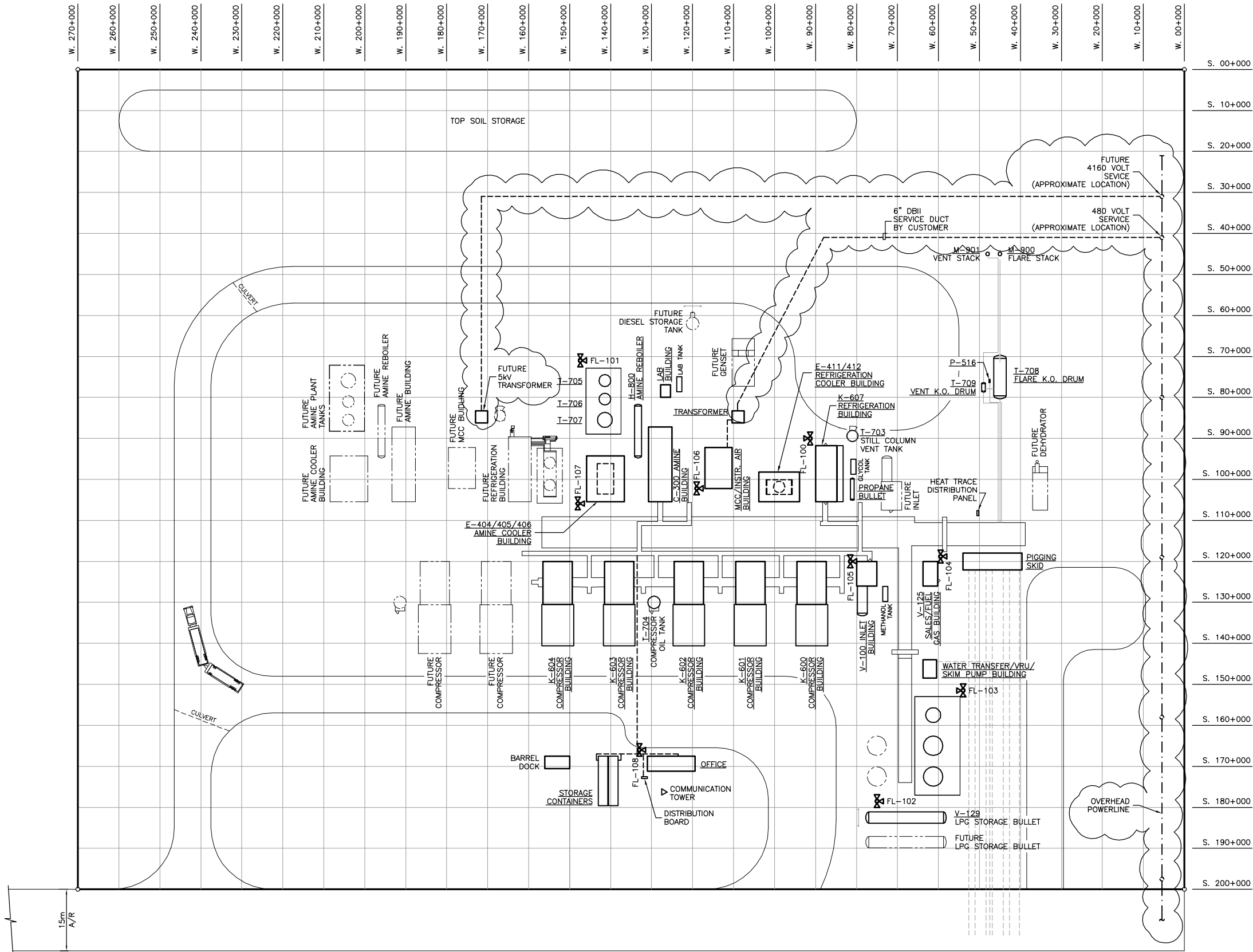




NO.	REVISION	PROJECT	DSN	DRN	CHK'D	APP'D	DATE
0	ISSUED FOR APPROVAL	53951	BGO	FC	BGO		06.03.28

PERMIT STAMP:

BOWER DAMBERGER ROLSETH
ENGINEERING LTD.
MAY 16 2006
POST CONSTRUCTION
REVISIONS

- GENERAL NOTES:
- "POST CONSTRUCTION DRAWINGS" ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWER DAMBERGER ROLSETH ENGINEERING LTD. BY THE OWNER'S FIELD SUPERVISORS AND/OR FIELD CONTRACTORS. ANY CHANGES NOT DOCUMENTED WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE THE DRAWING MAY NOT BE AN ACCURATE REPRESENTATION OF THE CONSTRUCTED FACILITY.
 - PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR EXCAVATION IT SHALL BE THE RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE TO VERIFY THE LOCATION AND STATUS OF ANY PIPING, ELECTRICAL, EQUIPMENT OR BUILDINGS.
 - ANY REVISIONS MADE TO EXISTING EQUIPMENT, PIPING OR ELECTRICAL ON A FACILITY AND REQUESTED BY BOWER DAMBERGER ROLSETH ENGINEERING LTD. IS ONLY SHOWN AS A REPRESENTATION OF WHAT EXISTS AND MUST BE VERIFIED BY THE OWNER.

