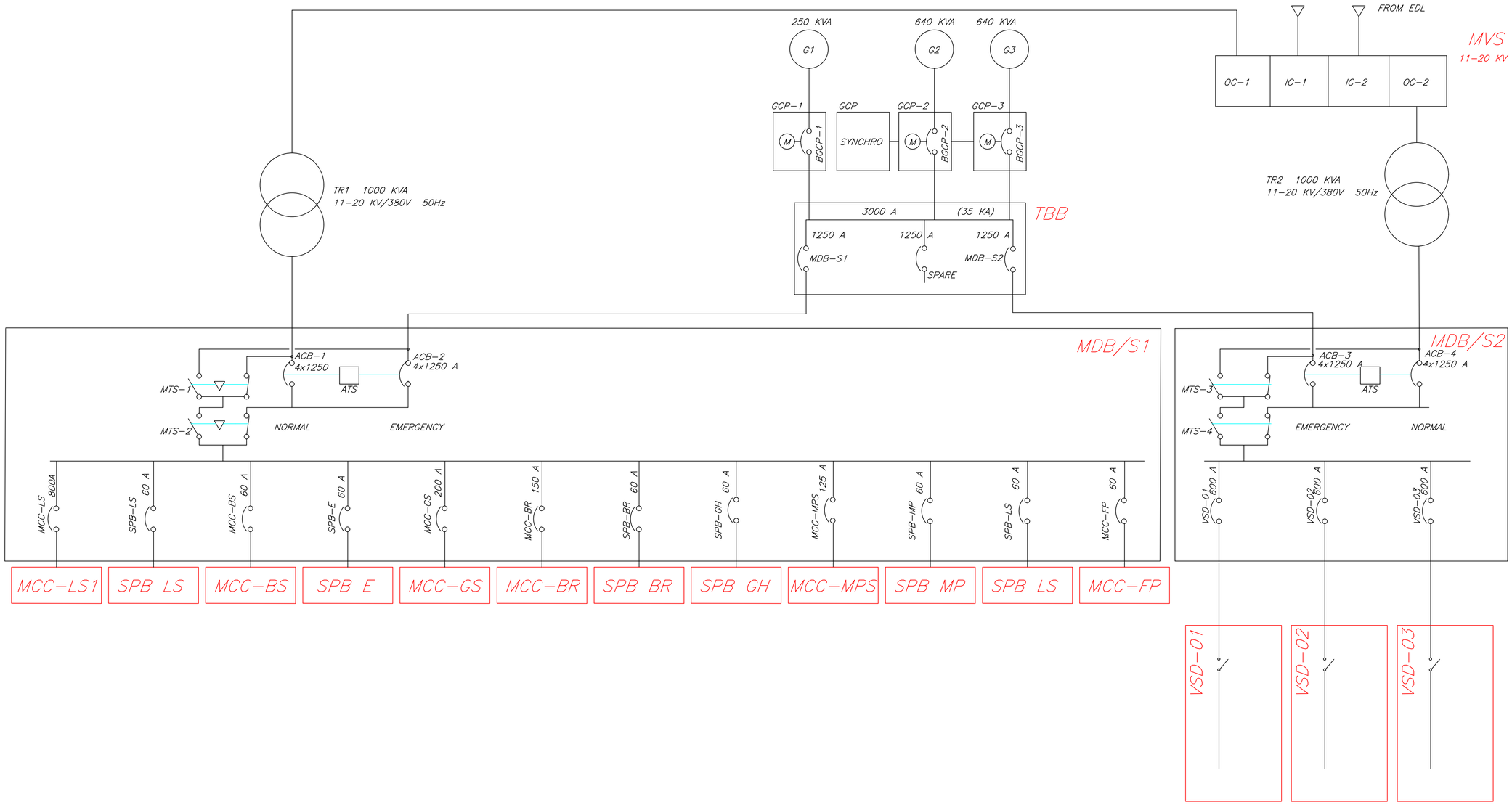


LEGEND:

