

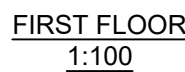
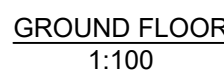
P23012 Wingates Plot 3







Drawing Register: EBM



*Please note: All drawings listed below are hyperlinked to the drawings listed.
Please click on the drawing title to go directly to the drawing of your choice.*

Works Completed: Electrical Works

Drawing No.	Drawing Title	Rev
P23012-EBM-03-XX-DR-E-0130	Unit 3 Main Office Lighting Layout	AF
P23012-EBM-03-XX-DR-E-0230	Unit 3 Main Office Fire Alarm Layout	AF
P23012-EBM-03-XX-DR-E-0330	Unit 3 Main Office Containment Layout	AF
P23012-EBM-03-XX-DR-E-0430	Unit 3 Main Office Containment Layout	AF
P23012-EBM-03-XX-DR-E-0530	Unit 3 Warehouse Electrical Services Layout	AF
P23012-EBM-03-ZZ-DR-E-000830	LV Schematic	AF
P23012-EBM-EX-XX-DR-E-0930	Unit 3 External Services Layout	AF
P23012-EBM-EX-XX-DR-E-0931	Unit 3 External Lighting & Lux Plot Layout	AF
P23012-EBM-EX-XX-DR-E-0933	Unit 3 External Lighting Elevation	AF
P23012-EBM-EX-XX-DR-E-0934	Unit 3 Structural Lightning Protection Layout	AF
P23012-EBM-EX-XX-DR-E-0935	Unit 3 Combined M&E External Services Layout	AF



LEGEND OF LIGHTING CONTROL SYMBOLS	
SYMBOL	DESCRIPTION
P1 ●	SWITCHING PIR DETECTOR RECESSED
P2 ●	DIMMING PIR / PHOTOCELL DETECTOR RECESSED
P3 ●	MICROWAVE DETECTOR RECESSED
	MANUAL SWITCH OR - OVERRIDE D - DIMMER
	LIGHTING CONTROL MODULE
	DIMMING MODULE
	SWITCHING MODULE
	X DENOTES NUMBER OF WAYS
	SWITCHING

LEGEND OF SMALL POWER & DATA SYMBOLS	
SYMBOL	DESCRIPTION
	SWITCHED FUSED CONNECTION UNIT
	DISTRIBUTION BOARD

HL	HIGH LEVEL
CV	CEILING VOID
WSV	SOLENOID VALVE

1. DO NOT SCALE FROM THE DRAWING.
2. EMERGENCY LIGHTING KEYSWITCHES ARE TO BE MOUNTED ADJACENT THE SERVING DISTRIBUTION BOARD.
3. ILLUMINATED EMERGENCY EXIT SIGNAGE AND BULKHEAD LUMINARIES ARE TO BE NON-MAINTENANCE TYPE.



AF	AS FITTED.	LH	21/05/2024
Rev.	Description	By	Date

AS FITTED



Project **UNIT 3 WINGATES,
BOLTON**

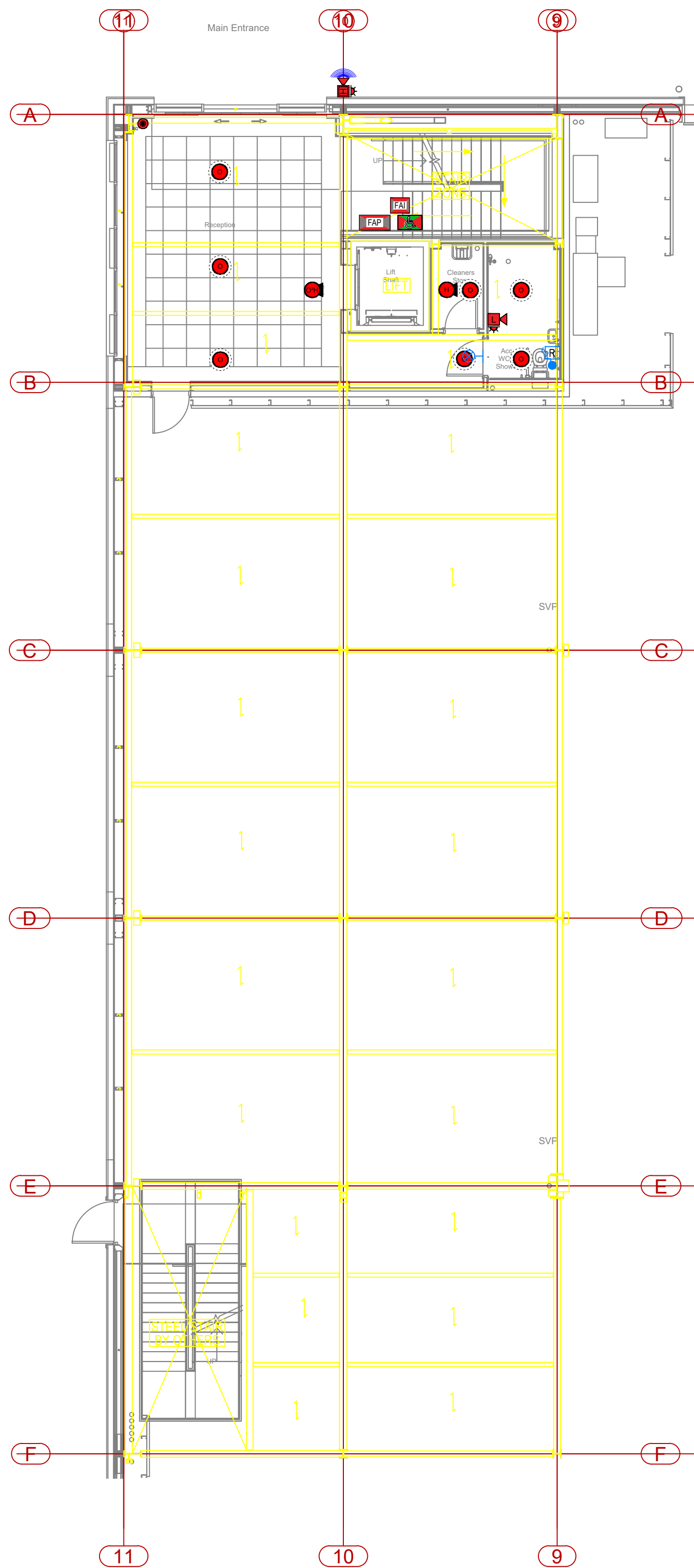
Title	UNIT 3 MAIN OFFICE LIGHTING LAYOUT
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Scale	1:100	Drg. Size	A1	Date	18.10.2023
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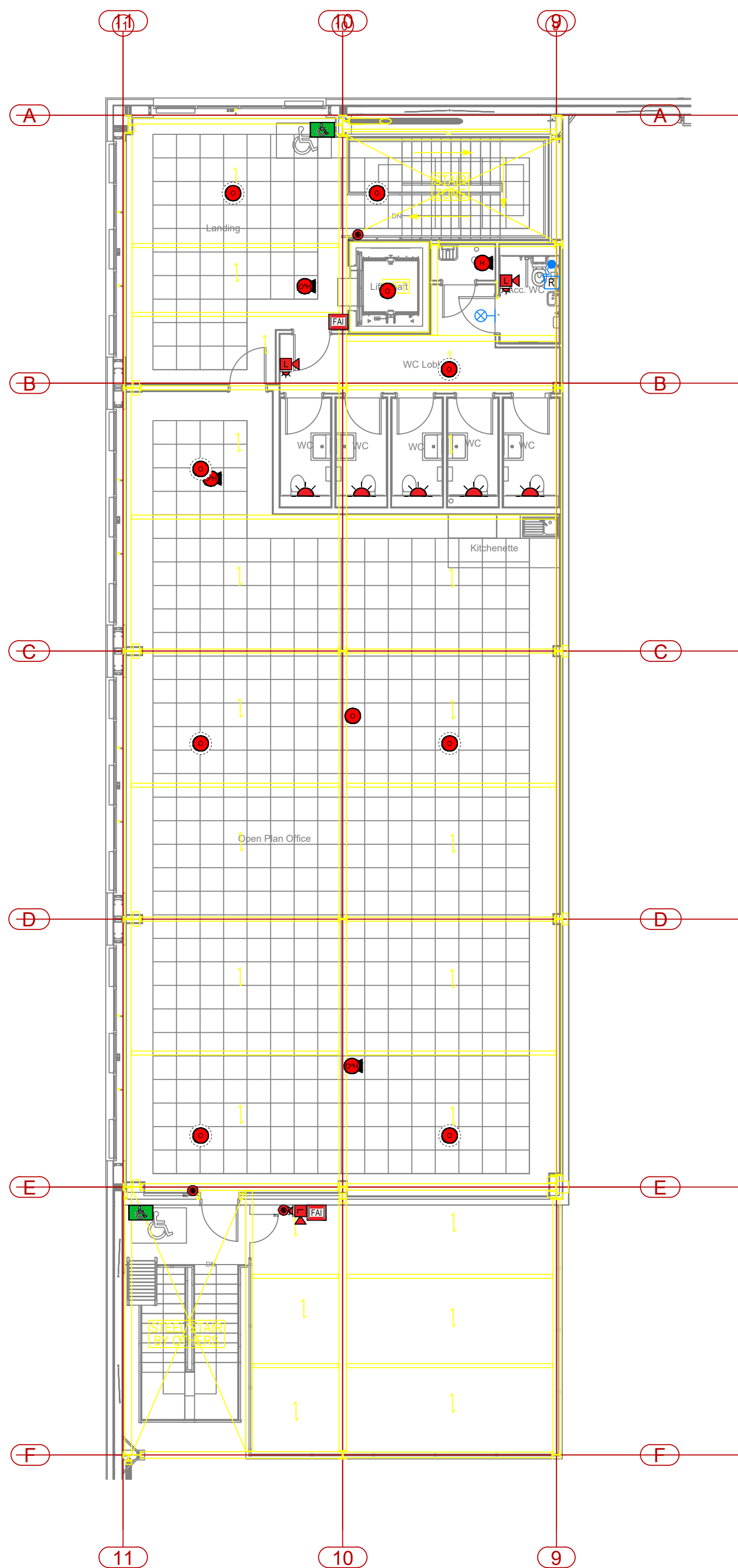
Drawn	LH	Checked	TW	Approved	XX
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Drg. No.	Rev.
P23012-EBM-03-XX-DR-E-0130	AF

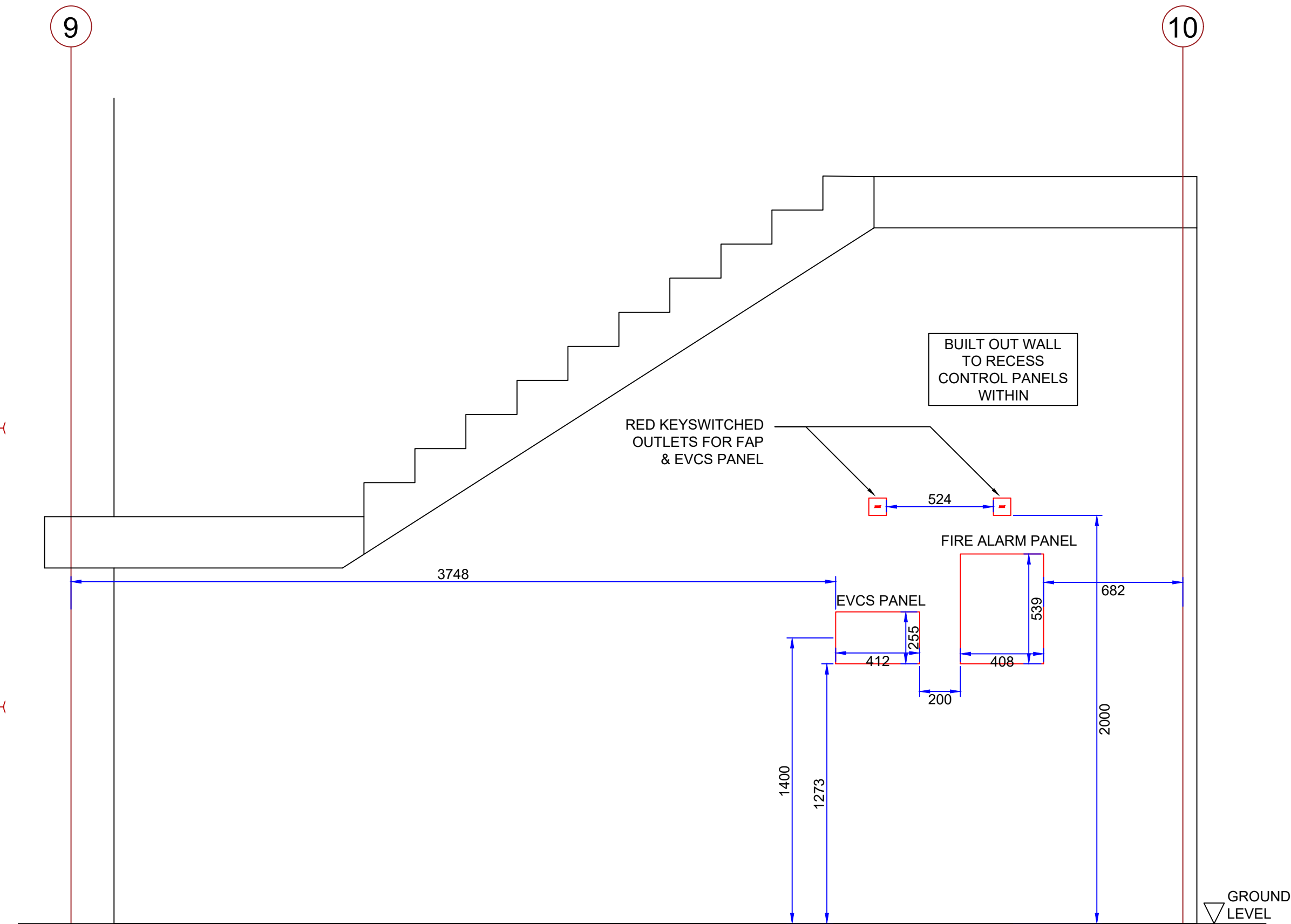
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GROUND FLOOR
1:100