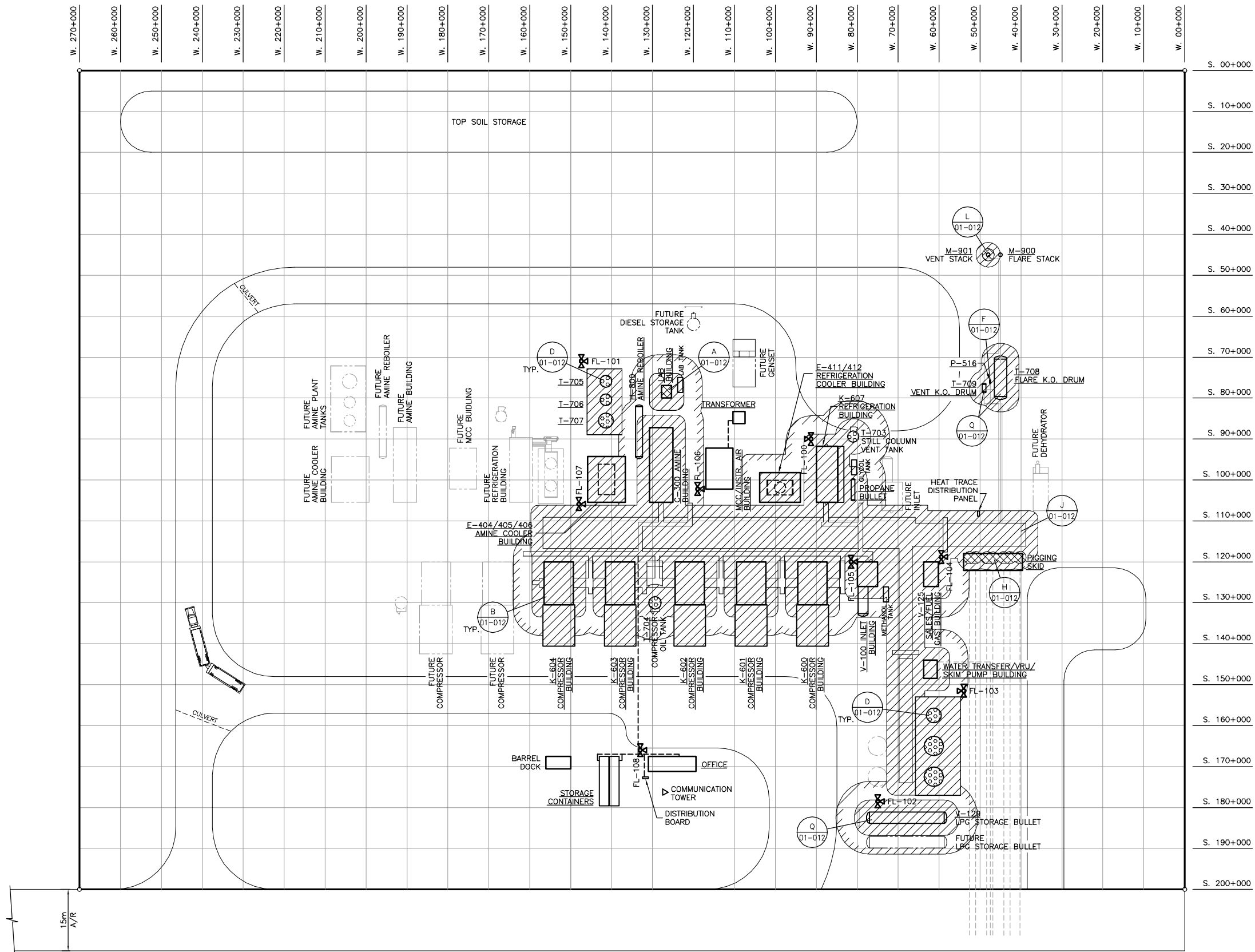
DESIGN	BY	DATE
DRAWN	BGO	06.02.23
CHK'D	FC	06.02.23
APP'D		
L.S.D.	09-06-61-05 W5M	

bdr
Bower Damberger Rolseth
Engineering Ltd.

FORT ENERGY CORP.

THUNDER GAS PLANT
ELECTRICAL EQUIPMENT LAYOUT/
PLOT PLAN

SCALE	DRAWING NUMBER	REV
1 : 500	D-53951-E-01-001	0



0	ISSUED FOR APPROVAL		53951	BGO	FC	BGO			06.03.28
NO.	REVISION		PROJECT	DSN	DRN	CHK'D	APP'D		DATE

**BOWER DAMBERGER ROLSETH
ENGINEERING LTD.**

MAY 16 2006

**POST CONSTRUCTION
REVISIONS**

1. "POST CONSTRUCTION DRAWINGS" ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWER DAMBERGER ROLSETH ENGINEERING LTD. BY THE OWNER'S FIELD SUPERVISORS AND OR HIRED CONTRACTORS. ANY CHANGES NOT DOCUMENTED WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE THE DRAWING MAY NOT BE AN ACCURATE REPRESENTATION OF THE CONSTRUCTED FACILITY.

2. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR EXCAVATION IT SHALL BE THE RESPONSIBILITY OF THE OWNERS REPRESENTATIVE TO VERIFY THE LOCATION AND STATUS OF ANY PIPING, ELECTRICAL, EQUIPMENT OR BUILDINGS.
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DESIGN	BGO	06.02.23
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CHK'D		
APP'D.		
L.S.D.	09-06-61-05 W5M	