G1	–GENERATOR #1.
GCP-1	–GENERATOR CONTROL PANEL #1.
BGCP	–BREAKER IN GENERATOR CONTROL PANEL #1.
OC-01	–OUTPUT CELL.
IC-01	–INCOMING CELL.
MVS	–MEDIUM VOLTAGE SWITCH.
MDB-S2	–MAIN DISTRIBUTION BOARD FOR 3 MAIN PUMPS.
SPB-BR	–SUB –PANEL BOARD FOR BLOWER ROOM.
SPB-GH	–SUB–PANEL BOARD FOR GUARD HOUSE.
SPB-MPS	–SUB–PANEL BOARD FOR PUMPING STATION.
SPB-LS	SUB–PANEL BOARD FOR LIFT STATION.
MCC-BR	–MOTOR CONTROL CENTER FOR BLOWER ROOM.
MCC-MPS	–MOTOR CONTROL CENTER FOR PUMPING STATION.
MCC-FP	–MOTOR CONTROL CENTER FOR FUEL PUMP.
VSD-01	–VARIABLE SPEED DRIVE #1.
MCC-LS1	–MOTOR CONTROL CENTER FOR LIFT STATION .
MDB-S1	–MAIN DISTRIBUTION BOARD .
TFX	–TRANSFORMER.
SPB-LS	–SUB–PANEL BOARD FOR LIFT STATION.
SPB-E	–SUB–PANEL BOARD.
MCC-BS	–MOTOR CONTROL CENTER FOR BAR SCREENS.
MCC-GS	–MOTOR CONTROL CENTER FOR DEGRITTING AREA.
CPBS-01	–CONTROL PANEL FOR TWO BAR SCREENS.
CPDB-01	–CONTROL PANEL FOR DEGRITTING BRIDGE #1.
ACB-01	–AIR CIRCUIT BREAKER #1
MTS-1	–MAIN TRANSFORMER SWITCH #1.

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COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

Expansion and Upgrade of Al-Ghadir Wastewater Treatment Plant Project – Phase I: Design, Build and Operate, Including Sea Outfalls

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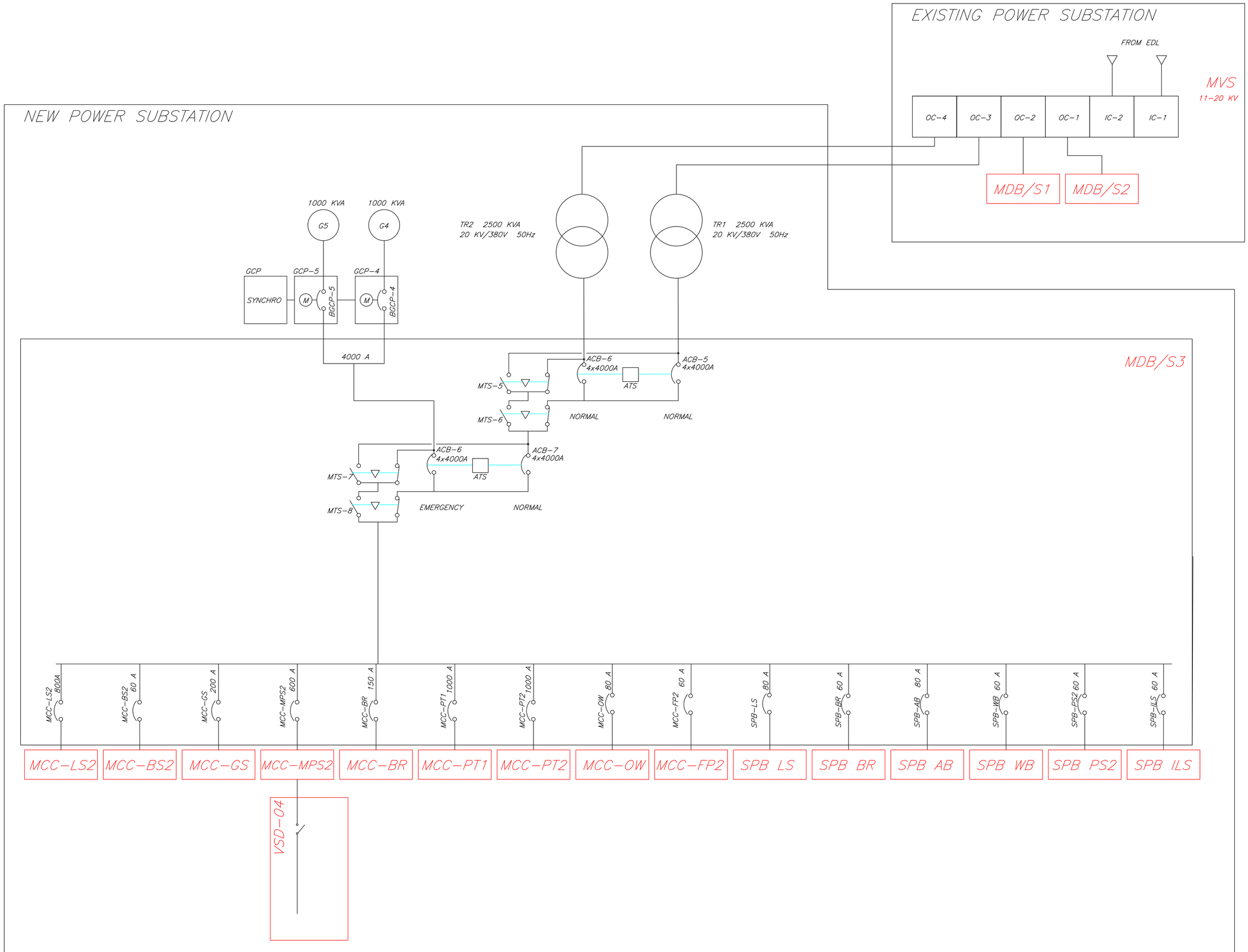
Technical Drawings & Schematics

