

GOLRANG 132KV SUBSTATION

PROTECTION & METERING SINGLE LINE DIAGRAM

B	M.ATAEI	R.AKBARNEZHAD	1404/07	ACCORDING TO LETTER NO.1404/4591
A	M.ATAEI	R.AKBARNEZHAD	1404/06	ACCORDING TO LETTER NO.1404/4412
Z	M.ATAEI	MO.AMINI	1404/06	FIRST ISSUE
REV.	VERIFIED	DRAWN	DATE	DESCRIPTION
	DATE:	NAME:	SCALE: –	STANDARD:
DRAWN	1404/06	MO.AMINI	SUBJECT: GOLRANG 132KV SUBSTATION PROTECTION & METERING SINGLE LINE DIAGRAM	
DESIGNED	1404/06	MO.AMINI		
CHECKED	1404/06	M.ATAEI		
APPROVED	1404/06	M.ATAEI		
CONTRACT NO:			DRAWING NO: MVL/403/33/132/701	
CONSULTANT:		CONTRACTOR:		CLIENT:
TOUS STADT KHORASAN ENGINEERS		MOHAM SHARGH CO.		SAMIN ENERGY PAYDAR
				
CONSU. REF:		CONT. REF:		CLIEN REF:

1

2

3

4

5

6

7

8

A

B

C

D

E

F

Page	Description	Revision				
		Z	A	B	C	D
0	COVER	X	X	X		
1	INDEX	X	X	X		
2	LEGEND	X	X	X		
3	PROTECTION SINGLE LINE DIAGRAM 132KV LINE E01	X	X	X		
4	METERING SINGLE LINE DIAGRAM 132KV LINE E01	X	X	X		
5	PROTECTION SINGLE LINE DIAGRAM 132KV TRANS E05	X	X	X		
