





1	2	3	4	5	6	7	8	
A								A
B								B
C	KIMUKA 400/220KV SUBSTATION 220kV PROTECTION SINGLE LINE DIAGRAM							C
D								D
E								E

F	PREPARED BY:  مونکو ایران Monenco Iran	D	ACC. TO CLIENT COMMENT SHEET DATED:04 MAR 2021		NIL	AZM	AKS	JVN	03.06.2021	DESIGNED BY	NIL	SIGNATURE	PROJECT: KIMUKA 400/220KV SUBSTATION	DWG. TITLE: 220kV PROTECTION SINGLE LINE DIAGRAM COVER		CLIENT:  KETRACO Kenya Electricity Transmission Co. Ltd.  THE WORLD BANK IBRD IDA WORLD BANK GROUP	
		C	ACC. TO CLIENT COMMENT SHEET DATED:03 FEB 2021		NIL	AZM	AKS	JVN	09.02.2021	DRAWN BY	AZM						
		B	ACC. TO CLIENT COMMENT SHEET DATED:22 DEC 2020		NIL	AZM	AKS	JVN	22.12.2020	CHECKED BY	AKS						
		A	ACC. TO CLIENT COMMENT SHEET DATED:24 NOV 2020		NIL	AZM	AKS	JVN	28.11.2020	APPROVED BY	JVN						
		0	FIRST ISSUE		NIL	AZM	AKS	JVN	21.11.2020	DATE: 21.11.2020 (DD.MM.YYYY)							
		REV	DESCRIPTION		DESIGN	DRAW	HEAD	APPR.	DATE	SCALE:		SIZE:					
1		2		3		4		5		6		7		8			

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

DESIGNATION OF	TITLE	REVISION				
1	COVERING SHEET	0	A	B	C	D
2	LIST OF DRAWINGS	0	A	B	C	D
3	LEGEND	0	A	B	C	D
4	220KV PROTECTION SLD DIAMETER 1 & 2	0	A	B	C	D
5	220KV BUSBAR PROTECTION	0	—	—	A	B

PREPARED BY:



مونکو ایران
Monenco Iran

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PROJECT:

KIMUKA

400/220KV SUBSTATION


DWG. TITLE:

220kV PROTECTION SINGLE LINE DIAGRAM
LIST OF DRAWINGS


DWG. NO.: MT-TLD-KETCO-5393-BD-02-SJ-252

SHEET: 2 OF: 5




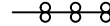









CLIENT:

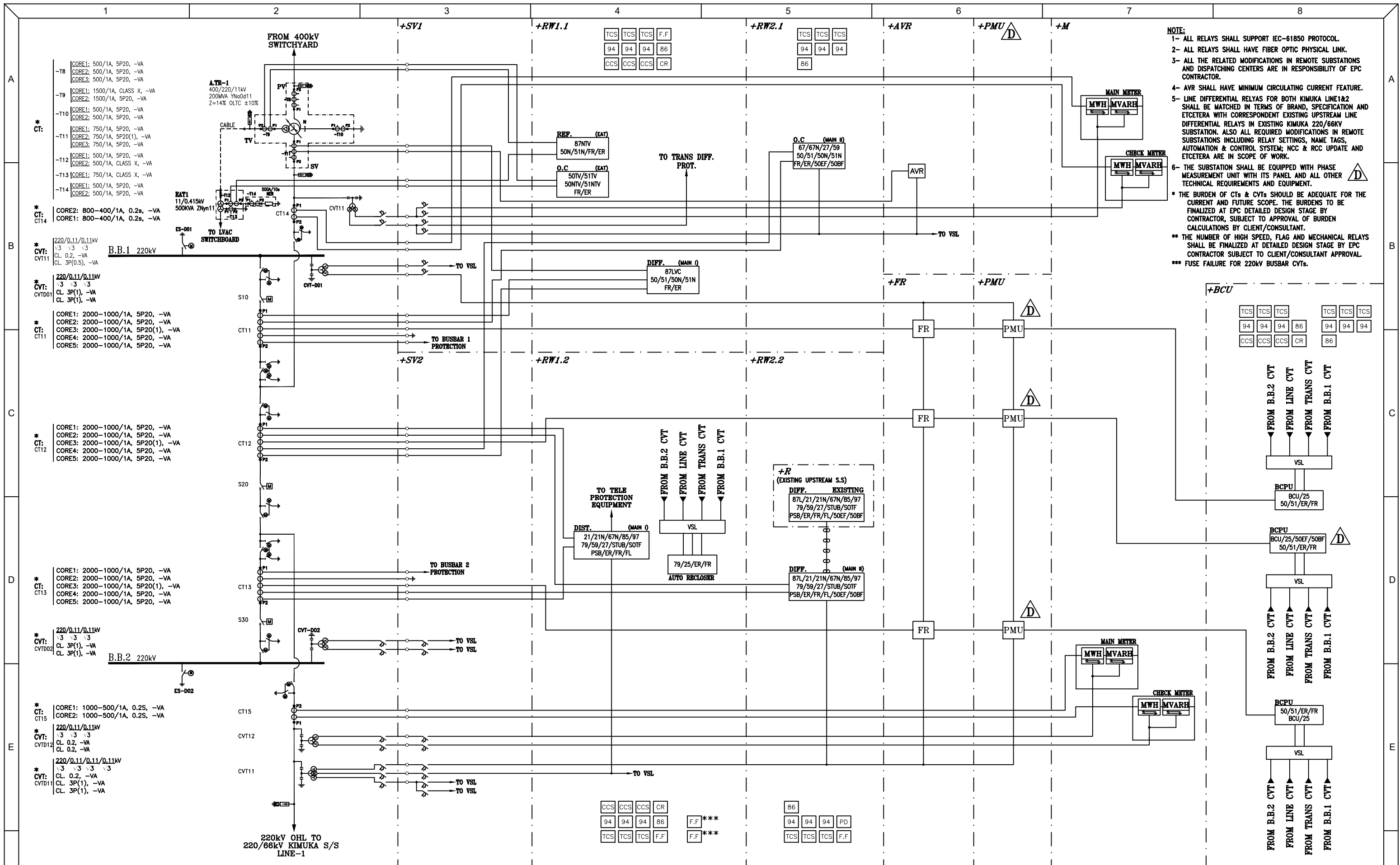



KETRACO
Kenya Electricity Transmission Co. Ltd.



