



This document applies to Green
Machine serial numbers 4124-4149.

ET-50 4000-003 Air Cooled Green Machine Engineering Drawings

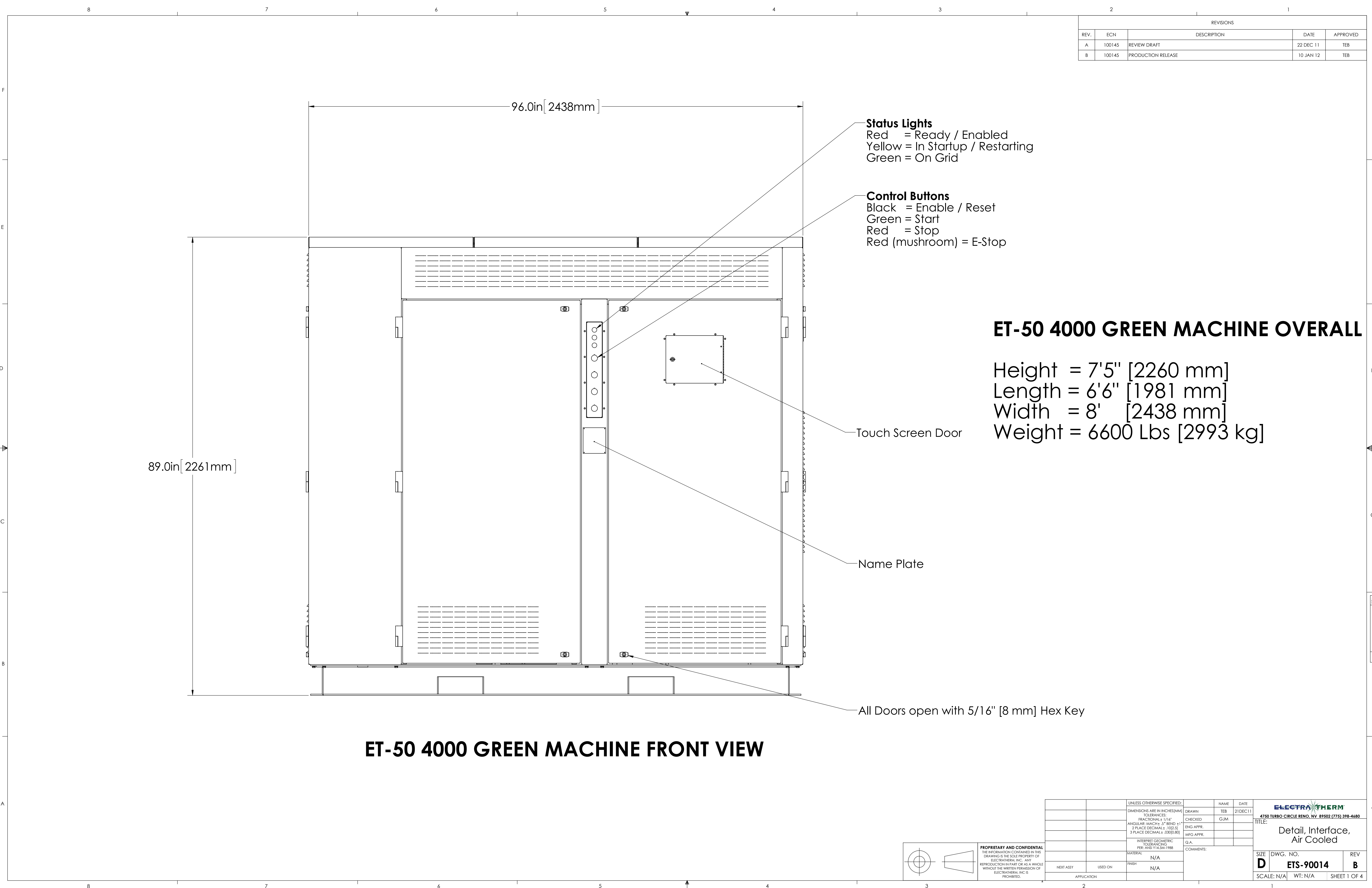
Table of Contents:

Drawing #	Drawing Title	# pages	Drawing description
ETS-90014	Detail, Interface, Air Cooled	4	Air Cooled Green Machine drawings
ETS-90023	Detail, Mounting, ET-50 4000	1	Green Machine Footprint drawing, with Green Machine weights for footing / concrete design
ETS-90016	Detail, Bypass, Hot Water	1	Hot Water Bypass Drawing
ETS-90019	Diagram, 1-Line, Intrcnct, Air Cooled	1	1 Line electrical interconnect drawing representative of typical air cooled Green Machine installation
ETS-90032	Detail, Installation, Air Cooled Condenser	4	Interconnection drawing details for Air Cooled Green Machine to Air Cooled Condenser
ETS-90064	Detail, Reference, ACC, 650kWt, Jumbo	2	Reference Dimensional drawing for ElectraTherm specified Air Cooled condenser, PN 11283
ETS-90013	P&ID, Air Condensing, ET-50 4000	4	Piping and Instrumentation Diagram and Electrical 1-Line drawings, Air Cooled
ETS-90027	Diagram, Trmnl Strip, Interface, ET-50 4000	1	Terminal Strip Connection diagram for connecting Client controls to Green Machine

DRAWING REVISION: 03FEB14



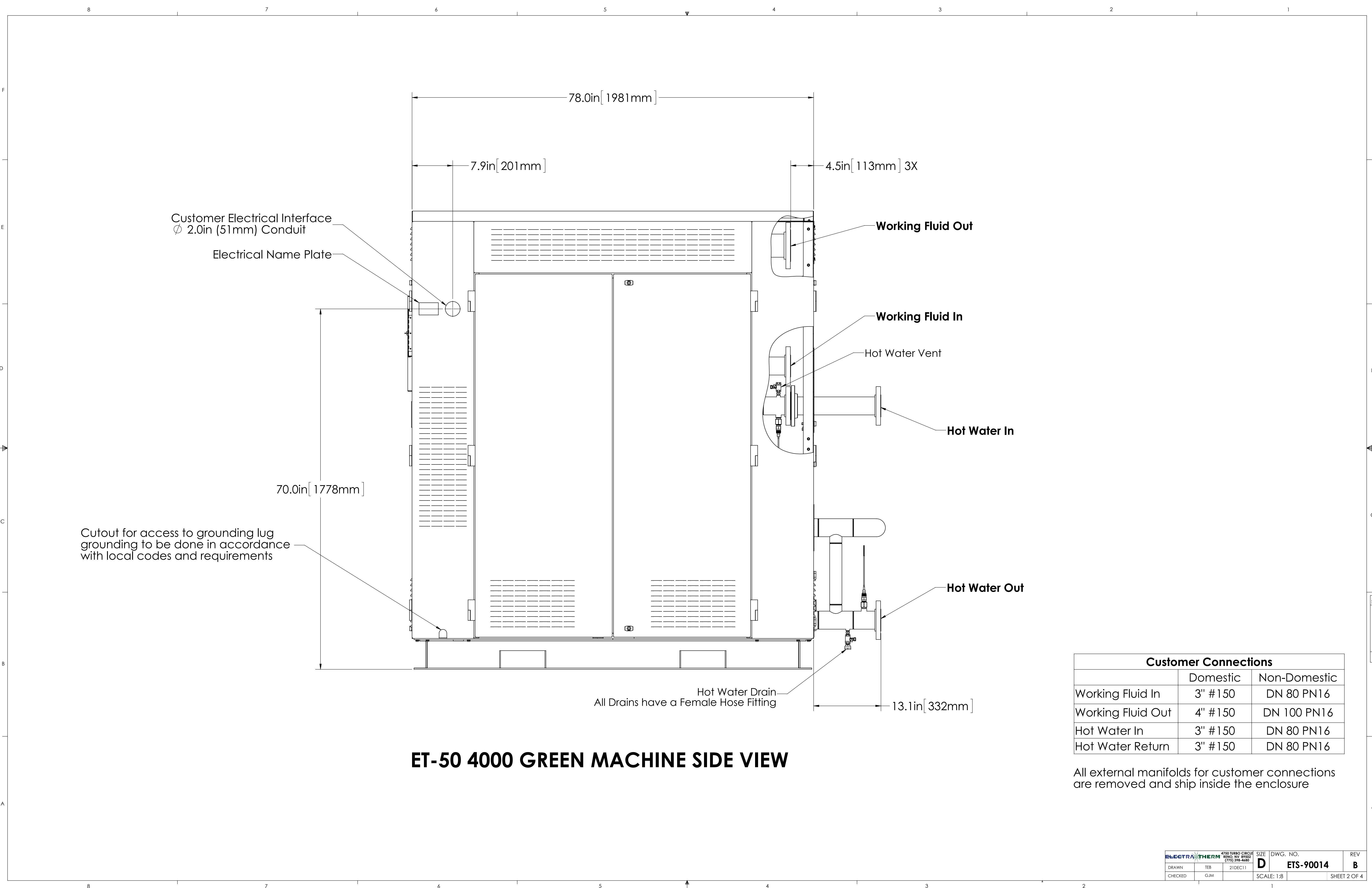
Drawing #	Drawing Title	# pages
ETS-90014	Detail, Interface, Air Cooled	4



REVISIONS				
REV.	ECN	DESCRIPTION	DATE	APPROVED
A	100145	REVIEW DRAFT	22 DEC 11	TEB
B	100145	PRODUCTION RELEASE	10 JAN 12	TEB

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES(MM)	DRAWN	TEB	21DEC11
		TOLERANCES:	CHECKED	GJM	
		FRACTIONALS 1/16"	ENG APPR:		
		ANGULARS: MACH ± .2° BEND ± 1°	MFG APPR:		
		2 PLACE DECIMAL ± .10(2.5)			
		3 PLACE DECIMALS .000(0.00)			
		INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5M-1988	COMMENTS:		
		MATERIAL			
		N/A			
		N/A			
		APPLICATION			
		NEXT ASSY	USED ON	FINISH	

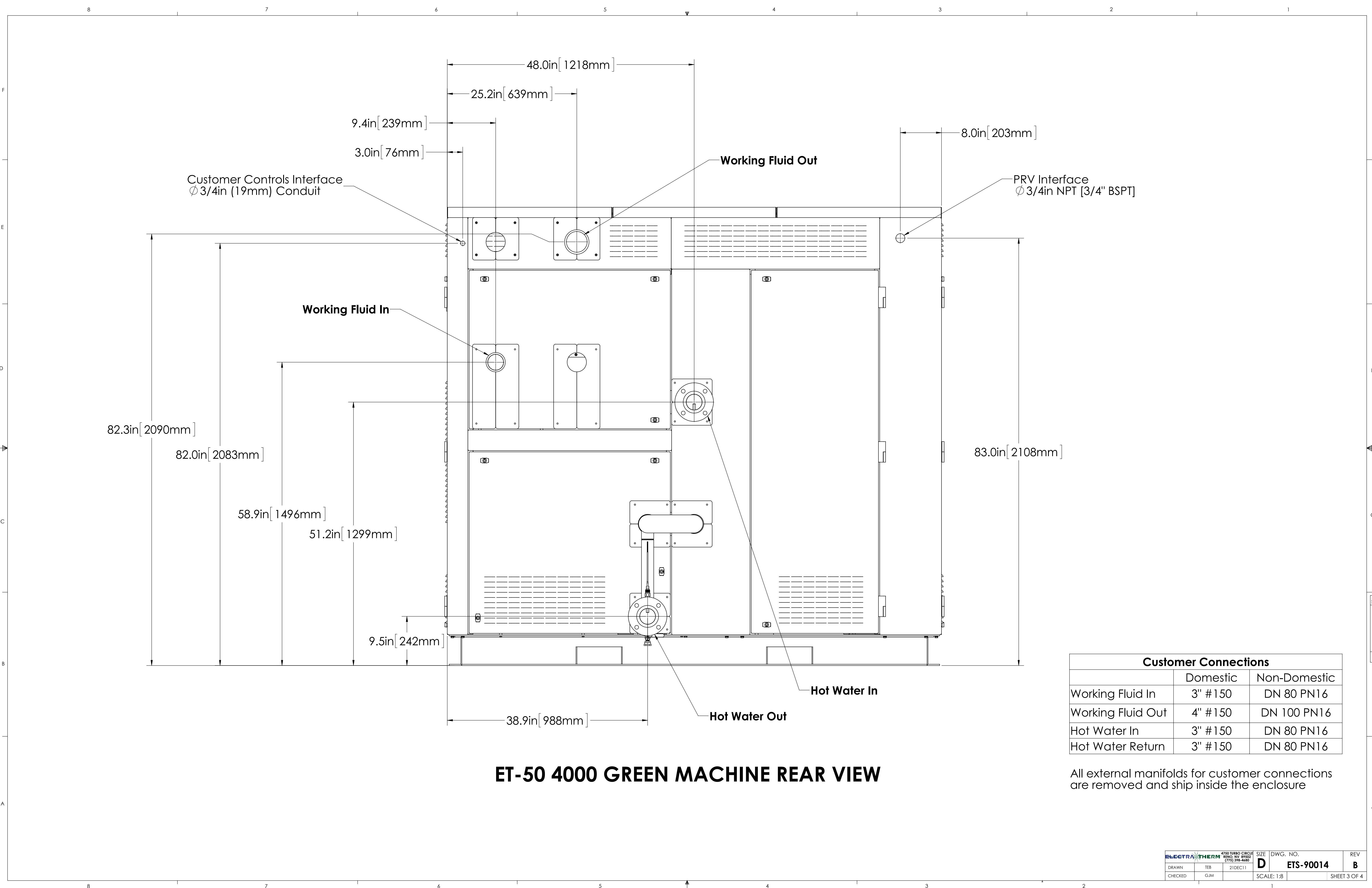
ELECTROTHERM	
4750 TURBO CIRCLE RENO, NV 89502 (775) 398-4680	
TITLE:	
Detail, Interface, Air Cooled	
SIZE	D
DWG. NO.	ETS-90014
REV	B
SCALE: N/A	WT: N/A
SHEET 1 OF 4	



