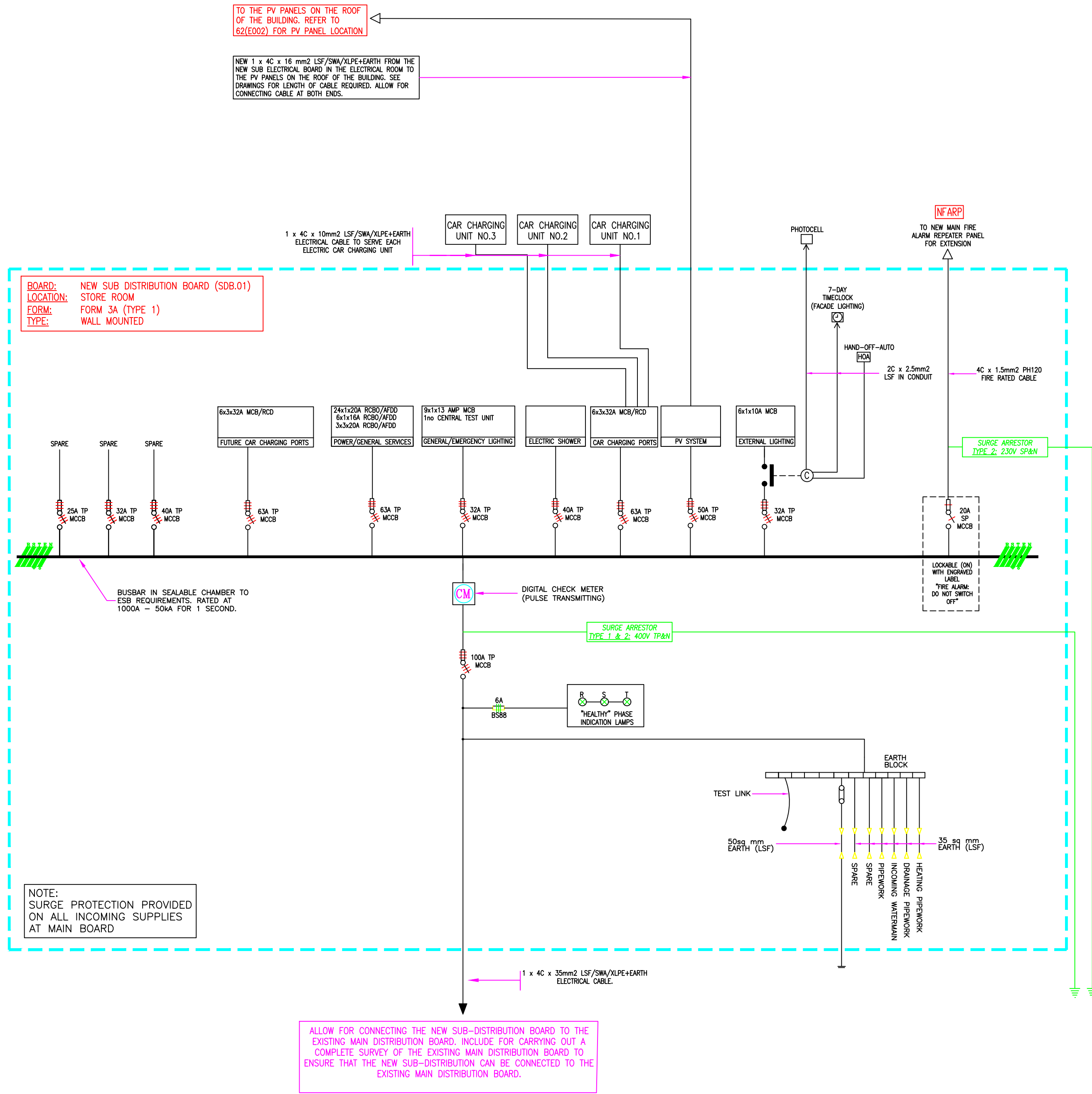
