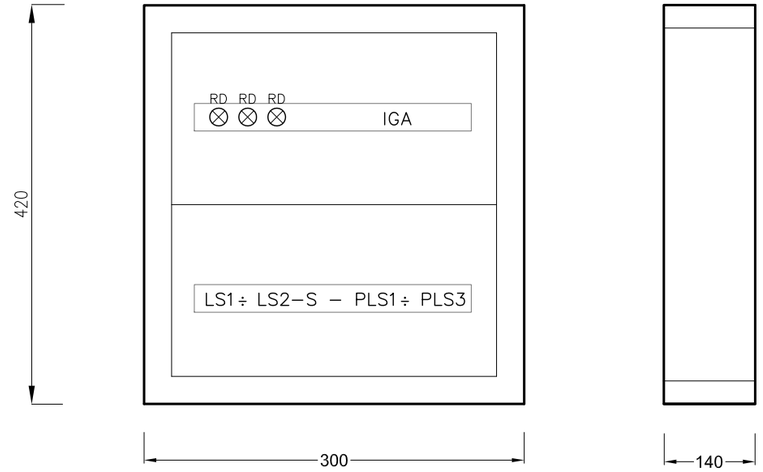
Sheet n. Pag.67 seg. 68

EARTH CONNECTION LAYOUT



FRONTAL LAYOUT



Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/U EARTH CONNECTION LAYOUT AND FRONTAL LAYOUT	Reference n. -	Drawing Ee_210 Rev. 0 / Sheet n. Pag.68 seg. 69

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

UNIVERSITY DISTRIBUTION BOARD – GROUND LEVEL

INITIALS

DB_L0/U/1 – DB_L0/U/2 – DB_L0/U/3 – DB_L0/U/4 – DB_L0/U/5

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

LIGHTING AND POWER LOAD NETWORK:	Rp~1.7kVA	– I~7.4A	(Kc=0.6)
UPS NETWORK:	Rp~1.3kVA	– I~5.6A	(Kc=0.7)
TOTAL:	Rp~3.0kVA	– I~13.0A	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

THERMOPLASTIC DISTRIBUTION BOARD (RECESSED INSTALLATION)

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

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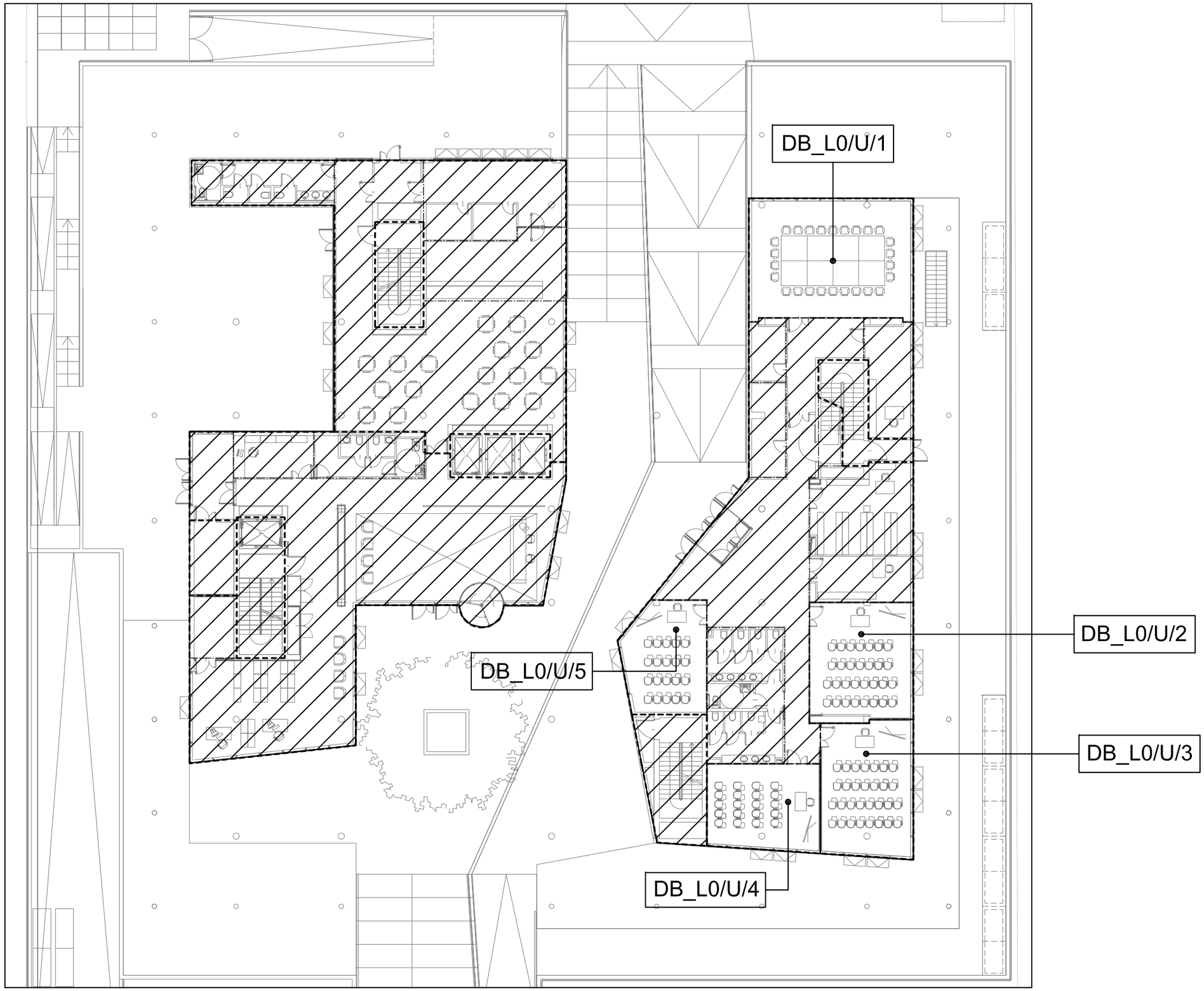

Annotations

Manens-Tifs INGEGNERIA

Title
DB_L0/U/1 - DB_L0/U/2 - DB_L0/U/3 - DB_L0/U/4 - DB_L0/U/5
ELECTRICAL ZONES

Reference n.
-

Drawing
Ee_210

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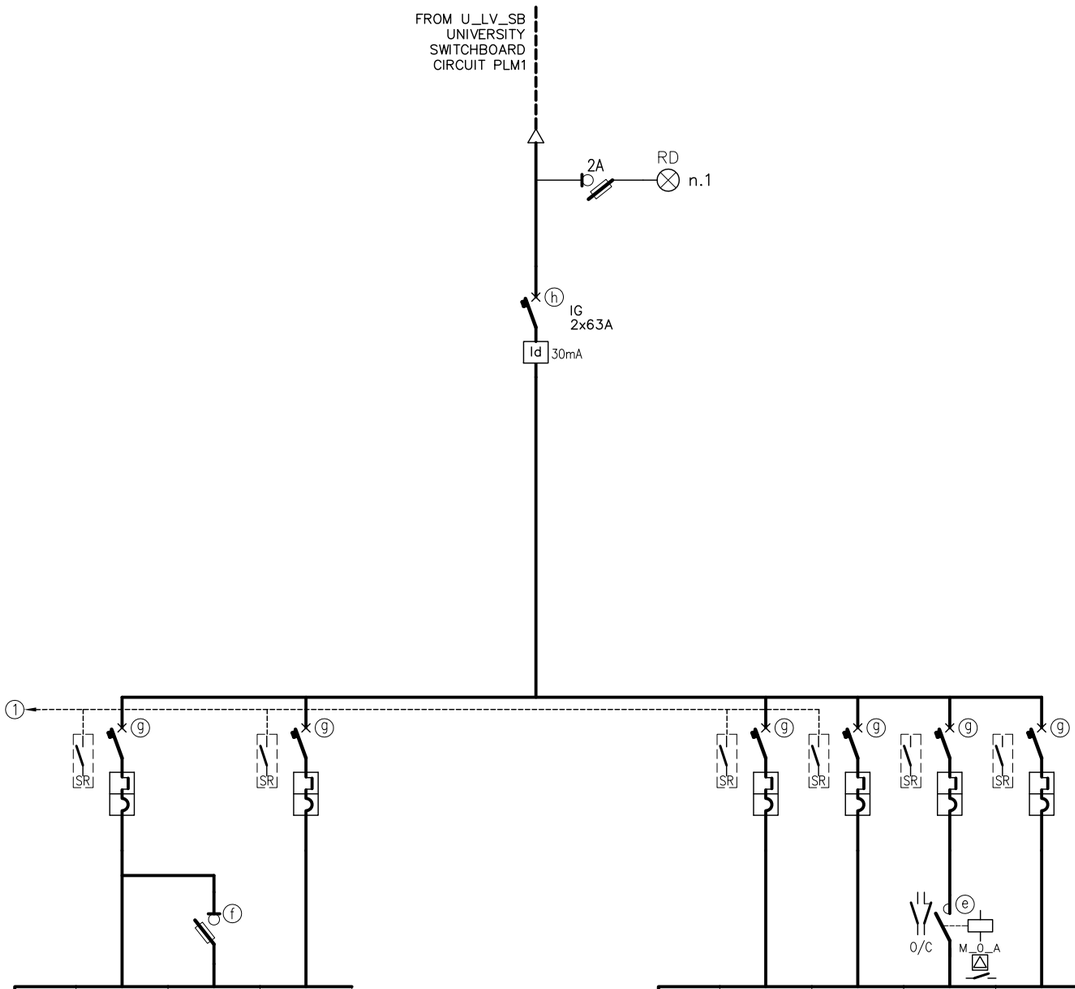
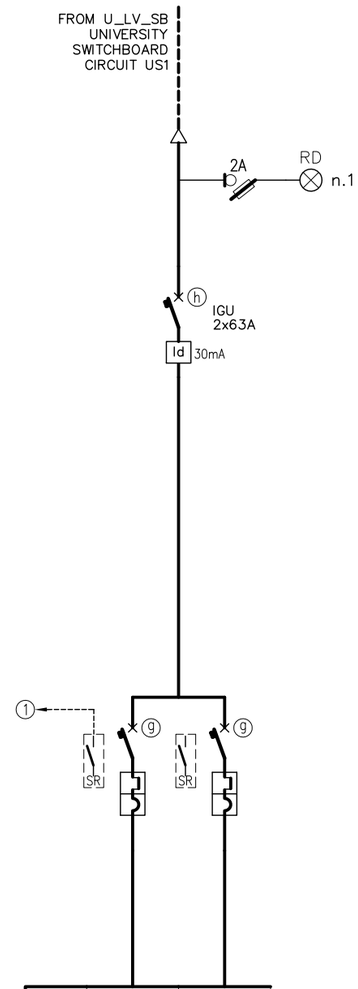
Sheet n.
Pag.70 seg. 71



1	LS1	LS1–S	LS2–S
2	0.6	0.05	0.05
3	2.6	0.3	2.2
4	1x10+N	1x20+N	1x10+N
5			
6			
7		2A–gG	
8	3x2.5	2x2.5	3x2.5
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	10	10	10
11	LIGHTING SYSTEM	EMERGENCY LIGHTING	EXIT EMERGENCY LIGHTING
12			

1	PLS1	PLS2	PLS3	PLS4
2	1.8	0.3	0.1	
3	7.9	1.3	0.5	
4	1x16+N	1x16+N	1x10+N	1x16+N
5			1x20	
6				
7				
8	3x4	3x4	3x2.5	
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	
10	10	10	10	
11	LOAD POWER	LOAD POWER	FAN–COIL	RESERVE
12				



1	UPS1	UPS2
2	1.8	
3	7.9	
4	1x16+N	1x16+N
5		
6		
7		
8	3x4	
9	FG70M1 0.6/1kV	
10	10	
11	LOAD POWER	RESERVE
12		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/U/1 - DB_L0/U/2 - DB_L0/U/3
WIRING DIAGRAM

Reference n. -

Drawing Ee_210

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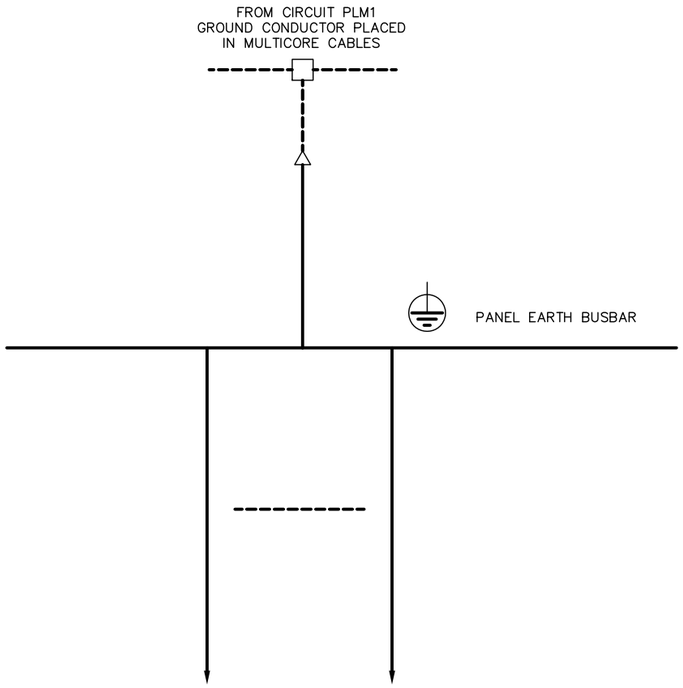
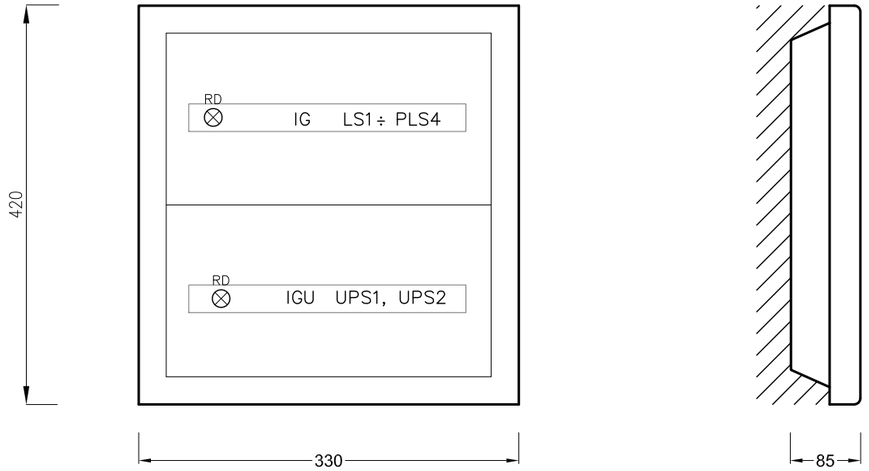
Sheet n. Pag.71 seg. 72

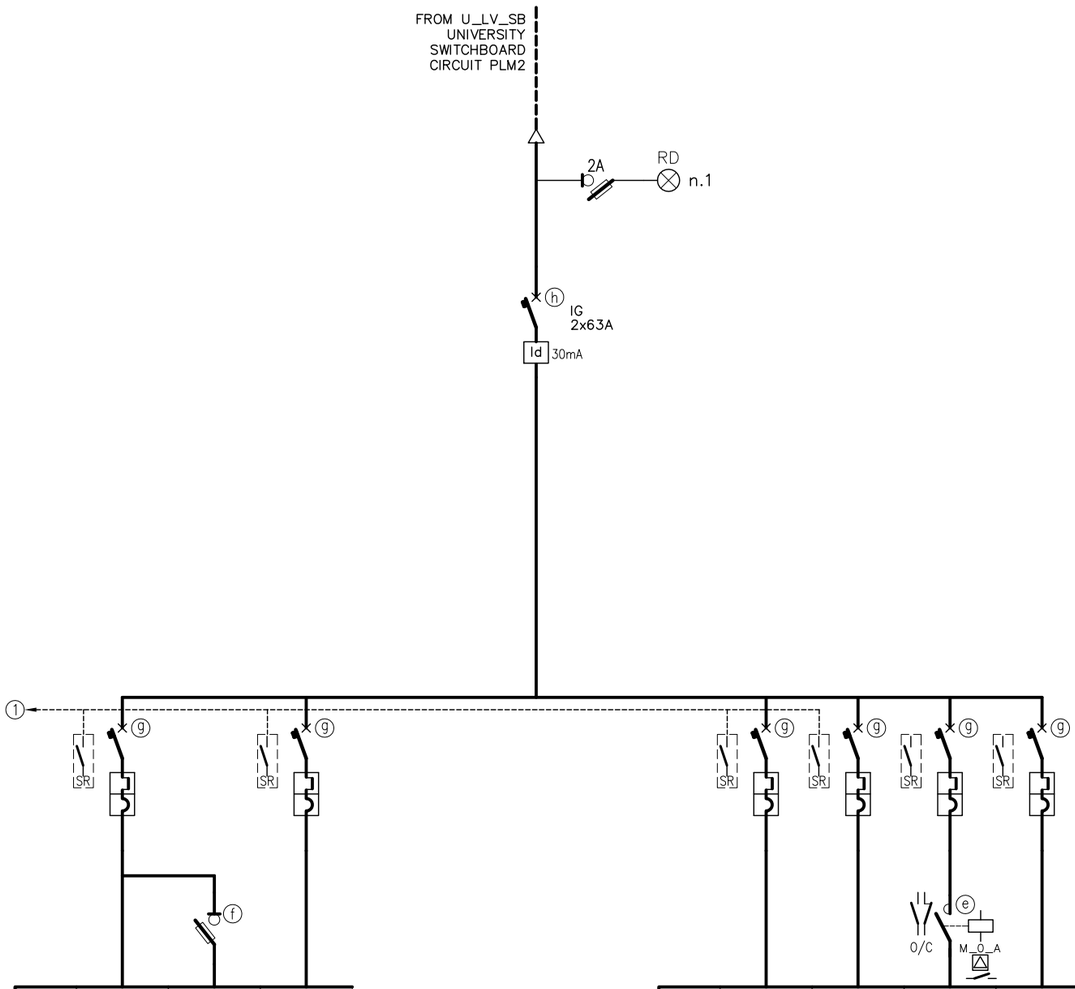
EARTH CONNECTION LAYOUT



FRONTAL LAYOUT

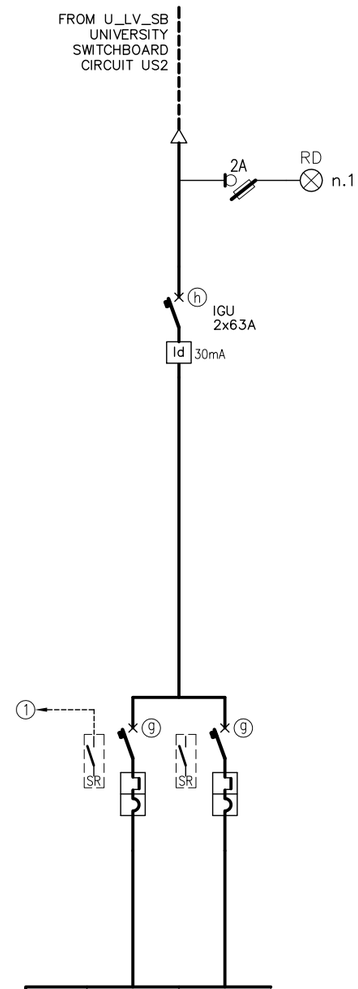


Annotations	Manens-Tifs INGEGNERIA	Title DB_L0/U/1 - DB_L0/U/2 - DB_L0/U/3 EARTH CONNECTION LAYOUT AND FRONTAL LAYOUT	Reference n. -	Drawing **Ee_210**	
				Rev. **0**	Sheet n. Pag.72 seg. 73



1	LS1	LS1–S	LS2–S
2	0.6	0.05	0.05
3	2.6	0.3	2.2
4	1x10+N	1x20+N	1x10+N
5			
6			
7		2A–gG	
8	3x2.5	2x2.5	3x2.5
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	10	10	10
11	LIGHTING SYSTEM	EMERGENCY LIGHTING	EXIT EMERGENCY LIGHTING
12			

1	PLS1	PLS2	PLS3	PLS4
2	1.8	0.3	0.1	
3	7.9	1.3	0.5	
4	1x16+N	1x16+N	1x10+N	1x16+N
5			1X20	
6				
7				
8	3x4	3x4	3x2.5	
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	
10	10	10	10	
11	LOAD POWER	LOAD POWER	FAN–COIL	RESERVE
12				



1	UPS1	UPS2
2	1.8	
3	7.9	
4	1x16+N	1x16+N
5		
6		
7		
8	3x4	
9	FG70M1 0.6/1kV	
10	10	
11	LOAD POWER	RESERVE
12		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

Manens-Tifs INGEGNERIA

Title

DB_L0/U/4 - DB_L0/U/5
WIRING DIAGRAM

Reference n.

-

Drawing

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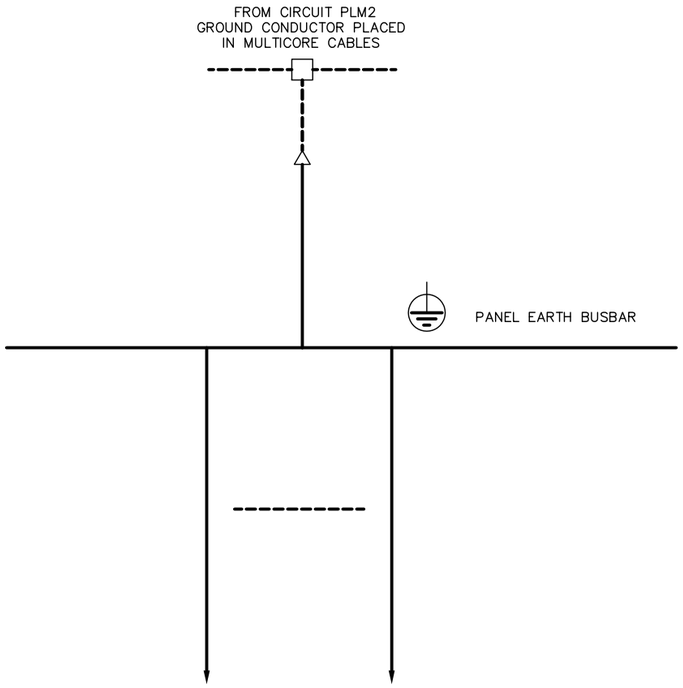
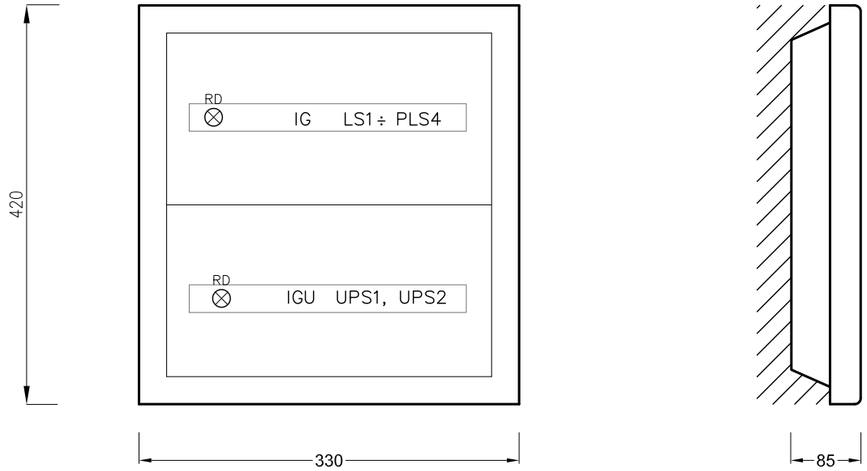
EARTH CONNECTION LAYOUT



FRONTAL LAYOUT



Annotations	Manens-Tifs INGEGNERIA	Title DB_L0/U/4 - DB_L0/U/5 EARTH CONNECTION LAYOUT AND FRONTAL LAYOUT	Reference n. -	Drawing **Ee_210** Rev. **0** / Sheet n. Pag.74 seg. 75

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

PHOTOVOLTAIC DISTRIBUTION BOARD – SECOND LEVEL

INITIALS

DB_2/PV

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~45kVA – I~65A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

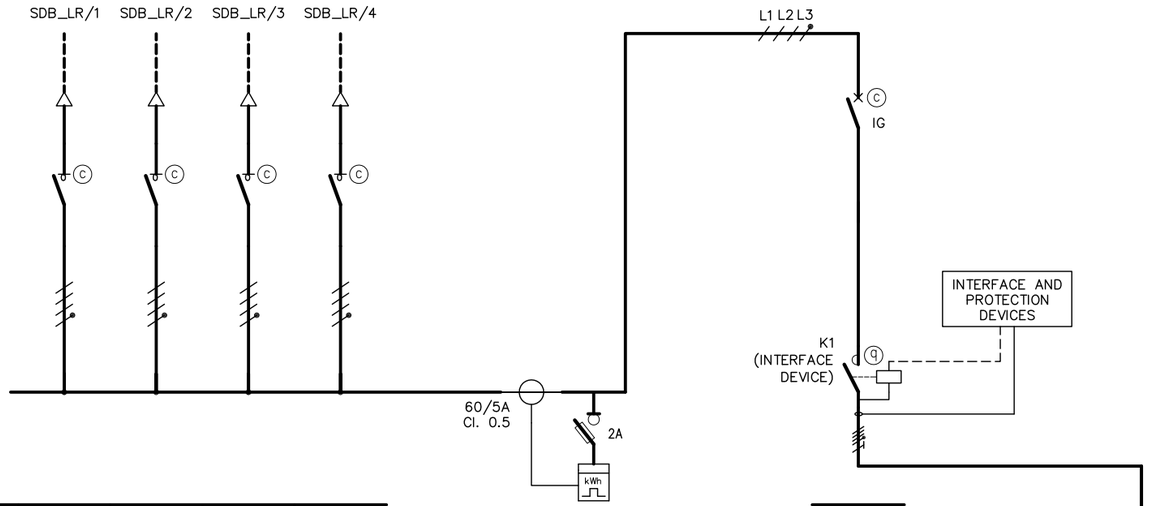
Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



1	F1	F2	F3	F4
2	7.5	10	20	7.5
3	33	43	29	33
4	2x63	2x63	4x63	2x63
5				
6				
7				
8	3x25	3x25	5x25	3x25
9	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV	FG70M1 0.6/1kV
10	60	20	70	90
11	SDB_LR/1	SDB_LR/2	SDB_LR/3	SDB_LR/4
12				

A1
44,5
64,2
4x80
4x96
3x1x50 +1x50N+25E
FG7M1 0.6/1kV
80
TO M_LV_SB

Annotations

Manens-Tifs INGEGNERIA

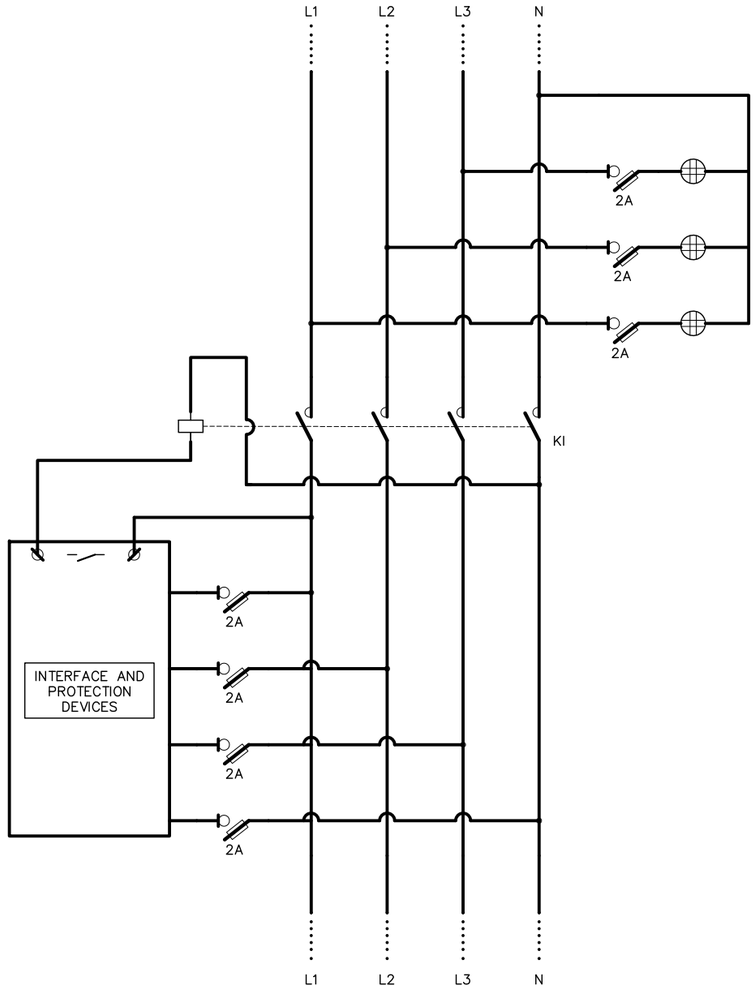
Title
DB_L2/PV
WIRING DIAGRAM

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.76 seg. 77



Annotations

Manens-Tifs INGEGNERIA

Title
DB_L2/PV
CONNECTION OF PROTECTION AND INTERFACE

Reference n.
-

Drawing
Ee_210

Rev.
0

Sheet n.
Pag.77 seg. 78

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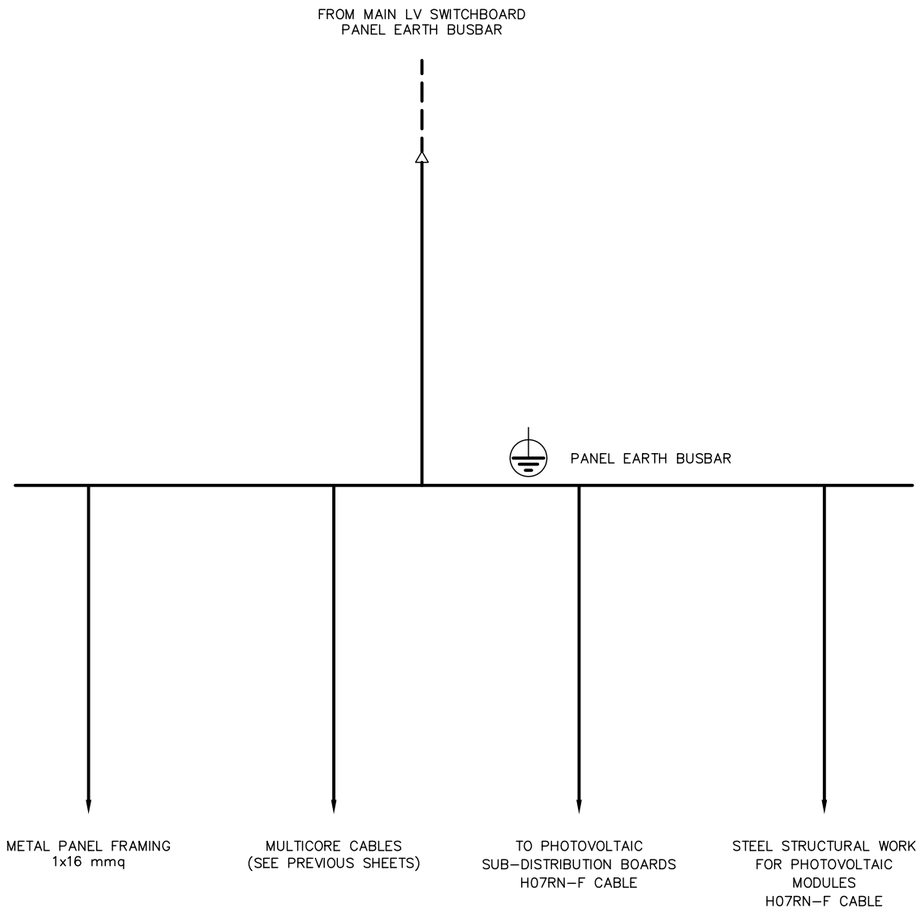
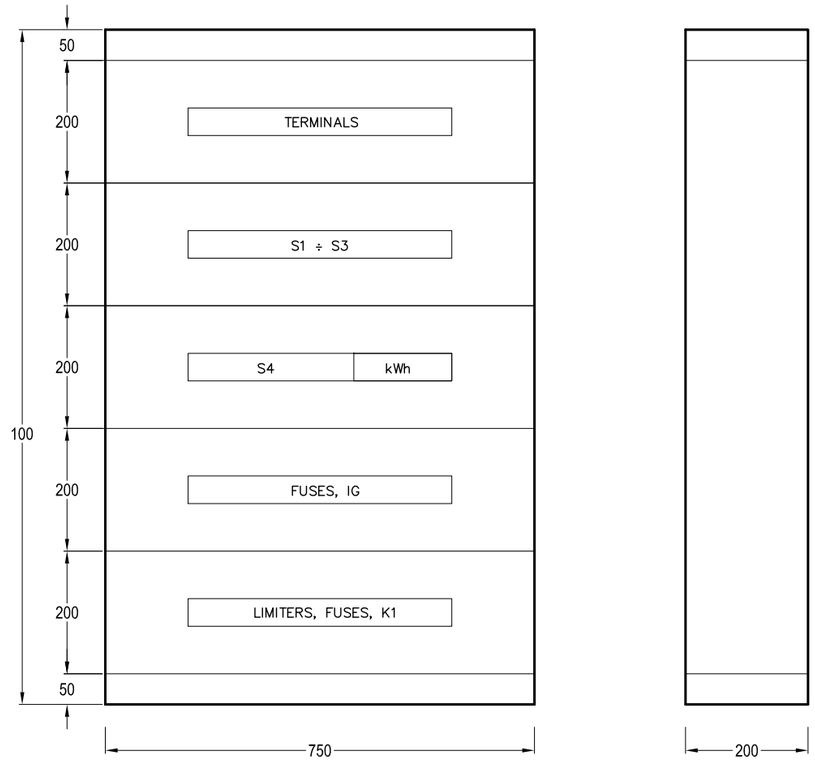


FRONTAL LAYOUT



Annotations

Manens-Tifs INGEGNERIA

Title

DB_L2/PV

EARTH CONNECTION LAYOUT AND FRONTAL LAYOUT

Reference n.

-

Drawing

Ee_210

Rev.

0

Sheet n.