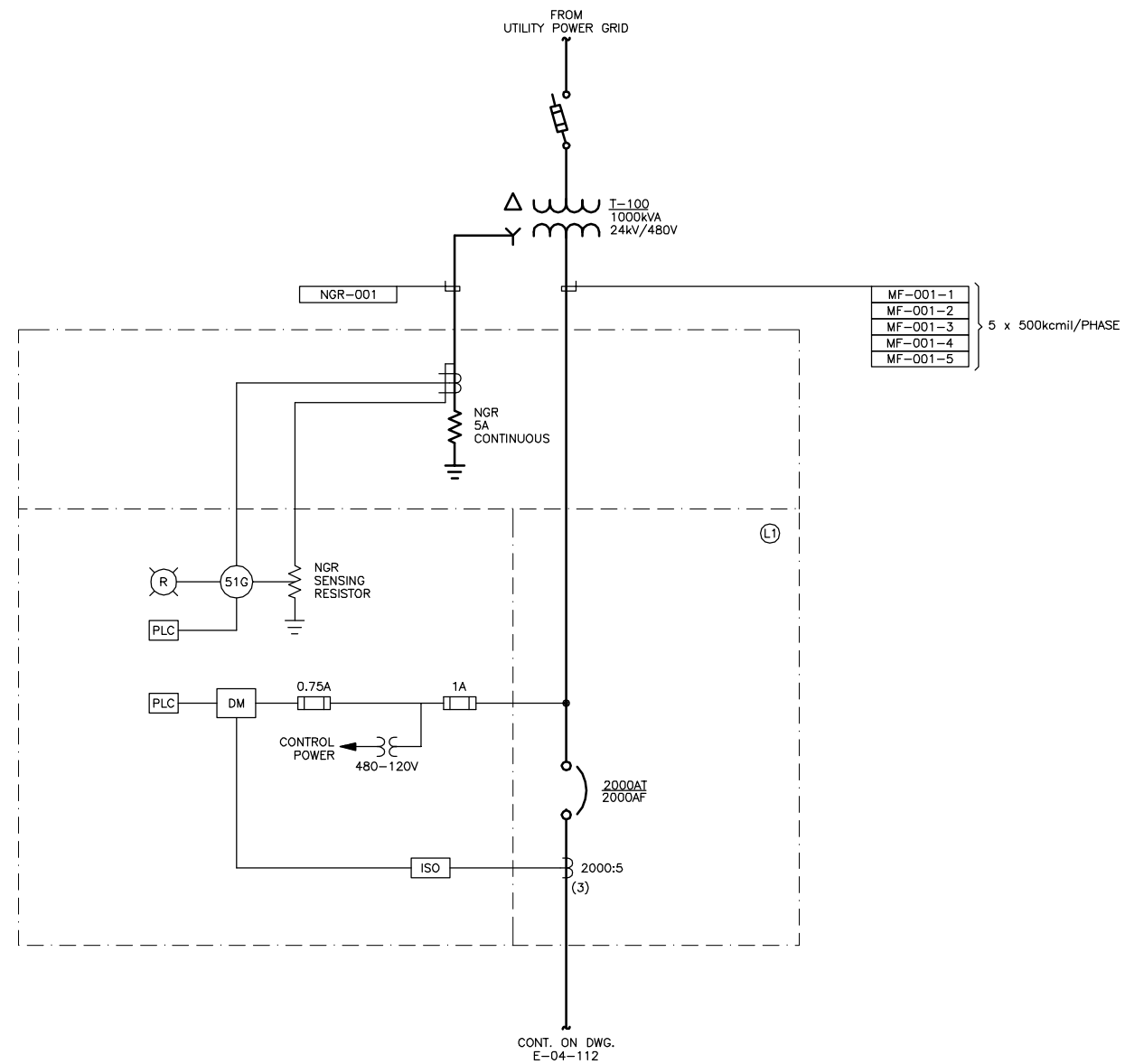
bdr
Bower Damberger Rolseth
Engineering Ltd.

THUNDER GAS PLANT
AREA CLASSIFICATION

SCALE	DRAWING NUMBER	REV
1 : 500	D-53951-E-01-011	0

LEGEND

ISO	CT SHORTING TEST/ISOLATION SWITCH
51G	GROUND FAULT DETECTION RELAY
DM	DIGITAL METER IQ DP-4000
DC INT	MCC DC FIELD INTERFACE
M	MOTOR CONTROL
BLDG I/O	AB 1794 SERIES FLEX I/O LOCATED IN FIELD
MCC PLC	AB CONTROL LOGIX 5000 LOCATED IN MCC
HMI	LOCAL MCC USER INTERFACE (INCLUDES RUN, STOP AND FAULT LIGHTS)



NOTE: MAIN BREAKER TO HAVE L.S.I. ADJUSTMENTS.
THE INSTANTANEOUS MUST BE CAPABLE OF BEING TURNED OF.

0	ISSUED FOR APPROVAL	53951	BGO	FC	BGO		06.03.28	
NO.	REVISION	PROJECT	DSN	DRN	CHK'D	APP'D	DATE	

PERMIT STAMP:

**BOWER DAMBERGER ROLSETH
ENGINEERING LTD.**

MAY 16 2006

**POST CONSTRUCTION
REVISIONS**

GENERAL NOTES:

1. "POST CONSTRUCTION DRAWINGS" ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWEN DAMBERGER ROELSTEH ENGINEERING LTD. BY THE OWNER'S FIELD SUPERVISORS AND OR HIRED INSPECTORS. ANY CHANGES TO DESIGN WHICH WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE THE DRAWING MAY NOT BE AN ACCURATE REPRESENTATION OF THE CONSTRUCTED FACILITY.
2. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND OR EXCAVATION IT SHALL BE THE RESPONSIBILITY OF THE BUSINESS REPRESENTATIVE TO VERIFY THE LOCATION AND STATUS OF ANY PIPING, ELECTRICAL, EQUIPMENT OR BUILDINGS.
3. ANY REVISIONS MADE TO EXISTING EQUIPMENT, PIPING OR ELECTRICAL ON A FACILITY NOT DESIGNED BY BOWEN DAMBERGER ROELSTEH ENGINEERING LTD. SHALL BE OF WHAT EXISTS AND MUST BE VERIFIED BY THE OWNER.