6	METERING SINGLE LINE DIAGRAM 132KV TRANS E05	X	X	X		
7	PROTECTION SINGLE LINE DIAGRAM 132KV COUPLER E00	X	X	X		
8	METERING SINGLE LINE DIAGRAM 132KV COUPLER E00	X	X	X		
9	PROTECTION & METERING SINGLE LINE DIAGRAM 33KV SOLAR FEEDER =H*	X	X	X		
10	PROTECTION & METERING SINGLE LINE DIAGRAM 33KV METERING FEEDER =HM	X	X	X		
11	PROTECTION SINGLE LINE DIAGRAM - 132KV BUSBAR PROTECTION	X	X	X		
12	PROTECTION & METERING SINGLE LINE DIAGRAM 33KV METERING FEEDER =HC01	X	X	X		

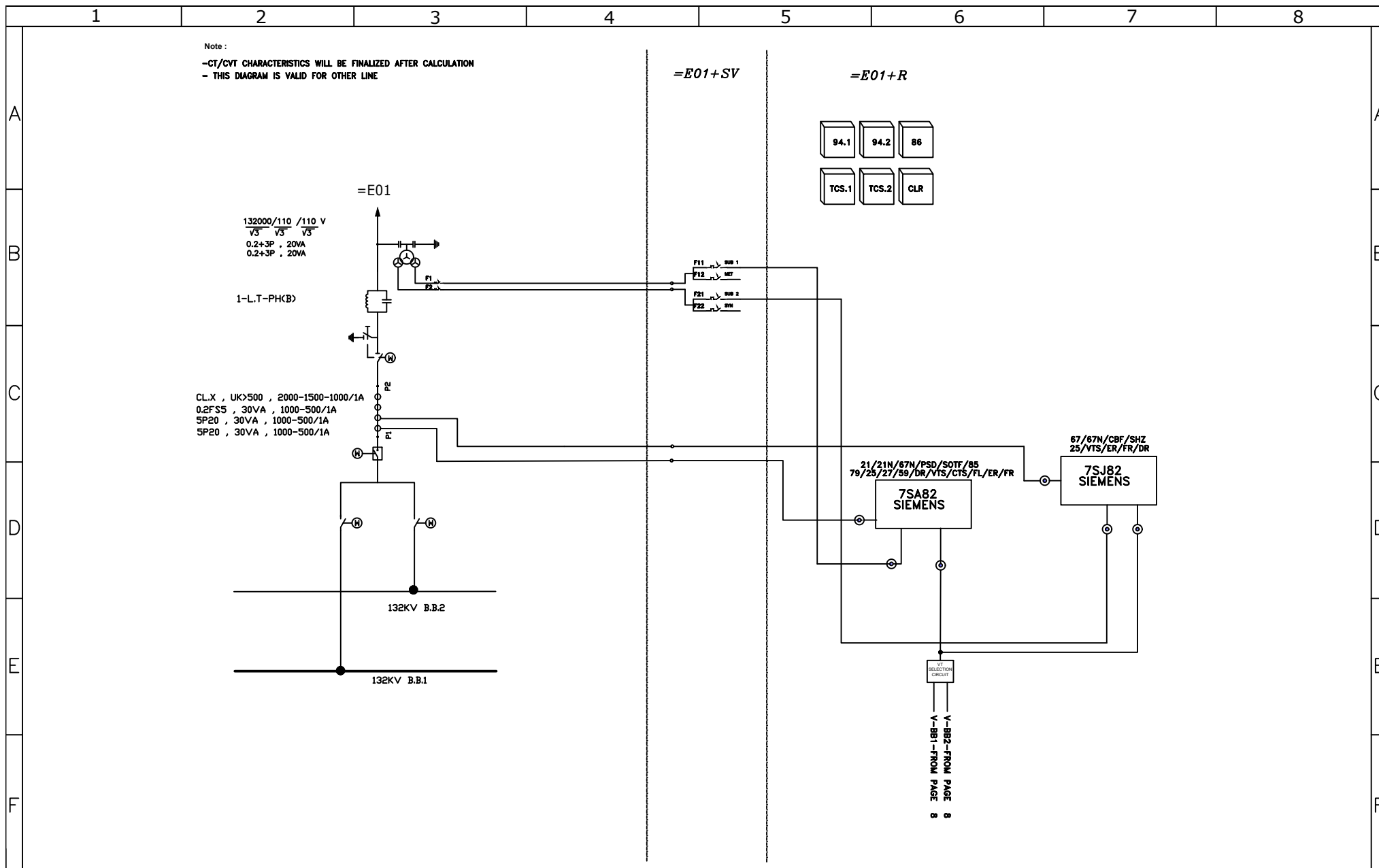
			Consultant:	Client:	Contractor:		Name	Date	Title:	Project:	Scale: --
B	ACC. TO LET. NO.1404/4591	04/07	 TOUS STADT KHORASAN ENGINEERS	SAMIN ENERGY PAYDAR	 (A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH	DRAWN	MO.AMINI	04/06	INDEX	GOLRANG 132 KV SUBSTATION	Size:
A	ACC. TO LET. NO.1404/4412	04/06				DESIGNED	MO.AMINI	04/06			
Z	FIRST ISSUE	04/06				CHECKED	M.ATAEI	04/06			
REV.	Description.	DATE				APPROVED	M.ATAEI	04/06		DWG NO: MVL/403/33/132/701	Contract No:
											Sheet: of 12

