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63/20KV AIS S/S MAZANDARAN




PROTECTION&METERING Single Line Diagram

REFERENCE DOCUMENT & DWG

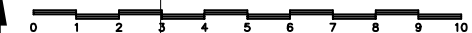
LEGENDS

NOTES





KEY PLAN



















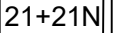













































D									
C									
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A	1403/179502/35371	REVISION	REVISION	REV	REV	REV	REV	REV	REV
O	FIRST ISSUE	REVISION	REVISION	REV	REV	REV	REV	REV	REV
Rev.	DESCRIPTION	OWNER	DESIGNED	CHECKED	HEAD	APPROV.	DATE		
 Mapna Power Plants Construction & Development Co.(MPCD)		 MOHAMMAD REZAEE CO.		 GHODS NIROO CONSULTING ENGINEERS					
PROJECT: MAZANDARAN 63/20KV AIS S/S									
TITLE: PROTECTION SINGLE LINE DIAGRAM									
OWNER'S DWG. NO. MD1-BQ-06-SS-E-01-NGO-801 REV. NO. 1 B									
SCALE: AS SHOWN FORMAT: A3 SHEET: 0 OF 10									
CONTRACT NO. - DESIGN TYPE: BASIC DESIGN <input checked="" type="checkbox"/> DETAIL DESIGN <input type="checkbox"/>									
SUB-CONTRACTOR'S LOGO									
MAZANDARAN REGIONAL ELECTRIC COMPANY (M.R.E.C.)									
OWNER'S DWG. NO. 1: MD1-BQ-06-SS-E-01-NGO-801 B SUB CONTRACTOR DWG. NO.: B									

XXXX IN-HOUSE REVISION									
C									
B	1403/179502/44982&67187	REVISION	REVISION	REV	REV	REV	REV	REV	REV
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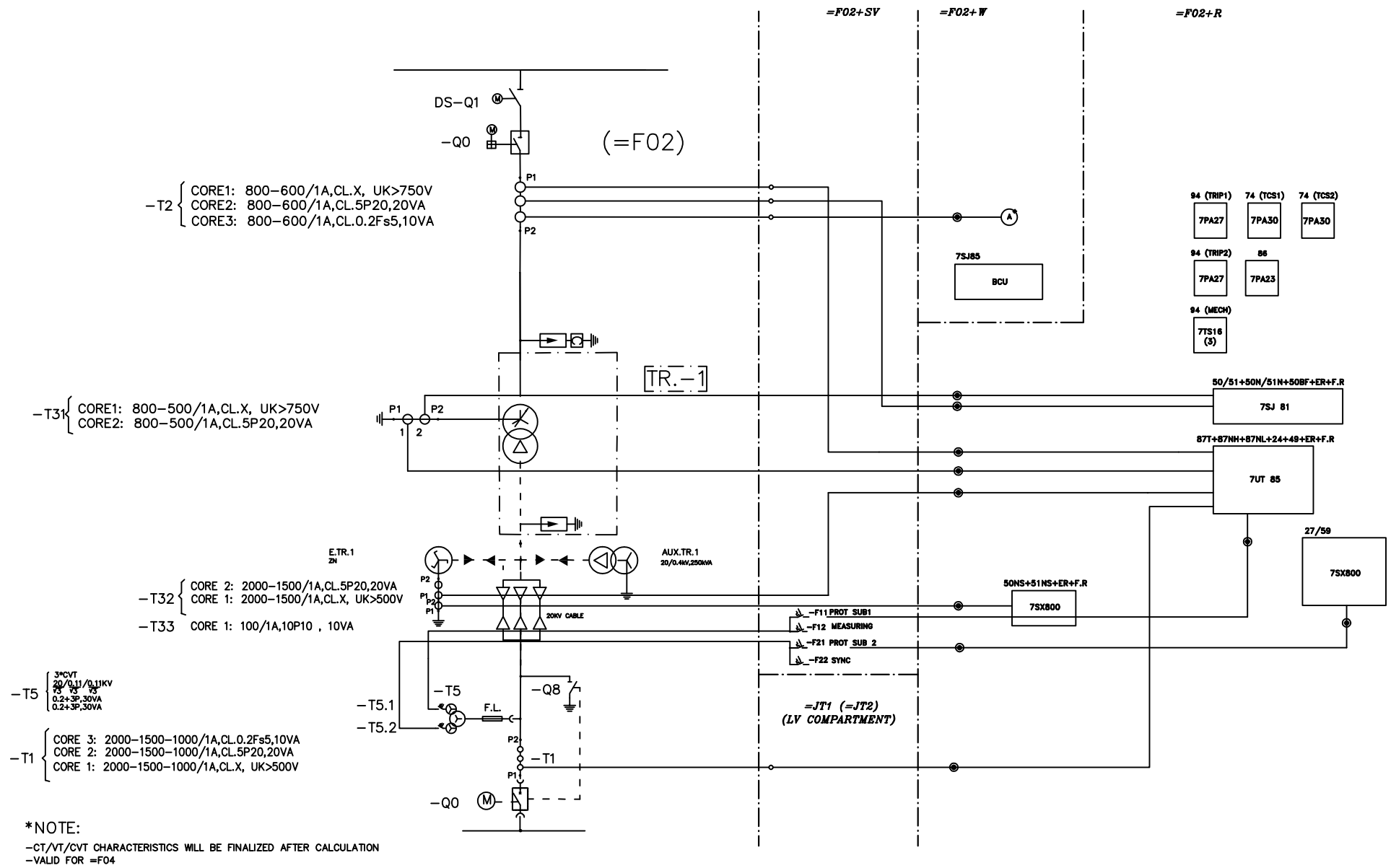
SHEET	DESCRIPTION
0	COVERING SHEET
1	INDEX
2	LIST OF SYMBOL
3	=GENERAL SLD
4	=F01 63 kV LINE PROT/MET. S.L.D
5	=F03 63/20 kV TRANSFORMER(HV SIDE) PROT/MET. S.L.D
6	=JT1 63/20 kV TRANSFORMER(LV SIDE) PROT/MET. S.L.D
7	63KV BUSBAR PROT/MET. S.L.D
8	=20KV FEDEER OUTGOING PROT/MET. S.L.D
9	=20KV BUS COUPLER PROT/MET. S.L.D
10	=CAPACITOR FEDEER PROT/MET. S.L.D
11	=20KV FEDEER OUTGOING PROT/MET. S.L.D B.B II
12	=CAPACITOR FEDEER PROT/MET. S.L.D B.B II

