

NOTES:
1. ALL DIMENSIONS ARE IN MM & ELEVATIONS ARE IN METRES.

LEGEND
 TG TURBINE GENERATOR
 BFP BOILER FEED PUMP
 EL ELEVATION
 HP HIGH PRESSURE

EXHIBIT-4

| REV. | DATE | DESCRIPTION | DESIGNED BY | CHECKED BY | APPROVED BY |
|------|----------|-----------------------|----------------------------|------------------------------|-------------|
| 1 | 19.01.13 | ISSUED WITH RFPIT DPM | ASST. ENGR. SRI. KISHA RAO | ENR. SRI. MURTHI ELEC. INST. | |

| | |
|-------------|------------------|
| PROJECT NO. | 30-3111152-M-004 |
| SCALE | 1:150 |
| SHEET NO. | 1 OF 1 |
| REVISED BY | |
| DESIGNED BY | |
| CHECKED BY | |
| APPROVED BY | |

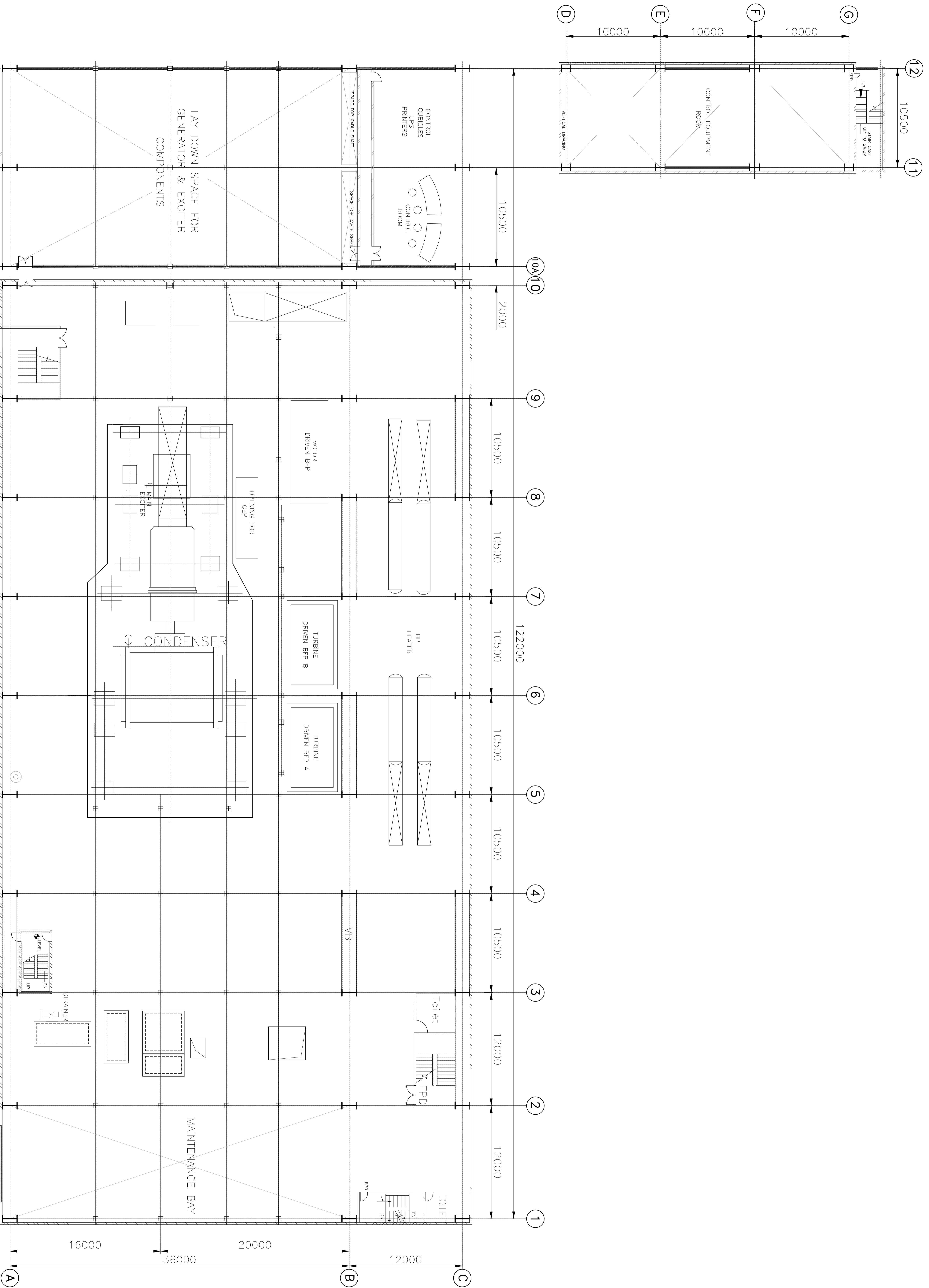
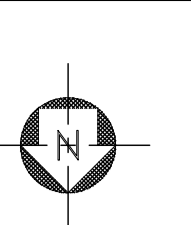
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|-------------|------------------|
| PROJECT NO. | 30-3111152-M-004 |
| SCALE | 1:150 |
| SHEET NO. | 1 OF 1 |
| REVISED BY | |
| DESIGNED BY | |
| CHECKED BY | |
| APPROVED BY | |

