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# SPECIFICATION OF ELECTRICAL EQUIPMENT FOR TWO FLOOR

| NO. | DESCRIPTION | SIGNS | UNIT | PIECES | REMARKS |
|---|---|---|---|---|---|
| 1 | FLUORESCENT LIGHT FIXTURE2x36W,50Hz,220V | | NO | 40 | |
| 2 | FLUORESCENT LIGHT FIXTURE1x40W,50Hz,220V | | NO | 12 | |
| 3 | TWO POLE SWITCH UNDER PLASTER 10 AMP, 1PH | | NO | 10 | |
| 4 | TWO WAY SWITCHES | | NO | 7 | |
| 5 | SINGLE POLE SWITCH UNDER PLASTER,10AMP,1PH | | NO | 2 | |
| 6 | SOCKET OUTLET - SINGLE PHASE | | NO | 49 | |
| 7 | PANEL BOARD WITH1X50 AMP MINE CB,2X16AMP CB+RCBO,10X20AMP CB+RCBO | | NO | 1 | All CB16&20Amp+RCBO. |
| 8 | WIRE 1X2.5 mm for lighting. | | M | 800 | |
| 9 | WIRE 1X4mm² for sockets. | | M | 850 | |
| 10 | WIRE 1(3x16)mm² from mine panel to distribution panel. | | M | 7 | |
| 11 | Cable1x16 mm² FOR GROUNDING | | M | 12 | |
| 12 | CABLE 1x25mm² FOR GROUNDING | | M | 15 | |
| 13 | PVC CONDUIT 1 INCH | | M | 500 | |
| 14 | PVC JOINT BOX | | NO | 63 | |
| 15 | GROUNDING ROD 3M LENGTH, Ø20MM | | NO | 4 | |
| 16 | MAIN DISTRIBUTION PANEL COMPLETE WITH 100 AMP MAIN C B AND2X40 , 1X50 AMP(CB) AUTOMATIC FUSE. | | M | 1 | THIS TYPE IS FOR TWO FLOOR |
| 17 | CABLE 1(2x25mm²) FOR MINE LINE | | M | 50 | THIS TYPE IS FOR TWO FLOOR. |
| 18 | PVC CONDUIT3 INCH | | M | 50 | |
| 13 | PVC CONDUIT 2 INCH FOR 1(3X16)MM CABLE | | M | 6 | |

RCBO(Residual Circuit Breaker Over Current

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| | | | | | |
|---|---|---|---|---|---|
| | MINISTRY OF EDUCATION DEPARTMENT OF CONSTRUCTION | | STANDARD SCHOOL DESIGN IN AFGHANISTAN | TYPE | PROJECT NAME |
| | | | | SCALE AS SHOWN (A3) | DRAWING TITLE LEGEND |
| | | | | DATE | |

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CONCRETE ENCASED ELECTRODE

SUB-PANEL (TYPICAL) AT BUILDING REMOTE FROM MDP

N
G

NEUTRAL BUS OR CONDUCTOR

GND BUS, CONDUCTOR, PANEL OR FRAME

GROUND ROD, CU-CLAD STEEL, 20 mm DIAMETER, 3M LOAG
PHASE CONDUCTORS AND BREAKERS NOT SHOWN
CONTACT AED-N (TAN) ENGINEERING FOR SPECIFIC
CONDUCTOR SIZES OR ANY CLARIFICATIONS

BUILDING STEEL
(IF AVAILABLE)

LATM RISER DIAGRAM

NOT TO SCALE

PANEL INSTALLATION DETAIL

NOT TO SCALE

MINIMUM CONTACT
AREA 50 SQ CM
( 8 SQUARE INCHES)

STEEL
COLUMN

70mm² BARE COPPER
BENDS SHALL NOT EXCEED
90 DEGREES & BENDING
RADIUS SHALL NOT BE
SMALLER THAN 203 mm

1.5M

EXOTHERMIC WELDED CONNECTION

3M

GROUND ROD
BOND TO BUILDING
GROUND SYSTEM

COLUMN GROUNDING DETAIL

NOT TO SCALE

NOTES:

1. CONDUCTOR SIZE SHALL BE AS INDICATED ON PLANS.
2. EXOTHERMIC WELDS SHALL BE AS RECOMMENDED BY MANUFACTURER FOR THE SIZE OF CONNECTION AND MATERIAL INVOLVED SEE DETAIL 5 ON SHEET SE-7.

BELOW GRADE GROUNDING ROD DETAIL

NOT TO SCALE

TOP VIEW
(COVER REMOVED)

SECTION A-A

MATERIAL LIST

- GROUND ROD
- EXOTHERMIC WELD
- GROUNDING CONDUCTOR 70mm² COPPER
- POLYMER CONCRETE FIBERGLASS REINFORCED BOX
- COVER FOR ABOVE BOX
- GRAVEL OR CRUSHED STONE

GROUND ROD ACCESS
BOX INSTALLATION DETAIL

NOT TO SCALE

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| | | | |
|---|---|---|---|
| MINISTRY OF EDUCATION<br>DEPARTMENT OF<br>CONSTRUCTION | | STANDARD SCHOOL DESIGN<br>IN AFGHANISTAN | TYPE<br>PROJECT NAME 6-2 CLASS SCHOOL B Brick R.C.C. SHEET ROOF<br>DRAWING TITLE GROUNDING |

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# GROUND FLOOR LIGHTING PLAN.