THE WORLD BANK
IBRD . IDA | WORLD BANK GROUP

	1	2	3	4	5	6	7	8																																																																			
A	<div>2</div> TIME DELAY RELAY		<div>87B</div> BUSBAR DIFFERENTIAL PROTECTION		<div>ER</div> EVENT RECORDER		<div></div> ACTIVE ENERGY METER (BOTH DIRECTIONS) (MULTI TARRIF,CLASS 0.2)	A																																																																			
	<div>21/21N</div> DISTANCE RELAY WITH THREE ZONES		<div>87L</div> LINE DIFFERENTIAL PROTECTION		<div>FR</div> FAULT RECORDER		<div></div> REACTIVE ENERGY METER (BOTH DIRECTIONS) (MULTI TARRIF,CLASS 0.2)																																																																				
	<div>24</div> OVER FLUX RELAY		<div>87NT</div> RESTRICTED EARTH FAULT PROTECTION RELAY FOR TRANSFORMER		<div>F.F.</div> FUSE FAILURE RELAY		<div>C.U.</div> CENTRAL UNIT																																																																				
B	<div>25</div> SYNCHRO—CHECK RELAY		<div>87NR</div> RESTRICTED EARTH FAULT PROTECTION RELAY FOR REACTOR		<div>F.L</div> FAULT LOCATOR		<div>B.U.</div> BAY UNIT																																																																				
	<div>27</div> UNDER(ZERO) VOLTAGE RELAY		<div>87NTV</div> RESTRICTED EARTH FAULT PROTECTION RELAY FOR EARTHING TRANSFORMER		<div>PD</div> POLE DISCORDANCE		<div>BCPU</div> BAY CONTROL AND PROTECTION UNIT																																																																				
	<div>46BC</div> UNBALANCY PROTECTION / BROKEN CONDUCTOR		<div>87T</div> TRANS. DIFFERENTIAL PROT.(BIASED DIFF.)		<div>PSB</div> POWER SWING BLOCKING		<div>POW</div> POINT ON WAVE SWITCH																																																																				
	<div>49</div> THERMAL OVER LOAD PROTECTION		<div>87R</div> REACTOR DIFFERENTIAL PROTECTION RELAY		<div>50EF</div> END FAULT / SHORT ZONE PROTECTION		<div>BCR</div> BAY CONTROL ROOM																																																																				
	<div>50</div> INSTANTANEOUS OVER CURRENT RELAY		<div>87HVC</div> TRANSFORMER HV CIRCUIT DIFFERENTIAL PROTECTION		<div>SOTF</div> SWITCH ON TO FAULT		<div></div> PMU PHASE MEASUREMENT UNIT	B																																																																			
C	<div>50BF</div> CIRCUIT BREAKER FAILURE RELAY(WITH 2—STAGE)		<div>87LVC</div> TRANSFORMER LV CIRCUIT DIFFERENTIAL PROTECTION		<div>STUB</div> STUB PROTECTION		<div>PANELS</div>																																																																				
	<div>50NS</div> INSTANTANEOUS SENSITIVE EARTH FAULT RELAY		<div>94</div> TRIP RELAY		<div>TCS</div> TRIP CIRCUIT SUPERVISION RELAY		<div>+RW</div> CONTROL AND PROTECTION PANEL																																																																				
	<div>50/51</div> INSTANTANEOUS AND INVERSE TIME OVER CURRENT RELAY		<div>94X</div> AUX. TRIP RELAY WITH HIGH SPEED CONTACT		<div>CCS</div> CLOSE CIRCUIT SUPERVISION RELAY		<div>+W</div> CONTROL PANEL																																																																				
	<div>50N/51N</div> INSTANTANEOUS AND INVERSE EARTH FAULT RELAY		<div>94Y</div> AUX. TRIP RELAY WITH FLAG		<div>VSL</div> VOLTAGE SELECTION LOGIC		<div>+SV</div> MARSHALING CUBICLE																																																																				
D	<div>51</div> INVERSE TIME OVER CURRENT RELAY		<div>95CT</div> CT SUPERVISION		<div>SBEF</div> STANDBY EARTH FAULT PROTECTION		<div>+M</div> MEASUREMENT PANEL																																																																				
	<div>59</div> OVER VOLTAGE RELAY		<div>95VT</div> VOLTAGE SUPERVISION				<div>+BCU</div> BAY CONTROL UNIT PANEL																																																																				
	<div>67</div> DIRECTIONAL OVER CURRENT RELAY WITH INVERSE TIME CHARACTRISTIC		<div>97</div> FUSE FAILURE (IN DISTANCE RELAY)				<div>+PMU</div> BAY CONTROL UNIT PANEL																																																																				
	<div>67N</div> DIRECTIONAL EARTH FAULT RELAY		<div>2/MECH</div> TRANSFORMER MECHANICAL PROTECTION				<div></div> FIBER OPTIC CABLE	C																																																																			
	<div>79</div> AUTO RECLOSER RELAY 1&3 PHASE		<div>BCU</div> BAY CONTROL UNIT				<div></div> MINIATURE CIRCUIT BREAKER																																																																				
E	<div>85</div> CARRIER INTERFACE/REMOTE TRIP		<div>C.R</div> CLOSE RELAY				<div></div> REVISION MARK																																																																				
	<div>86</div> LOCKOUT RELAY		<div>DTT</div> DIRECT TRANSFER TRIP					D																																																																			
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