SUBASSEMBLY	DRAWING DESCRIPTION	SHEET
SPARE TRANSFORMER	CABINET ARRANGEMENT	2
INPUT CABINET	TERMINATIONS	3
COOLANT SYSTEM	FLOW DIAGRAM	4
COOLANT SYSTEM	FLOW DIAGRAM	5

R1 to change the sheet number

Krepinevich Michael

Digitally signed by Krepinevich Michael
DN: cn=Krepinevich Michael, o=Siemens, email=michael.krepinevich@siemens.com
Date: 2016.12.08 09:57:18 -05'00'

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DFTG CODE NO.

TEMPLATE: A5E01211661A001AS

REVISIONS

APPROVED FOR PRODUCTION
SO# 3006153828.1201 Date 11/22/2016

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.35-1999 ASME Y14.5-2009 ASME Y14.1-2005
TOLERANCES: XX ± .03, XXX ± .015, ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE 3/64"=1"
LAYER XXXX
DATE 10/24/16
DWGBY D
DFTR A.MCCOY
ENGR D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

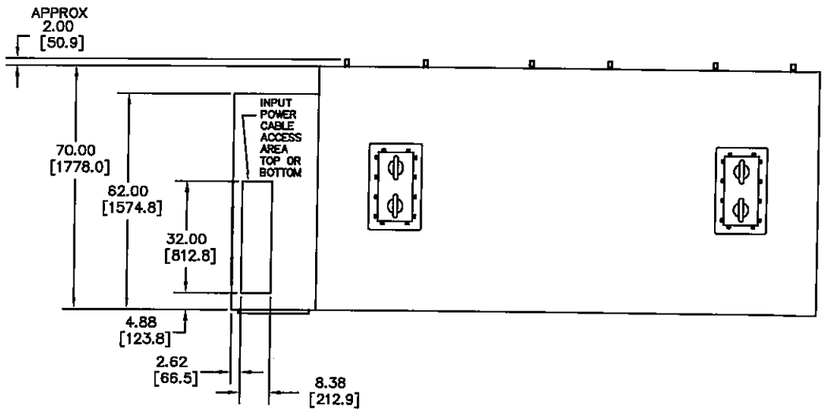
CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE WC3, OUTLINE
SPARE TRANSFORMER
10,500KVA PRIM 12,000KVA SEC

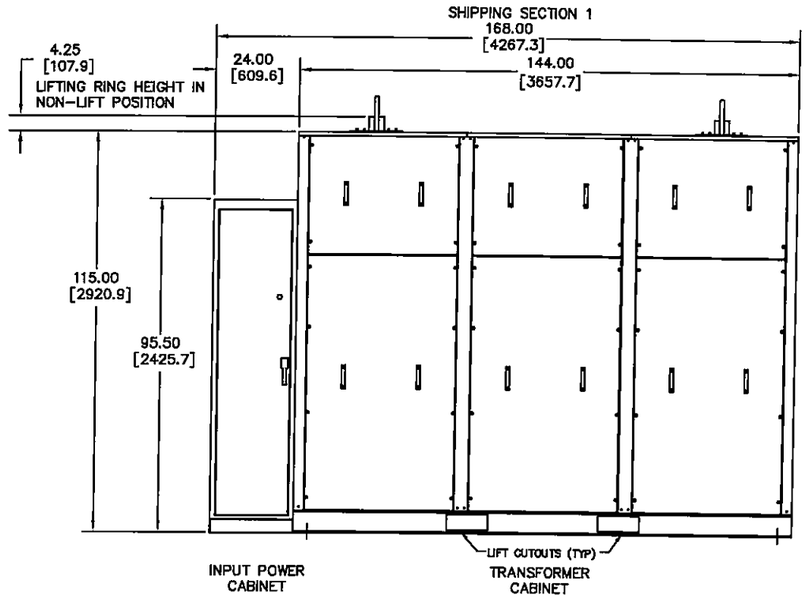
DWG NO A5E39163018A
REV AA

CAD FILE A5E39163018A002
SHEET NO 21 OF 5

DBORDF



TOP VIEW



FRONT VIEW

NOTES:

1. DIMENSIONS ARE IN INCHES, BRACKETS [ ] ARE IN MILLIMETERS.
2. SEE TRANSFORMER LIFTING DRAWING OR INSTRUCTION MANUAL BEFORE LIFTING. IMPROPER LIFTING CAN RESULT IN CABINET AND/OR TRANSFORMER DAMAGE AND COULD VOID ANY REMAINING WARRANTY.
3. THE DRIVE MOUNTING SURFACE MUST SATISFY A FLOOR FLATNESS NUMBER (FF) OF 38 (MIN. LOCAL, 32) AND A FLOOR LEVELNESS NUMBER (FL) OF 25 (MIN. LOCAL, 20) AS PER ACI 117-90 SECTION 4.5.6.1 (AS MEASURED IN ACCORDANCE WITH ASTM E 1155-87). ADJACENT MOUNTING SURFACES MUST QUALIFY AS CLASS A PER ACI 117-90 SECTION 4.5.4. COMPARABLE VALUES FROM COMPARABLE STANDARDS, SUCH AS DIN 18202-TABLE 3, CSN EN 15620, OR APPROPRIATE NON-CONCRETE SUBSTRATE STANDARDS, WILL SUFFICE.

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DFTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

TEMPLATE: A5E01211661A001AS

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.35-1998 ASME Y14.5-2009 ASME Y14.2-2008 ASME Y14.1-2005
TOLERANCES: .XX ± .03, .XXX ± .015, ANGLES ± 1°
THIRD ANGLE PROJECTION

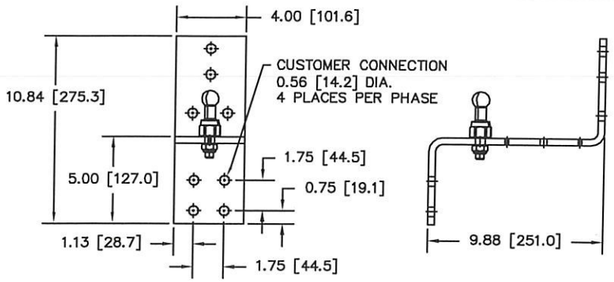
SCALE 3/64"=1" | LAYER XXXX | DATE 10/24/16 | DWGSIZE D | DFTR A.MCCOY | ENGR D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

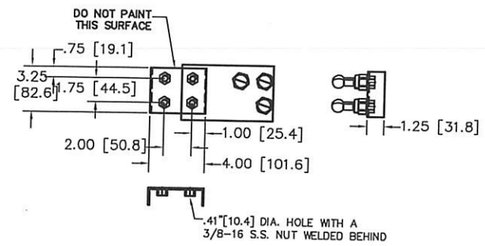
TITLE: WC3, OUTLINE SPARE TRANSFORMER CABINET ARRANGEMENT
DWG NO A5E39163018A | REV AA
CAD FILE A5E39163018A002 | SHEET NO 2 OF 5

DBORDF



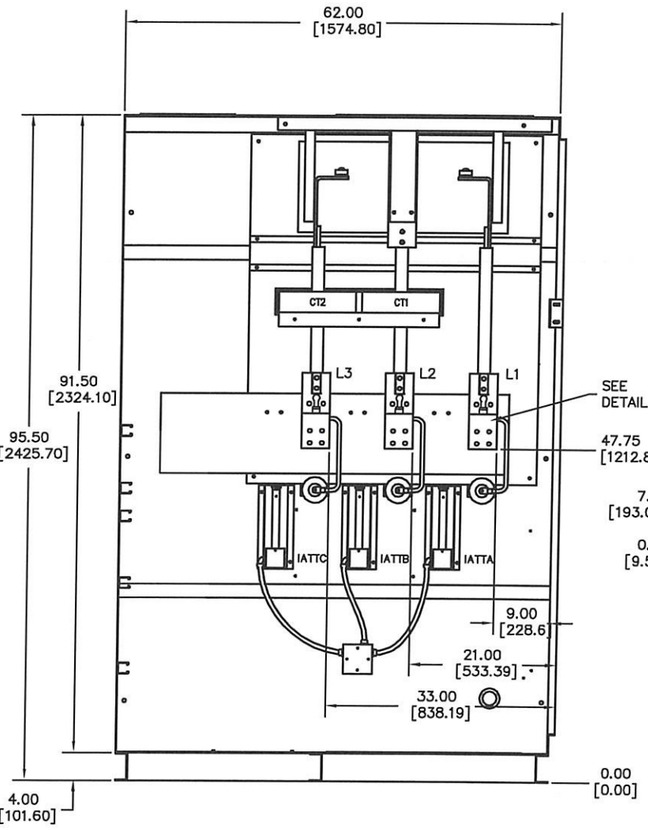
DETAIL "A" – L1/L2/L3 (NOT TO SCALE)

MATERIAL: 0.38 [9.7] TK COPPER BUS TIN PLATED

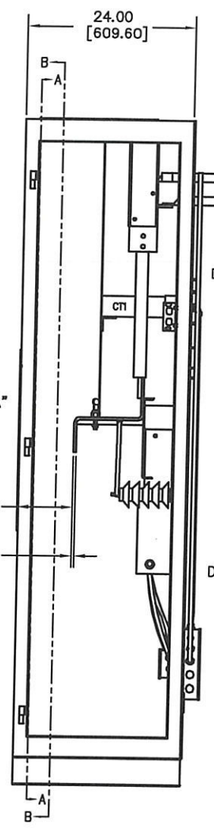


DETAIL "B" – GROUND PAD (NOT TO SCALE)

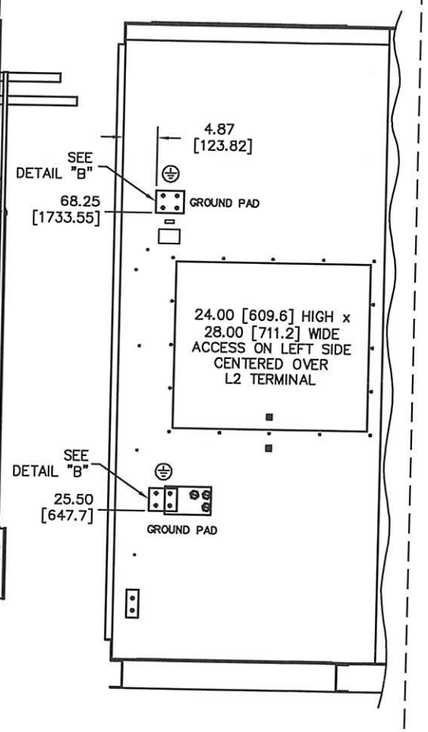
MATERIAL: 12 GA.STAINLESS STEEL, TYPE 304



SECTION "A–A"



FRONT VIEW
DOOR REMOVED



SECTION "B–B"
(PARTIAL)

INPUT POWER CABINET

DFTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

TEMPLATE: A5E01211661A003AS

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS IN INCHES
INTERPRET DRAWING PER
ASME Y14.5M–1994
ASME Y14.36–1969
ASME Y14.1–2005
ASME Y14.1–2005
TOLERANCES: .XX ± .03
.XXX ± .015
ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE 3/32" =1'
LAYER XXXX
DATE 10/24/16
DWGSZ D
DFTR A.MCCOY
ENGR D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST. ORDER NUMBER 3006153828

TITLE INPUT CABINET TERMINATIONS LIQUID COOLED HARMONY
DWG NO A5E39163018A REV AA
CAD FILE A5E39163018A003 SHEET NO 3 OF 5

ESD SENSITIVE EQUIPMENT

WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DBORDF

CUSTOMER INTERCONNECTING PIPING NOTICE:

CUSTOMER INTERCONNECTING PIPING IS NOT THE RESPONSIBILITY OF SIEMENS (UNLESS OTHER WISE CONTRACTED).
THIS PIPING MUST BE FREE OF DEBRIS, CHEMICALS, AND ALL OTHER CONTAMINANTS WHEN CONNECTED TO THE DRIVE. OTHERWISE PUMP SEAL DAMAGE AND/OR INTERNAL BLOCKAGES MAY OCCUR IN THE DRIVE. TAKE APPROPRIATE PRECAUTIONS TO PREVENT THESE CONTAMINANTS FROM ENTERING THE DRIVE. THE APPROVED MATERIALS OF CONSTRUCTION ARE LIMITED TO COPPER, STAINLESS STEEL (304 OR HIGHER) , AND POSSIBLY INDUSTRIAL HOSE THAT IS COMPATIBLE WITH DEIONIZED WATER/GLYCOL SOLUTIONS. ADDITIONALLY, SIEMENS RECOMMENDS FLEXIBLE COUPLING CONNECTIONS TO THE DRIVE TO PREVENT EXCESSIVE DYNAMIC LOADS ON THE FLANGES IN THE DRIVE. SEE DYNAMIC LOAD CONSIDERATIONS FOR EXTERNAL PIPING DESIGN.

