



PARIC CORPORATION
77 Westport Plaza Suite 250
St. Louis, MO 63146
TEL: 636-561-9500
FAX: 636-561-9501

REQUEST FOR INFORMATION **DATE:** December 16, 2016 **NO.:** RFI-386

To: Cannon Design

Attn: Kelvin Patel

From: Paric Corporation

Requested By: Devin Gates

Project Name: 15051-Webster University Interdisciplinary Science Building Project No.: 15051

Subject: Reinforcement for concrete housekeeping pad

Response Required By: December 23, 2016

Drawing / Spec Reference:

Information Requested:

Please advise of what reinforcing is necessary in the 6" thick concrete housekeeping pad per specification section 266500 section 2.1, A, 10. Concrete is proposed to be 4000 PSI. Please note the following:

** Attached is the Final Generator Layout along with the dimensions of how far off the North Retainer Wall and East Building Wall the generator will set. (A separate RFI will be sent to confirm layout in conjunction with other MEP items at this area – this RFI is only for pad reinforcement requirements).

** The Generator Intake "wings" will not need a concrete pad under them, Then Gen Pad will be a rectangle, see Pad Info Attachment for width and length.

** Attached is Generator Seismic Info

** Please note the dry weight is approximately 32,000 pounds wet weight would be approximately 37,000 pounds

Response:

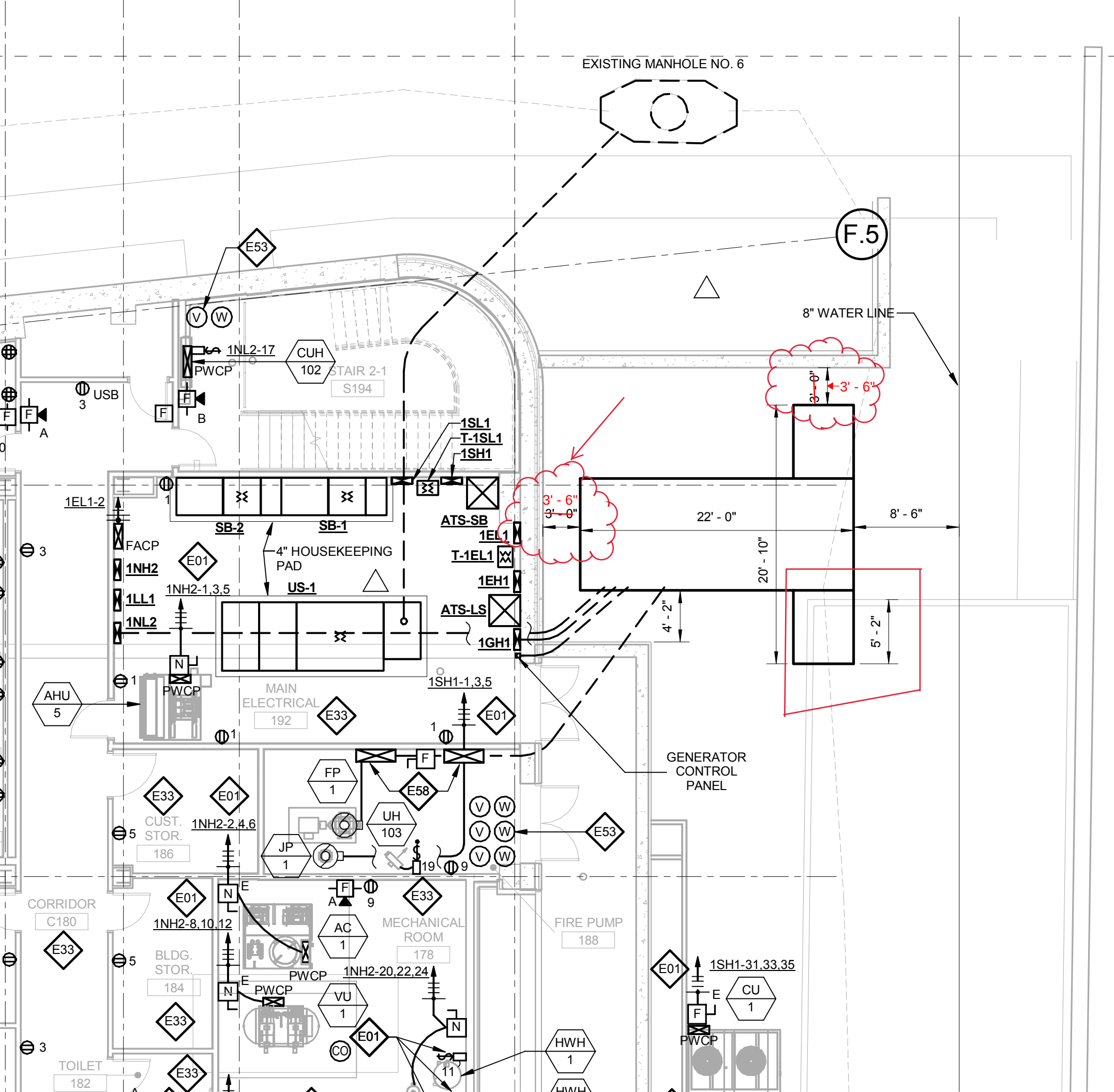
PROVIDE PER 8/S0003 WITH 14" THICK PAD AND #5@12"oc TOP WITH 3" COVER. PAD SIZE PER MANUFACTURER'S SUBMITTAL IS REQUIRED TO BE 24'-3"X11'-0". VERIFY WITH MANUFACTURE. (265"+13"+13"= 24'-3") (106"+13"+13"=11'-0")

