

TENDER SPECIFICATION

NO: BHE/PW/PUR/HZGG-CVL/1122

**CONSTRUCTION OF MISC. CIVIL WORKS AND REPAIRS / RENOVATION OF EXISTING
PLANT ROADS AND DRAINS INCLUDING ALL ASSOCIATED FINISHING &
ARCHITECTURAL WORKS**

AT

**1X350MW CCPP, GUJARAT STATE ELECTRICITY CORPORATION LIMITED (GSECL)
HAZIRA - GUJARAT.**

**VOLUME :I-E – Technical Specifications
(Drawings)**

BOOK NO.



BHARAT HEAVY ELECTRICALS LIMITED

(A GOVERNMENT OF INDIA UNDERTAKING)

POWER SECTOR - WESTERN REGION

SHREEMOHINI COMPLEX

345, KINGSWAY - NAGPUR 440 001

BHARAT HEAVY ELECTRICALS LIMITED

(A GOVERNMENT OF INDIA UNDERTAKING)
POWER SECTOR - WESTERN REGION
SHREEMOHINI COMPLEX
345, KINGSWAY - NAGPUR 440 001

T E N D E R S P E C I F I C A T I O N

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AT

**1X350MW CCPP, GUJARAT STATE ELECTRICITY CORPORATION LIMITED (GSECL) HAZIRA -
GUJARAT.**

EARNEST MONEY DEPOSIT: Please see Notice Inviting Tender.

LAST DATE FOR: Please see Notice Inviting Tender.

TENDER SUBMISSION:

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING **VOLUME-I-Tech Bid**, VOL-I-E- Technical Specifications (Drawings), **VOLUME- II-Price Bid** AND VOLIME-IBCD Rev-01 Rev-01 ARE ISSUED TO:

M/s.

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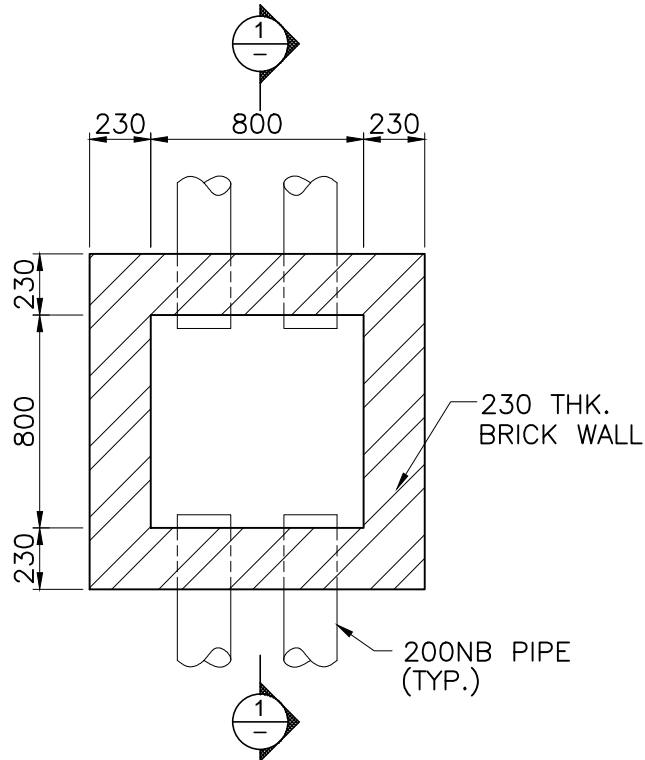
For Bharat Heavy Electricals Limited

AGM (Purchase)

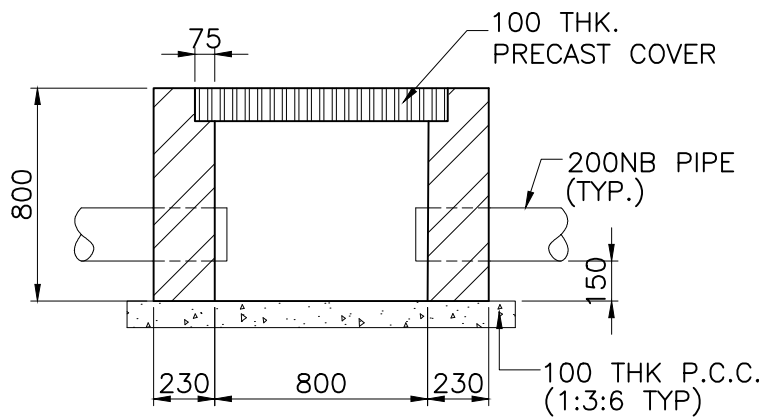
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Date:

LEGEND:

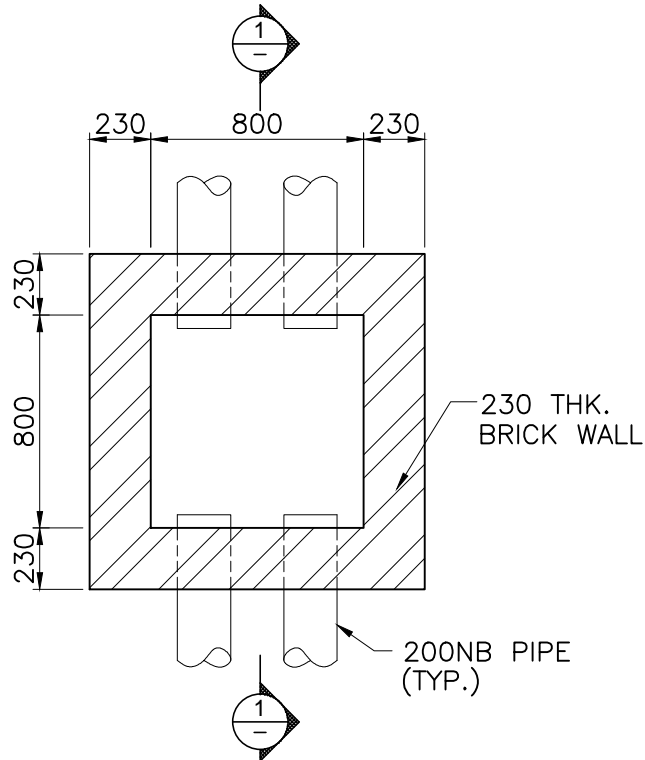


PLAN OF PULL PIT
(SCALE 1:25)

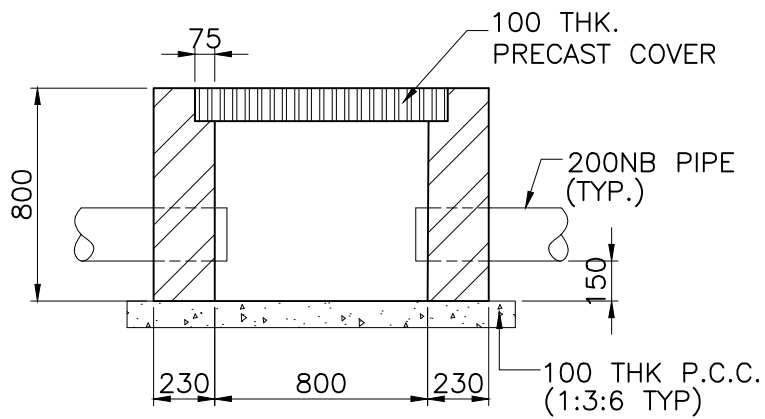


SECTION 1-1
(SCALE 1:25)

DETAIL OF PULL PIT 800X800X800D

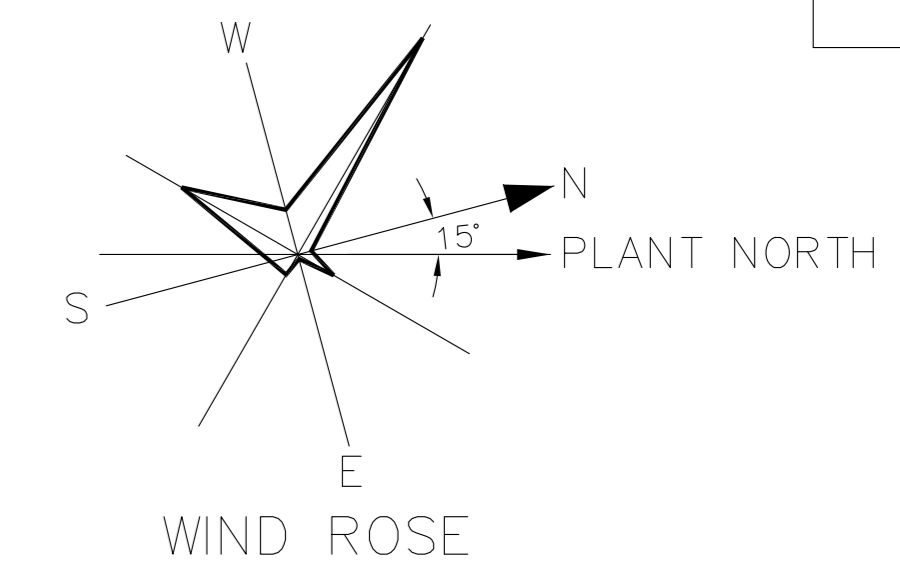


PLAN OF PULL PIT
(SCALE 1:25)



SECTION 1-1
(SCALE 1:25)

DETAIL OF PULL PIT 800X800X800D



LEGEND (PROPOSED)

1. GAS TURBINE HALL
2. STEAM TURBINE HALL
3. CONTROL & SWITCHGEAR EQUIPMENT BUILDING
4. HEAT RECOVERY STEAM GENERATOR
5. BFP BUILDING
6. CHLORINATION PLANT
7. CLARIFIED WATER STORAGE TANK & PUMP HOUSE
8. TRANSFORMER YARD
9. FUEL GAS HEATER SKID
10. SWITCH YARD
11. GUARD POND
12. RO PLANT
13. PLANT DRAIN COLLECTION PIT
14. COOLING TOWER
15. PT PLANT
16. RAW WATER RESERVOIR & PUMP HOUSE
17. DG BUILDING
18. COMPRESSOR BUILDING
19. DM WATER STORAGE TANK
20. CW TREATMENT PLANT
21. OVERHEAD STORAGE TANK
22. SIDE STREAM FILTRATION
23. H₂ & CO₂ CYLINDER STORAGE AREA
24. GAS CONDITIONING SKID
25. SEWAGE TREATMENT PLANT

LEGEND (EXISTING)

1. POWER GENERATION & TRANSMISSION
- 1.01 GAS TURBINE AREA
- 1.02 STEAM TURBINE BUILDING
- 1.03 COMMON CONTROL BUILDING
- 1.04 EXHAUST SILENCER WITH BYPASS STACK
- 1.05 HEAT RECOVERY STEAM GENERATOR
- 1.06 MAIN STACK
- 1.07 TRANSFORMER YARD GT AREA
- 1.08 TRANSFORMER YARD ST AREA
2. FUEL HANDLING SYSTEM
- 2.01 GAS STATION (OWNER'S SCOPE)
- 2.02 GAS MOISTURE SEPARATOR (PRIMARY GAS SKID)
- 2.03 FUEL GAS PIPELINE
- 2.04 AREA FOR LIQUID FUEL-FUTURE (OWNER'S SCOPE)
- 2.05 GAS FINE FILTER & PREHEATER (SECONDARY GAS SKID)
- 2.06 PRESSURE CONTROL VALVE
- 2.07 DRAIN PIT FOR OIL & DUAL M/CS
- 2.08 LIQUID FUEL SUPPLY & RETURN LINES
3. WATER HANDLING SYSTEM
- 3.01 RAW WATER RESERVOIR (OWNER'S SCOPE)
- 3.02 RAW / FIRE WATER PUMP HOUSE
- 3.03 CLARIFIER
- 3.04 CHEMICAL HOUSE
- 3.05 CLARIFIED WATER STORAGE TANK & PUMPS
- 3.06 POTABLE WATER TANK (OVERHEAD)
- 3.07 DEMIN WATER PLANT (OUTDOOR)
- 3.08 CHEMICAL LAB (ABOVE 4.02)
- 3.09 FILTERED WATER BY/W WASTE TANK
- 3.10 ACID / ALKALI STORAGE AREA
- 3.11 DEMIN WATER STORAGE TANKS
- 3.12 NEUTRALIZATION PIT
- 3.13 INDUCED DRAUGHT COOLING TOWER
- 3.14 COOLING WATER PUMP HOUSE
- 3.15 CHLORINATION PLANT & CHLORINE STORAGE
- 3.16 CW TREATMENT PLANT
- 3.17 CENTRAL MONITORING BASIN (OWNER'S SCOPE)
- 3.18 SLUDGE HANDLING FACILITY/PIT/THICKNER
- 3.19 OIL WATER SEPARATOR
- 3.20 DOSING SKID
- 3.21 SAMPLING SKID
4. ELECTRICAL FACILITIES
- 4.01 220 kv SWITCHYARD
- 4.02 DIESEL GENERATORS
- 4.03 OFFSITE SWITCHGEAR BUILDING
- 4.04 DM PLANT CONTROL ROOM
5. AUXILIARY BUILDINGS/FACILITIES
- 5.01 WORKSHOP
- 5.02 STORES (OWNER'S SCOPE)
- 5.03 AIR COMPRESSORS
6. NON-TECHNICAL BUILDINGS
- 6.01 CANTENEN
- 6.02 CAR PARKING SHED
- 6.03 ADMINISTRATION BUILDING (OWNER'S SCOPE)
- 6.04 GUEST HOUSE (OWNER'S SCOPE)
- 6.05 PARKING SHEDS (OWNER'S SCOPE)
- 6.06 GATE HOUSE (OWNER'S SCOPE)
- 6.07 FIRE STATION (OWNER'S SCOPE)
- 6.08 RESIDENTIAL COLONY (OWNER'S SCOPE)

