



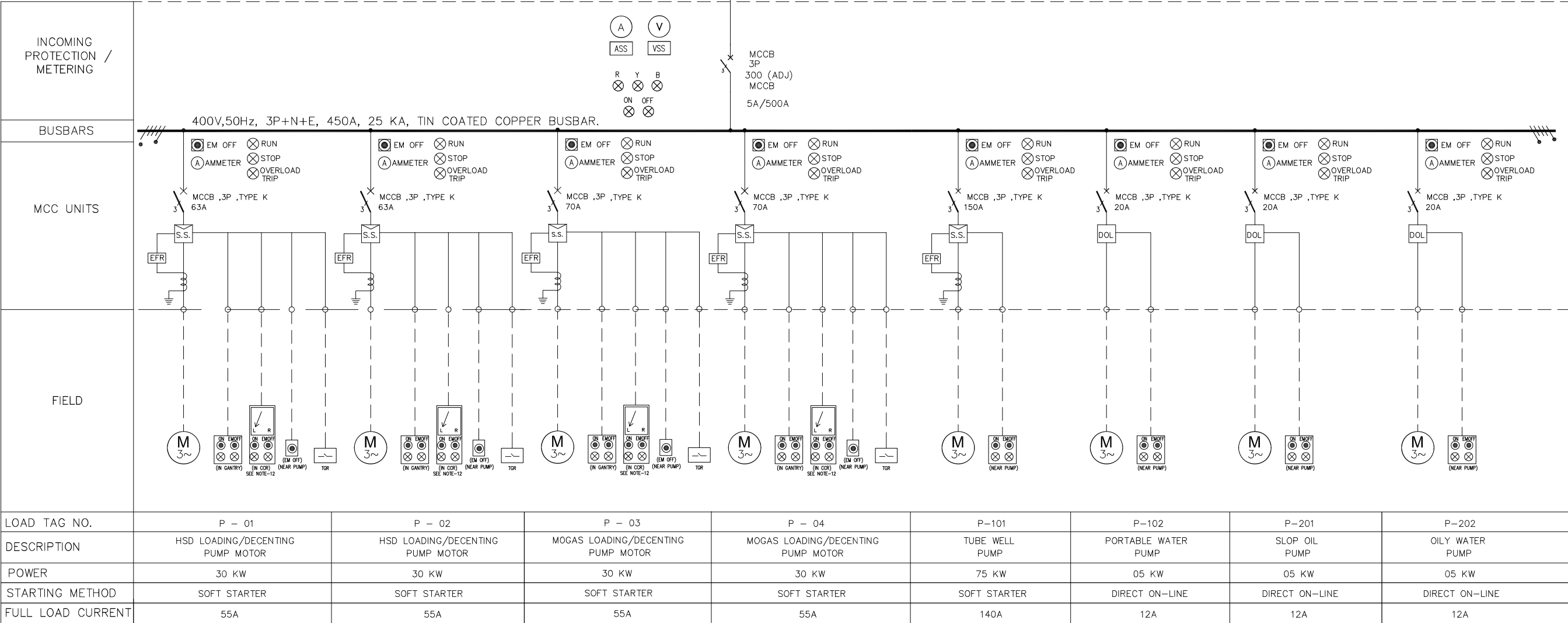
**FLOW PETROLEUM PRIVATE LIMITED**

**ELECTRICAL & INSTRUMENTATION WORKS**  
**AT KOHAT OIL DEPOT**

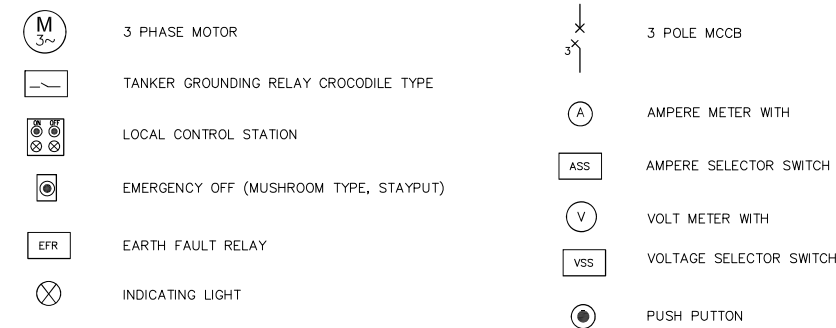
**DRAWINGS**



MCC-001 (AT ELECTRICAL BUILDING)



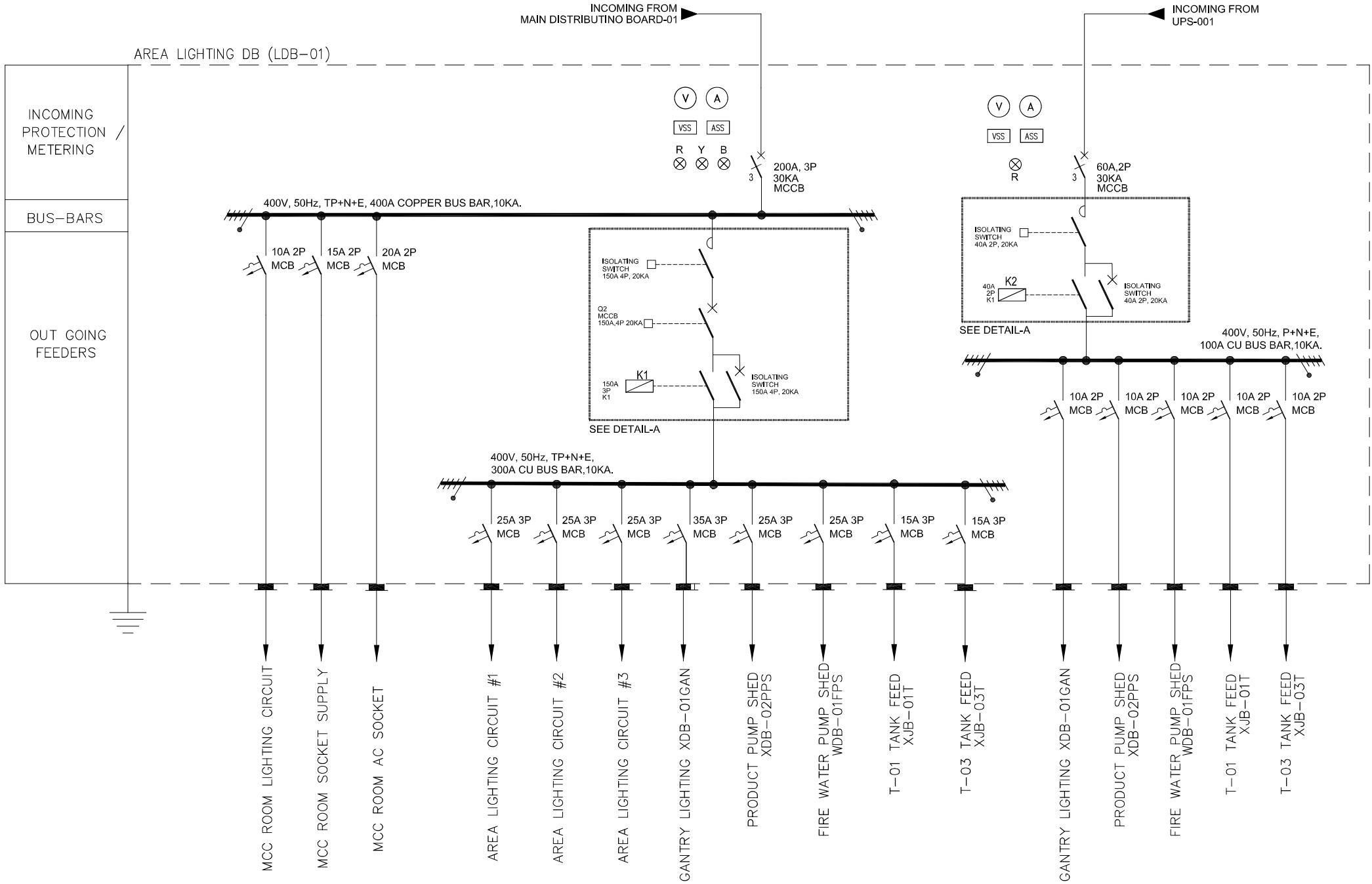
LEGENDS:



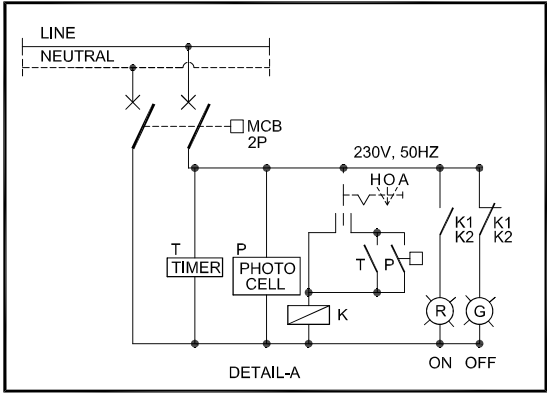
NOTES:

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH MCC SPECIFICATION.
- THE ELECTRICAL EQUIPMENT SHOWN ARE THE MINIMUM DESIGN REQUIREMENT. THE SUPPLIER SHALL FURNISH ADDITIONAL REQUIREMENTS AS PER IEC AND OTHER RELEVANT STANDARDS CONSIDERING SYSTEM REQUIREMENT.
- SUPPLIER SHALL CONSIDER MOTOR AND OTHER ELECTRICAL LOADS RATING FOR VERIFYING STARTER SIZE, BREAKER RATING AND OTHER ELECTRICAL COMPONENTS.
- THE MCC ENCLOSURE RATING SHALL BE IP42, FLOOR MOUNTED FREE STANDING, POWDER COATED SHEET STEEL.
- THE MCC SHALL BE FRONT OPERATED.
- THE MOTOR CONTROL CIRCUIT SHALL BE 230 VAC.
- THE POWER & CONTROL CABLES SHALL ENTER FROM BOTTOM OF MCC.
- THE DOOR LOCKING SYSTEM SHALL BE STAINLESS STEEL.
- THERE SHALL BE A PROVISION OF BYPASS OPERATION FROM AUTO TRIP IN THE CONTROL CIRCUIT.
- N/A - NOT APPLICABLE.
- TBA - TO BE ADVISED.
- CONTROL ROOM LCS SHALL BE PROVIDED IN CONTROL DESK WITH ON/OFF PUSH BUTTON, INDICATION LIGHTS AND LOCAL-REMOTE SELECTOR SWITCH. ON SELECTION OF LOCAL, MOTOR CONTROL WILL BE FROM CONTROL ROOM AND ON REMOTE SELECTION, MOTOR CONTROL WILL BE FROM GANTRY LCS.
- EM-OFF SHALL BE MUSHROOM (STAYPUT) TYPE PUSH BUTTON NEAR MOTOR, GANTRY LCS & IN CONTROL ROOM.
- VENDOR SHALL PROVIDE ATLEAST 2 SPARE NC & NO SPARE CONTACTS IN CONTROL SCHEME FOR FUTURE INTERLOCKS.
- FULL LOAD CURRENT AS PER 400V @ 0.8PF LINE-TO-LINE.

0	01-10-2022	FIRST ISSUE	ASAD	SFA	MAJ
REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.
COMPUTER REFERENCE DRAWING NUMBER : 288-1-ELE-SLD-002-R0					
<b>OES</b> OPTIMUM ENGINEERING SERVICES					
PLOT # 8-51, GROUND FLOOR, BLOCK# 6, DUBLIYANAH QABAL, KARACHI, PAKISTAN					
Tel: (05-21) 34800097, Fax: (05-21) 34800367, WEBSITE: www.optimumengs.com					
CLIENT:			FLOW PETROLEUM (PVT.) LTD.		
PROJECT:			KOHAT OIL DEPOT		
TITLE:			SINGLE LINE DIAGRAM FOR MOTOR CONTROL CENTRE		
DRAWING NO. 288-1-ELE-SLD-002			REV. 0		
JOB NO. 288-1	SCALE : N.T.S	SIZE : A1	SHEET : 1 OF 1		




