

DATE	SYM	WAS	BY
		D-305501	

▲
Pág. 0 cont. en 1
Total de pags. 69

DIAGRAMA INPUT/OUTPUT

▲
REFERENCIAS:
TRABAJAR ESTE PLANO CON LOS PLANOS:
5615-26-0034 (T1524AB1.dwg) * LISTA DE MATERIALES
5615-26-0030 (T1524ABC.dwg) * LISTA DE BURNERAS
5615-24-0033 (T1524AB1.dwg) * CANALIZACIONES
5615-21-0029 (T1521AB1.dwg) * LAY OUT
5615-25-0032 (T1525ABC.dwg) * LISTA DE CABLES

PLANO TECHNIT N° 2456-F-DF-550002 * JDB: 55067

1	SE KOREAN SIDERAL, PAGS. 05, 26, 29, 32, 43, 55, 62	DNV	TYPE	DRF	03-08-01
0	EMISION PARA CONSTRUCCION				12-06-01
REV.	DESCRIPCION	Ejec.	CONT.	APROX.	FECHA

PROVEEDOR:	LITTELL INTERNATIONAL INC.	IF PROVEEDOR:	D-308691
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ZONA:	SIDERON
SECTOR:	LINIA LITTELL
OBRA O EQUIPO:	LINIA DE CORTE - ER-4E

LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DIBUJO Y SUS COPIAS. SU USO SIN AUTORIZACION ESTÁ PROIBIDO. EL DIBUJO NO PUEDE SER MODIFICADO NI REEMPLAZADO EN TOTAL O PARCIALMENTE. PROYECTO: 5615-23-0028	SCROLL SHEETING LINE
DIBUJO:	ESCALAS
CONTROL:	PARTES: DIAGRAM-ELECTRICAL-SCHMATIC

APROBÓ:	5615-23-0028	IMPUTACIÓN: 1463 CAD: T1521000.DWG
DIBUJÓ:		FIL: T1523BC

DATE	STN	WAS	BY
8/7/94	(A)	CHUCKY & J.C. SANTO	JOL

BR-4E SCROLL SHEETING LINE #262
SIDERAR, ARGENTINA, SOUTH AMERICA
LITTELL ORDER #94228-00

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06	MAIN OPERATOR'S CONSOLE RACK #0
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13	SHARP TERMINALS
14	SHARP & FEED MOTORS
15	PILER 1 TERMINALS
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17	PILER 1 & 2 RACK #4
18	PILER 2 TERMINALS
19	PILER 3 TERMINALS
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22	PILER 3 & 4 MOTOR TERMINALS
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26	PANEL 5 & 6 - LAYOUT
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30	PANEL 5 & 6 - TERMINALS
31	PANEL 7 - TERMINALS
32	PANEL 8 & 9 - TERMINALS
33	ADDITIONAL CUSTOMER CONSOLE

LINE SPECIFICATIONS

LINE SPEED ENTRY SECTION	MAX. RUNNING	600.0 FPM
	MIN. RUNNING	183.0 FPM
	JOG	22.9 FPM
		30.0 FPM
		9.1 FPM
SHEAR	MAX. RUNNING (AT 30.85" FEED LENGTH)	225.0 SPM
	MIN. RUNNING	50.0 SPM
	SINGLE STROKE	50.0 SPM
	INCH	50.0 SPM
MAIN CONVEYOR	MAXIMUM	1050.0 FPM
	MINIMUM	320.0 FPM
		550.0 FPM
		167.0 FPM
PILE CONVEYOR	MAXIMUM	360.0 FPM
	MINIMUM	110.0 FPM
		160.0 FPM
		45.8 FPM
FEED LENGTH	MAXIMUM	46.0 IN
	MINIMUM	1158.0 MM
		18.0 IN
		457.0 MM
FEED WIDTH	MAXIMUM	40.0 IN
	MINIMUM	1016.0 MM
		24.0 IN
		610.0 MM
COIL DATA	O.D. MAXIMUM	72.0 IN
	I.D.	1828.8 MM
		16.5 IN
		419 MM
	WEIGHT	30,000.0 LBS
		15,000.0 KGS

OPTION	YES	NO	NOTES
POWER SUPPLY - THREE PHASE			380VAC, 50HZ
FLOOR PLAN			D
DOWNDER	YES		
STORAGE RACK	YES		
STANDARD REEL	NO		
TRaversing REEL	YES		
AUXILIARY PINCH ROLL STAND	NO		
EDGE TRIMMER BASE	YES		
CENTER GUIDE DETECTOR	YES		
SCRAP CHOPPER	YES		
STRAIGHTENER ROLLS INSPECTION HATCH	NO		
THICKNESS GAUGE	YES		RADIOMETRIC
THICKNESS MARKER	NO		
CHART RECORDER	NO		
PINHOLE DETECTOR	YES		SEMS
PINHOLE MARKER	NO		
QUICK DIE CHANGE	NO		
STACKER GUIDES AUTO POSITIONING	YES		
MOTORIZED GAUGE TABLE	YES		
REMOTE DIAGNOSTIC SOFTWARE PACKAGE	YES		
DATA REPORTING PACKAGE	NO		

MD or OC - OPERATOR'S CONSOLE
 DWN - DOWNENDER
 CC - COIL CAR
 CCTRACK - COIL CAR TRACK
 R - REEL
 ET - EDGE TRIMMER
 PR - PINCH ROLL STAND
 PRA - PINCH ROLL AUX. PB STATION
 ST - STRAIGHTENER
 INSPI - INSPECTION TERMINAL BOX
 SH - SHEAR
 CAT - SHEAR CATENARY

P1 - PILER 1
 P1F - PILER 1 FRONT PB STATION
 P1B - PILER 1 BACK PB STATION
 P2 - PILER 2
 P2F - PILER 2 FRONT PB STATION
 P2B - PILER 2 BACK PB STATION
 P3 - PILER 3
 P3F - PILER 3 FRONT PB STATION
 P3B - PILER 3 BACK PB STATION
 P4 - PILER 4
 P4F - PILER 4 FRONT PB STATION
 P4B - PILER 4 BACK PB STATION
 P4INS - PILER 4 INSPECTION PB STATION

WIRE COLOR CODE:
 BLK - 250VAC OR ABOVE
 RED - 110/220VAC - HOT
 WHT - 110/220VAC - COM (GROUNDED)
 Y - AUXILIARY POWER
 BL - +24VDC
 BL/WHT - 24VDC COM (GROUNDED)
 GRN/Y - GROUND

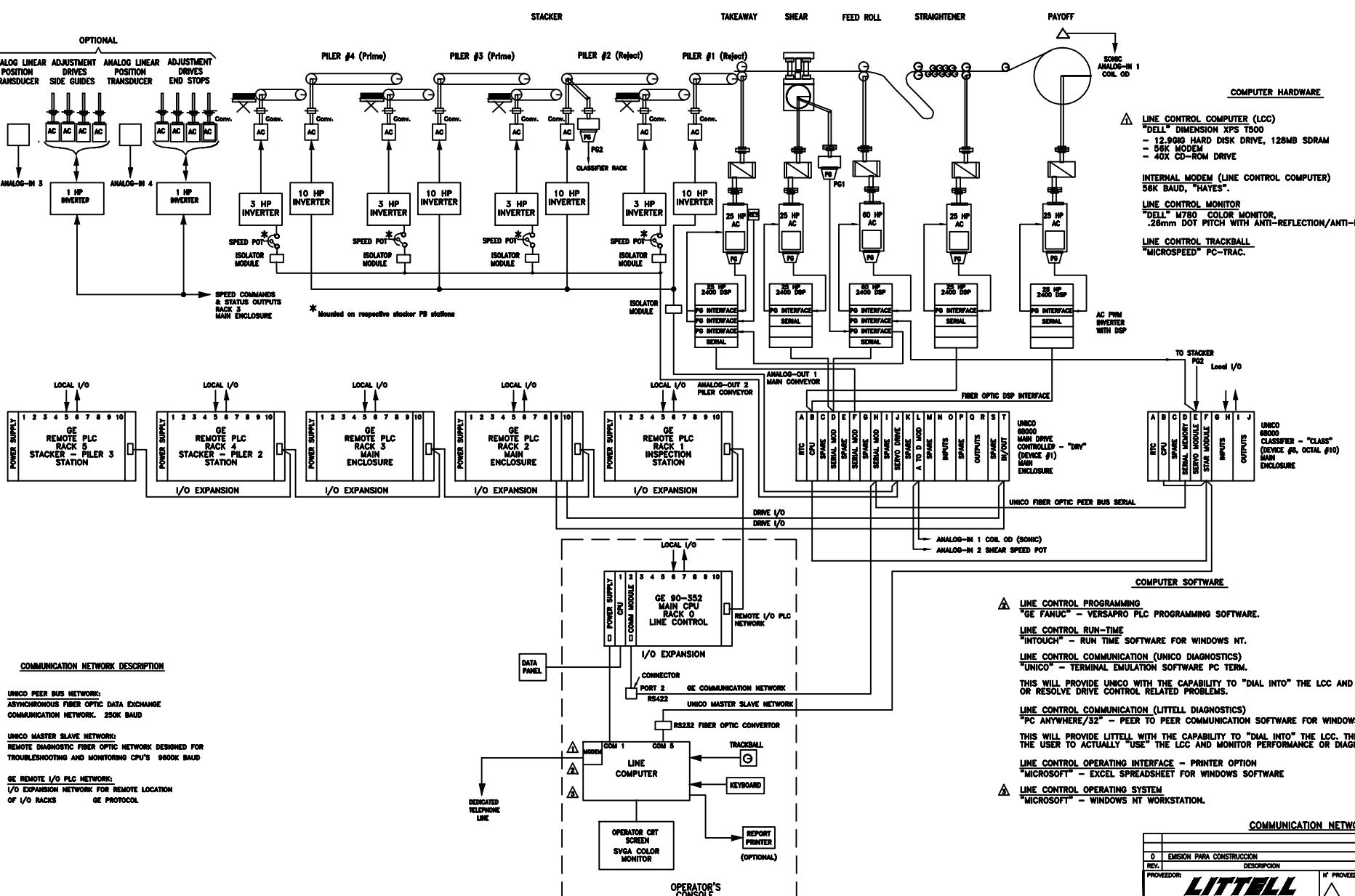
DEVICE NUMBER & CROSS REFERENCE IDENTIFICATION
 I/O TYPE
 UNICO PLC I/O IDENTIFICATION
 I/O TYPE
 BIT NUMBER
 I/O RACK SLOT DESIGNATION
 XXXX
 LINE NUMBER
 XXXX
 SHEET NUMBER
 LINE NUMBER
 XXXX
 SEQUENTIAL NUMBER
 XXXX
 SEQUENTIAL NUMBER

LITTELL JOB #94228 LINE (R → L)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV. DESCRIPCION	Ejec. Cont./Aprob. Fecha
PROVEEDOR: LITTELL INTERNATIONAL INC.	
ZONA: SIDEROM SECTOR: LINEA LITTELL COPRA O EQUIPO: LINEA DE CORTE - BR-4E PARTE: SCROLL SHEETING LINE DIAGRAM-ELECTRICAL-Schematic	
PROYECTO:	ESCALAS:
DIBUJO:	5615-23-0028
CONTROL	APROBADO:
APROBADO:	IMPRESION: 1483 CAD T152100.DWG

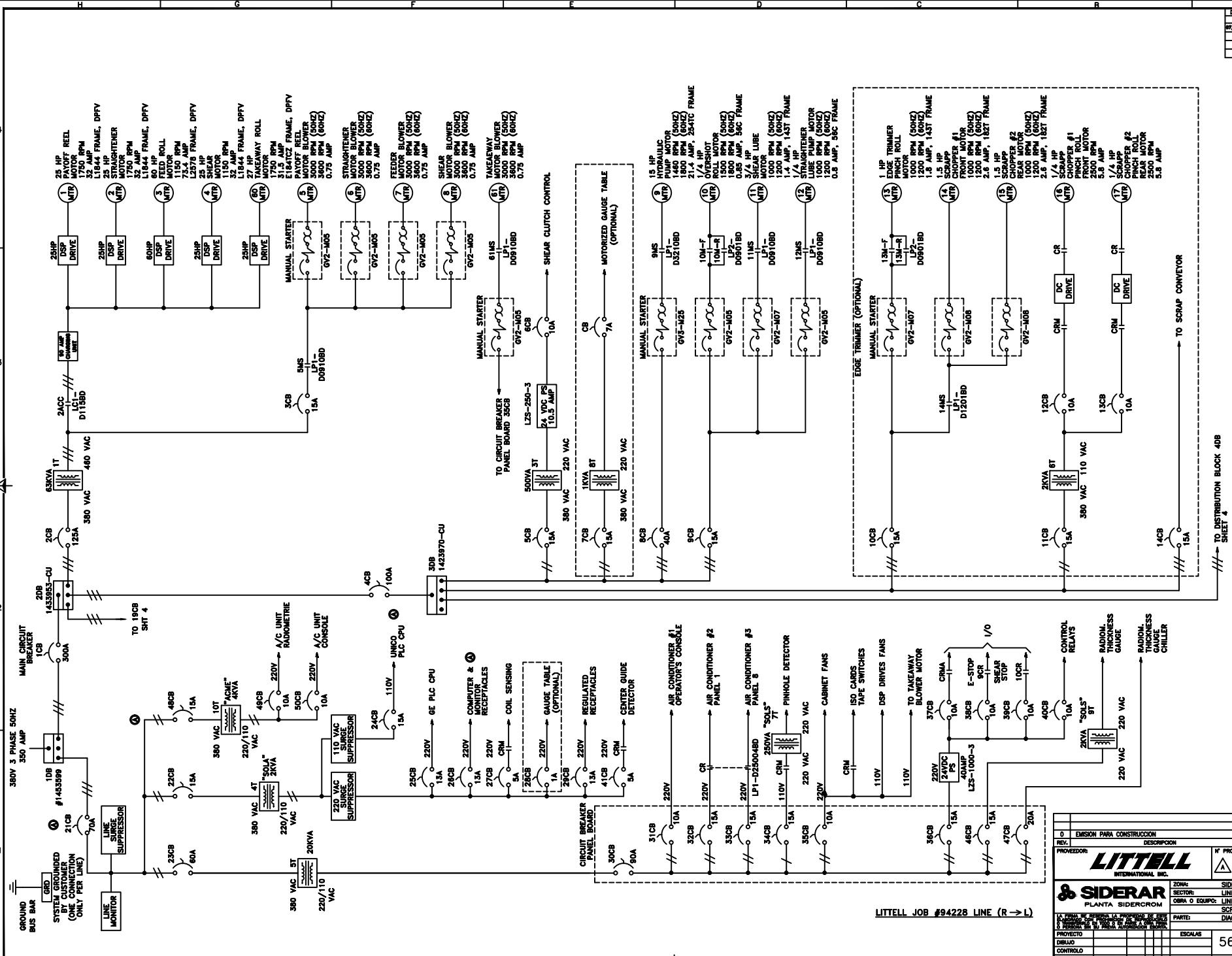
DATE	SYM	WAS	BY
		D-305501	

BR-4E



LITTELL JOB #94228 LINE (R → L)

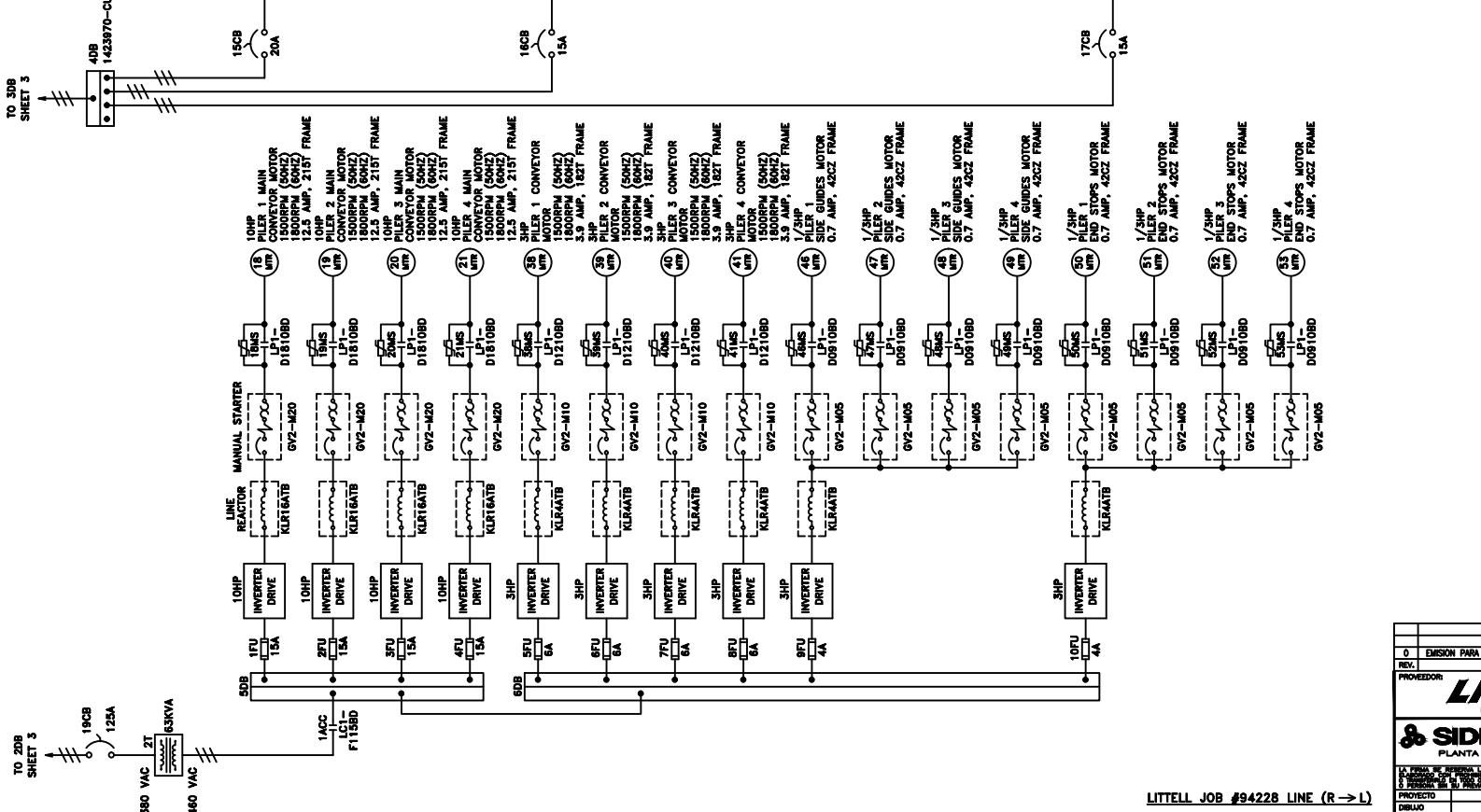
DATE	SYM	WAS	BY
8/7/04 08	(A)	D-305501	JUL



LITTELL JOB #94228 LINE (R → L)

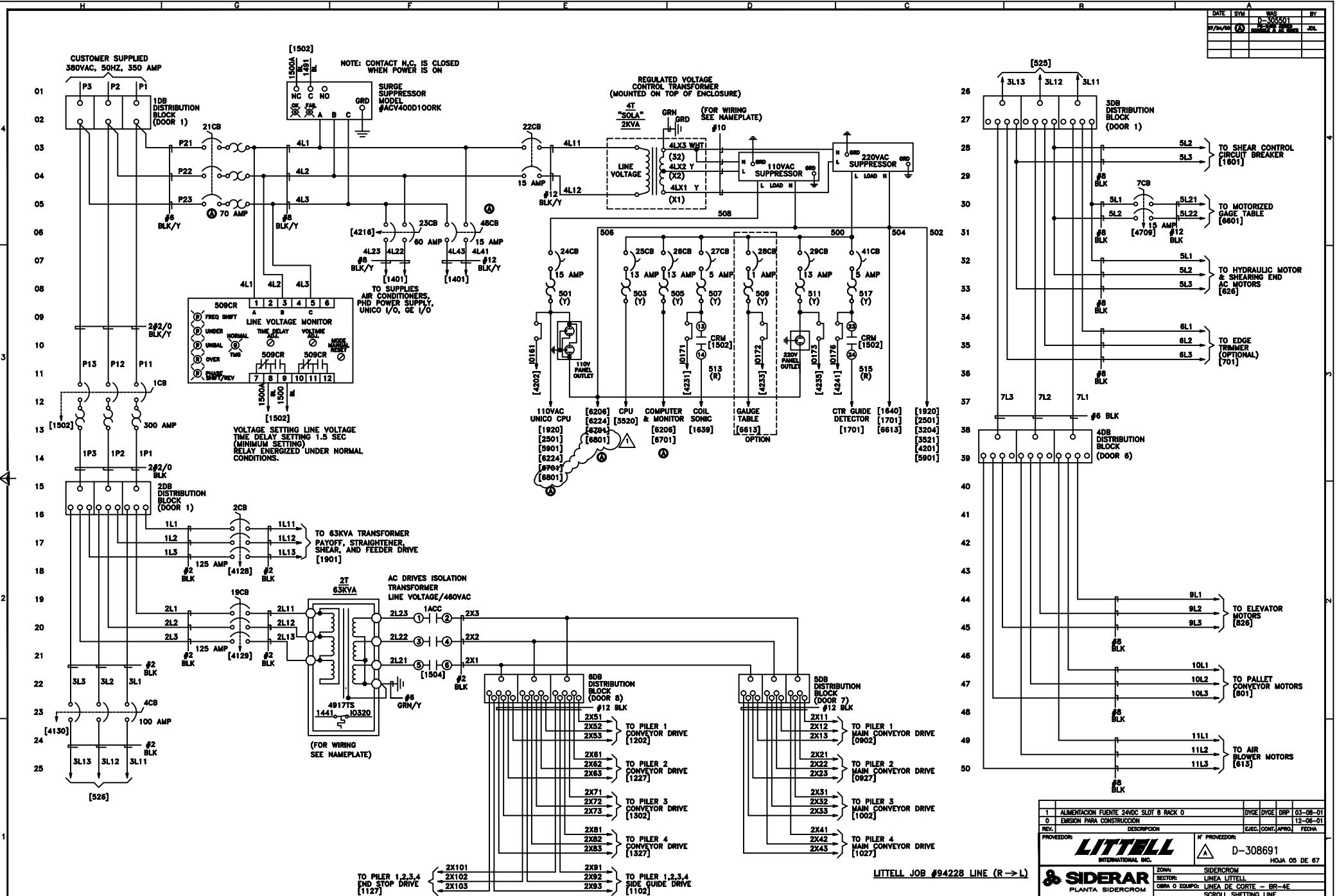
0 EMISSION PARA CONSTRUCCION	REV. 0	PROVEEDOR: LITTELL	FECHA: 12-06-01
SECCION: LINEA DE CORTE - ER-4E	DESCRIPCION: SCROLL SHEETING LINE	Nº PROVEEDOR: D-308691	
ZONA: SIDERONROM	SECCION: LINEA DE CORTE - ER-4E	HOJA 03 DE 67	
COMPAÑIA O EQUIPO: PLANTA SIDERONROM		IMPUTACION: 1463 CAD T1521000.DWG	
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SUS CONTENIDOS. ESTA ES UNA OBRA PROTEGIDA POR DERECHOS DE AUTOR. ESTA NO PUEDE SER COPIADA NI DIFUNDIDA SIN LA PREVIA AUTORIZACION ESCRITA.		PROYECTO: 5615-23-0028	
DIBUJO: FILIO T1523ABC		APROBADO:	
CONTROLADO:		ESCALAS:	
APROBADO:		IMPUTACION: 1463 CAD T1523ABC	

DATE	SYM	WAS	BY
		D-305501	

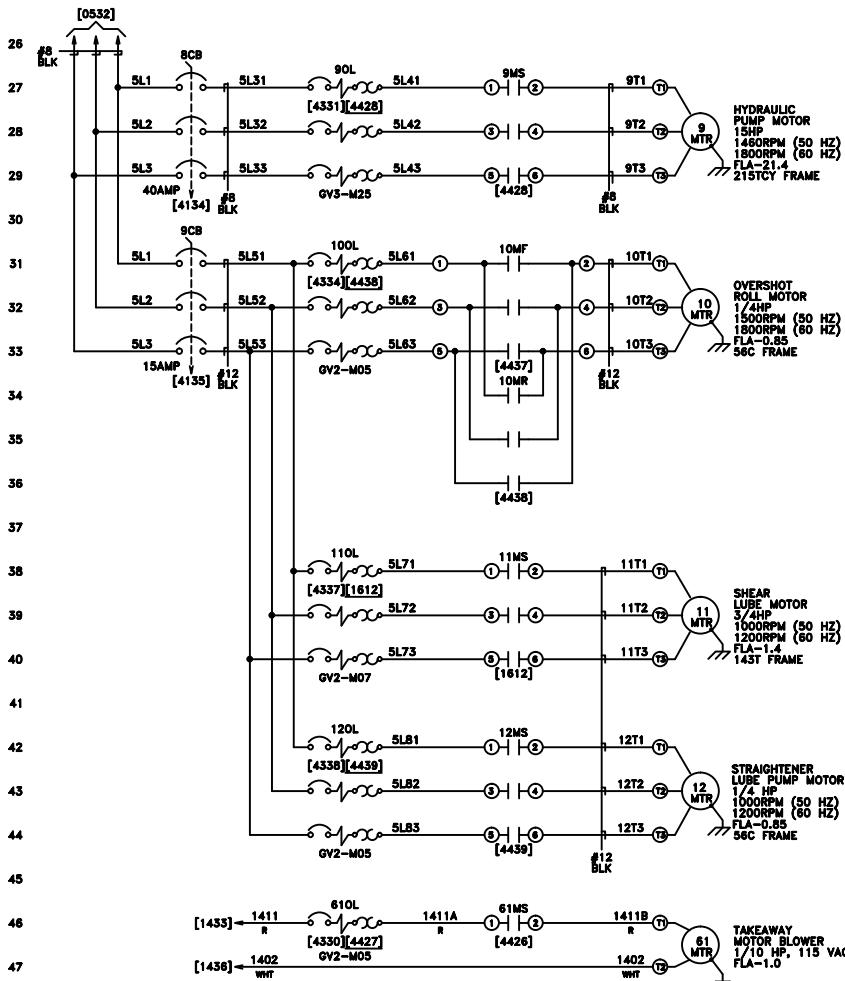
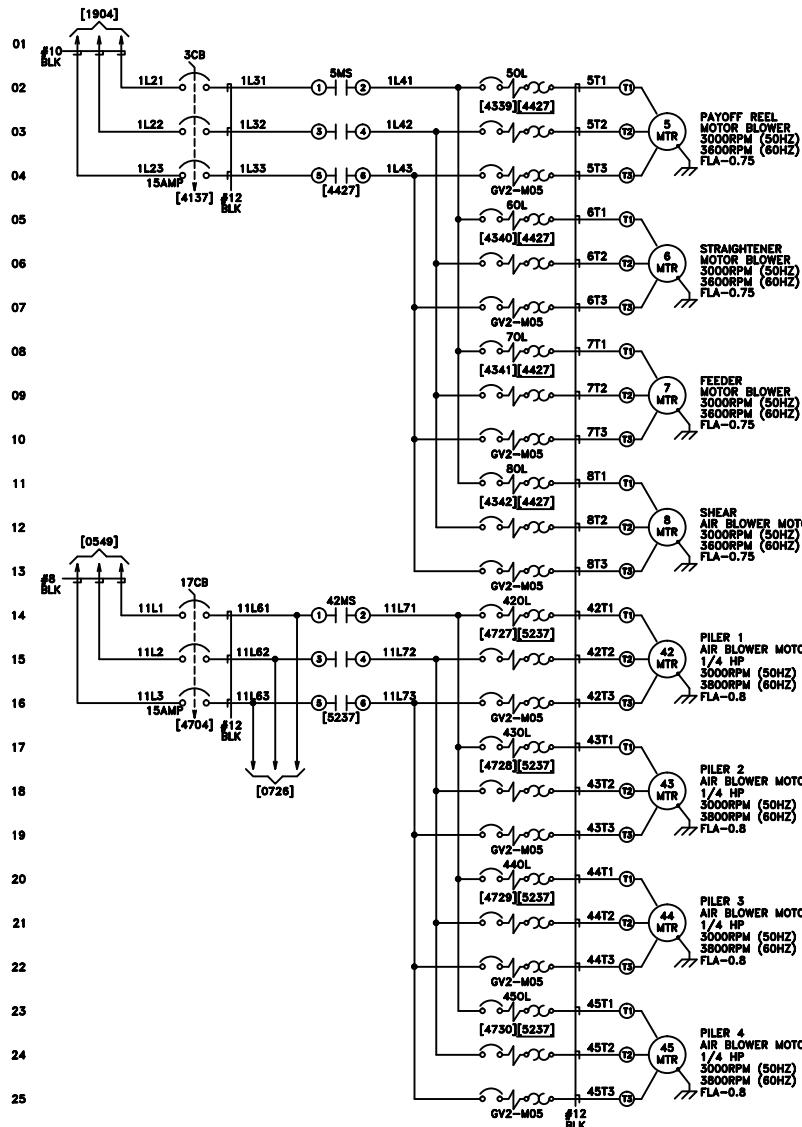


0 EMISSION PARA CONSTRUCCION	12-06-01
REV. 0 DESCRIPCION	Ejec. Cont. / Aprob. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.	
D-308691 HOJA 04 DE 67	
SIDERAR ZONA 4 PLANTA SIDERCROM SECTOR: LINEA DE CORTE - BR-4E OBRA O EQUIPO: SCROLL SHEETING LINE DIAGRAM-ELECTRICAL-SCHMATIC	
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DIBUJO Y SUS COPIAS. SU USO SIN AUTORIZACION ESCRITA ES UN DELITO PENAL Y CIVIL. ESTA DIBUJO NO PUEDE SER DADO EN TOTAL O PARCIALMENTE A TERCEROS NI PUEDE AUTORIZACION ESCRITA PROYECTO: ESCALAS: DIBUJO: IMPUTACION: 1463 CAD T152900.Dwg CONTROL: FILED T1523BC APROBADO: DATE: 12/09/2018 BY: 4615-23-0028	

DATE	SYM	WAS	BY
8/16/00	(A)	D-305501	JUL
		REVISION A 8/16/00	



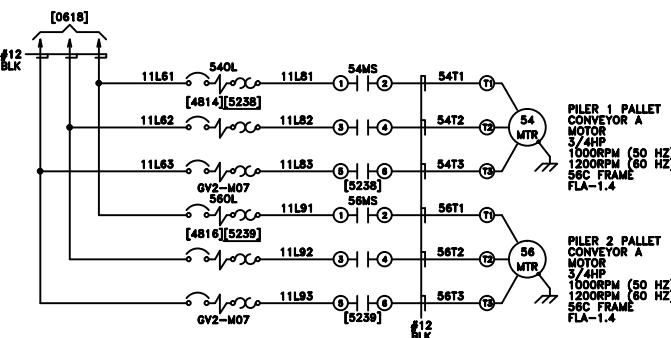
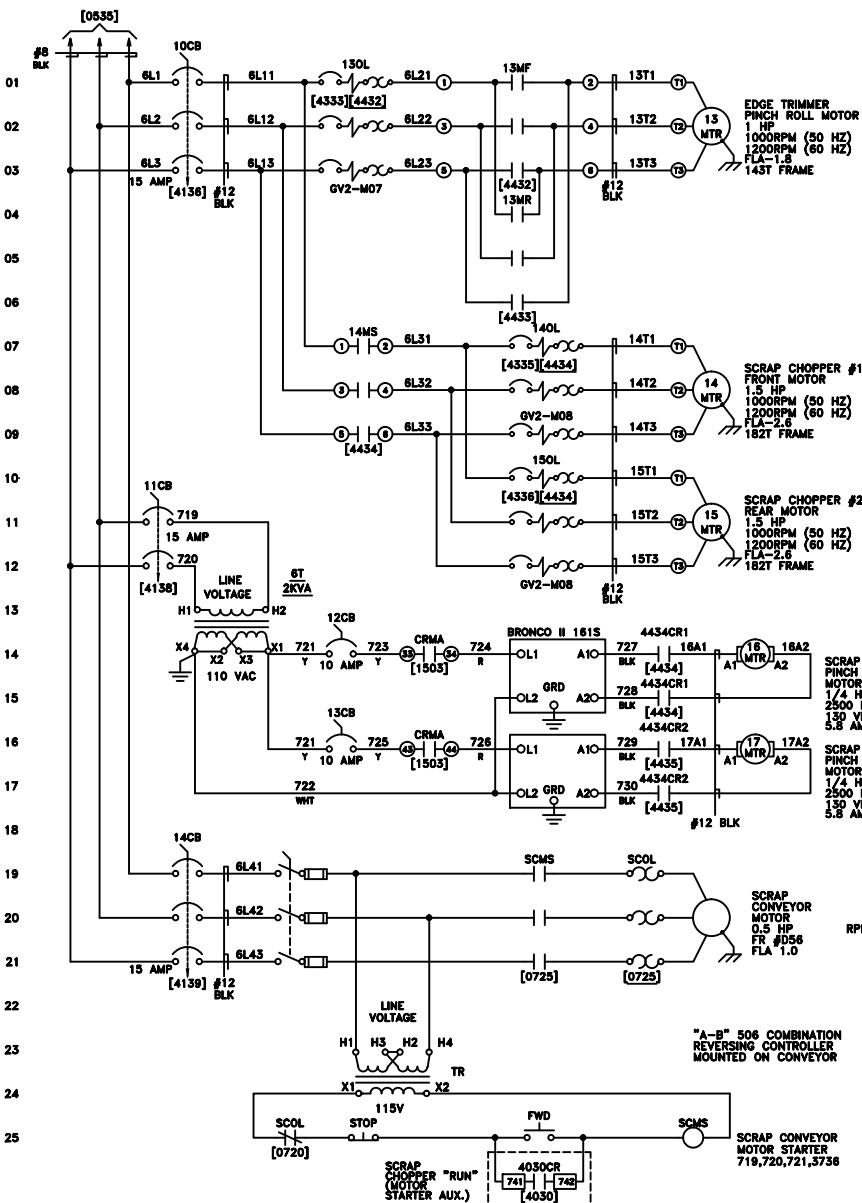
DATE	SYM	WAS	BY
		D-305501	



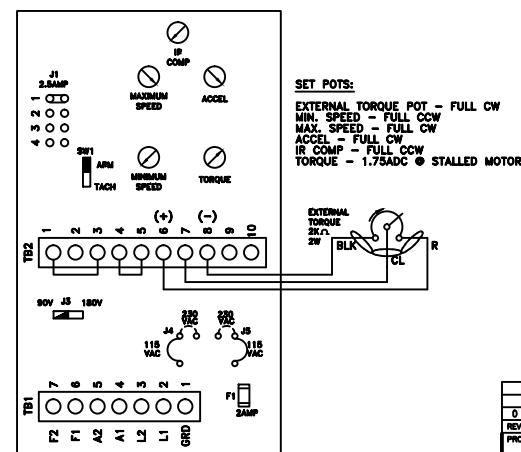
LITTELL JOB #94228 LINE (R → L)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
Nº PROVEEDOR	D-308691 HOJA 06 DE 67
SIDERON	
SECTOR:	LINEA DE CORTE - ER-4E
OBRA O EQUIPO:	LINEA DE CORTE - ER-4E
SCROLL SHEETING LINE	
PARTIDA:	DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO:	
DIBUJO:	
CONTROL:	
APROBADO:	
ESCALAS:	
IMPUTACION:	1463 CAD T1521000.DWG
FILE:	T152100C

DATE	SYM	WAS	BY
		D-305501	



DETAILS OF "SECO-WARNER ELECTRIC" DC DRIVE "BRONCO II 161S"



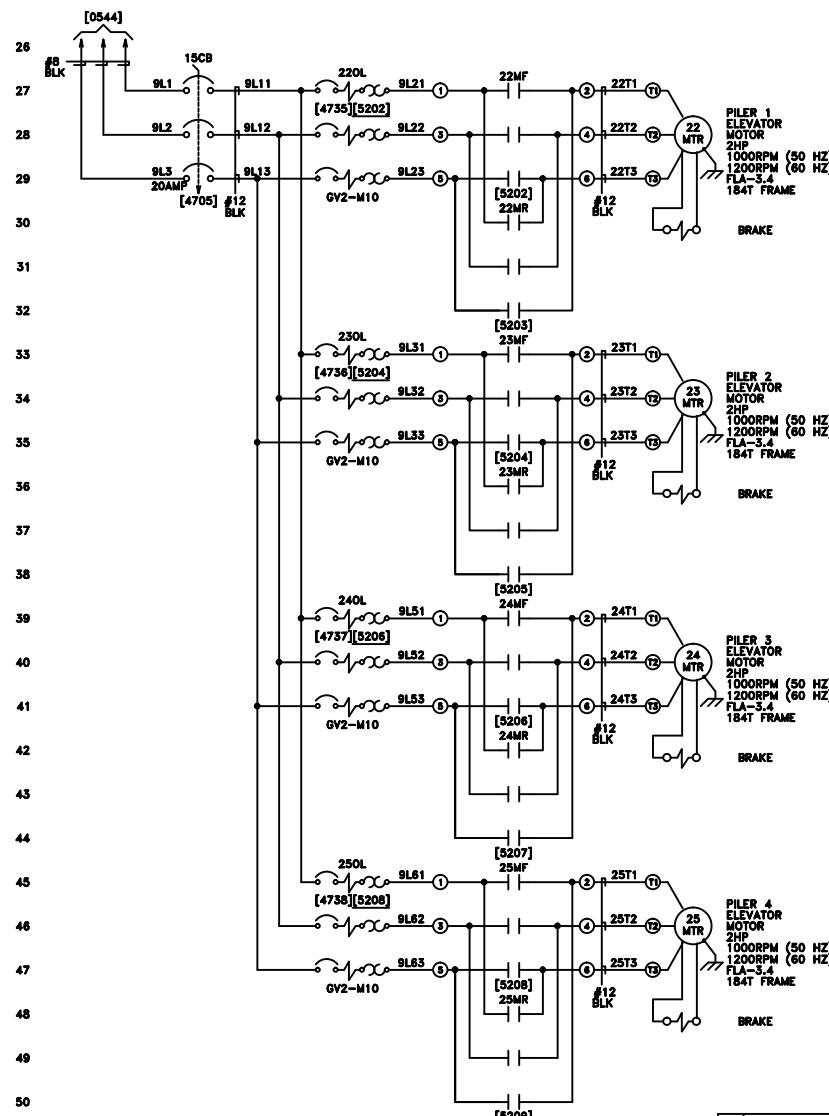
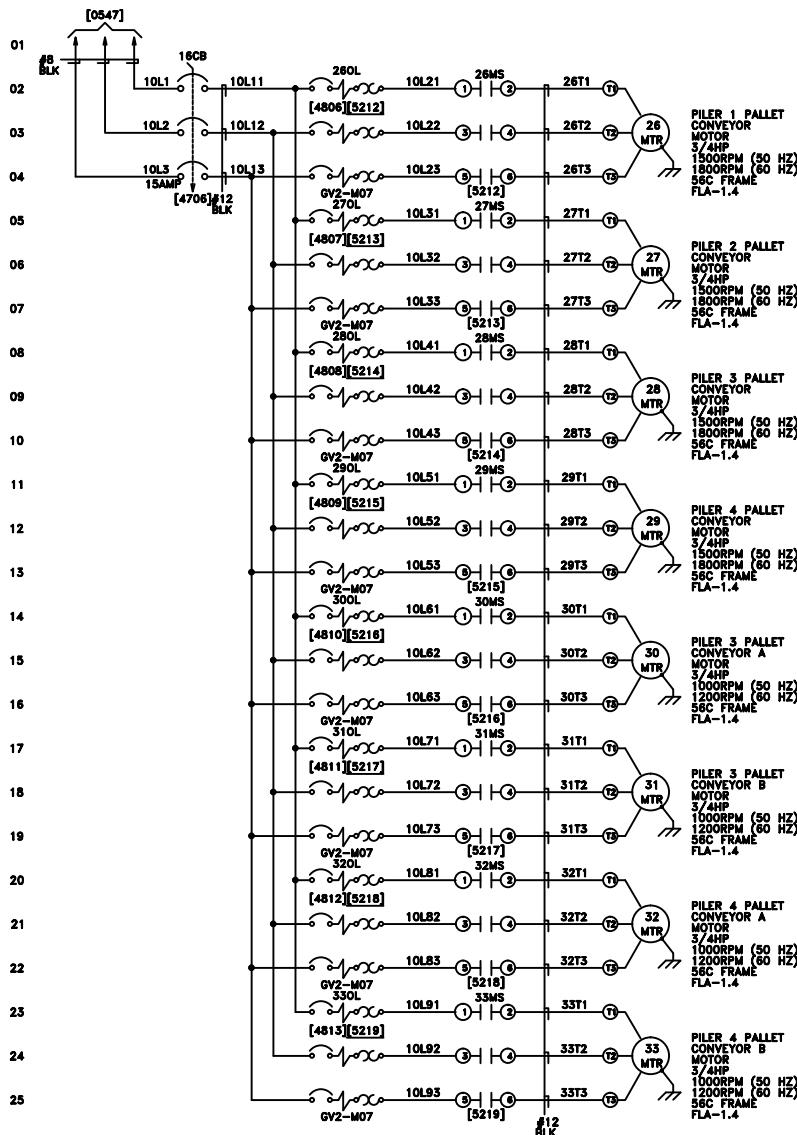
EDGE TRIMMER
AND SCRAP CONVEYOR
(OPTIONAL)

O EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC.	
D-308691	
HOJA 07 DE 67	
ZONA: SIDEROM	
SECTOR: LINEA LITTELL	
OBRA O EQUIPO: LINEA DE CORTE - ER-4E	
SCROLL SHEETING LINE	
DIAGRAM-ELECTRICAL-SCHMATIC	
LA FIRMA RE PRESENTA LA PROPIEDAD DE ESTE DIBUJO Y SE RESERVA EL DERECHO DE SU USO EXCLUSIVO. SU DISTRIBUCION, COPIA O REPRODUCCION SIN AUTORIZACION ESCRITA	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPRESION: 1463 CAD T152007.DWG	
FILE T1523BC	

LITTELL JOB #94228 LINE (R → L)

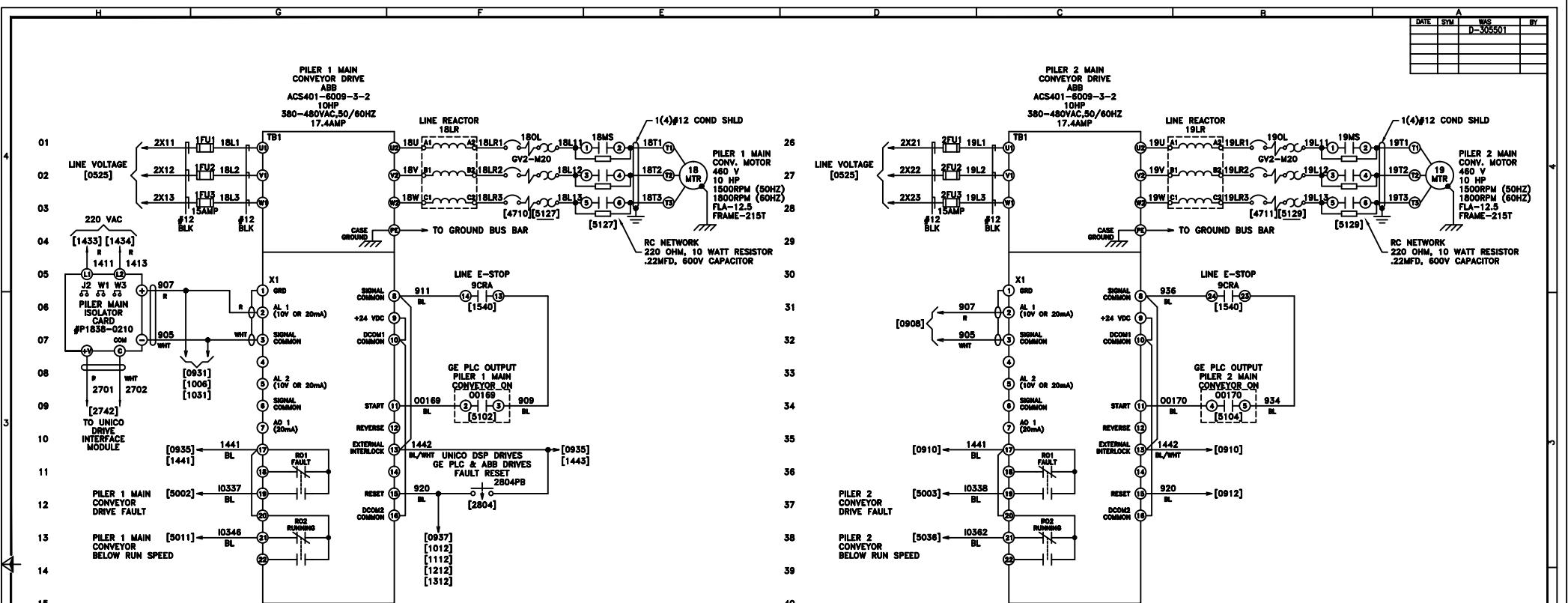
LITTELL P.N. 275397

DATE	SYM	WAS	BY
		D-305501	



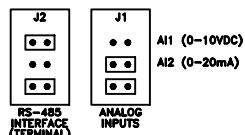
LITTELL JOB #94228 LINE (R → L)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
SIDERAR	SIDEROM SECTOR: LINEA DE Corte - ER-4E OBRA O EQUIPO: LINEA DE SIDERACION PARTES: SCROLL SHEETING LINE DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO	ESCALAS
DIBUJO	5615-23-0028
CONTROL	APROBADO
APROBADO	IMPUTACION: 1463 CAD T152000.DWG
	FILIO T1523BC

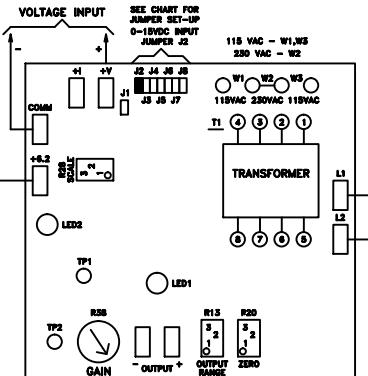


NOTES:
 1. CONTACTS SHOWN IN UNPOWERED STATE
 2. JUMPERS ARE SET TO FACTORY CONFIGURATION UNLESS OTHERWISE SPECIFIED.