Pag.78 seg. 79

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

PHOTOVOLTAIC SUB–DISTRIBUTION BOARDS – ROOF LEVEL

INITIALS

SDB_LR/1 – SDB_LR/2 – SDB_LR/3 – SDB_LR/4

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

SDB_LR/1:	Rp~7.5kVA – I~33A
SDB_LR/2:	Rp~10kVA – I~43A
SDB_LR/3:	Rp~20kVA – I~29A
SDB_LR/4:	Rp~7.5kVA – I~33A
TOTAL:	

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

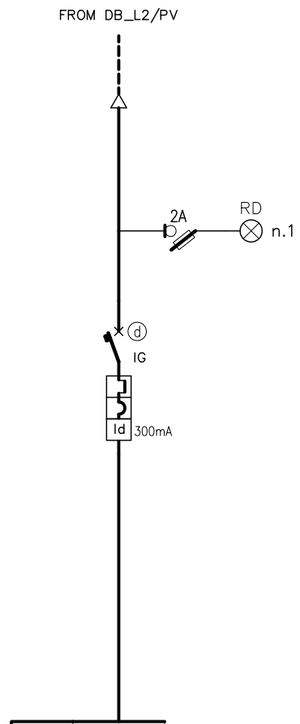
PANEL STRUCTURE

THERMOPLASTIC DISTRIBUTION BOARD (RECESSED INSTALLATION)

MINIMUM PROTECTION LEVEL

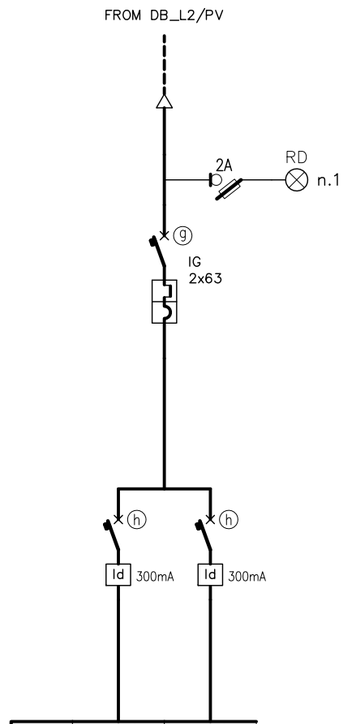
IP65 (IP20 TO OPEN PANEL)

SDB_LR/1



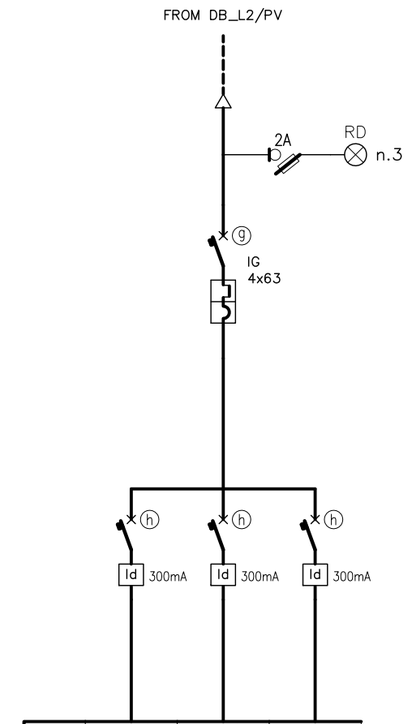
1	F1
2	7.5
3	33
4	2x40
5	
6	
7	
8	3x25
9	FG70R 0.6/1kV
10	10
11	INVERTER INV/F1
12	

SDB_LR/2



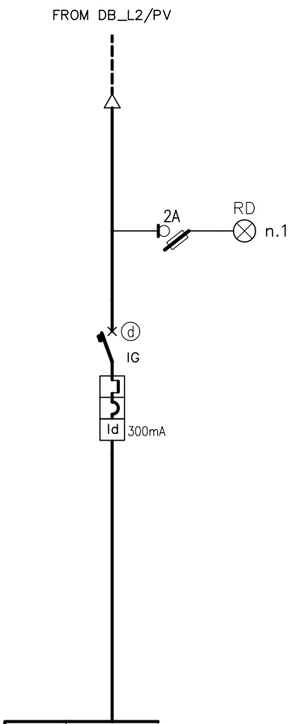
1	F2/1	F2/2
2	5	5
3	22	22
4	2x32	2x32
5		
6		
7		
8	3x25	3x25
9	FG70R 0.6/1kV	FG70R 0.6/1kV
10	10	10
11	INVERTER INV/F2/1	INVERTER INV/F2/2
12		

SDB_LR/3



1	F3/1	F3/2	F3/3
2	7.5	7.5	5
3	33	33	22
4	2x40	2x40	2x32
5			
6			
7			
8	3x25	3x25	3x25
9	FG70R 0.6/1kV	FG70R 0.6/1kV	FG70R 0.6/1kV
10	10	10	10
11	INVERTER INV/F3/1	INVERTER INV/F3/2	INVERTER INV/F3/3
12			

SDB_LR/4



1	F4
2	7.5
3	33
4	2x40
5	
6	
7	
8	3x25
9	FG70R 0.6/1kV
10	10
11	INVERTER INV/F4
12	

Annotations

Manens-Tifs INGEGNERIA

Title
SDB_LR/1 - SDB_LR/2 - SDB_LR/3 - SDB_LR/4
WIRING DIAGRAM

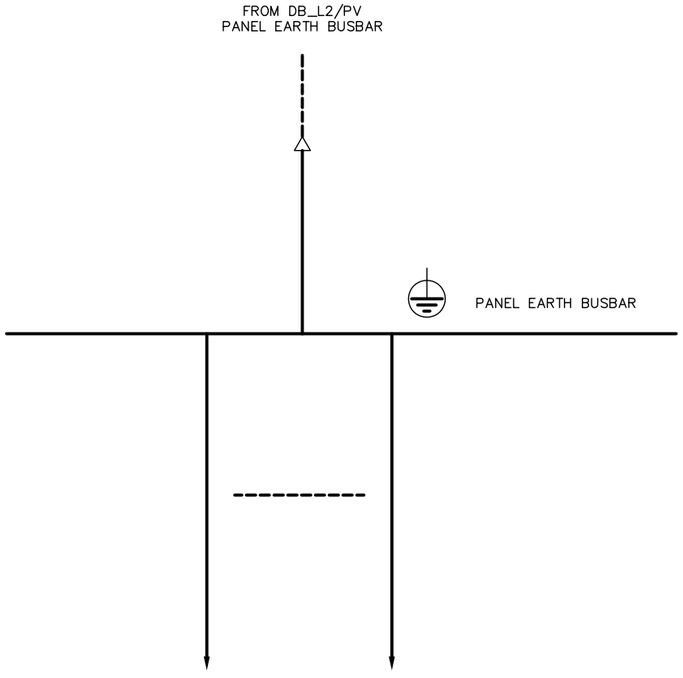
Reference n.
-

Drawing
Ee_210

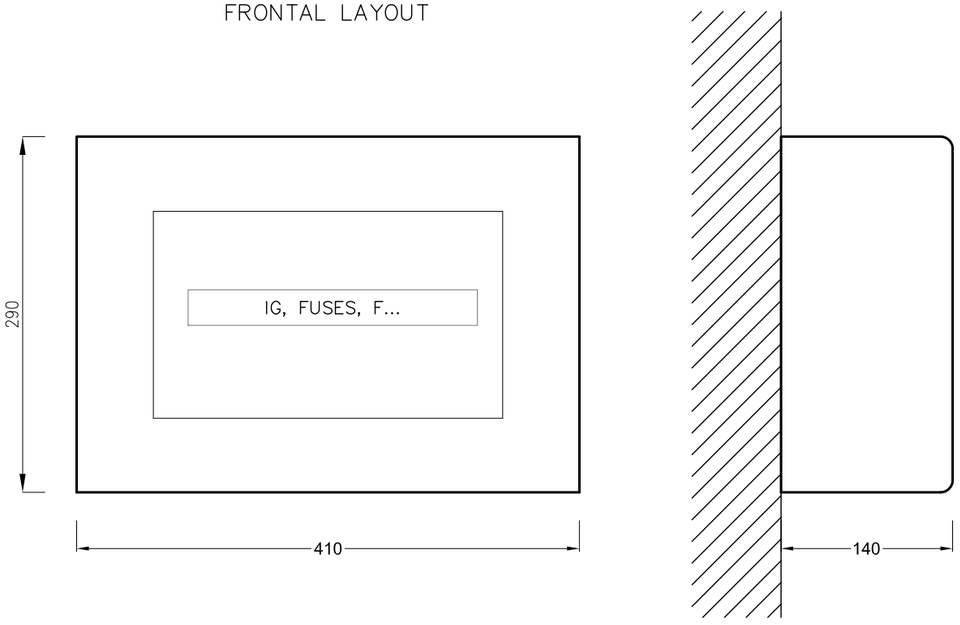
Rev.
0

Sheet n.
Pag.80 seg. 81

EARTH CONNECTION LAYOUT



FRONTAL LAYOUT



Annotations	Manens-Tifs INGEGNERIA	Title: SDB_LR/1 - SDB_LR/2 - SDB_LR/3 - SDB_LR/4 EARTH CONNECTION LAYOUT AND FRONTAL LAYOUT	Reference n.: -	Drawing: Ee_210
				Rev.: 0
				Sheet n.: Pag.81

INVESTITOR:

JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

MINISTRY OF THE ENVIRONMENT,
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INSTITUT za protivpožarnu zaštitu, Zaštitu na radu i Zaštitu životne sredine

Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT

ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE

EMERGENCY LIGHTING DISTRIBUTION BOARD WIRING DIAGRAM DB_.../.../EL

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR.

Ee_211

DATE:	SCALE:	FILE:
30/11/2010	-	926_Ee_211.dwg
J.N.: 926	DRAW: L. R.	APPROVED: M. C.

	DISCONNECTOR SWITCH	SR O/C D FB LO	SIGNAL AUXILIARY CONTACTS SR: RELAY RELEASED D: DISCONNECTED O/C: OPEN/CLOSED FB: FUSE BLOWOUT LO: LIMITER SWITCH ON		
	AUTOMATIC SWITCH	⊗	LED SIGNAL LAMPS RD (RED) = CLOSED SWITCH OR VOLTAGE PRESENT GN (GREEN) = OPEN SWITCH YE (YELLOW) = RELAY RELEASED WH (WHITE) = SECTIONED SWITCH, REMOTE CONTROL SWITCH OPEN OR REMOTE CONTROL SWITCH CLOSED		
	MAGNETIC RELEASE		LIGHT SIGNAL OF LED CROSS STATUS		
	THERMAL RELEASE		CURRENT REDUCTION GEAR		
	ADJUSTABLE THERMAL RELEASE	nP	AMMETRIC SWITCH (VOLTMETRIC) WITH "n" POSITIONS		
Id	RESIDUAL CURRENT RELEASE	V A kW kVAR	DIGITAL INDICATOR INSTRUMENTS		
Id	RESIDUAL CURRENT RELEASE WITH CT SEPARATED TOROIDAL	M_O_A	SWITCH WITH 3 POSITIONS (MANUAL_OR_AUTOMATIC)		
	INSULATOR MANOEUVRE SWITCH	B	OPEN SWITCH SPOOL WITH CURRENT LAUNCH		
	INSULATOR	M----	GEARED MOTOR FOR SPRING LOAD		
	PLUG-IN AND DRAW-OUT VERSION		KEY LOCK		
	FUSE BOX INSULATOR WITH FUSES	△	CABLE TERMINAL		
d b	CONTACTOR		PANEL EARTH BUSBAR		
	STEP BY STEP RELEASE	I/O	DEVICE (INPUT/OUTPUT) BUILDING AUTOMATION SYSTEM		
	COMMUTATOR WITH 2 POSITIONS		OVER VOLTAGE DUMPER/LIMITER		
	CONTROL SPOOL	E7	EMERGENCY RELEASE PUSHBUTTON		
	DELAY RELEASE CONTROL SPOOL	A V f tot W φ	MULTI INSTRUMENT MEASUREMENT		
RA	AUXILIARY RELAY (n. 3 NA CONTACTS, n. 3 NC CONTACTS)				
	AUXILIARY CONTACT NORMALLY OPEN				
	AUXILIARY CONTACT NORMALLY CLOSED				
	AUXILIARY EXCHANGE CONTACT				

Annotations

Manens-Tifs INGEGNERIA

Title
DB_.../.../EL
DESCRIPTION OF SYMBOL

Reference n.
-

Drawing n.
Ee_211

Rev.
0

Sheet n.
Pag.01 seg. 02

ⓐ MOULDED CASE CIRCUIT BREAKER, DISCONNECTOR SWITCH
ⓑ COMMUTATOR WITH 3 POSITIONS
ⓒ MODULAR DISCONNECTOR SWITCH
ⓓ MODULAR THERMOMAGNETIC CIRCUIT BREAKER WITH RESIDUAL CURRENT RELEASE
ⓔ POWER CONTACTOR
ⓕ MODULAR DISCONNECTED SWITCH WITH FUSES
ⓖ AUTOMATIC MODULAR MAGNETIC THERMAL CIRCUIT BREAKER
ⓗ RESIDUAL CURRENT RELEASE
ⓘ OVER VOLTAGE DUMPER/LIMITER

Annotations

Manens-Tifs
INGEGNERIA

Title
DB_.../.../EL
DEVICE LEGEND

Reference n.
-

Drawing n.
Ee_211

Rev.
0

Sheet n.
Pag.02 seg. 03

TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

EMERGENCY LIGHTING DISTRIBUTION BOARD – BASAMENT LEVEL

INITIALS

DB_L–1/P1/EL

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~1.4kVA – I~6.1A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

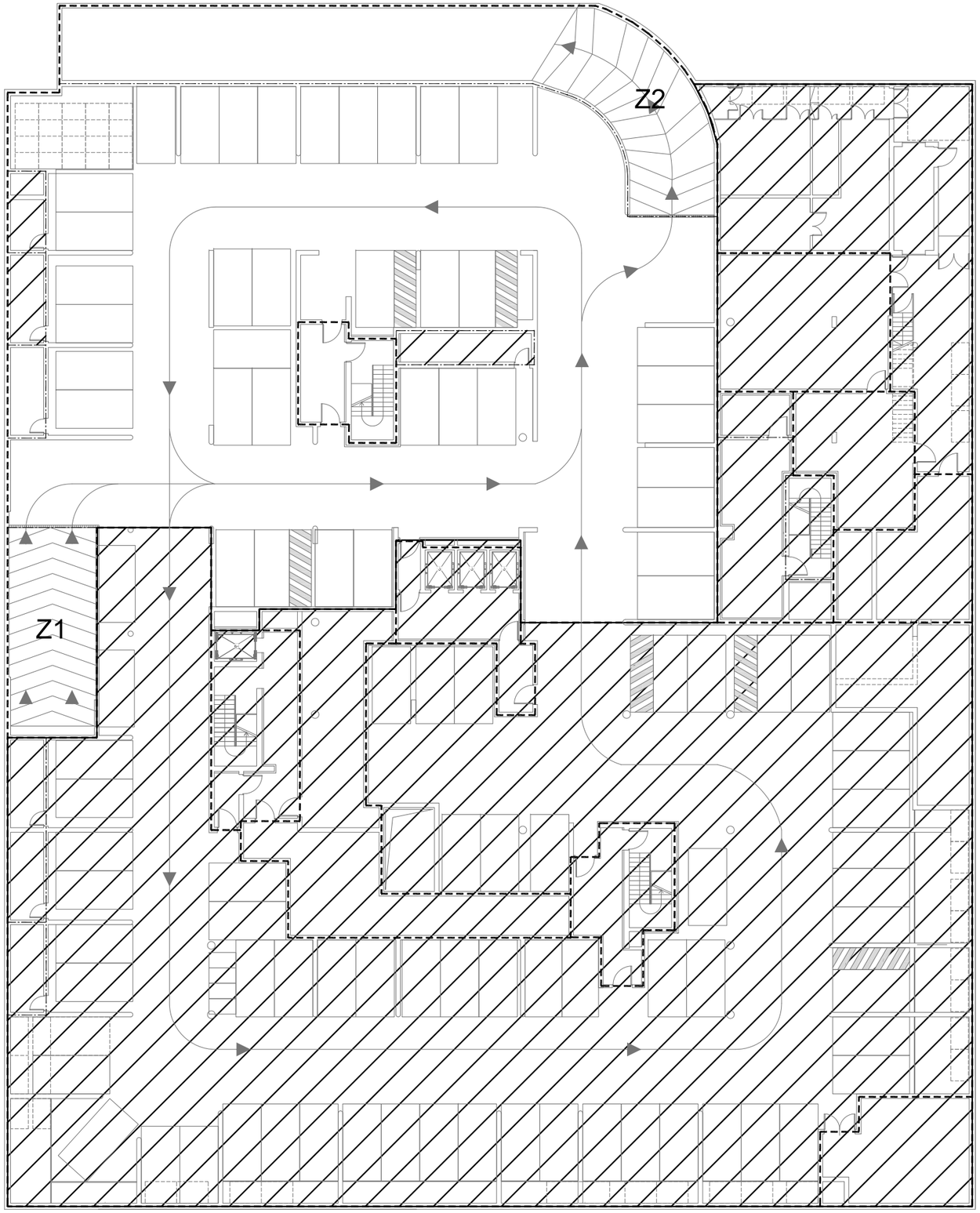
Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)



Annotations

Manens-Tifs
INGEGNERIA

Title
DB_L-1/P1/EL
ELECTRICAL ZONES

Reference n.
-

Drawing n.
Ee_211

Rev.
0

Sheet n.
Pag.04 seg. 05

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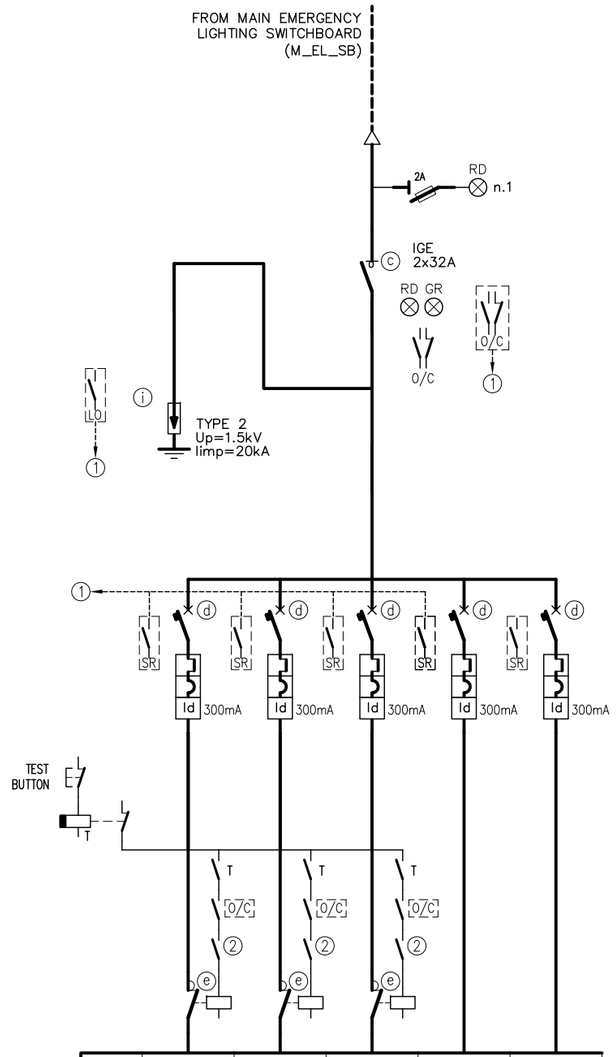

1	ELS1	ELS2	ELS3	ELS4	ELS5
2	0.8	0.2	0.2	0.2	
3	3.5	0.9	0.9	0.9	
4	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N
5	3x12−AC3	3x12−AC3	3x12−AC3		
6					
7					
8	3x2.5	3x2.5	3x2.5	3x2.5	
9	FTG100M1 CEI 20−45	FTG100M1 CEI 20−45	FTG100M1 CEI 20−45	FTG100M1 CEI 20−45	
10	65+40	50	60	50+40	
11	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	EXIT EMERGENCY LIGHTING	RESERVE
12	PARKING AREA	RAMP ZONE Z1	RAMP ZONE Z2		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L-1/P1/EL
WIRING DIAGRAM

Reference n.

-

Drawing n.

Ee_211

Rev. **0**

Sheet n. Pag.05 seg. 06

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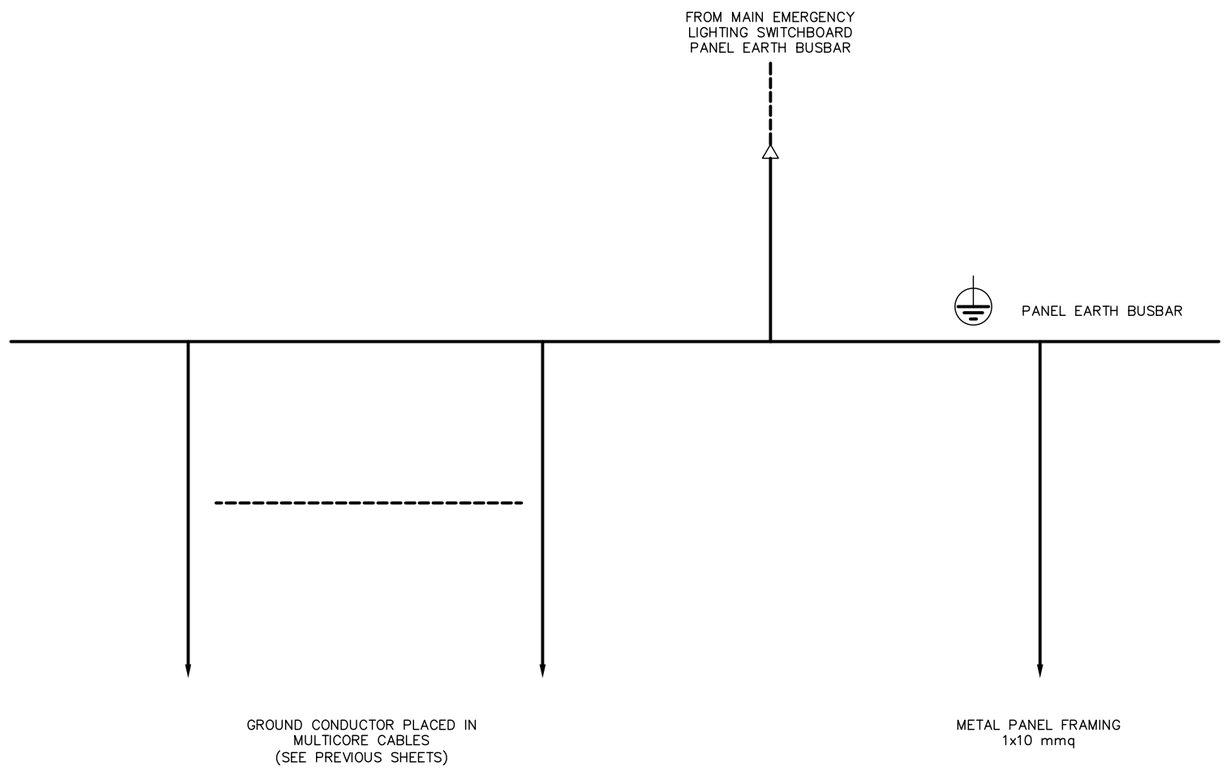

Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P1/EL EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_211**	
				Rev. **0**	Sheet n. Pag.06 seg. 07

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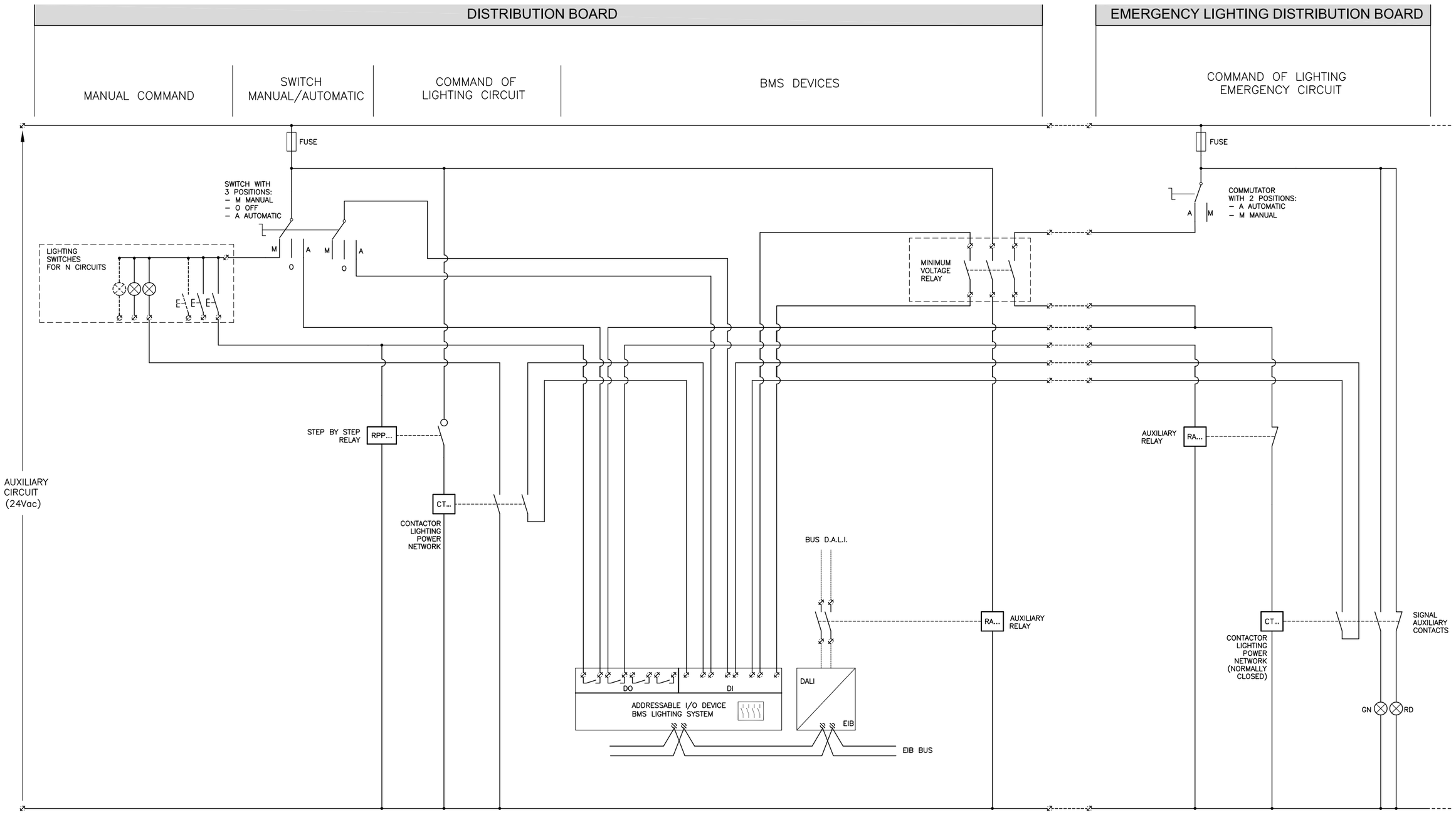
LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P1/EL TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	Reference n. -	Drawing n. **Ee_211**	
				Rev. **0**	Sheet n. Pag.07 seg. 08

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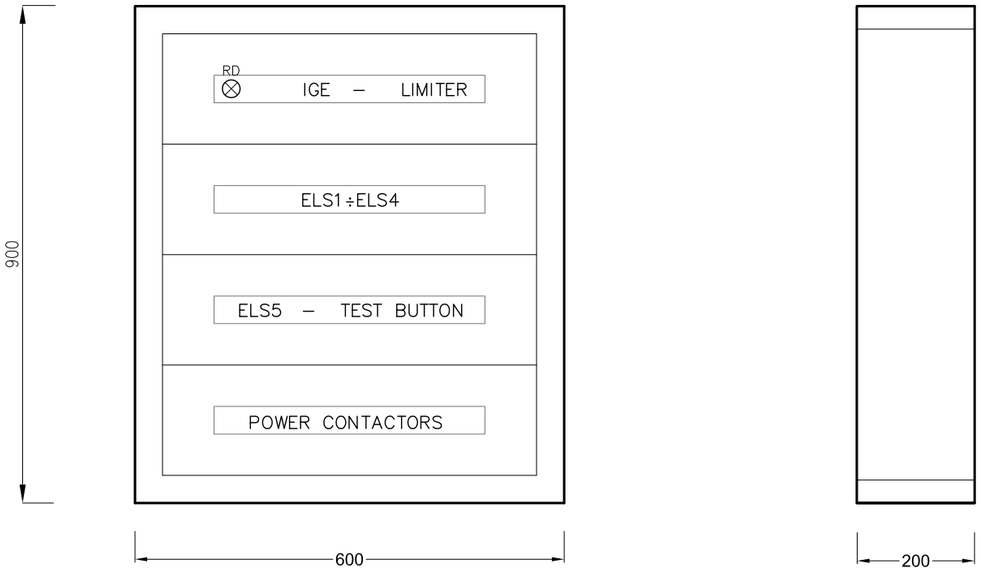

Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P1/EL FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_211** Rev. **0** / Sheet n. Pag.08 seg. 09

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TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

EMERGENCY LIGHTING DISTRIBUTION BOARD – BASAMENT LEVEL

INITIALS

DB_L–1/P2/EL

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~0.9kVA – I~3.9A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

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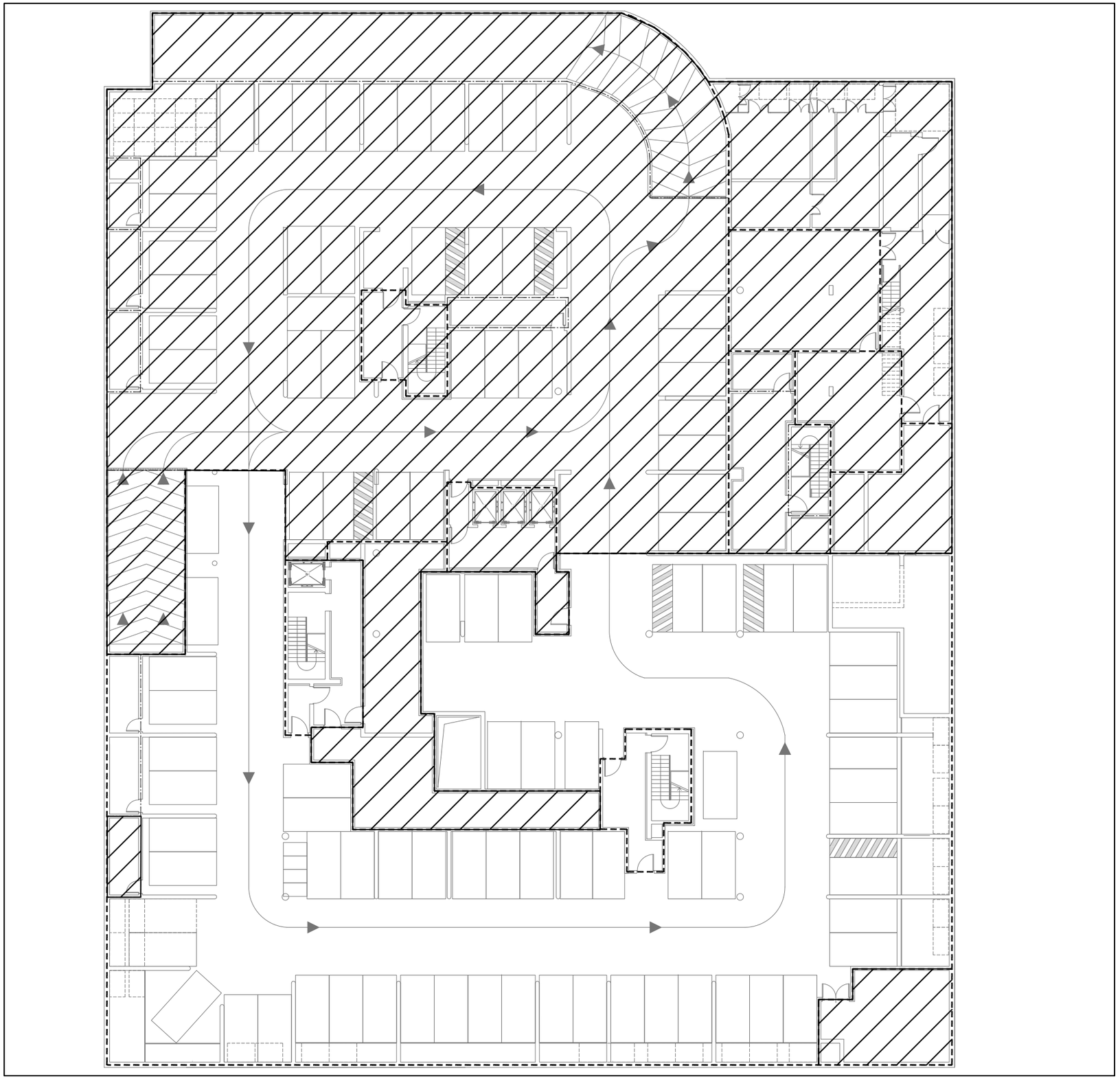

Annotations

Manens-Tifs
INGEGNERIA

Title
DB_L-1/P2/EL
ELECTRICAL ZONES

Reference n.
-

Drawing n.
Ee_211

Rev.
0

Sheet n.
Pag.10 seg. 11

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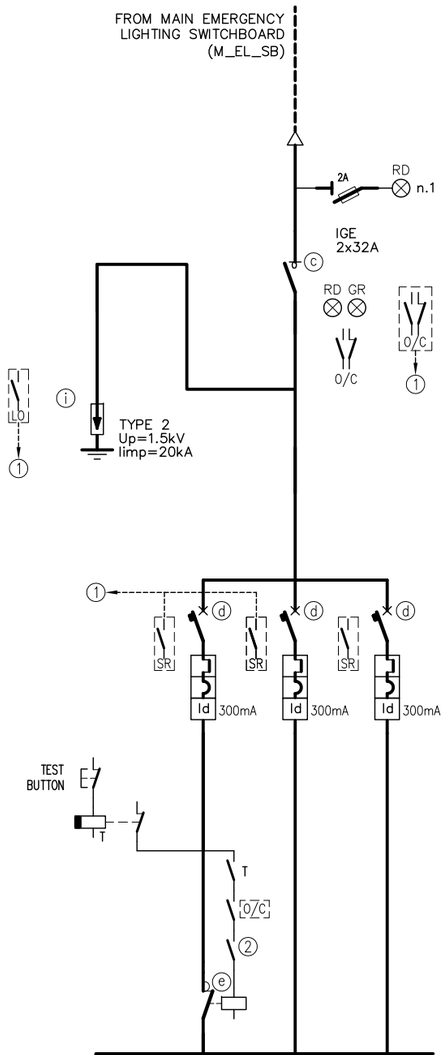

1	ELS1	ELS2	ELS3
2	0.7	0.2	
3	3.1	0.9	
4	1x10+N	1x10+N	1x10+N
5	3x12−AC3		
6			
7			
8	3x2.5	3x2.5	
9	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	
10	105+30	95+10	
11	SAFETY LIGHTING SYSTEM	EXIT EMERGENCY LIGHTING	RESERVE
12	PARKING AREA		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L-1/P2/EL

WIRING DIAGRAM

Reference n.

-

Drawing n.

