

Project : Kothagudem 1 x 800 MW Division : EPD

| Sl. No | Drawing/Document No | Title | Designation |
|--------|---------------------|--|-------------|
| 1 | EP-4-CS-048-001 | SCHEME FOR INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS | DAET-IC |
| 2 | EP-4-CS-048-002 | SCHEME FOR INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS | DAET-IC |
| 3 | EP-4-CS-048-003 | SCHEME FOR BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS | DAE-BC |
| 4 | EP-4-CS-048-004 | SCHEME FOR INCOMER-A TO SWBD CONTROLLED FROM DDCMIS ONLY | DAE-IC |
| 5 | EP-4-CS-048-005 | SCHEME FOR INCOMER-2 TO MCC/ACDB | DAE-IC |
| 6 | EP-4-CS-048-006 | SCHEME FOR BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY | DAE-BC |
| 7 | EP-4-CS-048-007 | SCHEME FOR MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMIS | DAEG IC (M) |
| 8 | EP-4-CS-048-008 | SCHEME FOR STAND BY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMIS | DAEG IC (S) |
| 9 | EP-4-CS-048-009 | SCHEME FOR NORMAL INCOMER-A TO EMERGENCY MCC CONTROLLED FROM ECP & DDCMIS | DAE IC (DG) |
| 10 | EP-4-CS-048-010 | SCHEME FOR NORMAL INCOMER-B TO EMERGENCY MCC CONTROLLED FROM ECP & DDCMIS | DAE IC (DG) |
| 11 | EP-4-CS-048-011 | SCHEME FOR BUSCOUPLER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMIS | DG BC |
| 12 | EP-4-CS-048-012 | SCHEME FOR TIE TO EMERGENCY MCC CONTROLLED FROM ECP & DDCMIS | DAE TIE |
| 13 | EP-4-CS-048-013 | SCHEME FOR OUTGOING ACB FEEDER FROM PMCC/PCC CONTROLLED FROM DDCMIS ONLY | DAE OG |
| 14 | EP-4-CS-048-014 | SCHEME FOR BREAKER OPERATED LT MOTOR FEEDERS CONTROLLED FROM DDCMIS ONLY | DM |
| 15 | EP-4-CS-048-015 | SCHEME FOR DCDB INCOMER FORM BATTERY CHARGER + DC BUSCOUPLER + BATTERY | CH+DB+DC |
| 16 | EP-4-CS-048-016 | SCHEME FOR MCCB INCOMER | EM3 (IC) |
| 17 | EP-4-CS-048-017 | SCHEME FOR MCCB BUSCOUPLER | EM3 (BC) |
| 18 | EP-4-CS-048-018 | SCHEME FOR MCCB+CONTACTOR OPERATED INCOMER | EMC3 (IC) |
| 19 | EP-4-CS-048-019 | SCHEME FOR MCCB OUTGOING | EM3 |
| 20 | EP-4-CS-048-020 | SCHEME FOR UNIDIRECTIONAL MOTOR FEEDER<45KW | DK2 |
| 21 | EP-4-CS-048-021 | SCHEME FOR UNIDIRECTIONAL MOTOR FEEDER : >=45KW & <90KW | DK21 |
| 22 | EP-4-CS-048-022 | SCHEME FOR BI-DIRECTIONAL MOTOR FEEDER | DN1 |
| 23 | EP-4-CS-048-023 | SCHEME FOR CRITICAL MOTOR FEEDER | DK2* |
| 24 | EP-4-CS-048-024 | SCHEME FOR DC OUTGOING FEEDER | X |
| 25 | EP-4-CS-048-025 | SCHEME FOR WINDING HEATING SUPPLY | EA3 |
| 26 | EP-4-CS-048-026 | SCHEME FOR 240V AC SPACE HEATER SUPPLY | SH |
| 27 | EP-4-CS-048-027 | SCHEME FOR BUS VT FOR PMCC | G1 |
| 28 | EP-4-CS-048-028 | SCHEME FOR BUS VT FOR MCC/ACDB | VM |
| 29 | EP-4-CS-048-029 | SCHEME FOR BUS VT FOR DG | G2 |
| 30 | EP-4-CS-048-030 | SCHEME FOR 110V AC CONTROL SUPPLY | CS |
| 31 | EP-4-CS-048-031 | SCHEME FOR DC BUS METERING/ RELAY MODULE | S |
| 32 | EP-4-CS-048-032 | SCHEME FOR ESSENTIAL MOTOR FEEDER BELOW 30KW | DK2E |
| 33 | EP-4-CS-048-033 | SCHEME FOR ESSENTIAL MOTOR FEEDER : >=30KW & <110KW | DK21E |
| 34 | EP-4-CS-048-034 | SCHEME FOR HEATER FEEDER | J1 |
| 35 | EP-4-CS-048-035 | SCHEME FOR TEST SUPPLY MODULE | J2 |
| 36 | EP-4-CS-048-036 | SCHEME FOR 240V AC ESSENTIAL SUPPLY MODULE | HTRT |
| 37 | EP-4-CS-048-037 | SCHEME FOR INCOMER-A TO MCC CONTROLLED FROM DDCMIS ONLY | DAE-IC |
| 38 | EP-4-CS-048-038 | SCHEME FOR INCOMER-B TO MCC CONTROLLED FROM DDCMIS ONLY | DAE-IC |
| 39 | EP-4-CS-048-039 | SCHEME FOR BUSCOUPLER TO MCC CONTROLLED FROM DDCMIS ONLY | DAE-BC |

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1 2 3 4 5 6 7 8

CUSTOMER:



TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:

1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

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


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DRG. NO. EP-4-CS-048-001

| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|-------------------------------------|--------|--------|
| 1 | 415V UNIT BOILER SERVICE PMCC | 10B | 4000A |
| 2 | 415V UNIT TURBINE SERVICE PMCC | 10A | 3000A |
| 3 | 415V STATION SERVICE PMCC | 00A | 4000A |
| 4 | 415V STATION EMERGENCY SERVICE PMCC | 00B | 4000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-001 | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|---|----------|---|-------------------|--------------------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH |  | 13.04.16 |  | | | 10 | 01 |
| 2 | | | | | DRAWN | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH |  | 13.04.16 | | | | | |
| 4 | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS

NO. OF SHEETS: 10
SHEET NO.: 01
REV. NO.: 00

DRG. NO. EP-4-CS-048-001

** - AS PER RATING
OF THE SWITCHBOARD

CT21-23
RATIO : **/1A
BURDEN:15VA
CLASS:0.5

03:1A

03:1A

03:1A

03:1A

03:1A

03:1A

03:1A

03:1A

03:1A

03:1A

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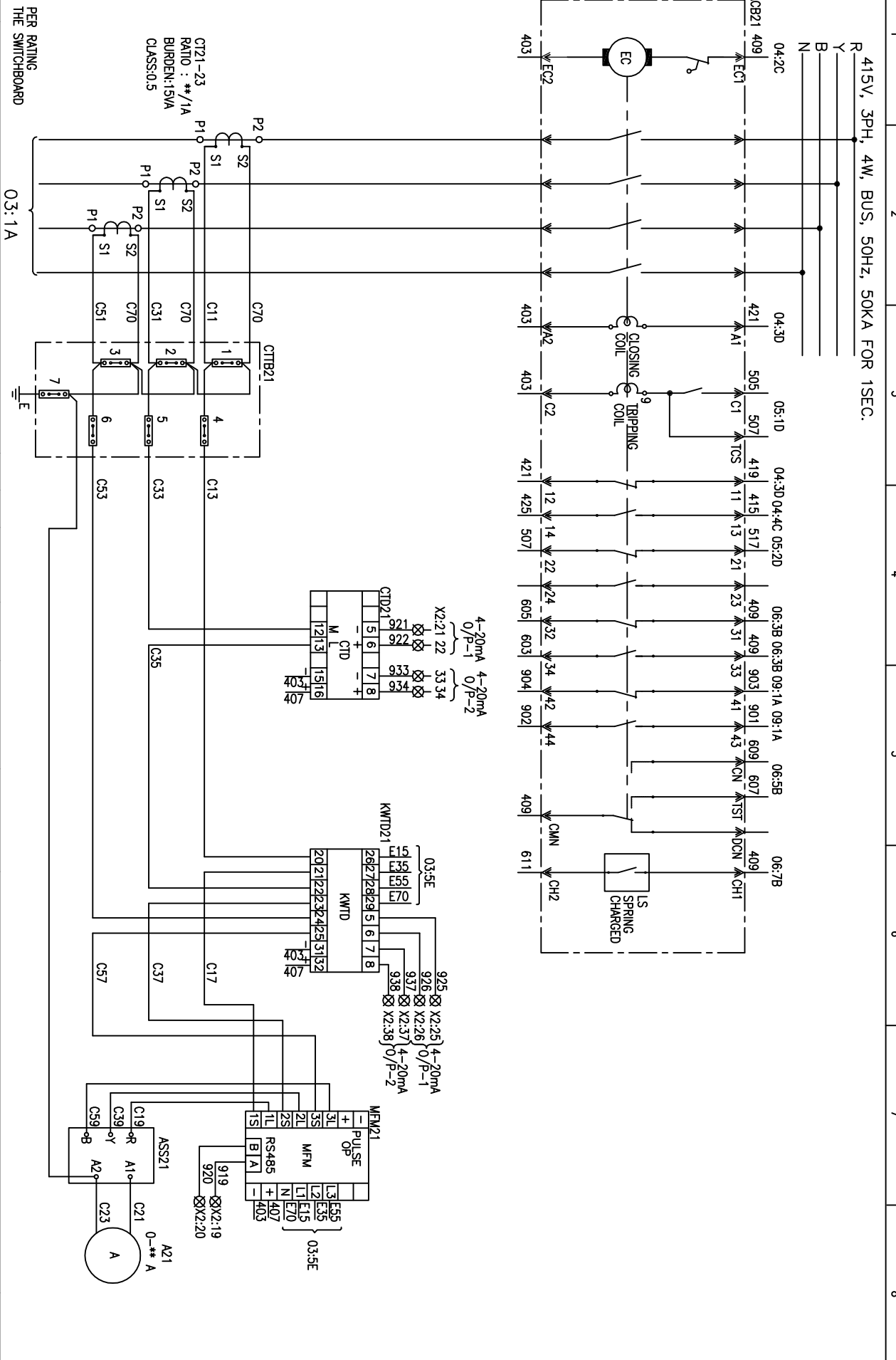
03:1A

03:1A

03:1A

03:1A

03:1A



1 2 3 4 5 6 7 8

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

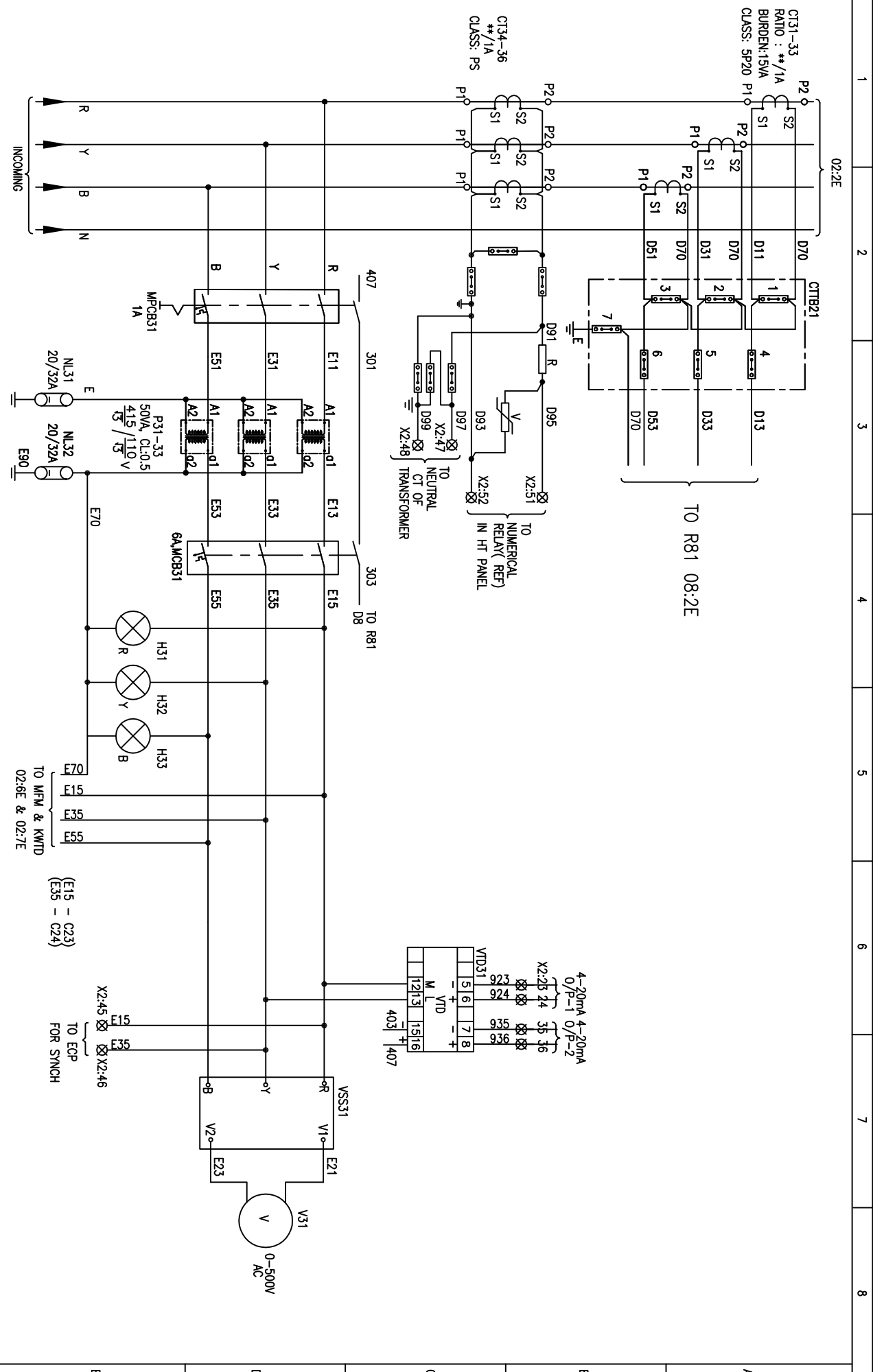
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| REV. NO. | 1 | DESIGNED | JAGADISH | 13.04.16 | MA | CP-14-048 | EP-4-CS-048-001 | 10 | 02 |
| DATE | 2 | DRAWN | JAGADISH | 13.04.16 | | | | | |
| DESCRIPTION | 3 | CHECKED | JAGADISH | 13.04.16 | | | | | |
| BY | 4 | APPD. | KSB | 13.04.16 | | | | | |
| APPROVED | 5 | APPROVED | | | | | | | |
| | 6 | | | | | | | | |
| | 7 | | | | | | | | |
| | 8 | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERELAINS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS



DRG. NO. EP-4-CS-048-001

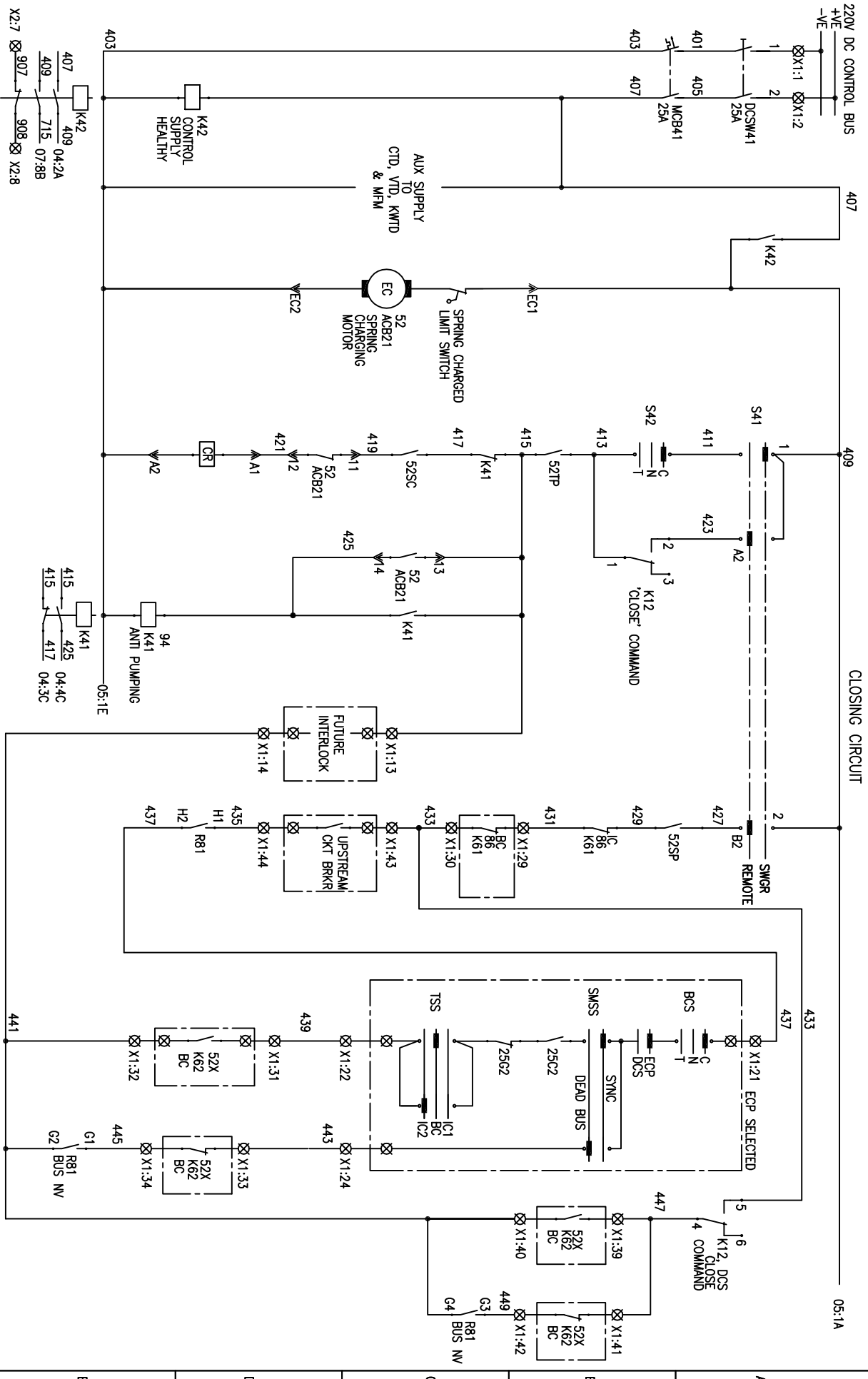


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

| | | | | | | | | | | | | | | | | | | | |
|---------------|---|---|---|---|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|---|-----------------|---------------|-----------|------|
| INVENTORY NO. | 4 | 3 | 2 | 1 | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
| | | | | | | | | | | | JAGADISH | | 13.04.16 | NA | CP-14-048 | EP-4-CS-048-001 | 10 | 03 | 00 |
| | | | | | | | | | | | | | | | <p>BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTIANS DIVISION BANGALORE</p> <p>TITLE : POWER & CONTROL SCHEME INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS</p> | | | | |

DRG. NO. EP-4-CS-048-001



FIRST ANGLE PROJECTION

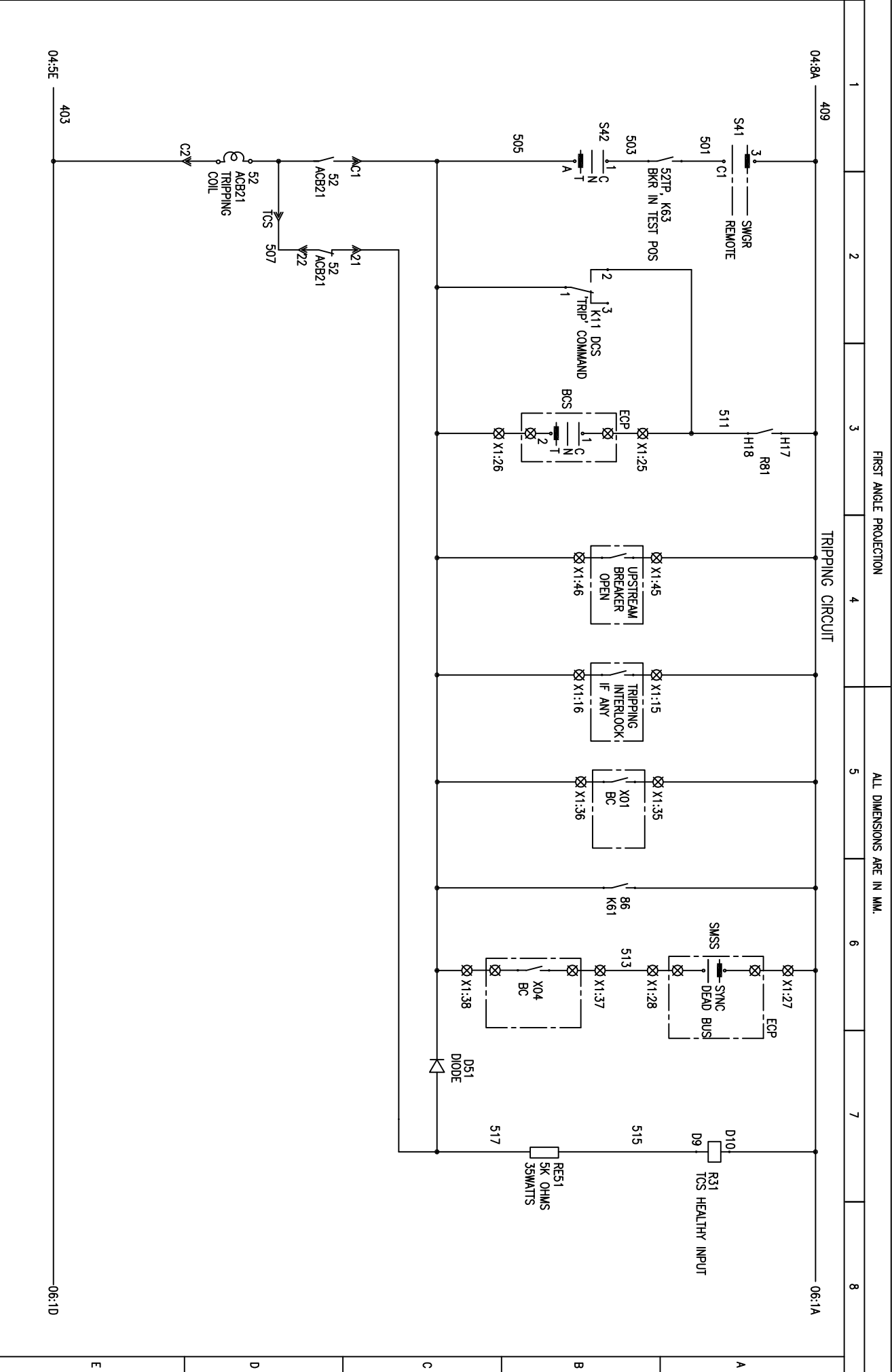
ALL DIMENSIONS ARE IN MM

CLOSING CIRCUIT

| | | | | | | | | | | |
|---------------|---|----------|-------|----------|-------|---|------------------------|-----------------|---------------|-------|
| INVENTORY NO. | 4 | NAME | SIGN. | DATE | SCALE | TITLE | JOB NO. | DRG. NO. | NO. OF SHEETS | REV. |
| REV. NO. | 1 | DESIGNED | | 13.04.16 | MA | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTIANS DIVISION BANGALORE | CP-14-048 | EP-4-CS-048-001 | 10 | 04 |
| DATE | 2 | DRAWN | | 13.04.16 | | | POWER & CONTROL SCHEME | | | SHEET |
| DESCRIPTION | 3 | CHECKED | | 13.04.16 | | INCOMER-A TO SWBD CONTROLLED FROM EOP AS WELL AS DDCMS | | | 04 | 00 |
| BY | 4 | JAGADISH | | 13.04.16 | | | | | | |
| APPD. | | KSB | | | | | | | | |
| APPROVED | | | | | | | | | | |

DRG. NO. EP-4-CS-048-001

FORM 66-271 A3



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | NA | CP-14-048 | EP-4-CS-048-001 | 10 | 05 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS



NO. OF SHEETS: 10
SHEET NO.: 05

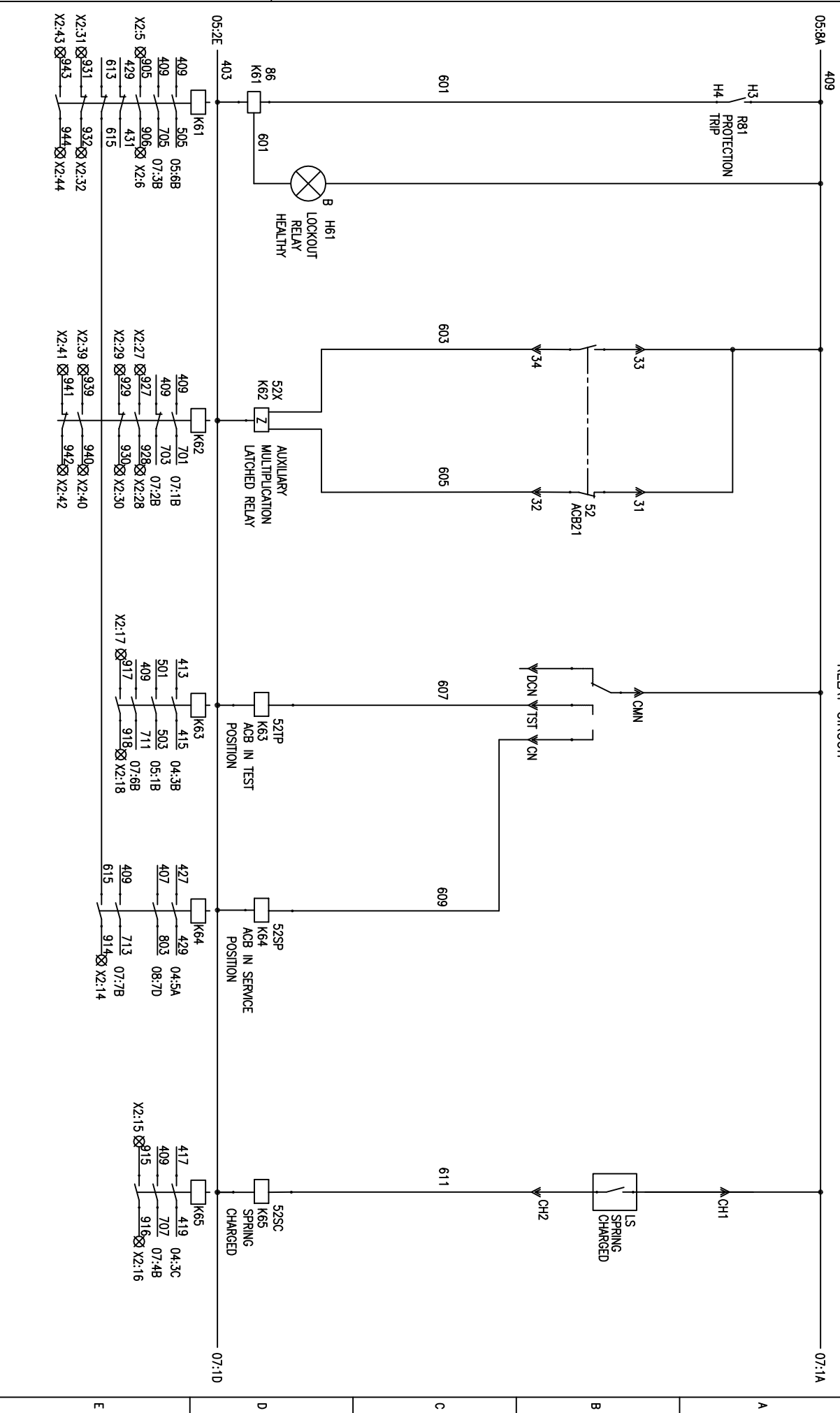
REV. NO.: 00

DRG. NO. EP-4-CS-048-001

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

RELAY CIRCUIT



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-001 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 06 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIVES DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS

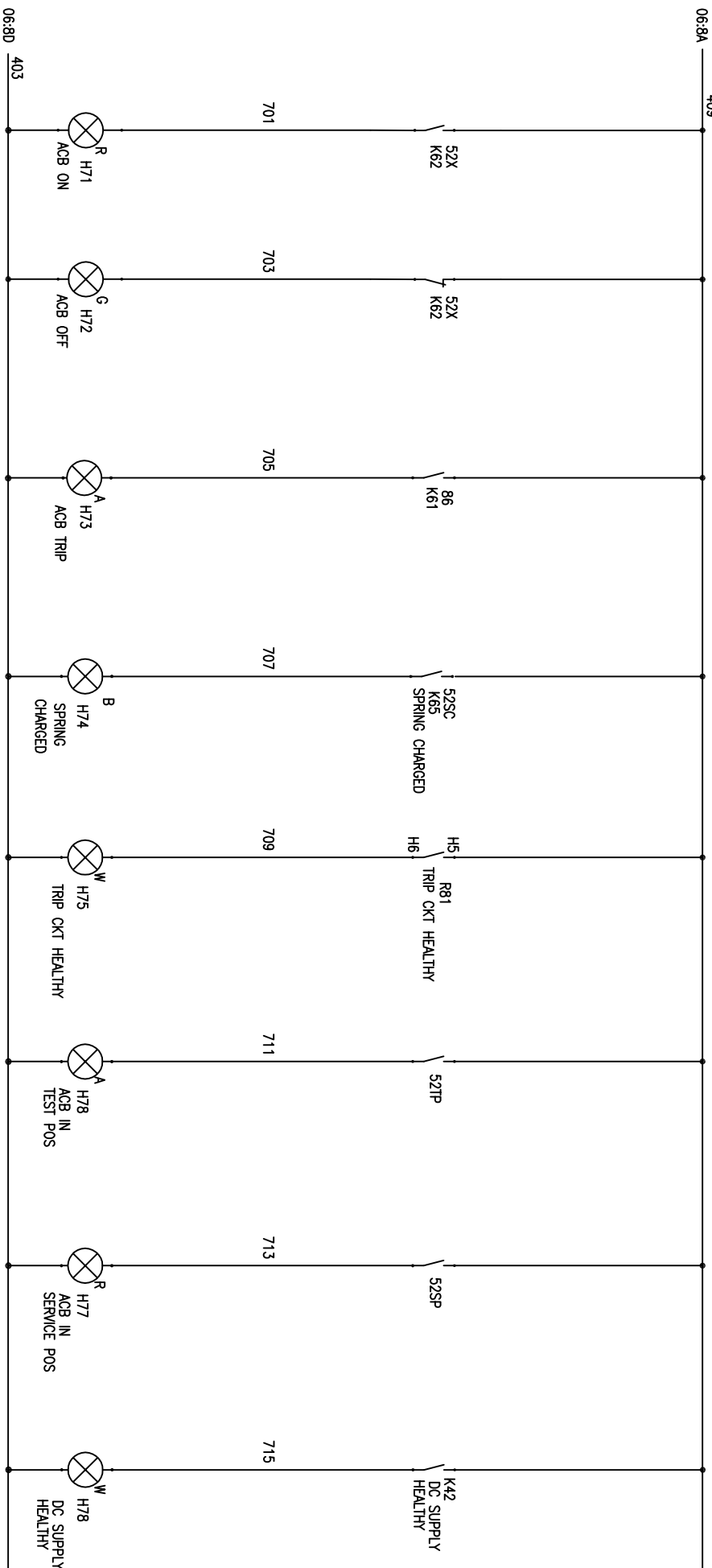


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1 2 3 4 5 6 7 8

INDICATION CIRCUIT



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DRG. NO. EP-4-CS-048-001


INVENTORY NO.