- TP TERMINAL POINTS**
- TP-1 NATURAL GAS
 - TP-2 RAW WATER INTAKE
 - TP-3 PLANT EFFLUENT
 - TP-4 OUT GOING POWER
 - TP-5 CONSTRUCTION POWER
 - TP-6 TELEPHONE CONNECTION
 - TP-7 CONSTRUCTION WATER
 - TP-8 POWER SUPPLY TO ADMIN. AREA
 - TP-9 POWER SUPPLY TO GAS/FUEL AREA
 - TP-9-a FIRE FIGHTING TERMINAL POINT
 - TP-10 LIQUID FUEL TERMINAL POINT
- SYMBOLS**
- Green Belt (50m wide Avg.)
 - Main Road 6.0 M Wide Road (Owner's Scope)
 - Peripheral Road 3.5 M Wide (Owner's Scope)
 - Approach Road for Facilities (APIL Scope)
 - Drain
 - Boundary Wall
 - Fencing
 - Chain Link Fence
 - Bench Mark

REFERENCE DRAWINGS:

S.N.	DESCRIPTION	DRAWING NO.
1.	PLOT PLAN (CUSTOMER)	1AYE 0 00 002 (CUST)
2.	GENERAL ARRANGEMENT OF BOILER-PLANT	0-00-561-93319 (TRY)
3.	GA OF GAS TURBINE & GENERATOR	1-366-09-89006 (HYD)
4.	LAYOUT PLAN OF 220KV SUBSTATION	TB-0-309-316-001 (TBB)
5.	MAIN EQUIPMENT LAYOUT PLAN	PE-DG-293-100-M002 (PEM)
6.	LAYOUT OF TRANSFORMER YARD	PE-DG-293-100-E001 (PEM)

NOTES

1. INFORMATIONS PERTAINING TO EXISTING PLANT IS AS PER CUSTOMER PLOT PLAN
2. ALL DIMENSIONS AND LEVELS ARE IN METRES.
3. FOR DETAILS IN MAIN PLANT AREA REFER. Drg. No. PE-DG-293-100-M002
4. FINISHED GRADED LEVEL OF THE MAIN PLANT AREA SHALL BE RL 6.6M.
5. POWER HOUSE (ST-GT HALL) FINISHED GROUND FLOOR LEVEL IS EL.(±)0.00M WHICH CORRESPONDS TO RL.6.9M & BOILER PAVED LEVEL IS EL.(-)0.200M WHICH CORRESPONDS TO RL. 6.7M.
6. DETAILS/REQUIREMENT OF VARIOUS BUILDINGS/FACILITIES SHALL BE AS PER RESPECTIVE PACKAGES.

CUSTOMER NOTES FOR EXISTING PLANT:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER.
2. PLANT ELEVATION (EL ±0.00 M) REFERS TO THE TOP OF FINISHED GROUND FLOOR OF STEAM TURBINE BUILDING (ITEM NO.1.02) WHICH IS EQUIVALENT TO FL 6.0 METERS.
3. TOP OF ROAD SHALL BE ABOUT 100 mm ABOVE THE SURROUNDING GRADE LEVEL UNLESS OTHERWISE NOTED.
4. BENCH MARK AT FL(+) 5.80 M ABOVE MSL FOR CONSTRUCTION PURPOSE SHOWN THUS
5. ALL THE GRIDS ARE MARKED FROM 0.00N/S, 0.00E/W W.R.T FL(+) 4.360 M RIL STONE.
- *. EXISTING ROAD WILL BE DISMANTLED & NEW ROAD WILL BE MADE AS SHOWN.

PROGRESS DRAWING
AS ON 30.08.2009

CONSULTANT: FICHTNER Consulting Engineers India (Private) Limited

GUJARAT STATE ENERGY GENERATION LIMITED (GSEG)
350 MW CCPP HAZIRA, GUJARAT

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
ENGINEERING MANAGEMENT
NEW DELHI

DEPT. NAME SIGN DATE
DRN. V.KRISHNAR. SM/ 11.02.2009
DESIN. BK. AGARWAL. SM/ 11.02.2009
CHKD. BK. AGARWAL. SM/ 11.02.2009
APPROV. ANIL JOSHI. SM/ 11.02.2009

TITLE: PLOT PLAN

SCALE: 1:1000

DRAWING No. PE-DG-293-100-M001

SHEET 1 OF 1 REV 02

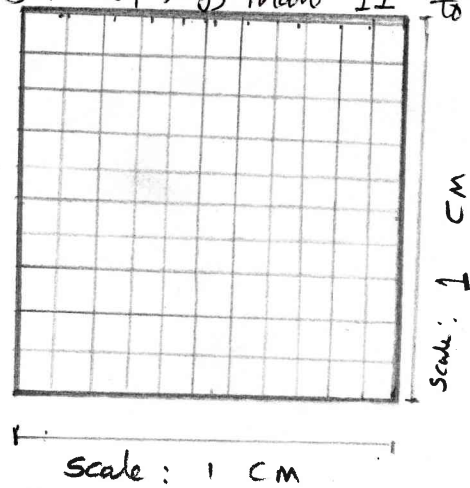
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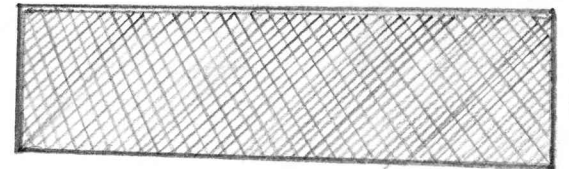
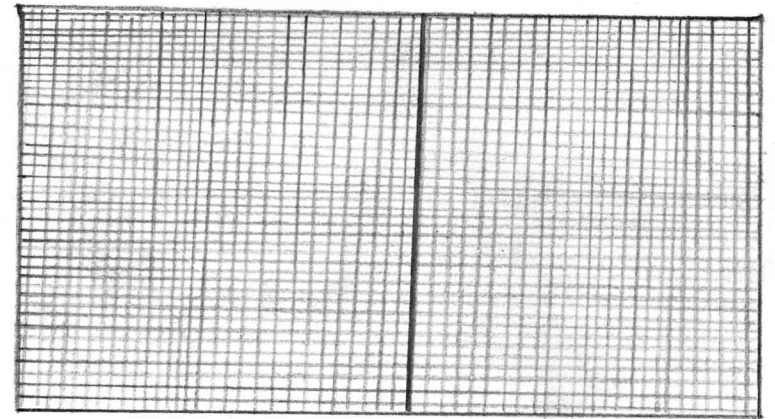
Space and Thickness Requirements

(A) Ventilators shall be provided with two thickness of fine copper or any other non-corroding (GI/SS) metal wire gauze of mesh not less than 11 to the Linear centimetre.

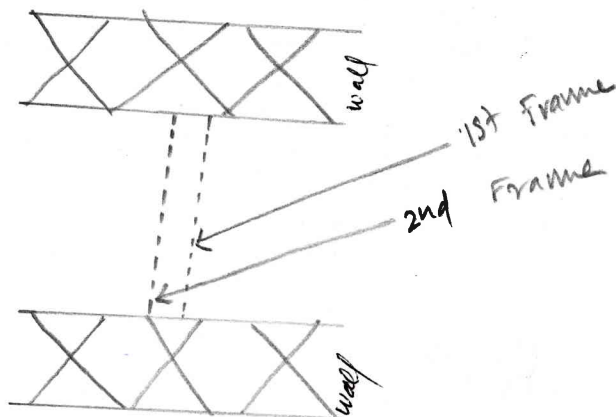
See sample →



Sample Look of ventilators



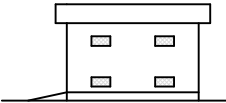
(B) Two layer / double ventilator net frames should be fixed at the ventilator space given as per sample → suitably.



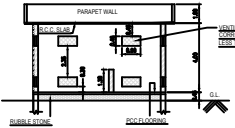
(C) Wire Thickness 0.20 mm or suitable

STAMP OF APPROVAL

2/2

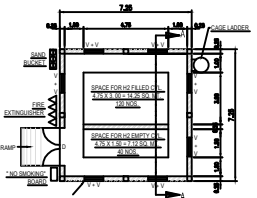


ELEVATION



SECTION "AA"

VENTILATION COVERED WITH 2 LAYERS OF 20MM CORRUGATED SHEET WITH 50MM GAP BETWEEN SHEETS TO PERMIT FREE FLOW OF AIR TO GROUND



VENTILATION COVERED WITH 2 LAYERS OF 20MM CORRUGATED SHEET WITH 50MM GAP BETWEEN SHEETS TO PERMIT FREE FLOW OF AIR TO GROUND

GROUND FLOOR PLAN

STORAGE ROOM DATA			
SR.NO.	DESCRIPTION	STORAGE QTY.	TYPE OF GAS
01.	HYDROGEN GAS	12 NOS (RULED)	NON TOXIC & FLAMMABLE

02	VENTILATION	1	0.2 X 0.6	11
01	DOOR (OUT SIDE OPENING)	0	1.8 X 2.10	01
SR.NO.	NAME	AMT.	SIZE	NOS.

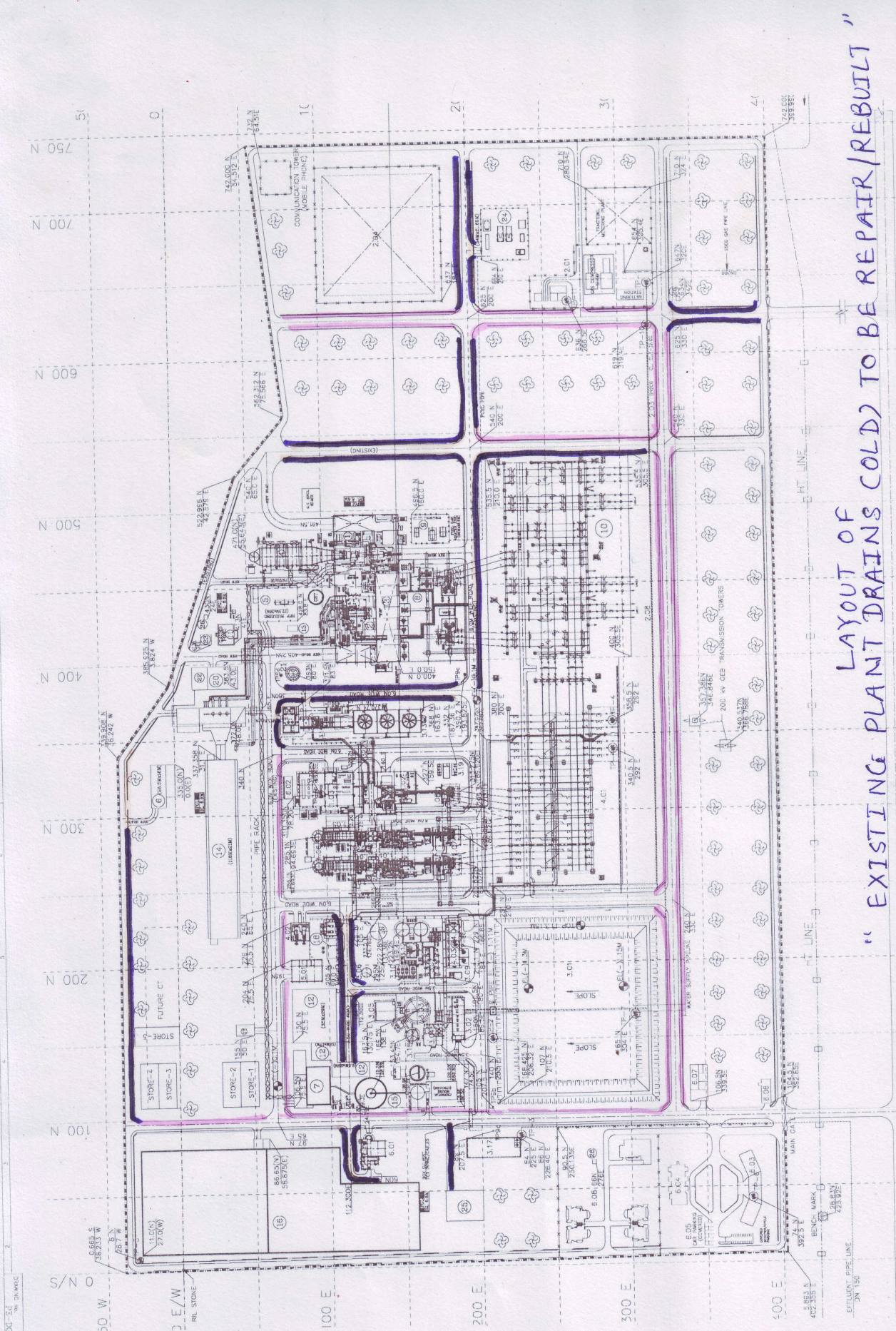
OPENING SCHEDULE:

GUJARAT STATE ENERGY GENERATION LIMITED.

