CORRIGENDUM-4 TO TENDER SPECIFICATION BHEL: PSSR: SCT: 1896

Sub: Civil, Structural & architectural works of various BOP Buildings Part 1 at 2x660 MW Ennore SEZ Super Thermal Power Project, at ash dyke of North Chennai Thermal Power Station (NCTPS), Thiruvallur District, Tamil Nadu

1. The following dates in Clause No. 1.0 Salient Features of NIT in NOTICE INVITING TENDER are revised as below: -

Description	As Per Tender	Revised as
Sl. No v) Due Date & Time of Offer Submission	04.06.2020, 15.00 HRS	18.06.2020, 15.00 HRS
Sl. No vi) Opening of Tender	04.06.2020, 15.30 HRS	18.06.2020, 15.30 HRS

2. A clarification was sought in regard to subject tender and BHEL's reply is furnished below for information.

Sl. No.	Tender Ref. clause	Existing Provision	Bidder's Query	BHEL Clarification
1.	Clause No. 1.3.11;Bid Drawings under Volume IA Part I Chapter III	BID DRAWINGS Bid drawings enclosed for information and this may get revised during execution.	Can we please get the drawings for review prior to bid (Structural Drawings detailing requirement of dewatering, Architectural Finishes etc)	Drawings are attached as part of this corrigendum for preliminary information and Tendering Purpose only. The attached drawings are indicative only & may get revised during execution.

Note:

1. All other conditions remain unchanged.
2. Bidders are requested to consider this corrigendum as part of tender specification and quote accordingly.

Encl.:

1. Indicative Drawings for following areas are attached for preliminary information and Tendering Purpose only (30 Pages)
    - Air washer building
    - Chemical house
    - Chlorination building
    - CPU regeneration building
    - Hydrogen generation plant
    - Filter water Tank
    - Fire water tank
    - Guard pond for ETP
    - Central Monitoring Basin
    - Service Water Overhead Tank

-sd-
T.K.Eashwar
Sr. Engineer/ SCT

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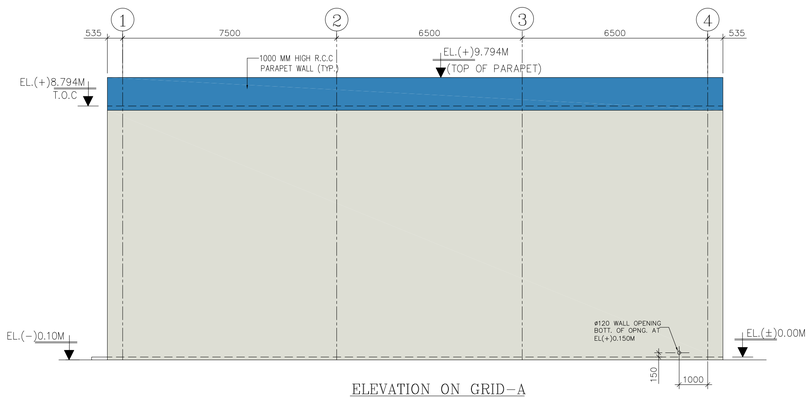
DRAWING NO. PE-DG-412-648-C002

FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM



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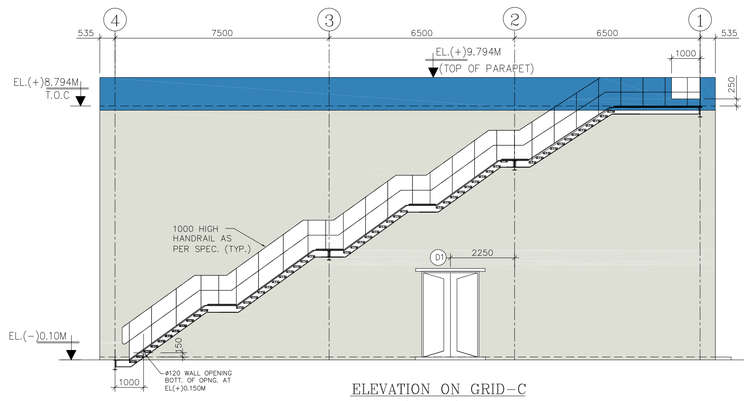

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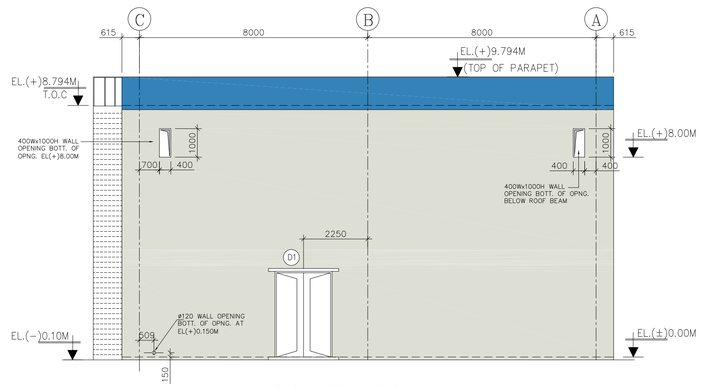

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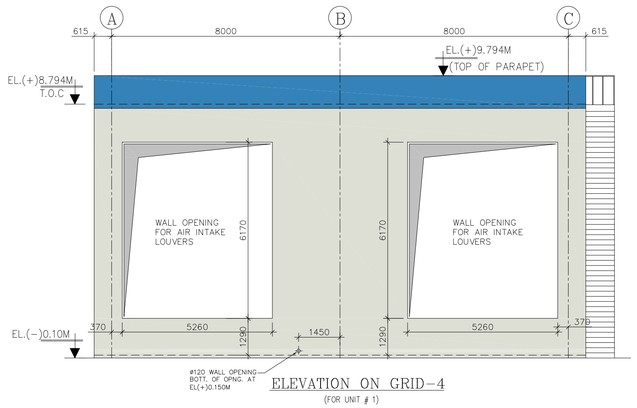

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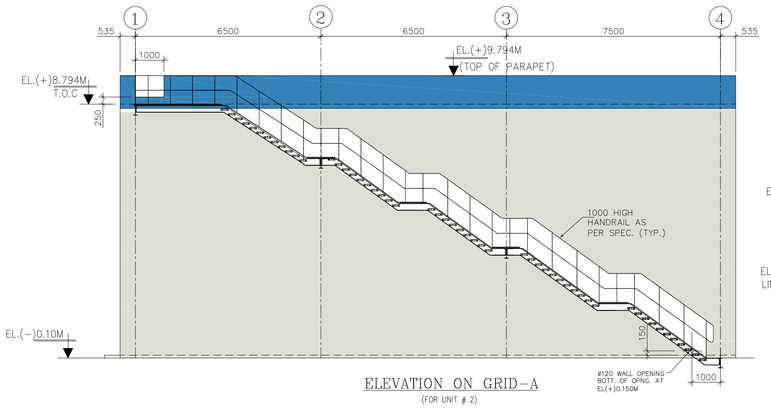

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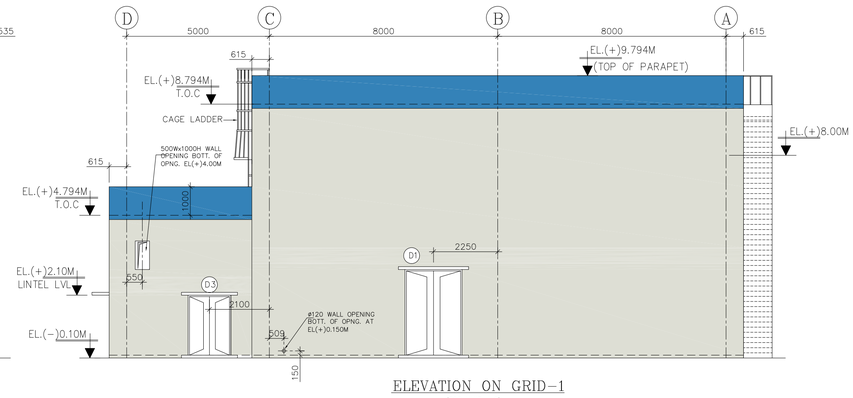

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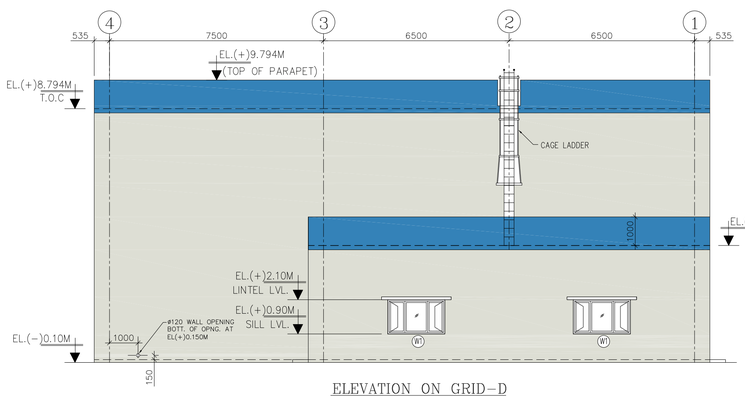

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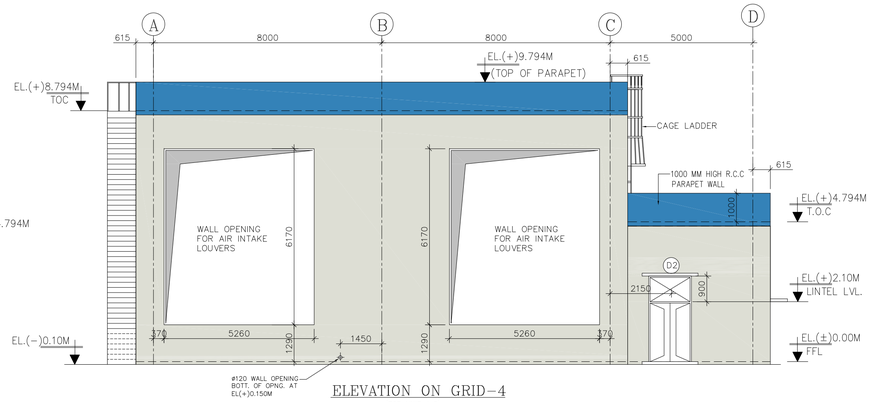

ELEVATION ON GRID–4
(FOR UNIT # 2)

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS & LEVELS ARE IN METER UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. (±)0.00 M WHICH CORRESPONDS TO RL. +8.50 M. ABOVE MEAN SEA LEVEL.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.

REFERENCE DWG.

1. PLOT PLAN ------- PE-DG-412-100-M001
2. STANDARD DETAILS FOR ARCHITECTURAL WORKS ------- PE-DG-412-611-C031
3. G.A. & R.C. DETAIL OF FOUNDATION & PLINTH BEAM ------- PE-DG-412-648-C003
4. AIR WASHER STRUCTURAL FRAMING ------- PE-DG-412-648-C004
5. ELECTRICAL EQUIPMENT AND CABLING IN AIR WASHER ROOM (A-ROW) -------PE-DG-412-100-E015
6. AIR WASHER LAYOUT OUTSIDE A-ROW SIDE ALONG WITH FDN. DETAIL -TG BLDG. --------PE-VO-412-554-A022 (SH 1&2)

LEGENDS:–

1. T.O.C -----TOP OF CONCRETE
2. F.G.L -----FINISHED GROUND LEVEL
3. F.F.L -----FINISHED FLOOR LEVEL
4. LVL -----LEVEL

* COLOUR SCHEME TO BE DECIDED BY CUSTOMER AT SITE.

READ THIS DRG. IN CONJUNCTION WITH DRG. PE-DG-412-648-C001

BHEL–PROJECT ENGINEERING MANAGEMENT(CIVIL)	
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☐ CONSTRUCTION	
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	
DATE	16 OCTOBER 2018

PROJECT	2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH–II, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

JOB NO. 412 | STATUS CONTRACT | DRG./REF. NO. (INTERNAL) | PRINT SCALE IN METRE 0 2 4 6 8 10 20 30 40 50

DEPT CODE	DRAWING	NAME	SIGN	DATE
C	DRN.	VSR		16/10/18
	DESN	VS/SB		16/10/18
	CHD	SM		16/10/18
	APPD	AN		16/10/18

DATE	ALTD	CHD	APPD	REV.
13.12.18	VSR	VS	SM	01

REVISED AS PER TENGEDCO COMMENTS VIA LR NO. SE/C/TP/ E2/ENNORE SEZTPP/F. AIR WASHER BLDG./ D. 2103 /18, DT. 04 .12.2018

TITLE: AIR WASHER BLDG ARCHITECTURAL ELEVATION

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –	DRAWING NO. PE-DG-412-648-C002
					SIGN		
					DATE		SHEET 1 OF 1 REV. 1

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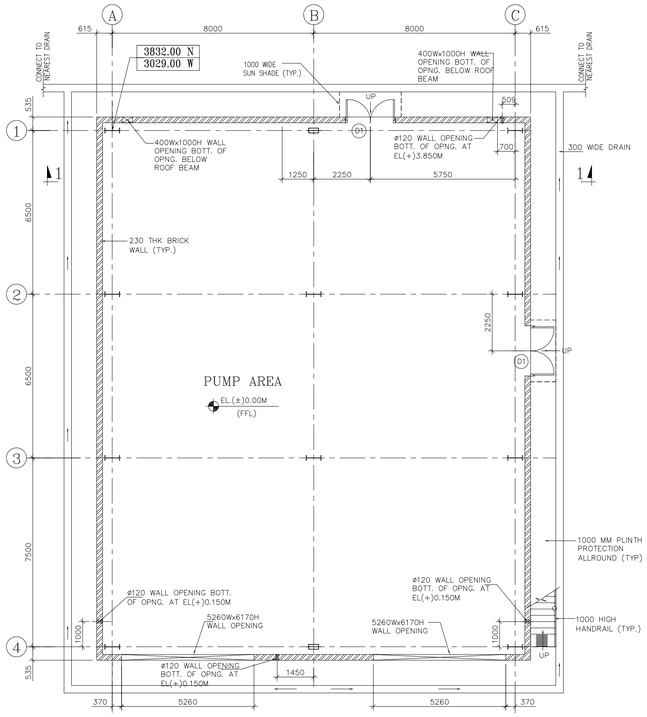
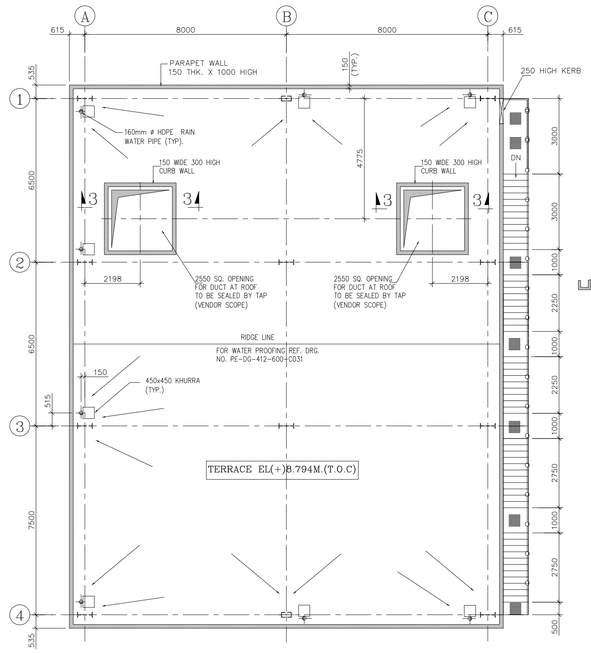
DRAWING NO. PE-DG-412-648-C001

FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM

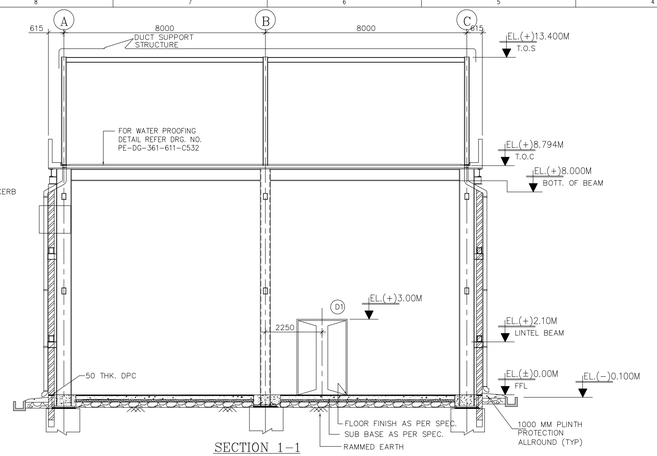
N



PLAN AT EL.(±)0.00M
(FOR UNIT # 1)



ROOF PLAN
(FOR UNIT # 1)



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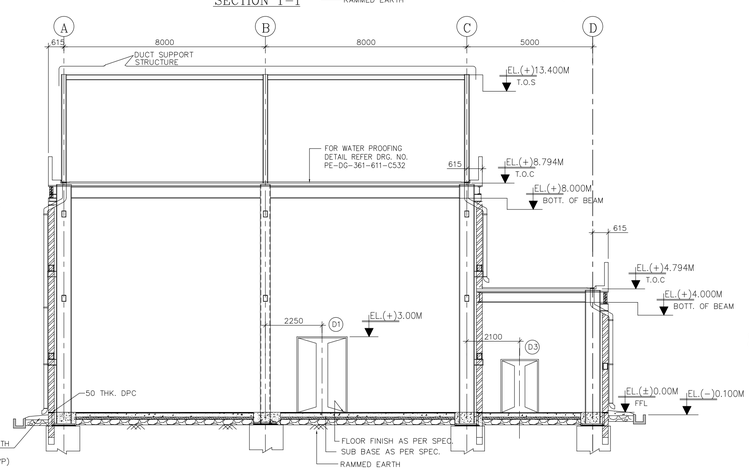

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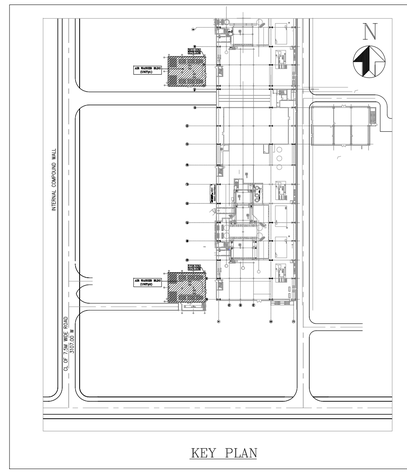

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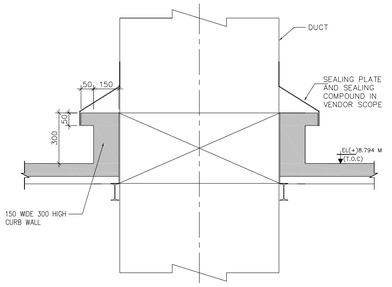

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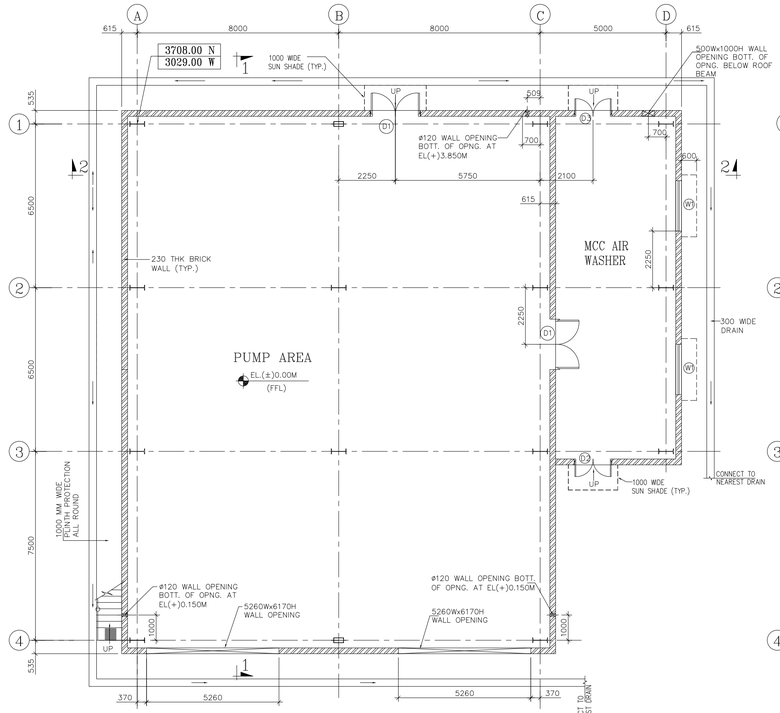

PLAN AT EL.(±)0.00M
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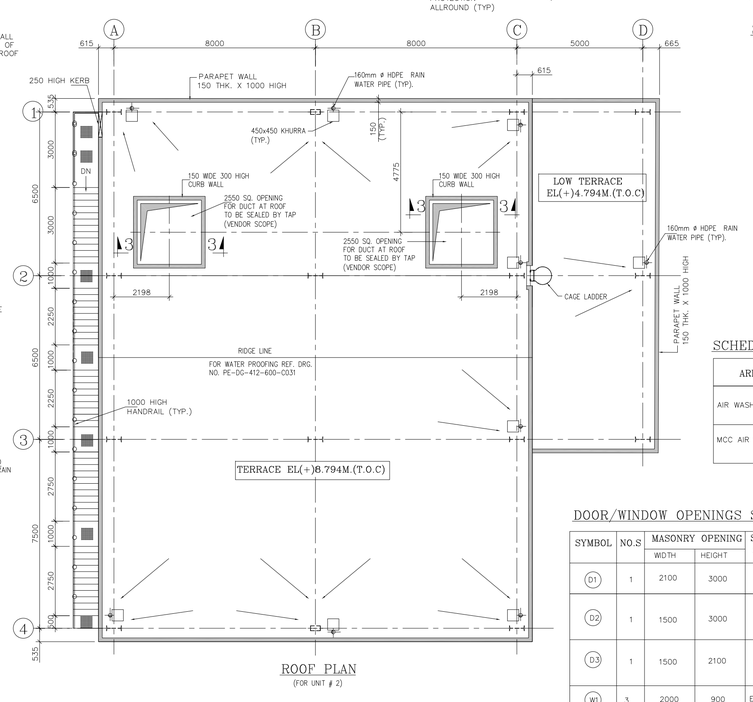

ROOF PLAN
(FOR UNIT # 2)

SCHEDULE OF EXTERNAL FINISHES

RWP	160mm ø HDPE RAIN WATER PIPE (TYP).
EXTERNAL WALL/SUNSHADE	FOR DETAIL REFER PE-DG-412-611-C031
INTERNAL PLASTER	
EXTERNAL PLASTER	
ROOF TREATMENT	FOR WATER PROOFING DETAIL REFER PE-DG-412-611-C031
EXTERNAL WALL PAINT	WATER PROOF CEMENT BASED PAINT

SCHEDULE OF INTERNAL FINISHES

AREA	FLOORING / SKIRTING	WALL	CEILING
AIR WASHER ROOM	GRANOLITHIC WITH NON-METALLIC FLOOR HARDNER & TOP FINISHED WITH EPOXY COATING.	ACRYLIC WASHABLE DISTEMPER	METAL DECK
MCC AIR WASHER	GRANOLITHIC WITH NON-METALLIC FLOOR HARDNER & TOP FINISHED WITH EPOXY COATING.	ACRYLIC WASHABLE DISTEMPER	METAL DECK

DOOR/WINDOW OPENINGS SCHEDULE

SYMBOL	NO.S	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	SILL LVL AT EL.	LINTEL LVL AT EL.	REMARKS
D1	1	2100	3000	--	EL+3.00M	HOLLOW METAL (STEEL) FLUSH DOOR WITH PRESSED STEEL FRAME
D2	1	1500	3000	--	EL+3.00M	HOLLOW METAL (STEEL) FLUSH DOOR WITH PRESSED STEEL FRAME 1500X3000 OPNG. HAVING 1500X2100 DOOR WITH 900 MM REMOVABLE TRASOME
D3	1	1500	2100	--	EL+2.10M	HOLLOW METAL (STEEL) FLUSH DOOR WITH PRESSED STEEL FRAME
W1	3	2000	900	EL(+)0.900	EL(+)2.100	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 6MM THICK SHEET GLASS.

NOTES :

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4. AIR WASHER STRUCTURAL FRAMING ------- PE-DG-412-648-C005
5. ELECTRICAL EQUIPMENT AND CABLING IN AIR WASHER ROOM (A-ROW) -------PE-DG-412-100-E015
6. AIR WASHER LAYOUT OUTSIDE A-ROW SIDE ALONG WITH FDN. DETAIL -TG BLDG. --------PE-VO-412-554-A022 (SH 1&2)

LEGENDS:-

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2. F.G.L -----FINISHED GROUND LEVEL
3. F.F.L -----FINISHED FLOOR LEVEL
4. LVL -----LEVEL

READ THIS DRG. IN CONJUNCTION WITH DRG. PE-DG-412-648-C002

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ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	-sd-
DATE	13 DECEMBER 2018

DATE	ALTD	CHD	APPD	REV.
13.12.18	YSR	VS	SM	01

REVISED AS PER TENGEDCO COMMENTS VIA LR. NO. SE/C/TP/ EQ/ENNORE SEZTPP/F. AIR WASHER BLDG./ D. 2103 /18, DT. 04 .12.2018

JOB NO.	412
STATUS	CONTRACT
DRG./REF. NO. (INTERNAL)	
PRINT SCALE IN METRE	0 10 20 30 40 50

PROJECT: 2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI

OWNER: TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED

OWNER'S CONSULTANT: DESEIN PRIVATE LIMITED
DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NEW DELHI

DEPT CODE	DRAWING	NAME	SIGN	DATE
C	DRN	YSR	-sd-	16/10/18
	DESN	VS/SB	-sd-	16/10/18
	CHD	SM	-sd-	16/10/18
	APPD	AN	-sd-	16/10/18

TITLE: AIR WASHER BLDG
ARCHITECTURAL AND SECTION

MPL	ELEC	C&I	MSE	MAX	DEPT. SIGN DATE	SCALE -

DRAWING NO. PE-DG-412-648-C001
SHEET 1 OF 1 REV. 1

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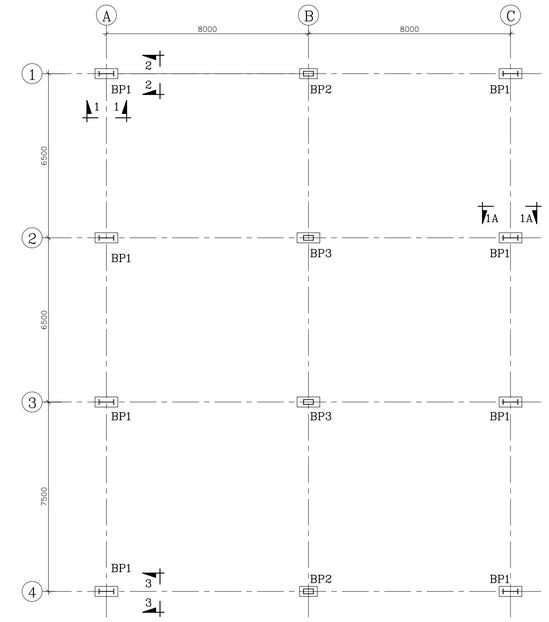

BASE PLATE PLAN
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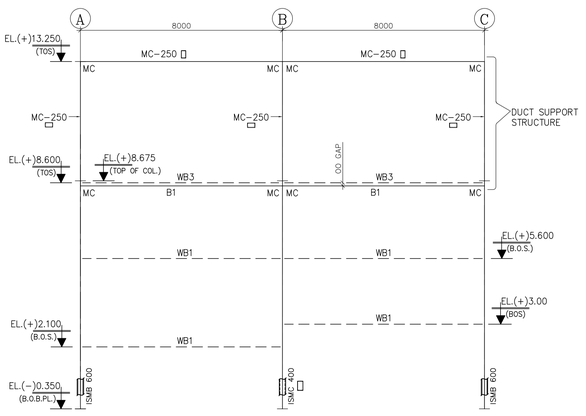
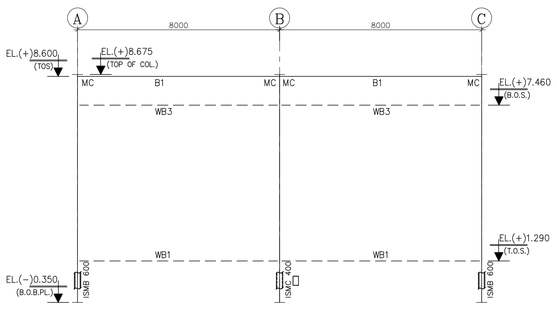


ELEVATION ON GRID-1



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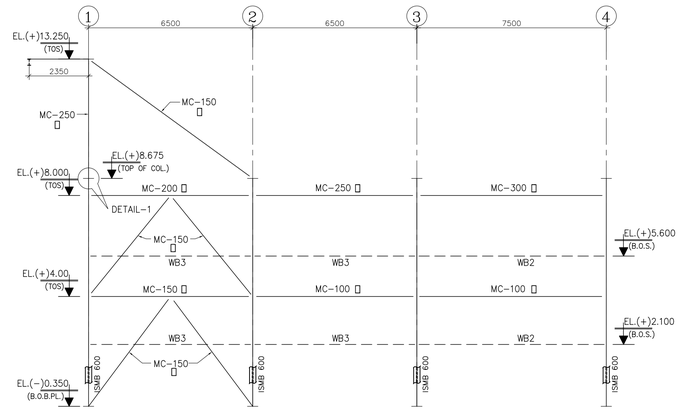

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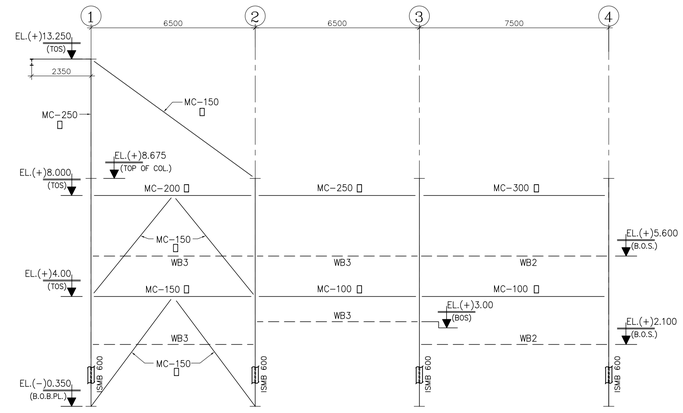

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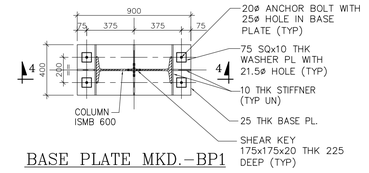

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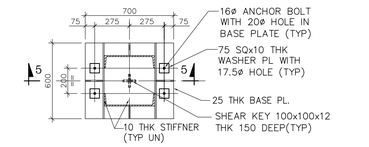

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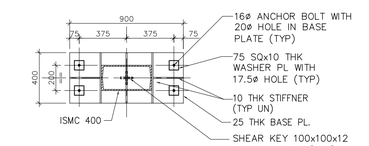

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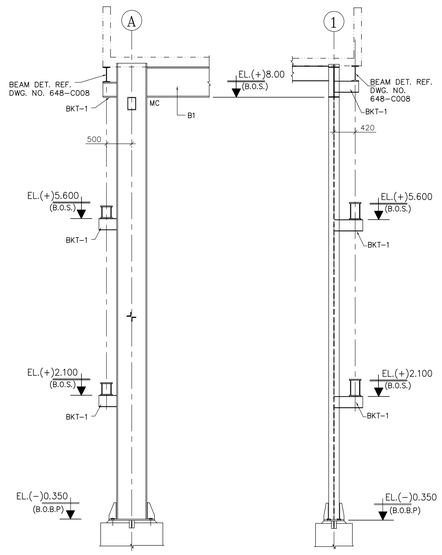
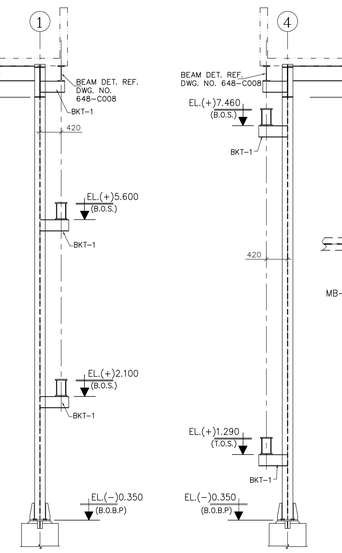
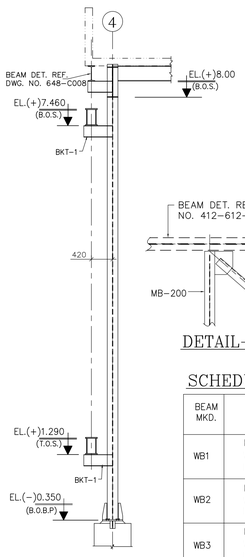


SECTION 1-1

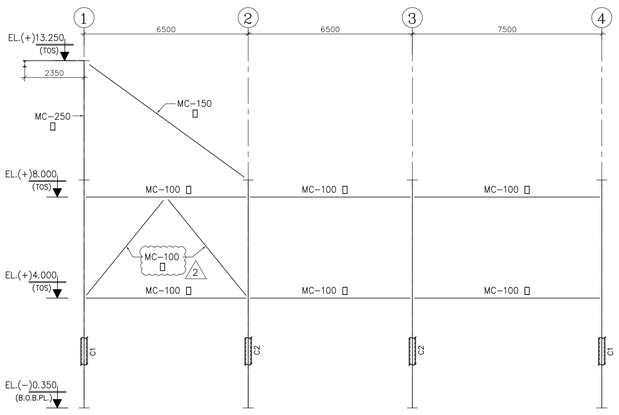
SECTION 1A-1A



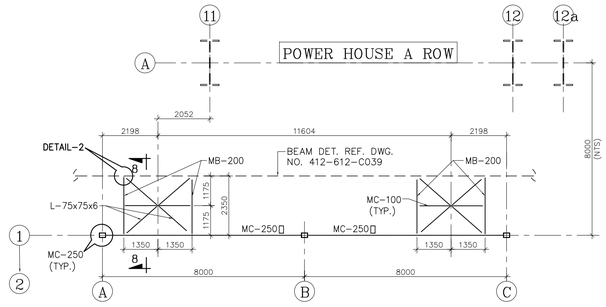
SECTION 2-2



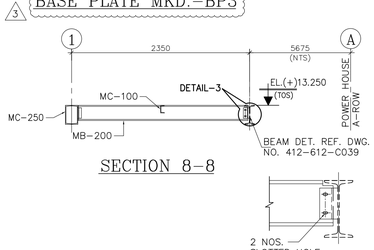
SECTION 3-3



ELEVATION ON GRID-B



PLAN AT EL(+)13.250 (TOS)
(DUCT SUPPORT STRUCTURE)



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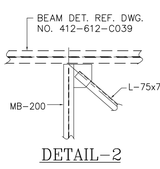


DETAIL-2

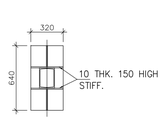
DETAIL-3

SCHEDULE OF BEAMS

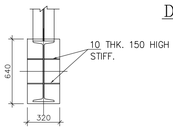
BEAM MKD.	BEAM SECTION	BRACKET
WB1	FP - 230X20 THK. WP - 16 THK. D - 340	MB 450
WB2	FP - 230X20 THK. WP - 16 THK. D - 300	MB 450
WB3	FP - 230X20 THK. WP - 16 THK. D - 250	MB 450
BKT-1	ISMB 450	-
B1	FP - 210X25 THK. WP - 20 THK. D - 600	-

SCHEDULE OF COLUMN

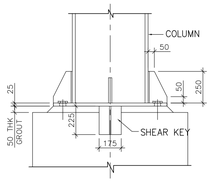
MKD.	BEAM SECTION	BRACKET
C1	a - 300X8 THK. b - 200 c -ISMC 400	
C2	ISMC 400 BOX (T/T)	



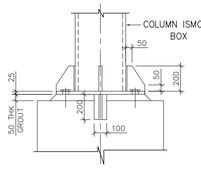
VIEW 6-6



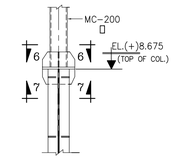
VIEW 7-7



SECTION 4-4



SECTION 5-5



DETAIL-1

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS & LEVELS ARE IN METER UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. (±)0.00 M WHICH CORRESPONDS TO RL. +10.00 M. ABOVE MEAN SEA LEVEL.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
4. ALL FABRICATION & ERECTION OF STRUCTURAL STEEL SHALL BE AS PER IS:800
5. CHECK ALL DIMENSIONS, CO-ORDINATES & ELEVATION IMMEDIATELY, REPORT ANY DISCREPANCIES, CONFLICTS OR ERROR FOR CLARIFICATION PRIOR TO COMMENCING WORK.

REFERENCE DWG.

1. PLOT PLAN ------ PE-DG-412-100-M001 (R4)
2. GENERAL NOTES & STANDARD DETAILS FOR STRUCTURAL STEEL WORKS -- PE-DG-412-600-C002 (R5)
3. AIR WASHER BLDG-ARCHITECTURAL PLANS & SECTION ------ PE-DG-412-648-C001 (R1)
4. AIR WASHER BLDG-ARCHITECTURAL ELEVATION ------ PE-DG-412-648-C002 (R1)
5. AIR WASHER BLDG- GA AND RC DETAILS OF FOUNDATION & COLMN --- PE-DG-412-648-C003 (R1)
6. AIR WASHER BLDG- ROOF DETAILS ------ PE-DG-412-648-C008 (R0)
7. AIR WASHER BLDG- LAYOUT & RC DETAILS OF PLINTH BEAM ------ PE-DG-412-648-C004 (R1)
8. ELECTRICAL EQUIPMENT AND CABLING IN AIR WASHER ROOM (A-ROW) ------PE-DG-412-100-E015 (R0)
9. AIR WASHER LAYOUT OUTSIDE A-ROW SIDE ALONG WITH FDN. DETAIL -TG BLDG. -------PE-VO-412-554-A022 (R0) (SH 1&2)

LEGENDS:-

1. T.O.C -----TOP OF CONCRETE
2. F.G.L -----FINISHED GROUND LEVEL
3. (B/F) -----BOTH FACE

TOTAL TONNAGE- 55 MT. (APPROX)

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED

ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	-sd-
DATE	12 MARCH 2019

REV.	DATE	ALTD	CHD	APPD
02	12.03.19	YSR	VS	SM
01	22.12.18	YSR	VS	SM

02: REVISED AS PER TENGEDCO COMMENTS VIA LR. NO. SE/C/TP/E2/ENNORE SEZTPP/F.AIR WASHER BLDG./D.264/19, DT. 13 .02.2019 AND MKD. AS 2

01: REVISED AS PER TENGEDCO COMMENTS VIA LR. NO. SE/C/TP/E2/ENNORE SEZTPP/F. AIR WASHER/D. 2096/18, DT. 01.12.2018

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	

DEPT CODE		NAME	SIGN	DATE
C	DRN	YSR	-sd-	15/11/17
	DESN	VS	-sd-	15/11/17
	CHD	SM	-sd-	15/11/17
	APPD	AN	-sd-	15/11/17

TITLE: AIR WASHER BUILDING
STRUCTURAL FRAMING (UNIT-1)

DEPT. | SCALE: | DRAWING NO. PE-DG-412-648-C005
SIGN | DATE | SHEET 1 OF 1 | REV. 2

FORMAT SIZE A1

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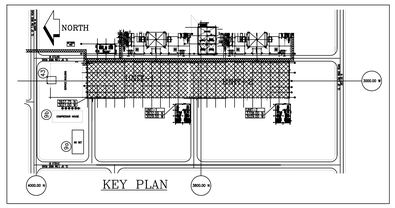
DRAWING NO. PE-V0-412-554-A022

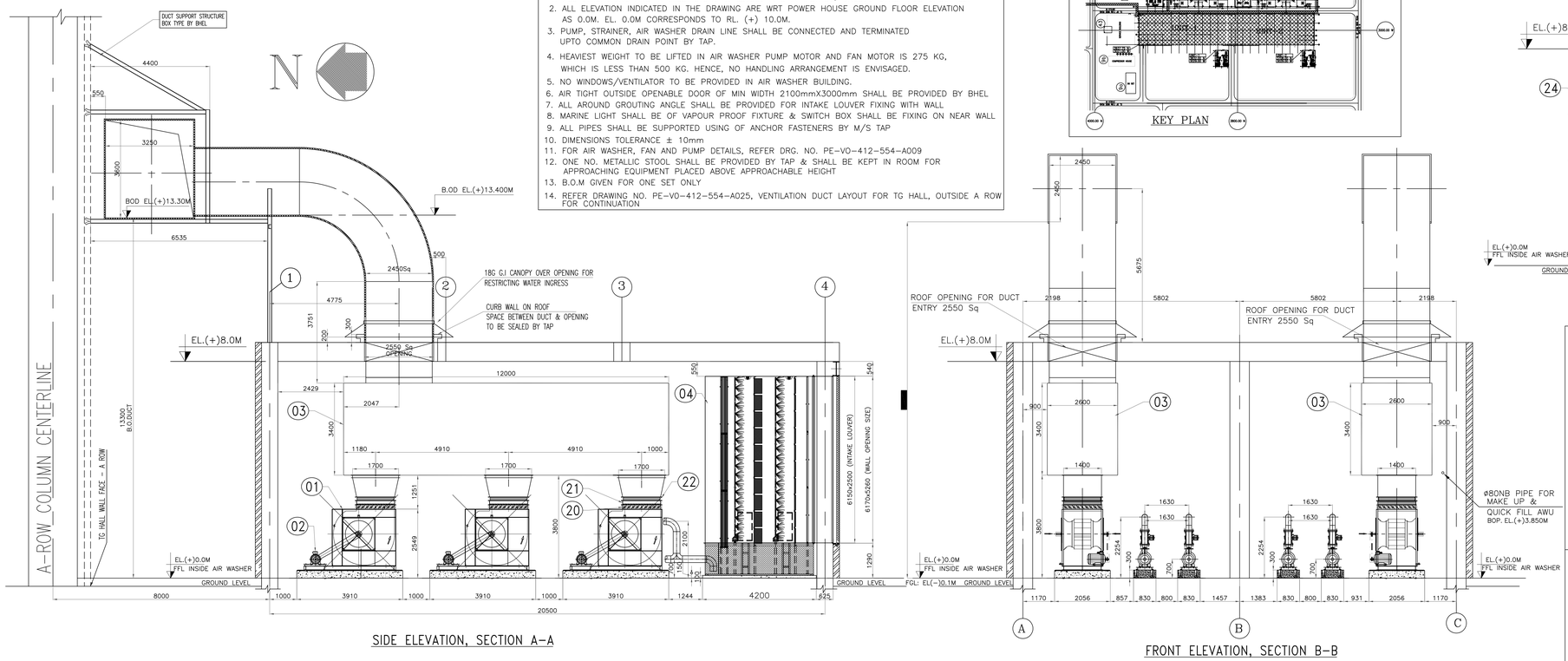
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

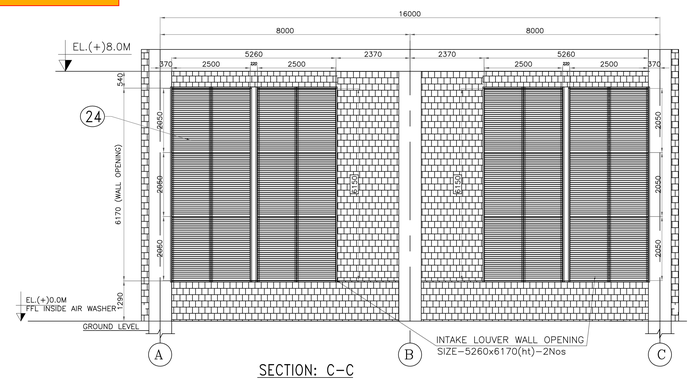
INPUT

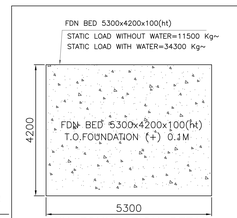
NOTES :-

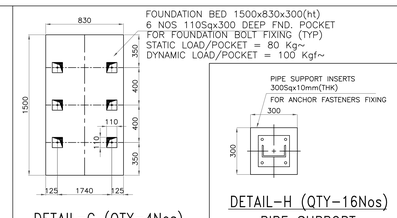
1. ALL DIMENSIONS ARE IN MILLIMETERS & LEVELS ARE IN METRES, UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATION INDICATED IN THE DRAWING ARE WRT POWER HOUSE GROUND FLOOR ELEVATION AS 0.0M. EL. 0.0M CORRESPONDS TO RL. (+) 10.0M.
3. PUMP, STRAINER, AIR WASHER DRAIN LINE SHALL BE CONNECTED AND TERMINATED UPTO COMMON DRAIN POINT BY TAP.
4. HEAVIEST WEIGHT TO BE LIFTED IN AIR WASHER PUMP MOTOR AND FAN MOTOR IS 275 KG, WHICH IS LESS THAN 500 KG. HENCE, NO HANDLING ARRANGEMENT IS ENVISAGED.
5. NO WINDOWS/VENTILATOR TO BE PROVIDED IN AIR WASHER BUILDING.
6. AIR TIGHT OUTSIDE OPENABLE DOOR OF MIN WIDTH 2100mmX3000mm SHALL BE PROVIDED BY BHEL
7. ALL AROUND GROUTING ANGLE SHALL BE PROVIDED FOR INTAKE LOUVER FIXING WITH WALL
8. MARINE LIGHT SHALL BE OF VAPOUR PROOF FIXTURE & SWITCH BOX SHALL BE FIXING ON NEAR WALL
9. ALL PIPES SHALL BE SUPPORTED USING OF ANCHOR FASTENERS BY M/S TAP
10. DIMENSIONS TOLERANCE ± 10mm
11. FOR AIR WASHER, FAN AND PUMP DETAILS, REFER DRG. NO. PE-V0-412-554-A009
12. ONE NO. METALLIC STOOL SHALL BE PROVIDED BY TAP & SHALL BE KEPT IN ROOM FOR APPROACHING EQUIPMENT PLACED ABOVE APPROACHABLE HEIGHT
13. B.O.M GIVEN FOR ONE SET ONLY
14. REFER DRAWING NO. PE-V0-412-554-A025, VENTILATION DUCT LAYOUT FOR TG HALL, OUTSIDE A ROW FOR CONTINUATION

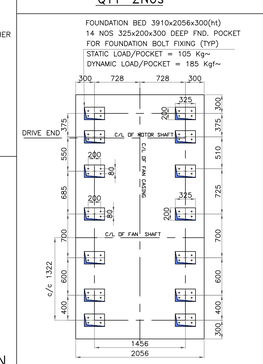








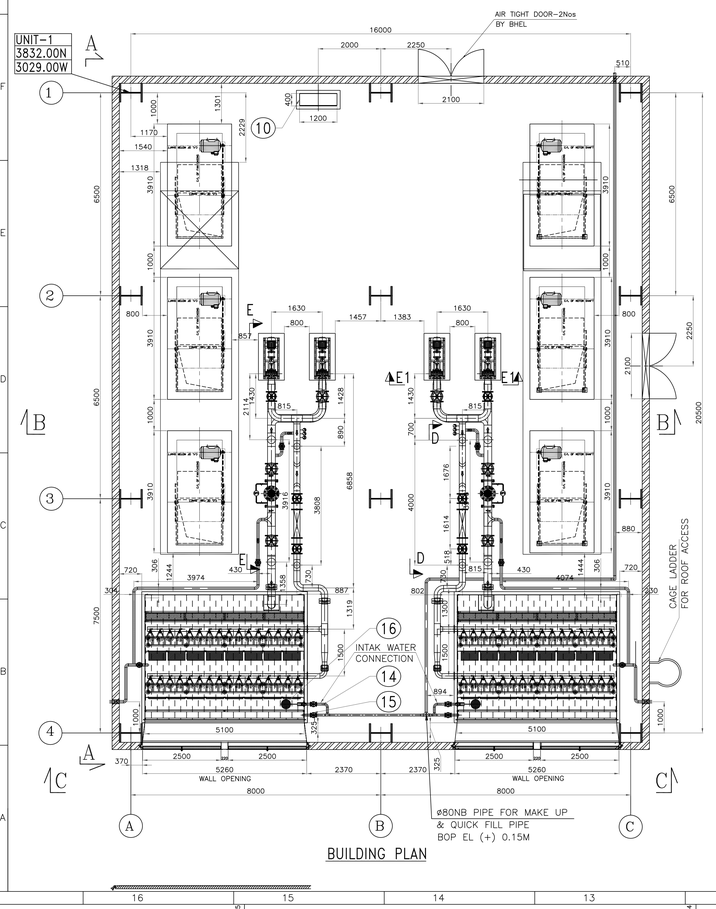


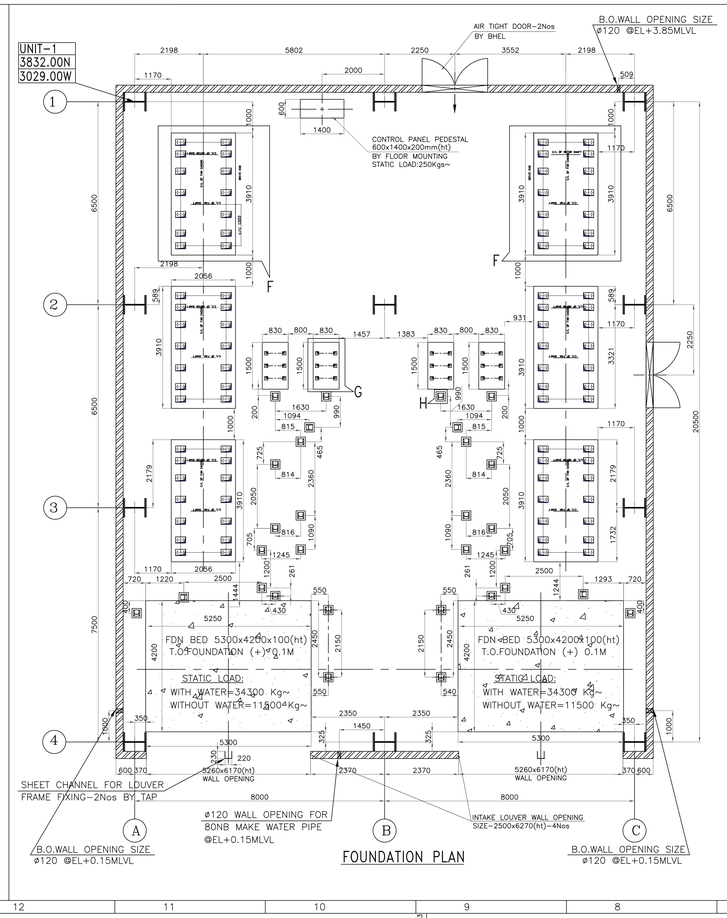


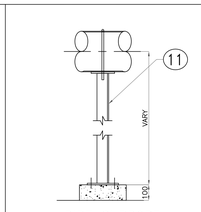
LOCATION:
A-ROW AT 0.0M LVL
UNIT#01

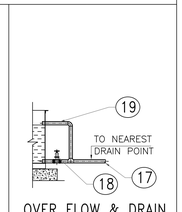
CAPACITY:2,50,000 CMH
2x2,50,000=5,00,000 CMH

