

ANNEXURE-D  
REFERENCE GETCO SANKHARI SCHEME

1

SR. No.-1 Contractor/Supplier Copy

**GETCO**

Released For Manufacture

Released For Construction

Released For Information

Approval Letter / Mail No 376 Dt. 19-3-14

**GETCO ENGG. CELL**

**DRAWING APPROVAL**

Cat-1 Approved *PKL*

Cat-2 Approved with Comments

Cat-3 Approved For Information


Cat-4 Not Approved.

The above approval, in general does not absolve you from Contractual Obligations.

This drawing and design is the property of ALSTOM and must not be copied or lent without prior permission in writing.

REV.	DESCRIPTION	DATE	PREPARED BY	ELE.	CIVIL	MECH.	APPROVED	STATUS
B	SECOND ISSUE							
		Name	GKA	AM	-	-	JKK	
		Date	10.03.2014	10.03.2014	-	-	10.03.2014	
		Sign.						
A	FIRST ISSUE							
		Name	SKA	AM	-	-	JKK	
		Date	19.02.2014	19.02.2014	-	-	19.02.2014	
		Sign.						

**CLIENT:**



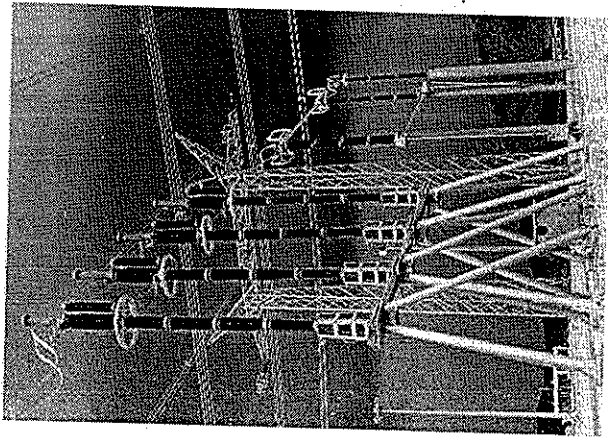
**GUJRAT ENERGY TRANSMISSION CORPORATION LTD.**  
SARDAR PATEL VIDYUT BHAWAN, RACE COURSE ROAD,  
VADODARA - 390 007, GUJARAT.

**PROJECT:**

GETCO-400/220/66kV SANHKARI

GETCO/ADB/SS/S&E/2012-13/400KV Sankhar/LOT-II/07

<p><b>CONTRACTOR:</b></p> <p><b>ALSTOM T&amp;D INIDA LTD</b></p> <p>A-7, SECTOR-65 NOIDA - 201301 UTTAR PRADESH (INDIA)</p> <p><b>ALSTOM</b></p>	<p><b>TITLE:</b> 400kV Line C&amp;R without BB CU schematics</p>		
	<p><b>DOCUMENT No.</b></p> <p>5427PN057-SNK-E-CRP-SCH-2202</p>	<p><b>No of Sheets</b></p> <p>82</p>	<p><b>REV.</b></p> <p>B</p>



**ALSTOM T&D INDIA Limited**  
**Automation SAS**  
**Pallavaram - Chennai 43**

**ALSTOM**

**CUSTOMER: GETCO/ALSTOM T&D India Ltd**  
**PROJECT : 400/220/66KV CRP&SAS AT SANKHARI S/S**  
**DRAWING : 400KV LINE PROTECTION PANEL**  
**P.O NO : 5427-4500660137**

**DTD 09.10.2013**

**SR. No.-1 Contractor / Supplier Copy**

**SALES ORDER NO.: 3269028787**  
**ENGG. REF. NO.: KV30**  
**ENGINEER : GKA**

**GETCO**

- Released For Manufacture
- Released For Construction
- Released For Information

14

Approval Letter / Msk No 376 Dt. 19-3-14  
**ENGG. CELL**

**GETCO** DRAWING APPROVAL

- Cat-1 Approved
- Cat-2 Approved with Comments
- Cat-3 Approved For Information
- Cat-4 Not Approved.

The above approval, in general does not absolve you from Contractual Obligations.



**LIST OF DOCUMENTS SUBMITTED**

S.NO.	DESCRIPTION	DRAWING NO.	ISSUE
	<b>SR. No. - 1 Contractor/Supplier Copy</b>		
1	GA - DRAWING PANEL TYPE 4RTA	CPG KV30 4RTA(F)	B-10.03.2014
2	GA - DRAWING PANEL TYPE 4RTA	CPG KV30 4RTA(R)	B-10.03.2014
3	LEGEND-PANEL TYPE 4RTA	CPG KV30 4RTA (L)	B-10.03.2014
4	GA - DRAWING PANEL TYPE 4RTB	CPG KV30 4RTB(F)	B-10.03.2014
5	GA - DRAWING PANEL TYPE 4RTB	CPG KV30 4RTB(R)	B-10.03.2014
6	LEGEND-PANEL TYPE 4RTB	CPG KV30 4RTB (L)	B-10.03.2014
7	SCHEMATIC DRAWING	CPD KV30 SCT1	B-10.03.2014

Approval Letter / Max No. 376 Dt. 19-3-14

**GETCO** **ENGG. CELL**

**DRAWING APPROVAL**

Cat-1 Approved

Cat-2 Approved with Comments

Cat-3 Approved For Information

Cat-4 Not Approved.

The above approval, in general does not absolve you from Contractual Obligations

**GETCO**

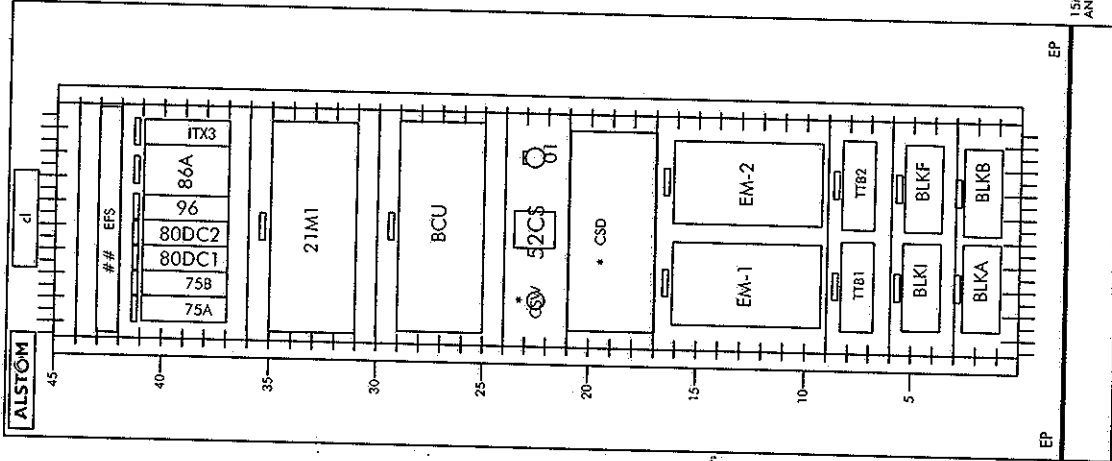
Released For Manufacture

Released For Construction

Released For Information

TYPE- 4R1A

900



15mm THICK  
ANTI-VIB. PAD

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

**SR. No.-1 Contractor / Supplier Copy**

royal Latter / Mail No 376 Dt. 14-3-14  
**GETCO**  
**ENGG. GEEL**  
**DRAWING APPROVAL**  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved  
 \* above approval, in general does not absolve you from Contractual Obligations

## NOTE: EFS APPLICABLE PANEL IS GIVEN INTO BELOW TABLE

NOTE:- THIS GA IS APPLICABLE FOR BELOW CIRCUITS

SL.NO	CIRCUIT NAME	PANEL TYPE
1	400KV VADAVI LINE	4R1A ##
2	400KV ZERDA LINE-1	4R1A ##
3	400KV CHARANKA LINE-1	4R1A ##
4	400KV PRANTU LINE-1	4R1A ##
5	400KV PRANTU LINE-2	4R1A ##

SCHEME REF.: DV3011  
 NETWORK NO.:  
 FINISHED GOOD:  
 SALES ORDER-ITEM: 3269PP827  
 ENGG. REF. NO.: KV30  
 CUSTOMER: GETCO/ALSTOM T&D India Ltd  
 PROJECT: 400/220/66KV CR&SAS AT SANRRAB/S/S  
 P.O.NO.: 5427-4500660137  
 Dated 09.10.2013

**ALSTOM**  
 ALSTOM T&D India Limited - AUTOMATION SAS  
 PALAYARAKKAL, CHENNAI 600043

GENERAL ARRANGEMENT DRAWING (FRONT VIEW)  
 PANEL TYPE: 4R1A PHANTOM: CPGV304R1A FILE: KV304R1A  
 TITLE: 400KV LINE PROTECTION PANEL

PREPARED BY: GKA  
 CHECKED BY: AM  
 APPROVED BY: JKK  
 REVISION: 8  
 DATE: 10.03.2014  
 SCALE: 1:15 IN A4  
 DRG. NO.: CPG KV30 4R1A (F) SHT 1 OF 1



**Supplier Copy**

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

**DESCRIPTION**

**DEV REF. MATERIAL NAME MAKE**

NUMERICAL DIST PROTIN **SR No-1 Contractor / Supplier Copy**  
 CONTROL RELAY-PT SELECTION  
 10M E/R : FLAG-YES: 220-250V DC: WD: 01 MVAJM14 011  
 CONTROL RELAY-PT SELECTION  
 10M E/R : FLAG-YES: 220-250V DC: WD: 01 MVAJM14 011  
 DC SUPPLY SUPERVISION RELAY  
 2M 2C/O SR : FLAG-REV : VX1:110-125VAC/DC, VX2:220-250VAC/DC: 60-100 mS TDDO WD:Z1MVAAM11014  
 DC SUPPLY SUPERVISION RELAY  
 2M 2C/O SR : FLAG-REV : VX1:110-125VAC/DC, VX2:220-250VAC/DC: 60-100 mS TDDO WD:Z1MVAAM11014  
 HIGH SPEED TRIPPING RELAY GROUP A  
 HI/LO BURDEN : FLAG-YES : 220-250V DC : 18M 2B ER/HR WD:01 MVAJ 205 01  
 HIGH SPEED TRIPPING RELAY  
 220-250V DC: ELECTRICAL/HAND RESET: 8M + 2B CONTACT CONTACT CASE-SIZE-2  
 BAY CONTROL & PROTECTION UNIT - 80TE; Youx: 220V DC and 115 to 230V  
 Inom: 1A/5A, 4DI, 5DO, 1AI, 1SWU CARDS  
 TEST BLOCK - DISTANCE PROTECTION - 21M1  
 STANDARD TEST BLOCK  
 TEST BLOCK - DISTANCE PROTECTION - 21M1  
 STANDARD TEST BLOCK  
 TEST BLOCK - BAY CONTROL UNIT - C264  
 STANDARD TEST BLOCK  
 STATIC ENERGY METER (ER300P) 3PART CL:-0.5S 3PH 4WIRE 3ELE 2000-1000-500/1A-400KV/110; AS PER APPROVED GTP  
 30MIN; RS485; SPECIAL: SUITABLE FOR GETCO DAS CONNECTIVITY  
 PUSH BUTTON BLOCK 2NO+2NC 86A RESET  
 DAY MAKE TEST TERMINAL BLOCK 3PH 4 WIRE - EM1  
 DAY MAKE TEST TERMINAL BLOCK 3PH 4 WIRE - EM2  
 SELECTOR SWITCH 22 WAY NON-LOCK 120 DEG SPRING RETURN  
 ETHERNET SWITCH (16FX+2TX)  
 ABT ENERGY METER(ER300P); CL:-0.2S;3PH 4WIRE 3ELE 2000-1000-500/1A-400KV/110; AS PER APPROVED GTP  
 SELECTOR SWITCH - FOR CSD BYPASS CIRCUIT  
 CONTROL SWITCHING DEVICE - TYPE: RPH3;1A,110V AC  
 FREQ : 50HZ, POWER SUPPLY-48-353V DC,CB COIL VOLTAGE : 48-250V DC

**GETCO**  
**APPROVAL**  
 Letter / Mail No 376 D/4-3  
**ENGG. CELL**  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved with R/I Information  
 Cat-4 Not Approved.  
 The above approval, in general does not absolve you from Contractual Obligations.

SCHEME REF: DV3011	ENGG.REF.NO: KV30	CUSTOMER: GETCO/ALSTOM T&D India Ltd	REVISION: B
NETWORK NO:	PROJECT: 400/220/66KV CPPSSAS AT SANKHARI SS	PANEL TYPE: 4R1A	CHECKED BY: AM
FINISHED GOOD:	P.O.NO: 5427-4500660137	TITLE: 400KV LINE PROTECTION PANEL	DATE: 10.03.2014
SALES ORDER-ITEM: 3269PP827	Dated 09.10.2013	FILE: KV304R1A	APPROVED BY: JKK
		400KV LINE PROTECTION PANEL	SCALE: NIL
		ALSTOM	DRG. NO.: CPG KV304R1A (L) SHT 1 OF 2
		ALSTOM T&D INDIA LIMITED - AUTOMATION SAS	
		PALLAVARAM CHEMNAI 600043	

DEV REF.	MATERIAL NAME	MAKE	DESCRIPTION
BLK1	MPGTESTBLOCK	ALSTOM	TEST BLOCK - CSD STANDARD TEST BLOCK
ITX3	MVAJM14IB1002A1	ALSTOM	CONTROL RELAY-IT MODE CONTACT MUL CRT 8M 2B E/R : FLAG-YES: 220-250V DC: WD: 01 MVAJM14 011

**SR. No. - 1 Contractor/Supplier Copy**

**INTERNALLY MOUNTED EQUIPMENTS**

80C	CCN1000008	SIEMENS	CONTACTOR 220VDC 4NO + 4NC - FOR DC CHANGE OVER CIRCUIT
80D	CCN1000008	SIEMENS	CONTACTOR 220VDC 4NO + 4NC - FOR DC CHANGE OVER CIRCUIT
CIL	CPE0000600	COMPAC	COMPACT FLOURESCENT LAMP - 11W 230V AC
HS	CPF0500901	SWITRON	HEATER SWITCH
HT	CPA0178101	SOFIA	HEATER 230V AC 50HZ, 60W
FS	CPE0000345	ANCHOR/OSWAL	POWER SOCKET 5/15A WITH SWITCH + PLUG 3PIN 230V AC
R86A	CPE0000197	..	RESISTOR 3.3K
TH	CPE0000612	MAVIS / APT CTRLS	THERMOSTAT 230V AC, 30 - 80 DEG C 230V, 85 DEG C
** CONV	GBMOXARS485R45	ADVANTECH	RS485 to FO CONVERTER (220V AC AND DC)
** PSC	GROMRONS8JCZ100W	OMRON	AUX UNIT : POWER SUPPLY (SMPS) FOR CONVERTER; 100-265VAC / DC; OUTPUT-24VDC
@@ K3		REPUTED	CONTACTOR 220VDC - FOR CSD EQUIPMENT
@@ K7		REPUTED	CONTACTOR 220VDC - FOR CSD EQUIPMENT
@@ RPH3 CT-R		ALSTOM	CT FOR RPH3 EQUIPMENT FOR CB TRIP ORDER DETECTION (R-PH)
@@ RPH3 CT-Y		ALSTOM	CT FOR RPH3 EQUIPMENT FOR CB TRIP ORDER DETECTION (Y-PH)
@@ RPH3 CT-B		ALSTOM	CT FOR RPH3 EQUIPMENT FOR CB TRIP ORDER DETECTION (B-PH)

## NOTE: EFS APPLICABLE PANEL IS GIVEN INTO GA DRAWING NOTE  
 \*\* NOTE: IF EFS NOT APPLICABLE ACCORDING TO THE GA NOTE THEN CONV & PSC ALSO NOT APPLICABLE  
 @@ NOTE : CSD AND THE ASSOCIATED EQUIPMENTS WILL BE THE PART OF CIRCUIT BREAKER SUPPLIES & WILL BE SUPPLIED AND MOUNTED AT SITE