350 MW CCPP
HAZIRA
DIST. SURAT
GUJARAT STATE.

NOTE

1. ALL DIMENSION ARE IN METER.
2. STRICT OBSERVANCE OF ALL RULES FRAMED UNDER THE GAS CYLINDER RULES 2004.
3. CYLINDER WILL BE STORED IN UP RIGHT POSITION.
4. THE STORAGE SHED THE CONSTRUCTION IS FIRE RESISTANT MATERIAL.
5. H2 GAS CYLINDER SIZE IS 600mm.



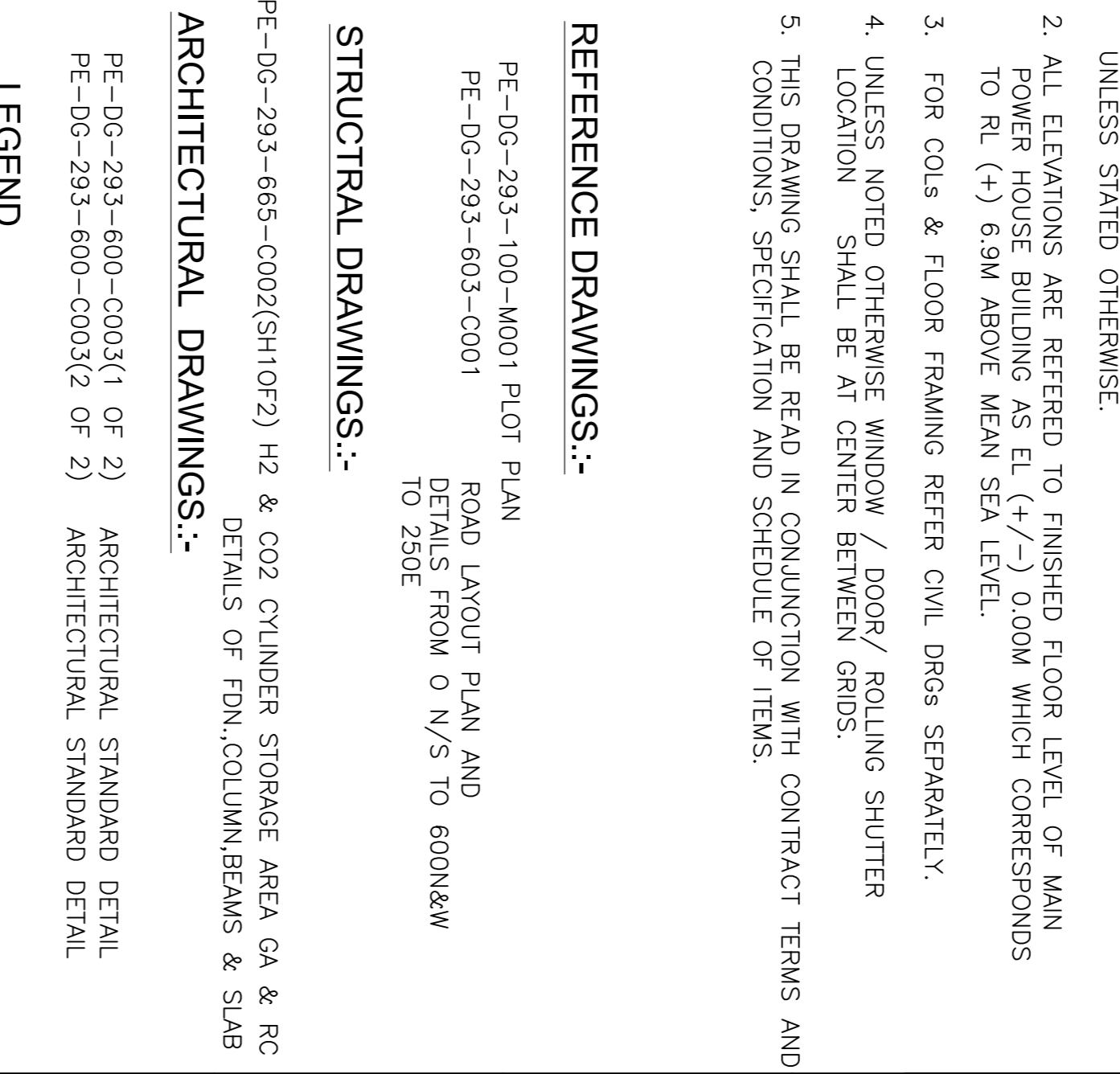
