

Technical Data Manual

Blasthole Drill

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BD77003 ROTARY BLASTHOLE DRILL PARTS MANUAL (LINK)	

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PREFACE

Only use this manual for the serial numbered equipment for which it was prepared.

The Parts Manual is a ready means of identifying parts, assemblies and structures of Komatsu manufactured equipment. It is intended for parts ordering purposes only.

Do not use any parts lists in the Electrical or Technical Data Manual to order parts. Refer to the Parts Manual when you need to order.

Before you order parts, refer to the Komatsu on-line parts catalog database or contact your Komatsu representative for the latest release of this manual. Komatsu is not responsible for the use of older or outdated information.

Only authorized and qualified maintenance and test personnel who have read, and are familiar with, the Equipment Operator Manual should use the Electrical or Technical Data Manual.

For assembling, operating, or maintaining Komatsu machines, consult the separate manuals provided for these purposes, or contact your local Komatsu representative for assistance.

Komatsu Mining Corp. Product Training and Publications

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General

This instruction includes information on the Electrical Data Manuals created for Electric Shovels, Blasthole Drills, and Draglines. These equipment have their own individually prepared Electrical Data Manual. Because these are electronic reproductions of controlled engineering documents, the documents in this manual are uncontrolled.

Only use the Electrical Data Manual for the serial numbered machine for which it was prepared. Additionally, check with your local Komatsu Office and compare the Record of Changes to be sure it is the latest release.

Your Komatsu Service Representative is available to answer your questions and assist you on request.

Manual Structure

An Electrical Data Manual is divided into major groups, Schematic Diagram with Electrical Inventory, and Cable Installation with Wire Lists, as shown in the Table of Contents. An Electrical Data Manual may only consist of Electrical Schematics and some widespread electrical assemblies.

Schematic Diagram with Electrical Inventory

The Inventory Number serves as the reference item link between the Schematic Diagram and the Electrical Inventory List.

Each component in the electrical schematic diagram has an Electrical Inventory Number associated with it. This Inventory Number may also be a location code intended to aid in physically locating the electrical component on the equipment. If applicable, appropriate instructions are provided at the front of the schematics to aid in using these location codes.

Schematic may also contain cross-reference numbers. When a circuit is continued from one sheet of the schematic to another sheet of the schematic, cross-reference numbers are utilized.

Cable Installation with Wire Lists

If provided, the Cable Installation contains individual letter/number Cable Symbols for each cable. These Cable Symbols associate the Cable Installation drawings to the separate Wire Lists. Double-click on Cable Symbols to move back-and-forth between the Cable Installation and the Wire Lists.

The letter part of the cable symbol is either an abbreviation or acronym of the transformer, cabinet, panel, module, or area of the machine the cable is connected from (or is located in.) The Cable Installation contains a table that describes this general machine area. The number part of the cable symbol refers to the specific machine location of the device (or connection area) when there are multiples of the same. For example, APB1 represents the Auxiliary Panel Breaker, position 1 cable. The Wire List Description defines each of these specific letter/number cable codes.

In addition to Cable Symbols, Wire Lists contain Wire Numbers. Wire Numbers associate the Wire List items to where they originate at on the Schematic Diagram.

There can be many different types of grounds in our equipment. They are typically differentiated by using wire numbers: 01GND, 02GND, etc. The various grounds are not the same and will be indicated on the schematic where that ground is located.

It is important to note that a neutral is not a ground. A neutral is an electrical point which has a net electrical charge of 0V. A ground is an electrical connection between equipment or component, and earth. Schematic diagrams should always be checked prior to ground check procedures.

Search by Inventory Number (Items Reference)

Serving as an inventory number index, the Search by Items Reference feature under the Search pulldown menu identifies the location of inventory numbers throughout this manual. The search result displays the matching inventory numbers in ascending order. The search result also allows you to go directly to where the item is in the list.

Search by Cable ID (Items Reference)

Serving as a cable symbol index, the Search by Items Reference feature under the Search pulldown menu identifies the location of cable symbols throughout this manual. The search result displays the matching cable symbols in ascending order. The search result also allows you to go directly to where the item is in the list.

Search by Part Number

Serving as a part number index, the Search by Part Number feature under the Search pulldown menu identifies the location of part numbers throughout this manual. The search result displays the matching part numbers in ascending order and lists the pages on which the part number will appear. The search result also allows you to go directly to the page the item appears on.

Search by Part Description

Serving as an alphabetical index, the Search by Part Description feature under the Search pulldown menu identifies the locations of a part description (or partial part description) throughout this manual. The search result displays the matching part descriptions and lists the pages on which the descriptions will appear. The search result also allows you to go directly to the page the item appears on.

Quantities

Quantities in this manual are shown as follows:

1. For piece parts, the quantity is the number of parts per functional application.
2. For electrical wire or cable, the quantity is one (bulk.) The length required must be specified.

Printing Schematics

The Schematic Diagram with Electrical Inventory and the Cable Installation are long lists with numerous sheets of pictures. The LinkOne Viewer treats each of these lists as one page.

If "Print Page" is selected for the Schematic Diagram with Electrical Inventory or the Cable Installation, Viewer will print out the entire list and all the pictures associated with the list.

To print out a single sheet of the Schematic Diagram with Electrical Inventory or the Cable Installation, select "Print Picture." To print out a short list of items contained in these long lists, use the "Selection List" feature to make the short list, and then print the selection list.

Ordering Repair Parts

To assure prompt and accurate service, confirm all part numbers selected from the machine's Electrical Data with those listed in the machine's Parts Manual. If there are differences, defer to the part number listed in the Parts Manual.

Refer to the Parts Manual Instructions for complete repair parts ordering instructions.

More Help

Refer to the documentation located under the Help menu. It contains information that will help you maximize the Electrical Data Manual with the many features offered.

Contacting Product Training and Publications

If you have comments, questions, or suggestions concerning this Electrical Data Manual, we would like to know about them.

Online:

Feedback regarding Parts Manual content can be communicated through the online Parts Manual site by using the Feedback menu item. This functionality is only available through the online Parts Manual site. Refer to the online Parts Manual help documentation for more information about this feature.

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ABBREVIATIONS

Abbreviation	Definition
#	NUMBER; POUND
2POS	2 POSITION
A	AMPERE
A/C	AIR CONDITIONING
AC	ALTERNATING CURRENT
ADJ / ADJ.	ADJUSTABLE; ADJUSTING
AL.	ALUMINUM
ALT	ALTERNATOR
AMB.	AMBIENT
AMP	AMPERE
APPROX.	APPROXIMATE
AR	AS REQUIRED
ASSY / ASSY.	ASSEMBLY
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BARFLAT	FLAT METAL BAR
BATT.	BATTERY
BL	BLACK
BLK.	BLOCK
BLU	BLUE
BRG / BRG.	BEARING
BRK / BRK.	BRAKE
BRKT	BRACKET
BRN	BROWN
BSHG	BUSHING
C	CENTIGRADE
C.E.	COMMUTATOR END
C.F.M.	CUBIC FEET PER MINUTE
CAC	CHARGE AIR COOLING; CHARGE AIR COOLER
CAD.	CADIUM
CAP / CAP.	CAP SCREW; CAPACITOR
CARR	CARRIAGE
CART	CARTRIDGE
CA-WT	CABLE WATERTIGHT
CCD	CHARGE COUPLED DEVICE
CCW	COUNTERCLOCKWISE
CEP	COMPONENT EXCHANGE PROGRAM
CHGING	CHARGING

ABBREVIATIONS

Abbreviation	Definition
CIRC BRKR	CIRCUIT BREAKER
CNTRL	CONTROL
COND	CONDUCTOR
CONT	CONTROL
CONV / CONV.	CONVERTER
CPRS	COMPRESSION; COMPRESSOR
CS	COUNTERSUNK
CSK.	COUNTERSUNK
CSKH	COUNTERSUNK HEAD
CTR	CENTER; CONTROLLER
CTS	COMPONENT TRACKING SYSTEM
CUYD	CUBIC YARD
CW	CLOCKWISE
CYL	CYLINDER
DC	DIRECT CURRENT
DE	DRIVE END
DEF	DIESEL EXHAUST FLUID
DEG / deg.	DEGREE
DIA.	DIAMETER
DIFF	DIFFERENTIAL
DPDT	DOUBLE POLE, DOUBLE THROW
DR.	DRIVER
DRILL	DRILLED
DWG.	DRAWING
E.L.	ELECTROLUMINESCENT
EA.	EACH
EL	ELBOW
ELEC	ELECTRICAL
ELEM	ELEMENT
EM	ELECTROMECHANICAL
EMGCY	EMERGENCY
ENG / ENG.	ENGINE
E-STOP	EMERGENCY STOP
EXH.	EXHAUST
EXT / EXT.	EXTERNAL
F	FAHRENHEIT
F.H.	FLAT HEAD
FIL HD	PHILISTER HEAD

ABBREVIATIONS

Abbreviation	Definition
FJ	FEMALE J.I.C. (HYDRAULIC FITTING)
FLEX	FLEXIBLE
FLTR	FILTER
FO	FEMALE O-RING
FOFS	FEMALE FACE SEAL
FOPS	FALLING OBJECT PROTECTION STRUCTURE
FP	FEMALE PIPE
FREQ.	FREQUENCY
FRIC	FRICTION
FT / FT.	FOOT
FTG	FITTING
GA	GAUGE
GAL	GALLON
GB	GIGABYTE
GEN.	GENERATOR
GET	GROUND ENGAGEMENT TOOLING
GL.	GALLON
GPM	GALLONS PER MINUTE
GR.	GRADE
GRN	GREEN
GRN/YEL	GREEN/YELLOW
GRY	GRAY
GUI	GRAPHIC USER INTERFACE
HD / HD.	HEAD
HDMI	HIGH-DEFINITION MULTIMEDIA INTERFACE
HEL	HELICAL
HEX	HEXAGON; HEXAGONAL
HHCS	HEX HEAD CAP SCREW
HID	HIGH INTENSITY DISCHARGE
HP	HORSE POWER
HST	HOIST
HV	HIGH VOLTAGE
HX	HEXAGONAL
HYD / HYD.	HYDRAULIC
I/O	INPUT/OUTPUT
ID / I.D.	INSIDE DIAMETER; INSIDE DIMENSION
ILL	ILLUMINATED
IN / IN.	INCHES

ABBREVIATIONS

Abbreviation	Definition
IND	INDEPENDENT; INDUCTION
INS.	INSULATED
INST	INSTALL; INSTALLATION
INSTL	INSTALL; INSTALLATION
INT	INTERMEDIATE; INTERNAL
km	KILOMETERS
KMAP	KOMATSU MINING ANALYTICS PLATFORM
L.F.	LEFT FRONT
L.R.	LEFT REAR
LB.	POUND
LBS	POUNDS
LED	LIGHT EMITTING DIODE
LG	LONG
LH / L.H.	LEFT HAND
LRG.	LARGE
LUBE	LUBRICANT; LUBRICATION
LVCC	LOW VOLTAGE CONTROL CABINET
LW	LOCK WASHER
LWR	LOWER
m	METER
M.P.H.	MILES PER HOUR
MACH	MACHINE
MAG.	MAGNETIC
MAN	MANUAL
MAX.	MAXIMUM
MCC	MOTOR CONTROL CABINET; MAIN CONTROL CABINET
MECH	MECHANICAL
MED	MEDIUM
MF	MICRO FARAD
MFD	MICRO FARAD
MFLD	MANIFOLD
MICROF	MICRO FARAD
MICROH	MICRO HENRIES
MIN.	MINIMUM; MINUTE
MINEAIR	MINE AIR SYSTEMS
MJ	MALE J.I.C. (HYDRAULIC FITTING)
MLC	MINE LOGIC CONTROLLER
MLH	MILLI HENRIES

ABBREVIATIONS

Abbreviation	Definition
mm	MILLIMETER
MM	METRIC MALE (Hydraulic Fitting)
MMO	METRIC MALE STRAIGHT THREAD O-RING
MO	MALE O-RING
MOD	MODEL; MODIFIED; MODIFICATION
MOFS	MALE FACE SEAL
MOM	MOMENTARY
MOV	METAL OXIDE VARISTOR
MP	MALE PIPE
MTG	MOUNTING
N.P.N.	NO PART NUMBER
NC	NATIONAL COARSE
NC / N.C.	NORMALLY CLOSED
NDE	NON-DRIVE END
NEG / NEG.	NEGATIVE
NF	NATIONAL FINE
NO / N.O.	NORMALLY OPEN
NO.	NUMBER
NPT	NATIONAL PIPE THREAD
NS	NOT SHOWN
NSS	NOT SOLD SEPARATELY; NOT SERVICED SEPARATELY
NYL	NYLON
O.D.E.	OPPOSITE DRIVE END
OD / O.D.	OUTSIDE DIAMETER; OUTSIDE DIMENSION
OGL	OPEN GEAR LUBE
ORN	ORANGE
OUT	OUTLET
OZ.	OUNCE
P.E.	PINION END
P/N	PART NUMBER
PDT	PUMP DRIVE TRANSMISSION
PF	PICO FARAD
PFD	PICO FARAD
PH / P.H.	PAN HEAD
PHL	PHILIPS HEAD
PLC	PROGRAMMABLE LOGIC CONTROLLER
PN	PAN; PART NUMBER
POS / POS.	POSITION; POSITIVE

ABBREVIATIONS

Abbreviation	Definition
POT.	POTENTIOMETER
PRESS / PRESS.	PRESSURE
PRIM	PRIMARY
PSI	POUNDS PER SQUARE INCH
PT / PT.	POINT
PTZ	PAN-TILT-ZOOM
PUR	PURCHASED; PURPLE
QTY.	QUANTITY
QUAD	QUADRANGLE
R.F.	RIGHT FRONT
R.R.	RIGHT REAR
RAD.	RADIATOR
RCV	RESISTIVE/CAPACITIVE/INDUCTIVE
RD.	ROUND
RECT.	RECTIFIER
REF	REFERENCE
RES	RESISTANT
RET / RET.	RETAINER
RH / R.H.	RIGHT HAND
RLR	ROLLER
ROPS	ROLL OVER PROTECTION STRUCTURE
ROT	ROTARY
RPM	REVOLUTIONS PER MINUTE
RPT	ROTOR POSITION TRANSDUCER
RR	RIGHT REAR
RSVR	RESERVOIR
RTC	ROOM TEMPERATURE CURE
RTD	RESISTANCE TEMPERATURE DETECTOR
RTV	ROOM TEMPERATURE VULCANIZING (SEALANT)
S.H.	SOCKET HEAD
S.S.	STAINLESS STEEL
SEC	SEQUENTIAL EVENTS CONTROLLER; STANDARD ELECTRIC CONTROLLER
SEC / SEC.	SECONDARY
SECT.	SECTION
SECTN	SECTION
SF	SPLIT FLANGE
SHCS	SOCKET HEAD CAP SCREW
SHRK CLR	SHRINK CLEAR

ABBREVIATIONS

Abbreviation	Definition
SKT.	SOCKET
SM.	SMALL
SOC	SOCKET
SOC HD	SOCKET HEAD
SPDT	SINGLE POLE, DOUBLE THROW
SPST	SINGLE POLE, SINGLE THROW
SQ.	SQUARE
SR	SWITCHED RELUCTANCE
SS	STAINLESS STEEL
ST.	STREET
STD.	STANDARD
STR / STR.	STRAIGHT; STREET; STRUCTURE
STRG	STEERING
SUC	SUCTION
SW.	SWITCH
SWV	SWIVEL
T	TAPER; TOOTH
T/M	TRACTION MOTOR
TACH.	TACHOMETER
TEMP / TEMP.	TEMPERATURE
TERM / TERM.	TERMINAL
THD.	THREAD
THHN	THERMOPLASTIC HIGH HEAT-RESISTANT NYLON-COATED
TNDM.	TANDEM
TRANS	TRANSMISSION
TRF.	TRANSFORMER
UNC	UNIFIED NATIONAL COARSE
UNF	UNIFIED NATIONAL FINE
UNINS.	UNINSULATED
UPR	UPPER
UPS	UNINTERRUPTIBLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
V	VOLT
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VR	VOLTAGE REGULATOR
W	WATT
W/	WITH

ABBREVIATIONS

Abbreviation	Definition
W/O	WITHOUT
WD	WIDE
WHT	WHITE
WP	WEATHER PROOF
WPR	WIPER
XFMR	TRANSFORMER
XMISSION	TRANSMISSION
YD	YARD

REVISION RECORD

Version	Revision Description	Author	Date
0000	Initial Release	CM	04/21
0001	Updated to include the Hydraulic and Main Air Schematics.	GRK	10/22
0002	Update ABBR page. Add Drill Automation Panel Schematics.	GRK	08/23
0003	Updated Main Air Schematic.	GRK	08/24
0004	Updated Main Air Schematic.	GRK	09/24
0005	Updated component list.	GRK	02/25
0006	Updates cover and Revision Records. Adds Stability Diagram.	GRK	07/25

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

SHEET NO.	SHEET DESCRIPTION
1A	TABLE OF CONTENTS
1C	OPTIONAL EQUIPMENT LIST
1D-1T	COMPONENT LIST
2A	CANBUS NETWORK 1
2C	CANBUS NETWORK 2
2E	CANBUS NETWORK 3
2F	CANBUS NETWORK 4
2G	CAN POWER NETWORK
2H	ETHERNET/USB NETWORK
3A	ONE-LINE DIAGRAM
4A	REMOTE I/O DIAGRAM
5A	J1939 BACKBONE DIAGRAM
10AA	BATTERIES & ALTERNATOR START EQUIPMENT
10AC	STARTER SUPPLY
10AE	FUSE LOADS & AUXILIARY START EQUIPMENT
10AF	AUXILIARY EQUIPMENT SUPPLY
10CA	CONTROL CABINET AUXILIARY EQUIPMENT
10CC	CHASSIS FLOOD LIGHTS
10CE	CHASSIS WORK LIGHTS
10CH	AUXILIARY EQUIPMENT
10K	BATTERY BOX AUXILIARY EQUIPMENT
12A-12CC	CUMMINS ENGINE EQUIPMENT
13A-13AC	REGULATED POWER SUPPLY
13C	ETHERNET SWITCH
13EA-13EC	MACHINE EMERGENCY STOP CIRCUIT
13FA-13FC	MACHINE GROUNDS
14AA-14AC	SPARE CABLE WIRE RUNS
15AA	CONTROLLER
15AC	OPTIONAL - PROFINET COMMUNICATION MODULE
15AE-15AG	CONTROLLER - CANBUS COMMUNICATION MODULES
15CA-15CC	CONTROL CABINET I/O MODULE - INPUTS
15CE-15CF	CONTROL CABINET I/O MODULE - OUTPUTS
15CH-15CK	CONTROL CABINET I/O MODULE - INPUTS
15CM-15CR	CONTROL CABINET I/O MODULE - OUTPUTS
16A	CONTROL CABINET I/O MODULE SUPPLY POWER
18A	CONTROL CABINET I/O MODULE - CHASSIS FLOOD LIGHTS
18CA-18CG	CHASSIS FLOOD LIGHTS
19AC	REMOTE MOTION STOP
21AA-21AC	J1939 BUS
30A	CHASSIS BUS - PROPEL BRAKE TRANSDUCER
30CC-30CE	CHASSIS BUS - COOLING FAN EQUIPMENT
30CF	CHASSIS BUS - TRANSMISSION EQUIPMENT
30EA-30EC	CHASSIS BUS - HYDRAULIC TANK I/O
30F	CHASSIS BUS - HYDRAULIC PUMP I/O ASSEMBLY
30GA-30GF	REAR CHASSIS BUS - HYDRAULIC PUMP I/O ASSEMBLY
30HA	REAR CHASSIS BUS - GREASE TANK I/O ASSEMBLY
30HB	REAR CHASSIS BUS - REAR I/O MODULE
30K	REAR CHASSIS BUS - COMPRESSOR OIL INLET PRESSURE XDCR
30MA	REAR CHASSIS BUS - DIVERTER I/O ASSEMBLY
30MC	REAR CHASSIS BUS - POWER SKID I/O MODULE
30R	LUBE PUMP CONTROL
35A	LEVELING BUS - RIGHT FRONT I/O
35E	LEVELING BUS - FRONT I/O MODULE
35K	LEVELING BUS - LEFT REAR I/O
35T	LEVELING BUS - RIGHT REAR I/O
40A	CAB BUS - REAR DECK I/O
50A	PRESSURE WASHER
75A-75E	MAST BUS - A FRAME I/O
76AA-76AE	MAST BUS - MAST LOWER RIGHT SIDE I/O
76CA-76CF	MAST BUS - MAST LOWER LEFT SIDE I/O
77AA-77AC	CARRIAGE BUS - MAST MIDDLE I/O
78A-78E	CARRIAGE BUS - CARRIAGE I/O
400A	CAB 24VDC SUPPLY FUSES
400C	CAB 12VDC EQUIPMENT
400E-400G	CAB AIR CONDITIONER I/O
402A-402C	CAB INTERFACE PLATE
404A-404E	CAB REGULATED 24VDC EQUIPMENT
406C	CAB POWER OUTPUT MODULE - WIPER MOTOR
406E	CAB RADIO
407EA-407EC	CAB I/O MODULE - INPUTS
407EE	CAB I/O MODULE - OUTPUTS
407EF	CAB 24VDC SUPPLY #2 - I/O MODULE - OUTPUTS
409A	CAB CAN COMMUNICATIONS DISTRIBUTION BLOCK
409AC	CAB CAN COMMUNICATIONS - MAST I/O
409C	CAB CAN COMMUNICATIONS - CONSOLE
410A-410E	CAB CAN COMMUNICATIONS - CHAIR

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KOMATSU

SCHEMATIC DIAGRAM - 77003

DRAWN/REVIEWED BY: K.LATHAM	DATE 03/02/2021
APPROVED BY: K.LATHAM	DATE 03/02/2021
CHEF ENGINEER: K.LATHAM	DATE 03/02/2021

MODEL NO: PH77	REV NO: 5521153
SIZE: DRAWING NUMBER C R109989	REV DATE: 03/02/2021
LOCATION: SILLASTO R111935	REV BY: 04
SHEET NO: 1A	SHEET COUNT: 10



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

OPTION #	DESCRIPTION	APPLICABLE SHEETS
DPT1		
DPT2	CUMMINS ENGINE	
DPT3	RADIO REMOTE PROPEL	
DPT4	ARTIC WEATHER PACKAGE	
DPT5	MAST ACCESS PLATFORM	
DPT6	COLD WEATHER PACKAGE (-40°C)	10AE,10FA,10H,12EA,13EA,15CR,30MC,35A,35E
DPT7	TELEOP REMOTE CONTROL	
DPT8	3D CAMERA SYSTEM	
DPT9	CAMERA SYSTEM	
DPT10	AUXILIARY POWER UNIT	10AA,10AE,10H,21AA,21AC
DPT11	AUXILIARY POWER UNIT - CONTROL	10H
DPT12	ANGLE DRILLING	75A,75C
DPT13	DOWN THE HOLE HAMMER	
DPT14	BIT CAROUSEL	76AA,76AC,76CC,76CE
DPT15	PIPE BREAKOUT WRENCH RAISE/LOWER	76CF
DPT16	CUTTING PILE SPRAYER	
DPT17	BIT LUBE	30HA,30R
DPT18	MPG LUBE	30HA,30R
DPT19	2 - STAGE COMPRESSOR	
DPT20	4 POT CAROUSEL	
DPT21	6 POT CAROUSEL	
DPT22	DECK CRANE	10AA,10CH
DPT23	PREVAIL	400A
DPT24	MAST WINCH	77AC
DPT25	DRY DUST COLLECTOR	
DPT26	PRESSURE WASHER	
DPT27	MAST BEACON	
DPT28	DUST CURTAIN RAISE/LOWER	
DPT29	CUMMINS TIER4	12CA,12CC,12D,12DA,12DC,12DE,13AC,13FA,21AC
DPT30	CAB REFRIDGERATOR	
DPT31	CAB MICROWAVE	
DPT32	CAB RADIO	406E
DPT33	CAB WIPER	406C,407EC,407EF
DPT34	OPERATOR SEAT SWITCH	

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OPTIONAL EQUIPMENT LIST

DRAWN/REVISED BY:	DATE	MODEL NO.	REV. NO.
AHANSJON	03/02/2021	P177	5521153
CHECKED BY:	DATE	SIZE	DRAWING NUMBER
EJ/STISS	03/21	C	R109989
OWNER ENGINEER	DATE	LOCATION	SIMILAR TO
KLATHAN	03/21		R111335

REV. DATE 03/02/2021
REV. 04
SHEET 10
CONT.



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

COMPONENT REPORT				
TAG NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
ALT_APU	AUX POWER	UNIT	ALTERNATOR	10AA
ALT_DRILL		DRILL	ALTERNATOR	10AA
BA_MB1	MASTER BATTERIES #1			10AA
BA_MB2	MASTER BATTERIES #2			10AA
BA_MB3	MASTER BATTERIES #3			10AA
BA_MB4	MASTER BATTERIES #4			10AA
BA_MB5	MASTER BATTERIES #5			10AA
BA_MB6	MASTER BATTERIES #6			10AA
BB-BN	BATTERY	NEGATIVE	BUS BAR	10AA
BB-BP	BATTERY	POSITIVE	BUS BAR	10AA
DS_SDS	BATTERY	DISCONNECT	SWITCH	10AA
FU_CP	CONTRL PANEL	FUSE		10AA
FU_CVP	COLD WEATHER	PUMPS	FUSE	10AA
FU_DC	DECK CRANE	UNIT FUSE		10AA
FU_MAIN	MAIN	FUSE		10AA
FU_T4	CUMMINS TIER 4	FUSE		10AA
FU10AA-191	APU INLINE	ALT FUSE #1		10AA
FU10AA-201	APU INLINE	ALT FUSE #2		10AA
FU10AA-261	CUMMINS INLINE	ALT FUSE #1		10AA
FU10AA-281	CUMMINS INLINE	ALT FUSE #2		10AA
LT_PWR	MAIN BATTERY	POWER	LIGHT	10AA
BB-BN	BATTERY	NEGATIVE	BUS BAR	10AC
BB-BP	BATTERY	POSITIVE	BUS BAR	10AC
BB-SN	STARTER	NEGATIVE	BUS BAR	10AC
BB-SP	STARTER	POSITIVE	BUS BAR	10AC
CR_P		PRELUBE	RELAY	10AC
CR_S1	STARTER #1	START	RELAY	10AC
CR_S2	STARTER #2	START	RELAY	10AC
DS_SDS	STARTER	DISCONNECT SWITCH	OFF ON	10AC
LT_SP	STARTER	POWER	LIGHT	10AC
BB-BN	BATTERY	NEGATIVE	BUS BAR	10AE
BB-MP	MAIN	POSITIVE	BUS BAR	10AE
DB_MN	DISTRIBUTION	BLOCK	MAIN NEGATIVE	10AE
DB_MP	DISTRIBUTION	BLOCK	MAIN POSITIVE	10AE
FU_AE	AUXILIARY	EQUIPMENT	FUSE	10AE
FU_AES1	BOARDING STAIR	SUPPLY FUSE		10AE
FU_AES2	AUXILIARY	EQUIPMENT	SUPPLY # 2 FUSE	10AE
FU_CVH1	COLD WEATHER	HEATER	FUSE #1	10AE
FU_CVH2	COLD WEATHER	HEATER	FUSE #2	10AE
FU_DAP1	DRILL AUTOMATION	POWER	FUSE #1	10AE
FU_EU	ENGINE CONTROL	UNIT FUSE		10AE
FU_IQBP	I/O BUS	POWER	FUSE	10AE
FU_ML	MACHINE	LIGHTING	FUSE	10AE
FU_DCP	OPERATOR'S	CAB POWER	FUSE	10AE
FU_P		POWER	FUSE	10AE
FU_UPS	CONTRL	CABINET	UPS FUSE	10AE
LT_CPWR	CONTRL	POWER	LIGHT	10AE
AH_MLF	HORN MACHINE	LEFT FRONT		10AF
AH_MRR	HORN MACHINE	RIGHT REAR		10AF
FU_CCGC	CONTROL CABINET	GENERAL CONTROL	FUSE	10AF
FU_CCIDM	CONTROL CABINET	I/O MODULE	FUSE	10AF
FU_DCLR	DUST CURTAIN	RAISE/LOWER	FUSE	10AF
FU_EC	ENGINE	CONTROL	FUSE	10AF
FU_ESIG	ENGINE	SIGNAL	FUSE	10AF
FU_KSS	KEY SWITCH	SUPPLY		10AF
FU_LPS	LUBE PUMP	SUPPLY	FUSE	10AF
FU_PH	PROPEL	HORN	FUSE	10AF
FU_PW	PRESSURE	WASHER	FUSE	10AF
FU_S2S1	CUTTING PILE	SPRAYER	SUPPLY FUSE	10AF
FU_BH	BATTERY	HEATERS	FUSE	10CA
FU_CCLTH	CONTROL CABINET	LOW TEMPERATURE	HEATER FUSE	10CA
FU_CCX210	CONTROL CABINET	I/O MODULE X21	OUTPUT FUSE	10CA
FU_CTCC	COMPRESSOR TORQUE	CONVERTER CONTROL	FUSE	10CA
FU_FB1	CONTROL CABINET	LIGHTS	FUSE	10CA
FU_FB1	FIRE SUPPRESSION	SUPPLY	FUSE	10CA
FU_HPACPRV	HYDRAULIC PUMP	AUXILIARY/COOLING	PRESS RELIEF VALVE FUSE	10CA
FU_MB	MAST	BEACON	FUSE	10CA
FU_MPWL	MAST PLATFORM	WORK LIGHT	FUSE	10CA
FU_VLCR1	WORK LIGHT	CONTROL RELAY 1	FUSE	10CA
FU_VLPR	WORK LIGHT	POWER	FUSE	10CA
CR_VLC1	WORK LIGHT	CONTROL #1	RELAY	10CC
FU_VLPR1	WORK LIGHT	POWER 1	FUSE	10CC
FU_VLPR2	WORK LIGHT	POWER 2	FUSE	10CC
LG_LFW	LEFT FRONT	WORK LIGHT		10CC
LG_RFV	RIGHT FRONT	WORK LIGHT		10CC
LG_RRJV	RIGHT REAR	JACK WORK	LIGHT	10CC
SW_WLB	WORK LIGHTS	SELECTOR SWITCH	(BOARDING)	10CC
CR_MPVL	MAST PLATFORM	WORK LIGHTS	CONTROL RELAY	10CE
FU_MSVL1	MAST SUPPORT	WORK LIGHT	FUSE #1	10CE
FU_MSVL2	MAST SUPPORT	WORK LIGHT	FUSE #2	10CE

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JOY GLOBAL SURFACE MINING INC
 4400 W. NATIONAL AVE
 MULTWAUER, WI 53244-8884

KOMATSU
 DRAWING TITLE
 COMPONENT REPORT

DRAWING NO: P177
 MODEL NO: 5521153
 SIZE: DRAWING NUMBER
C R109989

CHECKED BY: DATE: 03/21/2021
 ENGINEER: DATE: 03/21/2021
 CHIEF ENGINEER: K.LATHAM DATE: 03/21/2021

LOCATION: R111335
 SIMILAR TO: R111335
 SHEET: 17
 COUNT: 12

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAG NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
DV_GCT0	CONTROL CABINET	TEMPERATURE CONTROL		10CF
HTR_CCHC1	CONTROL CABINET	HEATER/COOLER DOOR		10CF
HTR_CCHC2	CONTROL CABINET	HEATER/COOLER SIDE		10CF
LT_OCLT1	CONTROL CABINET	LIGHT #1		10CG
LT_OCLT2	CONTROL CABINET	LIGHT #2		10CG
DC_CTRL	DECK CRANE	CONTROL		10CH
DC_P	DECK CRANE	POWER PACK		10CH
FU_DCC	DECK CRANE	CONTROL	FUSE #1	10CH
SW_DC	DECK CRANE	DISCONNECT	SWITCH	10CH
FU_CAR1	COMPRESSOR AIR	RESERVOIR HEATER #1	FUSE	10FA
FU_CAR2	COMPRESSOR AIR	RESERVOIR HEATER #2	FUSE	10FA
FU_CAR3	COMPRESSOR AIR	RESERVOIR HEATER #3	FUSE	10FA
FU_EOP1	ENGINE OIL PAN	HEATER #1	FUSE	10FA
FU_HTT	HEAT TRACE	TAPE	FUSE	10FA
FU_PDT1	PUMP DRIVE TRANSMISSION	HEATER #1	FUSE	10FA
FU_PDT2	PUMP DRIVE TRANSMISSION	HEATER #2	FUSE	10FA
FU_TCOR1	TORQUE CONVERTER	OIL RESERVOIR HEATER #1	FUSE	10FA
FU_TCOR2	TORQUE CONVERTER	OIL RESERVOIR HEATER #2	FUSE	10FA
ALT_APU0	APU	ONBOARD	ALTERNATOR	10H
APU_ECM	AUXILIARY POWER UNIT	ECM		10H
BA_APU1	APU BATTERIES #1			10H
BA_APU2	APU BATTERIES #2			10H
DS_APUDB	APU	DISCONNECT	SWITCH	10H
FU_APUB	APU INLINE	BATTERY FUSE #1		10H
MS_APU	APU	STARTER		10H
REC_APU1	APU INSTRUMENT	PANEL	RECEPTACLE	10H
REC_ECM	94 WAY ECM	CONNECTOR		10H
SW_APU5	APU SPEED	SWITCH		10H
DV_BBTO	BATTERY BOX	TEMPERATURE	CONTROL	10K
HTR_BBHC	BATTERY BOX	HEATER/COOLER		10K
CR_EPM5	ENGINE	PRELUBE	MAG SWITCH	12A
MS_CES1	CUMMINS	ENGINE	STARTER #1	12A
MS_CES2	CUMMINS	ENGINE	STARTER #2	12A
MTR_PL		PRELUBE	MOTOR	12A
PS_EP	ENGINE PRELUBE	PRESSURE	SWITCH	12A
SV_CS1	CUMMINS	STARTER #1	SOLENOID	12A
SV_CS2	CUMMINS	STARTER #2	SOLENOID	12A
FU_CEC51	CUMMINS ENGINE	CONTROL SUPPLY #1	FUSE	12CA
FU_CEC52	CUMMINS ENGINE	CONTROL SUPPLY #2	FUSE	12CA
FU_CEC53	CUMMINS ENGINE	CONTROL SUPPLY #3	FUSE	12CA
FU_CEC54	CUMMINS ENGINE	CONTROL SUPPLY #4	FUSE	12CA
FU_PL	CUMMINS ENGINE	PRELUBE	FUSE	12CA
C_ECM	MULTI ECM	ENGINE CONTROL BOX	(CUMMINS SUPPLIED)	12CC
LS_WIF	WATER IN	FUEL	SENSOR	12CC
PMP_FF1P	FUEL FILTER	FUEL LIFT	PUMP	12CC
SW_FCL	ENGINE COOLANT	LEVEL SWITCH		12CC
CR_DL	DOSING LEFT	RELAY		12D
CR_DR	DOSING RIGHT	RELAY		12D
CR_LHL	LINE HEATER	LEFT RELAY		12D
CR_LHR	LINE HEATER	RIGHT RELAY		12D
FU_DL	DOSING LEFT	FUSE		12D
FU_DR	DOSING	RIGHT FUSE		12D
FU_FFH	FUEL FILTER	HEATER	FUSE	12D
FU_LHL1	LINE HEATER	LEFT FUSE #1		12D
FU_LHL2	LINE HEATER	LEFT FUSE #2		12D
FU_LHL3	LINE HEATER	LEFT FUSE #3		12D
FU_LHR1	LINE HEATER	RIGHT FUSE #1		12D
FU_LHR2	LINE HEATER	RIGHT FUSE#2		12D
FU_LHR3	LINE HEATER	RIGHT FUSE #3		12D
FU_QFAS	QUICK FILL	AUTO STOP	FUSE	12D
FU_QFH	QUICK FILL	HOSE	FUSE	12D
FU_QFR	QUICK FILL	RECIEVER	FUSE	12D
HTR_FFH	FUEL FILTER	HEATER		12D
HTR_QFAS	QUICK FILL	AUTO STOP	HEATER	12D
HTR_QFH	QUICK FILL	HOSE HEATER		12D
HTR_QFR	QUICK FILL	RECIEVER	HEATER	12D
REC_MAIN	47 PIN	MAIN A/T	HARNESS	12DA
REC_AUX	31 PIN	AUX A/T	HARNESS	12DC
ALT_T4	TIER 4	DRILL	ALTERNATOR	12DE
FU10AA-281	TIER 4	ALT FUSE CABLE		12DE
CWP_12C	DC TO DC CONVERTER	24V TO 12V		12EA
FU_ABH	APU BATTERY	HEATER FUSE #1		12EA
FU_AHEC	COOLANPT	PUMP	FUSE	12EA
FU_AHECP	APU HEAT CIRC	PUMP	POWER FUSE	12EA
FU_BP1	BATTERY PAD	HEATER FUSE #1		12EA
FU_BP2	BATTERY PAD	HEATER FUSE #1		12EA
FU_BP3	BATTERY PAD	HEATER FUSE #1		12EA
FU_CWC	COLD WEATHER	FUSE		12EA
FU_DCC	DC CONVERTER	FUSE		12EA
FU_HTHG	HYDRAULIC TANK	HEAT CIRC. PUMP	FUSE	12EA

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JOY GLOBAL SURFACE MINING INC.
 4400 W. NATIONAL AVE.
 MILLVILLE, VA 22114-3504
 DRAWING TITLE: **COMPONENT REPORT**

DRAWN/REVISED BY:	DATE:	CHECKED BY:	DATE:
ALHANSON	03/02/2021	C	03/02/2021
ENGINEER	03/02/21	R109989	04
CHIEF ENGINEER			
LOCATION			

MODEL NO.: P47Z
 SIZE: DRAWING NUMBER
C R109989
 LOCATION: SULLYARTO
 R111853
 SHEET: 15
 TOTAL: 15



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAG NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
CR_PMS		PROPEL MODE	SELECT RELAY	15CE
CR_RST	E-STOP	RESET	CONTROL RELAY	15CE
M_DCA	DUST CURTAIN	ACTUATOR	MOTOR	15CE
CON_AS	AUXILIARIES	START	CONTACTOR	15CF
CON_MCC	MASTER	CONTROL	CONTACTOR	15CF
CR_AS		AUXILIARIES START	RELAY	15CF
CR_CPS	CUTTING PILE	SPRAYER PUMP	RELAY	15CF
CR_MC		MASTER CONTROL	RELAY	15CF
CR_MCP1		MAIN CONTACTOR POSITIVE	CONTROL RELAY #1	15CF
CR_MCP2		MAIN CONTACTOR POSITIVE	CONTROL RELAY #2	15CF
CR_PH	PROPEL	HORN	RELAY	15CF
IO_CCMA	CONTROL CABINET	I/O MODULE A		15CH
CR_CFD	COOLANT FLOW	DISABLE	RELAY	15CM
CR_CFE	COOLANT FLOW	ENABLE	RELAY	15CM
CR_SPARE1	SPARE	#1	RELAY	15CM
CR_SPARE2	SPARE	#2	RELAY	15CM
CON_CWH1	COLD WEATHER	HEATER #1 CONTACTOR		15CR
CON_CWH2	COLD WEATHER	HEATER #2 CONTACTOR		15CR
CR_AHEO	COOLANT	PUMP	ENABLE	15CR
CR_CWC	COLD	WEATHER CLUTCH		15CR
CR_HTHO	HYDRAULIC TANK	HEAT CIRCULATION	PUMP ENABLE	15CR
CR_WICW1	WATER INJECTION	COLD WEATHER	RELAY 1	15CR
CR_WICW2	WATER INJECTION	COLD WEATHER	RELAY 2	15CR
FU_AIOB	AUTO LEVEL	I/O BUS	FUSE	16A
FU_CIOB1	CHASSIS	I/O BUS	FUSE #1	16A
FU_CIOB2	CHASSIS I/O BUS	POWER #2	FUSE	16A
FU_MCIOB1	MAST / CARRIAGE	I/O BUS	FUSE	16A
FU_MCIOB2	MAST/CARRIAGE	I/O BUS #2	FUSE	16A
FU_SIOB	Spare #1	I/O BUS	FUSE	16A
FU_S3IOB	SPARE #3	I/O BUS	FUSE	16A
FU_S4IOB	SPARE #4	I/O BUS	FUSE	16A
IO_CLM	CHASSIS LIGHTING	I/O MODULE		16A
FU_FPL	FRONT	PROPEL LIGHTS	FUSE	16CA
FU_PLF	PROPEL LIGHTS	FUSE		16CA
FU_RCPL	REAR CAB	PROPEL LIGHTS	FUSE	16CA
FU_RPL	REAR	PROPEL LIGHTS	FUSE	16CA
LG_LFP	LEFT FRONT	PROPEL LIGHT	ASFDD	16CA
LG_LRP	LEFT REAR	PROPEL LIGHT		16CA
LG_RFP	RIGHT FRONT	PROPEL LIGHT		16CA
LG_RRCP	RIGHT REAR	CAB PLATFORM	PROPEL LIGHT	16CA
LG_RRP	RIGHT REAR	PROPEL LIGHT		16CA
FU_BLF1	BIT LIGHTS #1	FUSE		16CC
FU_BLF2	BIT LIGHTS #2	FUSE		16CC
FU_FLF1	FRONT	LIGHTS #1	FUSE	16CC
FU_FLF2	FRONT	LIGHTS #2	FUSE	16CC
LG_LFF	LEFT FRONT	FLOOD LIGHT		16CC
LG_LRF	LEFT REAR	FLOOD LIGHT		16CC
LG_RFF	RIGHT FRONT	FLOOD LIGHT		16CC
LG_RRF	RIGHT REAR	FLOOD LIGHT		16CC
LG_UCB	UNDER CAB	BIT LIGHT		16CC
FU_LS2	LIGHTS	SPARE #2	FUSE	16CE
FU_LS4	LIGHTS	SPARE #4		16CE
FU_PWB	PROPEL	WARNING	BEACON FUSE	16CE
FU_RDBV1	REAR DECK	BIT VIEW LIGHT	FUSE	16CE
LG_PWB	PROPEL	WARNING	BEACON	16CE
LG_RDBV1	REAR DECK	BIT VIEW	LIGHT #1	16CE
FU_GLF1	GROUND	LIGHTS #1	FUSE	16CF
FU_GLF2	GROUND	LIGHTS #2	FUSE	16CF
FU_GLF3	GROUND	LIGHTS #3	FUSE	16CF
FU_GLF4	GROUND	LIGHTS #4	FUSE	16CF
LG_LFG	LEFT FRONT	GROUND	LIGHT	16CF
LG_LRG	LEFT REAR	GROUND	LIGHT	16CF
LG_RCG	REAR CENTER	GROUND	LIGHT	16CF
LG_RFG	RIGHT FRONT	GROUND	LIGHT	16CF
LG_RRG	RIGHT REAR	GROUND	LIGHT	16CF
FU_O10F1	OUTPUT 10	#1	FUSE	16CG
FU_O10F2	OUTPUT 10	#2	FUSE	16CG
FU_O91	OUTPUT 9	#1	FUSE	16CG
FU_O92	OUTPUT 9	#2	FUSE	16CG
LG_RRDF	RIGHT REAR DECK	FLOOD LIGHT		16CG
LG_RRDM1	RIGHT REAR DECK	MAST LIGHT #1		16CG
LG_RRDM2	RIGHT REAR DECK	MAST LIGHT #2		16CG
CR_RES1	REMOTE	E-STOP #1	RELAY	19A
CR_RES2	REMOTE	E-STOP #2	RELAY	19A
CR_RMS	MOTION STOP	RELAY		19AC
C_CTC	COMPRESSOR	TORQUE CONVERTER	CONTROL	21AA
TCC_APUA	AUX POWER UNIT	ALTERNATOR	CANBUS T	21AA
TCC_COMP1	COMPRESSOR	CONTROL	CANBUS T	21AA
GR_CJB	COMPRESSOR	J-BOX	ENCL. GRD	21AC
LA_CAI	COMPRESSOR	AIR INLET	VALVE	21AC

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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE, WI 53214-9584

KOMATSU

COMPONENT REPORT

DATE	DATE	DATE	DATE	DATE	DATE
03/02/2021	03/21	09/21			

DRWING/REVISED BY: A. HANSON
CHECKED BY: E. WESS
DATE: 09/21

MODE NO.: PRT7
SIZE: DRAWING NUMBER
C R109989
LOCATION

ENR NO.: 5527153
REV DATE: 03/02/2021
REV: 04
SHEET: 13
COUNT: 13

CHIEF ENGINEER: KLATHAM



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAG NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
R_J1939	J1939	CANBUS	RESISTOR TERMINATING	21AC
TCC_AR	ALTERNATOR	REGULATOR	CANBUS T	21AC
TCC_CAI	COMPRESSDR	AIR INLET VALVE	CANBUS T	21AC
TCC_T4AR	TIER 4	ALT REGULATOR	CANBUS T	21AC
VC_BV	BIT VIEW	VIDEO CAMERA		22AA
VC_MV	MAST VIEW	VIDEO CAMERA		22AA
PT_PPB	PARK	BRAKE	PRESSURE XDCR	30A
TCC_PL	PROPEL	LEFT ENCODER	COMMUNICATION T	30A
TCC_PR	PROPEL	RIGHT ENCODER	COMMUNICATION T	30A
ID_ENG	ENGINE	I/O MODULE		30CC
RTD_CEHTAI	COOLING ENGINE	HIGH TEMP AIR INLET	TEMPERATURE	30CC
RTD_CEHTAO	COOLING ENGINE	HIGH TEMP AIR OUTLET	TEMPERATURE	30CC
RTD_CELTAI	COOLING ENGINE	LOW TEMP INLET	TEMPERATURE	30CC
RTD_CELTAO	COOLING ENGINE	LOW TEMP OUTLET	TEMPERATURE	30CC
TCC_ENG	ENGINE	I/O MODULE	COMMUNICATION T	30CC
ID_CC	COMPRESSOR	COOLER	I/O MODULE	30CE
RTD_CBA	COMPRESSOR	BIT AIR	TEMPERATURE	30CE
RTD_CCHO	COOLING COMP	OUTLET	TEMPERATURE	30CE
RTD_CXHO	COOLING HYD	OUTLET	TEMPERATURE	30CE
RTD_CO		COMPRESSOR OIL	TEMPERATURE	30CE
TCC_CC	COMPRESSOR	COOLER	COMMUNICATION T	30CE
ID_TRAN	TRANSMISSION	I/O MODULE		30CF
RTD_AAT	AMBIENT	AIR	TEMPERATURE	30CF
RTD_PTL	PROPEL	TRANSMISSION	LEFT TEMPERATURE	30CF
RTD_PTR	PROPEL	TRANSMISSION	RIGHT TEMPERATURE	30CF
TCC_CAA	TRANSMISSION	I/O MODULE	COMMUNICATION T	30CF
ID_HTM2	HYDRAULIC	TANK	I/O MODULE #2	30EA
SV_CCPC	COMPRESSOR COOLER	PUMP CONTROL VALVE		30EA
SV_ECP	ENGINE COOLER	PUMP CONTROL	VALVE	30EA
SV_HPA	HYDRAULIC PUMP	AUXILIARY VALVE		30EA
TCC_HTID	HYDRAULIC TANK	I/O MODULE	COMMUNICATION T	30EA
TCP_HTI02	HYDRAULIC TANK	I/O MODULE #2	POWER T	30EA
ID_HTI1	HYDRAULIC	TANK	I/O MODULE #1	30EC
LS_HTRP1F	HYDRAULIC TANK	RETURN PORT 1	FILTER SWITCH	30EC
LS_HTRP2F	HYDRAULIC TANK	RETURN PORT 2	FILTER SWITCH	30EC
LS_HTSPM0	HYDRAULIC TANK	SUCTION PORT MAIN	OPEN LIMIT SWITCH	30EC
LT_HTF1	HYDRAULIC	TANK	FLUID LEVEL XDCR	30EC
PT_HTAGP	HYDRAULIC	TANK AIR GAP	PRESS XDCR	30EC
SV_CBA	COMPRESSOR BIT	AIR	VALVE	30EC
SV_CTM	COMPRESSOR	THERMAL MIXING	VALVE	30EC
SV_HTP	HYDRAULIC TANK	PRESSURIZATION	SOLENOID	30EC
SV_MAR	MAIN AIR	RELIEF	SOLENOID	30EC
TCC_HTM5CHI	HYDRAULIC	TANK I/O MODULE #1	CHI CAN T	30EC
TCP_HTI01	HYDRAULIC TANK	I/O MODULE #1	POWER T	30EC
R_CANT	CHASSIS CAN	NETWORK TERMINATING	RESISTOR	30F
TCC_CADR	COMPRESSOR AIR/OIL	RESERVOIR PRESS/TEMP	COMMUNICATION T	30F
TTP_CADR	COMPRESSOR AIR/OIL	RESERVOIR	PRESS/TEMP XDCR	30F
ID_HP	HYDRAULIC	PUMP VALVE	I/O MODULE	30GA
SV_HPLT1FS	HYDRAULIC PUMP	LEFT/TRAVEL 1 FORWARD	SPEED COMMAND	30GA
SV_HPLT1RS	HYDRAULIC PUMP	LEFT/TRAVEL 1 REVERSE	SPEED COMMAND	30GA
SV_HPLT2FS	HYDRAULIC PUMP	LEFT/TRAVEL 2 FORWARD	SPEED COMMAND	30GA
SV_HPLT2RS	HYDRAULIC PUMP	LEFT/TRAVEL 2 REVERSE	SPEED COMMAND	30GA
SV_HPRR1FS	HYDRAULIC PUMP	RIGHT/ROTARY 1 FORWARD	SPEED COMMAND	30GA
SV_HPRR1RS	HYDRAULIC PUMP	RIGHT/ROTARY 1 REVERSE	SPEED COMMAND	30GA
SV_HPRR2FS	HYDRAULIC PUMP	RIGHT/ROTARY 2 FORWARD	SPEED COMMAND	30GA
SV_HPRR2RS	HYDRAULIC PUMP	RIGHT/ROTARY 2 REVERSE	SPEED COMMAND	30GA
TCC_HPVID	HYDRAULIC PUMP	VALVE I/O MODULE	COMMUNICATION T	30GA
TCP_HPVID	HYDRAULIC PUMP	VALVE I/O MODULE	POWER T	30GA
ID_HPS	HYDRAULIC	PUMP SENSOR	I/O MODULE	30GC
PT_CAI	COMPRESSOR	AIR INLET	PRESS XDCR	30GC
TCC_HPSID	HYDRAULIC PUMP	SENSOR I/O MODULE	COMMUNICATION T	30GC
TCP_HPSID	HYDRAULIC PUMP	SENSOR I/O MODULE	POWER T	30GC
PT_CDIP	COMPRESSOR	OIL INLET	PRESSURE XDCR	30GF
R_RCC	REAR CHASSIS	CANBUS	RESISTOR TERMINATING	30GF
TCC_CDIP	COMPRESSOR OIL	INLET	COMMUNICATION T	30GF
CR_LBP	LUBE	BIT PUMP	RELAY	30HA
CR_LMP	AUTO LUBE	PUMP	RELAY	30HA
CR_LDP	LUBE	OG PUMP	RELAY	30HA
ID_GT	GREASE	TANK	I/O MODULE	30HA
LS_LBTLL	LUBE BIT TANK	LDW LEVEL SWITCH		30HA
LS_LMTLL	AUTO LUBE	TANK LOW		30HA
LS_LGTLL	LUBE OG TANK	LDW LEVEL SWITCH		30HA
LS_TCCRL	TORQUE CONVERTER	OIL RESERVOIR LOW	LEVEL SWITCH	30HA
SV_MLVS	AUTO LUBE VENT	SOLENOID	VALVE	30HA
SV_DGLV	OG LUBE VENT	SOLENOID	VALVE	30HA
TCC_GI0CH4	GREASE TANK	I/O MODULE	CH4	30HA
TCC_GI0CH5	GREASE TANK	I/O MODULE	CH5	30HA
TCC_GI0CH6	GREASE TANK	I/O MODULE	CH6	30HA
TCC_GI0CH7	GREASE TANK	I/O MODULE	CH7	30HA
TCP_GTID	GREASE TANK	I/O MODULE	POWER T	30HA
ID_REAR		REAR	I/O MODULE	30HB

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JOY GLOBAL SURFACE MINING INC
 4400 W. NATIONAL AVE
 MICHIGAN MI 48064
KOMATSU
 DRAWING TITLE
 COMPONENT REPORT
 MODEL NO: PH77
 SIZE: DRAWING NUMBER
C R109989
 LOCATION
 SIMLARTO R113325
 DRAWN BY: E. WELLS
 DATE: 03/21
 CHECKED BY: K. LATVAN
 DATE: 03/21
 CHIEF ENGINEER:
 DATE: 03/21
 REV NO: 5521153
 REV DATE: 03/02/2021
 REV: 04
 SHEET: 10
 COUNT: 10



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAQ NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
SV_DCVB1	DUST CONTROL	WATER BYPASS	SOLENOID 1	30HB
SV_DCVB2	DUST CONTROL	WATER BYPASS	SOLENOID 2	30HB
SV_DCVIP	DUST CONTROL WATER	INJECTION PUMP	CONTROL VALVE	30HB
SV_HDTH	HYDRAULIC OIL	THERMAL MIXING	VALVE	30HB
SV_PL5		PROPEL LEFT	SPEED COMMAND	30HB
SV_PRS		PROPEL RIGHT	SPEED COMMAND	30HB
TCC_GTID	GREASE TANK	I/O MODULE	COMMUNICATION T	30HB
PT_HPA	HYDRAULIC PUMP	AUXILIARY LOAD	PRESSURE XDCR	30K
TCC_HPAP	HYDRAULIC PUMP	AUXILIARY LOAD	COMMUNICATION T	30K
ID_HD	HYDRAULIC	DIVERTER	I/O MODULE	30MA
PRS_HDLVT	HYDRAULIC DIVERTER	LEFT VALVE TRAVEL	PROX SWITCH	30MA
PRS_HDRV	HYDRAULIC DIVERTER	RIGHT VALVE ROTARY	PROX SWITCH	30MA
PS_HDLPF	HYDRAULIC DIVERTER	LEFT PROPEL	FILTER SWITCH	30MA
PS_HDLTF	HYDRAULIC DIVERTER	LEFT TRAVEL	FILTER SWITCH	30MA
PS_HDRPF	HYDRAULIC DIVERTER	RIGHT PROPEL	FILTER SWITCH	30MA
PS_HDRRF	HYDRAULIC DIVERTER	RIGHT ROTARY	FILTER SWITCH	30MA
SV_HDLPT	HYDRAULIC DIVERTER	LEFT PROPEL/TRAVEL	VALVE	30MA
SV_HDRPR	HYDRAULIC DIVERTER	RIGHT PROPEL/ROTARY	VALVE	30MA
TCC_HDCH5	HYD DIVERTER	I/O MODULE #5	CH5 CAN T	30MA
TCC_HDCH7	HYD DIVERTER	I/O MODULE #7	CH5 CAN T	30MA
TCP_HDIO	HYDRAULIC DIVERTER	I/O MODULE	POWER T	30MA
ID_PS	POWER SKID	I/O MODULE		30MC
SV_APU	AUXILIARY PUMP	UNLOADING	SOLENOID	30MC
SV_FCLP	FLUSH CARRIAGE	LEFT PROPEL	VALVE	30MC
SV_FRRP	FLUSH ROTARY	RIGHT PROPEL	VALVE	30MC
SV_LCVM	LEFT COLD	WEATHER MANIFOLD	VALVE	30MC
SV_RCVM	RIGHT COLD	WEATHER MANIFOLD	VALVE	30MC
TCC_PSCH1	POWER SKID	I/O MODULE	CH1 CAN T	30MC
TCC_PSCH4	POWER SKID	I/O MODULE	CH4	30MC
TCC_PSCH6	POWER SKID	I/O MODULE	CH4	30MC
TCC_PSCH7	POWER SKID	I/O MODULE	CH7 CAN T	30MC
TCP_PSIO	POWER SKID	I/O MODULE	POWER	30MC
TS_CD	HIGH TEMP	COMPRESSOR	SHUTDOWN SWITCH	30MC
TS_CD2	HIGH TEMP	COMPRESSOR	SHUTDOWN SWITCH	30MC
FU_LBP	LUBE BIT	PUMP	FUSE	30R
FU_LMP	LUBE MPG	PUMP	FUSE	30R
FU_LDGP	LUBE DG	PUMP	FUSE	30R
FU_LPCS	LUBE PUMP	CONTROL SUPPLY	FUSE	30R
GR_LPCE	LUBE PUMP	CONTROL	ENCL. GRD	30R
GR_LPCED	LUBE PUMP	CONTROL	ENCL. DDDR GRD	30R
SV_LBP	LUBE	BIT PUMP		30R
SV_LMP	AUTO LUBE	PUMP		30R
SV_LDGP	LUBE	DG PUMP		30R
DB_LJF1	LEVELING JACK	FRONT DISTRIBUTION	BLOCK 1	35A
DB_LJF2	LEVELING JACK	FRONT DISTRIBUTION	BLOCK 2	35A
LT_EFTL	ENGINE FUEL	TANK	LEVEL XDCR	35A
PT_LJLF1	LEVELING JACK	LEFT FRONT DEMAND	PRESSURE XDCR	35A
PT_LJLF2	LEVELING JACK	LEFT FRONT LOAD	PRESSURE XDCR	35A
PT_LJRF1	LEVELING JACK	RIGHT FRONT DEMAND	PRESSURE XDCR	35A
PT_LJRF2	LEVELING JACK	RIGHT FRONT LOAD	PRESSURE XDCR	35A
SV_LJLF	LEVELING JACK	LEFT FRONT	EXTEND/RETRACT VALVE	35A
SV_LJRF	LEVELING JACK	RIGHT FRONT	EXTEND/RETRACT VALVE	35A
TPP_CVSP	COLD WEATHER	SHEAR PUMP OUTPUT	TEMPERATURE XDCR	35A
ZT_LJLF	LEVELING JACK	LEFT FRONT	LINEAR POSITION XDCR	35A
ZT_LJRF	LEVELING JACK	RIGHT FRONT	LINEAR POSITION XDCR	35A
AH_PLF	HORN	PROPEL	LEFT FRONT	35E
CR_APU1	APU	IDLE	RELAY	35E
ID_FRONT	FRONT	I/O MODULE		35E
LS_BLR1	BOARDING LADDER	RF RETRACTED	PROX SWITCH	35E
SV_PLPB	PROPEL	PARK BRAKE	VALVE	35E
TCC_FCH2	GREASE TANK	I/O MODULE	CH6	35E
DB_LJLR	LEVELING JACK LEFT	REAR DISTRIBUTION	BLOCK	35K
IN_LEV	LEVELING	INCLINOMETER		35K
LT_DCVTL	DUST CONTROL	WATER TANK	LEVEL XDCR	35K
PT_LJLRD	LEVELING JACK	LEFT REAR DEMAND	PRESSURE XDCR	35K
PT_LJLRL	LEVELING JACK	LEFT REAR LOAD	PRESSURE XDCR	35K
SV_LJLR	LEVELING JACK	LEFT REAR	EXTEND/RETRACT VALVE	35K
ZT_LJLR	LEVELING JACK	LEFT REAR	LINEAR POSITION XDCR	35K
DB_LJRR1	LEVELING JACK RIGHT	REAR DISTRIBUTION	BLOCK 1	35T
DB_LJRR2	LEVELING JACK RIGHT	REAR DISTRIBUTION	BLOCK 2	35T
PT_HPLTF	HYDRAULIC PUMP	LEFT/TRAVEL FORWARD	PRESSURE XDCR	35T
PT_HPLTR	HYDRAULIC PUMP	LEFT/TRAVEL REVERSE	PRESSURE XDCR	35T
PT_HPRRF	HYDRAULIC PUMP	RIGHT/ROTARY FORWARD	PRESSURE XDCR	35T
PT_HPRRR	HYDRAULIC PUMP	RIGHT/ROTARY REVERSE	PRESSURE XDCR	35T
PT_LJRRD	LEVELING JACK	RIGHT REAR DEMAND	PRESSURE XDCR	35T
PT_LJLRL	LEVELING JACK	RIGHT REAR LOAD	PRESSURE XDCR	35T
R_CALNT	CHASSIS AUTO LEVEL	NETWORK TERMINATING	RESISTOR	35T
SV_LJRR	LEVELING JACK	RIGHT REAR	EXTEND/RETRACT VALVE	35T
ZT_LJRR	LEVELING JACK	RIGHT REAR	LINEAR POSITION XDCR	35T
AH_PRR	HORN	PROPEL	RIGHT REAR	40A

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 MILWAUKEE WI 53214-5884

KOMATSU

DRAWN/DESIGNED BY: A.HANSON DATE: 03/02/2021
 CHECKED BY: E.MELISS DATE: 03/21
 CREATED BY: K.L.HANSON DATE: 03/21

MODEL NO: P477
 SIZE: DRAWING NUMBER: C R109989
 LOCATION: SHELBY TOWNSHIP MI 48135

ENR NO: 5521153
 REV DATE: 03/02/2021
 REV: 04

SHEET NO: 16 OF 16

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAG NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
ID_RD	REAR DECK	I/O MODULE		40A
LS_BLLR	BOARDING LADDER	LR RETRACTED	PROX SWITCH	40A
LS_BLM	BOARDING LADDER	LRN RETRACTED	PROX SWITCH	40A
TCC_RDCM7	REAR DECK	I/O MODULE	CH7 CAN T	40A
ID_AFI0M1	A-FRAME	I/O MODULE 1		75A
PRS_MAPRL	MAST ANCHOR	PIN RIGHT LOCKED	PROX SWITCH	75A
PRS_MAPRU	MAST ANCHOR	PIN RIGHT UNLOCKED	PROX SWITCH	75A
PRS_MTPRL	MAST TILT PIN	RIGHT LOCKED	PROX SWITCH	75A
PRS_MTPRU	MAST TILT PIN	RIGHT UNLOCKED	PROX SWITCH	75A
SV_MAPLU	MAST ANCHOR PIN	LOCK/UNLOCK	VALVE	75A
SV_MTPLU	MAST TILT PIN	LOCK/UNLOCK	VALVE	75A
TCC_AFI0M1	A-FRAME	I/O MODULE 1	COMMUNICATION T	75A
TCC_AFM1CH1	A-FRAME	I/O MODULE #1	CH1 CAN T	75A
TCC_AFM1CH3	A-FRAME	I/O MODULE #1	CH3 CAN T	75A
TCC_AFM1CH5	A-FRAME	I/O MODULE #1	CH5 CAN T	75A
TCC_AFM1CH7	A-FRAME	I/O MODULE #1	CH7 CAN T	75A
TCP_AFI0M1	A-FRAME	I/O MODULE 1	POWER T	75A
IN_MAFAI	MAST A-FRAME	ACCELEROMETER/	INCLINOMETER	75C
ID_AFI0M2	A-FRAME	I/O MODULE 2		75C
PRS_MAPLL	MAST ANCHOR	PIN LEFT LOCKED	PROX SWITCH	75C
PRS_MAPLU	MAST ANCHOR	PIN LEFT UNLOCKED	PROX SWITCH	75C
PRS_MTPLL	MAST TILT PIN	LEFT LOCKED	PROX SWITCH	75C
PRS_MTPLU	MAST TILT PIN	LEFT UNLOCKED	PROX SWITCH	75C
TCC_AFM2CH1	A-FRAME	I/O MODULE #2	CH1 CAN T	75C
TCC_AFM2CH3	A-FRAME	I/O MODULE #2	CH3 CAN T	75C
TCC_AFM2CH5	A-FRAME	I/O MODULE #2	CH5 CAN T	75C
TCC_AFM2CH7	A-FRAME	I/O MODULE #2	CH7 CAN T	75C
TCP_AFI0M2	A-FRAME	I/O MODULE 2	POWER T	75C
PT_MFL	MAST FUNCTION	LOAD	PRESSURE XDCR	75E
SV_MFB	MAST	FUNCTION	VALVE BANK	75E
SV_MRL	MAST	RAISE/LOWER	VALVE	75E
TCC_MFB	MAST FUNCTION	VALVE BANK	COMMUNICATION T	75E
TCC_MFL	MAST FUNCTION	LOAD	COMMUNICATION T	75E
TCC_MRL	MAST	RAISE/LOWER	COMMUNICATION T	75E
ID_MLRSL	MAST LOWER	RIGHT SIDE	I/O MODULE #1	76AA
SV_BCBER	BIT CAROUSEL	BASKET OVER HOLE/	STORE VALVE	76AA
SV_BCI	BIT CAROUSEL	INDEX	VALVE	76AA
SV_BCPL	BIT CAROUSEL	PRESSURE LIMITER	VALVE	76AA
SV_BCTP	BIT CAROUSEL	THREAD MOTOR	VALVE	76AA
SV_BPPL	BIT/PIPE HANDLING	PRESSURE LIMITER	VALVE	76AA
SV_PSWOHS	PIPE SLIDE WRENCH	OVER HOLE/STORE	VALVE	76AA
TCC_MLRML	MAST LOWER	RIGHT I/O MODULE #1	CAN COM Y	76AA
ID_MLRSL	MAST LOWER	RIGHT SIDE	I/O MODULE #2	76AC
R_MCCNT	MAST CHASSIS CAN	NETWORK TERMINATING	RESISTOR	76AC
SV_BCLU	BIT CAROUSEL	RAISE/LOWER	VALVE	76AC
SV_PSER	PIPE SUPPORT	EXTEND/RETRACT	VALVE	76AC
TCC_MLRID2	MAST LOWER	RIGHT I/O MODULE #2	COMMUNICATION T	76AC
TCP_MLR	MAST LOWER	RIGHT	POWER T	76AC
TCP_MLRID2	MAST LOWER	RIGHT I/O MODULE #2	POWER T	76AC
PT_BCL	BIT CAROUSEL	LOAD	PRESSURE XDCR	76AE
SV_BCFP	BIT CAROUSEL	FUNCTION	PROPORTIONAL VALVE	76AE
SV_BPHFP	BIT/PIPE HANDLING FUNCTION	PROPORTIONAL	VALVE	76AE
TCC_BCLP	BIT CAROUSEL	LOAD PRESSURE	COMMUNICATION Y	76AE
ID_MLLS1	MAST LOWER	LEFT SIDE	I/O MODULE #1	76CA
SV_PBVED	PIPE BREAKOUT	WRENCH ENGAGE/	DISENGAGE VALVE	76CA
SV_PBVPL	PIPE BREAKOUT WRENCH	PRESSURE LIMITER	VALVE	76CA
SV_PBVRL	PIPE BREAKOUT	WRENCH RAISE/	LOWER VALVE	76CA
SV_PBWS	PIPE BREAKOUT	WRENCH SWING	VALVE	76CA
SV_PCPL	PIPE CAROUSEL	PRESSURE LIMITER	VALVE	76CA
SV_PPSC	PIPE POSITIONER	SWING/CLAMP	VALVE	76CA
ID_MLLS2	MAST LOWER	LEFT SIDE	I/O MODULE #2	76CC
PRS_BCBE	BIT CAROUSEL	BASKET EXTEND	PROX SWITCH	76CC
PRS_BCBR	BIT CAROUSEL	BASKET RETRACT	PROX SWITCH	76CC
PRS_BCH	BIT CAROUSEL	HOME	PROX SWITCH	76CC
PRS_PBWS	PIPE BREAKOUT	WRENCH STORED	PROX SWITCH	76CC
PRS_PCH	PIPE CAROUSEL	HOME	PROX SWITCH	76CC
PRS_PCP1	PIPE CAROUSEL	POT 1	PROX SWITCH	76CC
PRS_PCP2	PIPE CAROUSEL	POT 2	PROX SWITCH	76CC
PRS_PCSL	PIPE CAROUSEL	SWING LOCK	PROX SWITCH	76CC
SV_PCI	PIPE CAROUSEL	INDEX	VALVE	76CC
SV_PCS	PIPE CAROUSEL	SWING	VALVE	76CC
TCC_MLL2CH1	MAST LOWER	LEFT SIDE MODULE 2	CH1 CAN T	76CC
TCC_MLL2CH3	MAST LOWER	LEFT SIDE MODULE 2	CH3 CAN T	76CC
TCC_MLL2CH5	MAST LOWER	LEFT SIDE MODULE 2	CH5 CAN T	76CC
TCC_MLL2CH7	MAST LOWER	LEFT SIDE MODULE 2	CH7 CAN T	76CC
TCP_MLLID2	MAST LOWER	LEFT I/O MODULE #2	POWER T	76CC
EN_BCI	BIT CAROUSEL	INDEX	ENCODER	76CE
SV_PBVFP	PIPE BREAKOUT	WRENCH FUNCTION	PROPORTIONAL VALVE	76CE
TCC_BCLR	BIT CAROUSEL	RAISE/LOWER	COMMUNICATION Y	76CE
TCC_PSWLPB	PIPE SLIDE WRENCH	LINEAR POSITION BRANCH	COMMUNICATION Y	76CE

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KOMATSU

DRAWING TITLE
COMPONENT REPORT

DRAWN/DESIGNED BY: K.LATIAM	DATE: 03/21
CHECKED BY: E. WESS	DATE: 03/21
CHIEF ENGINEER: K.LATIAM	DATE: 03/21

MODEL NO: PH77	SERIAL NO: 5521153
SIZE: DRAWING NUMBER C/R109989	REV DATE REV 03/02/2021 04
LOCATION: SIMLARTO R11335	SHEET NO CONT IN

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAG NO	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
ZT_BCRL	BIT CAROUSEL	RAISE/LOWER	LINEAR POSITION XDCR	76CE
ZT_PSWALP	PIPE SLIDE WRENCH	LINEAR POSITION	XDCR	76CE
DB_MAST	MAST	DISTRIBUTION BLOCK		76CF
EN_PC	PIPE	CAROUSEL	ENCODER	76CF
SV_PCFP	PIPE CAROUSEL	FUNCTION PROPORTIONAL	VALVE	76CF
TCC_PCE	PIPE	CAROUSEL ENCODER	COMMUNICATION T	76CF
TCC_PCLP	PIPE CAROUSEL	LINEAR POSITION	COMMUNICATION Y	76CF
ZT_PBWR	PIPE BREAKOUT WRENCH	RAISE/LOWER	LINEAR POSITION XDCR	76CF
ZT_PCLP	PIPE CAROUSEL	LINEAR POSITION	XDCR	76CF
ZT_PSLP	LOWER PIPE	POSITIONER	LINEAR XDCR	76CF
IN_MIA	MAST ACCELEROMETER/	INCLINOMETER		77AA
ID_MM	MAST MIDDLE	I/O MODULE		77AA
LG_MHCRV	MAST MOUNTED	CENTER REAR	WORK LIGHT	77AA
PRS_PPC	PIPE POSITIONER	CLAMPED	PROX SWITCH	77AA
PRS_PPD	PIPE POSITIONER	OPENED	PROX SWITCH	77AA
PRS_PPS	PIPE POSITIONER	STORED	PROX SWITCH	77AA
PS_BCMPG	BIT CAROUSEL	MPG PRESSURE	SWITCH	77AA
PS_PCMPG	PIPE CAROUSEL	MPG PRESSURE	SWITCH	77AA
PS_UPMPG	UPPER PIPE POSITIONER	MPG PRESSURE	SWITCH	77AA
TCC_MMICH1	MAST	I/O MODULE #1	CH1 CAN T	77AA
TCC_MMICH3	MAST	I/O MODULE #1	CH3 CAN T	77AA
TCC_MMICH5	MAST	I/O MODULE #1	CH5 CAN T	77AA
TCC_MMICH7	MAST	I/O MODULE #1	CH7 CAN T	77AA
TCC_MMID	MAST MIDDLE	I/O MODULE	COMMUNICATIONS T	77AA
TCP_MMID	MAST MIDDLE	I/O MODULE	POWER T	77AA
SV_MW	MAST	WINCH	VALVE	77AC
TCC_MWV	MAST	WINCH VALVE	COMMUNICATION T	77AC
CS_CRG10C	CARRIAGE ROTARY	GEARCASE 1 DIL	CONTAMINATION SENSOR	78A
ID_C1	CARRIAGE	I/O MODULE #1		78A
SV_CTPBR	CARRIAGE TRAVEL	PARK BRAKE	RELEASE VALVE	78A
TCC_IDC1CH1	CARRIAGE	I/O MODULE #1	CH1 CAN T	78A
TCC_IDC1CH3	CARRIAGE	I/O MODULE #1	CH3 CAN T	78A
TCC_IDC1	CARRIAGE	I/O MODULE #1	POWER T	78A
TTP_CTPB	CARRIAGE TRAVEL	PARK BRAKE	PRESS XDCR	78A
ZS_CTL	CARRIAGE TRAVEL	LOWER	PROXIMITY SWITCH	78A
ZS_CTU	CARRIAGE TRAVEL	UPPER	PROXIMITY SWITCH	78A
ID_C2	CARRIAGE	I/O MODULE #2		78C
SV_CRM1ISC	CARRIAGE ROTARY	MOTOR 1 SPEED	COMMAND	78C
SV_CTM1ISC	CARRIAGE TRAVEL	MOTOR 1 SPEED	COMMAND	78C
SV_CTM2ISC	CARRIAGE TRAVEL	MOTOR 2 SPEED	COMMAND	78C
DB_CC1	CARRIAGE CAN	DISTRIBUTION	BLOCK 1	78E
DB_CC2	CARRIAGE CAN	DISTRIBUTION	BLOCK 2	78E
EN_CR	CARRIAGE	ROTARY	ENCODER	78E
EN_CT	CARRIAGE	TRAVEL	ENCODER	78E
R_CCT	CARRIAGE	CANBUS	RESISTOR TERMINATING	78E
TTP_CBA	CARRIAGE	BIT AIR	PRESS XDCR	78E
TTP_CRAD	CARRIAGE ROTARY	ANTI-DRILL	PRESS XDCR	78E
TTP_CRD	CARRIAGE ROTARY	DRILL	PRESS XDCR	78E
TTP_CTH	CARRIAGE TRAVEL	HUIST	PRESS XDCR	78E
TTP_CTPD	CARRIAGE TRAVEL	PULL DOWN	PRESS XDCR	78E
ANT_HR	MINE RADIO	ANTENNA		400A
CC1_P24SF	PREVAIL	24VDC SUPPLY	FUSE	400A
CC1_PR	PREVAIL	ROUTER		400A
CC2_P24SF	PREVAIL	24VDC SUPPLY	FUSE	400A
CC3_P24SF	PREVAIL	24VDC SUPPLY	FUSE	400A
CDMP_PRE	PREVAIL	COMPUTER		400A
ES_PRE	PREVAIL	ETHERNET	SWITCH	400A
FU_P4S	24VDC	SPARE	FUSE	400A
FU_CPM	CAB POWER	OUTPUT MODULE	FUSE	400A
FU_IDX20	I/O MODULE	X20 OUTPUTS	FUSE	400A
FU_IDX21	I/O MODULE	X21 OUTPUTS	FUSE	400A
FU_R	REFRIGERATOR	POWER	FUSE	400A
SV_CHE	CAB HEATER	ENABLE	SOLENOID	400A
CV_12C	24 VOLT DC	TO 12 VOLT DC	CONVERTER	400C
FU_12VP	12VDC	POWER	FUSE	400C
FU_ACC	12VDC ACCESSORY	RECEPTACLE	FUSE	400C
FU_CMR	MINE RADIO	POWER	FUSE	400C
FU_HPR	PRESSURIZER	POWER	FUSE	400C
FU_OCR	OPERATOR CAB	RADIO POWER	FUSE	400C
FU_SPBI	HAWKEYE	MONITOR	FUSE	400C
DS_CDS	OPERATORS SEAT			400C
REC_ACC	ACCESSORY	RECEPTACLE		400C
CR_CCF1	CEILING CONDENSER	FAN #1	RELAY	400E
CR_CCF2	CEILING CONDENSER	FAN #2	RELAY	400E
CR_CCH	CEILING CONDENSER	HIGH	RELAY	400E
CR_CCHS	CEILING CONDENSER	HYD SOLENOID VALVE	RELAY	400E
CR_CCL	CEILING CONDENSER	LDV	RELAY	400E
CR_CCM	CEILING CONDENSER	MEDIUM	RELAY	400E
CR_CHE	CAB HEATER ENABLE	SOLENOID RELAY		400E
CR_FCF1	FLOOR CONDENSER	FAN #1	RELAY	400E

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DRAWING TITLE: COMPONENT REPORT
MODEL NO: PH77
SIZE: DRAWING NUMBER: C R109989
DATE: 03/02/2021
CHECKED BY: [Signature]
DATE: 03/21
DESIGNED BY: [Signature]
DATE: 03/21
K.L. THAW

REV NO: 5521153
REV DATE: 03/02/2021
REV BY: 04
SHEET 10
CONT 1P

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAG NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
CR_FCF2	FLOOR CONDENSER	FAN #2	RELAY	400E
CR_FCH	FLOOR CONDENSER	HIGH	RELAY	400E
CR_FCHS	FLOOR CONDENSER	HYD SOLENOID VALVE	RELAY	400E
CR_FCL	FLOOR CONDENSER	LOW	RELAY	400E
CR_FCM	FLOOR CONDENSER	MEDIUM	RELAY	400E
FU_ACCF	AIR	CONDITIONER	CONTROL FUSE	400E
PS_CDP	CEILING DRYER	PRESSURE	SWITCH	400E
PS_FBP	FLOOR DRYER	PRESSURE	SWITCH	400E
SW_AC	AIR CONDITIONER	ON/OFF	SWITCH	400E
SW_ACB	AIR CONDITIONER	BLOWER		400E
TH_ACM	AIR CONDITIONING	HAIN	THERMOSTAT	400E
TH_CCF	CEILING CONDENSER	FREEZE	THERMOSTAT	400E
TH_FCF	FLOOR CONDENSER	FREEZE	THERMOSTAT	400E
FU_CB	CEILING	BLOWER	FUSE	400F
FU_CCF1	CEILING CONDENSER	FAN #1	FUSE	400F
FU_CCF2	CEILING CONDENSER	FAN #2	FUSE	400F
FU_CCH	CEILING COMPRESSOR	HYDRAULIC VALVE	FUSE	400F
FU_CHCP	CAB HEATER	COOLANT PUMP	FUSE	400F
FU_FB	FLOOR	BLOWER	FUSE	400F
FU_FCF1	FLOOR CONDENSER	FAN #1	FUSE	400F
FU_FCF2	FLOOR CONDENSER	FAN #2	FUSE	400F
FU_FCH	FLOOR COMPRESSOR	HYDRAULIC VALVE	FUSE	400F
HVAC_CC	CEILING	CONDENSER		400F
HVAC_CE	CEILING	CEILING	EVAPORATOR	400F
HVAC_FC	FLOOR	CONDENSER		400F
HVAC_FE	FLOOR	FLOOR	EVAPORATOR	400F
SV_CCH	CEILING COMPRESSOR	HYDRAULIC VALVE	VALVE	400F
SV_FCH	FLOOR COMPRESSOR	HYDRAULIC VALVE	VALVE	400F
FU_CHCI	CAB HEATER	COOLANT PUMP	IGN FUSE	400G
HVAC_HPR	HVAC	PRESSURIZER	VALVE	400G
PMP_CHCP	CAB HEATER	COOLANT PUMP		400G
SW_P	PRESSURIZER	CONTROL SWITCH		400G
CR_KSIGN	KEY SWITCH	IGNITION	CONTROL RELAY	402A
CR_KSSRRT	KEY SWITCH	ENGINE START	CONTROL RELAY	402A
PB_MEOC	MACHINE E-STOP	OPERATOR CAB		402A
SS_WLC	WORK LIGHTS	SELECTOR SWITCH	(CAB)	402A
SW_CICK	CAB	IGNITION/CRANK	KEYSWITCH	402A
LT_RMAC	REMOTE MODE	AVAILABLE	(CAB)	402C
PB_LMSC	LOCAL MODE	SELECT PUSHBUTTON	(CAB)	402C
PB_RMSC	REMOTE MODE	SELECT PUSHBUTTON	(CAB)	402C
FU_ES	ETHERNET/	HMI COMPUTER	FUSE	404A
FU_GUI	HMI	DISPLAY	FUSE	404A
GR_CP	CAB	PANEL	GROUND BUS	404A
ES_OC	OPERATOR CAB	ETHERNET	SWITCH	404C
COMP_HMI	HMI	COMPUTER		404E
HMI	HMI DISPLAY			404E
I_BUTTON	USER I.D.	I-BUTTON		404E
FU_VDH	WIPER MOTOR (FRONT DOOR)	HIGH SPEED	FUSE	406C
FU_VDL	WIPER MOTOR (FRONT DOOR)	LOW SPEED	FUSE	406C
FU_VFH	WIPER MOTOR (FRONT)	HIGH SPEED	FUSE	406C
FU_VFL	WIPER MOTOR (FRONT)	LOW SPEED	FUSE	406C
FU_VLDH	WIPER MOTOR	(LEFT DOOR) HIGH SPEED	FUSE	406C
FU_VLDL	WIPER MOTOR	(LEFT DOOR) LOW SPEED	FUSE	406C
FU_VLH	WIPER MOTOR	(LEFT) HIGH SPEED	FUSE	406C
FU_VLL	WIPER MOTOR	(LEFT) LOW SPEED	FUSE	406C
FU_VRH	WIPER MOTOR	(REAR) HIGH SPEED	FUSE	406C
FU_VRL	WIPER MOTOR	(REAR) LOW SPEED	FUSE	406C
ID_CPDH	CAB POWER	OUTPUT MODULE		406C
MTR_FDW	FRONT DOOR	WIPER MOTOR		406C
MTR_FV	FRONT	WIPER MOTOR		406C
MTR_LDW	LEFT DOOR	WIPER MOTOR		406C
MTR_LV	LEFT	WIPER MOTOR		406C
MTR_RV	REAR	WIPER MOTOR		406C
ANT_RADIO	RADIO	ANTENNA		406E
ANT_SAT	SATELLITE	ANTENNA		406E
CTL_R	OPERATOR'S	CAB RADIO		406E
RA_OC	RADIO BASE -	TUNER/AMPLIFIER		406E
SPKR_LF	FRONT	LEFT	SPEAKER	406E
SPKR_LR	REAR	LEFT	SPEAKER	406E
SPKR_RF	FRONT	RIGHT	SPEAKER	406E
SPKR_RR	REAR	RIGHT	SPEAKER	406E
XM_TUNER	XM RADIO	TUNER		406E
ID_MC	CAB	I/O MODULE		407EA
CNV_CHMS	SPARE		FREQ/ANALOG CONVERTER	407EC
ABU_CAB	OPERATOR CAB	ALARM BUZZER		407EE
CR_CHCP	CAB HEATER	COOLANT PUMP	RELAY	407EE
LG_CL1	CAB LIGHT #1	(CEILING)		407EE
LG_CL2	CAB LIGHT #2	(CEILING)		407EE
PL_RAL	RED	ALARM	LED	407EF
PL_YVL	YELLOW	WARNING	LED	407EF

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JOY GLOBAL SURFACE MINING INC.
4400 W. NATIONAL AVE.
MILLVALE, WA 98148-9894

DRAWN BY: K.LATHAN
CHECKED BY:
DATE: 03/02/2021
DATE:
DATE: 03/21

MODE NO: P177
SIZE: DRAWING NUMBER: C R109989
LOCATION: SHILKATO K113535

EN NO: 5521153
REV DATE: 03/02/2021
REV: 04

KOMATSU

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

TAG NO.	DESCRIPTION	DESCRIPTION	DESCRIPTION	SHEET
PMP_VSH_F	WASHER	PUMP FRONT		407EF
PMP_VSH_L	WASHER	PUMP LEFT		407EF
PMP_VSH_LD	WASHER	PUMP LEFT DOOR		407EF
PMP_VSH_R	WASHER	PUMP REAR		407EF
DB_CCC	CAB CONTROL CAN	DISTRIBUTION	BLOCK	409A
TCC_CBCB	CAN BUS	COMMUNICATIONS	COMMUNICATION T	409A
KP_C1	CAB OPERATOR	CONSOLE KEYPAD 1		409C
KP_C2	CAB OPERATOR	CONSOLE KEYPAD 2		409C
DB_CCCD	CAB CHAIR CAN	DISTRIBUTION	BLOCK	410A
R_CTR	TERMINATING	RESISTOR		410A
JS_LH	CAB	LEFT HAND	JOYSTICK	410C
KP_L1	CAB	RIGHT KEYPAD 2		410C
KP_L2	CAB	LEFT KEYPAD 2		410C
JS_RH	CAB	RIGHT HAND	JOYSTICK	410E
KP_R1	CAB	RIGHT KEYPAD 1		410E
KP_R2	CAB	LEFT KEYPAD 1		410E

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JOY GLOBAL SURFACE MINING INC
4400 W. VANTOUL AVE
MILWAUKEE, WI 53214-8004

KOMATSU

DRAWN/REVISED BY:	DATE	MODEL NO. PH77	REV NO.
ALANSON	03/02/2021		5521153
CHECKED BY:	DATE	DRAWING NUMBER	REV DATE
03/21	03/21	C R109989	03/02/2021
04			
CHIEF ENGINEER	DATE	LOCATION	SHEET
03/21	03/21	R11235	18
			17

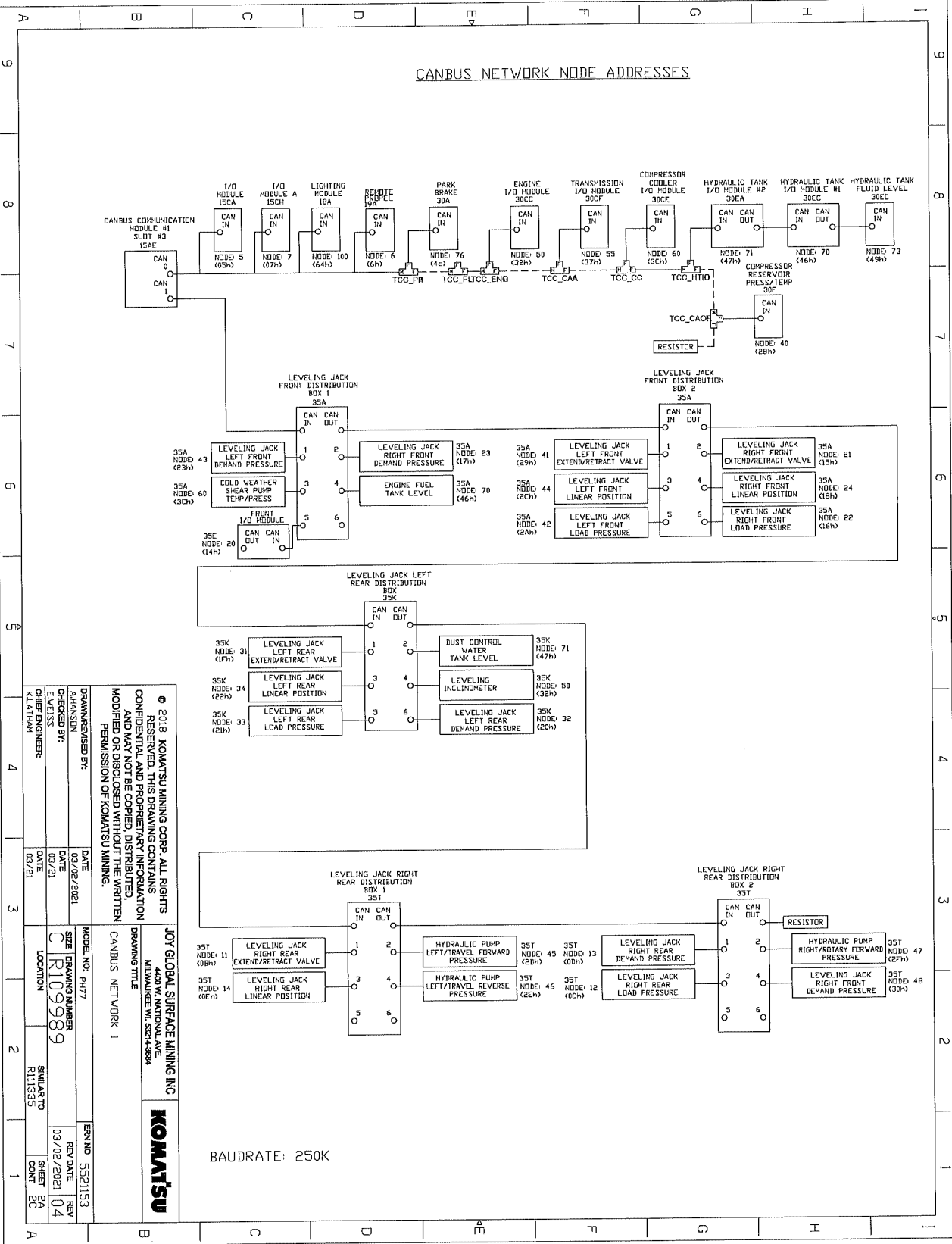
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

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INTENTIONALLY
LEFT BLANK

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DRAWN/REVISED BY: A.HANSEN		DATE: 03/02/2021	MODEL NO.: PH77		EBN NO.: 5521153
CHECKED BY: K.LATHAM		DATE: 03/21/21	SIZE: DRAWING NUMBER C/R109989		REV. DATE: 03/02/2021 REV: 04
ENGINEERED BY: K.LATHAM		DATE: 03/21/21	LOCATION: SIMILAR TO K111395		SHEET COUNT: 1/24



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

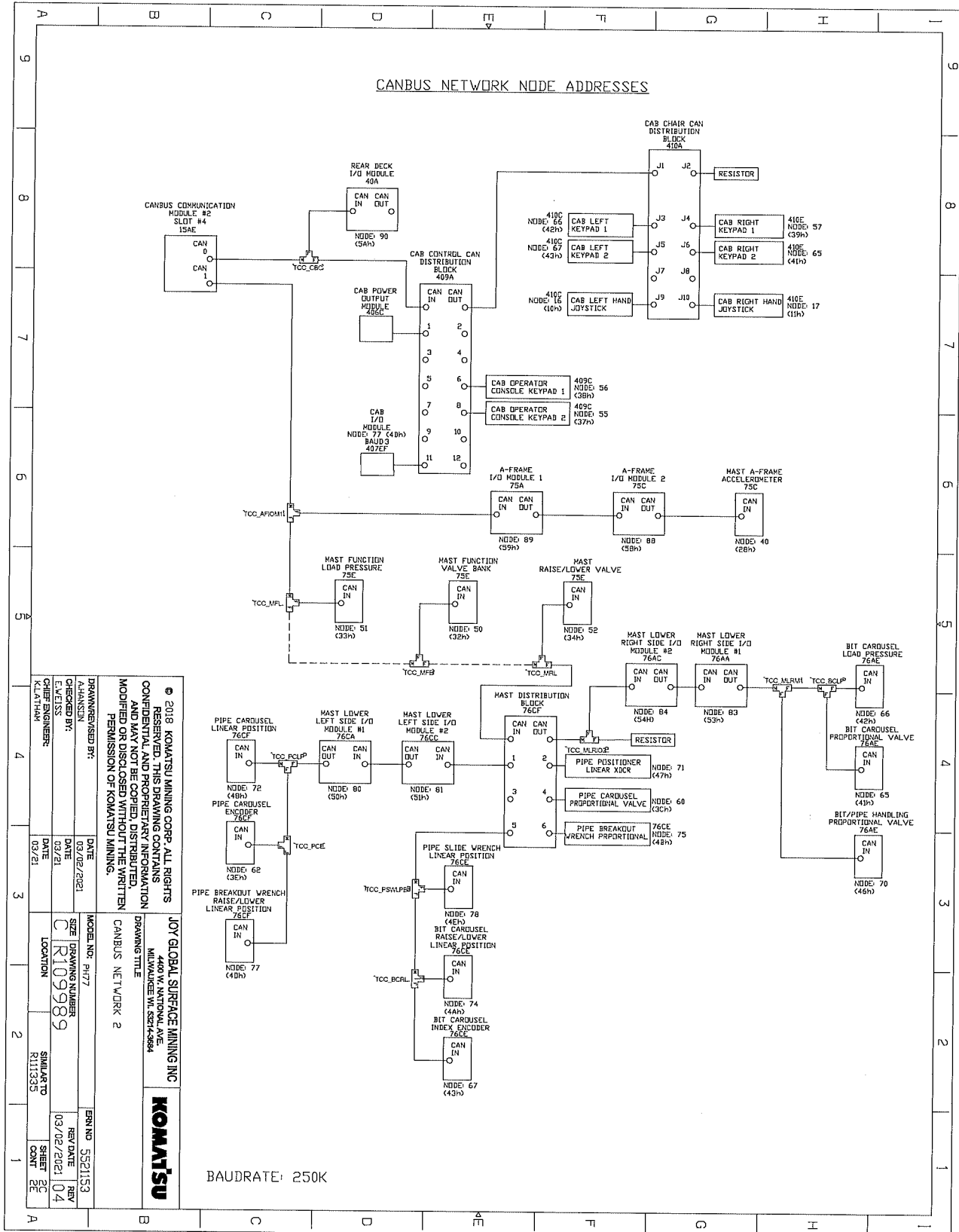


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DRAWN/REVIEWED BY:	DATE:	MODEL NO.:	REV. NO.:
A.HANSEN	03/02/2021	PH77	5521153
CHECKED BY:	DATE:	SIZE:	REV. DATE:
C. R109989	03/02/2021	DRAWING NUMBER	04
DATE:	DATE:	LOCATION:	SHEET:
03/21	03/21	R11335	2A
DATE:	DATE:	LOCATION:	SHEET:
03/21	03/21	R11335	2C

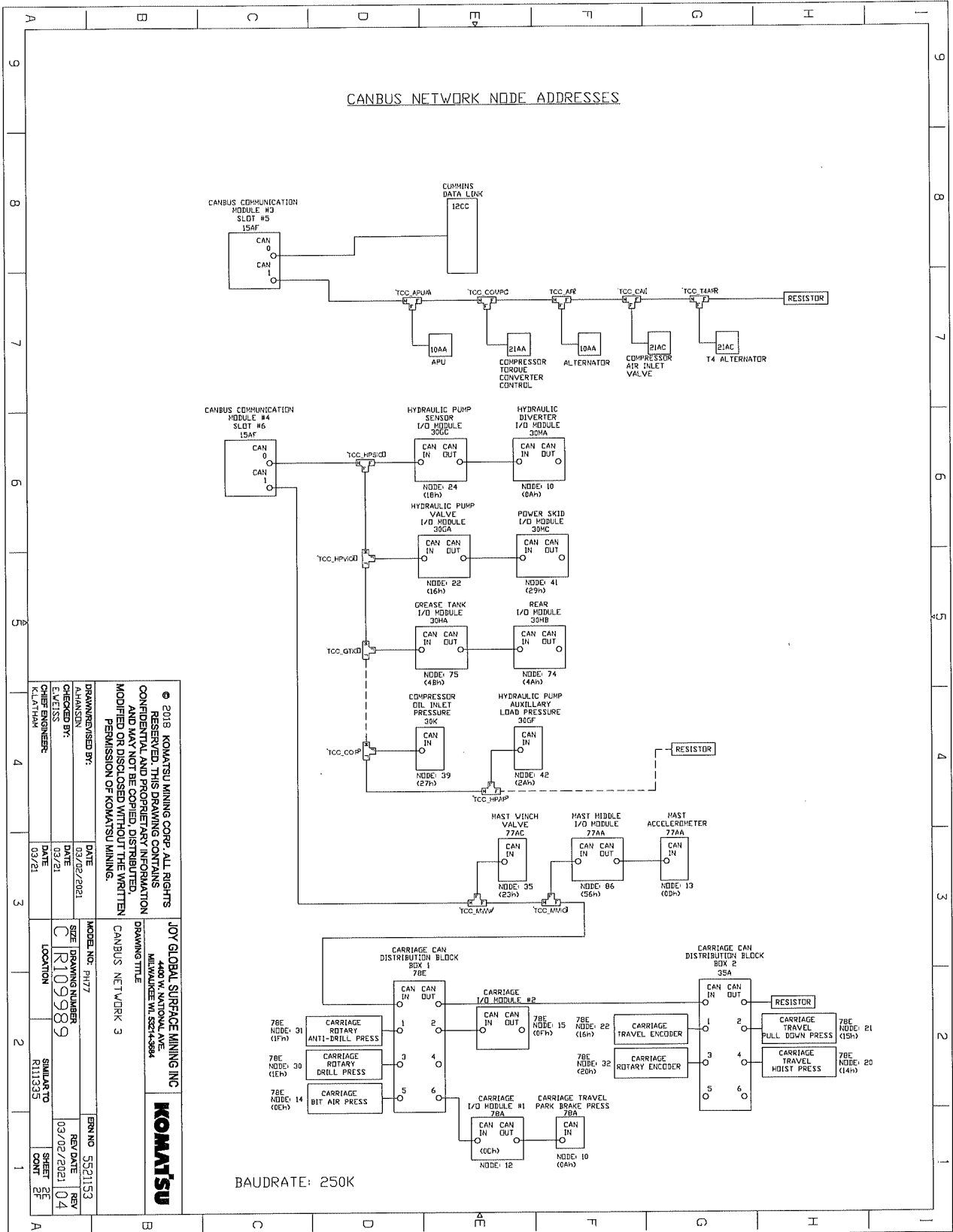
JOB GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53248-0804
DRAWING TITLE
CANBUS NETWORK 1
KOMATSU

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

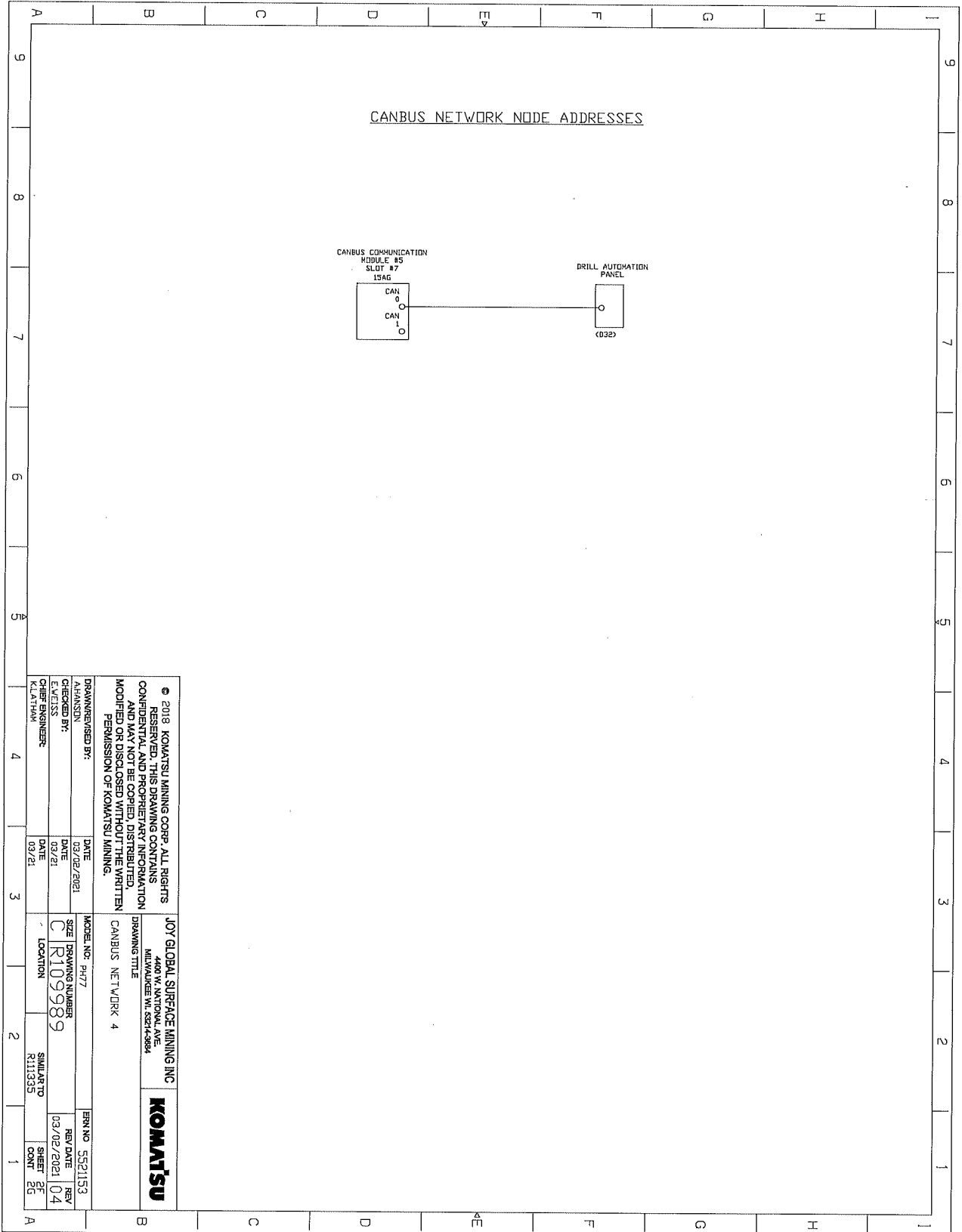


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<p>JOY GLOBAL SURFACE MINING INC. 4400 W. NATIONAL AVE. MILWAUKEE WI 53214-2884</p>	
<p>MODEL NO: P1177</p>	<p>ENR NO: 5521153</p>
<p>DATE: 03/02/2021</p>	<p>REV DATE: 03/02/2021</p>
<p>SIZE: C</p>	<p>REV: 04</p>
<p>DRAWING NUMBER: R109989</p>	<p>SHEET NO: 04</p>
<p>LOCATION: SKILLARIO</p>	<p>SHEET TOTAL: 04</p>
<p>DATE: 03/21</p>	<p>CONT: 04</p>
<p>CHIEF ENGINEER: K.LATHAN</p>	<p>DATE: 03/21</p>
<p>DRAWN/REVISED BY: CHANDLER</p>	<p>DATE: 03/02/2021</p>
<p>ENGINEER: BH</p>	<p>DATE: 03/02/2021</p>
<p>DATE: 03/21</p>	<p>DATE: 03/21</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

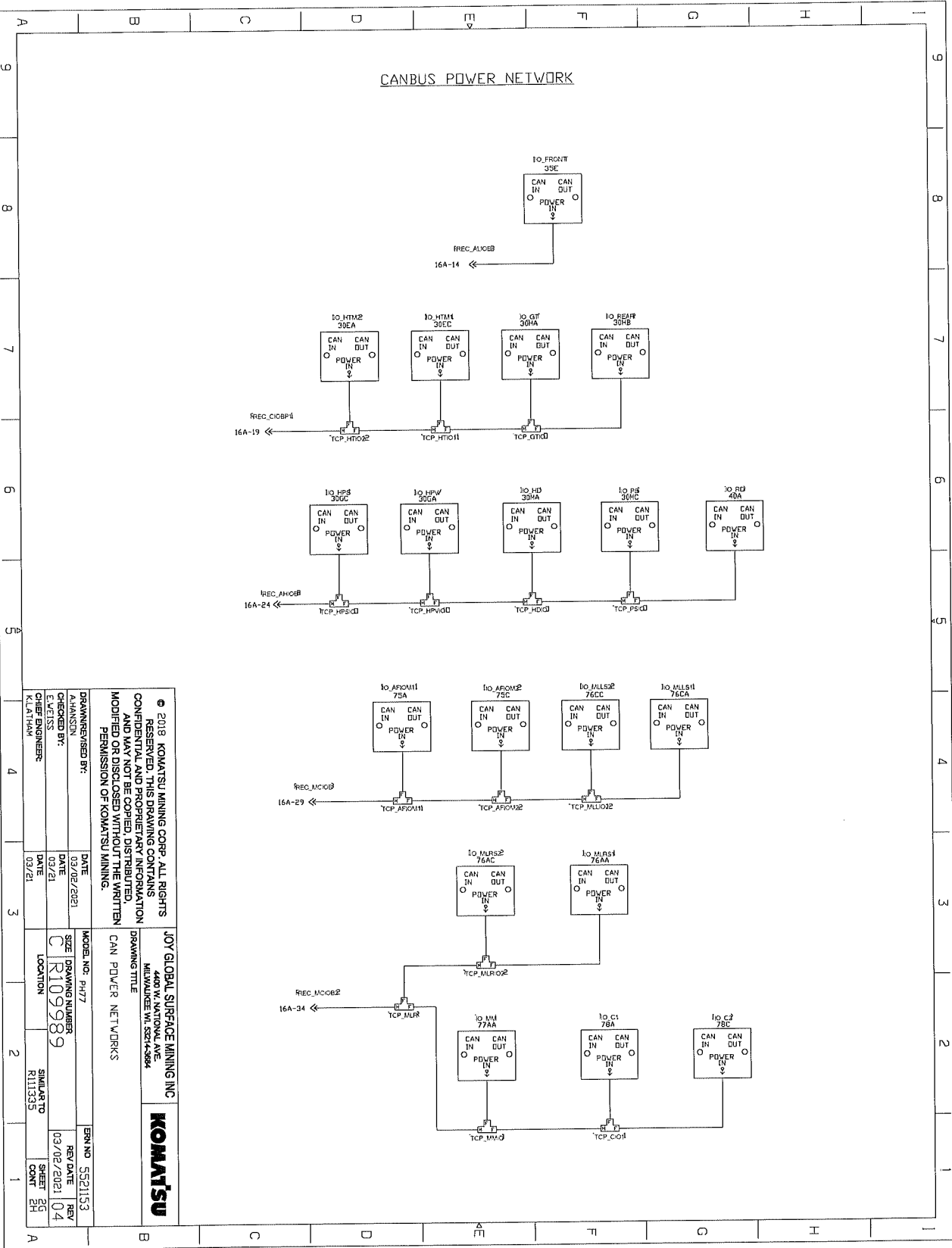


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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DRAWN BY:	DATE:	MODEL NO.:	REV. NO.:	REV. DATE:	REV. DATE:
AHANNON	03/02/2021	PH77	5521153	03/02/2021	04
CHECKED BY:	DATE:	SIZE:	DRAWING NUMBER:	LOCATION:	SIMILAR TO:
E.V. EISS	03/21	C	R109989		R113355
CHIEF ENGINEER:	DATE:				SHEET:
KLATYAM	03/21				25
					CONT:
					25