FIGHTNER
 Consulting Engineers
 (India) Private Limited
 Chennai, Mumbai, Bangalore

HASSAN THERMAL POWER PROJECT
 1 X 660 MW COAL BASED POWER PLANT
 BISHANWALI, DISTRICT KANNUR & KASHEWALI VILAGE, HASSAN, KARNATAKA

GENERAL ARRANGEMENT OF T.G. BUILDING
 MEZANNINE FLOOR PLAN AT EL. 8.5m

DWG. NO. 30-3111152-M-004



LEGEND
 TG TURBINE GENERATOR
 BFP BOILER FEED PUMP
 EL ELEVATION
 HP HIGH PRESSURE

NOTES:
 1. ALL DIMENSIONS ARE IN MM & ELEVATIONS ARE IN METRES.

| REV. | DATE | DESCRIPTION | DESIGNED BY | CHECKED BY | APPROVED BY |
|------|----------|---------------------|-------------|------------|-------------|
| 1 | 13.01.13 | ISSUED WITH DWG FOR | ASAD | ASAD | ASAD |

| | | | |
|----------|----------|----------|----------|
| PROJECT | DATE | DESIGNER | DATE |
| DESIGNED | 13.01.13 | CHECKED | 13.01.13 |
| DRAWN | 13.01.13 | APPROVED | 13.01.13 |
| SCALE | 1:150 | SHEET | 1 OF 1 |

| | | | |
|----------|----------|----------|----------|
| PROJECT | DATE | DESIGNER | DATE |
| DESIGNED | 13.01.13 | CHECKED | 13.01.13 |
| DRAWN | 13.01.13 | APPROVED | 13.01.13 |
| SCALE | 1:150 | SHEET | 1 OF 1 |

| | | | |
|----------|----------|----------|----------|
| PROJECT | DATE | DESIGNER | DATE |
| DESIGNED | 13.01.13 | CHECKED | 13.01.13 |
| DRAWN | 13.01.13 | APPROVED | 13.01.13 |
| SCALE | 1:150 | SHEET | 1 OF 1 |

| | | | |
|----------|----------|----------|----------|
| PROJECT | DATE | DESIGNER | DATE |
| DESIGNED | 13.01.13 | CHECKED | 13.01.13 |
| DRAWN | 13.01.13 | APPROVED | 13.01.13 |
| SCALE | 1:150 | SHEET | 1 OF 1 |