 MAZANDARAN REGIONAL ELECTRIC COMPANY MAPNA'S DWG. No. : MD1-BQ-06-SS-E-01-NG0-801	SUB-CONTRACTOR'S LOGO SUB CONTRACTOR DWG. NO.: MIYAM'S LOGO	E							DWG./Doc. No. MD1-BQ-06-SS-E-01-NG0-801	 Mapna Power Plants Construction & Development Co(MD-1)	 MOHAM SHARGH CO.	 GHODS NIROO CONSULTING ENGINEERS	
		D											
		B	ACC TO LETTER NO:1403/179502/44982&7187	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.10.30	DRAWING TITLE: INDEX				REV. NO. : B
		A	ACC TO LETTER NO:1403/179502/35371	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.10.30	SHEET: 1 OF: 12				
		0	FIRST ISSUE	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.04.19	DESIGN STAGE :	FILE No.	FORMAT : A3	PROJECT : MAZANDARAN 63/20KV AIS S/S	
		REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE					

Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
	Circuit Breaker		CAPACITOR BANK WITH UNBALANCE C.T		Fuse Failure Relay		Automatic Voltage Regulator Relay		Metering Center (V,A,MWh,MVARh,W,VAR,PF)
	Disconnect Switch		Trans Differential Relay		Directional Over Current Relay		Sensitive Earth-Fault Relay		Voltmeter Selector Switch
	Disconnect Switch With Earthing Switch		Restricted Earth-Fault Relay (HV Side)		Directional Earth Fault Relay		UNBALANCE		MCB (Miniature Circuit breaker)
	CIRCUIT BREAKER WITH DRAWABLE		Restricted Earth-Fault Relay (MV Side)		Power Swing Blocking Relay		Distance Relay		Fuse
	MOTOR OPERATED		Synchro-Check Relay		Trip Circuit Supervision Relay		Voltmeter		BUCHHOLZ RELAY
	HAND OPERATED		Under Voltage Relay		Auto Reclose Relay		AMMETER		OIL TEMPERATURE
	Star Connection		Switch On To Fault		Lock out Relay		Double Voltmeter		WINDING TEMPERATURE
	Line Trap		Instantaneous Over Current Relay		Trip Relay		Synchron Scope		PRESSURE RELIEF
	Lightning Arrester With Surge Counter		Inverse/Definite Time Over Current Relay		Fault Locator		Double Frequency meter		ON LOAD TAP CHANGER (O.L.T.C) BUCHHOLZ RELAY
	3-Ph Capacitive Voltage Transformer		Instantaneous Earth Fault Relay		CLOSE Relay		Test Block		OIL LEVEL TRANS
	Unbalance Current Transformer		Inverse/Definite Time Earth Fault Relay		Time Delay Relay		TERMINAL		OIL LEVEL O.L.T.C
	Current Transformer		Over Voltage Relay		Var Control For Capacitor Bank Relay		Voltage Selection Circuit		(V,I,W,VAR) TRANSDUCER
	Line differential Relay		Ferequency Relay		Load sheding Relay		Current Load sheding Relay		

