



SINGLE LINE DIAGRAM FOR EXPANSION OF UPSTREAM LV SWITCHGEAR IN SIAHMAKAN GAS INJECTION

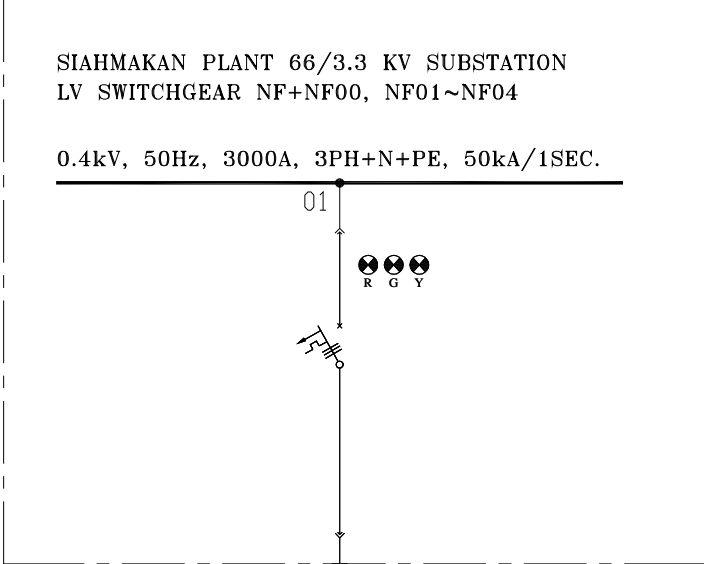
NOTES

LEGEND

REFERENCE DRAWING	DRG. No.
SINGLE LINE DIAGRAM FOR LV SWITCHGEAR, NF, NFD - NFM	11006-0-128-01

KEY PLAN

DO1	JUL.2002	APC	M. RAHMAN	M. FARHANI	M. MANSOURI	** **	***	*****	REV. 01	02.07.2002	REV. 01	02.07.2002						
DO1	OCT.2002	IPA	M. RAHMAN	M. FARHANI	M. MANSOURI	** **	REV.	DESCRIPTION	BY	DATE	BY	DATE						
DDO	MAY.2002	IPC	M. RAHMAN	M. FARHANI	M. MANSOURI	** **	REV.	CHECKED	BY	DATE	BY	DATE						
REV.	DATE	P.O.L.#	PREP.	CHK.	APP.	AUT.	اصل و کاپی این نقشه و جزئیات متعلق به شرکت ملی نفت ایران می باشد. 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 NAME:			BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION															
PROJECT NO.:			071020															
EPC CONTRACTOR:			EPD/EPC CONTRACTOR (CO):			BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAS COMPRESSOR STATION												
						DATE: _____ DRAWN BY: _____ CHECKED BY: _____ PROJECT ENG.												
DRAWING TITLE:			SINGLE LINE DIAGRAM FOR EXPANSION OF UPSTREAM LV SWITCHGEAR IN SIAHMAKAN GAS INJECTION							NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED								
SCALE:			AS							APPROVED FOR CONSTRUCTION BY: _____ DATE: _____								
DRAWING NO.:			SHEET NO.:		REV.:		BUDGET REF. LOCATION:		SIZE:		CLASS:		SERIAL NO.:		SHEET:		REVISION:	
N.F.B			01 OF 02		D02		003-070-0104		P 2		P		700635		01 OF 02		D02	



CATEGORY	F1
CODE	NF+NF04 (L11 EXISTING) FROM CELL NO 5
POWER (kW)	15KW
C.B TYPE/RATING	63A
FUSE TYPE/RATING	N/A
CONTACTOR RATING (A)	N/A
OVER LOAD SETTING RANGE	N/A
CABLE SIZE	-
DESCRIPTION OF FEEDER	RECTIFIRE TRANSFORMER CATHODIC PROTECTION OF 8" PIPELINE FROM BINAK TO SIHAMAKAN

D02

NOTES

1- RECTIFIER TRANSFORMER FOR CATHODIC PROTECTION AT THE END OF PIPELINE SHALL BE FED FROM EXISTING LV SWITCHGEAR IN SIHAMAKAN PLANT 66/3.3 KV SUBSTATION. THE CATHODIC PROTECTION SHALL BE FED FROM EXISTING FEEDER 63A L11 ON LV ROOM OF CELL 5.

2- ACCORDING TO EXISTING SINGLE LINE DIAGRAM, FEEDER L11 IS 3 POLE, WHILE NEUTRAL POINT IS NECESSARY, THEREFORE A CABLE WITH 4 CORES WILL BE CONSIDERED, IT DOES NOT NEED TO SPECIFY A 4 POLE MCCB.

LEGEND

	CABLE GLAND
	SIGNAL LAMP
	DRAWOUT UNIT
	MOULDED CASE CIRCUIT BREAKER, MANUALLY OPERATED WITH THERMAL MAGNETIC OVER CURRENT RELAY
	BUS BAR

REFERENCE DRAWING	DRG. No.
SINGLE LINE DIAGRAM FOR LV SWITCHGEAR NF, NF00 - NF04	11006-0-128-01

KEY PLAN

NO.	REV.	DATE	DESCRIPTION	CHECKED	BY	DATE	BY	DATE
D01	JUL.2002	APC	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN
D01	OCT.2002	IPA	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN
DDO	MAY.2002	IPC	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN	SIHAMAKAN
REV.	DATE	P.O.L.E	PREP.	CHK.	APP.	AUT.		