FIRST FLOOR
1:100



RECEPTION WALL ELEVATION
1:20

NOTES

- DO NOT SCALE FROM THE DRAWING.
- OFFICE AREAS ARE TO BE PROVIDED WITH HIGH IMPACT UPVC CONDUIT WHICH ARE GENERALLY TO BE RECESSED WITHIN WALLS AND CONCEALED.
- ALL FIRE ALARM CABLING WILL BE SUPPORTED WITH SUITABLY FIRE RATED CONTAINMENT AND FIXED DIRECT USING SUITABLY FIRE RATED CLIPS AS NECESSARY, AND RUN WITHIN BUILDING PURRLINS.
- SOUNDER BASES ADJACENT EMERGENCY VOICE COMMUNICATION OUTSTATIONS SHALL BE ADJUSTED ACCORDINGLY DURING COMMISSIONING TO ENSURE TWO-WAY COMMUNICATION IS POSSIBLE.
- FIRE ALARM DEVICES ARE TO BE NAMED ACCORDING TO THE AREAS IN WHICH THEY ARE INSTALLED. CONFIRMATION REQUIRED BY THE CLIENT AS TO THE ADDRESS NAMES PRIOR TO COMMISSIONING.

FIRE ALARM SYSTEM DESIGNED IN ACCORDANCE WITH BS5839-1:2017 CATEGORY L1P1

LEGEND OF FIRE ALARM SYMBOLS	
SYMBOL	DESCRIPTION
	GENT VIGILON FIRE ALARM PANEL - 4LOOP
	GENT OPTICAL SMOKE - CEILING VOID
	GENT HEAT DETECTOR
	GENT OPTICAL SMOKE
	GENT WALL MOUNTED SOUNDER + STROBE
	GENT IP RATED WALL MOUNTED SOUNDER + STROBE
	GENT OPTICAL SMOKE & HEAT DETECTOR + SOUNDER
	GENT OPTICAL SMOKE & HEAT DETECTOR + SOUNDER + BEACON
	MANUAL CALL POINT
	GENT STROBE
	GENT HEAT DETECTOR + SOUNDER
	FIRE ALARM INTERFACE

LEGEND OF EVCS & TOILET ALARM SYMBOLS	
SYMBOL	DESCRIPTION
	EVCS OUTSTATION
	EMERGENCY VOICE COMMUNICATION SYSTEM CONTROL PANEL
	ACCESSIBLE WC ALARM PULL CORD
	ACCESSIBLE WC INDICATOR LAMP / BUZZER
	ACCESSIBLE WC RESET BUTTON

ACRONYMS
IP65 IP65 INGRESS PROTECTION

1m SCALE 1:100

AF	AS FITTED	LH	21/05/2024
Rev.	Description	By	Date

AS FITTED

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Project UNIT 3 WINGATES,
BOLTON

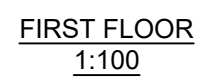
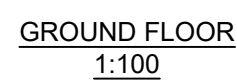
Title UNIT 3 MAIN OFFICE
FIRE ALARM LAYOUT

Scale 1:100 Drg. Size A1 Date 18.10.2023

Drawn LH Checked TW Approved XX

Drg. No. P23012-EBM-03-XX-DR-E-0230 Rev. AF

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ACRONYMS	
ACC	AC CENTRAL CONTROLLER
AD	AUTOMATIC DOOR
AHU	AIR HANDLING UNIT
BOB	AIR CONDITIONING SYSTEM BOX C
C	CLEANERS SOCKET
CV	CEILING VOID
DA	DISABED TOILET ALARM
DW	DISH WASHER
EF	EXTRACT FAN
EH	ELECTRICAL PANEL HEATER
EVCS	EMERGENCY VOICE COMMUNICATION SYSTEM PANEL
FR	FRIDGE
FA	FIRE ALARM PANEL
HB	HEATER BATTERY
HD	HAND DRYER
HR	HAIR DRYER
HRR	HEAT RECOVERY UNIT
HWC	HWS CYLINDER
HYB	HYDROBOX
MC	METAL CLAD
MCP	MECHANICAL CONTROL PANEL
MW	MICROWAVE
PJ	PRESSURISATION UNIT
PWC	PANTRY HARVESTING COMBI UNIT
SH	SHOWER
SPS	SOLAR PUMP STATION
SV	SOLINOID VALVE
UW	RAINWATER HARVESTING UV FILTER
WH	WATER HEATER

INSTALLATION HEIGHT ACRONYMS

LL	LOW LEVEL (450MM FFL)
ML	MID LEVEL (1200MM FFL)
HL	HIGH LEVEL (2200MM FFL)
CV	CEILING VOID

NOTES:-

1. DO NOT SCALE FROM THE DRAWINGS.
2. ALL HAND DRYERS ARE TO BE PROVIDED BY OTHERS.
3. DATA POINTS CONTAINMENT ONLY - WITH BLANK PLATES

AS FITTED

AS FITTED









Project	UNIT 3 WINGATES, BOLTON
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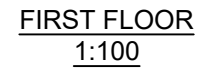
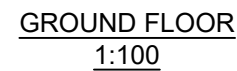
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Drg. No. P23012-EBM-03-XX-DR-E-0330	Rev. AF
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<u>LEGEND OF CONTAINMENT SYMBOLS</u>	
<u>SYMBOL</u>	<u>DESCRIPTION</u>
	LV SUBMAINS CABLE LADDER, SIZE AS DENOTED
	LV SUBMAINS CABLE TRAY, SIZE AS DENOTED
	LV CABLE BASKET, SIZE AS DENOTED
	LV CABLE BASKET (UNDERFLOOR), SIZE AS DENOTED
	FA CABLE BASKET, SIZE AS DENOTED
	CONTAINMENT RISER / DROP

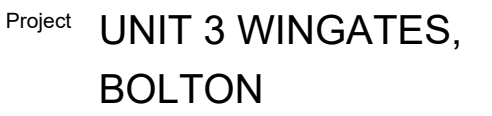
1. DO NOT SCALE FROM THE DRAWING.
2. OFFICE AREAS ARE TO BE PROVIDED WITH HIGH IMPACT uPVC CONDUIT RECESSED WITHIN WALLS.
3. WAREHOUSE/PLANT AREAS ARE TO BE PROVIDED WITH GALVANISED STEEL CONDUIT.
4. FIRE ALARM CABLING WILL BE CLIPPED DIRECT TO THE STRUCTURE, USING FIRE RATED CLIPS IN ANY AREAS WHERE NO DEDICATED CONTAINMENT IS INDICATED.
5. SUB-MAIN CABLING TO UTILISE THE BUILDING FABRIC (PURLINS) WHERE POSSIBLE.
6. ALL CONTAINMENT PENETRATIONS THROUGH FIRE WALLS ARE TO BE MADE GOOD BY MAIN CONTRACTOR.
7. ALL FIRE ALARM/ELV CONTAINMENT TO BE A MINIMUM 200mm FROM LV CONTAINMENT.