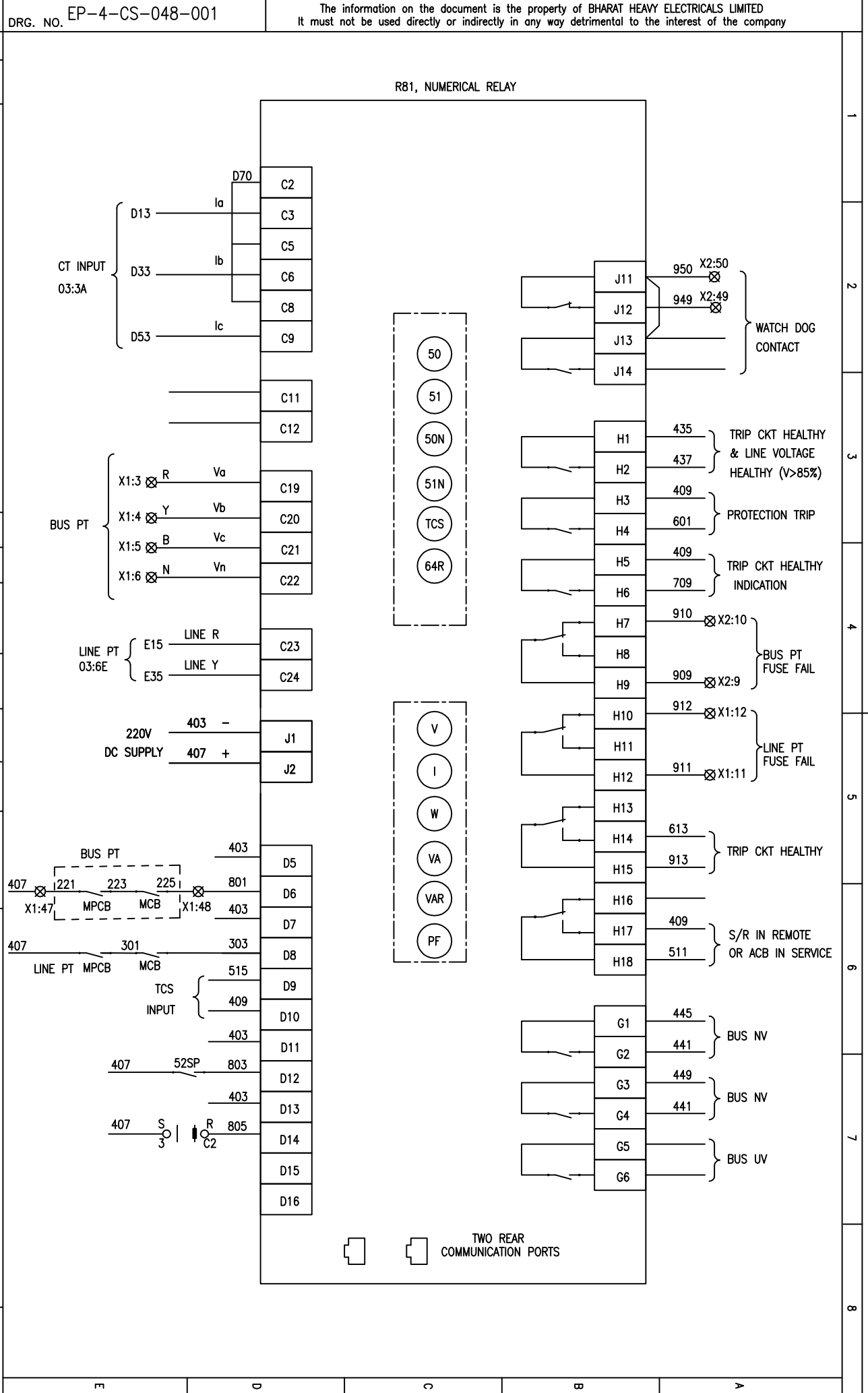
| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-001 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 07 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWER DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

| | | | |
|--------------------------|---|--------------------------|----------|
| INVENTORY NO. | | DRG. NO. EP-4-CS-048-001 | |
| REV. NO. | DATE | DESCRIPTION | BY |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| APPD. | CHECKED | DESIGNED | NAME |
| | | | JAGADISH |
| APPROVED | | DRAWN | SIGN. |
| | | | |
| KSB | JAGADISH | DATE | 13.04.16 |
| SCALE: NA |  | | |
| JOB NO. CP-14-048 | TITLE: POWER & CONTROL SCHEME INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS | | |
| DRG. NO. EP-4-CS-048-001 | NO. OF SHEETS: 10 SHEET NO.: 08 REV. NO.: 00 | | |



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

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E D C B A

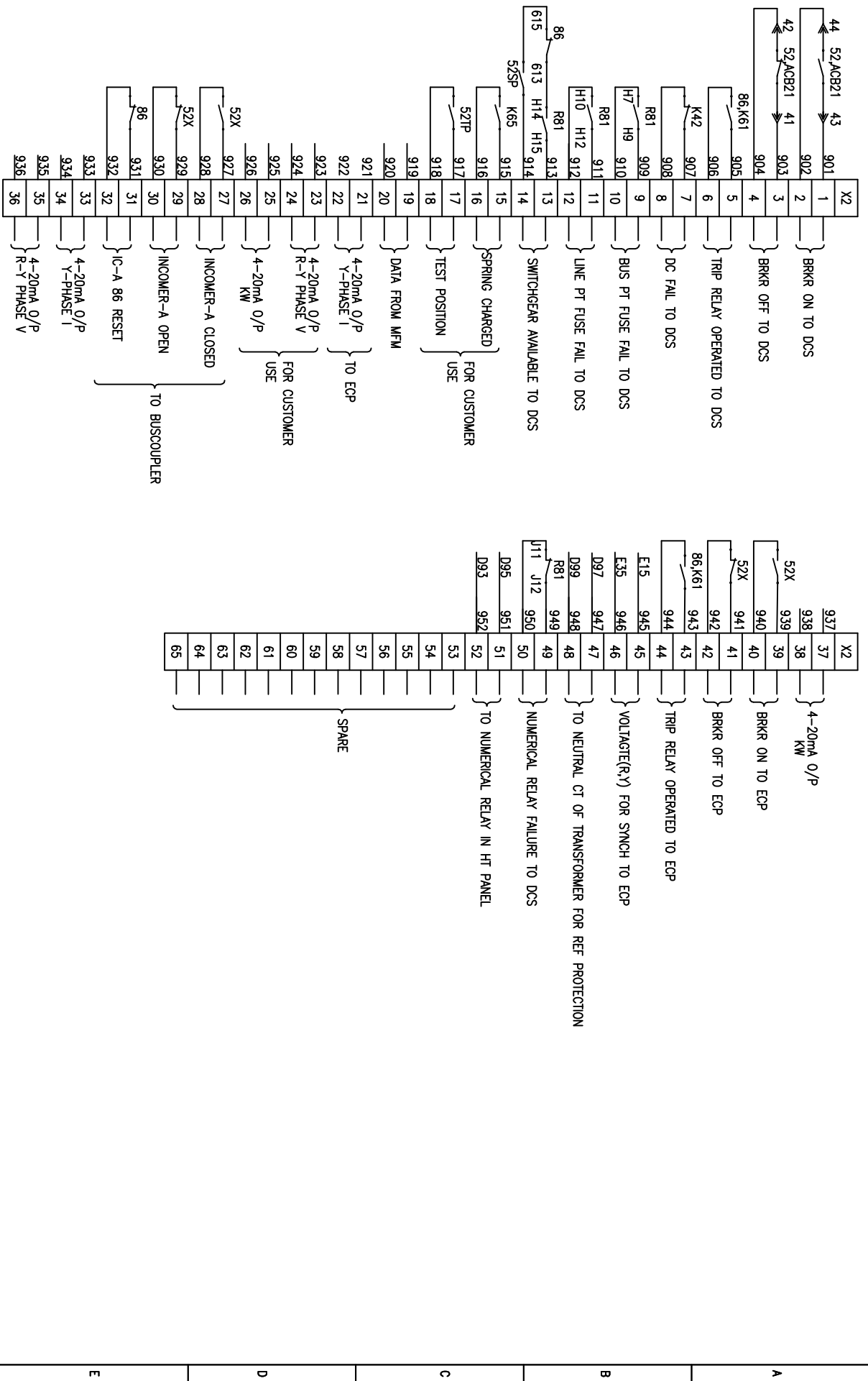
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DRG. NO. EP-4-CS-048-001

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM



| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-001 | NO. OF SHEETS | SHEET NO. | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 4 | | | | | | | | | | | | | 10 | 09 | 00 |
| 3 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 2 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
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BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE

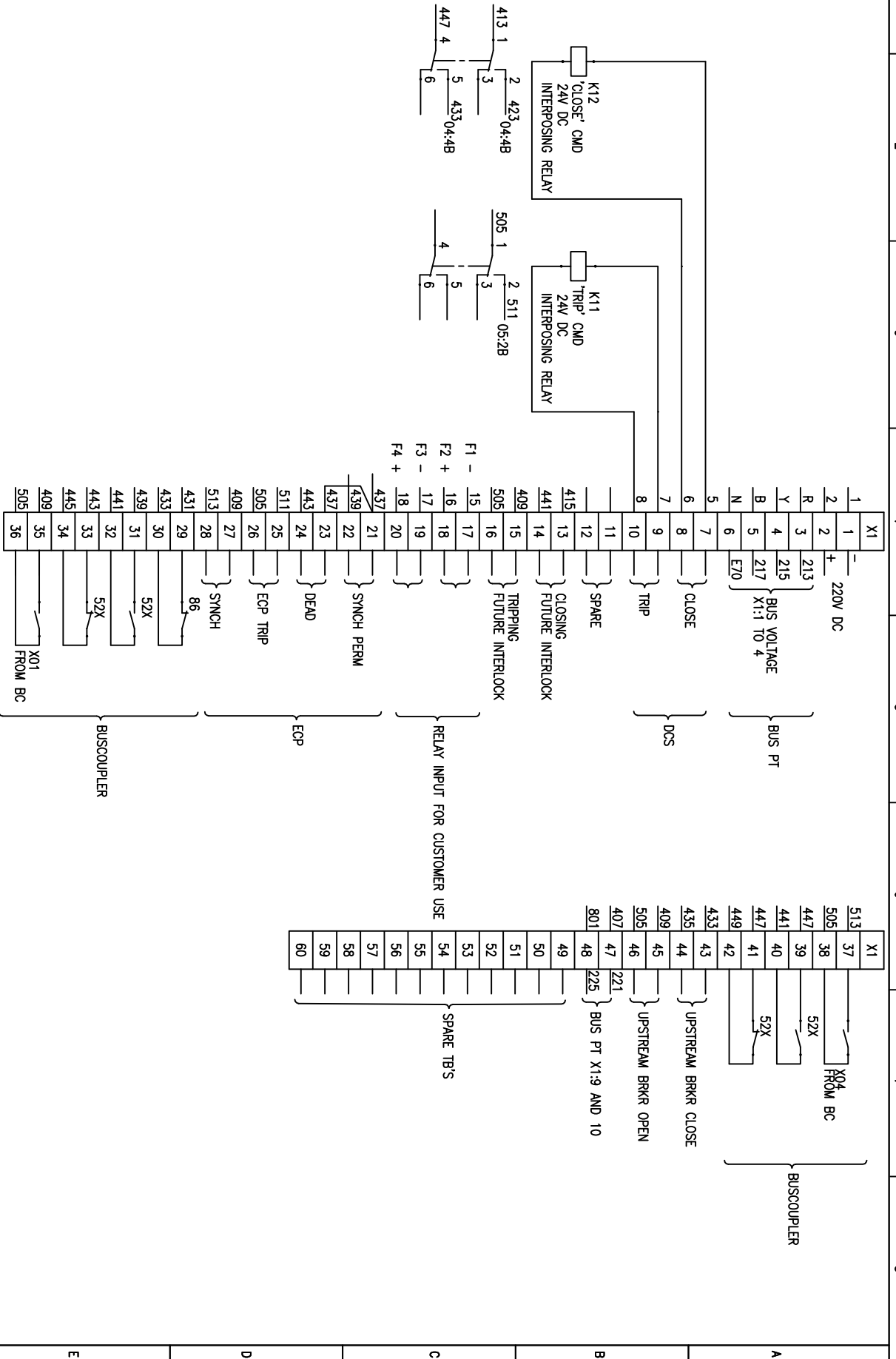
TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS



NO. OF SHEETS: 10
SHEET NO.: 09

REV. NO.: 00

DRG. NO. EP-4-CS-048-001



1 FIRST ANGLE PROJECTION 2 3 4 5 ALL DIMENSIONS ARE IN MM. 6 7 8

| | | | | | | | | | |
|---------------|---|----------|----------|----------|-----------|-------------------|---|--|--------------------------------------|
| INVENTORY NO. | 4 | NAME | | DATE | | | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTIANS DIVISION BANGALORE | TITLE : POWER & CONTROL SCHEME INCOMER-A TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS | NO. OF SHEETS : 10 SHEET NO. : 10 |
| REV. NO. | 1 | DESIGNED | JAGADISH | 13.04.16 | | | | | |
| DATE | 2 | DRAWN | | | | | | | |
| DESCRIPTION | 3 | CHECKED | JAGADISH | 13.04.16 | | | | | |
| BY | | APPROVED | KSB | 13.04.16 | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-001 | REV. NO. 00 | |

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1 2 3 4 5 6 7 8

CUSTOMER:



TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:
1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

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DRG. NO. EP-4-CS-048-002

| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|-------------------------------------|--------|--------|
| 1 | 415V UNIT BOILER SERVICE PMCC | 10B | 4000A |
| 2 | 415V UNIT TURBINE SERVICE PMCC | 10A | 3000A |
| 3 | 415V STATION SERVICE PMCC | 00A | 4000A |
| 4 | 415V STATION EMERGENCY SERVICE PMCC | 00B | 4000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-002 | NO. OF SHEETS | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|------|
| 4 | | | | | | | | | | | | | 10 | 00 |
| 3 | | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | 01 | |
| 2 | | | | | | DRAWN | | | | | | | | |
| 1 | | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROFORCELANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS

DRG. NO. EP-4-CS-048-002

FORM 66-271 A3

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

** - AS PER RATING
OF THE SWITCHBOARD

03:1A

CTB21

C35

C33

C37

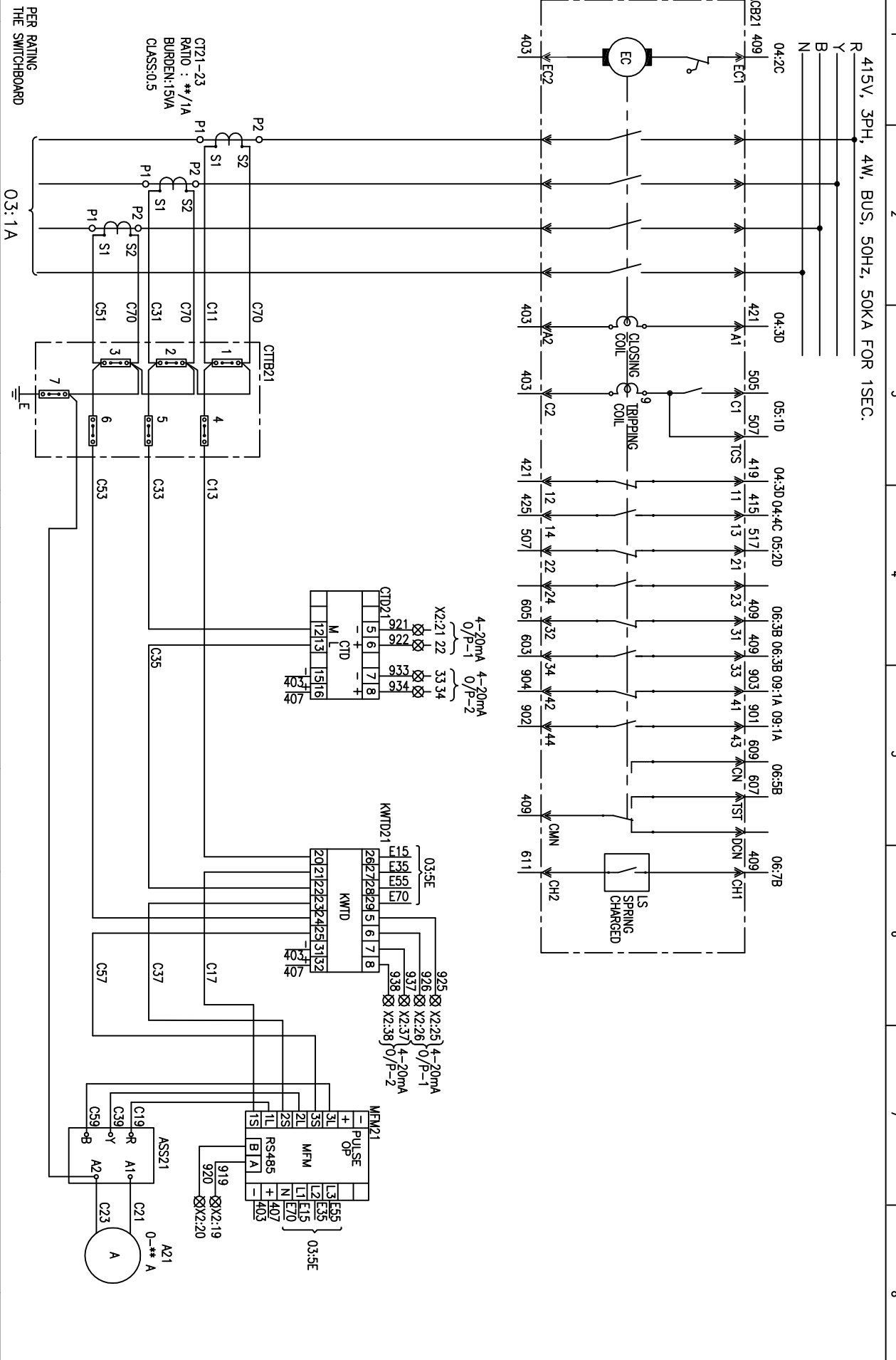
C17

C57

C21

C23

A



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-----------|-----------|-----------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | 1:3.04.16 | CP-14-048 | EP-4-CS-048-002 | 10 | 02 | |
| 2 | | | | | DRAWN | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | 13.04.16 | | | | | |
| 4 | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERELANS DIVISION BANGALORE

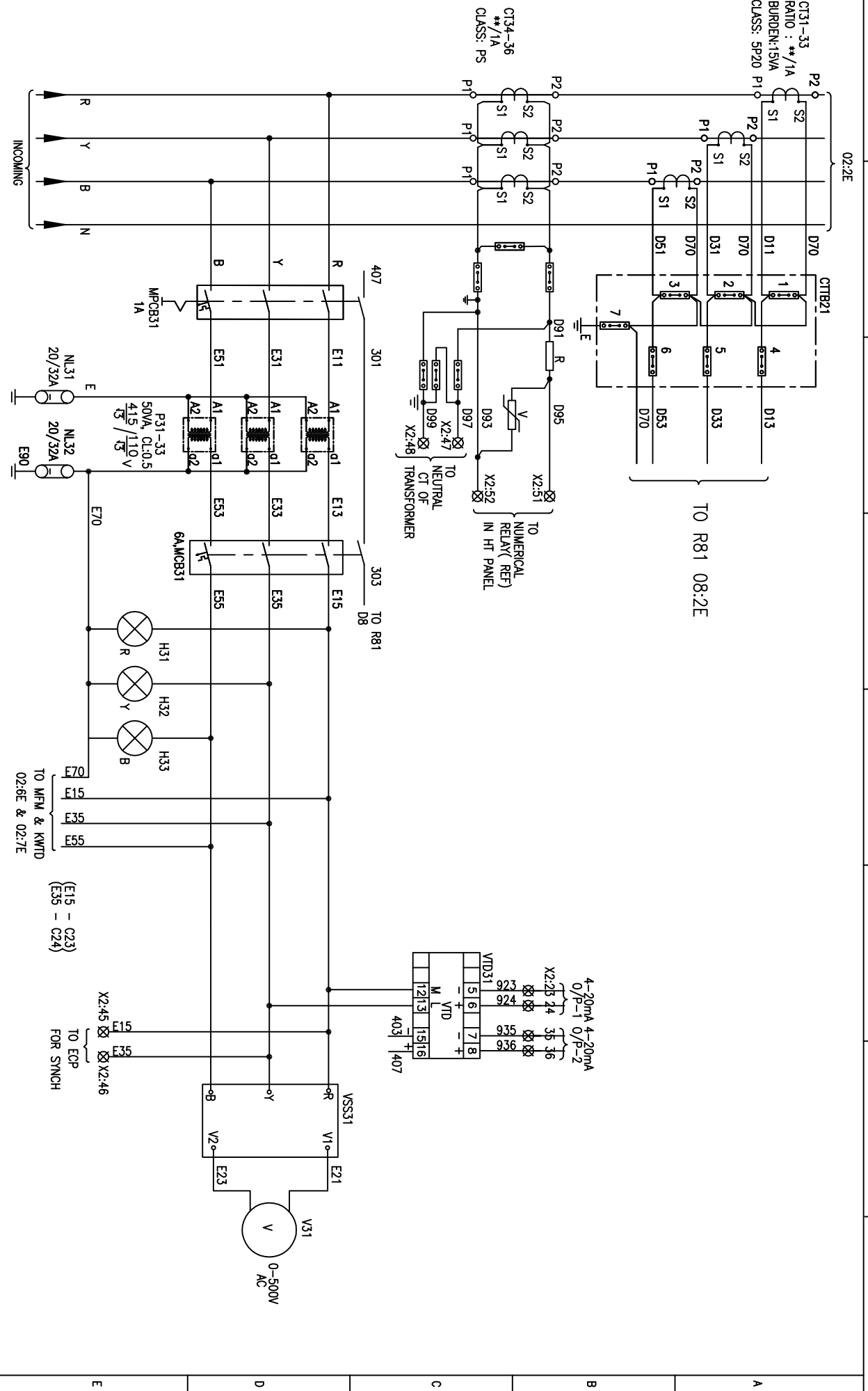
TITLE : POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS



NO. OF SHEETS: 10
SHEET NO.: 02

REV. NO.: 00

DRG. NO. EP-4-CS-048-002



1 2 3 4 5 6 7 8

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|-----------|------|
| 1 | | | | | | JAGADISH | | 13.04.16 | NA | CP-14-048 | EP-4-CS-048-002 | 10 | 03 | 00 |
| 2 | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | | JAGADISH | | 13.04.16 | | | | | | |
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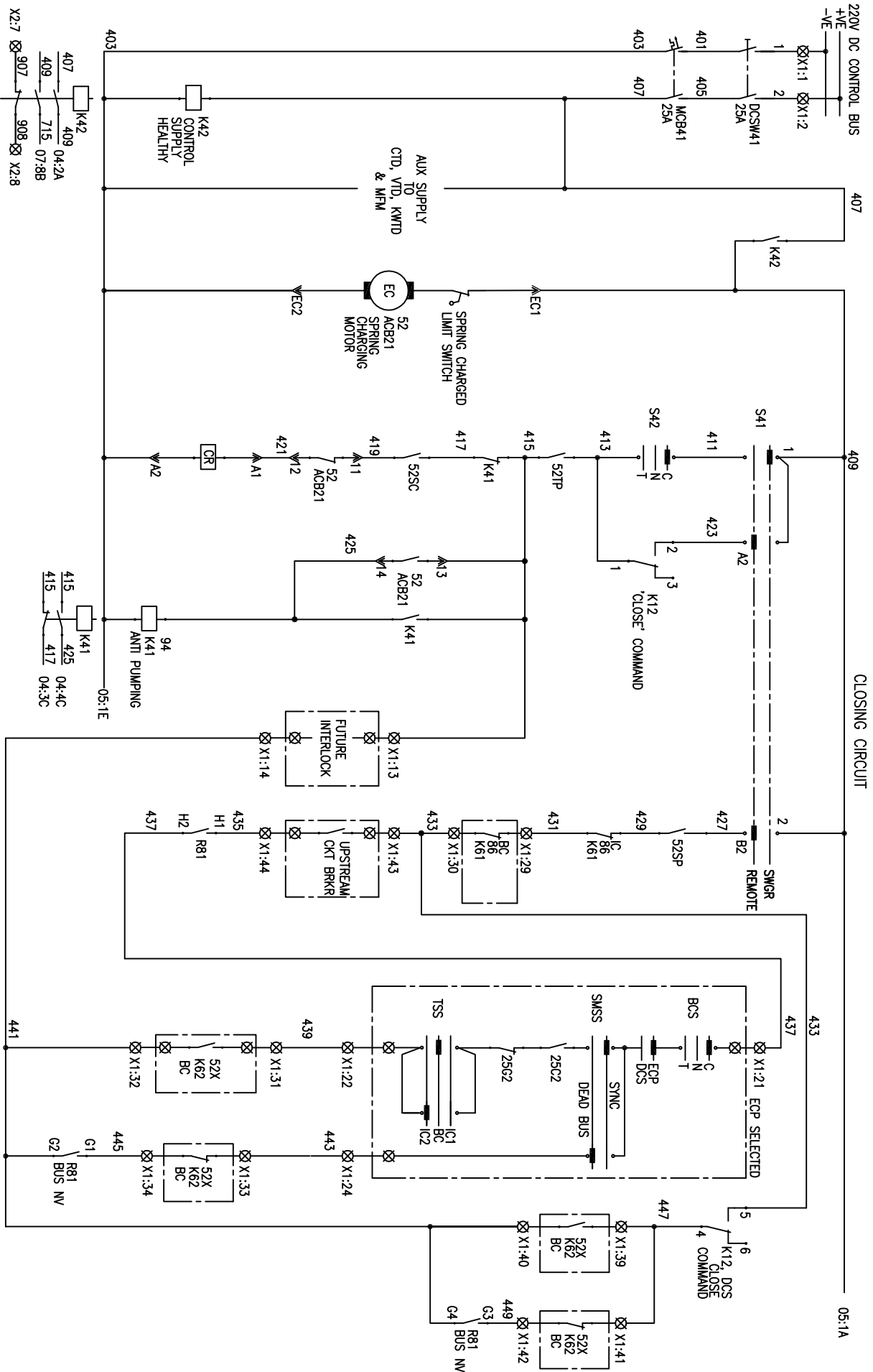
BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE



TITLE : POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

NO. OF SHEETS: 10
SHEET: 03
REV: 00

DRG. NO. EP-4-CS-048-002



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

CLOSING CIRCUIT

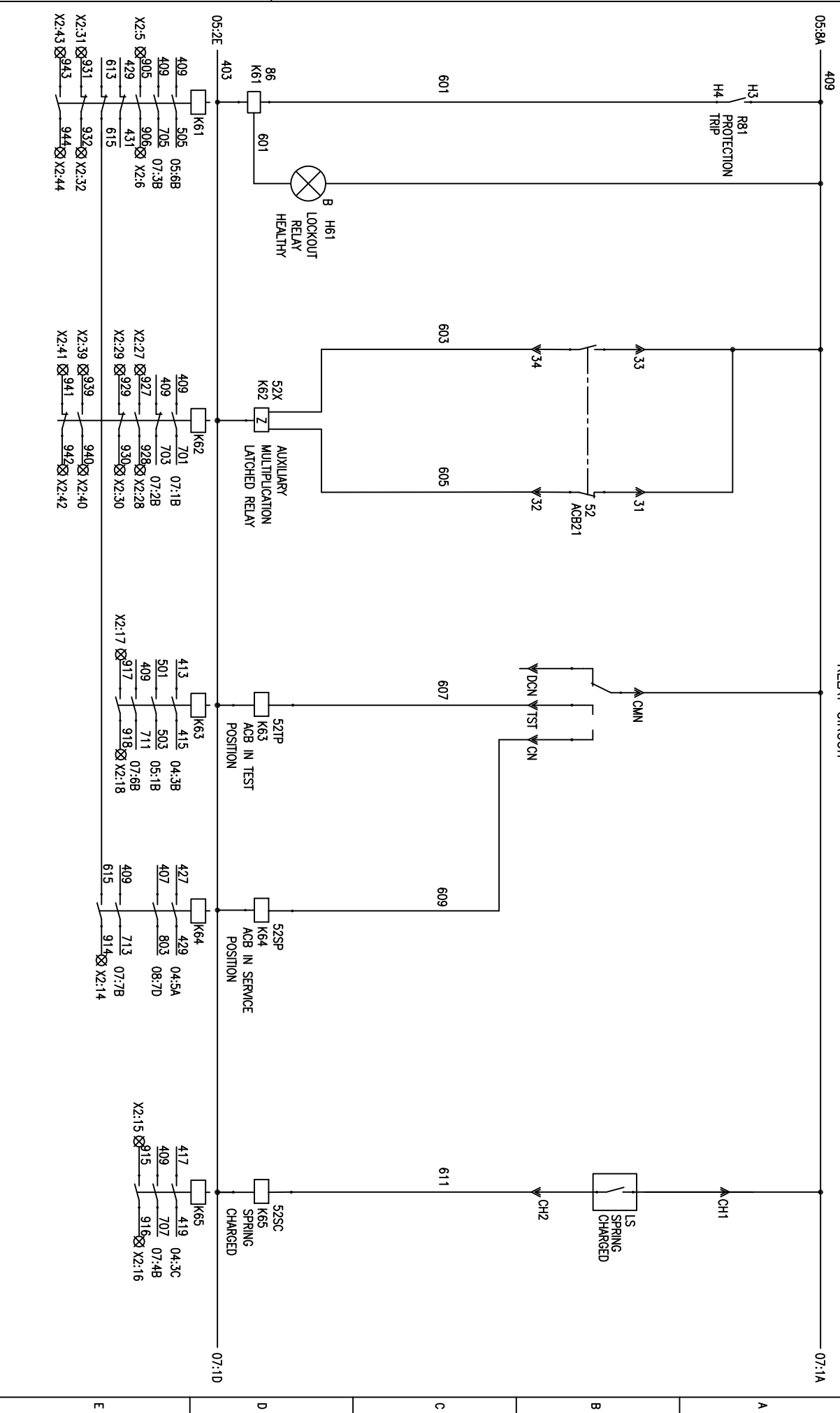
| | | | | | | | |
|----------------------------------|---|---------------------------------------|-------|---|-------|---------------|-----------------|
| INVENTORY NO. | 4 | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. |
| REV. NO. | 1 | DESIGNED | | 13.04.16 | NA | CP-14-048 | EP-4-CS-048-002 |
| DATE | | DRAWN | | 13.04.16 | | | |
| DESCRIPTION | | CHECKED | | 13.04.16 | | | |
| BY | | JAGADISH | | | | | |
| APPD. | | KSB | | | | | |
| APPROVED | | | | | | | |
| BHARAT HEAVY ELECTRICALS LIMITED | | ELECTROPROTECTIANS DIVISION BANGALORE | | TITLE : | | NO. OF SHEETS | |
| | | | | POWER & CONTROL SCHEME | | 10 | |
| | | | | INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS | | SHEET: 04 | |
| | | | | | | REV. NO. 00 | |

DRG. NO. EP-4-CS-048-002

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

RELAY CIRCUIT



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-002 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 06 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIVES DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

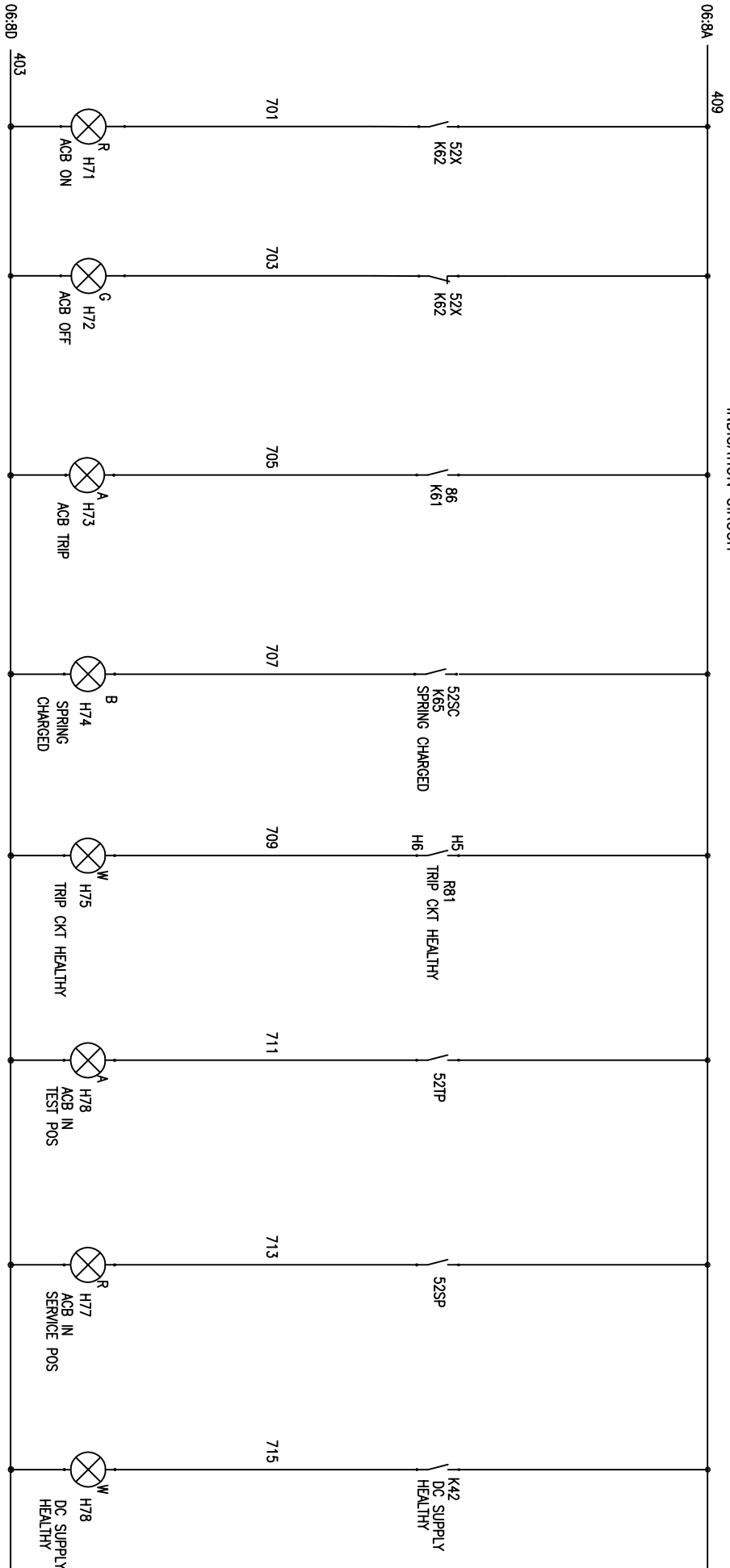


DRG. NO. EP-4-CS-048-002

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

INDICATION CIRCUIT



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-002 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 07 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |


BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE



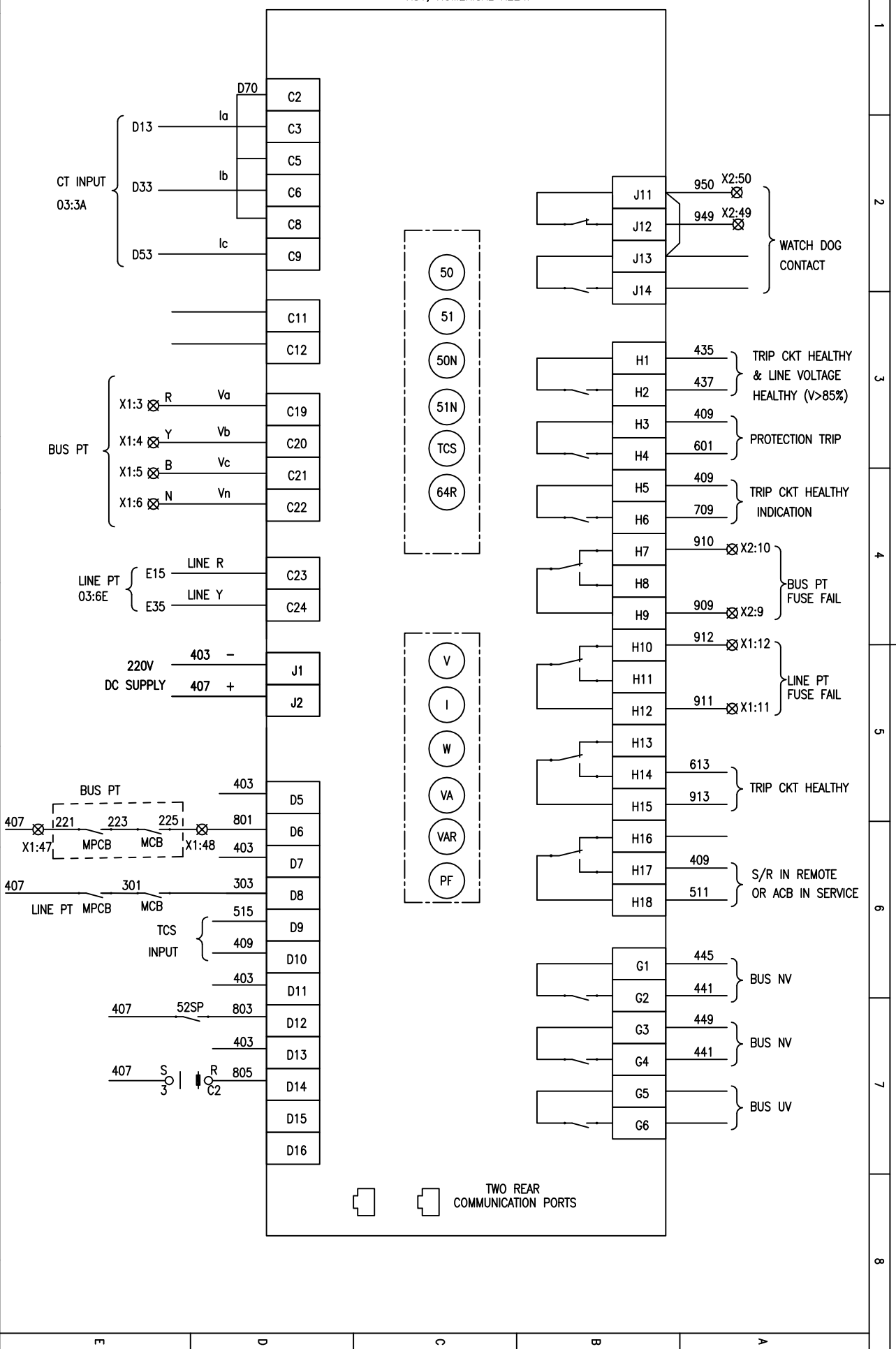
TITLE : **POWER & CONTROL SCHEME**
INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

INVENTORY NO.