Existing WWTP Single Line Diagram

DRAWN :	H.I
CHECKED :	S.H
APPROVED :	F.L
DATE :	05 March 2025
SCALE :	–
FILE NAME	Sc–ES–05

PROJECT	DIVISION	SUB-DIVISION	SHEET	REVISION
L2401DS	Sc	ES	05	0

A1 Size



LEGEND:

G1	–GENERATOR #1.
GCP-1	–GENERATOR CONTROL PANEL #1.
BGCP	–BREAKER IN GENERATOR CONTROL PANEL #1.
OC-01	–OUTPUT CELL.
IC-01	–INCOMING CELL.
MVS	–MEDIUM VOLTAGE SWITCH.
TFX	–TRANSFORMER.
MDB-S3	–MAIN DISTRIBUTION BOARD EXTENSION.
MCC-LS2	–MOTOR CONTROL CENTER LIFT STATION .
MCC-BS2	–MOTOR CONTROL CENTER BAR SCREENS.
MCC-GS	–MOTOR CONTROL CENTER DEGRITTING AREA.
MCC-MPS2	–MOTOR CONTROL CENTER PUMPING STATION.
MCC-BR	–MOTOR CONTROL CENTER BLOWER ROOM.
MCC-PT1	–MOTOR CONTROL CENTER PRIMARY TREATMENT.
MCC-OW	–MOTOR CONTROL CENTER ODOR CONTROL. & WASHWATER BOOSTER SET
MCC-FP2	–MOTOR CONTROL CENTER FUEL PUMP.
VSD-04	–VARIABLE SPEED DRIVE #4.
SPB-LS	–SUB-PANEL BOARD LIFT STATION.
SPB-BR	–SUB-PANEL BOARD BLOWER ROOM.
SPB-AB	–SUB-PANEL BOARD ADMINISTRATION BUILDING.
SPB-WB	–SUB-PANEL BOARD WORKSHOP BUILDING.
SPB-PS2	–SUB-PANEL BOARD NEW POWER SUBSTATION.
SPB-ILS	–SUB-PANEL BOARD INTERIM LIFTING STATION.
ACB-1	–AIR CIRCUIT BREAKER #1
MTS-1	–AIR CIRCUIT BREAKER #1
ATS-1	–AUTOMATIC TRANSFER SWITCH #1.

