

CODE 4

LEGEND

WV 4 HKV LINE



POWER T&D COMPANY INC.
DISTRIBUTION SYSTEMS DIVISION

188571

SHEET NO.

CONT. ON

NEXT
ASSY.
S. O.

BY W 4-23-62
DATE 3-2-77

CHD.
DATE

APP. *g. Chang*
DATE 3-3-77

SCALE

"THIS DRAWING IS THE PROPERTY OF GOULD INC. AND CONTAINS PROPRIETY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN EXPRESSLY AUTHORIZED BY GOULD INC."

STANDARD TOLERANCE INFO. ON DR. 52016

DIMENSIONS ARE IN INCH

TOLERANCES - UNLESS OTHERWISE SPECIFIED - 3 PL DEC. $\pm$

2 PL DEC. $\pm$

DESCRIPTION

- a - Auxiliary Switch Contact Closed When Breaker is Closed.
- b - Auxiliary Switch Contact Open When Breaker is Closed.
- Lcb - Latch Check Switch Contact Closed when breaker operating mechanism is reset.
- Lsa - Limit Switch Contact Open when springs are discharged, closed when springs are charged.
- Lsb - Limit Switch Contact Closed when springs are discharged, open when springs are charged.
- TC - Shunt Trip Coil.
- X - Closing Latch Release Coil.
- Y - Control Relay Lockout Coil.
- Ya - Normally Open Control Relay Contact
- Yb - Normally Closed Control Relay Contact.
- TB - Terminal Block Point
- ML - Motor Lead.
- CE - Coil Lead End.
- C1, C2 - Terminal Jumper (Control Device).
- Y - Female Secondary Disconnect Contact.
- UV - Undervoltage Trip Device or Undervoltage Lock Open.
- UVb - Normally Closed Undervoltage Trip Device Contact.
- 69 - Permissive Control Switch.
- BL - Blocking Lever Switch (Open When Ground Switch is Locked in Position)
- R1, 2, 3 - Resistor
- MOT - Motor
- MDS - Motor Disconnect Switch

5 CHG'D LOGO M.D. 3-31-82

REVISIONS

3-2-77 M.E.
3-2-77 M.E.
3-2-77 M.E.
3-2-77 M.E.
3-2-77 M.E.

CODE 4

FILMED

HK BREAKER ELECTRICAL OPERATING SEQUENCE D-C CLOSING



POWER T&D COMPANY INC.
DISTRIBUTION SYSTEMS DIVISION

188572

4

REV

SHEET NO.

CONT. ON

NOT
ASY.

BY L. SCHMIDT

CHD.

APP.

SCALE

S. O.

DATE 4-25-62

DATE

DATE

"THIS DRAWING IS THE PROPERTY OF GOULD INC. AND CONTAINS PROPRIETY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN EXPRESSLY AUTHORIZED BY GOULD INC."

With the circuit breaker open, the closing springs uncharged, and the control power source energized, and motor disconnect switch closed, operation occurs as follows:

- 1-Immediately upon the availability of control power, the spring charging motor(motor) is energized, which in turn charges the closing springs. When the closing springs are charged, limit switch contacts "LSb" are opened, and limit switch contact "LSa" is closed.
- 2-Operation of the Close Control switch energizes the latch release coil (X) through the circuit breaker auxiliary switch "b" contact, the normally closed lockout relay contact "Yb", and the limit switch contact "LSa". The latch release coil (X) releases the closing latch. The springs then discharge to close the circuit breaker.
- 3-When the springs discharge, limit switch contacts "LSb" close, and switch contact "LSa" opens.
- 4-When limit switch contact "LSb" in the motor circuit closes, the spring charging motor is energized, which in turn recharges the closing springs.
- 5-When the circuit breaker closes, all auxiliary switch "b" contacts open and all auxiliary switch "a" contacts close.