	1	2	3	4	5	6	7	8
A								
B								
C								
D								
E								
F								

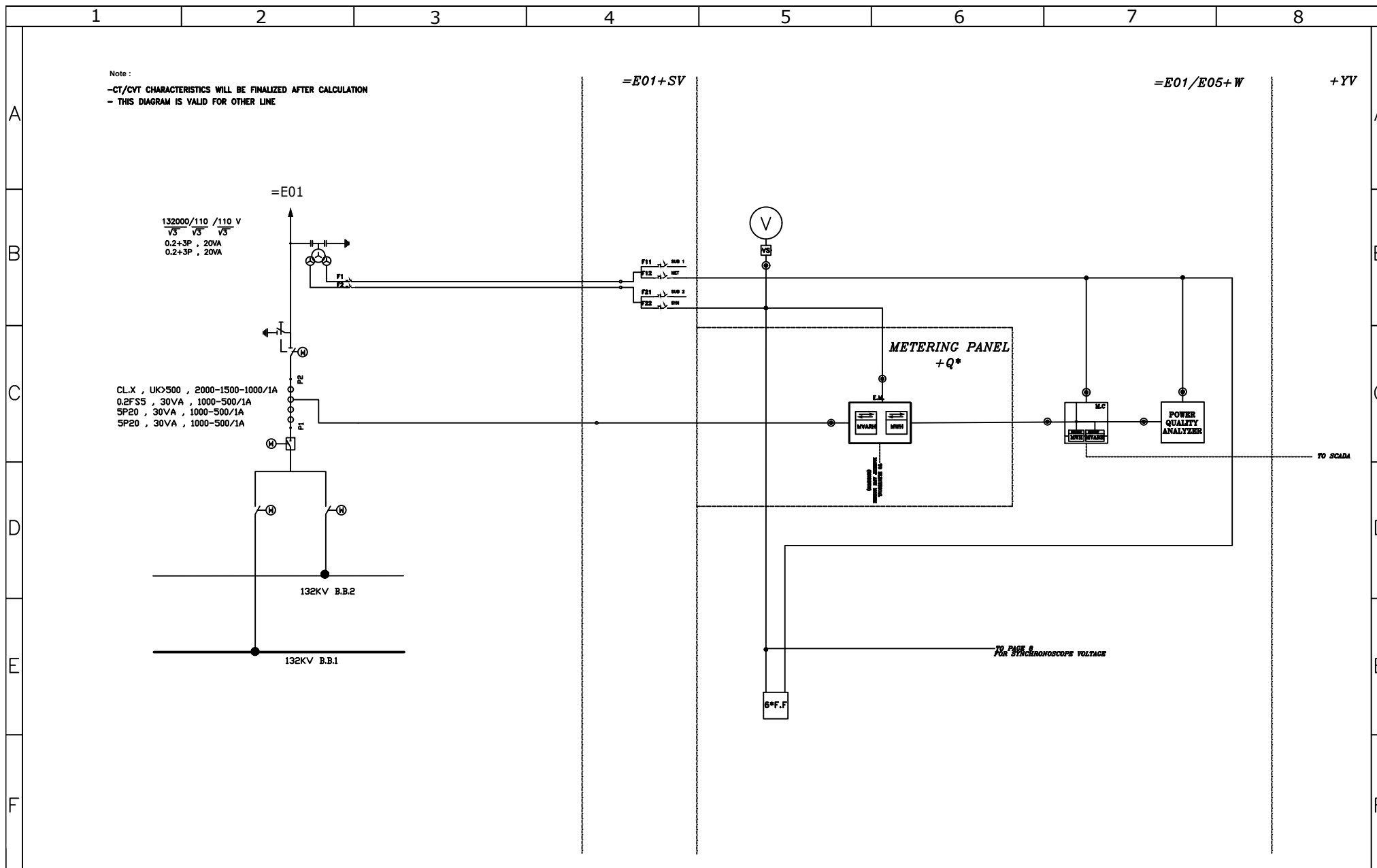
FUNC.	DESCRIPTION	FUNC.	DESCRIPTION
50/51	OVER CURRENT	97	FUSE FAILURE
50N/51N	EARTH FAULT	24	OVER FLUX
50NS/51NS	SENSITIVE EARTH FAULT	87L	LINE DIFFERENTIAL
50CBF	BREAKER FAILURE	PSD	POWER SWING DETECTION
87T	DIFFERENTIAL PROTECTION	21/21N	DISTANCE PROTECTION
64	RESTRICTED EARTH FAULT	25	SYNCHRO-CHECK
49	OVER LOAD PROTECTION	27 LSH	VOLTAGE LOAD SHEDDING
79	AUTO RECLOSER	67	DIRECTIONAL OVER CURRENT
F.F	FUSE FAILURE	67N	DIRECTIONAL EARTH FAULT
27/59	UNDER/OVER VOLTAGE	51 LSH	CURRENT LOAD SHEDDING
94	TRIP	87NL	LV SIDE RESTRICTED EARTH FAULT
94X	TRANS MECHANICAL TRIPS	87NH	HV SIDE RESTRICTED EARTH FAULT
TCS	TRIP CIRCUIT SUPERVISION	81 LSH	UNDER FREQUENCY LOAD SHEDDING
CCS	CLOSE CIRCUIT SUPERVISION	PD	POLE DISCORDANCE
CLR	CLOSE RELAY	BCU	BAY CONTROL UNIT
85	TELE PROTECTION	PQM	POWER QUALITY METER
86	LOCKOUT	87BB	BUSBAR DIFFERENTIAL
FR	FAULT RECORDER	CTS	CT SUPERVISION
SHZ	SHORT ZONE	VTs	VT SUPERVISION
STUB	STUB PROTECTION	DR	DISTURBANCE RECORDER
SOTF	SWITCH ON TO FAULT		
37	UNDER CURRENT		
46	UNBALANCE PROTECTION		