PROTECTION RELAY : SIEMENS RELAY
MEASURING DEVICE : AFZARAZMA
MEASURING CENTER : BASETPAZHUH-B851

<div> MAZANDARAN REGIONAL ELECTRIC COMPANY MAPNA'S DWG. No. : MD1-BQ-06-SS-E-01-NGO-801</div>	SUB-CONTRACTOR'S LOGO	E								DWG./Doc. No.		<div> Mapna Power Plants Construction & Development Co(MD-1)</div>	<div> MOHAM SHARGH CO.</div>	<div> GHODS NIROO CONSULTING ENGINEERS</div>
	SUB CONTRACTOR DWG. NO.:	B	ACC TO LETTER NO:1403/179502/44982&7187	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.10.30	DRAWING TITLE: LEGEND	REV. NO. : B SHEET: 2 OF: 12				
		A	ACC TO LETTER NO:1403/179502/35371	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.10.30						
		O	FIRST ISSUE	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.10.30						
NIYAM'S LOGO	REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE	DESIGN STAGE :	FILE No.	FORMAT : A3	PROJECT : MAZANDARAN 63/20KV AIS S/S			



SUB-CONTRACTOR'S LOGO

SUB CONTRACTOR DWG. NO.:

NIYAM'S LOGO

E
D
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B
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REV.

ACC TO LETTER NO:1403/179502/44982&67187
ACC TO LETTER NO:1403/179502/35371
FIRST ISSUE
DESCRIPTION

MOHAJER/MOHAJER
MOHAJER/MOHAJER
MOHAJER/MOHAJER
DESN

ATAEI
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APPR

1403.13.30
1403.10.30
1403.04.19
DATE

DWG./Doc. No.

DRAWING TITLE:
=F02 63/20 kV TR PROT/MET. S.L.D

DESIGN STAGE :

FILE No.

