

DOCKETED

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RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix A

Subsection(s):

- A.1 - Site Plan
- A.2 - Visual Resources Site Renderings
- A.3 - Generator Data & Specifications

RB INYOKERN DATA CENTER

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Supporting Document Appendix A

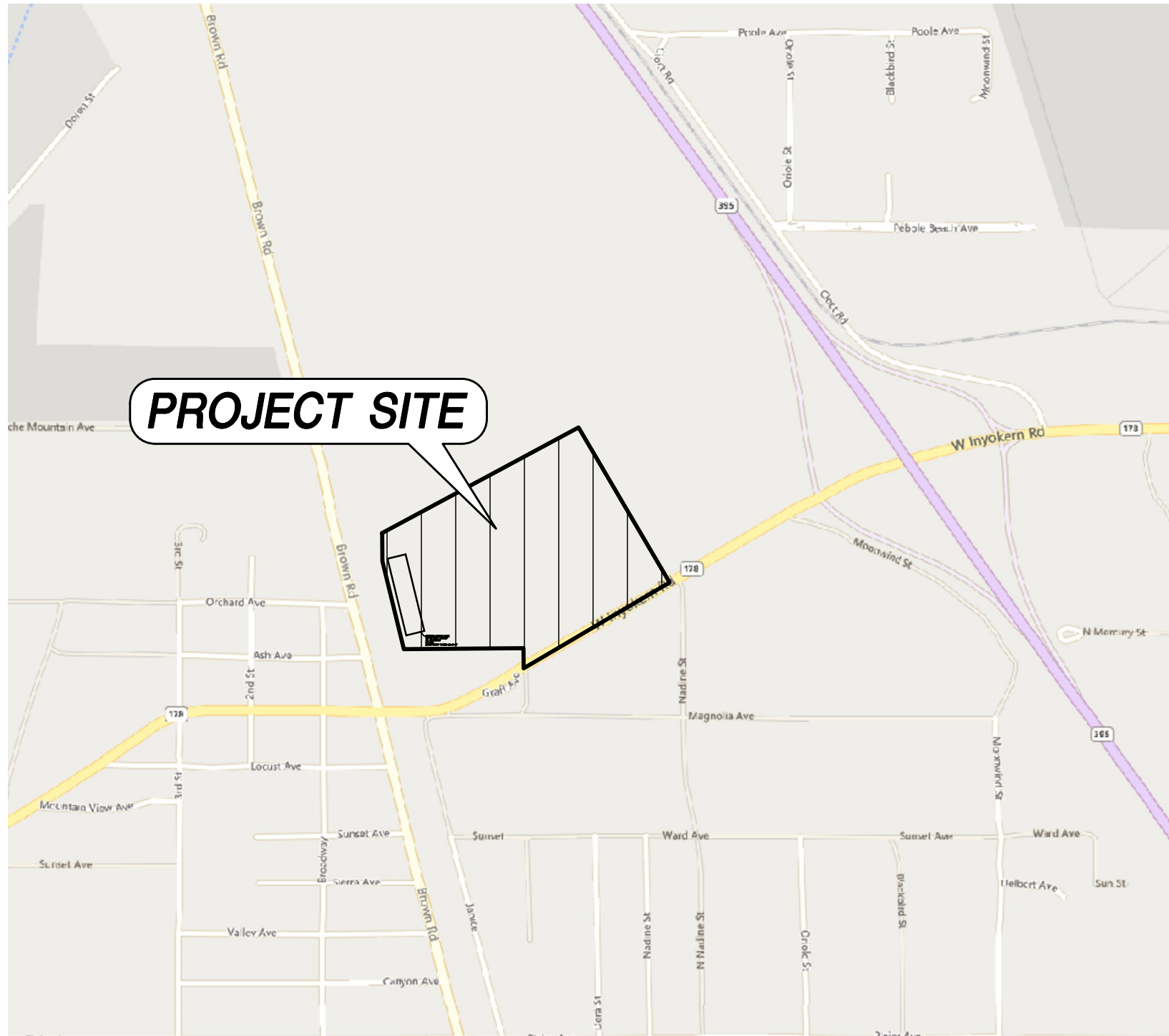
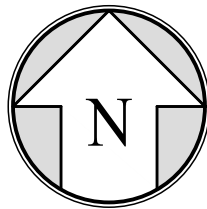
Subsection(s):

- A.1 - Site Plan

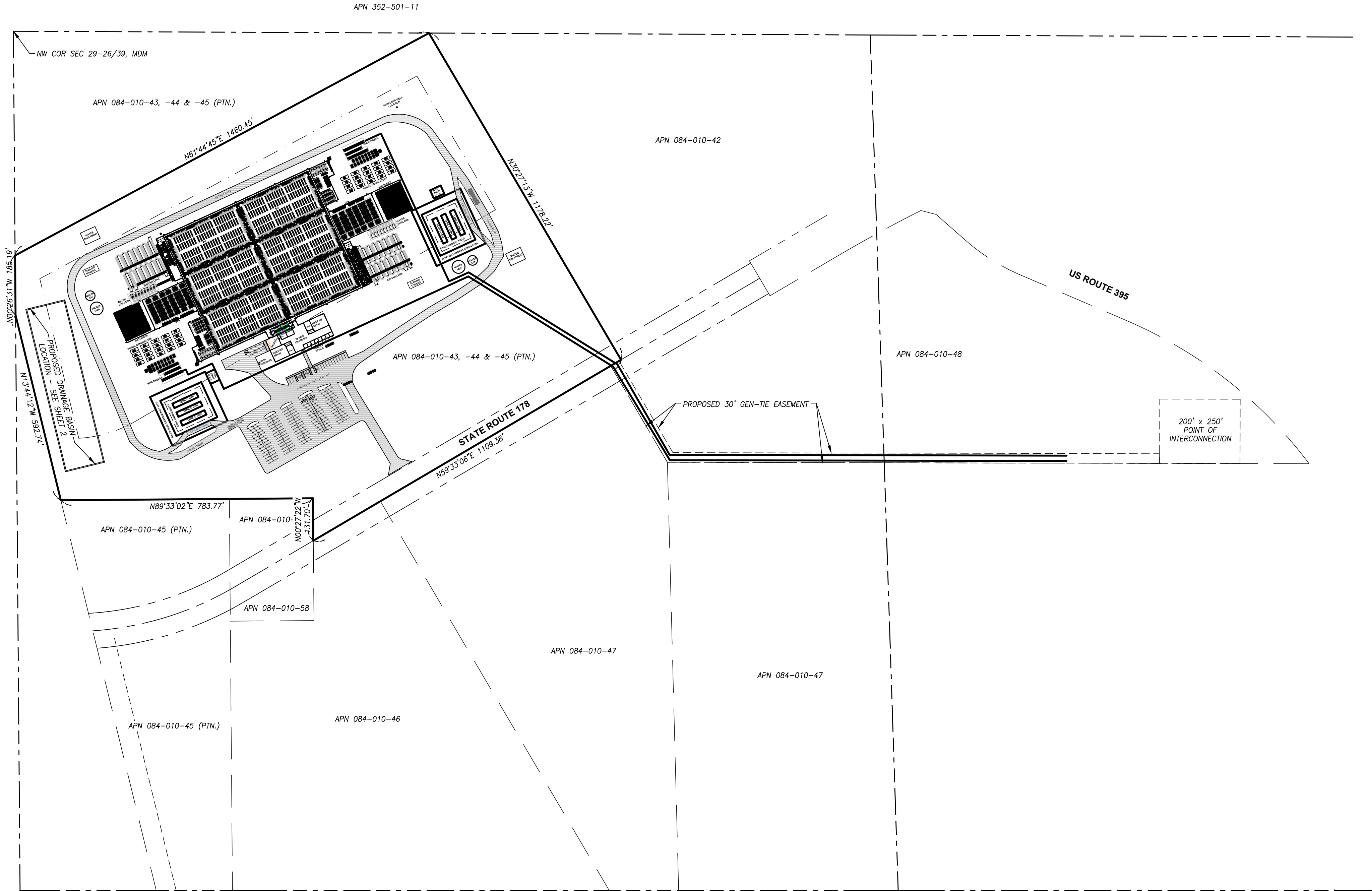
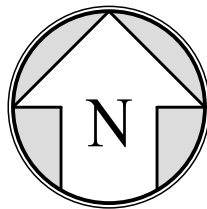
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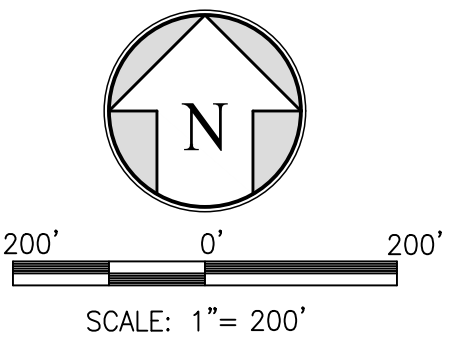
AREA MAP
NTS



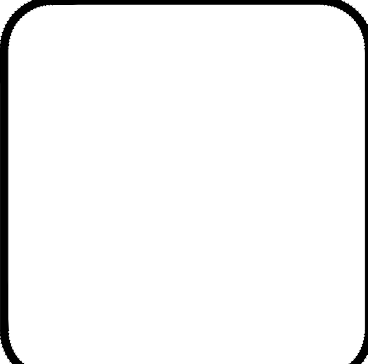
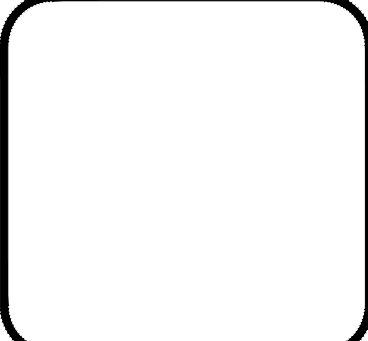
VICINITY MAP
NTS



SITE OVERVIEW



REVISIONS		
ID	DATE	DESCRIPTION



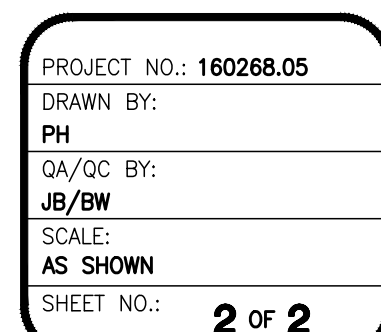
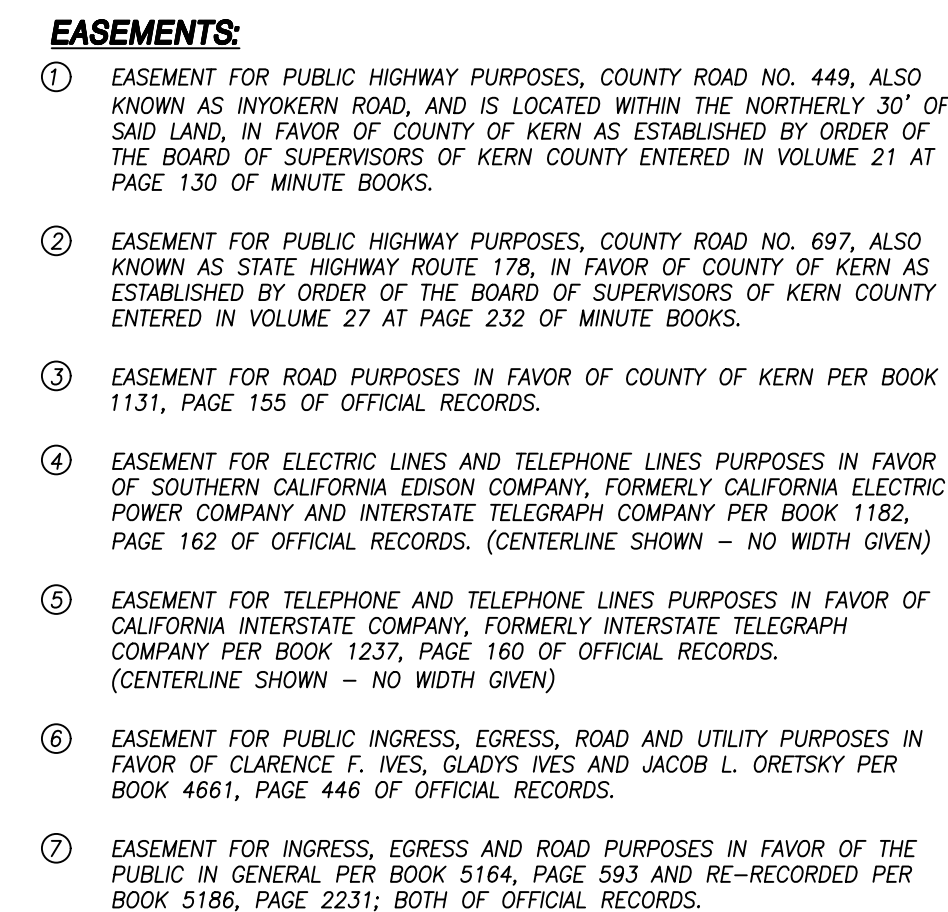
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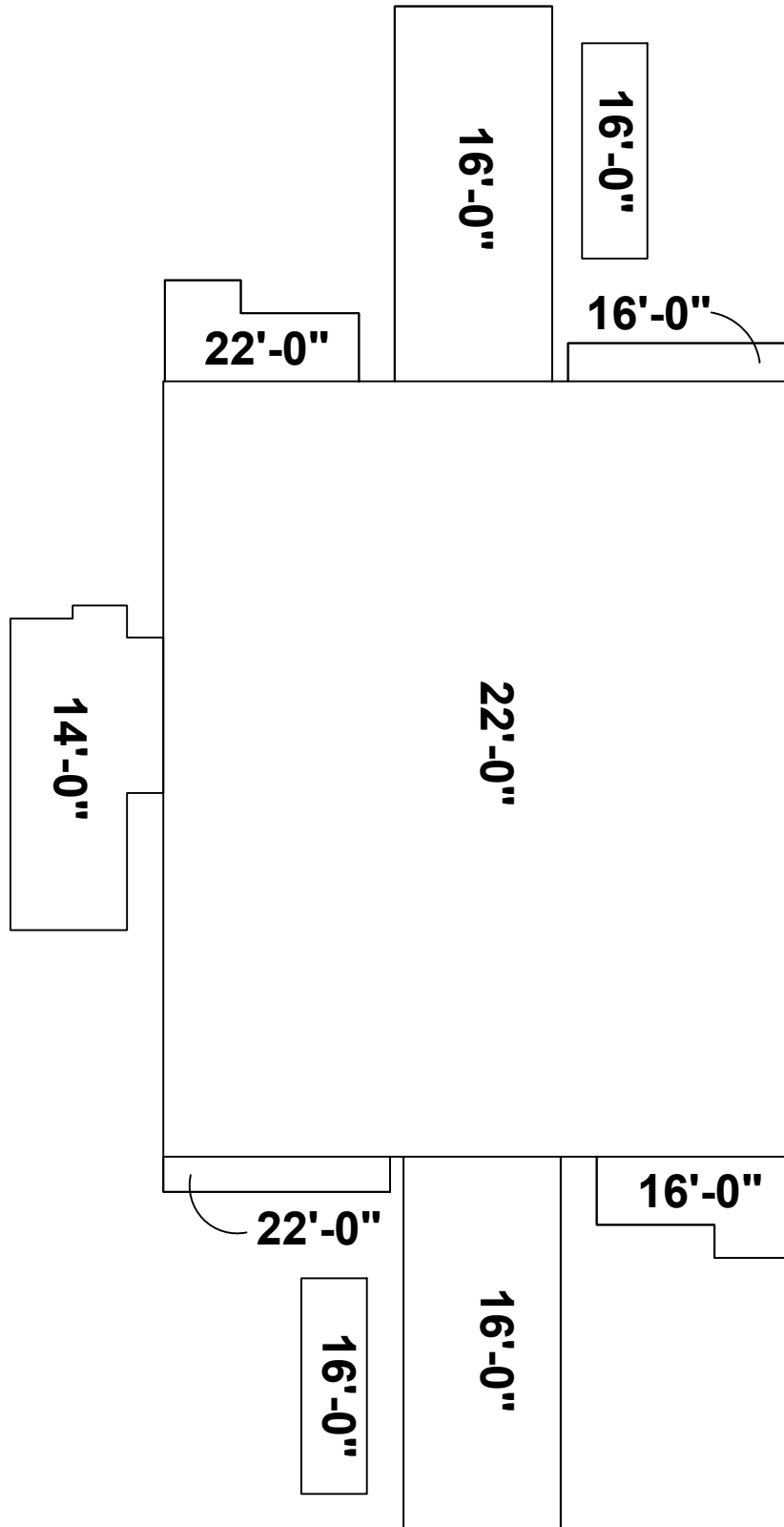
R & L CAPITAL, INC.
P.O. BOX 907
TRONA, CA 95992
(760) 264-5760

INYOKERN DATA CENTER
CUP X, ZONE MAP 47 - OVERVIEW
APN: 084-010-43, -44 & -45 (PTN.)

PROJECT NO.: 160268.05
DRAWN BY: PH
QA/QC BY: JB/BW
SCALE: AS SHOWN
SHEET NO.: 1 of 2



PROPOSED BUILDING HEIGHTS (NTS)



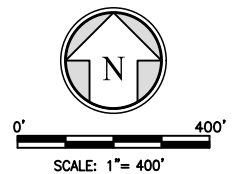
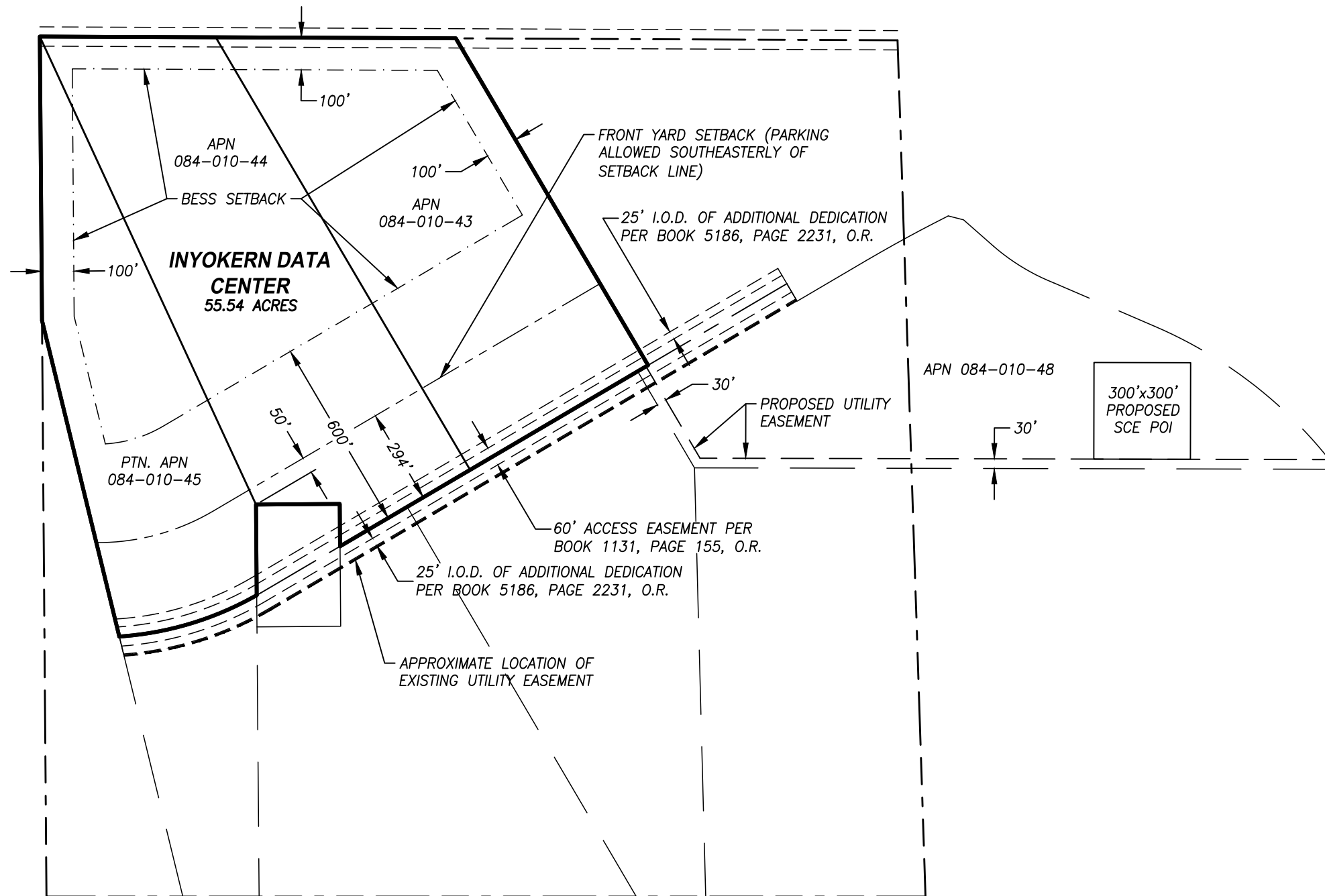
Date: 01.12.26

Drawing No.:

SK1

VW 99MW DATA CENTER
HIGHWAY 178
INYOKERN, CALIFORNIA

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PROJECT NO.: 160268.05
DRAWN BY: PLH
QA/QC BY: BW
SCALE: AS SHOWN
SHEET NO.: 1 OF 1

