



شركة السمرا لتوليد الكهرباء
Samra Electric Power Co. [SEPCO]

Tender 14/2024 Electromechanical Works

Supply, Erection, Testing, and Commissioning of Pumping System,
Piping Network, and its accessories.

Appendix A: Tender Drawings and Layouts

February 2024

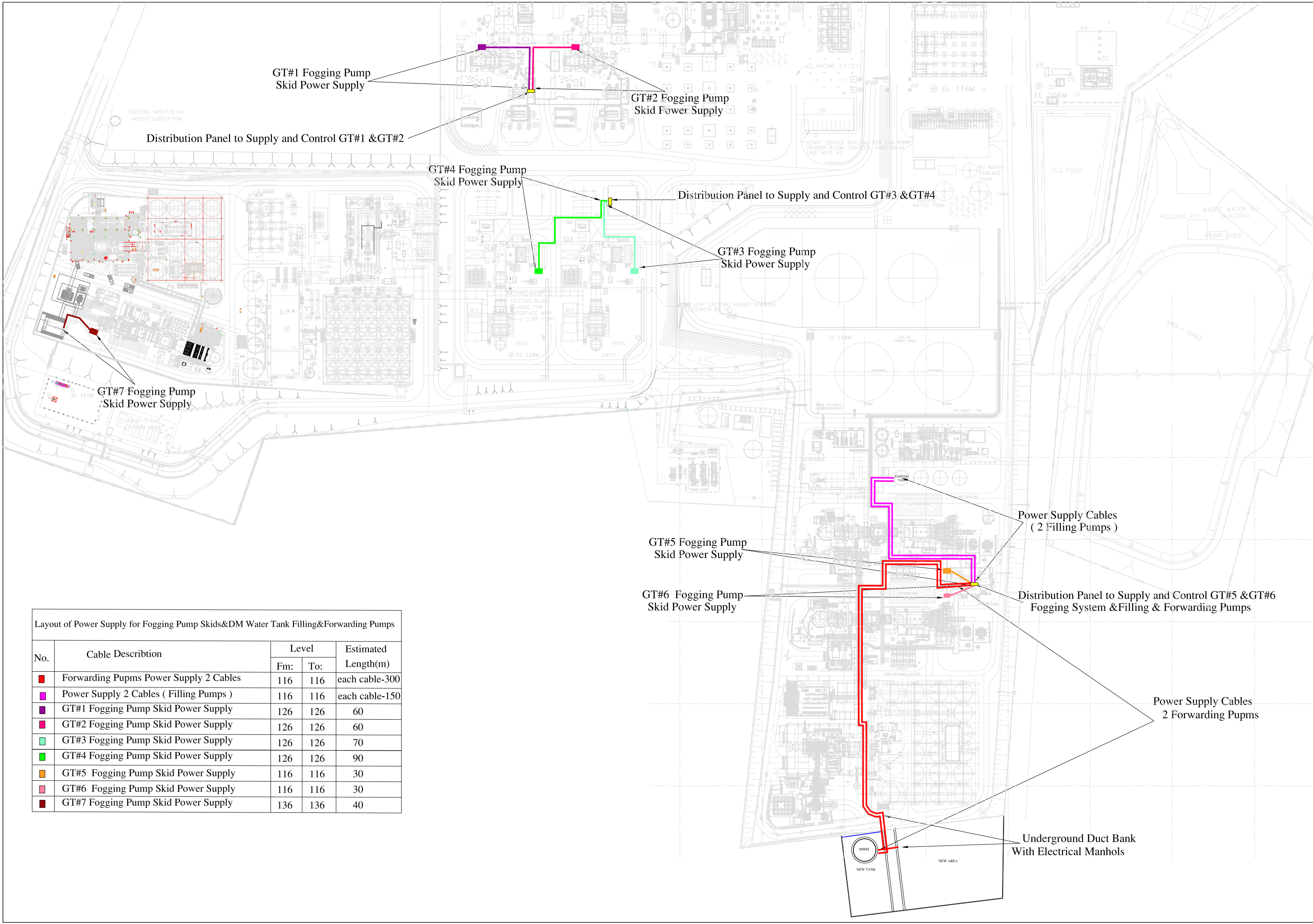


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1 Layout of Fogging System and New DM Water Tank Pipe Network

2 Layout of Power Supply for Fogging Pump Skids and New DM Water Tank Filling and Forwarding Pumps.



GT#1 Fogging Pump Skid Power Supply

GT#2 Fogging Pump Skid Power Supply

Distribution Panel to Supply and Control GT#1 & GT#2

GT#4 Fogging Pump Skid Power Supply

Distribution Panel to Supply and Control GT#3 & GT#4

GT#3 Fogging Pump Skid Power Supply

GT#7 Fogging Pump Skid Power Supply

GT#5 Fogging Pump Skid Power Supply

GT#6 Fogging Pump Skid Power Supply

Power Supply Cables (2 Filling Pumps)

Distribution Panel to Supply and Control GT#5 & GT#6 Fogging System & Filling & Forwarding Pumps