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



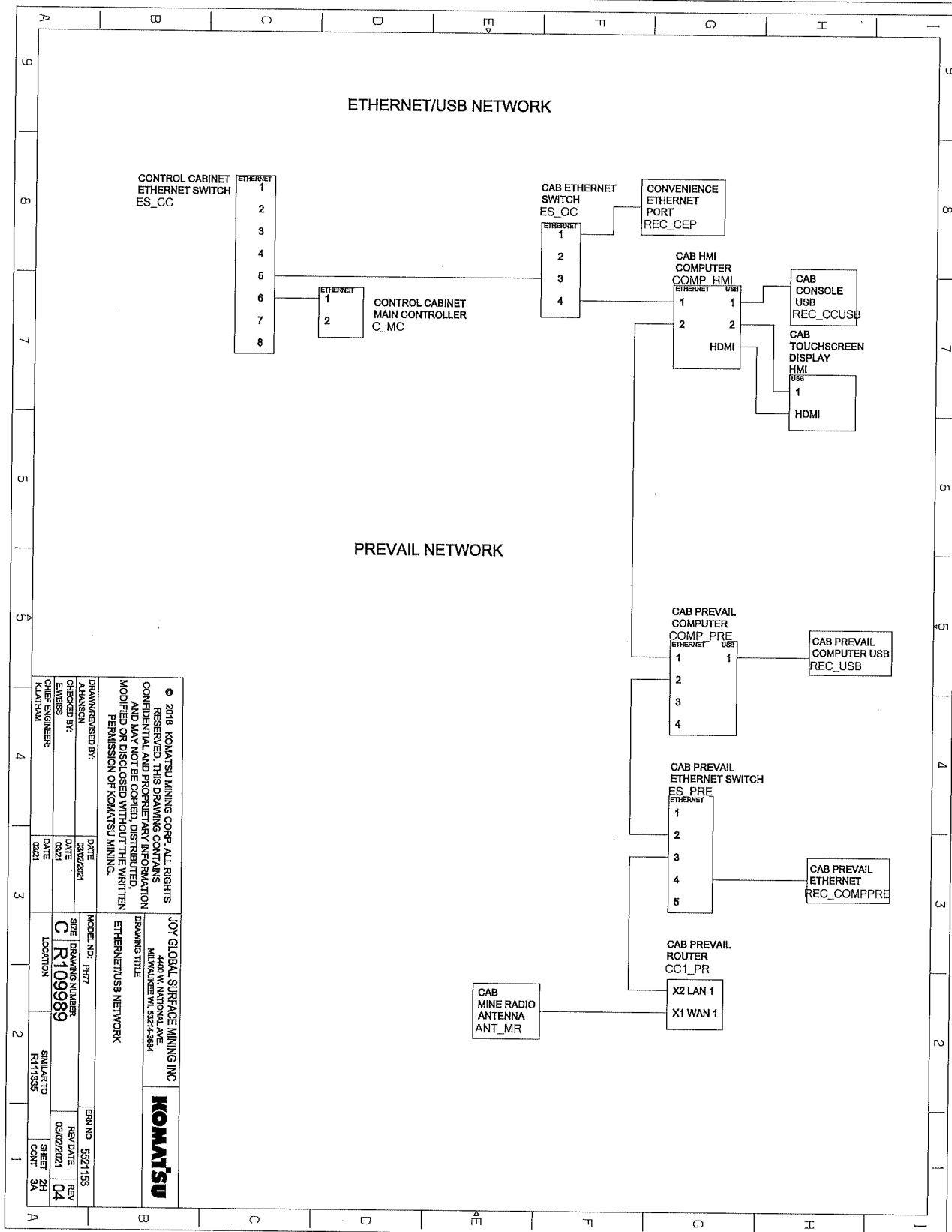
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DRAWN/REVIEWED BY: A.HANSSON	DATE 03/02/2021
CHECKED BY: L.VEITSS	DATE 03/02/2021
DATE 03/21	

MODEL NO. PH17	REV NO. 5521153
SIZE C	REV DATE 03/02/2021
DRAWING NUMBER R109989	REV 04
LOCATION R11335	SHEET 28
	CONT 28

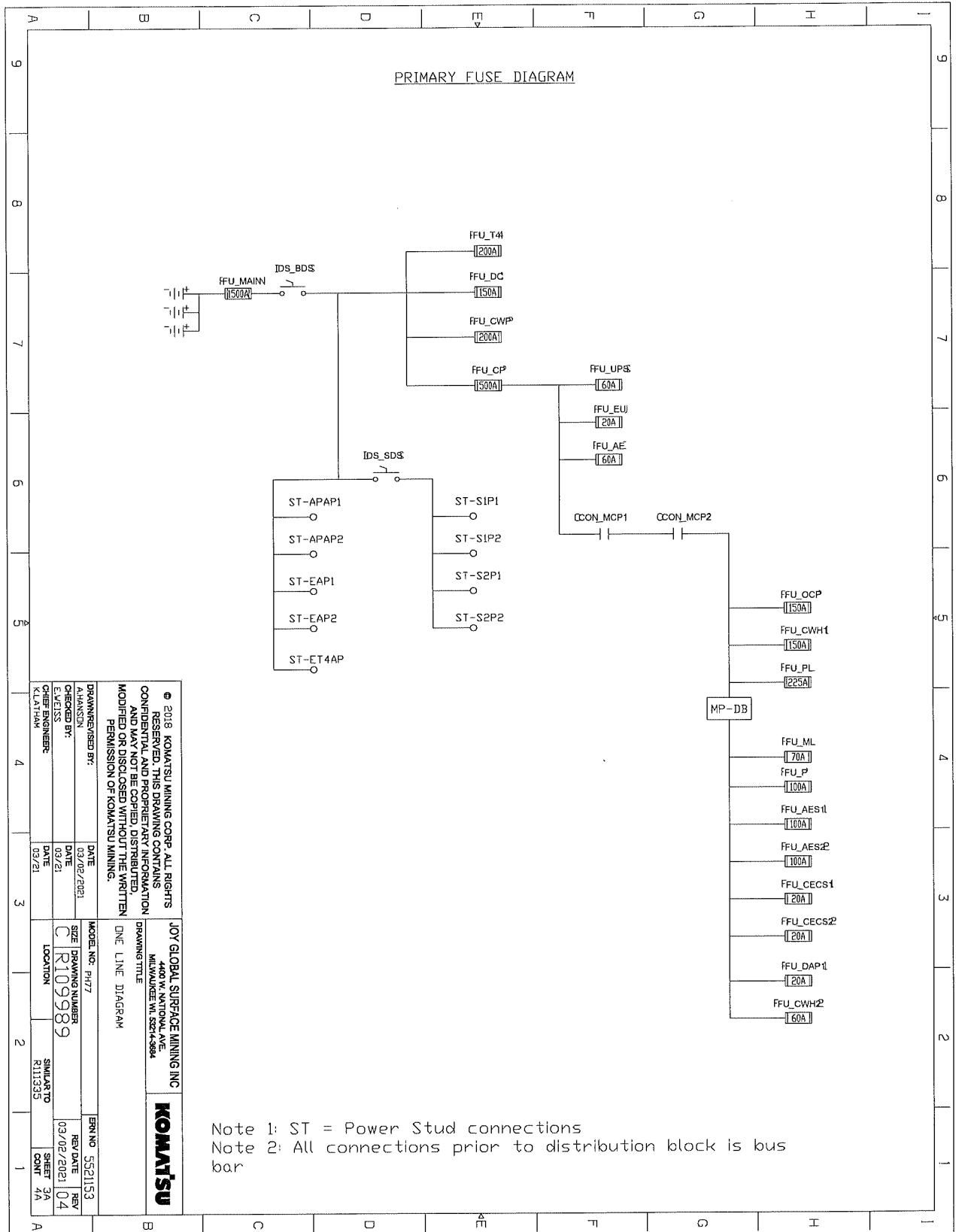
JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53248-8864
KOMATSU

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>JOY GLOBAL SURFACE MINING INC. 4400 W. NATIONAL AVE. MILWAUKEE WI 53214-3984</p>	<p>KOMATSU</p>
<p>DRAWING TITLE ETHERNET/USB NETWORK</p>	<p>MODEL NO: PH17</p>
<p>ENGINEER KLAUTHAM</p>	<p>DATE 03/02/2021</p>
<p>DESIGNER KLAUTHAM</p>	<p>DATE 03/02/2021</p>
<p>CHECKED BY KLAUTHAM</p>	<p>DATE 03/02/2021</p>
<p>APPROVED BY KLAUTHAM</p>	<p>DATE 03/02/2021</p>
<p>SIZE C</p>	<p>DRAWING NUMBER R1099989</p>
<p>LOCATION R111535</p>	<p>SIMILAR TO R111535</p>
<p>REVISION 04</p>	<p>REV. DATE 03/02/2021</p>
<p>SHEET 24</p>	<p>SHEET 34</p>
<p>CONTRACT NO. 5527153</p>	<p>REV. DATE 03/02/2021</p>

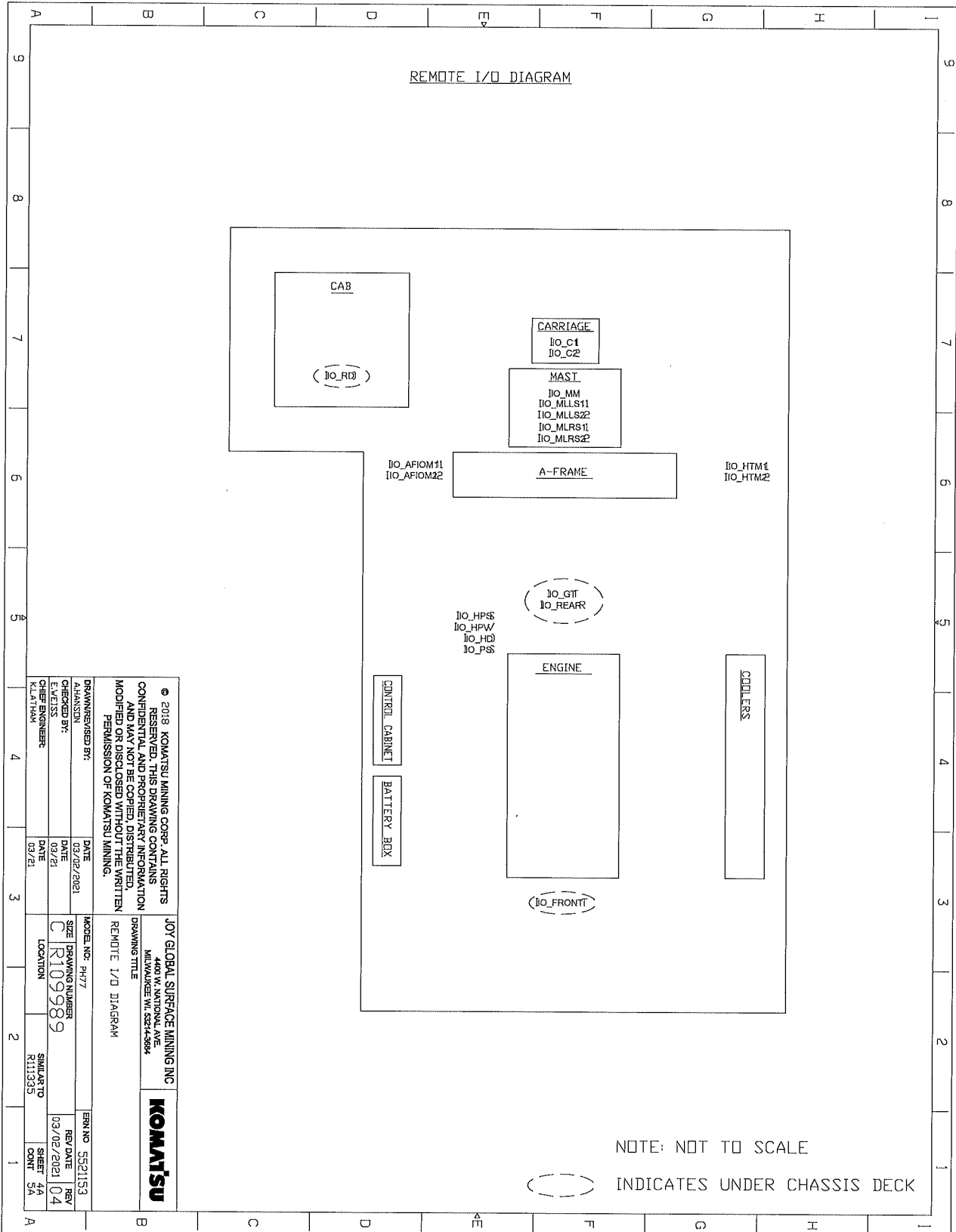
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



Note 1: ST = Power Stud connections
 Note 2: All connections prior to distribution block is bus bar

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ONE LINE DIAGRAM				
DRAWN/REVISED BY: A.HANSON	DATE: 03/02/2021	MODEL NO.: P1177	ERN NO.: 5521153	SHEET 3A OF 4A
CHECKED BY: E.VELISS	DATE: 03/21	SIZE: DRAWING NUMBER C R109989	REV DATE: 1887 03/02/2021	
CHIEF ENGINEER: CLAYMAN	DATE: 03/21	LOCATION:	SIMILAR TO: R111535	
LOCATION:		SHEET 3A OF 4A		

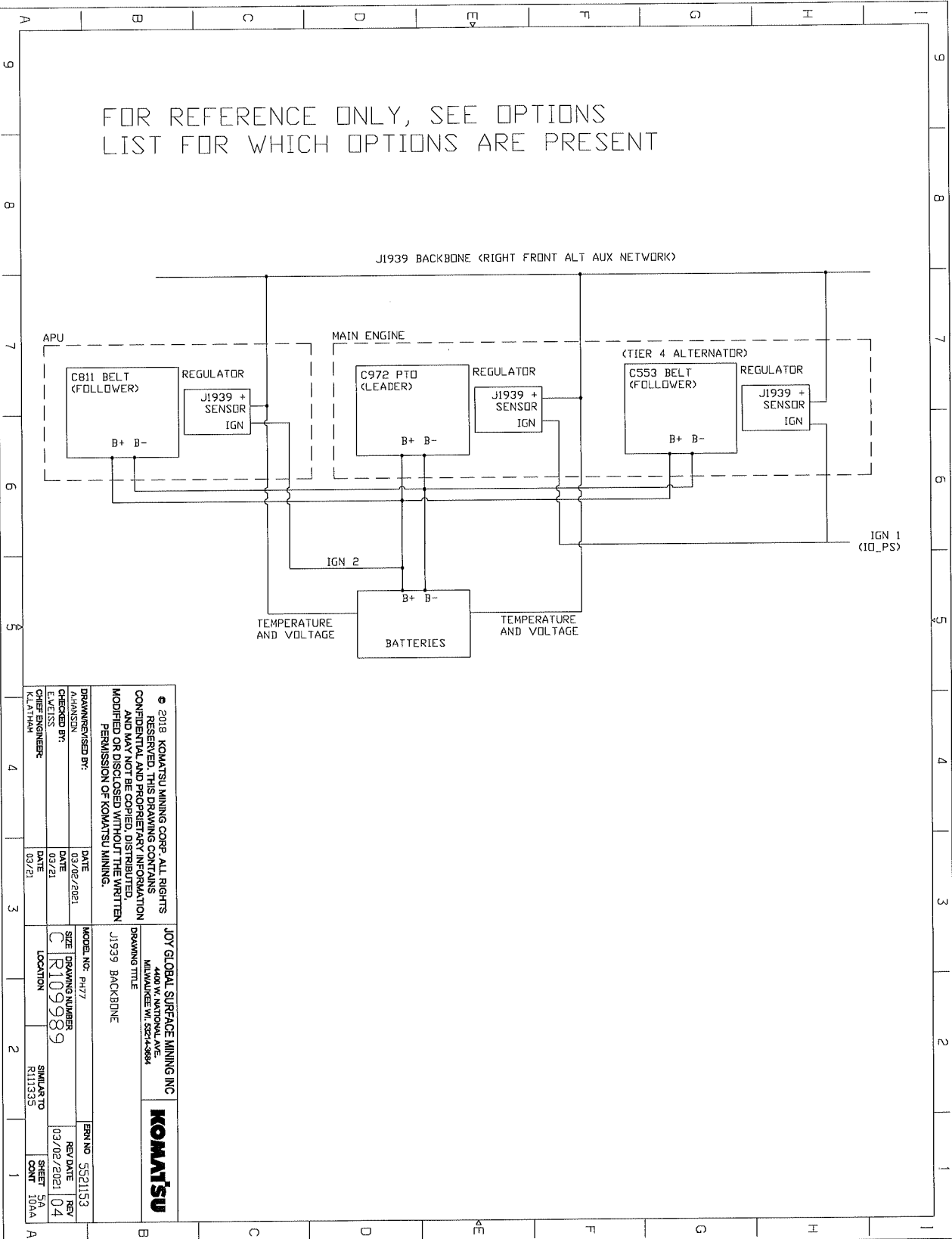
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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DRAWING TITLE		DRAWING NUMBER		REV. DATE	
REMOTE I/O DIAGRAM		C R109989		03/02/2021 04	
DRAWN BY:		DATE:		REV. DATE:	
M. HANSON		03/02/2021		03/02/2021	
CHECKED BY:		DATE:		REV. DATE:	
E. WESS		03/21		03/02/2021	
CHIEF ENGINEER:		DATE:		REV. DATE:	
K. LATIHAN		03/21		03/02/2021	
MODEL NO. P477		DRAWING NUMBER		REV. DATE	
C R109989		C R109989		03/02/2021	
LOCATION		SIMILAR TO		SHEET	
R11335		R11335		4A	
				CONT. 5A	
				REV. NO. 5521153	

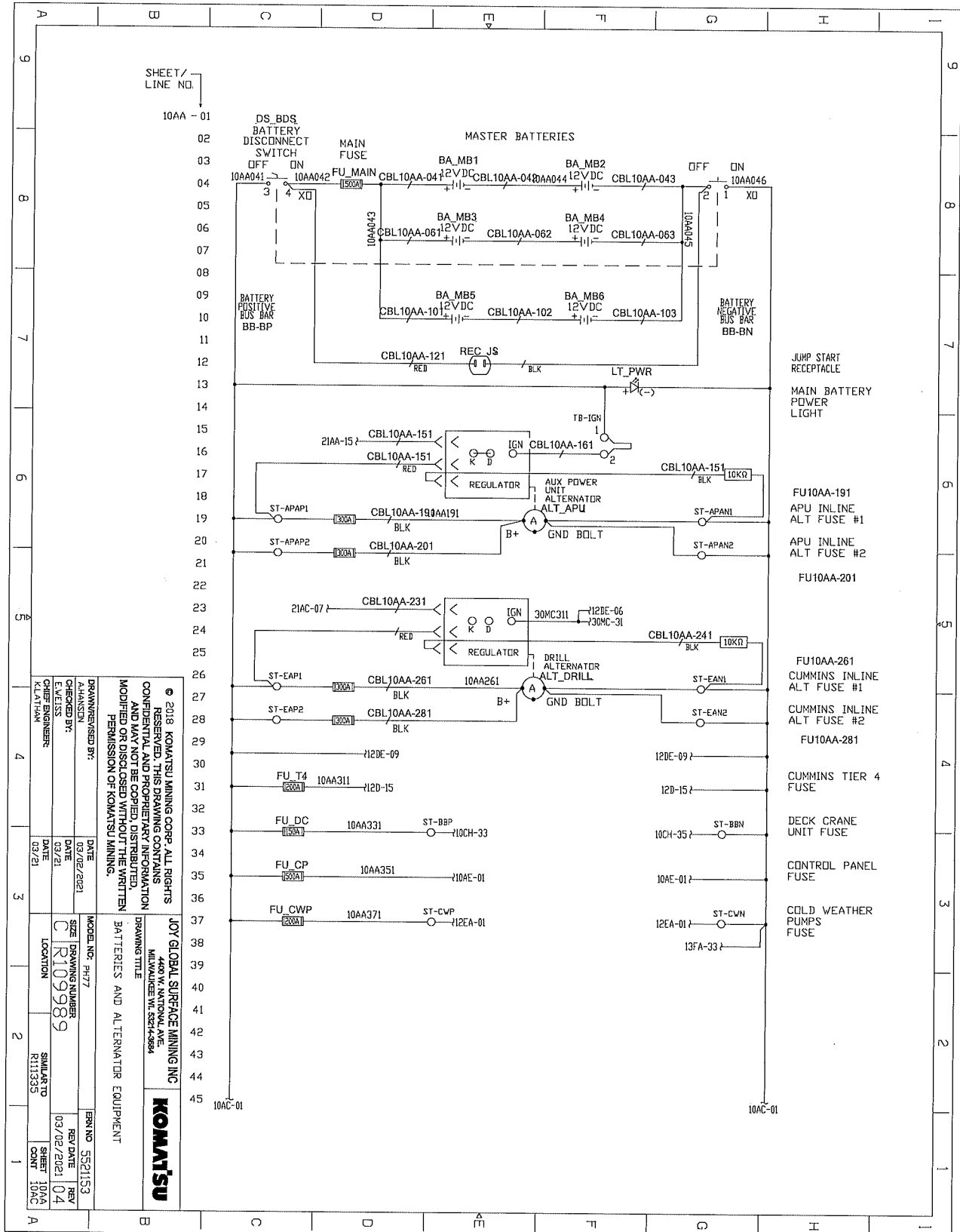
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

FOR REFERENCE ONLY, SEE OPTIONS LIST FOR WHICH OPTIONS ARE PRESENT



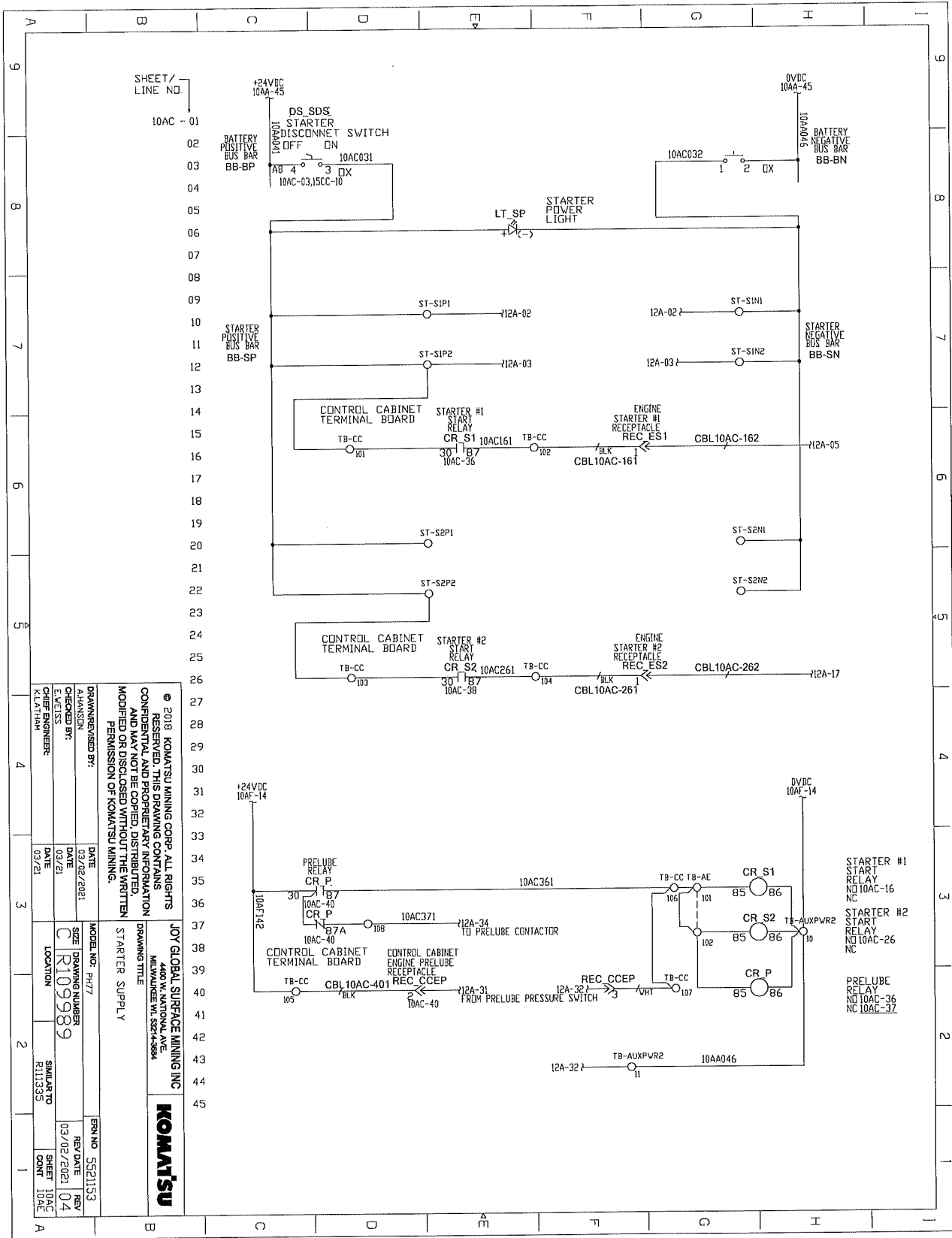
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<p>DRAWN/REVISED BY: A. HANSEN</p>	<p>DATE 03/02/2021</p>	<p>MODEL NO.: PH77</p>	<p>DRAWING TITLE J1939 BACKBONE</p>	<p>ERN NO. 5521153</p>	<p>REV DATE 1 REV 03/02/2021 04</p>
<p>CHECKED BY: C. R. JENSEN</p>	<p>DATE 03/21</p>	<p>SIZE C</p>	<p>DRAWING NUMBER R109989</p>	<p>SHEET 5A</p>	<p>REV</p>
<p>DATE 03/21</p>	<p>DATE 03/21</p>	<p>LOCATION R11335</p>	<p>SIMILAR TO R11335</p>	<p>COUNT 10AA</p>	<p>REV</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



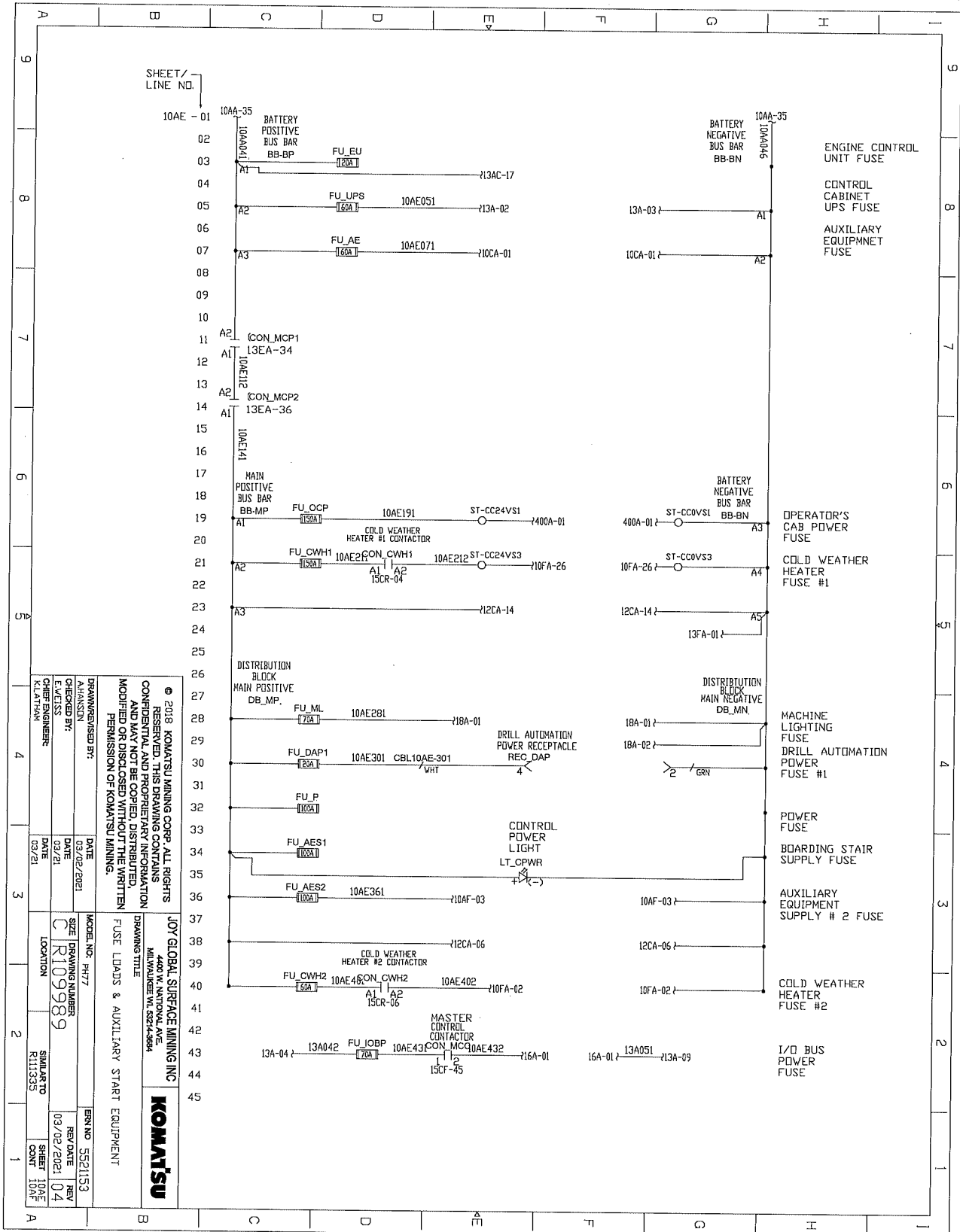
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<p>JOY GLOBAL SURFACE MINING INC 4400 W. NANTON AVE. MILWAUKEE WI 53214-9894</p>	
<p>KOMATSU</p>	
<p>DRAWN/REVISED BY: K.L.MITAHM</p>	<p>DATE: 03/02/2021</p>
<p>ENGINEER BY: K.L.MITAHM</p>	<p>DATE: 03/02/2021</p>
<p>CHIEF ENGINEER: K.L.MITAHM</p>	<p>DATE: 03/02/2021</p>
<p>MODEL NO.: PH77</p>	<p>REV. NO.: 5521153</p>
<p>SIZE: R109989</p>	<p>REV. DATE: 03/02/2021</p>
<p>LOCATION: R111353</p>	<p>REV. NO.: 04</p>
<p>SHEET 10AA</p>	<p>SHEET 10AA</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



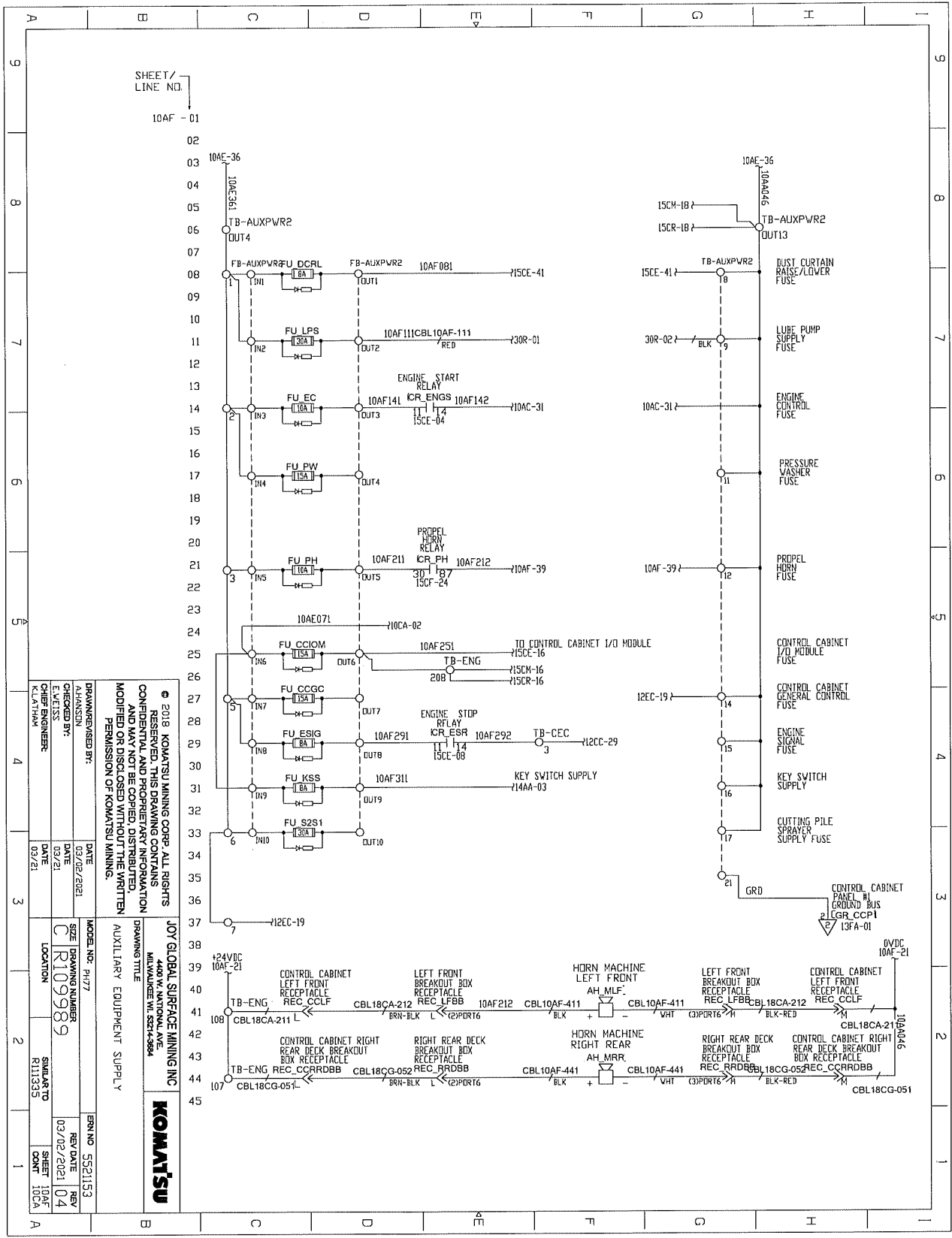
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JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE MESA, AZ 85204 DRAWING TITLE: STARTER SUPPLY	
DRAWN/REVIEWED BY: A.HANSSON	DATE: 03/02/2021
CHECKED BY: C. R. 109989	DATE: 03/02/2021
ENGINEER: K. LUTTMAN	DATE: 03/21
MODEL NO.: PH77	REV NO.: 5521153
SIZE: DRAWING NUMBER C R 109989	REV DATE: 03/02/2021 REV: 04
LOCATION: SIMILAR TO R11335	SHEET: 10AC CNT: 10AC

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>JOY GLOBAL SURFACE MINING INC. 4400 W. NATIONAL AVE. MILL VALLEY, CA 94541-3884</p>	
<p>DRAWING TITLE FUSE LEADS & AUXILIARY START EQUIPMENT</p>	
<p>DRAWN/REVISED BY: A.HANSSON</p>	<p>DATE 03/02/2021</p>
<p>CHECKED BY: E.LARSSON</p>	<p>DATE 03/21</p>
<p>DATE 03/21</p>	<p>DATE 03/21</p>
<p>MODEL NO.: PH77</p>	<p>SIZE: DRAWING NUMBER C R 09989</p>
<p>LOCATION SILVARTO R111335</p>	<p>ENR NO.: 5521153</p>
<p>REV DATE 03/02/2021</p>	<p>REV 04</p>
<p>SHEET 10AE</p>	<p>SHEET 10AE</p>
<p>COUNT 1</p>	<p>COUNT 1</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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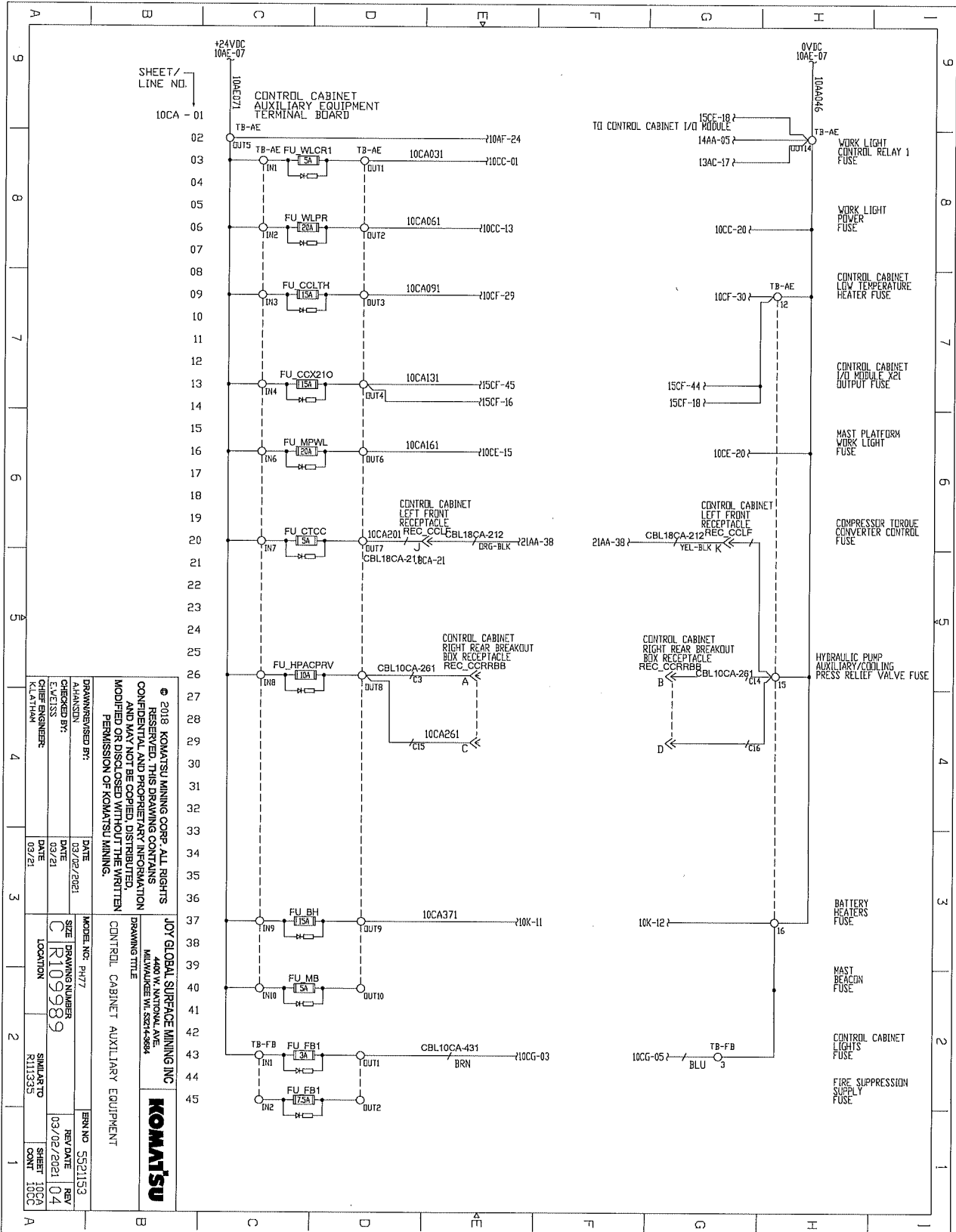
DRAWN/REVISED BY:	DATE:	MODEL NO.:	PI77
CHECKED BY:	DATE:	SIZE:	DRAWING NUMBER
ENGINEER:	DATE:	LOCATION:	C109989
CHECKER:	DATE:		

10Y GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE, WI 53214-9894

AUXILIARY EQUIPMENT SUPPLY

REV NO.:	5521153
REV DATE:	03/02/2021
REV:	04
SHEET NO.:	10AF
TOTAL SHEETS:	10AF

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI, 53248-8884

MODEL NO: PH77
DRAWING NUMBER: C1R109989
LOCATION: RIO TINTO R113335

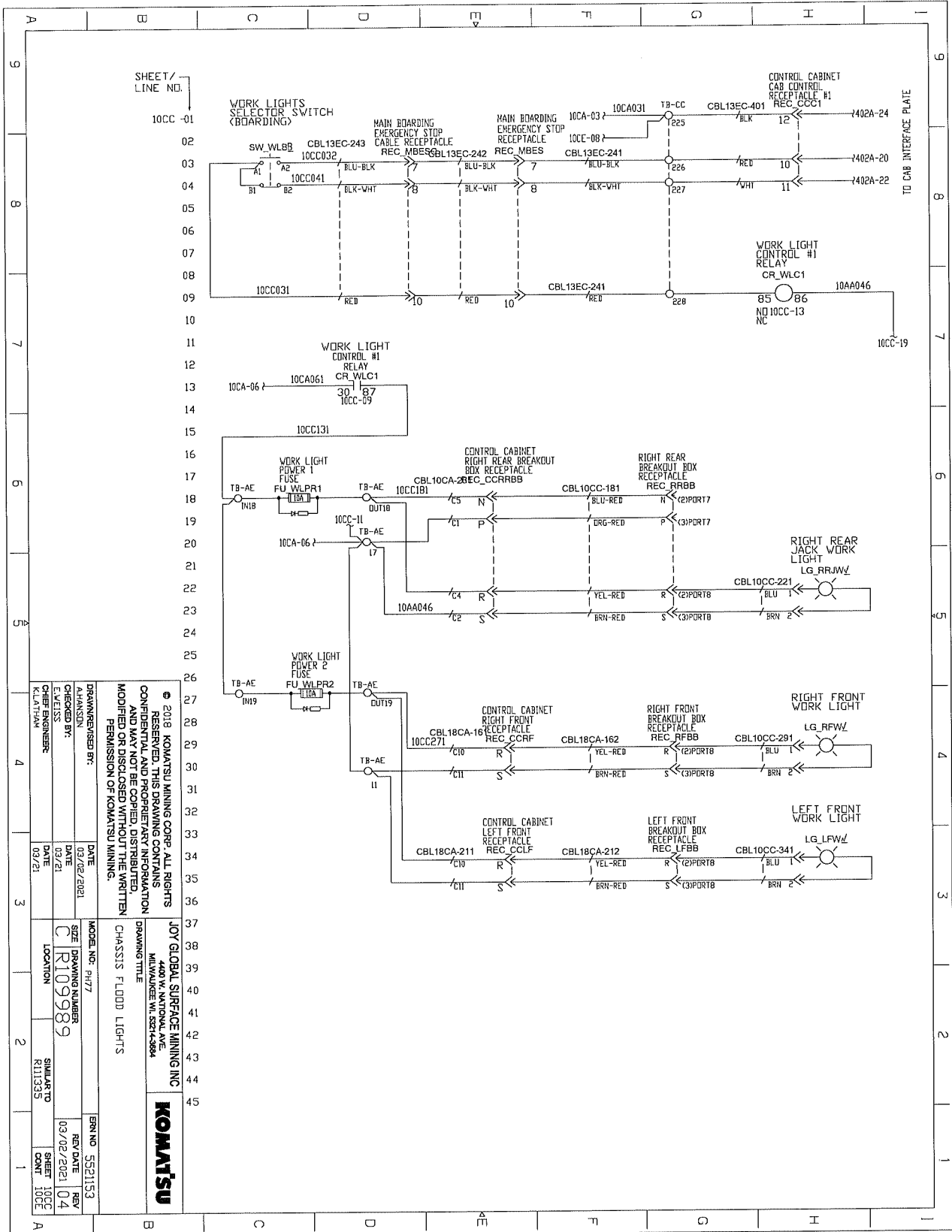
DRAWN/REVISOR BY: [Blank]
CHECKED BY: [Blank]
DATE: 03/21/2021

ENGINEER: K.LATHAM
DATE: 03/21/2021

REV NO: 04
REV DATE: 03/02/2021
REV BY: [Blank]

SHEET COUNT: 100/100

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

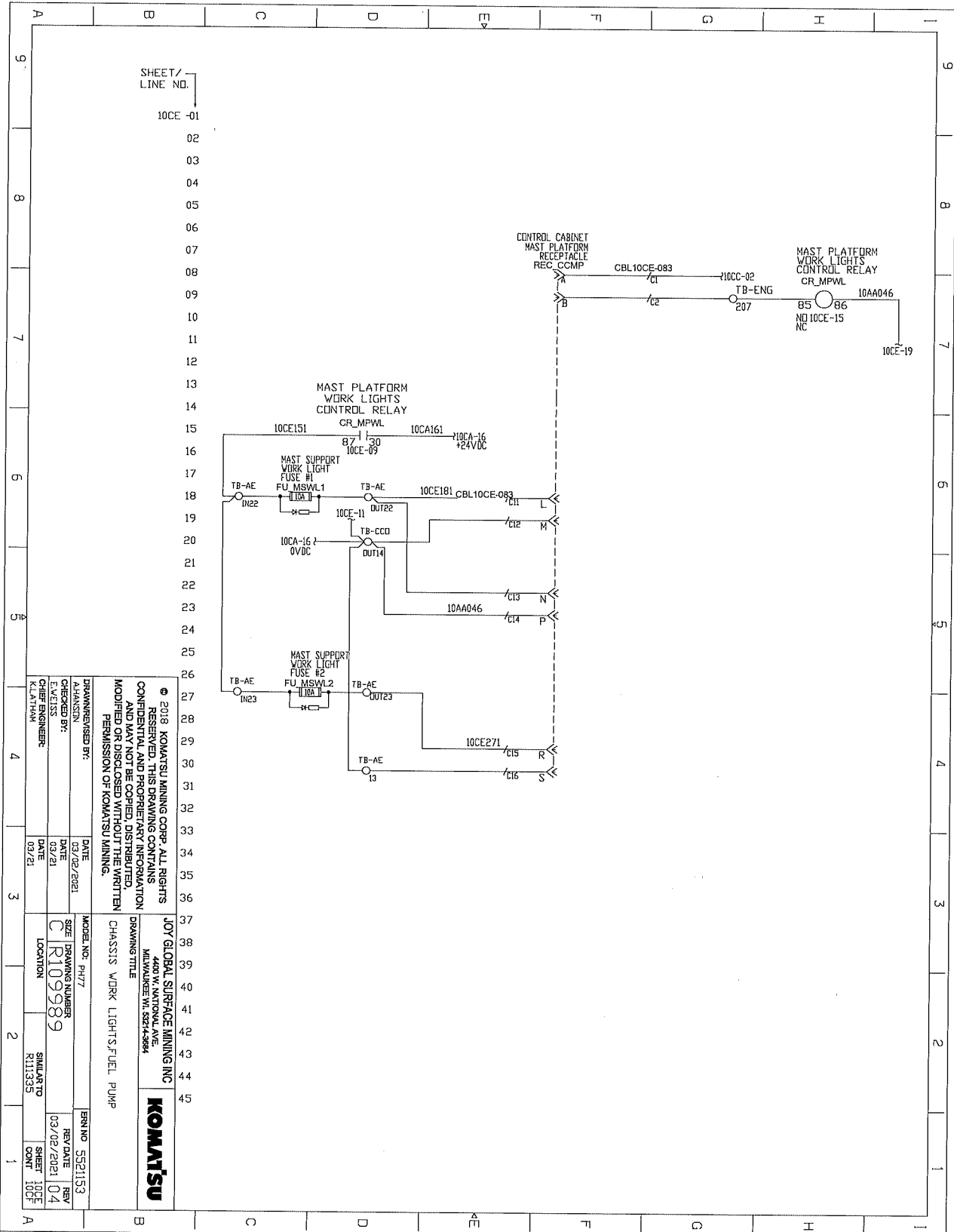


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DRAWN/REVIEWED BY: A.HANSON	DATE: 03/02/2021
CHECKED BY: L.WELLS	DATE: 03/21
DESIGNED BY: A.HANSON	DATE: 03/21
MODEL NO.: P477	BRN NO.: 5521153
DRAWING NUMBER: R109989	REV DATE: 03/02/2021
LOCATION: R11335	REV: 04
SHEET: 10CC	SHEET CNT: 10CC

JOY GLOBAL SURFACE MINING INC
 4400 W. NATIONAL AVE
 MILWAUKEE WI 53214-8884

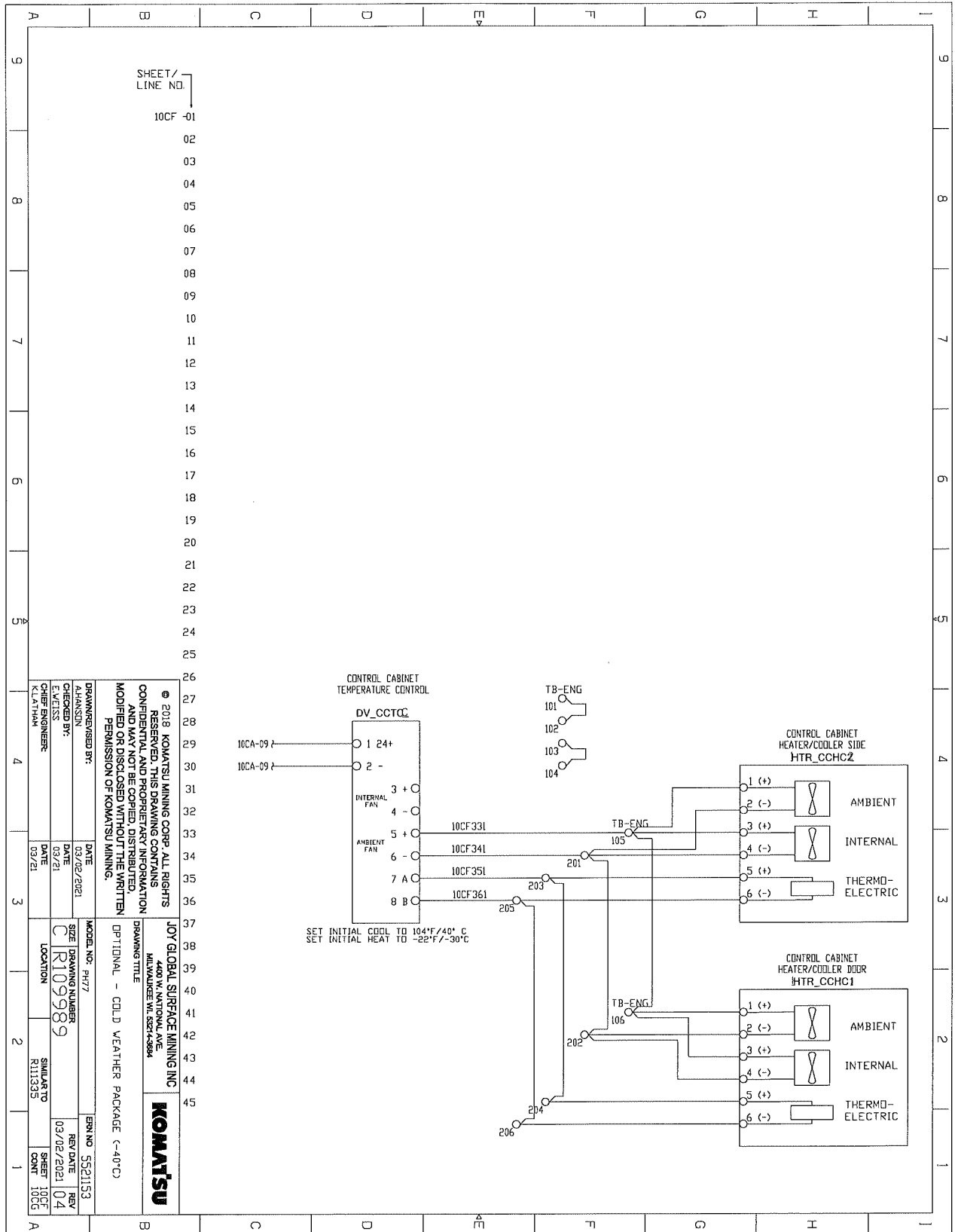


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>JOY GLOBAL SURFACE MINING INC 4401 W. NANTONAL AVE MILWAUKEE WI 53248-9894</p>	<p>KOMATSU</p>
<p>CHASSIS WORK LIGHTS FUEL PUMP</p>	<p>MODEL NO. PH77</p>
<p>DRAWING NUMBER C/R109989</p>	<p>DATE 03/21/2021</p>
<p>DATE 03/21</p>	<p>REVISION 03/02/2021 04</p>
<p>CHIEF ENGINEER K.LATHAM</p>	<p>SHEET NO. 1005</p>
<p>DATE 03/21/2021</p>	<p>REVISION 03/02/2021 04</p>
<p>DATE 03/21</p>	<p>SHEET NO. 1005</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET /
LINE NO.
10CF -01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

26	DRAWN/REVIEWED BY:	A.HANSSON	DATE:	03/02/2021
27	CHECKED BY:	E.MEISS	DATE:	03/21
28	CHIEF ENGINEER:	K.LATHAN	DATE:	03/21
29	MODEL NO.:	PH77	SIZE:	DRAWING NUMBER
30	SIZE:	R109989	LOCATION:	SIMILAR TO R111335
31	DATE:	03/02/2021	SHEET:	10CF
32	DATE:	03/02/2021	CONT:	04
33	DATE:	03/02/2021	CON:	10CF
34	DATE:	03/02/2021	CON:	10CF
35	DATE:	03/02/2021	CON:	10CF
36	DATE:	03/02/2021	CON:	10CF
37	DATE:	03/02/2021	CON:	10CF
38	DATE:	03/02/2021	CON:	10CF
39	DATE:	03/02/2021	CON:	10CF
40	DATE:	03/02/2021	CON:	10CF
41	DATE:	03/02/2021	CON:	10CF
42	DATE:	03/02/2021	CON:	10CF
43	DATE:	03/02/2021	CON:	10CF
44	DATE:	03/02/2021	CON:	10CF
45	DATE:	03/02/2021	CON:	10CF

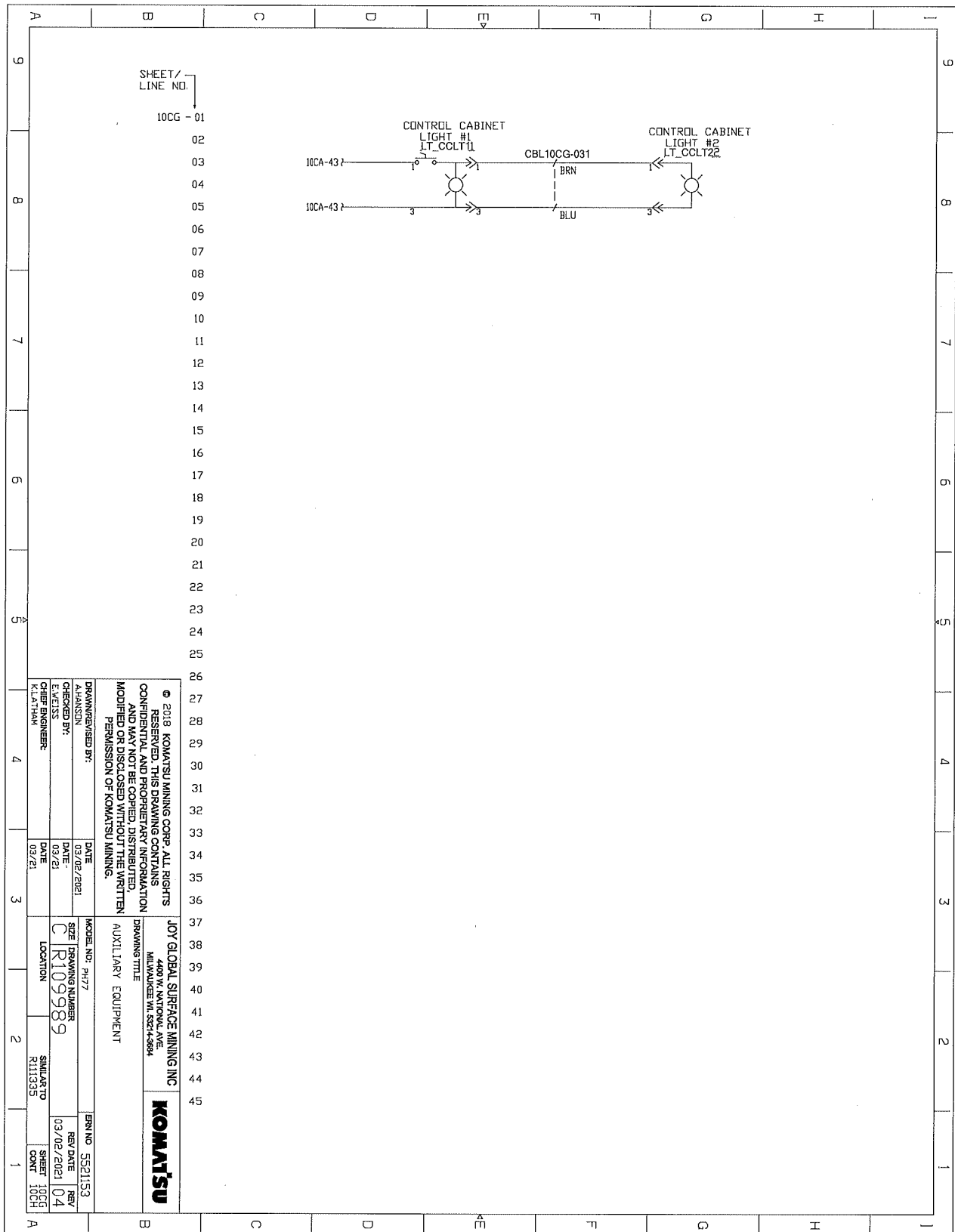
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JOY GLOBAL SURFACE MINING INC.
4400 W. NATIONAL AVE
MILWAUKEE WI 53214-3844

OPTIONAL - COLD WEATHER PACKAGE (-40°C)

KOMATSU

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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JOY GLOBAL SURFACE MINING INC
 DRAWING TITLE: AUXILIARY EQUIPMENT
 MODEL NO.: #777
 SIZE: R109989
 LOCATION: R111335

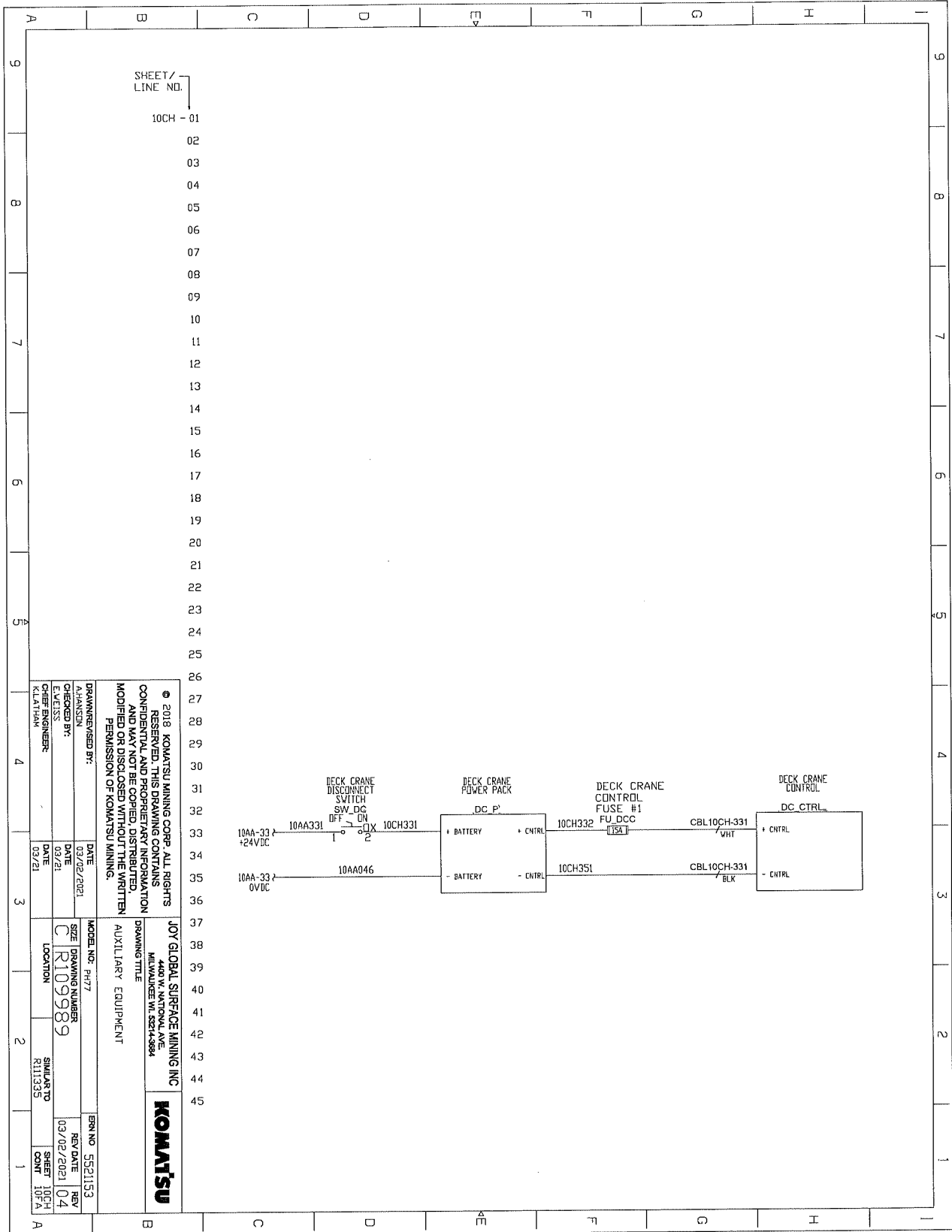
DRAWN BY: AMANSON
 CHECKED BY: E. WEISS
 CHIEF ENGINEER: K. LATHAM

DATE: 03/02/2021
 DATE: 03/21
 DATE: 03/21

REV NO: 5E21153
 REV DATE: 03/02/2021
 REV: 04

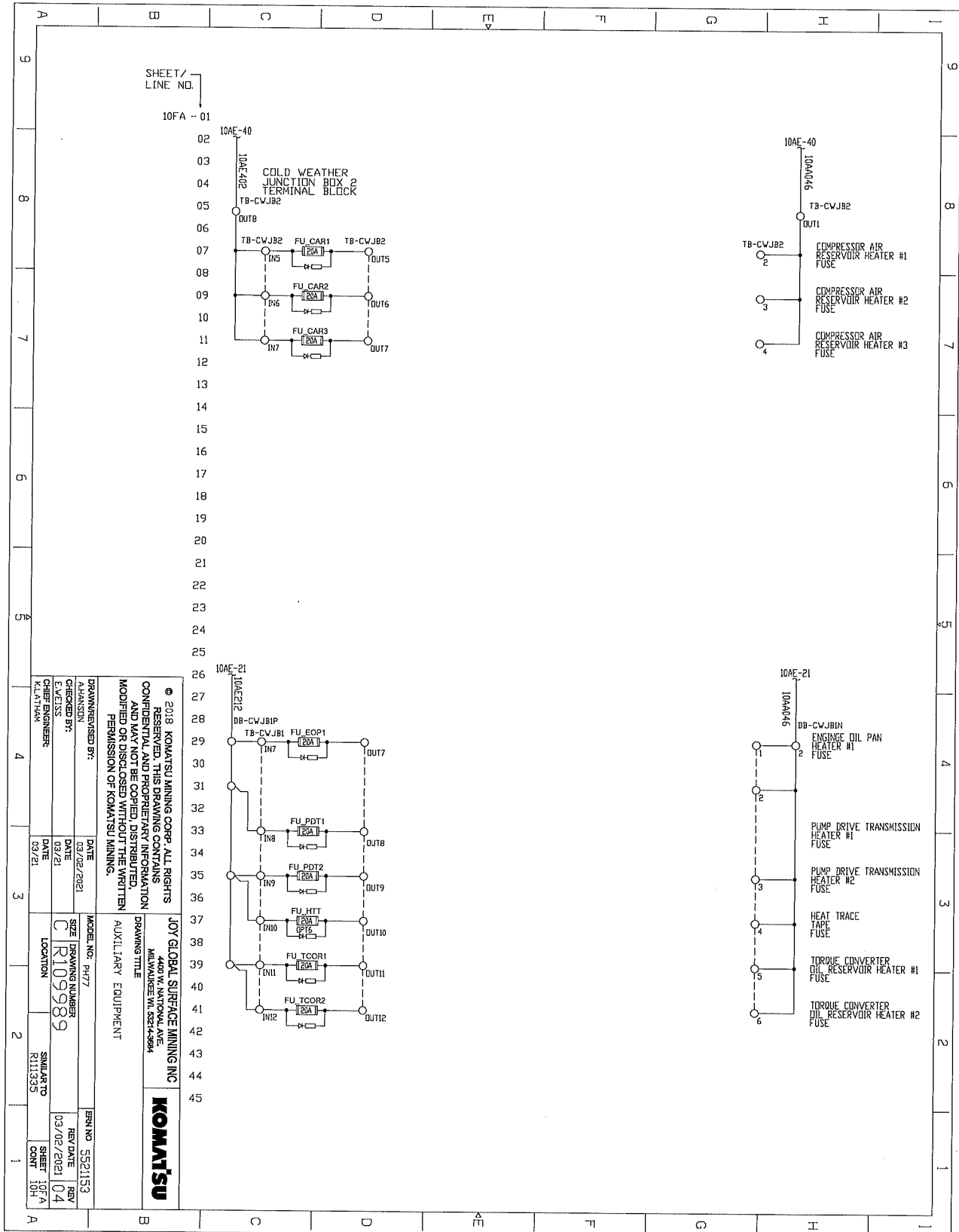
SHEET 10CG
 CONT 10CH

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



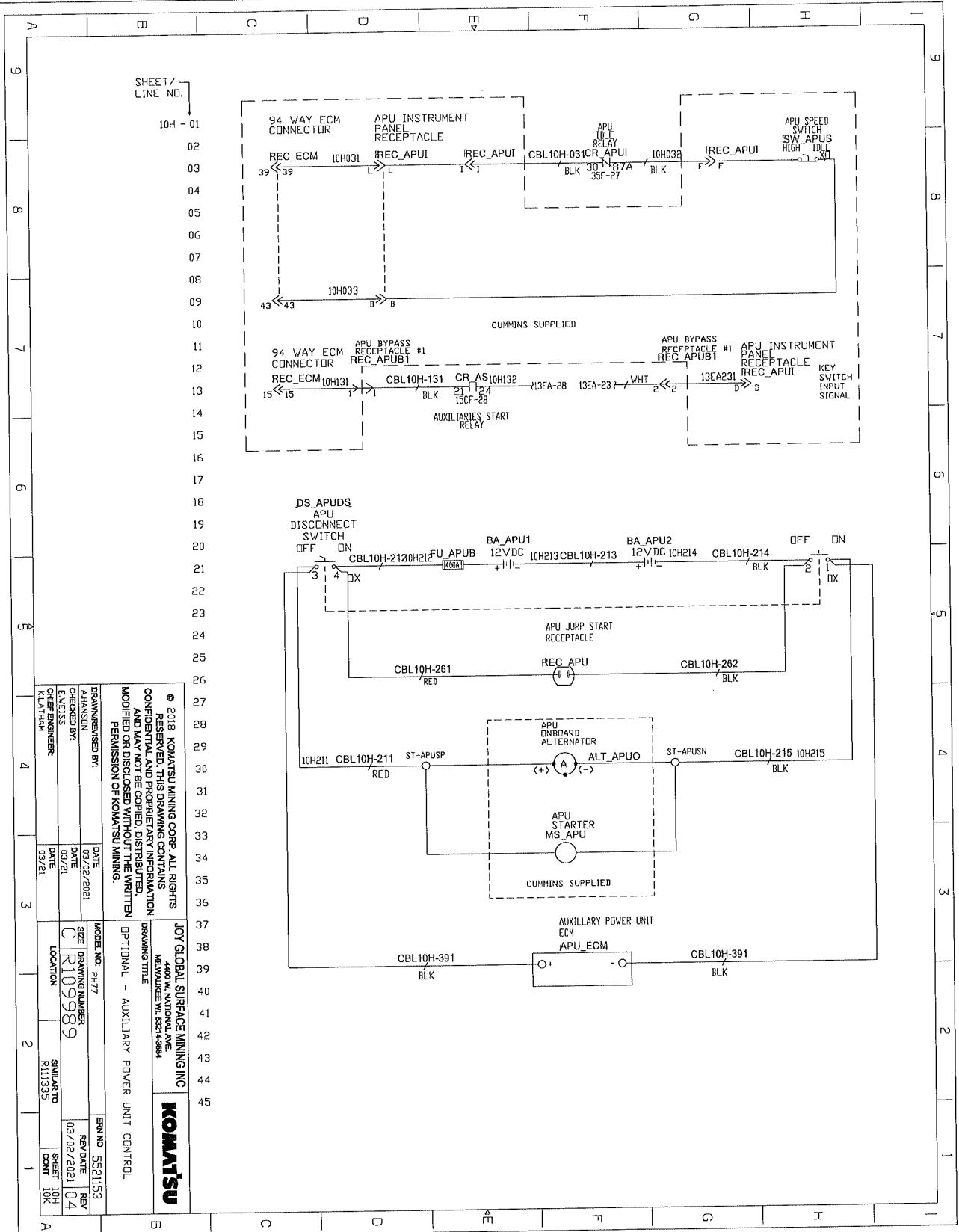
SHEET / LINE NO.		10CH - 01	
DRAWN/REVIEWED BY:		DATE	
A.HANSSON		09/02/2021	
CHECKED BY:		DATE	
E.WESS		03/21	
DRAWING NUMBER:		DATE	
R109989		03/21	
DRAWING TITLE		MODEL NO.	
JOY GLOBAL SURFACE MINING INC		PH77	
440 W. NATIONAL AVE.		SIZE	
MILWAUKEE WI 53214-9884		DRAWING NUMBER	
AUXILIARY EQUIPMENT		C R109989	
COMPTON		LOCATION	
R111335		SHEET	
R111335		10CH	
REV DATE		REV	
09/02/2021		04	
SHEET		SHEET	
10CH		10CH	
CONT		CONT	
10CH		10CH	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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DRAWN/REVISED BY: K.LATHAM CHECKED BY: K.LATHAM DATE: 03/21		MODEL NO. PH77 DRAWING NUMBER: C R109989 LOCATION: SIMILANTO R111535		
DATE: 03/02/2021		DATE: 03/02/2021		REV. DATE: 03/02/2021
SIZE: C		LOCATION: SIMILANTO R111535		SHEET: 10FA CONT: 04

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO. 10H - 01	
94 WAY ECM CONNECTOR REC_ECM 10H031	
APU INSTRUMENT PANEL RECEPTACLE REC_APUI	
APU (BLK) RELAY CBL10H-031CR APUI	
APU SPEED SWITCH SW APUS HIGH IDLE	
REC_APUI	
CUMMINS SUPPLIED	
94 WAY ECM CONNECTOR REC_ECM 10H131	
APU BYPASS RECEPTACLE #1 REC_APUB1	
CR AS 10H132 CBL10H-131	
AUXILIARIES START RELAY	
APU BYPASS RECEPTACLE #1 REC_APUB1	
APU INSTRUMENT PANEL RECEPTACLE REC_APUI	
KEY SWITCH INPUT SIGNAL	
DS_APUDS APU DISCONNECT SWITCH OFF ON	
BA_APU1 12VDC CBL10H-212 10H212	
BA_APU2 12VDC CBL10H-213 10H213	
OFF ON CBL10H-214 10H214	
APU JUMP START RECEPTACLE REC_APU	
CBL10H-261 CBL10H-262	
APU ONBOARD ALTERNATOR ALT_APUO	
APU STARTER MS_APU CUMMINS SUPPLIED	
AUXILIARY POWER UNIT ECM APU_ECM	
CBL10H-391 CBL10H-391	

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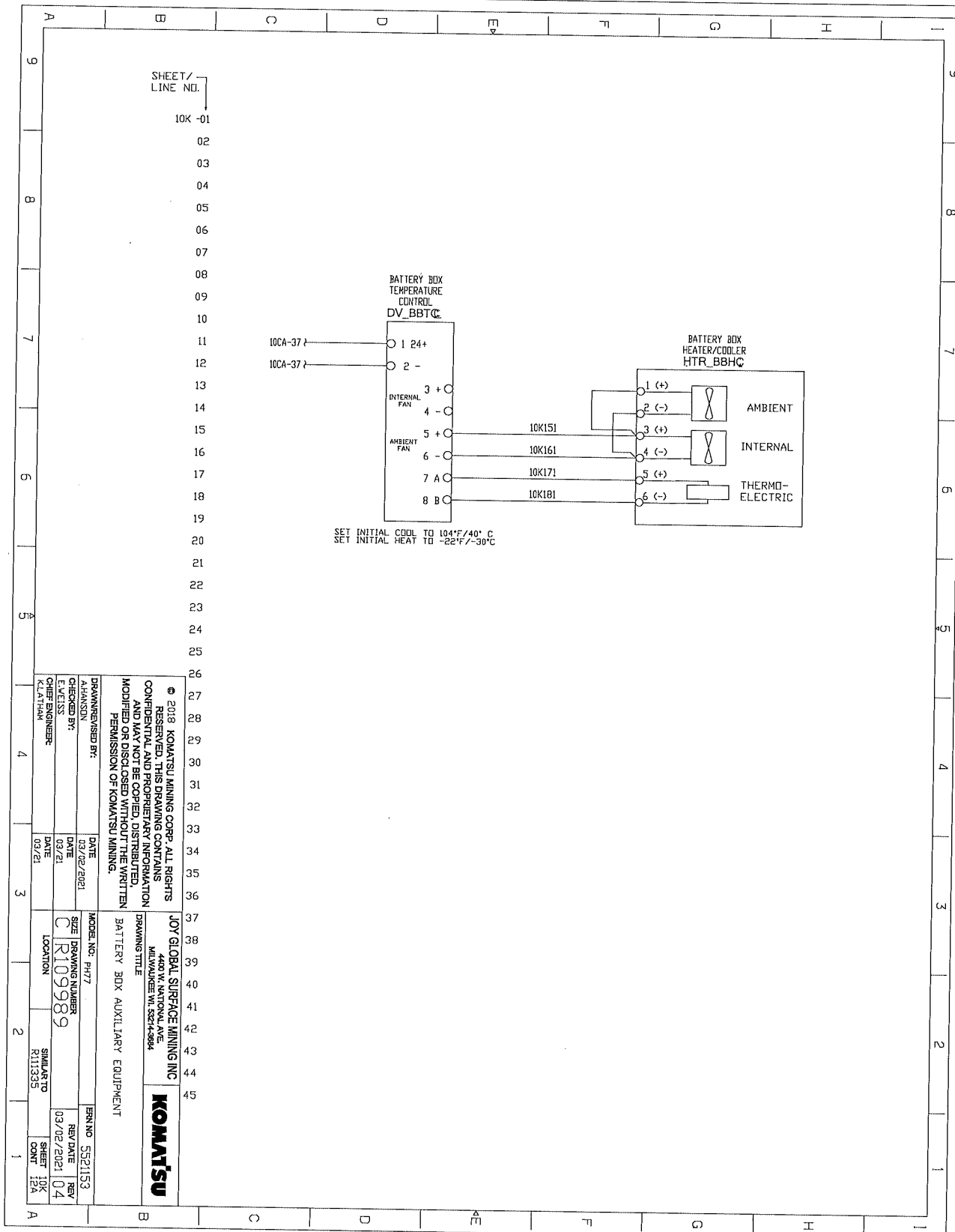
JOY GLOBAL SUPRECE MINING INC
 4401 W NATIONAL AVE
 MELBA WY, 8324-3884

KOMATSU

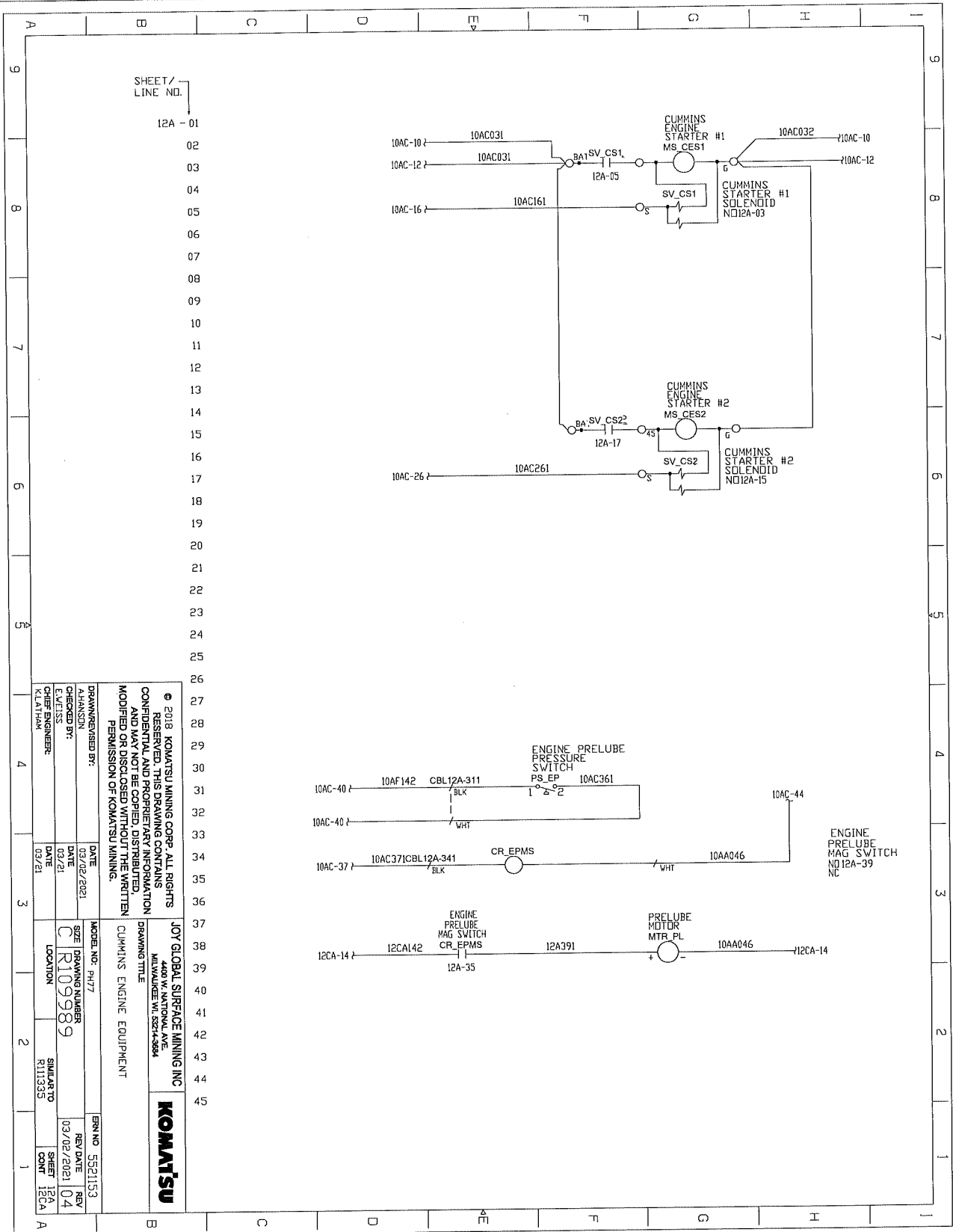
DRAWING TITLE
 OPTIONAL - AUXILIARY POWER UNIT CONTROL

DRAWN BY:	DATE:	MODEL NO:	REV:
AMANSON	03/02/2021	R109989	04
CHECKED BY:	DATE:	SIZE:	REV:
E.VEISS	03/21	C	04
CHIEF ENGINEER:	DATE:	LOCATION:	SHEET NO:
K.LATHAM	03/21	R11535	108
			108

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



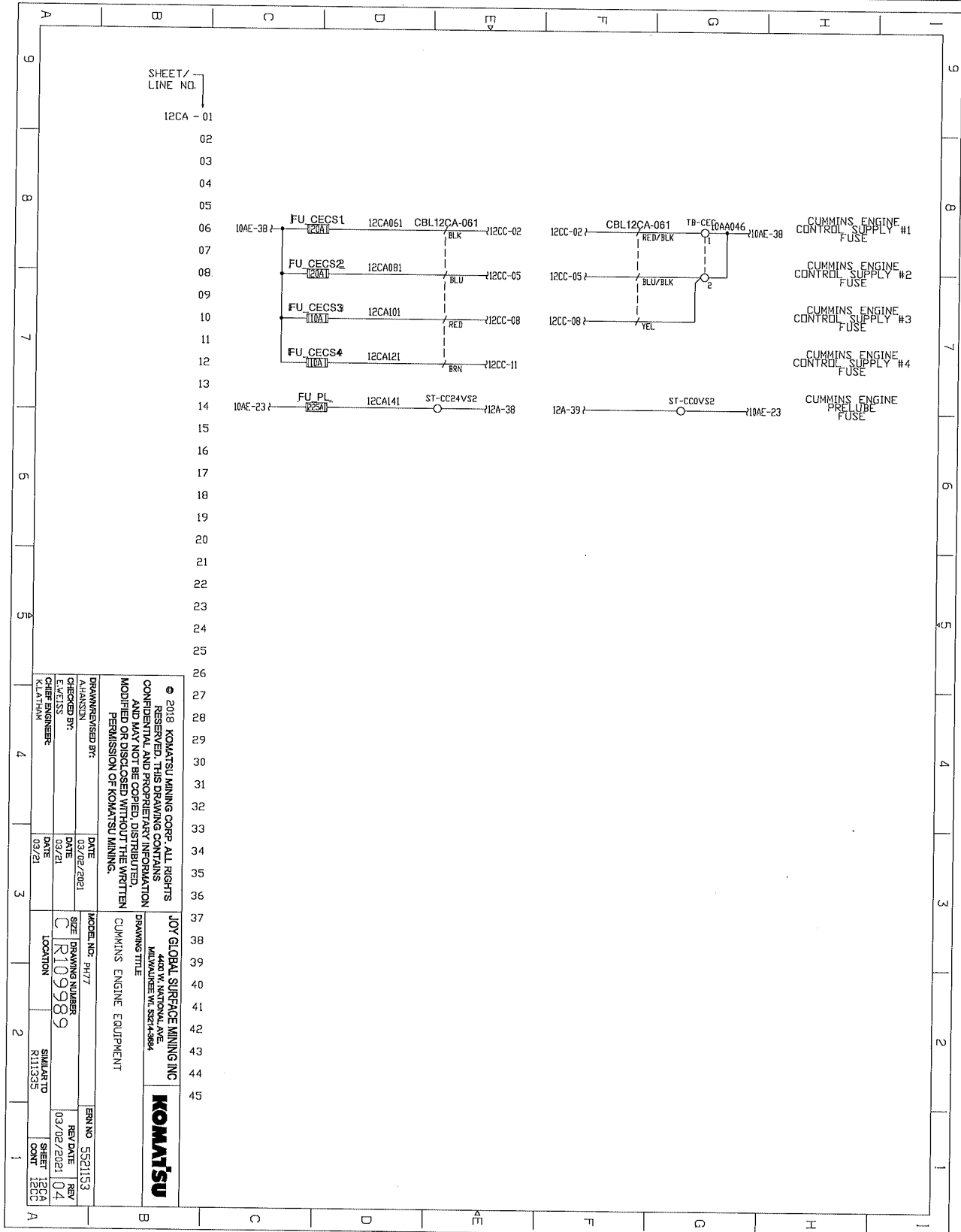
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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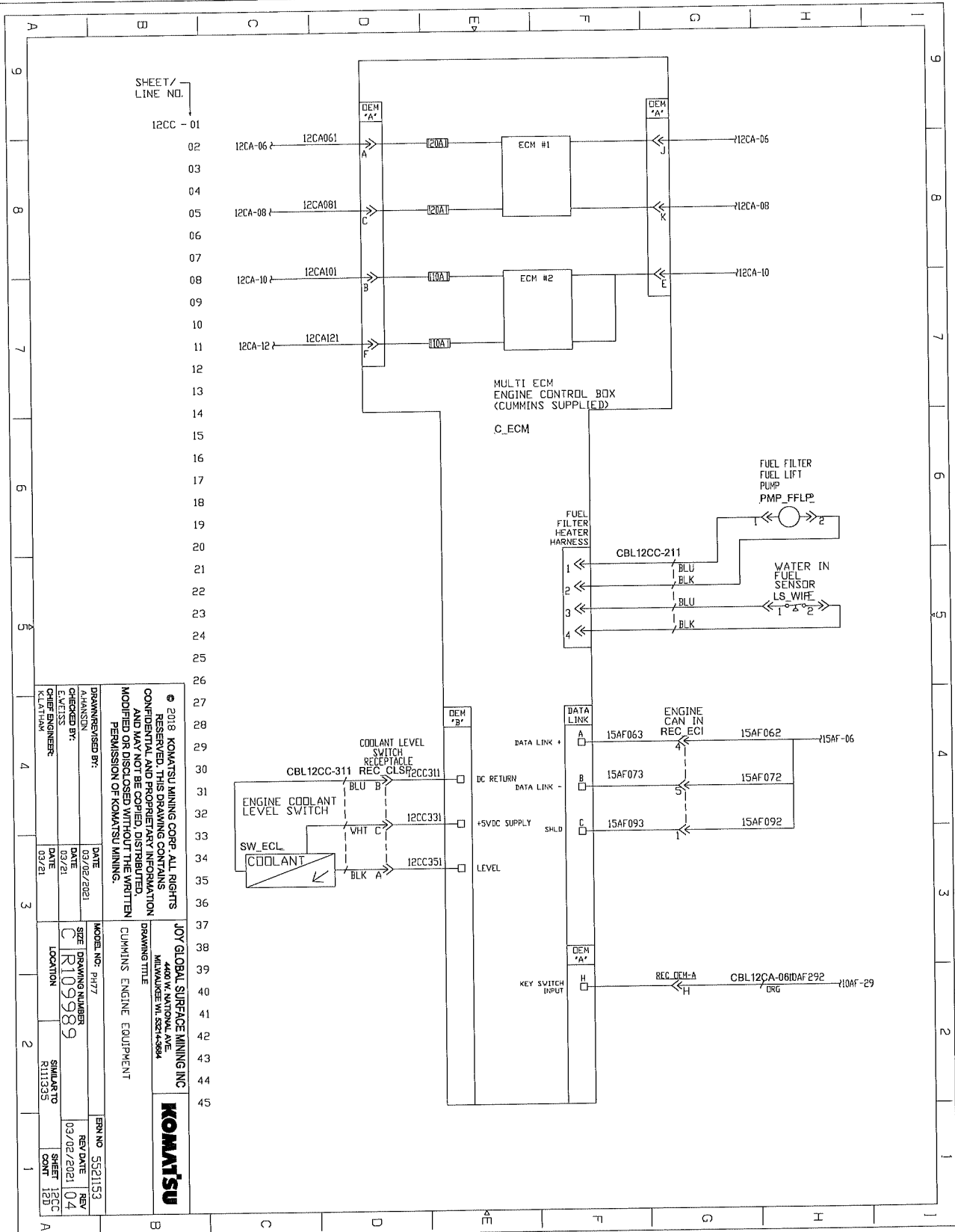
DRAWN/REVISED BY: HANUSON CHECKED BY: CHIEF ENGINEER: KLATHAM	DATE: 03/21/2021	MODEL NO.: PH77	ERN NO.: 5521153
SIZE: R109989	DATE: 03/21	DRAWING TITLE: CUMMINS ENGINE EQUIPMENT	REV DATE: 03/02/2021
LOCATION: R111335	SIMILAR TO: R111335	JOY GLOBAL SURFACE MINING INC 4400 W. SANTIAGO AVE. MARIETTA, GA 30067-5584	REV: 04
SHEET 12A	SHEET 12CA		COUNT 12CA

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



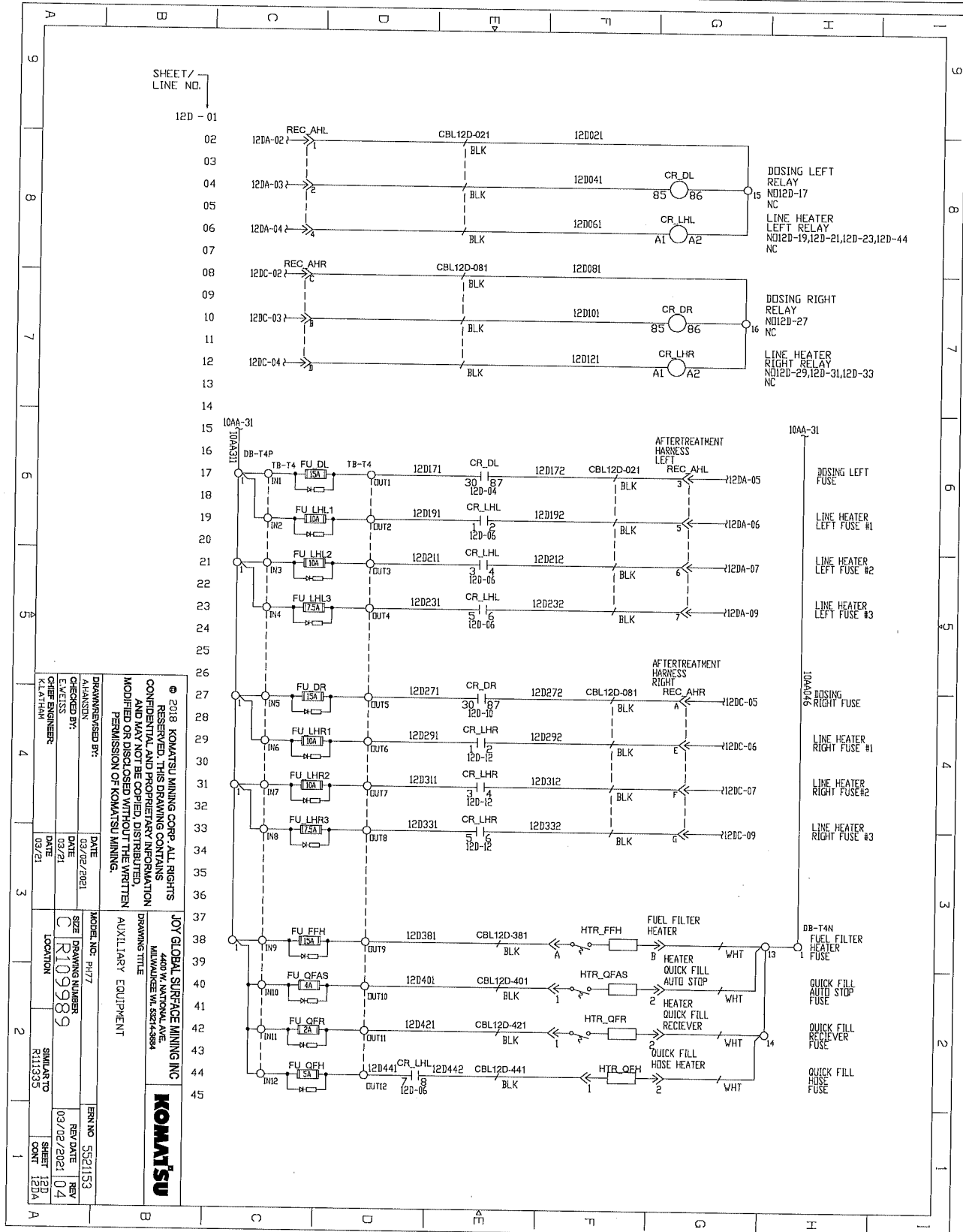
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<p>JOY GLOBAL SURFACE MINING INC 4401 W. NATIONAL AVE MILWAUKEE WI 53214-3854</p>	<p>KOMATSU</p>
<p>MODEL NO. 9477 DRAWING NUMBER C R109989 LOCATION R111335</p>	<p>ENGINE NO. 5521153 REV DATE 03/02/2021 REV 04 SHEET 12CA CONT 12CC</p>
<p>DRAWN/REVISED BY: A.HANSEN CHECKED BY: L.W.EISS DATE 03/21 DATE 03/21</p>	<p>DATE 03/21 DATE 03/21</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



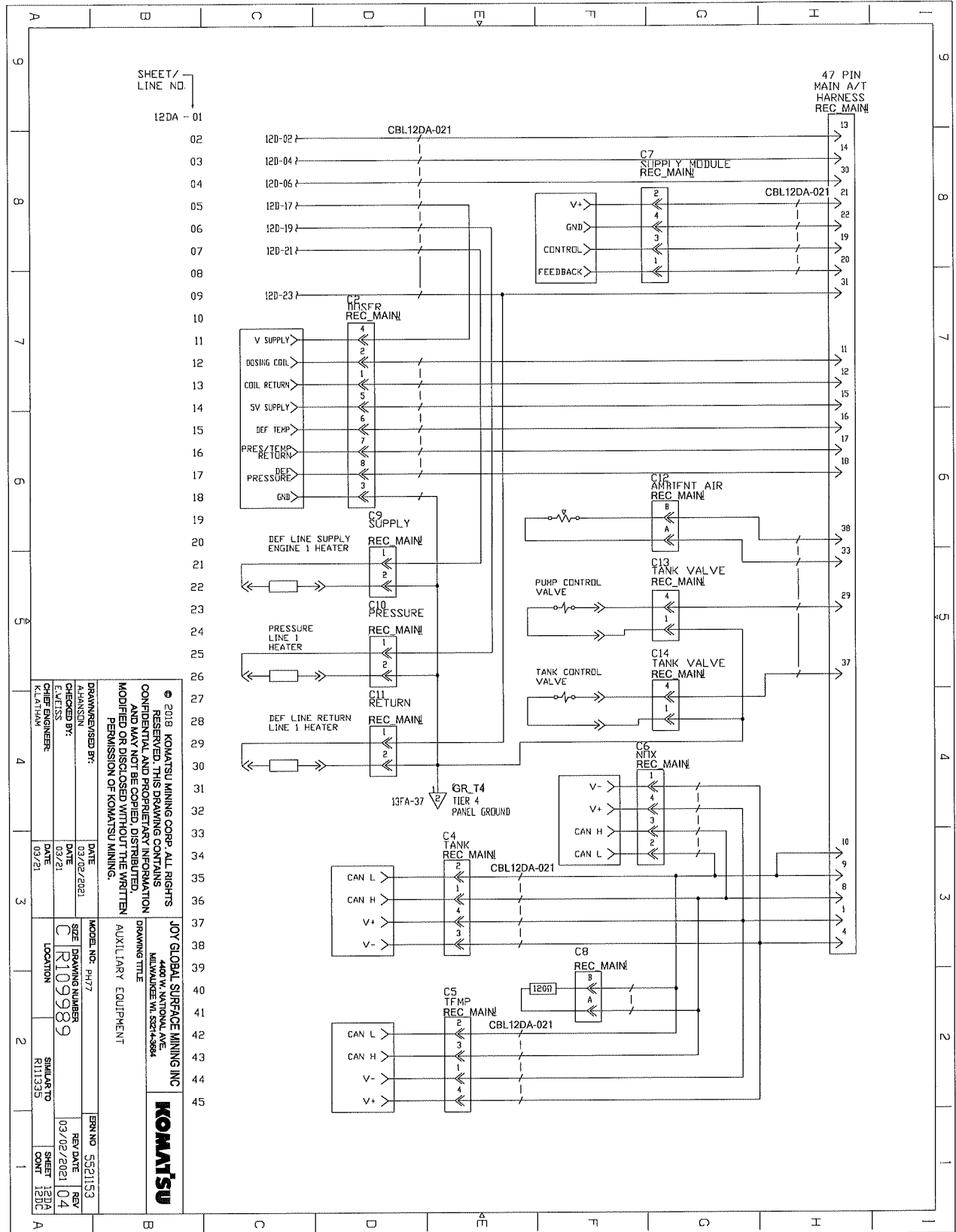
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JOY GLOBAL SURFACE MINING INC 4000 W. CENTER ST. SUITE 400 DENVER, CO 80202	
DRAWING TITLE CUMMINS ENGINE EQUIPMENT	
DRAWN BY K.LATHAM	DATE 03/21
CHECKED BY PH/77	DATE 03/21
ENGINEER PH/77	DATE 03/21
MODEL NO. PH/77	DATE 03/21
DRAWING NUMBER CR109989	REV DATE 04
LOCATION R11335	SHEET 12CC
SIMILAR TO R11335	SHEET 12D
SHEET 12CC	SHEET 12D
SHEET 12CC	SHEET 12D

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



DRAWN/REVISED BY: A.HANSEN		DATE: 03/02/2021	
CHECKED BY: E.WEISS		DATE: 03/21	
DESIGNED BY: C.R109989		DATE: 03/21	
LOCATION: SIMILAR TO R111335		SHEET NO.: 12DA	
MODEL NO.: R1177		SERIAL NO.: 5521153	
JOY GLOBAL SURFACE MINING INC 4401 W. NATIONAL AVE MILWAUKEE, WI 53244-8894 KOMATSU			
DRAWING TITLE: AUXILIARY EQUIPMENT			

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO. 12DA - 01

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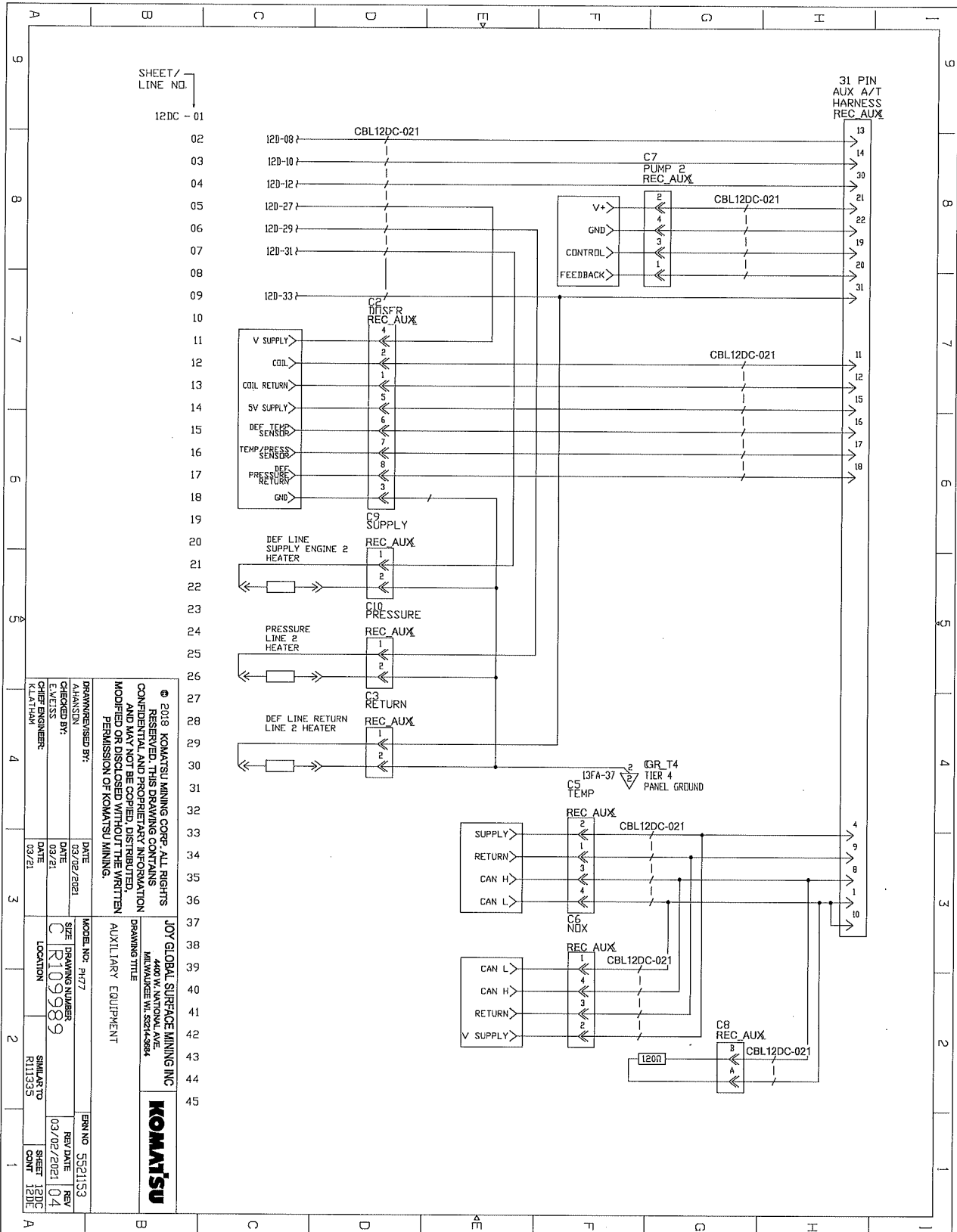
JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53214-3984

AUXILIARY EQUIPMENT

DRAWN/REVIEWED BY: A.HANSON	DATE: 03/02/2021	MODEL NO.: PH77	ERN NO.: 5521153
CHECKED BY: E.MEISS	DATE: 03/21	SIZE: DRAWING NUMBER	REV DATE: 03/02/2021
DATE: 03/21	DATE: 03/21	LOCATION: C R109989	REV: 04
DATE: 03/21	DATE: 03/21	STATUS TO: R111353	SHEET: 12DA
DATE: 03/21	DATE: 03/21	DATE: 03/21	SHEET: 12DA

KOMATSU

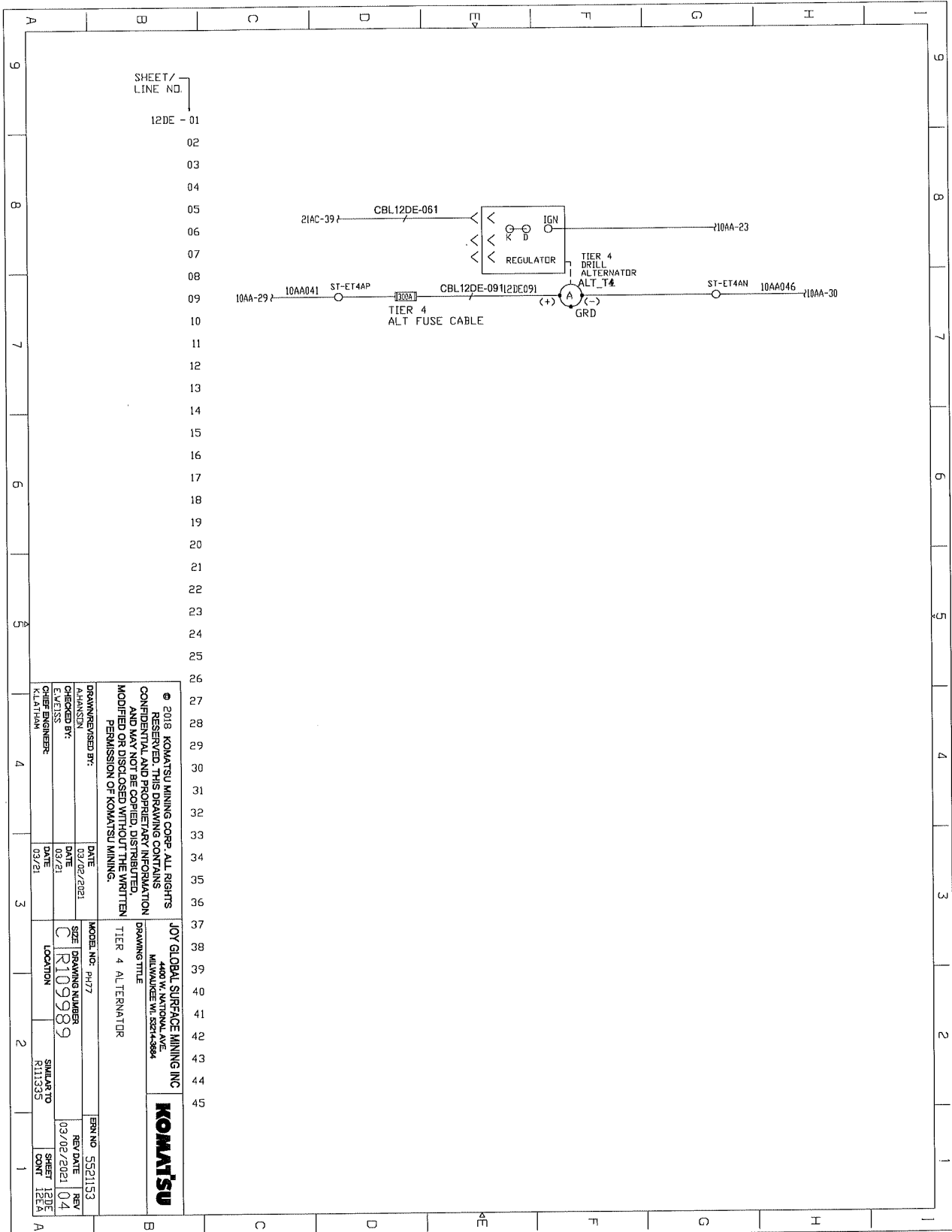
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO.
12DC - 01

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DRAWN/DESIGNED BY: CHECKED BY: E. L. WELLS CHIEF ENGINEER: K. LATHAM	DATE: 03/02/2021 DATE: 03/01 DATE: 03/21	MODEL NO.: PH77 SIZE: R109989 LOCATION: SIMILAR TO R113325
ERN NO: 5521153 REV DATE: 03/02/2021 SHEET: 12DC CNT: 1	DATE: 03/02/2021 REV: 04 SHEET: 12DC CNT: 1	ERN NO: 5521153 REV DATE: 03/02/2021 SHEET: 12DC CNT: 1