ARCHITECT'S RESPONSE:

This information is provided as an interpretation of the Contract Documents for implementation. It is not an authorization for change to the Contract Sum or Contract Time. If this information results in a claim for a change to the Contract, the Contractor shall notify the [Construction

Answered By: JILL WALKER / DMA

Date: 12.19.2016



Enclosure Length = 22 feet

Enclosure Width
Including Air
Intake
250 inches

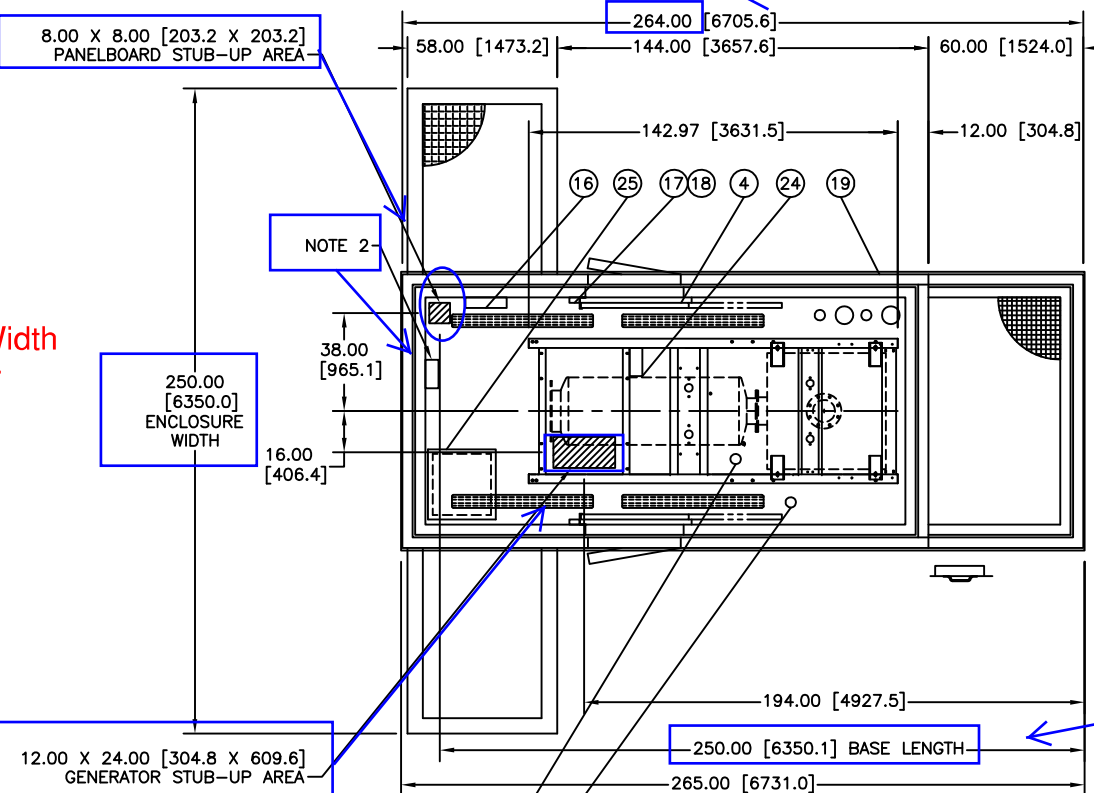
Base Width 108 inches

Base Length = 250 inches

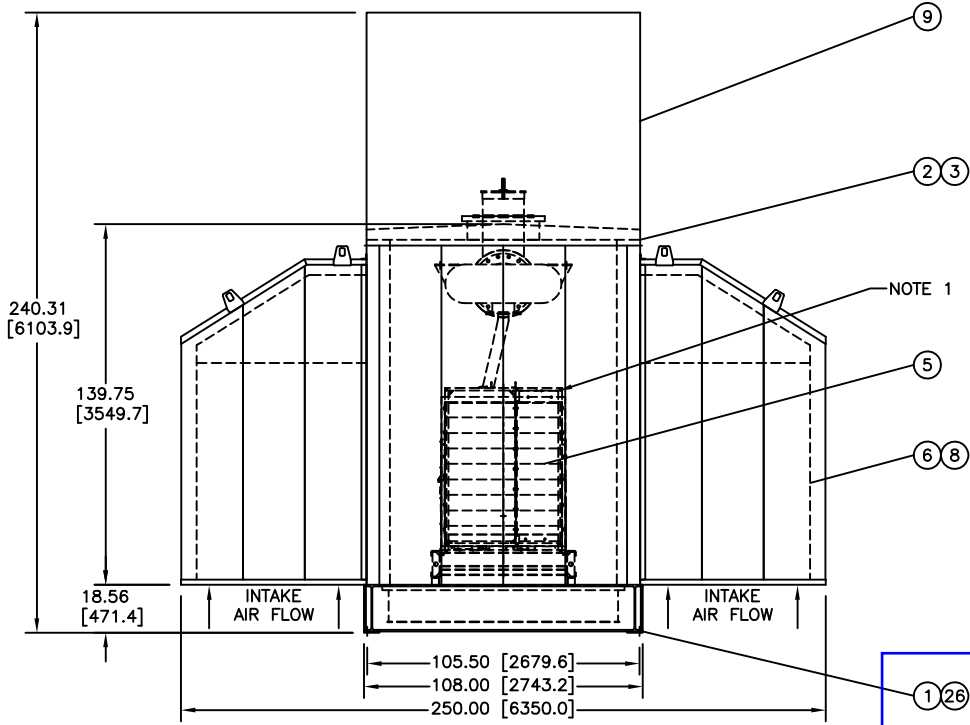
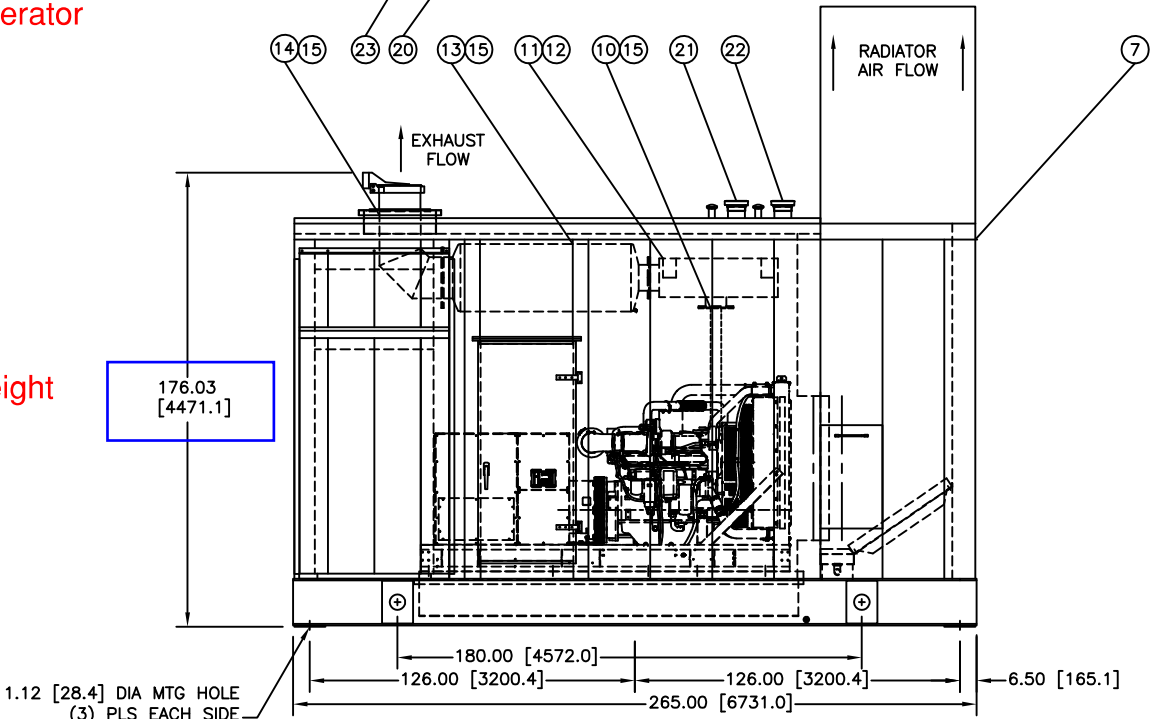
Enclosure Height
177 inches

16-17827		CDIBWKNKC1HH22	
COMP	QTY	DESCRIPTION	
1	1	660 USABLE GALLON UL 142 FUEL TANK WITH SECONDARY CONTAINMENT FULL STEEL FLOOR 4 POINT LIFT PROVISIONS LEAK LOW AND HIGH ALARMS	
2	1	ENCLOSURE 106W X 288L X 140H WITH (2) GASKETED LOCKABLE ACCESS DOORS AND INSIDE OPERATORS	