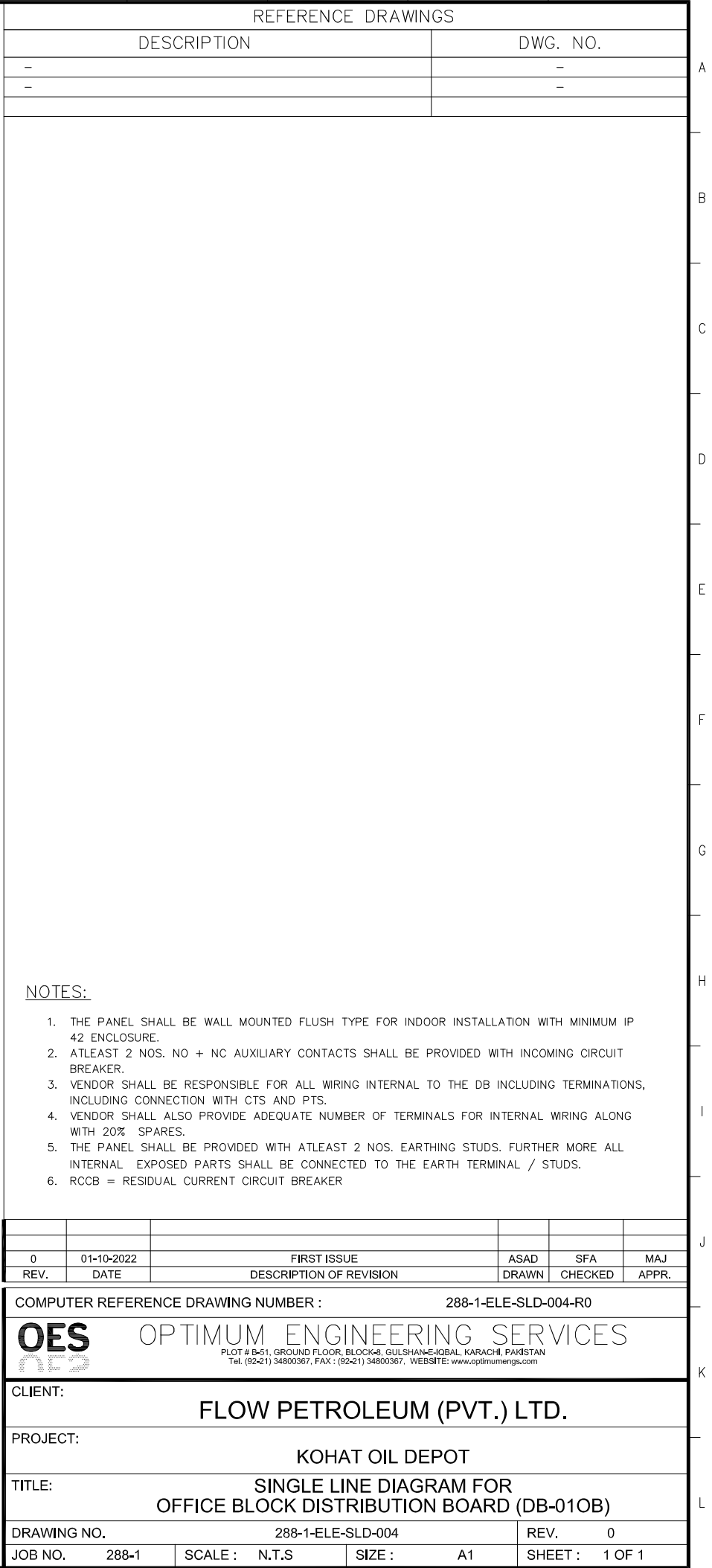
DETAIL-A

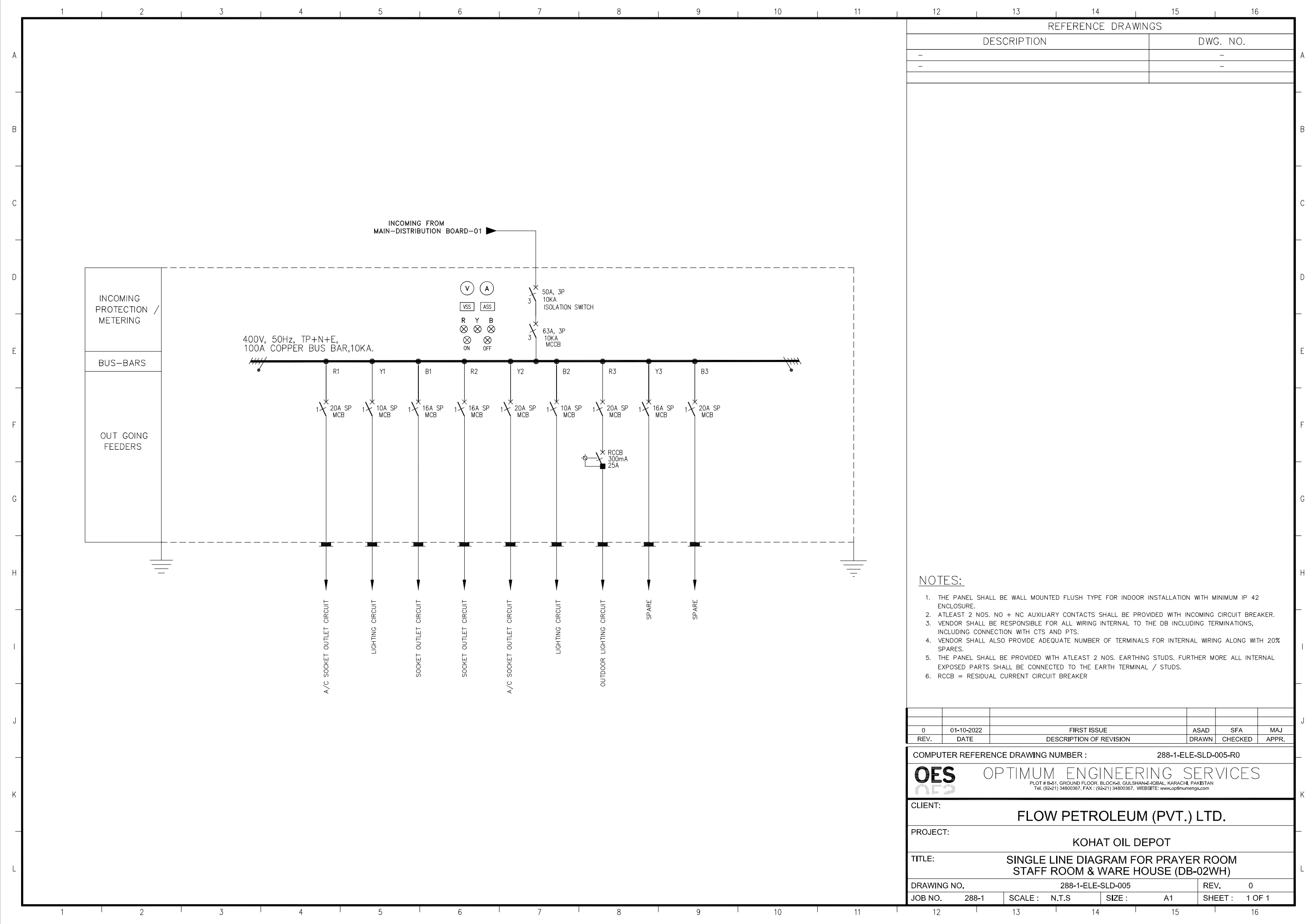


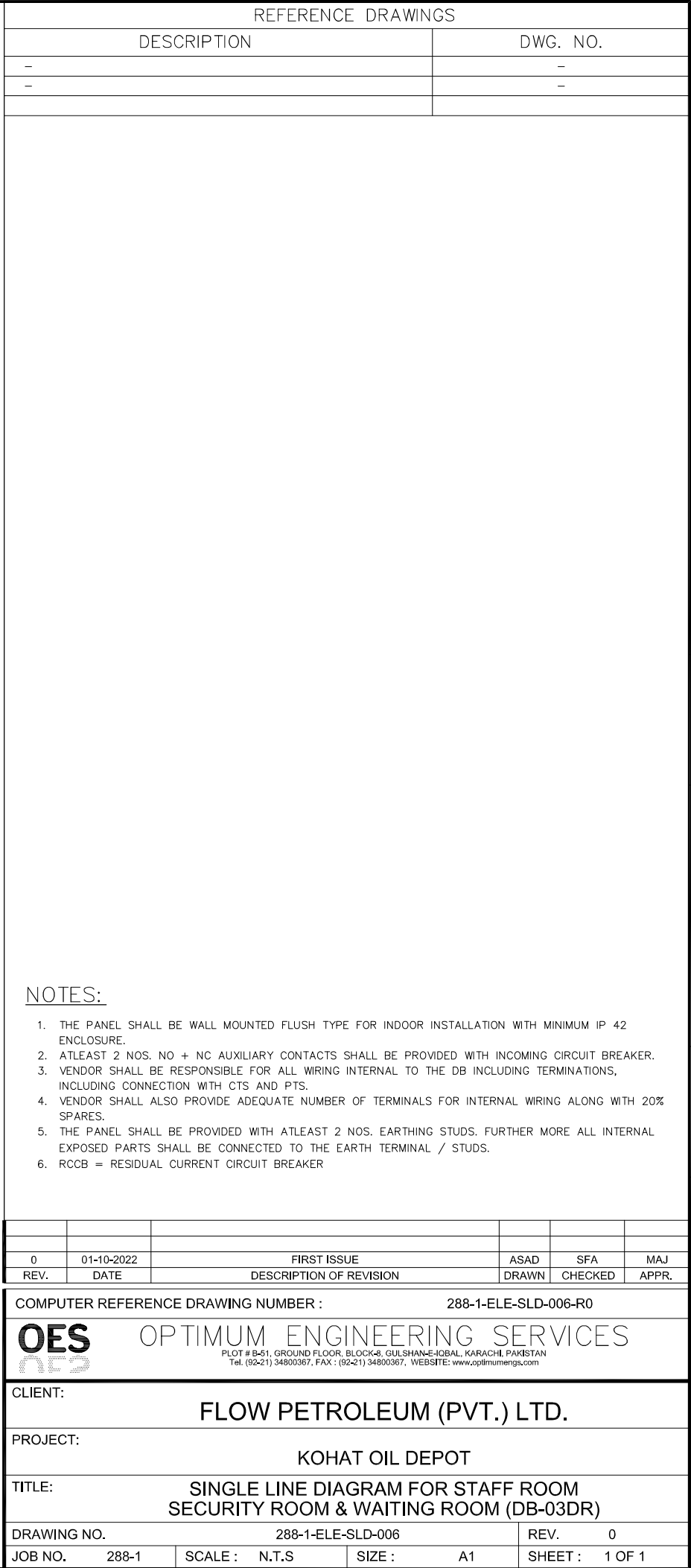
NOTES:

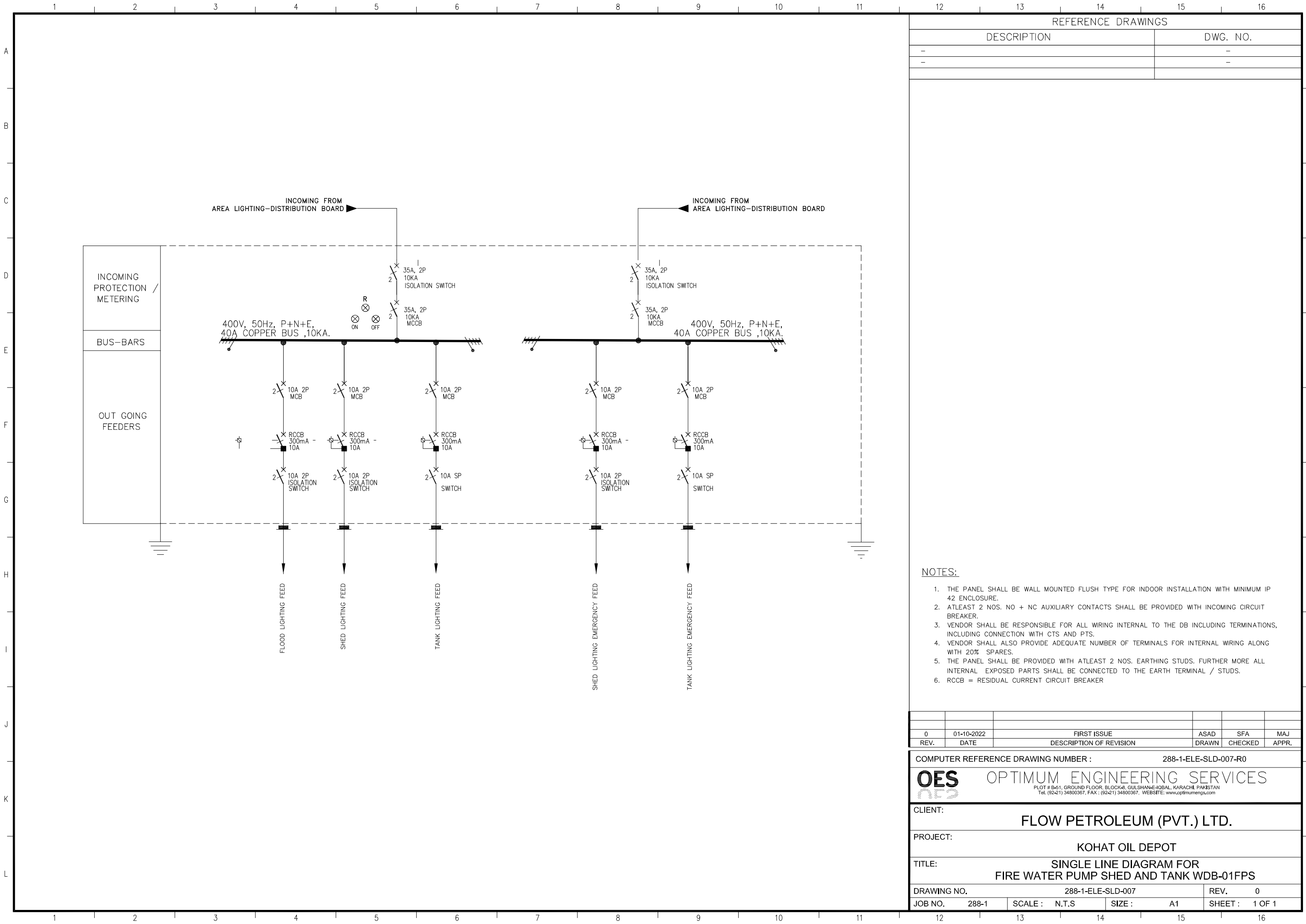
1. THE PANEL SHALL BE WALL MOUNTED FLUSH TYPE FOR INDOOR INSTALLATION WITH MINIMUM IP 42 ENCLOSURE.
2. AT LEAST 2 NOS. NO + NC AUXILIARY CONTACTS SHALL BE PROVIDED WITH INCOMING CIRCUIT BREAKER.
3. VENDOR SHALL BE RESPONSIBLE FOR ALL WIRING INTERNAL TO THE DB INCLUDING TERMINATIONS & CONNECTIONS WITH CT's AND PT's.
4. VENDOR SHALL ALSO PROVIDE ADEQUATE NUMBER OF TERMINALS FOR INTERNAL WIRING ALONG WITH 20% SPARES.
5. THE PANEL SHALL BE PROVIDED WITH AT LEAST TWO NOS. EARTHING STUDS. FURTHER MORE ALL INTERNAL EXPOSED PARTS SHALL BE CONNECTED TO THE EARTH TERMINAL / STUDS.
6. ALL DISTRIBUTION PANELS WITH EMERGENCY SUPPLY SHOULD BE PROVIDED WITH 4 CORE CABLE WITH SEPARATE CORE UPS POWER.