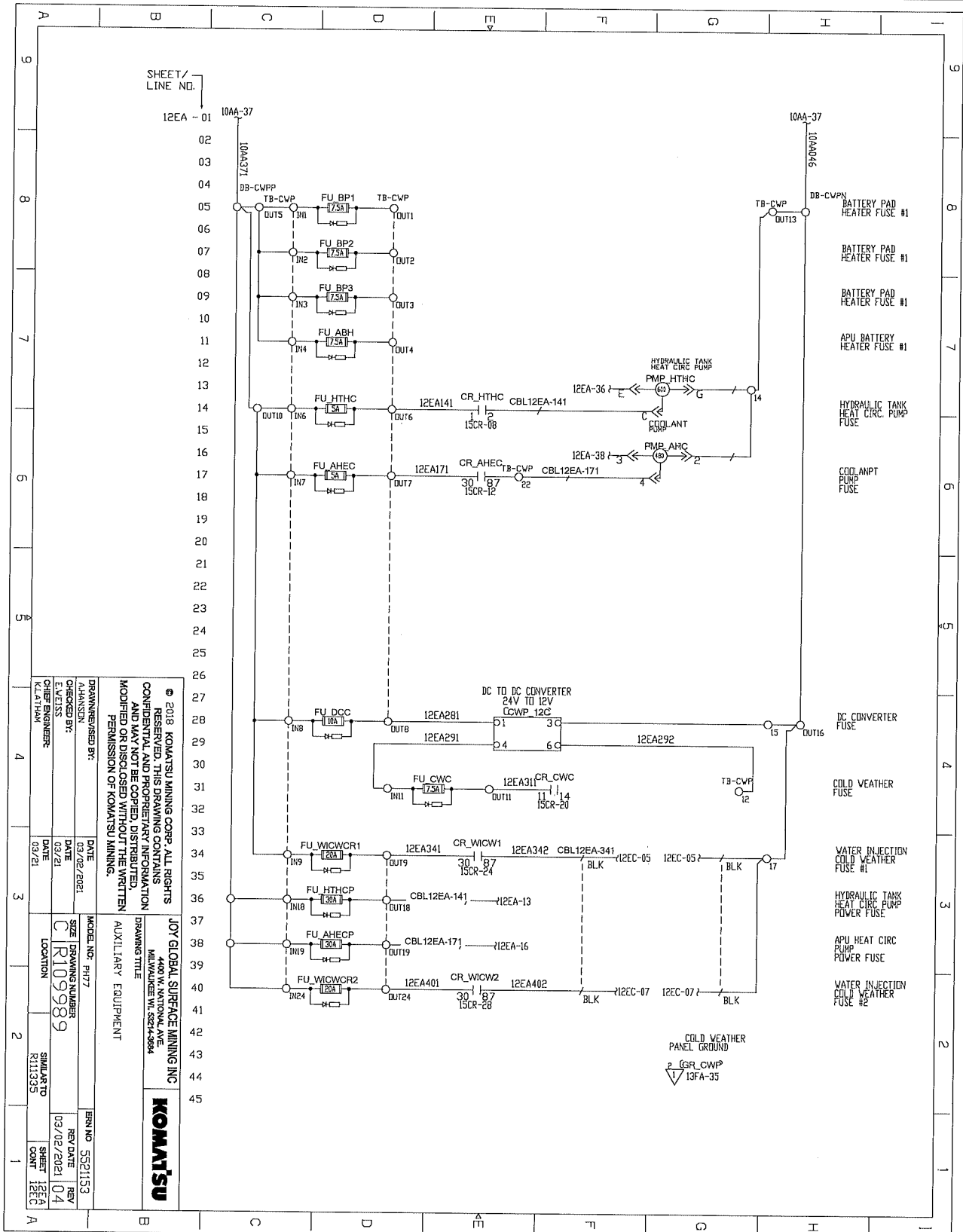
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO.
12DE - 01

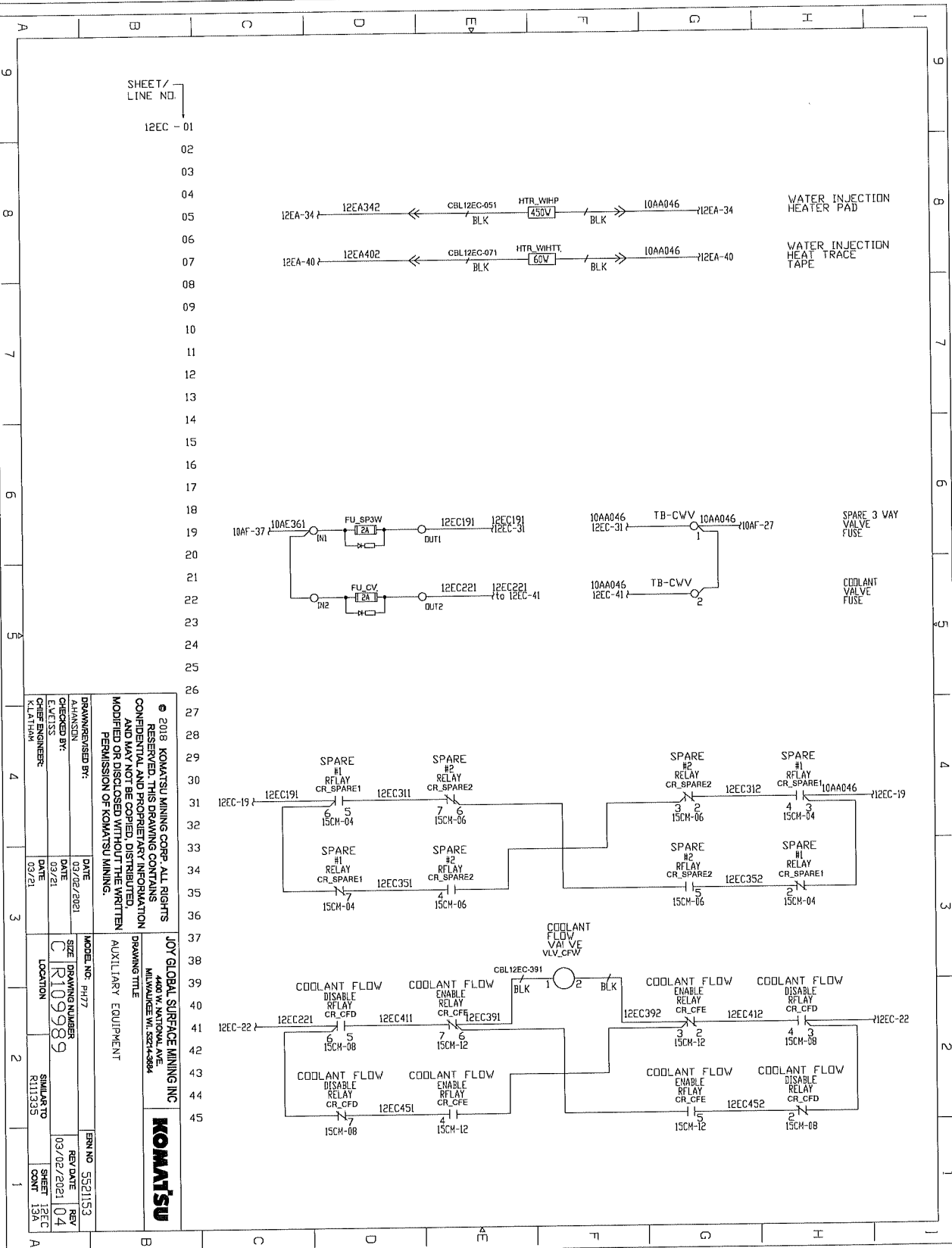
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<p>DRAWN/REVISED BY: AHANSON</p>		<p>DATE: 03/02/2021</p>		
<p>CHECKED BY: E. WESS</p>		<p>DATE: 03/21</p>		<p>REV NO: 5521153</p>
<p>DATE: 03/21</p>		<p>REV DATE: 03/02/2021</p>		
<p>MODEL NO: PH77</p>		<p>SIZE: DRAWING NUMBER</p>		<p>REV: 04</p>
<p>LOCATION: R109989</p>		<p>LOCATION: R11335</p>		
<p>DATE: 03/21</p>		<p>SIMILAR TO: R11335</p>		<p>SHEET: 12DE</p>
<p>DATE: 03/21</p>		<p>CONTR: 12EA</p>		<p>CONTR: 12EA</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>DRAWN BY: K.LATHAM</p>	<p>DATE: 03/02/2021</p>	<p>MODEL NO: PH77</p>	<p>SIZE: 1/8"</p>	<p>REV: 04</p>	<p>REV DATE: 03/02/2021</p>
<p>ENGINEER: K.LATHAM</p>	<p>DATE: 03/21</p>	<p>LOCATION: R111535</p>	<p>DRAWING NUMBER: C R109989</p>	<p>SHEET NO: 12EA</p>	<p>SHEET COUNT: 12EA</p>
<p>ERNO: 5521153</p>	<p>REV: 04</p>	<p>DATE: 03/02/2021</p>	<p>LOCATION: R111535</p>	<p>SHEET NO: 12EA</p>	<p>SHEET COUNT: 12EA</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET /
LINE NO.
12EC - 01

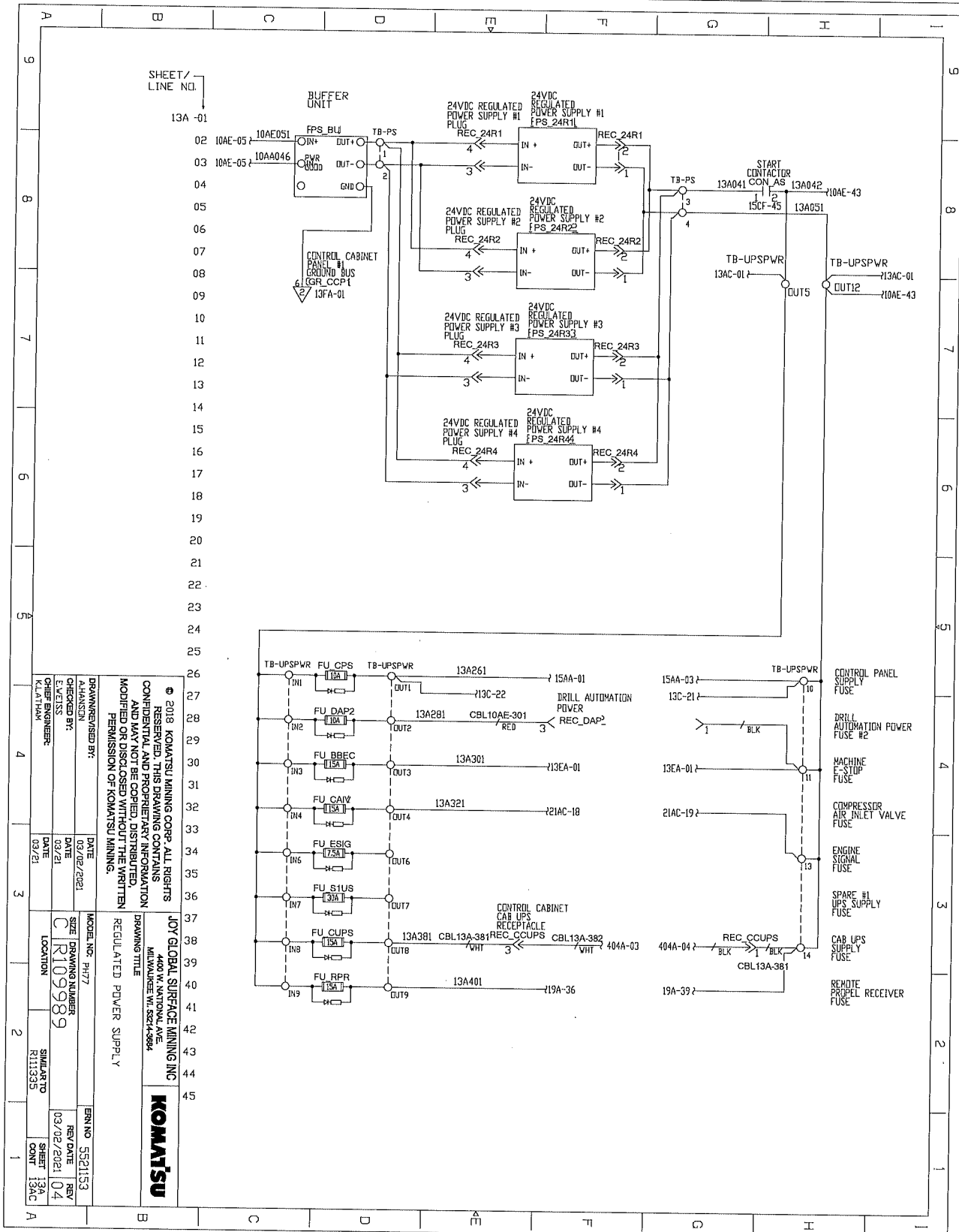
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MADISON, WI 53726-5884

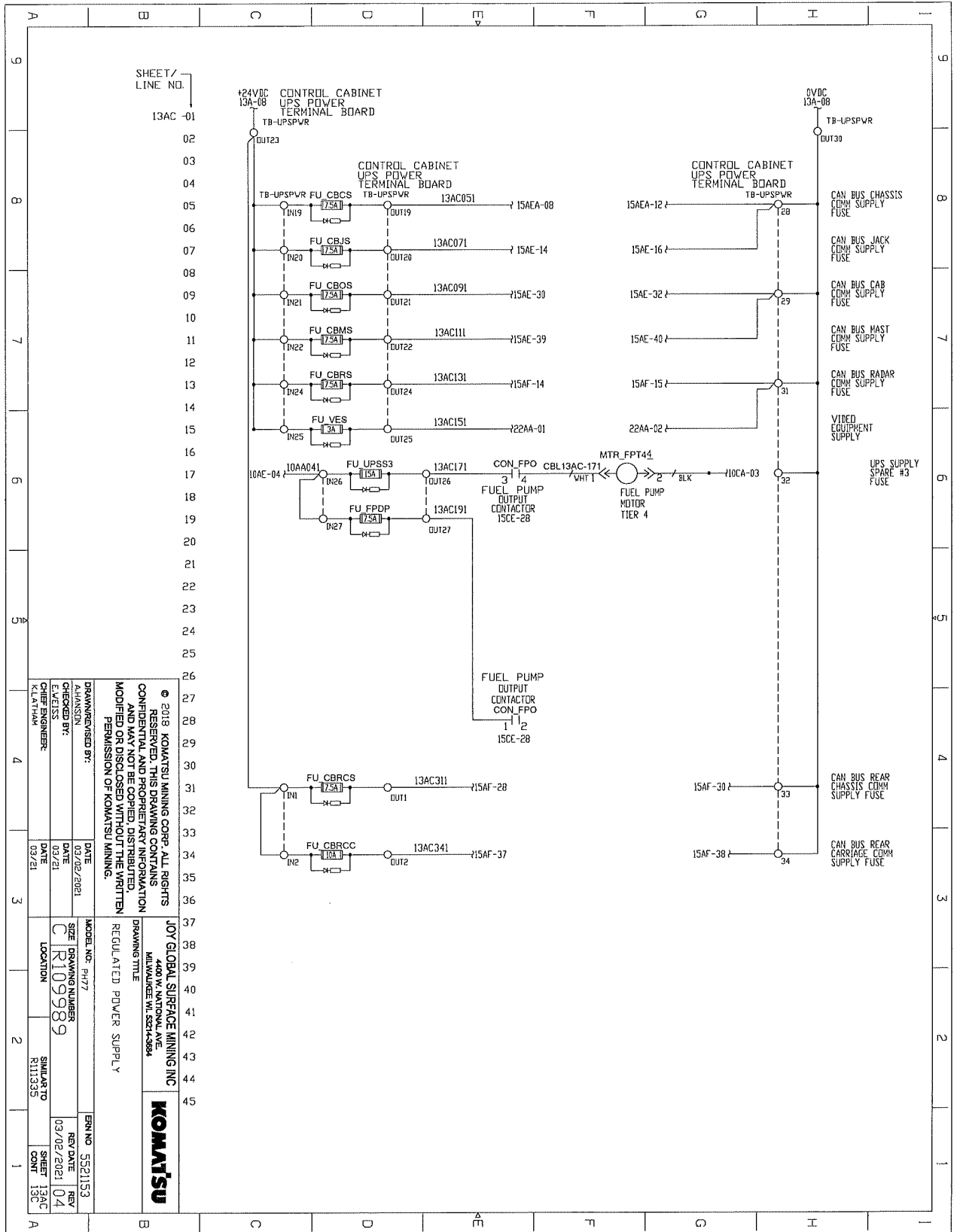


DRAWN BY: K.LATHAM	DATE: 03/21	MODEL NO: RH77	REV NO: 5521153
CHECKED BY: K.LATHAM	DATE: 03/21	SIZE: C	REV DATE: 03/02/2021
DESIGNED BY: K.LATHAM	DATE: 03/21	DRAWING NUMBER: R109989	REV: 04
ENGINEER: K.LATHAM	DATE: 03/21	LOCATION: R111335	SHEET COUNT: 13A

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



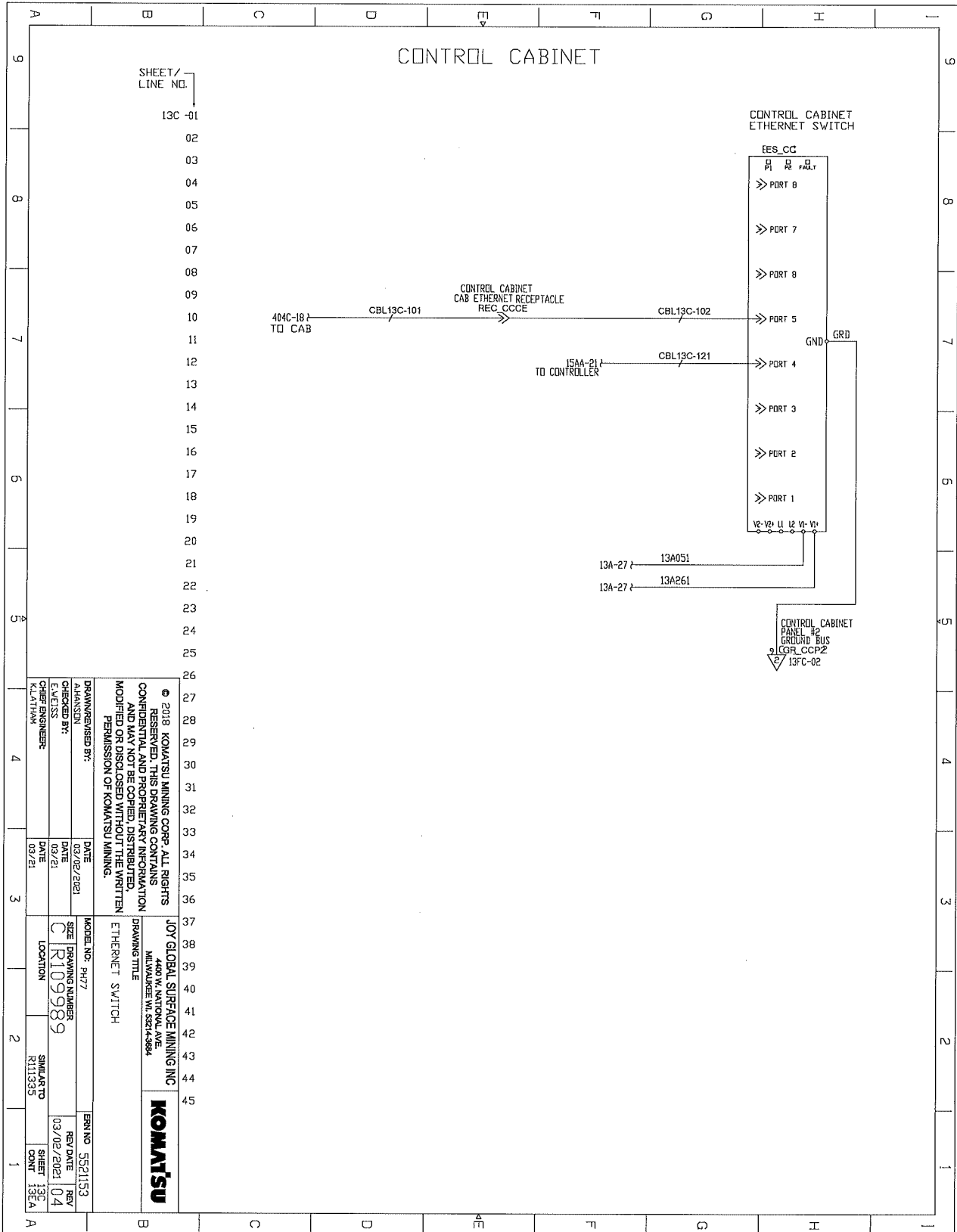
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SHEET/
LINE NO.

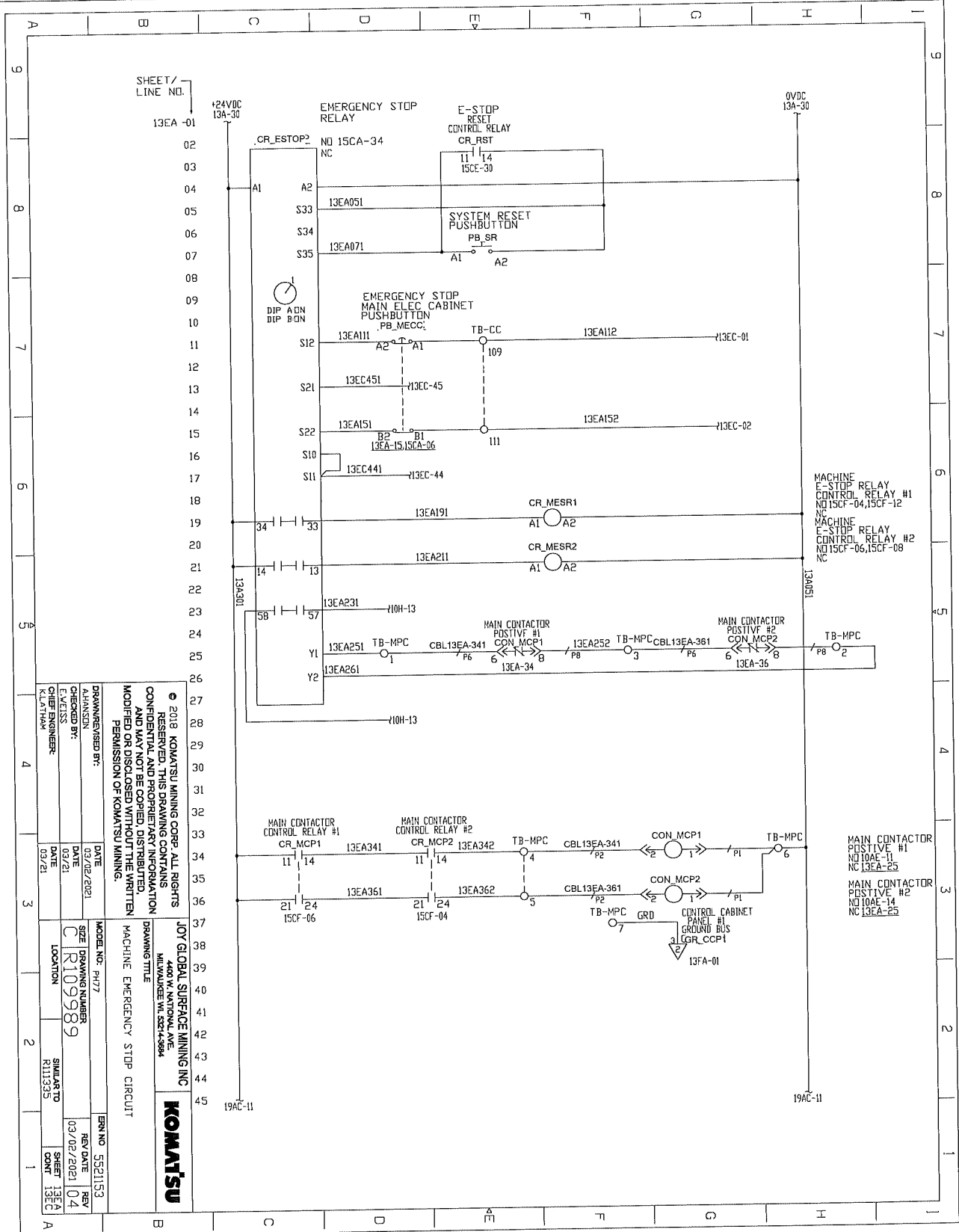
13AC -01
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DRAWN/REVIEWED BY: A.HANSON	DATE: 03/02/2021	MODEL NO.: PH77	ERM NO.: 5521153	SHEET 13AC CONT 13C	SHEET 13AC CONT 13C
CHECKED BY: E.VELISS	DATE: 03/21	SIZE: DRAWING NUMBER C R109989	REV DATE: 03/02/2021 04		
CHIEF ENGINEER: K.LANHAM	DATE: 03/21	LOCATION: SIMILAR TO R111353			

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



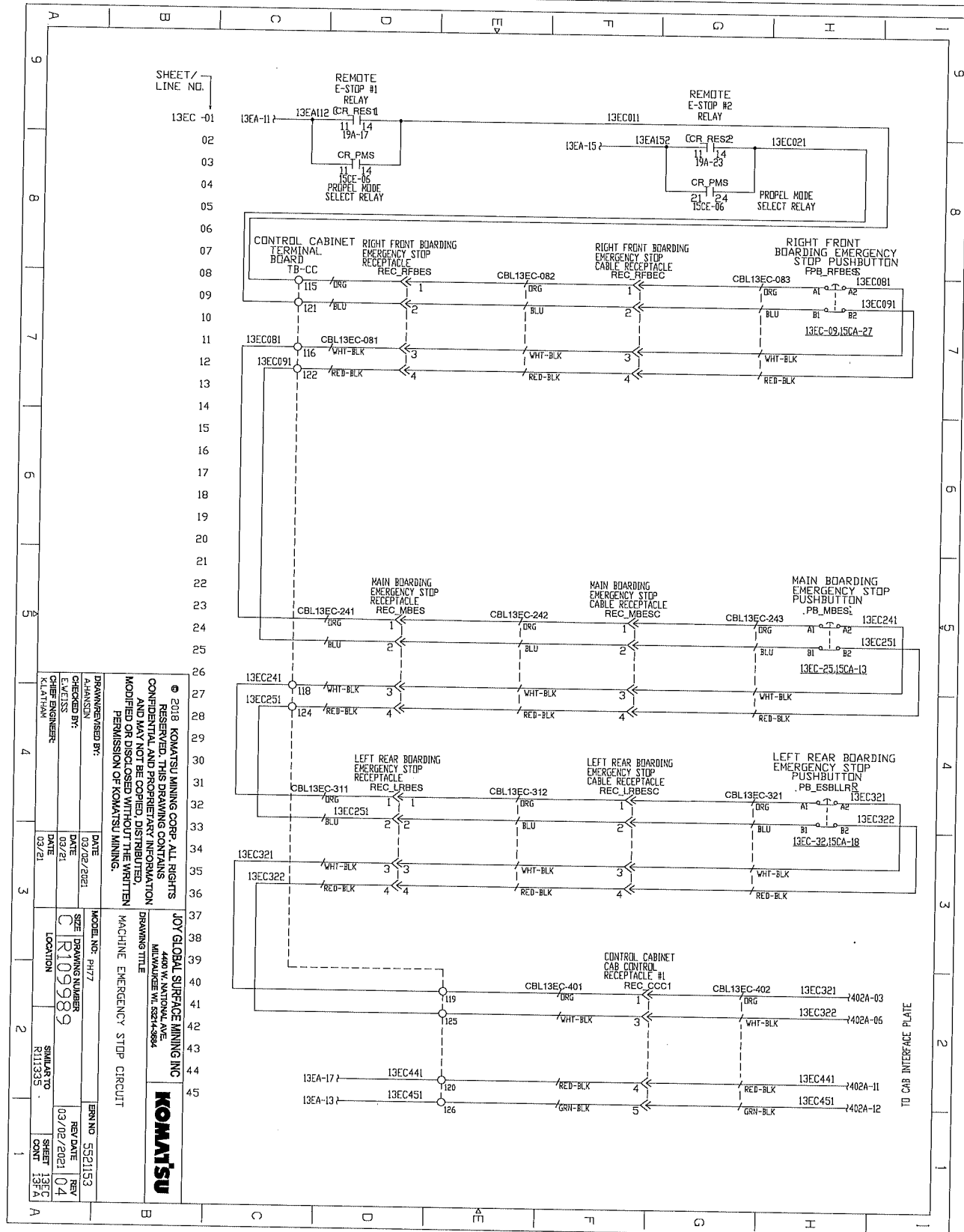
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JOY GLOBAL SURFACE MINING INC
4401 W NATIONAL AVE
MILWAUKEE WI 53244-3844

KOMATSU

DATE	03/02/2021	DATE	03/02/2021
CHECKED BY:	E.VEISS	DATE	03/21
CHIEF ENGINEER:	K.LATHAM	DATE	03/21
MODEL NO. P4177	SIZE	DRAWING NUMBER	REV
	C	R109989	04
	LOCATION	SIMILAR TO	SHEET
		R111335	13EA
			CONT
			13EC
			A
ERN NO.	5521153	REV	
		03/02/2021	04

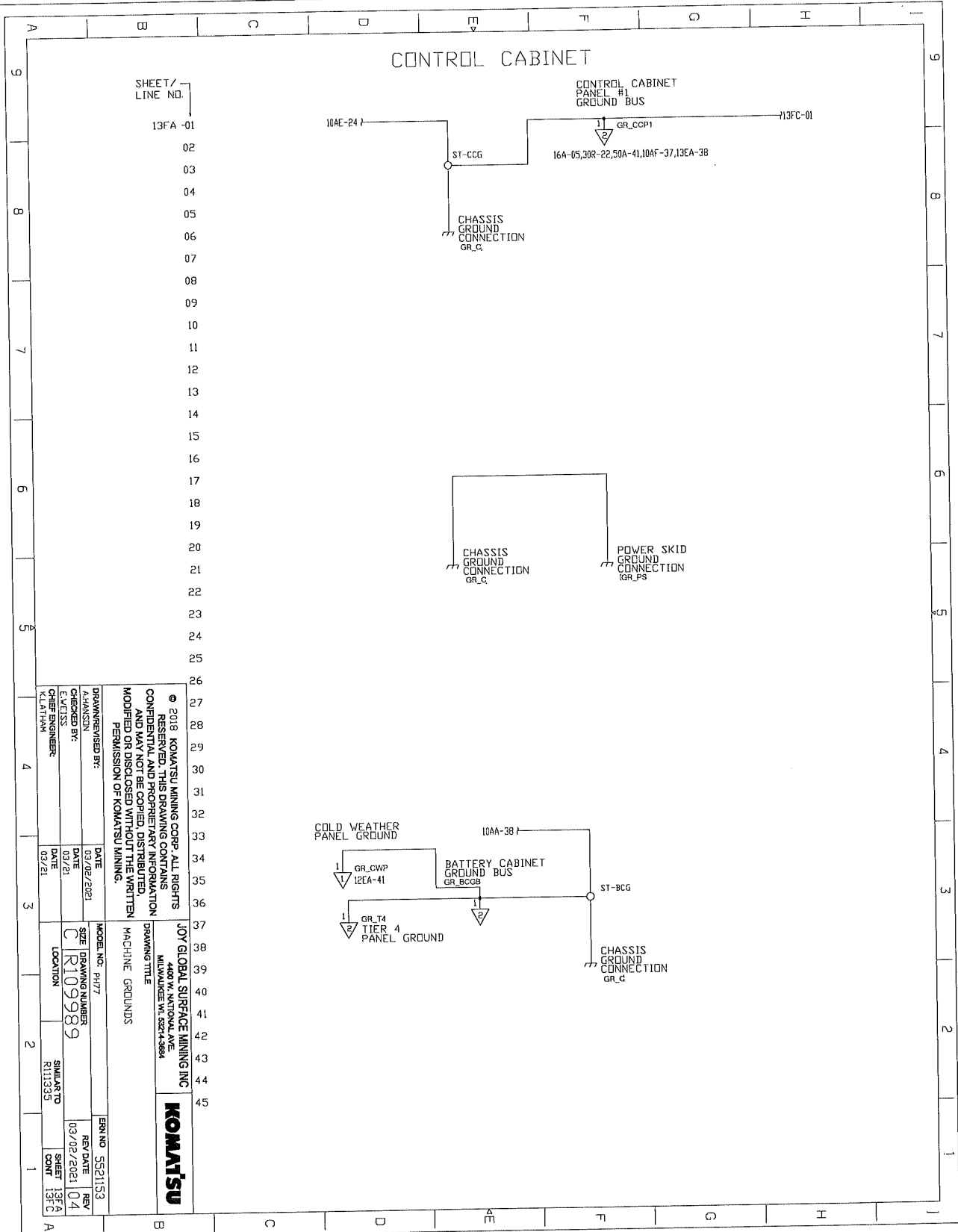
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NG.
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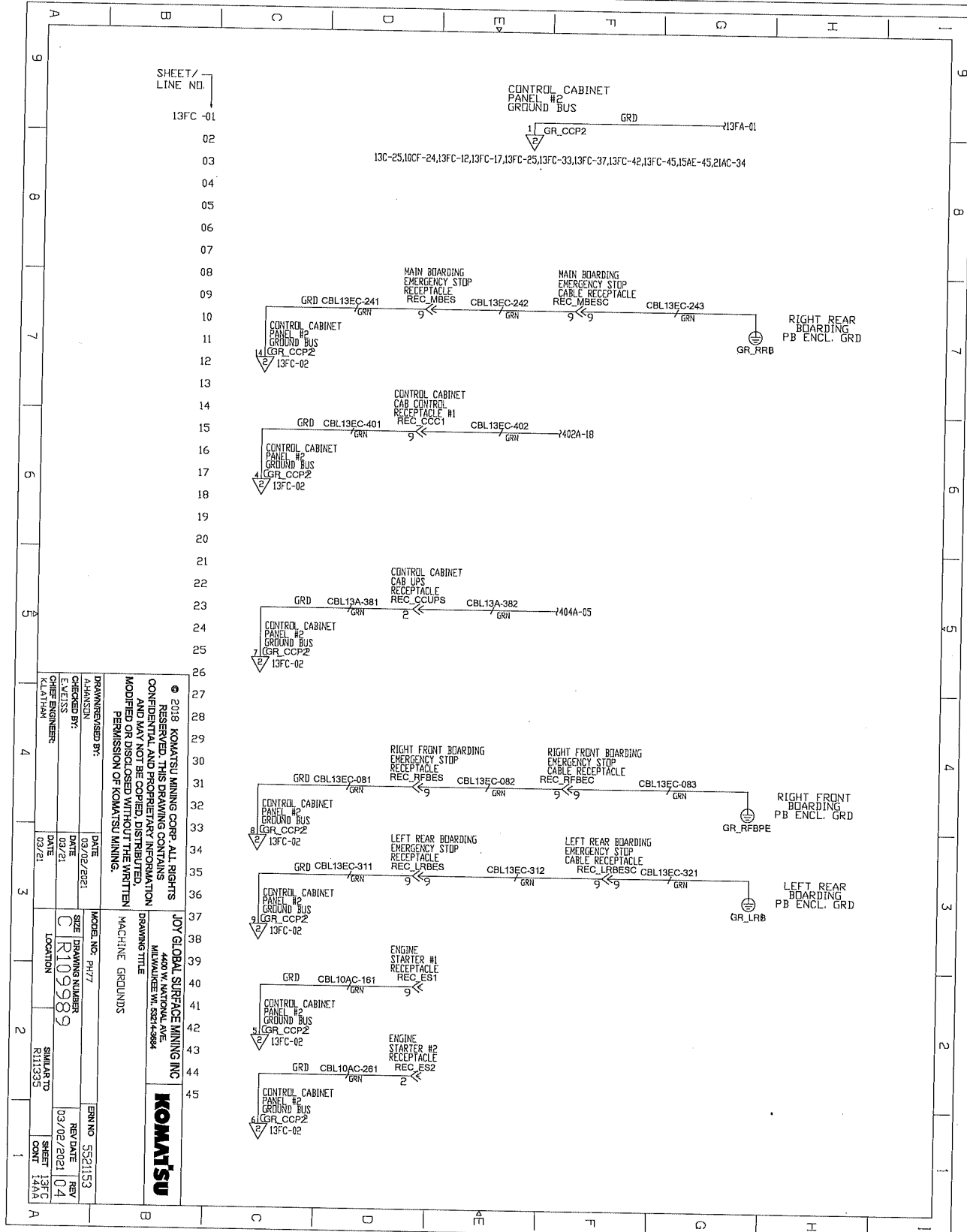
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<p>PROJECT: JOY GLOBAL SURFACE MINING INC MACHINE TITLE: MILLWAHOCKEER VIL 8524-1504 MACHINE: EMERGENCY STOP CIRCUIT</p>	<p>DATE: 03/02/2021 DATE: 03/21 DATE: 03/21</p>
<p>DRAWN/REVISED BY: ALHANNUN CHECKED BY: E.V. JESS OTHER ENGINEER: KILATHAN</p>	<p>MODEL NO: PH77 SIZE: DRAWING NUMBER C: R109989 LOCATION: SIMILAR TO R111335</p>
<p>REV NO: 5521153 REV DATE: 03/02/2021 REV: 04 SHEET: 13EC CONT: 13FA</p>	<p>TO CAB INTERFACE PLATE</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

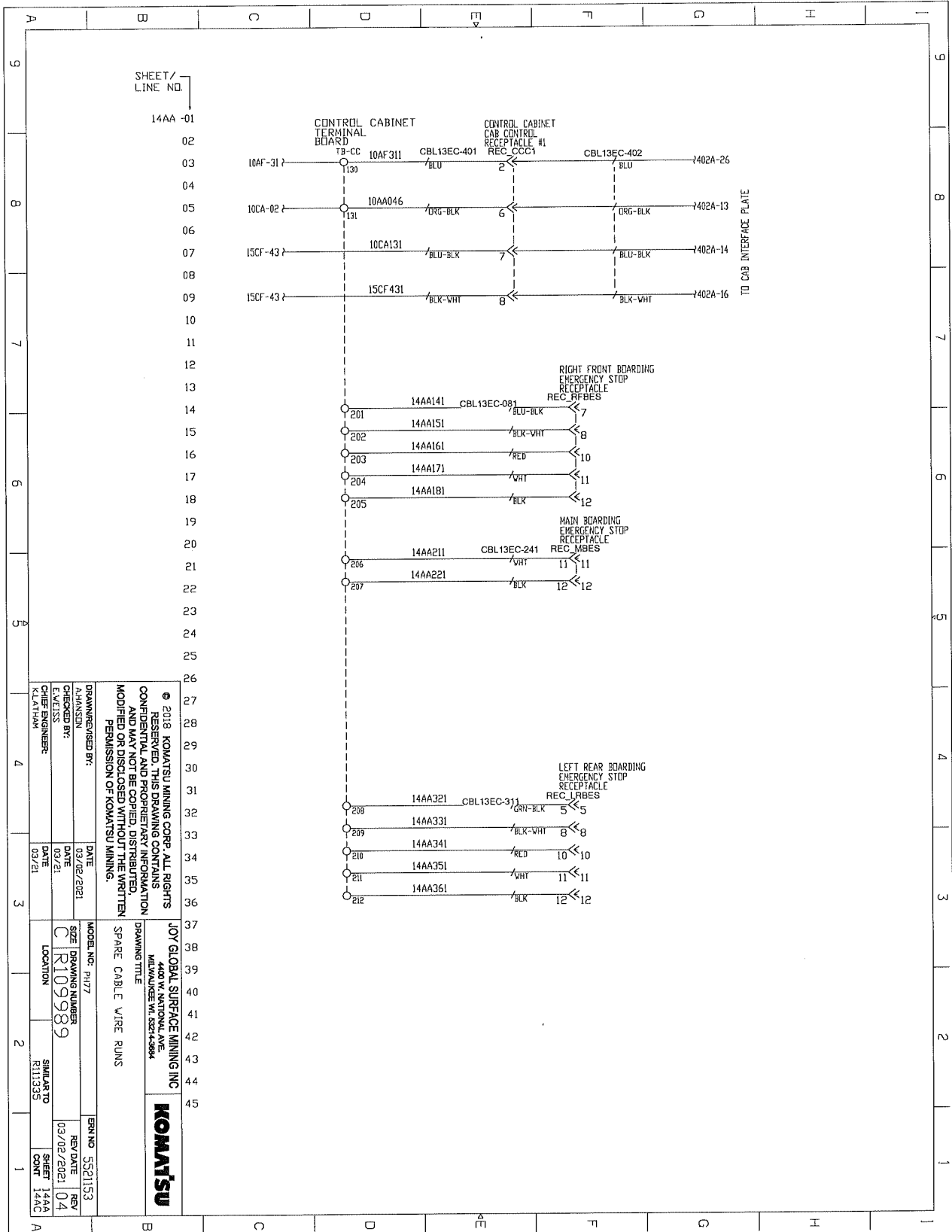


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JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE WI 52214-3984	
KOMATSU	
DRAWING TITLE MACHINE GROUNDS	REV NO 5521153
DRAWN BY A. HANSON	DATE 03/02/2021
CHECKED BY E. J. JESS	DATE 03/21
CHIEF ENGINEER K. LATHAM	DATE 03/21
MODEL NO. P177	SHEET NO. 13FA
SIZE C	DRAWING NUMBER R109989
LOCATION SIMILAR TO R111335	REV. DATE 03/02/2021
SHEET 13FA	REV. 04
CONT. 13FA	REV. DATE 03/02/2021

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

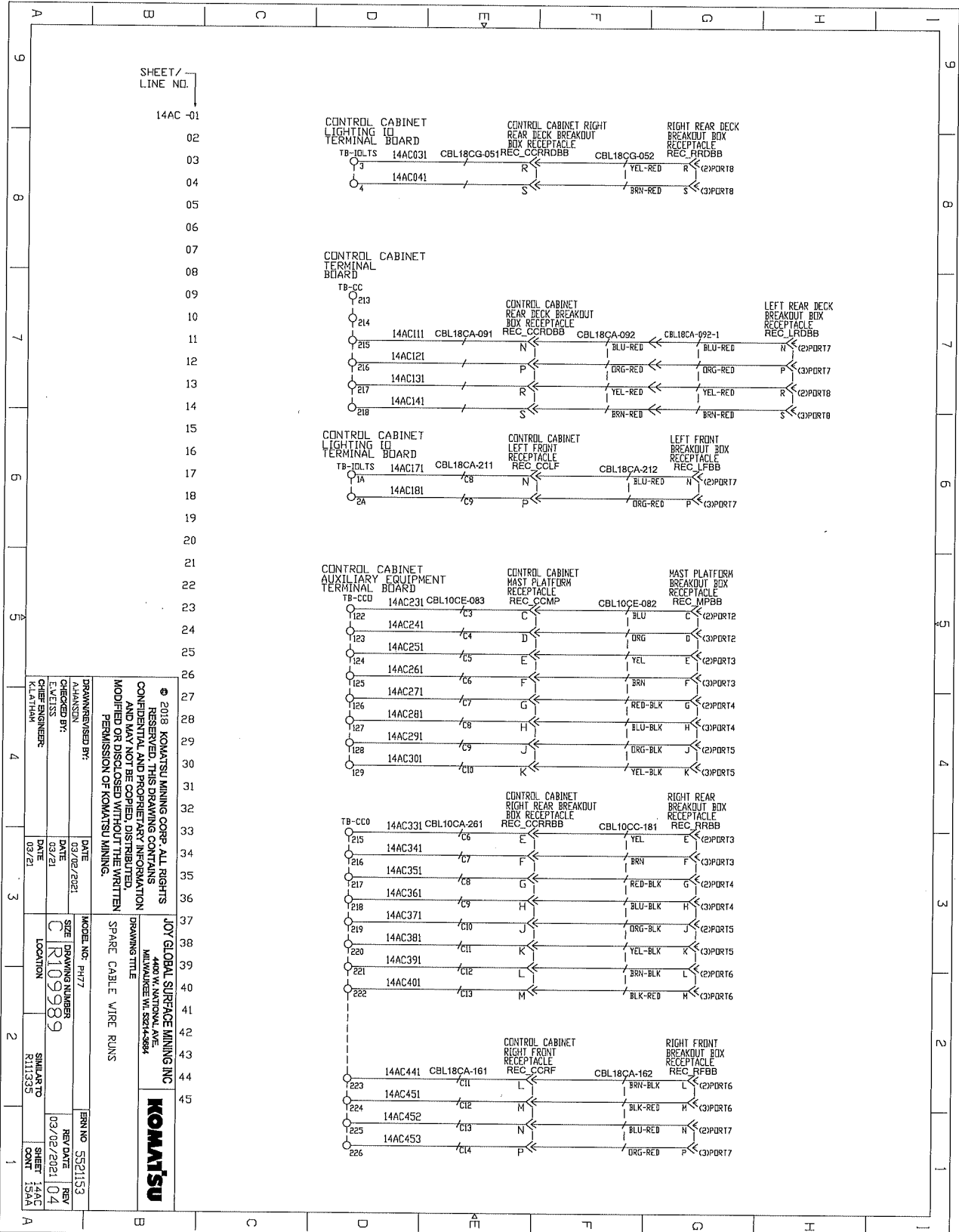


SHEET/
LINE NO.

14AA -01

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<p>JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE WI 52744-8884</p>	<p>KOMATSU</p>
<p>MODEL NO: R1177 SIZE: DRAWING NUMBER C R109989 LOCATION: R111335</p>	<p>REV NO: 5521153 REV DATE: 03/02/2021 REV: 04</p>
<p>DRAWN/REVISED BY: ALHANSEN CHECKED BY: E. JESS DRAWING NUMBER: C R109989 DATE: 03/02/2021 DATE: 03/21</p>	<p>SIMILAR TO: R111335 SHEET: 14AA CONT: 14AC</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



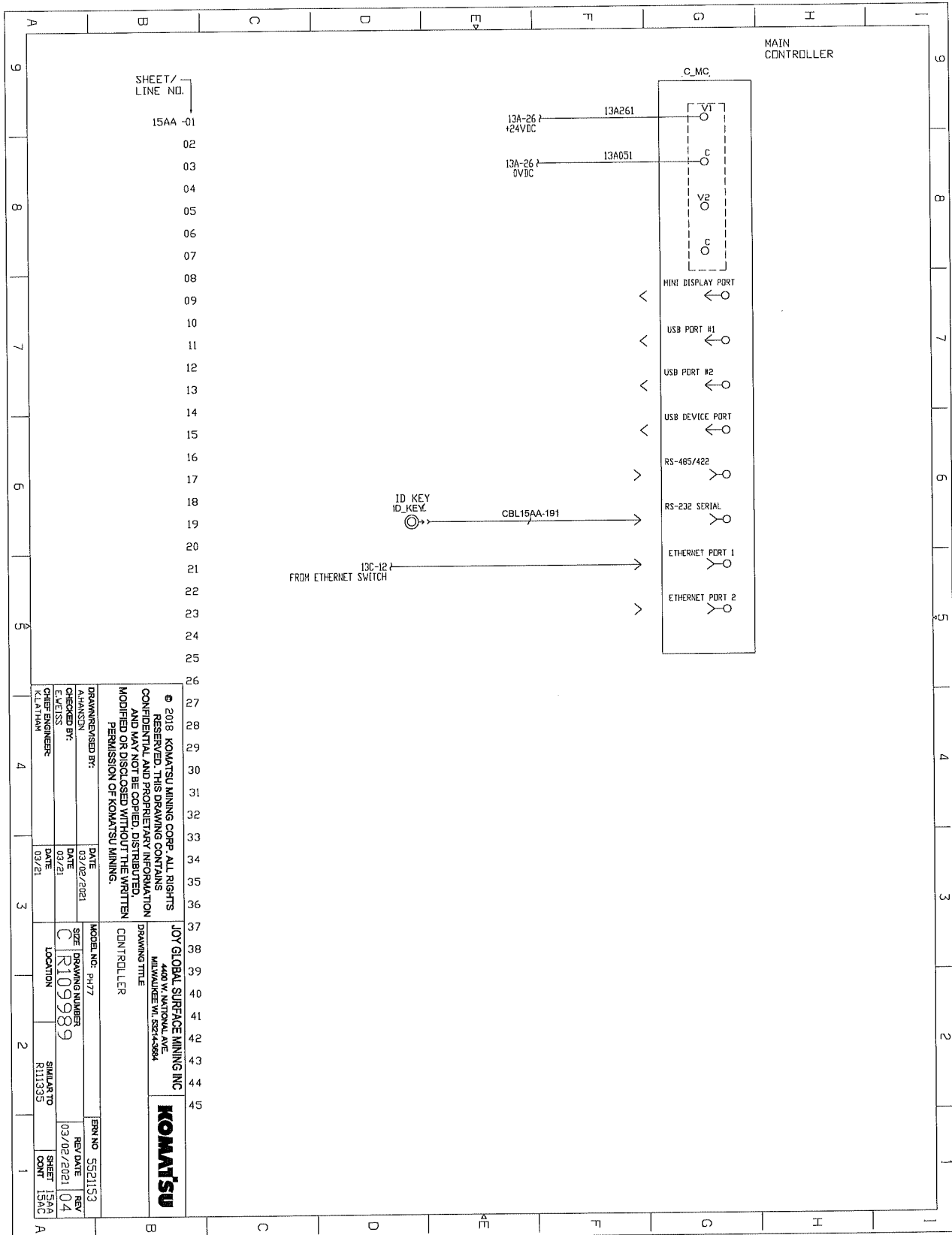
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JOY GLOBAL SURFACE MINING INC
 4400 W. NATIONAL AVE.
 MIDLAND, TX 79701-5274-5889

KOMATSU

DRAWN BY: K.LATHAM	DATE: 03/02/2021	MODEL NO: PH77	REV NO: 5521153
CHECKED BY: K.LATHAM	DATE: 03/02/2021	SIZE: DRAWING NUMBER	REV DATE: REV
ENGINEER: K.LATHAM	DATE: 03/02/21	C/R109989	03/02/2021 04
LOCATION: R111335	SHEET NO: 1541		

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>DRAWING TITLE CONTROLLER</p>		<p>MODEL NO. P-177</p>		
<p>DRAWN/REVISED BY: ADAMSON</p>	<p>DATE 03/02/2021</p>	<p>SIZE C</p>	<p>DRAWING NUMBER R109989</p>	<p>REV NO 5521153</p>
<p>CHECKED BY: CHEN/ENGINEER</p>	<p>DATE 03/21</p>	<p>LOCATION SIMILARTO R11335</p>	<p>REV DATE 03/02/2021</p>	<p>REV 04</p>
<p>DESIGNED BY: KLATHAM</p>	<p>DATE 03/21</p>	<p>SHEET 15AA</p>	<p>CONT 15AC</p>	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

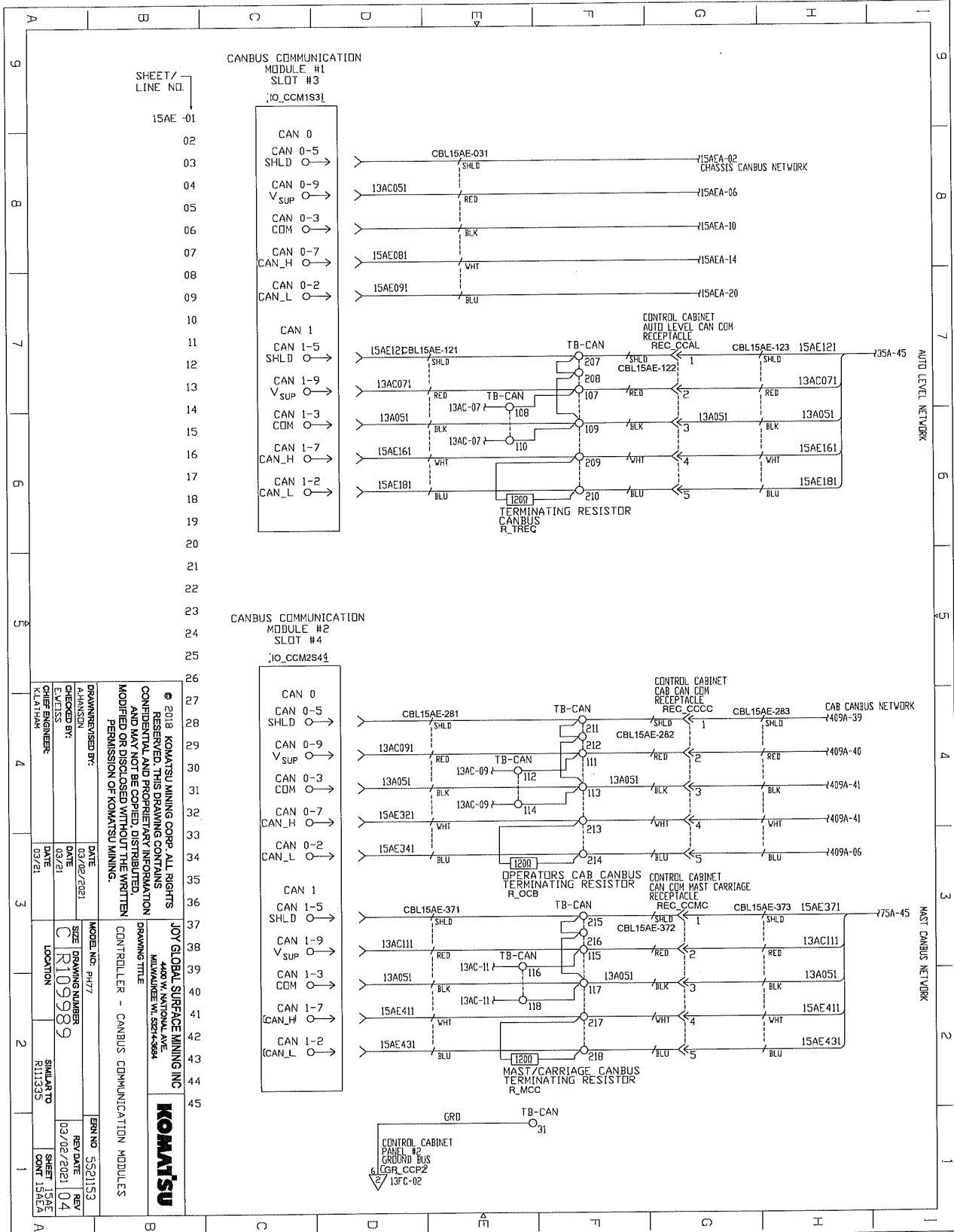
SHEET/ LINE NO.		15AC -01	
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04		05	
06		07	
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10		11	
12		13	
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16		17	
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30		31	
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SLOT #1
LEAVE OPEN

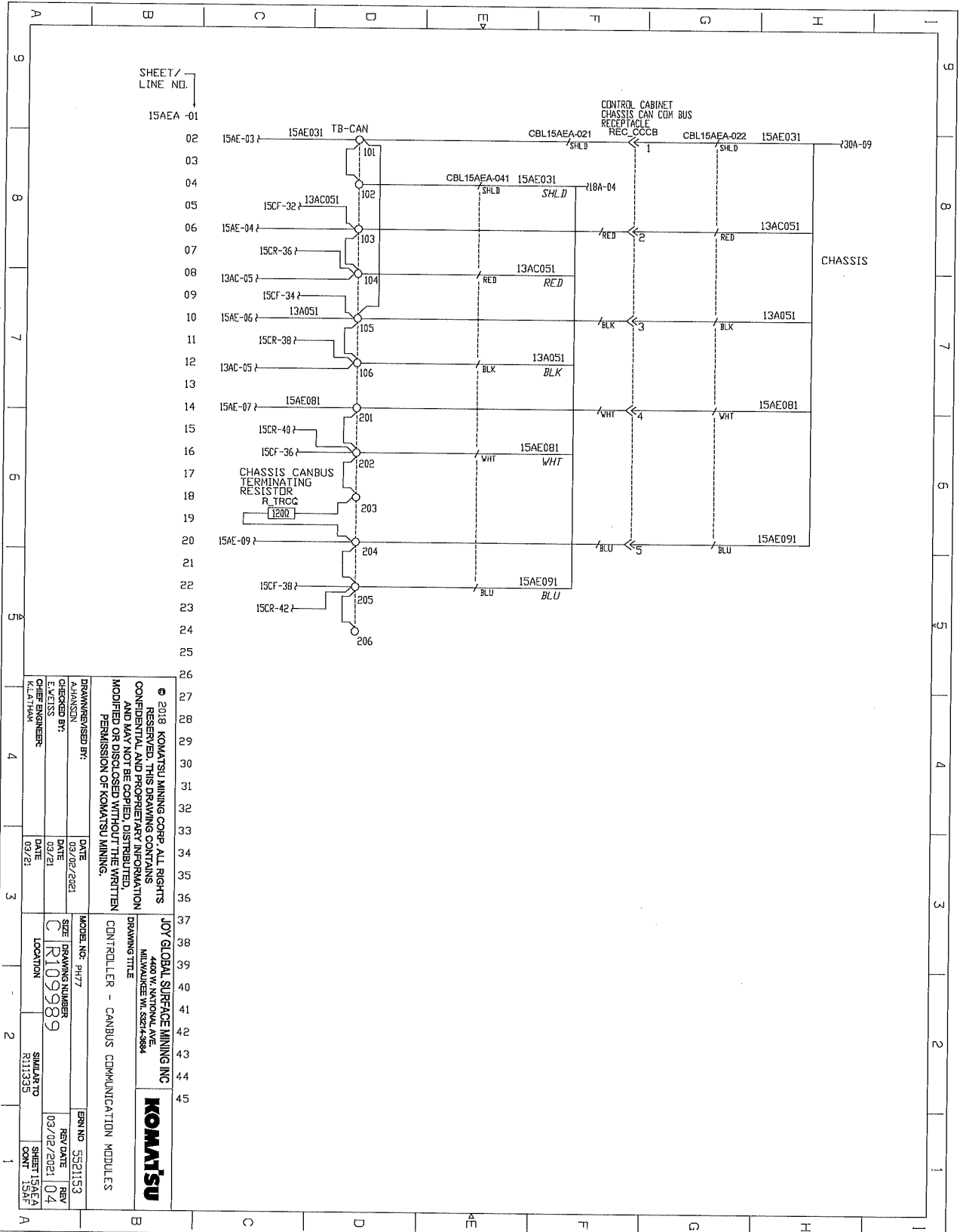
SLOT #2
LEAVE OPEN

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DRAWN/REVISED BY: A.JANSSON		MODEL NO. P477	
CHECKED BY: E.VELISS		SIZE DRAWING NUMBER C R109989	
DATE: 03/02/2021		LOCATION	
DATE: 03/21		SIMILAR TO R111335	
ERN NO 5521153		REV DATE REV 03/02/2021 04	
SHEET 15AC		SHEET CONT 15AC	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

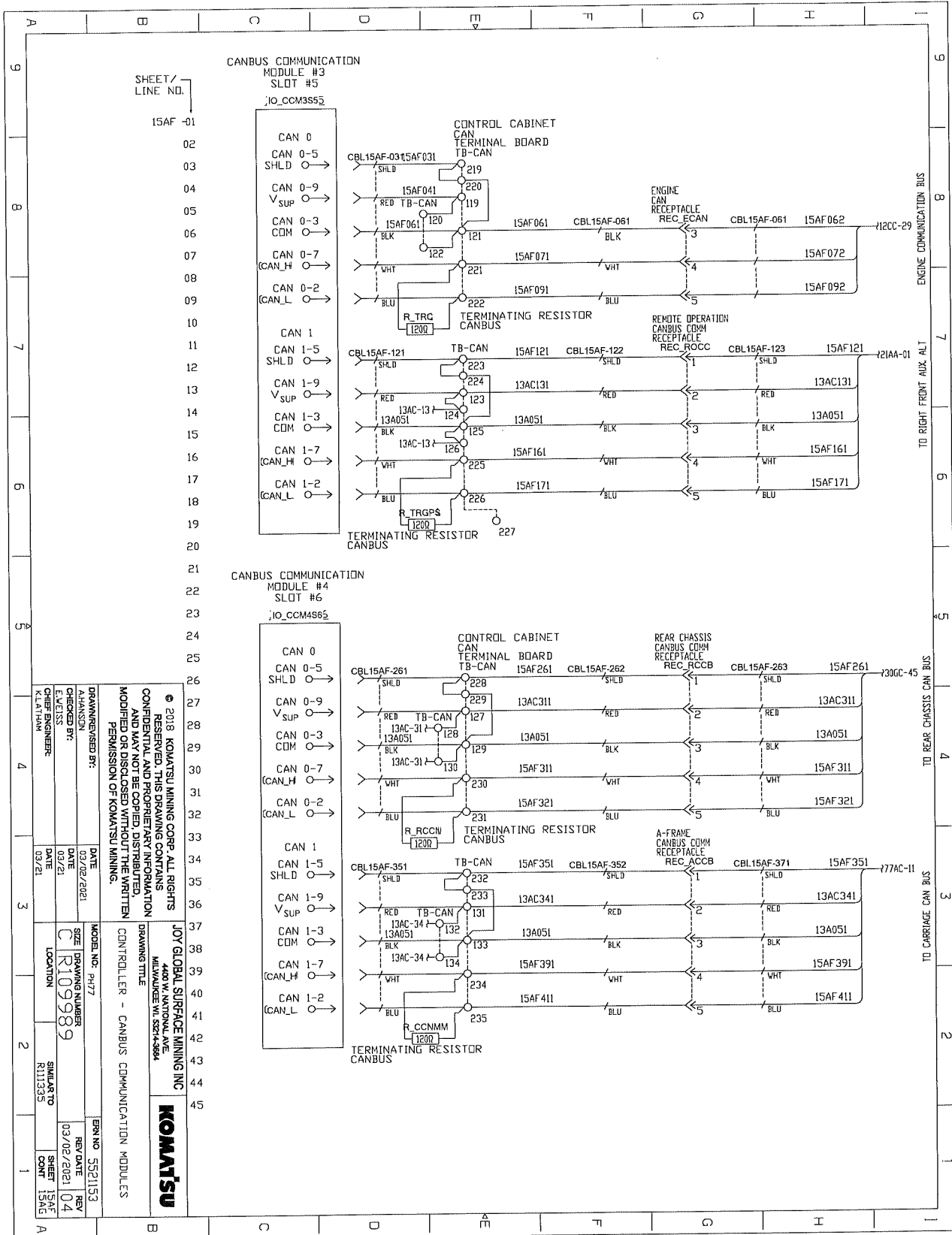


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO. 15AEA -01		DRAWN/REVISED BY: ALANSON		DATE 03/02/2021	
CHECKED BY: ELEZS ENGINEER K.LATHAM		DATE 03/21		DATE 03/21	
MODEL NO.: PH7Z		SIZE: DRAWING NUMBER C R109989		ERN NO: 5521153	
LOCATION SIMIARTO R111335		SHEET 15AEA 04 04		REV DATE 03/02/2021 04	
JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE WI 53214-3984		DRAWING TITLE CONTROLLER - CANBUS COMMUNICATION MODULES		KOMATSU	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



DRAWN/REVISED BY: HARRISON	DATE: 03/21/2021	MODEL NO. PH77	REV. NO. 5521153
CHECKED BY: K. LATHAM	DATE: 03/21/2021	SIZE: DRAWING NUMBER: C R109989	REV. DATE: 03/02/2021
CHIEF ENGINEER:	DATE: 03/21/2021	LOCATION:	SHEET: 15AF
			CONT. 15AF

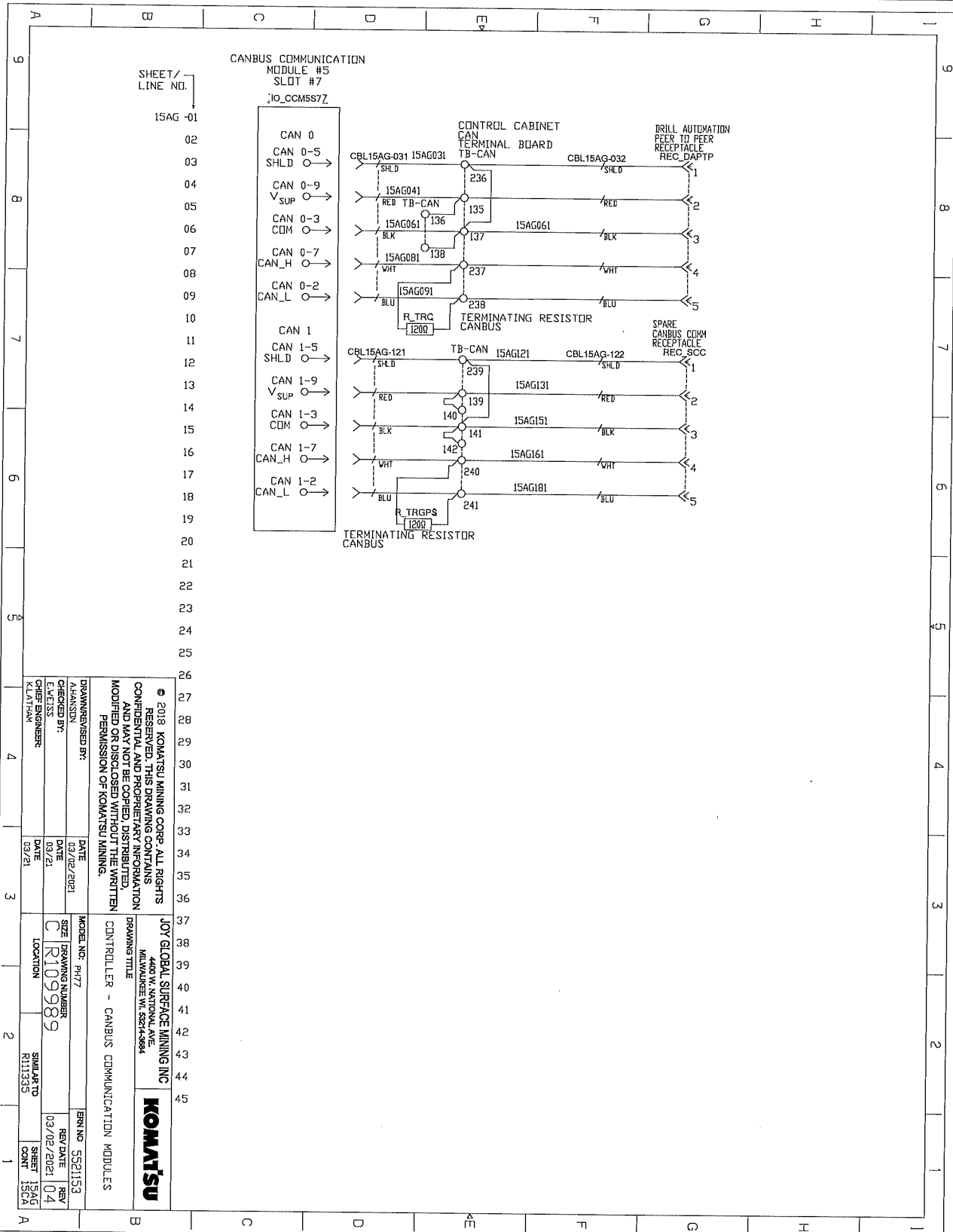
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JOY GLOBAL SURFACE MINING INC
4400 W. CENTRAL AVE
MIDLAND TX 79706-5844

DRAWING TITLE: CONTROLLER - CANBUS COMMUNICATION MODULES



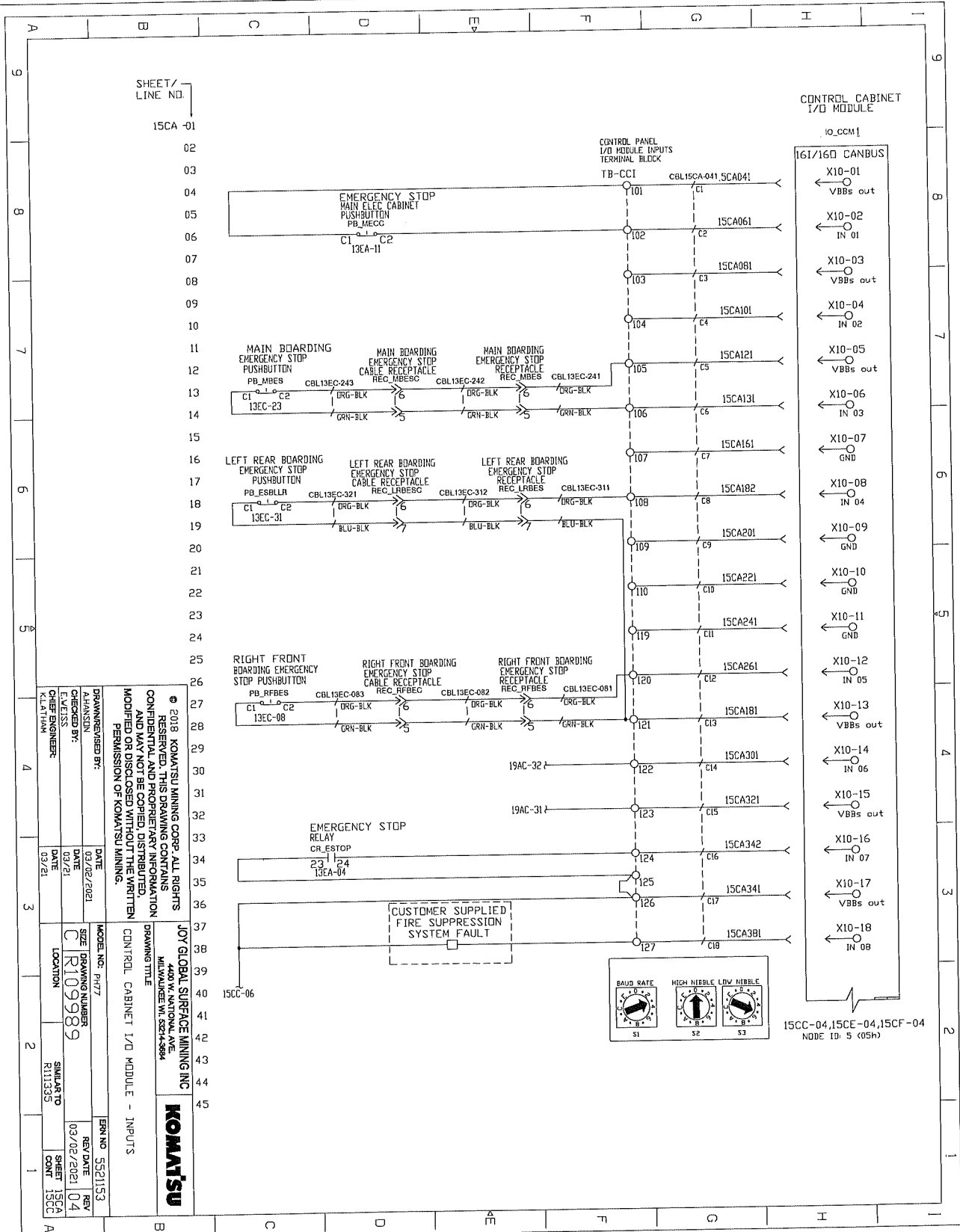
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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DRAWN/REVISED BY: A.HANSEN	DATE 03/02/2021
CHECKED BY: E.WELLS	DATE 03/21
DRAWN/ENGINEER K.M.PARK	DATE 03/21
MODEL NO.: PH7Z	SERIAL NO.: 5521153
SIZE: DRAWING NUMBER C R109989	REV. DATE: REV 03/02/2021 04
LOCATION SILVARTO R11135	SHEET NO.: 13CA COUNT: 1

JOB GLOBAL SURFACE MINING INC
 4401 W. NATIONAL AVE
 MILWAUKEE WI 53214-3884
KOMATSU

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



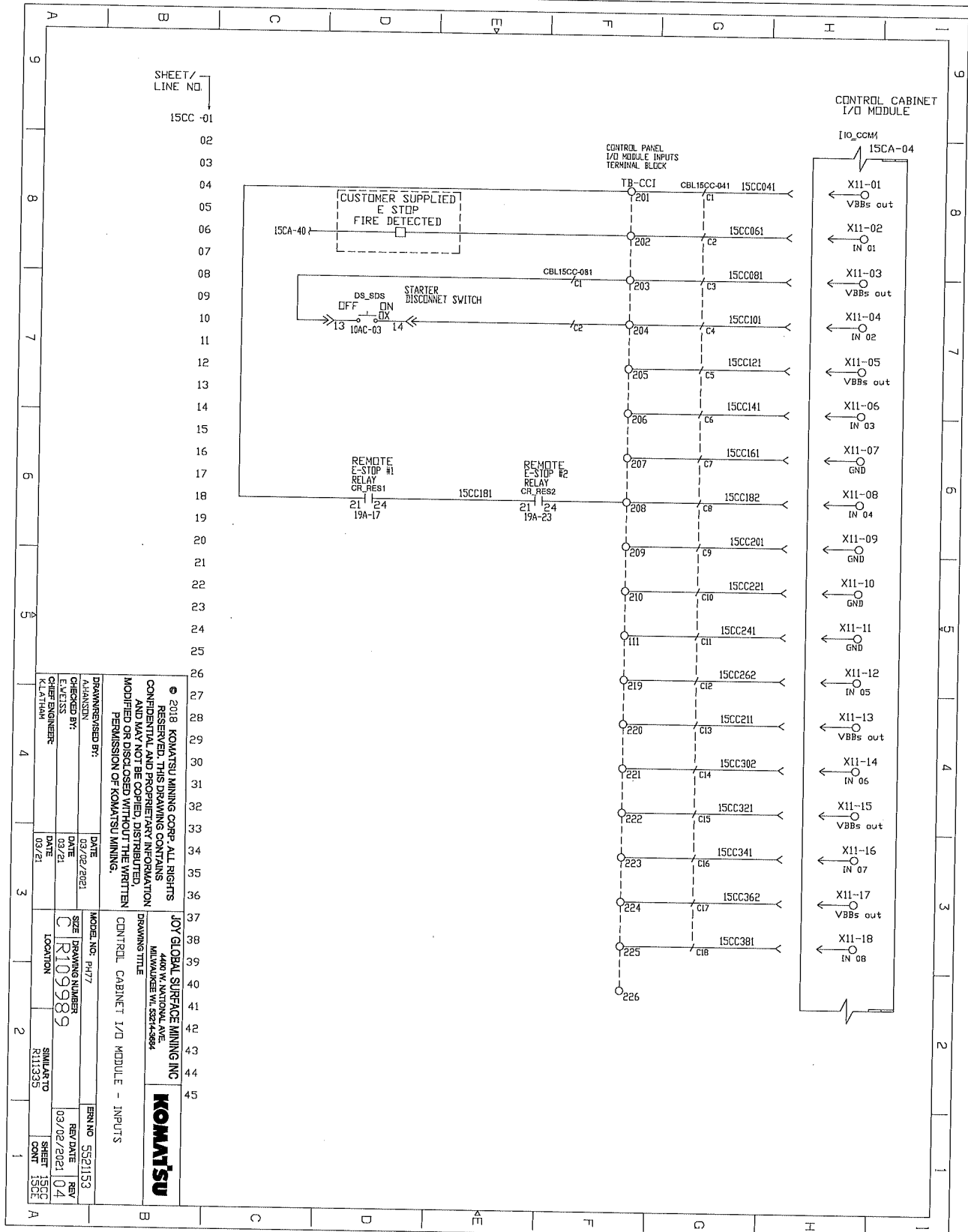
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53214-5884

DRAWING TITLE
CONTROL CABINET I/O MODULE - INPUTS

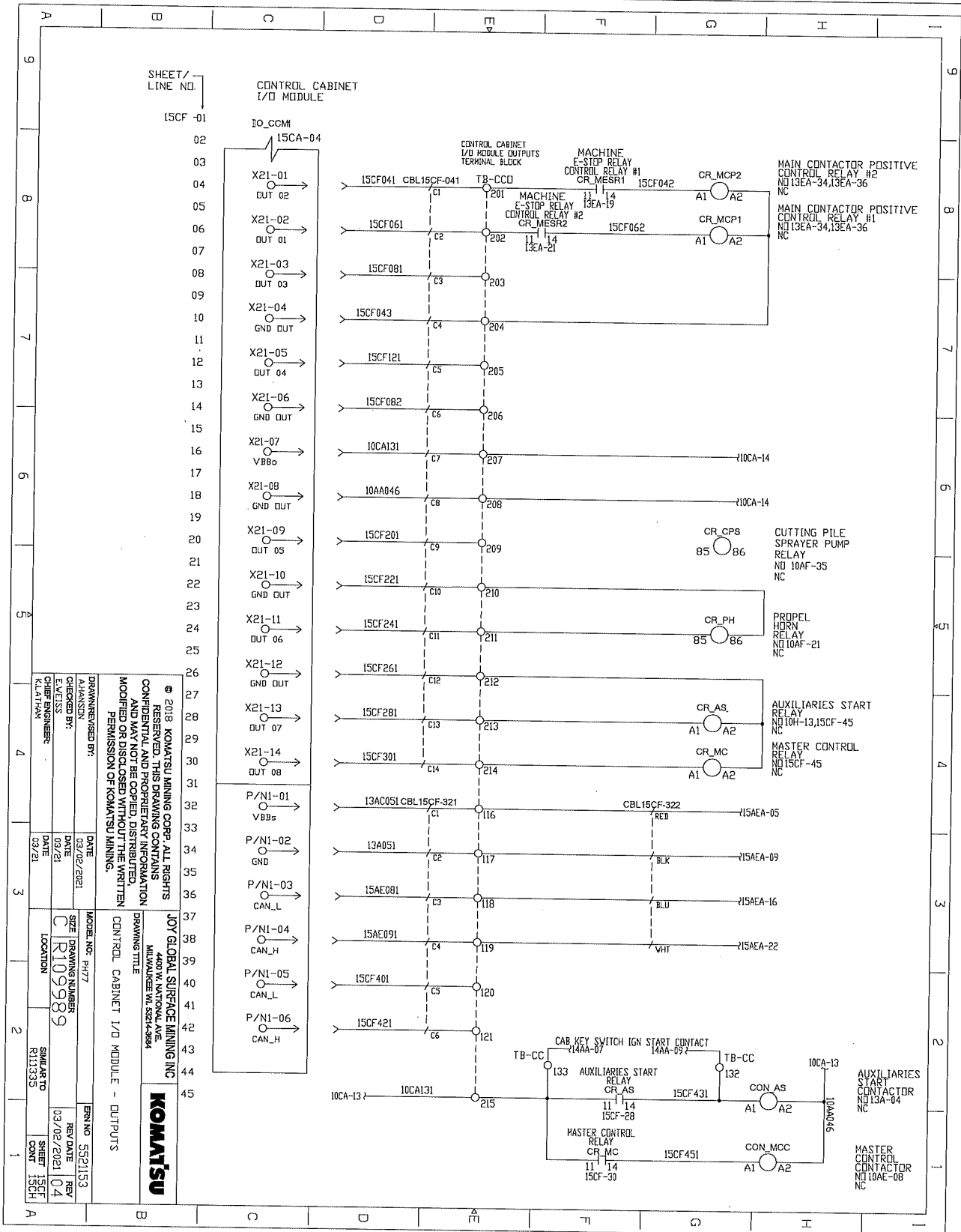
DESIGNED BY: D MANSON	DATE 02/02/2021	MODEL NO.: P177	REV. NO.: 5521153
CHECKED BY: E JEVISS	DATE 03/21	SIZE R109989	REV. DATE 03/02/2021
CHIEF ENGINEER: K LATHAM	DATE 03/21	LOCATION	REV. DATE 04
		SIMILAR TO R111335	SHEET 15CA
			COUNT 15CC

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>DRAWING TITLE CONTROL CABINET I/O MODULE - INPUTS</p>		<p>MODEL NO. PH77</p>	
<p>DRAWN/REVIEWED BY: A.HANSON</p>		<p>DATE 03/02/2021</p>	
<p>CHECKED BY: E.V.EISS</p>		<p>DATE 03/21</p>	
<p>CHIEF ENGINEER K.LATHAN</p>		<p>DATE 03/21</p>	
<p>SIZE DRAWING NUMBER C R109989</p>		<p>REV. NO. 5521153</p>	
<p>LOCATION R11335</p>		<p>REV. DATE 03/02/2021</p>	
<p>SIMILAR TO R11335</p>		<p>REV. SHEET 04</p>	
<p>SHEET 15CC</p>		<p>SHEET COUNT 15CC</p>	

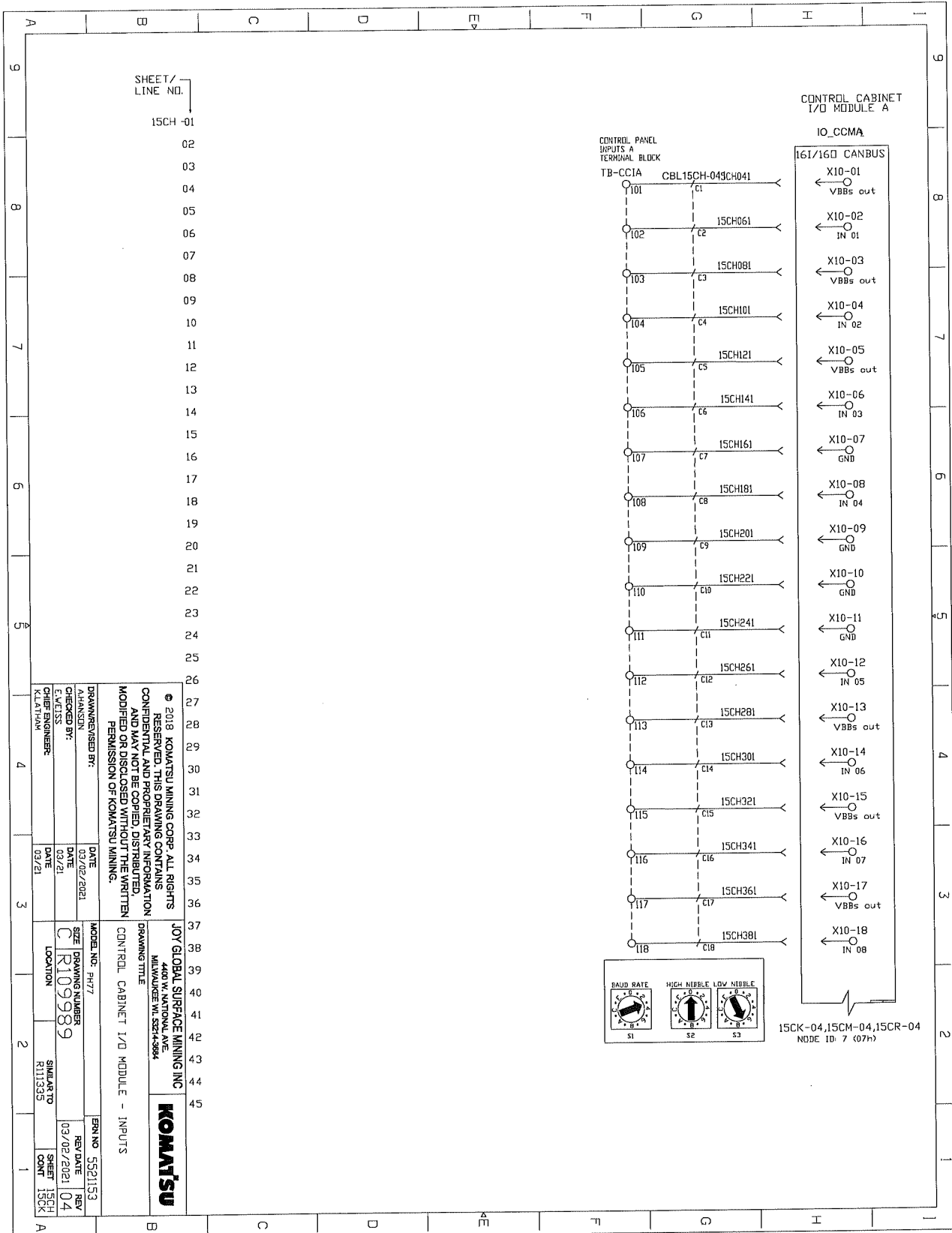
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



DRAWN/REVISION BY: AHANSON		DATE: 03/02/2021	MODEL NO: PH77
CHECKED BY: E.WESS		DATE: 03/21	SIZE: DRAWING NUMBER
DRAWING NUMBER: CR109989		LOCATION: 13CF	REVISION: 04
CHIEF ENGINEER: KANTAN		DATE: 03/21	REVISION: 04
DRAWING TITLE: CONTROL CABINET I/O MODULE - OUTPUTS		DATE: 03/02/2021	REVISION: 04
DRAFTER: KANTAN		DATE: 03/21	REVISION: 04
DRAWING NUMBER: CR109989		LOCATION: 13CF	REVISION: 04
CHIEF ENGINEER: KANTAN		DATE: 03/21	REVISION: 04
DRAWING TITLE: CONTROL CABINET I/O MODULE - OUTPUTS		DATE: 03/02/2021	REVISION: 04
DRAFTER: KANTAN		DATE: 03/21	REVISION: 04



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET /
LINE NO.
15CH -01

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JOY GLOBAL SURFACE MINING INC
440 W. NATIONAL AVE.
MILWAUKEE WI 53212-5844

KOMATSU

DRAWN/REVISED BY: A.FANSON
CHECKED BY: JON/ZEL
DESIGNED BY: JON/ZEL
DATE: 03/21/2021

DATE: 03/21/2021

MODEL NO: PH77
SIZE: R109989
DRAWING NUMBER: R109989
LOCATION: SIMILARTO R111335

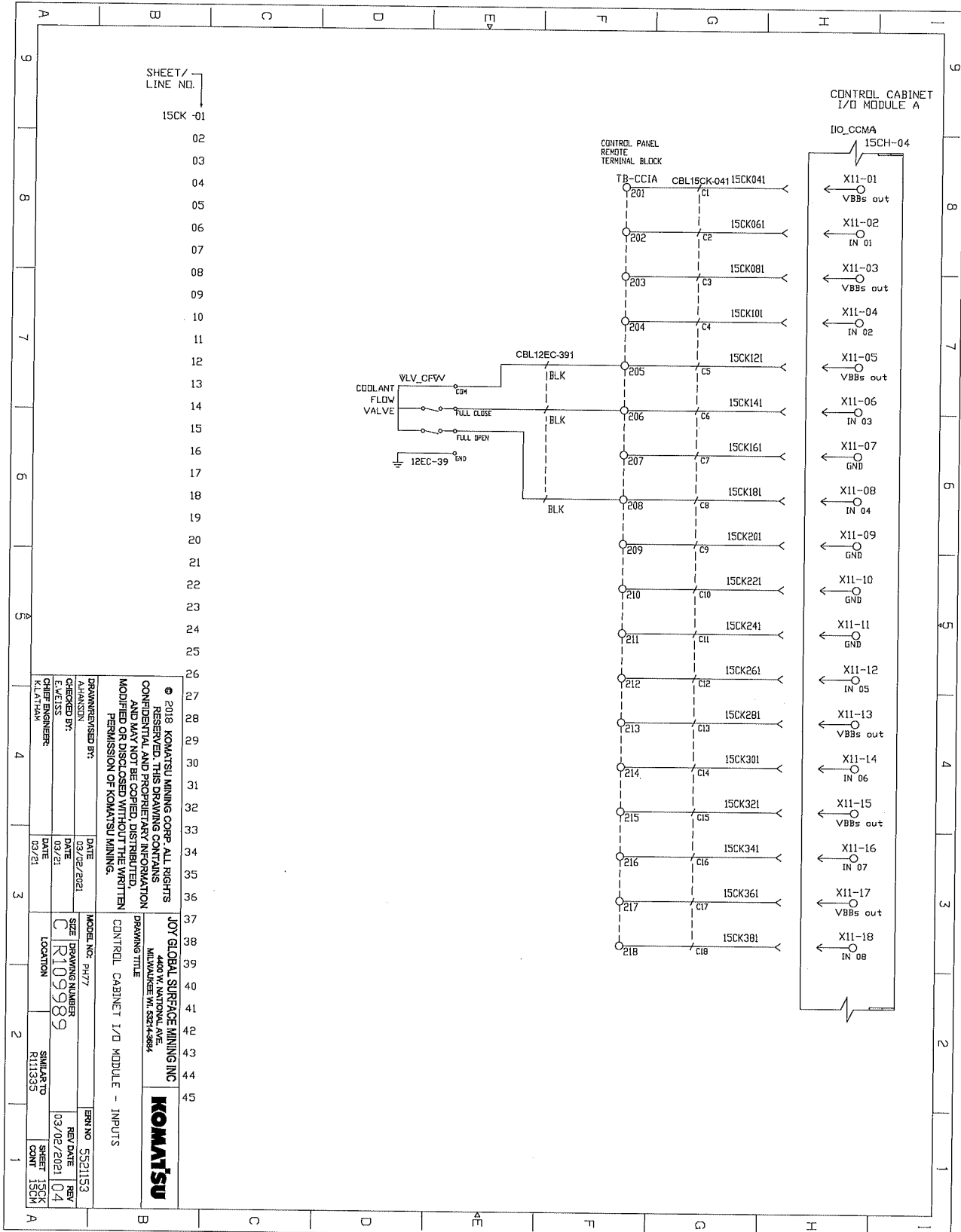
REV DATE: 03/02/2021
REV: 04

SHEET: 15CH
CONT: 15CK

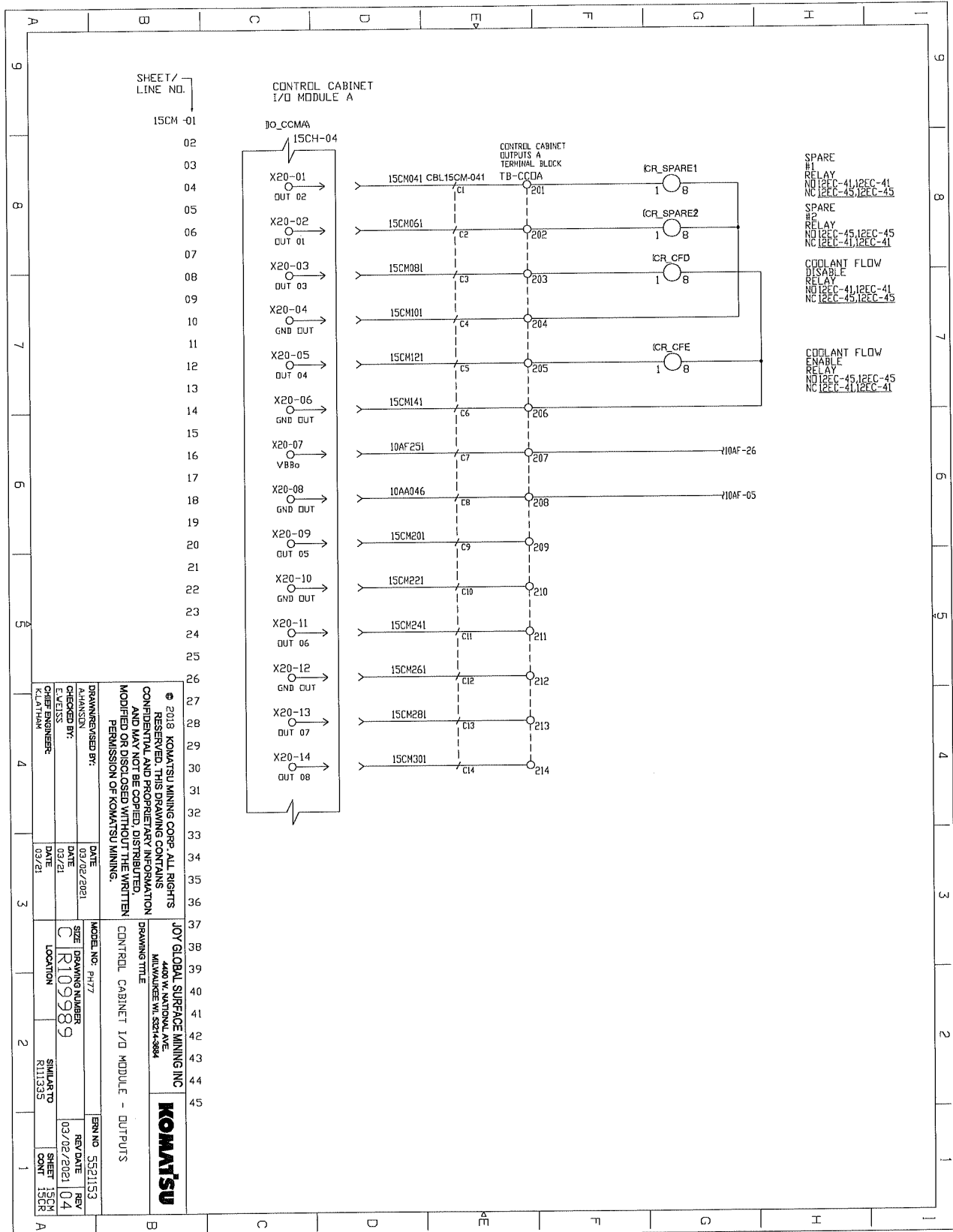
BRN NO: 5521153

DRAWING TITLE: CONTROL CABINET I/O MODULE - INPUTS

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

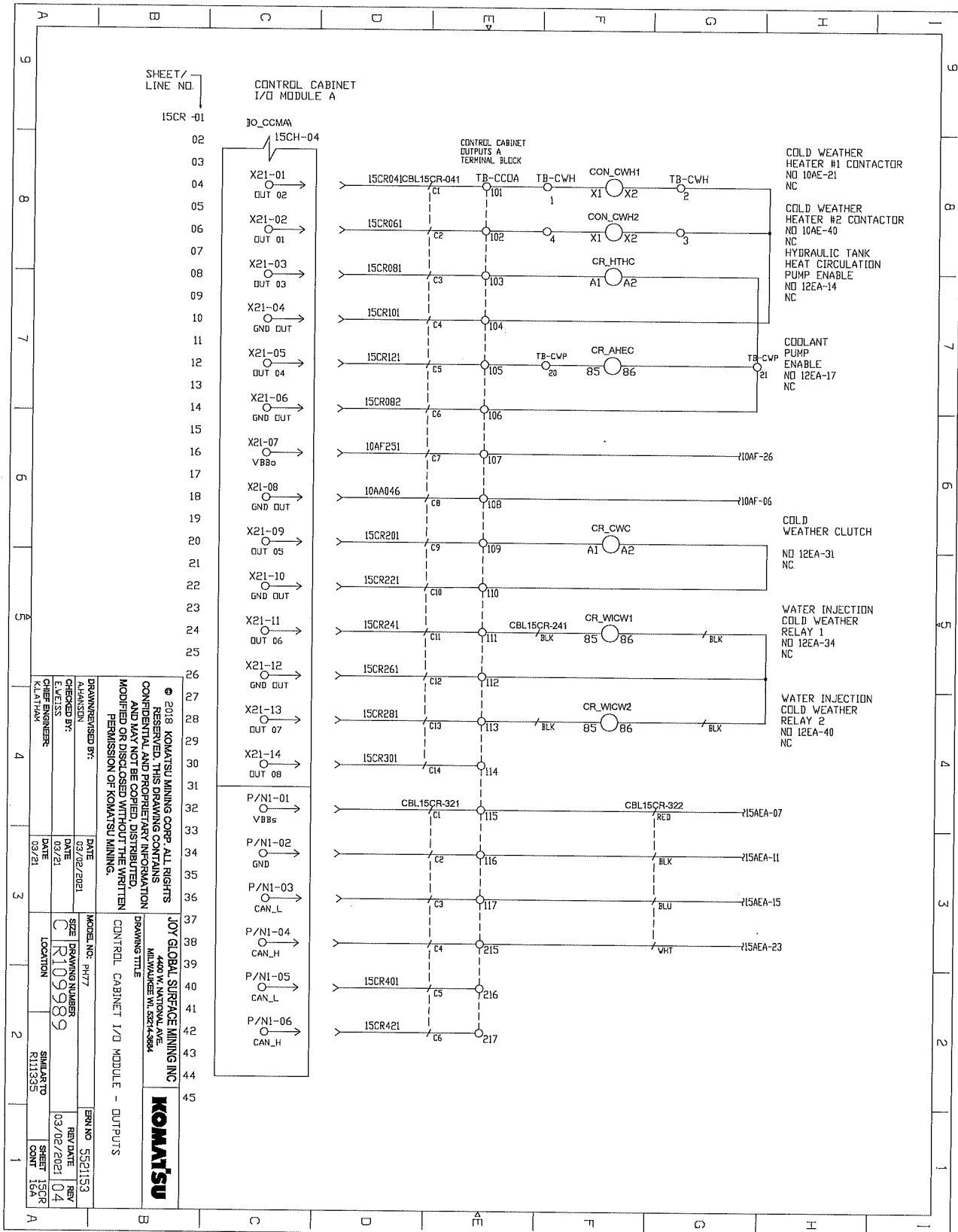


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

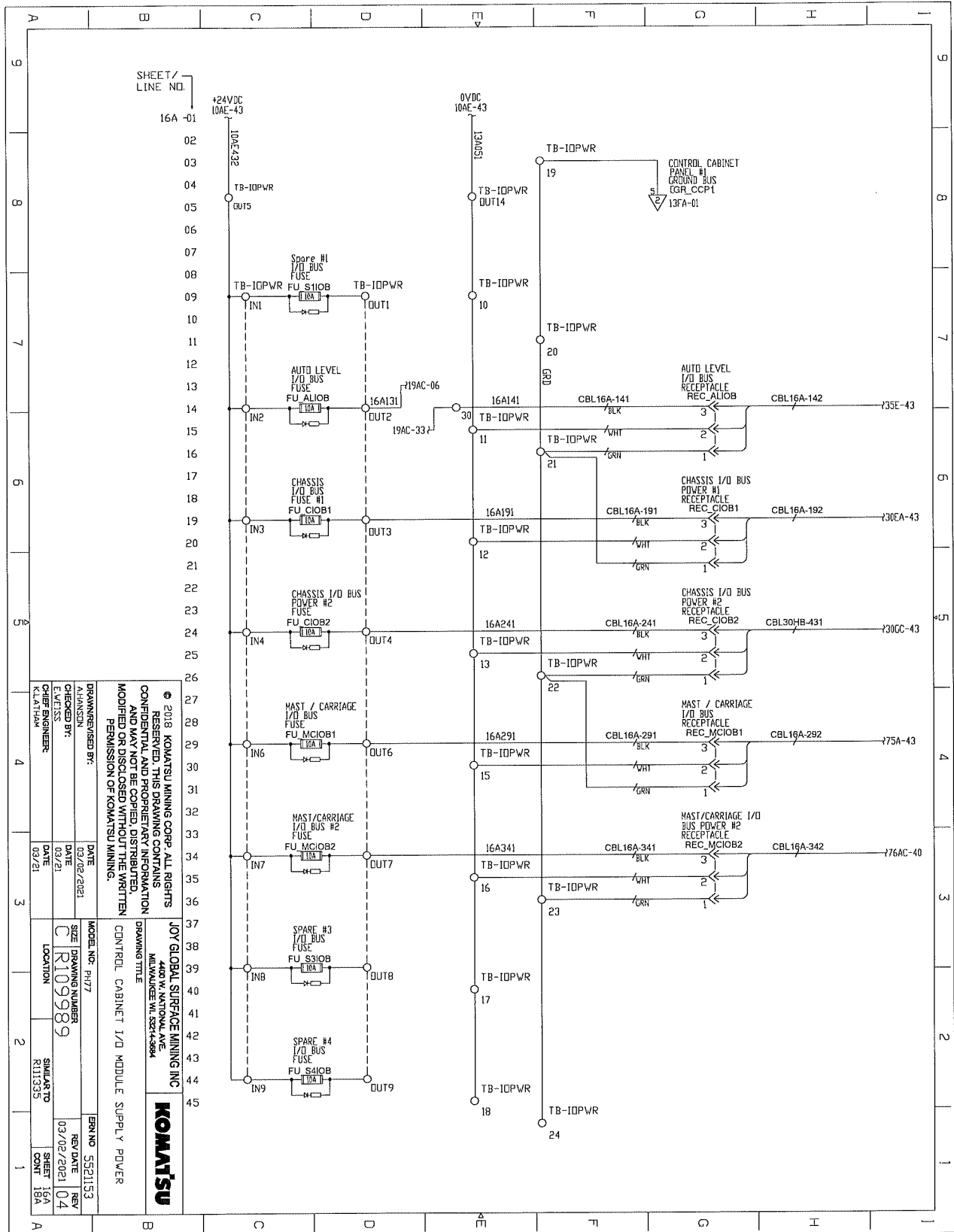


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DRAWN/REVISED BY: A.HANSSON	DATE: 03/02/2021
CHECKED BY: E.V.EISS	DATE: 03/21
CDR/ENGR: C.HANSSON	DATE: 03/21
MODEL NO.: PH17	REV. NO.: 5521153
SIZE: DRAWING NUMBER C/R109989	REV. DATE: REV 03/02/2021 04
LOCATION: SIMILAR TO R11335	SHEET: 15CM CONT: 15CR
DRAWING TITLE: JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE MILWAUKEE WI, 53248-8884 KOMATSU	
DRAWING TITLE: CONTROL CABINET I/O MODULE - OUTPUTS	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

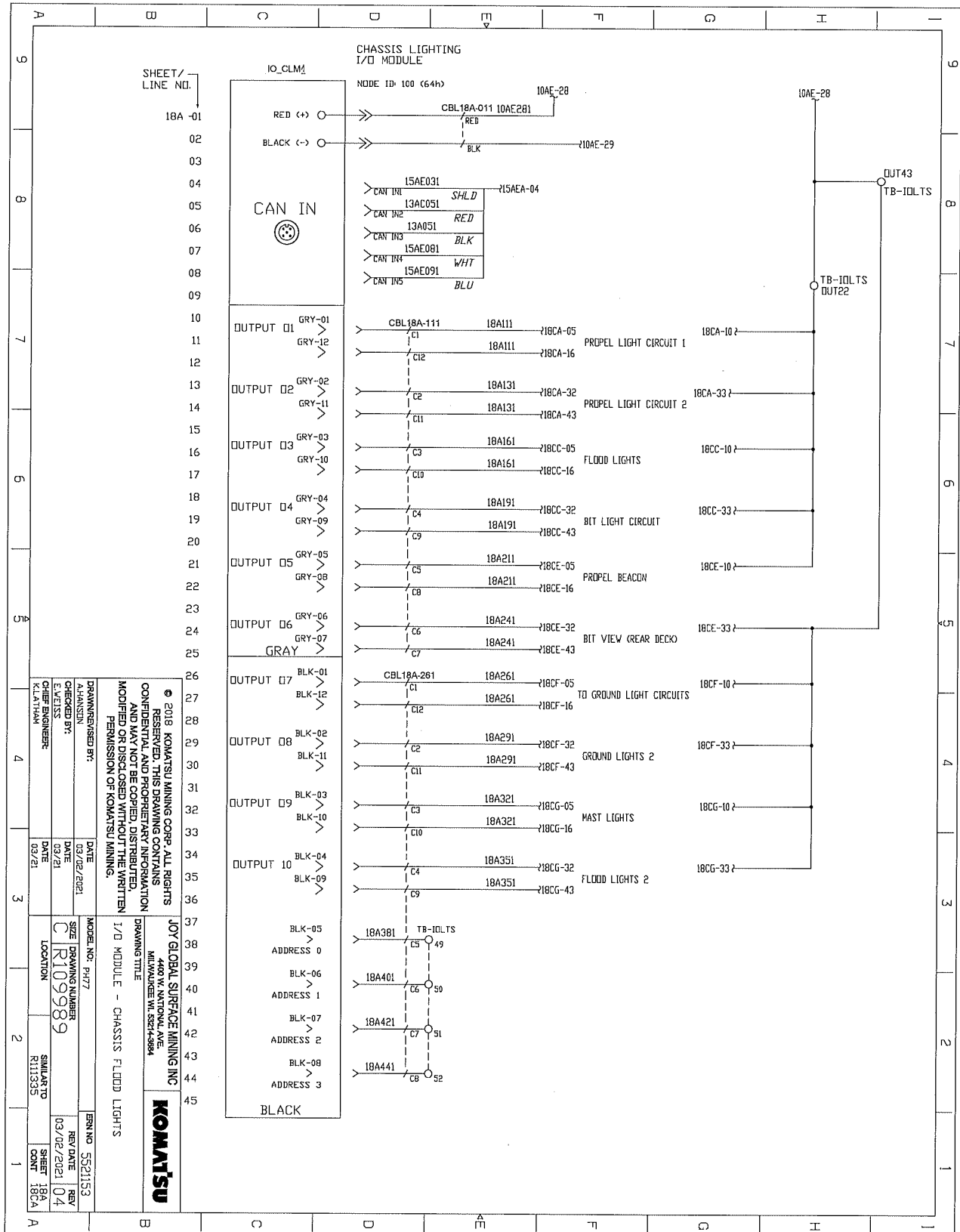


SHEET/
LINE NO.