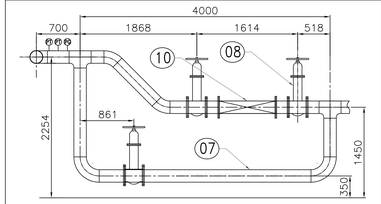
REVIEWED
By VIPIN NAUNI at 4:59 pm, Aug 13, 2018

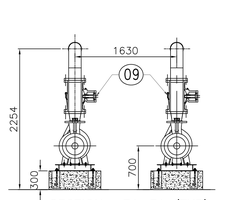


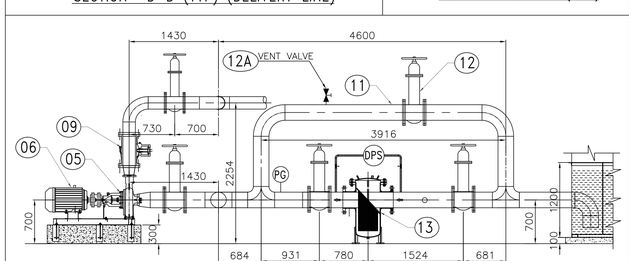












BILL OF MATERIALS

NO.	DESCRITION	SIZE/THK	MATL	QTY	RMKS
01.	CENTRIFUGAL FAN	GFAB-5-160	AS PER OEM STD	6 Nos	HOWDEN
02.	MOTOR	30KW/4P	IS 325	6 Nos	LHP
03.	PLENUM DUCT	AS PER DRAWING	IS 277@18G GI	1 Lot	275GSM
04.	AIRWASHER UNIT	5100x4000x7350H	IS 1079	2 Nos	
05.	SPRAY PUMP	CAPACITY-251m3	refer separate documents	4 Nos	SUC-250NB DEL-200NB
06.	MOTOR	30KW/4P		4 Nos	LHP SIM TURBO
07.	PIPE	200 NB PIPE	IS 1239/PART1	1 Lot	BUTT WELDING END
08.	ARRAN-GEMENT	GATE VALVE	Refer valve Documents	5 Nos	FLANGE END
09.	PIPE WITH BYPASS	CHECK VALVE		4 Nos	FLANGE END
10.	DELIVERY	SCALE PREVENTOR	STD	1 No	
11.		PIPE	IS 1239/PART1	1 No	BUTT WELDING END
12.	ARRAN-GEMENT	GATE VALVE		5 Nos	FLANGE END
12A	PIPE WITH BYPASS	VENT VALVE	Refer valve Documents	1 No	SCREW END
13.	SUCTION	POT STRAINER		1 No	FLANGE END
14.	ARRAN-GEMENT	PIPE	IS 1239/PART1	1 LOT	BUTT WELDING END
15.	QUICK FILL PIPE	GATE VALVE	Refer valve Documents	2 Nos	FLANGE END
16.		FLOAT VALVE		2 Nos	
17.	DRAIN PIPE ARRAN-GEMENT	PIPE (DRAIN)	IS 1239/PART1	1 Lot	BUTT WELDING END
18.		GATE VALVE(DRAIN)	Refer valve Documents	1 No	FLANGE END
19.		PIPE (OVER FLOW)	IS 1239/PART1	1 Lot	FLANGE END
20.	VOLUME CONTROL DAMPER	1400Sqx150	IS 1079@2Thk	6 Nos	M.S EPOXY PAINTED
21.	NON RETURN DAMPER	1400Sqx150	IS 277@1.2Thk	6 Nos	275 GSM
22.	FLEXIBLE CONNECTION	1400Sqx150	CANVASS	6 Nos	
23.	PIPE SUPPORT	AS REQD	ISMC 75x40	1 Lot	
24.	INATAKE LOUVER WITH FRAME	2500x6150(h)	IS 277/ISA	4 Nos	

CUSTOMER	TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
EPC CONTRACTOR	BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

2x660 MW ENNORE SEZ COAL BASED STPP
AT ASH DYKE OF NCTPS, CHENNAI

JOB NO.	412
STATUS	CONTRACT
DRG./REF. NO. (INTERNAL)	
PRINT SCALE IN METRE	

REV.	DATE	ALTD	CHD	APPD

SUB-CONTRACTOR VENTILATION SYSTEM

TAP ENGINEERING
No.152,(SP) AMBATTUR INDL ESTATE, 21st PHASE, CHENNAI-600 058

	NAME	SIGN	DATE
DSN	E.A	-sd-	29.03.2018
DRN	E.A	-sd-	29.03.2018
CHD	CRK	-sd-	29.03.2018
APPD	CRK	-sd-	29.03.2018

PACKAGE: VENTILATION SYSTEM

TITLE: AIR WASHER LAYOUT OUTSIDE-"A ROW" SIDE ALONG ALONG WITH FOUNDATION DETAILS -TG BUILDING

DEPT. | SCALE 1:100 | DRAWING No. PE-V0-412-554-A022
SIGN
DATE
SHEET 1 OF 2 | REV 00

FORMAT SIZE A1

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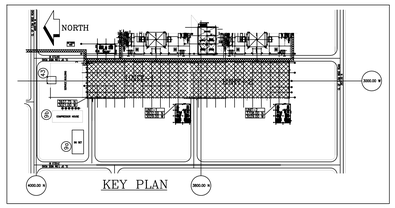
DRAWING NO. PE-V0-412-554-A022

FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

NOTES :-

1. ALL DIMENSIONS ARE IN MILLIMETERS & LEVELS ARE IN METRES, UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATION INDICATED IN THE DRAWING ARE WRT POWER HOUSE GROUND FLOOR ELEVATION AS 0.0M. EL. 0.0M CORRESPONDS TO RL. (+) 10.0M.
3. PUMP, STRAINER, AIR WASHER DRAIN LINE SHALL BE CONNECTED AND TERMINATED UPTO COMMON DRAIN POINT BY TAP.
4. HEAVIEST WEIGHT TO BE LIFTED IN AIR WASHER PUMP MOTOR AND FAN MOTOR IS 275 KG, WHICH IS LESS THAN 500 KG. HENCE, NO HANDLING ARRANGEMENT IS ENVISAGED.
5. NO WINDOWS/VENTILATOR TO BE PROVIDED IN AIR WASHER BUILDING.
6. AIR TIGHT OUTSIDE OPENABLE DOOR OF MIN WIDTH 2100mmX3000mm SHALL BE PROVIDED BY BHEL
7. ALL AROUND GROUTING ANGLE SHALL BE PROVIDED FOR INTAKE LOUVER FIXING WITH WALL
8. MARINE LIGHT SHALL BE OF VAPOUR PROOF FIXTURE & SWITCH BOX SHALL BE FIXING ON NEAR WALL
9. ALL PIPES SHALL BE SUPPORTED USING OF ANCHOR FASTENERS BY M/S TAP
10. DIMENSIONS TOLERANCE ± 10mm
11. FOR AIR WASHER, FAN AND PUMP DETAILS, REFER DRG. NO. PE-V0-412-554-A009
12. ONE NO. METALLIC STOOL SHALL BE PROVIDED BY TAP & SHALL BE KEPT IN ROOM FOR APPROACHING EQUIPMENT PLACED ABOVE APPROACHABLE HEIGHT
13. B.O.M GIVEN FOR ONE SET ONLY
14. REFER DRAWING NO. PE-V0-412-554-A025, VENTILATION DUCT LAYOUT FOR TG HALL, OUTSIDE A ROW FOR CONTINUATION



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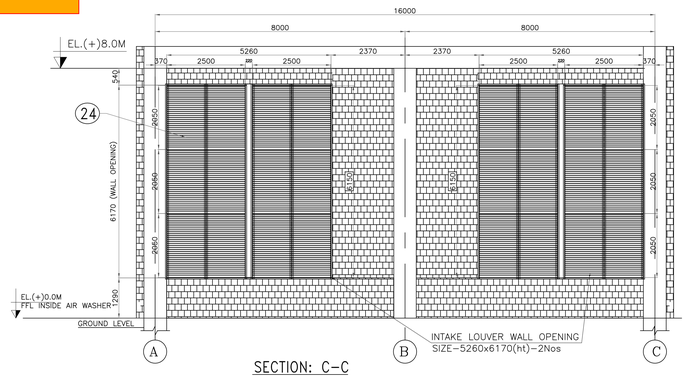
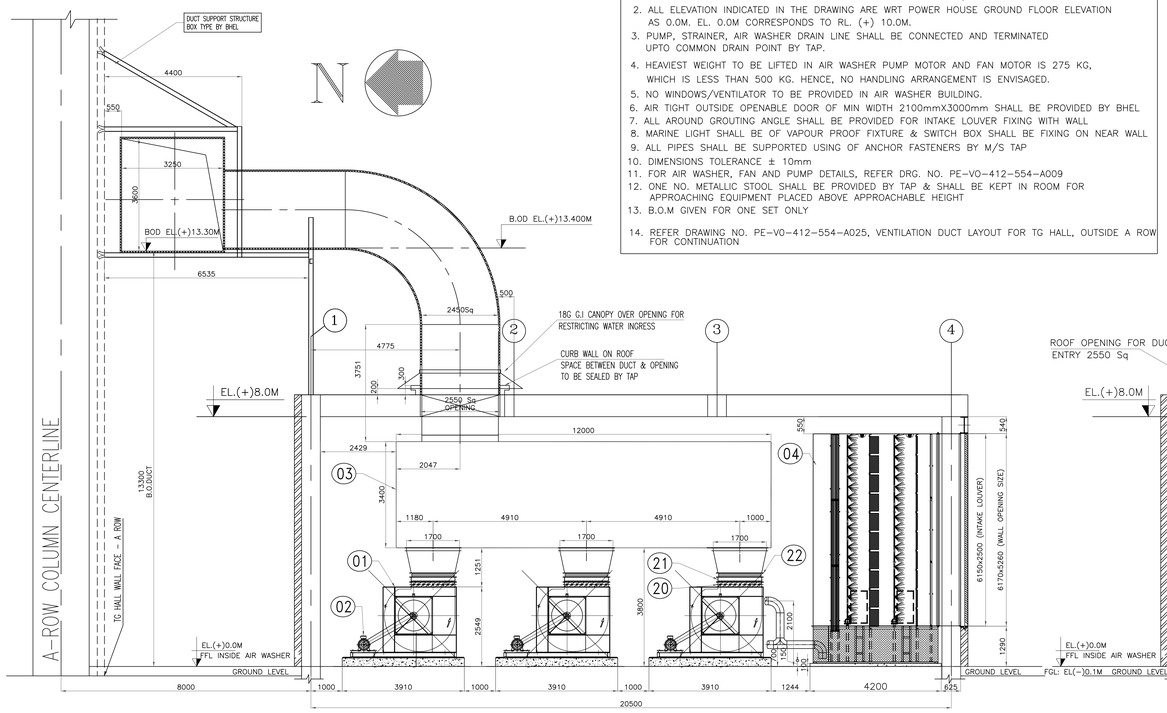
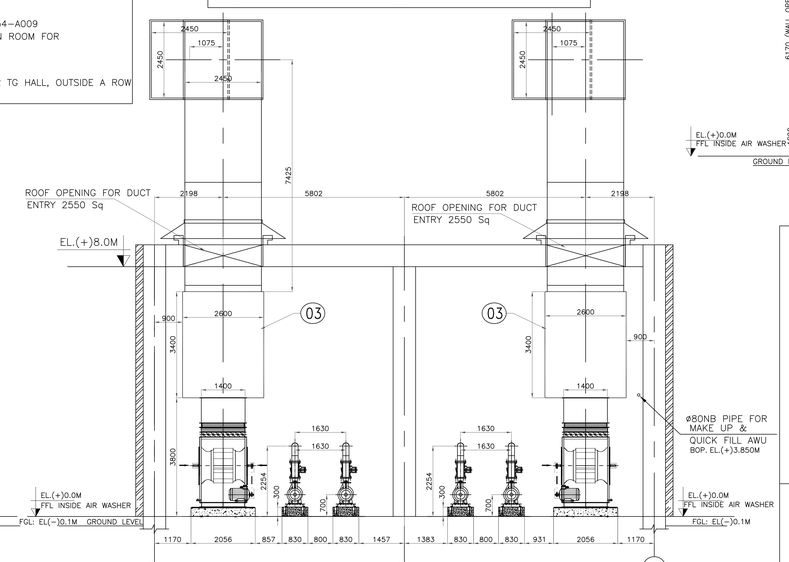


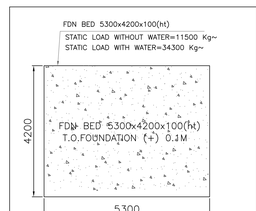
SECTION: C-C



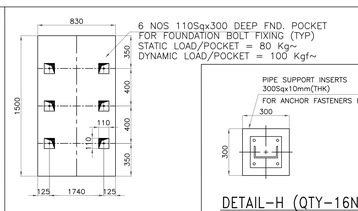
SIDE ELEVATION, SECTION A-A



FRONT ELEVATION, SECTION B-B

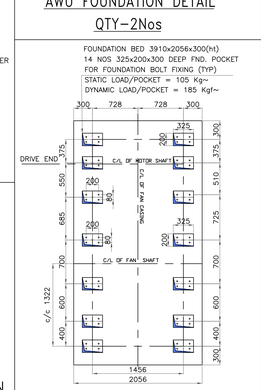


AWU FOUNDATION DETAIL
QTY-2Nos



DETAIL-G (QTY-4Nos)
PUMP FOUNDATION DETAIL

DETAIL-H (QTY-16Nos)
PIPE SUPPORT
PEDESTAL DETAIL

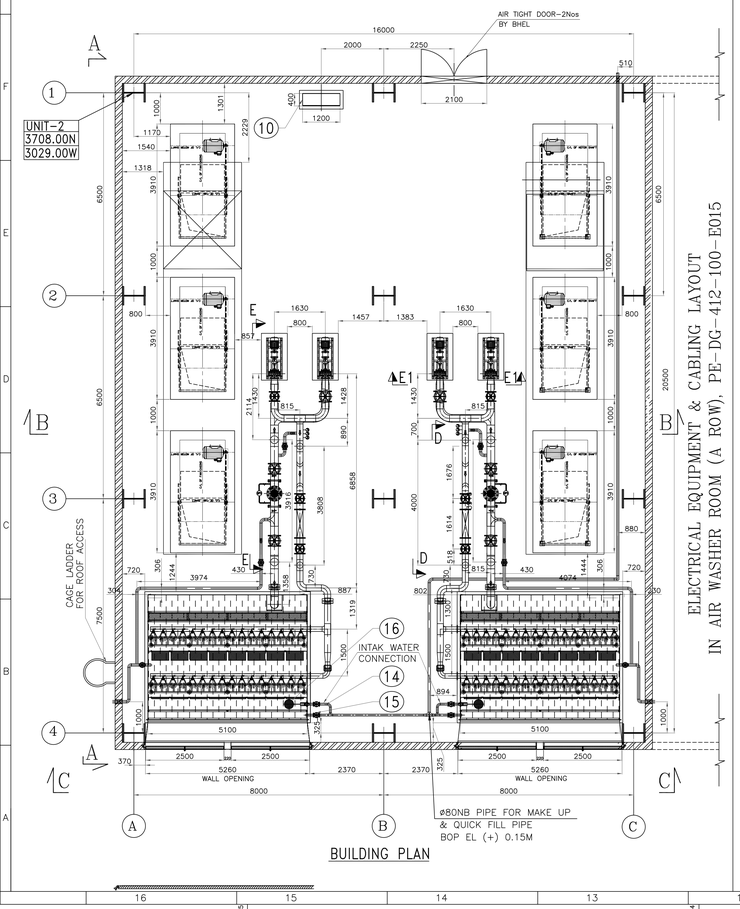


DETAIL-F (QTY-6Nos)
FAN FOUNDATION DETAIL

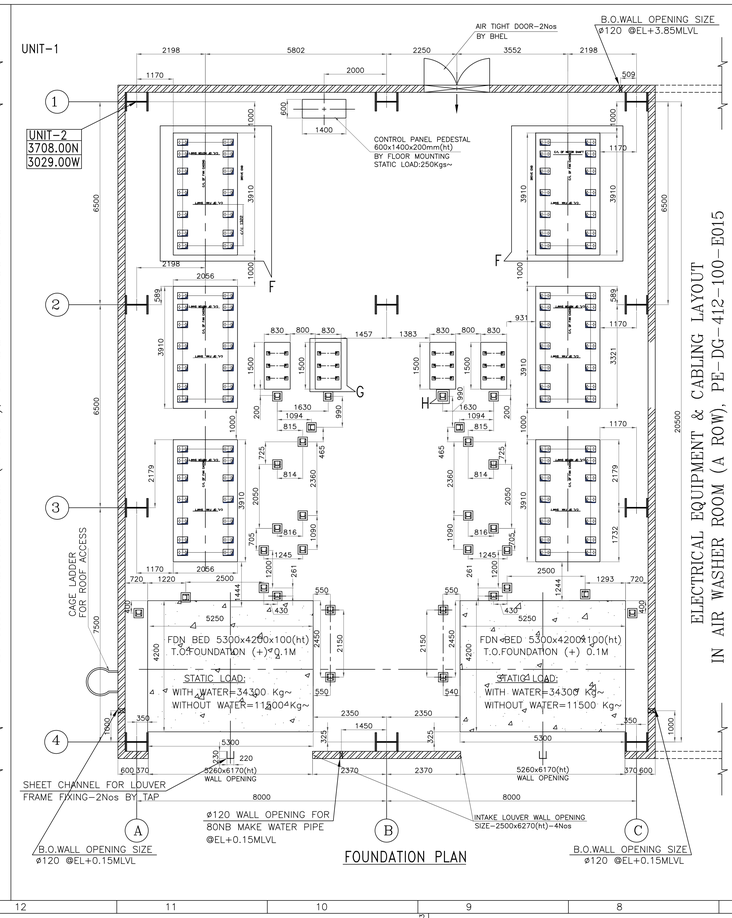
LOCATION:
A-ROW AT 0.0M LVL
UNIT#02

CAPACITY:2,50,000 CMH
2x2,50,000=5,00,000 CMH

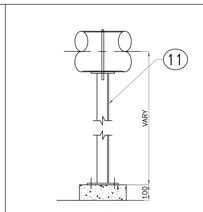
REVIEWED
By VIPIN NAUNI at 4:59 pm, Aug 13, 2018



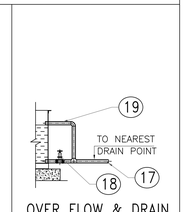
BUILDING PLAN



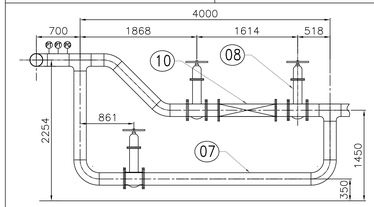
FOUNDATION PLAN



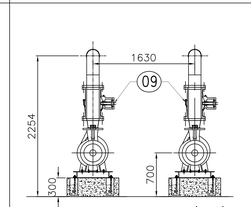
PIPE SUPPORT
SUCTION & DELIVERY (TYP)



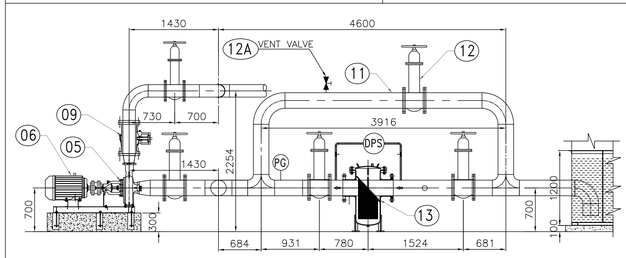
OVER FLOW & DRAIN
ARRANGEMENT SHOWN



SECTION- D-D (TYP) (DELIVERY LINE)



SECTION- E1-E1 (TYP)



SECTION- E-E (TYP)
SUCTION PIPE LINE

NO.	DESCRIPTION	SIZE/THK	MATL	QTY	RMKS
24.	INATAKE LOUVER WITH FRAME	2500x6150(h)	IS 277/ISA	4 Nos	
23.	PIPE SUPPORT	AS REQD	ISMC 75x40	1 Lot	
22.	FLEXIBLE CONNECTION	1400Sqx150	CANVASS	6 Nos	
21.	NON RETURN DAMPER	1400Sqx150	IS 277@1.2Thk	6 Nos	275 GSM
20.	VOLUME CONTROL DAMPER	1400Sqx150	IS 1079@2Thk	6 Nos	M.S EPOXY PAINTED
19.	DRAIN PIPE ARRAN-GEMENT — PIPE (OVER FLOW)	80 NB PIPE	IS 1239/PART1	1 Lot	FLANGE END
18.	GATE VALVE(DRAIN)	80 NB	Refer valve Documents	1 No	FLANGE END
17.	PIPE (DRAIN)	80 NB PIPE	IS 1239/PART1	1 Lot	BUTT WELDING END
16.	QUICK FILL PIPE — FLOAT VALVE	65 NB	Refer valve Documents	2 Nos	FLANGE END
15.	GATE VALVE	65 NB		2 Nos	
14.	ARRAN-GEMENT — PIPE	65 & 80 NB	IS 1239/PART1	1 LOT	BUTT WELDING END
13.	SUCTION PIPE WITH BYPASS ARRAN-GEMENT — POT STRAINER	250 NB	Refer valve Documents	1 No	FLANGE END
12A	VENT VALVE	15 NB		1 No	SCREW END
12.	GATE VALVE	250 NB		5 Nos	FLANGE END
11.	PIPE	250 NB	IS 1239/PART1	1 No	BUTT WELDING END
10.	DELIVERY — SCALE PREVENTOR	200 NB	STD	1 No	
09.	PIPE WITH BYPASS ARRAN-GEMENT — CHECK VALVE	200 NB	Refer valve Documents	4 Nos	FLANGE END
08.	GATE VALVE	200 NB		5 Nos	FLANGE END
07.	PIPE	200 NB PIPE	IS 1239/PART1	1 Lot	BUTT WELDING END
06.	MOTOR	30KW/4P	refer separate documents	4 Nos	LHP SAM TURBO
05.	SPRAY PUMP	CAPACITY-251m3		4 Nos	SUC-250NB DEL-200NB
04.	AIRWASHER UNIT	5100x4000x7350H	IS 1079	2 Nos	
03.	PLENUM DUCT	AS PER DRAWING	IS 277@18G GI	1 Lot	275GSM
02.	MOTOR	30KW/4P	IS 325	6 Nos	LHP
01.	CENTRIFUGAL FAN	GFAB-5-160	AS PER OEM STD	6 Nos	HOWDEN

BILL OF MATERIALS

CUSTOMER	TANGEDCO	TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	DESEIN	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
EPC CONTRACTOR	BHEL	BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

2x660 MW ENNORE SEZ COAL BASED STPP
AT ASH DYKE OF NCTPS, CHENNAI

JOB NO. 412
STATUS CONTRACT
DRG./REF. NO. (INTERNAL)
PRINT SCALE IN METRE

REV.	DATE	ALTD	CHD	APPD

SUB-CONTRACTOR VENTILATION SYSTEM

TAP ENGINEERING
No.152,(SP) AMBATTUR IND. ESTATE, 21st PHASE, CHENNAI-600 058

	NAME	SIGN	DATE
DSN	E.A	-sd-	29.03.2018
DRN	E.A	-sd-	29.03.2018
CHD	CRK	-sd-	29.03.2018
APPD	CRK	-sd-	29.03.2018

PACKAGE: VENTILATION SYSTEM

TITLE: AIR WASHER LAYOUT OUTSIDE-"A ROW" SIDE ALONG ALONG WITH FOUNDATION DETAILS -TG BUILDING

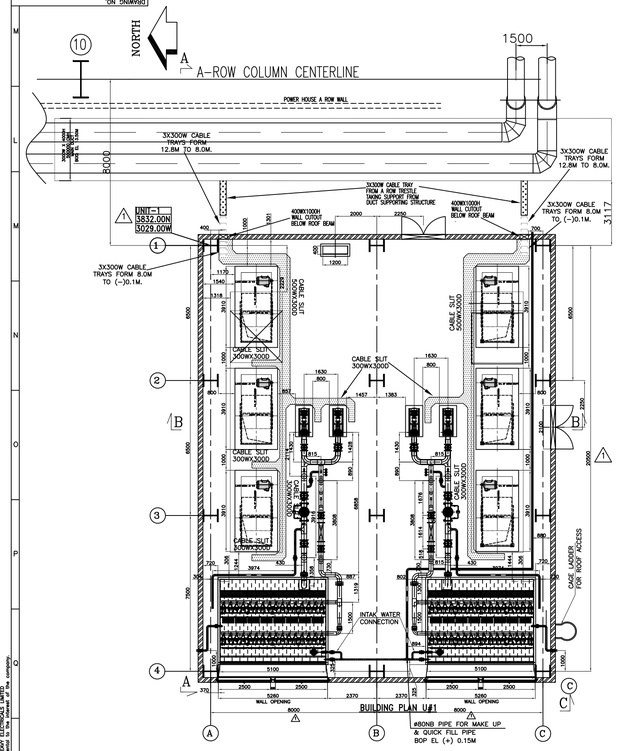
DEPT.	SCALE 1:100	DRAWING No. PE-V0-412-554-A022	
SIGN		SHEET 2 OF 2	REV 00
DATE			

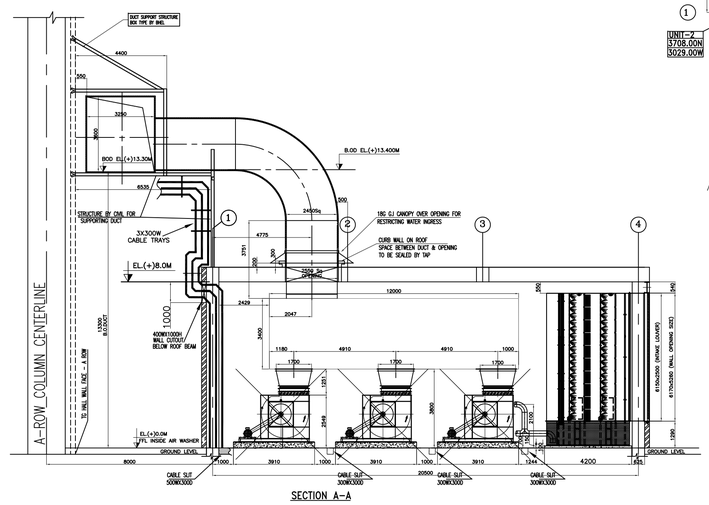
FORMAT SIZE A1

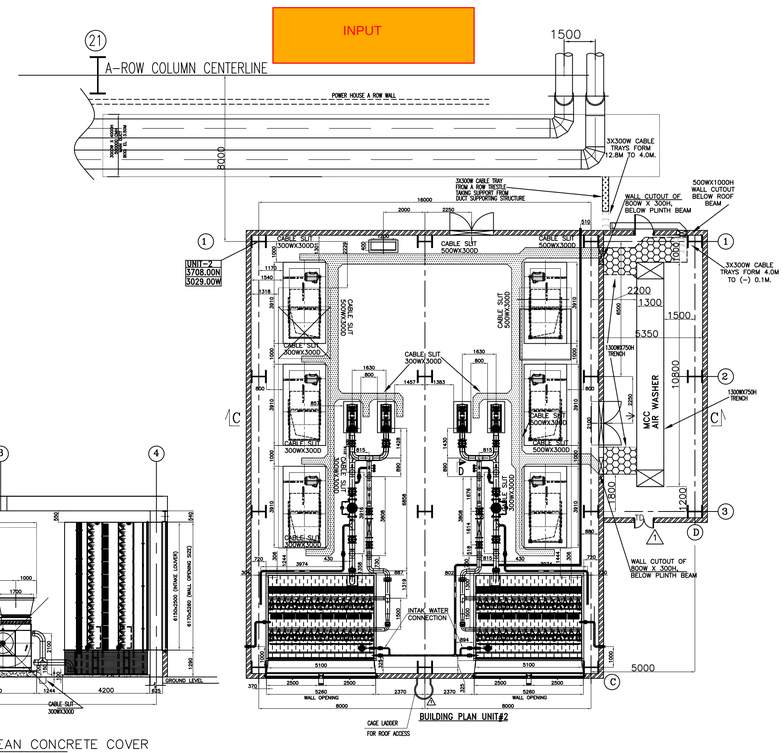
DRAWING NO. PE-DG-412-100-E015

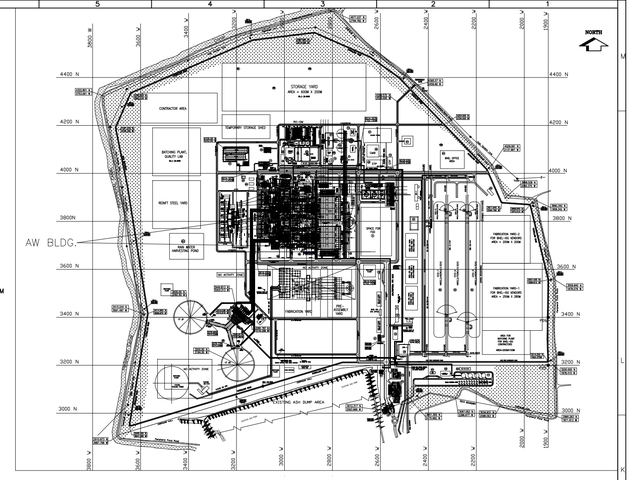
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

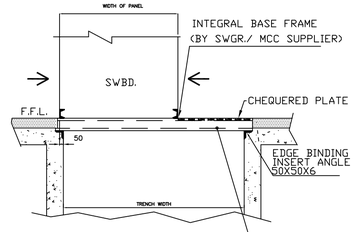
INPUT





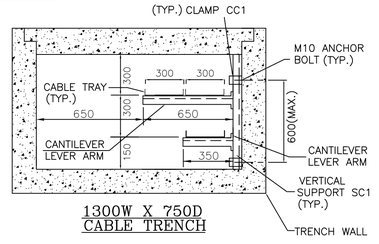




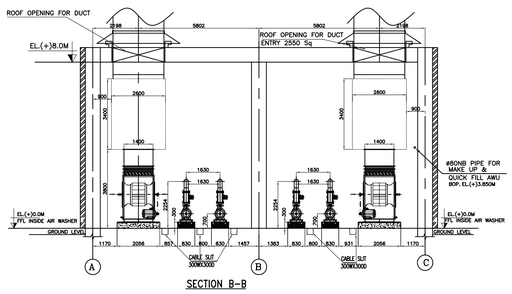


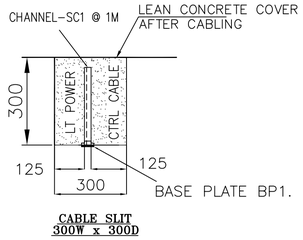
ISMC-75(SUPPLIED BY SWGR. SUPPLIER IN LOOSE PROVIDED AT EVERY SHIPPING SECTION)

TYP. SUPPORT/FIXING ARRANGEMENT FOR PANELS OVER CABLE TRENCH

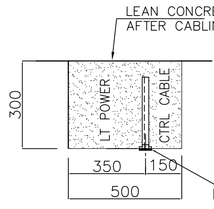


1300W X 750D CABLE TRENCH

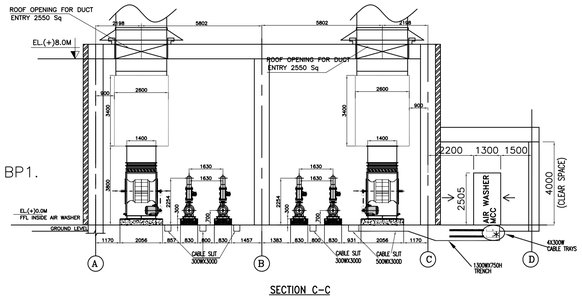




CABLE SLIT 300W x 300D



CABLE SLIT 500W x 300D



BILL OF QUANTITY ⚠

S.NO.	MATERIAL DESCRIPTION	UNIT	QUANTITY
01	CABLE TRAY 300MM WIDE (LADDER TYPE)	METRES	185
02	CABLE TRAY 300MM WIDE (PERFORATED TYPE)	METRES	85
03	SINGLE CHANNEL C1	METRES	125
04	BASE PLATE FOR SINGLE CHANNEL, BP1	NOS.	100
05	CANTILIVER ARM(650MM)	NOS.	30
06	CANTILIVER ARM(350MM)	NOS.	210
07	90° HORIZONTAL BEND 300 WIDE (LADDER)	NOS.	24
08	90° HORIZONTAL BEND 300 WIDE (PERFORATED)	NOS.	12
09	CLAMP FOR SINGLE CHANNEL CC1	NOS.	30
10	90° ANGLE FITTING, HL1	NOS.	140

LEGEND

- CABLE TRAY RISER
- CABLE TRAY (HORIZONTAL)
- CABLE SLIT
- CABLE TRENCH
- TD — DOUBLE LEAF DOOR WITH TRANSOM ARRANGEMENT 3M HEIGHT (INCLUSIVE OF TRANSOM ARRANGEMENT) X 2M WIDTH
- D — SINGLE LEAF DOOR

SL NO.	TITLE	DRG NO	SOURCE
1.	MAIN PLANT EQUIPMENT LAYOUT	PE-DG-412-100-M003	PEM/MPL
3.	PLOT PLAN	PE-DG-412-100-M001	PEM/MPL
3.	LAYOUT OF TRANSFORMER YARD	PE-DG-412-100-E001	PEM/ELECT
4.	CABLE ERECTION PHILOSOPHY	PE-DC-412-507-E004	PEM/ELECT
5.	DESIGN PHILOSOPHY FOR ELECTRICAL EQUIPMENT LAYOUT	PE-DC-412-100-E101	PEM/ELECT
6.	TYPICAL DETAILS OF CABLE TRAY & ACCESSORIES	PE-DC-412-507-E005	PEM/ELECT
7.	INSTALLATION DETAILS FOR CABLE TRAY SUPPORT SYSTEM.	PE-DG-412-507-E006	PEM/ ELECT
8.	AIR WASHER BUILDING LAYOUT – A ROW	PE-DG-412-554-A006	PEM/ MAUX

NOTES:–

1. ALL DIMENSION AND LEVELS ARE IN MM.
2. ALL ELEVATIONS MARKED W.R.T. TG HALL GROUND FLOOR ELEVATION OF 0.00M WHICH CORRESPONDS TO RL 10.0M.
3. THIS DRAWING SHALL BE REFERRED ONLY FOR ELECTRICAL EQUIPMENT & CABLING LAYOUT. FOR MECHANICAL/CIVIL ASPECTS, RESPECTIVE DRAWINGS SHALL BE REFEREED.
4. PANEL DIMENSIONS SHOWN ARE TENTATIVE.
5. FOR LT PANELS FIXING TYPICAL INSERT DETAILS ARE INDICATED FOR INCLUSION IN CIVIL DRAWINGS FOR SWITCHGEAR ROOM FLOOR GENERAL ARRANGEMENT.
6. CABLE TRAYS & TRAY SUPPORTS INSTALLATION SHALL BE DONE AS PER REF. DRGS. NO. AT SL. Nos. 4 TO 7.
7. ALL CABLE OPENINGS IN WALLS/FLOORS SHALL BE SEALED WITH CABLE FIRE SEALING SYSTEM MATERIAL AFTER.
8. LEFTOVER PORTIONS OF CABLE TRENCHES BEHIND / AROUND PANELS SHALL BE COVERED WITH MS CHEQUERED PLATE COVERS.
9. ALL CABLE SLITS SHALL BE SAND FILLED & PROVIDED WITH LEAN CONCRETE COVER AFTER CABLE LAYING.
10. CABLE SLITS SHALL BE LOCALLY DEEPENED FOR A LENGTH OF APPROX 1M TO RECEIVE PIPES FROM CABLE TRENCH.
11. ⚠ LOAD OF CABLE TRAY ALONG WITH CABLE WITH SUPPORT HAS BEEN CONSIDERED AS MINIMUM 100KG, 75KG, 50KG, 25KG FOR 600 WIDE, 450 WIDE, 300 WIDE & 150 WIDE CABLE TRAYS RESPECTIVELY.

REV.	DATE	ALTD	CHD	APPD
1.	18.08.18	RK/VKS	VY	SL

1. REVISED IN LINE WITH CUSTOMER/ CONSULTANT'S VIDE LETTER NO. D.323 DATED 31.07.2018.
2. DIMENSIONS OF AIR WASHER BUILDING UPDATED IN LINE WITH LATEST LAYOUT. CO-ORDINATES OF AIR WASHER BUILDING UNIT-1 UPDATED.

JOB NO. 412
STATUS CONTRACT
DISTRIBUTION
TO
No. OF

PROJECT
2x660 MW ENNORE SEZ COAL BASED STPP

CUSTOMER:
TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)

CONSULTANT:
DESEIN PRIVATE LIMITED
DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NEW DELHI

DEPT CODE		NAME	SIGN	DATE
E	DRN	SM		
	DESN	VKS		
	CHD	VY/SBH		
	APPD	SL		

TITLE
ELECTRICAL EQUIPMENT & CABLING LAYOUT IN AIR WASHER ROOM(A ROW)

DEPT. | SCALE: | DRAWING NO. PE-DG-412-100-E015
SIGN
DATE
SHEET 1 OF 1 | REV. 1

FORMAT SIZE A1

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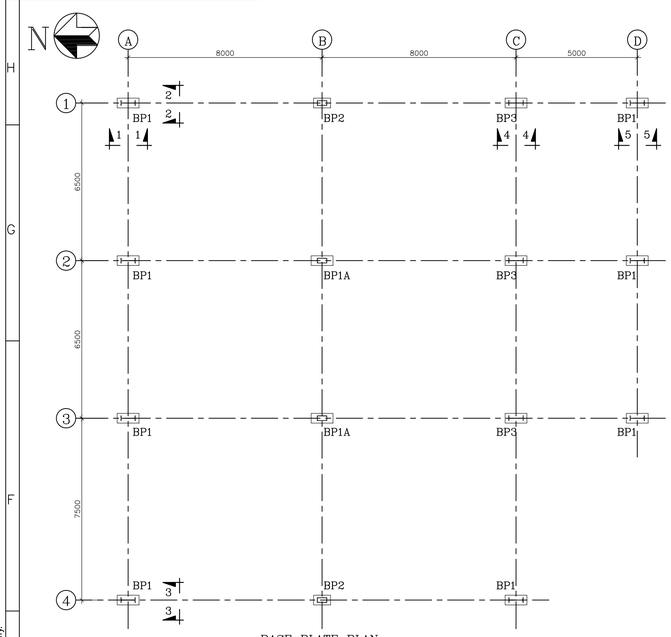
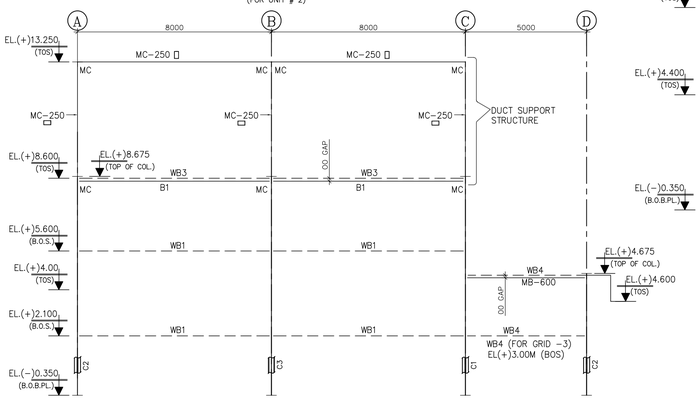
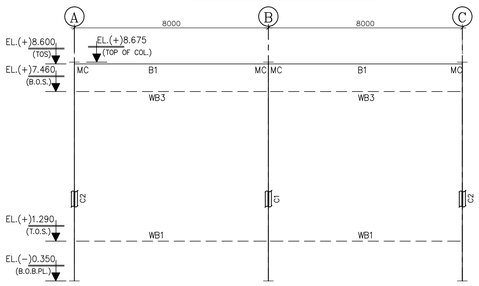


BASE PLATE PLAN
(FOR UNIT # 2)



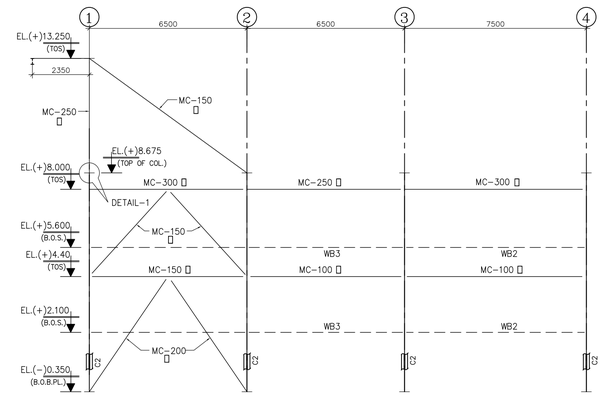
ELEVATION ON GRID–1



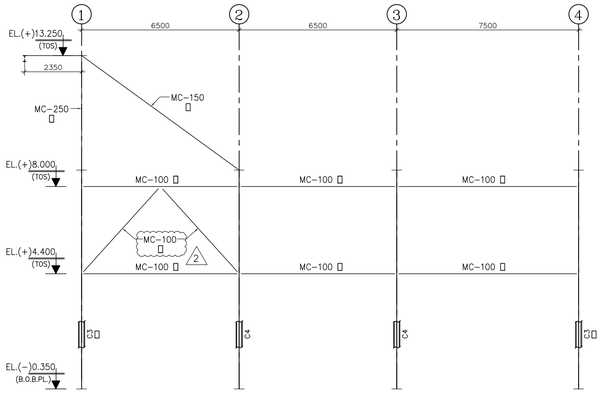
ELEVATION ON GRID–4

SCHEDULE OF BEAMS

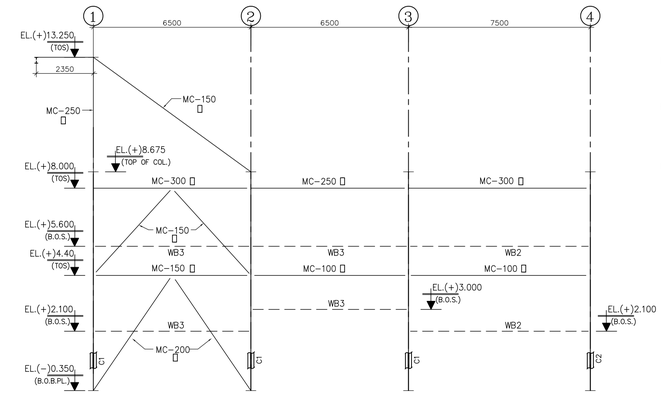
BEAM MKD.	BEAM SECTION	BRACKET
WB1	FP – 230X20 THK. WP – 16 THK. D – 340	MB 450
WB2	FP – 230X20 THK. WP – 16 THK. D – 300	MB 450
WB3	FP – 230X20 THK. WP – 16 THK. D – 250	MB 450
BKT–1	ISMB 450	–
B1	FP – 210X25 THK. WP – 20 THK. D – 600	–



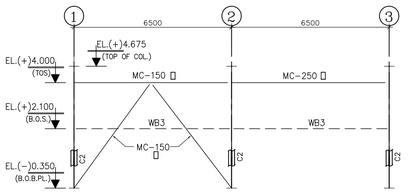
ELEVATION ON GRID–A



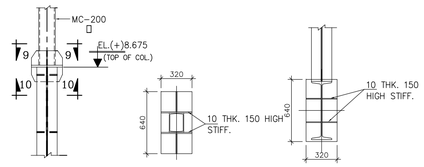
ELEVATION ON GRID–B



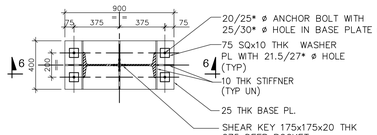
ELEVATION ON GRID–C



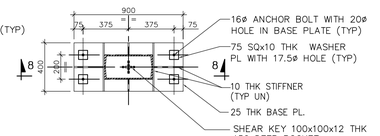
ELEVATION ON GRID–D



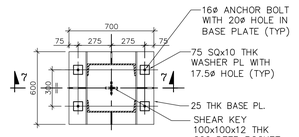
DETAIL–1 VIEW 9–9 VIEW 10–10



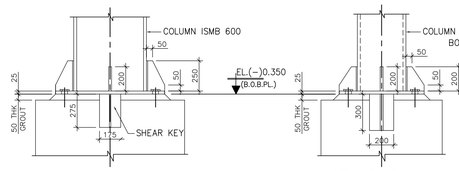
BASE PLATE MKD.–BP1
(*) FOR PEDESTAL D1



2 BASE PLATE MKD.–BP1A



BASE PLATE MKD.–BP2



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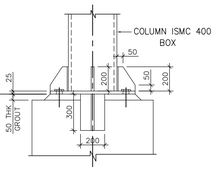

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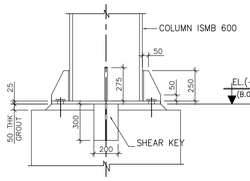
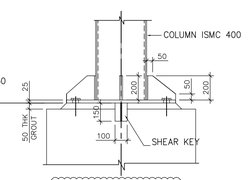
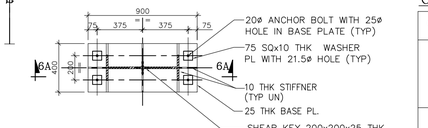


SECTION 6A–6A



2 SECTION 8–8



BASE PLATE MKD.–BP3

COLUMN SCHEDULE

COLUMN MKD.	COLUMN SECTION	
C1	FP – 210X25 THK. WP – 20 THK. D – 600	
C2	ISMB–600	
C3	a – 300X8 THK. b – 200 c –ISMC 400	
C4	ISMC–400 (T/T)	

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS & LEVELS ARE IN METER UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. (±)0.00 M WHICH CORRESPONDS TO RL. +10.00 M. ABOVE MEAN SEA LEVEL.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
4. ALL FABRICATION & ERECTION OF STRUCTURAL STEEL SHALL BE AS PER IS:800
5. CHECK ALL DIMENSIONS, CO–ORDINATES & ELEVATION IMMEDIATELY, REPORT ANY DISCREPANCIES, CONFLICTS OR ERROR FOR CLARIFICATION PRIOR TO COMMENCING WORK.

REFERENCE DWG.