DRIVE JUMPER SETTINGS



"EXTRON" #P1838-0210
ISOLATOR CARD
0-10 VDC - 0-10 VDC
P/N: 1838-0210
(DETAILS)



- CHECK THAT APPROPRIATE JUMPERS ARE INSTALLED FOR LINE INPUT POWER (W1,W2,W3) FOR 115 VAC INSTALL JUMPERS W1 AND W3. FOR 220 VAC INSTALL JUMPER W2.
- SET APPROPRIATE JUMPER (J1-J7) FOR INPUT VOLTAGE OR CURRENT. SET JUMPER J2 FOR 0-15 VDC VOLTAGE INPUT.
- WITH INPUT SET AT MINIMUM LEVEL SET ZERO (R20) TO ZERO VOLTS AT OUTPUT TERMINAL.
- WITH INPUT SET TO MAXIMUM LEVEL, ADJUST SCALING (R28) TO 4 VDC AT TP1 AND COMM.
- ADJUST GAIN (R38) TO OBTAIN 4 VDC AT TP2 AND - OUTPUT TERMINAL.
- ADJUST OUTPUT RANGE (R15) TO DESIRED MAXIMUM 10 VDC LEVEL AT OUTPUT TERMINAL.
- RECHECK STEP 3.

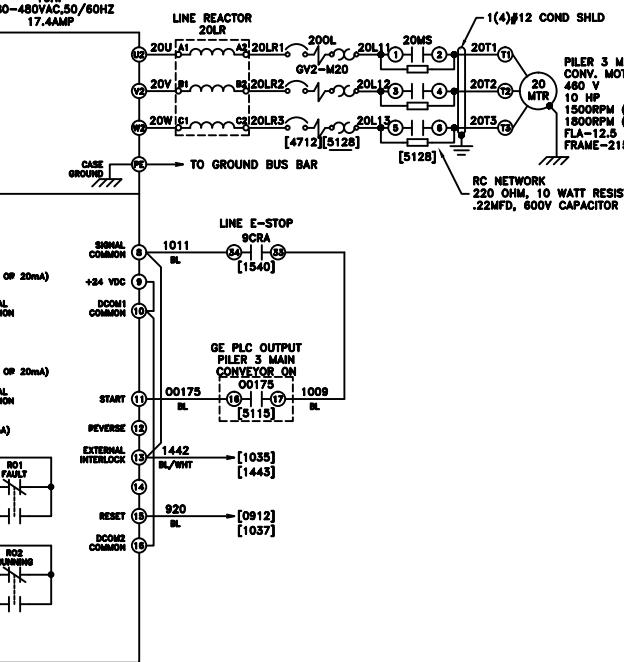
PILER 1 & 2 MAIN CONVEYOR DRIVES

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC.	
IF PROVEEDOR: SIDERAR ZONA: SIDERROM	
SECTOR: LINEA LITTELL	
OBRA O EQUIPO: LINEA DE CORTE - ER-4E	
SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC	
PROYECTO: 5615-23-0028	
DETALLE:	ESCALAS:
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T152000.DWG	
FILE T1523BC	

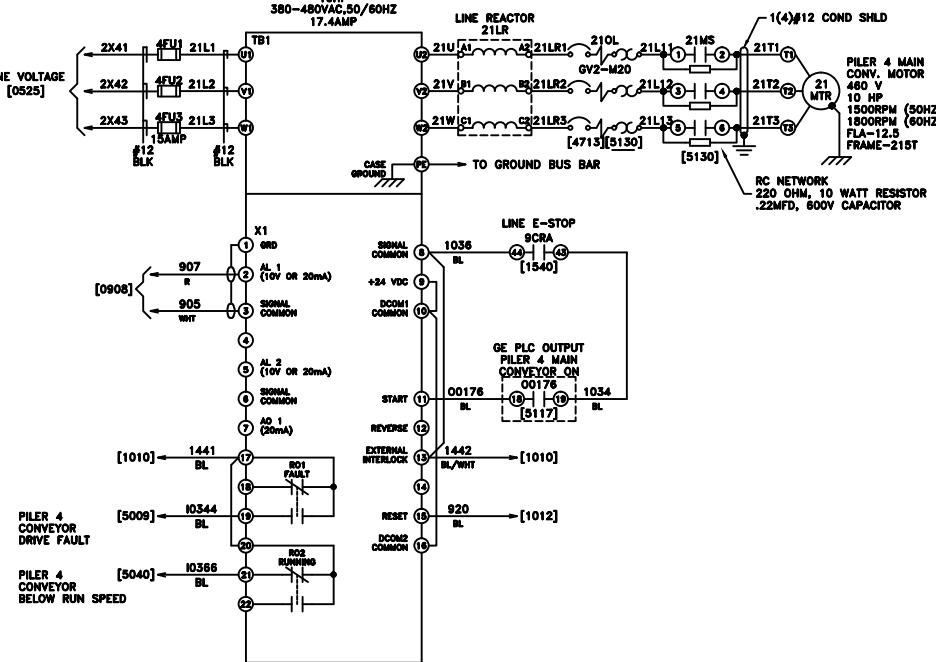
LITTELL JOB #94228 LINE (R → L)

DATE	SYM	WAS	BY
		D-305501	

PILER 3 MAIN
CONVEYOR DRIVE
ABB
ACS401-8009-5-2
10HP
380-480VAC, 50/60HZ
17.4AMP

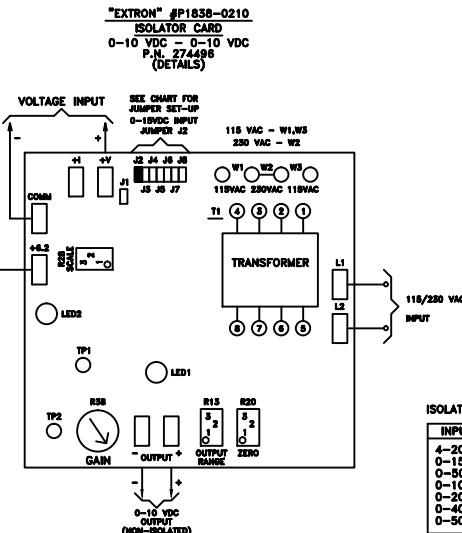
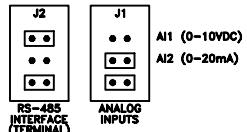


PILER 4 MAIN
CONVEYOR DRIVE
ABB
ACS401-8009-5-2
10HP
380-480VAC, 50/60HZ
17.4AMP



- NOTES:
1. CONTACTS SHOWN IN UNPOWERED STATE
 2. JUMPERS ARE SET TO FACTORY CONFIGURATION UNLESS OTHERWISE SPECIFIED.

DRIVE JUMPER SETTINGS



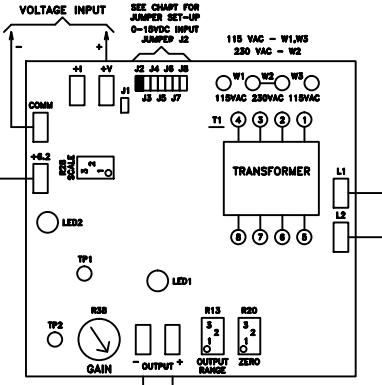
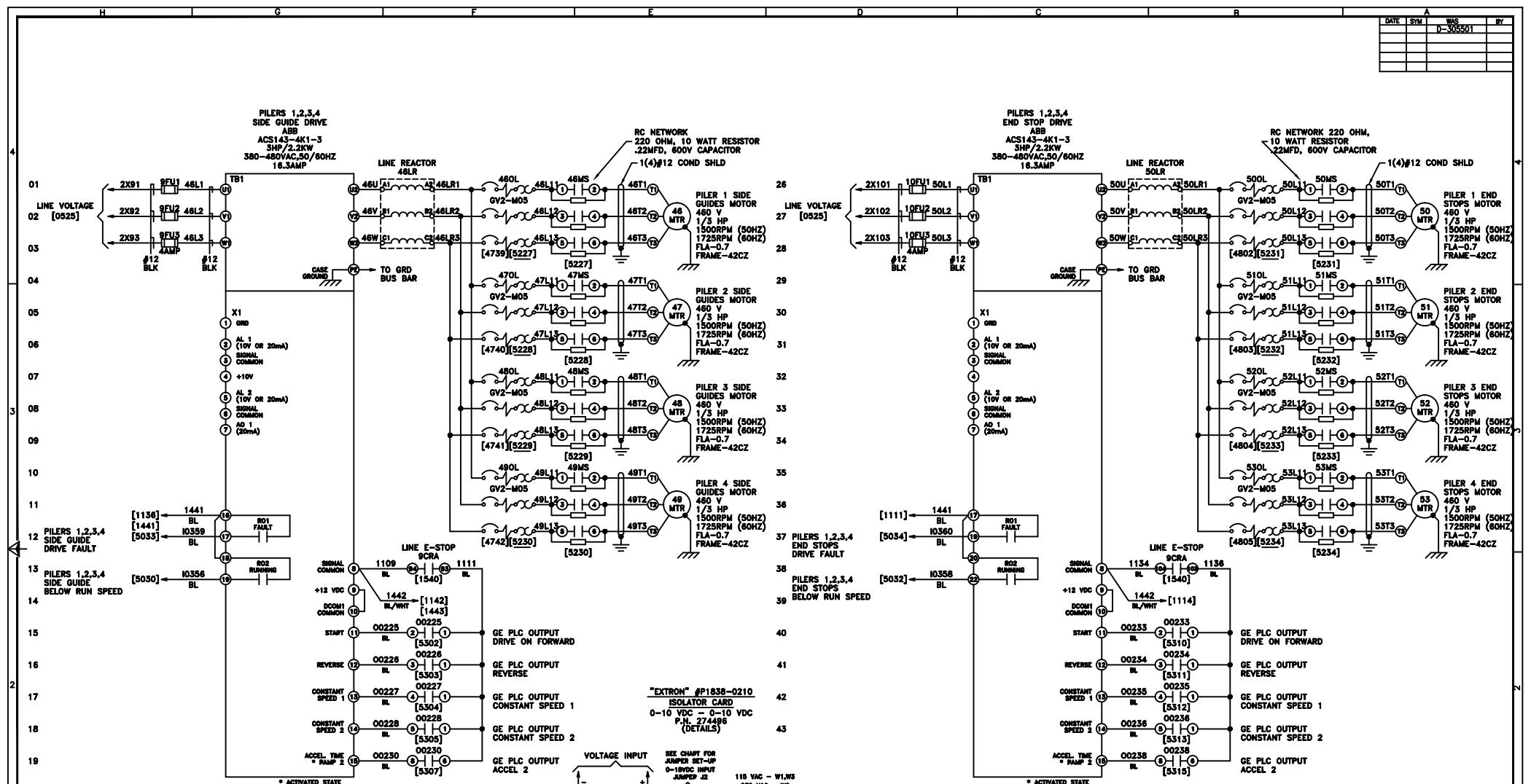
INPUT	JUMPER TO USE
4-20mA	J1
0-15VDC	J2
0-50VDC	J3
0-100VDC	J4
0-200VDC	J5
0-400VDC	J6
0-500VDC	J7

- 1) CHECK THAT APPROPRIATE JUMPERS ARE INSTALLED FOR LINE INPUT POWER (W1,W2,W3) FOR 115 VAC INSTALL JUMPERS W1 AND W3. FOR 230 VAC INSTALL JUMPER W2.
- 2) SET APPROPRIATE JUMPER (J1-J7) FOR INPUT VOLTAGE OR CURRENT. SET JUMPER J2 FOR 0-15 VDC VOLTAGE INPUT.
- 3) WITH INPUT SET AT MINIMUM LEVEL SET ZERO (R20) TO ZERO VOLTS AT OUTPUT TERMINAL.
- 4) WITH INPUT SET TO MAXIMUM LEVEL, ADJUST SCALING (R28) TO 4 VDC AT TP1 AND COMM.
- 5) ADJUST GAIN (R29) TO OBTAIN 4 VDC AT TP2 AND - OUTPUT TERMINAL.
- 6) ADJUST OUTPUT RANGE (R13) TO DESIRED MAXIMUM 10 VDC LEVEL AT OUTPUT TERMINAL.
- 7) RECHECK STEP 3.

PILER 3 & 4 MAIN CONVEYOR DRIVES

0 EMISSION PARA CONSTRUCCION	12-06-01
REV. 0 DESCRIPCION	Ejec. Cont. / Aprob. Fecha
PROVEEDOR: LITTELL INTERNATIONAL INC.	
IF PROVEEDOR: D-308691	
ZONA: SIDERONOM	
SECTOR: LINEA LITTELL	
OBRA O EQUIPO: LINEA DE CORTE - ER-4E	
SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC	
PROYECTO: 5615-23-0028	
DETALLE:	
CONTROL: ESCALAS	
APROBADO:	
IMPUTACION: 1463 CAD T152010.DWG	
FILE T1523BC	

DATE	SYM	WAS	BY
		D-305501	



- 1) CHECK THAT APPROPRIATE JUMPERS ARE INSTALLED FOR LINE INPUT POWER (W1,W2,W3) FOR 115 VAC INSTALL. JUMPERS W1 AND W3 FOR 220 VAC INSTALL. JUMPER W2.
- 2) SET APPROPRIATE JUMPER (J1-J7) FOR INPUT VOLTAGE OR CURRENT. SET JUMPER J2 FOR 0-15 VDC VOLTAGE INPUT.
- 3) WITH INPUT SET AT MINIMUM LEVEL, SET ZERO (R20) TO ZERO VOLTS AT OUTPUT TERMINAL.
- 4) WITH INPUT SET TO MAXIMUM LEVEL, ADJUST SCALING (R28) TO 4 VDC AT TP1 AND COMM.
- 5) ADJUST GAIN (R38) TO OBTAIN 4 VDC AT TP2 AND -OUTPUT TERMINAL.
- 6) ADJUST OUTPUT RANGE (R13) TO DESIRED MAXIMUM 10 VDC LEVEL AT OUTPUT TERMINAL.
- 7) RECHECK STEP 3.

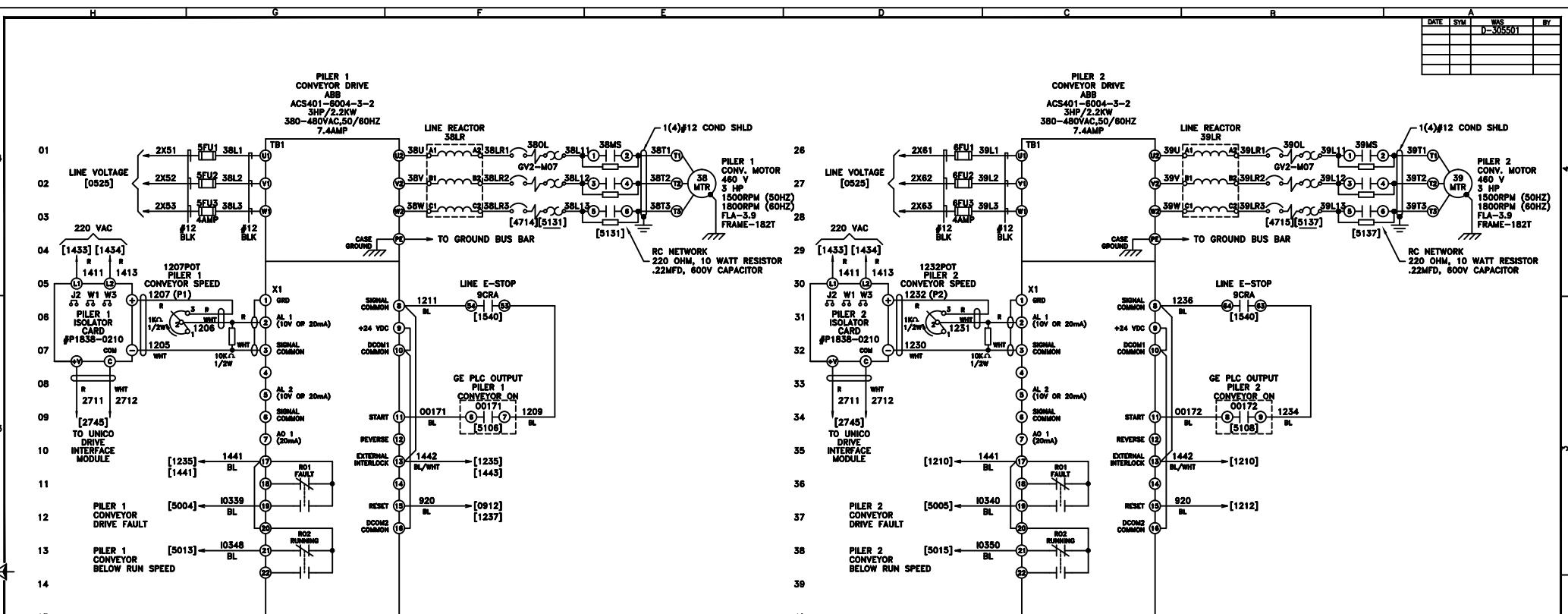
LITTELL JOB #94228 LINE (R → L)

ISOLATOR CARD JUMPER SETUP

INPUT	JUMPER TO USE
4-20mA	J1
0-15VDC	J2
0-50VDC	J3
0-100VDC	J4
0-200VDC	J5
0-400VDC	J6
0-500VDC	J7

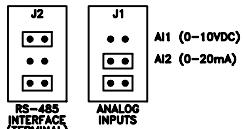
O EMISSION PARA CONSTRUCCION	12-06-01
REV. 0	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
IF PROVEEDOR	D-308691
ZONA 4	SIDEROM
SECTOR	LINIA DE Corte - ER-4E
OBRA O EQUIPO	PLANTA SIDEROCROM
SCROLL SHEETING LINE	
PARTIDA	DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO	
DIBUJO	
CONTROL	
APROBADO	
ESCALAS	
IMPUTACION	5615-23-0028
CAD T152011.DWG	
FILIO T1523BC	

DATE	SYM	WAS	BY
		D-305501	

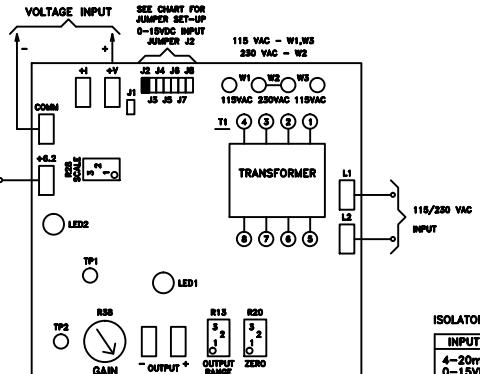


- NOTES:
1. CONTACTS SHOWN IN UNPOWERED STATE
 2. JUMPERS ARE SET TO FACTORY CONFIGURATION UNLESS OTHERWISE SPECIFIED.

DRIVE JUMPER SETTINGS



"EXTRON" #P1838-0210
ISOLATOR CARD
0-10 VDC - 0-10 VDC
P.N. 274495
(DETAILS)



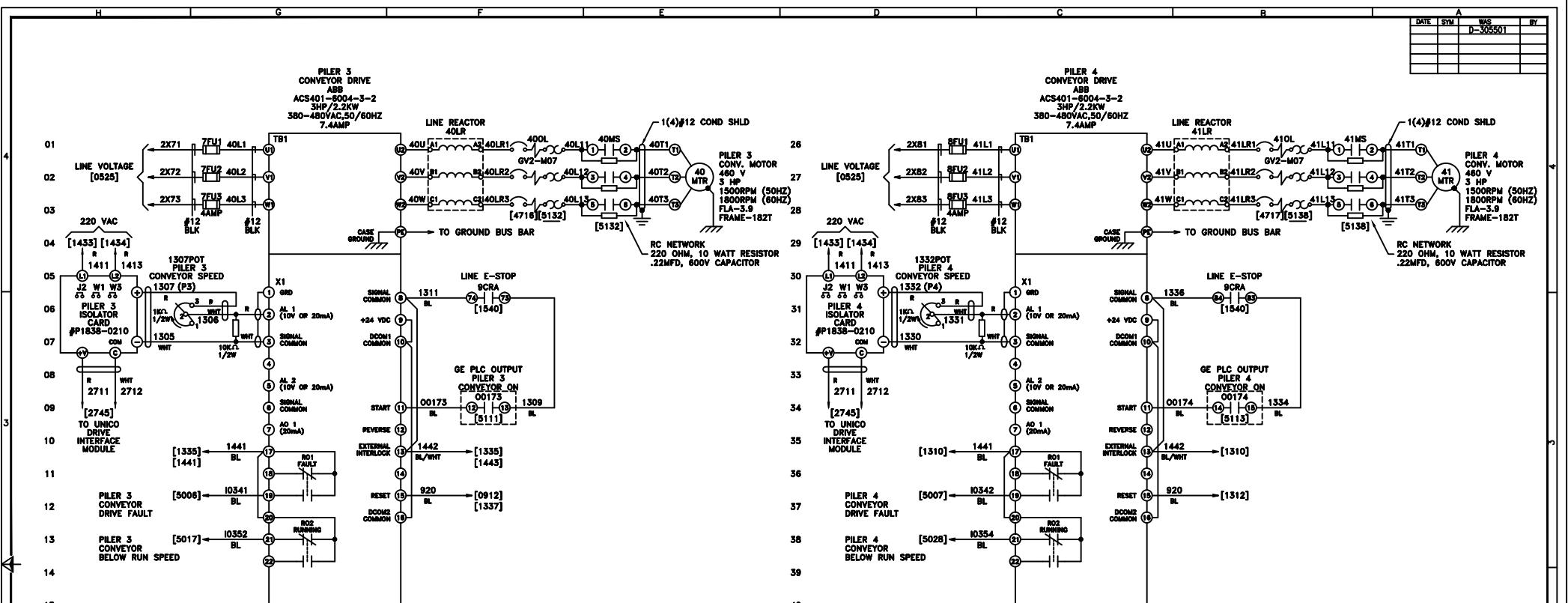
ISOLATOR CARD JUMPER SETUP

INPUT	JUMPER TO USE
4-20mA	J1
0-15VDC	J2
0-50VDC	J3
0-100VDC	J4
0-200VDC	J5
0-400VDC	J6
0-500VDC	J7

- 1) CHECK THAT APPROPRIATE JUMPERS ARE INSTALLED FOR LINE VOLTAGE POWER (W1,W2,W3) FOR 115 VAC INSTALL JUMPER J1 AND W3. FOR 220 VAC INSTALL JUMPER W2.
- 2) SET APPROPRIATE JUMPER (J1-J7) FOR INPUT VOLTAGE OR CURRENT. SET JUMPER J2 FOR 0-15 VDC VOLTAGE INPUT.
- 3) WITH INPUT SET AT MINIMUM LEVEL SET ZERO (R20) TO ZERO VOLTS AT OUTPUT TERMINAL.
- 4) WITH INPUT SET TO MAXIMUM LEVEL, ADJUST SCALING (R28) TO 4 VDC AT TP1 AND COMM.
- 5) ADJUST GAIN (R38) TO OBTAIN 4 VDC AT TP2 AND -OUTPUT TERMINAL.
- 6) ADJUST OUTPUT RANGE (R13) TO DESIRED MAXIMUM 10 VDC LEVEL AT OUTPUT TERMINAL.
- 7) RECHECK STEP 3.

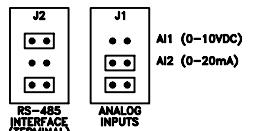
O EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
IF PROVEEDOR	D-308691
SIDERAR	ZONA: SIDEROM SECTOR: LINEA LITTELL OBRA O EQUIPO: LINEA DE CORTE - BR-4E SCROLL SHEETING LINE
LA FIRMA SE REFERENCIA LA PROPRIETAT DE ESTA DOCUMENTACION COMO CONFIDENTIAL Y RESERVA EL DERECHO DE MODIFICARLA EN TODA PT DE TIEMPO SIN AVISO.	
PROYECTO	ESCALAS
DIBUJO	5615-23-0028
CONTROL	CAD T1520102.DWG
APROBADO	FILIO T15203BC
IMPUTACION:	1463

LITTELL JOB #94226 LINE (R → L)

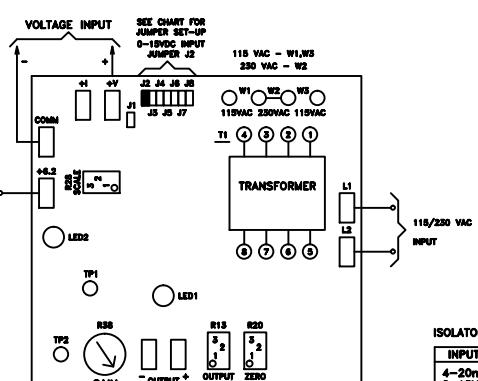


- NOTES:**
- CONTACTS SHOWN IN UNPOWERED STATE
 - JUMPERS ARE SET TO FACTORY CONFIGURATION UNLESS OTHERWISE SPECIFIED.

DRIVE JUMPER SETTINGS



"EXTRON" #P1838-0210
ISOLATOR CARD
0-10 VDC - 0-10 VDC
P.N. 274496
(DETAILS)



ISOLATOR CARD JUMPER SETUP

INPUT	JUMPER TO USE
4-20mA	J1
0-15VDC	J2
0-50VDC	J3
0-100VDC	J4
0-200VDC	J5
0-400VDC	J6
0-500VDC	J7

- CHECK THAT APPROPRIATE JUMPERS ARE INSTALLED FOR LINE INPUT POWER (W1,W2,W3) FOR 115 VAC INSTALL JUMPERS W1 AND W3. FOR 220 VAC INSTALL JUMPER W2.
- SET APPROPRIATE JUMPER (J1-J7) FOR INPUT VOLTAGE OR CURRENT. SET JUMPER J2 FOR 0-15 VDC VOLTAGE INPUT.
- WITH INPUT SET AT MINIMUM LEVEL SET ZERO (R20) TO ZERO VOLTS AT OUTPUT TERMINAL.
- WITH INPUT SET TO MAXIMUM LEVEL, ADJUST SCALING (R28) TO 4 VDC AT TPI1 AND COMM.
- ADJUST GAIN (R38) TO OBTAIN 4 VDC AT TP2 AND -OUTPUT TERMINAL.
- ADJUST OUTPUT RANGE (R13) TO DESIRED MAXIMUM 10 VDC LEVEL AT OUTPUT TERMINAL.
- RECHECK STEP 3.

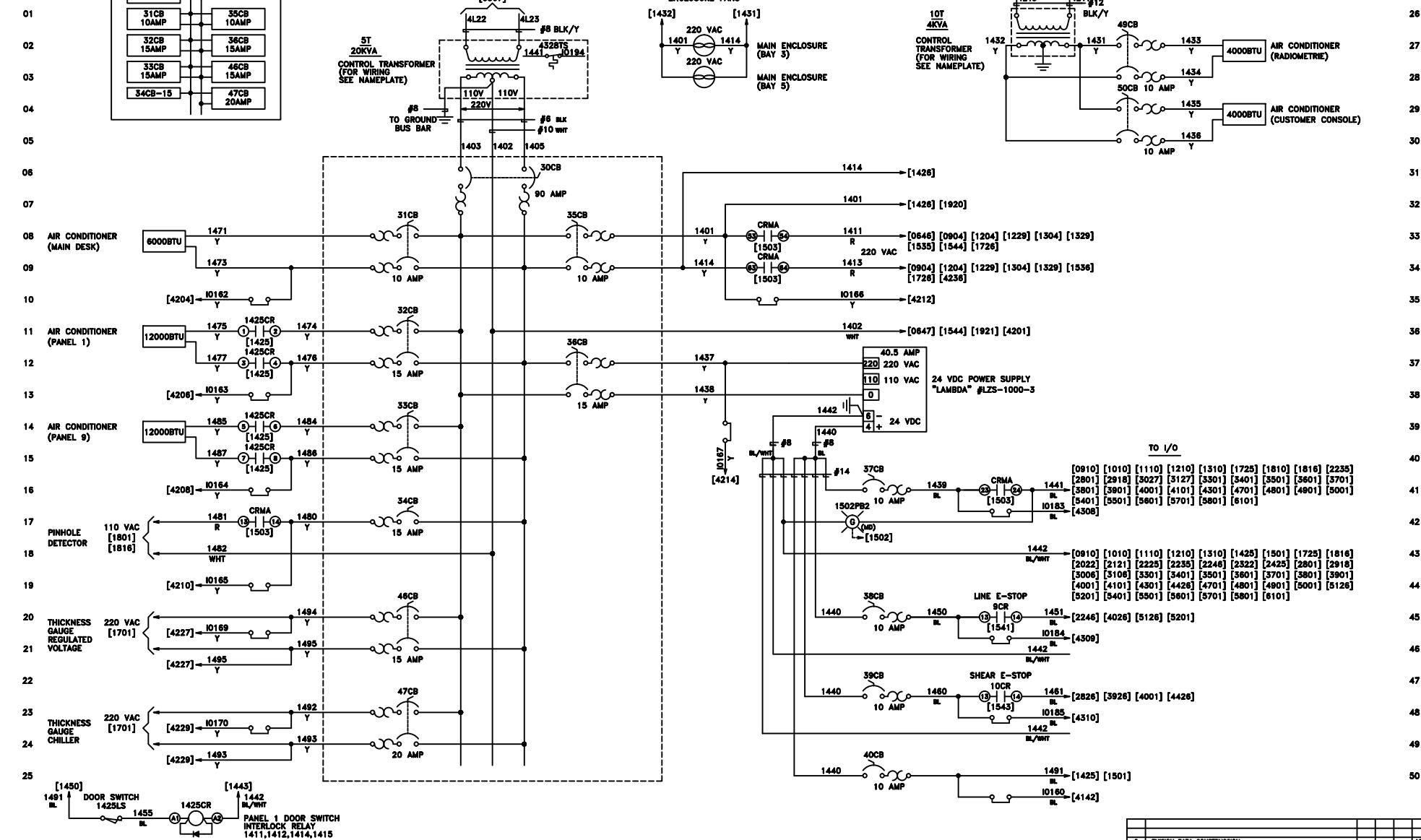
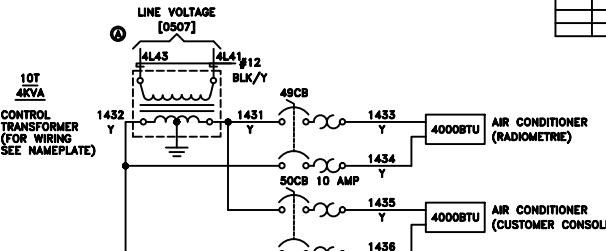
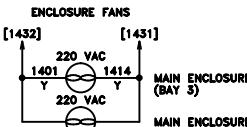
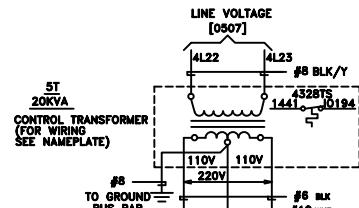
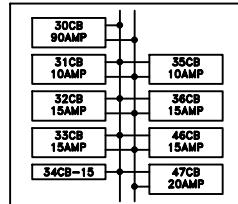
PILER 3 & 4 CONVEYOR DRIVES

0 EMISSION PARA CONSTRUCCION	12-06-01
REV. 00000000000000000000000000000000	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC.	
REF. NO. D-308691	
ZONA: SIDEROM	
SECTOR: LINEA LITTELL	
OBRA O EQUIPO: LINEA DE Corte - ER-4E	
SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-Schematic	
HOJA 13 DE 67	
LA FIRMA RE REFERENCIA LA PROPRIETAT DE ESTA DOCUMENTACION Y DECLARA QUE SE HA PRESTADO ATENCION AL DISEÑO Y SE HA VERIFICADO EN TODAS LAS PARTES DE ESTA DOCUMENTACION QUE NO HAYA FALTA DE AUTORIZACIONES ESPECIALES.	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T1520101.DWG	
FILE T1520101.DWG	

LITTELL JOB #94228 LINE (R → L)

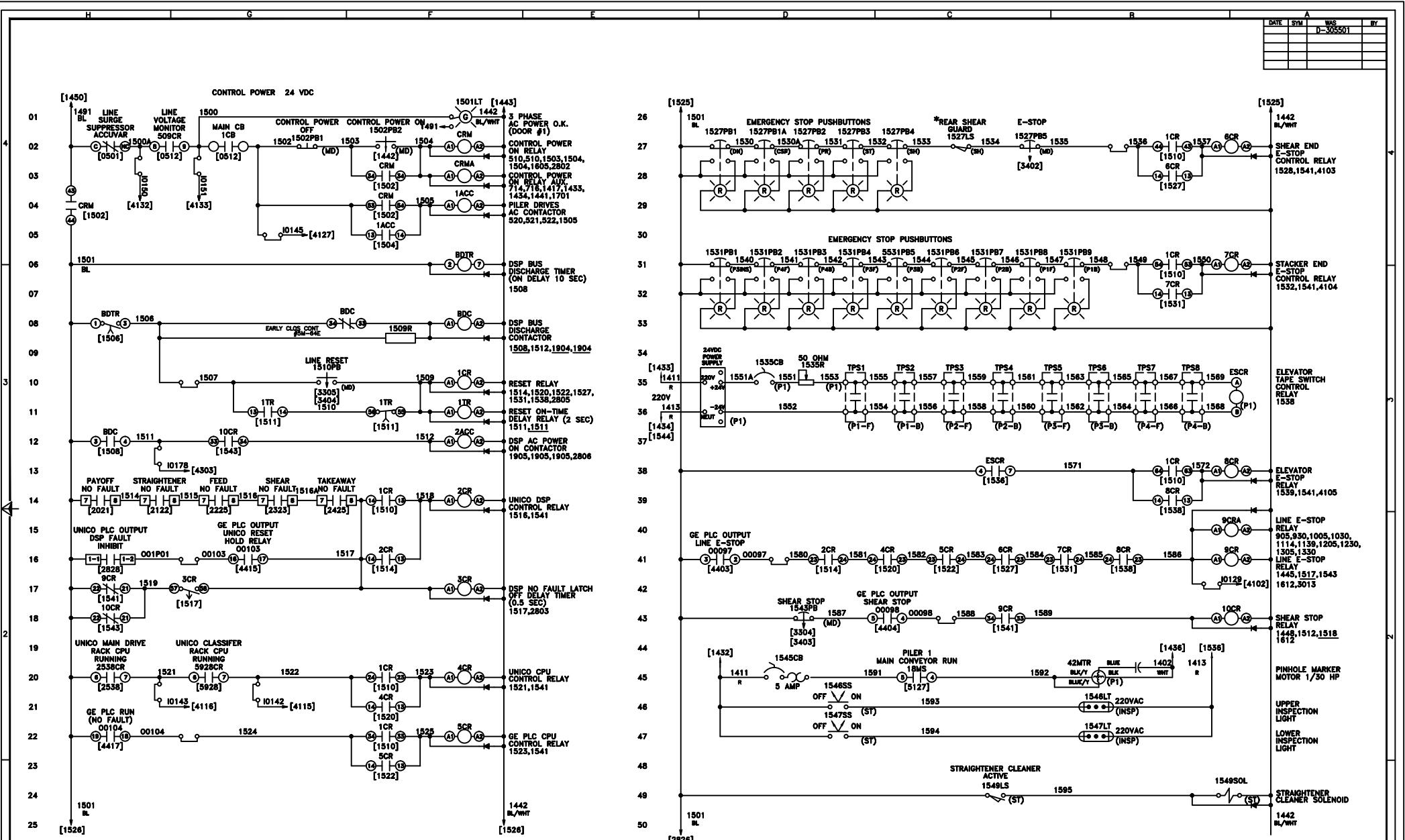
DATE	SYM	WAS	BY
07/14/04	(A)	D-305501	JOL

LOCATION
OF CIRCUIT BREAKERS
ON PANEL BOARD



LITTELL JOB #94228 LINE (R → L)

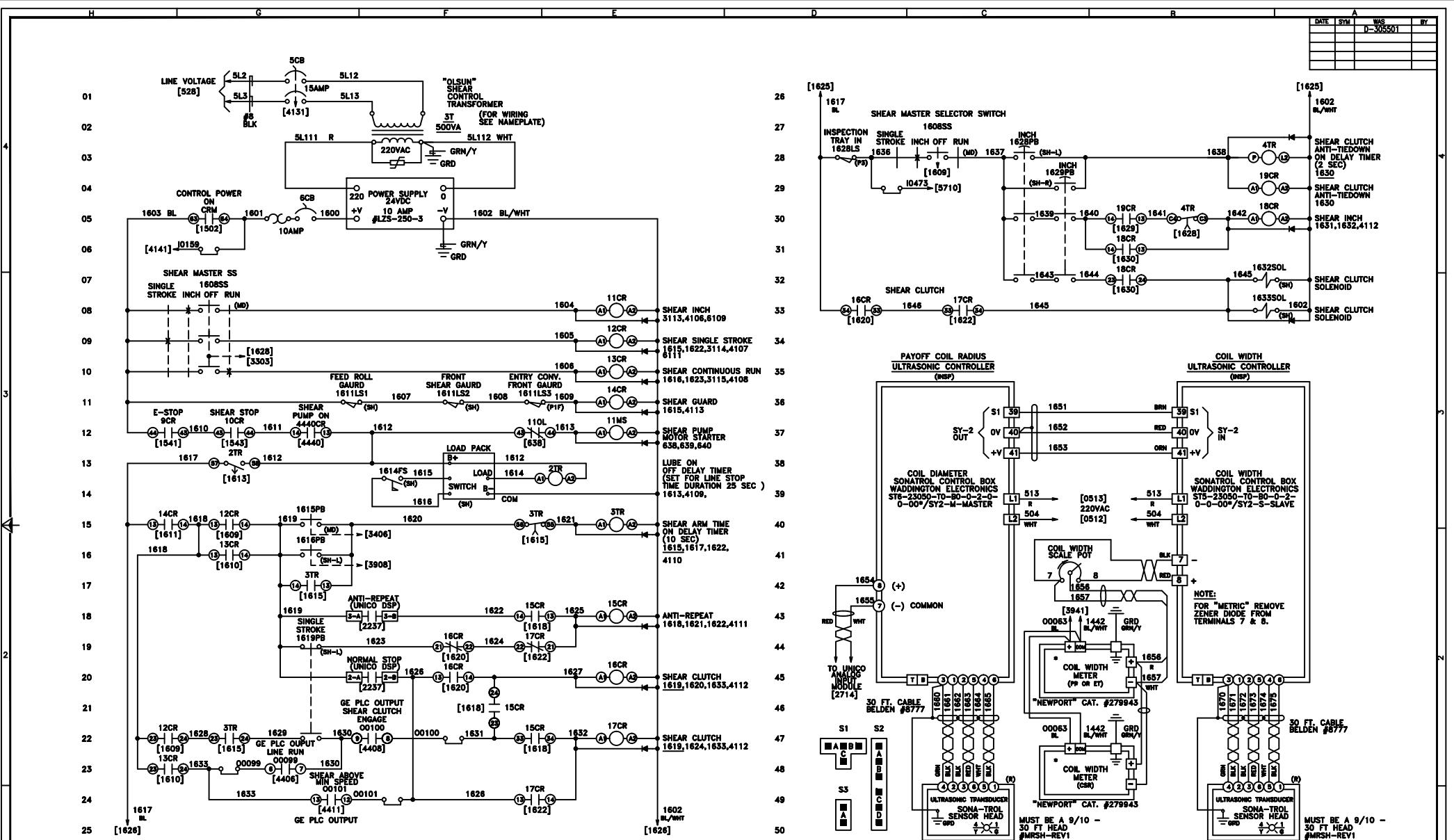
0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
PROVEEDOR	D-308691 HOJA 14 DE 67
SIDERAR	ZONA: SIDEROM SECTOR: LINEA LITTELL OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC
LA FIRMA RE PRESENTA LA PROPIEDAD DE ESTE DOCUMENTO Y SE RESERVA EL DERECHO DE PROPRIEDAD DE LOS DISEÑOS Y DIBUJOS. SE PROHIBE SU COPIA, REPRODUCCION, O DISTRIBUCION SIN LA PREVIA AUTORIZACION ESCRITA.	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPRESION: 1463	CAD T1521014.DWG
FILED T1523BC	



* NOTE: GUARD SWITCH(S) SHOWN WHEN GUARD(S) IS CLOSED.