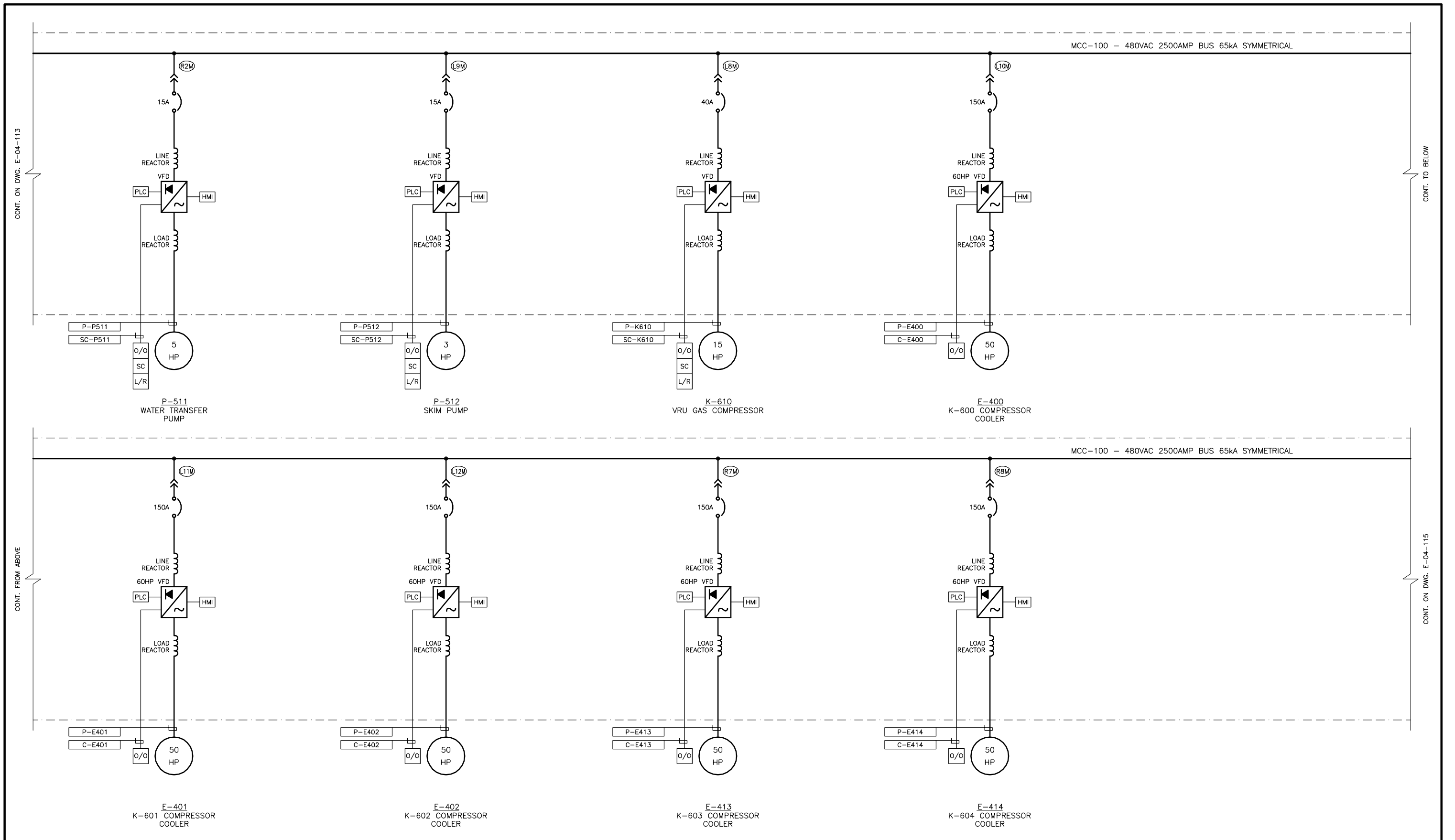
	BY	DATE
DESIGN	BGO	06.01.27
DRAWN	FC	06.01.27
CHK'D		
APP'D.		
L.S.D.	09-06-61-05	W5M



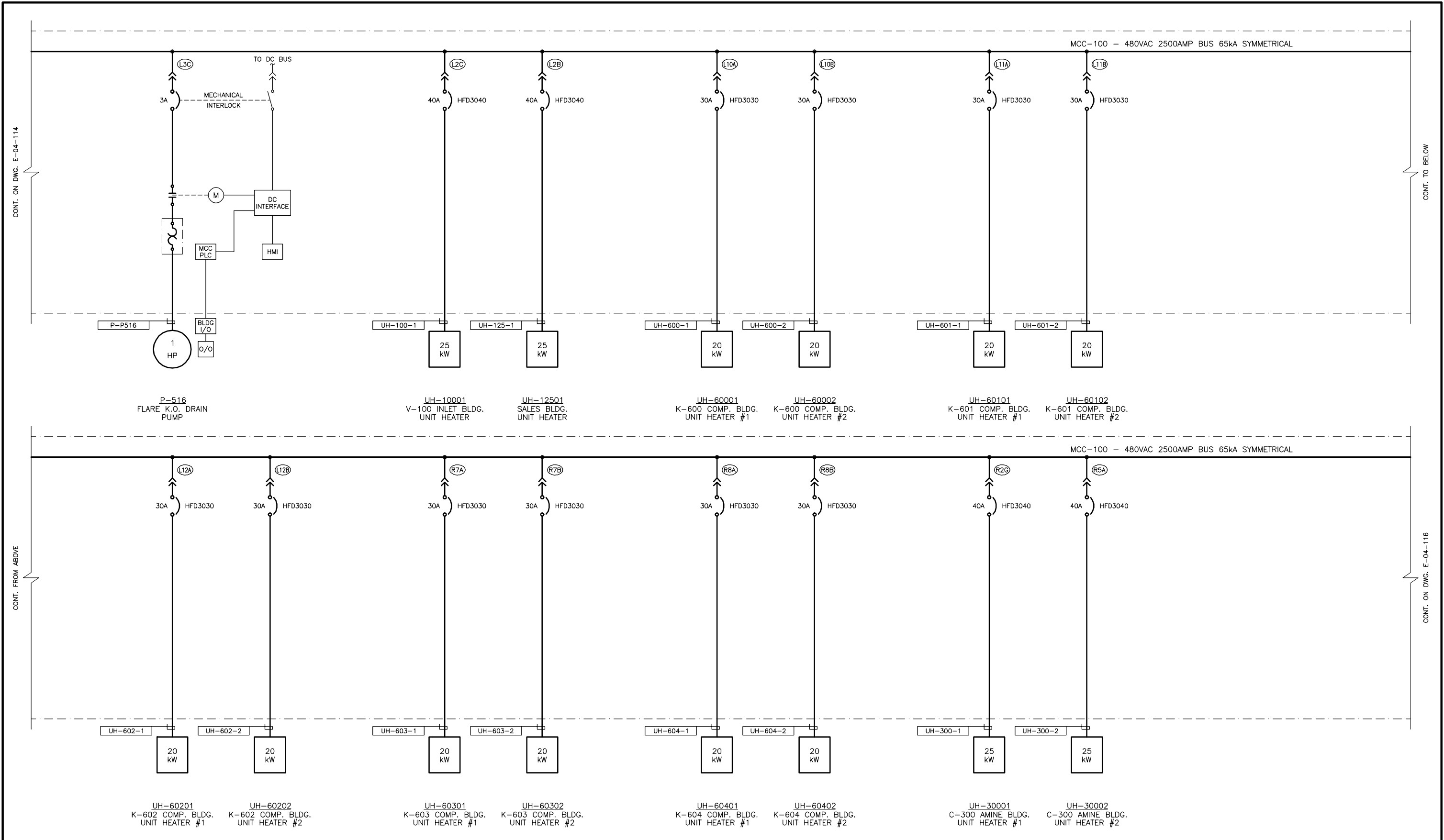
FORT ENERGY CORP.