1. PLOT PLAN ------- PE-DG-412-100-M001 (R4)
2. GENERAL NOTES & STANDARD DETAILS FOR STRUCTURAL STEEL WORKS -- PE-DG-412-600-C002 (R5)
3. AIR WASHER BLDG–ARCHITECTURAL PLANS & SECTION ------- PE-DG-412-648-C001 (R0)
4. AIR WASHER BLDG–ARCHITECTURAL ELEVATION ------- PE-DG-412-648-C002 (R0)
5. AIR WASHER BLDG– GA AND RC DETAILS OF FOUNDATION & COLMN --- PE-DG-412-648-C003 (R0)
6. AIR WASHER BLDG– ROOF DETAILS ------- PE-DG-412-648-C008 (R0)
7. ELECTRICAL EQUIPMENT AND CABLING IN AIR WASHER ROOM (A–ROW) -------PE-DG-412-100-E015 (R0)
8. AIR WASHER LAYOUT OUTSIDE A–ROW SIDE ALONG WITH FDN. DETAIL –TG BLDG. --------PE-VO-412-554-A022 (R0) (SH 1&2)

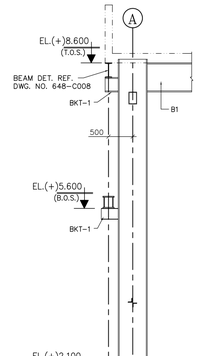
LEGENDS:–

1. T.O.C ------TOP OF CONCRETE
2. F.G.L ------FINISHED GROUND LEVEL
3. (B/F) -----BOTH FACE

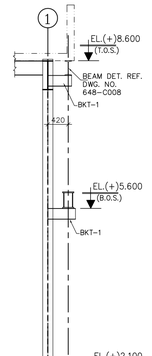
TOTAL TONNAGE– 60 MT. (APPROX)
(FOR UNIT 1&2)

BHEL–PROJECT ENGINEERING MANAGEMENT(CIVIL)
THIS DRAWING MARKED ☑ IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED

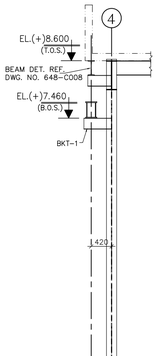
ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	–sd–
DATE	12 MARCH 2019



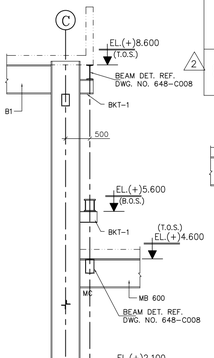
SECTION 1–1



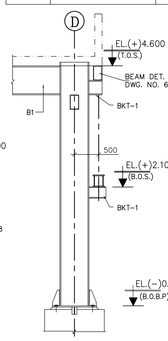
SECTION 2–2



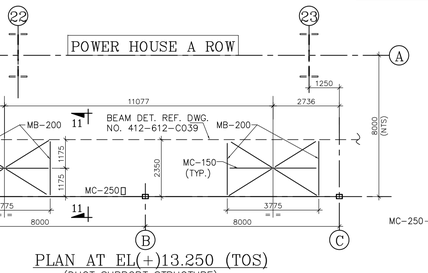
SECTION 3–3



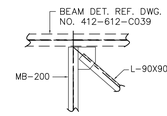
SECTION 4–4



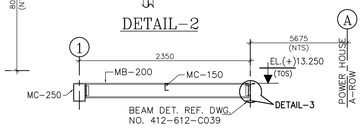
SECTION 5–5



PLAN AT EL(+)13.250 (TOS)
(DUCT SUPPORT STRUCTURE)



DETAIL–2



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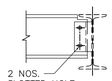

2 DETAIL–3

REV.	DATE	ALTD	CHD	APPD
02	12.03.19	YSR	VS	SM

REVISED AS PER TENGEDCO COMMENTS VIA LR. NO. SE/C/TP/E2/ENNORE SEZTPP/F. AIR WASHER BLDG./D. 264/19, DT. 13 .02.2019 AND MKD. AS 2

REV.	DATE	ALTD	CHD	APPD
01	22.12.18	YSR	VS	SM

REVISED AS PER TENGEDCO COMMENTS VIA LR. NO. SE/C/TP/E2/ENNORE SEZTPP/F. AIR WASHER/D. 2096/18, DT. 01.12.2018

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

DEPT CODE		NAME	SIGN	DATE
C	DRN	YSR	–sd–	19/11/17
	DESN	VS	–sd–	19/11/17
	CHD	SM	–sd–	19/11/17
	APPD	AN	–sd–	19/11/17

TITLE: AIR WASHER BUILDING
STRUCTURAL FRAMING (UNIT–2)

DEPT. | SCALE: | DRAWING NO. PE–DG–412–648–C006
SIGN | DATE | SHEET 1 OF 1 | REV. 2

FORMAT SIZE A1

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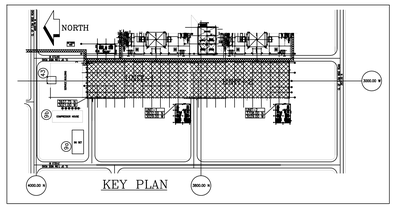
DRAWING NO. PE-V0-412-554-A022

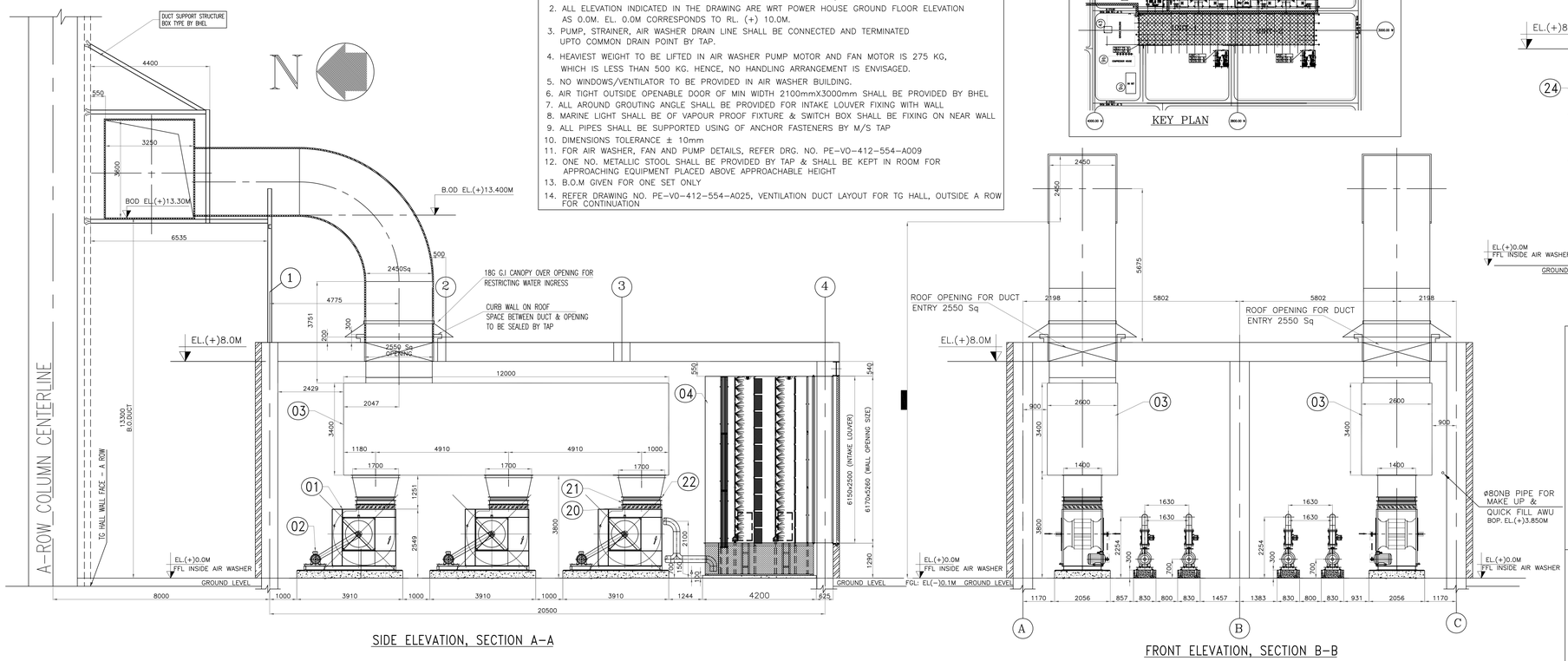
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

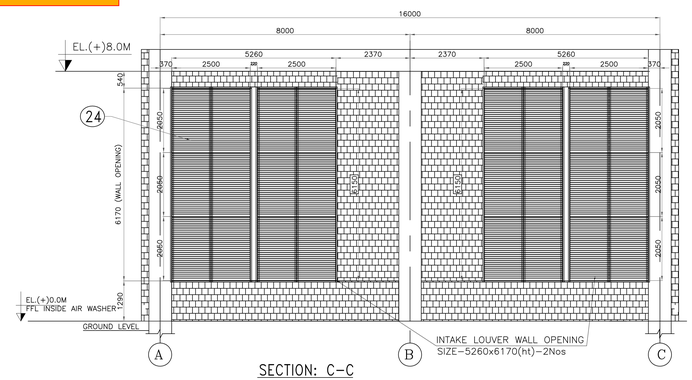
INPUT

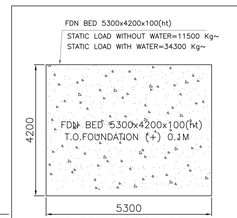
NOTES :-

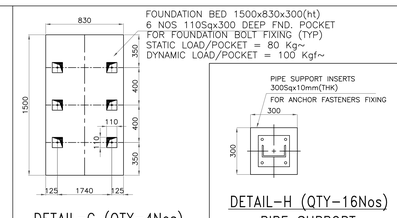
1. ALL DIMENSIONS ARE IN MILLIMETERS & LEVELS ARE IN METRES, UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATION INDICATED IN THE DRAWING ARE WRT POWER HOUSE GROUND FLOOR ELEVATION AS 0.0M. EL. 0.0M CORRESPONDS TO RL. (+) 10.0M.
3. PUMP, STRAINER, AIR WASHER DRAIN LINE SHALL BE CONNECTED AND TERMINATED UPTO COMMON DRAIN POINT BY TAP.
4. HEAVIEST WEIGHT TO BE LIFTED IN AIR WASHER PUMP MOTOR AND FAN MOTOR IS 275 KG, WHICH IS LESS THAN 500 KG. HENCE, NO HANDLING ARRANGEMENT IS ENVISAGED.
5. NO WINDOWS/VENTILATOR TO BE PROVIDED IN AIR WASHER BUILDING.
6. AIR TIGHT OUTSIDE OPENABLE DOOR OF MIN WIDTH 2100mmX3000mm SHALL BE PROVIDED BY BHEL
7. ALL AROUND GROUTING ANGLE SHALL BE PROVIDED FOR INTAKE LOUVER FIXING WITH WALL
8. MARINE LIGHT SHALL BE OF VAPOUR PROOF FIXTURE & SWITCH BOX SHALL BE FIXING ON NEAR WALL
9. ALL PIPES SHALL BE SUPPORTED USING OF ANCHOR FASTENERS BY M/S TAP
10. DIMENSIONS TOLERANCE ± 10mm
11. FOR AIR WASHER, FAN AND PUMP DETAILS, REFER DRG. NO. PE-V0-412-554-A009
12. ONE NO. METALLIC STOOL SHALL BE PROVIDED BY TAP & SHALL BE KEPT IN ROOM FOR APPROACHING EQUIPMENT PLACED ABOVE APPROACHABLE HEIGHT
13. B.O.M GIVEN FOR ONE SET ONLY
14. REFER DRAWING NO. PE-V0-412-554-A025, VENTILATION DUCT LAYOUT FOR TG HALL, OUTSIDE A ROW FOR CONTINUATION

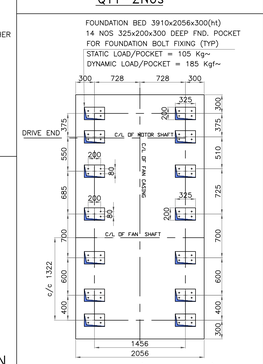








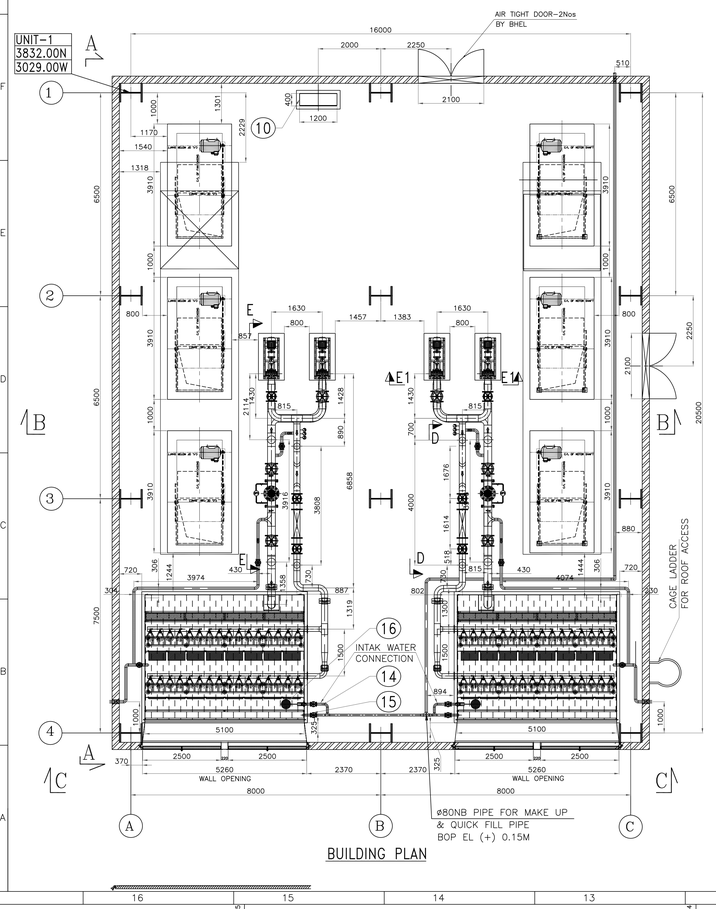


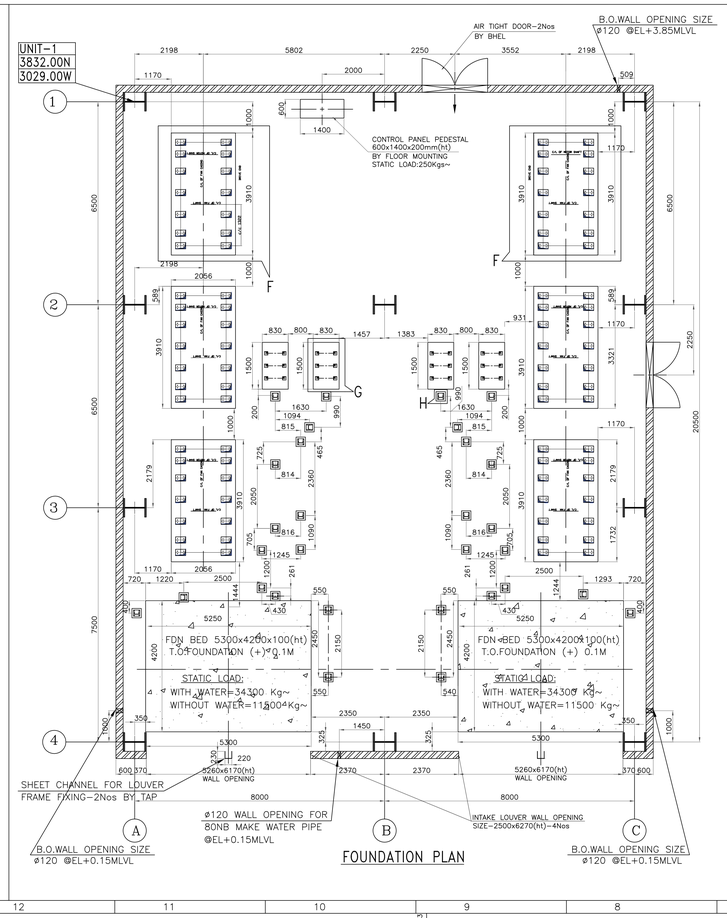


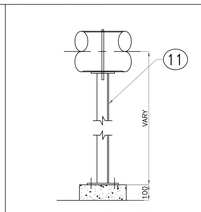
LOCATION:
A-ROW AT 0.0M LVL
UNIT#01

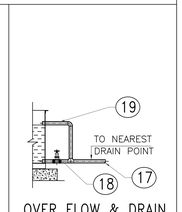
CAPACITY:2,50,000 CMH
2x2,50,000=5,00,000 CMH

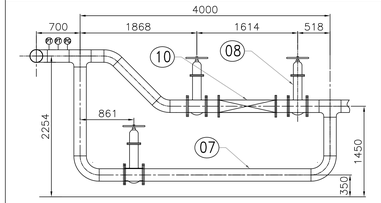
REVIEWED
By VIPIN NAUNI at 4:59 pm, Aug 13, 2018

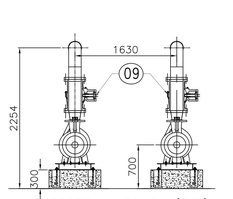


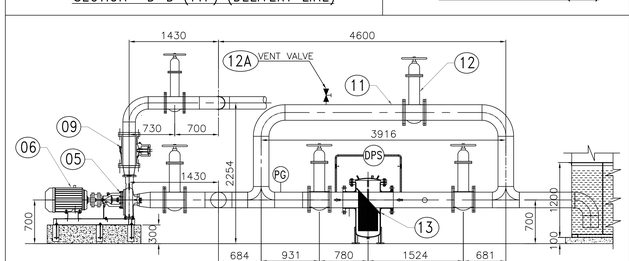












BILL OF MATERIALS

NO.	DESCRITION	SIZE/THK	MATL	QTY	RMKS
24.	INATAKE LOUVER WITH FRAME	2500x6150(h)	IS 277/ISA	4 Nos	
23.	PIPE SUPPORT		AS REQD	ISMC 75x40	1 Lot	
22.	FLEXIBLE CONNECTION	1400Sqx150	CANVASS	6 Nos	
21.	NON RETURN DAMPER	1400Sqx150	IS 277	Ø1.2Thk	6 Nos	275 GSM
20.	VOLUME CONTROL DAMPER	1400Sqx150	IS 1079	Ø2Thk	6 Nos	M.S EPOXY PAINTED
19.	DRAIN PIPE ARRAN-GEMENT	PIPE (OVER FLOW)	80 NB PIPE	IS 1239/PART1	1 Lot	FLANGE END
18.		GATE VALVE(DRAIN)	80 NB	Refer valve Documents	1 No	FLANGE END
17.		PIPE (DRAIN)	80 NB PIPE	IS 1239/PART1	1 Lot	BUTT WELDING END
16.	QUICK FILL PIPE	FLOAT VALVE	65 NB	Refer valve Documents	2 Nos	FLANGE END
15.	ARRAN-GEMENT	GATE VALVE	65 NB		2 Nos	
14.		PIPE	65 & 80 NB	IS 1239/PART1	1 LOT	BUTT WELDING END
13.	SUCTION PIPE WITH BYPASS ARRAN-GEMENT	POT STRAINER	250 NB	Refer valve Documents	1 No	FLANGE END
12A		VENT VALVE	15 NB		1 No	SCREW END
12.		GATE VALVE	250 NB		5 Nos	FLANGE END
11.		PIPE	250 NB	IS 1239/PART1	1 No	BUTT WELDING END
10.	DELIVERY	SCALE PREVENTOR	200 NB	STD	1 No	
09.	PIPE WITH BYPASS ARRAN-GEMENT	CHECK VALVE	200 NB	Refer valve Documents	4 Nos	FLANGE END
08.		GATE VALVE	200 NB		5 Nos	FLANGE END
07.		PIPE	200 NB PIPE	IS 1239/PART1	1 Lot	BUTT WELDING END
06.	MOTOR	30KW/4P		refer separate documents	4 Nos	LHP SAM TURBO
05.	SPRAY PUMP	CAPACITY-251m3			4 Nos	SUC-250NB DEL-200NB
04.	AIRWASHER UNIT	5100x4000x7350H	IS 1079		2 Nos	
03.	PLENUM DUCT	AS PER DRAWING	IS 277	18G GI	1 Lot	275GSM
02.	MOTOR	30KW/4P	IS 325		6 Nos	LHP
01.	CENTRIFUGAL FAN	GFAB-5-160	AS PER OEM STD		6 Nos	HOWDEN

CUSTOMER	TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
EPC CONTRACTOR	BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

2x660 MW ENNORE SEZ COAL BASED STPP
AT ASH DYKE OF NCTPS, CHENNAI

JOB NO. 412
STATUS CONTRACT
DRG./REF. NO. (INTERNAL)
PRINT SCALE IN METRE

REV.	DATE	ALTD	CHD	APPD

SUB-CONTRACTOR VENTILATION SYSTEM

TAP ENGINEERING
No.152,(SP) AMBATTUR INDL ESTATE, 21st PHASE, CHENNAI-600 058

	NAME	SIGN	DATE
DSN	E.A	-sd-	29.03.2018
DRN	E.A	-sd-	29.03.2018
CHD	CRK	-sd-	29.03.2018
APPD	CRK	-sd-	29.03.2018

PACKAGE: VENTILATION SYSTEM

TITLE: AIR WASHER LAYOUT OUTSIDE-"A ROW" SIDE ALONG ALONG WITH FOUNDATION DETAILS -TG BUILDING

DEPT. | SCALE 1:100 | DRAWING No. PE-V0-412-554-A022
SIGN
DATE
SHEET 1 OF 2 | REV 00

FORMAT SIZE A1

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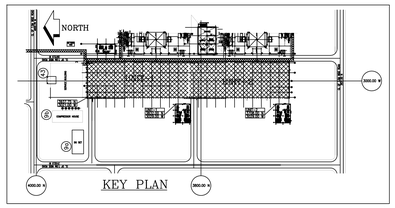
DRAWING NO. PE-V0-412-554-A022

FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

NOTES :-

1. ALL DIMENSIONS ARE IN MILLIMETERS & LEVELS ARE IN METRES, UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATION INDICATED IN THE DRAWING ARE WRT POWER HOUSE GROUND FLOOR ELEVATION AS 0.0M. EL. 0.0M CORRESPONDS TO RL. (+) 10.0M.
3. PUMP, STRAINER, AIR WASHER DRAIN LINE SHALL BE CONNECTED AND TERMINATED UPTO COMMON DRAIN POINT BY TAP.
4. HEAVIEST WEIGHT TO BE LIFTED IN AIR WASHER PUMP MOTOR AND FAN MOTOR IS 275 KG, WHICH IS LESS THAN 500 KG. HENCE, NO HANDLING ARRANGEMENT IS ENVISAGED.
5. NO WINDOWS/VENTILATOR TO BE PROVIDED IN AIR WASHER BUILDING.
6. AIR TIGHT OUTSIDE OPENABLE DOOR OF MIN WIDTH 2100mmX3000mm SHALL BE PROVIDED BY BHEL
7. ALL AROUND GROUTING ANGLE SHALL BE PROVIDED FOR INTAKE LOUVER FIXING WITH WALL
8. MARINE LIGHT SHALL BE OF VAPOUR PROOF FIXTURE & SWITCH BOX SHALL BE FIXING ON NEAR WALL
9. ALL PIPES SHALL BE SUPPORTED USING OF ANCHOR FASTENERS BY M/S TAP
10. DIMENSIONS TOLERANCE ± 10mm
11. FOR AIR WASHER, FAN AND PUMP DETAILS, REFER DRG. NO. PE-V0-412-554-A009
12. ONE NO. METALLIC STOOL SHALL BE PROVIDED BY TAP & SHALL BE KEPT IN ROOM FOR APPROACHING EQUIPMENT PLACED ABOVE APPROACHABLE HEIGHT
13. B.O.M GIVEN FOR ONE SET ONLY
14. REFER DRAWING NO. PE-V0-412-554-A025, VENTILATION DUCT LAYOUT FOR TG HALL, OUTSIDE A ROW FOR CONTINUATION



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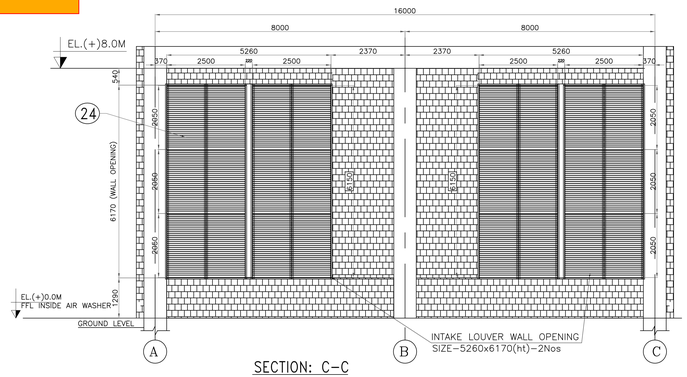
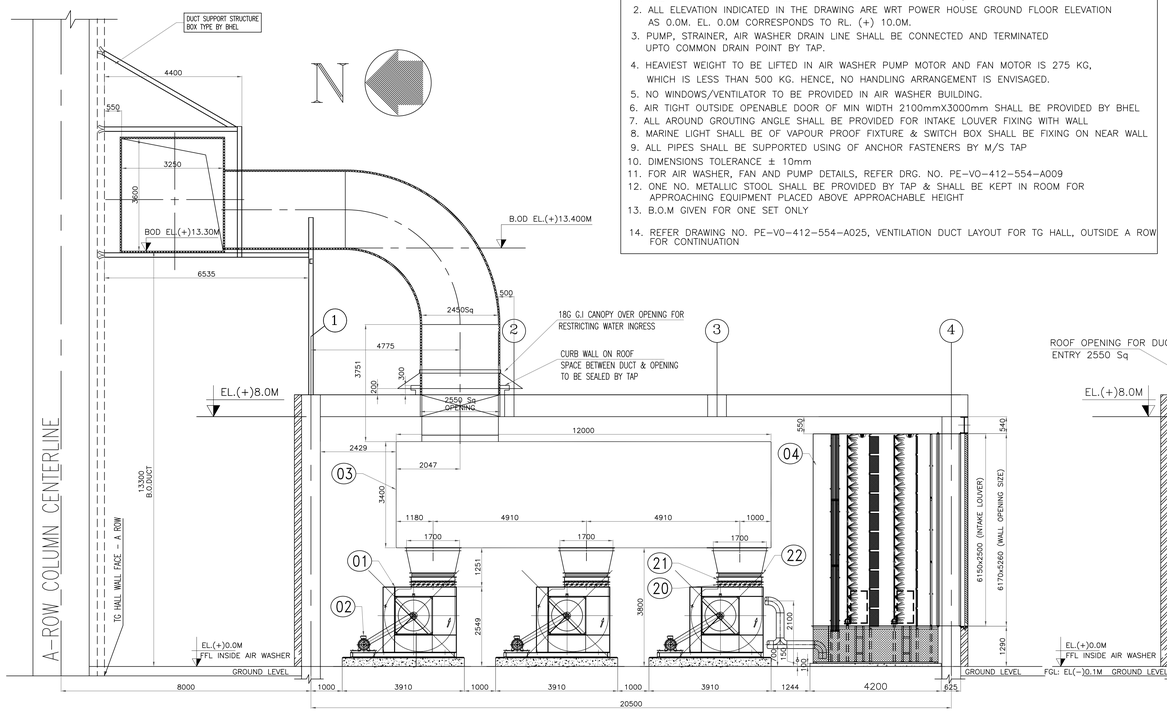
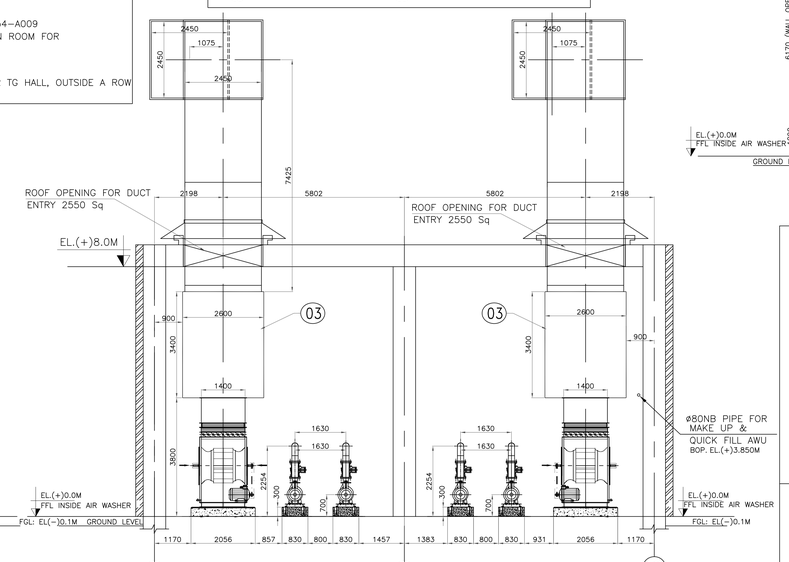


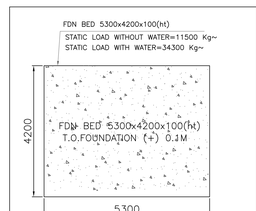
SECTION: C-C



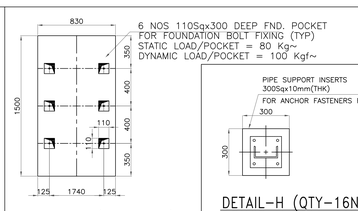
SIDE ELEVATION, SECTION A-A



FRONT ELEVATION, SECTION B-B

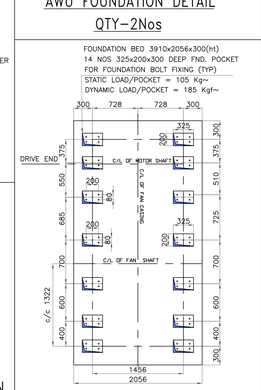


AWU FOUNDATION DETAIL
QTY-2Nos



DETAIL-G (QTY-4Nos)
PUMP FOUNDATION DETAIL

DETAIL-H (QTY-16Nos)
PIPE SUPPORT
PEDESTAL DETAIL

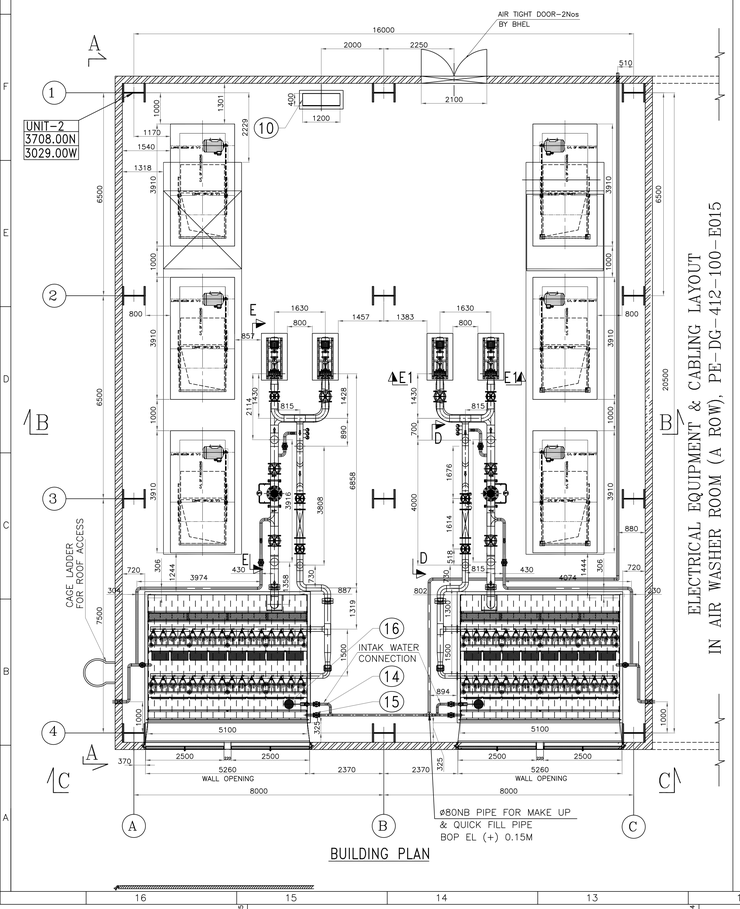


DETAIL-F (QTY-6Nos)
FAN FOUNDATION DETAIL

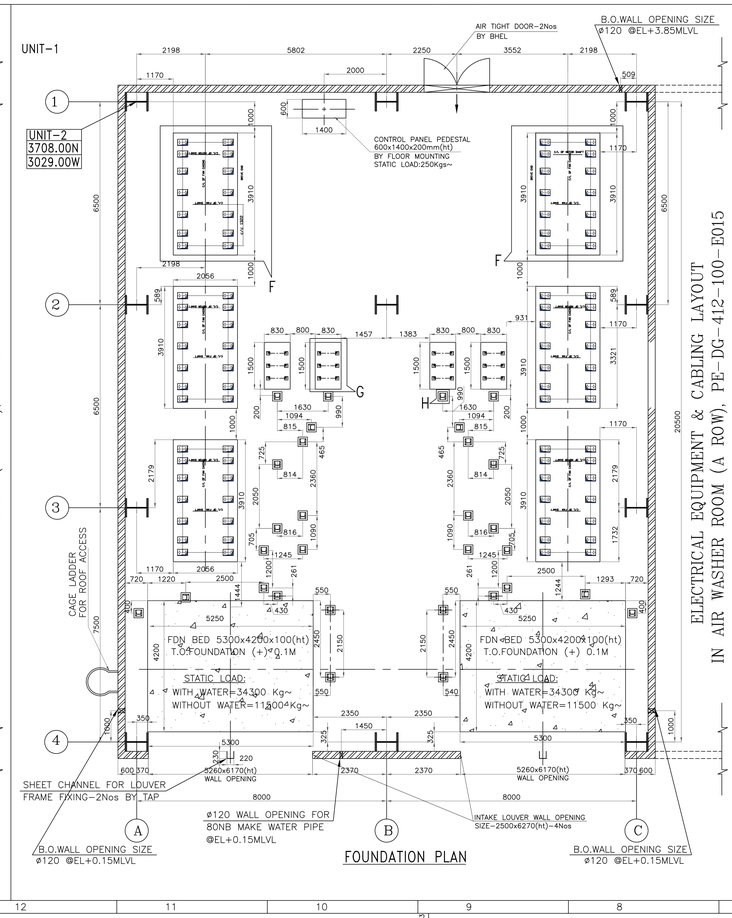
LOCATION:
A-ROW AT 0.0M LVL
UNIT#02

CAPACITY:2,50,000 CMH
2x2,50,000=5,00,000 CMH

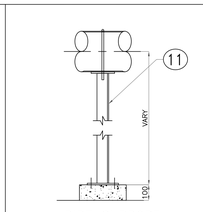
REVIEWED
By VIPIN NAUNI at 4:59 pm, Aug 13, 2018



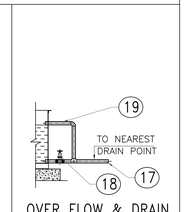
BUILDING PLAN



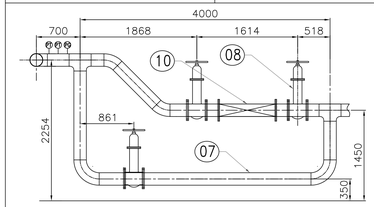
FOUNDATION PLAN



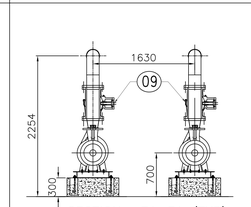
PIPE SUPPORT
SUCTION & DELIVERY (TYP)



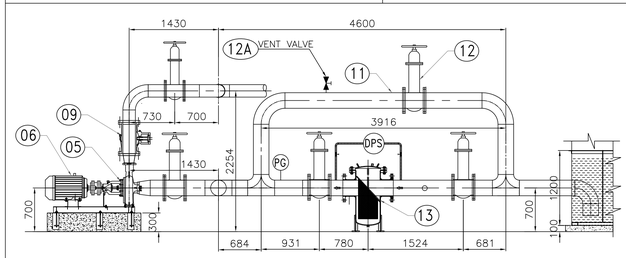
OVER FLOW & DRAIN
ARRANGEMENT SHOWN



SECTION- D-D (TYP) (DELIVERY LINE)



SECTION- E1-E1 (TYP)



SECTION- E-E (TYP)
SUCTION PIPE LINE

NO.	DESCRIPTION	SIZE/THK	MATL	QTY	RMKS
24.	INATAKE LOUVER WITH FRAME	2500x6150(h)	IS 277/ISA	4 Nos	
23.	PIPE SUPPORT	AS REQD	ISMC 75x40	1 Lot	
22.	FLEXIBLE CONNECTION	1400Sqx150	CANVASS	6 Nos	
21.	NON RETURN DAMPER	1400Sqx150	IS 277@1.2Thk	6 Nos	275 GSM
20.	VOLUME CONTROL DAMPER	1400Sqx150	IS 1079@2Thk	6 Nos	M.S EPOXY PAINTED
19.	DRAIN PIPE ARRAN-GEMENT — PIPE (OVER FLOW)	80 NB PIPE	IS 1239/PART1	1 Lot	FLANGE END
18.	GATE VALVE(DRAIN)	80 NB	Refer valve Documents	1 No	FLANGE END
17.	PIPE (DRAIN)	80 NB PIPE	IS 1239/PART1	1 Lot	BUTT WELDING END
16.	QUICK FILL PIPE — FLOAT VALVE	65 NB	Refer valve Documents	2 Nos	FLANGE END
15.	GATE VALVE	65 NB		2 Nos	
14.	ARRAN-GEMENT — PIPE	65 & 80 NB	IS 1239/PART1	1 LOT	BUTT WELDING END
13.	SUCTION PIPE WITH BYPASS ARRAN-GEMENT — POT STRAINER	250 NB	Refer valve Documents	1 No	FLANGE END
12A	VENT VALVE	15 NB		1 No	SCREW END
12.	GATE VALVE	250 NB		5 Nos	FLANGE END
11.	PIPE	250 NB	IS 1239/PART1	1 No	BUTT WELDING END
10.	DELIVERY — SCALE PREVENTOR	200 NB	STD	1 No	
09.	PIPE WITH BYPASS ARRAN-GEMENT — CHECK VALVE	200 NB	Refer valve Documents	4 Nos	FLANGE END
08.	GATE VALVE	200 NB		5 Nos	FLANGE END
07.	PIPE	200 NB PIPE	IS 1239/PART1	1 Lot	BUTT WELDING END
06.	MOTOR	30KW/4P	refer separate documents	4 Nos	LHP SAM TURBO
05.	SPRAY PUMP	CAPACITY-251m3		4 Nos	SUC-250NB DEL-200NB
04.	AIRWASHER UNIT	5100x4000x7350H	IS 1079	2 Nos	
03.	PLENUM DUCT	AS PER DRAWING	IS 277@18G GI	1 Lot	275GSM
02.	MOTOR	30KW/4P	IS 325	6 Nos	LHP
01.	CENTRIFUGAL FAN	GFAB-5-160	AS PER OEM STD	6 Nos	HOWDEN

BILL OF MATERIALS

CUSTOMER	TANGEDCO	TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)
CONSULTANT	DESEIN	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
EPC CONTRACTOR	BHEL	BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

2x660 MW ENNORE SEZ COAL BASED STPP
AT ASH DYKE OF NCTPS, CHENNAI

JOB NO. 412
STATUS CONTRACT
DRG./REF. NO. (INTERNAL)
PRINT SCALE IN METRE

REV.	DATE	ALTD	CHD	APPD

SUB-CONTRACTOR VENTILATION SYSTEM

TAP ENGINEERING
No.152,(SP) AMBATTUR IND. ESTATE, 21st PHASE, CHENNAI-600 058

	NAME	SIGN	DATE
DSN	E.A	-sd-	29.03.2018
DRN	E.A	-sd-	29.03.2018
CHD	CRK	-sd-	29.03.2018
APPD	CRK	-sd-	29.03.2018

PACKAGE: VENTILATION SYSTEM

TITLE: AIR WASHER LAYOUT OUTSIDE-"A ROW" SIDE ALONG ALONG WITH FOUNDATION DETAILS -TG BUILDING

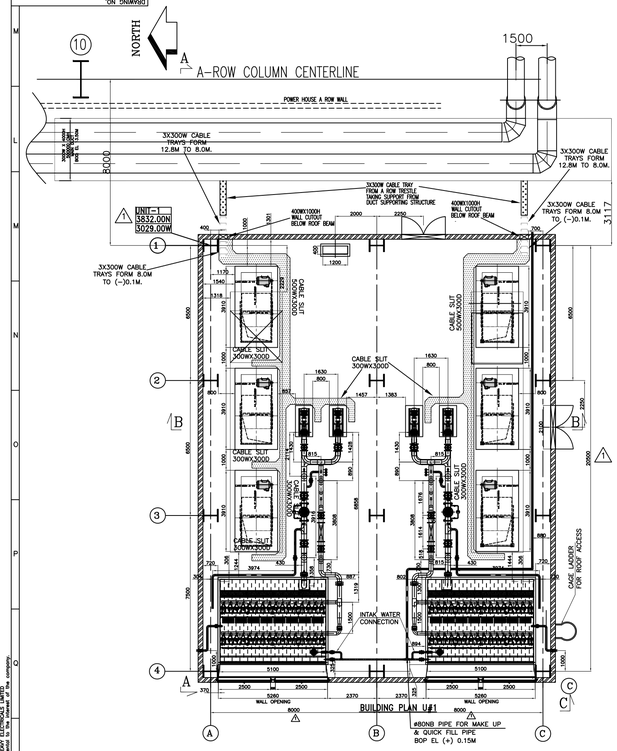
DEPT.	SCALE 1:100	DRAWING No. PE-V0-412-554-A022	
SIGN		SHEET 2 OF 2	REV 00
DATE			

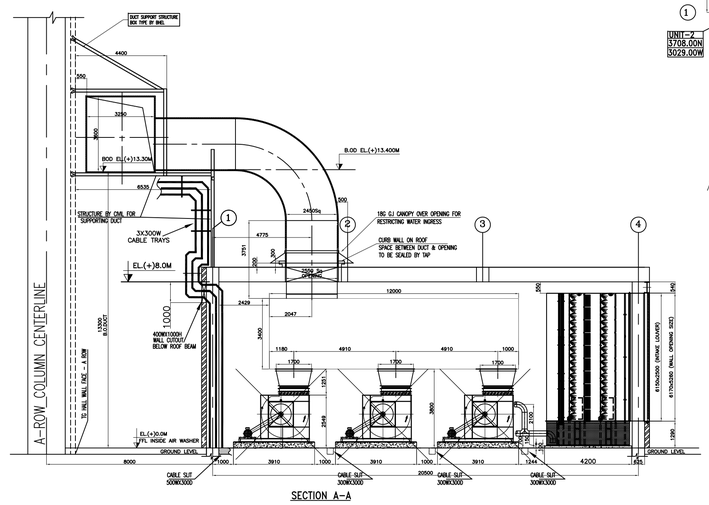
FORMAT SIZE A1

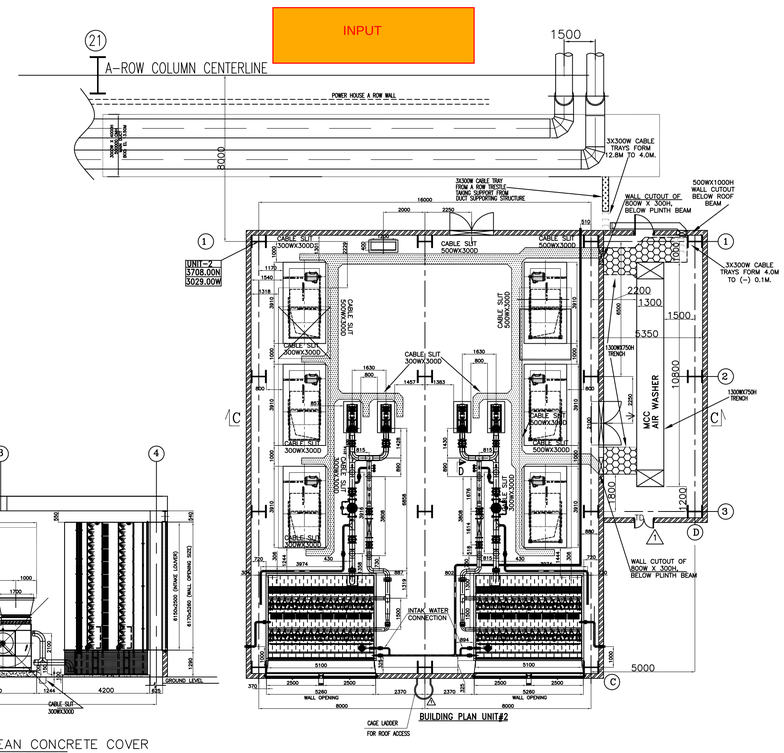
DRAWING NO. PE-DG-412-100-E015

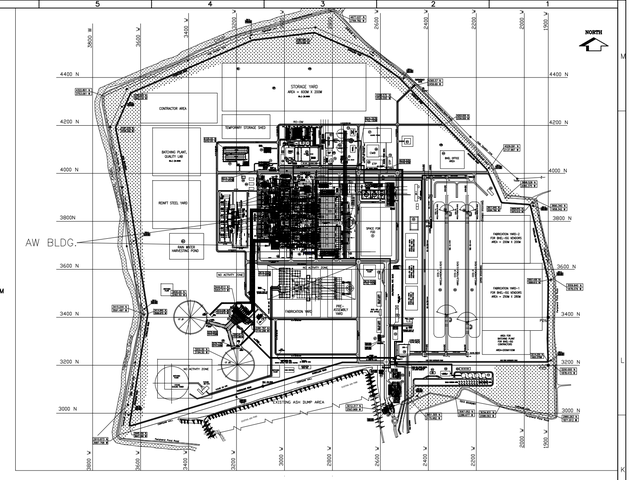
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

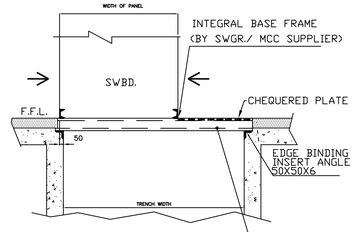
INPUT





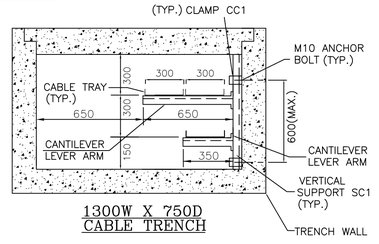




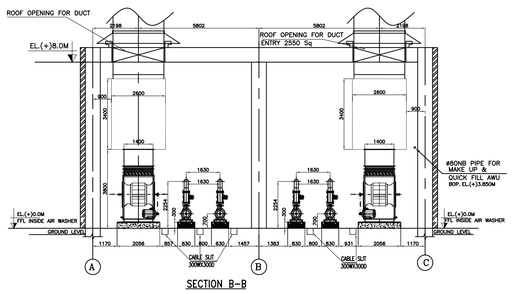


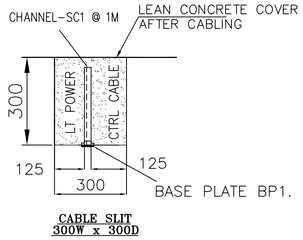
ISMC-75(SUPPLIED BY SWGR. SUPPLIER IN LOOSE PROVIDED AT EVERY SHIPPING SECTION)

TYP. SUPPORT/FIXING ARRANGEMENT FOR PANELS OVER CABLE TRENCH

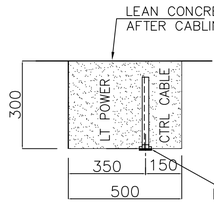


1300W X 750D CABLE TRENCH

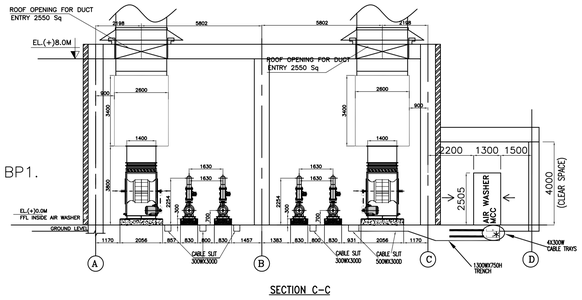




CABLE SLIT 300W x 300D



CABLE SLIT 500W x 300D



BILL OF QUANTITY ⚠

S.NO.	MATERIAL DESCRIPTION	UNIT	QUANTITY
01	CABLE TRAY 300MM WIDE (LADDER TYPE)	METRES	185
02	CABLE TRAY 300MM WIDE (PERFORATED TYPE)	METRES	85
03	SINGLE CHANNEL C1	METRES	125
04	BASE PLATE FOR SINGLE CHANNEL, BP1	NOS.	100
05	CANTILIVER ARM(650MM)	NOS.	30
06	CANTILIVER ARM(350MM)	NOS.	210
07	90° HORIZONTAL BEND 300 WIDE (LADDER)	NOS.	24
08	90° HORIZONTAL BEND 300 WIDE (PERFORATED)	NOS.	12
09	CLAMP FOR SINGLE CHANNEL CC1	NOS.	30
10	90° ANGLE FITTING, HL1	NOS.	140

LEGEND

- CABLE TRAY RISER
- CABLE TRAY (HORIZONTAL)
- CABLE SLIT
- CABLE TRENCH
- TD — DOUBLE LEAF DOOR WITH TRANSOM ARRANGEMENT 3M HEIGHT (INCLUSIVE OF TRANSOM ARRANGEMENT) X 2M WIDTH
- D — SINGLE LEAF DOOR

SL NO.	TITLE	DRG NO	SOURCE
1.	MAIN PLANT EQUIPMENT LAYOUT	PE-DG-412-100-M003	PEM/MPL
3.	PLOT PLAN	PE-DG-412-100-M001	PEM/MPL
3.	LAYOUT OF TRANSFORMER YARD	PE-DG-412-100-E001	PEM/ELECT
4.	CABLE ERECTION PHILOSOPHY	PE-DC-412-507-E004	PEM/ELECT
5.	DESIGN PHILOSOPHY FOR ELECTRICAL EQUIPMENT LAYOUT	PE-DC-412-100-E101	PEM/ELECT
6.	TYPICAL DETAILS OF CABLE TRAY & ACCESSORIES	PE-DC-412-507-E005	PEM/ELECT
7.	INSTALLATION DETAILS FOR CABLE TRAY SUPPORT SYSTEM.	PE-DG-412-507-E006	PEM/ ELECT
8.	AIR WASHER BUILDING LAYOUT – A ROW	PE-DG-412-554-A006	PEM/ MAUX

NOTES:–

1. ALL DIMENSION AND LEVELS ARE IN MM.
2. ALL ELEVATIONS MARKED W.R.T. TG HALL GROUND FLOOR ELEVATION OF 0.00M WHICH CORRESPONDS TO RL 10.0M.
3. THIS DRAWING SHALL BE REFERRED ONLY FOR ELECTRICAL EQUIPMENT & CABLING LAYOUT. FOR MECHANICAL/CIVIL ASPECTS, RESPECTIVE DRAWINGS SHALL BE REFEREED.
4. PANEL DIMENSIONS SHOWN ARE TENTATIVE.
5. FOR LT PANELS FIXING TYPICAL INSERT DETAILS ARE INDICATED FOR INCLUSION IN CIVIL DRAWINGS FOR SWITCHGEAR ROOM FLOOR GENERAL ARRANGEMENT.
6. CABLE TRAYS & TRAY SUPPORTS INSTALLATION SHALL BE DONE AS PER REF. DRGS. NO. AT SL. Nos. 4 TO 7.
7. ALL CABLE OPENINGS IN WALLS/FLOORS SHALL BE SEALED WITH CABLE FIRE SEALING SYSTEM MATERIAL AFTER.
8. LEFTOVER PORTIONS OF CABLE TRENCHES BEHIND / AROUND PANELS SHALL BE COVERED WITH MS CHEQUERED PLATE COVERS.
9. ALL CABLE SLITS SHALL BE SAND FILLED & PROVIDED WITH LEAN CONCRETE COVER AFTER CABLE LAYING.
10. CABLE SLITS SHALL BE LOCALLY DEEPENED FOR A LENGTH OF APPROX 1M TO RECEIVE PIPES FROM CABLE TRENCH.
11. ⚠ LOAD OF CABLE TRAY ALONG WITH CABLE WITH SUPPORT HAS BEEN CONSIDERED AS MINIMUM 100KG, 75KG, 50KG, 25KG FOR 600 WIDE, 450 WIDE, 300 WIDE & 150 WIDE CABLE TRAYS RESPECTIVELY.