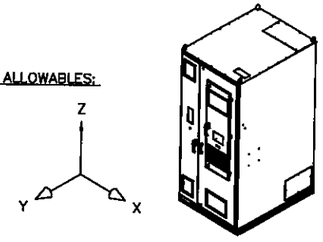
DYNAMIC LOAD CONSIDERATIONS:

THIS COOLING SYSTEM IS A CLOSED LOOP SYSTEM WITH REDUNDANT PUMPS. AS SUCH, SWING CHECK VALVES ARE EMPLOYED FOR BACKFLOW PROTECTION. THE RAPID CLOSURE OF THESE VALVES WILL RESULT IN A SUDDEN CHANGE IN FLOW WHICH GENERATES A PRESSURE WAVE THROUGHOUT THE SYSTEM. FIELD ADJUSTMENTS OF PUMP OVERLAP TIME (1 SECOND DEFAULT) WILL INCREASE THE VALUE OF THIS PRESSURE WAVE AS TIME IS INCREASED.

FLANGE LOADING ALLOWABLES:

Fx = 150 LB
Fy = 150 LB
Fz = 200 LB

Mx = 50 FT-LB
My = 50 FT-LB
Mz = 40 FT-LB



COOLANT:

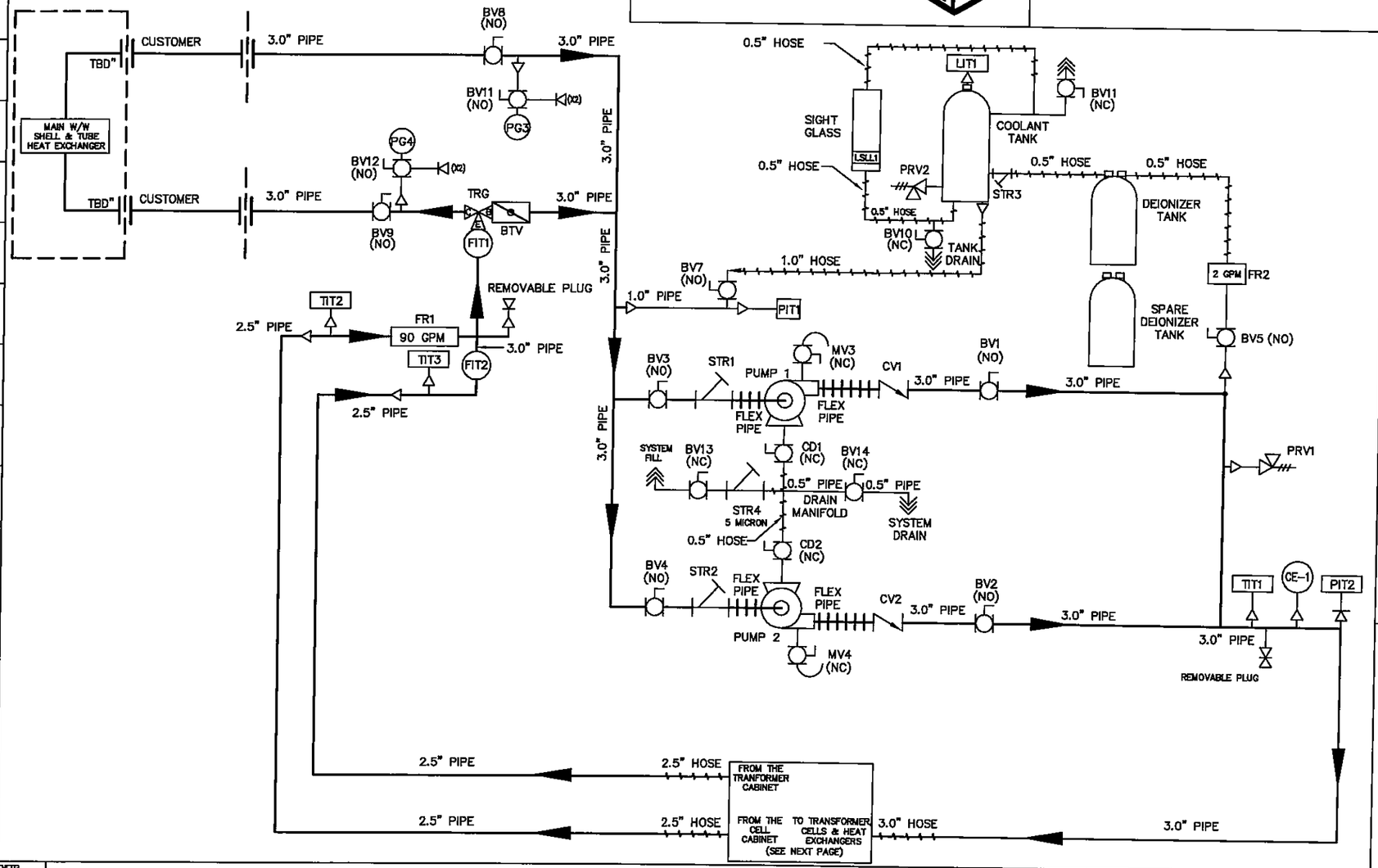
100% DEIONIZED WATER IS RECOMMENDED IF FREEZE PROTECTION IS NOT REQUIRED. IF FREEZE PROTECTION IS REQUIRED, GLYCOL SHOULD BE LIMITED TO THE RANGE 25% TO 60% BY VOLUME. GLYCOL CONCENTRATIONS BELOW 25% CAN LEAD TO ACCELERATED COOLANT BREAKDOWN AND CORROSION. RECOMMENDED COOLANT IS SIEMENS P/N A5E03840734 DEIONIZED WATER MIXED IN REQUIRED PROPORTION WITH PROPYLENE GLYCOL (P/N A5E03840723) OR ETHYLENE GLYCOL (P/N A1A164865.00) AS PER TABLE BELOW.

FREEZING POINT OF COOLANT	COOLANT MIX % PROPYLENE GLYCOL BY VOLUME(BY MASS)	COOLANT MIX % ETHYLENE GLYCOL BY VOLUME(BY MASS)
+10 °F / -12.2 °C	25(25)	25(29)
0 °F / -17.8 °C	32(33)	32(36)
-10 °F / -23.3 °C	39(40)	38(43)
-20 °F / -28.9 °C	44(45)	43(48)
-30 °F / -34.4 °C	48(49)	47(52)
-40 °F / -40 °C	52(53)	50(55)
-50 °F / -45.6 °C	55(56)	53(58)
-55 °F / -48 °C	60(62)	58(60)

IMPORTANT NOTES:

NEVER USE AUTOMOTIVE ANTIFREEZE IN THE COOLING SYSTEM. IT HAS ADDITIVES WHICH WILL INCREASE THE CONDUCTIVITY AND CAN CONTAMINATE THE DEIONIZER RESIN. USE ONLY INDUSTRIAL GRADE GLYCOL WITH NO ADDITIVES AND NO INHIBITORS.

THE ADDITION OF GLYCOL CONTAINING ANY ADDITIVE OR INHIBITOR MAY PERMANENTLY CONTAMINATE THE COOLING SYSTEM SUCH THAT EXTENSIVE FLUSHING AND/OR COMPONENT REPLACEMENT MAY BE NECESSARY TO RESTORE THE SYSTEM TO A USABLE CONDITION.



COOLANT NOTES:

1. PERCENT GLYCOL BY VOLUME NUMBERS ARE BASED ON 20° C (68° F) TEMPERATURE WHEN MIXING.
2. TOTAL COOLANT SYSTEM VOLUMES EXCEEDING 250 GALLONS CAN RESULT IN LOSS OF COOLANT ALARMS AND/OR OVER-PRESSURE CONDITIONS. CONSULT FACTORY. A KIT IS AVAILABLE TO ALLOW COOLANT SYSTEM VOLUMES UP TO 500 GALLONS.

IMPORTANT NOTE:

IF DRIVE COOLANT TEMPERATURE CAN NOT BE MAINTAINED AS REQUIRED, DRIVE MUST BE IMMEDIATELY REMOVED FROM SERVICE WHILE TRG IS MANUALLY ADJUSTED. FAILURE TO ADHERE TO THESE INSTRUCTIONS COULD LEAD TO CONDENSATION OR OVER-TEMPERATURE WHICH COULD RESULT IN CATASTROPHIC FAILURE OF DRIVE COMPONENTS.

IF TRG FAILS TO REGULATE TEMPERATURE, MANUALLY ADJUST AS FOLLOWS:

*** TO ADJUST FOR A DRIVE (VFD) RUNNING TOO HOT, TURN TRG CRANK HANDLE CLOCKWISE TO SEND MORE FLOW TO THE MAIN HEAT EXCHANGER UNTIL NORMAL TEMPERATURE IS ACHIEVED.

*** TO ADJUST FOR A DRIVE (VFD) RUNNING TOO COLD, TURN TRG CRANK HANDLE COUNTER-CLOCKWISE TO SEND LESS FLOW TO THE MAIN HEAT EXCHANGER UNIT UNTIL NORMAL TEMPERATURE IS ACHIEVED.

DEIONIZER (DI) TANK REPLACEMET:

1. REMOVE AND LOCKOUT ALL POWER FROM COOLANT CABINET AND DRIVE.
2. DISCONNECT SPENT DU TANK BY RELEASING QUICK DISCONNECTS.
3. INSTALL NEW DI TANK BY RECONNECTING QUICK DISCONNECTS.
4. RETURN COOLANT SYSTEM AND DRIVE TO SERVICE

GENERAL NOTES:

1. PIPE AND HOSE SIZES ARE IN INCHES, (") NOTATES INCHES.
2. VALVE POSITIONS
   NO - NORMALLY OPEN
   NC - NORMALLY CLOSED

TEXT LEGEND:

AV - AUTOMATIC AIR VENT
BTV - BUTTERFLY VALVE
BV - BALL VALVE
CD - CASE DRAIN
CE - CONDUCTIVITY ELEMENT
CV - CHECK VALVE
FIT - FLOW INDICATING TRANSMITTER
FR - FLOW RESTRICTOR (NOT ADJUSTABLE)
LSLL - LEVEL SWITCH VERY LOW LEVEL
LIT - LEVEL INDICATING TRANSMITTER
MV - MANUAL VENT
PG - PRESSURE GAUGE
PRV - PRESSURE RELIEF VALVE
PIT - PRESSURE INDICATING TRANSMITTER
STR - STRAINER
TRG - TEMPERATURE REGULATOR
TIT - TEMPERATURE INDICATING TRANSMITTER

SYMBOL LEGEND

AUTOMATIC AIR VENT
MANUAL AIR VENT
FITX FLOW INDICATING TRANSMITTER
BALL VALVE
PUMP
X GPM FLOW RESTRICTER
BUTTERFLY VALVE
PGX PRESSURE GAUGE
HOSE BARB
CHECK VALVE
PRESSURE RELIEF VALVE
LSLLX LEVEL SWITCH VERY LOW LEVEL
CE-X CONDUCTIVITY ELEMENT
PITX PRESSURE INDICATING TRANSMITTER
LITX LEVEL INDICATING TRANSMITTER
FLEXIBLE HOSE
REMOVABLE PLUG OR CAP
STRAINER
FLEXIBLE PIPE
REDUCER
TITX TEMPERATURE INDICATING TRANSMITTER

OPTO CODE NO.