THUNDER GAS PLANT
480VAC MCC-100
SINGLE LINE DIAGRAM

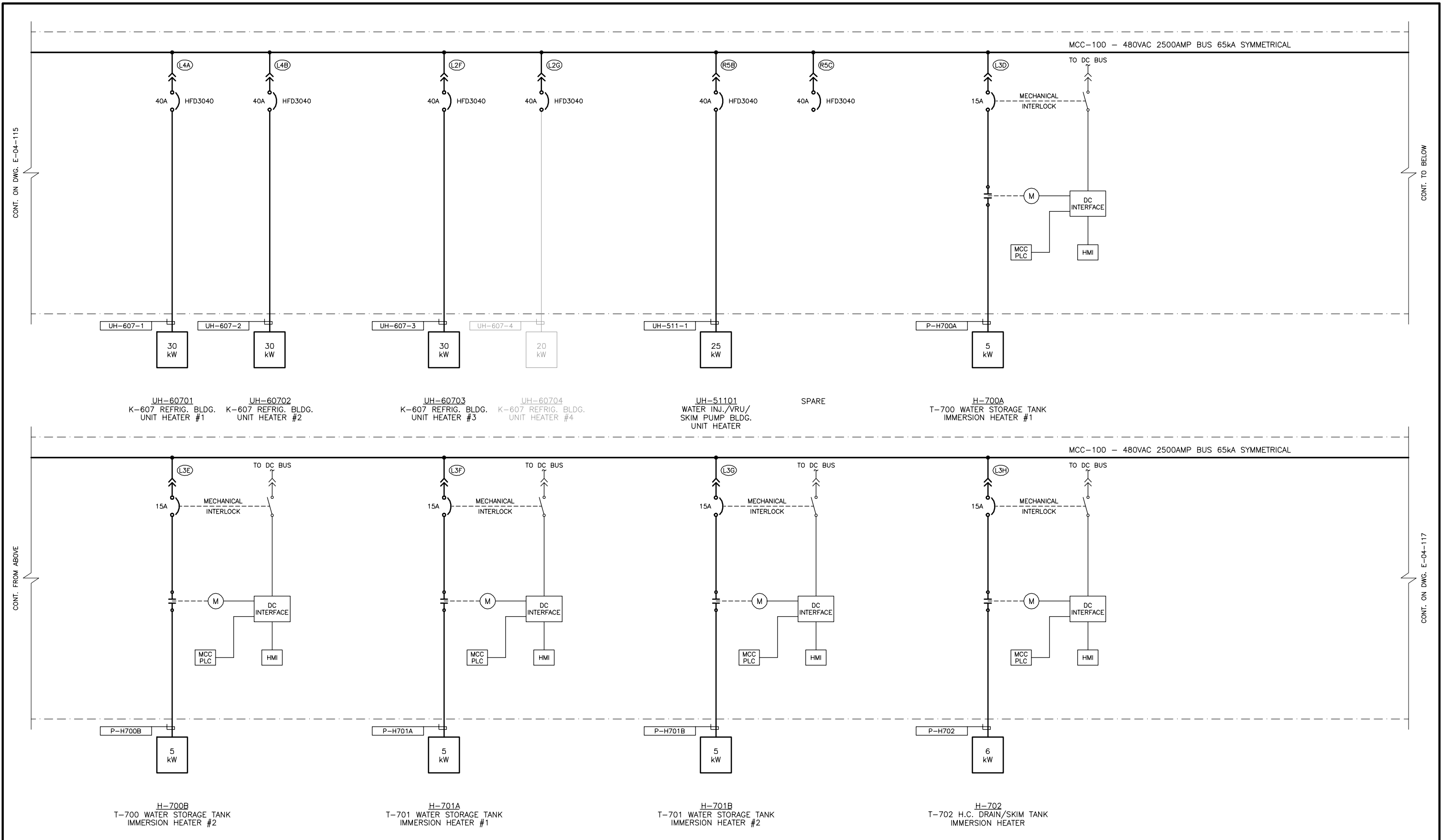
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N/A	D-53951-E-04-111	0