Ee_211

Rev. **0**

Sheet n. Pag.11 seg. 12

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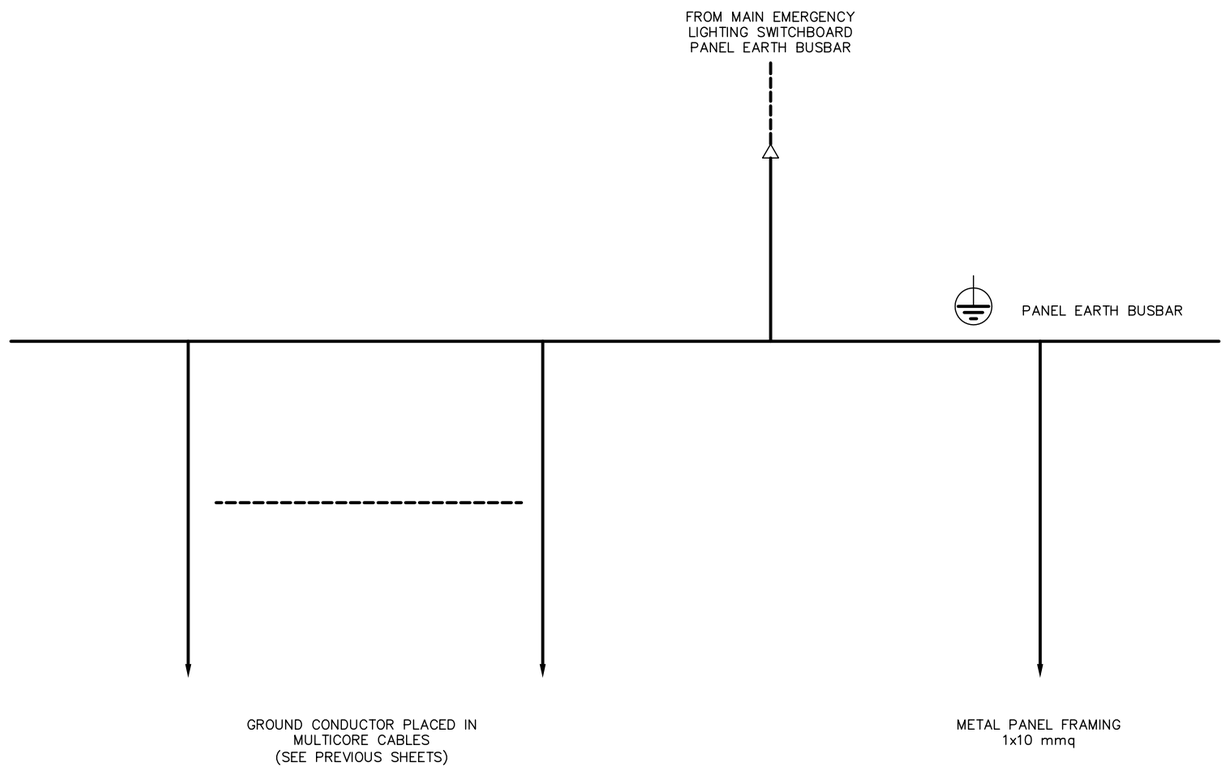

Annotations	Manens-Tifs INGEGNERIA	Title DB_L-1/P2/EL EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_211**	
				Rev. **0**	Sheet n. Pag.12 seg. 13

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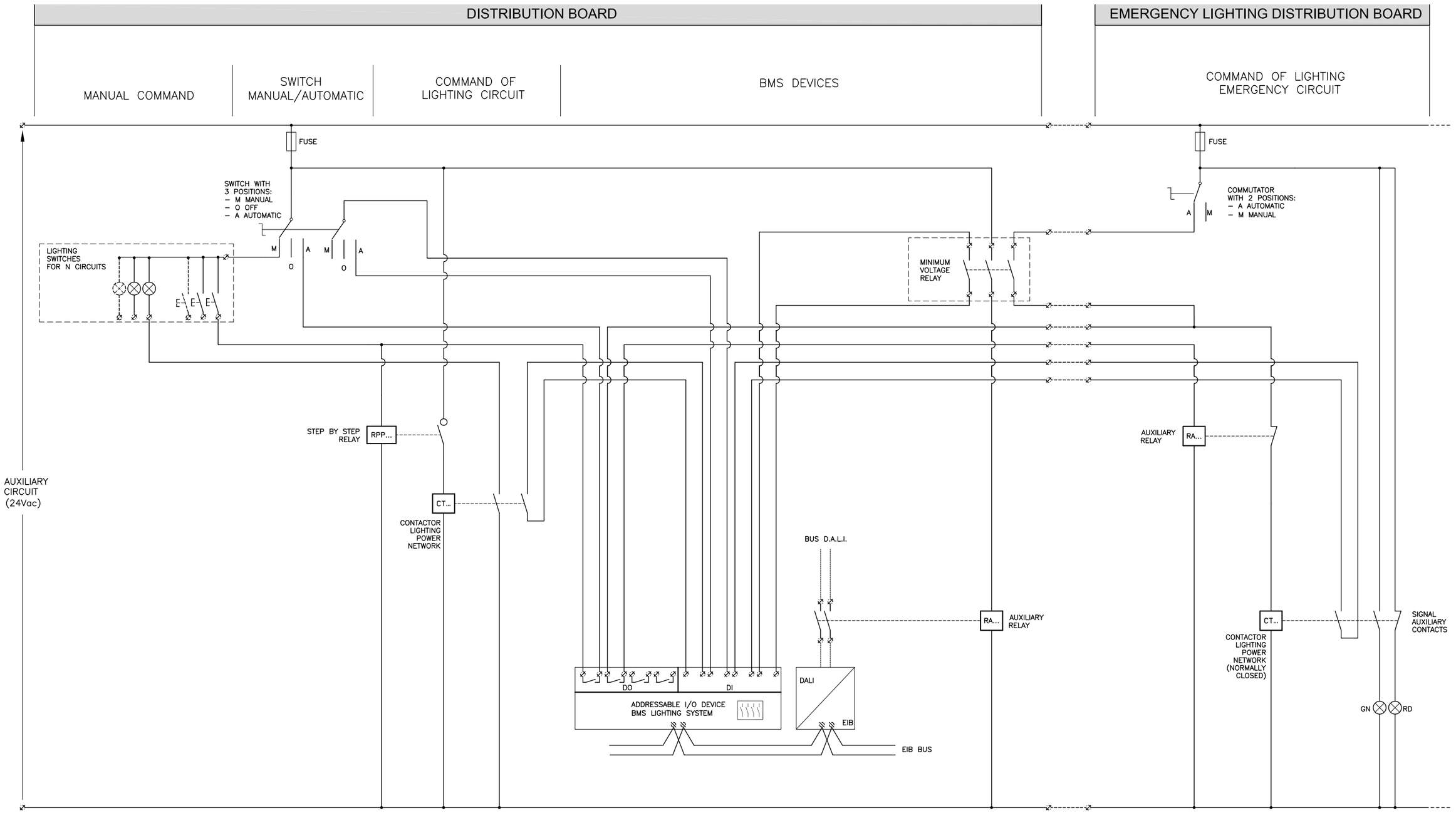
LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations		Title	Reference n.	Drawing n.
	Manens-Tifs INGEGNERIA	DB_L-1/P2/EL TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	-	Ee_211
			Rev. 0	Sheet n. Pag.13 seg. 14

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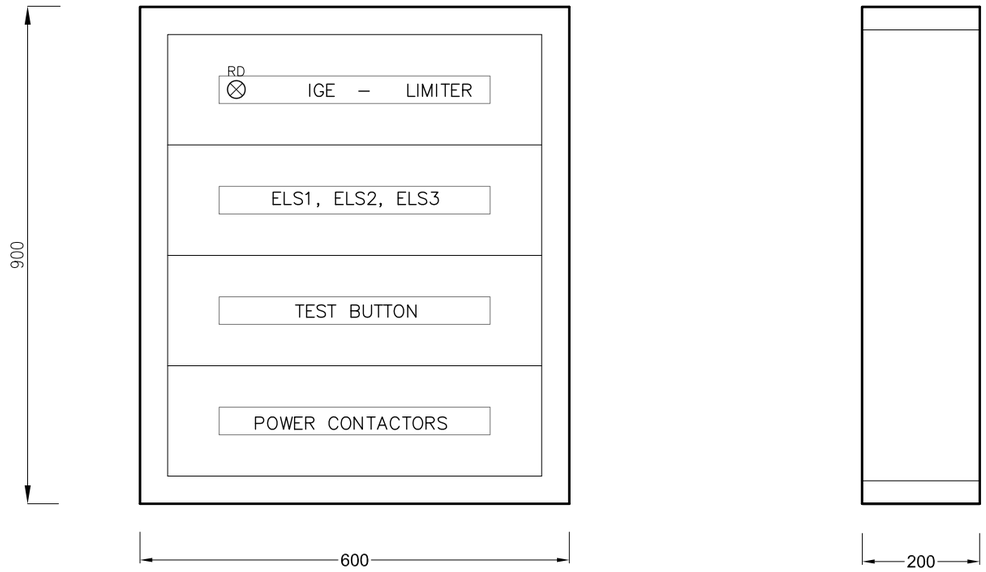

Annotations		Title	Reference n.	Drawing n.
	Manens-Tifs INGEGNERIA	DB_L-1/P2/EL FRONTAL LAYOUT	-	Ee_211
			Rev. 0	Sheet n. Pag.14 seg.15

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TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

EMERGENCY LIGHTING DISTRIBUTION BOARD – GROUND LEVEL

INITIALS

DB_L0/M/EL

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~0.9kVA – I~3.9A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

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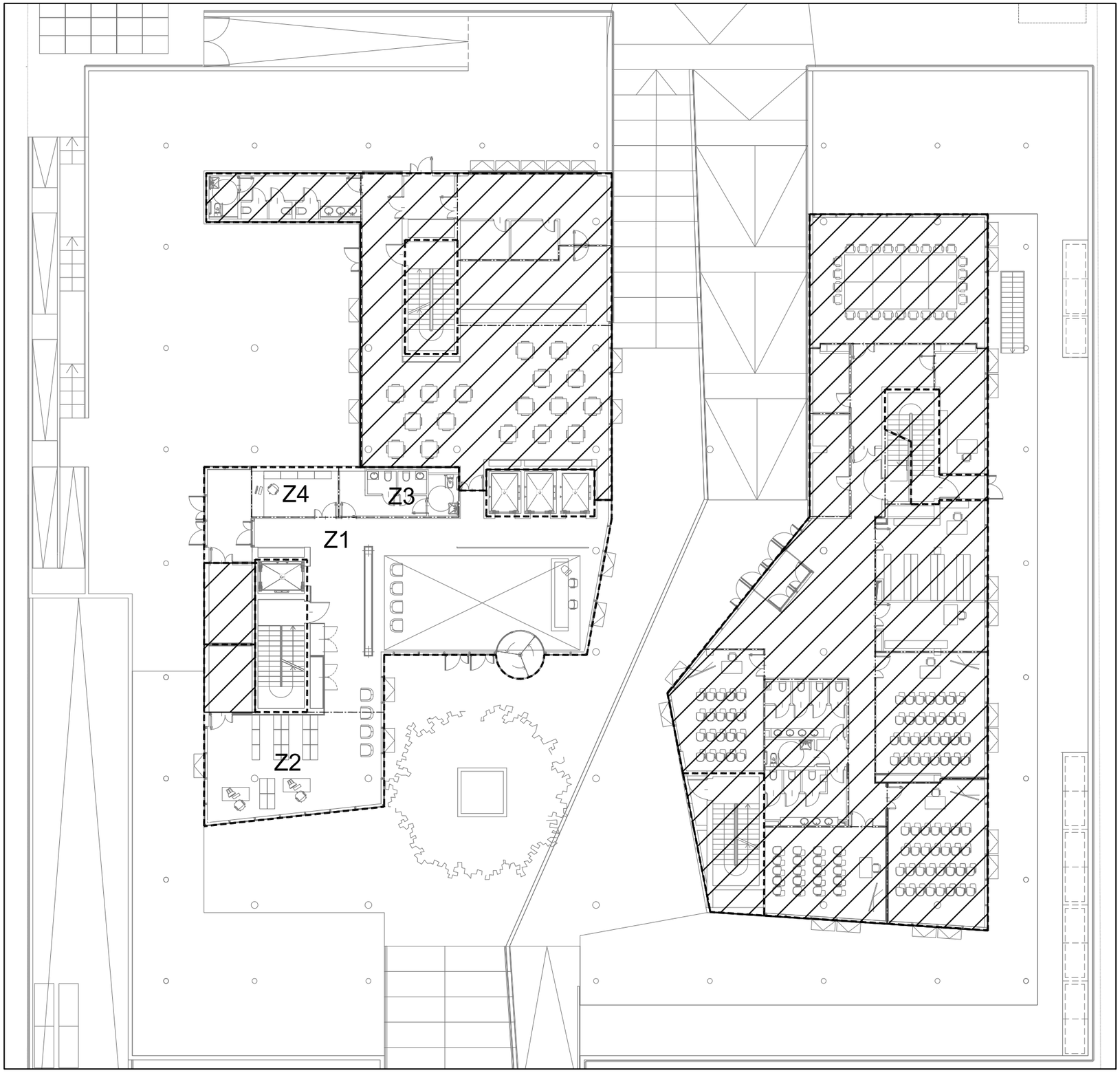

Annotations

Manens-Tifs INGENIERIA

Title
DB_L0/M/EL
ELECTRICAL ZONES

Reference n.
-

Drawing n.
Ee_211

Rev.
0

Sheet n.
Pag.16 seg. 17

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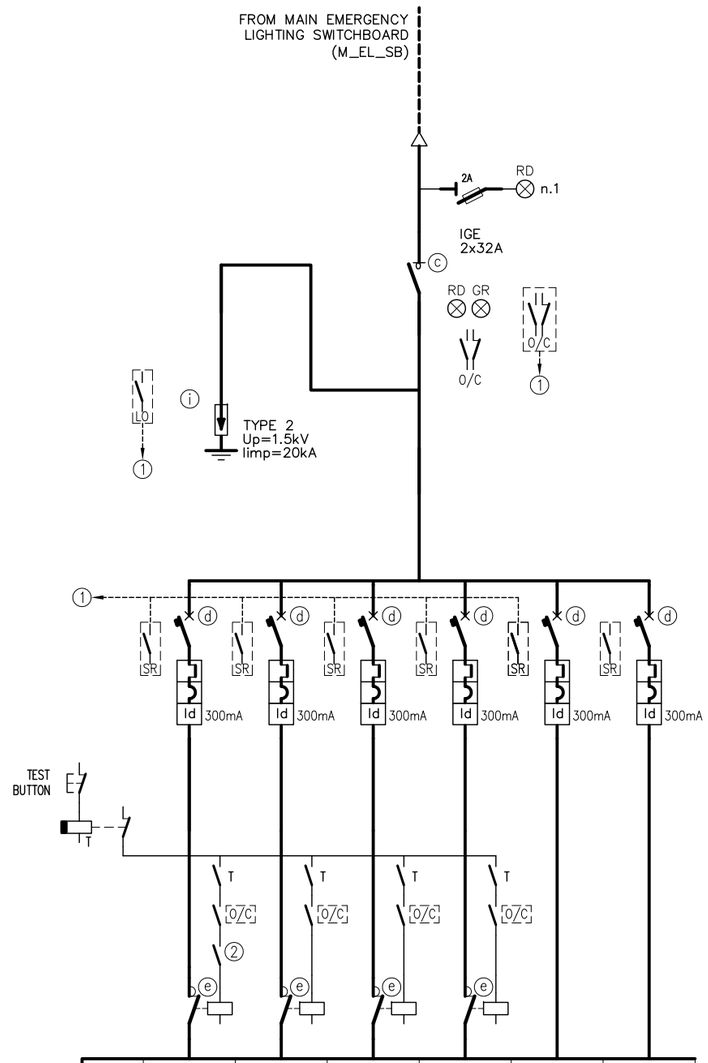

1	ELS1	ELS2	ELS3	ELS4	ELS5	ELS6
2	0.3	0.2	0.1	0.1	0.2	
3	1.3	0.9	0.4	0.4	0.9	
4	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N
5	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3		
6						
7						
8	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	
9	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	
10	40+10	15	30	30	35	
11	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	EXIT EMERGENCY LIGHTING	RESERVE
12	ZONE Z1	ZONE Z2	ZONE Z3	ZONE Z4		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L0/M/EL
WIRING DIAGRAM

Reference n.

-

Drawing n.

Ee_211

Rev.

0

Sheet n.

Pag.17 seg. 18

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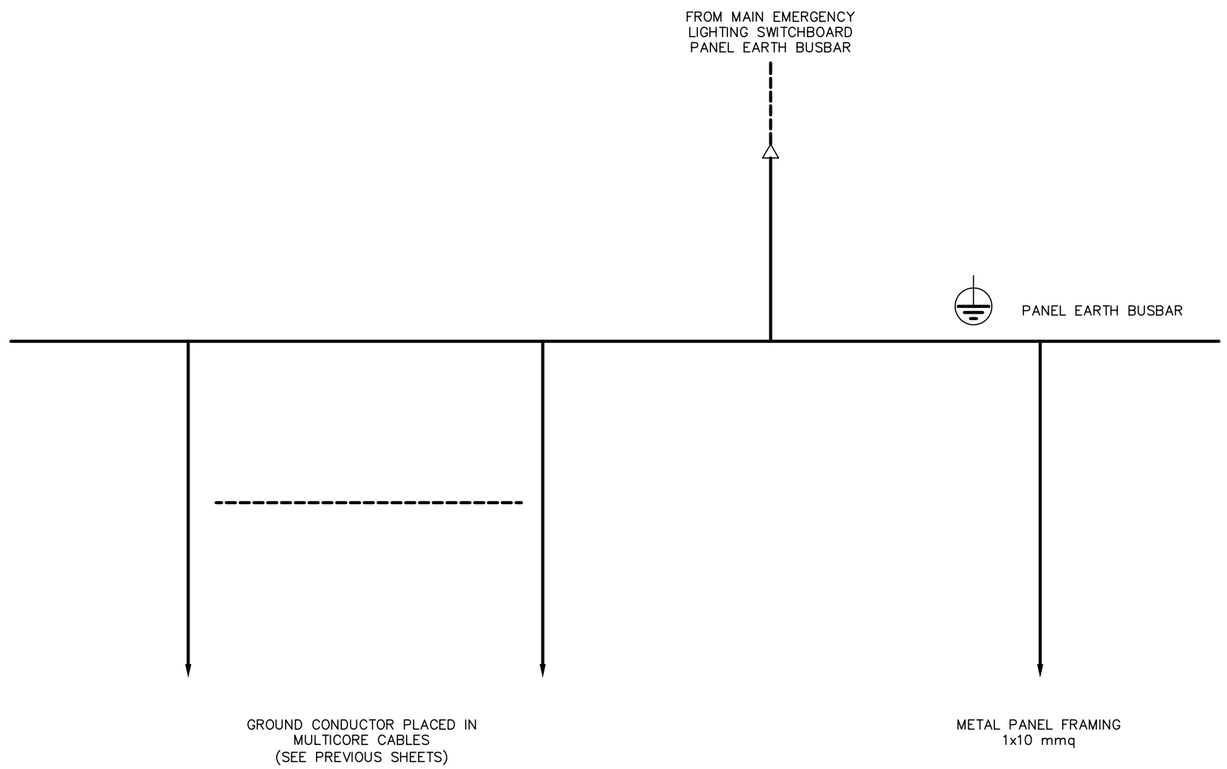

Annotations	Manens-Tifs INGEGNERIA	Title DB_L0/M/EL EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_211** Rev. **0** / Sheet n. Pag.18 seg. 19

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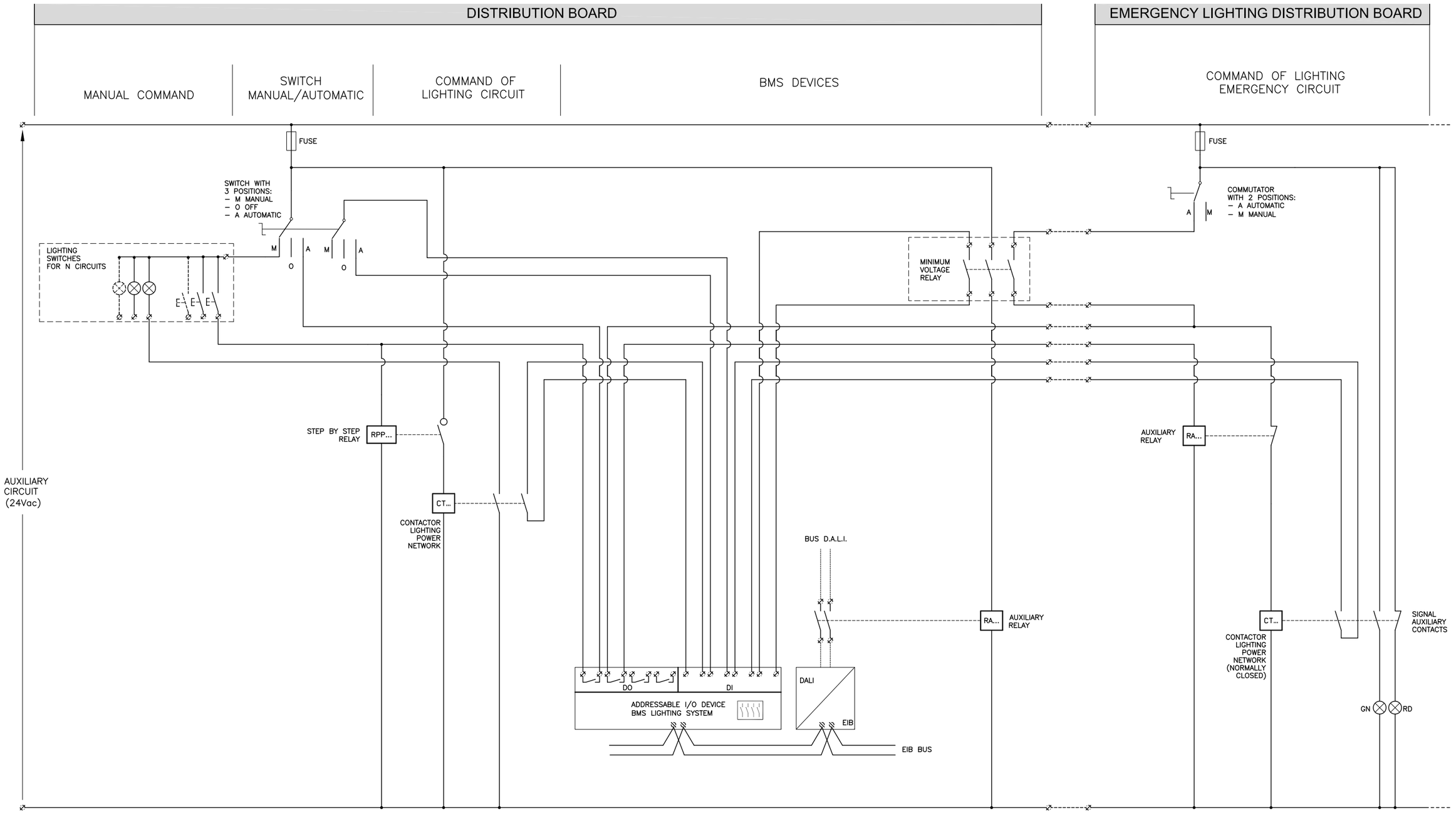
LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations		Title	Reference n.	Drawing n.
	Manens-Tifs INGEGNERIA	DB_L0/M/EL TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	-	Ee_211
			Rev. 0	Sheet n. Pag.19 seg. 20

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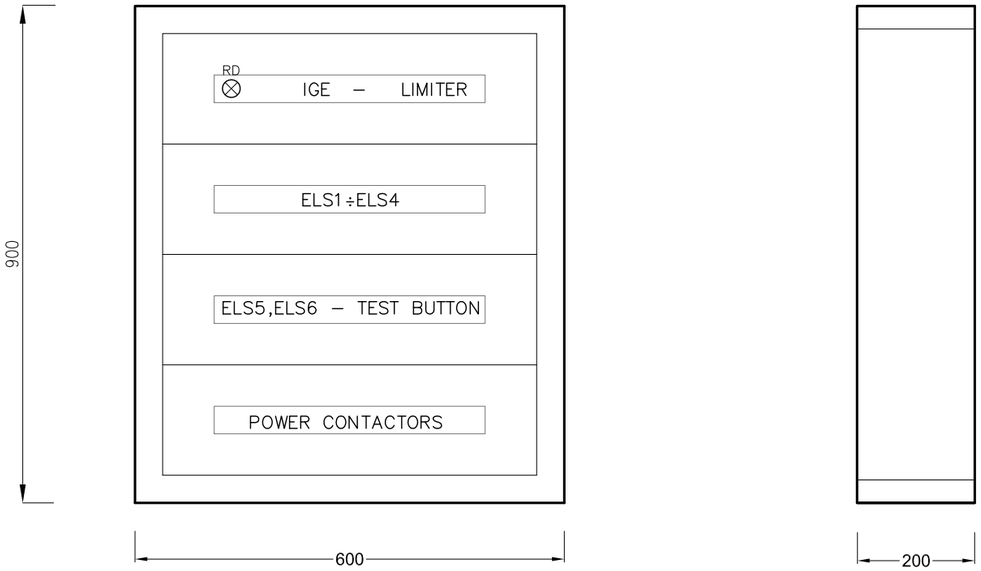

Annotations	Manens-Tifs INGEGNERIA	Title DB_L0/M/EL FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_211** Rev. **0** · Sheet n. Pag.20 seg. 21

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TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

EMERGENCY LIGHTING DISTRIBUTION BOARD – FIRST LEVEL

INITIALS

DB_L1/M/EL

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~7.4kVA – I~10.7A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

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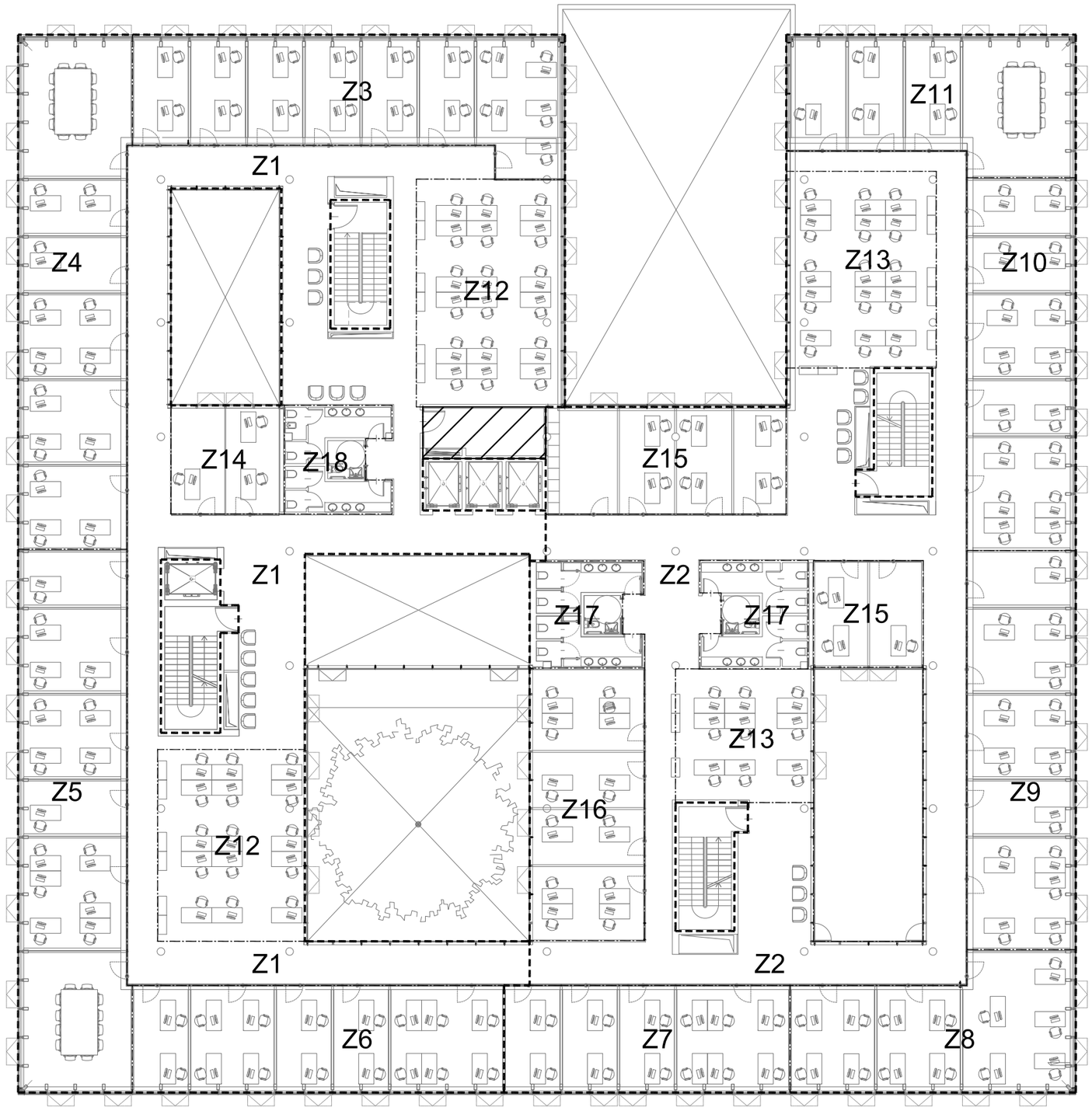

Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/EL ELECTRICAL ZONES	Reference n. -	Drawing n. **Ee_211** Rev. **0** · Sheet n. Pag.22 seg. 23

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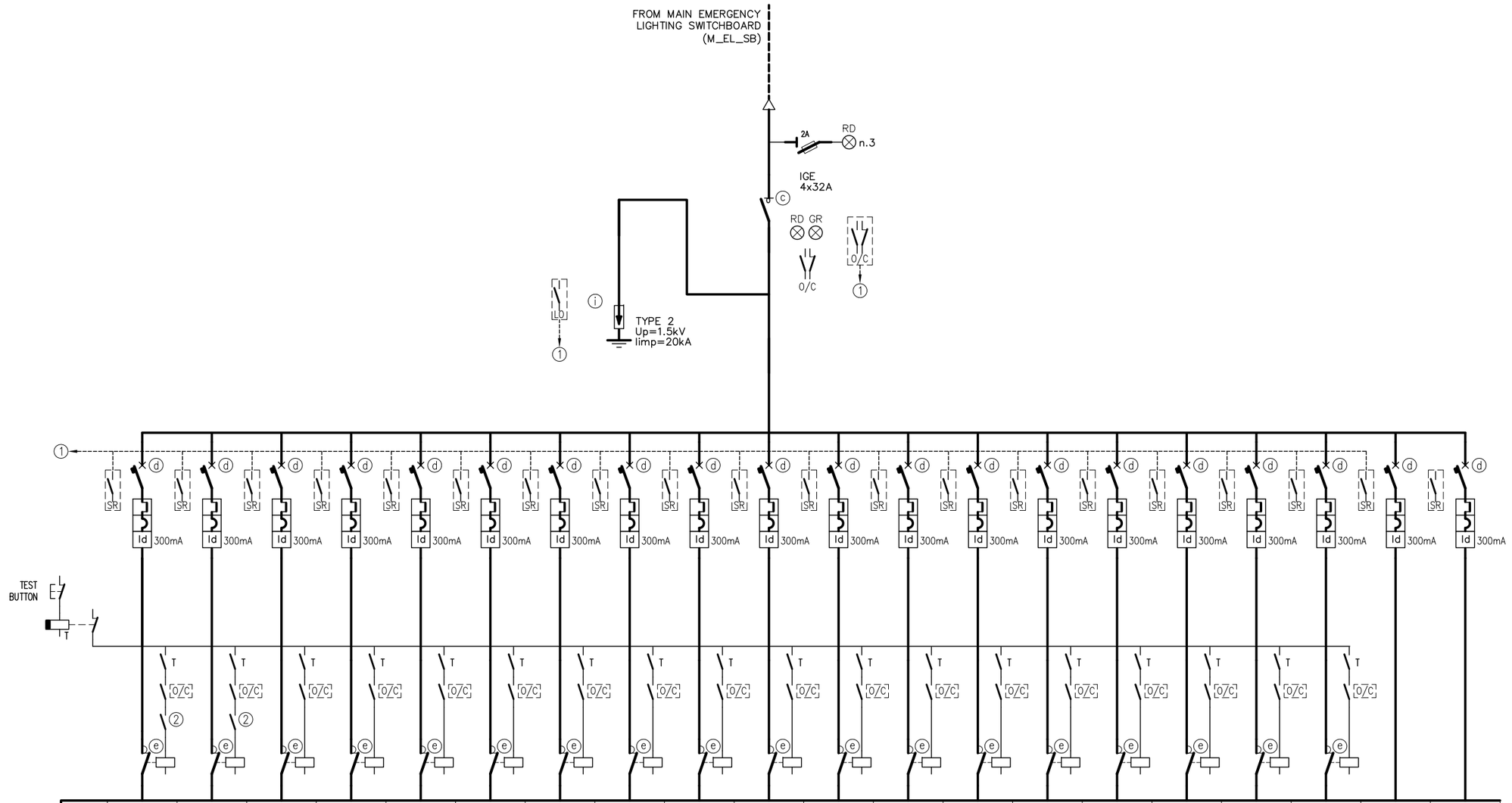

1	ELS1	ELS2	ELS3	ELS4	ELS5	ELS6	ELS7	ELS8	ELS9	ELS10	ELS11	ELS12	ELS13	ELS14	ELS15	ELS16	ELS17	ELS18	ELS19	ELS20
2	0.9	0.7	0.5	0.5	0.5	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.5	0.3	0.3	0.2		
3	3.9	3.1	2.2	2.2	2.2	1.8	1.3	1.3	1.8	1.8	1.8	1.3	1.3	0.9	2.2	1.3	1.3	0.9		
4	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N
5	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3	3x12–AC3		
6																				
7																				
8	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	
9	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	FTG10OM1 CEI 20–45	
10	70+50	70+40	35	45	50	70	50	55	55	50	50	40+10	45+15	25	30	35	35	10	75+25	
11	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	EXIT EMERGENCY LIGHTING	RESERVE
12	ZONE Z1 CIRCUIT 2	ZONE Z2 CIRCUIT 2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z9	ZONE Z10	ZONE Z11	ZONE Z12	ZONE Z13	ZONE Z14	ZONE Z15	ZONE Z16	ZONE Z17	ZONE Z18		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L1/M/EL

WIRING DIAGRAM

Reference n.

-

Drawing n.

Ee_211

Rev.

0

Sheet n.