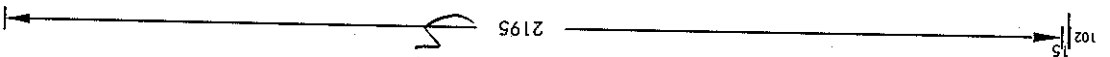
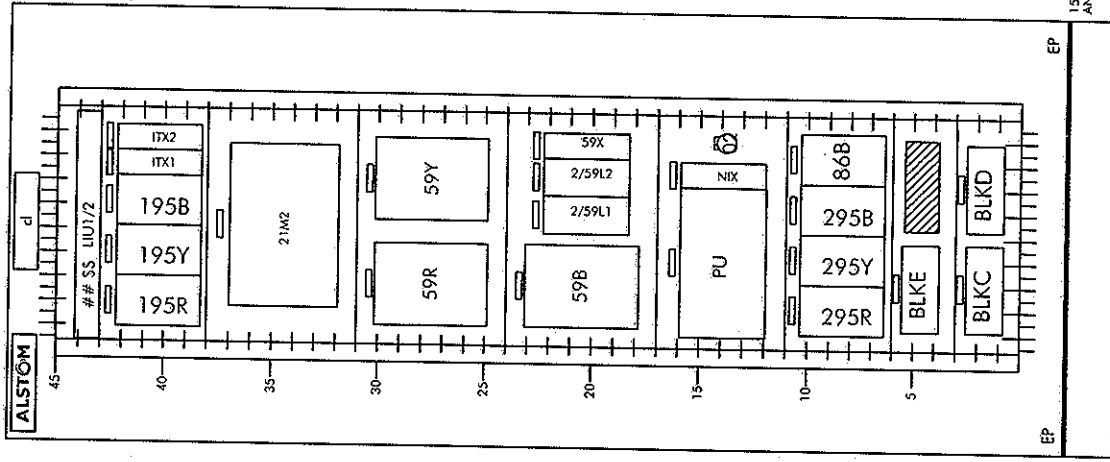
**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

Approval Letter / Mail No 376 D14-3  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved.  
 The above approval, in general does not absolve you from Contractual Obligations.  
 ENGG-CELL

SCHEME REF: DV3011	ENGS. REF. NO: KV30	CUSTOMER: GETCO/ALSTOM T&D India Ltd	LEGEND TO GA DRAWING	PREPARED BY: GKA	REVISION: 8
NETWORK NO.:		PROJECT: 400/220/66KV CRP8SAS AT SANKHARI SS	PANEL TYPE: 4RYA	CHECKED BY: AM	DATE: 10.03.2014
FINISHED GOOD:		P.O.NO.: 5427-450060137	TITLE: 400KV LINE PROTECTION PANEL	APPROVED BY: JKK	SCALE: NIL
SALES ORDER-ITEM: 3269PP827		Date: 09.10.2013	ALSTOM T&D INDIA LIMITED - AUTOMATION SAS PALLAVARAM CHENNAI 600043	DRG. NO.: CPG KV304R1A (L)	SHT 2 OF 2

TYPE: 4R1B

900



**SR. No.-1 Contractor / Supplier Copy**

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

Approval Letter / Mail No 376 Dt. 14-3-14  
**GETCO** **ENGG. CELL**  
**DRAWING APPROVAL**  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved.  
 The above approval, in general does not absolve you from Contractual Obligations

## NOTE: IU1 APPLICABLE PANEL IS GIVEN INTO BELOW TABLE  
 \$\$ NOTE: IU2 APPLICABLE PANEL IS GIVEN INTO BELOW TABLE  
 NOTE:- THIS GA IS APPLICABLE FOR BELOW CIRCUITS

SL.NO	CIRCUIT NAME	PANEL TYPE
1	400KV VADAVI LINE	4R1B ##
2	400KV ZERDA LINE-1	4R1B ##
3	400KV CHARANKA LINE-1	4R1B ##
4	400KV PRANTUJ LINE-1	4R1B ##
5	400KV PRANTUJ LINE-2	4R1B ##

SCHEME REF.: DV3011 ENGG. REF. NO.: KV30  
 NETWORK NO.:  
 FINISHED GOOD:  
 SALES ORDER-ITEM: 3269PB827

CUSTOMER: GETCO/ALSTOM T&D India Ltd  
 PROJECT: 400/220/66KV CRPS&S AT SANGHARI S/S  
 P.O.NO.: 5427-4500660137  
 Dated 09.10.2013

**ALSTOM**  
 ALSTOM T&D India Limited - AUTOMATION SAS  
 PALLAVARAM CHENNAI 600043

GENERAL ARRANGEMENT DRAWING (FRONT VIEW)  
 PANEL TYPE: 4R1B PHANTOM: CPGKV304R1B FILE: KV304R1B  
 TITLE: 400KV LINE PROTECTION PANEL

PREPARED BY: GKA REVISION: B  
 CHECKED BY: AM DATE: 10.03.2014  
 APPROVED BY: JKK SCALE: 1:15 IN A4  
 DRG. NO.: CPG KV30 4R1B (F) SHT 1 OF 1



Approval Letter/ Mail No. 376 of 3-19  
**GETCO**  
**DRAWING APPROVAL**  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For information  
 (TWO 16 I/P 220V DC & TWO 24 O/P), TRM 6I+6U VANOM=90-25V DC/110-220V AC/IEC61850-PROTECO  
 The above approval, in general does not absolve you from Contractual Obligations.

DEV REF.	MATERIAL NAME	MAKE	DESCRIPTION
195B	MVAXM31D1CE3005A	ALSTOM	TRIP COIL SUPERVISION RELAY - TC-1 B PHASE 1M 2B SR : FLAG-REV : 220-250V DC WD:Z1MVAXM31001SHT1
195R	MVAXM31D1CE3005A	ALSTOM	TRIP COIL SUPERVISION RELAY -TC-1 R PHASE 1M 2B SR : FLAG-REV : 220-250V DC WD:Z1MVAXM31001SHT1
195Y	MVAXM31D1CE3005A	ALSTOM	TRIP COIL SUPERVISION RELAY -TC-1 Y PHASE 1M 2B SR : FLAG-REV : 220-250V DC WD:Z1MVAXM31001SHT1
21M2	YNTM301B28-X8	ABB	REL 670 ABB MAKE DISTANCE PROT. RELAY, 3/4*19" CASING; FLUSH/RACK MOUNTED WITH BINARY MODULE OEM-1 GLASS INTERFACE, 15LEDS
295B	MVAXM31D1CE3005A	ALSTOM	TRIP COIL SUPERVISION RELAY -TC-2 B PHASE 1M 2B SR : FLAG-REV : 220-250V DC WD:Z1MVAXM31001SHT1
295R	MVAXM31D1CE3005A	ALSTOM	TRIP COIL SUPERVISION RELAY -TC-2 R PHASE 1M 2B SR : FLAG-REV : 220-250V DC WD:Z1MVAXM31001SHT1
295Y	MVAXM31D1CE3005A	ALSTOM	TRIP COIL SUPERVISION RELAY -TC-2 Y PHASE 1M 2B SR : FLAG-REV : 220-250V DC WD:Z1MVAXM31001SHT1
2/59L1	MVTTM14C1BA1003A	ALSTOM	TIMER RELAY - OVERVOLTAGE PROTECTION PICK UP: 4M SR: FLAG-YES:0.1 - 99.9 SEC: 220 - 250V DC:(I No. 3.3K 35W EXT.RES) WD:ADZ144-1-1
2/59L2	MVTTM14C1BA1003A	ALSTOM	TIMER RELAY - OVERVOLTAGE PROTECTION PICK UP: 4M SR: FLAG-YES:0.1 - 99.9 SEC: 220 - 250V DC:(I No. 3.3K 35W EXT.RES) WD:ADZ144-1-1
59X	MVAAM11B1AA2580A	ALSTOM	AUXILIARY RELAY - OVERVOLTAGE PROTECTION 2M 2C/O SR: FLAG-NO:110-125/220-250V DC: WD:MYDZ911-02-1 DEFINITE TIME AND INSTANTANEOUS OVER VOLTAGE PROTECTION RELAY O/V : 105-170% : 63.5V AC : 60MS : 2M SR : FLAG - YES : 0-5 SECS WD:MADZ8140-1 DEFINITE TIME AND INSTANTANEOUS OVER VOLTAGE PROTECTION RELAY O/V : 105-170% : 63.5V AC : 60MS : 2M SR : FLAG - YES : 0-5 SECS WD:MADZ8140-1 DEFINITE TIME AND INSTANTANEOUS OVER VOLTAGE PROTECTION RELAY O/V : 105-170% : 63.5V AC : 60MS : 2M SR : FLAG - YES : 0-5 SECS WD:MADZ8140-1 HIGH SPEED TRIPPING RELAY GROUP B HI/LO BURDEN : FLAG-YES : 220-250V DC : 18M 2B ER/HR WD:01 MVAJ 205 01 TEST BLOCK - DISTANCE PROTECTION-21M2 STANDARD TEST BLOCK CONTROL RELAY-NI MODE CONTACT MUL CKT 10M E/R : FLAG-YES: 220-250V DC: WD: 01 MVAJM14 011

**SR. No. 1 Contractor/Supplier Copy**

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

SCHEME REF: DV3011	ENGG. REF. NO: KV30	<b>CUSTOMER: GETCO/ALSTOM T&amp;D India Ltd</b>	
NETWORK NO.:	PROJECT: 400/220/66KV CRPSAS AT SANKHARI S	LEGEND TO GA DRAWING	
FINISHED GOOD:	P.O.NO.: 5427-450060137	PANEL TYPE: 4R1B	FILE: KV304R1B
SALES ORDER-ITEM: 3269PP827	Dated 09.10.2013	TITLE: 400KV LINE PROTECTION PANEL	APPROVED BY: JKK
			DATE: 10.03.2014
			SCALE: NIL
			DRG. NO.: CPG KV304R1B (L) SHT 1 OF 2

DEV REF.	MATERIAL NAME	MAKE	DESCRIPTION
BLKD	MPGTESTBLOCK	ALSTOM	TEST BLOCK - DISTANCE PROTECTION -21M2 STANDARD TEST BLOCK
8LKE	MPGTESTBLOCK	ALSTOM	TEST BLOCK - BUSBAR PROTECTION - P743 STANDARD TEST BLOCK
P801 PU	CPF0501104 P743916A6M0510K	TEKNIC ALSTOM	PUSH BUTTON BLACK 2NO+2NC 868 RESET INTEGRATED BUSBAR PROTIN-PERIPHERAL UNIT, 110-250V DC WITH 1/5A CT INPUT; IEC61850 PROTOCOL ETHERNET 100MPBS - LINE
ITX1	MVAJM14JB1000A1	ALSTOM	CONTROL RELAY-IT MODE CONTACT MUL CKT 10M E/R : FLAG-YES: 220-250V DC: WD: 01 MVAJM14 011
ITX2	MVAJM14JB1000A1	ALSTOM	CONTROL RELAY-IT MODE CONTACT MUL CKT 10M E/R : FLAG-YES: 220-250V DC: WD: 01 MVAJM14 011
## \$\$	GB541430024REAREND GB541430012REAREND	GENTECH GENTECH	LINE INTERFACE UNIT - 24 PORT LIU WITH ST COUPLER LINE INTERFACE UNIT - 12 PORT LIU WITH ST COUPLER

**SR. No. - 1 Contactor / Supplier Copy**

**INTERNALLY MOUNTED EQUIPMENTS**

CIL	CFE0000600	COMPAC	COMPACT FLOURESCENT LAMP - 11W 230V AC
HS	CPF0500901	SWITRON	HEATER SWITCH
HT	CPA0178101	SOFIA	HEATER 230V AC 50HZ, 60W
PS	CFE0000345	ANCHOR/OSWAL	POWER SOCKET 5/15A WITH SWITCH + PLUG 3PIN 230V AC
R868	CFE0000197	--	RESISTOR 3.3K
TH	CFE0000612	MAVIS / APT CTRLS	THERMOSTAT 230V AC, 30 - 80 DEG C 230V, 85 DEG C

## \$\$ NOTE: LIU1 & LIU2 APPLICABLE PANEL IS GIVEN INTO GA DRAWING NOTE

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

Approval Letter / Mail No. 376 D/19-3  
**GETCO**  
**ENGG. CELL**  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For information  
 Cat-4 Not Approved.  
 The above approval, in general does not absolve you from Contractual Obligations.

SCHEME REF: 0V3011	ENGG. REF. NO: KV30	CUSTOMER: GETCO/ALSTOM T&D India Ltd	LEGEND TO GA DRAWING
NETWORK NO.:	PROJECT: 400/220/66KV CRP&SAS AT SANKHARI/SS	FILE: KV304R1B	PANEL TYPE: 4R1B
FINISHED GOOD:	P.O.NO.: 5427-450060137	TITLE: 400KV LINE PROTECTION PANEL	DATE: 10.03.2014
SALES ORDER-ITEM: 32699P827	Dated: 09.10.2013	ALSTOM	SCALE: NIL
		ALSTOM T&D INDIA LIMITED - AUTOMATION SAS PALLAVARAM CHENNAI 600043	DRG. NO.: CPG KV304R1B (L) SHT 2 OF 2

**SCHEMATIC DRAWING**

400KV LINE PROTECTION  
 PANEL TYPES: 4RTA 4R1B

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

- 1 LIST OF SYMBOLS
- 2 KEY SINGLE LINE DIAGAM
- 3 SINGLE LINE DIAGAM
- 4 AC DISTRIBUTION
- 5 DC SUPERVISION
- 6 DC DISTRIBUTION
- 7 LINE CVT CIRCUIT - 220KV
- 8 ENERGY METER CIRCUIT
- 9 VOLTAGE SELECTION CKT
- 10 VOLTAGE SELECTION CKT
- 11 DISTANCE PROT.N.(MAIN-1) - AC CIRCUIT
- 12 DISTANCE PROT.N.(MAIN-1) - DC OPTO I/P CIRCUIT
- 13 DISTANCE PROT.N.(MAIN-1) - DC OPTO I/P CIRCUIT
- 14 DISTANCE PROT.N.(MAIN-1) - OUTPUT RELAY CONTACTS
- 15 DISTANCE PROT.N.(MAIN-1) - OUTPUT RELAY CONTACTS
- 16 DISTANCE PROT.N.(MAIN-1) - I/O & LED CONFIGURATION
- 17 DISTANCE PROT.N.(MAIN-2) - AC CIRCUIT
- 18 DISTANCE PROT.N.(MAIN-2) - DC OPTO I/P CIRCUIT
- 19 DISTANCE PROT.N.(MAIN-2) - DC OPTO I/P CIRCUIT
- 20 DISTANCE PROT.N.(MAIN-2) - OUTPUT RELAY CONTACTS
- 21 DISTANCE PROT.N.(MAIN-2) - OUTPUT RELAY CONTACTS
- 22 DISTANCE PROT.N.(MAIN-2) - I/O & LED CONFIGURATION
- 23 DISTANCE PROT.N.(MAIN-2) - I/O & LED CONFIGURATION
- 24 O/V RELAY CIRCUIT
- 25 TRIP RELAY CIRCUIT - GROUP-A
- 26 TRIP RELAY CIRCUIT - GROUP-B
- 27 LBB TRIP RELAY CIRCUIT
- 28 CB CLOSING CIRCUIT
- 29 CIRCUIT BREAKER CONTROL CKT. (TC-1)
- 30 CIRCUIT BREAKER CONTROL CKT. (TC-2)
- 31 RPH3 CONTROLLER CKT
- 32 ISOLATOR / EARTH SWITCH CKT
- 33 ISOLATOR / EARTH SWITCH CKT

- 67 MAKE SPECIFIC ISO (4-X89C) TERMINALS
- 68 MAKE SPECIFIC ISO (4-X89L) TERMINALS
- 69 MAKE SPECIFIC ISO (4-X89I) TERMINALS
- 70 MAKE SPECIFIC ES (4-X89LE) TERMINALS
- 71 MAKE SPECIFIC ES (4-X89AE) TERMINALS

Approval Letter / Mark No. 76 D14-3  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For information  
 Cat-4 Not Approved.  
 The above approval, in general does not release you from Contractual Obligations.