3	1	SOUND INSULATION WITH GALVANIZED PERFORATED LINER	
4	2	INTERIOR SLIDING DOORS	
5	1	GRAVITY DISCHARGE DAMPER	
6	2	SOUND ATTENUATING INTAKE HOOD *	
7	1	SOUND ATTENUATING DISCHARGE PLENUM	
8	2	INTAKE SOUND MODULE 84H WITH SCREEN	
9	1	DISCHARGE SOUND MODULE 84H WITH SCREEN *	
10	1	EXHAUST FLEX CONNECTION	
11	1	EXHAUST SILENCER MOUNTING PROVISIONS	
12	1	EXHAUST SILENCER 8" CRITICAL GRADE	
13	1	EXHAUST SILENCER 16" HOSPITAL GRADE	
14	1	EXHAUST ELBOW ROOF DRESS CAP AND RAIN CAP *	
15	1	EXHAUST INSULATION BLANKET GROUP	
16	1	PANELBOARD 240/120V SINGLE PHASE	
17	4	INTERIOR LIGHTS WITH (2) WALL SWITCHES	
18	2	GFI PROTECTED DUPLEX RECEPTACLES	
19	1	OIL WATER AND FUMES DISPOSAL GROUP	
20	1	MANUAL FUEL FILL 40 GPM	
21	1	ROOF MOUNTED FUEL TANK VENTS	
22	1	ROOF MOUNTED SECONDARY CONTAINMENT VENTS	
23	1	ENGINE FUEL SUPPLY 24VDC SOLENOID SHUT OFF VALVE	
24	1	FUEL TANK MONITOR PANEL	
25	1	HEATED BATTERY BOX AND CABLE GROUP	
26	8	0.50 THICK SPACER PADS *	