Pag.23 seg. 24

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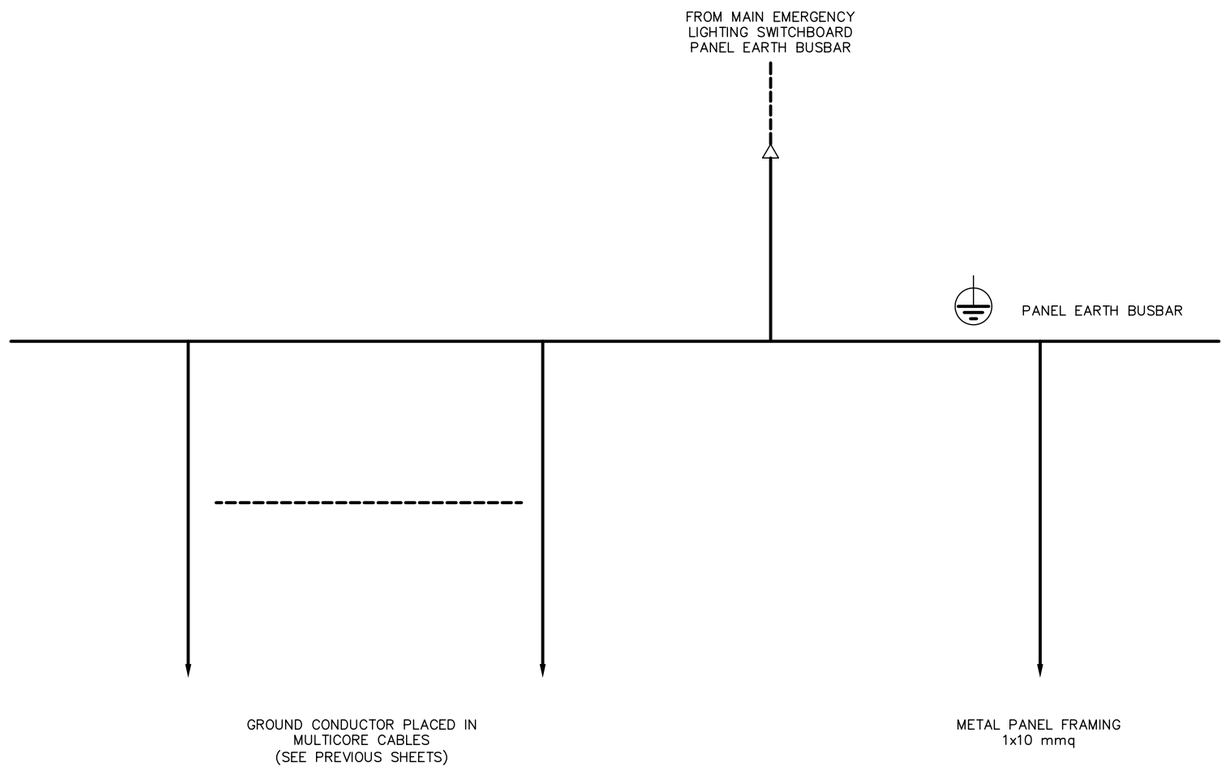

Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/EL EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_211**	
				Rev. **0**	Sheet n. Pag.24 seg. 25

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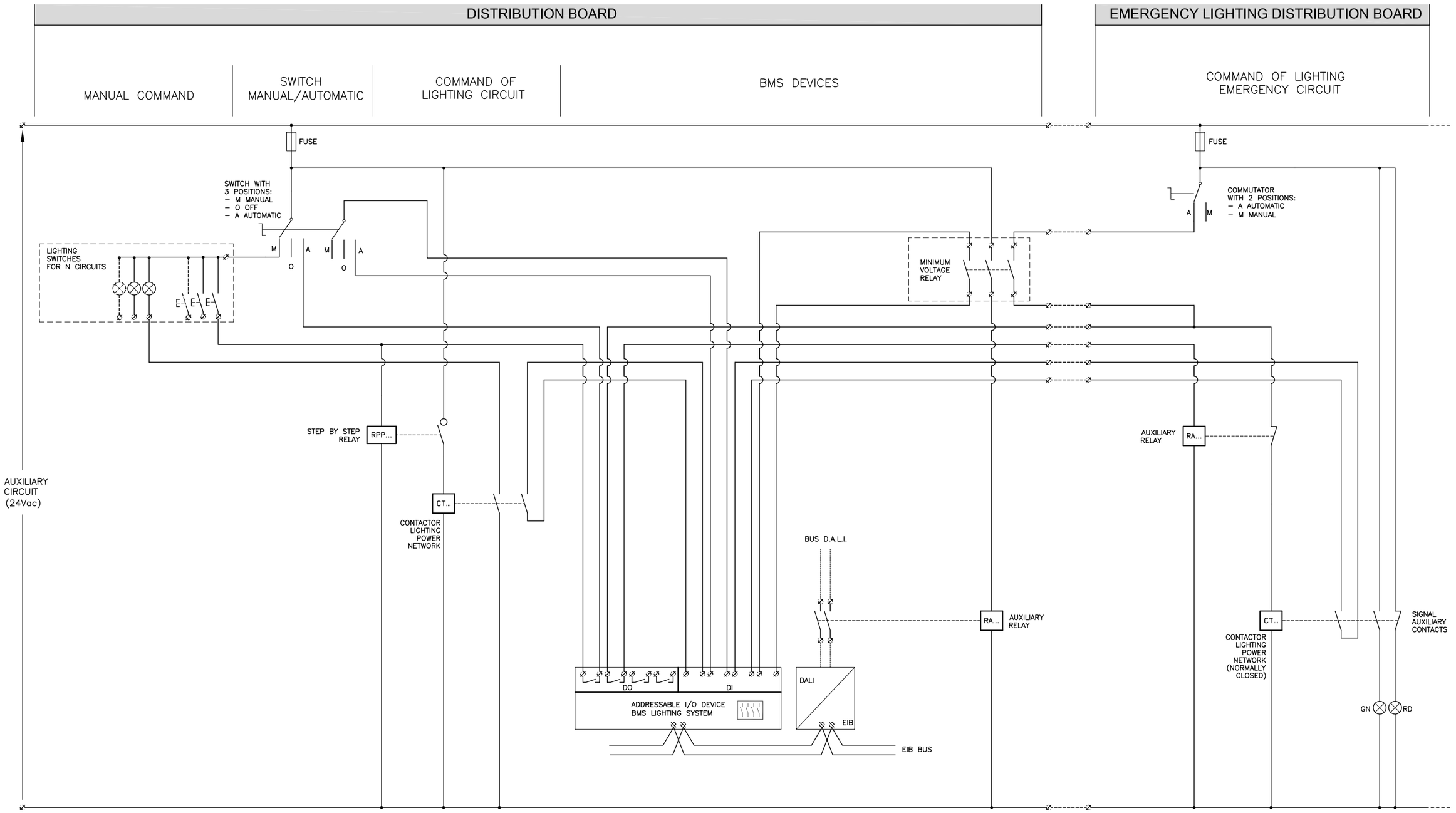
LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations		Title	Reference n.	Drawing n.
	Manens-Tifs INGEGNERIA	DB_L1/M/EL TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	-	Ee_211
			Rev. 0	Sheet n. Pag.25 seg. 26

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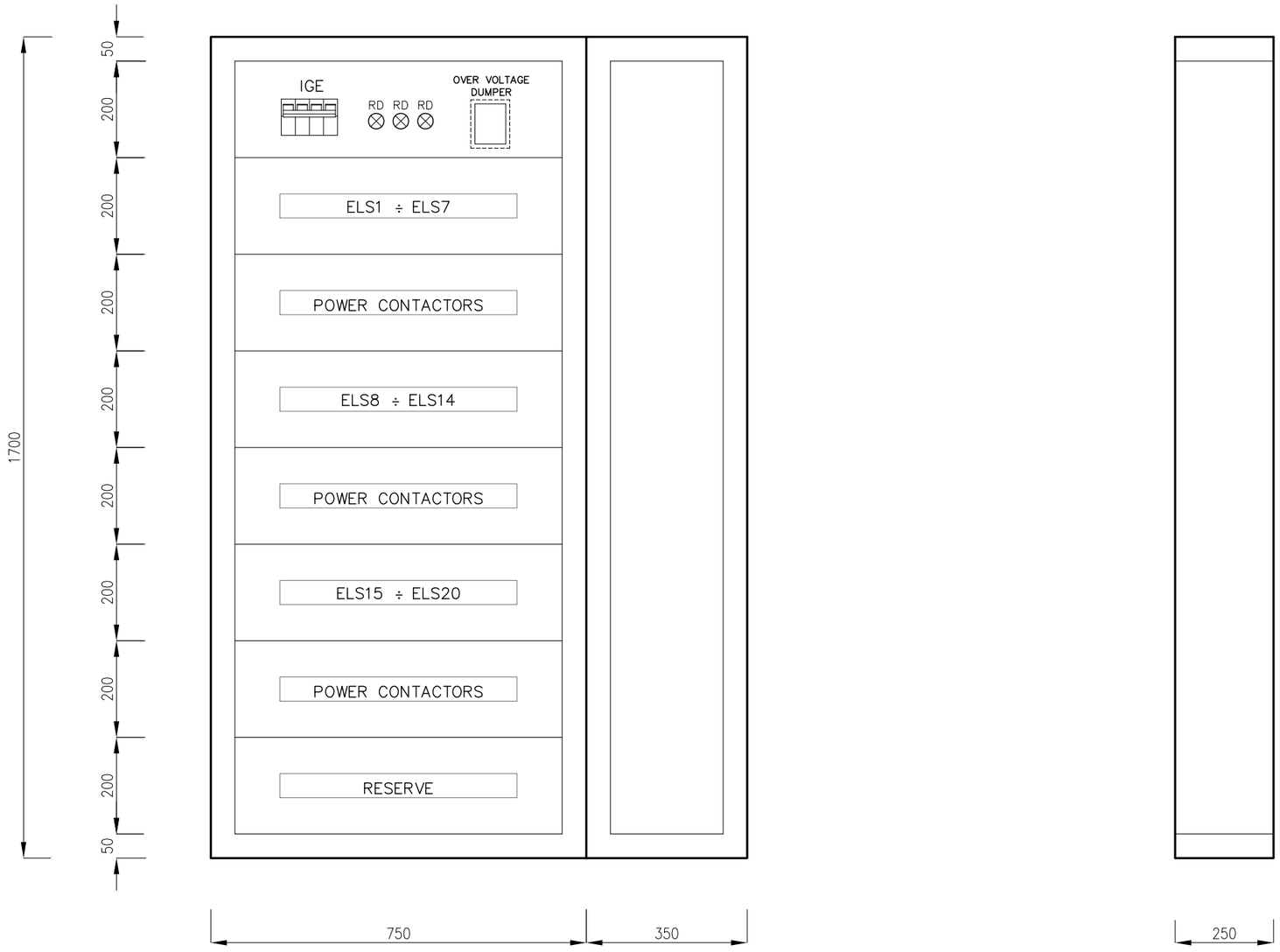

Annotations	Manens-Tifs INGEGNERIA	Title DB_L1/M/EL FRONTAL LAYOUT	Reference n. -	Drawing n. **Ee_211** Rev. **0** / Sheet n. Pag.26 seg. 27

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TABLE DESCRIPTION OF PANEL

1	USER INITIALS	
2	MAXIMUM ABSORBED POWER	kVA
3	MAXIMUM ABSORBED CURRENT	A
4	N.poles–I nom.–ADJUSTMENT SWITCH	A
5	I nominal CONTACTOR	A
6	HEAT RELAY ADJUSTMENT	A
7	I nominal FUSE	A
8	LINE FORMATION	mm²
9	CABLE TYPE	
10	LINE LENGTH	m
11	DESTINATION	
12	NOTE	

PANEL'S MAIN CHARACTERISTICS

NAME ON PANEL

EMERGENCY LIGHTING DISTRIBUTION BOARD – SECOND LEVEL

INITIALS

DB_L2/M/EL

NOMINAL VOLTAGE

Vn= 230/400V

FREQUENCY

f=50Hz

SIMULTANEOUS MAXIMUM POWER AND CURRENT

TOTAL: Rp~4.3kVA – I~6.2A

NOMINAL INTERRUPTION POWER ON MAXIMUM LIMIT DERIVED SWITCHES (IEC 23_3 E IEC 17_5)

Icn=>10kA

PANEL STRUCTURE

METAL DISTRIBUTION BOARD

MINIMUM PROTECTION LEVEL

IP40 (IP20 TO OPEN PANEL)

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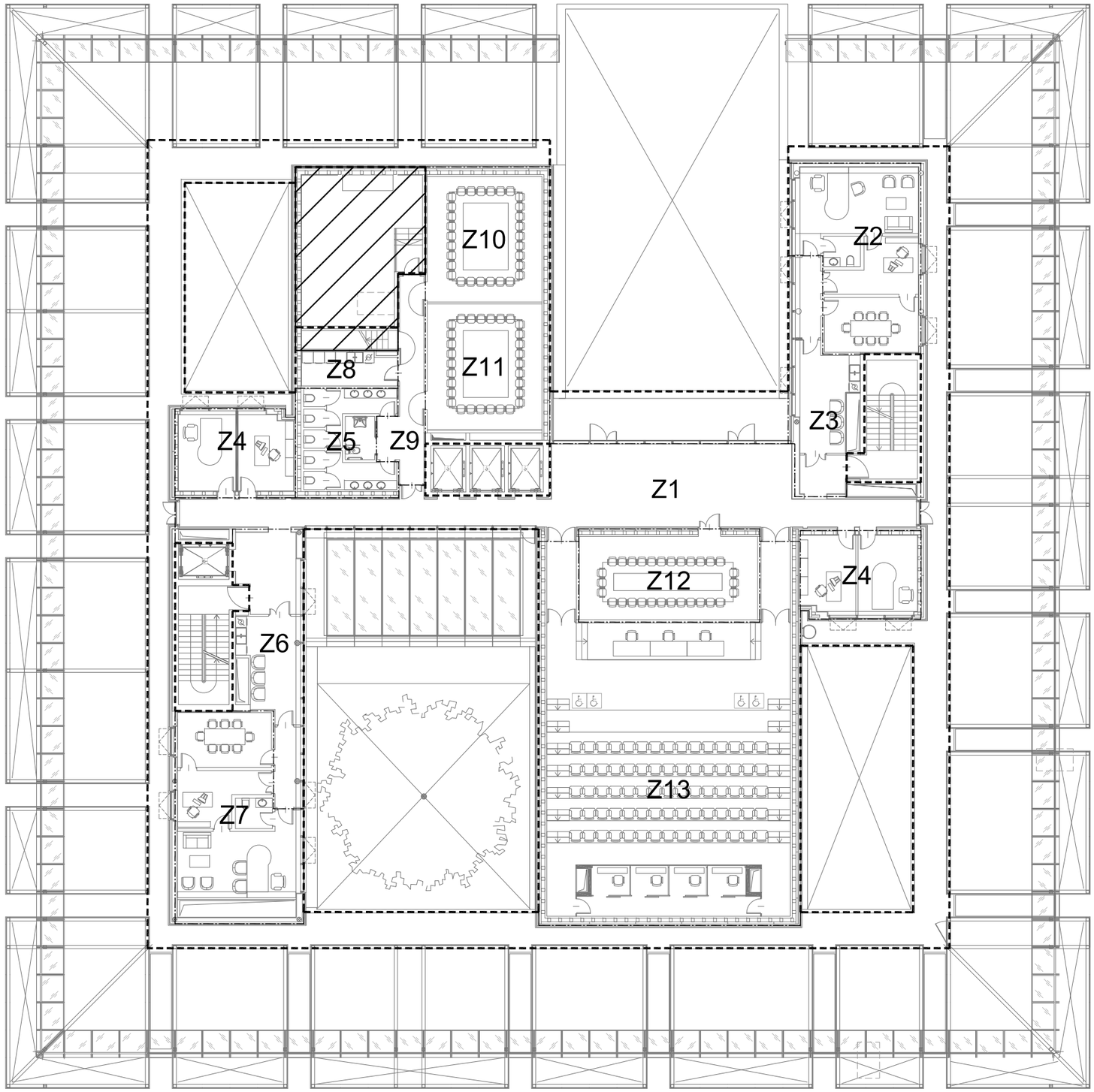

Annotations

Manens-Tifs INGEGNERIA

Title
DB_L2/M/EL
ELECTRICAL ZONES

Reference n.
-

Drawing n.
Ee_211

Rev.
0

Sheet n.
Pag.28 seg. 29

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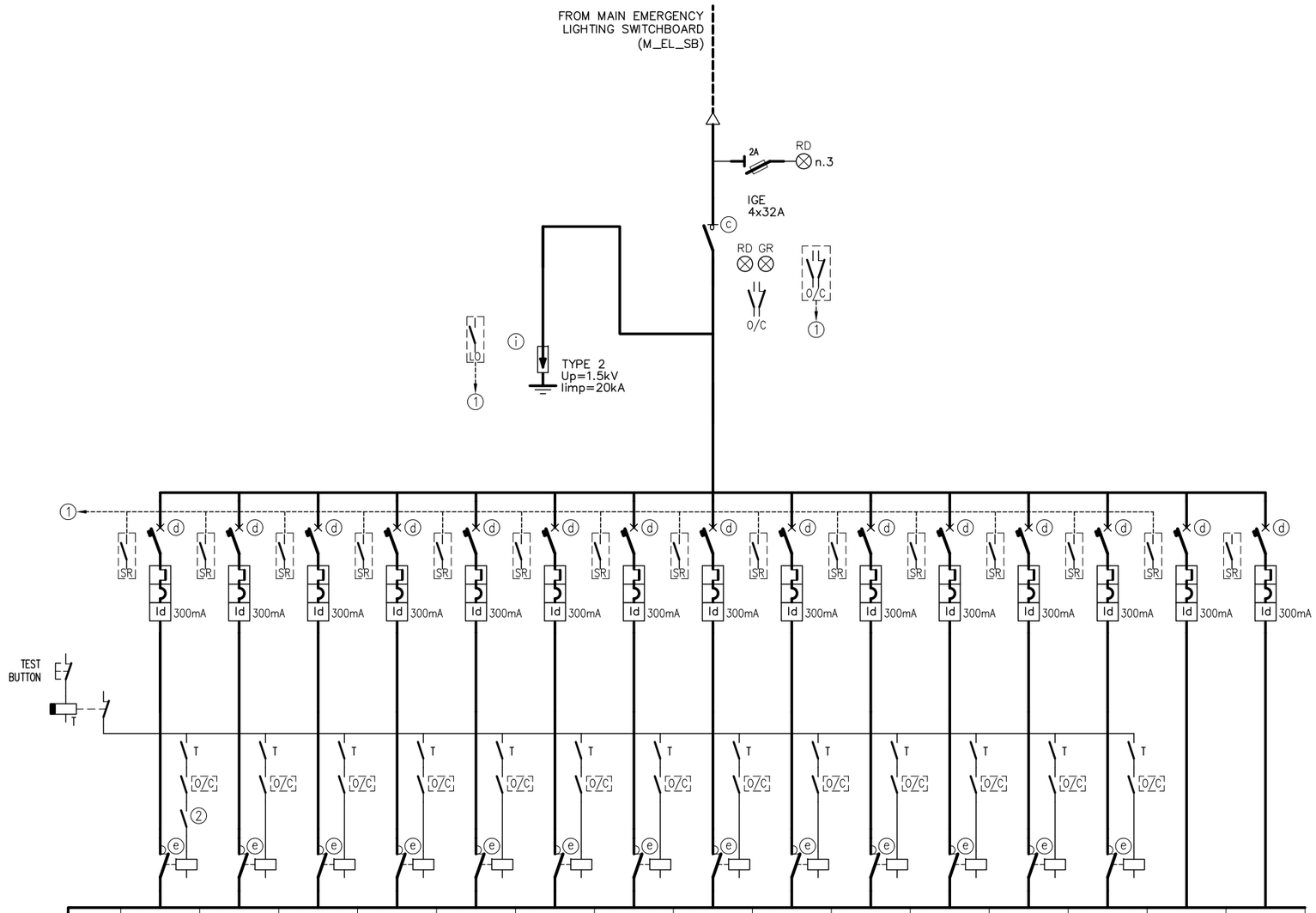

1	ELS1	ELS2	ELS3	ELS4	ELS5	ELS6	ELS7	ELS8	ELS9	ELS10	ELS11	ELS12	ELS13	ELS14	ELS15
2	0.4	0.3	0.2	0.4	0.2	0.2	0.4	0.1	0.1	0.2	0.2	0.2	1.1	0.3	
3	1.8	1.3	0.9	1.8	0.9	0.9	1.8	0.4	0.4	0.9	0.9	0.9	4.8	1.3	
4	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N	1x10+N
5	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3	3x12−AC3		
6															
7															
8	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	3x2.5	
9	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	FTG10OM1 CEI 20−45	
10	40	45	40	35+10	10	30	35	10	15	15	10	25	30	40+15	
11	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	SAFETY LIGHTING SYSTEM	EXIT EMERGENCY LIGHTING	RESERVE
12	ZONE Z1 CIRCUIT 2	ZONE Z2	ZONE Z3	ZONE Z4	ZONE Z5	ZONE Z6	ZONE Z7	ZONE Z8	ZONE Z9	ZONE Z10	ZONE Z11	ZONE Z12	ZONE Z13		

Annotations

① TO BUILDING MANEGEMENT SYSTEM

② FROM BUILDING MANEGEMENT SYSTEM COMMAND

Manens-Tifs INGEGNERIA

Title

DB_L2/M/EL

WIRING DIAGRAM

Reference n.

-

Drawing n.

Ee_211

Rev.

0

Sheet n.

Pag.29 seg. 30

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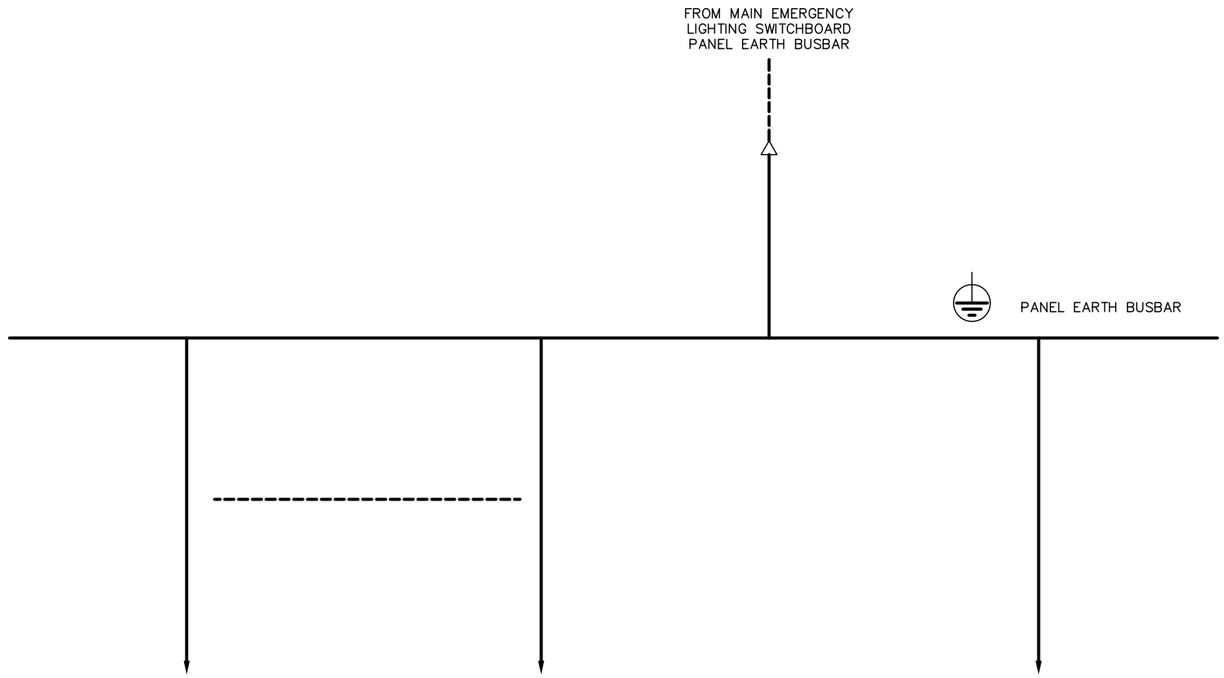

Annotations	Manens-Tifs INGEGNERIA	Title DB_L2/M/EL EARTH CONNECTION LAYOUT	Reference n. -	Drawing n. **Ee_211** Rev. **0** / Sheet n. Pag.30 seg. 31

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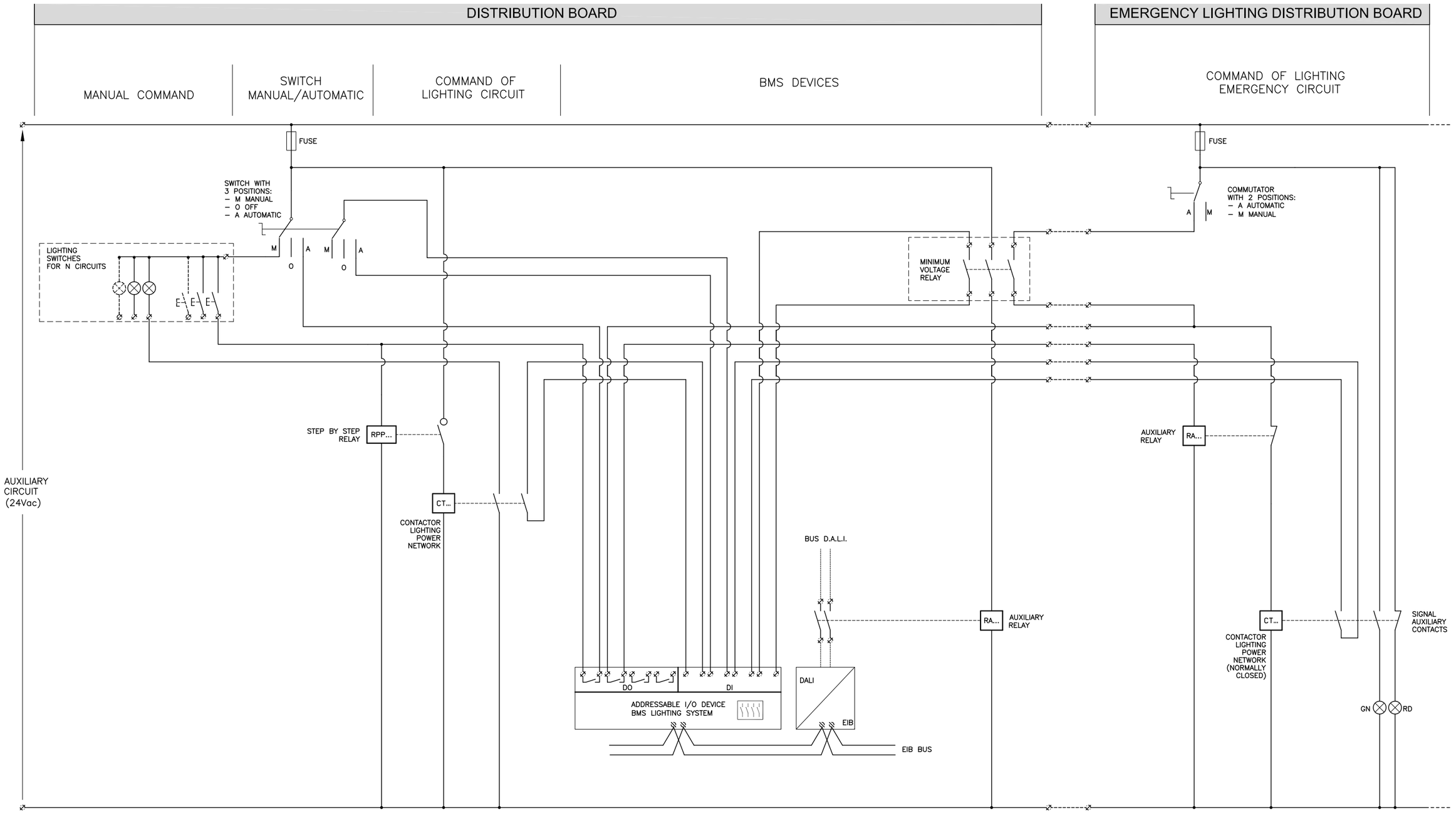
LIGHTING CONTROL DISTRIBUTION BOARD SCHEME



Annotations		Title	Reference n.	Drawing n.
	Manens-Tifs INGEGNERIA	DB_L2/M/EL TYPICAL LIGHTING CONTROL DISTRBUTION BOARD SCHEME	-	Ee_211
			Rev. 0	Sheet n. Pag.31 seg. 32

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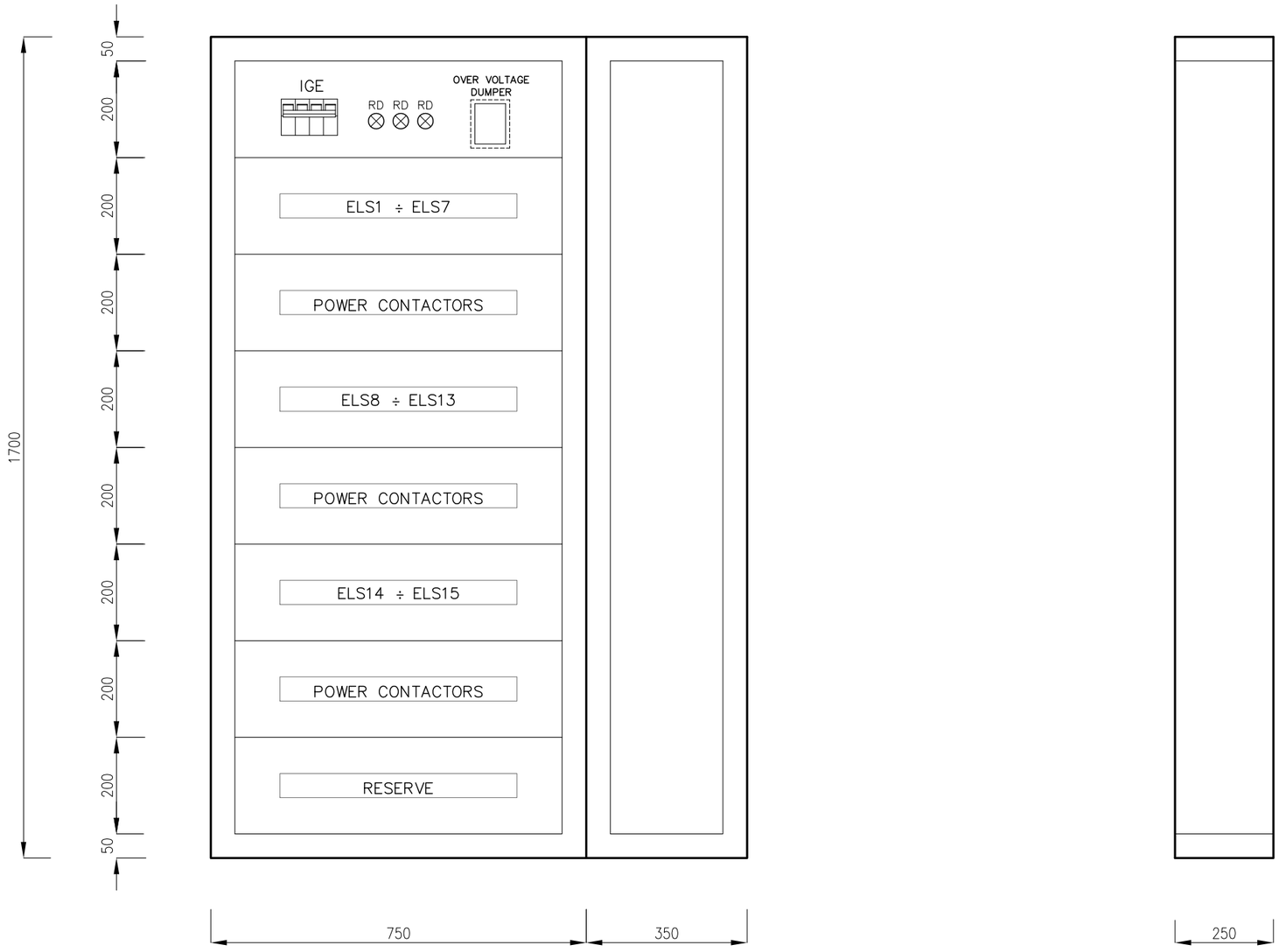

Annotations	Manens-Tifs INGEGNERIA	Title DB_L2/M/EL FRONTAL LAYOUT	Reference n. -	Drawing n. Ee_211 Rev. 0 / Sheet n. Pag.32

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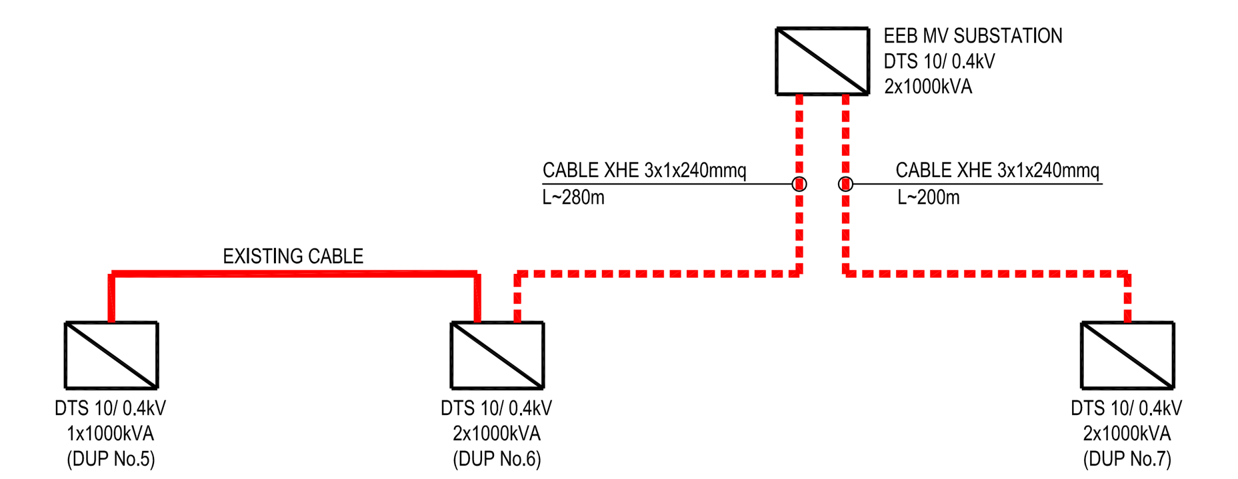
MEDIUM VOLTAGE CONNECTION SCHEME



LEGEND

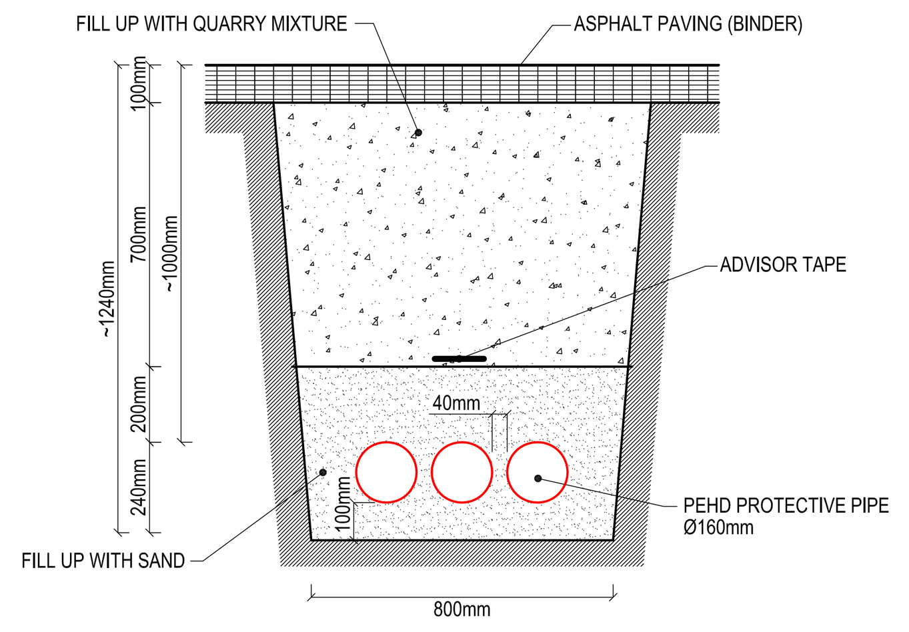
- MEDIUM VOLTAGE NETWORK Rv=10kV (MAIN DISTRIBUTION)
- E — WORK FOR CONCRETE BOX UNDERGROUND AND EQUIPPED WITH CAST IRON COVER
  E= SIZE 1500x1500xh1000mm
- VERTICAL RACEWAY/PIPE WAY
- hinst — INSTALLATION HEIGHT