DRG. NO. EP-4-CS-048-002

| | | | | |
|--------------------------|---|-------|----------|---|
| REV. NO. | 1 | 2 | 3 | 4 |
| DATE | | | | |
| DESCRIPTION | | | | |
| BY | | | | |
| APPD. | | | | |
| APPROVED | CHECKED | DRAWN | DESIGNED | |
| KSB | JAGADISH | | JAGADISH | |
| 13.04.16 | 13.04.16 | | 13.04.16 | |
| SCALE: NA |  | | | |
| JOB NO. CP-14-048 | TITLE: POWER & CONTROL SCHEME INCOMER-B TO SWDB CONTROLLED FROM ECP AS WELL AS DDCMIS | | | |
| DRG. NO. EP-4-CS-048-002 | NO. OF SHEETS: 10 SHEET NO.: 08 REV. NO.: 00 | | | |

R81, NUMERICAL RELAY

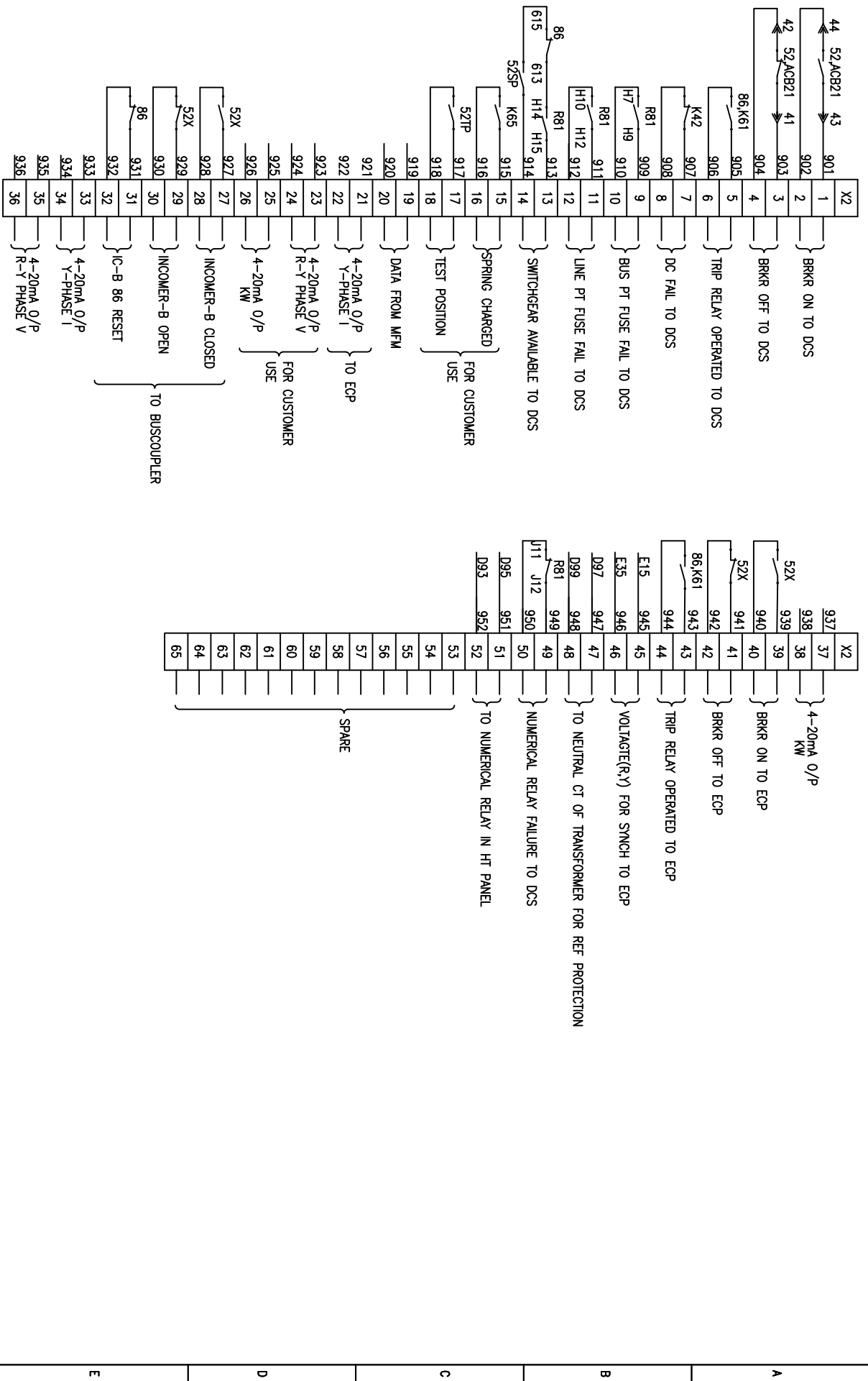


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

TWO REAR COMMUNICATION PORTS

DRG. NO. EP-4-CS-048-002



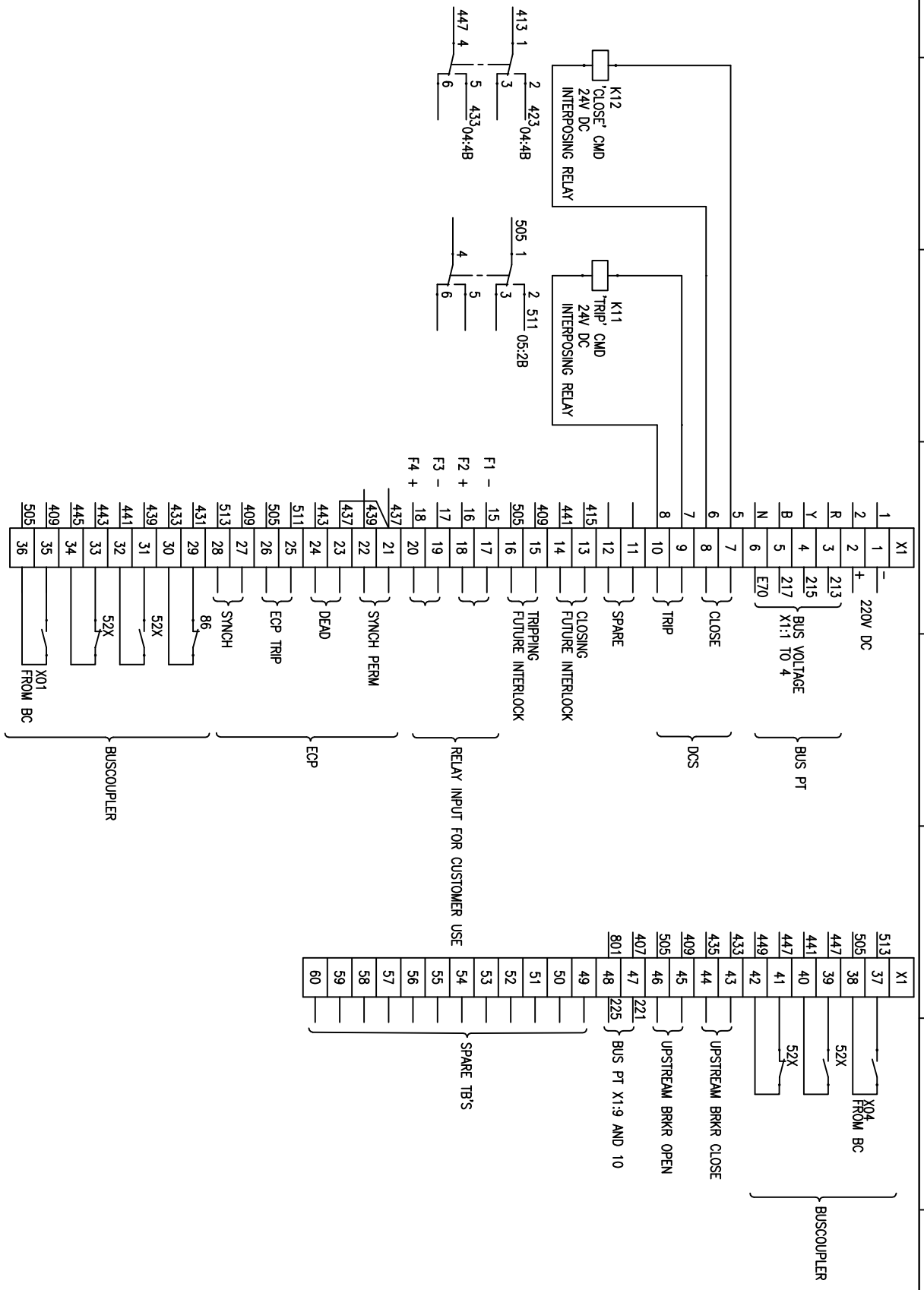
FIRST ANGLE PROJECTION
ALL DIMENSIONS ARE IN MM

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-002 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 09 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS



1 2 3 4 5 6 7 8

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| | | | | | | | | | | | | | |
|---------------|------|--------------------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|-------------------|-------------------|
| INVENTORY NO. | | DRG. NO. EP-4-CS-048-002 | | | | | | | | | | | |
| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-002 | NO. OF SHEETS: 10 | NO. OF SHEETS: 10 |
| 1 | | | | | | JAGADISH | | 13.04.16 | | | | | |
| 2 | | | | | | JAGADISH | | 13.04.16 | | | | | |
| 3 | | | | | | JAGADISH | | 13.04.16 | | | | | |
| 4 | | | | | | JAGADISH | | 13.04.16 | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMIS



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1

2

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CUSTOMER:



TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:

1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

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
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DRG. NO. EP-4-CS-048-003

| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|-------------------------------------|--------|--------|
| 1 | 415V UNIT BOILER SERVICE PMCC | 10B | 4000A |
| 2 | 415V UNIT TURBINE SERVICE PMCC | 10A | 3000A |
| 3 | 415V STATION SERVICE PMCC | 00A | 4000A |
| 4 | 415V STATION EMERGENCY SERVICE PMCC | 00B | 4000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-003 | NO. OF SHEETS | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|---|----------|-----------|-------------------|--------------------------|---------------|------|
| 4 | | | | | | | | | | | | | 11 | 00 |
| 3 | | | | | | DESIGNED | JAGADISH |  | 13.04.16 | | | | 11 | |
| 2 | | | | | | DRAWN | | | | | | | 01 | |
| 1 | | | | | | CHECKED | JAGADISH |  | 13.04.16 | | | | 01 | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROFORCELANS DIVISION BANGALORE

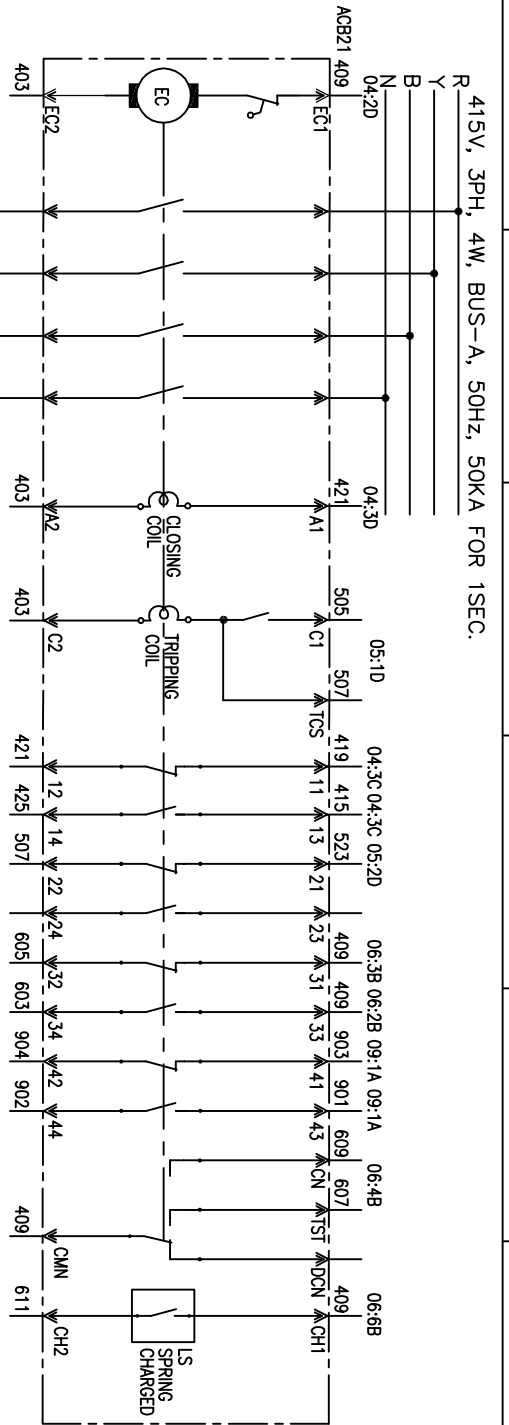
TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM EGP AS WELL AS DDCMS



DRG. NO. EP-4-CS-048-003

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



03:1E

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-003 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 11 | 02 | |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |



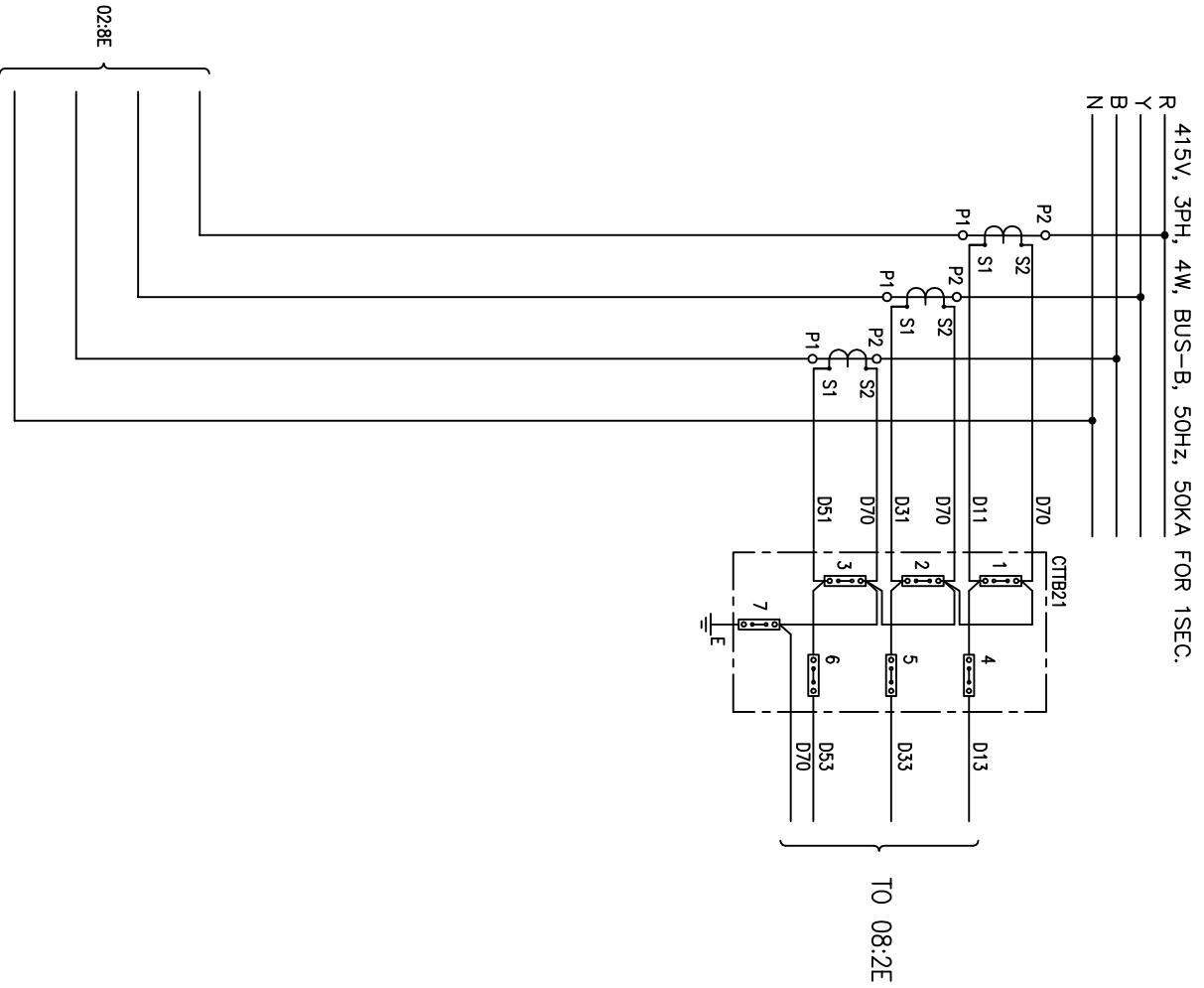
BHARAT HEAVY ELECTRICALS LIMITED
ELECTROFORCELANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

DRG. NO. EP-4-CS-048-003

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



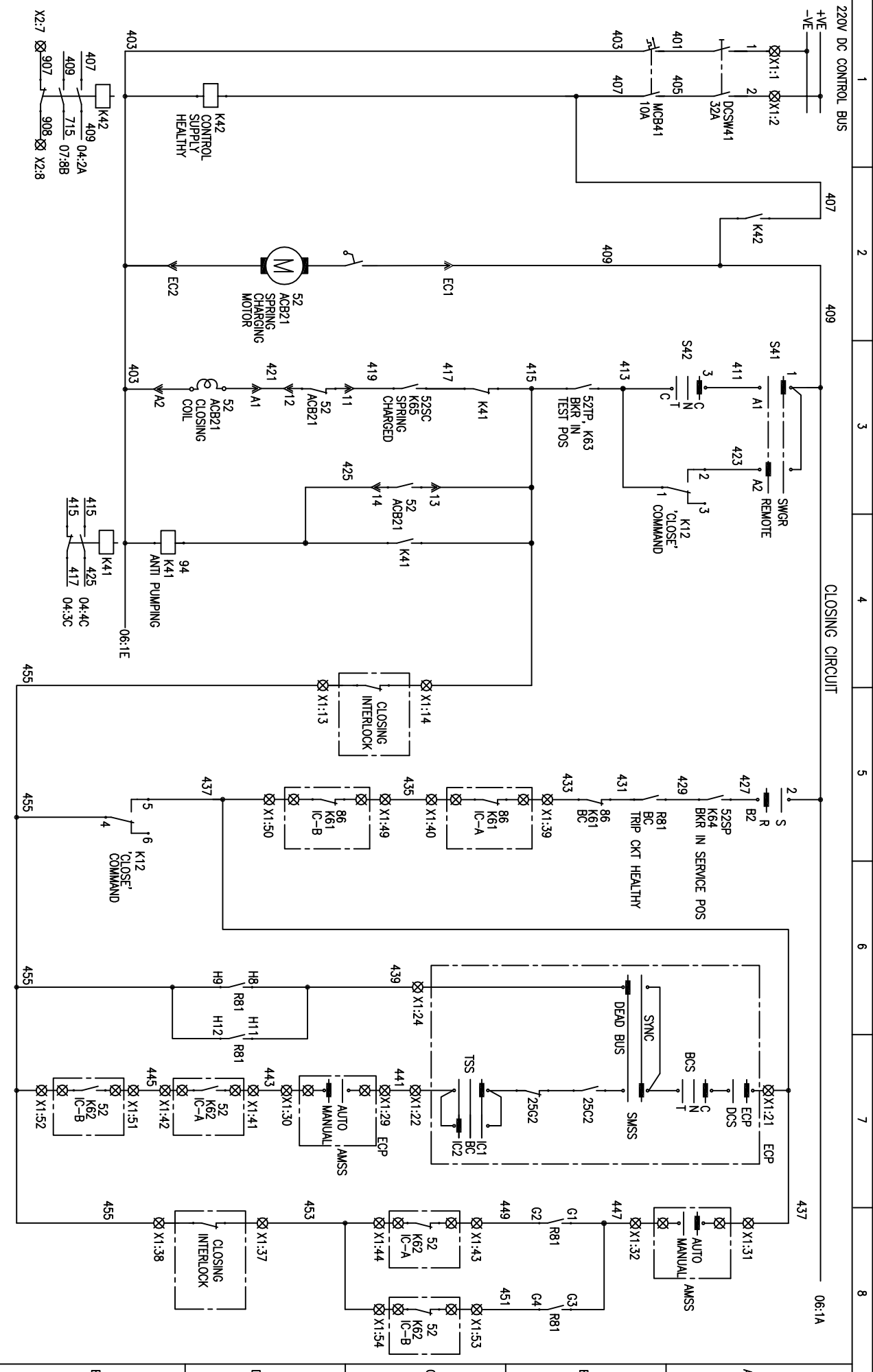
| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-003 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 11 | 03 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROFORCELANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

DRG. NO. EP-4-CS-048-003



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

CLOSING CIRCUIT

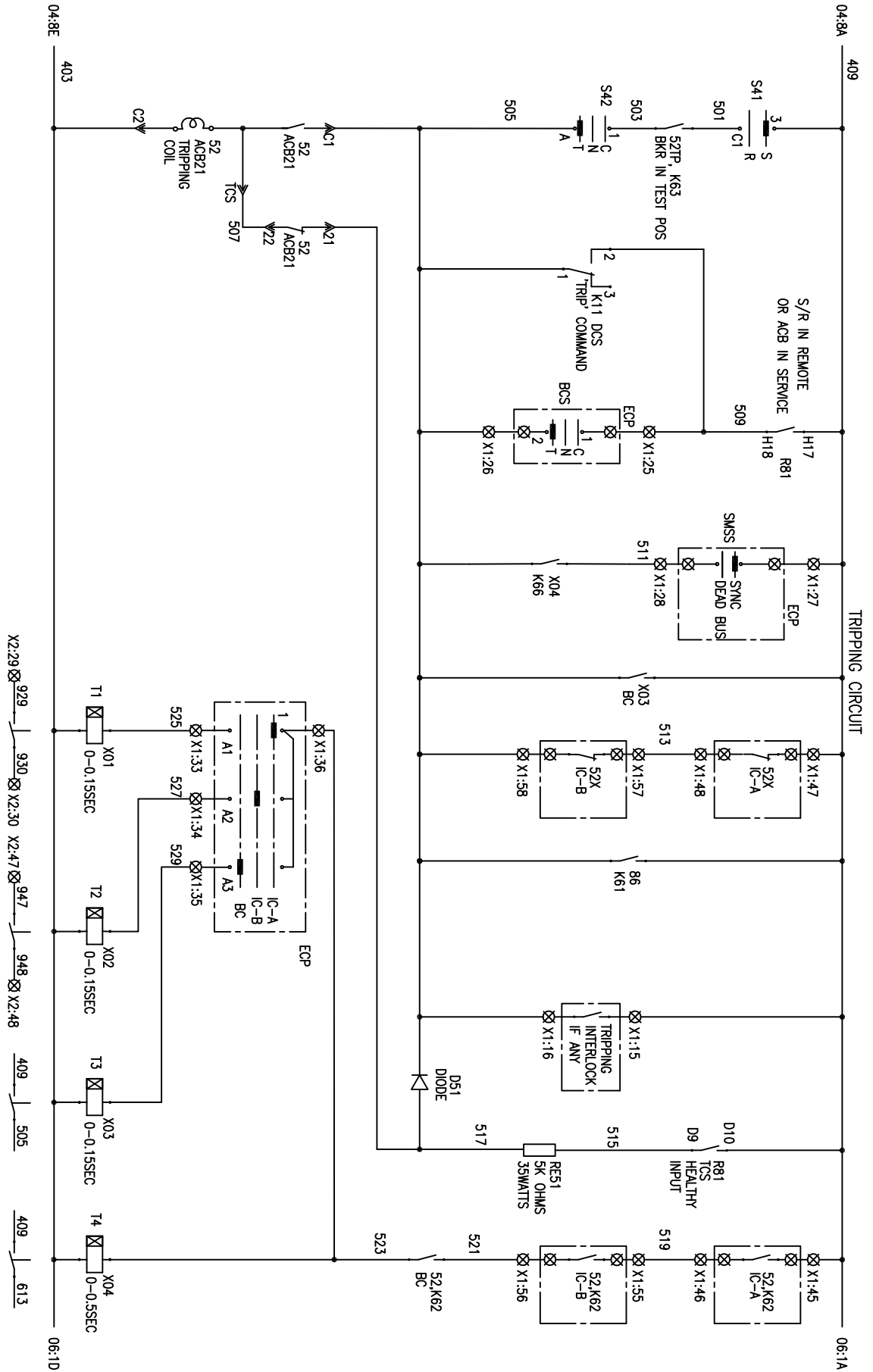
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|---------------|---|-------------|----------|-------|--|----------|--|---------|----|---|------------------------|----------|-----------------|
| INVENTORY NO. | 4 | NAME | | SIGN. | | DATE | | SCALE | NA | JOB NO. | CP-14-048 | DRG. NO. | EP-4-CS-048-003 |
| REV. NO. | 1 | DESCRIPTION | | BY | | APPD. | | CHECKED | | NAME | JAGADISH | SIGN. | |
| DATE | | | | | | APPROVED | | | | DATE | 13.04.16 | | |
| | 2 | | DESIGNED | | | 13.04.16 | | | | TITLE: | POWER & CONTROL SCHEME | | |
| | 3 | | DRAWN | | | 13.04.16 | | | | BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS | | | |
| | 4 | | CHECKED | | | 13.04.16 | | | | BHARAT HEAVY ELECTRICALS LIMITED | | | |
| | | | | | | | | | | ELECTROPROTECTIANS DIVISION BANGALORE | | | |
| | | | | | | | | | | NO. OF SHEETS: 11 | | | |
| | | | | | | | | | | SHEET: 04 | | | |
| | | | | | | | | | | REV. NO. 00 | | | |

DRG. NO. EP-4-CS-048-003

FORM 66-271 A3

FIRST ANGLE PROJECTION

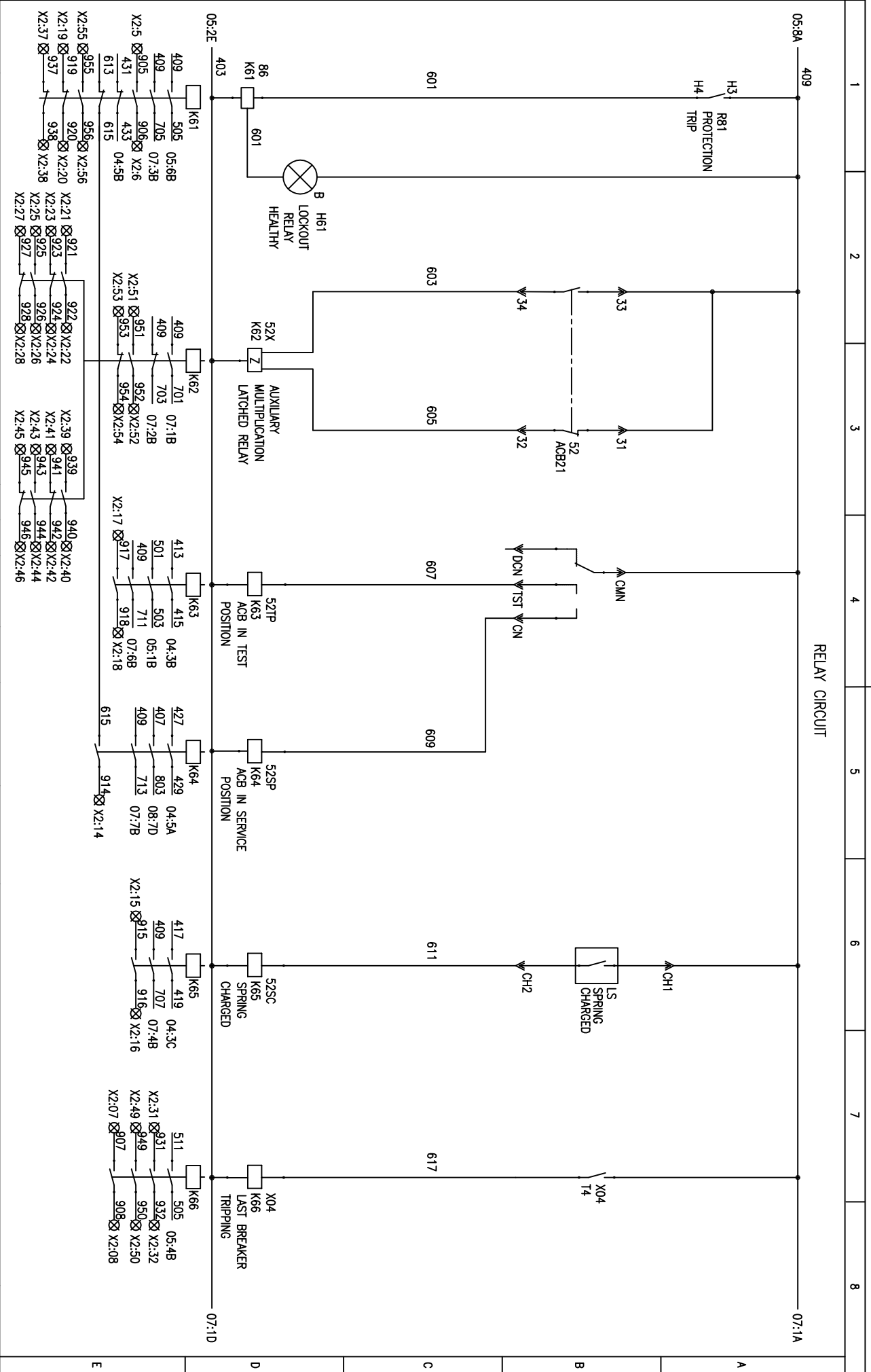
ALL DIMENSIONS ARE IN MM.



| | | | | | | | | | | | | |
|---------------|---|-------------|----------|----------|--|-------|----|---------------|---|----------|-----------------|--|
| INVENTORY NO. | 4 | NAME | | DATE | | SCALE | NA | JOB NO. | CP-14-048 | DRG. NO. | EP-4-CS-048-003 | |
| REV. NO. | 1 | SIGN. | | 13.04.16 | | | | TITLE : | POWER & CONTROL SCHEME BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS | | | |
| DATE | 2 | DESIGNED | JAGADISH | 13.04.16 | | | | NO. OF SHEETS | 11 | | | |
| | 3 | DRAWN | | | | | | SHEET NO. | 05 | | | |
| | 4 | CHECKED | JAGADISH | 13.04.16 | | | | REV. | 00 | | | |
| | | BY | | | | | | | | | | |
| | | APPD. | | | | | | | | | | |
| | | APPROVED | KSB | 13.04.16 | | | | | | | | |
| | | DESCRIPTION | | | | | | | | | | |

E D C B A

DRG. NO. EP-4-CS-048-003



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

RELAY CIRCUIT

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-003 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | 13.04.16 | | | 11 | 06 | 00 |
| 2 | | | | | DRAWN | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | 13.04.16 | | | | | |
| 4 | | | | | | | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
 ELECTROPROTECTIANS DIVISION BANGALORE

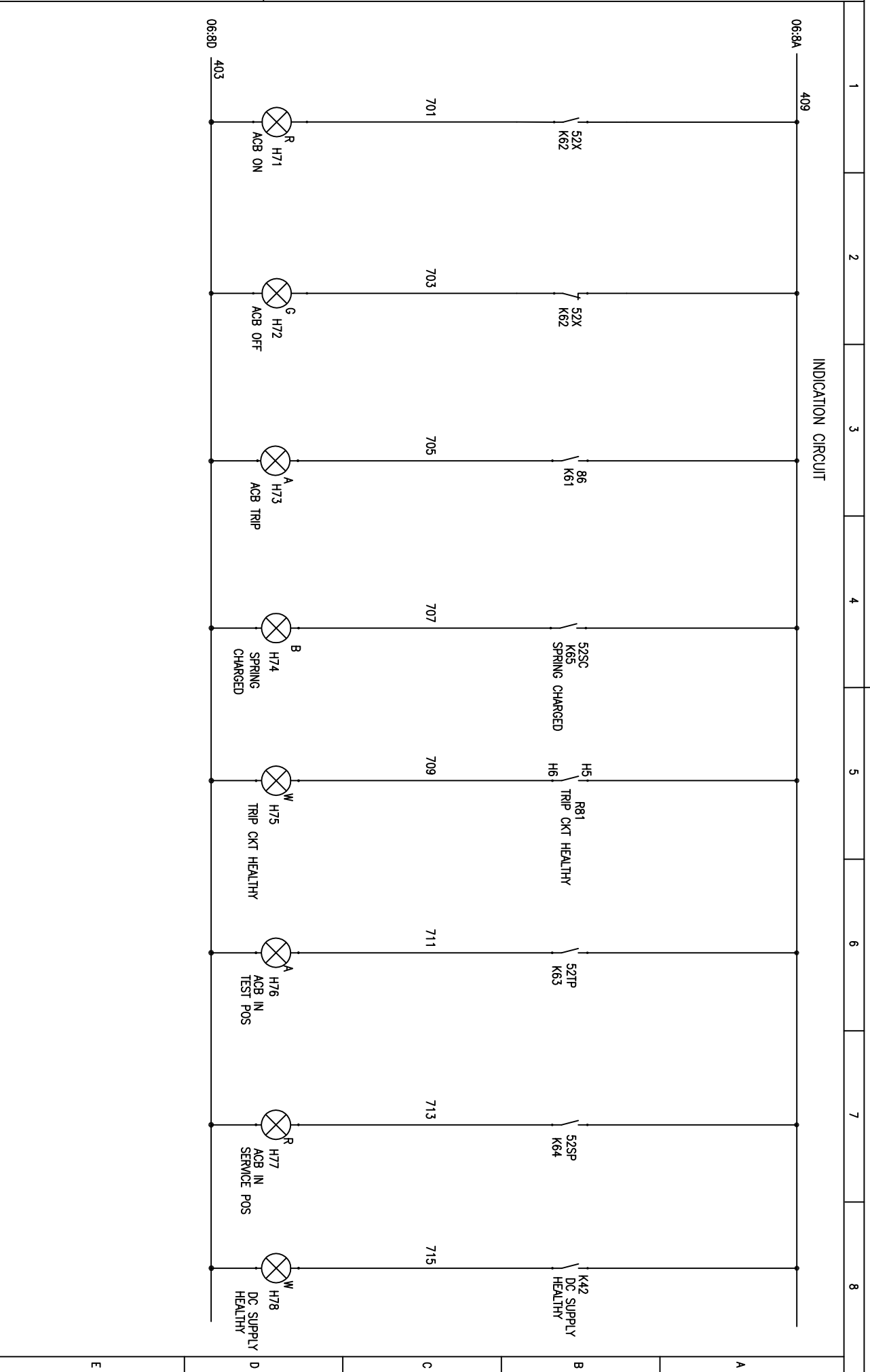


TITLE :
POWER & CONTROL SCHEME
 BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

DRG. NO. EP-4-CS-048-003

INVENTORY NO.

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|--|----------|-------|-----------|-----------------|---------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH |  | 13.04.16 | MA | CP-14-048 | EP-4-CS-048-003 | 11 | 07 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH |  | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |




FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

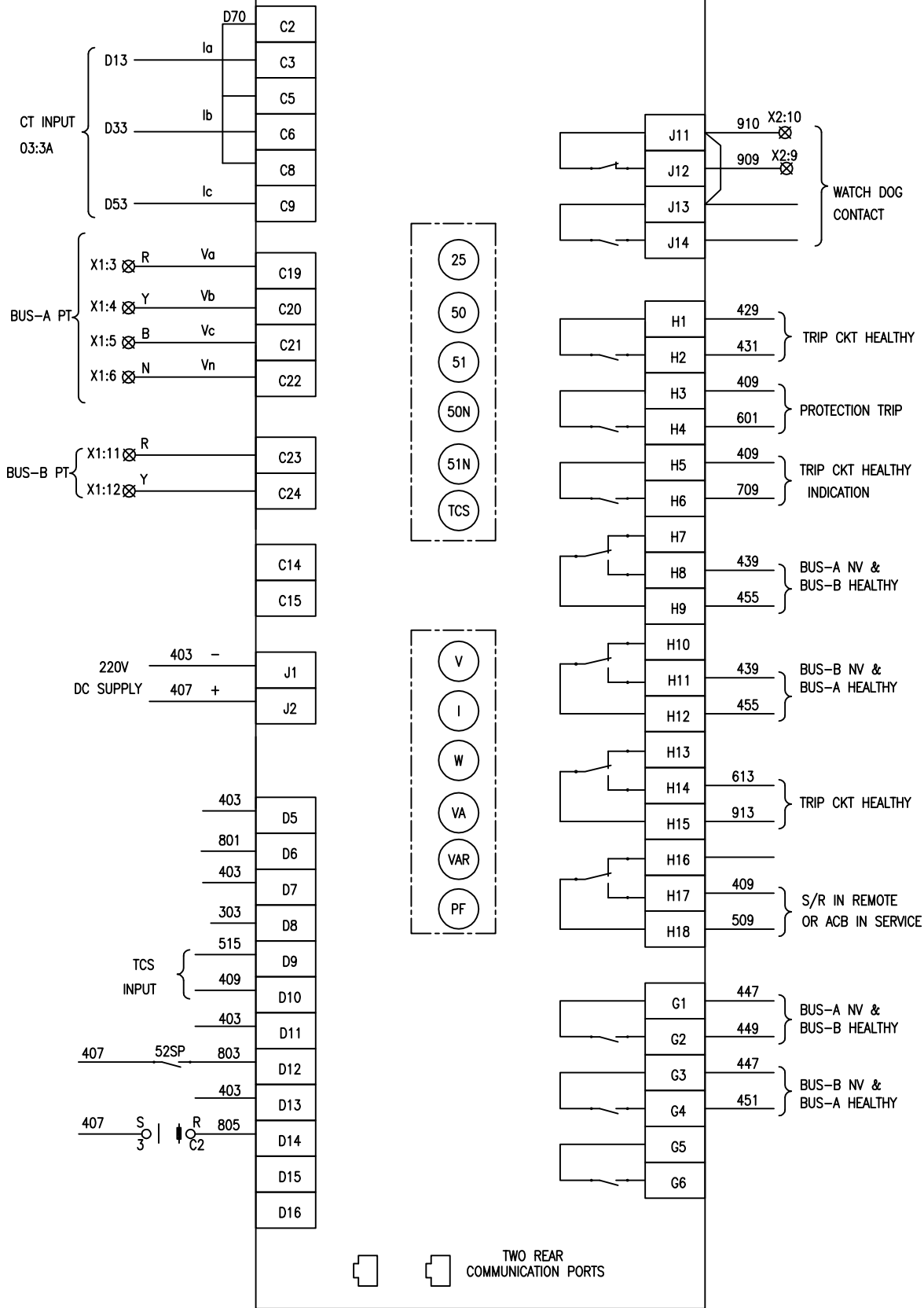
INDICATION CIRCUIT

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE

TITLE : **POWER & CONTROL SCHEME**
BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS

| | | | | | | | |
|--------------------------|---|----------|----------|--------------------------|------|-------------|----|
| INVENTORY NO. | | | | DRG. NO. EP-4-CS-048-003 | | | |
| REV. NO. | 1 | 2 | 3 | 4 | DATE | DESCRIPTION | BY |
| DATE | | | | | | | |
| BY | | | | | | | |
| APPD. | | | | | | | |
| APPROVED | CHECKED | DRAWN | DESIGNED | | | | |
| KSB | JAGADISH | | JAGADISH | | | | |
| | 13.04.16 | 13.04.16 | 13.04.16 | | | | |
| SCALE: NA |  | | | | | | |
| JOB NO. CP-14-048 | TITLE : BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS | | | | | | |
| DRG. NO. EP-4-CS-048-003 | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTIANS DIVISION BANGALORE | | | | | | |
| NO. OF SHEETS | 11 | | | | | | |
| SHEET NO. | 08 | | | | | | |
| REV. | 00 | | | | | | |