AS FITTED

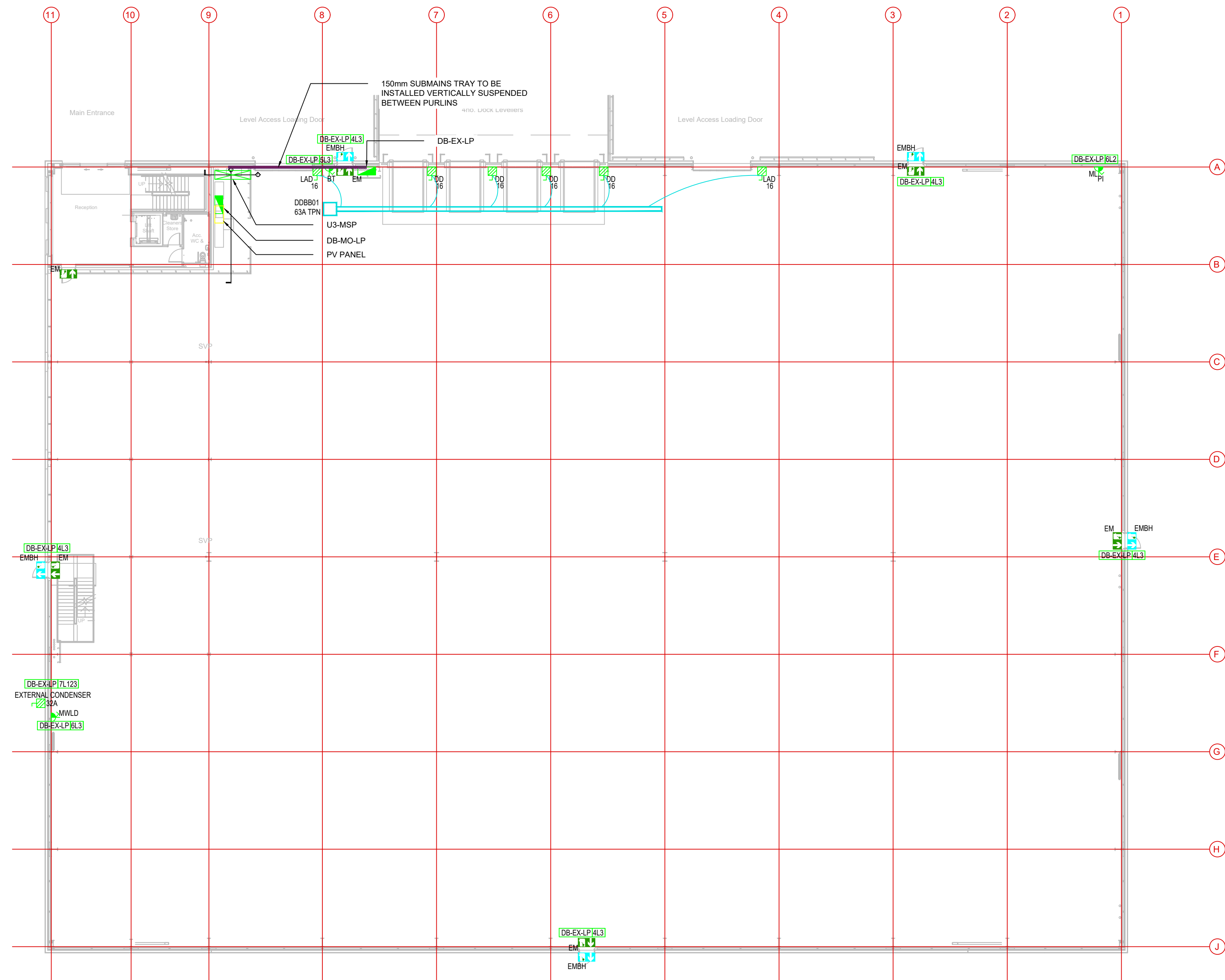


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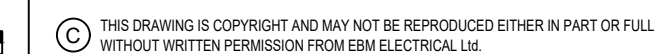
P23012-EBM-03-XX-DR-E-0330	AF
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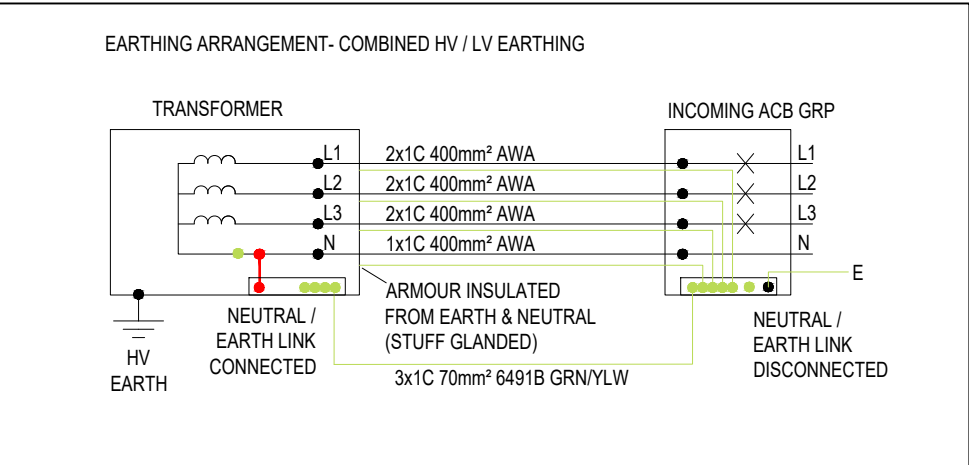
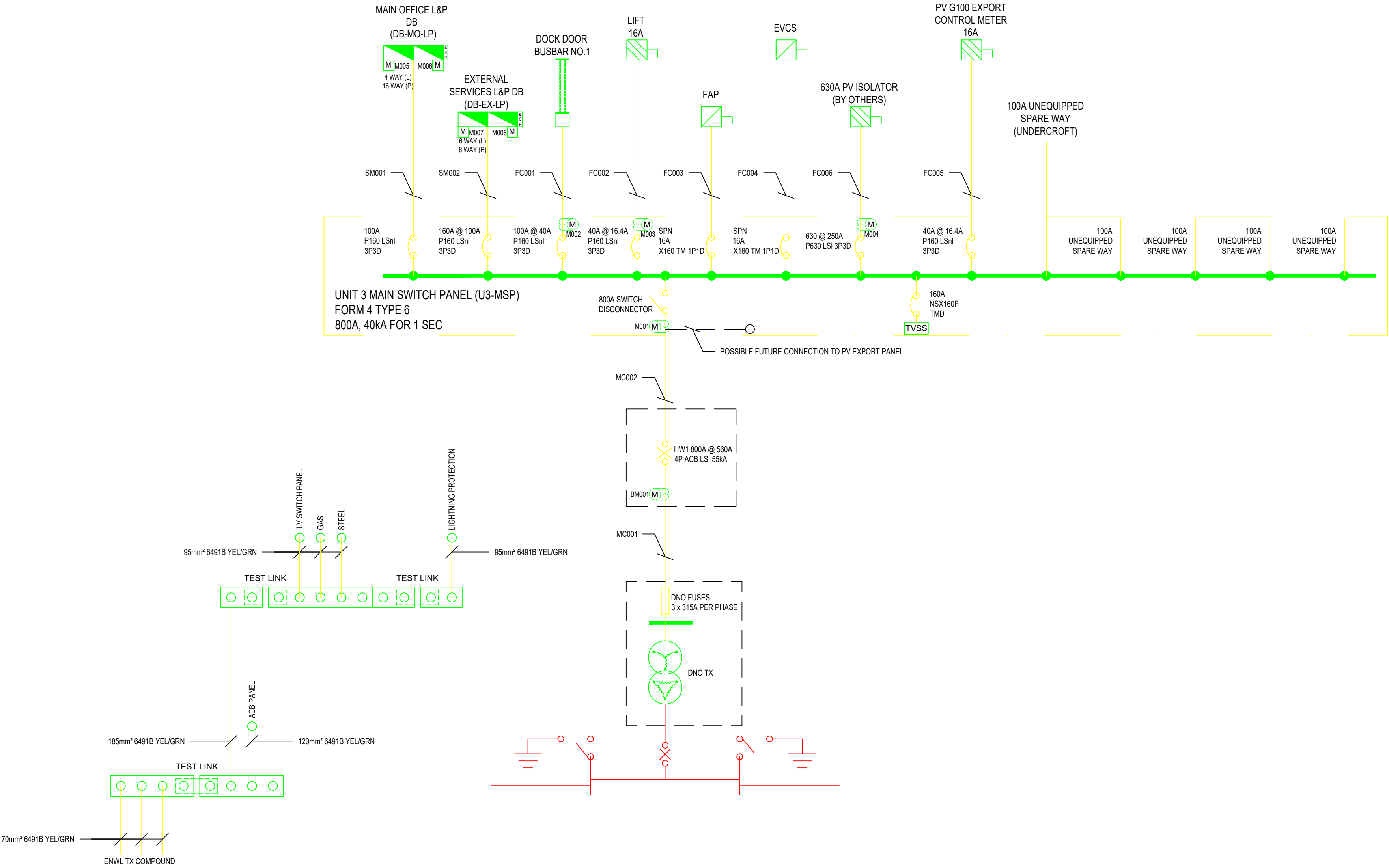
ACRONYMS	
AD	AUTOMATIC OPENING DOORS
ACB	ACCESS CONTROL
BCB	AIR CONDITIONING SYSTEM BC BOX
BT	BRITISH TELECOMS
CE	CEILING VOID
DA	DISABLED TOILET ALARM
DD	DOCK DOOR
DW	DISH WASHER
EF	EXTRACT FAN
EH	ELECTRICAL PANEL HEATER
EVCS	EMERGENCY VOICE COMMUNICATION SYSTEM PANEL
FR	FRIDGE
FAP	FIRE ALARM PANEL
HD	HAND DRYER
HRU	HAIR DRYER
HRU	HEAT RECOVERY UNIT
IDU	AIR CONDITIONING SYSTEM INDOOR UNIT
LD	LEVEL ACCESS DOOR
MW	MICROWAVE
MWLD	MAINWATER LEAK DETECTION
PI	PETROL INTERCEPTOR
ODH	OVER DOOR HEATER
RCD	RESIDUAL CURRENT DEVICE
SH	SHOWER
ST	SENSOR TAP
SV	SLOVENO VALVE
TS	TURNSILE
WH	WATER HEATER
WP	WATER PROOF
ZIP	ZIP HYDROTAP
<u>INSTALLATION HEIGHT ACRONYMS</u>	
LL	LOW LEVEL (450MM FFL)
ML	MID LEVEL (1200MM FFL)
HL	HIGH LEVEL (2200MM FFL)
CV	CEILING VOID
NOTES -	
1.	DO NOT SCALE FROM THE DRAWINGS.
2.	ALL HAND DRYERS ARE TO BE PROVIDED BY OTHERS
3.	DATA POINTS CONTAINMENT ONLY - WITH BLANK PLATES
4.	REFER TO EXTERNAL DUTY DRAWING FOR INCOMING DUCT CONTINUATION.

AF	AS FITTED.	LH	21/05/2024
Rev.	Description	By	Date



METER SCHEDULE			
REFERENCE	LOCATION	METERING	TYPE
BM001	ACB ENCLOSURE	BILLING METER	TBC BY METER PROVIDER
M001	MSP - INCOMING	MSP	HGR965 SERIES
M002	MSP - OUTGOING	DDBB1	HGR965 SERIES
M003	MSP - OUTGOING	LIFT	HGR965 SERIES
M004	MSP - OUTGOING	PV PANEL	HGR965 SERIES
M005	DB-MO-LP	DB-MO-LP (LIGHTING)	HGR43 SERIES
M006	DB-MO-LP	DB-MO-LP (POWER)	HGR43 SERIES
M007	DB-EX-LP	DB-EX-LP (LIGHTING)	HGR43 SERIES
M008	DB-EX-LP	DB-EX-LP (POWER)	HGR43 SERIES

CABLE REFERENCE	CABLE DETAIL	PROTECTION DEVICE DETAILS
MC001	7 X 1C 400MM² 90° THERMOSETTING NON-MAG XLPE/PVC/AWA/PVC CPC - 3 X 1C 70MM² 6491B GRN/YEL	SETTINGS TO BE PROVIDED BY ENWL
MC002	2 X 1 X 4C 240MM² 90° THERMOSETTING XLPE/LSF/SW/LSF CPC - 185MM² 6491B GRN/YEL	HAGER HW+ ACB HW1M - 55KA - 4P, LSI 800A I _r = 1.0, I _r = 25.0, I _{sd} = 4.0, P _t = OFF, I _{sd} = 0.05, I _i = 15.0, MAX Z _s - 0.0823Ω
SM001	1 X 1 X 4C 25MM² 90° THERMOSETTING XLPE/LSF/SW/LSF CPC - ARMOURING	HAGER H3+ MCCB P160 - 40KA - 3-4P, LShi 100A I _r 1 = 100, I _r 2 = 1.00, I _{sd} = 7.0, I _{sd} = 100, MAX Z _s - 0.3856Ω
SM002	1 X 1 X 4C 25MM² 90° THERMOSETTING XLPE/LSF/SW/LSF CPC - ARMOURING	HAGER H3+ MCCB P160 - 40KA - 3-4P, LShi 160A @ 100A I _r 1 = 100, I _r 2 = 1.00, I _{sd} = 7.0, I _{sd} = 100, MAX Z _s - 0.3856Ω
FC001	1 X 1 X 4C 6MM² 90° THERMOSETTING XLPE/LSF/SW/LSF CPC - ARMOURING	HAGER H3+ MCCB P160 - 40KA - 3-4P, LShi 100A @ 40A I _r 1 = 44, I _r 2 = 0.91, I _{sd} = 7.0, I _{sd} = 100, MAX Z _s - 0.9131Ω
FC002	1 X 1 X 4C 6MM² 90° THERMOSETTING XLPE/LSF/SW/LSF CPC - ARMOURING	HAGER H3+ MCCB P160 - 40KA - 3-4P, LShi 40A @ 16.4A I _r 1 = 18, I _r 2 = 0.91, I _{sd} = 7.0, I _{sd} = 100, MAX Z _s - 1.7391Ω
FC003	1 X 1 X 3C 4MM² FP200 CPC - INTEGRAL	HAGER MCCB x160 HHA-E 1P 25KA FTFM THMAG 16A MAX Z _s - 0.8706Ω
FC004	1 X 1 X 3C 4MM² FP200 CPC - INTEGRAL	HAGER MCCB x160 HHA-E 1P 25KA FTFM THMAG 16A MAX Z _s - 0.8706Ω
FC005	1 X 1 X 4C 2.5MM² 90° THERMOSETTING XLPE/LSF/SW/LSF CPC - INTEGRAL + ARMOURING	HAGER H3+ MCCB P160 - 40KA - 3-4P, LShi 40A @ 16.4A I _r 1 = 18, I _r 2 = 0.91, I _{sd} = 2.0, I _{sd} = 100, I _i = 15, MAX Z _s - 6.088Ω
FC006	2 X 1 X 4C 185MM² 90° THERMOSETTING XLPE/LSF/SW/LSF CPC - ARMOURING	HAGER H3+ MCCB P630 - 40KA - 3-4P, LShi 630A @ 250A I _r 1 = 250, I _r 2 = 1.0, I _r = 10.0, I _{sd} = 3.0, P _t = On, I _{sd} = 50, I _i = 3, MAX Z _s - 0.2659Ω



- NOTES
- DO NOT SCALE FROM THE DRAWING.
 - ALL DISTRIBUTION BOARDS ARE TO BE TPN UNLESS STATED OTHERWISE.
 - ALL MCCBs ARE TO BE TPN TYPE UNLESS STATED OTHERWISE
 - G99 RELAY INTEGRAL TO PV INVERTERS.
 - INCOMING ELECTRICAL SUPPLY TO UNIT 3 SHALL BE 550KVA
 - THE MAIN INCOMING PROTECTIVE DEVICE HAS BEEN SET IN ACCORDANCE WITH THE TOTAL LOAD IMPOSED ON THE MAIN LV PANEL BY BASEBUILD DEMAND AND CURRENT PV LOADS. FURTHER CONSIDERATION MAY BE REQUIRED TO THE TOTAL LOAD IMPOSED ON THE LV PANEL FOR FURTHER DEMAND AND / OR PV ADDED DURING FUTURE WORKS.