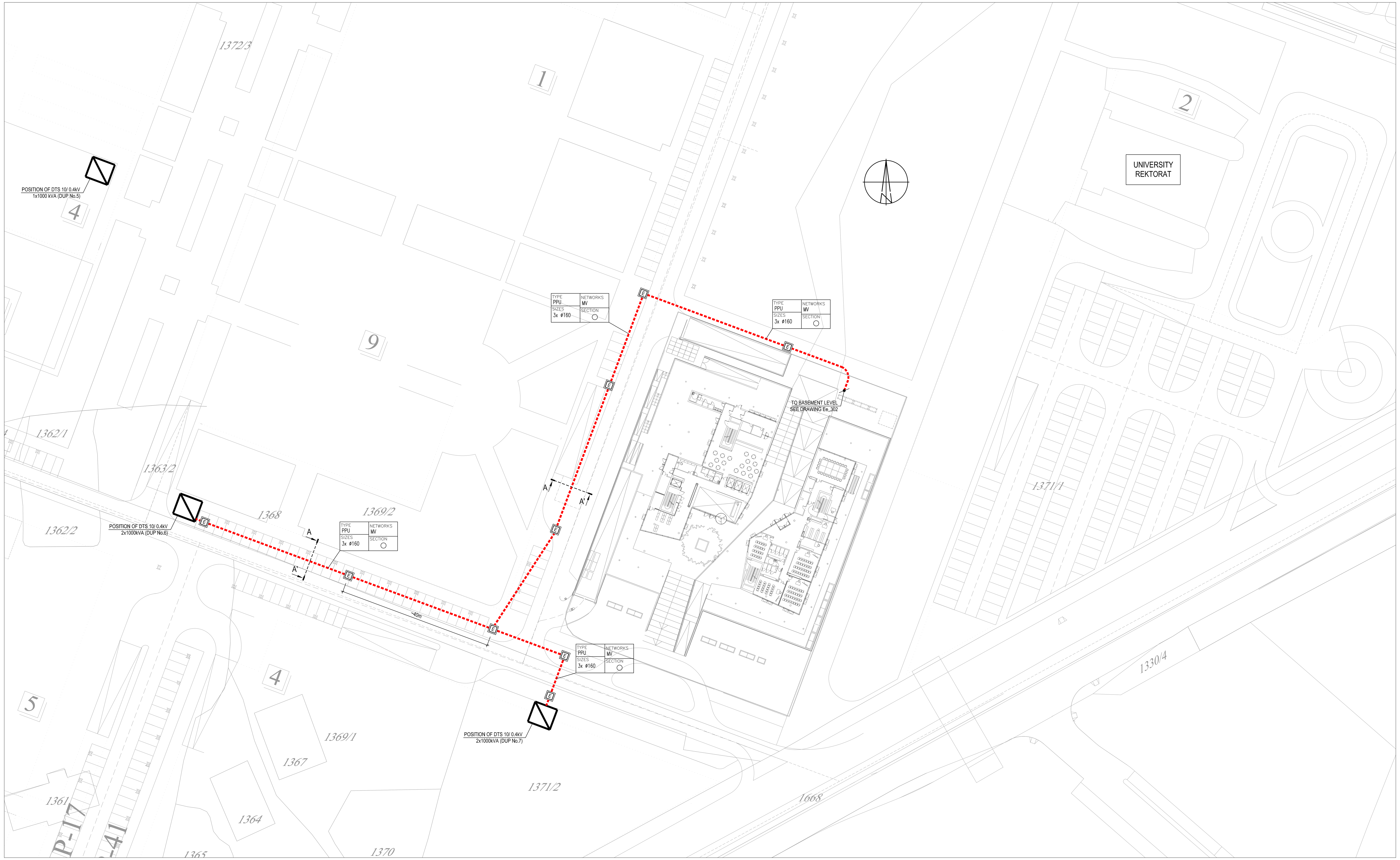
TYPE	NETWORKS
SIZE	SECTION

- NETWORKS — DESCRIPTION
  - MV — MEDIUM VOLTAGE NETWORK
- SECTION — SECTION EXAMPLES
  - ○ — PIPE
- TYPE — DESCRIPTION OF THE INDIVIDUAL CHANNELLING MODELS
  - PPU — PEHD PROTECTIVE PIPE TO BURY IN LIGHTWEIGHT CONCRETE OR UNDERGROUND
- SIZE — SIZES OF CHANNELLING

SECTION A-A'

EXCAVATION DETAIL (SCALE 1:20)





INVESTITOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT — ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

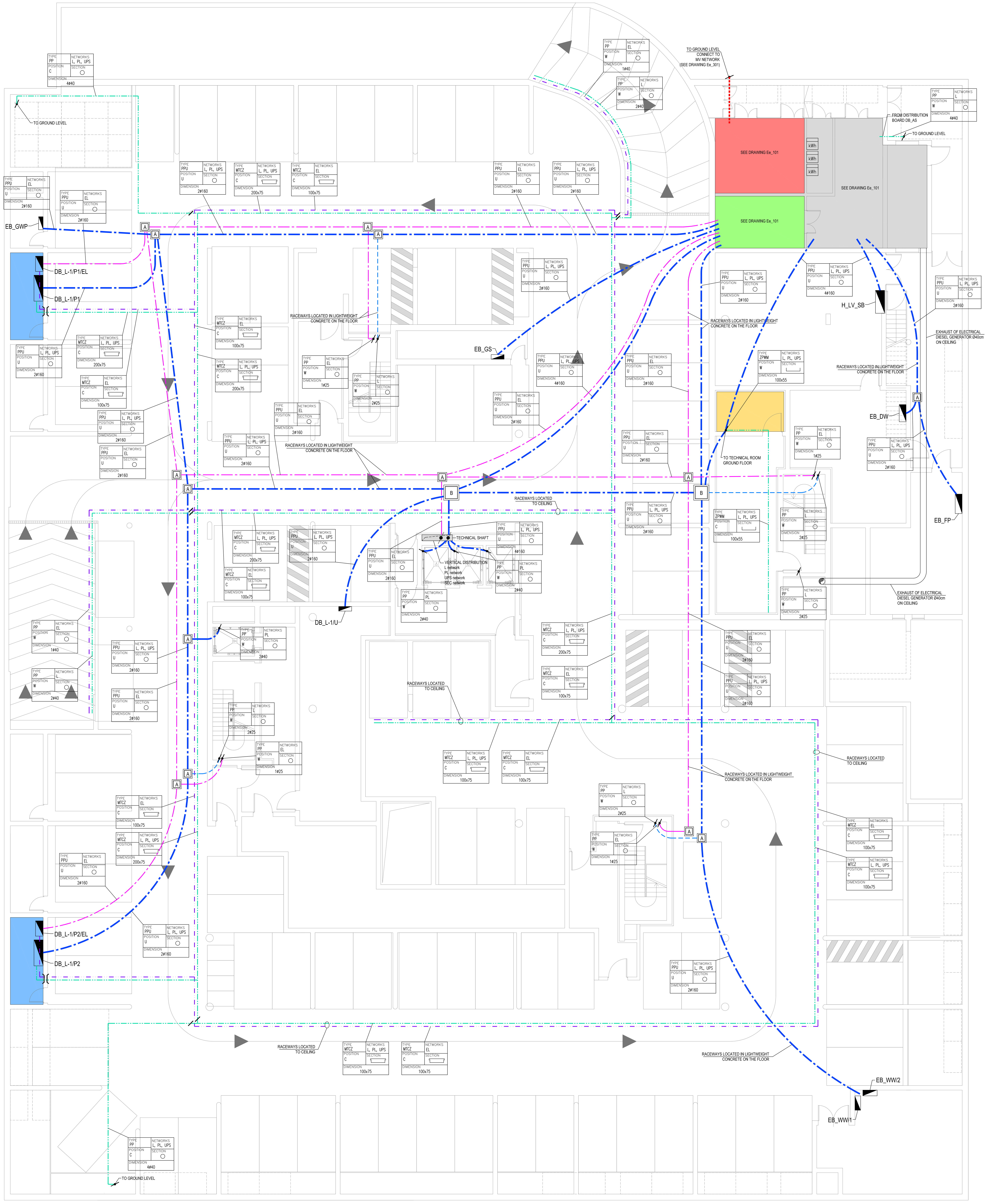
TITLE

MAIN CONNECTIONS GENERAL PLAN – MV

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_301_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b	27/07/2011	926_Ee_301_b.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
c					
d					

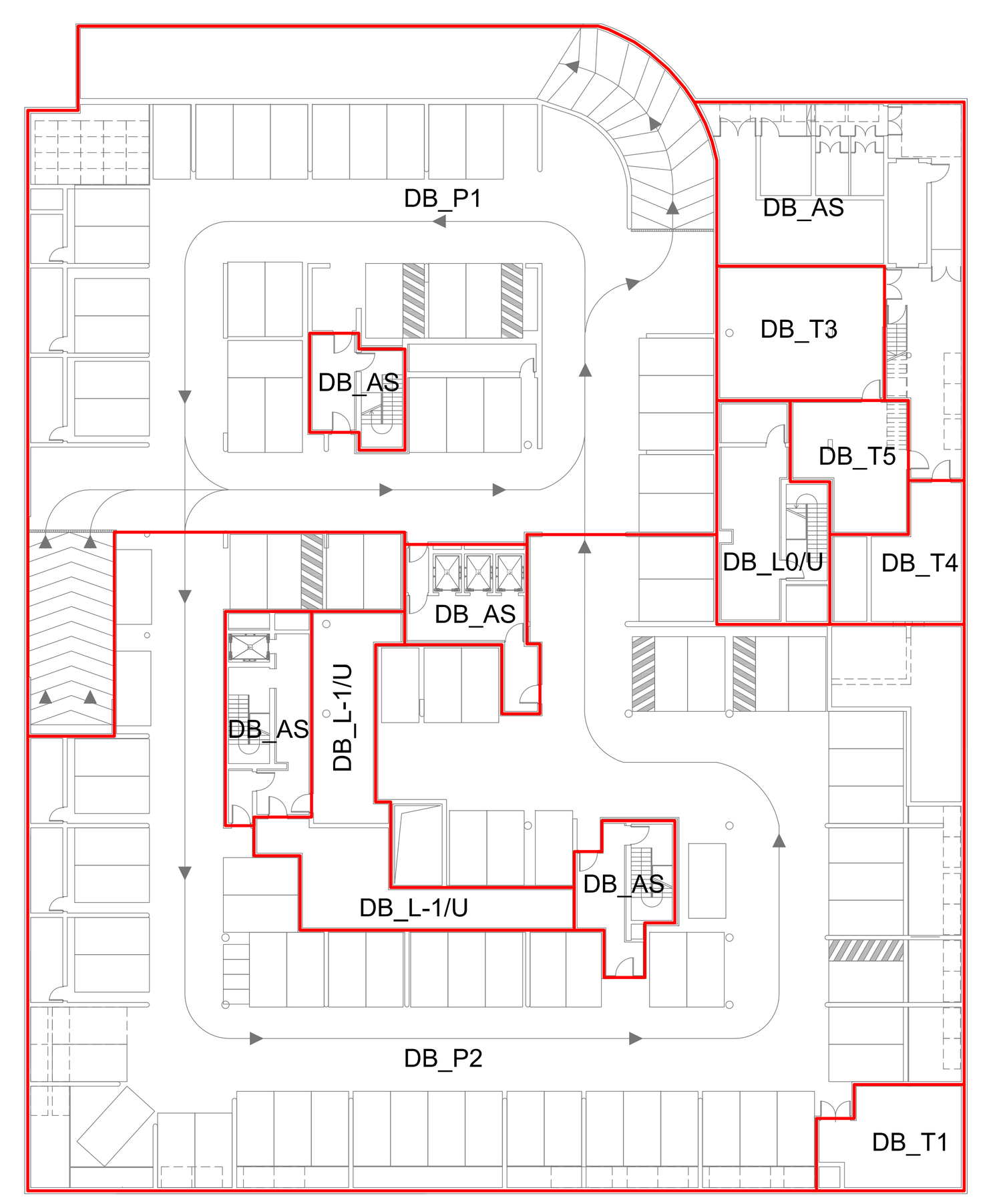
ISSUE NR. Ee_301

DATE: 30/11/2010	SCALE: 1:500	FILE: 926_Ee_301_b.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.



ELECTRICAL ZONING

BASEMENT LEVEL



LEGEND

	DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD
kWh	ELECTRICAL ENERGY METER
	MV/LV TRANSFORMER SUBSTATION
	LV SUBSTATION
	ELECTRICAL ROOM
	UPS ROOM
	MAIN DATA ROOM
	MAIN ELECTRICAL/DATA SHAFT
	FIRE BREAKING BARRIER
	MEDIUM VOLTAGE NETWORK Rv=10kV (MAIN DISTRIBUTION)
	LIGHTING, POWER LOAD AND UPS NETWORKS (MAIN DISTRIBUTION)
	EMERGENCY LIGHTING DISTRIBUTION NETWORK - FLOOR DISTRIBUTION
	LIGHTING, POWER LOAD AND UPS NETWORK - FLOOR DISTRIBUTION
	EMERGENCY LIGHTING DISTRIBUTION NETWORK - CEILING DISTRIBUTION
	LIGHTING, POWER LOAD AND UPS NETWORK - CEILING DISTRIBUTION
	VERTICAL RACEWAY / PIPE WAY
	RACEWAY CHANGE OF SIZE
A,B,C,D	PREFABRICATED CONCRETE BOX FOR INSTALLATION UNDERGROUND AND EQUIPPED WITH CAST IRON COVER A= SIZE 600x600xh600mm B= SIZE 1000x1000xh1000mm C= SIZE 600x600xh200mm D= SIZE 400x400xh400mm
hinst	INSTALLATION HEIGHT

TYPE / NETWORKS / POSITION / SECTION / DIMENSION

DESCRIPTION

MV	MEDIUM VOLTAGE NETWORK
LV	LOW VOLTAGE NETWORK
L, PL, UPS	LIGHTING, POWER LOAD AND UPS SYSTEMS
EL	EMERGENCY LIGHTING DISTRIBUTION NETWORK
PV	PHOTOVOLTAIC SYSTEM

SECTION EXAMPLES

- RACEWAY WITHOUT LID
- RACEWAY WITH LID
- RACEWAY WITH LID AND DIVIDER
- PIPE

POSITION OF CHANNEL

C	CEILING
U	UNDERFLOOR
W	WALL

DESCRIPTION OF THE INDIVIDUAL RACEWAY MODELS

MTCZ	METAL TRUNKING IN CLOSED VERSION, ZINC PLATED
ZPWM	ZINC PLATED WIRE MESH
PPU	PEHD PROTECTIVE PIPE TO BURY IN LIGHTWEIGHT CONCRETE OR UNDERGROUND
PP	PROTECTIVE PVC PIPE
ZPMP	ZINC PLATED METAL PIPE

DISTRIBUTION BOARD CODE

AS	AUXILIARY SERVICE SWITCHBOARD	MR...	MEETING ROOM
EG	EMERGENCY DIESEL GENERATOR	PV	PHOTOVOLTAIC SYSTEM
BR	BAR AREAS	M	MINISTRY AREAS
MDR	MINISTRY MAIN DATA ROOM	U	UNIVERSITY AREAS
L...	LEVEL	P	PARKING AREAS
		CB	CONNECTION BOARD

ELECTRICAL BOARD DEDICATED TO MECHANICAL CODE

FP...	FIRE PROTECTION PUMP STATION	LIFT	LIFT
W...	DOMESTIC WATER PUMP STATION	AHU	AIR HANDLING UNIT
GS	GREASE SEPARATOR	ASU...	AIR SUPPLY UNIT
WW/...	WASTE AND WEATHER WATER PUMP STATION		

SIZES OF VERTICAL DISTRIBUTION IN TECHNICAL SHAFT

TYPE	SIZES	NETWORKS	Description
ZPWM	500x105	L, PL, UPS	VERTICAL DISTRIBUTION LIGHTING NETWORK; POWER LOAD NETWORK; UPS SYSTEMS.
ZPWM	200x105	SEC	VERTICAL DISTRIBUTION SECURITY LIGHT NETWORK

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ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

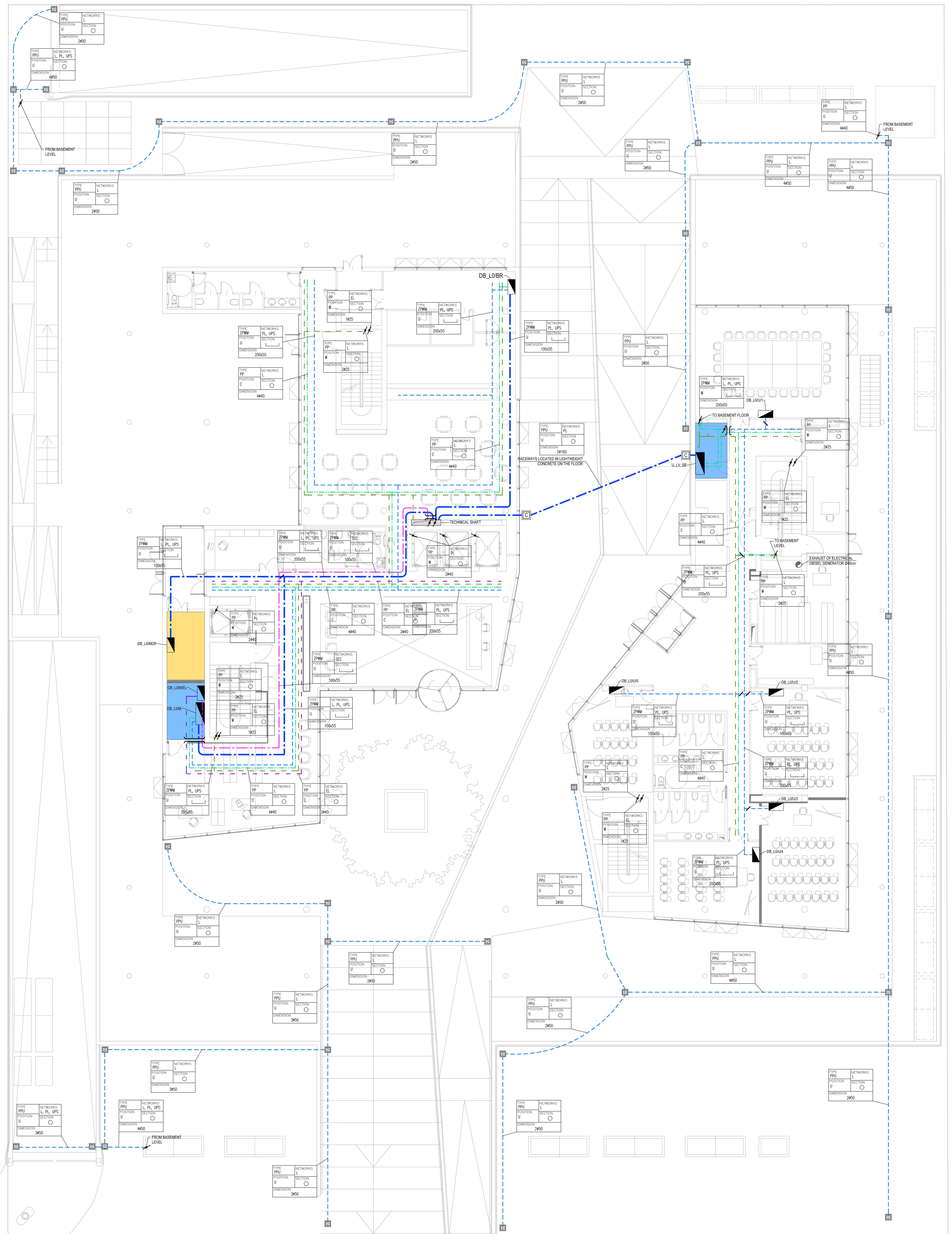
TITLE

DISTRIBUTION BOARDS AND RACEWAYS LAYOUT – LV LEVEL –1

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

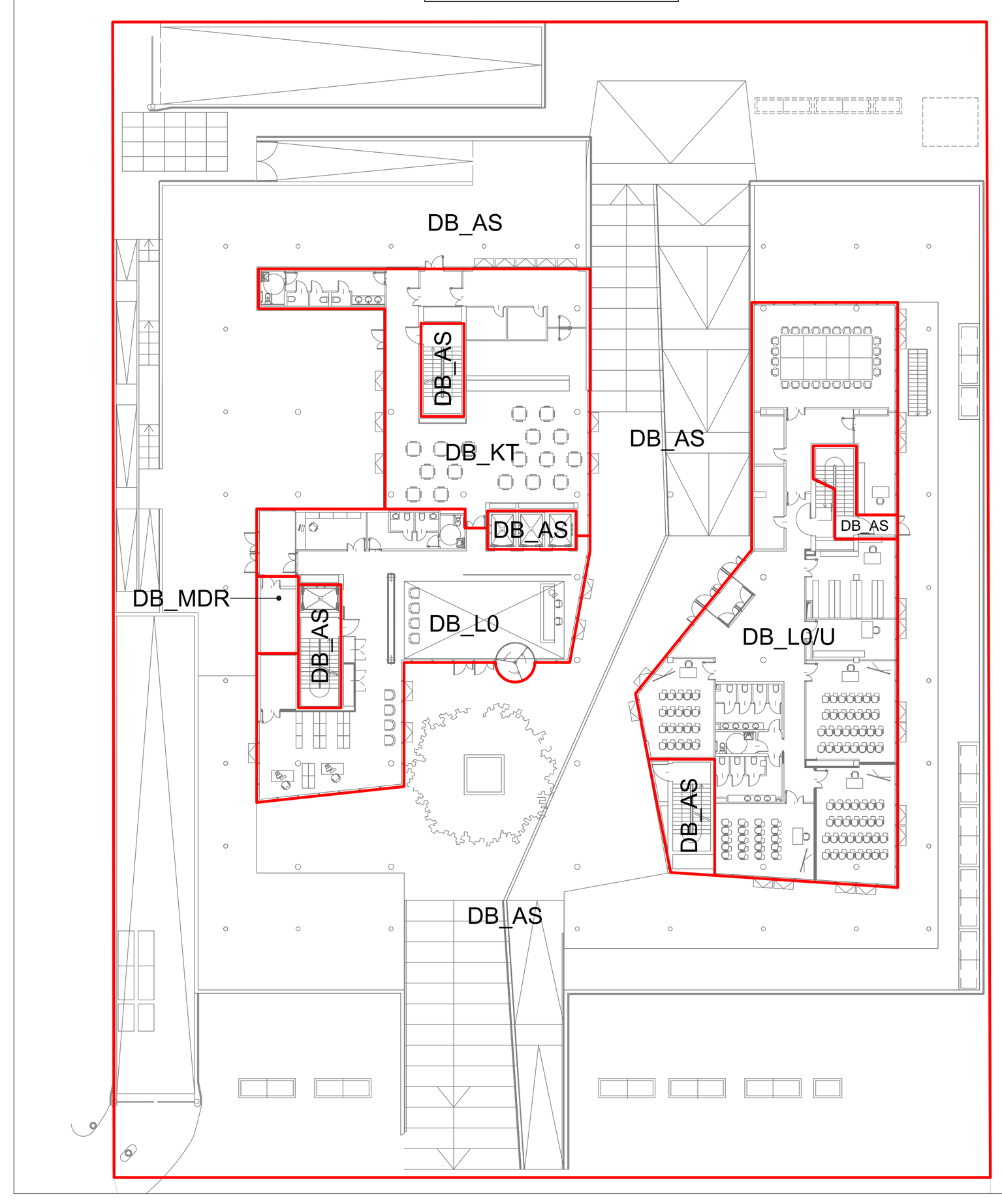
ISSUE NR. **Ee_302**

DATE: 30/11/2010	SCALE: 1:100	FILE: 926_Ee_302.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.



ELECTRICAL ZONING

GROUND LEVEL



LEGEND

	DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD
kWh	ELECTRICAL ENERGY METER
	MV/LV TRANSFORMER SUBSTATION
	LV SUBSTATION
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	UPS ROOM
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WW/...	WASTE AND WEATHER WATER PUMP STATION		

SIZES OF VERTICAL DISTRIBUTION IN TECHNICAL SHAFT

TYPE	NETWORKS	SIZES	
ZPWM	L, PL, UPS	500x105	VERTICAL DISTRIBUTION LIGHTING NETWORK; POWER LOAD NETWORK; UPS SYSTEMS.
ZPWM	SEC	200x105	VERTICAL DISTRIBUTION SECURITY LIGHT NETWORK

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Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

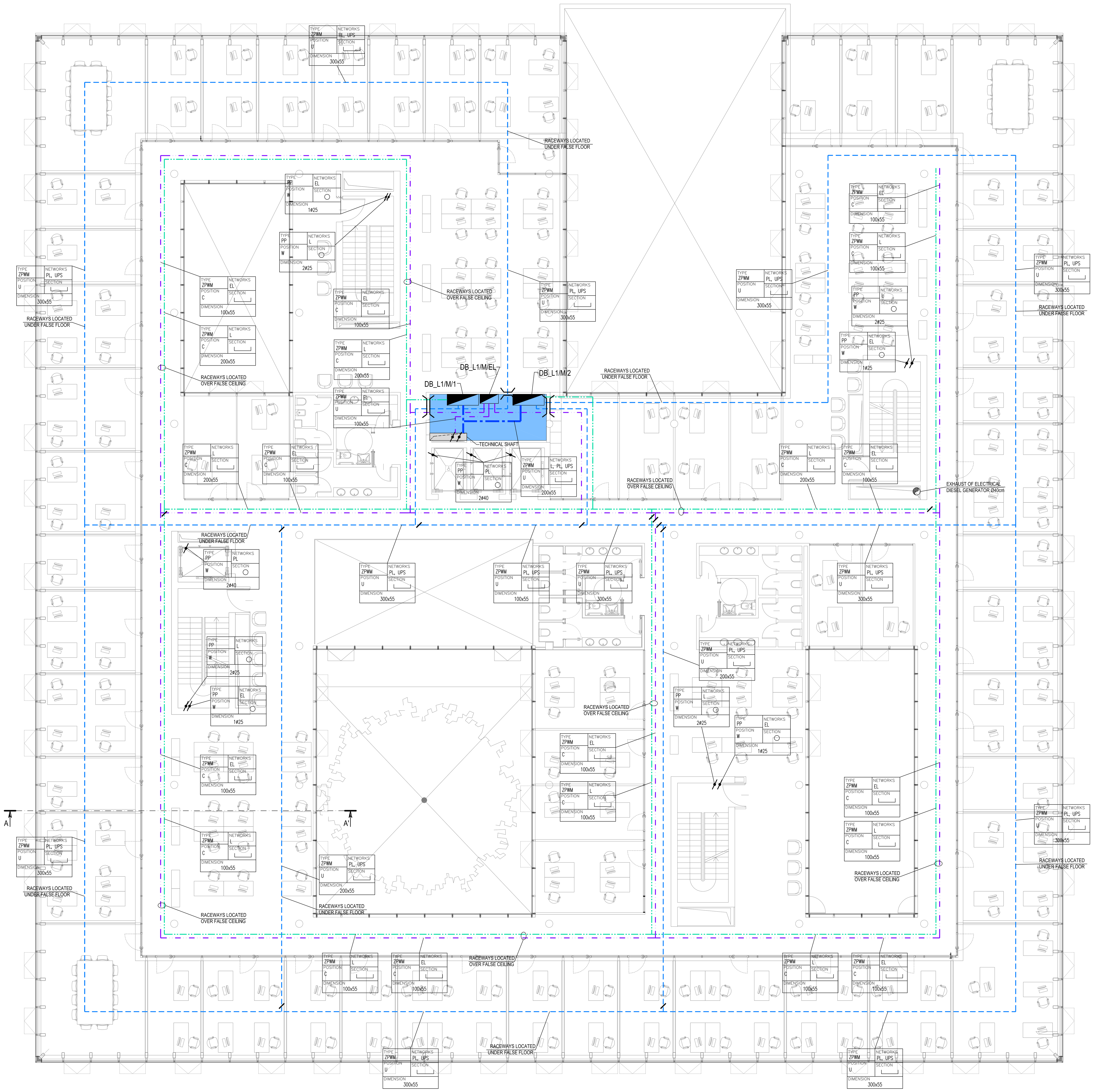
TITLE

DISTRIBUTION BOARDS AND RACEWAYS LAYOUT – LV
LEVEL 0

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

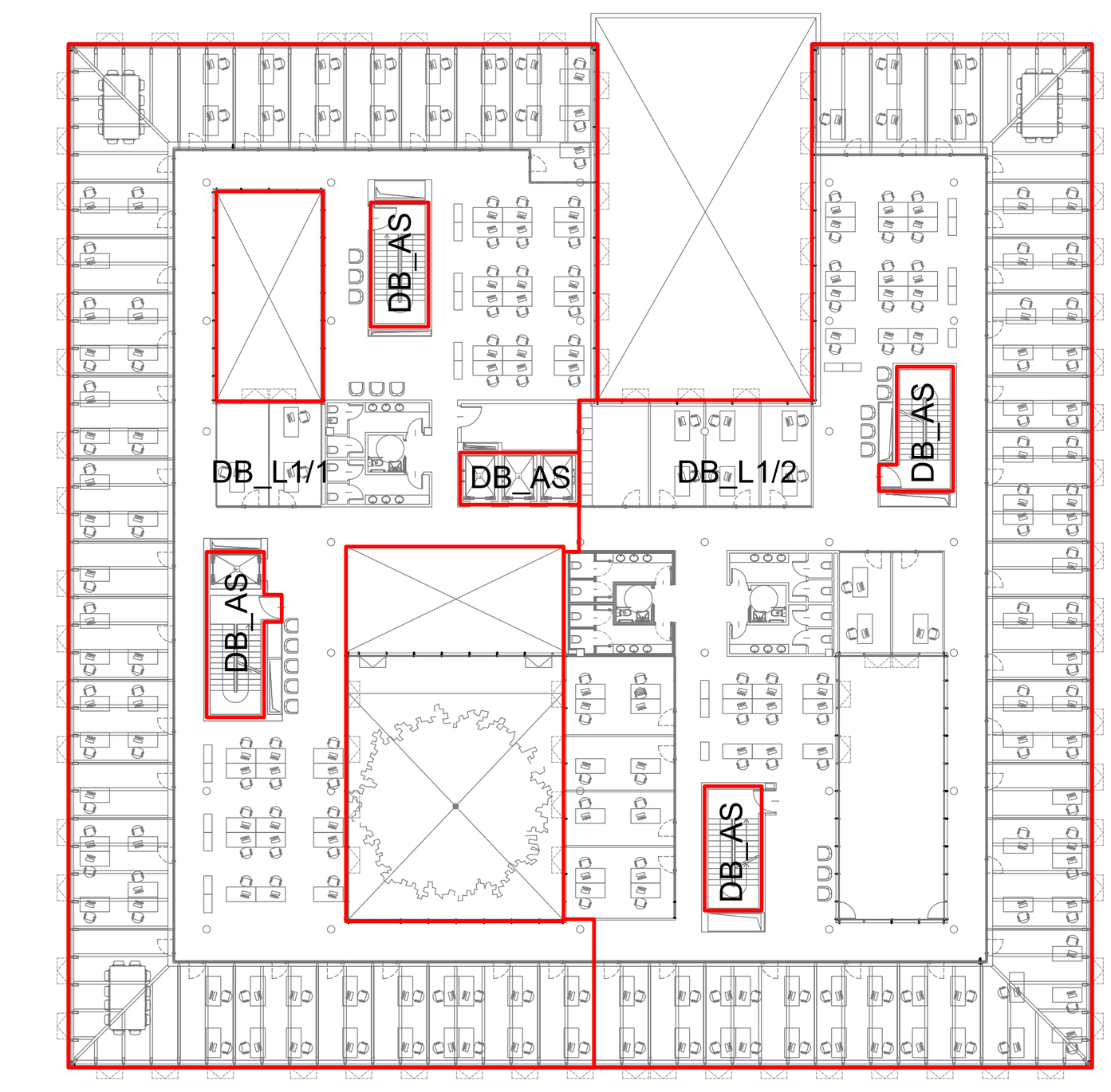
ISSUE NR. Ee_303

DATE: 30/11/2010	SCALE: 1:100	FILE: 926_Ee_303.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.