REV. NO. : B

SHEET: 5 OF: 12

FORMAT : A3



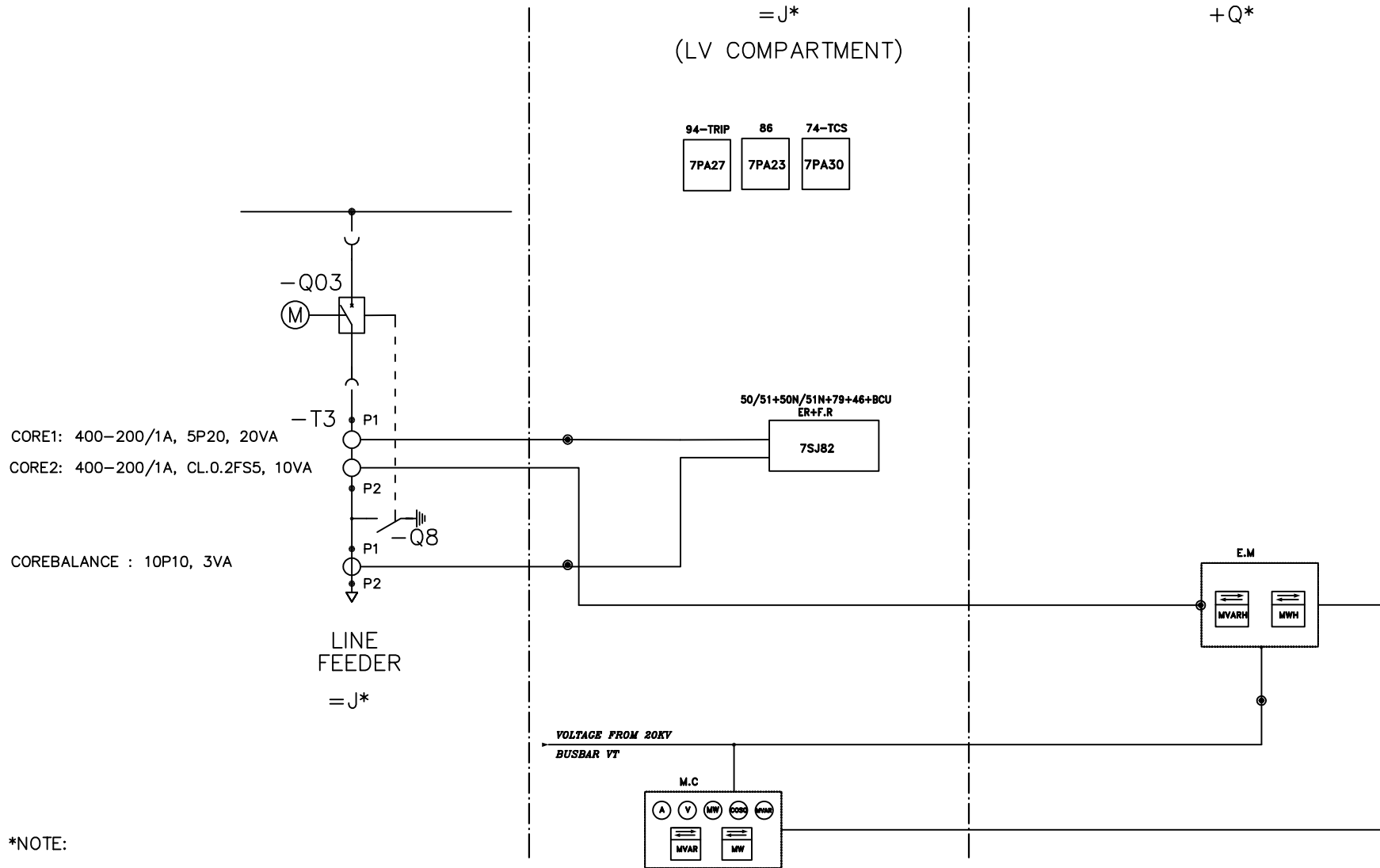
PROJECT : MAZANDARAN 63/20KV AIS S/S

MOHAM
SHARGH
CO.







