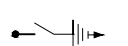
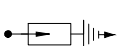


CAPACITOR BANKS SINGLE LINE DIAGRAM

LEGEND		
25	SYNCHRONIZING CHECK RELAY	 MOULDED CASE CIRCUIT BREAKER
27	UNDER VOLTAGE RELAY	 CONTACTOR (CONTACT OPEN IN THE UNOPERATED POSITION)(N.O.)
46	REVERSE PHASE OR PHASE BALANCE CURRENT RELAY	 SWITCH FUSE
47	PHASE SEQUENCE OR PHASE BALANCE VOLTAGE RELAY	 VOLTMETER SELECTOR SWITCH
49	THERMAL OVERLOAD RELAY	 AMMETER SELECTOR SWITCH
50	INSTANTANEOUS OVER CURRENT RELAY	 SELECTOR SWITCH
51	TIME DELAYED OVER CURRENT RELAY	 LED TYPE SIGNAL LAMP
50N	INSTANTANEOUS EARTH FAULT RELAY	 TRANSFORMER
51N	INVERSE TIME EARTH FAULT RELAY	 CURRENT TRANSFORMER
50G	INSTANTANEOUS EARTH FAULT RELAY (BY ZERO SEQUENCE CT)	 CABLE GLAND
51G	INSTANTANEOUS EARTH FAULT RELAY (BY ZERO SEQUENCE CT)	 CABLE SEALING END
59	OVER VOLTAGE RELAY	 POWER CABLE  CONTROL CABLE
63	LIQUID AND GAS PRESSURE RELAY	APFR AUTOMATIC POWER FACTOR REGULATOR
64	GROUND DETECTOR RELAY	 PHASE SEQUENCE OR PHASE BALANCE RELAY (47)
74	TRIP CIRCUIT SUPERVISION	 EARTHING SWITCH
86	LOCK OUT RELAY	 LIGHTNING ARRESTER OR SURGE ARRESTER
94	INTERTRIP RECEIVE RELAY	
	THERMAL OVERLOAD RELAY (49)	

NOTES

1- ALL EQUIPMENT REATING WILL BE FINALIZED BY VENDOR. THE SWITCHING DEVICES SHALL BE RATED FOR 1.5 TIMES OF RATED CURRENT.

2- INCOMING CABLE SIZE WILL BE ACCORDING TO "CALCULATION NOTE FOR CABLE SIZING"(BK-GCS-PEDCO-120-EL-CN-0003)

3- MCCB WITH LSI FUNCTION INCLUDES:
FUNCTION "L": LONG TIME DELAY, SETUP CURRENT & TIME DELAY
FUNCTION "S": SHORT TIME DELAY, SETUP CURRENT & TIME DELAY
FUNCTION "I": INSTANTANEOUS, SETUP CURRENT & TIME DELAY
FUNCTION "G": GROUND

4- VENDOR SHALL MODIFY THIS SINGLE LINE IAGRAM ACCORDING TO IPS-M-EL-181(2)

5- ALL SWITCH FUSES SHALL BE STRIKER PIN TYPE WITH FAULT MICRO SWITCH.

6- ACCORDING TO"ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANELS " (BK-GCS-PEDCO-120-EL-DG-0002) CONTROL CIRCUIT VOLTAGE FOR OUTGOING IS 230 VAC WHICH WILL BE SUPPLIED FOR EACH LV CUBICLE. IN OTHER WORDS FOR EACH LV CUBICLE ONE ISOLATED DRY TYPE TRANSFORMER SHALL BE CONSIDERED BY VENDOR. THEREFORE VENDOR SHALL CONSIDER ONE ISOLATED DRY TYPE TRANSFORMER FOR CAPACITOR CUBICLE.

7- ALL CAPACITORS SHALL BE PROVIDED WITH A DISCHARGE RESISTOR, CHARACTERISTICS OF WHICH SHALL BE SPECIFIED BY VENDOR. CAPACITORS MUST DISCHARGE TO RESIDUAL VOLTAGE LESS THAN 75V WITHIN 3 MINUTES FOR LV CAPACITORS & 75V WITHIN 10 MINUTES FOR MV CAPACITORS

8- THE CAPACITOR BANK RATING POWER SHOULD BE CONSIDERED IN 400V/11KV, BUT CAPACITOR RATING VOLTAGE SHOULD BE 440V/12KV.