*NOTE: ITEM SHIPS LOOSE TO BE SET AND INSTALLED BY CONTRACTOR ON SITE



Electrical Stub-Up
for Generator



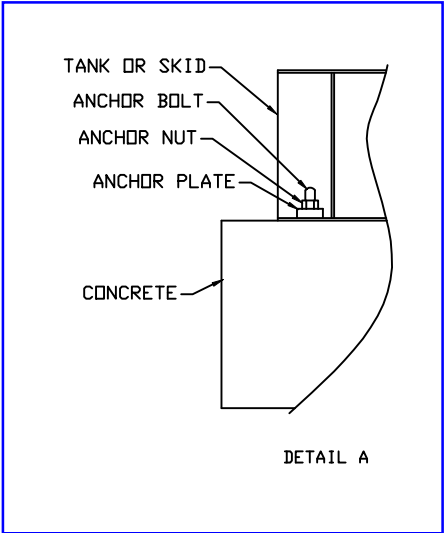
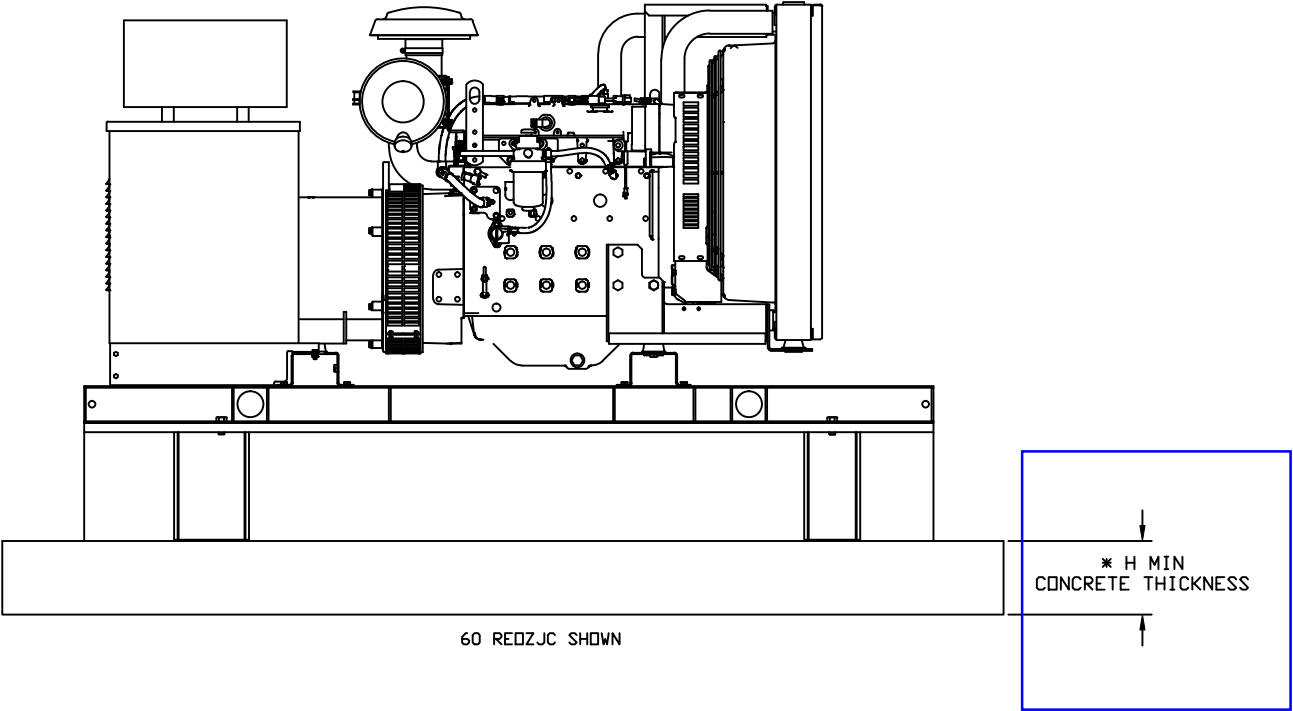
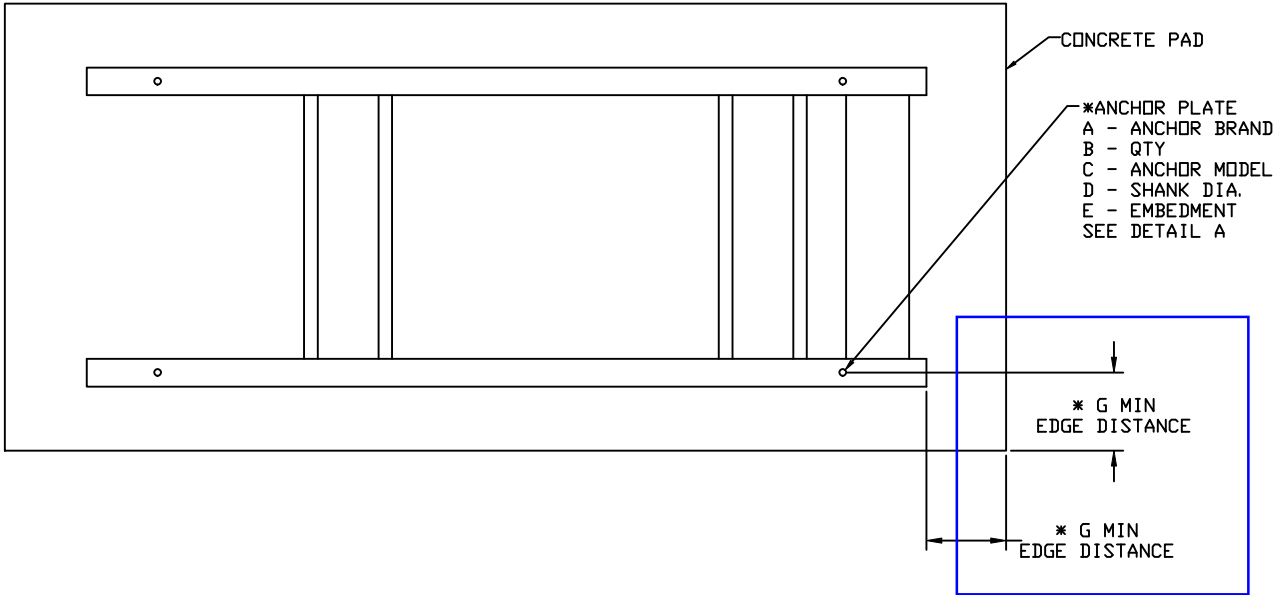
- NOTES:
1. KOHLER 500REOZJB SHOWN WITH 5M4024 ALTERNATOR FRAME
 2. KOHLER 10 AMP BATTERY CHARGER SHOWN
 3. APPROXIMATE SOUND LEVEL 51 DBA @ 19 FT (FREE FIELD)
 4. APPROXIMATE DRY WEIGHT OF PACKAGE = 41000 LB
 5. ENCLOSURE PACKAGE DESIGNED PER INTERNATIONAL BUILDING CODE 2009
 6. THIS UNIT IS DESIGNED TO SIT ON A FALT LEVEL SURFACE NO CROWNING ALLOWED
 7. RECOMMEND MINIMUM OF 60.00 [1524.0] BETWEEN THE ENCLOSURE AND ANY OTHER STRUCTURE FOR PROPER VENTILATION REFER TO LOCAL CODE/ORDINANCE FOR ANY FURTHER RESTRICTIONS