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Expansion and Upgrade of Al-Ghadir Wastewater Treatment Plant Project – Phase I: Design, Build and Operate, Including Sea Outfalls

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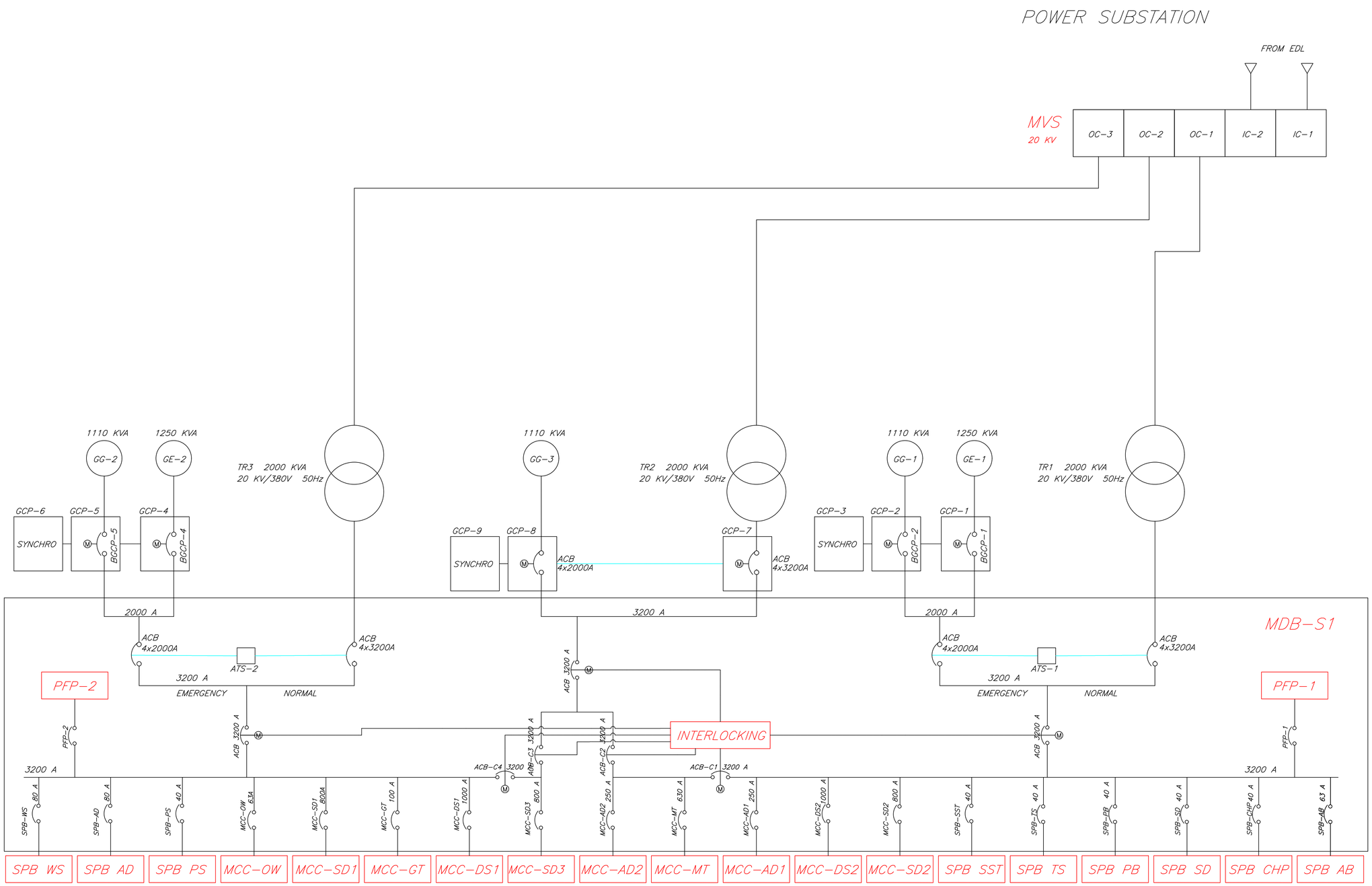
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Technical Drawings & Schematics