INYOKERN DATA CENTER BASE

PARCEL 2, 3 & 4 - PARCEL MAP NO. 4949
INYOKERN, CALIFORNIA



RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

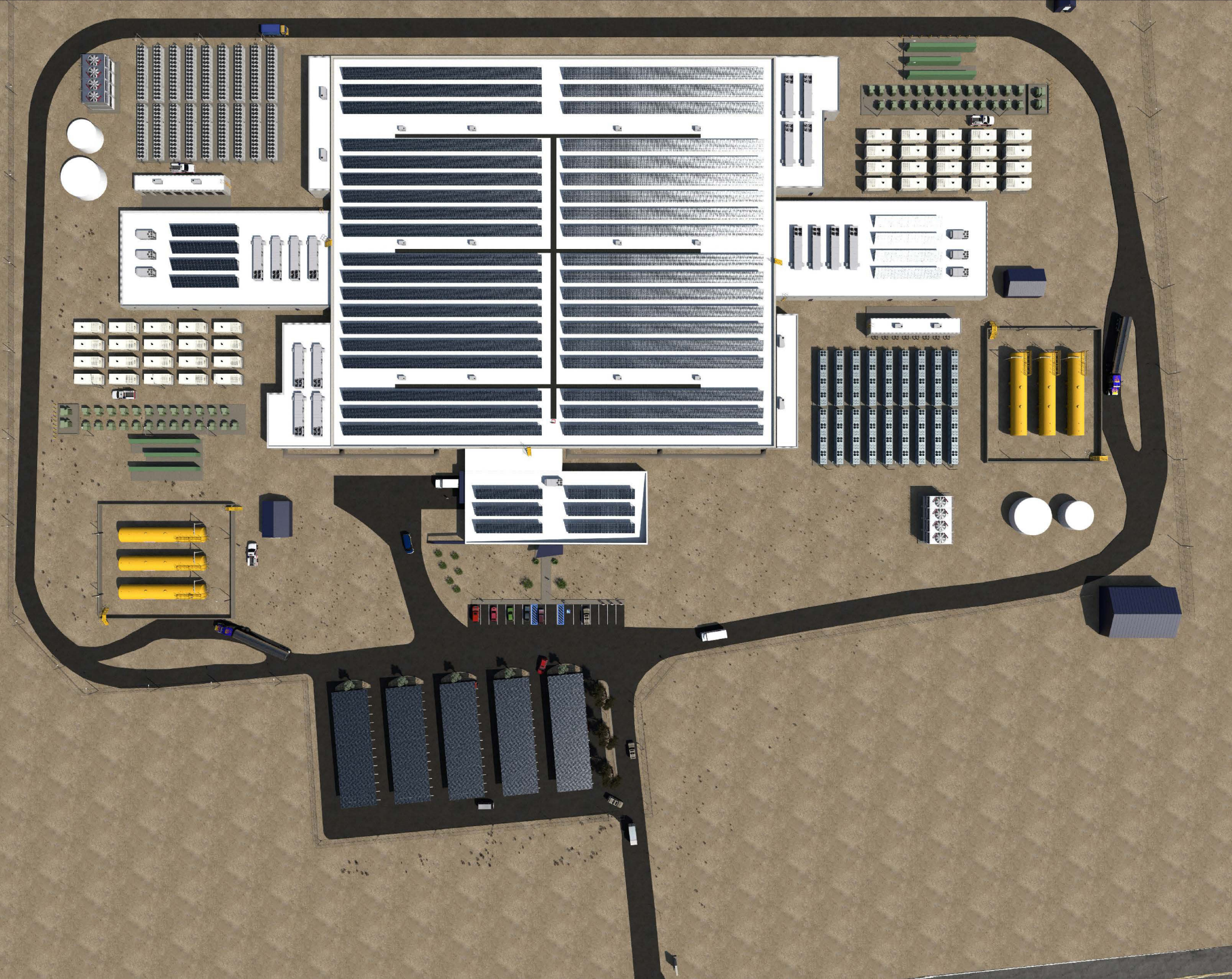
Inyokern, Kern County, California

Docket Number - 26-SPPE-01

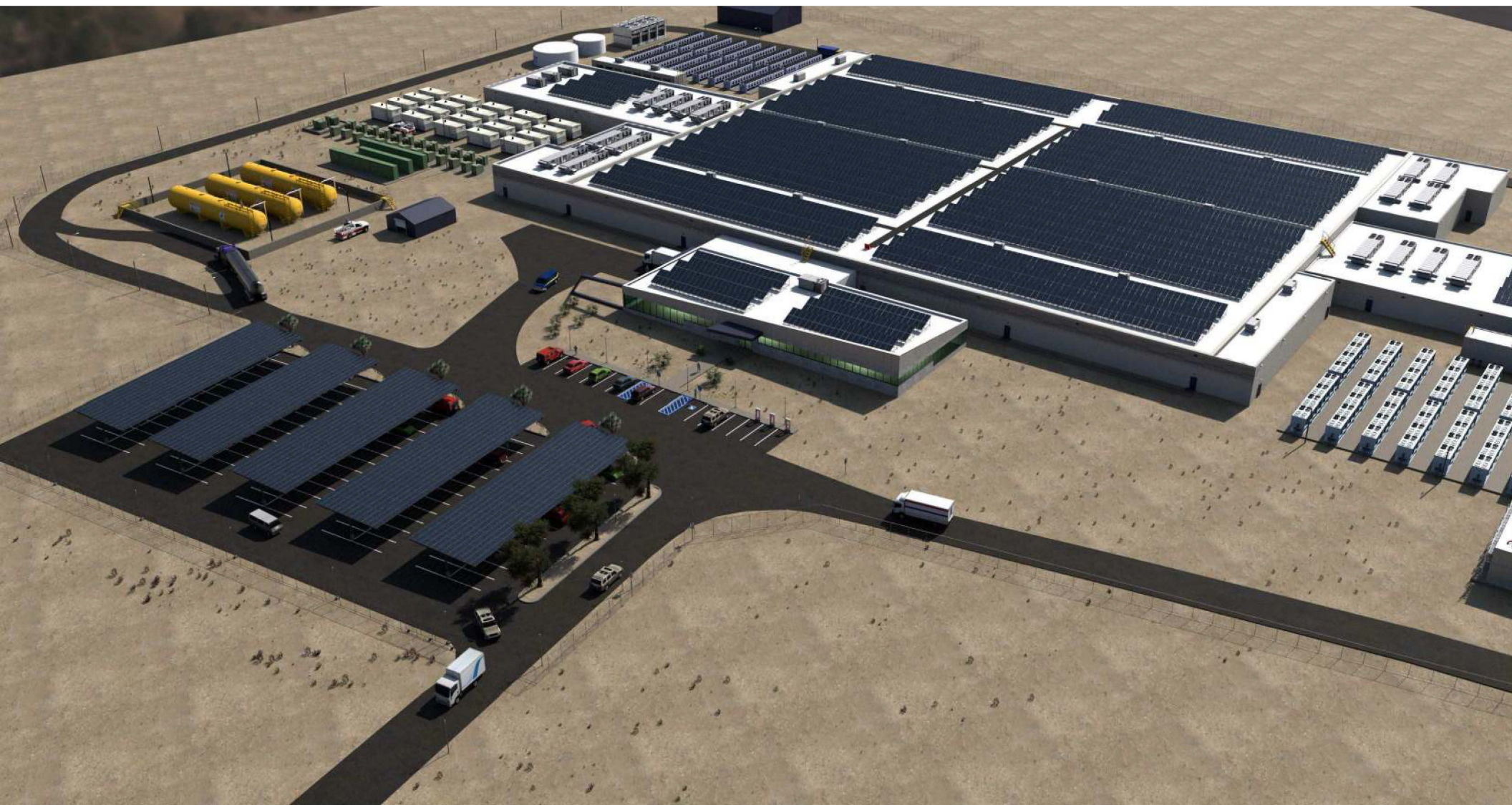
Supporting Document Appendix A

Subsection(s):

- A.2 - Visual Resources Site Renderings



















RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix A

Subsection(s):

- A.3 - Generator Data & Specifications

Cat® 3516E

High Power Density (HPD) Diesel Generator Sets

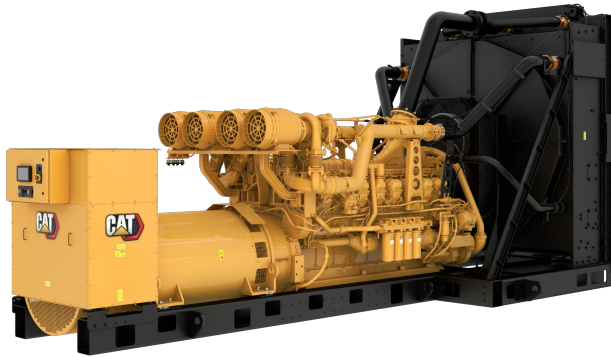


Image shown may not reflect actual configuration

Bore – mm (in)	170 (6.69)
Stroke – mm (in)	215 (8.46)
Displacement – L (in ³)	78.1 (4766)
Compression Ratio	13.9:1
Aspiration	TA
Fuel System	MEUI
Governor Type	ADEM™ A5

Standby 60 Hz ekW (kVA)	Mission Critical 60 Hz ekW (kVA)	Prime 60 Hz ekW (kVA)	Emissions Performance
3000 (3750)	3000 (3750)	2725 (3406)	U.S. EPA Certified for Emergency Stationary Applications (Tier 2)

Features

Cat® Diesel Engine

- Meets U.S. EPA Stationary Emergency Use Only (Tier 2) emissions standards
- Reliable performance proven in thousands of applications worldwide
- Certified alternative fuels including Hydrotreated Vegetable Oil (HVO), Renewable Diesel (RD) and Hydrotreated Renewable Diesel (HRD) which meet EN 15940 or ASTM D975 can be used or blended with EN 590 diesel

Generator Set Package

- Accepts 100% block load in one step
- Meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat diesel engines

Cooling System

- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- Tested to ensure proper generator set cooling

Cat Energy Control System (ECS)

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements
- Graphical touchscreen display
- Easily upgradeable

Warranty

- 24 months/1000-hour warranty for standby and mission critical ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

Standard and Optional Equipment

Engine

Air Cleaner

- ☐ Dual Element
- ☐ Service Indicator

Muffler

- ☐ Industrial grade (15 dB)
- ☐ Critical grade (25 dB)
- ☐ Hospital grade (35 dB)

Starting

- ☐ Standard batteries
- ☐ Oversized batteries
- ☐ Dual electric starting motors
- ☐ Air starter(s)
- ☐ Jacket water heater

Alternator

Output voltage

- ☐ 480V ☐ 12470V
- ☐ 600V ☐ 13200V
- ☐ 4160V ☐ 13800V

Temperature Rise (over 40°C ambient)

- ☐ 150°C
- ☐ 125°C/130°C

Winding type

- ☐ Random wound
- ☐ Form wound

Excitation

- ☐ Internal excitation (IE)
- ☐ Permanent magnet (PM)

Attachments

- ☐ Anti-condensation heater
- ☐ Stator and bearing temperature monitoring and protection

Power Termination

Type

- ☐ Bus bar
- ☐ Circuit breaker
- ☐ 5000A ☐ UL
- ☐ 3-pole ☐ 4-pole
- ☐ Manually operated
- ☐ Electrically operated

Trip Unit

- ☐ LSI ☐ LSI-G
- ☐ LSI-G-P

Control System

Controller

- ☐ Cat ECS 100
- ☐ Cat ECS 200
- ☐ EMCP 4.4

Attachments

- ☐ Local annunciator module
- ☐ Remote annunciator module
- ☐ Expansion I/O module
- ☐ Remote monitoring software

Charging

- ☐ Battery charger – 10A
- ☐ Battery charger – 20A
- ☐ Battery charger – 35A

Vibration Isolators

- ☐ Spring
- ☐ Seismic rated

Cat Connect

Connectivity

- ☐ Ethernet
- ☐ Cellular

Extended Service Options

Terms

- ☐ 2 year (prime)
- ☐ 3 year
- ☐ 5 year
- ☐ 10 year

Coverage

- ☐ Silver
- ☐ Gold
- ☐ Platinum
- ☐ Platinum Plus

Ancillary Equipment

- ☐ Automatic transfer switch (ATS)
- ☐ Paralleling switchgear
- ☐ Paralleling controls

Certifications

- ☐ ULC 2200 Listed
- ☐ IBC seismic certification

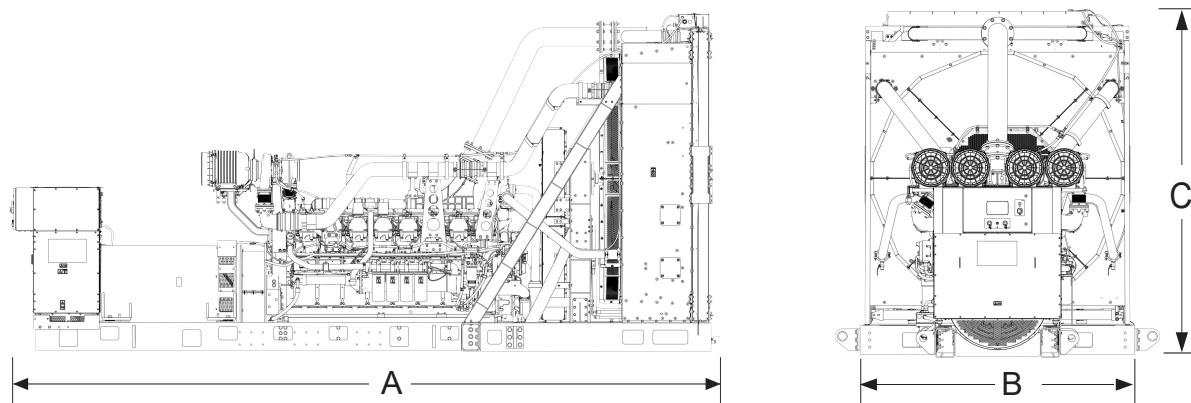
Note: Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

Package Performance

Performance	Standby		Mission Critical		Prime	
Engine Speed	1800 rpm		1800 rpm		1800 rpm	
Frequency	60 Hz		60 Hz		60 Hz	
Gen set power rating with fan	3000 ekW		3000 ekW		2725 ekW	
Gen set power rating with fan @ 0.8 power factor	3750 kVA		3750 kVA		3406 kVA	
Emissions	Tier 2 (EPA ESE)		Tier 2 (EPA ESE)		Tier 2 (EPA ESE)	
Performance number	EM4716-02		EM4718-02		EM4720-02	
Fuel Consumption						
100% load with fan – L/hr (gal/hr)	773.2	(204.3)	773.2	(204.3)	711.2	(187.9)
75% load with fan – L/hr (gal/hr)	624.2	(164.9)	624.2	(164.9)	581.6	(153.7)
50% load with fan – L/hr (gal/hr)	467.5	(123.5)	467.5	(123.5)	438.1	(115.7)
25% load with fan – L/hr (gal/hr)	246.4	(65.1)	246.4	(65.1)	229.2	(60.6)
Cooling System						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m³/min (cfm)	3476	(122753)	3476	(122753)	3476	(122753)
Engine coolant capacity – L (gal)	179.0	(47.3)	179.0	(47.3)	179.0	(47.3)
Radiator coolant capacity – L (gal)	255.0	(67.4)	255.0	(67.4)	255.0	(67.4)
Total coolant capacity – L (gal)	434.0	(114.7)	434.0	(114.7)	434.0	(114.7)
Inlet Air						
Combustion air inlet flow rate – m³/min (cfm)	246.1	(8690.9)	246.1	(8690.9)	230.3	(8133.7)
Exhaust System						
Exhaust stack gas temperature – °C (°F)	483.3	(902.0)	483.3	(902.0)	484.5	(904.1)
Exhaust gas flow rate – m³/min (cfm)	645.8	(22806.2)	645.8	(22806.2)	600.2	(21192.9)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	7.0	(28.1)	7.0	(28.1)	7.0	(28.1)
Heat Rejection						
Heat rejection to jacket water – kW (Btu/min)	917	(52144)	917	(52144)	854	(48592)
Heat rejection to exhaust (total) – kW (Btu/min)	3091	(175769)	3091	(175769)	2875	(163492)
Heat rejection to aftercooler – kW (Btu/min)	944	(53683)	944	(53683)	827	(47047)
Heat rejection to atmosphere from engine – kW (Btu/min)	158	(8993)	158	(8993)	154	(8766)
Heat rejection from alternator – kW (Btu/min)	119	(6739)	119	(6739)	108	(6119)
Emissions* (Nominal) - Full Load						
NOx mg/Nm³ (g/hp-h)	2610.4	(5.63)	2610.4	(5.63)	2311.6	(5.02)
CO mg/Nm³ (g/hp-h)	305.9	(0.66)	305.9	(0.66)	404.8	(0.89)
HC mg/Nm³ (g/hp-h)	17.4	(0.04)	17.4	(0.04)	15.0	(0.04)
PM mg/Nm³ (g/hp-h)	17.6	(0.05)	17.6	(0.05)	22.6	(0.06)
Emissions* (Potential Site Variation) - Full Load						
NOx mg/Nm³ (g/hp-h)	3132.5	(6.76)	3132.5	(6.76)	2773.9	(6.02)
CO mg/Nm³ (g/hp-h)	550.6	(1.20)	550.6	(1.20)	728.7	(1.60)
HC mg/Nm³ (g/hp-h)	23.1	(0.06)	23.1	(0.06)	19.9	(0.05)
PM mg/Nm³ (g/hp-h)	24.6	(0.06)	24.6	(0.06)	31.6	(0.08)

*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information

Weights and Dimensions



Rating ekW (kVA)	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
3000 (3750)	7678 (302.3)	2874 (113.2)	3639 (143.3)	20 380 (44,930)

Note: For reference only. Do not use for installation design.
 Contact your local Cat dealer for precise weights and dimensions.

Ratings Definitions

Standby

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby rated ekW. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Mission Critical

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical rated ekW. Typical peak demand up to 100% of rated ekW for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Prime

Output available with varying load for an unlimited time. Average power output is 70% of the prime rated ekW. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

Applicable Codes and Standards

AS 1359, ULC 2200 3rd edition, UL 489, UL 869A, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU and facilitates compliance to NFPA 37, NFPA 70, NFPA 99, NFPA 110.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

Data Center Applications

- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates

Fuel consumption reported in accordance with ISO 3046-1, based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 15°C (59°F) and weighing 850 g/liter (7.0936 lbs/U.S. gal.) All fuel consumption values refer to rated engine power.

www.cat.com/electricpower

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Materials and specifications are subject to change without notice.
 The International System of Units (SI) is used in this publication.

Perf No: EM6283				Change Level: 00			
General	Heat Rejection	Emissions	Regulatory	Altitude Derate	Cross Reference	Supplementary Data	Perf Param Ref
View PDF							
SALES MODEL:		3516E	COMBUSTION:		DIRECT INJECTION		
BRAND:		CAT	ENGINE SPEED (RPM):		1,800		
MACHINE SALES MODEL:			HERTZ:		60		
ENGINE POWER (BHP):		4,393	FAN POWER (HP):		154.2		
GEN POWER WITH FAN (EKW):		3,000.0	ASPIRATION:		TA		
COMPRESSION RATIO:		13.9	AFTERCOOLER TYPE:		ATAAC		
RATING LEVEL:		STANDBY	AFTERCOOLER CIRCUIT TYPE:		JW+OC, ATAAC		
PUMP QUANTITY:		1	INLET MANIFOLD AIR TEMP (F):		122		
FUEL TYPE:		DIESEL	JACKET WATER TEMP (F):		219.2		
MANIFOLD TYPE:		DRY	TURBO CONFIGURATION:		PARALLEL		
GOVERNOR TYPE:		ADEM5	TURBO QUANTITY:		4		
ELECTRONICS TYPE:		ADEM5	TURBOCHARGER MODEL:		TPX44-H32-CT70-CA50-TT70-TA80		
IGNITION TYPE:		CI	CERTIFICATION YEAR:		2020		
INJECTOR TYPE:		MEUI-C	CRANKCASE BLOWBY RATE (FT3/HR):		4,390.2		
FUEL INJECTOR:		5816980	FUEL RATE (RATED RPM) NO LOAD (GAL/HR):		17.2		
UNIT INJECTOR TIMING (IN):		0.88	PISTON SPD @ RATED ENG SPD (FT/MIN):		2,539.4		
REF EXH STACK DIAMETER (IN):		12					
MAX OPERATING ALTITUDE (FT):		6,562					
INDUSTRY			SUB INDUSTRY			APPLICATION	
ELECTRIC POWER			STANDARD			PACKAGED GENSET	

General Performance Data
 [Top](#)

Note(s)
THE INLET MANIFOLD AIR TEMP LISTED IN THE HEADER, AND IN THE GENERAL PERFORMANCE DATA, IS THE AVERAGE INLET MANIFOLD TEMP FRONT TO REAR ON THE ENGINE.
THIS STANDBY RATING IS FOR A STANDBY ONLY ENGINE ARRANGEMENT. RERATING THE ENGINE TO A STANDARD PRIME OR CONTINUOUS RATING IS NOT PERMITTED.

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	ISO BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	ISO VOL FUEL CONSUMPTN (VFC)	ELEC SPEC FUEL CONSUMPTN (ESFC)	ISO ELEC SPEC FUEL CONSUMPTN (ESFC)
EKW	%	BHP	PSI	LB/BHP-HR	LB/BHP-HR	GAL/HR	GAL/HR	LB/EKW-HR	LB/EKW-HR
3,000.0	100	4,393	406	0.337	0.331	209.0	205.0	0.494	0.485
2,700.0	90	3,976	367	0.340	0.333	190.3	186.7	0.500	0.491
2,400.0	80	3,557	328	0.349	0.343	175.1	171.7	0.517	0.508
2,250.0	75	3,347	309	0.356	0.349	168.1	164.9	0.530	0.520
2,100.0	70	3,137	290	0.362	0.355	160.2	157.1	0.541	0.531
1,800.0	60	2,716	251	0.370	0.363	141.7	139.0	0.559	0.548
1,500.0	50	2,294	212	0.389	0.382	125.9	123.5	0.595	0.584
1,200.0	40	1,872	173	0.406	0.398	107.2	105.2	0.634	0.622
900.0	30	1,449	134	0.401	0.393	81.8	80.3	0.645	0.633
750.0	25	1,236	114	0.381	0.374	66.4	65.1	0.628	0.616
600.0	20	1,022	94	0.392	0.384	56.4	55.4	0.667	0.655
300.0	10	590	55	0.441	0.433	36.7	36.0	0.869	0.852

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BHP	IN-HG	DEG F	DEG F	IN-HG	DEG F	IN-HG	DEG F
3,000.0	100	4,393	96.6	118.3	1,235.5	64.4	903.0	104	449.1
2,700.0	90	3,976	82.2	119.3	1,247.9	54.4	904.4	90	423.5
2,400.0	80	3,557	74.9	118.9	1,242.3	48.9	913.3	82	403.8
2,250.0	75	3,347	72.1	119.0	1,240.1	46.9	917.3	79	395.9
2,100.0	70	3,137	67.8	119.3	1,240.0	43.8	925.8	74	384.0
1,800.0	60	2,716	56.0	120.2	1,245.9	35.5	953.4	62	348.0
1,500.0	50	2,294	47.1	118.6	1,248.2	29.9	973.6	52	318.8
1,200.0	40	1,872	33.9	114.2	1,255.9	21.9	1,002.7	38	269.7
900.0	30	1,449	16.7	112.4	1,203.6	12.3	984.1	20	191.4
750.0	25	1,236	8.9	110.5	1,091.8	8.1	915.3	11	150.2
600.0	20	1,022	5.8	108.3	1,004.5	6.6	847.7	8	133.3
300.0	10	590	0.9	104.2	780.2	4.2	671.9	3	108.0

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
3,000.0	100	4,393	9,133.9	23,970.8	39,606.0	41,088.7	8,648.8	7,910.2
2,700.0	90	3,976	8,100.8	21,092.6	34,770.1	36,119.8	7,602.8	6,941.1
2,400.0	80	3,557	7,618.2	19,872.8	32,572.6	33,813.7	7,116.5	6,503.0
2,250.0	75	3,347	7,434.9	19,421.7	31,724.7	32,917.4	6,934.8	6,343.9
2,100.0	70	3,137	7,140.4	18,713.3	30,413.9	31,551.3	6,641.0	6,078.0
1,800.0	60	2,716	6,316.6	16,737.0	26,667.4	27,671.7	5,823.4	5,324.6
1,500.0	50	2,294	5,698.5	15,244.3	23,951.1	24,844.2	5,229.6	4,787.6
1,200.0	40	1,872	4,748.1	12,895.5	19,832.8	20,593.5	4,335.7	3,959.7
900.0	30	1,449	3,421.3	9,198.1	14,210.7	14,791.0	3,132.4	2,847.7
750.0	25	1,236	2,813.2	7,143.6	11,655.6	12,126.4	2,554.4	2,323.7

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET GAS VOL FLOW RATE	WET EXH MASS FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
600.0	20	1,022	2,588.4	6,214.7	10,705.5	11,105.8	2,337.3		2,139.1
300.0	10	590	2,189.5	4,545.1	9,126.5	9,387.3	1,974.8		1,838.2

Heat Rejection Data [Top](#)

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHAUST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
3,000.0	100	4,393	52,144	8,993	175,769	96,459	23,854	53,683	186,315	447,861	477,084
2,700.0	90	3,976	48,348	8,755	162,671	85,128	21,755	46,560	168,590	408,442	435,094
2,400.0	80	3,557	45,188	8,663	152,310	80,972	19,852	39,923	150,835	372,717	397,037
2,250.0	75	3,347	43,721	8,625	147,003	79,360	18,929	37,161	141,942	355,388	378,578
2,100.0	70	3,137	42,430	8,593	141,837	77,229	18,002	34,024	133,031	337,986	360,040
1,800.0	60	2,716	40,153	8,591	130,286	71,150	16,087	27,442	115,184	302,034	321,742
1,500.0	50	2,294	37,137	8,662	118,761	66,069	14,137	20,821	97,288	265,422	282,742

Emissions Data [Top](#)

Units Filter All Units [▼](#)

Note(s)

PARTICULATE EMISSIONS WERE NOT MEASURED FOR THIS RATING. PUBLISHED PM DATA IS ESTIMATED FROM MEASURED SMOKE METER DATA.