REVISIONS

APPROVED FOR PRODUCTION
SO# 3006153828.1201 Date 11/22/2016

Project Name: Alky Refrig. Comp. Electrification SPARE TRANSFORMER

TEMPLATE: A5E01211675A009AS

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.35-1998 ASME Y14.5-2009 ASME Y14.5-2009
TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE 1:1
LAYER XXXX
DATE 10/24/16
DWGED D
DFTR A.MCCOY
ENGRD ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE COOLANT SYSTEM FLOW DIAGRAM WC3, 60" STD CABINET
DWG NO A5E39163018A REV AA
CAD FILE A5E39163018A004 SHEET NO 4 OF 5

DBORDF

GENERAL NOTES:

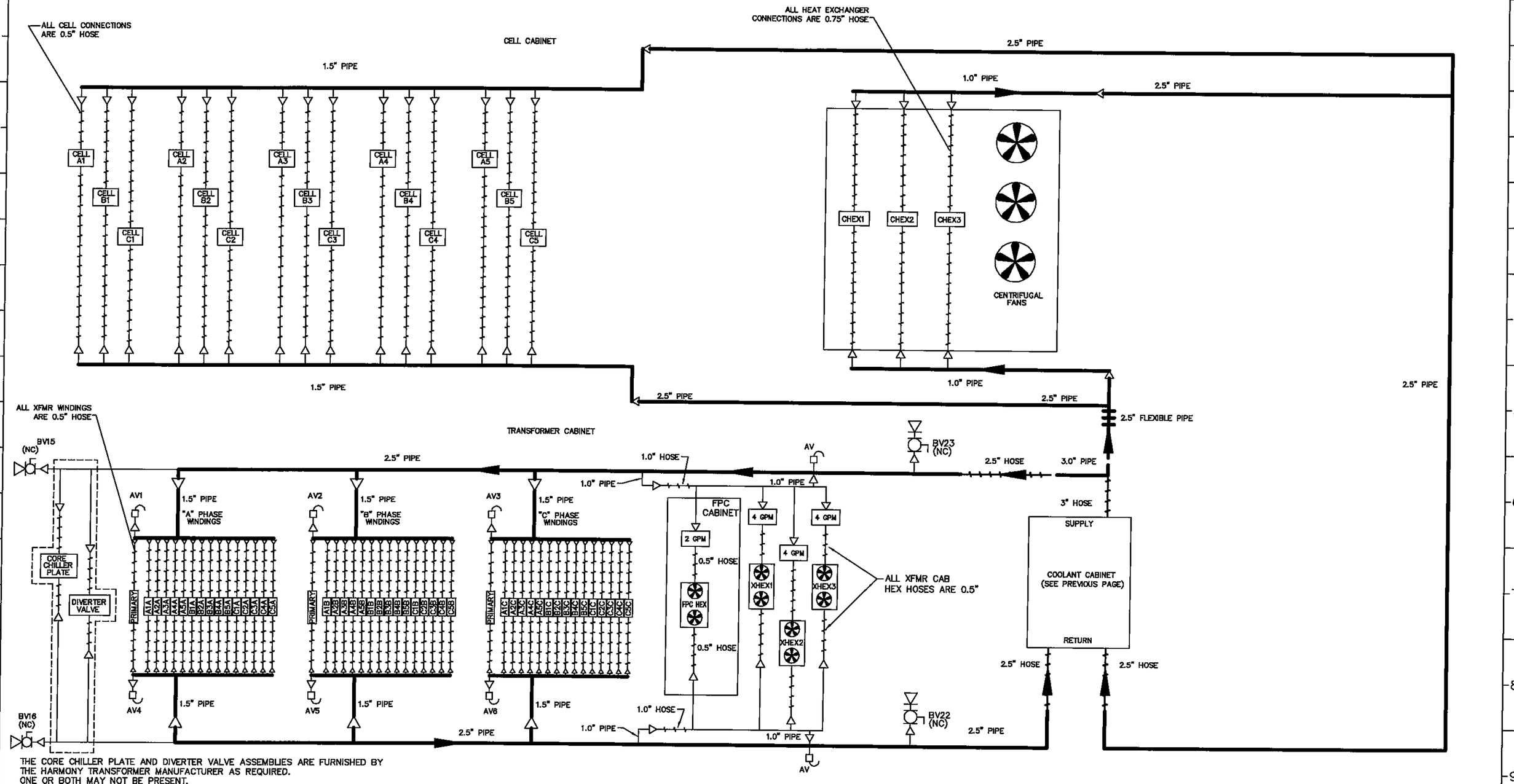
1. PIPE AND HOSE SIZES ARE IN INCHES, (") NOTATES INCHES.
2. VALVE POSITIONS
   NO – NORMALLY OPEN
   NC – NORMALLY CLOSED

TEXT LEGEND:

AV – AUTOMATIC AIR VENT
BV – BALL VALVE
CHEX – CELL CABINET HEAT EXCHANGER
FR – FLOW RESTRICTOR
XHEX – TRANSFORMER CABINET HEAT EXCHANGER

SYMBOL LEGEND

AUTOMATIC AIR VENT
BALL VALVE
CHEX2 – CELL CABINET HEAT EXCHANGER
XHEX5 – TRANSFORMER CABINET HEAT EXCHANGER
FPX HEX – FPC CABINET HEAT EXCHANGER
X GPM – FLOW RESTRICTOR
FLEXIBLE HOSE
REDUCER
PGE – PRESSURE GAUGE
REMOVABLE PLUG
FLEXIBLE PIPE



THE CORE CHILLER PLATE AND DIVERTER VALVE ASSEMBLIES ARE FURNISHED BY THE HARMONY TRANSFORMER MANUFACTURER AS REQUIRED. ONE OR BOTH MAY NOT BE PRESENT.

REVISIONS

OPTO CODE NO.

TEMPLATE: A5E01211675A010AS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M–1994 ASME Y14.5M–1985 ASME Y14.5–2003 ASME Y14.1–2003
TOLERANCES: .XX ± .03, .XXX ± .015, ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE 1:1
LAYER XXXX
DATE 10/24/16
DRAWN D
CHK'D A.MCCOY
ENG'D D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE COOLANT SYSTEM FLOW DIAGRAM WC3
DWG NO A5E39163018A
REV AA
CAD FILE A5E39163018A005
SHEET NO 5 OF 5

DBORDF

INSTRUCTIONS

1.) ALL DOORS AND PANELS MUST BE FULLY INSTALLED AND SECURE PRIOR TO LIFTING ANY CABINET OR SHIPPING SECTION.

2.) CENTER OF BALANCE (CB) STICKERS APPLIED TO THE PACKING MATERIAL ON THE CABINET OR SHIPPING SECTION PROVIDE GUIDANCE FOR LIFTING. IF STICKERS ARE MISSING, REFERENCE THE CENTER OF GRAVITY (COG) DATA SHOWN ON THIS DRAWING.

3.) DUE TO THE SIZE AND WEIGHT DISTRIBUTION OF THE CABINET / SHIPPING SECTION, LIFTING BY FORK LIFT TRUCK IS NOT RECOMMENDED. SEE WCIII OPERATING INSTRUCTIONS MANUAL A5E32043214 FOR RECOMMENDED HANDLING AND LIFTING GUIDELINES. IF A FORK LIFT TRUCK IS USED, THE CUSTOMER ASSUMES RESPONSIBILITY FOR SUBSEQUENT DAMAGES.

4.) THE PDC SUPPLIER IS RESPONSIBLE FOR THE PROPER PLANNING AND LIFTING OF ALL CABINETS AND SHIPPING SECTIONS. SIEMENS IS NOT RESPONSIBLE FOR ANY DAMAGE INCURRED AS A RESULT OF THE BUYER OR THEIR REPRESENTATIVE IMPROPERLY UNLOADING OR HANDLING ANY CABINET OR SHIPPING SECTION. THE GUIDELINES BELOW ARE NOT INTENDED TO PROVIDE ALL SAFEGUARDS TO BE TAKEN WHEN HANDLING OR LIFTING A CABINET OR SHIPPING SECTION.

5.) DO NOT LIFT FROM EYE BOLTS IN A CABINET FRAME. SEE SHEET 2 OF THIS DRAWING OR WCIII OPERATING INSTRUCTIONS MANUAL A5E32043214 FOR RECOMMENDED LIFTING POINTS.

6.) THE CABINET / SHIPPING SECTION MUST BE LEVEL DURING THE LIFT.

a.) ADJUST STRAPS / CABLES ACCORDINGLY BASED ON THEIR LENGTH AND THE CENTER OF GRAVITY.

b.) SPREADER BEAMS / BARS MAY BE NECESSARY TO OBTAIN LEVEL AND /OR PREVENT DEFORMING STRESS ON CABINETS.

c.) PRECAUTIONS MUST BE TAKEN TO ENSURE LIFTING STRAPS / CABLES DO NOT MAR, SCRATCH, OR OTHERWISE DAMAGE CABINETS.

7.) THE INPUT POWER CABINET, DOES NOT HAVE LIFTING CUTOUTS IN THE CABINET BASE. THESE CABINETS ARE DESIGNED TO BE LIFTED AS AN OVERHUNG ATTACHMENT TO THE ADJOINING CABINETS IN THE CORRESPONDING SHIPPING SECTION. THESE ADJOINING CABINETS HAVE LIFTING EYES ON THE ROOF AND/ OR LIFTING CUTOUTS IN THEIR CABINET BASE (TRANSFORMER CABINET).

ESD SENSITIVE EQUIPMENT

WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

OPTO CODE NO.

