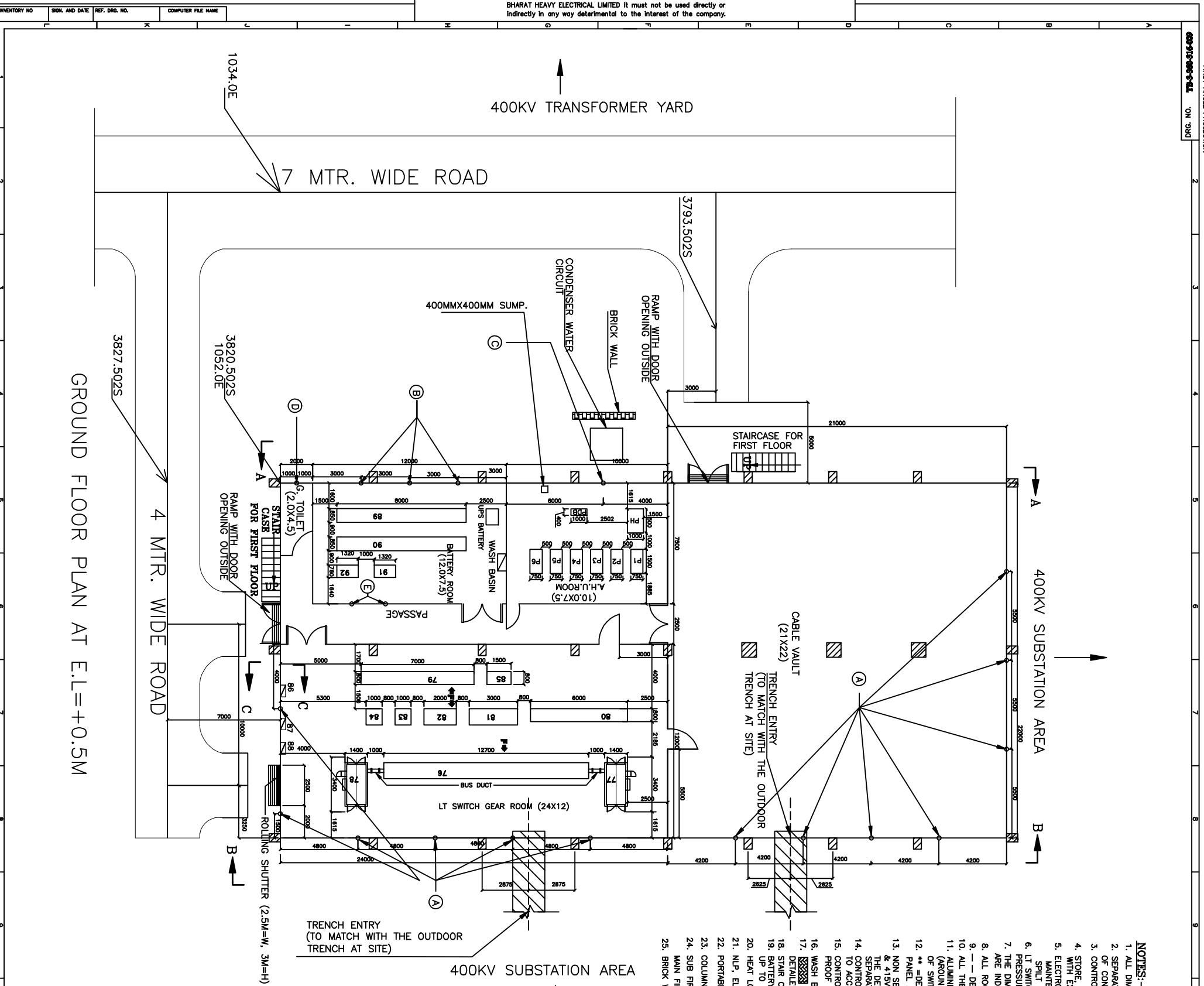


BHARAT HEAVY ELECTRICAL LIMITED It must not be used directly or indirectly in any way detrimental to the interest of the company.