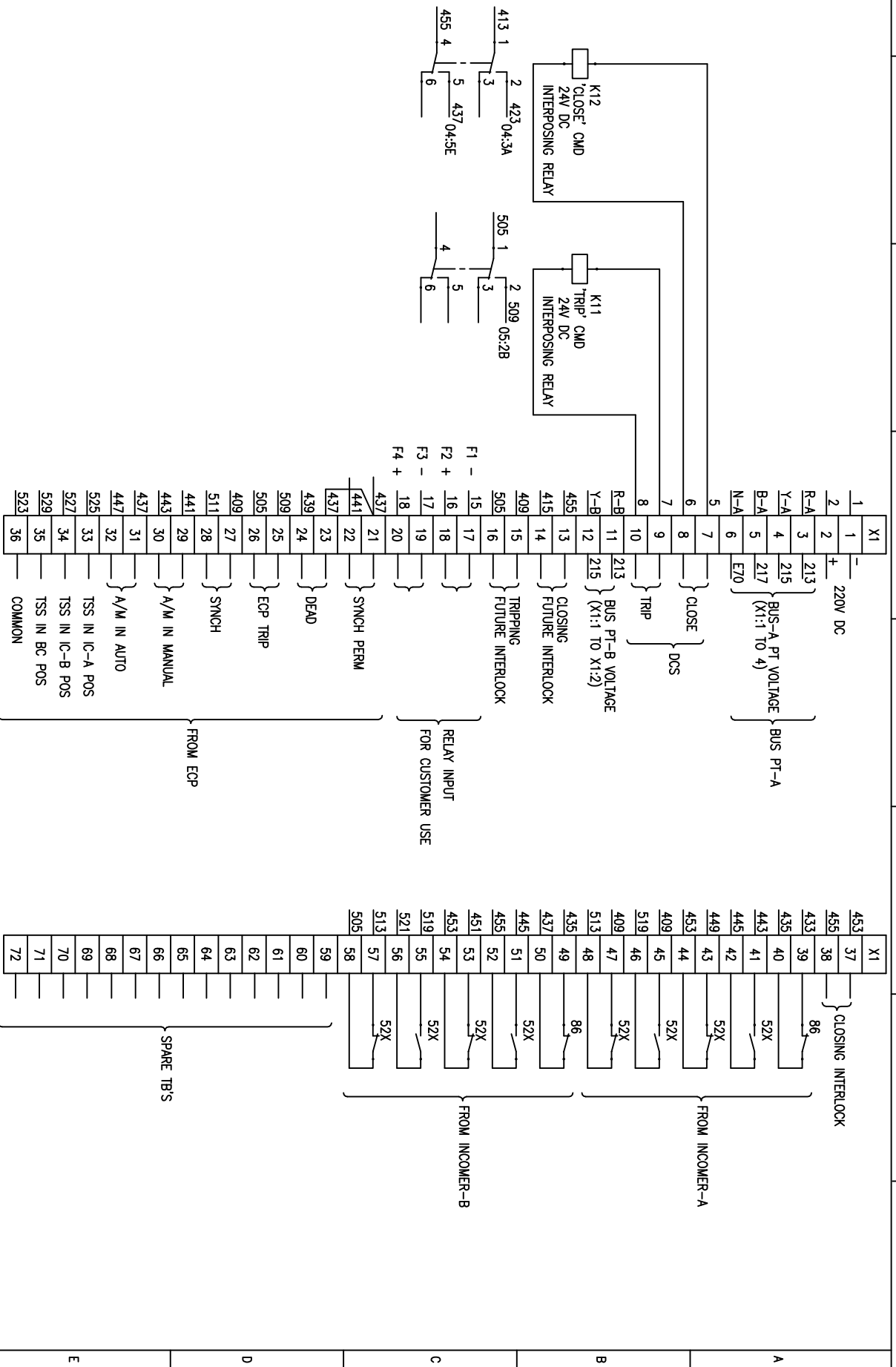
R81, NUMERICAL RELAY



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

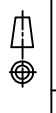
DRG. NO. EP-4-CS-048-003



1 FIRST ANGLE PROJECTION 2 3 4 5 ALL DIMENSIONS ARE IN MM. 6 7 8

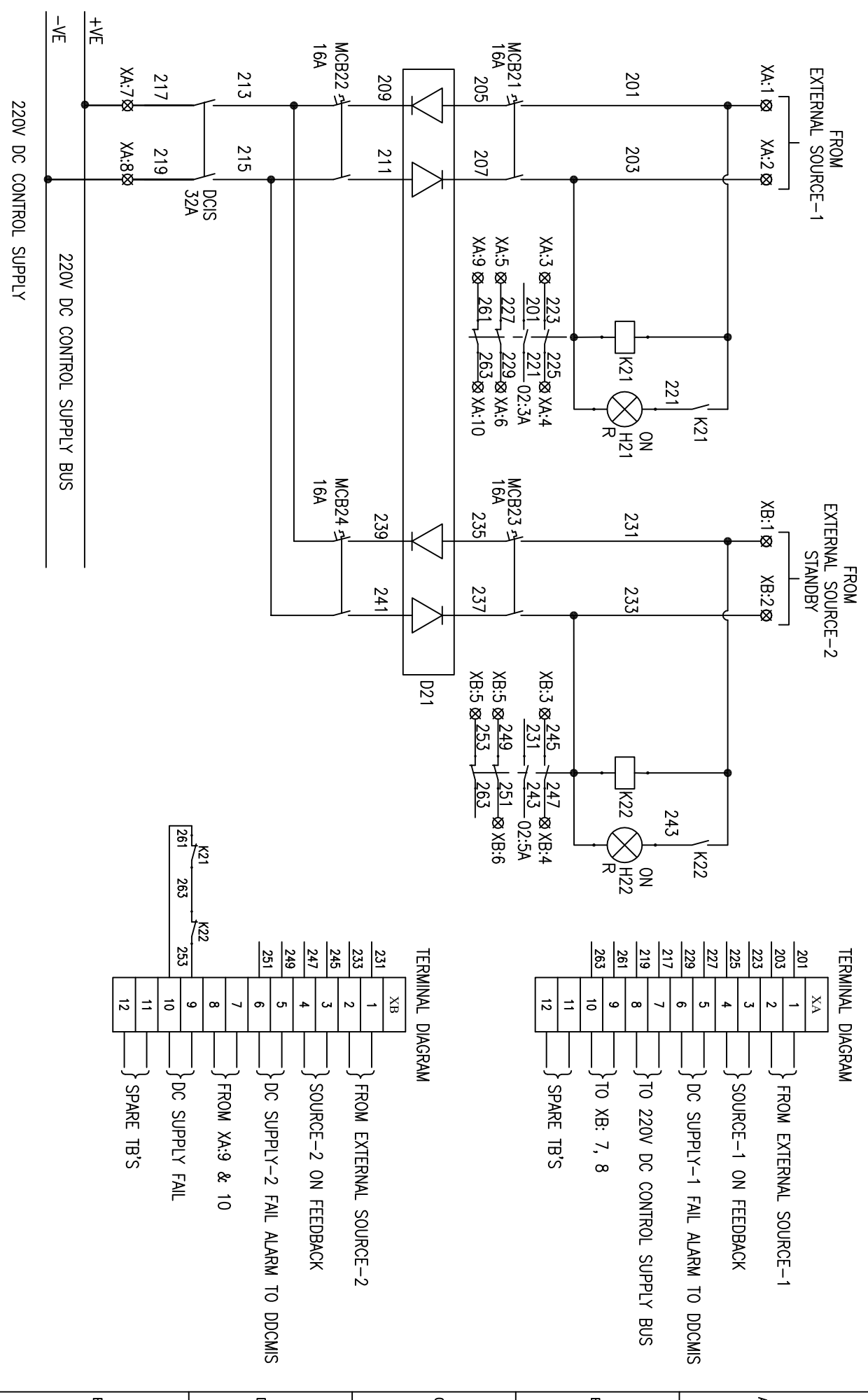
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|---------------|---|----------|----------|----------|--|-------|----|---|------------------------|----------|-----------------|---------------|-------|----|
| INVENTORY NO. | 4 | NAME | | DATE | | SCALE | NA | JOB NO. | CP-14-048 | DRG. NO. | EP-4-CS-048-003 | NO. OF SHEETS | 11 | |
| REV. NO. | 1 | DESIGNED | JAGADISH | 13.04.16 | | | | TITLE : | POWER & CONTROL SCHEME | | | | | |
| DATE | | DRAWN | | | | | | BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS | | | | | SHEET | 10 |
| DESCRIPTION | | CHECKED | JAGADISH | 13.04.16 | | | | | | | | | REV. | 00 |
| BY | | APPD. | | | | | | | | | | | | |
| | | APPROVED | KSB | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE



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DRG. NO. EP-4-CS-048-003



TERMINAL DIAGRAM

| Terminal | Description |
|----------|---------------------------------|
| XA:1 | FROM EXTERNAL SOURCE-1 |
| XA:2 | |
| XA:3 | |
| XA:4 | SOURCE-1 ON FEEDBACK |
| XA:5 | |
| XA:6 | |
| XA:7 | DC SUPPLY-1 FAIL ALARM TO DDCMS |
| XA:8 | |
| XA:9 | TO 220V DC CONTROL SUPPLY BUS |
| XA:10 | |
| XB:1 | TO XB: 7, 8 |
| XB:2 | |
| XB:3 | SPARE TB'S |
| XB:4 | |
| XB:5 | |
| XB:6 | SPARE TB'S |
| XB:7 | |
| XB:8 | |

TERMINAL DIAGRAM

| Terminal | Description |
|----------|---------------------------------|
| 231 | FROM EXTERNAL SOURCE-2 |
| 233 | |
| 235 | |
| 245 | SOURCE-2 ON FEEDBACK |
| 247 | |
| 249 | |
| 251 | DC SUPPLY-2 FAIL ALARM TO DDCMS |
| 253 | |
| 261 | FROM XA:9 & 10 |
| 263 | |
| 265 | DC SUPPLY FAIL |
| 267 | |
| 271 | SPARE TB'S |
| 273 | |
| 275 | |

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | MA | CP-14-048 | EP-4-CS-048-003 | 11 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 13.04.16 | | | | 11 | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | 11 | |
| 4 | | | | | | | | | | | | 11 | |



BHARAT HEAVY ELECTRICALS LIMITED
 ELECTROPROTECTIANS DIVISION BANGALORE

TITLE : POWER & CONTROL SCHEME
 BUSCOUPLER TO SWBD CONTROLLED FROM ECP AS WELL AS DDCMS



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

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CUSTOMER:



TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:

1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

COPYRIGHT AND CONFIDENTIAL




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DRG. NO. EP-4-CS-048-004

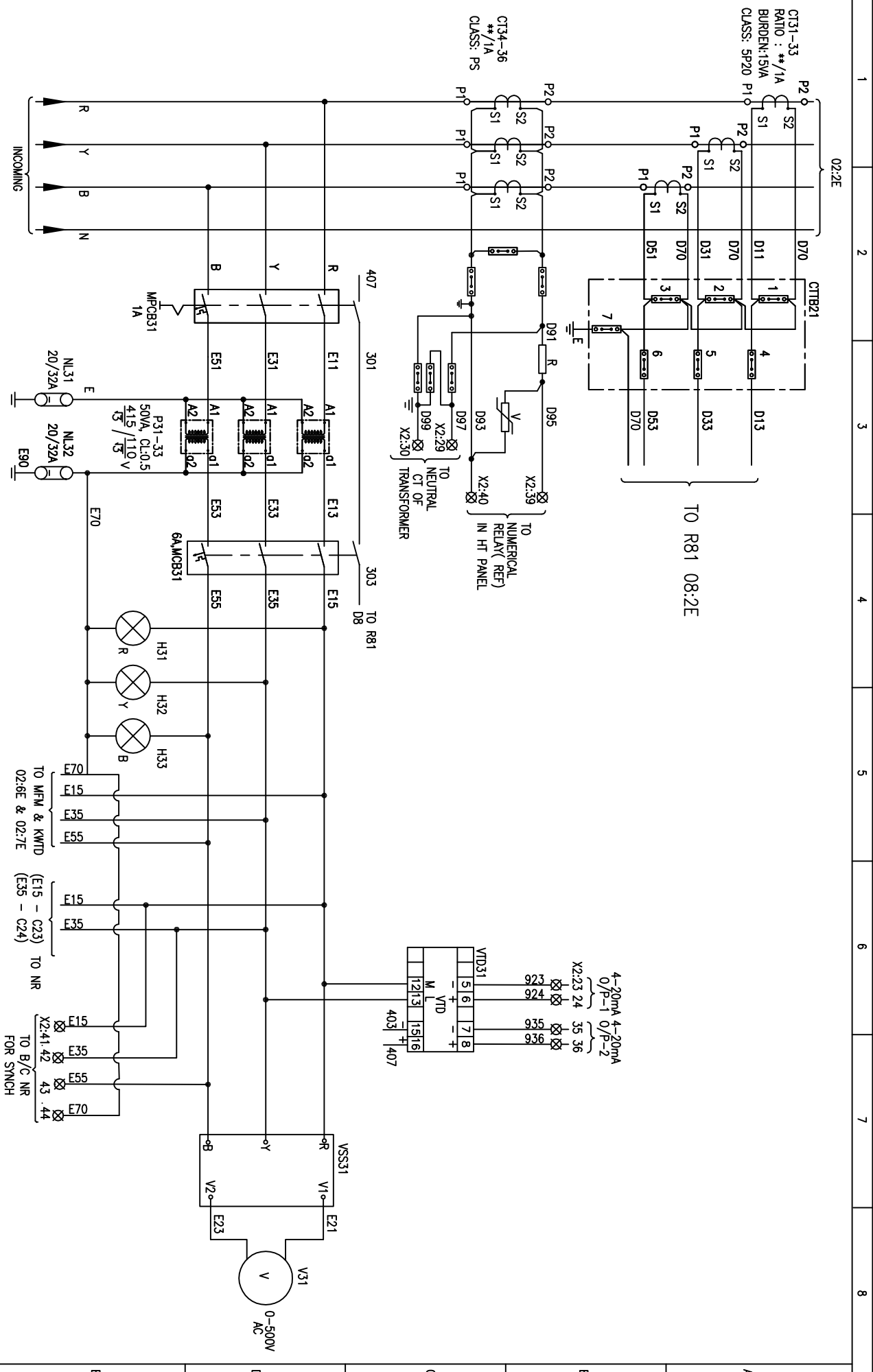
| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|------------------------------|--------|--------|
| 1 | 415V ADMIN BUILDING PMCC | 00C | 2500A |
| 2 | 415V FIRE WATER PH PMCC | 00D | 2500A |
| 3 | 415V CLARIFIED WATER PH PMCC | 00E | 2500A |
| 4 | 415V AUXILIARY BOILER PMCC | 00F | 3000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-004 | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|---|----------|---|---|--------------------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH |  | 13.04.16 |  | POWER & CONTROL SCHEME INCOMER-A TO SWBD CONTROLLED FROM DDCMIS ONLY | | 10 | 01 |
| 2 | | | | | DRAWN | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH |  | 13.04.16 | | | | | |
| 4 | | | | | | | | | | | | | |

DRG. NO. EP-4-CS-048-004



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

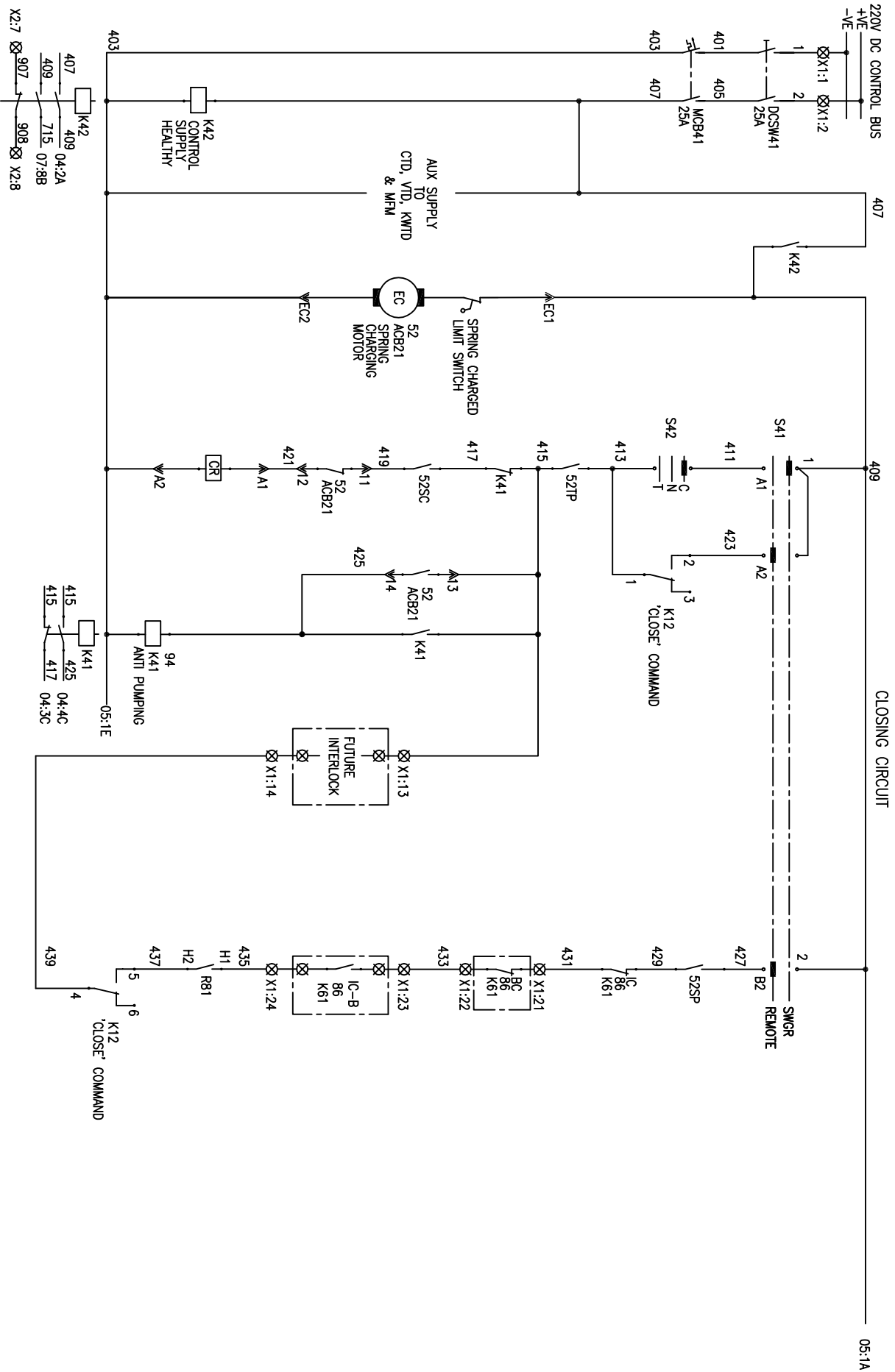
| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-004 | REV. |
|----------|------|-------------|----|-------|----------|----------|-----------|-------------------|--------------------------|------|
| 1 | | | | | CHECKED | JAGADISH | 13.04.16 | | | 03 |
| 2 | | | | | DRAWN | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | 13.04.16 | | | 10 |
| 4 | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
 ELECTROPROTECTIANS DIVISION BANGALORE



TITLE :
 POWER & CONTROL SCHEME
 INCOMER-A TO SWBD CONTROLLED FROM DDCMS ONLY

DRG. NO. EP-4-CS-048-004




FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

CLOSING CIRCUIT

05:1A

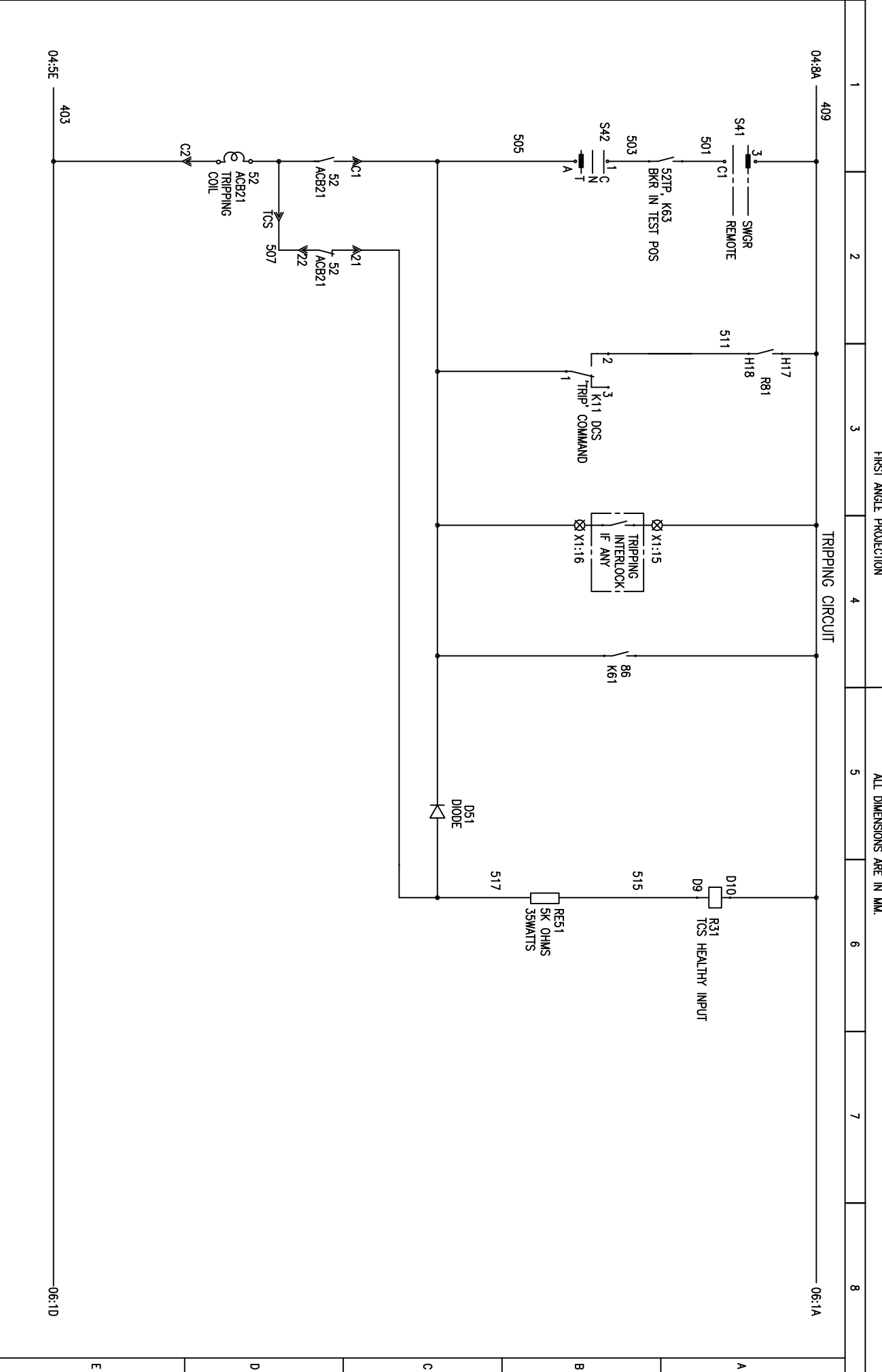
| | | | | | | | | | |
|---------------|---|----------|----------|----------|----------|---|---|--|----------------------------------|
| INVENTORY NO. | 4 | NAME | | SIGN. | DATE |  | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTIANS DIVISION BANGALORE | TITLE : POWER & CONTROL SCHEME INCOMER-A TO SWBD CONTROLLED FROM DDCMIS ONLY | NO. OF SHEETS : 10 SHEET : 04 |
| REV. NO. | 1 | DESIGNED | JAGADISH | | 13.04.16 | | | | |
| DATE | | DRAWN | | | | | | | |
| DESCRIPTION | | CHECKED | JAGADISH | | 13.04.16 | | | | |
| BY | | APPD. | | APPROVED | | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-004 | REV. 00 |

DRG. NO. EP-4-CS-048-004

FORM 66-271 A3

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-004 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 05 | |
| 2 | | | | | DRAWN | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM DDCMS ONLY

NO. OF SHEETS: 10
SHEET NO.: 05

REV. NO.: 00

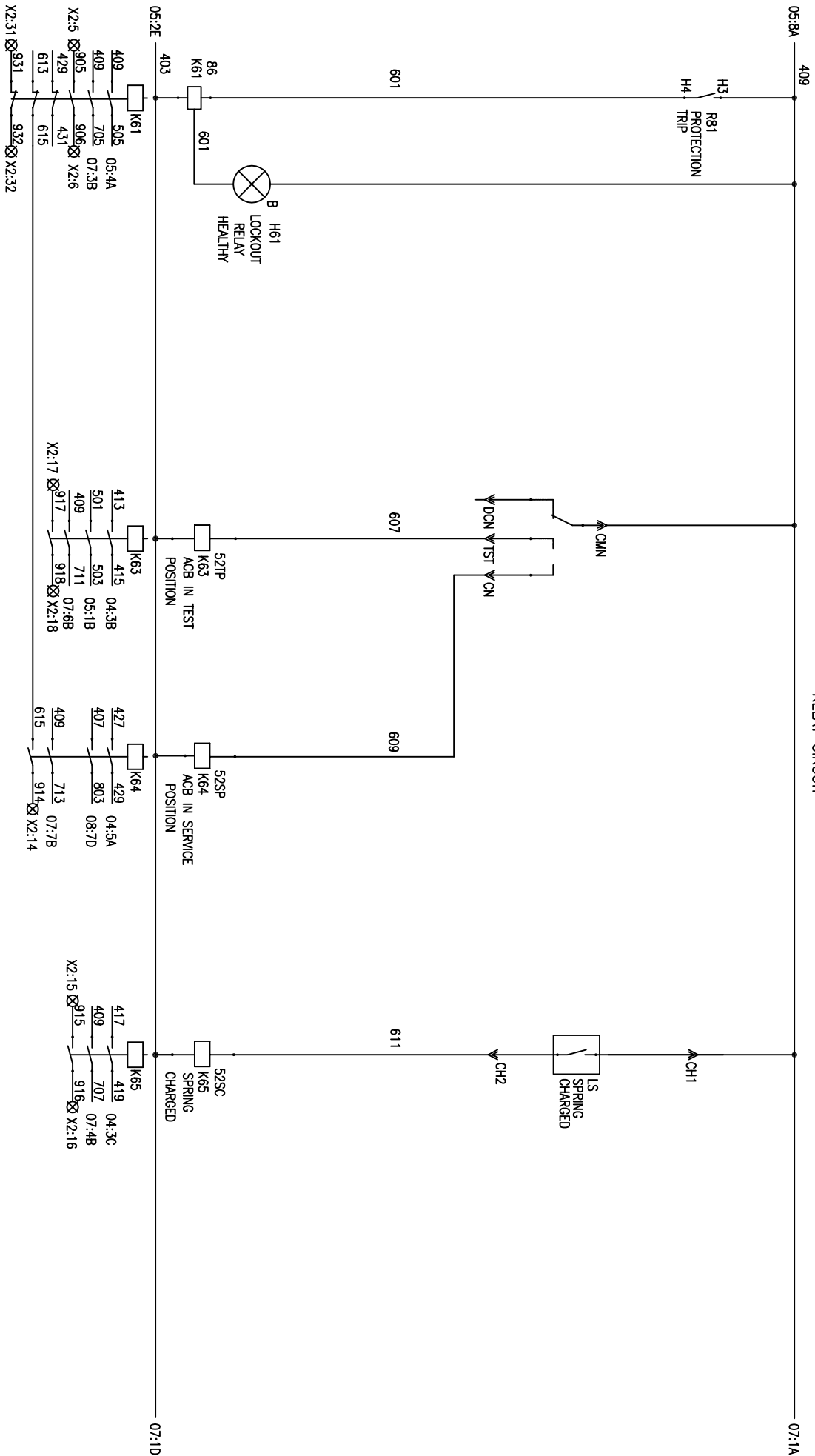
DRG. NO. EP-4-CS-048-004

FORM 66-271 A3

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

RELAY CIRCUIT



| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-004 | NO. OF SHEETS | SHEET NO. | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 4 | | | | | | | | | | | | | 10 | 06 | 00 |
| 3 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 2 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 1 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM DDCMIS ONLY

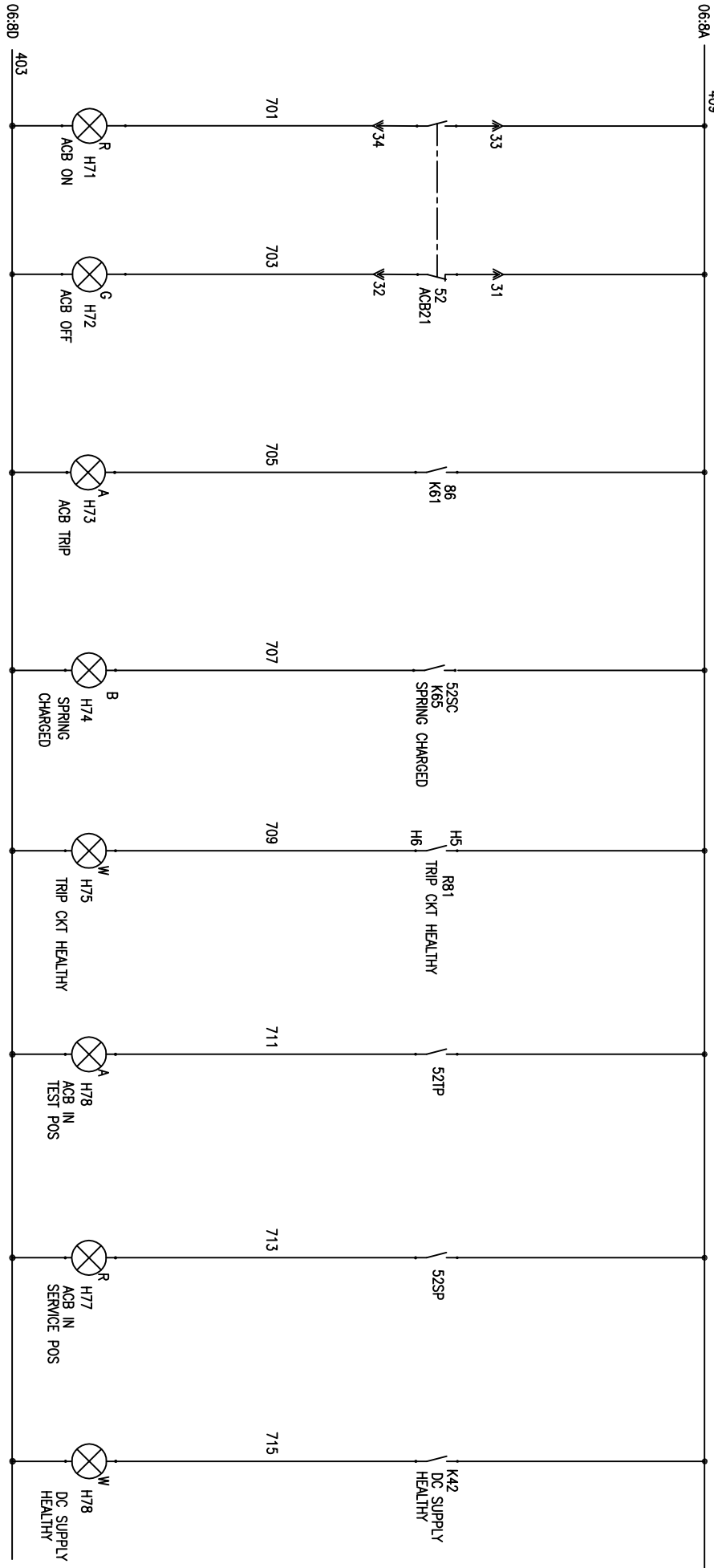


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1 2 3 4 5 6 7 8

INDICATION CIRCUIT



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DRG. NO. EP-4-CS-048-004

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-004 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 07 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |




BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERELAINS DIVISION BANGALORE

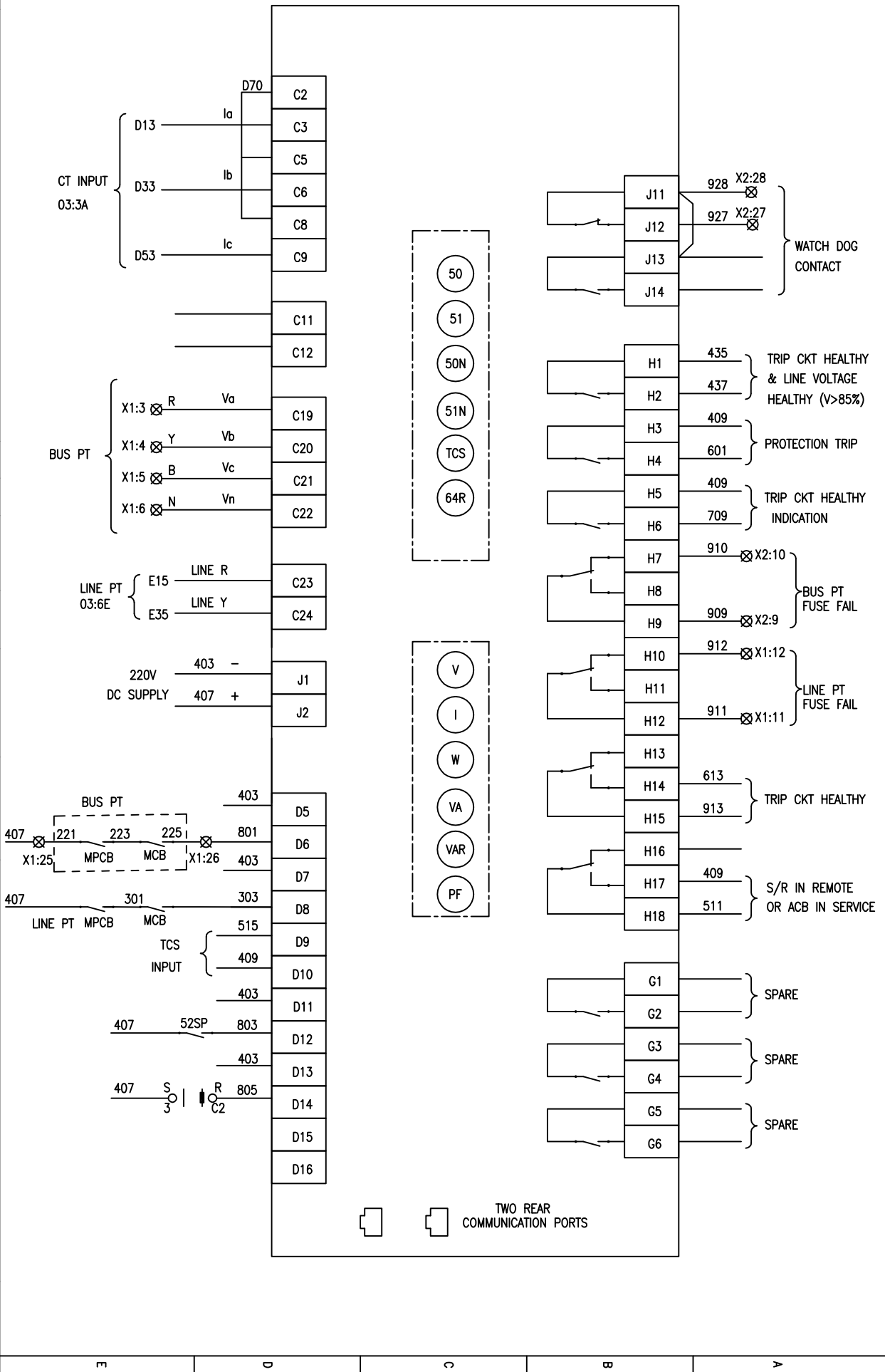
TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM DDCMIS ONLY

INVENTORY NO.