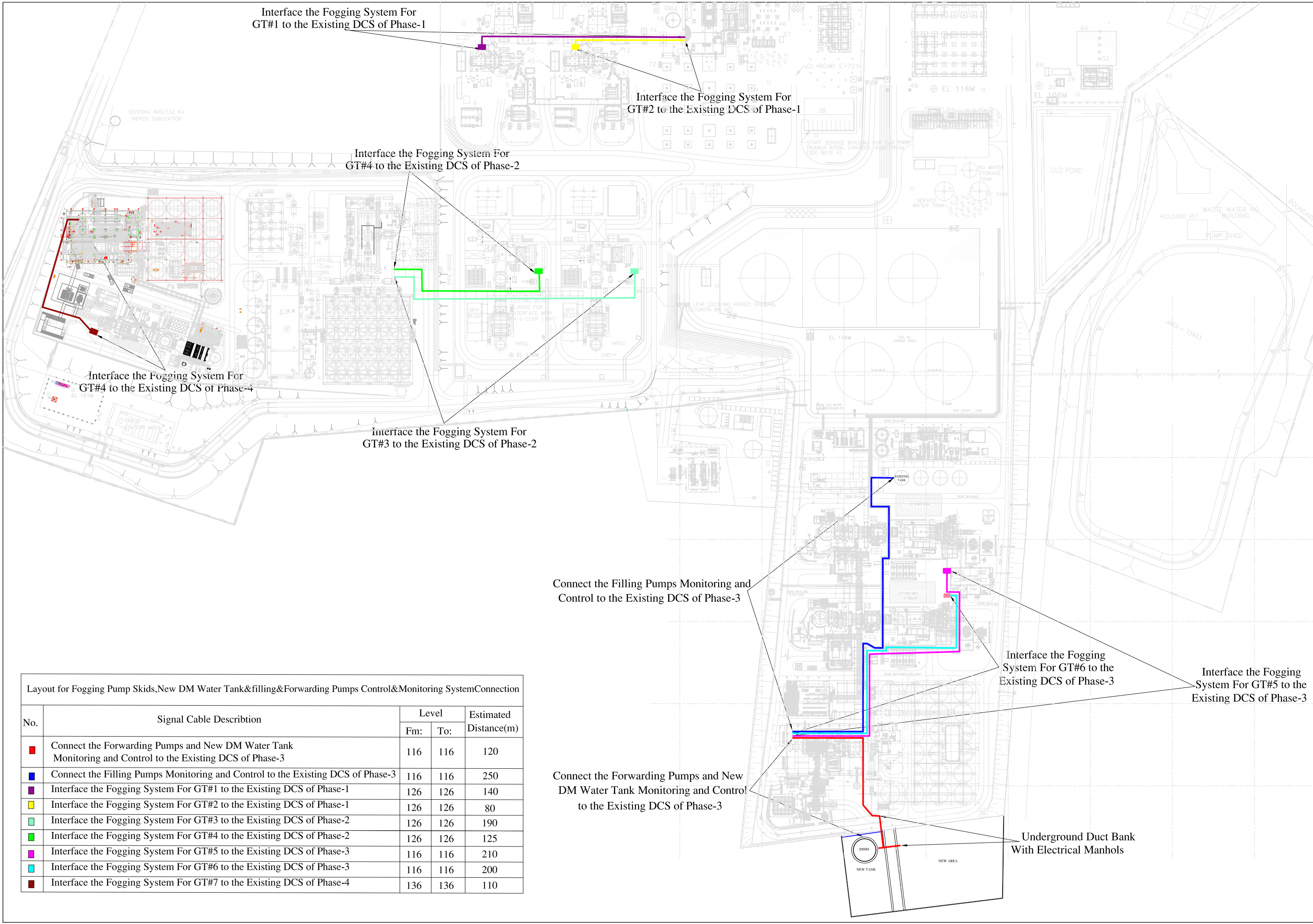
Power Supply Cables 2 Forwarding Pumps

Underground Duct Bank With Electrical Manholes

Layout of Power Supply for Fogging Pump Skids & DM Water Tank Filling & Forwarding Pumps

No.	Cable Description	Level		Estimated Length(m)
		Fm:	To:	
1	Forwarding Pumps Power Supply 2 Cables	116	116	each cable-300
2	Power Supply 2 Cables (Filling Pumps)	116	116	each cable-150
3	GT#1 Fogging Pump Skid Power Supply	126	126	60
4	GT#2 Fogging Pump Skid Power Supply	126	126	60
5	GT#3 Fogging Pump Skid Power Supply	126	126	70
6	GT#4 Fogging Pump Skid Power Supply	126	126	90
7	GT#5 Fogging Pump Skid Power Supply	116	116	30
8	GT#6 Fogging Pump Skid Power Supply	116	116	30
9	GT#7 Fogging Pump Skid Power Supply	136	136	40

3 Layout of Fogging Pump Skids, New DM water Tank, and Filling and Forwarding Pumps Control and Monitoring System Connection.