ELECTRICAL ZONING

FIRST LEVEL



LEGEND

DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD

kWh — ELECTRICAL ENERGY METER

MV/LV TRANSFORMER SUBSTATION

LV SUBSTATION

ELECTRICAL ROOM

UPS ROOM

MAIN DATA ROOM

MAIN ELECTRICAL/DATA SHAFT

FIRE BREAKING BARRIER

MEDIUM VOLTAGE NETWORK Rv=10kV (MAIN DISTRIBUTION)

LIGHTING, POWER LOAD AND UPS NETWORKS (MAIN DISTRIBUTION)

EMERGENCY LIGHTING DISTRIBUTION NETWORK - FLOOR DISTRIBUTION

LIGHTING, POWER LOAD AND UPS NETWORK - FLOOR DISTRIBUTION

EMERGENCY LIGHTING DISTRIBUTION NETWORK - CEILING DISTRIBUTION

LIGHTING, POWER LOAD AND UPS NETWORK - CEILING DISTRIBUTION

VERTICAL RACEWAY / PIPE WAY

RACEWAY CHANGE OF SIZE

A,B,C,D — PREFABRICATED CONCRETE BOX FOR INSTALLATION UNDERGROUND AND EQUIPPED WITH CAST IRON COVER
A= SIZE 600x600xh600mm
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hinst — INSTALLATION HEIGHT

TYPE | NETWORKS | POSITION | SECTION | DIMENSION

DESCRIPTION
- MV — MEDIUM VOLTAGE NETWORK
- LV — LOW VOLTAGE NETWORK
- L, PL, UPS — LIGHTING, POWER LOAD AND UPS SYSTEMS
- EL — EMERGENCY LIGHTING DISTRIBUTION NETWORK
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SECTION EXAMPLES
- RACEWAY WITHOUT LID
- RACEWAY WITH LID
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POSITION OF CHANNEL
- C — CEILING
- U — UNDERFLOOR
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DESCRIPTION OF THE INDIVIDUAL RACEWAY MODELS
- MTCZ — METAL TRUNKING IN CLOSED VERSION, ZINC PLATED
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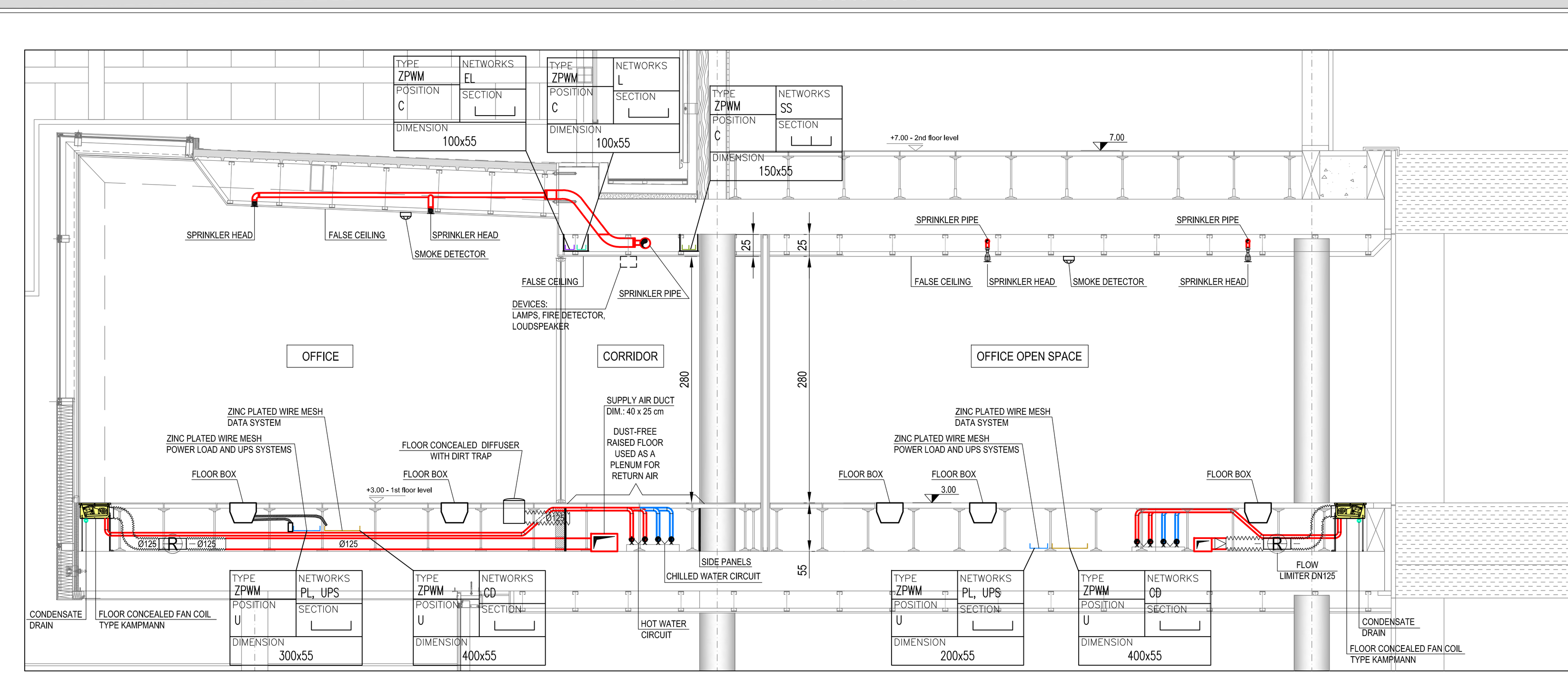
SECTION A-A' - scale 1:50



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Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

DISTRIBUTION BOARDS AND RACEWAYS LAYOUT – LV LEVEL 1

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a					
b					
c					
d					

ISSUE NR. Ee_304

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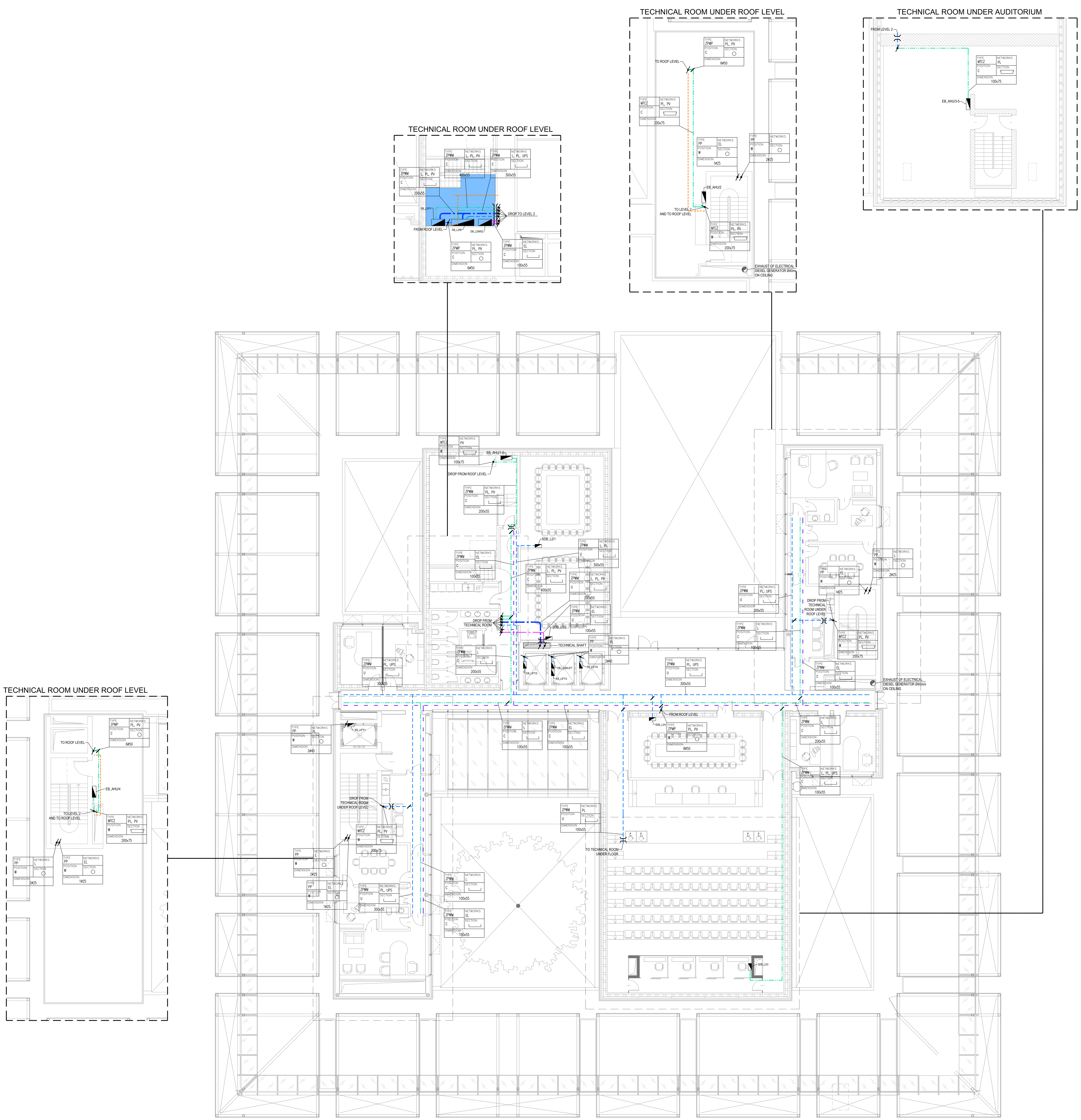
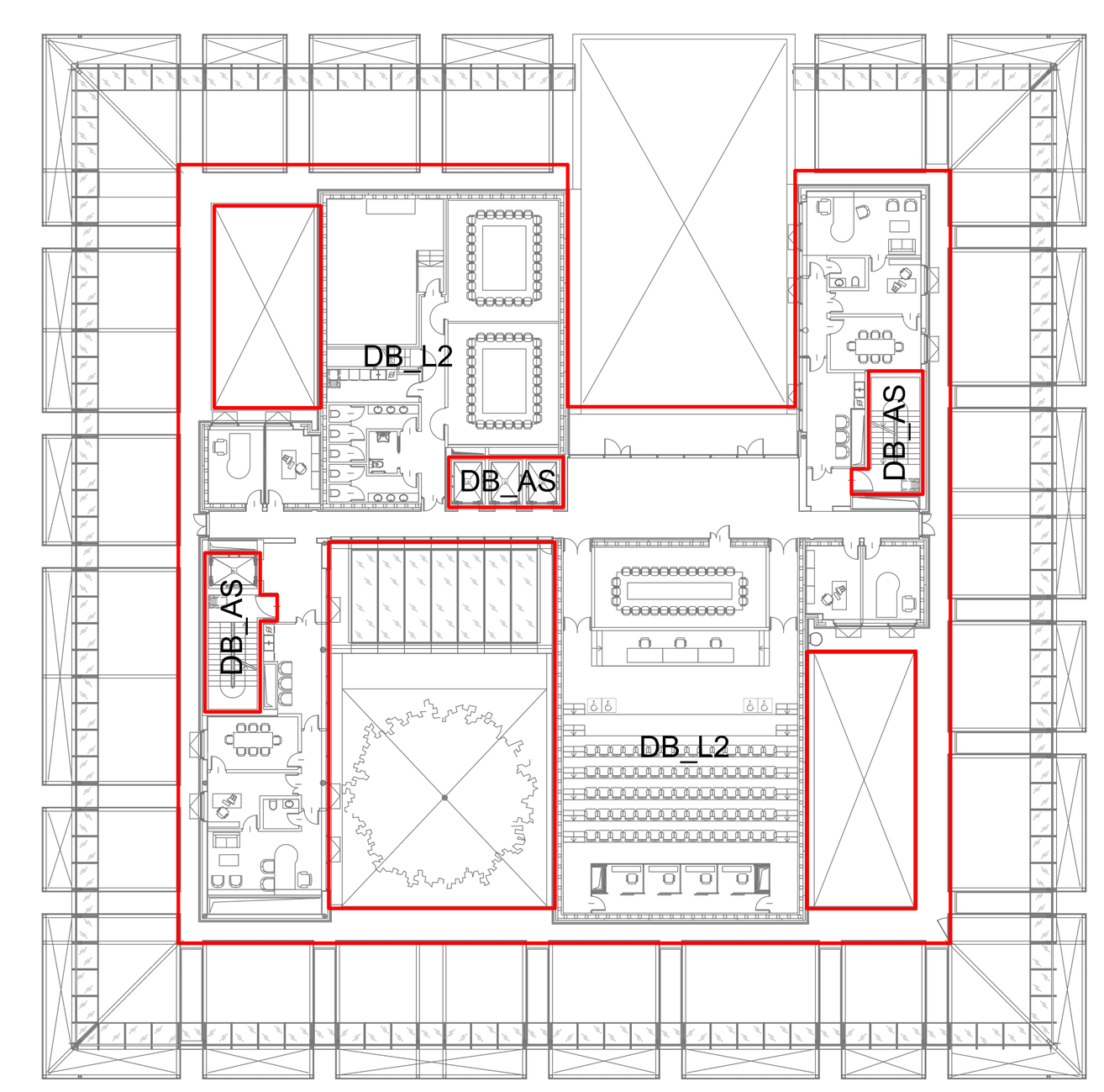


ELECTRICAL ZONING

SECOND LEVEL



LEGEND

	DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD
kWh	ELECTRICAL ENERGY METER
	MV/LV TRANSFORMER SUBSTATION
	LV SUBSTATION
	ELECTRICAL ROOM
	UPS ROOM
	MAIN DATA ROOM
	MAIN ELECTRICAL/DATA SHAFT
	FIRE BREAKING BARRIER
	MEDIUM VOLTAGE NETWORK Rv=10kV (MAIN DISTRIBUTION)
	LIGHTING, POWER LOAD AND UPS NETWORKS (MAIN DISTRIBUTION)
	EMERGENCY LIGHTING DISTRIBUTION NETWORK - FLOOR DISTRIBUTION
	LIGHTING, POWER LOAD AND UPS NETWORK - FLOOR DISTRIBUTION
	EMERGENCY LIGHTING DISTRIBUTION NETWORK - CEILING DISTRIBUTION
	LIGHTING, POWER LOAD AND UPS NETWORK - CEILING DISTRIBUTION
	VERTICAL RACEWAY / PIPE WAY
	RACEWAY CHANGE OF SIZE
A,B,C,D	PREFABRICATED CONCRETE BOX FOR INSTALLATION UNDERGROUND AND EQUIPPED WITH CAST IRON COVER A= SIZE 600x600xh600mm B= SIZE 1000x1000xh1000mm C= SIZE 600x600xh200mm D= SIZE 400x400xh400mm
hinst	INSTALLATION HEIGHT

TYPE / NETWORKS / POSITION / SECTION / DIMENSION

DESCRIPTION

MV	MEDIUM VOLTAGE NETWORK
LV	LOW VOLTAGE NETWORK
L, PL, UPS	LIGHTING, POWER LOAD AND UPS SYSTEMS
EL	EMERGENCY LIGHTING DISTRIBUTION NETWORK
PV	PHOTOVOLTAIC SYSTEM

SECTION EXAMPLES

- RACEWAY WITHOUT LID
- RACEWAY WITH LID
- RACEWAY WITH LID AND DIVIDER
- PIPE

POSITION OF CHANNEL

C	CEILING
U	UNDERFLOOR
W	WALL

DESCRIPTION OF THE INDIVIDUAL RACEWAY MODELS

MTCZ	METAL TRUNKING IN CLOSED VERSION, ZINC PLATED
ZPWM	ZINC PLATED WIRE MESH
PPU	PEHD PROTECTIVE PIPE TO BURY IN LIGHTWEIGHT CONCRETE OR UNDERGROUND
PP	PROTECTIVE PVC PIPE
ZPMP	ZINC PLATED METAL PIPE

DISTRIBUTION BOARD CODE

AS	AUXILIARY SERVICE SWITCHBOARD	MR...	MEETING ROOM
EG	EMERGENCY DIESEL GENERATOR	PV	PHOTOVOLTAIC SYSTEM
BR	BAR AREAS	M	MINISTRY AREAS
MDR	MINISTRY MAIN DATA ROOM	U	UNIVERSITY AREAS
L...	LEVEL	P	PARKING AREAS
		CB	CONNECTION BOARD

ELECTRICAL BOARD DEDICATED TO MECHANICAL CODE

FP...	FIRE PROTECTION PUMP STATION	LIFT	LIFT
W...	DOMESTIC WATER PUMP STATION	AHU	AIR HANDLING UNIT
GS	GREASE SEPARATOR	ASU...	AIR SUPPLY UNIT
WW/...	WASTE AND WEATHER WATER PUMP STATION		

SIZES OF VERTICAL DISTRIBUTION IN TECHNICAL SHAFT

TYPE	NETWORKS	SIZES	
ZPWM	L, PL, UPS	500x105	VERTICAL DISTRIBUTION LIGHTING NETWORK; POWER LOAD NETWORK; UPS SYSTEMS.
ZPWM	EL	200x105	VERTICAL DISTRIBUTION SECURITY LIGHT NETWORK

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MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

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DISTRIBUTION BOARDS AND RACEWAYS LAYOUT – LV
LEVEL 2

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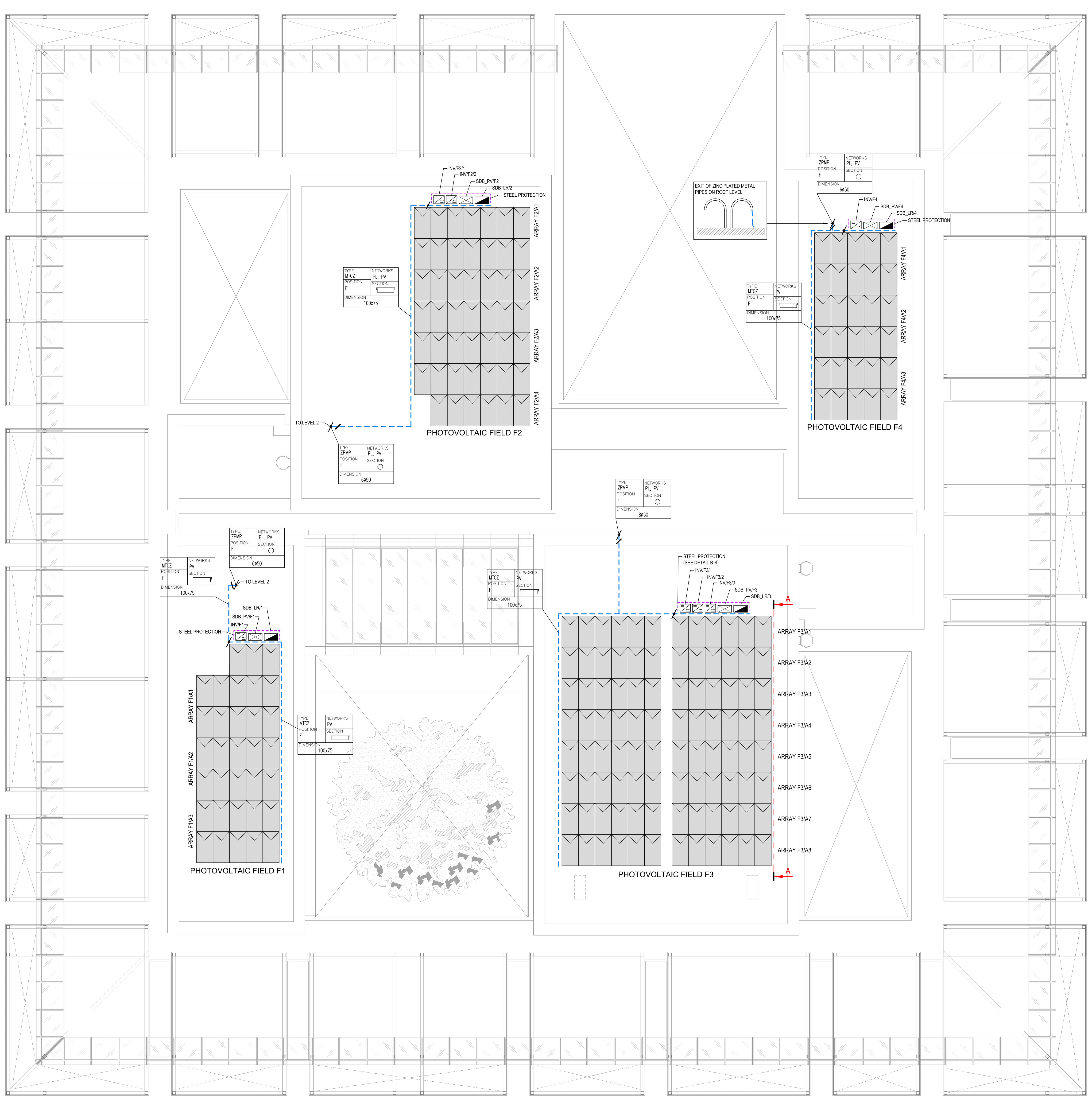
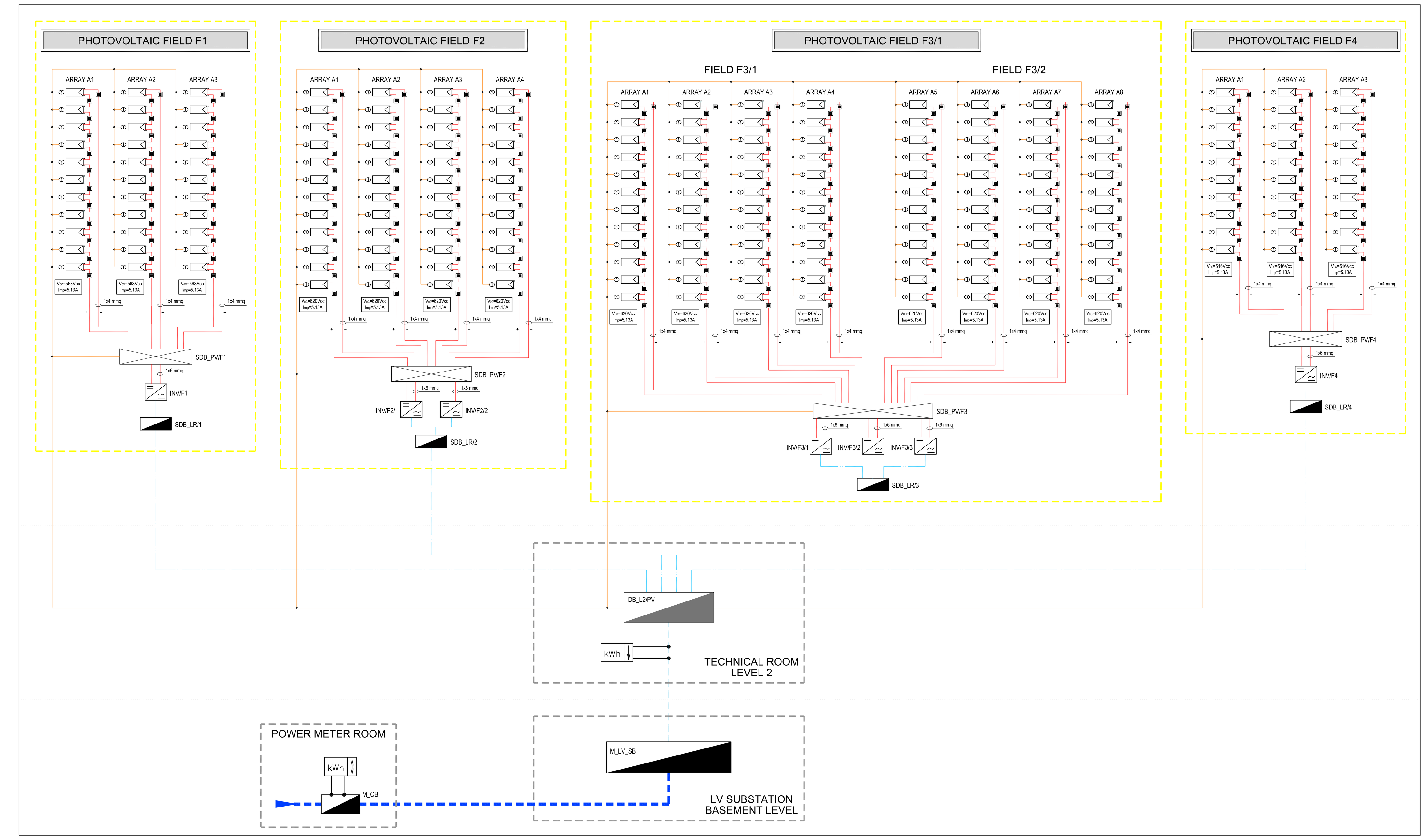
ROOF LEVEL (SCALE 1:100)



BLOCK DIAGRAM



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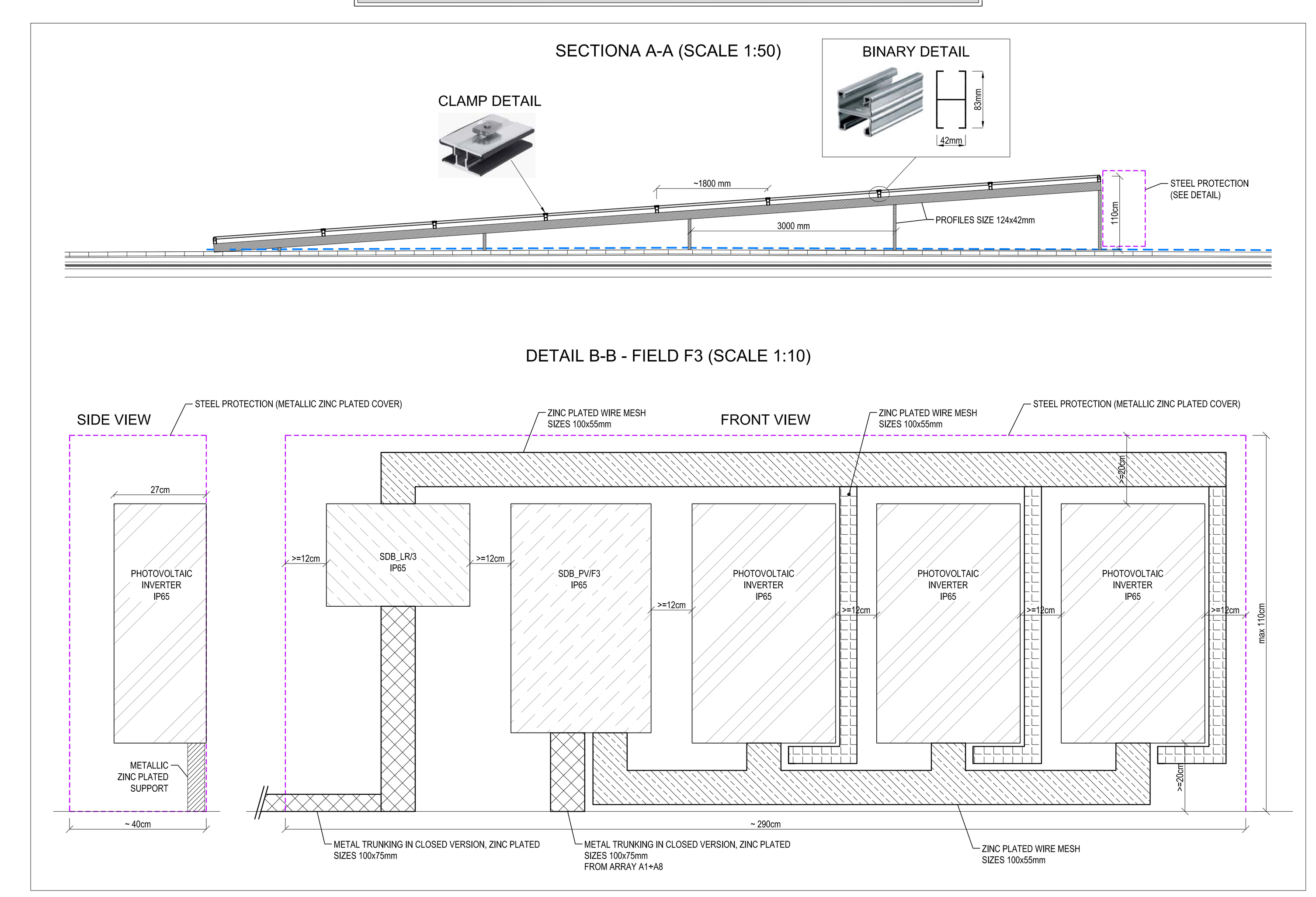
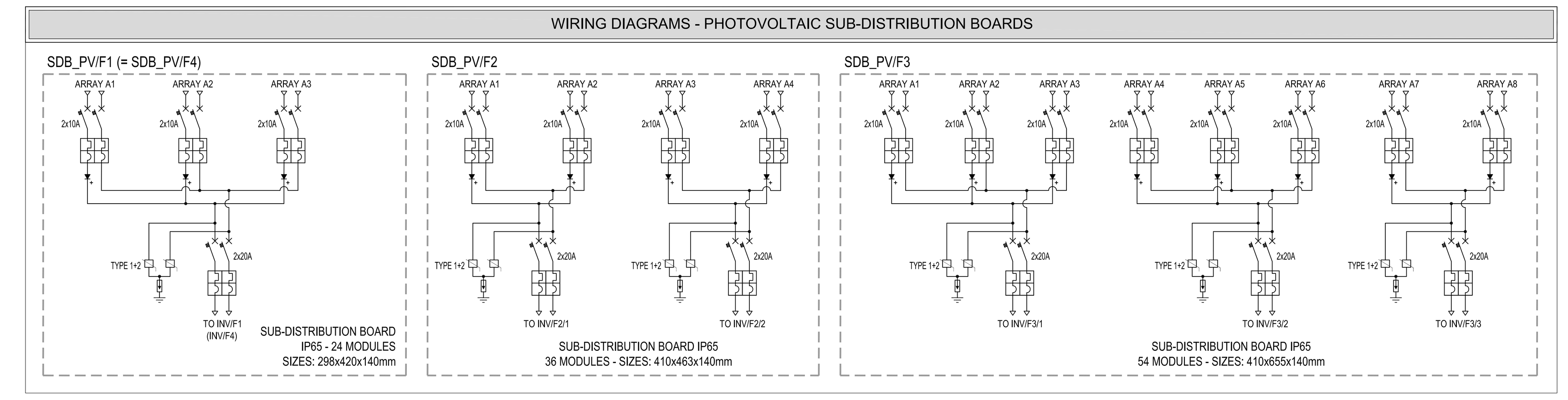


WIRING DIAGRAMS - PHOTOVOLTAIC SUB-DISTRIBUTION BOARDS



LEGENDA

N07V-K CABLE YELLOW/GREEN

FG7(O)M1 OR FG7(O)R CABLE
HORIZONTAL DISTRIBUTION NETWORK (LIGHTING AND POWER LOAD - 0.4kV)

FG7(O)M1 OR FG7(O)R CABLE
NETWORK "B" - MAIN LV DISTRIBUTION NOT FED BY DIESEL GENERATOR (IN CASE OF EMERGENCY)

FG7(O)M1 OR FG7(O)R CABLE
GENERAL LV NETWORK (0.4 kV)

SOLAR CABLE, HEPR IEC 60502-1, DC 0,9 / 1,8kV

PHOTOVOLTAIC MODULE, HIT TECNOLOGY (HETEROJUNCTION WITH INTRUSIC THIN LAYER):
- Voc=51,6V
- Isc=5,61A
- Imp=5,13A
- Pmax=215W
- MODULE EFFICIENCY: 17,1%

PHOTOVOLTAIC INVERTER WITH:

	DC	AC
INV/F1 INV/F3/1 INV/F3/2 INV/F4	Pmax IN: 7,9 kW Vmax IN: 845 V Range MPPT: 330-700 V	Pmax OUT: 7,6 kW V OUT: 230 Vac European Efficiency min: 94,5%

	DC	AC
INV/F2/1 INV/F2/2 INV/F3/3	Pmax IN: 5,4 kW Vmax IN: 845 V Range MPPT: 330-700 V	Pmax OUT: 5,0 kW V OUT: 230 Vac European Efficiency min: 94,5%

SOLAR CABLE CONNECTOR, MULTICONTACT IP67, SYSTEM VOLTAGE 1000V

DISTRIBUTION BOARD, IP55

2x...A POWER DISCONNECTOR SWITCH, DIRECT CURRENT, 2 POLES, ABB S800PV-M SERIES

2x...A CIRCUIT BREAKER, DIRECT CURRENT, 2 POLES, ABB S800PV-S SERIES

OPEN SWITCH SPOOL

OVER VOLTAGE LIMITER, TYPE "1+2"

UNIDIRECTIONAL POWER METER

BIDIRECTIONAL POWER METER

CONNECTIONS TO STEEL STRUCTURAL MASSES

RACEWAYS

POWER LOAD AND PHOTOVOLTAIC SYSTEM - FLOOR DISTRIBUTION

VERTICAL RACEWAY / PIPE WAY

RACEWAY CHANGE OF SIZE

TYPE / NETWORKS / POSITION / SECTION / DIMENSION

DESCRIPTION
PL POWER LOAD
PV PHOTOVOLTAIC SYSTEM

SECTION EXAMPLES
RACEWAY WITH LID
PIPE

POSITION OF CHANNEL
F FLOOR

DESCRIPTION OF THE INDIVIDUAL RACEWAY MODELS
MTCZ METAL TRUNKING IN CLOSED VERSION, ZINC PLATED
ZPMP ZINC PLATED METAL PIPE

POWER SUMMARY

FIELD	POWER PEAK (d.c.)	
F1	7095 Wp	
F2	10320 Wp	
F3	20640 Wp	
F4	6450 Wp	
	44505 Wp	SUMMARY

ANNUAL GENERATION OF ELECTRIC POWER: 53000 kWh/year

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ISSUE
MAIN PROJECT — ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE
PHOTOVOLTAIC SYSTEM: LAYOUT, SCHEME, DISTRIBUTION BOARDS AND RACEWAYS – ROOF LEVEL

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
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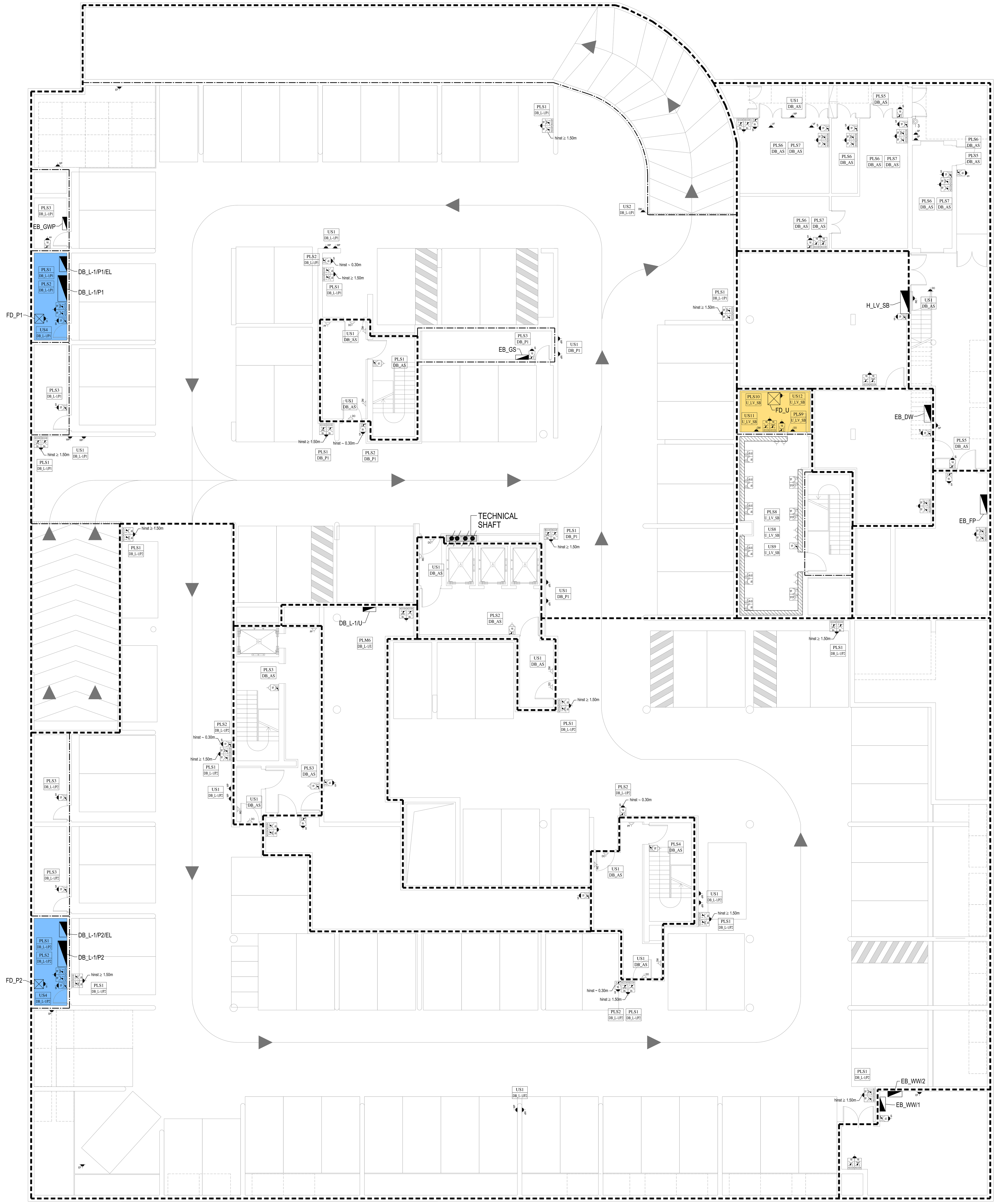
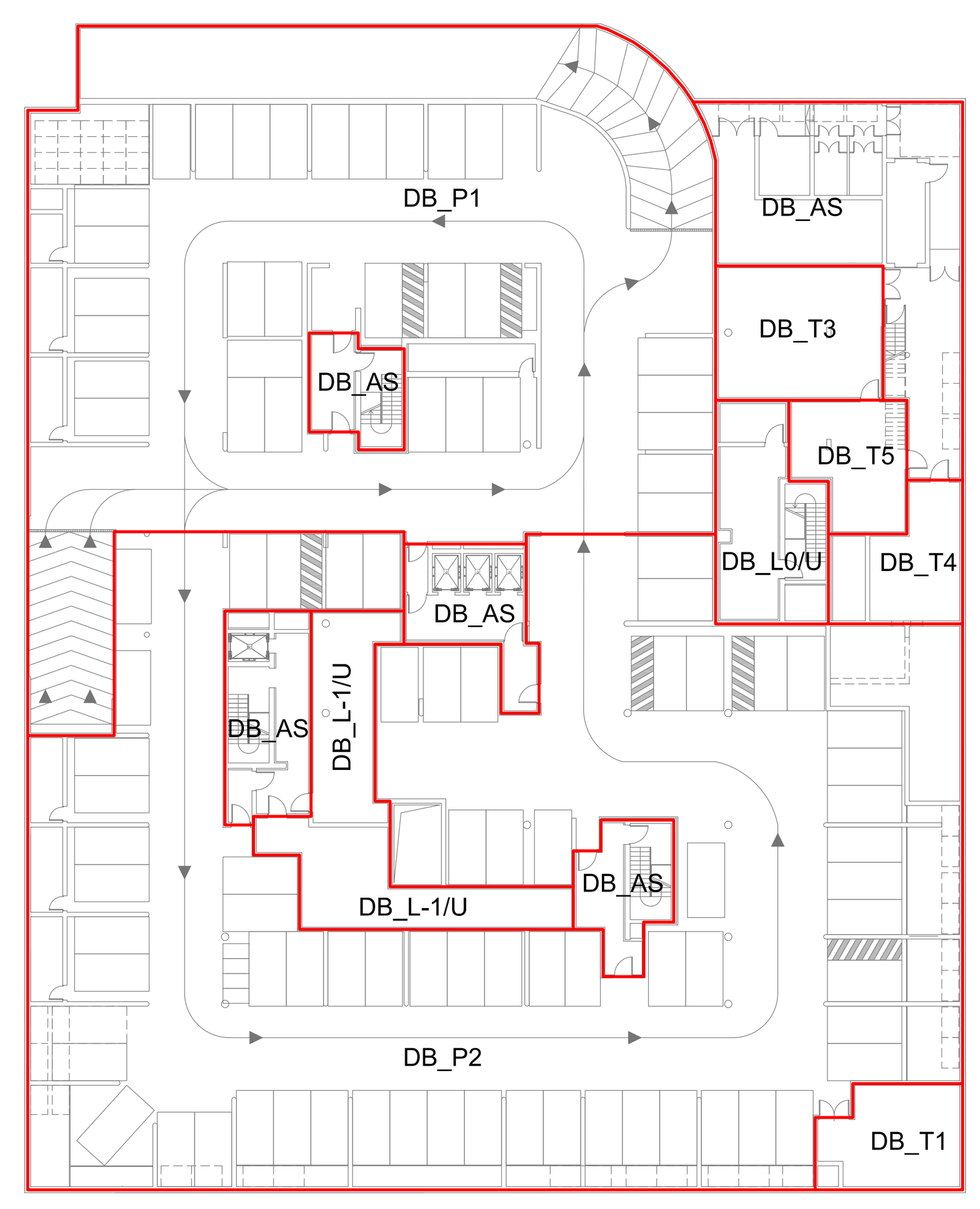