ET-50 4000 GREEN MACHINE SIDE VIEW

Customer Connections		
	Domestic	Non-Domestic
Working Fluid In	3" #150	DN 80 PN16
Working Fluid Out	4" #150	DN 100 PN16
Hot Water In	3" #150	DN 80 PN16
Hot Water Return	3" #150	DN 80 PN16

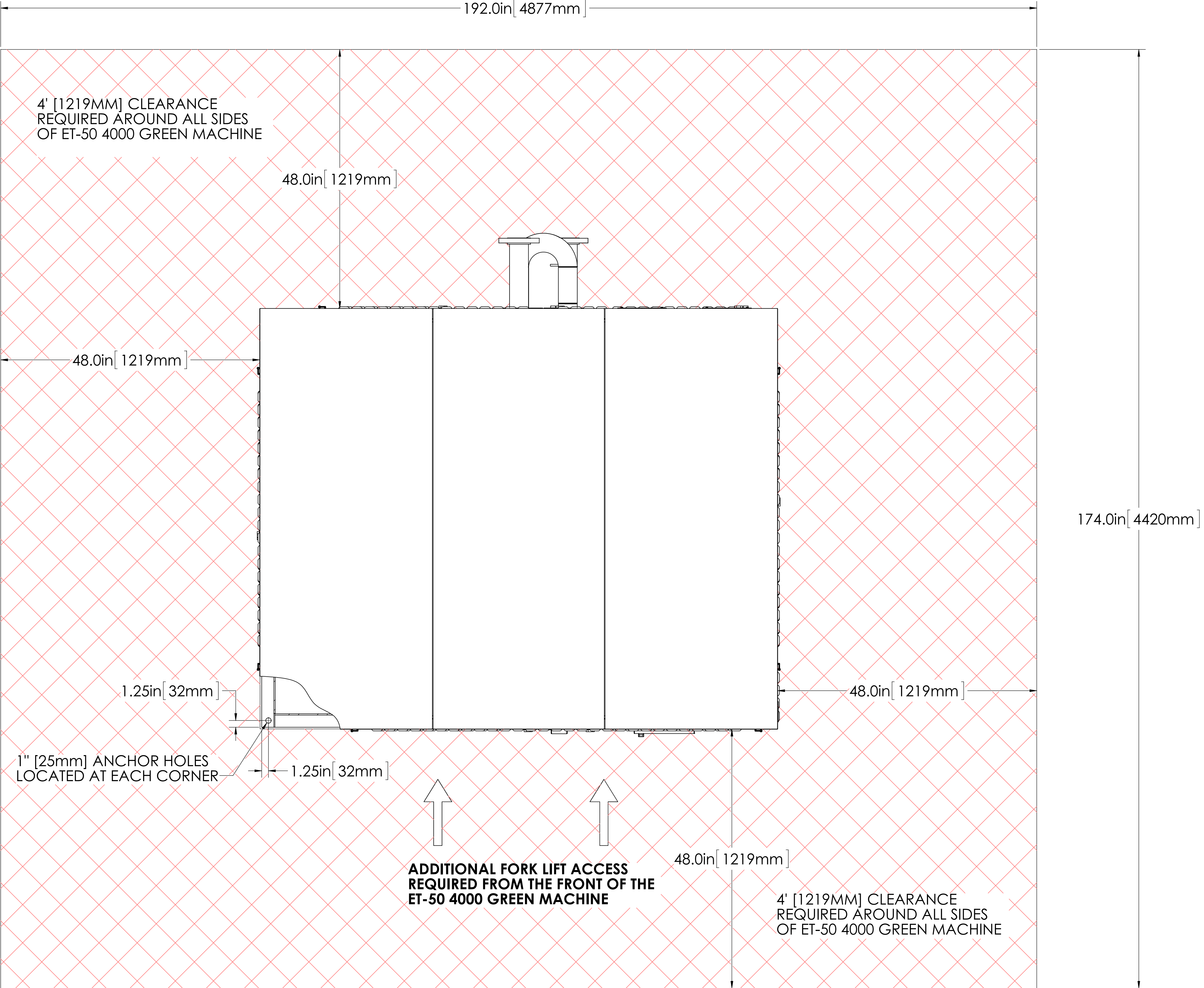
All external manifolds for customer connections are removed and ship inside the enclosure



ET-50 4000 GREEN MACHINE REAR VIEW

Customer Connections		
	Domestic	Non-Domestic
Working Fluid In	3" #150	DN 80 PN16
Working Fluid Out	4" #150	DN 100 PN16
Hot Water In	3" #150	DN 80 PN16
Hot Water Return	3" #150	DN 80 PN16

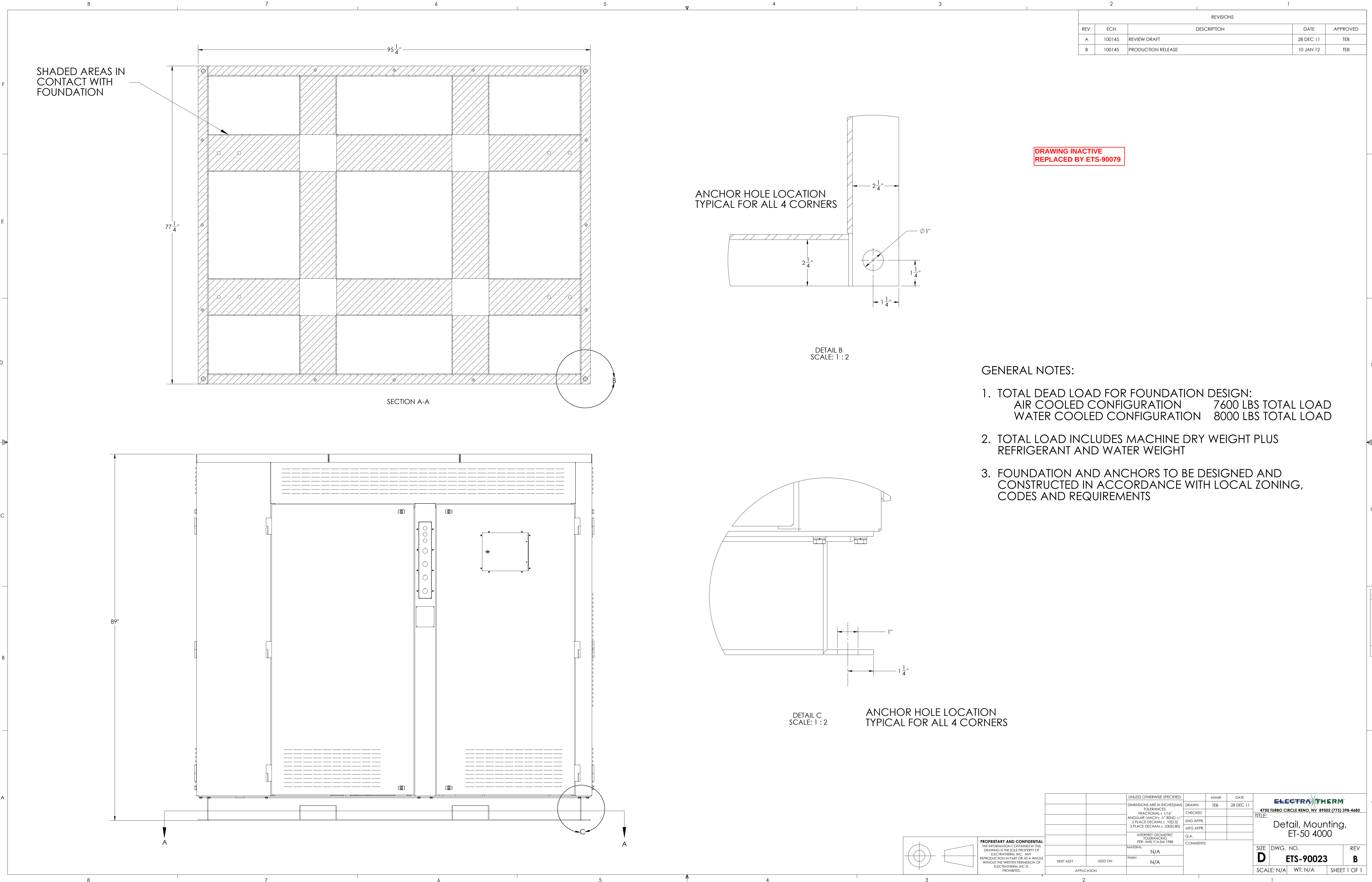
All external manifolds for customer connections are removed and ship inside the enclosure