REVISIONS

APPROVED FOR PRODUCTION
SO# 3006153828.1201 Date 11/22/2016

TEMPLATE: A5E01211669A001AM

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.5M-1985 ASME Y14.2-2003 ASME Y14.1-2003
TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°
THIRD ANGLE PROJECTION

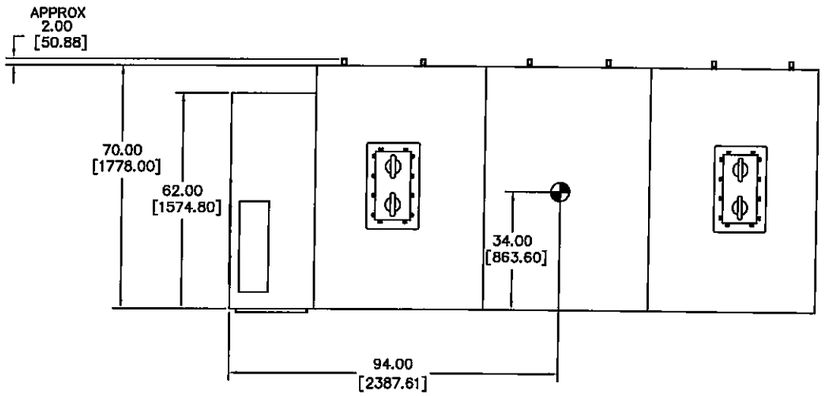
SCALE 3/64"=1"
LAYER XXXX
DATE 10/24/16
DWGBY D
DFTR A.MCCOY
ENGR D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

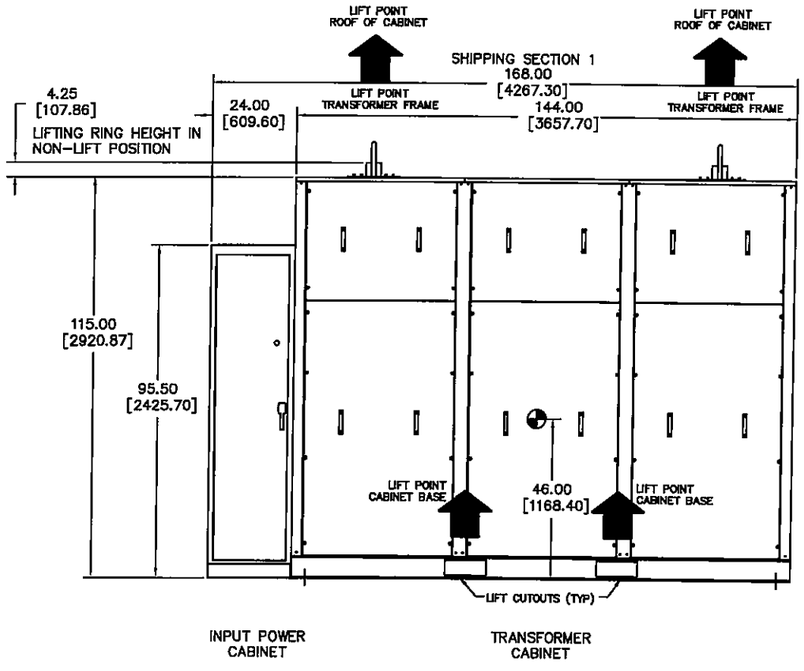
CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE WC3 LIFTING INSTRUCTIONS SPARE TRANSFORMER
DWG NO A5E39163018B
REV AA
CAD FILE A5E39163018B001
SHEET NO 1 OF 3

DBORDF



TOP VIEW



FRONT VIEW

⊕ – INDICATES CENTER OF GRAVITY.

WEIGHTS:

SHIPPING SECTION 1 – 32,400

NOTES:

1. DIMENSIONS ARE IN INCHES, BRACKETS [ ] ARE IN MILLIMETERS.

⚠WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

ESD SENSITIVE EQUIPMENT

OPTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

TEMPLATE: A5E01211669A002AM

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M–1994 ASME Y14.5M–2009 ASME Y14.5–2003 ASME Y14.1–2005
TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE 3/64"=1"
LAYER XXXX
DATE 10/24/16
CHKD'D
DFTR A.MCCOY
ENGR'D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

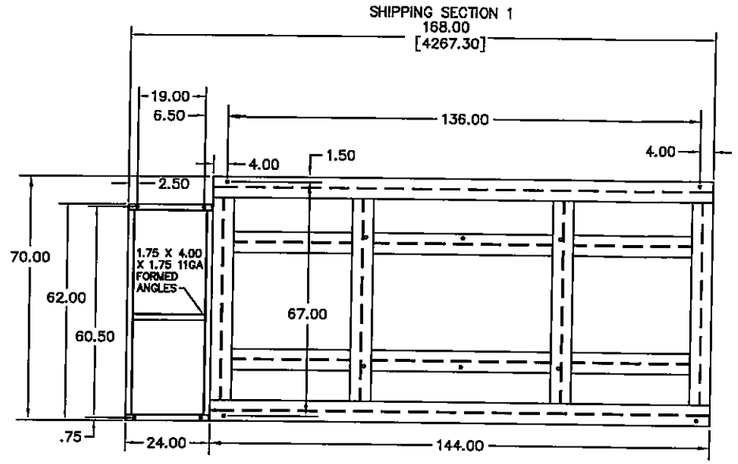
TITLE WC3
SPARE TRANSFORMER

DWG NO A5E39163018B REV AA
CAD FILE A5E39163018B002 SHEET NO 2 OF 3

DBORDF

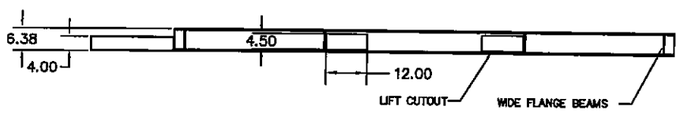
NOTES:

1. ALL ANCHOR HOLES ARE ø.81 [20.58] DIA. THRU HOLES EXCEPT TRANSFORMER CABINET WHICH ARE ø.88 [22.23] THRU HOLES
2. RECOMMENDED BOLTING = 3/4" x ≥ 2-1/2" GRADE 2
3. THE BASE IS NOT DETACHABLE.



24" INPUT CABINET BASE 144" TRANSFORMER CABINET BASE

TOP VIEW OF BASE



FRONT VIEW OF BASE

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DRG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

TEMPLATE: A5E01211669A003AM

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.5M-1982 ASME Y14.5-2009 ASME Y14.5-2009 ASME Y14.5-2009
TOLERANCES: XX ± .03, XXX ± .015, ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE 3/64"=1"
LAYER XXXX
DATE 10/24/16
DWGBY D
CHKR A.MCCOY
ENGR D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE SPARE TRANSFORMER LIFTING BASE

DWG NO A5E39163018B REV AA
CAD FILE A5E39163018B003 SHEET NO 3 OF 3

D80R2F

SUBASSEMBLY	DRAWING DESCRIPTION	SHEET
SPARE TRANSFORMER	CABINET ARRANGEMENT	2
INPUT CABINET	ASSEMBLY	3
TRANSFORMER CABINET	ASSEMBLY	4
TRANSFORMER CABINET	HEAT EXCHANGER MOUNTING	5
TRANSFORMER CABINET	MANIFOLD LOCATION	6

DFTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

FERRULES ARE TO BE STANDARD

FOR SYSTEM LABEL ARRANGEMENT SEE DRAWING 12001865

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.5-1988 ASME Y14.5-2009 ASME Y14.5-2009

TOLERANCES: .XX ±.03 .XXX ±.015 ANGLES ±1°

THIRD ANGLE PROJECTION

SCALE 1:1
LAYER XXXX
DATE 10/24/16
DWGSIZE D
DFTR A.MCCOY
ENGR D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

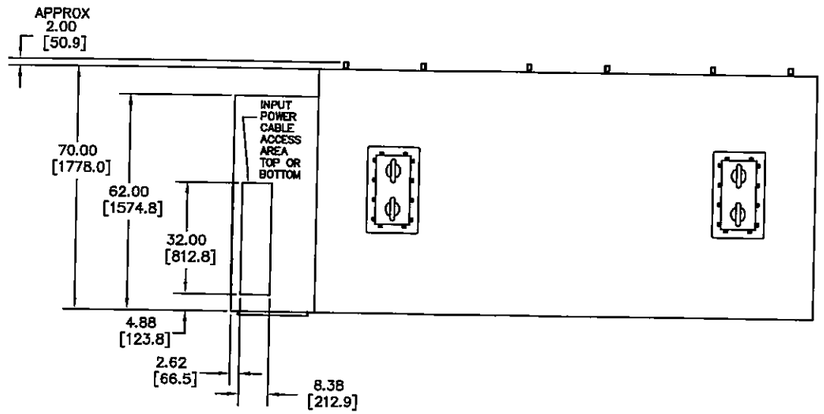
CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE WC3, ASSEMBLY SPARE TRANSFORMER 10,500KVA PRIM 12,000KVA SEC

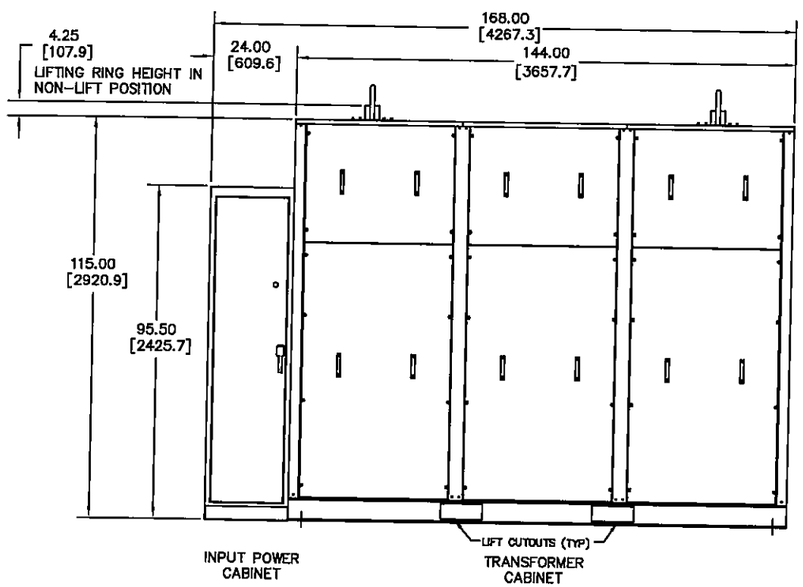
DWG NO A5E39163018E REV AA

CAD FILE A5E39163018E001 SHEET NO 1 OF 6

DBORDF



TOP VIEW



FRONT VIEW

NOTES:

1. DIMENSIONS ARE IN INCHES, BRACKETS [ ] ARE IN MILLIMETERS.
2. SEE TRANSFORMER LIFTING DRAWING OR INSTRUCTION MANUAL BEFORE LIFTING. IMPROPER LIFTING CAN RESULT IN CABINET AND/OR TRANSFORMER DAMAGE AND COULD VOID ANY REMAINING WARRANTY.
3. THE DRIVE MOUNTING SURFACE MUST SATISFY A FLOOR FLATNESS NUMBER (FF) OF 38 (MIN. LOCAL, 32) AND A FLOOR LEVELNESS NUMBER (FL) OF 25 (MIN. LOCAL, 20) AS PER ACI 117-90 SECTION 4.5.6.1 (AS MEASURED IN ACCORDANCE WITH ASTM E 1155-87). ADJACENT MOUNTING SURFACES MUST QUALIFY AS CLASS A PER ACI 117-90 SECTION 4.5.4. COMPARABLE VALUES FROM COMPARABLE STANDARDS, SUCH AS DIN 18202-TABLE 3, CSN EN 15620, OR APPROPRIATE NON-CONCRETE SUBSTRATE STANDARDS, WILL SUFFICE.