DIESEL

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN ENGINE POWER PERCENT LOAD	EKW BHP %	3,000.0 4,393 100	2,250.0 3,347 75	1,500.0 2,294 50	750.0 1,236 25	300.0 590 10
TOTAL NOX (AS NO2)	G/HR	22,368	12,160	6,934	8,735	6,302
TOTAL CO	G/HR	2,399	2,470	1,673	2,077	1,535
TOTAL HC	G/HR	190	142	118	84	160
TOTAL CO2	KG/HR	2,129	1,691	1,268	673	371
TOTAL NOX (AS NO2)	MG/NM3	2,404.9	1,597.8	1,214.4	2,955.6	3,548.5
TOTAL CO	MG/NM3	257.5	319.2	290.7	686.3	917.4
TOTAL HC	MG/NM3	17.6	16.0	17.7	24.0	84.5
TOTAL NOX (AS NO2)	MG/NM3	892.4	592.9	450.6	1,096.7	1,316.7
TOTAL CO	MG/NM3	95.6	118.5	107.9	254.7	340.4
TOTAL HC	MG/NM3	6.5	5.9	6.6	8.9	31.4
TOTAL NOX (AS NO2)	PPM	1,171	778	592	1,440	1,728
TOTAL CO	PPM	206	255	233	549	734
TOTAL HC	PPM	33	30	33	45	158
TOTAL NOX (AS NO2)	PPM	435	289	219	534	641
TOTAL CO	PPM	76	95	86	204	272
TOTAL HC	PPM	12	11	12	17	59
TOTAL NOX (AS NO2)	G/HP-HR	5.13	3.65	3.03	7.07	10.68
TOTAL CO	G/HP-HR	0.55	0.74	0.73	1.68	2.60
TOTAL HC	G/HP-HR	0.04	0.04	0.05	0.07	0.27
TOTAL NOX (AS NO2)	G/KW-HR	6.87	4.89	4.06	9.48	14.33
TOTAL CO	G/KW-HR	0.74	0.99	0.98	2.25	3.49
TOTAL HC	G/KW-HR	0.06	0.06	0.07	0.09	0.36
TOTAL NOX (AS NO2)	LB/HR	49.31	26.81	15.29	19.26	13.89
TOTAL CO	LB/HR	5.29	5.44	3.69	4.58	3.38
TOTAL HC	LB/HR	0.42	0.31	0.26	0.18	0.35
TOTAL CO2	LB/HR	4,694	3,728	2,794	1,484	819
OXYGEN IN EXH	%	9.7	9.4	9.5	8.5	12.0
DRY SMOKE OPACITY	%	2.0	2.6	2.9	4.3	0.2
BOSCH SMOKE NUMBER		0.85	0.96	1.02	1.16	0.70

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN ENGINE POWER PERCENT LOAD	EKW BHP %	3,000.0 4,393 100	2,250.0 3,347 75	1,500.0 2,294 50	750.0 1,236 25	300.0 590 10
TOTAL NOX (AS NO2)	G/HR	26,841	14,592	8,321	10,482	7,562
TOTAL CO	G/HR	4,319	4,446	3,012	3,738	2,763
TOTAL HC	G/HR	252	188	157	111	213
TOTAL NOX (AS NO2)	MG/NM3	2,885.9	1,917.4	1,457.3	3,546.7	4,258.2
TOTAL CO	MG/NM3	463.5	574.6	523.3	1,235.4	1,651.3
TOTAL HC	MG/NM3	23.4	21.3	23.6	31.9	112.4
TOTAL NOX (AS NO2)	MG/NM3	1,070.9	711.5	540.8	1,316.1	1,580.1
TOTAL CO	MG/NM3	172.0	213.2	194.2	458.4	612.8
TOTAL HC	MG/NM3	8.7	7.9	8.8	11.8	41.7
TOTAL NOX (AS NO2)	PPM	1,406	934	710	1,728	2,074
TOTAL CO	PPM	371	460	419	988	1,321
TOTAL HC	PPM	44	40	44	60	210
TOTAL NOX (AS NO2)	PPM	522	347	263	641	770
TOTAL CO	PPM	138	171	155	367	490
TOTAL HC	PPM	16	15	16	22	78
TOTAL NOX (AS NO2)	G/HP-HR	6.15	4.38	3.64	8.49	12.82
TOTAL CO	G/HP-HR	0.99	1.33	1.32	3.03	4.68
TOTAL HC	G/HP-HR	0.06	0.06	0.07	0.09	0.36
TOTAL NOX (AS NO2)	G/KW-HR	8.25	5.87	4.88	11.38	17.19
TOTAL CO	G/KW-HR	1.33	1.79	1.76	4.06	6.28
TOTAL HC	G/KW-HR	0.08	0.08	0.09	0.12	0.48
TOTAL NOX (AS NO2)	LB/HR	59.17	32.17	18.34	23.11	16.67
TOTAL CO	LB/HR	9.52	9.80	6.64	8.24	6.09
TOTAL HC	LB/HR	0.56	0.42	0.35	0.25	0.47

Regulatory Information [Top](#)

EPA EMERGENCY STATIONARY

2011 - ----

GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE EMERGENCY STATIONARY REGULATIONS.

EPA EMERGENCY STATIONARY

Locality
U.S. (INCL CALIF)Agency
EPA2011 - ----
Regulation
STATIONARYTier/Stage
EMERGENCY STATIONARYMax Limits - G/BKW - HR
CO: 3.5 NOx + HC: 6.4 PM: 0.20Altitude Derate Data [Top](#)

Note(s)

A BLANK IN THE ALTITUDE DERATE TABLE SIGNIFIES THAT NO RATING IS AVAILABLE AT THAT SPECIFIED ALTITUDE AND AMBIENT TEMPERATURE.
THE TEMPERATURES LISTED IN THE CHART ARE AMBIENT TEMPERATURES. THE FOLLOWING DERATE CHART WAS CALCULATED ASSUMING A 5 DEG C RISE IN AIR TEMPERATURE BETWEEN AMBIENT AND THE TURBOCHARGER INLET

STANDARD

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

AMBIENT OPERATING TEMP (F)	30	40	50	60	70	80	90	100	110	120	130	140	NORMAL
ALTITUDE (FT)													
0	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	1,927		4,393
1,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	1,860		4,393
2,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,304		4,393
3,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,313	2,786		4,393
4,000	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,393	4,355	4,037	1,625		4,393
5,000	4,393	4,393	4,393	4,393	4,393	4,383	4,383	4,334	4,221	3,517			4,393
6,000	4,393	4,393	4,393	4,356	4,307	4,246	4,183	4,064	2,023				4,393
7,000	4,393	4,380	4,306	4,226	4,160	4,072	3,968	3,778					4,378
8,000	4,347	4,247	4,153	4,051	3,974	3,836	3,573	3,093					4,274
9,000	4,203	4,068	3,954	3,831	3,738	3,550	3,208	2,621					4,152
10,000	3,990	3,831	3,691	3,541	3,442	3,250	2,968	2,196					3,986
11,000	3,755	3,560	3,390	3,239	3,162	3,018	2,762	1,678					3,815
12,000	3,413	3,252	3,123	3,015	2,940	2,762	2,300	1,104					3,539
13,000	3,070	2,977	2,897	2,829	2,750	2,477	1,702						3,198
14,000	2,754	2,728	2,691	2,660	2,553	2,240							2,841
15,000	2,454	2,461	2,285	2,143	2,057	1,713							2,523

Cross Reference [Top](#)

Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
5958125	LL2384	6143182	PG296	-	ZNL00001	

Supplementary Data [Top](#)

Type	Classification	Performance Number
ALTITUDE DATA	HIGH RESOLUTION	EMS585

Performance Parameter Reference [Top](#)

Parameters Reference: DM9600 - 15
PERFORMANCE DEFINITIONS
PERFORMANCE DEFINITIONS DM9600
APPLICATION: Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request (SERR) test data shall be noted.
PERFORMANCE PARAMETER TOLERANCE FACTORS: Power +/- 3% Torque +/- 3% Exhaust stack temperature +/- 8% Inlet airflow +/- 5% Intake manifold pressure-gage +/- 10% Exhaust flow +/- 6% Specific fuel consumption +/- 3% Specific fuel consumption (C7-C18) +/- 4% Fuel rate +/- 5% Specific DEF consumption +/- 3% DEF rate +/- 5% Heat rejection +/- 5% Heat rejection exhaust only +/- 10% Heat rejection CEM only +/- 10% Heat Rejection values based on using treated water. Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications. On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed. On 3500 and C175 engines, at speeds below Peak Torque these values are provided for reference only, and may not meet the tolerance listed. These values do not apply to C280/3600. For these models, see the tolerances listed below.
C280/3600 HEAT REJECTION TOLERANCE FACTORS: Heat rejection +/- 10% Heat rejection to Atmosphere +/- 50% Heat rejection to Lube Oil +/- 20% Heat rejection to Aftercooler +/- 5%
TEST CELL TRANSDUCER TOLERANCE FACTORS: Torque +/- 0.5% Speed +/- 0.2% Fuel flow +/- 1.0% Temperature +/- 2.0 C degrees Intake manifold pressure +/- 0.1 kPa OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.
REFERENCE ATMOSPHERIC INLET AIR FOR 3500 ENGINES AND SMALLER SAE J1228 AUG2002 for marine engines, and J1995 JAN2014 for other engines, reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity at the stated aftercooler water temp, or inlet manifold temp. FOR 3600 ENGINES Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JANJAN2014 reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity and 150M altitude at the stated aftercooler water temperature.
MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE Location for air temperature measurement air cleaner inlet at stabilized operating conditions.
REFERENCE EXHAUST STACK DIAMETER The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.
REFERENCE FUEL DIESEL Reference fuel is #2 distillate diesel with a 35API gravity; A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 15 deg C (59 deg F), where the density is 850 G/Liter (7.0936 Lbs/Gal). GAS Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.
ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD Engine corrected gross output includes the power required to

PACKAGE DATA [516DRWC]

AUGUST 20, 2025

For Help Desk Phone Numbers [Click here](#)

Feature Code:	516DRWC	Rating Type:	STANDBY	Sales model Package:	
Engine Sales Model:		Engine Arrangement Number:	6143182	Hertz:	60
EKW W/F:	3000.0	Noise Reduction:	0 dBA	Back Pressure:	0.0 inH2O

Engine Package Information

Engine Package Data

Package Cooling Information

Data not available.

Package Sound Information

Sound Comments :

Open Exhaust Sound Data

Distance: 3.3 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
3000.0	100.0	120.1	125.5	119.5	117.8	114.3	108.6	109.4	106.5
2250.0	75.0	118.1	123.4	118.3	116.3	111.9	106.8	107.4	103.1
1500.0	50.0	116.3	122.1	116.6	115.0	109.9	104.8	104.3	99.9
750.0	25.0	112.0	116.8	112.2	110.4	104.8	102.9	100.4	95.6

Distance: 23.0 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
3000.0	100.0	110.9	108.6	102.6	100.9	97.4	91.7	92.5	89.6
2250.0	75.0	109.2	106.5	101.4	99.4	95.0	89.9	90.5	86.2
1500.0	50.0	107.7	105.2	99.7	98.1	93.0	87.9	87.4	83.0
750.0	25.0	102.6	99.9	95.3	93.5	87.9	86.0	83.5	78.7

Distance: 49.2 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
3000.0	100.0	104.3	102.0	96.0	94.3	90.7	85.1	85.9	83.0
2250.0	75.0	102.5	99.9	94.8	92.8	88.4	83.3	83.9	79.6
1500.0	50.0	101.0	98.6	93.1	91.5	86.4	81.3	80.8	76.4
750.0	25.0	96.0	93.3	88.7	86.9	81.3	79.4	76.8	72.1

Open Mechanical Sound Data

Distance: 3.3 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
3000.0	100.0	109.8	103.5	107.0	108.1	104.0	100.7	97.9	98.9
2250.0	75.0	109.0	102.8	106.5	107.4	103.6	100.1	96.5	97.5
1500.0	50.0	108.7	101.5	106.3	107.3	103.3	100.1	96.2	93.6
750.0	25.0	108.9	101.7	107.1	108.4	104.0	98.7	94.9	90.8

Distance: 23.0 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
3000.0	100.0	101.1	99.0	98.9	99.0	95.0	92.7	89.1	90.8
2250.0	75.0	100.8	98.3	98.5	99.3	94.8	92.2	88.3	89.5
1500.0	50.0	100.3	97.4	98.4	98.5	94.7	92.3	88.1	85.8
750.0	25.0	100.4	98.3	99.1	99.8	94.8	91.1	87.2	83.1

Distance: 49.2 Feet

EKW W/F	% LOAD	OVERALL SOUND DB(A)	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
3000.0	100.0	95.0	92.0	94.9	92.7	88.4	86.8	83.7	84.3
2250.0	75.0	95.0	91.3	95.3	93.9	88.5	86.2	82.8	82.7
1500.0	50.0	95.0	91.0	94.2	93.5	89.5	86.6	82.7	79.7
750.0	25.0	95.5	91.2	94.9	95.4	89.4	85.8	82.3	78.4

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Systems Data

Reference Number: EM6283



August 20, 2025
For Help Desk Phone
Numbers [Click Here](#)

AIR INTAKE SYSTEM

THE INSTALLED SYSTEM MUST COMPLY WITH THE SYSTEM LIMITS BELOW FOR ALL EMISSIONS CERTIFIED ENGINES TO ASSURE REGULATORY COMPLIANCE.

MAXIMUM ALLOWABLE INTAKE RESTRICTION WITH CLEAN ELEMENT	15	IN-H2O
MAXIMUM ALLOWABLE INTAKE RESTRICTION WITH DIRTY ELEMENT	25	IN-H2O

COOLING SYSTEM

MAXIMUM ALLOWABLE JACKET WATER OUTLET TEMPERATURE	219	DEG F
REGULATOR LOCATION FOR JW (HT) CIRCUIT	OUTLET	
MAXIMUM UNINTERRUPTED FILL RATE	5.0	G/MIN

ENGINE SPEC SYSTEM

CYLINDER ARRANGEMENT	VEE	
NUMBER OF CYLINDERS	16	
CYLINDER BORE DIAMETER	6.7	IN
PISTON STROKE	8.5	IN
TOTAL CYLINDER DISPLACEMENT	4766	CU IN
STANDARD CRANKSHAFT ROTATION FROM FLYWHEEL END	CCW	
STANDARD CYLINDER FIRING ORDER	1-2-5-6-3-4-9-10-15-16-11-12-14-7-8	
NUMBER 1 CYLINDER LOCATION	RIGHT FRONT	
STROKES/COMBUSTION CYCLE	4	

EXHAUST SYSTEM

THE INSTALLED SYSTEM MUST COMPLY WITH THE SYSTEM LIMITS BELOW FOR ALL EMISSIONS CERTIFIED ENGINES TO ASSURE REGULATORY COMPLIANCE.

MAXIMUM ALLOWABLE SYSTEM BACK PRESSURE	27	IN-H2O
--	----	--------

FUEL SYSTEM

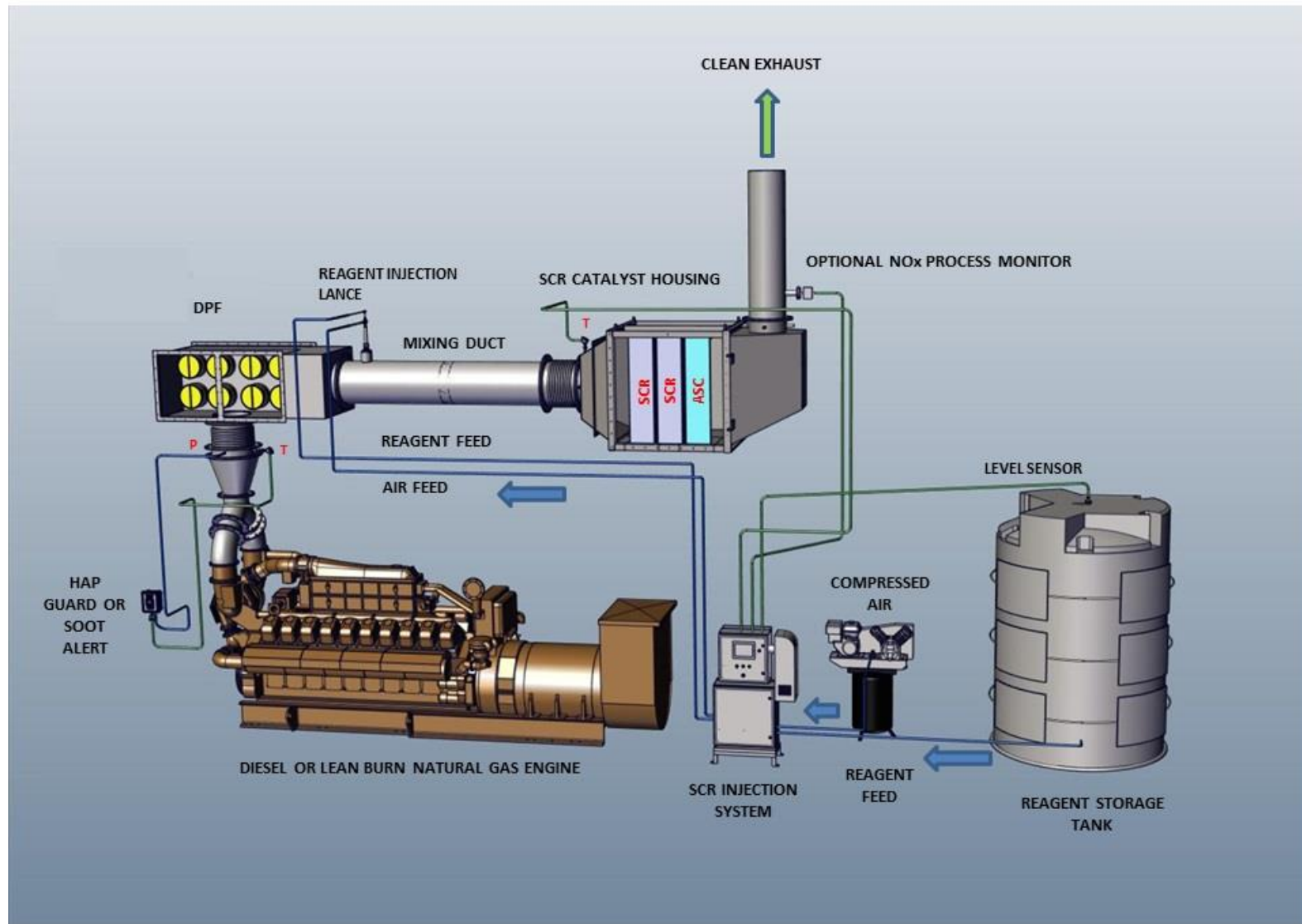
MAXIMUM ALLOWABLE FUEL SUPPLY LINE RESTRICTION	8.9	IN-HG
MAXIMUM ALLOWABLE FUEL TEMPERATURE AT TRANSFER PUMP INLET	151	DEG F
MAXIMUM ALLOWABLE FUEL RETURN LINE RESTRICTION	8.0	IN-HG
NORMAL FUEL PRESSURE IN A CLEAN SYSTEM	60.2	PSI
FUEL SYSTEM TYPE	EUI	
MAXIMUM TRANSFER PUMP PRIMING LIFT WITHOUT PRIMING PUMP	12.1	FT
MAXIMUM HEAT REJECTION TO FUEL	722	BTU/MIN

LUBE SYSTEM

CRANKCASE VENTILATION TYPE	TO ATM	
----------------------------	--------	--

STARTING SYSTEM

MINIMUM CRANKING SPEED REQUIRED FOR START	120	RPM
LOWEST AMBIENT START TEMPERATURE WITHOUT AIDS	32	DEG F

SCRT Arrangement Sketch



Tentative Interim Amendment

NFPA[®] 110

Standard for Emergency and Standby Power Systems

2022 Edition

Reference: 5.6.5.5.1(new)

TIA 22-1

(SC 24-4-14/ TIA Log #1759)

Pursuant to Section 5 of the NFPA *Regulations Governing the Development of NFPA Standards*, the National Fire Protection Association has issued the following Tentative Interim Amendment to NFPA 110, *Standard for Emergency and Standby Power Systems*, 2022 edition. The TIA was processed by the Technical Committee on Emergency Power Supplies, and the National Electrical Code® Correlating Committee, and was issued by the Standards Council on April 18, 2024, with an effective date of May 8, 2024.

1. *Add a new paragraph 5.6.5.5.1 to read as follows:*

5.6.5.5.1 Where used for permanent Level 1 applications, EPA-mandated inducement engine shutdowns due to emissions system controls that are required on Tier 4 certified engines with SCR shall be prohibited.

Issue Date: April 18, 2024

Effective Date: May 8, 2024

(Note: For further information on NFPA Codes and Standards, please see www.nfpa.org/docinfo)

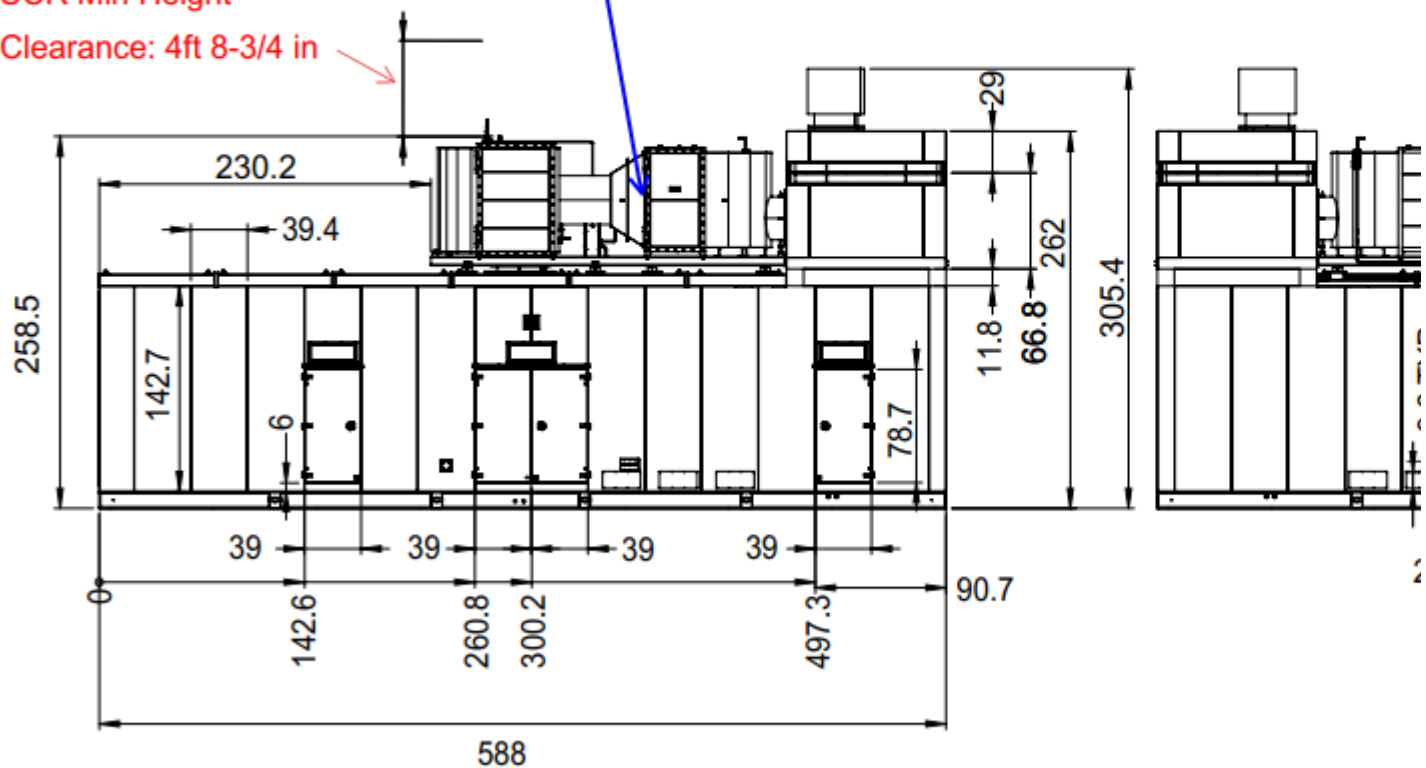
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NATIONAL FIRE PROTECTION ASSOCIATION

PRELIMINARY
DO NOT USE FOR

JOHNSON MATTHEY DPF/SCR UNIT

SCR Min Height

Clearance: 4ft 8-3/4 in



Respectfully,



Abner Enriquez | Application Engineer
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aenriquez@quinnpower.com | www.quinnpower.com