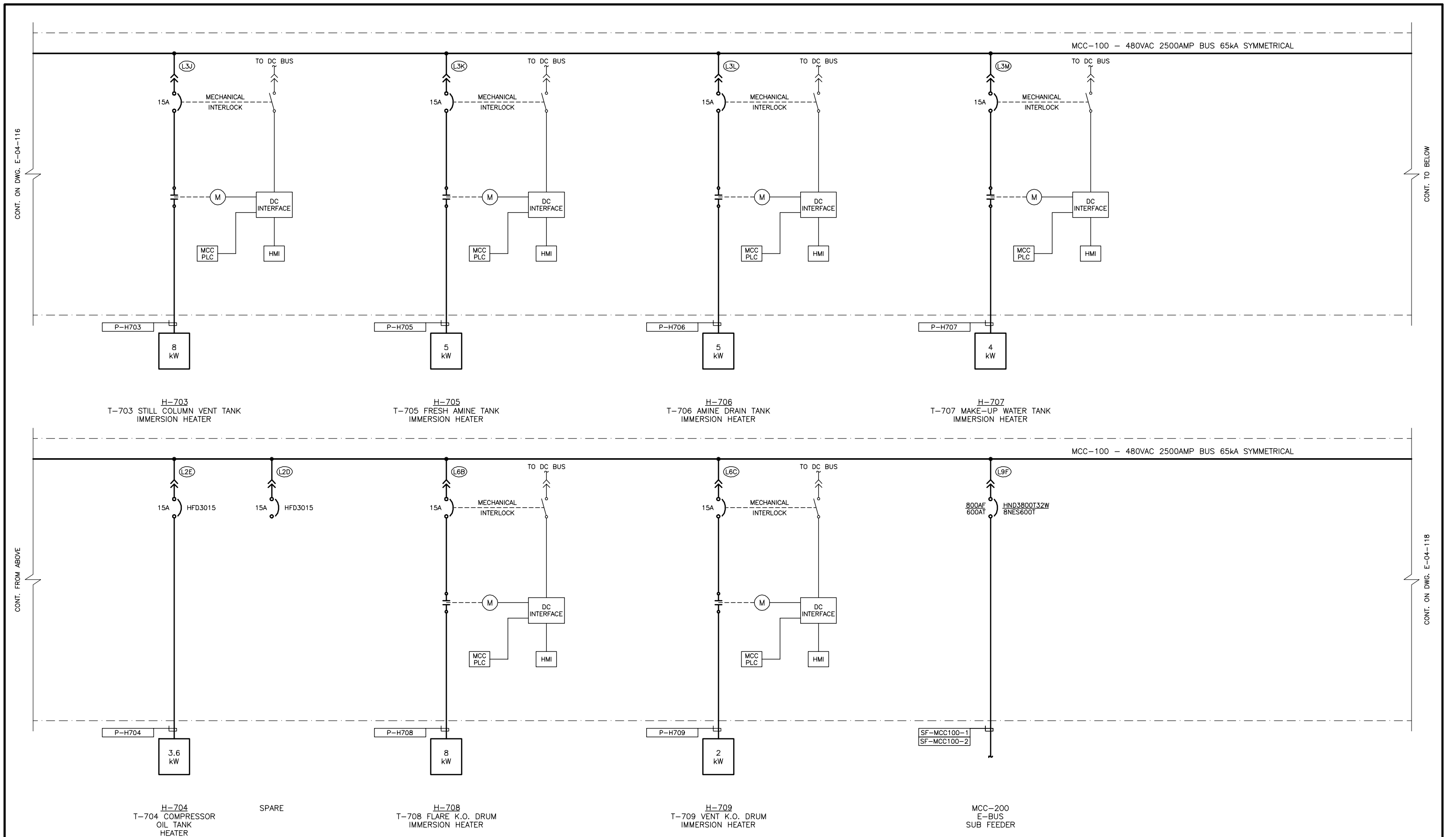
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BY	DATE																																		
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REVISION										PROJECT DSN DRN CHK'D APP'D DATE																									



										PERMIT STAMP:													



											PERMIT STAMP:		BOWER DAMBERGER ROLSETH ENGINEERING LTD. MAY 16 2006 POST CONSTRUCTION REVISIONS	GENERAL NOTES: 1. "POST CONSTRUCTION DRAWINGS" ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWER DAMBERGER ROLSETH ENGINEERING LTD. BY THE OWNER'S FIELD SUPERVISORS AND/OR FIELD CONTRACTORS. ANY CHANGES NOT DOCUMENTED WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE THE DRAWING, MAY, BUT BE AN INCOMPLETE REPRESENTATION OF THE CONSTRUCTED FACILITY. 2. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR EXCAVATION IT SHALL BE THE RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE TO VERIFY THE LOCATION AND STATUS OF ANY PIPING, ELECTRICAL, EQUIPMENT OR BUILDINGS. 3. ANY REVISIONS MADE TO EXISTING EQUIPMENT, PIPING OR ELECTRICAL ON A FACILITY NOT DESIGNED BY BDR, ENG. LTD. IS ONLY SHOWN AS A REPRESENTATION OF WHAT EXISTS AND MUST BE VERIFIED BY THE OWNER.	DESIGN BY DATE BGO 06.01.27 DRAWN FC 06.01.27 CHK'D APP'D L.S.D. 09-06-61-05 W5M	 Bower Damberger Rolseth Engineering Ltd.	FORT ENERGY CORP. THUNDER GAS PLANT 480VAC MCC-100 SINGLE LINE DIAGRAM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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NO.	REVISION	PROJECT	DSN	DRN	CHK'D	APP'D	DATE

PERMIT STAMP:

**BOWER DAMBERGER ROLSETH
ENGINEERING LTD.**

MAY 16 2006

**POST CONSTRUCTION
REVISIONS**

GENERAL NOTES:

1. "POST CONSTRUCTION DRAWINGS" ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWEN DAWBERGER ROSETH ENGINEERING LTD. BY THE OWNER'S FIELD REPRESENTATIVE TO THE CONTRACTORS. ANY CHANGES NOT DOCUMENTED WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE DRAWING MAY NOT BE AN ACCURATE REPRESENTATION OF THE CONSTRUCTED FACILITY.
2. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR EXCAVATION IT SHALL BE THE RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE TO VERIFY THE LOCATION AND STATUS OF ANY PIPING, ELECTRICAL, EQUIPMENT OR BUILDINGS.
3. ANY REVISIONS MADE TO EXISTING EQUIPMENT, PIPING OR ELECTRICAL OF A FACILITY NOT DESIGNED BY B.D.R. ENG. LTD. IS ONLY SHOWN AS A REPRESENTATION OF WHAT EXISTS AND MUST BE VERIFIED BY THE OWNER.