ITEM	SYMBOL	DESCRIPTION
1		M.C.
2		ENERGY METER
3		MINIATURE CIRCUIT BREAKER
4		TERMINATION
5		JUNCTION
6		SYNCHRONOSCOPE
7		VOLTMETER
8		FREQUENCY METER
9		TEST BLOCK

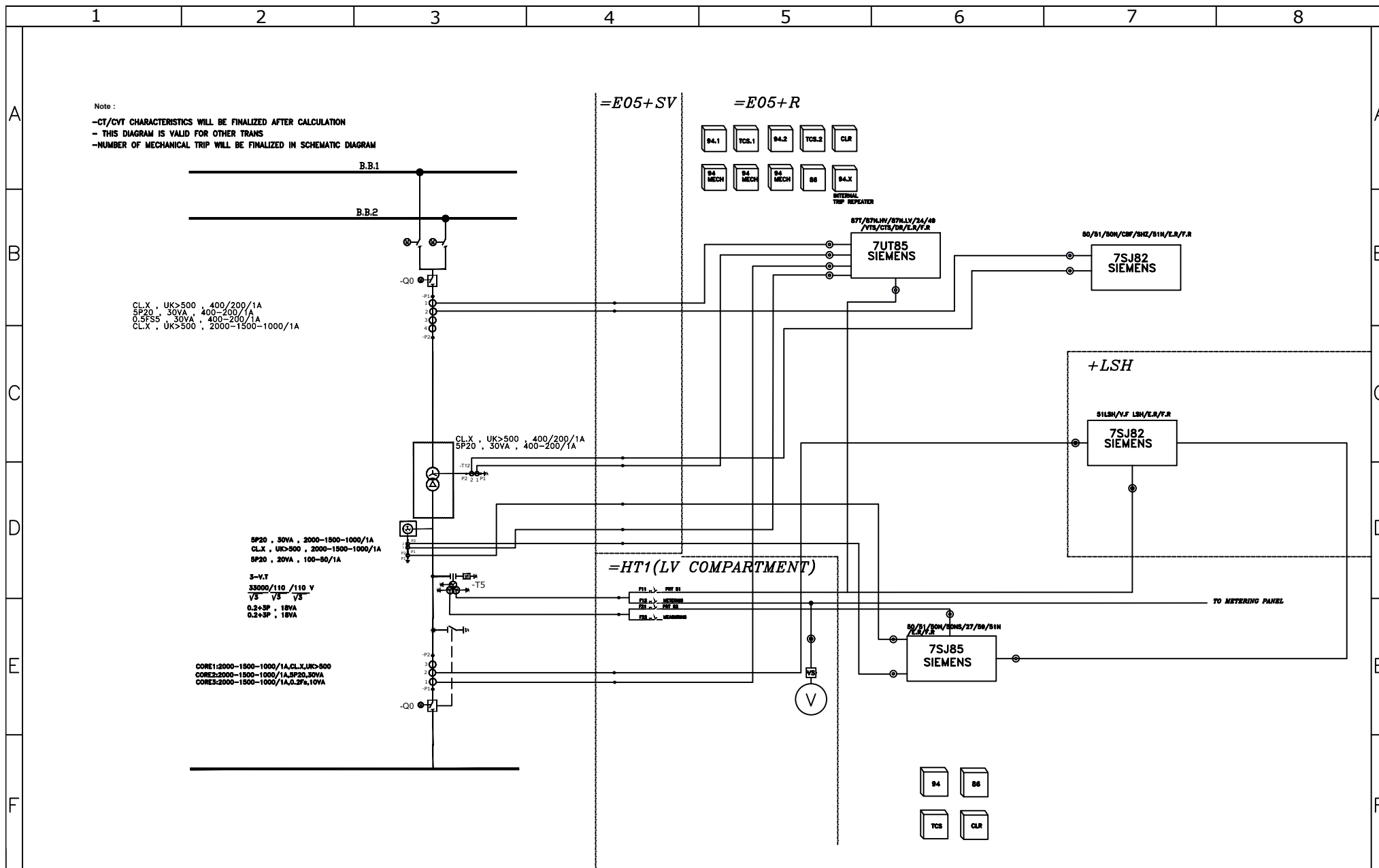
			Consultant:		Client:		Contractor:			Name	Date	Title: LEGEND	Project: GOLRANG 132 KV SUBSTATION	Scale: --			
B	ACC. TO LET. NO.1404/4591	04/07	TOUS STADT KHORASAN ENGINEERS		SAMIN ENERGY PAYDAR		(A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH		DRAWN	MO. AMINI	04/06			DWG NO: MVL/403/33/132/701		Size:	
A	ACC. TO LET. NO.1404/4412	04/06							DESIGNED	MO. AMINI	04/06						
Z	FIRST ISSUE	04/06							CHECKED	M.ATAEI	04/06					Project No:	Sheet: 02
REV.	Description.	DATE							APPROVED	M.ATAEI	04/06					Contract No:	Sheet: of 12



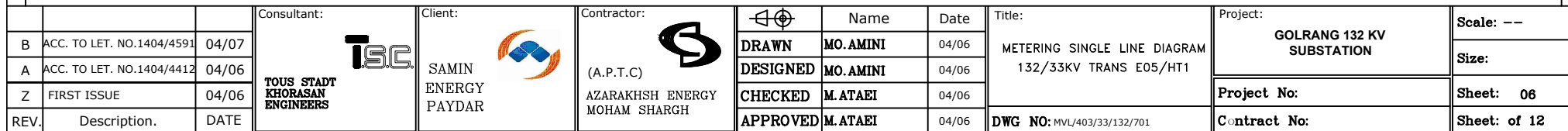
			Consultant:  TOUS STADT KHORASAN ENGINEERS	Client:  SAMIN ENERGY PAYDAR	Contractor:  (A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH		Name	Date	Title: PROTECTION SINGLE LINE DIAGRAM 132KV LINE E01	Project: GOLRANG 132 KV SUBSTATION	Scale: --
B	ACC. TO LET. NO.1404/4591	04/07				DRAWN	MO.AMINI	04/06			Size:
A	ACC. TO LET. NO.1404/4412	04/06				DESIGNED	MO.AMINI	04/06			
Z	FIRST ISSUE	04/06				CHECKED	M.ATAEI	04/06			Sheet: 03
REV.	Description.	DATE				APPROVED	M.ATAEI	04/06			Sheet: of 12
						DWG NO: MVL/403/33/132/701			Contract No:		