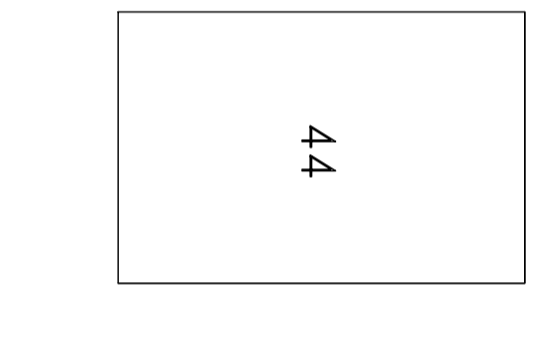
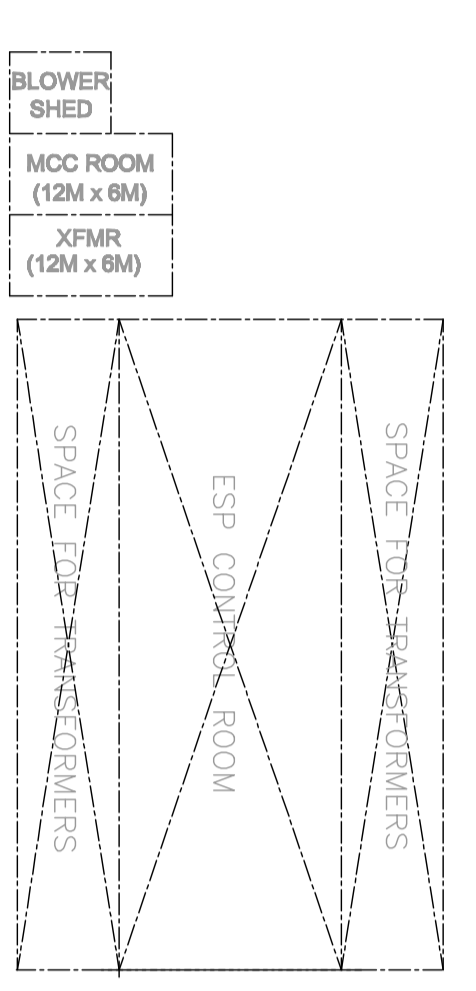
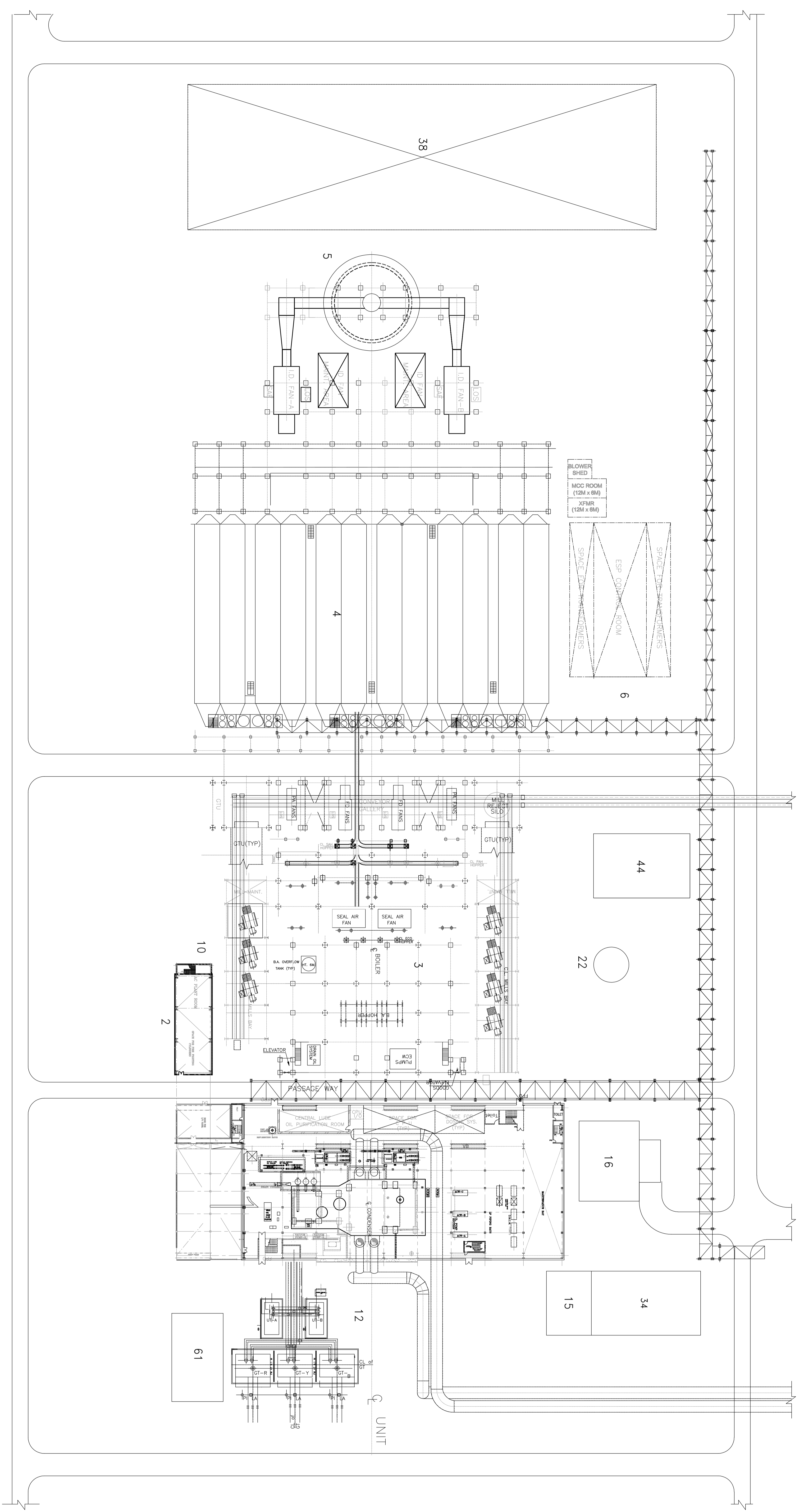
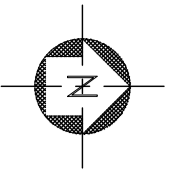
EXHIBIT-5

FICHTNER
 Consulting Engineers
 (India) Private Limited
 Chennai, Mumbai, Bangalore

HASSAN THERMAL POWER PROJECT
 1 X 660 MW COAL BASED POWER PLANT
 BIRTHINALLI, KODAKKANNEZHAWA & KANTHAWA VALLEY, HASSAN, KARNATAKA

GENERAL ARRANGEMENT OF T.G. BUILDING
OPERATING FLOOR PLAN AT EL. 17.0 m

DWG. NO. 30-3111152-M-005



| ITEM NO. | DESCRIPTION |
|----------|---|
| 1 | STEAM TURBINE BUILDING |
| 2 | CONDENSATE STORAGE TANK |
| 3 | STEAM GENERATOR AREA |
| 4 | ELECTROSTATIC PRECIPITATOR |
| 5 | CHIMNEY |
| 6 | ELECTROSTATIC PRECIPITATOR CONTROL ROOM |
| 10 | MILL REFLECT BUNKER |
| 12 | TRANSFORMER YARD |
| 16 | SERVICE BUILDING |
| 22 | CONDENSATE STORAGE TANK |
| 34 | COMPRESSOR HOUSE (INSTRUMENT & SERVICE AIR) |
| 38 | SPACE FOR FGD PLANT (FUTURE) |
| 44 | ASH SLURRY PH. ASH WATER PH. & VACUUM PH |
| 61 | AWS WASHER ROOM/ AAW PUMP HOUSE |

LEGEND
 JNT JUNCTION TOWER
 BOW BELT CONVEYOR

NOTES:
 1. ALL DIMENSIONS ARE IN MM & ELEVATIONS ARE IN METRES.

