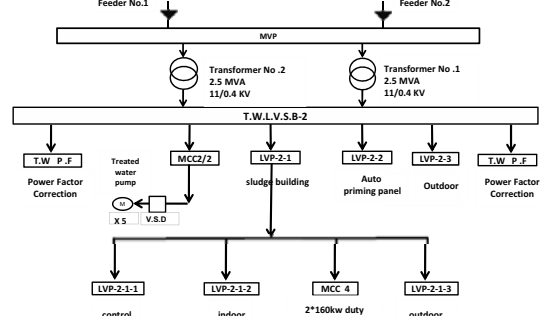
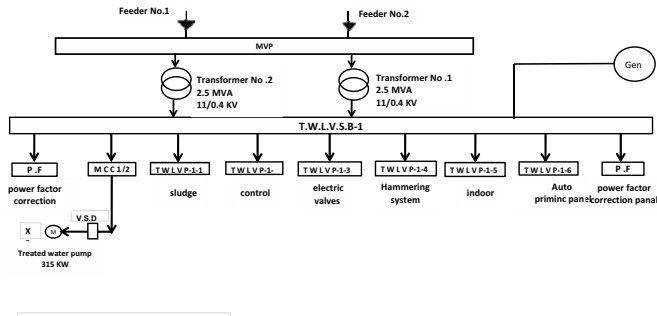


S2.5 単線接続図

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Power Flow Diagram



V.S.D.: Variable Speed Drive
Y/A: Star Delta Starter

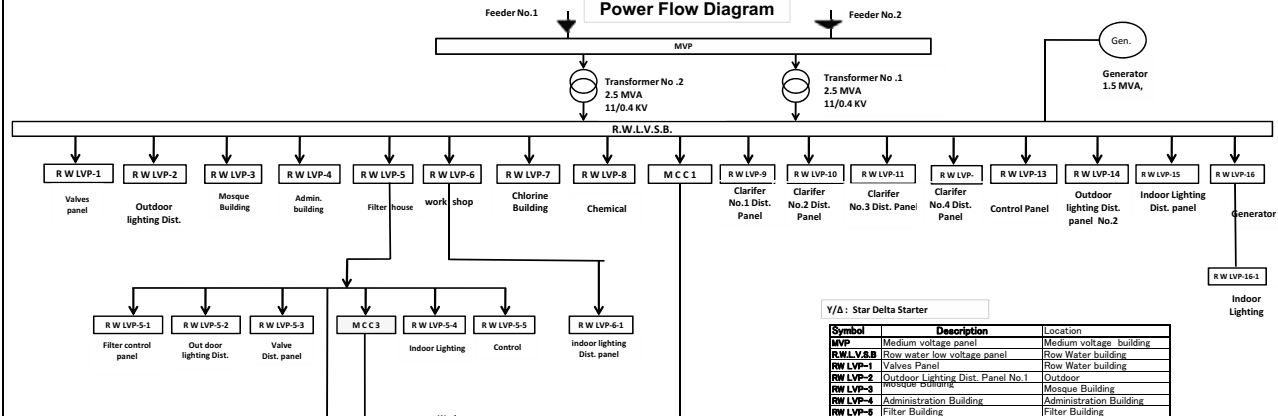
V.S.D.: Variable Speed Drive
Y/A: Star Delta Starter

Symbol	Description	Location
MVP	Medium voltage panel	Medium voltage building
T.W.L.V.S.B NO.1	treated water low voltage panel no.1	treated water building
P.F	power factor correction panel	treated water building
M.C.C 1/2	motor control center panel	treated water building
T.W.L.V.P-1-1	sludge building panel	sludge building
T.W.L.V.P-1-2	control panel panel	Administration building
T.W.L.V.P-1-3	electric valves panel	treated water building
T.W.L.V.P-1-4	Hammering system panel	treated water building
T.W.L.V.P-1-5	Indoor Lighting panel	treated water building
T.W.L.V.P-1-6	Auto priming panel	treated water building
P.F	power factor correction panel	treated water building

Symbol	Description	Location
MVP	Medium voltage panel	Medium voltage building
T.W.L.V.S.B NO.2	treated water low voltage panel no.2	treated water building
P.F	power factor correction panel	treated water building
M.C.C 2/2	Motor control center panel	treated water building
T.W.L.V.P-2-1	sludge building panel	sludge building
1	corner panel	sludge building
M.C.C 4	motor control center	sludge building
5	motor priming panel	sludge building
T.W.L.V.P-2-2	Auto priming panel	sludge building
T.W.L.V.P-2-3	Outdoor Lighting panel	treated water building
P.F	power factor correction panel	treated water building