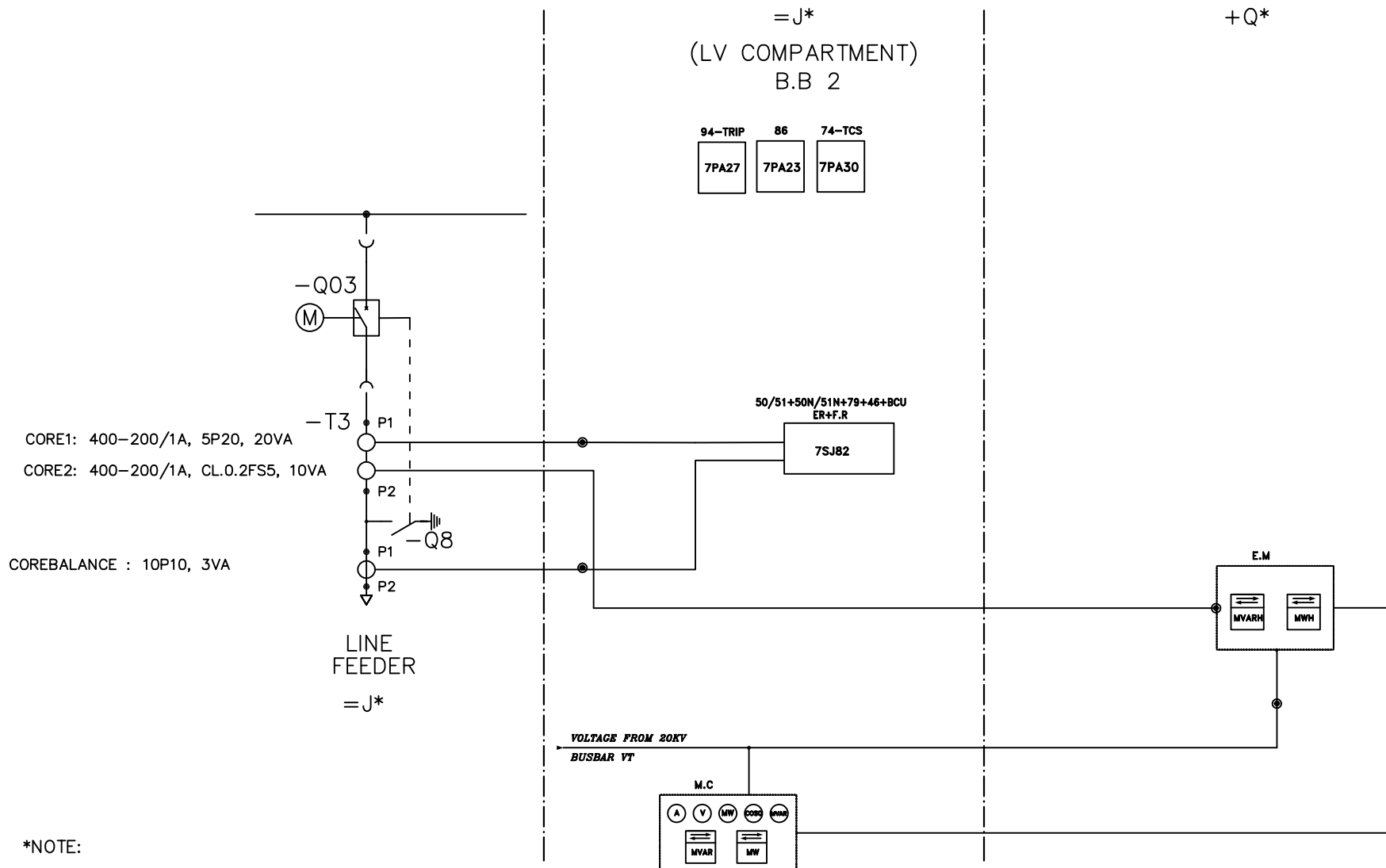
GHODS NIROO
CONSULTING ENGINEERS

7



*NOTE:
-VALID FOR OTHER OUTGOING FEEDER
-20KV FEEDER CT & PT ARE FINALIZED AFTER CAL.

<div> MAZANDARAN REGIONAL ELECTRIC COMPANY (M.R.E.C)</div>	SUB-CONTRACTOR'S LOGO	E								DWG./Doc. No.		<div> Mapna Power Plants Construction & Development Co(MD-1)</div>	<div> MOHAM SHARGH CO.</div>	<div> GHODS NIROO CONSULTING ENGINEERS</div>	
	SUB CONTRACTOR DWG. NO.:	C									DRAWING TITLE:				REV. NO. : B
		B	ACC TO LETTER NO:1403/179502/44982&7187	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.12.30	=20KV FEDEER PROT/MET. S.L.D	SHEET: 8 OF: 12					
		A	ACC TO LETTER NO:1403/179502/3537	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.10.30							
	MAPNA'S DWG. No. : MD1-BQ-06-SS-E-01-NGO-801	NIYAM'S LOGO	O	FIRST ISSUE	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.04.19	DESIGN STAGE :	FILE No.				FORMAT : A3
REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE									



*NOTE:

- VALID FOR OTHER OUTGOING FEEDER
- 20KV FEEDER CT & PT ARE FINALIZED AFTER CAL.



MAZANDARAN
REGIONAL ELECTRIC
COMPANY (M.R.E.C)

MAPNA'S DWG. No. :
MD1-BQ-06-SS-E-01-NGO-801

SUB-CONTRACTOR'S LOGO

SUB CONTRACTOR DWG. NO.:

NIYAM'S LOGO

E									
D									
C									
B	ACC TO LETTER NO:1403/179502/44882&7187	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.12.30			
A	ACC TO LETTER NO:1403/179502/35371	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.10.30			
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REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE			

DWG./Doc. No.

DRAWING TITLE:

=20KV FEDEER PROT/MET. S.L.D

DESIGN STAGE :

FILE No.