0	01-10-2022	FIRST ISSUE	ASAD	SFA	MAJ
REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.
COMPUTER REFERENCE DRAWING NUMBER :			288-1-ELE-SLD-003-R0		
<div><div><div>OPTIMUM ENGINEERING SERVICES</div></div><div><div>PLOT # 8-51, GROUND FLOOR, BLOCK# 6, GULSHAN E-KOBAI, KARACHI, PAKISTAN</div><div>Tel: (92-21) 34800097, FAX: (92-21) 34800367, WEBSITE: <a href="http://www.optimumengs.com">www.optimumengs.com</a></div></div></div>					
CLIENT: FLOW PETROLEUM (PVT.) LTD.					
PROJECT: KOHAT OIL DEPOT					
TITLE: SINGLE LINE DIAGRAM FOR AREA LIGHTING DISTRIBUTION BOARD					
DRAWING NO. 288-1-ELE-SLD-003			REV. 0		
JOB NO. 288-1	SCALE : N.T.S	SIZE : A1	SHEET : 1 OF 1		







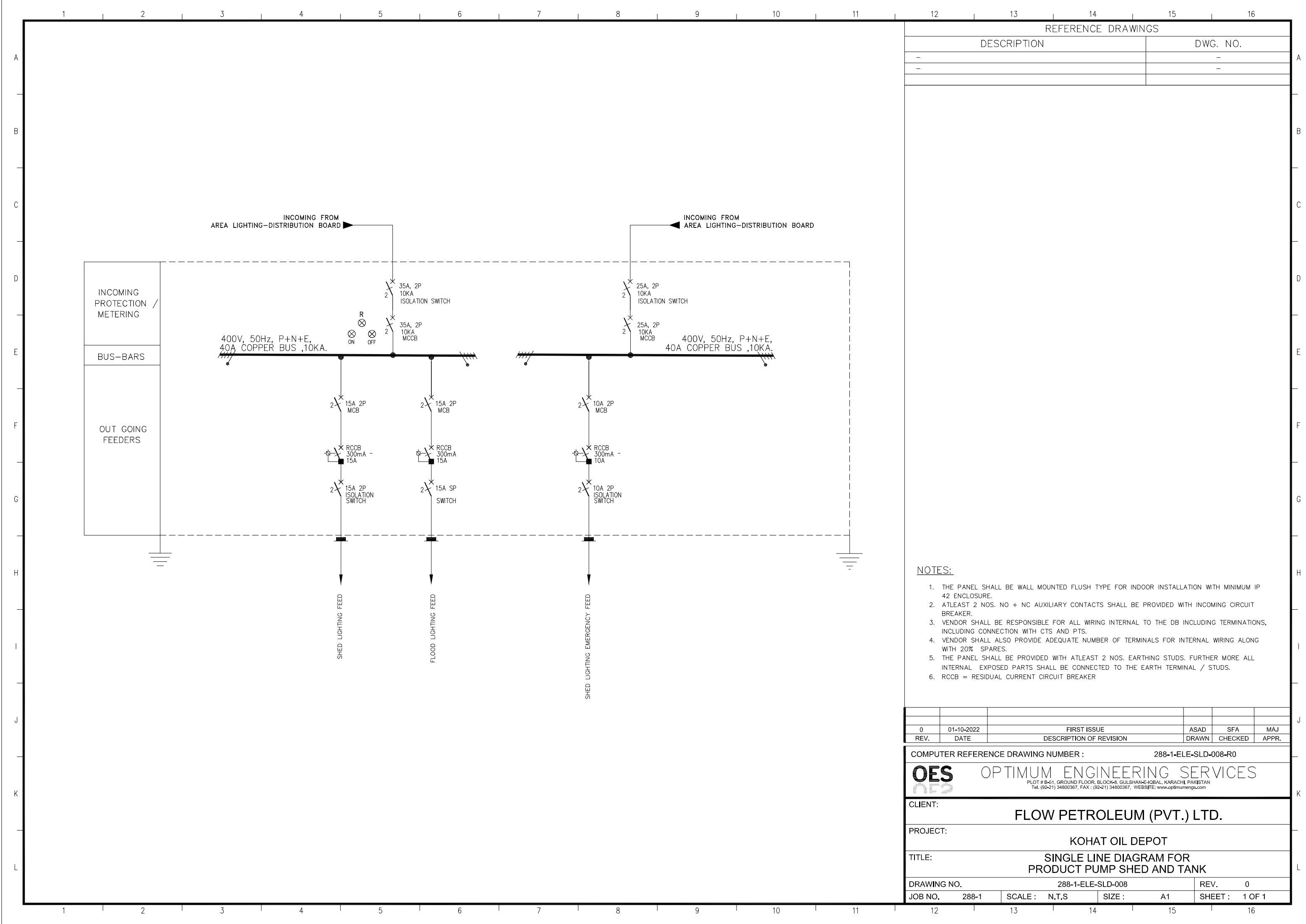


REFERENCE DRAWINGS	
DESCRIPTION	DWG. NO.
-	-
-	-

- NOTES:
1. THE PANEL SHALL BE WALL MOUNTED FLUSH TYPE FOR INDOOR INSTALLATION WITH MINIMUM IP 42 ENCLOSURE.
  2. ATLEAST 2 NOS. NO + NC AUXILIARY CONTACTS SHALL BE PROVIDED WITH INCOMING CIRCUIT BREAKER.
  3. VENDOR SHALL BE RESPONSIBLE FOR ALL WIRING INTERNAL TO THE DB INCLUDING TERMINATIONS, INCLUDING CONNECTION WITH CTS AND PTS.
  4. VENDOR SHALL ALSO PROVIDE ADEQUATE NUMBER OF TERMINALS FOR INTERNAL WIRING ALONG WITH 20% SPARES.
  5. THE PANEL SHALL BE PROVIDED WITH ATLEAST 2 NOS. EARTHING STUDS. FURTHER MORE ALL INTERNAL EXPOSED PARTS SHALL BE CONNECTED TO THE EARTH TERMINAL / STUDS.
  6. RCCB = RESIDUAL CURRENT CIRCUIT BREAKER

0	01-10-2022	FIRST ISSUE	ASAD	SFA	MAJ
REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.
COMPUTER REFERENCE DRAWING NUMBER :			288-1-ELE-SLD-007-R0		
<div><div><div>OES</div><div>OPTIMUM ENGINEERING SERVICES</div><div><small>PLOT # B-51, GROUND FLOOR, BLOCK-8, GULSHAN-E-HQBAL, KARACHI, PAKISTAN Tel. (92-21) 34800367, FAX : (92-21) 34800367, WEBSITE: www.optimumengs.com</small></div></div></div>					
CLIENT:					
FLOW PETROLEUM (PVT.) LTD.					
PROJECT:					
KOHAT OIL DEPOT					
TITLE:					
SINGLE LINE DIAGRAM FOR FIRE WATER PUMP SHED AND TANK WDB-01FPS					
DRAWING NO.			288-1-ELE-SLD-007		REV. 0
JOB NO.	288-1	SCALE :	N.T.S	SIZE :	A1
				SHEET :	1 OF 1