Power Flow Diagram
El Melahia SWTP

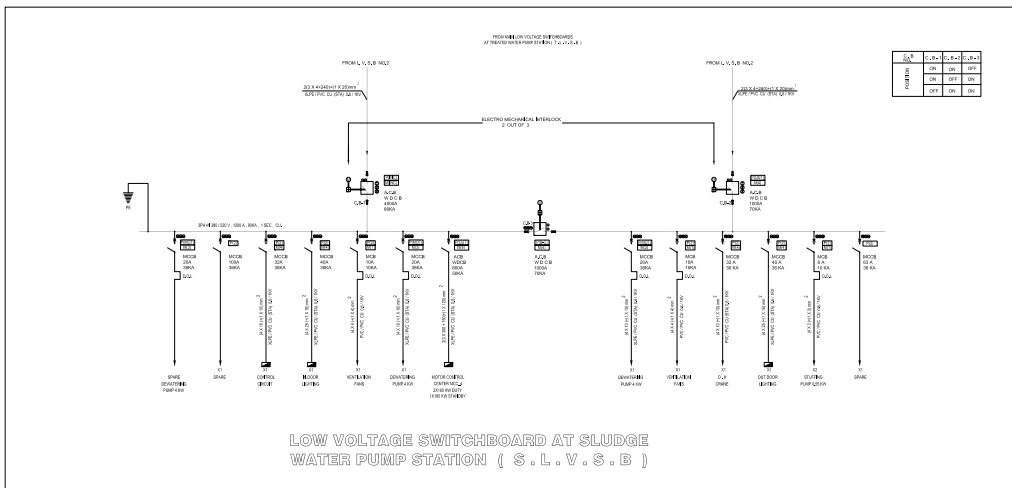
Power Flow Diagram



Y/A: Star Delta Starter

Symbol	Description	Location
MVP	Medium voltage panel	Medium voltage building
R.W.L.V.S.B	Raw water low voltage panel	Raw Water building
R.W.LVP-1	Valves Panel	Raw Water building
R.W.LVP-2	Outdoor Lighting Dist. Panel No.1	Outdoor
R.W.LVP-3	Mosque priming	Mosque Building
R.W.LVP-4	Administration Building	Administration Building
R.W.LVP-5	Filter Building	Filter Building
R.W.LVP-5-1	Filter Control Desk	Filter Building
R.W.LVP-5-2	Out Door Lighting	Outdoor
R.W.LVP-5-3	Valves Panel	Filter Building
R.W.LVP-5-4	In Door Lighting dist panel	Filter Building
R.W.LVP-5-5	Filter control panel	Filter Building
MCC3	Motor Control Centre	Filter Building
R.W.LVP-6	Work shop dist. Panel	Work shop Building
R.W.LVP-6-1	In Door Lighting dist panel	Work shop Building
R.W.LVP-7	Chlorine Building dist. Panel	Chlorine Building
R.W.LVP-8	Chemical Building Dist. panel	Chemical Building
MCC-1	Motor Control centre	Raw Water building
R.W.LVP-9	Clarifier No.1 dist. Panel	Clarifier No.1
R.W.LVP-10	Clarifier No.2 dist. Panel	Clarifier No.2
R.W.LVP-11	Clarifier No.3 dist. Panel	Clarifier No.3
R.W.LVP-12	Clarifier No.4 dist. Panel	Clarifier No.4
R.W.LVP-13	Control Panel	Raw Water building
R.W.LVP-14	Outdoor Lighting Dist. Panel No.2	Outdoor
R.W.LVP-15	In Door Lighting dist panel	Raw Water building
R.W.LVP-16	Generator building	Generator building
R.W.LVP-16-1	Indoor Lighting Dist. panel	Generator building

Power Flow Diagram
El Melahia SWTP



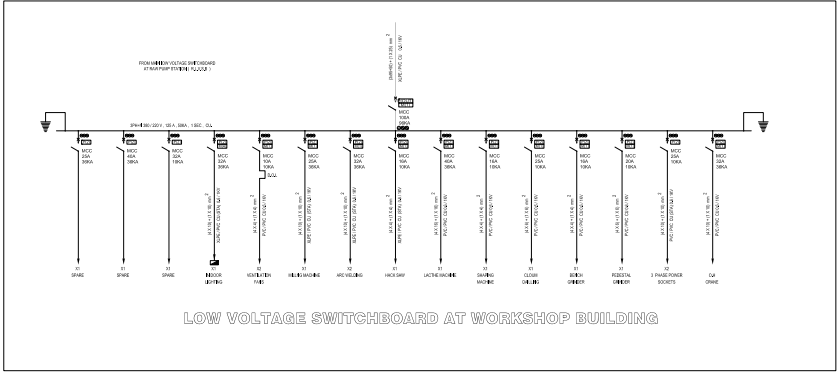
LOW VOLTAGE SWITCHBOARD AT SLUDGE WATER PUMP STATION (S.L.V.S.B)

- A-NOTES FOR THE LOW VOLTAGE SWITCHBOARD:**
- 1-All main C, B with earth leakage protection shall be monitored through toroid.
 - 2-All L, V, C, B greater than 100A must have electronic trip unit.
 - 3-The selection of all C, B and bus bare should be carried out in accordance to the S, C breaking capacity at that point.
 - 4-The rating value of all component and the S, C breaking capacity mentioned in the drawing is minimum value.
 - 5-All components in the motor starter (such as C, B, contactor, overload, motor protection relay and starter) shall be selected according to type (2) co-ordinated as per the IEC 947-4-1 & IEC 947-4-2. Also it shall be properly sized according to the specified duties and design temperature the motor starter should contain circuit breaker.
 - 6-The degree of protection for the switchboard not less than IP42.
 - 7-The steel thickness of switchboard not less than 2 mm.
 - 8-All bus bar cross section area are calculated with current density not exceed = 1.5 A / mm².
 - 9-All low voltage switch board are feeded from 2 feeders according to owner requires.

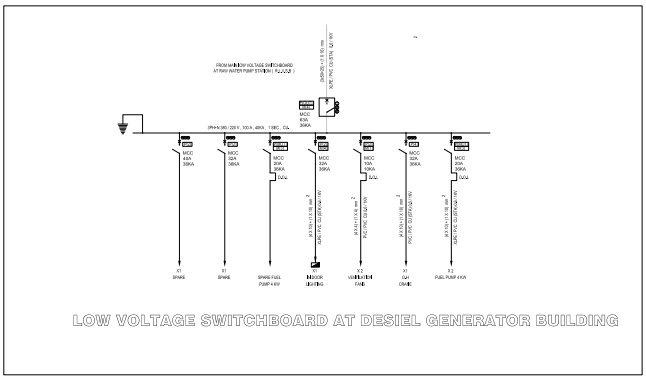
- B-CAPACITOR:**
- 1-The steps selection of the power factor correction units should be done according to the specification to reach to the best power factor values.
 - 2-The capacitor bank should contain discharge resistor, inside or out side, to make the voltage on the terminal reach 50 V within one second or according to IEC.
 - 3-The supplier of switchgear should provide a solution to protect the capacitor bank from the harmonic produced by the soft starter during starting and stopping period.