Existing WWTP Extension - Phase 1 - Single Line Diagram

DRAWN :	H.I
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APPROVED :	F.L
DATE :	05 March 2025
SCALE :	-
FILE NAME	Sc-ES1-06

PROJECT	DIVISION	SUB-DIVISION	SHEET	REVISION
L2401DS	Sc	ES1	06	0



LEGEND:

GE-1	-DIESEL GENERATOR #1.
GG-1	-GAS GENERATOR #1.
GCP-1	-GENERATOR CONTROL PANEL #1.
BGCP	-BREAKER IN GENERATOR CONTROL PANEL #1.
OC-01	-OUTPUT CELL.
IC-01	-INCOMING CELL.
MVS	-MEDIUM VOLTAGE SWITCH.
TR-1	-TRANSFORMER #1.
MDB-S1	-MAIN DISTRIBUTION BOARD.
MCC	-MOTOR CONTROL CENTER.
MCC-SDx	-MCC FOR SLUDGE DEWATERING.
MCC-GT	-MCC FOR GRAVITY THICKENER PS.
MCC-MT	-MCC FOR MECHANICAL THICKENING SECONDARY.
MCC-ADx	-MCC FOR ANAEROBIC DIGESTION.
MCC-DSx	-MCC FOR DIGESTER SLUDGE BUFFER TANK.
MCC-OW	-MOTOR CONTROL CENTER ODOR CONTROL, & WASHWATER BOOSTER SET & FUEL PUMP
SPB-AB	-SUB-PANEL BOARD ACCOMODATION BUILDING.
SPB-CHP	-SUB-PANEL BOARD CHP BUILDING.
SPB-SD	-SUB-PANEL BOARD SLUDGE DEWATERING BLG.
SPB-PB	-SUB-PANEL BOARD PUMP BLOWERS.
SPB-TS	-SUB-PANEL BOARD THICKENED PUMPS BLG.
SPB-SST	-SUB-PANEL BOARD SECONDARY SLUDGE BLG.
SPB-PS	-SUB-PANEL BOARD POWER STATION.
SPB-AD	-SUB-PANEL BOARD ADMINISTRATIVE BUILDING.
SPB-WS	-SUB-PANEL BOARD WORKSHOP.
ACB-1	-AIR CIRCUIT BREAKER #1
ATS-1	-AUTOMATIC TRANSFER SWITCH #1.
PFP-1	-POWER FACTOR PANEL (CAPACITOR BANK) #1.

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Expansion and Upgrade of Al-Ghadir Wastewater Treatment Plant Project – Phase I: Design, Build and Operate, Including Sea Outfalls