ET-50 4000 GREEN MACHINE TOP VIEW

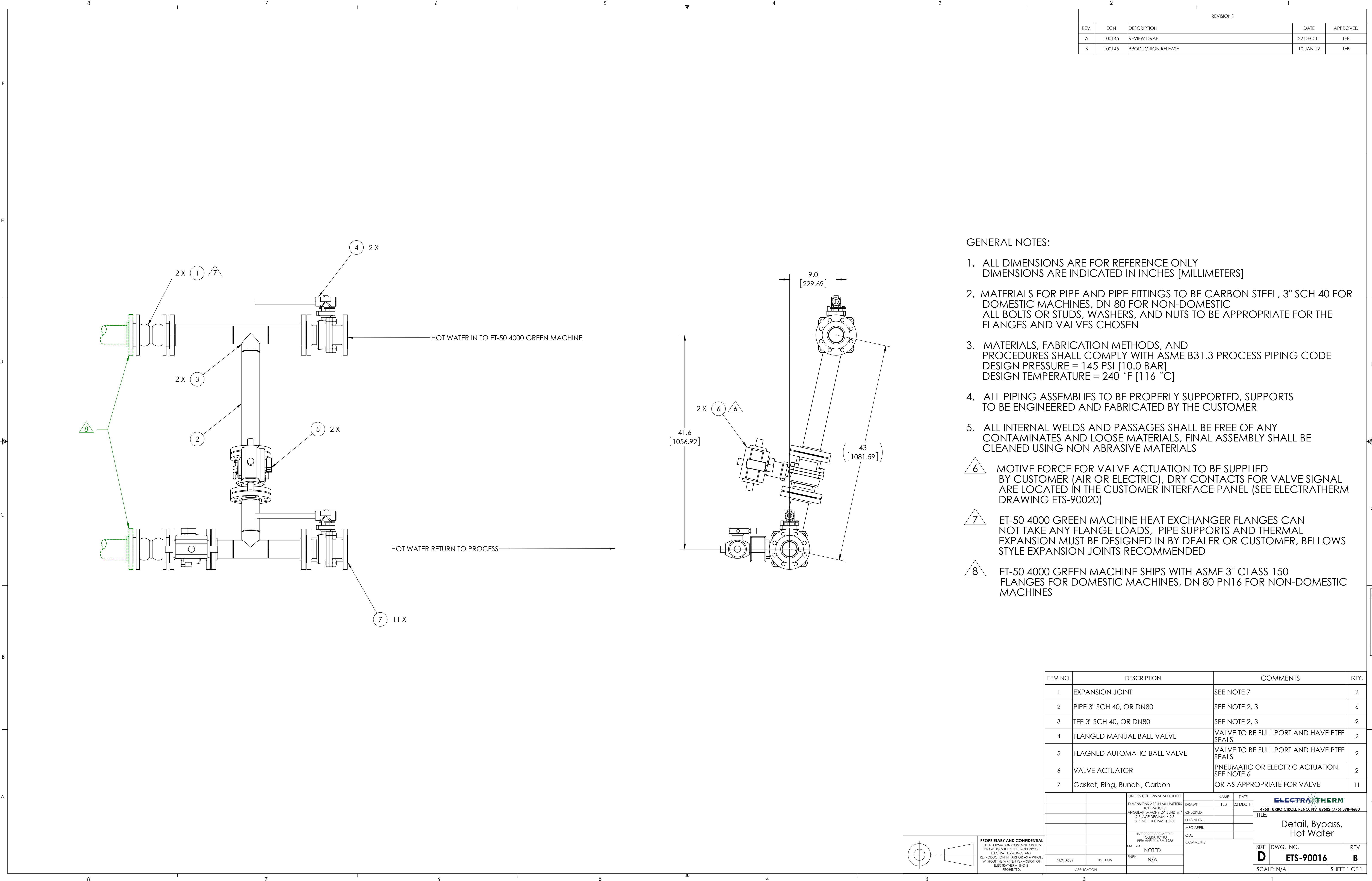


Drawing #	Drawing Title	# pages
ETS-90023	Detail, Mounting, ET-50 4000	1





Drawing #	Drawing Title	# pages
ETS-90016	Detail, Bypass, Hot Water	1



REVISIONS				
REV.	ECN	DESCRIPTION	DATE	APPROVED
A	100145	REVIEW DRAFT	22 DEC 11	TEB
B	100145	PRODUCTION RELEASE	10 JAN 12	TEB

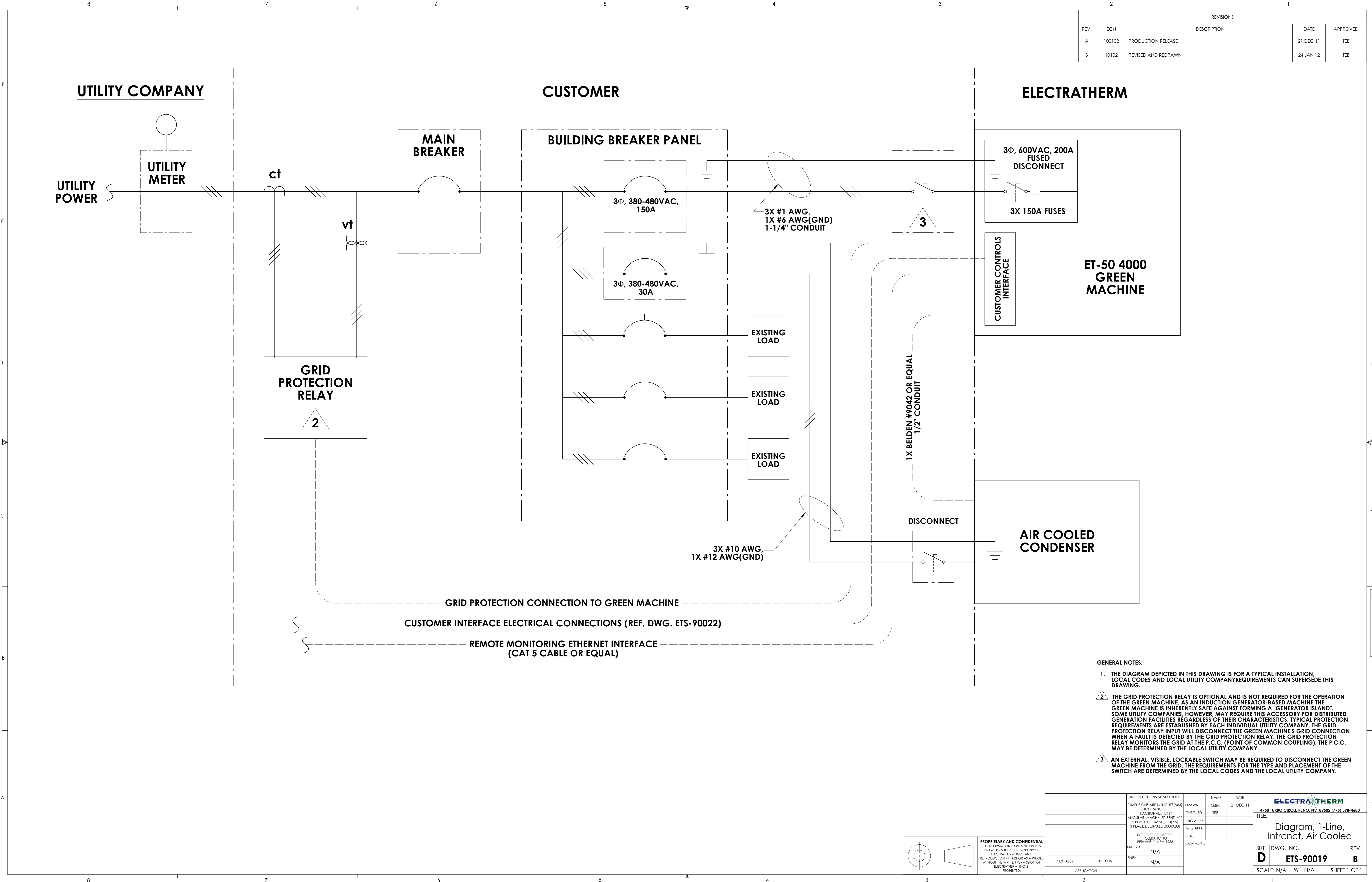
GENERAL NOTES:

- ALL DIMENSIONS ARE FOR REFERENCE ONLY
DIMENSIONS ARE INDICATED IN INCHES [MILLIMETERS]
 - MATERIALS FOR PIPE AND PIPE FITTINGS TO BE CARBON STEEL, 3" SCH 40 FOR DOMESTIC MACHINES, DN 80 FOR NON-DOMESTIC
ALL BOLTS OR STUDS, WASHERS, AND NUTS TO BE APPROPRIATE FOR THE FLANGES AND VALVES CHOSEN
 - MATERIALS, FABRICATION METHODS, AND PROCEDURES SHALL COMPLY WITH ASME B31.3 PROCESS PIPING CODE
DESIGN PRESSURE = 145 PSI [10.0 BAR]
DESIGN TEMPERATURE = 240 °F [116 °C]
 - ALL PIPING ASSEMBLIES TO BE PROPERLY SUPPORTED, SUPPORTS TO BE ENGINEERED AND FABRICATED BY THE CUSTOMER
 - ALL INTERNAL WELDS AND PASSAGES SHALL BE FREE OF ANY CONTAMINATES AND LOOSE MATERIALS, FINAL ASSEMBLY SHALL BE CLEANED USING NON ABRASIVE MATERIALS
- 6 MOTIVE FORCE FOR VALVE ACTUATION TO BE SUPPLIED BY CUSTOMER (AIR OR ELECTRIC), DRY CONTACTS FOR VALVE SIGNAL ARE LOCATED IN THE CUSTOMER INTERFACE PANEL (SEE ELECTRATHERM DRAWING ETS-90020)
- 7 ET-50 4000 GREEN MACHINE HEAT EXCHANGER FLANGES CAN NOT TAKE ANY FLANGE LOADS, PIPE SUPPORTS AND THERMAL EXPANSION MUST BE DESIGNED IN BY DEALER OR CUSTOMER, BELLOWS STYLE EXPANSION JOINTS RECOMMENDED
- 8 ET-50 4000 GREEN MACHINE SHIPS WITH ASME 3" CLASS 150 FLANGES FOR DOMESTIC MACHINES, DN 80 PN16 FOR NON-DOMESTIC MACHINES

ITEM NO.	DESCRIPTION		COMMENTS		QTY.
1	EXPANSION JOINT		SEE NOTE 7		2
2	PIPE 3" SCH 40, OR DN80		SEE NOTE 2, 3		6
3	TEE 3" SCH 40, OR DN80		SEE NOTE 2, 3		2
4	FLANGED MANUAL BALL VALVE		VALVE TO BE FULL PORT AND HAVE PTFE SEALS		2
5	FLAGNED AUTOMATIC BALL VALVE		VALVE TO BE FULL PORT AND HAVE PTFE SEALS		2
6	VALVE ACTUATOR		PNEUMATIC OR ELECTRIC ACTUATION, SEE NOTE 6		2
7	Gasket, Ring, BunaN, Carbon		OR AS APPROPRIATE FOR VALVE		11
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS TOLERANCES: ANGULAR: MACH ± .5° BEND ± 1° 2 PLACE DECIMAL ± 0.3 3 PLACE DECIMAL ± 0.00	DRAWN TEB 22 DEC 11	NAME TEB	DATE 22 DEC 11
		INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5M-1988	CHECKED	ENG APPR.	
		MATERIAL NOTED	MFG APPR.	Q.A.	
		FINISH N/A	COMMENTS:		
NEXT ASSY		USED ON	TITLE: ELECTRATHERM 4750 TURBO CIRCLE RENO, NV 89502 (775) 398-4680 Detail, Bypass, Hot Water		
APPLICATION:			SIZE D	DWG. NO. ETS-90016	REV B
			SCALE: N/A		SHEET 1 OF 1



Drawing #	Drawing Title	# pages
ETS-90019	Diagram, 1-Line, Intrcnct, Air Cooled	1



REVISIONS				
REV.	ECN	DESCRIPTION	DATE	APPROVED
A	100102	PRODUCTION RELEASE	21 DEC 11	TEB
B	10102	REVISED AND REDRAWN	24 JAN 12	TEB

3Φ, 600VAC, 200A
FUSED
DISCONNECT

3X 150A FUSES

ET-50 4000
GREEN
MACHINE

ELECTRATHERM

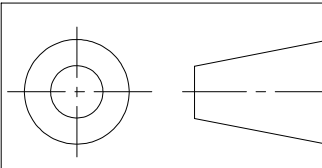
AIR COOLED
CONDENSER

- GENERAL NOTES:
- THE DIAGRAM DEPICTED IN THIS DRAWING IS FOR A TYPICAL INSTALLATION. LOCAL CODES AND LOCAL UTILITY COMPANY REQUIREMENTS CAN SUPERSEDE THIS DRAWING.
 - THE GRID PROTECTION RELAY IS OPTIONAL AND IS NOT REQUIRED FOR THE OPERATION OF THE GREEN MACHINE. AS AN INDUCTION GENERATOR-BASED MACHINE THE GREEN MACHINE IS INHERENTLY SAFE AGAINST FORMING A "GENERATOR ISLAND". SOME UTILITY COMPANIES, HOWEVER, MAY REQUIRE THIS ACCESSORY FOR DISTRIBUTED GENERATION FACILITIES REGARDLESS OF THEIR CHARACTERISTICS. TYPICAL PROTECTION REQUIREMENTS ARE ESTABLISHED BY EACH INDIVIDUAL UTILITY COMPANY. THE GRID PROTECTION RELAY INPUT WILL DISCONNECT THE GREEN MACHINE'S GRID CONNECTION WHEN A FAULT IS DETECTED BY THE GRID PROTECTION RELAY. THE GRID PROTECTION RELAY MONITORS THE GRID AT THE P.C.C. (POINT OF COMMON COUPLING). THE P.C.C. MAY BE DETERMINED BY THE LOCAL UTILITY COMPANY.
 - AN EXTERNAL, VISIBLE, LOCKABLE SWITCH MAY BE REQUIRED TO DISCONNECT THE GREEN MACHINE FROM THE GRID. THE REQUIREMENTS FOR THE TYPE AND PLACEMENT OF THE SWITCH ARE DETERMINED BY THE LOCAL CODES AND THE LOCAL UTILITY COMPANY.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES(MM) TOLERANCES: FRACTIONAL ± 1/16" ANGULAR, MACH ± 5° BEND ± 1° 2 PLACE DECIMAL ± .10(2.5) 3 PLACE DECIMAL ± .005(0.125)	DRAWN GJM	NAME TEB	DATE 21 DEC 11
		INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5M-1988	CHECKED	ENG APPR.	
		MATERIAL N/A	ENG APPR.	MFG APPR.	
		FINISH N/A	G.A.	COMMENTS:	
NEXT ASSY	USED ON	APPLICATION			