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02	ONE OFF SETTING
03	ONE OFF SETTING
04	ONE OFF SETTING
05	ONE OFF SETTING
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LOW VOLTAGE SWITCHBOARD AT WORKSHOP BUILDING

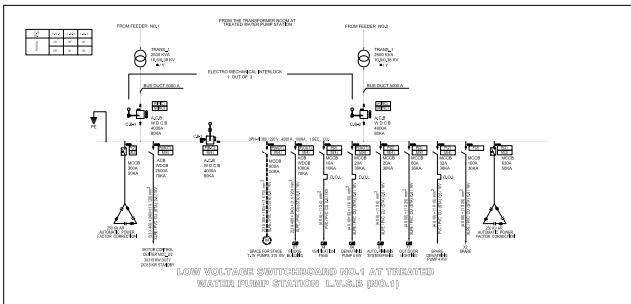
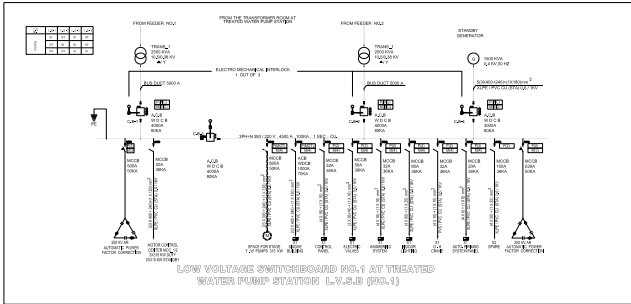


LOW VOLTAGE SWITCHBOARD AT DIESEL GENERATOR BUILDING

- A-NOTES FOR THE LOW VOLTAGE SWITCHBOARD:**
- 1-All main C, B with earth leakage protection shall be monitored through toroid.
 - 2-All L, V, C, B greater than 100A must have electronic trip unit.
 - 3-The selection of all C, B and bus bare should be carried out in accordance to the S, C breaking capacity at that point.
 - 4-The rating value of all component and the S, C breaking capacity mentioned in the drawing is minimum value.
 - 5-All components in the motor starter (such as C, B, contactor, overload, motor protection relay and starter) shall be selected according to type (2) co-ordinated as per the IEC 947-4-1 & IEC 947-4-2. Also it shall be properly sized according to the specified duties and design temperature the motor starter should contain circuit breaker.
 - 6-The degree of protection for the switchboard not less than IP42.
 - 7-The steel thickness of switchboard not less than 2 mm.
 - 8-All bus bar cross section area are calculated with current density not exceed = 1.5 A / mm².
 - 9-All low voltage switch board are feeded from 2 feeders according to owner requires.

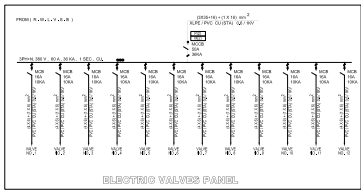
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B-CAPACITOR:

- The steps selection of the power factor correction units should be done according to the specification to reach to the best power factor values.
- The capacitor bank should contain discharge resistor, inside or out side, to make the voltage on the terminal reach 50 V within one second or according to IEC.
- The supplier of switchgear should provide a solution to protect the capacitor bank from the harmonic produced by the soft starter during starting and stopping period.

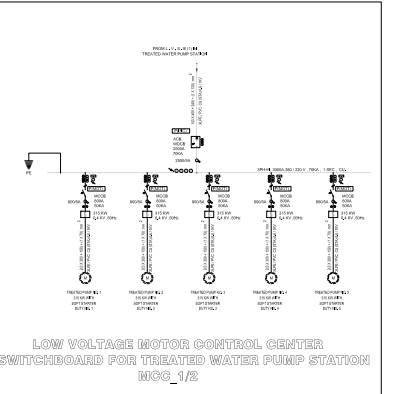
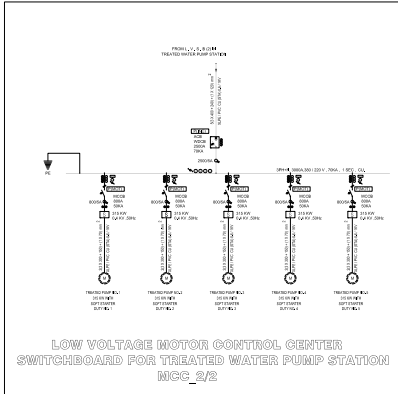


A-NOTES FOR THE LOW VOLTAGE SWITCHBOARD:

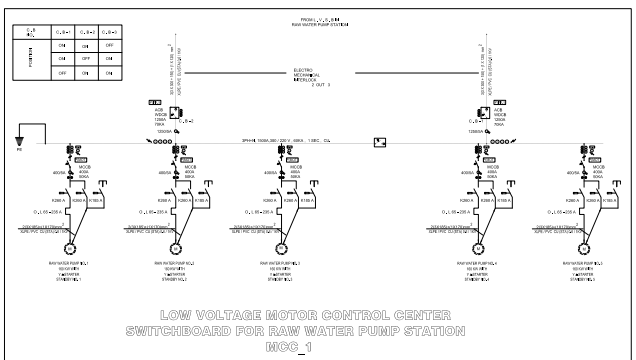
- All main C, B with earth leakage protection shall be monitored through toroid.
- All L, V, C, B greater than 100A must have electronic trip unit.
- The selection of all C, B and bus bars should be carried out in accordance to the S, C breaking capacity at that point.
- The rating value of all component and the S, C breaking capacity mentioned in the drawing is minimum value.
- All components in the motor starter (such as C, B, contactor, overload, motor protection relay and starter) shall be selected according to type (2) co-ordinated as per the IEC 947-4-1 & IEC 947-4-2. Also it shall be properly sized according to the specified duties and design temperature the motor starter should contain circuit breaker.
- The degree of protection for the switchboard not less than IP42.
- The steel thickness of switchboard not less than 2 mm.
- All bus bar cross section area are calculated with current density not exceed = 1.5 A / mm².
- All low voltage switch board are feeded from 2 feeders according to owner requires.

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LOW VOLTAGE MOTOR CONTROL CENTER SWITCHBOARD FOR TREATED WATER PUMP STATION

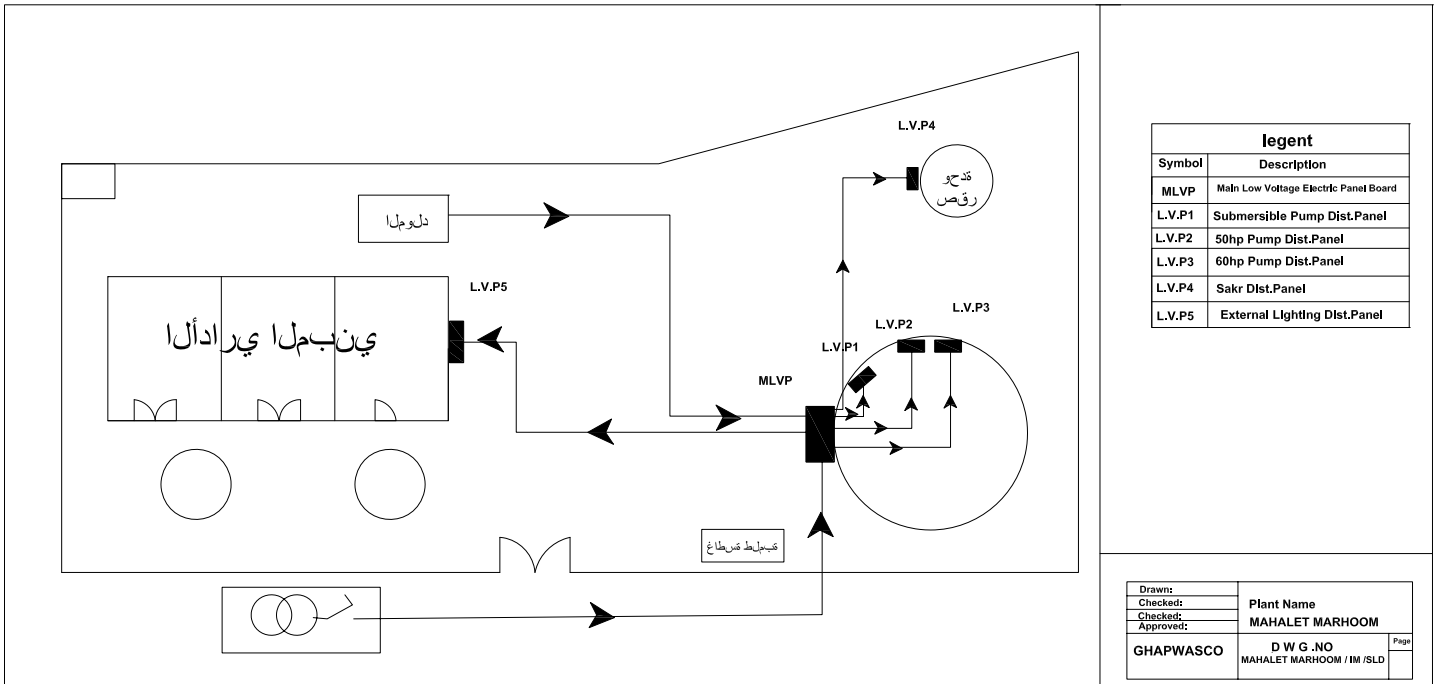
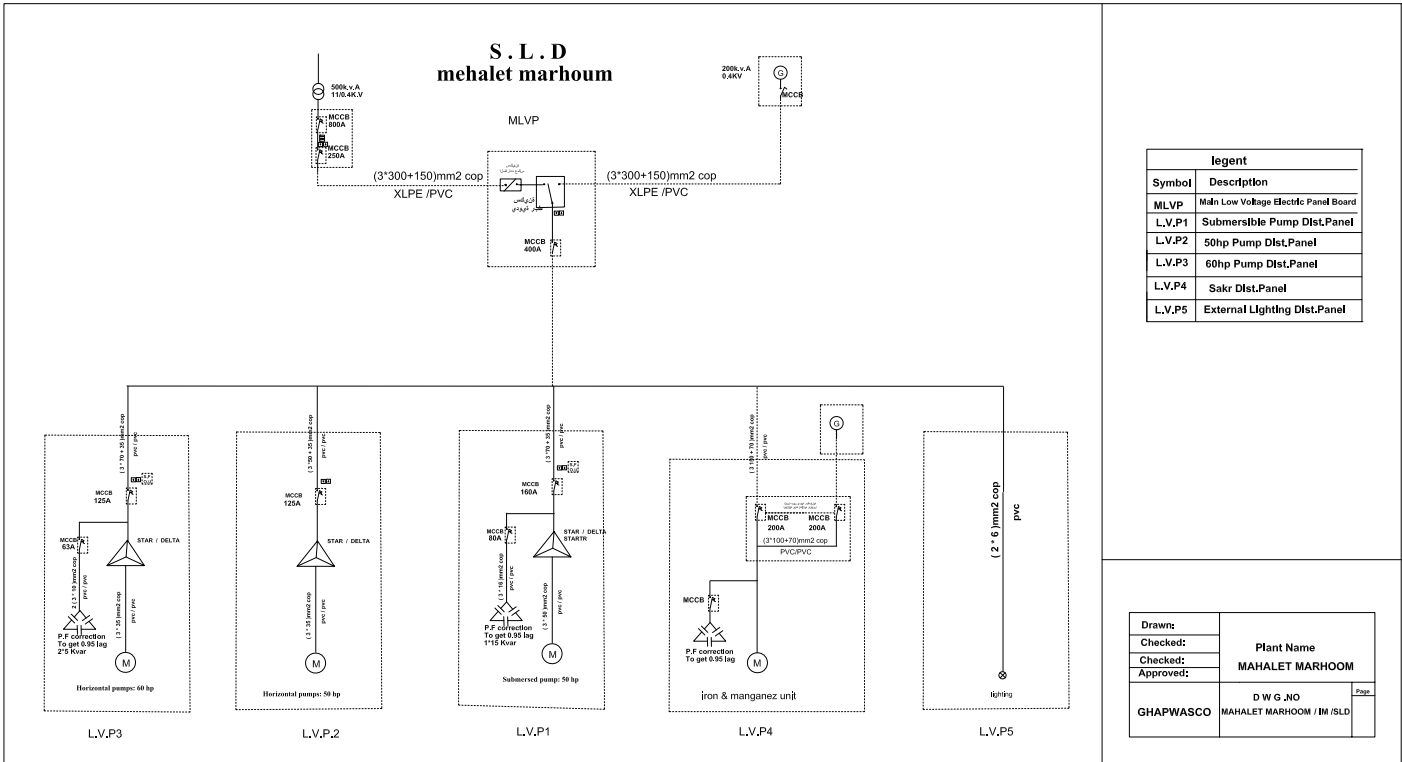