DRG. NO. EP-4-CS-048-004

| | | | | |
|--------------------------|---|-------|----------|---|
| REV. NO. | 1 | 2 | 3 | 4 |
| DATE | | | | |
| DESCRIPTION | | | | |
| BY | | | | |
| APPD. | | | | |
| APPROVED | CHECKED | DRAWN | DESIGNED | |
| KSB | JAGADISH | | JAGADISH | |
| 13.04.16 | 13.04.16 | | 13.04.16 | |
| SCALE: NA |  | | | |
| JOB NO. CP-14-048 | TITLE : POWER & CONTROL SCHEME INCOMER-A TO SWBD CONTROLLED FROM DDCMIS ONLY | | | |
| DRG. NO. EP-4-CS-048-004 | NO. OF SHEETS : 10 SHEET NO. : 08 REV. NO. : 00 | | | |

R81, NUMERICAL RELAY

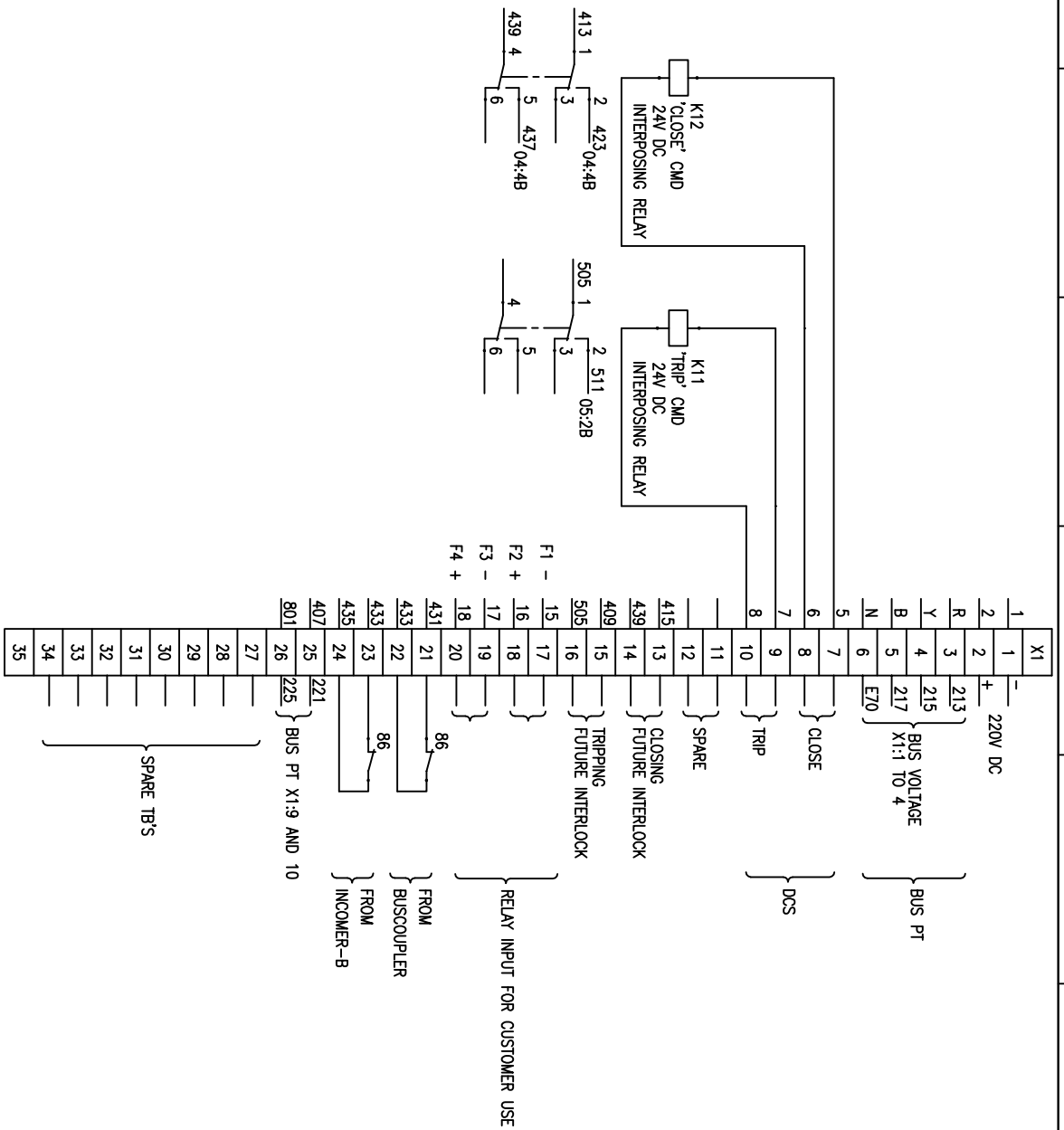


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

8

DRG. NO. EP-4-CS-048-004



1 2 3 4 5 6 7 8

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|--------------------|----------|-------|-----------|-----------------|---------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH | <i>[Signature]</i> | 13.04.16 | NA | CP-14-048 | EP-4-CS-048-004 | 10 | 10 | 00 |
| 2 | | | | | DRAWN | JAGADISH | <i>[Signature]</i> | 13.04.16 | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | <i>[Signature]</i> | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-A TO SWBD CONTROLLED FROM DDCMIS ONLY



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

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CUSTOMER:



TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:

1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

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DRG. NO. EP-4-CS-048-005

| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|------------------------------|--------|--------|
| 1 | 415V ADMIN BUILDING PMCC | 00C | 2500A |
| 2 | 415V FIRE WATER PH PMCC | 00D | 2500A |
| 3 | 415V CLARIFIED WATER PH PMCC | 00E | 2500A |
| 4 | 415V AUXILIARY BOILER PMCC | 00F | 3000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-005 | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 01 |
| 2 | | | | | DRAWN | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | |
| 4 | | | | | | | | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROFORCELANS DIVISION BANGALORE
TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY



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DRG. NO. EP-4-CS-048-005

** - AS PER RATING
OF THE SWITCHBOARD

03:1A

CT21-23
RATIO : **/1A
BURDEN:1:5VA
CLASS:0.5

C70

C11

C70

C31

C70

C51

P1

P2

S1

S2

P1

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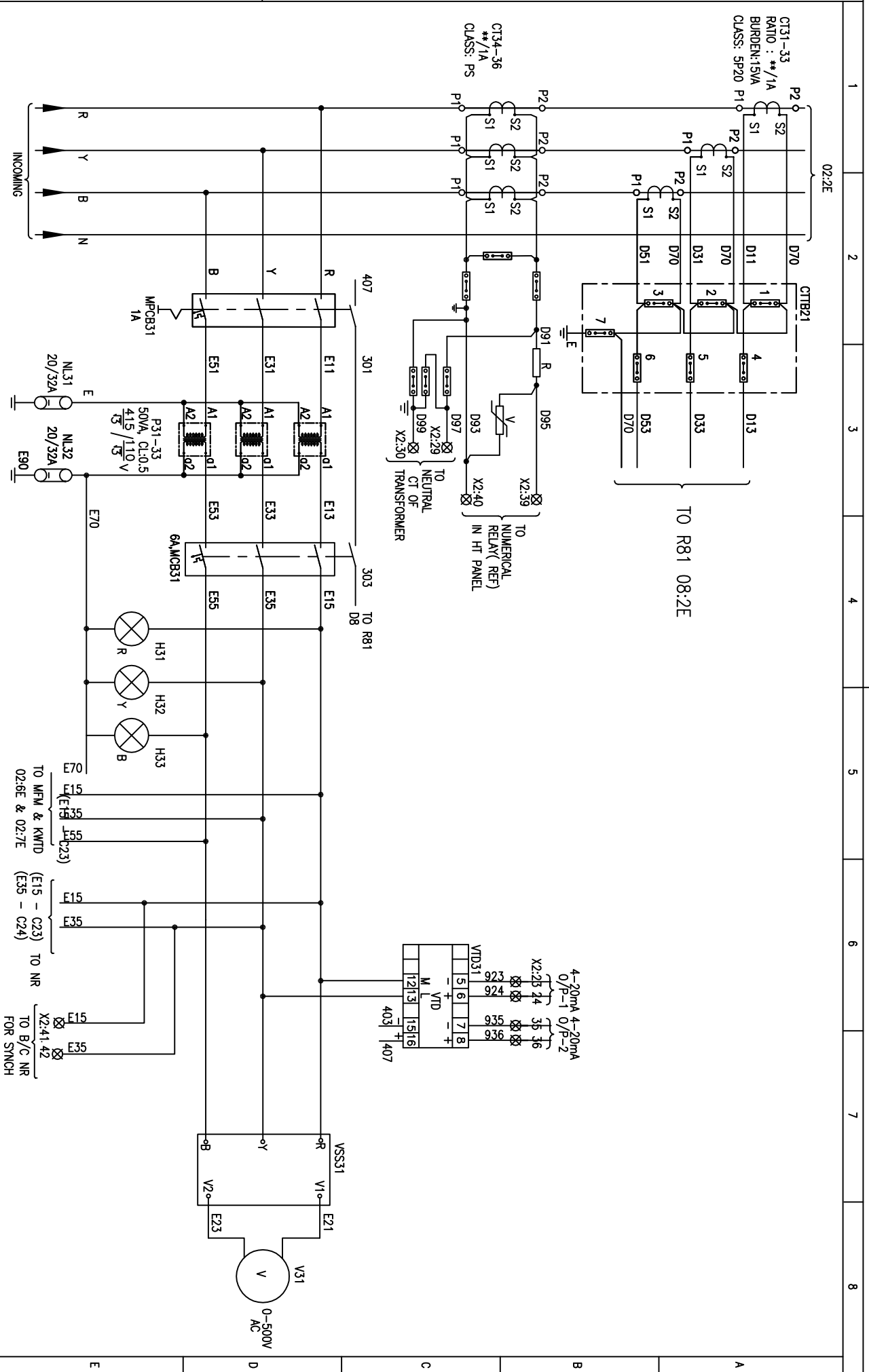
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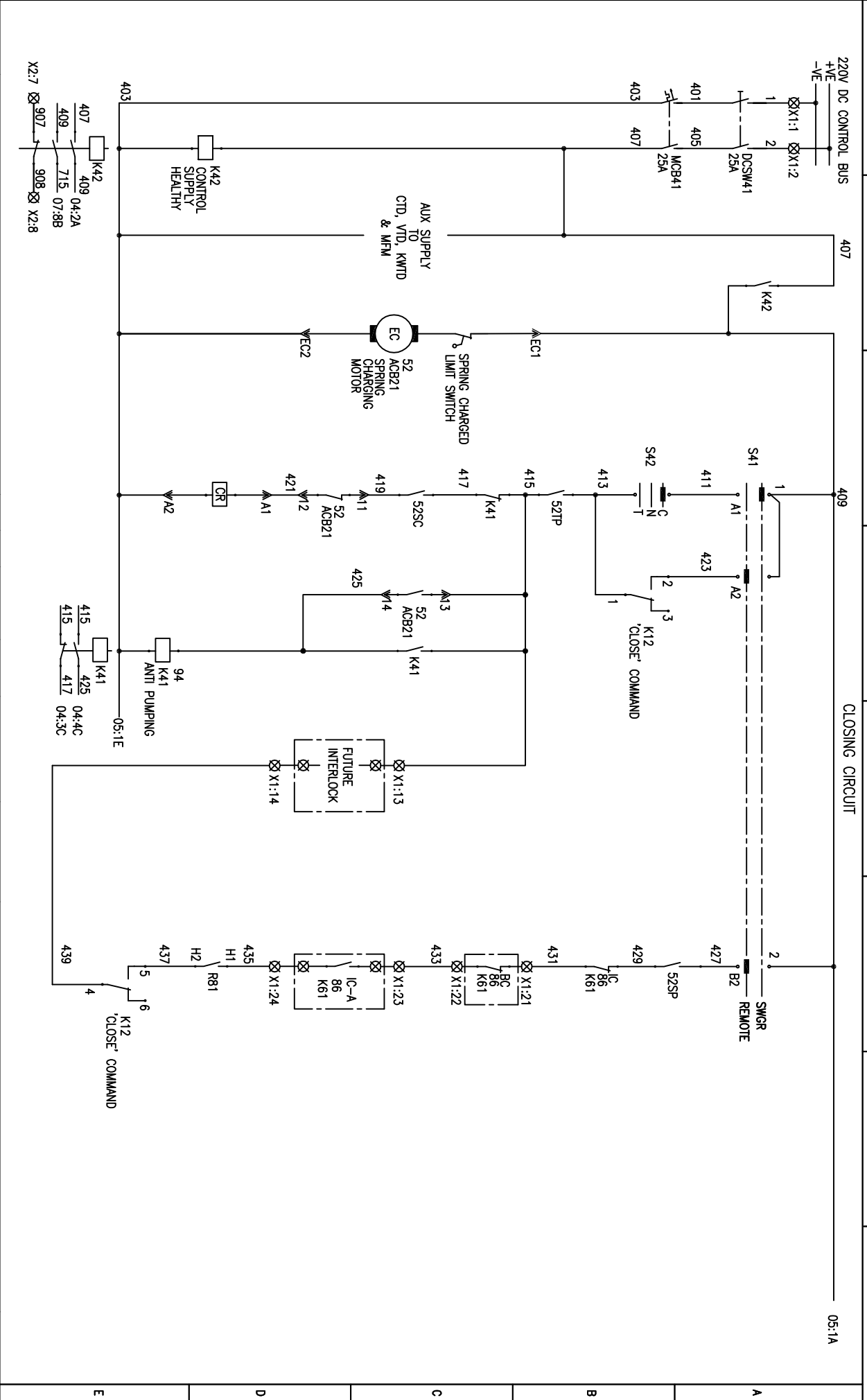


1 2 3 4 5 6 7 8

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| | | | | | | | | | | | | | |
|---------------|---|----------|----------|-------|--|----------|--|-------|--|--------------------------------------|---------------|----------|-----------------|
| INVENTORY NO. | 4 | NAME | | SIGN. | | DATE | | SCALE | NA | JOB NO. | CP-14-048 | DRG. NO. | EP-4-CS-048-005 |
| REV. NO. | 1 | DESIGNED | JAGADISH | | | 13.04.16 | | | TITLE : POWER & CONTROL SCHEME INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY | NO. OF SHEETS : 10 SHEET NO. : 03 | REV. NO. : 00 | | |
| REV. NO. | 2 | DRAWN | | | | | | | | | | | |
| REV. NO. | 3 | CHECKED | JAGADISH | | | 13.04.16 | | | | | | | |
| DATE | | BY | KSB | APPD. | | APPROVED | | | | | | | |



FIRST ANGLE PROJECTION
ALL DIMENSIONS ARE IN MM
CLOSING CIRCUIT
05:1A

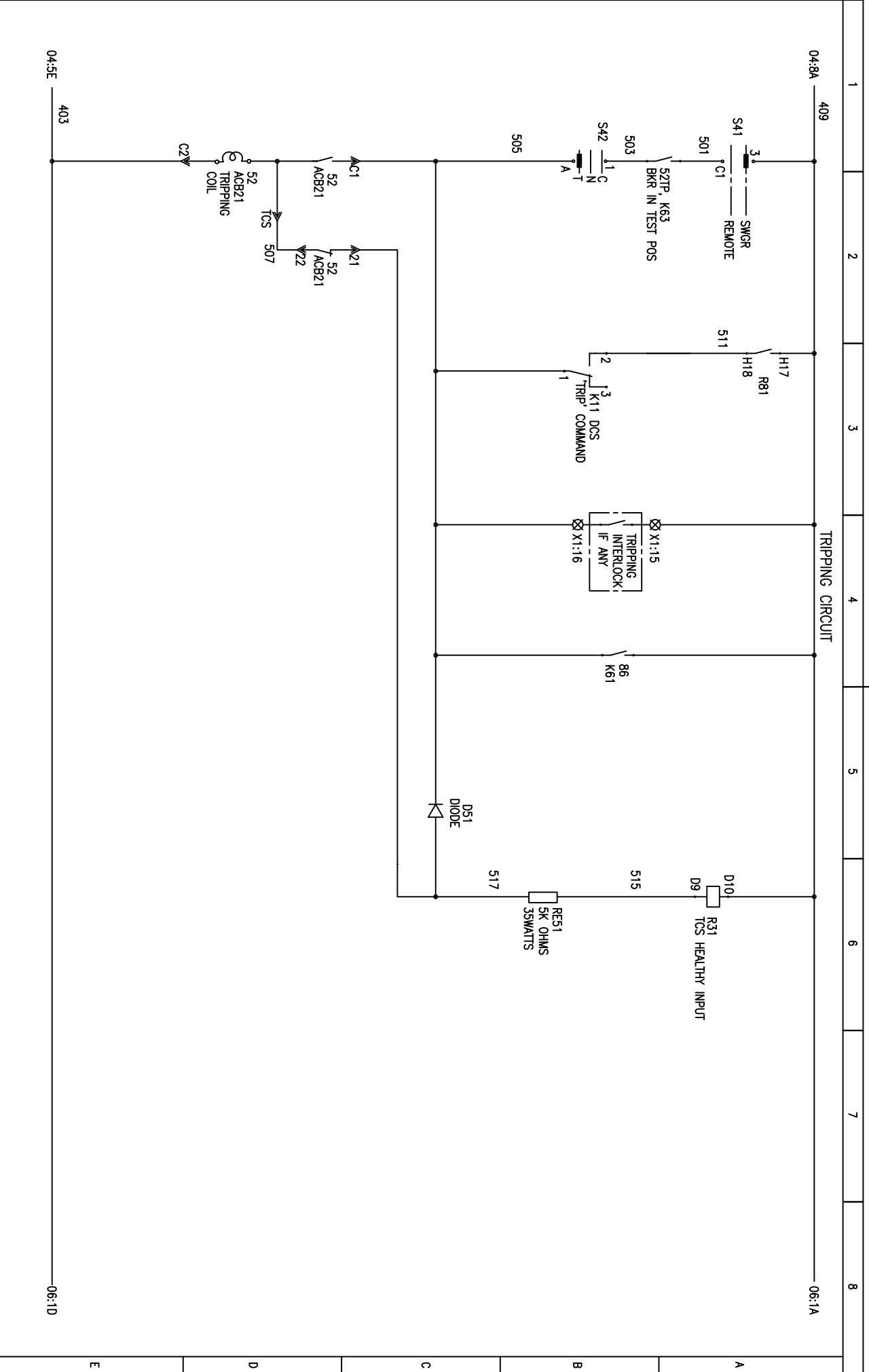
| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-005 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | 13.04.16 | | | 10 | 04 | 00 |
| 2 | | | | | DRAWN | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | 13.04.16 | | | | | |
| 4 | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWER DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY



DRG. NO. EP-4-CS-048-005



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

| | | | | | | | | | | | | | | | |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-005 | NO. OF SHEETS | SHEET NO. | REV. |
| 4 | 1 | | | | | | JAGADISH | | 13.04.16 | | | | 10 | 05 | 00 |
| 3 | 2 | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 1 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY

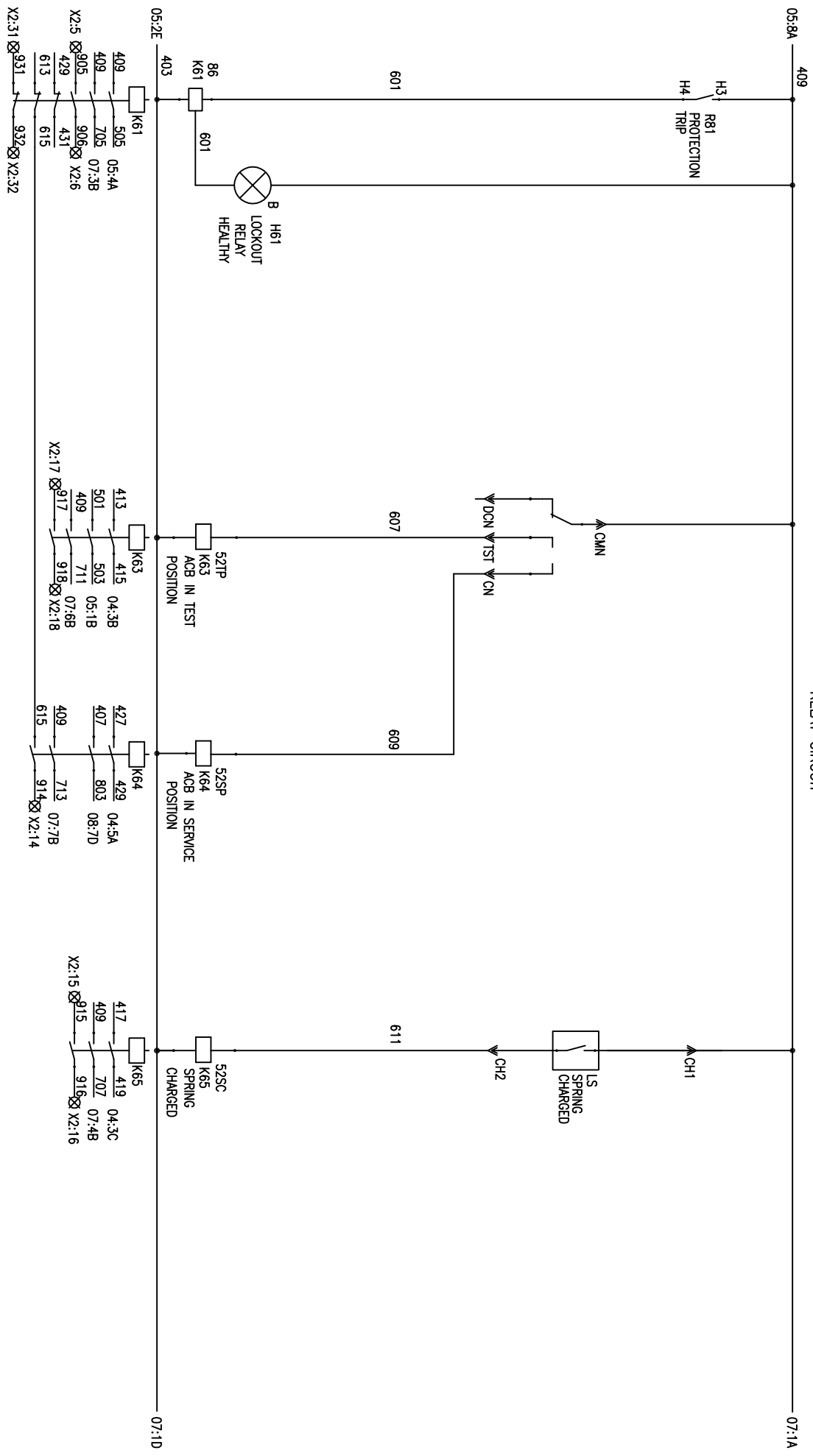


DRG. NO. EP-4-CS-048-005

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

RELAY CIRCUIT



| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-005 | NO. OF SHEETS | SHEET NO. | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | | | JAGADISH | | 13.04.16 | | | | 10 | 06 | 00 |
| 2 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIVES DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY

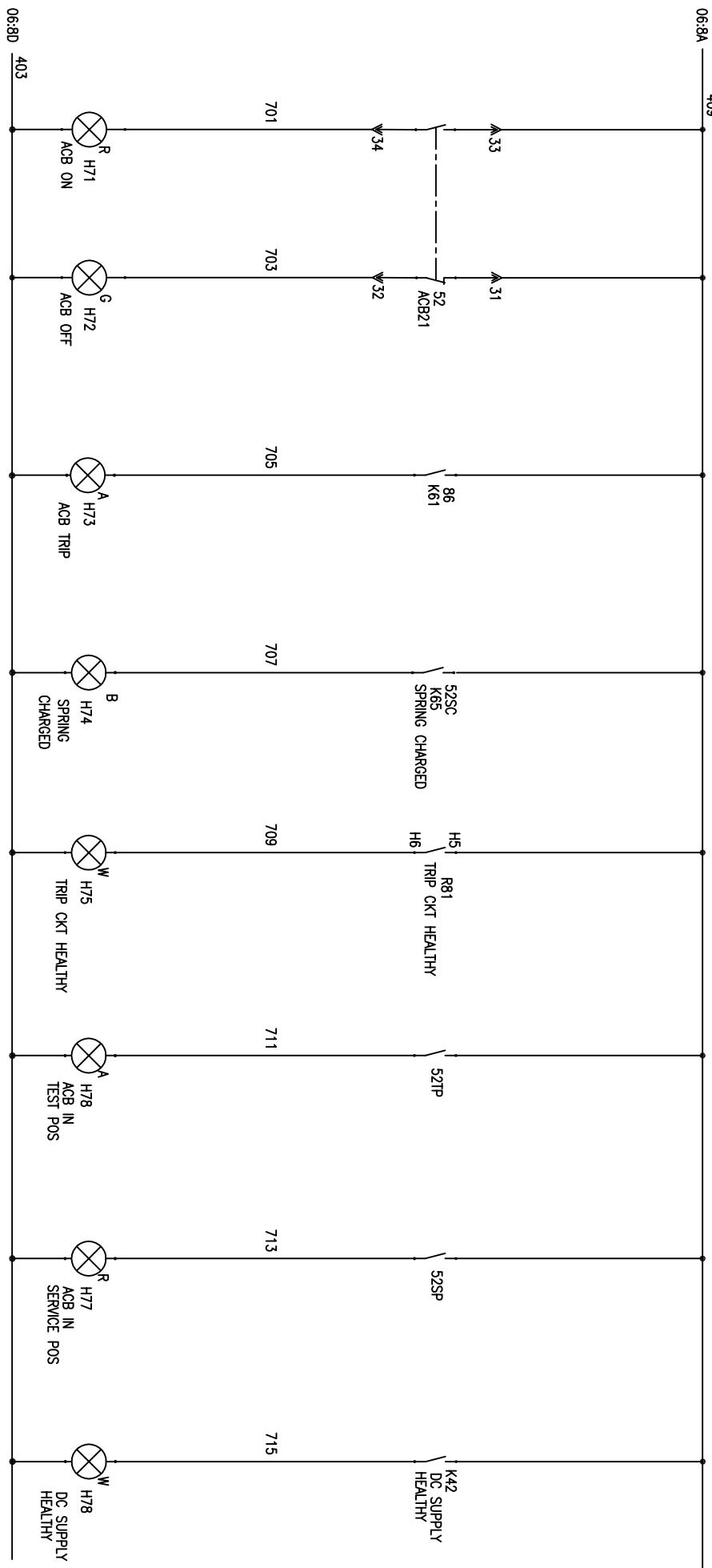


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1 2 3 4 5 6 7 8

INDICATION CIRCUIT



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DRG. NO. EP-4-CS-048-005

INVENTORY NO.

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-005 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 10 | 07 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |




BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE

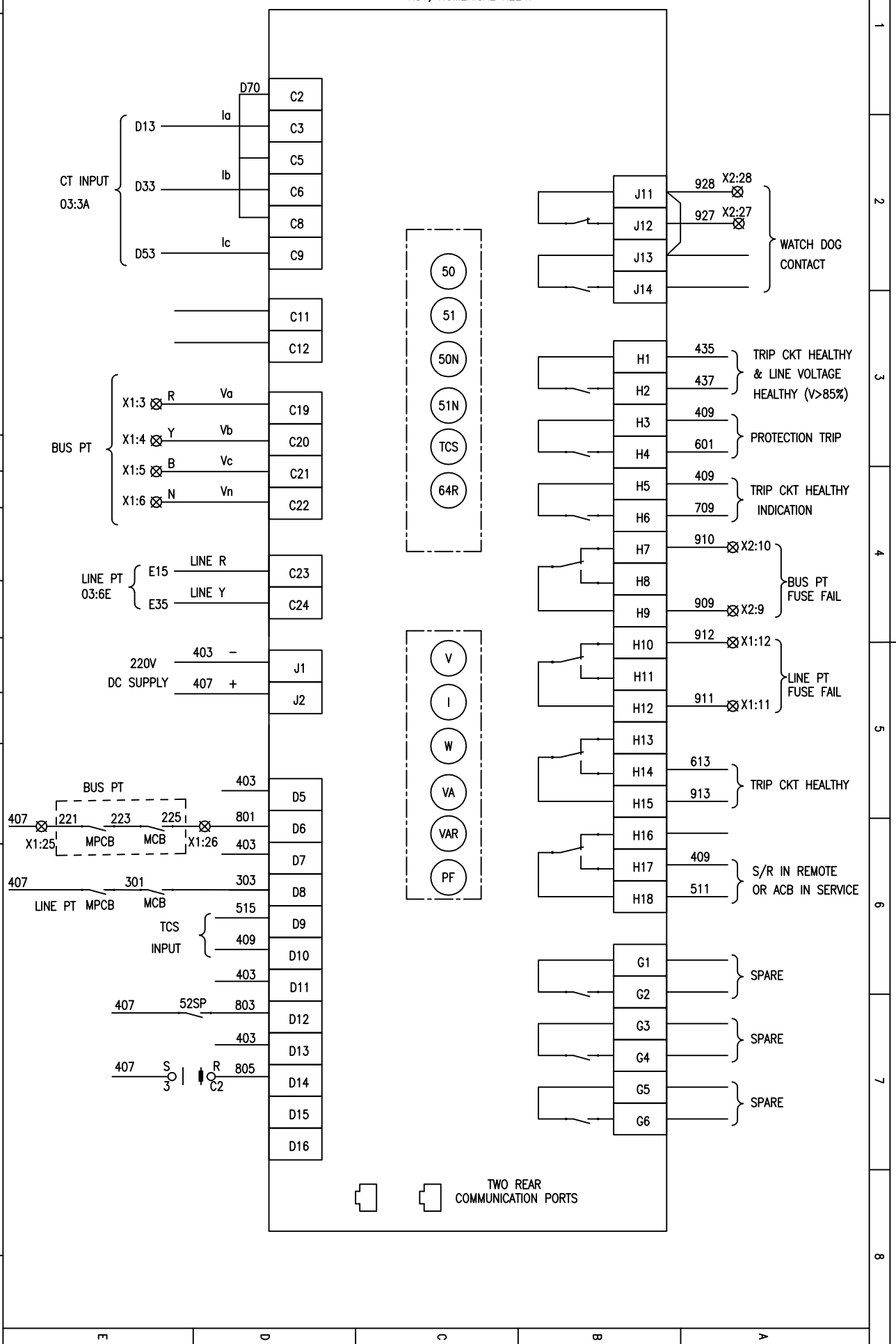
TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY

INVENTORY NO.

DRG. NO. EP-4-CS-048-005

| | | | | |
|--------------------------|---|-------|----------|---|
| REV. NO. | 1 | 2 | 3 | 4 |
| DATE | | | | |
| DESCRIPTION | | | | |
| BY | | | | |
| APPD. | | | | |
| APPROVED | CHECKED | DRAWN | DESIGNED | |
| KSB | JAGADISH | | JAGADISH | |
| 13.04.16 | 13.04.16 | | 13.04.16 | |
| SCALE: NA |  | | | |
| JOB NO. CP-14-048 | TITLE: POWER & CONTROL SCHEME INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY | | | |
| DRG. NO. EP-4-CS-048-005 | NO. OF SHEETS: 10 SHEET NO.: 08 REV. NO.: 00 | | | |

R81, NUMERICAL RELAY



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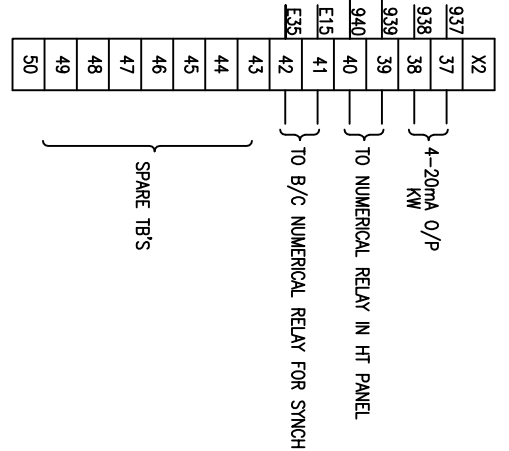
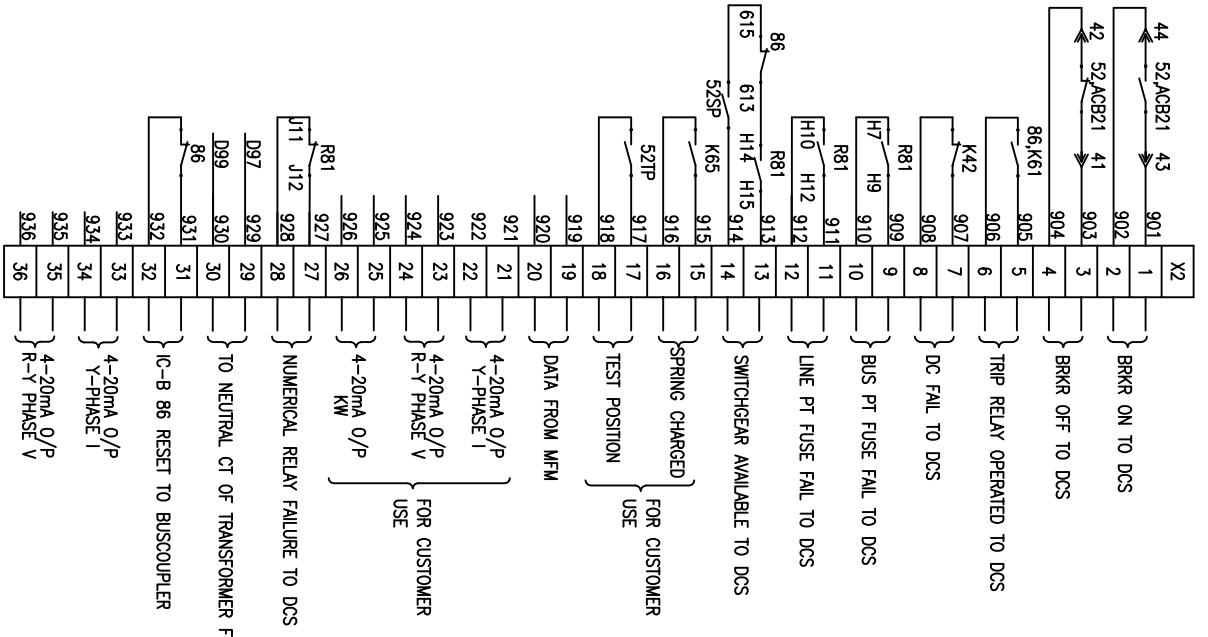
FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

DRG. NO. EP-4-CS-048-005

FORM 66-271 A3

FIRST ANGLE PROJECTION
ALL DIMENSIONS ARE IN MM



| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-005 | NO. OF SHEETS | SHEET NO. | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 4 | | | | | | | | | | | | | 10 | 09 | 00 |
| 3 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 2 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 1 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY



NO. OF SHEETS: 10
SHEET NO.: 09

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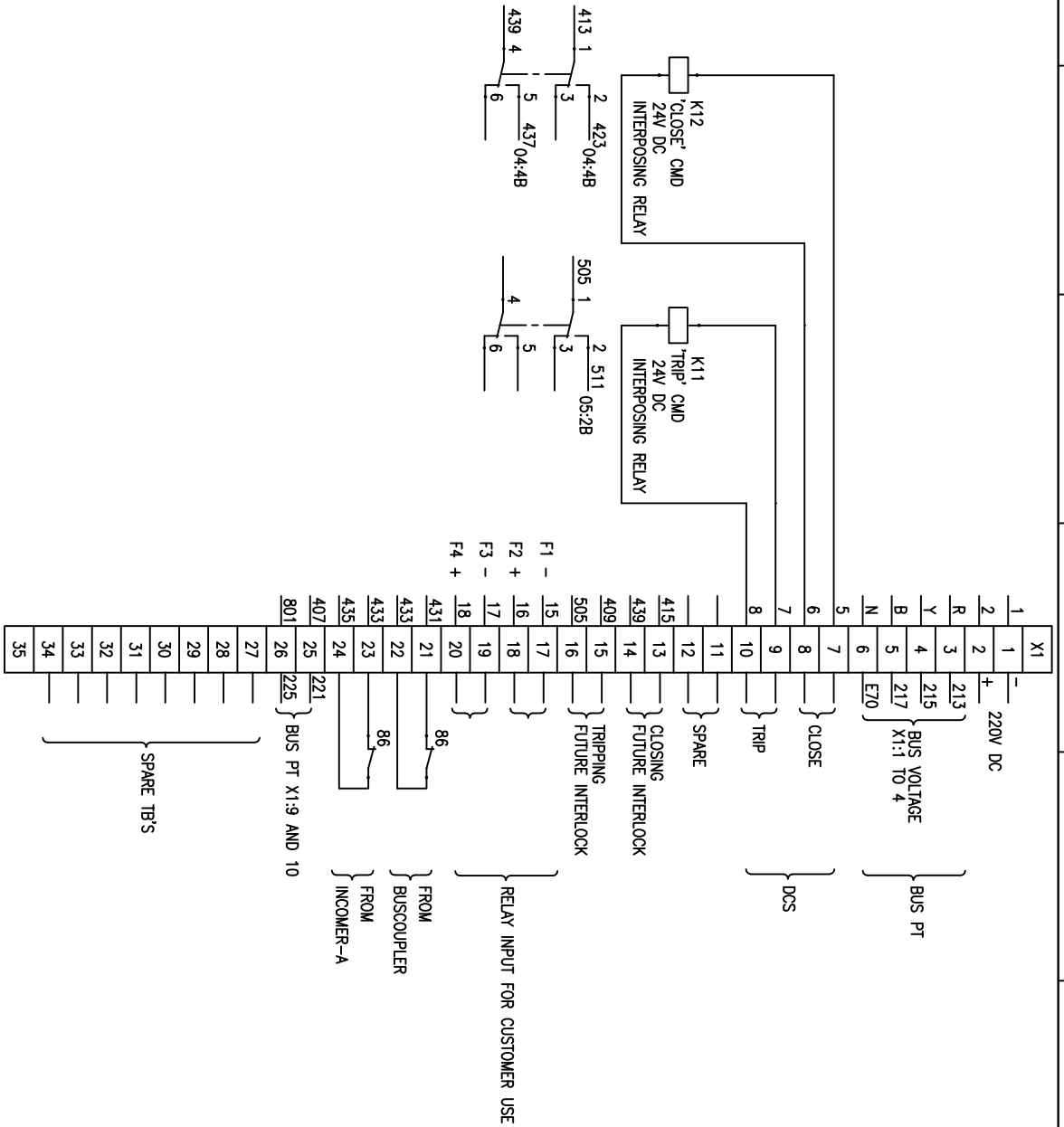
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DRG. NO. EP-4-CS-048-005



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| | | | | | | | | | |
|---------------|---|----------|----------|----------|-----------|-------------------|---|--|--------------------------------------|
| INVENTORY NO. | 4 | NAME | JAGADISH | DATE | 13.04.16 | | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTANS DIVISION BANGALORE | TITLE : POWER & CONTROL SCHEME INCOMER-B TO SWBD CONTROLLED FROM DDCMIS ONLY | NO. OF SHEETS : 10 SHEET NO. : 10 |
| REV. NO. | 1 | DESIGNED | JAGADISH | 13.04.16 | | | | | |
| DATE | | DRAWN | | | | | | | |
| DESCRIPTION | | CHECKED | JAGADISH | 13.04.16 | | | | | |
| BY | | APPD. | KSB | 13.04.16 | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-005 | REV. NO. 00 | |

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1

2

3

4

5

6

7

8

CUSTOMER:



TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:

1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

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


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It must not be used directly or indirectly in any way detrimental to the interest of the company

DRG. NO. EP-4-CS-048-006

| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|------------------------------|--------|--------|
| 1 | 415V ADMIN BUILDING PMCC | 00C | 2500A |
| 2 | 415V FIRE WATER PH PMCC | 00D | 2500A |
| 3 | 415V CLARIFIED WATER PH PMCC | 00E | 2500A |
| 4 | 415V AUXILIARY BOILER PMCC | 00F | 3000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-006 | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|---|----------|---|-------------------|--------------------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH |  | 13.04.16 |  | | | 11 | 01 |
| 2 | | | | | DRAWN | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH |  | 13.04.16 | | | | | |
| 4 | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROFORCELANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY



NO. OF SHEETS

SHEET NO.