EST. SHIPPING DIMENSIONS
WIDTH - 111.00 [2819.4]
HEIGHT - 165.00 [4191.0]
LENGTH - 210.05 [5335.3]

ENCLOSURE PACKAGE FOR KOHLER 500REOZJB

		THIS PRINT IS THE PROPERTY OF CHILlicothe METAL CO AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THEIR INTEREST		Chillicothe Metal Co. 4507 E. ROME ROAD CHILlicothe, IL. 61523 PH. 309-274-5421 FAX 309-274-4686 WEBSITE: WWW.CMCOUSA.COM	
		UNLESS OTHERWISE SPECIFIED		W.O. # 16-17827	
		DIMENSIONS ARE IN INCH [MM]		DATE: 6/20/16 ENGR. FILE: CD	
		DIMENSIONS WITHOUT TOLERANCE ARE BASIC		CHKD. DURST DATE: 6/20/16 SCALE: 1=100 SHT 1 OF 2	
		REVISION RECORD		DWG. # CDIBWKNKC1HH22	

REV	DATE	REVISION	BY
-	9-11-13	NEW DRAWING [CT58454]	SAM
A	5-12-14	SEE SHEET 2 [CT80886]	SAM
B	9-7-14	SEE SHEET 2 [CT95823]	SAM
C	10-29-14	SEE SHEET 2 [CT97691]	SAM
D	9-16-15	SEE SHEET 2 AND 4 [CT124394]	KNN
E	11-20-15	SHEET 3 ADDED; TABLE ON SHEET 2 CONTINUED ON SHEET 3	
		[CT132257]	SSS