LEGEND OF POWER SYMBOLS	
SYMBOL	DESCRIPTION
	11,000V / 400V TRANSFORMER
	ACB - RATING AS SHOWN
	MCCB - RATING AS SHOWN
	SWITCH DISCONNECTOR - RATING AS SHOWN
	FUSE - RATING AS SHOWN
	TPN DISTRIBUTION BOARD
	SPLIT METERED LIGHTING & POWER TPN DISTRIBUTION BOARD
	TPN BUSBAR
	TPN ISOLATOR
	DOUBLE POLE KEYSWITCH
	METER c/w MODBUS CONNECTIVITY
	RESTRICTED EARTH FAULT RELAY
	TYPE 1 & 2 SURGE SUPPRESSION
	LOCAL DB 2 SURGE SUPPRESSION
	EMERGENCY POWER OFF BUTTON

AF	AS FITTED.	LH	21.05.2024
Rev.	Description	By	Date

AS FITTED



Project UNIT 3 WINGATES, BOLTON

Title LV SCHEMATIC

Scale NTS Drg. Size A1 Date 26.09.23

Drawn LH Checked TW Approved TW

Drg. No. P23012-EBM-03-ZZ-DR-E-000830 Rev. AF

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LEGEND OF EXTERNAL LIGHTING SYMBOLS	
SYMBOL	DESCRIPTION
	6m EXTERNAL LIGHTING COLUMN

LEGEND OF POWER SYMBOLS	
SYMBOL	DESCRIPTION
	ELECTRIC VEHICLE CHARGER

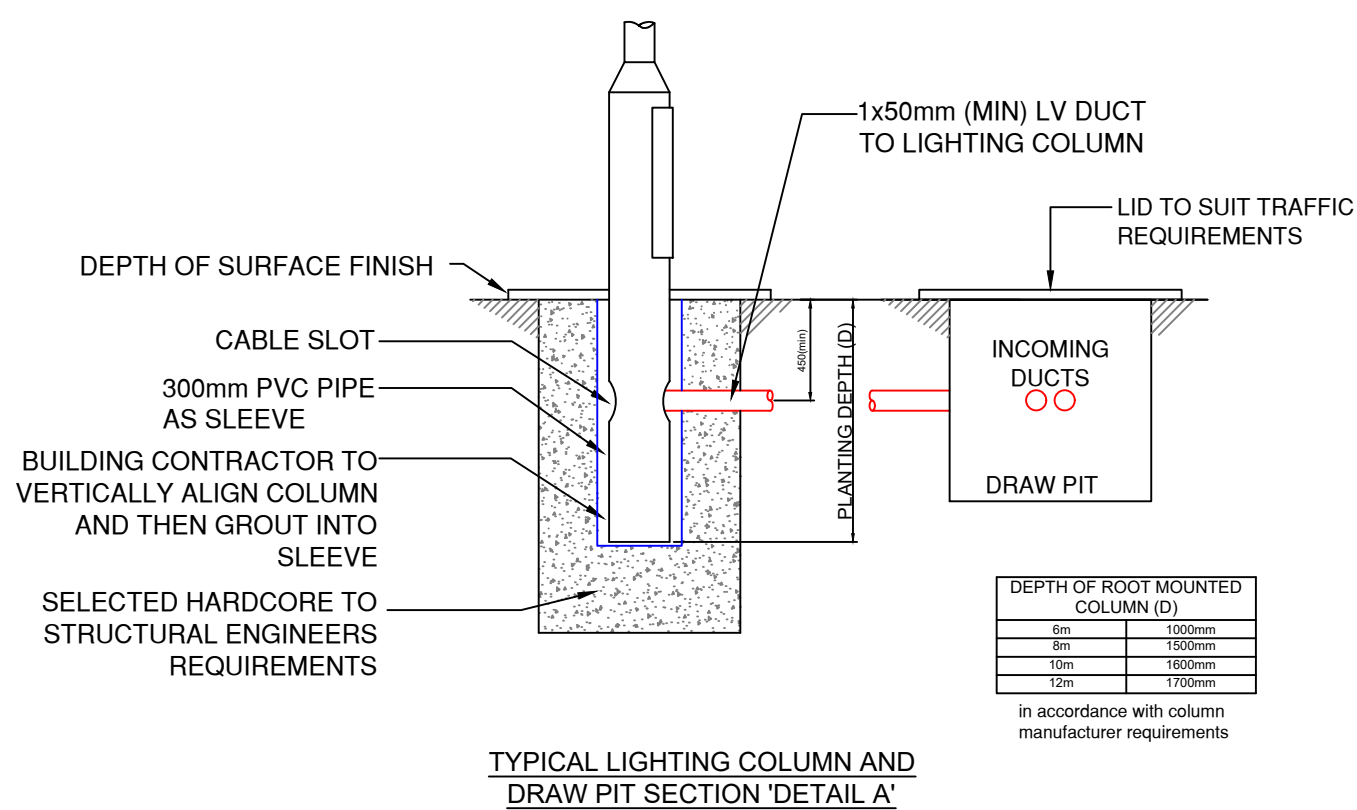
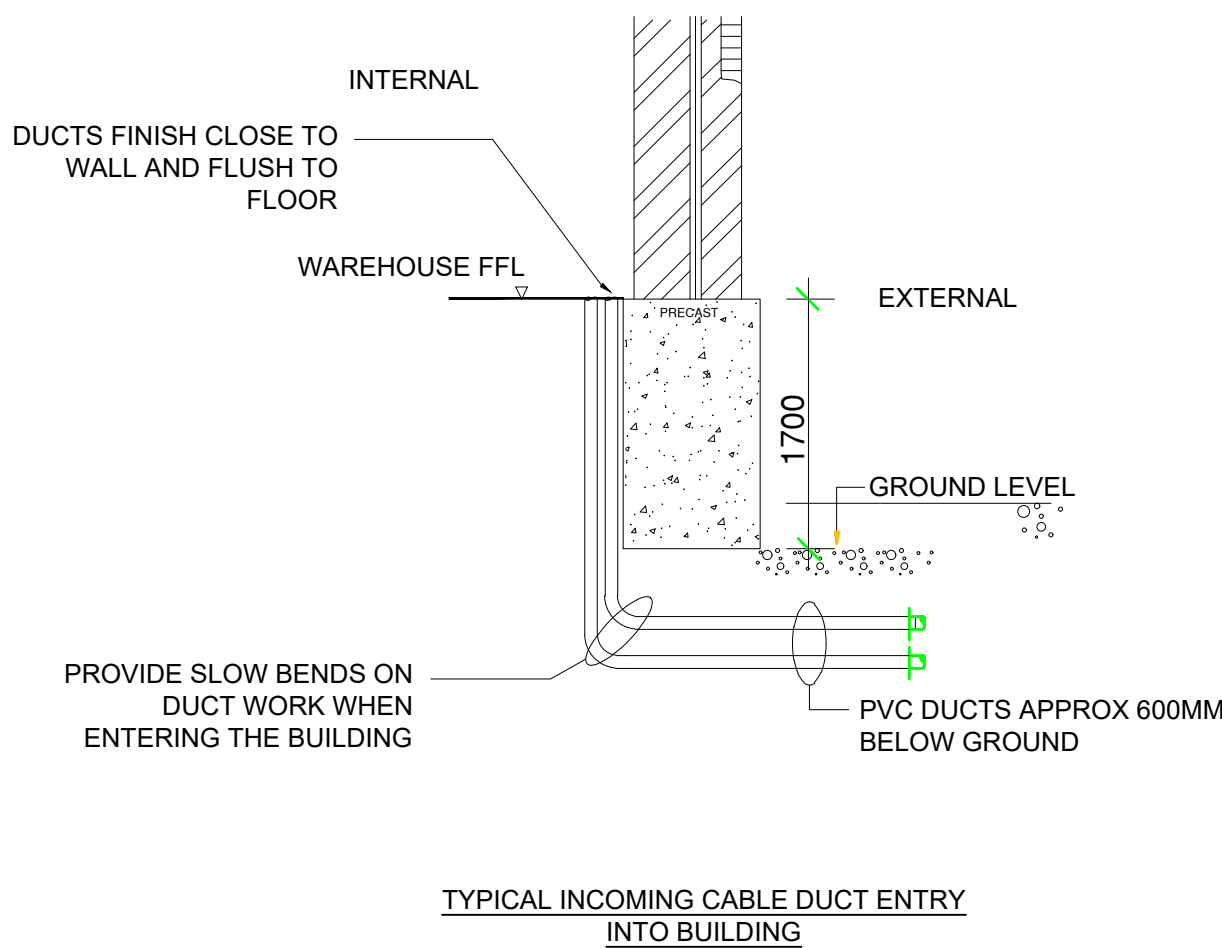
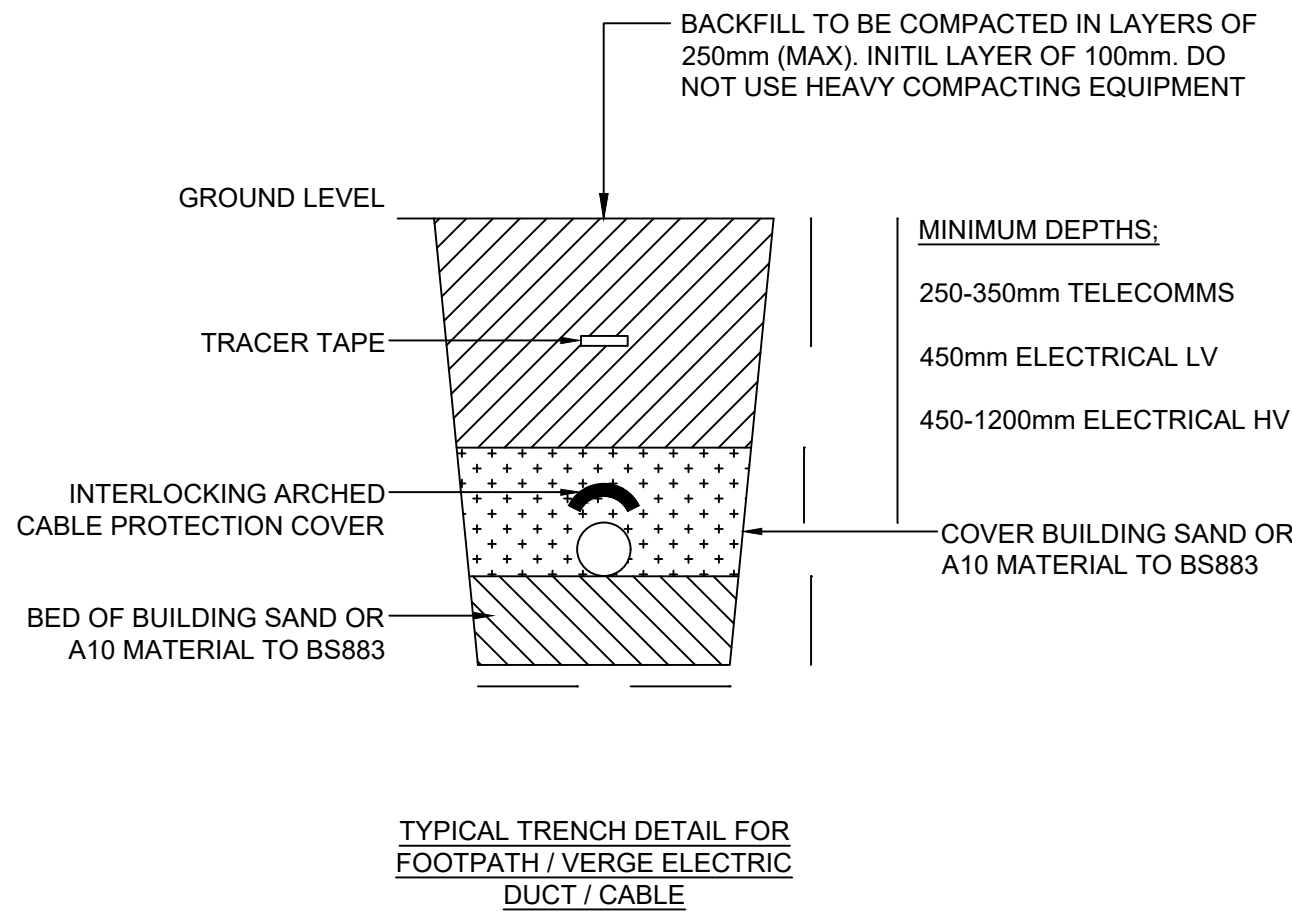
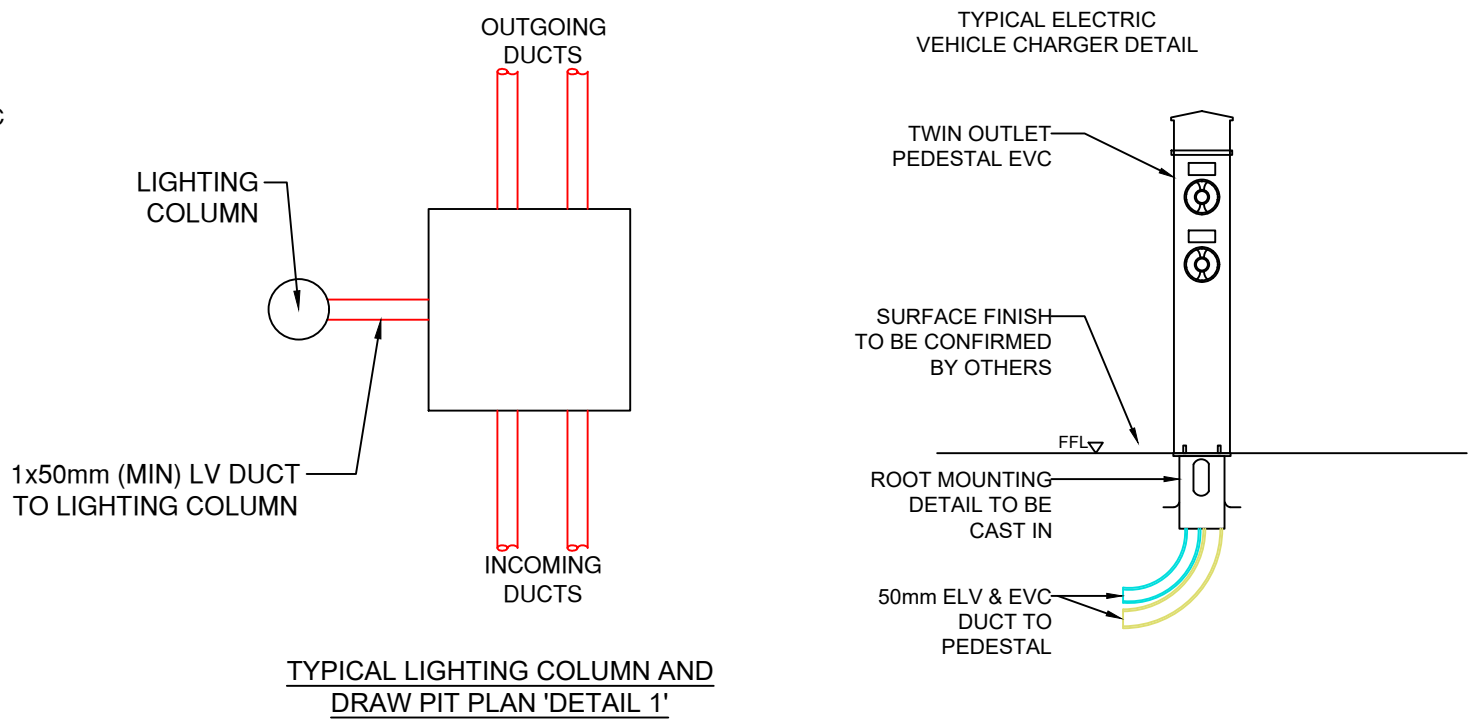
LEGEND OF EXTERNAL DUCT SYMBOLS	
SYMBOL	DESCRIPTION
	SPARE DUCT
	BT DUCT (BT SPECIFICATION)
	LV DUCT
	LV LIGHTING DUCT
	ELV DUCT
	EVC DUCT
	ALTERNATIVE COMMS/DATA DUCT
	DRAW PIT (600mm x 600mm)
	DRAW PIT (900mm x 900mm)
	DRAW PIT (1000mm x 1000mm)
	BT PIT - EXACT DETAILS TBC BY BT