REV. NO. : B

SHEET: 11 OF 12

FORMAT : A3



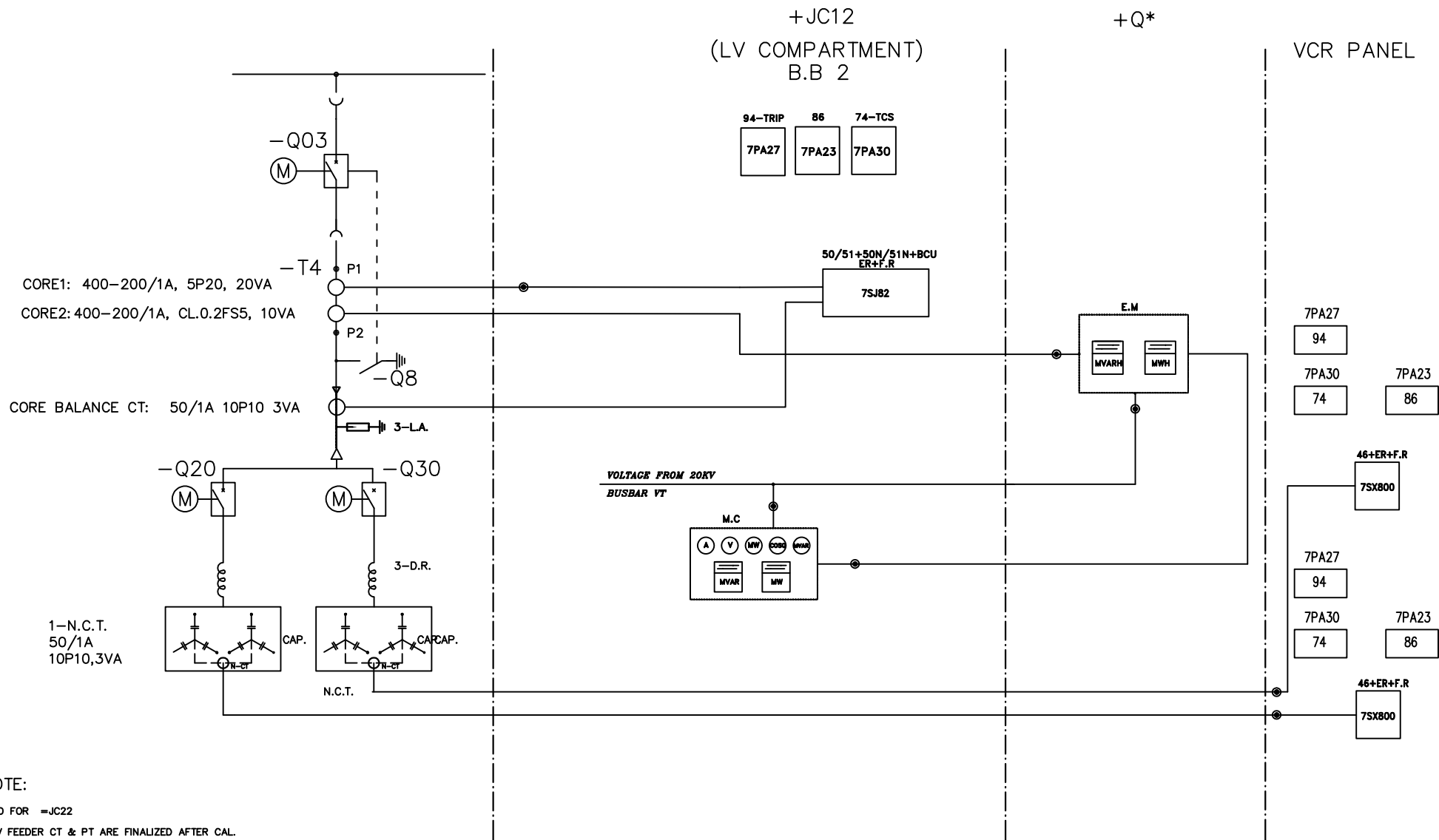
Mapna Power Plants Construction &
Development Co (MD-1)

MOHAM
SHARGH
CO.



GHODS NIROO
CONSULTING ENGINEERS

PROJECT : MAZANDARAN 63/20KV AIS S/S



SUB-CONTRACTOR'S LOGO

SUB CONTRACTOR DWG. NO.:

MAZANDARAN
REGIONAL ELECTRIC
COMPANY (M.R.E.C.)

MAPNA'S DWG. No. :

MD1-BQ-06-SS-E-01-NGO-801

NIYAM'S LOGO

E									
D									
C									
B	ACC TO LETTER NO:1403/179502/44982&7187	MOHAJER	MOHAJER	ATAEI	ATAEI	1403.13.30			
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REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE			

DWG./Doc. No.

DRAWING TITLE:

CAPACITOR FEDEER PROT/MET. S.L.D

DESIGN STAGE :

FILE No.

REV. NO. : B

SHEET:12 OF: 12

FORMAT : A3



Mapna Power Plants Construction &
Development Co(MD-1)

MOHAM
SHARGH
CO.



GHODS NIROO
CONSULTING ENGINEERS

PROJECT : MAZANDARAN 63/20KV AIS S/S