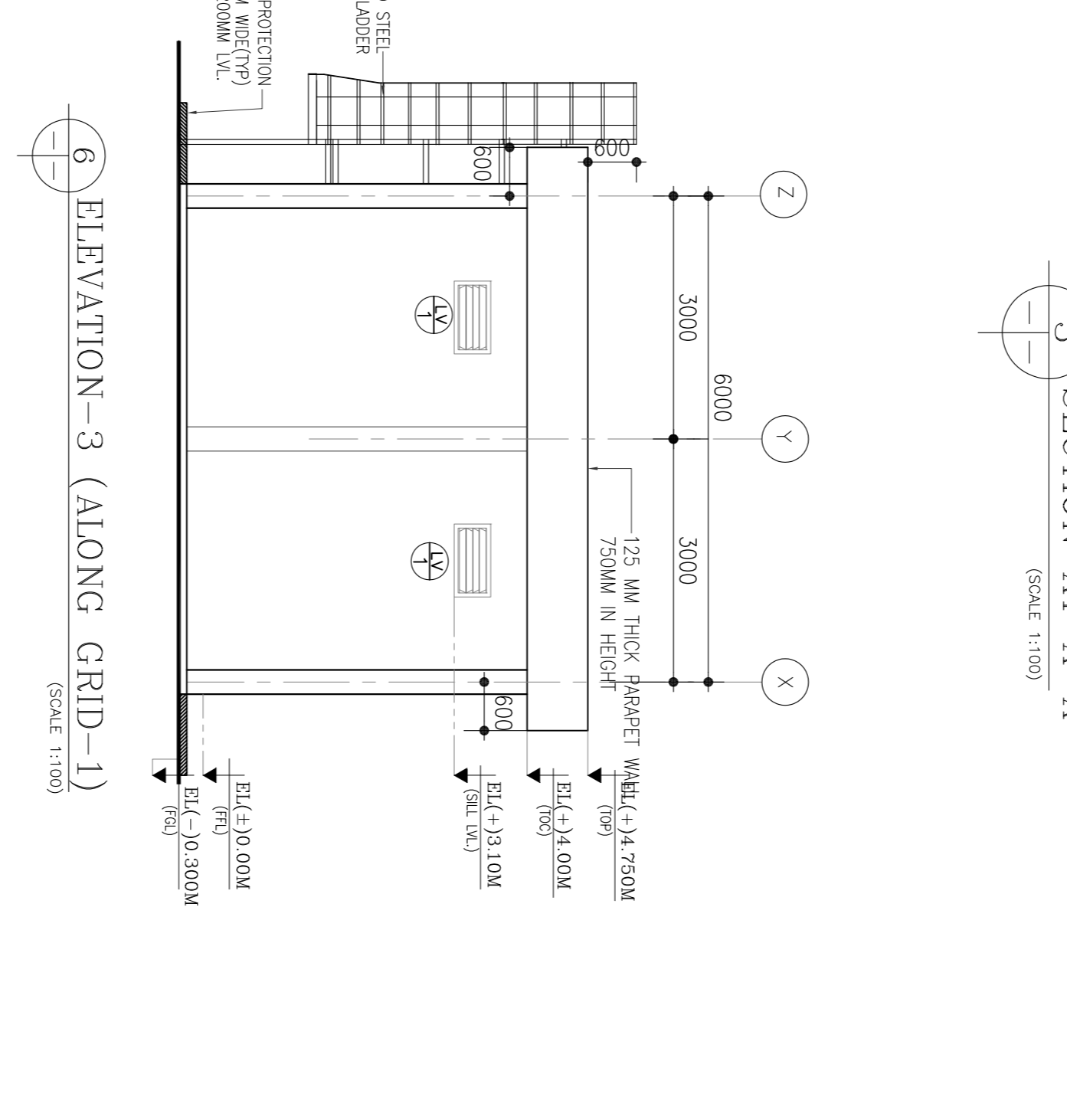
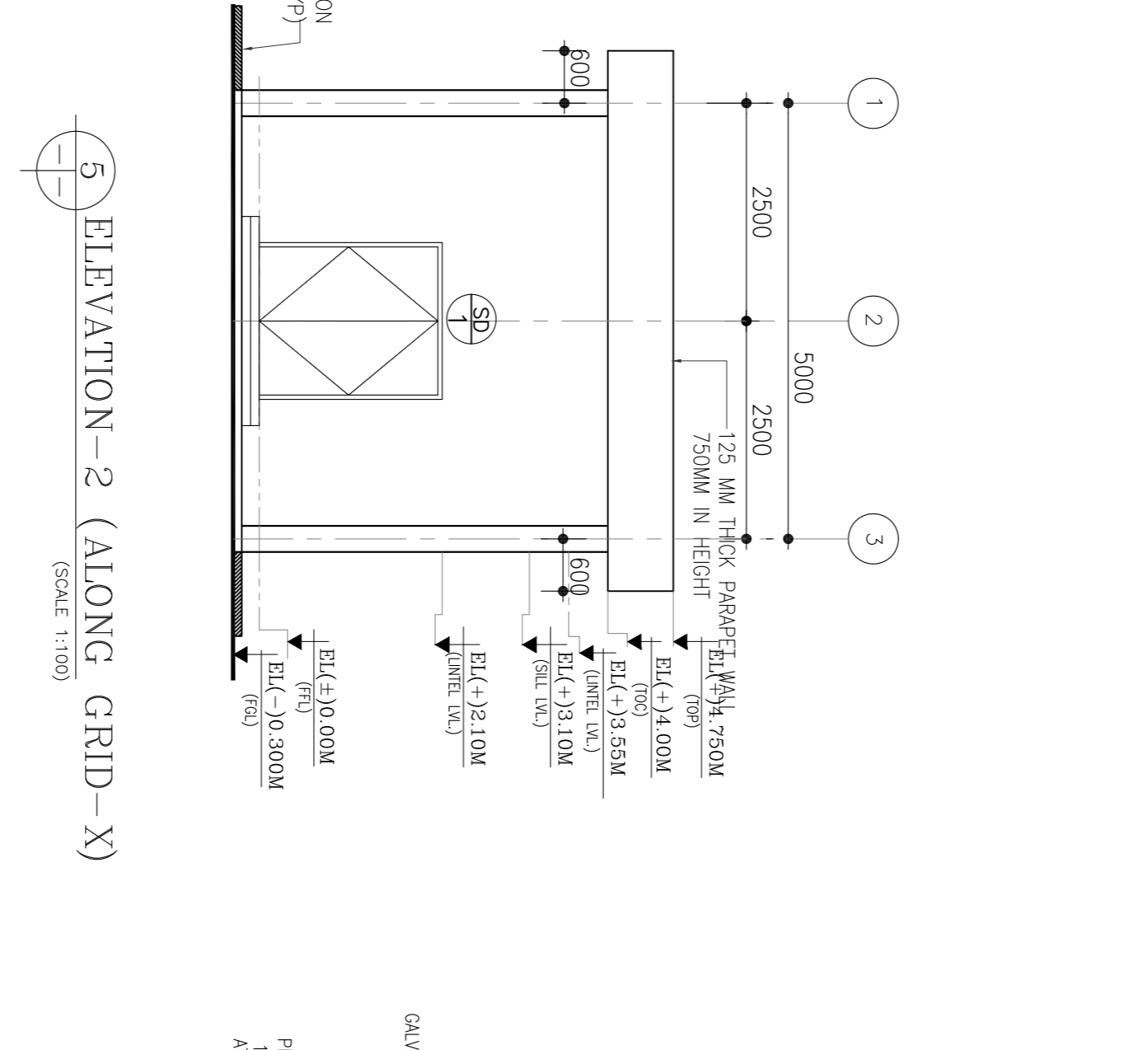
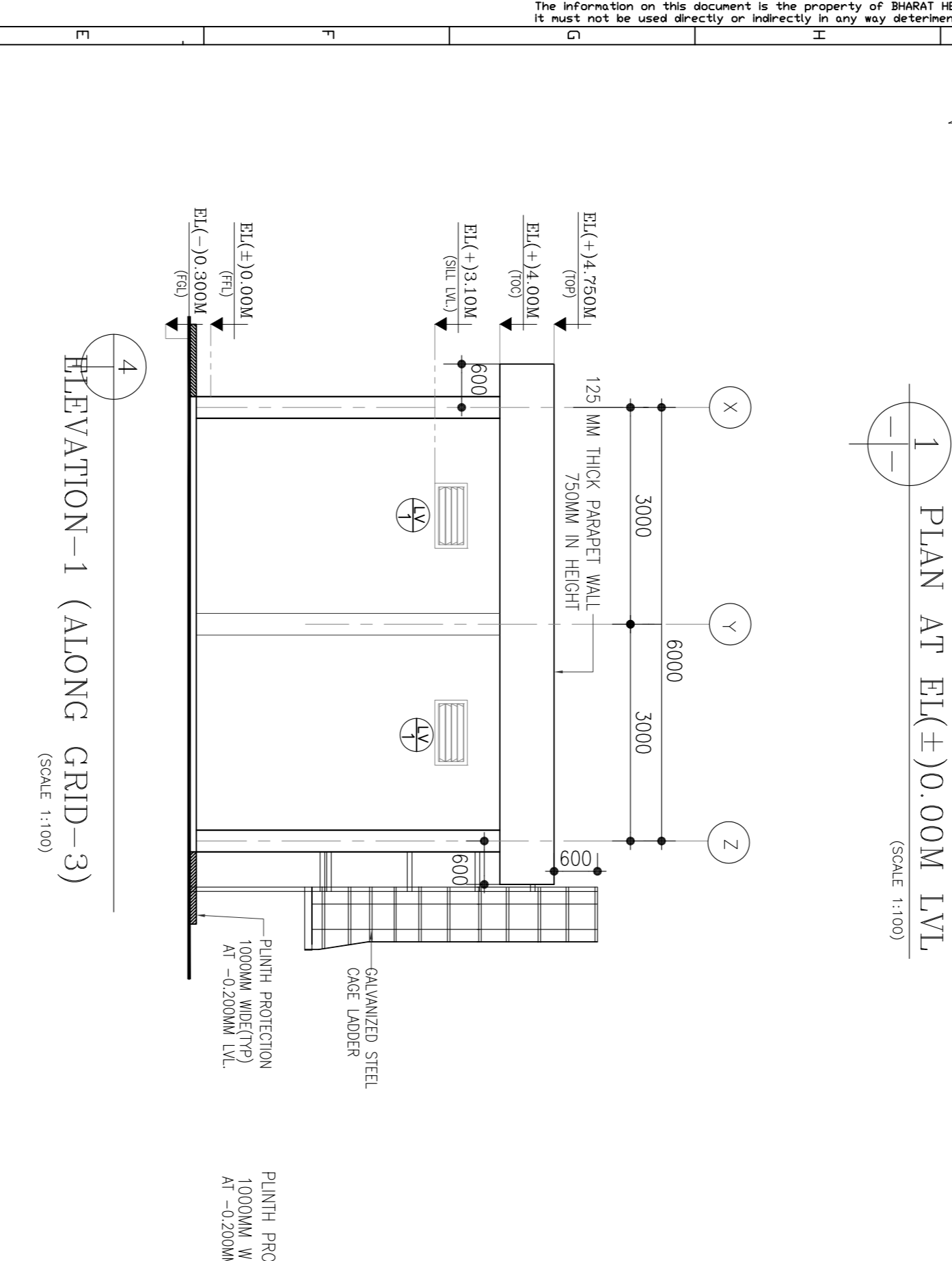
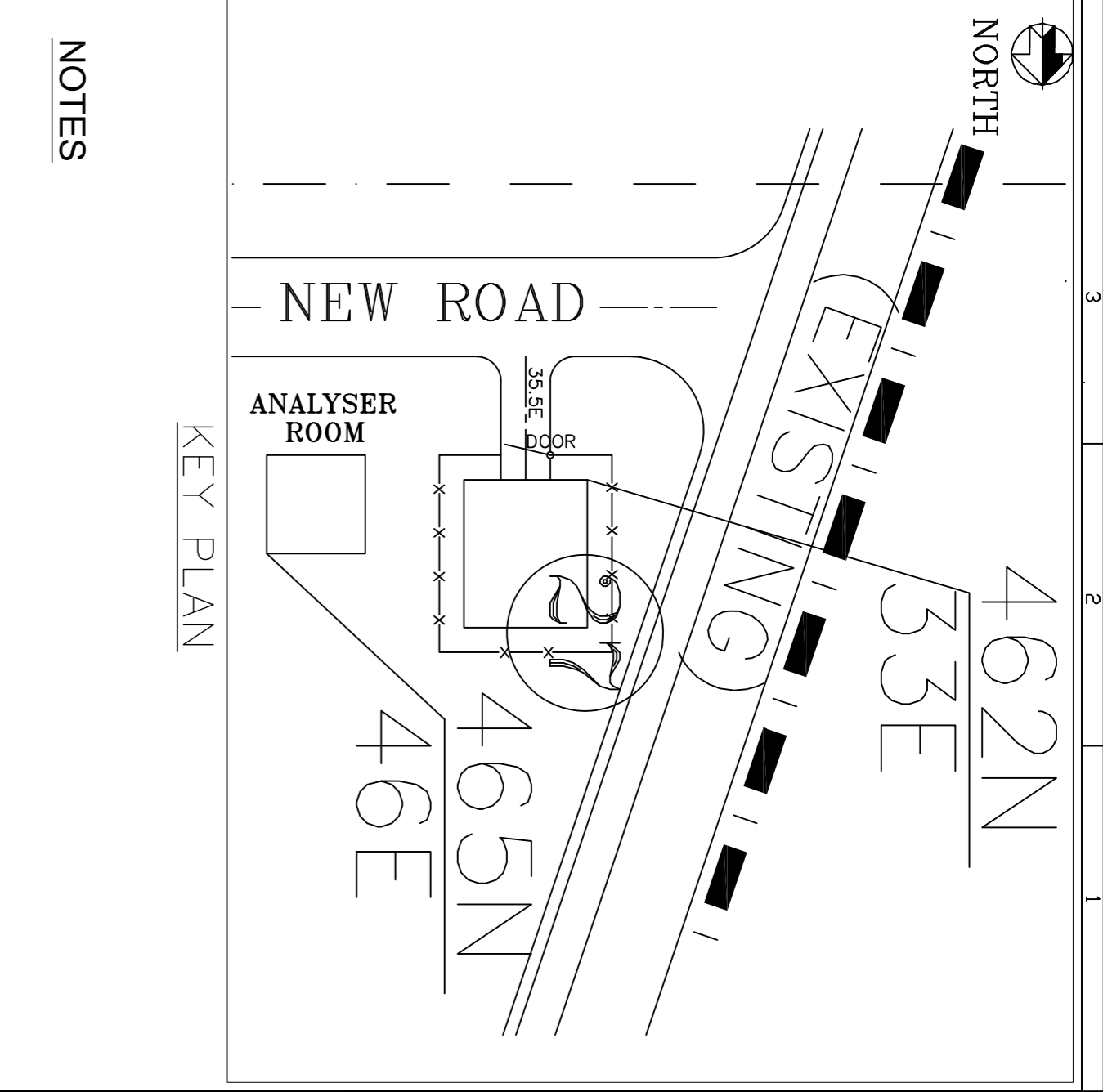
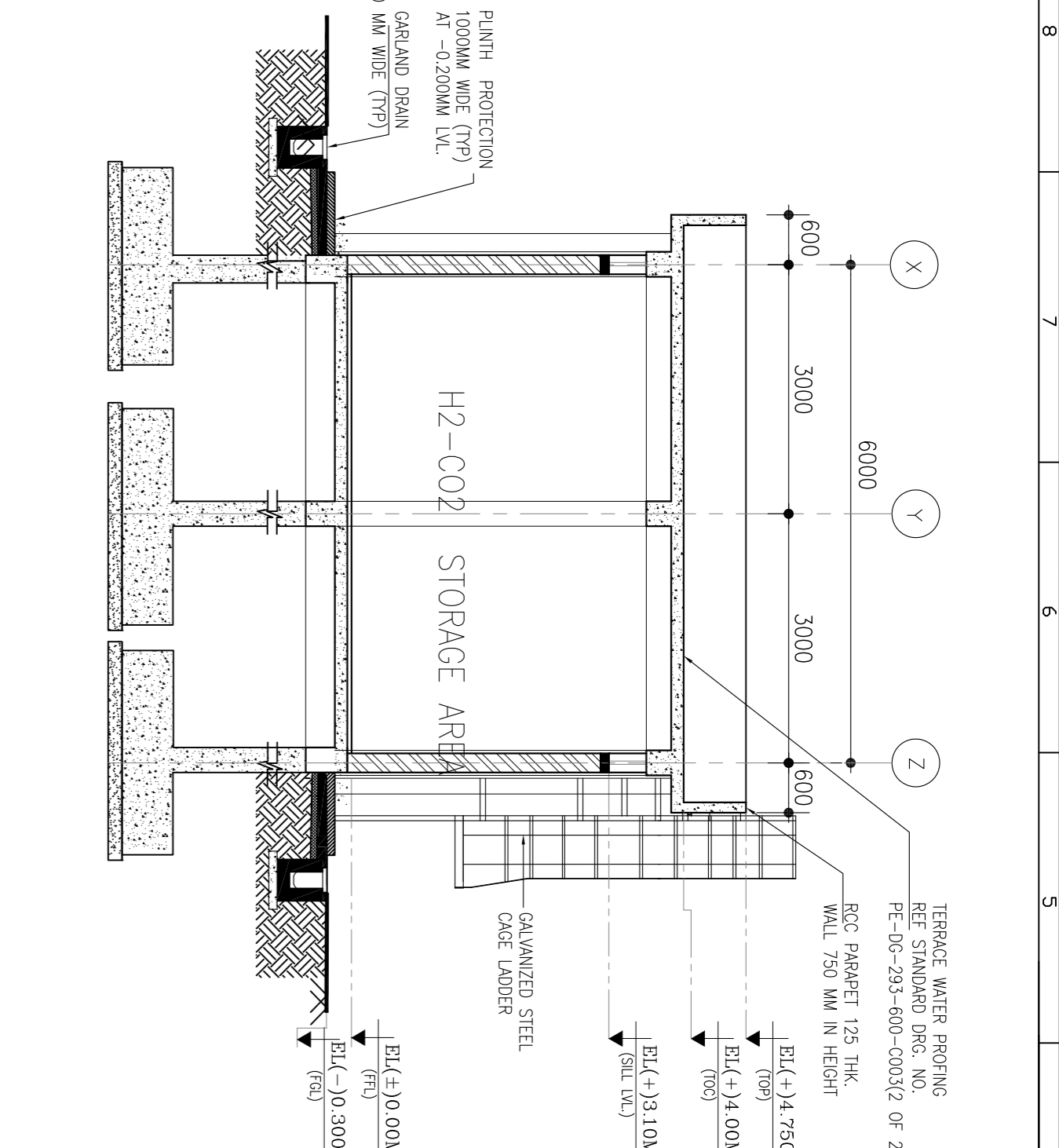
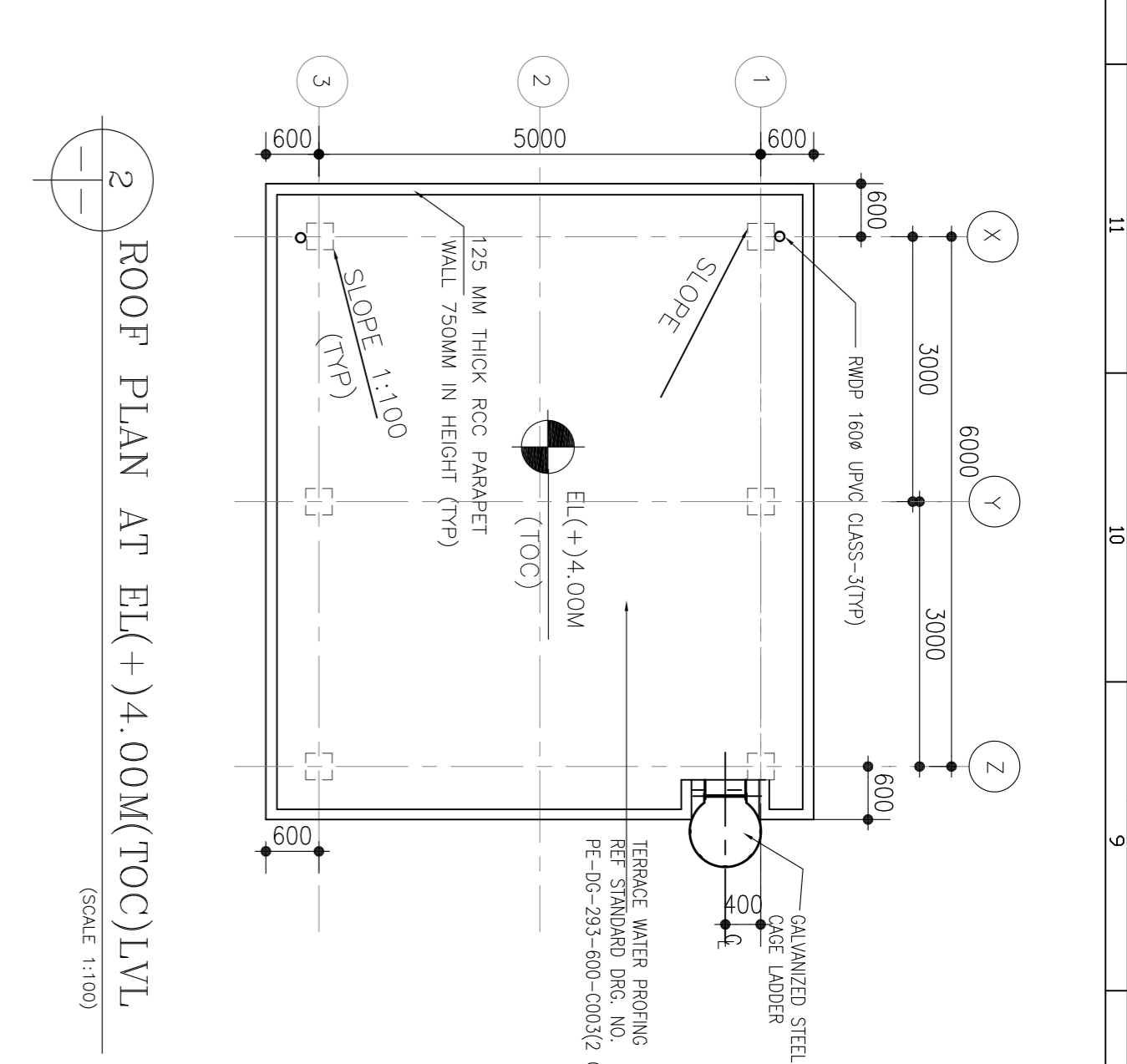
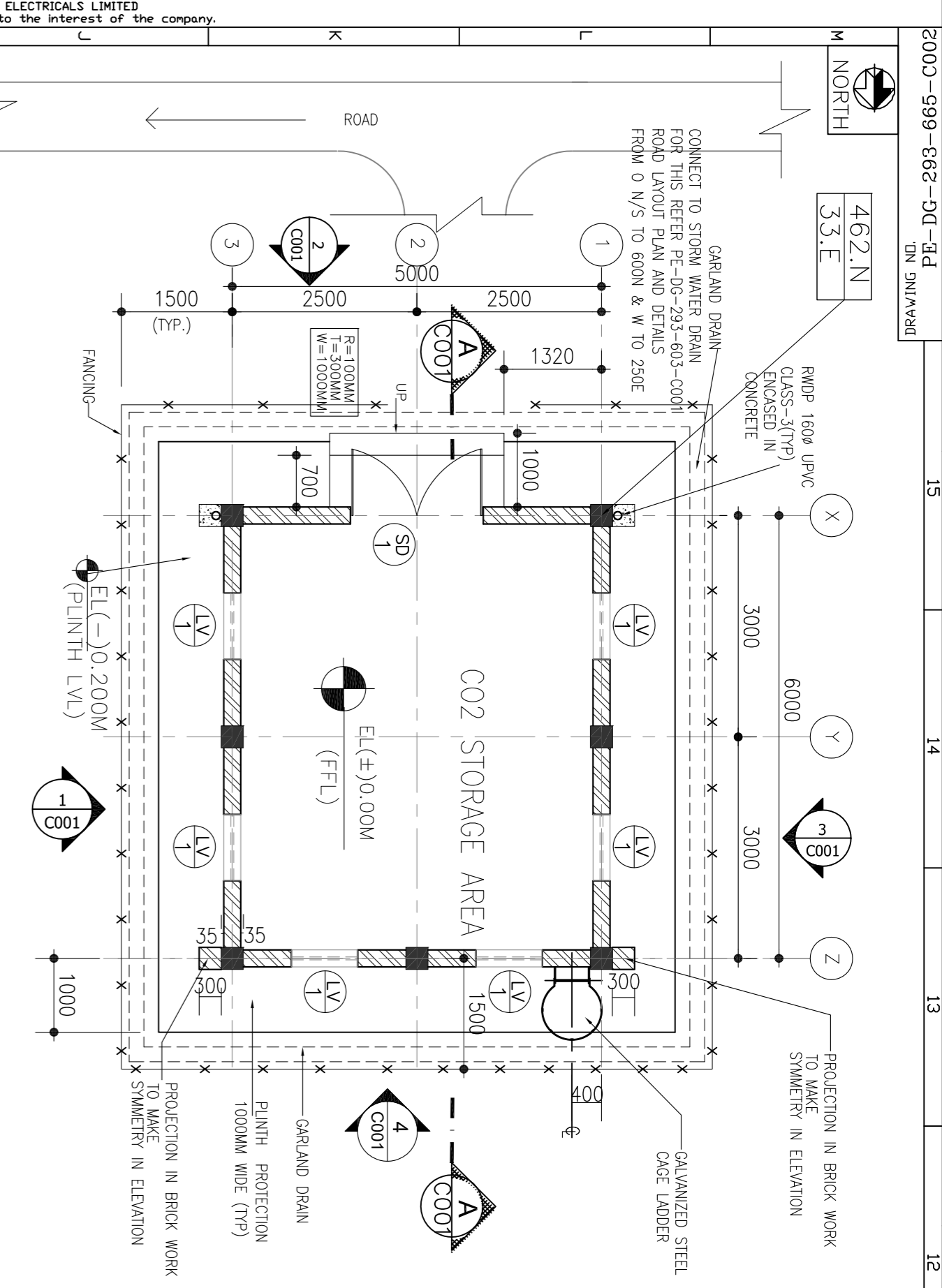
"EXISTING PLANT DRAINS (COLD) TO BE REPAIR/REBUILT"

