

CALLOUTS

- 1

Main Fuel Storage Tank UL-142 DW or UL-2085 listed
- 2

FOS piping shall be ran 1" off bottom, FOR shall terminate at 50% fuel level.
- 3

FOS shall include N.C., 120 VAC,zero differential pressure solenoid.
- 4

Priming Tee installed at high point and downstream from solenoid valve.
- 5

Incoming power for SSFS control panel shall be dedicated circuit on emergency power.
- 6

Pump Inlet Y-strainer
- 7

Distribution manifold with tank inlet check valve, flow restrictor, float assembly and back-pressure valve.

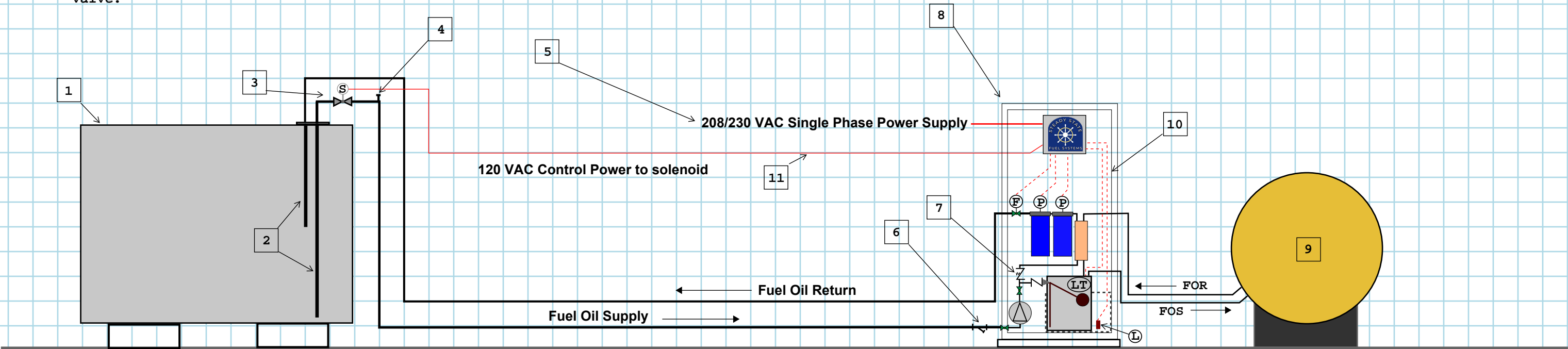
- 8

SSFS Fuel Delivery Skid assembly w/ tank, rupture basin, drip tray, filter manifold, 10 gpm positive displacement pump, heat exchanger, valves and sensors, isolation valves,and UL-508 PLC control panel with NEMA 4 enclosure, disconnect and HMI interface. Refer to SSFS detailed drawings on Sheets 4 & 5 for more information of fuel delivery skid assembly.
- 9






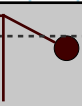






Emergency Generator
- 10

24 VDC sensor wiring, pre-installed on skid assembly.
- 11

120 VAC Anti-siphon solenoid power from control panel (field wired).



SYMBOLS KEY:

	3 GPM Shuttle Flow Switch		Rotary Vane Pump
	20 PSID Pressure Transducer		High Capacity/Efficiency Fuel Oil Filter (Particulate or Water Absorbing)
	Rupture Basin Leak Switch		14 Gallon Fuel Tank for Generator Fuel Supply
	120 VAC Solenoid Valve		UL-508 PLC Controller in NEMA 4 Enclosure w/ Touchscreen HMI
	4-20 mAmp Level Transducer		
	24 VDC Low Voltage		
	120 or 240 VAC High Voltage		
	Cross-flow Plate Heat Exchanger		

NOTE: Refer to SSFS Detail drawings for more information. SSFS skid assembly can be ordered with a duplex pump set or with remote duplex pumps to maximize configurations to meet system requirements.



DRAWN BY: B. Durkin
REVISION:
DATE: January 15th, 2025

SHEET 1

SSFS Simplex fuel delivery system

CALLOUTS

- 1

Main Fuel Storage Tank UL-142 DW or UL-2085 listed
- 2

FOS piping shall be ran 1" off bottom, FOR shall terminate at 50% fuel level.
- 3

FOS shall include N.C., 120 VAC, zero differential pressure solenoid.
- 4

Priming Tee installed at high point and downstream from solenoid valve.
- 5

Incoming power for SSFS control panel shall be dedicated circuit on emergency power.
- 6