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAB COMPRESSOR STATION

PROJECT NO.: 071020

EPC CONTRACTOR: HIRSAN ENERGY DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (CO): PETROIRAN DEVELOPMENT COMPANY

BINAK OILFIELD DEVELOPMENT SURFACE FACILITIES GAB COMPRESSOR STATION

DRAWING TITLE: SINGLE LINE DIAGRAM FOR EXPANSION OF UPSTREAM LV SWITCHGEAR IN SIHAMAKAN GAS INJECTION

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.	BUDGET REF.	LOCATION	CONSTRUCTION CLASS	SERIAL NO.	SHEET	REVISION
N.T.B	A3	BK-PPL-PIEDCO-300-01-0001	02 OF 02	D02	003-070-0104	P	2	P	700636	02 OF 02 D02

PROJECT NAME : SIAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME : LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

PANEL TYPE : SIVACON 8PT

DOCUMENT TITLE : SINGEL LINE DIAGRAM FOR LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-LSL-01

TOTAL SHEETS : 11

REV.	DATE	REVISION DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED
04	26.01.2017	ISSUE FOR APPROVAL	A.R	S.N	A.Z	M.R
03	22.12.2016	ISSUE FOR APPROVAL	A.R	S.N	A.Z	M.R
02	10.11.2016	ISSUE FOR APPROVAL	A.R	I.N	A.Z	M.R
01	02.10.2016	ISSUE FOR APPROVAL	A.R	I.N	A.Z	M.R
00	16.08.2016	ISSUE FOR APPROVAL	A.R	I.N	A.Z	M.R



ELECTRO KAVIR Co.

EMPLOYER :

NATIONAL IRANIAN OIL COMPANY
NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONSUMER DWG NO. :

CONTRACTOR :

RASMARA INDUSTRIAL GROUP



ELECTRO KAVIR Co.

EMPLOYER :

NATIONAL IRANIAN OIL COMPANY
NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R

DATE : 26.01.2017

TITLE :

COVER

PROJECT :

SIAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-LSL-01

UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 1 OF 11

SHEET	DESCRIPTION	REVISION						
		0	1	2	3	4	5	6
1	COVER					X		
2	INDEX					X		
3	SWITCHBOARD CHARACTERISTICS					X		
4	ANSI CODES					X		
5	LEGEND					X		
6	SINGLE LINE DIAGRAM					X		
7	SINGLE LINE DIAGRAM					X		
8	SINGLE LINE DIAGRAM					X		
9	SINGLE LINE DIAGRAM					X		
10	SINGLE LINE DIAGRAM					X		
11	SINGLE LINE DIAGRAM					X		
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SHEET	DESCRIPTION	REVISION						
		0	1	2	3	4	5	6



ELECTRO KAVIR Co.

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CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R

DATE : 26.01.2017

TITLE :

INDEX

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-I.SL-01

UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 2 OF 11

Main Characteristic

Switchgear Type : 8PT/SIVACON
Standard : IEC-60439
Rated Voltage : 690V
Service Voltage : 400V
Main Busbar Rated Current : 3000A
Rated Short Time Withstand Current : 50KA/1SEC
Frequency : 50Hz
Switchboard Color : RAL 7032
Degree of Protection : IP 42
Ambient Temperature : 52°C
Connection in Panel : FRONT
Sheet Thicknees : 2, 2.5 mm

Type Of Entrance

Incoming Panels : CABLE/BOTTOM
Outgoing Panels : CABLE/BOTTOM

Dimension

Depth : 800 mm
Height : 2200 mm
Width : 6600+1600 mm
Number of Cubicle : 7+2

Busbar

Main Busbar Configuration : 3PH+N+PE
Insulation : AIR
Coating : SILVER PLATED (ONLY JOINTS)
Thermofit Cover : YES
Main Busbar Size : 2*100*10
Neutral Busbar Size : 1*100*10
Earth Busbar Size : 1*60*10

Auxiliary Voltage

Control , Protection , Closing, Tripping & Signalling : 110VDC FOR INCOMING & COUPLING; 230VAC FOR OUTGOING
Spring Charging Motor : 110VDC
Panel Lighting & Space Heater : 230VAC
Motors Space Heater : 230VAC

Wire

Size

Control Circuit : 1.5 mm²
CT Secondary : 2.5 mm²
PT Secondary : 2.5 mm²

Color

DC Circuit : Brown(+)/Black(-)
AC Circuit : RED(L)/BLUE(N)
CT& PT Secondary : Red/Yellow/Blue (SIMILAR TO PHASE COLOR)
Earth : Yellow/Green
POWER CABLES : RED(R)/YELLOW(S)/BLUE(T)/BLACK(N)



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NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R

DATE : 26.01.2017

TITLE :

SWITCHBOARD CHARACTERISTICS

PROJECT :

SHAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-I.SL-01

UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 3 OF 11

ANSI CODE	DESCRIPTION
51LR	LOCKED ROTOR PROTECTION
24	OVERFLUXING(V/F PROTECTION)
25	SYNCHRON CHECK
27	UNDERVOLTAGE
27/34	STATOR EARTH-FAULT 3 HARMONIC
32	DIRECTIONAL POWER
32F	FORWARD POWER
32R	REVERSE POWER
37	UNDERCURRENT OR UNDERPOWER
38	TEMPERATURE MONITORING
40	LOSS OF FIELD
46	LOAD UNBALANCE,NEGATIVE PHASE SEQUENCE OVERCURRENT
47	PHASE-SEQUENCE VOLTAGE
48	INCOMPLETE SEQUENCE,LOCKED ROTOR
49	THERMAL OVERLOAD
50	INSTANTANEOUS OVERCURRENT
50G	EARTH-FAULT PROTECTION
50BF	BREAKER FAILURE
51GN	ZERO SPEED AND UNDERSPEED DEV.
51	OVERCURRENT-TIME RELAY,PHASE
51N	OVERCURRENT-TIME RELAY,EARTH
51V	OVERCURRENT-TIME RELAY,VOLTAGE CONTROLLED
59	OVERVOLTAGE
59N	RESIDUAL VOLTAGE EARTH-FAULT PROTECTION
59GN	STATOR EARTH-FAULT PROTECTION

ANSI CODE	DESCRIPTION
64	RESTRICTED EARTH-FAULT PROTECTION
64R	ROTOR EARTH FAULT
66	RESTART INHIBIT
67	DIRECTIONAL OVERCURRENT
67N	DIRECTIONAL EARTH-FAULT OVERCURRENT
67G	STATOR EARTH-FAULT DIRECTIONAL OVERCURRENT
68	POWER SWING DETECTION
74TC	TRIP CIRCUIT SUPERVISION
78	OUT-OF-STEP PROTECTION
79	AUTO-RECLOSURE
81	FREQUENCY PROTECTION
81R	RATE-OF-FREQUENCY-CHANGE PROTECTION
85	CARRIER INTERFACE/REMOTE TRIP
86	LOCKOUT FUNCTION
87G	DIFFERENTIAL PROTECTION GENERATOR
87T	DIFFERENTIAL PROTECTION TRANSFORMER
87BB	DIFFERENTIAL PROTECTION BUSBAR
87M	DIFFERENTIAL PROTECTION MOTOR
87L	DIFFERENTIAL PROTECTION LINE
21	TERANSFORMER THERMAL DEVICE ON WINDING-PT100
DG	DISCHARGE OF GASES/SIGNIFICANT DROP IN LEVEL
P	TANK PRESSURE
T2	DIELECTRIC TEMPERATURE-2 CONTACTS



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CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R

DATE : 26.01.2017

TITLE :

ANSI CODE

PROJECT :

SIAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04
























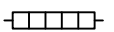







EKC DWG No. : 11065-0-I.SL-01

UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 4 OF 11

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	MOTORIZED ACB		AMMETER		TEST BOX
	LINE OR MOTOR PROTECTION MCCB OR MPCB		VOLT METER		VOLT METER SELECTOR SWITCH
	CT		MULTIMETER		AMMETER SELECTOR SWITCH
	COREBALANCE CT		WATT METER		HARD WIRED CONNECTION
	PT		VAR METER		SERIAL LINK
	DISCONNECTOR SWITCH WITH HRC FUSE		POWER FACTOR METER		FREQUENCY CONVERTOR
	CONTACTOR		WATT HOUR METER		SOFT STARTER
	THERMAL OVERLOAD RELAY		CURRENT TRANSDUCER		
	HEATING ELEMENT		VOLTAGE TRANSDUCER		
	PROTECTION RELAY		ACTIVE POWER MULTI TRANSDUCER		
	AUTOMATIC TRANSFER SYSTEM		REACTIVE POWER MULTI TRANSDUCER		
	MULTI TRANSDUCER		LOCAL - OFF- REMOTE SELECTOR SWITCH		



ELECTRO KAVIR Co.

EMPLOYER :

NATIONAL IRANIAN OIL COMPANY
NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R

DATE : 26.01.2017

TITLE :

LEGEND

PROJECT :

SIAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-1.SL-01

UNIT: mm

SCALE:N.T.S

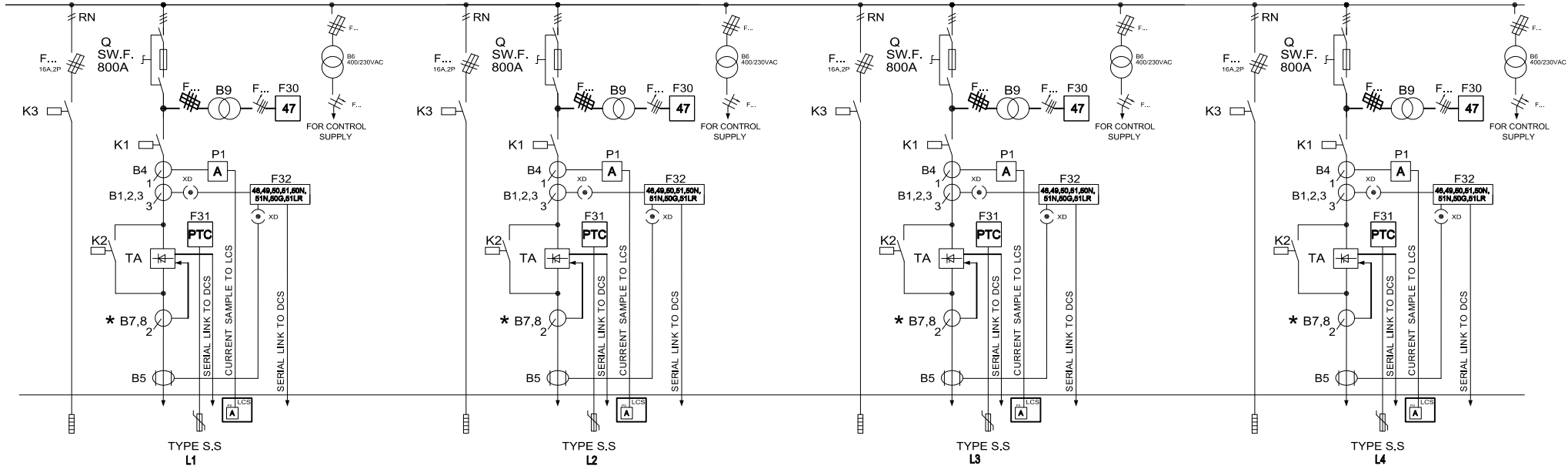
REV: 04

SHEET: 5 OF 11

400V, 50Hz, 3PH+N+PE, 3000A, 50KA/1Sec

A

B



A

B

C

PANEL NAME	FEEDER NO.	TAG NO.	DESCRIPTION	MODULE NO. & SIZE	RATING POWER	RATED CURRENT (A)	WIRING TYPE	CS. RATING	CS. ORDER SIEMENS	CONTACTOR RATING	CONTACTOR SIEMENS	OVERLOAD RATING	OVERLOAD SIEMENS	PTC PROTECTION RELAY SIEMENS	PROTECTION RELAY VAMP	FUSE RATING	FUSE ORDER SIEMENS	LOCK OUT SIEMENS	SOFT STARTER EMOTION	MULTIMETER IME	CTR RATING IMAG	AMMETER RATING PAEL, CL.1	PT RATING AZIMON TRANS	VOLTMETER PAEL, CL.1	CORE BALANCE CT IMG	ELB RELAY AUST/CONTROL	CABLE SIZE
NF-NS1	L1	P-115A	-	1.1	150KW	-	TYPE S.S	-	-	400A 9A	2*3RT1075-9AP36 3RT2023-1AP00	-	-	3UG4615-1CR20(47) 3RN1011-1CK00	VAMP 40 (48,48,50,51 50N,51N,50G,51LR)	800A	1*3KL 6230-1AB 02 3*3NE1438-1 3CX3612-1B 3CX3681-1AA 00	-	MSF-310 5252C-N- 01-1733-00	-	1*400/1A,CL.1F85,7.9VA 3*400/9A,CL.5P20,9VA	0-400A,SCALE 90,8n,98° 98	1*400/230VAC,200VA, 1*400/8/400/19VAC, 10VA	-	505,CL.3FS15,9VA	-	2(3*150)
NF-NS1	L2	P-115B	-	2.1	150KW	-	TYPE S.S	-	-	400A 9A	2*3RT1075-9AP36 3RT2023-1AP00	-	-	3UG4615-1CR20(47) 3RN1011-1CK00	VAMP 40 (48,48,50,51 50N,51N,50G,51LR)	800A	1*3KL 6230-1AB 02 3*3NE1438-1 3CX3612-1B 3CX3681-1AA 00	-	MSF-310 5252C-N- 01-1733-00	-	1*400/1A,CL.1F85,7.9VA 3*400/9A,CL.5P20,9VA	0-400A,SCALE 90,8n,98° 98	1*400/230VAC,200VA, 1*400/8/400/19VAC, 10VA	-	505,CL.3FS15,9VA	-	2(3*150)
NF-NS2	L3	P-115C	-	3.1	150KW	-	TYPE S.S	-	-	400A 9A	2*3RT1075-9AP36 3RT2023-1AP00	-	-	3UG4615-1CR20(47) 3RN1011-1CK00	VAMP 40 (48,48,50,51 50N,51N,50G,51LR)	800A	1*3KL 6230-1AB 02 3*3NE1438-1 3CX3612-1B 3CX3681-1AA 00	-	MSF-310 5252C-N- 01-1733-00	-	1*400/1A,CL.1F85,7.9VA 3*400/9A,CL.5P20,9VA	0-400A,SCALE 90,8n,98° 98	1*400/230VAC,200VA, 1*400/8/400/19VAC, 10VA	-	505,CL.3FS15,9VA	-	2(3*150)
NF-NS2	L4	-	SPARE	4.1	150KW	-	TYPE S.S	-	-	400A 9A	2*3RT1075-9AP36 3RT2023-1AP00	-	-	3UG4615-1CR20(47) 3RN1011-1CK00	VAMP 40 (48,48,50,51 50N,51N,50G,51LR)	800A	1*3KL 6230-1AB 02 3*3NE1438-1 3CX3612-1B 3CX3681-1AA 00	-	MSF-310 5252C-N- 01-1733-00	-	1*400/1A,CL.1F85,7.9VA 3*400/9A,CL.5P20,9VA	0-400A,SCALE 90,8n,98° 98	1*400/230VAC,200VA, 1*400/8/400/19VAC, 10VA	-	505,CL.3FS15,9VA	-	2(3*150)

C

D

* THE SOFT STARTER CTs HAVE TO MOVE OUTSIDE OF THE S.S PACKAGE IN BYPASS MODE

D



ELECTRO KAVIR Co.