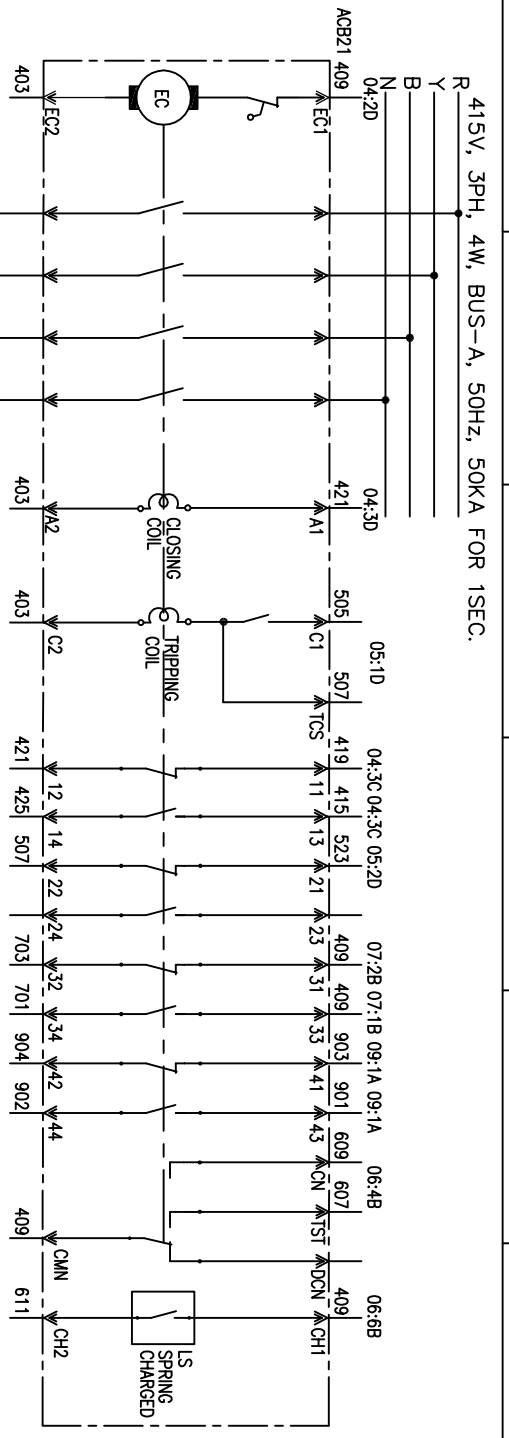
REV. NO.

DRG. NO. EP-4-CS-048-006

INVENTORY NO.

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE |
|----------|------|-------------|----|-------|----------|----------|-------|----------|
| 4 | | | | | | | | |
| 3 | | | | | | JAGADISH | | 13.04.16 |
| 2 | | | | | | JAGADISH | | 13.04.16 |
| 1 | | | | | | JAGADISH | | 13.04.16 |

03:1E

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIVES DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY

JOB NO. CP-14-048 DRG. NO. EP-4-CS-048-006

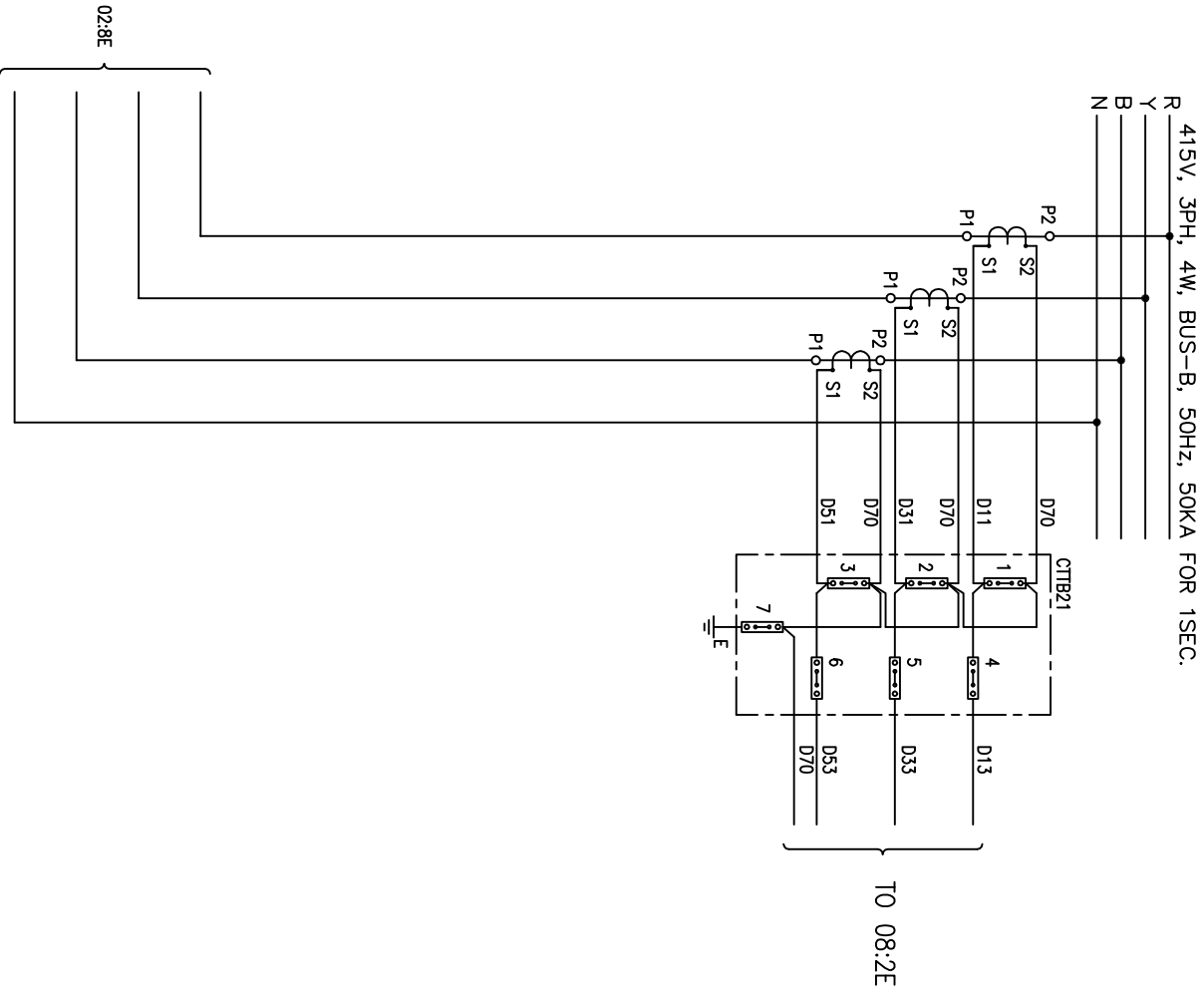
NO. OF SHEETS: 11
SHEET NO.: 02

REV. NO.: 00

DRG. NO. EP-4-CS-048-006

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-006 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 13.04.16 | | | | 11 | 03 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |

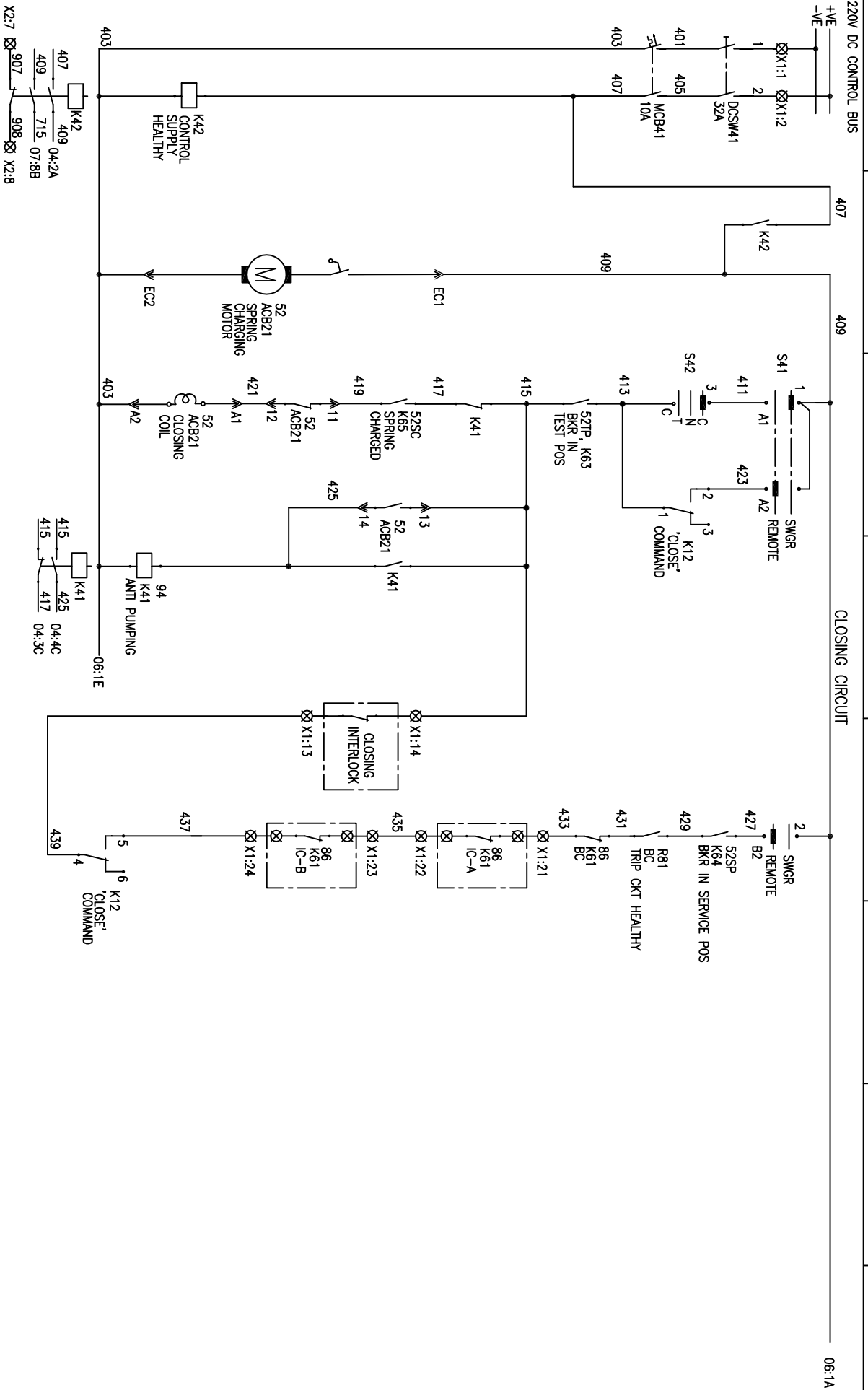


BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY



DRG. NO. EP-4-CS-048-006



CLOSING CIRCUIT

06:1A

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| | | | | | | | | | | | | | | | | | | | |
|---------------|-----------------|---|---|---|----------|------|-------------|----|-------|----------|------|-------|------|-----------|-------------------|--------------------------|------------------|--------------|-------------|
| INVENTORY NO. | 4 | 3 | 2 | 1 | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-006 | NO. OF SHEETS 11 | SHEET NO. 04 | REV. NO. 00 |
| DRG. NO. | EP-4-CS-048-006 | | | | | | | | | | | | | | | | | | |
| REV. NO. | 1 | 2 | 3 | 4 | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-006 | NO. OF SHEETS 11 | SHEET NO. 04 | REV. NO. 00 |
| REV. NO. | 1 | 2 | 3 | 4 | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-006 | NO. OF SHEETS 11 | SHEET NO. 04 | REV. NO. 00 |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY

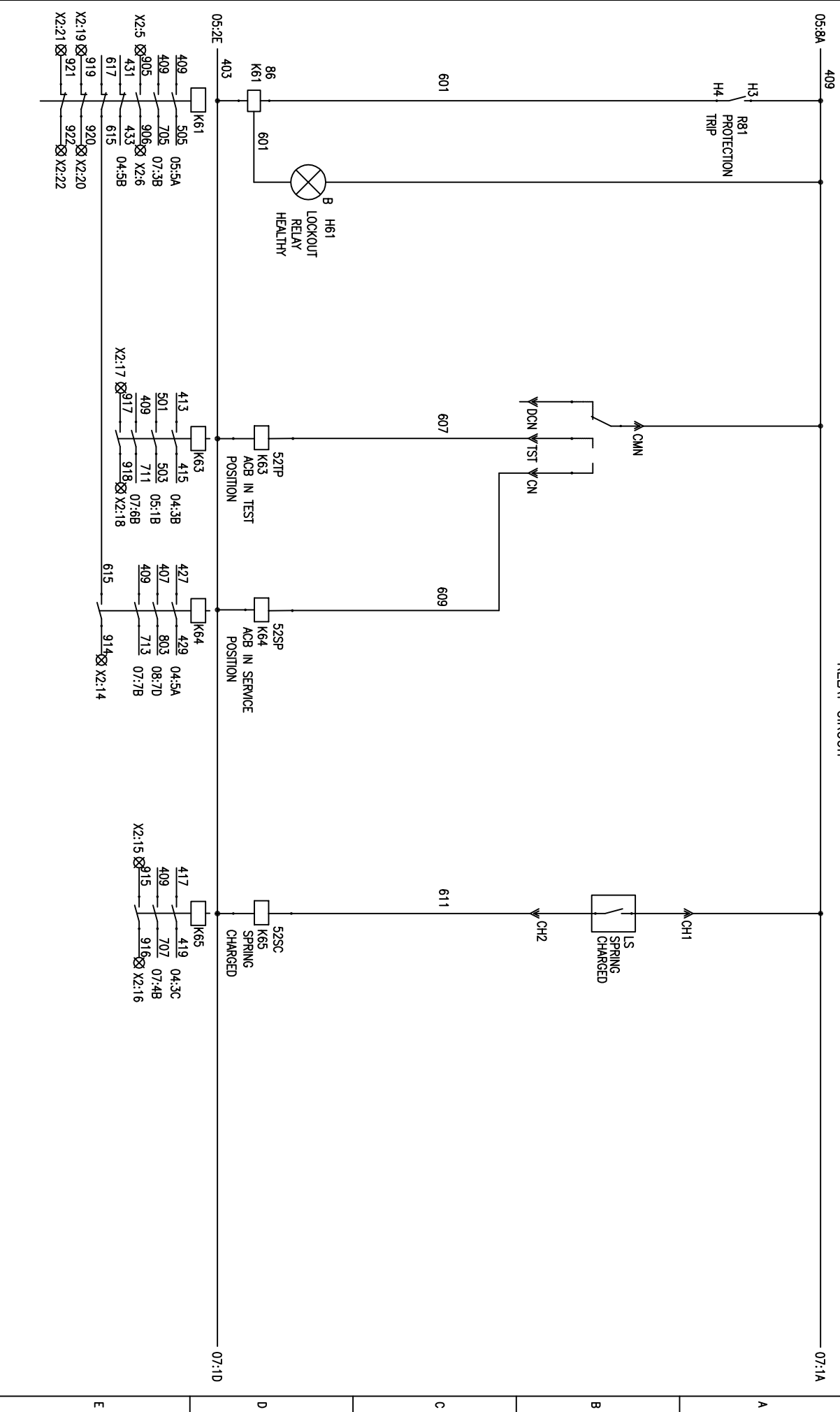


DRG. NO. EP-4-CS-048-006

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

RELAY CIRCUIT



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-006 | REV. NO. |
|----------|------|-------------|----|-------|----------|----------|-----------|-------------------|--------------------------|----------|
| 1 | | | | | CHECKED | JAGADISH | 13.04.16 | | | 06 |
| 2 | | | | | DRAWN | | | | | 11 |
| 3 | | | | | DESIGNED | JAGADISH | 13.04.16 | | | |
| 4 | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIVES DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMS ONLY



NO. OF SHEETS: 11
SHEET NO.: 06

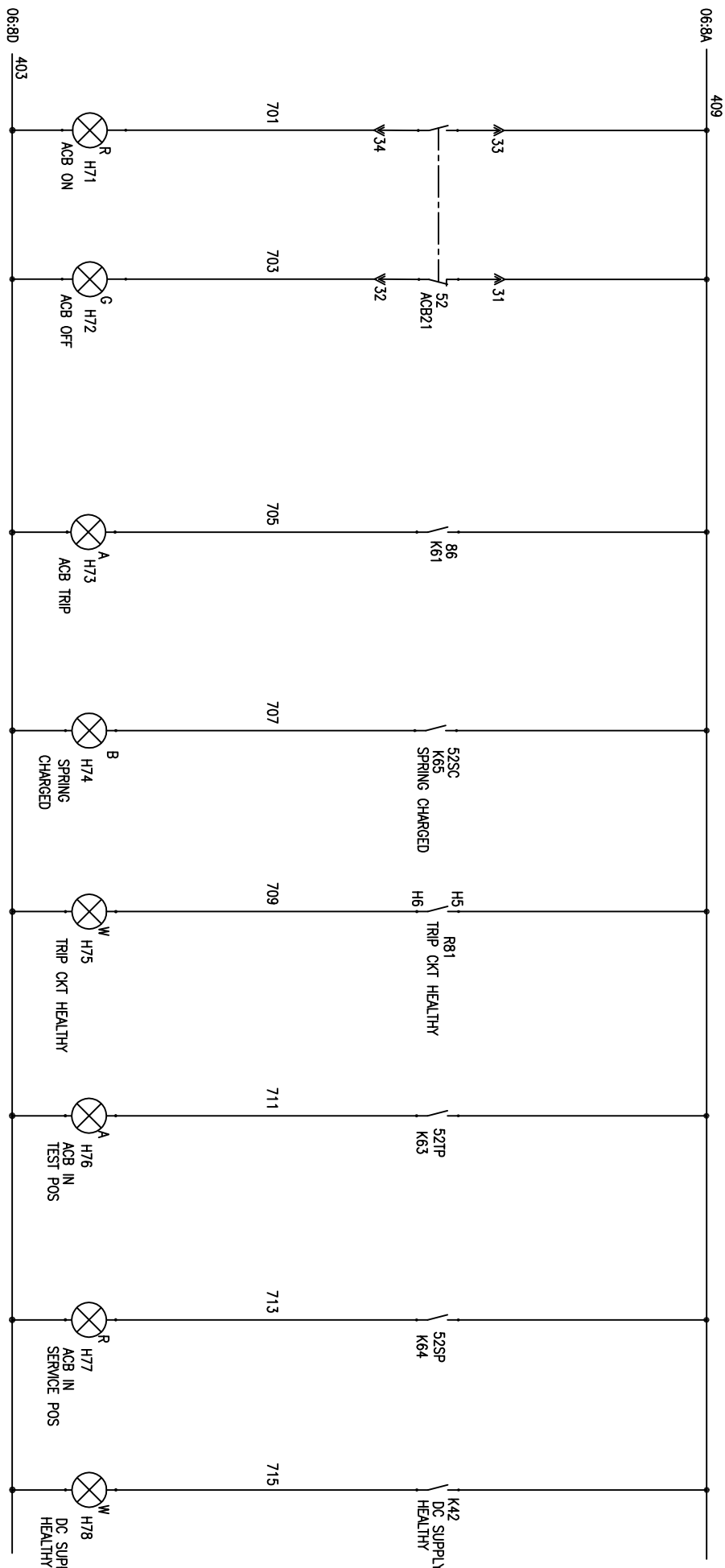
REV. NO.: 00

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1 2 3 4 5 6 7 8

INDICATION CIRCUIT



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DRG. NO. EP-4-CS-048-006


| | | | | | | | | | | | | | | | |
|---------------|------|-------------|----------|-------|----------|------|--|-----------|--|-------------------|--|--------------------------|--|---------|--|
| INVENTORY NO. | | NAME | | SIGN. | | DATE | | SCALE: NA | | JOB NO. CP-14-048 | | DRG. NO. EP-4-CS-048-006 | | REV. 00 | |
| 4 | | | | | | | | | | | | | | | |
| 3 | | DESIGNED | JAGADISH | | 13.04.16 | | | | | | | | | | |
| 2 | | DRAWN | | | | | | | | | | | | | |
| 1 | | CHECKED | JAGADISH | | 13.04.16 | | | | | | | | | | |
| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | | | | | | | | | |

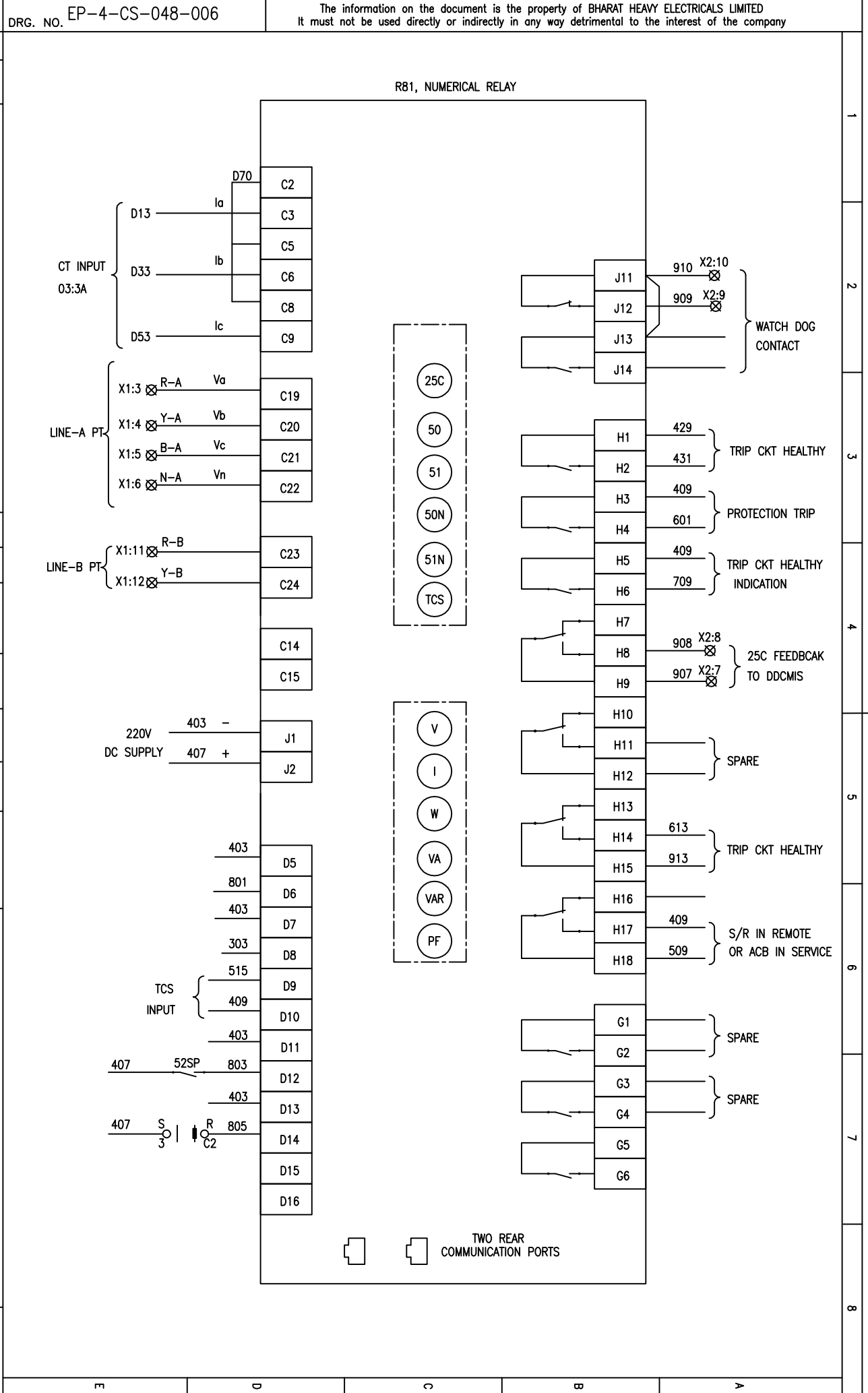
BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIVES DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY

NO. OF SHEETS: 11
SHEET NO.: 07

| | | | | | | | |
|--------------------------|---|----------|----------|--------------------------|------|-------------|----|
| INVENTORY NO. | | | | DRG. NO. EP-4-CS-048-006 | | | |
| REV. NO. | 1 | 2 | 3 | 4 | DATE | DESCRIPTION | BY |
| APPD. | | | | | | | |
| APPROVED | CHECKED | DRAWN | DESIGNED | | | | |
| KSB | JAGADISH | JAGADISH | JAGADISH | | | | |
| | 13.04.16 | 13.04.16 | 13.04.16 | | | | |
| SCALE: NA |  | | | | | | |
| JOB NO. CP-14-048 | TITLE : BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY | | | | | | |
| DRG. NO. EP-4-CS-048-006 | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTION DIVISION BANGALORE | | | | | | |
| NO. OF SHEETS: 11 | SHEET NO. 08 | | | | | | |
| REV. NO. 00 | | | | | | | |



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FIRST ANGLE PROJECTION

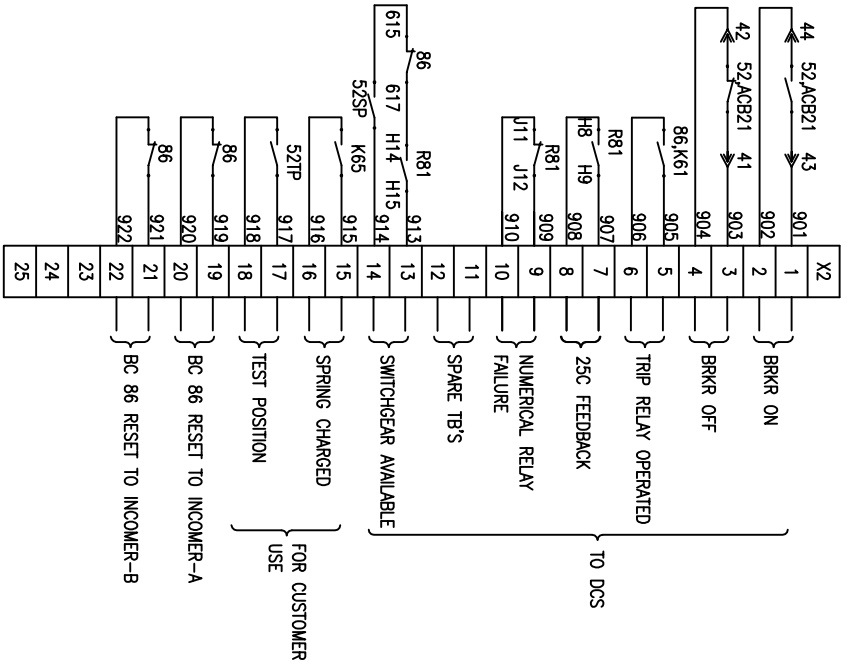
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DRG. NO. EP-4-CS-048-006

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-006 | NO. OF SHEETS | SHEET NO. | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 4 | | | | | | | | | | | | | 11 | 09 | 00 |
| 3 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 2 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 1 | | | | | | | JAGADISH | | 13.04.16 | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE

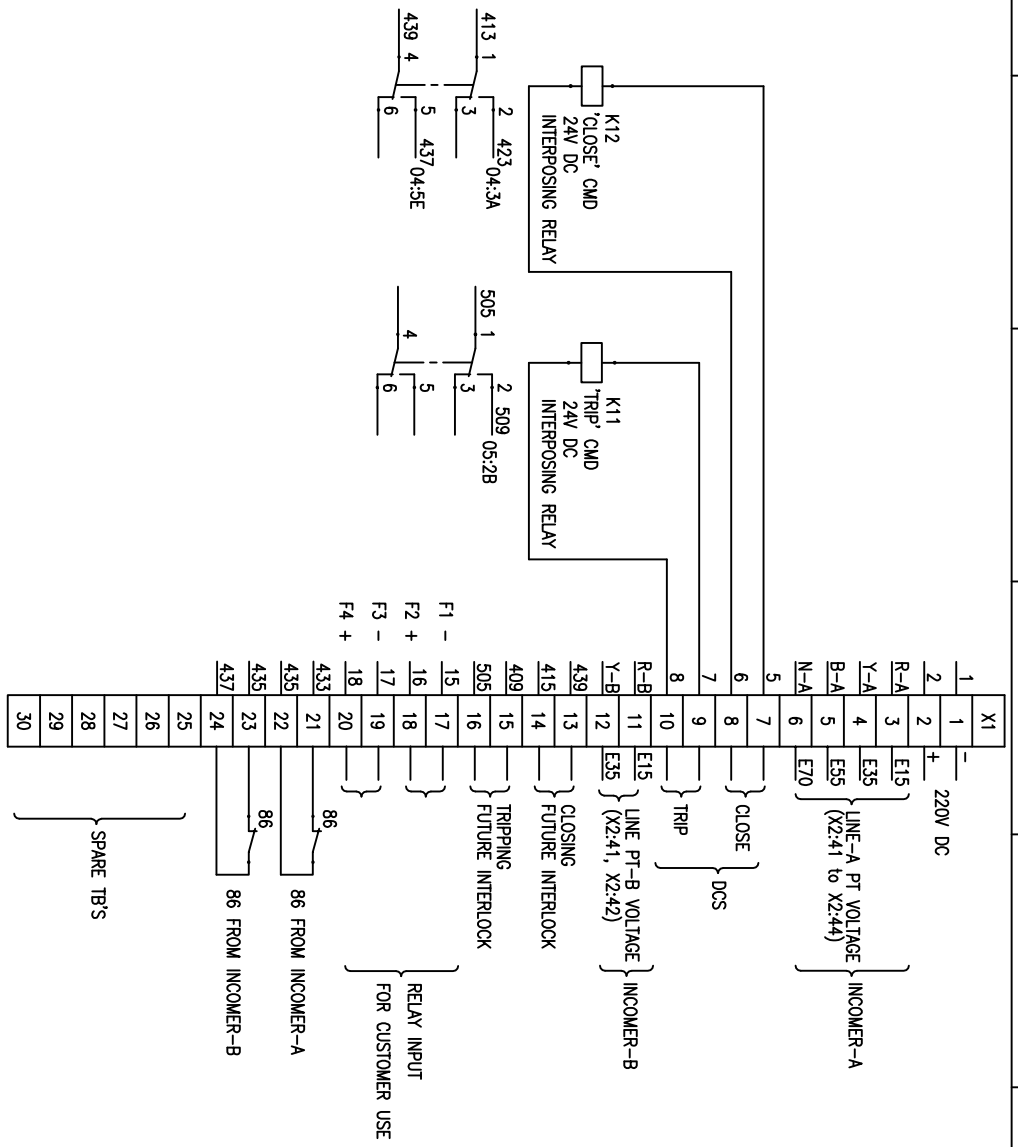
TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY

DRG. NO. EP-4-CS-048-006

1 2 3 4 5 6 7 8

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH | JAGADISH | | 13.04.16 | MA | CP-14-048 | EP-4-CS-048-006 | 11 | 10 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | | | | | | | | | | |

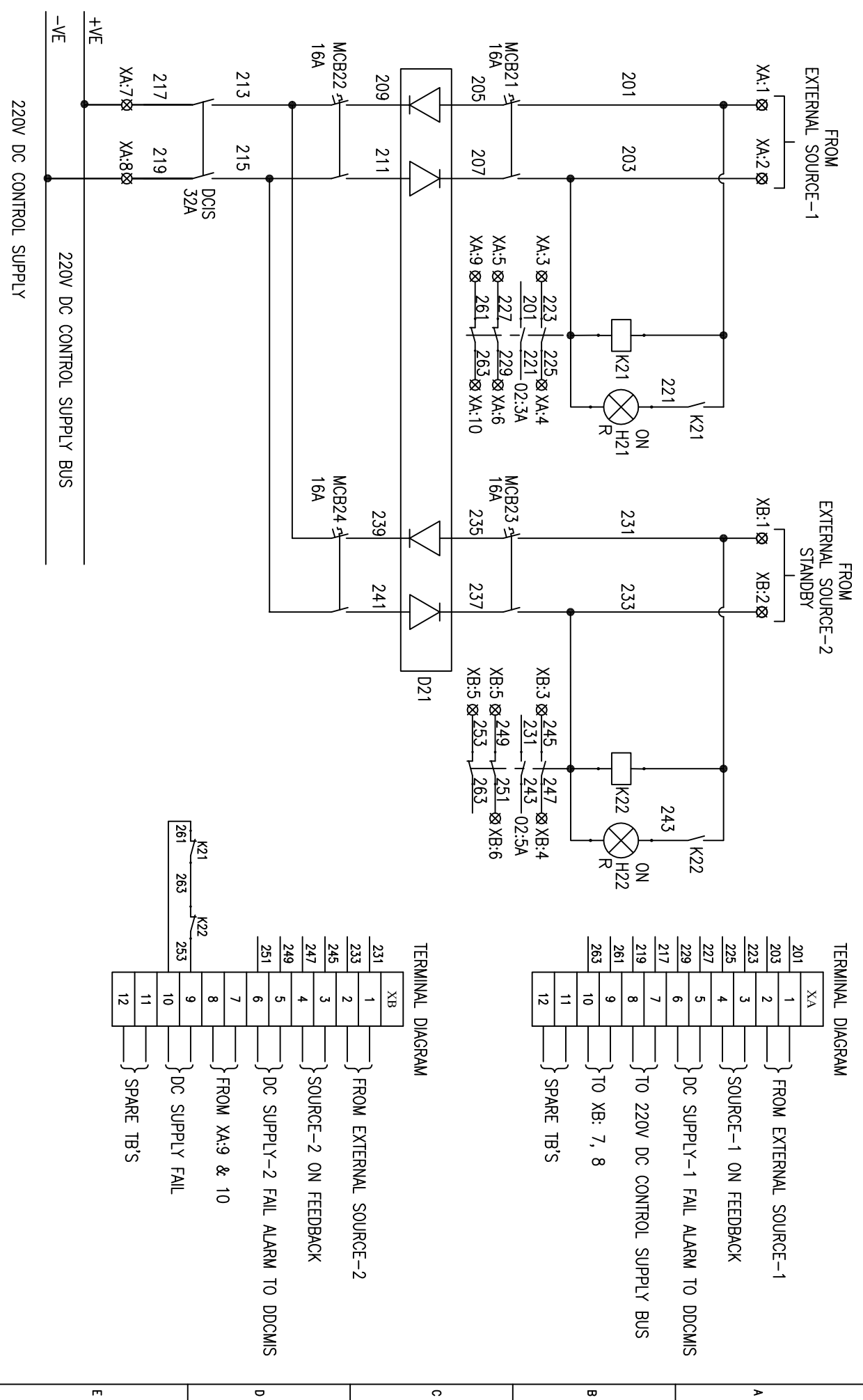
BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
BUSCOUPLER TO SWBD CONTROLLED FROM DDCMS ONLY



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DRG. NO. EP-4-CS-048-006



TERMINAL DIAGRAM

| Terminal | Description |
|----------|----------------------------------|
| XA:1 | FROM EXTERNAL SOURCE-1 |
| XA:2 | |
| XA:3 | |
| XA:4 | SOURCE-1 ON FEEDBACK |
| XA:5 | |
| XA:6 | |
| XA:7 | DC SUPPLY-1 FAIL ALARM TO DDCMIS |
| XA:8 | |
| XA:9 | |
| XA:10 | TO 220V DC CONTROL SUPPLY BUS |
| XA:11 | |
| XA:12 | |
| XB:1 | FROM EXTERNAL SOURCE-2 |
| XB:2 | |
| XB:3 | |
| XB:4 | SOURCE-2 ON FEEDBACK |
| XB:5 | |
| XB:6 | |
| XB:7 | DC SUPPLY-2 FAIL ALARM TO DDCMIS |
| XB:8 | |
| XB:9 | |
| XB:10 | TO XB: 7, 8 |
| XB:11 | |
| XB:12 | |

TERMINAL DIAGRAM

| Terminal | Description |
|----------|----------------------------------|
| 231 | FROM EXTERNAL SOURCE-2 |
| 233 | |
| 235 | |
| 245 | SOURCE-2 ON FEEDBACK |
| 247 | |
| 249 | |
| 251 | DC SUPPLY-2 FAIL ALARM TO DDCMIS |
| 253 | |
| 255 | |
| 261 | FROM XA:9 & 10 |
| 263 | |
| 265 | |
| 271 | DC SUPPLY FAIL |
| 273 | |
| 275 | |
| 281 | SPARE TB'S |
| 283 | |
| 285 | |