Interface the Fogging System For GT#1 to the Existing DCS of Phase-1

Interface the Fogging System For GT#2 to the Existing DCS of Phase-1

Interface the Fogging System For GT#4 to the Existing DCS of Phase-2

Interface the Fogging System For GT#4 to the Existing DCS of Phase-4

Interface the Fogging System For GT#3 to the Existing DCS of Phase-2

Connect the Filling Pumps Monitoring and Control to the Existing DCS of Phase-3

Interface the Fogging System For GT#6 to the Existing DCS of Phase-3

Interface the Fogging System For GT#5 to the Existing DCS of Phase-3

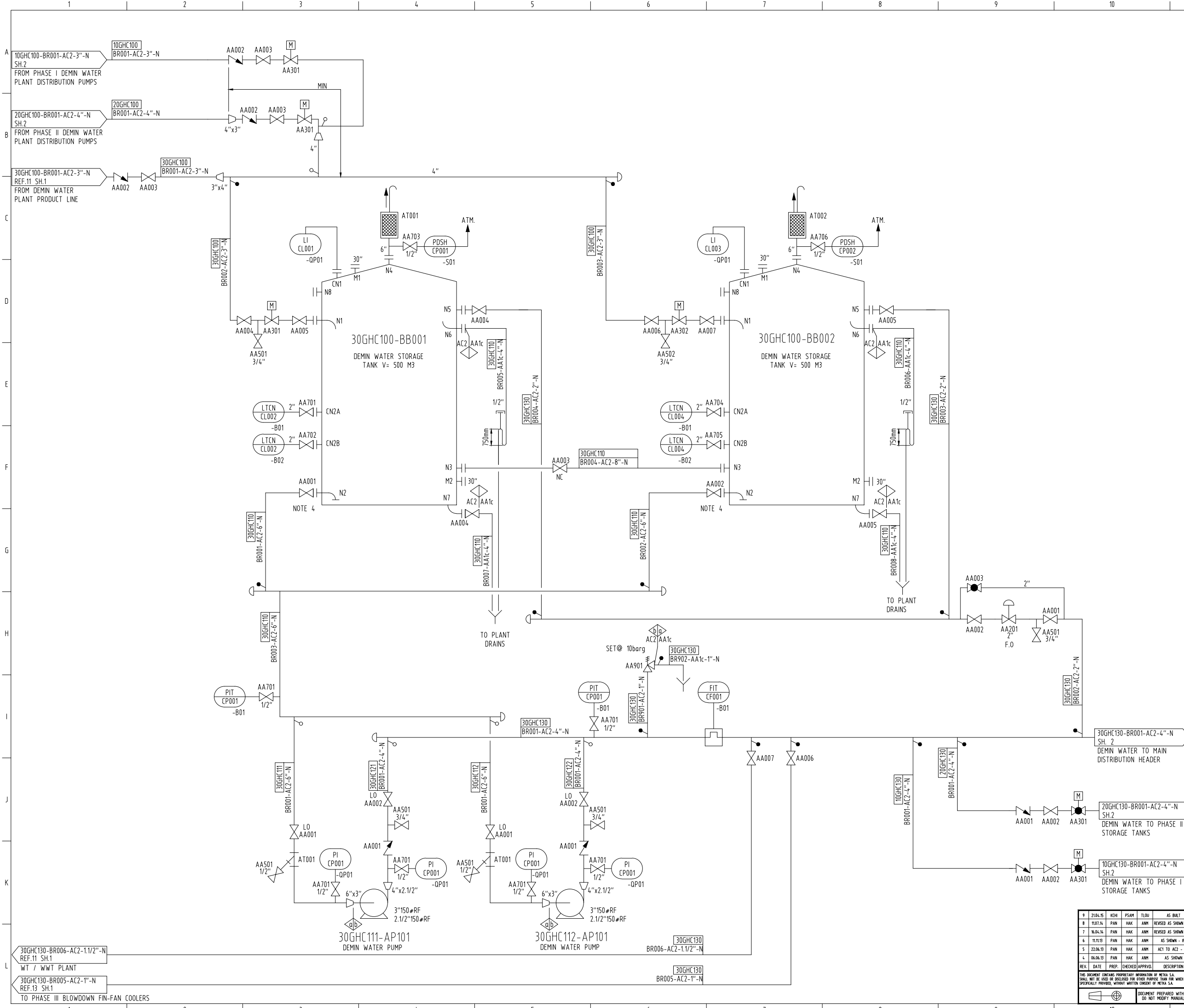
Connect the Forwarding Pumps and New DM Water Tank Monitoring and Control to the Existing DCS of Phase-3

Underground Duct Bank With Electrical Manholes

Layout for Fogging Pump Skids, New DM Water Tank & Filling & Forwarding Pumps Control & Monitoring System Connection

No.	Signal Cable Description	Level		Estimated Distance(m)
		Fm:	To:	
1	Connect the Forwarding Pumps and New DM Water Tank Monitoring and Control to the Existing DCS of Phase-3	116	116	120
2	Connect the Filling Pumps Monitoring and Control to the Existing DCS of Phase-3	116	116	250
3	Interface the Fogging System For GT#1 to the Existing DCS of Phase-1	126	126	140
4	Interface the Fogging System For GT#2 to the Existing DCS of Phase-1	126	126	80
5	Interface the Fogging System For GT#3 to the Existing DCS of Phase-2	126	126	190
6	Interface the Fogging System For GT#4 to the Existing DCS of Phase-2	126	126	125
7	Interface the Fogging System For GT#5 to the Existing DCS of Phase-3	116	116	210
8	Interface the Fogging System For GT#6 to the Existing DCS of Phase-3	116	116	200
9	Interface the Fogging System For GT#7 to the Existing DCS of Phase-4	136	136	110