REV.	DATE	ALTD	CHD	APPD
1.	18.08.18	RK/VKS	VY	SL

1. REVISED IN LINE WITH CUSTOMER/ CONSULTANT'S VIDE LETTER NO. D.323 DATED 31.07.2018.
2. DIMENSIONS OF AIR WASHER BUILDING UPDATED IN LINE WITH LATEST LAYOUT. CO-ORDINATES OF AIR WASHER BUILDING UNIT-1 UPDATED.

JOB NO. 412
STATUS CONTRACT
DISTRIBUTION
TO
No. OF

PROJECT
2x660 MW ENNORE SEZ COAL BASED STPP

CUSTOMER:
TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LIMITED (TANGEDCO)

CONSULTANT:
DESEIN PRIVATE LIMITED
DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NEW DELHI

DEPT CODE		NAME	SIGN	DATE
E	DRN	SM		
	DESN	VKS		
	CHD	VY/SBH		
	APPD	SL		

TITLE
ELECTRICAL EQUIPMENT & CABLING LAYOUT IN AIR WASHER ROOM(A ROW)

DEPT. | SCALE: | DRAWING NO. PE-DG-412-100-E015
SIGN
DATE
SHEET 1 OF 1 | REV. 1

FORMAT SIZE A1

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ELECTRONIC FILE NAME/FILE_PATH:

COPY RIGHT AND CONFIDENTIAL:
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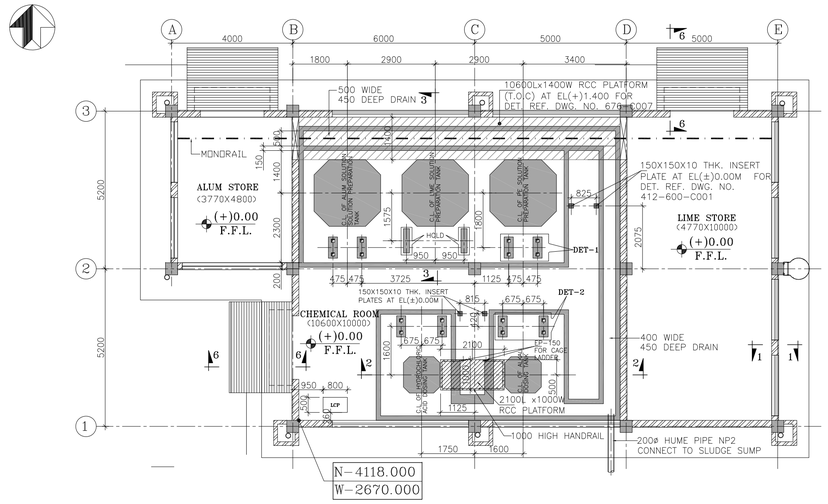
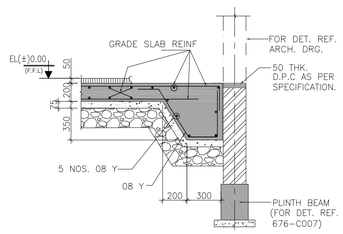
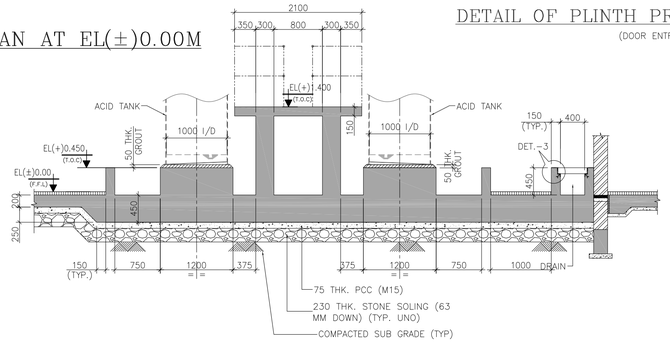
it must not be used directly or indirectly in any way detrimental to the interest of the company.



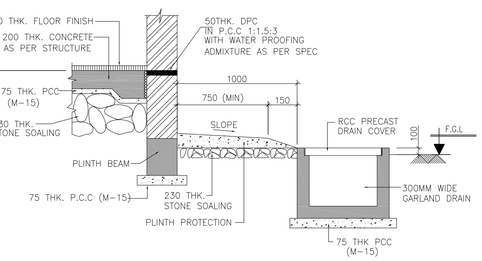
PLAN AT EL(±)0.00M



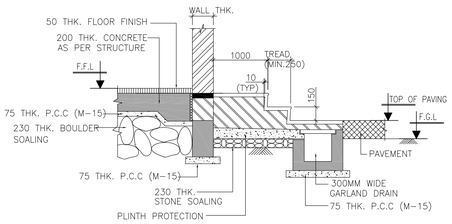
SECTION 1-1



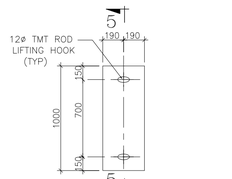
SECTION 2-2
(G.A)



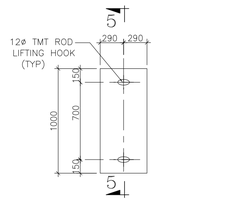
DETAIL OF PLINTH PROTECTION



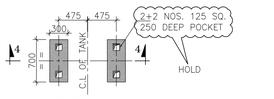
DETAIL OF PLINTH PROTECTION & STEPS
(DOOR ENTRANCES)



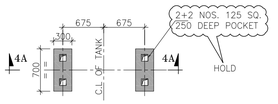
PLAN-PRECAST COVER
(FOR 400 WIDE DRAIN)



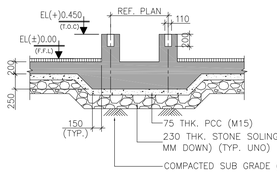
PLAN-PRECAST COVER
(FOR 500 WIDE DRAIN)



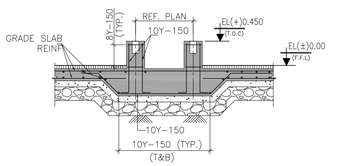
DETAIL-1



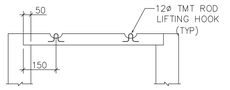
DETAIL-2



SECTION 4-4
SECTION 4A-4A
(G.A)

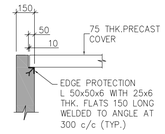


SECTION 4-4
SECTION 4A-4A
(R.C)

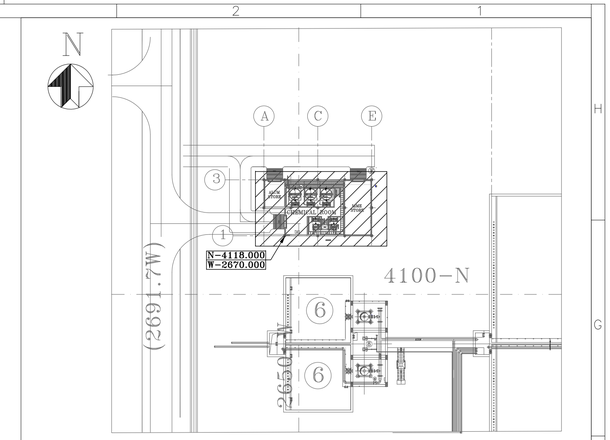


SECTION 5-5

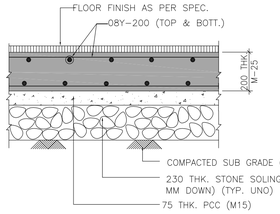
R/F DET. OF PRECAST COVER



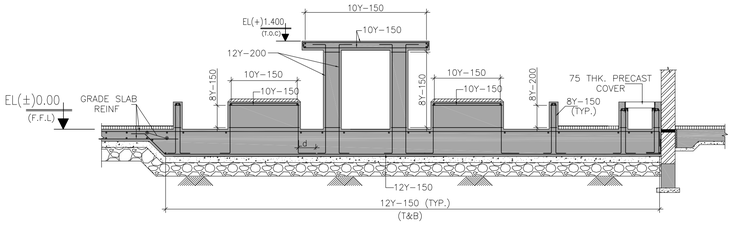
DETAIL-3



KEY PLAN



TYP DET. OF GRADE SLAB



SECTION 2-2
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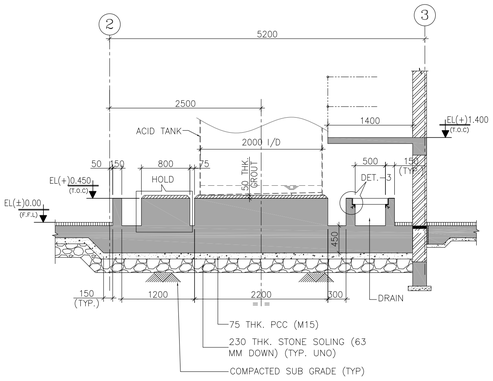

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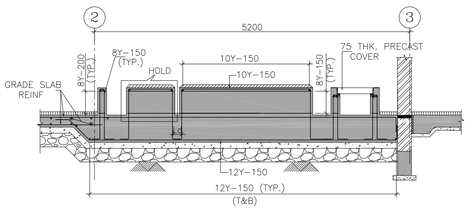
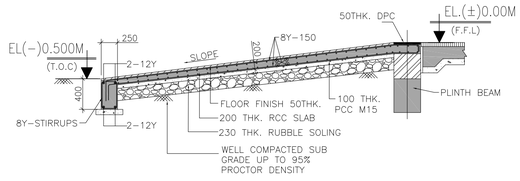


SECTION 3-3
(R.C)



SECTION 6-6
(FOR RAMP)

NOTES: -

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. +10.00 M. ABOVE MEAN SEA LEVEL.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M-30 UNLESS OTHERWISE NOTED.
5. ALL REINFORCEMENTS SHALL BE HIGH STRENGTH DEFORMED BARS OF MINIMUM GRADE Fe500 CONFORMING TO IS:1786 (LATEST). AND SHALL BE FUSION BONDED EPOXY COATING CONFORMING TO IS:13620.
6. BACK FILLING SHALL HAVE TO BE DONE ENSURING PROPER COMPACTION AND STRICTLY AS PER SPECIFICTION AND IT SHOULD BE COMPLETED BEFORE TAKING UP ERECTION WORK.
7. CEMENT SHALL BE OPC WITH C3A CONTENT FROM 5% TO 8%.
8. FOR GENERAL NOTES AND STANDARD RCC DETAILS REFER DRAWING NO.-PE-DG-412-600-C001
9. FOR GROUND IMPROVEMENT REFER SEPARATE DRAWING.
10. BACK FILLING WITH GOOD EARTH BELOW SOAK PIT TO BE DONE ENSURING COMPACTION OF 95% PROCTOR MAXIMUM DRY DENSITY

REFERENCE DRAWINGS CONSTRUCTION

1. PE-DG-412-600-C001 ----- STANDARD NOTES & DETAILS FOR RCC
2. PE-DG-412-100-M001 ------ PLOT PLAN.
3. PE-DG-412-676-C006 ------ CHEMICAL HOUSE BUILDING ARCHITECTURE PLAN, ELEVATION & SECTIONS DETAILS
4. PE-DG-412-676-C007 ------ CHEMICAL HOUSE BUILDING FDN., AND STRUCTURE DETAILS

CONCRETE	: 50 CUM. (APPROX)
REINFORCEMENT	: 5 MT. (APPROX)

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)	
THIS DRAWING MARKED(✓) IS RELEASED FOR	
☑ COMMENTS/APPROVAL	
☐ PLANNING/INFORMATION	
☐ CONSTRUCTION	
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	-sd-
DATE	6 June 2019

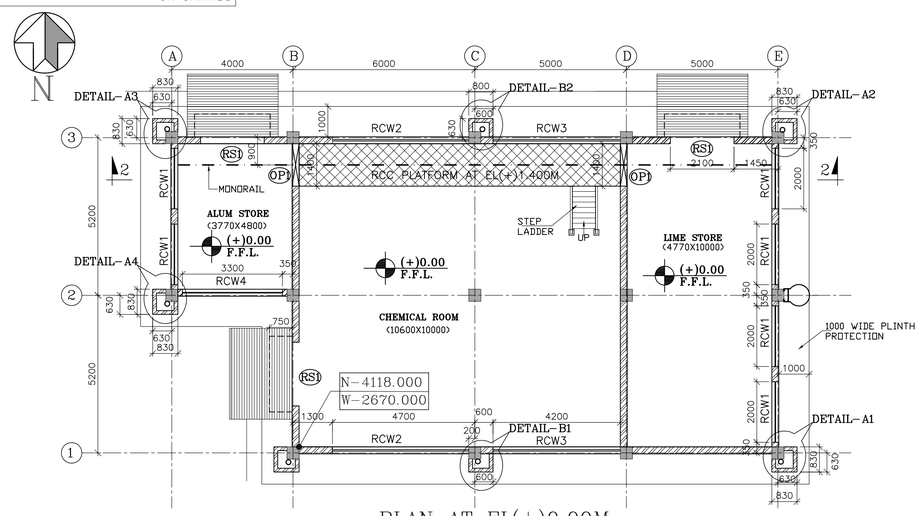
REV.	DATE	ALTD	CHD	APPD

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI
TITLE	CHEMICAL HOUSE BUILDING GA AND RC DETAILS OF GROUND FLOOR

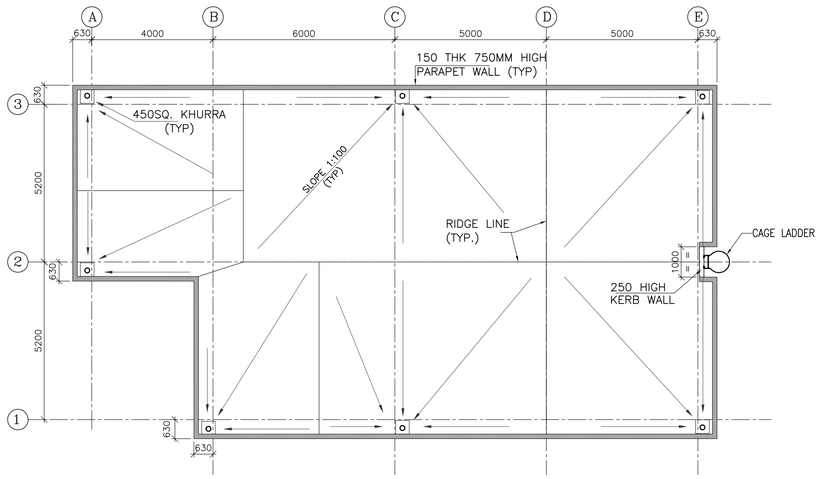
		NAME	SIGN	DATE
DEPT CODE	DRN	YSR		06/06/19
	DESN	PS		06/06/19
C	CHD	SM		06/06/19
	APPD	AN		06/06/19

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	
DEPT.	
SCALE:	
SIGN	
DATE	
DRAWING NO.	PE-DG-412-676-C008
SHEET OF	REV. 0

FORMAT SIZE A1



PLAN AT EL(±)0.00M

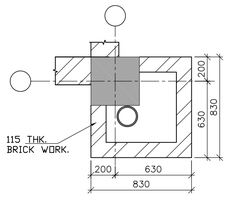


ROOF PLAN AT EL(+)5.60M (ROOF LEVEL)

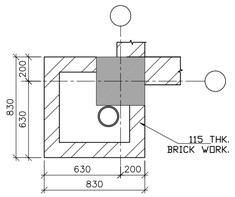
SCHEDULE OF FINISHES :-

AREA	FLOORING	WALL /DADO	CEILING
CHEMICAL ROOM	ACID/ALKALI RESISTANT TILES	ACID/ALKALI RESISTANT TILES ON WALL UP TO 1500MM HEIGHT & CHEMICAL RESISTANT PAINT ABOVE.	CHEMICAL RESISTANT PAINT.
LIME STORE AREA	ACID/ALKALI RESISTANT TILES	ACID/ALKALI RESISTANT TILES ON WALL UP TO 1500MM HEIGHT & CHEMICAL RESISTANT PAINT ABOVE.	CHEMICAL RESISTANT PAINT.
ALUM STORE AREA	ACID/ALKALI RESISTANT TILES	ACID/ALKALI RESISTANT TILES ON WALL UP TO 1500MM HEIGHT & CHEMICAL RESISTANT PAINT ABOVE.	CHEMICAL RESISTANT PAINT.
EXTERNAL WALL/ SUNSHADE	WATER PROOF CEMENT BASED PAINT		

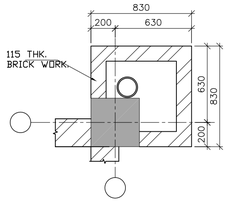
(*) 150 MM HIGH SKIRTING UNO (TYP.)



DETAIL-A1



DETAIL-A1



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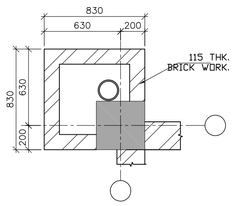

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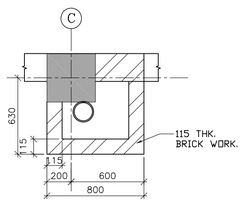

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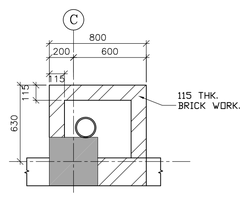

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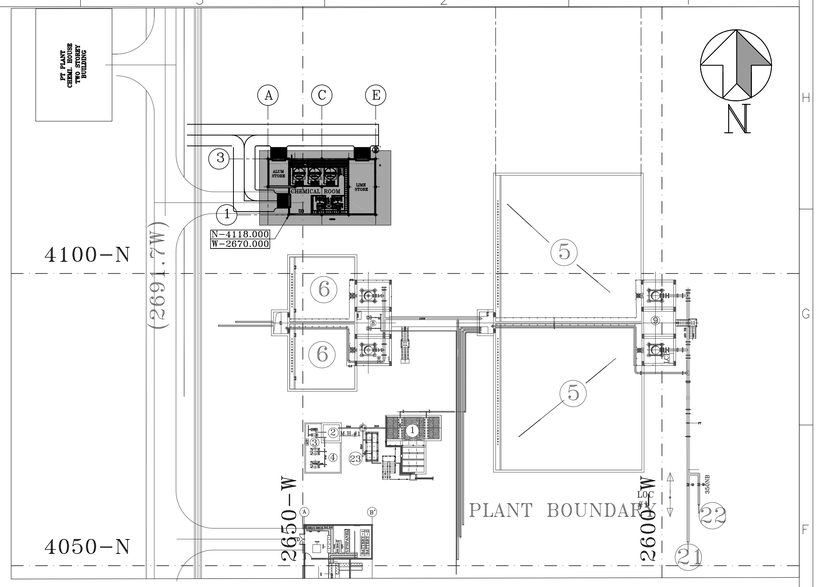

KEY PLAN

NOTES: -

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. (+) 10.00 M.
3. UNLESS NOTED OTHERWISE WINDOW / DOOR LOCATION SHALL BE AT CENTER BETWEEN GRIDS.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
5. ALL GROUND FLOOR WINDOWS SHALL BE PROVIDED WITH GRILL.

REFERENCE DRAWINGS CONSTRUCTION

1. PE-DG-412-600-C001 ----- STANDARD NOTES & DETAILS FOR RCC
2. PE-DG-412-100-M001 ------ PLOT PLAN.
3. PE-DG-412-611-C031 ------ STANDARD DETAILS FOR ARCHITECTURAL WORKS

SCHEDULE OF DOOR & WINDOW :-

SYMBOL	NOS.	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	SILL LEVEL FROM FFL	LINTEL FROM FFL	REMARKS
RS1	03	2100	3000	-	EL.(+)3.000M	STEEL ROLLING SHUTTER (MANUALLY OPERATED)
RCW1	06	2000	2000	EL.(+)1.400M	EL.(+)3.400M	RCC JALI AS PER SPECIFICATIONS
RCW2	02	4500	2000	EL.(+)1.400M	EL.(+)3.400M	RCC JALI AS PER SPECIFICATIONS
RCW3	02	4200	2000	EL.(+)1.400M	EL.(+)3.400M	RCC JALI AS PER SPECIFICATIONS
RCW4	01	3300	2000	EL.(+)1.400M	EL.(+)3.400M	RCC JALI AS PER SPECIFICATIONS
OP1	02	1400	2000	EL.(+)1.400M	B.O. ROOF BEAM	

READ THIS DRG. IN CONJUNCTION WITH DRG. PE-DG-412-676-C006 (SH-2)

* COLOUR SCHEME TO BE DECIDED BY CUSTOMER AT SITE.

LEGEND: -

CL.	CENTRE LINE
EL.	ELEVATION
T.O.C.	TOP OF CONCRETE
B.O.C.	BOTTOM OF CONCRETE
PCC	PLAIN CEMENT CONCRETE
COL.	COLUMN
N.T.S	NOT TO SCALE
DET.	DETAIL
TYP	TYPICAL
C/C	CENTRE TO CENTRE
SPEC.	SPECIFICATION
F.G.L.	FINISHED GROUND LEVEL
F.F.L.	FINISHED FLOOR LEVEL

COLOR TO MATCHED WITH - 9002

COLOR TO MATCHED WITH - 5012

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)	
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☐ CONSTRUCTION	
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ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	-sd-
DATE	28 May 2019

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
CONSULTANT	DESEIN PRIVATE LIMITED, DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	TO / No. OF
	BHARAT HEAVY ELECTRICALS LTD, POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NEW DELHI
TITLE	CHEMICAL HOUSE BUILDING, ARCHITECTURE PLAN, ELEVATION & SECTIONS DETAILS (SH1)
DRAWING NO.	PE-DG-412-676-C006
SHEET	1 OF 2
REV.	0

DEPT CODE		NAME	SIGN	DATE
C	DRN	RAJENDRA	-sd-	28.05.2019
	DESN	PRASHANT	-sd-	28.05.2019
	CHD	SM	-sd-	28.05.2019
	APPD	AN	-sd-	28.05.2019

REV.	DATE	ALTD	CHD	APPD

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FORMAT SIZE A1

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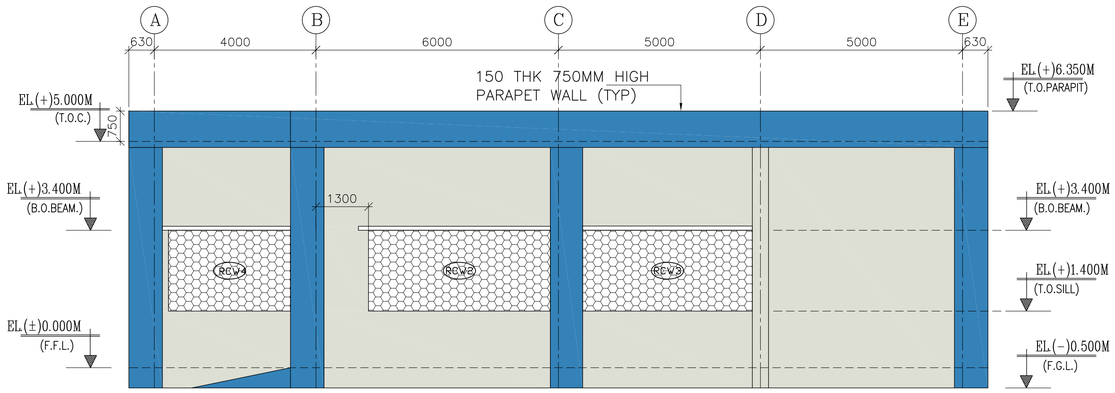
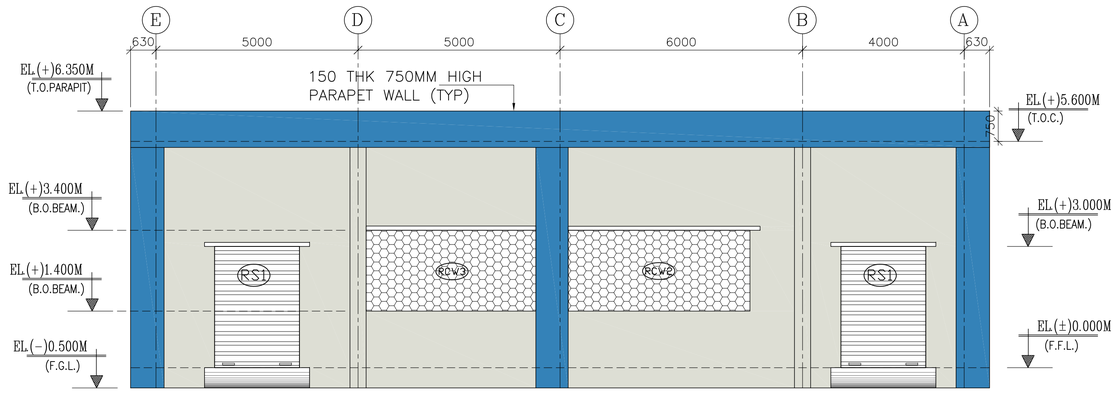


ELEVATION ALONG GRID–1



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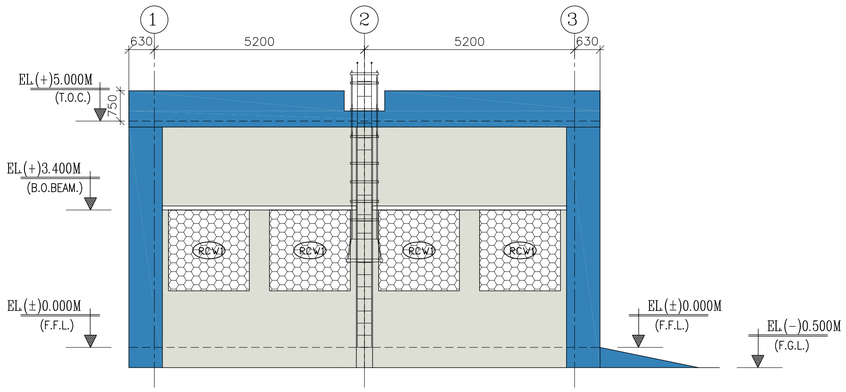
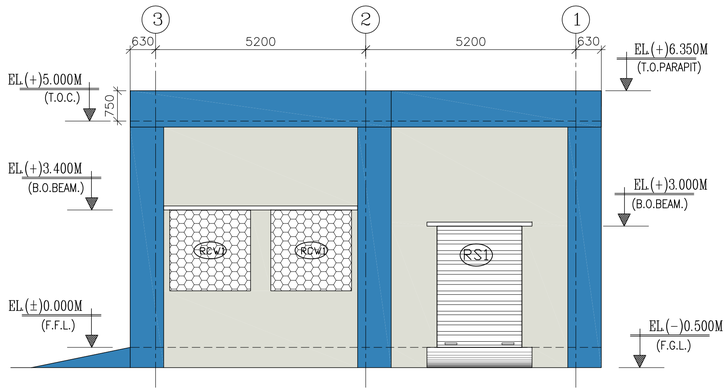
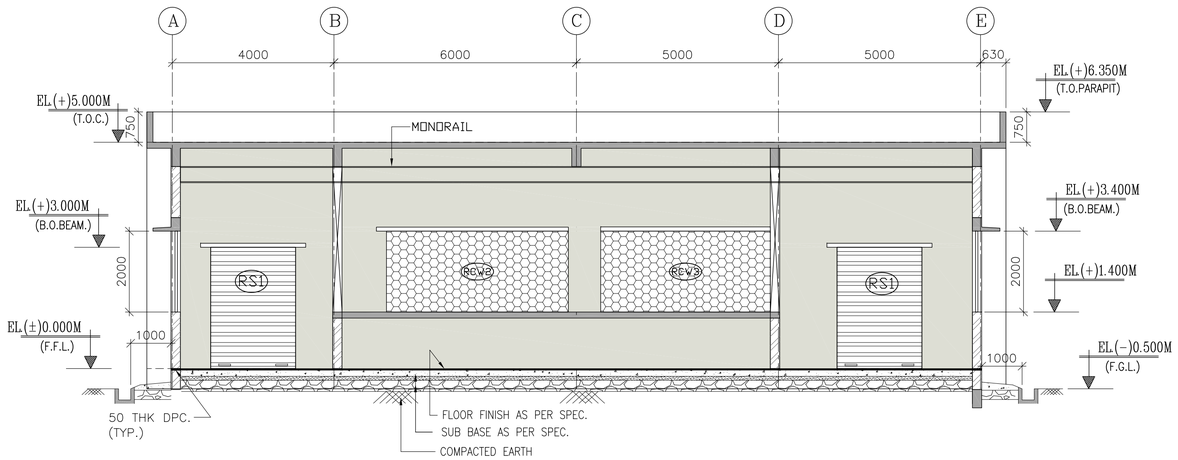


ELEVATION ALONG ROW–E



ELEVATION ALONG ROW–A



SECTION 1–1

NOTES: –

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REFERENCE DRAWINGS CONSTRUCTION

1. PE–DG–412–600–C001 ----- STANDARD NOTES & DETAILS FOR RCC
2. PE–DG–412–100–M001 ------ PLOT PLAN.
3. PE–DG–412–611–C031 ------ STANDARD DETAILS FOR ARCHITECTURAL WORKS

LEGEND: –

CL.	CENTRE LINE
EL.	ELEVATION
T.O.C.	TOP OF CONCRETE
B.O.C.	BOTTOM OF CONCRETE
PCC	PLAIN CEMENT CONCRETE
COL.	COLUMN
N.T.S	NOT TO SCALE
DET.	DETAIL
TYP	TYPICAL
C/C	CENTRE TO CENTRE
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F.G.L.	FINISHED GROUND LEVEL
F.F.L.	FINISHED FLOOR LEVEL

COLOR TO MATCHED WITH – 9002

COLOR TO MATCHED WITH – 5012

* COLOUR SCHEME TO BE DECIDED BY CUSTOMER AT SITE.

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☐ CONSTRUCTION	
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ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	–sd–
DATE	27 May 2019

READ THIS DRG. IN CONJUNCTION WITH DRG. PE–DG–412–676–C006 (SH–1)

REV.	DATE	ALTD	CHD	APPD

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION TO	
No. OF	

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
CONSULTANT	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH–II, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

DEPT CODE		NAME	SIGN	DATE
C	DRN	RAJENDRA	–sd–	28.05.2019
	DESN	PRASHANT	–sd–	28.05.2019
	CHD	SM	–sd–	28.05.2019
	APPD	AN	–sd–	28.05.2019

TITLE: CHEMICAL HOUSE BUILDING
ARCHITECTURE PLAN, ELEVATION & SECTIONS DETAILS (SH2)

DEPT. | SCALE:

SIGN | DATE

DRAWING NO. PE–DG–412–676–C006

SHEET 2 OF 2 | REV. 0

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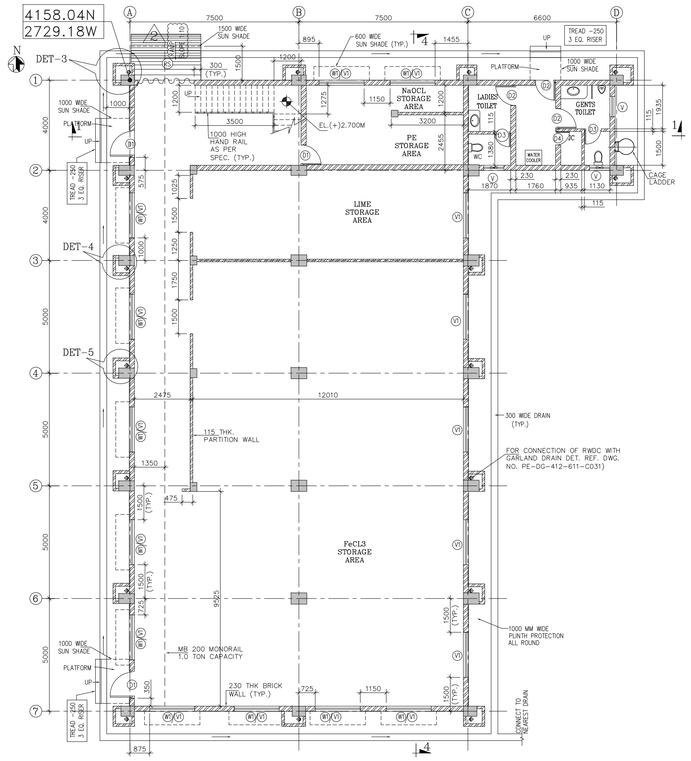
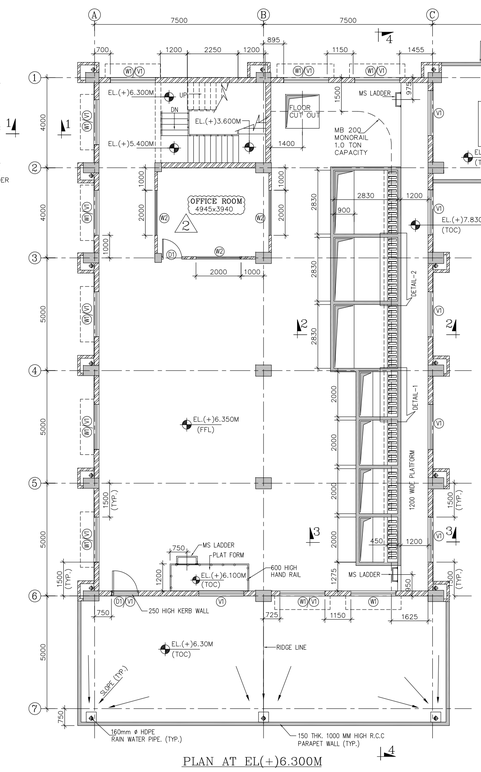


PLAN AT EL(±)0.00M



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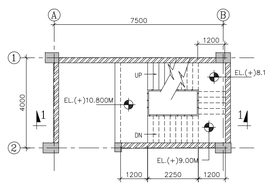

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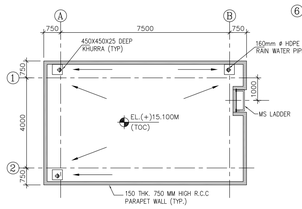
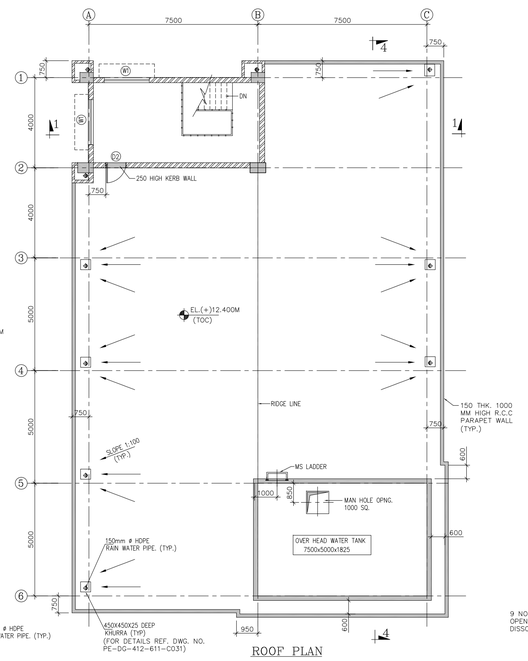
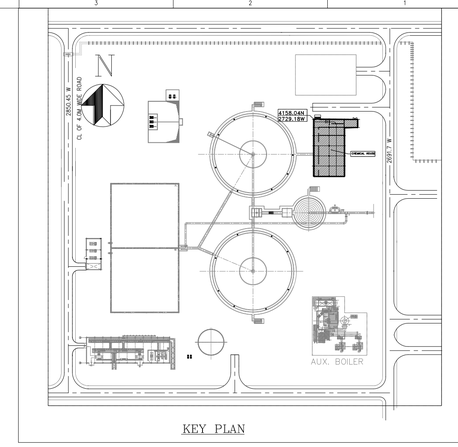


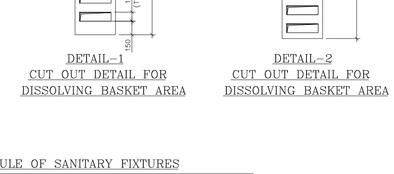
PLAN AT MUMTY ROOF



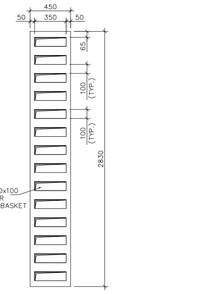
ROOF PLAN



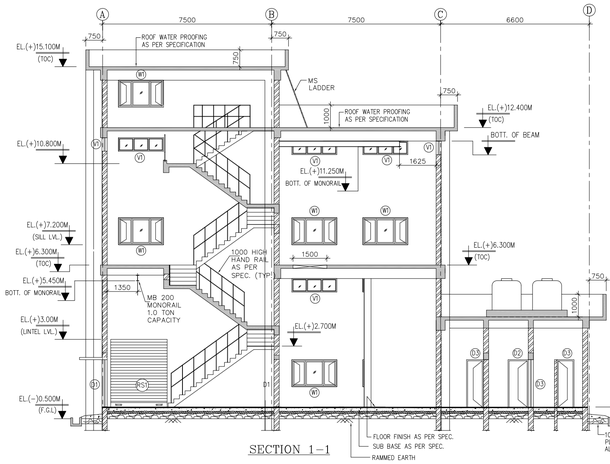
KEY PLAN



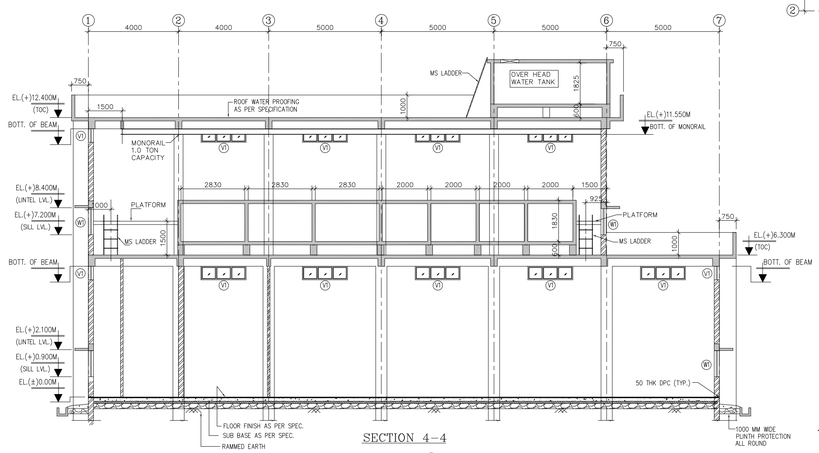
DETAIL-1
CUT OUT DETAIL FOR DISSOLVING BASKET AREA



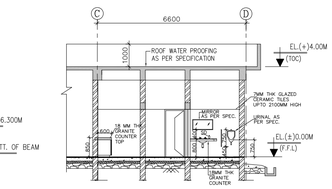
DETAIL-2
CUT OUT DETAIL FOR DISSOLVING BASKET AREA



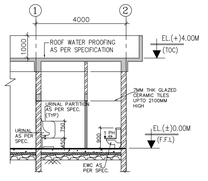
SECTION 1-1



SECTION 4-4



SECTION 5-5



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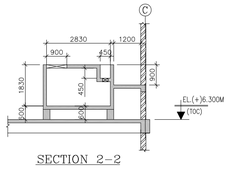
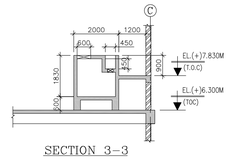
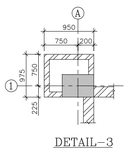


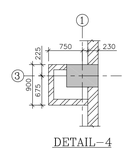
SECTION 2-2



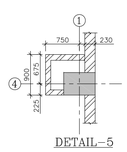
SECTION 3-3



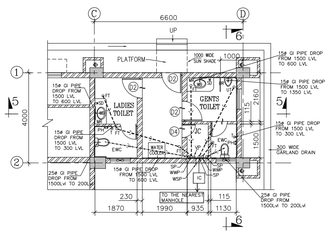
DETAIL-3



DETAIL-4



DETAIL-5



SANITARY PLAN FOR TOILET

SCHEDULE OF SANITARY FIXTURES

ITEM	DESCRIPTION
EWC	WC WESTERN TYPE 390 MM HIGH AS PER IS: 2556 (PART 2) WITH ALL FITTINGS INCLUDING FLUSHING SYSTEM OF APPROPRIATE CAPACITY .
WB	WASH BASIN (OVAL SHAPE) WITH ALL FITTINGS AS PER IS: 2556 TO BE FIXED ON CONCRETE PLATFORM FINISHED WITH 12 MM THICK POLISHED GRANITE STONE.
UR	URINAL WITH ALL FITTINGS WITH PHOTO VOLTIC CONTROL FLUSHING SYSTEM AS PER IS: 2556 (PART-6, SEC.1)
MR	MIRROR (5.5 MM THICK FLOAT GLASS)
SD	STAINLESS STEEL LIQUID SOAP HOLDER CUM DISPENSER
TR	STAINLESS STEEL TOWEL RAIL (600X20 MM)

SCHEDULE OF DOOR & WINDOW :-

SYMBOL	NOS.	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	SILL LEVEL FROM FFL	LINTEL FROM FFL	REMARKS
RS1	01	2500	3000	–	EL.(+)3.000M	STEEL ROLLING SHUTTER (MANUALLY OPERATED)
D1	04	1200	2100	–	EL.(+)2.10M	ANODIZED ALUMINIUM GLAZED DOOR WITH 6MM THK. FLOAT GLASS
D2	04	900	2100	–	EL.(+)2.10M	ANODIZED ALUMINIUM FRAMED DOOR WITH PRE-LAMINATED PARTICLE BOARD
D3	02	750	2100	–	EL.(+)2.10M	PVC DOOR AS PER SPECIFICATION
D4	01	600	2100	–	EL.(+)2.10M	PVC DOOR AS PER SPECIFICATION
W1	23	2000	1200	EL.(+)0.900M	EL.(+)2.10M	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 4MM THICK SHEET GLASS.
W2	03	2000	1200	EL.(+)0.900M	EL.(+)2.10M	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY CLOSED WITH 4MM THICK SHEET GLASS.
V	03	900	600	REF. ELEVATION	REF. ELEVATION	ANODISED ALUMINIUM GLAZED VENTILATOR FIXED WITH 6 MM THICK WIRED GLASS.
V1	32	2000	600	REF. ELEVATION	REF. ELEVATION	ANODISED ALUMINIUM GLAZED VENTILATOR FIXED WITH 6 MM THICK WIRED GLASS.

NOTE-: ALL WINDOW SHALL BE PROVIDED WITH GRANITE SLAB AT SILL LEVEL.

SCHEDULE OF FINISHES :-

AREA	FLOORING	WALL /DADO	CEILING
CHEMICAL STORAGE AREA	ACID/ALKALI RESISTANT TILES	ACID/ALKALI RESISTANT TILES ON WALL UP TO 1500MM HEIGHT & CHEMICAL RESISTANT PAINT ABOVE.	CHEMICAL RESISTANT PAINT.
TOILETS	ANTI SKID CERAMIC TILES OF MATT FINISH	GLAZED CERAMIC TILES UPTO 2.1M & ACRYLIC WASHABLE DISTEMPER FOR BALANCE HEIGHT.	ACRYLIC WASHABLE DISTEMPER
CHEMICAL STORAGE TANK	THE CHEMICAL STORAGE TANKS SHALL BE LINED WITH ACID/ALKALI PROOF TILE LINING AS PER SPEC.		
OFFICE AREA	VITRIFIED CERAMIC TILES	ACRYLIC WASHABLE DISTEMPER	GYPSUM BOARD FALSE CEILING
EXTERNAL WALL/ SUNSHADE	WATER PROOF CEMENT BASED PAINT		

(*) 150 MM HIGH SKIRTING UNO (TYP.)

LEGEND:-

1.	PH	PAPER HOLDER
2.	SD	SOAP DISPENSER
3.	TR	TOWEL RAIL
4.	FT	FLOOR TRAP
5.	EWC	EUROPEAN WATER CLOSET
6.	IWC	INDIAN WATER CLOSET
7.	WB	WASH BASIN
8.	UR	URINAL
9.	MR	MIRROR
10.	T	TAP
11.	TYP	TYPICAL
12.	EL	ELEVATION
13.	THK	THICKNESS
14.	UT	URINAL TRAP
15.	SP	SOIL PIPE
16.	WWP	WASTE WATER PIPE
17.	WSP	WATER SUPPLY PIPE
18.	VP	VENT PIPE
		100 DIA CI SOIL WASTE PIPE
		75 DIA CI WWP PIPE
		WATER SUPPLY LINE

NOTES:-

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REFERENCE DRGS :-

1. PLOT PLAN --- PE-DG-412-100-M001 (R4)
2. STANDARD DETAILS FOR ARCHITECTURAL WORKS --- PE-DG-412-611-C031
3. MECHANICAL GA FOR CHEMICAL HOUSE INCLUDING ALL NOSING TANK --- PE-VO-412-158-A035 (R2)
4. CHEMICAL HOUSE- GA AND RC DETAILS OF FOUNDATION, COLUMN, PLINTH BEAM --PE-DG-412-610-C005 (R0)

LEGENDS:-

1. T.O.C -----TOP OF CONCRETE
2. F.G.L -----FINISHED GROUND LEVEL
3. F.F.L -----FINISHED FLOOR LEVEL
4. LVL -----LEVEL

READ THIS DRG. IN CONJUNCTION WITH DRG. PE-DG-412-610-C004 (SH-2)

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)

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- ☐ PLANNING/INFORMATION
- ☐ CONSTRUCTION

STAMP ALL PREVIOUS REVISION AS SUPERSEDED

ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	-sd-
DATE	29 APRIL 2019

REV.	DATE	ALTD	CHD	APPD	DESCRIPTION
02	29.04.19	YSR	SB/VS	SM	REVISED AS PER CUSTOMER'S COMMENTS IN LR. NO. SE/C/PP/EJ/ENNORE SEZ STPP/F, CHEMICAL HOUSE /D.604/76, DT.22.04.2019 AND WKD. AS
01	16.03.19	-sd- YSR	CHD -sd- SB/VS	APPD -sd- SM	REVISED AS PER CUSTOMER'S COMMENTS IN LR. NO. SE/C/PP/EJ/ENNORE SEZ STPP/F, CHEMICAL HOUSE /D. 311 /19, DT. 22 .02.2019

PROJECT	2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
JOB NO.	412
STATUS	CONTRACT
DRG./REF. NO. (INTERNAL)	
PRINT SCALE IN METRE	0 10 20 30 40 50 60
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI
TITLE:	CHEMICAL HOUSE ARCHITECTURAL PLAN & SECTION

DEPT CODE	DRAWING	NAME	SIGN	DATE
C	DRN	YSR	-sd-	19.12.18
	CHD	VS/SB	-sd-	19.12.18
	CHD	SM	-sd-	19.12.18
	APPD	AN	-sd-	19.12.18

MPL	ELEC	C&I	MSE	MAX	DEPT. SIGN DATE	SCALE –	DRAWING NO. PE-DG-412-610-C004	REV. 02

SHEET 1 OF 2

FORMAT SIZE A0

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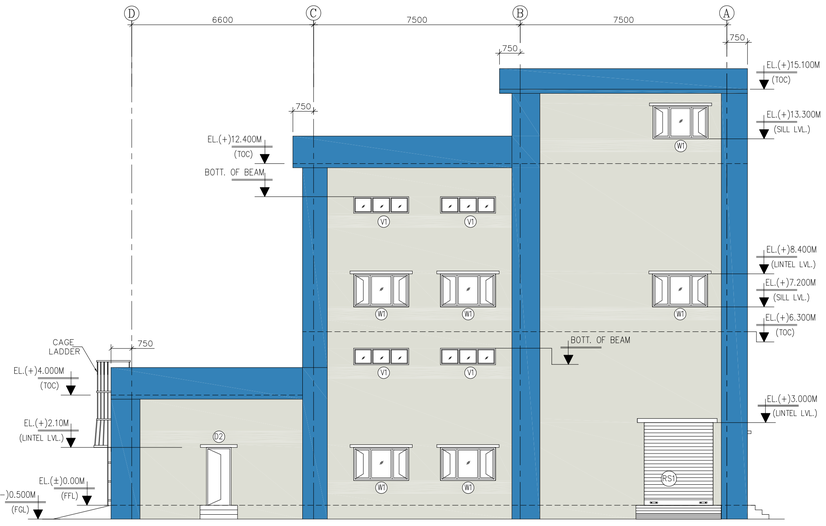
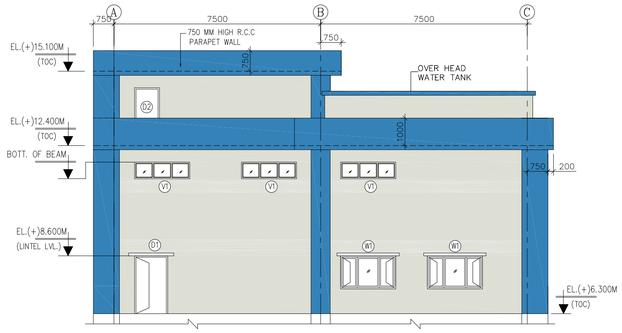
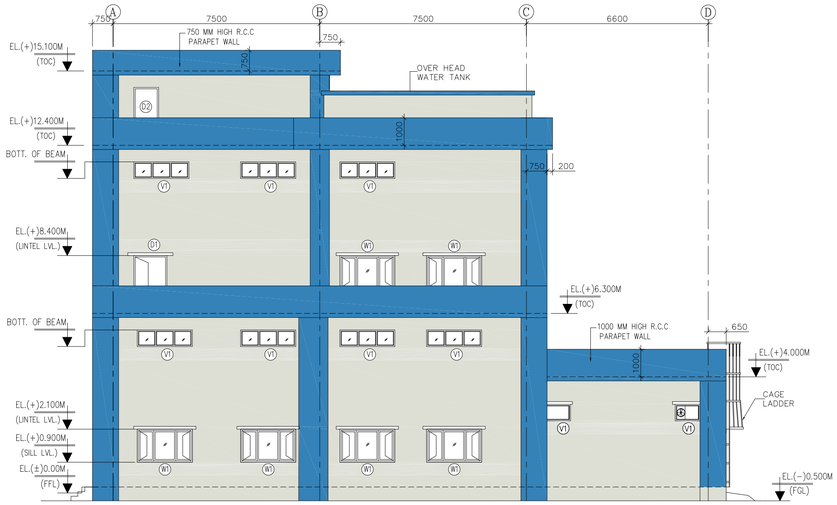


ELEVATION ON GRID−1

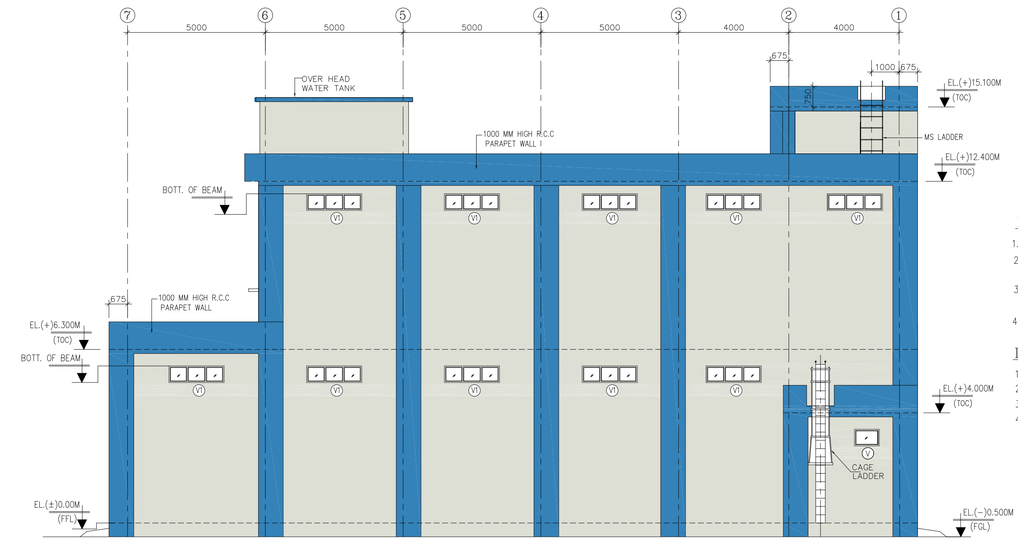
ELEVATION ON GRID−A



PART ELEVATION ON GRID −6
(ABOVE EL(+)6.300M TOC)



ELEVATION ON GRID −7



ELEVATION ON GRID−C

NOTES:−

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. (+) 10.00 M.
3. UNLESS NOTED OTHERWISE WINDOW / DOOR LOCATION SHALL BE AT CENTER BETWEEN GRIDS.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.