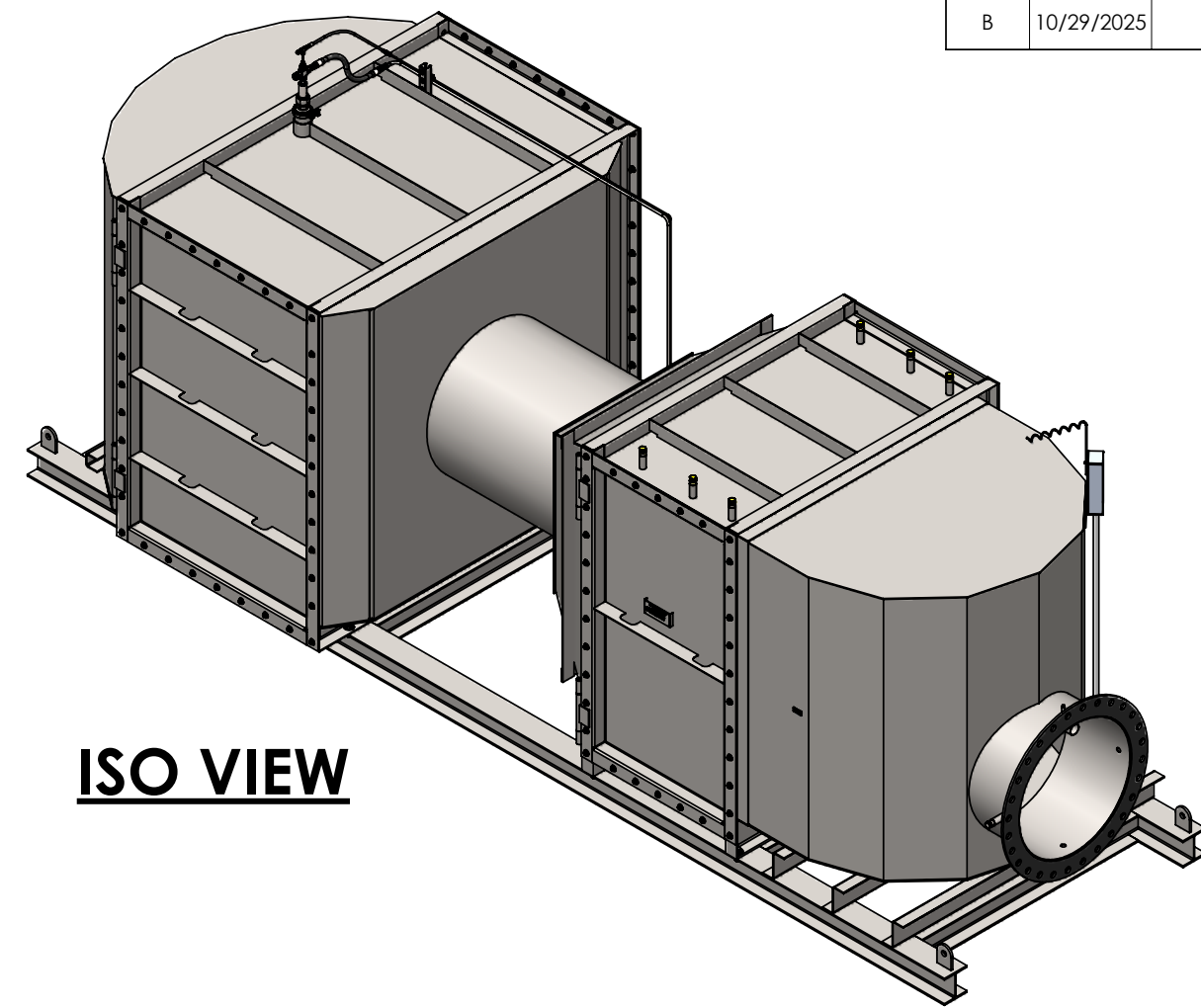
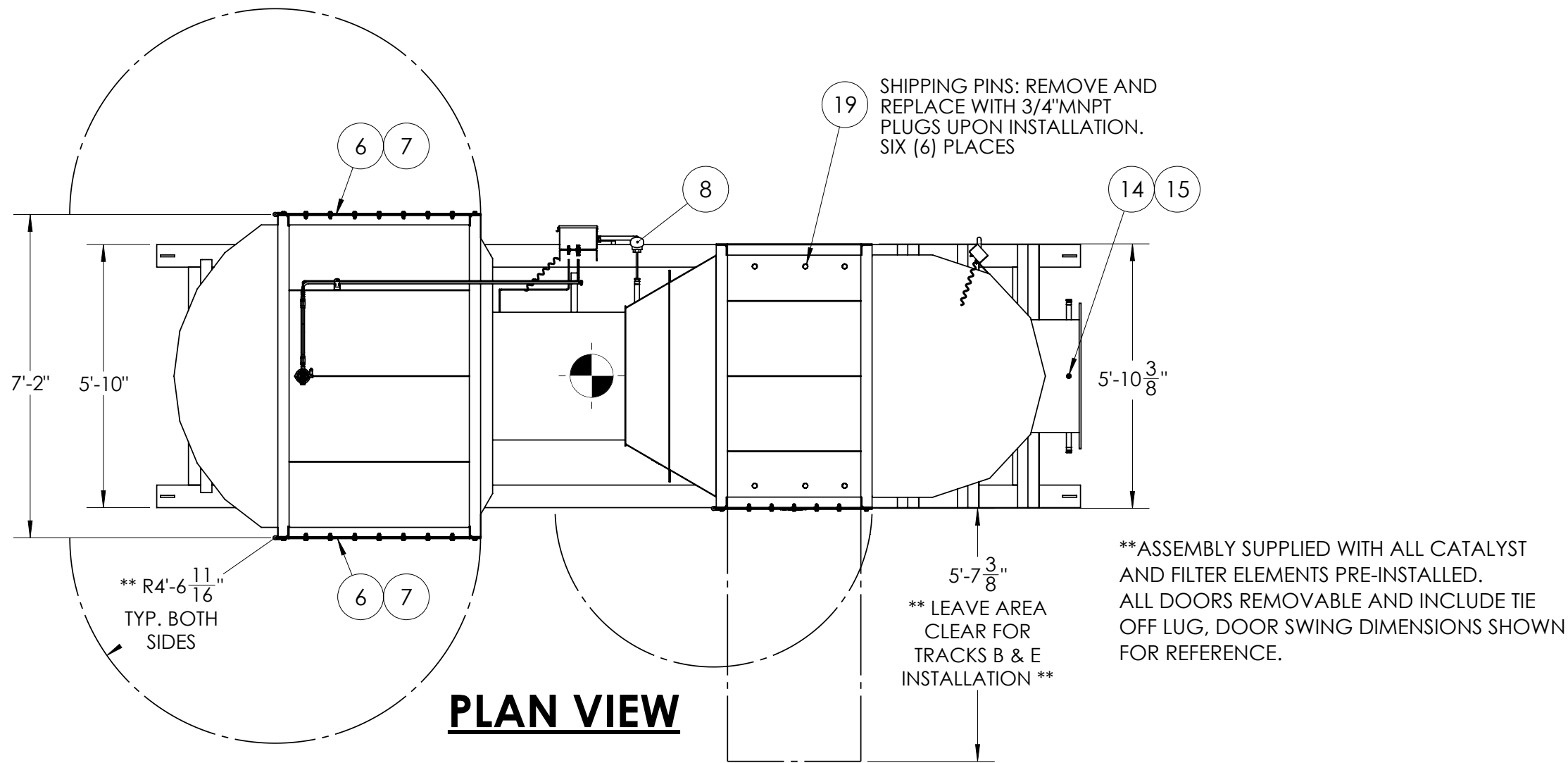
Full Load Design Parameters	
Engine	CAT 3516E
Engine kW Rating	3000
Application	Standby Power
Operating Hours per Year	~
Fuel	Ultra-Low Sulfur Diesel
Exhaust Gas Flow Rate	23,971 cfm (wet)
Full Load Exhaust Gas Temperature	903°F (1)
Design Exhaust Oxygen Concentration	10% (assumed)
Design Moisture Concentration	8% (assumed)

(1) THE UREA INJECTION PERMISSIVE IS 575° F. AND THE 100% LOAD TEMPERATURE IS 903° F

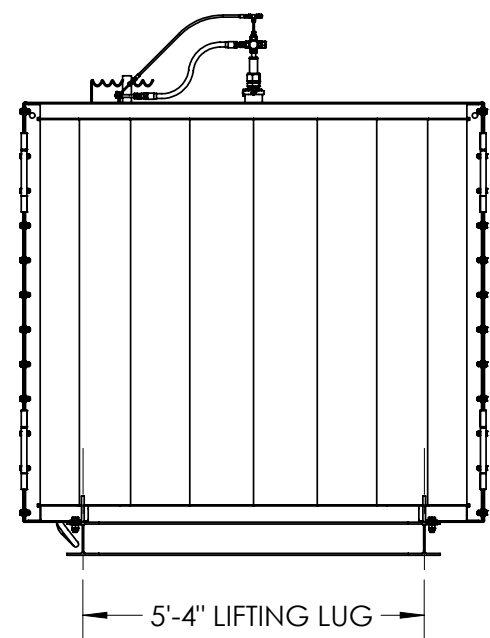
Full Load SCRT System Data	
Max. Ammonia Slip	10 ppmvd @ 15% O ₂
Estimated 32.5% Urea Usage	14.6 USGPH
Estimated System Pressure Loss(2)	19.6" wc with clean filters and ~ 25.2" wc when filters are soot coated and need regeneration
Max. Allowable Engine Backpressure	27" wc
Est. Overall Sound Insertion Loss	40-45dBA

(2) Defined across JM components

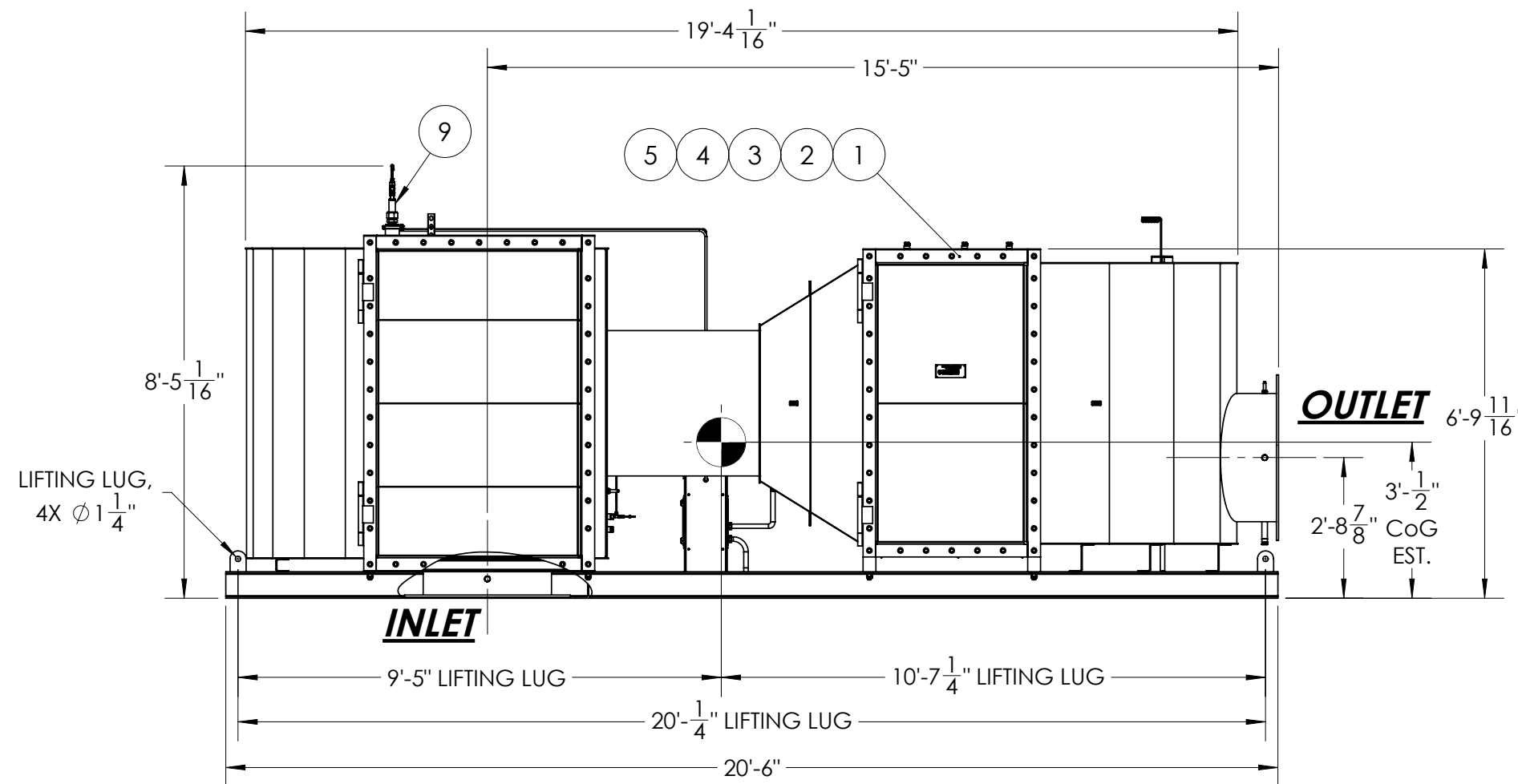
Full Load Emissions Data				
Emission	Catalyst Inlet	Catalyst Outlet	Reduction %	Tier 4F Reference
NOx	6.76 g/bhp-hr	0.50 g/bhp-hr	92.6%	0.50 g/bhp-hr
CO	1.20 g/bhp-hr	0.24 g/bhp-hr	80%	2.60 g/bhp-hr
HC	0.06 g/bhp-hr	0.018 g/bhp-hr	70%	0.14 g/bhp-hr
PM	0.06 g/bhp-hr	0.009 g/bhp-hr	85%	0.02 g/bhp-hr



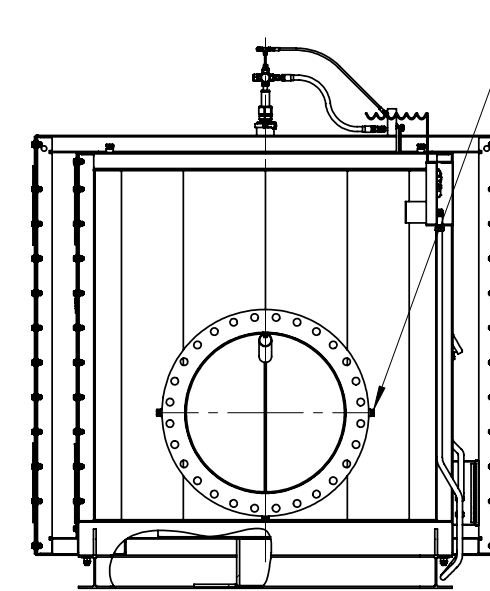
ISO VIEW



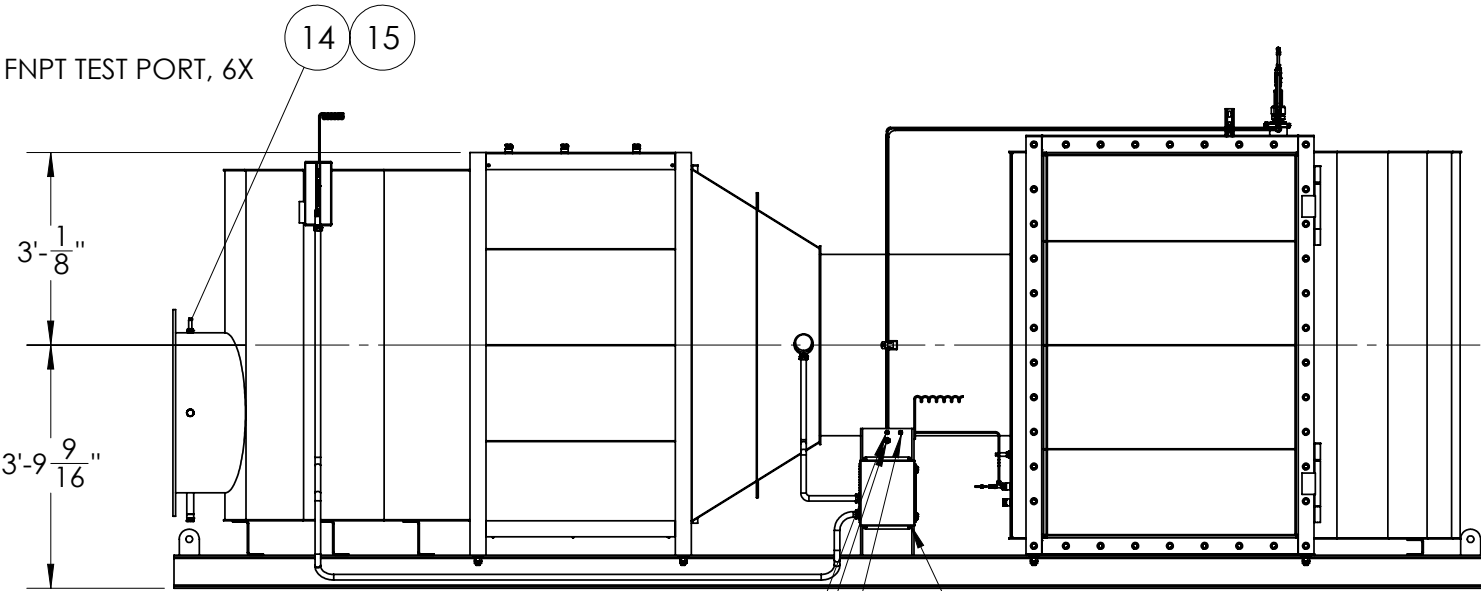
SIDE VIEW



ELEVATION VIEW

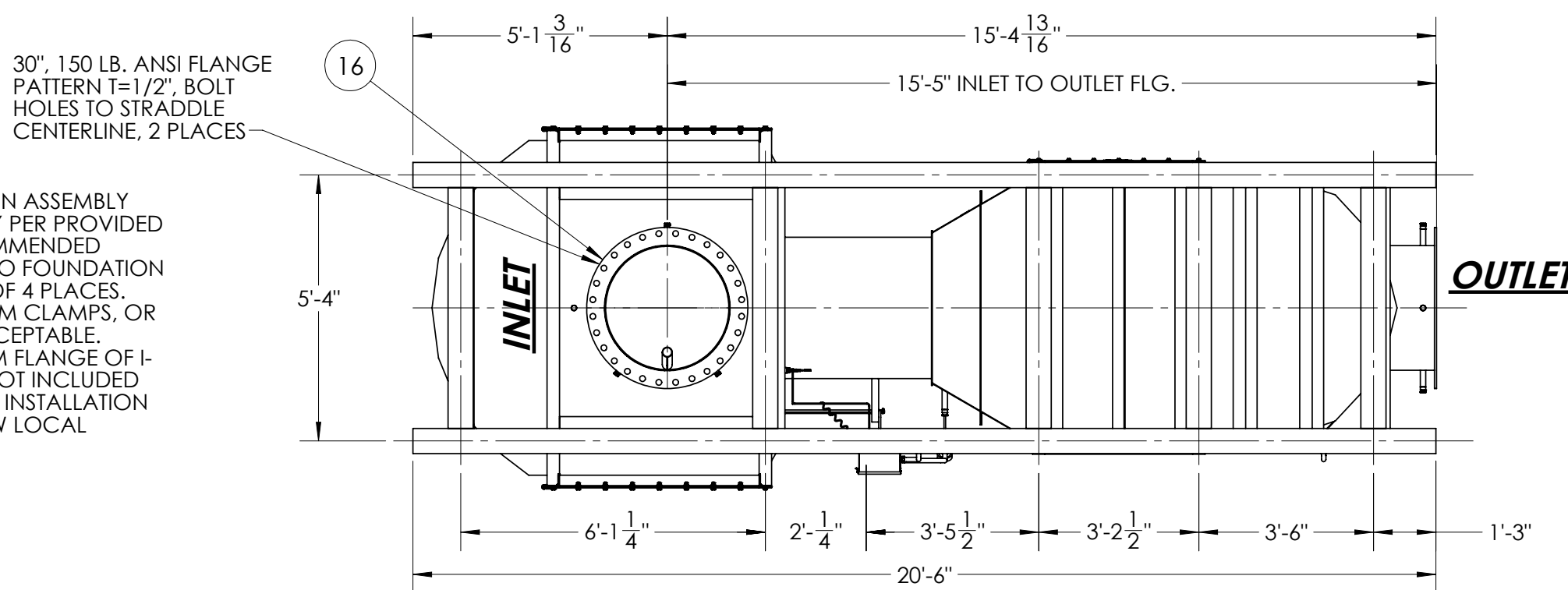


SIDE VIEW



ELEVATION REAR VIEW

– JUNCTION BOX:
(1) 50 FT LENGTH OF 18/2 AWG SHIELDED, PRE-WIRED TO TEMPERATURE TRANSMITTER
(2) 50FT LENGTHS OF NOx SENSOR COMMUNICATION CABLE PRE-WIRED TO INSTALLED NOx SENSORS AT ASSEMBLY. CONTINUOUS LENGTH TO DOSING PNL DO NOT SPICE
(1) 50 FT LENGTH OF K-TYPE THERMOCOUPLE WIRE.



BOTTOM VIEW

W6X20 I-BEAM CONSTRUCTION ASSEMBLY
BASE. SUPPORT OF ASSEMBLY PER PROVIDED
WEIGHTS, BY OTHERS, RECOMMENDED
ATTACHMENT OF ASSEMBLY TO FOUNDATION
OR STRUCTURE IN MINIMUM OF 4 PLACES.
USE OF STITCH WELDING, BEAM CLAMPS, OR
3/4" HARDWARE ARE ALL ACCEPTABLE.
MOUNTING HOLES IN BOTTOM FLANGE OF I-
BEAM BASE INTENTIONALLY NOT INCLUDED
DUE TO VARIANCES OF FINAL INSTALLATION
LOCATION. ALWAYS FOLLOW LOCAL
CODES WHERE APPLICABLE.

PRELIMINARY

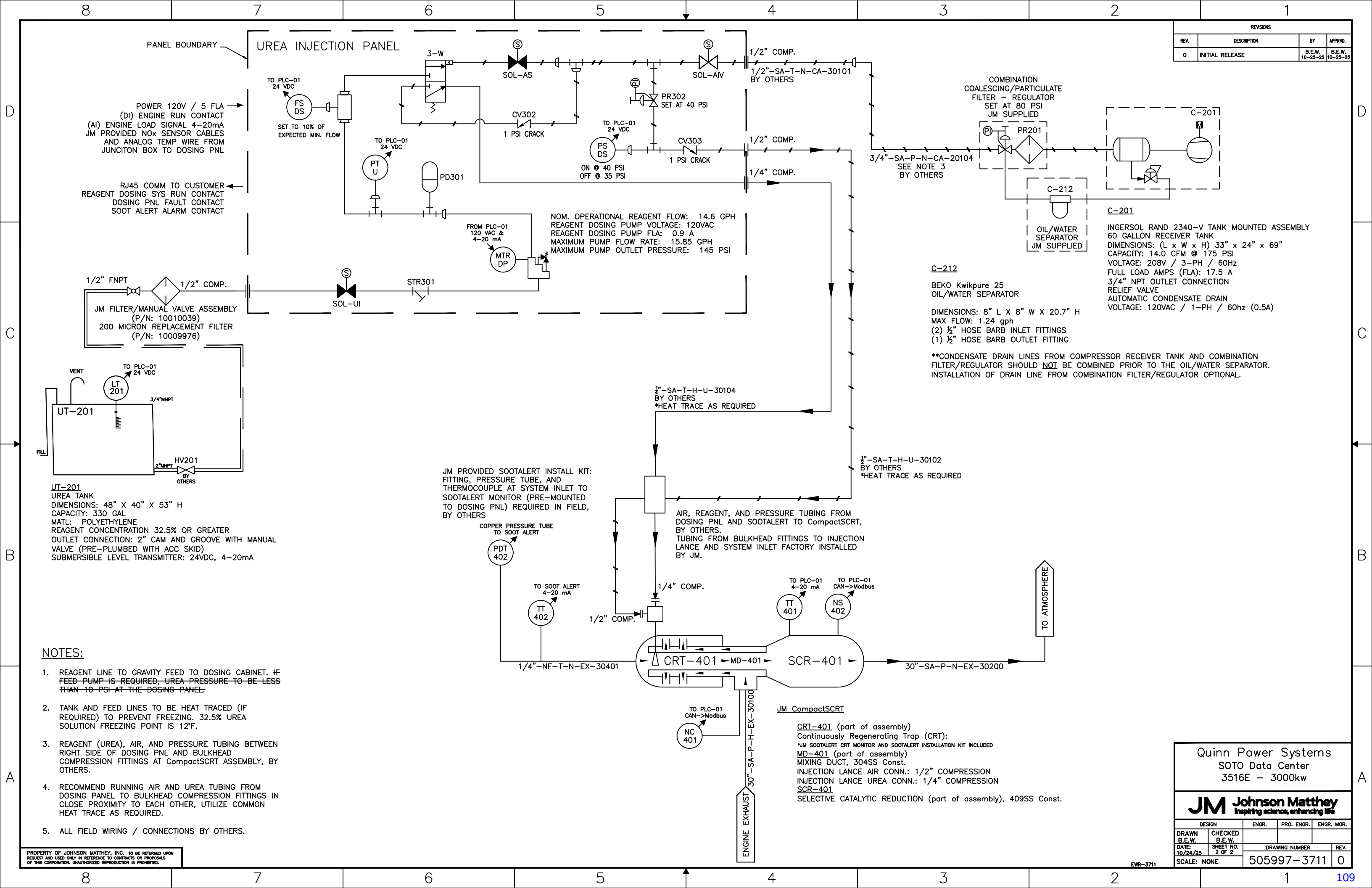
ALL DIMENSIONS & WEIGHTS ARE FOR REFERENCE ONLY,
CATALYST VOLUME, CONFIGURATION AND
PERFORMANCE REQUIREMENTS MAY EFFECT
FINAL DIMENSIONS.