ELECTRATHERM		4750 TURBO CIRCLE RENO, NV 89502 (775) 398-4680
Diagram, 1-Line, Intcrnct, Air Cooled		
SIZE D	DWG. NO. ETS-90019	REV B
SCALE: N/A	WT: N/A	SHEET 1 OF 1

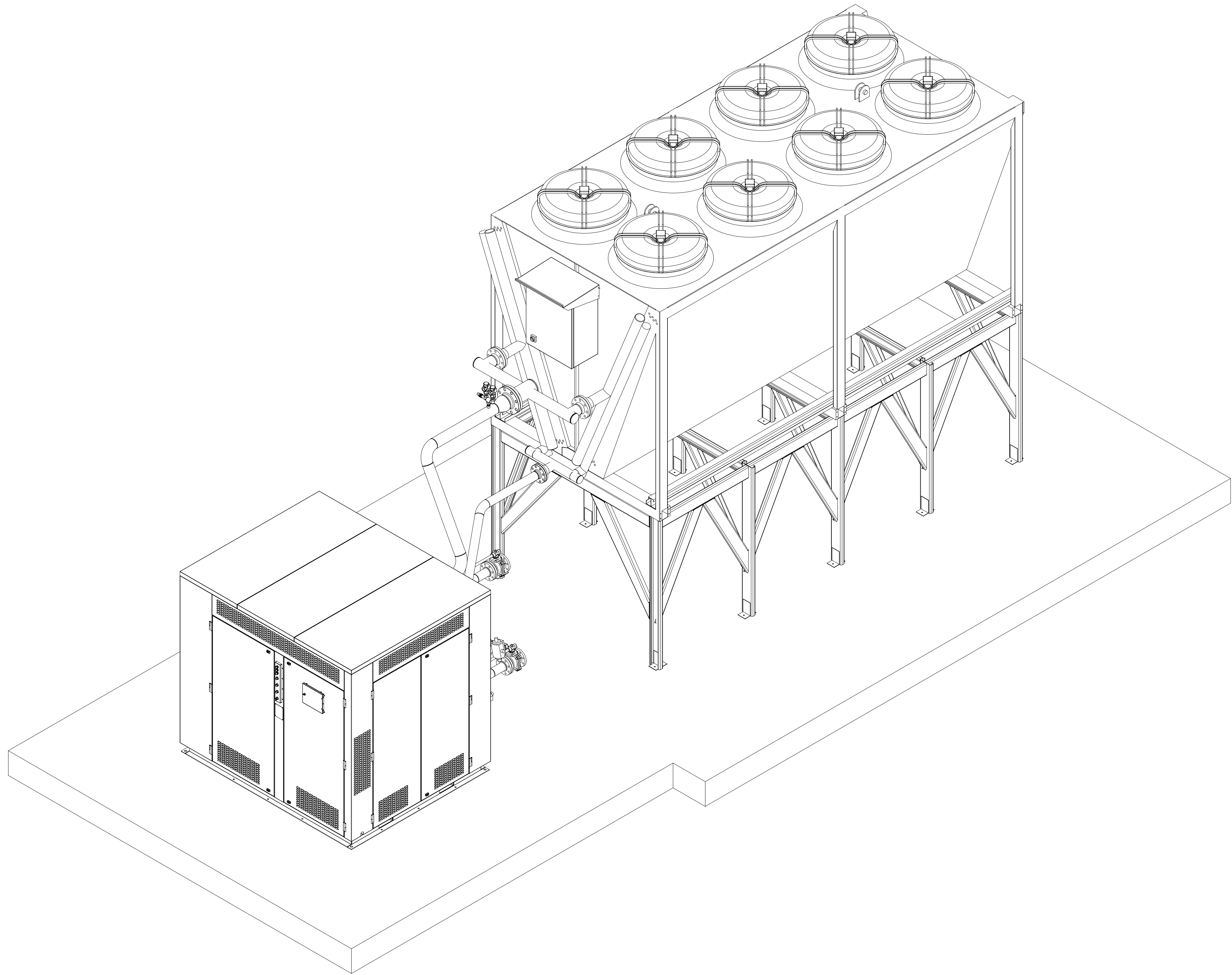
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Drawing #	Drawing Title	# pages
ETS-90032	Detail, Installation, Air Cooled Condenser	4

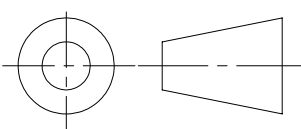
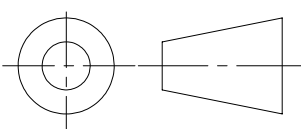
REVISIONS		
REV.	ECN	DESCRIPTION
A	100386	PRODUCTION RELEASE

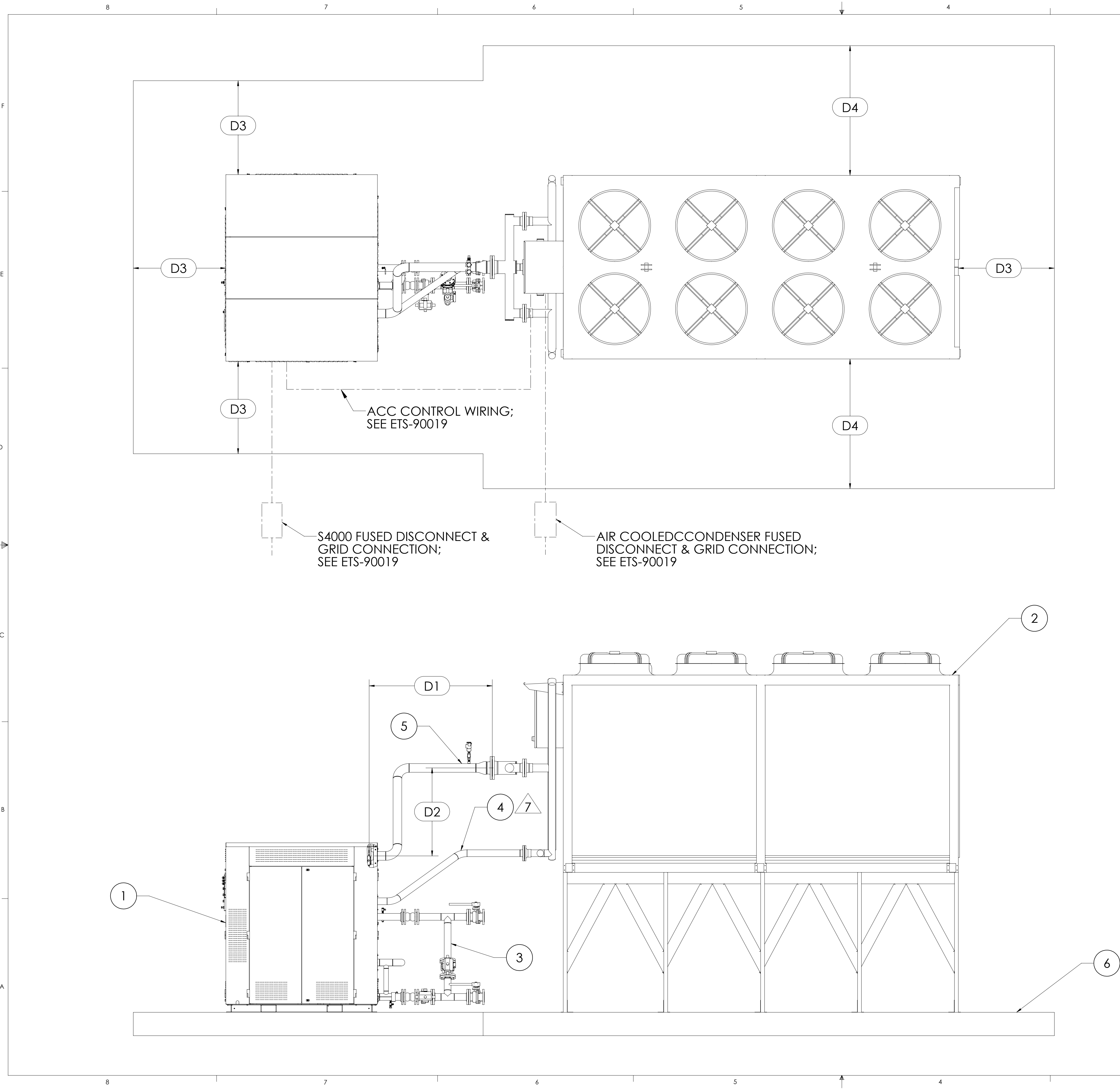


GENERAL NOTES:

1. ALL DIMENSIONS ARE FOR REFERENCE ONLY DIMENSIONS ARE INDICATED IN INCHES AND [MILLIMETERS].
2. LAYOUT AND ORIENTATION OF THE AIR COOLED CONDENSER AND ELECTRATHERM ET-50 4000 GREEN MACHINE IS FOR REFERENCE ONLY, EXACT ORIENTATION TO BE DETERMINED BY SITE LAYOUT.
3. SUPPORT STRUCTURE FOR THE AIR COOLED CONDENSER TO BE ENGINEERED AND FABRICATE BY THE DEALER OR CUSTOMER IN ACCORDANCE WITH LOCAL ZONING CODES AND REQUIREMENTS, SEE SHEET 4.
4. ALL PIPING ASSEMBLIES TO BE PROPERLY SUPPORTED, SUPPORTS TO BE ENGINEERED AND FABRICATED BY THE DEALER OR CUSTOMER IN ACCORDANCE WITH LOCAL ZONING CODES AND REQUIREMENTS (PIPE SUPPORTS NOT SHOWN).
5. FOOTINGS AND ANCHOR BOLTS TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH LOCAL ZONING CODES AND REQUIREMENTS.

NOTES CONTINUED ON PAGE 2

UNLESS OTHERWISE SPECIFIED:		NAME		DATE		 4750 TURBO CIRCLE RENO, NV 89502 (775) 396-4680		
DIMENSIONS ARE IN INCHES[MM]		DRAWN	ABC	10 JUL 13		TITLE: Detail, Installation, Air Cooled Condenser, 004		
TOLERANCES: FRACTIONAL: ± 1/16" ANGULAR: MACH: ± .5° BEND ± 1° 2 PLACE DECIMAL: ± .10[.5] 3 PLACE DECIMAL: ± .030[0.80]		CHECKED	JPR	11 JUL 13				
INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER: ASME Y14.5M-2009		ENG APPR.	ABC	11 JUL 13				
		MATERIAL		N/A				
		FINISH		N/A				
		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ELECTRATHERM INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ELECTRATHERM INC. IS PROHIBITED.				SIZE	DWG. NO.	REV
						D	ETS-90032	A
DO NOT SCALE DRAWING						SCALE: 1:64WEIGHT: 1lb		SHEET 1 OF 4



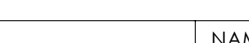
GENERAL NOTES CONTINUED FROM PAGE 1:

6. HEIGHT OF AIR COOLED CONDENSER TO BE DETERMINED BY THE DISTANCE BETWEEN THE ELECTRATHERM ET-50 4000 GREEN MACHINE AND THE AIR COOLED CONDENSER, SUCH THAT A PROPER SLOPE IS MAINTAINED BETWEEN THE UNITS.
7. A MINIMUM SLOPE OF 1/4 INCH PER FOOT [18mm PER METER] OF THE PIPING CONNECTING THE WORKING FLUID FROM THE AIR COOLED CONDENSER TO THE ELECTRATHERM ET-50 4000 GREEN MACHINE
8. FLANGES ON ELECTRATHERM ET-50 4000 GREEN MACHINE HEAT EXCHANGERS AND AIR COOLED CONDENSER CAN NOT TAKE ANY FLANGE LOADS, PIPE SUPPORTS AND THERMAL EXPANSION MUST BE DESIGNED IN BY DEALER OR CUSTOMER. FLEXIBLE PIPE OR HORIZONTAL "U" SECTIONS MAY BE USED AS APPROPRIATE.
9. FOR CLARITY NO PIPE SUPPORTS ARE SHOWN IN THESE DRAWINGS.
10. RECOMMENDED MAXIMUM DIMENSIONS; PERFORMANCE MAY BE IMPAIRED IF DISTANCE IS EXCEEDED. CONSULT WITH ELECTRATHERM PRIOR TO EXCEEDING INDICATED VALUE.