Pump Inlet Y-strainer
- 7

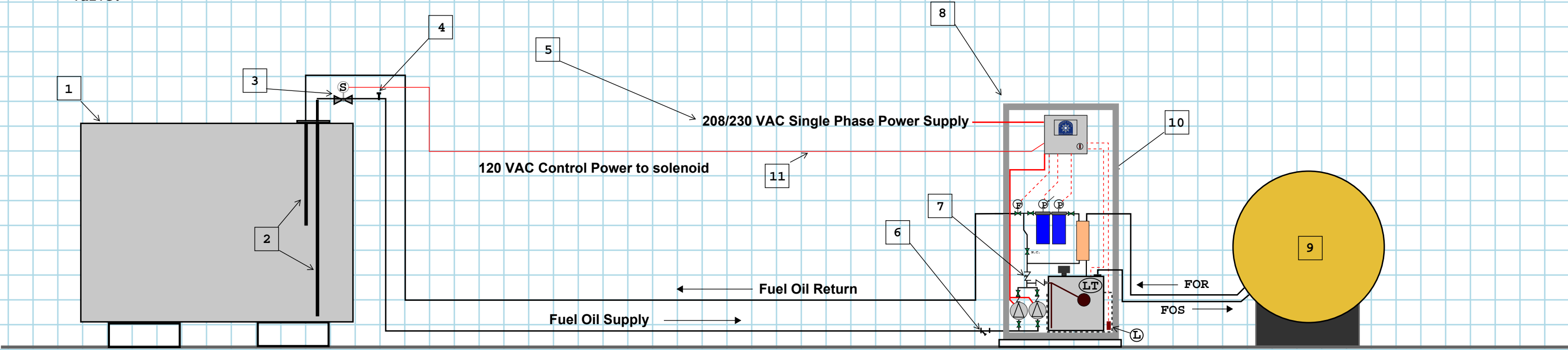
Distribution manifold with tank inlet check valve, flow restrictor, float assembly and back-pressure valve.
- 8

SSFS Fuel Delivery Skid assembly w/ tank, rupture basin, drip tray, filter manifold, 10 gpm positive displacement pump, heat exchanger, valves and sensors, isolation valves (not illustrated) and UL-508 PLC control panel with NEMA 4 enclosure, disconnect and HMI interface. Refer to SSFS detailed drawings on Sheets 2 & 3 for more information of fuel delivery skid assembly.
- 9






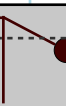






Emergency Generator
- 10

24 VDC sensor wiring, pre-installed on skid assembly.
- 11

120 VAC Anti-siphon solenoid power from control panel (field wired).



SYMBOLS KEY:

	3 GPM Shuttle Flow Switch		Rotary Vane Pump
	20 PSID Pressure Transducer		High Capacity/Efficiency Fuel Oil Filter (Particulate or Water Absorbing)
	Rupture Basin Leak Switch		14 Gallon Fuel Tank for Generator Fuel Supply
	120 VAC Solenoid Valve		UL-508 PLC Controller in NEMA 4 Enclosure w/ Touchscreen HMI
	4-20 mAmp Level Transducer		
	24 VDC Low Voltage		
	120 or 240 VAC High Voltage		
	Cross-flow Plate Heat Exchanger		

NOTE: Refer to SSFS Detail drawings for more information. SSFS skid assembly can be ordered with a duplex pump set or with remote duplex pumps to maximize configurations to meet system requirements.



DRAWN BY: B. Durkin
REVISION: 2
DATE: January 28th, 2025

SHEET 2

SSFS Duplex fuel delivery system

CALLOUTS

- 1

Main Fuel Storage Tank UL-142 DW or UL-2085 listed
- 2

FOS piping shall be ran 1" off bottom, FOR shall terminate at 50% fuel level.
- 3

FOS shall include N.C., 120 VAC, zero differential pressure solenoid.
- 4

Priming Tee installed at high point and downstream from solenoid valve.
- 5

Incoming power for SSFS control panel shall be dedicated circuit on emergency power.
- 6

Pump Inlet Y-strainer
- 7

Distribution manifold with tank inlet check valve, flow restrictor, float assembly and back-pressure valve.