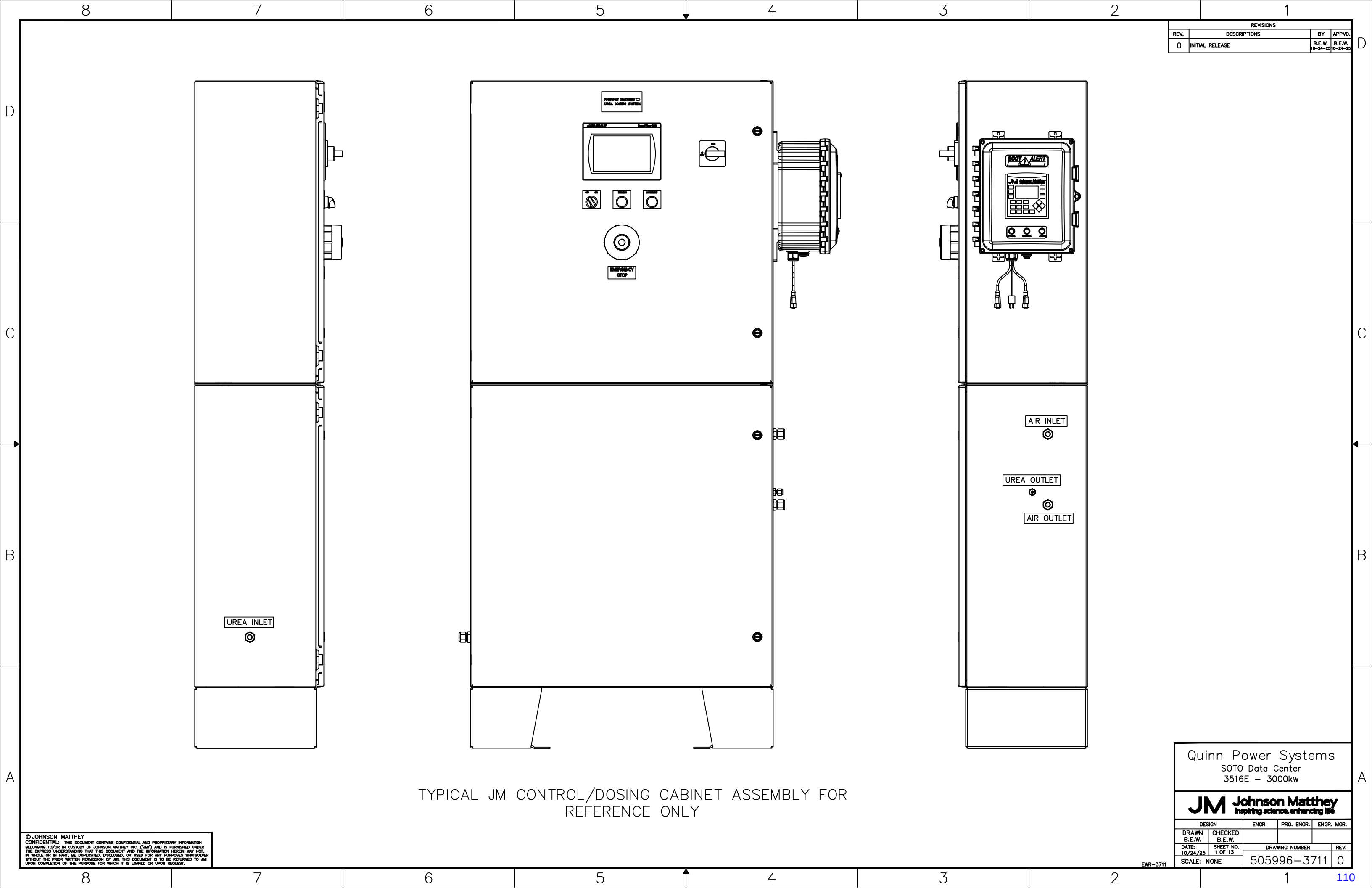
NOTES:

1. REAGENT (UREA) INJECTION / EMISSIONS TREATMENT WILL NOT OCCUR AT SYSTEM TEMPERATURES BELOW 500°F. STATED ENGINE FULL LOAD TEMPERATURE IS 903°F AT FULL LOAD.
2. ALL PIPING AND WIRING UP TO JM SUPPLIED JUNCTION BOX AND BULKHEAD FITTINGS, BY OTHERS.
3. DOSING PANEL REQUIRES FLOODED INLET OF CLEAN 32.5% OR GREATER REAGENT. IF REAGENT FORWARDING IS REQUIRED SUPPLY PRESSURE NOT TO EXCEED 10psig
4. 120VAC / 1-PHASE / 60 Hz ELECTRICAL SERVICE REQUIRED TO SUPPLIED CONTROL / DOSING PANEL, BY OTHERS.
5. SOOT ALERT CONTROL MODULE IS TO BE PRE-MOUNTED TO THE SIDE OF THE DOSING CABINET AND POWERED FROM THE 24VDC POWER SUPPLY WITHIN THE DOSING PANEL.
6. AIR SUPPLY: ~8 cfm OF FILTERED (40-MICRON ELEMENT OR LESS) AND REGULATED AIR BETWEEN 80 to 110 psig REQUIRED.
7. SYSTEM CALL SIGNAL - DRY CONTACT INDICATING ENGINE RUN REQUIRED, BY OTHERS.
8. ENGINE LOAD SIGNAL - (4-20ma) SIGNAL RELATIVE TO ENGINE LOAD TO CONTROL / DOSING PANEL FOR EACH ENGINE REQUIRED, BY OTHERS.
9. UNIT MOUNTED TEST PORTS ARE FOR COMMISSIONING AND FIELD REQUIRED TESTING, AND ARE NOT TO BE USED FOR EPA STACK TEST.

**** ASSEMBLY LIFT WEIGHT IS 13,063 lbs. CENTER OF GRAVITY INDICATED WITHIN ELEVATION AND PLAN VIEWS. SUPPORTING STRUCTURE UNDER ASSEMBLY TO BE SIZED FOR MINIMUM OF 14,500 lbs. (Compact\$CRT ASSEMBLY WITH SPARE FILTERS & CATALYST LAYER FILLED/UTILIZED)**

Shipping Dims			JM Johnson Matthey	Quinn Power Systems Soto Data Center				cSCRT 24/22S10x10-2+1-30/30 GENERAL ARRANGEMENT						
Length	Width	Height												
Material														
Finish														
THIS DRAWING IS OUR PROPERTY AND ALL THE INFORMATION CONTAINED THEREON IS TO BE KEPT CONFIDENTIAL BY THE RECIPIENT AND NOT TO BE USED OR DISCLOSED TO ANY OTHER PERSON, FIRM OR CORPORATION WITHOUT OUR EXPRESS CONSENT; AND THIS DRAWING SHALL NOT BE USED, DIRECTLY OR INDIRECTLY, EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE PRESERVED			DRAWN BY DB		CHECKED AP	DATE 24 Oct 25	WHERE USED		DISCIP.	PROJECTION: THIRD ANGLE	SHEET NO. 1 OF 2	SIZE D		
Weight (lbs) 7926.50	Model Rev.		ENGINEER BW		APPROVED BW	SCALE 1:36	EWR NO. 03711	SO NO.		DRAWING NO. 202-C0039989			SHT. -1-	REV. B



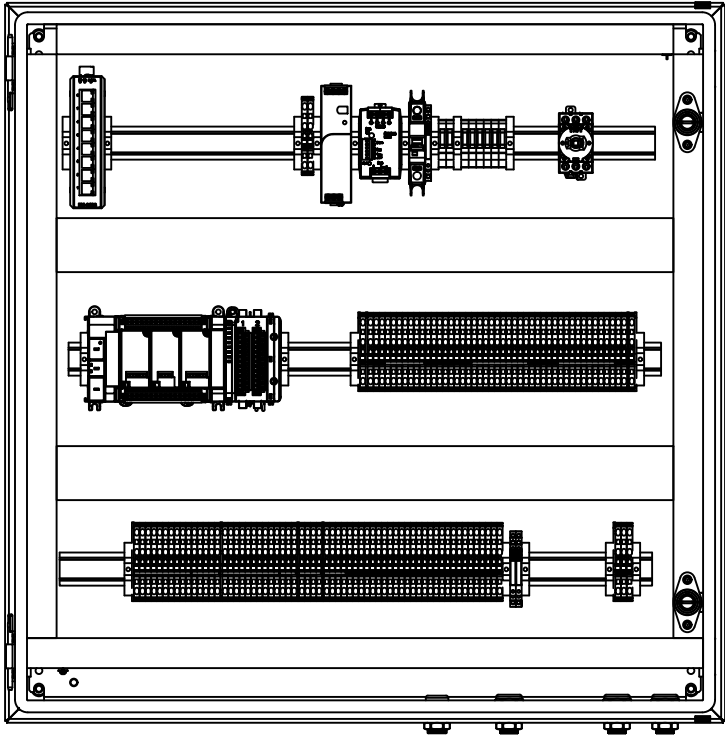
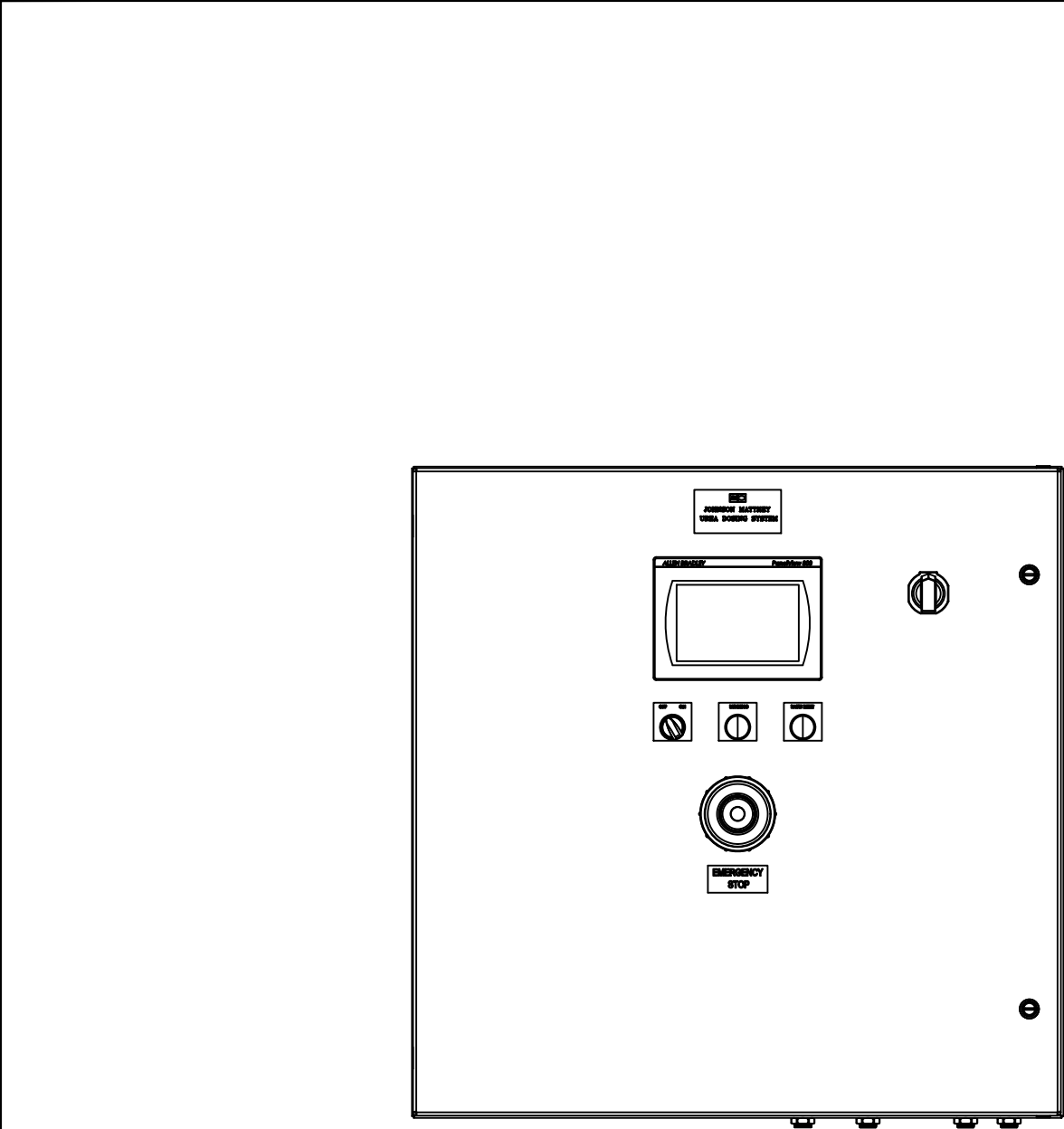


REVISIONS			
REV.	DESCRIPTIONS	BY	APPVD.
0	INITIAL RELEASE	B.E.W.	B.E.W.
		10-24-25	10-24-25

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Quinn Power Systems SOTO Data Center 3516E - 3000kw			
JM Johnson Matthey Inspiring science, enhancing life			
DESIGN	ENGR.	PRO. ENGR.	ENGR. MGR.
DRAWN B.E.W.	CHECKED B.E.W.		
DATE: 10/24/25	SHEET NO. 1 OF 13	DRAWING NUMBER	REV.
SCALE: NONE		505996-3711	0

EWR-3711



PANEL TO BE UL LISTED (usUL, cUL)
INDUSTRIAL CONTROL PANEL UL508A

- TAG LEGEND

LP-LIGHTED PUSHBUTTON
P - PUSHBUTTON
S - SWITCH
L - LIGHT
T - TAG
- NAME

L-GO
LP-ALM

PP-ES
S-PWR
TAG-JM

TAG-MD

LEGEND

RUNNING
FAULT
RESET
EMERGENCY STOP
OFF/ON
JOHNSON MATTHEY
UREA DOSING SYSTEM
MAIN
DISCONNECT

REVISIONS			
REV.	DESCRIPTIONS	BY	APPVD.
0	INITIAL RELEASE	B.E.W.	B.E.W.
		10-24-25	10-24-25

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Quinn Power Systems

SOTO Data Center

3516E - 3000kw

JM

Johnson Matthey

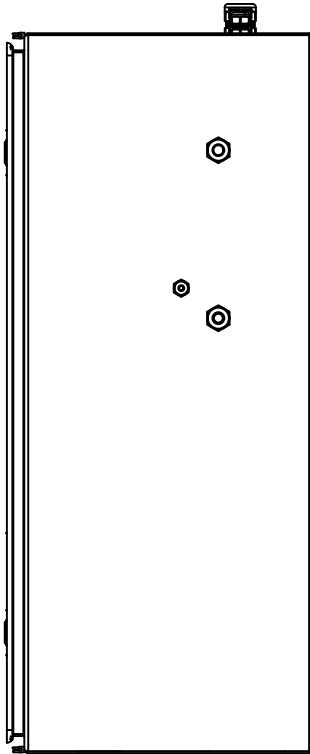
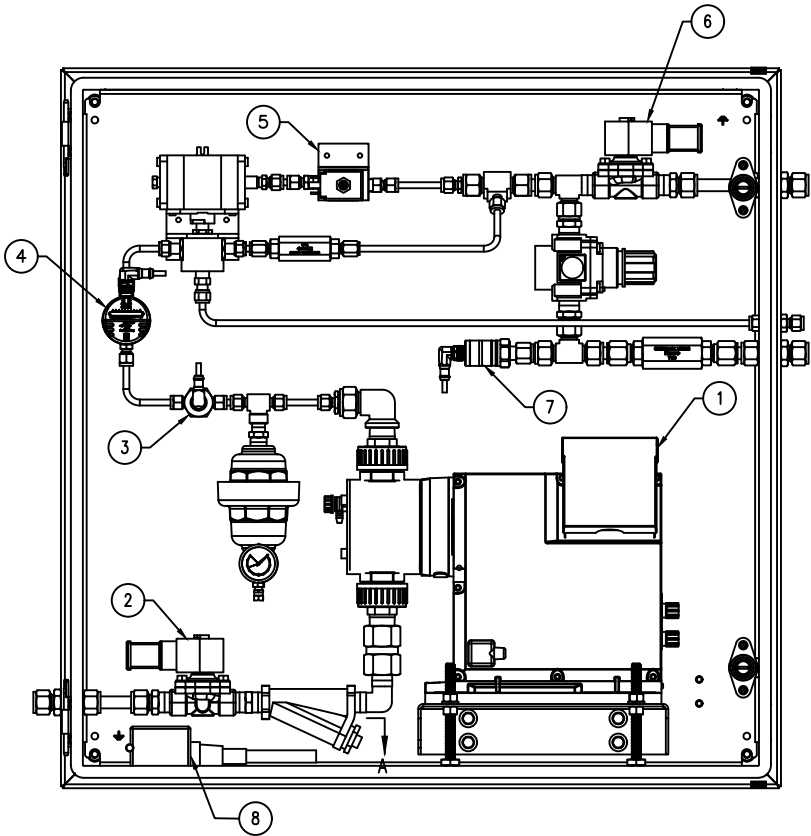
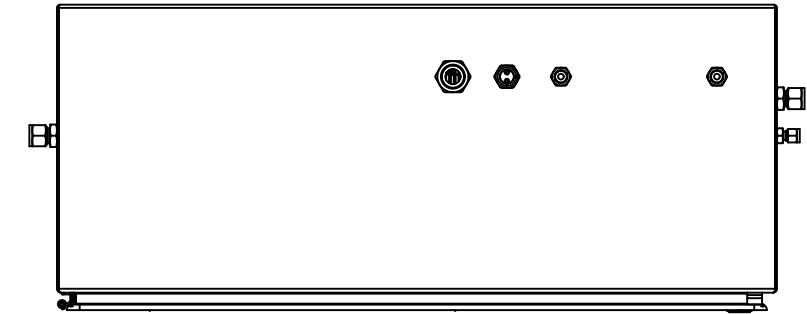
Inspiring science, enhancing life

DESIGN	ENGR.	PRO. ENGR.	ENGR. MGR.
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DATE: 10/24/25	SHEET NO. 2 OF 13	DRAWING NUMBER	REV.
SCALE: NONE		505996-3711	0

EWR-3711

REVISIONS			
REV.	DESCRIPTIONS	BY	APPVD.
0	INITIAL RELEASE	B.E.W.	B.E.W.
		10-24-25	10-24-25

1	DOSING PUMP
2	N.C. UREA INLET SOLENOID
3	UREA PRESSURE TRANSMITTER
4	FLOW SWITCH
5	3-WAY VALVE SOLENOID
6	N.O. AIR INLET SOLENOID
7	PRESSURE SWITCH
8	LEAK DETECTOR SWITCH



TYPICAL JM DOSING CABINET ASSEMBLY
* FOR REFERENCE ONLY

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Quinn Power Systems
SOTO Data Center
3516E – 3000kw

JM Johnson Matthey
Inspiring science, enhancing life

DESIGN	ENGR.	PRO. ENGR.	ENGR. MGR.
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DATE: 10/24/25	SHEET NO. 3 OF 13	DRAWING NUMBER	REV.
SCALE: NONE		505996-3711	0

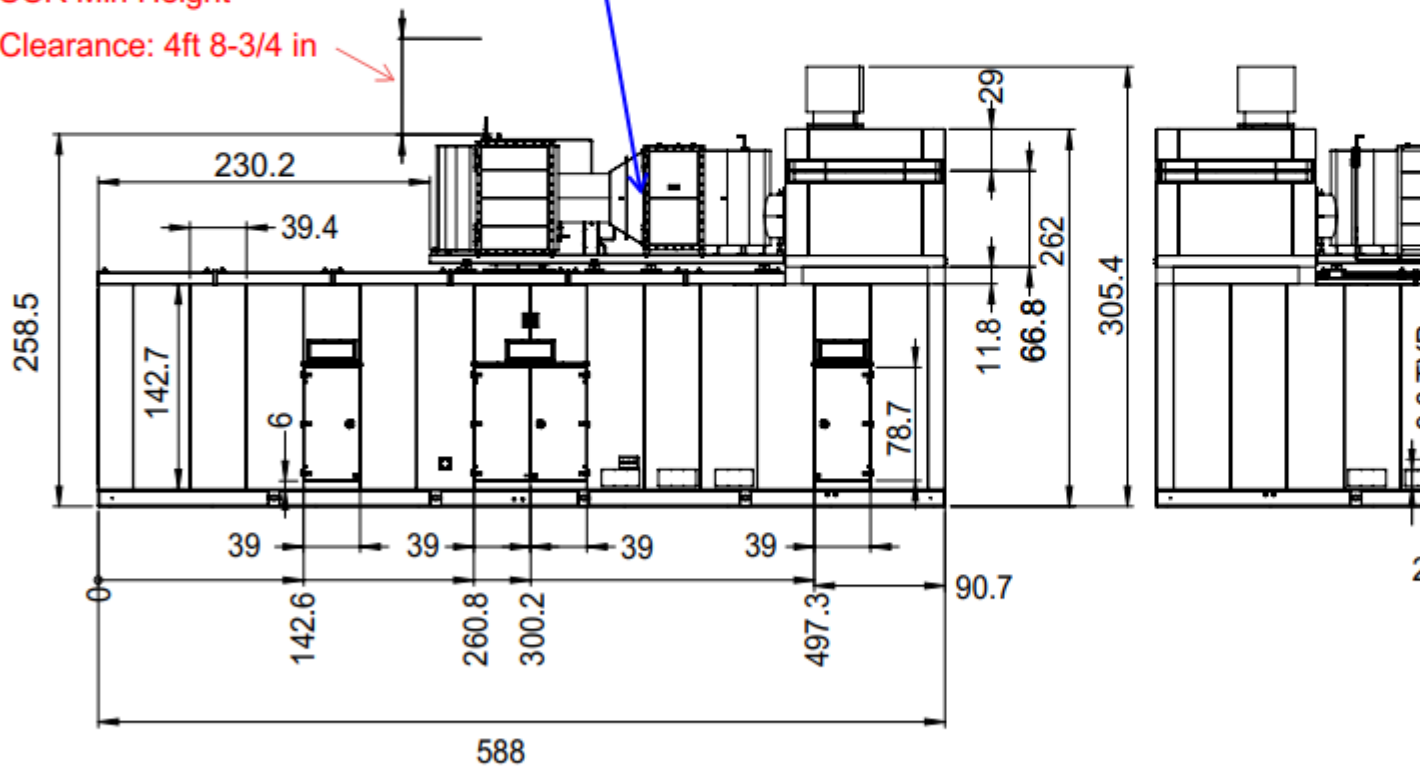
EWR-3711

PRELIMINARY
DO NOT USE FOR

JOHNSON MATTHEY DPF/SCR UNIT

SCR Min Height

Clearance: 4ft 8-3/4 in



Respectfully,



Abner Enriquez | Application Engineer
562-463-6035 Phone | 562-243-3909 Cell
aenriquez@quinnpower.com | www.quinnpower.com