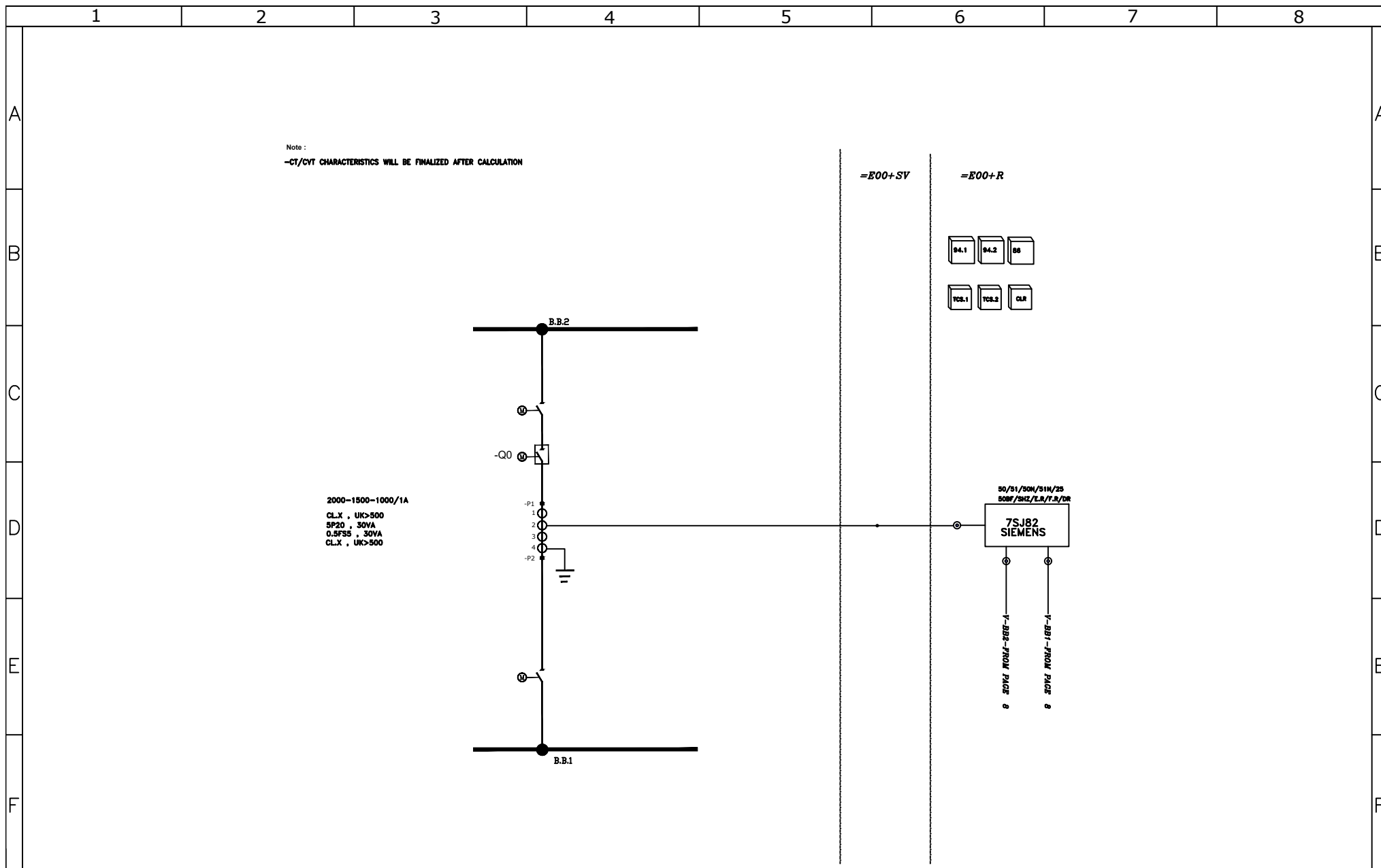


			Consultant:	Client:	Contractor:		Name	Date	Title:	Project:	Scale: --		
B	ACC. TO LET. NO.1404/4591	04/07	 TOUS STADT KHORASAN ENGINEERS	 SAMIN ENERGY PAYDAR	 (A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH	DRAWN	MO.AMINI	04/06	METERING SINGLE LINE DIAGRAM 132KV LINE E01	GOLRANG 132 KV SUBSTATION	Size:		
A	ACC. TO LET. NO.1404/4412	04/06				DESIGNED	MO.AMINI	04/06			Project No:	Sheet: 04	
Z	FIRST ISSUE	04/06				CHECKED	M.ATAEI	04/06				Contract No:	Sheet: of 12
REV.	Description.	DATE				APPROVED	M.ATAEI	04/06					DWG NO: MVL/403/33/132/701