- 8

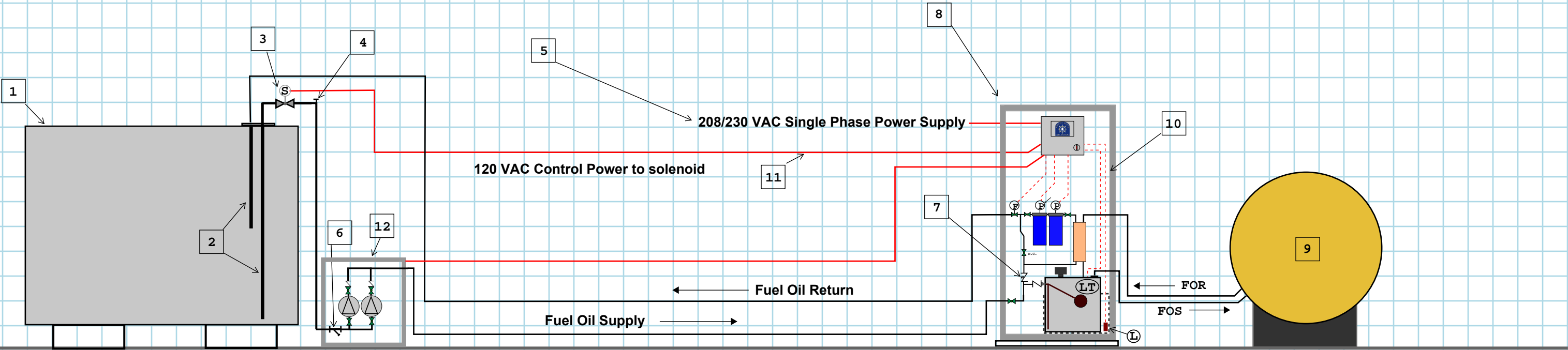
SSFS Fuel Delivery Skid assembly w/ tank, rupture basin, drip tray, filter manifold, heat exchanger, valves and sensors, isolation valves, and UL-508 PLC control panel with NEMA 4 enclosure, disconnect and HMI interface. Refer to SSFS detailed drawings on Sheets 4 & 5 for more information of fuel delivery skid assembly.
- 9

Emergency Generator
- 10






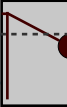






24 VDC sensor wiring, pre-installed on skid assembly.
- 11

120 VAC Anti-siphon solenoid power from control panel (field wired).
- 12

Duplex skid assembly with two 10 gpm, stainless steel, heavy duty, positive displacement rotary vane pumps with 1 HP, 208/230 VAC, Single phase, TEFC, continuous duty motors.



SYMBOLS KEY:

	3 GPM Shuttle Flow Switch		Rotary Vane Pump
	20 PSID Pressure Transducer		High Capacity/Efficiency Fuel Oil Filter (Particulate or Water Absorbing)
	Rupture Basin Leak Switch		14 Gallon Fuel Tank for Generator Fuel Supply
	120 VAC Solenoid Valve		UL-508 PLC Controller in NEMA 4 Enclosure w/ Touchscreen HMI
	4-20 mA Level Transducer		
	24 VDC Low Voltage		
	120 or 240 VAC High Voltage		
	Cross-flow Plate Heat Exchanger		

NOTE: Refer to SSFS Detail drawings for more information. SSFS skid assembly can be ordered with a duplex pump set or with remote duplex pumps to maximize configurations to meet system requirements.



DRAWN BY: B. Durkin
REVISION:
DATE: January 15th, 2025

SHEET 3

SSFS Remote Duplex fuel delivery system

- 1

UL-508 PLC Controller in NEMA 4,non-metallic enclosure w/ high contrast touchscreen HMI & panel mounted disconnect.
- 2

Powder coated, mild steel square tube frame skid assembly with integral drip tray.
- 3

Pump inlet Y-strainer.
- 4

Rotary vane positive displacement pump with mechanical seal, stainless steel housing,1 hp 208/230 VAC,Single phase,1745 rpm,TEFC enclosure,continuous duty motor.
- 5

14 gallon mild steel fuel storage tank with bolted lid with gasket. Powder coat finish matching skid assembly. Fittings to accommodate sensors, lines and vent.
- 6

Fuel discharge manifold assembly with spring loaded back pressure valve, in line check valve, flow restrictor and float assembly.
- 7

Isolation valve typical of 5, all valves are normally open except for filter bypass valve which is marked as N.C.
- 8

Trap air breather vent cap for moisture control.
- 9

Cross flow plated heat exchanger. Uses main storage tank fuel to cool returning generator fuel.
- 10

Shuttle style flow switch.
- 11

Pressure transducer. Switch closes at 20 PSID.
- 12

High Efficiency, High capacity spin on particulate filter. Includes adapter with bypass at 25 psid and green/yellow/red filter change indicator.
- 13

High Efficiency, High capacity spin on water absorbing filter. Includes adapter with bypass at 25 psid and green/yellow/red filter change indicator.
- 14