LEGENDS :-

- Repair, Cleaning Required
- Rebuilding Required

- CUSTOMER NOTES FOR EXISTING E.A.M.
1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS
 2. PLAN ELEVATION (E) = +0.00 M REFERENCE TO THE S.E.C
 3. TOP OF ROAD SHALL BE ABOUT 1.00 M ABOVE THE SURROUNDING GROUND LEVEL UNLESS OTHERWISE NOTED
 4. B.P.A.C. MARK AT 21.41 TO BE ABOVE 0.50 M VS. 0.50 M
- INFORMATION PERTAINING TO EXISTING PLAN IS AS PER CUSTOMER PLOT PLAN
1. ALL DIMENSIONS AND LEVELS ARE IN METERS
 2. FOR 0.75 IN MAIN PLANT AREA REFER DRG. NO. PE-30-293-CO-W02
 3. FINISHED GRADED LEVEL OF THE MAIN PLANT AREA SHALL BE RL 5.5M
 4. POWER HOUSE (31-C) HALL FINISHED GROUND LEVEL IS RL 5.00 M

EN 645/V/SEA

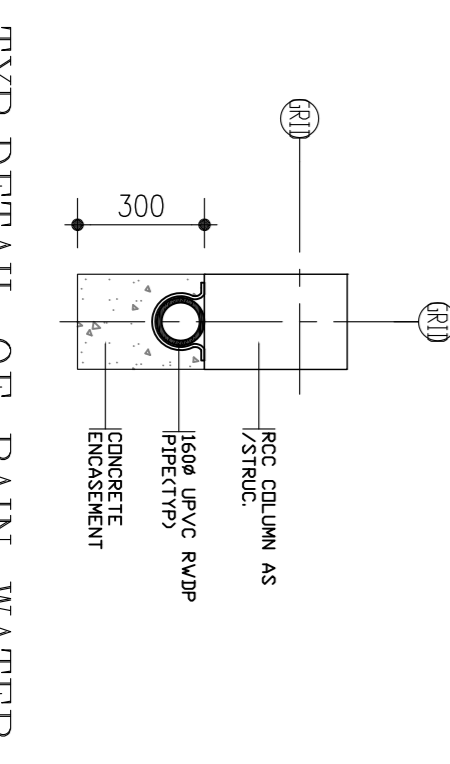


DOOR/WINDOW OPENINGS SCHEDULE

SYMBOL	NOS.	SILL LEVEL AT EL.	MASONRY OPENING WIDTH	HEIGHT	REMARKS
SD	1	EL(+0.000m)	1800	2100	STEEL DOOR - DOUBLE SHUTTER
VI	8	EL(+1.000m)	900	450	PRESSED STEEL FRAME WITH STEEL LOWERED VENTILATORS

FINISHING SCHEDULE

SL.NO.	ROOMS	FLOORING	SKIRTING	INTERNAL WALLS PAINTING	CEILING	EXTERNAL WALL
1	CO2 STORAGE AREA	IPS FLOORING WITH NON METALLIC FLOOR HARDENER	CEMENT MORTAR SKIRTING (1:4) 12mm THICK	OIL BOUND DISTEMPER	WATER BOND DISTEMPER	WATER PROOF CEMENT BASED PAINT/GRANULAR FINISH



- NOTES**
1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
 2. ALL ELEVATIONS ARE REFERRED TO FINISHED FLOOR LEVEL OF MAIN POWER HOUSE BUILDING AS EL (+/-) 0.00M WHICH CORRESPONDS TO RL (+) 6.9M ABOVE MEAN SEA LEVEL.
 3. FOR COLS & FLOOR FRAMING REFER CIVIL DROGS SEPARATELY.
 4. UNLESS NOTED OTHERWISE WINDOW / DOOR / ROLLING SHUTTER LOCATION SHALL BE AT CENTER BETWEEN GRIDS.
 5. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.