- NOTE:
- 1) SPECIAL INSPECTION PER IBC IS REQUIRED ON ALL INSTALLATIONS. ALL ANCHORS MUST BE INSTALLED TO MEET COMPLIANCE
 - 2) NO OTHER ANCHORS ARE ALLOWED WITHIN MINIMUM SPACING DISTANCE WITHOUT ADVANCED APPROVAL OF THE STRUCTURAL PROJECT ENGINEER OF RECORD.
 - 3) *SEE NOTES ON SHEET 3

METRIC CAD FILE

DIMENSIONS IN [] ARE INCH EQUIVALENT

UNLESS OTHERWISE SPECIFIED - 1) DIMENSIONS ARE IN MILLIMETERS 2) TOLERANCES ARE: X.XX ± 0.25 X.X ± 1.0 X ± 1.5 ANGLES ± 0°30'		SURFACE FINISH ✓ MAX.		THIRD ANGLE PROJECTION	
APPROVALS		DATE		TITLE	
DRAWN SAM		9-11-13		DIMENSION PRINT SEISMIC INSTRUCTION	
CHECKED A/JD		9-12-13		SCALE 1-3	
APPROVED A/JD		9-12-13		SHEET 1-3	
				DWG. NO. ADV-8629	
				PLOTTED DATE	

SEISMIC INSTRUCTION

D

8														7				6				5				4				3				2				1			
MAXIMUM SEISMIC DESIGN RATING APPLIES AS A SYSTEM TO GENSET, TANKS, ENCLOSURES AND ACCESSORIES														ANCHORING SYSTEM														REVISION				BY									
GENSET MODELS		ENCLOSURE		FUEL TANK CAPACITY		S _{DS} @ Z/H=0.0		S _{DS} @ Z/H=1.0		ANCHORING PLACEMENT LOCATIONS		A		B		C		D		E		G MIN.		H MIN.																	
				LITERS GAL								ANCHOR BRAND		QTY		ANCHOR MODEL		SHANK DIA		EMBEDMENT		EDGE DISTANCE		THICKNESS																	
25-150 REZG 50-60 REZGB		OPEN OR ENCLOSED UNITS		-		2.0		2.0		FOR MTG. HOLES SEE GENSET/ENCLOSURE/ ADVS RESPECTIVELY		HILTI		6		TZ		15.88 [.62]		101.6 [4.0]		203.2 [8.0]		203.2 [8.0]																	
80 REZGB 80 REZGD		OPEN UNITS		-		2.0		2.0				HILTI		4		HDA-P M16X190/40		16.0 [.63]		190 [7.48]		203.2 [8.0]		304.8 [12.0]																	
		ENCLOSED		-		2.0		2.0				HILTI		6		HDA-P M16X190/40		16.0 [.63]		190 [7.48]		203.2 [8.0]		304.8 [12.0]																	
100 REZGB 100 REZGD		OPEN UNITS		-		2.0		2.0				HILTI		6		HDA-P M16X190/40		16.0 [.63]		190 [7.48]		203.2 [8.0]		304.8 [12.0]																	
		ENCLOSED		-		2.0		2.0				HILTI		6		HDA-P M16X190/40		16.0 [.63]		190 [7.48]		203.2 [8.0]		304.8 [12.0]																	
180-200 REZX/ 180-200REZXB		OPEN UNITS ONLY		-		2.0		2.0		FOR MTG. HOLES SEE GENSET/ENCLOSURE/ ADVS RESPECTIVELY		HILTI		6		HDA-P M20X250/50		20.0 [.79]		254 [10.0]		762.0 [30.0]		609.6 [24.0]																	
		ENCLOSED UNITS ONLY		-		2.0		2.0				HILTI		8		HDA-P M20X250/50		20.0 [.79]		254 [10.0]		635.0 [25.0]		635.0 [25.0]																	
250 REZX/ 250REZXB		OPEN UNITS ONLY		-		2.0		2.0				HILTI		8		HDA-P M20X250/100		20.0 [.79]		250 [9.84]		228.6 [9.0]		355.6 [14.0]																	
		ENCLOSED UNITS ONLY		-		2.0		2.0				HILTI		8		HDA-P M20X250/100		20.0 [.79]		250 [9.84]		228.6 [9.0]		355.6 [14.0]																	
300-400REZXB		OPEN OR ENCLOSED UNITS		-		2.0		.66				KWIK BOLT		6		TZ		19.05 [.75]		95.3 [3.75]		127 [5.0]		152.4 [6.0]																	
20-60 REOZJC 50-60 REOZJD		OPEN OR ENCLOSED UNITS		UP THROUGH 908 240		1.93		1.93		FOR MTG. HOLES SEE GENSET/ENCLOSURE/ TANK ADVS RESPECTIVELY		HILTI		4		DUC-34-500L		19.05 [.75]		127 [5.0]		215.9 [8.5]		254.0 [10.0]																	
20-60 REOZJD		NON-TANK ENCLOSED UNITS		- -		1.93		1.93				HILTI		4		TZ		15.9 [0.63]		95.3 [3.75]		152.4 [6.0]		152.4 [6.0]																	
														4		TZ		15.9 [0.63]		101.6 [4.0]		203.2 [8.0]		203.2 [8.0]																	
														8		TZ		19.05 [.75]		120.7 [4.75]		304.8 [12.0]		304.8 [12.0]																	
																8		TZ		19.05 [.75]		120.7 [4.75]		355.6 [14]		304.8 [12.0]															
																6		HDA-P		20.0 [.79]		250 [9.84]		254 [10]		355.6 [14.0]															
																6		HDA-P		20.0 [.79]		250 [9.84]		355.6 [14]		355.6 [14.0]															
																6		TZ		19.05 [.75]		95.3 [3.75]		152.4 [6.0]		152.4 [6.0]															
																6		TZ		19.05 [.75]		95.3 [3.75]		203.2 [8.0]		203.2 [8.0]															
																16		HY 200 + HAS		19.05 [.75]		254 [10]		228.6 [9.0]		304.8 [12.0]															
																16		HY 200 + HAS		19.05 [.75]		254 [10.0]		228.6 [9.0]		304.8 [12.0]															
																8		TZ		19.05 [.75]		101.6 [4.0]		304.8 [12.0]		203.2 [8.0]															
																12		TZ		19.05 [.75]		120.7 [4.75]		177.8 [7.0]		203.2 [8.0]															
																10		HDA-P		20.0 [.79]		250 [9.84]		304.8 [12.0]		355.6 [14.0]															
																10		HDA-P		20.0 [.79]		250 [9.84]		304.8 [12.0]		355.6 [14.0]															
																10		TZ		19.05 [.75]		120.7 [4.75]		254 [10]		203.2 [8.0]															
																10		HY 200 + HAS		19.05 [.75]		203.2 [8]		228.6 [9.0]		279.4 [11.0]															
																14		HDA-P		20.0 [.79]		250 [9.84]		254 [10]		355.6 [14.0]															
																14		HDA-P		20.0 [.79]		250 [9.84]		254 [10]		355.6 [14.0]															
																HILTI		10		HY 200 + HAS		19.05 [.75]		228.6 [9.0]		304.8 [12.0]															
																12		TZ		19.05 [.75]		120.7 [4.75]		304.8 [12.0]		355.6 [14.0]															
																HILTI		14		HDA-P		20.0 [.79]		250 [9.84]		330.2 [13]		355.6 [14.0]													
																HILTI		10		HY 200 + HAS		19.05 [.75]		228.6 [9.0]		228.6 [9.0]		304.8 [12.0]													
																12		TZ		19.05 [.75]		120.7 [4.75]		304.8 [12.0]		355.6 [14.0]															
																14		HDA-P		20.0 [.79]		250 [9.84]		330.2 [13.0]		355.6 [14.0]															
350-500 REOZJB		OPEN UNITS		SET ONLY NO TANK		1.93		1.93								HILTI		10		HY 200 + HAS		19.05 [.75]		304.8 [12.0]		279.4 [11.0]		355.6 [14.0]													
		ENCLOSED		1529-4394 [404-1161]		1.93		1.93								14		HY 200 + HAS		19.05 [.75]		381.0 [15.0]		304.8 [12.0]		431.8 [17.0]															
				5046 1333		1.93		1.93								18																									
				5765 1523		1.93		1.93								20																									
				6674 1763		1.93		1.93								22																									
				6674 1763		1.93		1.93								24																									
				10008 2644		1.93		1.93								24																									
20 REOZK		OPEN OR ENCLOSED UNITS		231-598 [61-158]		2.0		2.0								KWIK BOLT		4		TZ		16.0 [.63]		101.6 [4.0]		152 [6.0]		203.2 [8.0]													
						2.0																																			