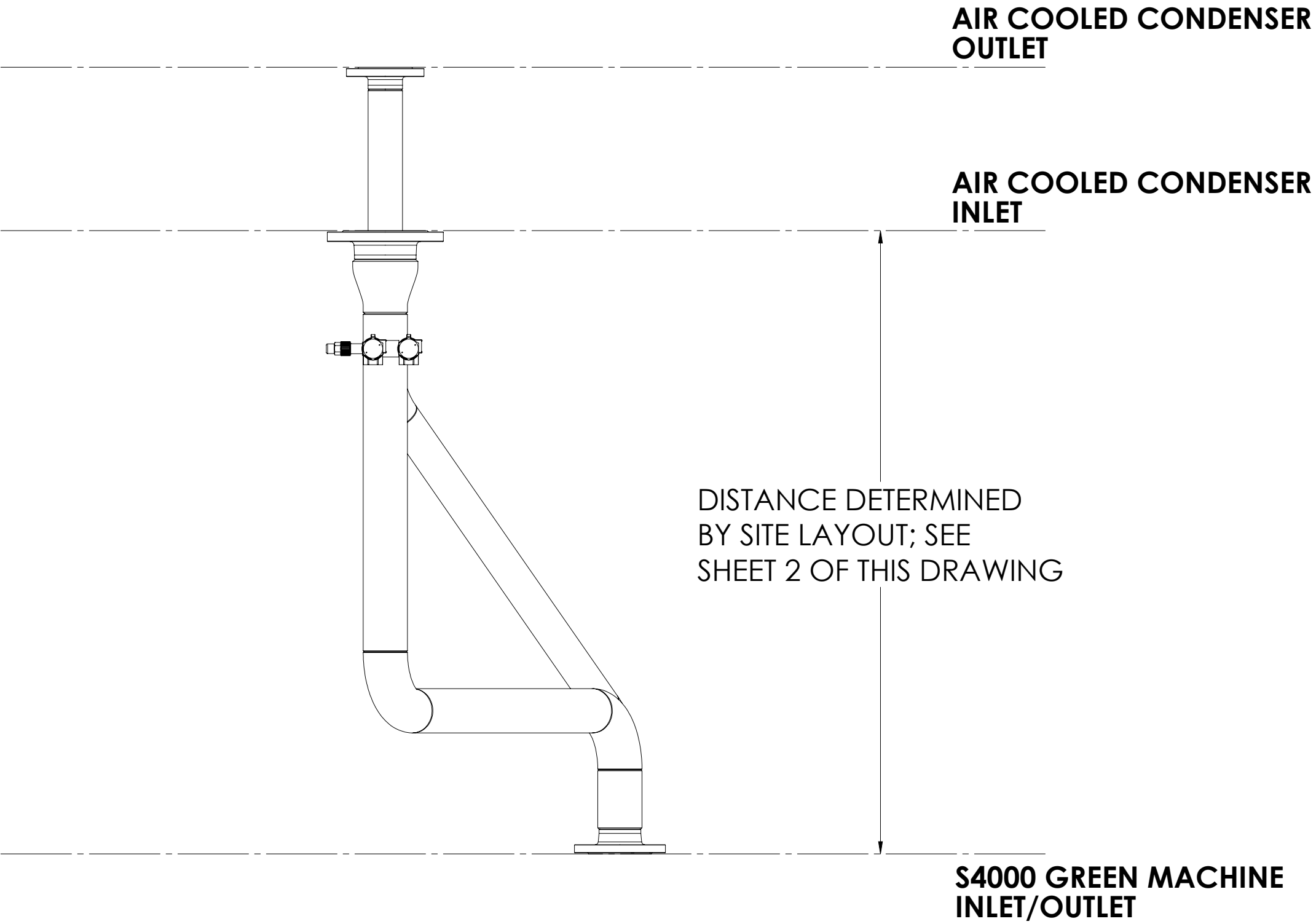
NOTES CONTINUED ON PAGE 3

DIMENSION	DESCRIPTION	MINIMUM	MAXIMUM 
D1	S4000 OUTLET TO ACC INLET - HORIZONTAL DISTANCE	72.0 [1830]	240.0 [6096]
D2	24000 OUTLET TO ACC INLET - ELEVATION	20.5 [520]	78.0 [1981]
D3	MINIMUM DISTANCE FOR MAINTENANCE ACCESS	48.0 [1219]	N/A
D4	MINIMUM DISTANCE FOR REQUIRED AIR FLOW	118.1 [3000]	N/A

ITEM NO.	DESCRIPTION	COMMENTS	QTY.
1	S4000 GREEN MACHINE	SEE DRAWING ETS-90028	1
2	AIR COOLED CONDENSER	SEE SHEET 4	1
3	PIPE ASSY - HOT WATER BYPASS	SEE DRAWING ETS-90016	1
4	PIPE ASSY - S4000 TO ACC	SEE SHEET 3	1
5	PIPE ASSY - ACC TO S4000	SEE SHEET 3	1
6	FOUNDATION	BUILD PER LOCAL CODE	1

 4750 TURBO CIRCLE RENO, NV 89502 (775) 398-6600		TITLE: Detail, Installation, Air Cooled Condenser, 004	
DRAWN	NAME ABC	DATE 10 JUL 13	SCALE: 1:15
CHECKED	JPR	11 JUL 13	
ENG APPR.	ABC	11 JUL 13	
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ELECTRATHERM INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ELECTRATHERM INC. IS PROHIBITED.		SIZE D	DWG. NO. ETS-90032
		REV A	SHEET 2 OF 4

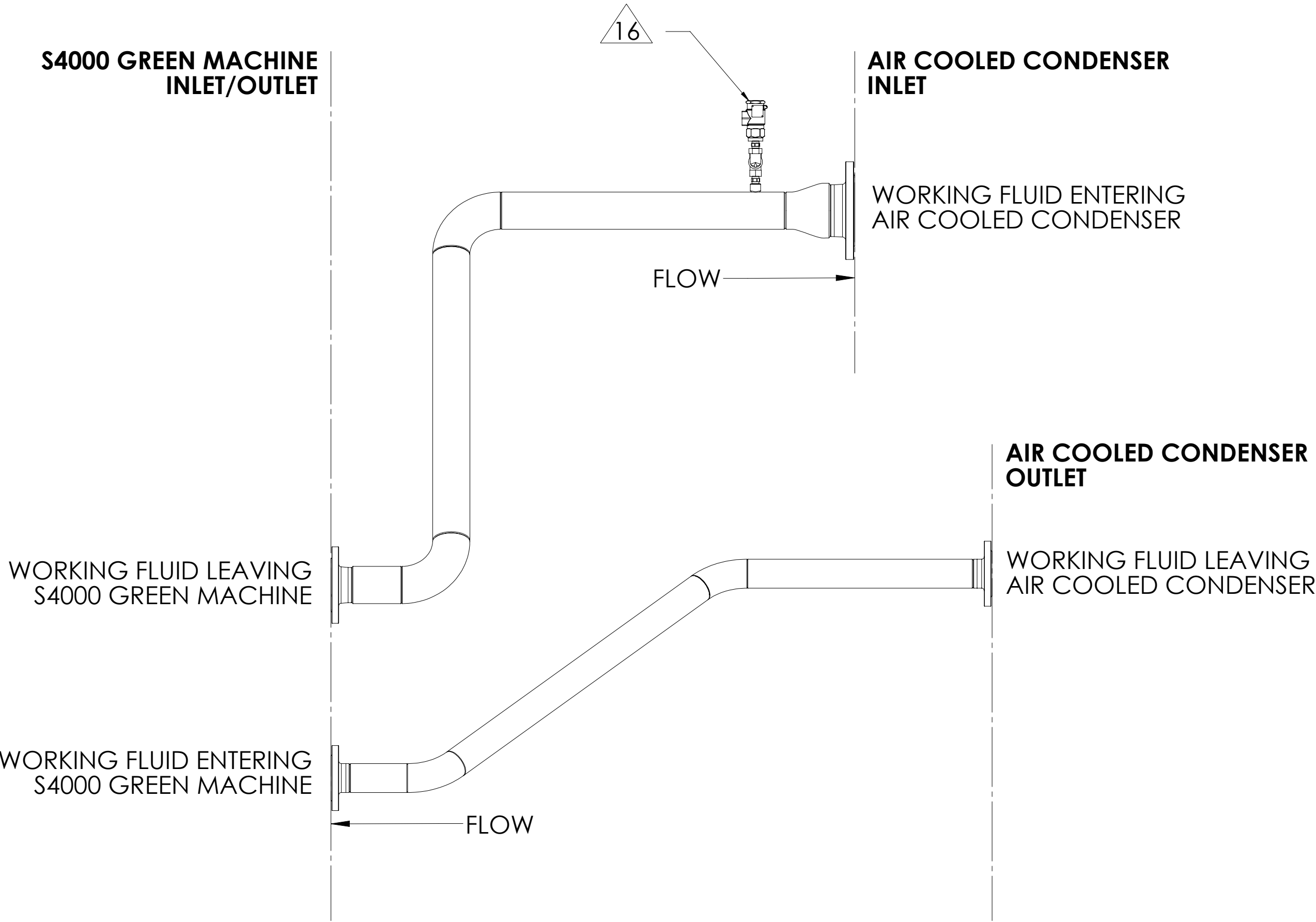
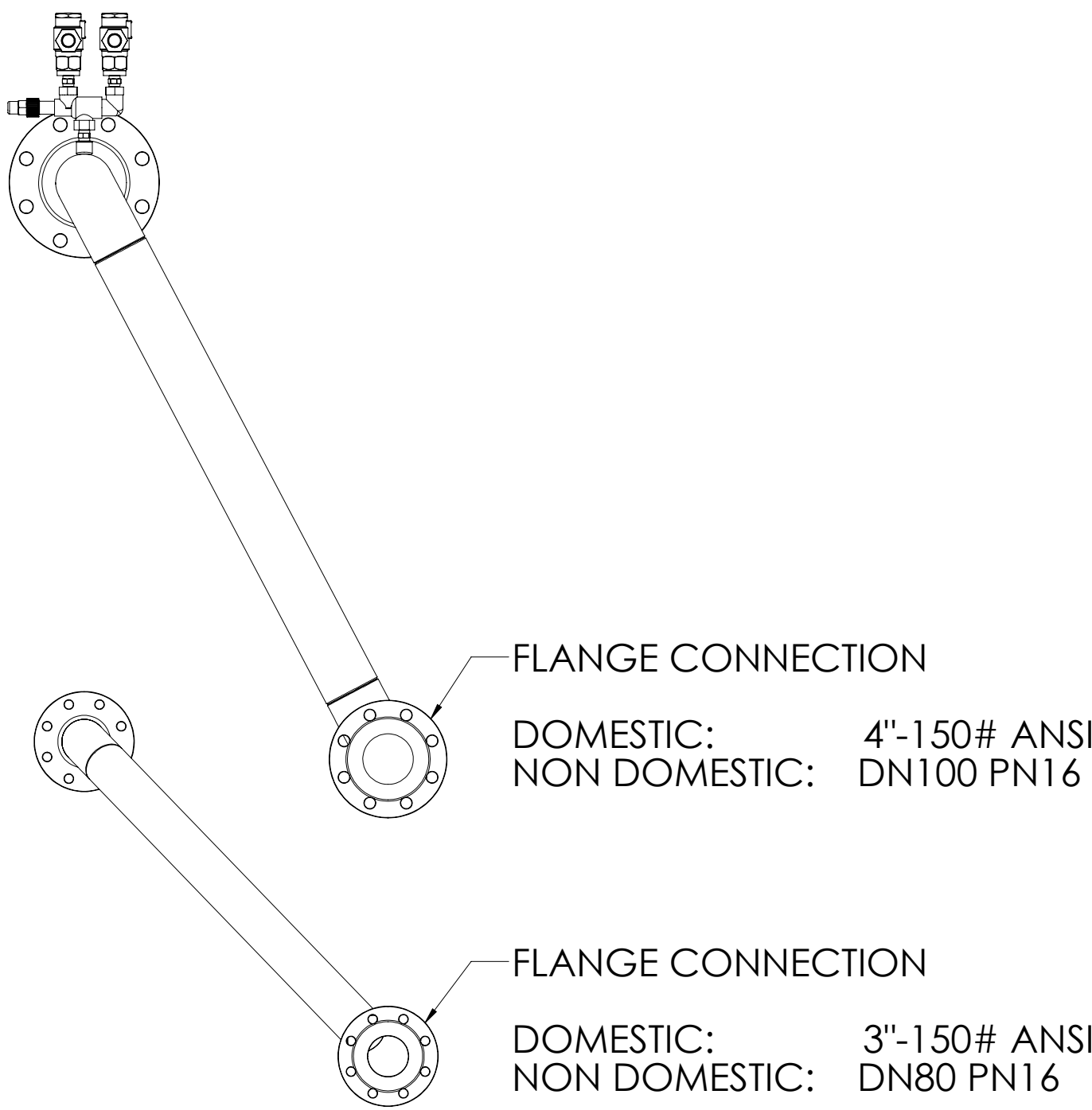
8 7 6 5 4 3 2 1