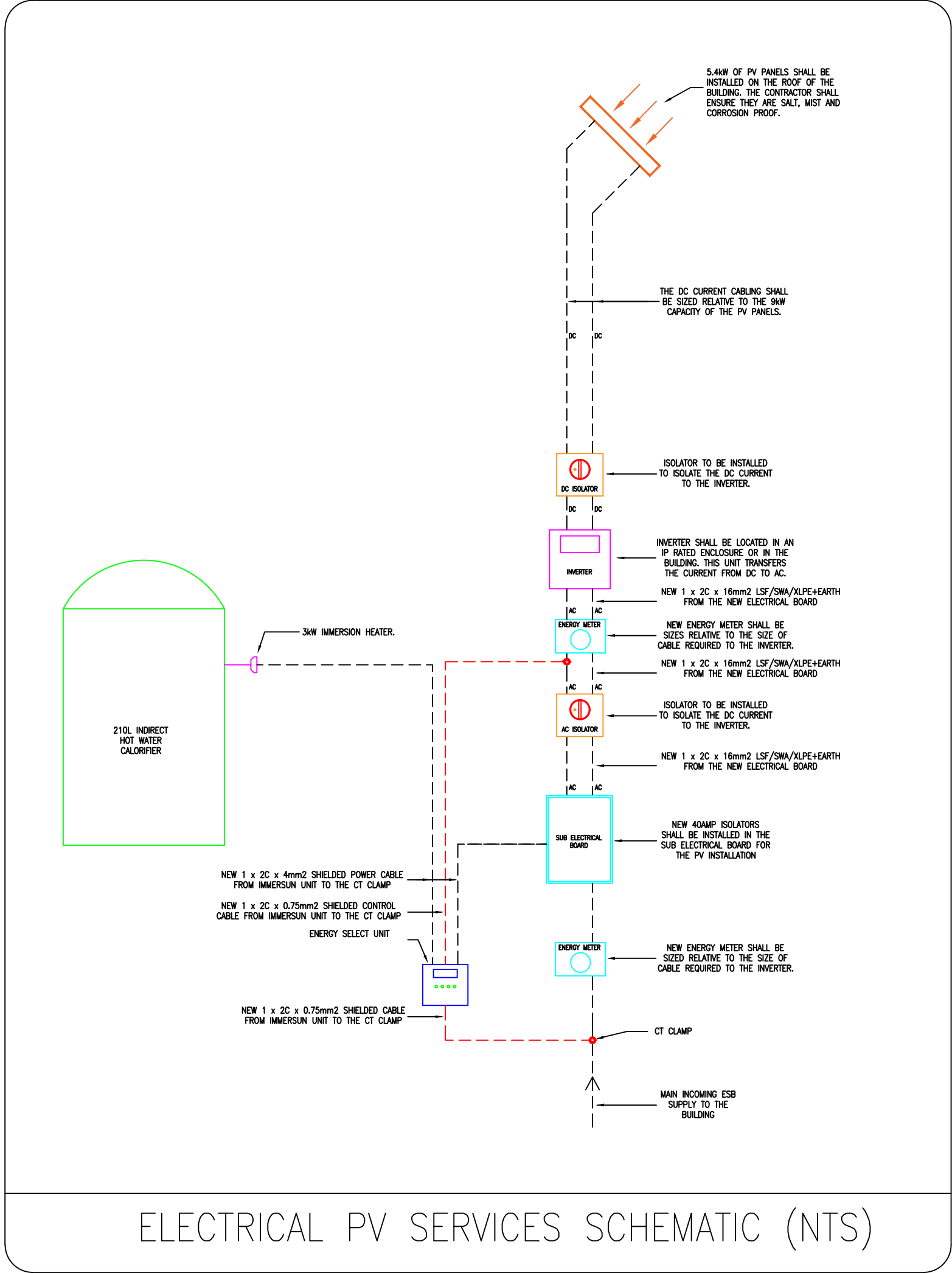