A-NOTES FOR THE LOW VOLTAGE SWITCHBOARD:

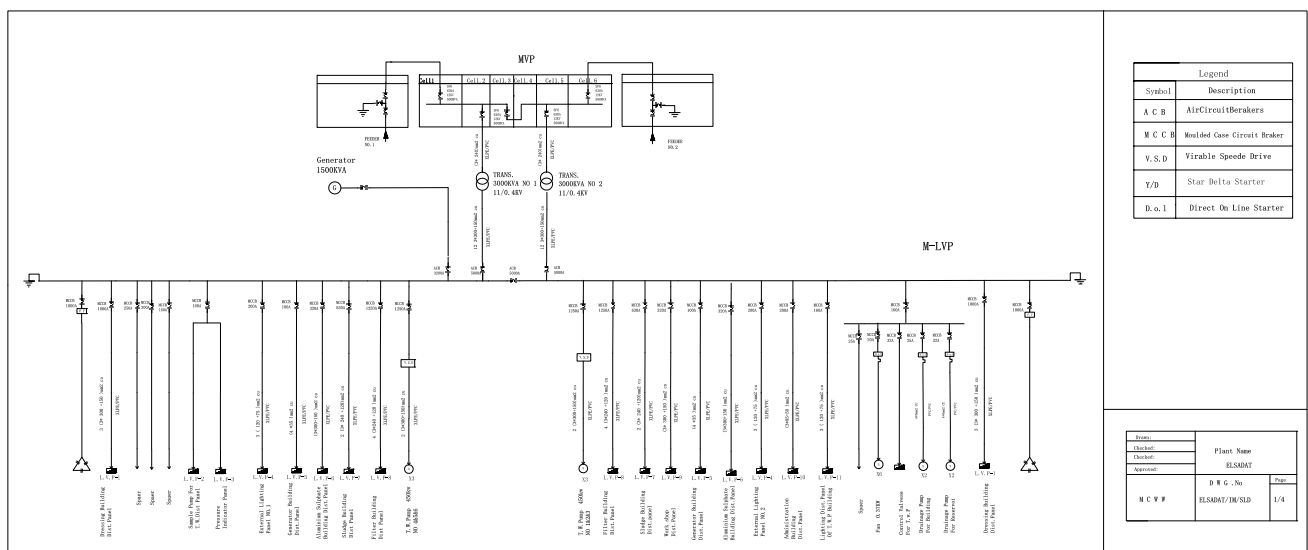
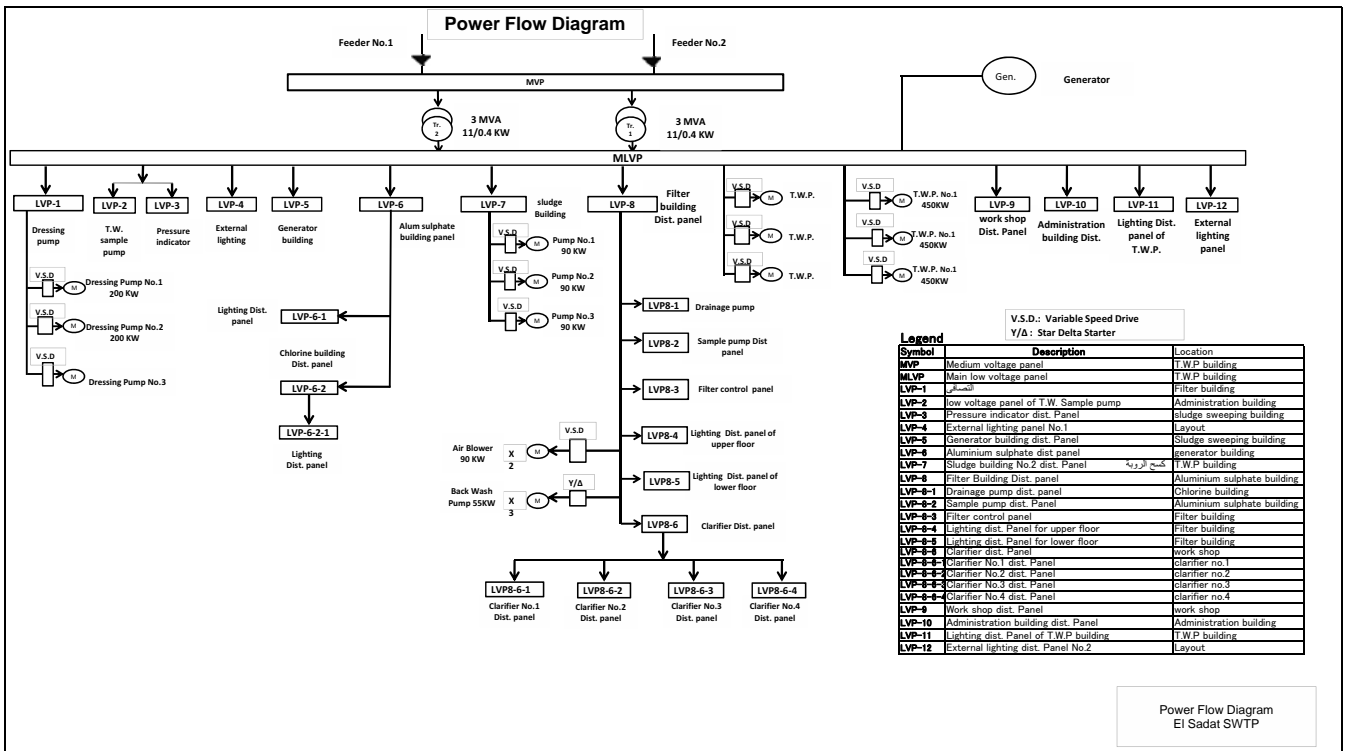
- All main C, B with earth leakage protection shall be monitored through toroid.
- All L, V, C, B greater than 100A must have electronic trip unit.
- The selection of all C, B and bus bars should be carried out in accordance to the S, C breaking capacity at that point.
- The rating value of all component and the S, C breaking capacity mentioned in the drawing is minimum value.
- All components in the motor starter (such as C, B, contactor, overload, motor protection relay and starter) shall be selected according to type (2) co-ordinated as per the IEC 947-4-1 & IEC 947-4-2. Also it shall be properly sized according to the specified duties and design temperature the motor starter should contain circuit breaker.
- The degree of protection for the switchboard not less than IP42.
- The steel thickness of switchboard not less than 2 mm.
- All bus bar cross section area are calculated with current density not exceed = 1.5 A / mm².
- All low voltage switch board are feeded from 2 feeders according to owner requires.

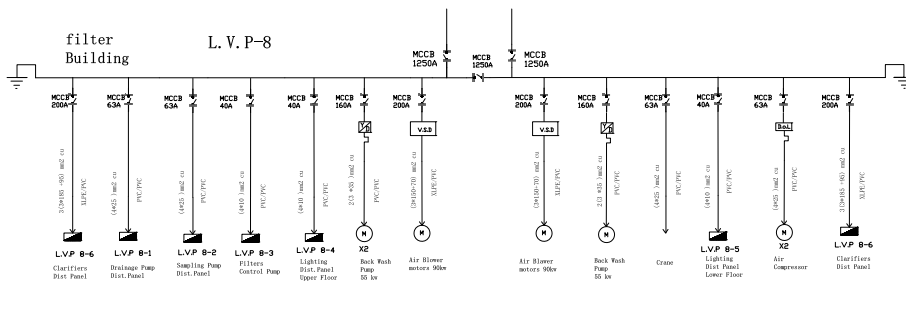
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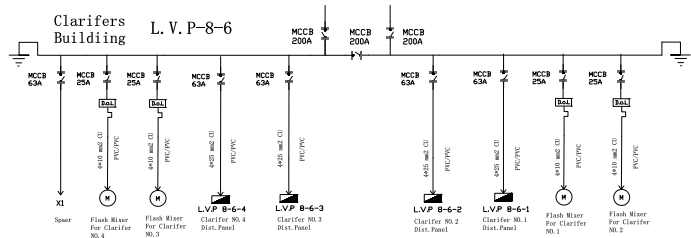


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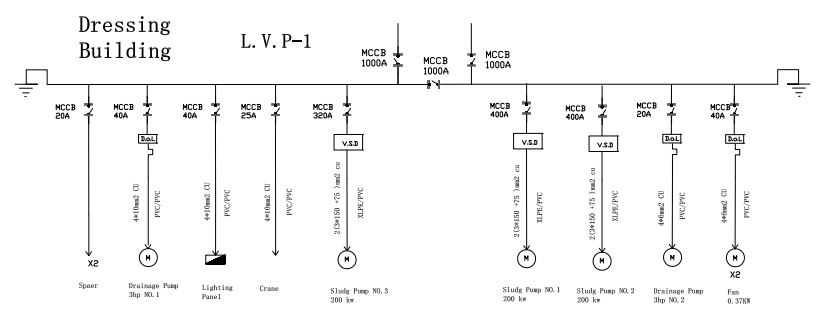