LITTELL JOB #94228 LINE (R → L)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV. DESCRIPCION	Ejec. Cont./Aprob. Fecha
PROVEEDOR: LITTELL INTERNATIONAL INC.	
W PROVEEDOR: D-308691 HOJA 15 DE 67	
SIDERAR ZONA: SIDERON	
SECTOR: LINEA LITTELL	
OBRA O EQUIPO: LINEA DE CORTE - ER-4E	
SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-Schematic	
LA FIRMA REEXPRESA LA PROPIEDAD DE ESTE DOCUMENTO Y SUS DERECHOS SE RESERVAN EN TOTAL AL PROVEEDOR. SE PROHIBE SU COPIA SIN AUTORIZACION ESCRITA.	
PROYECTO: ESCALAS	
DIBUJO: 5615-23-0028	IMPUTACION: 1463 CAD T1521015.DWG
CONTROL: FILTRO T1523ABC	APROBADO:

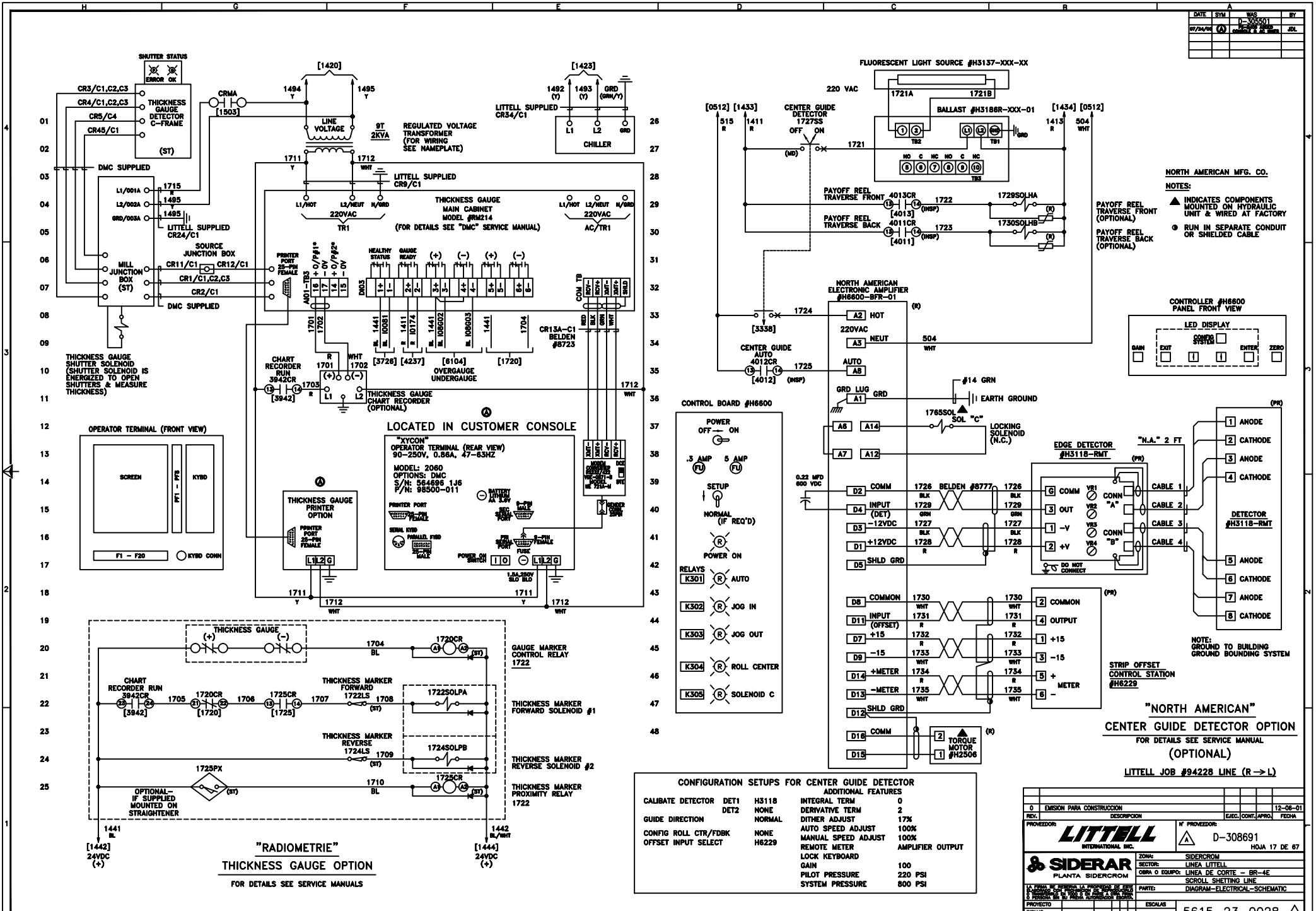


JUMPER	INCH	METRIC	FUNCTION
S1	B	NO JUMPER	DECIMAL POINT
S2	B + C	B + C	20VDC VOLTAGE RANGE
S3	NO JUMPER	NO JUMPER	

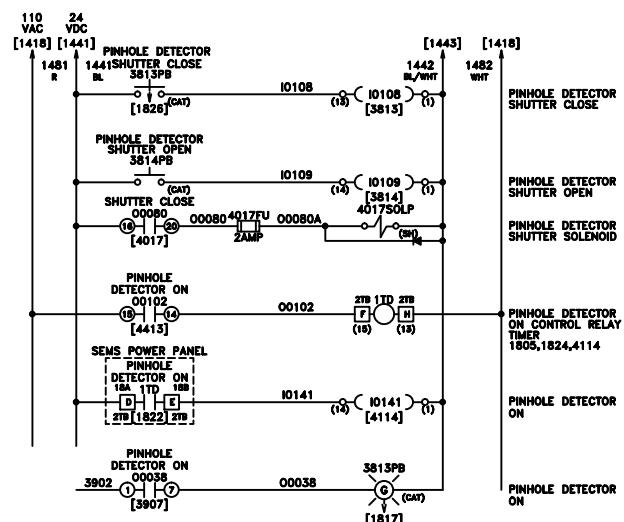
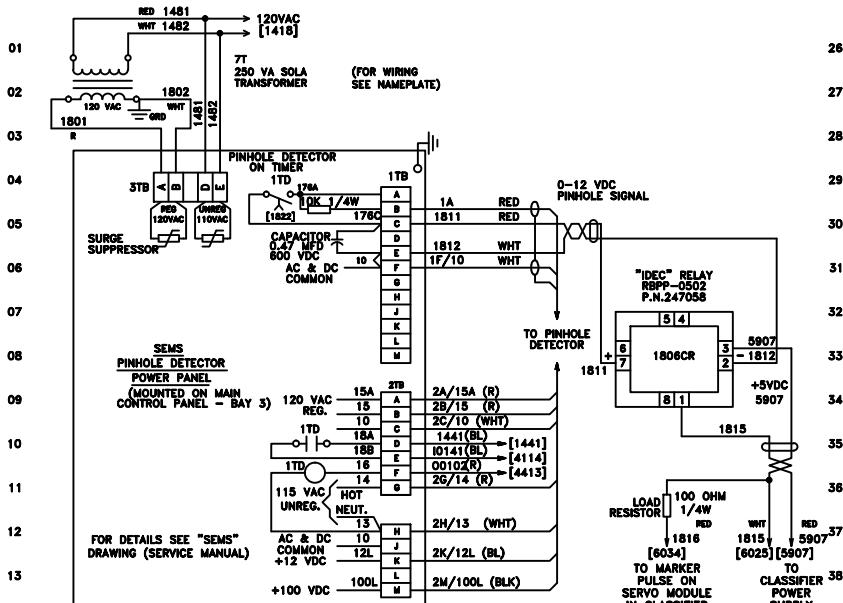
LITTELL JOB #94228 LINE (R → L)

D. EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC.	
ZONA: SIDEROM	
SECTOR: LINEA LITTELL	
OBRA O EQUIPO: LINEA DE CORTE - ER-4E	
SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-Schematic	
D. PROVEEDOR: D-308691 HOJA 16 DE 67	
SIDERAR PLANTA SIDEROM	
LA FIRMA RE CONFIRMA LA PROPIEDAD DE ESTA DIBUJO Y SE RESERVA EL DERECHO DE SU USO Y DISTRIBUCION SIN EL CONSENTO ESCRITO DE LA FIRMA AUTORIZADA DENTRO	
PROYECTO:	ESCALAS:
DIBUJO:	5615-23-0028
CONTROL:	CAD T152016 DBO
APROBADO:	FILIO T1523BC
IMPRESION:	1483

DATE: 08/04/94 WAS: D-305501 BY:
BY: SIDERAR (A) APPROVED: JOL



DATE	SYM	WAS	BY
		D-305501	

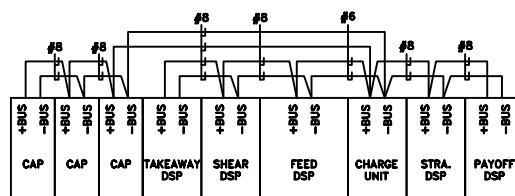
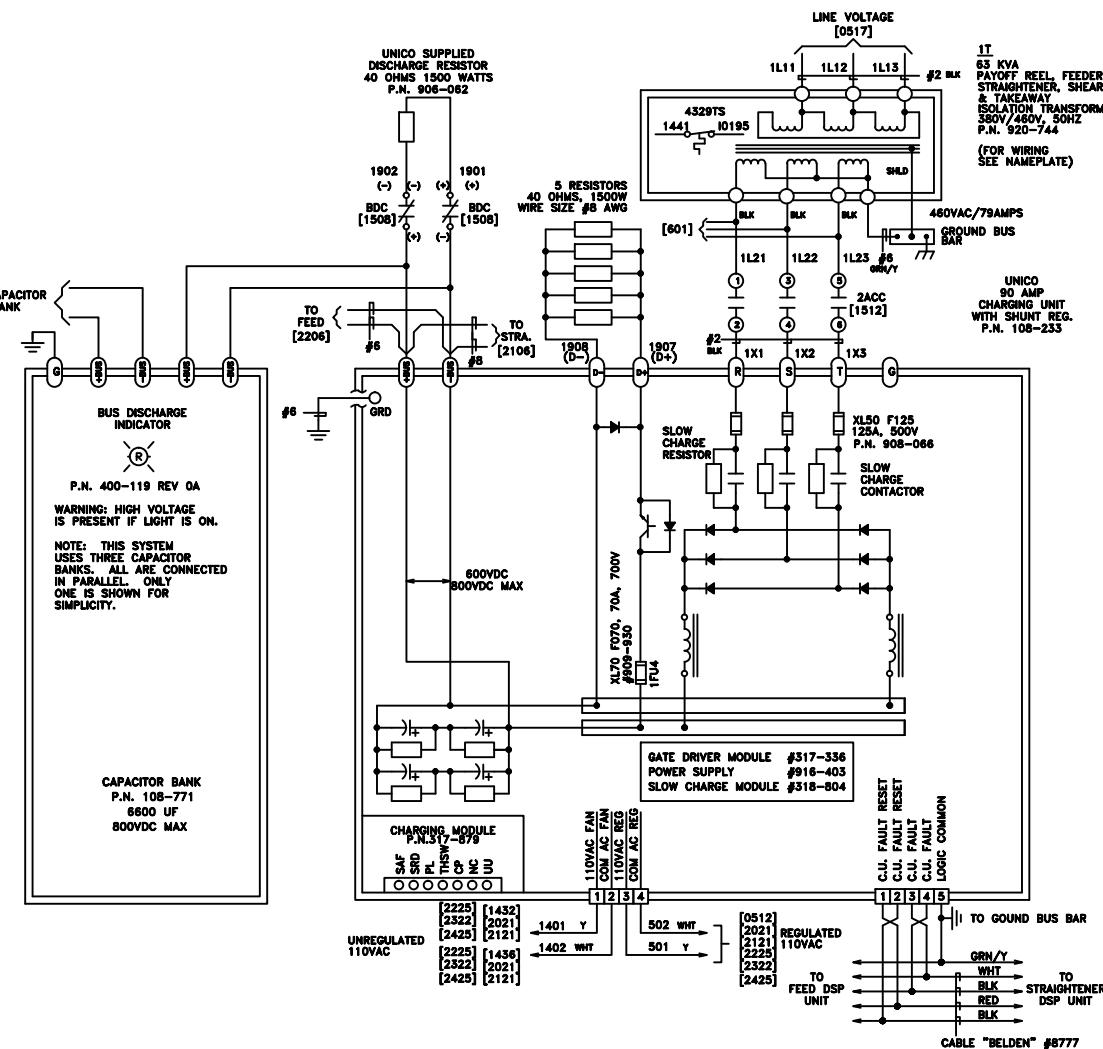


LITTELL JOB #94228 LINE (R → L)

"SEMS"
PINHOLE DETECTOR

O	EMISION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION	EJEC. CONT./APRO. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC. N° PROVEEDOR: D-308691 HOJA 18 DE 67		
ZONA: SIDEROM		
SECTOR: LINEA LITTELL		
OBRA O EQUIPO: PLANTA SIDEROCROM SCROLL SHEETING LINE		
PARTE: DIAGRAM-ELECTRICAL-SCHMATIC		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPRESION: 1463 CAD T152010.DWG		
FILE T1523BC		

DATE	SYM	WAS
		D-305501



LITTELL JOB #94228 LINE (R → L)

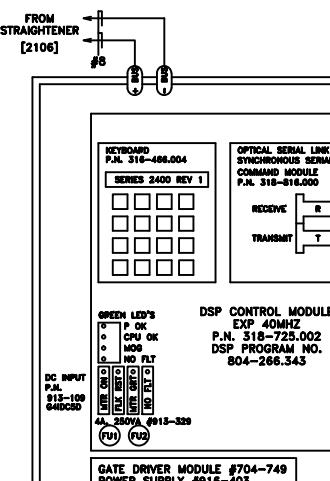
ZONA:	SIDEROM	12-06-01
REV.:	DESCRIPCION	EJEC. CONT./APRO. FECHA
PROVEEDOR: LITTELL		W PROVEEDOR: D-308691
ZONA: SIDEROM		HOJA 19 DE 67
SECTOR: LINEA LITTELL		
OBRA O EQUIPO: LINEA DE CORTE - ER-4E		
SCROLL SHEETING LINE		
PARTE: DIAGRAM-ELECTRICAL-Schematic		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPUTACION: 1463	CAD T152010.DWG	
	FILIO T1523BC	

DATE	SYM	WAS	BY
		D-305501	

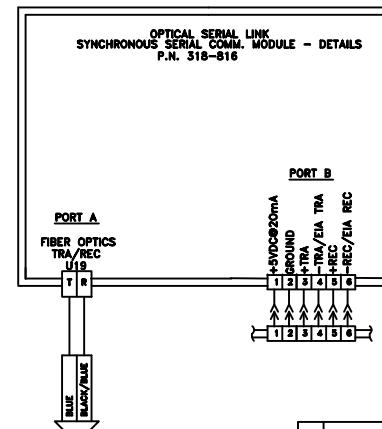
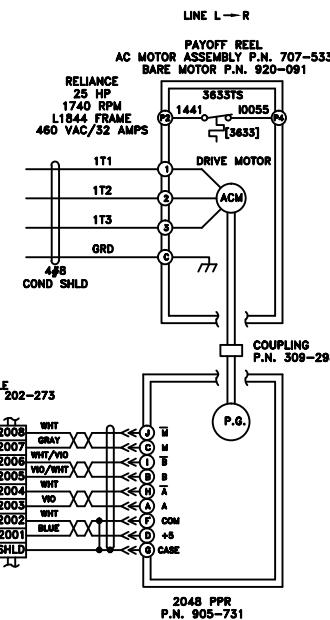
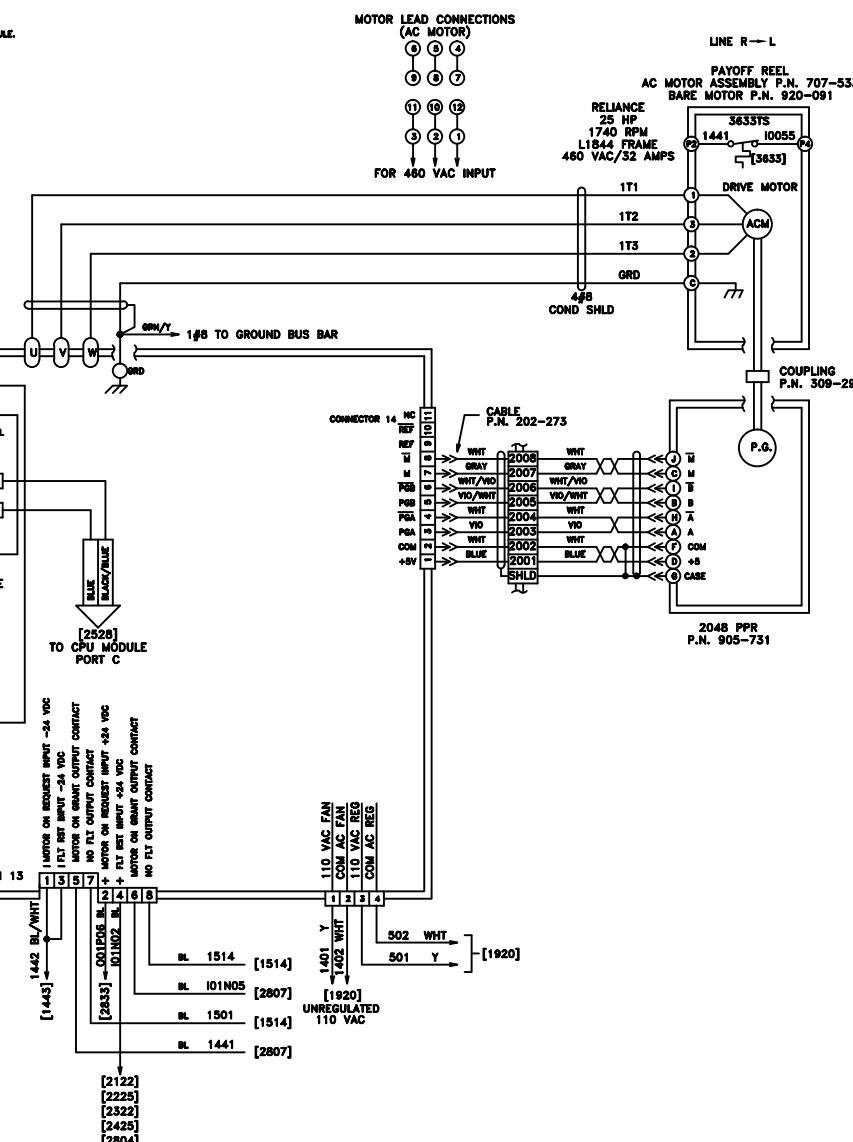
DSP PROGRAM LOCATION IS ON DSP CONTROL MODULE.
THESE IC'S ARE LOCATED UNDER THE SYNC SERIAL
MODULE. SYNC SERIAL MODULE MUST BE REMOVED
TO GET AT THE IC'S. ALL POWER MUST BE SHUT
OFF BEFORE CHECKING PROGRAM NUMBERS.



PAYOFF REEL
DSP DRIVE
25 HP/460 VAC, 34 AMP
P.N. 109-181



CJA FAULT RESET
CJA FAULT
CJA FAULT
CJA FAULT
LOGIC COMMON



PAYOFF REEL DSP DRIVE

LITTELL JOB #94228 LINE (R → L)

ZONA:	SIDEROM	12-06-01
REV.:	DESCRIPCION	EJEC. CONT./APRO. FECHA
PROVEEDOR:	LITTELL INTERNATIONAL INC.	
D-308691 HOJA 20 DE 67		
SIDERAR PLANTA SIDEROCROM SECTOR: LINEA DE CORTE - ER-4E OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE PARTE: DIAGRAM-ELECTRICAL-Schematic		
PROYECTO:	ESCALAS	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPRESION:	1463	CAD T152020.DWG
FILE:	T1523BC	

DATE	SYM	WAS	BY
		D-305501	

DSP PROGRAM LOCATION IS ON DSP CONTROL MODULE.
THESE IC'S ARE LOCATED UNDER THE SYNC SERIAL
MODULE. SYNC SERIAL MODULE MUST BE REMOVED
TO GET AT THE IC'S. ALL POWER MUST BE SHUT
OFF BEFORE CHECKING PROGRAM NUMBERS.

01 804-265-543
P.N. 915-738
LOW U28
02 804-265-543
P.N. 915-738
HIGH U28
03 804-265-543
P.N. 915-738
HIGH U28

04 STRAIGHTENER
SERIES 2400
DSP DRIVE 25 HP, 480 VAC, 34 AMP
P.N. 109-181

05 FROM CHARGING
UNIT [1906] TO PAYOFF REEL
DSP UNIT [2006]

#6 BLK #6 BLK

06 1#8 TO GROUND BUS BAR

07 U V W GND

08 KEYBOARD
P.N. 316-486.004
SERIES 2400 REV 1

09 OPTICAL SERIAL LINK
SYNCHRONOUS SERIAL
COMMAND MODULE
P.N. 318-818.000

10 RECEIVE R
TRANSMIT T
SEE DETAILS
ON SHEET 20

11 GREEN LED'S
P OK
CPU OK
NO FAULT
NO FILT

12 DC INPUT
P.N. 915-108
04IDCSD
4A, 250VA #915-328
FUS

13 GATE DRIVER MODULE #704-749
POWER SUPPLY #915-403
LEM DF MODULE #318-165
DIG CURR REGULATOR #318-777

14 C.J. FAULT RESET
C.J. FAULT
C.J. FAULT
LOGIC COMMON

15 CON 13

16 142 BL/WHITE
1445 1 3 5 7 9
2 4 6 8

17 1445 1 3 5 7 9
2 4 6 8

18 1445 1 3 5 7 9
2 4 6 8

19 1445 1 3 5 7 9
2 4 6 8

20 1445 1 3 5 7 9
2 4 6 8

21 1445 1 3 5 7 9
2 4 6 8

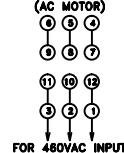
22 1445 1 3 5 7 9
2 4 6 8

23 1445 1 3 5 7 9
2 4 6 8

24 1445 1 3 5 7 9
2 4 6 8

25 1445 1 3 5 7 9
2 4 6 8

MOTOR LEAD CONNECTIONS (AC MOTOR)



LINE R → L

STRAIGHTENER
AC MOTOR ASSEMBLY P.N. 707-533
RELIANCE
25 HP
1740 RPM
L1544 FRAME
460 VAC/32 AMPS

1441 10084 [3642]
3642TS
1441 10084 [3642]

2T1 2T2 2T3
GRD

4#8 COND SHLD
/77

DRIVE MOTOR
ACM

COUPLING P.N. 309-298

P.G.

CABLE P.N. 202-273

WHITE 2108 WHITE
GRAY 2107 GRAY
WHT/VIO 2106 WHT/VIO
VIO/WHT 2105 VIO/WHT
WHITE 2104 WHITE
VIOLET 2103 VIOLET
WHITE 2102 WHITE
BLUE 2101 BLUE
SHLD

2048 PPR
P.N. 905-731

INTERNAL CONNECTION TO INVERTER

Y Y Y Y Y
CON 2 EIA REC/TTL REC-
EIA TRA/TTL TRA-
COMMON +VOLT

CON 3 RxD-
RxD+
RxD-
RxD+
RxD-
RxD+
LCOM
+SYDC

CON 4 RTC-
RTC+
LOGIC COMMON
+5 VDC
+5 VDC
-15 VDC
LOGIC COMMON
TO CASE GND

CON 5

Y Y Y Y Y
CON 6 COMMAND MODULE

U26 804-265-543
P.N. 915-738
U27 804-265-543
P.N. 915-738
U28 804-265-543
P.N. 915-738

DC INPUT
P.N. 915-108
04IDCSD
4A, 250VA #915-328
FUS

CON 13

REGULATED 110 VAC
502 WHT
501 Y

[1921]
1401 Y
1402 WHT
[2024]-10102
BL 1515 [1514]
BL 10106 [2808]
BL 1514 [1514]
BL 1441 [2806]

UNREGULATED
110 VAC

DC OUTPUT
P.N. 915-110
04IDCSD
4A, 250VA #915-328
FUS

CON 14

EXPANDABLE
I/O
CON 15
(NOT USED)

CON 16
(NOT USED)

+ANALOG 1 IN
+ANALOG 2 IN
+ANALOG 3 IN
+ANALOG 4 IN
+ANALOG 5 IN
SIGNAL COMMON
ANALOG 1 OUT
ANALOG 2 OUT
SIGNAL COMMON

LITTELL JOB #94228 LINE (R → L)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC.	
ZONA: SIDEROM	
SECTOR: LINEA DE CORTE - ER-4E	
OBRA O EQUIPO: PLANTA SIDERCROM	
COMENTARIO: SCROLL SHEETING LINE	
PARTE: DIAGRAM-ELECTRICAL-Schematic	
PROYECTO:	ESCALAS:
DETALLE:	
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T152021.Dwg	
FILE T1523BC	

STRAIGHTENER DSP DRIVE

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: SIDERAR	
ZONA: SIDEROM	
SECTOR: LINEA DE CORTE - ER-4E	
OBRA O EQUIPO: PLANTA SIDERCROM	
COMENTARIO: SCROLL SHEETING LINE	
PARTE: DIAGRAM-ELECTRICAL-Schematic	
PROYECTO:	ESCALAS:
DETALLE:	
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T152021.Dwg	
FILE T1523BC	

5615-23-0028

DATE	SYM	WAS	BY
		D-305501	

DSP PROGRAM LOCATION IS ON DSP CONTROL MODULE.
THESE IC'S ARE LOCATED UNDER THE SYNC SERIAL
MODULE. SYNC SIGNAL WIRE MUST BE REMOVED
TO GET AT THE IC'S. ALL POWER MUST BE SHUT
OFF BEFORE CHECKING PROGRAM NUMBERS.

MOTOR LEAD CONNECTIONS (AC MOTOR)

LINE R - L
AC MOTOR FEED ASSEMBLY P.N. 706-044
REF: 918-784

RELIANCE
60 HP
1150 RPM
L2578 FRAME
460 VAC/73.4 AMPS
3817TS
1441 [0112]

FOR 460VAC INPUT
3T1
3T2
3T3
GRD

DRIVE MOTOR
ACM
[3817]
77

COND SHLD
462
COND SHLD
77

LINE L - R

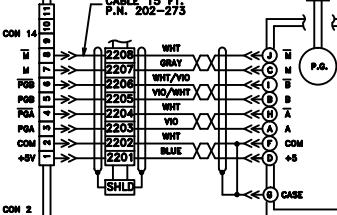
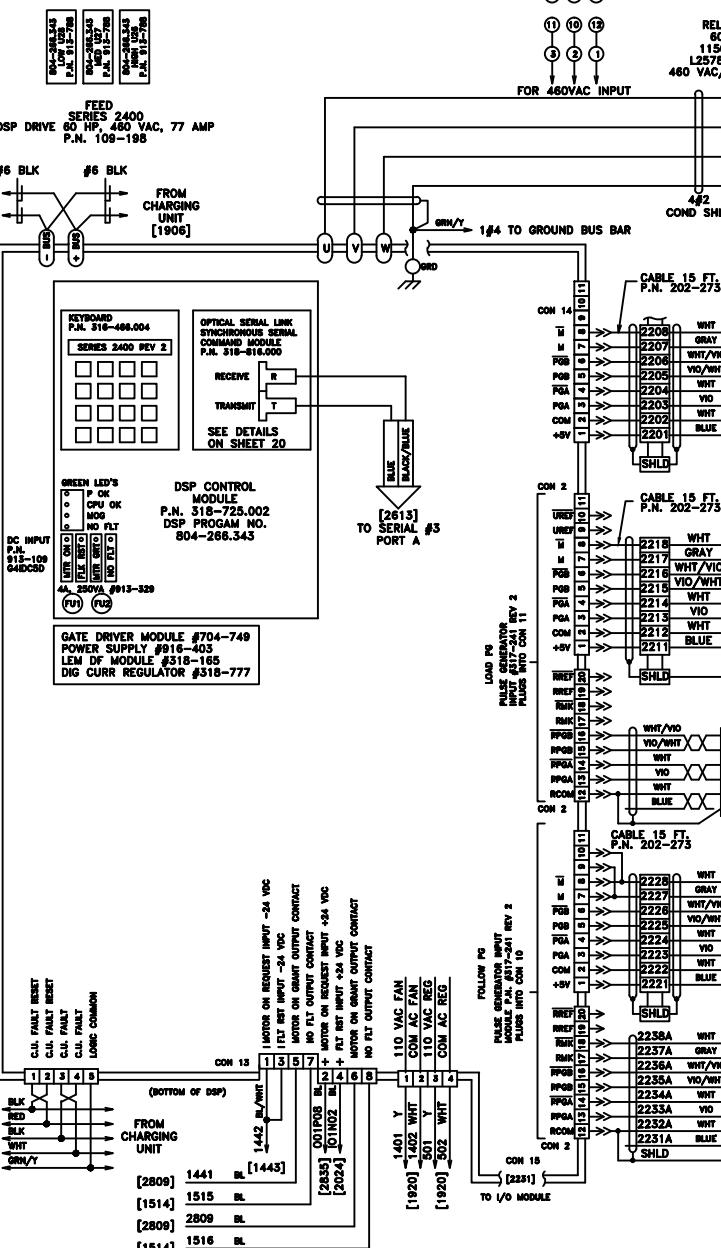
AC MOTOR FEED ASSEMBLY P.N. 706-044
REF: 918-784

RELIANCE
60 HP
1150 RPM
L2578 FRAME
460 VAC/73.4 AMPS
3817TS
1441 [0112]

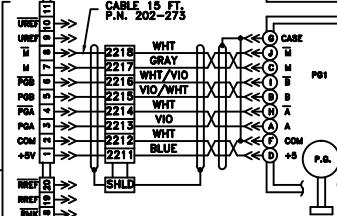
DRIVE MOTOR
ACM
[3817]
77

COND SHLD
462
COND SHLD
77

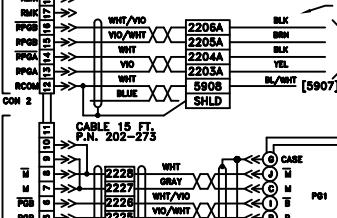
- BIT 7 SPARE
- BIT 6 DIE CLAMPS CAM (ON=235°, OFF=290°)
- BIT 5 TAKE AWAY DEAD CENTER (ON=170°, OFF=215°)
- BIT 4 BOTTOM DEAD CENTER (ON=180°, OFF=260°)
- BIT 3 ANTI-REPEAT (ON=130°, OFF=110°)
- BIT 2 SHEAR NORMAL STOP CAM (ON=185°, OFF=165°)
- BIT 1 SHEAR SHIFT CAM (ON=150°, OFF=183°) (SHEAR CUT)
- BIT 0 BUCKLE DETECT CAM (ON=75°, OFF=115°) (ON BHP WAS 70°-90°)



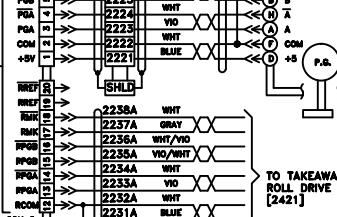
PULSE GENERATOR
6000 PPR
P.N. 915-291



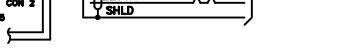
LOWER FEED ROLL
PULSE GENERATOR
6000 PPR
P.N. 915-291
(SH)



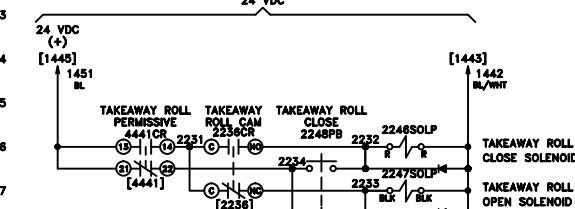
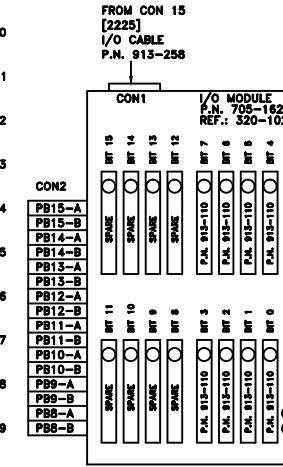
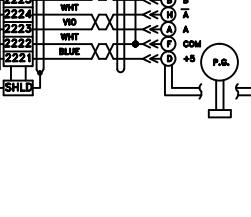
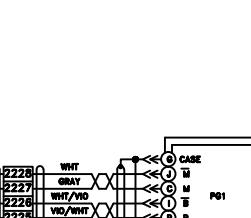
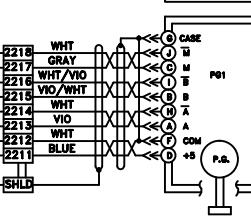
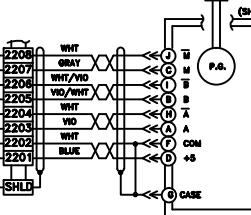
SERVO CABLE
#202-440
TO CLASSIFIER SERVO DRIVE
INTERFACE MODULE
[6023]



PRESS SHAFT POSITION
PULSE GENERATOR
2048PPR
P.N. 905-731
(SH)



TO TAKEAWAY ROLL DRIVE
[2421]



FEEDER DSP DRIVE

LITTELL JOB #94228 LINE (R → L)

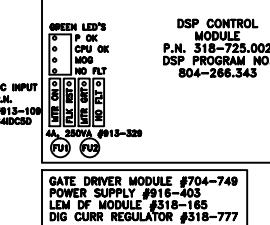
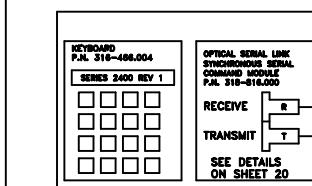
0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC.	
IF PROVEEDOR: D-308691	
ZONA: SIDEROM SECTOR: LINEA LITTELL CIBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC	
PROYECTO:	ESCALAS:
DIBUJO:	IMPUTACION: 1463 CAD T152022.DWG
CONTROL:	FILE T1523BC
APROBADO:	

DATE	SYM	WAS	RIV
D-305501			

DSP PROGRAM LOCATION IS ON DSP CONTROL MODULE.
THESE IC'S ARE LOCATED UNDER THE SYNC SIGNAL
WAVEFORM SPLITTER. IC'S MUST BE REMOVED
TO SET AT THE IC'S. ALL POWER MUST BE SHUT
OFF BEFORE CHECKING PROGRAM NUMBERS.



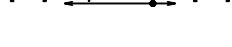
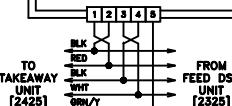
SHEAR
SERIES 2400
DSP DRIVE 25 HP, 480 VAC, 34 AMP
P.N. 109-181



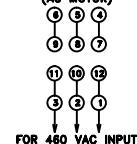
C.J. FAULT RESET

C.J. FAULT

C.J. FAULT COMMON

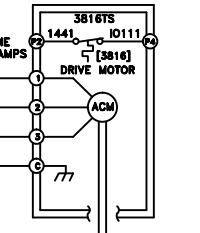


MOTOR LEAD CONNECTIONS (AC MOTOR)



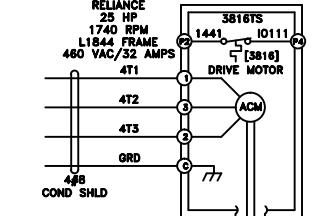
LINE R → L

AC MOTOR ASSEMBLY P.N. 707-533
BARE MOTOR P.N. 920-091

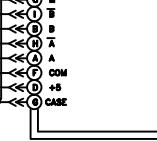


LINE L → R

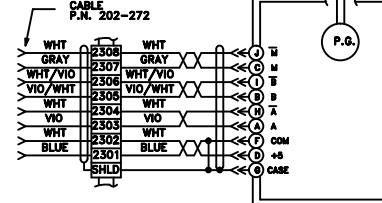
AC MOTOR ASSEMBLY P.N. 707-533
BARE MOTOR P.N. 920-091



CONNECTOR 14
NC REF NC REF
GND REF GND REF
POB POB
POA POA
COM COM
+5V +5V

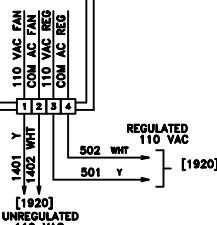


2048 PPR
P.N. 905-731



2048 PPR
P.N. 905-731

CON 13
1 2 3 4 5 1 2 3 4
1442 BL/WHT [1443] 1442 BL/WHT [1443]
[2024] 1441 Y
BL 1516A [1514] [1920]
BL IO1N0B [2811] UNREGULATED
BL 1516 [1514] 110 VAC
BL 1441 [2811]



SHEAR DSP DRIVE

O EMISSION PARA CONSTRUCCION	12-06-01
REV. 1.0	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC. IF PROVEEDOR: D-308691 HOJA 23 DE 67	
SIDERAR ZONA: SIDERROM SECTOR: LINEA LITTELL PLANTA SIDERROM OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE	
LA FIRMA RE PRESENTA LA PROPIEDAD DE ESTA DOCUMENTACION Y DECLARA QUE SOLO SERA USADA PARA LOS FINES INDICADOS EN EL MISMO. LA FIRMA AUTORIZACION ESPECIAL	
PROYECTO:	ESCALAS:
DETALLE:	
CONTROL:	
APROBADO:	
IMPRESION: 1463 CAD T152022.DWG	
FILE T1523BC	

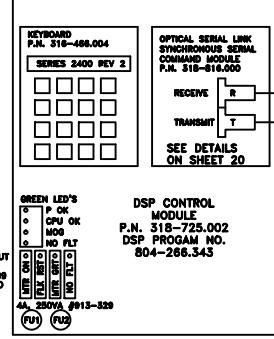
DATE	SYM	WAS	BY
		D-305501	

DSP PROGRAM LOCATION IS ON DSP CONTROL MODULE.
THESE IC's ARE LOCATED UNDER THE SYNC SIGNAL
MODULE. SYNC SIGNAL MODULE MUST BE REMOVED
TO GET AT THE IC's. ALL POWER MUST BE SHUT
OFF BEFORE CHECKING PROGRAM NUMBERS.