9- SINCE THERE IS AIR INRUSH REACTOR FOR MV CAPACITOR BANK, THEREFORE VENDOR SHALL CALCULATE REQUIRED CAPACITY OF BANK.

10-LIGHTING, HEATER, THERMOSTAT & FAN SHALL BE CONSIDERED BY VENDOR IN CAPACITOR BANKS

11-MECHANICAL AND ELECTRICAL INTERLOCK OF THE EARTH SWITCH AND THE DOOR OF THE HIGH-VOLTAGE CAPACITOR BANK PANEL WITH THE MAIN FEEDER SWITCH TO PREVENT THE EARTH SWITCH FROM BEING CONNECTED AND THE DOOR OF THE HIGH-VOLTAGE CAPACITOR BANK PANEL FROM BEING OPENED WHEN THE MAIN FEEDER SWITCH IS CLOSED AND VICE VERSA, IN ACCORDANCE WITH STANDARD REQUIREMENTS. IPS-M-EL-181 INCLUDING (5-7 , 6-7)

LEGEND

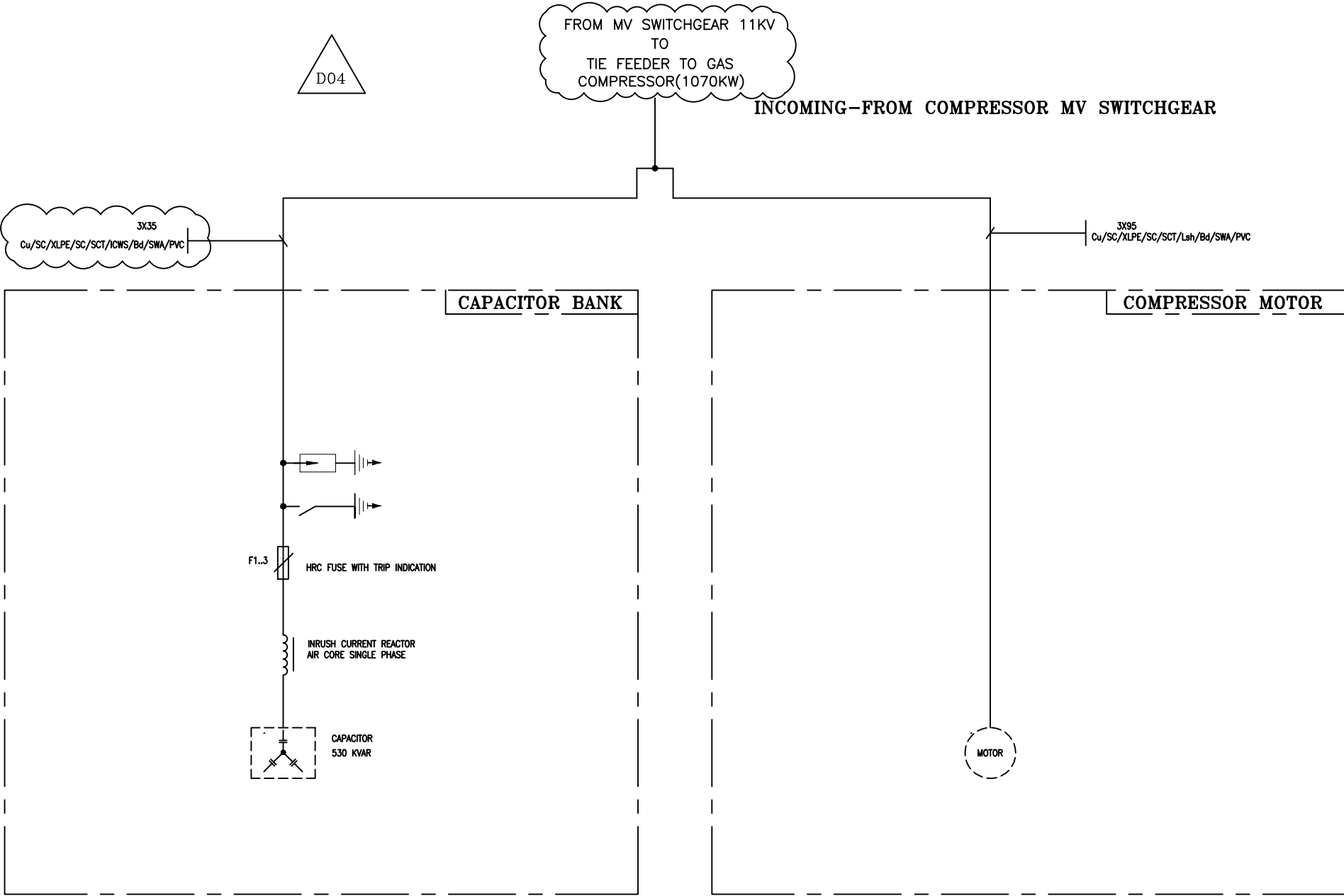
 D04

REFERENCE DRAWING	DRG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0002
SISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0003
CALCULATION NOTE FOR CAPACITOR BANKS	BK-GCS-PEDCO-120-EL-CN-0011
DATA SHEETS FOR CAPACITOR BANK	BK-GCS-PEDCO-120-EL-DT-0007

KEY PLAN

D04	DEC.2024	AFC	M.Pourdeahi	M.PAKHARIAN	M.SADDEGHIAN												
D03	AUG.2024	AFC	H.SHAHBA	M.PAKHARIAN	M.SADDEGHIAN												
D02	AUG.2023	AFC	H.SHAHBA	M.PAKHARIAN	A.M.MOHESEN	00.00	000	0000000000	00.00	000.0000	00.00	000.0000	00.00	000.0000			
D01	JUL.2022	IPA	H.SHAHBA	M.PAKHARIAN	M.MEHRESHAD	00.00	REV.	DESCRIPTION	BY	DATE	BY	DATE	BY	DATE			
D00	FEB.2022	IPC	H.SHAHBA	M.PAKHARIAN	M.MEHRESHAD	00.00			CHECKED				REV. APPR.				
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.	اصل و کاپیه نسخ این نقشه و حق اقتباس متعلق به شرکت ملی مناطق نفت خیز جنوب میباشد.										
PROJECT NAME:							THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREIN ARE THE SOLE PROPERTY OF N.I.S.O.C./ FIELDS										
PROJECT NO.:							971020										
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GC):				BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION										
 HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES			 PEDCO				 PETROIRAN DEVELOPMENT COMPANY										
DRAWING TITLE:							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED										
							CAPACITOR BANKS SINGLE LINE DIAGRAM							APPROVED FOR CONSTRUCTION		BY:	
SCALE	SIZE	DRAWING NO.			SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION				
NTS	A3	BK-GCS-PEDCO-120-EL-SL-0007			02 OF 04	D04	053-073-9184	F	2	P	709055	02 OF 04	D04				