Fuel Oil Supply from main/remote fuel storage tank. (FOS)
- 15

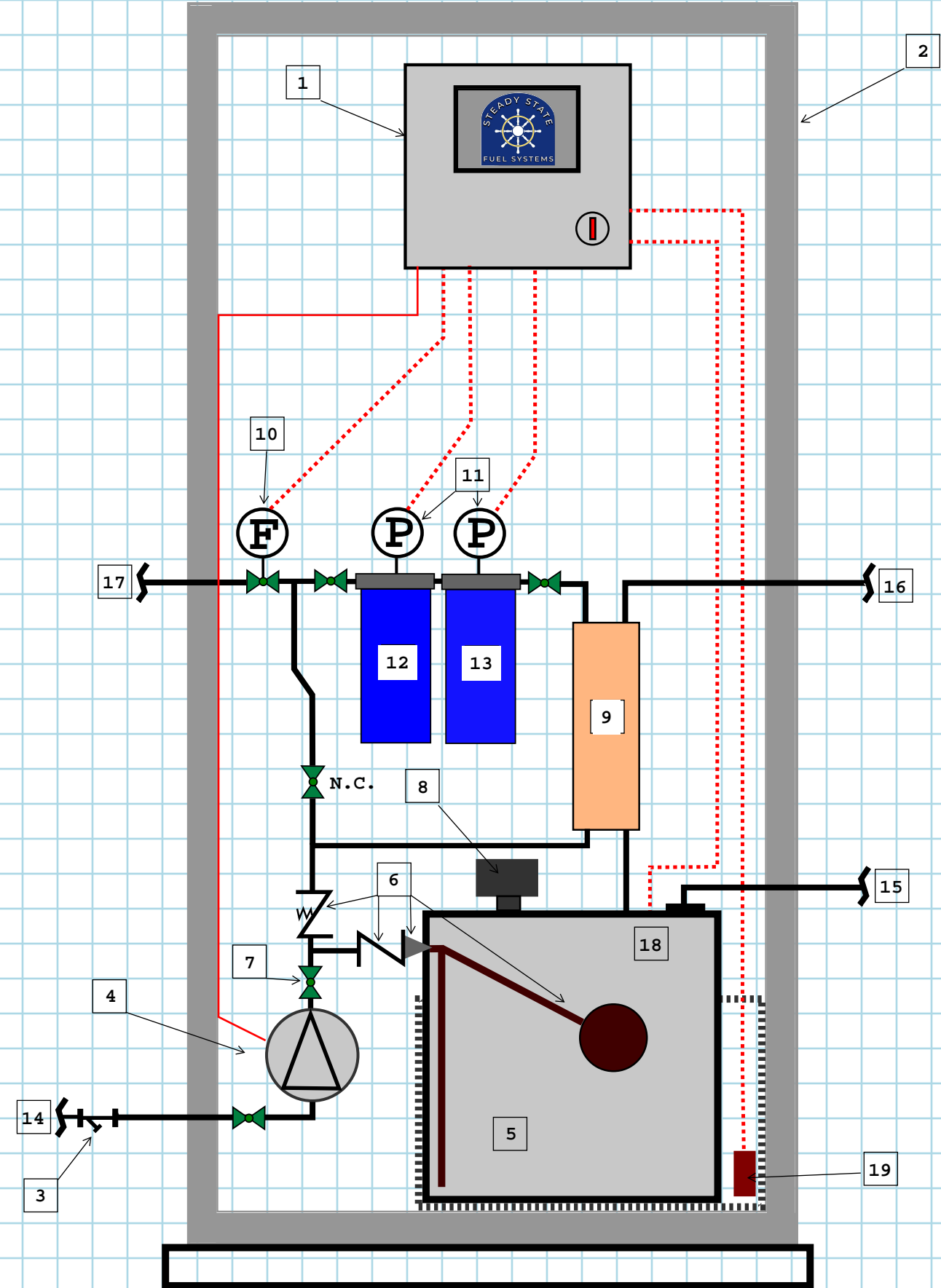
Fuel Oil Supply to generator. (FOSG)
- 16

Fuel Oil Return from generator. (FORG)
- 17

Fuel Oil Return to main/remote fuel storage tank. (FOR)
- 18

4-20mAmp Level Transducer.
- 19

Normally Open Leak Switch.