EXHIBIT-6

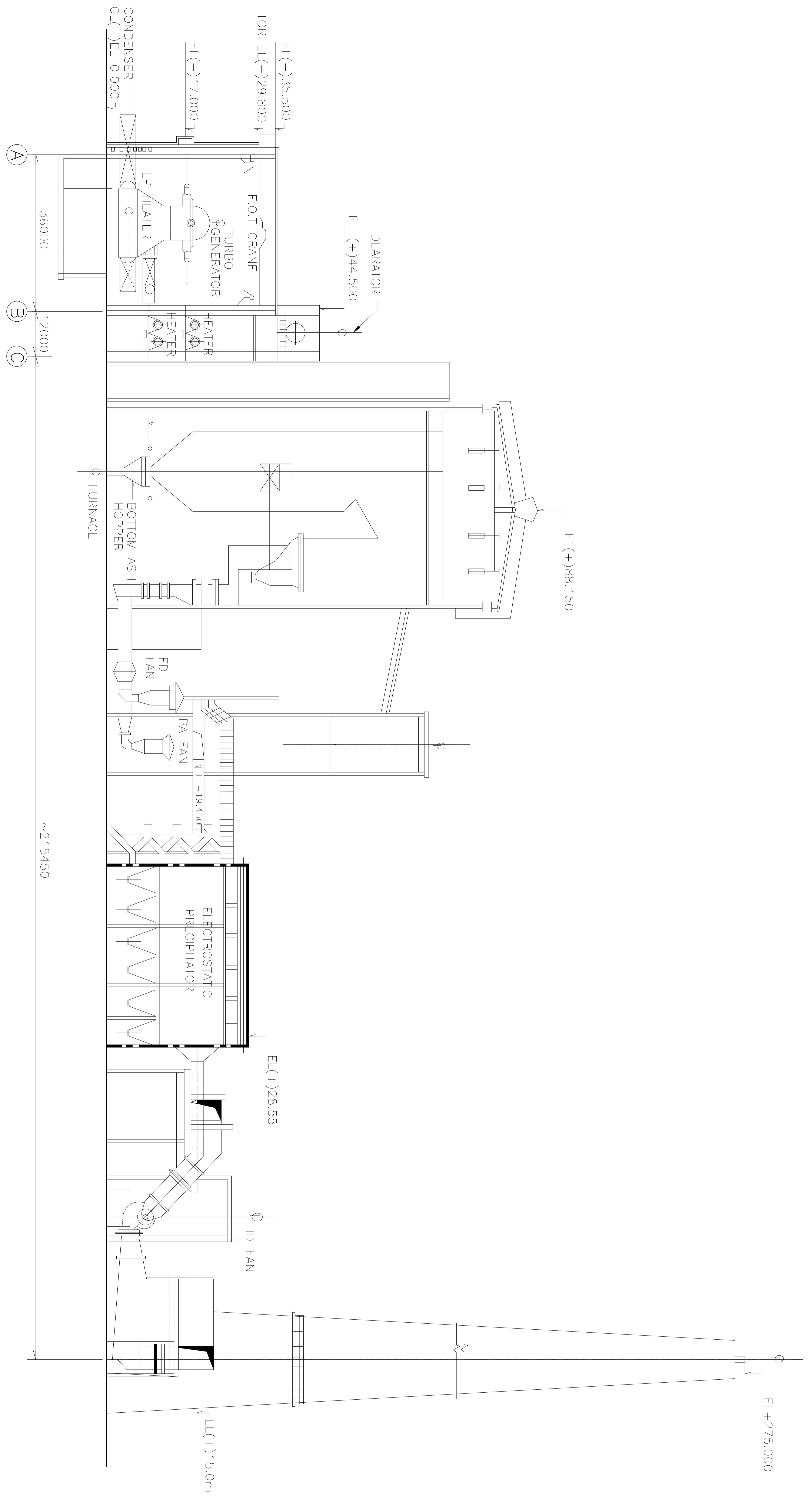
| REV. | DATE | DESCRIPTION | BY | CHKD. | APPROVED BY |
|------|----------|----------------------|----|-------|-------------|
| 1 | 13.01.13 | ISSUED WITH DWG. DMR | | | |

FIGHTNER
 Consulting Engineers
 (India) Private Limited
 Chennai, Mumbai, Bangalore