FIRST ANGLE PROJECTION ON 2ND

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



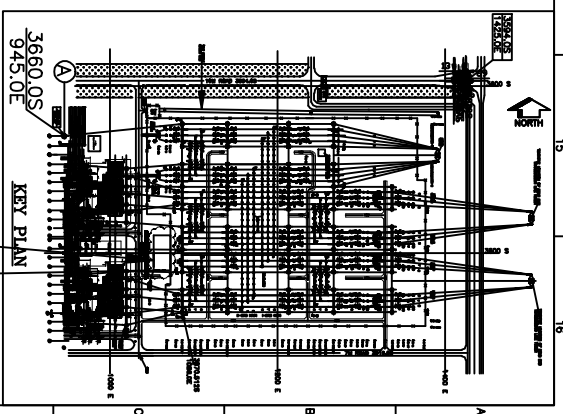
GROUND FLOOR PLAN AT E.L.=+0.5M

- NOTES:-**
1. ALL DIMENSION ARE IN mm EXCEPT ELEVATION OF BUILDING AND OVERALL ROOM DIMENSION ARE IN METER.
  2. SEPARATE DRAWING SHALL BE SUBMITTED FOR DETAILED ARCHITECTURE AND TRENCH LAYOUT
  3. CONTROL ROOM BUILDING.
  4. STORE, PANTRY AND TOILET SHALL BE PROVIDED WITH EXHAUST FAN. BATTERY ROOM SHALL BE PROVIDED WITH EXHAUST FAN AND LOWERS FOR FRESH AIR.
  5. ELECTRONICS TEST LAB, LIBRARY, CLIM RECORD ROOM, SHIFT INCUBATOR ROOM, MAINTENANCE STAFF ROOM, MAINTENANCE ROOM & ENGINEERS ROOM SHALL BE PROVIDED WITH SPLIT AC OF ADEQUATE CAPACITY.
  6. LT SWITCH GEAR ROOM & CABLE VAULT SHALL BE PROVIDED WITH SUPPLY AIR FAN FOR POSITIVE PRESSURE VENTILATION. AHU ROOM SHALL BE PROVIDED WITH FRESH AIR FAN.
  7. THE DIMENSION AND ARRANGEMENT OF PANELS INSIDE ROOM ARE INDICATIVE AND SHALL BE FINALISED DURING DETAILED ENGINEERING.
  8. ALL ROOM EXCEPT AHU ROOM SHALL BE PROVIDED WITH WINDOW.
  9. -- DENOTE FUTURE PANEL.
  10. ALL THE DIMENSIONS OF THE ROOMS ARE FROM CENTER LINE OF WALL (THICKNESS OF WALL 230MM)
  11. ALUMINIUM GLAZED WINDOW SHALL BE PROVIDED IN THE FIRST FLOOR (AROUND THE CONTROL ROOM, RELAY ROOM & PLCC ROOM) TO HAVE A CLEAR VIEW OF SWITCHYARD EQUIPMENT.
  12. -- DETAILED ARRANGEMENT OF MONORAIL, PLATFORM, REMOVABLE HANDRAIL AND ELECTRICAL HOIST FOR LIFTING OF PANEL AT FIRST FLOOR SHALL BE SHOWN IN CIVIL DRAWING. RATING OF MONORAIL FOR EQUIPMENT LIFTING IS 1.5 TON.
  13. NON SEGREGATED PHASE BUS DUCT BETWEEN DRY TYPE TRANSFORMER & 415V ACDB SHALL BE SUITABLE FOR FUTURE EXPANSION & 415V ACDB BUS DUCT CONNECTION SHALL BE SHOWN IN SEPARATE DRAWING.
  14. CONTROL ROOM TOWARDS CABLE VAULT SHALL BE SUITABLE EXTENDIBLE TO ACCOMMODATE CONTROL & RELAY PANEL FOR FOUR FUTURE BAYS.
  15. CONTROL ROOM, RELAY ROOM, LT SWITCH GEAR ROOM, BATTERY ROOM & PLCC ROOM SHALL BE PROVIDED WITH FIRE PROOF DOOR. THE FIRE PROOF DOOR SHALL BE RATED FOR A MINIMUM OF TWO HOURS.
  16. WASH BASIN SHALL BE PROVIDED IN BATTERY ROOM
  17. IN AIR LOCK LOBBY ENTRY ALUMINIUM GLAZED AUTOMATIC CENTER OPENING SLIDING DOOR SHALL BE PROVIDED. DETAILS SHALL BE SHOWN IN CIVIL DRAWING. AUTOMATIC DOOR POWER SUPPLY SHALL BE FED FROM EMERGENCY AC SECTION OF LT SWITCHGEAR.
  18. STAIR CASE SHALL BE COVERED. LOWER HEIGHT DOOR SHALL BE PROVIDED FOR BOTH EXTERNAL STAIR CASE.
  19. BATTERY SHALL BE LEAD ACID PLANT TYPE. BATTERY ROOM FLOOR SHALL BE PROVIDED WITH ACID PROOF TILES. UP TO HEIGHT 2.3M FROM FTL.
  20. HEAT LOAD PER PANEL IS APPROX. 100W. WEIGHT PER PANEL IS APPROX. 300Kg
  21. NIP, ELP, DLP, ACAN AND FIRE ALARM PANEL SHALL BE WALL MOUNTED.
  22. PORTABLE PUMP AND MOTOR SHALL BE PROVIDED IN AHU ROOM FOR LIFTING THE WATER FROM 400MMX400MM SUMP.
  23. COLUMN LOCATION ARE INDICATIVE AND DETAILED SHALL BE SHOWN IN CIVIL DRAWING.
  24. SUB FIRE ALARM PANEL SHALL BE LOCATED IN SWITCHYARD CONTROL ROOM AND SAME SHALL BE INTERFACED WITH MAIN FIRE ALARM PANEL. INTERFACE SHALL BE IN BRHL TBG SCOPE.
  25. BRICK WALL SHALL BE PROVIDED TOWARDS SOUTH OF CONDENSER WATER CIRCUIT.