- 1

UL-508 PLC Controller in NEMA 4,non-metallic enclosure w/ high contrast touchscreen HMI & panel mounted disconnect.
- 2

Powder coated, mild steel square tube frame skid assembly with integral drip tray.
- 3

Pump inlet Y-strainer.
- 4

Rotary vane positive displacement pump with mechanical seal, stainless steel housing,1 hp 208/230 VAC,Single phase,1745 rpm,TEFC enclosure,continuous duty motor.
- 5

14 gallon mild steel fuel storage tank with bolted lid with gasket. Powder coat finish matching skid assembly. Fittings to accommodate sensors, lines and vent.
- 6

Fuel discharge manifold assembly with spring loaded back pressure valve, in line check valve, flow restrictor and float assembly.
- 7

Isolation valve typical of 5, all valves are normally open except for filter bypass valve which is marked as N.C.
- 8

Trap air breather vent cap for moisture control.
- 9

Cross flow plated heat exchanger. Uses main storage tank fuel to cool returning generator fuel.
- 10

Shuttle style flow switch.
- 11

Pressure transducer. Switch closes at 20 PSID.
- 12

High Efficiency, High capacity spin on particulate filter. Includes adapter with bypass at 25 psid and green/yellow/red filter change indicator.
- 13

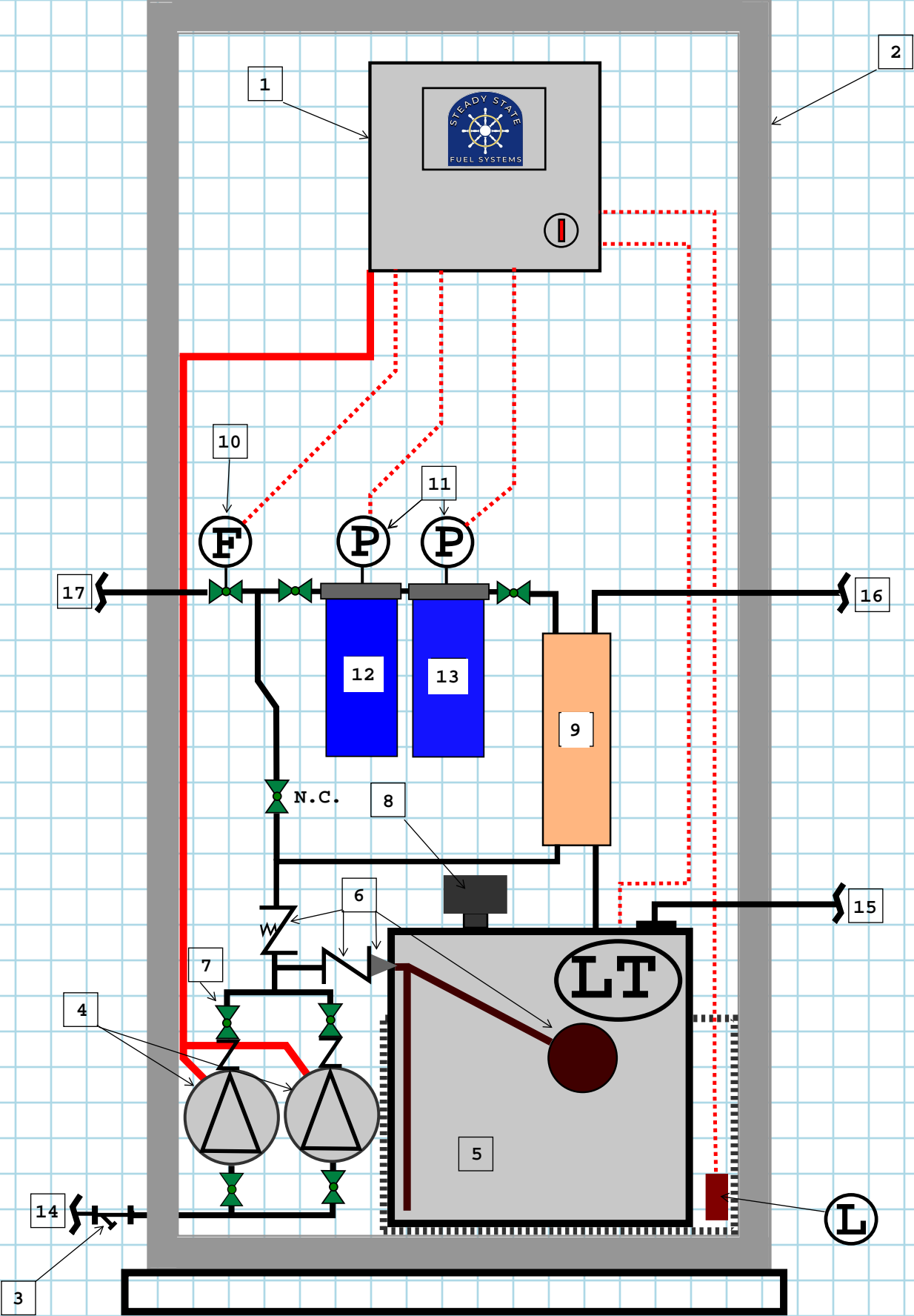
High Efficiency, High capacity spin on water absorbing filter. Includes adapter with bypass at 25 psid and green/yellow/red filter change indicator.
- 14