LEGENDS:−

1. T.O.C −−−−−TOP OF CONCRETE
2. F.G.L −−−−−FINISHED GROUND LEVEL
3. F.F.L −−−−−FINISHED FLOOR LEVEL
4. LVL −−−−−LEVEL

* COLOUR SCHEME TO BE DECIDED BY CUSTOMER AT SITE.

BHEL−PROJECT ENGINEERING MANAGEMENT(CIVIL)	
THIS DRAWING MARKED(✓) IS RELEASED FOR	
☑ COMMENTS/APPROVAL	
☐ PLANNING/INFORMATION	
☐ CONSTRUCTION	
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	−sd−
DATE	29 APRIL 2019

△2
1. ALL THE PROJECTIONS FOR RWDC ENCASING SHALL BE 750 MM BEYOND THE GRID LINES (DETAIL −3, 4 & 5 OF DRG NO. PE−DG−412−610−C004 (SHT. 1 OF 2)
2. ALL THE PROJECTIONS FOR ROOF ARE AS PER DRG NO. PE−DG−412−610−C004 (SHT. 1 OF 2).

READ THIS DRG. IN CONJUNCTION WITH DRG. PE−DG−412−610−C004 (SH−1)

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
	OWNER: TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
	OWNER'S CONSULTANT: DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI
TITLE	CHEMICAL HOUSE ARCHITECTURAL ELEVATION
JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO / No. OF	
DRAWING NO.	PE−DG−412−610−C004
SHEET	2 OF 2
REV.	02

DEPT CODE		NAME	SIGN	DATE
C	DRN	YSR	−sd−	19/12/18
	DESN	VS/SB	−sd−	19/12/18
	CHD	SB	−sd−	19/12/18
	APPD	AN	−sd−	19/12/18

REV.	DATE	ALTD	CHD	APPD
02	29.04.19	YSR	SB/VS	SM
01	11.03.19	YSR	−sd− SB/VS	−sd− SM

02: REVISED AS PER CUSTOMER'S COMMENTS IN LR. NO. SE/C/TP/E2/ENNORE SEZ STPP/F. CHEMICAL HOUSE /D.606/19, DT.22.04.2019 AND MKD. AS △2

01: REVISED AS PER CUSTOMER'S COMMENTS IN LR. NO. SE/C/TP/E2/ENNORE SEZ STPP/F. CHEMICAL HOUSE /D. 311 /19, DT. 22 .02.2019

FORMAT SIZE A1

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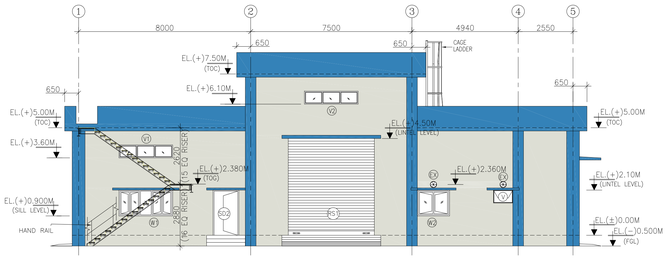
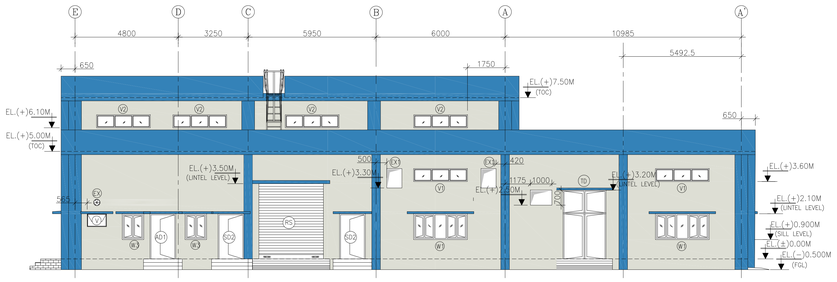
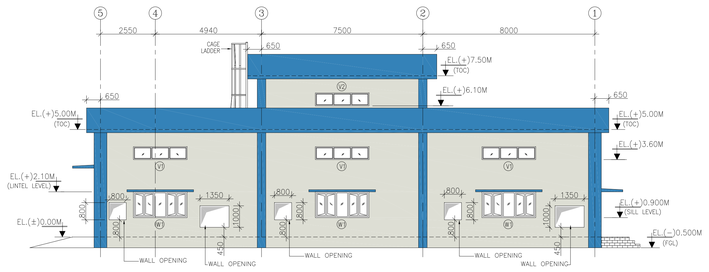


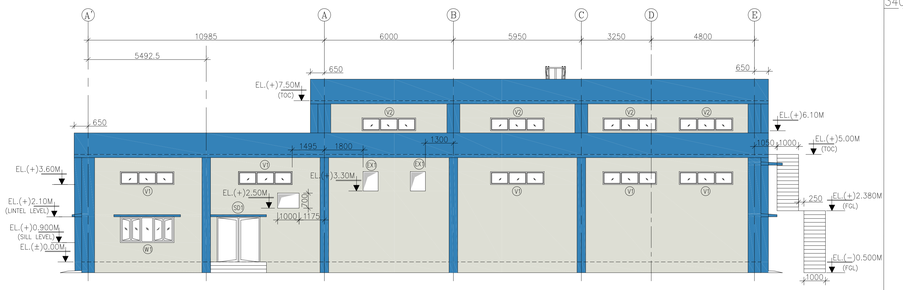
ELEVATION ALONG E ROW ⚠



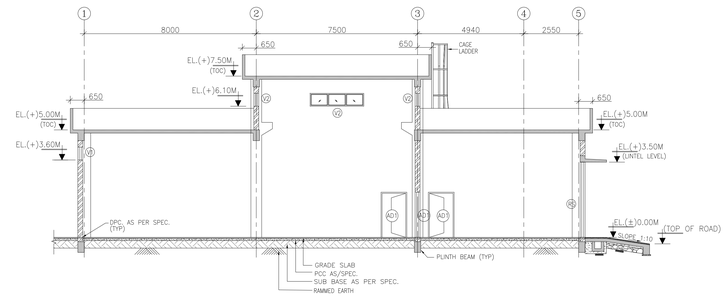
ELEVATION ALONG GRID-5 ⚠



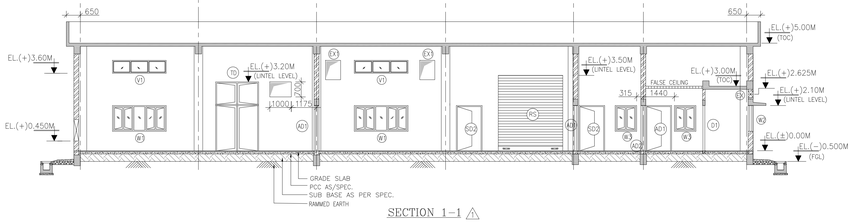
ELEVATION ALONG A' ROW



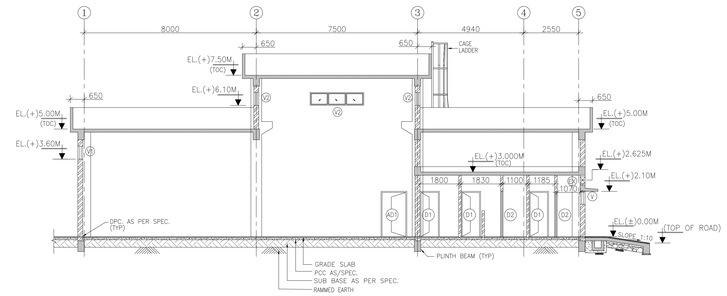
ELEVATION ALONG GRID-1 ⚠



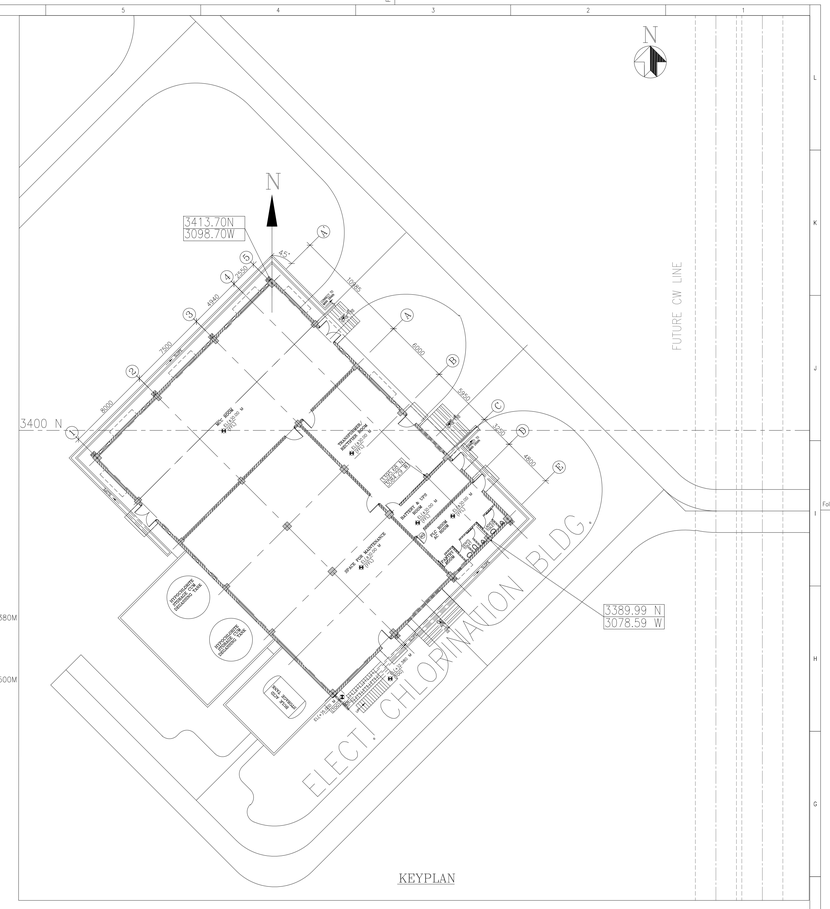
SECTION 2-2



SECTION 1-1 ⚠



SECTION 3-3 ⚠


N
3413.70N
3098.70W
3400 N
3389.99 N
3078.59 W
FUTURE CW LINE
ELECT. CHLORINATION BLDG.
45°
10985
6000
3250
4800
3000
2600
4500
2500
6000
3250
4800
3000
2600
4500
2500
EQUIPMENT FOUNDATION EL.(+)0.00M
EQUIPMENT FOUNDATION EL.(+)0.00M
EQUIPMENT FOUNDATION EL.(+)0.00M

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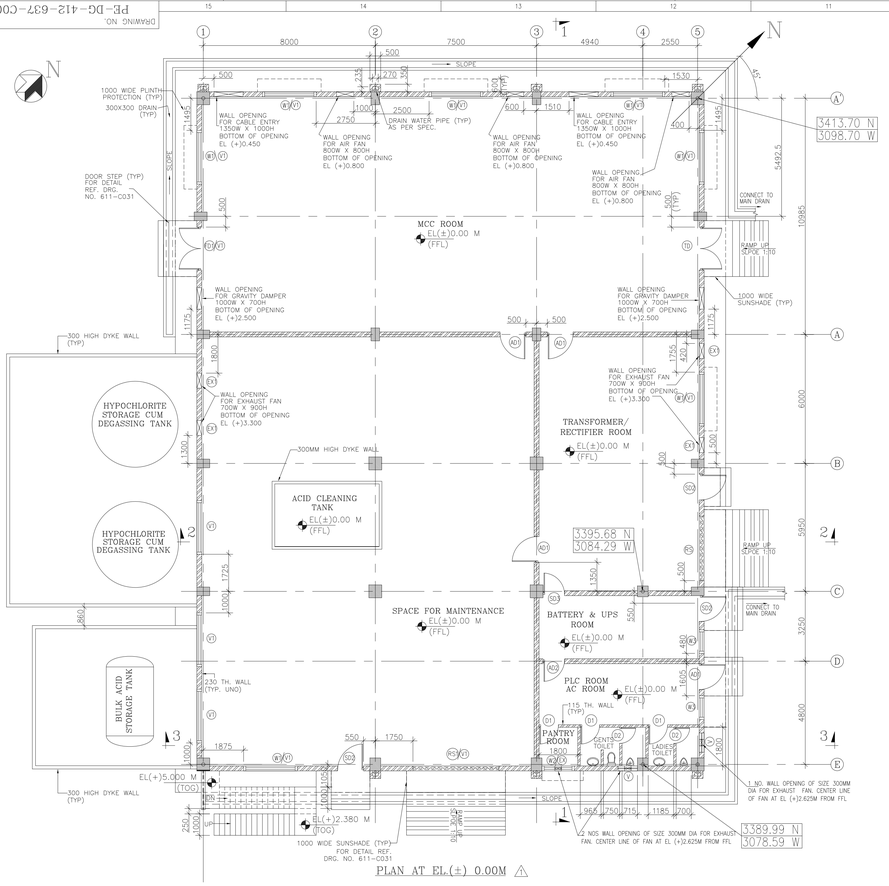
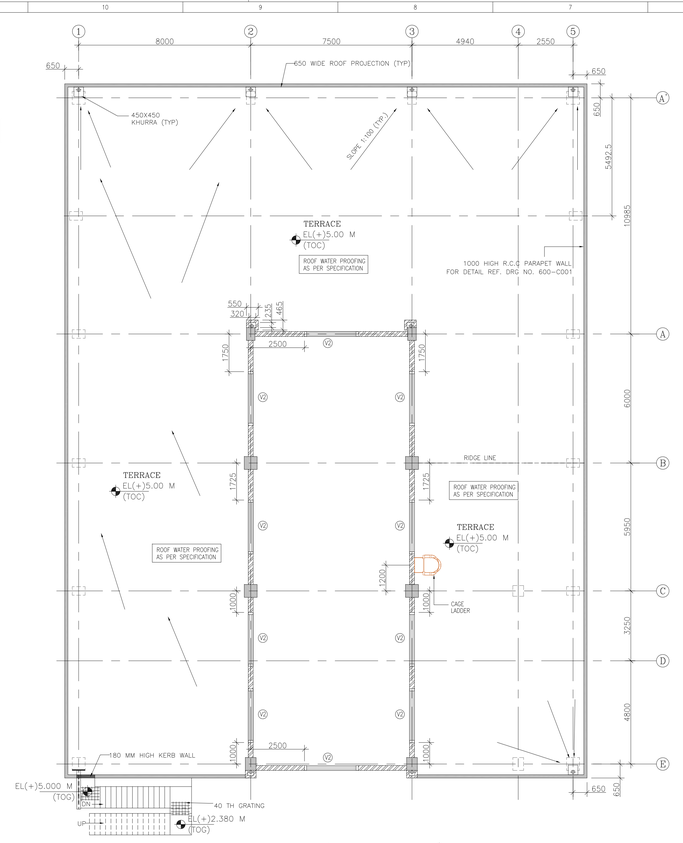
DRAWING NO. PE-DG-412-637-C001

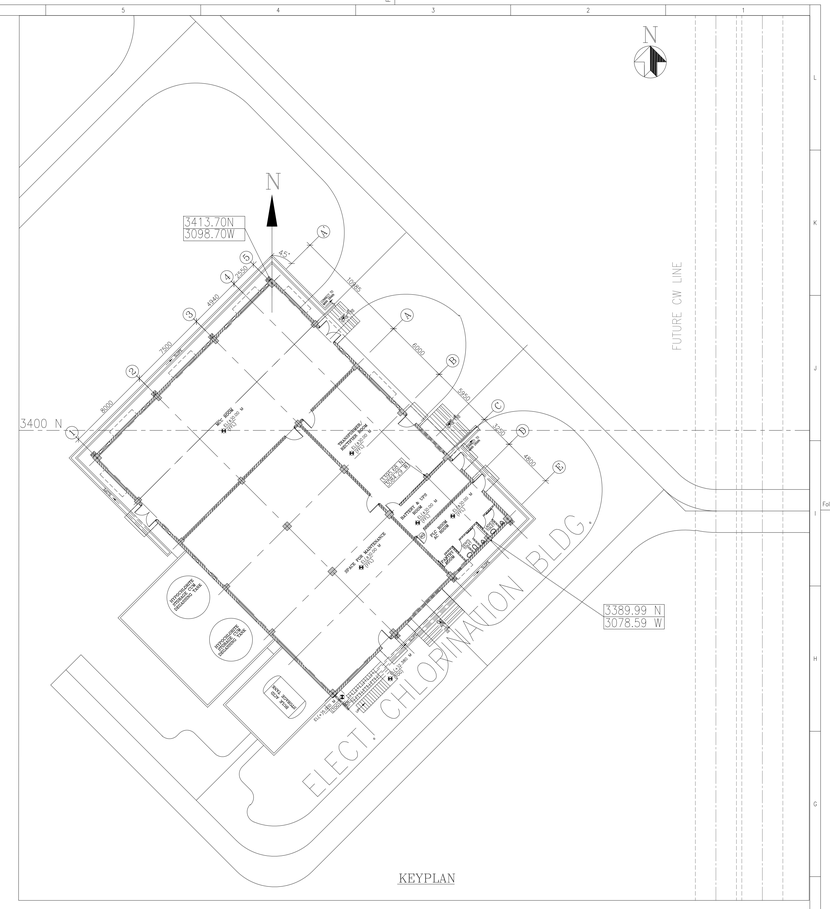
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM



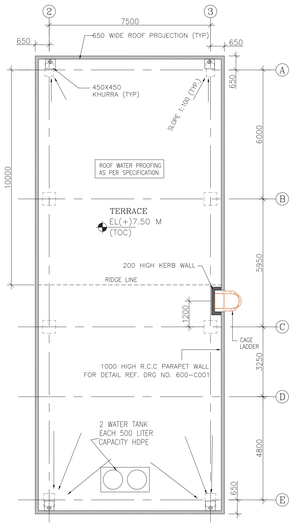
PLAN AT EL.(±) 0.00M ⚠



PLAN AT EL.(+) 5.00M (TOC.) ⚠



KEYPLAN



PLAN AT EL.(+) 7.50M (TOC.)

DOOR/WINDOW OPENING SCHEDULE :- ⚠

SYMBOL	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	SILL LEVEL AT EL.	LINTEL AT EL.	REMARKS
RS	3000	3500	EL.(±)0.00M	EL.(+)3.50M	AS PER SPEC.
RS1	4000	4500	EL.(±)0.00M	EL.(+)4.50M	AS PER SPEC.
FD1	2000	2100	EL.(±)0.00M	EL.(+)2.10M	FIRE PROOF DOOR AS PER SPEC.
SD2	1200	2100	EL.(±)0.00M	EL.(+)2.10M	HOLLOW METAL STEEL FLUSH DOOR SINGLE SHUTTER
SD3	1000	2100	EL.(±)0.00M	EL.(+)2.10M	HOLLOW METAL STEEL FLUSH DOOR SINGLE SHUTTER
AD1	1200	2100	EL.(±)0.00M	EL.(+)2.10M	ANODIZED ALUMINIUM GLAZED DOOR WITH 6MM THK. FLOAT GLASS SINGLE SHUTTER
AD2	1000	2100	EL.(±)0.00M	EL.(+)3.10M	ANODIZED ALUMINUM GLAZED DOOR WITH 6MM THK. FLOAT GLASS DOUBLE SHUTTER
D1	900	2100	EL.(±)0.00M	EL.(+)2.10M	ANODIZED ALUMINUM FRAMED DOOR WITH PRE-LAMINATED PARTICLE BOARD
D2	750	2100	EL.(±)0.00M	EL.(+)2.10M	ANODIZED ALUMINUM FRAMED DOOR WITH PRE-LAMINATED PARTICLE BOARD
TD	2000	3200	EL.(±)0.00M	EL.(+)3.20OM	HOLLOW METAL STEEL FLUSH DOOR DOUBLE SHUTTER WITH 1100 MM HIGH REMOVABLE TRANSOM (2100MM + 1100MM)
W1	2500	1200	EL.(+)0.90M	EL.(+)2.10M	ANODIZED ALUMINUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 6MM THK. WIRED GLASS.
W2	1500	1200	EL.(+)0.90M	EL.(+)2.10M	ANODIZED ALUMINUM GLAZED WINDOW WITH 6MM THK. WIRED GLASS.
W3	1000	1200	EL.(+)0.90M	EL.(+)2.10M	ANODIZED ALUMINUM GLAZED WINDOW WITH 6MM THK. WIRED GLASS.
V	900	600	EL.(+)1.500M	EL.(+)2.10OM	ANODISED ALUMINUMN GLAZED VENTILATOR FIXED WITH 6MM THK. WIRED GLASS.
V1	2000	600	EL.(+)3.600M	EL.(+)4.200M	ANODISED ALUMINUMN GLAZED VENTILATOR FIXED WITH 6MM THK. WIRED GLASS.
V2	2000	600	EL.(+)6.100M	EL.(+)6.700M	ANODISED ALUMINUMN GLAZED VENTILATOR FIXED WITH 6MM THK. WIRED GLASS.
EX1	700	900	EL.(+)3.30M	BOTTOM OF FAN	EXHAUST FAN

SCHEDULE OF FINISHES :-

AREA	FLOORING	WALL	CEILING
MCC ROOM	GRANOLITHIC FLOORING WITH NON METALLIC FLOOR HARDENER & TOP FINISHED WITH EPOXY COATING.	ACRYLIC WASHABLE DISTEMPER	ACRYLIC WASHABLE DISTEMPER
BATTERY & UPS ROOM	ACID / ALKALI RESISTANT TILES	ACID & ALKALI TILE DADOING FOR 2100 MM HIGH + CHLORINATED RUBBER BASED PAINT	CHLORINATED RUBBER BASED PAINT
PUMP AREA	GRANOLITHIC FLOORING WITH NON METALLIC FLOOR HARDENER	CHLORINATED RUBBER BASED PAINT	ACRYLIC WASHABLE DISTEMPER
ACID CLEANING TANK AREA	ACID / ALKALI RESISTANT TILES	CHLORINATED RUBBER BASED PAINT	--
PLC ROOM	GLAZE VITRIFIED CERAMIC TILES	ACRYLIC EMULSION PAINT	ALUMINUM FALL CEILING
TOILET	HEAVY DUTY MATT FINISH CERAMIC TILES	DADOING FOR 2100 MM HIGH + ACRYLIC DISTEMPER	ACRYLIC WASHABLE DISTEMPER
PANTRY ROOM	HEAVY DUTY MATT FINISH CERAMIC TILES	DADOING FOR 2100 MM HIGH + ACRYLIC DISTEMPER	ACRYLIC WASHABLE DISTEMPER
EXTERNAL WALL	WATER PROOF CEMENT BASED PAINT		

NOTES:-

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. (+) 10.00 M.
3. FOR FUEL OIL PUMP HOUSE COLUMNS & FLOOR FRAMING REFER CIVIL DRGS 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.
6. ALUMINUM GRILL SHOULD BE PROVIDED TO ALL WINDOWS AT GROUND FLOOR.
7. FOR GROUND IMPROVEMENT DRAWING REFER SEPARATE DRAWING.
8. GRANITE SLAB SHALL BE PROVIDED AT SILL LEVEL FOR WINDOW.

REFERENCE DRGS :-

1. PLOT PLAN---------- PE-DG-412-100-M001
2. STANDARD DETAILS FOR ARCHITECTURAL WORKS----------PE-DG-412-611-C031
3. EQUIPMENT LAYOUT FOR ELECTROCHLORINATION PLANT-------PE-V11-412-174-A103 SH1 & SH2.
4. ELECTRICAL EQUIPMENT & CABLING LAYOUT----------PE-DG-412-100-E049. CW/ELECTRO-CHLORINATION PMCC AREA

LEGENDS:-

1. T.O.C -----TOP OF CONCRETE
2. F.G.L -----FINISHED GROUND LEVEL
3. F.F.L -----FINISHED FLOOR LEVEL
4. RS -----STEEL ROLLING

COLOR TO BE MATCHED WITH RAL-5012

COLOR TO BE MATCHED WITH RAL-9002

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME: SOMNATH MISHRA
SIGNATURE:
DATE: 21 JULY 2018

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. PE-DG-412-637-C002. ELECTRO CHLORINATION BUILDING ARCHITECTURAL ELEVATIONS

REV.	DATE	ALTD	CHD	APPD
01	13.07.18	DRS	PS	SM

REVISED AS PER CUSTOMER COMMENTS VIDE LETTER NO. SE/C/TP/E3/ENNORE SEZ STPP/F.ELECTRO CHLORINATION/ D.837/18 DATED 28.05.18 & MKD. AS ⚠

PROJECT	2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

JOB NO. 412 | STATUS CONTRACT | DRG./REF. NO. (INTERNAL)

PRINT SCALE IN METRE 0 2 4 6 8 10 20 30 40 50

DEPT CODE	DRAWING	NAME	SIGN	DATE
C	DRN	DRS		27.02.18
	DESN	PS		28.02.18
	CHD	SM		28.02.18
	APPD	AN		28.02.18

TITLE: ELECTRO CHLORINATION BUILDING ARCHITECTURAL PLAN

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE 1:100	DRAWING NO. PE-DG-412-637-C001
					SIGN		
					DATE		SHEET 1 OF 1 REV. 1

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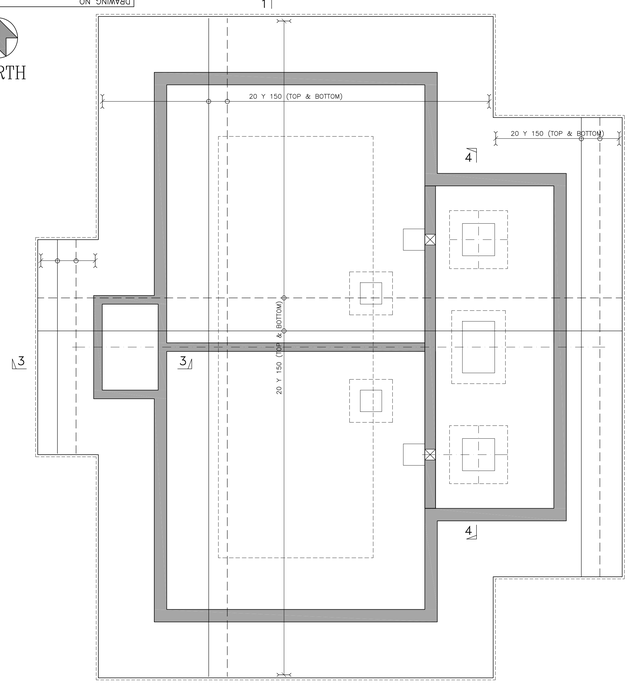
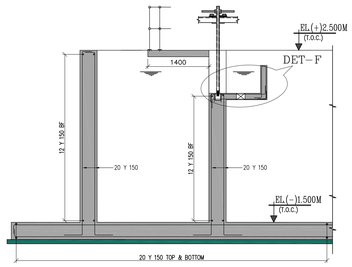
DRAWING NO. PE-DG-412-676-C002

FIRST ANGLE PROJECTION | ALL DIMENSIONS ARE IN MM

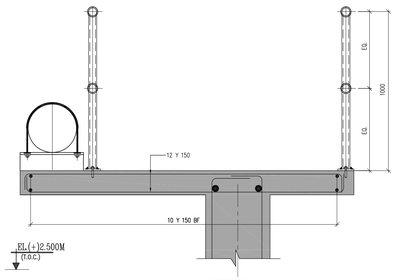
NORTH



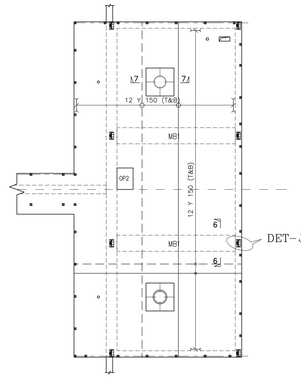
PLAN AT EL(−)1.500M



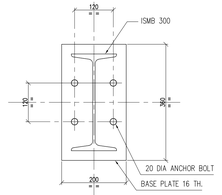
SECTION 3−3



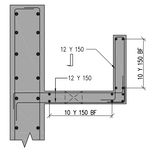
DETAIL−A



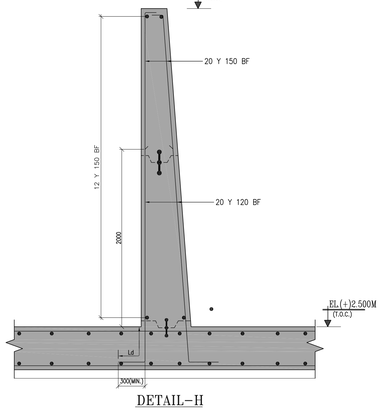
PLAN AT EL(+)2.500M



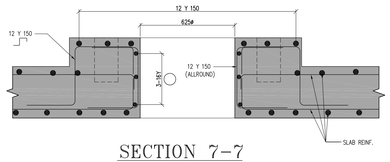
DETAIL −J
(TYP. DETAIL OF BASE PLATE)



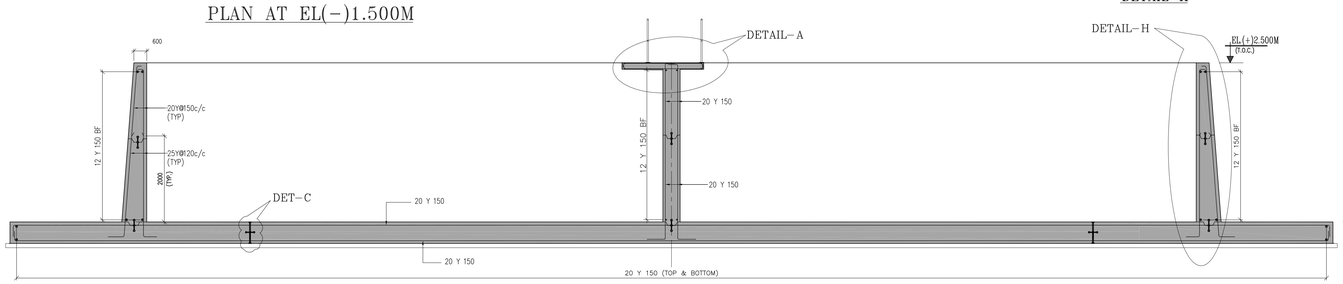
DETAIL−F



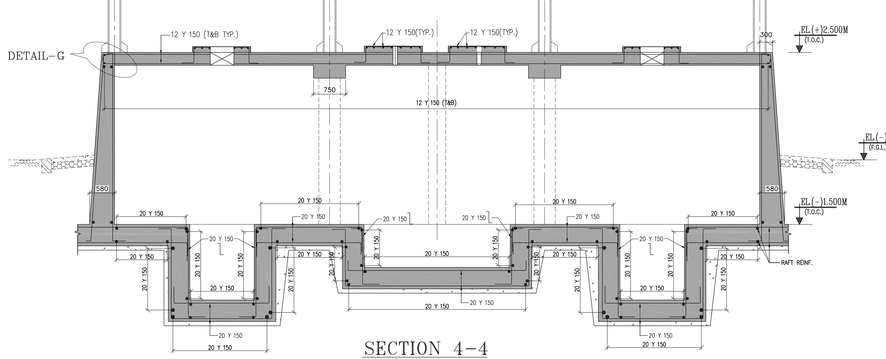
DETAIL−H



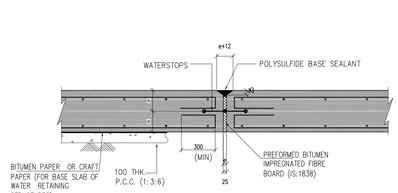
SECTION 7−7



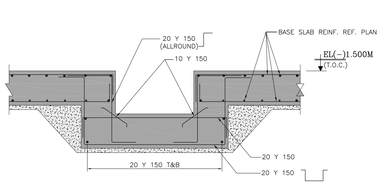
SECTION 1−1
(SHOWING R.C. DETAILS ONLY)



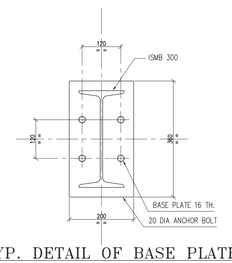
SECTION 4−4



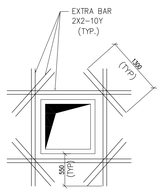
DETAIL − C
(TYPICAL DETAIL OF WATER PROOF EXPANSION JOINT)
(FOR BASE RAFT)



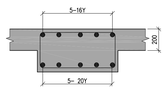
TYP. X−SECTIONAL OF DEWATERING PIT
(TYP. REINFORCEMENT DETAILS OF SUMP PIT)



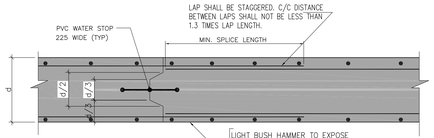
TYP. DETAIL OF BASE PLATE



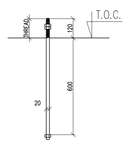
TYP. DETAIL OF
EXTRA R/F FOR OPENING



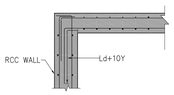
SECTION 6−6
(DETAIL OF MB1)



(TYP. DETAIL FOR CONSTRUCTION JOINT)



DETAIL OF 20ø
ANCHOR BOLT



DETAIL − G
(ROOF SLAB−WALL JUNCTION)

BHEL−PROJECT ENGINEERING MANAGEMENT(DIVN.)	
THIS DRAWING MARKED(✓) IS RELEASED FOR	
☑ COMMENTS/APPROVAL	
☐ PLANNING/INFORMATION	
☐ CONSTRUCTION	
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY	
NAME	S.MISHRA
SIGNATURE	
DATE	22 April 2019

PROJECT	2x660MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:-	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
EPC CONTRACTOR:-	BHARAT HEAVY ELECTRICALS LTD

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA

DEPT CODE		NAME	SIGN.	DATE
C	DRN	RAJENDRA	−sd−	22.04.2019
	DESN	PRASHANT	−sd−	22.04.2019
	CHD	SM	−sd−	22.04.2019
	APPD	A.NARAYAN	−sd−	22.04.2019

TITLE
GA & RC DETAILS OF CMB

DEPT.	SCALE:	DRAWING NO.
SIGN		PE−DG−412−676−C002
DATE		SHEET 2 OF 2 REV. 0

FORMAT SIZE A0

DATE	ALTD	CHD	APPD	REV.

ELECTRONIC FILE NAME:

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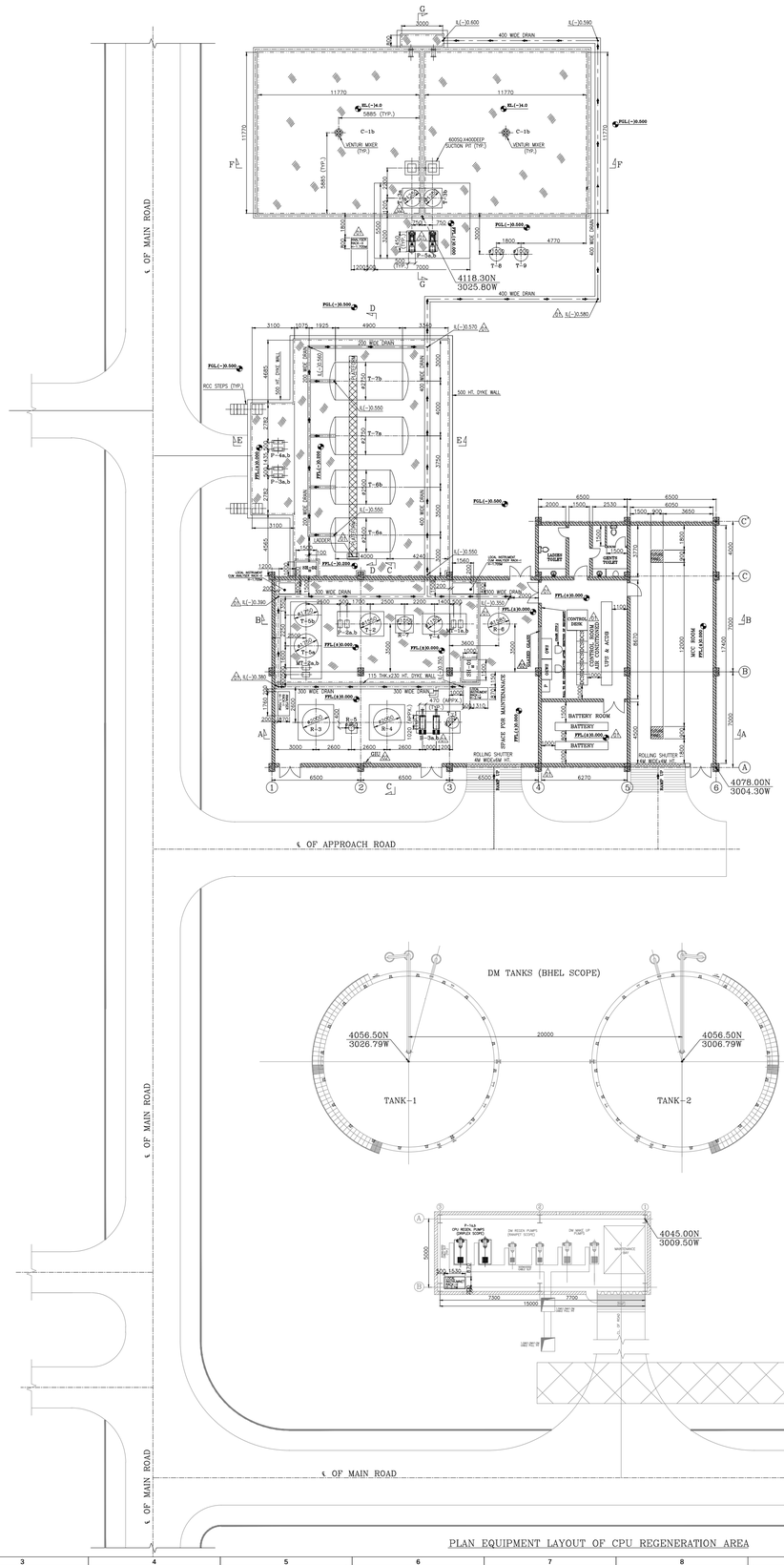
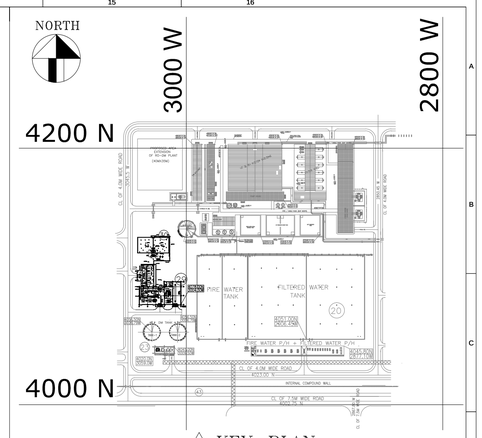
PE-V0-412-155-A033

BHEL DRAWING NO.



NOTES:–

1. ALL DIMENSIONS ARE IN MM AND LEVELS, CO-ORDINATES ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATIONS INDICATED ARE WITH RESPECT TO POWER HOUSE GROUND FLOOR EL.(±)0.00M, WHICH CORRESPONDS TO RL. (+) 10.0M.
3. ➡ DENOTES DIRECTION OF SLOPE.
4. ALL CIVIL WORKS INCLUDING ACID/ALAKLI PROOF LINING/TILING/PVC LINING, PRECAST SLAB, RUNGS, AIR CONDITIONING/VENTILATION SYSTEM IS IN M/s BHEL SCOPE.
5. FOR CIVIL ASSIGNEMENT DRAWING OF CONDENSATE POLISHIG UNIT OF REGENERATION AREA PLEASE REFER DRAWING NO. : PE-V0-412-155-A030 FOR CIVIL DESIGN.
6. ALL EFFLUENT DRAINS AND INCLUDING DRAINS LEADING TO NEU. PIT ARE TO BE LINED WITH ACID AND ALAKLI PROOF LINING AND DRAIN WIDTHS & DEPTH SHOWN ARE FINISHED DIMENSION AFTER LINING.
7. ACID/ALKALI PROOF LINING SHOWN THUS ▨ & ▬▬▬▬▬▬▬▬▬▬▬▬
8. DRAIN INSIDE THE BUILDING SHALL BE COVERED BY PRECAST SLAB/GI GRATING.
9. DRAIN OUTSIDE THE BUILDING SHALL BE COVERED BY PRECAST SLAB.
10. LOCATION OF ALL SKID BASED EQUIPMENT SHOWN ARE INDICATIVE AND SHALL BE SUITABLY ADJUSTED TO MEET THE SKID/PIPING REQUIREMENTS CONSIDERING SOME MINOR VARIATIONS.
11. FOR CABLE TRAY/TRENCH & CONDUIT ROUTING AND EARTHING LAYOUT DIAGRAM FOR CPU (REGENERATION AREA) PLEASE REFER M/s BHEL DRAWING NO.: PE-V0-412-155-A048.
12. FOR PIPING LAYOUT (REGENERATION AREA) FOR CONDENSATE POLISHING UNIT PLEASE REFER M/s BHEL DRAWING NO.: PE-V0-412-155-A034.
13. QUANTITY, LOCATION AND DIMENSION OF LOCAL INSTRUMENT RACK AND ANALYSER RACK IS SUBJECTED TO CHANGED DURING DETAIL ENGINEERING AND AS PER SUIT AT SITE CONDITION.
14. FOR SECTION PLEASE REFER M/s BHEL DRAWING NO.: PE-V0-412-155-A033, SHEET 2 OF 2.
- 01 15. ONE NO. SHOE RACK SHALL BE PROVIDED AT MAIN ENTRANCE OF CONTROL ROOM BY M/s BHEL.
- 01 16. AIR CURTAINS AT ENTRANCE OF CONTROL ROOM SHALL BE PROVIDED BY M/s BHEL.



EQUIPMENT LIST

SL. NO.	TAG NO.	DESCRIPTION	QTY.	SIZE/CAPACITY	REMARKS
1	R-3	ANION REGENERATION	1	2000ø x 1600ø x 5215HT.	ON SKID
2	R-4	CATION REGENERATION	1	2000ø x 5000HT.	ON SKID
3	R-5	INTERFCAE ISOLATION UNIT (IRU)	1	450ø x 3200HT.	ON SKID
4	R-6	HOT WATER TANK	1	1585ø x 2500HOS.	ON FDN.
5	R-7	ACTIVATED CARBON FILTER	1	1050ø x 2200HT.	ON SKID
6	T-1	RESIN MAKE-UP HOPPER	1	900ø x 700HT.	ON SKID
7	T-2	ALKALI PREPARATION TANK	1	1550ø x 1500HT.	ON SKID
8	T-3a T-3b	PRIMING TANK	2	1250ø x 1250HT. 02	ON SKID
9	T-4	ALKALI DAY TANK	1	1150ø x 1500HT.	ON SKID
10	T-5a T-5b	ACID MEASURING TANK	2	1750ø x 1500HT.	ON SKID
11	T-6a T-6b	ALKALI STORAGE TANK	2	2500ø x 4000LOS.	ON SADDLE
12	T-7a T-7b	ACID STORAGE TANK	2	2750ø x 4900LOS.	ON SADDLE
13	T-8	ALKALI MEAS. TANK FOR N. PIT	1	1000ø x 1000HT.	ON FDN.
14	T-9	ACID MEAS. TANK FOR N. PIT	1	1000ø x 1000HT.	ON FDN.
15	C-1a C-1b	NEUTRALISATION PIT	1	11770x11770x4000 DEPTH EACH COMP.	TWO COMP.
16	MT-1a MT-1b	ALKALI DOSING PUMP	2	1000LPHx30MLC	ON SKID
17	MT-2a MT-2b	ACID DOSING PUMP	2	2000LPHx30MLC	ON SKID
18	P-1a P-1b	DM WATER REGENERATION CUM RESIN TRANSFER PUMPS	2	$40m^3$/hrx100MWC	ON SKID
19	P-2a P-2b	ALKALI TRANSFER CUM RECIERCULATION PUMP	2	$10m^3$/hrx10MWC	ON SKID
20	P-3a P-3b	ALKALI UNLOADING PUMPS	2	$10m^3$/hrx15MWC	ON SKID
21	P-4a P-4b	ACID UNLOADING PUMPS	2	$10m^3$/hrx15MWC	ON SKID
22	P-5a P-5b	WASTE RECIRCULATION CUM DISPOSAL PUMPS	2	$80m^3$/hrx25MWC	ON SKID
23	B-3a B-3b	AIR BLOWER REGENERATION UNIT	2	$300m^3$/hrx5MWC	ON SKID
24	SH-01 SH-02	SAFETY SHOWER	2		

01 C & I PANEL AND RACK LIST

SL. NO.	DESCRIPTION	QTY.	SIZE
1	ANALYZER RACK-I	1	1760Lx870Wx1705HT.
2	ANALYZER RACK-II	1	1200Lx800Wx1705HT.
3	LOCAL INSTRUMENT RACK-I	1	1310Lx870Wx2100HT.
4	LOCAL INSTRUMENT RACK-I	1	1530Lx870Wx2100HT.
5	LOCAL INSTRUMENT CUM ANALYZER RACK-I	1	1560Lx800Wx1705HT.
6	LOCAL INSTRUMENT CUM ANALYZER RACK-II	1	1560Lx800Wx1705HT.