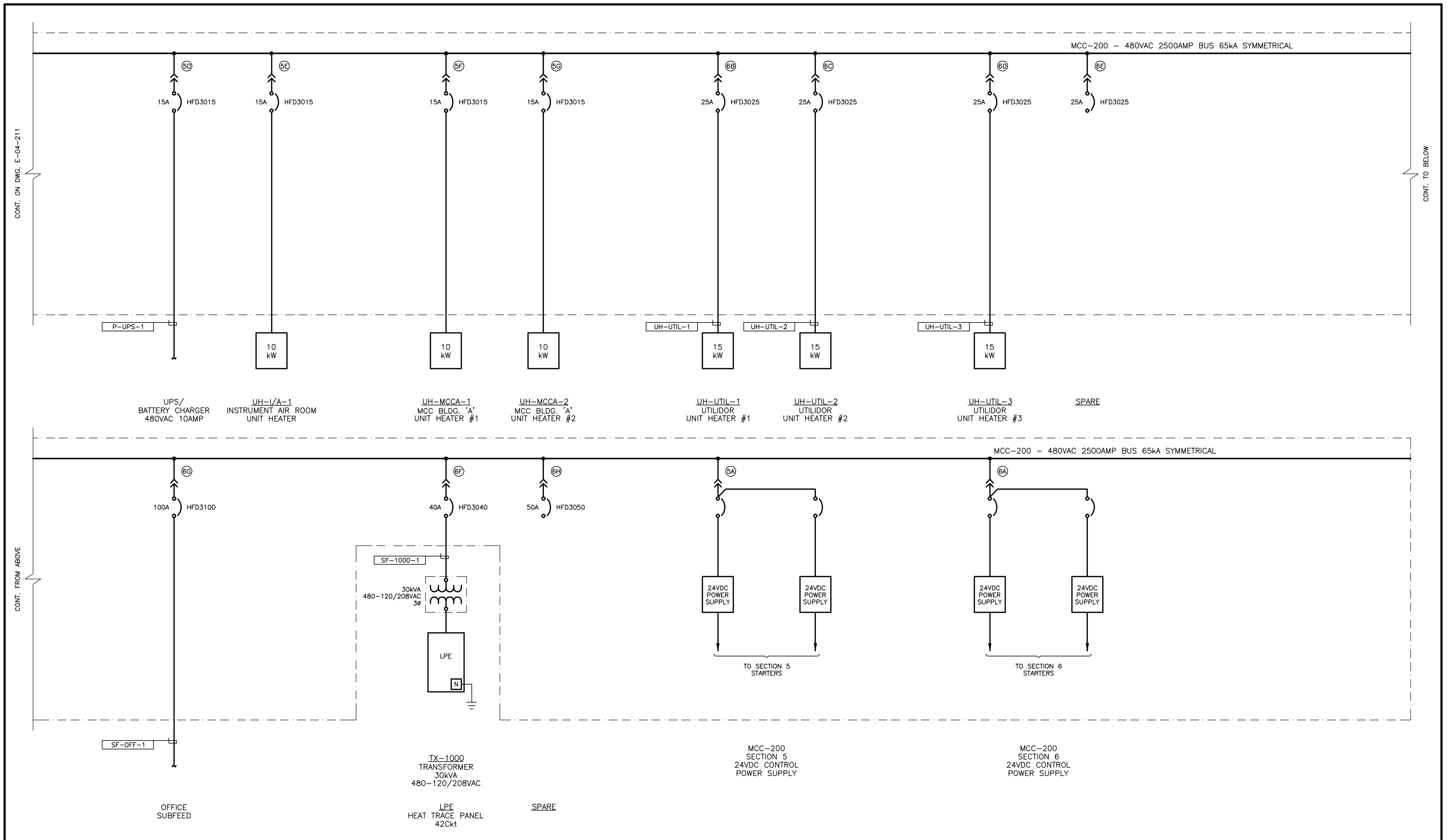
	BY	DATE
DESIGN	BGO	06.01.27
DRAWN	FC	06.01.27
CHK'D		
APP'D.		
L.S.D.	09-06-61-05 W5M	



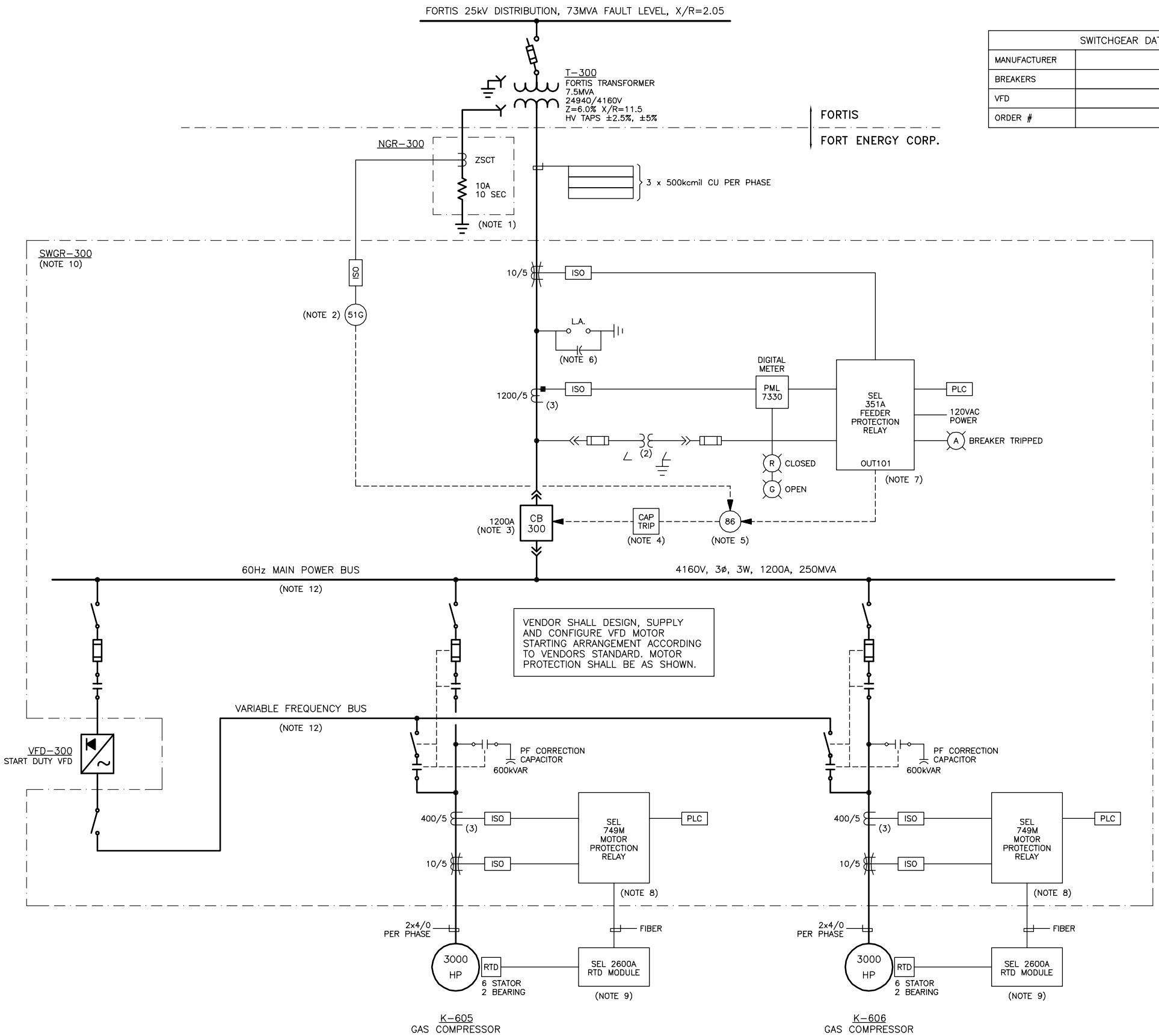
FORT ENERGY CORP.