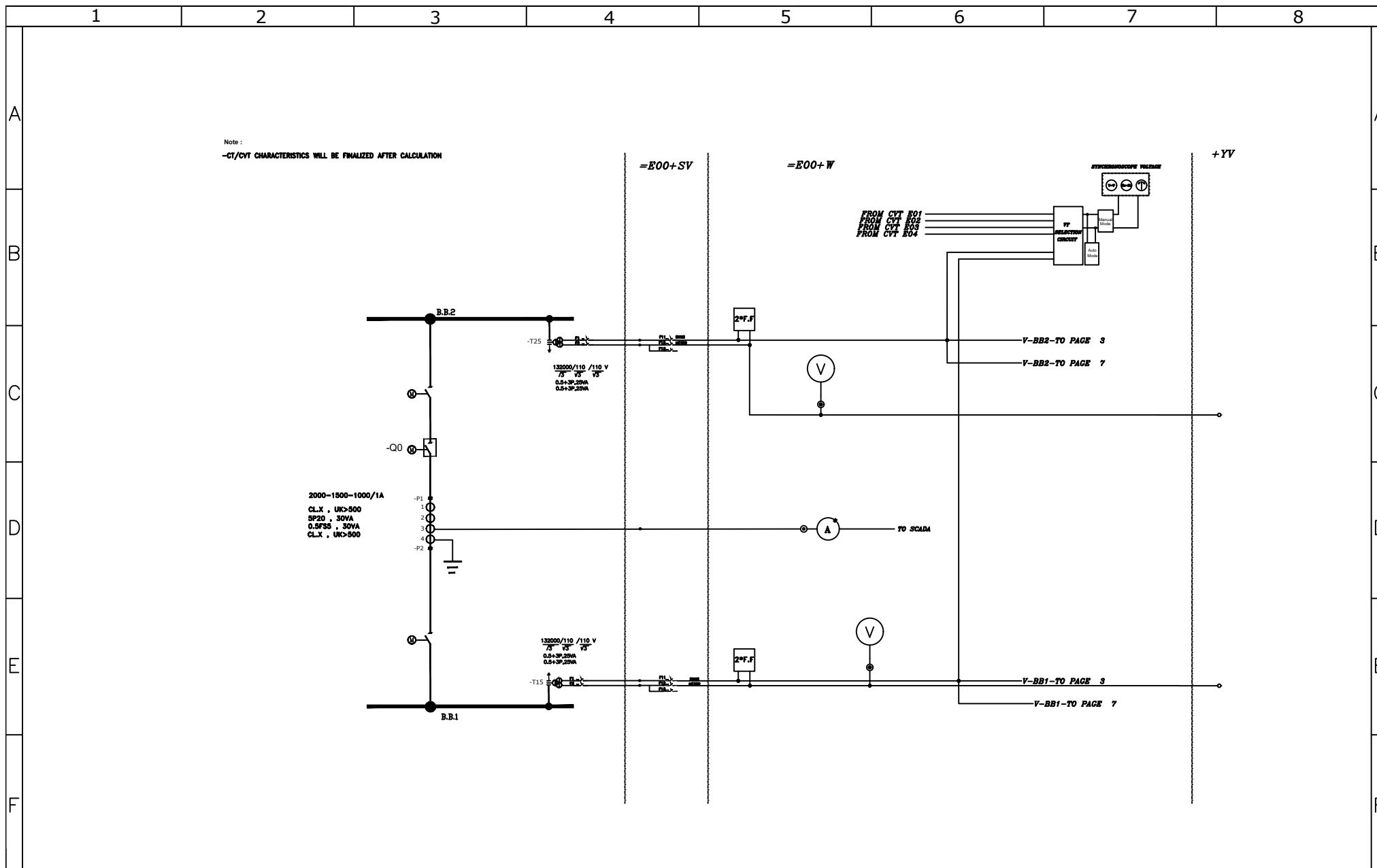


			Consultant:	Client:	Contractor:	Name Date	Title:	Project:	Scale: --
B	ACC. TO LET. NO.1404/4591	04/07	 TOUS STADT KHORASAN ENGINEERS	 SAMIN ENERGY PAYDAR	 (A.P.T.C.) AZARAKHSH ENERGY MOHAM SHARGH	Name Date	PROTECTION SINGLE LINE DIAGRAM 132/33KV TRANS E05/HT1	GOLRANG 132 KV SUBSTATION	Size:
A	ACC. TO LET. NO.1404/4412	04/06				Name Date			Sheet: 05
Z	FIRST ISSUE	04/06				Name Date		Project No:	Sheet: of 12
REV.	Description.	DATE				Name Date	DWG NO: MVL/403/33/132/701	Contract No:	