- REFERENCE DRAWINGS:-**
- PE-DG-293-100-M001 PLOT PLAN
 - PE-DG-293-603-C001 ROAD LAYOUT PLAN AND DETAILS FROM O N/S TO 600M&W TO 250E
- STRUCTURAL DRAWINGS:-**
- PE-DG-293-665-C002(SH10F2) H2 & CO2 CYLINDER STORAGE AREA GA & RC DETAILS OF FDN,COLUMN,BEAMS & SLAB
- ARCHITECTURAL DRAWINGS:-**
- PE-DG-293-600-C003(1 OF 2) ARCHITECTURAL STANDARD DETAIL
- PE-DG-293-600-C003(2 OF 2) ARCHITECTURAL STANDARD DETAIL

- LEGEND**
- 230 THK BRICK WALL
 - CONCRETE HATCH
 - LEVEL TEG
 - RWDP- RAIN WATER DOWN PIPE
 - EXHAUST FAN
 - TYPICAL
 - TOP OF CONCRETE
 - TOP OF PARAPET
 - TOP OF STEEL
 - TOP OF GRATING
 - UNO - UNLESS NOTED OTHERWISE
 - ELEVATION
 - FINISHED FLOOR LEVEL
 - FINISHED GROUND LEVEL
 - BOTTOM OF LINTEL

GENERAL NOTES

CONSULTANTS: FIGHTNER Consulting Engineers (India) Private Limited

GUJARAT STATE ENERGY GENERATION LIMITED

350 MW CPP HAZIRA, GUJARAT

BHARAT HEAVY ELECTRICALS LTD

POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

CO2 CYLINDER STORAGE AREA

ARCHITECTURAL PLANS, ELEVATIONS, & SECTION DRAWINGS

SCALE: 1:100

DATE: 10/01/2013

SHEET: 2 OF 2

PROJECT INFORMATION

JOB NO. _____

STATUS _____

DATE _____

SCALE: 1:100

PROJECT: GUJARAT STATE ENERGY GENERATION LIMITED, 350 MW CPP HAZIRA, GUJARAT

CLIENT: BHARAT HEAVY ELECTRICALS LTD, POWER SECTOR PROJECT ENGINEERING MANAGEMENT, NEW DELHI

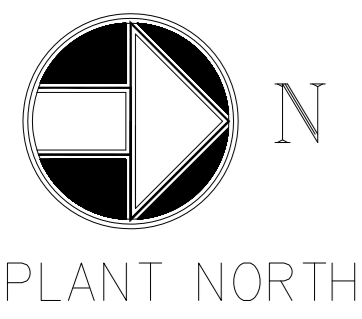
CONSULTANT: FIGHTNER CONSULTING ENGINEERS (INDIA) PRIVATE LIMITED

DESIGNER: _____

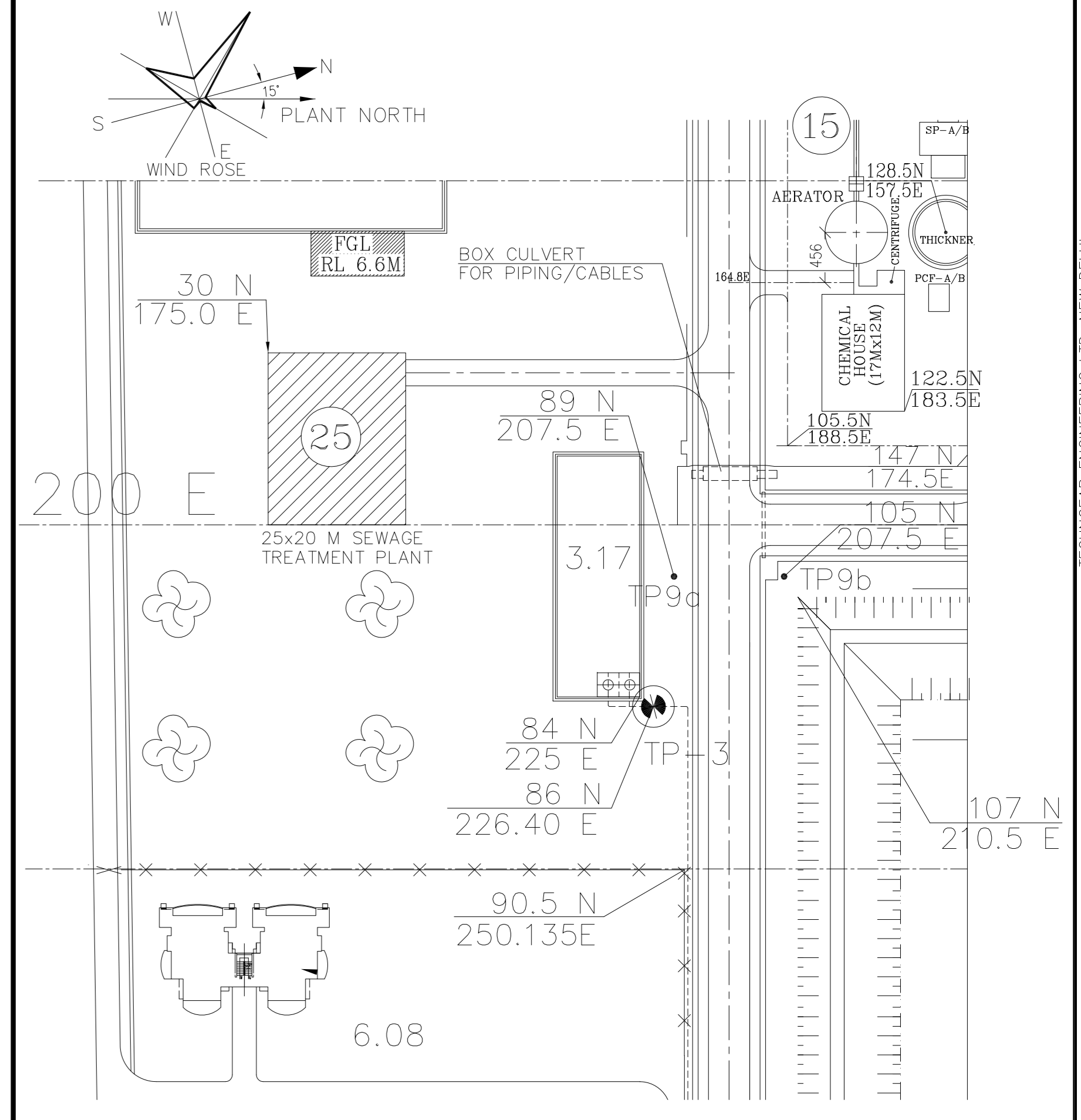
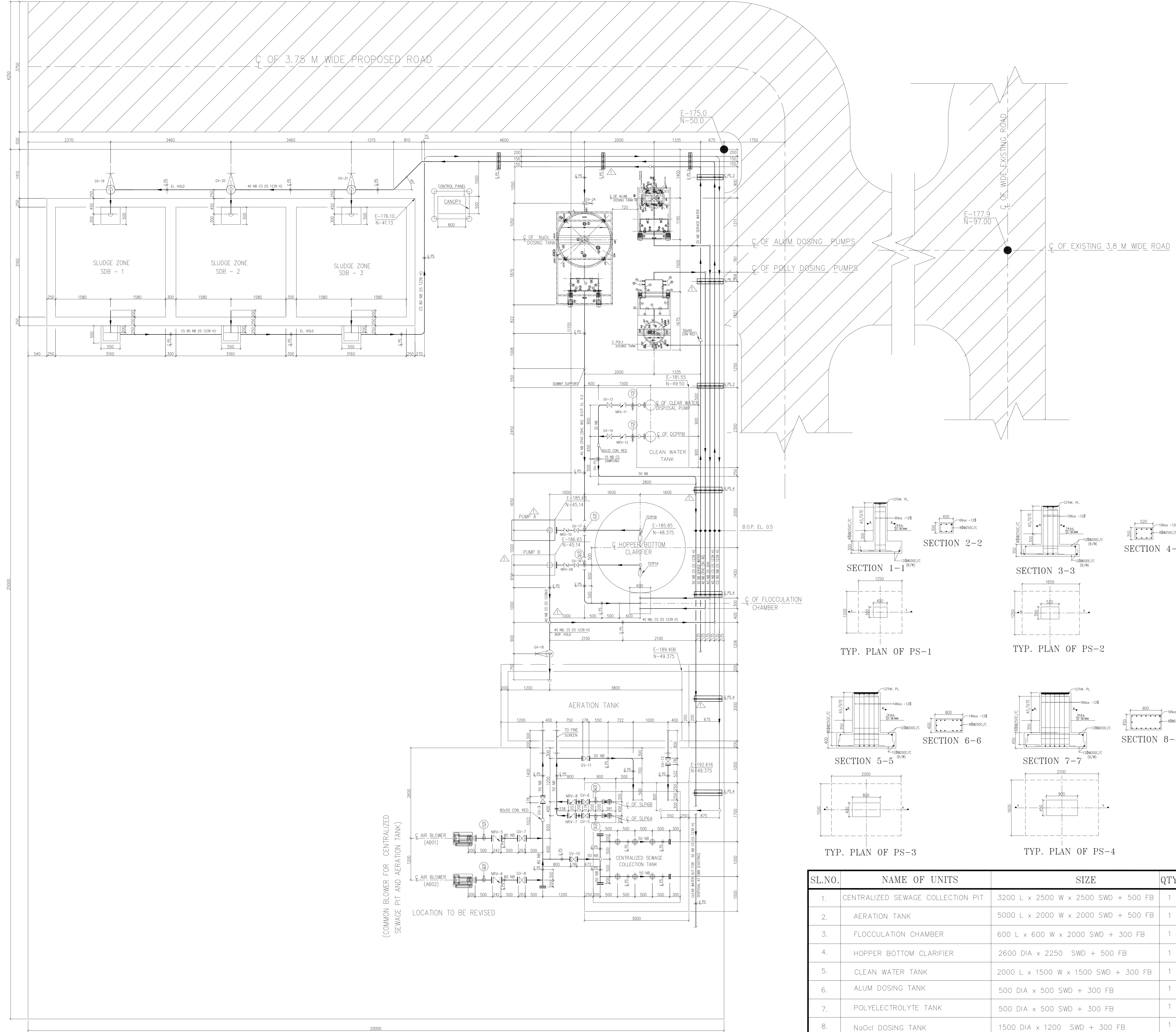
CHECKER: _____

DATE: 10/01/2013

SHEET: 2 OF 2



APPROVED



KEY PLAN

LEGEND

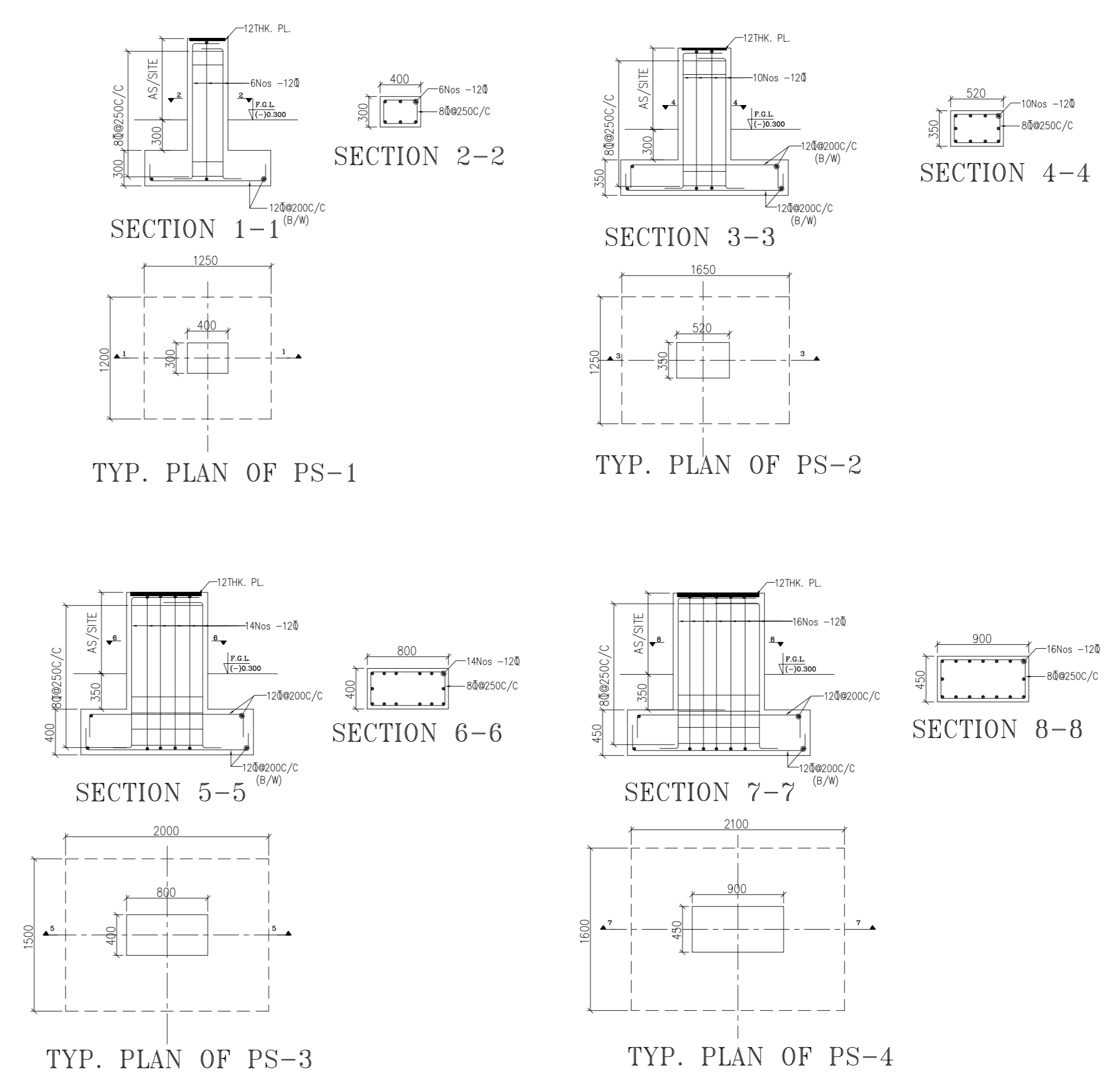
- GATE VALVE
- NONRETURN VALVE (NRV)
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER

REFERENCE DRAWINGS NOS:-

SL. NO.	TITLE	DWG. NOS.	REV.
1.	PLOT PLAN	PE-DG-293-100-M001	REV. 2
2.	P. & I. D. FOR SEWAGE TREATMENT PLANT	PE-VO-293-183-A001	REV. 2

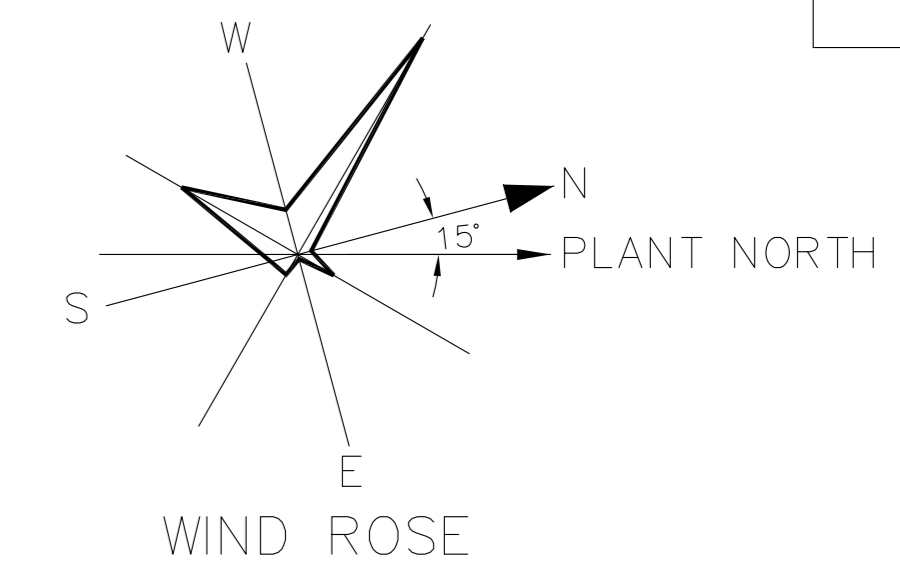
NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS & ELEVATIONS ARE IN METERS UNLESS OTHERWISE STATED.



SL.NO.	NAME OF UNITS	SIZE	QTY.
1.	CENTRALIZED SEWAGE COLLECTION PIT	3200 L x 2500 W x 2500 SWD + 500 FB	1
2.	AERATION TANK	5000 L x 2000 W x 2000 SWD + 500 FB	1
3.	FLOCCULATION CHAMBER	600 L x 600 W x 2000 SWD + 300 FB	1
4.	HOPPER BOTTOM CLARIFIER	2600 DIA x 2250 SWD + 500 FB	1
5.	CLEAN WATER TANK	2000 L x 1500 W x 1500 SWD + 300 FB	1
6.	ALUM DOSING TANK	500 DIA x 500 SWD + 300 FB	1
7.	POLYELECTROLYTE TANK	500 DIA x 500 SWD + 300 FB	1
8.	NaOCl DOSING TANK	1500 DIA x 1200 SWD + 300 FB	1
9.	SLUDGE DRYING BEDS	3160 L x 3160 W	3
10.	CONTROL PANEL	800 L x 500 W	1

1	07.02.13	SUBMITTED FOR APPROVAL	LSH	RB	SSJ
0	27.05.10	SUBMITTED FOR APPROVAL	LSH	NITIN	SSJ
REV.	DATE	DESCRIPTION	DRN.	CHD.	APPRD.
OWNER:	GUJARAT STATE ENERGY GENERATION LIMITED				
MAIN CONTRACTOR:	BHARAT HEAVY ELECTRICAL LIMITED PROJECT ENGINEERING MANAGEMENT, NEW DELHI				
CONTRACTOR:	TECHNOFAB ENGINEERING LIMITED 507 EROS APARTMENTS, 56 NEHRU PLACE NEW DELHI - 110019, INDIA PHONE : 91-129-2270202, 2275310				
PROJECT:	350 MW COMBINED CYCLE POWER PLANT AT HAZIRA, GUJARAT.				
TITLE:	LAYOUT OF SEWAGE TREATMENT PLANT				
SCALE	SHEET NO.	BHEL DRG. NO.	TECHNOFAB DRG. NO.	REV.	
1:60	1 OF 1	PE-VO-293-183-A003	0-3514-L-01	1	



LEGEND (PROPOSED)

1. GAS TURBINE HALL
2. STEAM TURBINE HALL
3. CONTROL & SWITCHGEAR EQUIPMENT BUILDING
4. HEAT RECOVERY STEAM GENERATOR
5. BFP BUILDING
6. CHLORINATION PLANT
7. CLARIFIED WATER STORAGE TANK & PUMP HOUSE
8. TRANSFORMER YARD
9. FUEL GAS HEATER SKID
10. SWITCH YARD
11. GUARD POND
12. RO PLANT
13. PLANT DRAIN COLLECTION PIT
14. COOLING TOWER
15. PT PLANT
16. RAW WATER RESERVOIR & PUMP HOUSE
17. DG BUILDING
18. COMPRESSOR BUILDING
19. DM WATER STORAGE TANK
20. CW TREATMENT PLANT
21. OVERHEAD STORAGE TANK
22. SIDE STREAM FILTRATION
23. H2 & CO2 CYLINDER STORAGE AREA
24. GAS CONDITIONING SKID
25. SEWAGE TREATMENT PLANT

LEGEND (EXISTING)

1. POWER GENERATION & TRANSMISSION
- 1.01 GAS TURBINE AREA
- 1.02 STEAM TURBINE BUILDING
- 1.03 COMMON CONTROL BUILDING
- 1.04 EXHAUST SILENCER WITH BYPASS STACK
- 1.05 HEAT RECOVERY STEAM GENERATOR
- 1.06 MAIN STACK
- 1.07 TRANSFORMER YARD GT AREA
- 1.08 TRANSFORMER YARD ST AREA
2. FUEL HANDLING SYSTEM
- 2.01 GAS STATION (OWNER'S SCOPE)
- 2.02 GAS MOISTURE SEPARATOR (PRIMARY GAS SKID)
- 2.03 FUEL GAS PIPELINE
- 2.04 AREA FOR LIQUID FUEL-FUTURE (OWNER'S SCOPE)
- 2.05 GAS FINE FILTER & PREHEATER (SECONDARY GAS SKID)
- 2.06 PRESSURE CONTROL VALVE
- 2.07 DRAIN PIT FOR OIL & DUAL M/CS
- 2.08 LIQUID FUEL SUPPLY & RETURN LINES
3. WATER HANDLING SYSTEM
- 3.01 RAW WATER RESERVOIR (OWNER'S SCOPE)
- 3.02 RAW / FIRE WATER PUMP HOUSE
- 3.03 CLARIFIER
- 3.04 CHEMICAL HOUSE
- 3.05 CLARIFIED WATER STORAGE TANK & PUMPS
- 3.06 POTABLE WATER TANK (OVERHEAD)
- 3.07 DEMIN WATER PLANT (OUTDOOR)
- 3.08 CHEMICAL LAB (ABOVE 4.02)
- 3.09 FILTERED WATER BY/W WASTE TANK
- 3.10 ACID / ALKALI STORAGE AREA
- 3.11 DEMIN WATER STORAGE TANKS
- 3.12 NEUTRALIZATION PIT
- 3.13 INDUCED DRAUGHT COOLING TOWER
- 3.14 COOLING WATER PUMP HOUSE
- 3.15 CHLORINATION PLANT & CHLORINE STORAGE
- 3.16 CW TREATMENT PLANT
- 3.17 CENTRAL MONITORING BASIN (OWNER'S SCOPE)
- 3.18 SLUDGE HANDLING FACILITY/PIT/THICKNER
- 3.19 OIL WATER SEPARATOR
- 3.20 DOSING SKID
- 3.21 SAMPLING SKID
4. ELECTRICAL FACILITIES
- 4.01 220 kv SWITCHYARD
- 4.02 DIESEL GENERATORS
- 4.03 OFFSITE SWITCHGEAR BUILDING
- 4.04 DM PLANT CONTROL ROOM
5. AUXILIARY BUILDINGS/FACILITIES
- 5.01 WORKSHOP
- 5.02 STORES (OWNER'S SCOPE)
- 5.03 AIR COMPRESSORS
6. NON-TECHNICAL BUILDINGS
- 6.01 CANTENNE
- 6.02 CAR PARKING SHED
- 6.03 ADMINISTRATION BUILDING (OWNER'S SCOPE)
- 6.04 GUEST HOUSE (OWNER'S SCOPE)
- 6.05 PARKING SHEDS (OWNER'S SCOPE)
- 6.06 GATE HOUSE (OWNER'S SCOPE)
- 6.07 FIRE STATION (OWNER'S SCOPE)
- 6.08 RESIDENTIAL COLONY (OWNER'S SCOPE)

- TP TERMINAL POINTS
- TP-1 NATURAL GAS
 - TP-2 RAW WATER INTAKE
 - TP-3 PLANT EFFLUENT
 - TP-4 OUT GOING POWER
 - TP-5 CONSTRUCTION POWER
 - TP-6 TELEPHONE CONNECTION
 - TP-7 CONSTRUCTION WATER
 - TP-8 POWER SUPPLY TO ADMIN. AREA
 - TP-9 POWER SUPPLY TO GAS/FUEL AREA
 - TP-9-a FIRE FIGHTING TERMINAL POINT
 - TP-10 LIQUID FUEL TERMINAL POINT
- GREEN BELT (50m WIDE AVG.)
 MAIN ROAD 6.0 M WIDE ROAD (OWNER'S SCOPE)
 PERIPHERAL ROAD 3.5 M WIDE (OWNER'S SCOPE)
 APPROACH ROAD FOR FACILITIES (APIL SCOPE)
 DRAIN
 BOUNDARY WALL
 FENCING
 CHAIN LINK FENCE
 BENCH MARK

REFERENCE DRAWINGS:

S.N.	DESCRIPTION	DRAWING NO.
1.	PLOT PLAN (CUSTOMER)	1AYE 0 00 002 (CUST)
2.	GENERAL ARRANGEMENT OF BOILER-PLANT	0-00-561-93319 (TRY)
3.	GA OF GAS TURBINE & GENERATOR	1-366-09-89006 (HYD)
4.	LAYOUT PLAN OF 220KV SUBSTATION	TB-0-309-316-001 (TBB)
5.	MAIN EQUIPMENT LAYOUT PLAN	PE-DG-293-100-M002 (PEM)
6.	LAYOUT OF TRANSFORMER YARD	PE-DG-293-100-E001 (PEM)

NOTES

1. INFORMATIONS PERTAINING TO EXISTING PLANT IS AS PER CUSTOMER PLOT PLAN
2. ALL DIMENSIONS AND LEVELS ARE IN METRES.
3. FOR DETAILS IN MAIN PLANT AREA REFER. Drg. No. PE-DG-293-100-M002
4. FINISHED GRADED LEVEL OF THE MAIN PLANT AREA SHALL BE RL 6.6M.
5. POWER HOUSE (ST-GT HALL) FINISHED GROUND FLOOR LEVEL IS EL.(±)0.00M WHICH CORRESPONDS TO RL.6.9M & BOILER PAVED LEVEL IS EL.(-)0.200M WHICH CORRESPONDS TO RL. 6.7M.
6. DETAILS/REQUIREMENT OF VARIOUS BUILDINGS/FACILITIES SHALL BE AS PER RESPECTIVE PACKAGES.