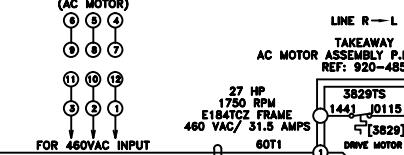


TAKEAWAY
SERIES 2400 VAC, 34 AMP
P.N. 105-181

#8 BLK
FROM SHEAR [2106]



MOTOR LEAD CONNECTIONS (AC MOTOR)



CABLE 15 FT.
P.N. 202-275

PULSE GENERATOR
2048 PPR
P.N. 905-731

RESOLVER 14BIT/ 7KHz

TO FEED DRIVE
[2224]

SHLD

LINE L—R

TAKEAWAY AC MOTOR ASSEMBLY P.N. 707-801
REF: 920-485

27 HP 1750 RPM
E184TC FRAME
460 VAC/ 31.5 AMPS

60T1 60T2 60T3 GRD

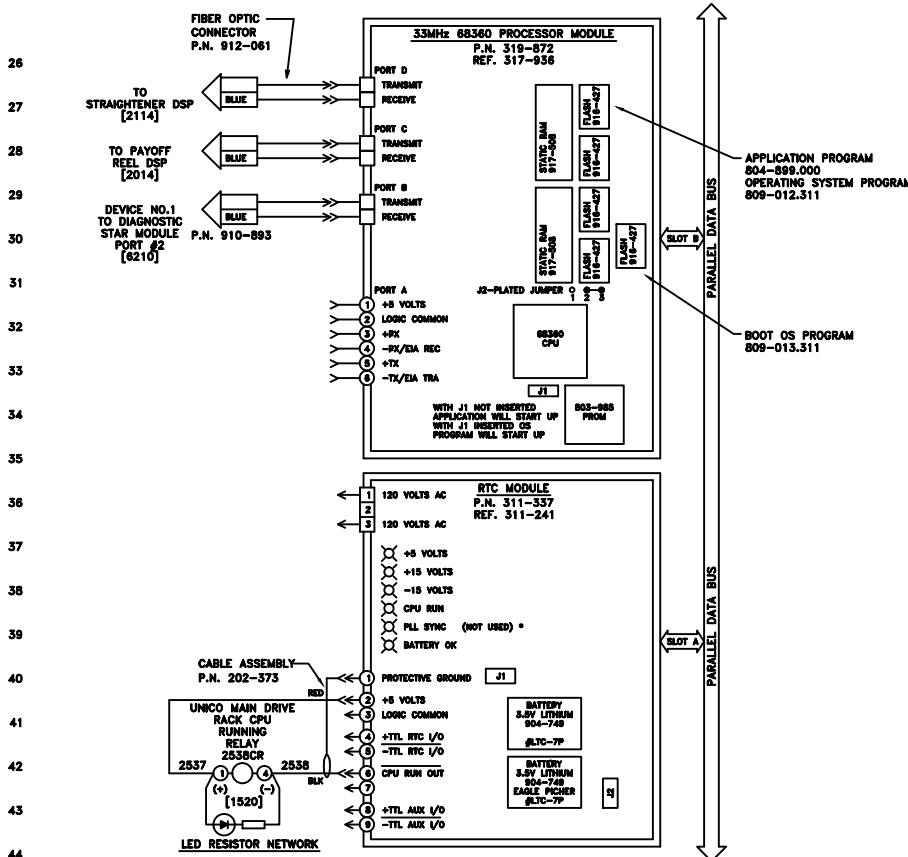
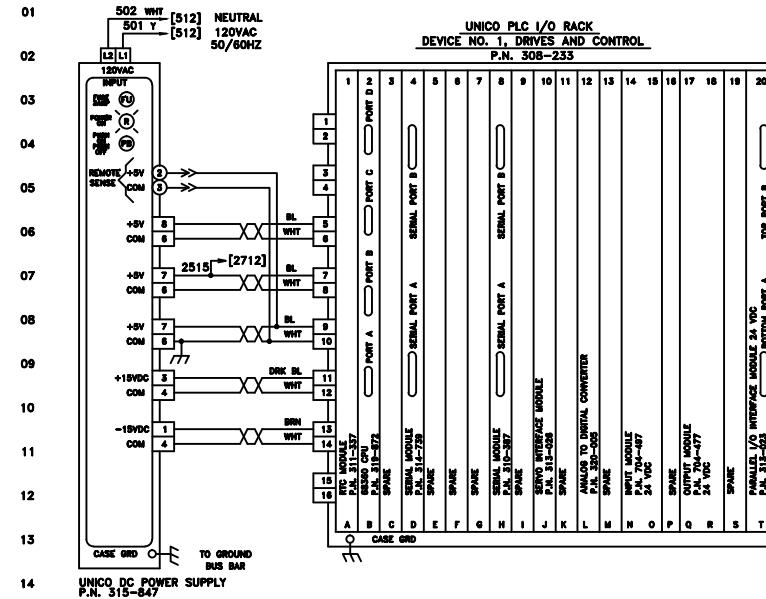
3829TS 1441_0115 [3829]
DRIVE MOTOR ACM

COND SHLD

TAKEAWAY DSP DRIVE

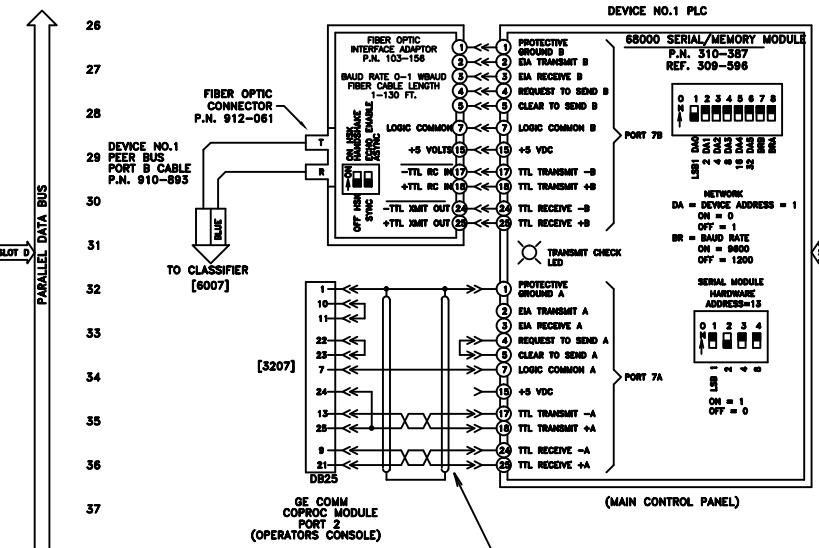
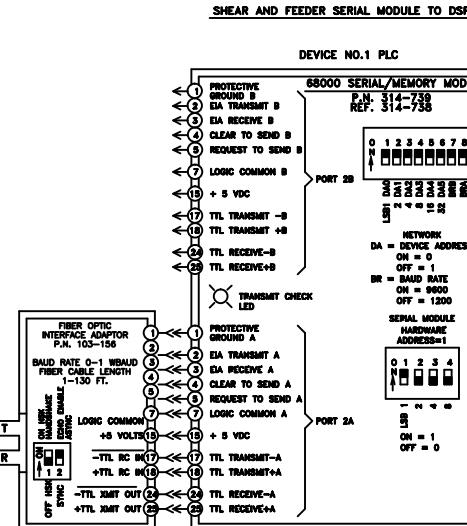
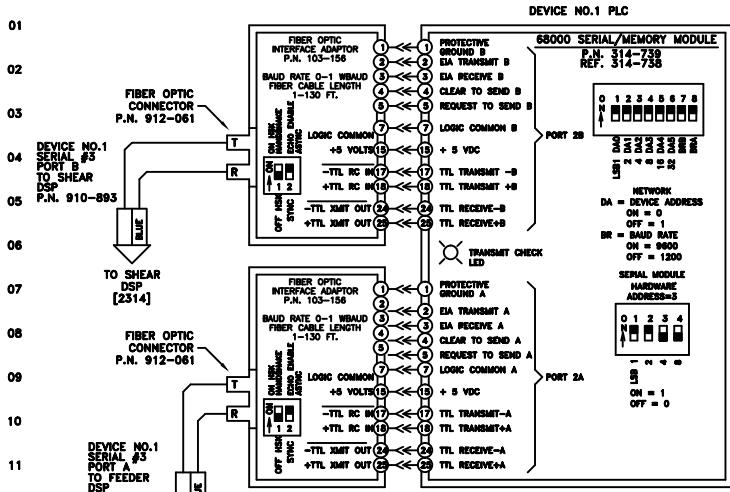
0 EMISSION PARA CONSTRUCCION	12-06-01
REV. 0 DESCRIPCION	EJEC. CONT./APRO. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC. IF PROVEEDOR: D-308691 HOJA 24 DE 67	
SIDERON SIDERON ZONA: LINEA LITTELL SECTOR: LINEA DE CORTE - ER-4E	
COPA O EQUIPO: PLANTA SIDERCROM OBRA: SCROLL SHEETING LINE	
PARTE: DIAGRAM-ELECTRICAL-Schematic	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T152024.DWG	
FILE T1523BC	

DATE	SYM	WAS	BY
		D-305501	



0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR:	LITTELL INTERNATIONAL INC.
D-308691 HOJA 25 DE 67	
SIDERAR ZONA: SIDERROM SECTOR: LINEA LITTELL PLANTA SIDERCROM OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE	
LA FIRMA DE REPRESA LA PROPIEDAD DE ESTA DOCUMENTACION Y SE RESERVA EL DERECHO DE PROPRIEDAD EN TODO TIEMPO. SE PROHIBE LA COPIA, DISTRIBUCION, O MODIFICACION SIN LA PREVIA AUTORIZACION ESCRITA.	
PROYECTO:	ESCALAS
DIBUJO:	
CONTROL:	
APROBADO:	
IMPUTACION:	5615-23-0028 CAD T152022.DWG
FILE:	T1523BC

DATE	SYM	WAS	BY
		D-305501	



FIBER OPTIC INTERFACE ADAPTOR P.N. 103-156
SWITCH SETTING

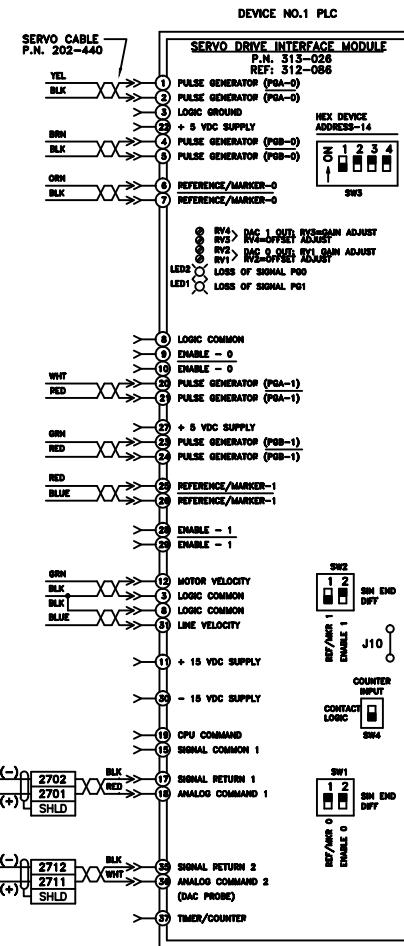
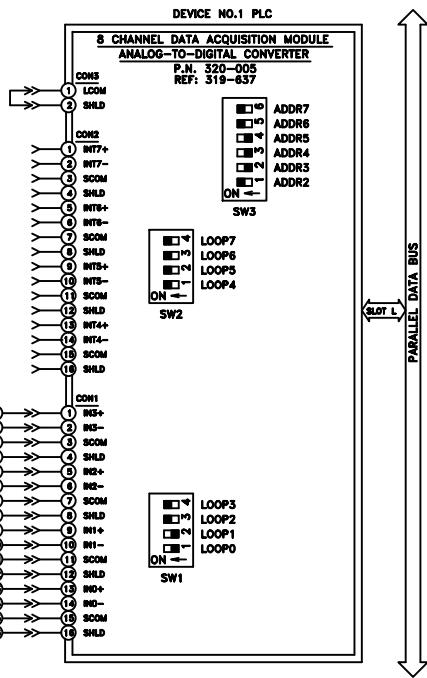
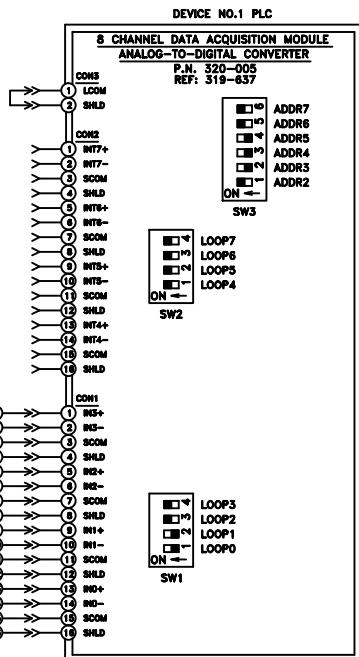
	SWITCH	1	ON	OFF	OFF
HANDSHAKE	1	ON	OFF	OFF	OFF
ECHO ENABLE	2	ON	OFF	ON	ON

AESYNC FEED BUS SYNC BUS DEP

UNICO PLC I/O RACK - DEVICE NO.1
68000 SERIAL/MEMORY MODULE
(DOOR 3)

O EMISSION PARA CONSTRUCCION	ZONA:	SIDEROM	12-06-01
REV.	DESCRIPCION	EJEC. CONT./APROV.	FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC. N° PROVEEDOR: D-308691 HOJA 26 DE 67			
SIDEROM ZONA: SIDEROM SECTOR: LINEA LITTELL			
COPA O GRUPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE			
LA FIRMA RE PRESENTA LA PROPIEDAD DE ESTA DOCUMENTACION Y SE RESERVA EL DERECHO DE DISFRUTAR DE SU USO EN TODO EL MUNDO. SE PROHIBE LA DISTRIBUCION DE ESTA DOCUMENTACION SIN LA PREVIA AUTORIZACION ESCRITA.			
PROYECTO:	ESCALAS	PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC	
DIBUJO:			
CONTROL:			
APROBADO:			
IMPUTACION: 1463 CAD T152102.DWG		FILE T1523BC	

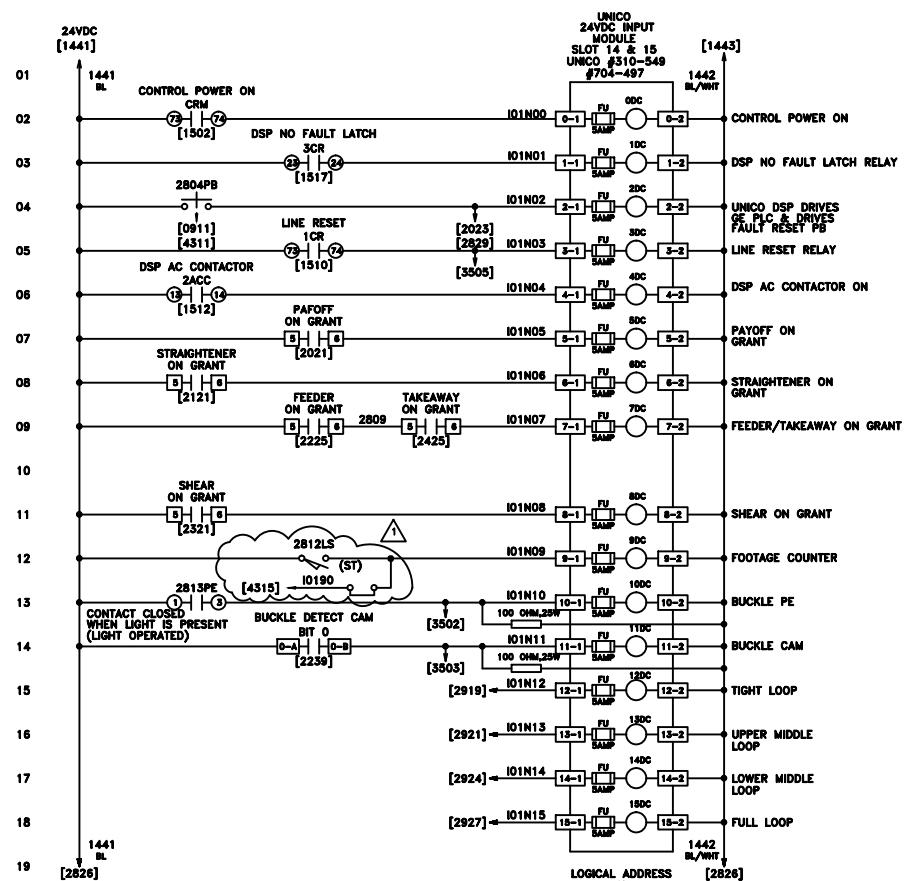
DATE	SYM	WAS	BY
		D-305501	



UNICO PLC I/O RACK - DEVICE NO.1
DATA ACQUISITION MODULE
SERVO DRIVE INTERFACE MODULE
(DOOR 3)

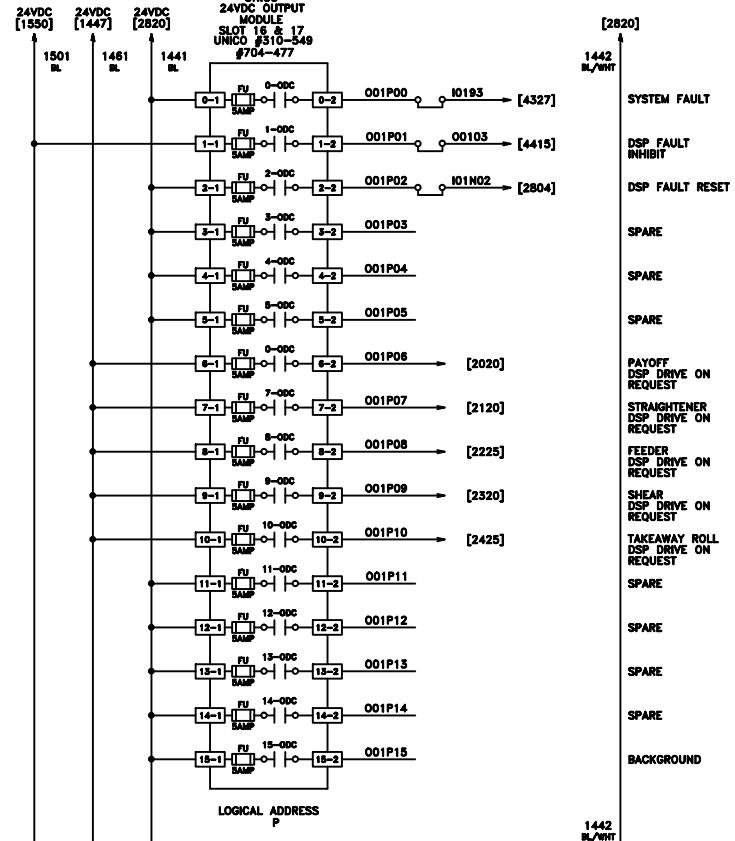
O EMISSION PARA CONSTRUCCION	REV.	12-06-01
PROVEEDOR:	LITTELL INTERNATIONAL INC.	N° PROVEEDOR: D-308691
SIDERAR PLANTA SIDERCROM		ZONA: SIDERCROM SECTOR: LINEA LITTELL OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPUTACION: 1463 CAD T152027.DWG		FILIO T1523BC

DATE	SYM	WAS	BY
		D-305501	



UNICO I/O RACK SLOT N-O

BIT 15 #014-324	BIT 11 #014-324	BIT 7 #014-324	BIT 3 #014-324
BIT 14 #014-324	BIT 10 #014-324	BIT 6 #014-324	BIT 2 #014-324
BIT 13 #014-324	BIT 9 #014-324	BIT 5 #014-324	BIT 1 #014-324
BIT 12 #014-324	BIT 8 #014-324	BIT 4 #014-324	BIT 0 #014-324



UNICO I/O RACK SLOT P & Q

BIT 15 #014-326	BIT 11 #014-326	BIT 7 #014-326	BIT 3 #014-326
BIT 14 #014-326	BIT 10 #014-326	BIT 6 #014-326	BIT 2 #014-326
BIT 13 #014-326	BIT 9 #014-326	BIT 5 #014-326	BIT 1 #014-326
BIT 12 #014-326	BIT 8 #014-326	BIT 4 #014-326	BIT 0 #014-326



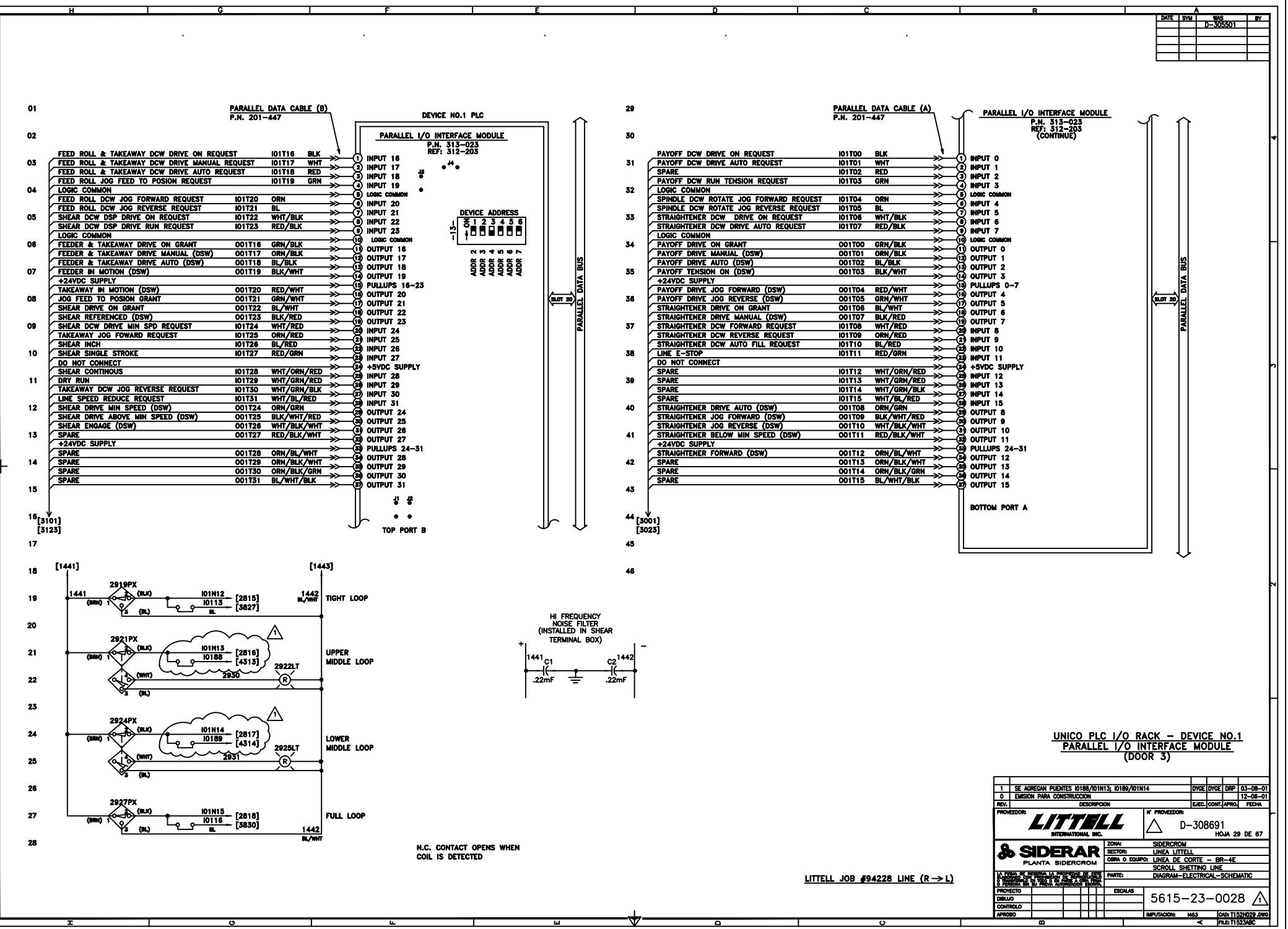
UNICO PLC I/O RACK - DEVICE NO.1
I/O MODULES
(DOOR 3)

1 SE ALCALPA PUENTE IO1N00 E IO1B00	2 DSYE	DSYE	DPF	03-08-01
0 EMISIÓN PARA CONSTRUCCIÓN	3	4	5	12-06-01
REV.	6	7	8	9
PROVEEDOR	LITTELL	10	11	12
SIDERAR	13	14	15	16
PLANTA SIDERCRON	17	18	19	20
LA FIRMA DE RESENDA LA PROPIEDAD DE ESTE DOCUMENTO Y CONFIRMA QUE EL MISMO ES UN DOCUMENTO DE TECNOLOGÍA DE VIDA Y NO DE DISEÑO. ESTA FIRMA AUTORIZA SU USO.	21	22	23	24
PROYECTO	25	26	27	28
DIBUJO	29	30	31	32
CONTROL	33	34	35	36
APROBÓ	37	38	39	40
ESCALAS	41	42	43	44
IMPUTACIÓN:	45	46	47	48
CAD T1521020.DWG	49	50	51	52
FILIO T1523ABC	53	54	55	56

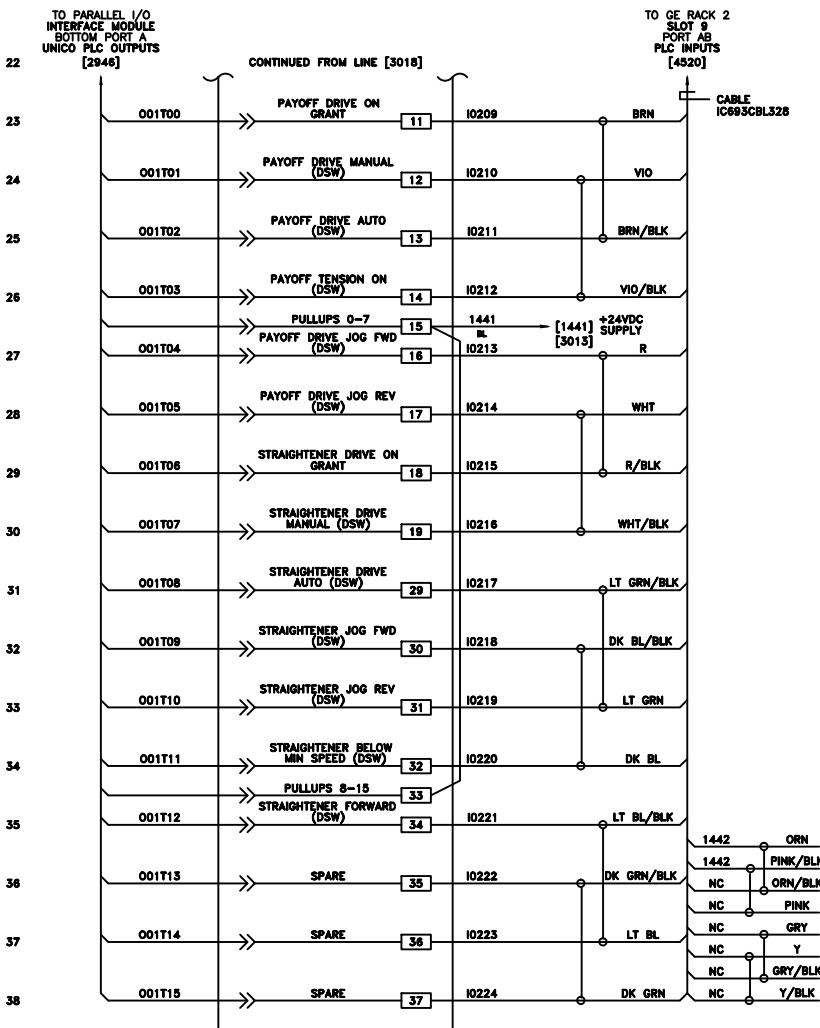
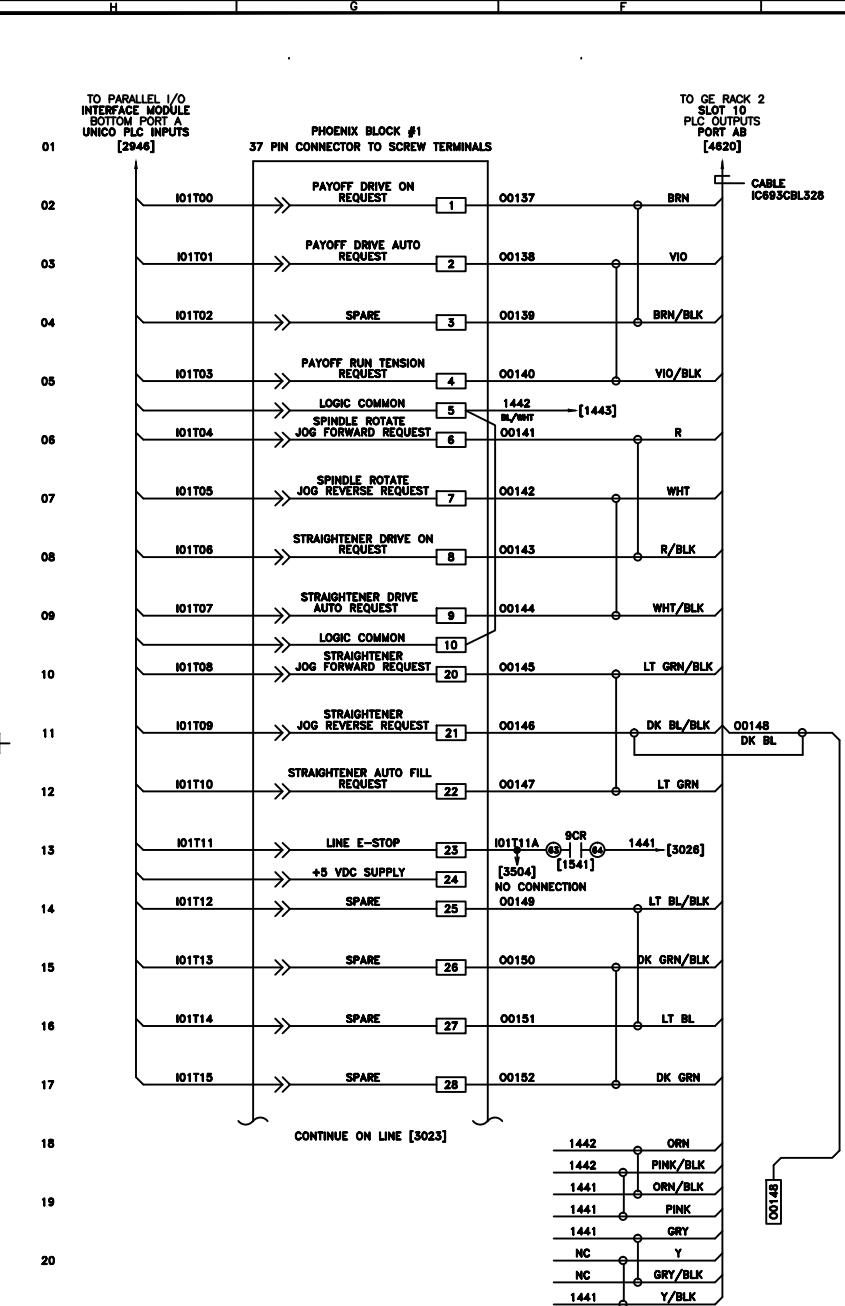
D-308691 HOJA 28 DE 67

5615-23-0028

DATE	SYM	WAS	BY
		D-305501	



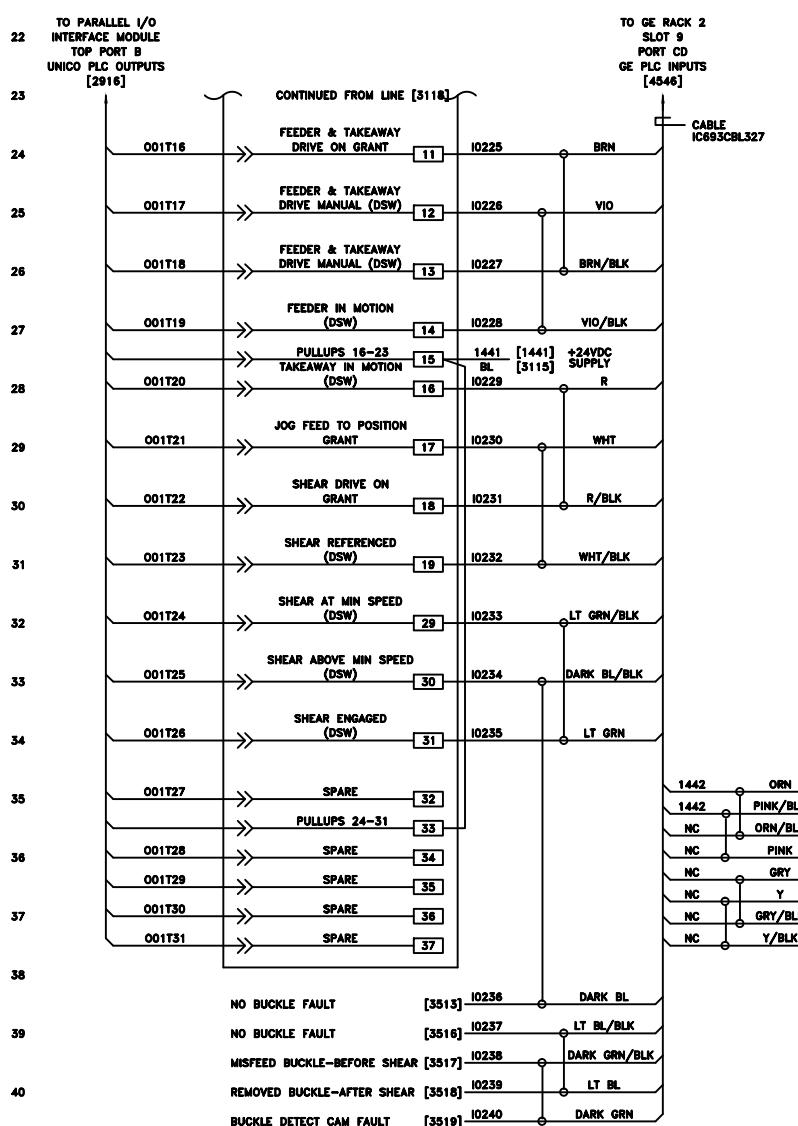
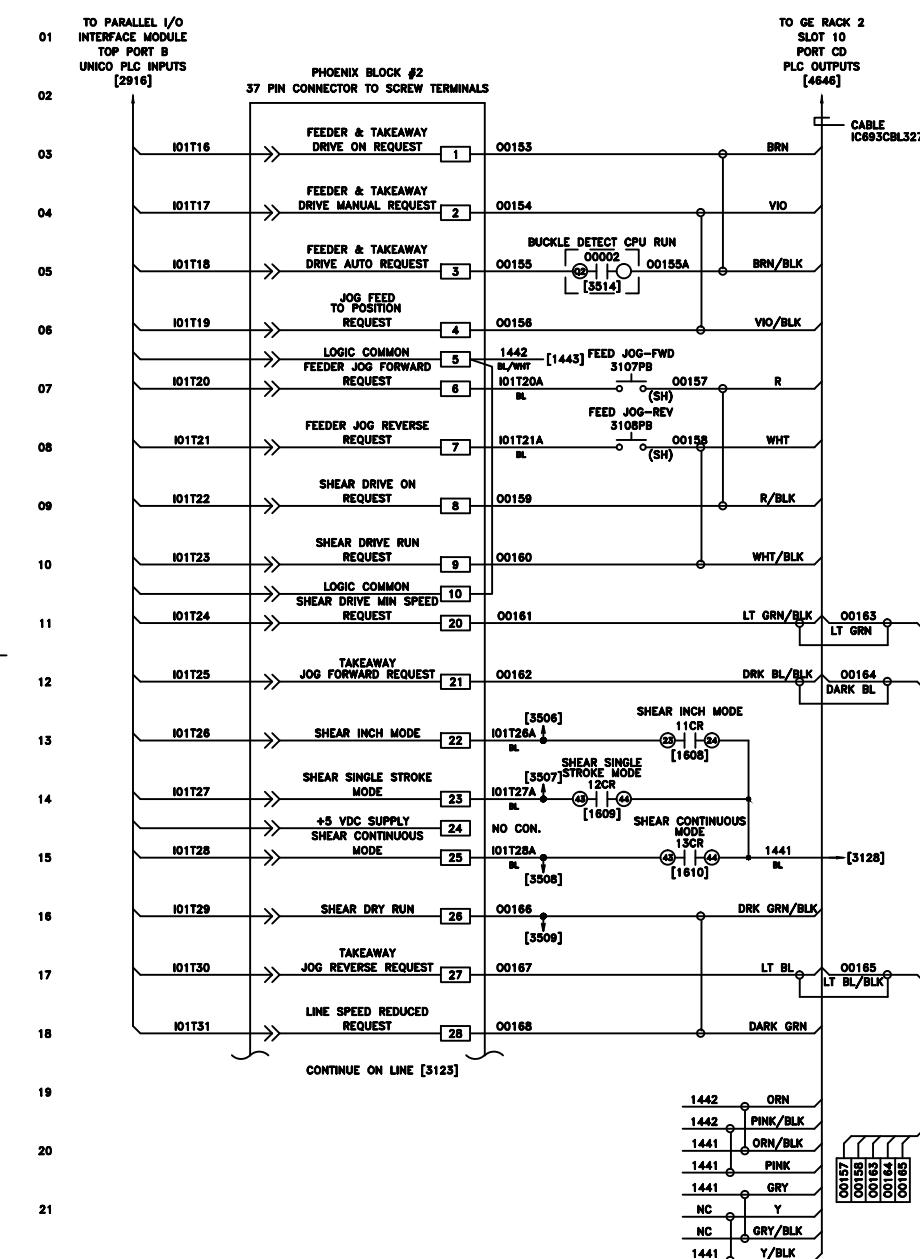
DATE	SYM	WAS	BY
		D-305501	



MAIN CONTROL ENCLOSURE

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
W PROVEEDOR	D-308691 HOJA 30 DE 67
ZONA:	SIDERROM
SECTOR:	LINIA LITTELL
OBRA O EQUIPO:	LINIA DE CORTE - ER-4E
SCROLL SHEETING LINE	
PARTIDA:	DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO:	
DETALLE:	
CONTROL:	
APROBADO:	
ESCALAS:	
IMPRESION:	5615-23-0028
CAD:	T152030.DWG
FIL:	T1523BC