Fuel Oil Supply from main/remote fuel storage tank. (FOS)
- 15

Fuel Oil Supply to generator. (FOSG)
- 16

Fuel Oil Return from generator. (FORG)
- 17

Fuel Oil Return to main/remote fuel storage tank. (FOR)



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REVISION:2
DATE: January 28th, 2025

SHEET 5

SSFS Duplex fuel delivery system

- 1

Main Fuel Storage Tank UL-142 DW or UL-2085 listed
- 2

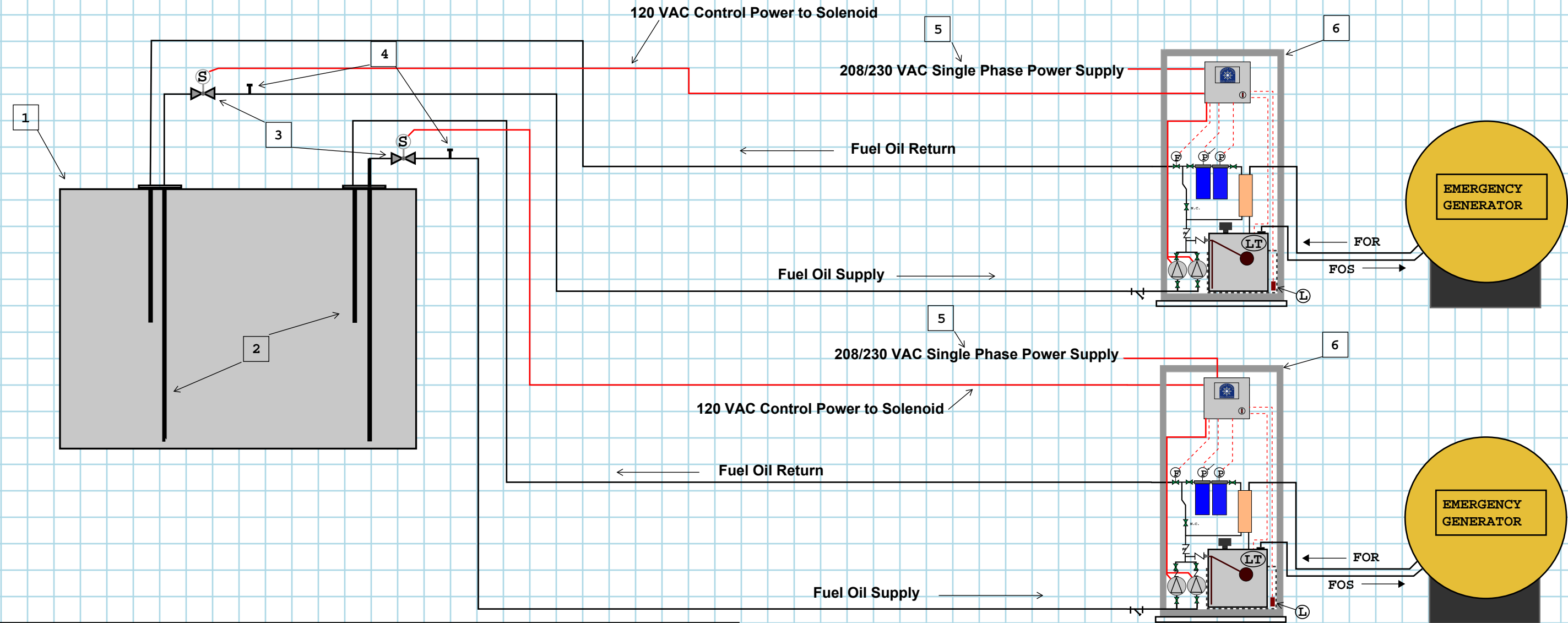
FOS piping shall be ran 1" off bottom, FOR shall terminate at 50% fuel level.
- 3

FOS shall include N.C., 120 VAC, zero differential pressure solenoid.
- 4

Priming Tee installed at high point and downstream from solenoid valve.
- 5

Incoming power for SSFS control panel shall be dedicated circuit on emergency power.
- 6

SSFS Fuel Delivery Skid assembly w/ tank, rupture basin, drip tray, filter manifold, 10 gpm positive displacement pump, heat exchanger, valves and sensors, isolation valves, and UL-508 PLC control panel with NEMA 4 enclosure, disconnect and HMI interface. Refer to SSFS detailed drawings on Sheets 4 & 5 for more information of fuel delivery skid assembly.