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DRAWING TITLE CONTROL CABINET I/O MODULE SUPPLY POWER	
DRAWN/REVIEWED BY: ALANSON	DATE: 03/02/2021
CHECKED BY: E.M.J.S.S.	DATE: 03/21
CREATING ENGINEER: K.L.S.T.H.S.	DATE: 03/21
MODEL NO.: P417	SIZE: DRAWING NUMBER C R109989
LOCATION: R111353	SIMULATED R111353
EBN NO.: 5521153	REV DATE: REV 03/02/2021 04
SHEET NO.: 18A	CHK:



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



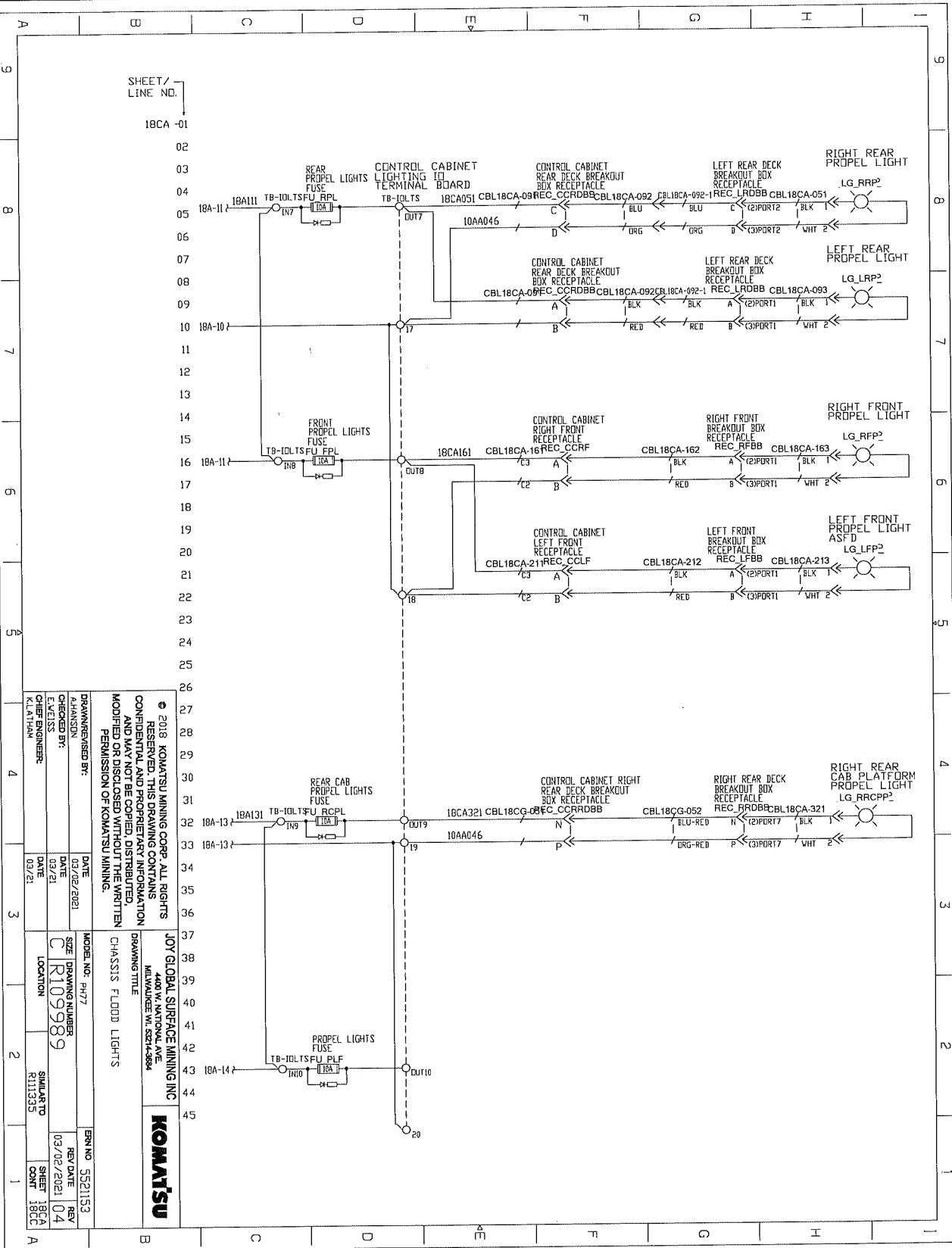
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53274-8884

DRAWING TITLE
I/O MODULE - CHASSIS FLOOD LIGHTS

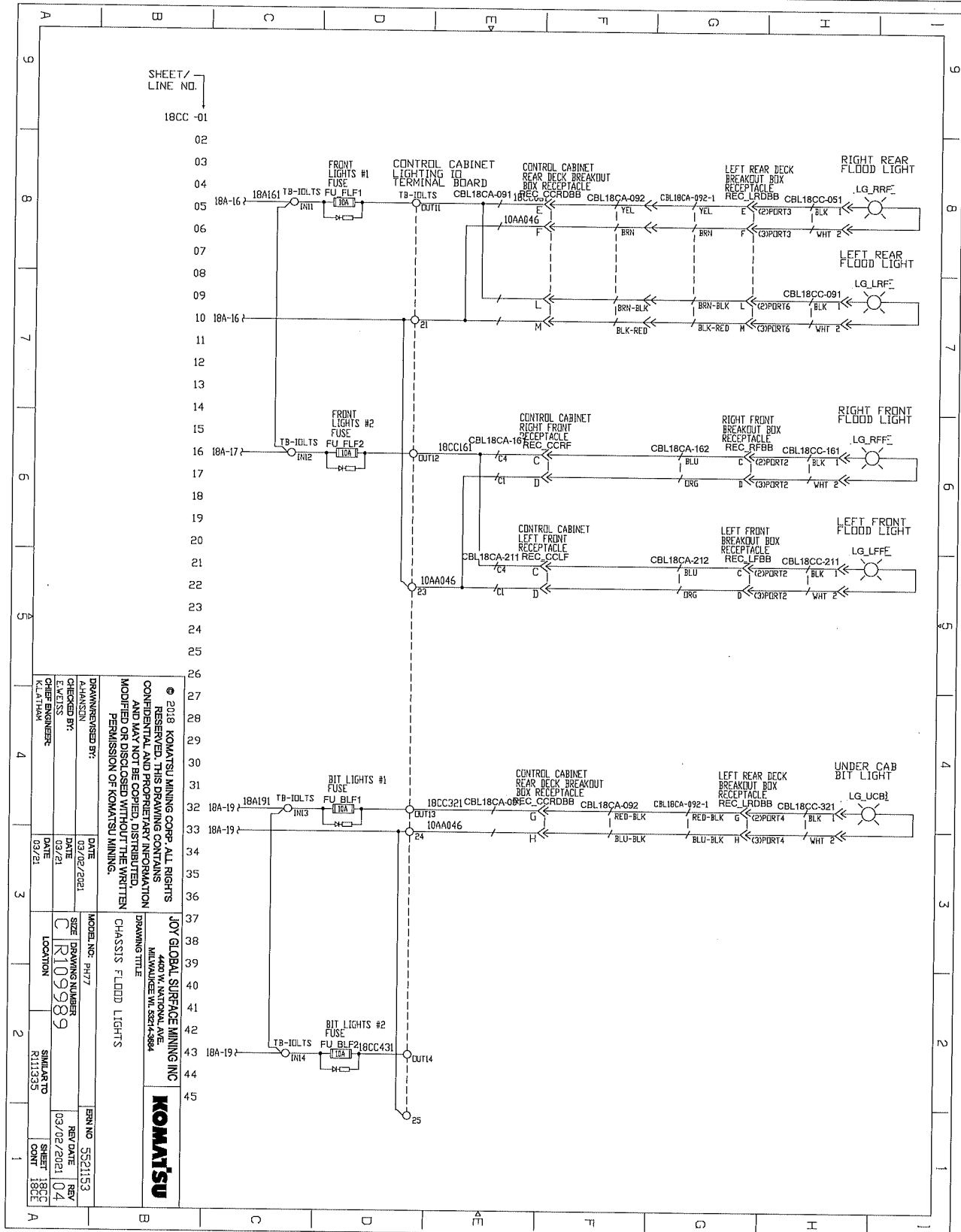
MODEL NO: P477	DATE: 03/02/2021	REV NO: 5521153
DESIGNED BY: K.LATIHAM	DATE: 03/01/2021	REV DATE: 03/02/2021
CHECKED BY: K.LATIHAM	DATE: 03/21	REV: 04
CHIEF ENGINEER: K.LATIHAM	DATE: 03/21	SHEET: 18A
	LOCATION: R113325	CHK: 18CA

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



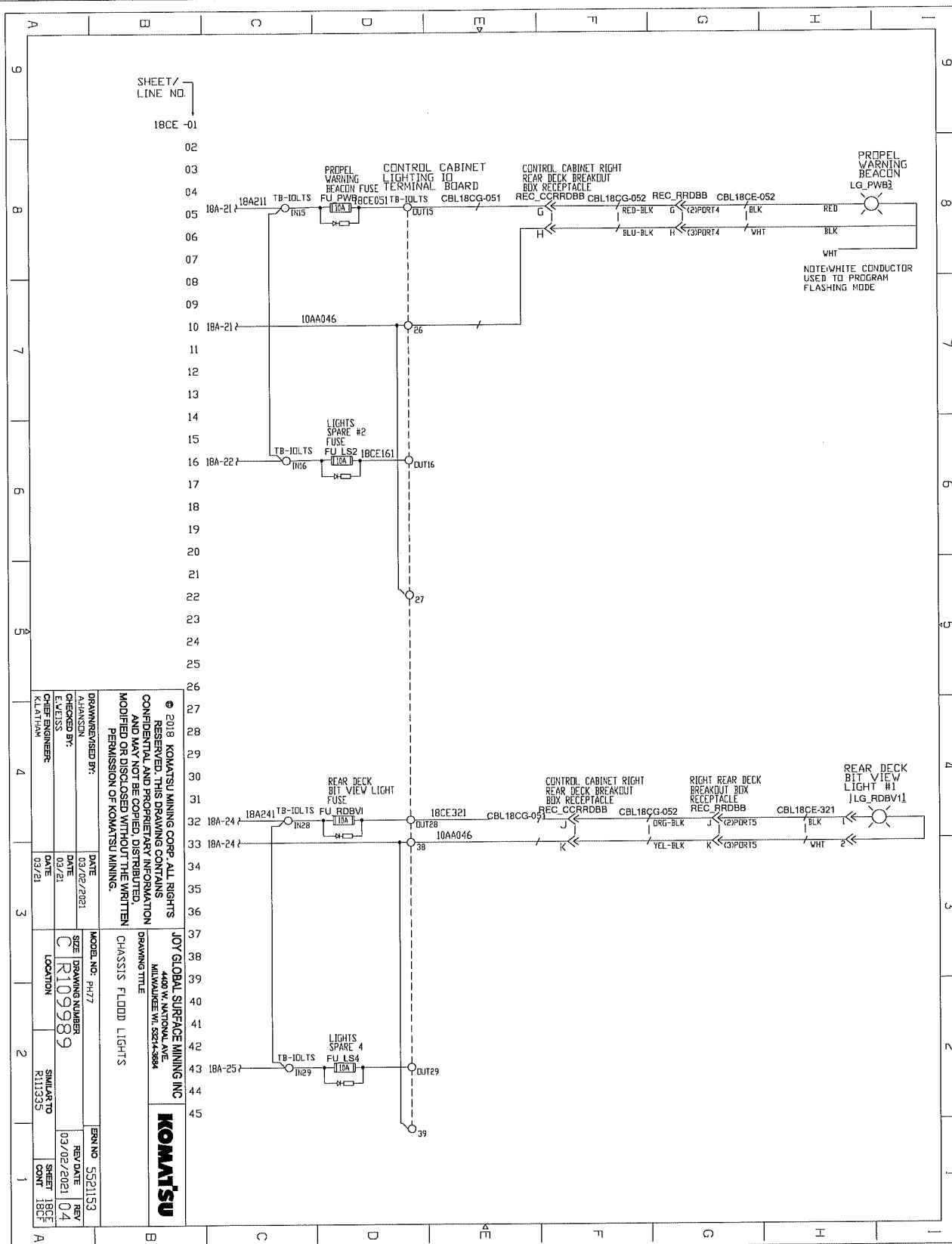
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DRAWN/REVISIONS BY: PHANSONI	
CHECKED BY: CHAISSAINEER	
DATE: 03/21	
DATE: 03/21	
MODEL NO. PH-77	
SIZE: DRAWING NUMBER C R109989	
LOCATION: SIMILAR TO R11335	
DRAWING TITLE: CHASSIS FLOOD LIGHTS	
JOY GLOBAL SURFACE MINING INC 440 W. NATIONAL AVE. MARIETTA, GA 30067	
ERN NO. 5521153	
REV DATE: 03/02/2021	
REV: 04	
SHEET: 18CA	
COUNT: 18CC	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



DRAWN/REVIEWED BY: A-HANSSON		DATE: 03/02/2021	
CHECKED BY: E-WEISS		DATE: 03/21	
REVISION ENGINEER: K-THAN		DATE: 03/21	
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MODEL NO.: PH77		SERIAL NO.: 5521153	
SIZE: DRAWING NUMBER C R109989		REV DATE REV 03/02/2021 04	
LOCATION: SIMILAR TO R111335		SHEET 180C CONT 180C	
JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE MILWAUKEE WI 53214-3884 DRAWING TITLE: CHASSIS FLOOD LIGHTS			

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



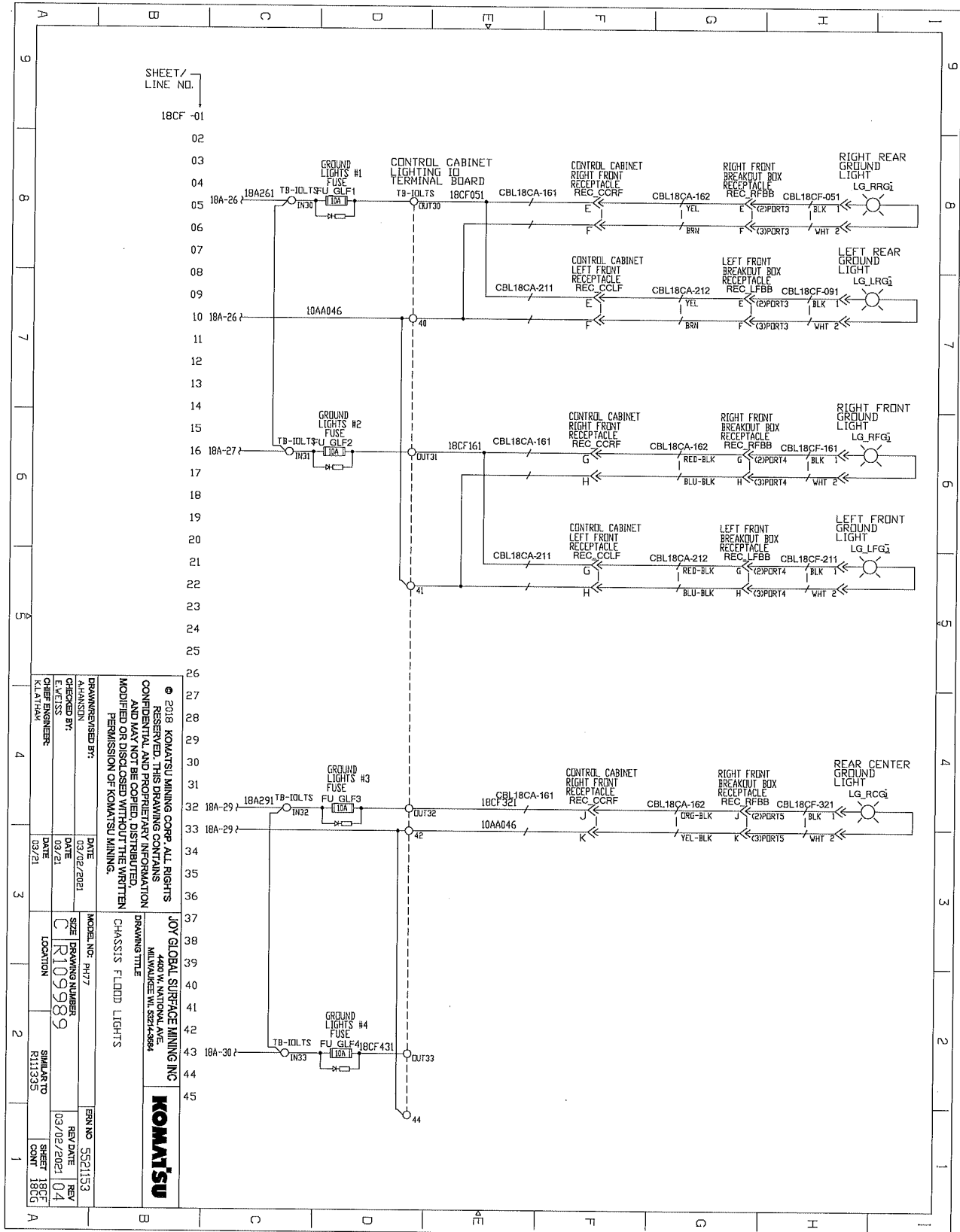
SHEET/
LINE NO.
18CE -01

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DRAWN/REVISED BY: ALPHANSON CHECKED BY: E. LAYLIS KIDALIMAW	DATE 03/02/2021 DATE 03/02/2021 DATE 03/21	MODEL NO.: PH17 SIZE: DRAWING NUMBER C R 109989 LOCATION: SUNIAR TO R113335	DATE 03/02/2021 REV DATE 03/02/2021 REV 04 SHEET 18CF CONT 18CF
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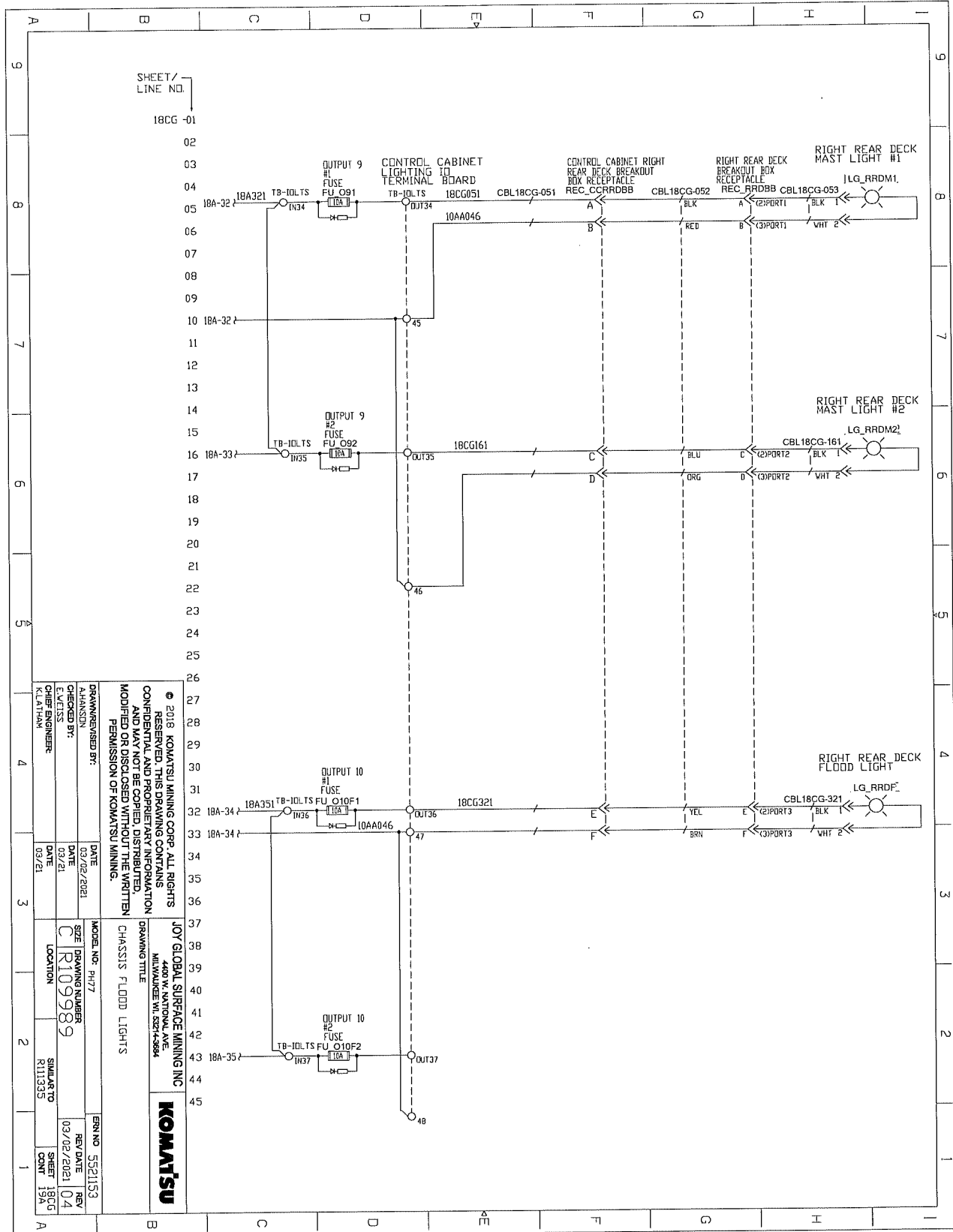
DRAWING TITLE: JOY GLOBAL SURFACE MINING INC
 4400 W. NANTOVAL AVE.
 MILWAUKEE WI, 53244-5804
KOMATSU
 CHASSIS FLOOD LIGHTS

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



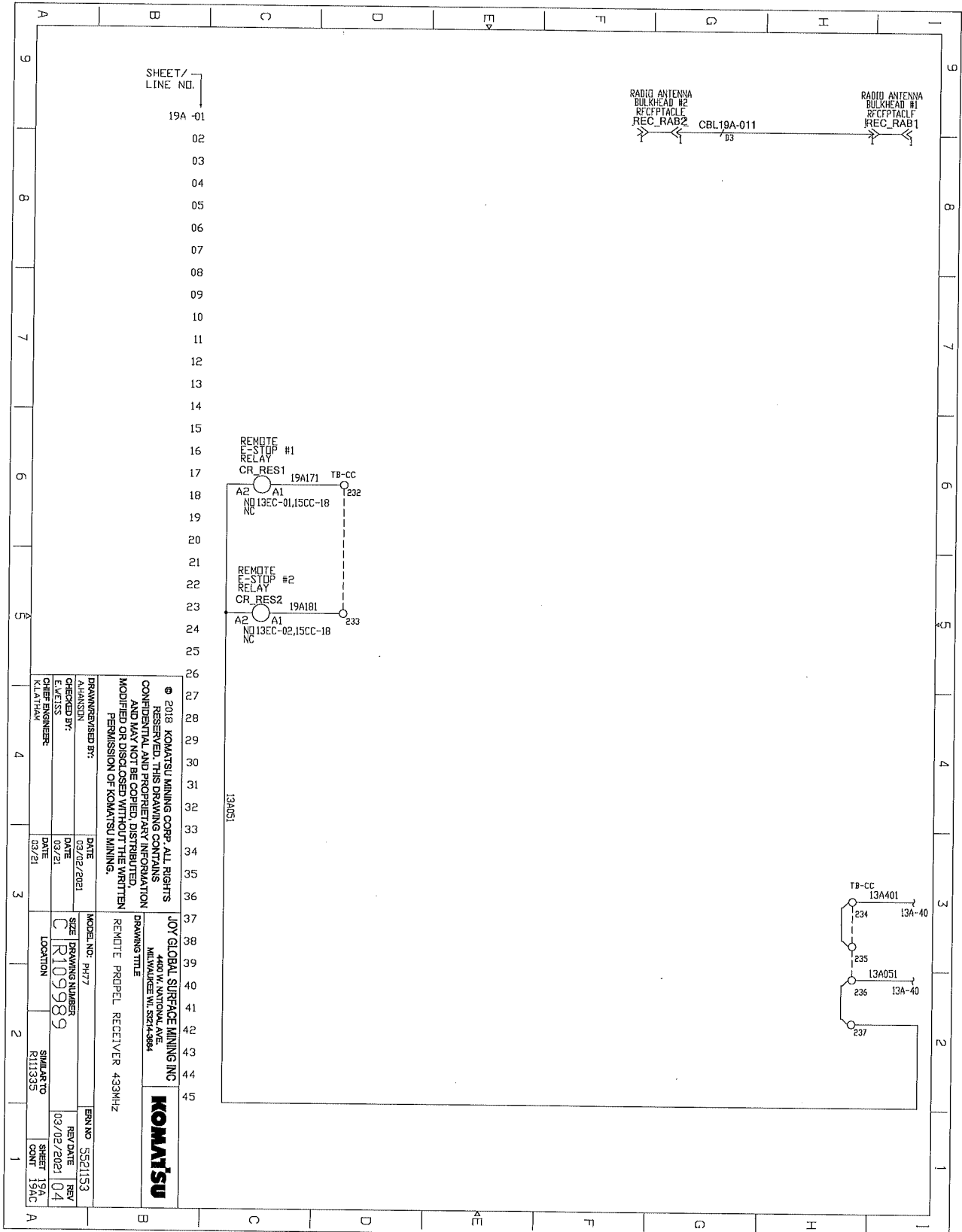
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<p>DRAWN/REVISED BY: A.HANSON</p> <p>CHECKED BY: [Signature]</p> <p>DESIGNED BY: [Signature]</p> <p>DATE: 03/21/2021</p>	<p>DATE: 03/02/2021</p> <p>DATE: 03/21/2021</p> <p>DATE: 03/21/2021</p>
<p>MODEL NO.: PH77</p> <p>SIZE: [Blank]</p> <p>DRAWING NUMBER: R109989</p> <p>LOCATION: [Blank]</p> <p>SIMILAR TO: R111335</p>	<p>REV. NO.: 5521153</p> <p>REV. DATE: 03/02/2021</p> <p>REV. BY: [Blank]</p> <p>SHEET NO.: 04</p> <p>SHEET COUNT: 18CF</p>
<p>JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE, WI 53214-2884</p> <p>DRAWING TITLE: CHASSIS FLOOD LIGHTS</p> <p>KOMATSU</p>	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO. 18CG -01	
DRAWN/REVISED BY: ALHANNUN	
CHECKED BY: CLAYTON SANDERS	
DATE: 03/21/2021	
MODEL NO.: PH177	
SIZE: DRAWING NUMBER C R109989	
LOCATION: SIMILAR TO R11335	
DATE: 03/21/2021	
REV. DATE: 03/02/2021	
REV. SHEET: 04	
REV. SHEET: 18CG	
REV. SHEET: 19A	
DRAWING TITLE: JOY GLOBAL SURFACE MINING INC 4400 W. NANTOVAL AVE MILWAUKEE WI, 53244-0804	
CHASSIS TITLE: CHASSIS FLOOD LIGHTS	
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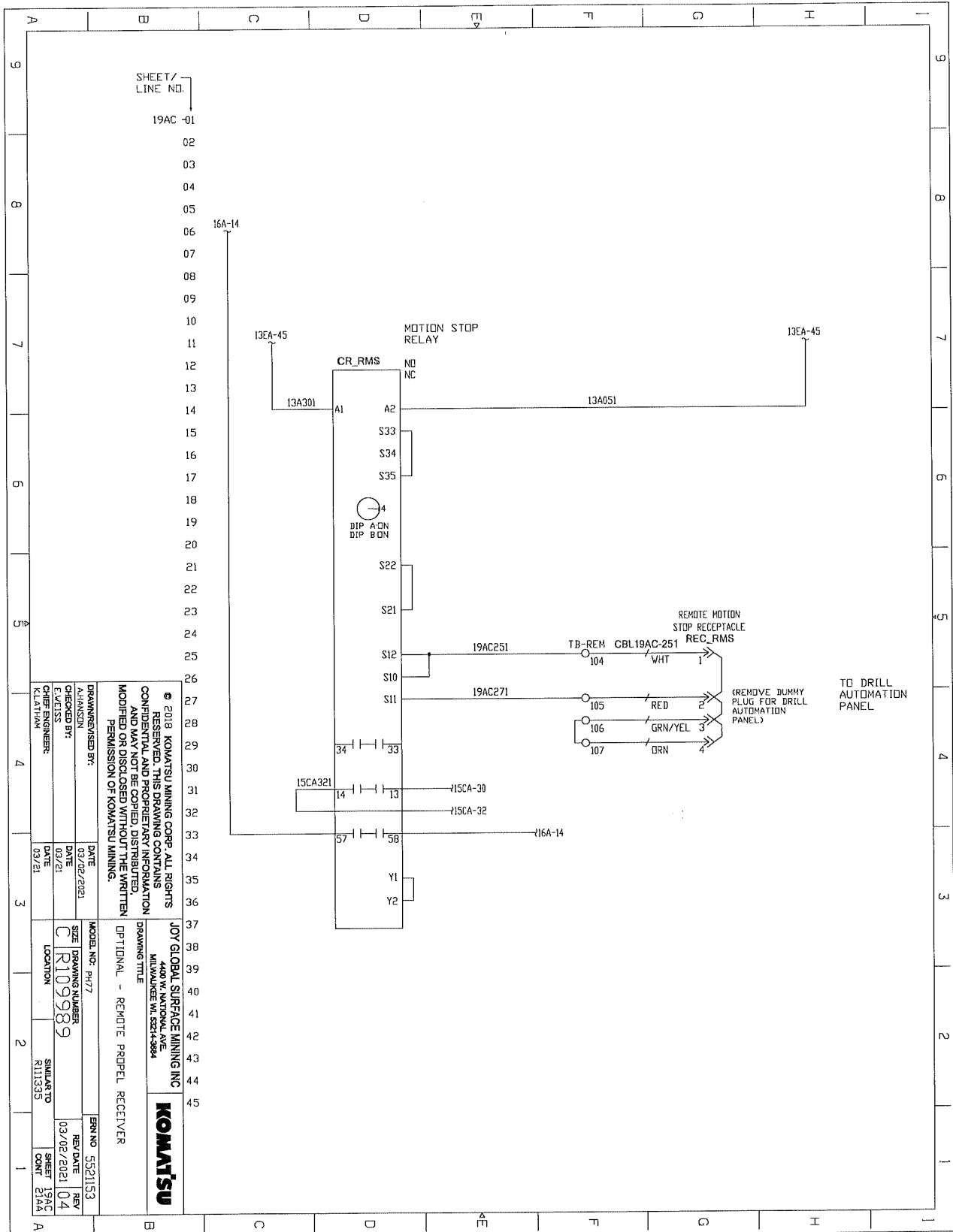
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



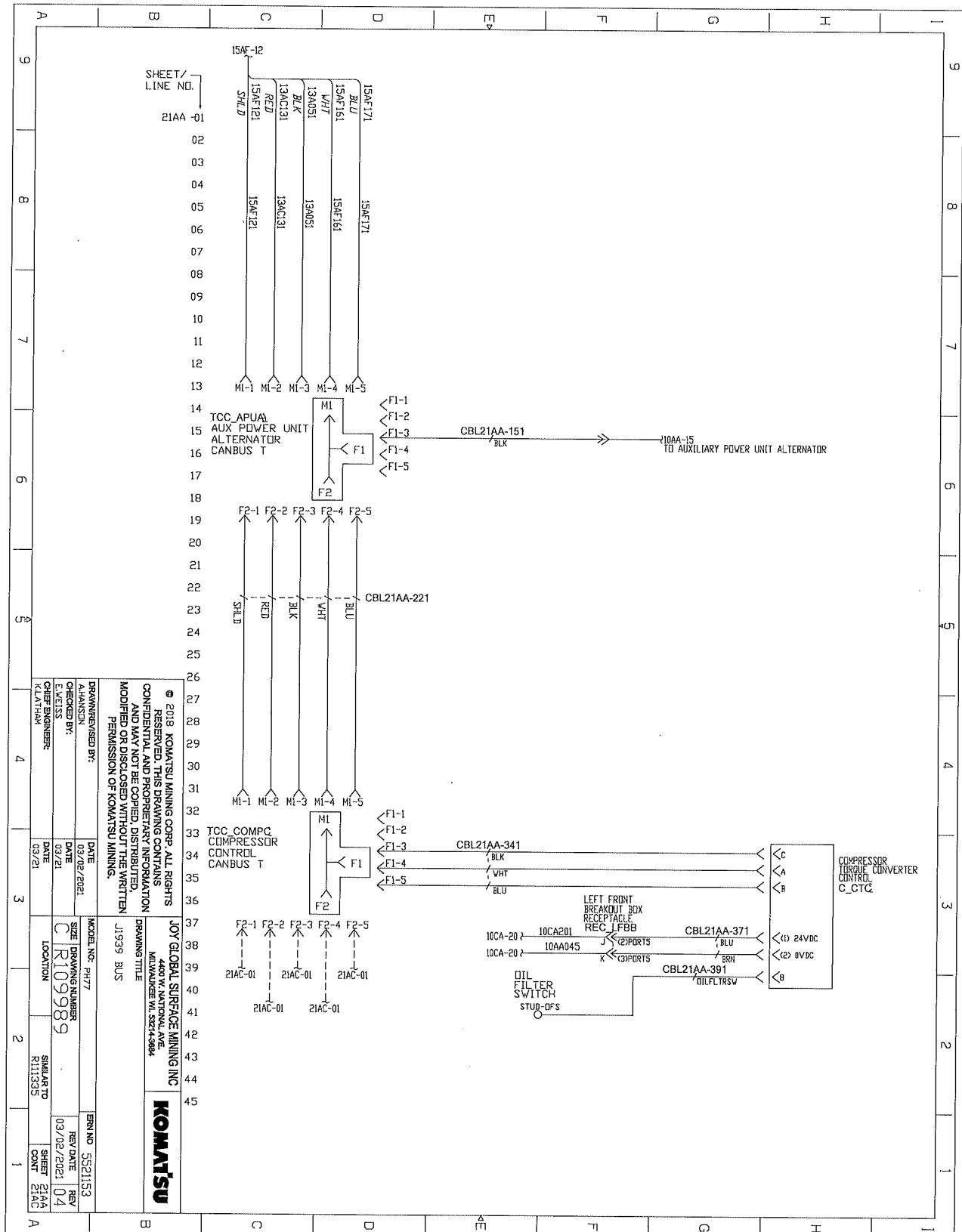
SHEET / LINE NO.
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DRAWN/REVISOR BY: ALANSON CHECKED BY: E. J. JONES DESIGNED BY: K.L.A. HAV		DATE 03/02/2021	DATE 03/21	DATE 03/21
MODEL NO.: PH77		SIZE	DRAWING NUMBER	LOCATION
CIR109989				SMILARTO K111353
DRAWING TITLE		EN NO.	REV. DATE	SHEET
JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE WI 53214-3884		5521153	03/02/2021	19A
REVISIONS		REV.	DATE	BY
REMOTE PROPEL RECEIVER 433MHZ		04		
COMMENTS		© 2018 KOMATSU MINING CORP. ALL RIGHTS RESERVED. THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MINING.		

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

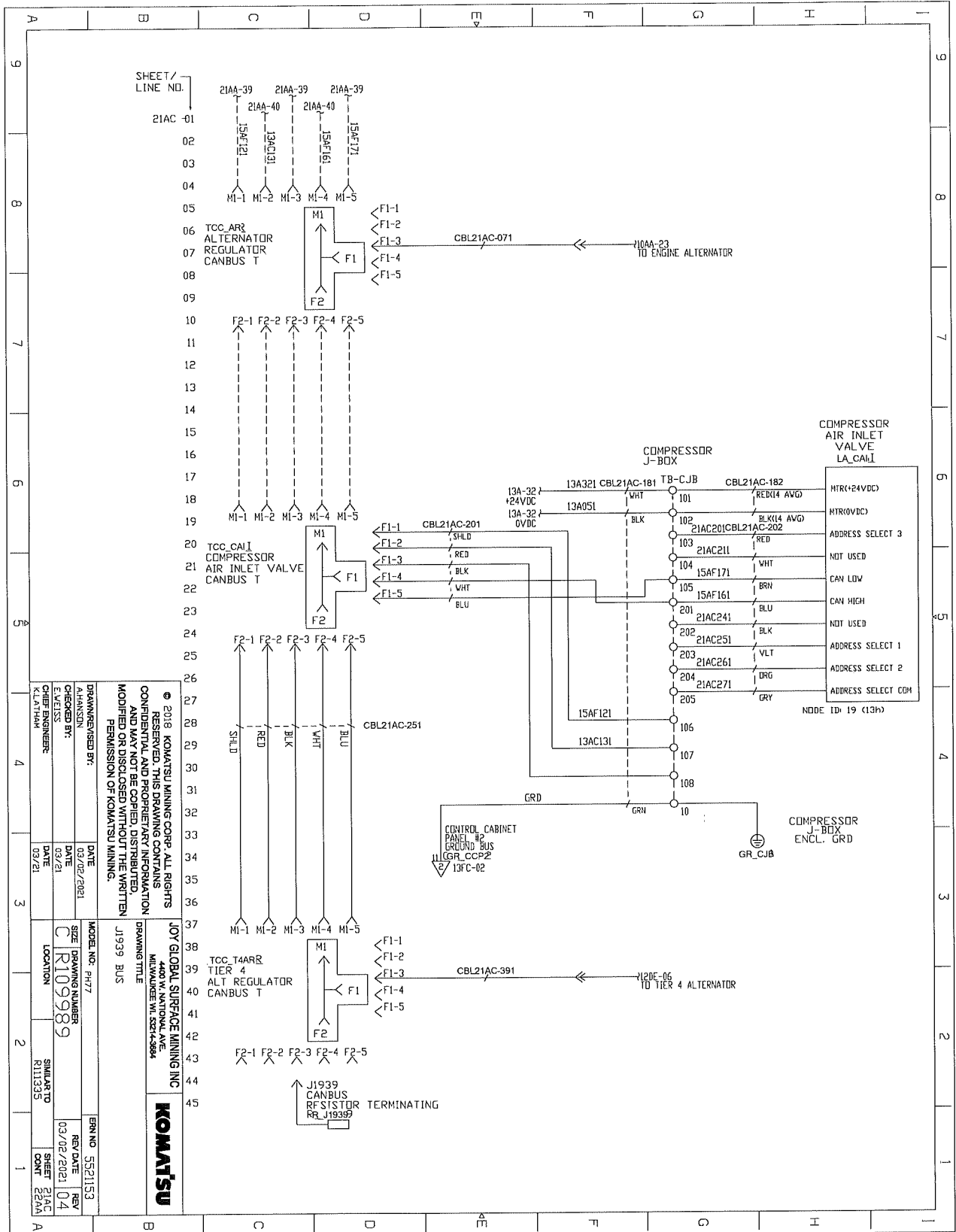


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

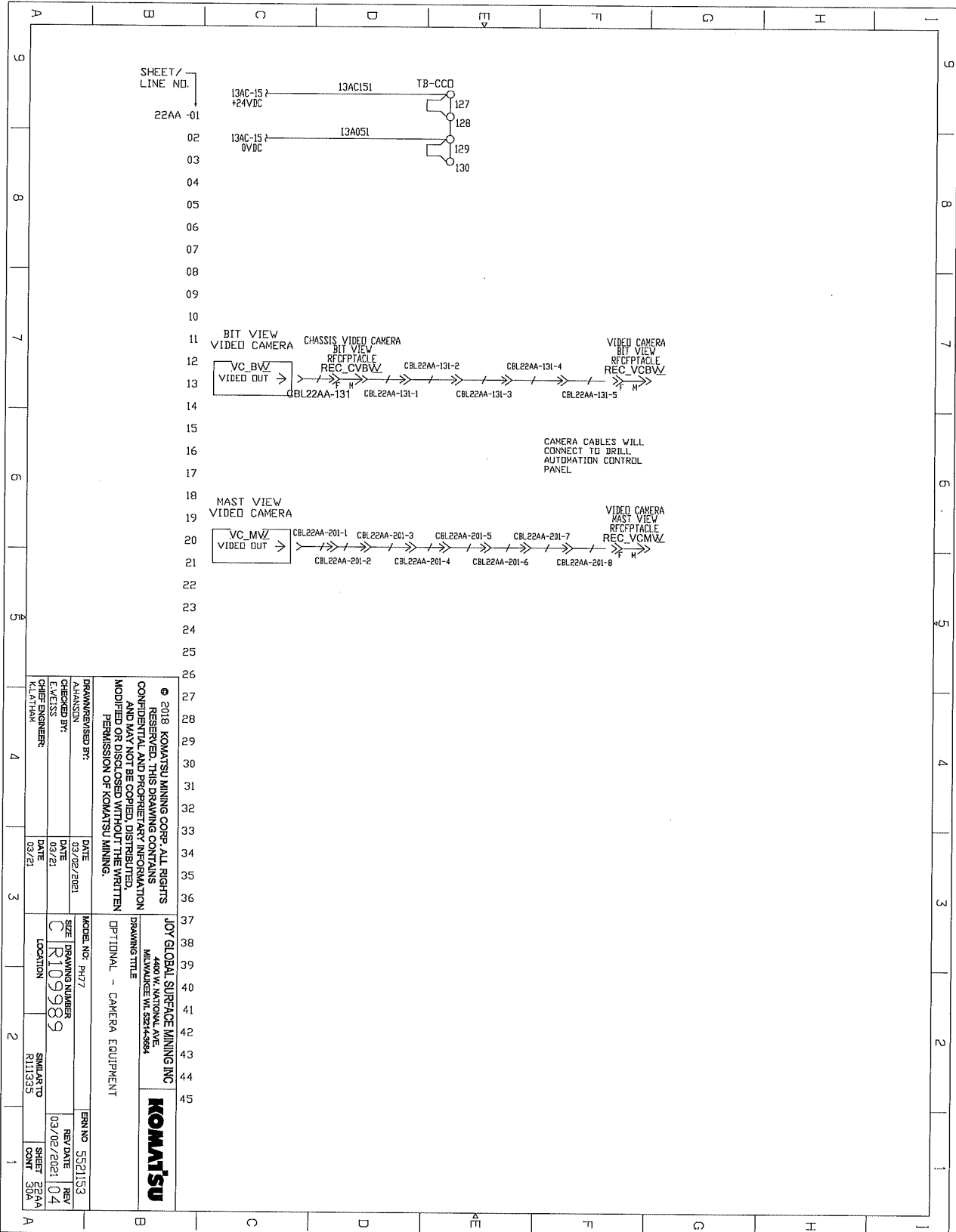


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<p>JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE WI 53274-9884</p>	<p>KOMATSU</p>
<p>MODEL NO: PH77 SIZE: DRAWING NUMBER C R109989 LOCATION:</p>	<p>ERR NO: 5521153 REV DATE: 03/02/2021 REV: 04 SHEET NO: 21AA SHEET COUNT: 01</p>
<p>DRAWN BY: PH77 DATE: 03/02/2021 CHECKED BY: K.LATHAM DATE: 03/21</p>	<p>DATE: 03/02/2021 DATE: 03/21</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

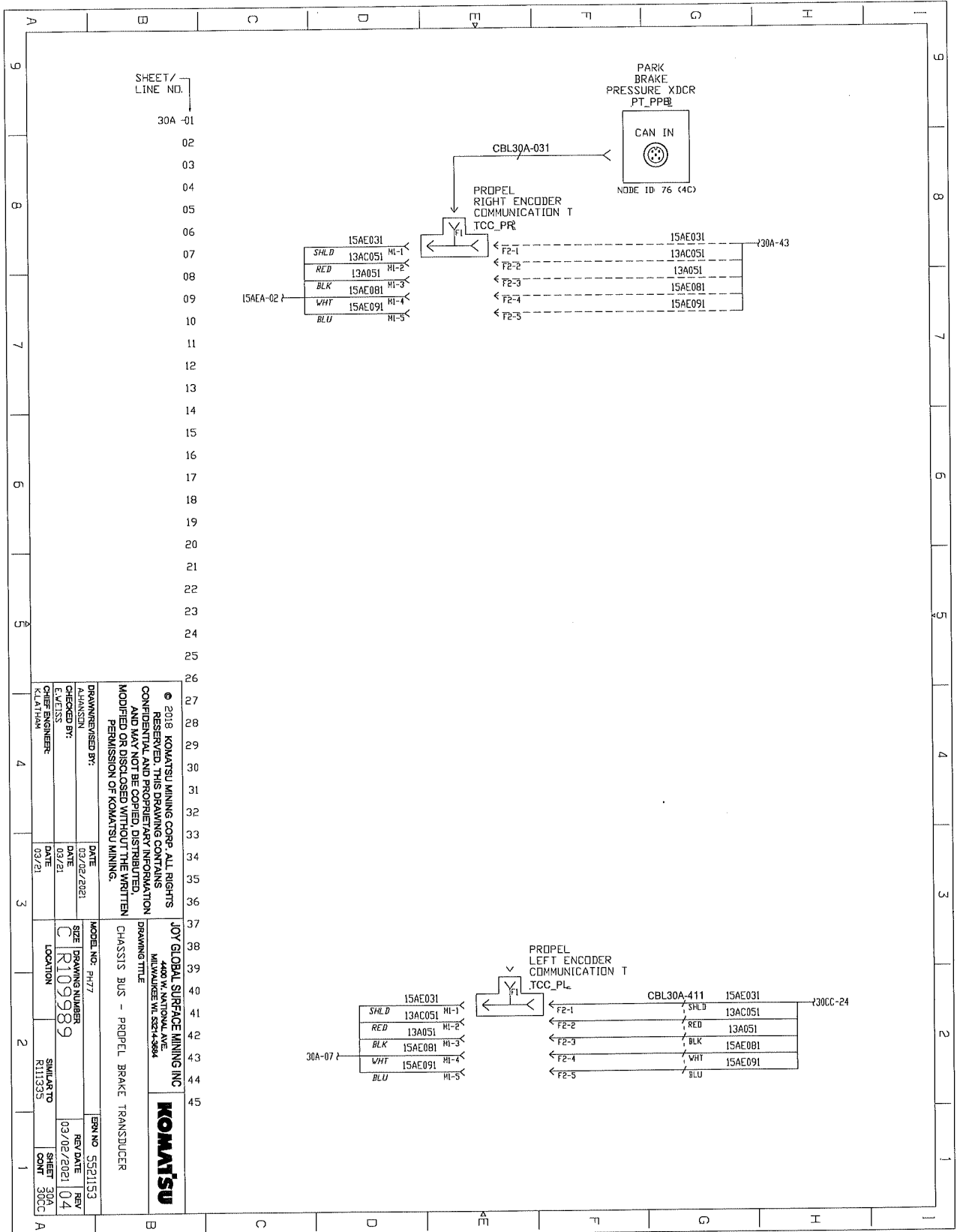


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

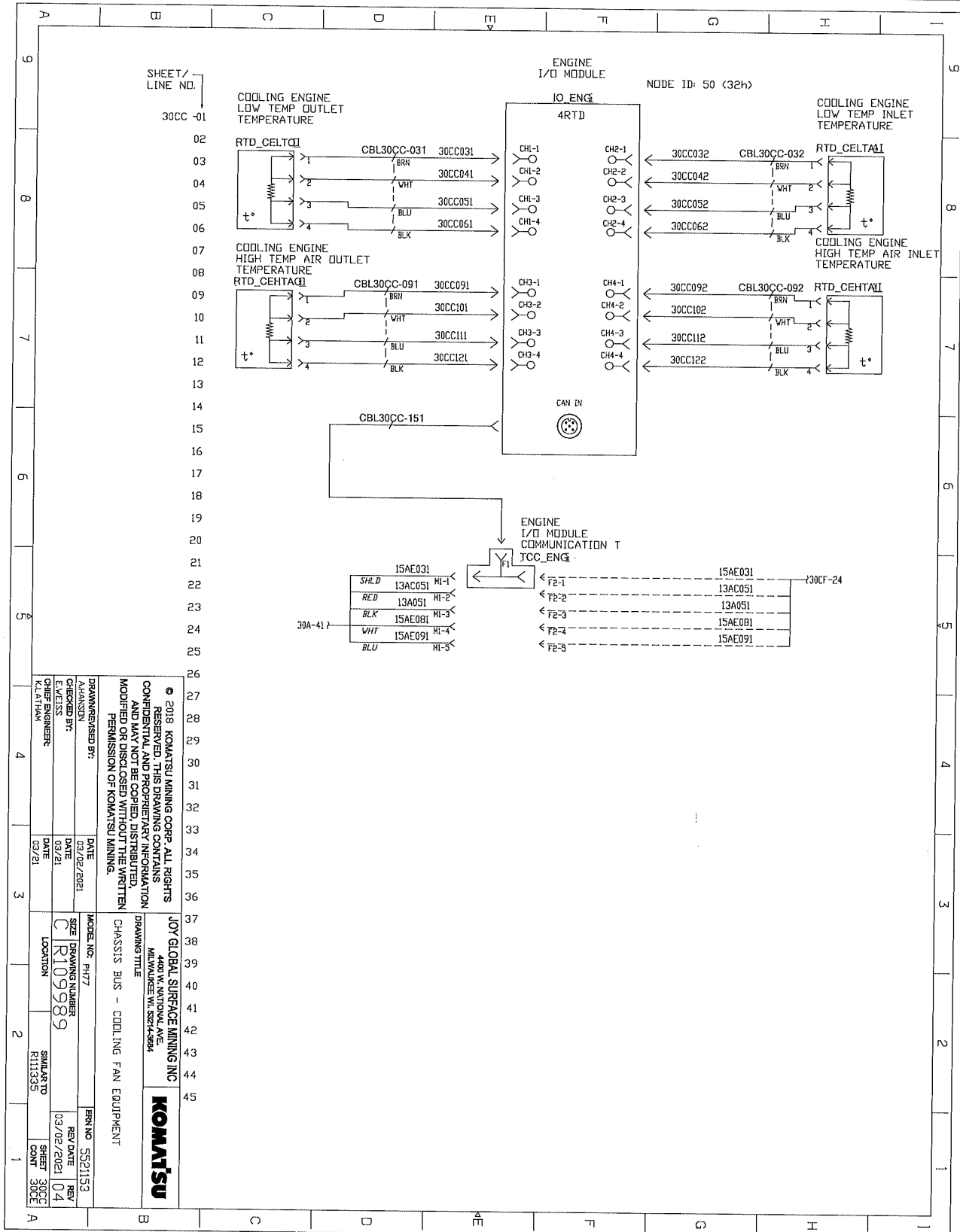


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<p>JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE MILWAUKEE WI 53214-8884</p>	<p>KOMATSU</p>
<p>MODEL NO. PH77 DRAWING NUMBER C/R109989</p>	<p>OPTIONAL - CAMERA EQUIPMENT</p>
<p>DRAWN/DESIGNED BY: K.LATYHAM CHECKED BY: E.M.ESS CHIEF ENGINEER:</p>	<p>DATE: 03/02/2021 DATE: 03/21 DATE: 03/21</p>
<p>SHILASTO R113255</p>	<p>REV DATE: 03/02/2021 REV: 04 SHEET: 35/44 CHIT: 35/44</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

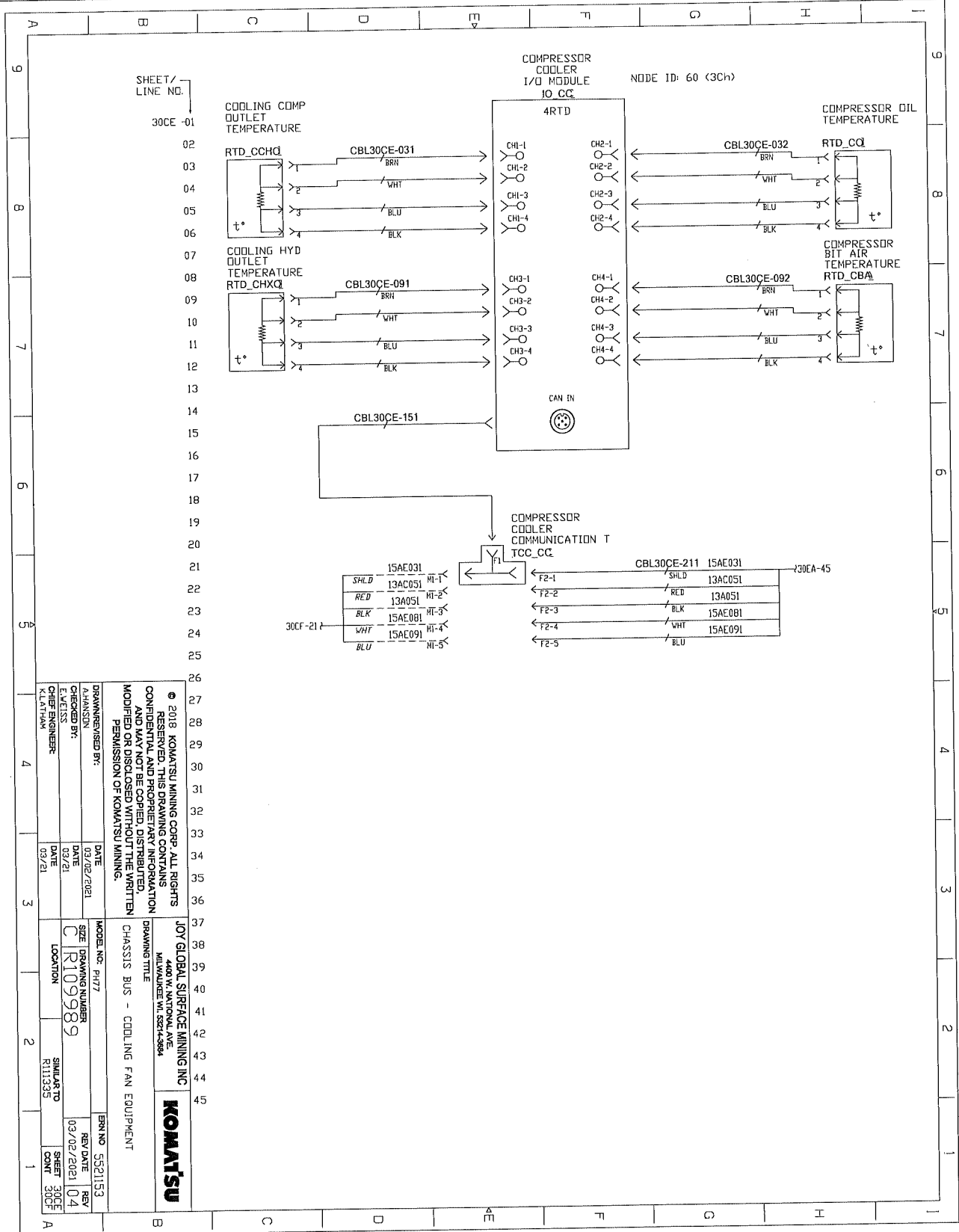


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



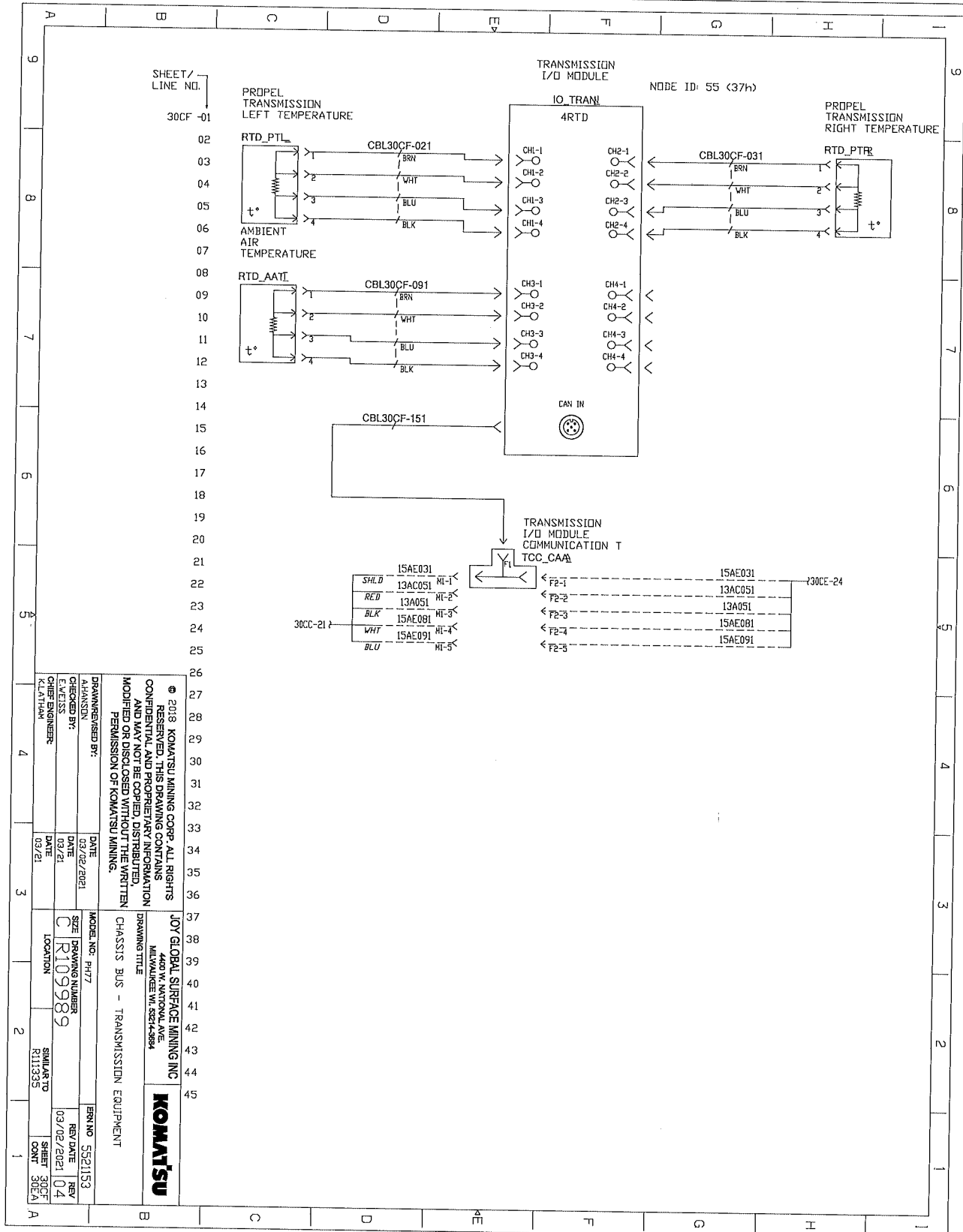
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JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE MILWAUKEE WI 53144-9894	
KOMATSU	
DRAWN/REVISED BY: A.HANSON	DATE: 03/02/2021
CHECKED BY: CHERIE RICHMOND	DATE: 03/21
CHIEF ENGINEER K.LATHAN	DATE: 03/21
MODEL NO: P177	SIZE: DRAWING NUMBER C1R109989
LOCATION SIMILAR TO R111353	SERIAL NO: R111353
ENGINE NO: 5521153	REV: 1
REV DATE: 03/02/2021	SHEET NO: 04
SHEET NO: 30CC	SHEET COUNT: 30CC

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>JOY GLOBAL SURFACE MINING INC 1001 W. NATIONAL AVE MILWAUKEE WI 53214-3864</p>	<p>CHASSIS BUS - COOLING FAN EQUIPMENT</p>
<p>KOMATSU</p>	<p>ERN NO. 5521153</p>
<p>DRAWN BY: M.HANSON CHECKED BY: E.WEISS CHIEF ENGINEER: K.LATHAM</p>	<p>DATE: 03/02/2021 DATE: 03/21 DATE: 03/21</p>
<p>MODEL NO: P477 SIZE: DRAWING NUMBER C/R109989 LOCATION: R111335</p>	<p>REV/DRAWN: 04 REV: 04 SHEET: 30CE COUNT: 30CF</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

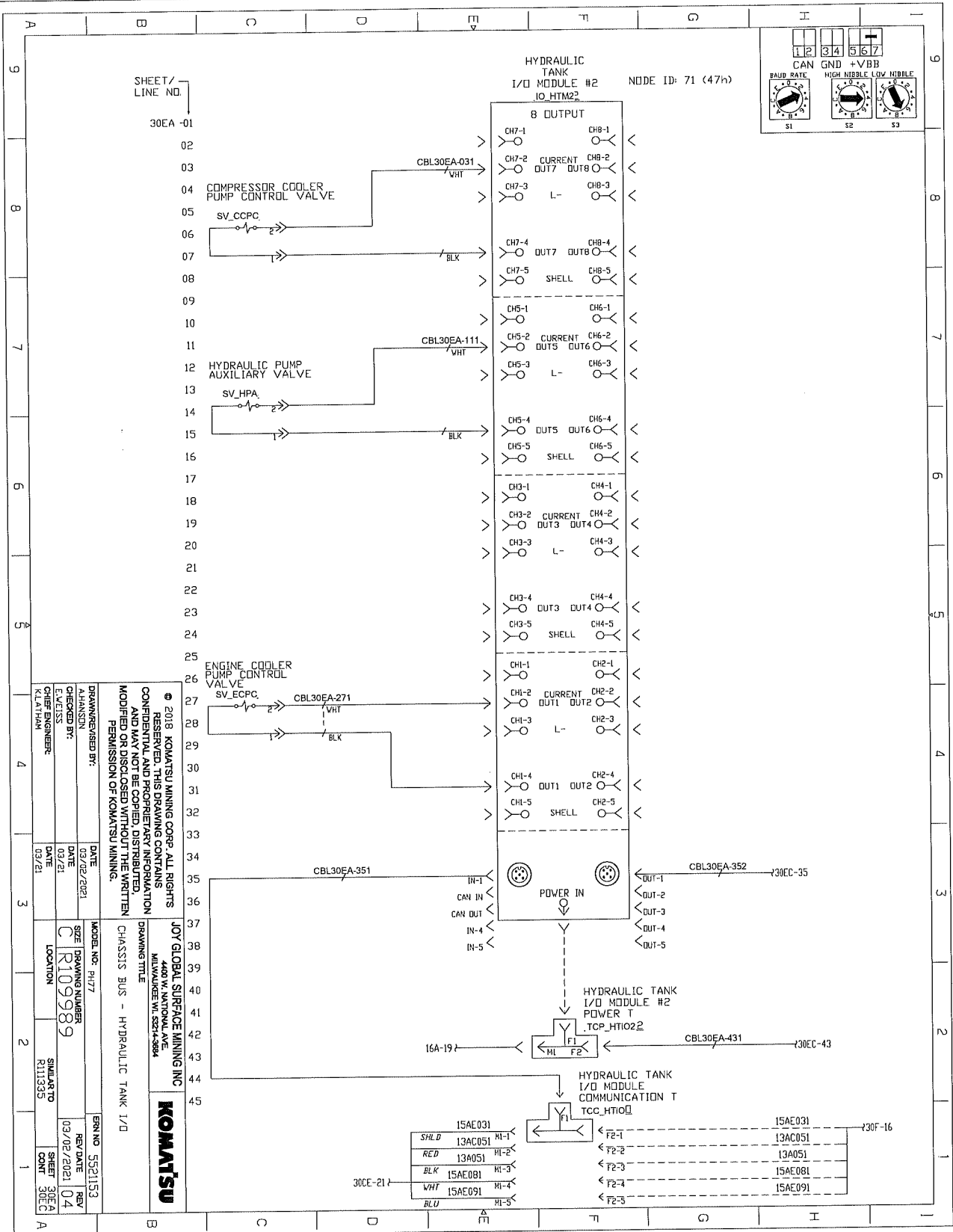


SHEET / LINE NO.
30CF -01

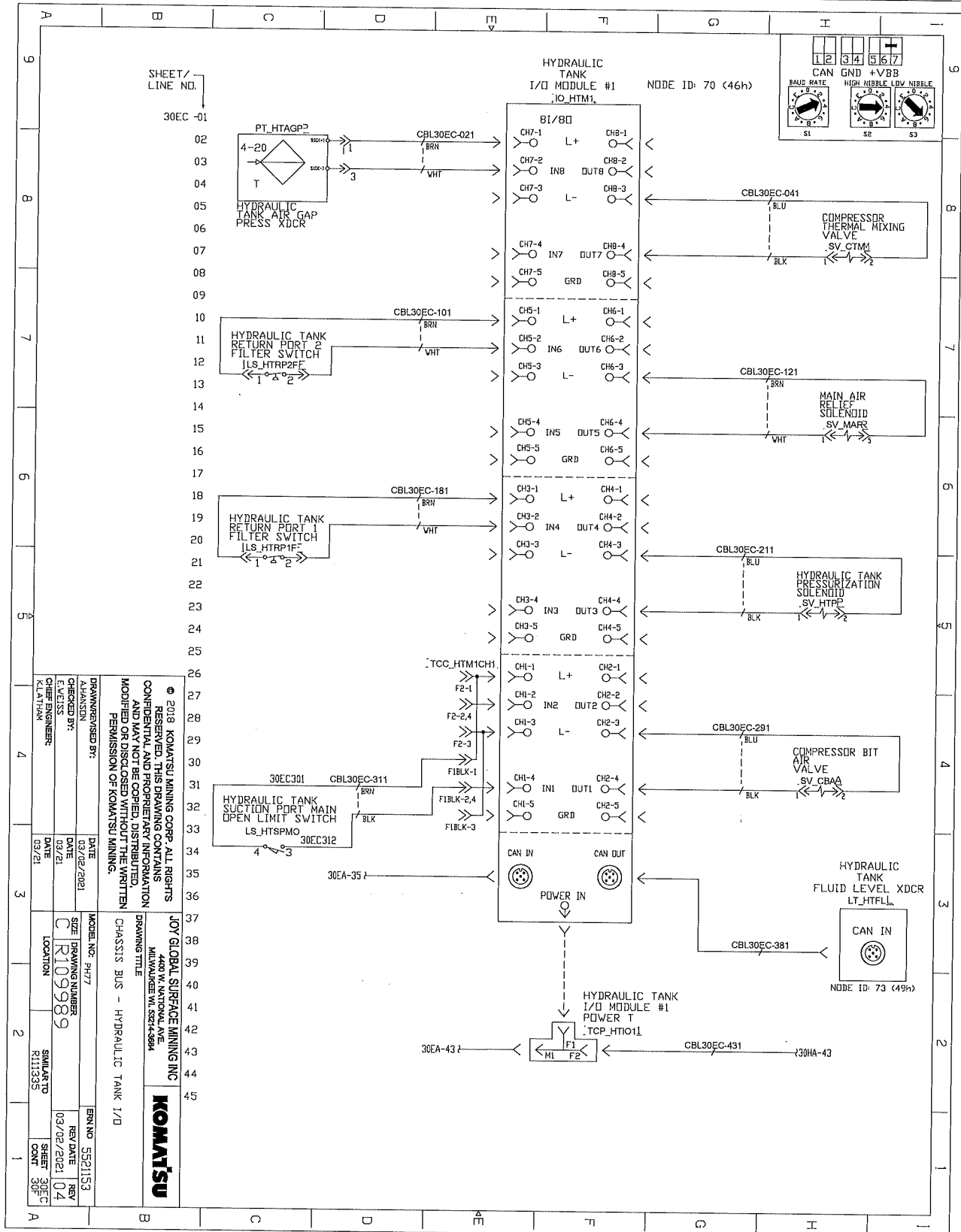
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<p>DRAWN/REVISED BY: AHLAND</p>		<p>DATE 03/02/2021</p>	
<p>CHECKED BY: E. WEISS</p>		<p>DATE 03/21</p>	
<p>DATE ENGINEER K. LATHAN</p>		<p>DATE 03/21</p>	
<p>MODEL NO. P477</p>		<p>REV. NO. 5521153</p>	
<p>SIZE C</p>		<p>REV. DATE 03/02/2021</p>	
<p>LOCATION R109989</p>		<p>REV. 04</p>	
<p>SIMILAR TO R113335</p>		<p>SHEET 30CF</p>	
<p>CHASSIS BUS - TRANSMISSION EQUIPMENT</p>		<p>COM. 30CF.A</p>	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

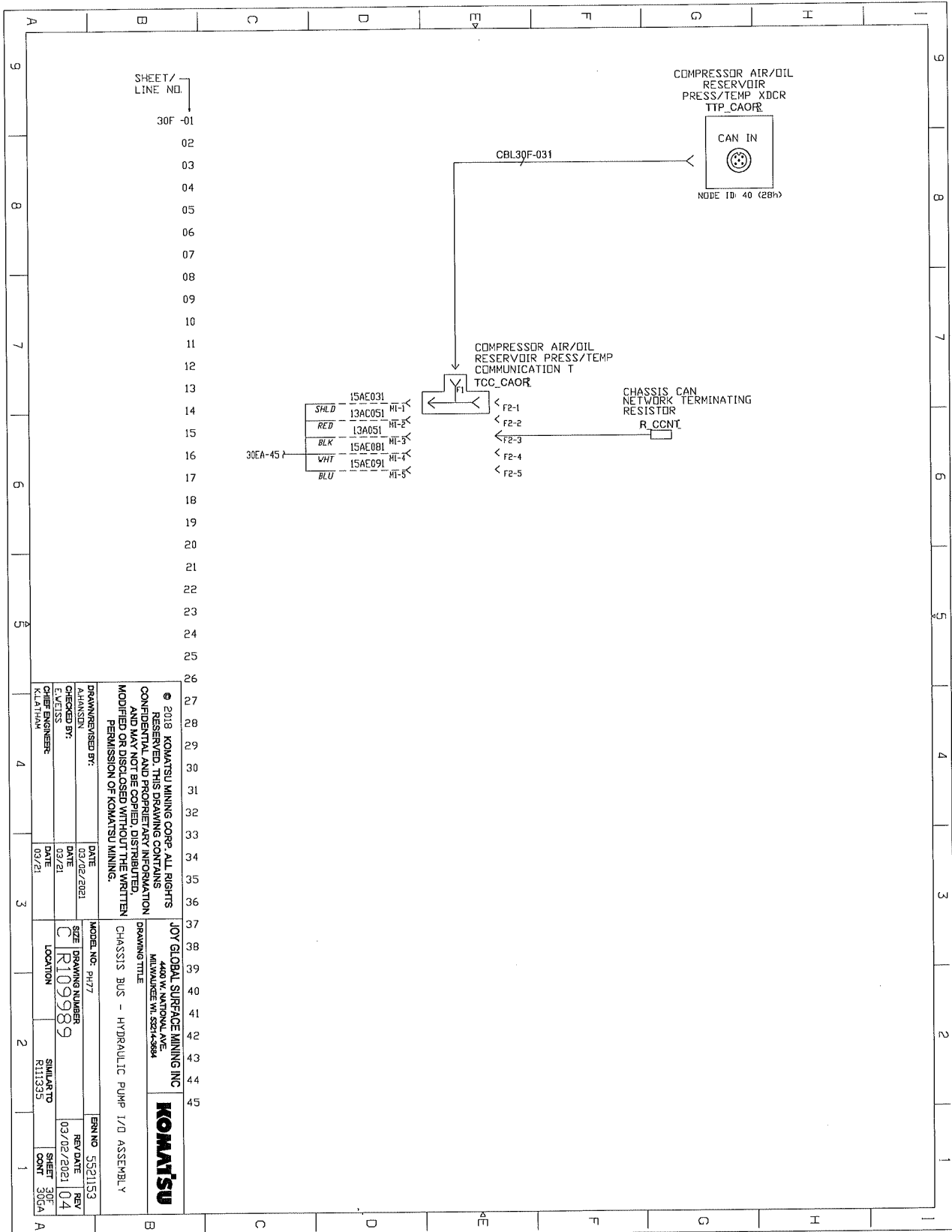


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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<p>DRAWN/REVIEWED BY: A.HANSEN CHECKED BY: C.KLESS DATE: 03/21/2021</p>		<p>MODEL NO.: PH17 SIZE: DRAWING NUMBER C: R109989 LOCATION: SIMILAR TO R111335</p>		
<p>DATE: 03/21/2021</p>		<p>DATE: 03/21/2021</p>		<p>ERN NO: 5521153 REV DATE: 03/02/2021 REV: 04</p>
<p>SHEET 30EC</p>		<p>SHEET 30EC</p>		<p>SHEET 30EC</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



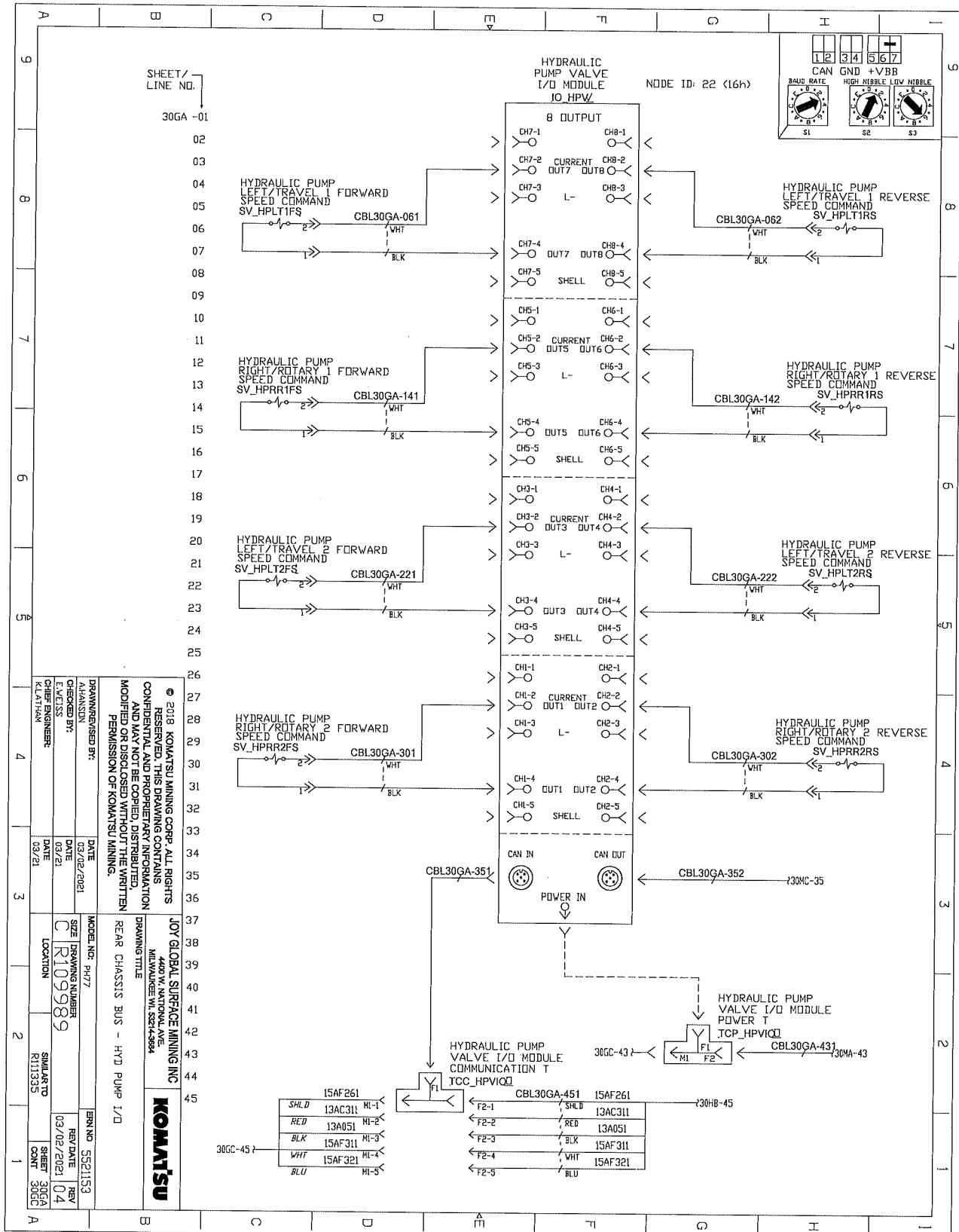
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53214-2884

KOMATSU

DRAWN/REVISED BY: A.HANSSON	DATE: 03/02/2021	MODEL NO.: PH77	ERRNO: 5521153
CHECKED BY: L.ELIASSON	DATE: 03/21	SIZE: C	REV DATE: 03/02/2021
DESIGNER: K.LATHAN	DATE: 03/21	DRAWING NUMBER: R109989	REV: 04
		LOCATION: SIMIARDO R11335	SHEET: 30F
			COUNT: 306A

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET/
LINE NO.
30GA-01

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KOMATSU

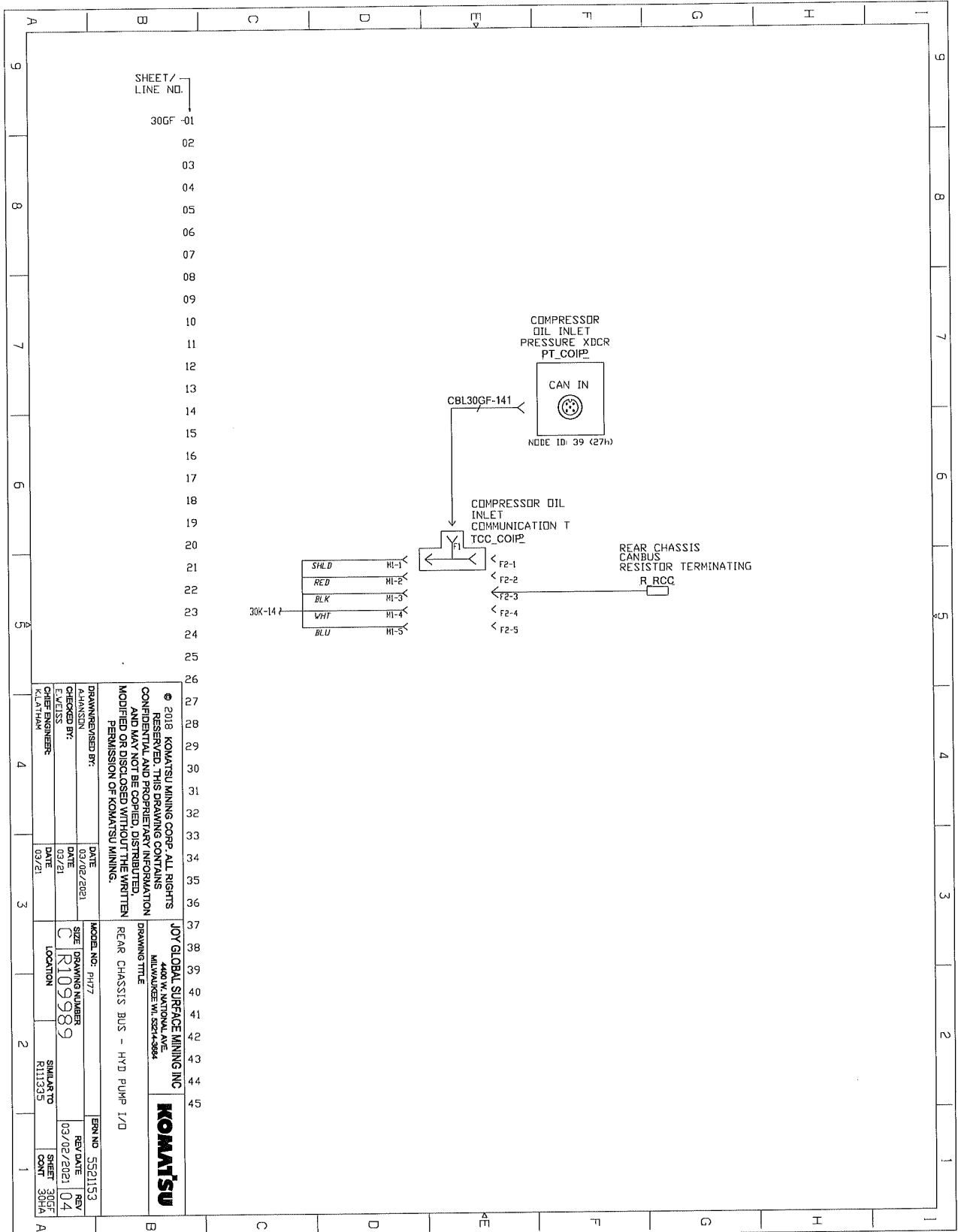
JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53274-9884

DRAWN/REVISED BY: K.LATIHAN	DATE 03/02/2021	MODEL NO. PH77	ERN NO. 5521153
CHECKED BY: E.LACLESS	DATE 03/01	SIZE C	REV DATE 03/02/2021
CHIEF ENGINEER: K.LATIHAN	DATE 03/21	DRAWING NUMBER R109989	REV 04
		LOCATION R111353	SHEET 001

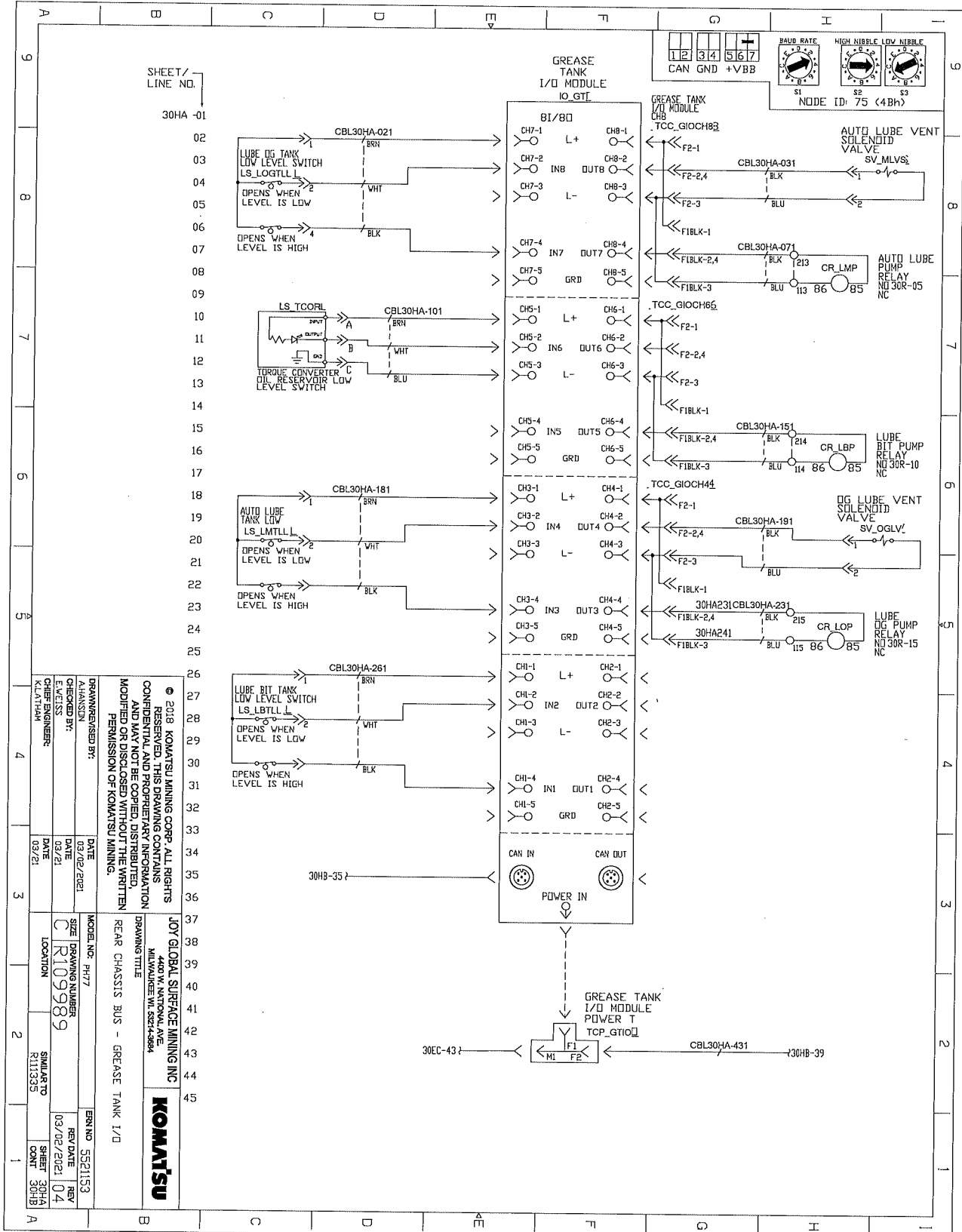
REAR CHASSIS BUS - HYD PUMP I/O

30GC-45	15AF261	ML-1	SHLD	13AC311	ML-1	←F2-1	SHLD	13AC311	←F2-5
	13A051	ML-2	RED	13A051	ML-2	←F2-2	RED	13A051	
	15AF311	ML-3	BLK	15AF311	ML-3	←F2-3	BLK	15AF311	
	15AF321	ML-4	WHT	15AF321	ML-4	←F2-4	WHT	15AF321	
		ML-5	BLU				BLU		

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO.
30HA -01

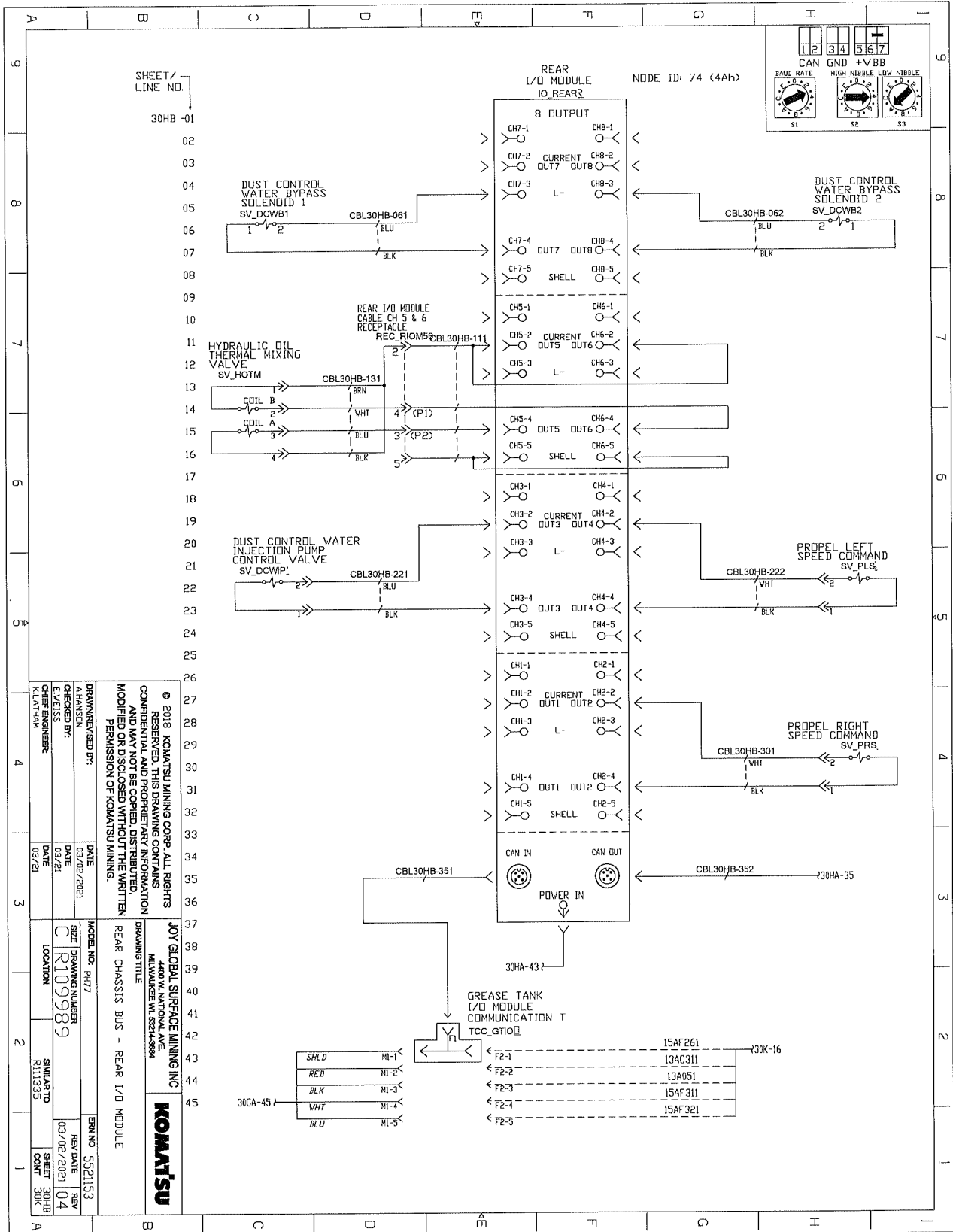
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53214-3884

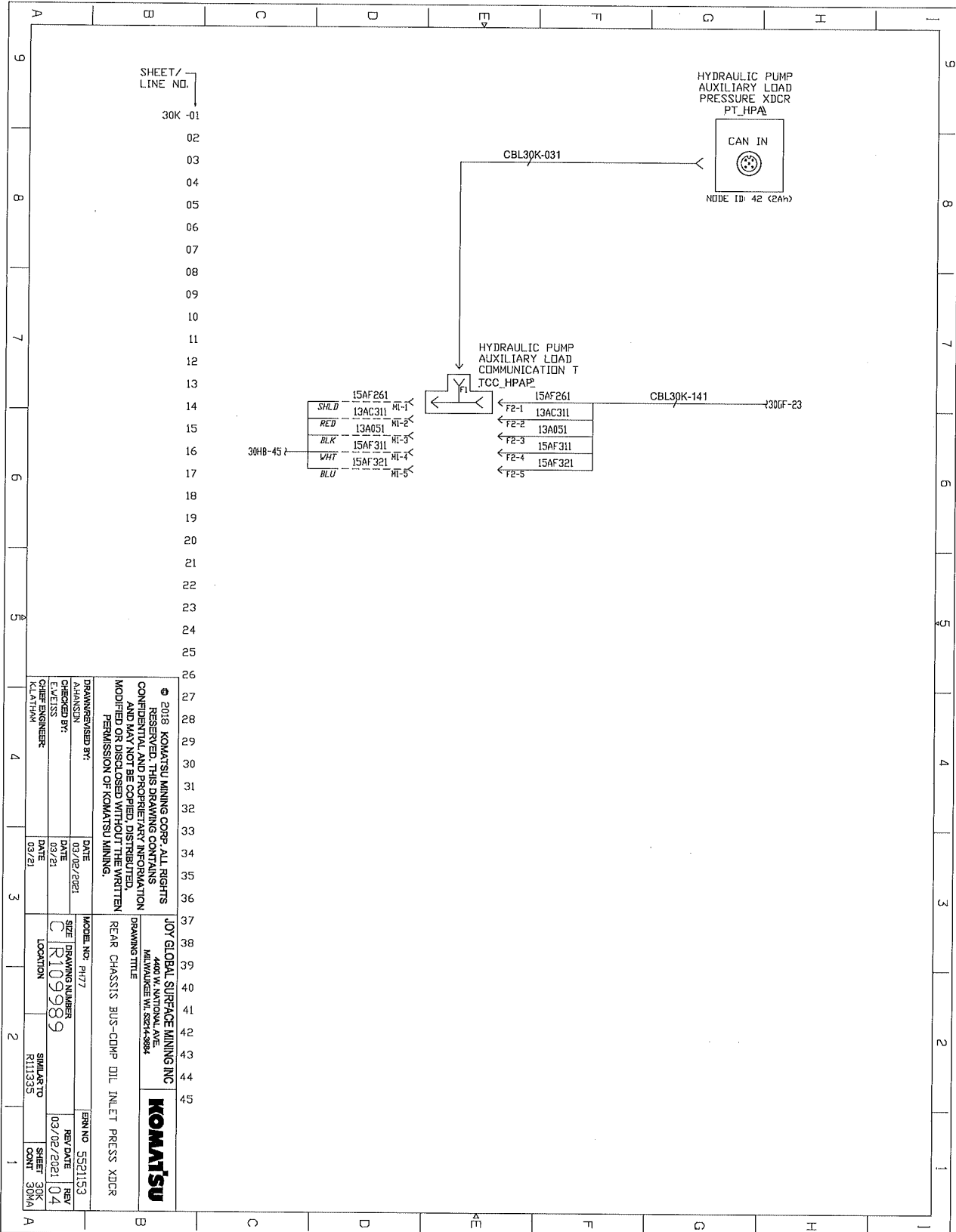
REAR CHASSIS BUS - GREASE TANK I/O

DRAWN/REVISED BY: A.HANSEN	DATE 03/02/2021	MODEL NO. PH177	ERR NO. 5521153
CHECKED BY: C.R109989	DATE 03/21	DRAWING NUMBER C R109989	REV DATE 03/02/2021
DESIGNED BY: K.LATHAM	DATE 03/21	LOCATION SIMULATED K111353	SHEET COUNT 30HA 04

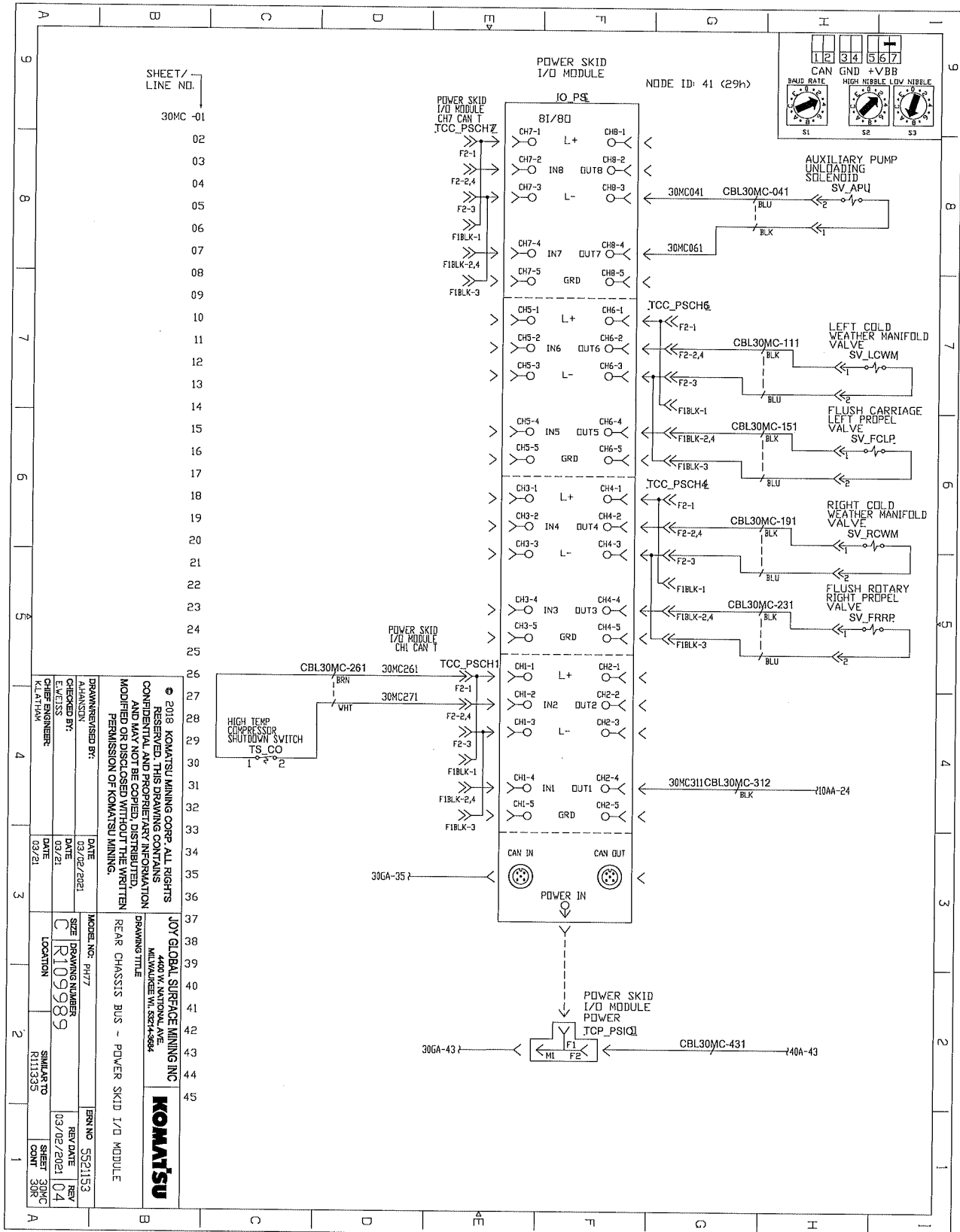
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO.