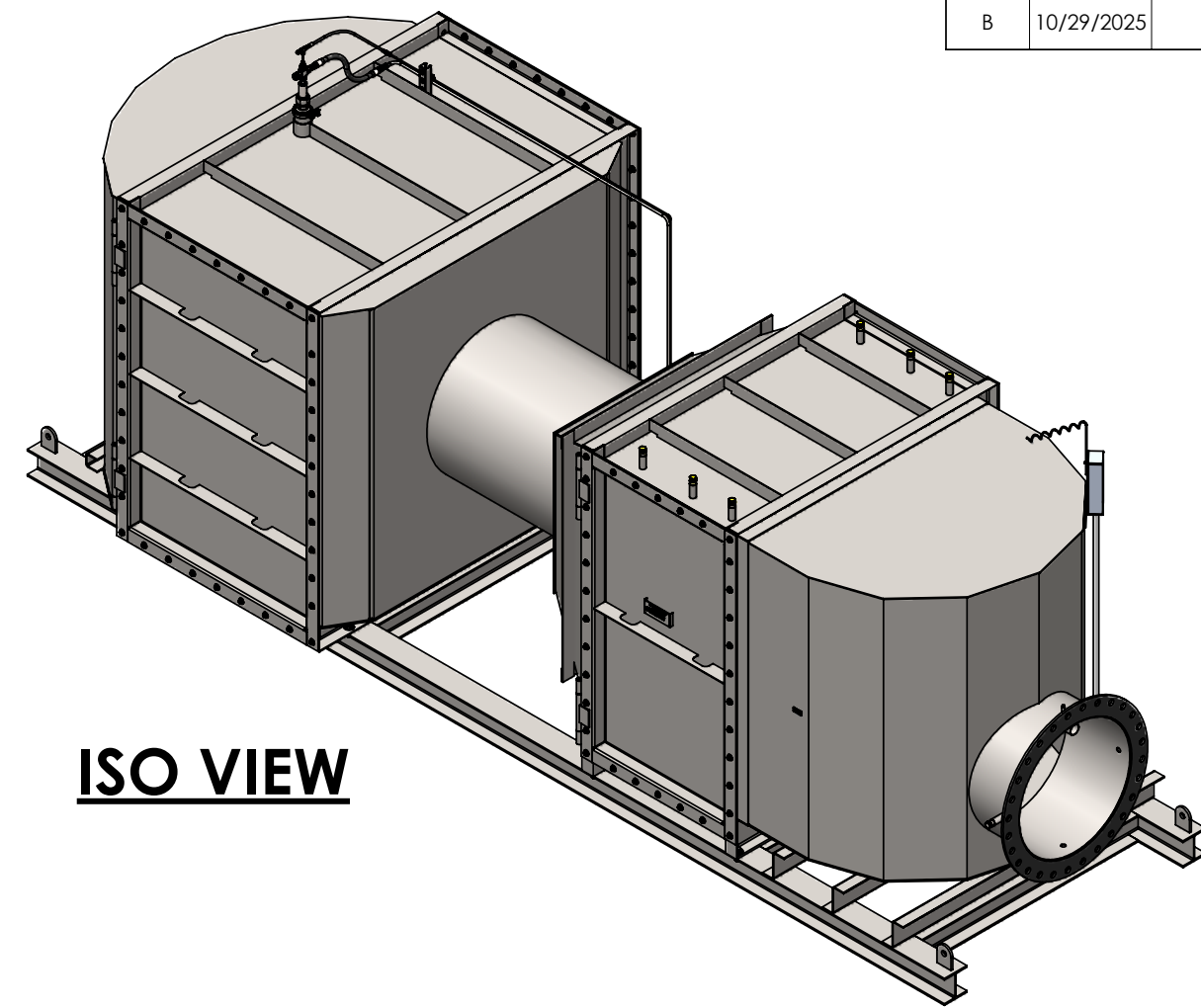
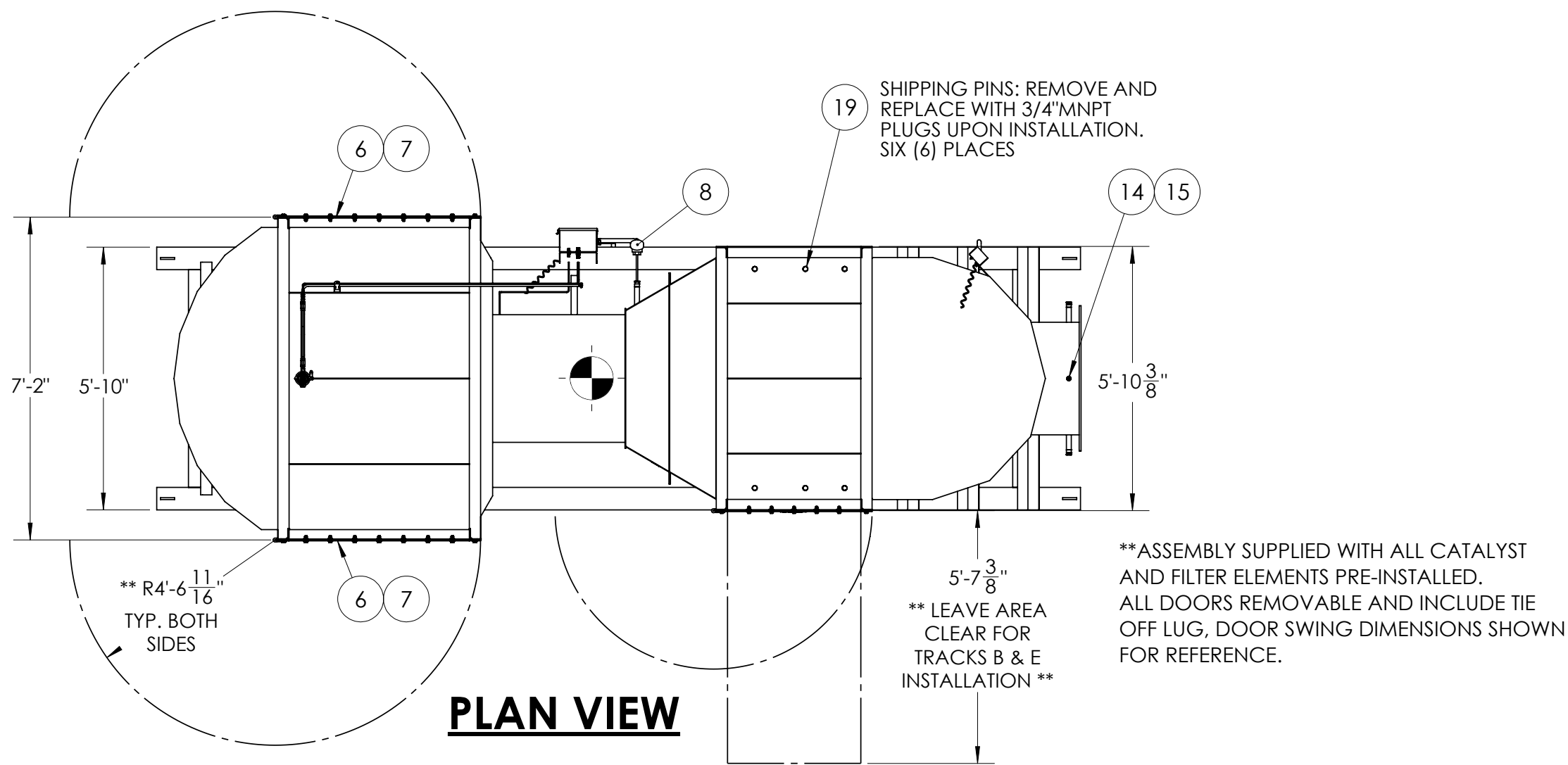
Full Load Design Parameters	
Engine	CAT 3516E
Engine kW Rating	3000
Application	Standby Power
Operating Hours per Year	~
Fuel	Ultra-Low Sulfur Diesel
Exhaust Gas Flow Rate	23,971 cfm (wet)
Full Load Exhaust Gas Temperature	903°F (1)
Design Exhaust Oxygen Concentration	10% (assumed)
Design Moisture Concentration	8% (assumed)

(1) THE UREA INJECTION PERMISSIVE IS 575° F. AND THE 100% LOAD TEMPERATURE IS 903° F

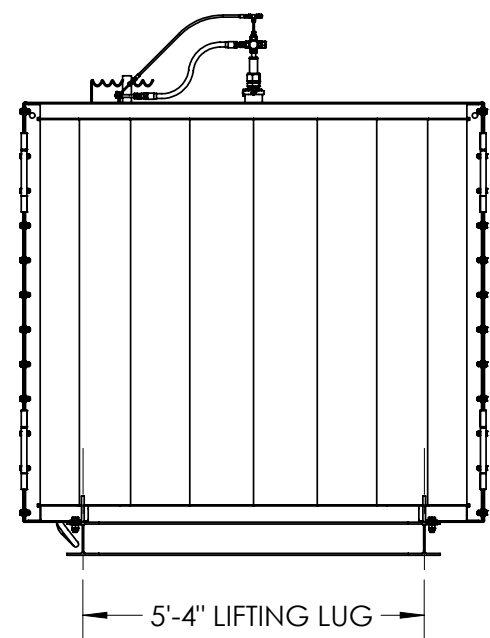
Full Load SCRT System Data	
Max. Ammonia Slip	10 ppmvd @ 15% O ₂
Estimated 32.5% Urea Usage	14.6 USGPH
Estimated System Pressure Loss(2)	19.6" wc with clean filters and ~ 25.2" wc when filters are soot coated and need regeneration
Max. Allowable Engine Backpressure	27" wc
Est. Overall Sound Insertion Loss	40-45dBA

(2) Defined across JM components

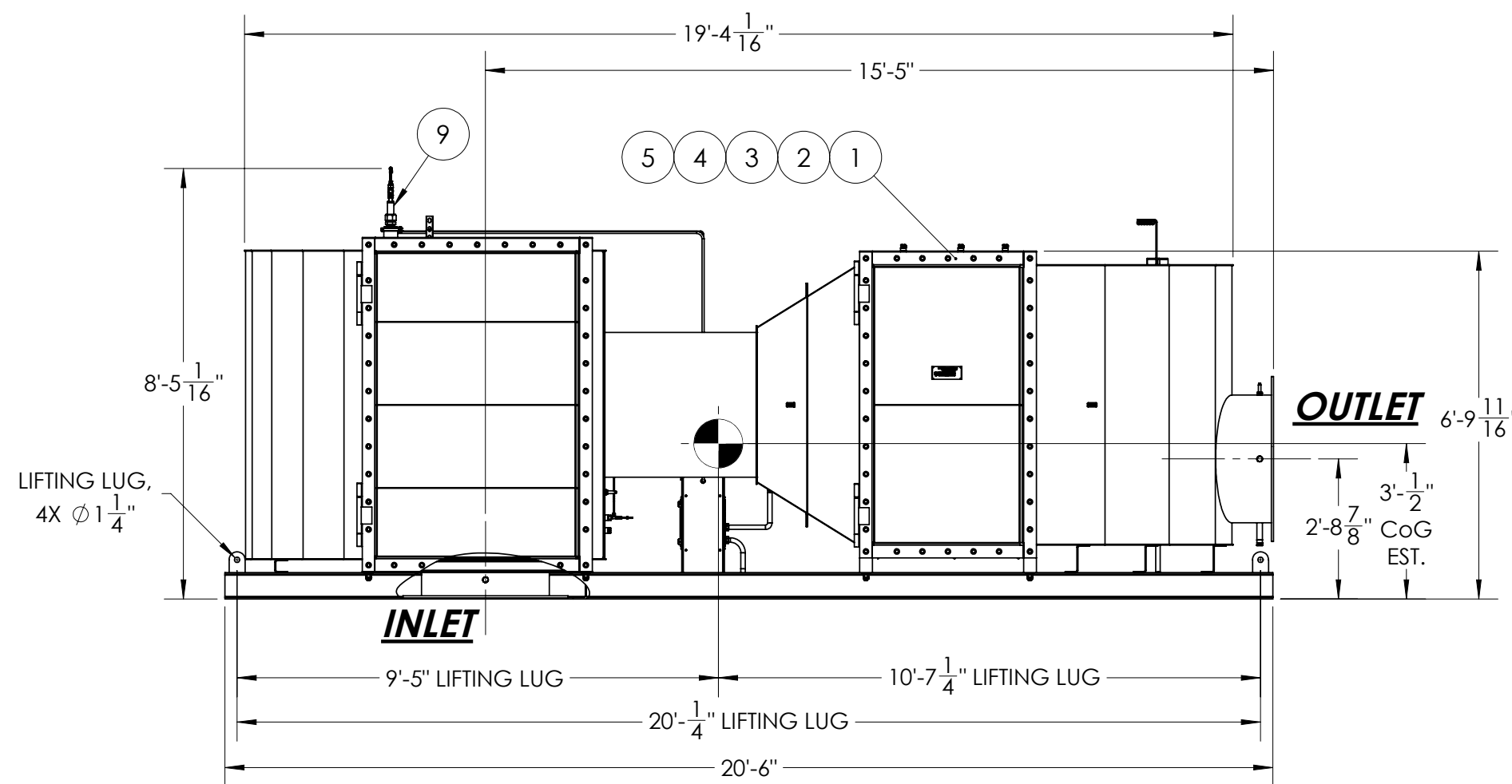
Full Load Emissions Data				
Emission	Catalyst Inlet	Catalyst Outlet	Reduction %	Tier 4F Reference
NOx	6.76 g/bhp-hr	0.50 g/bhp-hr	92.4%	0.50 g/bhp-hr
CO	1.20 g/bhp-hr	0.24 g/bhp-hr	80%	2.60 g/bhp-hr
HC	0.06 g/bhp-hr	0.018 g/bhp-hr	70%	0.14 g/bhp-hr
PM	0.06 g/bhp-hr	0.009 g/bhp-hr	85%	0.02 g/bhp-hr



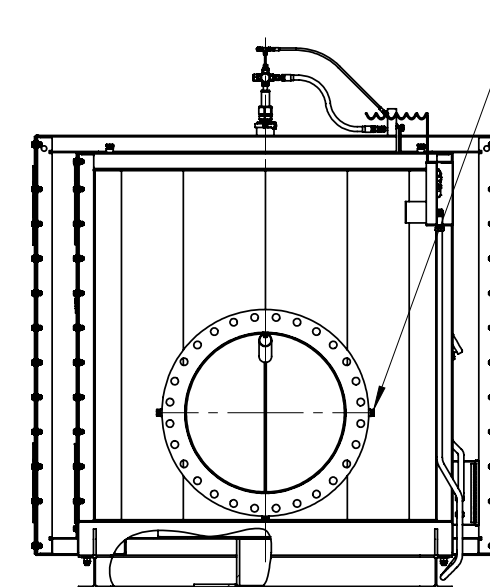
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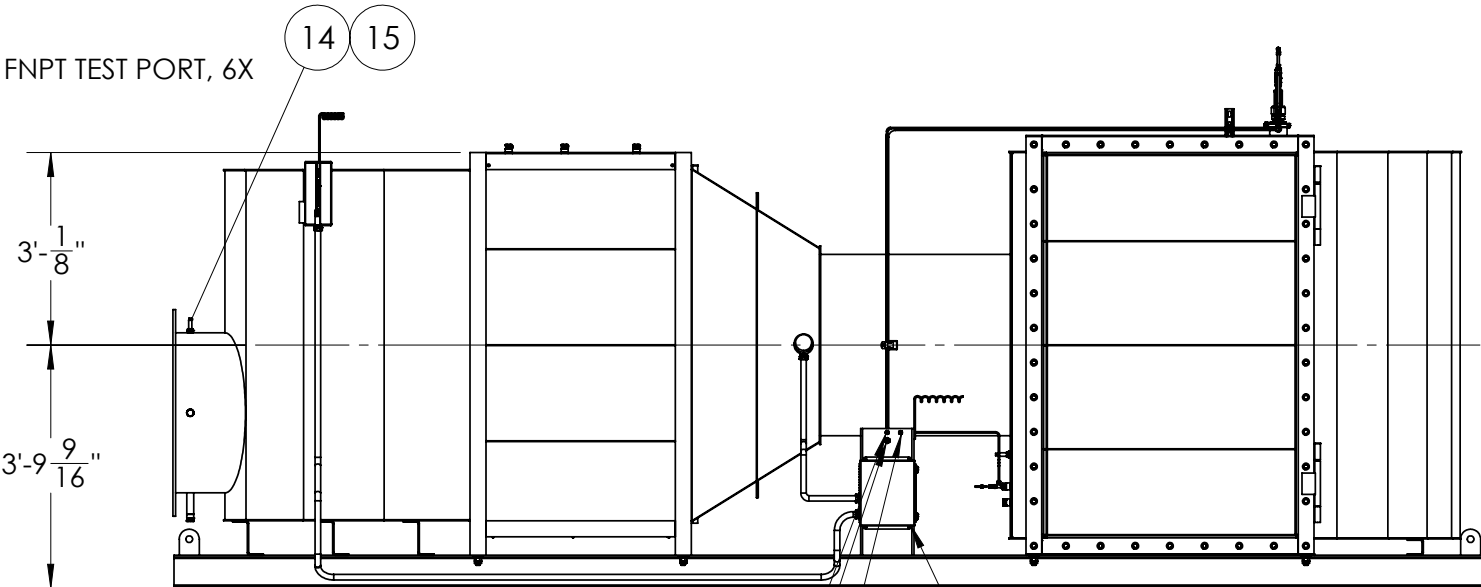
SIDE VIEW



ELEVATION VIEW



SIDE VIEW



ELEVATION REAR VIEW

- JUNCTION BOX:
 - (1) 50 FT LENGTH OF 18/2 AWG SHIELDED, PRE-WIRED TO TEMPERATURE TRANSMITTER
 - (2) 50FT LENGTHS OF NOX SENSOR COMMUNICATION CABLE, PRE-WIRED TO INSTALLED NOX SENSORS AT ASSEMBLY. CONTINUOUS LENGTH TO DOSING PNL DO NOT SPLICE
 - (1) 50 FT LENGTH OF K-TYPE THERMOCOUPLE WIRE

ITEM NO.	DESCRIPTION	QTY.	JM PART NUMBER	MATERIAL	WEIGHT
1	cSCRT 24/22S10x10-2+1-30/30	1	202-C0039988	SS	13063
2	TRACK (B), UPPER FLOATING TRACK	2		409 SS	41.75
3	TRACK (E), HORIZONTAL TRACK	8		409 SS	35.95
4	TRACK (F), SM DIVIDING TRACK	40		409 SS	3.55
5	SCR E-FRAME CATALYST	50	30007558		41.46
6	OXIDATION CATALYST	22	30006504		18.15
7	SOOT FILTER	22	30006815		31.98
8	TEMPERATURE SENSOR W/THERMOWELL & TRANSMITTER	1	10010063	316 SS	1.46
9	INJECTION LANCE WITH NOZZLE	1	202-C0039990	316 SS	
10	INJECTION CONTROL SYSTEM, 60L (STAINLESS STEEL)	1			
	DATA LOGGER				
	NOx SENSOR COMMUNICATIONS				
11	REAGENT FILTER ASSEMBLY	1	10010039		
12	SOOT ALERT WITH INSTALLATION KIT	1	10009768		
13	RECIPRICATING AIR COMPRESSOR W/60 GALLON TANK, AUTO START/STOP, 200-208VAC/3PH/60Hz	1	2340L5		435
	COMBINATION REGULATOR / FILTER, 3/4" NPT	1			
	OIL / WATER SEPARATOR	1			
14	NOx SENSOR, 24V	2	10009774		
15	NOx SENSOR CAN BUS CABLE, 50 FT. LG.	2	10010050		
16	BOLT AND GASKET KIT, 30" ANSI	2			
17	REAGENT STORAGE TANK, (330 gal.)	1			
	TANK FITTING, REDUCER AND CORD GRIP	1	SEC-ENG		
18	SUBMERSIBLE TANK LEVEL SENSOR	1	10010036		
19	SHIPPING PIN - 3/4"MNPT PLUG (shipping pin replacement)	4	SEC ENG	CS	
20	SCR O&M MANUAL (SEC-EN-M-029 SCR OM)	1	18007		
21	SOOT ALERT MANUAL	1	SEC-EN-M-004		

NOTES:

1. REAGENT (UREA) INJECTION / EMISSIONS TREATMENT WILL NOT OCCUR AT SYSTEM TEMPERATURES BELOW 500°F. STATED ENGINE FULL LOAD TEMPERATURE IS 903°F AT FULL LOAD.
2. ALL PIPING AND WIRING UP TO JM SUPPLIED JUNCTION BOX AND BULKHEAD FITTINGS, BY OTHERS.
3. DOSING PANEL REQUIRES FLOODED INLET OF CLEAN 32.5% OR GREATER REAGENT, IF REAGENT FORWARDING IS REQUIRED SUPPLY PRESSURE NOT TO EXCEED 10psig
4. 120VAC / 1-PHASE / 60 HZ ELECTRICAL SERVICE REQUIRED TO SUPPLIED CONTROL / DOSING PANEL, BY OTHERS.
5. SOOT ALERT CONTROL MODULE IS TO BE PRE-MOUNTED TO THE SIDE OF THE DOSING CABINET AND POWERED FROM THE 24VDC POWER SUPPLY WITHIN THE DOSING PANEL.
6. AIR SUPPLY: ~8 cfm OF FILTERED (40-MICRON ELEMENT OR LESS) AND REGULATED AIR BETWEEN 80 to 110 psig REQUIRED.
7. SYSTEM CALL SIGNAL - DRY CONTACT INDICATING ENGINE RUN REQUIRED, BY OTHERS.
8. ENGINE LOAD SIGNAL - (4-20ma) SIGNAL RELATIVE TO ENGINE LOAD TO CONTROL / DOSING PANEL FOR EACH ENGINE REQUIRED, BY OTHERS.
9. UNIT MOUNTED TEST PORTS ARE FOR COMMISSIONING AND FIELD REQUIRED TESTING, AND ARE NOT TO BE USED FOR EPA STACK TEST.

**** ASSEMBLY LIFT WEIGHT IS 13,063 lbs. CENTER OF GRAVITY INDICATED WITHIN ELEVATION AND PLAN VIEWS. SUPPORTING STRUCTURE UNDER ASSEMBLY TO BE SIZED FOR MINIMUM OF 14,500 lbs. (Compact) SCRT ASSEMBLY WITH SPARE FILTERS & CATALYST LAYER FILLED/UTILIZED)**

Shipping Dims			JM Johnson Matthey	Quinn Power Systems Soto Data Center				cSCRT 24/22S10x10-2+1-30/30 GENERAL ARRANGEMENT										
Length	Width	Height																
Material																		
Finish																		
Weight (lbs) 7926.50			Model Rev.			THIS DRAWING IS OUR PROPERTY AND ALL THE INFORMATION CONTAINED THEREON IS TO BE KEPT CONFIDENTIAL BY THE RECIPIENT AND NOT TO BE USED OR DISCLOSED TO ANY OTHER PERSON, FIRM OR CORPORATION WITHOUT OUR EXPRESS CONSENT; AND THIS DRAWING SHALL NOT BE USED, DIRECTLY OR INDIRECTLY, EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE PRESERVED												
			DRAWN BY DB		CHECKED APW		DATE 24 Oct 25		WHERE USED			DISCIP.	PROJECTION: THIRD ANGLE		SHEET NO. 1 of 2		SIZE D	
			ENGINEER BW		APPROVED APW		SCALE 1:36		EWR NO. 03711		SO NO.		DRAWING NO. 202-C0039989				SHT. -1-	REV. B

PRELIMINARY

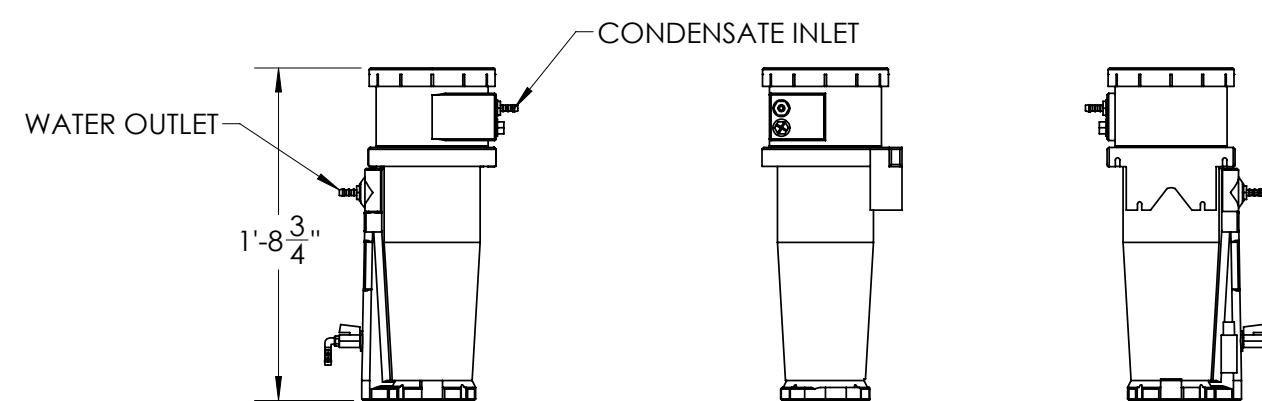
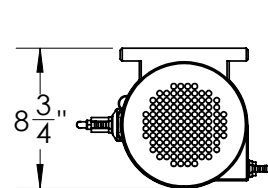
**ALL DIMENSIONS & WEIGHTS ARE FOR REFERENCE ONLY,
CATALYST VOLUME, CONFIGURATION AND
PERFORMANCE REQUIREMENTS MAY EFFECT
FINAL DIMENSIONS.**