GENERAL NOTES CONTINUED FROM PAGE 2:

11. ACTUAL PIPE MANIFOLDS TO BE DESIGNED AND FABRICATED BY THE DEALER OR CUSTOMER
12. MATERILAS FOR PIPE AND PIPE FITTINGS TO BE CARBON STEEL, ALL BOLTS OR STUDS, WASHERS, AND NUTS TO BE APPROPRIATE FOR THE FLANGES CHOSEN
13. MATERIALS, FABRICATION METHODS, AND PROCEDURES FOR PIPE ASSEMBLIES SHALL COMPLY WITH ASME B31.3 PROCESS PIPING CODE
DESIGN PRESSURE = 145 PSIG [10 BAR]
DESIGN TEMPERATURE = 122F [50C]
14. ALL INTERNAL WELDS AND PASSAGES SHALL BE FREE OF ANY CONTAMINATES AND LOOSE MATERIALS, FINAL ASSEMBLY SHALL BE CLEANED USING NON ABRASIVE MATERIALS
15. WORKING FLUID GASKETS TO BE FLEXITALIC, MODEL CGI, GRAPHITE FILLED
16. PRESSURE RELIEF DEVICES MAY BE REQUIRED FOR EXPANSIBLE FLUID; VERIFY WITH LOCAL CODES & REGULATIONS.

NOTES CONTINUED ON PAGE 4.

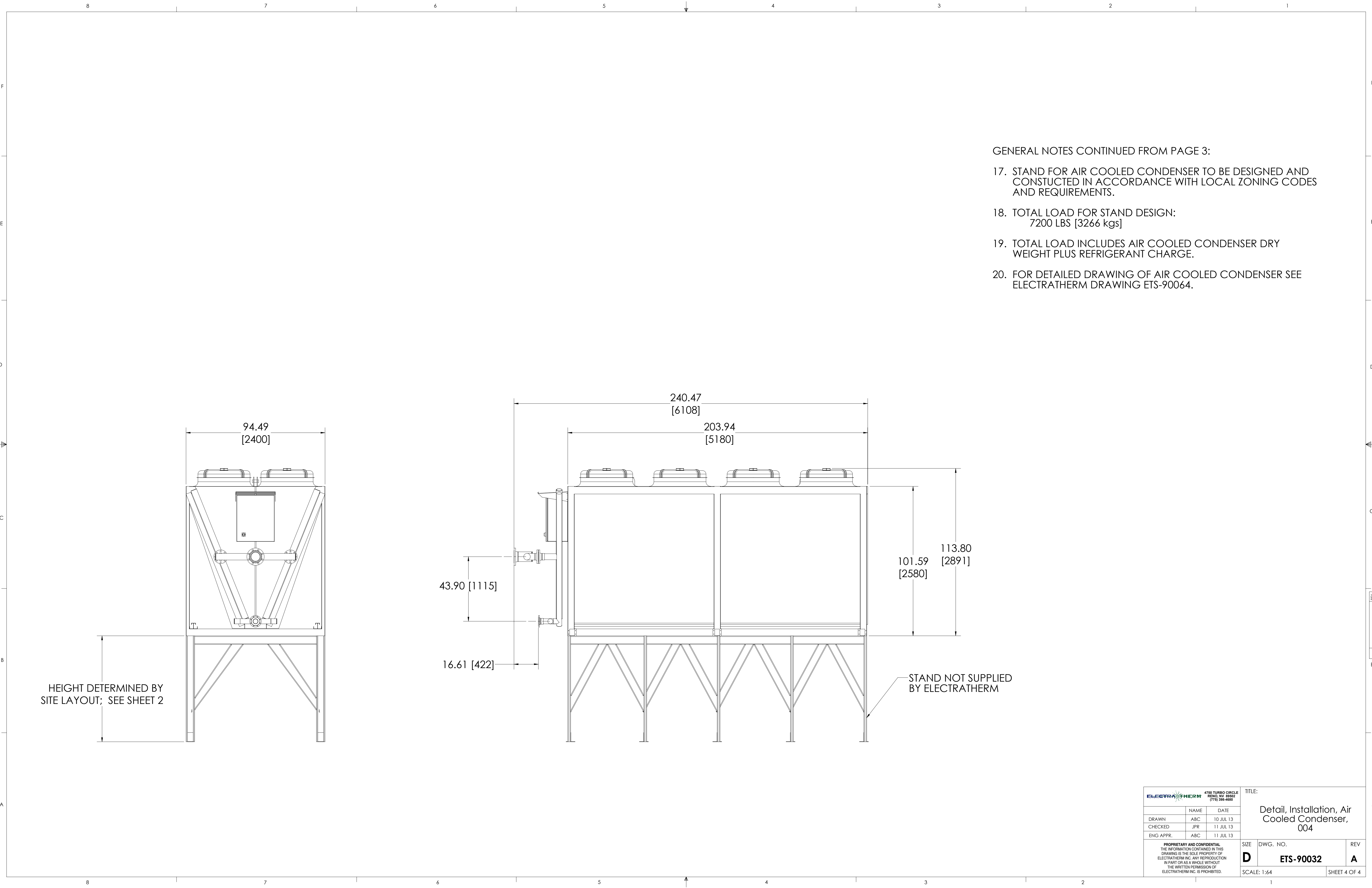


ON THIS SHEET THE ET-50 4000 GREEN MACHINE, AIR COOLED CONDENSER AND HOT WATER BYPASS HAVE BEEN REMOVED TO SHOW THE DETAIL OF THE PIPE MANIFOLDS BETWEEN THE UNITS

 4750 TURBO CIRCLE RENO, NV 89002 (775) 398-4660			TITLE: Detail, Installation, Air Cooled Condenser		
	NAME	DATE			
DRAWN	ABC	10 JUL 13			
CHECKED	JPR	11 JUL 13			
ENG APPR.	ABC	11 JUL 13			
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			SCALE: 1:12		SHEET 3 OF 4

8 7 6 5 4 3 2 1

REV A
D ETS-90032

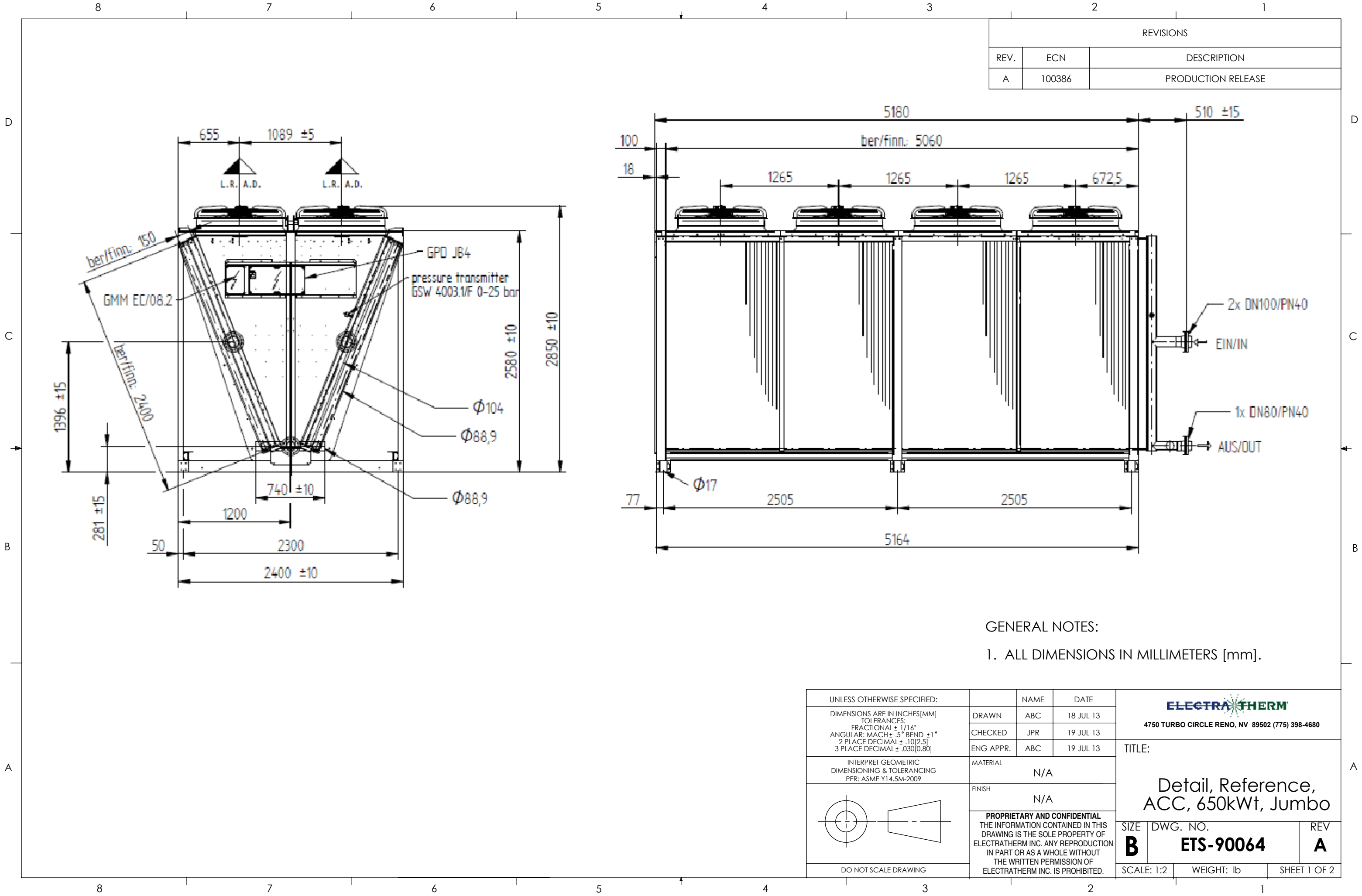


- GENERAL NOTES CONTINUED FROM PAGE 3:
- 17. STAND FOR AIR COOLED CONDENSER TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH LOCAL ZONING CODES AND REQUIREMENTS.
 - 18. TOTAL LOAD FOR STAND DESIGN:
7200 LBS [3266 kgs]
 - 19. TOTAL LOAD INCLUDES AIR COOLED CONDENSER DRY WEIGHT PLUS REFRIGERANT CHARGE.
 - 20. FOR DETAILED DRAWING OF AIR COOLED CONDENSER SEE ELECTRATHERM DRAWING ETS-90064.