NOTE:- THIS SCHEME IS APPLICABLE FOR BELOW BAY CIRCUITS

SL.NO	CIRCUIT NAME	PANEL TYPE
1	400KV VADAVI LINE	4RTA, 4R1B
2	400KV ZERDA LINE-1	4RTA, 4R1B
3	400KV CHARANKA LINE-1	4RTA, 4R1B
4	400KV PRANTU LINE-1	4RTA, 4R1B
5	400KV PRANTU LINE-2	4RTA, 4R1B

- 57 IT CONT MUL. CKT.
- 58 MAKE SPECIFIC CB (4-X52) TERMINALS
- 59 MAKE SPECIFIC CB (4-X52) TERMINALS
- 60 MAKE SPECIFIC CB (4-X52) TERMINALS
- 61 MAKE SPECIFIC CB (4-X52) TERMINALS
- 62 MAKE SPECIFIC ISO (4-X89A) TERMINALS
- 63 MAKE SPECIFIC ISO (4-X89A) TERMINALS
- 64 MAKE SPECIFIC ISO (4-X89B) TERMINALS
- 65 MAKE SPECIFIC ISO (4-X89C) TERMINALS

**SR. No. - 1** Constructive / Supplier Copy

FOR ALSTOM REF.:	ENGG. REF. NO.: K920	PREPARED BY: GKA	REVISION: 8
SCHEME TYPE: FEEDER	CUSTOMER: GETCO/ALSTOM T&D India Ltd	CHECKED BY: AM	DATE: 10.03.2014
BASE FILE:	PROJECT: 400/220/66KV CR3SAS AT SANGHVI S/S	APPROVED BY: JKK	SCALE: ---
SALES ORDER: 3269PP827	P.O. NO.: 5427-450060137	FILE: DV301100	DRG. NO.: CPD K930 SC11 SHT 00 OF 71
<p><b>ALSTOM</b>                  ALSTOM T&amp;D India Limited - AUTOMATION SAS                  PALLAVARAM, CHENNAI 600043</p>		<p>SCHEMATIC DRAWING                  PANEL TYPES: 4RTA, 4R1B                  TITLE: 400KV LINE PROTECTION                  LIST OF DRAWINGS</p>	

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	MAKE CONTACT		RELAY COIL - GENERAL SYMBOL		CUB. ILLUM. LAMP WITH D/S		
	MAKE CONTACT - DELAYED PICKUP		RELAY COIL - SLOW RELEASING		HEATER		
	MAKE CONTACT - DELAYED DROP OFF		RELAY COIL - SLOW OPERATING		HEATER SWITCH		
	MAKE CONTACT WITH BLOWOUT MAGNET		FLASHER RELAY		POWER SOCKET		
	MAKE CONTACT - HAND RESET		RELAY COIL - HAND RESET		THERMOSTAT		
	MAKE CONTACT - THYRISTOR				LINK		
	BREAK CONTACT				TEST BLOCK - MPG		
	BREAK CONTACT - DELAYED PICKUP		FLAG INDICATOR		RESISTOR		
	BREAK CONTACT - DELAYED DROP OFF		DISCONNECTING TB AT C&R PANIES		CONTROL/SEL SW-TYPE ODS		
	BREAK CONTACT WITH BLOWOUT MAGNET		TERMINAL BOARD AT C&R PANIES		SEMAPHORE INDICATOR		
	BREAK CONTACT - HAND RESET		TERMINAL BOARD AT CT/VT KIOSK/PLCC PANEL		ELECTRIC BELL		
	CHANGE OVER CONTACT		TERMINAL BOARD AT CIRCUIT BREAKER		ELECTRIC HOOTER		
	CHANGE OVER CONTACT - HAND RESET		TERMINAL BOARD FOR BCU I/P & O/P CKTS		BUSWIRE		
	CHANGE OVER CONTACT - DELAYED PICKUP		TERMINAL BOARD AT ISOLATOR				
	CHANGE OVER CONTACT - DELAYED DROP OFF						

- FERRULE NUMBERING STANDARDS
- FERRULE - "A" : CT CIRCUIT - MAIN PROTECTION
  - FERRULE - "B" : CT CIRCUIT - BUSBAR PROTECTION
  - FERRULE - "C" : CT CIRCUIT - BACKUP PROTECTION
  - FERRULE - "D" : CT CIRCUIT - METERING
  - FERRULE - "E" : VT CIRCUIT - PROTECTION/METERING
  - FERRULE - "G" : VT CIRCUIT - SYNCHRONISING
  - FERRULE - "H" : AUXILIARY AC CIRCUIT
  - FERRULE - "J" : AUXILIARY DC CIRCUIT
  - FERRULE - "K" : CONTROL CIRCUITS
  - FERRULE - "L" : INDICATION & ALARM CIRCUITS
  - FERRULE - "P" : DC CIRCUIT - BUSBAR PROTECTION CIRCUITS
  - FERRULE - "S" : EVENT LOGGER/DAS/SCADA CIRCUITS
  - FERRULE - "U" : SPARE CONTACTS

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

- TB DETAILS
- TB1 - CT CKTS
  - TB2 - PT CKTS
  - TB3 - I/C AC & DC CKTS
  - TB4 - CONTROL CKTS
  - TB4X - CONTROL CKTS (EXCEEDING 99 TBs)
  - TB4A - TBC CONTROL CKTS
  - TB7 - SPARE
  - TB0 - BCU DIGITAL O/P CKT
  - TB1 - BCU DIGITAL I/P CKT
- BB DETAILS
- BB1 - AC & PT CKT
  - BB2 - TRANSFER & EPS SIGNAL
  - BB3/BB4/BB5 - SIGNALS FOR OWN CKT
- \* SLOT REFERENCE OF BCU

**SR. No.-1 Contractor / Supplier Copy**

WIRE CROSS REFERENCE STANDARDS

L101 ← FERRULE NO  
 20 ← SHEET NO

Approval letter / May No 376 dt 14-3-17

**GETCO**  
 DRAWING APPROVAL

Cat-1 Approved **ALSTOM**

Cat-2 Approved

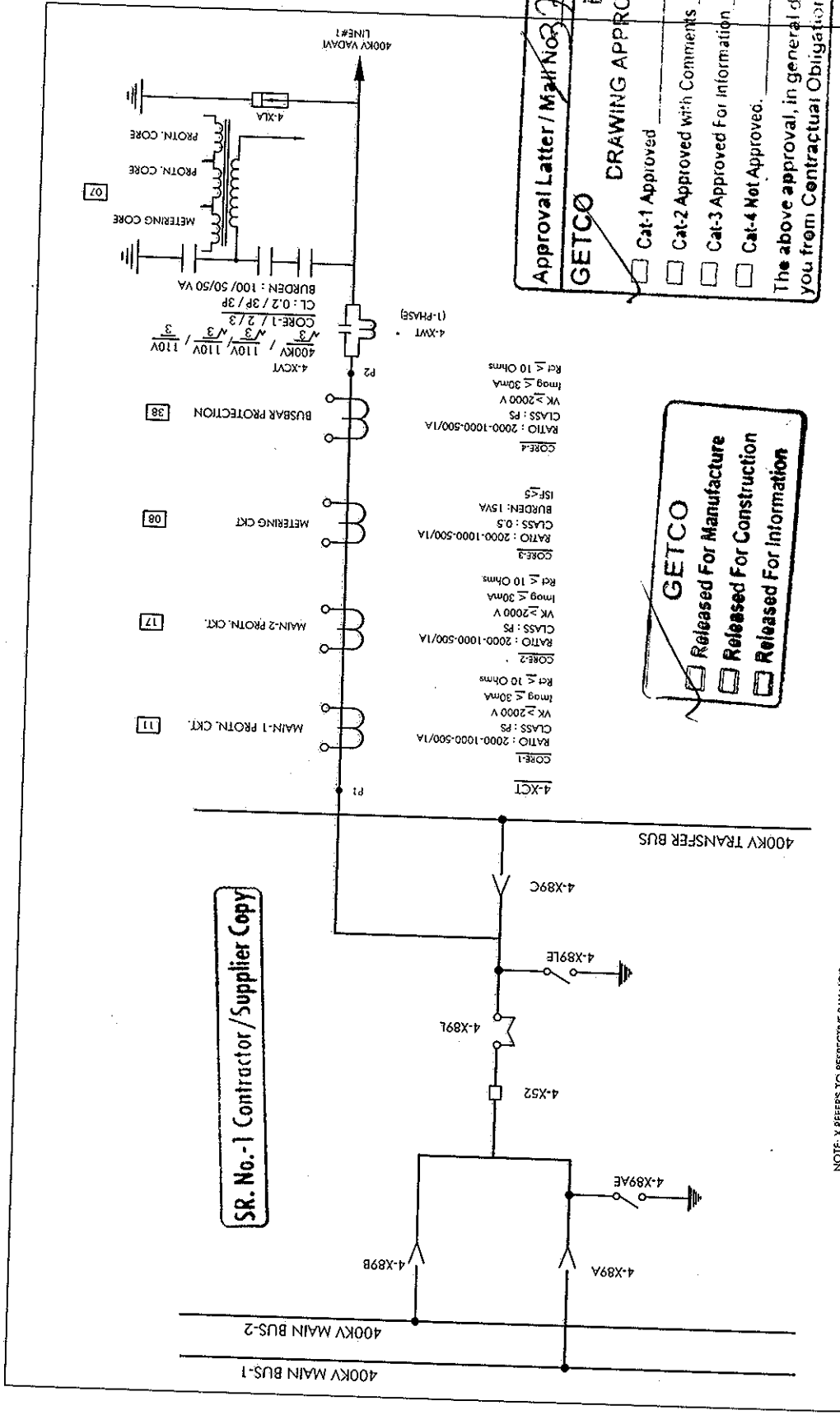
Cat-3 Approved For Information

Cat-4 Not Approved.

The above approval, in general does not absolve you from Contractual Obligations

FOR ALSTOM REF.	ENGG. REF. NO.: K30	CUSTOMER: GETCO/ALSTOM	TA
SCHEME TYPE: FEEDER		PROJECT: 400/270/66KV CRESSAS AT SINGURAI S/S	SCHEMATIC DRAWING
BASE FILE:		P.O. NO.: 5497-4500660137	PANEL TYPE: HTA 4RTB
SALES ORDER: 32699PB27		Dated: 09.10.2013	TITLE: 400KV LINE PROTECTION
			LIST OF SYMBOLS
			FILE: DV001101
			REVISION: B
			CHECKED BY: AM
			DATE: 10.03.2014
			APPROVED BY: JKK
			SCALE: ...
			DRG. NO.: CPD KV30 SC11_SHT 01 OF 71





**SR. No.-1 Contractor/Supplier Copy**

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

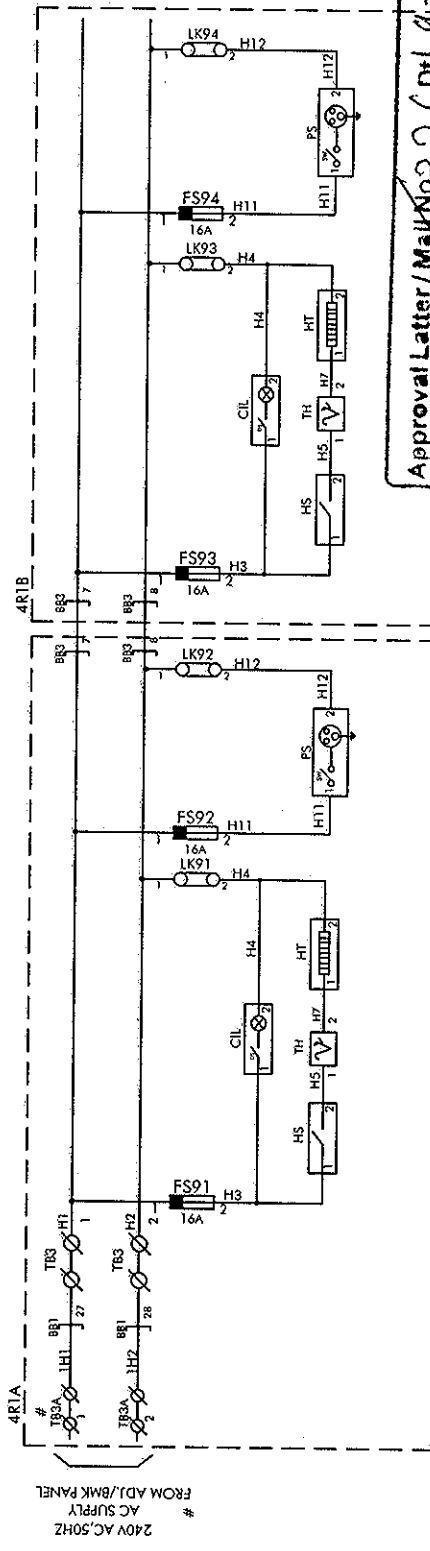
Approval Letter / Mail No. 376 dt 4-3-14  
**GETCO**  
**ENGG. CELL**  
**DRAWING APPROVAL**  
 Cat-1 Approved  
 Cat-2 Approved With Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved.  
 The above approval, in general does not absolve you from Contractual Obligations.

NOTE: X REFERS TO RESPECTIVE BAY NOS.

NOTE: \* WAVE TRAP IS NOT APPLICABLE FOR CHARANKA-1 AND 2 LINE BAYS

FOR ALSTOM REF:	ENGG. REF. NO.:	RY20
SCHEME TYPE: FEEDER	CUSTOMER:	GETCO/ALSTOM T&D India Ltd
BASE FILE:	PROJECT:	400/20/20/66KV CRRSSAG AT SANKHARI S/S
SALES ORDER: 3269PBZ7	P.O. NO.:	5427-450060137
	Dated:	09.10.2013
	ALSTOM T&D India Limited - AUTOMATION SAS	
	PALAYAKKAM, CHENNAI 600043	
	PREPARED BY: GKA	REVISION: B
	CHECKED BY: AN	DATE: 10.03.2014
	APPROVED BY: JKK	SCALE: ..
	FILE: D:\001103	
	DRG. NO.:	CPD KV30 SCT11_SHT 03 OF 71
	SCHMATIC DRAWING	
	PANEL TYPES: 4RIA 4R18	
	TITLE: 400KV LINE PROTECTION	
	SINGLE LINE DIAGRAM	

**SR. No.-1 Contractor / Supplier Copy**



\* 240V AC, 50HZ  
AC SUPPLY  
FROM ADJ/BMK PANEL

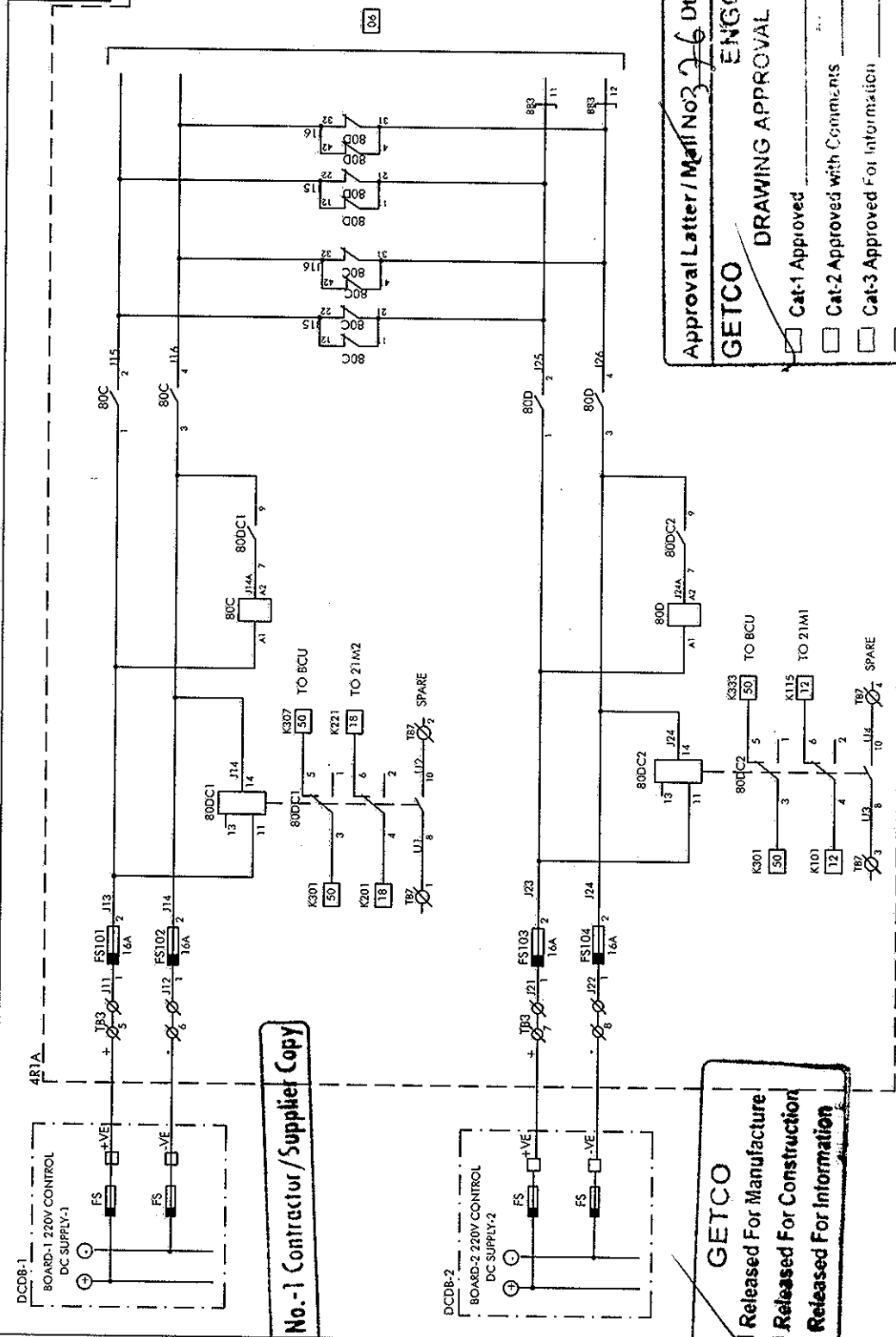
**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

# NOTE: FOR ACTUAL 'AC' SUPPLY COORDINATION SEE THE 400KV DISTRIBUTION DRG

Approval Letter/ Mail No. 376 Dt. 9-3-14  
**GETCO**  
**ENGG. CELL**  
**DRAWING APPROVAL**  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved.  
 The above approval, in general does not absolve you from Contractual Obligations.