30", 150 LB. ANSI FLANGE
PATTERN T=1/2", BOLT
HOLES TO STRADDLE
CENTERLINE, 2 PLACES

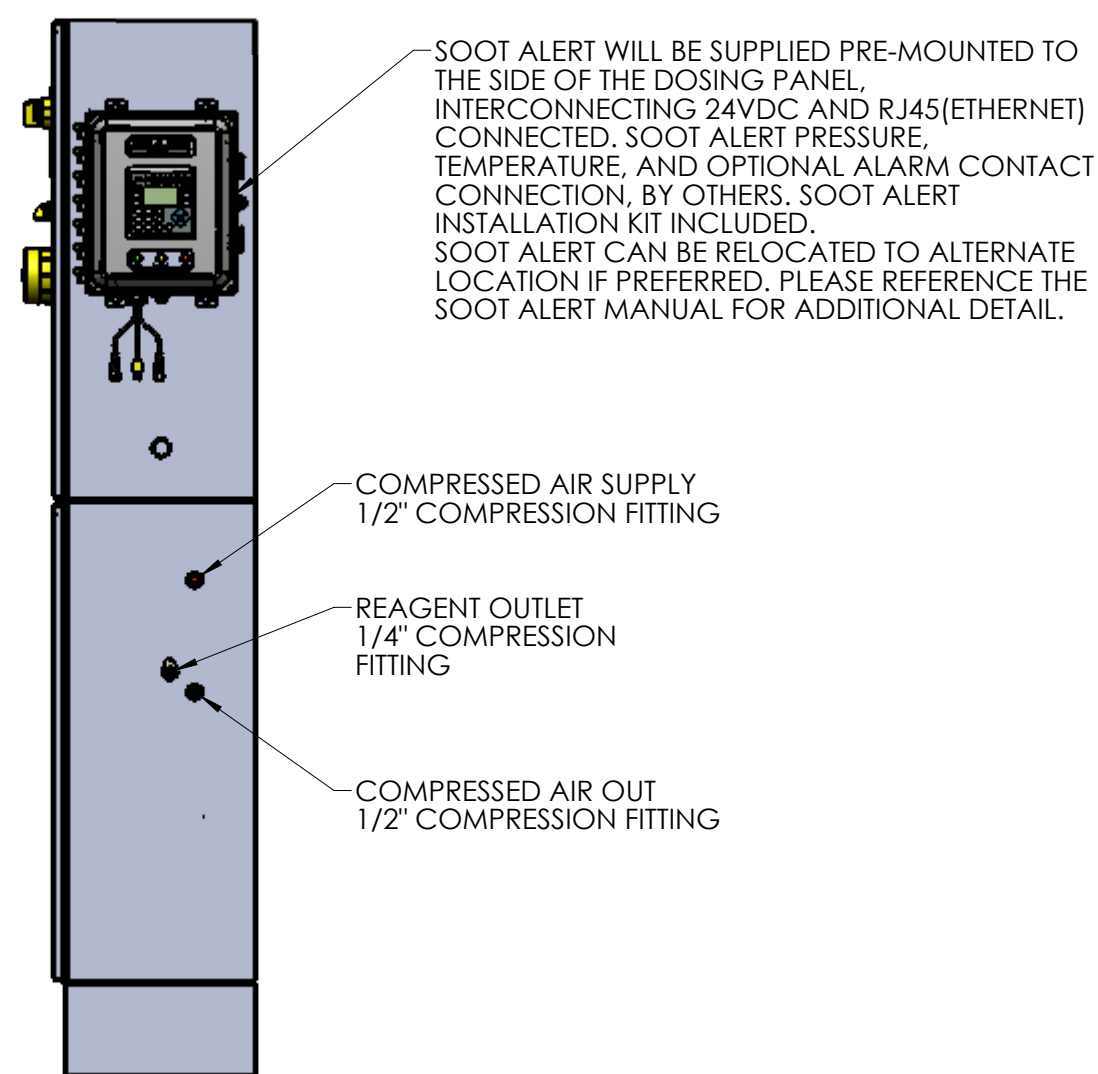
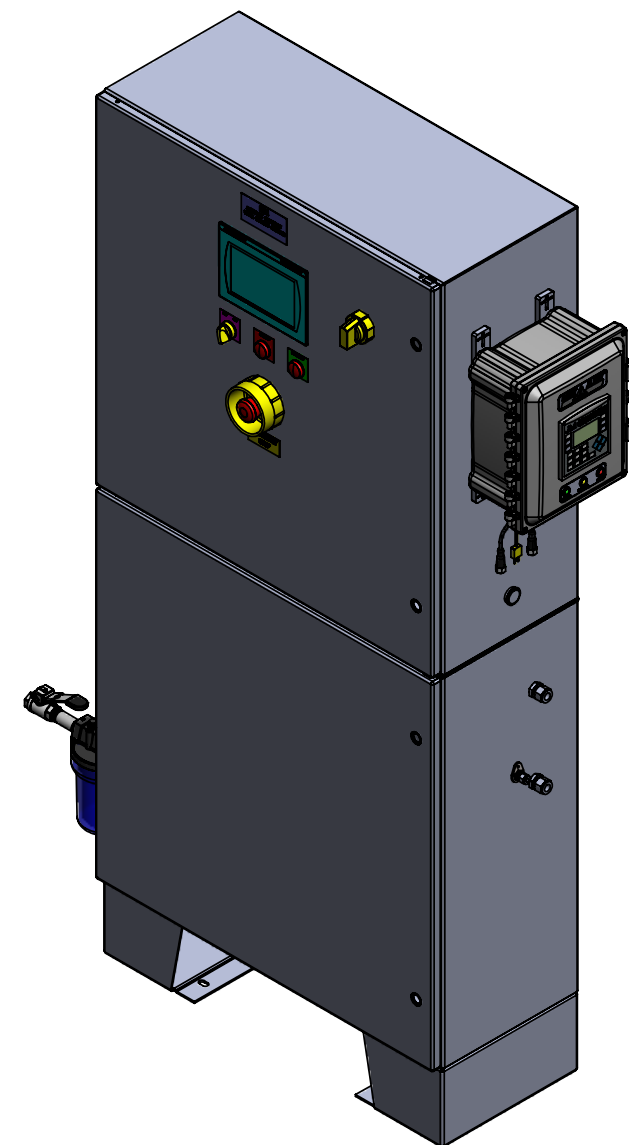
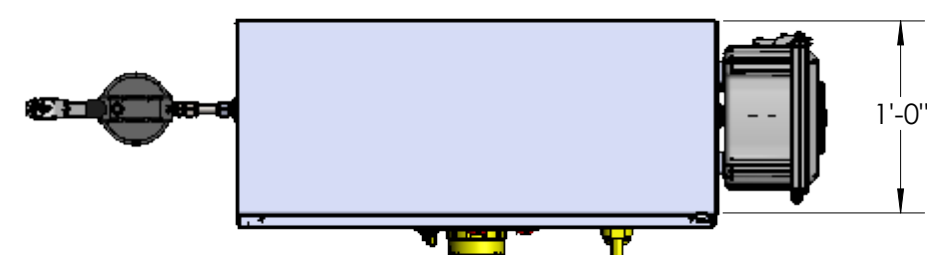
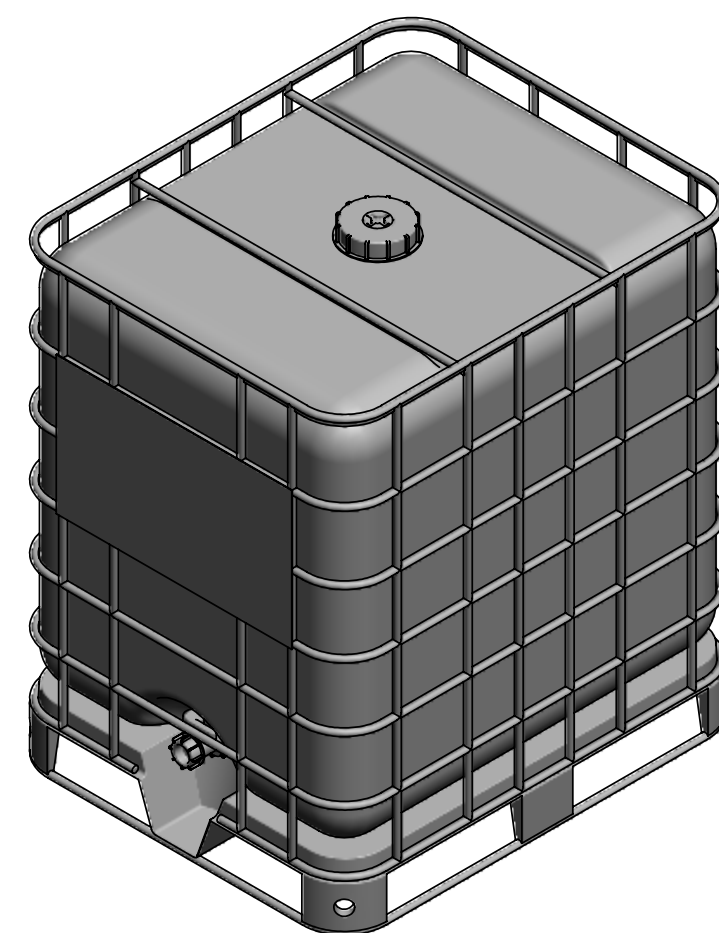
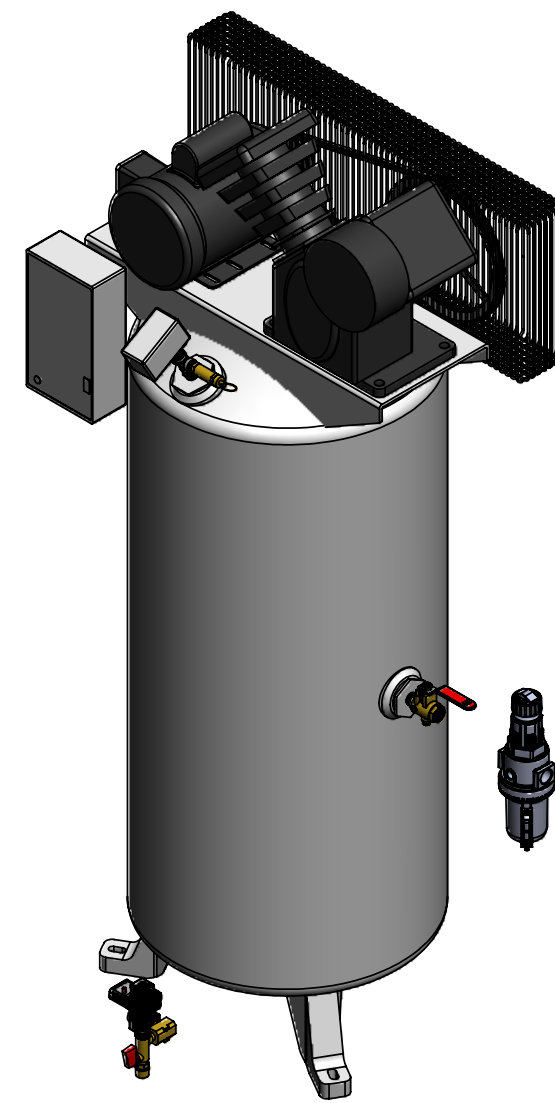
W6X20 I-BEAM CONSTRUCTION ASSEMBLY
BASE. SUPPORT OF ASSEMBLY PER PROVIDED
WEIGHTS, BY OTHERS, RECOMMENDED
ATTACHMENT OF ASSEMBLY TO FOUNDATION
OR STRUCTURE IN MINIMUM OF 4 PLACES.
USE OF STITCH WELDING, BEAM CLAMPS, OR
3/4" HARDWARE ARE ALL ACCEPTABLE.
MOUNTING HOLES IN BOTTOM FLANGE OF I-
BEAM BASE INTENTIONALLY NOT INCLUDED
DUE TO VARIANCES OF FINAL INSTALLATION
LOCATION. ALWAYS FOLLOW LOCAL
CODES WHERE APPLICABLE.

BOTTOM VIEW

REVISIONS					
REV.	DATE	DESCRIPTION	BY	ENG	APPROVED
A	10/24/2025	ISSUED FOR APPROVAL	DB	BW	
B	10/29/2025	CHANGED TO END OUT CONFIG.	DB	BW	



OIL / WATER SEPARATOR
(INCLUDED WITH AIR COMPRESSOR PACKAGE)



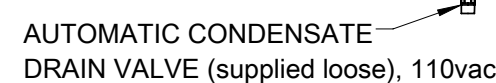
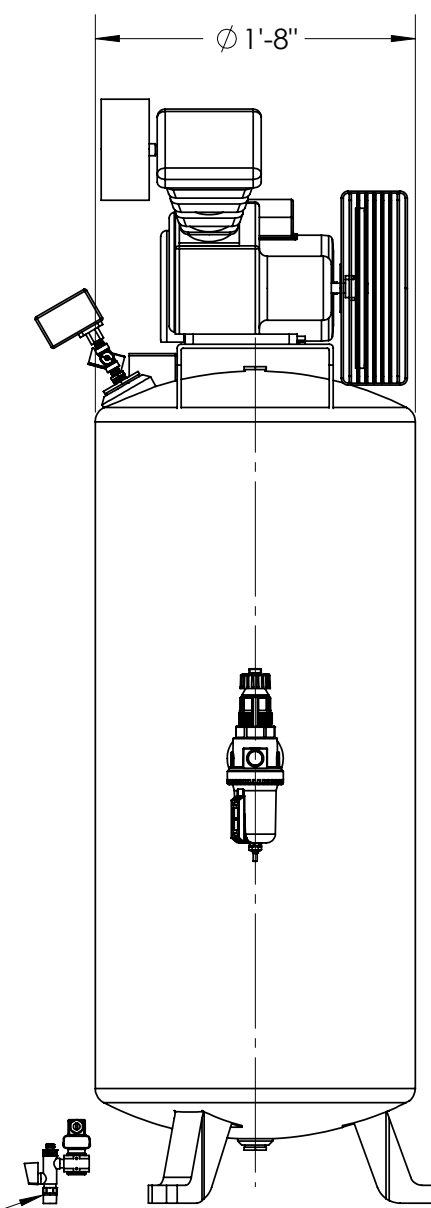
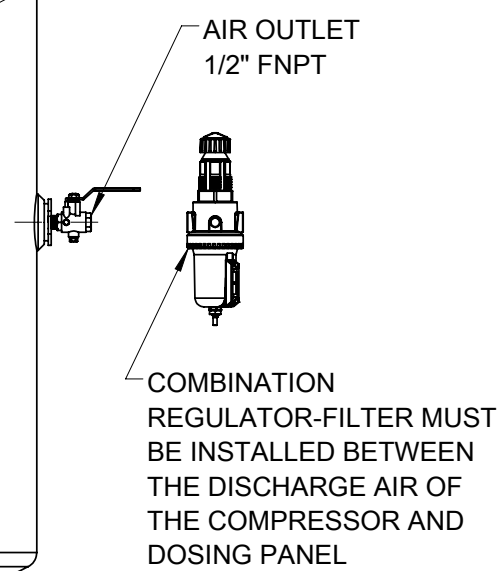
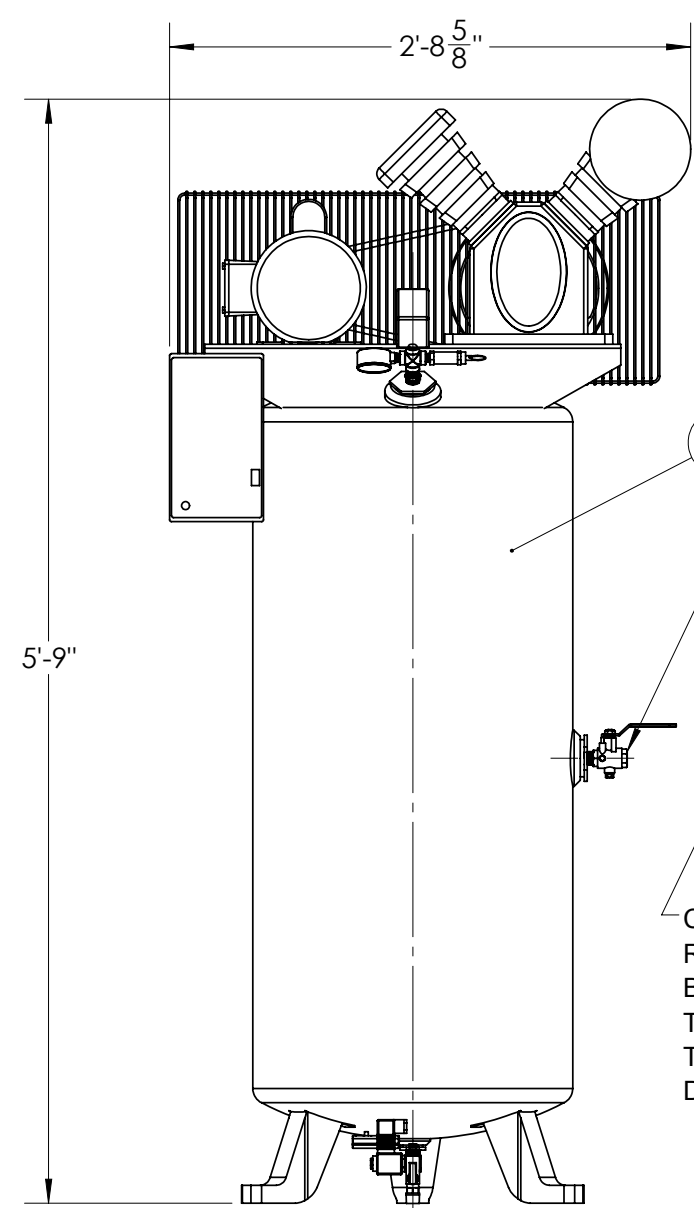
CONTROL & DOSING PANEL

CONTROL AND DOSING PANEL ASSEMBLY TO BE PLACED IN A LOCATION WHICH
 ALLOWS FOR FEASIBLE FIELD WIRING CONNECTIONS, ACCESS TO UREA SUPPLY, AND
 REASONABLE TUBE LENGTHS BETWEEN THE DOSING ASSEMBLY AND THE REAGENT AND
 AIR BULKHEAD FITTINGS OF THE CompactSCRT ASSEMBLY.

OUTDOOR PLACEMENT OF CONTROL AND DOSING PANEL ASSEMBLY IS NOT RECOMMENDED. HEATING AND COOLING OF THE DOSING CABINET ARE NOT INCLUDED, BUT AVAILABLE UPON REQUEST.

POSITIVE DISPLACEMENT METERED DOSING PUMP, INTERNAL TO JM DOSING CONTROL ASSEMBLY, UTILIZED FOR PRECISE INJECTION OF REAGENT INTO THE SYSTEM FOR THE TREATMENT OF NO_x EMISSIONS. FLOODED (GRAVITY FED) REAGENT SUPPLY FROM STORAGE TANK REQUIRED AT PUMP INLET. MAXIMUM PUMP LIFT CAPACITY DURING PRIMING 1.5m(4.9ft) AND 3m(9.8ft) DURING OPERATION.

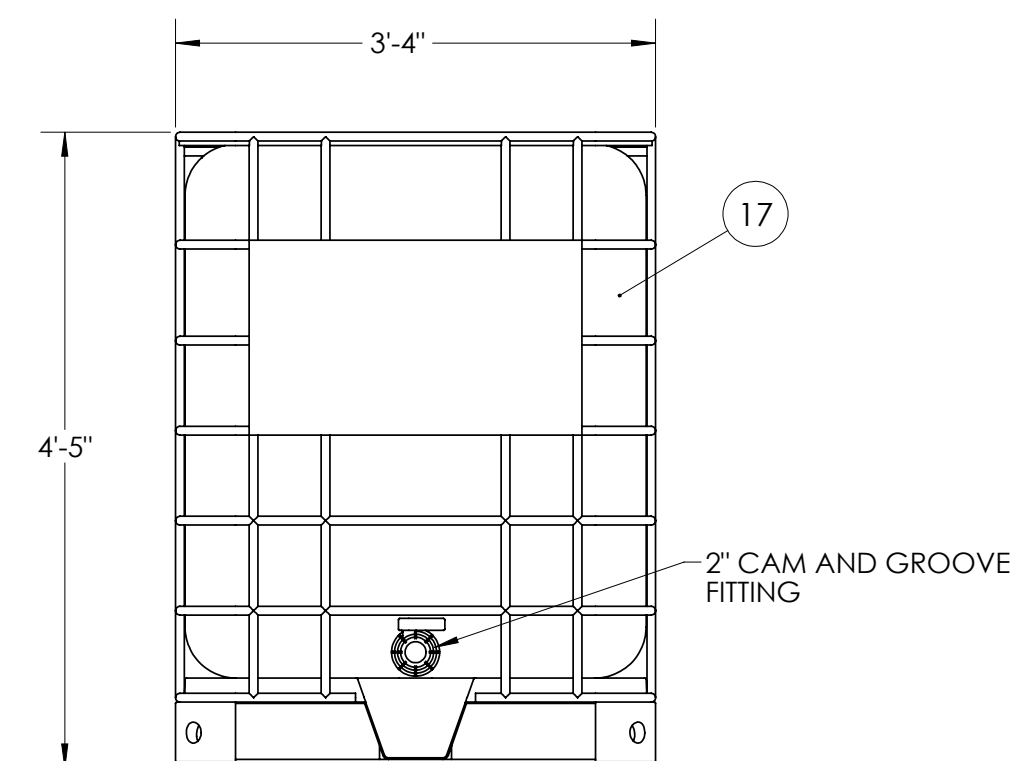
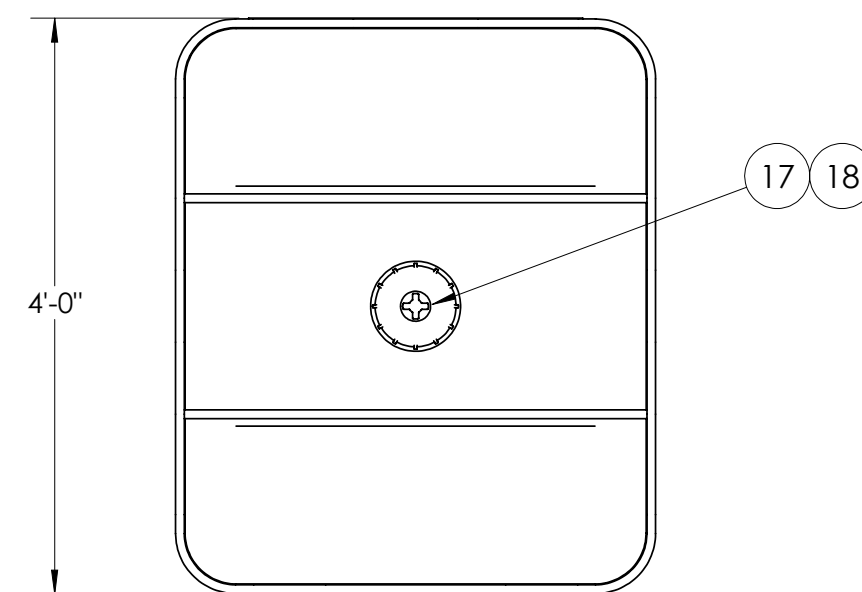
REAGENT FORWARDING ONLY REQUIRED IF DOSING CONTROL PANEL IS TO BE LOCATED AT AN ELEVATION IN EXCESS OF 4.9ft GREATER THAN THE LIQUID LEVEL OF THE STORAGE TANK.



RECIPROCATING
AIR COMPRESSOR PACKAGE
WITH AUTOMATIC CONDENSATE DRAIN

NOTES:

1. ADEQUATE AIR CIRCULATION AROUND THE COMPRESSOR MUST BE MAINTAINED.
2. FOUNDATION OR FLOOR MUST BE LEVEL AND SUPPORT ALL FEET EQUALLY.
3. FOUNDATION BOLTS SHOULD PROJECT THRU NUTS AT LEAST 1/2" TO ALLOW FOR LEVELING.
4. ALLOW AT LEAST 12" CLEARANCE MIN. ON ALL SIDES FOR PROPER AIR CIRCULATION.