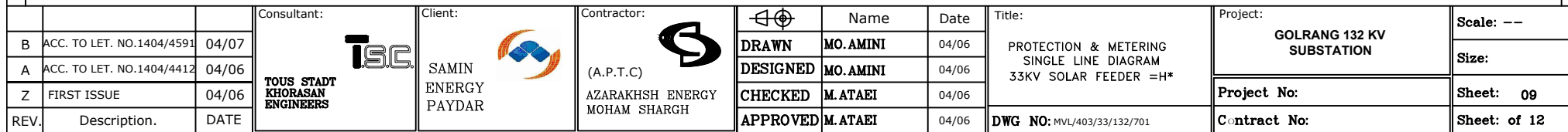


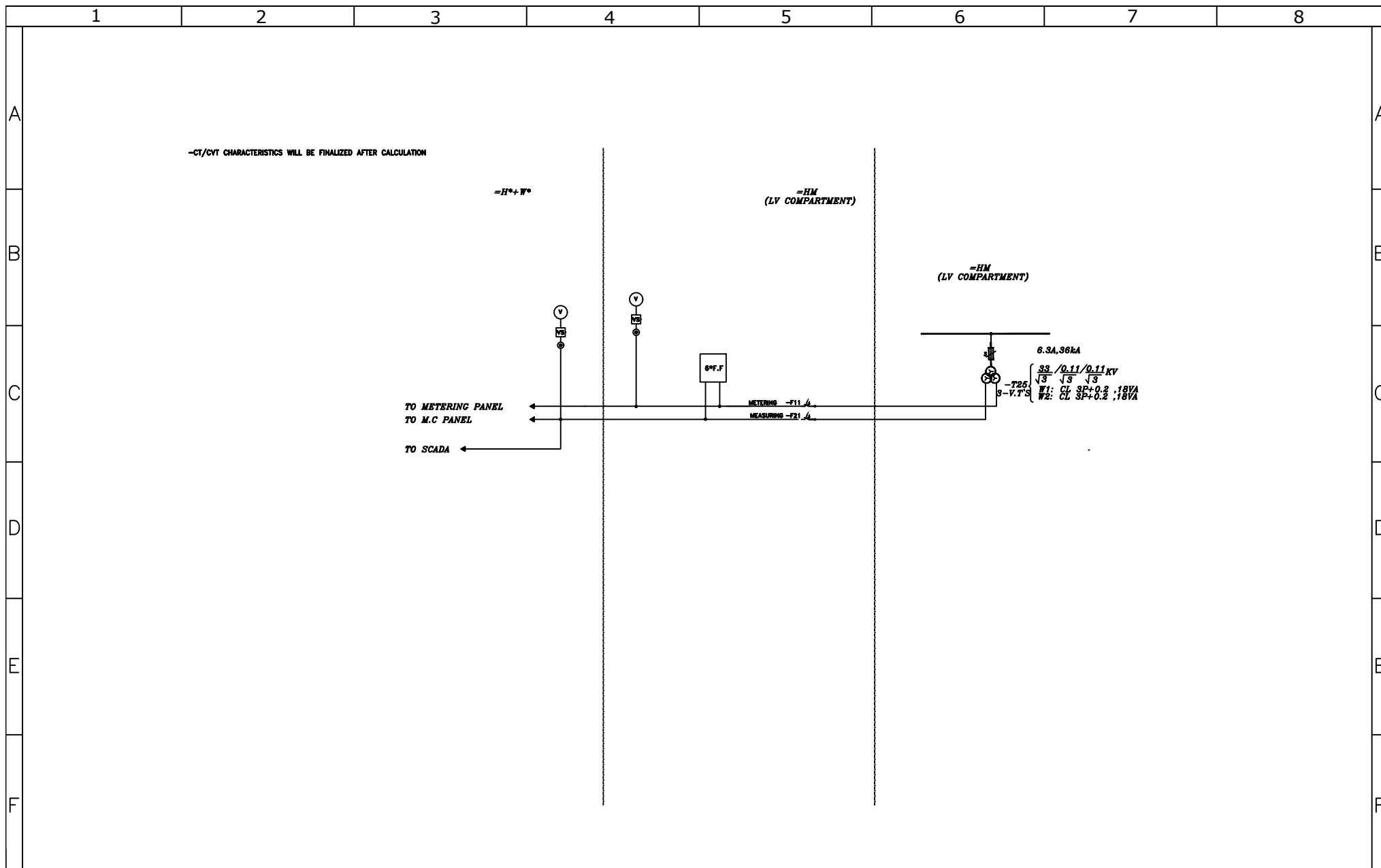


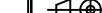
			Consultant:	Client:	Contractor:		Name	Date	Title:	Project:	Scale: --
B	ACC. TO LET. NO.1404/4591	04/07	 TOUS STADT KHORASAN ENGINEERS	 SAMIN ENERGY PAYDAR	 (A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH	DRAWN	MO.AMINI	04/06	PROTECTION SINGLE LINE DIAGRAM 132KV COUPLER E00	GOLRANG 132 KV SUBSTATION	Size:
A	ACC. TO LET. NO.1404/4412	04/06				DESIGNED	MO.AMINI	04/06			
Z	FIRST ISSUE	04/06				CHECKED	M.ATAEI	04/06			
REV.	Description.	DATE				APPROVED	M.ATAEI	04/06			
									DWG NO: MVL/403/33/132/701	Project No:	Sheet: 07
										Contract No:	Sheet: of 12