FOR ALSTOM REF:	ENGG. REF. NO.: KV30	PREPARED BY: GKA	REVISION: B
SCHEME TYPE: FEEDER		CHECKED BY: AM	DATE: 10.03.2014
BASE FILE:		APPROVED BY: JKK	SCALE: --
SALES ORDER: 3269PP827		FILE: D:\301104	
		SCHEMATIC DRAWING PANEL TYPE: ARIA-RTB TITLE: 400KV LINE PROTECTION AC DISTRIBUTION	
		<b>ALSTOM</b> ALSTOM T&D India Limited - AUTOMATION SAS PALLAVARAM, CHENNAI 600043	
		CUSTOMER: GETCO/ALSTOM T&D India Ltd PROJECT: 400/220/66KV CRP&SAS AT SANKHARI S/S P.O.NO.: 5427-4500660137 Dated: 09.10.2013	
		DRG. NO.: CPD-KV30 SC11 SHT 04 OF 71	

EQPT	80DC1/80C
TYPE	4RIA
LOC	4RIA
EQPT	80C/D
TYPE	CONTRACTOR
LOC	4RIA



**SR. No.-1 Contractor/Supplier Copy**

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

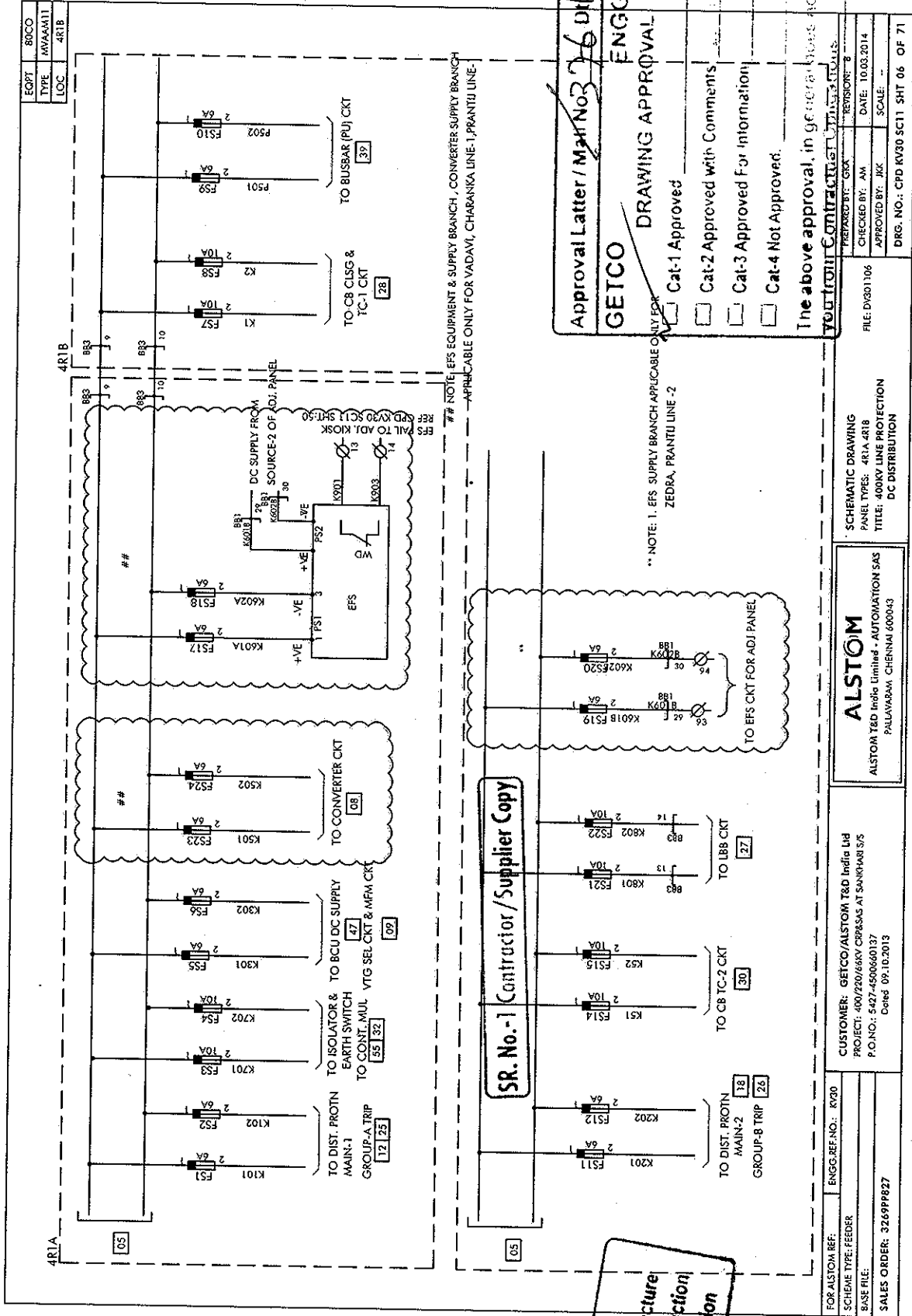
Approval Letter / Mail No 376 Dtl 4-3-14  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 CATECH APPROVED

FOR ALSTOM REF: ENGG. REF. NO.: KV30  
 SCHEME TYPE: FEEDER  
 BASE FILE:  
 SALES ORDER: 3269PB27

**ALSTOM**  
 ALSTOM T&D India Limited - AUTOMATION SAS  
 PALAIVARAM, CHENNAI 600043

CUSTOMER: GETCO/ALSTOM T&D India Ltd  
 PROJECT: 400/220/66KV ORISSAS AT SANKHARI S/S  
 P.O.NO.: 5427-4500650137  
 Dated: 09.10.2013

REVISION: 8  
 PREPARED BY: GAA  
 CHECKED BY: S. S. SURESH  
 APPROVED BY: S. S. SURESH  
 SCALE: ...  
 Dwg. No.: CDR/KV30/SC11/SHT-05-OF-71



Approval Letter / Mail No: 376 DH 4-2-13  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved.  
 The above approval, in general, is not absolute.  
 Your firm Contractor's Stamp

\*\* NOTE: 1. EFS SUPPLY BRANCH APPLICABLE ONLY FOR ZEDRA, PRANTULU LINE-2

SR. No.-1 Contractor/Supplier Copy

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

FOR ALSTOM REF:	ENGGS. REF. NO.: K930	FILE: D:\301106	REVISION: 8
SCHEME TYPE: FEEDER		CHECKED BY: AM	DATE: 10.03.2014
BASE FILE:		APPROVED BY: JKK	SCALE:
SALES ORDER: 32699827		DRG. NO.: CPD KV30 SC11 SHT 06	OF 71

**ALSTOM**  
 ALSTOM T&D India Limited - AUTOMATION SAS  
 PALAVARAKKAM, CHENNAI 600043

CUSTOMER: GETCO/ALSTOM T&D India Ltd  
 PROJECT: 400/220/6KV CRRSAS AT SANKHARI S/S  
 P.O. NO.: 5427-450060137  
 Dated: 09.10.2013

SCHMATIC DRAWING  
 PANEL TYPES: 4R1A 4R1B  
 TITLE: 400KV LINE PROTECTION  
 DC DISTRIBUTION

Approval Letter / Mak No. 76 Dt. 4-3-14

**GETCO** **ENGCELL**

**DRAWING APPROVAL**

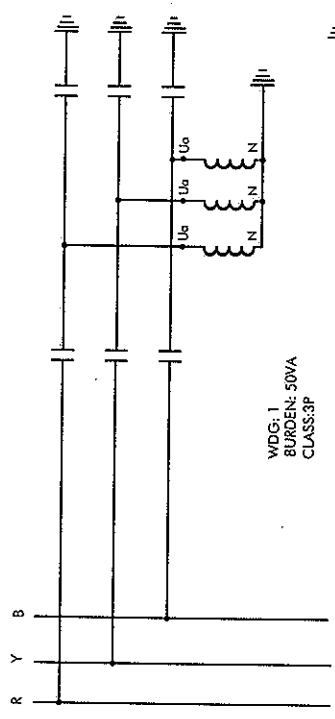
Cat-1 Approved

Cat-2 Approved with Comments

Cat-3 Approved For Information

Cat-4 Not Approved.

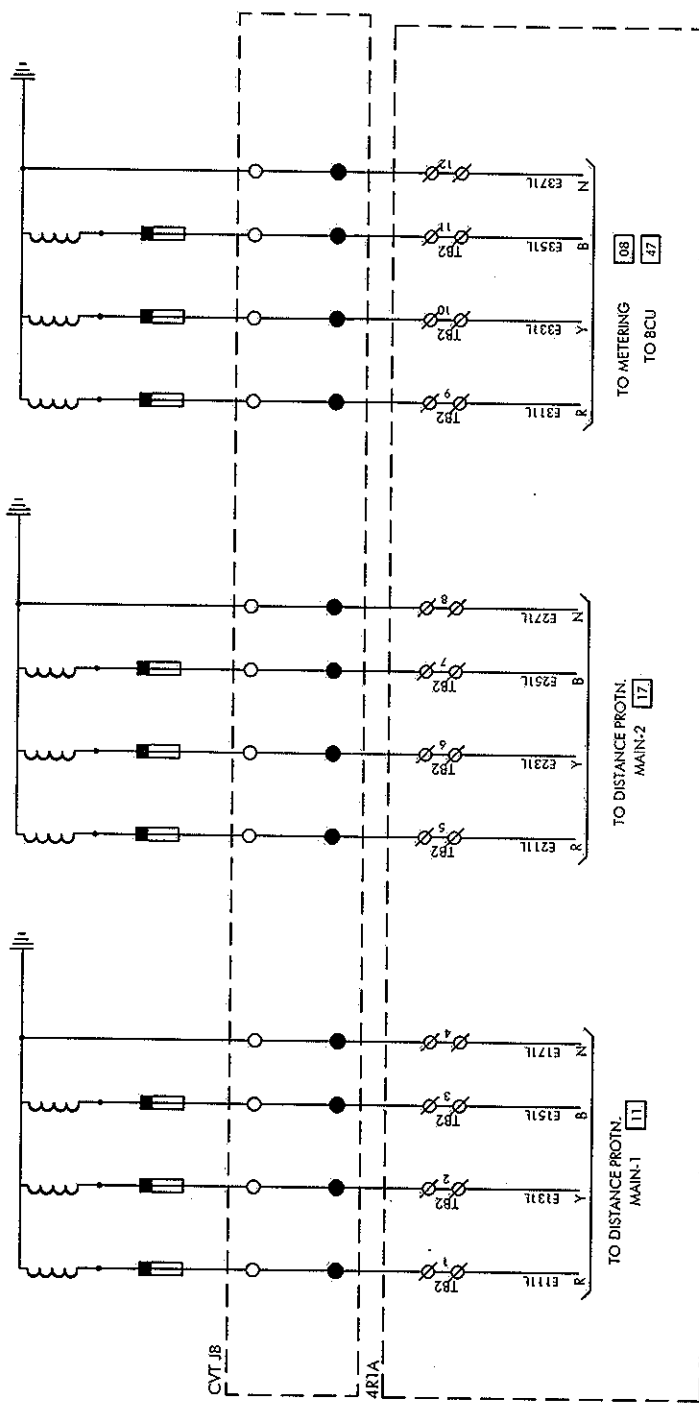
The above approval, in general does not absolve you from Contractual Obligations.



WDG: 1  
BURDEN: 50VA  
CLASS: 3P

WDG: 2  
BURDEN: 50VA  
CLASS: 3P

WDG: 3  
BURDEN: 100VA  
CLASS: 0.2



SR. No.-1 Contractor/Supplier Copy

**GETCO**

Released For Manufacture

Released For Construction

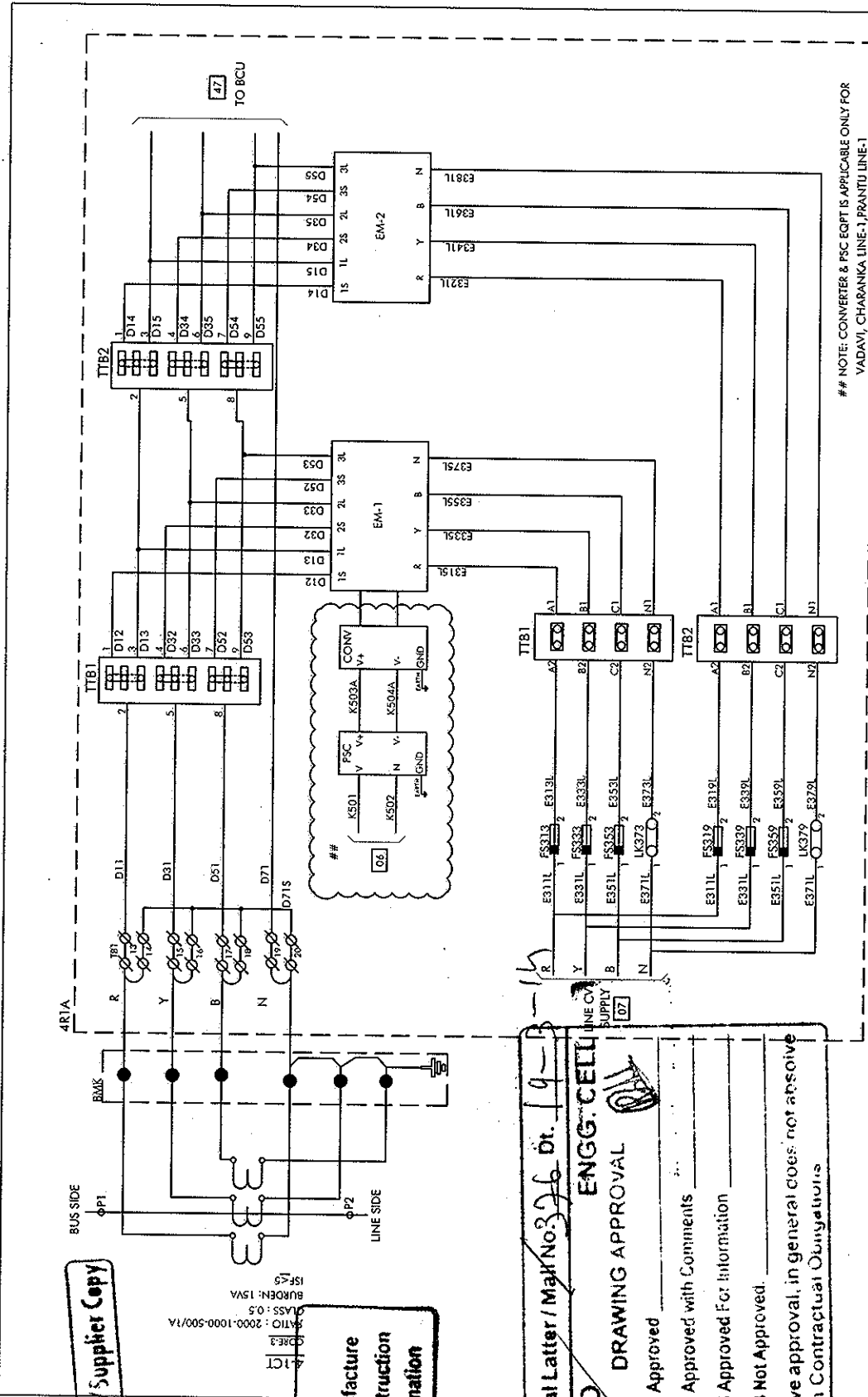
Released For Information

FOR ALSTOM REF:	ENG. REF. NO.: RV30	REVISION: B
SCHEME TYPE: FEEDER	CHECKED BY: AM	DATE: 10.03.2014
BASE FILE:	APPROVED BY: JIK	SCALE: --
SALES ORDER: 3269PP827	FILE: D:\601107	DRG. NO.: CPD RV30 SCT11 SHT 07 OF 71
<p><b>ALSTOM</b></p> <p>SCHMATIC DRAWING</p> <p>PANEL TYPES: 4RIA, 4R1B</p> <p>TITLE: 400KV LINE PROTECTION</p> <p>LINE CWT CIRCUIT - 400KV</p>		
<p>CUSTOMER: GETCO/ALSTOM T&amp;D India Ltd</p> <p>PROJECT: 400/220/66KV CRRSAS AT SANKHARI S/S</p> <p>P.O.NO.: 5427-4500640137</p> <p>Dated 09.10.2013</p>		
<p>PALAVAKKAM, CHENNAI 600043</p>		