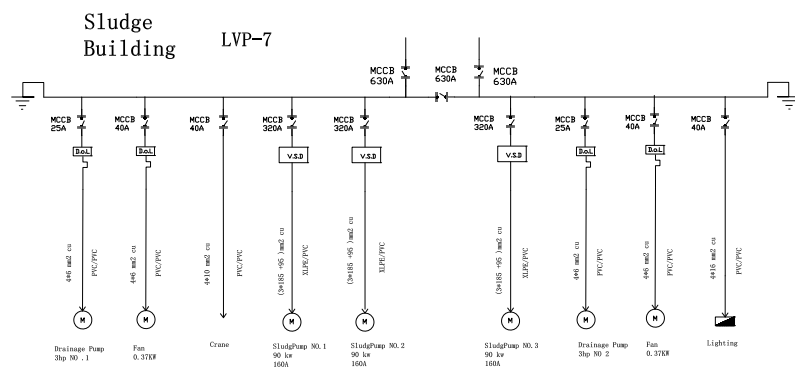
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Symbol	Description
A C B	AirCircuitBreakers
M C C B	Moulded Case Circuit Breaker
V. S. D	Virable Speede Drive
Y/D	Star Delta Starter
D. o. l	Direct On Line Starter



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M C W W		



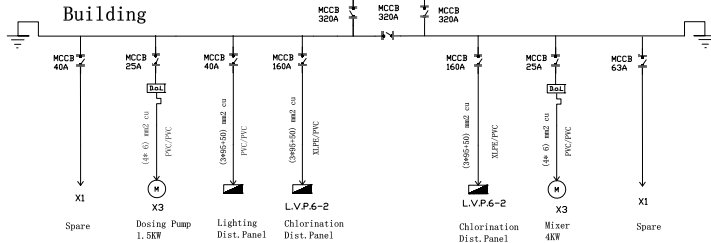
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Symbol	Description
A C B	AirCircuitBreakers
M C C B	Moulded Case Circuit Breaker
V. S. D	Virable Speede Drive
Y/D	Star Delta Starter
D. o. l	Direct On Line Starter



Drawn:	Plant Name	
Checked:	ELSADAT	
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Approved:	ELSADAT/IM/SLD	3/4
M C W W		

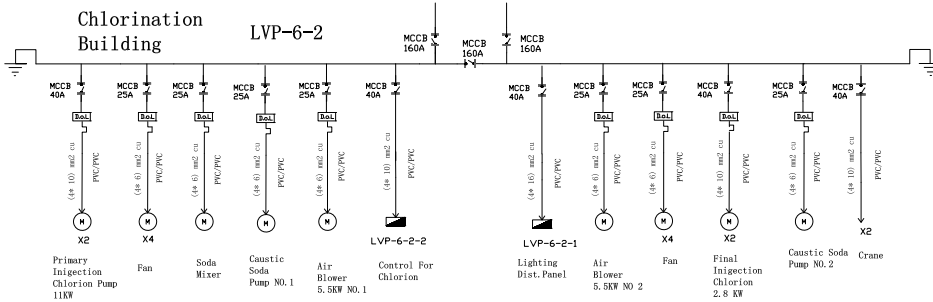
Aluminium Sulphate Building

LVP-6



Chlorination Building

LVP-6-2

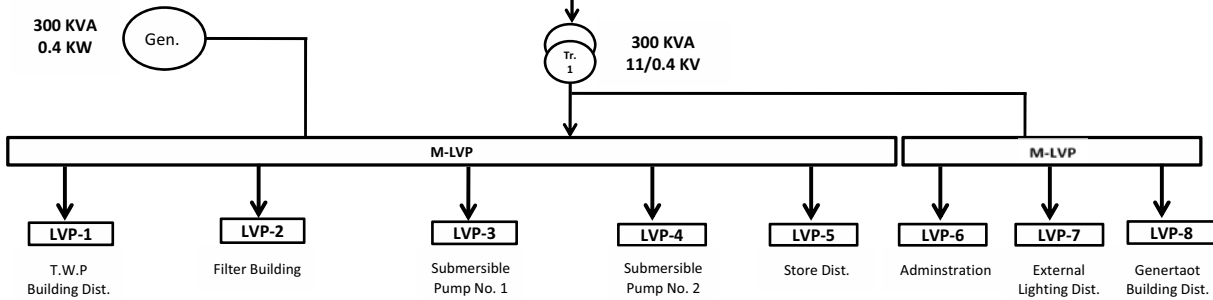


Legend

Symbol	Description
A C B	AirCircuitBerakers
M C C B	Moulded Case Circuit Braker
V. S. D	Virable Speede Drive
Y/D	Star Delta Starter
D. o. l	Direct On Line Starter