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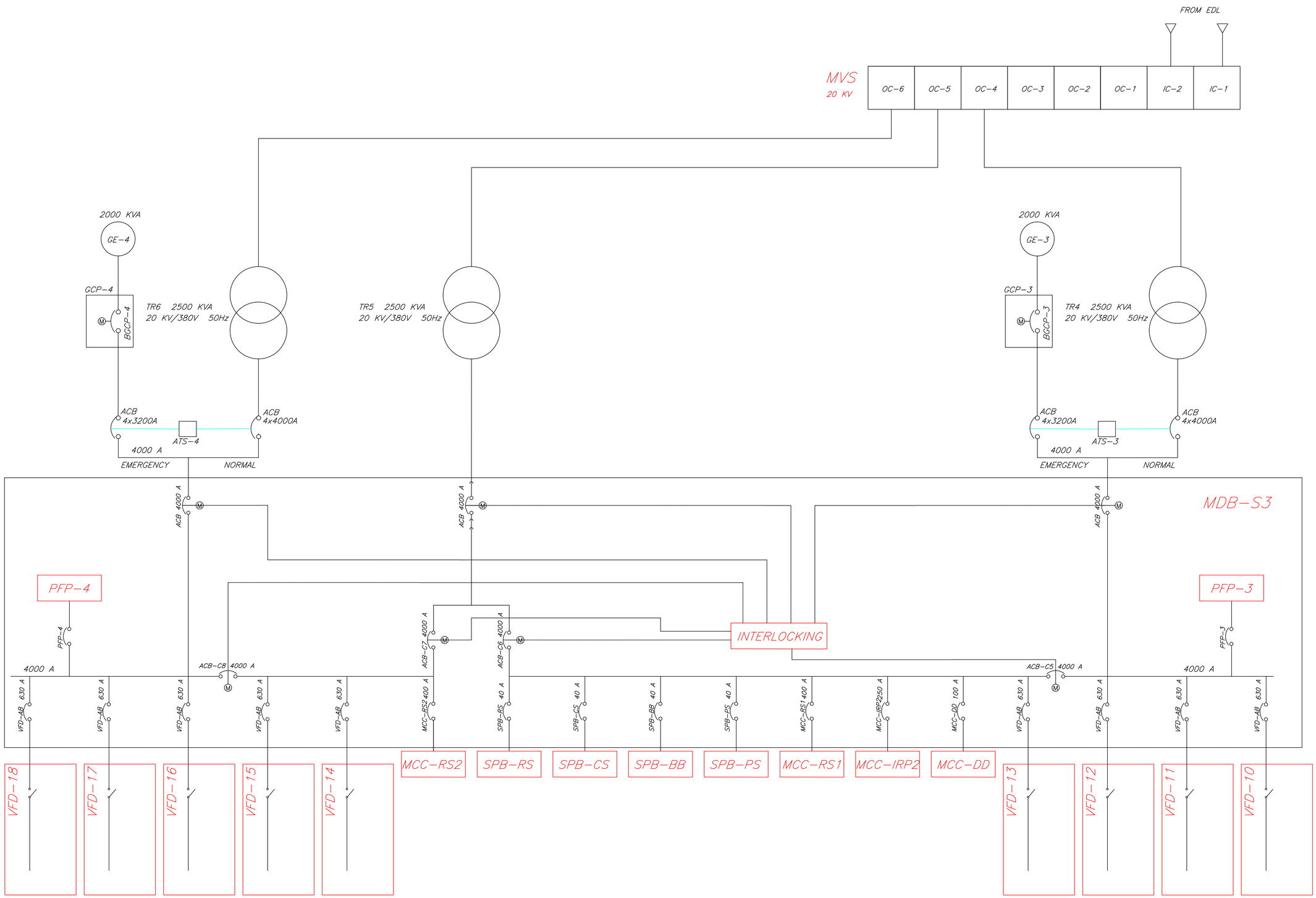
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APPROVED :	F.I
DATE :	05 March 2025
SCALE :	–
FILE NAME	

New WWTP Expansion Site - Phase 1 - Single Line Diagram

Sc-NS1-07

PROJECT	DIVISION	SUB-DIVISION	SHEET	REVISION
L2401DS	Sc	NS1	07	0

POWER SUBSTATION



LEGEND:

GE-1	-DIESEL GENERATOR #1.
GCP-1	-GENERATOR CONTROL PANEL #1.
BGCP	-BREAKER IN GENERATOR CONTROL PANEL #1.
OC-01	-OUTPUT CELL.
IC-01	-INCOMING CELL.
MVS	-MEDIUM VOLTAGE SWITCH.
TR-1	-TRANSFORMER #1.
MDB-S1	-MAIN DISTRIBUTION BOARD.
MCC	-MOTOR CONTROL CENTER.
MCC-ATM	-MCC FOR ANOXIC TANKS MIXERS.
MCC-IRPx	-MCC FOR IR PUMPS.
MCC-DD	-MCC FOR DISINFECTION & DECHLORINATION.
MCC-RSx	-MCC FOR RAS/SAS PUMPS.
VFD-x	-VFD FOR AIR BLOWERS.
SPB-PS	-SUB-PANEL BOARD POWER STATION PHASE II.
SPB-BB	-SUB-PANEL BOARD BLOWERS BUILDING.
SPB-CS	-SUB-PANEL BOARD CHEMICAL STORAGE.
SPB-RS	-SUB-PANEL BOARD RAS/SAS PUMPING STATION.
ACB-1	-AIR CIRCUIT BREAKER #1
ATS-1	-AUTOMATIC TRANSFER SWITCH #1.
PFP-1	-POWER FACTOR PANEL (CAPACITOR BANK) #1.