4 Existing Phase III DM Water System PI&D Drawing.



REFERENCE DRAWINGS

1	PID SYMBOLOLOGY	111205-30-YDS-MDD-PS-001
2	PID DEMIN WATER DISTRIBUTION	373-F26312-K0601-05
3	PID CONDENSATE	111205-30-GHC-MDD-MML-002
4	PID CYCLE MAKEUP AND STORAGE	136043-CFWF-M2346
5	PID PHASE I DM AND RO WATER STORAGE TANKS	373-F26312-K0607-09
6	PID DEMIN WATER AND SERVICE WATER DISTRIBUTION	252008-ME-PID-0081
7	PID SAMPLING	111205-30-QU-MDD-MML-001
8	PID CHEMICAL DOSING	111205-30-QC-MDD-MML-001
9
10	PID AUX COOLING WATER	111205-30-PG-MDD-MML-001
11	PID WATER TREATMENT PLANT INTERCONNECTING	111205-30-GD-MDD-PS-001
12	PID STEAM AND CONDENSATE	111205-30-MAG-MDD-SPX-001
13	PID PROCESS DRAIN COOLING	111205-30-GNK-MDD-PS-001
14	PID VACUUM CLEANING SYSTEM	111205-30-MAG-GDD-SPS-001
15	PID CLEAN DRAIN FLASH TANK	111205-30-LCM-MDD-MML-001

NOTES

1. DELETED.
2. AFTER INTERCONNECTION WITH PHASE III OPEN CYCLE, VALVE V-703 SHALL BE CLOSED DISCONTINUING DEMIN WATER SUPPLY FROM PHASE I.
3. DETAILS FOR PH I PH II & PH III SYSTEMS CAN BE FOUND IN THE RELATIVE REFERENCES 2, 4, 5, & 6
4. WITH LIMIT SWITCH.
5. OPEN MANUAL VALVE 30SDA21AA001 BEFORE STARTING ACC CLEANING SYSTEM