 4750 TURBO CIRCLE RENO, NV 89502 (775) 398-4660			TITLE: Detail, Installation, Air Cooled Condenser, 004		
	NAME	DATE			
DRAWN	ABC	10 JUL 13			
CHECKED	JPR	11 JUL 13			
ENG APPR.	ABC	11 JUL 13			
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			D	ETS-90032	A
			SCALE: 1:64		SHEET 4 OF 4

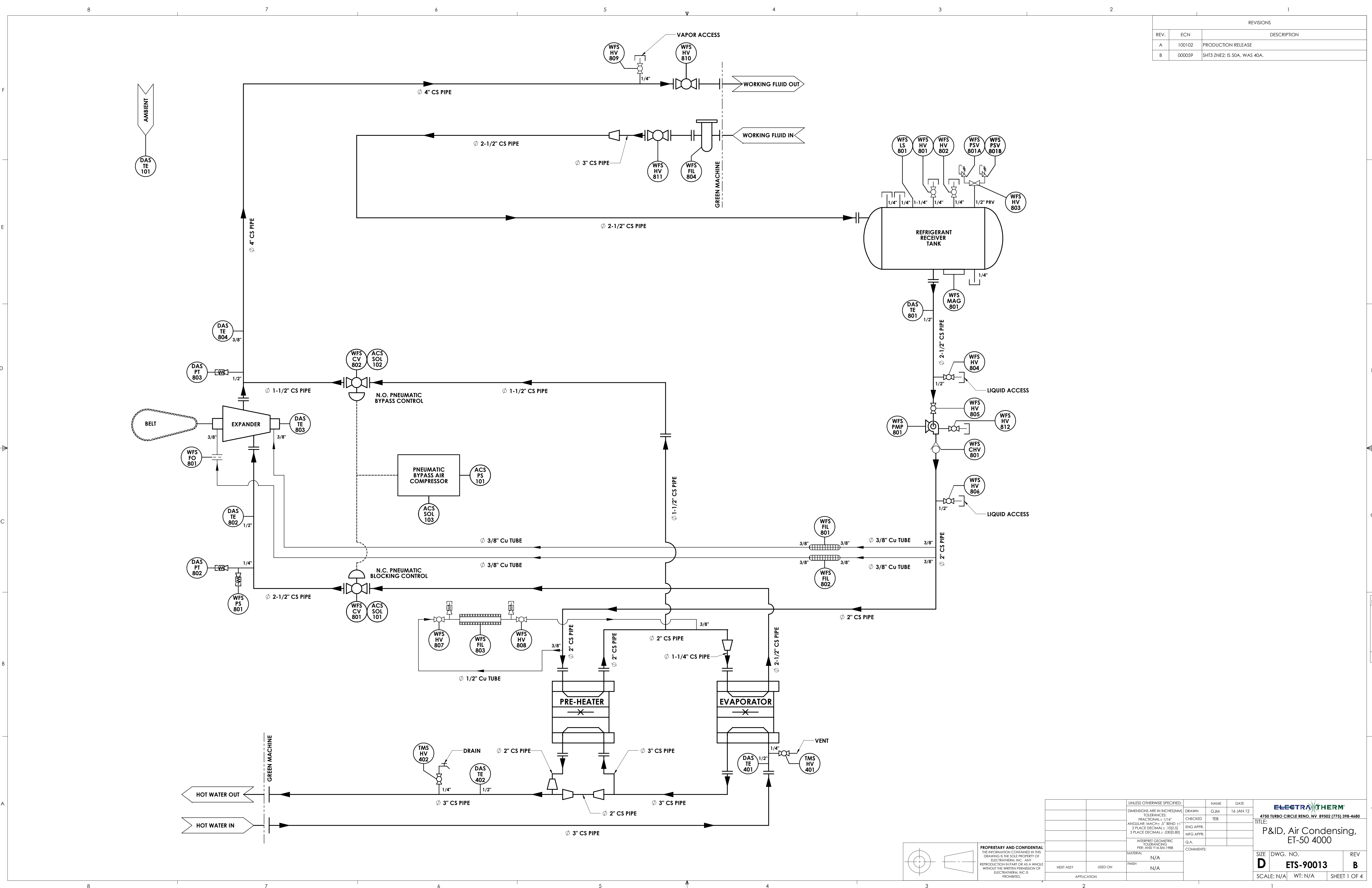


Drawing #	Drawing Title	# pages
ETS-90064	Detail, Reference, ACC, 650kWt, Jumbo	2

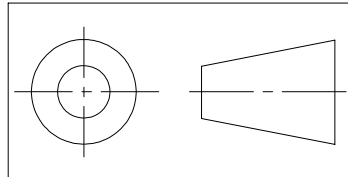




Drawing #	Drawing Title	# pages
ETS-90013	P&ID, Air Condensing, ET-50 4000	4



REVISIONS		
REV.	ECN	DESCRIPTION
A	100102	PRODUCTION RELEASE
B	000059	SHT3 ZNE2; IS 50A, WAS 40A.



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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES(MM) TOLERANCES: FRACTIONAL ± 1/16" ANGULAR: MACH ± 2° BEND ± 1° 2 PLACE DECIMAL ± .10(2.5) 3 PLACE DECIMAL ± .030(0.80)		DRAWN GJM	NAME GJM	DATE 16 JAN 12
INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5M-1988		CHECKED TEB	ENG APPR. G.A.	
MATERIAL N/A		FINISH N/A	COMMENTS:	
NEXT ASSY	USED ON	APPLICATION		

ELECTRATHERM 4750 TURBO CIRCLE RENO, NV 89502 (775) 398-4680			TITLE: P&ID, Air Condensing, ET-50 4000		
SIZE D	DWG. NO. ETS-90013	REV B	SCALE: N/A WT: N/A SHEET 1 OF 4		

WFS-LS-801	X0: WF LEVEL HIGH-HIGH
WFS-LS-801	X1: WF LEVEL HIGH
WFS-LS-801	X2: WF LEVEL LOW
WFS-LS-801	X3: WF LEVEL LOW-LOW
	X4: MCR
	X5: EXPANDER HIGH SIDE PRESSURE SWITCH
	X6: COLD WATER FLOW SWITCH
	X7: SPARE

C CUSTOMER REMOTE START	C X10: GPR
C CUSTOMER REMOTE STOP	X11: PANEL START PUSH BUTTON
	X12: PANEL STOP PUSH BUTTON
	X13: GENERATOR THERMAL SENSOR
	X14: GENERATOR CONTACTOR AUX CONTACT
	X15: SPARE
	X16: VFD FAULT RELAY
ACS-PS-101	X17: LOW AIR PRESSURE SWITCH

DAS-PT-802	V2000: EXPANDER HIGH SIDE PRESSURE SENSOR
	V2001: CT L1
	V2002: CT L2
	V2003: CT L3
DAS-PT-803	V2004: EXP LOW SIDE PRESSURE SENSOR
	V2005: SPARE
	V2006: PUMP POWER CONSUMPTION
	V2007: SPARE

	V2100: SPARE
DAS-TE-803	V2102: TEMP EXPANDER REAR
DAS-TE-410	V2104: TEMP COLD WATER IN
DAS-TE-411	V2006: TEMP COLD WATER OUT

DAS-TE-402	V2200: TEMP HOT WATER IN
DAS-TE-401	V2202: TEMP HOT WATER OUT
DAS-TE-101	V2204: TEMP AMBIENT
DAS-TE-801	V2206: TEMP TANK OUT

DAS-TE-801	V3200: EXPANDER WF IN TEMP
DAS-TE-801	V3202: EXPANDER WF OUT TEMP
	V3204: SPARE
	V3206: SPARE

X200: E-STOP
X201: SPARE
X202: SPARE
X203: SPARE
X204: SPARE
X205: SPARE
X206: SPARE
X207: SPARE

GENERATOR
ENCODER

PLC RACK 0
CPU & I/O

SLOT 0A
24VDC INPUTS
X0 - X7

SLOT 0B
24VDC INPUTS
X10 - X17

SLOT 1
4-20mA ANALOG INPUTS
V2000 - V20007

SLOT 3
RTD INPUTS
V2100 - V2106

SLOT 4
RTD INPUTS
V2200 - V2206

SLOT 6
HIGH SPEED
COUNTER INPUTS

DL260 CPU

SLOT 2
4-20mA ANALOG OUTPUTS
V3000 - V3007

SLOT 5A
24VDC OUTPUTS
Y20 - Y25

SLOT 5B
120VAC OUTPUTS
Y30 - Y35

SLOT 7
ETHERNET
COMMUNICATIONS

D2-EM
EXPANSION MOD

PLC RACK 1
I/O

(SLOTS 0-2 IN USE - SLOTS 3-7 SPARE)

D2-CM
EXPANSION CONTROLLER

SLOT 1
RTD INPUTS
V3200 - V3206

SLOT 2
24VDC INPUTS
X200 - 207

SLOT 0A
120VAC OUTPUTS
Y40 - Y45

SLOT 0B
FUTURE OUTPUTS
Y50 - Y55

D2-EM
EXPANSION MOD

MODBUS RS485

VERIS KW METER

V3000: VFD SPEED REFERENCE
V3001: SPARE
V3002: SPARE
V3003: SPARE
V3004: SPARE
V3005: SPARE
V3006: SPARE
V3007: FAN SPEED REFERENCE (AIR COOLED CONDENSER OPTION)

Y20: ENABLE VFD
Y21: WF BYPASS VALVE (LEGACY)
Y22: CUSTOMER HOT WATER RELAY
Y23: CUSTOMER COLD WATER RELAY
Y24: CUSTOMER HOT WATER BYPASS RELAY
Y25: ENABLE GENERATOR

Y30: POWER FACTOR CONTACTOR
Y31: RED SIGNAL LIGHT
Y32: AMBER SIGNAL LIGHT
Y33: HORN (LEGACY)
Y34: PLC RUN TO MCR
Y35: HMI RESET RELAY

ETHERNET SWITCH

C-more® HMI TOUCH PANEL

CUSTOMER
INTERNET CONNECTION

Y40: AIR TANK PURGE SOLENOID	ACS-SOL-103
Y41: WF BLOCKING VALVE SOLENOID	ACS-SOL-101
Y42: WF BYPASS VALVE SOLENOID	ACS-SOL-102
Y43: SPARE	
Y44: SPARE	
Y45: SPARE	