REV.	DATE	DESCRIPTION					
02	31.07.2018	REVISED AS PER M/s TANGEDCO/DESEIN COMMENTS			PJ	KK	
014	06.04.2018	REVISED AS PER M/s BHEL COMMENTS			PJ	KK	
01	31.05.2018	REVISED AS PER M/s TANGEDCO/DESEIN COMMENTS			PJ	KK	
0B	07.05.2018	REVISED AS PER M/s BHEL COMMENTS			PJ	KK	
0A	12.02.2018	REVISED AS PER M/s BHEL COMMENTS			PJ	KK	
00	09.12.2017	SUBMISSION FOR APPROVAL			PJ	KK	

PROJECT	2x660MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:-	DESEIN PRIVATE LIMITED, DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LIMITED (A GOVERNMENT OF INDIA UNDERTAKING), PROJECTS ENGINEERING MANAGEMENT, NOIDA
	driplex WATER ENGG.,NEW DELHI

DEPT.	CODE	SCALE	WEIGHT(KG)	VENDOR DRAWING NO.	ITEM
--	--			D03-C-343-83-PL-00034-B001	

TITLE: EQUIPMENT LAYOUT OF CONDENSATE POLISHING UNIT (REGENERATION AREA)

	NAME	SIGN	DATE
PREP	PJ	PJ	15.12.2017
CHKD	PJ	PJ	15.12.2017
CHKD	KK	KK	15.12.2017
APPD	KK	KK	15.12.2017

DEPT. | CARD CODE | SIGN | DATE

BHEL DRAWING NO. PE-V0-412-155-A033 | REV 02

NO. OF SHEETS 01 OF 02

SIZE-A2

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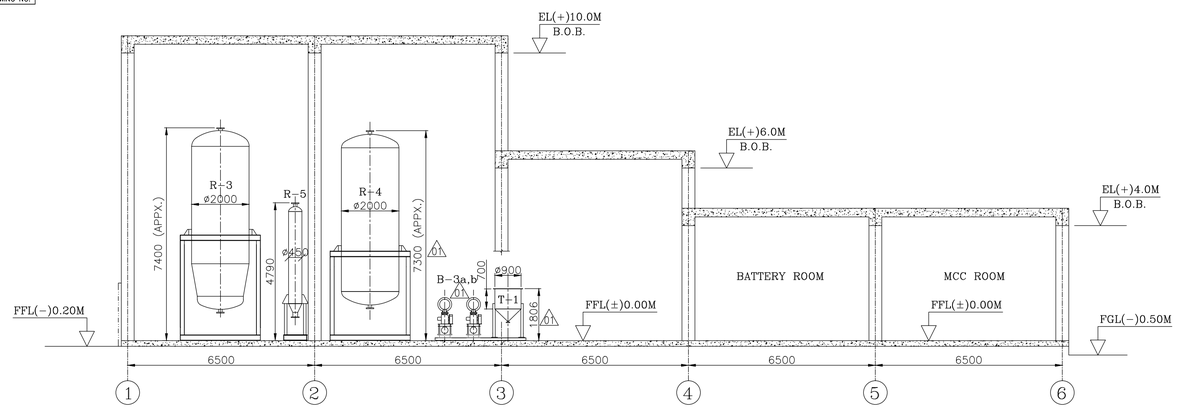
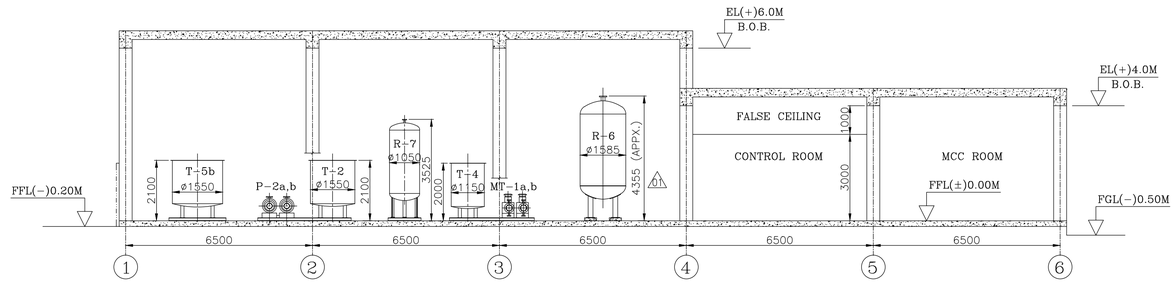
PE-V0-412-155-A033
BHEL DRAWING NO.

NORTH



SECTION A-A (GRID A & B)



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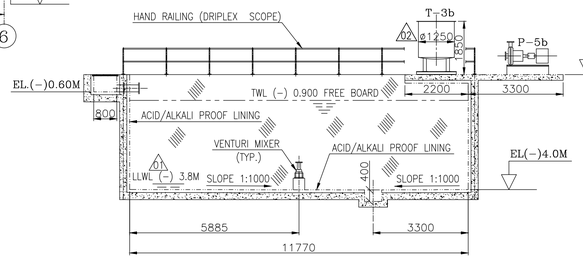
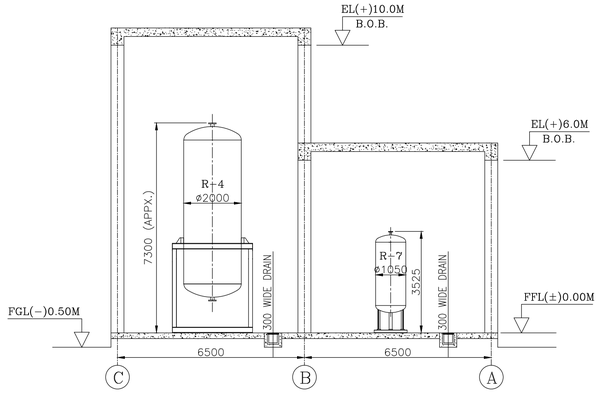


SECTION G-G



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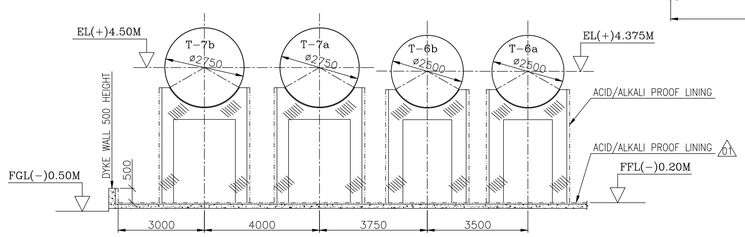

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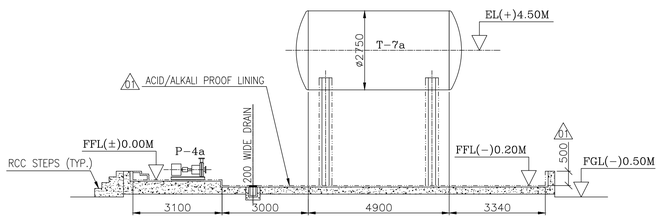

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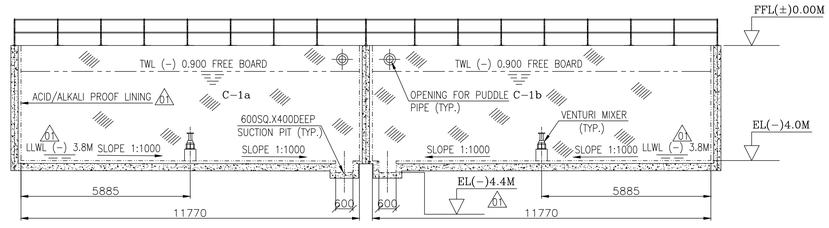
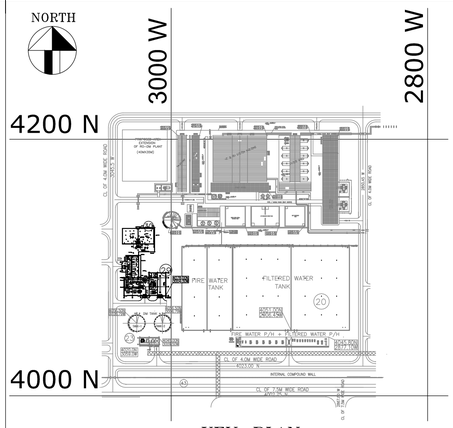


SECTION F-F

NOTES:-

1. ALL DIMENSIONS ARE IN MM AND LEVELS, CO-ORDINATES ARE IN METER UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATIONS INDICATED ARE WITH RESPECT TO POWER HOUSE GROUND FLOOR EL.(±)0.00M, WHICH CORRESPONDS TO RL. (+) 10.0M.
3. FOR OTHER NOTES PLEASE REFER M/s BHEL DRAWING NO.: PE-V0-412-155-A033, SHEET 1 OF 2.
4. FOR PLAN PLEASE REFER M/s BHEL DRAWING NO.: PE-V0-412-155-A033, SHEET 2 OF 2.

NORTH



KEY-PLAN

EQUIPMENT LIST

SL. NO.	TAG NO.	DESCRIPTION	QTY.	SIZE/CAPACITY	REMARKS
1	R-3	ANION REGENERATION	1	2000ø x1600ø x5215HT.	ON SKID
2	R-4	CATION REGENERATION	1	2000ø x5000HT.	ON SKID
3	R-5	INTERFCAE ISOLATION UNIT (IRU)	1	450ø x3200HT.	ON SKID
4	R-6	HOT WATER TANK	1	1585ø x2500HOS.	ON FDN.
5	R-7	ACTIVATED CARBON FILTER	1	1050ø x2200HT.	ON SKID
6	T-1	RESIN MAKE-UP HOPPER	1	900ø x700HT.	ON SKID
7	T-2	ALKALI PREPARATION TANK	1	1550ø x1500HT.	ON SKID
8	T-3a T-3b	PRIMING TANK	2	1250ø x1250HT. 02	ON SKID
9	T-4	ALKALI DAY TANK	1	1150ø x1500HT.	ON SKID
10	T-5a T-5b	ACID MEASURING TANK	2	1750ø x1500HT.	ON SKID
11	T-6a T-6b	ALKALI STORAGE TANK	2	2500ø x4000LOS.	ON SADDLE
12	T-7a T-7b	ACID STORAGE TANK	2	2750ø x4900LOS.	ON SADDLE
13	T-8	ALKALI MEAS. TANK FOR N. PIT	1	1000ø x1000HT.	ON FDN.
14	T-9	ACID MEAS. TANK FOR N. PIT	1	1000ø x1000HT.	ON FDN.
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18	P-1a P-1b	DM WATER REGENERATION CUM RESIN TRANSFER PUMPS	2	40m³/hrx100MWC	ON SKID
19	P-2a P-2b	ALKALI TRANSFER CUM RECIERCULATION PUMP	2	10m³/hrx10MWC	ON SKID
20	P-3a P-3b	ALKALI UNLOADING PUMPS	2	10m³/hrx15MWC	ON SKID
21	P-4a P-4b	ACID UNLOADING PUMPS	2	10m³/hrx15MWC	ON SKID
22	P-5a P-5b	WASTE RECIRCULATION CUM DISPOSAL PUMPS	2	80m³/hrx25MWC	ON SKID
23	B-3a B-3b	AIR BLOWER REGENERATION UNIT	2	300m³/hrx5MWC	ON SKID
24	SH-01 SH-02	SAFETY SHOWER	2		

REV.	DATE	DESCRIPTION	PREP	CHKD	CHKD	APPD
02	30.07.2018	REVISED AS PER M/s TANGEDCO/DESEIN COMMENTS	PJ	KK		
01A	08.06.2018	REVISED AS PER M/s BHEL COMMENTS	PJ	KK		
01	31.05.2018	REVISED AS PER M/s TANGEDCO/DESEIN COMMENTS	PJ	KK		
00	07.05.2018	REVISED AS PER M/s BHEL COMMENTS	PJ	KK		
04	12.02.2018	REVISED AS PER M/s BHEL COMMENTS	PJ	KK		
00	09.12.2017	SUBMISSION FOR APPROVAL	PJ	KK		

PROJECT	2x660MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:-	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LIMITED (A GOVERNMENT OF INDIA ENTERPRISE) PROJECTS ENGINEERING MANAGEMENT, NOIDA
	driplex WATER ENGG.,NEW DELHI

DEPT. | CODE | SCALE | WEIGHT(KG) | VENDOR DRAWING NO. | ITEM
D03-C-343-83-PL-00034-B001

TITLE: EQUIPMENT LAYOUT OF CONDENSATE POLISHING UNIT (REGENERATION AREA)

	NAME	SIGN	DATE
PREP	PJ	PJ	15.12.2017
CHKD	KK	KK	15.12.2017
CHKD	KK	KK	15.12.2017
APPD	KK	KK	15.12.2017

DEPT. | CARD CODE | BHEL DRAWING NO. PE-V0-412-155-A033 | REV 02
SIGN | DATE | NO. OF SHEETS 02 OF 02

SIZE-A2

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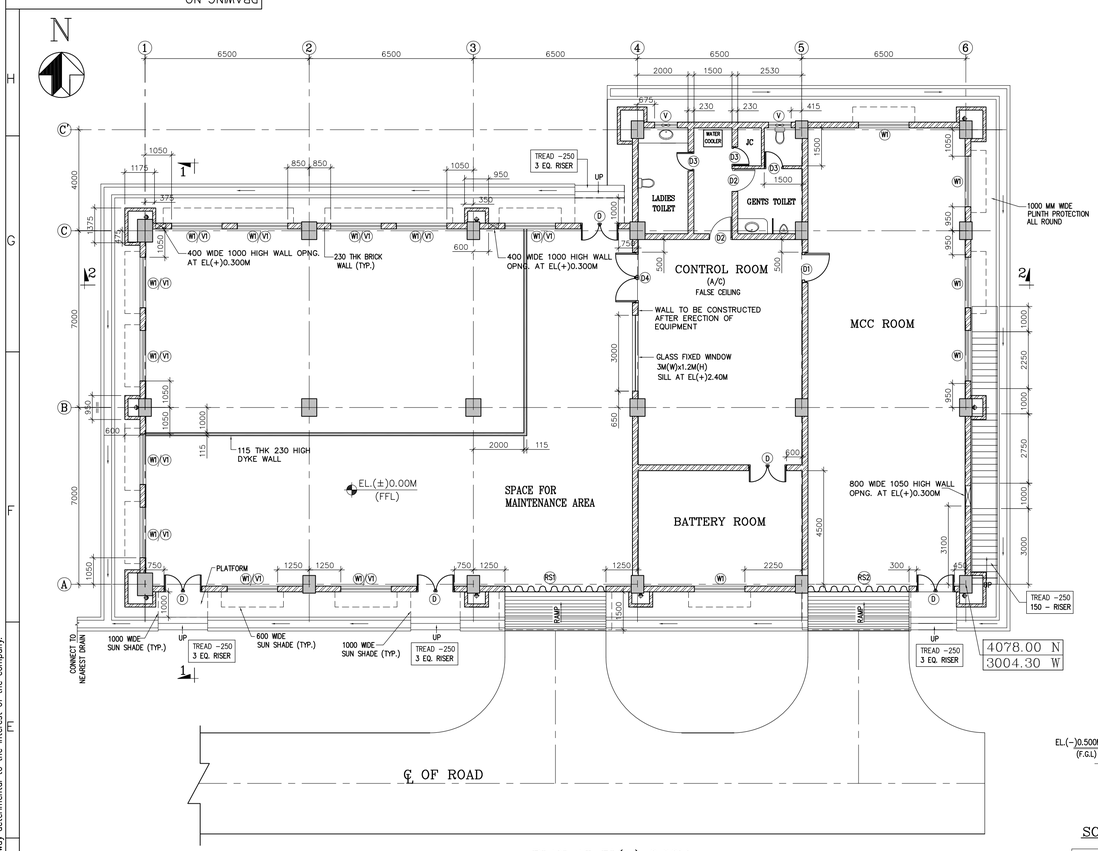
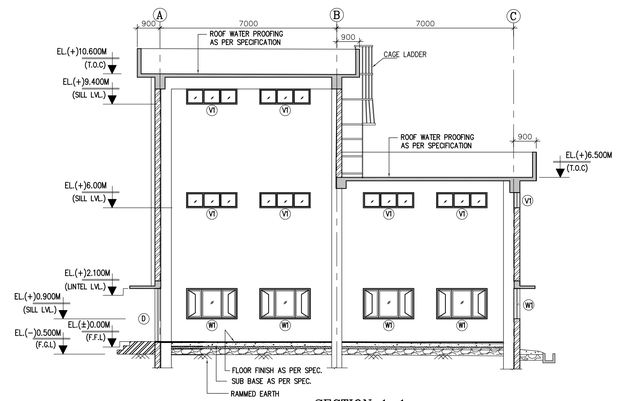
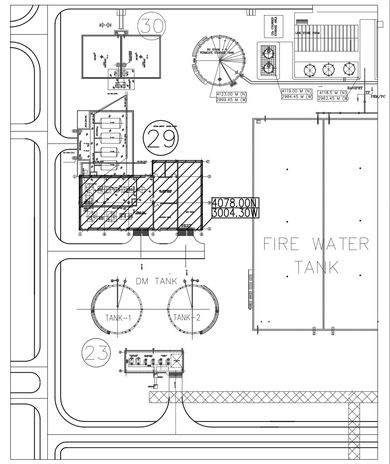
it must not be used directly or indirectly in any way detrimental to the interest of the company.



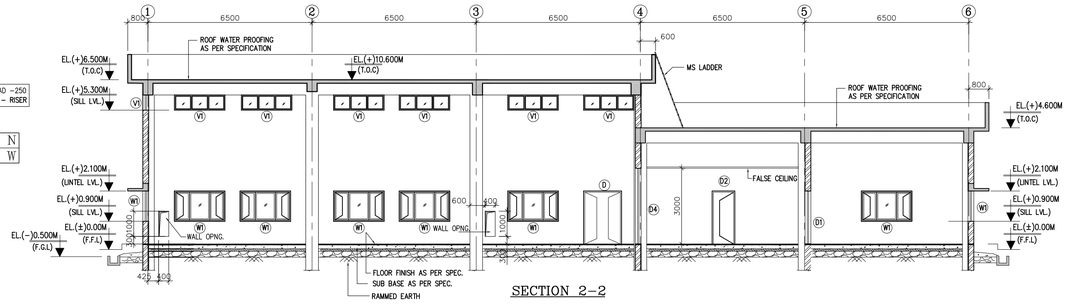
PLAN AT EL(±) 0.00M



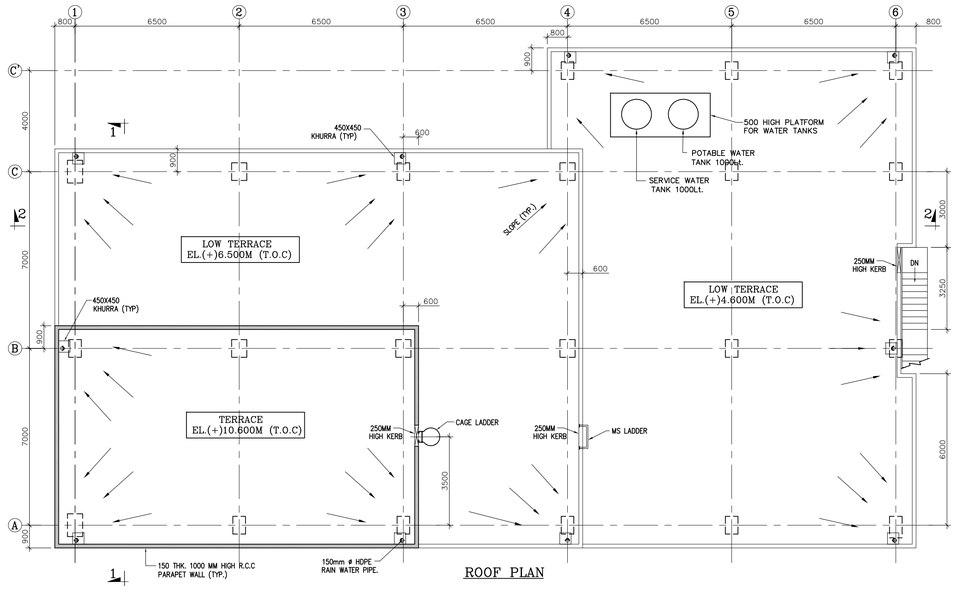
SECTION 1-1



KEY PLAN



SECTION 2-2



ROOF PLAN

SCHEDULE OF DOOR & WINDOW :-

SYMBOL	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	SILL LEVEL AT EL..	LINTEL AT EL..	REMARKS
RS1	4000	6000	–	EL.(+)6.00M	STEEL ROLLING SHUTTER
RS2	4000	4000	–	EL.(+)4.00M	STEEL ROLLING SHUTTER
D	1500	2100	–	EL.(+)2.10M	HOLLOW METAL (STEEL) FLUSH DOOR AS PER SPECIFICATION
D1	1200	2100	–	EL.(+)2.10M	ANODIZED ALUMINIUM GLAZED DOOR WITH 6MM THK. FLOAT GLASS
D2	900	2100	–	EL.(+)2.10M	ANODIZED ALUMINIUM FRAMED DOOR WITH PRE-LAMINATED PARTICLE BOARD
D3	750	2100	–	EL.(+)2.10M	PVC DOOR AS PER SPECIFICATION
D4	2000	3000	–	EL.(+)3.00M	ADONISED ALUMINIUM GLAZED DOOR WITH 6MM THK. FLOAT GLASS DOUBLE SHUTTER
W1	2000	1200	EL.(+)0.900M	EL.(+)2.10M	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 6MM THICK SHEET GLASS.
V	900	600	REF. ELEVATION	REF. ELEVATION	ANODISED ALUMINIUMN GLAZED VENTILATOR FIXED WITH 6MM THK. GROUND GLASS.
V1	2000	600	REF. ELEVATION	REF. ELEVATION	ANODISED ALUMINIUMN GLAZED VENTILATOR FIXED WITH 6 MM THICK WIRED GLASS.

NOTE-: ALL WINDOW SHALL BE PROVIDED WITH GRAINITE SLAB AT SILL LEVEL.

SCHEDULE OF FINISHES :-

AREA	FLOORING	WALL /DADO	CEILING
CONTROL ROOM	VITRIFIED CERAMIC GLAZED TILES	ACRYLIC EMULSION PAINT	GYPSUM BOARD FALSE CEILING
BATTERY ROOM	ACID/ALKALI RESISTANT TILES	ACID & ALKALI TILE UPTO 2.100 M HIGH + CHLORINATED RUBBER BASED PAINT	CHLORINATED RUBBER BASED PAINT
TOILETS	ANTI SKID CERAMIC TILES OF MATT FINISH	GLAZED CERAMIC TILES UPTO 2.1M & ACRYLIC WASHABLE DISTEMPER FOR BALANCE HEIGHT.	ACRYLIC WASHABLE DISTEMPER
MCC	GRANOLITHIC WITH NON-METALLIC FLOOR HARDNER & TOP FINISHED WITH EPOXY COATING.	ACRYLIC WASHABLE DISTEMPER	ACRYLIC WASHABLE DISTEMPER
MAINTENANCE AREA	ACID/ALKALI RESISTANT TILE	ACRYLIC WASHABLE DISTEMPER	ACRYLIC WASHABLE DISTEMPER
EXTERNAL WALL/ SUNSHADE	WATER PROOF CEMENT BASED PAINT		

(*) 150 MM HIGH SKIRTING (TYP.)

NOTES:-

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. (+) 10.00 M.
3. UNLESS NOTED OTHERWISE WINDOW / DOOR LOCATION SHALL BE AT CENTER BETWEEN GRIDS.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
5. UNDERDECK INSULATION IN A/C AREA SHALL BE PROVIDED AS PER SPEC.
6. ALL GROUND FLOOR WINDOWS SHALL BE PROVIDED WITH GRILL.

REFERENCE DRGS :-

1. PLOT PLAN -------- PE-DG-412-100-M001
2. STANDARD DETAILS FOR ARCHITECTURAL WORKS ---------- PE-DG-412-611-C031
3. EQUIPMENT LAYOUT OF CONDENSATE POLISHING UNIT REGENERATION AREA) --- PE-VO-412-155-A033 (R2)
4. CPU REGENERATION BUILDING -GA & RC DET. OF COL.FDN -------- PE-DG-412-639-C004 (R0)

LEGENDS:-

1. T.O.C -----TOP OF CONCRETE
2. F.G.L -----FINISHED GROUND LEVEL
3. F.F.L -----FINISHED FLOOR LEVEL
4. LVL -----LEVEL

* COLOUR SCHEME TO BE DECIDED BY CUSTOMER AT SITE.

READ THIS DRG. IN CONJUNCTION WITH DRG. PE-DG-412-639-C002

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)	
THIS DRAWING MARKED(✓) IS RELEASED FOR	
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☐ CONSTRUCTION	
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ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	
DATE	19 SEPTEMBER 2018

REV.	DATE	ALTD	CHD	APPD

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI	DEPT CODE C

	NAME	SIGN	DATE
DRN	YSR		19/09/18
DESN	PUNAM		19/09/18
CHD	SB		19/09/18
APPD	AN		19/09/18

TITLE: CPU REGENERATION BUILDING
ARCHITECTURAL PLAN & SECTION

DEPT. | SCALE: | DRAWING NO. PE-DG-412-639-C001
SIGN | DATE | SHEET 1 OF 1 | REV. 0

FORMAT SIZE A1

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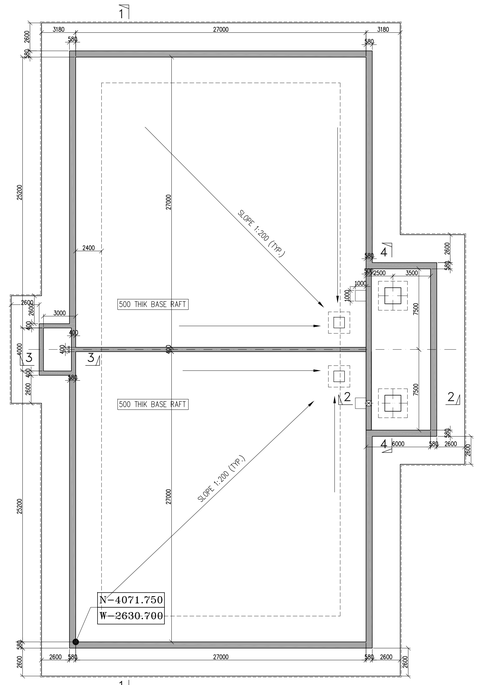
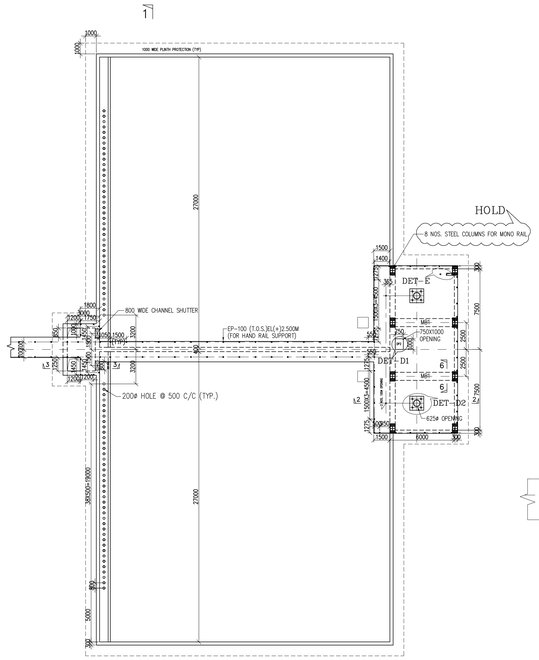
DRAWING NO. PE-DG-412-676-C001

FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

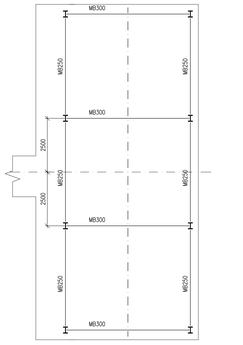
NORTH



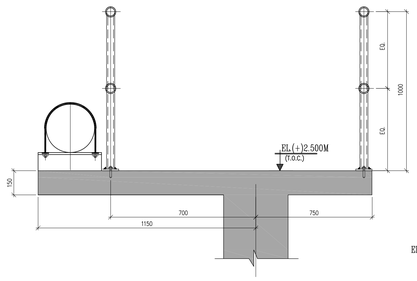
PLAN AT EL(−)1.500M



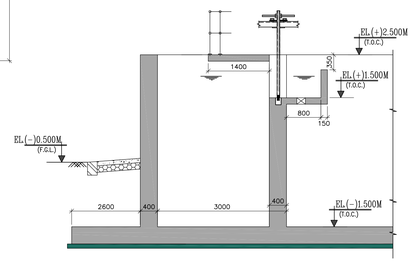
PLAN AT EL(+)2.500M



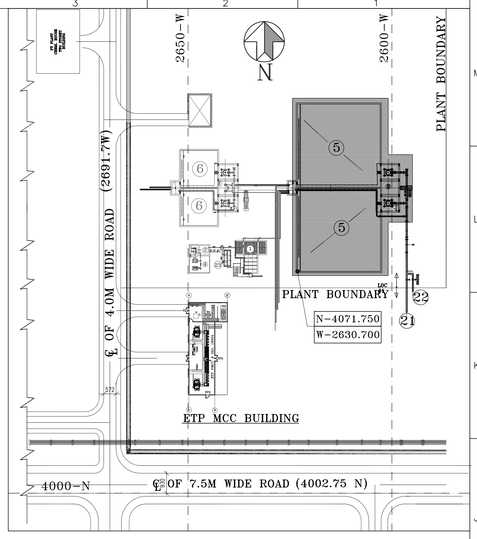
PLAN AT EL(+)7.500M

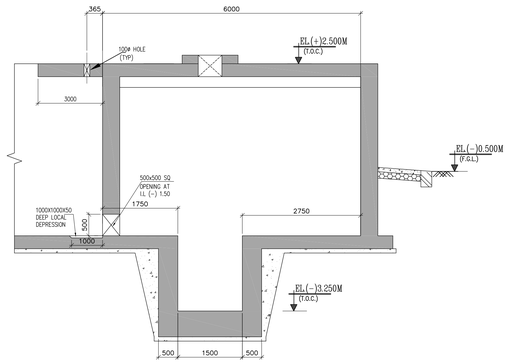


DETAIL-A

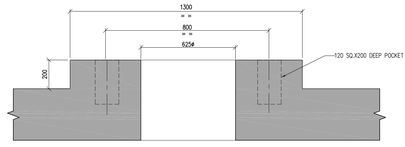


SECTION 3-3

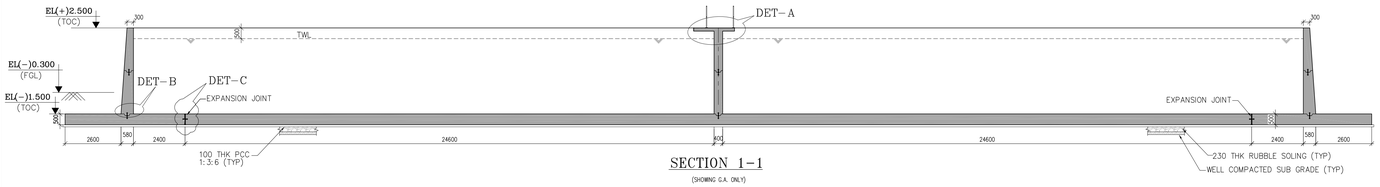




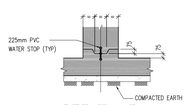
SECTION 2-2



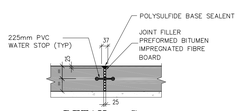
SECTION 7-7



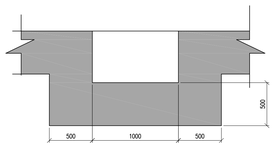
SECTION 1-1
(SHOWING G.A. ONLY)



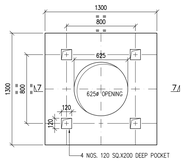
DETAIL -B
(TYPICAL DETAIL OF CONSTRUCTION JOINT)
(FOR WALL)



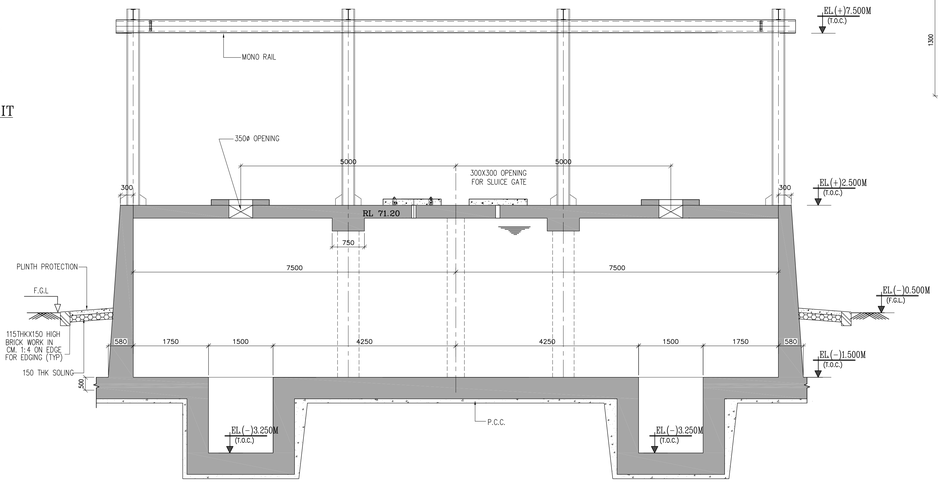
DETAIL -C
(TYPICAL DETAIL OF WATER PROOF EXPANSION JOINT)
(FOR BASE RAFT)



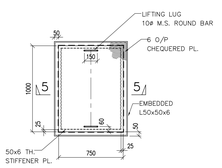
TYP. X-SECTIONAL OF DEWATERING PIT



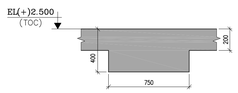
DETAIL -D2



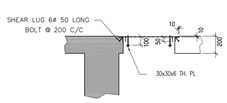
SECTION 4-4



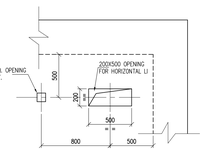
DETAIL -D1
MAN HOLE COVER



SECTION 6-6
(SHOWING G.A. ONLY)
(DETAIL OF MB1)



SECTION 5-5



DETAIL -E

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS AND ELEVATIONS ARE IN METERS.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. 10.00 M. ABOVE MEAN SEA LEVEL.
3. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M-30 UNLESS OTHERWISE NOTED.
4. ALL REINFORCEMENTS SHALL BE TMT BARS MINIMUM GRADE Fe 500 CONFORMING TO IS:1786.
5. BACK FILLING SHALL HAVE TO BE DONE ENSURING PROPER COMPACTION AND STRICTLY AS PER SPECIFICTION AND IT SHOULD BE COMPLETED BEFORE TAKING UP ERECTION WORK.
6. SITE TO CHECK ALL BOLT LOCATION ALONG WITH STRUCTURAL DRGS. OF RESPECTIVE PIPE RACK BEFORE CASTING OF PEDESTALS.
7. LAP LENGTH FOR M-30 GRADE CONCRETE SHALL BE 45xd, WHERE "d" IS THE DIA. OF THE LARGEST BAR.
8. REINFORCEMENTS MAY SUITABLY BE ADJUSTED AT SITE, IF REQUIRED, TO CLEAR POCKETS, ANCHOR BOLTS ETC.
9. FOR OTHER NOTES AND STD. DETAILS REF. DRG. PE-DG-412-600-C001
10. NET SAFE BEARING CAPACITY AT FOUNDING LEVEL SHALL BE CONSIDERED 5T/M² AT EL(−)4.00M.
11. ALL PCC SHALL BE OF MIX GRADE M15 AND SHALL BE 75 MM THK.
12. FOR GROUND IMPROVEMENT REF. SEPARATE DRAWING.
13. BACKFILLING SHALL BE DONE WITH NON-EXPANSIVE SOIL/ EARTH. BACKFILL SHALL BE DONE IN LAYER NOT EXCEEDING 250MM DEPTH & COMPACTED TO ACHIEVE 97% PROCTOR DENSITY & OTHER REQUIREMENTS OF CONTRACT SPECIFICATION/ DBR.

REFERENCE DRAWINGS:-

1. PE-VD-412-164A-A051 -CIVIL INPUT DRGS.OF ETP AREA SUMPS & LAMELLA CLARIFIER MECH. GA OF CMB
2. PE-DG-412-612-C001 -FOR OTHER GENERAL NOTES
3. PE-DG-412-100-M001 -PLOT PLAN

LEGENDS:

T.O.S. = TOP OF STEEL
T.O.C. = TOP OF CONCRETE
(B.O.F) = BOTTOM OF FOOTING
THK. = THICKNESS
CL. = CENTRE LINE
EL. = ELEVATION
TYP. = TYPICAL
R/F = REINFORCMENT
F.G.L. = FINISH GROUND LEVEL
T.O. PAVING = TOP OF PAVING

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)	
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ISSUED BY	
NAME	S.MISHRA
SIGNATURE	
DATE	19 April 2019

TOTAL QUANTITY	
CONCRETE	: 1450 Cum. (APPROX)
REINFORCEMENT	: 130 MT (APPROX)

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
No. OF	
TO	

PROJECT	2x660MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:-	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
EPC CONTRACTOR:-	BHARAT HEAVY ELECTRICALS LTD

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA

DEPT CODE		NAME	SIGN	DATE
C	DRN	RAJENDRA	-sd-	19.04.2019
	DESN	PRASHANT	-sd-	19.04.2019
	CHD	SM	-sd-	19.04.2019
	APPD	A.NARAYAN	-sd-	19.04.2019

TITLE
GA & RC DETAILS OF GUARD POND FOR EFFLUENT TREATMENT PLANT

DEPT.	SCALE:	DRAWING NO.
SIGN		PE-DG-412-676-C001
DATE		SHEET 1 OF 2 REV. 0

FORMAT SIZE A0

DATE	ALTD	CHD	APPD	REV.

ELECTRONIC FILE NAME:

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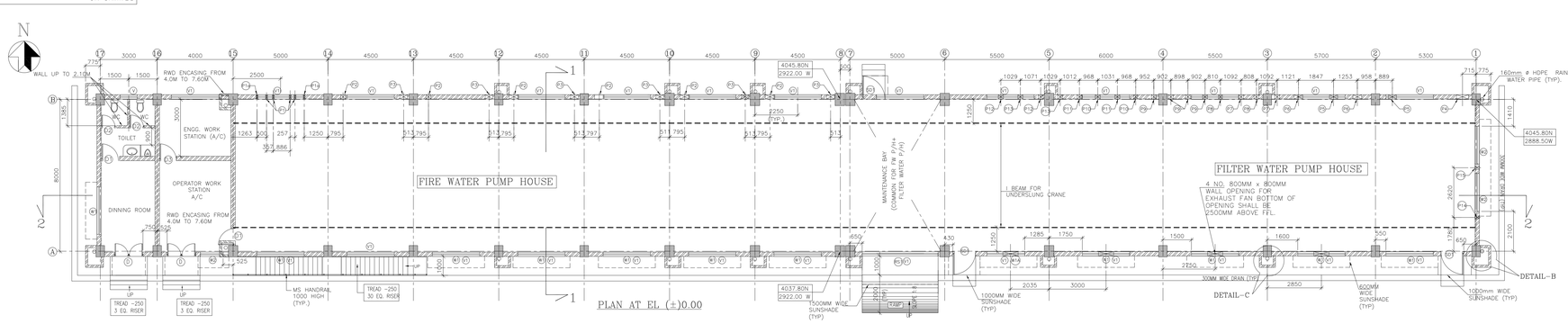
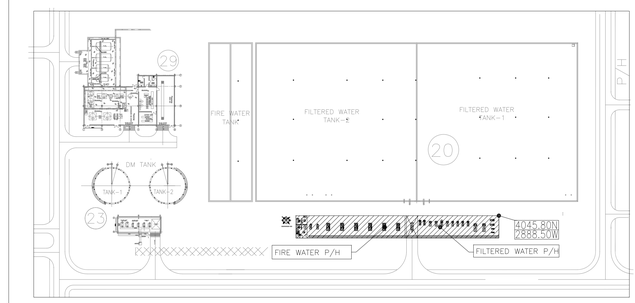
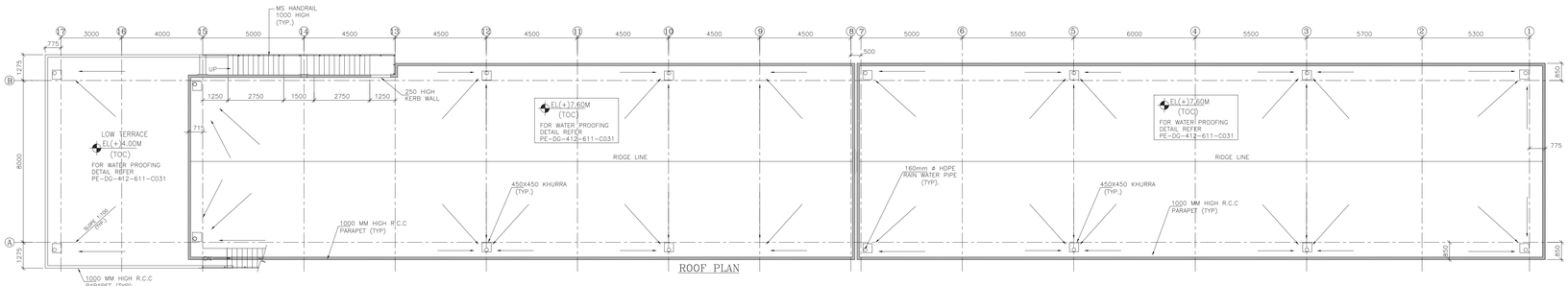


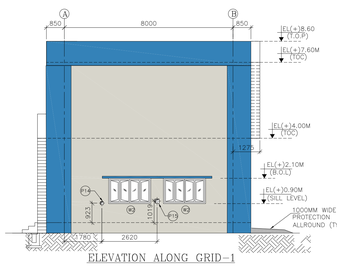
PLAN AT EL (±)0.00



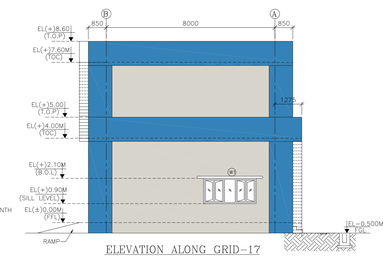
KEY PLAN



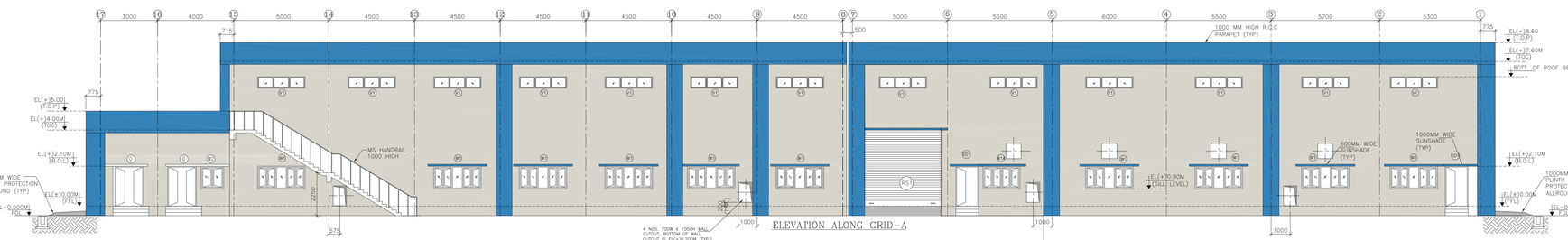
ROOF PLAN



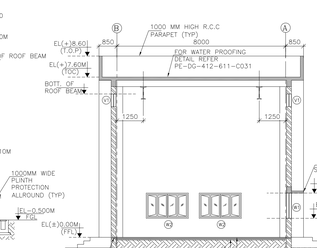
ELEVATION ALONG GRID-1



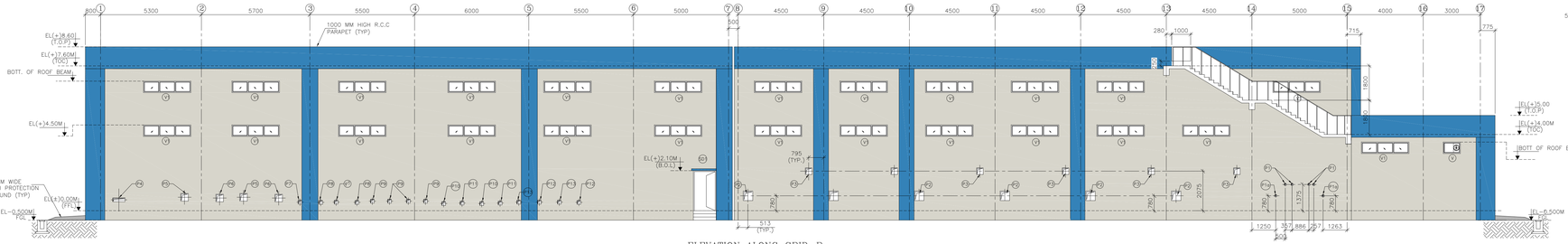
ELEVATION ALONG GRID-17



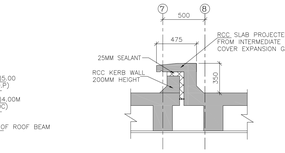
ELEVATION ALONG GRID-A



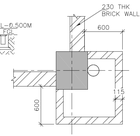
SECTION 1-1



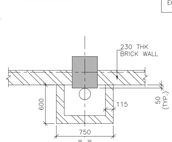
ELEVATION ALONG GRID-B



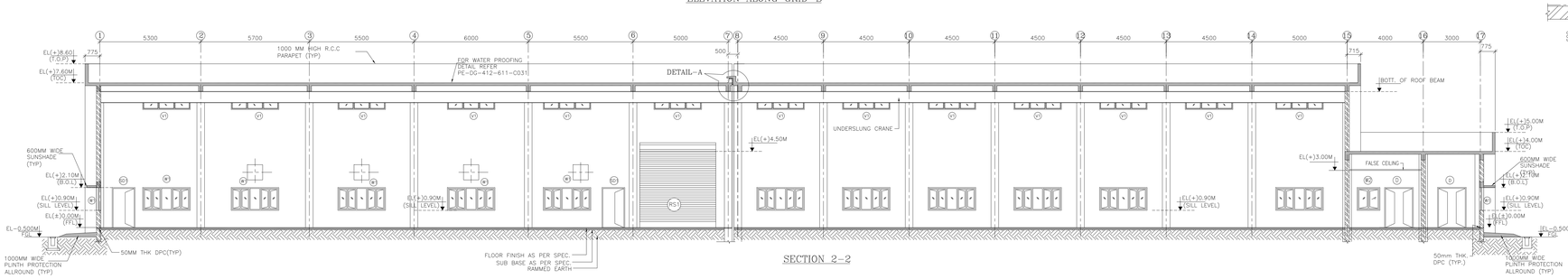
DETAIL-A



DETAIL-B



DETAIL-C



SECTION 2-2

SCHEDULE OF DOOR & WINDOW :-

SYMBOL	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	SILL LEVEL AT EL..	LINTEL AT EL..	REMARKS
RS1	4000	4500	--	EL(+)4.50M	ROLLING SHUTTER (MECHANICALLY OPERATED)
SD1	1200	2100	--	EL(+)2.10M	HOLLOW METAL STEEL FLUSH DOOR SINGLE SHUTTER
W1	2500	1200	EL(+)0.90M	EL(+)2.10M	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 6 MM THK. SHEET GLASS.
W1A	2000	1200	EL(+)0.90M	EL(+)2.10M	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 6 MM THK. SHEET GLASS.
W2	2000	1200	EL(+)0.90M	EL(+)2.10M	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 6 MM THK. SHEET GLASS.
V1	2500	600	REFER ELEVATION	REFER ELEVATION	ANODISED ALUMINIUMN GLAZED VENTILATOR FIXED WITH 6MM THK. GROUND GLASS.
V2	2000	600	REFER ELEVATION	REFER ELEVATION	ANODISED ALUMINIUM GLAZED VENTILATOR FIXED WITH 6MM THK. GROUND GLASS.
D	1500	2100	REFER ELEVATION	EL(+)2.10M	ANODISED ALUMINIUMN GLAZED DOOR
D1	900	2100	REFER ELEVATION	EL(+)2.10M	ANODISED ALUMINIUMN GLAZED DOOR
D2	750	2100	--	EL(+)2.10M	PVC DOOR AS PER SPECIFICATION
D3	900	2100	REFER ELEVATION	EL(+)2.10M	ANODIZED ALUMINIUM FRAMED DOOR WITH FIRE-LAMINATED PARTICLE BOARD
V	900	600	REF. ELEVATION	REF. ELEVATION	ANODISED ALUMINIUMN GLAZED VENTILATOR FIXED WITH 6MM THK. GROUND GLASS.

SCHEDULE OF FINISHES :-

AREA	FLOORING	WALL	CEILING
PUMP AREA	GRANOLITHIC FLOORING WITH NON METALLIC FLOOR HARDENER	ACRYLIC WASHABLE DISTEMPER	ACRYLIC WASHABLE DISTEMPER
ENGG. WORK STATION	VITRIFIED CERAMIC GLAZED TILES	ACRYLIC EMULSION PAINT	GYPSUM BOARD FALSE CEILING
DINNING ROOM	VITRIFIED CERAMIC GLAZED TILES	ACRYLIC EMULSION PAINT	ACRYLIC WASHABLE DISTEMPER
OPERATOR WORK STATION	VITRIFIED CERAMIC GLAZED TILES	ACRYLIC EMULSION PAINT	GYPSUM BOARD FALSE CEILING
TOILET	ANTI SKID CERAMIC TILES OF MATT FINISH	GLAZED CERAMIC TILES UPTO 2.1M & ACRYLIC WASHABLE DISTEMPER FOR BALANCE HEIGHT.	ACRYLIC WASHABLE DISTEMPER
EXTERNAL WALL	WATER PROOF CEMENT BASED PAINT		

LEGENDS

S.NO	LEGEND	DESCRIPTION
1.	T.O.P	TOP OF PARAPET
2.	B.O.L	BOTTOM OF LINTEL
3.	TYP	TYPICAL
4.	THK	THICK
5.	FGL	FLOOR GROUND LEVEL
6.	FFL	FINISH FLOOR LEVEL
7.	LVL	LEVEL
8.	T.O.C	TOP OF CONCRETE

NOTES:-

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. (+) 10.00 M.
3. UNLESS NOTED OTHERWISE WINDOW / DOOR/ ROLLING SHUTTER LOCATION SHALL BE AT CENTER BETWEEN GRIDS.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
5. ALUMINUM GRILL SHOULD BE PROVIDED TO ALL WINDOWS AT GROUND FLOOR.