NOTE:

1) SPECIAL INSPECTION PER IBC IS REQUIRED ON ALL INSTALLATIONS. ALL ANCHORS MUST BE INSTALLED TO MEET COMPLIANCE

2) NO OTHER ANCHORS ARE ALLOWED WITHIN MINIMUM SPACING DISTANCE WITHOUT ADVANCED APPROVAL OF THE STRUCTURAL PROJECT ENGINEER OF RECORD.

3) *SEE NOTES ON SHEET 3

4) Z/H=0.0 EQUATES TO AT GRADE
Z/H=1.0 EQUATES TO AT ROOF TOP

METRIC CAD FILE

DIMENSIONS IN [] ARE INCH EQUIVALENT

UNLESS OTHERWISE SPECIFIED -
1) DIMENSIONS ARE IN MILLIMETERS
2) TOLERANCES ARE:
X.XX ± 0.25
X.X ± 1.0
X ± 1.5
ANGLES ± 0°30'

THIRD ANGLE PROJECTION

SURFACE FINISH

MAX.

APPROVALS

DATE

DRAWN

SAM

9-11-13

CHECKED

AJD

9-12-13

APPROVED

AJD

9-12-13

KOHLER CO.

POWER SYSTEMS, KOHLER, WI 53044 U.S.A.

THIS DRAWING, IN DESIGN AND DETAIL, IS KOHLER CO. PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH KOHLER CO. WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TITLE

**DIMENSION PRINT
SEISMIC INSTRUCTION**

SCALE

DRAW. NO.