LEBANESE REPUBLIC
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Expansion and Upgrade of Al-Ghadir Wastewater Treatment Plant Project – Phase I: Design, Build and Operate, Including Sea Outfalls

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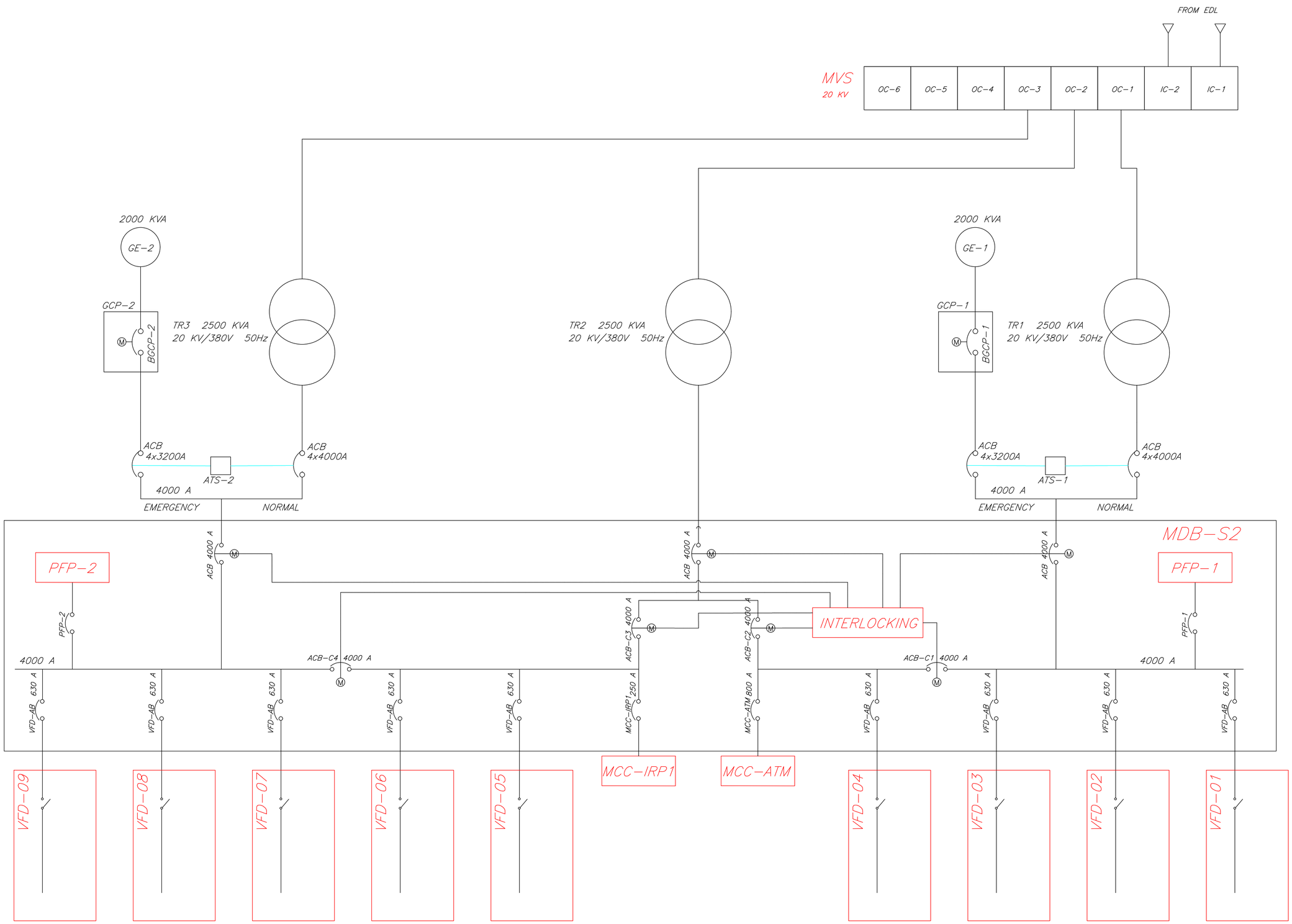
Technical Drawings & Schematics