ELECTRICAL ZONING

BASEMENT LEVEL



LEGEND

POWER LOAD AND UPS DEVICES

DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD

RACK 19" FOR FLOOR DISTRIBUTOR (DATA AND COMMUNICATION SYSTEMS)

RACK FOR MULTIMEDIAL EQUIPMENTS

ELECTRICAL ROOM

MAIN DATA ROOM

VERTICAL RACEWAY OR PIPES WAY

EMERGENCY RELEASE PUSHBUTTON

n. SOCKET OUTLET WITH MECHANICAL INTERBLOCK AND FUSES 3x16A+N+E 400V. VISIBLE WALL INSTALLATION MINIMUM PROTECTION LEVEL IP55

n. SOCKET OUTLET WITH MECHANICAL INTERBLOCK AND FUSES 2x16A+E 400V. VISIBLE WALL INSTALLATION MINIMUM PROTECTION LEVEL IP55

n. SOCKET OUTLET 2P+E 16A 230V POWER LOAD NETWORK WITH INTERBLOCK SWITCH

n.2 SOCKET OUTLET 2P+E 10/16A 230V POWER LOAD NETWORK;

n.2 SOCKET OUTLET 2P+E 16A 230V UPS NETWORK;

FLOOR BOXES WITH:
- n.2 SOCKET OUTLET 2P+E 10/16A 230V POWER LOAD NETWORK;
- n.2 SOCKET OUTLET 2P+E 16A 230V UPS NETWORK;

WALL MOUNTING RACEWAY TO EQUIP WITH SOCKETS

WALL EMBEDDED POWER SUPPLY

VISIBLE WALL INSTALLATION POWER SUPPLY

... POWER SUPPLY INDICATION ON KIND OF USER:
AD: AIR SAMPLING SMOKE DETECTION SYSTEM - CABLE 3x2,5mmq
AR: AIRFLOW REGULATOR - CABLE 3x2,5mmq
B: BOILER - CABLE 3x2,5mmq
BR: CAR PARK BARRIER - CABLE 3x4mmq
CU: CONTROL UNIT OF SAFETY SYSTEM - CABLE 3x2,5mmq
DC: DOME CAMERA (LOCATED ON CEILING) - CABLE 3x2,5mmq
DM: DOOR CONTROL MODULE - CABLE 3x2,5mmq
DO: DOOR OPENER - CABLE 2x1,5mmq
EF: EXHAUST FAN - CABLE 4x2,5mmq
FC: FANCOIL - CABLE 3x2,5mmq
HD: HAND DRYER (Hinst~0.8m) - CABLE 3x4mmq
M: SOCKET OUTLET FOR MULTIMEDIA DEVICE - CABLE 3x2,5mmq
MC: MONOBLOCK CONDITIONING UNIT - CABLE 3x4mmq
MD: MOTORIZED DAMPER - CABLE 3x2,5mmq
MW: MOTORIZED OPENABLE WINDOW - CABLE 3x2,5mmq
PS: POWER SUPPLY UNIT FOR VIDEO ENTRYPHONE SYSTEM - CABLE 3x2,5mmq
PF: PRESSURIZATION FILTER - CABLE 3x2,5mmq
SO: SMOKE OUT - CABLE 3x2,5mmq
SP: SPLIT UNIT - CABLE 3x4mmq
TV: TELEVISION - CABLE 3x2,5mmq
VF: VENTILATION FAN - CABLE 3x4mmq
WP: OPTICAL ACOUSTIC WARNING PANEL - CABLE 3x2,5mmq

PERTINENCE AREA OF DISTRIBUTION BOARDS

ELECTRIC ZONE DELIMITATION

S — DEVICE WITH MINIMUM PROTECTION LEVEL IP44

hinst — INSTALLATION HEIGHT (m)

FINAL DISTRIBUTION CIRCUIT DEFINITION
PLS... — POWER LOAD (PL) OR UPS NETWORK (U) CIRCUIT USER INITIAL
DB_... — DISTRIBUTION BOARD

NOTES

1) THE TERMINAL LOAD CONNECTIONS FROM THE METALLIC CHANNELS (LOCATED UNDER FALSE FLOOR) TO ELECTRICAL AND DATA DEVICES (SOCKET AND TELECOM OUTLET) WILL BE REALIZED TROUGHOUT STEEL MADE OR PLASTIC MADE PIPES EMBEDDED ON THE WALL

2) THE SOCKET AND TELECOM OUTLETS WILL BE INSTALLED AT A HEIGHT NOT LESS THAN 30cm (IF NOT DIFFERENTLY SPECIFIED)

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ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

LV DEVICES LAYOUT
LEVEL -1

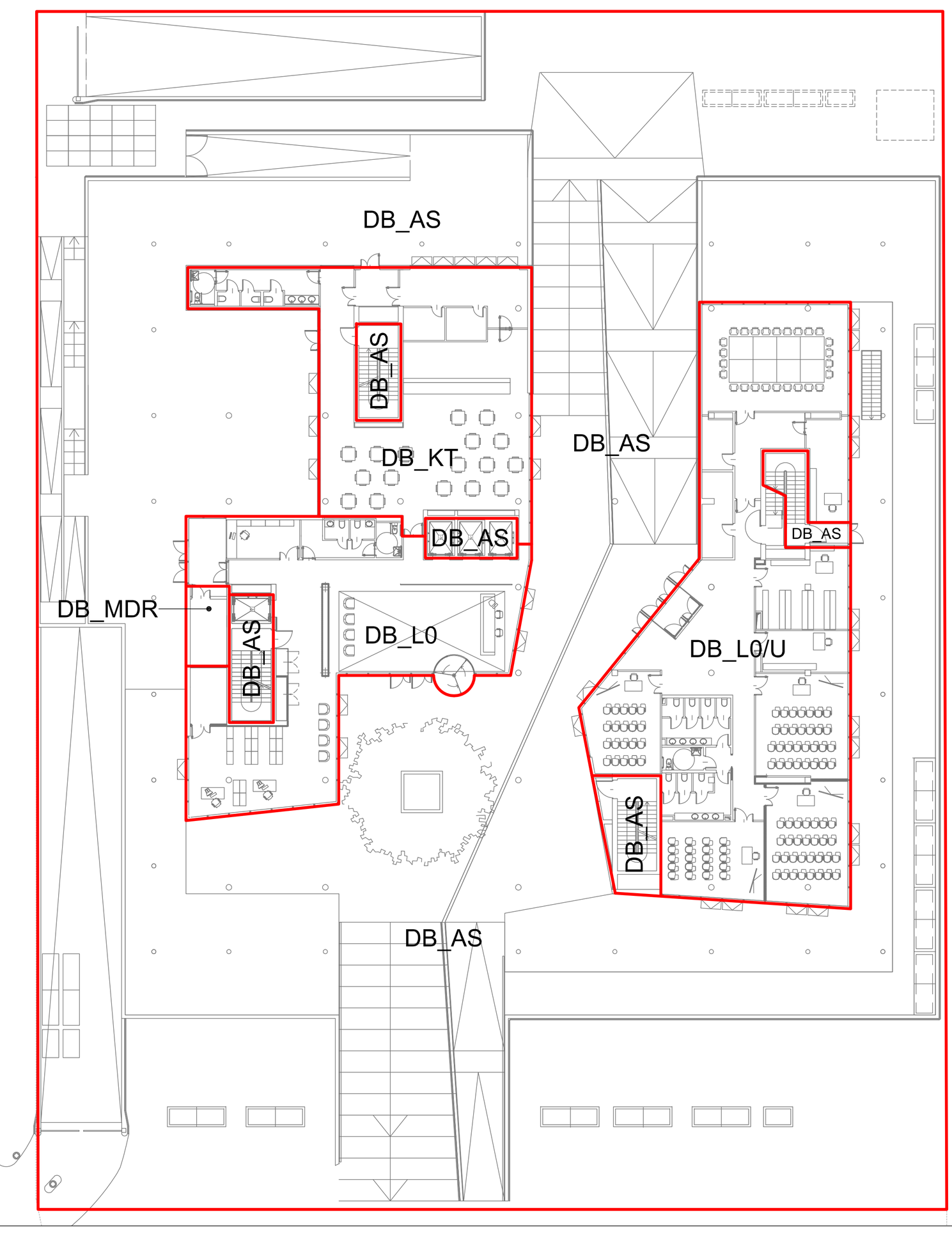
REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_401_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR. Ee_401

DATE: 30/11/2010	SCALE: 1:100	FILE: 926_Ee_401_a.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.

ELECTRICAL ZONING

GROUND LEVEL



LEGEND

POWER LOAD AND UPS DEVICES

DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD

RACK 19" FOR FLOOR DISTRIBUTOR (DATA AND COMMUNICATION SYSTEMS)

RACK FOR MULTIMEDIAL EQUIPMENTS

ELECTRICAL ROOM

MAIN DATA ROOM

VERTICAL RACEWAY OR PIPES WAY

EMERGENCY RELEASE PUSHBUTTON

n. SOCKET OUTLET WITH MECHANICAL INTERBLOCK AND FUSES 3x16A+N+E 400V. VISIBLE WALL INSTALLATION MINIMUM PROTECTION LEVEL IP55

n. SOCKET OUTLET WITH MECHANICAL INTERBLOCK AND FUSES 2x16A+E 400V. VISIBLE WALL INSTALLATION MINIMUM PROTECTION LEVEL IP55

n. SOCKET OUTLET 2P+E 16A 230V POWER LOAD NETWORK WITH INTERBLOCK SWITCH

n.2 SOCKET OUTLET 2P+E 10/16A 230V POWER LOAD NETWORK;

n.2 SOCKET OUTLET 2P+E 16A 230V UPS NETWORK;

FLOOR BOXES WITH:

- n.2 SOCKET OUTLET 2P+E 10/16A 230V POWER LOAD NETWORK;
- n.2 SOCKET OUTLET 2P+E 16A 230V UPS NETWORK;

WALL MOUNTING RACEWAY TO EQUIP WITH SOCKETS

WALL EMBEDDED POWER SUPPLY

VISIBLE WALL INSTALLATION POWER SUPPLY

... POWER SUPPLY INDICATION ON KIND OF USER:

AD: AIR SAMPLING SMOKE DETECTION SYSTEM - CABLE 3x2,5mmq
AR: AIRFLOW REGULATOR - CABLE 3x2,5mmq
B: BOILER - CABLE 3x2,5mmq
BR: CAR PARK BARRIER - CABLE 3x4mmq
CU: CONTROL UNIT OF SAFETY SYSTEM - CABLE 3x2,5mmq
DC: DOME CAMERA (LOCATED ON CEILING) - CABLE 3x2,5mmq
DM: DOOR CONTROL MODULE - CABLE 3x2,5mmq
DO: DOOR OPENER - CABLE 2x1,5mmq
EF: EXHAUST FAN - CABLE 4x2,5mmq
FC: FANCOIL - CABLE 3x2,5mmq
HD: HAND DRYER (Hinst~0.8m) - CABLE 3x4mmq
M: SOCKET OUTLET FOR MULTIMEDIA DEVICE - CABLE 3x2,5mmq
MC: MONOBLOCK CONDITIONING UNIT - CABLE 3x4mmq
MD: MOTORIZED DAMPER - CABLE 3x2,5mmq
MW: MOTORIZED OPENABLE WINDOW - CABLE 3x2,5mmq
PS: POWER SUPPLY UNIT FOR VIDEO ENTRYPHONE SYSTEM - CABLE 3x2,5mmq
PF: PRESSURIZATION FILTER - CABLE 3x2,5mmq
SO: SMOKE OUT - CABLE 3x2,5mmq
SP: SPLIT UNIT - CABLE 3x4mmq
TV: TELEVISION - CABLE 3x2,5mmq
VF: VENTILATION FAN - CABLE 3x4mmq
WP: OPTICAL ACOUSTIC WARNING PANEL - CABLE 3x2,5mmq

PERTINENCE AREA OF DISTRIBUTION BOARDS

ELECTRIC ZONE DELIMITATION

S — DEVICE WITH MINIMUM PROTECTION LEVEL IP44

hinst — INSTALLATION HEIGHT (m)

FINAL DISTRIBUTION CIRCUIT DEFINITION

PLS... — POWER LOAD (PL) OR UPS NETWORK (U) CIRCUIT USER INITIAL

DB_... — DISTRIBUTION BOARD

NOTES

1) THE TERMINAL LOAD CONNECTIONS FROM THE METALLIC CHANNELS (LOCATED UNDER FALSE FLOOR) TO ELECTRICAL AND DATA DEVICES (SOCKET AND TELECOM OUTLET) WILL BE REALIZED TROUGHOUT STEEL MADE OR PLASTIC MADE PIPES EMBEDDED ON THE WALL

2) THE SOCKET AND TELECOM OUTLETS WILL BE INSTALLED AT A HEIGHT NOT LESS THAN 30cm (IF NOT DIFFERENTLY SPECIFIED)

INVESTITOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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Objekat i mjesto:

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ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

LV DEVICES LAYOUT
LEVEL 0

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_402_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR. Ee_402

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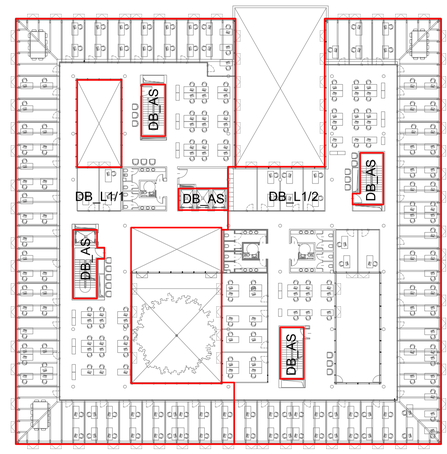
J.N. 926	DRAW: L. R.	APPROVED: M. C.

ELECTRICAL ZONING

FIRST LEVEL



LEGEND

POWER LOAD AND UPS DEVICES

- DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD
- RACK 19" FOR FLOOR DISTRIBUTOR (DATA AND COMMUNICATION SYSTEMS)
- RACK FOR MULTIMEDIAL EQUIPMENTS
- ELECTRICAL ROOM
- MAIN DATA ROOM
- VERTICAL RACEWAY OR PIPES WAY
- EMERGENCY RELEASE PUSHBUTTON
- n. SOCKET OUTLET WITH MECHANICAL INTERBLOCK AND FUSES 3x16A+N+E 400V. VISIBLE WALL INSTALLATION MINIMUM PROTECTION LEVEL IP55
- n. SOCKET OUTLET WITH MECHANICAL INTERBLOCK AND FUSES 2x16A+E 400V. VISIBLE WALL INSTALLATION MINIMUM PROTECTION LEVEL IP55
- n. SOCKET OUTLET 2P+E 16A 230V POWER LOAD NETWORK WITH INTERBLOCK SWITCH
- n.2 SOCKET OUTLET 2P+E 10/16A 230V POWER LOAD NETWORK;
- n.2 SOCKET OUTLET 2P+E 16A 230V UPS NETWORK;
- FLOOR BOXES WITH:
  - n.2 SOCKET OUTLET 2P+E 10/16A 230V POWER LOAD NETWORK;
  - n.2 SOCKET OUTLET 2P+E 16A 230V UPS NETWORK;
- WALL MOUNTING RACEWAY TO EQUIP WITH SOCKETS
- WALL EMBEDDED POWER SUPPLY
- VISIBLE WALL INSTALLATION POWER SUPPLY
- ... POWER SUPPLY INDICATION ON KIND OF USER:
  - AD: AIR SAMPLING SMOKE DETECTION SYSTEM - CABLE 3x2,5mmq
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- PERTINENCE AREA OF DISTRIBUTION BOARDS
- ELECTRIC ZONE DELIMITATION
- S — DEVICE WITH MINIMUM PROTECTION LEVEL IP44
- hinst — INSTALLATION HEIGHT (m)
- FINAL DISTRIBUTION CIRCUIT DEFINITION
  - PLS... — POWER LOAD (PL) OR UPS NETWORK (U) CIRCUIT USER INITIAL
  - DB_... — DISTRIBUTION BOARD

NOTES

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Podgorica, Crna Gora

ISSUE
MAIN PROJECT — ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE
LV DEVICES LAYOUT
LEVEL 1

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_403_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
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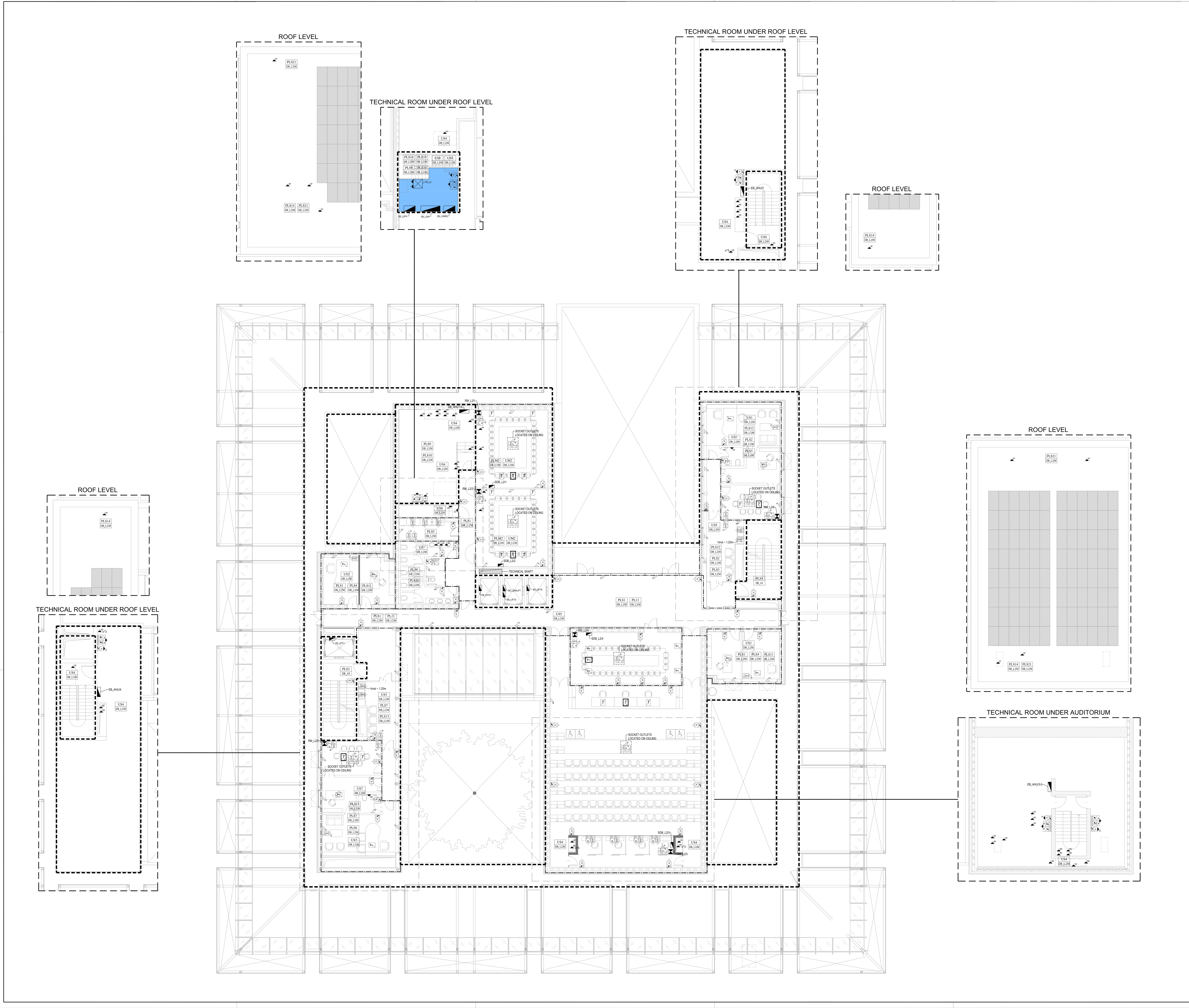
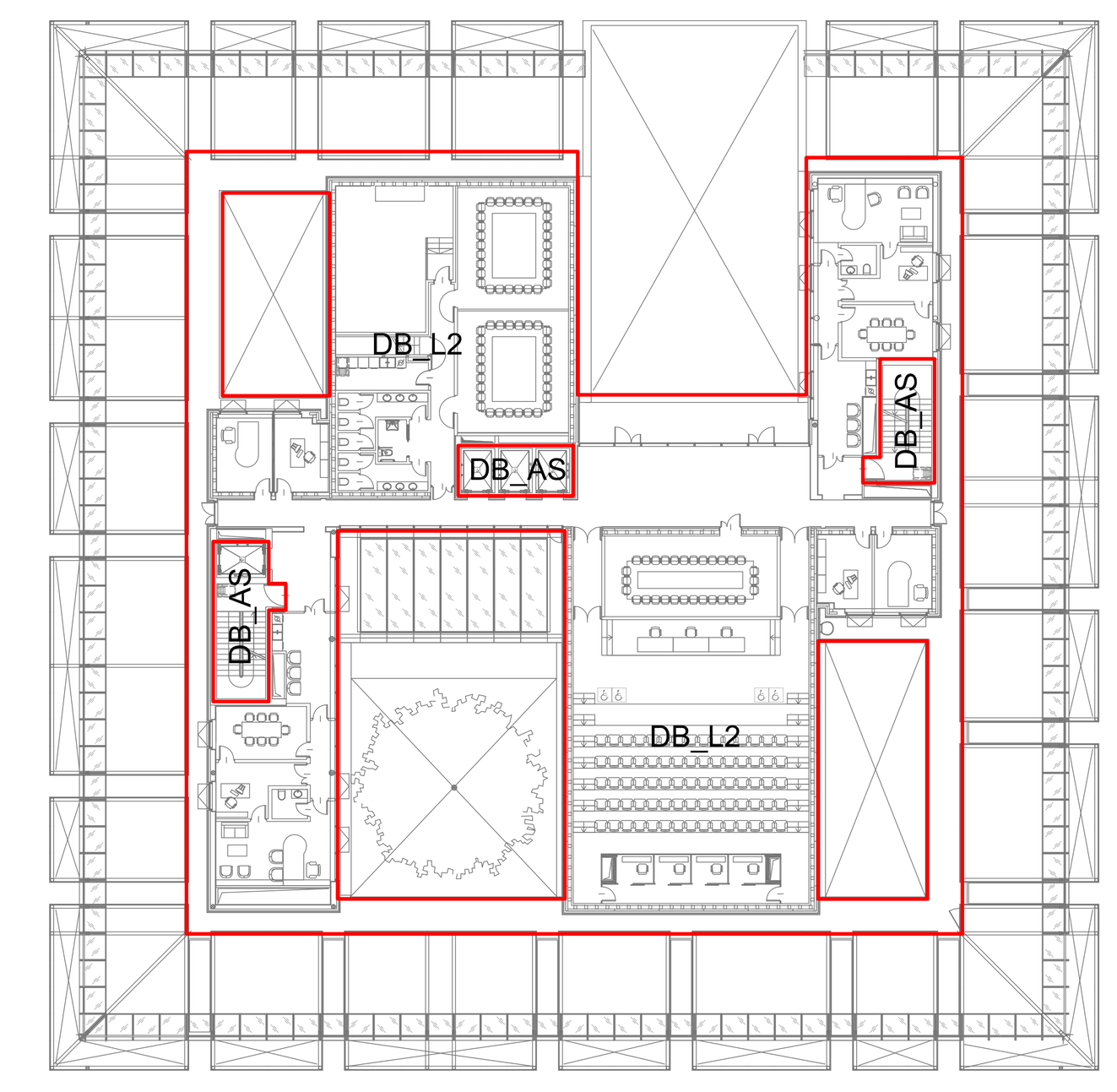
J.N. 926	DRAW: L. R.	APPROVED: M. C.



ELECTRICAL ZONING

SECOND LEVEL



LEGEND

POWER LOAD AND UPS DEVICES

DISTRIBUTION BOARD AND SUB-DISTRIBUTION BOARD

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RACK FOR MULTIMEDIAL EQUIPMENTS

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PERTINENCE AREA OF DISTRIBUTION BOARDS

ELECTRIC ZONE DELIMITATION

S — DEVICE WITH MINIMUM PROTECTION LEVEL IP44

hinst — INSTALLATION HEIGHT (m)

FINAL DISTRIBUTION CIRCUIT DEFINITION
PLS... — POWER LOAD (PL) OR UPS NETWORK (U) CIRCUIT USER INITIAL
DB_... — DISTRIBUTION BOARD

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Urbanistička parcela 9
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Podgorica, Crna Gora

ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

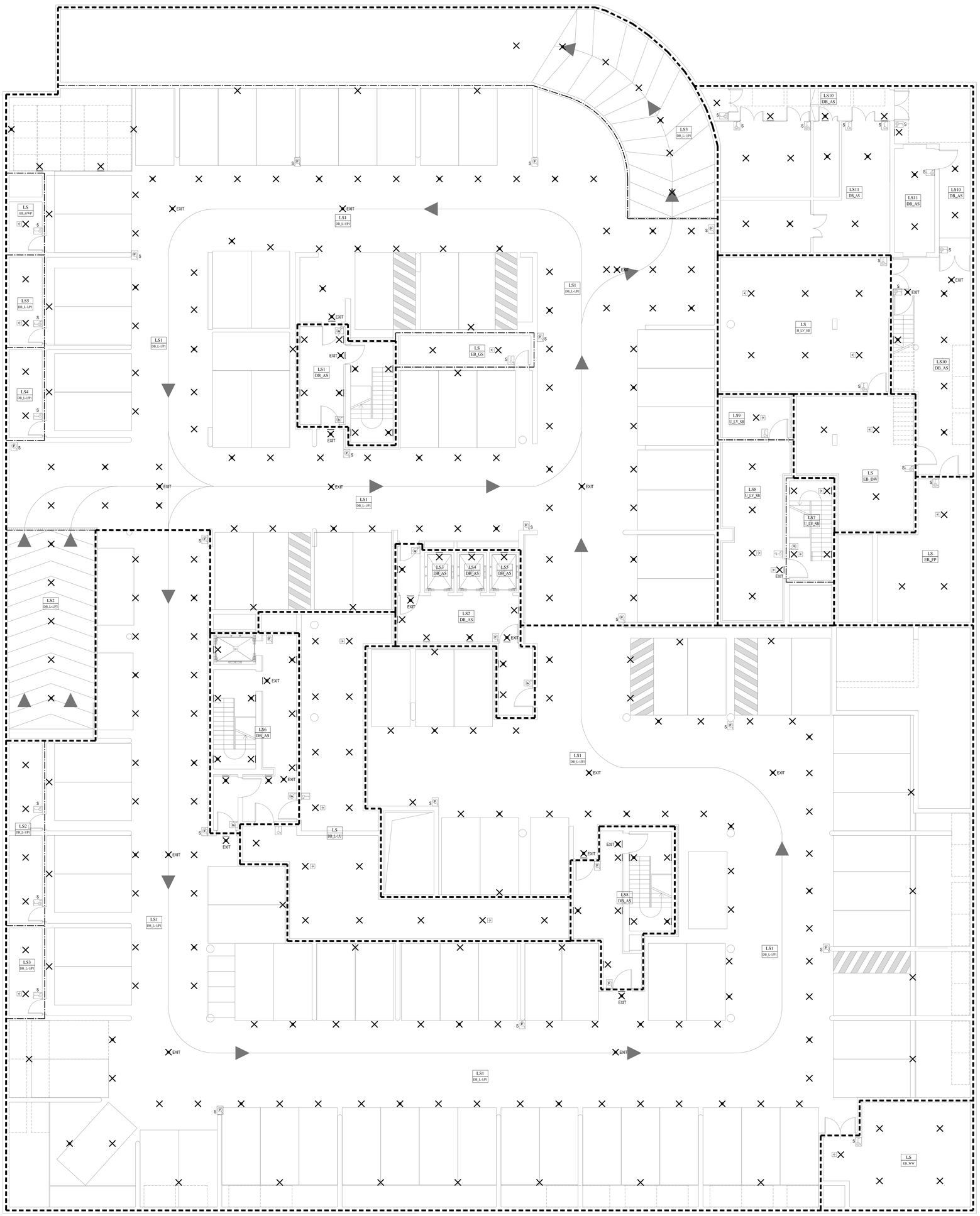
TITLE

LV DEVICES LAYOUT
LEVEL 2

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_404_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

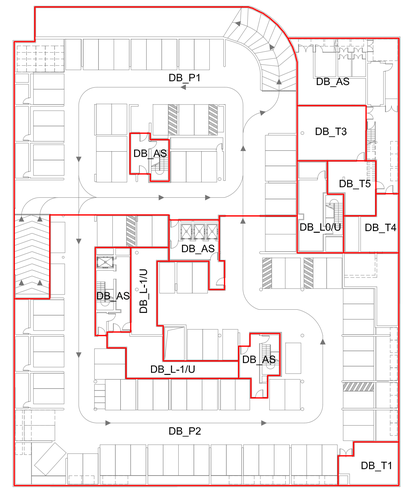
ISSUE NR. **Ee_404**

DATE: 30/11/2010	SCALE: 1:100	FILE: 926_Ee_404_a.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.



ELECTRICAL ZONING

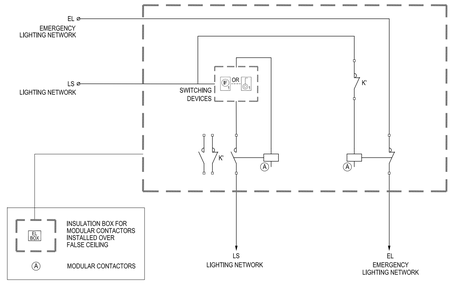
BASEMENT LEVEL



LEGEND

- LIGHT SUPPLY ON WALL - CABLE 3x1,5mmq
- LIGHT SUPPLY ON CEILING - CABLE 3x1,5mmq
- F — LIGHT SUPPLY ON FLOOR - CABLE 3x1,5mmq
- SK — LIGHT SUPPLY FOR OUTDOOR SKYLIGHT SCREENS - CABLE 3x1,5mmq
- W — LIGHT SUPPLY ON WATER AREA - CABLE 3x1,5mmq
- SAFETY LIGHT SUPPLY ON CEILING - FIRE RESISTANCE CABLE 3x1,5mmq
- EXIT — SAFETY LIGHT SUPPLY FOR EMERGENCY EXIT - FIRE RESISTANCE CABLE 3x1,5mmq
- SAFETY LIGHT SUPPLY ON WALL - FIRE RESISTANCE CABLE 3x1,5mmq
- SELF-POWERING KIT
- SWITCH - CABLE 2x1,5mmq
- INFRARED SENSOR (hinst.=1,20m) - CABLE 2x1,5mmq
- S — INFRARED SENSOR FOR CAR PARK (hinst.~2m - MINIMUM PROTECTION LEVEL IP44) - CABLE 2x1,5mmq
- DIMMABLE SWITCH - CABLE 2x1,5mmq
- PUSH BUTTON SWITCH - CABLE 2x1,5mmq
- INSULATION BOX FOR MODULAR CONTACTORS INSTALLED OVER FALSE CEILING
- INFRARED AND LIGHTING SENSOR (INSTALLATION ON CEILING) - CABLE 2x1,5mmq
- S — DEVICE WITH MINIMUM PROTECTION LEVEL IP44
- hinst — INSTALLATION HEIGHT (m)
- PERTINENCE AREA OF BOARDS
- ELECTRIC ZONE DELIMITATION
- FINAL DISTRIBUTION CIRCUIT DEFINITION
- LS... — LIGHTING (L) OR SAFETY NETWORK (SAF) CIRCUIT USER INITIAL
- DBU... — DISTRIBUTION BOARD

POWER SUPPLY LIGHTING AND EMERGENCY LIGHTING SCHEME (BOX INSTALLED)



INVESTITOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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Projektant faze - MAŠINSKE INSTALACIJE:
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fax. 020/652-241
INSTITUT za protivpožarnu zaštitu, Zaštita na radu i Zaštita životne sredine

Objekat i projekto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

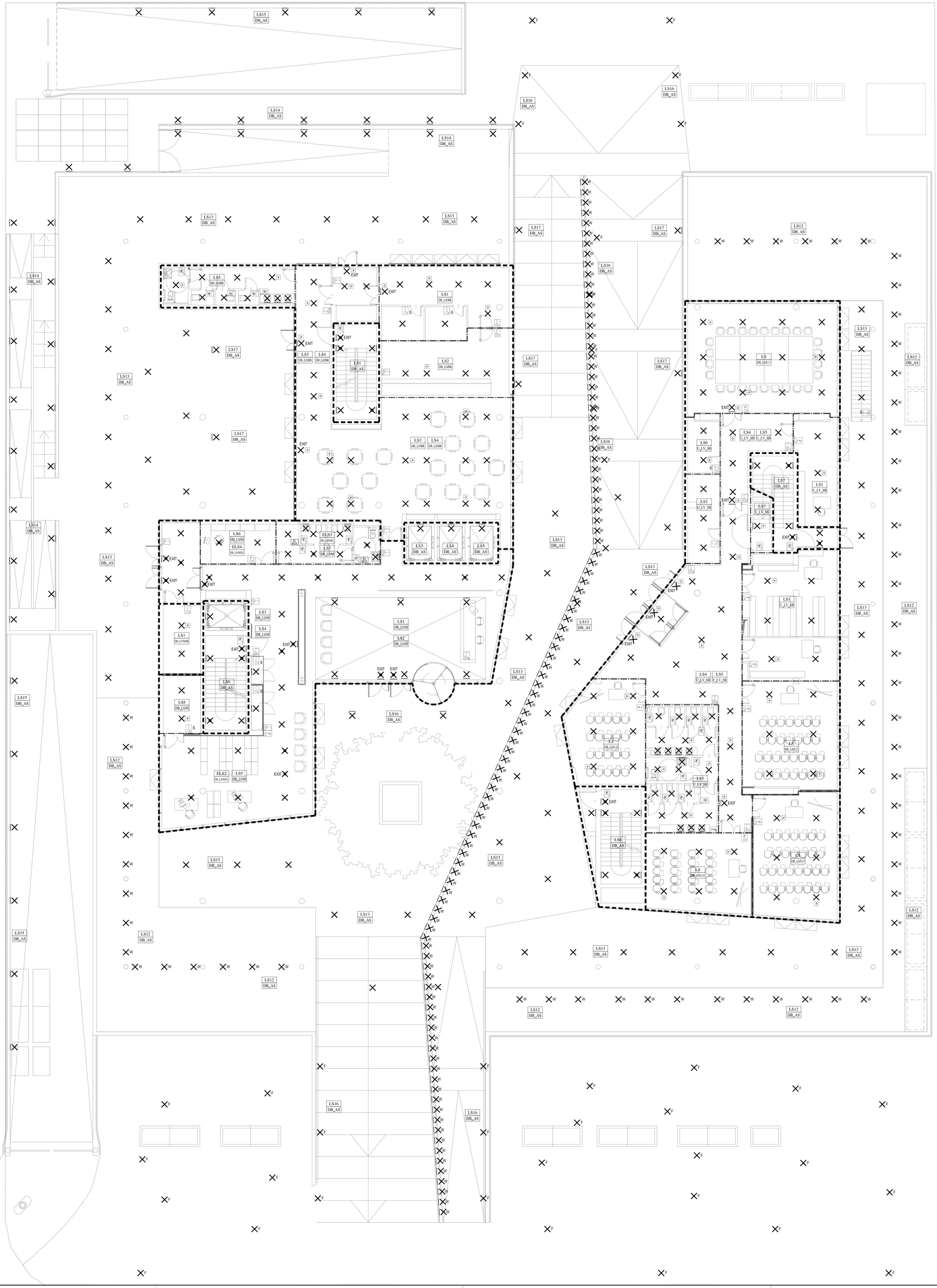
LIGHTING SUPPLIES LAYOUT
LEVEL −1

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_501_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR.