LEGEND OF SMALL POWER & DATA SYMBOLS	
SYMBOL	DESCRIPTION
	NEW TPN DISTRIBUTION BOARD

NOTES

- DO NOT SCALE FROM THE DRAWING.
- ALL HV / LV CABLE DUCTS ARE TO HAVE SLOW RADIUS BENDS.
- ALL DUCTS ARE TO BE LEFT WITH DRAW CORDS FOR EASE OF FUTURE CABLE PULLING.
- ALL DUCTS AND BELOW GROUND SERVICES ARE TO BE INSTALL IN ACCORDANCE WITH THE NJUG STANDARD DEPTHS.
- ALL DRAW PITS ARE TO BE HEAVY DUTY TYPE TO WITHSTAND THE ASSOCIATED VEHICLE TRAFFIC, DEPENDING UPON AREA.
- ALL EXTERNAL LIGHTING COLUMNS TO BE PROVIDED WITH PRE-FORMED DEMOUNTABLE POLE CHAMBER SYSTEMS WHICH COMBINE COLUMN CHAMBER AND CABLE CHAMBER FOR EASE OF WIRING AND MAINTENANCE.
- ALL BT DUCTING AND CHAMBERS TO BE INSTALLED TO BT SPECIFICATION AND STANDARDS.
- ALL HV / LV CABLES ARE PROVIDED WITH THE NECESSARY WARNING MARKER TAPES.
- ALL BELOW GROUND DUCTING IS TWIN WALL TYPE COMPLETE WITH SMOOTH INTERIOR.

2



Rev.	Description	By	Date
AF	AS FITTED	LH	21/05/2024

AS FITTED



Project UNIT 3 WINGATES, BOLTON

Title UNIT 3 EXTERNAL SERVICES LAYOUT

Scale 1:500 Drg. Size A1 Date 16.10.2023

Drawn LH Checked TW Approved XX

Drg. No. P23012-EBM-EX-XX-DR-E-0930 Rev. AF

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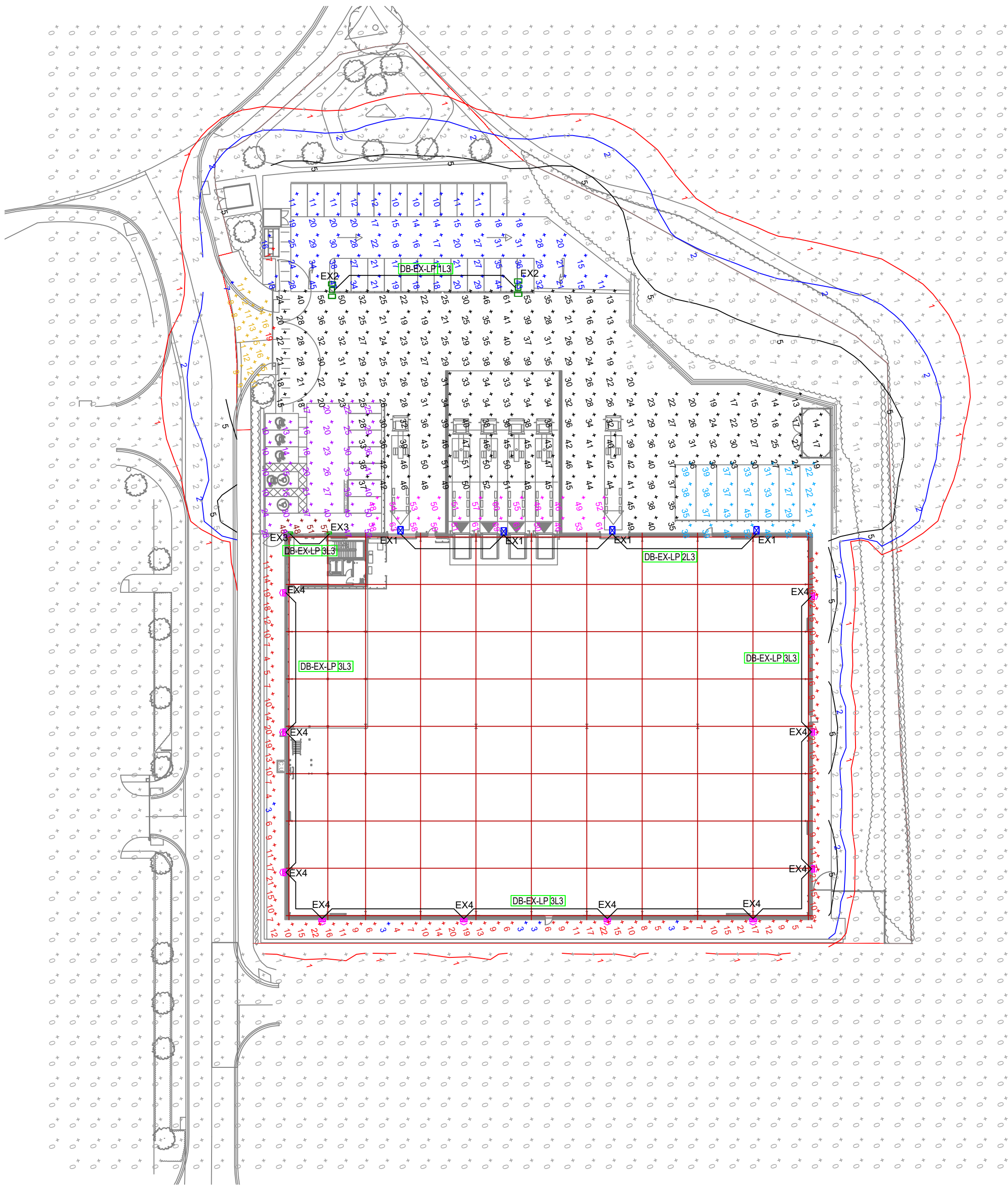
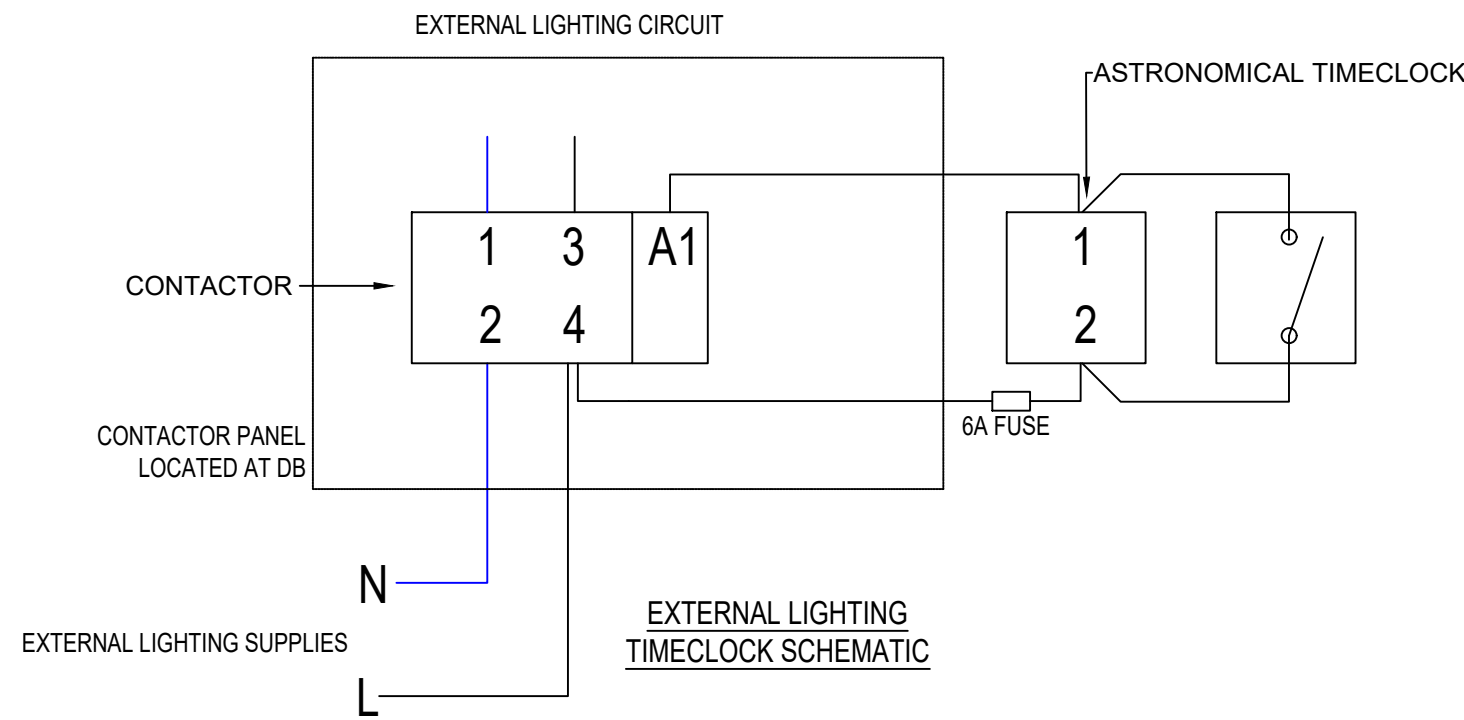
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REFERENCE 'EX1'



D-SERIES 0 LUMINAIRE
REFERENCE 'EX2'