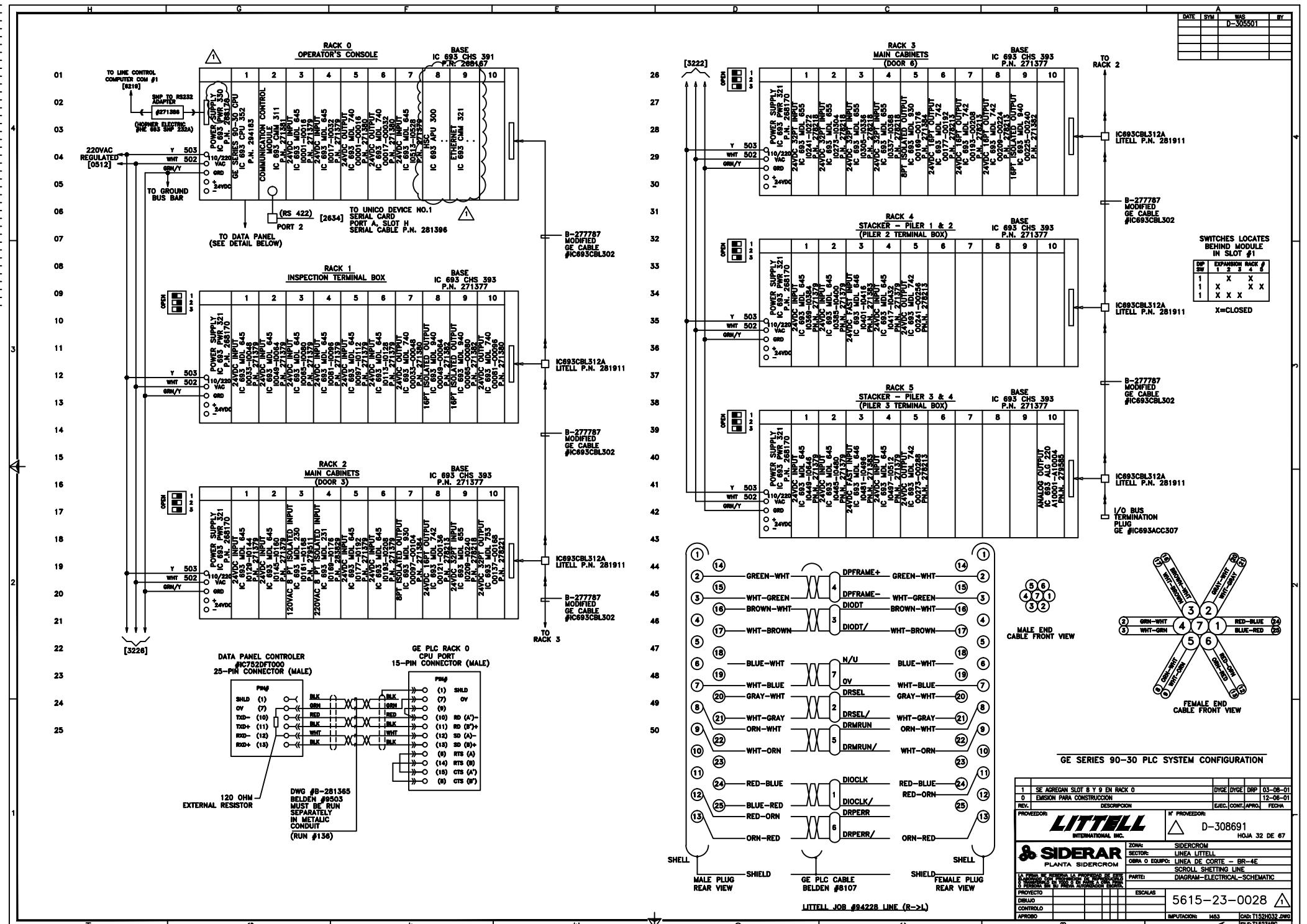
DATE	SYM	WAS	BY
		D-305501	



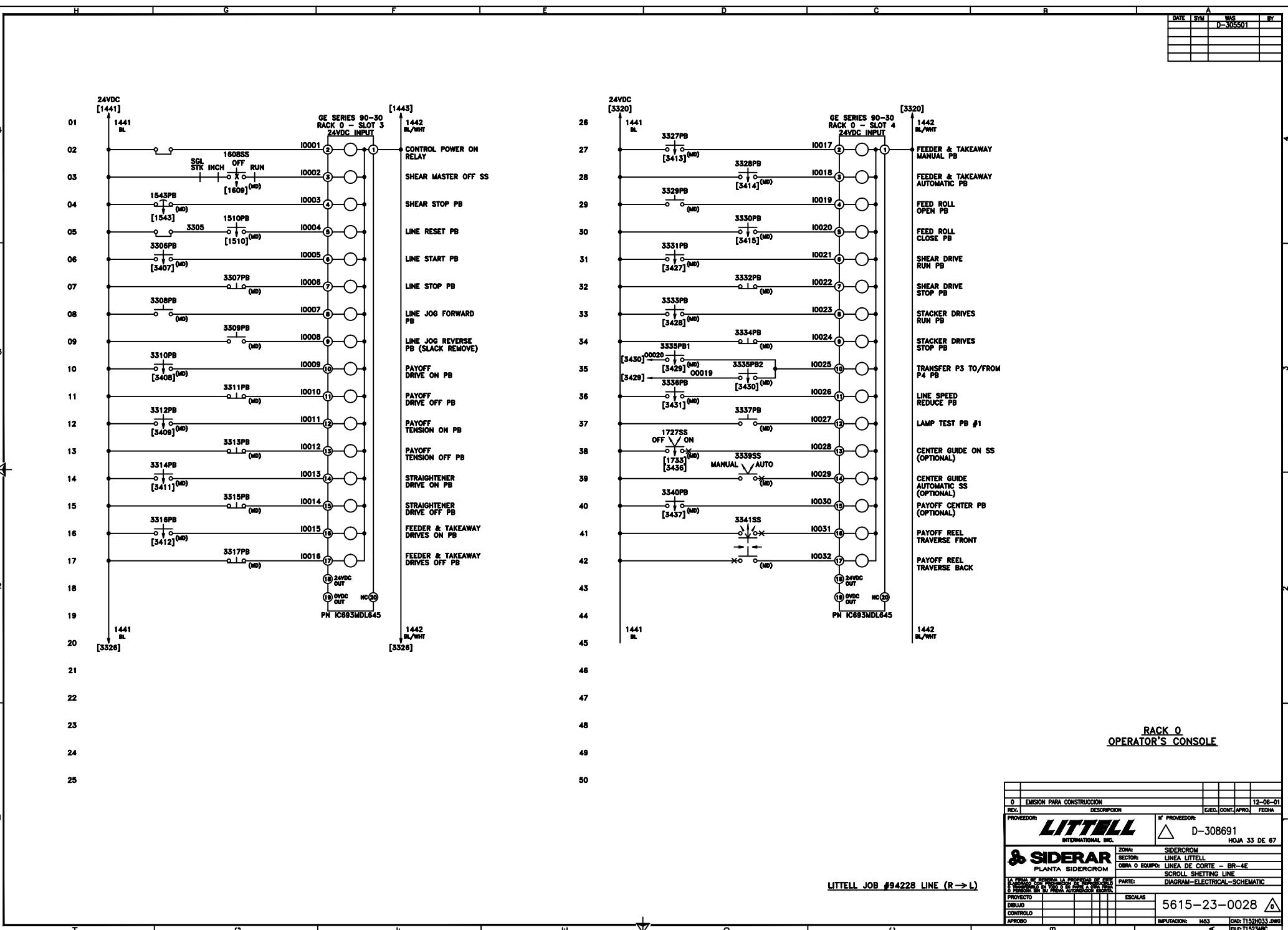
0. EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR:	LITTELL INTERNATIONAL INC.
PROVEEDOR:	D-308691 HOJA 31 DE 67
SIDERAR	ZONA: SIDEROM SECTOR: LINEA DE TELLEL OBRA O EQUIPO: LINEA DE CORTA - ER-4E SCROLL SHEETING LINE PARTIDA: DIAGRAM-ELECTRICAL-Schematic
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SUS DERECHOS DE AUTORIDAD SOBRE EL MISMO. SU USO SIN LA AUTORIZACION ESCRITA DEL DISEÑADOR ES UNA INFRACTIONE PENAL.	PROYECTO: 5615-23-0028 DIBUJO: CONTROL: FILIO T1523BC APROBADO: IMPUTACION: 1463 CAD T152031.DWG FILIO T1523BC

LITTELL JOB #94228 LINE (R → L)

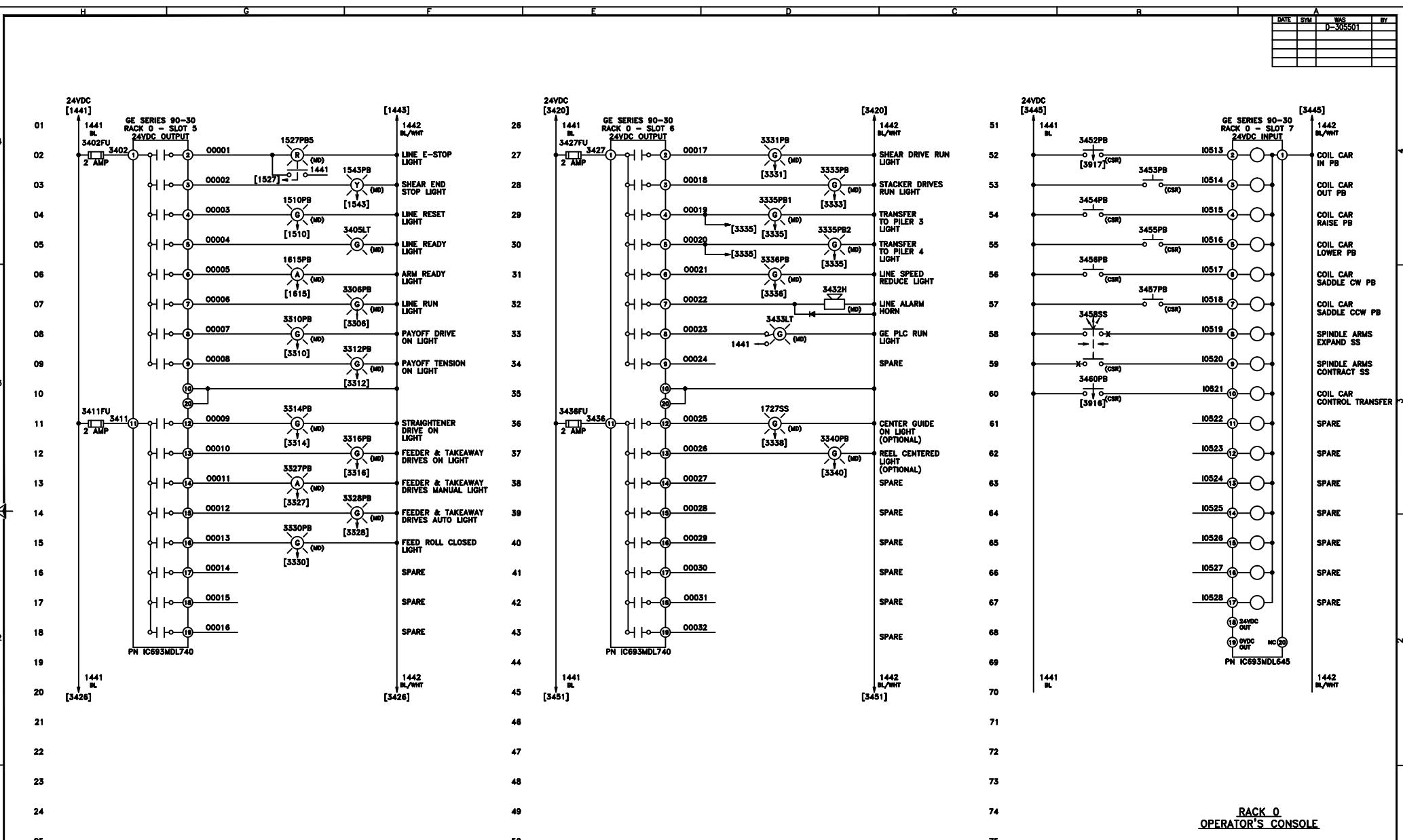
DATE	SYM	WAS	BY
		D-305501	



DATE	SYM	WAS	BY
		D-305501	



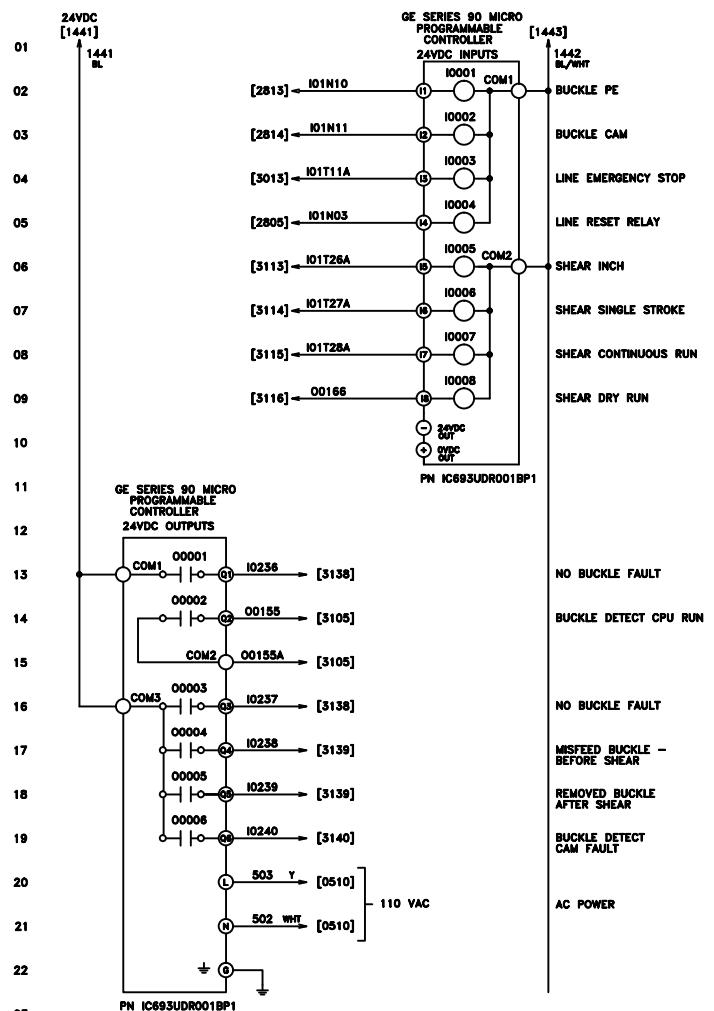
DATE	SYM	WAS	BY
		D-305501	



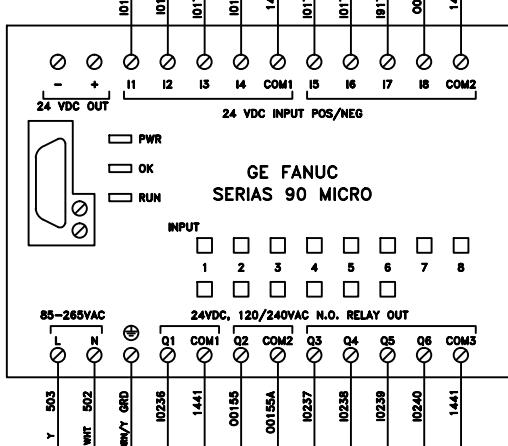
RACK 0
OPERATOR'S CONSOLE

O EMISSION PARA CONSTRUCCION	12-06-01
REV. 0 DESCRIPCION	Ejec. Cont. / Aprob. Fecha
PROVEEDOR: LITTELL INTERNATIONAL INC.	
D-308691	
ZONA: SIDEROM	
SECTOR: LINEA LITTELL	
CIBRA O GRUPO: LINEA DE CORTE - ER-4E	
SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T152034.DWG	
FILE T1523BC	

DATE	SYM	WAS	BY
		D-305501	



26 1442
27 1442
28 1442
29 1442
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31 1442
32 1442
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38 1442
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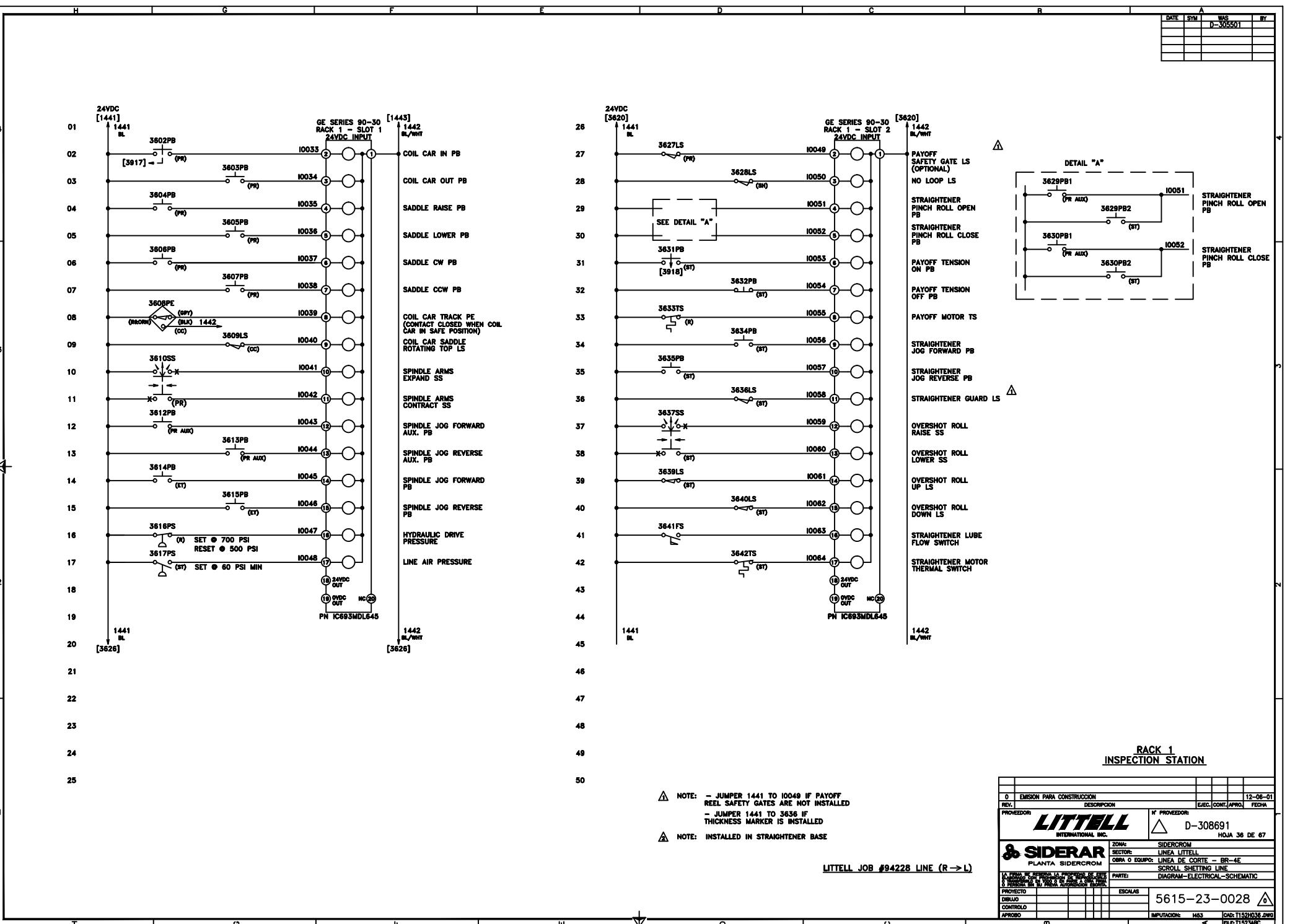
BUCKLE DETECTOR PROGRAMMABLE CONTROLLER

ZONA:	SIDERON	12-06-01
REV.:	DESCRIPCION	EJEC./CONT./APROV./FECHA
PROVEEDOR: LITTELL N° PROVEEDOR: D-308691		
INTERNATIONAL INC.		
HOJA 35 DE 67		
△		
SIDERON		
SECTOR: LINEA LITTELL		
CIBRA O GRUPO: LINEA DE CORTE - ER-4E		
SCROLL SHEETING LINE		
PARTE: DIAGRAM-ELECTRICAL-SCHMATIC		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBÓ:		
IMPUTACION: 1463 CAD T15203.DWG		
FILE T1523BC		

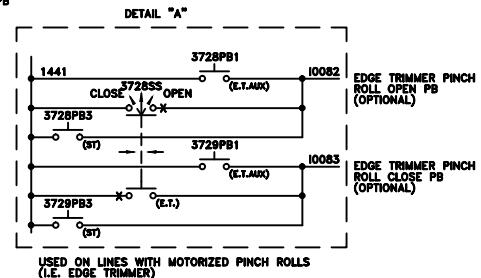
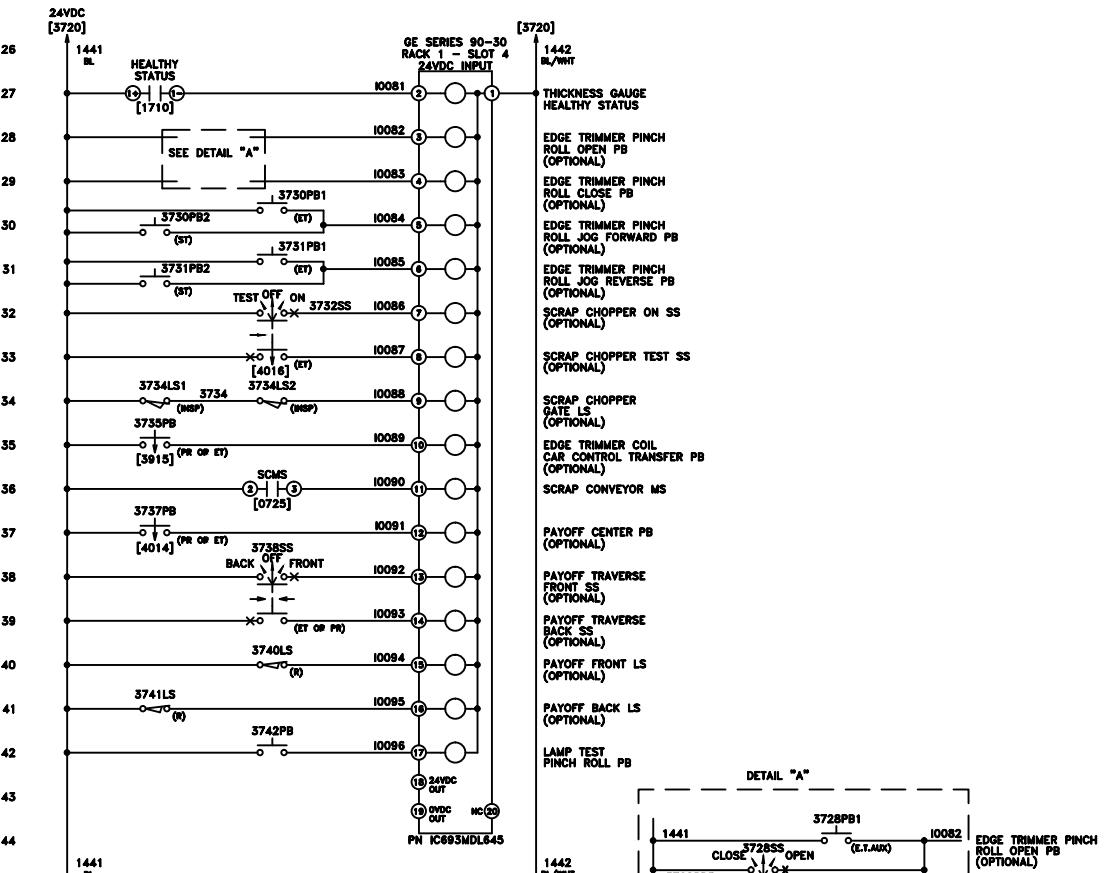
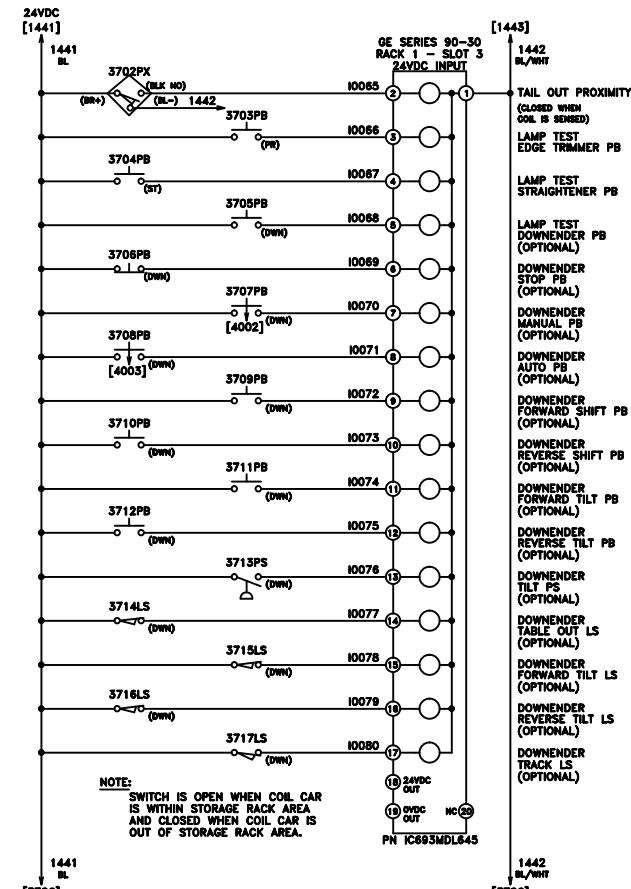
LITTELL JOB #94228 LINE (R → L)

LA FIRMA REPRESENTA LA PROPRIETAT DE DIRECCIO DEL DOCUMENTO. EL DIBUJO ESTA DIBUJADO EN UN SISTEMA DE COORDINADAS UNIVERSAL. NO SE ADMITE LA MODIFICACION NI EL BORRADO DE NINGUNA PARTE DEL DIBUJO SIN LA AUTORIZACION ESCRITA.

DATE	SYM	WAS	BY
		D-305501	



DATE	SYM	WAS	BY
		D-305501	



USED ON LINES WITH MOTORIZED PINCH ROLLS
(I.E. EDGE TRIMMER)

RACK 1
INSPECTION STATION

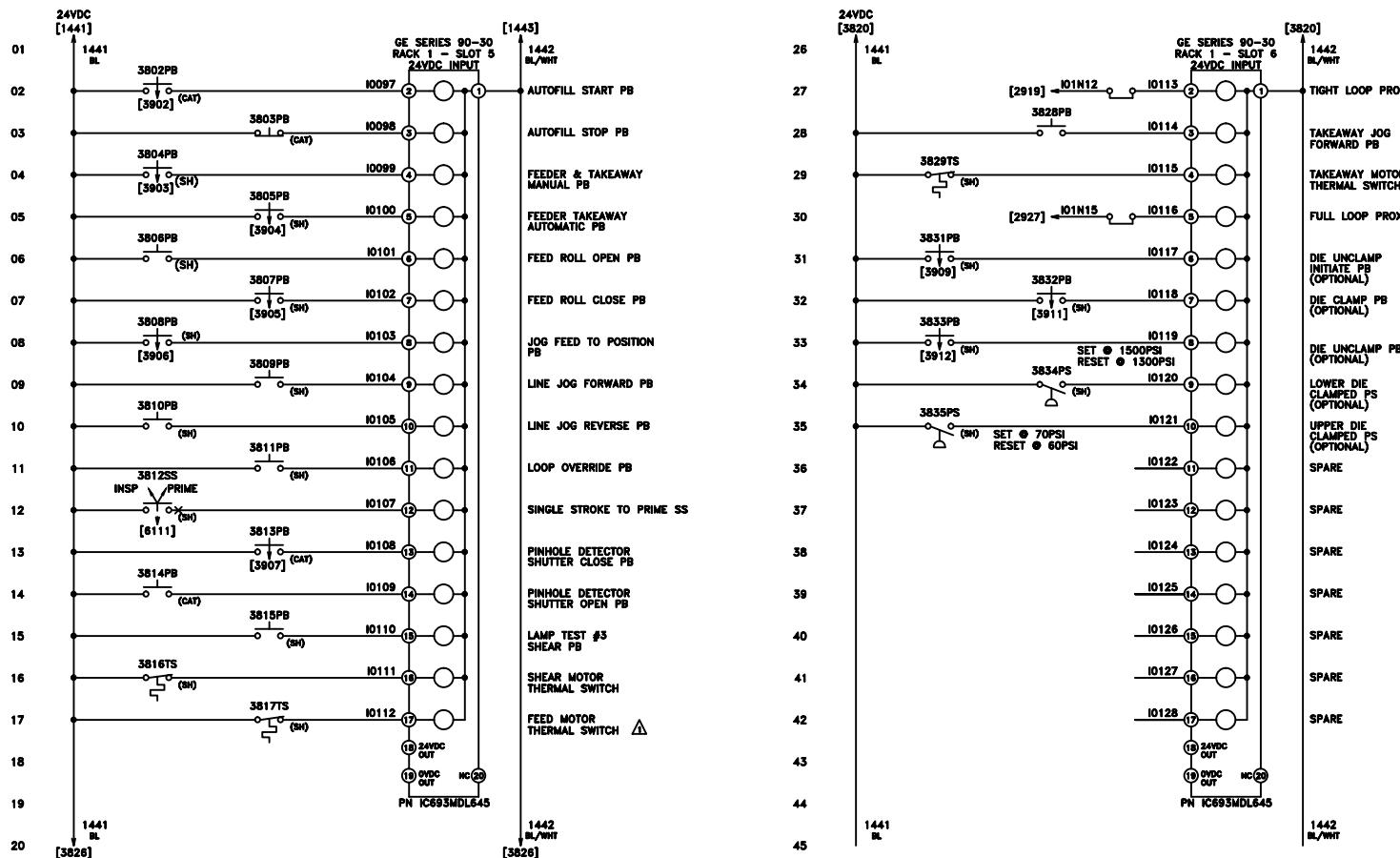
O EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
Nº PROVEEDOR	D-308691
ZONA	SIDEROM
SECTOR	LINIA DE CORTE - ER-4E
OBRA O EQUIPO	PLANTA SIDEROM
PROYECTO	SCROLL SHEETING LINE
DIBUJO	DIAGRAM-ELECTRICAL-SCHAEMATIC
CONTROL	5615-23-0028
APROBADO	IMPUTACION: 1463 CAD T152603.DWG
FECHA	FIL1523ABC

LITTELL
INTERNATIONAL INC.

SIDERAR
PLANTA SIDEROM

LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DIBUJO Y SUS COPIAS. SU USO SIN AUTORIZACION ESCRITA ES UNA INFRACTIONE AL DERECHO DE AUTOR. EL DIBUJO NO PUEDE SER MODIFICADO NI TRANSFERIDO A OTROS.

DATE	SYM	WAS	BY
		D-305501	



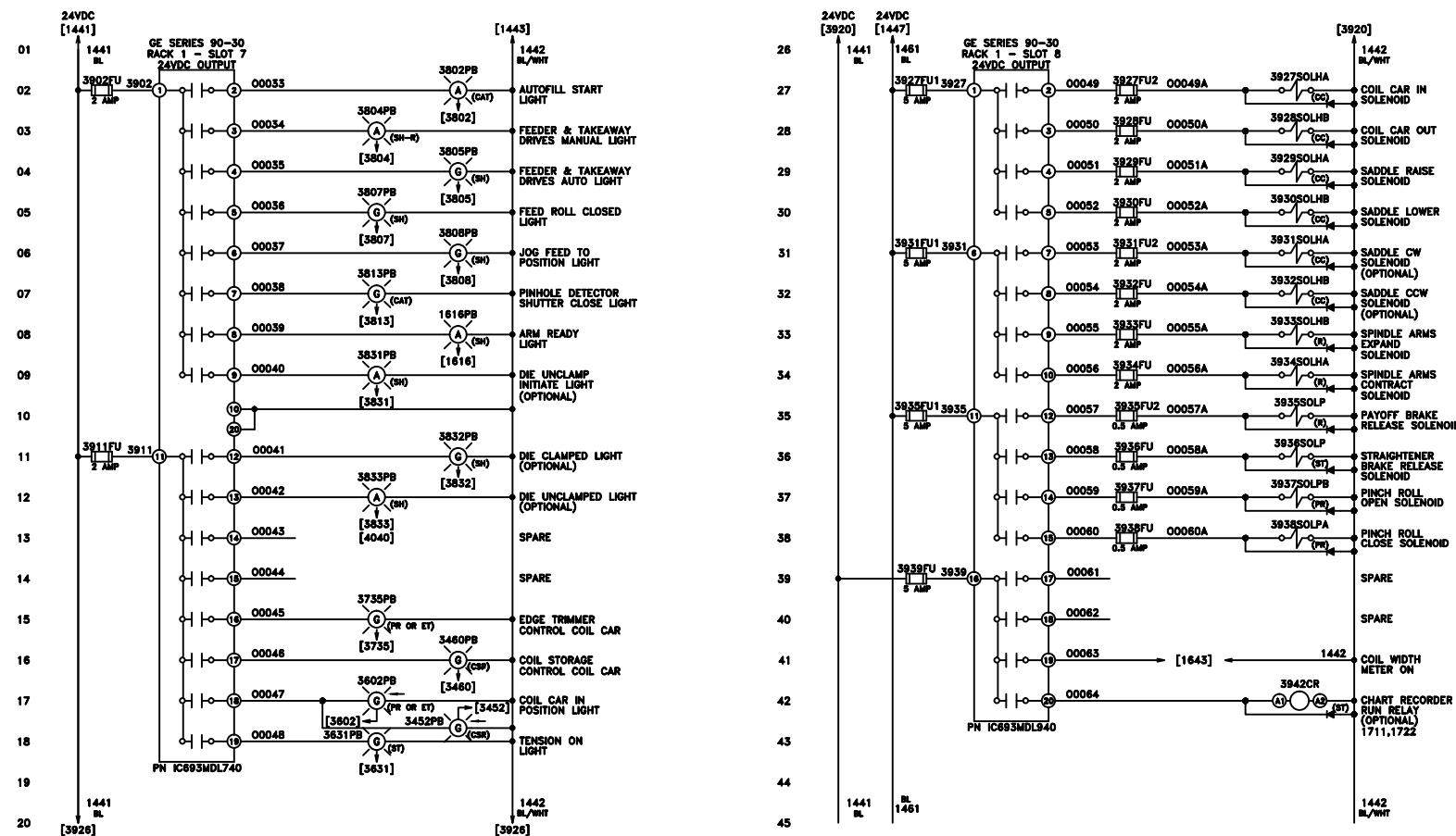
RACK 1
INSPECTION STATION

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
PROVEEDOR	D-308691
ZONA:	SIDEROM
SECTOR:	LINIA LITTELL
OBRA O EQUIPO:	LINIA DE CORTE - ER-4E
SCROLL SHEETING LINE	
PARTIDA:	DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO:	ESCALAS
DIBUJO:	5615-23-0028
CONTROL:	CAD T152030.DWG
APROBADO:	FILIO T1523BC
IMPRESION:	1463

NOTE:
△ JUMPER 1441 TO I0112 IF FEED MOTOR THERMAL SWITCH IS NOT SUPPLIED

LITTELL JOB #94228 LINE (R → L)

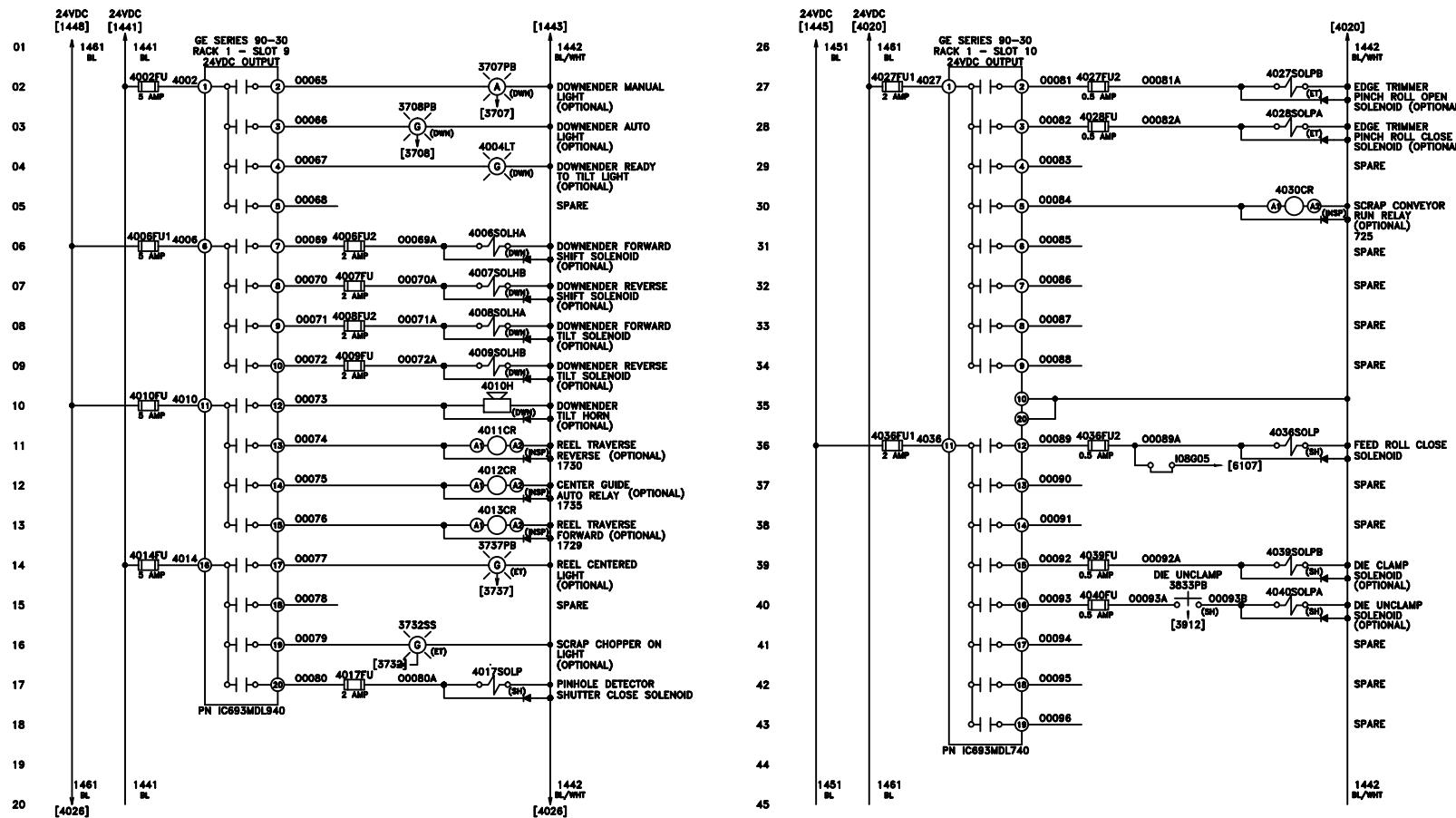
DATE	SYM	WAS	BY
		D-305501	



RACK 1
INSPECTION STATION

O EMISSION PARA CONSTRUCCION	ZONA4:	12-06-01
REV.:	DESCRIPCION:	EJEC. CONT./APROD. FECHA:
PROVEEDOR: LITTELL INTERNATIONAL INC.		
Nº PROVEEDOR: D-308691		
ZONA4: SIDEROM		
SECTOR: LINEA LITTELL		
OBRA O EQUIPO: PLANTA SIDERCROM		
COMPAÑIA / GRUPO: LINEA DE CORTE - ER-4E		
DIAGRAMA / SCROLL SHEETING LINE		
PARTIDA: DIAGRAM-ELECTRICAL-Schematic		
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SUS DERECHOS SON RESERVADOS EN TODO EL MUNDO. SU USO SIN AUTORIZACION ESCRITA ES UNA INFRAACCION AL DERECHO DE AUTOR.		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPRESION: 1463 CAD T152039.DWG		
FILE T1523BC		

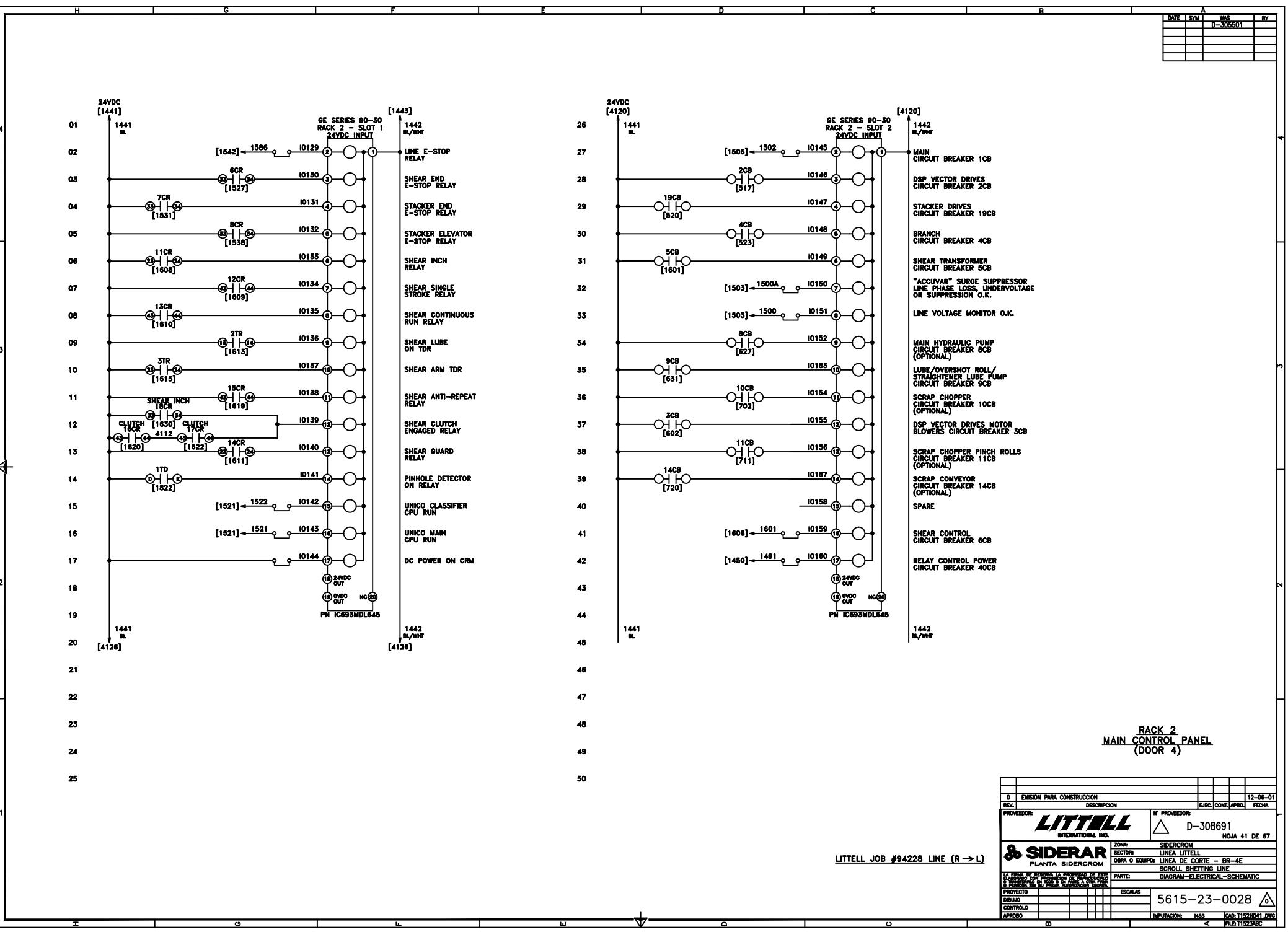
DATE	SYM	WAS	BY
		D-305501	



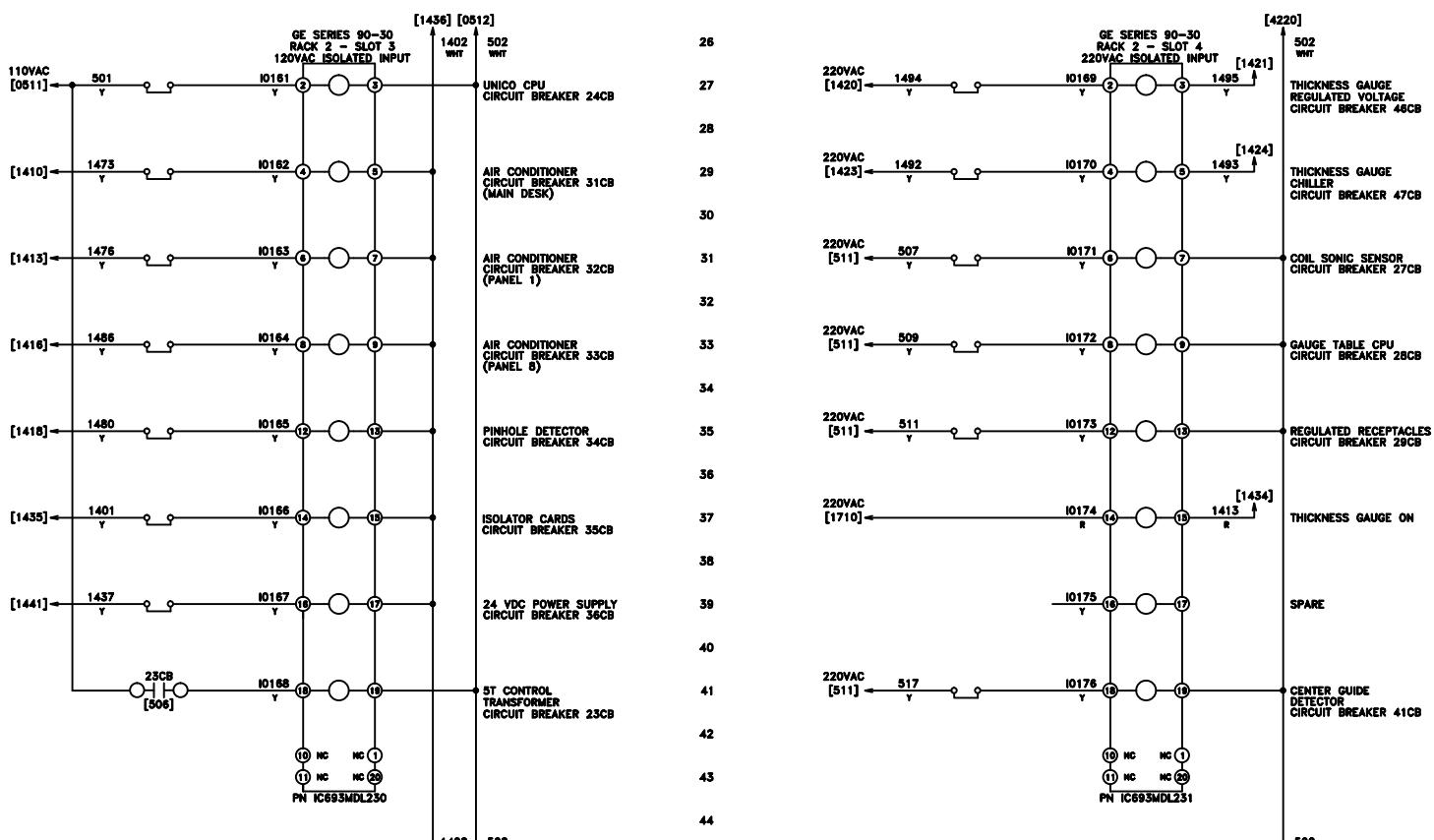
RACK 1
INSPECTION STATION

O EMISSION PARA CONSTRUCCION	ZONA:	12-06-01
REV.	DESCRIPCION	EJEC. CONT./APROV. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC. N° PROVEEDOR: D-308691		
SIDERAR ZONA: SIDERROM SECTOR: LINEA LITTELL		
COPIA O EQUIPO: LINEA DE CORTE - ER-4E		
SCROLL SHEETING LINE		
PARTIDA: DIAGRAM-ELECTRICAL-Schematic		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPRESION: 1463 CAD T1521040.DWG		
FILE T1523ABC		