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| | | | | |
|---|---|---|---|---|
| MINISTRY OF EDUCATION<br>DEPARTMENT OF<br>CONSTRUCTION | STANDARD SCHOOL DESIGN<br>IN AFGHANISTAN | | TYPE | PROJECT NAME 6-2 CLASS SCHOOL, 3 Brick Roof, Brick Floor |
| | | | | DRAWING TITLE GROUND FLOOR LIGHTING PLAN |

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# GROUND FLOOR POWER PLAN.

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|---|---|---|---|---|---|
| MINISTRY OF EDUCATION DEPARTMENT OF CONSTRUCTION | | STANDARD SCHOOL DESIGN IN AFGHANISTAN | TYPE | | PROJECT NAME 6-2 CLASS SCHOOL B Brick Roof SHEET ROOF |
| | | | | | DRAWING TITLE GROUND FLOOR POWER PLAN |

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PANEL BOARD NAME : PB1 50 AMP BUS BAR RATE MAIN BREAKER :50 A
PANEL LOCATION: GROUND FLOOR PANEL 220 VOLT , 1 PHASE , 3 WIRE ,50HZ 30KA ISO / 0.5 SEC RECESSED MOUNTED NAME ENCLOSURE

| WIRE AND CONDUIT AND DESCRIPTION | | | SINGLE PHASE | | | TRIP S CIRCUIT | | | | SINGLE PHASE | | | WIRE AND CONDUIT AND DESCRIPTION | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WIRE AND CONDUIT | GND WIRE | DESCRIPTION | A (VA) | A (VA) | A (VA) | AMP | CKT | CKT | AMP | A (VA) | A (VA) | A (VA) | DESCRIPTION | GND WIRE | WIRE AND CONDUIT |
| 2(1X2.5mm²)Ø20mm | 2.5mm² | LIGHTING | 820.8000 | | | 16 | 1 | 2 | 16 | 1051.0 | | | LIGHTING | 2.5mm² | 2(1X2.5mm²)Ø20mm |
| 2(1X4mm²)Ø20mm | 4mm² | RECEPTACLE | | 2064.0000 | | 20 | 3 | 4 | 20 | | 2064.0 | | RECEPTACLE | 4mm² | 2(1X4mm²)Ø20mm |
| 2(1X4mm²)Ø20mm | 4mm² | RECEPTACLE | | | 432.0 | 20 | 5 | 6 | 20 | | | 864.0 | RECEPTACLE | 4mm² | 2(1X4mm²)Ø20mm |
| 2(1X4mm²)Ø20mm | 4mm² | RECEPTACLE | 864.0 | | | 20 | 7 | 8 | 20 | 1008.0 | | | RECEPTACLE | 4mm² | 2(1X4mm²)Ø20mm |
| 2(1X4mm²)Ø20mm | 4mm² | RECEPTACLE | | 864.0 | | 20 | 9 | 10 | 20 | | 1008.0 | | RECEPTACLE | 4mm² | 2(1X4mm²)Ø20mm |
| | | SPARE | | | 0.0 | 20 | 11 | 12 | 20 | | | 0.0 | SPARE | | |
| | | SUB - TOTAL IN (VA) | 1684.8 | 2928.0 | 432.0 | | | | | 2059.0 | 2064.0 | 864.0 | SUB - TOTAL IN (VA) | | |

| | | |
|---|---|---|
| TOTAL PHASE (A) = | 3743.8 | 17.0 |
| TOTAL PHASE (A) = | 4992.0 | 22.7 |
| TOTAL PHASE (A) = | 4296.0 | [illegible] |
| TOTAL CONNECTED LOAD | 10231.8 | 46.5 |
| DEMAND FACTOR | 0.7 | |
| DEMAND LOAD | 7022.3 | |
| 25% FUTURE LOAD | 1755.6 | |
| TOTAL LOAD | 8777.8 | |
| TOTAL AMPERE | 39.9 | |
| BREAKER SIZE | 40.0 | |

1(2x16mm²) Cu P.V.C/PVC 1+1x16mm² Cu GND
Ø50mm PVC CONDUIT

40 AMP

BP-1 GROUND FLOOR 40 AMP BUS BAR RATE ALL 16&20 CB -RCBO

| 16A | 20A | 20A | 20A | 20A | 20A | 20A | 20A | 20A | 20A | 20A | 20A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | P=0.820KVA | P=1.051KVA | P=2.0KVA | P=2.0 KVA | P=0.43 KVA | P=0.864KVA | P=0.864KVA | P=1.0 KVA | P=0.864 KVA | P=1.0 KVA | |
| 1 - 2(1X2.5mm²)+2.5mm² CU GND | 2 - 2(1X2.5mm²)+2.5mm² CU GND | 3 - 2(1X4mm²)+4mm² CU GND | 4 - 2(1X4mm²)+4mm² CU GND | 5 - 2(1X4mm²)+4mm² CU GND | 6-2(1X4mm²)+4mm² CU GND | 7-2(1X4mm²)+4mm² CU GND | 8-2(1X4mm²)+4mm² CU GND | 9-2(1X4mm²)+4mm² CU GND | 10-2(1X4mm²)+4mm² CU GND | 11- | 12- |
| LIGHTING | | RECEPTACLE | | | | | | | | SPARES | |

PANEL SCHEDULE AND SINGLE LINE DIAGRAM

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MINISTRY OF EDUCATION
DEPARTMENT OF
CONSTRUCTION

STANDARD SCHOOL DESIGN
IN AFGHANISTAN

TYPE ELECTRICAL
PROJECT NAME 6-2 CLAS
SHEET 6
DRAWING TITLE
SHEDULE

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