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DRTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.35-1998 ASME Y14.5-2009 ASME Y14.7-2006

TOLERANCES: .XX ± .03, .XXX ± .015, ANGLES ± 1°

THIRD ANGLE PROJECTION

SCALE	3/64"=1"
LAYER	XXXX
DATE	10/24/16
DWGBY	D
DFTR	A.MCCOY
ENGR	D.ROMANO

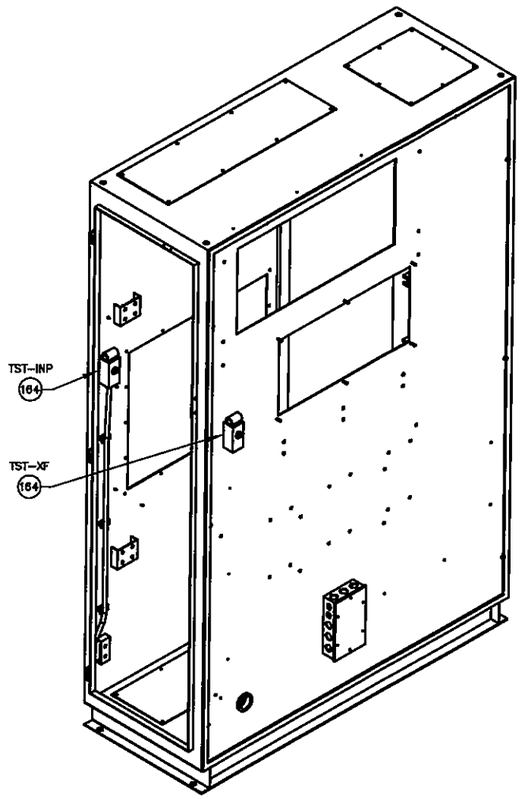
Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER	TESORO
CUST ORDER NUMBER	3006153828

TITLE: WC3, ASSEMBLY SPARE TRANSFORMER CABINET ARRANGEMENT

DWG NO	A5E39163018E
REV	AA
CAD FILE	A5E39163018E002
SHEET NO	2 OF 6

DBORDF



CABINET SPACE HEATER THERMOSTAT

INPUT POWER CABINET

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DFTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.2M-1992 ASME Y14.3-2003 ASME Y14.1-2005
TOLERANCES: XX ±.03 XXX ±.015 ANGLES ±1°
THIRD ANGLE PROJECTION

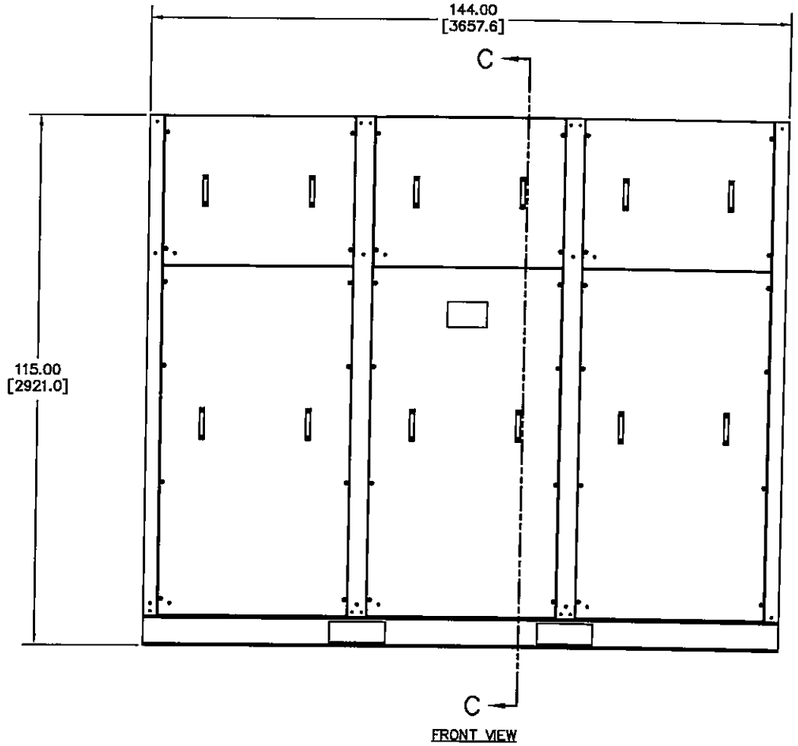
SCALE 3/32"=1'
LAYER XXXX
DATE 10/24/16
DRWG'D
DFTR A.MCCOY
ENGR'D.ROMANO

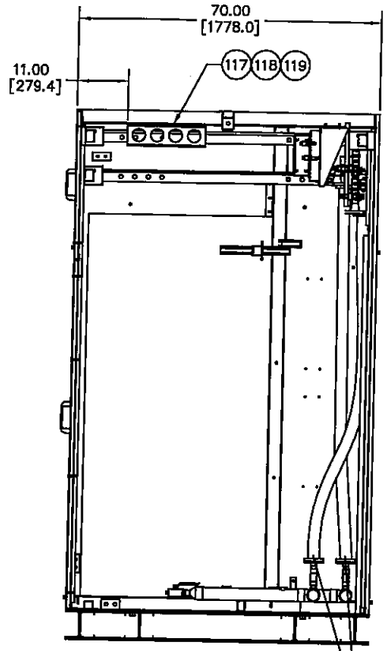
Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

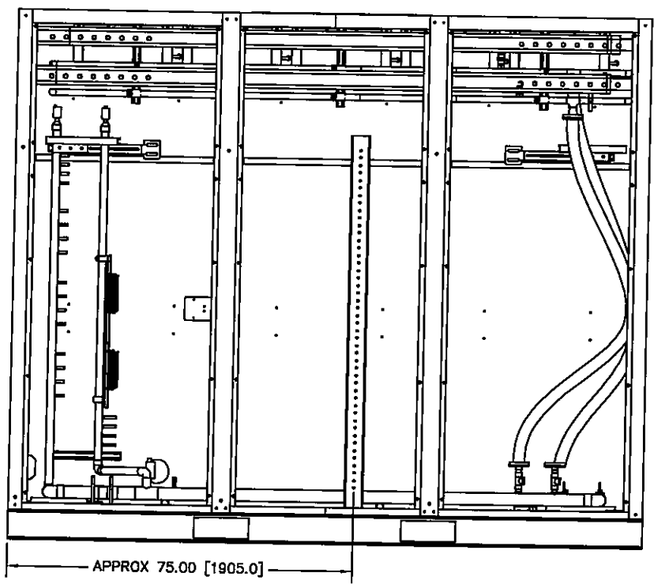
CUSTOMER TESORO
QUOT ORDER NUMBER 3006153828

TITLE INPUT CABINET ASSEMBLY LIQUID COOLED HARMONY
DWG NO A5E39163018E
REV AA
CAD FILE A5E39163018E003
SHEET NO 3 OF 6

DBORDF







APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M–1994 ASME Y14.36–1996 ASME B1.1–2003 ASME B18.2.8–2005
TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE	1:1
LAYER	XXXX
DATE	10/24/16
DWGSIZE	D
DFTR	A.MCCOY
ENGR	D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER	TESORO
CUST ORDER NUMBER	3006153828

TITLE: ASSEMBLY TRANSFORMER CABINET

DWG NO	A5E39163018E
REV	AA
CAD FILE	A5E39163018E004
SHEET NO	4 OF 6

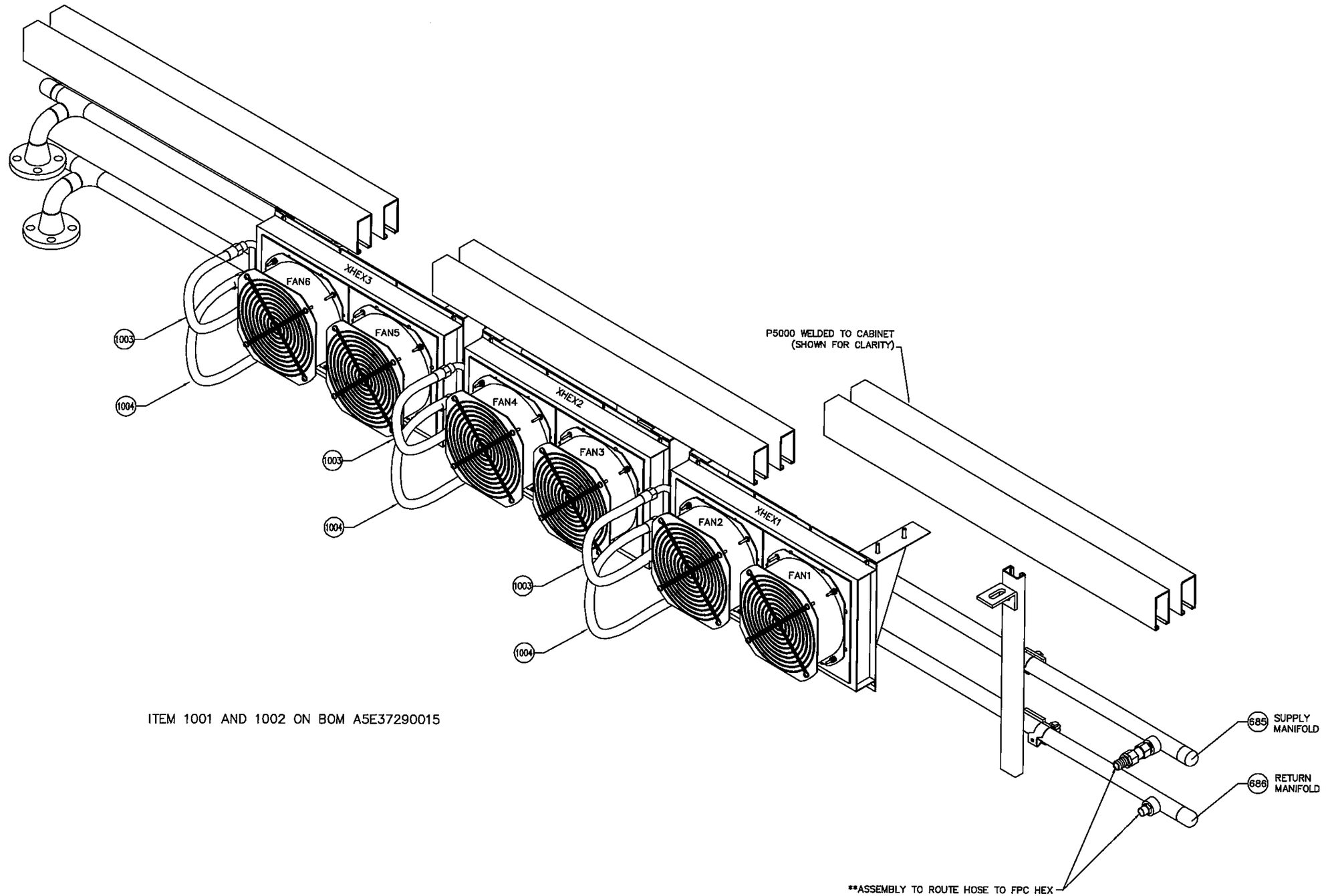
DBORDF

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

REVISIONS

DFTG CODE NO.