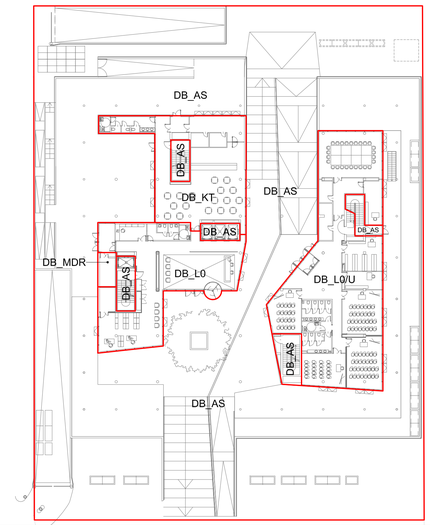
Ee_501

DATE:	SCALE:	FILE:
30/11/2010	1:100	926_Ee_501_a.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.



ELECTRICAL ZONING

GROUND LEVEL



LEGEND

- LIGHT SUPPLY ON WALL - CABLE 3x1,5mmq
- LIGHT SUPPLY ON CEILING - CABLE 3x1,5mmq
- F — LIGHT SUPPLY ON FLOOR - CABLE 3x1,5mmq
- SK — LIGHT SUPPLY FOR OUTDOOR SKYLIGHT SCREENS - CABLE 3x1,5mmq
- W — LIGHT SUPPLY ON WATER AREA - CABLE 3x1,5mmq
- SAFETY LIGHT SUPPLY ON CEILING - FIRE RESISTANCE CABLE 3x1,5mmq
- EXIT — SAFETY LIGHT SUPPLY FOR EMERGENCY EXIT - FIRE RESISTANCE CABLE 3x1,5mmq
- SAFETY LIGHT SUPPLY ON WALL - FIRE RESISTANCE CABLE 3x1,5mmq
- SELF-POWERING KIT
- SWITCH - CABLE 2x1,5mmq
- INFRARED SENSOR (hinst.=1,20m) - CABLE 2x1,5mmq
- INFRARED SENSOR FOR CAR PARK (hinst.=2m - MINIMUM PROTECTION LEVEL IP44) - CABLE 2x1,5mmq
- DIMMABLE SWITCH - CABLE 2x1,5mmq
- PUSH BUTTON SWITCH - CABLE 2x1,5mmq
- INSULATION BOX FOR MODULAR CONTACTORS INSTALLED OVER FALSE CEILING
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- S — DEVICE WITH MINIMUM PROTECTION LEVEL IP44
- hinst — INSTALLATION HEIGHT (m)
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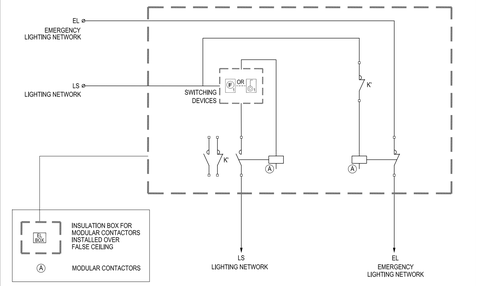
- ELECTRIC ZONE DELIMITATION
- FINAL DISTRIBUTION CIRCUIT DEFINITION
- LS... — LIGHTING (L) OR SAFETY NETWORK (SAF) CIRCUIT USER INITIAL
- DB/... — DISTRIBUTION BOARD

POWER SUPPLY LIGHTING AND EMERGENCY LIGHTING SCHEME (BOX INSTALLED)



INVESTITOR: JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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DOO ZA PROJEKTOVANJE, INSTALIRANJE, PROMET I USLUGE
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fax. 020/663-241
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Objekat i mjesto:
Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE
MAIN PROJECT — ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS

TITLE
LIGHTING SUPPLIES LAYOUT
LEVEL 0

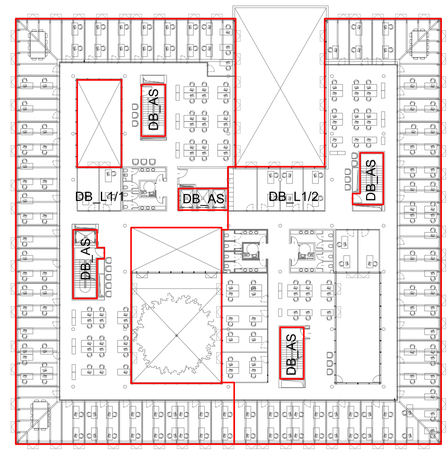
REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_502_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR. Ee_502

DATE:	SCALE:	FILE:
30/11/2010	1:100	926_Ee_502_a.dwg
J.N. 926	DRAWN: L. R.	APPROVED: M. C.

ELECTRICAL ZONING

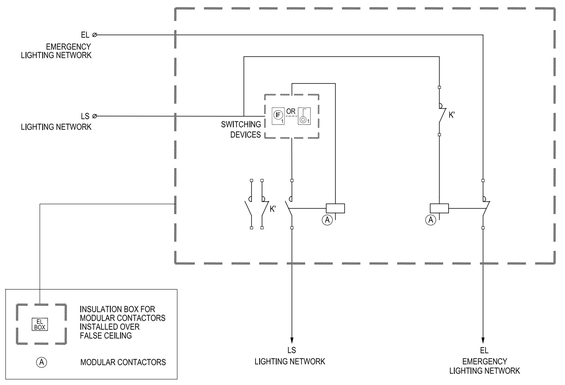
FIRST LEVEL



LEGEND

	LIGHT SUPPLY ON WALL - CABLE 3x1,5mmq
	LIGHT SUPPLY ON CEILING - CABLE 3x1,5mmq
F	LIGHT SUPPLY ON FLOOR - CABLE 3x1,5mmq
SK	LIGHT SUPPLY FOR OUTDOOR SKYLIGHT SCREENS - CABLE 3x1,5mmq
W	LIGHT SUPPLY ON WATER AREA - CABLE 3x1,5mmq
	SAFETY LIGHT SUPPLY ON CEILING - FIRE RESISTANCE CABLE 3x1,5mmq
EXIT	SAFETY LIGHT SUPPLY FOR EMERGENCY EXIT - FIRE RESISTANCE CABLE 3x1,5mmq
	SAFETY LIGHT SUPPLY ON WALL - FIRE RESISTANCE CABLE 3x1,5mmq
	SELF-POWERING KIT
	SWITCH - CABLE 2x1,5mmq
IF	INFRARED SENSOR (hinst.~1.20m) - CABLE 2x1,5mmq
IF S	INFRARED SENSOR FOR CAR PARK (hinst.~2m - MINIMUM PROTECTION LEVEL IP44) - CABLE 2x1,5mmq
	DIMMABLE SWITCH - CABLE 2x1,5mmq
	PUSH BUTTON SWITCH - CABLE 2x1,5mmq
EL BOX	INSULATION BOX FOR MODULAR CONTACTORS INSTALLED OVER FALSE CEILING
	INFRARED AND LIGHTING SENSOR (INSTALLATION ON CEILING) - CABLE 2x1,5mmq
S	DEVICE WITH MINIMUM PROTECTION LEVEL IP44
hinst	INSTALLATION HEIGHT (m)
	PERTINENCE AREA OF BOARDS
	ELECTRIC ZONE DELIMITATION
	FINAL DISTRIBUTION CIRCUIT DEFINITION
LS...	LIGHTING (L) OR SAFETY NETWORK (SAF) CIRCUIT USER INITIAL
DB/...	DISTRIBUTION BOARD

POWER SUPPLY LIGHTING AND EMERGENCY LIGHTING SCHEME (BOX INSTALLED)



INVESTITOR:

JOINT PROJECT ON ENVIRONMENT AND ENERGY BETWEEN ITALY AND MONTENEGRO

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fax. 020/602-201
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Objekat i mjesto:

Poslovni objekat - objekat Vlade Crne Gore
ENERGETSKI EFIKASNA ZGRADA
Urbanistička parcela 9
DUP "Univerzitetski centar" - izmjene i dopune
Podgorica, Crna Gora

ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

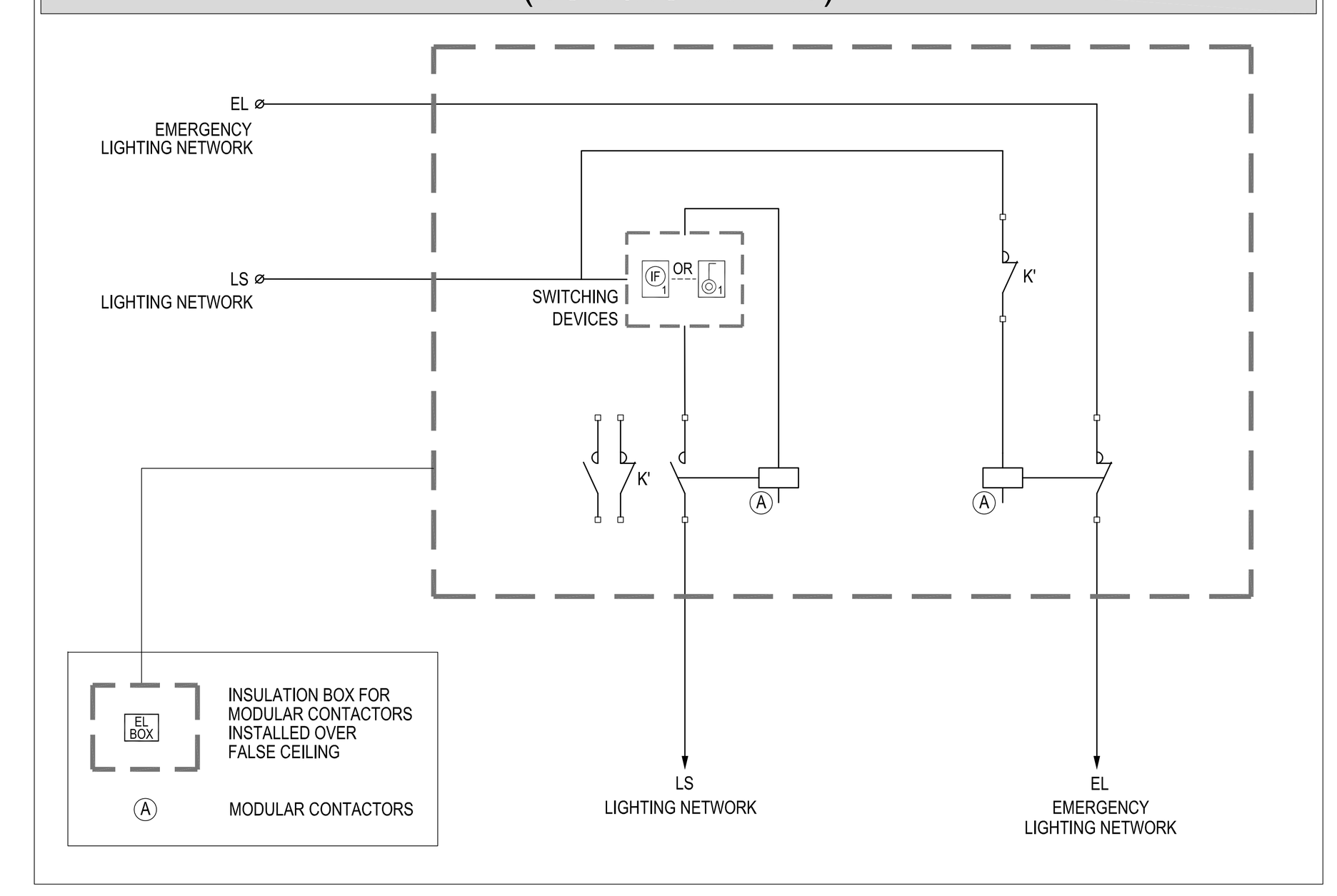
LIGHTING SUPPLIES LAYOUT
LEVEL 1

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_503_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
c					
d					

ISSUE NR. Ee_503

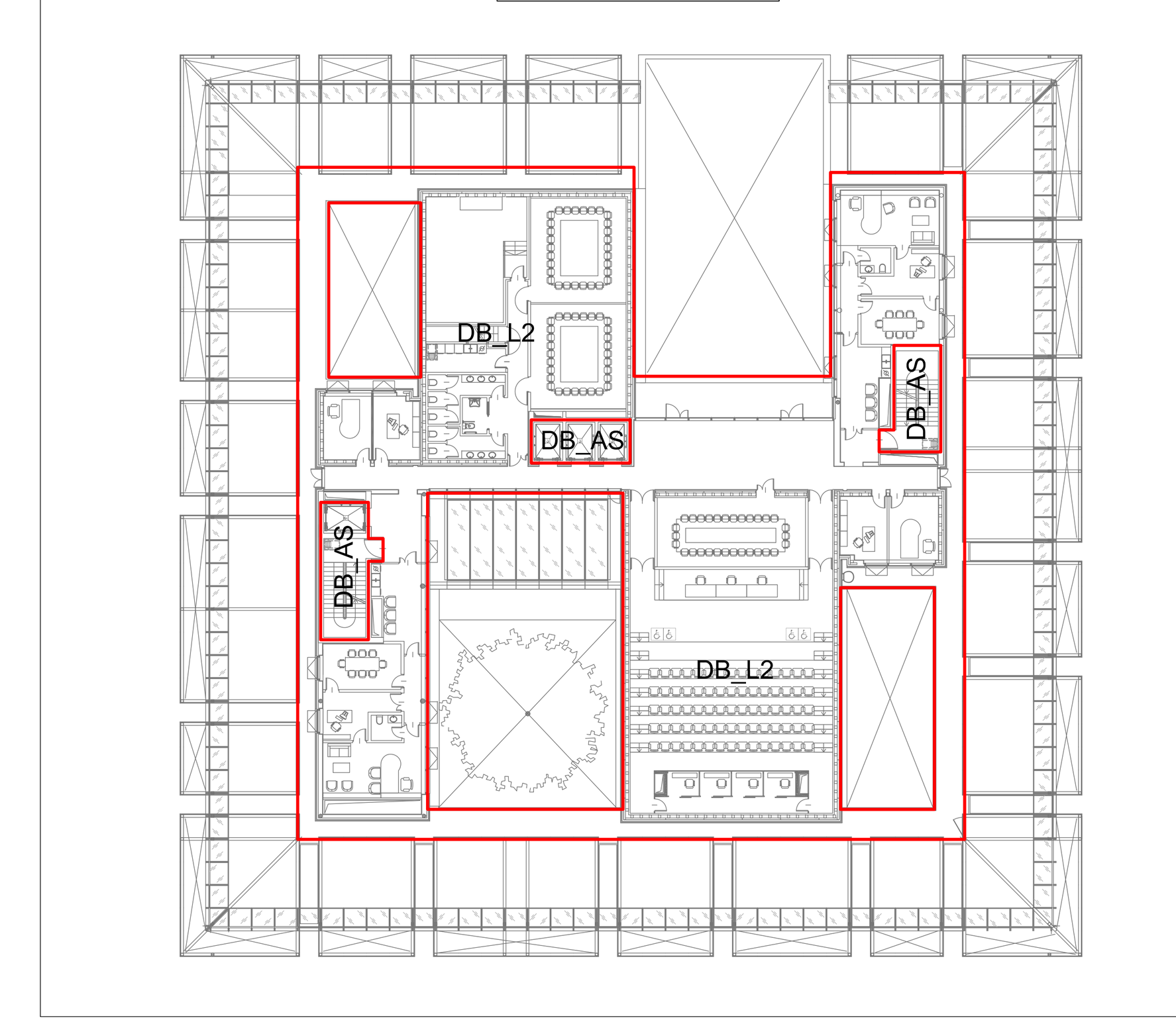
DATE: 30/11/2010	SCALE: 1:100	FILE: 926_Ee_503_a.dwg
J.N. 926	DRAW: L. R.	APPROVED: M. C.

POWER SUPPLY LIGHTING AND EMERGENCY LIGHTING SCHEME (BOX INSTALLED)

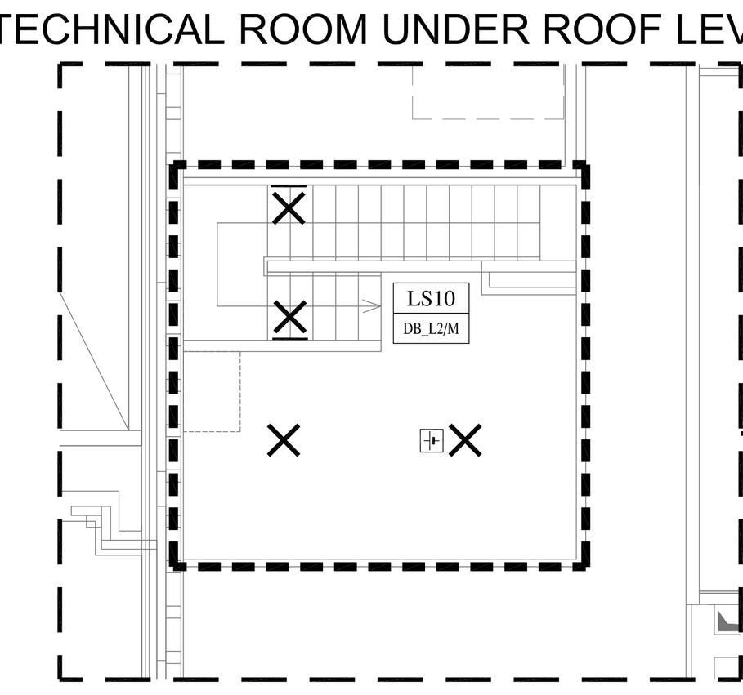


ELECTRICAL ZONING

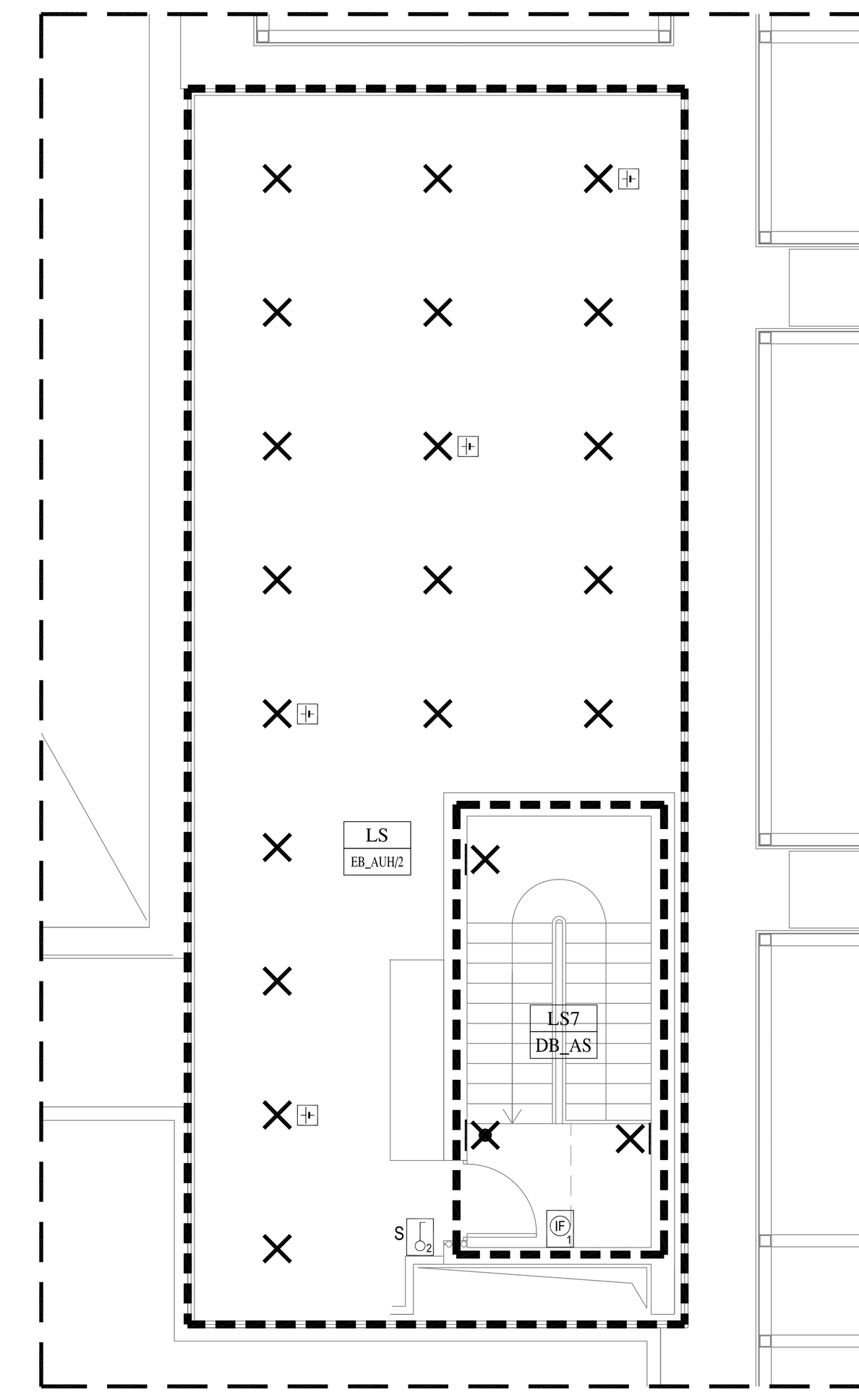
SECOND LEVEL



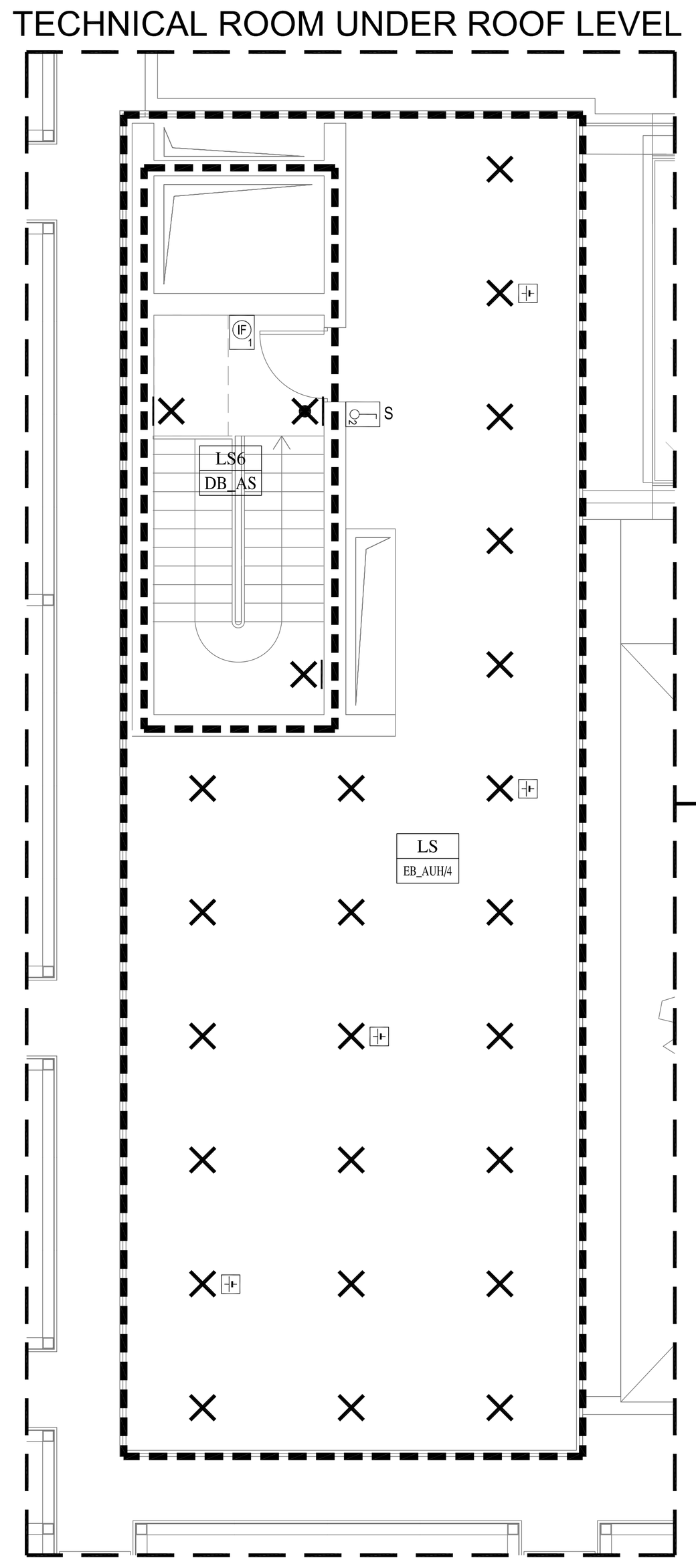
TECHNICAL ROOM UNDER ROOF LEVEL

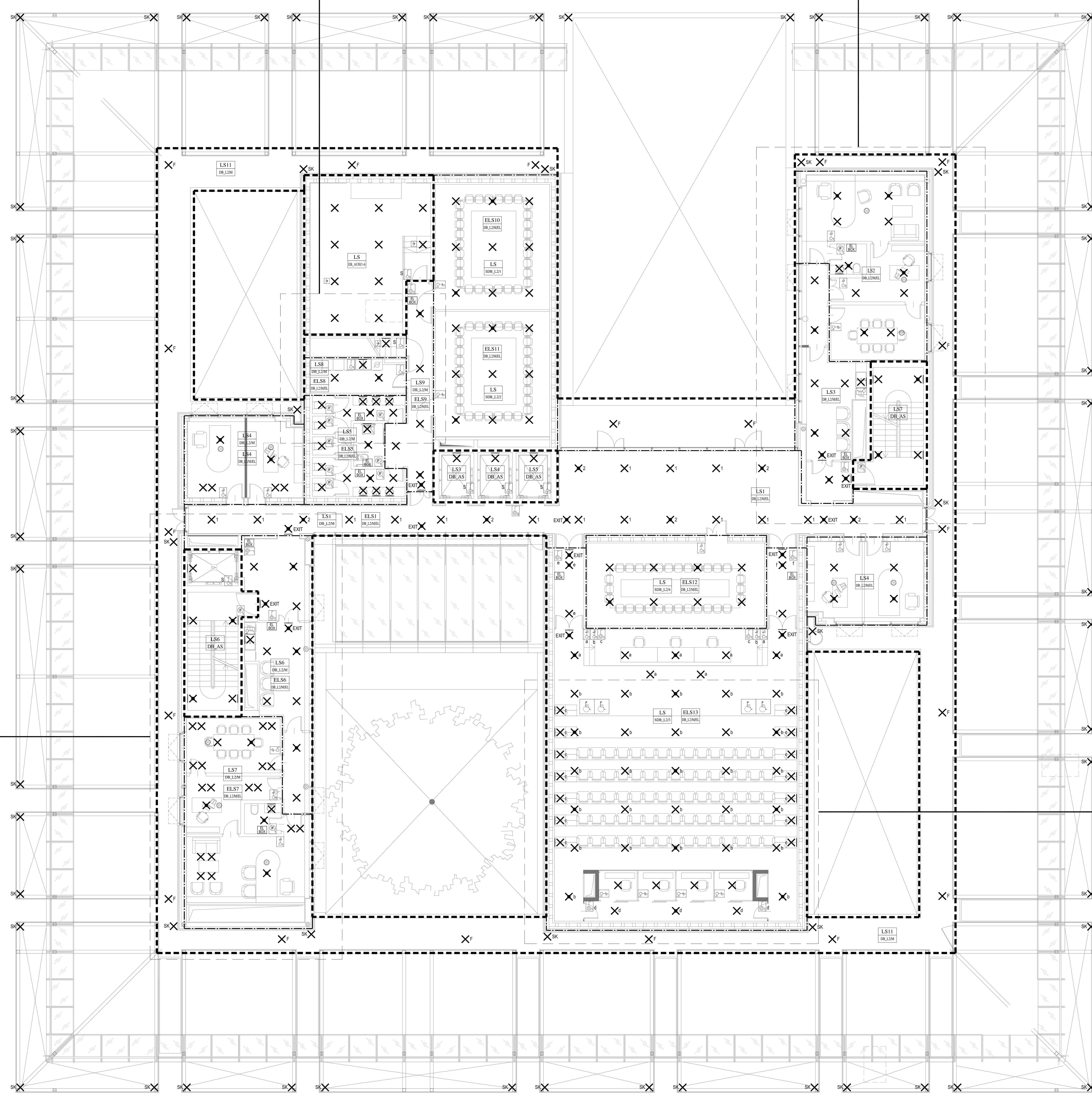


TECHNICAL ROOM UNDER ROOF LEVEL

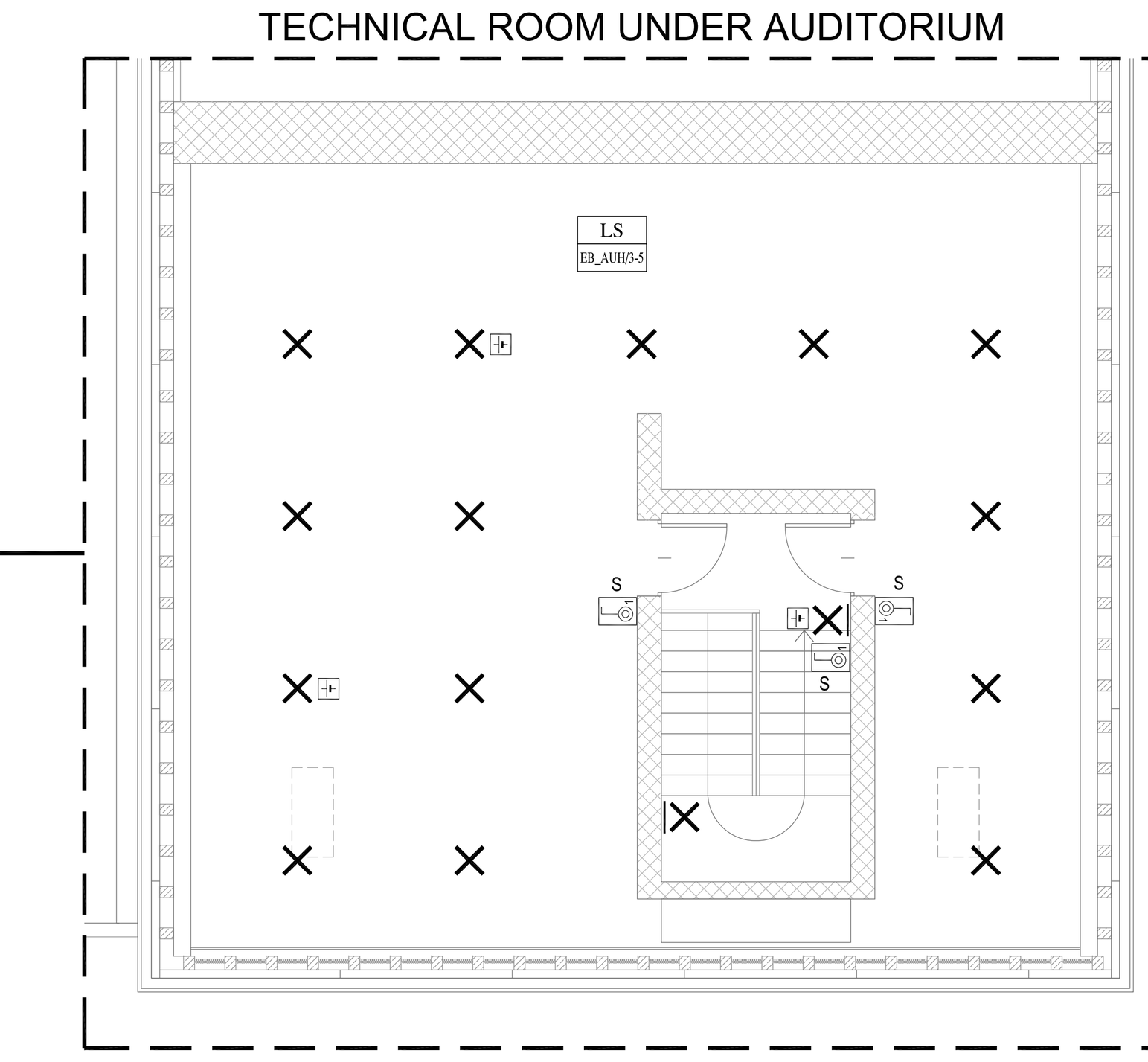


TECHNICAL ROOM UNDER ROOF LEVEL





TECHNICAL ROOM UNDER AUDITORIUM



LEGEND

Symbol	Description
X (underlined)	LIGHT SUPPLY ON WALL - CABLE 3x1,5mmq
X	LIGHT SUPPLY ON CEILING - CABLE 3x1,5mmq
X F	LIGHT SUPPLY ON FLOOR - CABLE 3x1,5mmq
X SK	LIGHT SUPPLY FOR OUTDOOR SKYLIGHT SCREENS - CABLE 3x1,5mmq
X W	LIGHT SUPPLY ON WATER AREA - CABLE 3x1,5mmq
X (filled)	SAFETY LIGHT SUPPLY ON CEILING - FIRE RESISTANCE CABLE 3x1,5mmq
X EXIT	SAFETY LIGHT SUPPLY FOR EMERGENCY EXIT - FIRE RESISTANCE CABLE 3x1,5mmq
X (filled, underlined)	SAFETY LIGHT SUPPLY ON WALL - FIRE RESISTANCE CABLE 3x1,5mmq
	SELF-POWERING KIT
	SWITCH - CABLE 2x1,5mmq
IF	INFRARED SENSOR (hinst.~1.20m) - CABLE 2x1,5mmq
IF S	INFRARED SENSOR FOR CAR PARK (hinst.~2m - MINIMUM PROTECTION LEVEL IP44) - CABLE 2x1,5mmq
	DIMMABLE SWITCH - CABLE 2x1,5mmq
	PUSH BUTTON SWITCH - CABLE 2x1,5mmq
EL BOX	INSULATION BOX FOR MODULAR CONTACTORS INSTALLED OVER FALSE CEILING
	INFRARED AND LIGHTING SENSOR (INSTALLATION ON CEILING) - CABLE 2x1,5mmq
S	DEVICE WITH MINIMUM PROTECTION LEVEL IP44
hinst	INSTALLATION HEIGHT (m)
— — —	PERTINENCE AREA OF BOARDS
—·—	ELECTRIC ZONE DELIMITATION
	FINAL DISTRIBUTION CIRCUIT DEFINITION
LS...	LIGHTING (L) OR SAFETY NETWORK (SAF) CIRCUIT USER INITIAL
DB/...	DISTRIBUTION BOARD

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ISSUE

MAIN PROJECT — **ELECTRICAL MEDIUM AND LOW VOLTAGE DRAWINGS**

TITLE

LIGHTING SUPPLIES LAYOUT LEVEL 2

REV.	DATE	FILE	SUBJECT	DRAW	APPR.
a	07/03/2011	926_Ee_504_a.dwg	REVIEW ACCORDING TO REVISION COMMISSION NOTES	L.R.	M.C.
b					
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d					

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