**SR. No.-1 Contractor / Supplier Copy**

DATE: 2000.1000.500/1A  
 CLASS: 0.5  
 BURDEN: 15VA  
 S.F. 5  
 4-ICT  
 DREF3

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information



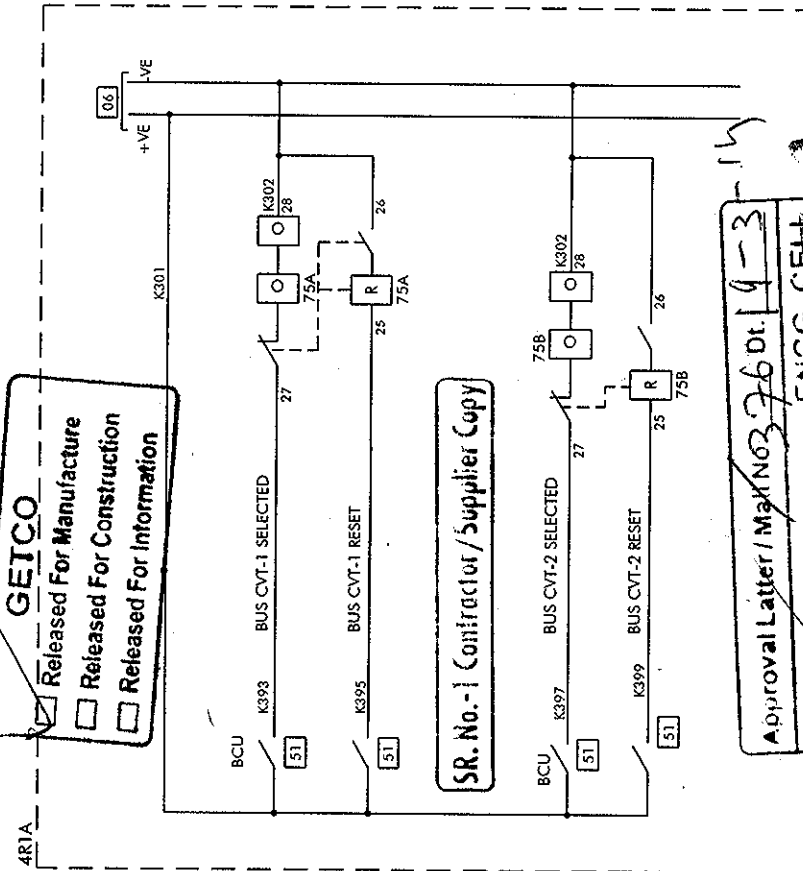
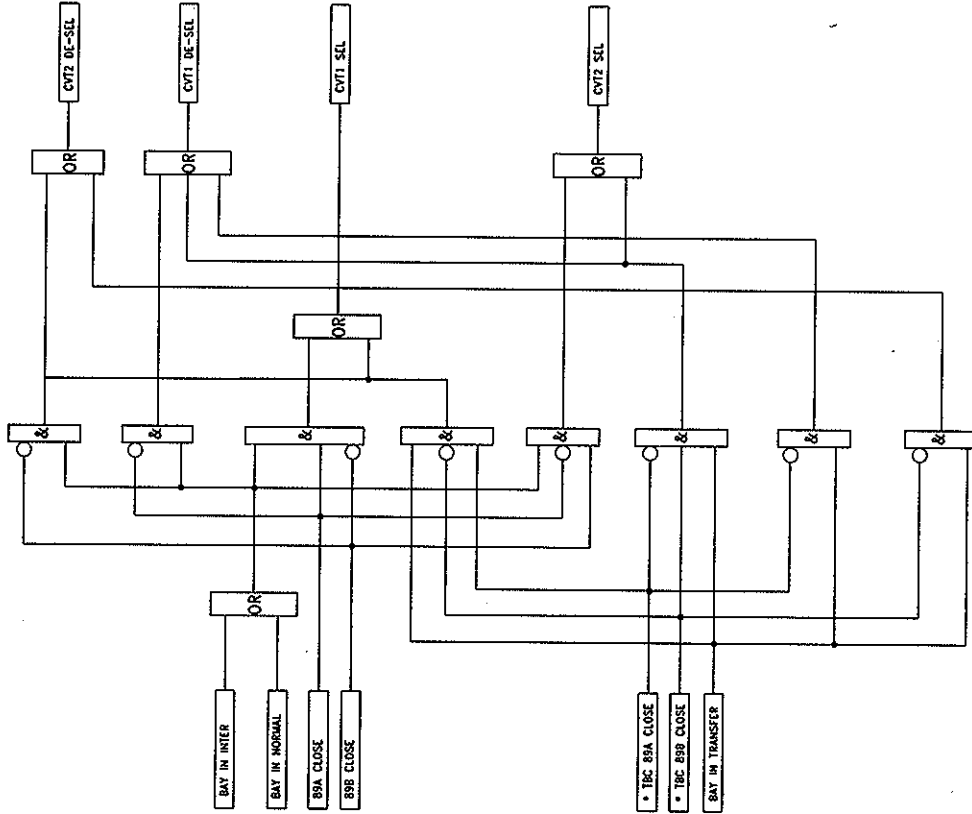
## NOTE: CONVERTER & PSC EQPT IS APPLICABLE ONLY FOR VADAVI, CHABANKA LINE-1, PRANTU LINE-1

Approval Letter / Mak No. 26 Dt. 19-11-11  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved.  
 The above approval, in general does not absolve you from Contractual Obligations

FOR ALSTOM REF:	ENGG. REF. NO.: KV30	REVISION: B
SCHEME TYPE: FEEDER	FILE D:\9201108	CHECKED BY: AM
BASE FILE:	PREPARED BY: GKA	DATE: 10.03.2014
SALES ORDER: 3269P827	APPROVED BY: JKK	SCALE:
<b>ALSTOM</b>		
ALSTOM T&D India Limited - AUTOMATION SAS PALLAVARAM, CHENNAI 600043		
TITLE: 400KV LINE PROTECTION ENERGY METER CIRCUIT		
SHEMATIC DRAWING PANEL TYPE: 4R1A-4R1B		
DRG. NO.: CPD KV30 SC11 SHT 08 OF 71		

CUSTOMER: GETCO/ALSTOM T&D India Ltd  
 PROJECT: 400/220/66KV CRPSSAS AT SANKHARI S/S  
 P.O.NO.: 5427-4500660137  
 Dated 09.10.2013

EQUIP	75A, B
TYPE	NVA/JM14
LOC	4RIA



**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

**SR. No.-1 Contractor/Supplier Copy**

Approval Letter / Max No. 76 dt. 19-3-14  
**GETCO** ENGINEERING  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For information

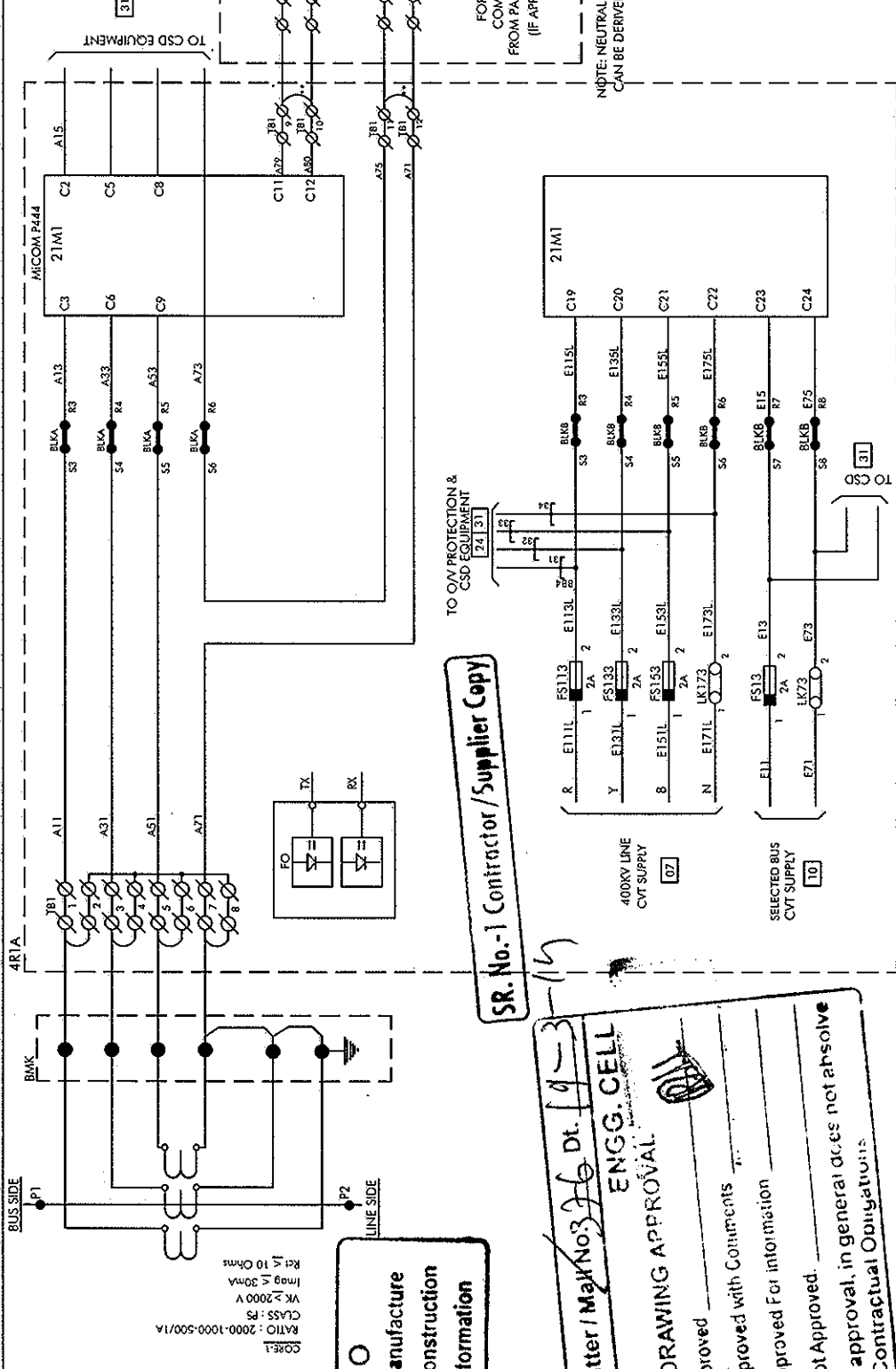
FOR ALSTOM REF:	ENG. REF. NO:	NOT APPROVED	PREPARED BY: GRA	REVISION: B
SCHEME TYPE: FEEDER	CUSTOMER: GETCO/ALSTOM T&D India Ltd. P.O. BOX 2010, CHENNAI-600043	Customer approval/REVISIONS OF DRAWINGS	CHECKED BY: AM	DATE: 10.03.2014
BASE FILE:	you from Contra for approval at site	ALSTOM T&D India Limited - AUTOMATION SAS PALLAVARAM CHENNAI 600043	APPROVED BY: JKK	SCALE: --
SALES ORDER: 3269PP827			FILE: DV301109	DRG. NO.: CPD KV30 SC11 SHT 09 OF 71

SCHEMATIC DRAWING  
 PANEL TYPES: 4RIA 4R1B  
 TITLE: 400KV LINE PROTECTION  
 VOLTAGE SELECTION CKT

**ALSTOM**  
 ALSTOM T&D India Limited - AUTOMATION SAS  
 PALLAVARAM CHENNAI 600043



EGPT	21M1
TYPE	MICOMP444
LOC.	4RIA



FOR ALSTOM REF.	ENGG. REF. NO. : KV30
SCH/DWG TYPE: FEEDER	
BASE FILE:	
SALES ORDER: 3269P827	

CORE: 1	
RATIO: 2000-1000-500/1A	
CLASS: F5	
VK > 2000 V	
Imag < 30mA	
Rct < 10 Ohms	

EGPT	21M1
TYPE	MICOMP444
LOC.	4RIA

TO CSD EQUIPMENT

TO O/V PROTECTION & CSD EQUIPMENT

FOR MUTUAL COMPENSATION FROM PARALLEL LINE (IF APPLICABLE)