LEGEND

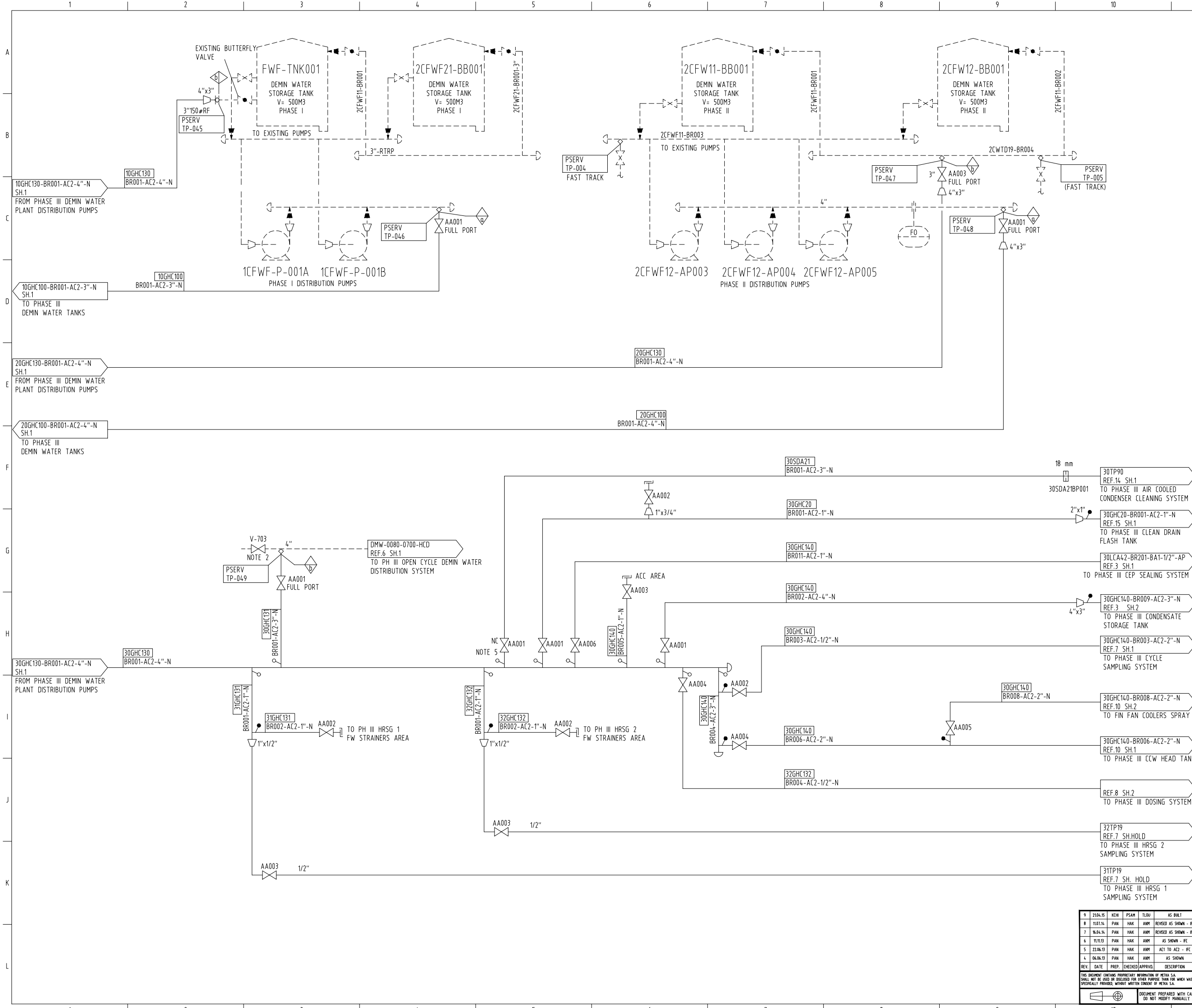
———	PH III ADD-ON
----	PH I, II & III EXISTING AND FAST TRACK

DESIGN CONDITIONS	
BRANCH	DESIGN CONDITIONS
	PRESSURE TEMP.
	barg °C
a	3.5 60
b	10 60

9	2104.05	KEH	PSAM	TLOU	AS BUILT	CLIENT			
8	1107.14	PAN	HAK	ANM	REVISED AS SHOWN - IFC	CONTRACTOR			
7	16.04.14	PAN	HAK	ANM	REVISED AS SHOWN - IFC	CONTRACTOR			
6	11.11.13	PAN	HAK	ANM	AS SHOWN - IFC	CONTRACTOR			
5	22.06.13	PAN	HAK	ANM	ACT TO ACT - IFC	CONTRACTOR			
4	06.06.13	PAN	HAK	ANM	AS SHOWN	CONTRACTOR			
REV.	DATE	PREP.	CHECKED	APPROV.	DESCRIPTION	DESIGN			
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DOCUMENT PREPARED WITH CAD SO NOT MODIFY MANUALLY							DESIGN		
							KKS DWG No.:		111205-30-GHC-MDD-PS-001
							MET DWG No.:		SCALE : NTS
							SEPCO DWG No.:		SHEET : 1 OF 2

30GHC130-BR006-AC2-1.1/2"-N
REF.11 SH.1
WT / WWT PLANT

30GHC130-BR005-AC2-1"-N
REF.13 SH.1
TO PHASE III BLOWDOWN FIN-FAN COOLERS



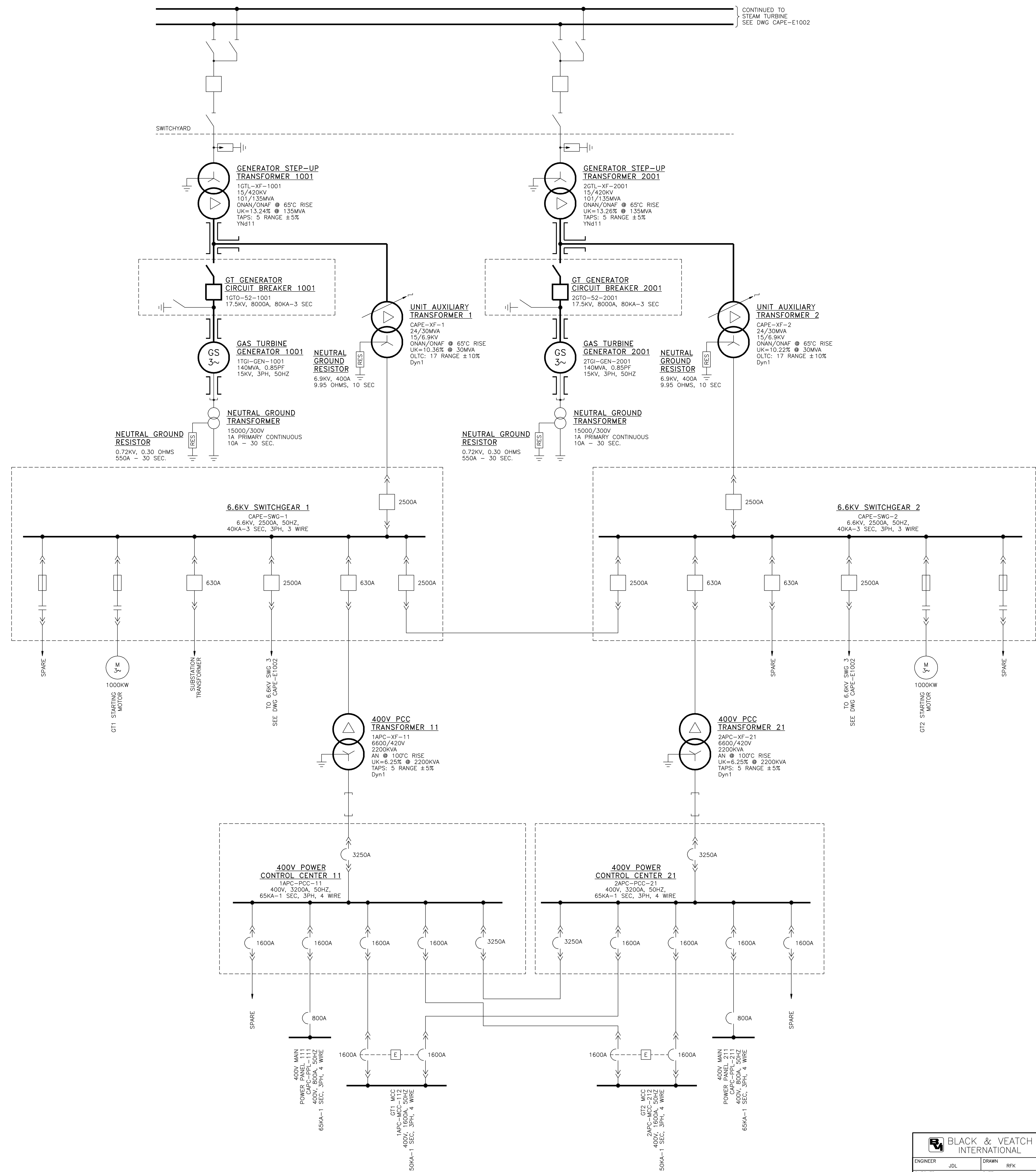
REFERENCE DRAWINGS		
1	PID SYMBOLOLOGY	111205-30-YDS-MDD-PS-001
2	PID DEMIN WATER DISTRIBUTION	373-F26312-K0601-05
3	PID CONDENSATE	111205-30-GHC-MDD-MML-002
4	PID CYCLE MAKEUP AND STORAGE	136043-CFWF-M2346
5	PID PHASE I DM AND RO WATER STORAGE TANKS	373-F26312-K0607-09
6	PID DEMIN WATER AND SERVICE WATER DISTRIBUTION	252008-ME-PID-0081
7	PID SAMPLING	111205-30-OU-MDD-MML-001
8	PID CHEMICAL DOSING	111205-30-OC-MDD-MML-001
9
10	PID AUX COOLING WATER	111205-30-PG-MDD-MML-001
11	PID WATER TREATMENT PLANT INTERCONNECTING	111205-30-GD-MDD-PS-001
12	PID STEAM AND CONDENSATE	111205-30-MAG-MDD-SPX-001
13	PID PROCESS DRAIN COOLING	111205-30-GNK-MDD-PS-001
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- NOTES**
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 4. WITH LIMIT SWITCH.
 5. OPEN MANUAL VALVE 30SDA21AA001 BEFORE STARTING ACC CLEANING SYSTEM