ITEM 1001 AND 1002 ON BOM A5E37290015

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994 ASME Y14.36-1996 ASME Y14.5-2009 ASME Y14.41-2003

TOLERANCES: XX ± .03 XXX ± .015 ANGLES ± 1°

THIRD ANGLE PROJECTION

SCALE	NTS
LAYER	XXXX
DATE	10/24/16
DWG'RD	D
DFTR	A.MCCOY
ENGR	D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

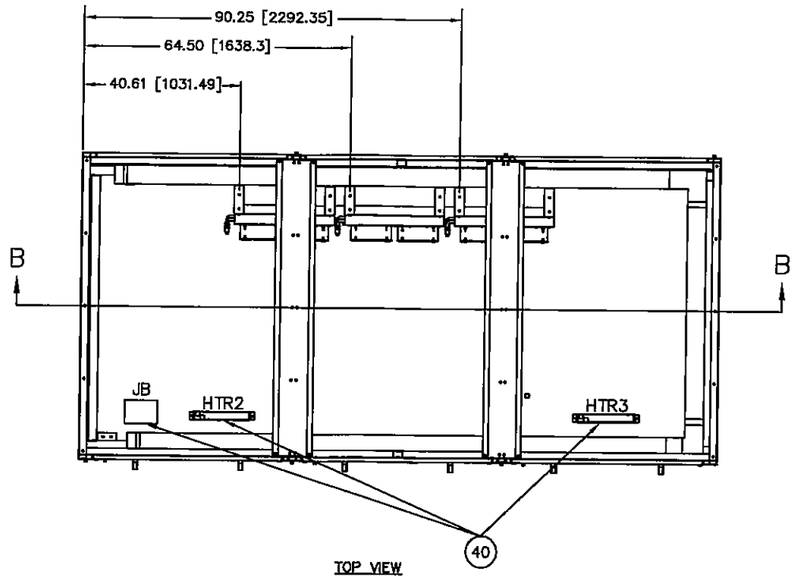
TITLE: ASSEMBLY TRANSFORMER CABINET HEAT EXCHANGER MOUNTING

DWG NO	A5E39163018E
REV	AA
CAD FILE	A5E39163018E005
SHEET NO	5 OF 6

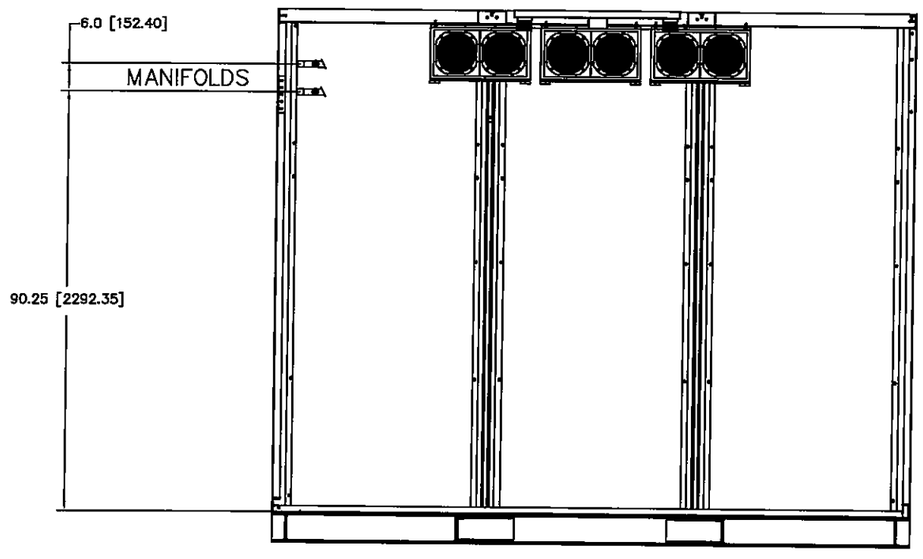
DBORDF

REVISIONS

ECO CODE NO.



TOP VIEW
(PANELS REMOVED)



SECTION B–B

SIZE 2 CABINET
3 HEXs

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DITZ CODE NO.

REVISIONS

TEMPLATE: A5E03647416A002AF

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 11/22/2016

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS IN INCHES
INTERPRET DRAWING PER
ASME Y14.5M-1994
ASME Y14.35-1998
ASME Y14.5-2009
ASME Y14.41-2003
TOLERANCES: .XX ± .03
.XXX ± .015
ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE NTS
LAYER XXXX
DATE 10/24/16
CHKD'D
DFTR A.MCCOY
ENGR'D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE WC3 TRANSFORMER MANIFOLD LOCATION
DWG NO A5E39163018E
REV AA
CAD FILE A5E39163018E006
SHEET NO 6 OF 6

D80R0F

SUBASSEMBLY	DRAWING DESCRIPTION	SHEET
SYSTEM NOTES	SYMBOL LEGEND	2
INPUT CABINET	INPUT ATTEN., CTS, T1 XFMR	3
SPARE TRANSFORMER	TRANSFORMER CABINET	4
SPARE TRANSFORMER	XFMR HEX, TEMP SW'S & HTRS	5

NOTE:
1. ALL WIRING TO BE 600V, 105°C UNLESS OTHERWISE NOTED.
2. ALL WIRING TO BE #18 AWG UNLESS OTHERWISE NOTED.
3. ALL WIRING TO BE 600V, NON-PVC FLAME RETARDANT, LOW SMOKE, LOW HALOGEN, (VW-1) EXCEPT FOR STANDARD HARNESSES
4. ALL GROUND BOND WIRE TO BE MINIMUM #14 AWG GN/YL UNLESS OTHERWISE NOTED.
5. USE INSULATED FERRULES ON ALL CONTROL WIRING #22 AWG THROUGH #14 AWG.
6. SEGREGATE WIRES BY VOLTAGES 24V – 120V – 600V – 750V – MV

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

RPTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 1/22/2016

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

TEMPLATE A5E01211683A REV AX

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M–1994 ASME Y14.35–1994 ASME Y14.2–2003 ASME Y14.1–2004
TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE
LAYER XXXX
DATE 10/24/16
ORDER D
DFTR A.MCCOY
ENGR D.ROMANO

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

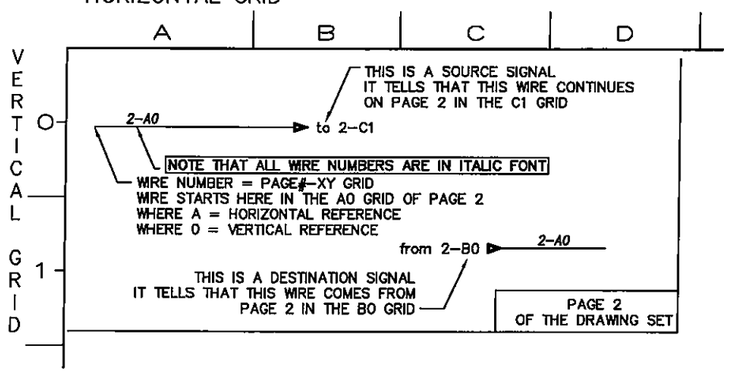
CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE
INDEX,
SPARE TRANSFORMER
SHOP WIRING DIAGRAM

DWG NO A5E39163018F REV AA
CAD FILE A5E39163018F001 SHEET NO 1 OF 5

DBORDF

HORIZONTAL GRID



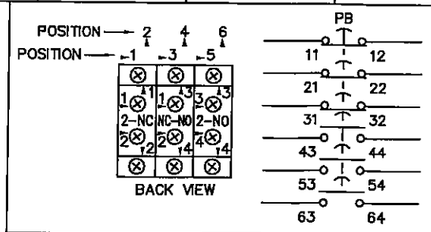
TERMINAL BLOCKS		
14	TB2	CUSTOMER CONTROL CONNECTIONS
2	TB2PWR	CUSTOMER POWER CONNECTIONS
3	TB2ELV	SIGNAL WIRING
11	TB1	RESERVED FOR INTERNAL WIRING
1	TBPC	PRECHARGE
T3	TBXFMR	TRANSFORMER THERMAL SWITCH CONNECTIONS
1 X 2 FXXX, XA X	TBC120	120V CONTROL POWER DISTRIBUTION FUSED TERMS AND UNFUSED TERMS
1 X 2 FXXX, XA X	TB24V	24V CONTROL POWER DISTRIBUTION FUSED TERMS AND UNFUSED TERMS
1 X 2 FXXX, XA X	TBHEX	HEAT EXCHANGER CONTROL POWER FUSED TERMS AND UNFUSED TERMS
1 1 2 FXXX, XA XX	TBPLC	LEVEL SIGNALS
X	TBSIG	LEVEL SIGNALS
XX	TBEXC	MISCINET TERMINALS
XXX	TB2RTD	CUSTOMER RTD CONNECTIONS (IF MPM USED)
O O X O O	TBC120	120V CONTROL POWER DISTRIBUTION 4 CONNECTION POINTS

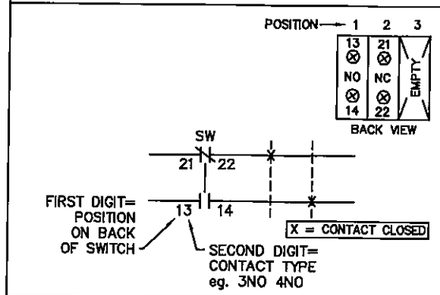
WCIII

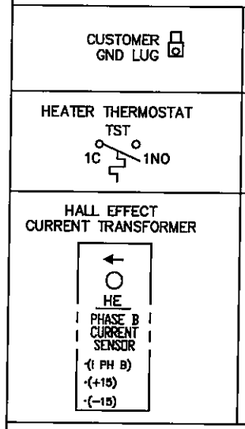
PDB – POWER DISTRIBUTION BLOCKS
CR – CONTROL RELAYS
PT – POTENTIAL TRANSFORMERS
CT – CURRENT TRANSFORMERS
PS – POWER SUPPLIES
TEMP– TEMPERATURE SWITCHES
LSW – FLUID LEVEL SWITCH
DSW – DOOR ACTIVATED SWITCH
FLT – FLUORESCENT LIGHT
TST – THERMOSTAT
HTR – CABINET HEATERS
HE – HALL EFFECT CURRENT TRANSFORMER
TOL – THERMAL OVERLOAD
CB – CIRCUIT BREAKERS
SW – SWITCH
PB – PUSH BUTTON
TF – TRANSFORMER CABINET HEAT EXCHANGER FAN
CBLWR – CELL CABINET BLOWER STARTERS
TBLWR – TRANSFORMER CABINET BLOWER STARTERS
FPCF – FUSE PRE–CHARGE CABINET HEAT EXCHANGER FAN

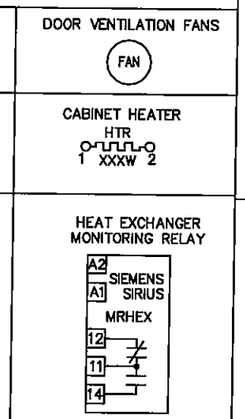
-------- DASHED LINE IS WIRING BY CUSTOMER
-------- BOLD DASHED LINE IS WIRING BY PDC SUPPLIER

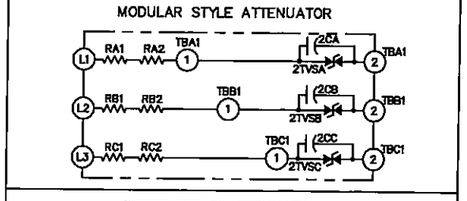
NOTE:
1. ALL WIRING TO BE 600V, 105°C UNLESS OTHERWISE NOTED.
2. ALL WIRING TO BE #18 AWG UNLESS OTHERWISE NOTED.
3. ALL WIRING TO BE 600V, NON–PVC FLAME RETARDANT, LOW SMOKE, LOW HALOGEN, (VW–1) EXCEPT FOR STANDARD HARNESSES
4. ALL GROUND BOND WIRE TO BE MINIMUM #14 AWG GN/YL UNLESS OTHERWISE NOTED.
5. USE INSULATED FERRULES ON ALL CONTROL WIRING #22 AWG THROUGH #14 AWG.
6. SEGREGATE WIRES BY VOLTAGES 24V – 120V – 600V – 750V – MV