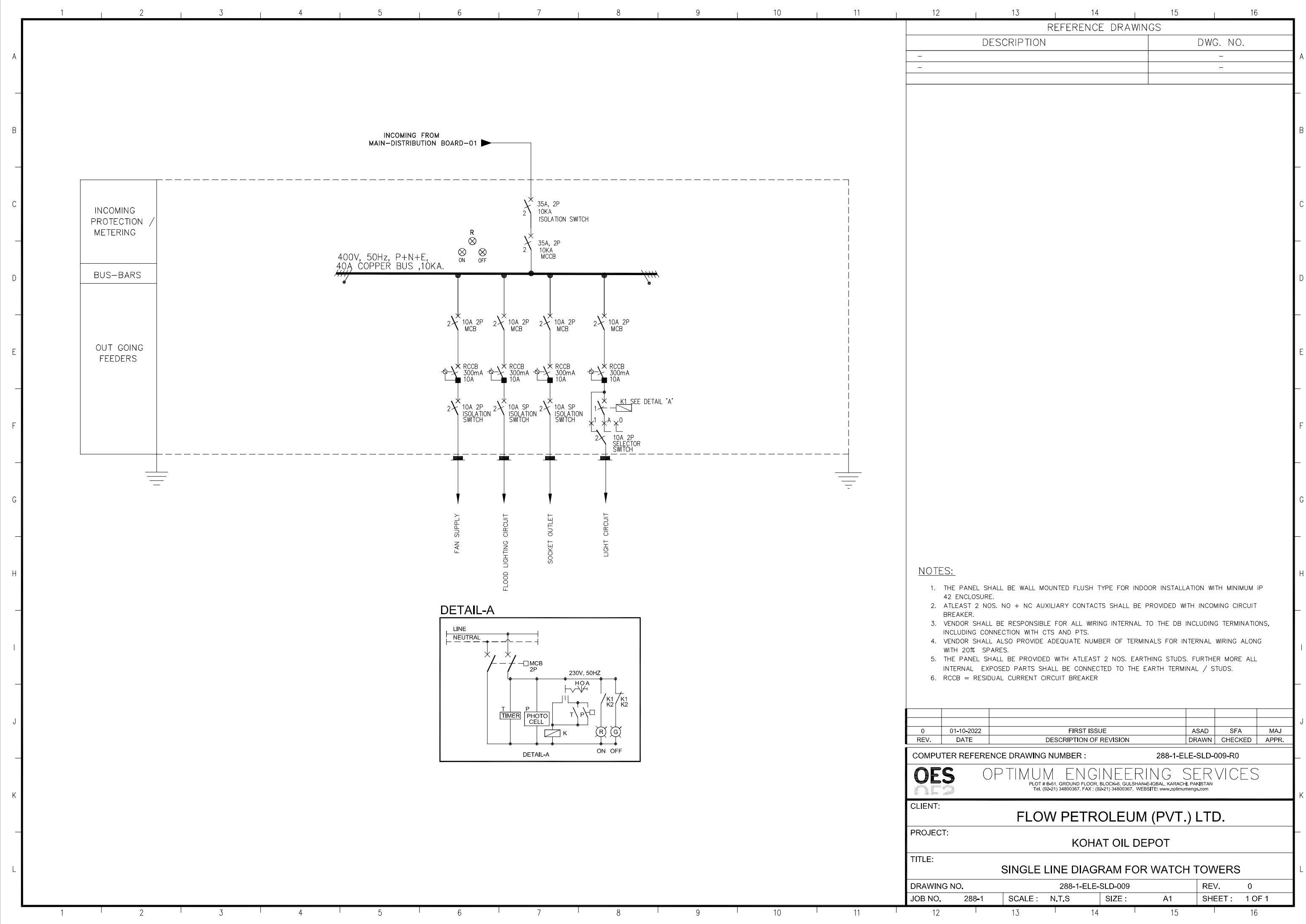


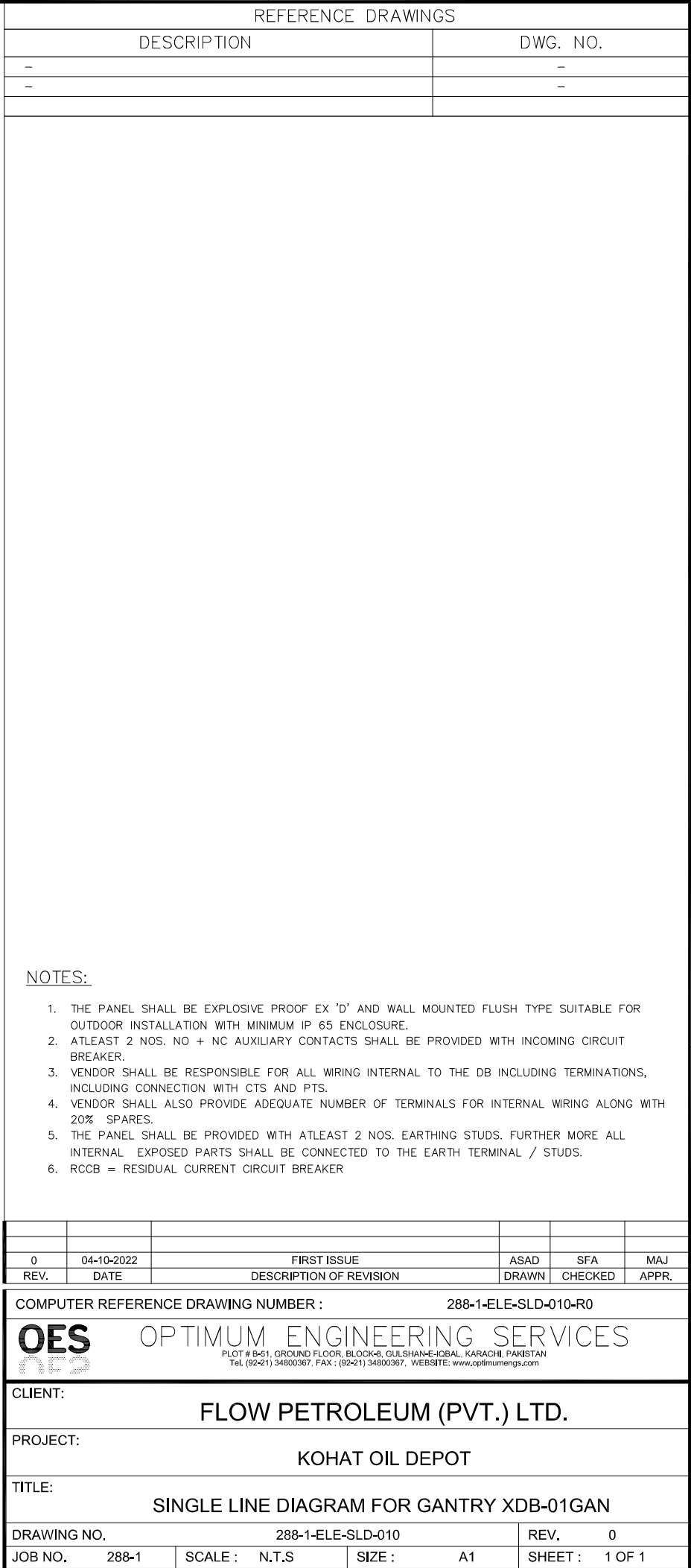


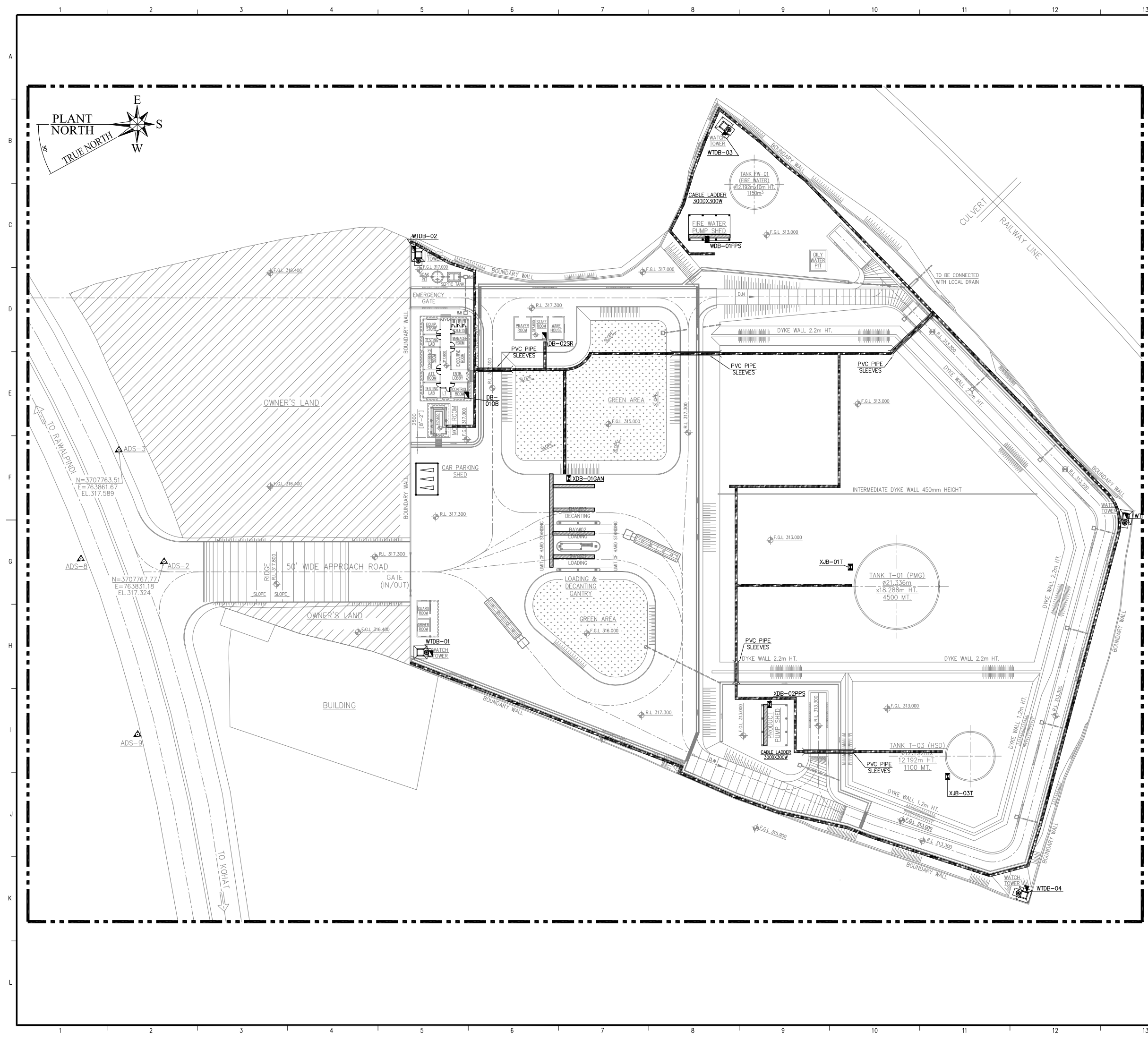
REFERENCE DRAWINGS	
DESCRIPTION	DWG. NO.
-	-
-	-

- NOTES:
1. THE PANEL SHALL BE WALL MOUNTED FLUSH TYPE FOR INDOOR INSTALLATION WITH MINIMUM IP 42 ENCLOSURE.
  2. ATLEAST 2 NOS. NO + NC AUXILIARY CONTACTS SHALL BE PROVIDED WITH INCOMING CIRCUIT BREAKER.
  3. VENDOR SHALL BE RESPONSIBLE FOR ALL WIRING INTERNAL TO THE DB INCLUDING TERMINATIONS, INCLUDING CONNECTION WITH CTS AND PTS.
  4. VENDOR SHALL ALSO PROVIDE ADEQUATE NUMBER OF TERMINALS FOR INTERNAL WIRING ALONG WITH 20% SPARES.
  5. THE PANEL SHALL BE PROVIDED WITH ATLEAST 2 NOS. EARTHING STUDS. FURTHER MORE ALL INTERNAL EXPOSED PARTS SHALL BE CONNECTED TO THE EARTH TERMINAL / STUDS.
  6. RCCB = RESIDUAL CURRENT CIRCUIT BREAKER

0	01-10-2022	FIRST ISSUE	ASAD	SFA	MAJ
REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.
COMPUTER REFERENCE DRAWING NUMBER : 288-1-ELE-SLD-008-R0					