HASSAN THERMAL POWER PROJECT
 1 x 660 MW COAL BASED POWER PLANT
 BISTONWALI, DISTRICT KARNATAKA & KARNATAKA, INDIA, HASSAN, KARNATAKA

STEAM GENERATOR AREA
 GENERAL ARRANGEMENT PLAN

DESIGNED: HSGR (10.01.12)
 CHECKED: MAB (12.01.12)
 DEPT. HEAD: DP (12.01.12)
 PROJECT NO.: 30-311152
 SHEET NO.: 1 OF 1
 SCALE: 1:150
 DWG. NO.: 30-311152-M-006



NOTES:
 1. ALL DIMENSIONS ARE IN MM & ELEVATIONS ARE IN METRES.
 2. DIMENSIONS INDICATED ARE TYPICAL ONLY AND THE SAME SHALL BE FINALISED DURING DETAILED ENGINEERING.

LEGEND
 FD FORCED DRAFT
 ID INDUCED DRAFT
 PA POSITIVE AIR FLOW
 TOP TOP OF ASH
 EOT ELECTRICAL OVERHEAD TRAWELLING

| REV. | DATE | DESCRIPTION | DESIGNED BY | CHECKED BY | APPROVED BY |
|------|----------|-----------------------|-------------|------------|-------------|
| 1 | 19.01.13 | ISSUED WITH DRAFT DPR | SSR | SRM | SRM |

| | | | |
|---|------------------|---|----------|
| FICHTNER Consulting Engineers (India) Private Limited Chennai, Madurai, Bangalore | | HASSAN THERMAL POWER PROJECT 1 X 660 MW COAL BASED POWER PLANT BISTRAWALI, DODDANKANNEHALI & KANAKANURU TALUK, HASSAN, KARNATAKA | |
| DESIGNED BY | SSR | DATE | 19.01.13 |
| CHECKED BY | SSR | DATE | 19.01.13 |
| APPROVED BY | SRM | DATE | 19.01.13 |
| PROJECT NO. | 30-3111152 | SCALE | 1:150 |
| DWG. NO. | 30-3111152-M-007 | SHEET | 1 OF 1 |

EXHIBIT-7

| DESCRIPTION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | |
|--------------------------|-------|--------|-------|-------|------|----|------|------|------|-----|------|------|------|------|-----|-----|-----|---------|-------|---------|------|------|-------|-------|------|------|-----|-----|------|------|------|-----|---|
| MEDIUM | RW | CLW | CLWST | CTMW | FPW | FW | APHW | SW | FLW | PW | DMPW | BWFP | DMW | DMW | DMW | NW | SW | CW | ACW | CW | CHPW | AHPW | CWSS | SSCT | SSCS | CTBD | | | | | | | |
| OPERATING PRESSURE (MWC) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| OPERATING TEMP. (°C) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| FLOW M /HR. (NORMAL) | 1950 | 1852.5 | 97.5 | 1470 | 65 | - | - | 110 | 62 | 10 | 62 | 3 | 52 | 52 | 30 | 10 | 12 | 75800 | 4025 | 79825 | 60 | 226 | 1596 | 1596 | 20 | 286 | 15 | 26 | 45 | 50 | 45 | 10 | |
| FLOW M /DAY (NORMAL) | 46800 | 44460 | 2340 | 35280 | 1560 | - | - | 2640 | 1488 | 240 | 1488 | 72 | 1248 | 1040 | 720 | 240 | 288 | 1819200 | 96600 | 1915800 | 1440 | 5424 | 38304 | 38304 | 480 | 6864 | 360 | 624 | 1080 | 1200 | 1080 | 240 | |

NOTES :

1. ALL FLOW QUANTITIES INDICATED ARE TENTATIVE.
2. ZERO DISCHARGE CONCEPT WITH SOLID WASTE MANAGEMENT SHALL BE ADOPTED. ONLY IF TOTAL DISSOLVED SOLIDS LEVEL IS HAVING MORE THAN 2100 PPM & EXCESS.
3. COC OF 5 HAS BEEN CONSIDERED FOR COOLING WATER SYSTEM.
4. FOR ASH HANDLING SYSTEM JET PUMP SYSTEM IS ENVISAGED.
5. DISCHARGE FROM ETP AND NEUTRALIZATION TANK IS INTERMITTENT.
6. MAKEUP WATER FOR SERVICE TANK IS INTERMITTENT.