9	2104.05	KEH	PSAM	AS BUILT	CLIENT	
8	1107.14	PAN	HAK	REVISED AS SHOWN - EC	CONTRACTOR	
7	16.04.14	PAN	HAK	REVISED AS SHOWN - EC		SAMRA POWER STATION PHASE III ADD-ON COMBINED CYCLE PROJECT PIPING AND INSTRUMENT DIAGRAM DEMINERALIZED WATER STORAGE AND DISTRIBUTION
6	11.11.13	PAN	HAK	AS SHOWN - EC		
5	22.06.13	PAN	HAK	ACT TO ACT - EC		KKS DWG No.: 111205-30-GHC-MDD-PS-001 DWG No.: MET DWG No.: SEPCO DWG No.:
4	04.06.13	PAN	HAK	AS SHOWN		
REV.	DATE	PREP.	CHECKED	APPROVD.	DESCRIPTION	SHEET : 2 OF 2

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5 GT1 and GT2 Single Line Diagram (SLD)



CONTINUED TO
STEAM TURBINE
SEE DWG CAPE-E1002

NOTES	
1.	EQUIPMENT DESIGN AMBIENT = 40°C.

REFERENCE DRAWINGS	
DRAWING NO.	TITLE
CAAA-E0001	ELECTRICAL GRAPHIC SYMBOLS
1TG-E1021	ONE LINE DIAGRAM - PROTECTION AND METERING GAS TURBINE GENERATOR 1001
2TG-E1022	ONE LINE DIAGRAM - PROTECTION AND METERING GAS TURBINE GENERATOR 2001
CAPE-E1011	ONE LINE DIAGRAM 6.6KV SWITCHGEAR 1
CAPE-E1012	ONE LINE DIAGRAM 6.6KV SWITCHGEAR 2
1APC-E1101	ONE LINE DIAGRAM 400V PCC 11
2APC-E1102	ONE LINE DIAGRAM 400V PCC 21

CAPE-E1001 15.06s (LMS Tech)
 1=1
 04/20/05 11:39:40

NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN/DES/CHK/PDE/APP
3	30-JUN-05	ISSUED FOR OWNER REVIEW: KH-BGH-690-F, L4	GHCJDLDCBGGDVM
2	25-FEB-05	REISSUED FOR OWNER REVIEW - GENERAL REVISION	AWCJDLDCBGGDVM
1	29-OCT-04	ISSUED FOR OWNER REVIEW - GENERAL REVISION	SLBJDLDCBGGDVM
0	24-SEP-04	ISSUED FOR OWNER REVIEW	RFKJDLDCBGGDVM
5	28-APR-06	CONFORMED TO CONSTRUCTION RECORDS-NIC	RMSRMSMDKMDVM
4	20-JUL-05	ISSUED FOR CONSTRUCTION: KH-BGH-1401-F, L3	GHCJDLDCBGGDVM