- 6-When the limit switch contacts "LSb" close, the lock out relay coil (Y) is energized and opens lockout relay contact "Yb", which deenergizes the latch release coil (X). Lockout relay contact "Ya" closes, which seals-in the lockout relay coil (Y) as long as the "close" contact is maintained. The purpose of the lockout relay coil (Y) is to prevent pumping of the closing mechanism when closing against a faulted circuit.
- 7-After the breaker has closed and when the "close" switch is released by the operator, the lockout relay coil (Y) is deenergized. This allows the normally-closed lockout relay contact "Yb" to close, and the normally-open lockout relay contact "Ya" to open.
- 8-The circuit breaker can be tripped by operation of the trip control switch which energizes the circuit breaker trip coil (TC) through the auxiliary switch "a" contact.
- 9-The undervoltage device, if furnished, provides a direct acting lock-open and undervoltage tripping feature. This device must be energized to initially close the breaker, and also to maintain the breaker in a closed position.
- 10-The latch check switch, if furnished, insures that the tripping mechanism must be reset prior to energizing the closing latch release coil (X).
- 11-The stopping device switch, if applicable, prevents electrical reclosing of the circuit breaker after a manual trip until the stopping device has been manually reset.

REVISIONS

3-12-62 To Add
W.R. COLEMAN, JR.
4-25-62 L.S. 4-3-62

WS

03

TEST JUMPER WIRING

FOR 5.7.5, 15HK & 38HKV SWITCHGEAR

(5+12 CONDUCTOR)



POWER T&D COMPANY INC.
DISTRIBUTION SYSTEMS DIVISION

817876

SHEET NO. 2

CONT. ON -

RE

ASSY. 824607 SH. 12
S.O. -

BY Wade Poolman
DATE 10 July 1961

CHKD. B. J. Seiser
DATE 11 July 1961

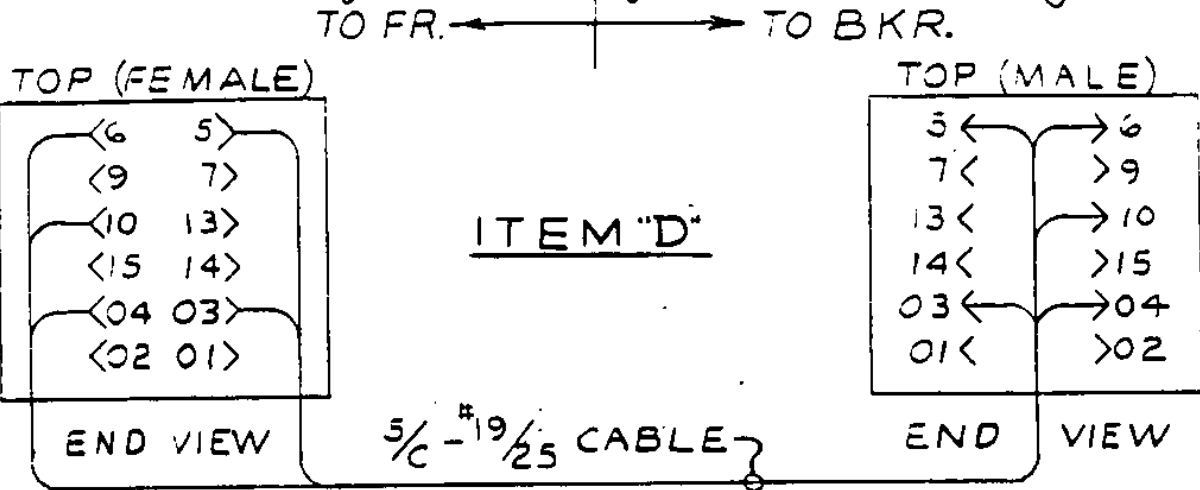
APP. J. B. Brown
DATE 11 July 1961

SCALE 1/2" = 1'