LEGEND:

| | |
|--|---|
| 1) RW: RAW WATER | 19) CWSS: COOLING WATER TO SIDE STREAM |
| 2) CW: CLARIFIED WATER | 20) SSCT: SIDE STREAM TO COOLING TOWER |
| 3) CTMW: COOLING TOWER MAKE-UP WATER | 21) SCS: SIDE STREAM TO COLLECTION SUMP |
| 4) FW: FIRE WATER | 22) CLWST: CLARIFIED WATER TO SLUDGE THICKENER. |
| 5) FPW: FILTRATION PLANT WATER | |
| 6) APHW: AIR PREHEATER WASH. | |
| 7) AHPW: ASH HANDLING PLANT WATER. | |
| 8) SW: SERVICE WATER | |
| 9) FLW: FILTERED WATER | |
| 10) PW: POTABLE WATER. | |
| 11) DMPW: DE-MINERALIZED PLANT WATER | |
| 12) BWFP: BACK WASH TO FILTRATION PLANT. | |
| 13) DMW: DE-MINERALIZED WATER. | |
| 14) NW: NEUTRALISED WATER. | |
| 15) SW: SERVICE WATER. | |
| 16) CW: COOLING WATER. | |
| 17) ACW: AUXILIARY COOLING WATER. | |
| 18) CTBD: COOLING TOWER BLOW DOWN. | |

RIVER WATER ANALYSIS :

| SL. NO. | PARAMETER | UNIT | DATA |
|---------|---|------|-----------|
| 1 | COLOUR IN HAZEN UNITS | | <5.0 |
| 2 | COLOUR | | ODOURLESS |
| 3 | CONDUCTIVITY @250 CM MICROMMOS | Cm | 140 |
| 4 | TURBIDITY AS NTU | | |
| 5 | pH VALUE | | 8.0 |
| 6 | TOTAL DISSOLVED SOLIDS | mg/l | 100 |
| 7 | TOTAL SUSPENDED SOLIDS | mg/l | <5 |
| 8 | TOTAL HARDNESS AS CaCO ₃ | mg/l | 60.0 |
| 9 | CALCIUM AS Ca | mg/l | 13.62 |
| 10 | CALCIUM OXIDE AS CaO | mg/l | 19.04 |
| 11 | MAGNESIUM AS Mg | mg/l | 6.31 |
| 12 | CHLORIDE AS Cl | mg/l | 7.09 |
| 13 | SULPHATES (AS SO ₄) | mg/l | 10.0 |
| 14 | SULPHATES (AS SO ₂) | mg/l | 0.0 |
| 15 | METHYL ORANGE ALKALINITY AS CaCO ₃ | mg/l | 60.0 |
| 16 | PHENOLPHTHALEIN ALKALINITY AS CaCO ₃ | mg/l | 0.0 |
| 17 | CARBONATE AS CaCO ₂ | mg/l | 0.0 |
| 18 | NITRATE AS NO ₃ | mg/l | 2.62 |
| 19 | NITRATE AS NO ₂ | mg/l | 0.0 |
| 20 | FLUORIDE AS F | mg/l | 0.37 |
| 21 | AMMONIA AS NH ₃ | mg/l | 0.0 |
| 22 | IRON AS FE | mg/l | 0.08 |
| 23 | PHOSPHATE AS PO ₄ | mg/l | <0.01 |
| 24 | SILICA AS SiO ₂ | mg/l | 3.60 |
| 25 | SODIUM AS NA | mg/l | 10.20 |
| 26 | POTASSIUM AS K | mg/l | 2725 |
| 27 | MANGANESE AS Mn | mg/l | <0.01 |
| 28 | AMMONICAL NITROGEN AS N | mg/l | 0.0 |
| 29 | BIO CHEMICAL OXYGEN DEMAND FOR 5 DAYS AT 20° | mg/l | 0.0 |
| 30 | CHEMICAL OXYGEN DEMAND | mg/l | 0.0 |