- Ⓟ

3 GPM Shuttle Flow Switch
- Ⓢ

20 PSID Pressure Transducer
- Ⓛ

Rupture Basin Leak Switch
- Ⓢ

120 VAC Solenoid Valve
- LT

4-20 mA Level Transducer
- 24 VDC Low Voltage
- 120 or 240 VAC High Voltage
- Ⓢ

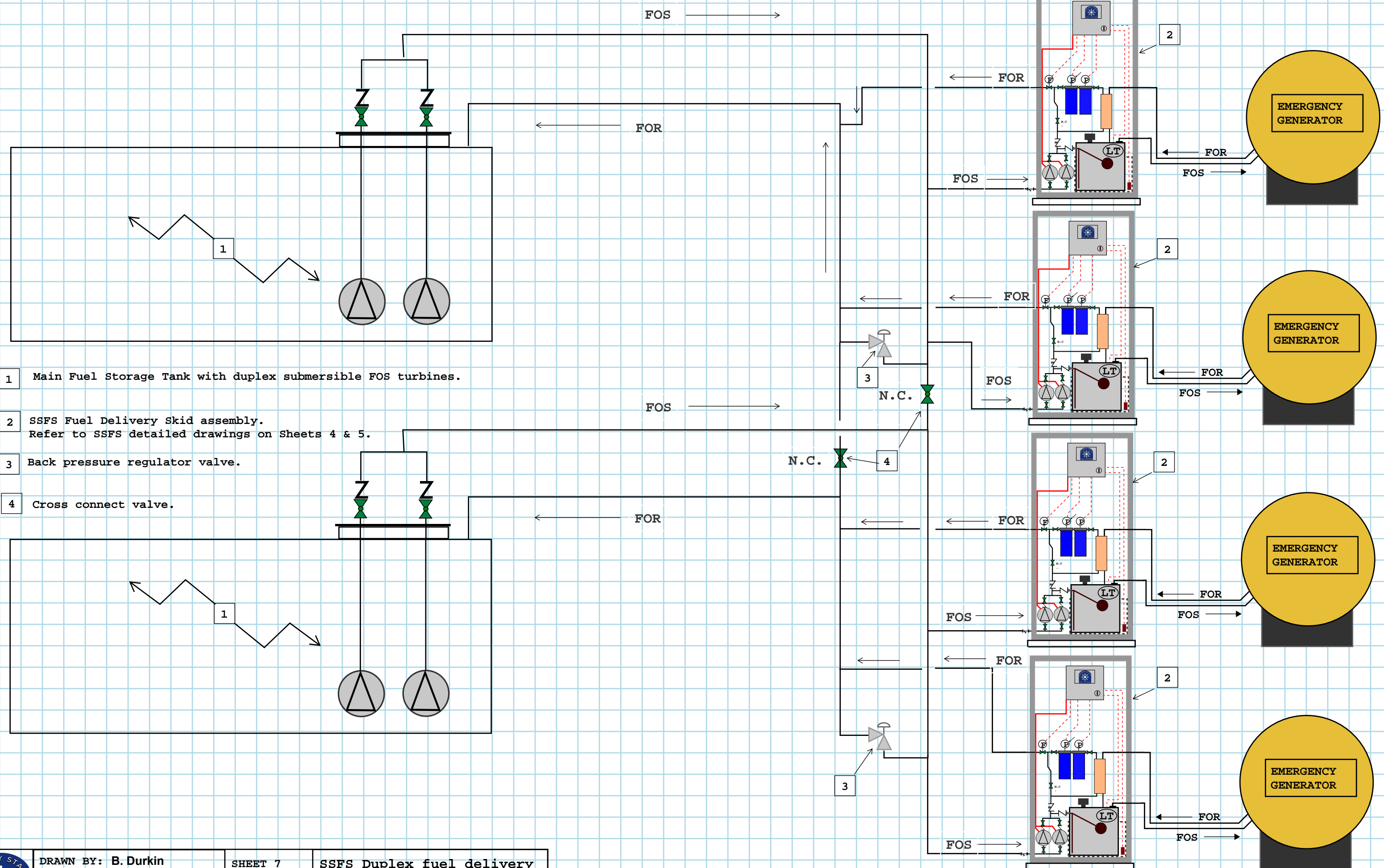
Rotary Vane Pump
- Ⓢ

High Capacity/Efficiency Fuel Oil Filter (Particulate or Water Absorbing)
- Ⓢ

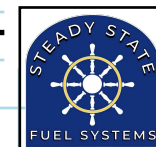
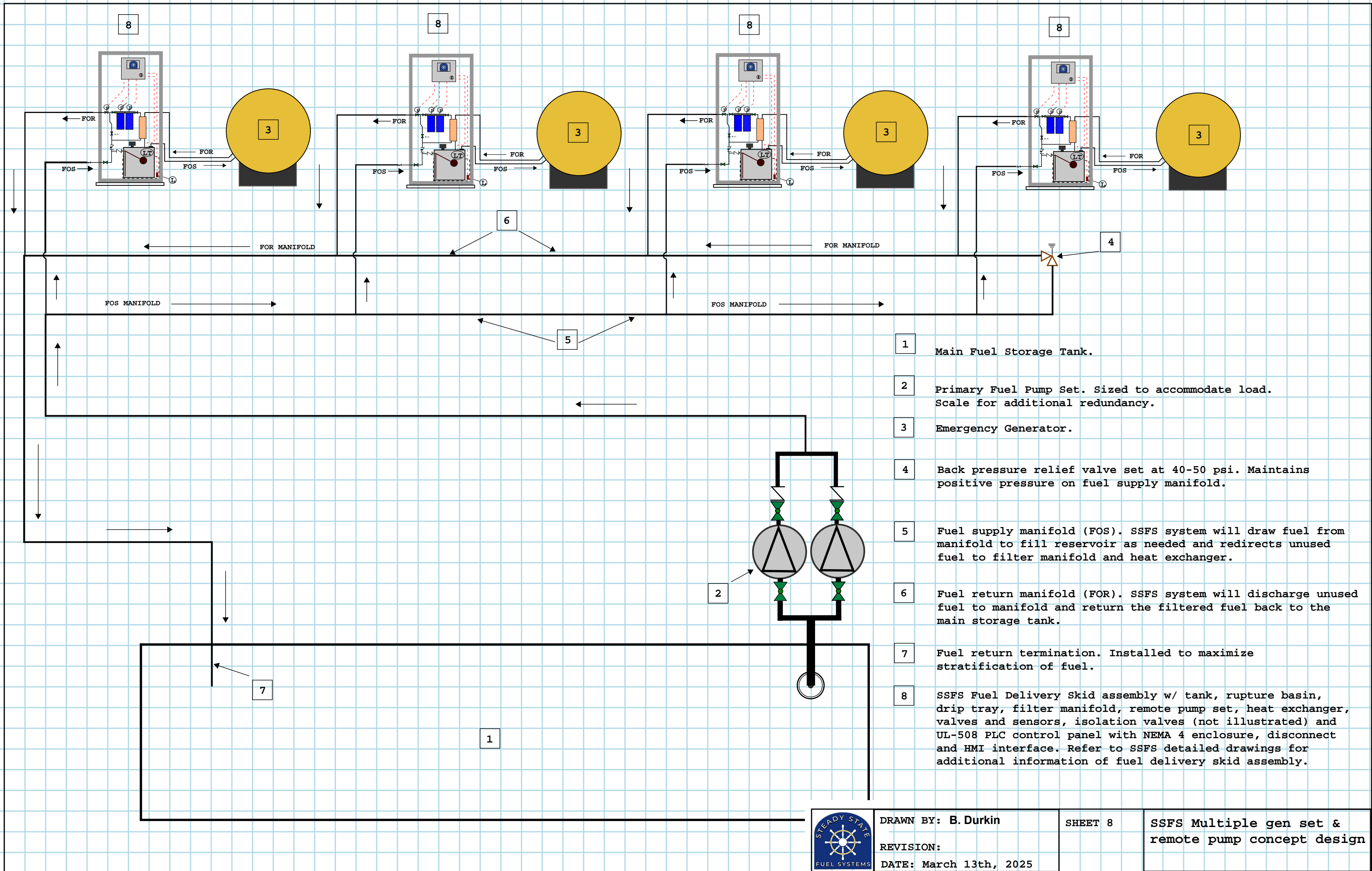
14 Gallon Fuel Tank for Generator Fuel Supply
- Ⓢ

UL-508 PLC Controller in NEMA 4 Enclosure w/ Touchscreen HMI
- Ⓢ

Cross-flow Plate Heat Exchanger



- 1 Main Fuel Storage Tank with duplex submersible FOS turbines.
- 2 SSFS Fuel Delivery Skid assembly.
Refer to SSFS detailed drawings on Sheets 4 & 5.
- 3 Back pressure regulator valve.
- 4 Cross connect valve.



DRAWN BY: B. Durkin
REVISION:
DATE: March 13th, 2025

SHEET 8

SSFS Multiple gen set &
remote pump concept design