C

 = CUSTOMER CONNECTIONS

CONTROL DIAGRAM

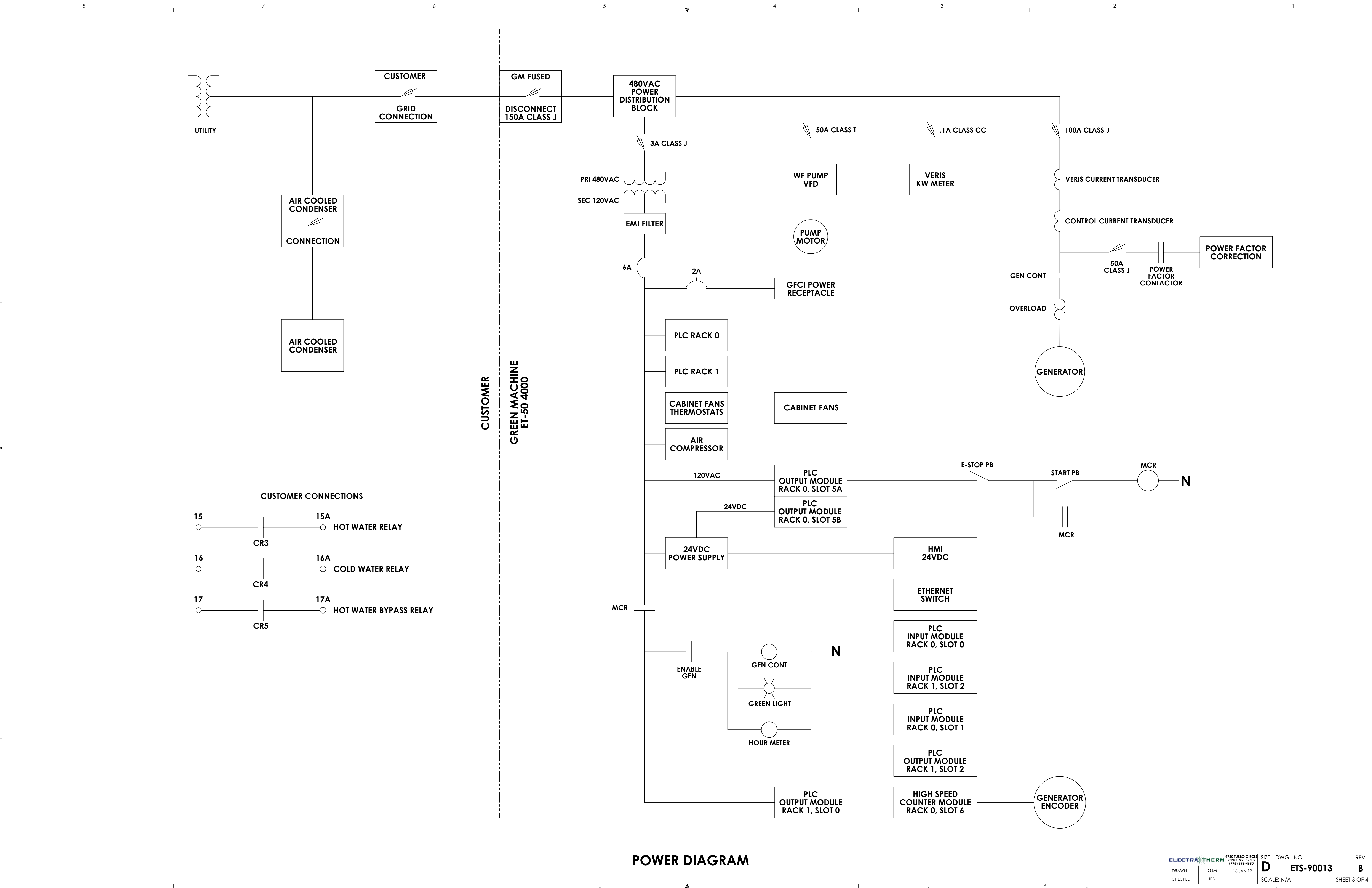


TABLE 1 SUBSYSTEM IDENTIFIERS	
IDENTIFIER	SUBSYSTEM NAME
ACS	AIR CONTROL SYSTEM
DAS	DATA ACQUISITION SYSTEM
TMS	THERMAL MANAGEMENT SYSTEM
WFS	WORKING FLUID SYSTEM

TABLE 2 ABBREVIATIONS	
ABBREVIATION	DESCRIPTION
CHV	CHECK VALVE
CV	CONTROL VALVE
FIL	FILTER
FO	FLOW ORIFICE
FS	FLOW SWITCH
HV	HAND VALVE
LS	LEVEL SWITCH
MAG	MAGNET
PMP	PUMP
PS	PRESSURE SWITCH
PSV	PRESSURE SAFETY VALVE
PT	PRESSURE TRANSMITTER
SOL	SOLENOID
TE	TEMPERATURE ELEMENT

TABLE 3 FLUID IDENTIFICATION NUMBERS	
SERIES	FLUID
100	AIR OR OXYGEN
400	WATER
800	WORKING FLUID

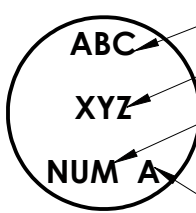
TABLE 4 P&ID TAG DRAWING DEPICTION	
	SUBSYSTEM IDENTIFIER (TABLE 1) ABBREVIATIONS (TABLE 2) FLUID IDENTIFICATION NUMBER (TABLE 3) OPTIONAL LETTER

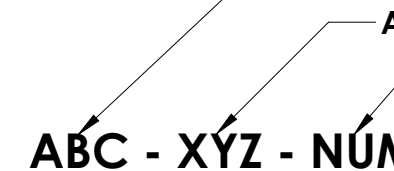
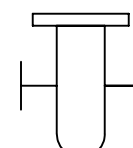
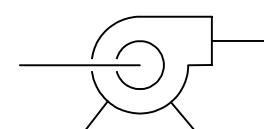
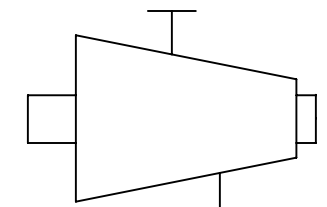
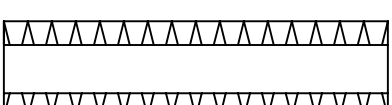
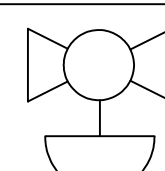
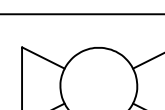
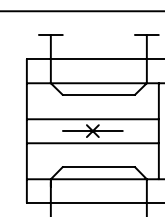
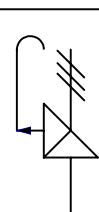
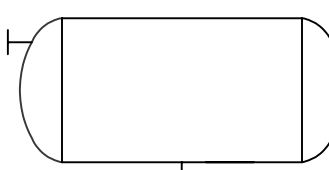
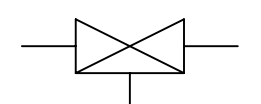
TABLE 5 P&ID TAG NAMING DESIGNATION	
	SUBSYSTEM IDENTIFIER (TABLE 1) ABBREVIATIONS (TABLE 2) FLUID IDENTIFICATION NUMBER (TABLE 3)

TABLE 6 INSTRUMENT LINE SYMBOLS	
LINE SYMBOL	DESCRIPTION
	MAJOR PROCESS LINE
	MINOR PROCESS LINE
	ELECTRICAL SIGNAL

TABLE 7 SYMBOL IDENTIFICATION	
SYMBOL NAME	SYMBOL
CANISTER FILTER	
CENTRIFUGAL PUMP	
CHECK VALVE	
EXPANDER	
FILTER	
FILTER OR STRAINER	
FLOW ORIFICE	
GATE (DIAPHRAGM) VALVE	
HAND VALVE	
HEAT EXCHANGER	
HOSE BIBB	
SAFETY VALVE	
SCHRADER VALVE	
TANK	
3 WAY VALVE	

LEGEND TABLES

			4750 TURBO CIRCLE RENO, NV 89502 (775) 376-4400	SIZE	DWG. NO.	REV
DRAWN	GJM	16 JAN 12	D	ETS-90013	B	
CHECKED	TEB					
SCALE: N/A				SHEET 4 OF 4		



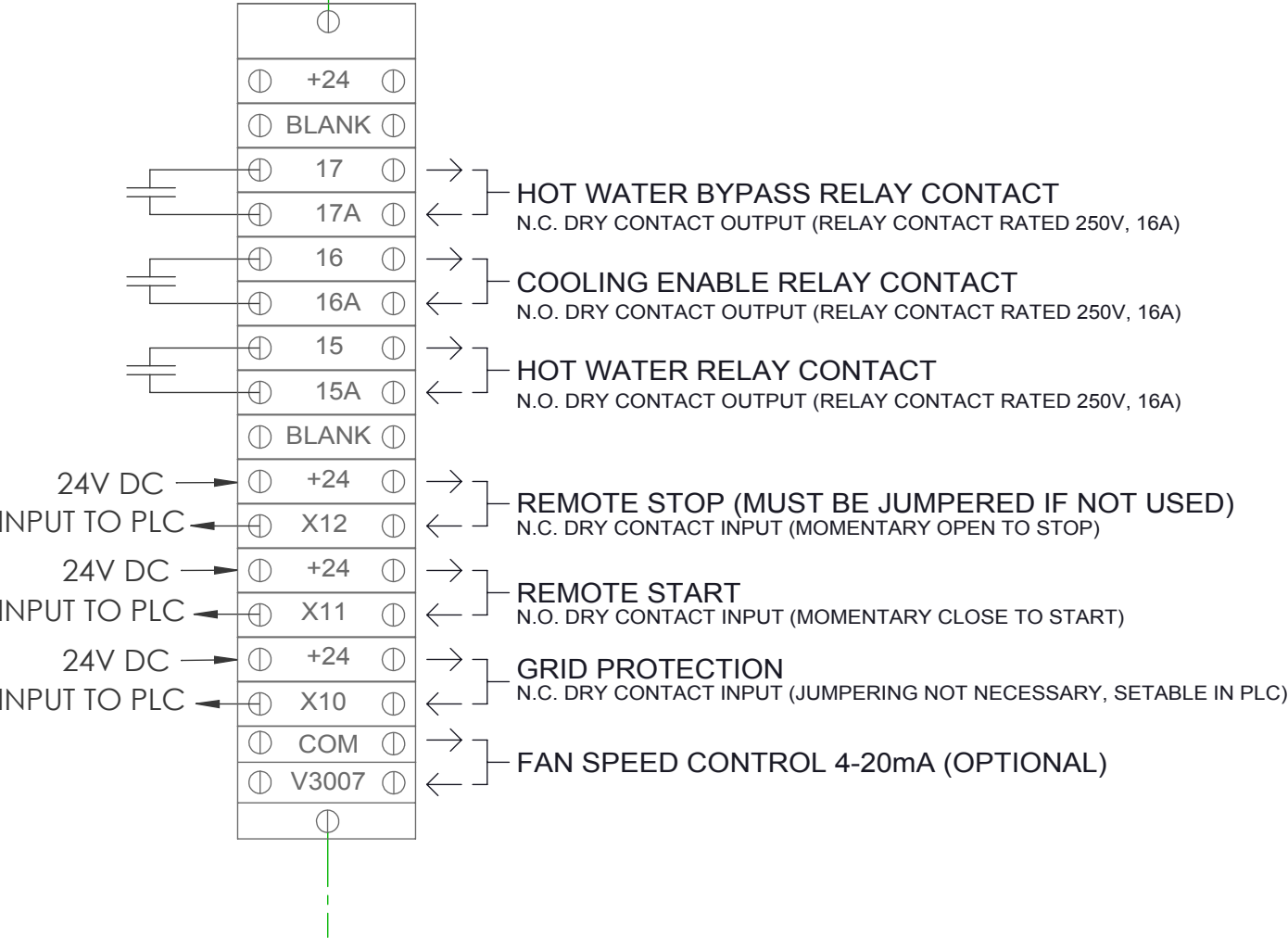
Drawing #	Drawing Title	# pages
ETS-90027	Diagram, Trmnl Strip, Interface, ET-50 4000	1

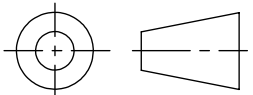
REVISIONS				
REV.	ECN	DESCRIPTION	DATE	APPROVED
A	100201	PRODUCTION RELEASE	09 MAY 12	TEB

CUSTOMER INTERFACE
TERMINAL STRIP

ET-50 4000
GREEN MACHINE
CONNECTION TO
TERMINAL STRIP

CUSTOMER
CONNECTION TO
TERMINAL STRIP



			UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 4750 TURBO CIRCLE RENO, NV 89502 (775) 398-4680	
			DIMENSIONS ARE IN INCHES[MM]	DRAWN	TEB		11 APR 12
			TOLERANCES: FRACTIONAL ± 1/16" ANGULAR: MACH ± .5° BEND ± 1° 2 PLACE DECIMAL ± .10[2.5] 3 PLACE DECIMAL ± .030[0.80]	CHECKED	GJM		09 MAY 12
			MATERIAL	ENG APPR.			
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			FINISH	Q.A.			
			COMMENTS:				
	NEXT ASSY	USED ON					
	APPLICATION		DO NOT SCALE DRAWING			SIZE A DWG. NO. ETS-90027 REV. A	
						SCALE: N/A WEIGHT: N/A SHEET 1 OF 1	