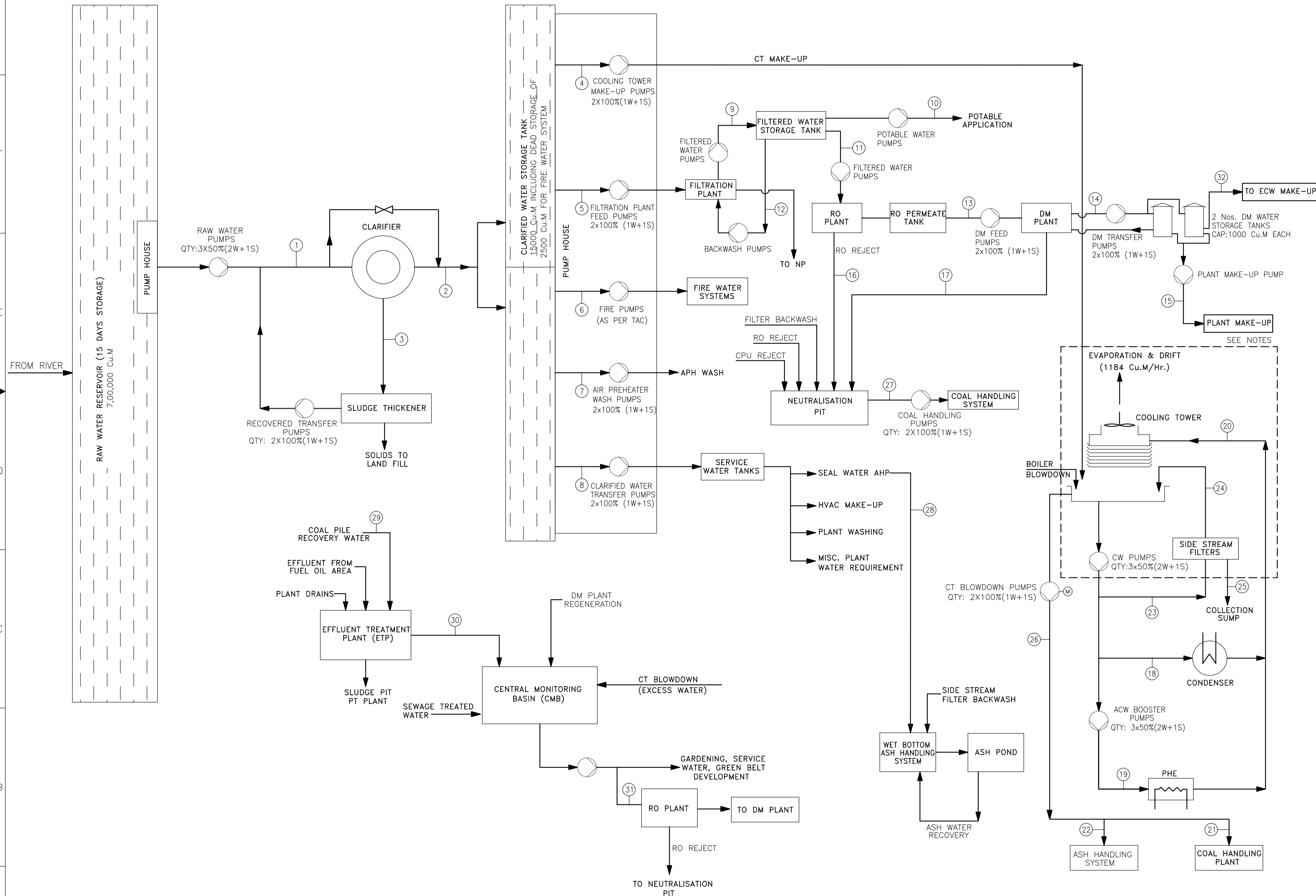


EXHIBIT-8

| | | | | | | | |
|------|----------|-----------------------|------|------|------|-------|-------|
| REV. | DATE | DESCRIPTION | DRN. | STR. | MECH | ELEC. | INST. |
| A | 19.01.12 | ISSUED WITH DRAFT DPR | | | | | |

FICHTNER Consulting Engineers (India) Private Limited
Chennai, Mumbai, Bangalore.

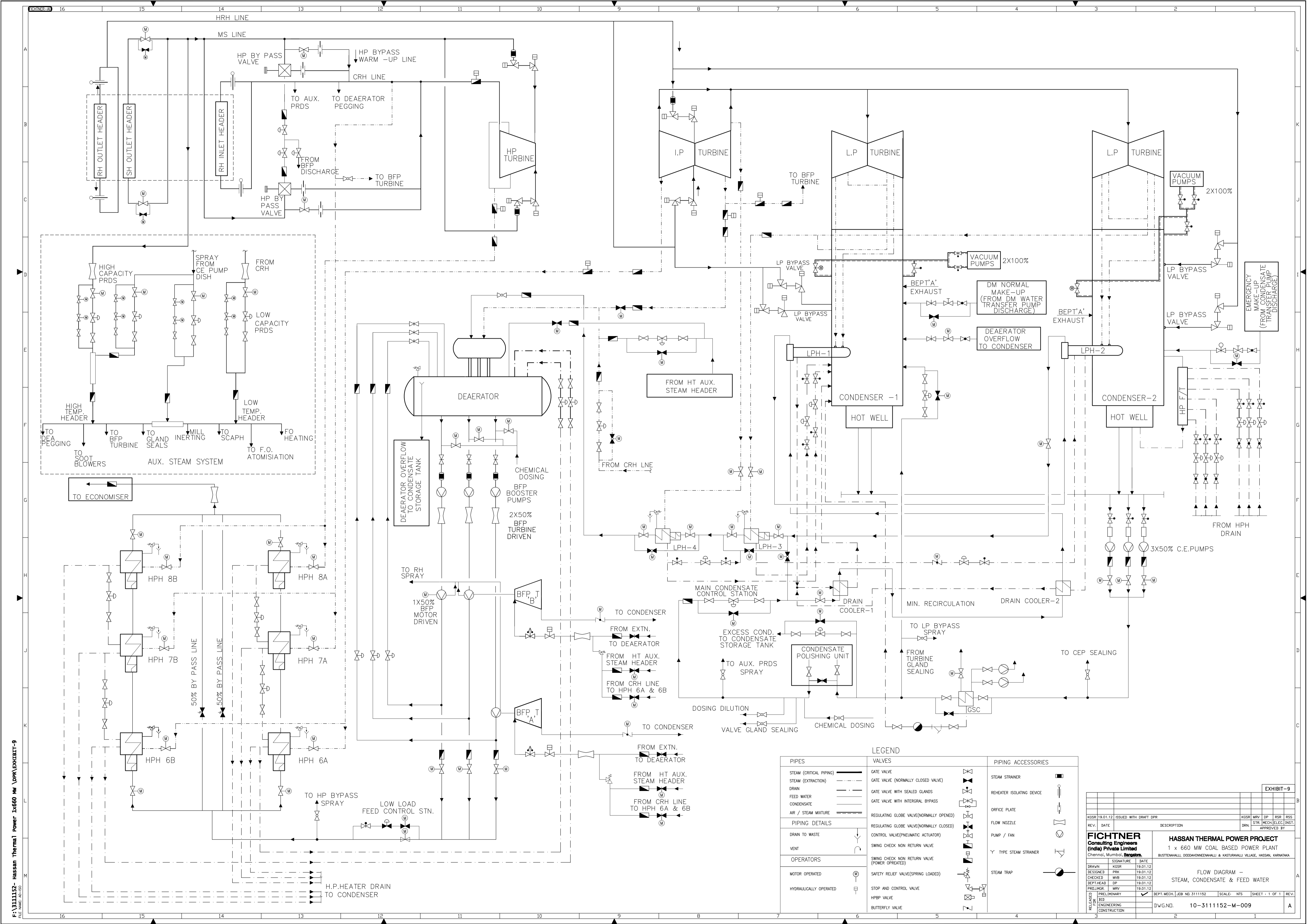
HASSAN THERMAL POWER PROJECT
1 x 660 MW COAL BASED POWER PLANT
BUSTENAHALLI, DODDAHOMNENAHALLI & KASTURAWALLI VILLAGE, HASSAN, KARNATAKA