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DRAWN BY: A.HANSON	DATE: 03/02/2021	MODEL NO: PH77	ERN NO: 5521153
CHECKED BY: [blank]	DATE: 03/21	SIZE: C	REV: 04
DESIGNED BY: K.LATHAW	DATE: 03/21	DRAWING NUMBER: R109989	REV DATE: 03/02/2021
		LOCATION: SMIKARTO R111335	SHEET 30MC 04
			CON: 30R

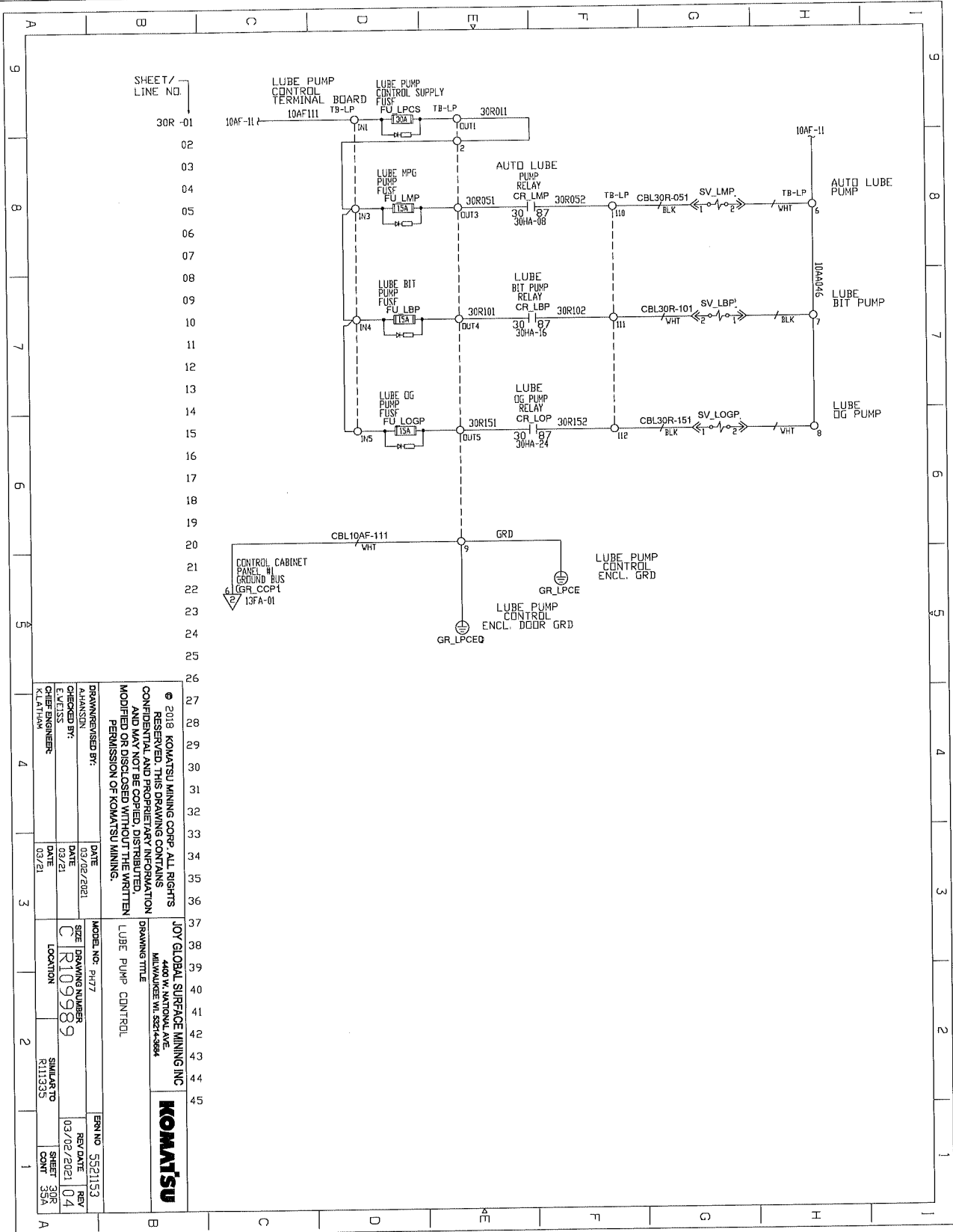
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53214-3664

REAR CHASSIS BUS - POWER SKID I/O MODULE

KOMATSU

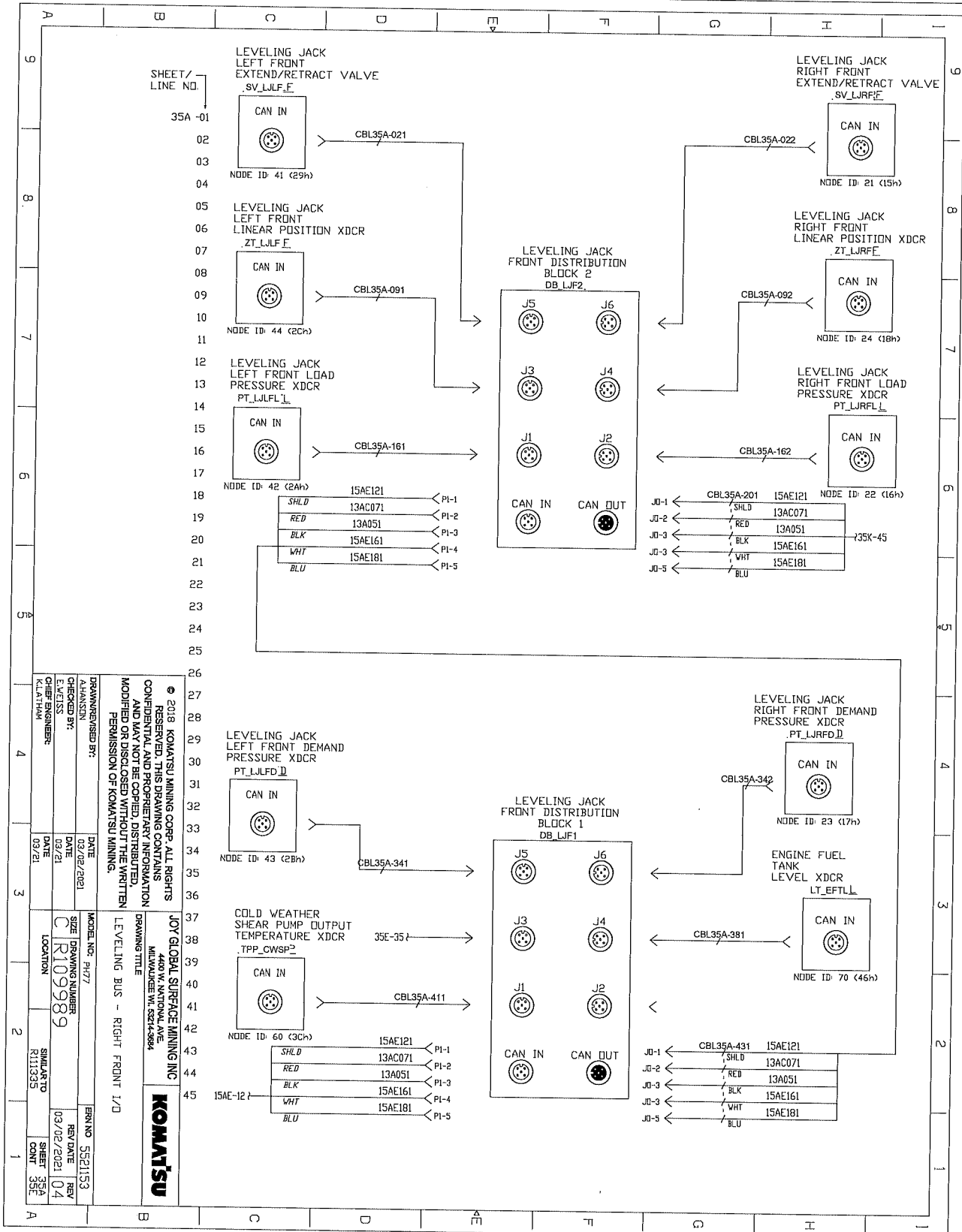
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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JOY GLOBAL SURFACE MINING INC MILWAUKEE, WI 53144-0864	KOMATSU
DRAWING TITLE LUBE PUMP CONTROL	ERN NO. 5521153
MODEL NO. P477	REV DATE REV
SIZE DRAWING NUMBER C R109989	03/02/2021 04
LOCATION SIMILAR TO R111335	SHEET 30R CONT 35A
DRAWN/REVISION BY: CHECKED BY: E. WATKINS CHIEF ENGINEER: K. LATHAM	DATE 03/02/2021 DATE 03/21 DATE 03/21

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53214-9894

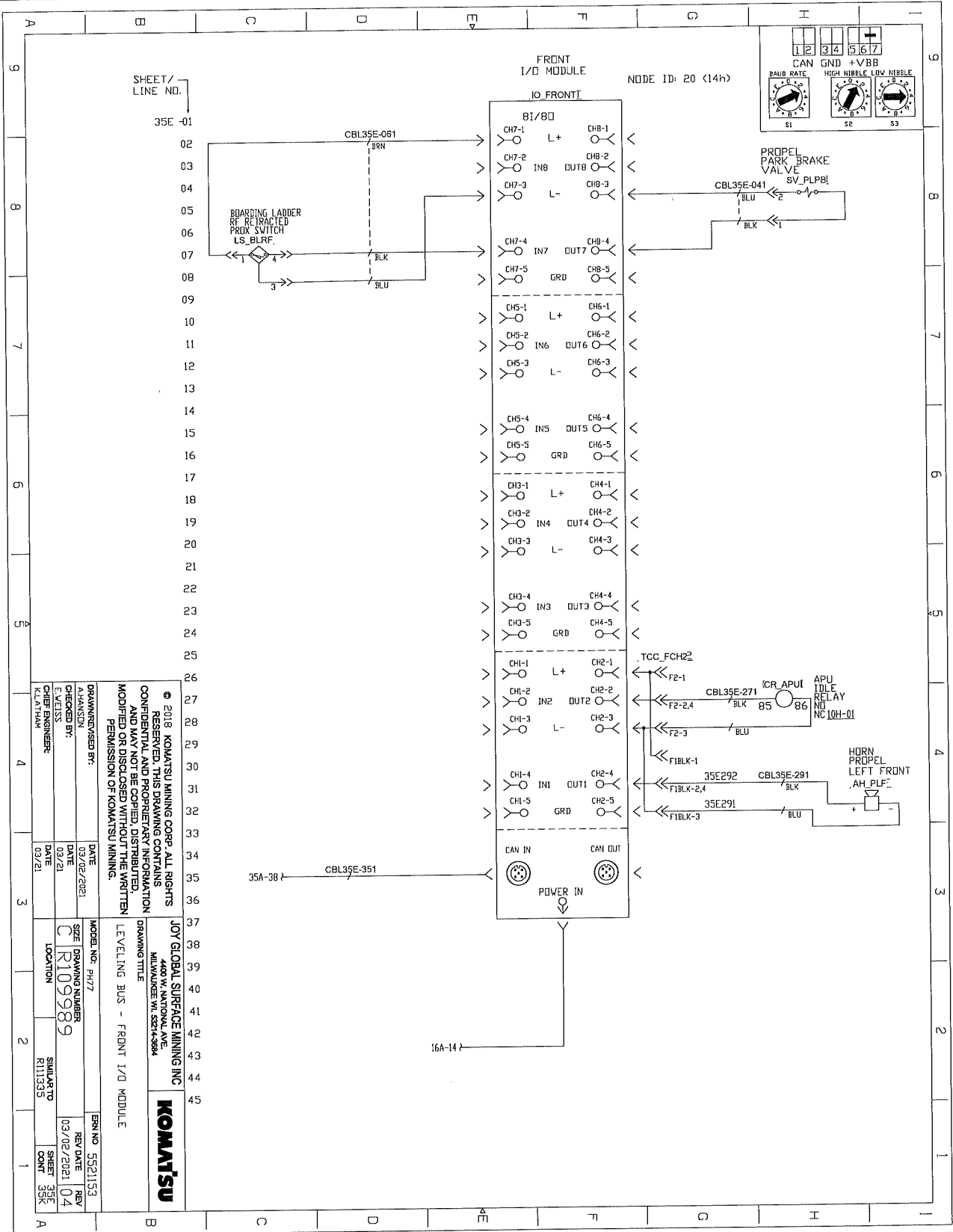
KOMATSU

DRAWING TITLE: LEVELING BUS - RIGHT FRONT 1/0

DATE	03/02/2021	DATE	03/02/2021
CHECKED BY:	ALANSON	DATE	03/21
ENGINEER:	E.W.EISS	DATE	03/21
CHIEF ENGINEER:	KLAITHAM	DATE	03/21

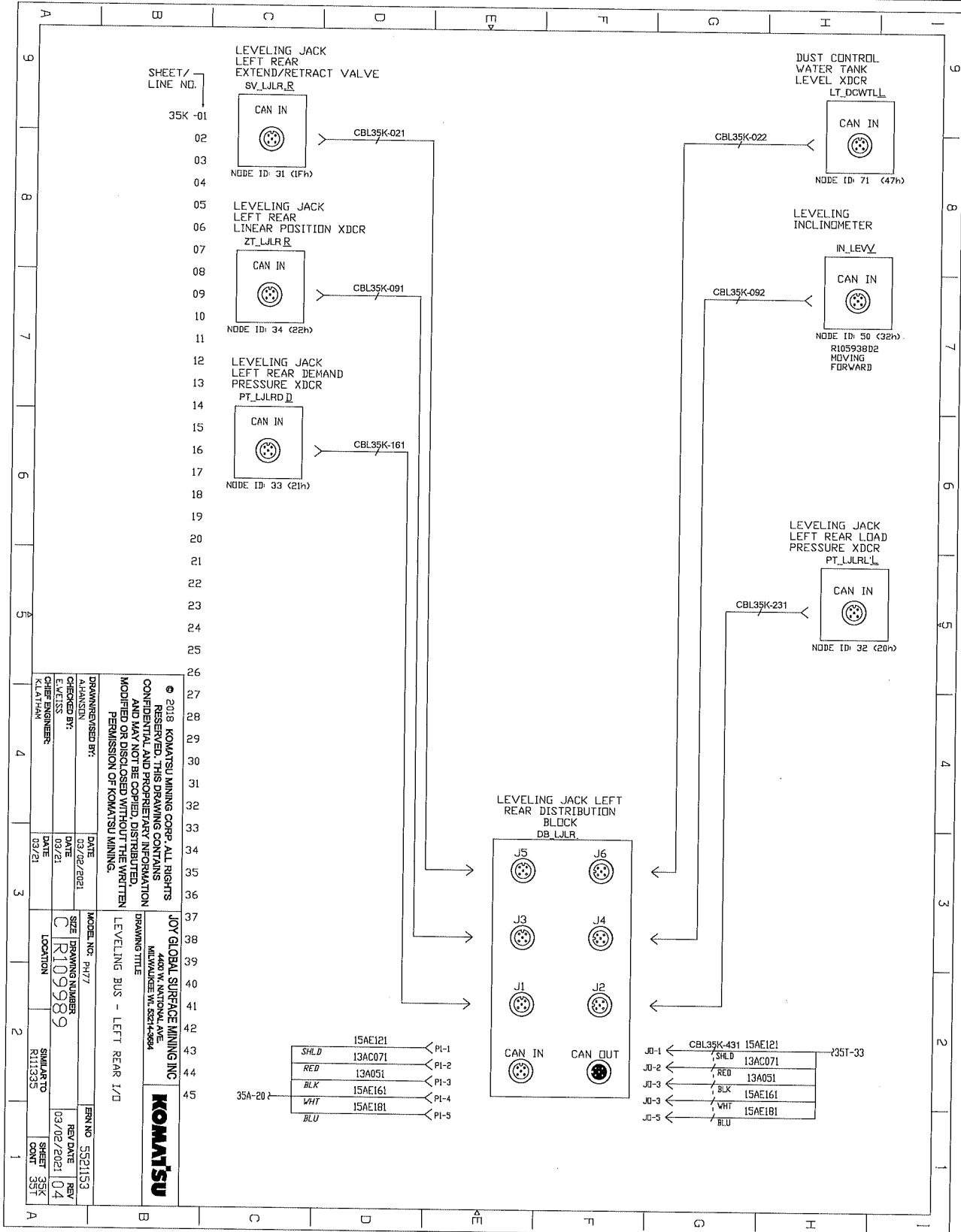
MODEL NO.	PH77	REV NO.	5521153
SHEET NUMBER	C109989	REV DATE	03/02/2021
LOCATION	R111335	REV	04
SIMILAR TO	R111335	SHEET	35A
CONTR.	35E	CONTR.	35E

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET/ LINE NO.		35E -01	
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DRAWN/REVISED BY:		DATE	
A-HANSEN		03/02/2021	
CHECKED BY:		DATE	
C-LESSINGER		03/21	
DRAWING TITLE		MODEL NO. P477	
LEVELING BUS - FRONT I/O MODULE		SIZE	
JOY GLOBAL SURFACE MINING INC		DRAWING NUMBER	
4400 W. NATIONAL AVE		C R109989	
MILWAUKEE WI, 53152-0004		LOCATION	
KOMATSU		SIMULATED	
REV. NO. 5521153		R111335	
REV. DATE		SHEET	
03/02/2021		35E	
REV. NO. 04		SHEET	
04		35E	
REV. DATE		COUNT	
03/02/2021		04	
REV. NO. 04		COUNT	
04		04	

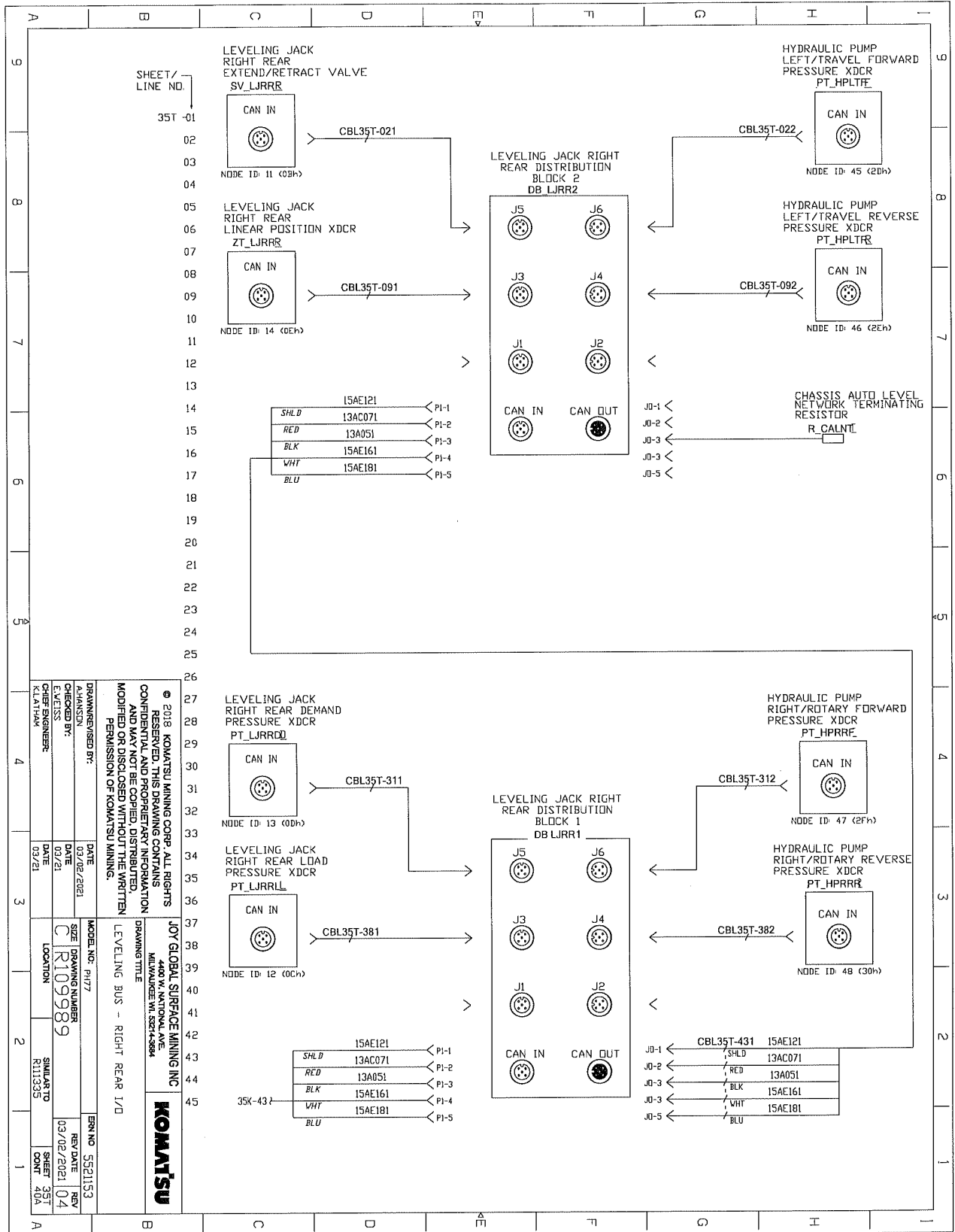
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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DRAWN/REVISED BY: A.HANSSON	DATE: 03/02/2021
CHECKED BY: E.WELISS	DATE: 03/21
CABLE ENGINEER: L.MATTHEI	DATE: 03/21
MODEL NO.: P477	SIZE / DRAWING NUMBER: C R109989
LOCATION: R111335	SIMILAR TO: R111335
REV. NO.: 5521153	REV. DATE: 03/02/2021
SHEET: 35K	REV. NO.: 04
SHEET COUNT: 35T	

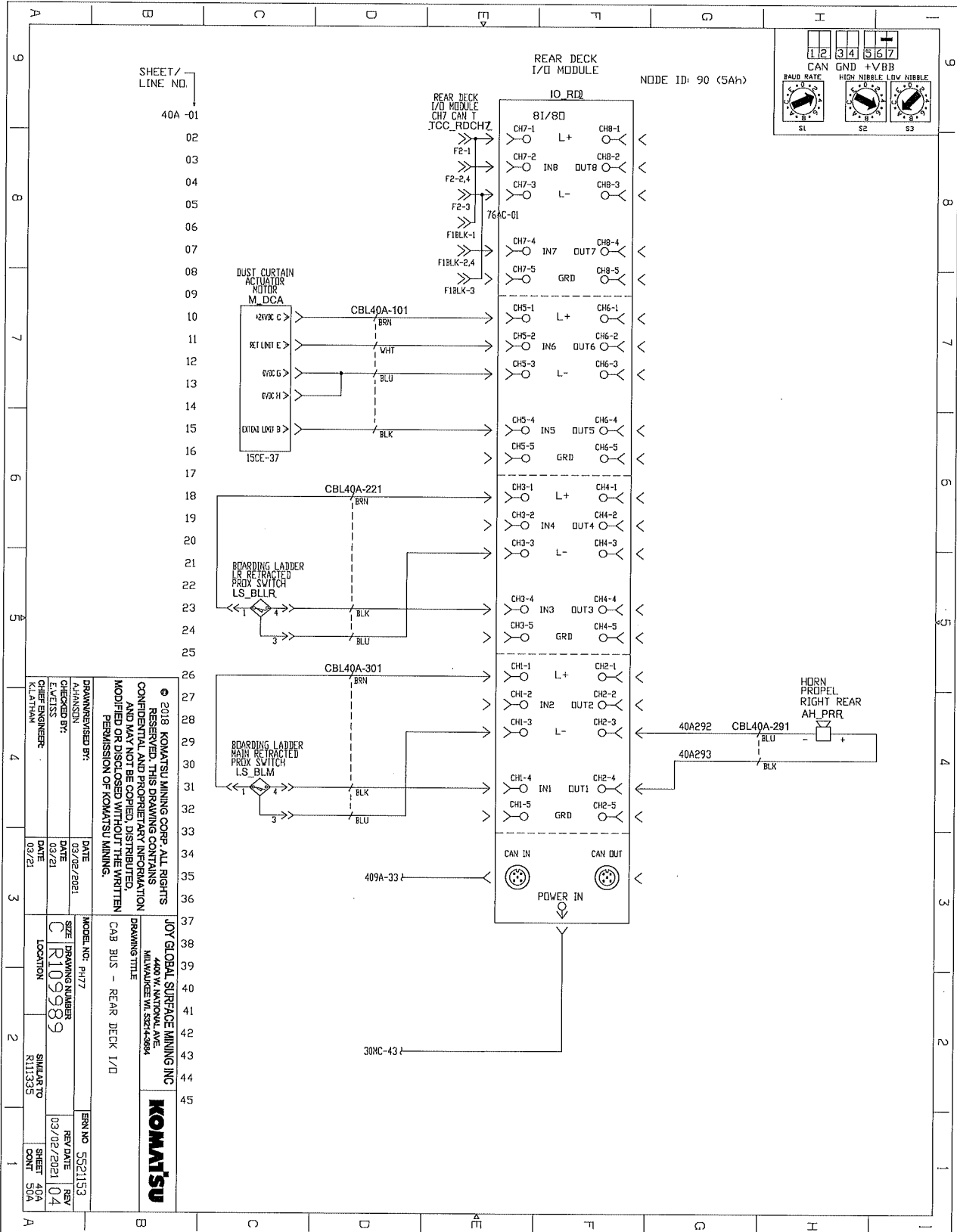
KOMATSU
 JOY GLOBAL SURFACE MINING INC
 4400 W. NATIONAL AVE.
 MILWAUKEE WI, 53214-9894

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE, WI, 53214-3884	
DRAWING TITLE LEVELLING BUS - RIGHT REAR 1/0	
DRAWN/REVISED BY: AHANSEN	DATE: 03/02/2021
CHECKED BY: EVELISS	DATE: 03/21
CHIEF ENGINEER: KILTHAN	DATE: 03/21
MODEL NO.: PI177	ENR NO.: 5521153
SIZE: R109989	REV. DATE: 03/02/2021
LOCATION: SIMILAR TO R111355	REV. NO.: 04
SHEET: 35T	SHEET COUNT: 104

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO.
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DRAWN/REVISOR BY:	DATE:
DESIGNED BY:	DATE:
CHECKED BY:	DATE:
CHIEF ENGINEER:	DATE:
K.LATHAM	03/21

MODEL NO.:	PI17
SIZE:	DRAWING NUMBER
LOCATION:	C R109989
SIMILAR TO:	R113335
REV NO.:	5521153
REV DATE:	03/02/2021
SHEET:	104
TOTAL SHEETS:	50A

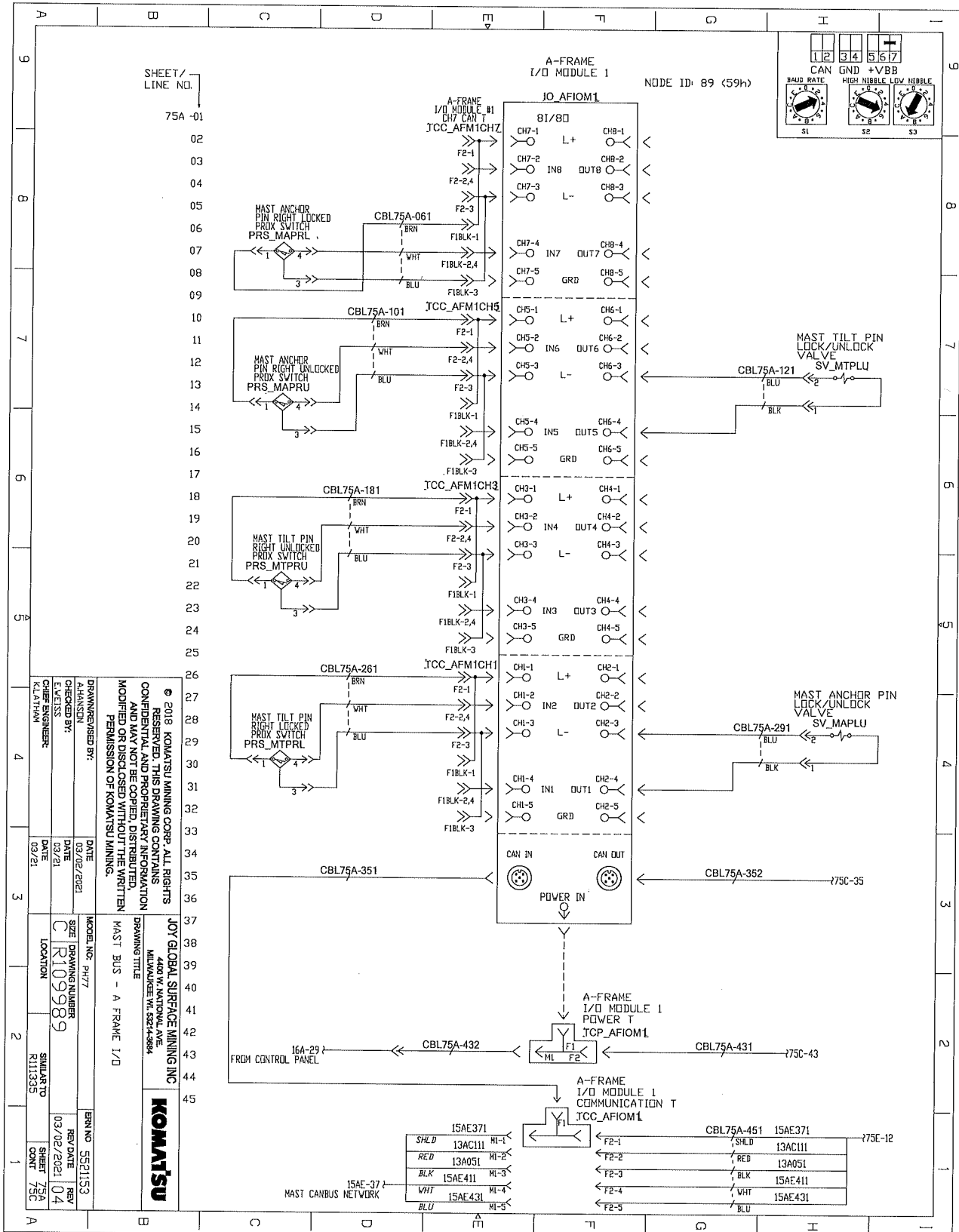


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

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DRAWN/REVISED BY: A.HANSSON		DATE 03/02/2021	
CHECKED BY: E.WELISS		DATE 02/21	
CHIEF ENGINEER: K.LATHAN		DATE 03/21	
MODEL NO.: PH77		SIZE C	
DRAWING NUMBER R109989		LOCATION SIMILAR TO R113335	
ESN NO. 5521153		REV DATE 03/02/2021	
REV 04		SHEET 50A	
CONT 75A		REV 04	

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO.
75A-01

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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53214-9888

MODEL NO. PH77
SIZE DRAWING NUMBER
C R109989
LOCATION

DATE 03/21
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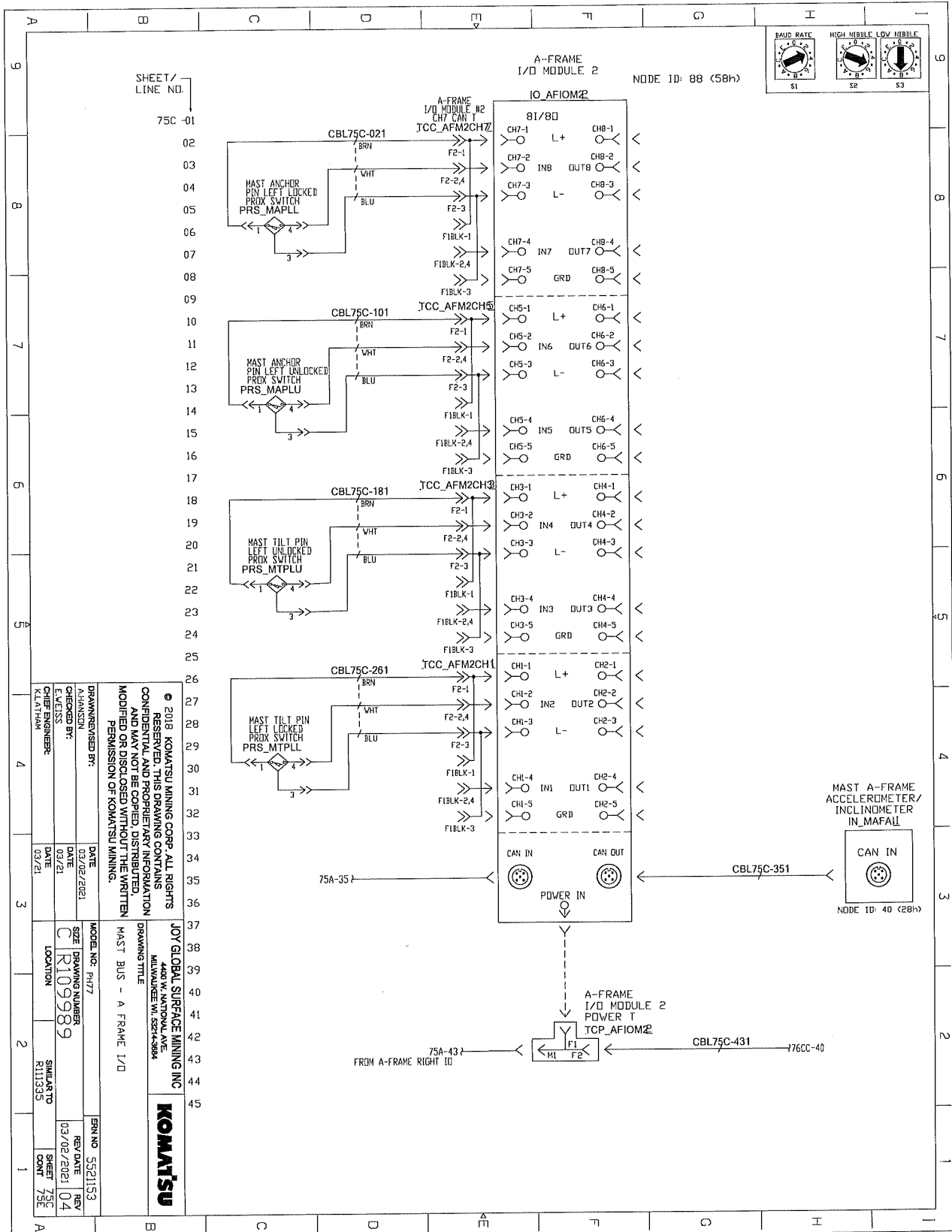
DATE 03/21

DATE 03/21

DATE 03/21

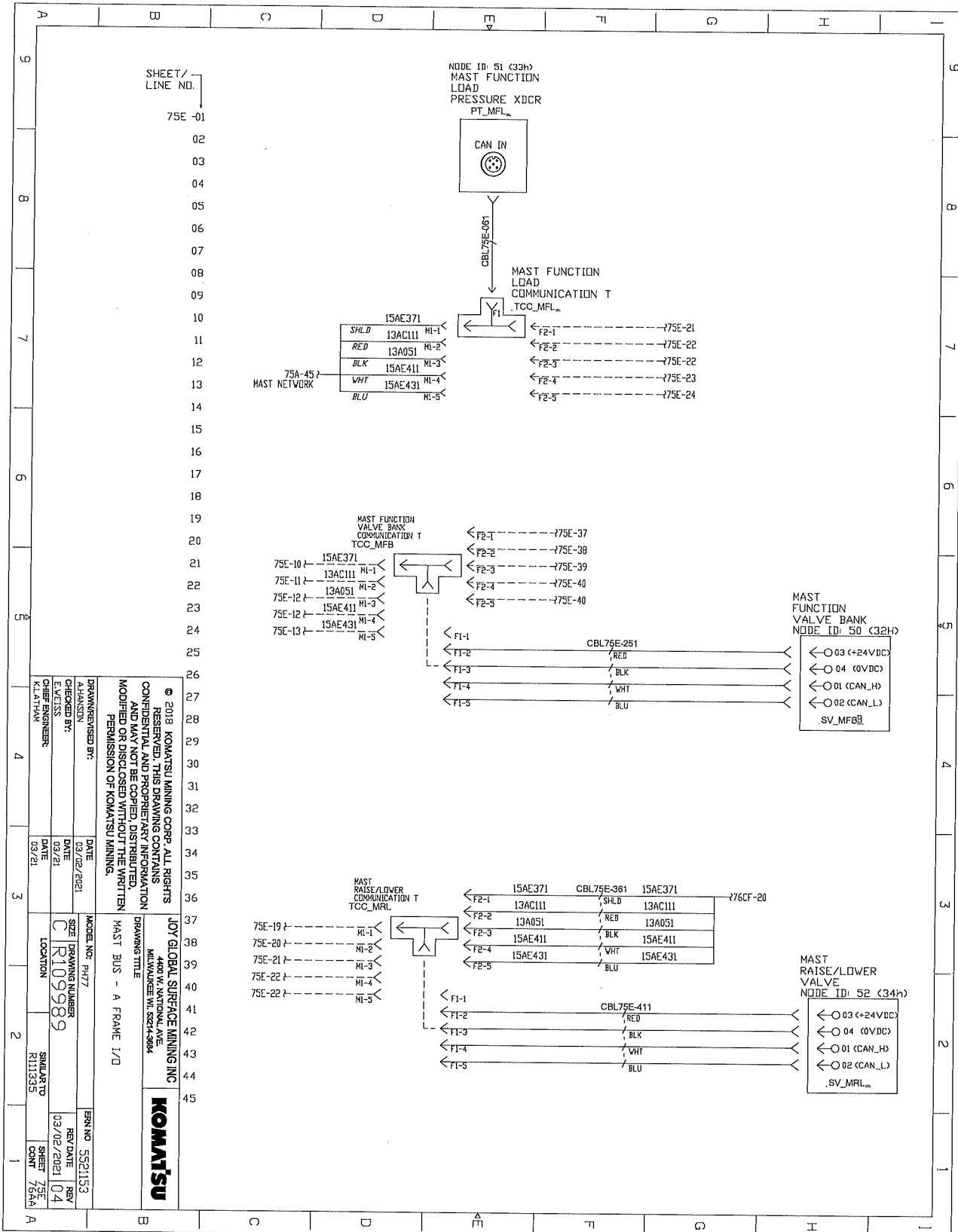
DATE 03/21

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST





ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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DRAWN/REVISED BY: A.HANSEN	DATE 03/02/2021	MODEL NO. P477	SHEET NO. 1597
CHECKED BY: SHEETS ENGINEER	DATE 03/21/2021	SIZE C	REV 04
DATE 03/21/2021	LOCATION	SHEET NO. R1109989	SHEET COUNT 04
DATE 03/21/2021	LOCATION KUALA LUMPUR	SHEET NO. R1109989	SHEET COUNT 04

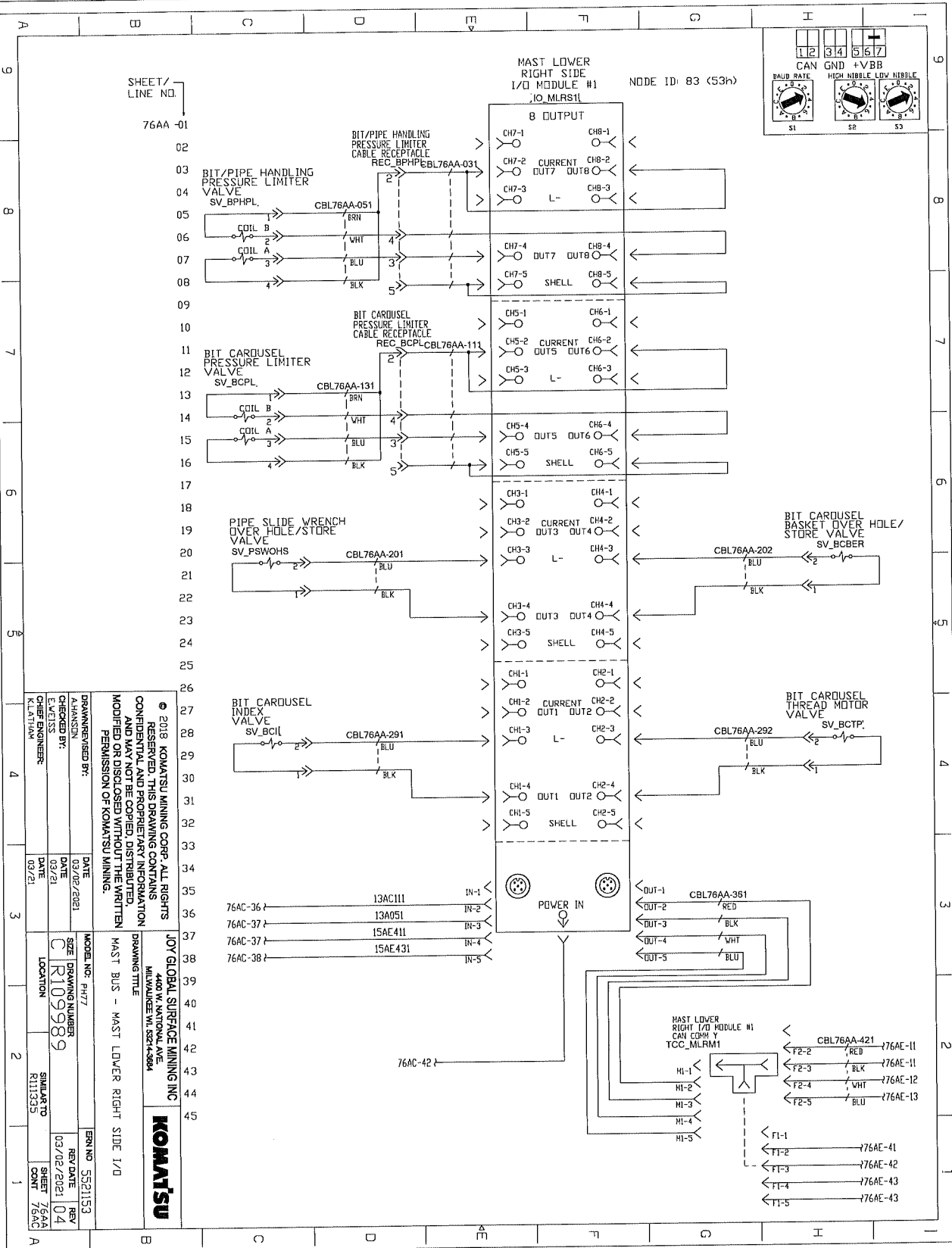
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DRAWING TITLE
JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53214-5884

MAST BUS - A FRAME 1/D



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

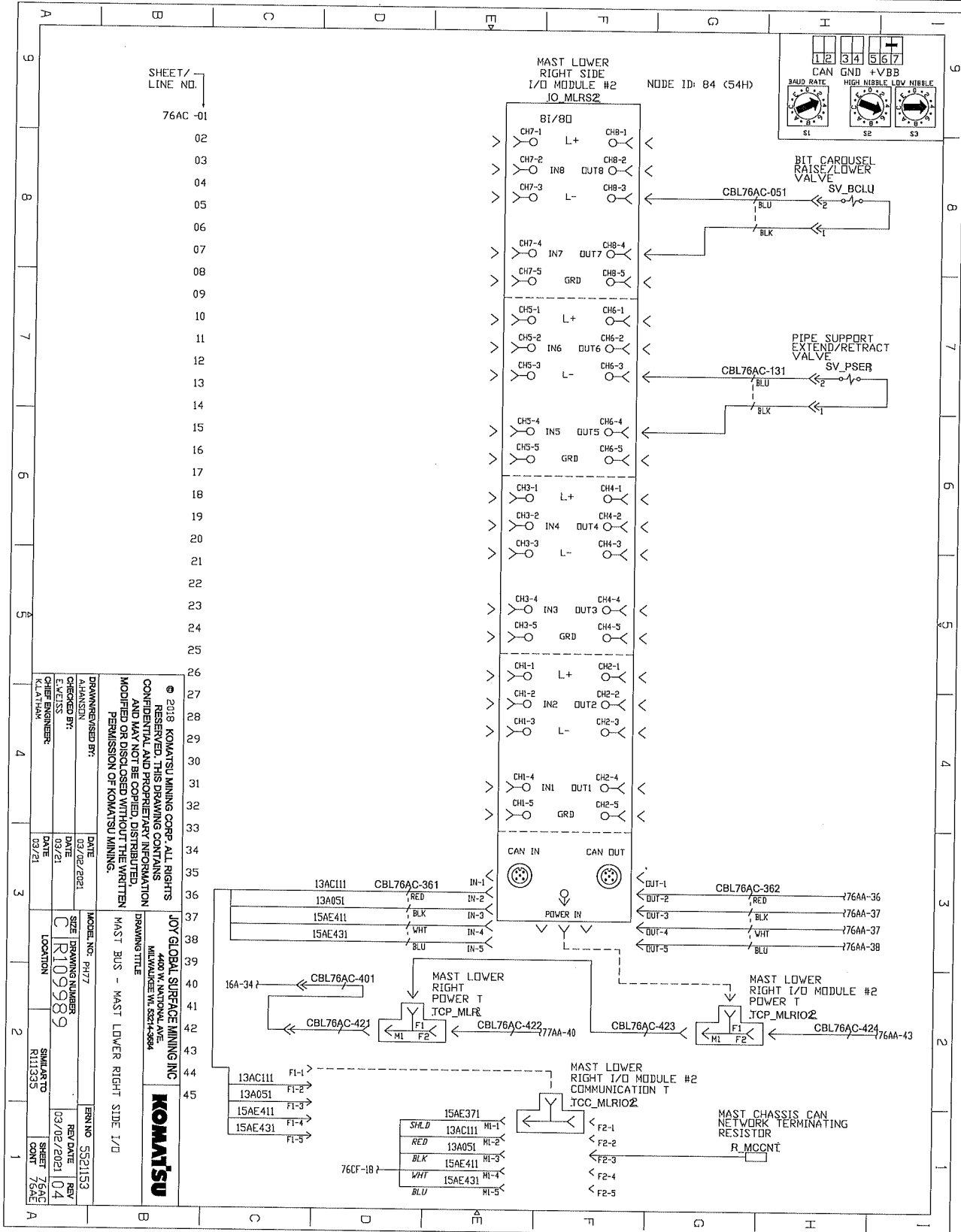


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JOY GLOBAL SURFACE MINING INC 440 W. SIMPSON AVE. MARIETTA, GA 30067-2884	MODEL NO. PH77 DRAWING NUMBER C R109989 LOCATION SIMILAR TO R113335 SHEET 76AA CONT 76AC	ERD NO. 5521153 REV DATE 03/02/2021 REV 04
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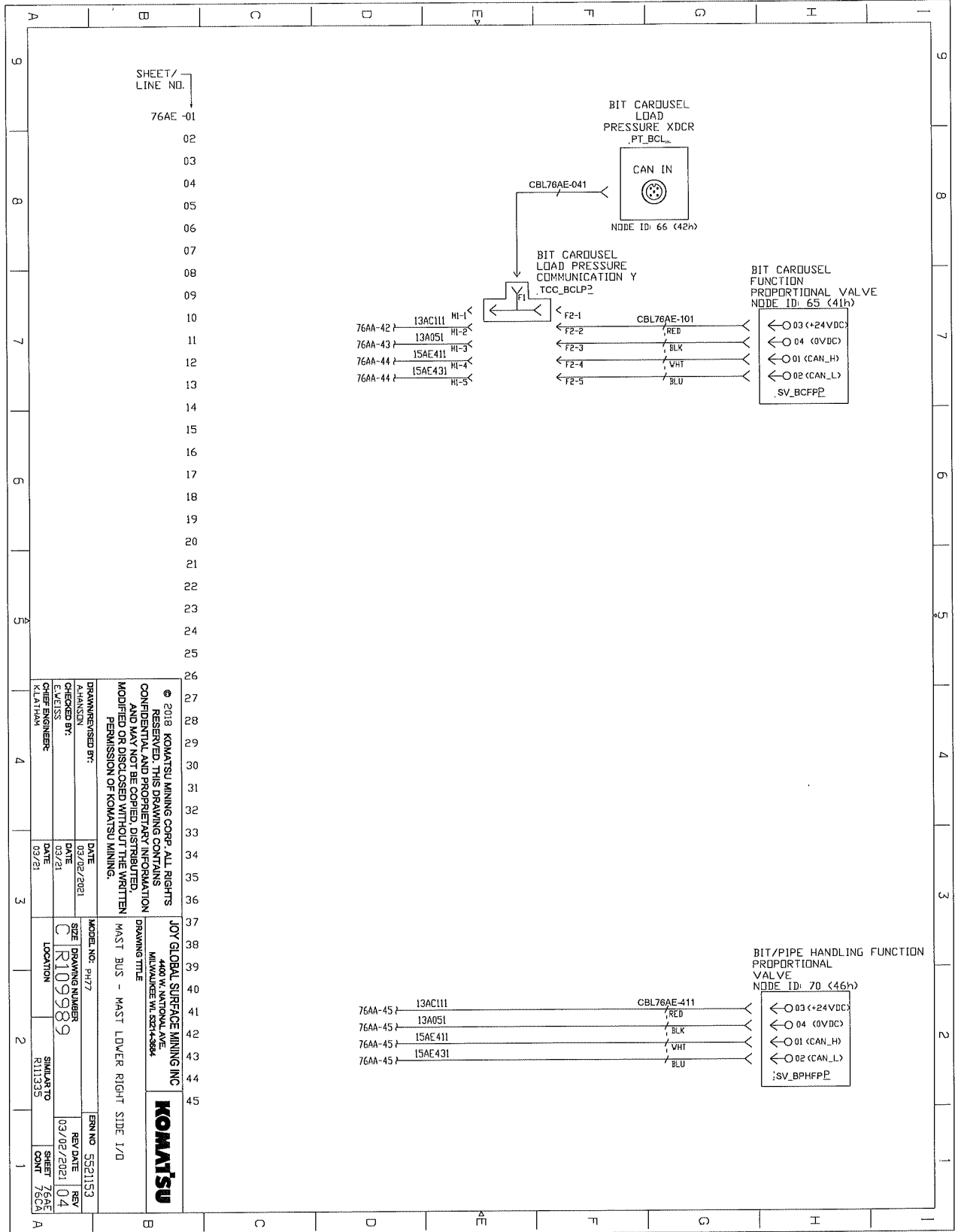
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



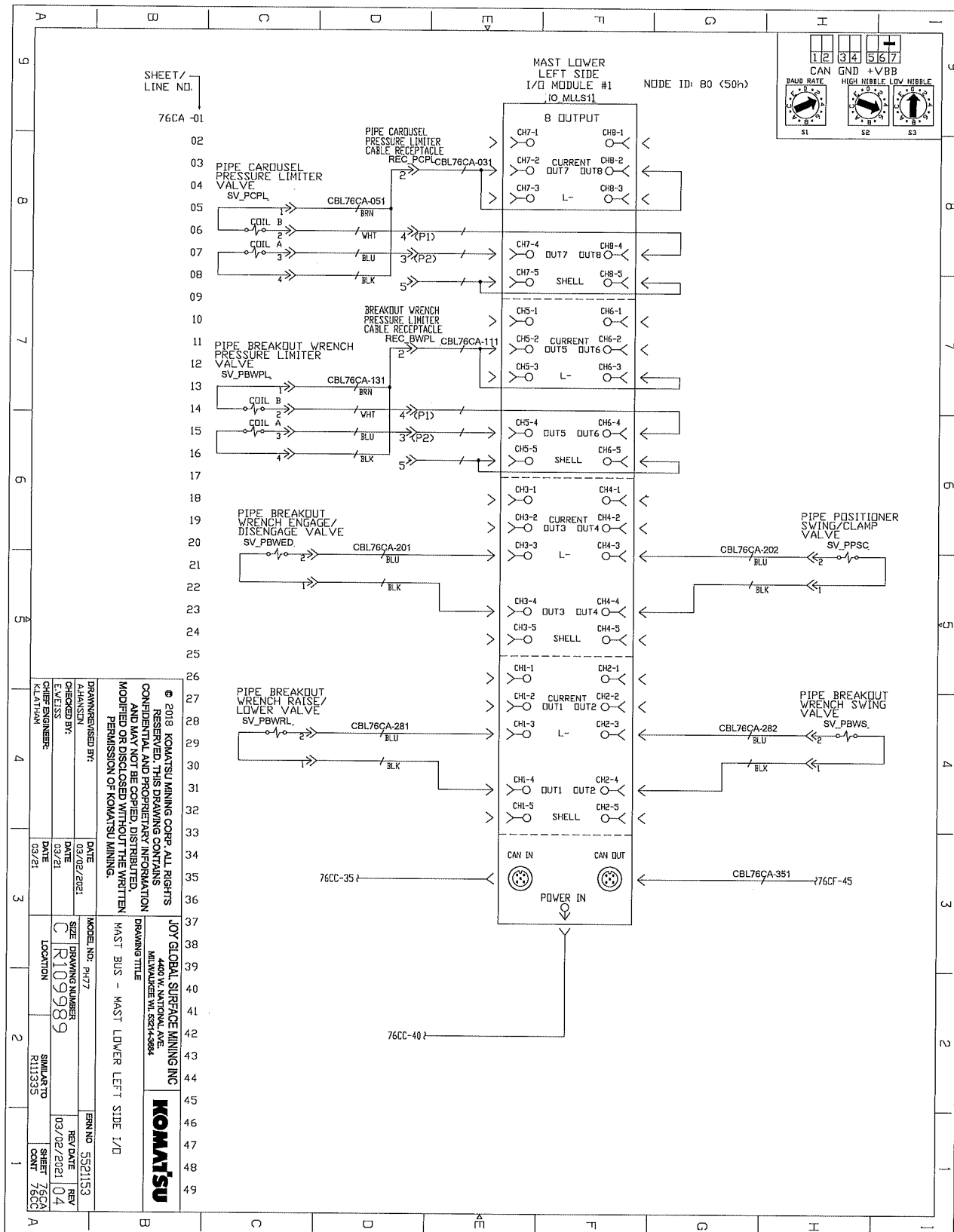
SHEET/
LINE NO.
76AC-01

DRAWN/REVISED BY: AHANSSON		DATE: 03/02/2021	MODEL NO.: PH7Z	REVISION: 5521153
CHECKED BY: E. WEISS		DATE: 03/21	SIZE: DRAWING NUMBER R109989	REV DATE: 03/02/2021
DRAWING TITLE: JOY GLOBAL SURFACE MINING INC. 4400 W. NATIONAL AVE. MILWAUKEE WI 53214-3884		DATE: 03/21	LOCATION: SIMILAR TO R111335	REV 04
COMMENTS: © 2018 KOMATSU MINING CORP. ALL RIGHTS RESERVED. THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MINING.				SHEET 76AC CNT 76AC

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET/
LINE NO.
76CA-01

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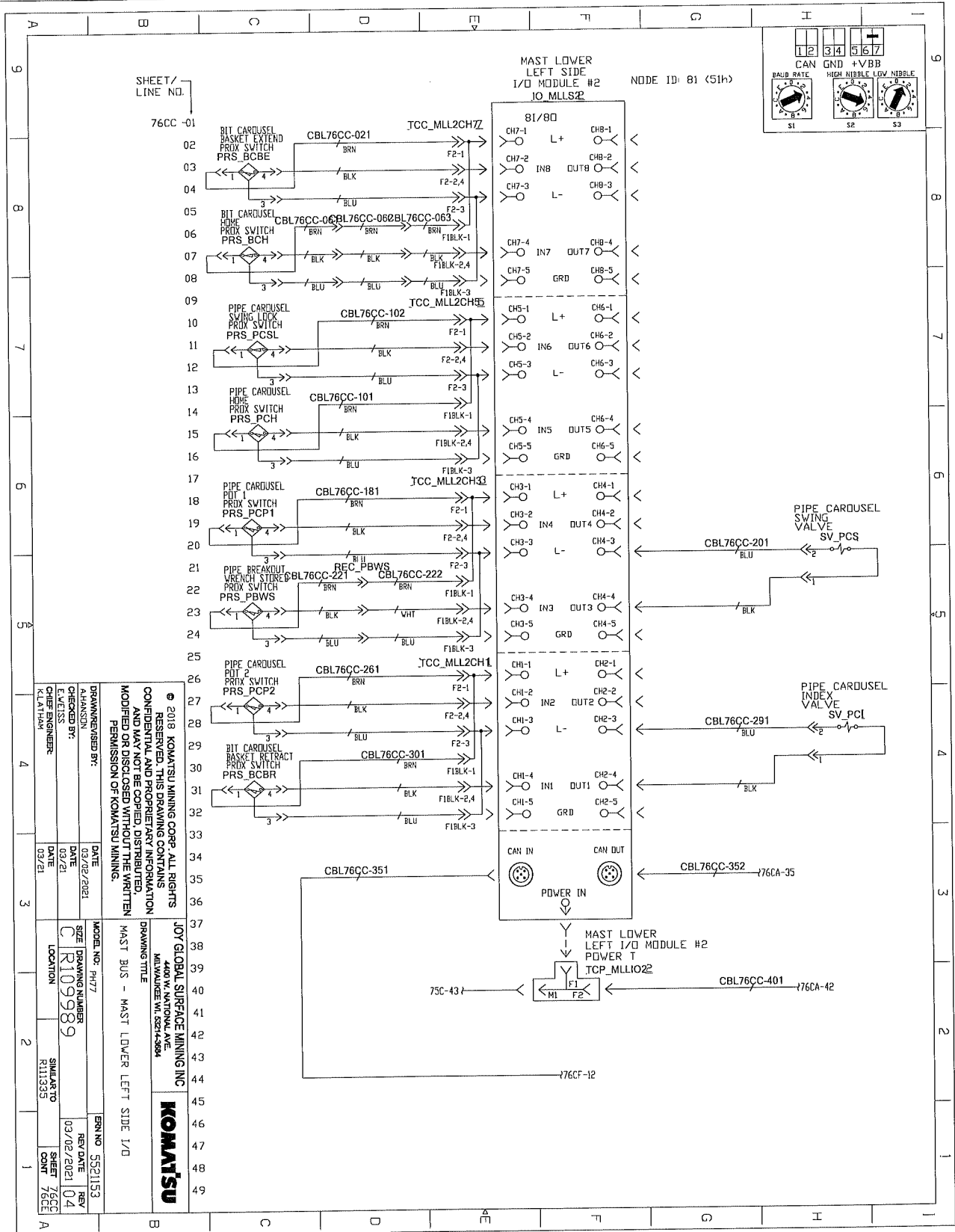
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE, WI, 53214-2884

DRAWING TITLE
MAST BUS - MAST LOWER LEFT SIDE 1/0

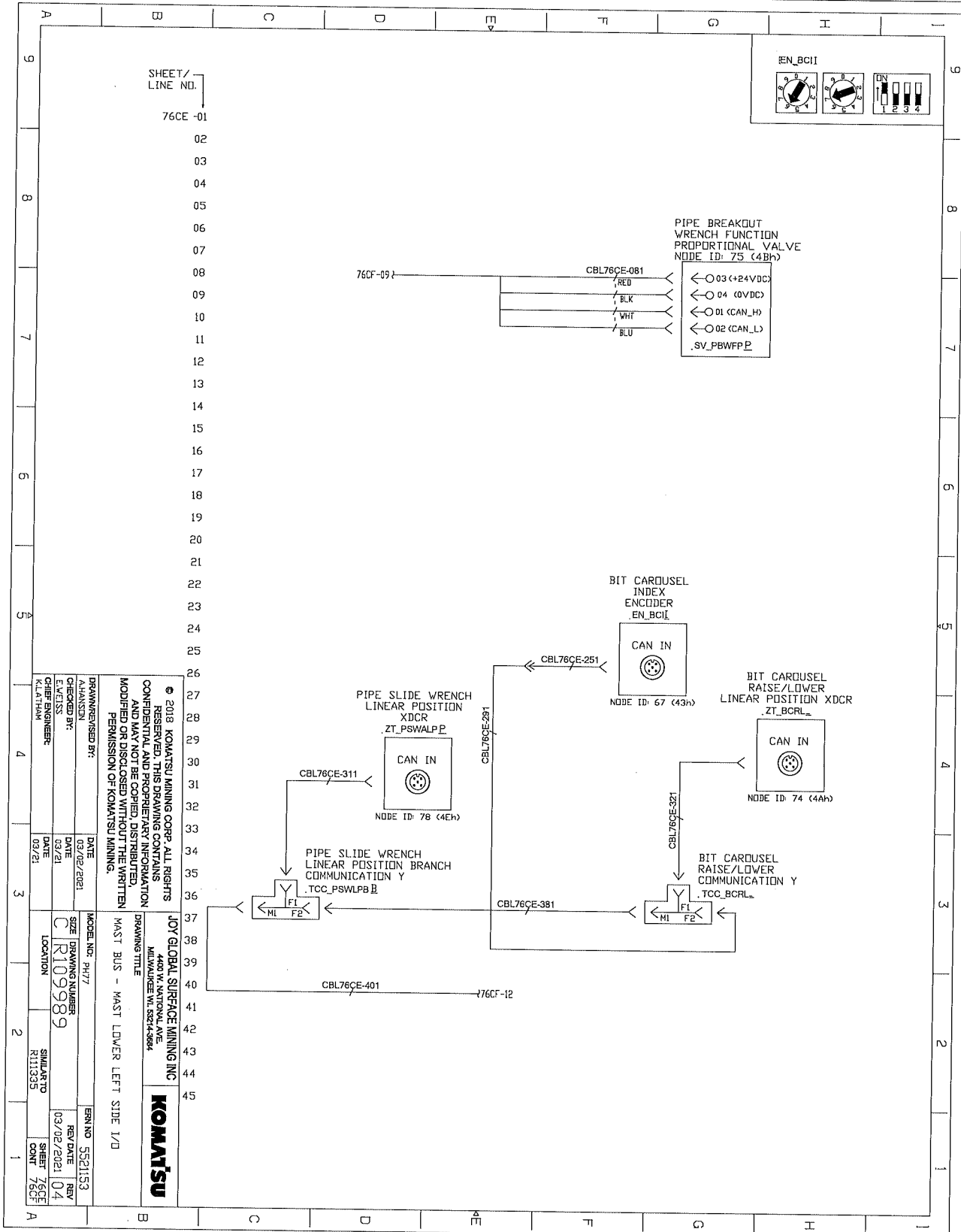
APPROVED BY:	DATE:	MODEL NO.:	REV. NO.:
DESIGNED BY:	DATE:	PH77	5521153
CHECKED BY:	DATE:	DRAWING NUMBER:	REV. DATE:
K.LATHAM	03/21	C/R109989	03/02/2021 04
		LOCATION:	SHEET:
		R11393	76CA
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			1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

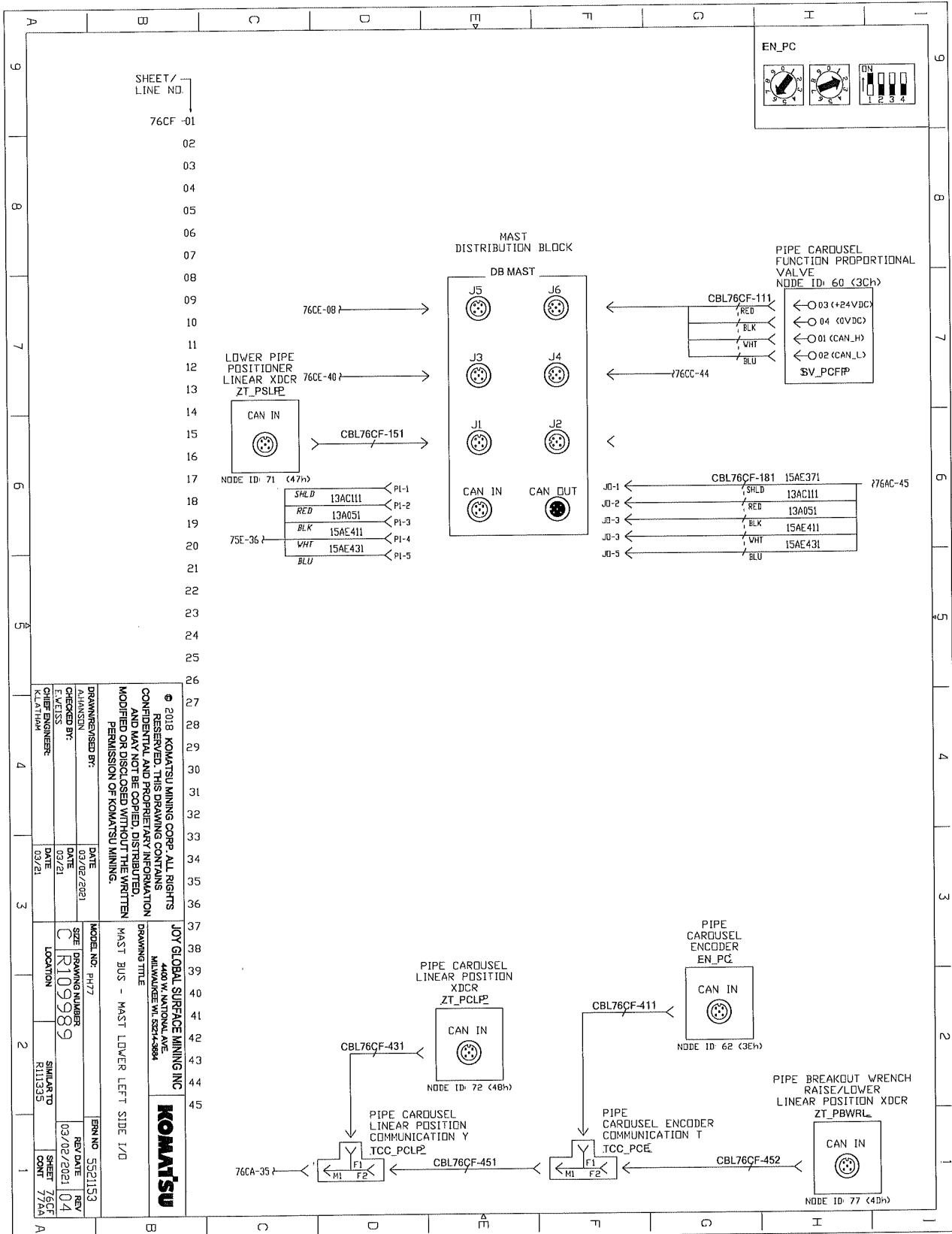


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DRAWN/REVISED BY: HANUSON CHECKED BY: C DATE ENGINEER: KLATHAM	DATE 02/22/2021 DATE 03/21 DATE 03/21	MODEL NO.: P477 SIZE R109989 LOCATION	BRN NO.: 5321153 REV DATE 03/02/2021 REV 04 SHEET 76CC COUNT 76CC

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



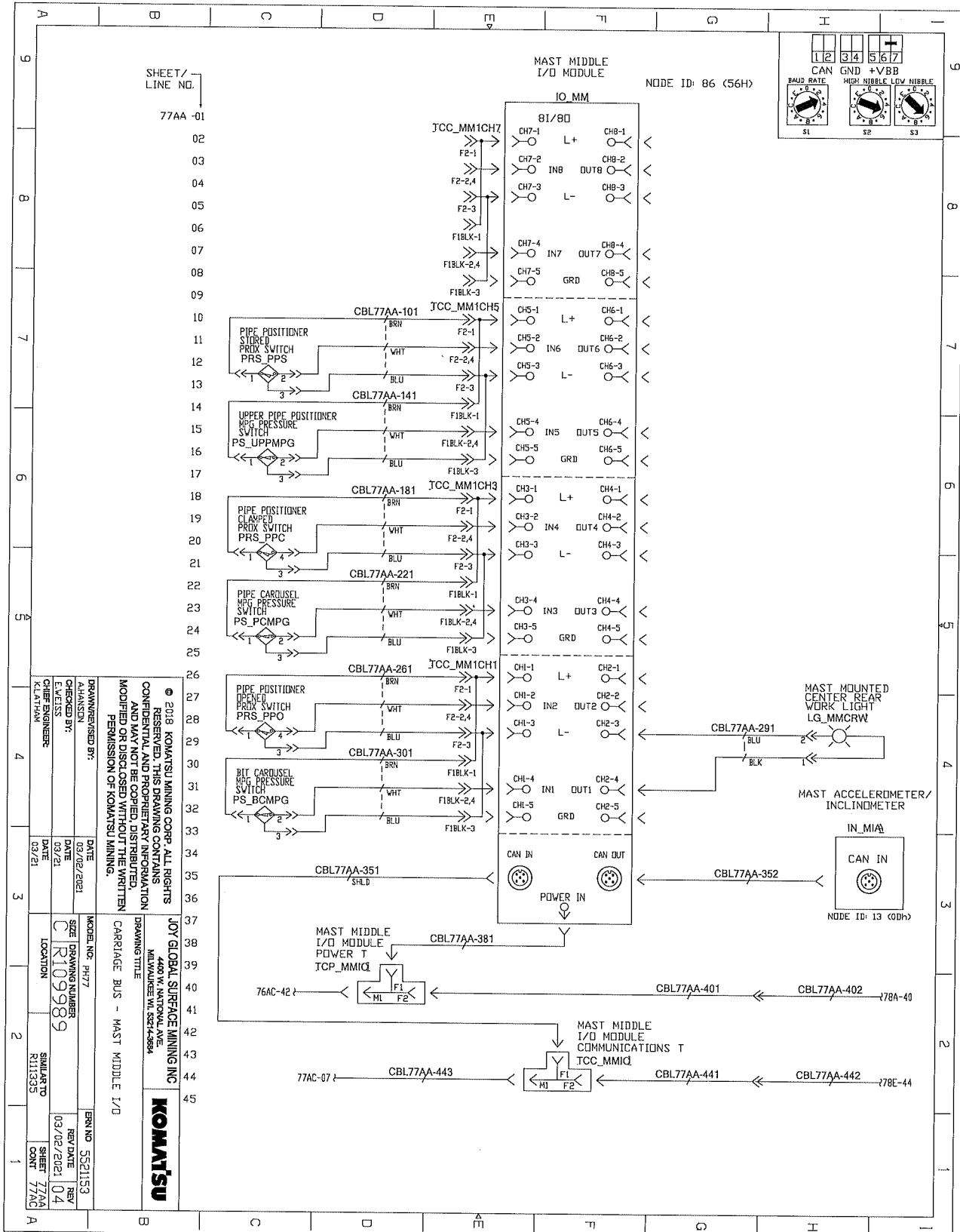
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JOY GLOBAL SURFACE MINING INC
440 W. CENTRAL AVE
MILWAUKEE WI 53212-5084

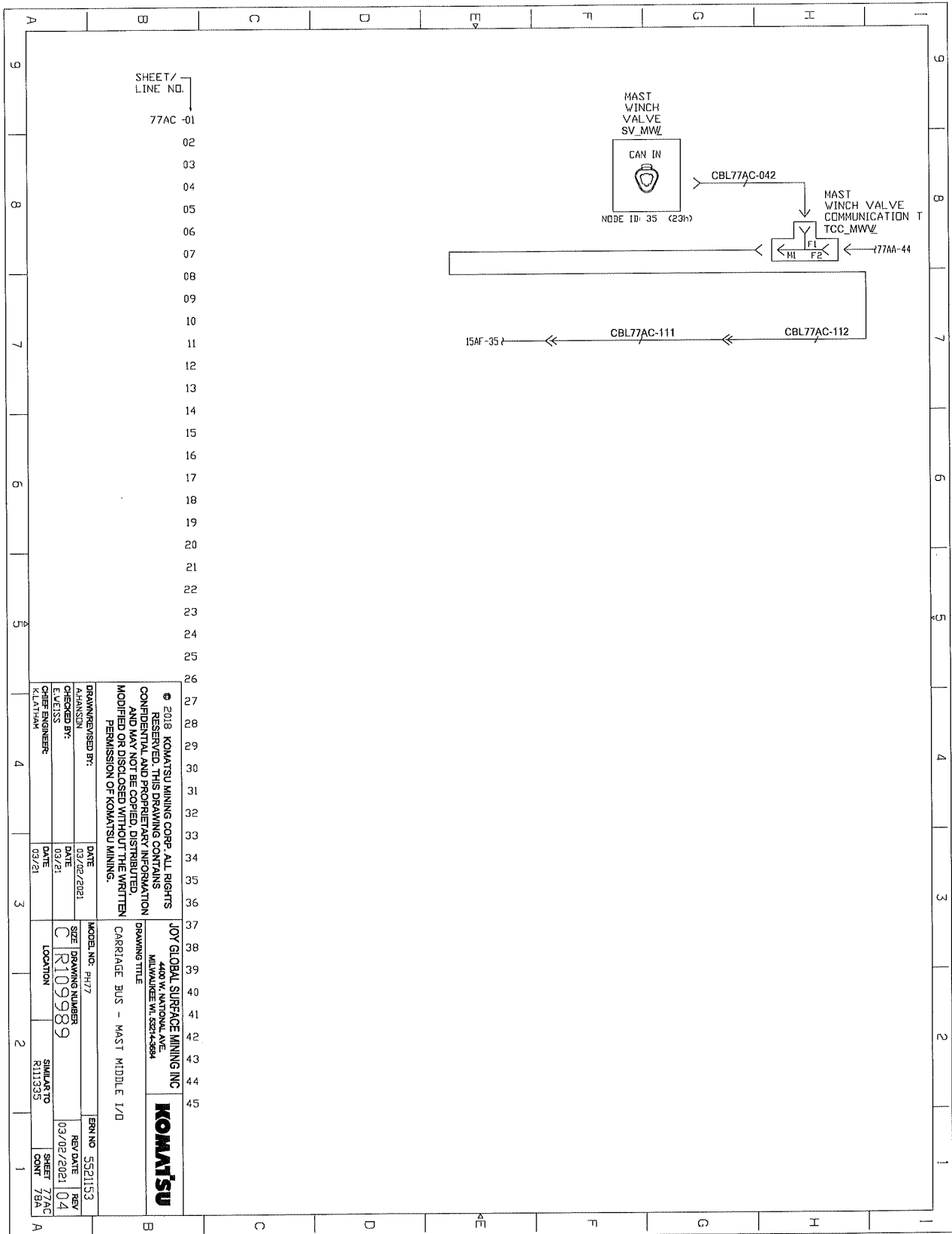
MAST BUS - MAST LOWER LEFT SIDE 1/0

DRAWN/REVISED BY: AJ/ANSON	DATE 03/02/2021	MODEL NO: PH77	REV DATE 03/02/2021
CHECKED BY: C. R. JOHNSON	DATE 03/21	SIZE C	REV 04
DESIGNED BY: K. LAITHAM	DATE 03/21	DRAWING NUMBER R109989	SHEET 776CF
		LOCATION R111325	CON'T 776A
		ERN NO 5521153	

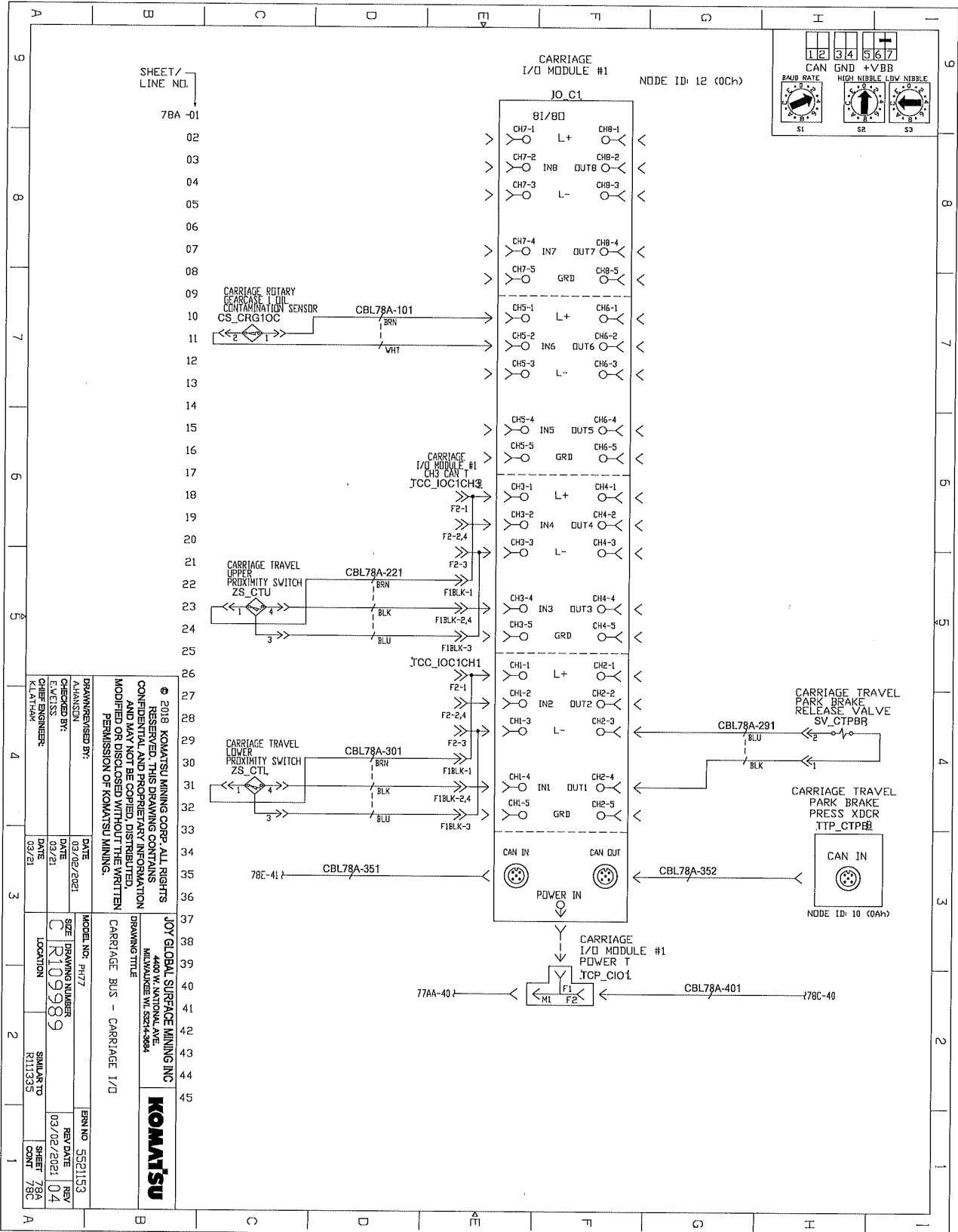
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



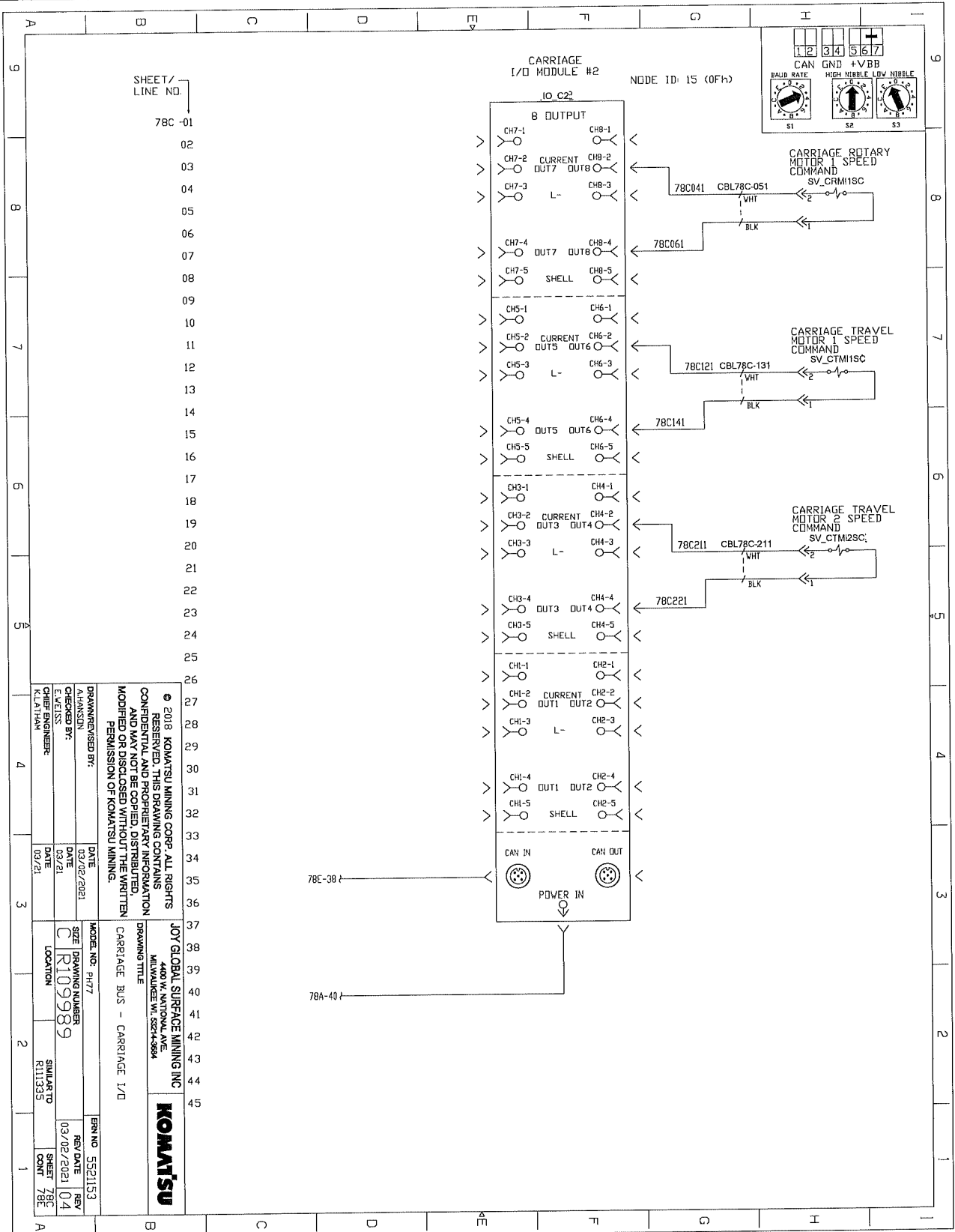
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

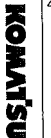


SHEET/
LINE NO.

78C-01

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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53214-2884



DRAWN/REVIEWED BY:
A.HANSSON

CHECKED BY:
C. R109989

DATE:
03/02/2021

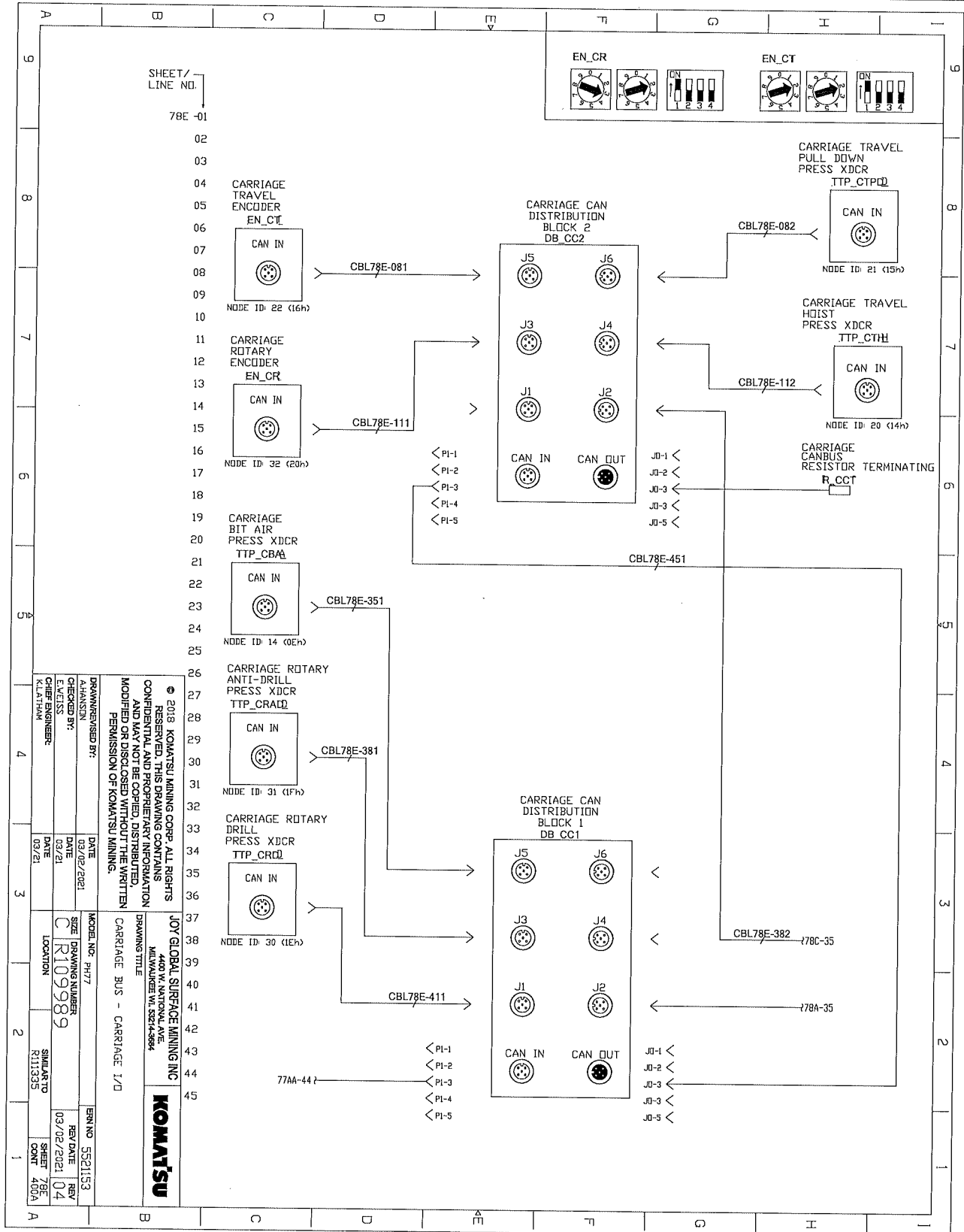
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DRAWING NUMBER:
R109989

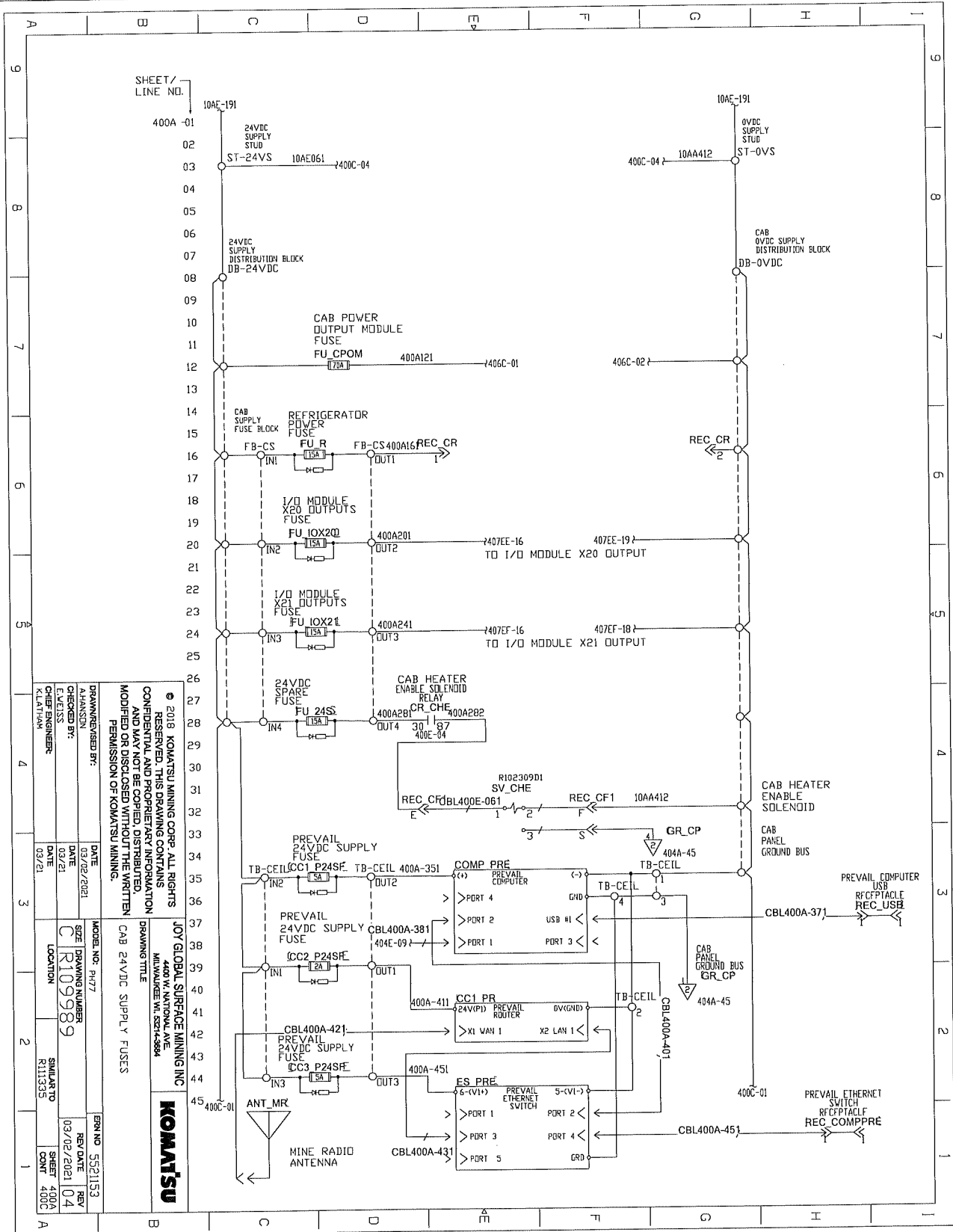
REV DATE:
04

SHEET COUNT:
78C

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

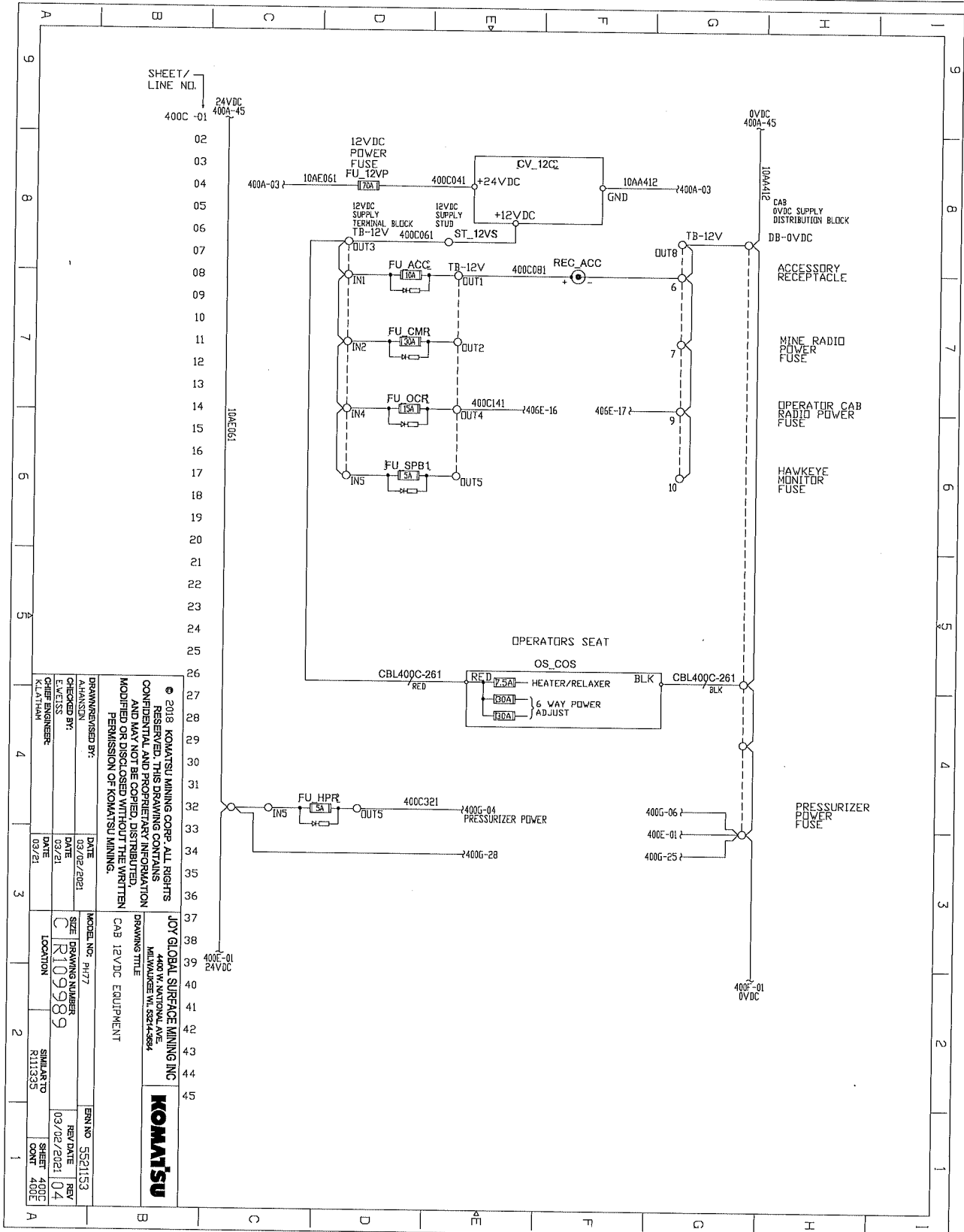


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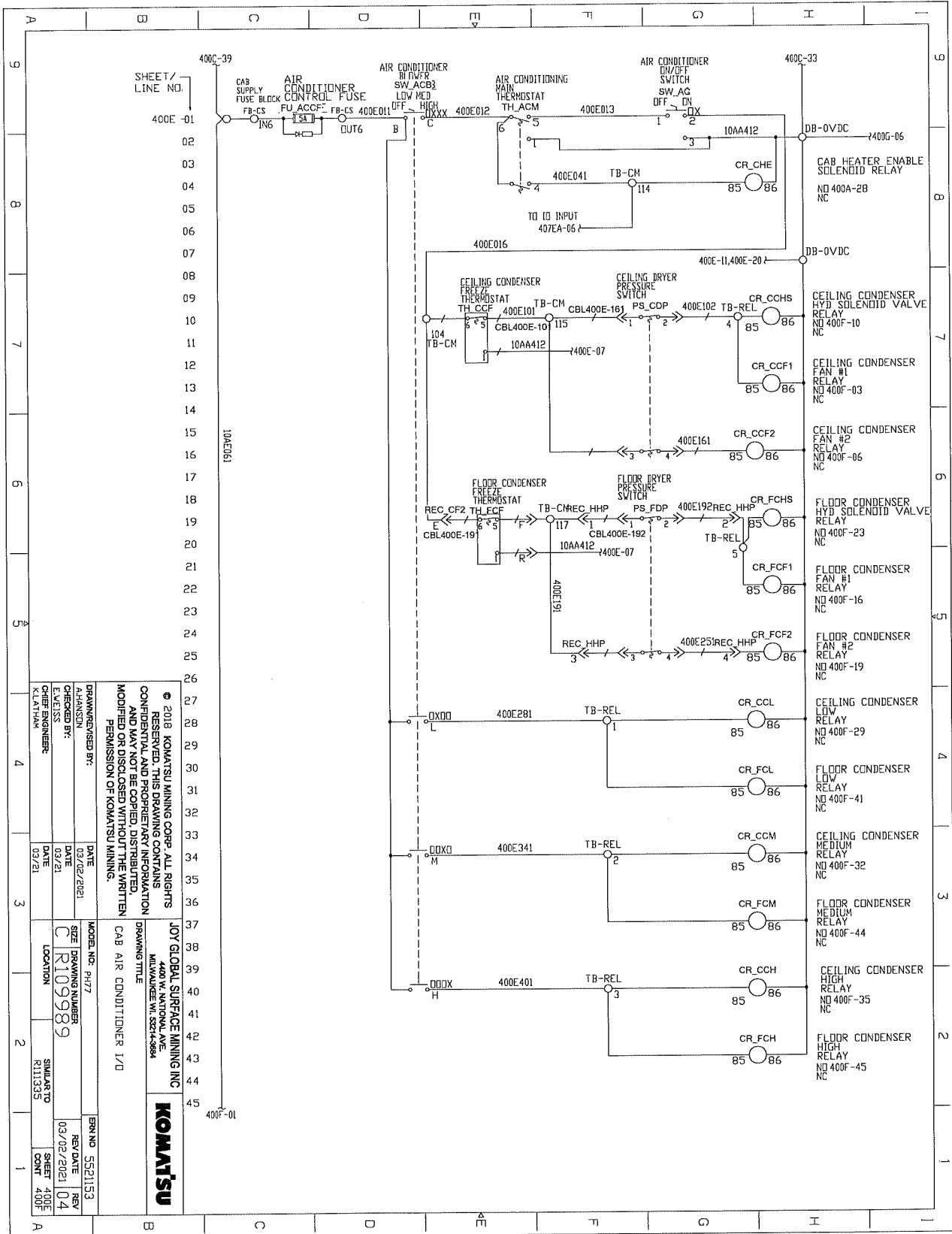
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JOY GLOBAL SURFACE MINING INC 1401 W. UNIVERSITY AVE. MILWAUKEE, WI 53214-8884	
DRAWING TITLE CAB 24VDC SUPPLY FUSES	
MODEL NO. P477	SERIAL NO. 5521153
DRAWN BY: C. R10989	CHECKED BY: C. R10989
DATE: 03/21	DATE: 03/21
LOCATION: R11335	SHEET: 400A
CONT: 400C	REV: 04
DATE: 03/02/2021	DATE: 03/02/2021
DATE: 03/21	DATE: 03/21

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



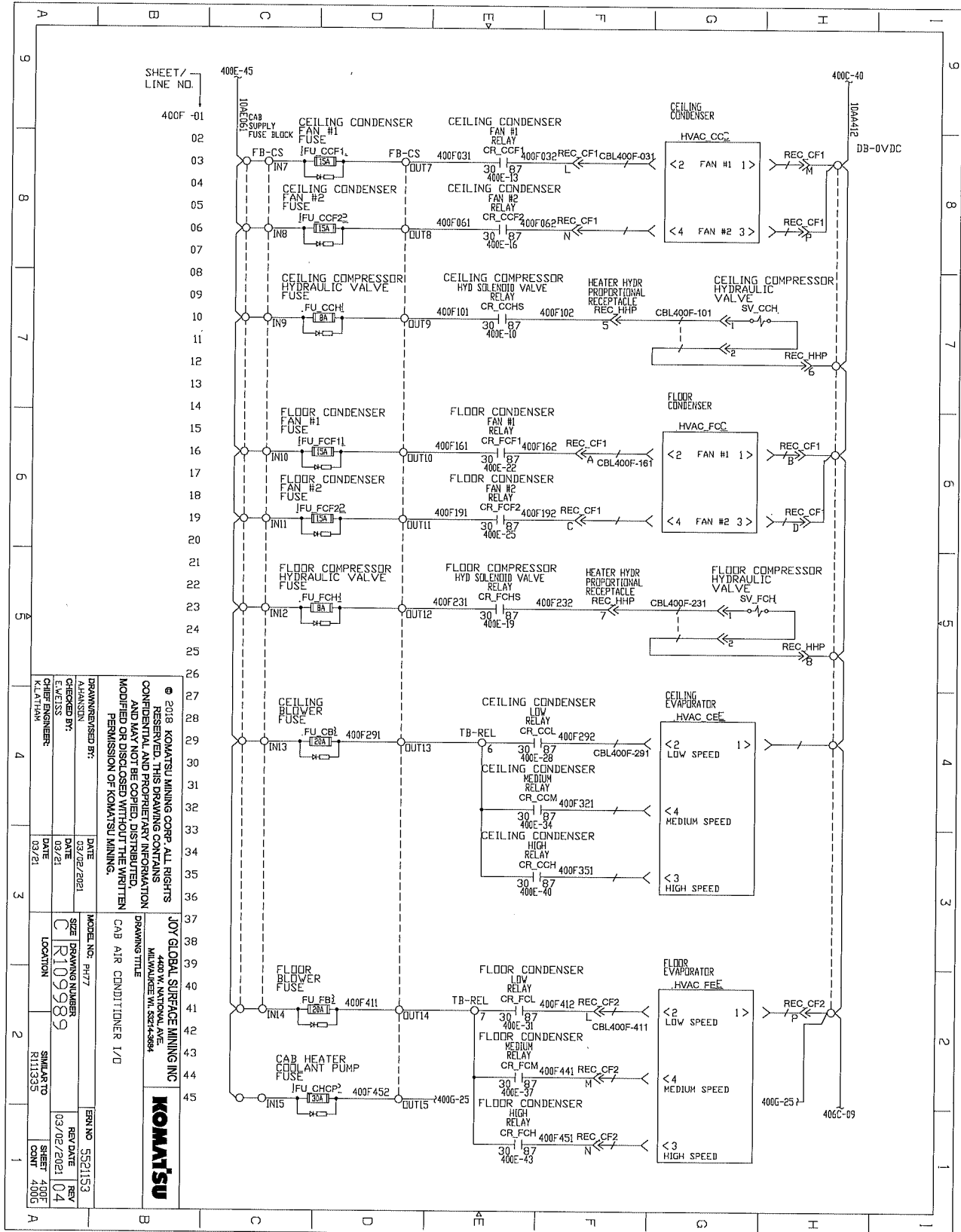
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<p>JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE MILWAUKEE WI 53244-3884</p>	
<p>KOMATSU</p>	
<p>DRAWN/REVISED BY: A.HANSSON</p>	<p>MODEL NO.: P477</p>
<p>CHECKED BY: L.W.EISS</p>	<p>DATE: 03/02/2021</p>
<p>DATE: 03/21</p>	<p>SIZE: DRAWING NUMBER C R109989</p>
<p>DATE: 03/21</p>	<p>LOCATION: R111335</p>
<p>SIMILAR TO R111335</p>	<p>ENR NO.: 5521153</p>
<p>SHEET: 400E</p>	<p>REV DATE: 03/02/2021</p>
<p>CONTR: 400E</p>	<p>REV: 04</p>

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

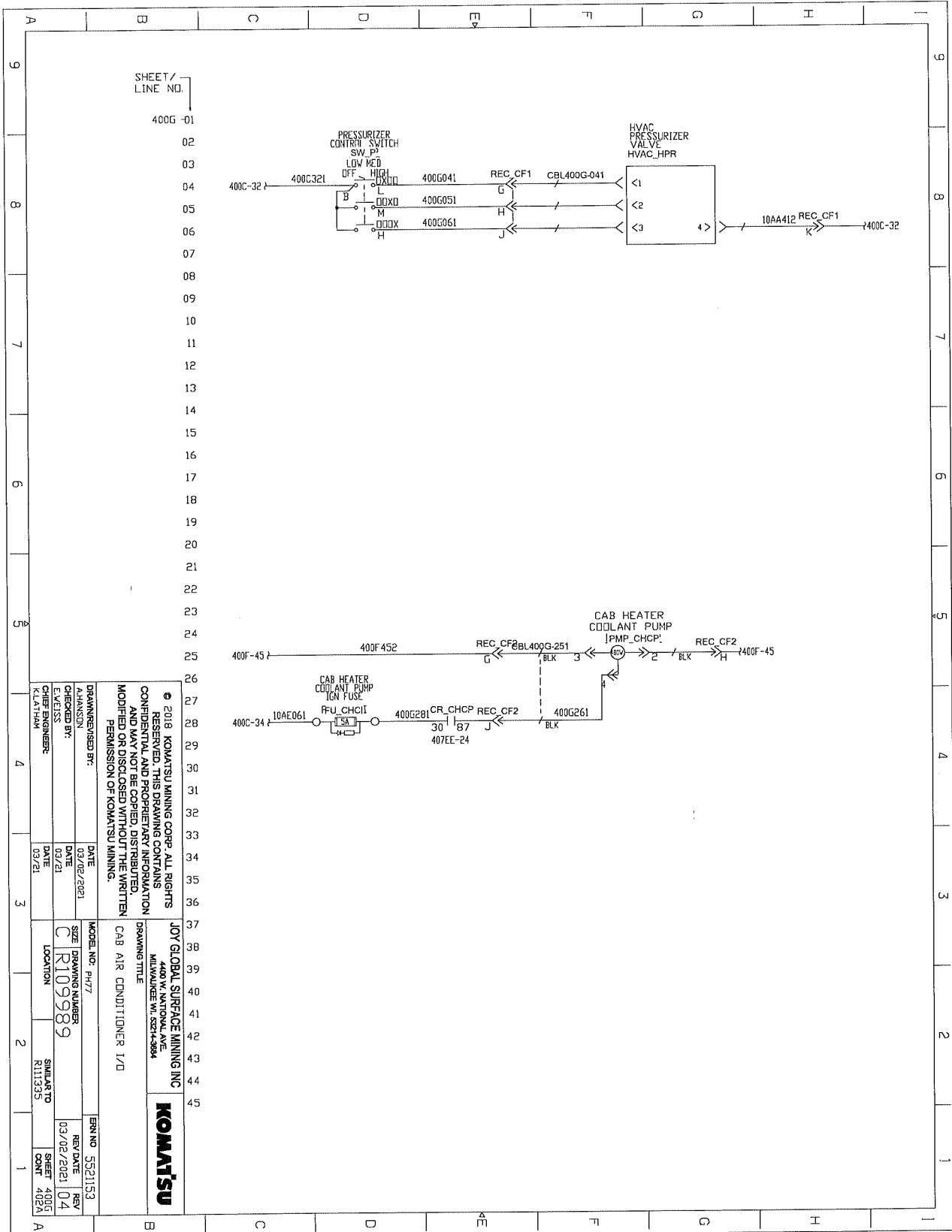


SHEET / LINE NO. 400E-01		CAB SUPPLY FUSE BLOCK FB-CS		AIR CONDITIONER CONTROL FUSE FU ACCF1		AIR CONDITIONER BLOWER SW ACB3 SW ACB3		AIR CONDITIONING MAIN THERMOSTAT TH_ACM		AIR CONDITIONER ON/OFF SWITCH SW_AG		DB-0VDC CAB HEATER ENABLE SOLENOID RELAY NO 400A-28 NC	
400E01		400E011		400E012		400E013		10AA412		400E041		TB-CM 114	
10AE016		400E101		CBL400E-101		CBL400E-161		400E102		TB-REL 4		CR_CCHS 85 86 CEILING CONDENSER HYD SOLENOID VALVE RELAY NO 400F-10 NC	
10AE016		400E101		CBL400E-101		CBL400E-192		400E192		TB-REL 5		CR_CCF1 85 86 CEILING CONDENSER FAN #1 RELAY NO 400F-03 NC	
10AE016		400E101		CBL400E-192		CBL400E-192		400E192		TB-REL 5		CR_CCF2 85 86 CEILING CONDENSER FAN #2 RELAY NO 400F-05 NC	
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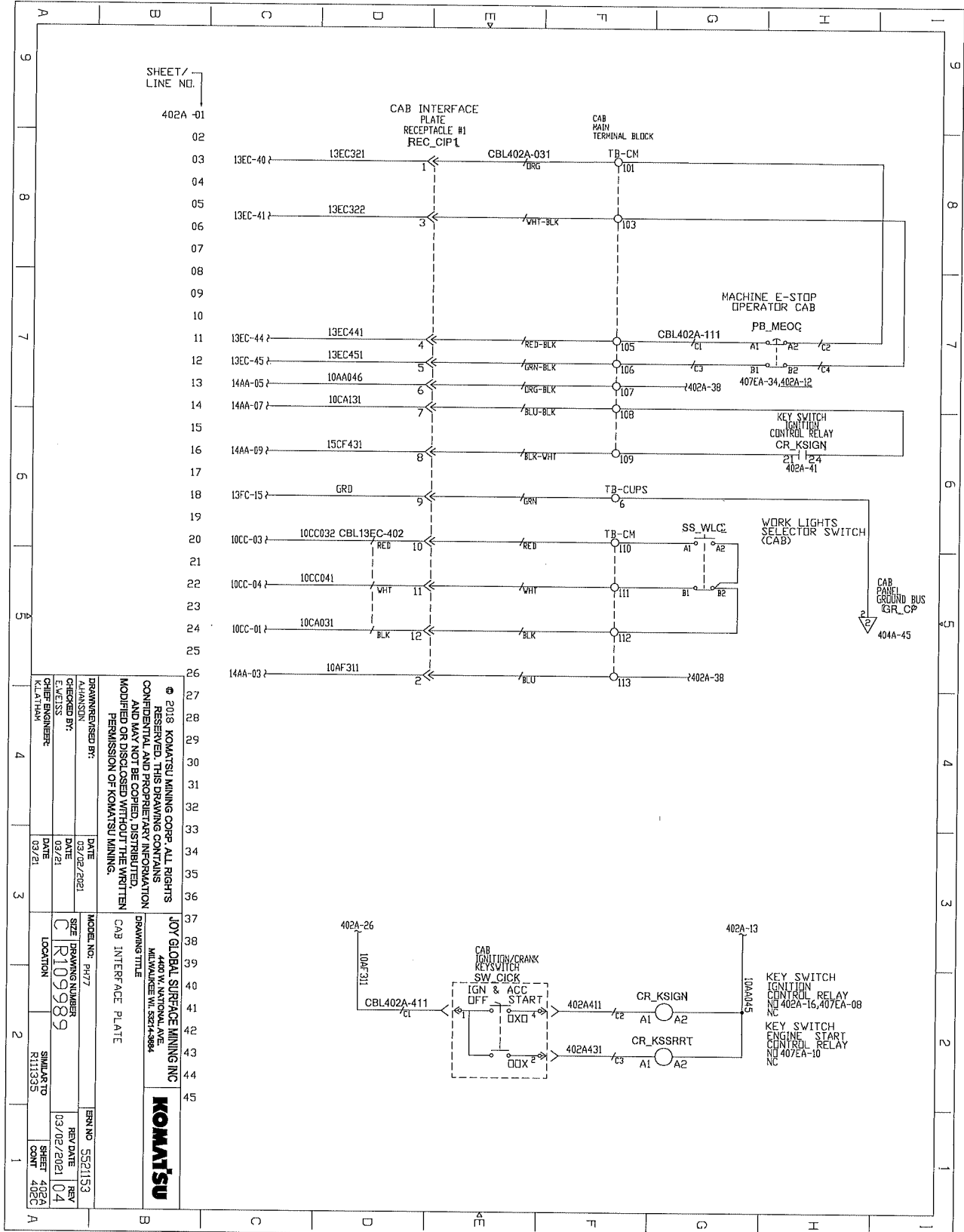
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET / LINE NO.