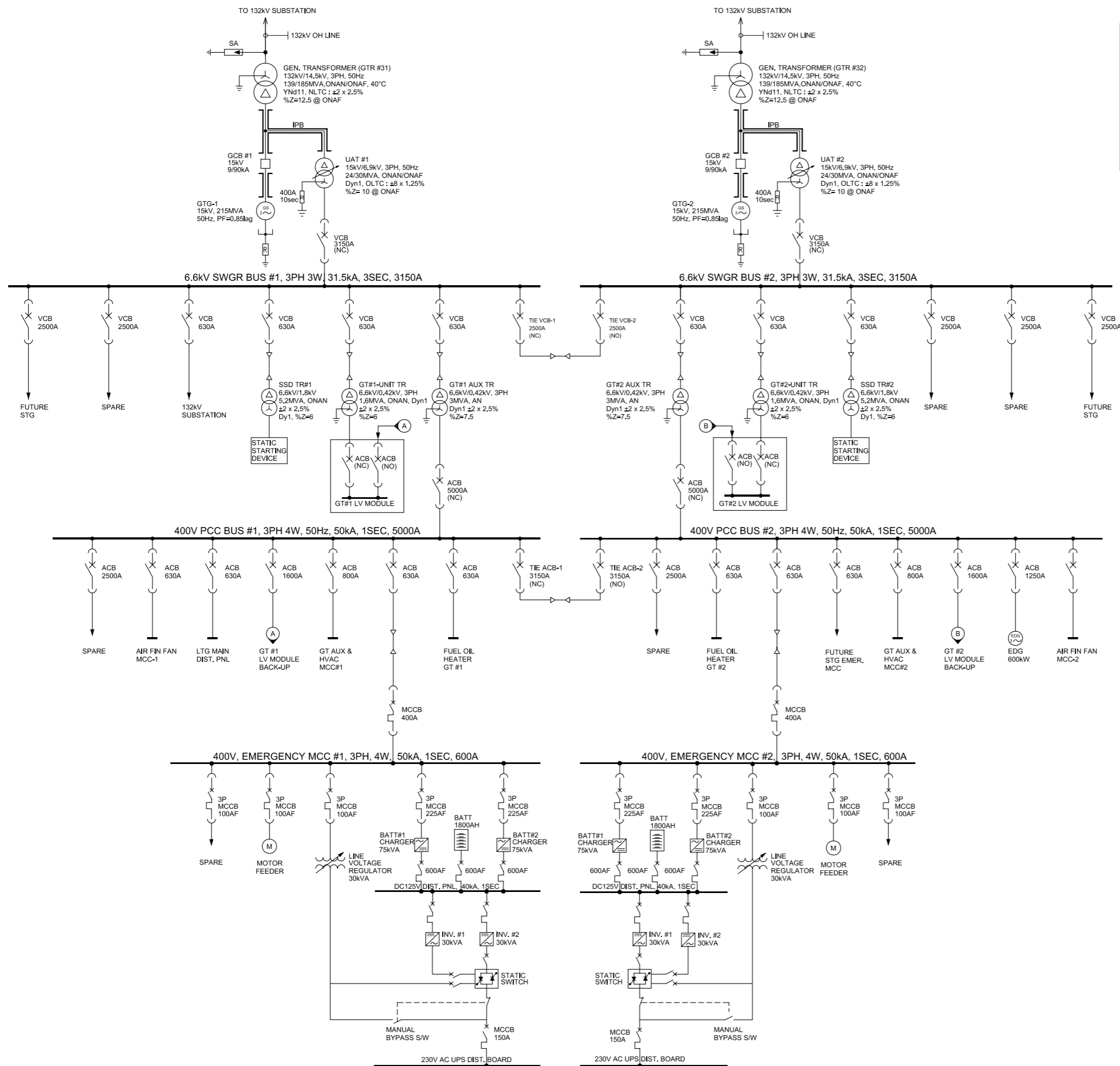
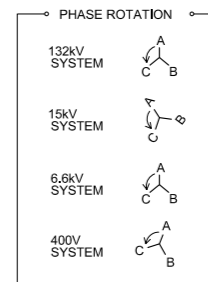
ENGINEER: JDL	DRAWN: RPK	GAMA Endustri Tesileri Imalat ve Montaj A.S. PROJECT: SAMRA THERMAL POWER STATION COMBINED CYCLE PLANT PROJECT - JORDAN	
CHECKED: DGG	DATE: 24-SEP-04	PROJECT DRAWING NUMBER: 136043-CAPE-E1001	REV: 5
		ONE LINE DIAGRAM SIMPLE CYCLE OVERALL	SEPCO CONTRACT NUMBER: 33/2003 SEPCO DRAWING NUMBER: 2-6-1-0E-

6 GT3 and GT4 Single Line Diagram (SLD)

7 GT5 and GT6 Single Line Diagram (SLD)

NOTES

1. FOR SYMBOL & LEGEND, REFER TO DWG No. 252008-EL-DSL-0001
2. MOTORS RETED MORE THAN 190kW SHALL BE FED FROM 6.6kV SWITCHGEAR
3. FOR ALSTOM'S SLD, REFER TO DWG No. HTCT124654
4. GENERATOR OUTPUT RATING SHOWN IS BASED ON STANDARD AMBIENT CONDITIONS



FOR CONSTRUCTION

△					
△					
△					
△					
△	10.03.15	ISSUE FOR CONSTRUCTION	S.W.R	Y.S.H	Y.LL
REV.	DATE	DESCRIPTION	DRN.	CHK.	RW.