| | | | |
|------------|-----|------|----------|
| DRAWN | CBP | DATE | 17.01.12 |
| DESIGNED | ASC | DATE | 17.01.12 |
| CHECKED | ASC | DATE | 17.01.12 |
| DEPT. HEAD | DP | DATE | 17.01.12 |
| PROJ. MGR. | MRV | DATE | 17.01.12 |

WATER BALANCE DIAGRAM

| | | | | | | |
|--------------|--------------|------------|-----------------|------------|--------------|------|
| RELEASED FOR | PRELIMINARY | DEPT. MECH | JOB NO. 311152 | SCALE: NTS | SHEET 1 OF 1 | REV. |
| | BID | | | | | |
| | ENGINEERING | DWG. NO. | 10-311152-M-008 | | | A |
| | CONSTRUCTION | | | | | |

F:\311152-HASSAN 1x660MW \DPR\EXHIBIT-8



F:\311152- Hassan Thermal Power 1x660 MW \DPR\EXHIBIT-9
 FILE NAME: 02-50

| PIPES | | VALVES | | PIPING ACCESSORIES | |
|-------------------------|--|---|--|---------------------------|--|
| STEAM (CRITICAL PIPING) | | GATE VALVE | | STEAM STRAINER | |
| STEAM (EXTRACTION) | | GATE VALVE (NORMALLY CLOSED VALVE) | | REHEATER ISOLATING DEVICE | |
| DRAIN | | GATE VALVE WITH SEALED GLANDS | | ORFICE PLATE | |
| FEED WATER | | GATE VALVE WITH INTEGRAL BYPASS | | FLOW NOZZLE | |
| CONDENSATE | | REGULATING GLOBE VALVE(NORMALLY OPENED) | | PUMP / FAN | |
| AIR / STEAM MIXTURE | | REGULATING GLOBE VALVE(NORMALLY CLOSED) | | Y TYPE STEAM STRAINER | |
| PIPING DETAILS | | CONTROL VALVE(PNEUMATIC ACTUATOR) | | STEAM TRAP | |
| DRAIN TO WASTE | | SWING CHECK NON RETURN VALVE | | | |
| VENT | | SAFETY RELIEF VALVE(Spring Loaded) | | | |
| OPERATORS | | STOP AND CONTROL VALVE | | | |
| MOTOR OPERATED | | HPBP VALVE | | | |
| HYDRAULICALLY OPERATED | | BUTTERFLY VALVE | | | |

| | | | |
|---|--|---|--|
| DESIGNED PRK 19.01.12 CHECKED MVB 19.01.12 DEPT HEAD DP 19.01.12 PROJECT MVR 19.01.12 RELEASED BY MVR 19.01.12 ENGINEERING CONSTRUCTION | | ISSUED WITH DRAFT DPR DATE 19.01.12 DESCRIPTION HASSAN THERMAL POWER PROJECT 1 x 660 MW COAL BASED POWER PLANT BUSTENAHALLI, DODDANAHENNAHALI & KASTURBAHALI VILLAGE, HASSAN, KARNATAKA FLOW DIAGRAM - STEAM, CONDENSATE & FEED WATER SCALE: NTS SHEET 1 OF 1 DWG.ND. 10-311152-M-009 | |
|---|--|---|--|

EXHIBIT-9

APPROVED BY