EMPLOYER :

NATIONAL IRANIAN OIL COMPANY
NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R

DATE : 26.01.2017

TITLE :

SINGLE LINE DIAGRAM

PROJECT :

SHAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-1.SI-01

UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 6 OF 11

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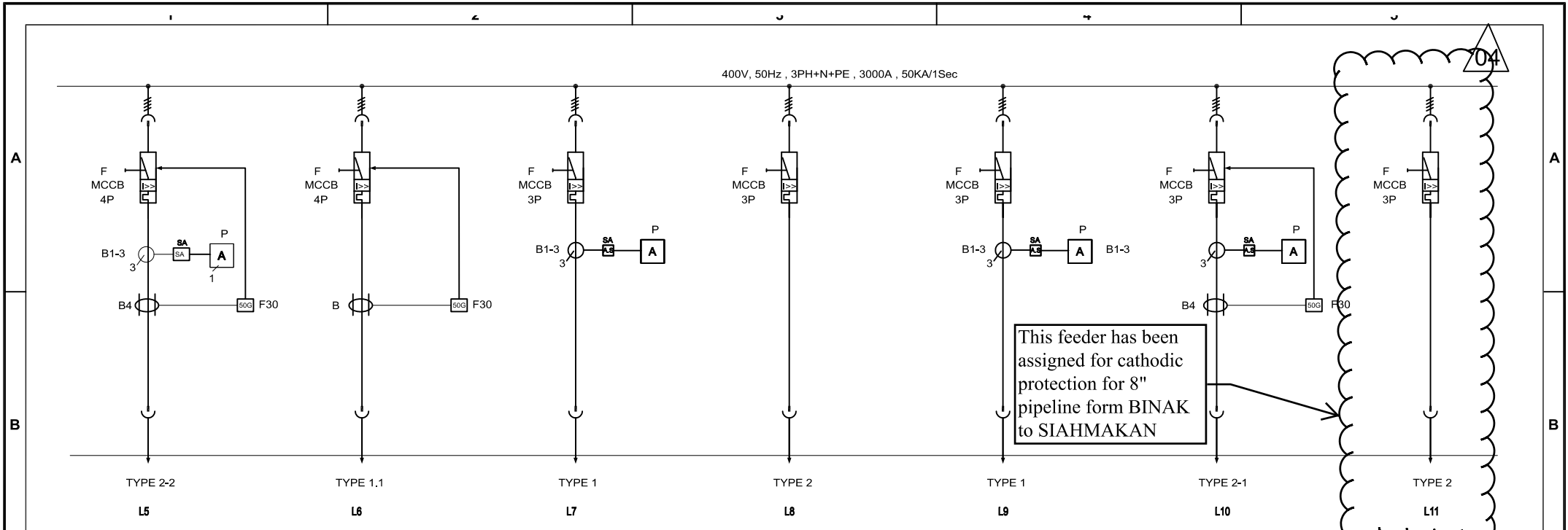
1

2

3

4

5



PANEL NAME	FEEDER NO.	TAG NO.	DESCRIPTION	MODULE NO. & SIZE	RATING POWER	RATED CURRENT (A)	WIRING TYPE	CS. RATING	CS. ORDER SIEMENS	CONTACTOR RATING	CONTACTOR SIEMENS	OVERLOAD RATING	OVERLOAD SIEMENS	PTC PROTECTION RELAY SIEMENS	PROTECTION RELAY VAMP	FUSE RATING	FUSE ORDER SIEMENS	LOCK OUT SIEMENS	SOFT STARTER/ EMOTION	MULTIMETER IME	CTRATING IMAG	AMMETER RATING PAEL, CL.1	PT RATING AZIMON TRANS	VOLTMETER PAEL, CL.1	CORE BALANCE CT IMAG	ELR RELAY & SFC CONTROL	CABLE SIZE
NF+NF03	L5	-	LIGHTING	4M 5.3	-	-	TYPE 2-2	80-100A	3VL2710-1EJ43-8TD1	-	-	-	-	-	-	-	-	-	-	-	3"100/5A,CL.1F35,5/A	0-100A,SCALE 90,2h/48"48+A.S	-	-	-	ELR7/ CT35H	4x50
NF+NF03	L6	-	SPARE	4M 5.4	-	-	TYPE 1.1	80-100A	3VL2710-1EJ43-8TD1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ELR7/ CT35H	-
NF+NF03	L7	-	BATTERY CHARGER	3M 5.2	-	-	TYPE 1	40A	3VA 1140-4EP36-0AA 0 3VA 9988-0AA 11 3VA 9988-0AB 12	-	-	-	-	-	-	-	-	-	-	-	3"40/5A,CL.1F35,5/A	0-40A,SCALE 90,2h/48"48+A.S	-	-	-	-	4x16
NF+NF03	L8	-	SPARE	4M 5.5	-	-	TYPE 2	63A	3VL1706-1DD33-0AD1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NF+NF04	L9	-	SPARE	4M 5.6	-	-	TYPE 1	63A	3VL1706-1DD33-0AD1	-	-	-	-	-	-	-	-	-	-	-	3"80/5A,CL.1F35,5/A	0-80A,SCALE 90,2h/48"48+A.S	-	-	-	-	-
NF+NF04	L10	-	POWER TRANSFORMER OIL TREATMENT	4M 5.7	-	-	TYPE 2-1	125A	3VL1712-1DD33-8TD1	-	-	-	-	-	-	-	-	-	-	-	3"125/5A,CL.1F35,5/A	0-125A,SCALE 90,2h/48"48+A.S	-	-	-	ELR7/ CT601	4x50
NF+NF04	L11	-	SPARE	4M 5.8	-	-	TYPE 2	63A	3VL1706-1DD33-0AD1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EMPLOYER :
 NATIONAL IRANIAN OIL COMPANY
 NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY

CONTRACTOR :
 RASMA INDUSTRIAL GROUP

DESIGN : A.R
 DRAWN : S.N
 CHECKED : A.Z
 APPROVED: M.R
 DATE : 26.01.2017

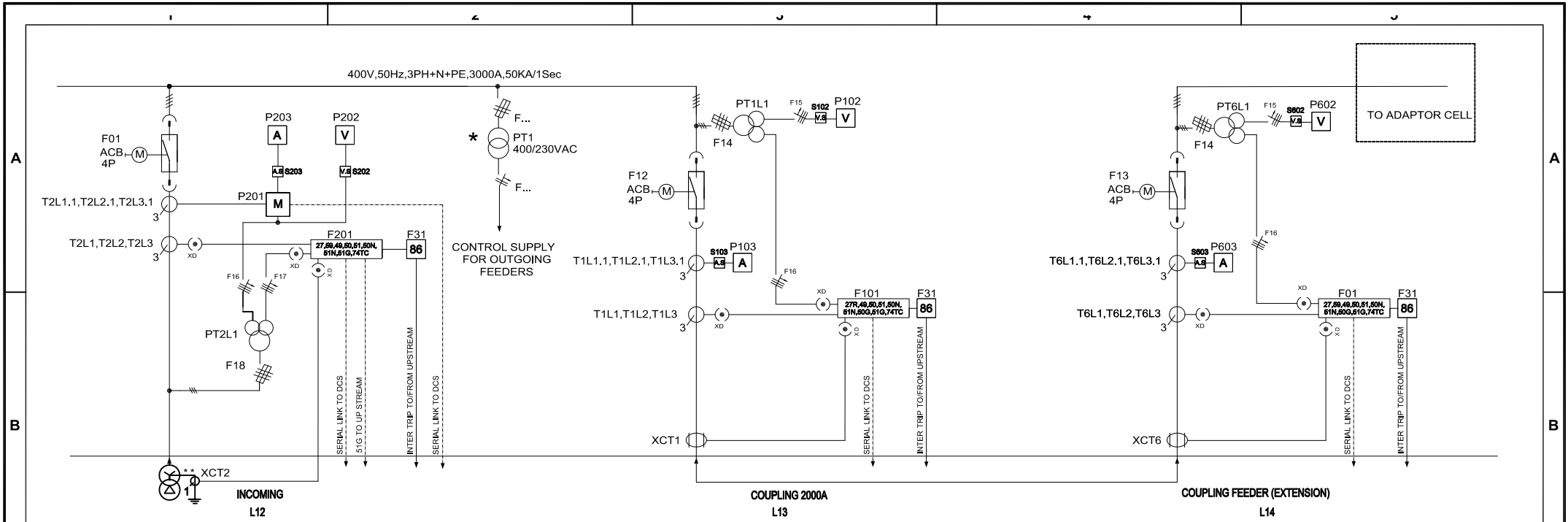
TITLE :
 SINGLE LINE DIAGRAM

PROJECT :
 SIAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :
 LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-1.SI-01

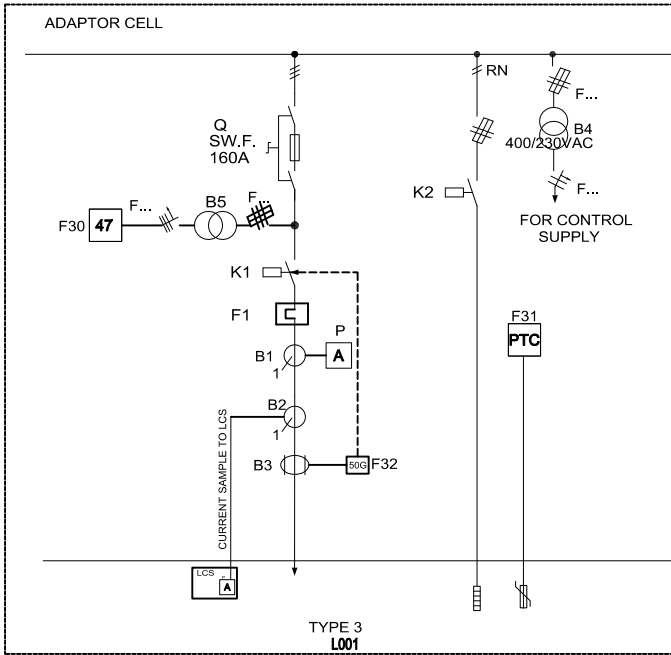
UNIT: mm SCALE:N.T.S REV: 04 SHEET: 7 OF 11