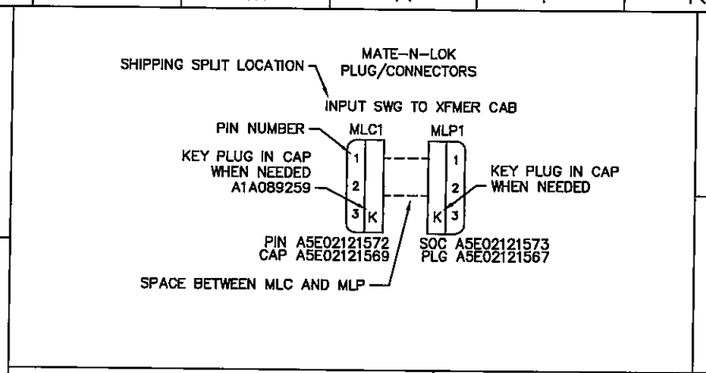


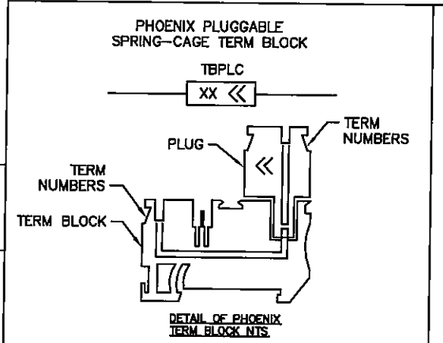


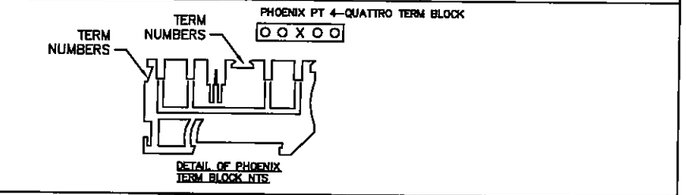


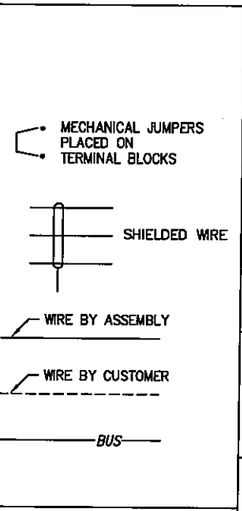


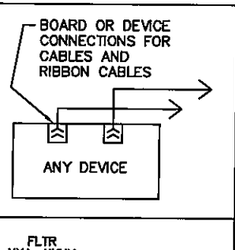


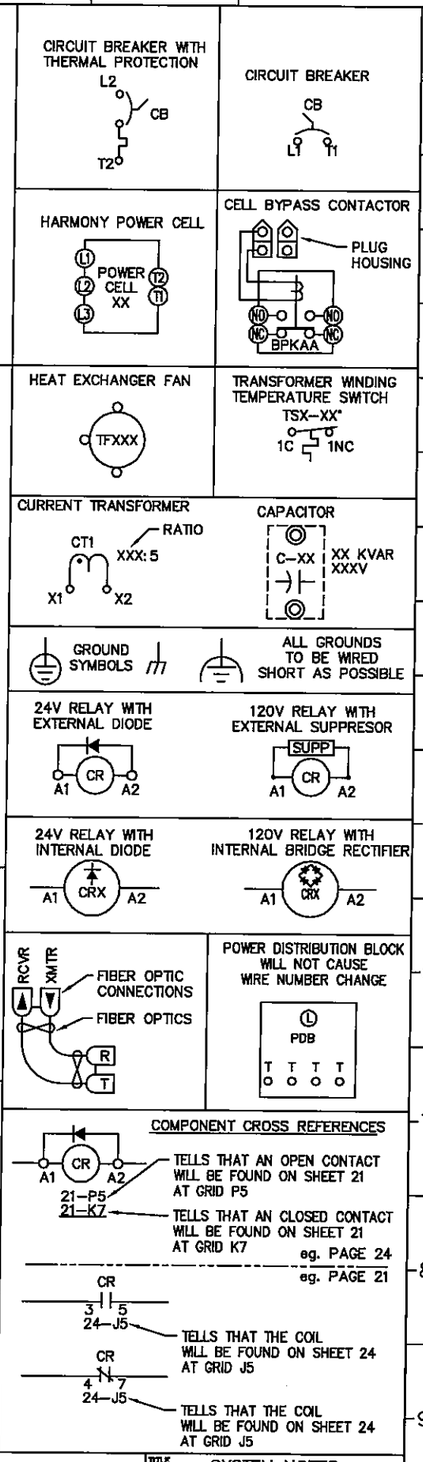












APPROVED FOR PRODUCTION
SO# ~~3006153828.120~~ Date

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER
1/22/2016

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES IN RESPECT DRAWING PER ASME Y14.5M–1994 ASME Y14.35–1998 ASME Y14.2–2000 ASME Y14.1–2000
TOLERANCES: .XX ± .03, .XXX ± .015, ANGLES ± 1°
THIRD ANGLE PROJECTION

SCALE	
LAYER	XXXX
DATE	10/24/16
CHECK	D
DRTR	A.MCCOY
ENGR	D.ROMANO
CUSTOMER	TESORO
CUST ORDER NUMBER	3006153828

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

TITLE	SYSTEM NOTES SYMBOL LEGEND SHOP WIRING DIAGRAM
DWG NO	A5E39163018F
REV	AA
CAD FILE	A5E39163018F002
SHEET NO	2 OF 5

DBORDF

REVISIONS

SHIELDS TIED TO GND STUDS

#10 AWG GN/YL

INPUT VOLTAGE ATTENUATORS (ATTA, ATTB, ATTC)

FC

TVSS

R1 = 4.5MΩ
R2 = 4.5MΩ
FC = 0.0047 µF (SEE TECH NOTE 00143)
NOTE: FC & TVSS CONNECTED EXTERNALLY

XFMR–FPC
PIN A5E02559053
CAP A1A075555
MLC2

FPC CABINET

XFMR–FPC
MLP2

SIB

WH 3–C3
BK 3–C3
WH 3–C3A
BK 3–C3A
WH 3–B3
BK 3–B3

#18 AWG SHLD/2COND WH
TYPICAL EACH ATTENUATOR
#18 AWG SHLD/2COND BK

CUSTOMER INPUT
MEDIUM VOLTAGE
12.47KV, 485AAC
60 HZ, 3 PH

CIRCUIT BREAKER
[BY PDC SUPPLIER]

ARRESTER RATING–DUTY CYCLE (MCOV)

#6 AWG SUPPLIED ON SURGE ARRESTERS

STUD 15kV–(12.7kV) SA–L1 SURGE ARRESTER
STUD 15kV–(12.7kV) SA–L2 SURGE ARRESTER
STUD 15kV–(12.7kV) SA–L3 SURGE ARRESTER

L1
L2
L3

#18 AWG 40KV RD
#18 AWG 40KV WH
#18 AWG 40KV BL

BUS

CT1 500:5
CT2 500:5
X1
X2

OR
BK
GN/YL
YL

SHORTEST POSSIBLE AWG #14 600V

XFMR–FPC
PIN A5E02559056
CAP A1A055826
MLC4

FPC CABINET

XFMR–FPC
MLP4

3–L6A #14 AWG TW YL/BK–BK
3–M7 #14 AWG TW YL/BK–YL
3–L6A #14 AWG TW OR/BK–BK
3–L6 #14 AWG TW OR/BK–OR

CABLE SHLDS GN/YL

#10 AWG 600V

500 MCM 15KV SHLD
1 PER PHASE

COPPER BUS

L1 to 2–A2
L2 to 2–A2
L3 to 2–A1

NOTE:
1. ALL WIRING TO BE 600V, 105°C UNLESS OTHERWISE NOTED.
2. ALL WIRING TO BE #18 AWG UNLESS OTHERWISE NOTED.
3. ALL WIRING TO BE 600V, NON–PVC FLAME RETARDANT, LOW SMOKE, LOW HALOGEN, (VW–1) EXCEPT FOR STANDARD HARNESSES
4. ALL GROUND BOND WIRE TO BE MINIMUM #14 AWG GN/YL UNLESS OTHERWISE NOTED.
5. USE INSULATED FERRULES ON ALL CONTROL WIRING #22 AWG THROUGH #14 AWG.
6. SEGREGATE WIRES BY VOLTAGES 24V – 120V – 600V – 750V – MV

– – – – – – – – DASHED LINE IS EXISTING FIELD WIRES TO BE CONNECTED AT FIELD.

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

ESD SENSITIVE EQUIPMENT

APPROVED FOR PRODUCTION
SO# 3006153828.1201 Date 1/22/2016

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M–1994, ASME Y14.35–1990, ASME Y14.2–2003, ASME Y14.7–2008
TOLERANCES: .XX ± .03, .XXX ± .015, ANGLES ±
THIRD ANGLE PROJECTION

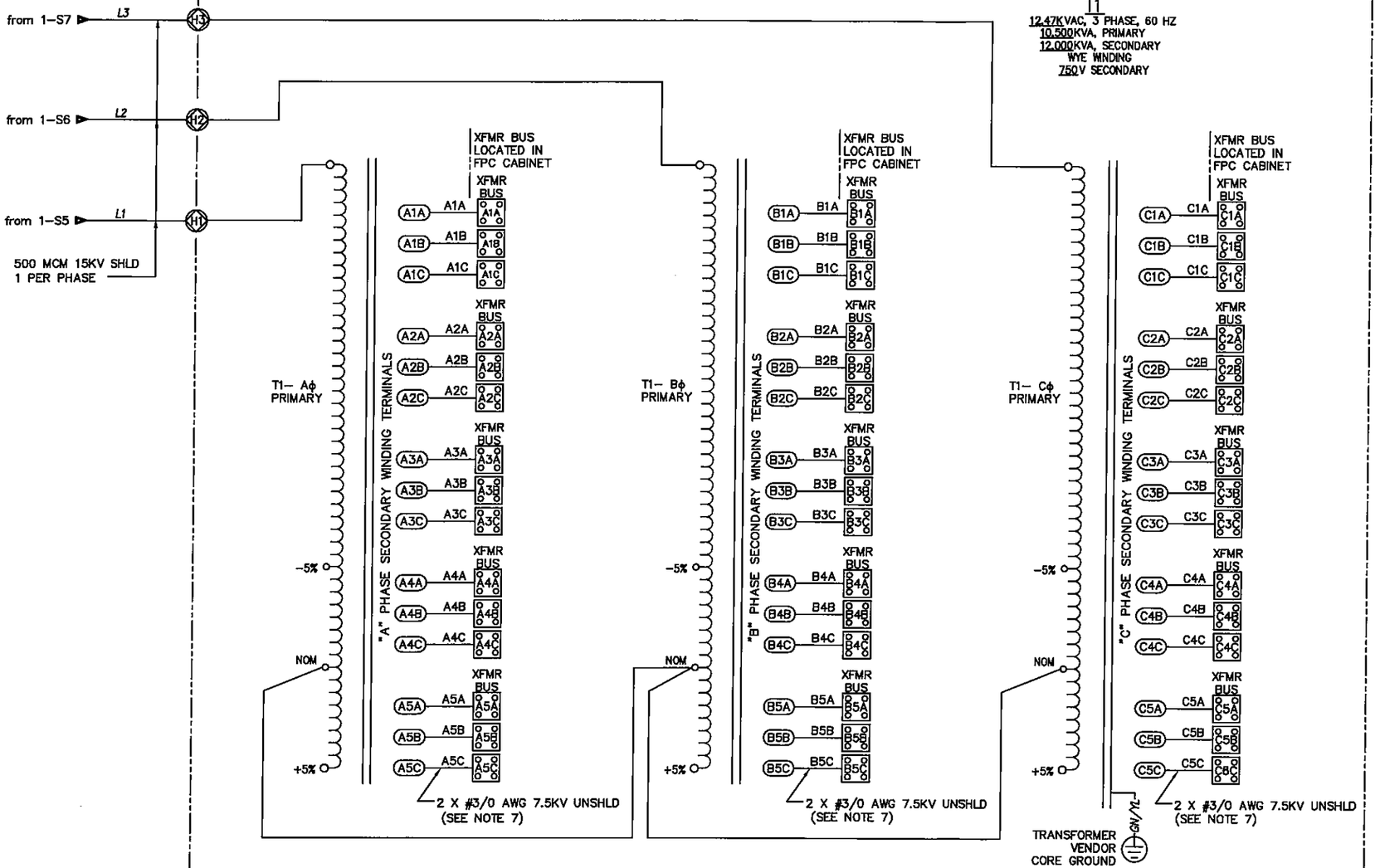
SCALE	
LAYER	XXXX
DATE	10/24/16
DRAWN BY	D
DEPT	A.MCCOY
ENGR	D.ROMANO
CUSTOMER	TESORO
CUST ORDER NUMBER	3006153828

Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

TITLE: SPARE INPUT CAB INPUT ATTEN., CTS SHOP WIRING DIAGRAM
DWG NO: A5E39163018F
REV: AA
CAD FILE: A5E39163018F003
SHEET NO: 3 OF 5

REVISIONS

DBORDF



NOTE:
1. ALL WIRING TO BE 600V, 105°C UNLESS OTHERWISE NOTED.
2. ALL WIRING TO BE #18 AWG UNLESS OTHERWISE NOTED.
3. ALL WIRING TO BE 600V, NON-PVC FLAME RETARDANT, LOW SMOKE, LOW HALOGEN, (VW-1) EXCEPT FOR STANDARD HARNESSES
4. ALL GROUND BOND WIRE TO BE MINIMUM #14 AWG GN/YL UNLESS OTHERWISE NOTED.
5. USE INSULATED FERRULES ON ALL CONTROL WIRING #22 AWG THROUGH #14 AWG.
6. SEGREGATE WIRES BY VOLTAGES 24V - 120V - 600V - 750V - MV
7. USE SECONDARY CABLE POWER WIRE JIG FOR PROPER LENGTHS, CRIMP CABLES ACCORDINGLY.

-------- DASHED LINE IS EXISTING FIELD WIRES TO BE CONNECTED AT FIELD.

ESD SENSITIVE EQUIPMENT

⚠ WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT

DFTG CODE NO.

REVISIONS

APPROVED FOR PRODUCTION

SO# 3006153828.1201 Date 1/22/2016

Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS & NOTES PER ASME Y14.5M-1994
ASME Y14.5M-1994
ASME Y14.38-1999
ASME Y14.2-2003
ASME Y14.41-2005
TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ±
THIRD ANGLE PROJECTION

SCALE
LAYER XXXX
DATE 10/24/16
DWGSIZE D
DFTR A.MCCOY
ENGR D.ROMANO

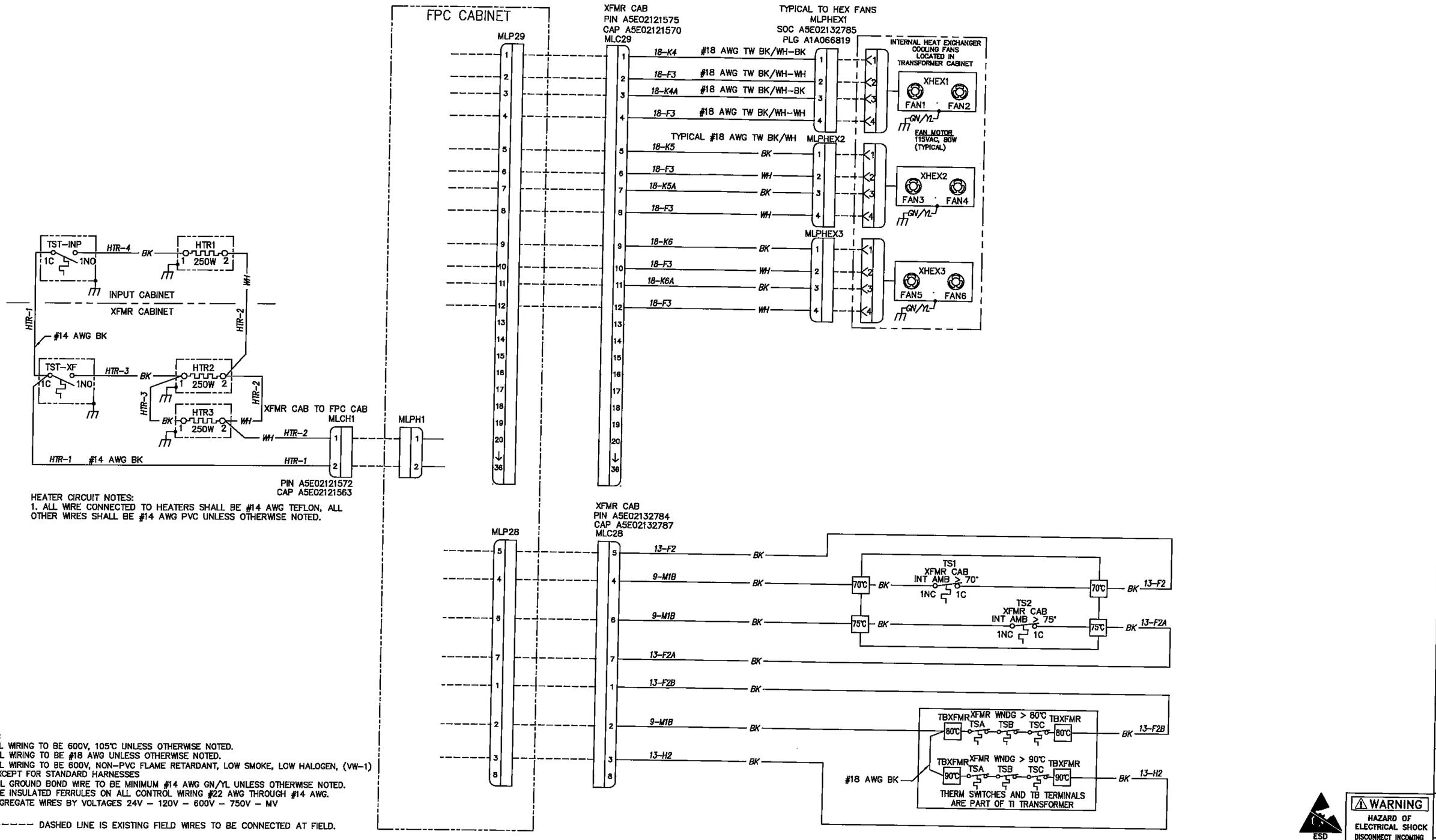
Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications

CUSTOMER TESORO
CUST ORDER NUMBER 3006153828

TITLE
WC3
SPARE TRANSFORMER
SHOP WIRING DIAGRAM

DWG NO A5E39163018F REV AA
CAD FILE A5E39163018F004 SHEET NO 4 OF 5

DSORDF


FPC CABINET
MLP29
XFMR CAB
PIN A5E02121575
CAP A5E02121570
MLC29
TYPICAL TO HEX FANS
MLPHEX1
SOC A5E02132785
PLG A1A066819
INTERNAL HEAT EXCHANGER COOLING FANS LOCATED IN TRANSFORMER CABINET
18-K4 #18 AWG TW BK/WH-BK
18-F3 #18 AWG TW BK/WH-WH
18-K4A #18 AWG TW BK/WH-BK
18-F3 #18 AWG TW BK/WH-WH
XHEX1
FAN1 FAN2
GN/YL
FAN MOTOR 115VAC, 80W (TYPICAL)
TYPICAL #18 AWG TW BK/WH
MLPHEX2
18-K5 BK
18-F3 WH
18-K5A BK
18-F3 WH
XHEX2
FAN3 FAN4
GN/YL
MLPHEX3
18-K6 BK
18-F3 WH
18-K6A BK
18-F3 WH
XHEX3
FAN5 FAN6
GN/YL
TST-INP
1C 1NO
HTR-4 BK
HTR1 250W
WH
INPUT CABINET
XFMR CABINET
HTR-1
HTR-2
#14 AWG BK
TST-XF
1C 1NO
HTR-3 BK
HTR2 250W
HTR3 250W
XFMR CAB TO FPC CAB
MLCH1
MLPH1
WH HTR-2
HTR-1 #14 AWG BK HTR-1
PIN A5E02121572
CAP A5E02121563
HEATER CIRCUIT NOTES:
1. ALL WIRE CONNECTED TO HEATERS SHALL BE #14 AWG TEFLON, ALL OTHER WIRES SHALL BE #14 AWG PVC UNLESS OTHERWISE NOTED.
XFMR CAB
PIN A5E02132784
CAP A5E02132787
MLC28
MLP28
13-F2 BK
9-M1B BK
9-M1B BK
13-F2A BK
13-F2B BK
9-M1B BK
13-H2 BK
TS1
XFMR CAB
INT AMB > 70°
1NC 1C
70°C BK 13-F2
TS2
XFMR CAB
INT AMB > 75°
1NC 1C
75°C BK 13-F2A
TBXFMR XFMR WNDG > 80°C TBXFMR
TSA TSB TSC
80°C BK 13-F2B
TBXFMR XFMR WNDG > 90°C TBXFMR
TSA TSB TSC
90°C BK 13-H2
#18 AWG BK
THERM SWITCHES AND TB TERMINALS ARE PART OF T1 TRANSFORMER
NOTE:
1. ALL WIRING TO BE 600V, 105°C UNLESS OTHERWISE NOTED.
2. ALL WIRING TO BE #18 AWG UNLESS OTHERWISE NOTED.
3. ALL WIRING TO BE 600V, NON-PVC FLAME RETARDANT, LOW SMOKE, LOW HALOGEN, (VW-1) EXCEPT FOR STANDARD HARNESSES
4. ALL GROUND BOND WIRE TO BE MINIMUM #14 AWG GN/YL UNLESS OTHERWISE NOTED.
5. USE INSULATED FERRULES ON ALL CONTROL WIRING #22 AWG THROUGH #14 AWG.
6. SEGREGATE WIRES BY VOLTAGES 24V - 120V - 600V - 750V - MV
DASHED LINE IS EXISTING FIELD WIRES TO BE CONNECTED AT FIELD.
ESD SENSITIVE EQUIPMENT
WARNING
HAZARD OF ELECTRICAL SHOCK
DISCONNECT INCOMING POWER BEFORE OPENING OR WORKING ON THIS UNIT
APPROVED FOR PRODUCTION
SO# 3006153828.1201 Date 11/22/2016
Project Name: Alky Refrig. Comp. Electrification
SPARE TRANSFORMER
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UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN INCHES INTERPRET DRAWING PER ASME Y14.5M-1994
ASME Y14.35-1998
ASME Y14.5-2009
ASME Y14.41-2003
ASME Y14.1-2005
TOLERANCES: .XX ± .03 .XXX ± .015 ANGLES ± 1°
THIRD ANGLE PROJECTION
SCALE
LAYER XXXX
DATE 10/24/16
DWN'D
DSTR A.MCCOY
ENGR D.ROMANO
Siemens Industry, Inc.
Drive Technologies Division
Large Drives Applications
CUSTOMER TESORO
CUST. ORDER NUMBER 3006153828
TITLE SPARE TRANSFORMER XFMR HEX, TEMP SW'S & HTRS SHOP WIRING DIAGRAM
DWG NO A5E39163018F
REV AA
CAD FILE A5E39163018F005
SHEET NO 5 OF 5
DBORDF
REVISIONS
DCTG CODE NO.