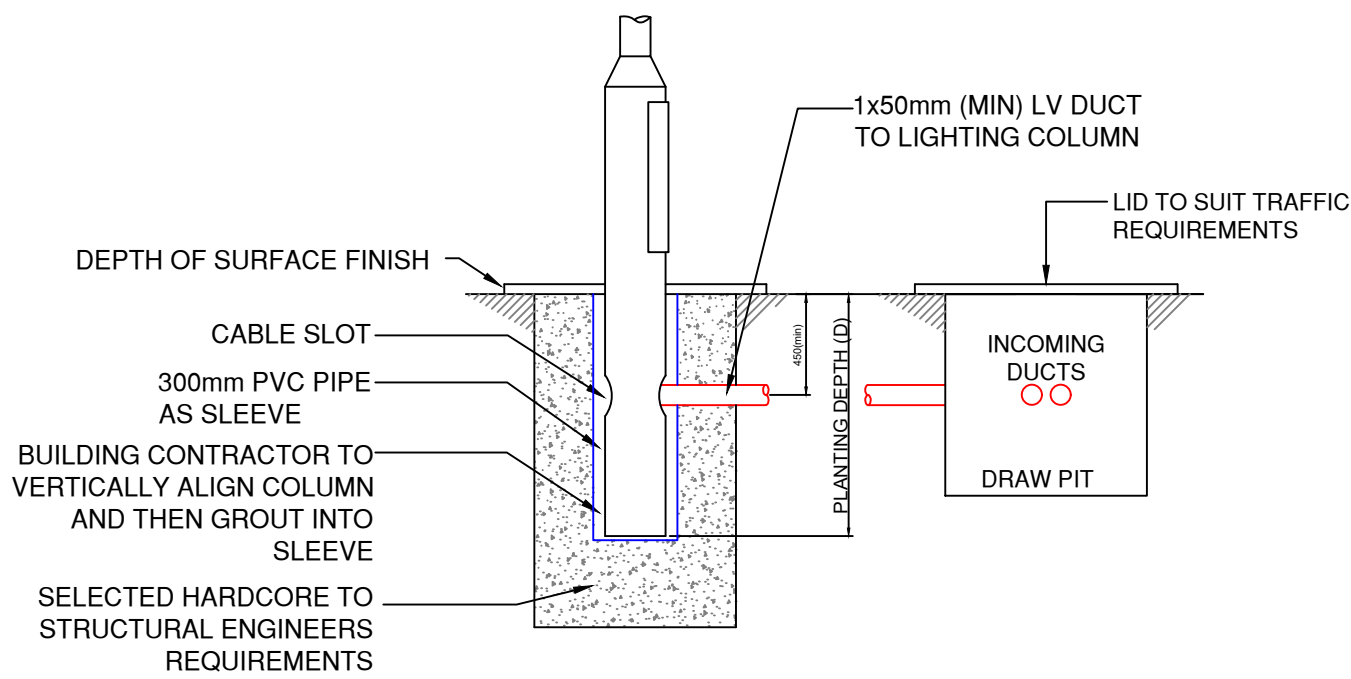
DENVER ID WALL
REFERENCE 'EX3 & EX4'



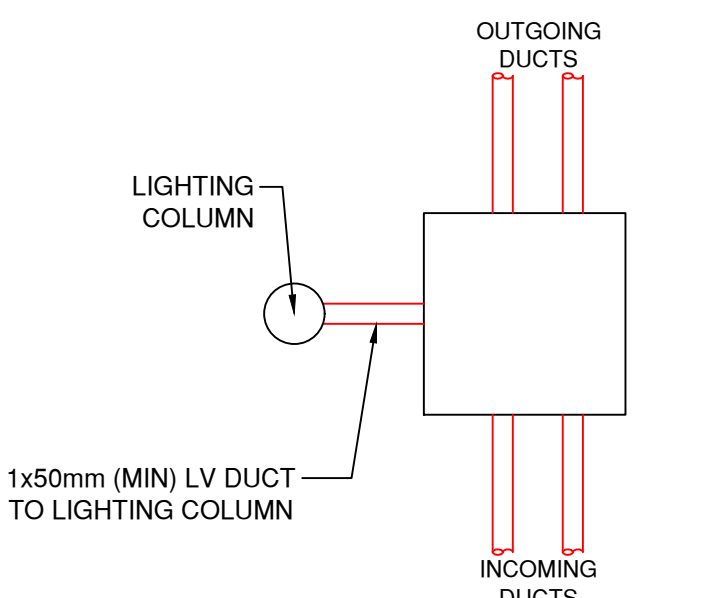
LUX PLOT LEGEND				
SYMBOL	DESCRIPTION	AVG	MIN	MIN/AVG
+	CYCLE STORAGE	17 LUX	16 LUX	0.94
+	ENTRANCE (50 AVE 0.4 Uo)	51 LUX	48 LUX	0.94
+	LOADING BAYS (50 AVE 0.4 Uo)	54 LUX	46 LUX	0.85
+	PARKING MAIN (10 AVE 0.25 Uo)	22 LUX	10 LUX	0.45
+	PARKING OUTSIDE RECEPTION (10 AVE 0.25 Uo)	27 LUX	10 LUX	0.37
+	PARKING VANS (10 AVE 0.25 Uo)	35 LUX	21 LUX	0.60
+	PERIMETER (10 AVE 0.25 Uo)	11 LUX	3 LUX	0.27
+	SERVICE YARD (30 AVE 0.4 Uo)	32 LUX	13 LUX	0.41
+	SITE ENTRANCE (10 AVE 0.4 Uo)	12 LUX	7 LUX	0.58
+	SPILL LIGHT	1 LUX	0 LUX	0.00

EXTERNAL LIGHTING COLUMN SLEEVE DETAILS		
LIGHTING COLUMN HEIGHT	SLEEVE SIZE	HOLE IN SLEEVE HALF WAY UP
3M, 4M & 5M	800mm LONG 300mm WIDE	100mm
6M	1000mm LONG 400mm WIDE	100mm
8M	1200mm LONG 400mm WIDE	100mm
10M	1600mm LONG 450mm WIDE	100mm
12M	1700mm LONG 450mm WIDE	100mm

LEGEND OF EXTERNAL LIGHTING SYMBOLS					
SYMBOL	DESCRIPTION	QUANTITY	WEIGHTS	LLMW	WINDAGE
EX1	200W (22000LM) D-SERIES 1 LUMINAIRE WITH FORWARD THROW OPTIC, WALL MOUNTED AT 6M - DSX1.2.LA224.FW - HOLOPHANE	4	12.2 kg	110	0.09
EX2	162W (10000LM) D-SERIES 0 LUMINAIRE WITH FORWARD THROW OPTIC, TWIN HEAD COLUMN MOUNTED AT 6M - DSX0.1.LA104.FW.BLS - HOLOPHANE	2	8.0 kg	123	0.09
EX3	11W (2000LM) DENVER ID WALL WITH LONG AND NARROW THROW OPTIC, WALL MOUNTED AT 5M - DWL.1.LA024.NR.W011 - HOLOPHANE	2	6.5 kg	135	N/A
EX4	6.5W (1000LM) DENVER ID WALL WITH LONG AND NARROW THROW OPTIC C/W PIR, WALL MOUNTED AT 3.5M - DWL.1.LA014.NR.W007.PL0 - HOLOPHANE	10	6.5 kg	127	N/A



TYPICAL LIGHTING COLUMN AND
DRAW PIT SECTION 'DETAIL A'



TYPICAL LIGHTING COLUMN AND
DRAW PIT PLAN 'DETAIL 1'

NOTES

- DO NOT SCALE FROM THE DRAWING.
- ALL EXTERNAL LIGHTING COLUMNS ARE TO BE PROVIDED WITH PRE-FORMED DEMOUNTABLE POLE CHAMBER SYSTEM WHICH COMBINE COLUMN AND CABLE CHAMBER FOR EASE OF WIRING AND MAINTENANCE.
- ALL LV CABLING DUCTS ARE TO HAVE SLOW RADIUS BENDS.
- EXTERNAL LIGHTING IS TO BE OPERATED BY ASTRONOMICAL TIME CLOCK COMPLETE WITH MANUAL OVERRIDE SWITCH. TIME SETTING DETAILS TBC ON SITE.

AF	AS FITTED	LH	21/05/2024
Rev.	Description	By	Date

AS FITTED



Project UNIT 3 WINGATES,
BOLTON

Title UNIT 3 EXTERNAL LIGHTING
& LUX PLOT LAYOUT

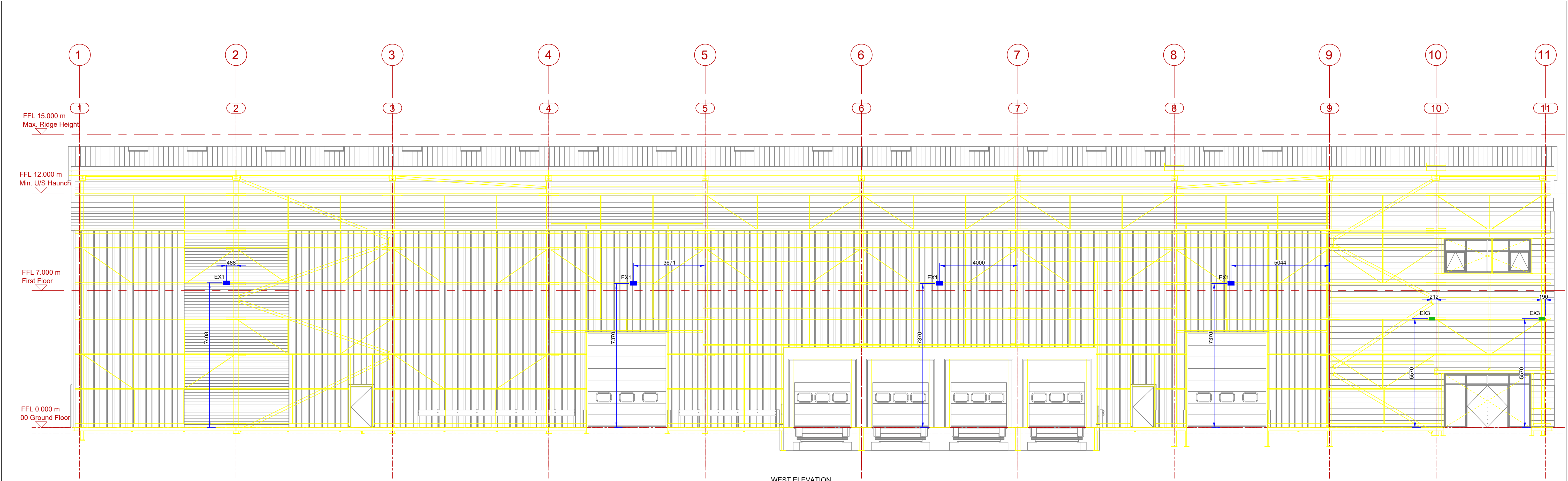
Scale 1:500 Drg. Size A1 Date 02.11.2023

Drawn LH Checked TW Approved XX

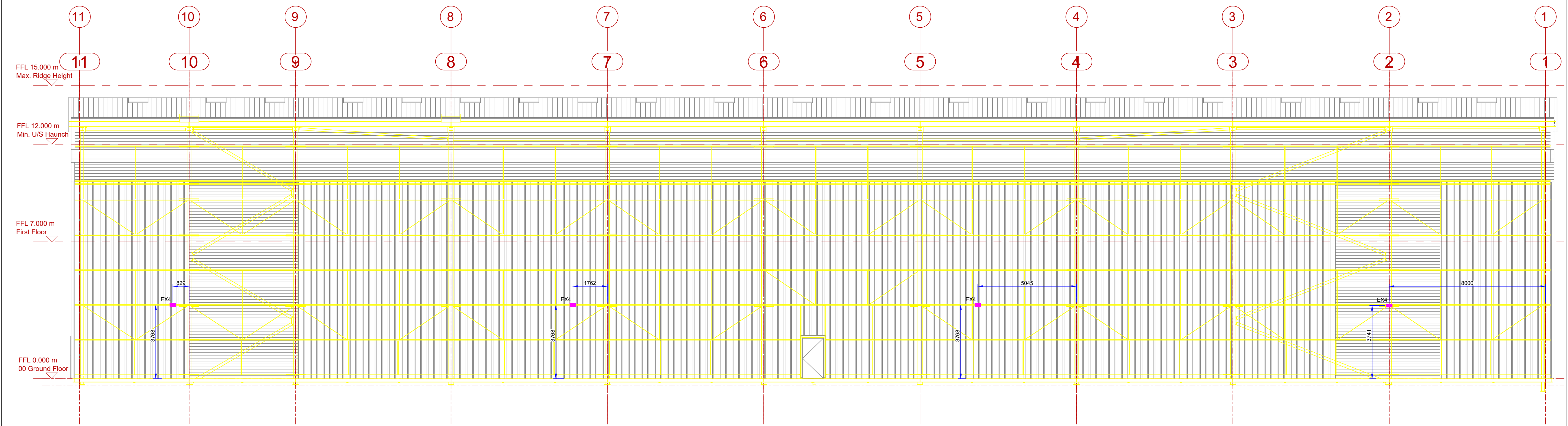
Drg. No. P23012-EBM-EX-XX-DR-E-0931 Rev. AF