CUSTOMER NOTES FOR EXISTING PLANT:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER.
2. PLANT ELEVATION (EL ±0.00 M) REFERS TO THE TOP OF FINISHED GROUND FLOOR OF STEAM TURBINE BUILDING (ITEM NO.1.02) WHICH IS EQUIVALENT TO FL 6.0 METERS.
3. TOP OF ROAD SHALL BE ABOUT 100 mm ABOVE THE SURROUNDING GRADE LEVEL UNLESS OTHERWISE NOTED.
4. BENCH MARK AT FL(+) 5.80 M ABOVE MSL FOR CONSTRUCTION PURPOSE SHOWN THUS
5. ALL THE GRIDS ARE MARKED FROM 0.00N/S, 0.00E/W W.R.T FL(+) 4.360 M RIL STONE.
- *. EXISTING ROAD WILL BE DISMANTLED & NEW ROAD WILL BE MADE AS SHOWN.

PROGRESS DRAWING
AS ON 30.08.2009

CONSULTANT: FICHTNER Consulting Engineers India (Private) Limited

GUJARAT STATE ENERGY GENERATION LIMITED (GSEG)
350 MW CCPP HAZIRA, GUJARAT

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
ENGINEERING MANAGEMENT
NEW DELHI

DEPT. NAME SIGN DATE
DRN V.KRISHNAR SM/ 11.02.2009
DESIN BR. AGARWAL SM/ 11.02.2009
CHD BR. AGARWAL SM/ 11.02.2009
APPROV ANIL JOSHI SM/ 11.02.2009

TITLE: PLOT PLAN

SCALE: 1:1000

DRAWING No. PE-DG-293-100-M001

SHEET 1 OF 1 REV 02

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COMPUTER FILE NAME: 293_100_M001_01

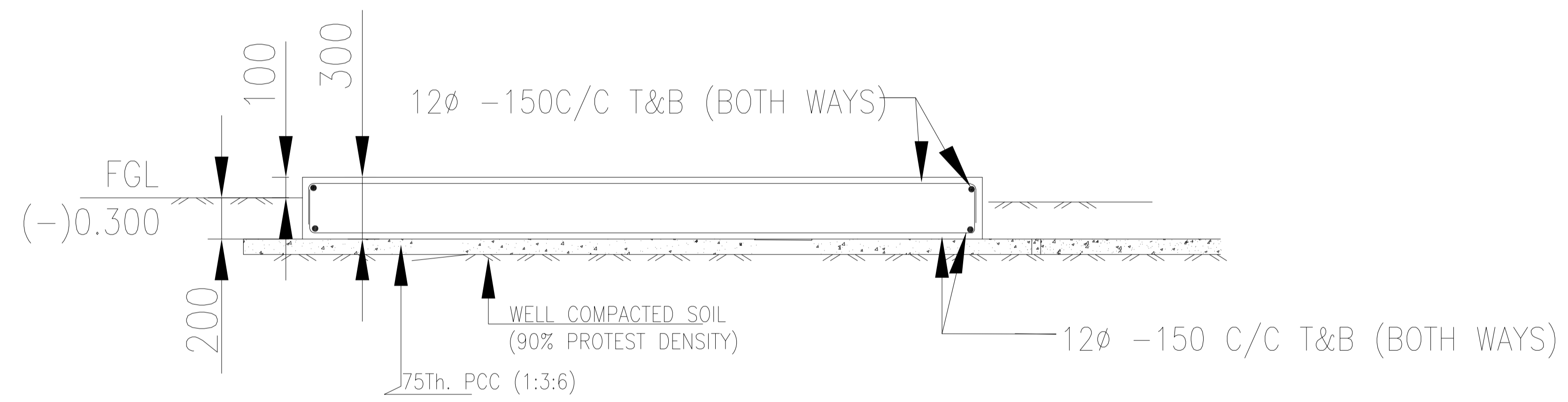
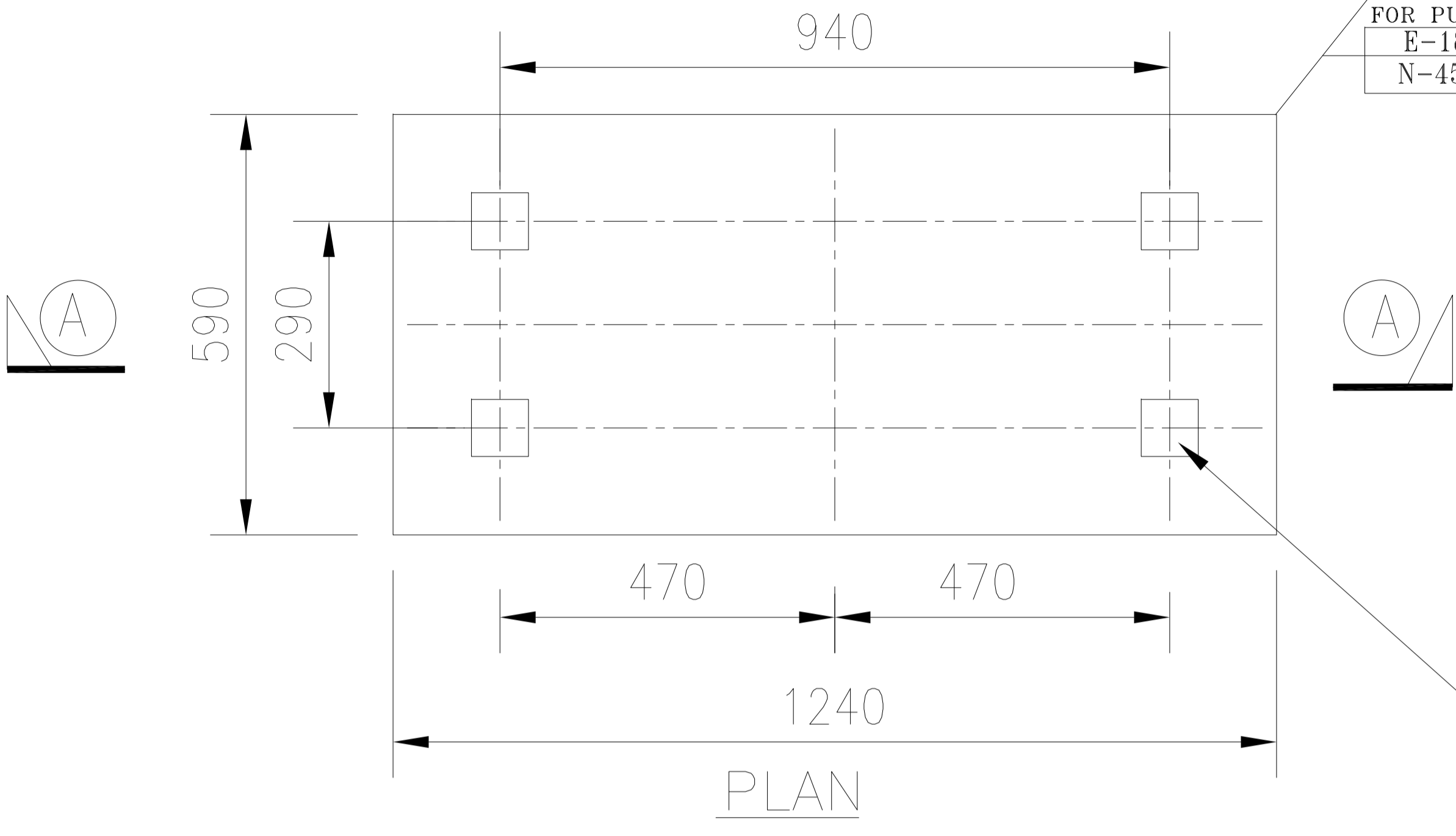
NOTE :

- ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRE UNLESS OTHERWISE STATED.
- ALL ELEVATIONS ARE REFERRED TO THE FINISHED FLOOR LEVEL OF MAIN POWER HOUSE BLDG AS EL + 0.00M WHICH CORRESPONDS TO RL 6.90M ABOVE MEAN SEA LEVEL.
- ALL LEAN CONCRETE SHALL BE OF MIX GRADE 1:3:6 AND SHALL BE 100MM THK. UNDER
- A. REINFORCING STEEL SHALL BE HCR-M GRADE Fe-500.
B. RCC SHALL BE M-30 FOR PILE CAP, PEDESTAL, WATER RETAINING STRUCTURES AND SUBSTRUCTURES.
C. SUBSTRUCTURE INCLUDING PILE CAP AND PEDESTAL CMING IN CONTACT WITH SUBSOIL AND GROUND WATER SHALL BE COATED WITH ATLEAST THREE COATS OF BITUMEN PAINT.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS, SPECIFICATION AND SCHEDULE OF ITEMS.
- BACKFILLING SHALL HAVE TO BE DONE ENSURING PROPER COMPACTION AND STRICTLY AS PER SPECIFICATION/SOIL REPORT RECOMMENDATION AND SHOULD BE COMPLETED BEFORE CONSTRUCTION OF SUMP COVER.
- COVER TO REINFORCEMENT :
BOTTOM SLAB, BOTTOM : 75 mm
WALL, SURFACE IN CONTACT OF LIQUID/SOIL : 50 mm
- CEMENT USED FOR SUBSTRUCTURE COMING IN DIRECT CONTACT WITH GROUND WATER SHALL BE AS PER SUBPOINT A.
A. PORTLAND SLAG CEMENT CONFIRMING TO IS 455 WITH MORE THAN 50% SLAG CEMENT EQUIVALENT TO 43 GRADE CEMENT STRENGTH.
- MINIMUM CEMENT CONTENT SHALL BE 400 KG/CUM.
- WATER CEMENT RATIO SHALL BE MAINTAINED AS 0.4. NECESSARY SUPER PLASTICIZER TO BE ADDED IF REQUIRED.
- POTABLE WATER SHALL BE USED FOR CONCRETE MIX AND CURING AND SHALL BE STRICTLY
- DEVELOPMENT LENGTH SHALL BE MINIMUM OF 40D AND LAP LENGTH SHALL BE 50D.
- CARE SHALL BE EXERCISED TO PREVENT UPLIFT OF SUBSTRUCTURE DURING VARIOUS STAGE OF CONSTRUCTION. SUITABLE PREVENTIVE MEASURES SUCH AS DEWATERING, PART BACKFILLING ON WALL SIDE, LOADING WITH SAND BAGS OR ANY APPROVED MEASURES SHALL BE ADOPTED TO SUIT CONSTRUCTION SEQUENCE/CONSTRAINTS.
- LAP LOCATION AND STAGGERING SHALL BE DECIDED AT SITE WITH CONCERN FROM SITE INCHARGE.
- 900MM THICK SOIL BELOW PCC OF THE FOOTING/RAFT SHALL BE REMOVED AND FILLED WITH MOORUM/CNS SOIL FILL IN LAYERS NOT EXCEEDING 250MM IN LOOSE THICKNESS AND EACH SHALL BE COMPACTED SO AS TO ACHIEVE AT LEAST 98% OF MAXIMUM DRY DENSITY AS PER IS: 2720 PART-7.
- NET SAFE BEARING CAPACITY AT THE FOUNDATION LEVEL SHALL BE 42 kN/SQM.
- REINFORCEMENT BAR TO CLEAR THE POCKET LOCATION.


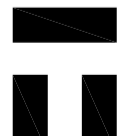
FOR PUMP-A
E-185.65
N-45.14

FOR PUMP-B
E-186.65
N-45.14

80x80x250 POCKET SIZE
(4 NOS M16 & 250 DEEP)



SECTION-AA

0	07.02.13	SUBMISSION FOR APPROVAL	AR	RB	RB
REV.	DATE	DESCRIPTION	DRN.	CHD.	APPRD.
OWNER:		GUJARAT STATE ENERGY GENERATION LIMITED			
MAIN CONTRACTOR:		 BHARAT HEAVY ELECTRICAL LIMITED PROJECT ENGINEERING MANAGEMENT, NEW DELHI			
CONTRACTOR:		 TECHNOFAB ENGINEERING LIMITED 507 EROS APARTMENTS, 56 NEHRU PLACE NEW DELHI - 110019, INDIA PHONE : 91-129-2270202, 2275310			
PROJECT:		350 MW COMBINED CYCLE POWER PLANT AT HAZIRA GUJRAT			
TITLE:		RCC DETAILS OF FOUNDATION FOR THICKENED SLUDGE TRANSFER PUMP			
SCALE	SHEET NO.	BHEL DRG. NO.	TECHNOFAB DRG. NO.	REV.	
1:100	1 OF 1	PE-VO-293-183-A177		0	