NOTE: NEUTRAL DR CURRENT CAN BE DERIVED INTERNALLY

NOTE: \*\* SHORTING LINKS WILL BE REMOVED IN FUTURE IF PARALLEL LINE IS RUNNING

SR. No. - 1 Contractor/Supplier Copy

Approval Letter / Mak No. 376 Dt. 19-3-2013

ENGG. CELL

DRAWING APPROVAL

Cat-1 Approved

Cat-2 Approved with Comments

Cat-3 Approved For information

Cat-4 Not Approved

The above approval, in general does not absolve you from Contractual Obligations

GETCO

Released For Manufacture

Released For Construction

Released For Information

ALSTOM

ALSTOM T&D India Limited - AUTOMATION SAS

PALAVARAK - CHENNAI 600043

FILE: DV201111

PREPARED BY: CKA

CHECKED BY: AM

APPROVED BY: JKC

REVISION: B

DATE: 10.03.2014

SCALE: --

DRG. NO.: CPD KV30 SC11 SHT 11 OF 71

TITLE: 400KV LINE PROTECTION

DISTANCE PROT(N,MAIN-1) - AC CIRCUIT

ALSTOM

ALSTOM T&D India Limited - AUTOMATION SAS

PALAVARAK - CHENNAI 600043

FILE: DV201111

PREPARED BY: CKA

CHECKED BY: AM

APPROVED BY: JKC

REVISION: B

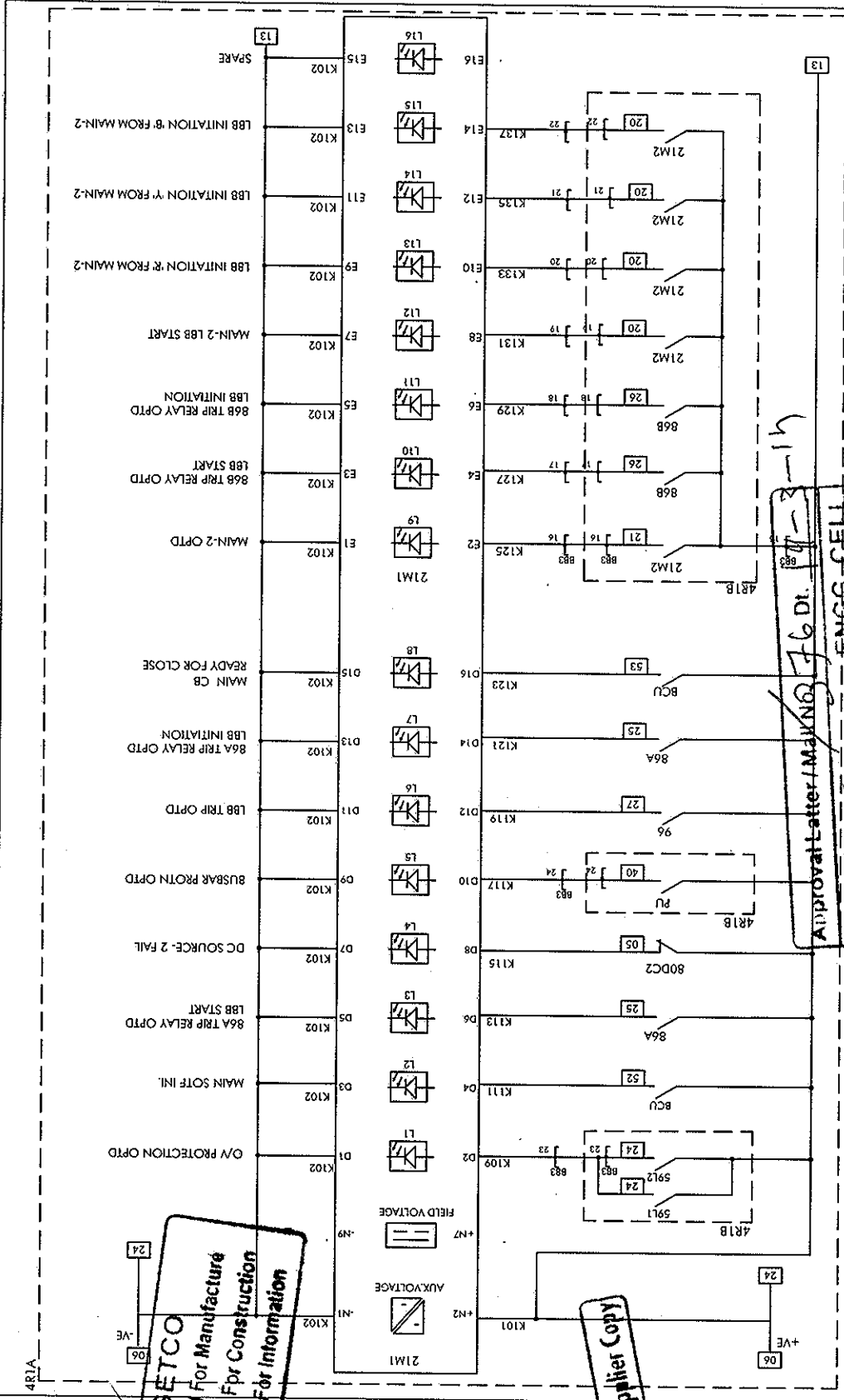
DATE: 10.03.2014

SCALE: --

DRG. NO.: CPD KV30 SC11 SHT 11 OF 71

TITLE: 400KV LINE PROTECTION

DISTANCE PROT(N,MAIN-1) - AC CIRCUIT



4R1A

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

**SR. No.-1 Contractor/Supplier Copy**

Approval Letter / Marking F6 DI. 11-3-11

**GETCO**  
**ENGINEERING CELL**

FOR ALSTOM REF:	ENG. REF. NO.: KV00	PREPARED BY: GVA	REVISION: B
SCHEME TYPE: FEEDER	CUSTOMER: GETCO/ALSTOM T&D India Ltd	CHECKED BY: AM	DATE: 10.03.2014
BASE FILE:	PROJECT: 400/220/66KV CIRCUIT BREAKERS AT Srinagar	APPROVED BY: JKK	SCALE: ..
SALES ORDER: 32699827	P.O.NO.: 5427-4500640137	FILE: DV201112	
	Dated: 09.10.2013	TITLE: 400V LINE PROTECTION	
		DISTANCE PROT.N.(MAIN-1) - DC/OPTO I/P CIRCUIT	
		DWG. NO.: CPD KV30 SC11 SHT 12 OF 71	

**DRAWING APPROVAL**  
**ALSTOM**  
 Cat-1 Approved  
 Cat-2 Approved  
 Cat-3 Approved For Information  
 Cat-4 Not Approved

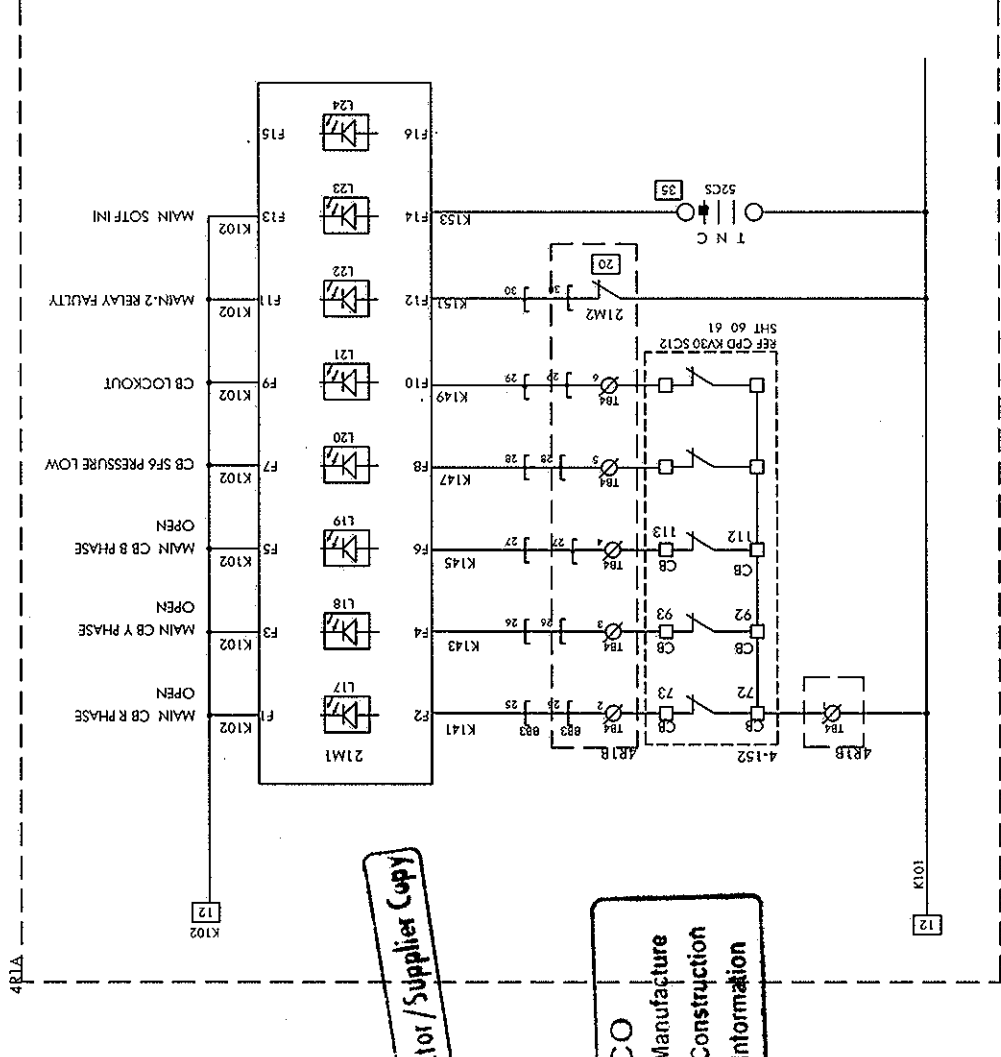
The above approval, in general does not absolve you from Contractual Obligations.

FOLLOWING SIGNALS FROM TBC SHALL BE TAKEN THROUGH GOOSE TO M-1 & M-2 FOR A/R OPERATION O TBC DURING TRANSFER MODE

- CB SPRING CHARGED
- CB SF6 GAS LOCKOUT
- TNC/BCU CB CLOSED
- LBB RESET
- 86A/86B RESET
- BB PROT.N. OPTD
- BB PROT.N. RESET

FOLLOWING SIGNALS ARE SET FROM SCADA HMI

- A/R IN / OUT
- BAY IN 'N'T or 'T' MODE
- CARRIER IN / OUT



NO.	PROTN. SIGNALS THROUGH SOFT
1	Over voltage protn.
2	SOTF trip opid
3	Power swing opid
4	Power swing block
5	Load encroachment
6	VT fuse fail
7	Broken conductor protn. opid
8	21M1 relay opid
9	21M1 LBB protn. opid
10	21M1 relay faulty
11	Rph fault
12	Yph fault
13	Bph fault
14	Multi phase faulty
15	Z1 opid
16	Z2 opid
17	Z3 opid
18	A/R opid
19	A/R block
20	Carrier fail
21	Carrier received
22	Carrier send
23	Direct trip sent
24	Direct trip received

Approval Letter / Mail No: 376 dt: 14-3-14  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For information  
 Cat-4 Not Approved.  
 The above approval, in general does not ansive you from Contractual Obligations

SR. No.-1 Contractor/Supplier Copy

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For information

FOR ALSTOM REF:	ENG. REF. NO.: KV90	REVISION: 8
SCHEME TYPE: FEEDER	FILE: DV031113	CHECKED BY: AA
BASE FILE:	FILE: DV031113	DATE: 10.03.2014
SALES ORDER: 3269PP827	APPROVED BY: JMK	SCALE: --
<b>ALSTOM</b> ALSTOM T&D India Limited - AUTOMATION SAS PALLAVARAM, CHENNAI 600043		
CUSTOMER: GETCO/ALSTOM T&D India Ltd PROJECT: 400/220/66KV CBPS SAS AT SANKHARU S/S P.O.NO.: 5427-4500660137 Dated: 07.10.2013		
SCHEMATIC DRAWING PANEL TYPES: 4R1A, 4R1B TITLE: 400KV LINE PROTECTION DISTANCE PROTN.(MAIN-1) - DC/OPTO I/P CIRCUIT		
DRG. NO.: CPD KV30 SC11 SHT 13 OF 71		



AR1A

**GETCO**

- Released For Manufacture
- Released For Construction
- Released For Information

**SR No. 1 Contractor/Supplier Copy**

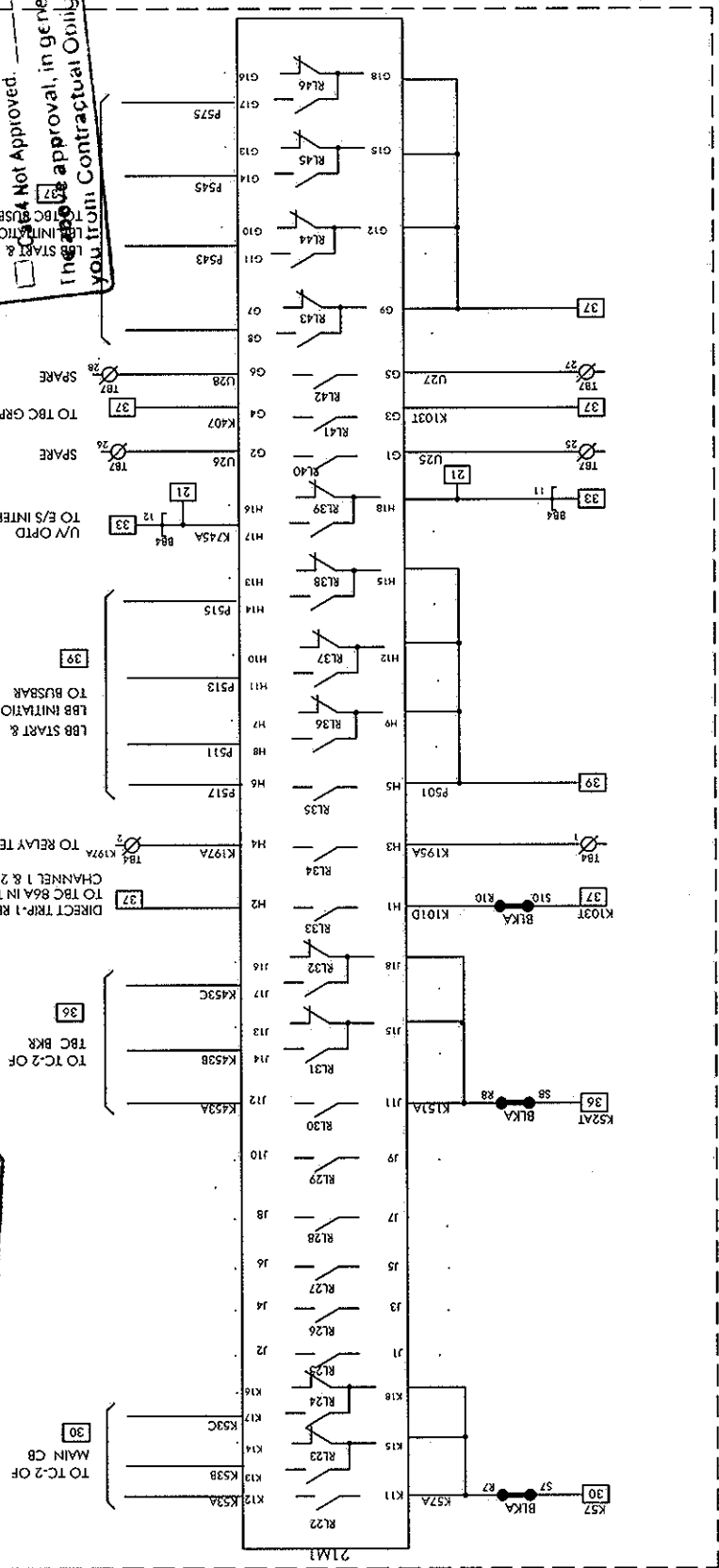
Approval Letter / Mailing 76 Df4-3-2

**ENG. CELL**

**GETCO DRAWING APPROVAL**

- Cat-1 Approved
- Cat-2 Approved with Comments
- Cat-3 Approved For Information
- Cat-4 Not Approved.

The above approval, in general does not absolve you from Contractual Obligations.



FOR ALSTOM REF:	ENG. REF. NO.: K930	REVISION: B
SCHEME TYPE: FEEDER	FILE: DVG01115	DATE: 10.03.2014
BASE FILE:	APPROVED BY: JJK	SCALE: -
SALES ORDER: 3269PP827	DIR: 09.10.2013	
<b>ALSTOM</b> ALSTOM T&D India Limited - AUTOMATION SAS PALLAVARAKA, CHENNAI 600043		
CLIENT - POWER GRID CORPORATION OF INDIA LTD. CUSTOMER - GETCO/ALSTOM T&D India Ltd PROJECT: 400/220/66KV CBSSAS AT SANKHAR S/S P.O.NO.: 5427-4800660137		
PREPARED BY: GKA CHECKED BY: AM APPROVED BY: JJK TITLE: 400KV LINE PROTECTION DISTANCE PROTIN (MAIN-1) - OUTPUT RELAY CONTROL FIG. NO.: CPD KV30 SC11 SHT 15 OF 71		

**LIST OF GOOSE SIGNALS**

NO.	FUNCTION	EQUIP.
1	CARRIER HEALTHY CH-1/2	FROM PLCB BCU
2	CARRIER RECIEVE CH-1/2	FROM PLCB BCU
3	CARRIER CH-1/2 IN	FROM PLCB BCU
4	CARRIER CH-1/2 IN OUT	FROM PLCB BCU
5	DIRECT TRIP-1/2 RECIEVE	FROM PLCB BCU
6	A/R INI & OUT	FROM HMI
7	BAY IN 'N-I-T' MODE	FROM HMI
8	TBC CB READY (SPRING CHARGE)	FROM TBC BCU
9	TBC R PHASE OPEN	FROM TBC BCU
10	TBC Y PHASE OPEN	FROM TBC BCU
11	TBC B PHASE OPEN	FROM TBC BCU
12	TBC SOTF INI.	FROM TBC BCU
13	TBC BB PROT.N. OPTD	FROM TBC BCU
14	TBC CB CLOSE COMMAND	FROM TBC BCU
15	TBC CB TRIP COMMAND	FROM TBC BCU
16	TBC CB LOCKOUT	FROM TBC BCU
17	TBC LBB OPTD	FROM TBC BCU
18	TBC LBB RESET	FROM TBC BCU
19	TBC BB RESET	FROM TBC BCU
20	TBC 86A & 86B RESET	FROM TBC BCU
21	CARRIER SEND CH-1/2	TO PLCB
22	DIRECT TRIP SEND CH-1/2	TO PLCB

**INPUT CONFIGURATION**

INPUT -	ASSIGNMENT
INPUT - 1	O/V PROT.N OPTD
INPUT - 2	MAIN SOTF INI
INPUT - 3	86A OPTD-LBB START
INPUT - 4	DC 2 SOURCE FAIL
INPUT - 5	BUSBAR PROT.N OPTD
INPUT - 6	LBB TRIP OPTD
INPUT - 7	86A OPTD-LBB INI.
INPUT - 8	MAIN CB READY FOR CLOSE
INPUT - 9	MAIN-2 OPTD
INPUT - 10	86B OPTD-LBB START
INPUT - 11	86B OPTD-LBB INI.
INPUT - 12	MAIN-2 LBB START
INPUT - 13	LBB INITIATION 'R' PHASE-FROM MAIN-2
INPUT - 14	LBB INITIATION 'Y' PHASE-FROM MAIN-2
INPUT - 15	LBB INITIATION 'B' PHASE-FROM MAIN-2
INPUT - 16	SPARE
INPUT - 17	MAIN CB 'R' PHASE OPEN
INPUT - 18	MAIN CB 'Y' PHASE OPEN
INPUT - 19	MAIN CB 'B' PHASE OPEN
INPUT - 20	CB SF6 PRESSURE LOW
INPUT - 21	CB LOCKOUT
INPUT - 22	MAIN-2 RELAY FAULTY
INPUT - 23	MAIN SOTF INI
INPUT - 24	SPARE