PANEL NAME	FEEDER NO.	TAG NO.	DESCRIPTION	MODULE NO. & SIZE	RATING POWER	RATED CURRENT (A)	WIRING TYPE	CS. RATING	CS. ORDER SIEMENS	CONTACTOR RATING	CONTACTOR SIEMENS	OVERLOAD RATING	OVERLOAD SIEMENS	PT/PROTECTION RELAY SIEMENS	PROTECTION RELAY VAMP	FUSE RATING	FUSE ORDER SIEMENS	LOCK OUT SIEMENS	SOFT STARTER/ EMOTION	MULTIMETER TIME	CTR RATING MAG	AMMETER RATING RAEI, CL.1	PT RATING AZIMON TRANS	VOLTMETER RAEI, CL.1	CORE BALANCE CT RING	ELB RELAY & CONTROL	CABLE SIZE	
NF+NF02	L12	-	INCOMING	8.1	-	-	INCOMING	2000A	3WL1220-3AA46-5FA4-Z C22+R16+R21 3WL9111-0BA21-0AA0 3WL9111-0AP03-0AA0	-	-	-	-	-	VAMP57 (27,48,50,51,50N, 51N,51G,51G,74TC)	-	-	7PA2381-1	-	MF86021 +F96001 (A-V-KVH-KVHH +KVH-F-PT)	3°1600/5A,CL.1F35,5VA 3°1600/5A,CL.5P20,5VA	0-1800A,SCALE 80,2h,30°58+A.5	3°400V/3/110V/3 /110V/3(1PH) CL.0.5,10VA CL.3P,10VA 1°400/230V/AC,200VA	1°0-500V +V5,30°58	-	-	9(1°400) +2(1°400)	
NF+NF01	L13	-	COUPLER	7.1	-	-	COUPLING	2000A	3WL1220-3AA46-5FA4-Z C22+R16+R21 3WL9111-0BA21-0AA0 3WL9111-0AP03-0AA0	-	-	-	-	-	VAMP57 (27,48,50,51,50N, 51N,51G,51G,74TC)	-	-	7PA2381-1	-	-	3°1600/5A,CL.1F35,5VA 3°1600/5A,CL.5P20,5VA	0-1800A,SCALE 80,2h,30°58+A.5	3°400V/3/110V/3 /110V/3(1PH) CL.0.5,10VA CL.3P,10VA	1°0-500V +V5,30°58	100/5,CL.3F310,5VA	-	-	9(1°400) +2(1°400)
NF+NF00	L14	-	COUPLER FEEDER (EXTENSION)	8.1	-	-	COUPLING	2000A	3WL1220-3AA46-5FA4-Z C22+R16+R21 3WL9111-0BA21-0AA0 3WL9111-0AP03-0AA0	-	-	-	-	-	VAMP57 (27,48,50,51,50N, 51N,51G,51G,74TC)	-	-	7PA2381-1	-	-	3°1600/5A,CL.1F35,5VA 3°1600/5A,CL.5P20,5VA	0-1800A,SCALE 80,2h,30°58+A.5	3°400V/3/110V/3 /110V/3(1PH) CL.0.5,10VA CL.3P,10VA	1°0-500V +V5,30°58	100/5,CL.3F310,5VA	-	-	9(1°400) +2(1°400)

* PT1 IS INSTALLED IN INCOMING CELL
 ** THIS CT IS OUT OF EKC SCOPE

	EMPLOYER : NATIONAL IRANIAN OIL COMPANY NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY	CONTRACTOR : RASMARA INDUSTRIAL GROUP 	DESIGN : A.R DRAWN : S.N CHECKED : A.Z APPROVED : M.R DATE : 26.01.2017	TITLE : SINGLE LINE DIAGRAM	SWITCHGEAR NAME : LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04
			PROJECT : SHAHMAKAN PLANT 66/3.3 KV SUBSTATION	EKC DWG No. : 11065-0-1.SI-01	UNIT: mm SCALE: N.T.S REV: 04 SHEET: 8 OF 11



PANEL NAME	FEEDER NO.	TAG NO.	DESCRIPTION	MODULE NO. & SIZE	RATING POWER	RATED CURRENT (A)	WIRING TYPE	CS. RATING	CS. ORDER SIEMENS	CONTACTOR RATING	CONTACTOR SIEMENS	OVERLOAD RATING	OVERLOAD SIEMENS	PTC/PROTECTION RELAY SIEMENS	PROTECTION RELAY VAMP	FUSE RATING	FUSE ORDER SIEMENS	LOCK OUT SIEMENS	SOFT STARTER/ EMOTRON	MULTIMETER IME	CT RATING MAG	AMMETER RATING PAEL, CL.1	PT RATING AZIMON TRANS	VOLTMETER PAEL, CL.1	COREBALANCE CT IING	ELB RELAY & SET/CONTROL	CABLE SIZE
ADAPTOR	L001	-	-	CELL#	75KW	-	TYPE 3	-	-	165A 9A	3RT10 58-6AP26 3RH1821-EA11-RIGHT 3RT2023-1AP00	50-200A	3RB2058-1FW2	3UG4615-1CR20(47) 3RN1011-1CK00	-	160A	1*3KL 6330-14B01 3*3ND1836 3SB1400-0A 3CX 3627-3AA	-	-	-	B1:160/5A,CL.1F35,5/A B2:180/1A,CL.1F35,7,5/A	0-100A,SCALE 90,80,50,00	B4:400/230VAC,200VA B5:400/3400V3VAC, 10VA	-	-	ELR7/ CT80Y1	3x70



ELECTRO KAVIR Co.

EMPLOYER :

NATIONAL IRANIAN OIL COMPANY
NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R
DATE : 26.01.2017

TITLE :

SINGLE LINE DIAGRAM

PROJECT :

SHAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-1.SL-01

UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 9 OF 11

LV FEEDERS(FOR EXISTING LV SWG)



ELECTRO KAVIR Co.