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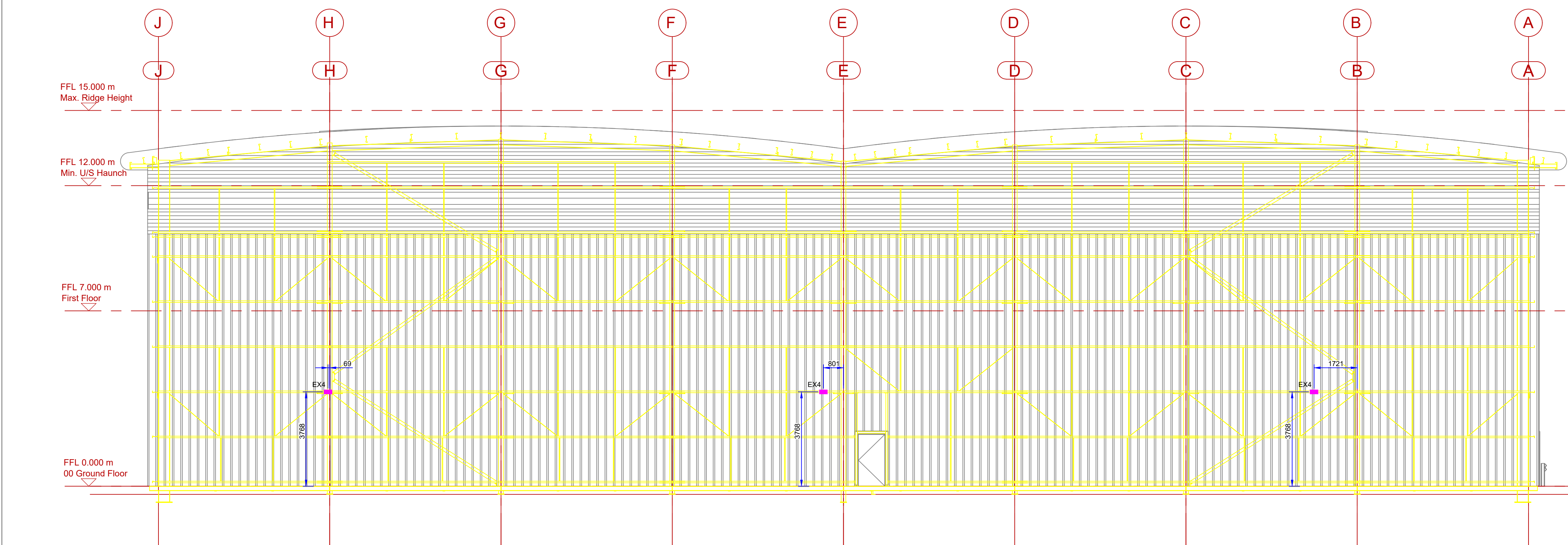
10m SCALE 1:500



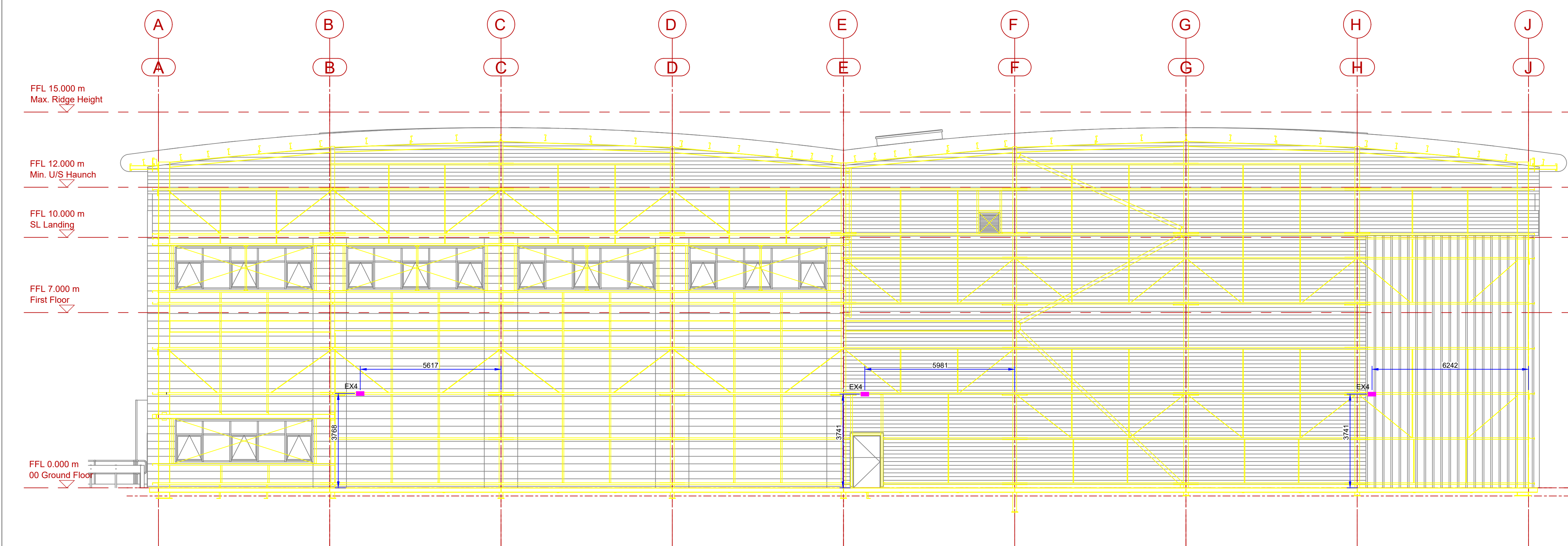
WEST ELEVATION
1:100



EAST ELEVATION
1:100



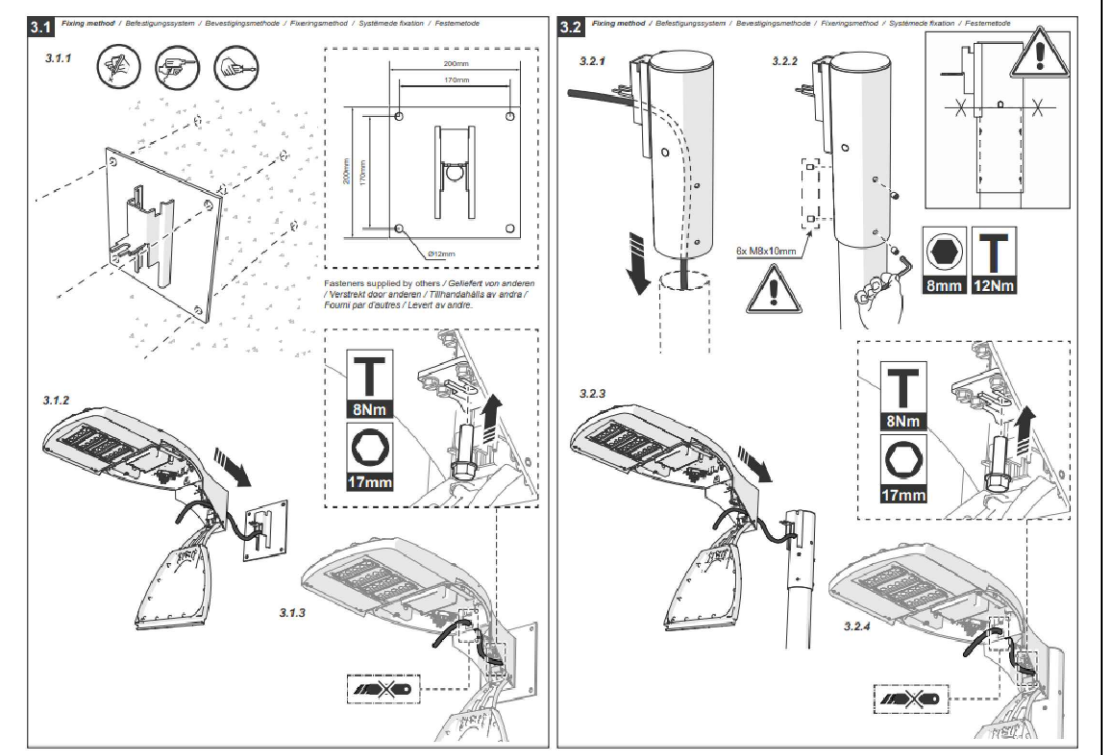
NORTH ELEVATION
1:100



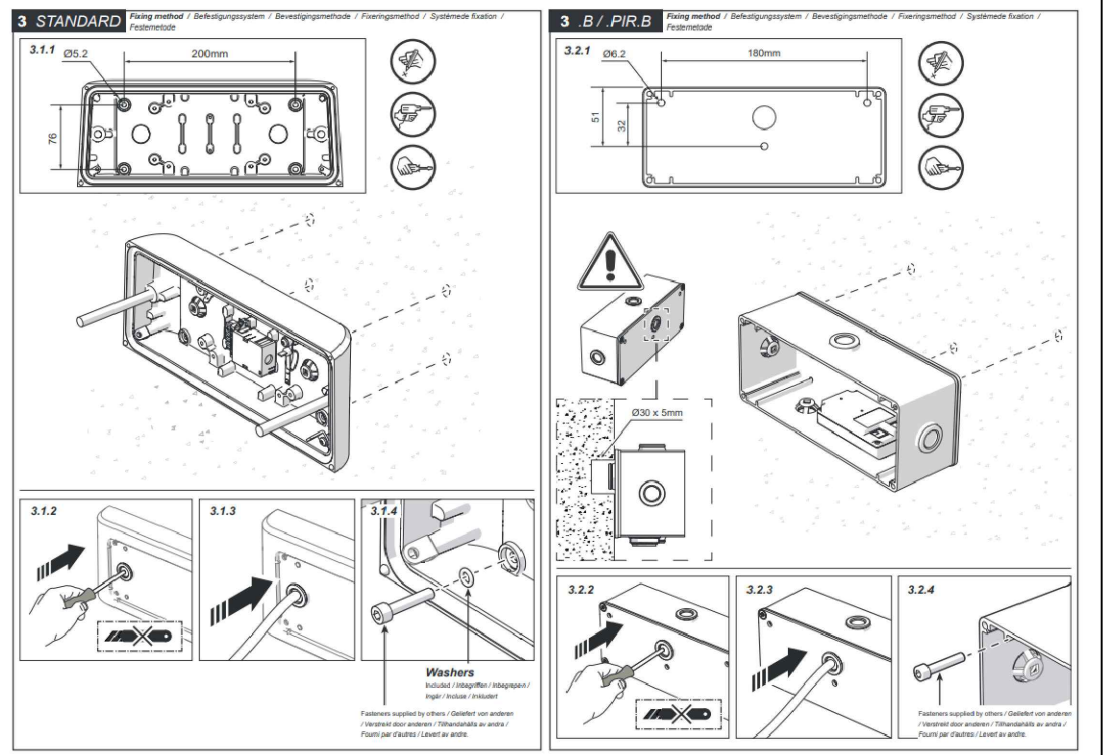
SOUTH ELEVATION
1:100



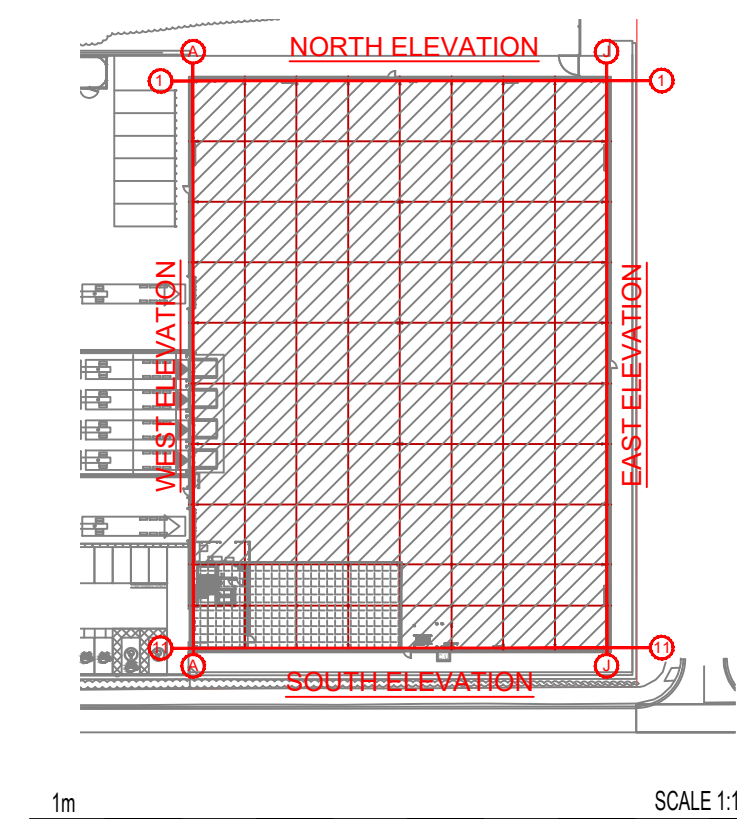
D SERIES 1 LUMINAIRE
REFERENCE 'EX1'