**ASSIGNMENT**

OUTPUT-RL	ASSIGNMENT
OUTPUT-RL1	TC-1 R PH TRIP - MAIN CB
OUTPUT-RL2	TC-1 Y PH TRIP - MAIN CB
OUTPUT-RL3	TC-1 B PH TRIP - MAIN CB
OUTPUT-RL4	LBB TRIP
OUTPUT-RL5	MAIN-1 OPTD
OUTPUT-RL6	TO CB CLOSING CKT(AUTO RECLOSURE)
OUTPUT-RL7	TO GRP-A TRIP RELAY
OUTPUT-RL8	DRT-1 REC. TO 86A
OUTPUT-RL9	SPARE
OUTPUT-RL10	O/V OPTD TO BCU
OUTPUT-RL11	SPARE
OUTPUT-RL12	SPARE
OUTPUT-RL13	SPARE
OUTPUT-RL14	TC-1 R PH TRIP - TBC CB
OUTPUT-RL15	TC-1 Y PH TRIP - TBC CB
OUTPUT-RL16	TC-1 B PH TRIP - TBC CB
OUTPUT-RL17	SPARE
OUTPUT-RL18	SPARE
OUTPUT-RL19	SPARE
OUTPUT-RL20	SPARE
OUTPUT-RL21	SPARE
OUTPUT-RL22	TC-2 R PH TRIP - MAIN CB
OUTPUT-RL23	TC-2 Y PH TRIP - MAIN CB
OUTPUT-RL24	TC-2 B PH TRIP - MAIN CB
OUTPUT-RL25	SPARE
OUTPUT-RL26	SPARE
OUTPUT-RL27	SPARE
OUTPUT-RL28	SPARE
OUTPUT-RL29	SPARE
OUTPUT-RL30	TC-2 R PH TRIP - TBC CB
OUTPUT-RL31	TC-2 Y PH TRIP - TBC CB
OUTPUT-RL32	TC-2 B PH TRIP - TBC CB
OUTPUT-RL33	DRT-1 REC. TO TBC 86A
OUTPUT-RL34	TO RELAY TEST KIT RESET
OUTPUT-RL35	LBB START TO 88
OUTPUT-RL36	LBB INI TO BUSBAR - R PH
OUTPUT-RL37	LBB INI TO BUSBAR - Y PH
OUTPUT-RL38	LBB INI TO BUSBAR - B PH
OUTPUT-RL39	U/V OPTD TO E/S INTERLOCK
OUTPUT-RL40	TO TBC GRP-A TRIP RELAY
OUTPUT-RL41	SPARE
OUTPUT-RL42	LBB START TO TBC
OUTPUT-RL43	LBB INI TO TBC - R PH
OUTPUT-RL44	LBB INI TO TBC - Y PH
OUTPUT-RL45	LBB INI TO TBC - B PH
OUTPUT-RL46	SPARE

**LED CONFIGURATION (DEDICATED LED'S)**

LED REF	FUNCTION
<input checked="" type="checkbox"/>	TRIP
<input checked="" type="checkbox"/>	ALABA
<input checked="" type="checkbox"/>	OUT OF SERVICE
<input checked="" type="checkbox"/>	RELAY HEALTHY

**LED CONFIGURATION (USER PROGRAMMABLE LED'S)**

LED REF	FUNCTION
<input checked="" type="checkbox"/>	R-PH FAULT
<input checked="" type="checkbox"/>	Y-PH FAULT
<input checked="" type="checkbox"/>	B-PH FAULT
<input checked="" type="checkbox"/>	Z1 OPTD.
<input checked="" type="checkbox"/>	Z2 OPTD.
<input checked="" type="checkbox"/>	Z3 OPTD.
<input checked="" type="checkbox"/>	SOTF TRIP
<input checked="" type="checkbox"/>	CARRIER AIDED TRIP

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

Approval Letter / Main No. 76 D/L 9-3  
**ENGG. SELL**  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved  
 Cat-3 Approved  
 Cat-4 Not Approved

**SR. No. 1 Contractor/Supplier Copy**

FOR ALSTOM REF:	ENGG. REF. NO. 1000	REVISION: B
SCHEME TYPE: FEEDER	Cat-2 Approved	CHECKED BY: AM
BASE FILE:	Cat-3 Approved	DATE: 10.03.2014
SALES ORDER: 37499827	Cat-4 Not Approved	APPROVED BY: JKK
		SCALE: --

FILE: D:\001116  
 PREPARED BY: GKA  
 SCHEDULED DRAWING  
 PANEL TYPES: AR1A-UR18  
 TITLE: 400KV LINE PROTECTION  
 DISTANCE PROT.N.(MAIN-1) - I/O & LED CONFIGURATION

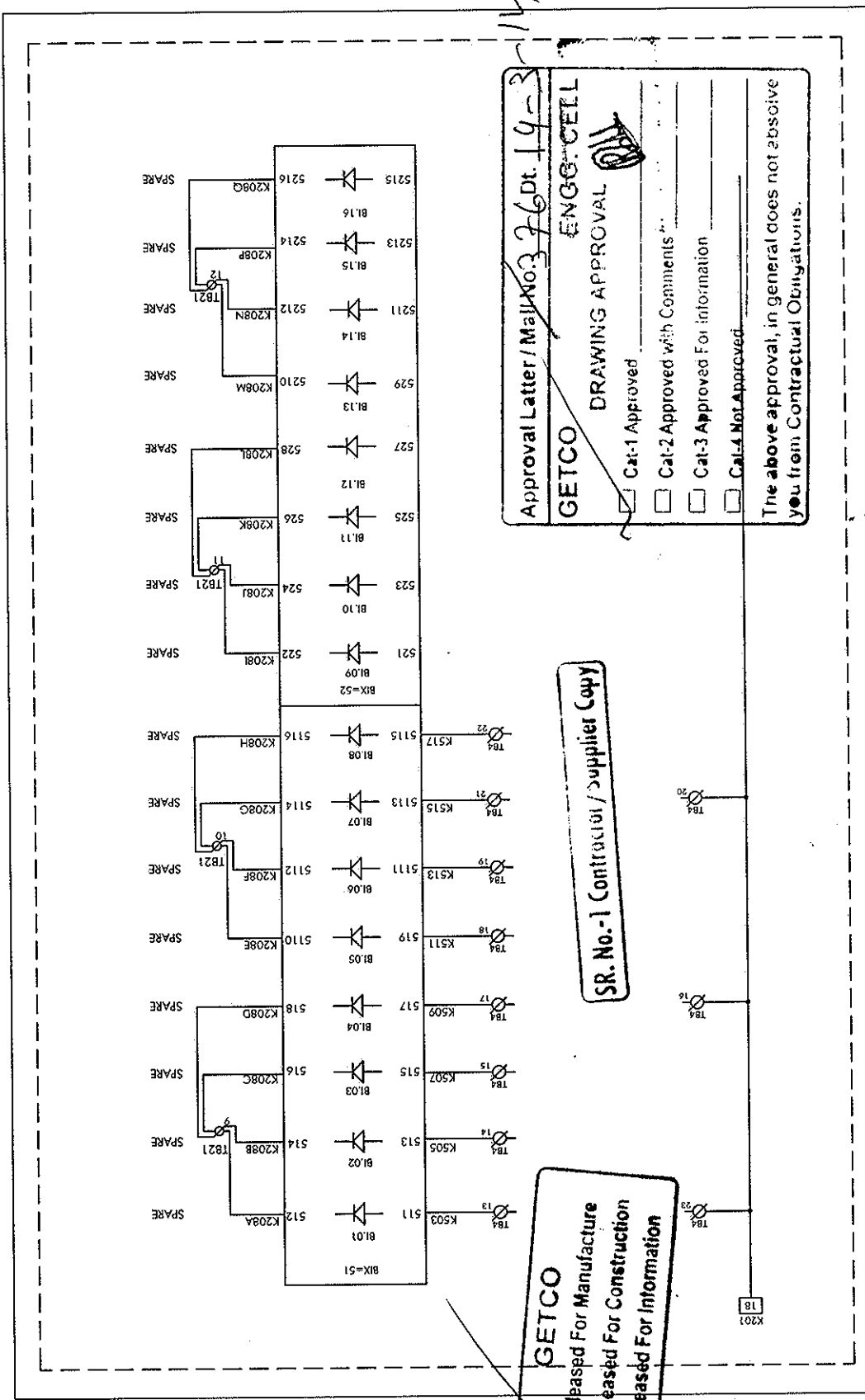
**ALSTOM**  
 ALSTOM T&D India Limited - AUTOMATION SAS  
 PALAVANAM, CHENNAI 600043

PROJECT: 400/220/66KV CPRESSAG AT SANKHARI S/S  
 From 400/220/66KV CPRESSAG AT SANKHARI S/S  
 Dated: 09.10.2013

The above approval, in general does not absolve you from Contractual Obligations.







Approval Letter / Mail No. 376 Dt. 19-3-14  
**GETCO** ENGG. CELL  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved For Information  
 Cat-4 Not Approved  
 The above approval, in general does not absolve you from Contractual Obligations.

SR. No.-1 Contractor/Supplier Copy

**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

FOR ALSTOM REF.:	ENGG. REF. NO.:	KV30	REVISION:	B
SCHEME TYPE: FEEDER	ENG. REF. NO.:	KV30	DATE:	10.03.2014
BASE FILE:	ENGG. REF. NO.:	KV30	APPROVED BY:	JJK
SALES ORDER: 3269PP827	ENGG. REF. NO.:	KV30	SCALE:	...
CUSTOMER: GETCO/ALSTOM T&D India Ltd		SCHEMATIC DRAWING		
PROJECT: 400/220/66KV CROSSAS AT SANKHARI S/S		PANEL TYPES: 4R1A, 4R1B		
P.O. NO.: 5427-4500660137		FILE: DV301119		
Dated: 09.10.2013		TITLE: 400KV LINE PROTECTION		
		DISTANCE PROTECTION (MAIN-2) - DC I/P & OUT/588		
		NO.: CPD KV30 SC11 SHT 19 OF 71		
		<b>ALSTOM</b>		
		ALSTOM T&D India Limited - AUTOMATION SAS PALLAVARAM, CHENNAI 600043		

Approval Letter / Mat No 376 of 9-3-11

**GETCO** DRAWING APPROVAL

Cat-1 Approved

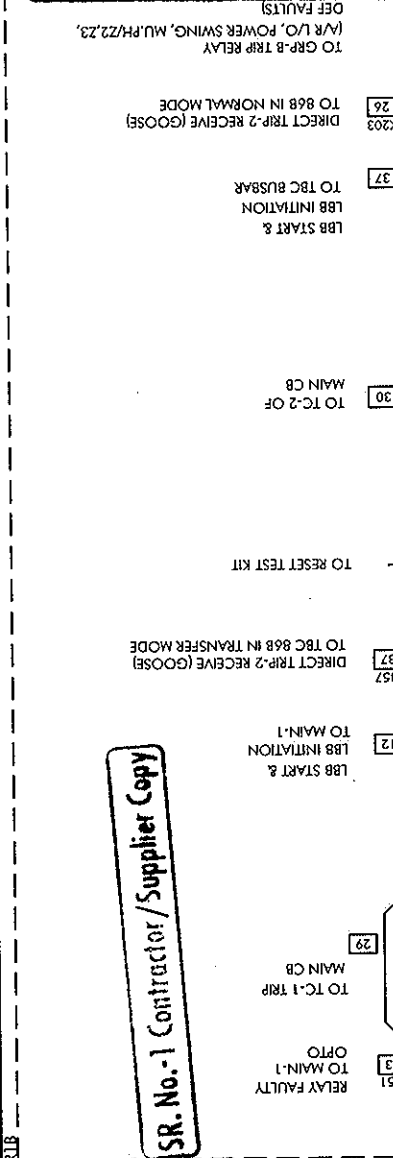
Cat-2 Approved with Comments

Cat-3 Approved For information

Cat-4 Not Approved.

**ENG. GELL**

Line above approval, in general does not represent you from Contractual Obligations



SR. No.-1 Contractor/Supplier Copy

**GETCO**

Released For Manufacture

Released For Construction

Released For Information

FOR ALSTOM REF:	ENG. REF. NO.:	REVISED BY:	REVISION:
SCHEME TYPE: FEEDER	NO: 0020	DATE: 10.03.2014	B
BASE FILE:		CHECKED BY: AM	
SALES ORDER: 3269PP827		APPROVED BY: JKK	
		FILE: D:\901120	
		SCHEMATIC DRAWING	
		PANEL TYPES: 4R1A-4R1B	
		TITLE: 400KV LINE PROTECTION (MAIN-2) - DC 1P & OUTLINE	
		DISTANCE PROTECTION (MAIN-2) - DC 1P & OUTLINE	
		ALSTOM	
		ALSTOM T&D India Limited - AUTOMATION SAS	
		PALLAVARAM, CHENNAI 600043	
		CUSTOMER: GETCO/ALSTOM T&D India Ltd	
		PROJECT: 400/220/66KV CDR&SAS AT SANKHAR 5/S	
		P.O.NO.: 5427-4500660137	
		Dated: 09.10.2013	

Approval Letter / Man No 326 Dtl 4-3-14

**GETCO** **ENGG. CELL**

**DRAWING APPROVAL**

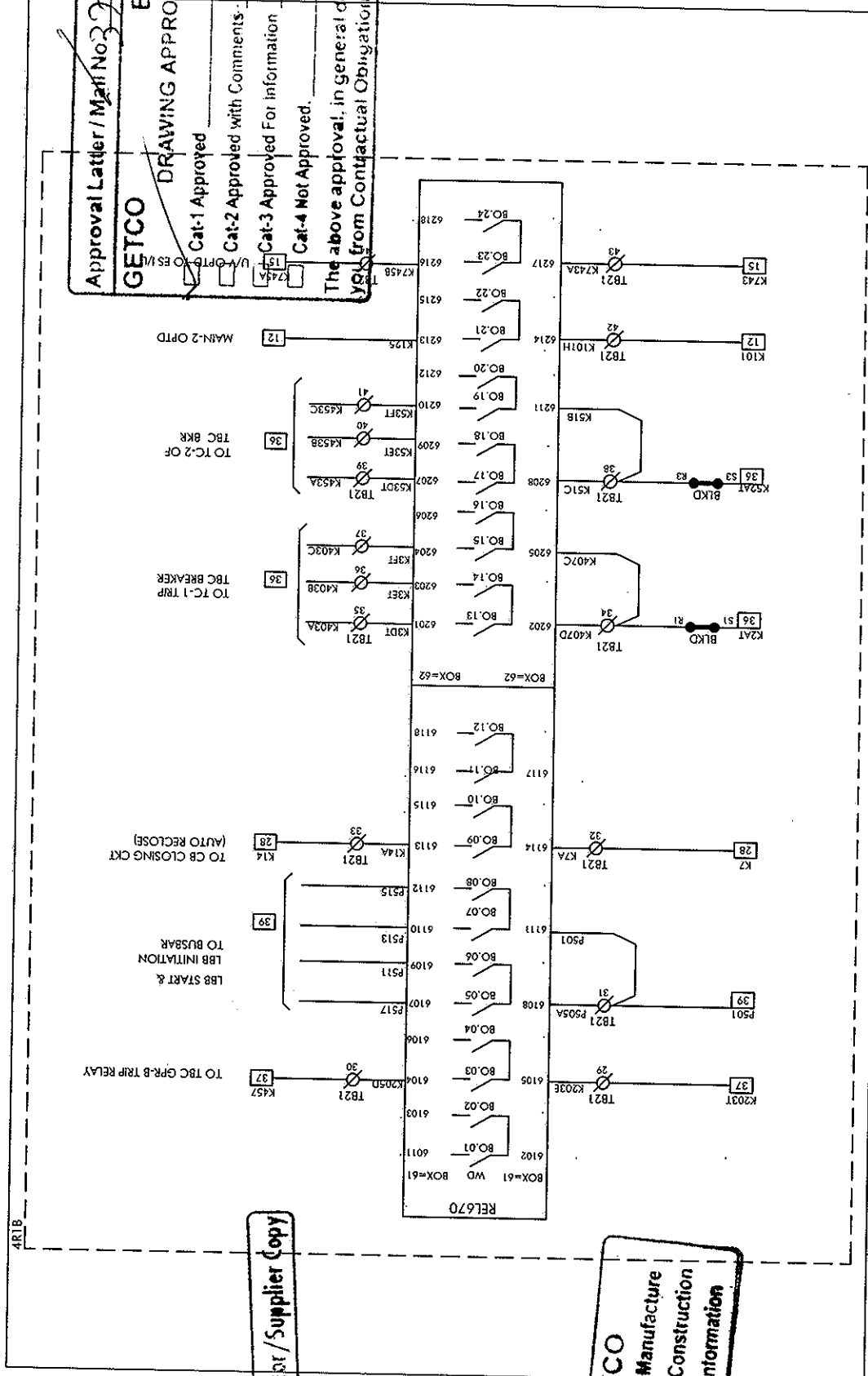
Cat-1 Approved

Cat-2 Approved with Comments

Cat-3 Approved For Information

Cat-4 Not Approved.