EMPLOYER :

NATIONAL IRANIAN OIL COMPANY
NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M,R

DATE : 26.01.2017

TITLE :

SINGLE LINE DIAGRAM

PROJECT :

SHAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-I.SL-01

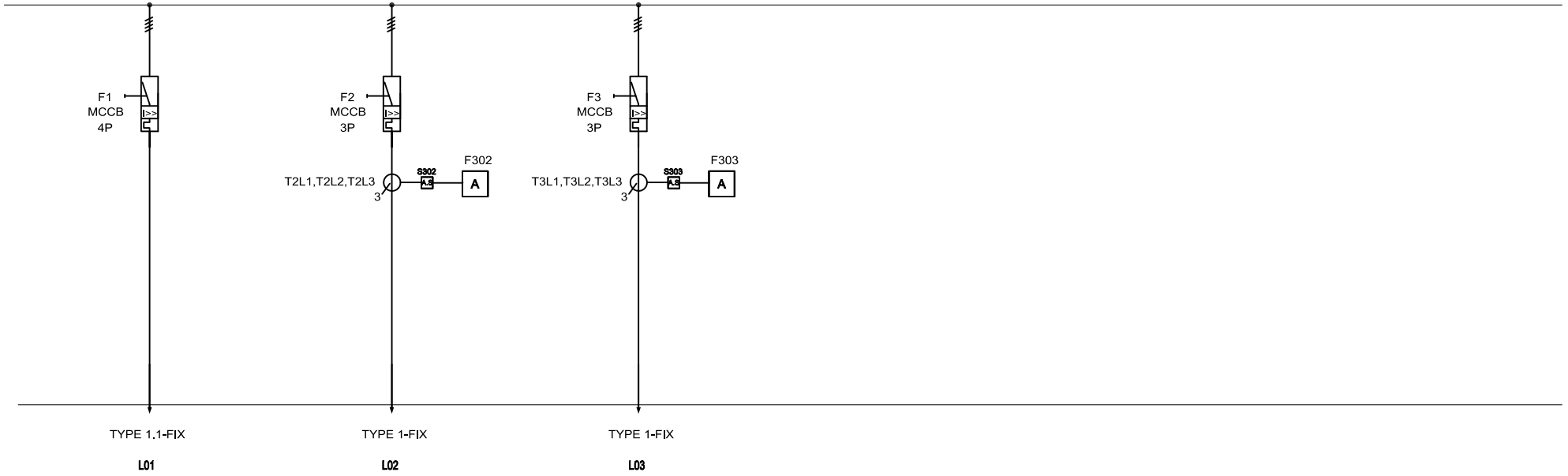
UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 10 OF 11

400V, 50Hz, 3PH+N+PE, 3000A, 50KA/1Sec (EXISTING LV SWG IN PROJECT SITE)



PANEL NAME	FEEDER NO.	TAG NO.	DESCRIPTION	MODULE NO. & SIZE	RATING POWER	RATED CURRENT (A)	WIRING TYPE	CB. RATING	CB. ORDER SIEMENS	CONTACTOR RATING	CONTACTOR SIEMENS	OVERLOAD RATING	OVERLOAD SIEMENS	PT/PROTECTION RELAY SIEMENS	PROTECTION RELAY VAMP	FUSE RATING	FUSE ORDER SIEMENS	LOCK OUT SIEMENS	SOFT STARTER/EMOTION	MULTIMETER TIME	CT RATING IMG	AMMETER RATING PANEL, CL.1	PT RATING AZMCON TRANS	VOLTMETER PANEL, CL.1	COREBALANCE CT IMG	ELB RELAY & SFC/CONTROL	CABLE SIZE
EXISTING LV SWG	L01	-	-	FIX	-	-	TYPE 1.1-FIX	50-63A	3VL2706-1EJ4S-0AD1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4x50
EXISTING LV SWG	L02	-	-	FIX	-	-	TYPE 1-FIX	50-63A	3VL1706-1DO33-0AD1	-	-	-	-	-	-	-	-	-	-	-	3" 60/5A, CL.1F85,5VA	0-40A, SCALE 90,2h,48" 48-A.S	-	-	-	-	4x50
EXISTING LV SWG	L03	-	-	FIX	-	-	TYPE 1-FIX	40A	3VA 1140-EP736-0AA 0 3VA 9886-0AA 11 3VA 9886-0AB 12	-	-	-	-	-	-	-	-	-	-	-	3" 40/5A, CL.1F85,5VA	0-40A, SCALE 90,2h,48" 48-A.S	-	-	-	-	4x36



ELECTRO KAVIR Co.

EMPLOYER :

NATIONAL IRANIAN OIL COMPANY
NATIONAL IRANIAN SOUTH OIL FIELDS COMPANY



CONTRACTOR :

RASMARA INDUSTRIAL GROUP



DESIGN : A.R

DRAWN : S.N

CHECKED : A.Z

APPROVED: M.R

DATE : 26.01.2017

TITLE :

SINGLE LINE DIAGRAM

PROJECT :

SHAHMAKAN PLANT 66/3.3 KV SUBSTATION

SWITCHGEAR NAME :

LV SWITCHGEAR NF+NF00,NF01,NF02,NF03,NF04

EKC DWG No. : 11065-0-1.SL-01

UNIT: mm

SCALE:N.T.S

REV: 04

SHEET: 11 OF 11