DENVER ID WALL
REFERENCE 'EX3 & EX4'



LEGEND OF EXTERNAL LIGHTING SYMBOLS					
SYMBOL	DESCRIPTION	QTY	WEIGHTS	LMW	WINDAGE
EX1	200W (2200LM) D-SERIES 1 LUMINAIRE WITH FORWARD THROW OPTIC, WALL MOUNTED AT 9M - DSK1.2 LA224 FW - HOPLOPHONE	4	12.2 kg	110	0.09
EX3	11W (2000LM) DENVER ID WALL WITH LONG AND NARROW THROW OPTIC, WALL MOUNTED AT 5M - DWL 1 LA24 NR W011 - HOPLOPHONE	2	6.5 kg	135	N/A
EX4	6.5W (1000LM) DENVER ID WALL WITH LONG AND NARROW THROW OPTIC, WALL MOUNTED AT 3.5M - DWL 1 LA24 NR W007 - HOPLOPHONE	10	6.5 kg	127	N/A

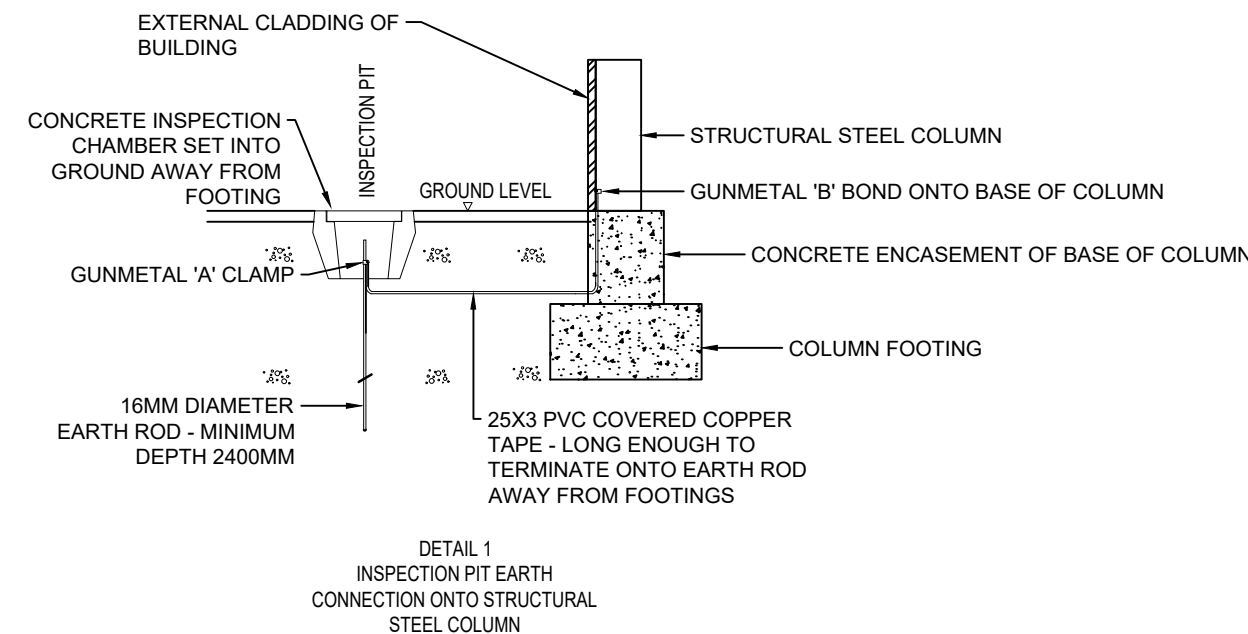
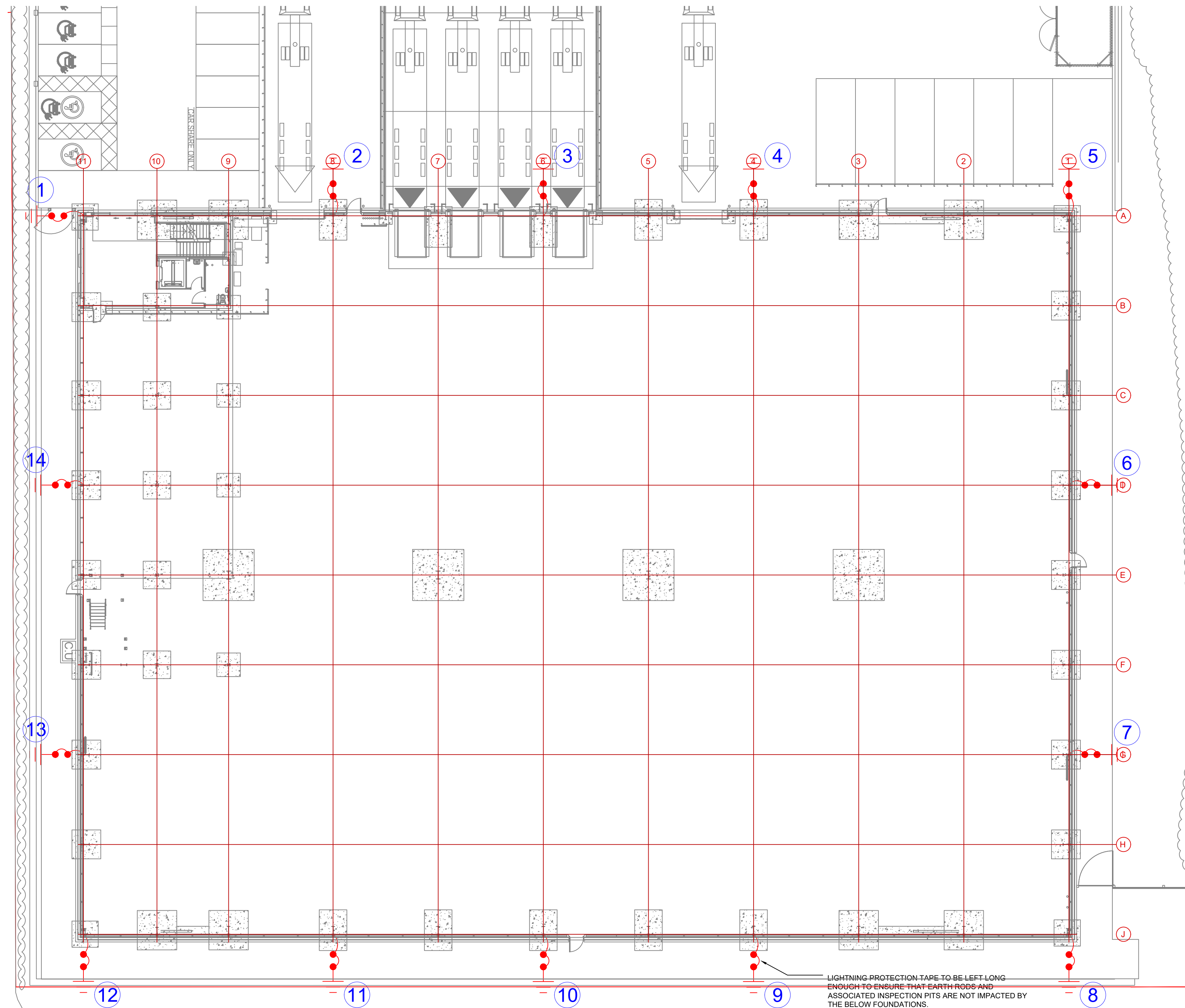


AF	AS FITTED	LH	21.05.2024
Rev.	Description	By	Date
AS FITTED			
EBM ELECTRICALS SERVICES LIMITED			
winvic			
Project	UNIT 3 WINGATES, BOLTON		
Title	UNIT 3 EXTERNAL LIGHTING ELEVATION		
Scale	1:100	Dwg. Size	A0
Drawn	LH	Checked	TW
Dwg. No.	P23012-EBM-EX-XX-DR-E-0933	Rev.	AF
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LEGEND OF LIGHTNING PROTECTION SYMBOLS	
SYMBOL	DESCRIPTION
	EARTH LOCATION AND IDENTIFICATION

NOTES

- STRUCTURAL LIGHTNING PROTECTION SCHEME DESIGNED AND INSTALLED TO LEVEL IV OF BS EN 62305:2011.
- AIR TERMINATION NETWORK CONSISTS OF UTILISED BUILDING FABRIC.
- DOWN CONDUCTORS NETWORK CONSIST OF UTILISED METALLIC STRUCTURE.
- TEST POINTS TO BE VIA INSPECTION PITS.
- EARTH TERMINATION NETWORK CONSISTS OF 2.4M X 16MM COPPERBOND EARTH RODS COMPLETE WITH POLYMER INSPECTION PITS.
- LIGHTNING PROTECTION TAPE TO BE LEFT LONG ENOUGH TO ENSURE THAT EARTH RODS AND ASSOCIATED INSPECTION PITS ARE NOT IMPACTED BY THE BELOW FOUNDATIONS.



1m SCALE 1:200

AF	AS FITTED	LH	21/05/2024
Rev.	Description	By	Date

AS FITTED



Project UNIT 3 WINGATES,
BOLTON

Title UNIT 3 STRUCTURAL LIGHTNING
PROTECTION LAYOUT

Scale 1:200 Drg. Size A1 Date 16.10.2023

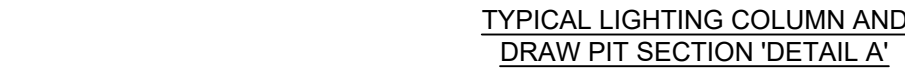
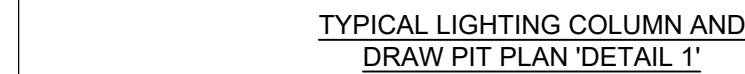
Drawn LH Checked TW Approved XX


Drg. No. P23012-EBM-EX-XX-DR-E-0934 Rev. AF

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1x50mm (MIN) LV DUCT
TO LIGHTING COLUMN

3



<u>SYMBOL</u>	<u>DESCRIPTION</u>
	6m EXTERNAL LIGHTING COLUMN

<u>SYMBOL</u>	<u>DESCRIPTION</u>
EVC	ELECTRIC VEHICLE CHARGER

<u>LEGEND OF SMALL POWER & DATA SYMBOLS</u>	
<u>SYMBOL</u>	<u>DESCRIPTION</u>
	NEW TPN DISTRIBUTION BOARD

1. DO NOT SCALE FROM THE DRAWING.
2. ALL HV / LV CABLE DUCTS ARE TO HAVE SLOW RADII BENDS.
3. ALL DUCTS ARE TO BE LEFT WITH DRAW CORDS FOR EASE OF FUTURE CABLE PULLING.
4. ALL DUCTS AND BELOW GROUND SERVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE NUIS STANDARD.
5. ALL DRAWT PITS ARE TO BE HEAVY DUTY TYPE TO WITHSTAND THE ASSOCIATED VEHICLE TRAFFIC, DEPENDING UPON AREA.
6. ALL EXTERNAL LIGHTING COLUMNS TO BE PROVIDED WITH PRE-FORMED DEMOUNTABLE POLE CHAMBER SYSTEMS WHICH COMBINE COLUMN CHAMBER AND CABLE CHAMBER FOR EASE OF WIRING AND MAINTENANCE.
7. ALL BT DUCTING AND CHAMBERS TO BE INSTALLED TO BT SPECIFICATION AND STANDARDS.
8. ALL HV / LV CABLES ARE PROVIDED WITH THE NECESSARY WARNING MARKER TAPES.
9. ALL BELOW GROUND DUCTING IS TWIN WALL TYPE COMPLETE WITH SMOOTH INTERIOR.



AS FITTED

AS FITTED

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

Drawn	LH	Checked	TW	Approved	XX
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