(VENDOR TITLE BLOCK)**



- NOTES**
- 1- ALL EQUIPMENT REATING WILL BE FINALIZED BY VENDOR. THE SWITCHING DEVICES SHALL BE RATED FOR 1.5 TIMES OF RATED CURRENT.
 - 2- INCOMING CABLE SIZE WILL BE ACCORDING TO "CALCULATION NOTE FOR CABLE SIZING"(BK-GCS-PEDCO-120-EL-CN-0003)
 - 3- MCCB WITH LSI FUNCTION INCLUDES:
FUNCTION "L": LONG TIME DELAY, SETUP CURRENT & TIME DELAY
FUNCTION "S": SHORT TIME DELAY, SETUP CURRENT & TIME DELAY
FUNCTION "I": INSTANTANEOUS, SETUP CURRENT & TIME DELAY
FUNCTION "G": GROUND
 - 4- VENDOR SHALL MODIFY THIS SINGLE LINE IAGRAM ACCORDING TO IPS-M-EL-181(2)
 - 5- ALL SWITCH FUSES SHALL BE STRIKER PIN TYPE WITH FAULT MICRO SWITCH.
 - 6- ACCORDING TO"ELECTRICAL TYPICAL SCHEMATIC DIAGRAMS FOR LV PANELS " (BK-GCS-PEDCO-120-EL-DG-0002) CONTROL CIRCUIT VOLTAGE FOR OUTGOING IS 230 VAC WHICH WILL BE SUPPLIED FOR EACH LV CUBICLE. IN OTHER WORDS FOR EACH LV CUBICLE ONE ISOLATED DRY TYPE TRANSFORMER SHALL BE CONSIDERED BY VENDOR. THEREFORE VENDOR SHALL CONSIDER ONE ISOLATED DRY TYPE TRANSFORMER FOR CAPACITOR CUBICLE.
 - 7- ALL CAPACITORS SHALL BE PROVIDED WITH A DISCHARGE RESISTOR, CHARACTERISTICS OF WHICH SHALL BE SPECIFIED BY VENDOR. CAPACITORS MUST DISCHARGE TO RESIDUAL VOLTAGE LESS THAN 75V WITHIN 3 MINUTES FOR LV CAPACITORS & 75V WITHIN 10 MINUTES FOR MV CAPACITORS
 - 8- THE CAPACITOR BANK RATING POWER SHOULD BE CONSIDERED IN 400V/11KV, BUT CAPACITOR RATING VOLTAGE SHOULD BE 440V/12KV.
 - 9- SINCE THERE IS AIR INRUSH REACTOR FOR MV CAPACITOR BANK, THEREFOR VENDOR SHALL CALCULATE REQUIRED CAPACITY OF BANK.
 - 10-LIGHTING, HEATER, THERMOSTAT & FAN SHALL BE CONSIDERED BY VENDOR IN CAPACITOR BANKS.
 - 11-MECHANICAL AND ELECTRICAL INTERLOCK OF THE EARTH SWITCH AND THE DOOR OF THE HIGH-VOLTAGE CAPACITOR BANK PANEL WITH THE MAIN FEEDER SWITCH TO PREVENT THE EARTH SWITCH FROM BEING CONNECTED AND THE DOOR OF THE HIGH-VOLTAGE CAPACITOR BANK PANEL FROM BEING OPENED WHEN THE MAIN FEEDER SWITCH IS CLOSED AND VICE VERSA, IN ACCORDANCE WITH STANDARD REQUIREMENTS. IPS-M-EL-181 INCLUDING (5-7 , 6-7)

LEGEND

D04

REFERENCE DRAWING	DRG. No.
LV SWITCHGEAR/MCC SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0002
SISTENT MV SWITCHGEAR EXPANSION SINGLE LINE DIAGRAM	BK-GCS-PEDCO-120-EL-SL-0003
CALCULATION NOTE FOR CAPACITOR BANKS	BK-GCS-PEDCO-120-EL-CN-0011
DATA SHEETS FOR CAPACITOR BANK	BK-GCS-PEDCO-120-EL-DT-0007

KEY PLAN

SHEET THICKNESS	2 mm
COLOR	RAL 7032
ACCESSIBILITY	FRONT
INC CONNECTION	BOTTOM
OUT CONNECTIONS	BOTTOM
INSTALLATION TYPE	FREE STANDING
ENCLOSURE DEGREE OF PROTECTION	IP42

D04	DEC.2024	APC	M.Pourdeahi	M.PAKHARIAN	M.SADDEGHIAN						
D03	AUG.2024	APC	H.SHAHBA	M.PAKHARIAN	M.SADDEGHIAN						
D02	AUG.2023	APC	H.SHAHBA	M.PAKHARIAN	A.M.MOHESEN	00.00	0000000000	00.00	0000000000	00.00	0000000000
D01	JUL.2022	IPA	H.SHAHBA	M.PAKHARIAN	M.MOHESEN	00.00					
D00	FEB.2022	IPC	H.SHAHBA	M.PAKHARIAN	M.MOHESEN	00.00					
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.					
PROJECT NAME:							THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREIN ARE THE SOLE PROPERTY OF N.I.S.O.C./ FIELDS				
PROJECT NO.: 971020											
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (GC):								
  HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES			 PETROIRAN DEVELOPMENT COMPANY				BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION				
							DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.
DRAWING TITLE:							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED				
CAPACITOR BANKS SINGLE LINE DIAGRAM							APPROVED FOR CONSTRUCTION BY: DATE:				
SCALE	SIZE	DRAWING NO.			SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE CLASS	SERIAL NO.	SHEET REVISION
NTS	A3	BK-GCS-PEDCO-120-EL-SL-0007			04 OF 04	D04	053-073-9184	F	2	P	709055 04 OF 04 D04