REFERENCE DRGS :-

1. PLOT PLAN---------- PE-DG-412-100-M001 (R4)
2. STANDARD DETAILS FOR ARCHITECTURAL WORKS---------- PE-DG-412-611-C031 (R0)
3. GA & PIPING LAYOUT IN & AROUND FILTER WATER PUMP HOUSE.---------- PE-DG-412-100-M045 (R4)
4. CRANE CLEARENCE DIAGRAM---------- PE-DG-412-524-A003 (R2)
5. EQUIPMENT & PIPING LAYOUT OF FIRE WATER P/H---------- PY-LP-1-M066-8315-01 (R2)

SCHEDULE OF OPENING

OPNG. MKD.	WIDTH	HEIGHT	CL. OF OPNG
P1	200	200	EL(+)1.375
P1a	200	200	EL(+)0.780
P2	500	500	EL(+)0.780
P3	350	350	EL(+)2.075
P4	650	200	EL(+)0.507
P5	425	425	EL(+)0.705
P6	455	455	EL(+)0.664
P7	265	265	EL(+)0.450
P8	265	265	EL(+)0.437
P9	255	255	EL(+)0.500
P10	295	265	EL(+)0.374
P11	265	265	EL(+)0.400
P12	265	265	EL(+)0.437
P13	265	265	EL(+)0.450
P14	200	200	EL(+)0.923
P15	265	265	EL(+)1.019

LEGENDS

COLOR TO BE MATCHED WITH RAL-5012

COLOR TO BE MATCHED WITH RAL-9002

* COLOUR SCHEME TO BE DECIDED BY CUSTOMER AT SITE.

BHEL-PROJECT ENGINEERING MANAGEMENT(DVL)
THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY

NAME	SOMNATH MISHRA
SIGNATURE	
DATE	04 OCTOBER 2018

PROJECT	2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

JOB NO. 412
STATUS CONTRACT
DRG./REF. NO. (INTERNAL)
PRINT SCALE IN METRE

DEPT CODE		DRAWING	NAME	SIGN	DATE
		DRN	USHA	-sd-	12/12/17
	C	DESN	VS	-sd-	12/12/17
		CHD	SB	-sd-	12/12/17
		APPD	AN	-sd-	12/12/17

TITLE: DRINKING & SERVICE WATER (FILTER CUM FIRE WATER PUMP HOUSE) ARCHITECTURAL PLAN, ELEVATIONS & SECTIONS.

MPL	ELEC	C&I	MSE	MAX	DEPT. SIGN DATE	SCALE -

DRAWING NO. PE-DG-412-671-C001
SHEET 1 OF 1 REV. 02

REV.	DATE	ALTD	CHD	APPD
02	08.02.19	YSR	VS	SN
01	04.10.18	YSR	VS/SB	A.N.

02: DRAWING REVISED AS PER COMMENTS RECEIVE VIDE TANGEDCO LR. NO:SE/C/TP/E3/ENNORESEZSTPP/F.FILTERCUMFIREWATER TANK/D.1949/18, DT. 12.11.2018

01: DRAWING REVISED AS PER COMMENTS RECEIVE VIDE TANGEDCO LR.NO.SE/C/TP/E3/ENNORESEZSTPP/F.FILTERCUMFIREWATER TANK/D.79/18, DT.18.01.2018

FORMAT SIZE A0

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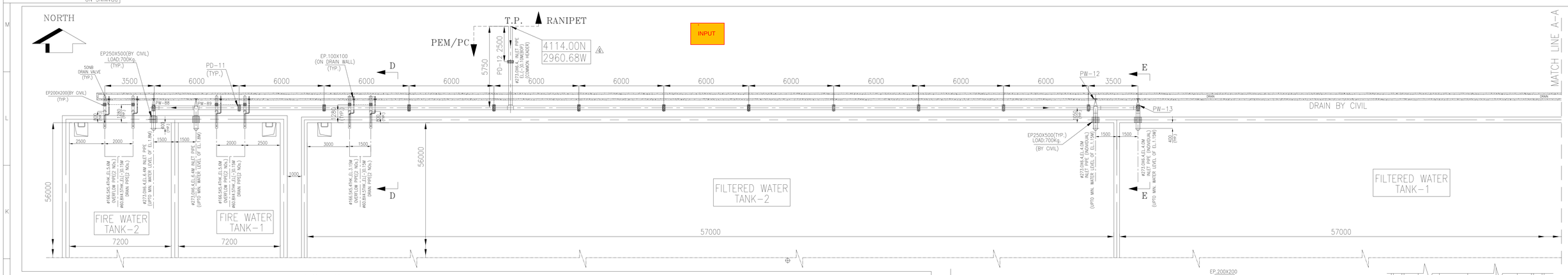
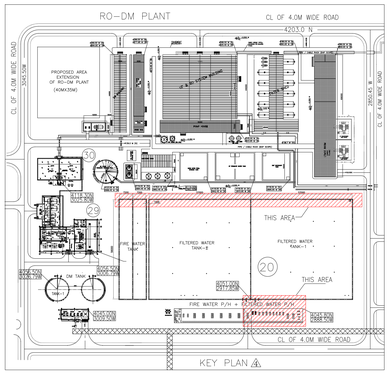
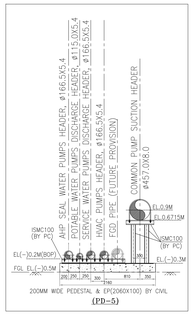
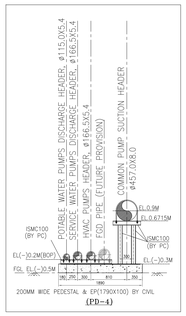


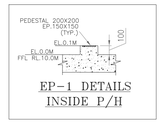


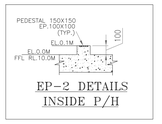
NOTES :-

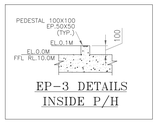
1. ALL DIMENSIONS ARE IN MILIMETRES AND ELEVATIONS ARE IN METRES.
2. ALL ELEVATIONS MARKED ARE WITH RESPECT TO T.G. BUILDING FINISHED FLOOR ELEVATION i.e. 0.0M WHICH CORRESPONDS TO RL +10.0M.
3. ALL PIPE ELEVATIONS ARE OF CENTRELINE OF PIPE UNLESS NOTED OTHERWISE.
4. THIS DRG. TO BE REFFERED FOR MECH. EQPTS. & PIPING DETAILS. FOR ELECTRICAL DETAILS, REFER RESPECTIVE ELECTRICAL DRAWING.
5. SUITABLE COUNTER FLANGES & FASTENERS FOR PUMPS SHALL BE SUPPLIED ALONGWITH PUMPS BY VENDOR.
6. FOR PEM SUPPLIED VALVES & ORIFICES, COUNTER FLANGES AND FASTENERS SHALL BE SUPPLIED BY PIPING CENTRE.
7. FOR BHEL BHOPAL SUPPLIED VALVES, COUNTER FLANGES AND FASTENERS SHALL BE SUPPLIED BY BHEL BPL.
8. MATERIAL OF CONSTRUCTION:
   a).FOR SERVICE/AHP SEAL/HVAC/APH WASH WATER/CHP DFDS/ASH CONDITIONER PUMPS
   i.PIPING<150NB SHALL BE CARBON STEEL,ERW CONFIRMING TO IS:1239(HEAVY GRADE).
   ii).PIPING>150NB SHALL BE CARBON STEEL, IS:2062 PLATE ROLLED & WELDED AS PER IS 3589.
   b).FOR POTABLE WATER
   i.PIPING<150NB SHALL BE CARBON STEEL,ERW CONFIRMING TO IS:1239(HEAVY GRADE), GALVANIZED.
   ii).PIPING>150NB SHALL BE CARBON STEEL,AS PER IS 3589, GALVANIZED.
9. 50NB DRAIN/VENT SHALL BE PROVIDED FOR PIPE SIZES 400NB & ABOVE AND 25NB FOR PIPE SIZES UPTO 350NB. DRAIN & VENT ALONG WITH DRAIN & VENT VALVES SHALL BE PROVIDED AT ALL LOW POINTS & HIGH POINTS RESPECTIVELY.
10. CONCRETE PEDESTALS/EPs AS SHOWN IN THIS DRAWING TO BE PROVIDED BY CIVIL.
11. ECCENTRIC REDUCER AT PUMP SUCTION SIDE SHALL HAVE FLAT TOP.
12. FOR PRESSURE & TEMPERATURE STUBS, REFER P&ID-PLANT WATER SYSTEM (DWG. NO. PE-DG-412-172-N001,SH.02 OF 02).

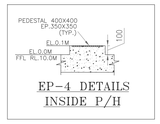






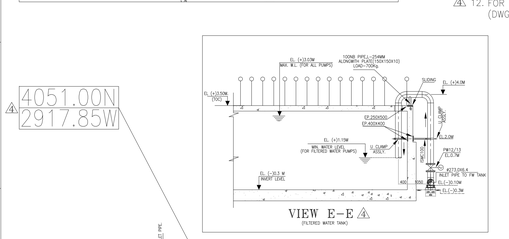


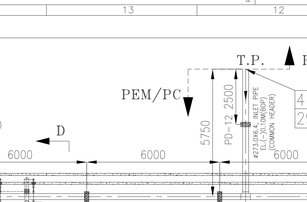


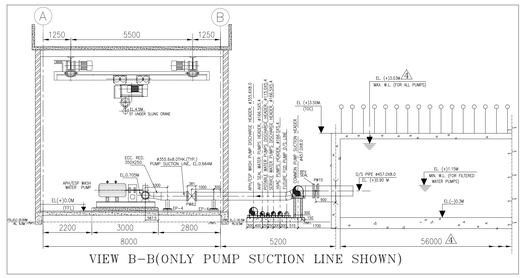


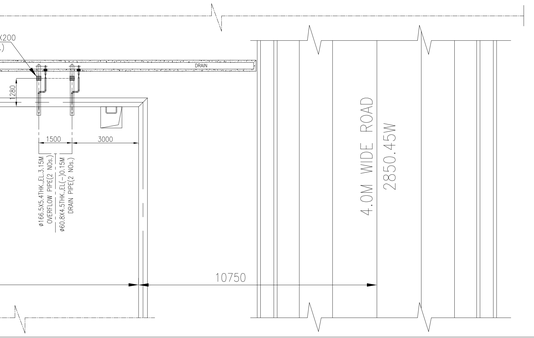
VALVE DATA :-

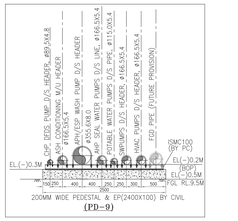
Sl No.	TAG No.	TYPE	SIZE (NB)	LENGTH (mm)	WEIGHT (Kg)	SUPPLY SCOPE
1	PW-72,73	GV	50		11.8	TRICHY
2	PW-74,75	NRV	50	177.8	10.3	TRICHY
3	PW-76,77	GV(MO)	50	130.2	56	TRICHY
4	PW-23,24,79,80	GV	100	228.6	58.09	TRICHY
5	PW-25,26,81,82	NRV	100	292.1	51	TRICHY
6	PW-27,28,83,84	GV(MO)	100		100	TRICHY
7	PW-16,17,36,37 PW-45,46	GV	150	266.7	91.4	TRICHY
8	PW-18,19,38,39 PW-47,48	NRV	150	355.6	110	TRICHY
9	PW-20,21,40,41 PW-49,50	GV(MO)	150	266.7	126	TRICHY
10	PW-87	GV	200	292	119	TRICHY
11	PW-62,63	GV	350	381	525	TRICHY
12	PW-64,65	NRV	300	711.2	249	TRICHY
13	PW-66,67	GV(MO)	300	355.6	300	TRICHY
14	PW-14,15	BFV	450	283	387	BHOPAL
15	PW-12,13,88,89	GV(MO)	250	330	252	TRICHY

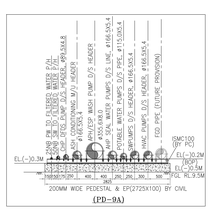


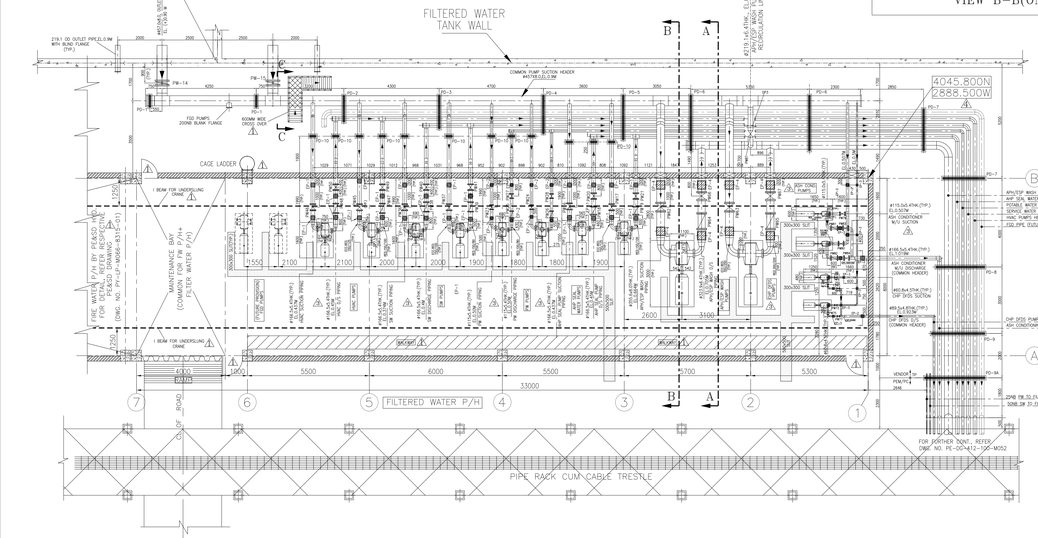


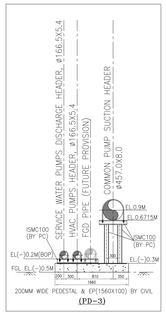


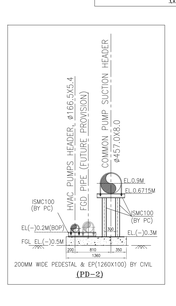


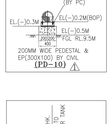


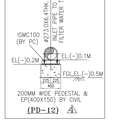


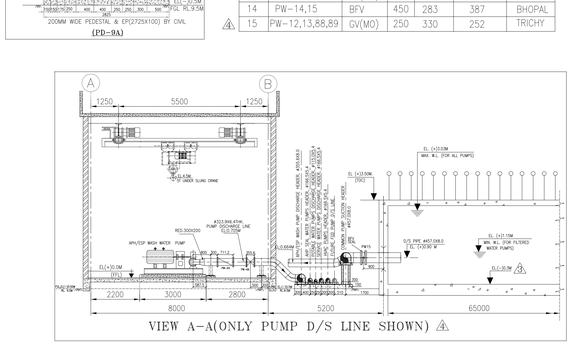


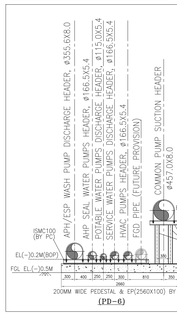


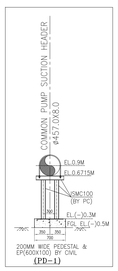


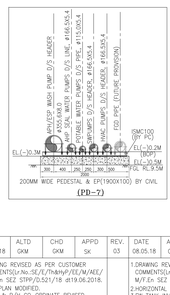


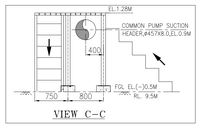












REFERENCE DRAWINGS :-

1.	PLOT PLAN	PE-DG-412-100-M001
2.	PID PLANT WATER SYSTEM	PE-DG-412-172-N001
3.	GA & C/S DRGS. FOR MISC. PUMP	PE-V7-412-N012 & N002
4.	ELECT. EQUIP. & CABLING LAYOUT	PE-DG-412-100-E027
5.	450NB B/F VALVE(MAN)	2-951-38-00104
6.	GA OF FILTERED CUM FIRE WATER TANK	PE-DG-412-172-N100

PROJECT	2x660MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:-	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
EPC CONTRACTOR:-	BHARAT HEAVY ELECTRICALS LTD

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	

REV.	DATE	ALTD	CHD	APPD
04	05.12.18	GKM	GKM	SK
03	08.05.18	GKM	GKM	SK
02	26.12.17	GKM	GKM	SK
01	23.10.17	GKM	GKM	SK

1.DRAWING REVISED AS PER CUSTOMER COMMENTS(Lr.No.:SE/E/Th&Hyd/EE/M/AEE/M/F.En SEZ STPP/D.521/18 dt19.06.2018.
2.KEY PLAN MODIFIED.
3.TANK & P/H CO-ORDINATE REVISED.
4.DRAWING GENERALLY REVISED.
5.CHANGES ARE MARKED AS A.

1.DRAWING REVISED AS PER CUSTOMER COMMENTS(Lr.No.:SE/E/Th&Hyd/EE/M/AEE/M/F.En SEZ STPP/D.457/18 dt16.02.2018.
2.HORIZONTAL PUMPS DRAWINGS UPDATED.
3.P/H TANK INVERT LEVEL UPDATED.
4.KEY PLAN UPDATED.
5.DRAWING GENERALLY REVISED.
6.CHANGES ARE MARKED AS A.

1.DRAWING REVISED AS PER CUSTOMER COMMENTS(Lr.No.:SE/E/Th&Hyd/EE/M/AEE/M/F.En SEZ STPP/D.313 /2017-d23.11.17.
2.CROSS-SECTION OF CROSS OVER SHOWN.
3.DRAWING GENERALLY REVISED.
4.CHANGES ARE MARKED AS A.

1.DRAWING REVISED AS PER CUSTOMER COMMENTS(Ref.no. Lr.No.:SE/E/Th&Hyd/EE/M/AEE/M/F.En SEZ STPP/D.261 /2017.)
2.CO-ORDINATE OF TANK & P/H MODIFIED.
3.DRAWING GENERALLY REVISED.
4.CHANGES ARE MARKED AS A.

BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA

DEPT CODE	NAME	SIGN	DATE
DRN	GKM		11.08.2017
DESN	GKM		11.08.2017
CHD	SK		11.08.2017
APPD	SK		11.08.2017

TITLE: GA & PIPING LAYOUT IN AND AROUND FILTER WATER PUMP HOUSE

DEPT. | SCALE: 1:97 | DRAWING NO. PE-DG-412-100-M045
SIGN | DATE
SHEET 1 OF 1 | REV. 04

FORMAT SIZE A0

ELECTRONIC FILE NAME: 412-100-M045-R3

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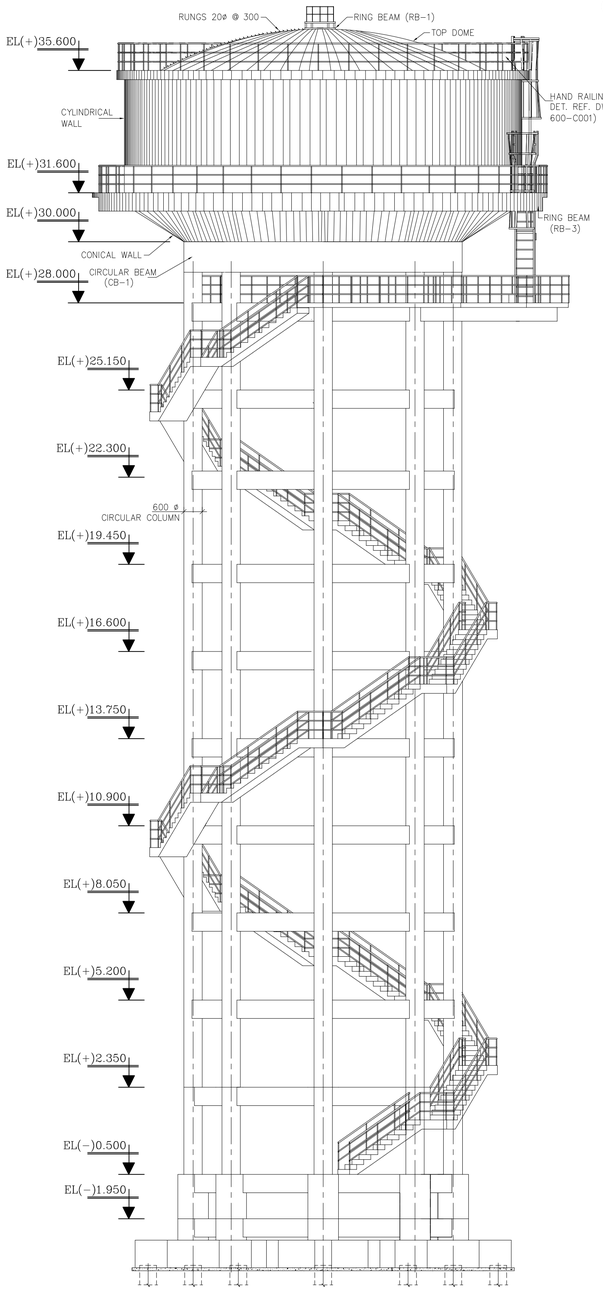
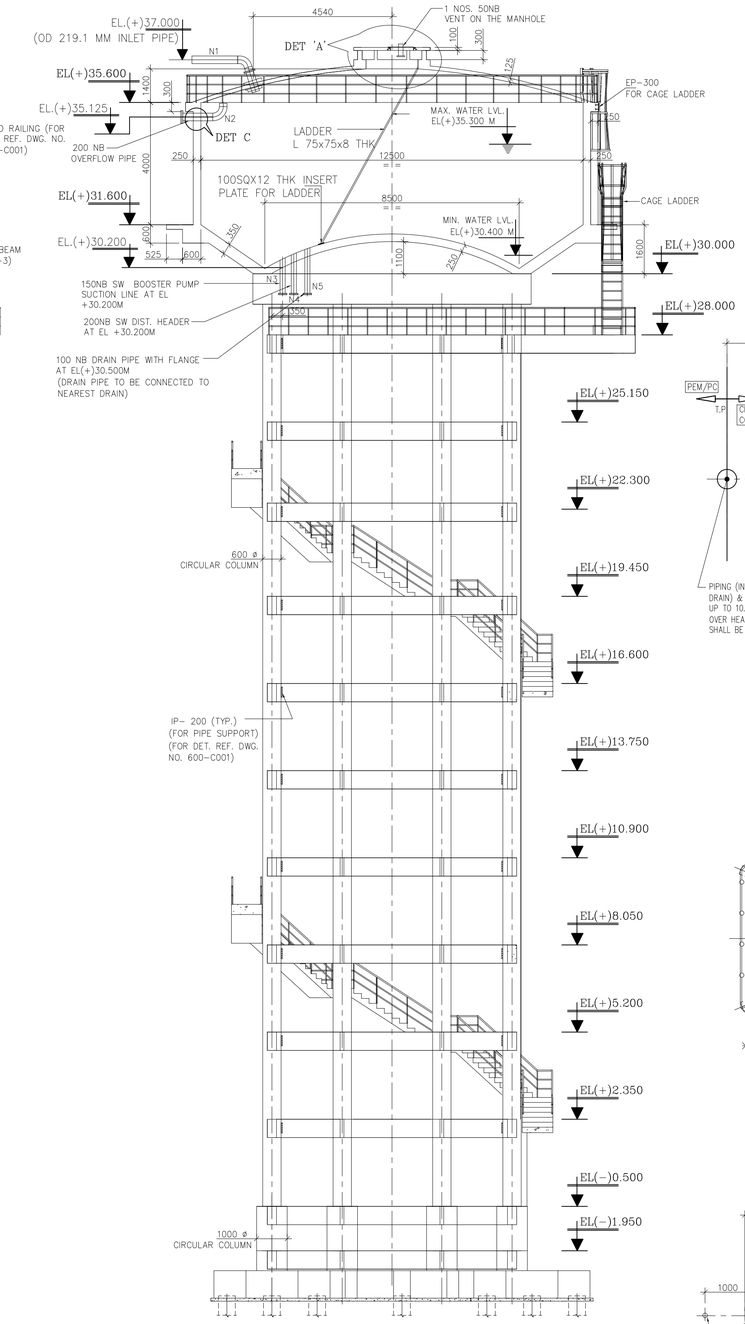
DRAWING NO. PE-DG-412-671-C007

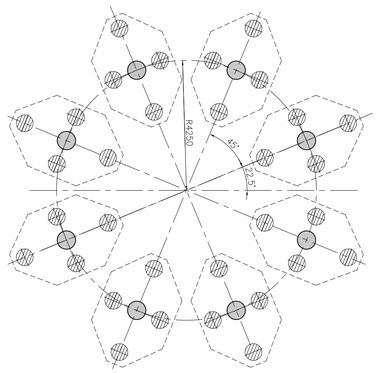
FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM



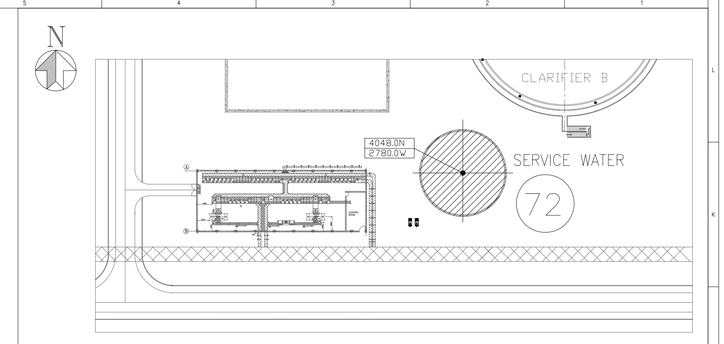
ELEVATION VIEW A-A



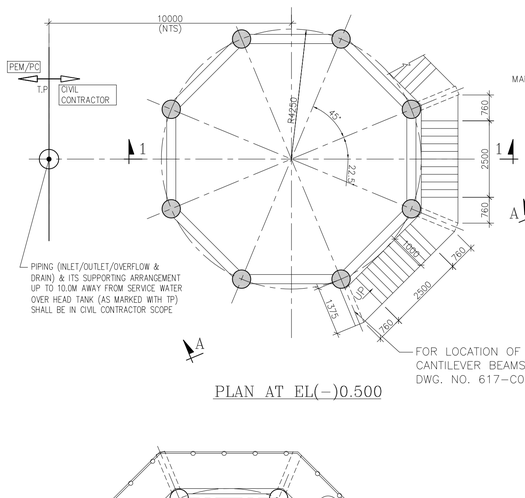
SECTION 1-1



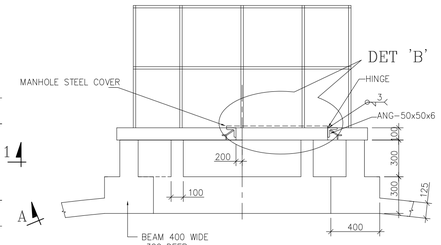
PLAN AT EL(-)3.500



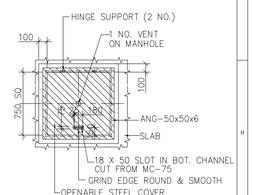
KEY PLAN



PLAN AT EL(-)0.500



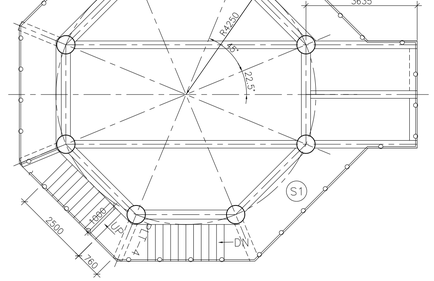
DETAIL-A



DETAIL-B

NOZZLE SHEDULE

NOZZLE NO.	SIZE IN NB	DESCRIPTION
N1	150 NB	FW LINE TO SERVICE WATER O/H TANK
N2	200 NB	SERVICE WATER OVERFLOW
N.3	150 NB	SERVICE WATER BOOSTER PUMP SUCTION
N4	200 NB	SERVICE WATER DISTRIBUTION HEADER
N5	100 NB	SERVICE WATER DRAIN PIPING



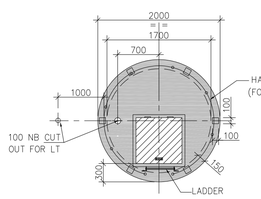
PLAN AT EL(+)28.000

NOTES

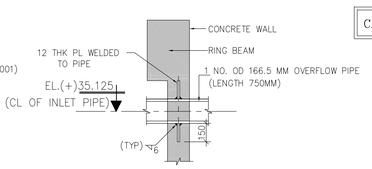
1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. +10.00 M. ABOVE MEAN SEA LEVEL.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
4. ALL PIPE ELEVATIONS INDICATED ARE CORRESPONDS TO CENTER LINE OF PIPE UNLESS OTHERWISE NOTED.

REFERENCE DRAWING'S

1. PLOT PLAN – PE-DG-412-100-M001 (R3)
2. GENERAL NOTES & STANDARD DETAILS FOR R.C.C. WORKS – PE-DG-412-600-C001 (R3)
3. P&ID – PLANT WATER SYSTEM – PE-DG-412-172-N001 (R2)
4. SERVICE WATER OVERHEAD TANK – GA & RC DETAILS OF FOUNDATION AND TANK SUPPORTING STRUCTURE – PE-DG-412-671-C008 (R0)
5. SERVICE WATER OVERHEAD TANK – GA & RC DETAIL OF TANK AND STAIRCASE – PE-DG-412-671-C009 (R0)



PLAN AT(+)37.700



DETAIL-C

TYP ARRANGEMENT FOR NOZZLE EMBEDDED IN CONCRETE IN TANK PORTION (FOR RING BEAM)

CAPACITY OF THE TANK 500M³

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)	
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☐ PLANNING/INFORMATION	
☐ CONSTRUCTION	
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ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	
DATE	31 MAY 2018

JOB NO.	412
STATUS	CONTRACT
DRG./REF. NO. (INTERNAL)	
PRINT SCALE IN METRE	0.0 0.5 1.0 20 30 40 50

PROJECT: 2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI

OWNER: TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED

OWNER'S CONSULTANT: DESEIN PRIVATE LIMITED, DESEIN HOUSE, GREATER KAILASH-II, NEW DELHI

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

DEPT CODE	DRAWING	NAME	SIGN	DATE
C	DRN	VSR		31.05.18
	DESN	VS		31.05.18
	CHD	SM		31.05.18
	APPD	AN		31.05.18

TITLE: SERVICE WATER OVERHEAD TANK
ARCHITECTURAL SECTIONS DETAIL

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –	DRAWING NO. PE-DG-412-671-C007
					SIGN		
					DATE		SHEET 1 OF 1 REV. 0

FORMAT SIZE A0

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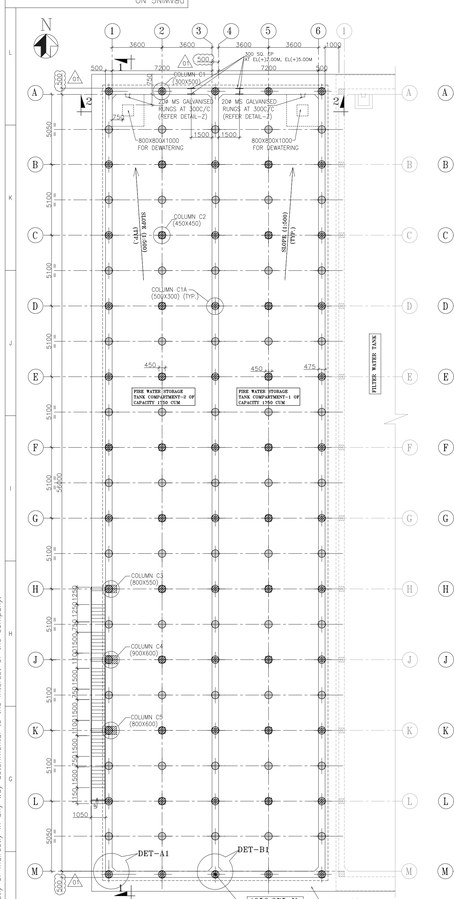
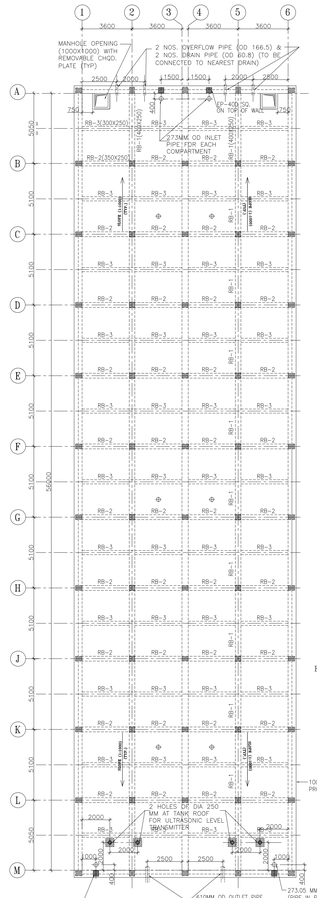
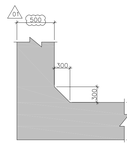
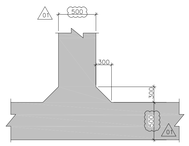


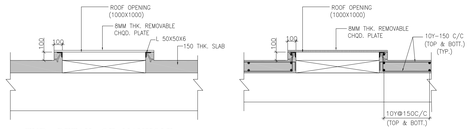
BOTTOM PLAN AT EL(−)1.00M



ROOF PLAN AT EL(+)5.900M (TOC)

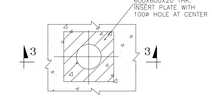




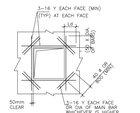


TYP. DETAIL OF MANHOLE
(GA DETAIL)

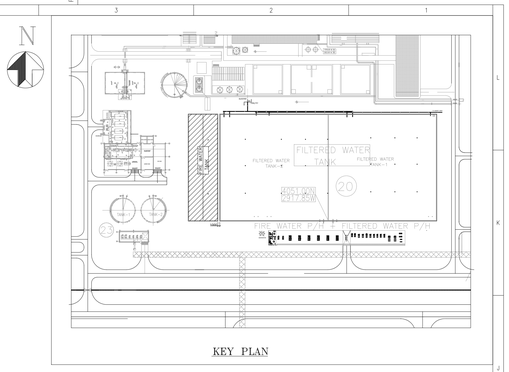
TYP. REINF. DETAIL OF MANHOLE
(R/F DETAIL)



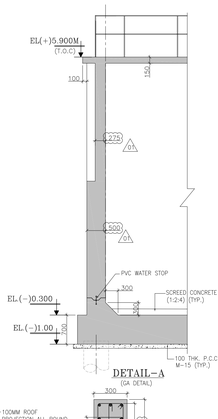
PLAN AT LEVEL TRANSMITTAL
(LOCATION REF. PLAN)



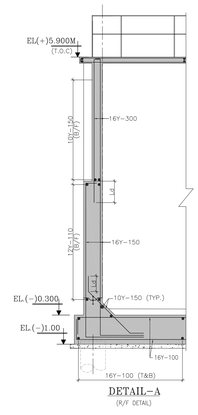
TYP. DET. OF REINF. AROUND OPENINGS



KEY PLAN



DETAIL-A
(GA DETAIL)



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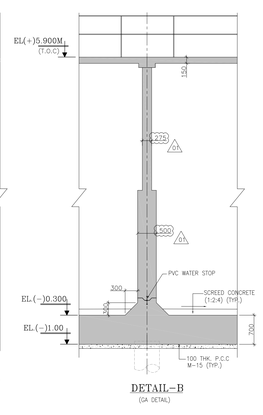
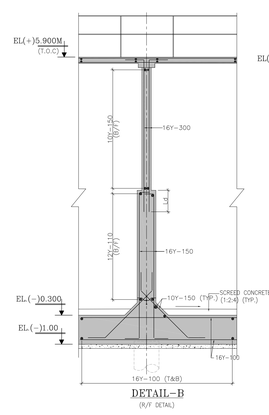
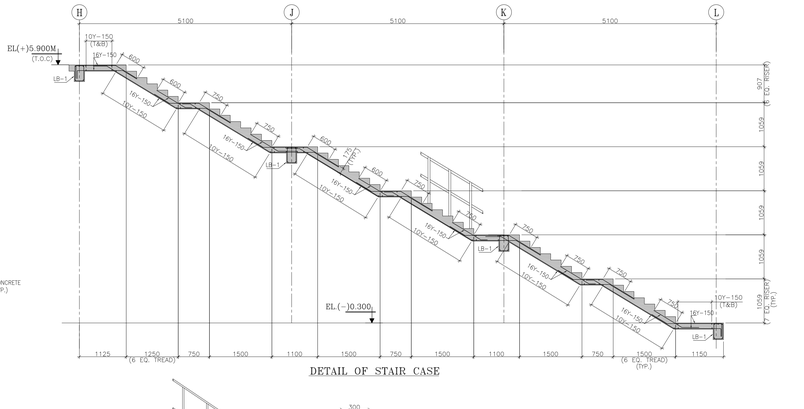
(R/F DETAIL)



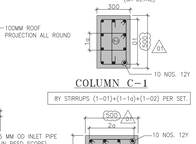
DETAIL-B
(GA DETAIL)



DETAIL-B
(R/F DETAIL)

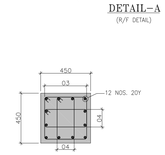


DETAIL OF STAIR CASE



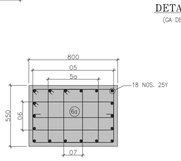
COLUMN C-1A

8Y STIRRUPS (1−2a)+(1−2b)+(1−2c) PER SET.



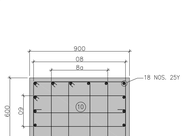
COLUMN C-2

8Y STIRRUPS (1−03)+(2−04) PER SET.



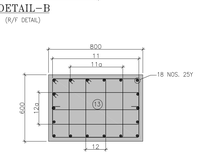
COLUMN C-3

8Y STIRRUPS (1−05)+(1−5a)+(1−06)+(1−6a)+(1−07) PER SET.



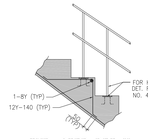
COLUMN C-4

8Y STIRRUPS (1−08)+(1−8a)+(1−09)+(1−9a)+(1−10) PER SET.

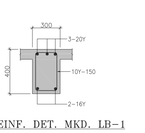


COLUMN C-5

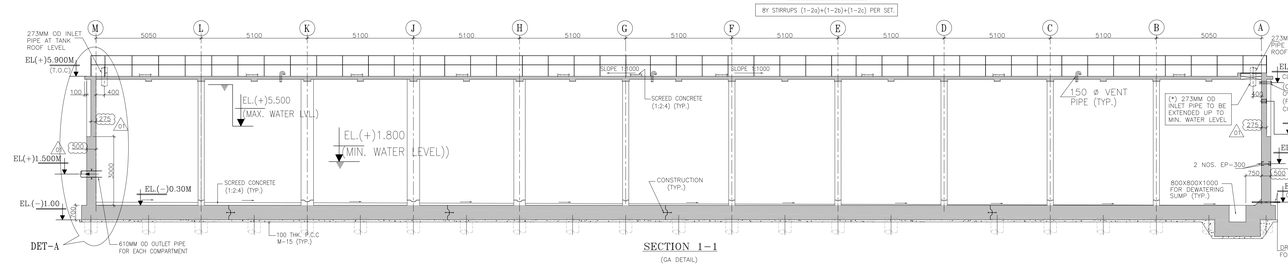
8Y STIRRUPS (1−11)+(1−11a)+(1−12)+(1−12a)+(1−13) PER SET.



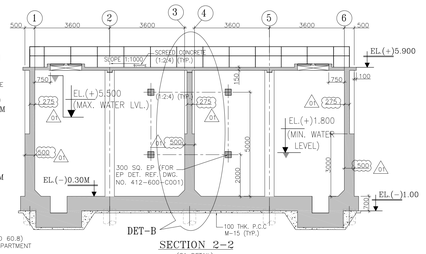
TYP. STEP DETAIL



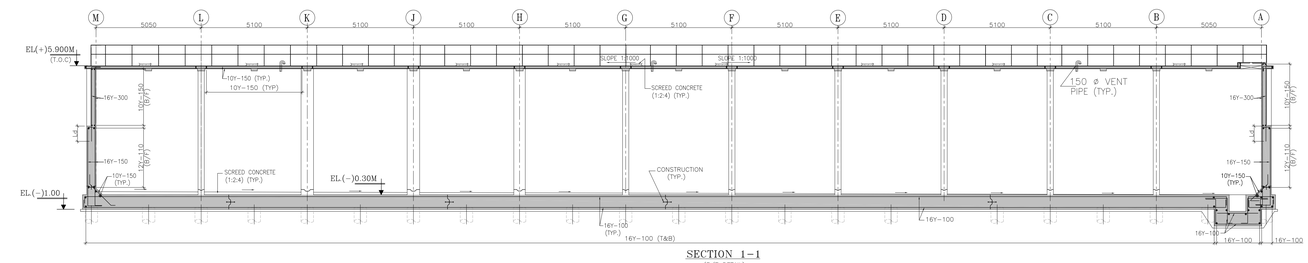
REINF. DET. MKD. LB-1
(SLAB REINF. NOT SHOWN FOR CLARITY)



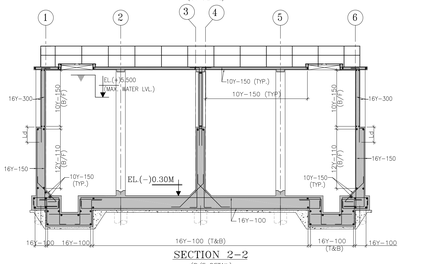
SECTION 1−1
(GA DETAIL)



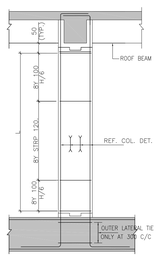
SECTION 2−2
(GA DETAIL)



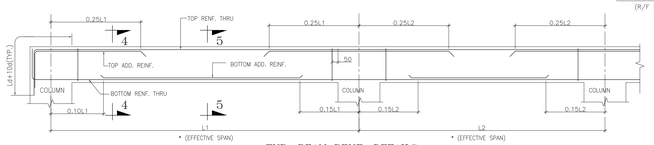
SECTION 1−1
(R/F DETAIL)



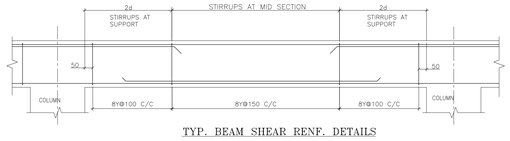
SECTION 2−2
(R/F DETAIL)



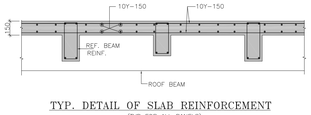
TYP. DETAIL OF COLUMN REINF.



TYP. BEAM RENF. DETAILS



TYP. BEAM SHEAR RENF. DETAILS
(d=EFFECTIVE DEPTH OF BEAM)



TYP. DETAIL OF SLAB REINFORCEMENT
(TYP FOR ALL PANELS)

ROOF BEAM SECTION DETAILS

BEAM NAME	END SECTION 4−4	MIDDLE SECTION 5−5
RB1	2−20Y, 1−20Y, 8Y@100 C/C, 1−12Y, 1−20Y, 2−20Y	2−20Y, 1−12Y, 8Y@150 C/C, 1−12Y, 1−20Y, 2−20Y
RB2	2−20Y, 1−12Y, 8Y@100 C/C, 1−12Y, 2−20Y	2−20Y, 1−12Y, 8Y@150 C/C, 1−12Y, 1−20Y, 2−20Y
RB3	2−20Y, 1−20Y, 8Y@100 C/C, 1−20Y, 2−20Y	2−20Y, 1−20Y, 8Y@150 C/C, 1−20Y, 2−20Y

IMPORTANT NOTE :−

- SITE SHALL ENSURE THE CORRECTNESS OF WATER BAR ALIGNMENT BEFORE PLACING OF CONCRETE. ANY RUPTURE, PUNCTURE, TEARING ETC OF WATER BAR SHALL BE CAREFULLY CHECKED AND PLACED BEFORE CONCRETING.