PROJECT NAME

**SAMRA POWER STATION PHASE III
SIMPLE CYCLE PROJECT**

**SAMRA ELECTRIC POWER GENERATING CO.
(SEPGCO)**

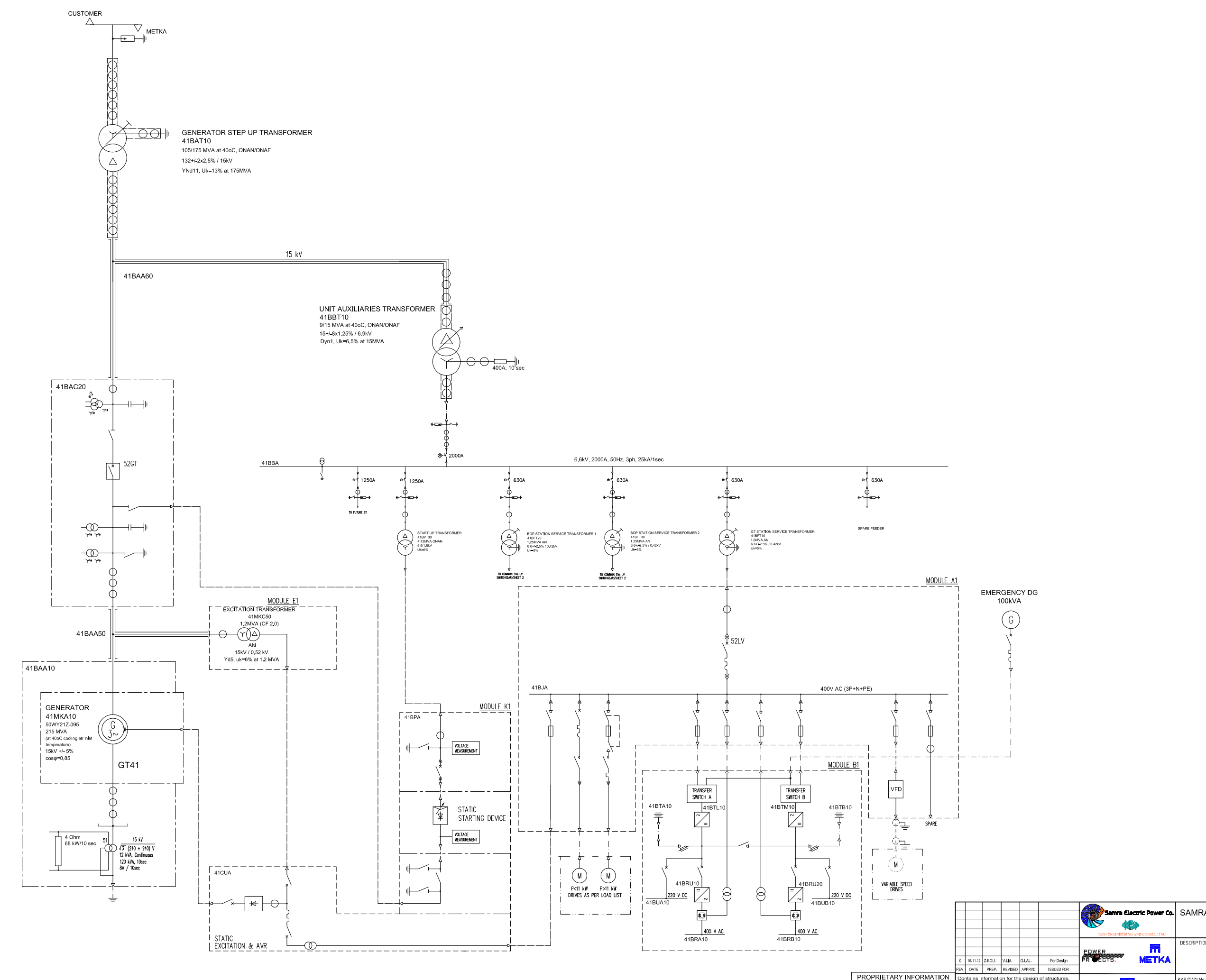
THE KULJIAN CORPORATION
ENGINEERS ARCHITECTS CONSULTANTS
PHILADELPHIA, PA., U.S.A.

Hanwha Engineering & Construction

TITLE	KEY SINGLE LINE DIAGRAM	DRAWN BY	S.W.R	DATE	10.03.15
		CHECKED BY	Y.S.H	DATE	10.03.15
		REVIEWED BY	Y.LL	DATE	10.03.15
CONTRACTOR JOB NO.	SCALE	APPROVED BY	J.H.S	DATE	10.03.15
DRAWING NO.	252008-EL-DSL-0002	SIZE	A1	REV.	0

8 GT7 Single Line Diagram (SLD)

11206-41-YTU-EDU-MET-001



GENERATOR STEP UP TRANSFORMER
41BAT10
 105/175 MVA at 40°C, ONAN/ONAF
 132+/-2x2.5% / 15kV
 YNd11, Uk=13% at 175MVA

UNIT AUXILIARIES TRANSFORMER
41BBT10
 9/15 MVA at 40°C, ONAN/ONAF
 15+/-8x1.25% / 6.9kV
 Dyn1, Uk=6.5% at 15MVA

GENERATOR
41MKA10
 50WY21Z-095
 215 MVA
 (at 40°C cooling air inlet temperature)
 15kV +/-5%
 cosφ=0.85

GT41

4 Ohm
 68 kW/10 sec
 15 kV
 4T (240 + 240) V
 12 kVA, Continuous
 120 kVA, 10sec
 8A / 10sec

EXCITATION TRANSFORMER
41MKC50
 1.2MVA (CF 2,0)
 AN
 15kV / 0.52 kV
 Yd5, uk=6% at 1.2 MVA

START UP TRANSFORMER
41BPT30
 4.75MVA ONAN
 6.6/1.8kV
 Uk=7%

BOP STATION SERVICE TRANSFORMER 1
41BPT30
 1.25MVA AN
 6.6+/-2.5% / 0.42kV
 Uk=7%

BOP STATION SERVICE TRANSFORMER 2
41BPT30
 1.25MVA AN
 6.6+/-2.5% / 0.42kV
 Uk=7%

GT STATION SERVICE TRANSFORMER
41BTT10
 1.00MVA AN
 6.6+/-2.5% / 0.42kV
 Uk=6%

		SAMRA THERMAL POWER STATION FAST TRACK SINGLE CYCLE POWER PLANT	
DESCRIPTION Single Line Diagram MV and GT Auxiliaries		KKS DWG.No. 111206-41-YTU-EDU-MET-001 DIN Axx	
METKA		SCALE	
SEPCO DWG.No.		SHEET 1 OF 2	

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0	16.11.12	EZKOL	VJAA	GLJAL	For Design
REV.	DATE	PREP.	REVISED	APPROV.	ISSUED FOR
VERIFICATOR	NO. 0	HOUSUP.	VERIFER	NO. 0	DO NOT MODIFY MANUALLY

0 100 200 mm