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|-----------|------|
| 1 | | | | | | JAGADISH | | 13.04.16 | NA | CP-14-048 | EP-4-CS-048-006 | 11 | 11 | 00 |
| 2 | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 3 | | | | | | JAGADISH | | 13.04.16 | | | | | | |
| 4 | | | | | | JAGADISH | | 13.04.16 | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
 ELECTROPROTECTIANS DIVISION BANGALORE

TITLE : POWER & CONTROL SCHEME
 BUSCOUPLER TO SWBD CONTROLLED FROM DDCMIS ONLY

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

1

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CUSTOMER:



TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:

1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

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


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DRG. NO. EP-4-CS-048-007

| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|-------------------------|--------|--------|
| 1 | 415V UNIT EMERGENCY MCC | TDG | 3000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-007 | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|---|----------|---|--|--------------------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH |  | 16.06.16 |  | MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMS | | 10 | 01 |
| 2 | | | | | DRAWN | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH |  | 16.06.16 | | | | | |
| 4 | | | | | | | | | | | | | |

DRG. NO. EP-4-CS-048-007

** - AS PER RATING
OF THE SWITCHBOARD

CT21-23
RATIO : **/1A
BURDEN:15VA
CLASS:0.5

03:1A

CTTB21

C70

C11

C70

C31

C70

C51

C13

C33

C53

C35

C57

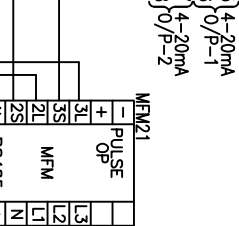
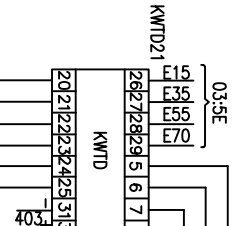
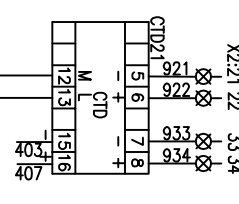
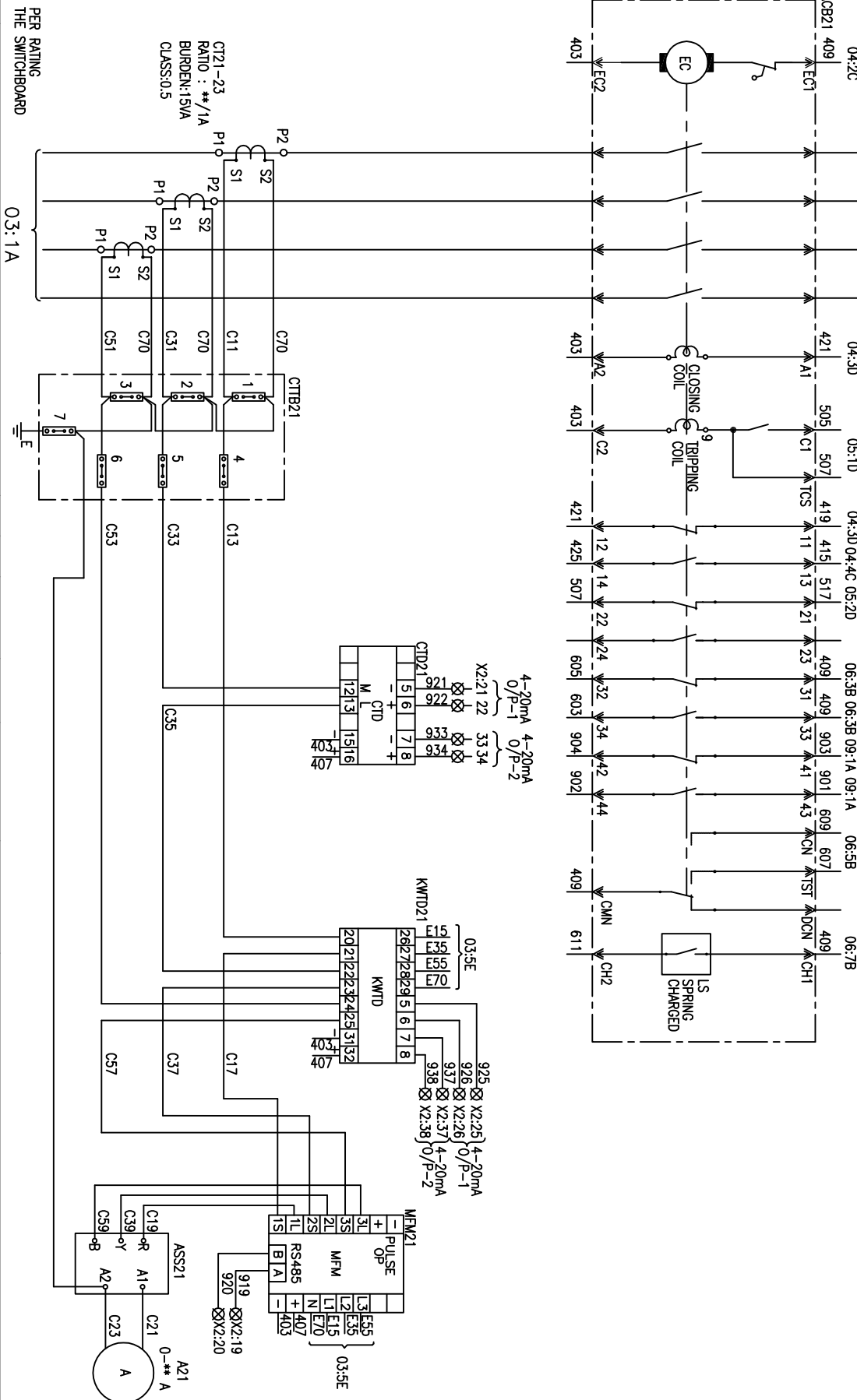
C17

C37

C59

C21

C23



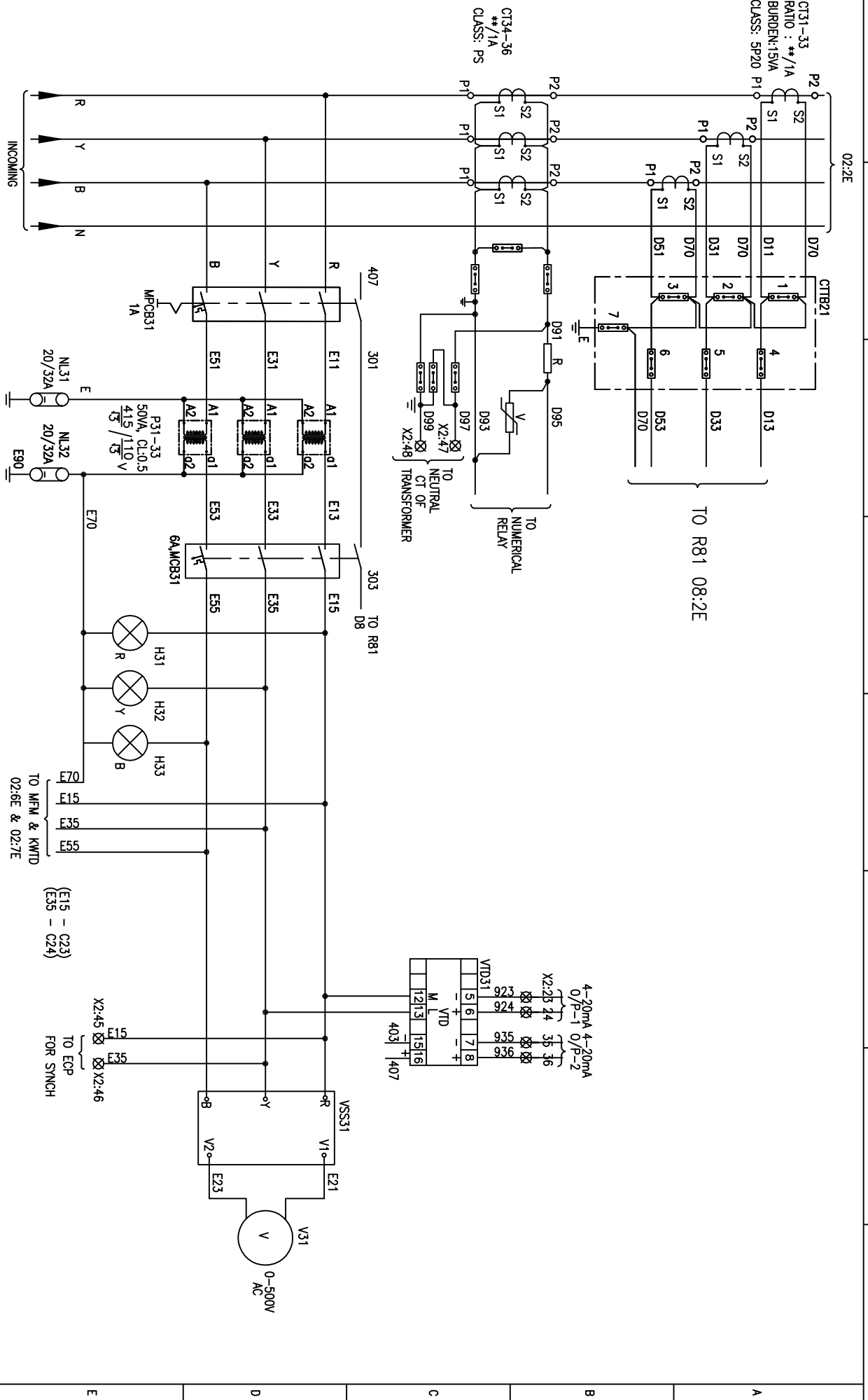
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|---------------|--|----------|----------|----------|
| INVENTORY NO. | 4 | 3 | 2 | 1 |
| REV. NO. | | | | |
| DATE | | | | |
| DESCRIPTION | | | | |
| BY | | | | |
| APPD. | | | | |
| APPROVED | | | | |
| KSB | | | | |
| NAME | JAGADISH | JAGADISH | JAGADISH | JAGADISH |
| SIGN. | | | | |
| DATE | 16.06.16 | 16.06.16 | 16.06.16 | 16.06.16 |
| SCALE | NA | | | |
| TITLE | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPOWERCIANS DIVISION BANGALORE | | | |
| JOB NO. | CP-14-048 | | | |
| DRG. NO. | EP-4-CS-048-007 | | | |
| NO. OF SHEETS | 10 | | | |
| SHEET NO. | 02 | | | |
| REV. | 00 | | | |

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

DRG. NO. EP-4-CS-048-007

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|-----------|------|
| 1 | | | | | | | | | | CP-14-048 | EP-4-CS-048-007 | 10 | 03 | 00 |
| 2 | | | | | | JAGADISH | | 16.06.16 | | | | | | |
| 3 | | | | | | JAGADISH | | 16.06.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |



| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

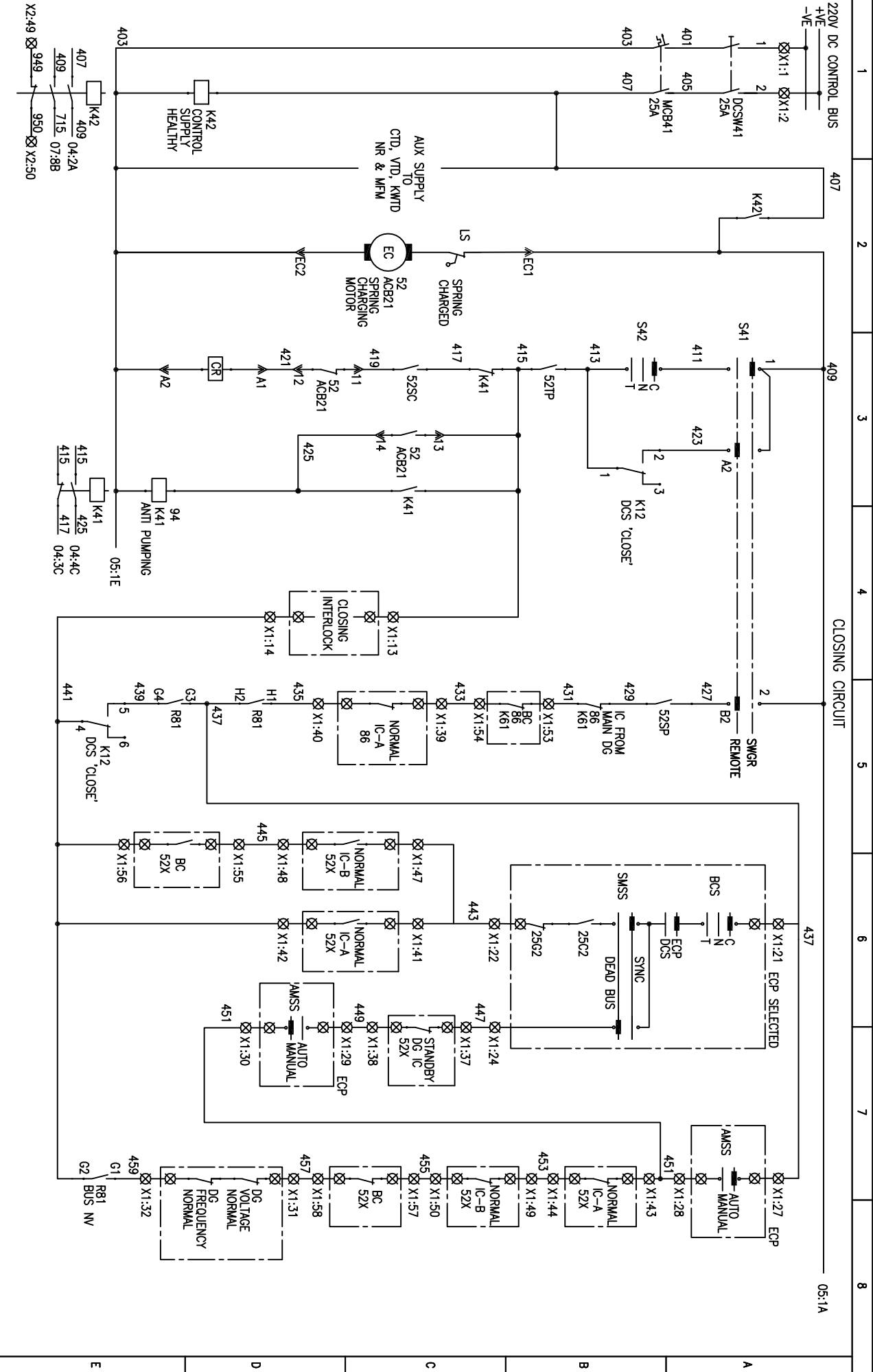
BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME

MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDGMS

NO. OF SHEETS: 10
SHEET: 03

NO. OF SHEETS: 10
SHEET: 03



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|-----|-------|-----------|-----------------|---------------|-----------|------|
| 1 | | | | | | | 1:1 | CP-14-048 | EP-4-CS-048-007 | 10 | 04 | 00 |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |

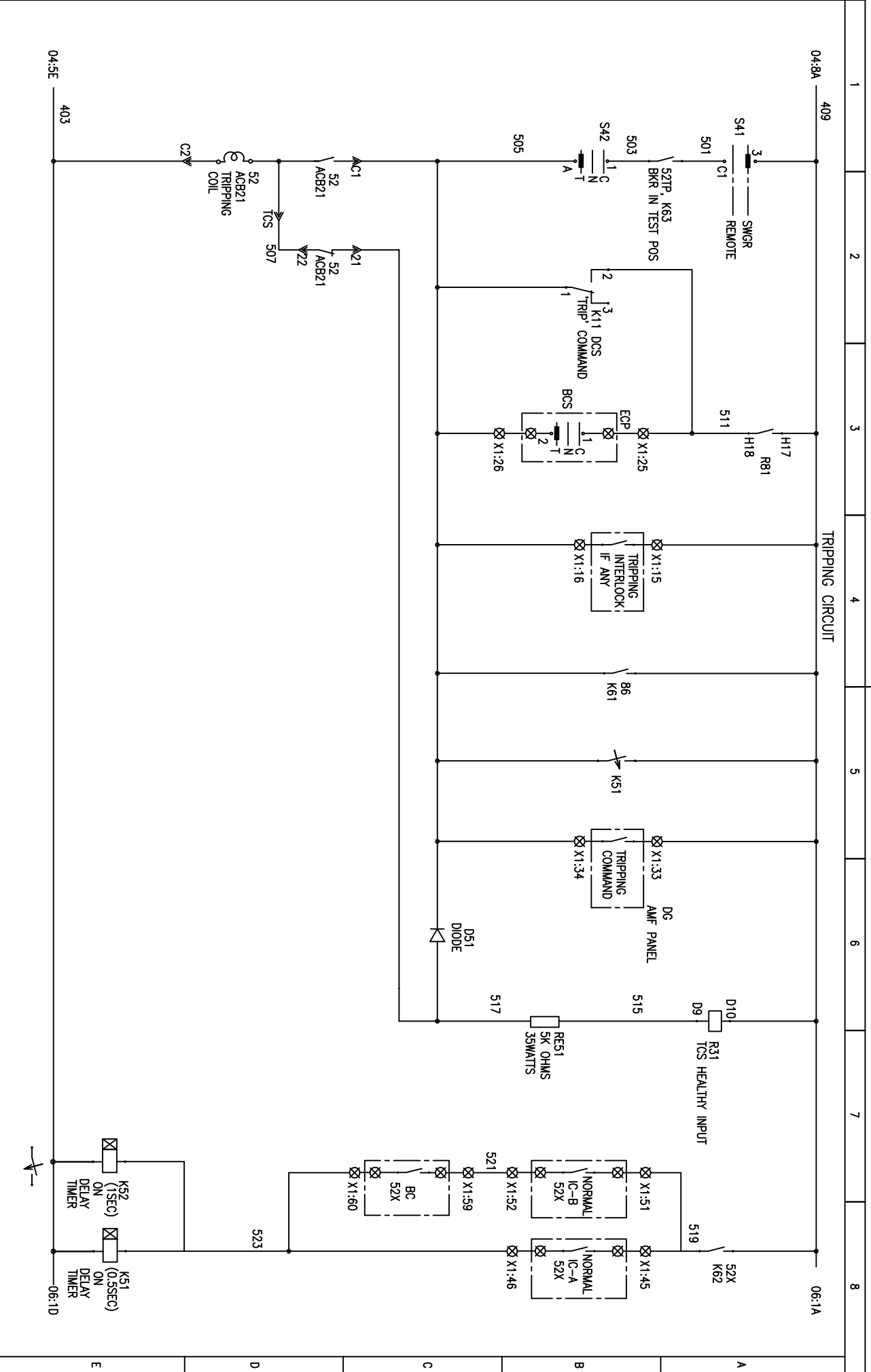
BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDGMS

| | |
|---------------|----|
| NO. OF SHEETS | 10 |
| SHEET NO. | 04 |
| REV. | 00 |

DRG. NO. EP-4-CS-048-007

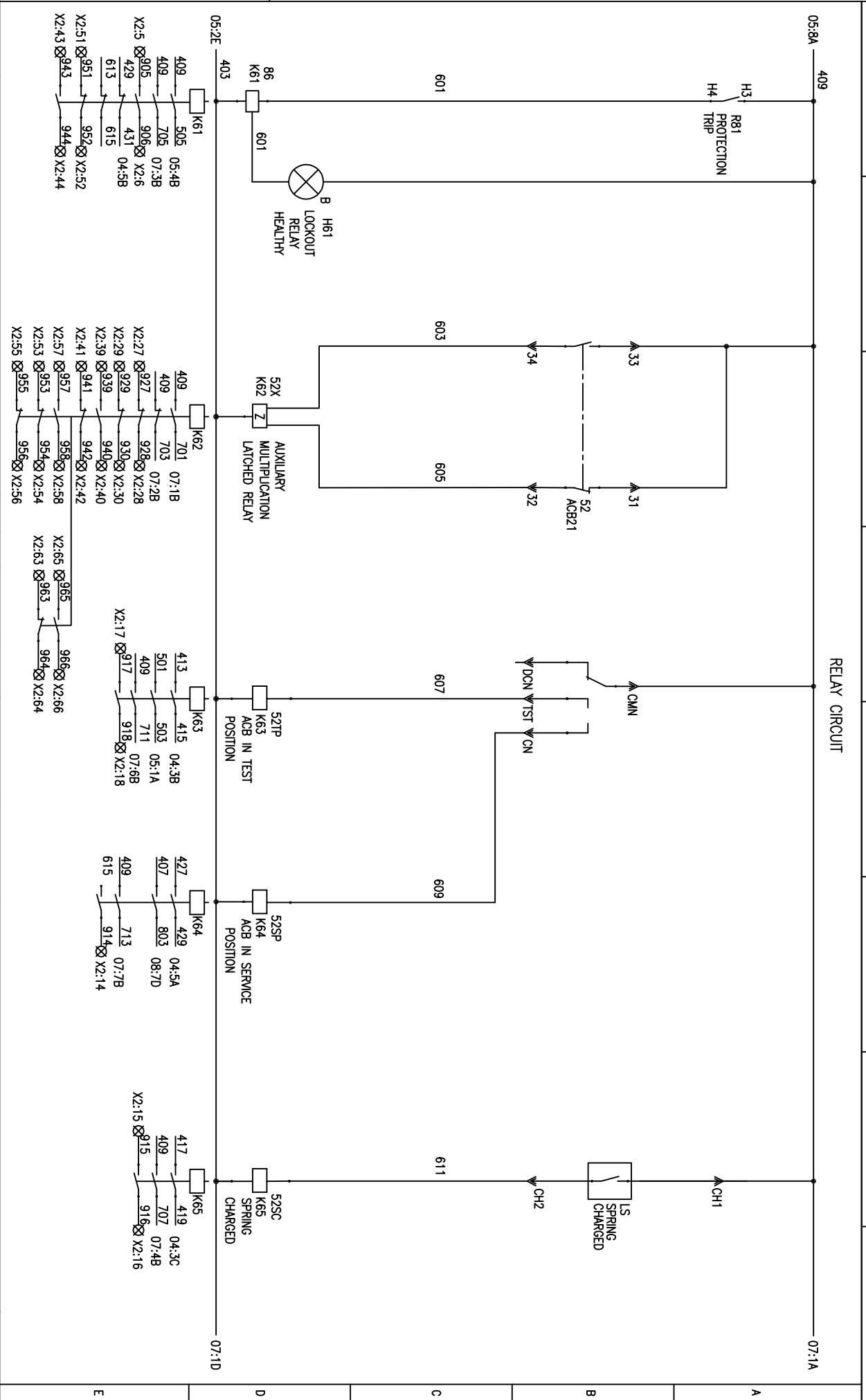


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| | | | | | | | | | | | | | |
|---------------|---|----------|----------|----------|--|-------|----|--|------------------------|----------|-----------------|---------------|----|
| INVENTORY NO. | 4 | NAME | | DATE | | SCALE | NA | JOB NO. | CP-14-048 | DRG. NO. | EP-4-CS-048-007 | NO. OF SHEETS | 10 |
| REV. NO. | 1 | DESIGNED | JAGADISH | 16.06.16 | | | | TITLE : | POWER & CONTROL SCHEME | | | SHEETS | 05 |
| DATE | | DRAWN | | 16.06.16 | | | | MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDGMS | | | | | |
| DESCRIPTION | | CHECKED | JAGADISH | 16.06.16 | | | | | | | | | |
| BY | | APPROVED | KSB | 16.06.16 | | | | | | | | | |

DRG. NO. EP-4-CS-048-007



RELAY CIRCUIT

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|-----------|-----------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | NA | CP-14-048 | EP-4-CS-048-007 | 10 | 06 | 00 |
| 2 | | | | | DRAWN | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | | | | | |
| 4 | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIVES DIVISION BANGALORE



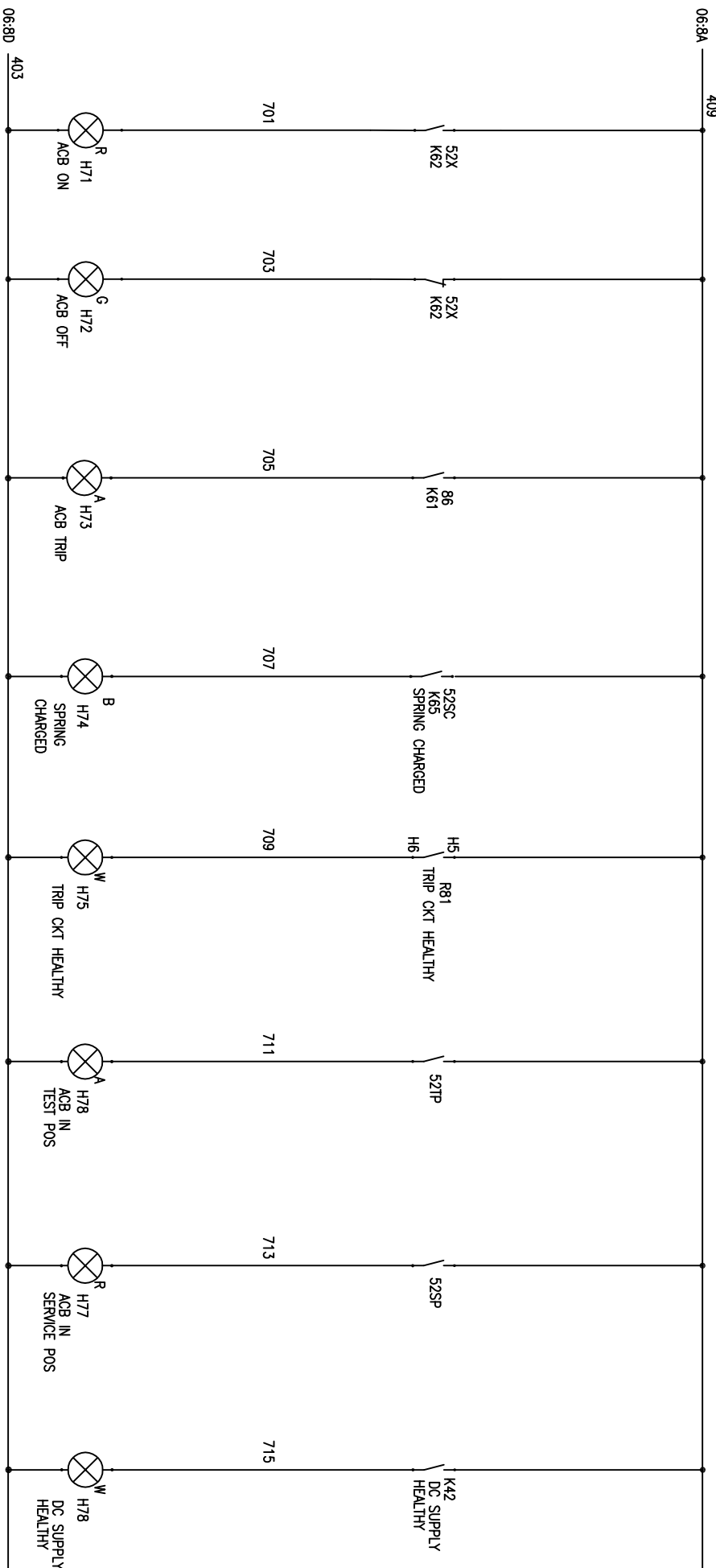
TITLE :
POWER & CONTROL SCHEME
MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDGMS



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

INDICATION CIRCUIT



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DRG. NO. EP-4-CS-048-007

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-007 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 16.06.16 | | | | 10 | 07 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 16.06.16 | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 16.06.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |



BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWER DIVISION BANGALORE

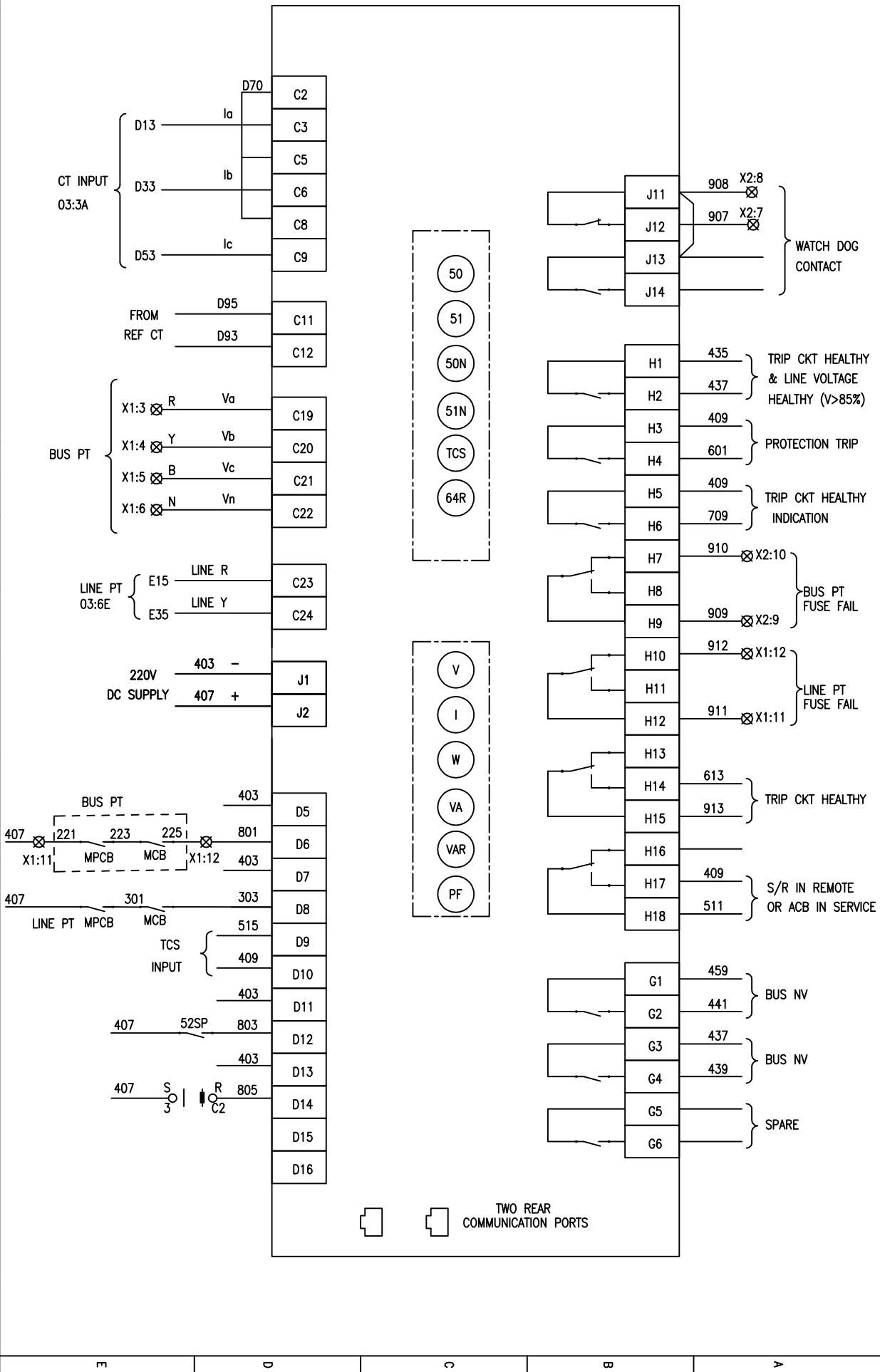
TITLE :
POWER & CONTROL SCHEME
MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDGMS

INVENTORY NO.

DRG. NO. EP-4-CS-048-007

| | | | | |
|---------------|-----------------|----------|----------|---|
| REV. NO. | 1 | 2 | 3 | 4 |
| DATE | | | | |
| DESCRIPTION | | | | |
| BY | | | | |
| APPD. | | | | |
| APPROVED | CHECKED | DRAWN | DESIGNED | |
| KSB | JAGADISH | | JAGADISH | |
| SIGN. | | | | |
| DATE | 16.06.16 | 16.06.16 | 16.06.16 | |
| SCALE | NA | | | |
| JOB NO. | CP-14-048 | | | |
| DRG. NO. | EP-4-CS-048-007 | | | |
| NO. OF SHEETS | 10 | | | |
| SHEET NO. | 08 | | | |
| REV. | 00 | | | |

R81, NUMERICAL RELAY

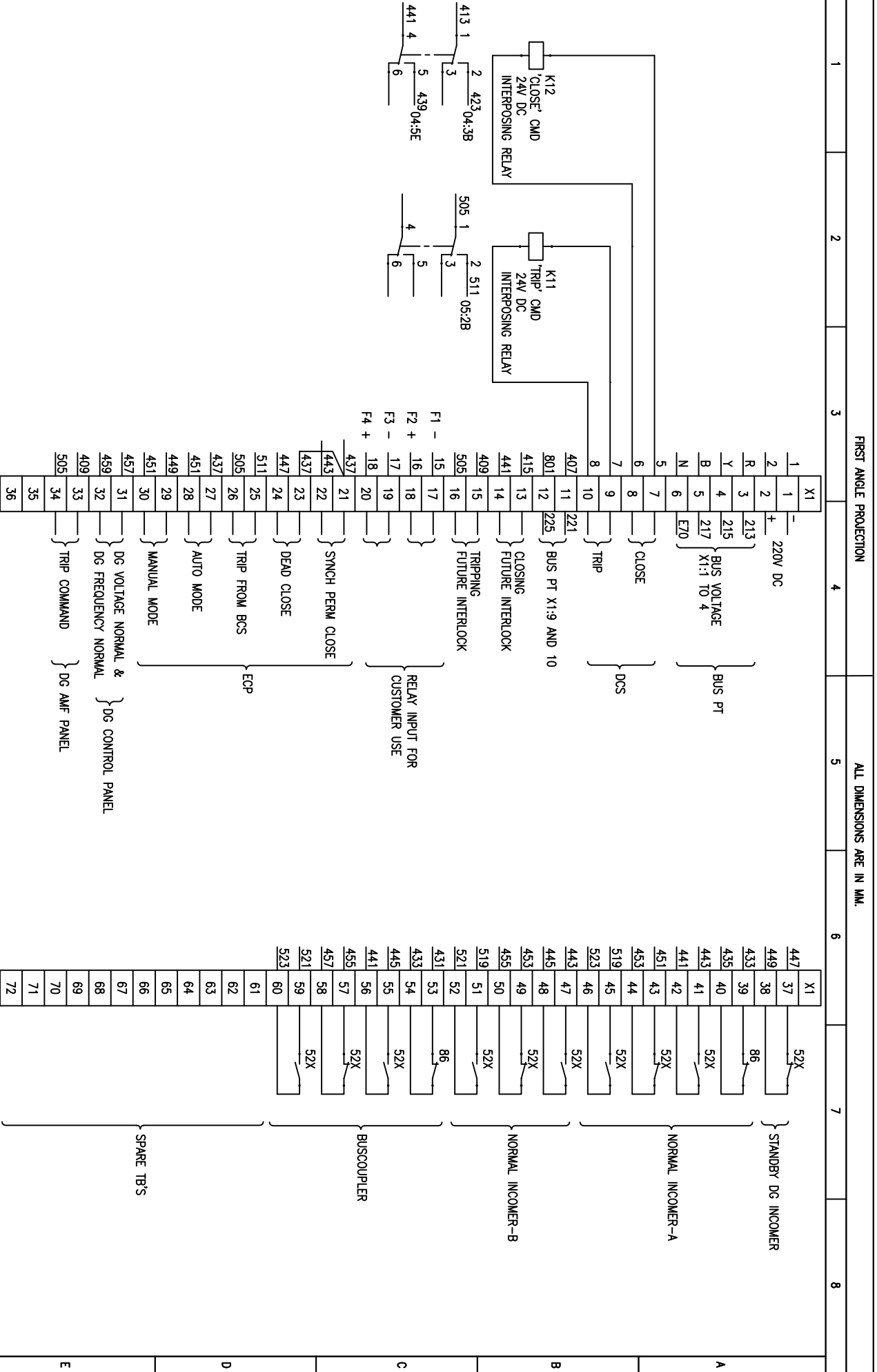


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FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

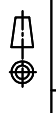
DRG. NO. EP-4-CS-048-007



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH | | 16.06.16 | NA | CP-14-048 | EP-4-CS-048-007 | 10 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 16.06.16 | | | | 10 | |
| 3 | | | | | DESIGNED | JAGADISH | | 16.06.16 | | | | 10 | |
| 4 | | | | | | | | | | | | 10 | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
MAIN DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMS



NO. OF SHEETS: 10
SHEET NO.: 10

REV. NO.: 00

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



CUSTOMER:

TELANGANA STATE POWER GENERATION CORPORATION LTD
TELANGANA STATE
INDIA

PROJECT:



1x800 MW KOTHAGUDAM THERMAL POWER STATION
STAGE-VII, UNIT#12
PALONCHA

| Sl No | SWITCHBOARD DESCRIPTION | DESIGN | RATING |
|-------|-------------------------|--------|--------|
| 1 | 415V UNIT EMERGENCY MCC | TDG | 3000A |

CUSTOMER CONSULTANT:

DEVELOPMENT CONSULTANTS PVT LTD
KOLKATA

DRG. NO. EP-4-CS-048-008

| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-008 | NO. OF SHEETS | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|---|----------|-----------|-------------------|--------------------------|---------------|------|
| 4 | | | | | | | | | | | | | 10 | 00 |
| 3 | | | | | | DESIGNED | JAGADISH |  | 16.06.16 | | | | 01 | |
| 2 | | | | | | DRAWN | | | | | | | | |
| 1 | | | | | | CHECKED | JAGADISH |  | 16.06.16 | | | | | |



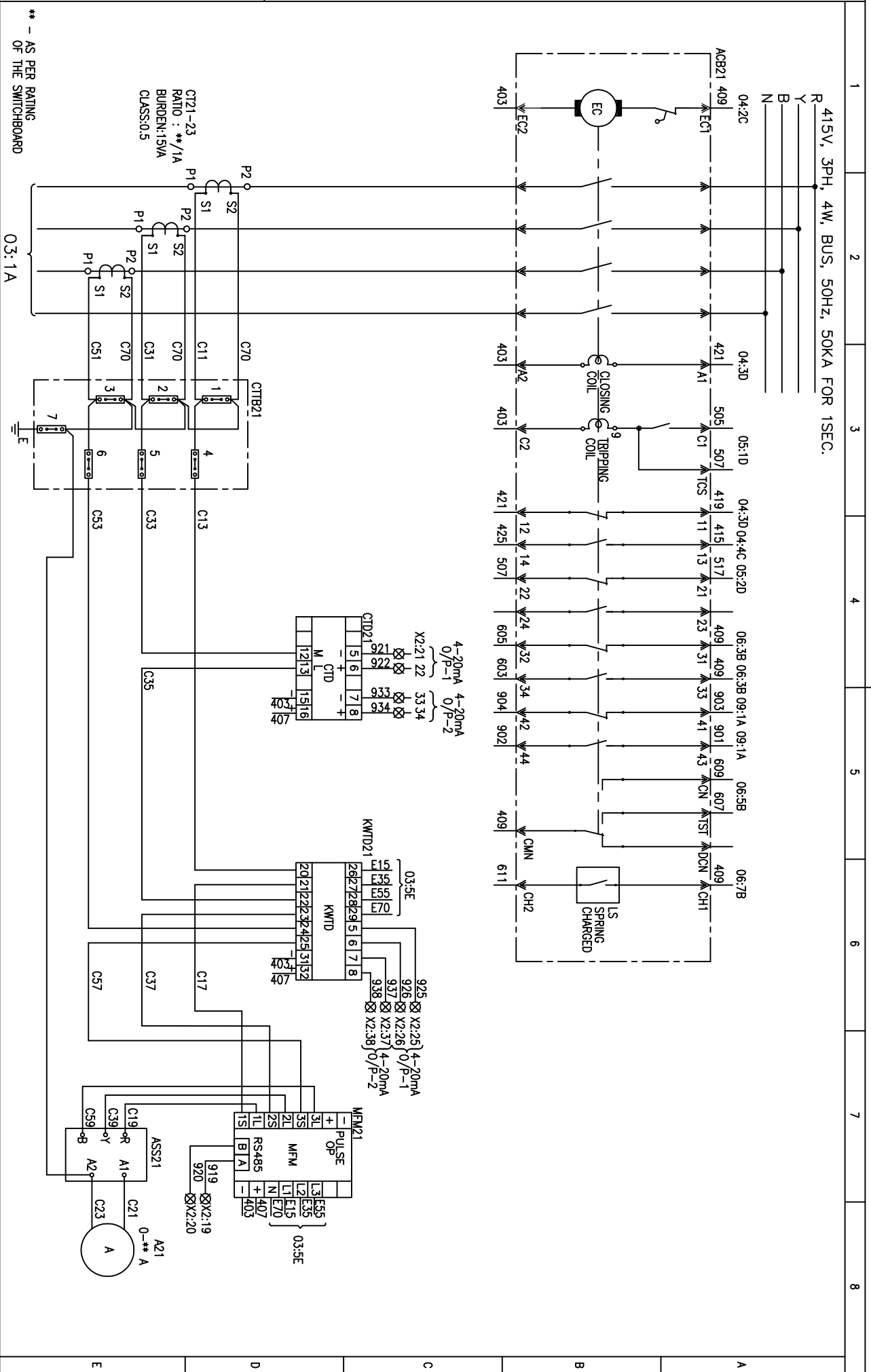
BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE

TITLE :
POWER & CONTROL SCHEME
STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDGMS



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.



| | | | | | | | | | | | | | | |
|---------------|---|-------------|----------|---------|----------|----------|-------|----|---------|-----------|----------|-----------------|---------------|----|
| INVENTORY NO. | 4 | NAME | JAGADISH | SIGN. | DATE | 16.06.16 | SCALE | MA | JOB NO. | CP-14-048 | DRG. NO. | EP-4-CS-048-008 | NO. OF SHEETS | 10 |
| REV. NO. | 1 | DESCRIPTION | JAGADISH | CHECKED | JAGADISH | 16.06.16 | | | | | | | SHEET | 02 |
| DATE | | BY | | APPD. | | | | | | | | | REV. | 00 |

** - AS PER RATING OF THE SWITCHBOARD

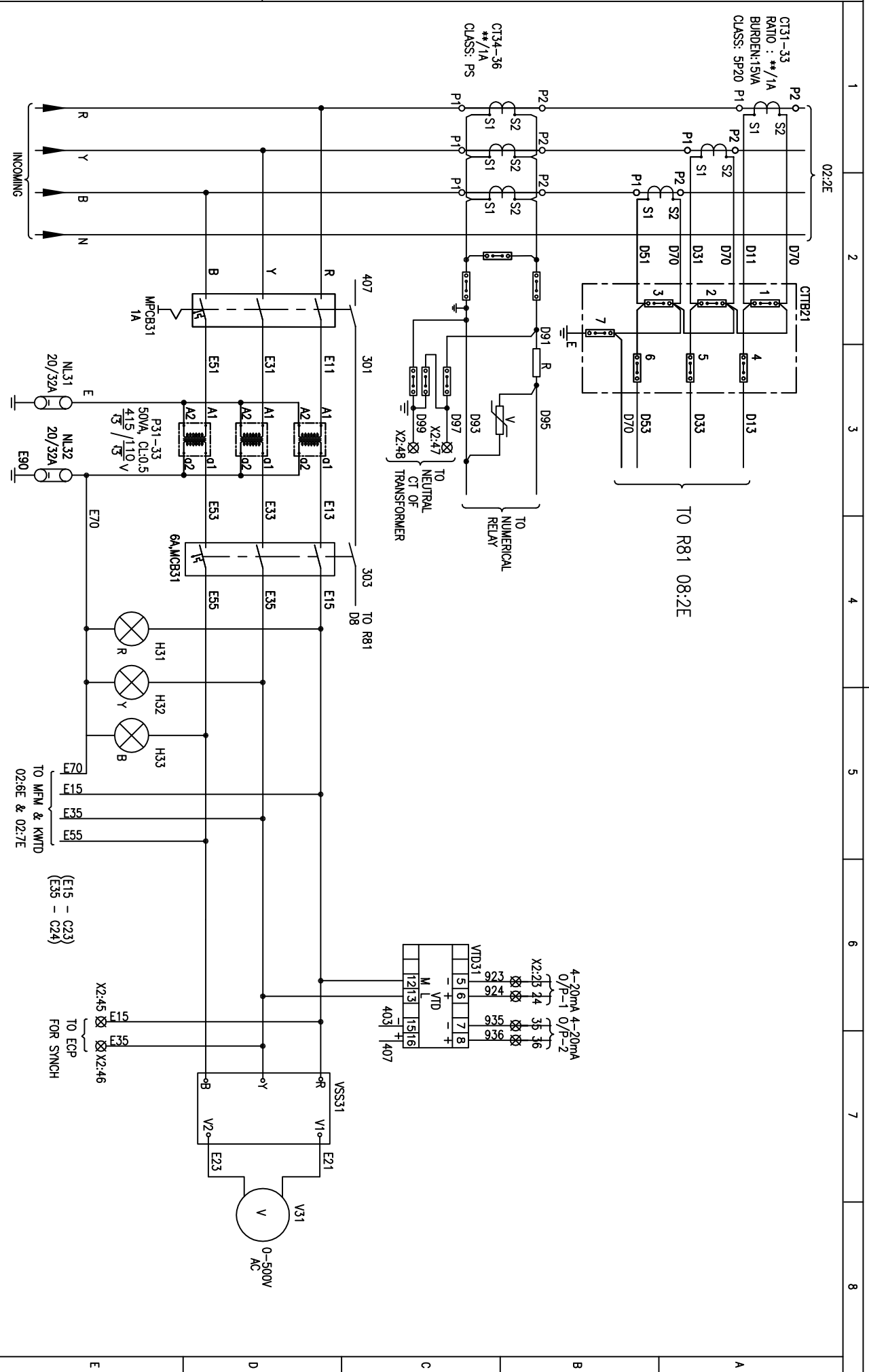
CT21-23
RATIO : **/1A
BURDEN:15VA
CLASS:0.5

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERELAINS DIVISION BANGALORE



TITLE : POWER & CONTROL SCHEME
STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM EOP & DDGMS

DRG. NO. EP-4-CS-048-008

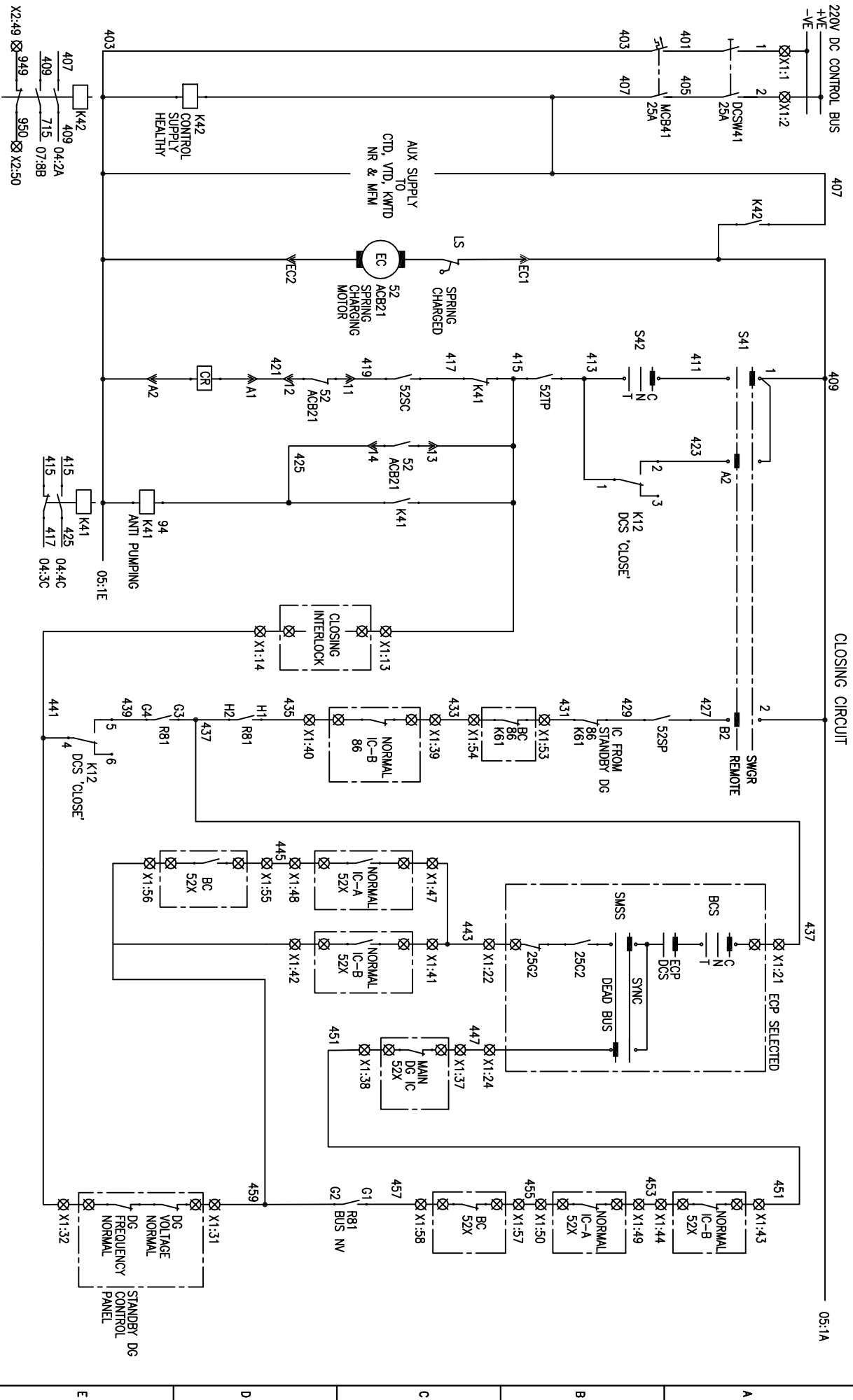


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

| | | | | | | | | | | | | |
|---------------|------------------------|----------|--|---|----------|-------|----------|-------|-----------|-----------------|---------------|---------------|
| INVENTORY NO. | 1 | 2 | 3 | 4 | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | NO. OF SHEETS |
| REV. NO. | 1 | 2 | 3 | 4 | DESIGNED | | 16.06.16 | NA | CP-14-048 | EP-4-CS-048-008 | 10 | 10 |
| DATE | | | | | DRAWN | | 16.06.16 | | | | 03 | 03 |
| DESCRIPTION | POWER & CONTROL SCHEME | | | | | | | | | | | |
| BY | APPD. | APPROVED | TITLE : STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DCOMS | | | | | | | | | |
| | | | BHARAT HEAVY ELECTRICALS LIMITED ELECTRONOCELEANS DIVISION BANGALORE | | | | | | | | | |
| | | | JOB NO. CP-14-048 | | | | | | | | | |
| | | | DRG. NO. EP-4-CS-048-008 | | | | | | | | | |
| | | | NO. OF SHEETS: 10 | | | | | | | | | |
| | | | SHEET: 03 | | | | | | | | | |
| | | | REV. 00 | | | | | | | | | |

DRG. NO. EP-4-CS-048-008

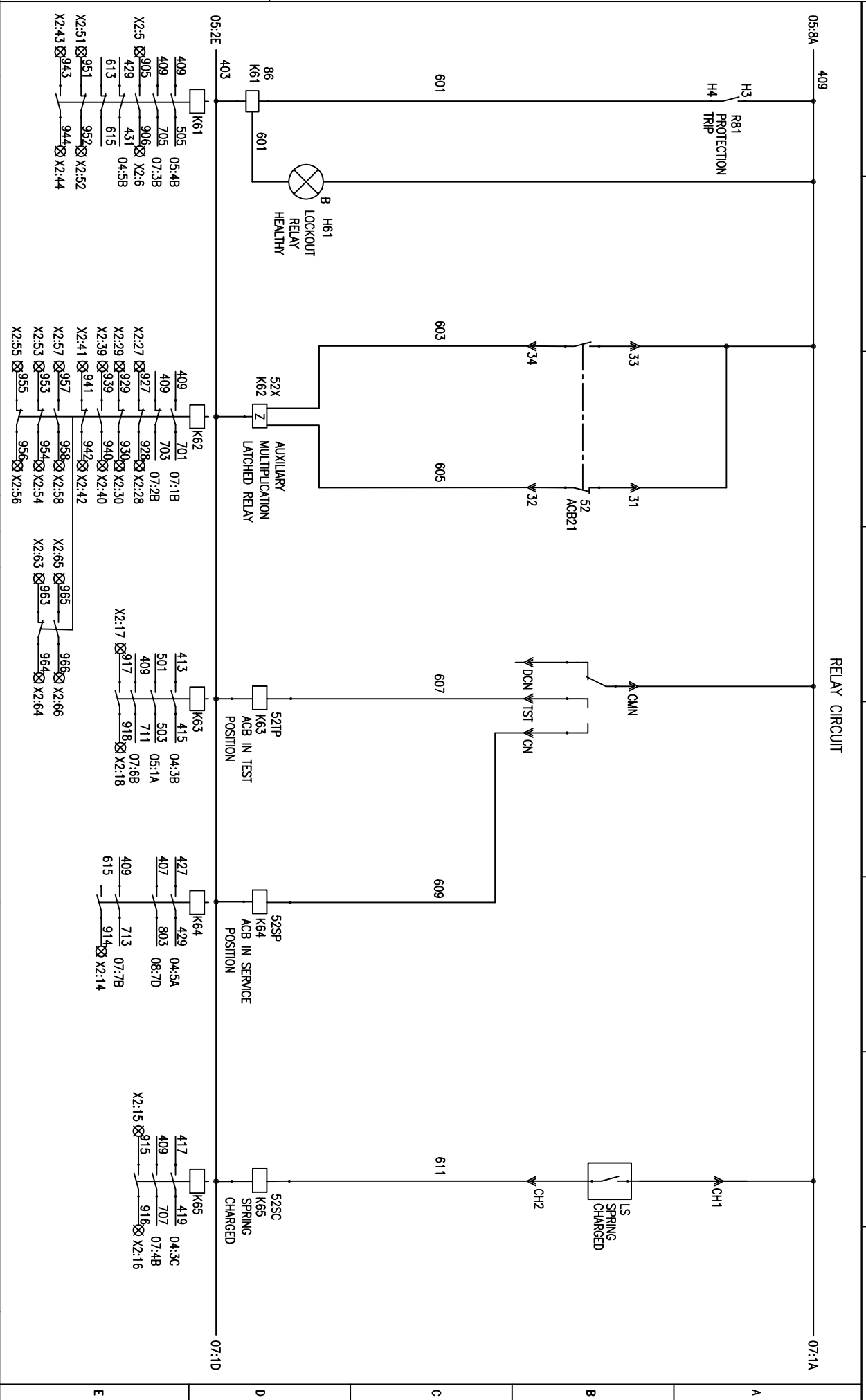


FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

| | | | | | | | | | | | |
|---------------|----|---|--|----------|--|---------|----------|----------|-----------|----------|-----------------|
| INVENTORY NO. | 4 | NAME | | DATE | | SCALE | NA | JOB NO. | CP-14-048 | DRG. NO. | EP-4-CS-048-008 |
| REV. NO. | 1 | BY | | APPD. | | CHECKED | JAGADISH | 16.06.16 | | | |
| DATE | | DESCRIPTION | | APPROVED | | KSB | | | | | |
| NO. OF SHEETS | 10 | BHARAT HEAVY ELECTRICALS LIMITED ELECTROPROTECTIANS DIVISION BANGALORE | | | | | | | | | |
| SHEET NO. | 04 | TITLE : POWER & CONTROL SCHEME STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMS | | | | | | | | | |
| REV. | 00 | | | | | | | | | | |

DRG. NO. EP-4-CS-048-008



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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| FIRST ANGLE PROJECTION | | | | ALL DIMENSIONS ARE IN MM. | | | |

| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | KSB | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-008 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | | | 10 | 06 | 00 |
| 2 | | | | | DRAWN | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | | | | | |
| 4 | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERELANS DIVISION BANGALORE



TITLE: POWER & CONTROL SCHEME
STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM EOP & DDGMS

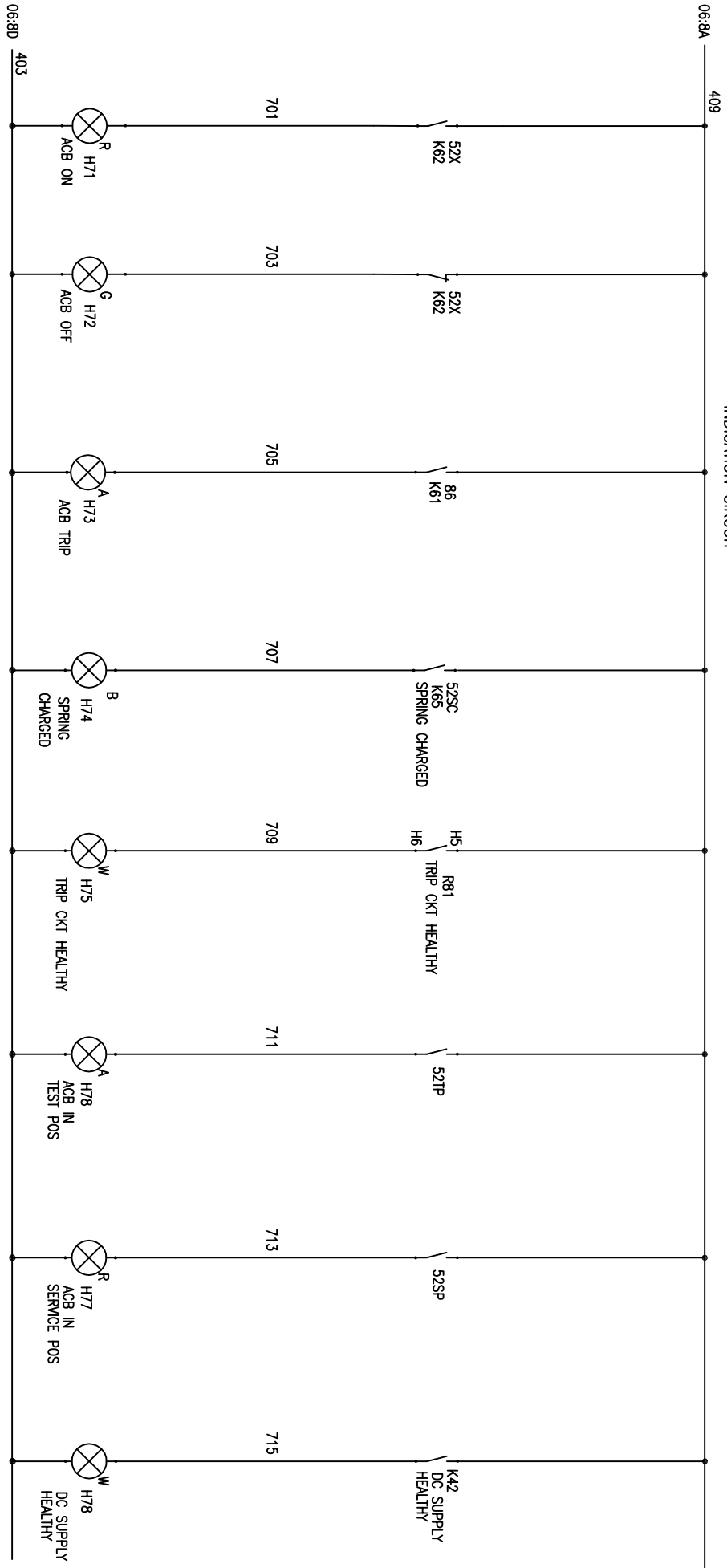
DRG. NO. EP-4-CS-048-008

INVENTORY NO.

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

INDICATION CIRCUIT



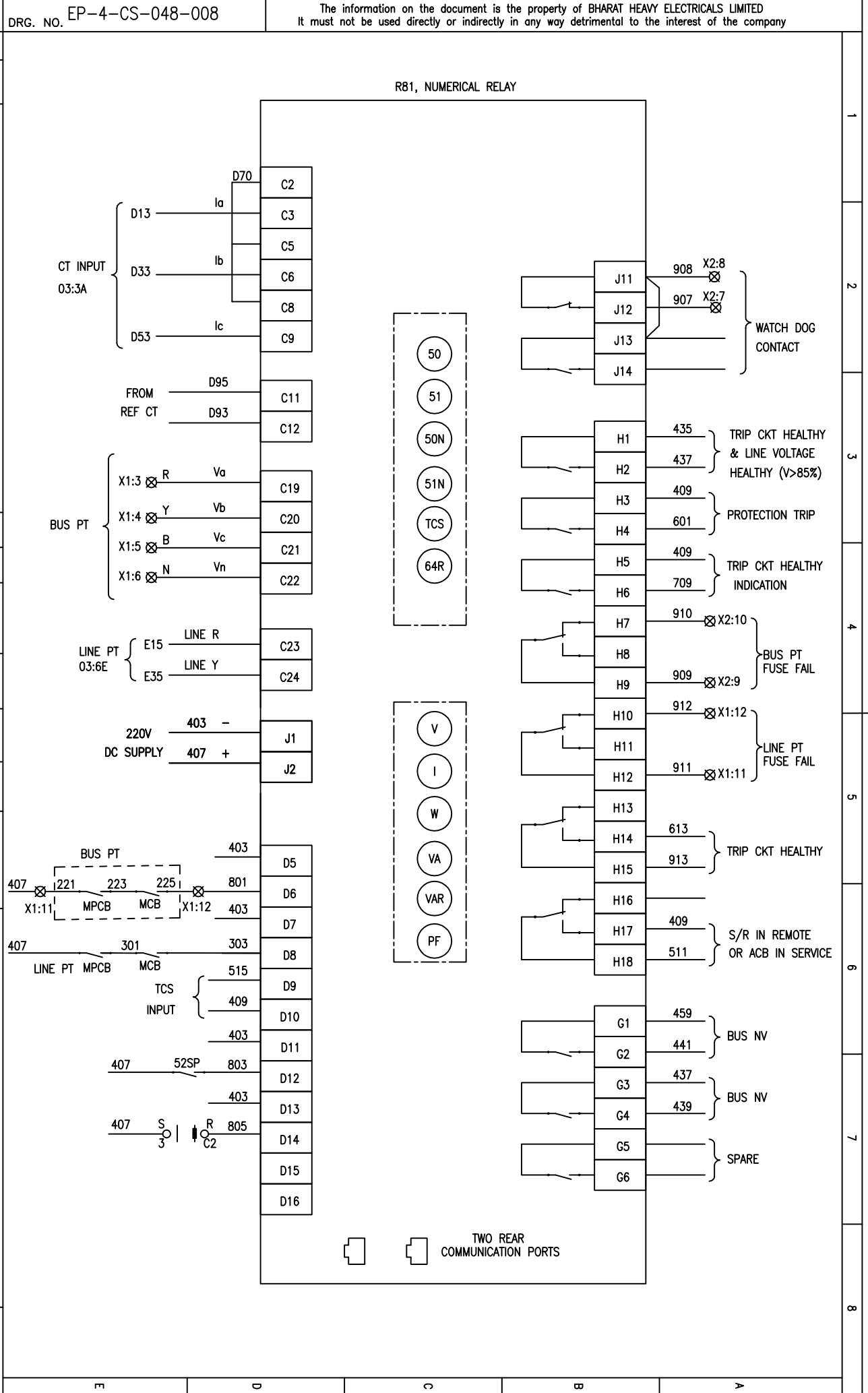
| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE: NA | JOB NO. CP-14-048 | DRG. NO. EP-4-CS-048-008 | NO. OF SHEETS | SHEET NO. | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-----------|-------------------|--------------------------|---------------|-----------|------|
| 1 | | | | | CHECKED | JAGADISH | | 16.06.16 | | | | 10 | 07 | 00 |
| 2 | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | DESIGNED | JAGADISH | | 16.06.16 | | | | | | |
| 4 | | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPOWERCELLS DIVISION BANGALORE



TITLE :
POWER & CONTROL SCHEME
STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDGMS

| | | | | | | | |
|---------------|-----------------|----------|----------|--------------------------|------|-------------|----|
| INVENTORY NO. | | | | DRG. NO. EP-4-CS-048-008 | | | |
| REV. NO. | 1 | 2 | 3 | 4 | DATE | DESCRIPTION | BY |
| DATE | | | | | | | |
| APPD. | | | | | | | |
| APPROVED | CHECKED | DRAWN | DESIGNED | | | | |
| KSB | JAGADISH | JAGADISH | JAGADISH | | | | |
| SIGN. | | | | | | | |
| DATE | 16.06.16 | 16.06.16 | 16.06.16 | | | | |
| SCALE | NA | | | | | | |
| JOB NO. | CP-14-048 | | | | | | |
| DRG. NO. | EP-4-CS-048-008 | | | | | | |
| NO. OF SHEETS | 10 | | | | | | |
| SHEET NO. | 08 | | | | | | |
| REV. | 00 | | | | | | |



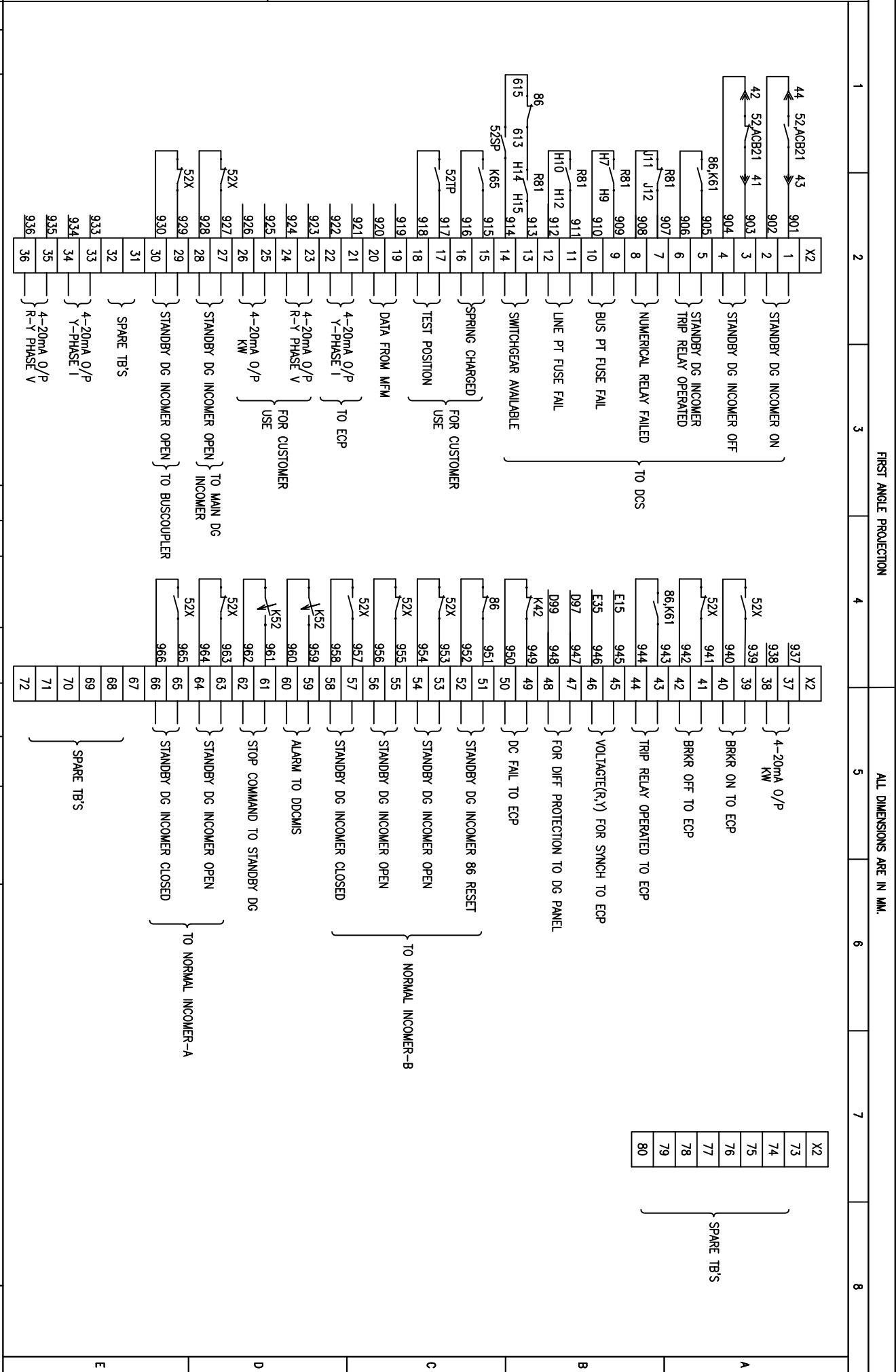
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FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM.

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DRG. NO. EP-4-CS-048-008



FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

| INVENTORY NO. | REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | NO. OF SHEETS | REV. |
|---------------|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|---------------|------|
| 1 | | | | | | CHECKED | JAGADISH | | 16.06.16 | NA | CP-14-048 | EP-4-CS-048-008 | 10 | 09 | 00 |
| 2 | | | | | | DRAWN | | | | | | | | | |
| 3 | | | | | | DESIGNED | JAGADISH | | 16.06.16 | | | | | | |
| 4 | | | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE

TITLE : POWER & CONTROL SCHEME

STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMS

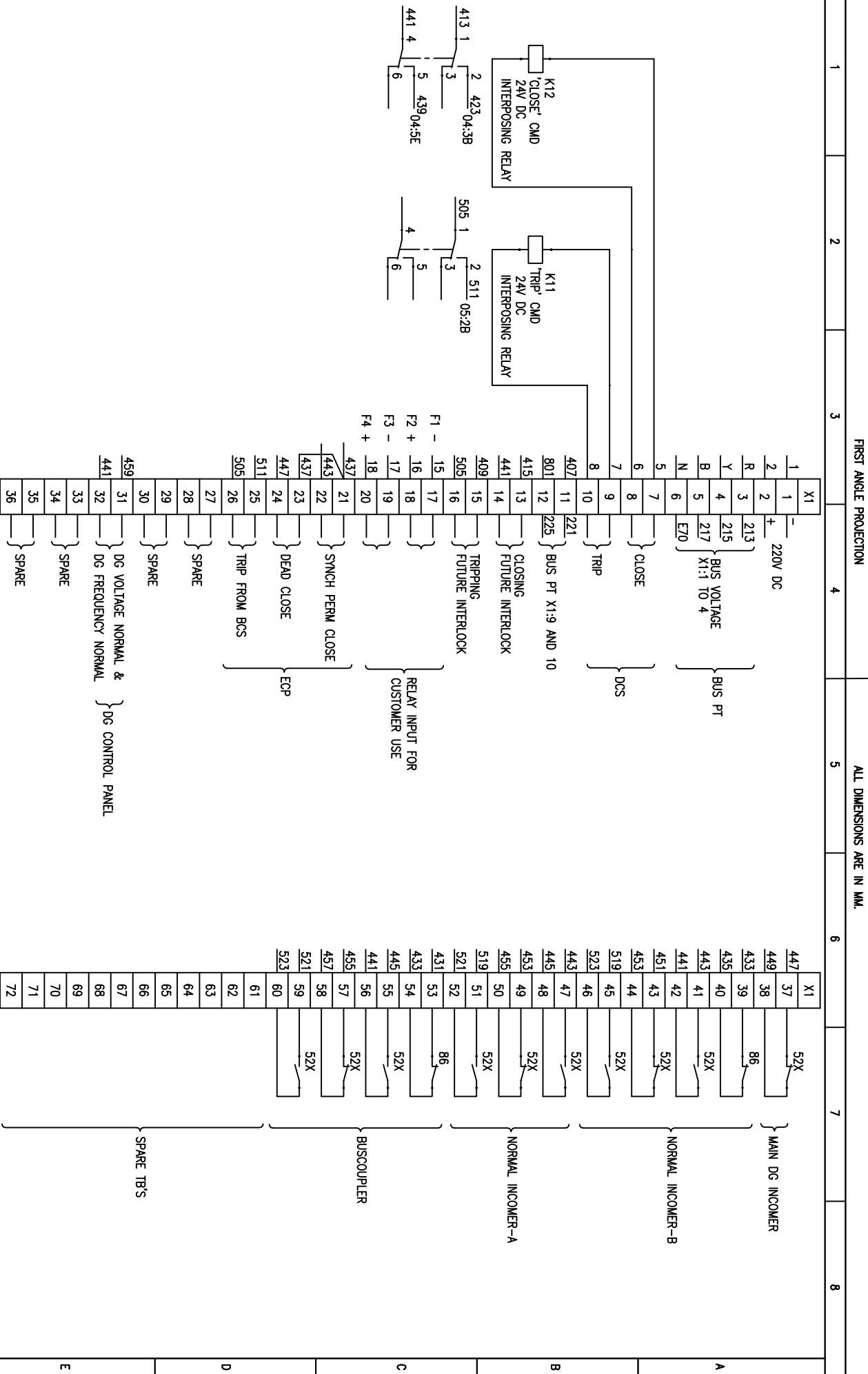


NO. OF SHEETS: 10

SHEET NO.: 09

REV. NO.: 00

DRG. NO. EP-4-CS-048-008



| REV. NO. | DATE | DESCRIPTION | BY | APPD. | APPROVED | NAME | SIGN. | DATE | SCALE | JOB NO. | DRG. NO. | NO. OF SHEETS | REV. |
|----------|------|-------------|----|-------|----------|----------|-------|----------|-------|-----------|-----------------|---------------|------|
| 1 | | | | | CHECKED | JAGADISH | | 16.06.16 | MA | CP-14-048 | EP-4-CS-048-008 | 10 | 00 |
| 2 | | | | | DRAWN | JAGADISH | | 16.06.16 | | | | 10 | |
| 3 | | | | | DESIGNED | JAGADISH | | 16.06.16 | | | | 10 | |
| 4 | | | | | | | | | | | | | |

BHARAT HEAVY ELECTRICALS LIMITED
ELECTROPROTECTIANS DIVISION BANGALORE



TITLE : **POWER & CONTROL SCHEME**
STANDBY DG INCOMER OF EMERGENCY MCC CONTROLLED FROM ECP & DDCMS