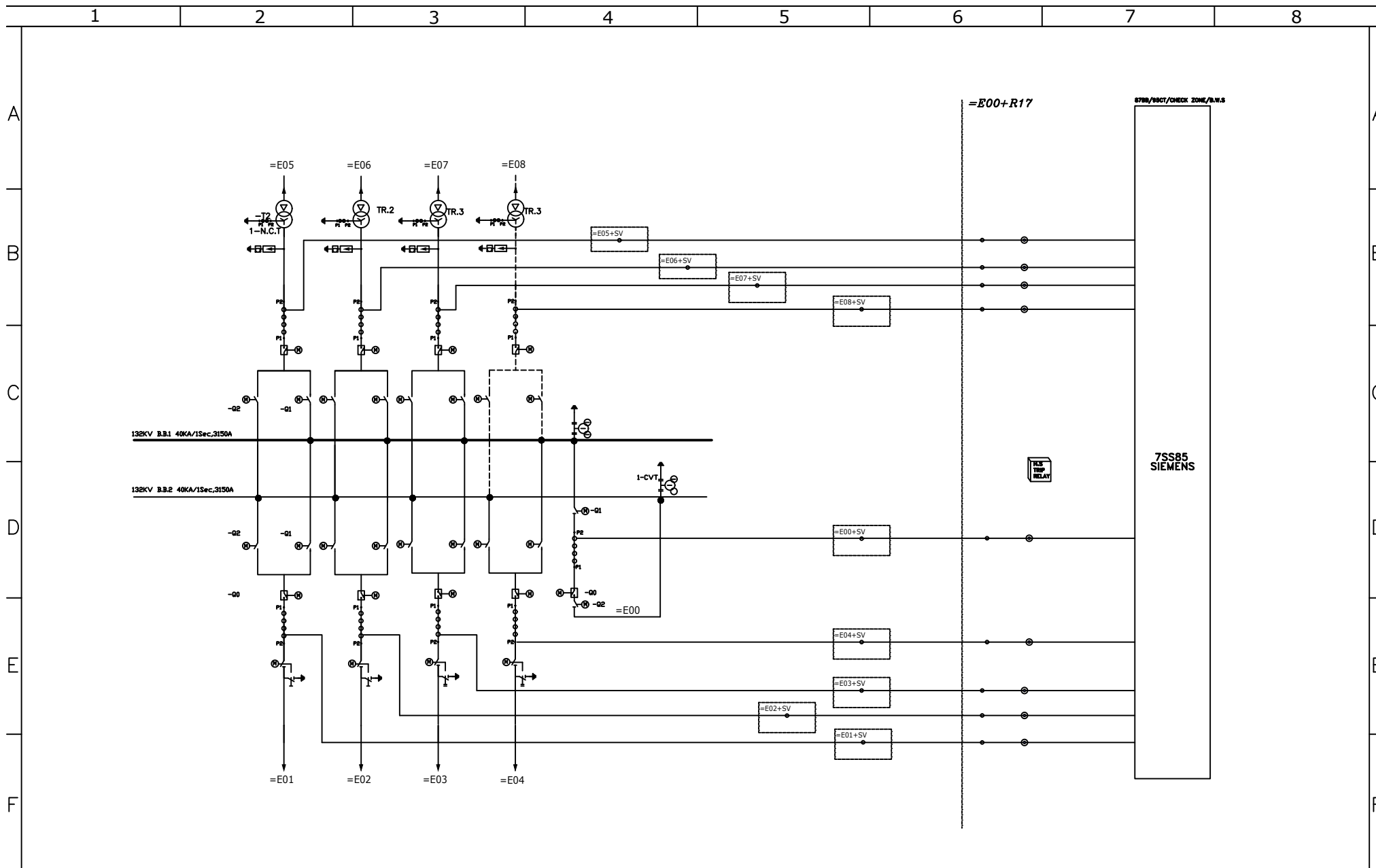


			Consultant:	Client:	Contractor:		Name	Date	Title:	Project:	Scale: --
B	ACC. TO LET. NO.1404/4591	04/07	 TOUS STADT KHORASAN ENGINEERS	 SAMIN ENERGY PAYDAR	 (A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH	DRAWN	MO.AMINI	04/06	METERING SINGLE LINE DIAGRAM 132KV COUPLER E00	GOLRANG 132 KV SUBSTATION	Size:
A	ACC. TO LET. NO.1404/4412	04/06				DESIGNED	MO.AMINI	04/06			
Z	FIRST ISSUE	04/06				CHECKED	M.ATAEI	04/06			
REV.	Description.	DATE				APPROVED	M.ATAEI	04/06			
									DWG NO: MVL/403/33/132/701	Contract No:	Sheet: 08 of 12





			Consultant:	Client:	Contractor:		Name	Date	Title:	Project:	Scale: --
B	ACC. TO LET. NO.1404/4591	04/07	 TOUS STADT KHORASAN ENGINEERS	 SAMIN ENERGY PAYDAR	 (A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH	DRAWN	MO.AMINI	04/06	PROTECTION & METERING SINGLE LINE DIAGRAM 33KV METERING FEEDER =HM	GOLRANG 132 KV SUBSTATION	Size:
A	ACC. TO LET. NO.1404/4412	04/06				DESIGNED	MO.AMINI	04/06			
Z	FIRST ISSUE	04/06				CHECKED	M.ATAEI	04/06			
REV.	Description.	DATE				APPROVED	M.ATAEI	04/06			
									DWG NO: MVL/403/33/132/701	Project No:	Sheet: 10
										Contract No:	Sheet: of 12



			Consultant:  TOUS STADT KHORASAN ENGINEERS	Client:  SAMIN ENERGY PAYDAR	Contractor:  (A.P.T.C) AZARAKHSH ENERGY MOHAM SHARGH		Name	Date	Title: PROTECTION & METERING SINGLE LINE DIAGRAM 132KV BUSBAR PROTECTION	Project: GOLRANG 132 KV SUBSTATION	Scale: --
B	ACC. TO LET. NO.1404/4591	04/07				DRAWN	MO.AMINI	04/06			Size:
A	ACC. TO LET. NO.1404/4412	04/06				DESIGNED	MO.AMINI	04/06		Project No:	Sheet: 11
Z	FIRST ISSUE	04/06				CHECKED	M.ATAEI	04/06			Contract No:
REV.	Description.	DATE				APPROVED	M.ATAEI	04/06	DWG NO: MVL/403/33/132/701		