<div><div>OES</div><div>OPTIMUM ENGINEERING SERVICES</div><div><small>PLOT # B-61, GROUND FLOOR, BLOCK-8, GULSHAN-E-HQBAL, KARACHI, PAKISTAN Tel. (92-21) 34800367, FAX : (92-21) 34800367, WEBSITE: www.optimumengs.com</small></div></div>					
CLIENT: FLOW PETROLEUM (PVT.) LTD.					
PROJECT: KOHAT OIL DEPOT					
TITLE: SINGLE LINE DIAGRAM FOR PRODUCT PUMP SHED AND TANK					
DRAWING NO. 288-1-ELE-SLD-008			REV. 0		
JOB NO. 288-1	SCALE : N.T.S	SIZE : A1	SHEET : 1 OF 1		







REFERENCE DRAWINGS

DESCRIPTION	DWG. NO.
GENERAL PLOT PLAN	288-1-GEN-PLT-001
PIPING GENERAL ARRANGEMENT	288-1-PIP-GA-001

LEGEND:

CONDUIT

TRENCH

PVC SLEEVE

CABLE PULLING PIT (1500x1500 TYP.)

WEATHER-PROOF JUNCTION BOX

ELECTRICAL DISTRIBUTION BOARD

EX-PROOF JUNCTION BOX

NOTES:

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS, UNLESS OTHERWISE STATED.

2. LEVEL OF MM ROAD TO KIRARI KOT ROAD IS ASSUMED AS 100.000m & REMAINING LEVELS ARE MARKED ACCORDINGLY.

3. CONDUIT RUNS AND SIZE AS PER SITE CONDITIONS.

0	15-09-2022	ISSUED FOR REVIEW / APPROVAL	ASAD	SFA	MAJ
REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.