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DRAWING TITLE: CAB INTERFACE PLATE

JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53214-9894

MODEL NO. PH77

DATE	03/02/2021
SIZE	C
DRAWING NUMBER	R109989
LOCATION	SHIMAZU R111353
DATE	03/21
DATE	03/21
DATE	03/21
DATE	03/21

CHIEF ENGINEER: K.LATHAM

DRWNG REVISD BY:	DATE
CHECKED BY:	DATE
DATE	03/02/2021
DATE	03/02/2021
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DATE	03/02/2021

REV NO. 5521153

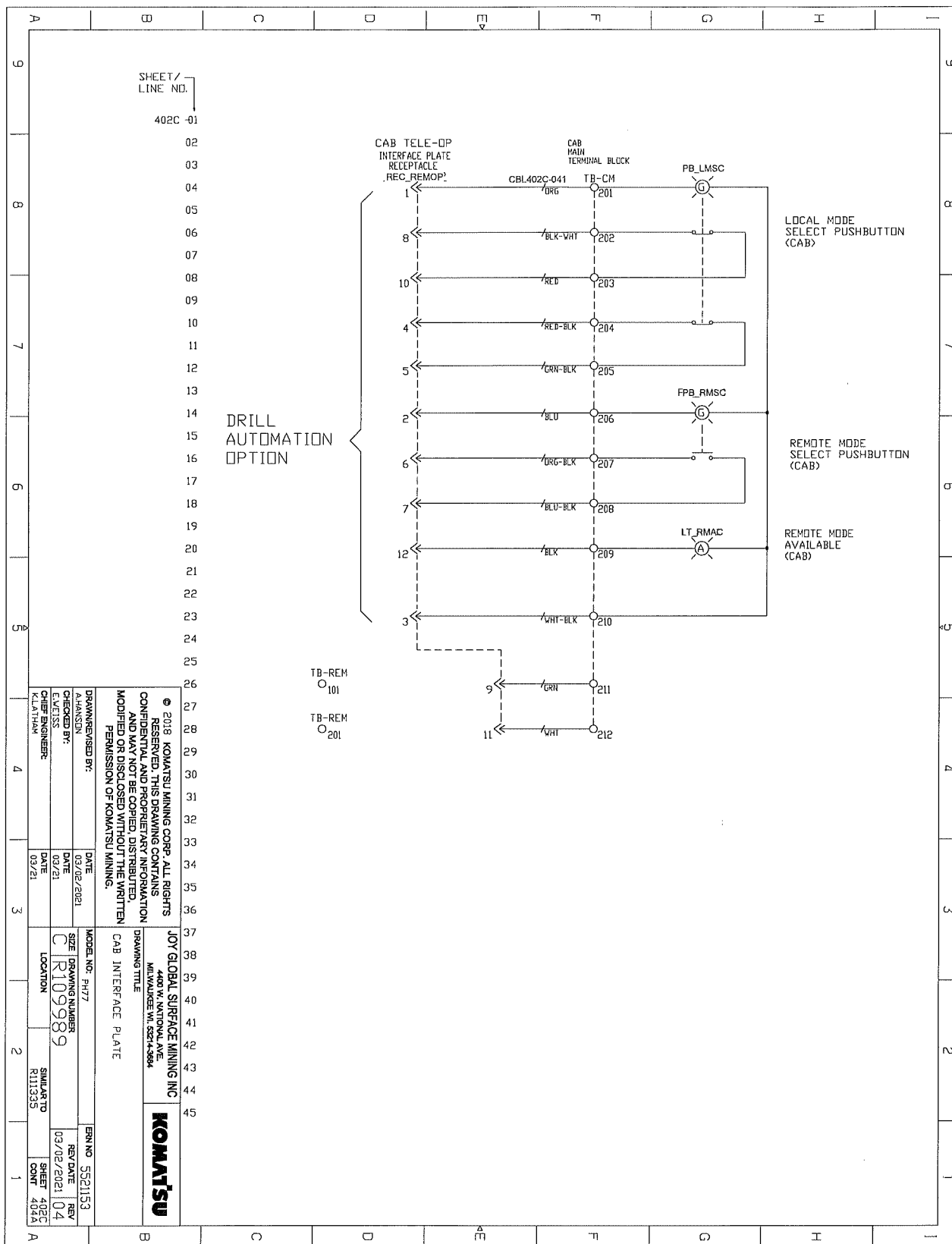
REV DATE 03/02/2021

REV 04

SHEET 402A

402C

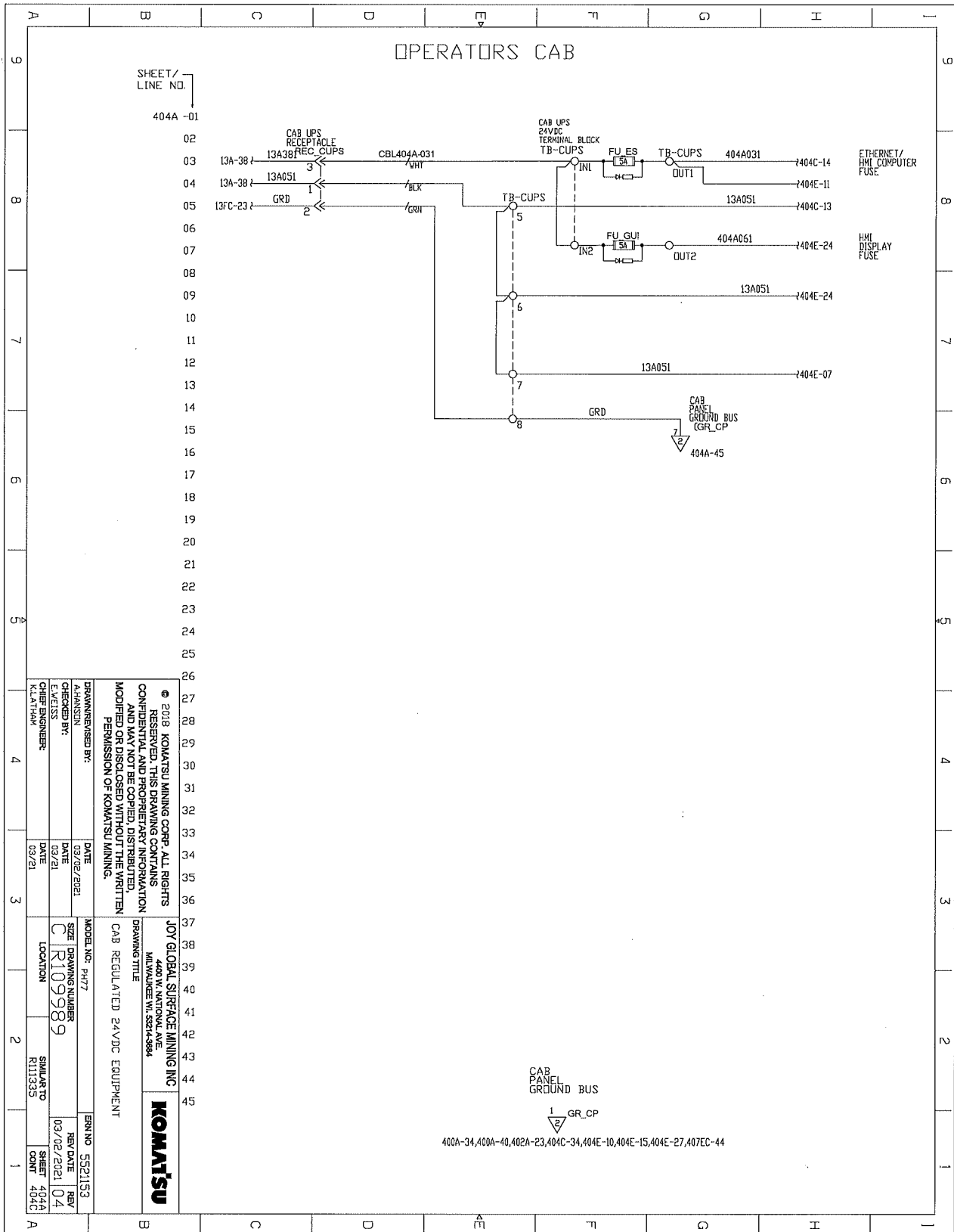
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



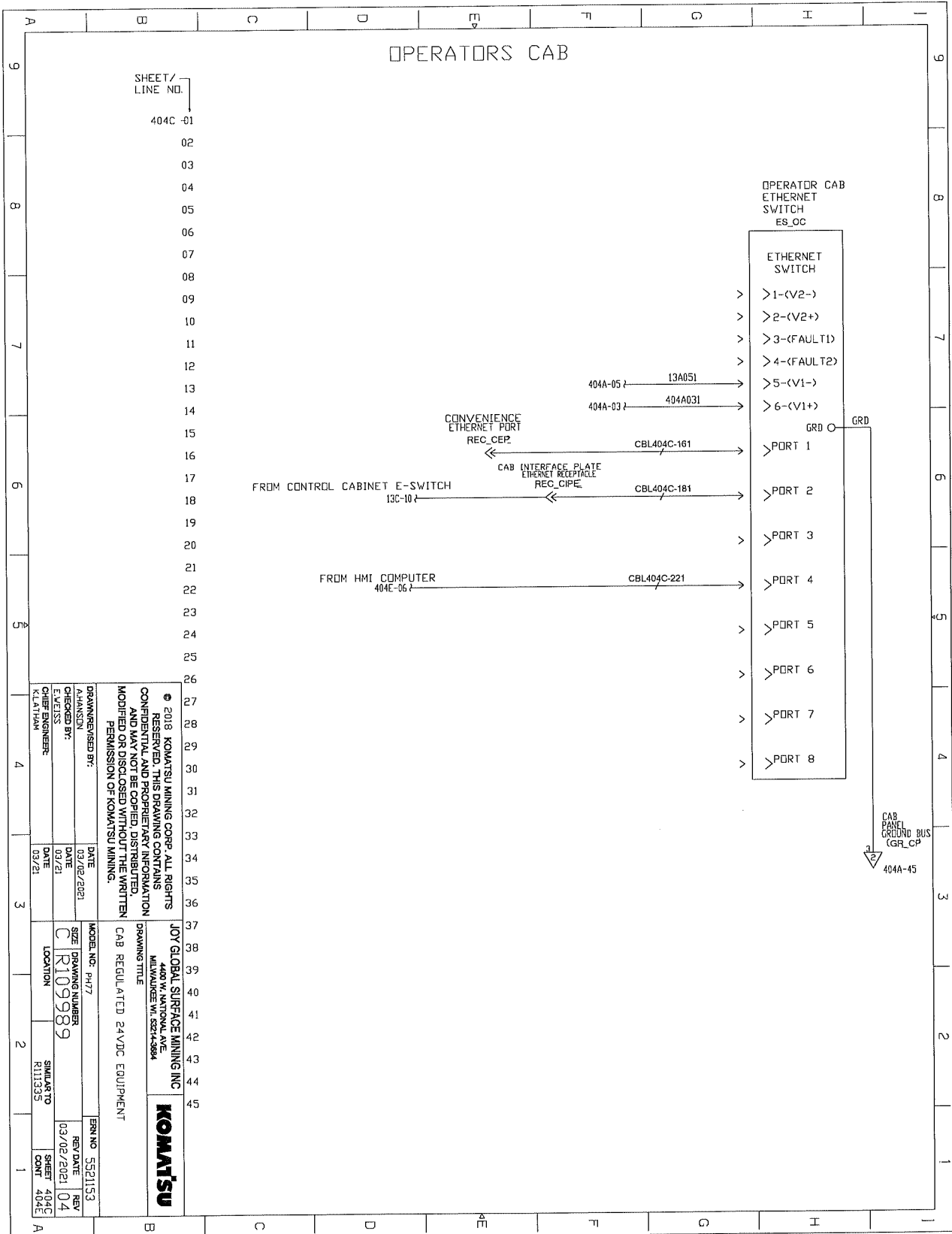
DRAWING TITLE CAB INTERFACE PLATE		JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE, WI 53214-9884	
DRAWING NUMBER R109989		MODEL NO. PH77	
CHECKED BY: EVELISS		DATE 03/02/2021	
CHECKED BY: KILATHAN		DATE 03/21	
CHIEF ENGINEER: KILATHAN		DATE 03/21	
SIMILAR TO R111335		ENR NO. 5521153	
SHEET 402C CNT 404A		REV DATE 03/02/2021 04	

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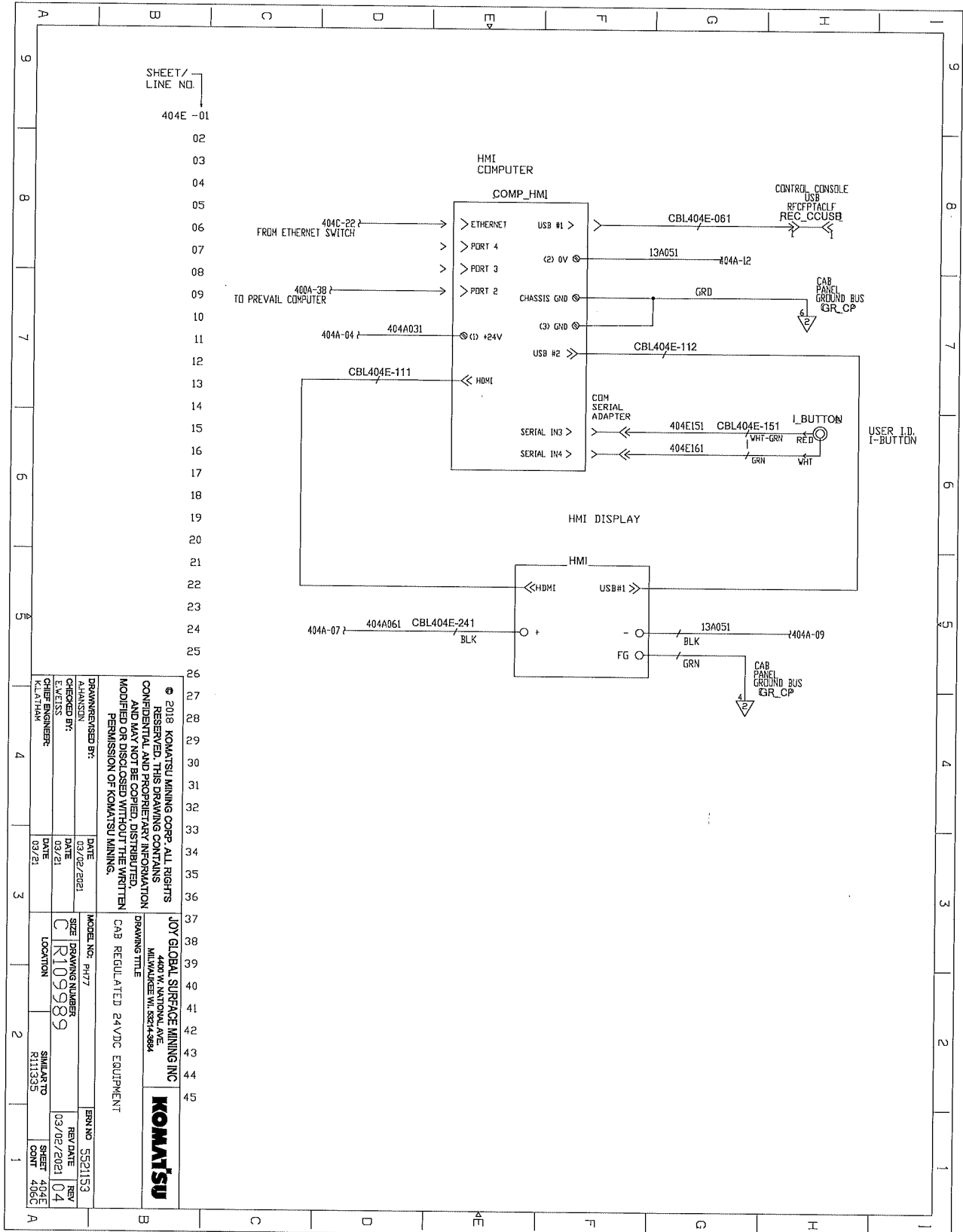
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

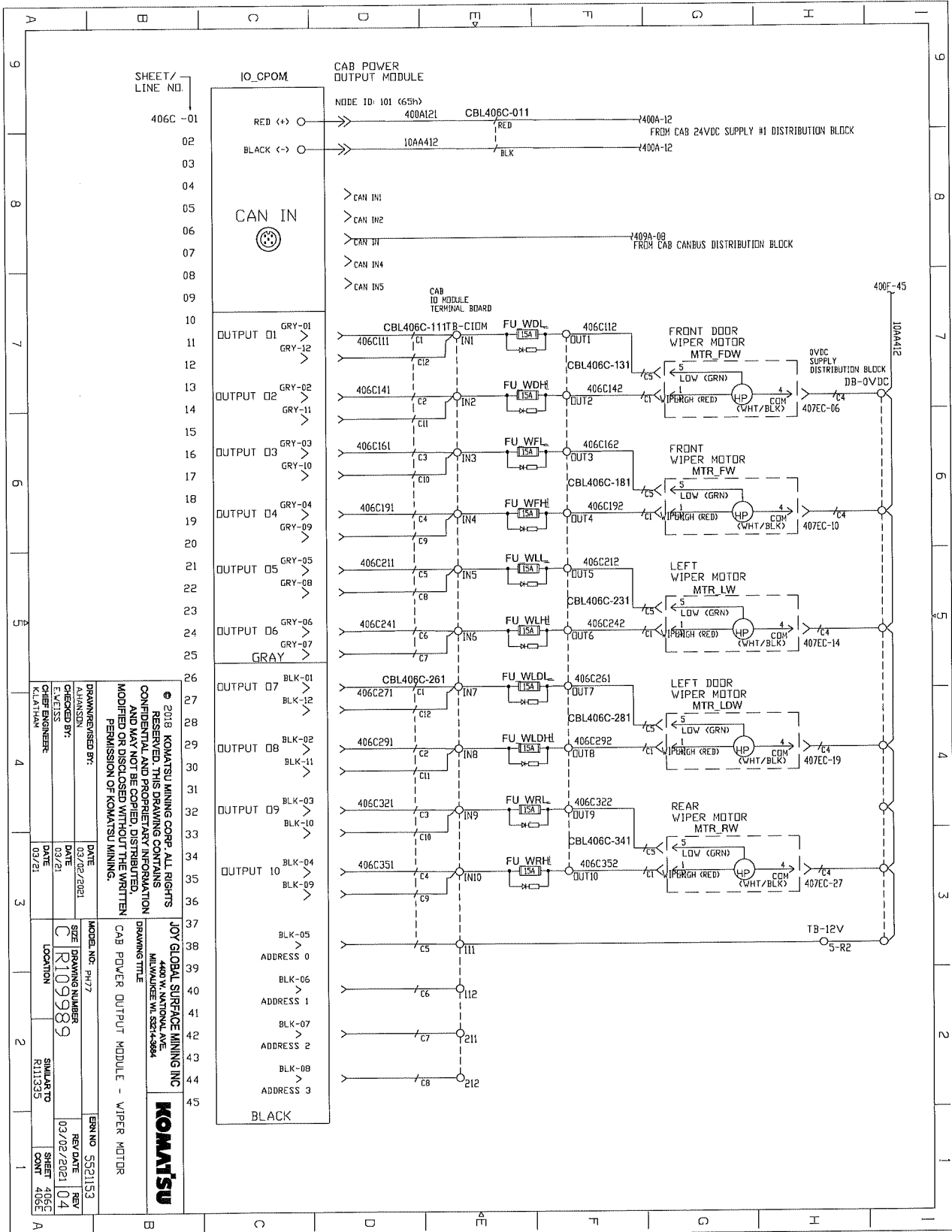


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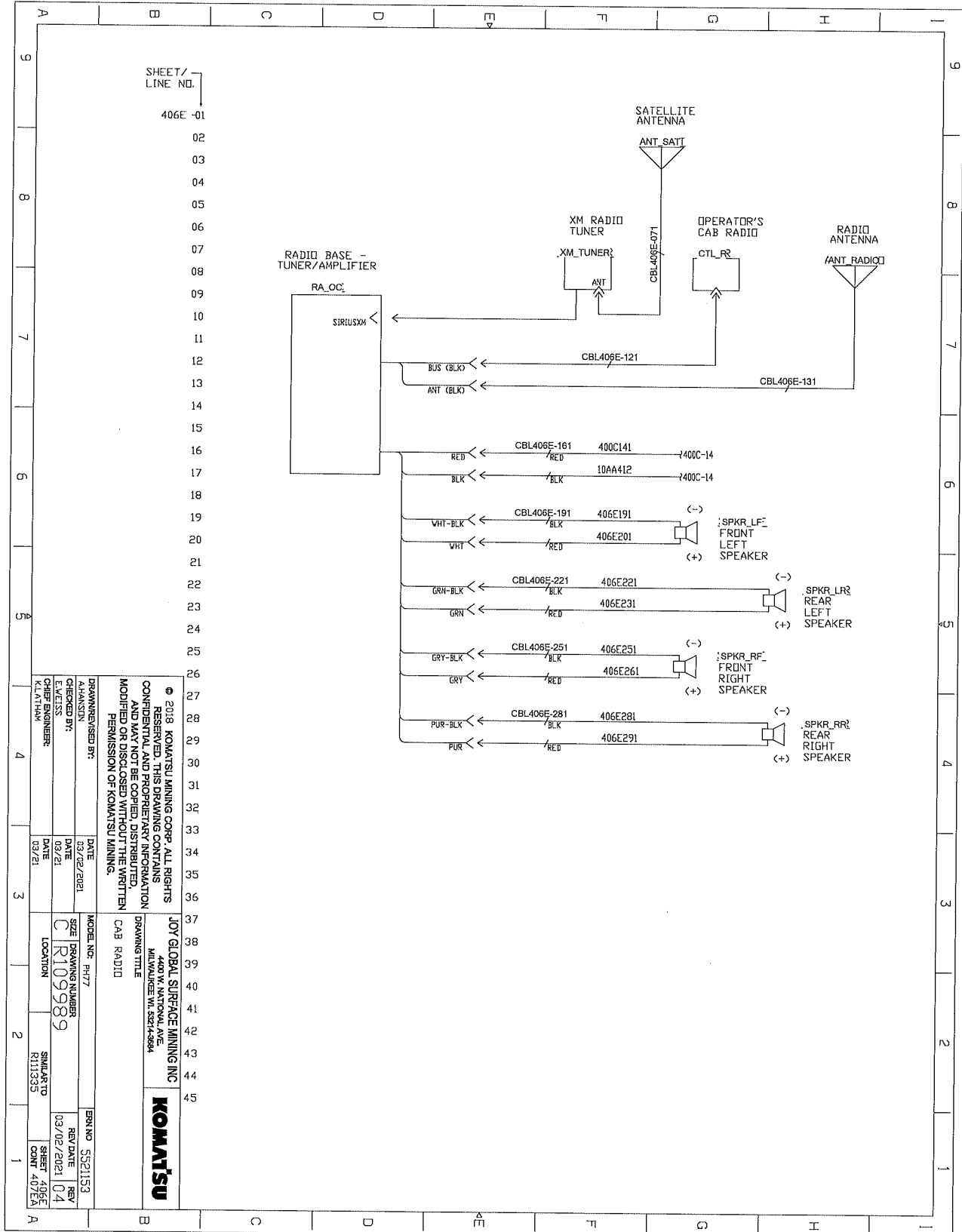
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DRAWN/REVISED BY: CHANGSU E. WELLS CHIEF ENGINEER K.LATHAM	DATE: 03/02/2021 DATE: 03/21 DATE: 03/21	MODEL NO.: PH77 SIZE: DRAWING NUMBER C/R109989 LOCATION:	SERIAL NO.: R111535 SHEET: 404E COUNT: 405C	DRAWING TITLE: CAB REGULATED 24VDC EQUIPMENT	PART NO.: 5521153 REV: 1 REV DATE: 03/02/2021 SHEET: 04 COUNT: 405C

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



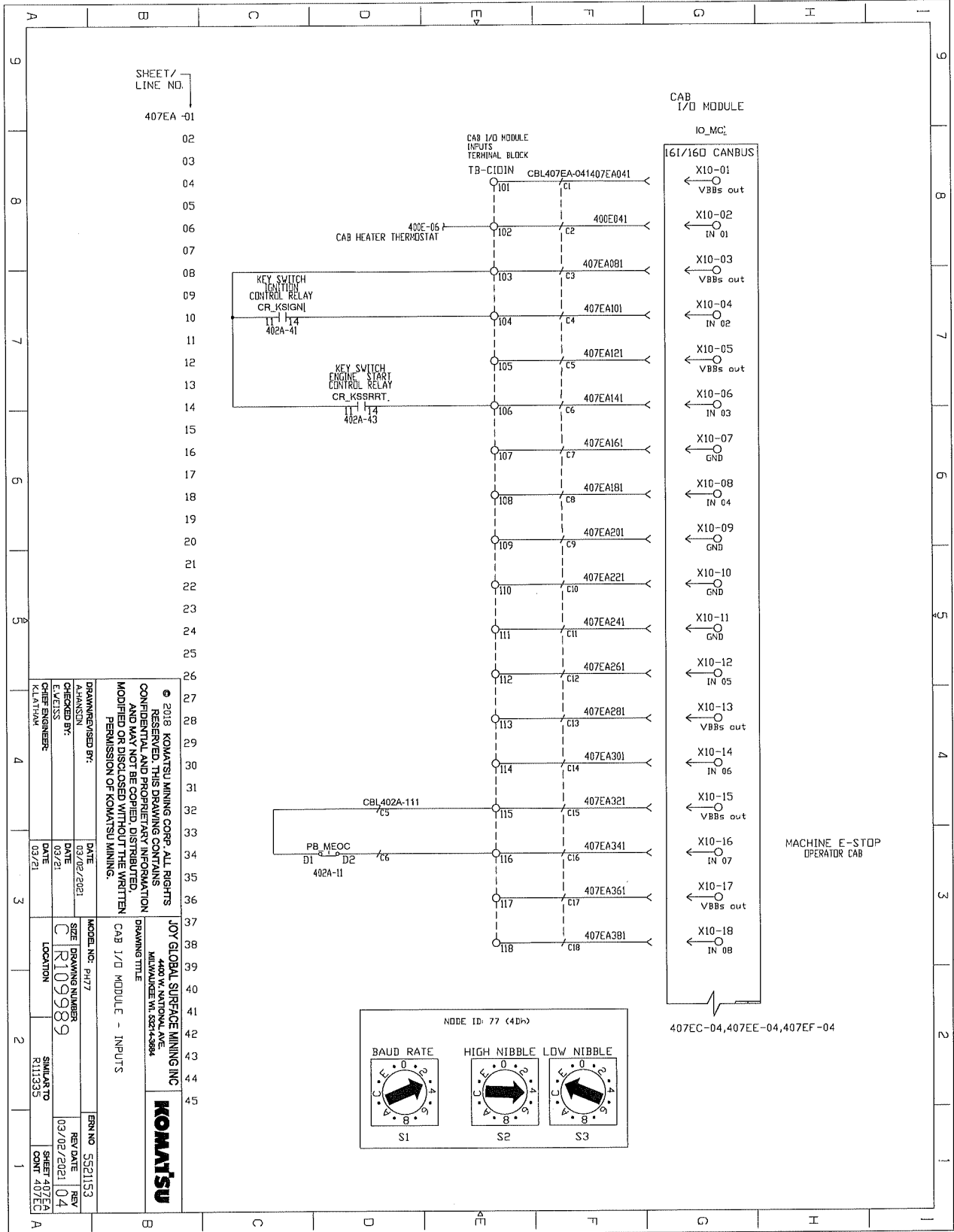
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JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MINERALS WY. S27-0884	
DRAWING TITLE CAB POWER OUTPUT MODULE - WIPER MOTOR	MODEL NO. PH-77 SIZE R109989 LOCATION R113335
DRAWN/REVISED BY: A.HANSSON CHECKED BY: E.VLESS CHIEF ENGINEER KILPATRICK	DATE: 03/02/2021 DATE: 03/21 DATE: 03/21
ERNO 5521153 REV DATE 03/02/2021 REV 04 SHEET 406C COUNT	SHEET COUNT

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

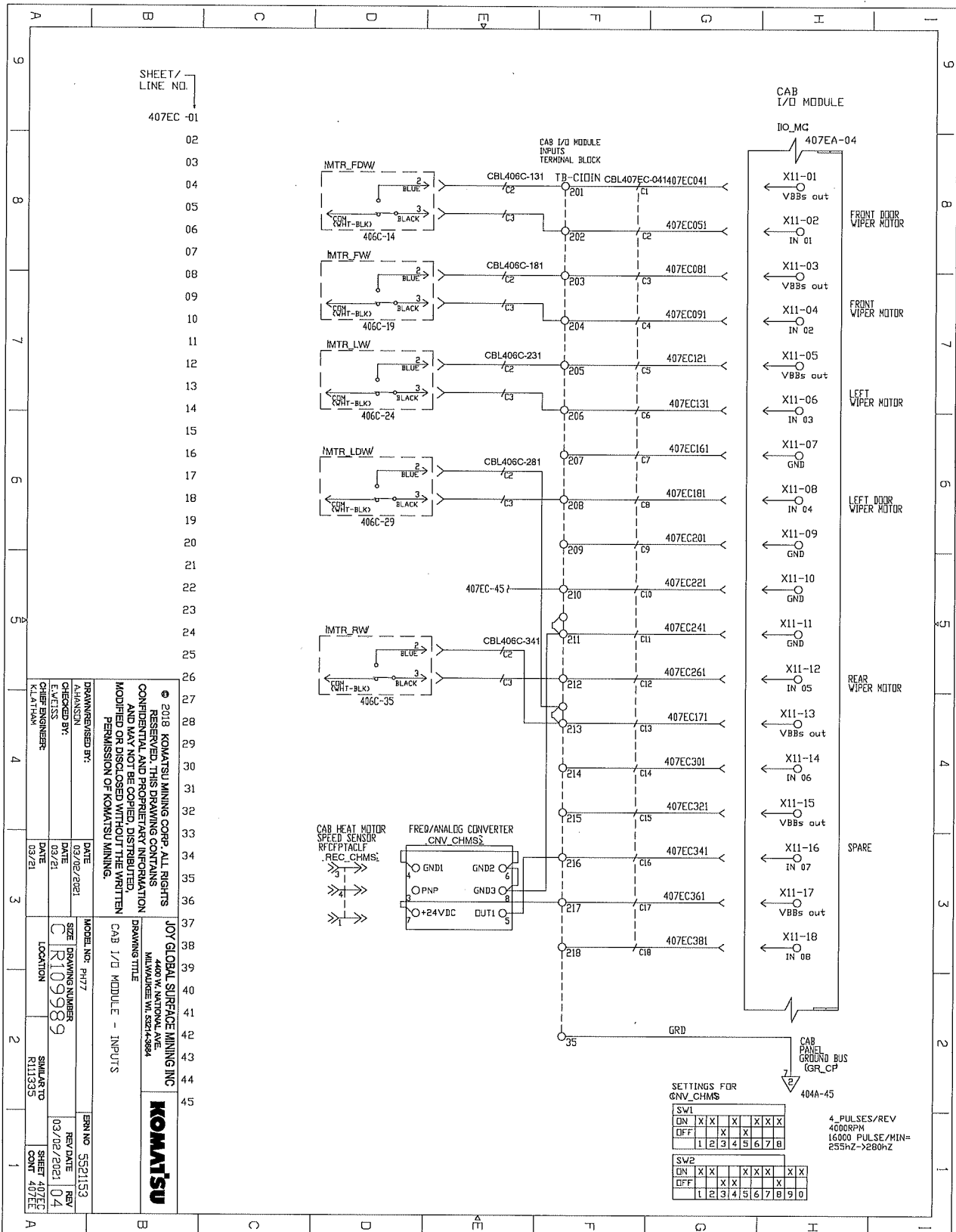


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<p>JOY GLOBAL SURFACE MINING INC 4400 W. NATIONAL AVE. MILWAUKEE WI 53214-5894</p>	
<p>KOMATSU</p>	
<p>MODEL NO. PH77</p>	<p>DRAWING TITLE CAB RADIO</p>
<p>DRAWN/REVISED BY: A.PANJIN</p>	<p>DATE 03/02/2021</p>
<p>CHECKED BY: C. R109989</p>	<p>DATE 03/02/2021</p>
<p>DATE 03/02/2021</p>	<p>LOCATION SINILAKITO K111535</p>
<p>REV. DATE 03/02/2021</p>	<p>REV. NO. 04</p>
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<p>CONT 40/EA</p>	<p>ERN NO. 5521153</p>

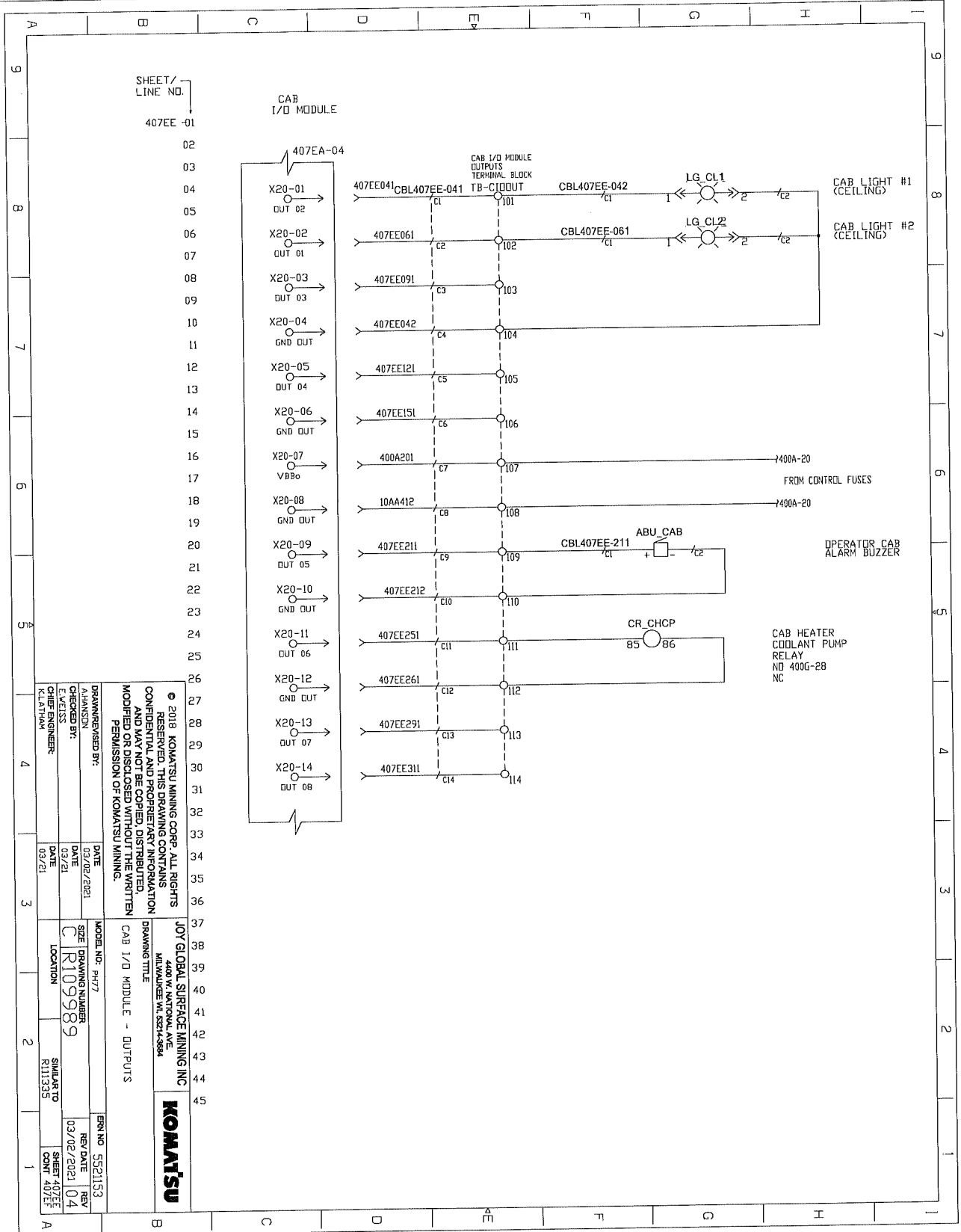
ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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 CHECKED BY: E. WEISS
 DATE: 03/21
 CHIEF ENGINEER: K. LATHAM
 DATE: 03/21

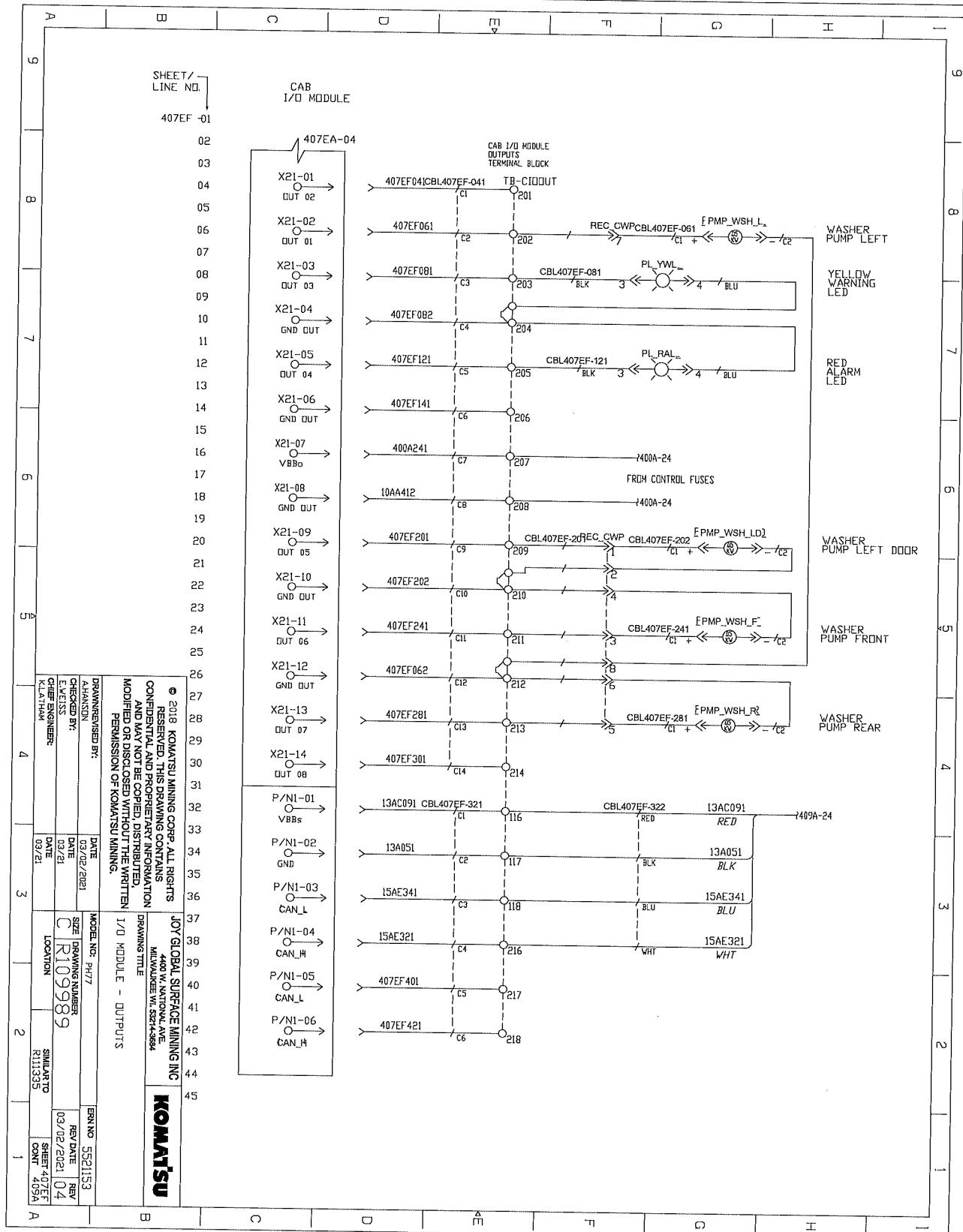
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JOY GLOBAL SURFACE MINING INC
 1000 W. CENTRAL AVE.
 MILWAUKEE WI 53214-3884



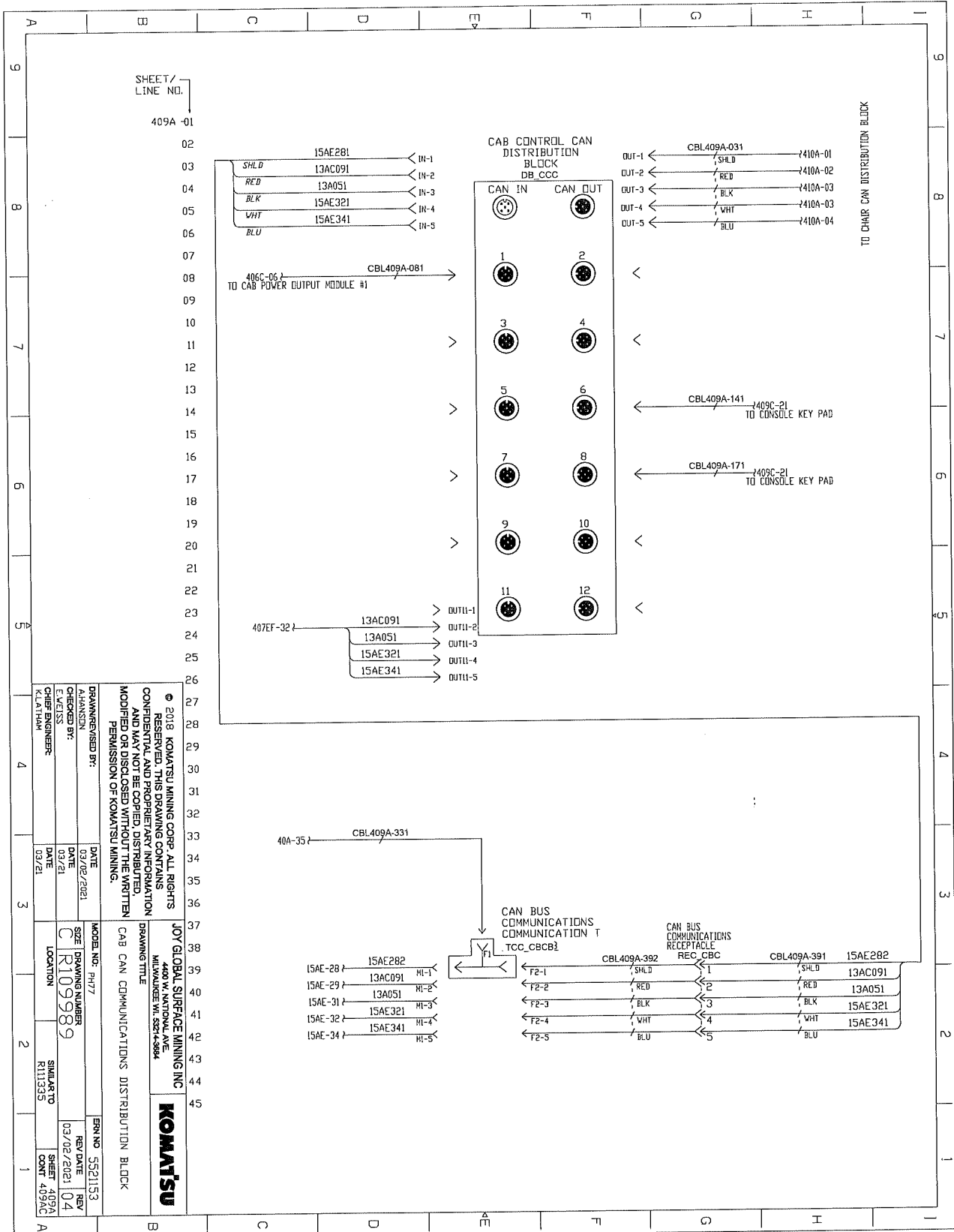
MODEL NO. P477	FRN NO. 5521153
SIZE	REV
C R10989	03/02/2021 04
LOCATION	SHEET 407EE
	CONT 407EE

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



Sheet 407EF

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

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CHECKED BY:		DATE		SIZE DRAWING NUMBER		REV DATE KEY	
DESIGN NUMBER:		DATE		C R109989		03/02/2021 04	
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						SHEET 409AC	
						CONT 409C	

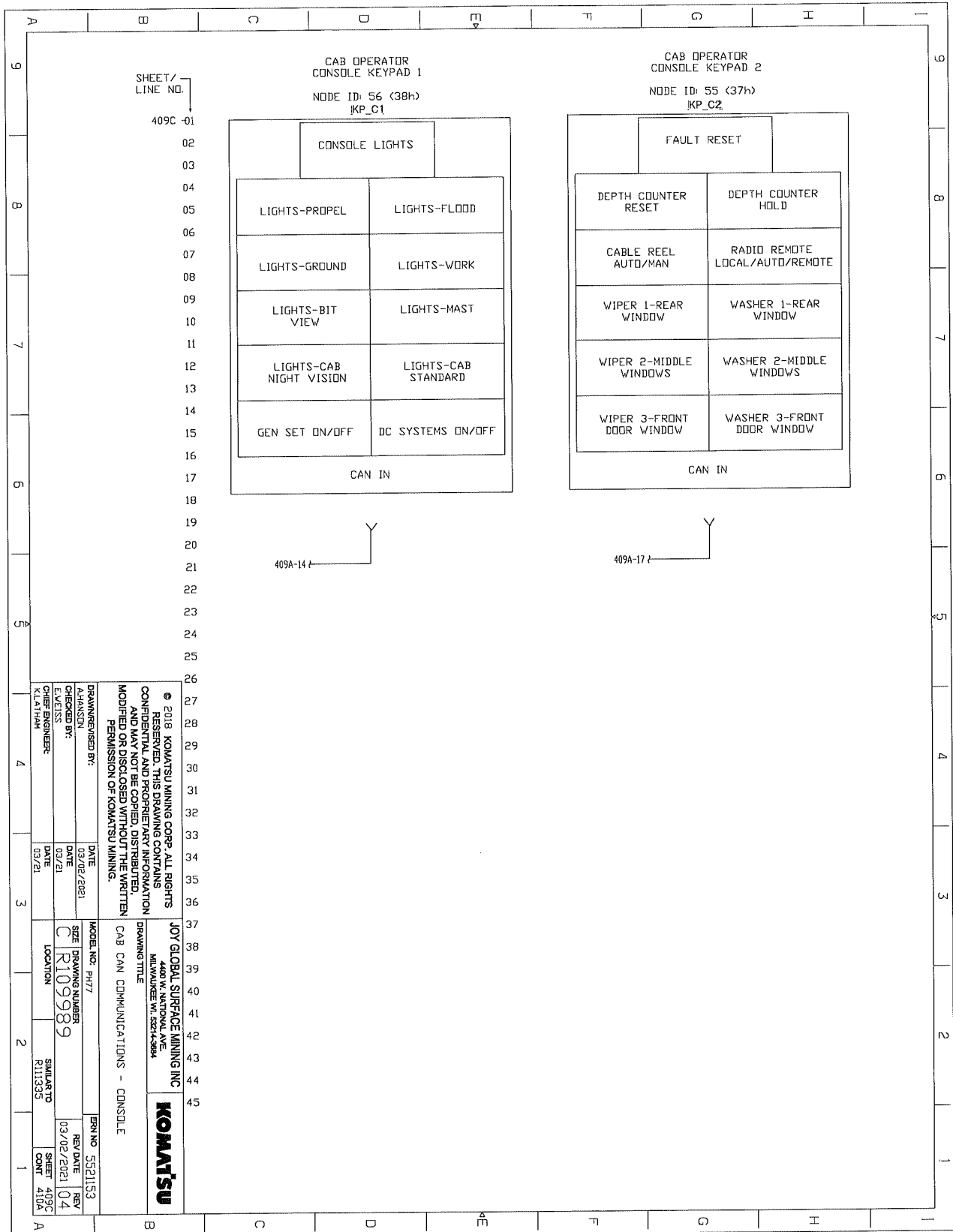
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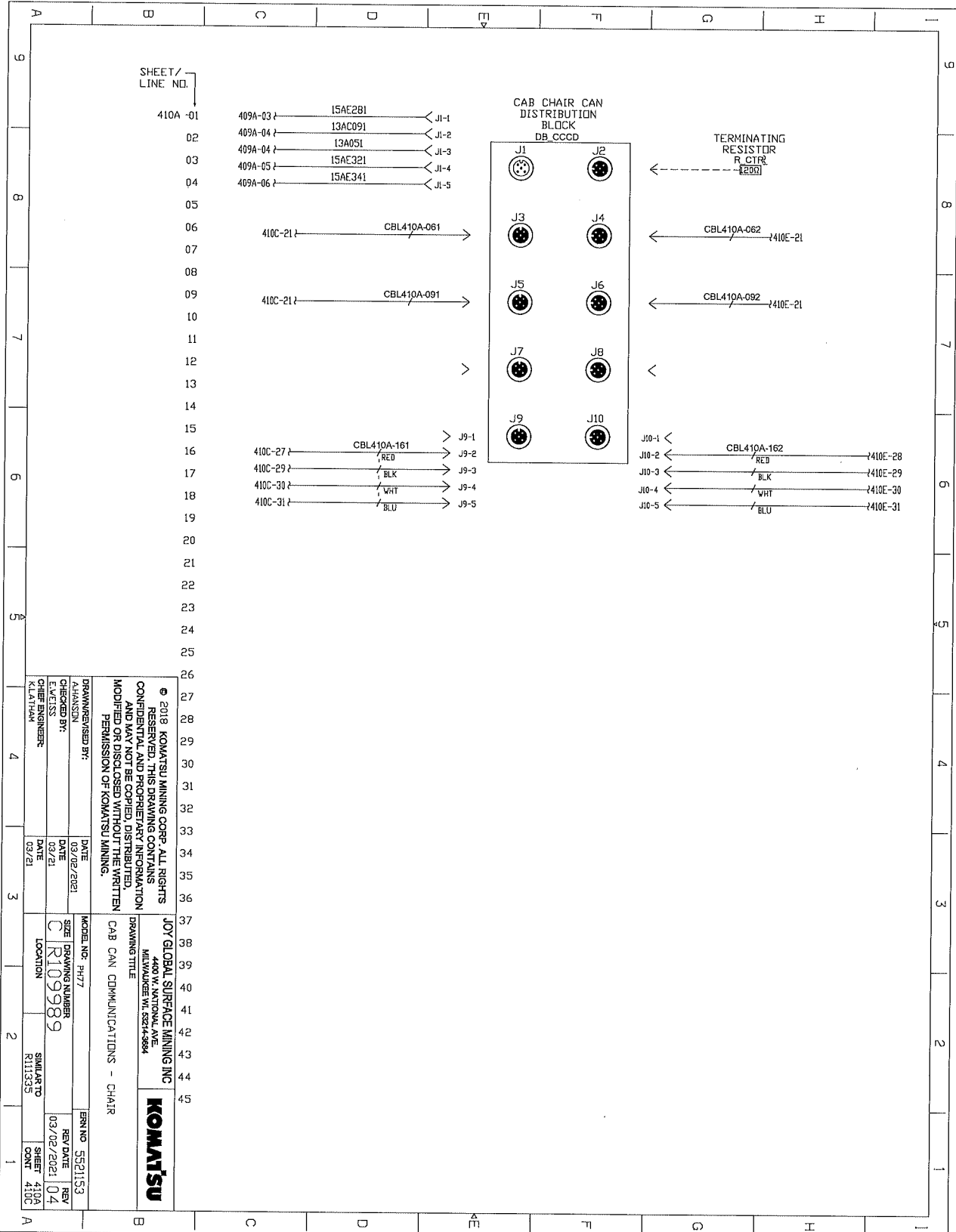
KOMATSU

CAB CAN COMMUNICATIONS - MAST 1/D

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

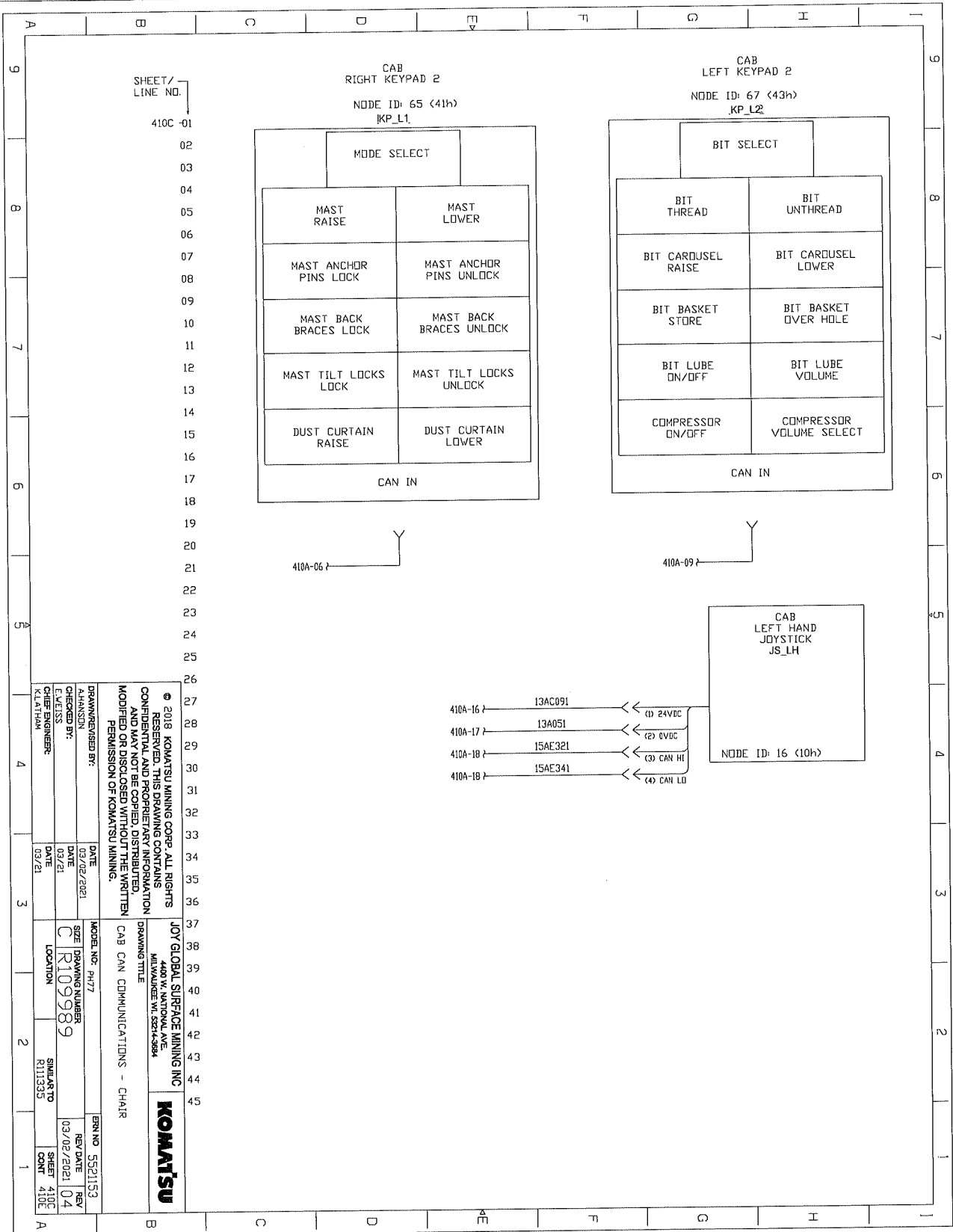


ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



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DRAWN/REVIEWED BY: DARRINSON CHECKED BY: K. LATHAM	DATE: 03/02/2021	MODEL NO.: PH77	SIZE: R109989	ERN NO.: 5521153	REV DATE: 03/02/2021
CHIEF ENGINEER: K. LATHAM	DATE: 03/21	DRAWING TITLE: CAB CAN COMMUNICATIONS - CHAIR	LOCATION: R111335	SHEET NO.: 410A	REV: 04

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



SHEET/
LINE NO.

410C-01

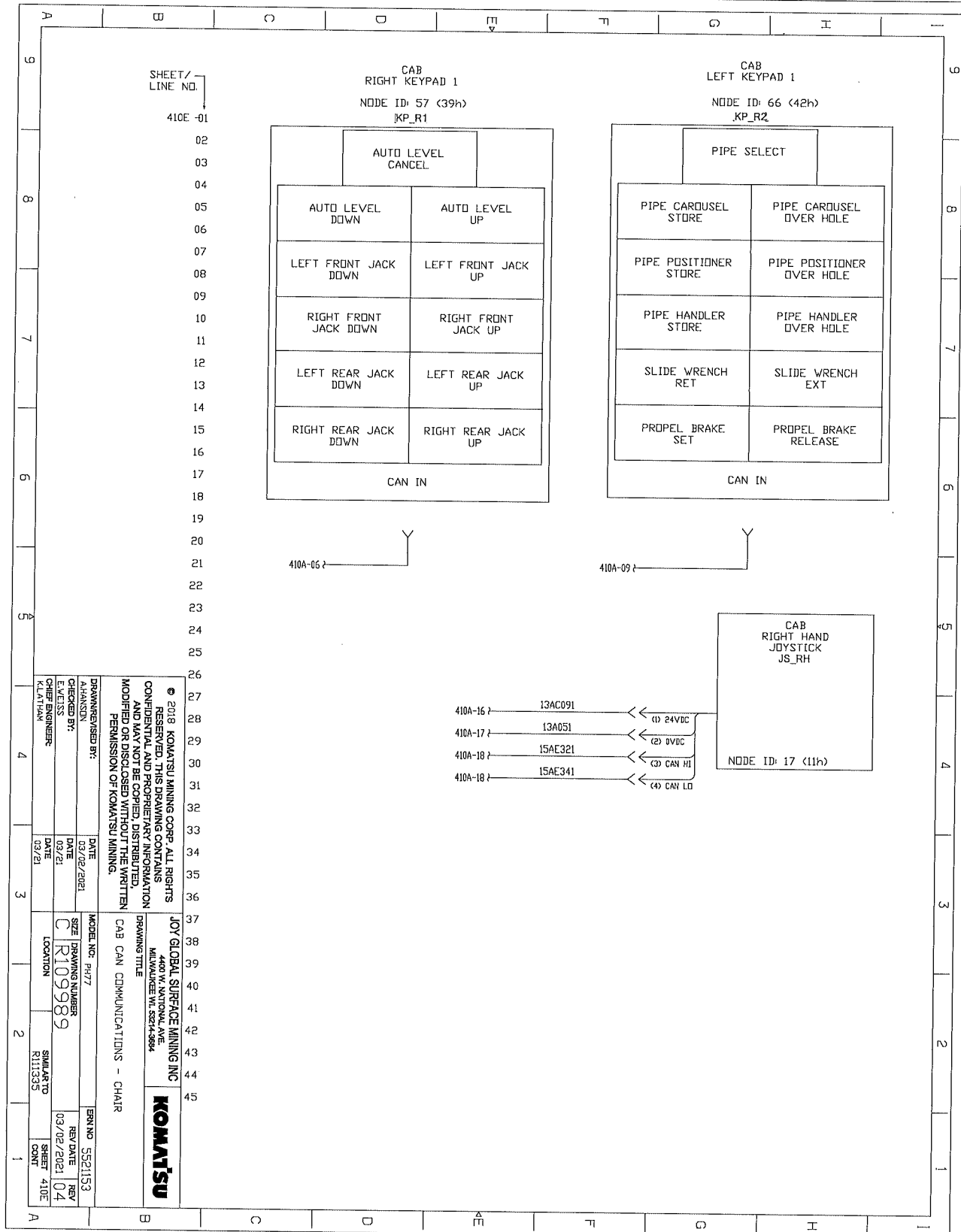
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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE, WI 53214-5004

KOMATSU

DRAWN/REVISED BY:	DATE	MODEL NO.	ERR NO.
AMANUSUN	03/02/2021	P477	5521153
CHECKED BY:	DATE	SIZE	REV DATE
CHIEF ENGINEER:	03/21	R109989	03/02/2021 04
KLATHAM	03/21	LOCATION	SHEET
		R111335	410C
			410E

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST



ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
	R109989	COMPONENTS LIST	
ABU_CAB		• OPERATOR CAB ALARM BUZZER	1
AH_MLF		• HORN MACHINE LEFT FRONT	1
AH_MRR		• HORN MACHINE RIGHT REAR	1
AH_PLF		• HORN PROPEL LEFT FRONT	1
AH_PRR		• HORN PROPEL RIGHT REAR	1
ALT_APU		• AUX POWER UNIT ALTERNATOR	1
ALT_APUO		• APU ONBOARD ALTERNATOR	1
ALT_DRILL		• DRILL ALTERNATOR	1
ALT_T4		• TIER 4 DRILL ALTERNATOR	1
ANT_MR		• MINE RADIO ANTENNA	1
ANT_RADIO		• RADIO ANTENNA	1
ANT_SAT		• SATELLITE ANTENNA	1
APU_ECM		• AUXILLARY POWER UNIT ECM	1
BA_APU1		• APU BATTERIES #1	1
BA_APU2		• APU BATTERIES #2	1
BA_MB1		• MASTER BATTERIES #1	1
BA_MB2		• MASTER BATTERIES #2	1
BA_MB3		• MASTER BATTERIES #3	1
BA_MB4		• MASTER BATTERIES #4	1
BA_MB5		• MASTER BATTERIES #5	1
BA_MB6		• MASTER BATTERIES #6	1
BB-BN		• BATTERY NEGATIVE BUS BAR	1
		• BATTERY NEGATIVE BUS BAR	1
		• BATTERY NEGATIVE BUS BAR	1
BB-BP		• BATTERY POSITIVE BUS BAR	1
		• BATTERY POSITIVE BUS BAR	1
BB-MP		• MAIN POSITIVE BUS BAR	1
BB-SN		• STARTER NEGATIVE BUS BAR	1
BB-SP		• STARTER POSITIVE BUS BAR	1
C_CTC		• COMPRESSOR TORQUE CONVERTER CONTROL	1
C_ECM		• MULTI ECM ENGINE CONTROL BOX (CUMMINS SUPPLIED)	1
C_MC		• MAIN CONTROLLER	1
CBL10AA-041		• CABLE	1
CBL10AA-042		• CABLE	1
CBL10AA-043		• CABLE	1
CBL10AA-061		• CABLE	1
CBL10AA-062		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL10AA-063		• CABLE	1
CBL10AA-101		• CABLE	1
CBL10AA-102		• CABLE	1
CBL10AA-103		• CABLE	1
CBL10AA-121		• CABLE	1
CBL10AA-151		• CABLE	1
CBL10AA-161		• CABLE	1
CBL10AA-191		• CABLE	1
CBL10AA-201		• CABLE	1
CBL10AA-231		• CABLE	1
CBL10AA-241		• CABLE	1
CBL10AA-261		• CABLE	1
CBL10AA-281		• CABLE	1
CBL10AC-161		• CABLE	1
CBL10AC-162		• CABLE	1
CBL10AC-261		• CABLE	1
CBL10AC-262		• CABLE	1
CBL10AC-401		• CABLE	1
CBL10AE-301		• CABLE	1
CBL10AF-111		• CABLE	1
CBL10AF-411		• CABLE	1
CBL10AF-441		• CABLE	1
CBL10CA-261		• CABLE	1
CBL10CA-431		• CABLE	1
CBL10CC-181		• CABLE	1
CBL10CC-221		• CABLE	1
CBL10CC-291		• CABLE	1
CBL10CC-341		• CABLE	1
CBL10CE-083		• CABLE	1
CBL10CG-031		• CABLE	1
CBL10CH-331		• CABLE	1
CBL10H-031		• CABLE	1
CBL10H-131		• CABLE	1
CBL10H-211		• CABLE	1
CBL10H-212		• CABLE	1
CBL10H-213		• CABLE	1
CBL10H-214		• CABLE	1
CBL10H-215		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL10H-261		• CABLE	1
CBL10H-262		• CABLE	1
CBL10H-391		• CABLE	1
CBL12A-311		• CABLE	1
CBL12A-341		• CABLE	1
CBL12CA-061		• CABLE	1
CBL12CC-211		• CABLE	1
CBL12CC-311		• CABLE	1
CBL12D-021		• CABLE	1
CBL12D-081		• CABLE	1
CBL12D-381		• CABLE	1
CBL12D-401		• CABLE	1
CBL12D-421		• CABLE	1
CBL12D-441		• CABLE	1
CBL12DA-021		• CABLE	1
CBL12DC-021		• CABLE	1
CBL12DE-061		• CABLE	1
CBL12DE-091		• CABLE	1
CBL12EA-141		• CABLE	1
CBL12EA-171		• CABLE	1
CBL12EA-341		• CABLE	1
CBL12EC-051		• CABLE	1
CBL12EC-071		• CABLE	1
CBL12EC-391		• CABLE	1
CBL13A-381		• CABLE	1
CBL13A-382		• CABLE	1
CBL13AC-171		• CABLE	1
CBL13C-101		• CABLE	1
CBL13C-102		• CABLE	1
CBL13C-121		• CABLE	1
CBL13EA-341		• CABLE	1
CBL13EA-361		• CABLE	1
CBL13EC-081		• CABLE	1
CBL13EC-082		• CABLE	1
CBL13EC-083		• CABLE	1
CBL13EC-241		• CABLE	1
CBL13EC-242		• CABLE	1
CBL13EC-243		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL13EC-311		• CABLE	1
CBL13EC-312		• CABLE	1
CBL13EC-321		• CABLE	1
CBL13EC-401		• CABLE	1
CBL13EC-402		• CABLE	1
CBL15AA-191		• CABLE	1
CBL15AE-031		• CABLE	1
CBL15AE-121		• CABLE	1
CBL15AE-122		• CABLE	1
CBL15AE-123		• CABLE	1
CBL15AE-281		• CABLE	1
CBL15AE-282		• CABLE	1
CBL15AE-283		• CABLE	1
CBL15AE-371		• CABLE	1
CBL15AE-372		• CABLE	1
CBL15AE-373		• CABLE	1
CBL15AEA-021		• CABLE	1
CBL15AEA-022		• CABLE	1
CBL15AEA-041		• CABLE	1
CBL15AF-031		• CABLE	1
CBL15AF-061		• CABLE	1
		• CABLE	1
CBL15AF-121		• CABLE	1
CBL15AF-122		• CABLE	1
CBL15AF-123		• CABLE	1
CBL15AF-261		• CABLE	1
CBL15AF-262		• CABLE	1
CBL15AF-263		• CABLE	1
CBL15AF-351		• CABLE	1
CBL15AF-352		• CABLE	1
CBL15AF-371		• CABLE	1
CBL15AG-031		• CABLE	1
CBL15AG-032		• CABLE	1
CBL15AG-121		• CABLE	1
CBL15AG-122		• CABLE	1
CBL15CA-041		• CABLE	1
CBL15CC-041		• CABLE	1
CBL15CC-081		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL15CE-041		• CABLE	1
CBL15CE-371		• CABLE	1
CBL15CF-041		• CABLE	1
CBL15CF-321		• CABLE	1
CBL15CF-322		• CABLE	1
CBL15CH-041		• CABLE	1
CBL15CK-041		• CABLE	1
CBL15CM-041		• CABLE	1
CBL15CR-041		• CABLE	1
CBL15CR-241		• CABLE	1
CBL15CR-321		• CABLE	1
CBL15CR-322		• CABLE	1
CBL16A-141		• CABLE	1
CBL16A-142		• CABLE	1
CBL16A-191		• CABLE	1
CBL16A-192		• CABLE	1
CBL16A-241		• CABLE	1
CBL16A-291		• CABLE	1
CBL16A-292		• CABLE	1
CBL16A-341		• CABLE	1
CBL16A-342		• CABLE	1
CBL18A-011		• CABLE	1
CBL18A-111		• CABLE	1
CBL18A-261		• CABLE	1
CBL18CA-051		• CABLE	1
CBL18CA-091		• CABLE	1
CBL18CA-092		• CABLE	1
CBL18CA-092-1		• CABLE	1
CBL18CA-093		• CABLE	1
CBL18CA-161		• CABLE	1
CBL18CA-162		• CABLE	1
CBL18CA-163		• CABLE	1
CBL18CA-211		• CABLE	1
CBL18CA-212		• CABLE	1
CBL18CA-213		• CABLE	1
CBL18CA-321		• CABLE	1
CBL18CC-051		• CABLE	1
CBL18CC-091		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL18CC-161		• CABLE	1
CBL18CC-211		• CABLE	1
CBL18CC-321		• CABLE	1
CBL18CE-052		• CABLE	1
CBL18CE-321		• CABLE	1
CBL18CF-051		• CABLE	1
CBL18CF-091		• CABLE	1
CBL18CF-161		• CABLE	1
CBL18CF-211		• CABLE	1
CBL18CF-321		• CABLE	1
CBL18CG-051		• CABLE	1
CBL18CG-052		• CABLE	1
CBL18CG-053		• CABLE	1
CBL18CG-161		• CABLE	1
CBL18CG-321		• CABLE	1
CBL19A-011		• CABLE	1
CBL19AC-251		• CABLE	1
CBL21AA-151		• CABLE	1
CBL21AA-221		• CABLE	1
CBL21AA-341		• CABLE	1
CBL21AA-371		• CABLE	1
CBL21AA-391		• CABLE	1
CBL21AC-071		• CABLE	1
CBL21AC-181		• CABLE	1
CBL21AC-182		• CABLE	1
CBL21AC-201		• CABLE	1
CBL21AC-202		• CABLE	1
CBL21AC-251		• CABLE	1
CBL21AC-391		• CABLE	1
CBL22AA-131		• CABLE	1
CBL22AA-131-1		• CABLE	1
CBL22AA-131-2		• CABLE	1
CBL22AA-131-3		• CABLE	1
CBL22AA-131-4		• CABLE	1
CBL22AA-131-5		• CABLE	1
CBL22AA-201-1		• CABLE	1
CBL22AA-201-2		• CABLE	1
CBL22AA-201-3		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL22AA-201-4		• CABLE	1
CBL22AA-201-5		• CABLE	1
CBL22AA-201-6		• CABLE	1
CBL22AA-201-7		• CABLE	1
CBL22AA-201-8		• CABLE	1
CBL30A-031		• CABLE	1
CBL30A-411		• CABLE	1
CBL30CC-031		• CABLE	1
CBL30CC-032		• CABLE	1
CBL30CC-091		• CABLE	1
CBL30CC-092		• CABLE	1
CBL30CC-151		• CABLE	1
CBL30CE-031		• CABLE	1
CBL30CE-032		• CABLE	1
CBL30CE-091		• CABLE	1
CBL30CE-092		• CABLE	1
CBL30CE-151		• CABLE	1
CBL30CE-211		• CABLE	1
CBL30CF-021		• CABLE	1
CBL30CF-031		• CABLE	1
CBL30CF-091		• CABLE	1
CBL30CF-151		• CABLE	1
CBL30EA-031		• CABLE	1
CBL30EA-111		• CABLE	1
CBL30EA-271		• CABLE	1
CBL30EA-351		• CABLE	1
CBL30EA-352		• CABLE	1
CBL30EA-431		• CABLE	1
CBL30EC-021		• CABLE	1
CBL30EC-041		• CABLE	1
CBL30EC-101		• CABLE	1
CBL30EC-121		• CABLE	1
CBL30EC-181		• CABLE	1
CBL30EC-211		• CABLE	1
CBL30EC-291		• CABLE	1
CBL30EC-311		• CABLE	1
CBL30EC-381		• CABLE	1
CBL30EC-431		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL30F-031		• CABLE	1
CBL30GA-061		• CABLE	1
CBL30GA-062		• CABLE	1
CBL30GA-141		• CABLE	1
CBL30GA-142		• CABLE	1
CBL30GA-221		• CABLE	1
CBL30GA-222		• CABLE	1
CBL30GA-301		• CABLE	1
CBL30GA-302		• CABLE	1
CBL30GA-351		• CABLE	1
CBL30GA-352		• CABLE	1
CBL30GA-431		• CABLE	1
CBL30GA-451		• CABLE	1
CBL30GC-261		• CABLE	1
CBL30GC-351		• CABLE	1
CBL30GC-352		• CABLE	1
CBL30GC-431		• CABLE	1
CBL30GC-451		• CABLE	1
CBL30GF-141		• CABLE	1
CBL30HA-021		• CABLE	1
CBL30HA-031		• CABLE	1
CBL30HA-071		• CABLE	1
CBL30HA-101		• CABLE	1
CBL30HA-151		• CABLE	1
CBL30HA-181		• CABLE	1
CBL30HA-191		• CABLE	1
CBL30HA-231		• CABLE	1
CBL30HA-261		• CABLE	1
CBL30HA-431		• CABLE	1
CBL30HB-061		• CABLE	1
CBL30HB-062		• CABLE	1
CBL30HB-111		• CABLE	1
CBL30HB-131		• CABLE	1
CBL30HB-221		• CABLE	1
CBL30HB-222		• CABLE	1
CBL30HB-301		• CABLE	1
CBL30HB-351		• CABLE	1
CBL30HB-352		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL30HB-431		• CABLE	1
CBL30K-031		• CABLE	1
CBL30K-141		• CABLE	1
CBL30MA-021		• CABLE	1
CBL30MA-041		• CABLE	1
CBL30MA-061		• CABLE	1
CBL30MA-101		• CABLE	1
CBL30MA-141		• CABLE	1
CBL30MA-181		• CABLE	1
CBL30MA-201		• CABLE	1
CBL30MA-261		• CABLE	1
CBL30MA-431		• CABLE	1
CBL30MC-041		• CABLE	1
CBL30MC-111		• CABLE	1
CBL30MC-151		• CABLE	1
CBL30MC-181		• CABLE	1
CBL30MC-191		• CABLE	1
CBL30MC-231		• CABLE	1
CBL30MC-261		• CABLE	1
CBL30MC-312		• CABLE	1
CBL30MC-431		• CABLE	1
CBL30R-051		• CABLE	1
CBL30R-101		• CABLE	1
CBL30R-151		• CABLE	1
CBL35A-021		• CABLE	1
CBL35A-022		• CABLE	1
CBL35A-091		• CABLE	1
CBL35A-092		• CABLE	1
CBL35A-161		• CABLE	1
CBL35A-162		• CABLE	1
CBL35A-201		• CABLE	1
CBL35A-341		• CABLE	1
CBL35A-342		• CABLE	1
CBL35A-381		• CABLE	1
CBL35A-411		• CABLE	1
CBL35A-431		• CABLE	1
CBL35E-041		• CABLE	1
CBL35E-061		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL35E-271		• CABLE	1
CBL35E-291		• CABLE	1
CBL35E-351		• CABLE	1
CBL35K-021		• CABLE	1
CBL35K-022		• CABLE	1
CBL35K-091		• CABLE	1
CBL35K-092		• CABLE	1
CBL35K-161		• CABLE	1
CBL35K-231		• CABLE	1
CBL35K-431		• CABLE	1
CBL35T-021		• CABLE	1
CBL35T-022		• CABLE	1
CBL35T-091		• CABLE	1
CBL35T-092		• CABLE	1
CBL35T-311		• CABLE	1
CBL35T-312		• CABLE	1
CBL35T-381		• CABLE	1
CBL35T-382		• CABLE	1
CBL35T-431		• CABLE	1
CBL400A-371		• CABLE	1
CBL400A-381		• CABLE	1
CBL400A-401		• CABLE	1
CBL400A-421		• CABLE	1
CBL400A-431		• CABLE	1
CBL400A-451		• CABLE	1
CBL400C-261		• CABLE	1
CBL400E-061		• CABLE	1
CBL400E-101		• CABLE	1
CBL400E-161		• CABLE	1
CBL400E-191		• CABLE	1
CBL400E-192		• CABLE	1
CBL400F-031		• CABLE	1
CBL400F-101		• CABLE	1
CBL400F-161		• CABLE	1
CBL400F-231		• CABLE	1
CBL400F-291		• CABLE	1
CBL400F-411		• CABLE	1
CBL400G-041		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL400G-251		• CABLE	1
CBL402A-031		• CABLE	1
CBL402A-111		• CABLE	1
CBL402A-411		• CABLE	1
CBL402C-041		• CABLE	1
CBL404A-031		• CABLE	1
CBL404C-161		• CABLE	1
CBL404C-181		• CABLE	1
CBL404C-221		• CABLE	1
CBL404E-061		• CABLE	1
CBL404E-111		• CABLE	1
CBL404E-112		• CABLE	1
CBL404E-151		• CABLE	1
CBL404E-241		• CABLE	1
CBL406C-011		• CABLE	1
CBL406C-111		• CABLE	1
CBL406C-131		• CABLE	1
CBL406C-181		• CABLE	1
CBL406C-231		• CABLE	1
CBL406C-261		• CABLE	1
CBL406C-281		• CABLE	1
CBL406C-341		• CABLE	1
CBL406E-071		• CABLE	1
CBL406E-121		• CABLE	1
CBL406E-131		• CABLE	1
CBL406E-161		• CABLE	1
CBL406E-191		• CABLE	1
CBL406E-221		• CABLE	1
CBL406E-251		• CABLE	1
CBL406E-281		• CABLE	1
CBL407EA-041		• CABLE	1
CBL407EC-041		• CABLE	1
CBL407EE-041		• CABLE	1
CBL407EE-042		• CABLE	1
CBL407EE-061		• CABLE	1
CBL407EE-211		• CABLE	1
CBL407EF-041		• CABLE	1
CBL407EF-061		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL407EF-081		• CABLE	1
CBL407EF-121		• CABLE	1
CBL407EF-201		• CABLE	1
CBL407EF-202		• CABLE	1
CBL407EF-241		• CABLE	1
CBL407EF-281		• CABLE	1
CBL407EF-321		• CABLE	1
CBL407EF-322		• CABLE	1
CBL409A-031		• CABLE	1
CBL409A-081		• CABLE	1
CBL409A-141		• CABLE	1
CBL409A-171		• CABLE	1
CBL409A-331		• CABLE	1
CBL409A-391		• CABLE	1
CBL409A-392		• CABLE	1
CBL40A-101		• CABLE	1
CBL40A-221		• CABLE	1
CBL40A-291		• CABLE	1
CBL40A-301		• CABLE	1
CBL410A-061		• CABLE	1
CBL410A-062		• CABLE	1
CBL410A-091		• CABLE	1
CBL410A-092		• CABLE	1
CBL410A-161		• CABLE	1
CBL410A-162		• CABLE	1
CBL75A-061		• CABLE	1
CBL75A-101		• CABLE	1
CBL75A-121		• CABLE	1
CBL75A-181		• CABLE	1
CBL75A-261		• CABLE	1
CBL75A-291		• CABLE	1
CBL75A-351		• CABLE	1
CBL75A-352		• CABLE	1
CBL75A-431		• CABLE	1
CBL75A-432		• CABLE	1
CBL75A-451		• CABLE	1
CBL75C-021		• CABLE	1
CBL75C-101		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL75C-181		• CABLE	1
CBL75C-261		• CABLE	1
CBL75C-351		• CABLE	1
CBL75C-431		• CABLE	1
CBL75E-061		• CABLE	1
CBL75E-251		• CABLE	1
CBL75E-361		• CABLE	1
CBL75E-411		• CABLE	1
CBL76AA-031		• CABLE	1
CBL76AA-051		• CABLE	1
CBL76AA-111		• CABLE	1
CBL76AA-131		• CABLE	1
CBL76AA-201		• CABLE	1
CBL76AA-202		• CABLE	1
CBL76AA-291		• CABLE	1
CBL76AA-292		• CABLE	1
CBL76AA-361		• CABLE	1
CBL76AA-421		• CABLE	1
CBL76AC-051		• CABLE	1
CBL76AC-131		• CABLE	1
CBL76AC-361		• CABLE	1
CBL76AC-362		• CABLE	1
CBL76AC-401		• CABLE	1
CBL76AC-421		• CABLE	1
CBL76AC-422		• CABLE	1
CBL76AC-423		• CABLE	1
CBL76AC-424		• CABLE	1
CBL76AE-041		• CABLE	1
CBL76AE-101		• CABLE	1
CBL76AE-411		• CABLE	1
CBL76CA-031		• CABLE	1
CBL76CA-051		• CABLE	1
CBL76CA-111		• CABLE	1
CBL76CA-131		• CABLE	1
CBL76CA-201		• CABLE	1
CBL76CA-202		• CABLE	1
CBL76CA-281		• CABLE	1
CBL76CA-282		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL76CA-351		• CABLE	1
CBL76CC-021		• CABLE	1
CBL76CC-061		• CABLE	1
CBL76CC-062		• CABLE	1
CBL76CC-063		• CABLE	1
CBL76CC-101		• CABLE	1
CBL76CC-102		• CABLE	1
CBL76CC-181		• CABLE	1
CBL76CC-201		• CABLE	1
CBL76CC-221		• CABLE	1
CBL76CC-222		• CABLE	1
CBL76CC-261		• CABLE	1
CBL76CC-291		• CABLE	1
CBL76CC-301		• CABLE	1
CBL76CC-351		• CABLE	1
CBL76CC-352		• CABLE	1
CBL76CC-401		• CABLE	1
CBL76CE-081		• CABLE	1
CBL76CE-251		• CABLE	1
CBL76CE-291		• CABLE	1
CBL76CE-311		• CABLE	1
CBL76CE-321		• CABLE	1
CBL76CE-381		• CABLE	1
CBL76CE-401		• CABLE	1
CBL76CF-111		• CABLE	1
CBL76CF-151		• CABLE	1
CBL76CF-181		• CABLE	1
CBL76CF-411		• CABLE	1
CBL76CF-431		• CABLE	1
CBL76CF-451		• CABLE	1
CBL76CF-452		• CABLE	1
CBL77AA-101		• CABLE	1
CBL77AA-141		• CABLE	1
CBL77AA-181		• CABLE	1
CBL77AA-221		• CABLE	1
CBL77AA-261		• CABLE	1
CBL77AA-291		• CABLE	1
CBL77AA-301		• CABLE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CBL77AA-351		• CABLE	1
CBL77AA-352		• CABLE	1
CBL77AA-381		• CABLE	1
CBL77AA-401		• CABLE	1
CBL77AA-402		• CABLE	1
CBL77AA-441		• CABLE	1
CBL77AA-442		• CABLE	1
CBL77AA-443		• CABLE	1
CBL77AC-042		• CABLE	1
CBL77AC-111		• CABLE	1
CBL77AC-112		• CABLE	1
CBL78A-101		• CABLE	1
CBL78A-221		• CABLE	1
CBL78A-291		• CABLE	1
CBL78A-301		• CABLE	1
CBL78A-351		• CABLE	1
CBL78A-352		• CABLE	1
CBL78A-401		• CABLE	1
CBL78C-051		• CABLE	1
CBL78C-131		• CABLE	1
CBL78C-211		• CABLE	1
CBL78E-081		• CABLE	1
CBL78E-082		• CABLE	1
CBL78E-111		• CABLE	1
CBL78E-112		• CABLE	1
CBL78E-351		• CABLE	1
CBL78E-381		• CABLE	1
CBL78E-382		• CABLE	1
CBL78E-411		• CABLE	1
CBL78E-451		• CABLE	1
CC1_P24SF		• PREVAIL 24VDC SUPPLY FUSE	1
CC1_PR		• PREVAIL ROUTER	1
CC2_P24SF		• PREVAIL 24VDC SUPPLY FUSE	1
CC3_P24SF		• PREVAIL 24VDC SUPPLY FUSE	1
CNV_CHMS		• SPARE FREQ/ANALOG CONVERTER	1
COMP_HMI		• HMI COMPUTER	1
COMP_PRE		• PREVAIL COMPUTER	1
CON_AS		• AUXILIARIES START CONTACTOR	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CON_CWH1		• COLD WEATHER HEATER #1 CONTACTOR	1
CON_CWH2		• COLD WEATHER HEATER #2 CONTACTOR	1
CON_FPO		• FUEL PUMP OUTPUT CONTACTOR	1
CON_MCC		• MASTER CONTROL CONTACTOR	1
CON_MCP1		• MAIN CONTACTOR POSTIVE #1	1
CON_MCP2		• MAIN CONTACTOR POSTIVE #2	1
CR_AHEC		• COOLANT PUMP ENABLE	1
CR_APUI		• APU IDLE RELAY	1
CR_AS		• AUXILIARIES START RELAY	1
CR_CCF1		• CEILING CONDENSER FAN #1 RELAY	1
CR_CCF2		• CEILING CONDENSER FAN #2 RELAY	1
CR_CCH		• CEILING CONDENSER HIGH RELAY	1
CR_CCHS		• CEILING CONDENSER HYD SOLENOID VALVE RELAY	1
CR_CCL		• CEILING CONDENSER LOW RELAY	1
CR_CCM		• CEILING CONDENSER MEDIUM RELAY	1
CR_CFD		• COOLANT FLOW DISABLE RELAY	1
CR_CFE		• COOLANT FLOW ENABLE RELAY	1
CR_CHCP		• CAB HEATER COOLANT PUMP RELAY	1
CR_CHE		• CAB HEATER ENABLE SOLENOID RELAY	1
CR_CPS		• CUTTING PILE SPRAYER PUMP RELAY	1
CR_CWC		• COLD WEATHER CLUTCH	1
CR_DCL		• DUST CURTAIN LOWER RELAY	1
CR_DCR		• DUST CURTAIN RAISE RELAY	1
CR_DL		• DOSING LEFT RELAY	1
CR_DR		• DOSING RIGHT RELAY	1
CR_ENGS		• ENGINE START RELAY	1
CR_EPMS		• ENGINE PRELUBE MAG SWITCH	1
CR_ESR		• ENGINE STOP RELAY	1
CR_ESTOP		• EMERGENCY STOP RELAY	1
CR_FCF1		• FLOOR CONDENSER FAN #1 RELAY	1
CR_FCF2		• FLOOR CONDENSER FAN #2 RELAY	1
CR_FCH		• FLOOR CONDENSER HIGH RELAY	1
CR_FCHS		• FLOOR CONDENSER HYD SOLENOID VALVE RELAY	1
CR_FCL		• FLOOR CONDENSER LOW RELAY	1
CR_FCM		• FLOOR CONDENSER MEDIUM RELAY	1
CR_HTHC		• HYDRAULIC TANK HEAT CIRCULATION PUMP ENABLE	1
CR_KSIGN		• KEY SWITCH IGNITION CONTROL RELAY	1
CR_KSSRRT		• KEY SWITCH ENGINE START CONTROL RELAY	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
CR_LBP		• LUBE BIT PUMP RELAY	1
CR_LHL		• LINE HEATER LEFT RELAY	1
CR_LHR		• LINE HEATER RIGHT RELAY	1
CR_LMP		• AUTO LUBE PUMP RELAY	1
CR_LOP		• LUBE OG PUMP RELAY	1
CR_MC		• MASTER CONTROL RELAY	1
CR_MCP1		• MAIN CONTACTOR POSITIVE CONTROL RELAY #1	1
CR_MCP2		• MAIN CONTACTOR POSITIVE CONTROL RELAY #2	1
CR_MESR1		• MACHINE E-STOP RELAY CONTROL RELAY #1	1
CR_MESR2		• MACHINE E-STOP RELAY CONTROL RELAY #2	1
CR_MPWL		• MAST PLATFORM WORK LIGHTS CONTROL RELAY	1
CR_P		• PRELUBE RELAY	1
CR_PH		• PROPEL HORN RELAY	1
CR_PMS		• PROPEL MODE SELECT RELAY	1
CR_RES1		• REMOTE E-STOP #1 RELAY	1
CR_RES2		• REMOTE E-STOP #2 RELAY	1
CR_RMS		• MOTION STOP RELAY	1
CR_RST		• E-STOP RESET CONTROL RELAY	1
CR_S1		• STARTER #1 START RELAY	1
CR_S2		• STARTER #2 START RELAY	1
CR_SPARE1		• SPARE #1 RELAY	1
CR_SPARE2		• SPARE #2 RELAY	1
CR_WICW1		• WATER INJECTION COLD WEATHER RELAY 1	1
CR_WICW2		• WATER INJECTION COLD WEATHER RELAY 2	1
CR_WLC1		• WORK LIGHT CONTROL #1 RELAY	1
CS_CRG10C		• CARRIAGE ROTARY GEARCASE 1 OIL CONTAMINATION SENSOR	1
CTL_R		• OPERATOR'S CAB RADIO	1
CV_12C		• 24 VOLT DC TO 12 VOLT DC CONVERTER	1
CWP_12C		• DC TO DC CONVERTER 24V TO 12V	1
DB_LJRR1		• LEVELING JACK RIGHT REAR DISTRIBUTION BLOCK 1	1
DB_MAST		• MAST DISTRIBUTION BLOCK	1
DB_CC1		• CARRIAGE CAN DISTRIBUTION BLOCK 1	1
DB_CC2		• CARRIAGE CAN DISTRIBUTION BLOCK 2	1
DB_CCC		• CAB CONTROL CAN DISTRIBUTION BLOCK	1
DB_CCCD		• CAB CHAIR CAN DISTRIBUTION BLOCK	1
DB_LJF1		• LEVELING JACK FRONT DISTRIBUTION BLOCK 1	1
DB_LJF2		• LEVELING JACK FRONT DISTRIBUTION BLOCK 2	1
DB_LJLR		• LEVELING JACK LEFT REAR DISTRIBUTION BLOCK	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
DB_LJRR2		• LEVELING JACK RIGHT REAR DISTRIBUTION BLOCK 2	1
DB_MN		• DISTRIBUTION BLOCK MAIN NEGATIVE	1
DB_MP		• DISTRIBUTION BLOCK MAIN POSITIVE	1
DC_CTRL		• DECK CRANE CONTROL	1
DC_P		• DECK CRANE POWER PACK	1
DS_APUDS		• APU DISCONNECT SWITCH	1
DS_BDS		• BATTERY DISCONNECT SWITCH	1
DS_SDS		• STARTER DISCONNECT SWITCH OFF ON	1
DV_BBTC		• BATTERY BOX TEMPERATURE CONTROL	1
DV_CCTC		• CONTROL CABINET TEMPERATURE CONTROL	1
EN_BCI		• BIT CAROUSEL INDEX ENCODER	1
EN_CR		• CARRIAGE ROTARY ENCODER	1
EN_CT		• CARRIAGE TRAVEL ENCODER	1
EN_PC		• PIPE CAROUSEL ENCODER	1
ES_CC		• CONTROL CABINET ETHERNET SWITCH	1
ES_OC		• OPERATOR CAB ETHERNET SWITCH	1
ES_PRE		• PREVAIL ETHERNET SWITCH	1
FU_12VP		• 12VDC POWER FUSE	1
FU_24S		• 24VDC SPARE FUSE	1
FU_ABH		• APU BATTERY HEATER FUSE #1	1
FU_ACC		• 12VDC ACCESSORY RECEPTACLE FUSE	1
FU_ACCF		• AIR CONDITIONER CONTROL FUSE	1
FU_AE		• AUXILIARY EQUIPMENT FUSE	1
FU_AES1		• BOARDING STAIR SUPPLY FUSE	1
FU_AES2		• AUXILIARY EQUIPMENT SUPPLY # 2 FUSE	1
FU_AHEC		• COOLANT PUMP FUSE	1
FU_AHECP		• APU HEAT CIRC PUMP POWER FUSE	1
FU_ALIOB		• AUTO LEVEL I/O BUS FUSE	1
FU_APUB		• APU INLINE BATTERY FUSE #1	1
FU_BBEC		• MACHINE E-STOP FUSE	1
FU_BH		• BATTERY HEATERS FUSE	1
FU_BLF1		• BIT LIGHTS #1 FUSE	1
FU_BLF2		• BIT LIGHTS #2 FUSE	1
FU_BP1		• BATTERY PAD HEATER FUSE #1	1
FU_BP2		• BATTERY PAD HEATER FUSE #1	1
FU_BP3		• BATTERY PAD HEATER FUSE #1	1
FU_CAIV		• COMPRESSOR AIR INLET VALVE FUSE	1
FU_CAR1		• COMPRESSOR AIR RESERVOIR HEATER #1 FUSE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
FU_CAR2		• COMPRESSOR AIR RESERVOIR HEATER #2 FUSE	1
FU_CAR3		• COMPRESSOR AIR RESERVOIR HEATER #3 FUSE	1
FU_CB		• CEILING BLOWER FUSE	1
FU_CBCS		• CAN BUS CHASSIS COMM SUPPLY FUSE	1
FU_CBJS		• CAN BUS JACK COMM SUPPLY FUSE	1
FU_CBMS		• CAN BUS MAST COMM SUPPLY FUSE	1
FU_CBOS		• CAN BUS CAB COMM SUPPLY FUSE	1
FU_CBRCC		• CAN BUS REAR CARRIAGE COMM SUPPLY FUSE	1
FU_CBRCS		• CAN BUS REAR CHASSIS COMM SUPPLY FUSE	1
FU_CBRS		• CAN BUS RADAR COMM SUPPLY FUSE	1
FU_CCF1		• CEILING CONDENSER FAN #1 FUSE	1
FU_CCF2		• CEILING CONDENSER FAN #2 FUSE	1
FU_CCGC		• CONTROL CABINET GENERAL CONTROL FUSE	1
FU_CCH		• CEILING COMPRESSOR HYDRAULIC VALVE FUSE	1
FU_CCIOM		• CONTROL CABINET I/O MODULE FUSE	1
FU_CCLTH		• CONTROL CABINET LOW TEMPERATURE HEATER FUSE	1
FU_CCX210		• CONTROL CABINET I/O MODULE X21 OUTPUT FUSE	1
FU_CECS1		• CUMMINS ENGINE CONTROL SUPPLY #1 FUSE	1
FU_CECS2		• CUMMINS ENGINE CONTROL SUPPLY #2 FUSE	1
FU_CECS3		• CUMMINS ENGINE CONTROL SUPPLY #3 FUSE	1
FU_CECS4		• CUMMINS ENGINE CONTROL SUPPLY #4 FUSE	1
FU_CHCI		• CAB HEATER COOLANT PUMP IGN FUSE	1
FU_CHCP		• CAB HEATER COOLANT PUMP FUSE	1
FU_CIOB1		• CHASSIS I/O BUS FUSE #1	1
FU_CIOB2		• CHASSIS I/O BUS POWER #2 FUSE	1
FU_CMV		• MINE RADIO POWER FUSE	1
FU_CP		• CONTROL PANEL FUSE	1
FU_CPOM		• CAB POWER OUTPUT MODULE FUSE	1
FU_CPS		• CONTROL PANEL SUPPLY FUSE	1
FU_CTCC		• COMPRESSOR TORQUE CONVERTER CONTROL FUSE	1
FU_CUPS		• CAB UPS SUPPLY FUSE	1
FU_CV		• COOLANT VALVE FUSE	1
FU_CWC		• COLD WEATHER FUSE	1
FU_CWH1		• COLD WEATHER HEATER FUSE #1	1
FU_CWH2		• COLD WEATHER HEATER FUSE #2	1
FU_CWP		• COLD WEATHER PUMPS FUSE	1
FU_DAP1		• DRILL AUTOMATION POWER FUSE #1	1
FU_DAP2		• DRILL AUTOMATION POWER FUSE #2	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
FU_DC		• DECK CRANE UNIT FUSE	1
FU_DCC		• DECK CRANE CONTROL FUSE #1	1
		• DC CONVERTER FUSE	1
FU_DCRL		• DUST CURTAIN RAISE/LOWER FUSE	1
FU_DL		• DOSING LEFT FUSE	1
FU_DR		• DOSING RIGHT FUSE	1
FU_EC		• ENGINE CONTROL FUSE	1
FU_EOP1		• ENGINE OIL PAN HEATER #1 FUSE	1
FU_ES		• ETHERNET/ HMI COMPUTER FUSE	1
FU_ESIG		• ENGINE SIGNAL FUSE	1
		• ENGINE SIGNAL FUSE	1
FU_EU		• ENGINE CONTROL UNIT FUSE	1
FU_FB		• FLOOR BLOWER FUSE	1
FU_FB1		• CONTROL CABINET LIGHTS FUSE	1
		• FIRE SUPPRESSION SUPPLY FUSE	1
FU_FCF1		• FLOOR CONDENSER FAN #1 FUSE	1
FU_FCF2		• FLOOR CONDENSER FAN #2 FUSE	1
FU_FCH		• FLOOR COMPRESSOR HYDRAULIC VALVE FUSE	1
FU_FFH		• FUEL FILTER HEATER FUSE	1
FU_FLF1		• FRONT LIGHTS #1 FUSE	1
FU_FLF2		• FRONT LIGHTS #2 FUSE	1
FU_FPDP		• FUEL PUMP DIAGNOSTIC PANEL FUSE	1
FU_FPL		• FRONT PROPEL LIGHTS FUSE	1
FU_GLF1		• GROUND LIGHTS #1 FUSE	1
FU_GLF2		• GROUND LIGHTS #2 FUSE	1
FU_GLF3		• GROUND LIGHTS #3 FUSE	1
FU_GLF4		• GROUND LIGHTS #4 FUSE	1
FU_GUI		• HMI DISPLAY FUSE	1
FU_HPACPRV		• HYDRAULIC PUMP AUXILIARY/COOLING PRESS RELIEF VALVE FUSE	1
FU_HPR		• PRESSURIZER POWER FUSE	1
FU_HTHC		• HYDRAULIC TANK HEAT CIRC. PUMP FUSE	1
FU_HTHCP		• HYDRAULIC TANK HEAT CIRC PUMP POWER FUSE	1
FU_HTT		• HEAT TRACE TAPE FUSE	1
FU_IOBP		• I/O BUS POWER FUSE	1
FU_IOX20		• I/O MODULE X20 OUTPUTS FUSE	1
FU_IOX21		• I/O MODULE X21 OUTPUTS FUSE	1
FU_KSS		• KEY SWITCH SUPPLY	1
FU_LBP		• LUBE BIT PUMP FUSE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
FU_LHL1		• LINE HEATER LEFT FUSE #1	1
FU_LHL2		• LINE HEATER LEFT FUSE #2	1
FU_LHL3		• LINE HEATER LEFT FUSE #3	1
FU_LHR1		• LINE HEATER RIGHT FUSE #1	1
FU_LHR2		• LINE HEATER RIGHT FUSE#2	1
FU_LHR3		• LINE HEATER RIGHT FUSE #3	1
FU_LMP		• LUBE MPG PUMP FUSE	1
FU_LOGP		• LUBE OG PUMP FUSE	1
FU_LPCS		• LUBE PUMP CONTROL SUPPLY FUSE	1
FU_LPS		• LUBE PUMP SUPPLY FUSE	1
FU_LS2		• LIGHTS SPARE #2 FUSE	1
FU_LS4		• LIGHTS SPARE 4	1
FU_MAIN		• MAIN FUSE	1
FU_MB		• MAST BEACON FUSE	1
FU_MCI0B1		• MAST / CARRIAGE I/O BUS FUSE	1
FU_MCI0B2		• MAST/CARRIAGE I/O BUS #2 FUSE	1
FU_ML		• MACHINE LIGHTING FUSE	1
FU_MPWL		• MAST PLATFORM WORK LIGHT FUSE	1
FU_MSWL1		• MAST SUPPORT WORK LIGHT FUSE #1	1
FU_MSWL2		• MAST SUPPORT WORK LIGHT FUSE #2	1
FU_O10F1		• OUTPUT 10 #1 FUSE	1
FU_O10F2		• OUTPUT 10 #2 FUSE	1
FU_O91		• OUTPUT 9 #1 FUSE	1
FU_O92		• OUTPUT 9 #2 FUSE	1
FU_OCP		• OPERATOR'S CAB POWER FUSE	1
FU_OCR		• OPERATOR CAB RADIO POWER FUSE	1
FU_P		• POWER FUSE	1
FU_PDT1		• PUMP DRIVE TRANSMISSION HEATER #1 FUSE	1
FU_PDT2		• PUMP DRIVE TRANSMISSION HEATER #2 FUSE	1
FU_PH		• PROPEL HORN FUSE	1
FU_PL		• CUMMINS ENGINE PRELUBE FUSE	1
FU_PLF		• PROPEL LIGHTS FUSE	1
FU_PW		• PRESSURE WASHER FUSE	1
FU_PWB		• PROPEL WARNING BEACON FUSE	1
FU_QFAS		• QUICK FILL AUTO STOP FUSE	1
FU_QFH		• QUICK FILL HOSE FUSE	1
FU_QFR		• QUICK FILL RECIEVER FUSE	1
FU_R		• REFRIGERATOR POWER FUSE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
FU_RCPL		• REAR CAB PROPEL LIGHTS FUSE	1
FU_RDBVI		• REAR DECK BIT VIEW LIGHT FUSE	1
FU_RPL		• REAR PROPEL LIGHTS FUSE	1
FU_RPR		• REMOTE PROPEL RECEIVER FUSE	1
FU_S1IOB		• Spare #1 I/O BUS FUSE	1
FU_S1US		• SPARE #1 UPS SUPPLY FUSE	1
FU_S2S1		• CUTTING PILE SPRAYER SUPPLY FUSE	1
FU_S3IOB		• SPARE #3 I/O BUS FUSE	1
FU_S4IOB		• SPARE #4 I/O BUS FUSE	1
FU_SP3W		• SPARE 3 WAY VALVE FUSE	1
FU_SPB1		• HAWKEYE MONITOR FUSE	1
FU_T4		• CUMMINS TIER 4 FUSE	1
FU_TCOR1		• TORQUE CONVERTER OIL RESERVOIR HEATER #1 FUSE	1
FU_TCOR2		• TORQUE CONVERTER OIL RESERVOIR HEATER #2 FUSE	1
FU_UPS		• CONTROL CABINET UPS FUSE	1
FU_UPSS3		• UPS SUPPLY SPARE #3 FUSE	1
FU_VES		• VIDEO EQUIPMENT SUPPLY	1
FU_WDH		• WIPER MOTOR (FRONT DOOR) HIGH SPEED FUSE	1
FU_WDL		• WIPER MOTOR (FRONT DOOR) LOW SPEED FUSE	1
FU_WFH		• WIPER MOTOR (FRONT) HIGH SPEED FUSE	1
FU_WFL		• WIPER MOTOR (FRONT) LOW SPEED FUSE	1
FU_WICWCR1		• WATER INJECTION COLD WEATHER FUSE #1	1
FU_WICWCR2		• WATER INJECTION COLD WEATHER FUSE #2	1
FU_WLCR1		• WORK LIGHT CONTROL RELAY 1 FUSE	1
FU_WLDH		• WIPER MOTOR (LEFT DOOR) HIGH SPEED FUSE	1
FU_WLDL		• WIPER MOTOR (LEFT DOOR) LOW SPEED FUSE	1
FU_WLH		• WIPER MOTOR (LEFT) HIGH SPEED FUSE	1
FU_WLL		• WIPER MOTOR (LEFT) LOW SPEED FUSE	1
FU_WLPR		• WORK LIGHT POWER FUSE	1
FU_WLPR1		• WORK LIGHT POWER 1 FUSE	1
FU_WLPR2		• WORK LIGHT POWER 2 FUSE	1
FU_WRH		• WIPER MOTOR (REAR) HIGH SPEED FUSE	1
FU_WRL		• WIPER MOTOR (REAR) LOW SPEED FUSE	1
FU10AA-191		• APU INLINE ALT FUSE #1	1
FU10AA-201		• APU INLINE ALT FUSE #2	1
FU10AA-261		• CUMMINS INLINE ALT FUSE #1	1
		• TIER 4 ALT FUSE CABLE	1
FU10AA-281		• CUMMINS INLINE ALT FUSE #2	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
GR_BCGB		• BATTERY CABINET GROUND BUS	1
GR_C		• CHASSIS GROUND CONNECTION	1
		• CHASSIS GROUND CONNECTION	1
		• CHASSIS GROUND CONNECTION	1
GR_CCP1		• CONTROL CABINET PANEL #1 GROUND BUS	1
GR_CCP2		• CONTROL CABINET PANEL #2 GROUND BUS	1
GR_CJB		• COMPRESSOR J-BOX ENCL. GRD	1
GR_CP		• CAB PANEL GROUND BUS	1
GR_CWP		• COLD WEATHER PANEL GROUND	1
GR_LPCE		• LUBE PUMP CONTROL ENCL. GRD	1
GR_LPCED		• LUBE PUMP CONTROL ENCL. DOOR GRD	1
GR_LRB		• LEFT REAR BOARDING PB ENCL. GRD	1
GR_PS		• POWER SKID GROUND CONNECTION	1
GR_RFBPE		• RIGHT FRONT BOARDING PB ENCL. GRD	1
GR_RRB		• RIGHT REAR BOARDING PB ENCL. GRD	1
GR_T4		• TIER 4 PANEL GROUND	1
HMI		• HMI DISPLAY	1
HTR_BBHC		• BATTERY BOX HEATER/COOLER	1
HTR_CCHC1		• CONTROL CABINET HEATER/COOLER DOOR	1
HTR_CCHC2		• CONTROL CABINET HEATER/COOLER SIDE	1
HTR_FFH		• FUEL FILTER HEATER	1
HTR_QFAS		• QUICK FILL AUTO STOP HEATER	1
HTR_QFH		• QUICK FILL HOSE HEATER	1
HTR_QFR		• QUICK FILL RECIEVER HEATER	1
HTR_WIHP		• WATER INJECTION HEATER PAD	1
HTR_WIHTT		• WATER INJECTION HEAT TRACE TAPE	1
HVAC_CC		• CEILING CONDENSER	1
HVAC_CE		• CEILING EVAPORATOR	1
HVAC_FC		• FLOOR CONDENSER	1
HVAC_FE		• FLOOR EVAPORATOR	1
HVAC_HPR		• HVAC PRESSURIZER VALVE	1
I_BUTTON		• USER I.D. I-BUTTON	1
ID_KEY		• ID KEY	1
IN_LEV		• LEVELING INCLINOMETER	1
IN_MAFAI		• MAST A-FRAME ACCELEROMETER/ INCLINOMETER	1
IN_MIA		• MAST ACCELEROMETER/ INCLINOMETER	1
IO_AFIOM1		• A-FRAME I/O MODULE 1	1
IO_AFIOM2		• A-FRAME I/O MODULE 2	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
IO_C1		• CARRIAGE I/O MODULE #1	1
IO_C2		• CARRIAGE I/O MODULE #2	1
IO_CC		• COMPRESSOR COOLER I/O MODULE	1
IO_CCM		• CONTROL CABINET I/O MODULE	1
IO_CCM1S3		• CANBUS COMMUNICATION MODULE #1 SLOT #3	1
IO_CCM2S4		• CANBUS COMMUNICATION MODULE #2 SLOT #4	1
IO_CCM3S5		• CANBUS COMMUNICATION MODULE #3 SLOT #5	1
IO_CCM4S6		• CANBUS COMMUNICATION MODULE #4 SLOT #6	1
IO_CCM5S7		• CANBUS COMMUNICATION MODULE #5 SLOT #7	1
IO_CCMA		• CONTROL CABINET I/O MODULE A	1
IO_CLM		• CHASSIS LIGHTING I/O MODULE	1
IO_CPOM		• CAB POWER OUTPUT MODULE	1
IO_ENG		• ENGINE I/O MODULE	1
IO_FRONT		• FRONT I/O MODULE	1
IO_GT		• GREASE TANK I/O MODULE	1
IO_HD		• HYDRAULIC DIVERTER I/O MODULE	1
IO_HPS		• HYDRAULIC PUMP SENSOR I/O MODULE	1
IO_HPVS		• HYDRAULIC PUMP VALVE I/O MODULE	1
IO_HTM1		• HYDRAULIC TANK I/O MODULE #1	1
IO_HTM2		• HYDRAULIC TANK I/O MODULE #2	1
IO_MC		• CAB I/O MODULE	1
IO_MLLS1		• MAST LOWER LEFT SIDE I/O MODULE #1	1
IO_MLLS2		• MAST LOWER LEFT SIDE I/O MODULE #2	1
IO_MLRS1		• MAST LOWER RIGHT SIDE I/O MODULE #1	1
IO_MLRS2		• MAST LOWER RIGHT SIDE I/O MODULE #2	1
IO_MM		• MAST MIDDLE I/O MODULE	1
IO_PS		• POWER SKID I/O MODULE	1
IO_RD		• REAR DECK I/O MODULE	1
IO_REAR		• REAR I/O MODULE	1
IO_TRAN		• TRANSMISSION I/O MODULE	1
JS_LH		• CAB LEFT HAND JOYSTICK	1
JS_RH		• CAB RIGHT HAND JOYSTICK	1
KP_C1		• CAB OPERATOR CONSOLE KEYPAD 1	1
KP_C2		• CAB OPERATOR CONSOLE KEYPAD 2	1
KP_L1		• CAB RIGHT KEYPAD 2	1
KP_L2		• CAB LEFT KEYPAD 2	1
KP_R1		• CAB RIGHT KEYPAD 1	1
KP_R2		• CAB LEFT KEYPAD 1	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
LA_CAI		• COMPRESSOR AIR INLET VALVE	1
LG_CL1		• CAB LIGHT #1 (CEILING)	1
LG_CL2		• CAB LIGHT #2 (CEILING)	1
LG_LFF		• LEFT FRONT FLOOD LIGHT	1
LG_LFG		• LEFT FRONT GROUND LIGHT	1
LG_LFP		• LEFT FRONT PROPEL LIGHT ASFD	1
LG_LFW		• LEFT FRONT WORK LIGHT	1
LG_LRF		• LEFT REAR FLOOD LIGHT	1
LG_LRG		• LEFT REAR GROUND LIGHT	1
LG_LRP		• LEFT REAR PROPEL LIGHT	1
LG_MMCRW		• MAST MOUNTED CENTER REAR WORK LIGHT	1
LG_PWB		• PROPEL WARNING BEACON	1
LG_RCG		• REAR CENTER GROUND LIGHT	1
LG_RDBV1		• REAR DECK BIT VIEW LIGHT #1	1
LG_RFF		• RIGHT FRONT FLOOD LIGHT	1
LG_RFG		• RIGHT FRONT GROUND LIGHT	1
LG_RFP		• RIGHT FRONT PROPEL LIGHT	1
LG_RFW		• RIGHT FRONT WORK LIGHT	1
LG_RRCPP		• RIGHT REAR CAB PLATFORM PROPEL LIGHT	1
LG_RRDF		• RIGHT REAR DECK FLOOD LIGHT	1
LG_RRDM1		• RIGHT REAR DECK MAST LIGHT #1	1
LG_RRDM2		• RIGHT REAR DECK MAST LIGHT #2	1
LG_RRF		• RIGHT REAR FLOOD LIGHT	1
LG_RRG		• RIGHT REAR GROUND LIGHT	1
LG_RRJW		• RIGHT REAR JACK WORK LIGHT	1
LG_RRP		• RIGHT REAR PROPEL LIGHT	1
LG_UCB		• UNDER CAB BIT LIGHT	1
LS_BLLR		• BOARDING LADDER LR RETRACTED PROX SWITCH	1
LS_BLM		• BOARDING LADDER MAIN RETRACTED PROX SWITCH	1
LS_BLRF		• BOARDING LADDER RF RETRACTED PROX SWITCH	1
LS_HTRP1F		• HYDRAULIC TANK RETURN PORT 1 FILTER SWITCH	1
LS_HTRP2F		• HYDRAULIC TANK RETURN PORT 2 FILTER SWITCH	1
LS_HTSPMO		• HYDRAULIC TANK SUCTION PORT MAIN OPEN LIMIT SWITCH	1
LS_LBTLL		• LUBE BIT TANK LOW LEVEL SWITCH	1
LS_LMTLL		• AUTO LUBE TANK LOW	1
LS_LOGTLL		• LUBE OG TANK LOW LEVEL SWITCH	1
LS_TCORL		• TORQUE CONVERTER OIL RESERVOIR LOW LEVEL SWITCH	1
LS_WIF		• WATER IN FUEL SENSOR	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
LT_CCLT1		• CONTROL CABINET LIGHT #1	1
LT_CCLT2		• CONTROL CABINET LIGHT #2	1
LT_CPWR		• CONTROL POWER LIGHT	1
LT_DCWTL		• DUST CONTROL WATER TANK LEVEL XDCR	1
LT_EFTL		• ENGINE FUEL TANK LEVEL XDCR	1
LT_HTFL		• HYDRAULIC TANK FLUID LEVEL XDCR	1
LT_PWR		• MAIN BATTERY POWER LIGHT	1
LT_RMAC		• REMOTE MODE AVAILABLE (CAB)	1
LT_SP		• STARTER POWER LIGHT	1
M_DCA		• DUST CURTAIN ACTUATOR MOTOR	1
MS_APU		• APU STARTER	1
MS_CES1		• CUMMINS ENGINE STARTER #1	1
MS_CES2		• CUMMINS ENGINE STARTER #2	1
MTR_FDW		• FRONT DOOR WIPER MOTOR	1
MTR_FPT4		• FUEL PUMP MOTOR TIER 4	1
MTR_FW		• FRONT WIPER MOTOR	1
MTR_LDW		• LEFT DOOR WIPER MOTOR	1
MTR_LW		• LEFT WIPER MOTOR	1
MTR_PL		• PRELUBE MOTOR	1
MTR_RW		• REAR WIPER MOTOR	1
OS_COS		• OPERATORS SEAT	1
PB_ESBLLR		• LEFT REAR BOARDING EMERGENCY STOP PUSHBUTTON	1
PB_LMSC		• LOCAL MODE SELECT PUSHBUTTON (CAB)	1
PB_MBES		• MAIN BOARDING EMERGENCY STOP PUSHBUTTON	1
PB_MECC		• EMERGENCY STOP MAIN ELEC CABINET PUSHBUTTON	1
PB_MEOC		• MACHINE E-STOP OPERATOR CAB	1
PB_RFBES		• RIGHT FRONT BOARDING EMERGENCY STOP PUSHBUTTON	1
PB_RMSC		• REMOTE MODE SELECT PUSHBUTTON (CAB)	1
PB_SR		• SYSTEM RESET PUSHBUTTON	1
PL_RAL		• RED ALARM LED	1
PL_YWL		• YELLOW WARNING LED	1
PMP_AHC		• COOLANT PUMP	1
PMP_CHCP		• CAB HEATER COOLANT PUMP	1
PMP_FFLP		• FUEL FILTER FUEL LIFT PUMP	1
PMP_HTHC		• HYDRAULIC TANK HEAT CIRC PUMP	1
PMP_WSH_F		• WASHER PUMP FRONT	1
PMP_WSH_L		• WASHER PUMP LEFT	1
PMP_WSH_LD		• WASHER PUMP LEFT DOOR	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
PMP_WSH_R		• WASHER PUMP REAR	1
PRS_BCBE		• BIT CAROUSEL BASKET EXTEND PROX SWITCH	1
PRS_BCBR		• BIT CAROUSEL BASKET RETRACT PROX SWITCH	1
PRS_BCH		• BIT CAROUSEL HOME PROX SWITCH	1
PRS_HDLVT		• HYDRAULIC DIVERter LEFT VALVE TRAVEL PROX SWITCH	1
PRS_HDRVR		• HYDRAULIC DIVERter RIGHT VALVE ROTARY PROX SWITCH	1
PRS_MAPLL		• MAST ANCHOR PIN LEFT LOCKED PROX SWITCH	1
PRS_MAPLU		• MAST ANCHOR PIN LEFT UNLOCKED PROX SWITCH	1
PRS_MAPRL		• MAST ANCHOR PIN RIGHT LOCKED PROX SWITCH	1
PRS_MAPRU		• MAST ANCHOR PIN RIGHT UNLOCKED PROX SWITCH	1
PRS_MTPLL		• MAST TILT PIN LEFT LOCKED PROX SWITCH	1
PRS_MTPLU		• MAST TILT PIN LEFT UNLOCKED PROX SWITCH	1
PRS_MTPRL		• MAST TILT PIN RIGHT LOCKED PROX SWITCH	1
PRS_MTPRU		• MAST TILT PIN RIGHT UNLOCKED PROX SWITCH	1
PRS_PBWS		• PIPE BREAKOUT WRENCH STORED PROX SWITCH	1
PRS_PCH		• PIPE CAROUSEL HOME PROX SWITCH	1
PRS_PCP1		• PIPE CAROUSEL POT 1 PROX SWITCH	1
PRS_PCP2		• PIPE CAROUSEL POT 2 PROX SWITCH	1
PRS_PCSSL		• PIPE CAROUSEL SWING LOCK PROX SWITCH	1
PRS_PPC		• PIPE POSITIONER CLAMPED PROX SWITCH	1
PRS_PPO		• PIPE POSITIONER OPENED PROX SWITCH	1
PRS_PPS		• PIPE POSITIONER STORED PROX SWITCH	1
PS_24R1		• 24VDC REGULATED POWER SUPPLY #1	1
PS_24R2		• 24VDC REGULATED POWER SUPPLY #2	1
PS_24R3		• 24VDC REGULATED POWER SUPPLY #3	1
PS_24R4		• 24VDC REGULATED POWER SUPPLY #4	1
PS_BCMPG		• BIT CAROUSEL MPG PRESSURE SWITCH	1
PS_BU		• BUFFER UNIT	1
PS_CDP		• CEILING DRYER PRESSURE SWITCH	1
PS_EP		• ENGINE PRELUBE PRESSURE SWITCH	1
PS_FDP		• FLOOR DRYER PRESSURE SWITCH	1
PS_HDLPF		• HYDRAULIC DIVERter LEFT PROPEL FILTER SWITCH	1
PS_HDLTF		• HYDRAULIC DIVERter LEFT TRAVEL FILTER SWITCH	1
PS_HDRPF		• HYDRAULIC DIVERter RIGHT PROPEL FILTER SWITCH	1
PS_HDRRF		• HYDRAULIC DIVERter RIGHT ROTARY FILTER SWITCH	1
PS_PCMPG		• PIPE CAROUSEL MPG PRESSURE SWITCH	1
PS_UPPMPG		• UPPER PIPE POSITIONER MPG PRESSURE SWITCH	1
PT_BCL		• BIT CAROUSEL LOAD PRESSURE XDCR	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
PT_CAI		• COMPRESSOR AIR INLET PRESS XDCR	1
PT_COIP		• COMPRESSOR OIL INLET PRESSURE XDCR	1
PT_HPA		• HYDRAULIC PUMP AUXILIARY LOAD PRESSURE XDCR	1
PT_HPLTF		• HYDRAULIC PUMP LEFT/TRAVEL FORWARD PRESSURE XDCR	1
PT_HPLTR		• HYDRAULIC PUMP LEFT/TRAVEL REVERSE PRESSURE XDCR	1
PT_HPRRF		• HYDRAULIC PUMP RIGHT/ROTARY FORWARD PRESSURE XDCR	1
PT_HPRRR		• HYDRAULIC PUMP RIGHT/ROTARY REVERSE PRESSURE XDCR	1
PT_HTAGP		• HYDRAULIC TANK AIR GAP PRESS XDCR	1
PT_LJLFD		• LEVELING JACK LEFT FRONT DEMAND PRESSURE XDCR	1
PT_LJLFL		• LEVELING JACK LEFT FRONT LOAD PRESSURE XDCR	1
PT_LJLRD		• LEVELING JACK LEFT REAR DEMAND PRESSURE XDCR	1
PT_LJLRL		• LEVELING JACK LEFT REAR LOAD PRESSURE XDCR	1
PT_LJRFD		• LEVELING JACK RIGHT FRONT DEMAND PRESSURE XDCR	1
PT_LJRFL		• LEVELING JACK RIGHT FRONT LOAD PRESSURE XDCR	1
PT_LJRRD		• LEVELING JACK RIGHT REAR DEMAND PRESSURE XDCR	1
PT_LJRRL		• LEVELING JACK RIGHT REAR LOAD PRESSURE XDCR	1
PT_MFL		• MAST FUNCTION LOAD PRESSURE XDCR	1
PT_PPB		• PARK BRAKE PRESSURE XDCR	1
R_CALNT		• CHASSIS AUTO LEVEL NETWORK TERMINATING RESISTOR	1
R_CCNMM		• TERMINATING RESISTOR CANBUS	1
R_CCNT		• CHASSIS CAN NETWORK TERMINATING RESISTOR	1
R_CCT		• CARRIAGE CANBUS RESISTOR TERMINATING	1
R_CTR		• TERMINATING RESISTOR	1
R_J1939		• J1939 CANBUS RESISTOR TERMINATING	1
R_MCC		• MAST/CARRIAGE CANBUS TERMINATING RESISTOR	1
R_MCCNT		• MAST CHASSIS CAN NETWORK TERMINATING RESISTOR	1
R_OCB		• OPERATORS CAB CANBUS TERMINATING RESISTOR	1
R_RCC		• REAR CHASSIS CANBUS RESISTOR TERMINATING	1
R_RCCN		• TERMINATING RESISTOR CANBUS	1
R_TRC		• TERMINATING RESISTOR CANBUS	1
		• TERMINATING RESISTOR CANBUS	1
R_TRCC		• TERMINATING RESISTOR CHASSIS CANBUS	1
R_TREC		• TERMINATING RESISTOR CANBUS	1
R_TRGPS		• TERMINATING RESISTOR CANBUS	1
		• TERMINATING RESISTOR CANBUS	1
RA_OC		• RADIO BASE - TUNER/AMPLIFIER	1
REC_24R1		•	1
		•	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
REC_24R2		•	1
		•	1
REC_24R3		•	1
		•	1
REC_24R4		•	1
		•	1
REC_ACC		• ACCESSORY RECEPTACLE	1
REC_ACCB		•	1
REC_AHL		•	1
REC_AHR		•	1
REC_ALIOB		•	1
REC_APU		•	1
REC_APU1		• APU INSTRUMENT PANEL RECEPTACLE	1
REC_AUX		• 31 PIN AUX A/T HARNESS	1
REC_BCH2		•	1
REC_BCH3		•	1
REC_BCPL		•	1
REC_BPHPL		•	1
REC_BWPL		•	1
REC_CBC		•	1
REC_CCAL		•	1
REC_CCC1		•	1
REC_CCCB		•	1
REC_CCCC		•	1
REC_CCCE		•	1
REC_CCEP		•	1
REC_CCLF		•	1
REC_CCMC		•	1
REC_CCMP		•	1
		•	1
REC_CCRDBB		•	1
REC_CCRF		•	1
REC_CCRRBB		•	1
		•	1
REC_CCRRDBB		•	1
REC_CCUPS		•	1
REC_CCUSB		•	1
REC_CEP		•	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
REC_CF1	.		1
REC_CHMS	.		1
REC_CIOB1	.		1
REC_CIOB2	.		1
REC_CIP1	.		1
REC_CIPE	.		1
REC_CLSP	.		1
REC_COMPPRE	.		1
REC_CR	.		1
REC_CUPS	.		1
REC_CVBV	.		1
REC_CWP	.		1
REC_DAP	.		1
REC_DAPTP	.		1
REC_ECAN	.		1
REC_ECI	.		1
REC_ECM	.	94 WAY ECM CONNECTOR	1
REC_ES1	.		1
REC_ES2	.		1
REC_HHP	.		1
REC_JS	.		1
REC_LFBB	.		1
REC_LRBES	.		1
REC_LRBESC	.		1
REC_LRDBB	.		1
REC_MAIN	.	47 PIN MAIN A/T HARNESS	1
REC_MBES	.		1
REC_MBESC	.		1
REC_MCIOB1	.		1
REC_MCIOB2	.		1
REC_PBWS	.		1
REC_PCPL	.		1
REC_RAB1	.		1
REC_RAB2	.		1
REC_RCCB	.		1
REC_REMOP	.		1
REC_RFBB	.		1
REC_RFBE	.		1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
REC_RFBES		•	1
REC_RIOM56		•	1
REC_RMS		•	1
REC_ROCC		•	1
REC_RRBB		•	1
REC_RRDBB		•	1
REC_SCC		•	1
REC_USB		•	1
REC_VCBV		•	1
REC_VCMV		•	1
RTD_AAT		• AMBIENT AIR TEMPERATURE	1
RTD_CBA		• COMPRESSOR BIT AIR TEMPERATURE	1
RTD_CCHO		• COOLING COMP OUTLET TEMPERATURE	1
RTD_CEHTAI		• COOLING ENGINE HIGH TEMP AIR INLET TEMPERATURE	1
RTD_CEHTAO		• COOLING ENGINE HIGH TEMP AIR OUTLET TEMPERATURE	1
RTD_CELTAI		• COOLING ENGINE LOW TEMP INLET TEMPERATURE	1
RTD_CELTO		• COOLING ENGINE LOW TEMP OUTLET TEMPERATURE	1
RTD_CHXO		• COOLING HYD OUTLET TEMPERATURE	1
RTD_CO		• COMPRESSOR OIL TEMPERATURE	1
RTD_PTL		• PROPEL TRANSMISSION LEFT TEMPERATURE	1
RTD_PTR		• PROPEL TRANSMISSION RIGHT TEMPERATURE	1
SPKR_LF		• FRONT LEFT SPEAKER	1
SPKR_LR		• REAR LEFT SPEAKER	1
SPKR_RF		• FRONT RIGHT SPEAKER	1
SPKR_RR		• REAR RIGHT SPEAKER	1
SS_WLC		• WORK LIGHTS SELECTOR SWITCH (CAB)	1
SV_APU		• AUXILIARY PUMP UNLOADING SOLENOID	1
SV_BCBER		• BIT CAROUSEL BASKET OVER HOLE/ STORE VALVE	1
SV_BCFP		• BIT CAROUSEL FUNCTION PROPORTIONAL VALVE	1
SV_BCI		• BIT CAROUSEL INDEX VALVE	1
SV_BCLU		• BIT CAROUSEL RAISE/LOWER VALVE	1
SV_BCPL		• BIT CAROUSEL PRESSURE LIMITER VALVE	1
SV_BCTP		• BIT CAROUSEL THREAD MOTOR VALVE	1
SV_BPHFP		• BIT/PIPE HANDLING FUNCTION PROPORTIONAL VALVE	1
SV_BPHPL		• BIT/PIPE HANDLING PRESSURE LIMITER VALVE	1
SV_CBA		• COMPRESSOR BIT AIR VALVE	1
SV_CCH		• CEILING COMPRESSOR HYDRAULIC VALVE	1
SV_CCPC		• COMPRESSOR COOLER PUMP CONTROL VALVE	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
SV_CHE		• CAB HEATER ENABLE SOLENOID	1
SV_CRMI1SC		• CARRIAGE ROTARY MOTOR 1 SPEED COMMAND	1
SV_CS1		• CUMMINS STARTER #1 SOLENOID	1
SV_CS2		• CUMMINS STARTER #2 SOLENOID	1
SV_CTM		• COMPRESSOR THERMAL MIXING VALVE	1
SV_CTM1SC		• CARRIAGE TRAVEL MOTOR 1 SPEED COMMAND	1
SV_CTM2SC		• CARRIAGE TRAVEL MOTOR 2 SPEED COMMAND	1
SV_CTPBR		• CARRIAGE TRAVEL PARK BRAKE RELEASE VALVE	1
SV_DCWB1		• DUST CONTROL WATER BYPASS SOLENOID 1	1
SV_DCWB2		• DUST CONTROL WATER BYPASS SOLENOID 2	1
SV_DCWIP		• DUST CONTROL WATER INJECTION PUMP CONTROL VALVE	1
SV_ECPC		• ENGINE COOLER PUMP CONTROL VALVE	1
SV_FCH		• FLOOR COMPRESSOR HYDRAULIC VALVE	1
SV_FCLP		• FLUSH CARRIAGE LEFT PROPEL VALVE	1
SV_FRRP		• FLUSH ROTARY RIGHT PROPEL VALVE	1
SV_HDLPT		• HYDRAULIC DIVERter LEFT PROPEL/TRAVEL VALVE	1
SV_HDRPR		• HYDRAULIC DIVERter RIGHT PROPEL/ROTARY VALVE	1
SV_HOTM		• HYDRAULIC OIL THERMAL MIXING VALVE	1
SV_HPA		• HYDRAULIC PUMP AUXILIARY VALVE	1
SV_HPLT1FS		• HYDRAULIC PUMP LEFT/TRAVEL 1 FORWARD SPEED COMMAND	1
SV_HPLT1RS		• HYDRAULIC PUMP LEFT/TRAVEL 1 REVERSE SPEED COMMAND	1
SV_HPLT2FS		• HYDRAULIC PUMP LEFT/TRAVEL 2 FORWARD SPEED COMMAND	1
SV_HPLT2RS		• HYDRAULIC PUMP LEFT/TRAVEL 2 REVERSE SPEED COMMAND	1
SV_HPRR1FS		• HYDRAULIC PUMP RIGHT/ROTARY 1 FORWARD SPEED COMMAND	1
SV_HPRR1RS		• HYDRAULIC PUMP RIGHT/ROTARY 1 REVERSE SPEED COMMAND	1
SV_HPRR2FS		• HYDRAULIC PUMP RIGHT/ROTARY 2 FORWARD SPEED COMMAND	1
SV_HPRR2RS		• HYDRAULIC PUMP RIGHT/ROTARY 2 REVERSE SPEED COMMAND	1
SV_HTP		• HYDRAULIC TANK PRESSURIZATION SOLENOID	1
SV_LBP		• LUBE BIT PUMP	1
SV_LCWM		• LEFT COLD WEATHER MANIFOLD VALVE	1
SV_LJLF		• LEVELING JACK LEFT FRONT EXTEND/RETRACT VALVE	1
SV_LJLR		• LEVELING JACK LEFT REAR EXTEND/RETRACT VALVE	1
SV_LJRF		• LEVELING JACK RIGHT FRONT EXTEND/RETRACT VALVE	1
SV_LJRR		• LEVELING JACK RIGHT REAR EXTEND/RETRACT VALVE	1
SV_LMP		• AUTO LUBE PUMP	1
SV_LOGP		• LUBE OG PUMP	1
SV_MAPLU		• MAST ANCHOR PIN LOCK/UNLOCK VALVE	1
SV_MAR		• MAIN AIR RELIEF SOLENOID	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
SV_MFB		• MAST FUNCTION VALVE BANK	1
SV_MLVS		• AUTO LUBE VENT SOLENOID VALVE	1
SV_MRL		• MAST RAISE/LOWER VALVE	1
SV_MTPLU		• MAST TILT PIN LOCK/UNLOCK VALVE	1
SV_MW		• MAST WINCH VALVE	1
SV_OGLV		• OG LUBE VENT SOLENOID VALVE	1
SV_PBWED		• PIPE BREAKOUT WRENCH ENGAGE/ DISENGAGE VALVE	1
SV_PBWFP		• PIPE BREAKOUT WRENCH FUNCTION PROPORTIONAL VALVE	1
SV_PBWPL		• PIPE BREAKOUT WRENCH PRESSURE LIMITER VALVE	1
SV_PBWRL		• PIPE BREAKOUT WRENCH RAISE/ LOWER VALVE	1
SV_PBWS		• PIPE BREAKOUT WRENCH SWING VALVE	1
SV_PCFP		• PIPE CAROUSEL FUNCTION PROPORTIONAL VALVE	1
SV_PCI		• PIPE CAROUSEL INDEX VALVE	1
SV_PCPL		• PIPE CAROUSEL PRESSURE LIMITER VALVE	1
SV_PCS		• PIPE CAROUSEL SWING VALVE	1
SV_PLPB		• PROPEL PARK BRAKE VALVE	1
SV_PLS		• PROPEL LEFT SPEED COMMAND	1
SV_PPSC		• PIPE POSITIONER SWING/CLAMP VALVE	1
SV_PRS		• PROPEL RIGHT SPEED COMMAND	1
SV_PSER		• PIPE SUPPORT EXTEND/RETRACT VALVE	1
SV_PSWOHS		• PIPE SLIDE WRENCH OVER HOLE/STORE VALVE	1
SV_RCWM		• RIGHT COLD WEATHER MANIFOLD VALVE	1
SW_AC		• AIR CONDITIONER ON/OFF SWITCH	1
SW_ACB		• AIR CONDITIONER BLOWER	1
SW_APUS		• APU SPEED SWITCH	1
SW_CICK		• CAB IGNITION/CRANK KEYSWITCH	1
SW_DC		• DECK CRANE DISCONNECT SWITCH	1
SW_ECL		• ENGINE COOLANT LEVEL SWITCH	1
SW_P		• PRESSURIZER CONTROL SWITCH	1
SW_WLB		• WORK LIGHTS SELECTOR SWITCH (BOARDING)	1
TCC_AFIOM1		• A-FRAME I/O MODULE 1 COMMUNICATION T	1
TCC_AFM1CH1		• A-FRAME I/O MODULE #1 CH1 CAN T	1
TCC_AFM1CH3		• A-FRAME I/O MODULE #1 CH3 CAN T	1
TCC_AFM1CH5		• A-FRAME I/O MODULE #1 CH5 CAN T	1
TCC_AFM1CH7		• A-FRAME I/O MODULE #1 CH7 CAN T	1
TCC_AFM2CH1		• A-FRAME I/O MODULE #2 CH1 CAN T	1
TCC_AFM2CH3		• A-FRAME I/O MODULE #2 CH3 CAN T	1
TCC_AFM2CH5		• A-FRAME I/O MODULE #2 CH5 CAN T	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