**LEGEND:-**

- M.L.D.B= MAIN LIGHTING DISTRIBUTION BOARD
- W.D.B= WELDING DISTRIBUTION BOARD
- E.L.D.B= EMERGENCY LIGHTING DISTRIBUTION BOARD
- L.T= LIGHTING TRANSFORMER
- D.C.D.B= DC DISTRIBUTION BOARD
- A.H.U= AIR HANDLING UNIT
- P.L.C.C= POWER LINE CARRIER COMMUNICATION TO P6= PACKAGE UNITS
- P.H= PAN HANDLITER
- P.D.B= POWER DISTRIBUTION BOARD
- M.T= 11/0.433KV, 630KVA DRY TRANSFORMER
- F.T.L= FINISHED FLOOR LEVEL
- F.G.L= FINISHED GROUND LEVEL
- F= FRONT
- CH= CHARGER
- N.L.P= NORMAL AC LIGHTING PANEL
- E.L.P= EMERGENCY AC LIGHTING PANEL
- D.L.P= DC LIGHTING PANEL
- E.P.A.B.X= ELECTRONIC PRIVATE AUTOMATIC BRANCH EXCHANGE
- I.C.C= BUS DUCT
- F.A= FIRE ALARM PANEL
- A.C.A.N= AIR CONDITIONING ANNUNCIATION PANEL.
- D.Z= AUTOMATIC CENTER OPENING DOUBLE SLIDING DOOR ALUMINIUM GLAZE
- = COLUMN
- ▨ = CABLE TRENCH

**REFERENCE DWG.:-**  
LAYOUT PLAN FOR 400KV S/S AT SURATGARH  
DWG. NO. TB-0-360-316-002



SWITCHYARD CONTROL ROOM

| REV. | DATE     | REASON FOR REVISION              | DRAWN  | CHECKED BY | APPROVED BY |
|------|----------|----------------------------------|--------|------------|-------------|
| 03   | 05-08-14 | AS PER THE LETTER DATED-14-07-14 | SK -SD | SKS        | NS          |
| 02   | 18-06-14 | AS PER THE LETTER DATED-18-06-14 | SK -SD | SKS-SD     | NS-SD       |
| 01   | 11-04-14 | AS PER THE LETTER DATED-28-10-13 | SK -SD | SKS-SD     | NS-SD       |

**DRAWN BY**  
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED

**PROJECT**  
2X660MW THERMAL POWER PLANT, SURATGARH STAGE-V, UNIT 7 & 8 AT SURATGARH, RAJASTHAN

**ENGINEER**  
TATA CONSULTING ENGINEERS LIMITED

**EPC CONTRACTOR**  
BHARAT HEAVY ELECTRICALS LTD  
TRANSMISSION BUSINESS GROUP

| DEPT. CODE | DRN. RK  | NAME | SIGN. | DATE     |
|------------|----------|------|-------|----------|
| 422        | DESN SK  |      | -SD-  | 14.08.13 |
|            | CHD. SKS |      | -SD-  |          |
|            | APPD. SS |      | -SD-  |          |

| TITLE  | CV | ME | EL | I&C | DEPT. SCALE | BHEL/SUB VENDOR DRG. NO. |
|--|----|----|----|-----|-------------|--------------------------|
| CONCEPTUAL CONTROL ROOM BUILDING LAYOUT FOR 400KV S/S AT SURATGARH |    |    |    |     | 1:600       | TB-3-360-316-009         |