DATE	SYM	WAS	BY
		D-305501	



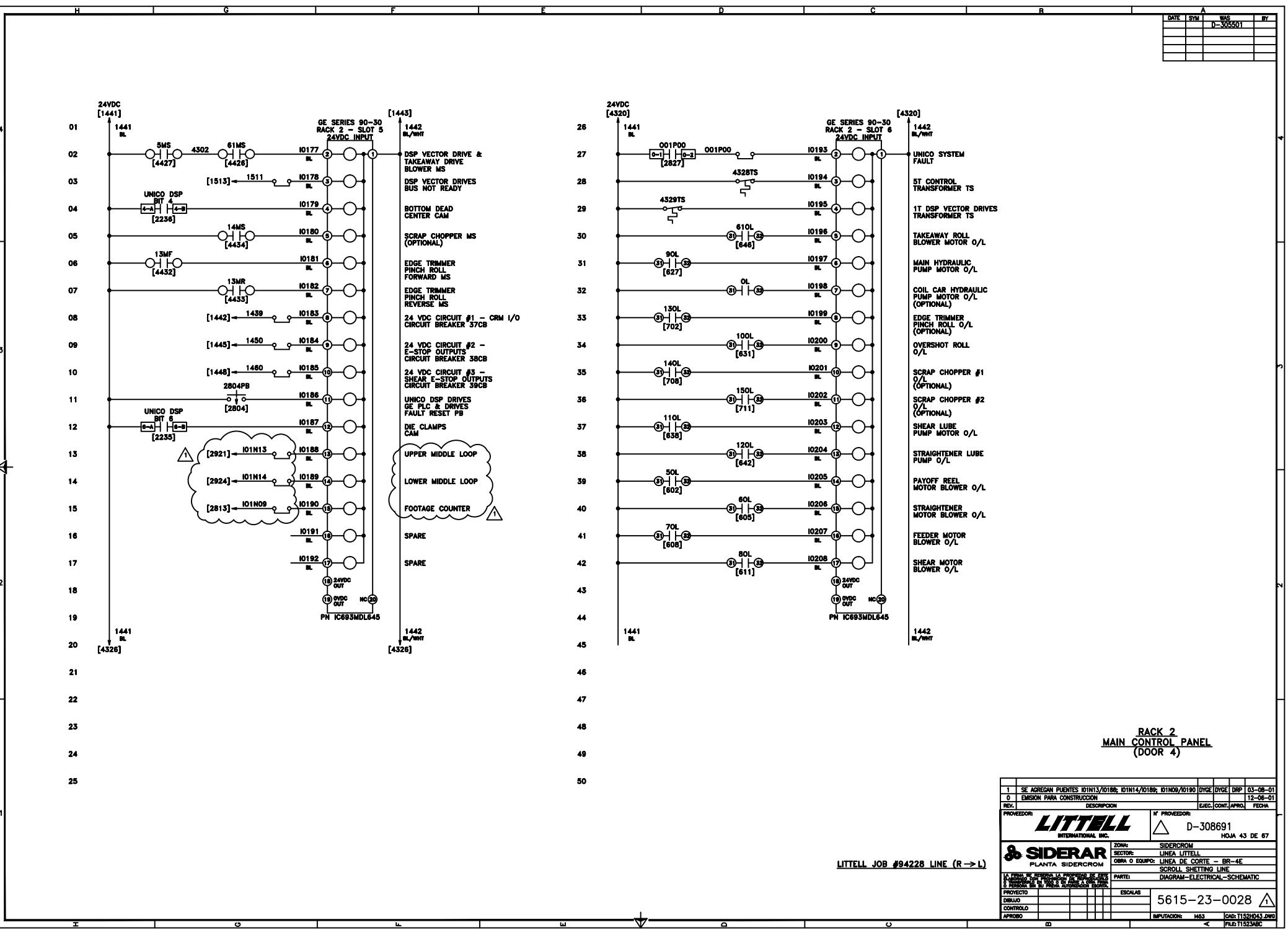
DATE	SYM	WAS	BY
		D-305501	



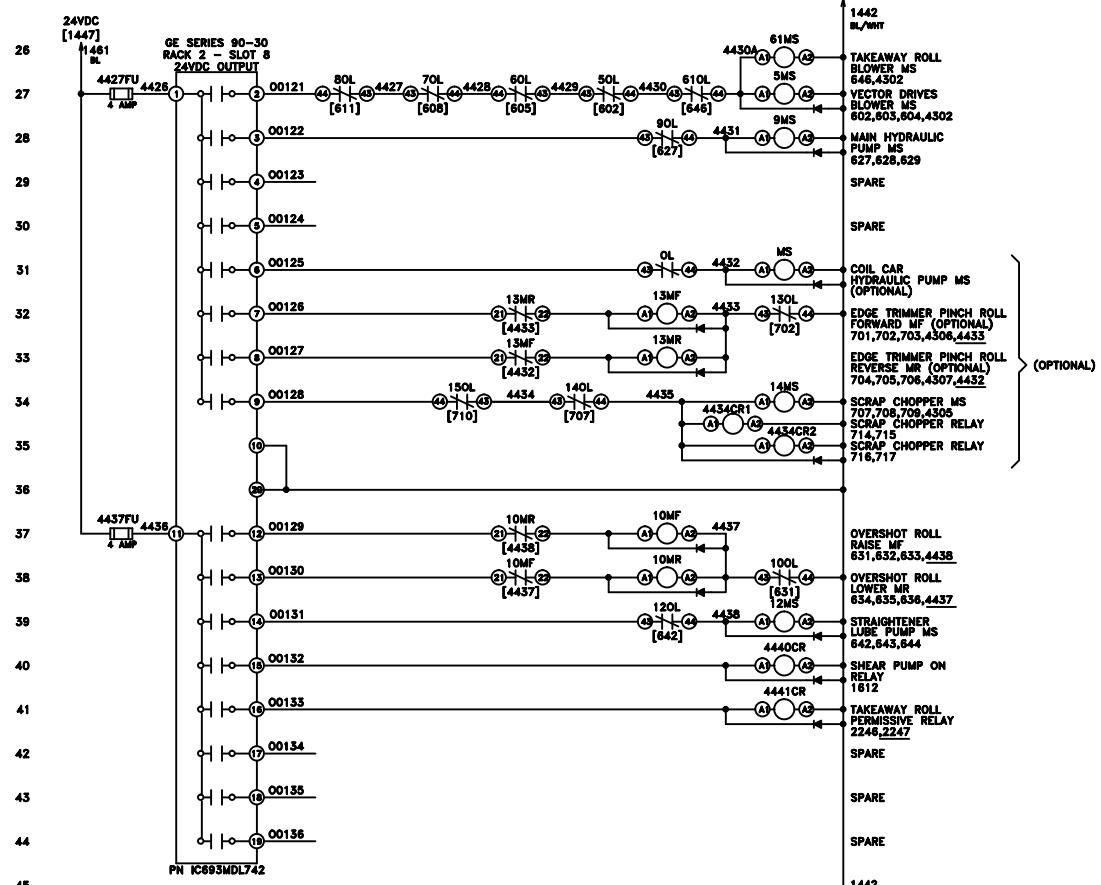
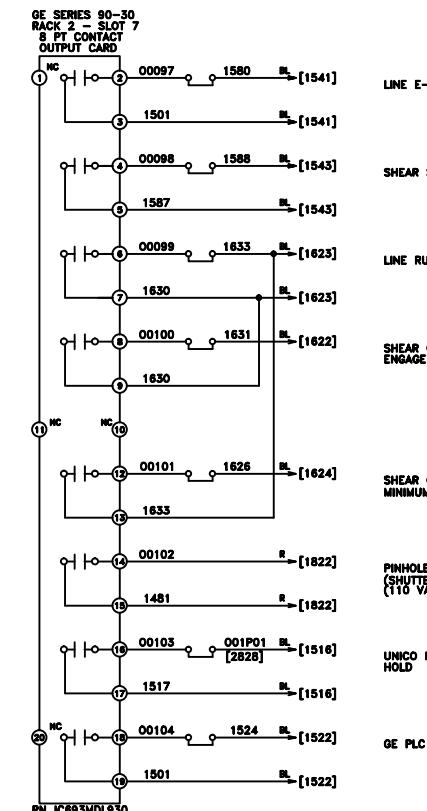
LITTELL JOB #94228 LINE (R → L)

ZONA:	SIDERON	12-06-01
REV.:	DESCRIPCION	EJEC. CONT./APROV. FECHA
PROVEEDOR:	LITTELL INTERNATIONAL INC.	
D-308691		HOJA 42 DE 67
SIDERAR PLANTA SIDERON		
SECTOR: LINEA LITTELL		
OBRA O EQUIPO: LINEA DE CORTE - ER-4E		
SCROLL SHEETING LINE		
PARTES: DIAGRAM-ELECTRICAL-SCHMATIC		
LA FIRMA DE REPRESA LA PROPIEDAD DE ESTE DOCUMENTO Y CONFIRMA QUE EL MISMO FUE PREPARADO EN TUTA SU EXTENSION POR PERSONAL AUTORIZADO POR LA FIRMA AUTORIZADA BASTIDA.	PROYECTO:	ESCALAS:
DIBUJO:		
CONTROL:		
APROBIO:		
IMPRESION: 1463 CAD T1521042.DWG		
FILE T1523BC		

DATE	SYM	WAS	BY
		D-305501	



DATE	SYM	WAS	BY
		D-305501	



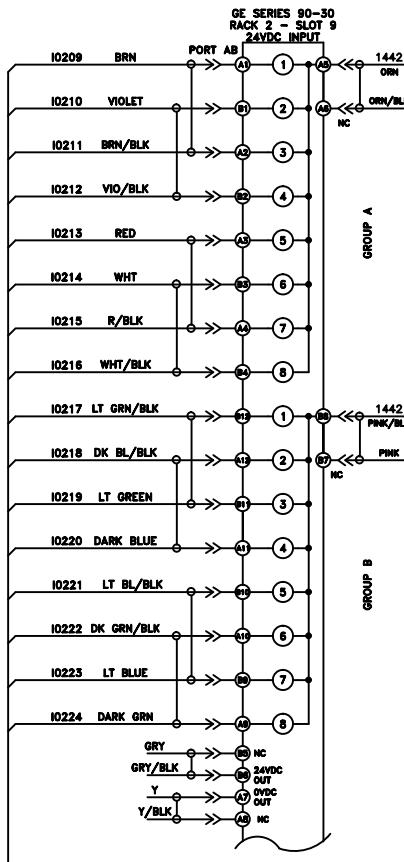
NOTES:
 * - MODULE IS FUSED INTERNALLY
 + - PROVIDE JUMPER ACROSS 8290L WITHOUT FEEDER

RACK 2
MAIN CONTROL PANEL
(DOOR 4)

0	EMISIÓN PARA CONSTRUCCIÓN	12-06-01
REV.	DESCRIPCIÓN	EJEC. CONT./APRO. FECHA
PROVEEDOR: LITTELL N° PROVEEDOR: D-308691		
ZONA: SIDERONOM		
SECTOR: LÍNEA LITTELL		
OBRAS O EQUIPO: LÍNEA DE Corte - ER-4E		
SCROLL SHEETING LINE		
PARTE: DIAGRAM-ELECTRICAL-SCHMATIC		
LA FIRMA SE RESERVA LA PROPRIETÀ DE FOTOGRAFÍAS Y DIBUJOS DE ESTA DOCUMENTACIÓN. SU USO, COPIA Y DISTRIBUCIÓN SIN EL CONSENTO DE LA FIRMA AUTORIZADA ES ILLEGAL.		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBÓ:		
IMPRESIÓN: 1463 CAD T1520104.DWG		
FILE T1523ABC		

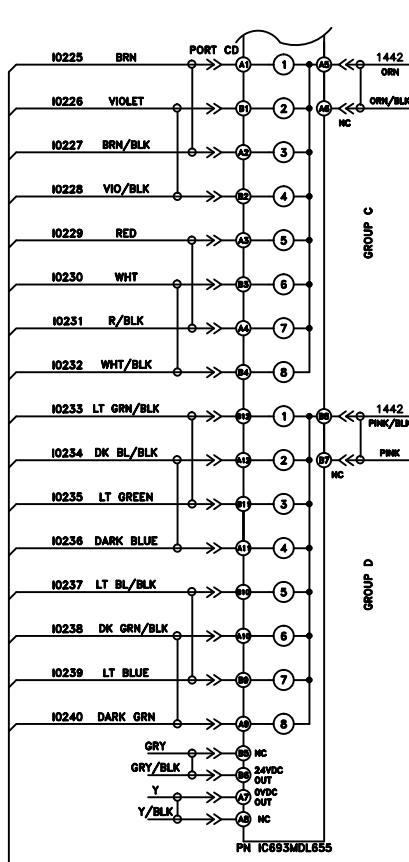
DATE	SYM	WAS	BY
		D-305501	

4



PAYOUT DRIVE
ON GRANT
PAYOUT DRIVE
MANUAL (DSW)
PAYOUT DRIVE
AUTO (DSW)
PAYOUT TENSION
ON (DSW)
PAYOUT DRIVE
JOG FORWARD (DSW)
PAYOUT DRIVE
JOG REVERSE (DSW)
STRAIGHTENER DRIVE
ON GRANT
STRAIGHTENER DRIVE
MANUAL (DSW)
STRAIGHTENER DRIVE
AUTO (DSW)
STRAIGHTENER JOG
FORWARD (DSW)
STRAIGHTENER JOG
REVERSE (DSW)
STRAIGHTENER BELOW
MIN SPEED (DSW)
STRAIGHTENER FORWARD (DSW)
SPARE
SPARE

26



FEEDER & TAKEAWAY
DRIVES ON GRANT
FEEDER & TAKEAWAY
DRIVES MANUAL (DSW)
FEEDER & TAKEAWAY
DRIVES AUTO (DSW)
FEEDER IN
MOTION (DSW)
TAKEAWAY IN
MOTION (DSW)
JOG FEED TO
POSITION GRANT
SHEAR DRIVE
ON GRANT
SHEAR
REFERENCED (DSW)
SHEAR DRIVE
MIN SPEED (DSW)
SHEAR DRIVE ABOVE
MIN SPEED (DSW)
SHEAR
ENGAGED (DSW)

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PORT AB
TO PHOENIX BLOCK #1
[3024]
CABLE
IC693CBL328

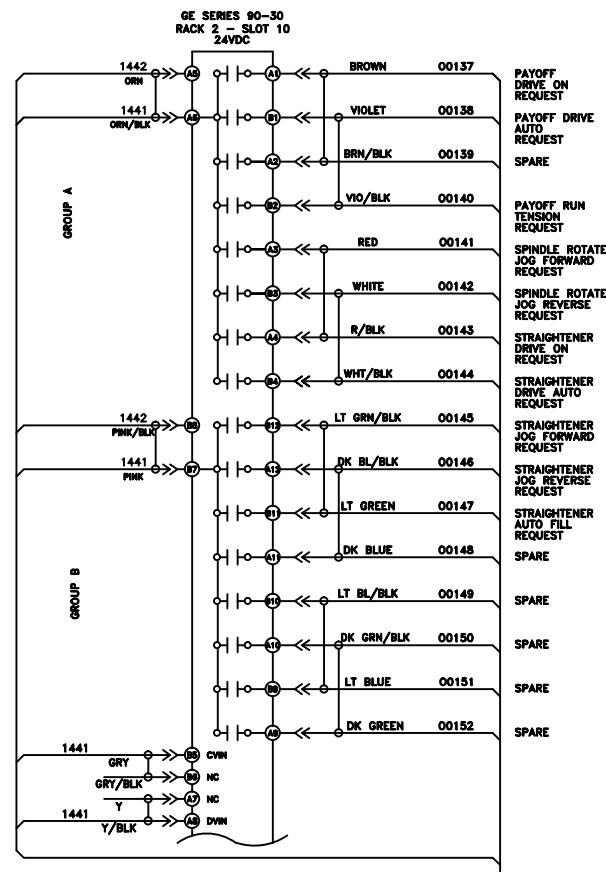
PORT CD
TO PHOENIX BLOCK #2
[3124]
CABLE
IC693CBL327

RACK 2
MAIN CONTROL PANEL
(DOOR 4)

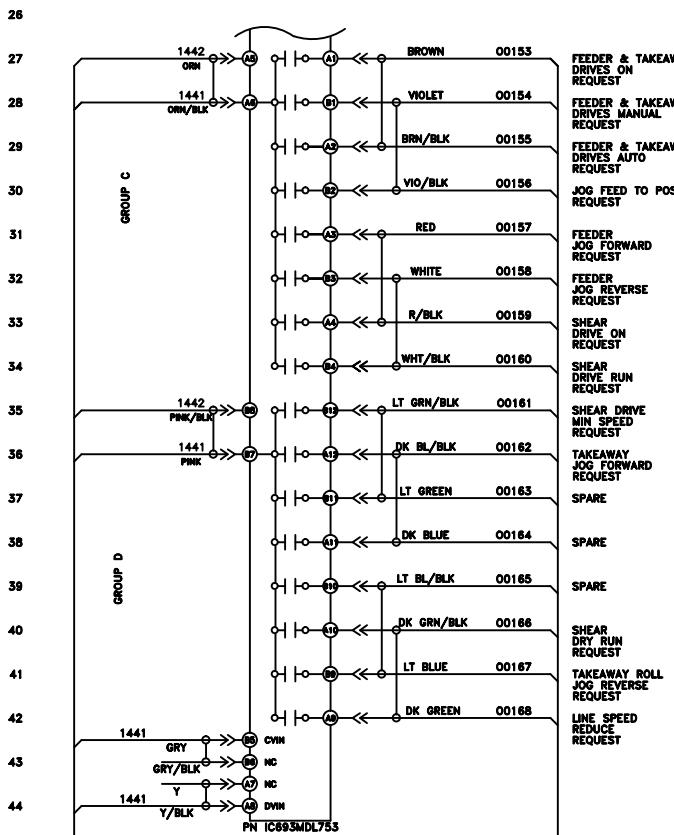
O EMISSION PARA CONSTRUCCION	ZONA:	12-06-01
REV. 0	DESCRIPCION	EJEC. CONT./APROV. FECHA
PROVEEDOR: LITTELL N° PROVEEDOR: D-308691		
INTERNATIONAL INC.		
SIDEROM HOJA 45 DE 67		
SECTOR: LINEA LITTELL		
CIBRA O GRUPO: LINEA DE CORTE - ER-4E		
SCROLL SHEETING LINE		
PARTE: DIAGRAM-ELECTRICAL-SCHMATIC		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPUTACION: 1463 CAD T1521045.DWG		
FILE T1523ABC		

LITTELL JOB #94228 LINE (R → L)

DATE	SYM	WAS	BY
		D-305501	



GROUP A



GROUP C

GROUP D

CABLE
IC693CBL328
PORT AB
TO PHOENIX BLOCK #1
[3002]

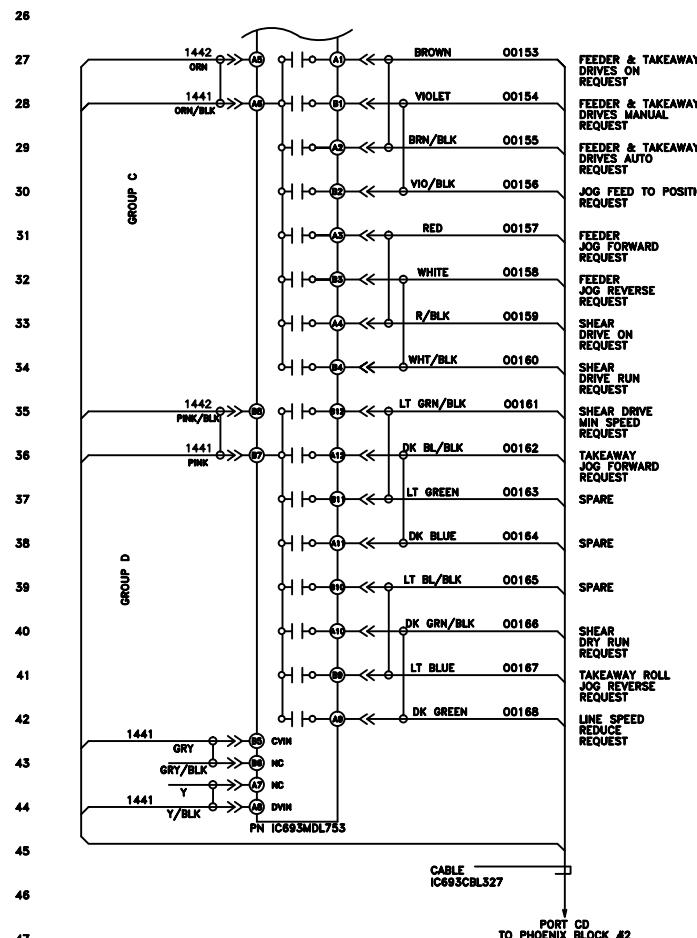
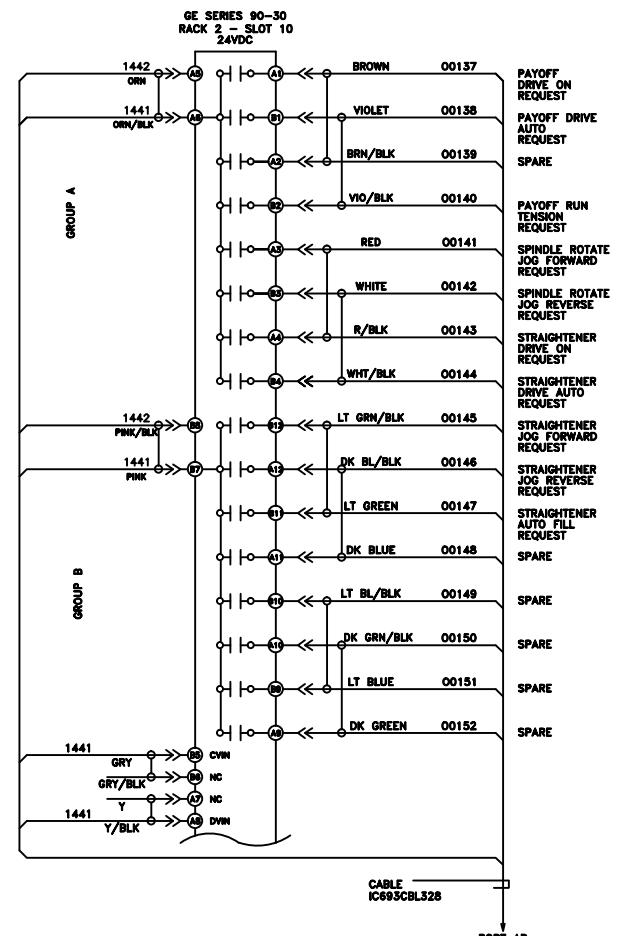
CABLE
IC693CBL327
PORT CD
TO PHOENIX BLOCK #2
[3102]

RACK 2
MAIN CONTROL PANEL
(DOOR 4)

ZONA:	SIDERON	12-06-01
REV.:	DESCRIPCION	EJEC. CONT./APROV. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.		Nº PROVEEDOR: D-308691 HOJA 46 DE 67
SIDERAR PLANTA SIDERON		SECTOR: LINEA LITTELL
COPIA O EQUIPO: LINEA DE CORTE - ER-4E		SCROLL SHEETING LINE
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SE PROHIBE SU COPIA SIN AUTORIZACION ESCRITA DEL PROVEEDOR.		PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPRESION: 1463 CAD T1521040.DWG		FILTR: T1523ABC

LITTELL JOB #94228 LINE (R → L)

DATE	SYM	WAS	BY
		D-305501	

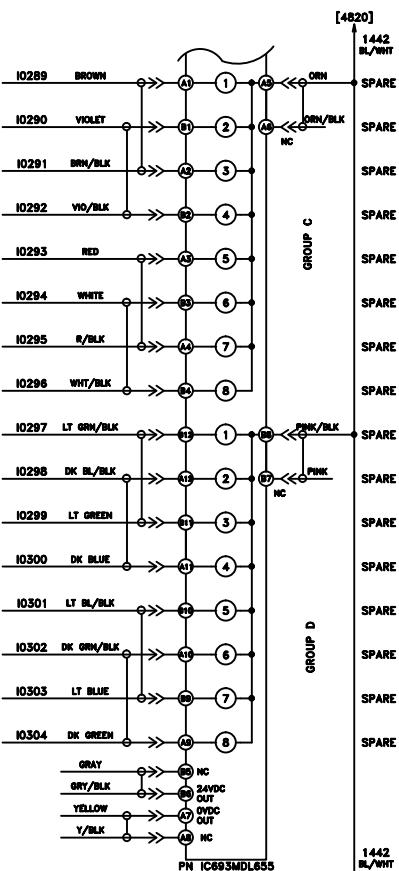
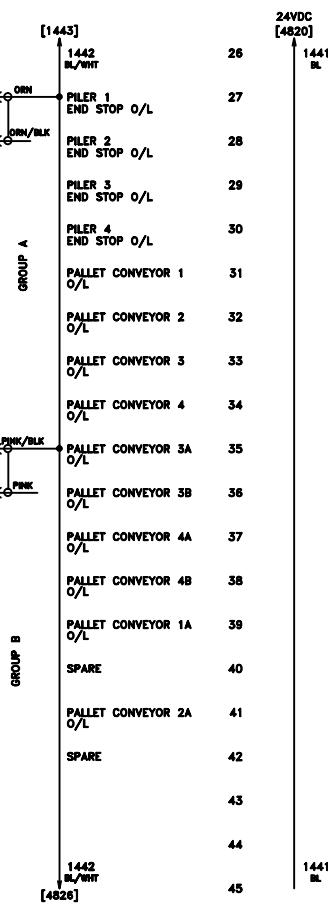
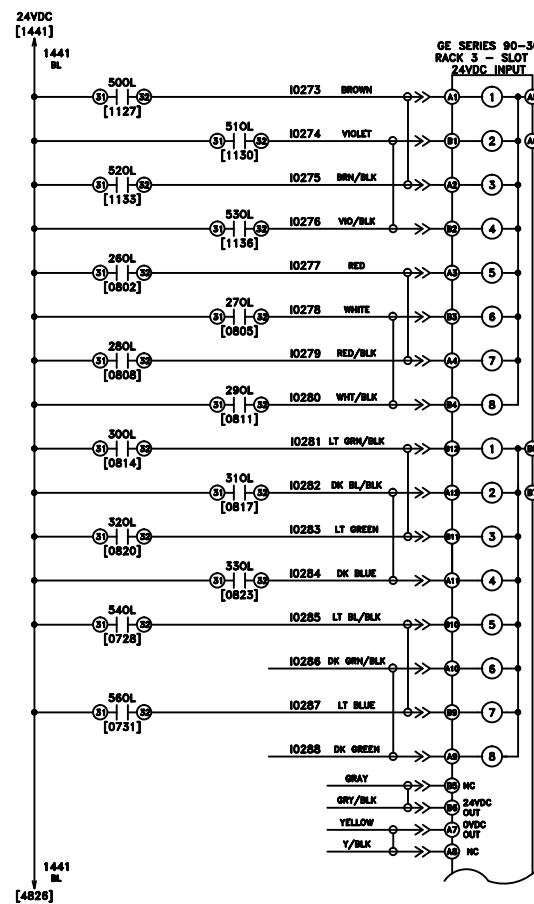


RACK 2
MAIN CONTROL PANEL
(DOOR 4)

ZONA:	SIDERON	12-06-01
REV.:	DESCRIPCION	Ejec. Cont./Aprob. Fecha
PROVEEDOR: LITTELL INTERNATIONAL INC.		Nº PROVEEDOR: D-308691
SIDERAR PLANTA SIDERON		ZONA: SIDERON SECTOR: LINEA LITTEL OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC
LA FIRMA SE RESERVA LA PROPRIETAD DE ESTE DOCUMENTO Y SE PROHIBE SU COPIA SIN AUTORIZACION ESCRITA		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPRESION: 1463 CAD T1521047.DWG		FILTR: T1523ABC

LITTELL JOB #94228 LINE (R → L)

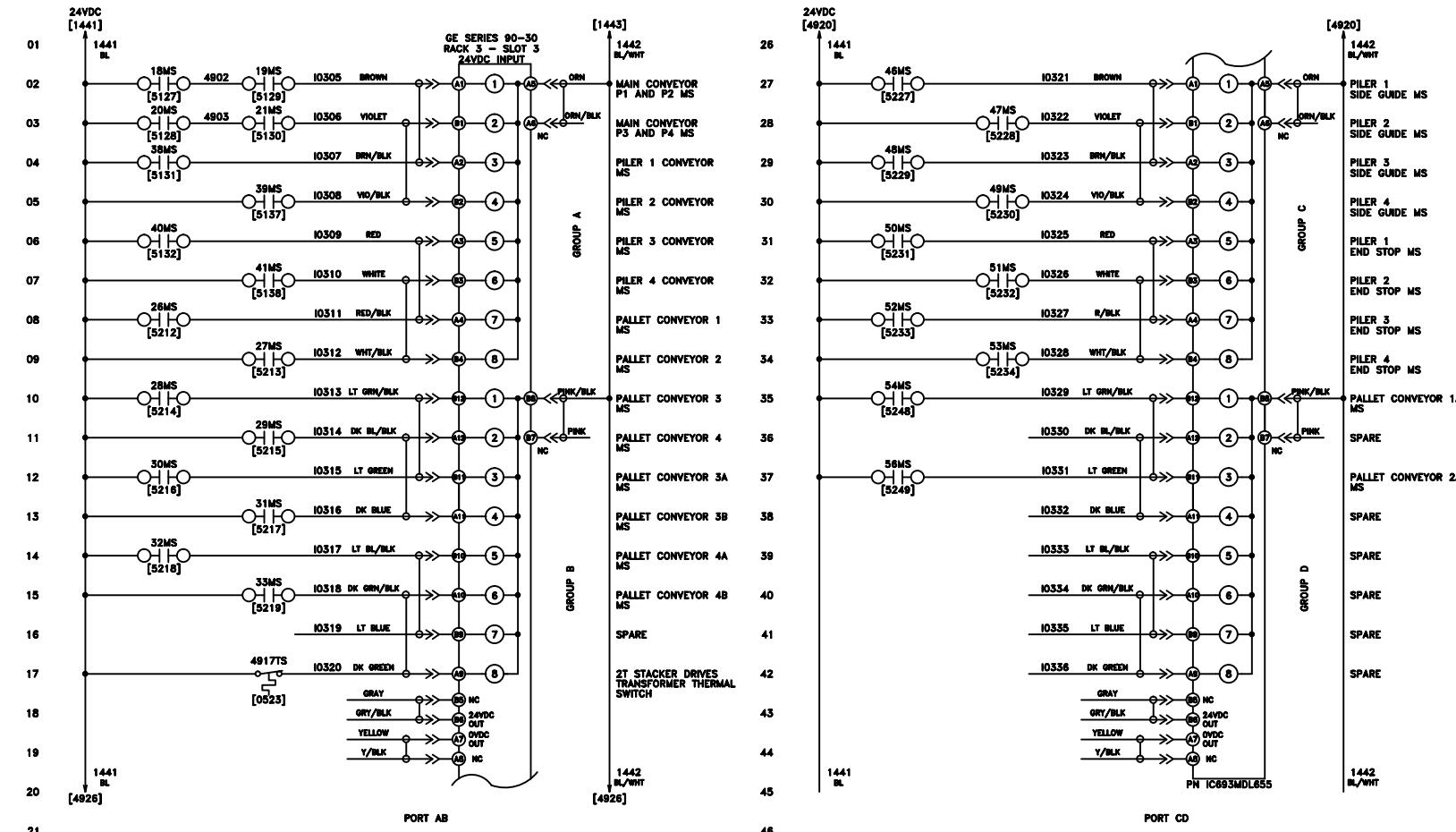
DATE	SYM	WAS	BY
		D-305501	



RACK 3
MAIN CONTROL PANEL
(DOOR 8)

O EMISSION PARA CONSTRUCCION	ZONA:	12-06-01
REV.	DESCRIPCION	EJEC./CONT./APROD./FECHA
PROVEEDOR: LITTELL N° PROVEEDOR: D-308691		
INTERNATIONAL INC. HOJA 48 DE 67		
SIDERAR ZONA: SIDERROM		
SECTOR: LINEA LITTELL		
OBRAS O EQUIPO: PLANTA SIDERROM		
SCROLL SHEETING LINE		
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SUS CONTENIDOS. SU USO, COPIA Y DISTRIBUCION SIN EL CONSENTO ESCRITO DE LA FIRMA AUTORIZADA ES ILLEGAL.		
PROYECTO:	ESCALAS:	PARTIDA:
DIBUJO:		DIAGRAM-ELECTRICAL-SCHMATIC
CONTROL:		
APROBADO:		
IMPUTACION: 1463 CAD T1521040.DWG		
FILE T1523BC		

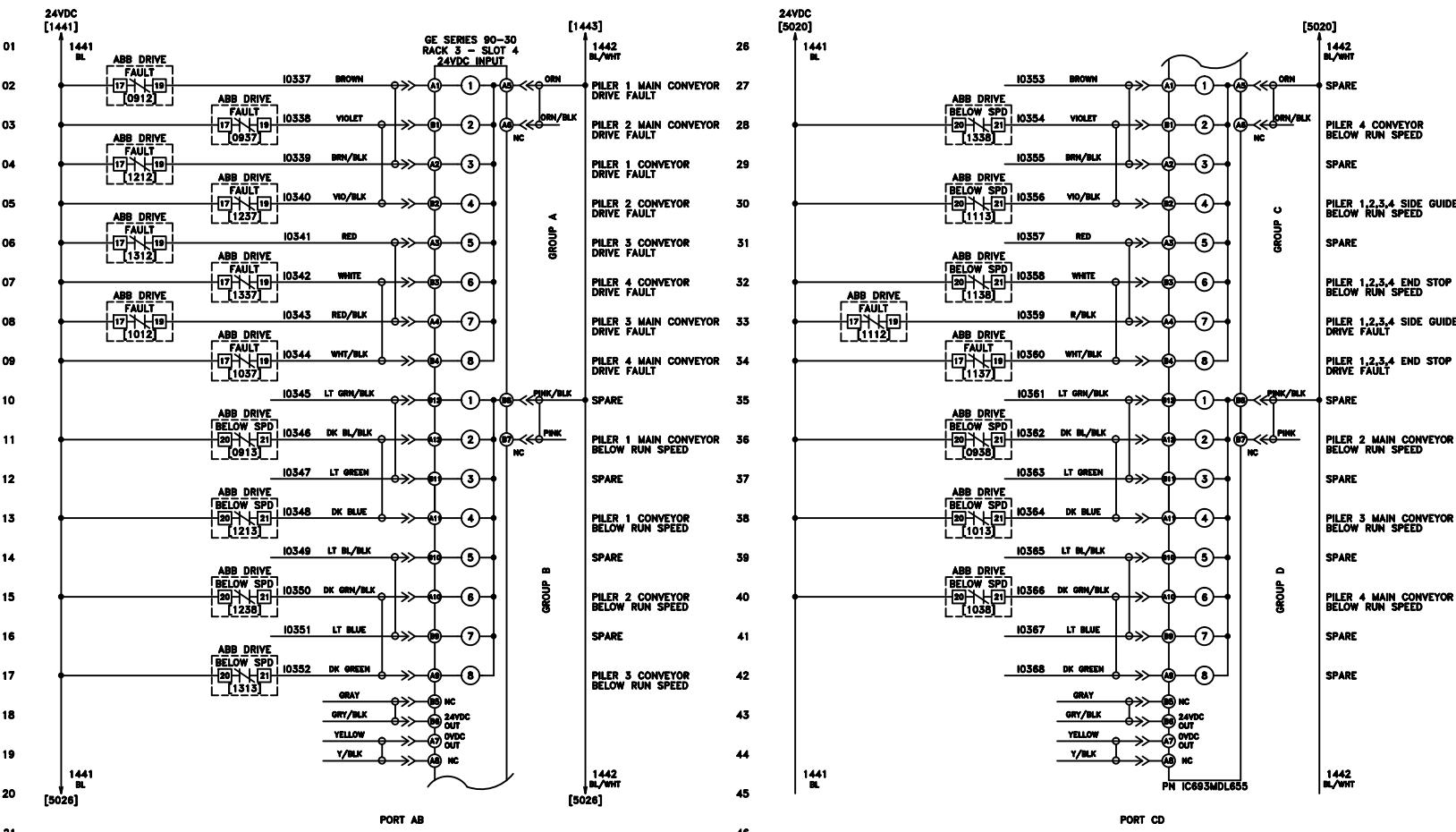
DATE	SYM	WAS	BY
		D-305501	



RACK 3
MAIN CONTROL PANEL
(DOOR 8)

O EMISSION PARA CONSTRUCCION	ZONA:	12-06-01
REV.	DESCRIPCION	EJEC. CONT./APROX. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.		
W PROVEEDOR: SIDERAR ZONA: SIDERROM		
SECTOR: LINEA LITTELL		
OBRAS O EQUIPO: LINEA DE CORTE - ER-4E		
SCROLL SHEETING LINE		
PARTE: DIAGRAM-ELECTRICAL-Schematic		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPUTACION: 1463 CAD T1521049.DWG		
FILE T1523BC		

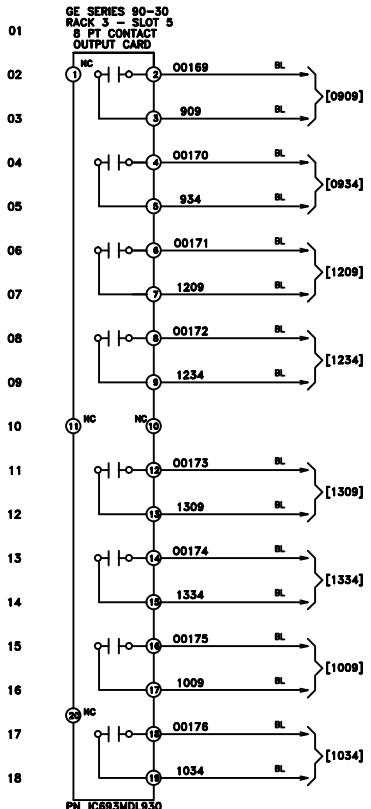
DATE	SYM	WAS	BY
		D-305501	



O EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
Nº PROVEEDOR	D-308691
ZONA	SIDERON
SECTOR	LINIA LITTELL
OBRA O EQUIPO:	LINIA DE CORTE - ER-4E
SCROLL SHEETING LINE	
PARTIDA:	DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO	ESCALAS
DIBUJO	
CONTROL	
APROBADO	
IMPUTACION:	5615-23-0028
COD T1521050.DWG	
FILIO T1523BC	

LA FIRMA REEXPRESA LA PROPIEDAD DE ESTE DOCUMENTO Y SE RESERVA EL DERECHO DE USARLO SOLO PARA LOS FINES PARA LOS CUALES FUE DISEÑADO. NO SE PUEDE AUTORIZAR SU DIFUSION.