New WWTP Expansion Site - Phase 2 - Single Line Diagram (1 / 2)

DRAWN :	H.I
CHECKED :	S.H
APPROVED :	F.L
DATE :	05 March 2025
SCALE :	-
FILE NAME	
Sc-NS2a-08	

PROJECT	DIVISION	SUB-DIVISION	SHEET	REVISION
L2401DS	Sc	NS2a	08	0

POWER SUBSTATION



LEGEND:

GE-1	-DIESEL GENERATOR #1.
GCP-1	-GENERATOR CONTROL PANEL #1.
BGCP	-BREAKER IN GENERATOR CONTROL PANEL #1.
OC-01	-OUTPUT CELL.
IC-01	-INCOMING CELL.
MVS	-MEDIUM VOLTAGE SWITCH.
TR-1	-TRANSFORMER #1.
MDB-S1	-MAIN DISTRIBUTION BOARD.
MCC	-MOTOR CONTROL CENTER.
MCC-ATM	-MCC FOR ANOXIC TANKS MIXERS.
MCC-IRPx	-MCC FOR IR PUMPS.
MCC-DD	-MCC FOR DISINFECTION & DECHLORINATION.
MCC-RSx	-MCC FOR RAS/SAS PUMPS.
VFD-x	-VFD FOR AIR BLOWERS.
SPB-PS	-SUB-PANEL BOARD POWER STATION PHASE II.
SPB-BB	-SUB-PANEL BOARD BLOWERS BUILDING.
SPB-CS	-SUB-PANEL BOARD CHEMICAL STORAGE.
SPB-RS	-SUB-PANEL BOARD RAS/SAS PUMPING STATION.
ACB-1	-AIR CIRCUIT BREAKER #1.
ATS-1	-AUTOMATIC TRANSFER SWITCH #1.
PFP-1	-POWER FACTOR PANEL (CAPACITOR BANK) #1.

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COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

Expansion and Upgrade of Al-Ghadir Wastewater Treatment Plant Project – Phase I: Design, Build and Operate, Including Sea Outfalls

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Technical Drawings & Schematics

New WWTP Expansion Site - Phase 2 - Single Line Diagram (2 / 2)

DRAWN :	H.J
CHECKED :	S.H
APPROVED :	F.L
DATE :	05 March 2025
SCALE :	-
FILE NAME	Sc-NS2b-09

PROJECT	DIVISION	SUB-DIVISION	SHEET	REVISION
L2401DS	Sc	NS2b	09	0

Funded by:

Expansion and Upgrade of Al-Ghadir Wastewater Treatment Plant Project – Phase I: Design, Build and Operate, Including Two New Sea Outfalls and Inspection & Assessment of Existing Sea Outfalls
Contract Ref. # 21043

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Tender Documents, Part 4 - Drawings
Section XI - Book 2/2 : New Sea Outfalls Drawings

2.1 General Layout
2.2 Jnah Sea Outfall Drawings
2.3 Ramlet El Bayda Sea Outfall Drawings

IMPORTANT BASIC NOTES

1- The Tender Document Drawings include, in addition to the WWTP drawings, **Reference** drawings for the Jnah Sea Outfall and **Preliminary Concept** drawings for the Ramlet El Bayda Sea Outfall.

2- The **Reference** drawings for the Jnah Sea Outfall include available detailed design drawings extracted from the tender documents of the project titled:

BEIRUT CITY SERVICES UPGRADING PROJECT PHASE III - LOT 4

prepared by Khatib and Aalami for CDR on June 2018.

The original drawings were located in Volume 4.

However, these drawings are provided for information and reference purpose only and shall not relieve the Contractor from full design responsibility.

3- The **Preliminary Concept** drawings for the Ramlet El Bayda Sea Outfall include available short conceptual drawings for which no reliance may be placed. These drawings show a tentative layout proposal of the pipelines locations.

These preliminary drawings are provided for information purpose only and shall not relieve the Contractor from full design responsibility.

As guideline for the design, the Contractor shall refer basically to the design presented for Jnah sea outfall.

2.1 - General Layout