THUNDER GAS PLANT
480VAC MCC-100
SINGLE LINE DIAGRAM

SCALE	DRAWING NUMBER	REV
N/A	D-53951-E-04-117	0



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SWITCHGEAR DATA	
MANUFACTURER	
BREAKERS	
VFD	
ORDER #	

LEGEND	
	DRAWOUT STABS
	GROUND (EARTH)
	OPEN DELTA/OPEN DELTA CORNER GROUND PT CONNECTION
	CURRENT TRANSFORMER (NUMBER INDICATES QUANTITY)
	ZERO SEQUENCE CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER (NUMBER INDICATES QUANTITY)
	CT SHORTING TEST/ISOLATION SWITCH MOUNTED ON DOOR, ABB FT-1 OR EQUAL
	WITHDRAWABLE VACUUM CIRCUIT BREAKER
	FUSE
	CAPACITOR
	LIGHTING ARRESTOR AND SURGE CAPACITOR
	DIGITAL METER
	CAPACITOR TRIP

PROTECTIVE RELAY DEVICE NUMBER:	
51G	GROUND FAULT DETECTION RELAY
52	POWER CIRCUIT BREAKER
86	LOCKOUT RELAY

- NOTES:
- THE NEUTRAL GROUNDING RESISTOR COMPLETE WITH ZERO ZERO SEQUENCE CT SHALL BE SUPPLIED BY THE 5KV SWITCHGEAR MANUFACTURER.
 - 51G GROUND FAULT DETECTION RELAY SHALL BE IPC TYPE MOFR-20-ZB.
 - MAIN BREAKER CONTROL POWER IS 120 VAC OBTAINED FROM BREAKER PTs OR A SEPARATE CONTROL POWER TRANSFORMER.
 - CAPACITOR TRIP OR OTHER ENERGY STORAGE DEVICE SHALL BE PROVIDED TO ENSURE BREAKER TRIP AND SEL CONTROL POWER IS AVAILABLE FOR AT LEAST 2 SECONDS AFTER A POWER FAILURE.
 - ALL SEL TRIPS SHALL LOCK OUT VIA THE 86 RELAY.
 - LIGHTNING ARRESTERS FOR MAIN BREAKER SHALL BE STATION CLASS.
 - SEL 351A RELAY SHALL BE HORIZONTAL PANEL MOUNT SUPPLIED WITH LCD AND TARGETS.
 - SEL 49A MOTOR PROTECTION RELAY SHALL BE SUPPLIED c/w MODBUS OR DEVICENET COMMUNICATIONS CARD (PROTOCOL TO BE DETERMINED LATER).
 - SEL 2600A RDT MODULE TO BE LOCATED AT MOTOR AND SUPPLIED BY THE 5 kV SWITCHGEAR MANUFACTURER.
 - VFD STARTING ARRANGEMENT SHOWN ON THIS DRAWING IS FOR REFERENCE ONLY. VENDOR SHALL DESIGN AND SUPPLY VFD WITH MOTOR STARTING ARRANGEMENT TO VENDOR'S STANDARD.
 - MOTOR IS PROTECTED BY VFD DURING STARTING.
 - 60Hz BUS AND VARIABLE FREQUENCY BUS SHALL HAVE PROVISION TO EXTEND FOR A THIRD 3000 HP MOTOR.

NO.	REVISION	PROJECT	DSN	DRN	CHK'D	APP'D	DATE
1	ISSUED FOR EQUIPMENT BID	64202	WDS	FC	WDS		06.03.31
0	ISSUED FOR APPROVAL	64202	WDS	FC	WDS		06.02.24

PERMIT STAMP:

- GENERAL NOTES:
- "AS-BUILT" CONSTRUCTION DRAWINGS ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWER DAMBERGER ROLSETH ENGINEERING LTD. BY THE OWNER'S FIELD SUPERVISORS AND/OR VENDOR CONTRACTORS. ANY CHANGES NOT DOCUMENTED WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE THE DRAWING MAY NOT BE AN ACCURATE REPRESENTATION OF THE CONSTRUCTED FACILITY.
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DESIGN	BY	DATE
WDS	WDS	06.02.24
DRAWN	FC	06.02.24
CHK'D		
APP'D		
L.S.D.	09-06-61-05	W5M



FORT ENERGY CORP.		
THUNDER GAS PLANT 4160V VFD-300 & SWGR-300 SINGLE LINE DIAGRAM		
SCALE	DRAWING NUMBER	REV
N/A	D-53951-E-04-311	1