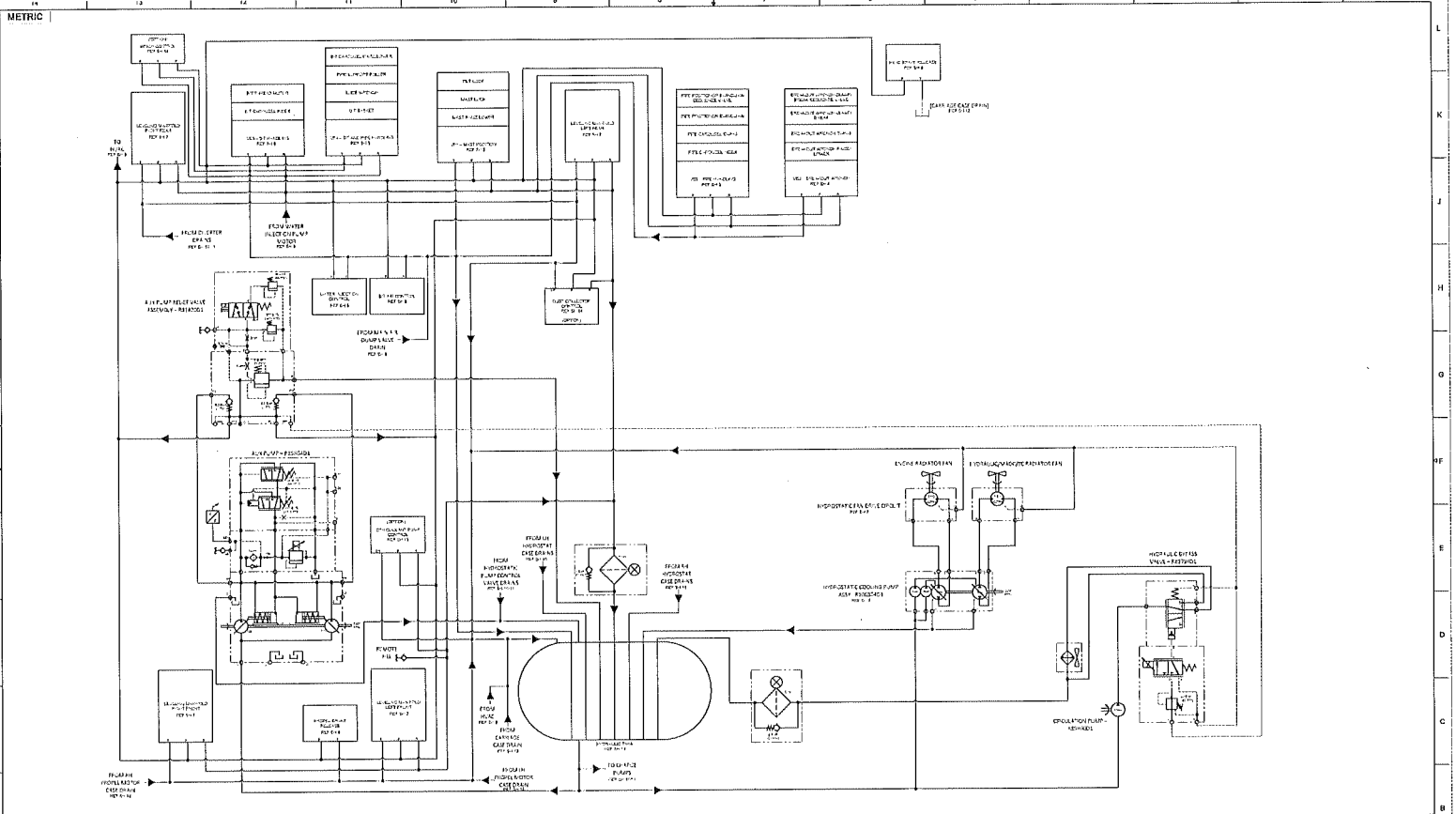
Item	Part No.	Description	Qty.
TCC_AFM2CH7		• A-FRAME I/O MODULE #2 CH7 CAN T	1
TCC_APUA		• AUX POWER UNIT ALTERNATOR CANBUS T	1
TCC_AR		• ALTERNATOR REGULATOR CANBUS T	1
TCC_BCLP		• BIT CAROUSEL LOAD PRESSURE COMMUNICATION Y	1
TCC_BCRL		• BIT CAROUSEL RAISE/LOWER COMMUNICATION Y	1
TCC_CAA		• TRANSMISSION I/O MODULE COMMUNICATION T	1
TCC_CAI		• COMPRESSOR AIR INLET VALVE CANBUS T	1
TCC_CAOR		• COMPRESSOR AIR/OIL RESERVOIR PRESS/TEMP COMMUNICATION T	1
TCC_CBCB		• CAN BUS COMMUNICATIONS COMMUNICATION T	1
TCC_CC		• COMPRESSOR COOLER COMMUNICATION T	1
TCC_COIP		• COMPRESSOR OIL INLET COMMUNICATION T	1
TCC_COMPC		• COMPRESSOR CONTROL CANBUS T	1
TCC_ENG		• ENGINE I/O MODULE COMMUNICATION T	1
TCC_FCH2		• GREASE TANK I/O MODULE CH6	1
TCC_GIOCH4		• GREASE TANK I/O MODULE CH4	1
TCC_GIOCH6		• GREASE TANK I/O MODULE CH6	1
TCC_GIOCH8		• GREASE TANK I/O MODULE CH8	1
TCC_GTIO		• GREASE TANK I/O MODULE COMMUNICATION T	1
TCC_HDCH5		• HYD DIVERTER I/O MODULE #5 CH5 CAN T	1
TCC_HDCH7		• HYD DIVERTER I/O MODULE #7 CH5 CAN T	1
TCC_HPAP		• HYDRAULIC PUMP AUXILIARY LOAD COMMUNICATION T	1
TCC_HPSIO		• HYDRAULIC PUMP SENSOR I/O MODULE COMMUNICATION T	1
TCC_HPPIO		• HYDRAULIC PUMP VALVE I/O MODULE COMMUNICATION T	1
TCC_HTIO		• HYDRAULIC TANK I/O MODULE COMMUNICATION T	1
TCC_HTM1CH1		• HYDRAULIC TANK I/O MODULE #1 CH1 CAN T	1
TCC_IOC1CH1		• CARRIAGE I/O MODULE #1 CH1 CAN T	1
TCC_IOC1CH3		• CARRIAGE I/O MODULE #1 CH3 CAN T	1
TCC_MFB		• MAST FUNCTION VALVE BANK COMMUNICATION T	1
TCC_MFL		• MAST FUNCTION LOAD COMMUNICATION T	1
TCC_MLL2CH1		• MAST LOWER LEFT SIDE MODULE 2 CH1 CAN T	1
TCC_MLL2CH3		• MAST LOWER LEFT SIDE MODULE 2 CH3 CAN T	1
TCC_MLL2CH5		• MAST LOWER LEFT SIDE MODULE 2 CH2 CAN T	1
TCC_MLL2CH7		• MAST LOWER LEFT SIDE MODULE 2 CH7 CAN T	1
TCC_MLRIO2		• MAST LOWER RIGHT I/O MODULE #2 COMMUNICATION T	1
TCC_MLRM1		• MAST LOWER RIGHT I/O MODULE #1 CAN COMM Y	1
TCC_MM1CH1		• MAST I/O MODULE #1 CH1 CAN T	1
TCC_MM1CH3		• MAST I/O MODULE #1 CH3 CAN T	1
TCC_MM1CH5		• MAST I/O MODULE #1 CH5 CAN T	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
TCC_MM1CH7		• MAST I/O MODULE #1 CH7 CAN T	1
TCC_MMIO		• MAST MIDDLE I/O MODULE COMMUNICATIONS T	1
TCC_MRL		• MAST RAISE/LOWER COMMUNICATION T	1
TCC_MWV		• MAST WINCH VALVE COMMUNICATION T	1
TCC_PCE		• PIPE CAROUSEL ENCODER COMMUNICATION T	1
TCC_PCLP		• PIPE CAROUSEL LINEAR POSITION COMMUNICATION Y	1
TCC_PL		• PROPEL LEFT ENCODER COMMUNICATION T	1
TCC_PR		• PROPEL RIGHT ENCODER COMMUNICATION T	1
TCC_PSCH1		• POWER SKID I/O MODULE CH1 CAN T	1
TCC_PSCH4		• POWER SKID I/O MODULE CH4	1
TCC_PSCH6		• POWER SKID I/O MODULE CH4	1
TCC_PSCH7		• POWER SKID I/O MODULE CH7 CAN T	1
TCC_PSWLPB		• PIPE SLIDE WRENCH LINEAR POSITION BRANCH COMMUNICATION Y	1
TCC_RDCH7		• REAR DECK I/O MODULE CH7 CAN T	1
TCC_T4AR		• TIER 4 ALT REGULATOR CANBUS T	1
TCP_AFIOM1		• A-FRAME I/O MODULE 1 POWER T	1
TCP_AFIOM2		• A-FRAME I/O MODULE 2 POWER T	1
TCP_CIO1		• CARRIAGE I/O MODULE #1 POWER T	1
TCP_GTIO		• GREASE TANK I/O MODULE POWER T	1
TCP_HDIO		• HYDRAULIC DIVERTER I/O MODULE POWER T	1
TCP_HPSIO		• HYDRAULIC PUMP SENSOR I/O MODULE POWER T	1
TCP_HPVI0		• HYDRAULIC PUMP VALVE I/O MODULE POWER T	1
TCP_HTIO1		• HYDRAULIC TANK I/O MODULE #1 POWER T	1
TCP_HTIO2		• HYDRAULIC TANK I/O MODULE #2 POWER T	1
TCP_MLLIO2		• MAST LOWER LEFT I/O MODULE #2 POWER T	1
TCP_MLR		• MAST LOWER RIGHT POWER T	1
TCP_MLRIO2		• MAST LOWER RIGHT I/O MODULE #2 POWER T	1
TCP_MMIO		• MAST MIDDLE I/O MODULE POWER T	1
TCP_PSIO		• POWER SKID I/O MODULE POWER	1
TH_ACM		• AIR CONDITIONING MAIN THERMOSTAT	1
TH_CCF		• CEILING CONDENSER FREEZE THERMOSTAT	1
TH_FCF		• FLOOR CONDENSER FREEZE THERMOSTAT	1
TPP_CWSP		• COLD WEATHER SHEAR PUMP OUTPUT TEMPERATURE XDCR	1
TS_CO		• HIGH TEMP COMPRESSOR SHUTDOWN SWITCH	1
TS_CO2		• HIGH TEMP COMPRESSOR SHUTDOWN SWITCH	1
TTP_CAOR		• COMPRESSOR AIR/OIL RESERVOIR PRESS/TEMP XDCR	1
TTP_CBA		• CARRIAGE BIT AIR PRESS XDCR	1
TTP_CRAD		• CARRIAGE ROTARY ANTI-DRILL PRESS XDCR	1

ELECTRICAL SCHEMATICS WITH COMPONENTS LIST

Item	Part No.	Description	Qty.
TTP_CRD		• CARRIAGE ROTARY DRILL PRESS XDCR	1
TTP_CTH		• CARRIAGE TRAVEL HOIST PRESS XDCR	1
TTP_CTPB		• CARRIAGE TRAVEL PARK BRAKE PRESS XDCR	1
TTP_CTPD		• CARRIAGE TRAVEL PULL DOWN PRESS XDCR	1
VC_BV		• BIT VIEW VIDEO CAMERA	1
VC_MV		• MAST VIEW VIDEO CAMERA	1
VLV_CV		• COOLANT FLOW VALVE	1
XM_TUNER		• XM RADIO TUNER	1
ZS_CTL		• CARRIAGE TRAVEL LOWER PROXIMITY SWITCH	1
ZS_CU		• CARRIAGE TRAVEL UPPER PROXIMITY SWITCH	1
ZT_BCRL		• BIT CAROUSEL RAISE/LOWER LINEAR POSITION XDCR	1
ZT_LJLF		• LEVELING JACK LEFT FRONT LINEAR POSITION XDCR	1
ZT_LJLR		• LEVELING JACK LEFT REAR LINEAR POSITION XDCR	1
ZT_LJRF		• LEVELING JACK RIGHT FRONT LINEAR POSITION XDCR	1
ZT_LJRR		• LEVELING JACK RIGHT REAR LINEAR POSITION XDCR	1
ZT_PBWRL		• PIPE BREAKOUT WRENCH RAISE/LOWER LINEAR POSITION XDCR	1
ZT_PCLP		• PIPE CAROUSEL LINEAR POSITION XDCR	1
ZT_PSLP		• LOWER PIPE POSITIONER LINEAR XDCR	1
ZT_PSWALP		• PIPE SLIDE WRENCH LINEAR POSITION XDCR	1



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JOY GLOBAL SURFACE MINING, INC.
 4600 N. NATIONAL AVE.
 MESA, AZ 85204-3000

KOMATSU

MODEL NO. 77
 DRAWING NUMBER: D R11311 DWG
 SCALE: 1:1
 SHEET: 1 OF 16

GENERAL TOLERANCE NOTE

DECIMAL PLACE	STRUCTURE & FABRICATION	MACHINING	SHEET METAL
0.1	± 0.25 mm	± 0.10 mm	± 0.20 mm
0.01	± 0.05 mm	± 0.02 mm	± 0.05 mm
0.001	± 0.01 mm	± 0.005 mm	± 0.01 mm
0.0001	± 0.002 mm	± 0.001 mm	± 0.002 mm

THIRD ANGLE PROJECTION

CHECKED BY: JPM/LSM
 DATE: 05/05/2018

DESIGNED BY: JPM/LSM
 DATE: 05/05/2018

APPROVED BY: JPM/LSM
 DATE: 05/05/2018

REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR FABRICATION	05/05/2018

METRIC

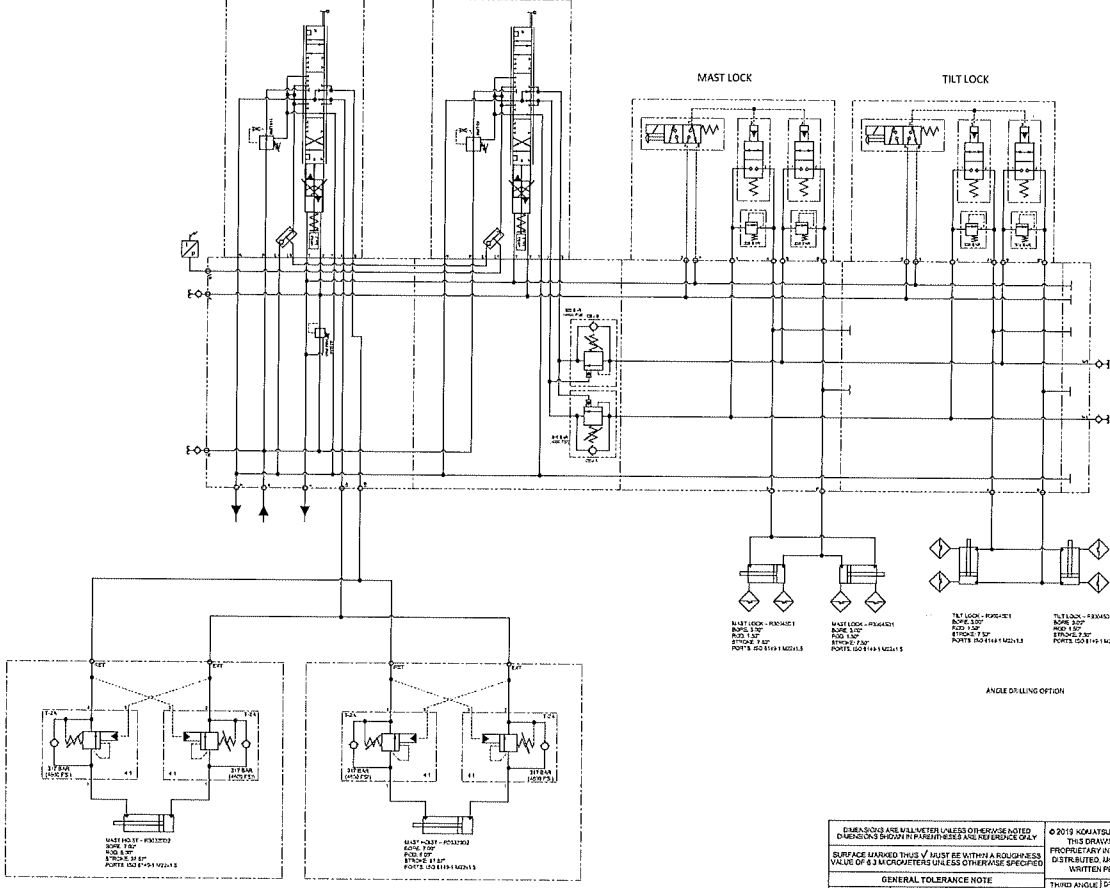
MAST RAISE/LOWER

CONTROL ELEMENT

MAST POSITION CONTROL - R89814D1 (VB1)

MAST LOCK

TILT LOCK



MAST LOCK - R89814D1
 BORE 50*
 ROD 12*
 STROKE 50*
 PORTS ISO 6148 1/2IN*15

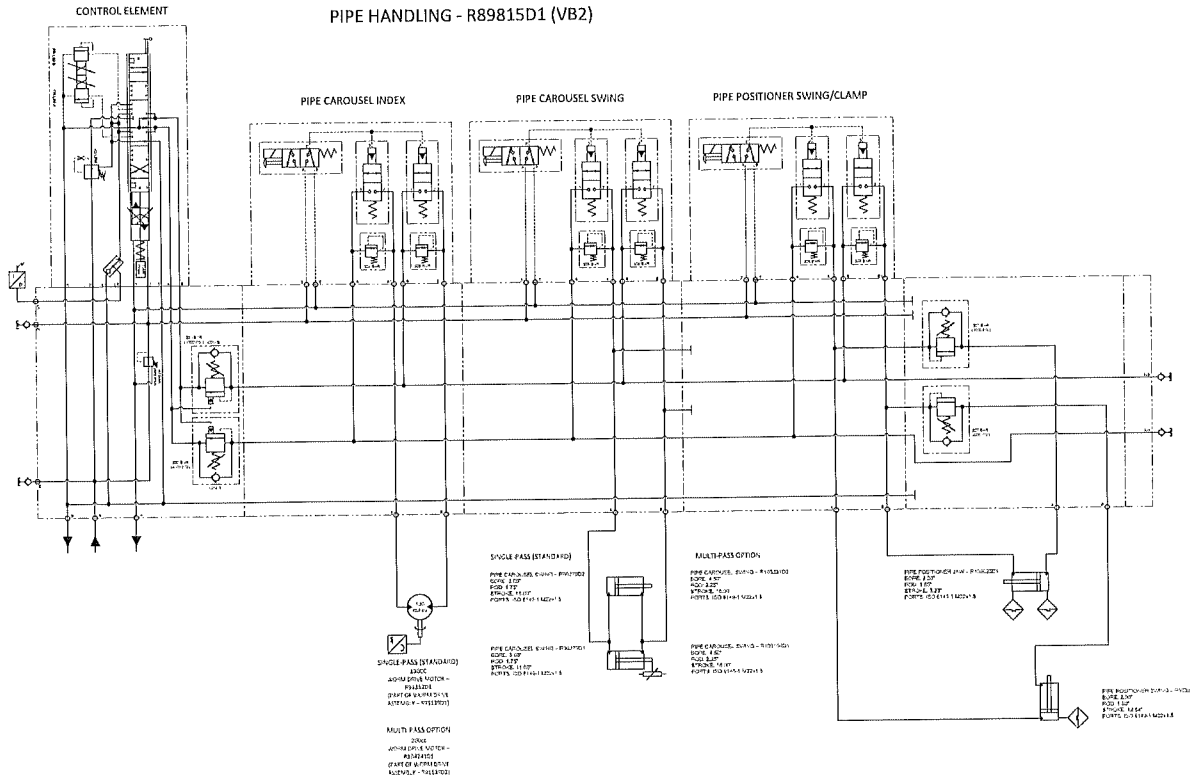
TILT LOCK - R89814D1
 BORE 50*
 ROD 12*
 STROKE 50*
 PORTS ISO 6148 1/2IN*15

ANGLE OF LIFTING OPTION

DIMENSIONS AND ALIQUOTS UNLESS OTHERWISE NOTED DIMENSIONS SHOWN IN PARENTHESES ARE REFERENCE ONLY SURFACE MARKED THIS $\sqrt{\quad}$ MUST BE WITHIN A RAUGHNESS VALUE OF 8.3 MICROMETERS UNLESS OTHERWISE SPECIFIED		© 2015 KOMATSU MACHINERY CO., LTD. ALL RIGHTS RESERVED. THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MACHINERY.		JOY GLOBAL SURFACE MINING, INC. 400 W. NATIONAL AVE. WYLLIE, VA 23146-3664		KOMATSU	
GENERAL TOLERANCE NOTE				MODEL NO. 77		ERN NO. 5519990	
DECIMAL PLACE	FRACTIONAL	MACHINING	SHEET METAL	HAND ANGLE	DATE	SCALE	SIZE
0.1	1/10	1/10	1/16	30°	04/02/2015	1:1	A4
0.2	1/5	1/5	1/8	45°	05/05/2015	1:1	A3
0.5	1/2	1/2	3/16	60°	05/05/2015	1:1	A2
1.0	1/1	1/1	1/4	75°	05/14/2015	1:1	A1
2.0	1/2	1/2	3/8	90°	05/14/2015	1:1	A0
5.0	1/2	1/2	3/8	105°	05/14/2015	1:1	A0
10.0	1/2	1/2	3/8	120°	05/14/2015	1:1	A0
20.0	1/2	1/2	3/8	135°	05/14/2015	1:1	A0
50.0	1/2	1/2	3/8	150°	05/14/2015	1:1	A0
100.0	1/2	1/2	3/8	165°	05/14/2015	1:1	A0
200.0	1/2	1/2	3/8	180°	05/14/2015	1:1	A0
500.0	1/2	1/2	3/8	195°	05/14/2015	1:1	A0
1000.0	1/2	1/2	3/8	210°	05/14/2015	1:1	A0
2000.0	1/2	1/2	3/8	225°	05/14/2015	1:1	A0
5000.0	1/2	1/2	3/8	240°	05/14/2015	1:1	A0
10000.0	1/2	1/2	3/8	255°	05/14/2015	1:1	A0
20000.0	1/2	1/2	3/8	270°	05/14/2015	1:1	A0
50000.0	1/2	1/2	3/8	285°	05/14/2015	1:1	A0
100000.0	1/2	1/2	3/8	300°	05/14/2015	1:1	A0
200000.0	1/2	1/2	3/8	315°	05/14/2015	1:1	A0
500000.0	1/2	1/2	3/8	330°	05/14/2015	1:1	A0
1000000.0	1/2	1/2	3/8	345°	05/14/2015	1:1	A0
2000000.0	1/2	1/2	3/8	360°	05/14/2015	1:1	A0

METRIC

PIPE HANDLING - R89815D1 (VB2)



SINGLE PASS (STANDARD)
 PIPE CAROUSEL SWING - PNEUMATIC
 CODE: 1100
 SIZE: 110 mm
 STROKE: 110 mm
 PORTS: ISO 11/16" (28.5 mm)

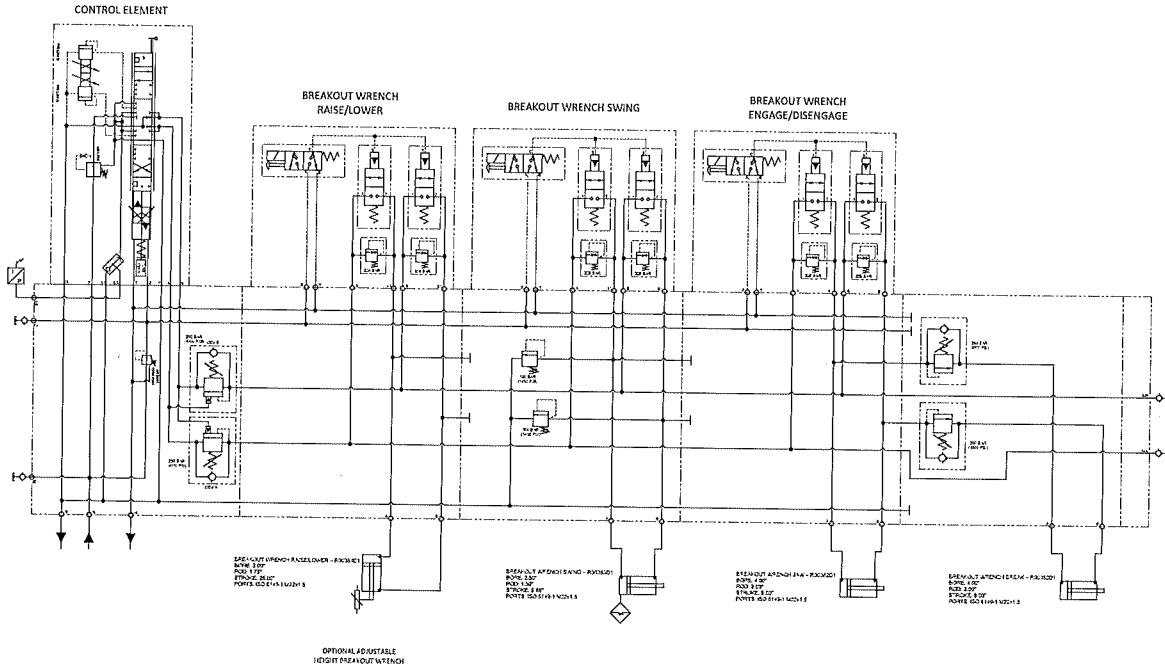
MULTI PASS OPTION
 PIPE CAROUSEL SWING - PNEUMATIC
 CODE: 1100
 SIZE: 110 mm
 STROKE: 110 mm
 PORTS: ISO 11/16" (28.5 mm)

SINGLE PASS (STANDARD)
 PIPE POSITIONER SWING/CLAMP
 CODE: 1100
 SIZE: 110 mm
 STROKE: 110 mm
 PORTS: ISO 11/16" (28.5 mm)

MULTI PASS OPTION
 PIPE POSITIONER SWING/CLAMP
 CODE: 1100
 SIZE: 110 mm
 STROKE: 110 mm
 PORTS: ISO 11/16" (28.5 mm)

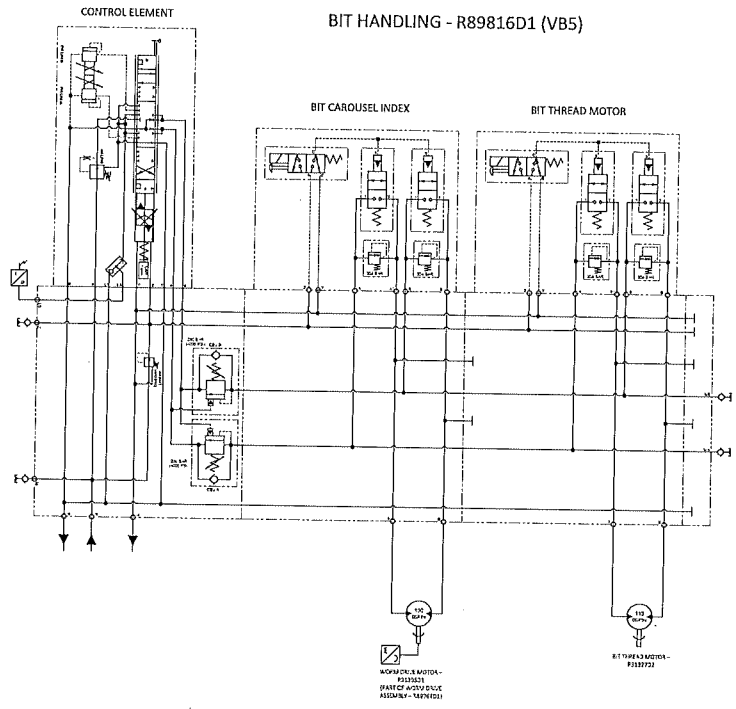
<p>GENERAL TOLERANCE NOTE</p> <table border="1"> <thead> <tr> <th>GENERAL TOLERANCE</th> <th>FABRICATION</th> <th>MACHINING</th> <th>SHEET METAL</th> </tr> </thead> <tbody> <tr> <td>(Ø) ±</td> <td>±0.25 mm</td> <td>±0.10 mm</td> <td>±0.20 mm</td> </tr> <tr> <td>(H) ±</td> <td>±0.25 mm</td> <td>±0.10 mm</td> <td>±0.20 mm</td> </tr> <tr> <td>(L) ±</td> <td>±0.25 mm</td> <td>±0.10 mm</td> <td>±0.20 mm</td> </tr> <tr> <td>(S) ±</td> <td>±0.25 mm</td> <td>±0.10 mm</td> <td>±0.20 mm</td> </tr> </tbody> </table>		GENERAL TOLERANCE	FABRICATION	MACHINING	SHEET METAL	(Ø) ±	±0.25 mm	±0.10 mm	±0.20 mm	(H) ±	±0.25 mm	±0.10 mm	±0.20 mm	(L) ±	±0.25 mm	±0.10 mm	±0.20 mm	(S) ±	±0.25 mm	±0.10 mm	±0.20 mm	<p>© 2019 KOMATSU MINING CORP. ALL RIGHTS RESERVED THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, REPRODUCED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MINING.</p>		<p>JOY GLOBAL SURFACE MINING, INC. 800 W. NATIONAL AVE. BELLEVILLE, VA 22214-2024</p>		<p>KOMATSU</p>	
GENERAL TOLERANCE	FABRICATION	MACHINING	SHEET METAL																								
(Ø) ±	±0.25 mm	±0.10 mm	±0.20 mm																								
(H) ±	±0.25 mm	±0.10 mm	±0.20 mm																								
(L) ±	±0.25 mm	±0.10 mm	±0.20 mm																								
(S) ±	±0.25 mm	±0.10 mm	±0.20 mm																								
<p>THIRD ANGLE PROJECTION</p>		<p>DRAWN/REVIEWED BY: JOHN GATES</p>		<p>DATE: 04/27/2020</p>		<p>MODEL NO. 77</p>																					
<p>DESIGNED BY: JOHN GATES</p>		<p>DATE: 05/06/2020</p>		<p>SIZE: DRAWING NUMBER D IR 11131 DWG</p>		<p>REV. DATE: 05/19/2020 REV. BY: 02</p>																					
<p>DATE: 05/14/2020</p>		<p>SCALE: 1:1 (AS SHOWN)</p>		<p>ENLARGED TO:</p>		<p>SHEET 3 OF 16</p>																					

BREAKOUT WRENCH - R89813D1 (VB3)



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SURFACE FINISHES: UNLESS OTHERWISE SPECIFIED, ALL SURFACES SHALL BE FINISHED TO A RAUGHNESS VALUE OF 3.2 MICROMETERS UNLESS OTHERWISE SPECIFIED.		DRAWING TITLE: SCHEMATIC HYDRAULIC		MODEL NO. 77		PART NO. 55109996	
GENERAL TOLERANCE NOTE				THIRD ANGLE PROJECTION		CHECKED BY: DATE: 06/05/2020	
DECIMAL PLACE FABRICATION MACHINING SHEET METAL				DRAWN BY: DATE: 05/28/2020		SCALE: 1:1	
0.1X	±0.30 mm	±0.20 mm	±0.20 mm	DESIGNED BY: DATE: 05/28/2020		SCALE: MASS (KG)	
0.1X	±0.20 mm	±0.15 mm	±0.15 mm	CHECKED BY: DATE: 05/28/2020		SCALE: EMLAR TO	
0.1X	±0.10 mm	±0.10 mm	±0.10 mm	DRAWN BY: DATE: 05/28/2020		SHEET 4 OF 15	

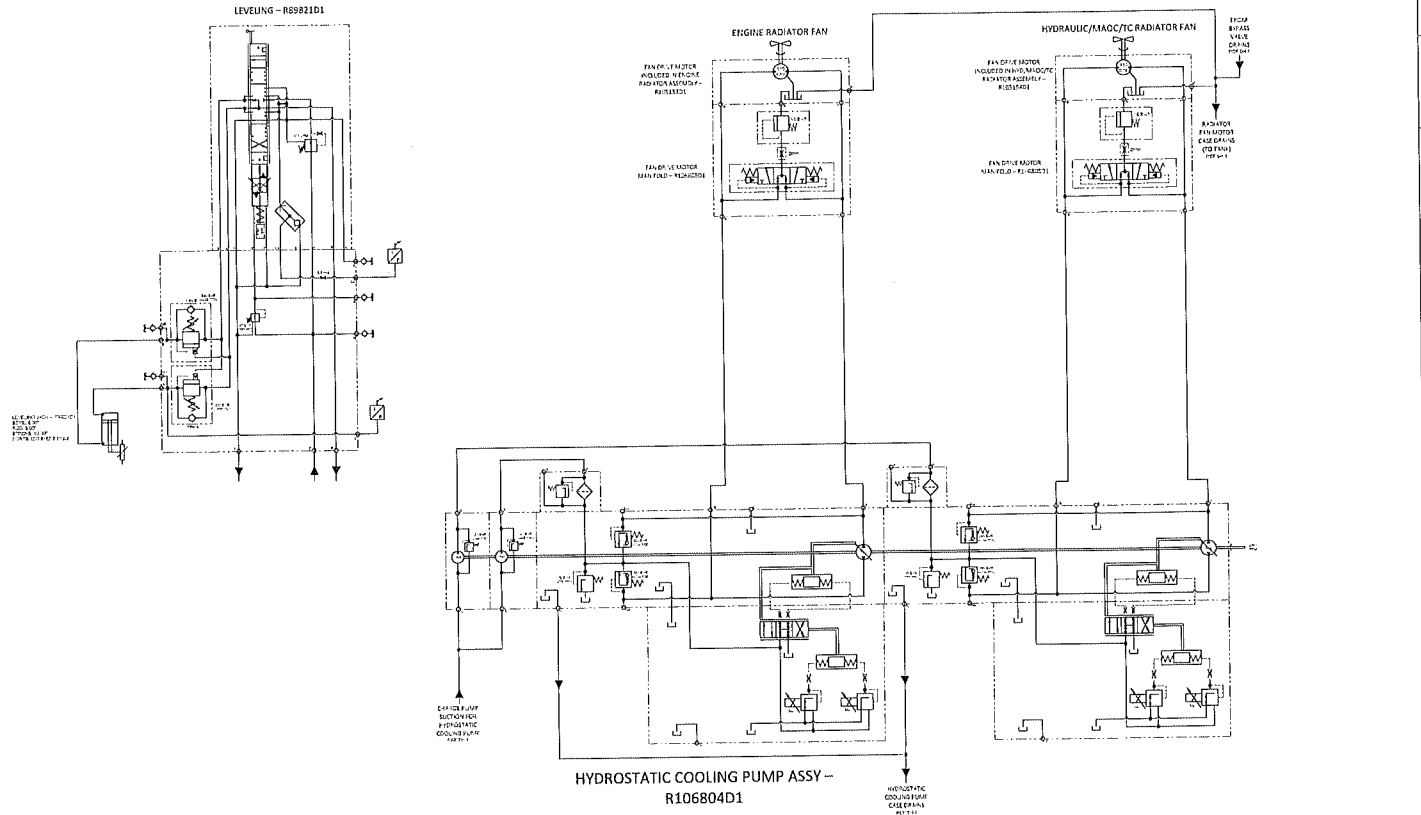
BIT HANDLING - R89816D1 (VB5)



DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. DIMENSIONS IN PARENTHESES ARE REFERENCE ONLY. SURFACE MARKED WITH $\sqrt{\quad}$ MUST BE WITHIN A ROUGHNESS VALUE OF 6.3 MICROMETERS UNLESS OTHERWISE SPECIFIED.	© 2019 KOMATSU MFG. CORP. ALL RIGHTS RESERVED. THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MFG.	JOY GLOBAL SURFACE MINING INC. 400 W. NATIONAL AVE. MILLVALE, VA 22174-2644 DRAWING TITLE: SCHEMATIC HYDRAULIC	KOMATSU
GENERAL TOLERANCE NOTE DIMENSIONAL PLACE FABRICATION MACHINING SHEET METAL (1) 0.1 0.15 mm 0.10 mm 0.13 mm (2) 0.2 0.20 mm 0.20 mm 0.25 mm (3) 0.3 0.30 mm 0.30 mm 0.35 mm		THIRD ANGLE PROJECTION DRAWN BY: JPH/LUM/ST CHECKED BY: M/ST/ST/ST DATE: 05/14/2020	MODEL NO. 77 SIZE: DR111311DWG DATE: 05/18/2020 SCALE: 1:1 SHEET NO. 02 OF 15

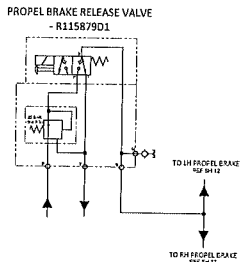
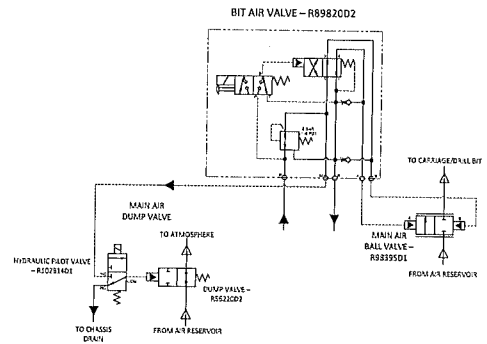
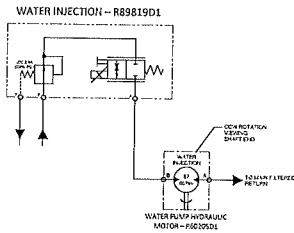
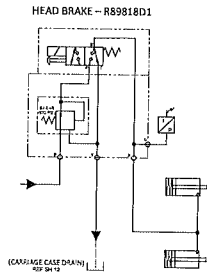
METRIC

HYDROSTATIC FAN DRIVE CIRCUIT

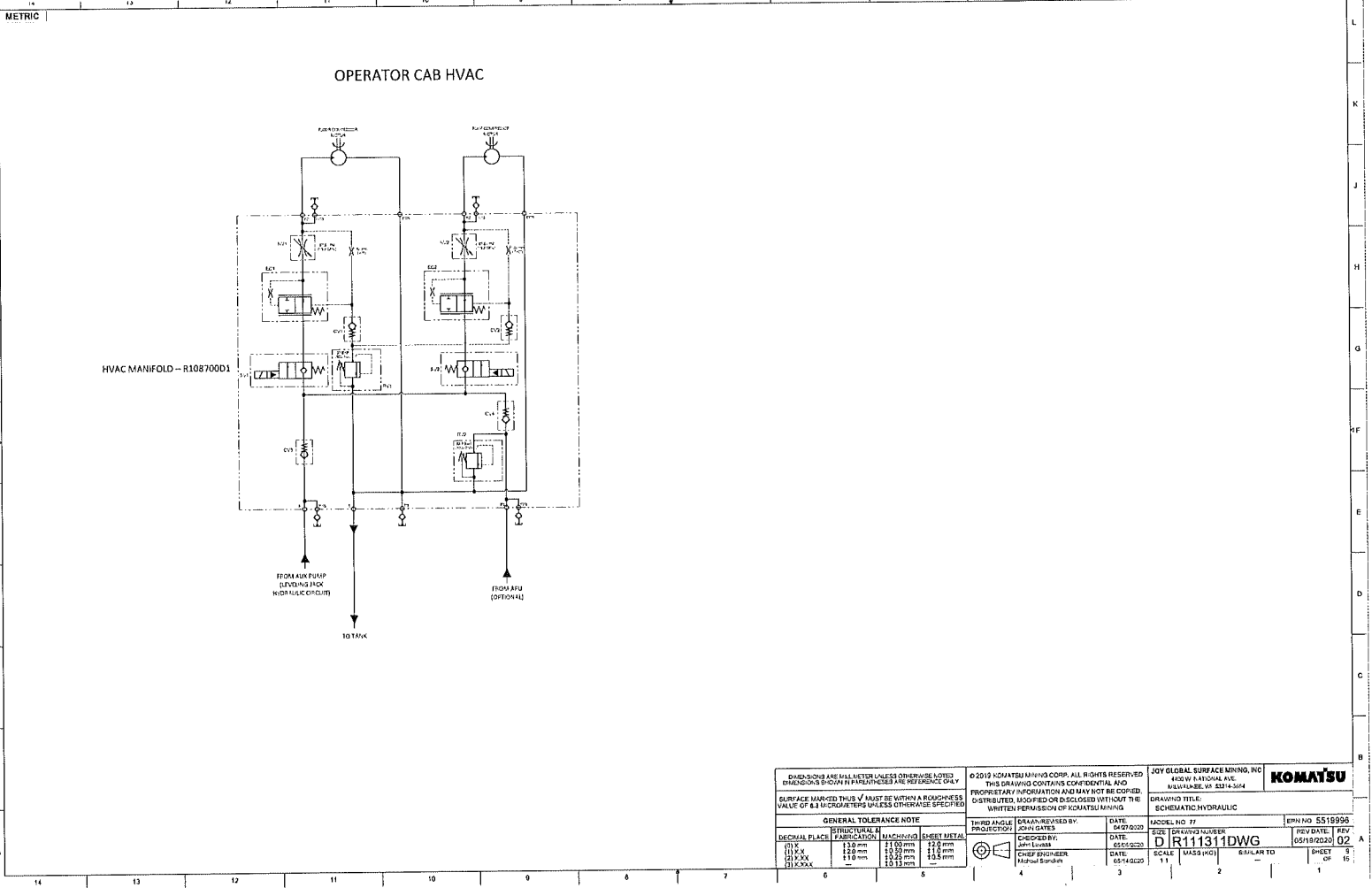


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GENERAL TOLERANCE NOTE				DRAWING TITLE: SCHEMATIC HYDRAULIC		EPM NO. 5518996	
THIRD ANGLE PROJECTION		DRAWN/REVISED BY: JOY H. GATES		DATE: 04/27/2020		REV. DATE: 05/19/2020	
CHECKED BY: JOHN LORRA		DATE: 05/05/2020		SCALE: 1:1		SHEET NO. 02	
DESIGNED BY: CHEF ENGINEER		DATE: 05/14/2020		SCALE: 1:1		SHEET OF 15	
DRAWN BY: MICHAEL EMMERSON		DATE: 05/14/2020		SCALE: 1:1		SHEET OF 15	

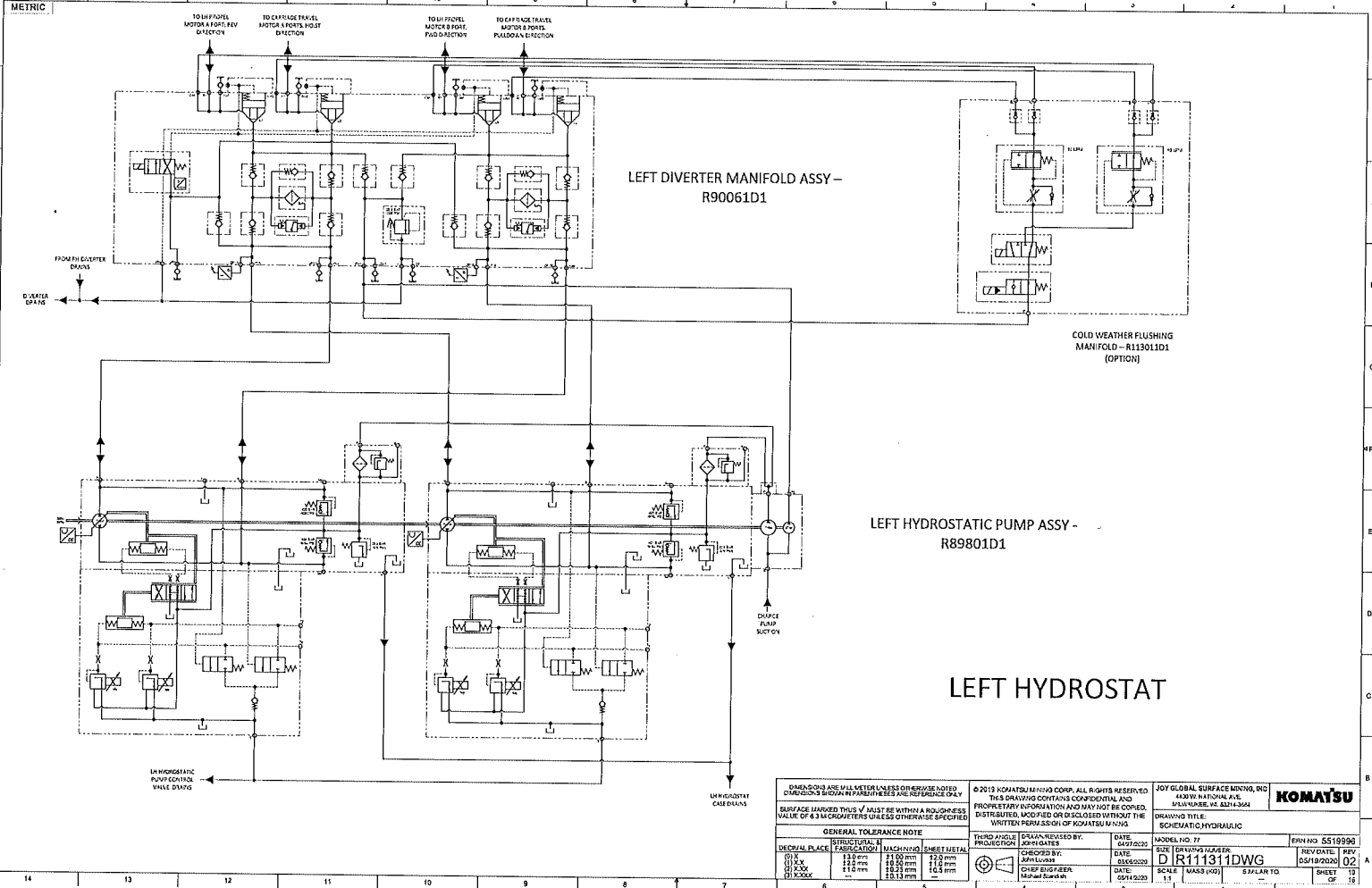
METRIC



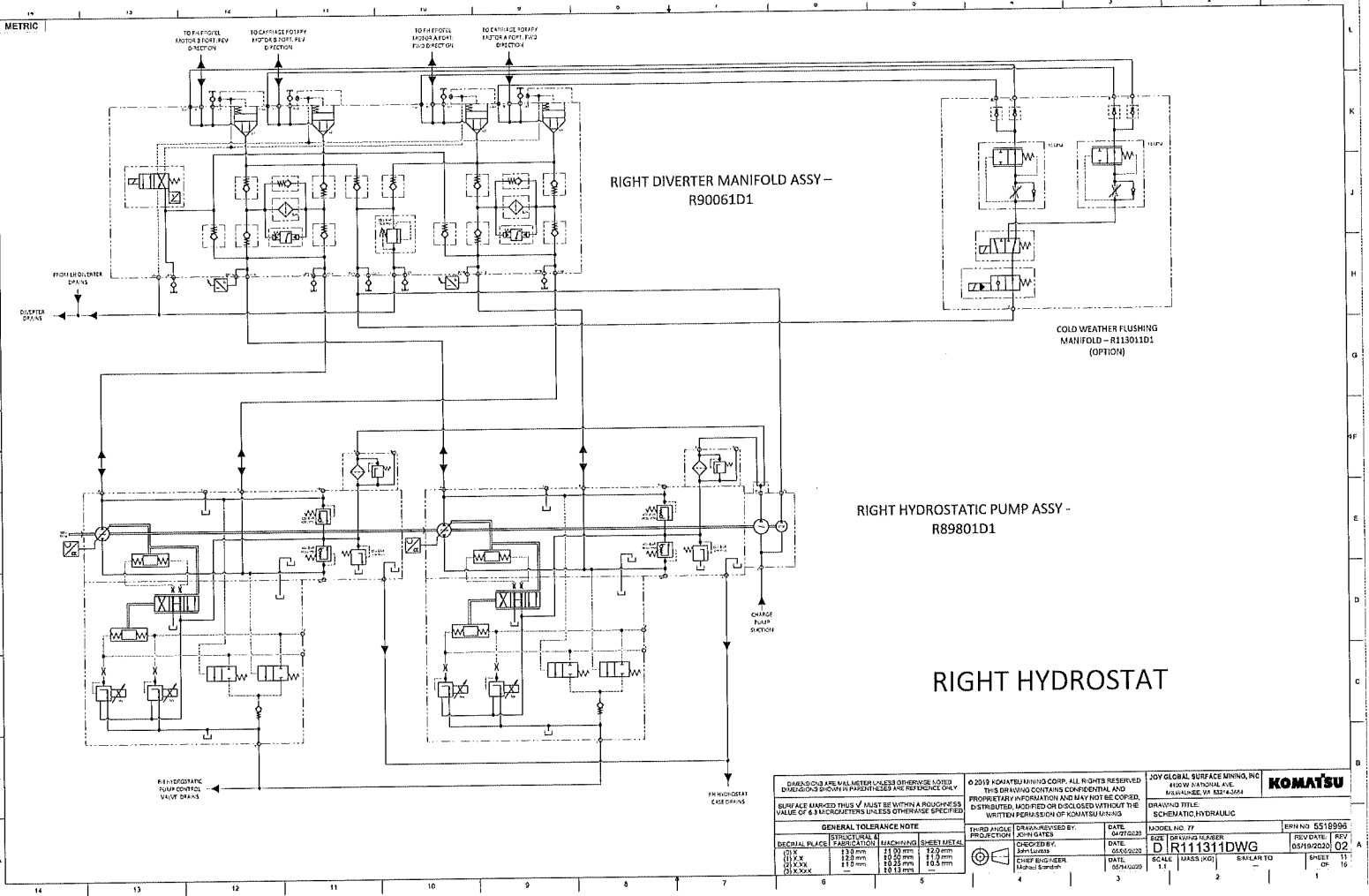
DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED DIMENSIONS IN PARENTHESIS ARE REFERENCE ONLY		© 2013 KOMATSU MACHINERY CO., LTD. ALL RIGHTS RESERVED. THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MACHINERY.		JOY GLOBAL SURFACE MINING INC 400 W. NATIONAL AVE. MUNDOGO, VA 22644		KOMATSU	
GENERAL TOLERANCE NOTE				DRAWING TITLE: SCHEMATIC HYDRAULIC			
SURFACE MARKED WITH 'V' MUST BE WITHIN A ROUGHNESS VALUE OF 0.3 μm C/P/T/0.1 μm UNLESS OTHERWISE SPECIFIED				MODEL NO. 77		ERN NO. 6519996	
THIRD ANGLE PROJECTION				DATE: 05/27/2013		REV. DATE: REV.	
CHECKED BY: JOHN LUKAS				DATE: 05/28/2013		DISPOSITION: 02	
DRAWN BY: CHIEF ENGINEER				DATE: 05/28/2013		SCALE: (N/A)	
DESIGNED BY: MICHAEL SIKOLY				DATE: 05/28/2013		SIMILAR TO: SHEET 6 OF 16	
DECIMAL PLACE FRACTIONATION		DIMENSION		SHEET LISTAL			
0.1X	±0.30 mm	1.00	±0.10 mm	2.00	±0.05 mm		
0.15X	±0.25 mm	1.50	±0.08 mm	1.50	±0.05 mm		
0.20X	±0.20 mm	2.00	±0.05 mm	1.00	±0.05 mm		
0.25X	±0.15 mm	2.50	±0.03 mm	0.50	±0.03 mm		



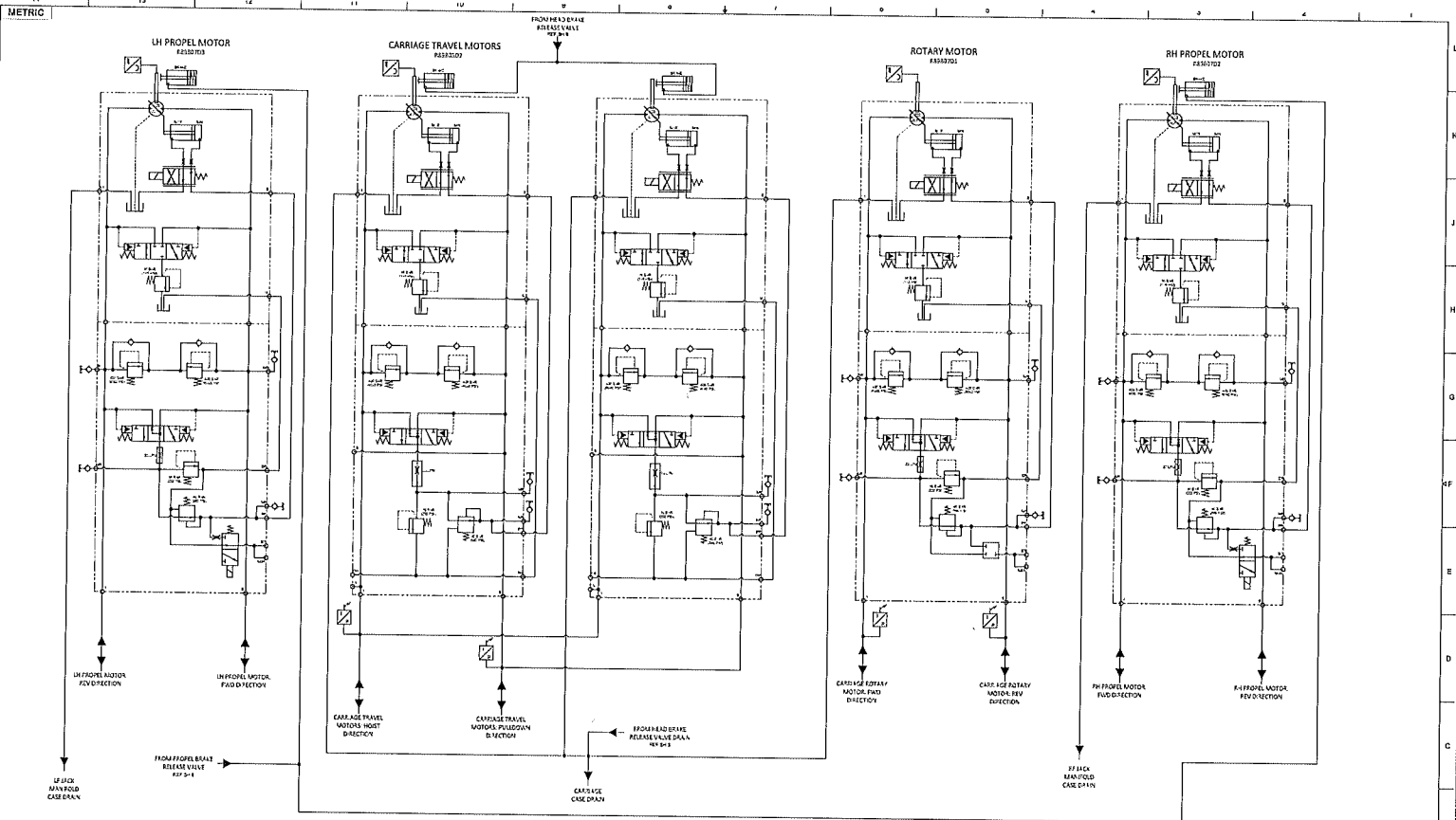
DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED DIMENSIONS IN PARENTHESES ARE REFERENCED ONLY		© 2019 KOMATSU MINING CORP. ALL RIGHTS RESERVED. THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MINING		JOY GLOBAL SURFACE MINING, INC 400 W. PATRIOT AVE. MILLERSVILLE, VA 23114-5414		KOMATSU	
SURFACE MARKED WITH $\sqrt{\quad}$ MUST BE WITHIN A ROUGHNESS VALUE OF 6.3 MICROMETERS UNLESS OTHERWISE SPECIFIED		DRAWN BY: JOHN GATES		DATE: 04/27/2020		DRAWING TITLE: SCHEMATIC HYDRAULIC	
GENERAL TOLERANCE NOTE		THIRD ANGLE PROJECTION		CHECKED BY: JOHN GATES		DATE: 05/05/2020	
DECIMAL PLACE		STRUCTURAL M		MACHINING		SHEET METAL	
11.XX	1.0 mm	21.00	22.0 mm	11.0	11.0	11.0	11.0
12.XXX	0.20 mm	12.20	12.20 mm	11.0	11.0	11.0	11.0
13.XXXX	0.10 mm	13.20	13.20 mm	10.0	10.0	10.0	10.0
14.XXXX	0.05 mm	14.20	14.20 mm	9.0	9.0	9.0	9.0
DRAWING NUMBER: D R111311DWG		SCALE: 1:1		DATE: 05/14/2020		REV. DATE: 05/19/2020	
EQUIPMENT NO.:		SHEET NO.:		REV. NO.:		REV. DATE:	
		11		3		02	



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GENERAL TOLERANCE NOTE				DRAWING TITLE: SCHEMATIC HYDRAULIC		EPR NO. 5510990	
STRUCTURAL	FABRICATION	MACHINING	SHEET METAL	THIRD ANGLE PROJECTION	DESIGNED BY: SPT/MSW	DATE: 04/27/2020	SIZE: 250X350
Ø1.2	±0.15	±0.05	±0.15		CHECKED BY: SPT/MSW	DATE: 04/28/2020	SCALE: 1:1
Ø1.5	±0.20	±0.10	±0.20		CHIEF ENGINEER: Michael Szymanski	DATE: 05/14/2020	SCALE: 1:1
Ø1.5-3X	±0.25	±0.15	±0.25				
Ø1.5-3X	±0.30	±0.20	±0.30				

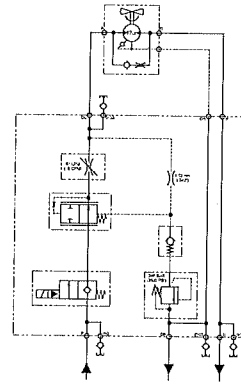
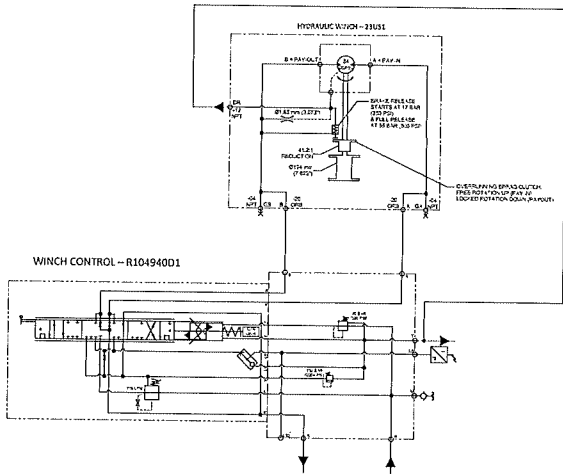


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SURFACE MARKED THIS $\sqrt{\quad}$ MUST BE WITHIN A ROUGHNESS VALUE OF 6.3 MICROMETERS UNLESS OTHERWISE SPECIFIED				DRAWING TITLE SCHEMATIC HYDRAULIC			
GENERAL TOLERANCE NOTE				THIRD ANGLE PROJECTION		DRAWN/REVISED BY: JOHN GATES	
DECIMAL PLACE	STRUCTURAL	FABRICATION	MACHINING	DATE	DATE	MODEL NO. 77	REV. NO. 5516990
0.1	13.0 mm	21.0 mm	12.0 mm	05/05/2023	05/05/2023	SIZE	REV. DATE
0.1 x 0.1	12.0 mm	10.0 mm	11.0 mm			D	05/19/2023
0.1 x 0.1 x 0.1	11.0 mm	10.0 mm	10.5 mm			D R111311DWG	02
0.1 x 0.1 x 0.1	10.0 mm	10.0 mm	10.5 mm			SCALE	EXPLAN TO
						1:1	CHECK
							OF



DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN IN PARENTHESES ARE FOR REFERENCE ONLY. SURFACE FINISHES SHALL BE AS LISTED. FINISHES NOT LISTED SHALL BE WITHIN A RAUGNESS VALUE OF 6.3 MICROMETERS UNLESS OTHERWISE SPECIFIED.		© 2019 KOMATSU LTD. ALL RIGHTS RESERVED. THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND SHALL NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU LTD.		JOY GLOBAL SURFACE FINISHING, INC. 4100 W. NATIONAL AVE. IRVING, TEXAS 75038-4044	
GENERAL TOLERANCE NOTE DECIMAL PLACE FABRICATION MACHINING SHEET METAL		THIRD PARTY DATA REVIEWED BY: DATE: 02/27/2020 PRODUCTION KHY/GATES		MODEL NO. 77 PART NO. SS10990	
DIMENSION 01.0 - 13.0 mm 01.5 - 12.0 mm 02.0 - 11.0 mm	13.0 mm 12.0 mm 11.0 mm	16.0 mm 15.0 mm 14.0 mm	12.0 mm 11.0 mm 10.0 mm	CHECKED BY: DATE: 02/05/2020 DATE: 02/05/2020	DATE: 02/05/2020 SCALE: 1:1 MASS (KG)
DRAWING TITLE: SCHEMATIC HYDRAULIC				REV. DATE: 02/05/2020	REV. BY: 02
				SHEET 12	OF 18

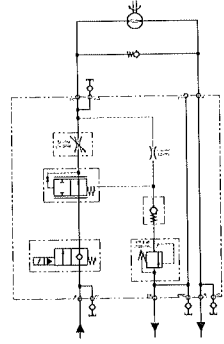
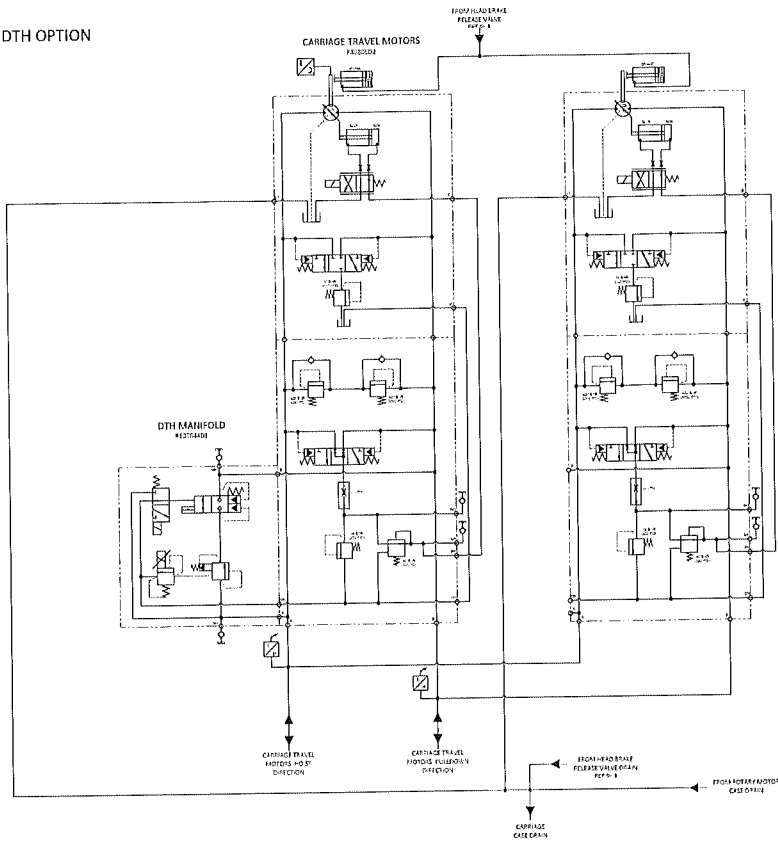
OPTIONS



DIMENSIONS AND UNITS: METRIC UNITS ARE USED UNLESS OTHERWISE SPECIFIED IN PARENTHESES AND REFERENCE ONLY.		© 2012 KOMATSU MINING CORP. ALL RIGHTS RESERVED. THIS DRAWING CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION AND MAY NOT BE COPIED, DISTRIBUTED, MODIFIED OR DISCLOSED WITHOUT THE WRITTEN PERMISSION OF KOMATSU MINING CORP.		JOY GLOBAL SURFACE MINING, INC. 1420 W. PATTERSON AVE. MADISON, VA 22114-3464		KOMATSU	
SURFACE MARKED THIS VALUE IS WITHIN A RANGE OF ±0.3 MICROMETERS UNLESS OTHERWISE SPECIFIED.		DRAWING TITLE: SCHEMATIC, HYDRAULIC		DRAWING NO. 77		EPN NO. 5510936	
GENERAL TOLERANCE NOTE				THIRD ANGLE PROJECTION		DRAWN/REVISED BY: KOHJI GATES	
DECIMAL PLACE		FABRICATION	MACHINING	DATE:		SHEET NO. / TOTAL SHEETS	
0.1	±0.3	±0.10	±0.05	04/27/2010		02 / 15	
0.2	±0.5	±0.20	±0.10	DATE:		FIGURE DATE	
0.3	±0.8	±0.30	±0.15	04/16/2010		05/19/2010	
0.4	±1.0	±0.40	±0.20	DATE:		SCALE	
0.5	±1.5	±0.60	±0.30	05/11/2010		1:1	
CHIEF ENGINEER: SHEILA KUMAR				CHIEF ENGINEER: SHEILA KUMAR		SIMILAR TO	

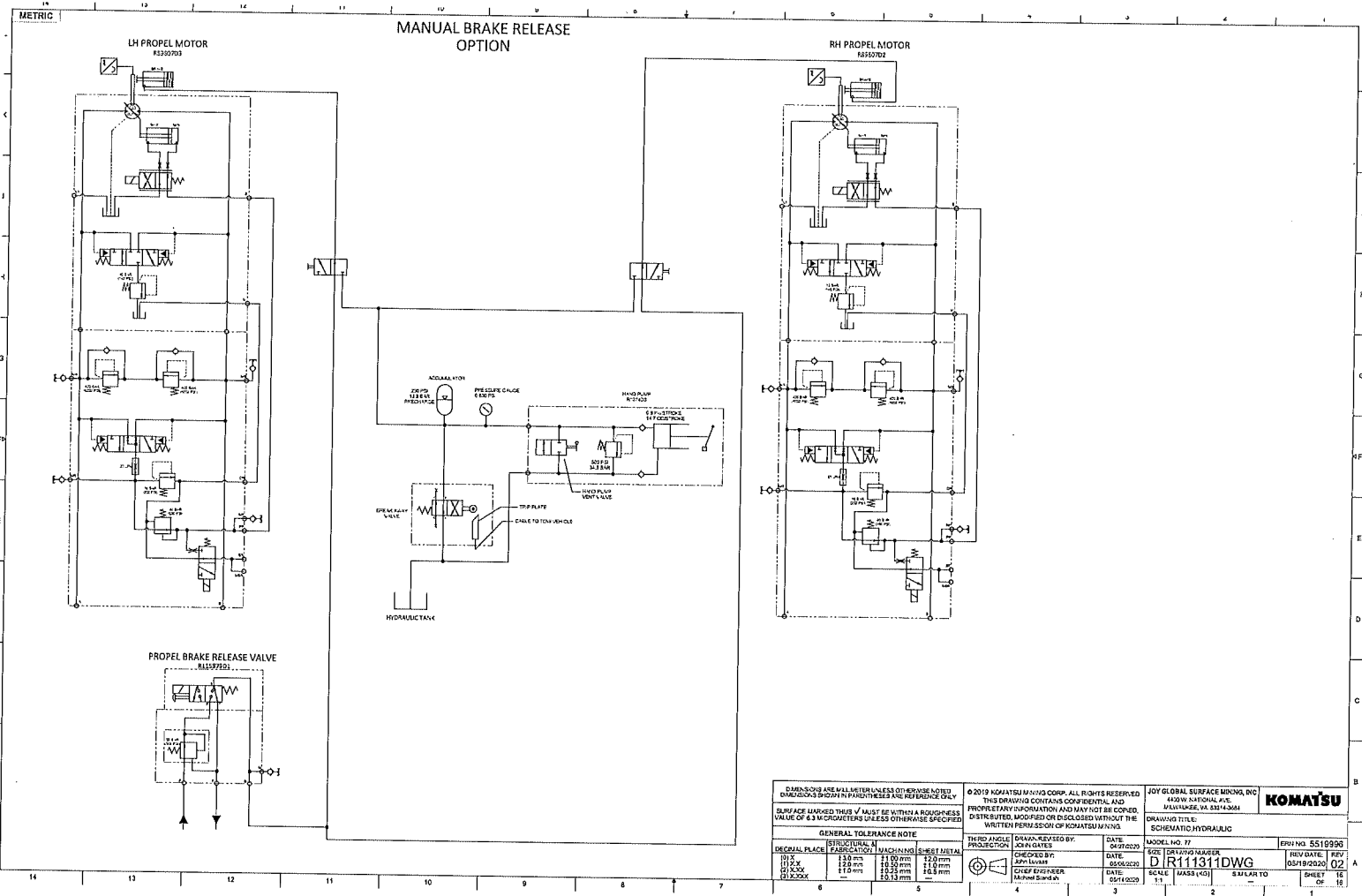
METRIC

DTH OPTION



DTH COOLANT PUMP CONTROL - R105653D2

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SURFACE MARKED WITH $\sqrt{\quad}$ MUST BE WITHIN A ROUGHNESS VALUE OF 6.3 MICROMETERS UNLESS OTHERWISE SPECIFIED.		DRAWN/REVIEWED BY: DATE: 04/27/2010		MODEL NO. 77		KPN NO. 5518996	
GENERAL TOLERANCE NOTE		CHECKED BY: DATE: 05/10/2010		SCALE: 1:1		SHEET 15 OF 19	
DECIMAL PLACE	FRACTIONAL	FRACTIONAL	FRACTIONAL	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
0.1	1/16	1/16	1/16	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
0.2	1/8	1/8	1/8	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
0.5	1/4	1/4	1/4	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
1	1/2	1/2	1/2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
2	1	1	1	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
3	3/2	3/2	3/2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
4	2	2	2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
5	5/2	5/2	5/2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
6	3	3	3	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
7	7/2	7/2	7/2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
8	4	4	4	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
9	9/2	9/2	9/2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
10	5	5	5	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
11	11/2	11/2	11/2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
12	6	6	6	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
13	13/2	13/2	13/2	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19
14	7	7	7	DATE: 05/14/2010	SCALE: 1:1	SIMILAR TO	SHEET 15 OF 19



GENERAL TOLERANCE NOTE

DIGITAL PLACE	FABRICATION	MACHINING	SOFT METAL
0.1	±0.10 mm	±0.05 mm	±0.10 mm
0.2	±0.15 mm	±0.08 mm	±0.15 mm
0.3	±0.20 mm	±0.10 mm	±0.20 mm
0.4	±0.25 mm	±0.12 mm	±0.25 mm
0.5	±0.30 mm	±0.15 mm	±0.30 mm

THIRD ANGLE PROJECTION

DATE: 04/27/2009

MODEL NO. 77

SOE: DR111311DWG

REV. DATE: 05/18/2020

REV. 02

DATE: 05/18/2020

SCALE: 1:1

SIMILAR TO:

SHEET 16 OF 16

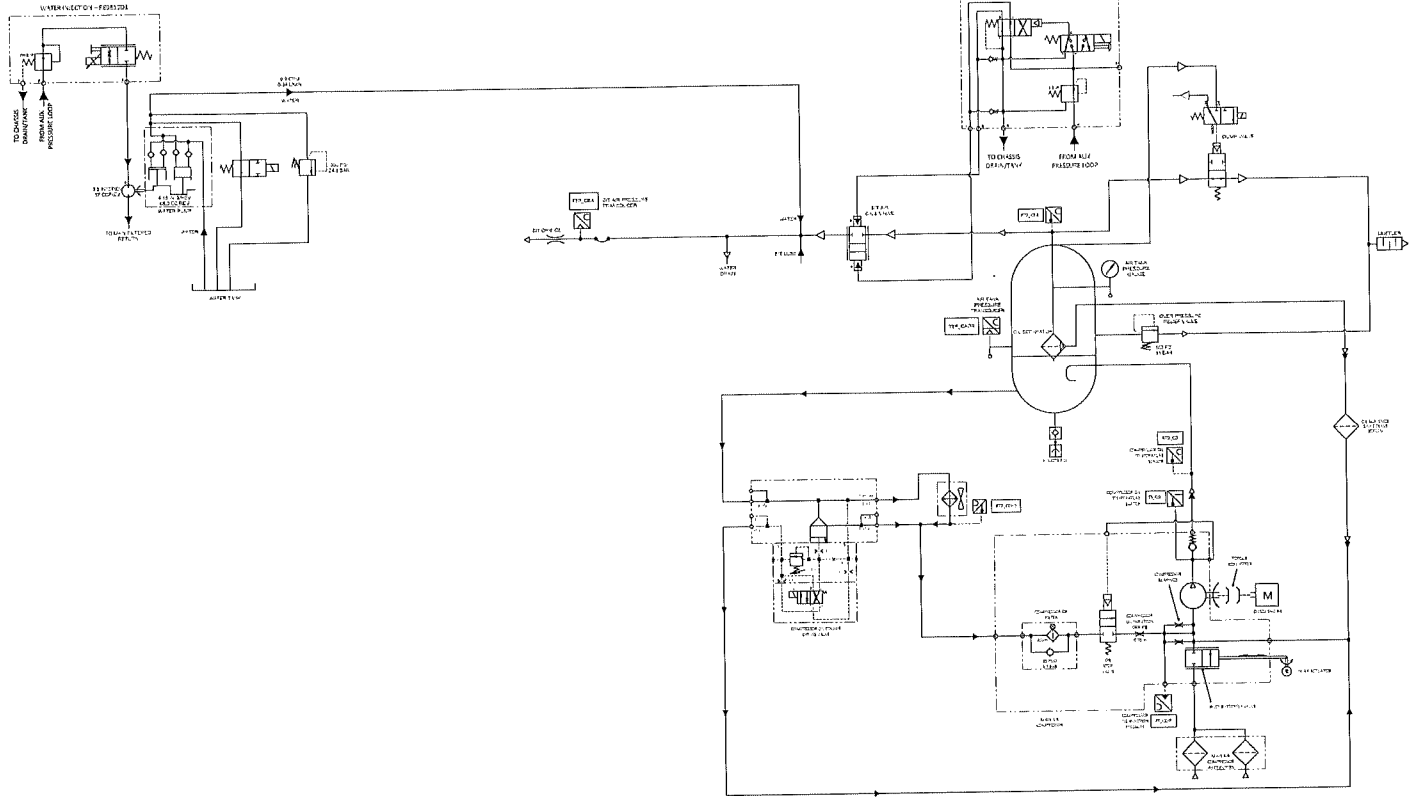
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JOY GLOBAL SURFACE MINING INC.
4000 NATIONAL AVE.
MILLVALE, VA 23114-0044

KOMATSU

DRAWING TITLE: SCHEMATIC HYDRAULIC

METRIC



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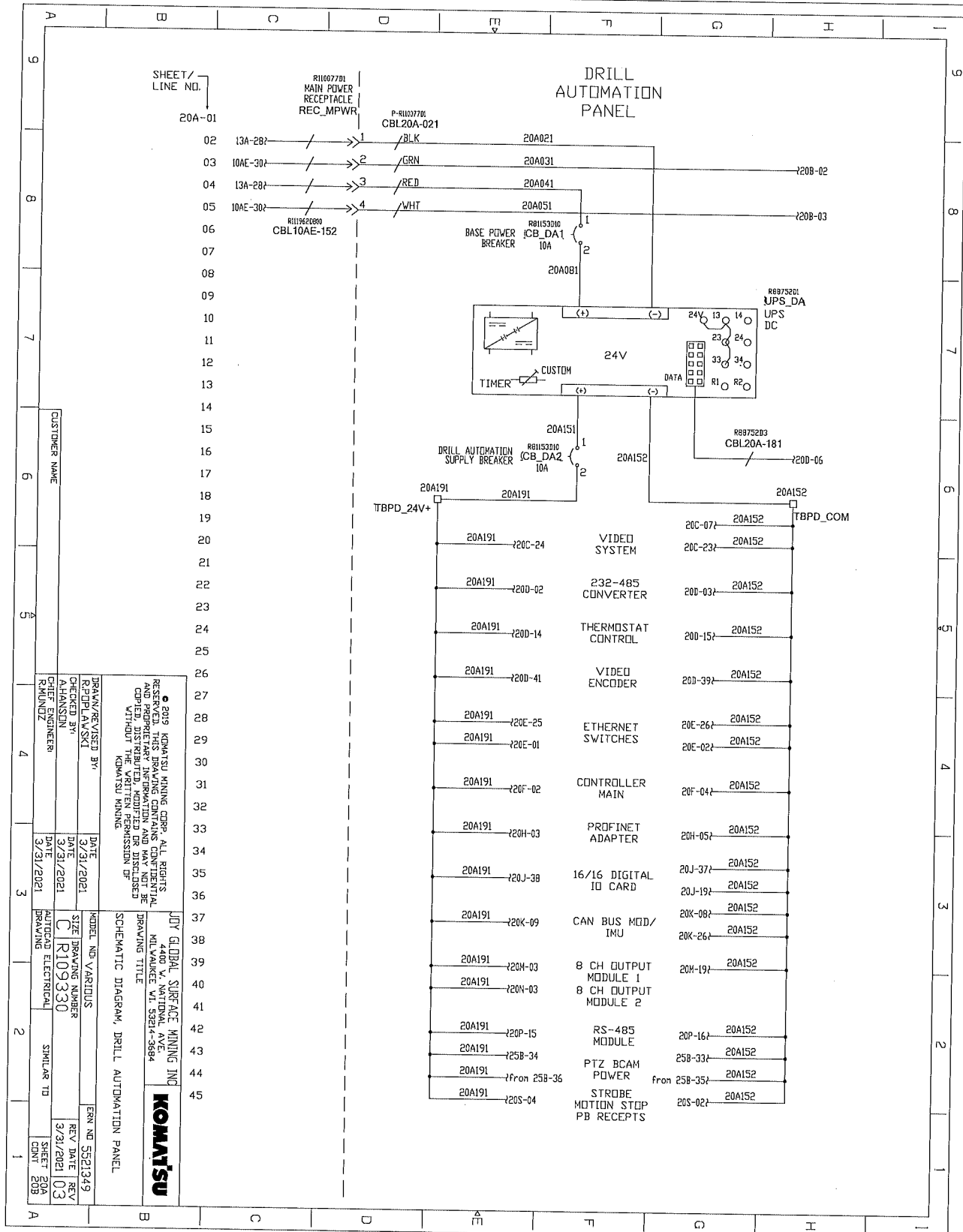
JOY GLOBAL SURFACE MINING, INC.
 4600 W. AFTON AVE.
 MICHIGAN, MI 48143-3444

KOMATSU

GENERAL TOLERANCE NOTE				THIRD ANGLE PROJECTION	DRAWN/REVISED BY	DATE	MODEL NO.	REV. NO.
DECIMAL PLACE	STRUCTURE	FINISHING	SHEET METAL		PRODUCTION	05/2024	RD121942DWG	03
01 X	1.50 mm	21.50 mm	22.0 mm		CHECKED BY:	05/2024		
02 X	1.25 mm	17.50 mm	17.5 mm		DATE:	05/2024		
03 X	1.00 mm	12.50 mm	12.5 mm		DATE:	05/2024		
04 X	0.75 mm	7.50 mm	7.5 mm		CHECKED BY:	05/2024		
05 X	0.50 mm	5.00 mm	5.0 mm		DATE:	05/2024		

DRAWING TITLE: SCHEMATIC MAIN AIR
 SCALE: 1:1
 REVISIONS: 1

DRILL AUTOMATION PANEL SCHEMATICS



DRAWN/REVISED BY R11007701 ALHANSUN		DATE 3/31/2021
CHECKED BY R11007701 ALHANSUN		DATE 3/31/2021
DATE 3/31/2021		DATE 3/31/2021
AUTOCAD ELECTRICAL DRAWING		SHEET NO. 20A
MODEL NO. VARIOUS		REV. NO. 5521349
SHEET DRAWING NUMBER CIR109330		REV. DATE 3/31/2021
SHEET ELECTRICAL DRAWING		REV. NO. 03
SIMILAR TO		SHEET NO. 20B

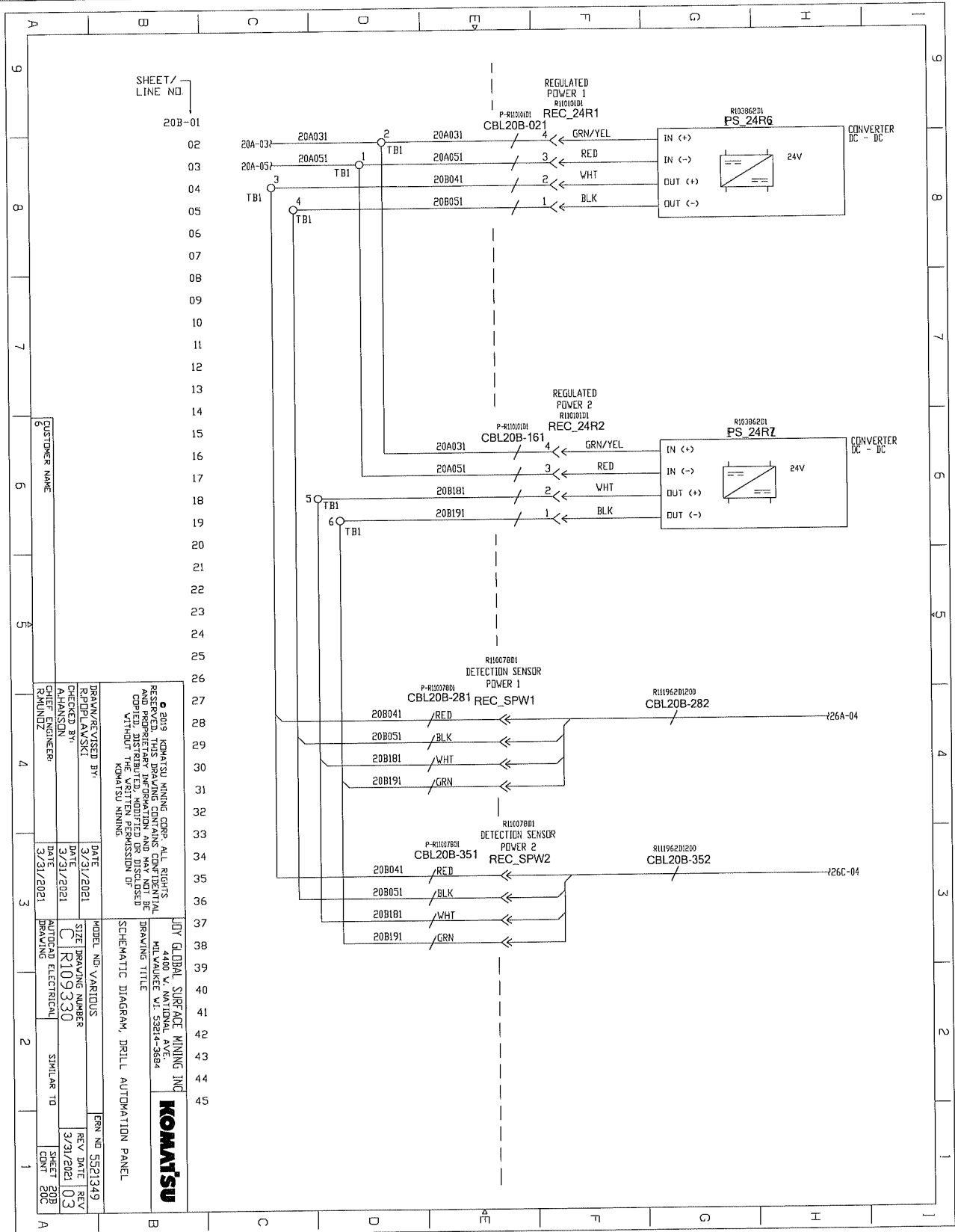
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JOY GLOBAL SURFACE MINING INC
4401 V. NATIONAL AVENUE
MILWAUKEE, WI 53014-3694

KOMATSU

SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL

DRILL AUTOMATION PANEL SCHEMATICS



SHEET / LINE NO.
20B-01

CUSTOMER NAME

DRAWN/REVISED BY	DATE	MODEL NO.	VARIOUS
CHECKED BY	DATE	SIZE	DRAWING NUMBER
DESIGNED BY	DATE	CAD	R109330
APPROVED BY	DATE	AUTOCAD ELECTRICAL	SIMILAR TO
REVISIONS	DATE	REV. NO.	REV. DATE
1	3/31/2021	03	3/31/2021
2	3/31/2021	03	3/31/2021

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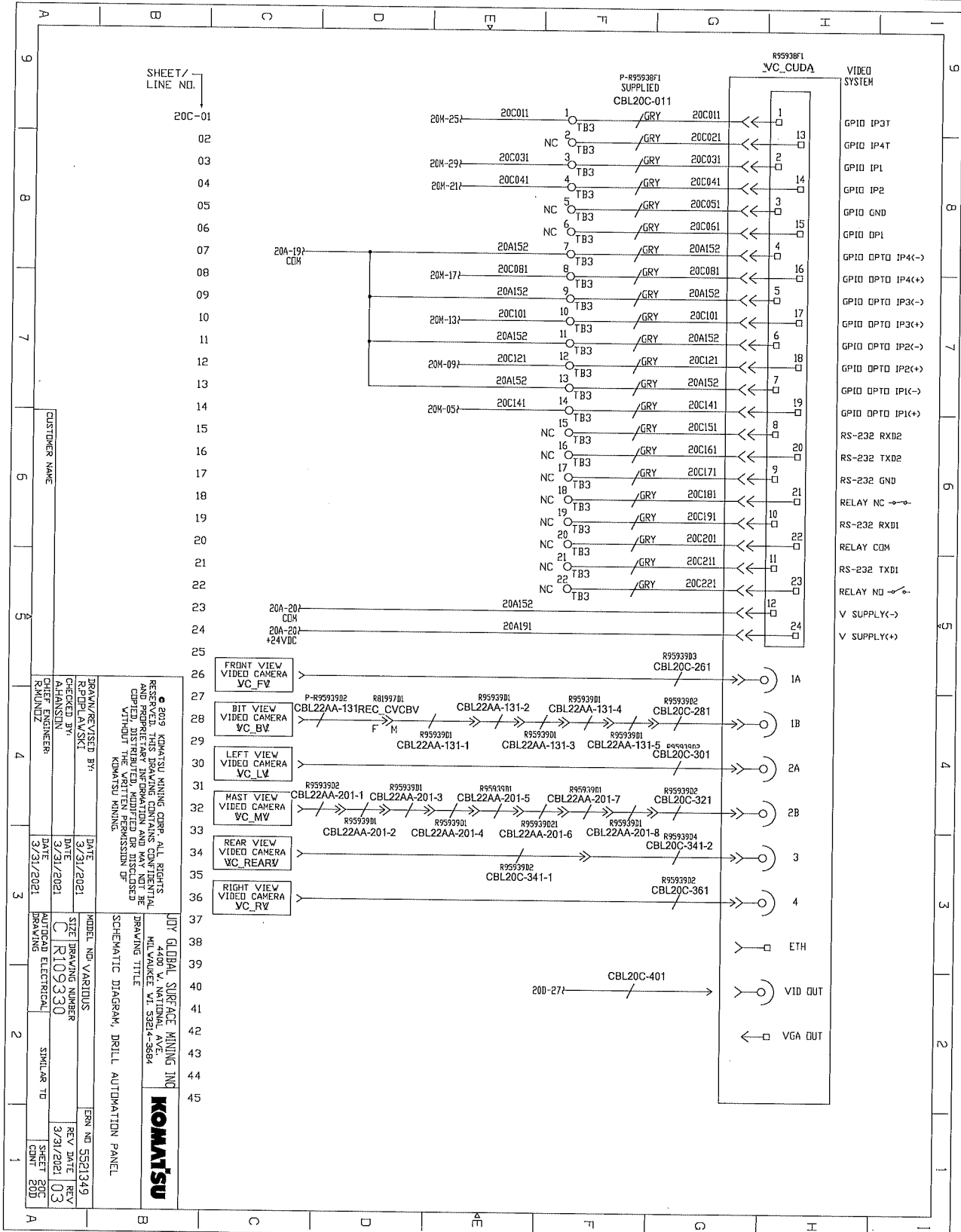
JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53214-3804

KOMATSU

SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL

ERN NO. 5521349

DRILL AUTOMATION PANEL SCHEMATICS



SHEET / LINE NO.
20C-01
02
03
04
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24
25

CUSTOMER NAME

FRONT VIEW VIDEO CAMERA VC_FV
BIT VIEW VIDEO CAMERA VC_BV
LEFT VIEW VIDEO CAMERA VC_LV
HAST VIEW VIDEO CAMERA VC_MV
REAR VIEW VIDEO CAMERA VC_REARY
RIGHT VIEW VIDEO CAMERA VC_RV