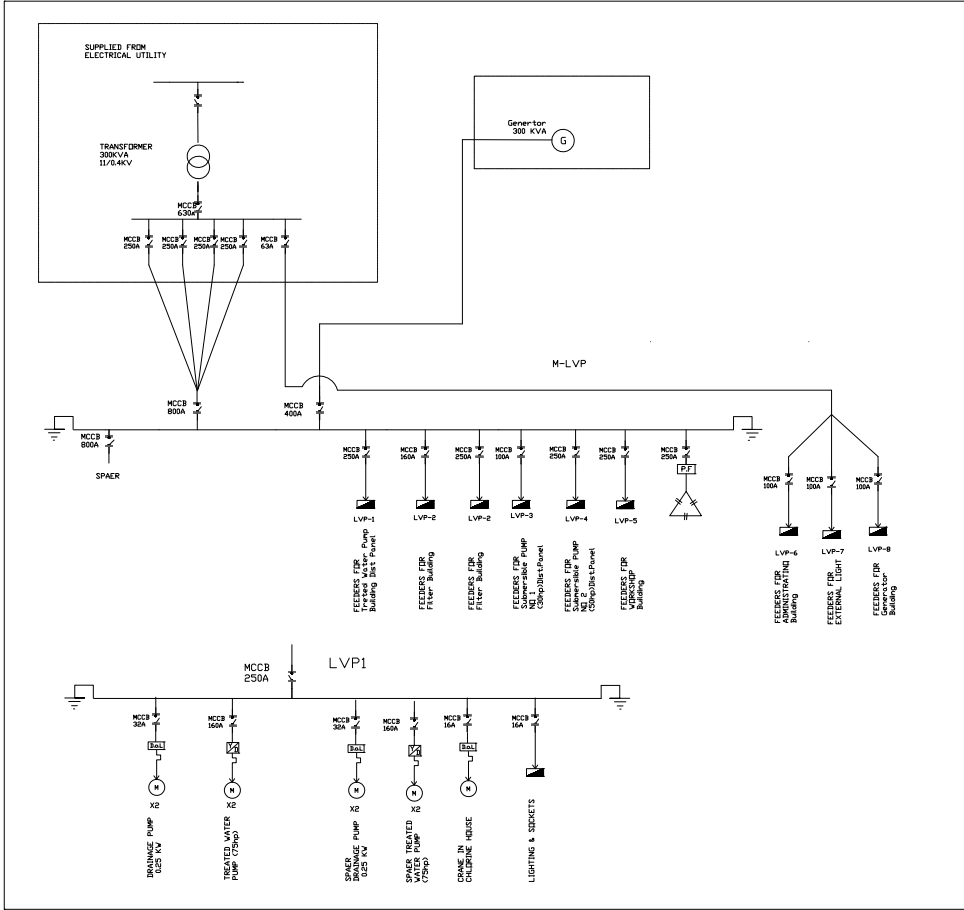
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Power Flow Diagram



Legend	
M-LVP	Main Low Voltage Electric Panel Board
LVP1	Treted Water Pump Building Dist. Panel
LVP2	Filter Building Dist. Panel
LVP3	Submersible Pump No. 1 Dist. Panel
LVP4	Submersible Pump No. 2 Dist. Panel
LVP5	Store Dist. Panel
LVP6	Adminstration Building Dist. Panel
LVP7	External Lighting Dist. Panel
LVP8	Genertaot Building Dist. Panel

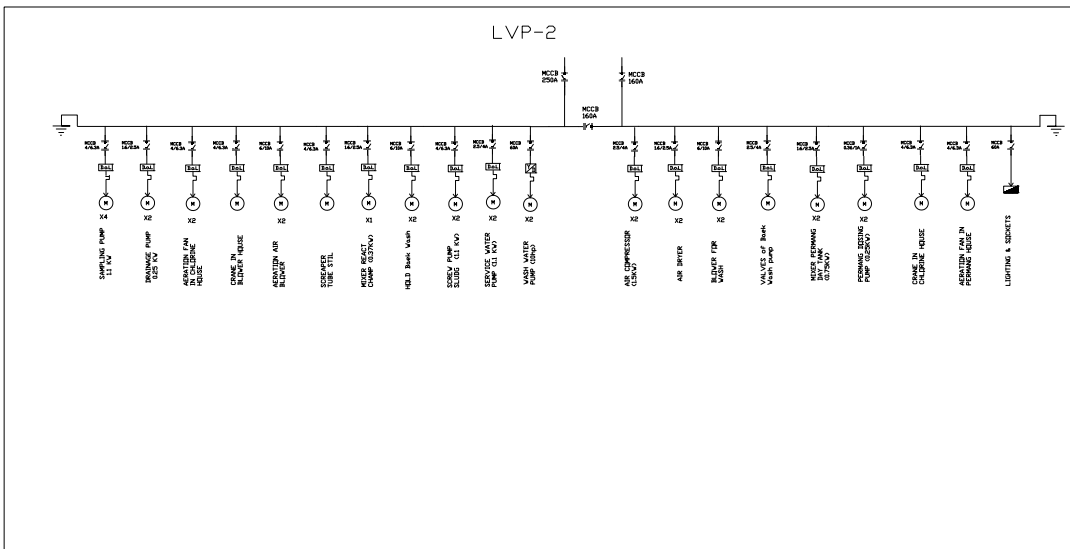
Power Flow Diagram
Geay IMRP



Legend	
Symbol	Description
M c c b	Moulded Case Circuit Breaker
Y/D	Star Delta Starter
D.o.l	Direct On Line Starter

Legend	
Symbol	Description
M-LVP	Main low voltage Electric Panel Board
LVP1	Treated Water Pump Building Dist.Panel
LVP2	Filter Building Dist.Panel
LVP3	Submersible pump 1Dist.Panel
LVP4	Submersible pump 2Dist.Panel
LVP5	Store Dist.Panel
LVP6	Administration Building Dist.Panel
LVP7	External Lighting Dist.Panel
LVP8	Genertaot Building Dist.Panel

Drawn:	Plant Name	
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M C W W		



Legend	
Symbol	Description
M c c b	Moulded Case Circuit Breaker
Y/D	Star Delta Starter
D.o.l	Direct On Line Starter

Drawn:	Plant Name	
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Approved:	Gezay/IM/SLD	2/2
M C W W		