The above approval, in general does not absolve you from Contractual Obligations.



4RTB

SR. No.-1 Contractor/Supplier Copy

**GETCO**

Released For Manufacture

Released For Construction

Released For Information

FOR ALSTOM REF:	ENGG. REF. NO.: KV20	PREPARED BY: GKA	REVISION: 8
SCHEME TYPE: FEEDER		CHECKED BY: AXA	DATE: 10.03.2014
BASE FILE		APPROVED BY: JKK	SCALE: --
SALES ORDER: 3269PP827		FILE: DV031121	
		TITLE: 400KV LINE PROTECTION (MAIN-2) - DC 1/P & OUTLINE	
		DISTANCE PROTECTION (MAIN-2) - DC 1/P & OUTLINE	
		SCHAEMATIC DRAWING	
		PANEL TYPES: 4RTA-4RTB	
		ALSTOM T&D India Limited - AUTOMATION SAS	
		PALLAVARAM, CHENNAI 600043	
		CUSTOMER: GETCO/ALSTOM T&D India Ltd	
		PROJECT: 400720/66KV CRP/SAS AT SANKHAR S/S	
		P.O.NO.: 5427-4500660137	
		Dated 09.10.2013	
		B&E NO.: CPD KV20 SC11 SHT 21 OF 71	

**GETCO**

- Released For Manufacture
- Released For Construction
- Released For Information

LED CONFIGURATION - REL670

LED REF	FUNCTION
1	R-PH FAULT
2	Y-PH FAULT
3	B-PH FAULT
4	Z1 OPTD.
5	Z2 OPTD.
6	Z3 OPTD.
7	DIRECT TRIP
8	CARRIER AIDED TRIP
9	SOTF OPERATED
10	A/R OPTD
11	A/R LOCKOUT/BLOCK OPTD
12	VT FUSE FAIL
13	SPARE
14	SPARE
15	SPARE

INPUT CONFIGURATION

SLOT: X31,32	ASSIGNMENT
INPUT - BI 1	MAIN CB R PH OPEN
INPUT - BI 2	MAIN CB Y PH OPEN
INPUT - BI 3	MAIN CB B PH OPEN
INPUT - BI 4	86A TRIP RELAY OPTD.
INPUT - BI 5	DC-1 SOURCE FAIL
INPUT - BI 6	BCU FAIL
INPUT - BI 7	BUSBAR PROTIN OPTD.
INPUT - BI 8	MAIN LBB TRIP RELAY OPTD.
INPUT - BI 9	MAIN CB SOTF INI
INPUT - BI 10	MAIN CB SOTF INI
INPUT - BI 11	CB LOCKOUT
INPUT - BI 12	MAIN CB READY FOR CLOSE
INPUT - BI 13	86B TRIP RELAY OPTD.
INPUT - BI 14	MAIN-1 RELAY FAULTY
INPUT - BI 15	MAIN-1 OPTD.
INPUT - BI 16	SPARE

INPUT CONFIGURATION

SLOT: X61,62	ASSIGNMENT
INPUT - BI 1	SPARE
INPUT - BI 2	SPARE
INPUT - BI 3	SPARE
INPUT - BI 4	SPARE
INPUT - BI 5	SPARE
INPUT - BI 6	SPARE
INPUT - BI 7	SPARE
INPUT - BI 8	SPARE
INPUT - BI 9	SPARE
INPUT - BI 10	SPARE
INPUT - BI 11	SPARE
INPUT - BI 12	SPARE
INPUT - BI 13	SPARE
INPUT - BI 14	SPARE
INPUT - BI 15	SPARE
INPUT - BI 16	SPARE

NO.	PROTN. SIGNALS THROUGH SOTF
1	Over voltage protin.
2	SOTF trip optd
3	Power swing optd
4	Power swing block
5	Load encroachment
6	VT fuse fail
7	Broken conductor protin. optd
8	21M2 relay optd
9	21M2 relay faultly
10	Rph fault
11	Yph fault
12	8ph fault
13	Multi phase faultly
14	Z1 optd
15	Z2 optd
16	Z3 optd
17	A/R optd
18	A/R block
19	Carrier fail
20	Carrier received
21	Carrier send
22	Direct trip sent
23	Direct trip received

**GETCO**

- Released For Manufacture
- Released For Construction
- Released For Information

Approval Letter / Mail No. 376 Dt. 14-3-14  
**GETCO**  
 DRAWING APPROVAL  
 ENGG. SELL  
 Cat-1 Approved

FOR ALSTOM REF: ENGG. REF. NO. 10017  
 SCHEMATIC TYPE: FEEDER  
 BASE FILE:  Cat-3 Approved  
 SALES ORDER: 3269PP827  
 CUSTOMER: GETCO/ALSTOM 750 India Ltd  
 PROJECT NO.: 5437-450060137  
 Date: 07/08/2013  
 Cat-4 Not Approved

APPROVED WITH COMMENTS  
 SCHEDULED DRAWING  
 PANEL TYPES: 4RIA, 4R18  
 TITLE: 400KV LINE PROTECTION  
 DISTANCE PROTIN (MAIN-2) - I/O & LED CONFIGURATION  
 PREPARED BY: GKA  
 CHECKED BY: AM  
 APPROVED BY: JKK  
 REVISION: 8  
 DATE: 10.03.2014  
 SCALE: 1:1  
 SHEET NO.: CPD KV30 SC11 SHIT 22 OF 71

**ALSTOM**  
 ALSTOM Technology India Limited - AUTOMATION SAS  
 PALLAVARAM, CHENNAI 600043

The above approval, in general does not absolve you from Contractual Obligations

**LIST OF GOOSE SIGNALS**

NO.	FUNCTION	EQUIP.
1	CARRIER HEALTHY CH-1/2	FROM PLCC BCU
2	CARRIER RECEIVE CH-1/2	
3	CARRIER CH-1/2 IN	
4	CARRIER CH-1/2 IN OUT	
5	DIRECT TRIP-1/2 RECEIVE	
6	A/R IN & OUT	FROM HMI
7	BAY IN 'N-I-T' MODE	
8	TBC CB READY (SPRING CHARGE)	FROM TBC BCU
9	TBC R PHASE OPEN	
10	TBC Y PHASE OPEN	
11	TBC B PHASE OPEN	
12	TBC SOTF INI.	
13	TBC BB PROTN. OPTD	
14	TBC CB CLOSE COMMAND	
15	TBC CB TRIP COMMAND	
16	TBC CB LOCKOUT	
17	TBC BB RESET	
18	TBC 86A & 86B RESET	
19	CARRIER SEND CH-1/2	TO PLCC
20	DIRECT TRIP SEND CH-1/2	

**SR. No.-1 Contractor / Supplier Copy**

OUTPUT CONTACT ASSIGNMENT		OUTPUT CONTACT ASSIGNMENT	
OUTPUT NO.	ASSIGNMENT	OUTPUT NO.	ASSIGNMENT
<b>SLOT- X41</b>			
OUTPUT-BO1	TC-1 R PH TRIP MAIN CB	OUTPUT-BO1	SPARE
OUTPUT-BO2	TC-1 Y PH TRIP MAIN CB	OUTPUT-BO2	TO TBC GPR-B TRIP RELAY
OUTPUT-BO3	TC-1 B PH TRIP MAIN CB	OUTPUT-BO3	SPARE
OUTPUT-BO4	SPARE	OUTPUT-BO4	MAIN-2 LBB START
OUTPUT-BO5	MAIN-2 LBB START	OUTPUT-BO5	LBB INI TO MAIN-1 R PH
OUTPUT-BO6	LBB INI TO MAIN-1 R PH	OUTPUT-BO6	LBB INI TO MAIN-1 Y PH
OUTPUT-BO7	LBB INI TO MAIN-1 B PH	OUTPUT-BO7	LBB INI TO MAIN-1 B PH TO CB CLOSING CKT
OUTPUT-BO8	DIRECT TRIP - 2 RECEIVE (GOOSE) TO TBC 86B	OUTPUT-BO8	SPARE
OUTPUT-BO9	TO RESET TEST KIT	OUTPUT-BO9	SPARE
OUTPUT-BO10	SPARE	OUTPUT-BO10	SPARE
OUTPUT-BO11	SPARE	OUTPUT-BO11	SPARE
OUTPUT-BO12	SPARE	OUTPUT-BO12	SPARE
<b>SLOT- X42</b>			
OUTPUT-BO13	TC-2 R PH TRIP MAIN CB	OUTPUT-BO13	TC-1 R PH TRIP TBC BKR
OUTPUT-BO14	TC-2 R PH TRIP MAIN CB	OUTPUT-BO14	TC-1 Y PH TRIP TBC BKR
OUTPUT-BO15	TC-2 R PH TRIP MAIN CB	OUTPUT-BO15	TC-1 B PH TRIP TBC BKR
OUTPUT-BO16	SPARE	OUTPUT-BO16	SPARE
OUTPUT-BO17	LBB START TO TBC	OUTPUT-BO17	TC-2 R PH TRIP TBC BKR
OUTPUT-BO18	LBB INI TO TBC R PH	OUTPUT-BO18	TC-2 Y PH TRIP TBC BKR
OUTPUT-BO19	LBB INI TO TBC Y PH	OUTPUT-BO19	TC-2 B PH TRIP TBC BKR
OUTPUT-BO20	LBB INI TO TBC B PH	OUTPUT-BO20	SPARE
OUTPUT-BO21	DIRECT TRIP - 2 RECEIVE (GOOSE) TO TBC 86B	OUTPUT-BO21	SPARE
OUTPUT-BO22	IN NORMAL MODE	OUTPUT-BO22	U/V OPTD TO ES I/L
OUTPUT-BO23	TO GRP-B TRIP RELAY	OUTPUT-BO23	SPARE
OUTPUT-BO24	SPARE	OUTPUT-BO24	SPARE

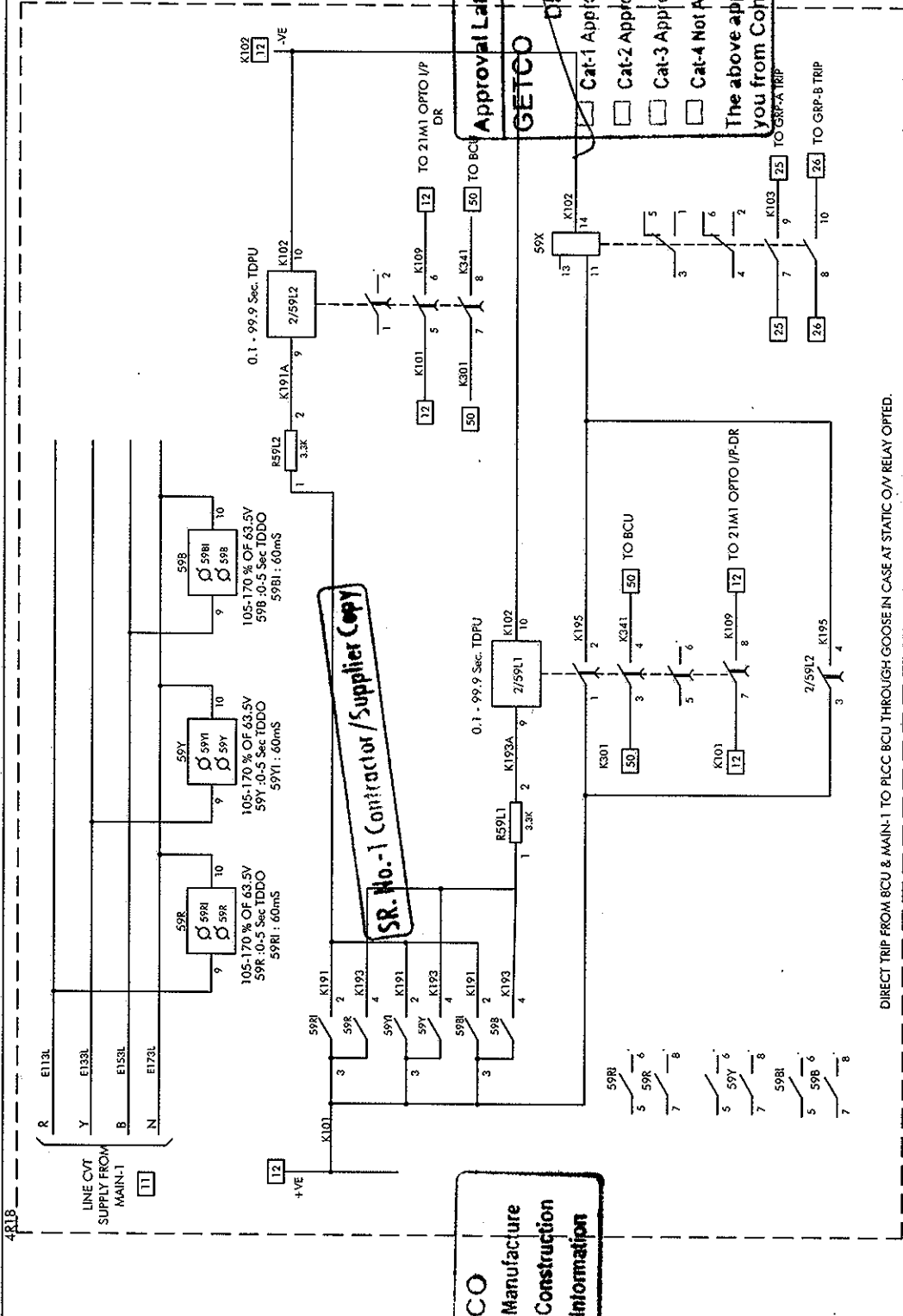
**GETCO**  
 Released For Manufacture  
 Released For Construction  
 Released For Information

Approval Letter / Main No. 376 Dt. 19-3-14  
**GETCO**  
 DRAWING APPROVAL  
 Cat-1 Approved  
 Cat-2 Approved with Comments  
 Cat-3 Approved  
 Cat-4 Not Approved

FOR AISTOM REF.	ENG. REF. NO.: K030	PREPARED BY: GKA	REVISION: 8
SCHEME TYPE: FEEDER	CUSTOMER: GETCO/AISTOM T&D	CHECKED BY: AM	DATE: 10.03.2014
BASE FILE:	PROJECT: 400/220/66KV CR&AS AT SANKARAPUR	APPROVED BY: JJK	SCALE: -
SALES ORDER: 3249PP827	P.O. NO.: 5427-4500660137	FILE: DVG01123	
	Dated: 09.10.2013	TITLE: 400KV LINE PROTECTION	
		TITLE: DISTANCE PROTN (MAIN-2) - I/O & LED CONFIGURATION	
		NO.: CPD KVS0 SC11 SHT 23 OF 71	

The above approval, in general does not absolve you from Contractual Obligations.

EQPT	59R/7/B
TYPE	VTU31
LOC	4R1A
EQPT	2/59L1.2
TYPE	MVT11.4
LOC	4R1B
EQPT	59X
TYPE	MVA11
LOC	4R1B



SR. No.-1 Contractor/Supplier Copy

**GETCO**

Released For Manufacture

Released For Construction

Released For Information

Approval Letter / Mail No. 376 94-3-20

**GETCO**

**ENG CELL**

DRAWING APPROVAL

Cat-1 Approved

Cat-2 Approved with Comments

Cat-3 Approved For Information

Cat-4 Not Approved.

The above approval, in general does not release you from Contractual Obligations

DIRECT TRIP FROM 8CU & MAIN-1 TO PLCC BCU THROUGH GOOSE IN CASE AT STATIC O/V RELAY OPTED.

FOR ALSTOM REF:	ENGG. REF. NO.: KV30	REVISION: B
SCHEME TYPE: FEEDER		CHECKED BY: AM
BASE FILE:		DATE: 10.03.2014
SALES ORDER: 32699827		APPROVED BY: JJK
		SCALE:
		DRG. NO.: CPD KV30 SCT11 SHT 24 OF 71
<p><b>ALSTOM</b></p> <p>ALSTOM T&amp;D India Limited - AUTOMATION SAS</p> <p>PALAVARAKA, CHENNAI 600043</p>		
<p>FILE: DVG01124</p> <p>PREPARED BY: GKA</p> <p>SCHMATIC DRAWING</p> <p>PANEL TYPE: 4R1A, 4R1B</p> <p>TITLE: 400KV LINE PROTECTION</p> <p>O/V RELAY CIRCUIT</p>		