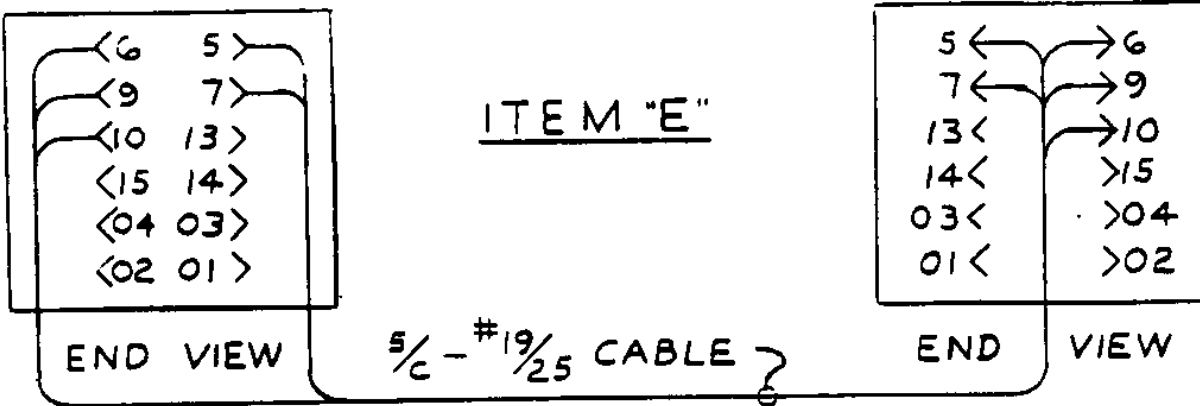
14 IT 1.33 JUMPER IN 1115
C. Z 6-B-78
COLORS YEL. WAS WNT.
JR. WAS GR., BLK WITH RED
WAS BLK. WITH WNT, E, I 11-2-78

CONDUCTOR, REMOVED ITEM
"G" MILLER 5-25-62
3 DELETED DUG NO. CDRER-
MS REF. 1 TAB ITEMS "D", "E"
11-17-80
11-17-80
11-17-80

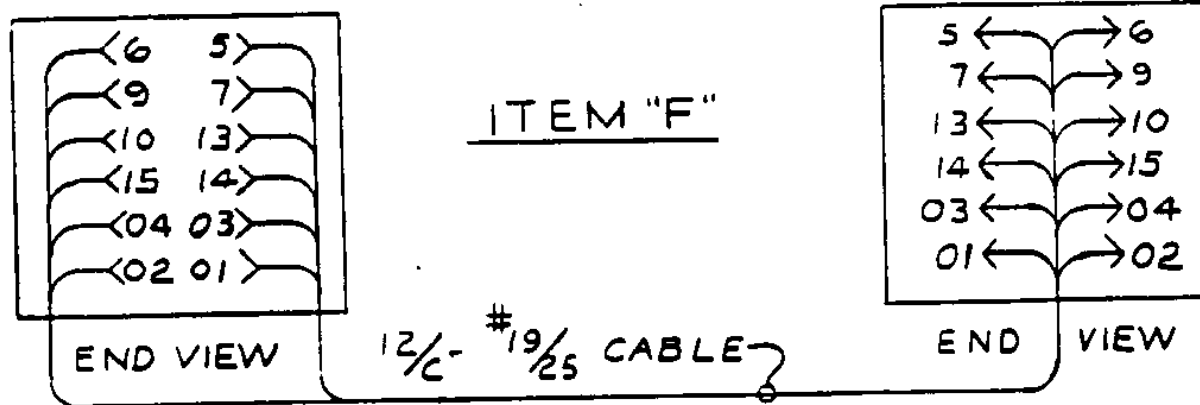
REVISIONS
IT. "D", "E" CABLE WAS
DOUBLING REORPLASTIC
11-17-80
11-17-80
11-17-80



USE ON BKR. WITH TEST P.B.'S.



USE ON BKR. W/O TEST P.B.'S.



USE ON BKR. WITH OR WITHOUT TEST P.B.'S.

NO	REVISION	BY DATE	CKD	APP
7	REMOVED COLOR CODE	E. Z 11-14-80	WJW 11-17-80	JMC 11-17-80