COMPUTER REFERENCE DRAWING NUMBER : 288-1-ELE-LAY-001-R0

OES

OPTIMUM ENGINEERING SERVICES

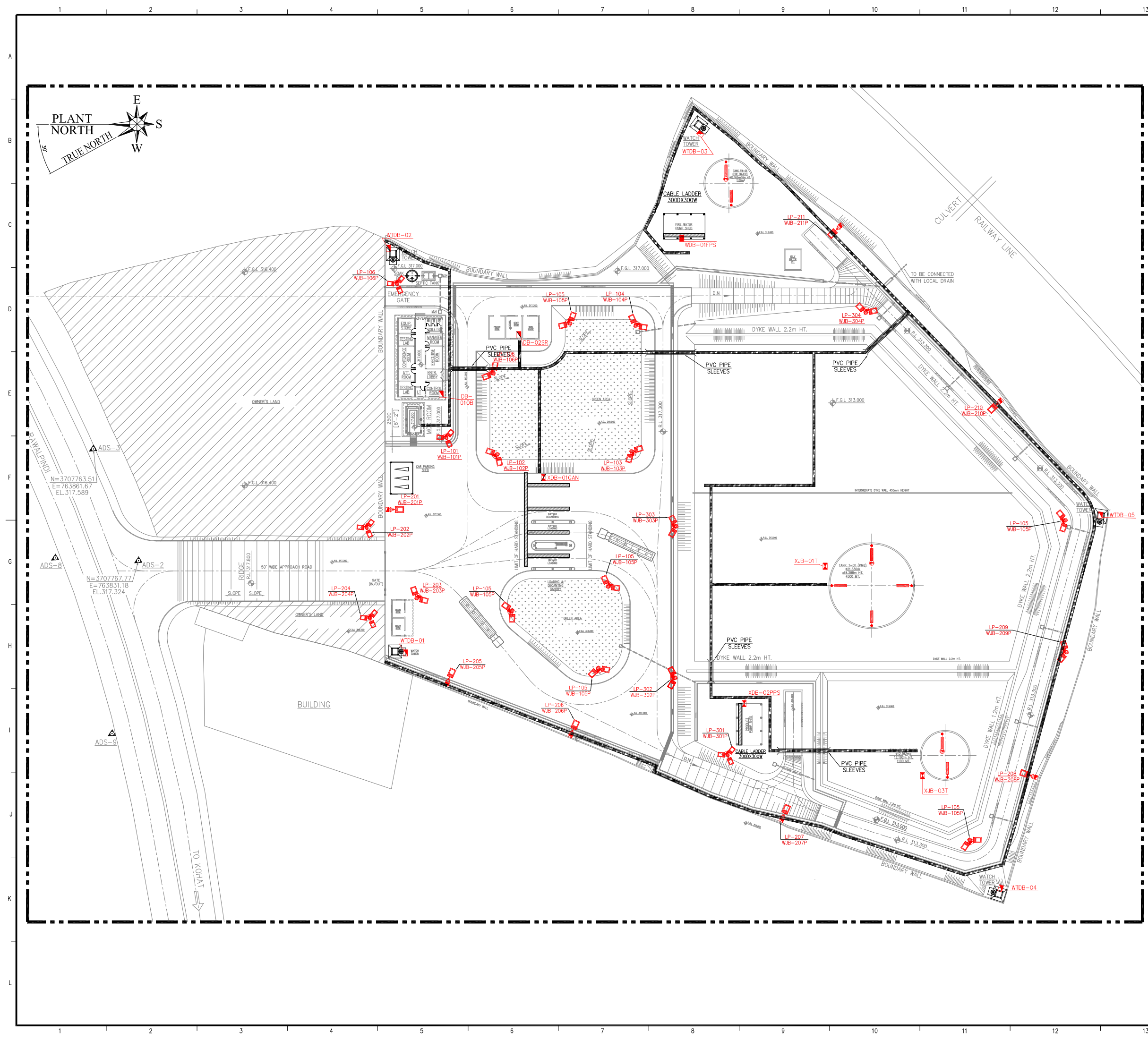
Plot # B-51, Ground Floor, Block-6, Gulshan-e-Hisab, Karachi, Pakistan  
Tel: (021) 34800387, Fax: (021) 34800387, Website: www.optimumeng.com

CLIENT: FLOW PETROLEUM (PVT.) LTD.

PROJECT: KOHAT OIL DEPOT

TITLE: ELECTRICAL TRENCH LAYOUT

DRAWING NO.	288-1-ELE-LAY-001	REV.	0
JOB NO.	288-1	SCALE :	1:450
		SIZE :	A1
		SHEET :	1 OF 1



REFERENCE DRAWINGS	
DESCRIPTION	DWG. NO.
GENERAL PLOT PLAN	288-1-GEN-PLT-001
PIPING GENERAL ARRANGEMENT	288-1-PIP-GA-001

**LEGEND:**

- 200W LED FLOOD LIGHT (YELLOW)
- 45W LINEAR LED LIGHT FIXTURE STANCHION MOUNTED
- 45W LINEAR LED LIGHT FIXTURE STANCHION MOUNTED STANCHION MOUNTED MAINTAINED TYPE (EXPLOSION PROOF)
- 45W LINEAR LED LIGHT FIXTURE STANCHION MOUNTED (WEATHERPROOF PROOF)
- 45W LINEAR LED LIGHT FIXTURE STANCHION MOUNTED STANCHION MOUNTED MAINTAINED TYPE (WEATHERPROOF PROOF)
- 10-METER HEIGHT LIGHTING POLE
- JUNCTION BOX (WEATHER PROOF)
- JUNCTION BOX (EXPLOSION PROOF)
- LIGHTING DISTRIBUTION BOARD

**ABBREVIATIONS:**

- LP : LIGHT POLE (WITH NORMAL LIGHT)
- WJB : WEATHERPROOF LIGHTING JUNCTION BOX
- XJB : EXPLOSIONPROOF LIGHTING JUNCTION BOX
- WTDB : WATCH TOWER LIGHTING DISTRIBUTION BOARD
- LDB : LIGHTING DISTRIBUTION BOARD

**NOTES:**

- ALL DIMENSION ARE IN MM UNLESS OTHERWISE SPECIFIED
- ALL COORDINATES AND LEVELS ARE IN METER
- THE SYMBOLS FOR ELECTRICAL EQUIPMENT SHOWN IN THE DRAWING ARE "NOT-TO-SCALE"AND SIZE HAVE BEEN BLOWN-UP FOR EASE OF REPRESENTATION.
- REFER TYPICAL DETAIL OF LIGHTING POLE. DWG # 288-1-ELE-DTL-XXX.
- THIS DRAWING SHALL READ IN CONJUNCTION WITH ELECTRICAL CABLE TRENCH ROUTE LAYOUT OF DRAWING # 288-1-ELE-001.
- AREA LIGHTING CIRCUIT CONNECTION SHALL BE LAID IN POWER CABLE TRENCHES ROUTE AS MUCH AS REASONABLY PRACTICABLE. WHERE TRENCH IS NOT AVAILABLE, LIGHTING CIRCUIT CABLE SHALL BE BURIED DIRECTLY AT A DEPTH NOT LESS THAN 300MM.
- WATCH TOWER JB'S WILL BE FED FROM INDEPENDENT DB.

REV.	DATE	ISSUED FOR REVIEW / APPROVAL	ASAD	SFA	MAJ
		DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.
0	15-09-2022				

COMPUTER REFERENCE DRAWING NUMBER : 288-1-ELE-LAY-002-R0

**OES** OPTIMUM ENGINEERING SERVICES  
PLOT # 86-01, GROUND FLOOR, BLOCK-6, GULSHAN-E-KHAR, KARACHI, PAKISTAN  
Tel: (02-21) 34800367, FAX: (02-21) 34800367, WEBSITE: www.optimumeng.com

CLIENT: FLOW PETROLEUM (PVT.) LTD.

PROJECT: KOHAT OIL DEPOT

TITLE: LIGHTING LAYOUT

DRAWING NO.	288-1-ELE-LAY-002	REV.	0
JOB NO.	288-1	SCALE :	1:450
		SIZE :	A1
		SHEET :	1 OF 1