NOTES:−

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE WITH RESPECT TO MAIN POWER HOUSE BUILDING GROUND FLOOR LEVEL AS EL(±)0.000 M. WHICH CORRESPONDS TO RL(+)10.00 M.
3. ALL REINFORCEMENT STEEL SHALL BE HYSD BARS OF GRADE FE−500D CONFIRMING TO IS:1786, (LATEST), AND SHALL BE FUSION BONDED EPOXY COATING CONFORMING TO IS:13620. GRADE OF CONCRETE: M30−ROOF BEAM & SLAB, M30−WALLS, BOTTOM & TOP RAFT, COLUMN AND M30 FOR STAIR CASE.
4. ALL FACE IN CONTACT WITH SOIL SHALL BE PROVIDED WITH TWO COATS OF BITUMINOUS PAINT AS PER STANDARD DWG. NO.−PE−DG−412−600−C001.
5. STRUCTURAL CONCRETE SHALL HAVE PLASTIOIZERS CUM WATER PROOFING CEMENT CONFIRMING IS:9103.
6. BACK FILLING SHALL HAVE TO BE DONE ENSURING PROPER COMPACTION AND AS PER SPECIFICATION USING EXCAVATED SOIL. BACK FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm AND EACH LAYER TO BE COMPACTED SO AS TO ACHIEVE AT−LEAST 90% COMPACTION AS PER STANDARD PROCTOR DENSITY TEST.
7. BOTTOM 300MM OF EXCAVATION TO BE DONE CAREFULLY TO AVOID OVER EXCAVATION AND PCC TO BE DONE IMMEDIATELY AFTER EXCAVATION & COMPACTION.
8. WATER PROOFING SHALL BE DONE AS PER TECHNICAL SPECIFICATION.
9. AFTER EMBEDMENT OF ALL INLET/OUTLET PIPE IN RCC WALL, PROPER SEALANT (BITUMEN / POLYSULPHIDE) MATERIAL SHALL BE USED TO SEAL ANY GAP BETWEEN RCC WALL AND PIPE TO ENSURE NO LEAKAGE OF WATER
10. CEMENT SHALL BE OPC WITH C3A CONTENT FROM 5% TO 8%. GRADE OF CEMENT SHALL BE 43 CONFORMING TO IS :8112.
11. CLEAR COVER OF PILE CAP 75 MM.
12. NOMINAL COVER (AS DEFINED IN IS 456 : 2000) TO REINFORCEMENT SHALL BE AS FOLLOWS OR BAR DIA WHICHEVER IS GREATER UNLESS STATED OTHERWISE :−

		TOP	BOTTOM	SIDES	ENDS
1.	FOUNDATION	50	50	50	–
2.	COLUMNS	–	–	45	50
3.	BEAMS	45	45	45	45
4.	SLABS	30	30	30	–
5.	WALLS	30	30	30	–

13. PILES HAVE BEEN SIZED BASED ON THE FOLLOWING SAFE LOAD CARRYING CAPACITY OF PILE.

PILE DIA. (mm)	VERTICAL LOADCAPACITY (t)	TENSILE LOAD CAPACITY (t)	LATERAL LOAD CAPACITY (t)	CUTOFF LEVEL (M)	PILE QUANTITY
550	90	25	5.0	(−)1.00	115

REFERENCE DRAWINGS

1. PLOT PLAN ---------- PE−DG−412−100−M001 (R4)
2. GENERAL NOTES & STANDARD DETAILS FOR R.C.C. WORKS ---------- PE−DG−412−600−C001 (R3)
3. MECHANICAL GA OF FILTERED CUM FIRE WATER TANK ---------- PE−DG−412−172−N100 (R4)

LEGEND

550ø DRIVEN CAST IN SITU PILE

TOTAL QUANTITY OF CONCRETE : 1175 Cum. (APPROX)

BHEL−PROJECT ENGINEERING MANAGEMENT(CIVIL)	
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☐ PLANNING/INFORMATION	
☐ CONSTRUCTION	
STAMP ALL PREVIOUS REVISION AS SUPERSEDED	
ISSUED BY:	
NAME	SOMNATH MISHRA
SIGNATURE	
DATE	14 SEPTEMBER 2018

JOB NO.	412
STATUS	CONTRACT
DRG./REF. NO. (INTERNAL)	
PRINT SCALE IN METRE	0 2 4 6 8 10 20 30 40 50

DATE	ALTD	CHD	APPD	REV.
				A

REVISED AS PER CUSTOMER'S COMMENTS IN LR.NO.SE/5/TF/E2/ENNORE SEZ STPP/FIREWATER TANK /D. 1745 /18, DT. 11.10.2018 △A

PROJECT	2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH−II, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

DEPT CODE		DRAWING	NAME	SIGN	DATE
C	DRN	YSR		– sd –	14.09.18
	DESN	VS		– sd –	14.09.18
	CHD	SM		– sd –	14.09.18
	APPD	AN		– sd –	14.09.18

TITLE: FIRE WATER TANK
GA & RC DETAILS

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE −
					SIGN	
					DATE	

DRAWING NO. PE−DG−412−634−C016
SHEET 1 OF 1 REV. 1

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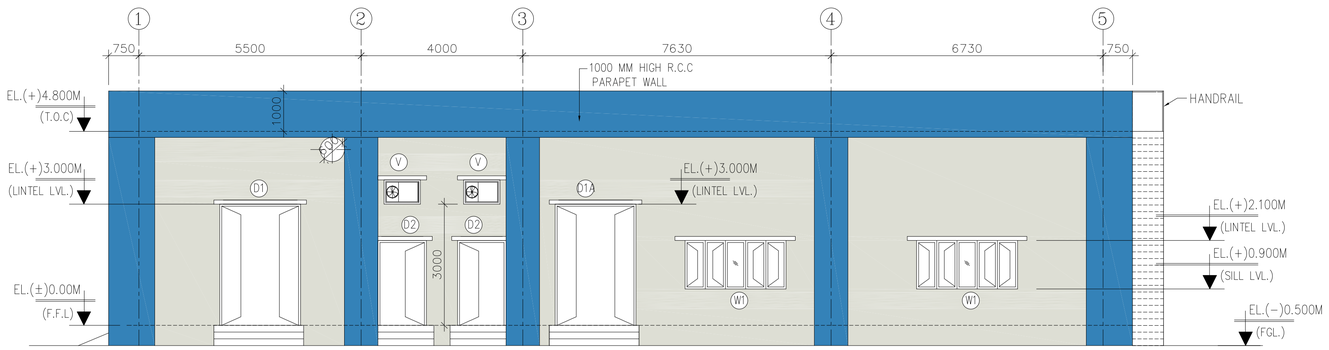
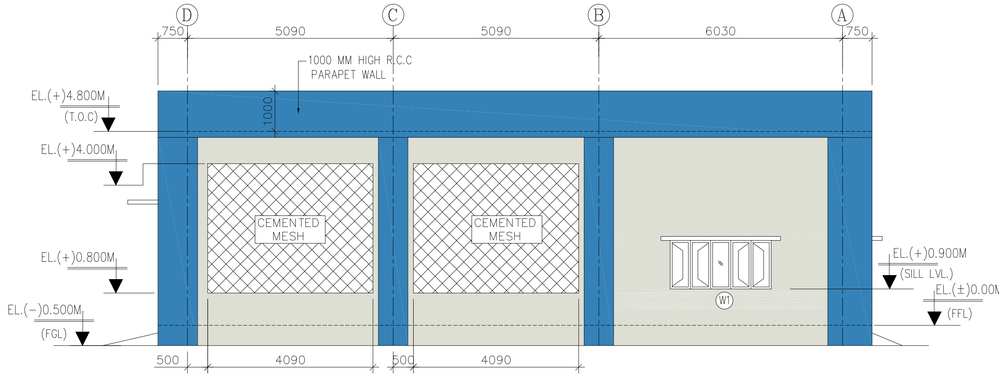
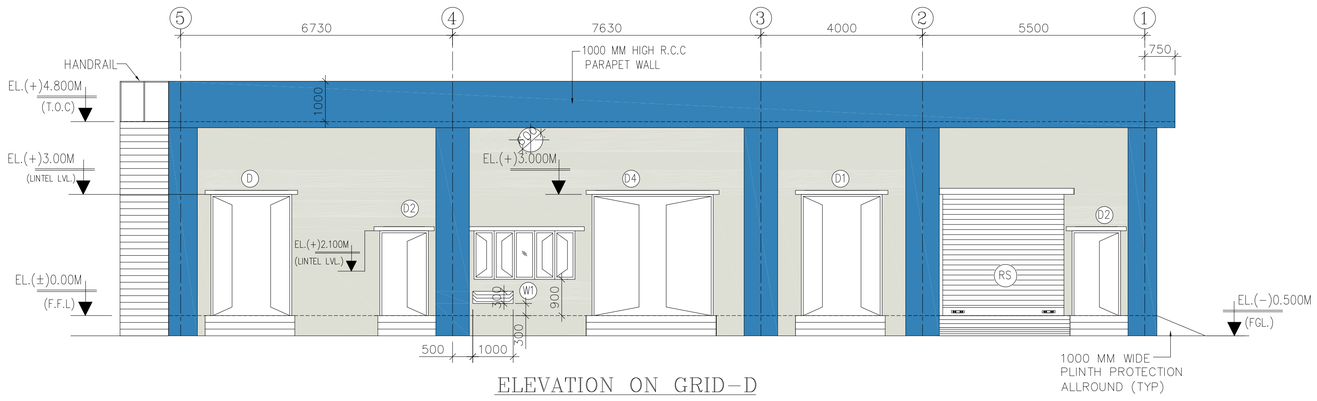


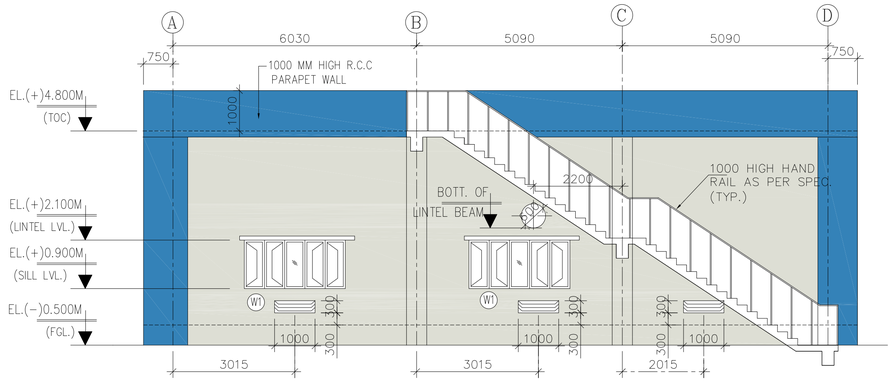
ELEVATION ON GRID-A



ELEVATION ON GRID-1



ELEVATION ON GRID-D



ELEVATION ON GRID-5

NOTES:-

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. (+) 10.00 M.
3. UNLESS NOTED OTHERWISE WINDOW / DOOR LOCATION SHALL BE AT CENTER BETWEEN GRIDS.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
5. ALL GROUND FLOOR WINDOWS SHALL BE PROVIDED WITH GRILL.

LEGENDS:-

1. T.O.C -----TOP OF CONCRETE
2. F.G.L -----FINISHED GROUND LEVEL
3. F.F.L -----FINISHED FLOOR LEVEL
4. LVL -----LEVEL

COLOR TO MATCHED WITH - 9002

COLOR TO MATCHED WITH - 5012

* COLOUR SCHEME TO BE DECIDED BY CUSTOMER AT SITE.

READ THIS DRG. IN CONJUNCTION WITH DRG. PE-DG-412-644-C001

BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)	
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ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	-sd-
DATE	24 JANUARY 2019

REV.	DATE	ALTD	CHD	APPD

JOB NO.	412
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	

PROJECT	2x660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI
TITLE	H2 GENERATION PLANT ARCHITECTURAL ELEVATION
DRAWING NO.	PE-DG-412-644-C002
SHEET	1 OF 1
REV.	0

DEPT CODE		NAME	SIGN	DATE
C	DRN	YSR		24/01/19
	DESN	VS/SB		24/01/19
	CHD	SB		24/01/19
	APPD	AN		24/01/19

DEPT. | SCALE: | SIGN | DATE

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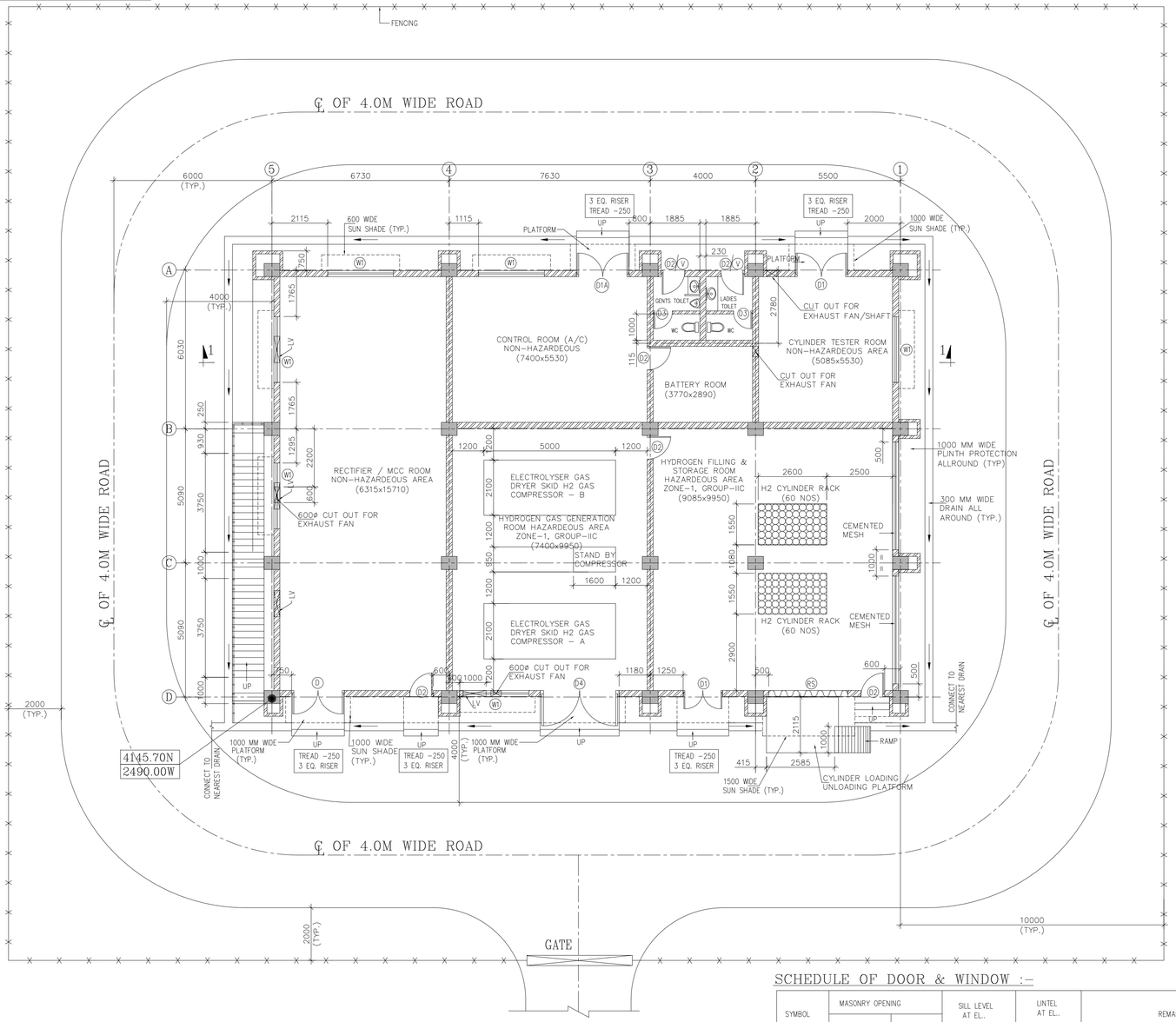
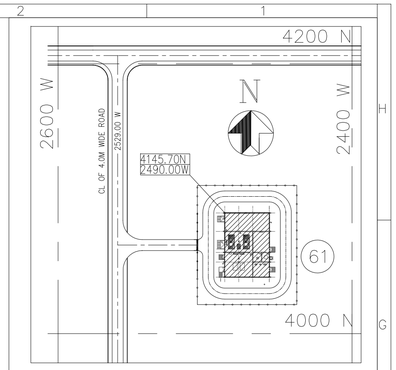


PLAN AT EL(±)0.00M (FFL)

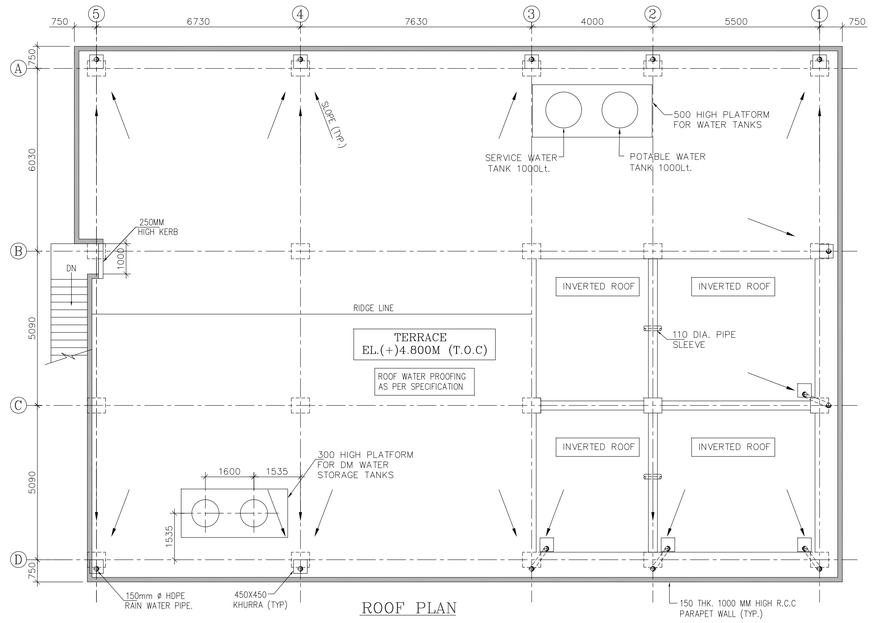
SCHEDULE OF FINISHES :-

AREA	FLOORING	WALL /DADO	CEILING
CONTROL ROOM	VITRIFIED CERAMIC GLAZED TILES	ACRYLIC EMULSION PAINT	GYPSUM BOARD FALSE CEILING
BATTERY ROOM	ACID/ALKALI RESISTANT TILES	ACID & ALKALI TILE UPTO 2.100 M HIGH + CHLORINATED RUBBER BASED PAINT	CHLORINATED RUBBER BASED PAINT
TOILETS	ANTI SKID CERAMIC TILES OF MATT FINISH	GLAZED CERAMIC TILES UPTO 2.100M & ACRYLIC WASHABLE DISTEMPER FOR BALANCE HEIGHT.	ACRYLIC WASHABLE DISTEMPER
CYLINDER TESTING ROOM	RCC FLOORING WITH METTALIC HARDNER TOPPING. AS PER SPEC	ACRYLIC WASHABLE DISTEMPER	ACRYLIC DISTEMPER
HYDROGEN GAS GENERATION ROOM HAZARDEOUS AREA ZONE-1, GROUP-IIC	RCC FLOORING WITH METTALIC HARDNER TOPPING. AS PER SPEC	ACRYLIC WASHABLE DISTEMPER	ACRYLIC DISTEMPER
HYDROGEN FILLING & STORAGE ROOM HAZARDEOUS AREA ZONE-1, GROUP-IIC	RCC FLOORING WITH METTALIC HARDNER TOPPING. AS PER SPEC	ACRYLIC WASHABLE DISTEMPER	ACRYLIC DISTEMPER
EXTERNAL WALL/ SUNSHADE	WATER PROOF CEMENT BASED PAINT		

(*) 150 MM HIGH SKIRTING (TYP.)



KEY PLAN



ROOF PLAN

READ THIS DRG. IN CONJUNCTION WITH DRG. PE-DG-412-644-C002

LEGENDS:-

1. T.O.C -----TOP OF CONCRETE
2. F.G.L -----FINISHED GROUND LEVEL
3. F.F.L -----FINISHED FLOOR LEVEL
4. LVL -----LEVEL

NOTES:-

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. (+) 10.00 M.
3. UNLESS NOTED OTHERWISE WINDOW / DOOR LOCATION SHALL BE AT CENTER BETWEEN GRIDS.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
5. ALL GROUND FLOOR WINDOWS SHALL BE PROVIDED WITH GRILL.

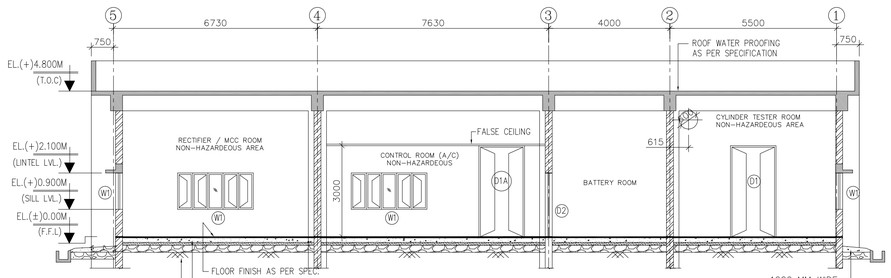
REFERENCE DRGS :-

1. PLOT PLAN ------- PE-DG-412-100-M001 (R4)
2. STANDARD DETAILS FOR ARCHITECTURAL WORKS -------- PE-DG-412-611-C031 (R1)
3. EQUIPMENT LAYOUT OF H2 GENERATION PLANT --------PE-VQ-412-168-A002 (R1) (SH 1, SH2 & SH-3)
4. HYD. GEN. PLANT - FOUNDATION & PLINTH BEAM ------PE-DG-412-644-C003 (R0)

SCHEDULE OF DOOR & WINDOW :-

SYMBOL	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	SILL LEVEL AT EL.	LINTEL AT EL.	REMARKS
RS	3000	3000	-	EL.(+)3.00M	STEEL ROLLING SHUTTER
D	2000	3000	-	EL.(+)3.00M	ADONISED ALUMINIUM GLAZED DOOR WITH 6MM THK. FLOAT GLASS DOUBLE SHUTTER
D1	1500	3000	-	EL.(+)3.00M	HOLLOW METAL (STEEL) FLUSH DOOR AS PER SPECIFICATION
D1A	1500	3000	-	EL.(+)3.00M	ALUMINIUM DOOR AS PER SPECIFICATION
D2	900	2100	-	EL.(+)2.10M	ANODIZED ALUMINIUM FRAMED DOOR WITH PRE-LAMINATED PARTICLE BOARD
D3	750	2100	-	EL.(+)2.10M	PVC DOOR AS PER SPECIFICATION
D4	3000	3000	-	EL.(+)3.00M	ADONISED ALUMINIUM GLAZED DOOR WITH 6MM THK. FLOAT GLASS DOUBLE SHUTTER
W1	2000	1200	EL.(+)0.900M	EL.(+)2.10M	ANODIZED ALUMINIUM GLAZED WINDOW PARTLY OPENABLE PARTLY CLOSED WITH 6MM THICK SHEET GLASS.
V	900	600	REF. ELEVATION	REF. ELEVATION	ANODISED ALUMINUMN GLAZED VENTILATOR TOP HUNG WITH 6MM THK. GROUND GLASS.
LV	1000	300	REF. ELEVATION	REF. ELEVATION	LOUVERS
CEMENTED MESH	4090	3200	REF. ELEVATION		

NOTE-: ALL WINDOW SHALL BE PROVIDED WITH GRAINITE SLAB AT SILL LEVEL.



SECTION 1-1

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SIGNATURE	-sd-
DATE	24 JANUARY 2019

REV.	DATE	ALTD	CHD	APPD

JOB NO.	412
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OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

DEPT CODE		NAME	SIGN	DATE
C	DRN	YSR		24/01/19
	DESN	VS/SB		24/01/19
	CHD	SB		24/01/19
	APPD	AN		24/01/19

TITLE: H2 GENERATION PLANT
ARCHITECTURAL PLAN & SECTION

DEPT. | SCALE: | DRAWING NO. PE-DG-412-644-C001
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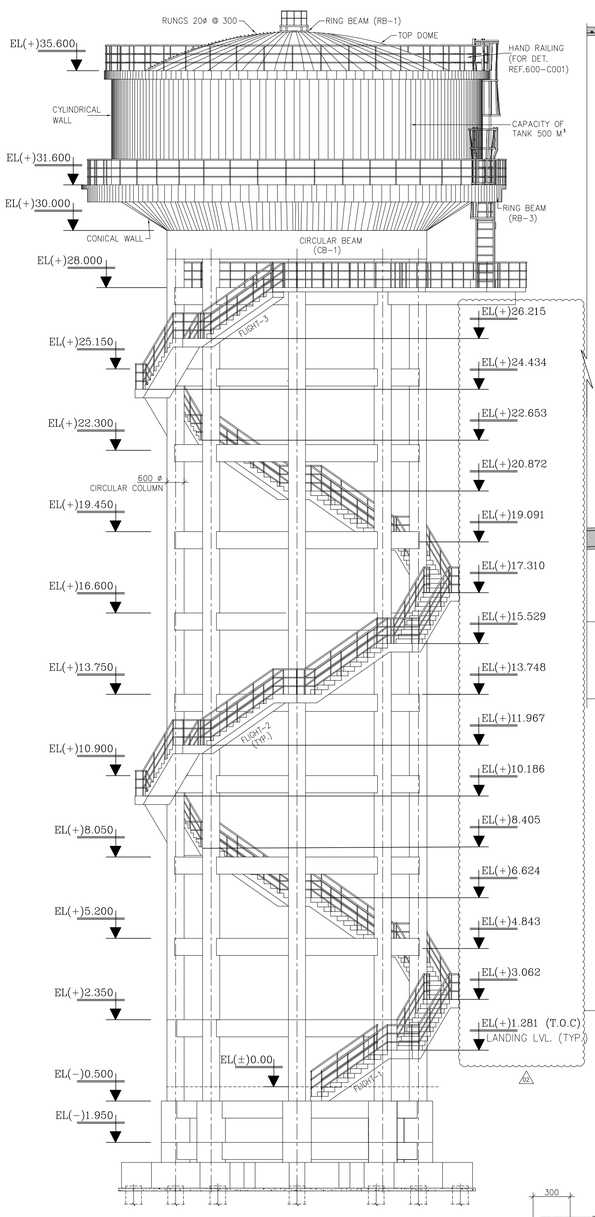
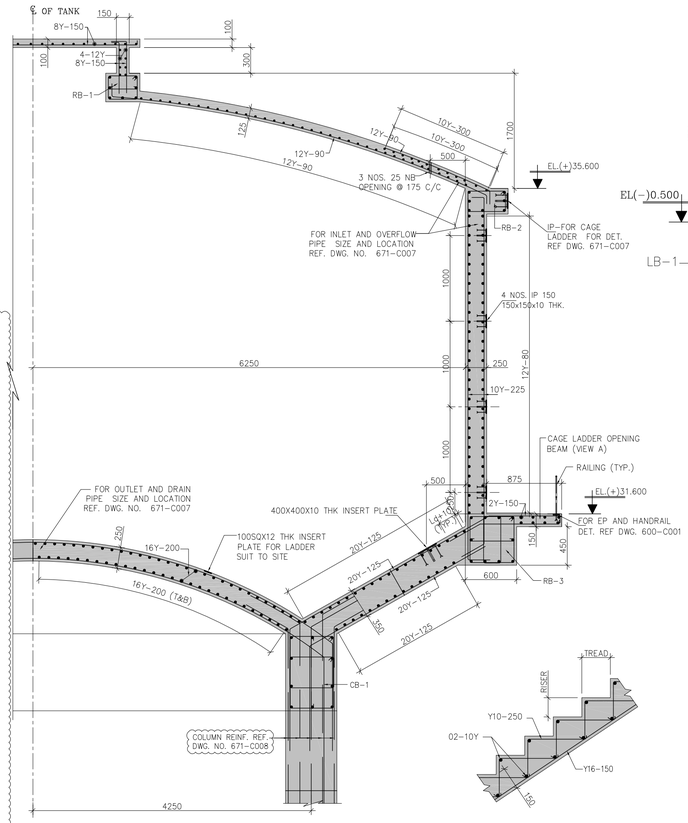
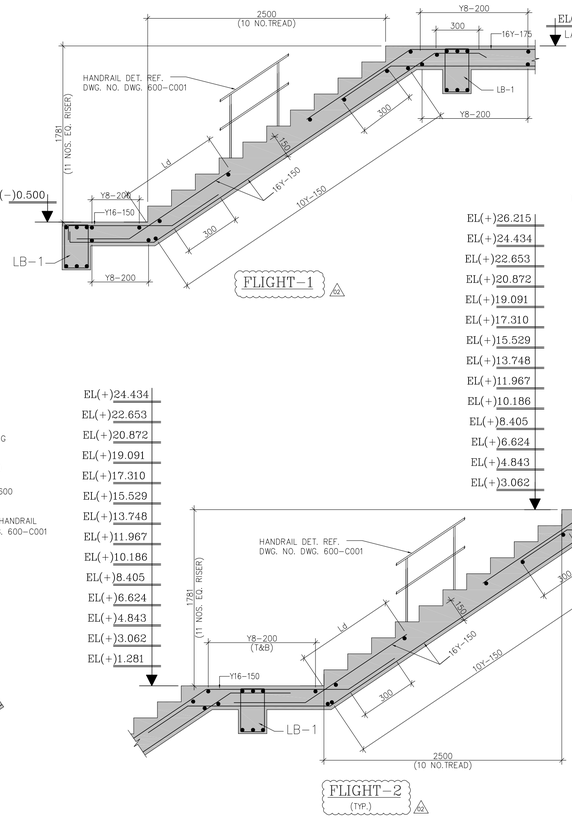


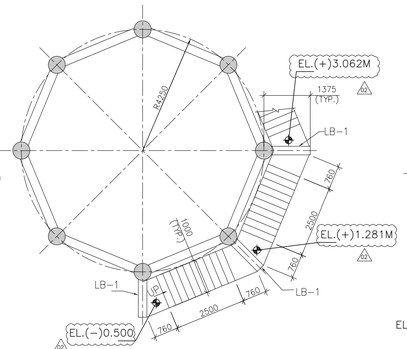
ELEVATION VIEW



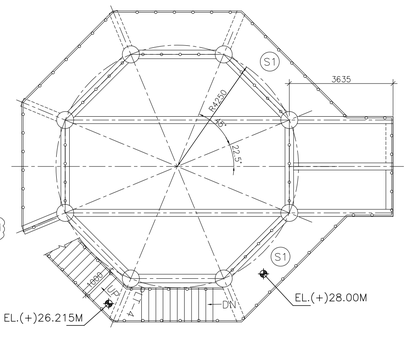
TANK SECTION DETAIL



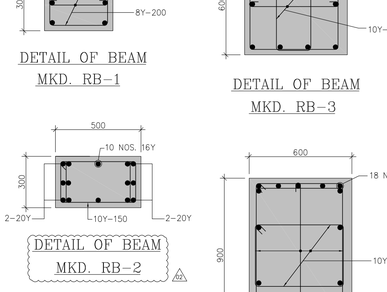
TYPICAL DETAIL FOR STEPS



PLAN AT EL(−)0.500

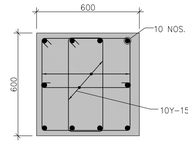


PLAN AT EL(+)28.000

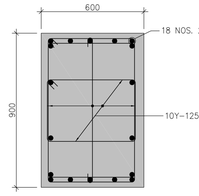


DETAIL OF BEAM MKD. RB−1

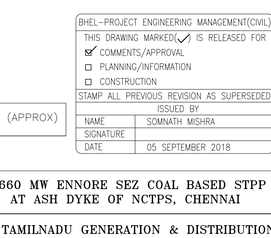
DETAIL OF BEAM MKD. RB−2



DETAIL OF BEAM MKD. RB−3

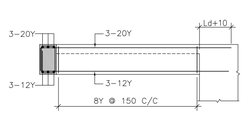


DETAIL OF BEAM MKD. CB−1

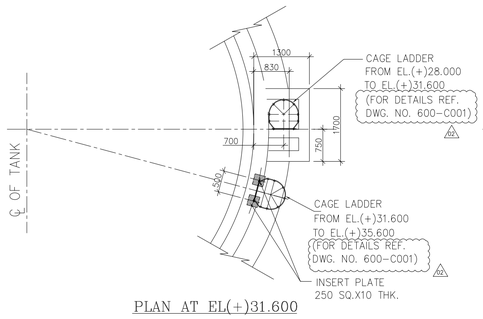


TYP DET. OF GRADE SLAB

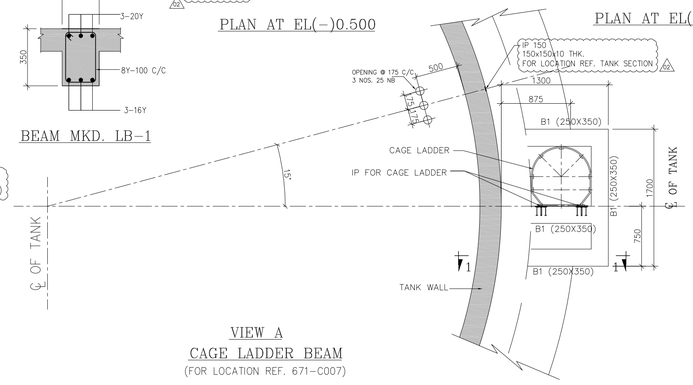
BEAM MKD. LB−1



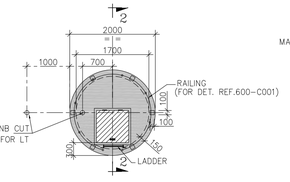
SECTION 1−1
(ELEVATION OF BEAM MKD. B1)



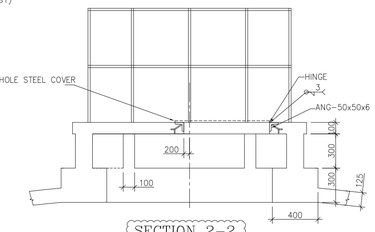
PLAN AT EL(+)31.600



VIEW A
CAGE LADDER BEAM
(FOR LOCATION REF. 671−C007)



PLAN AT(+)37.700



SECTION 2−2

NOTES

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. +10.00 M. ABOVE MEAN SEA LEVEL.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
4. ALL PIPE ELEVATIONS INDICATED ARE CORRESPONDS TO CENTER LINE OF PIPE UNLESS OTHERWISE NOTED.
5. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M−30 UNLESS OTHERWISE NOTED.
6. ALL REINFORCEMENTS SHALL BE HIGH STRENGTH DEFORMED BARS OF MINIMUM GRADE Fe500 CONFORMING TO IS:1786 (LATEST). AND SHALL BE FUSION BONDED EPOXY COATING CONFORMING TO IS:13620.
7. ALL LEAN CONC. SHALL BE OF GRADE M−15 AND SHALL BE 100 TH. UNDER FOOTING.
8. CEMENT SHALL BE OPC WITH C3A CONTENT FROM 5% TO 8%.
9. NOMINAL COVER (AS DEFINED IN IS 456 : 2000) TO REINFORCEMENT SHALL BE AS FOLLOWS OR BAR DIA WHICHEVER IS GREATER UNLESS STATED OTHERWISE :−

	TOP	BOTTOM	SIDES	ENDS
1. FOUNDATION	50	50	50	–
2. COLUMNS	–	–	45	50
3. BEAMS	45	45	45	45
4. SLABS	30	30	30	–
5. WALLS	30	30	30	–

REFERENCE DRAWING'S

1. PLOT PLAN	– PE−DG−412−100−M001(R3)
2. GENERAL NOTES & STANDARD DETAILS FOR R.C.C. WORKS	– PE−DG−412−600−C001(R3)
3. P&ID – PLANT WATER SYSTEM	– PE−DG−412−172−N001(R2)
4. SERVICE WATER OVERHEAD TANK – ARCHITECTURAL SECTIONS DETAIL	– PE−DG−412−671−C007(R0)
5. SERVICE WATER OVERHEAD TANK – GA & RC DETAILS OF FOUNDATION AND TANK SUPPORTING STRUCTURE	– PE−DG−412−671−C008(R2)

QTY. OF CONCRETE= 125 CUM. (APPROX)

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NAME	SOMNATH MISHRA
SIGNATURE	
DATE	05 SEPTEMBER 2018

PROJECT	2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH−II, NEW DELHI
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

JOB NO.	412
STATUS	CONTRACT
DRG./REF. NO. (INTERNAL)	
PRINT SCALE IN METRE	0 2 4 6 8 10 20 30 40 50

DEPT CODE	DRAWING	NAME	SIGN	DATE
C	DRN.	YSR	−sd−	23.05.18
	DESN	VS	−sd−	23.05.18
	CHD	SM	−sd−	23.05.18
	APPD	AN	−sd−	23.05.18

TITLE: SERVICE WATER OVERHEAD TANK
GA & RC DETAIL OF TANK AND STAIRCASE

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE –
					SIGN	
					DATE	

DRAWING NO. PE−DG−412−671−C009
SHEET 1 OF 1 REV. 02

REV.	DATE	ALTD	CHD	APPD
02	20.04.19	YSR	VS	SM
01	05.09.18	−sd− YSR	CHD −sd− VS	APPD −sd− SM

02 REVISED AS PER CUSTOMER'S COMMENTS IN LR.NO.SE/C/TP/ES/ENNORE SEZ/TPP/T. CH. TANK./D. 1220 /18 DT. 21 .07.2018 AND MKD. AS.
01 REVISED AS PER CUSTOMER'S COMMENTS IN LR.NO.SE/C/TP/ES/ENNORE SEZ/TPP/T. CH. TANK./D. 1220 /18 DT. 21 .07.2018 AND MKD. AS.

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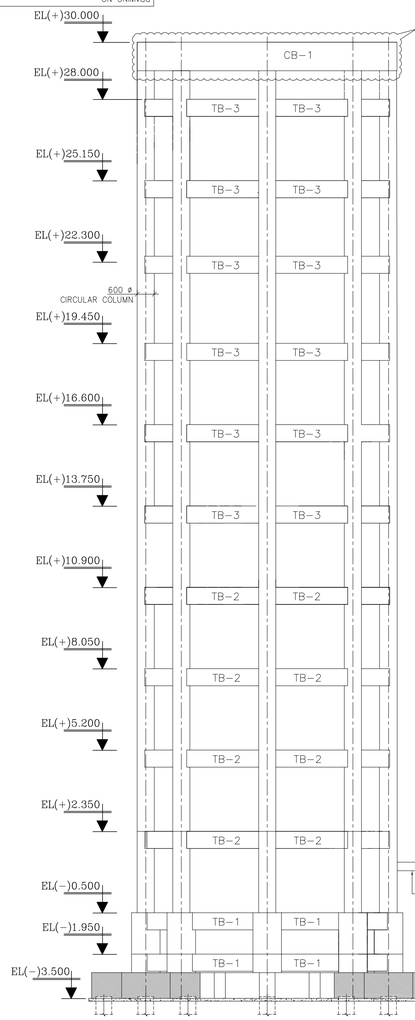
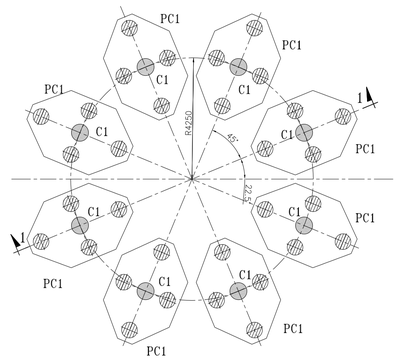
DRAWING NO. PE-DG-412-671-C008

FIRST ANGLE PROJECTION — ALL DIMENSIONS ARE IN MM

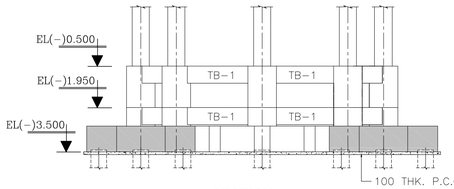


SECTION 1−1

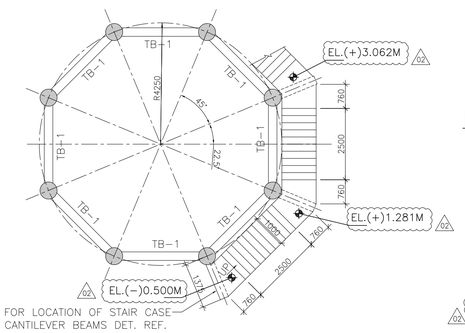


FOUNDATION PLAN

(32 NO. 550ø DRIVEN PILE)

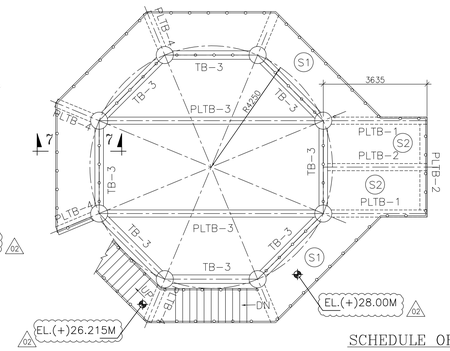


SECTION 1−1

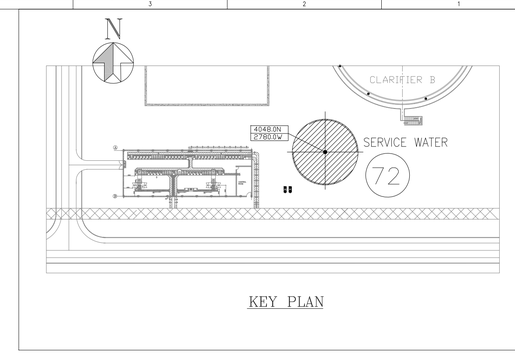


FOR LOCATION OF STAIR CASE CANTILEVER BEAMS DET. REF. DWG. NO. 617−C009

PLAN AT EL(−)0.500



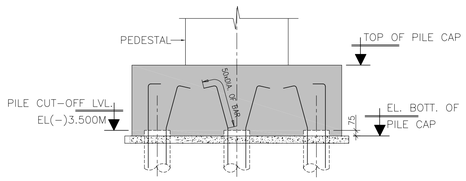
PLAN AT EL(+)28.000



KEY PLAN

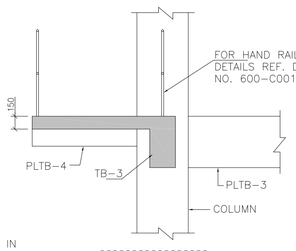
SCHEDULE OF PLATFORM BEAMS

PLTB−1 (250x600)	3−25Y	2−20Y	8Y @ 100 C/C (2 LEGGED)	3−25Y	2−20Y	8Y @ 150 C/C (2 LEGGED)
PLTB−2 (250x350)	3−25Y	3−20Y 02	8Y @ 100 C/C (2 LEGGED)	3−25Y	3−20Y 02	8Y @ 100 C/C (2 LEGGED)
PLTB−3 (300x600)	3−25Y	3−25Y	8Y @ 100 C/C (2 LEGGED)	3−25Y	3−25Y	8Y @ 150 C/C (2 LEGGED)
PLTB−4 (300x350)	3−25Y	3−16Y	8Y @ 100 C/C (2 LEGGED)	3−25Y	3−16Y	8Y @ 100 C/C (2 LEGGED)



TYP. DETAIL OF PILE CAP AND PILE CUT−OFF

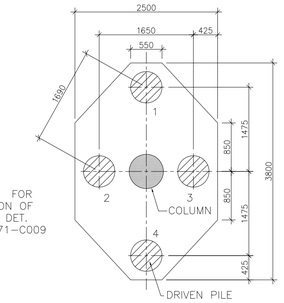
NOTE: CUT−OFF LEVELS OF ALL PILES SHALL BE 75 MM ABOVE BOTTOM OF PILE CAP UNLESS NOTED OTHERWISE.



SECTION 7−7 02

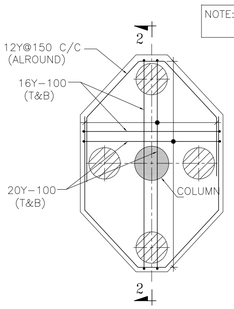
SCHEDULE OF SLAB REINFORCEMENT

SLAB MKD. AS	REINFORCEMENT		THICKNESS (IN MM)
	SHORTER SPAN	LONGER SPAN	
S1	10Y−150 (T&B)	16Y−150 (T&B)	150
S2	10Y−150 (T&B)	8Y−200 (T&B)	150

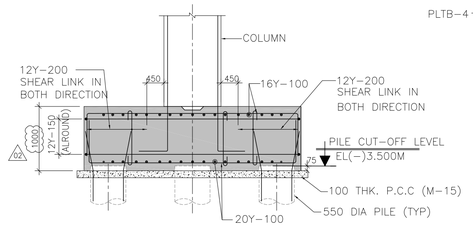


PLAN FOR PILE CAP MKD. PC−1

(4 NO. 550ø DRIVEN PILE)

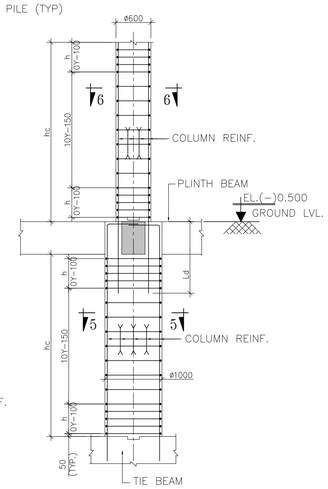


TYP. R/F DETAIL OF PILE CAP MKD.−PC1



SECTION 2−2

(COLUMN & PILE R/F NOT SHOWN FOR CLARITY)



TYP. COLUMN SECTION DETAIL

(RAFT REINF. AND BEAM REINF. NOT SHOWN FOR CLARITY)

h − SHALL NOT BE LESS THAN:−
(1) LARGER LATERAL DIMENSION OF COLUMN
(2) 1/6 OF hc
(3) 450mm

NOTES

1. ALL DIMENSIONS ARE IN MILIMETERS AND ELEVATIONS IN METERS UNLESS NOTED.
2. ALL ELEVATIONS ARE REFERRED TO THE FINISHED GROUND FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.00 M WHICH CORRESPONDS TO RL. +10.00 M. ABOVE MEAN SEA LEVEL.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, SPECIFICATION AND SCHEDULE OF ITEMS.
4. ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M−30 UNLESS OTHERWISE NOTED.
5. ALL REINFORCEMENTS SHALL BE HIGH STRENGTH DEFORMED BARS OF MINIMUM GRADE Fe500 CONFORMING TO IS:1786 (LATEST). AND SHALL BE FUSION BONDED EPOXY COATING CONFORMING TO IS:13620.
6. ALL LEAN CONC. SHALL BE OF GRADE M−15 AND SHALL BE 100 TH. UNDER FOOTING.
7. BACK FILLING SHALL HAVE TO BE DONE ENSURING PROPER COMPACTION AND STRICTLY AS PER SPECIFICTION AND IT SHOULD BE COMPLETED BEFORE TAKING UP ERECTION WORK.
8. CLEAR COVER OF PILE CAP 75 MM.
9. CEMENT SHALL BE OPC WITH C3A CONTENT FROM 5% TO 8%.
10. THE FOUNDATION & PEDESTAL WORK BELOW GROUND COMING IN CONTACT WITH SOIL, BITUMINOUS PAINTING OF GRADE 85/25 CONFORMING IS 702@ 1.7 KG/ SQM.(MIN) SHALL BE PROVIDED.
11. PILES HAVE BEEN SIZED BASED ON THE FOLLOWING SAFE LOAD CARRYING CAPACITY OF PILE.

PILE DIA. (mm)	VERTICAL LOADCAPACITY (t)	TENSILE LOAD CAPACITY (t)	LATERAL LOAD CAPACITY (t)	CUTOFF LEVEL (M)	PILE QUANTITY
550	100	30	6.25	(−)3.500	32

REFERENCE DRAWING'S

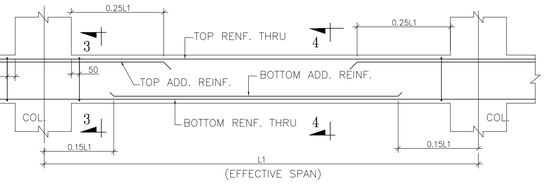
1. PLOT PLAN	− PE−DG−412−100−M001(R4)
2. GENERAL NOTES & STANDARD DETAILS FOR R.C.C. WORKS	− PE−DG−412−600−C001(R3)
3. SERVICE WATER OVERHEAD TANK − ARCHITECTURAL SECTIONS DETAIL	− PE−DG−412−671−C007(R0)
4 SERVICE WATER OVERHEAD TANK − GA & RC DETAIL OF TANK AND STAIRCASE	− PE−DG−412−671−C009(R2)
5. R/C DETAILS OF 550MM DIAMETER JOB PILE	− PE−DG−412−607−C004(R1)
5. SERVICE WATER OVER HEAD TANK−GROUND IMPROVEMENT DETAILS	− PE−DG−412−634−C019(R0)

LEGEND

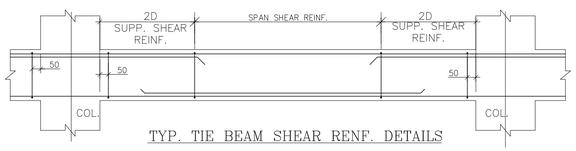
▨ ——— 550ø DRIVEN CAST IN SITU PILE
PLTBB − PLATFORM BEAM AT EL(+)28.00M
TB − TIE BEAM

TANK PILE CAP FOUNDATION TO BE CASTED ONLY AFTER GROUND IMPROVEMENT COMPLETION

QTY. OF CONCRETE= 175 CUM. (APPROX)



TYP. TIE BEAM RENF. DETAILS

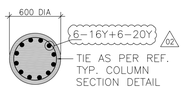


TYP. TIE BEAM SHEAR RENF. DETAILS

SCHEDULE OF BEAMS

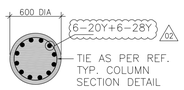
BEAM MKD. (WXD)	SUPP. REINFORCEMENT			SPAN REINFORCEMENT		
	TOP	BOTTOM	SHEAR REINF.	TOP	BOTTOM	SHEAR REINF
TB1 (300x600)	3−25Y + 2−16Y	3−25Y + 2−16Y	10Y @ 100 C/C (2 LEGGED)	3−25Y + 2−16Y	3−25Y + 2−16Y	10Y @ 150 C/C (2 LEGGED)
TB2 (300x600)	3−25Y + 2−25Y	3−25Y + 2−25Y	10Y @ 100 C/C (2 LEGGED)	3−25Y	3−25Y + 2−25Y	10Y @ 150 C/C (2 LEGGED)
TB3 (300x600)	3−25Y + 2−16Y	3−25Y + 2−16Y	10Y @ 100 C/C (2 LEGGED)	3−25Y	3−25Y + 2−16Y	10Y @ 150 C/C (2 LEGGED)

02



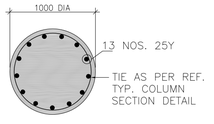
COLUMN MKD−C1 (ABOVE 16.60M ELEVATION)

SECTION 6−6



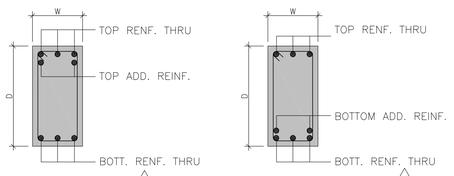
COLUMN MKD−C1 (BELOW 16.6M ELEVATION)

SECTION 6A−6A



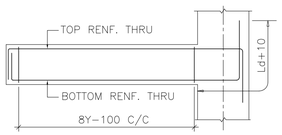
COLUMN MKD−C1

SECTION 5−5



SECTION 3−3 02

SECTION 4−4 02



TYP. BEAM DETAIL FOR PLATFORM AT 28.00M

COLUMN REINF. DETAIL 02

LVL.	DIA OF COLUMN	COL. R/F. (REF. SECTION)
EL(+) 16.600M TO EL(+) 30.00M	600	SECTION 6−6
EL(−) 0.500M TO EL(+) 16.600M	600	SECTION 6A−6A
EL(−) 2.500M TO EL(−) 0.500M	1000	SECTION 5−5

BHEL−PROJECT ENGINEERING MANAGEMENT(CIVIL)

THIS DRAWING MARKED(✓) IS RELEASED FOR
☑ COMMENTS/APPROVAL
☐ PLANNING/INFORMATION
☐ CONSTRUCTION

STAMP ALL PREVIOUS REVISION AS SUPERSEDED

ISSUED BY	
NAME	SOMNATH MISHRA
SIGNATURE	−sd−
DATE	20 APRIL 2019

DATE	ALTD	CHD	APPD	REV.	DESCRIPTION
20.04.19	YSR	VS	SM	02	REVISED AS PER CUSTOMER'S COMMENTS IN LR.NO.SE/C/TP/E2/ENNORE SEZ/PF/T. OH TANK./D. 1202/18 DT. 03.11.2018 AND MKD. AS 02
05.09.18	ALTD YSR	CHD VS	APPD SM	01	REVISED AS PER CUSTOMER'S COMMENTS IN LR.NO.SE/C/TP/E3/ENNORE SEZ/PF/T. OH TANK./D. 1220 /18 DT. 07.2018 AND MKD. AS 01

PROJECT	2x660 MW ENNORE SEZ COAL BASED STPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER:	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
OWNER'S CONSULTANT:	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH−II, NEW DELHI
JOB NO.	412
STATUS	CONTRACT
DRG./REF. NO. (INTERNAL)	
PRINT SCALE IN METRE	0.0 0.5 1.0 0.5 0.3 0.4 0.5
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI
TITLE:	SERVICE WATER OVERHEAD TANK GA & RC DETAILS OF FOUNDATION AND TANK SUPPORTING STRUCTURE

DEPT CODE	DRAWING	NAME	SIGN	DATE
DESN		YSR	−sd−	23.05.18
	C	VS	−sd−	23.05.18
	CHD	SM	−sd−	23.05.18
	APPD	AN	−sd−	23.05.18

MPL	ELEC	C&I	MSE	MAX	DEPT.	SCALE −
					SIGN	
					DATE	

DRAWING NO. PE−DG−412−671−C008

SHEET 1 OF 1 REV. 02

FORMAT SIZE A0