DATE	SYM	WAS	BY
		D-305501	



PILER 1 MAIN CONVEYOR COMMAND

PILER 2 MAIN CONVEYOR COMMAND

PILER 1 CONVEYOR COMMAND

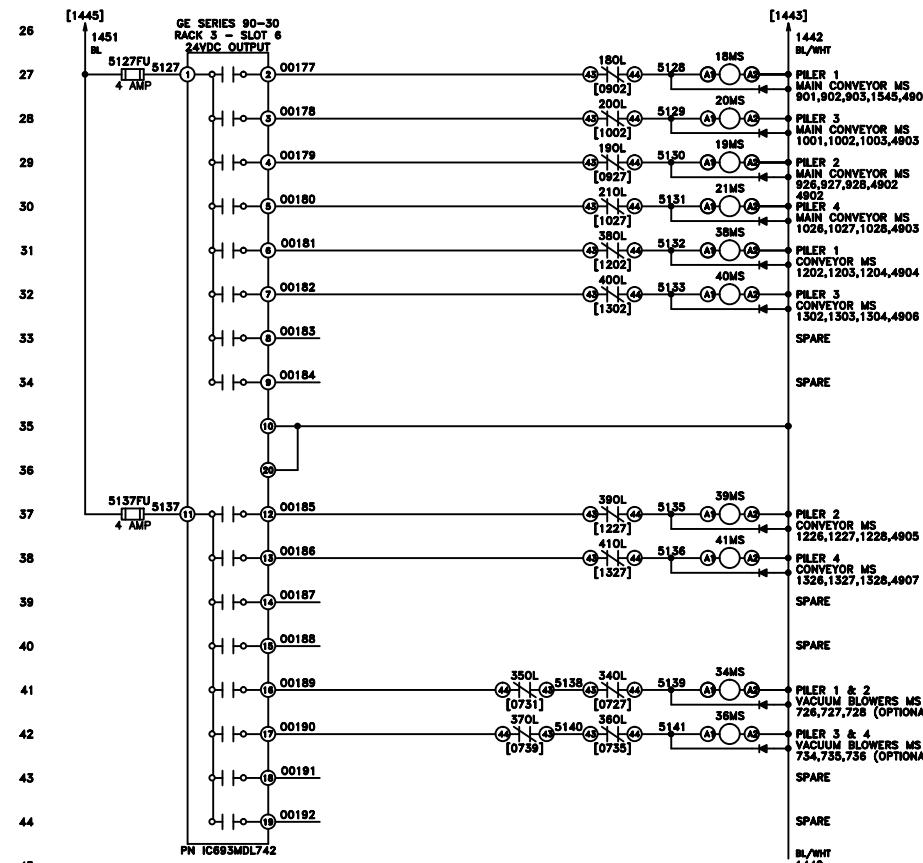
PILER 2 CONVEYOR COMMAND

PILER 3 CONVEYOR COMMAND

PILER 4 CONVEYOR COMMAND

PILER 3 MAIN CONVEYOR COMMAND

PILER 4 MAIN CONVEYOR COMMAND

**NOTES:**

* - MODULE IS FUSED INTERNALLY

RACK 3
MAIN CONTROL PANEL
(DOOR 8)

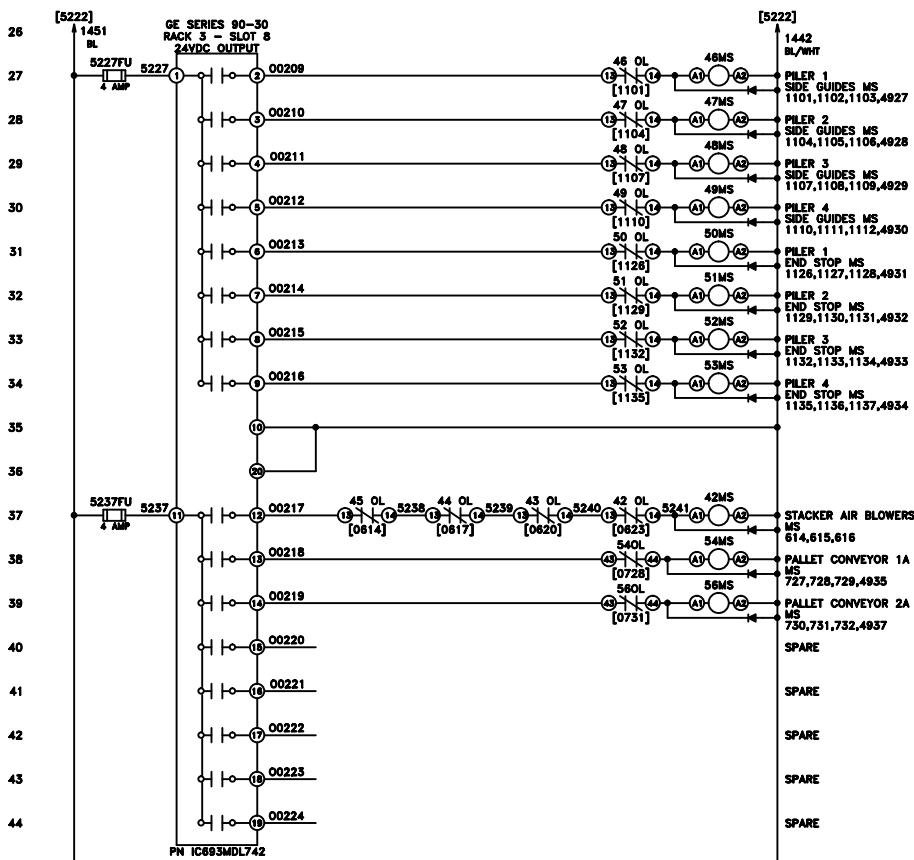
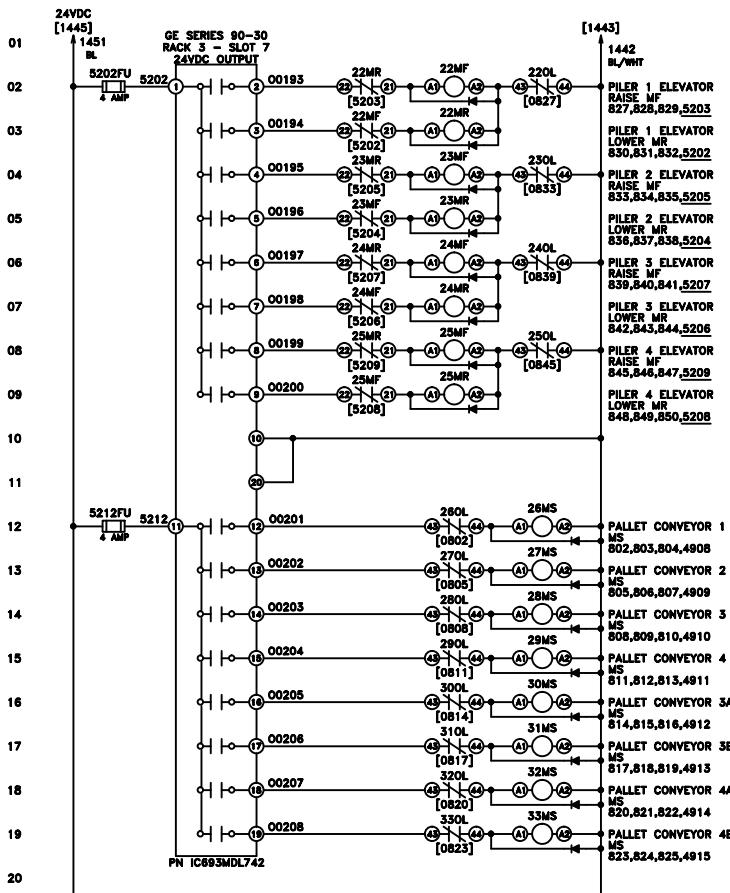
O EMISSION PARA CONSTRUCCION	12-06-01
REV. 0 DESCRIPCION	EJEC. CONT./APRO. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.	
Nº PROVEEDOR: D-308691	
ZONA: SIDERONROM SECTOR: LINEA LITTELL	
COPIA O EQUIPO: LINEA DE CORTE - ER-4E	
PLANTA SIDERONROM SCROLL SHEETING LINE	
PARTE: DIAGRAM-ELECTRICAL-SCHMATIC	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPRESION: 1463 CAD T1521051.DWG	
FILE T1523BC	

SIDERAR ZONA: SIDERONROM
PLANTA SIDERONROM SECTOR: LINEA LITTELL
COPIA O EQUIPO: LINEA DE CORTE - ER-4E
SCROLL SHEETING LINE
PARTE: DIAGRAM-ELECTRICAL-SCHMATIC

LA FIRMA RE CONFIRMA LA PROPRIETAT DE ESTE DOCUMENT, QUE ESTA EN TOTAL O PARTE, SOBREMANERA, EN TOTS LOS DETALLS, ESTA AUTENTICA, I ESTA AUTORIZADA PER LA FIRMA AUTORIZADA SOTIAL.

PROYECTO: 5615-23-0028
DIBUJO:
CONTROL:
APROBADO:
IMPRESION: 1463 CAD T1521051.DWG
FILE T1523BC

DATE	SYM	WAS	BY
		D-305501	



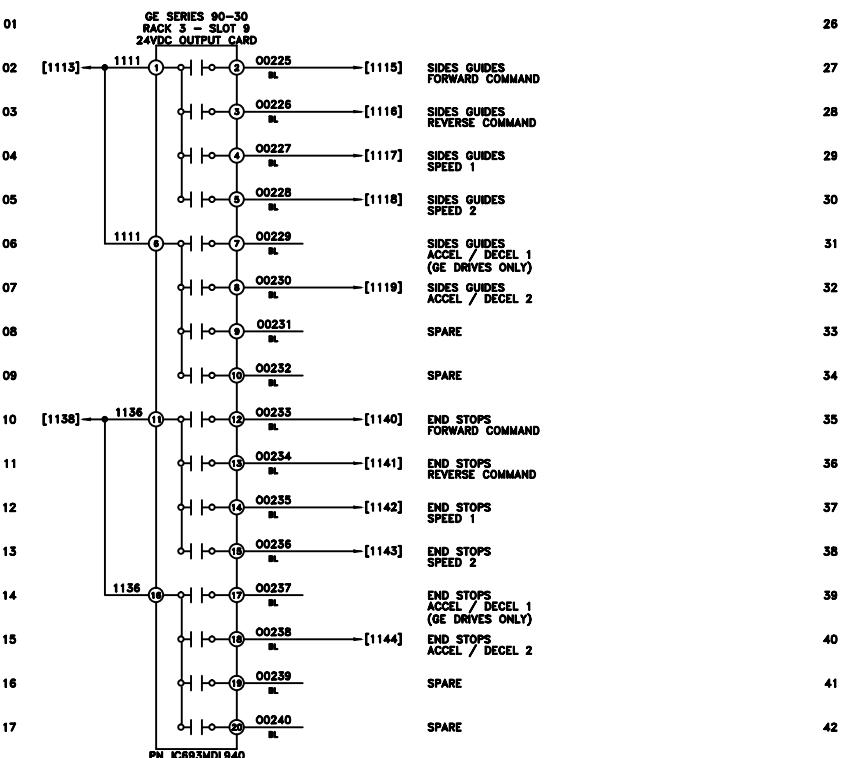
RACK 3
MAIN CONTROL PANEL
(DOOR 8)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL INC.	
Nº PROVEEDOR: D-308691	
ZONA:	SIDERON
SECTOR:	LINEA LITTELL
OBRA O EQUIPO:	LINEA DE CORTE - ER-4E
SCROLL SHEETING LINE	
PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC	
PROYECTO:	ESCALAS
DIBUJO:	5615-23-0028
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T152105.DWG	
FILE T1523BC	

LITTELL
SIDERAR
PLANTA SIDERON
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SE PROHIBE SU COPIA SIN AUTORIZACION ESCRITA
PROYECTO: 5615-23-0028
DIBUJO:
CONTROL:
APROBADO:
IMPUTACION: 1463 CAD T152105.DWG
FILE T1523BC

LITTELL JOB #94228 LINE (R → L)

DATE	SYM	WAS	BY
		D-305501	

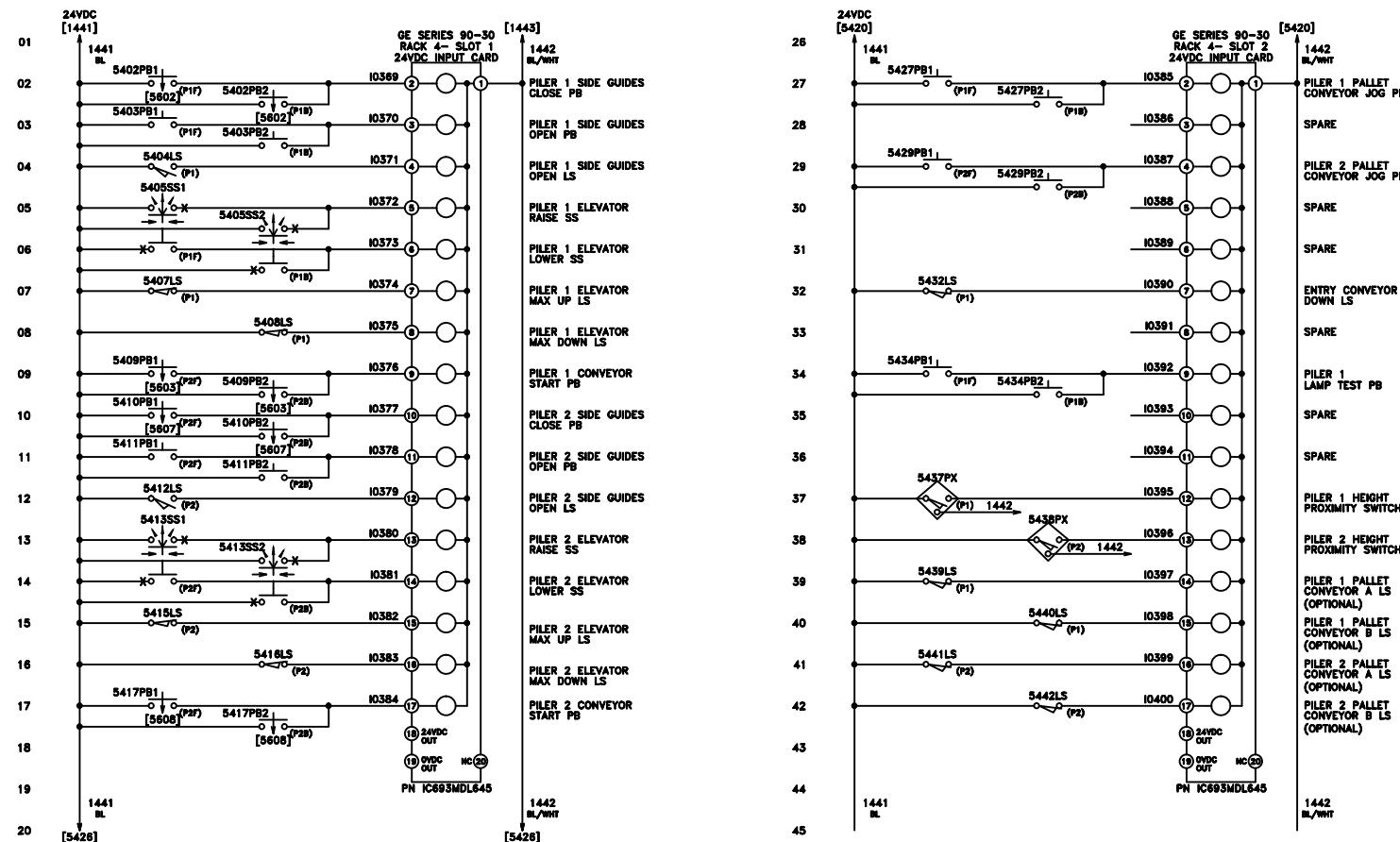


RACK 3
MAIN CONTROL PANEL
(DOOR 8)

0	EMISION PARA CONSTRUCCION	ZONA:	12-06-01
REV.	DESCRIPCION	EJEC. CONT./APRO.	FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.		Nº PROVEEDOR: D-308691 HOJA 53 DE 67	
SIDERAR PLANTA SIDERCROM		ZONA: SIDERCROM SECTOR: LINEA LITTELL OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC	
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SE PROHIBE SU COPIA SIN AUTORIZACION ESCRITA DEL DISEÑADOR. SE PROHIBE SU USO SIN AUTORIZACION ESCRITA DEL DISEÑADOR.			
PROYECTO	ESCALAS		
DIBUJO			
CONTROL			
APROBADO			
IMPUTACION: 1463 CAD T152055.DWG		< FILE T1523BC	

LITTELL JOB #94228 LINE (R → L)

DATE	SYM	WAS	BY
		D-305501	

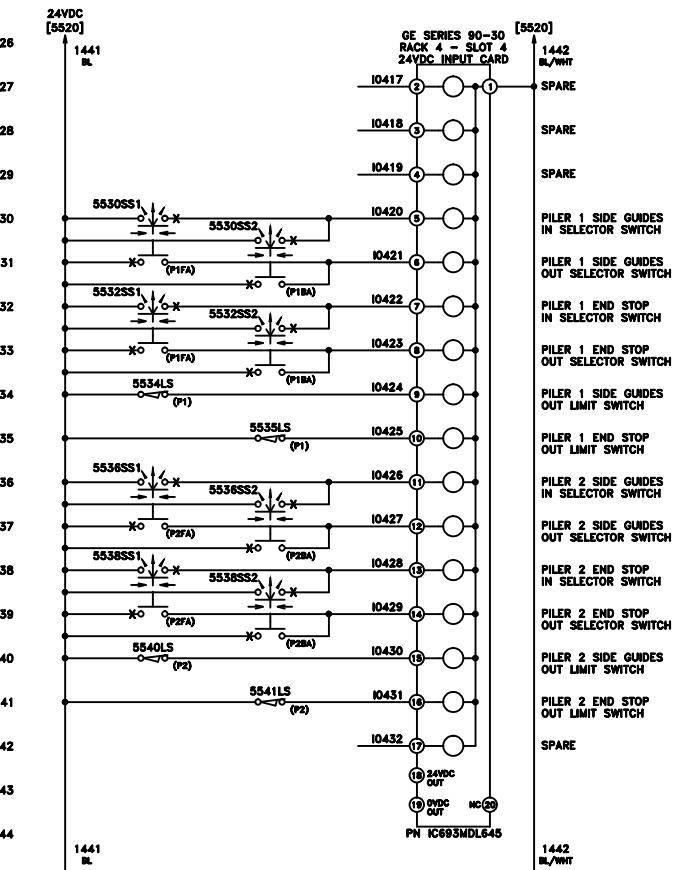
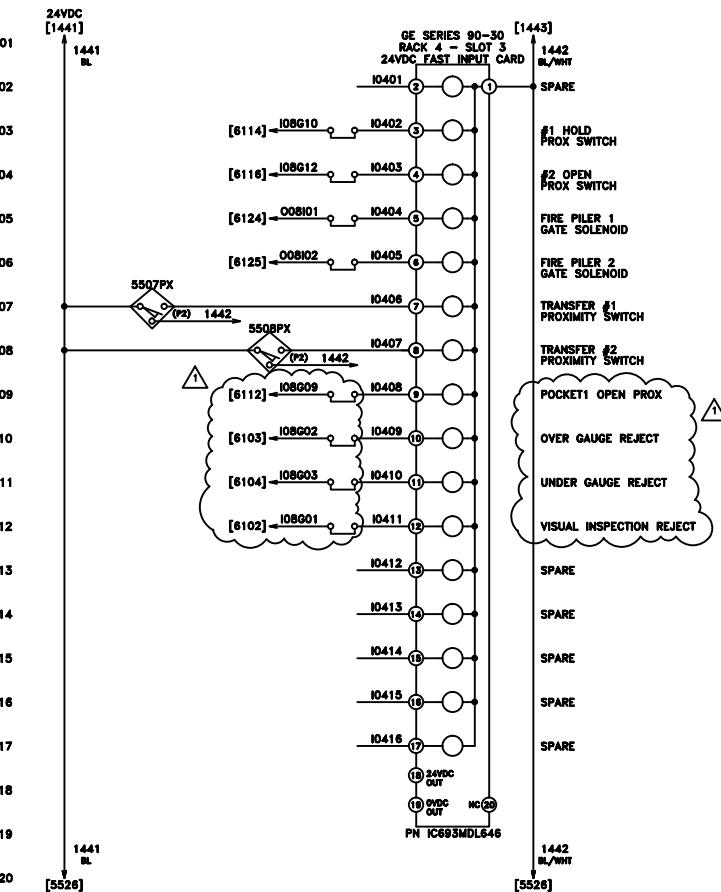


RACK 4
STACKER - PILER 1 & 2

LITTELL JOB #94228 LINE (R → L)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR	LITTELL INTERNATIONAL INC.
Nº PROVEEDOR	D-308691
ZONA:	SIDERROM
SECTOR:	LINIA DE CORTE - ER-4E
OBRA O EQUIPO:	PLANTA SIDERCROM
SCROLL SHEETING LINE	
PARTIDA:	DIAGRAM-ELECTRICAL-SCHMATIC
PROYECTO:	ESCALAS
DIBUJO:	5615-23-0028
CONTROL:	
APROBADO:	
IMPRESION:	1463 CAD T1521054.DWG
FILE:	T1523BC

DATE	SYM	WAS	BY
		D-305501	

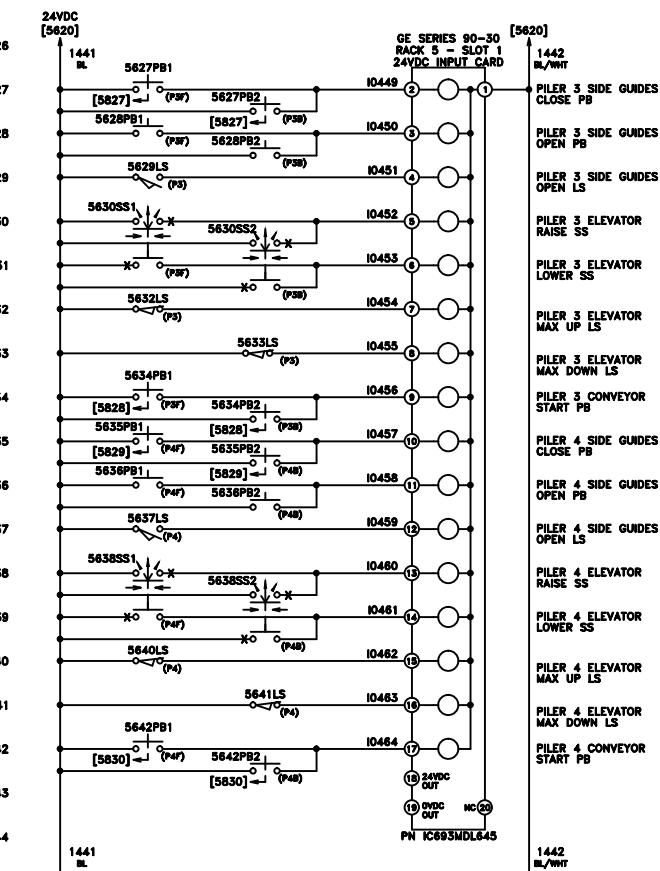
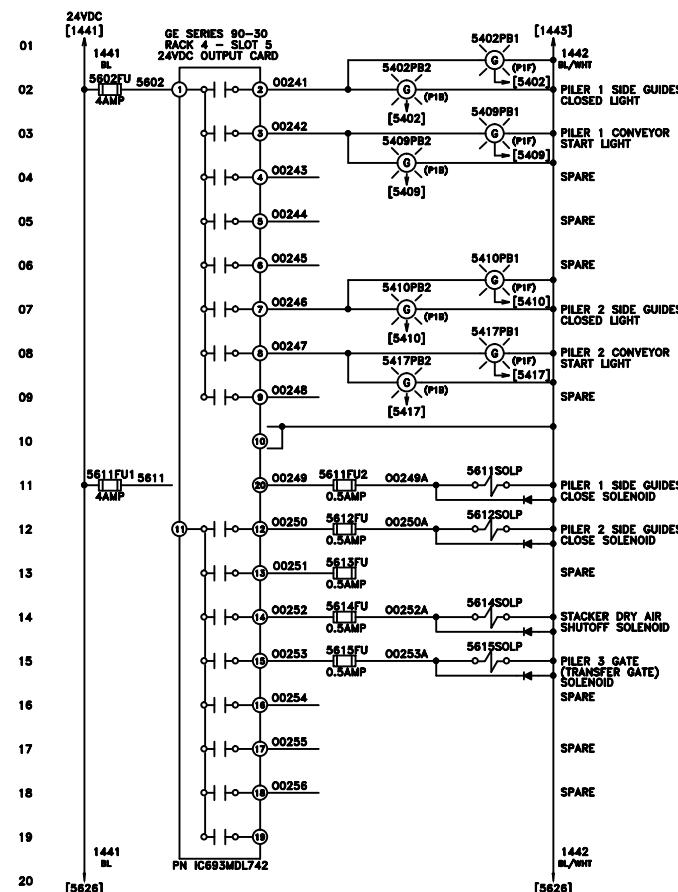


RACK 4
STACKER - PILER 1 & 2

1 PUENTES I08000/I0405; I08002/I0409; I08003/I0410; I08001/I0411	2 DISEÑO	3 DIF.	4 03-08-01
0 EMISIÓN PARA CONSTRUCCIÓN	5 ZONA:	6 SECTOR:	7 12-06-01
REV. 0	8 DESCRIPCIÓN	9 EJEC. CONT./APRO.	10 FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC. N° PROVEEDOR: D-308691 HOJA 55 DE 67			
ZONA: SIDERONOM			
SECTOR: LINEA LITTELL			
OBRA O EQUIPO: PLANTA SIDERONOM			
COMPAÑIA: LINEA DE CORTE - ER-4E			
DESCRIPCIÓN: SCROLL SHEETING LINE			
PARTIDA: DIAGRAM-ELECTRICAL-SCHMATIC			
PROYECTO:	11 ESCALAS:	12	13
DIBUJO:	14	15	16
CONTROL:	17	18	19
APROB:	20	21	22
IMPUTACION: 1463 CAD T152105.DWG			
FILE T1523BC			

LITTELL JOB #94228 LINE (R → L)

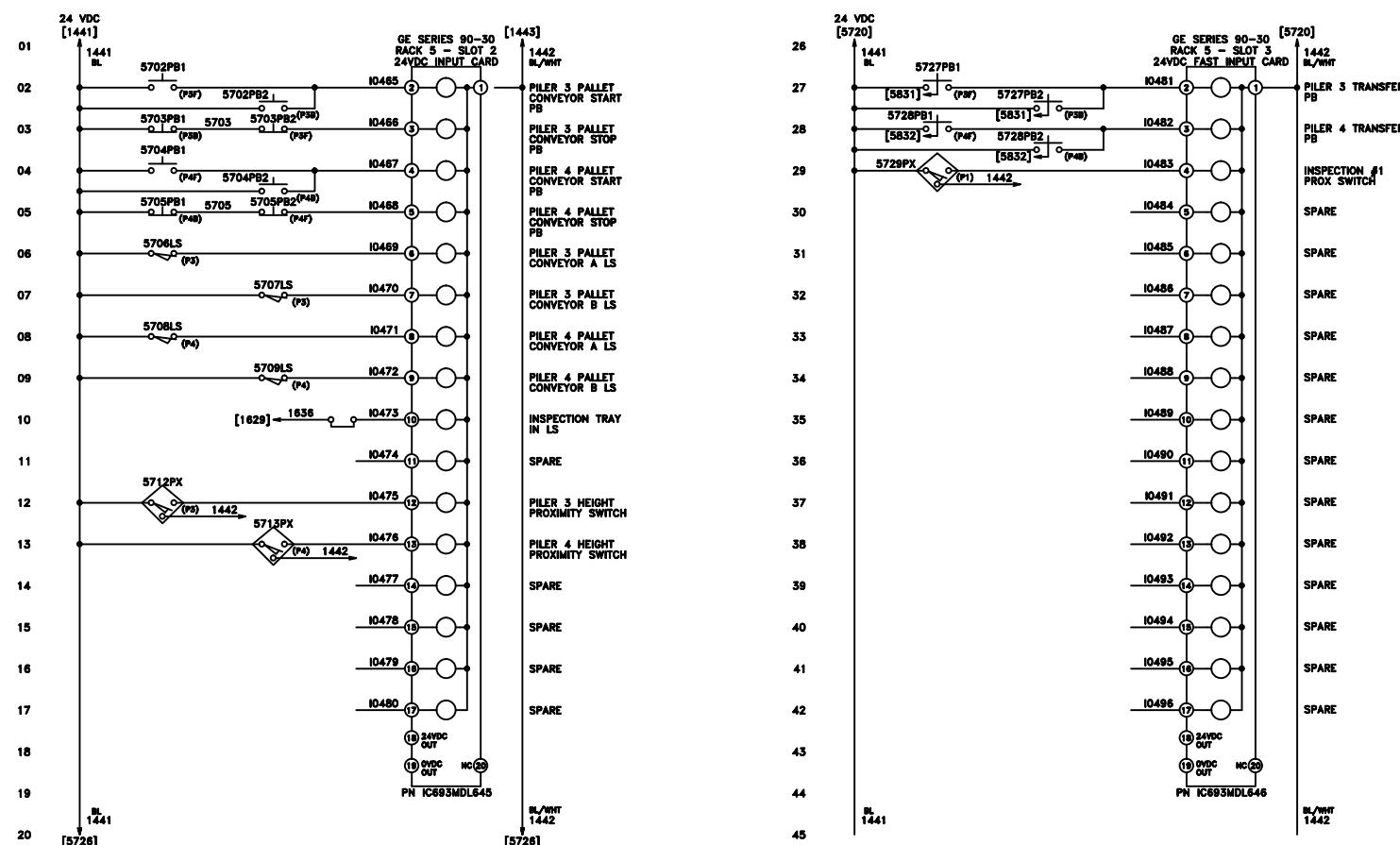
DATE	SYM	WAS	BY
		D-305501	



RACK 4 & 5
STACKER - PILER 1,2,3,4

O EMISSION PARA CONSTRUCCION	ZONA4:	12-06-01
REV.	DESCRIPCION	EJEC. CONT. / APROV. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.		Nº PROVEEDOR: D-308691 HOJA 56 DE 67
SIDERAR ZONA4: SIDEROM SECTOR: LINEA DE CORTA - ER-4E OBRA O EQUIPO: LINEA DE CORTA SCROLL SHEETING LINE PARTE: DIAGRAM-ELECTRICAL-SCHMATIC		
LA FIRMA SE RESERVA LA PROPIEDAD DE ESTE DOCUMENTO Y SE PROHIBE SU COPIA SIN AUTORIZACION ESCRITA DEL PROVEEDOR.		
PROYECTO:	ESCALAS:	IMPUTACION: 1463 CAD T1521059.DWG
DIBUJO:		FILIO T1523ABC
CONTROL:		
APROBADO:		

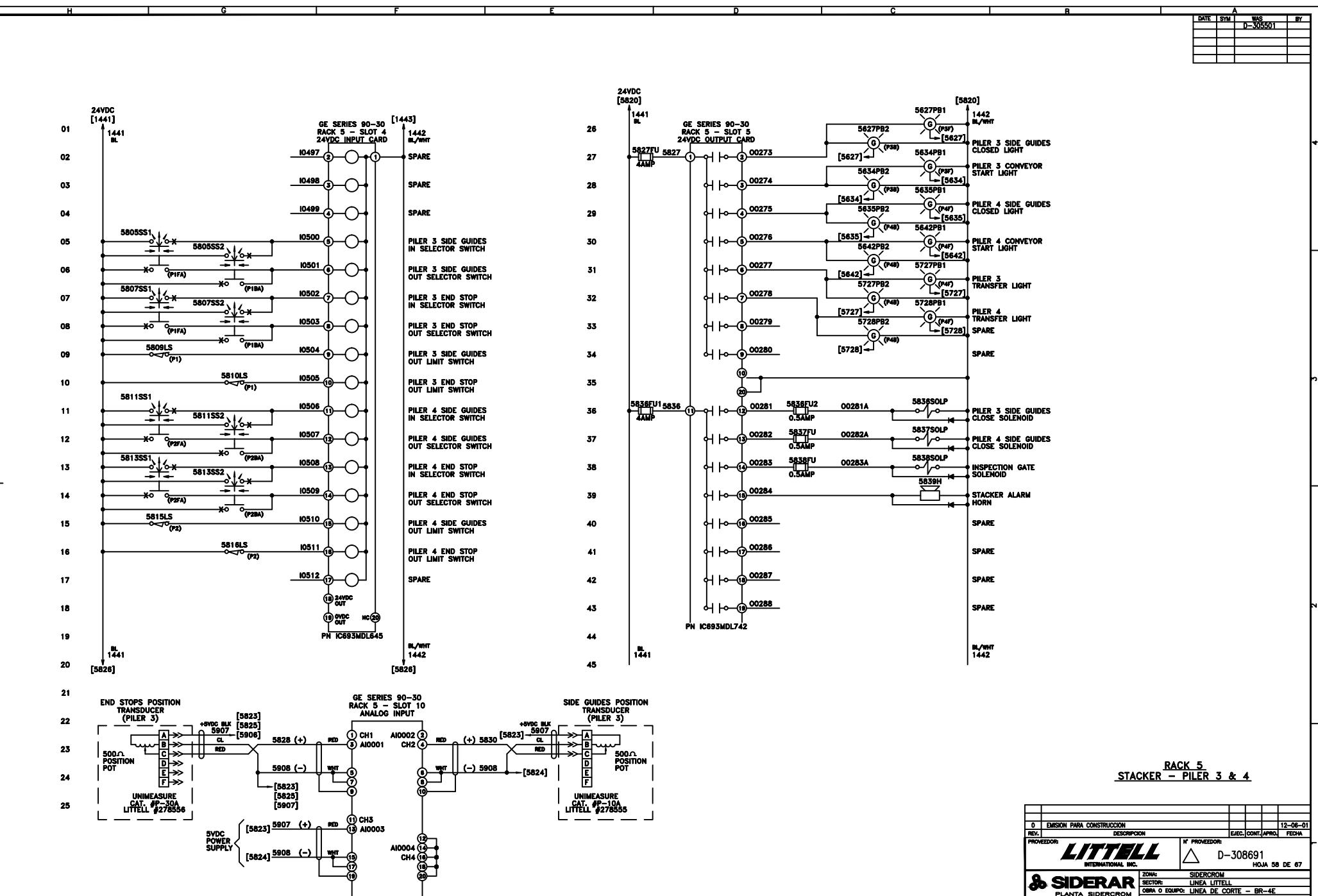
DATE	SYM	WAS	BY
		D-305501	



LITTELL JOB #94228 LINE (R → L)

ZONA:	SIDEROM	12-06-01
REV.:	DESCRIPCION	EJEC. CONT./APRO. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.		Nº PROVEEDOR: D-308691
SIDERAR PLANTA SIDERCROM		HOJA 57 DE 67
LA FIRMA SE RESERVA LA PROPRIETAD DE ESTE DIBUJO Y SUS COPIAS. SU USO SIN CONSENTIMIENTO ESCRITO DE LA FIRMA AUTORIZADA SERIA UNA INFRACTION PENAL.		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROB:		
IMPRESION: 1463 CAD T1521057.DWG		FILIO T1523BC

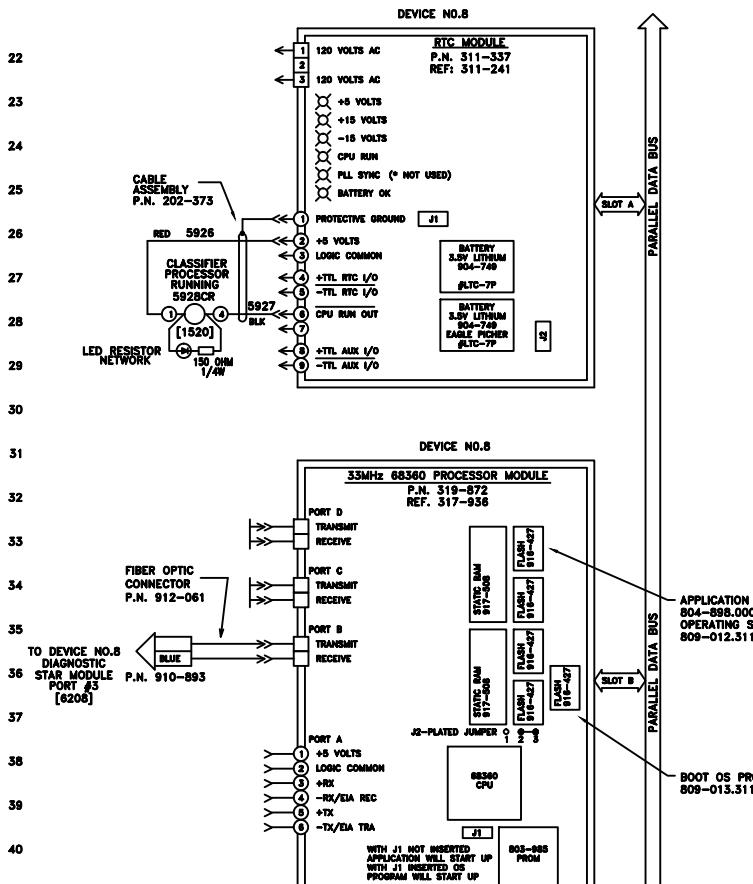
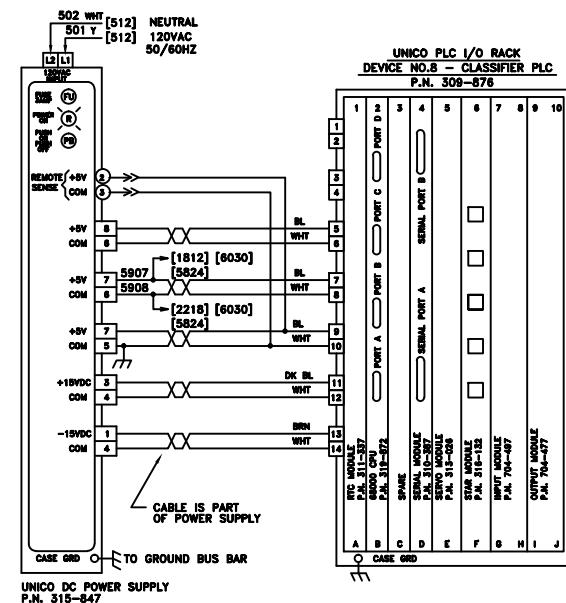
DATE	SYM	WAS	BY
		D-305501	



LITTELL JOB #94228 LINE (R → L)

O EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR:	LITTELL INTERNATIONAL INC.
Nº PROVEEDOR:	D-308691
ZONA:	SIDEROM
SECTOR:	LINIA DE CORTE - ER-4E
OBRA O EQUIPO:	PLANTA SIDEROM
SCROLL SHEETING LINE	
PARTIDA:	DIAGRAM-ELECTRICAL-Schematic
PROYECTO:	ESCALAS
DIBUJO:	5615-23-0028
CONTROL:	IMPUTACION: 1463 CAD T152105.DWG
APROBADO:	FILIO T1523BC