MCB'S SHALL BE TYPE B,C,D TO ISEN 60898 TO THE FOLLOWING TABLE		
TYPE	INSTANTANEOUS TRIP CURRENT	APPLICATION
B	5 x In	RESISTIVE LOADS
C	10 x In	DISCHARGE LIGHTING, SMALL MOTORS ETC.
D	20 x In	LARGE INDUCTIVE LOADS, LARGE MOTORS, WELDING PLANT, ETC.

NOTE: SIZES OF EARTHS TO CONFORM WITH THE FOLLOWING TABLE	
CROSS SECTIONAL AREA OF CONDUCTOR, S sqmm	CROSS SECTIONAL AREA OF CORRESPONDING PROTECTIVE CONDUCTOR.
$S \leq 16$	S
$16 < S \leq 35$	16
$S > 35$	0.5S



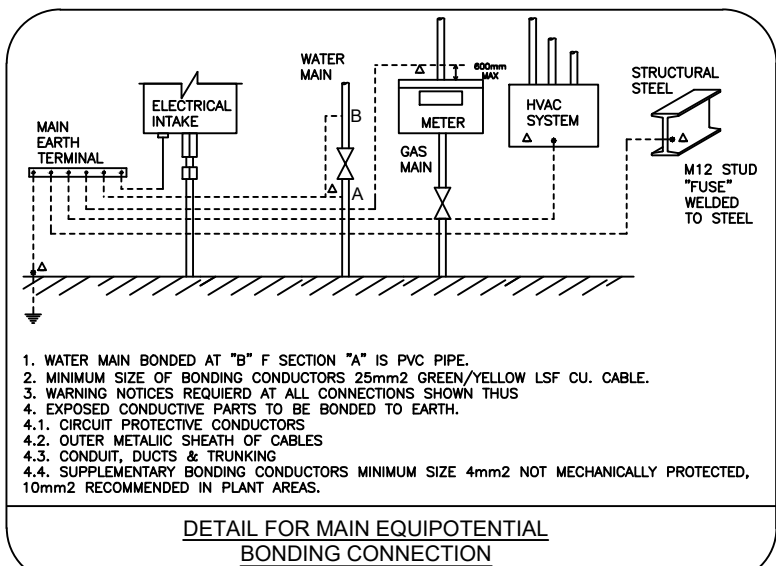
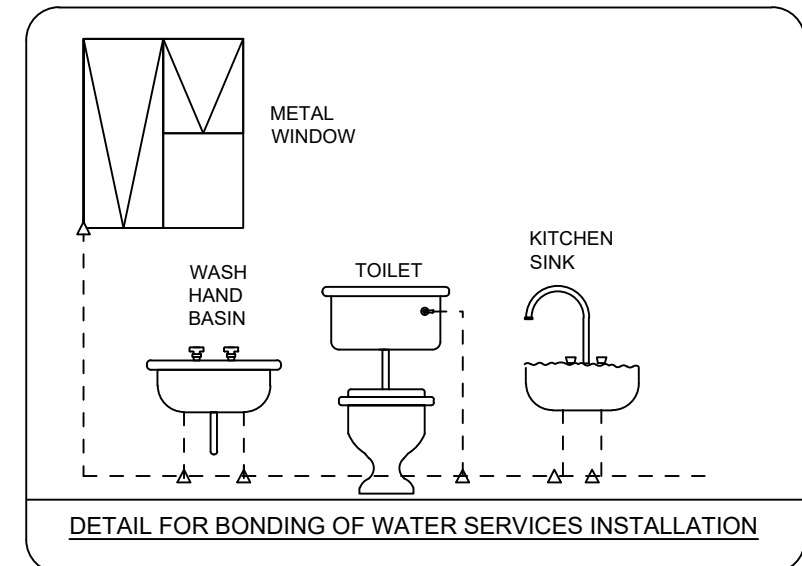
ELECTRICAL SCHEMATIC



ELECTRICAL PV SERVICES SCHEMATIC (NTS)

SCHEMATIC SYMBOLS

MCB	MINIATURE CIRCUIT BREAKER	E	EARTHING
RCB	RESIDUAL CURRENT DEVICE	ELTU	EMERGENCY LIGHTING TEST UNIT
SWA	STEEL WIRED ARMoured	P	PHOTOCELL
XLPE	CROSS-LINKED POLYETHYLENE	7-DAY	7-DAY DIGITAL TIMECLOCK
LSF	LOW SMOKE FLAME	C	CONTACTOR C/W OVERLOAD PROTECTION
A	AMP	MFAP	MAIN FIRE ALARM PANEL
3 PHASE SWITCH FUSE		ADVCP	AOV CONTROL PANEL
H.O.A	HAND-OFF AUTO SWITCH	MIAP	MAIN INTRUDER ALARM PANEL
MET	MAIN EARTH TERMINAL	3 PHASE BUSBAR	
MAIN EARTH ELECTRODES		C	CONTACTOR
CONTACTOR C/W OVERLOAD PROTECTION		3-PHASE ISOLATOR	



GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL DRAWINGS & SPECIFICATIONS.
2. THE CONTRACTOR SHALL CO-ORDINATE FULLY WITH ALL OTHER TRADES BEFORE COMMENCING WORK. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL THE NECESSARY INFORMATION TO ALLOW THE MAIN CONTRACTOR CO-ORDINATE ALL SERVICES.
3. THE MECHANICAL CONTRACTOR SHALL ALLOW FOR CO-ORDINATING THE MECHANICAL INSTALLATION WITH THE ELECTRICAL CONTRACTOR ON SITE. EXTRA COSTS INCURRED DUE TO THE CO-ORDINATION EXERCISE NOT BEING COMPLETED WILL NOT BE ACCEPTED BY THE ENGINEER.
4. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS TO BE TAKEN ON SITE.
5. THE CONTRACTOR SHALL ALLOW FOR THE SUPPLY AND INSTALLATION OF ALL ELECTRICAL SERVICES INDICATED ON THIS DRAWING.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO IDENTIFY SUITABLE FINAL ROUTES FOR CABLE CONTAINMENT, ELECTRICAL SERVICES, ETC. AS INDICATED ON THE DRAWINGS.
7. NEW MAINS RUN OF ELECTRICAL CONTAINMENT SHALL BE INSTALLED IN THE AREAS AS INDICATED. THIS IS INDICATIVE ONLY AND IF THE CONTRACTOR FINDS A MORE CONVENIENT ROUTE FOR THE ELECTRICAL SERVICES ON SITE THEN THAT WILL BE ACCEPTABLE.
8. FINAL LOCATION OF ALL ITEMS OF SOCKETS/IT POINTS/LIGHTING, ETC. SHALL BE AGREED ON SITE WITH THE EMPLOYERS REPRESENTATIVE AND THE CLIENT.
9. ALL SERVICES THROUGH FIRE BARRIERS SHALL BE SLEEVED EACH SIDE OF THE BARRIER. THE MAIN CONTRACTOR SHALL ALLOW FOR FIRE PROOFING THE OPES AFTER SERVICES IS INSTALLED.
10. THE CONTRACTOR SHALL ALLOW FOR ALL NECESSARY LABOUR, WIRING AND ATTENDANCES IN COMPLETING ALL THE ELECTRICAL WORKS AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS.

ELECTRICAL SCHEMATIC NOTES:

11. THE ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL SERVICES FOR THIS PROJECT ARE INSTALLED IN ACCORDANCE WITH THE ETCI REGULATIONS.
 12. SEE ELECTRICAL SCHEMATIC FOR SPECIFIC DETAILS ON THE ELECTRICAL BOARD IN THE EXTENSION OF THE BUILDING.
 13. ANY SINGLE PHASE CIRCUIT FED DIRECTLY FROM A THREE PHASE DISTRIBUTION BOARD SHALL HAVE THE APPROPRIATE PHASE COLOUR EXTENDED INTO THE SINGLE PHASE CIRCUITS FED FROM THAT PHASE.
 14. REFER TO TABLE 51C COLOUR CODE FOR CABLE CORES AND INSULATED CONDUCTORS OF AMENDMENT No. 2 ETI01:2004/A2:2005 OF THE NATIONAL RULES FOR ELECTRICAL INSTALLATIONS.
 15. SURGE PROTECTION TO BE INSTALLED ON THE ELECTRICAL BOARD AS INDICATED. SEE SPECIFICATION FOR FURTHER DETAILS.
 16. EXTERNAL LIGHT SETTINGS TO BE CONTROLLED BY A COMBINATION OF TIMECLOCK AND HAND-OFF-AUTO SWITCH.
 17. THE SUB ELECTRICAL DISTRIBUTION BOARD SHALL BE 'FORM 3A'.
 18. MAIN INCOMING RCB SHALL HAVE A RATED PROSPECTIVE SHORT CIRCUIT CURRENT OF NOT LESS THAN 40 kA AT A POWER FACTOR OF 0.2, AND SHALL BE TESTED TO P2 CATEGORY IEC157-1.
 19. BUSBARS SHALL BE HDHC COPPER OF UNIFORM CROSS SECTION AND SHALL COMPLY FULLY WITH BS 159. THE BUSBAR SYSTEM SHALL BE TYPE TESTED IN ACCORDANCE WITH IEC 439 AND BE CAPABLE OF CARRYING THE CONTINUOUS LOAD CURRENT AS SPECIFIED.
 20. BUSBARS CONNECTIONS UP TO 63 AMP MAY BE EFFECTED BY MEANS OF CABLE. BRACED AND SUPPORTED AS NECESSARY. WHEREAS CONNECTIONS ABOVE 63 AMP SHALL BE MADE BY MEANS OF HDHC RECTANGULAR SECTION COPPER BUSBAR, INSULATED AND SUPPORTED AS NECESSARY.
 21. INSTALLATION RADII ON MEDIUM VOLTAGE CABLES SHALL BE AS LARGE AS POSSIBLE AND SHALL IN NO INSTANCE BE LESS THAN 18 TIMES THE OVERALL CABLE DIAMETER.
 22. THE ENGINEERS APPROVAL / COMMENT / VERIFICATION OF WORKING OR MANUFACTURING DRAWINGS SUBMITTED BY THE CONTRACTOR SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY IN RESPECT OF THE ACCURACY OF ALL SUCH DRAWINGS NOR FROM HIS RESPONSIBILITY FOR PROVIDING EQUIPMENT SUITABLE IN DIMENSIONS, CONSTRUCTION AND FINISH.
 23. ALL SWITCHGEAR SHALL BE LABELLED WITH SCREW FIXED IVORINE LABELS INDICATING SUPPLY DESTINATION.
 24. CIRCUIT BREAKER FOR POWER SUPPLY TO FIRE ALARM TO BE INSTALLED. IN LOCKABLE ENCLOSURE WITH RED LABEL ENGRAVED 'FIRE ALARM SYSTEM - DO NOT SWITCH OFF'.
 25. ALL EARTH CABLES, SHALL BE GREEN/YELLOW COLOUR CODE AND LSF SHEATHED.
 26. THE SWITCH GEAR SUPPLIER SHALL GUARANTEE AND DEMONSTRATE THAT FULL DISCRIMINATION IS ACHIEVED THROUGHOUT THE SWITCHGEAR SYSTEM.
- PV INSTALLATION SERVICES NOTES:**
27. THERE SHALL BE A PV INSTALLATION INSTALLED ON THE ROOF OF THE BUILDING IN THE LOCATION INDICATED ON THE DRAWING. REFER TO DRAWING 62(E002) FOR LOCATION OF PV PANELS.
 28. THE ELECTRICAL CONTRACTOR SHALL ALLOW FOR LANSING WITH THE PV INSTALLER TO ENSURE THAT THEY ARE BOTH AWARE OF THE WORKS NECESSARY TO INSTALL THE PANELS.
 29. PLEASE ENSURE THAT THE LOADING OF THE ROOF ARE SUFFICIENT TO CATER FOR THE PV INSTALLATION. THERE ARE 12 PV PANELS IN TOTAL TO BE INSTALLED ON THE ROOF. EACH PANEL IS APPROXIMATELY 20KG.
 30. SEE 61(E001) IF THE SCHEMATIC INDICATING HOW THE PV SYSTEM SHALL BE INCORPORATED INTO THE NEW SUB DISTRIBUTION ELECTRICAL BOARD.

T1	22.07.2028	K. DAVITT	G. BENNDORF
REV	DATE	PREPARED BY/PROJECT ENGINEER	QUALITY CHECK BY:
M&E CONSULTANT			
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ELECTRICAL SERVICES SCHEMATIC			
Architect			
M'CLOUGHLIN ARCHITCTURE Unit 4B, Elm House Millennium Park, Naas Co.Kildare, Ireland			
Scale:			
N.T.S. @ A1			
Drawn By:			
K. DAVITT			
Job No.			
21-093			
Drawing No.			
61(E001)			
Rev.			
T1			

ALL ELECTRICAL SERVICES THROUGHOUT THE NEW EXTENSION ARE TO BE CHASED INTO WALLS.