NOTES:

1. DIESEL EXHAUST FLUID (DEF) OR UREA SHOULD BE STORED IN COOL, DRY, AND VENTILATED PLACE OUT OF DIRECT SUNLIGHT
2. FOR OPTIMAL FLUID SHELF LIFE AMBIENT STORAGE TEMPERATURES SHOULD BE MAINTAINED BETWEEN 12°F AND 86°F
3. REFERENCE FLUID SUPPLIER SDS FOR ADDITIONAL DETAIL

REAGENT STORAGE TANK
330 GALLONS

Shipping Dims				QUINN POWER SYSTEMS SOTO DATA CENTER		cSCRT 24/22S10x10-2+1-30/30 GENERAL ARRANGEMENT									
Length	Width	Height													
Material															
Finish															
Weight (lbs)			Model Rev.			THIS DRAWING IS OUR PROPERTY AND ALL THE INFORMATION CONTAINED THEREON IS TO BE KEPT CONFIDENTIAL BY THE RECIPIENT AND NOT TO BE USED OR DISCLOSED TO ANY OTHER PERSON, FIRM OR CORPORATION WITHOUT OUR EXPRESS CONSENT; AND THIS DRAWING SHALL NOT BE USED, DIRECTLY OR INDIRECTLY, EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE PRESERVED									
DRAWN BY		CHECKED	DATE		WHERE USED			DISCIP.	PROJECTION:		SHEET NO.	SIZE			
DB		BW	24 Oct 25						THIRD ANGLE 		2 OF 2	D			
ENGINEER		APPROVED	SCALE		EWR NO.		SO NO.		DRAWING NO.		SHT.	REV.			
BW		BW	1:12		03711				202-C0039989 -2-			B			

REVISIONS			
REV.	DESCRIPTION	BY	APPROD.
0	INITIAL RELEASE	B.E.W. 10-25-25	B.E.W. 10-25-25

PIPING SYMBOLS	
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	PLUG VALVE
	NEEDLE VALVE
	BUTTERFLY VALVE, NO WITH SPRING RETURN
	BUTTERFLY VALVE
	CHECK VALVE
	3-WAY VALVE
	ANGLE VALVE
	POST INDICATOR VALVE
	SLIDE VALVE
	PISTON SLIDE VALVE, NC WITH SPRING RETURN
	DIAPHRAGM ACTUATED CONTROL VALVE
	PISTON OPERATED VALVE
	SOLENOID VALVE NORMALLY OPEN (NO)
	SOLENOID VALVE NORMALLY CLOSED (NC)
	MOTOR OPERATED VALVE
	MANUALLY OPERATED VALVE
	SELF ACTIVATED VALVE
	PRESSURE OR VACUUM RELIEF VALVE
	PRESSURE/VACUUM RELIEF VALVE
	EJECTOR OR EDUCTOR
	UNION
	LINE BLIND
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	PIPE CAP
	PIPE CAP (SCREWED)
	BLIND FLANGE
	EXPANSION OR FLEX JOINT
	FLEXIBLE CONNECTION HOSE OR TUBING
	SAMPLE CONNECTION
	GOOSE NECK VENT
	ORIFICE TYPE FLOW ELEMENT
	FILTER

PIPING SYMBOLS	
	TURBINE OR PROPELLER TYPE FLOW ELEMENT
	VENTURI TUBE OR FLOW NOZZLE
	PITOT TUBE
	ROTAMETER
	Y-STRAINER
	PRESSURE RELIEF REGULATOR, SELF CONTAINED, WITH HANDWHEEL ADJ. SET POINT / PRESSURE INDICATOR
MISC PROCESS SYMBOLS	
	METERING PUMP WITH DIAPHRAGM
	CENTRIFUGAL BLOWER
	VANE PUMP
	3-WAY VALVE PILOT SUPPLY SPRING RETURN
	PULSATION DAMPENER
	PITOT TUBE
	NOx SENSOR
PIPING DATA	
LINE NUMBER DESIGNATION AA-BB-C-D-EE-WXZZZZ	
AA	= INTERNAL LINE SIZE
BB	= PIPING BASE MATERIAL DESIGNATION
C	= PIPING TYPE
D	= INSULATION PURPOSE DESIGNATION
EE	= PIPE SERVICE
XXXXX	= UNIQUE LINE NUMBER
PIPE MATERIAL CODES	
BA	BLACK IRON PIPE
CA	CARBON STEEL
CB	GALVANIZED CARBON STEEL
LA	TEFLON LINED PIPE
LB	POLYPROPYLENE LINED PIPE
LC	GLASS LINED
MA	CEMENT LINED DUCTILE IRON
MB	CAST IRON
MC	DURIRON
NA	HASTELLOY B2
NB	HASTELLOY C22
NC	HASTELLOY C276
ND	MONEL
NE	NICKEL
NG	INCONEL
NF	COPPER
PA	TEFLON
PB	POLYPROPYLENE
PC	POLYVINYL CHLORIDE(PVC)
PD	CHLORINATED POLYVINYL CHLORIDE(CPVC)
PE	FRP
PF	BONDED PFA COMPOSITE
PG	BONDED FEP COMPOSITE
SA	304 STAINLESS
SB	316 STAINLESS
SC	904 STAINLESS
PIPING TYPE CODES	
T	TUBE
P	PIPE
INSULATION CODES	
A	ANTI-SWEAT
C	COLD CONSERVATION
F	FIRE PROTECTION
H	HEAT CONSERVATION
N	NONE
P	PERSONAL PROTECTION
S	SOUND
PIPE SERVICE CODES	
CA	COMPRESSED AIR
CW	COLD WATER
EX	EXHAUST
HW	HOT WATER
O	OXYGEN
NG	NATURAL GAS
NO	NOX
PW	PROCESS WATER
U	UREA

INSTRUMENT IDENTIFICATION LETTERS					
FIRST-LETTER (4)			SUCCEEDING-LETTERS (3)		
LETTER	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (5,19)		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE (1)	USER'S CHOICE (1)	USER'S CHOICE (1)
C	USER'S CHOICE (1)			CONTROL (13)	
D	USER'S CHOICE (1)	DIFFERENTIALS (4)			
E	VOLTAGE		SENSOR (PRIM. ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)(4)			
G	USER'S CHOICE (1)		GLASS VIEWING DEVICE (9)		
H	HAND				HIGH (7,15,18)
I	CURRENT (ELECTRICAL)		INDICATE (10)		
J	POWER	SCAN (7)			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE (20)		CONTROL STATION (22)	
L	LEVEL		LIGHT (11)		LOW (7,15,18)
M	MOTOR	MOMENTARY (4)			MIDDLE INTERMEDIATE (7,15)
N	USER'S CHOICE (1)		USER'S CHOICE (1)	USER'S CHOICE (1)	USER'S CHOICE (1)
O	USER'S CHOICE (1)		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZER(4)			
R	RADIATION		RECORD (17)		
S	SPEED, FREQUENCY	SAFETY (8)			
T	TEMPERATURE			SWITCH (13)	
U	MULTIVARIABLE (6)		MULTIFUNCTION (12)	RELAY, COMPUTE, CONVERT (13,14,18)	
V	VIBRATION, MECHANICAL ANALYSIS (19)			VALVE, DAMPER, LOUVER (13)	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED (2)	X AXIS	UNCLASSIFIED (2)	UNCLASSIFIED (2)	UNCLASSIFIED (2)
Y	EVENT, STATE, OR PRESENCE (20)	Y AXIS			
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

MISC PROCESS SYMBOLS		INSTRUMENTS	
	DRIP SHIELD		LOCAL (FIELD) INSTRUMENT
	COMPRESSOR		INSTRUMENT ON LOCAL PANEL
	STORAGE TANK		INSTRUMENT ON MAIN PANEL CONSOLE
	DRAIN		PLC FUNCTION ON MAIN PANEL CONSOLE

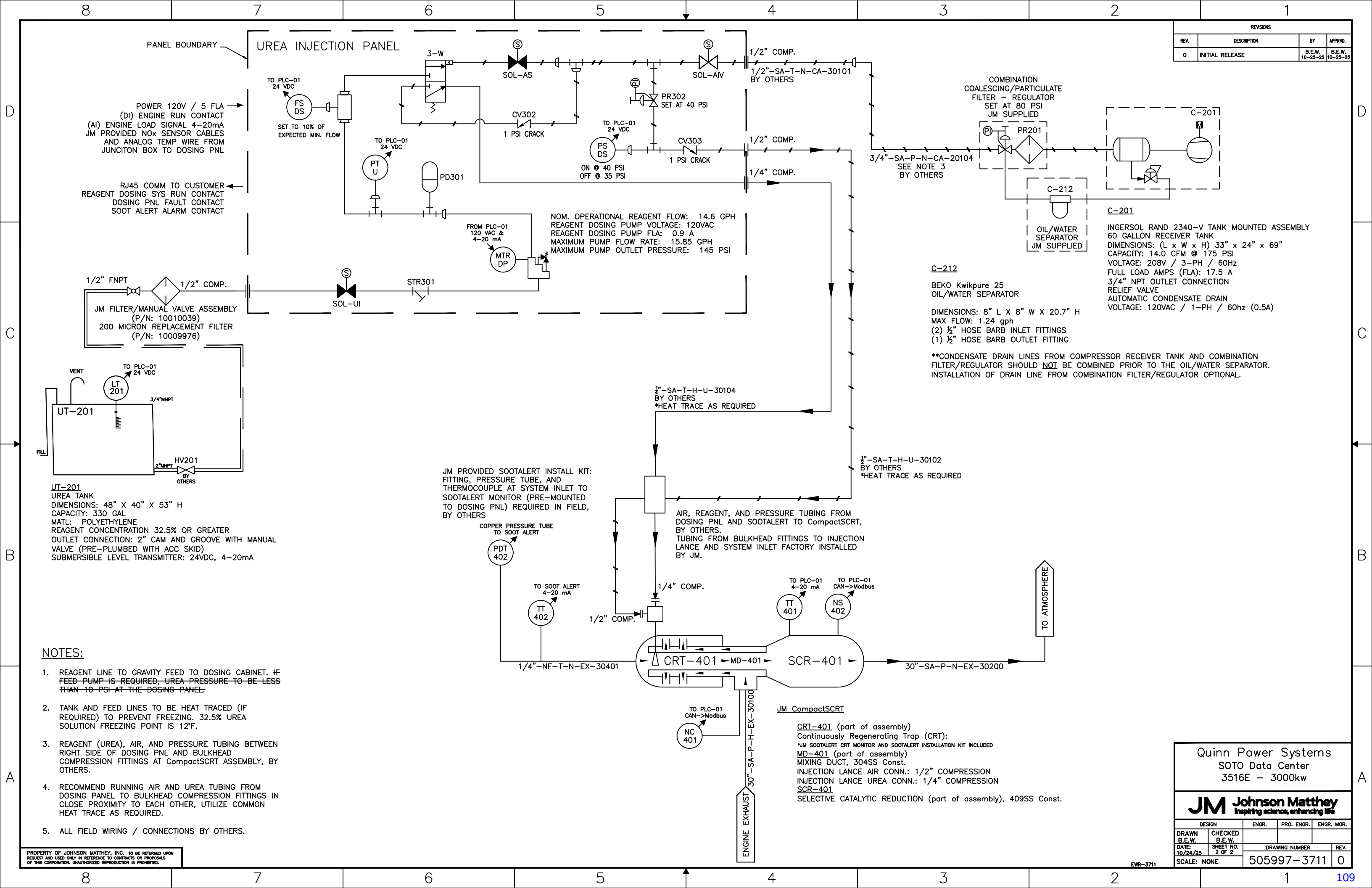
OFF PLOT CONNECTOR	
PRIMARY/SECONDARY LINES AND INSTRUMENT SIGNAL CONNECTOR	
SERVICE DESCRIPTION	
CONNECTOR NUMBER	XXXXX P&ID NUMBER
ORIGIN/DESTINATION	
UTILITY CONNECTOR	
	XXXXX P&ID NUMBER

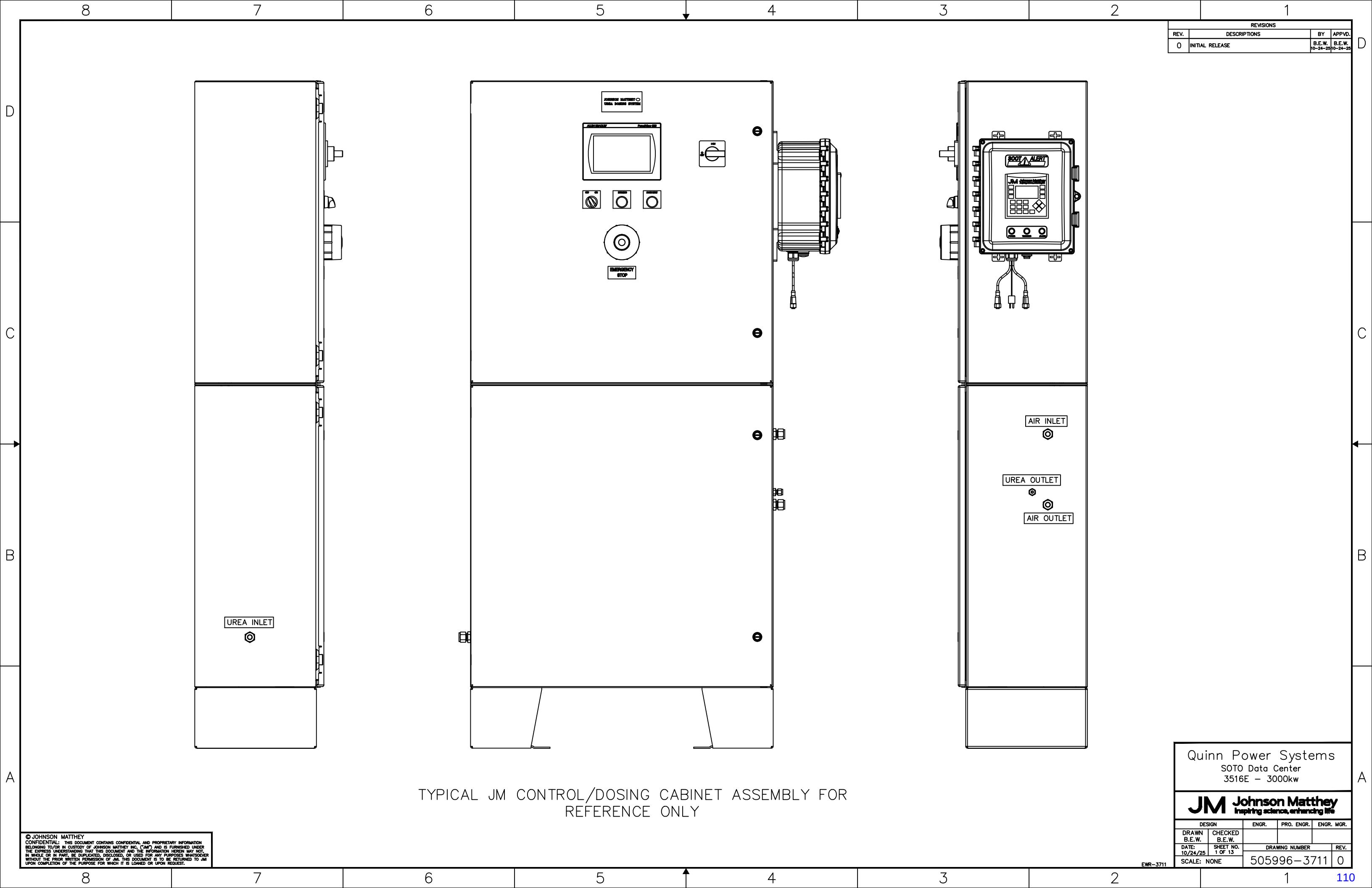
LINE SYMBOLS	
INSTRUMENT SUPPLY OR CONNECTION TO PROCESS	
PNEUMATIC SIGNAL	
ELECTRIC SIGNAL	
HEAT TRACED, INSULATED PROCESS LINE	
CUSTOMER SUPPLIED UNITS	

Quinn Power Systems
SOTO Data Center
3516E - 3000kw

JM Johnson Matthey
Inspiring science, enhancing life

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DATE: 10/24/25	SHEET NO. 1 OF 2	DRAWING NUMBER 505997-3711	REV. 0
SCALE: NONE			

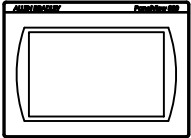




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REV.	DESCRIPTIONS	BY	APPVD.
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		10-24-25	10-24-25

UREA INLET

JOHNSON MATTHEY
SOTO DATA Dosing SYSTEM



EMERGENCY
STOP

AIR INLET



UREA OUTLET



AIR OUTLET



TYPICAL JM CONTROL/DOSING CABINET ASSEMBLY FOR
REFERENCE ONLY

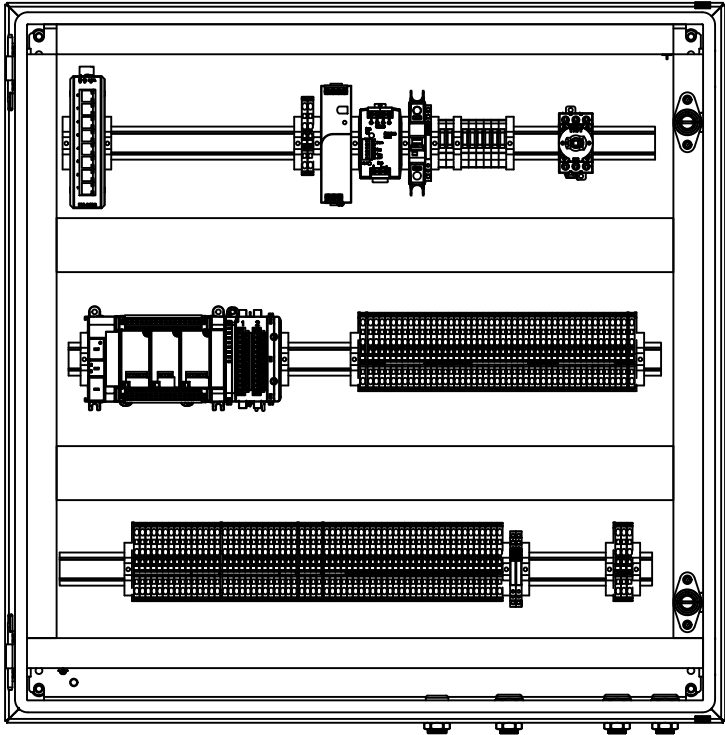
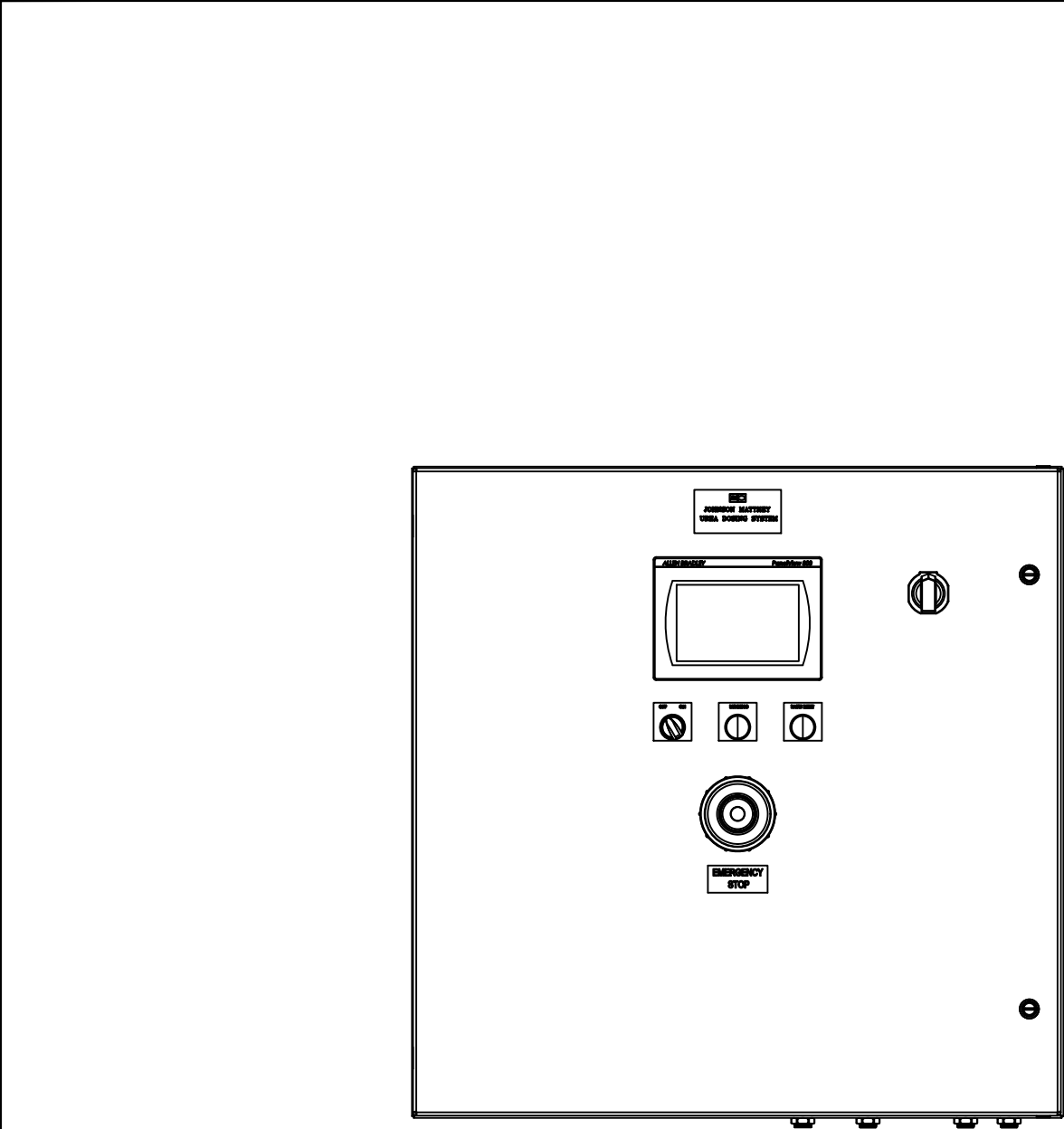
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EWR-3711



PANEL TO BE UL LISTED (usUL, cUL)
INDUSTRIAL CONTROL PANEL UL508A

- TAG LEGEND

LP-LIGHTED PUSHBUTTON
P - PUSHBUTTON
S - SWITCH
L - LIGHT
T - TAG
- NAME

L-GO
LP-ALM

PP-ES
S-PWR
TAG-JM

TAG-MD

LEGEND

RUNNING
FAULT
RESET
EMERGENCY STOP
OFF/ON
JOHNSON MATTHEY
UREA DOSING SYSTEM
MAIN
DISCONNECT

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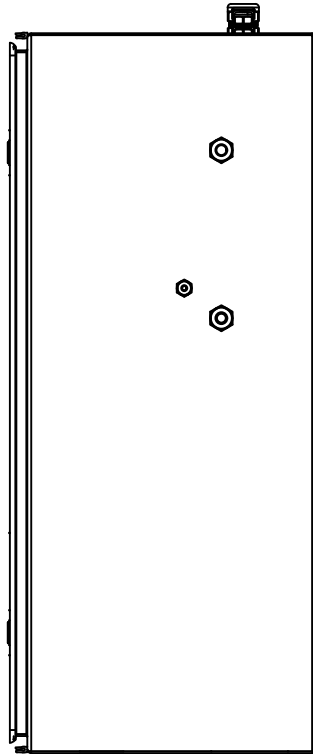
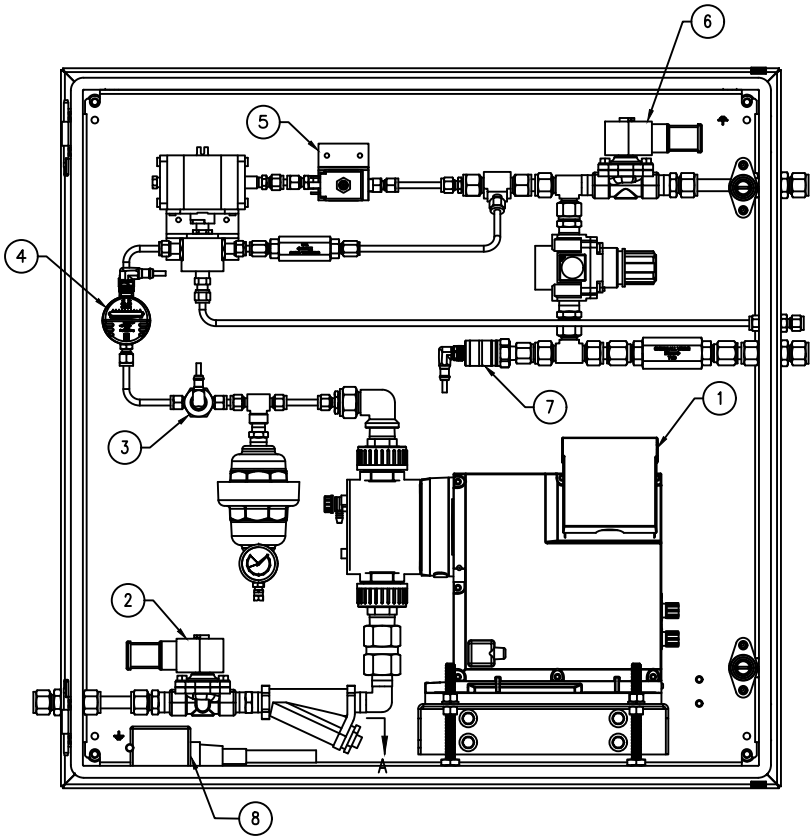
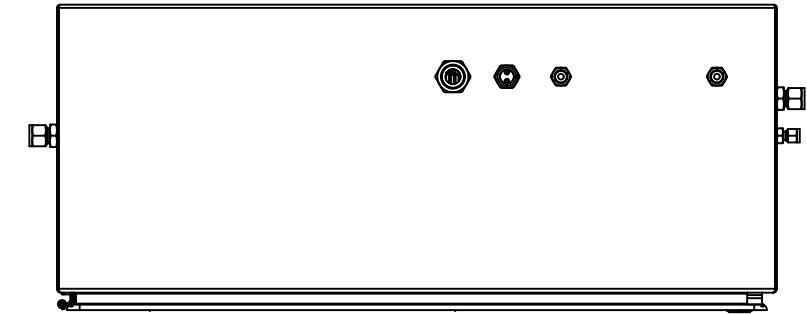
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1	DOSING PUMP
2	N.C. UREA INLET SOLENOID
3	UREA PRESSURE TRANSMITTER
4	FLOW SWITCH
5	3-WAY VALVE SOLENOID
6	N.O. AIR INLET SOLENOID
7	PRESSURE SWITCH
8	LEAK DETECTOR SWITCH



TYPICAL JM DOSING CABINET ASSEMBLY
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