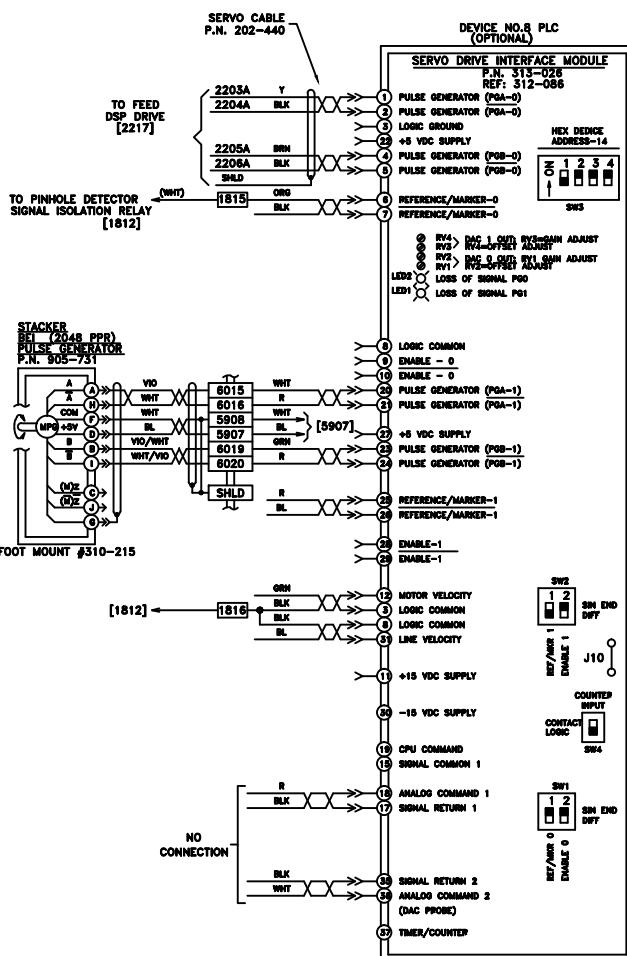
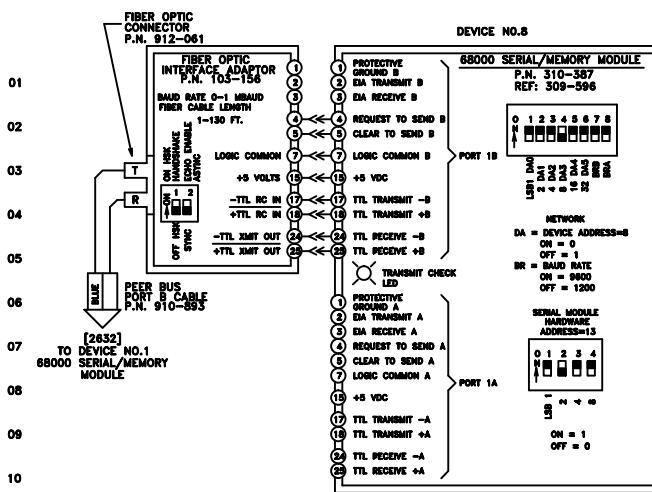
DATE	SYM	WAS	BY
		D-305501	



UNICO PLC I/O RACK
DEVICE NO.8 - CLASSIFIER PLC
SC-2397
(DOOR 5)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV. 0 DESCRIPCION	EJEC. CONT. / APROV. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC. N° PROVEEDOR: D-308691 HOJA 59 DE 67	
SIDERAR ZONA: SIDERROM SECTOR: LINEA LITTELL PLANTA SIDERCROM OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE	
LA FIRMA RE PRESENTA LA PROPIEDAD DE ESTA DOCUMENTACION Y SE RESERVA EL DERECHO DE PROPRIEDAD DE LOS DISEÑOS, DIBUJOS Y DOCUMENTACIONES EN TODO TIEMPO. SE PROHIBE LA COPIA, DISTRIBUCION, O TRANSFERENCIA SIN LA PREVIA AUTORIZACION ESCRITA.	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPRESION: 1463 CAD T152105.DWG	
FILE T1523BC	

DATE	SYM	WAS	BY
		D-305501	



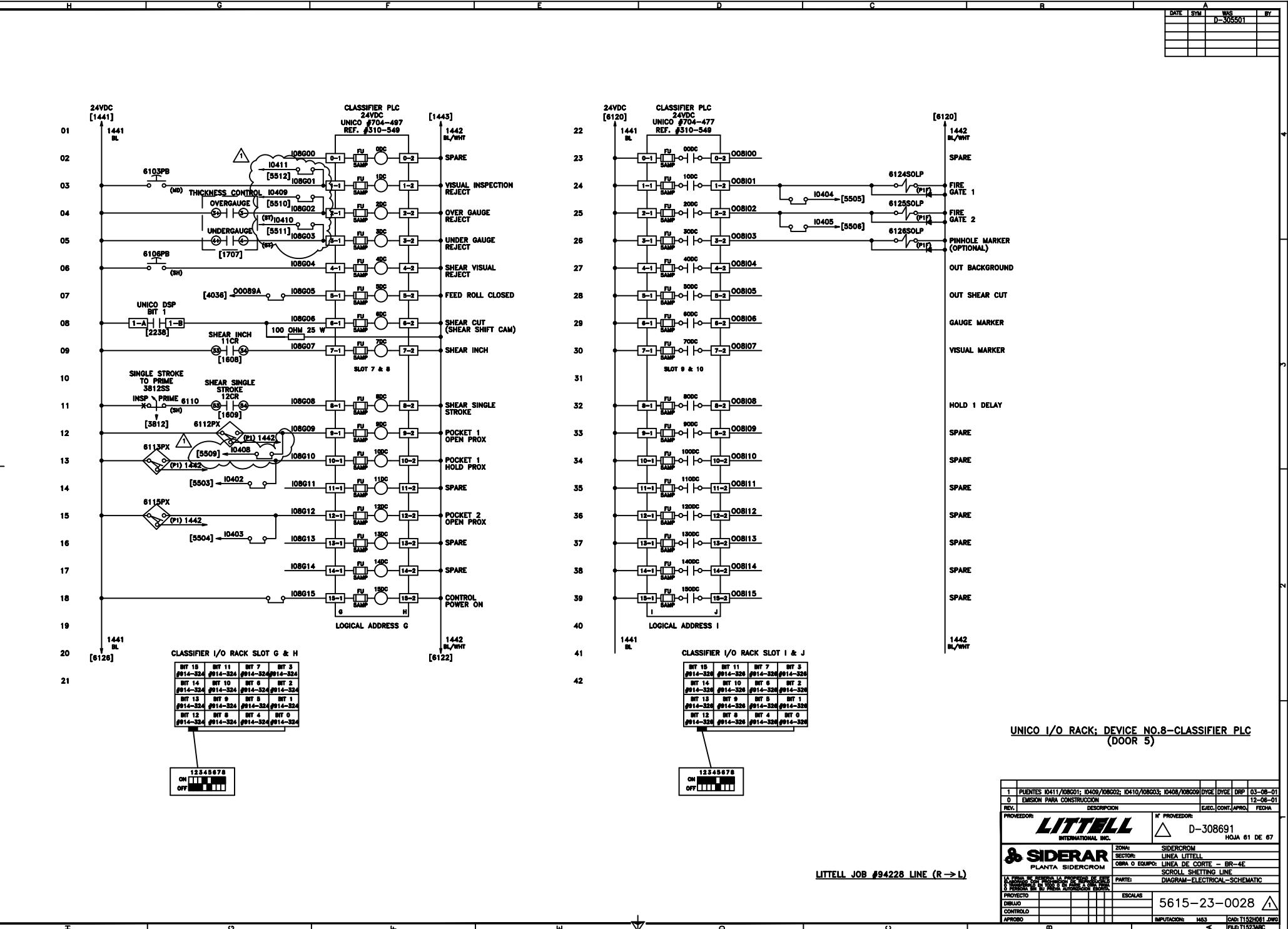
68000 SERIAL/MEMORY MODULE
SERVO DRIVE INTERFACE MODULE
(DEVICE #8)
(DOOR 5)

SWITCH SETTING FOR P.N. 103-156			
SWITCH	1	ON	OFF
HANDSHAKE	1	ON	OFF
ECHO ENABLE	2	ON	OFF
ASTRO SYNC	3	ON	OFF
ASTRO SYNC	4	ON	OFF

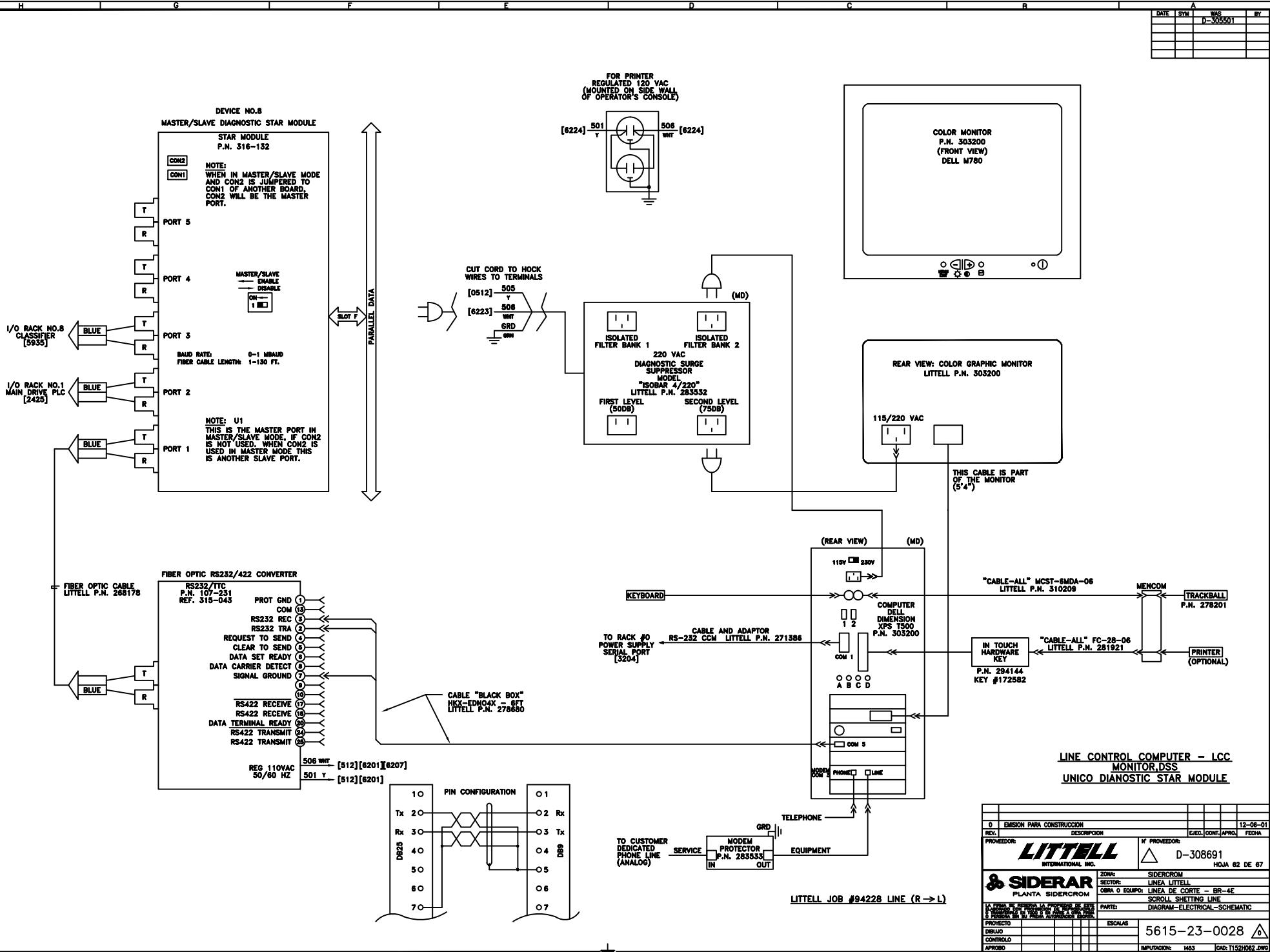
LITTELL JOB #94228 LINE (R → L)

O EMISSION PARA CONSTRUCCION	12-06-01
REV. DESCRIPCION	EJEC. CONT. /APRO. FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.	
IF PROVEEDOR: D-308691 HOJA 60 DE 67	
SIDERAR SIDEROM SECTOR: LINEA LITTELL OFICINA/GRUPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE PROYECTO: 5615-23-0028 ESCALAS: DIBUJO: 5615-23-0028 CAD T152100.DWG CONTROL: 5615-23-0028 DIAGRAM-ELECTRICAL-SCHMATIC APROBADO: 5615-23-0028 IMPUTACION: 1463 FILE T1523ABC	

DATE	SYM	WAS	BY
		D-305501	



DATE	SYM	WAS	BY
		D-305501	



DATE	SYM	WAS	BY
		D-305501	

4

EXTERNAL WIRING NOTES:

ENCODER CABLE TO BE UNICO P.N. 101-895 (OR EQUIVALENT). REMAINING SIGNAL WIRES ARE TO BE TWISTED PAIR, AND ARE TO BE RUN IN A SEPARATE CONDUIT, AND ROUTED SEPARATE FROM OTHER CONTROL WIRING. IN GENERAL, EACH TRANSDUCER SHOULD HAVE ITS OWN SEPARATE CONDUIT FOR ITS SIGNAL AND BIAS WIRING. SPECIFICALLY ROUTE TRANSDUCER LEADS SEPARATE FROM MOTOR LEADS, FIELD LEADS, AND BLOWER MOTOR WIRES.

RUN TRANSDUCER AND REFERENCE SWITCHES DIRECTLY BACK TO THE OPERATORS CONSOLE USING P.N. 105-619 TRANSDUCER CABLE OR EQUIVALENT. JUNCTION BOXES CAN BE USED AS REQUIRED PROVIDED THE RESULTS ARE EQUIVALENT AS A CONTINUOUS CABLE.

DO NOT ROUTE TRANSDUCER AND REFERENCE SIGNAL WIRES THROUGH TERMINAL JUNCTION BOXES THAT CONTAIN AC CONTROL WIRING.

USE #14 OR #12 TWISTED PAIR FOR TRANSDUCER BIAS WIRES WITH LONG RUNS. THIS REDUCES FUTURE INTERMITTENT SIGNAL PROBLEMS AND LINE VOLTAGE DROP.

ENCLOSURE

NOTE: CONTACT PROTECTION MUST BE PROVIDED ON INDUCTIVE OR HIGH INRUSH CURRENT LOADS.

ARC SUPPRESSORS SHOULD BE USED ON ALL INDUCTIVE LOADS IN CLOSE PROXIMITY TO UNICO CIRCUITS.

CUSTOMER SUPPLIED CONTACTS TO UNICO LOGIC CIRCUITS MUST BE SUITABLE FOR SWITCHING 5 VDC LOGIC SIGNALS, AND MUST BE BOUNCE FREE.

SEPARATE SIGNAL (5-15 VOLT) WIRING FROM CONTROL (120 VOLT) AND (240/480 VOLT) WIRING IN THE POWER CABINET AND ON MACHINE INTERCABLING. IN GENERAL, WIRING WITH DIFFERENT VOLTAGE POTENTIALS SHOULD BE RUN IN SEPARATE WIRE CHANNEL AND TERMINAL STRIPS IN THE ENCLOSURE AND EXCLUSIVE CONDUITS AND JUNCTION BOXES WITH MACHINE INTERCABLING.

WIRING NOTES:

1. PULSE GENERATOR CABLE TO BE UNICO P.N. 101-895 (OR EQUIVALENT). REMAINING SIGNAL WIRES ARE TO BE TWISTED PAIR, ALPHA #2258 (OR EQUIVALENT), AND ARE TO BE RUN IN A SEPARATE CONDUIT AND ROUTED SEPARATE FROM OTHER CONTROL WIRING. IN GENERAL, EACH TRANSDUCER SHOULD HAVE ITS OWN SEPARATE CONDUIT FOR ITS SIGNAL AND BIAS WIRING.

2. REMAINING WIRING, INCLUDING BIAS WIRING, CAN BE #14 AWG.

3. N/A

4. ARC SUPPRESSORS SHOULD BE USED ON ALL INDUCTIVE LOADS IN CLOSE PROXIMITY TO UNICO CIRCUITS.

5. CUSTOMER SUPPLIED CONTACTS MUST BE SUITABLE FOR SWITCHING 5 VDC LOGIC SIGNALS, AND MUST BE BOUNCE FREE.

6. UNICO SYSTEMS SUPPLIED IN ENCLOSURES OR ON PANELS MUST HAVE ENCLOSURES, PANELS, TRANSFORMERS, AND LOOSE ELECTRICAL COMPONENTS CONNECTED TO EARTH ACCORDING TO NEC AND ALL LOCAL CODES.

7. UNICO LOOSE PARTS SYSTEMS MUST HAVE ALL ELECTRICAL COMPONENTS, ESPECIALLY TRANSFORMERS, CONNECTED TO EARTH ACCORDING TO NEC AND ALL LOCAL CODES.

ENCLOSURE WIRING STANDARDS

1. FOLLOW JOINT INDUSTRIAL COUNCIL ELECTRICAL STANDARDS (J.I.C.) AND CONSULT THE NATIONAL ELECTRICAL CODE (N.E.C.)
2. PANEL SHOULD BE LAID OUT TO KEEP POWER AND CONTROL CIRCUITRY ISOLATED.
3. LAY OUT THE WIRE TERMINAL BLOCKS SO THAT INTERNAL AND EXTERNAL WIRING DOES NOT CROSS OVER TERMINALS.
4. SHOULD HAVE A MINIMUM OF 1 1/2" CLEARANCE ON BOTH SIDES OF TERMINALS.
5. KEEP PULSE GENERATOR CONNECTIONS CLOSE TOGETHER BY USING CONSECUTIVE TERMINALS.
6. WATCH THAT PULSE GENERATOR AND ENCODER WIRING DOES NOT SPLIT BETWEEN TIERS OF TERMINALS.
7. USE TWISTED PAIR WIRES FOR SIGNAL WIRES AS DESIGNATED ON THE ELECTRICAL DRAWINGS.
8. SIGNAL AND GROUND WIRES SHOULD ORIGINATE AT ADJACENT TERMINALS.
9. LAY OUT +5VDC AND GROUND WIRES CONSIDERING THE LOADING REQUIREMENTS OF VARIOUS DEVICES.
10. ON PANEL DRAWINGS, DESIGNATE AND LABEL WIRE CHANNEL FOR HIGH VOLTAGE, LOW VOLTAGE, AND CUSTOMER WIRING.
11. TRY TO LEAVE EMPTY WIRE CHANNEL AVAILABLE FOR CUSTOMER'S WIRES (TRY NOT TO EXCEED 50% USAGE)
12. ON THE ENCLOSURE DRAWINGS SHOW THE POSITION OF EQUIPMENT SO THE CUSTOMER CAN FIGURE WHERE TO ENTER THE ENCLOSURE WITH HIS WIRING.
13. DO NOT PANEL MOUNT ANY EQUIPMENT LOWER THAN 18" FROM THE FLOOR.
14. KEEP AC LINES SEPARATE FROM DC LINES, CROSS AT RIGHT ANGLES ONLY, AND KEEP THE RED 110VAC AND BLACK HIGH VOLTAGE WIRES AWAY FROM OTHER WIRES.
15. MAXIMUM OF TWO WIRES PER SIDE OF TERMINAL, EXCLUDING BUS BARS.
16. TWIST AC LINES WHEN POSSIBLE.
17. WHEN RUNNING HIGH POWER ON SUB-PANEL, WIRE SHOULD LIE ON SUB-PANEL EXCEPT WHEN CROSSING OVER WIRE CHANNEL THEN 1/2" HIGHER.
18. KEEP UNICO WIRING TO ONE SIDE OF TERMINALS. (TOP AND INSIDE)
19. NO SPLICING OF WIRE EXCEPT FOR INTERLOCKS, ETC.
20. TRANSFORMER 110VAC WIRING TO TOP OF FUSE BLOCKS, LOAD TO BOTTOM.
21. SAME WIRE NUMBER ON BOTH SIDES OF TERMINALS. ALL WIRES TO HAVE WIRE NUMBERS.

3

2

1

LITTELL JOB #94228 LINE (R → L)

D-EMISIÓN PARA CONSTRUCCIÓN		ZONA:	LINEA LITTELL	12-06-01
REV.	DESCRIPCIÓN	EJEC.	CONT./APRO.	FECHA
PROVEEDOR: LITTELL INTERNATIONAL INC.		Nº PROVEEDOR: D-308691 HOJA 63 DE 67		
SIDERAR PLANTA SIDERCRON		ZONA: SIDERCRON SECTOR: LINEA LITTELL OBRA O EQUIPO: LINEA DE CORTE - ER-4E SCROLL SHEETING LINE PARTES: DIAGRAM-ELECTRICAL-Schematic		
LA FIRMA SE REFERIDA LA PROPIEDAD DE ESTE DOCUMENTO Y DECLARA QUE EL MISMO NO SERÁ DIFUNDIDO NI REPRODUCIDO EN TOTAS O PARTE SIN LA AUTORIZACIÓN EXPRESA DEL PROVEEDOR.				
PROYECTO	DETALLE	ESCALAS	IMPRESIÓN: 1483 CAD T152105.DWG	
DETALLE			< FILE T1523BC <	
CONTROL				
APROBÓ				

H	G	F	E	D	C	B	A
DATE	STN	WAS	BY				

4

DC OUTPUT MODULE
70-ODCS AND 700-ODCS

OUTPUT SPECIFICATIONS

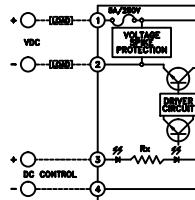
- LINE VOLTAGE 60 Vac max.
- LOAD VOLTAGE RANGE 24–140 Vac
- MAX. OFF-STATE LEAKAGE 1.5 mA @ 60Hz
- MINIMUM PEAK BLOCKING VOLTAGE 400 V
- MAXIMUM TURN-ON TIME 0.20 microseconds
- MAXIMUM TURN-OFF TIME 0.50 microseconds
- LOAD CURRENT RANGE (rms) 0.02–5.5 Amps
- POWER DISSIPATION 1.0 Watt/Amp
- MAXIMUM SURGE CURRENT 5 Amps for 1 Sec.
- MAXIMUM ZERO VOLTAGE OFFSET 500 mVdc ± 0.5%
- STATIC 4V/dT 1.2 V max.
- ON STATE VOLTAGE DROP 60 Vdc max.
- CLAMPING VOLTAGE 200 Vdc typical
- Thermal Resistance 20°C/Watt typical
- TRANSIENT POWER DISSIPATION 400 Watts @ 1msec non-recurring
- I_{f1} POP FUSING(=0.3msec) 50mA

INPUT SPECIFICATIONS

- NOMINAL LOGIC VOLTAGE (V_{cc}) 5Vdc
- LOGIC VOLTAGE RANGE: STD 2.5–10Vdc
- LOGIC VOLTAGE RANGE: GS 2–5Vdc
- MAX. LOGIC SUPPLY CURRENT AT NOMINAL V_{cc} 14 mA
- NOMINAL INPUT RESISTANCE (R_{in}): STD 300 Ohms
- NOMINAL INPUT RESISTANCE (R_{in}): GS 100 Ohms
- MIN. DROPOUT VOLTAGE 1Vdc
- MAXIMUM REVERSE LOGIC VOLTAGE -6Vdc

GENERAL SPECIFICATIONS

- STORAGE TEMPERATURE RANGE -40° TO +125° C
- OPERATING TEMPERATURE RANGE -40° TO +100° C
- INPUT TO OUTPUT TO GND 10¹⁰ Ohms
- Dielectric Strength INPUT TO OUTPUT 4000Vdc (rms) min.
- INPUT TO OUTPUT CAPACITANCE 6pF typical
- VIBRATION 20–55° PEAK OR 10° DOUBLE AMPLITUDE CONDITION B PER MIL-STD-202, METHOD 204, 1600 G's 0.056 HALF-SINE PER MIL-STD-202, METHOD 213, CONDITION F
- MECHANICAL SHOCK 1000 G's 0.056 HALF-SINE PER MIL-STD-202, METHOD 213, CONDITION F

DC OUTPUT
FUSE AND STATUS LED IN GS MODULE ONLYAC OUTPUT MODULE
70-DACS AND 700-DACS

120 Vac nominal

24–140 Vac

2 mA @ 60Hz

400 V

0.3 microseconds @ 60 Hz

0.3 microseconds @ 60 Hz

0.03–5.5 Amps

1.0 Watt/Amp

80 Amps @ 50Hz, 1 cycle (peak)

8 V peak

3000 V/ussec

1.5 V max.

20°C/Watt typical

35 °A per Sec. min.

INPUT SPECIFICATIONS

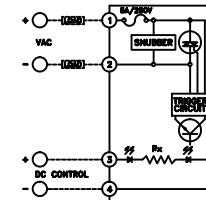
- INPUT VOLTAGE 32 Vdc max.
- INPUT VOLTAGE RANGE 3–32 Vdc
- INPUT CURRENT AT MAX INPUT VOLTAGE 18 mA
- MAXIMUM TURN-ON TIME 0.20 msec
- MAXIMUM TURN-OFF TIME 0.40 msec
- NOMINAL INPUT RESISTANCE (R_{in}) 1.8kOhm
- MAX. PICK UP VOLTAGE 3Vdc
- MIN. DROPOUT VOLTAGE 1Vdc

OUTPUT SPECIFICATIONS

- NOMINAL LOGIC VOLTAGE (V_{cc}) 5Vdc
- LOGIC VOLTAGE RANGE: STD 2.5–10Vdc
- LOGIC VOLTAGE RANGE: GS 2–5Vdc
- MAX. LOGIC SUPPLY CURRENT AT NOMINAL V_{cc} 10 mA
- OUTPUT CURRENT RANGE 1–50mA
- BREAKDOWN VOLTAGE 50Vdc min.
- OFF STATE LEAKAGE CURRENT 1mA max.
- ON STATE VOLTAGE DROP 0.45Vdc @ 50mA max.

GENERAL SPECIFICATIONS

- STORAGE TEMPERATURE RANGE -40° TO +125° C
- OPERATING TEMPERATURE RANGE -40° TO +100° C
- INSULATION RESISTANCE (INPUT TO OUTPUT: INPUT TO OUTPUT TO GND) 10¹⁰ Ohms
- DEIECTRIC STRENGTH INPUT TO OUTPUT 4000Vdc (rms) min.
- INPUT TO OUTPUT CAPACITANCE 6pF typical
- VIBRATION 20–55° PEAK OR 10° DOUBLE AMPLITUDE CONDITION B PER MIL-STD-202, METHOD 204, 1600 G's 0.056 HALF-SINE PER MIL-STD-202, METHOD 213, CONDITION F
- MECHANICAL SHOCK 1000 G's 0.056 HALF-SINE PER MIL-STD-202, METHOD 213, CONDITION F

AC OUTPUT
FUSE AND STATUS LED IN GS MODULE ONLYDC INPUT MODULE
70-IDCS AND 700-IDCS

120 Vac nominal

90–140 Vac/Vdc

8 mA rms

20 msec

20 msec

220kOhm

90Vdc

25Vdc

INPUT SPECIFICATIONS

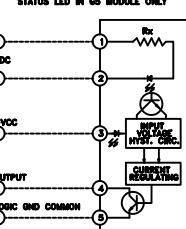
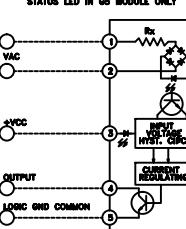
- INPUT VOLTAGE 90–140 Vac/Vdc
- INPUT VOLTAGE RANGE 8 mA rms
- INPUT CURRENT AT MAX INPUT VOLTAGE 20 msec
- MAXIMUM TURN-ON TIME 20 msec
- MAXIMUM TURN-OFF TIME 220kOhm
- NOMINAL INPUT RESISTANCE (R_{in}) 90Vdc
- MAX. PICK UP VOLTAGE 25Vdc

OUTPUT SPECIFICATIONS

- NOMINAL LOGIC VOLTAGE (V_{cc}) 5Vdc
- LOGIC VOLTAGE RANGE: STD 2.5–10Vdc
- LOGIC VOLTAGE RANGE: GS 2–5Vdc
- MAX. LOGIC SUPPLY CURRENT AT NOMINAL V_{cc} 10 mA
- OUTPUT CURRENT RANGE 1–50mA
- BREAKDOWN VOLTAGE 50Vdc min.
- OFF STATE LEAKAGE CURRENT 1mA max.
- ON STATE VOLTAGE DROP 0.45Vdc @ 50mA max.

GENERAL SPECIFICATIONS

- STORAGE TEMPERATURE RANGE -40° TO +125° C
- OPERATING TEMPERATURE RANGE -40° TO +100° C
- INSULATION RESISTANCE (INPUT TO OUTPUT: INPUT TO OUTPUT TO GND) 10¹⁰ Ohms
- DEIECTRIC STRENGTH INPUT TO OUTPUT 4000Vdc (rms) min.
- INPUT TO OUTPUT CAPACITANCE 6pF typical
- VIBRATION 20–55° PEAK OR 10° DOUBLE AMPLITUDE CONDITION B PER MIL-STD-202, METHOD 204, 1600 G's 0.056 HALF-SINE PER MIL-STD-202, METHOD 213, CONDITION F
- MECHANICAL SHOCK 1000 G's 0.056 HALF-SINE PER MIL-STD-202, METHOD 213, CONDITION F

DC INPUT
STATUS LED IN GS MODULE ONLYAC INPUT
STATUS LED IN GS MODULE ONLY

ZONA:	SIDERON	SECTOR:	SIDERON	FECHA:	12-08-01
REV.:	0	DESCRIPCION:			
PROVEEDOR:	LITTELL INTERNATIONAL INC.		Nº PROVEEDOR: D-308691		
SIDERAR PLANTA SIDERCRON		HOJA 64 DE 67			
LA FIRMA SE RESERVA LA PROPRIETAT DE TOTS LOS Drets RESERVATS. ESTA DOCUMENTACION NO PUEDE SER COPIADA NI DISTRIBUIDA SIN EL CONSENTO ESCRITO DEL PROVEEDOR. LA FIRMA AUTORIZADA ES LA DE LA FIRMA EN LA CABEZA DE LA DOCUMENTACION. PROJECTO: _____ DIBUJO: _____ CONTROL: _____ APROBADO: _____ ESCALAS: _____ IMPUTACION: 1463 CAD T152106.DWG FILIO T1523AC					

DATE	SYM	WAS	BY
		D-305501	

* ABB DRIVE SETTINGS

PARAMETER	MAIN CONV.	PILER CONV. DRIVES 1-4	SIDE GUIDES & END STOPS	COMMENT
9901	1 = ENGLISH (US)	1 = ENGLISH (US)	1 = ENGLISH (US)	LANGUAGE
9902	1 = ABB STANDARD	1 = ABB STANDARD	1 = ABB STANDARD	APPLICATION MACRO
9905	460	460	460	MOTOR VOLTAGE
9906	12.5	4	0.7	MOTOR CURRENT
9907	60	60	60	MOTOR FREQUENCY
9908	1765	1760	1725	MOTOR SPEED
9909	10	3	1/3	MOTOR POWER
9910	82	80	58	MOTOR COS PWJ (PF)
1001	0 = NOT SEL	0 = NOT SEL	9 = DI1F,2R	EXT1 COMMANDS
1003	1 = FORWARD	1 = FORWARD	3 = REQUEST	DIRECTION
1105	60	60	60	EXT REF1 MAX (HZ)
1201	0 = NOT SEL	0 = NOT SEL	7 = DI5,4	CONST SPEED SEL
1202	0 = NOT SEL	0 = NOT SEL	30	CONST SPEED 1 (HZ)
1203	0 = NOT SEL	0 = NOT SEL	60	CONST SPEED 2 (HZ)
1204	0 = NOT SEL	0 = NOT SEL	0 = NOT SEL	CONST SPEED 3 (HZ)
1402	7 = SUPRV1 OVER	7 = SUPRV1 OVER	7 = SUPRV1 OVER	RELAY OUTPUT 2 (SUPERVISE PARAM. 3201)
1602	0 = LOCKED	0 = LOCKED	0 = LOCKED	PARAMETER LOCK
1604	5 = DI5	5 = DI5	0 = KEYPAD	FAULT RESET SELECT
1605	1 = LOCKED	1 = LOCKED	1 = LOCKED	LOCAL LOCK (EXTERNAL CONTROL ONLY)
2008	60	60	60	MAXIMUM FREQUENCY (HZ)
2102	1 = COAST	1 = COAST	1 = COAST	STOP FUNCTION
2201	0 = NOT SEL	0 = NOT SEL	5 = DI5	ACC/DEC 1/2 SEL
2202	3	3	1	ACCELER TIME 1 (SEC)
2203	60	60	1	DECELER TIME 1 (SEC)
2204	1	1	1	ACCELER TIME 2 (SEC)
2205	1	1	1	DECELER TIME 2 (SEC)
3003	3 = DI3	3 = DI3	0 = NOT SEL	EXTERNAL FAULT
TO SET UP RELAY 2 FUNCTION				
3201	103	103	103	SUPERVISE 1 PARAMETER
3202	29	20	10	SUPERVISE 1 LIMIT LOW (OF PARAM. 3201)
3203	32	23	12	SUPERVISE 1 LIMIT HI (OF PARAM. 3201)

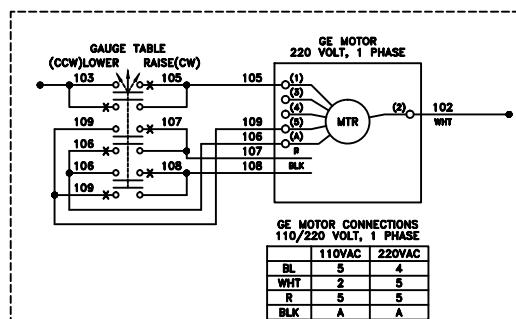
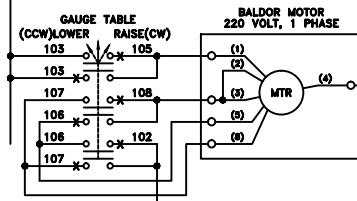
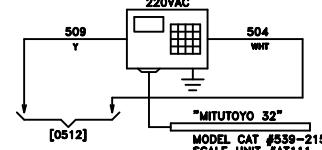
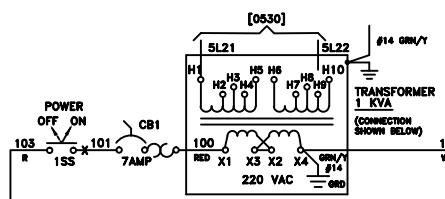
* NOTE: PARAMETERS WHICH ARE SHOWN HAVE VALUES DIFFERENT FROM FACTORY SETTINGS.
FOR FULL LISTING AND DESCRIPTION OF PARAMETERS AND DRIVE OPERATIONS, SEE ABB USER'S MANUAL IN LITTELL SERVICE MANUAL.

STACKER DRIVE SETTINGS

ZONA:	SIDERON	12-06-01
REV.:	DESCRIPCION	Ejec. Cont. / Aprob. Fecha
PROVEEDOR:	LITTELL INTERNATIONAL INC.	Nº PROVEEDOR: D-308691 HOJA 65 DE 67
 SIDERAR ZONA: SIDERON SECTOR: LINEA DE CORTE - ER-4E OBRA O EQUIPO: LINEA DE CORTE - ER-4E PLANTA SIDERCROM SCROLL SHEETING LINE LA FIRMA REEXPRESA LA PROPIEDAD DE ESTE DOCUMENTO Y SUS FICHAS DE DISEÑO, DIBUJO Y OTROS MATERIALES DE TODA CLASE DE LA FIRMA SIDERAR, S.A. DE C.V. Y SUS EMPRESAS AFILIADAS, SE RESERVA EL DERECHO DE PONER EN MARCHA AUTORIZACIONES ESPECIALES PARA SU USO.		
PROYECTO:	ESCALAS:	
DIBUJO:		
CONTROL:		
APROBADO:		
IMPUTACION:	5615-23-0028	CAD T1521065.DWG
		FILIO T1523BC

LITTELL JOB #94228 LINE (R → L)

DATE	SYM	WAS	BY
		D-305501	



NOTES:

COMPUTER MODEL UDR-200-1L
DIP SWITCH SETTINGS
RESOLUTION 0.0005"/0.005MM
POSITION 1 2 3 4 5 6 7 8
SETTINGS ON OFF ON OFF ON OFF ON OFF

TRANSFORMER CONNECTIONS (50/60 Hz)

PRIMARY VOLT	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
200	1L1		1L2		1L1		1L2			
220	1L1				1L2	1L1				1L2
380	1L1				JUMPER		1L2			
400	1L1				JUMPER		1L2			
415	1L1					JUMPER	1L2			
440	1L1						JUMPER	1L2		
480	1L1							JUMPER	1L2	

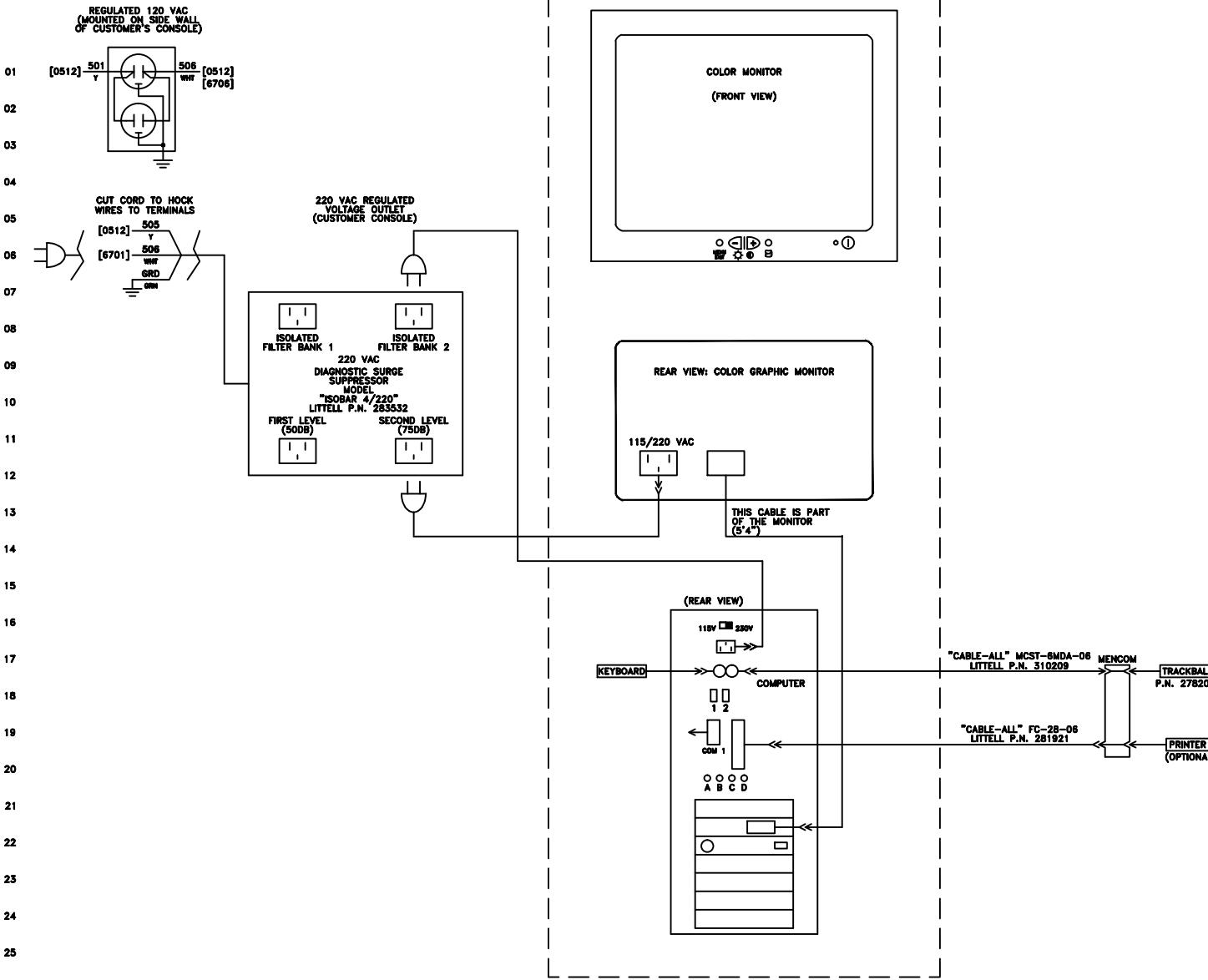
ZONA:	12-06-01
REV.:	DESCRIPCION
PROVEEDOR:	LITTELL INTERNATIONAL INC.
SIDERAR PLANTA SIDERCROM	HOJA 66 DE 67
Dibujo para Construcción	
Copia o Grupo: LINEA DE CORTE - ER-4E	
Scroll Sheeting Line	
Parte: Diagram-Electrical-Schematic	
PROYECTO:	ESCALAS:
DIBUJO:	5615-23-0028
CONTROL:	IMPUTACION: 1463 CAD T152106.DWG
APROB:	FILIO T1523BC

LITTELL JOB #94228 LINE (R → L)

LA FIRMA REPRESENTA LA PROPIEDAD DE ESTE DIBUJO Y SE RESERVA EL DERECHO DE PROPRIEDAD DE TODOS LOS DIBUJOS, FOTOCOPIAS Y REPRODUCCIONES DE ESTE DIBUJO. NO SE PUEDE AUTORIZAR SU USO SIN LA PREVIA AUTORIZACION ESCRITA.

DATE	SYM	WAS	BY
		D-305501	

CUSTOMER SUPPLIED



LITTELL JOB #94228 LINE (R → L)

0 EMISSION PARA CONSTRUCCION	12-06-01
REV.	DESCRIPCION
PROVEEDOR: LITTELL INTERNATIONAL, INC.	
REF. NO. D-308691 HOJA 67 CONT 68	
SIDERAR PLANTA SIDERCROM	
SECTOR: LINEA LITTELL	
OBRAS O EQUIPO: LINEA DE CORTE - ER-4E	
SCROLL SHEETING LINE	
PARTE: DIAGRAM-ELECTRICAL-SCHMATIC	
PROYECTO:	ESCALAS:
DIBUJO:	
CONTROL:	
APROBADO:	
IMPUTACION: 1463 CAD T1521007.DWG	
< FILE T1523ABC	