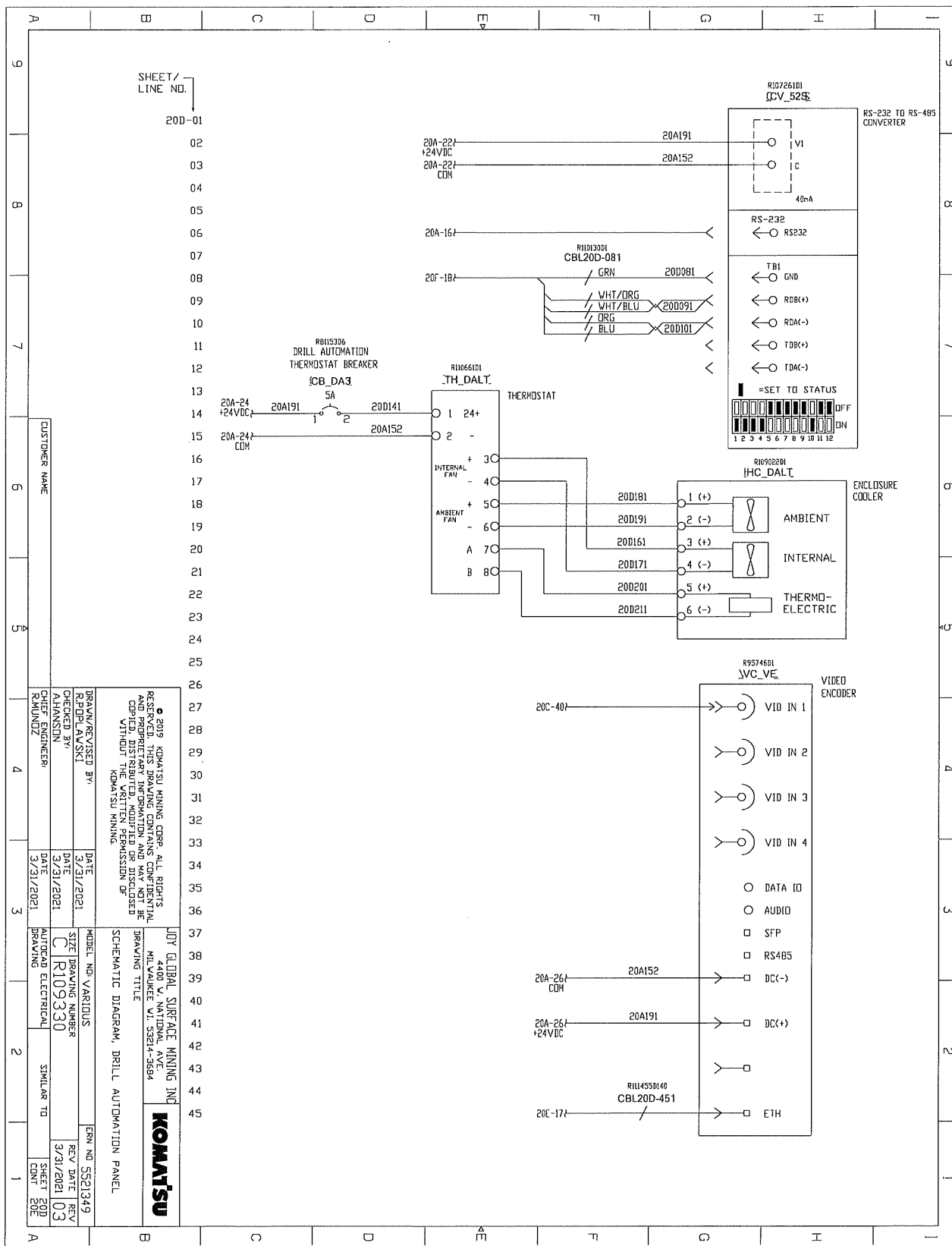
DATE 3/31/2021
DATE 3/31/2021
DATE 3/31/2021
DATE 3/31/2021
DATE 3/31/2021

MODEL NO. VARIOUS
SIZE DRAWING NUMBER R109330
AUTOCAD ELECTRICAL
SIMILAR TO
SHEET 20C
CMT 200

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LOY GLOBAL SURFACE MINING INC
4400 V. NATIONAL AVE.
MILWAUKEE, WI 53214-3684
KOMATSU

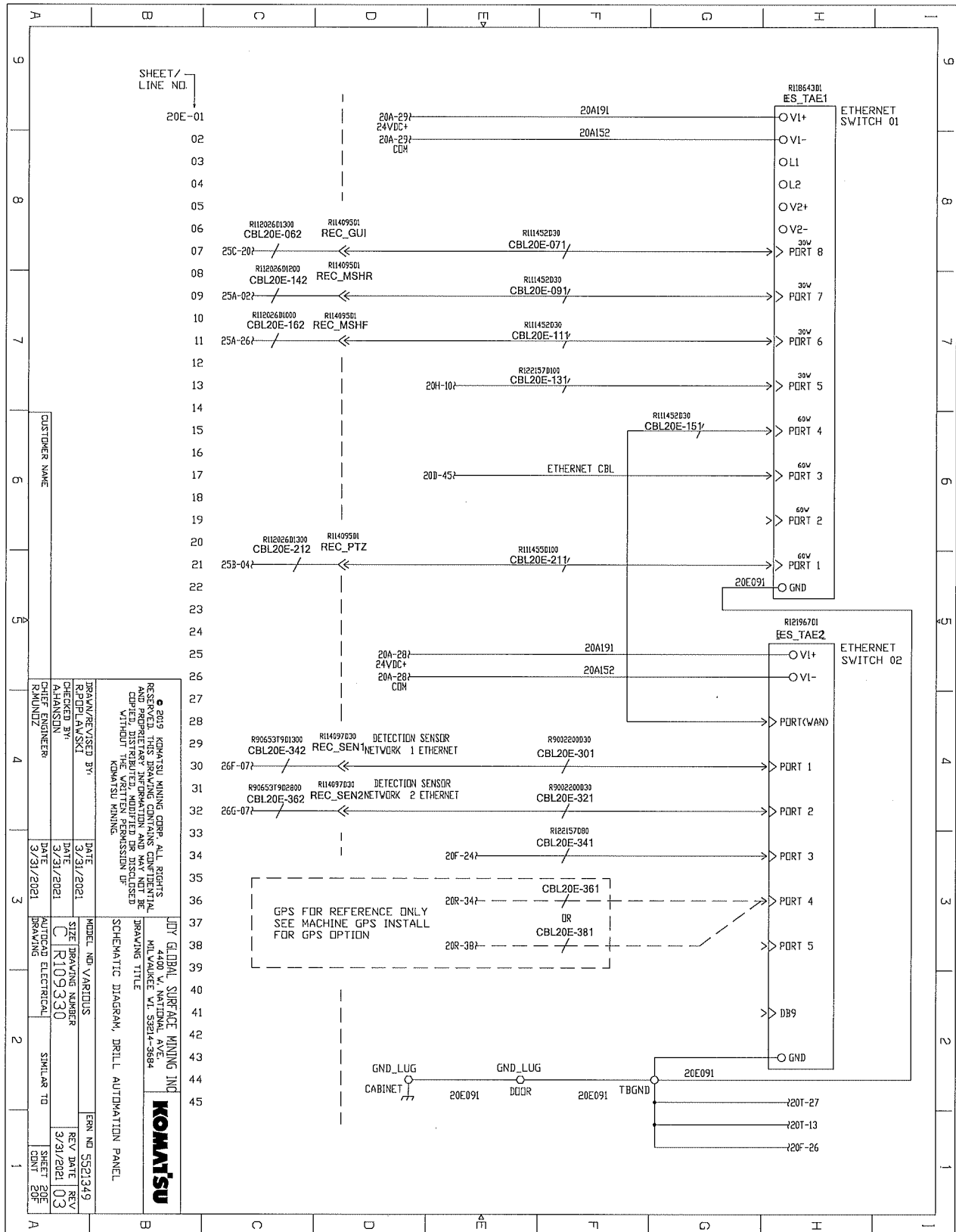
SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL

DRILL AUTOMATION PANEL SCHEMATICS

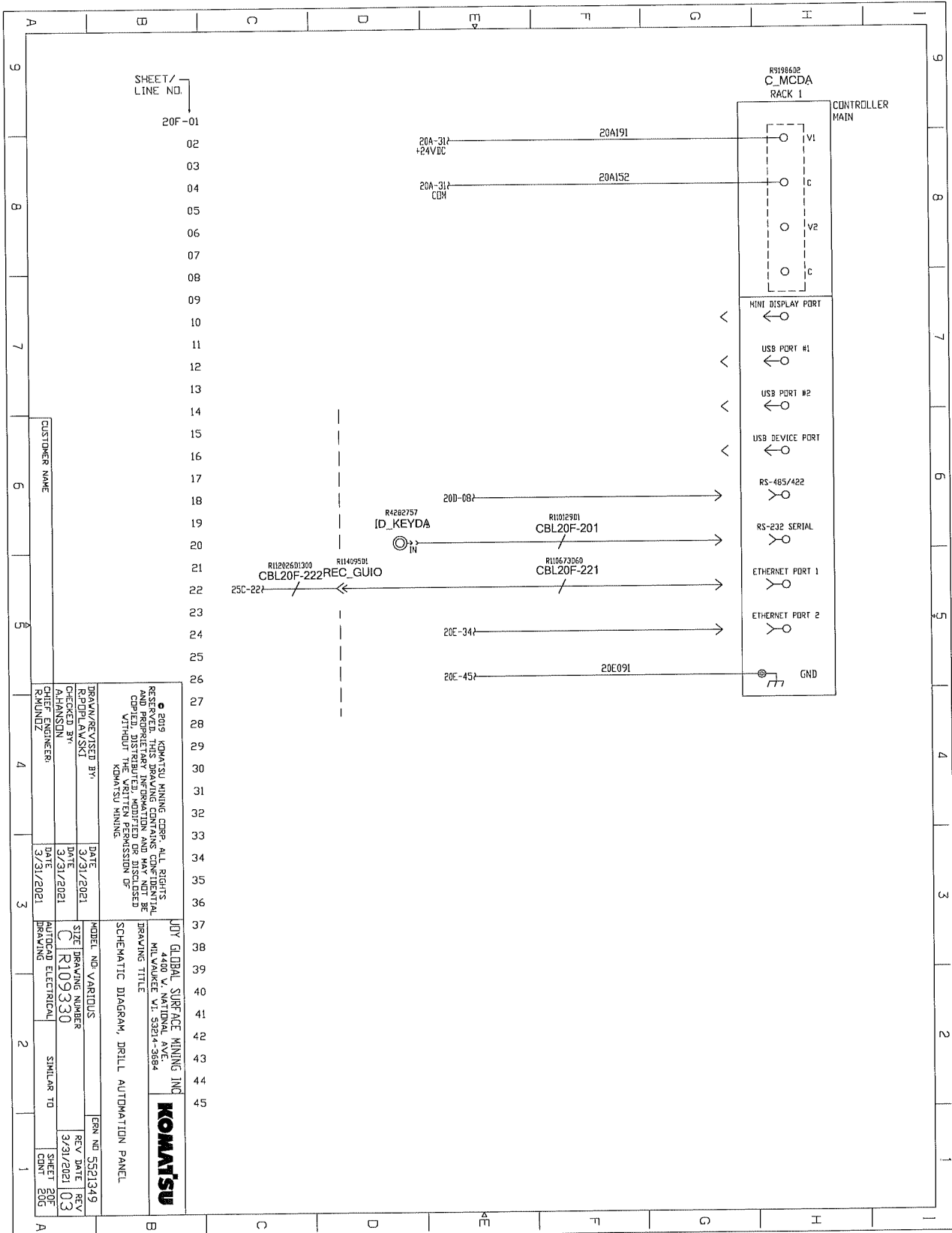


CUSTOMER NAME		DATE	
R. POPLAWSKI		3/31/2021	
CHECKED BY		DATE	
A. HANSEN		3/31/2021	
CHIEF ENGINEER		DATE	
R. MUNDZ		3/31/2021	
DRAWN/REVISED BY		DATE	
R. POPLAWSKI		3/31/2021	
SHEET DRAWING NUMBER		REV DATE	
C R109330		3/31/2021 03	
AUTOCAD ELECTRICAL		SIMILAR TO	
DRAWING		SHEET 20D	
		CMT 20E	
MODEL NO. VARIOUS		EON NO. 5521349	
JOB GLOBAL SURFACE MINING INC		REV DATE	
1401 W. NATIONAL AVE		3/31/2021	
MILWAUKEE, WI 53014-3664			
DRAWING TITLE		REV	
SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL		03	
KOMATSU			

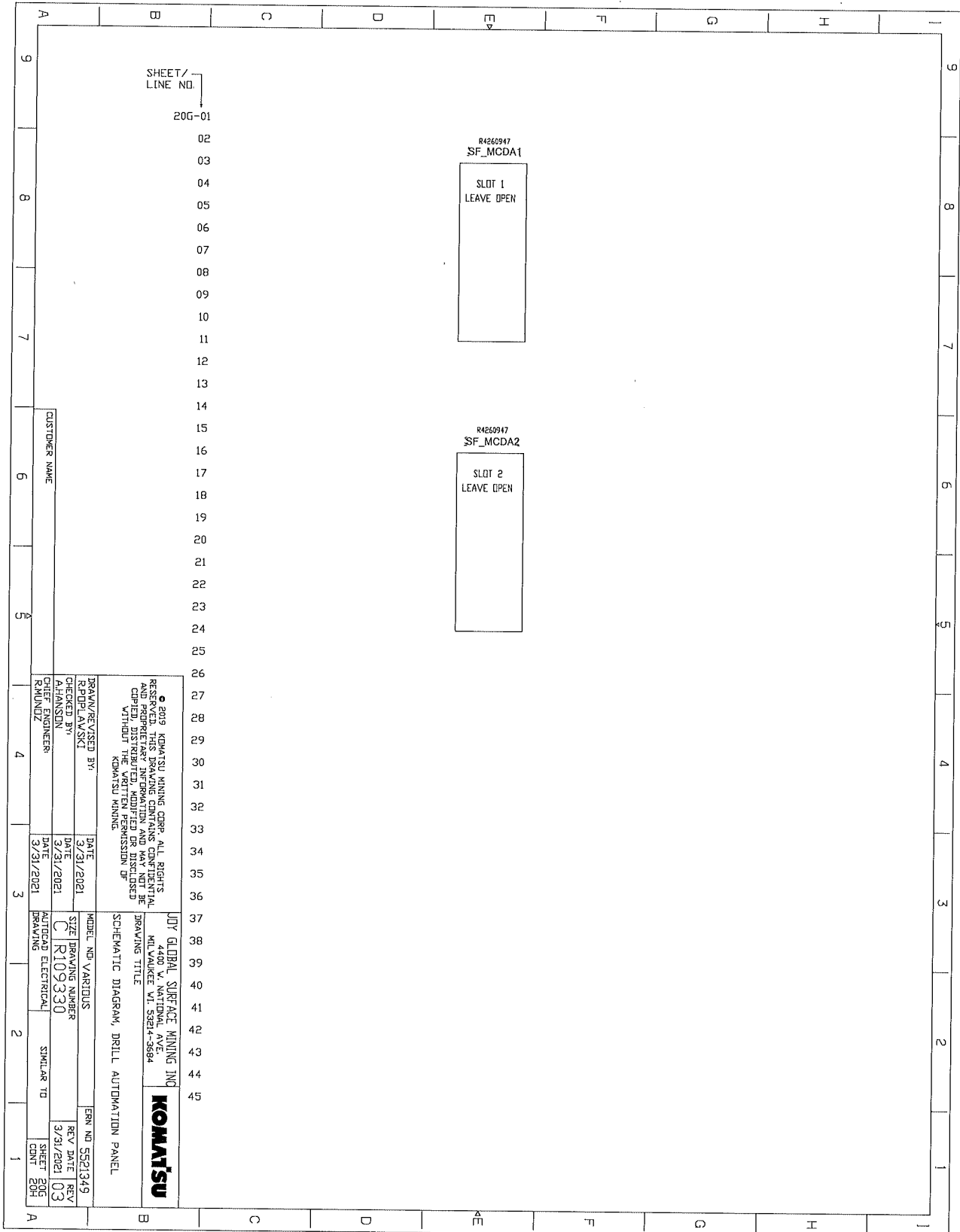
DRILL AUTOMATION PANEL SCHEMATICS



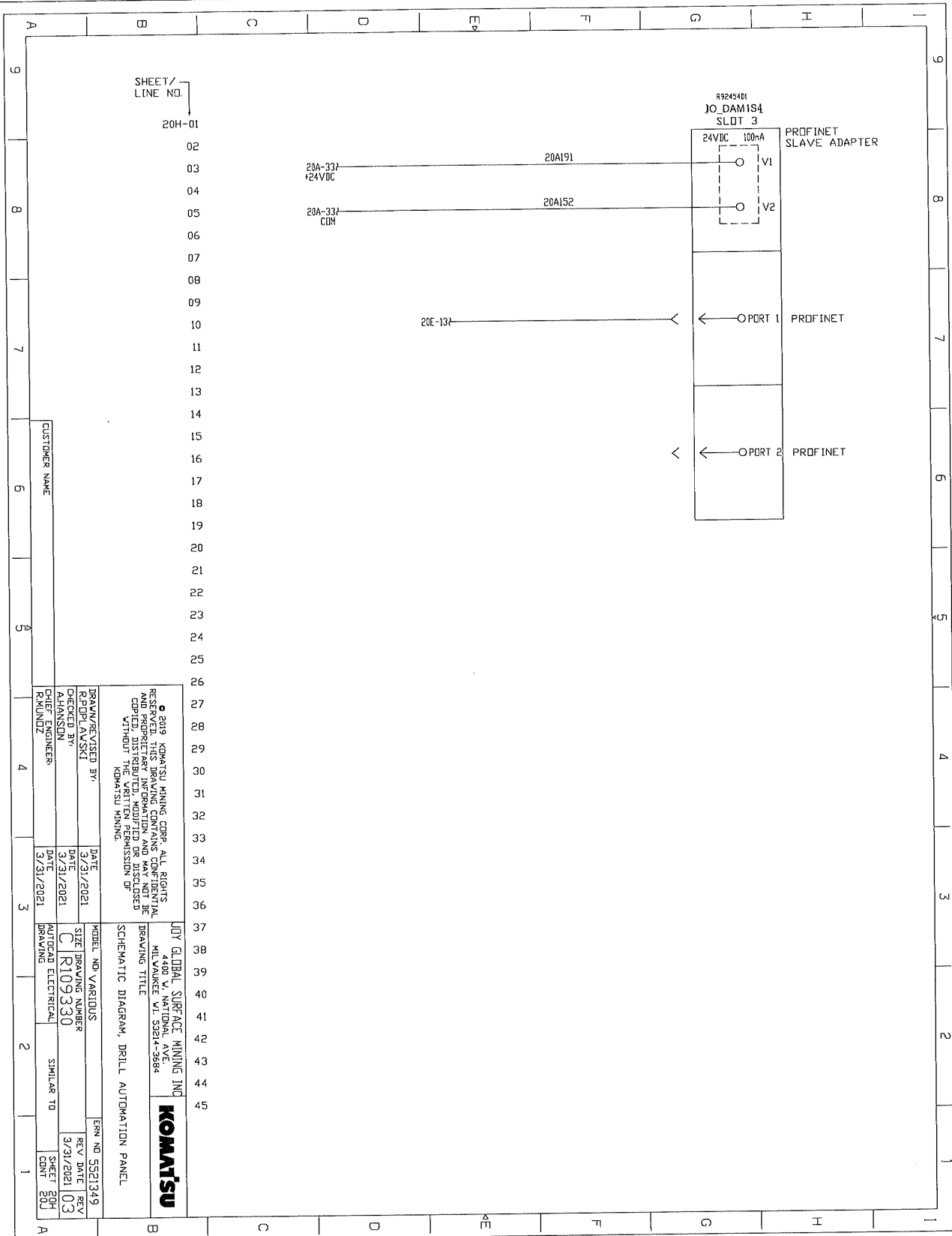
DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



CUSTOMER NAME

SHEET / LINE NO.
20H-01

DRAWN/REVISED BY: R.POPILAVSKI
CHECKED BY: A.HANSEN
DESIGNED BY: J.MUNIZ
ENGINEER

DATE: 3/21/2021
DATE: 3/21/2021
DATE: 3/21/2021

MODEL AND VARIANTS: R109330
SIZE: C
DRAWING NUMBER: R109330
AUTOCAD ELECTRICAL DRAWING

DATE: 3/21/2021

DATE: 3/21/2021

DATE: 3/21/2021

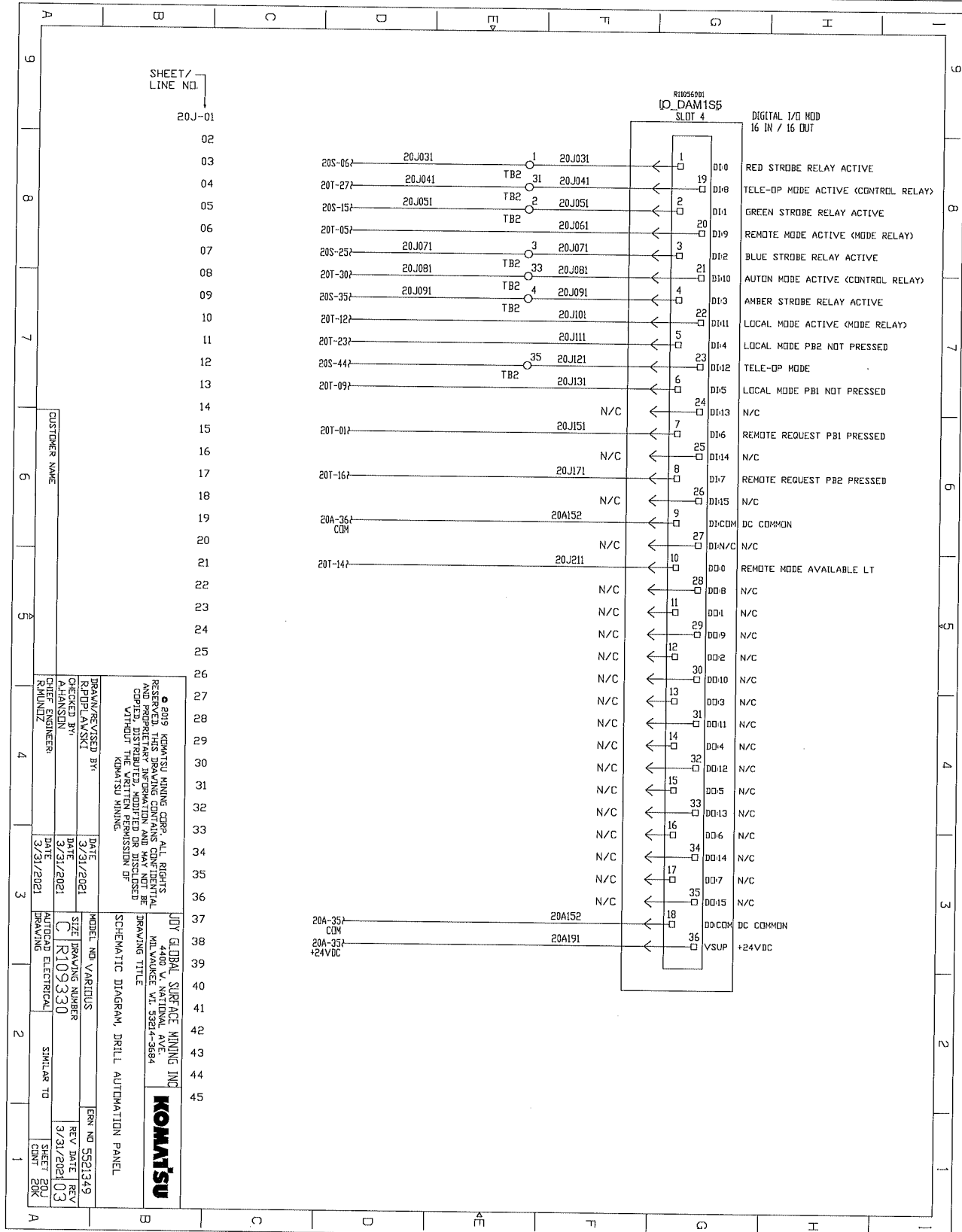
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JOY GLOBAL SURFACE MINING INC
4400 V. NATIONAL AVE
MILWAUKEE WI 53214-3884

SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL



DRILL AUTOMATION PANEL SCHEMATICS

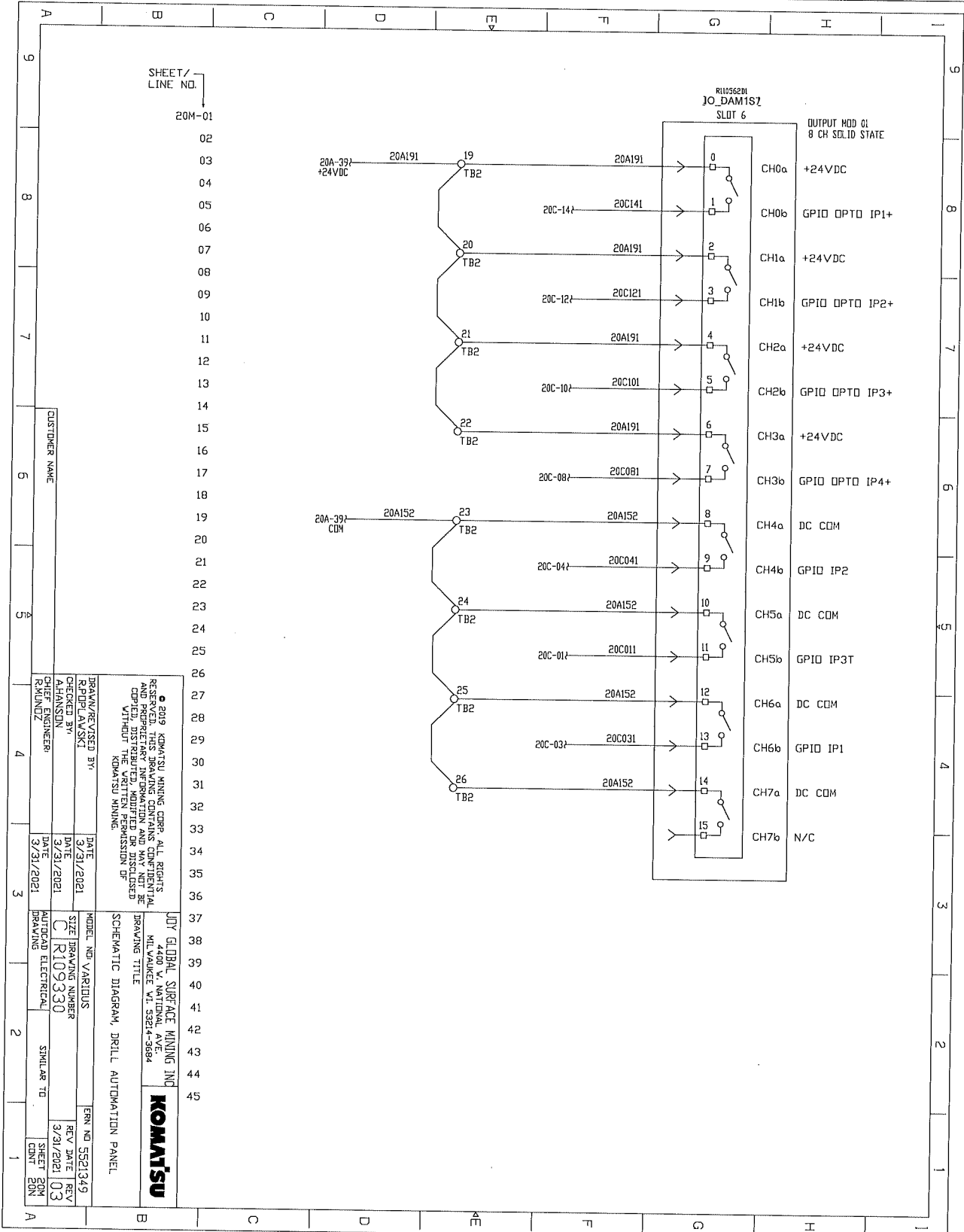


SHEET / LINE NO.
20J-01

CUSTOMER NAME

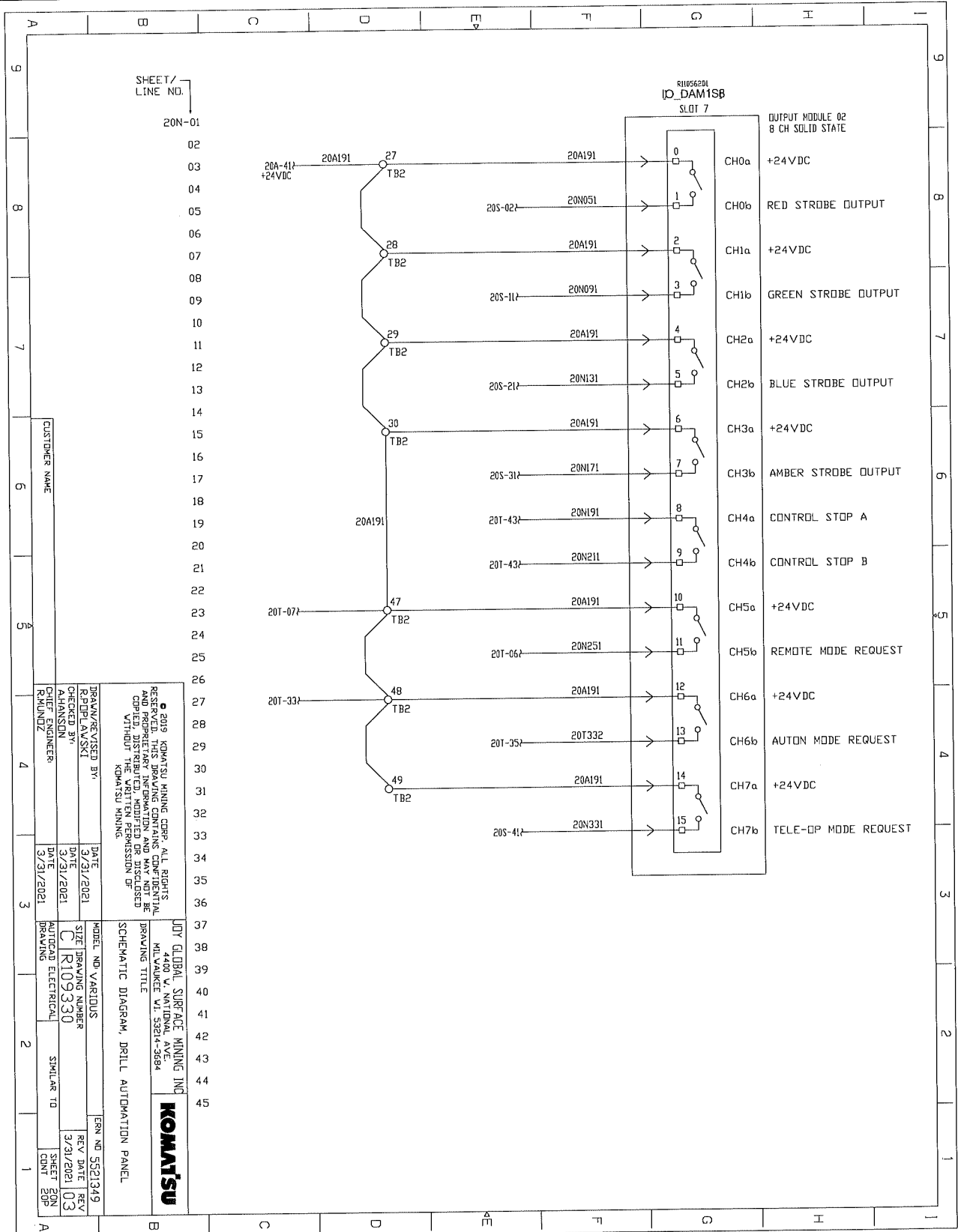
DRAWN/REVISED BY R/PL/LSK	DATE 3/31/2021	MODEL NO. VARIANTS	ERR NO. 5521349
CHECKED BY R/PL/LSK	DATE 3/31/2021	SIZE DRAWING NUMBER C R109330	REV. DATE 3/31/2021
DESIGNED BY R/PL/LSK	DATE 3/31/2021	AUTOCAD ELECTRICAL DRAWING	SHEET 20J CONF 20K
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SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL			

DRILL AUTOMATION PANEL SCHEMATICS



DRAWN/REVISED BY: R/P/PL/AVSKI		DATE: 3/31/2021	MODEL: NBT VARIOUS	ERN NO: 5521349
CHECKED BY: CHANISSUN		DATE: 3/31/2021	SIZE: DRAWING NUMBER	REV DATE: 3/31/2021
APPROVED BY: R/AVNDZ		DATE: 3/31/2021	AUTOCAD ELECTRICAL DRAWING	SHEET 20M
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DRILL AUTOMATION PANEL SCHEMATICS



SHEET / LINE NO.
20N-01

CUSTOMER NAME

DRAWN/REVISED BY:
CHECKED BY:
DATE: 3/21/2021
DATE: 3/21/2021
DATE: 3/21/2021

MODEL NO. VARIOUS
SIZE DRAWING NUMBER
C R109330
AUTOCAD ELECTRICAL
DRAWING

DATE: 3/21/2021
DATE: 3/21/2021
DATE: 3/21/2021

REV. DATE
REV. DATE
REV. DATE

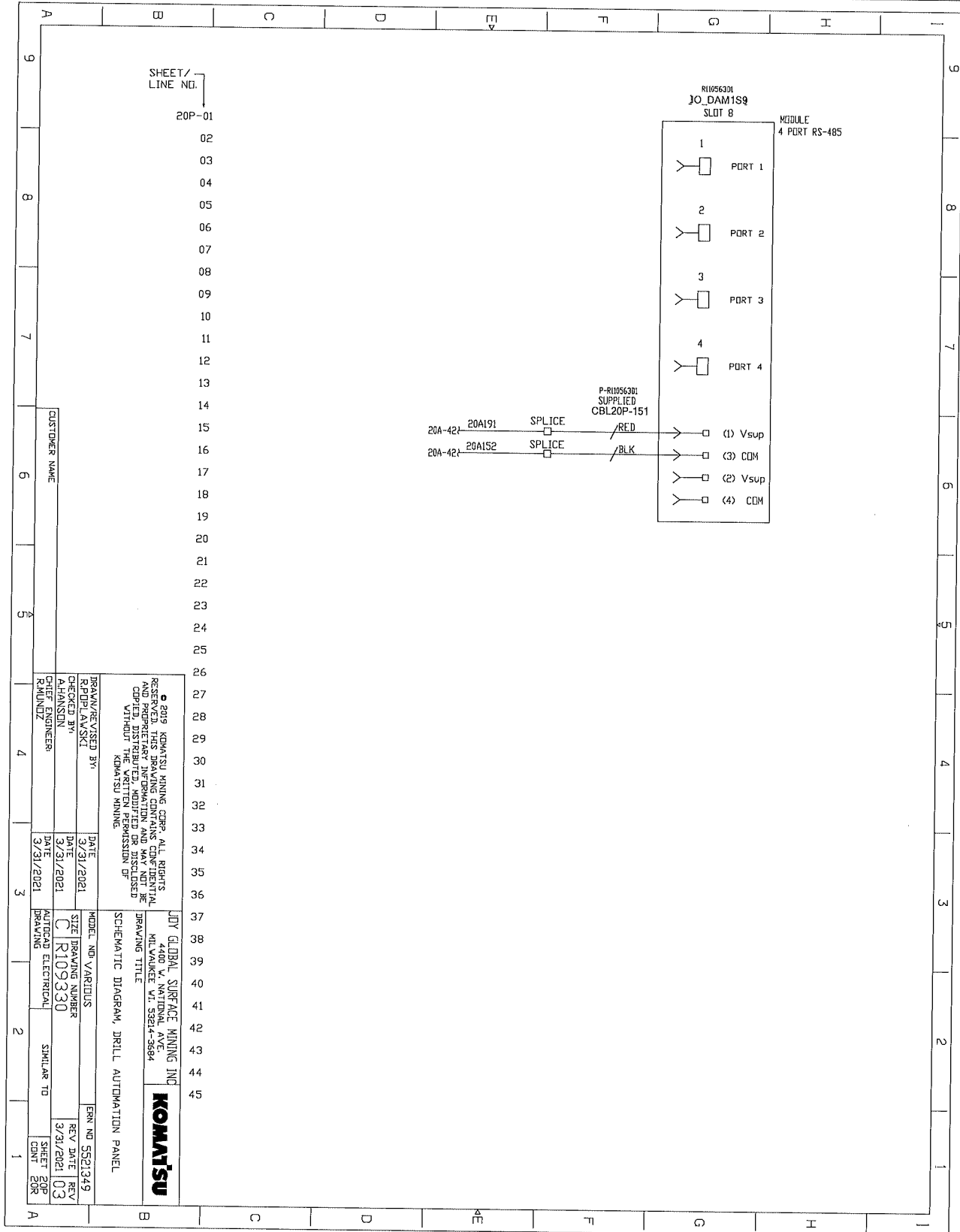
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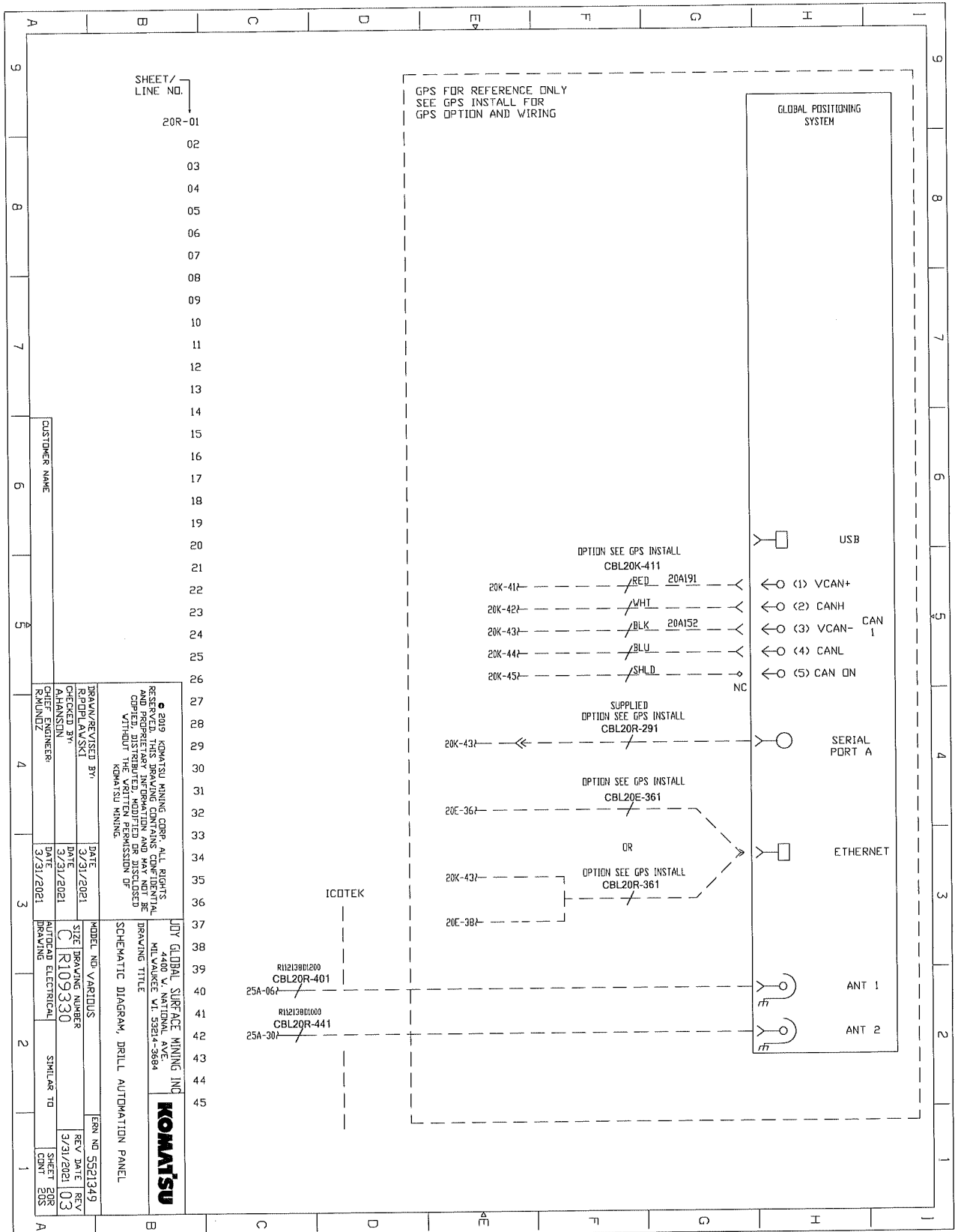
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JGV GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE, WI 53214-3884
KOMATSU
SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL

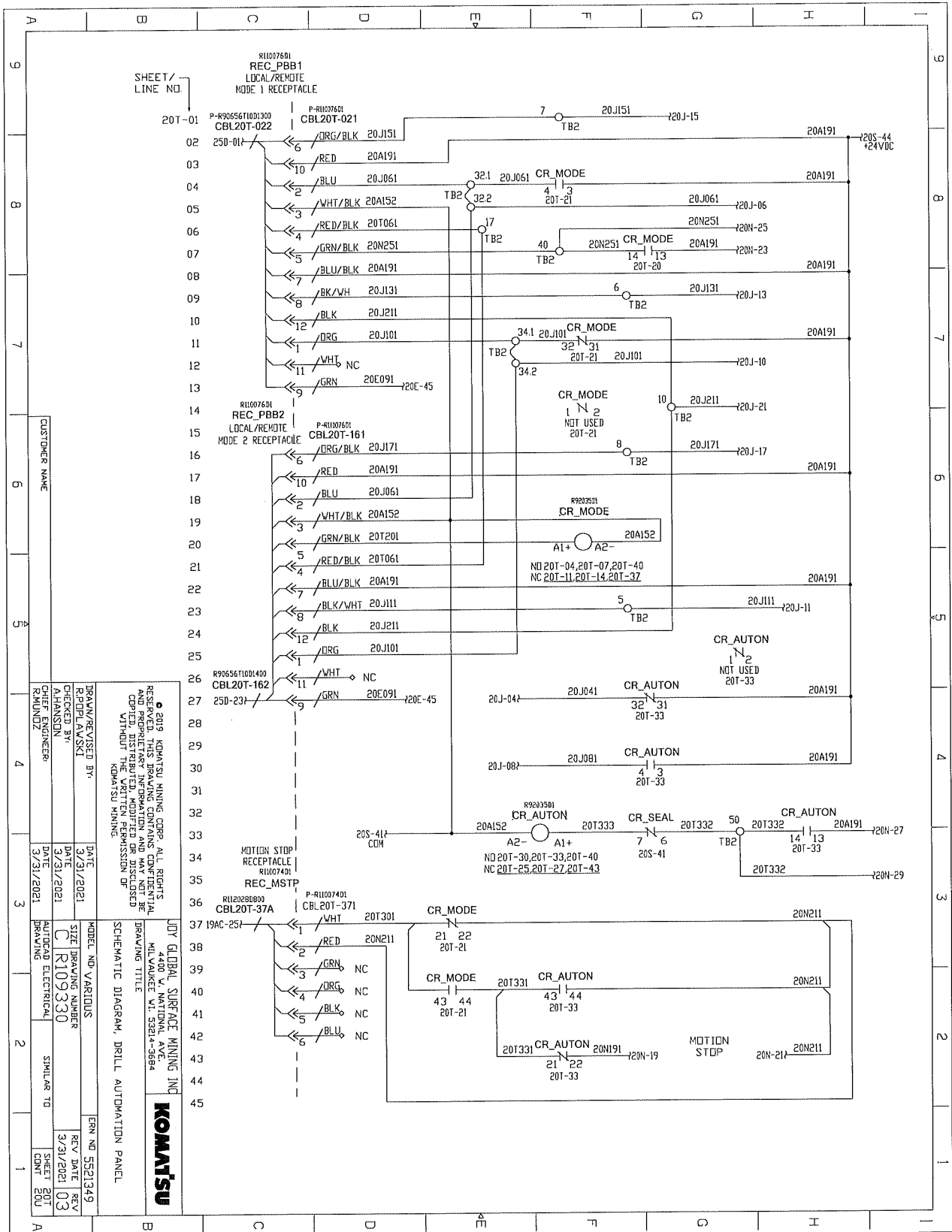
DRILL AUTOMATION PANEL SCHEMATICS



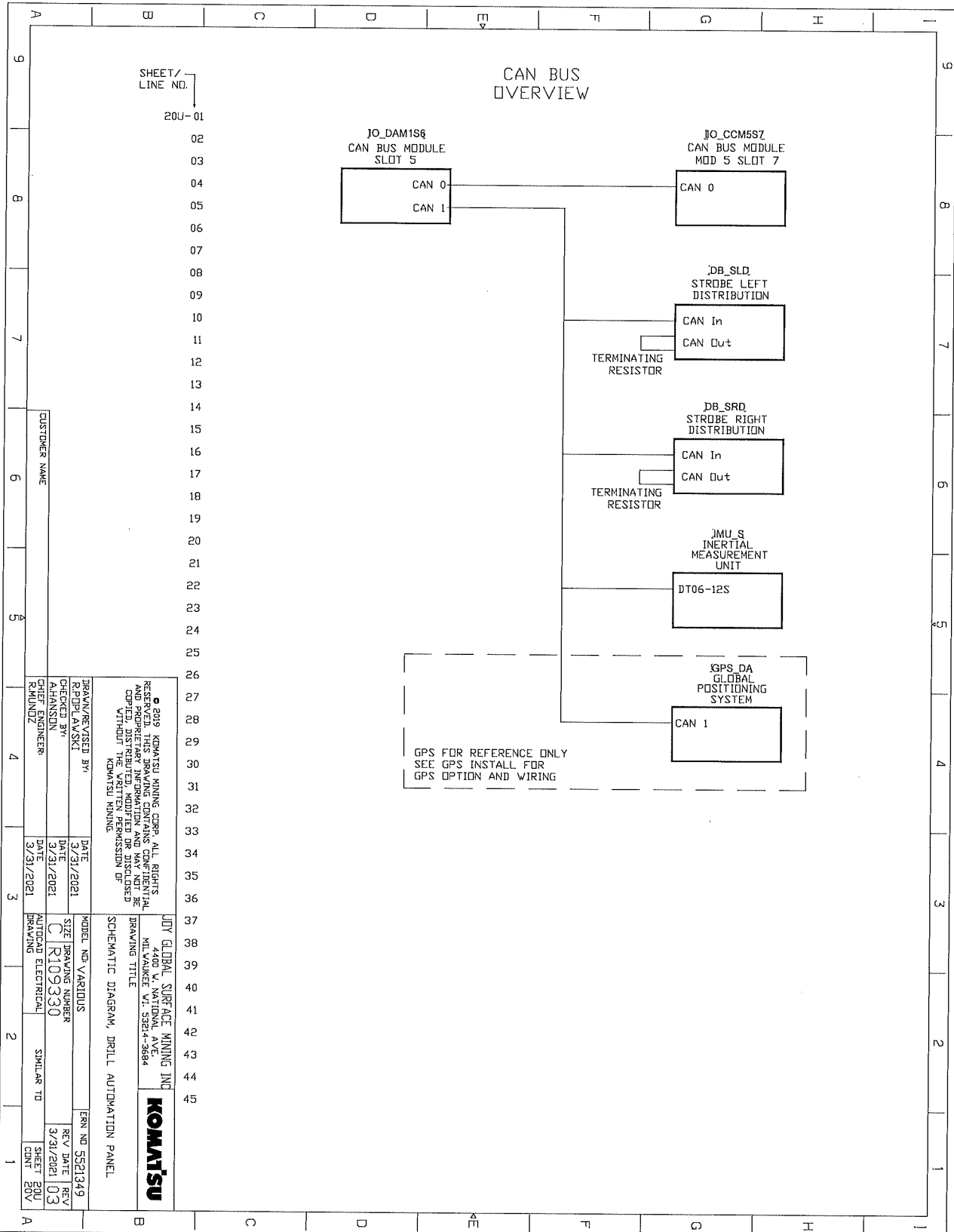
DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



SHEET/
LINE NO.
20U-01

CUSTOMER NAME

REVISION	DATE	BY
1	3/21/2021	ALANSON
2	3/21/2021	ALANSON
3	3/21/2021	ALANSON

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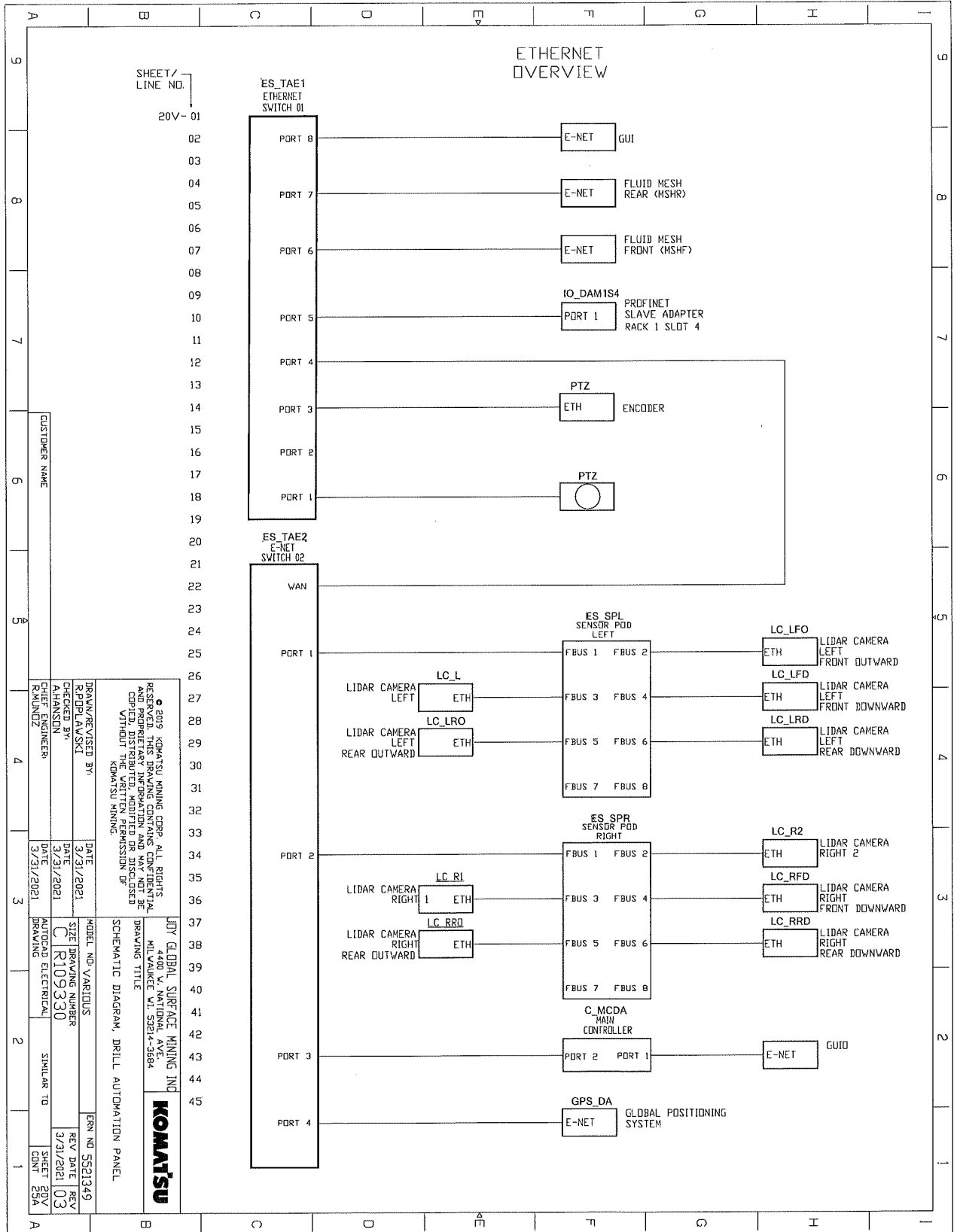
MODEL NO. VARIOUS	ERN NO. 5521349
SIZE DRAWING NUMBER	REV. DATE
R109330	3/21/2021
AUTOCAD ELECTRICAL	SHEET NO.
DRAWING	20U

JQY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE.
MILWAUKEE WI 53244-3684

KOMATSU

SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL

DRILL AUTOMATION PANEL SCHEMATICS

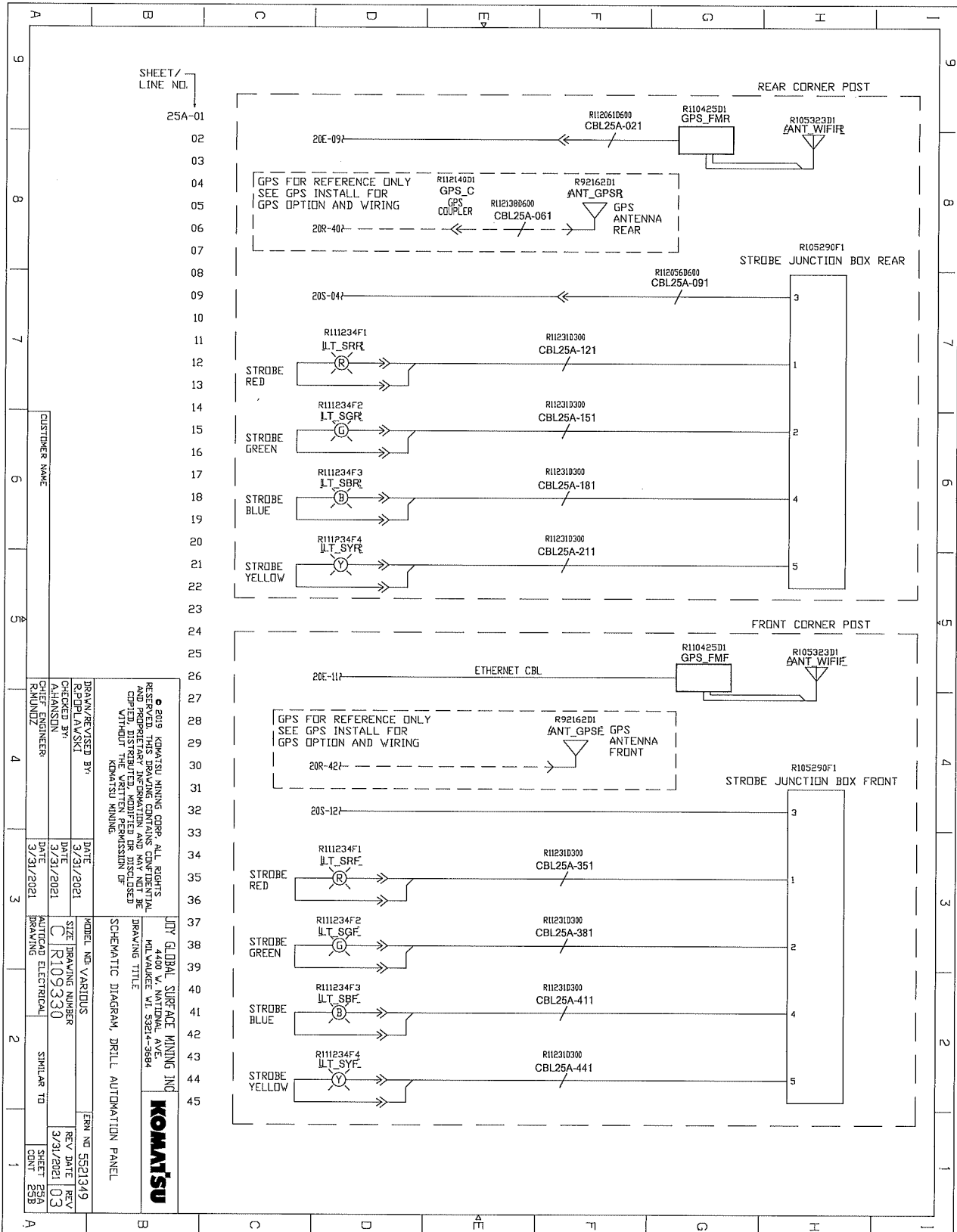


CUSTOMER NAME

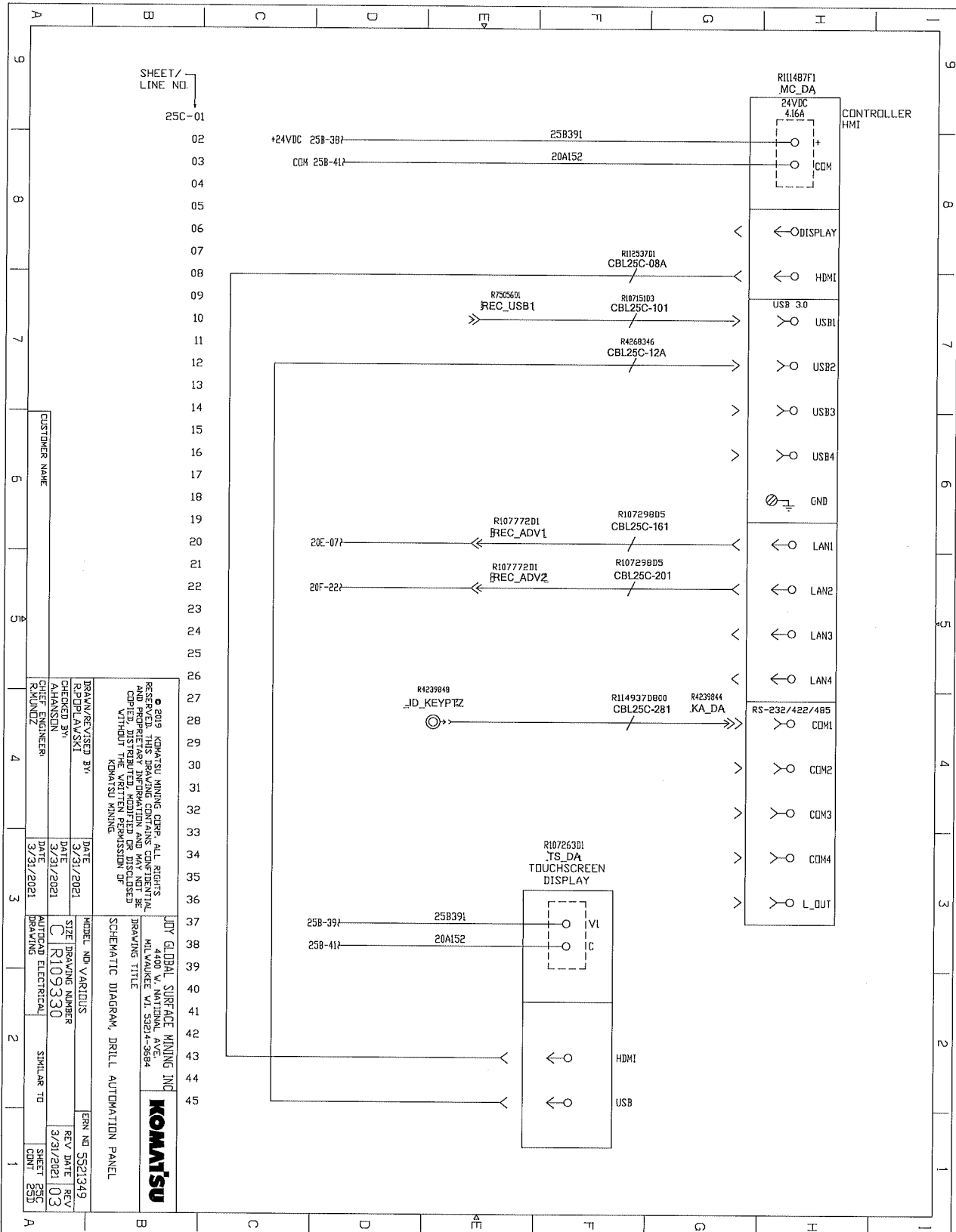
SHEET / LINE NO.
20V- 01

DRAWN/REVISED BY: RPOPLAVSKI	DATE: 3/31/2021	MODEL NO. VARIANTS	ERN NO. 5521349
CHECKED BY: AHANSSON	DATE: 3/31/2021	SIZE DRAWING NUMBER	REV. DATE REV.
CHIEF ENGINEER: KJONVIZ	DATE: 3/31/2021	C R109330	3/31/2021 03
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SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL			

DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



CUSTOMER NAME

REVISIONS

REV	DATE	BY	DESCRIPTION
01	3/31/2021	AMANSUN	INITIAL
02	3/31/2021	AMANSUN	REVISED
03	3/31/2021	AMANSUN	REVISED

SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL

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JOB GLOBAL SURFACE MINING INC
4400 V. NATIONAL AVE.
HELIXVILLE, VA 55214-3844

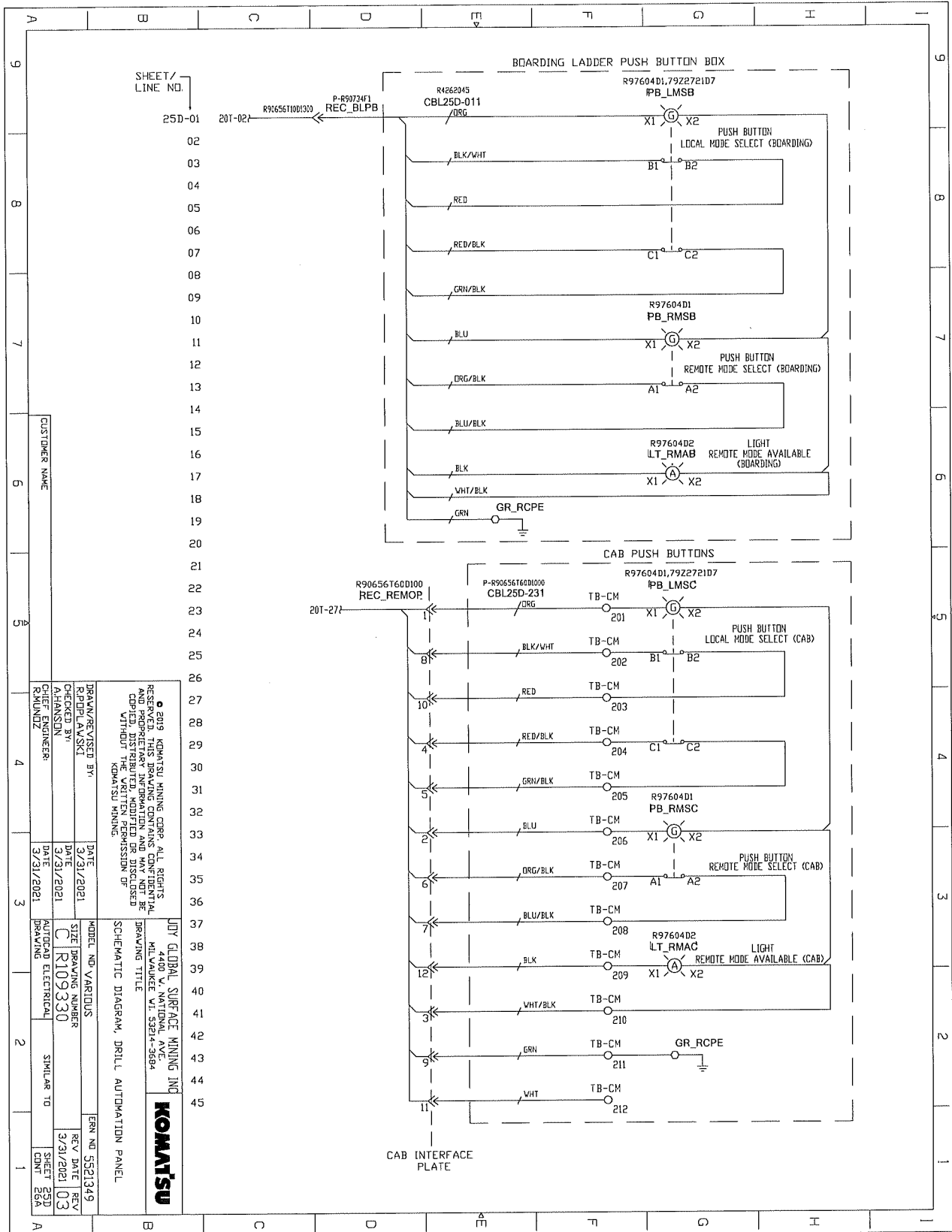
COMMENTS: MODEL NO. VARIOUS
SIZE DRAWING NUMBER R109330
AUTOCAD ELECTRICAL DRAWING

DATE 3/31/2021
BY AMANSUN
CHECKED BY AMANSUN
CHIEF ENGINEER R.MUNDZ

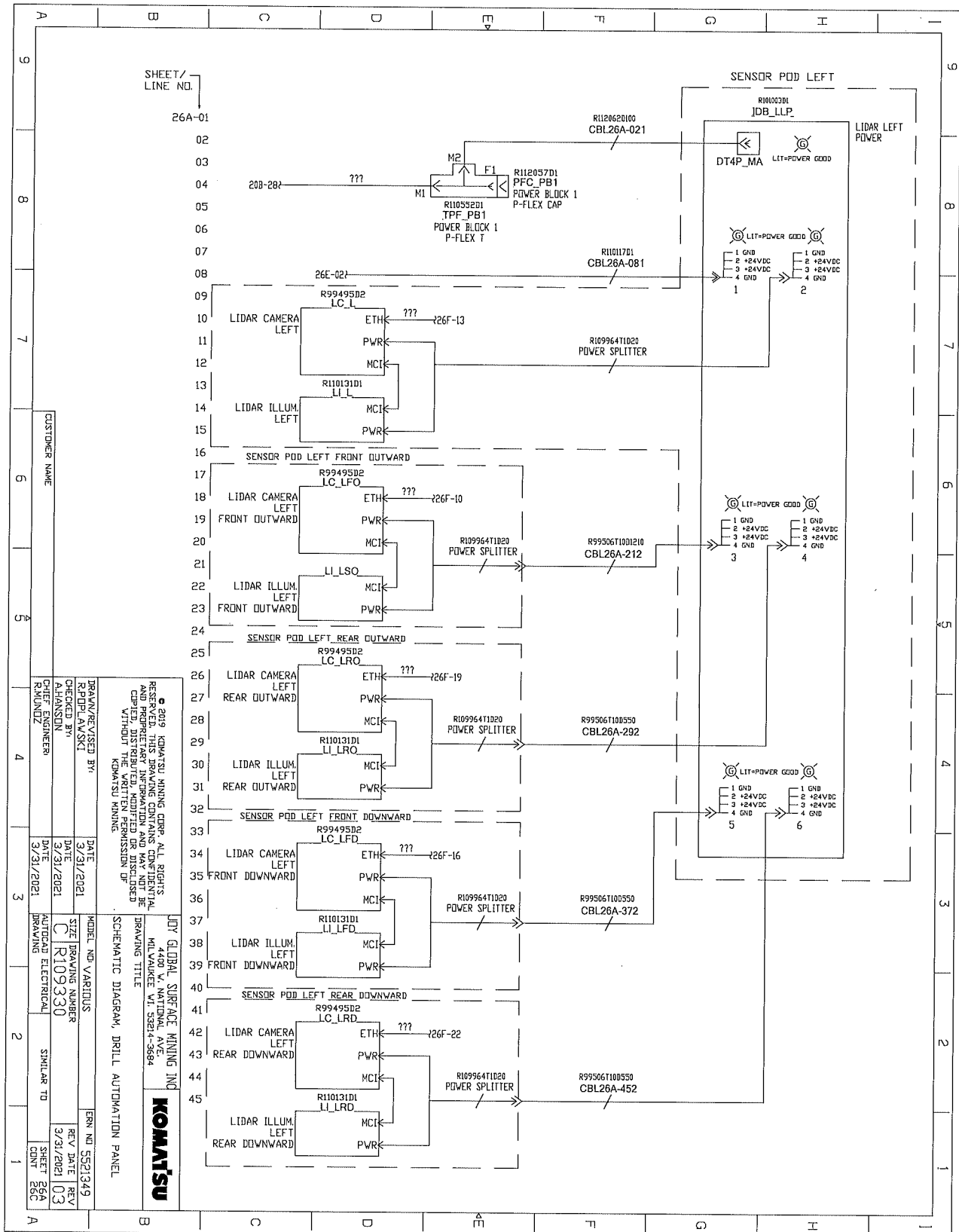
REV NO 5521349
REV DATE 3/31/2021
REV 03

SHEET 25C
CNT 25D

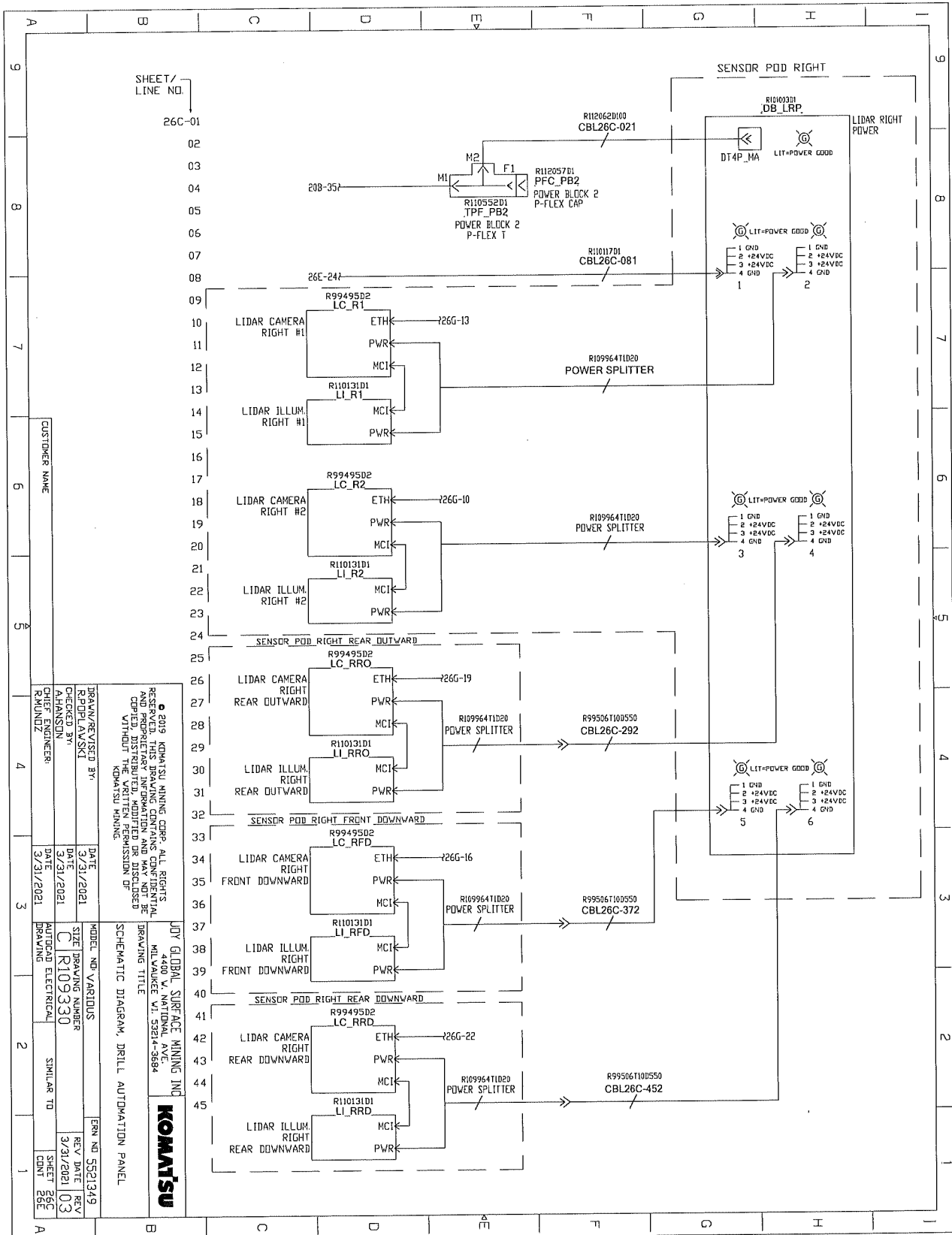
DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



CUSTOMER NAME

DRAWN/REVISED BY
RPP/PLAVSKI
CHECKED BY
DATE
3/21/2021
AUTOCAD ELECTRICAL
DRAWING

DATE
3/21/2021

MODEL NO VARIANTS
R109330

SIZE DRAWING NUMBER
R109330

DATE
3/21/2021

SHEET 26C
CNT 26E

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JOY GLOBAL SURFACE MINING INC
4400 W. NATIONAL AVE
MILWAUKEE WI 53214-3804

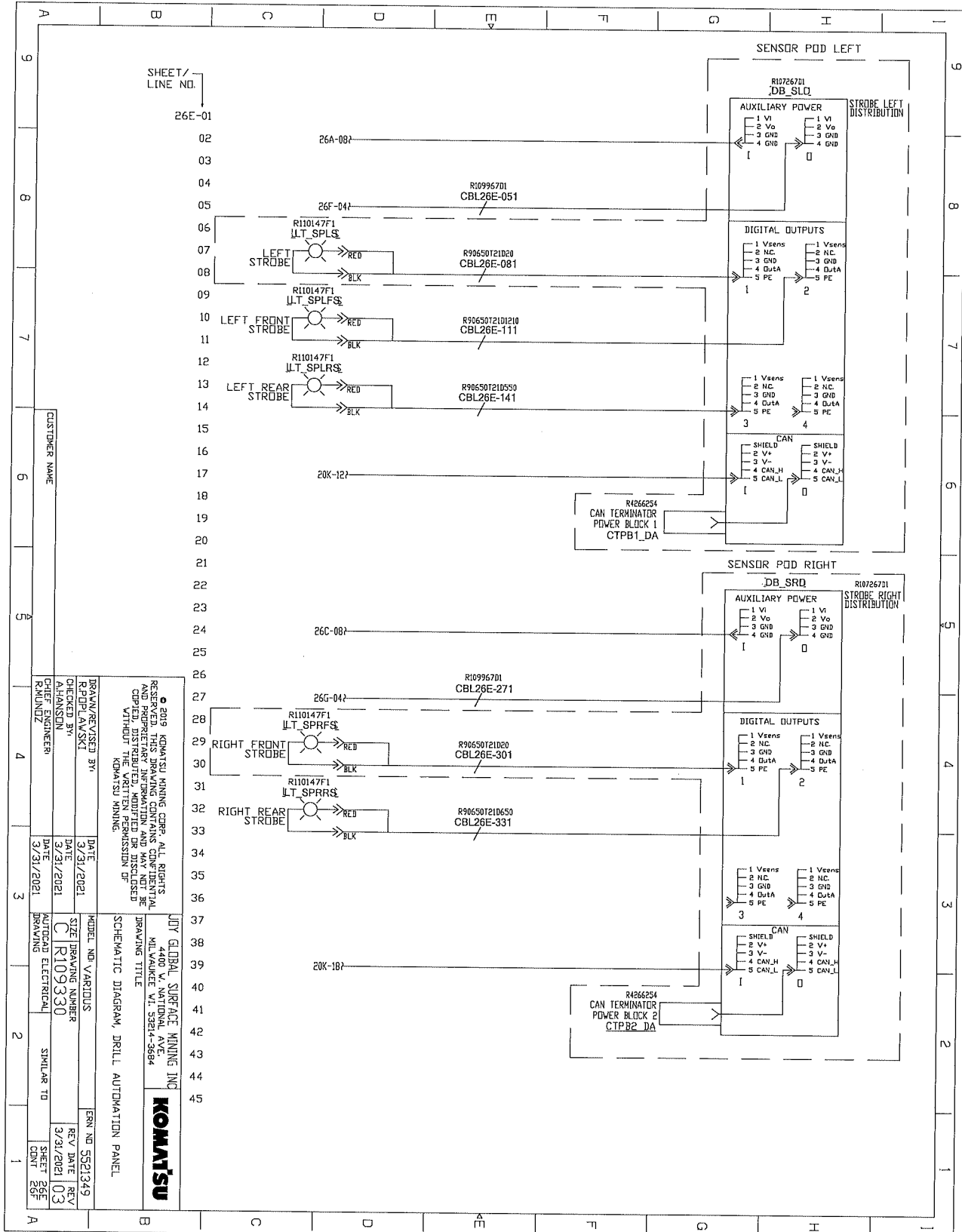


SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL

ERR NO 5521349

REV DATE
REV 03
3/21/2021

DRILL AUTOMATION PANEL SCHEMATICS



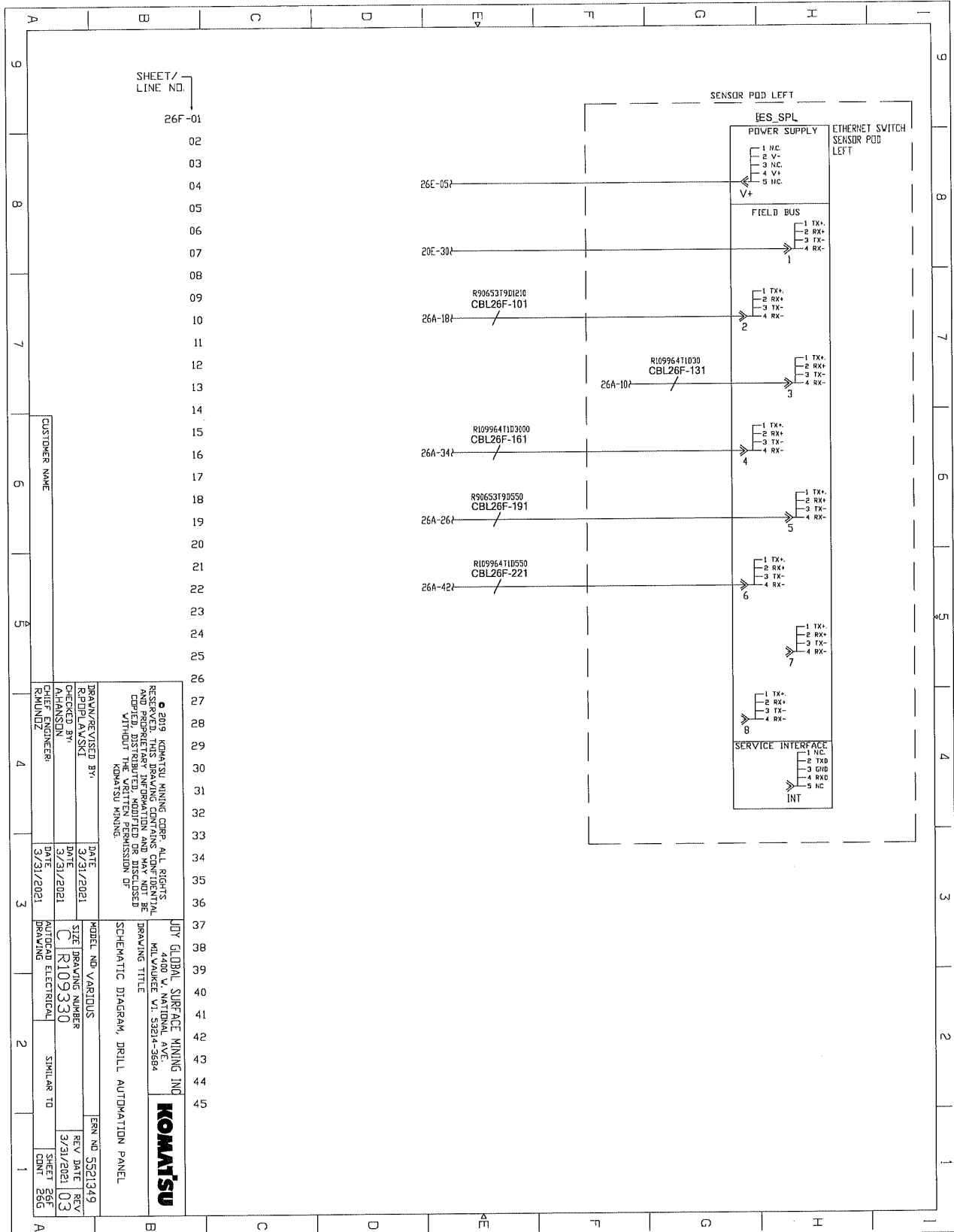
SHEET / LINE NO.
26E-01

26A-081
26F-041
R10996701 CBL26E-051
R110147F1 I.L.T. SPLRS
R99650121D20 CBL26E-081
R110147F1 I.L.T. SPLRS
R99650121D210 CBL26E-111
R110147F1 I.L.T. SPLRS
R99650121D550 CBL26E-141
20K-121
R4266254 CAN TERMINATOR POWER BLOCK 1 CTPB1_DA

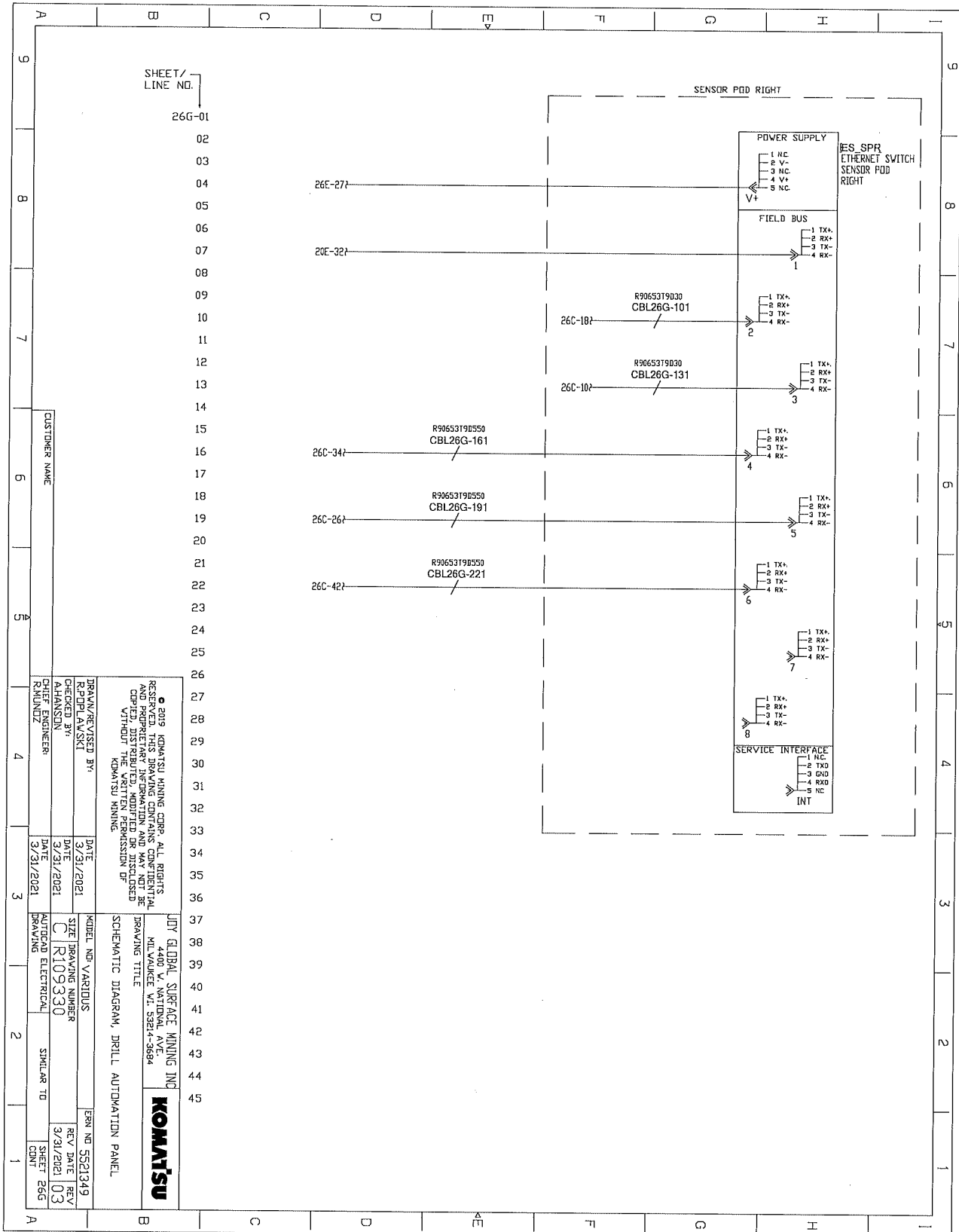
26C-081
R10996701 CBL26E-271
R110147F1 I.L.T. SPRFS
R99650121D20 CBL26E-301
R110147F1 I.L.T. SPRFS
R99650121D650 CBL26E-331
20K-181
R4266254 CAN TERMINATOR POWER BLOCK 2 CTPB2_DA

DRAWN/REVISED BY R.F.P./A.V.S.K.I. CHECKED BY C.H.F. E.J. M.C. R.A.M./D.Z.	DATE 3/31/2021 DATE 3/31/2021 DATE 3/31/2021	MODEL NO. VARIANTS R109330 SIZE DRAWING NUMBER R109330 SHEET NO. 25E	ERN NO. 5521349 REV. DATE 3/31/2021 REV. NO. 03
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DRILL AUTOMATION PANEL SCHEMATICS



DRILL AUTOMATION PANEL SCHEMATICS



DRAWN/REVISED BY:		DATE
CHECKED BY:		DATE
DESIGNED BY:		DATE
DRAWN/REVISED BY:		DATE
CHECKED BY:		DATE
DESIGNED BY:		DATE
DRAWN/REVISED BY:		DATE

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MODEL NO. VARIANTS		DATE
DRAWING NUMBER		DATE
DRAWING TITLE		DATE
DRAWING NUMBER		DATE
DRAWING TITLE		DATE
DRAWING NUMBER		DATE
DRAWING TITLE		DATE

UDY GLOBAL SURFACE MINING INC
4400 V. NATIONAL AVE.
MILWAUKEE WI 53214-3694

KOMATSU

SCHEMATIC DIAGRAM, DRILL AUTOMATION PANEL



DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
	R109330	DRILL AUTOMATION PANEL SCHEMATICS	1	Each
_ID_KEYPTZ		•		
ANT_GPSF		•		
ANT_GPSR		•		
ANT_WIFIF		•		
ANT_WIFIR		•		
C_MCDA		•		
		•		
CAM_PTZ		•		
CB_DA1		•		
CB_DA2		•		
CB_DA3		•		
CBL10AE-152		•		
CBL20A-021		•		
CBL20A-181		•		
CBL20B-021		•		
CBL20B-161		•		
CBL20B-281		•		
CBL20B-282		•		
CBL20B-351		•		
CBL20B-352		•		
CBL20C-011		•		
CBL20C-261		•		
CBL20C-281		•		
CBL20C-301		•		
CBL20C-321		•		
CBL20C-341-1		•		
CBL20C-341-2		•		
CBL20C-361		•		
CBL20C-401		•		
CBL20D-081		•		
CBL20D-451		•		
CBL20E-062		•		
CBL20E-071		•		
CBL20E-091		•		
CBL20E-111		•		
CBL20E-131		•		
CBL20E-142		•		



DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
CBL20E-151		.		
CBL20E-162		.		
CBL20E-211		.		
CBL20E-212		.		
CBL20E-301		.		
CBL20E-321		.		
CBL20E-341		.		
CBL20E-342		.		
CBL20E-361		.		
		.		
CBL20E-362		.		
CBL20E-381		.		
CBL20F-201		.		
CBL20F-221		.		
CBL20F-222		.		
CBL20K-031		.		
CBL20K-032		.		
CBL20K-033		.		
CBL20K-121		.		
CBL20K-122		.		
CBL20K-181		.		
CBL20K-182		.		
CBL20K-183		.		
CBL20K-271		.		
CBL20K-411		.		
		.		
CBL20K-431		.		
CBL20P-151		.		
CBL20P-172		.		
CBL20R-291		.		
CBL20R-361		.		
CBL20R-401		.		
CBL20R-441		.		
CBL20S-041		.		
CBL20S-042		.		
CBL20S-121		.		
CBL20S-122		.		
CBL20T-021		.		

DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
CBL20T-022		•		
CBL20T-161		•		
CBL20T-162		•		
CBL20T-37A		•		
CBL22AA-131		•		
CBL22AA-131-1		•		
CBL22AA-131-2		•		
CBL22AA-131-3		•		
CBL22AA-131-4		•		
CBL22AA-131-5		•		
CBL22AA-201-1		•		
CBL22AA-201-2		•		
CBL22AA-201-3		•		
CBL22AA-201-4		•		
CBL22AA-201-5		•		
CBL22AA-201-6		•		
CBL22AA-201-7		•		
CBL22AA-201-8		•		
CBL25A-021		•		
CBL25A-061		•		
CBL25A-091		•		
CBL25A-121		•		
CBL25A-151		•		
CBL25A-181		•		
CBL25A-211		•		
CBL25A-351		•		
CBL25A-381		•		
CBL25A-411		•		
CBL25A-441		•		
CBL25B-041		•		
CBL25B-042		•		
CBL25B-191		•		
CBL25C-08A		•		
CBL25C-101		•		
CBL25C-121		•		
CBL25C-12A		•		
CBL25C-161		•		
CBL25C-201		•		

DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
CBL25C-281		.		
CBL25D-011		.		
CBL25D-231		.		
CBL26A-021		.		
CBL26A-081		.		
CBL26A-212		.		
CBL26A-292		.		
CBL26A-372		.		
CBL26A-452		.		
CBL26C-021		.		
CBL26C-081		.		
CBL26C-292		.		
CBL26C-372		.		
CBL26C-452		.		
CBL26E-051		.		
CBL26E-081		.		
CBL26E-111		.		
CBL26E-141		.		
CBL26E-271		.		
CBL26E-301		.		
CBL26E-331		.		
CBL26F-101		.		
CBL26F-131		.		
CBL26F-161		.		
CBL26F-191		.		
CBL26F-221		.		
CBL26G-101		.		
CBL26G-131		.		
CBL26G-161		.		
CBL26G-191		.		
CBL26G-221		.		
CR_AS		.		
		.		
CR_AUTON		.		
		.		
		.		
		.		
		.		
		.		

DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
		.		
		.		
CR_BS		.		
		.		
CR_GS		.		
		.		
CR_MODE		.		
		.		
		.		
		.		
		.		
		.		
		.		
CR_RESERVE		.		
CR_RS		.		
		.		
CR_SEAL		.		
		.		
		.		
CTPB1_DA		.		
CV_52S		.		
DB_LLP		.		
DB_LRP		.		
DB_SLD		.		
		.		
DB_SRD		.		
		.		
DT4P_MA		.		
ES_SPL		.		
		.		
ES_SPR		.		
		.		
ES_TAE1		.		
		.		
ES_TAE2		.		
		.		
GPS_C		.		
GPS_DA		.		

DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
		.		
GPS_FMF		.		
GPS_FMR		.		
GR_RCPE		.		
		.		
HC_DALT		.		
ID_KEYDA		.		
IMU_S		.		
		.		
IO_CCM5S7		.		
IO_DAM1S4		.		
		.		
IO_DAM1S5		.		
IO_DAM1S6		.		
		.		
IO_DAM1S7		.		
IO_DAM1S8		.		
IO_DAM1S9		.		
KA_DA		.		
LC_L		.		
		.		
LC_LFD		.		
		.		
LC_LFO		.		
		.		
LC_LRD		.		
		.		
LC_LRO		.		
		.		
LC_R1		.		
LC_R2		.		
		.		
LC_RFD		.		
		.		
LC_RRD		.		
		.		
LC_RRO		.		
LI_L		.		

DRILL AUTOMATION PANEL SCHEMATICS

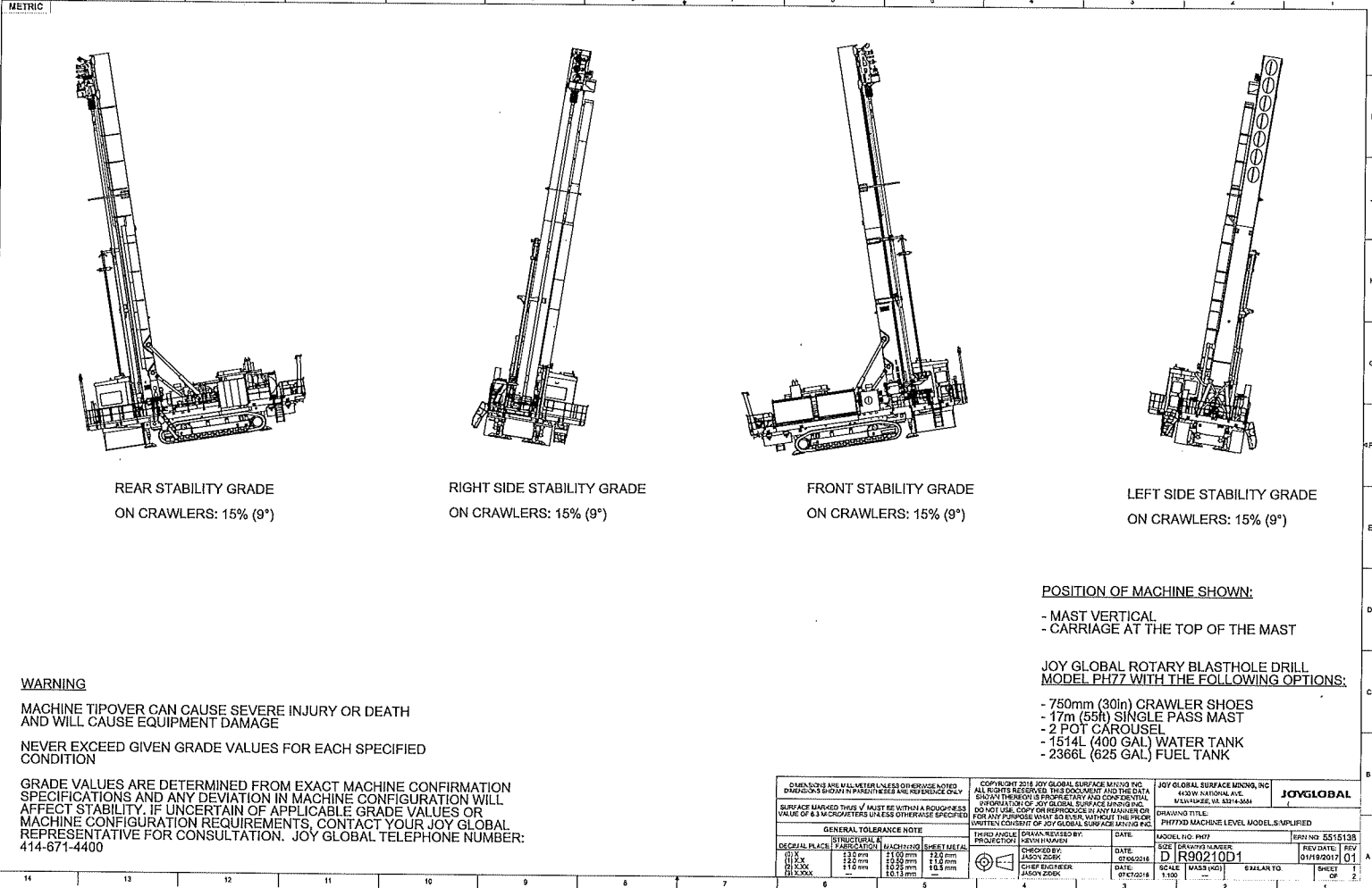
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LI_LFD		•		
LI_LRD		•		
LI_LRO		•		
LI_LSO		•		
LI_R1		•		
LI_R2		•		
LI_RFD		•		
LI_RRD		•		
LI_RRO		•		
LT_RMAB		•		
LT_RMAC		•		
LT_SBF		•		
LT_SBR		•		
LT_SGF		•		
LT_SGR		•		
LT_SPLFS		•		
LT_SPLRS		•		
LT_SPLS		•		
LT_SPRFS		•		
LT_SPRRS		•		
LT_SRF		•		
LT_SRR		•		
LT_SYF		•		
LT_SYR		•		
MC_DA		•		
PB_LMSB		•		
PB_LMSC		•		
PB_RMSB		•		
PB_RMSC		•		
PFC_PB1		•		
PFC_PB2		•		
POWER SPLITTER		•		
PS_24R6		•		
PS_24R7		•		
PTZ		•		
		•		
R_TRCB		•		
REC_24R1		•		

DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
REC_24R2		.		
REC_ADV1		.		
REC_ADV2		.		
REC_BCAM		.		
REC_BLPB		.		
REC_CVCBV		.		
REC_FSR		.		
REC_GUI		.		
REC_GUIO		.		
REC_MPWR		.		
REC_MSHF		.		
REC_MSHR		.		
REC_MSTP		.		
REC_PBB1		.		
REC_PBB2		.		
REC_PTZ		.		
REC_PTZ1		.		
REC_PTZE		.		
REC_PTZP		.		
REC_REMOP		.		
REC_RSR		.		
REC_SEN1		.		
REC_SEN2		.		
REC_SPW1		.		
REC_SPW2		.		
REC_USB1		.		
REC-P2PC		.		
REC-SCN1		.		
REC-SCN2		.		
RED STROBE		.		
SF_MCDA1		.		
SF_MCDA2		.		
TBPD_24V+		.		
TBPD_COM		.		
TH_DALT		.		
TPF_PB1		.		
TPF_PB2		.		
TS_DA		.		

DRILL AUTOMATION PANEL SCHEMATICS

Item	Part No.	Description	Qty.	Unit
UPS_DA		•		
VC_BV		•		
VC_CUDA		•		
VC_FV		•		
VC_LV		•		
VC_MV		•		
VC_REARV		•		
VC_RV		•		
VC_VE		•		



REAR STABILITY GRADE
ON CRAWLERS: 15% (9°)

RIGHT SIDE STABILITY GRADE
ON CRAWLERS: 15% (9°)

FRONT STABILITY GRADE
ON CRAWLERS: 15% (9°)

LEFT SIDE STABILITY GRADE
ON CRAWLERS: 15% (9°)

WARNING

MACHINE TIPOVER CAN CAUSE SEVERE INJURY OR DEATH
AND WILL CAUSE EQUIPMENT DAMAGE

NEVER EXCEED GIVEN GRADE VALUES FOR EACH SPECIFIED
CONDITION

GRADE VALUES ARE DETERMINED FROM EXACT MACHINE CONFIRMATION
SPECIFICATIONS AND ANY DEVIATION IN MACHINE CONFIGURATION WILL
AFFECT STABILITY. IF UNCERTAIN OF APPLICABLE GRADE VALUES OR
MACHINE CONFIGURATION REQUIREMENTS, CONTACT YOUR JOY GLOBAL
REPRESENTATIVE FOR CONSULTATION. JOY GLOBAL TELEPHONE NUMBER:
414-671-4400

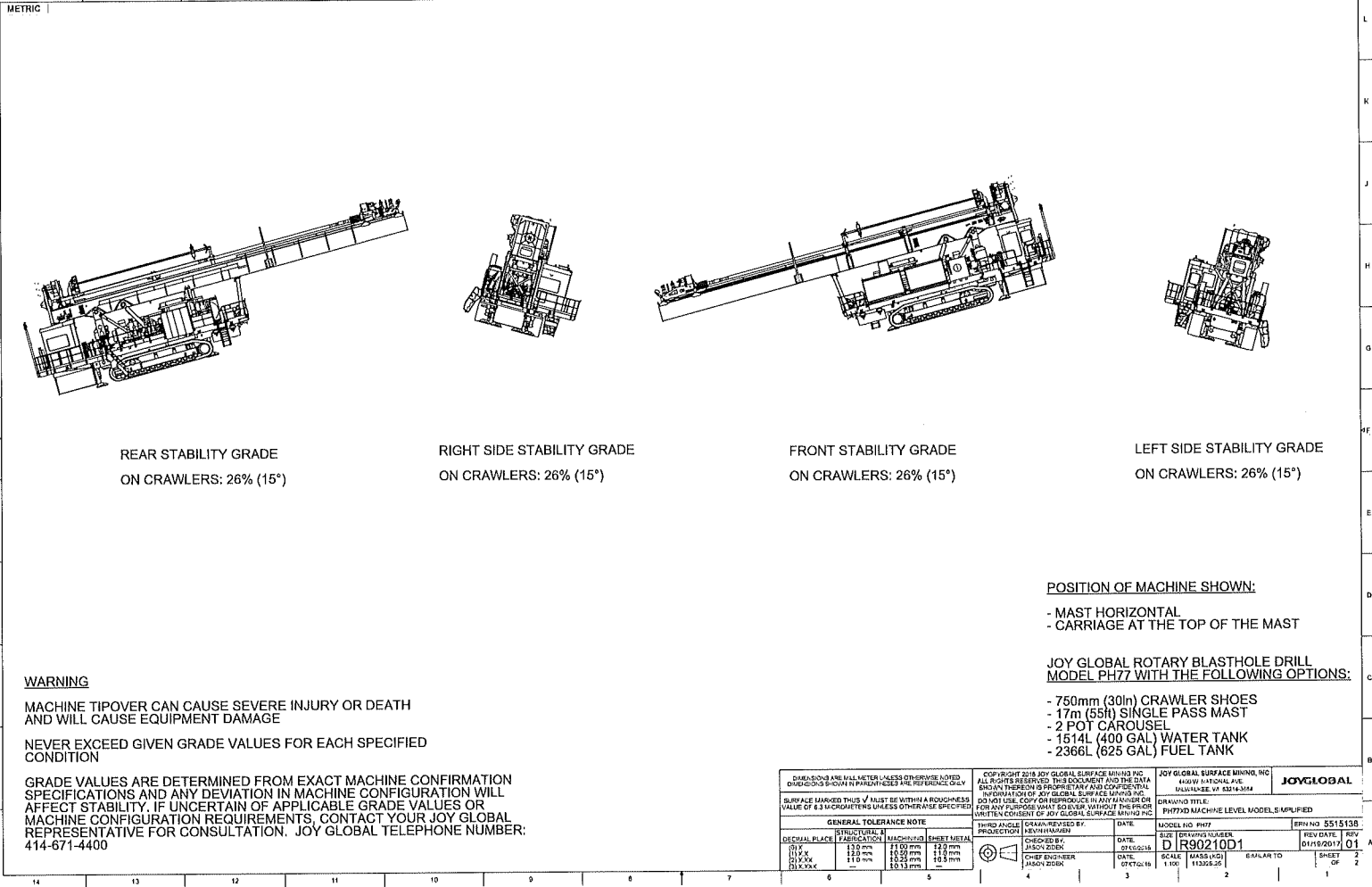
POSITION OF MACHINE SHOWN:

- MAST VERTICAL
- CARRIAGE AT THE TOP OF THE MAST

**JOY GLOBAL ROTARY BLASTHOLE DRILL
MODEL PH77 WITH THE FOLLOWING OPTIONS:**

- 750mm (30in) CRAWLER SHOES
- 17m (55ft) SINGLE PASS MAST
- 2 POT CAROUSEL
- 1514L (400 GAL) WATER TANK
- 2366L (625 GAL) FUEL TANK

DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED DIMENSIONS SHOWN IN PARENTHESES ARE FOR REFERENCE ONLY		COPYRIGHT 2016 JOY GLOBAL SURFACE MINING, INC. ALL RIGHTS RESERVED. THIS DOCUMENT AND THE DATA CONTAINED THEREIN IS PROPRIETARY AND CONFIDENTIAL PROPERTY OF JOY GLOBAL SURFACE MINING, INC. DO NOT USE, COPY OR REPRODUCE IN ANY MANNER OR FOR ANY PURPOSE WITHOUT THE WRITTEN CONSENT OF JOY GLOBAL SURFACE MINING, INC.		JOY GLOBAL SURFACE MINING, INC. 8420N NATIONAL AVE. MILWAUKEE, WI 53144-3344		JOYGLOBAL	
SURFACE MARKED THIS 'V' MUST BE WITHIN A ROUNDNESS VALUE OF 0.3 MILLIMETERS UNLESS OTHERWISE SPECIFIED		DRAWING TITLE: PH77D MACHINE LEVEL MODEL'S UNIFIED		MODEL NO. PH77		SERIAL NO. 5518135	
GENERAL TOLERANCE NOTE		THIRD ANGLE ISOPROJECTION		DATE: 01/06/2016		REVISED: FEB 01/19/2017	
DECIMAL PLACE	FABRICATION	MACHINING	SHEET METAL	DESIGNED BY: JASON ZIECK	SCALE: 1:500	SCALE TO:	SHEET 01
0.1	±0.10 mm	±0.05 mm	±0.20 mm	CHECKED BY: JASON ZIECK	DATE: 01/06/2016		
0.2	±0.20 mm	±0.10 mm	±0.40 mm	DATE: 01/06/2016			
0.5	±0.50 mm	±0.25 mm	±1.00 mm				
1.0	±1.00 mm	±0.50 mm	±2.00 mm				



REAR STABILITY GRADE
ON CRAWLERS: 26% (15°)

RIGHT SIDE STABILITY GRADE
ON CRAWLERS: 26% (15°)

FRONT STABILITY GRADE
ON CRAWLERS: 26% (15°)

LEFT SIDE STABILITY GRADE
ON CRAWLERS: 26% (15°)

WARNING
MACHINE TIPOVER CAN CAUSE SEVERE INJURY OR DEATH
AND WILL CAUSE EQUIPMENT DAMAGE
NEVER EXCEED GIVEN GRADE VALUES FOR EACH SPECIFIED
CONDITION

GRADE VALUES ARE DETERMINED FROM EXACT MACHINE CONFIRMATION
SPECIFICATIONS AND ANY DEVIATION IN MACHINE CONFIGURATION WILL
AFFECT STABILITY. IF UNCERTAIN OF APPLICABLE GRADE VALUES OR
MACHINE CONFIGURATION REQUIREMENTS, CONTACT YOUR JOY GLOBAL
REPRESENTATIVE FOR CONSULTATION. JOY GLOBAL TELEPHONE NUMBER:
414-671-4400

POSITION OF MACHINE SHOWN:
- MAST HORIZONTAL
- CARRIAGE AT THE TOP OF THE MAST

**JOY GLOBAL ROTARY BLASTHOLE DRILL
MODEL PH77 WITH THE FOLLOWING OPTIONS:**
- 750mm (30in) CRAWLER SHOES
- 17m (55ft) SINGLE PASS MAST
- 2 POT CAROUSEL
- 1514L (400 GAL) WATER TANK
- 2366L (625 GAL) FUEL TANK

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SURFACE MARKED THIS $\sqrt{}$ MUST BE WITHIN A ROUGHNESS VALUE OF 6.3 MICROMETERS UNLESS OTHERWISE SPECIFIED.		DRAWING TITLE: PH77XD MACHINE LEVEL MODELS (MPLD)		MODEL NO. PH77		EPRN NO. 5515138	
GENERAL TOLERANCE NOTE				THIRD ANGLE	CHECKED BY: JASON OREN	DATE: 01/18/2018	REV. DATE: 01/18/2017
DECIMAL PLACE	STRUCTURAL	FABRICATION	MACHINING	SHEET METAL	DATE:	SCALE:	REV.:
0.1	±0.25 mm	±0.50 mm	±0.25 mm	±0.50 mm	01/18/2018	MASB (KJ)	01
0.1 X	±0.25 mm	±0.50 mm	±0.25 mm	±0.50 mm	01/18/2018	1:100	01
0.1 X X X	±0.25 mm	±0.50 mm	±0.25 mm	±0.50 mm	01/18/2018	1:100	01
0.1 X X X X	±0.25 mm	±0.50 mm	±0.25 mm	±0.50 mm	01/18/2018	1:100	01