SHEET 2-3

ADV-8629

D

SEISMIC INSTRUCTION

2

1

SEISMIC INSTALLATION REQUIREMENTS:

The following are requirements for seismic installation:

1. The design of post-installed anchors in concrete used for the component anchorage is pre-qualified for seismic applications in accordance with ACI 355.2 and documented in a report by a reputable testing agency. (ex. The Evaluation Service Report issued by the International code Council)
2. Anchors must be installed to an embedment depth as recommended in the pre-qualification test report as defined in Note 1.
3. Anchors must be installed in minimum 4000 psi compressive strength normal weight concrete. Concrete aggregate must comply with ASTM C33. Installation in structural lightweight concrete is not permitted unless otherwise approved by the structural engineer of record.
4. Anchors must be installed to the torque specification as recommended by the anchor manufacturer to obtain maximum loading
5. Anchors must be installed in the locations specified the Kohler ADV dimension print.
6. Anchor bolt design loads or specific anchors are specified on seismic Kohler ADV.
7. Anchor plates from Kohler must be installed at each anchor location between anchor head and equipment to tension load distribution.
8. Concrete floor slab and concrete housekeeping pads must be designed and rebar reinforced for seismic applications in accordance with ACI 318.
9. All housekeeping pad thickness must be designed in accordance with pre-qualification test report as defined in Note 1 or a minimum of 1.5x the anchor embedment depth, whichever is largest
10. All housekeeping pads must be doweled or cast into the building structural floor slab and designed for seismic application per ACI 318 and as approved by the structural engineer of record
11. Wall mounted equipment must be installed to a rebar reinforced structural concrete wall that is seismically designed and approved by the engineer of record to resist the added seismic loads from the components being anchored to the wall.
12. Floor mounted equipment (with or without housekeeping pad) must be installed to a rebar reinforced structural concrete floor that is seismically designed and approved by the engineer of record to resist the added seismic loads from components being anchored to the floor.
13. When installing to a floor or wall, rebar interference must be considered.
14. Attaching seismic certified equipment to any floor or wall other than those constructed of structural concrete and designed to accept the seismic loads form said equipment is not permitted by this specification and beyond the scope of this certification.
16. Attaching seismic certified equipment to any concrete block walls or cinder block walls is not permitted by this specification and beyond the scope of this certification.
17. For installations upon rooftop, steel dunnage shall be coordinated with the Structural Engineer of Record.
18. Installation upon only rooftop curb shall be coordinated with the curb manufacturer and the Structural Engineer of Record. Any curb or concrete pad that supports the RTU unit is beyond the scope of this certification.
19. Anchor locations, size, type and load requirements are specified on the installation drawing. Mounting requirements details such as brand, type, embedment depth, edge spacing, anchor spacing, concrete strength, wall bracing, and special inspection must be outlined and approved by the project Structural Engineer of Record to withstand the seismic anchor loads as defined on the seismic installation drawing. The installing contractor is responsible for the proper installation of all anchors and mounting hardware, observing the mounting requirement details outlined by the Engineer of Record. Contact Kohler if a detail Seismic Installation Calculation Package is required.
20. Electrical wiring, piping, duct and other connections to the equipment is the responsibility of the installing contractor. It is necessary that these remain in tact, functional and do not inhibit the functionality of the generator set after a seismic event. Adequate slack shall be allowed cable and piping to allow for motions of set during a seismic event.
- *21. Concrete pad dimensions are minimum values to satisfy only the anchor bolt requirements. The pad must be designed by the project structural engineer of record.
- *22 Anchor bolt and concrete recommendations are for the maximum seismic design levels shown. If the specific application has a lower level, thinner concrete or alternate anchors may be acceptable. Consult Kohler.

REV	DATE	REVISION	BY
-	9-11-13	NEW DRAWING [CTS8454]	SAM
A	5-12-14	SEE SHEET 2 [CT80886]	SAM
B	9-7-14	SEE SHEET 2 [CT95823]	SAM
C	10-29-14	SEE SHEET 2 [CT97691]	SAM
D	9-16-15	(D-6) "ACI" WAS "ADI, SEE SHEET 2 [CT124394]	KNN
E	11-20-15	SHEET 3 ADDED; TABLE ON SHEET 2 CONTINUED ON SHEET 3	
		[CT132257]	SSS

METRIC CAD FILE

DIMENSIONS IN [] ARE INCH EQUIVALENT

UNLESS OTHERWISE SPECIFIED - 1) DIMENSIONS ARE IN MILLIMETERS 2) TOLERANCES ARE: X.XX ± 0.25 X.X ± 1.0 X ± 1.5 ANGLES ± 0°30'		SURFACE FINISH ✓ MAX.	
TWO ANGLE PROJECTION		TITLE	
APPROVALS		DATE	
DRAWN	SAM	9-11-13	
CHECKED	AJD	9-11-13	
APPROVED	AJD	9-12-13	
KOHLER CO. POWER SYSTEMS, KOHLER, WI 53044 U.S.A. THIS DRAWING, IN DESIGN AND DETAIL, IS KOHLER CO. PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH KOHLER CO. WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		SCALE	
DIMENSION PRINT SEISMIC INSTRUCTION		SHEET 3-3	
ADV-8629		D	

SEISMIC INSTRUCTION