KINGWORKS
STRUCTURAL ENGINEERS
600 Dupont St * Ste B
Bellingham, WA 98225
360-714-8260 www.king-works.com

JOB TITLE PSE OTC GENERATOR PAD
JOB NO. 21239 **SHEET NO.**
CALCULATED BY DL **DATE**
CHECKED BY **DATE**

City of Puyallup
Building
REVIEWED FOR COMPLIANCE
SKinnear
04/29/2025
1:11:59 PM

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

PRCTI20250486

Calculations required to be provided by the Permittee on site for all Inspections

STRUCTURAL CALCULATIONS

FOR

PSE - OTC
GENERATOR PAD

PUYALLUP, WA

DANIEL DAVIS LINKHART
STATE OF WASHINGTON
41390
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER
4/11/25
Linkhart, PE, SE
Date: 2025.04.11
DIGITAL SEAL
ON PDF FILE

Code: 2021 International Building Code
Loads: see attached

Description:

Design of concrete pad for support of Cummins generator, including fuel tank and enclosure. Anchorage design by others.

Page	Item
1	Cover Sheet
2-4	Loads / Design
5-9	Generator Specs

KINGWORKS
STRUCTURAL ENGINEERS
600 Dupont St * Ste B
Bellingham, WA 98225
360-714-8260 www.king-works.com

JOB TITLE PSE OTC
GENERATOR PAD
JOB NO. 21239 SHEET NO.
CALCULATED BY DL DATE
CHECKED BY DATE

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

Wind and Seismic Criteria

Seismic (ASCE 7-16 Chapter 13)

S_{DS} =	1.02g	[USGS Hazard Calculator]
I_p =	1	[ASCE Section 13.1.3]
a_p =	2.5	[ASCE Table 13.6-1]
R_p =	2	[ASCE Table 13.6-1]
Bldg Ht =	1 ft	[h]
unit Ht on Bldg =	0 ft	[z]

Seismic Design Force(ASCE 13.3)

Horizontal

$$F_p = \frac{0.4 a_p S_{DS} W_p}{\left(\frac{R_p}{I_p}\right)}\left(1 + 2\frac{z}{h}\right)$$

$$F_{p_{max}} = 1.6 S_{DS} I_P W_p$$

$$F_{p_{min}} = 0.3 S_{DS} I_P W_p$$

F_p = .51 x Wp <------controls
F_{pmax} = 1.64 x Wp
F_{pmin} = .31 x Wp
Design F_{phoriz} = .51 x Wp

Vertical

F_{pvert} = +/-0.2SdsWp
Design F_{pvert} = .20 x Wp

Wind Loads (ASCE 7-16 Chapter 29 Building Appurtenances)

Wind Speed, V =	98 MPH	
Exposure Cat =	B	[ASCE Section 26.7.3]
K_d =	0.85	[ASCE Table 26.6-1]
K_{zt} =	1	[ASCE Section 26.8]
α =	7	[ASCE Table 26.11-1]
z_g =	1200	[ASCE Table 26.11-1]
K_z =	0.57	[ASCE Table 26.10-1 Footnote Equations]
Horizontal GC_r =	1.9	[ASCE Section 29.4.1]
Vertical GC_r =	1.5	[ASCE Section 29.4.1]
q_h =	12.0107 psf	[ASCE Eq 26.10-1]

P_{horiz} = 22.8203 psf
P_{vert} = 18.016 psf

KINGWORKS
STRUCTURAL ENGINEERS
600 Dupont St * Ste B
Bellingham, WA 98225
360-714-8260 www.king-works.com

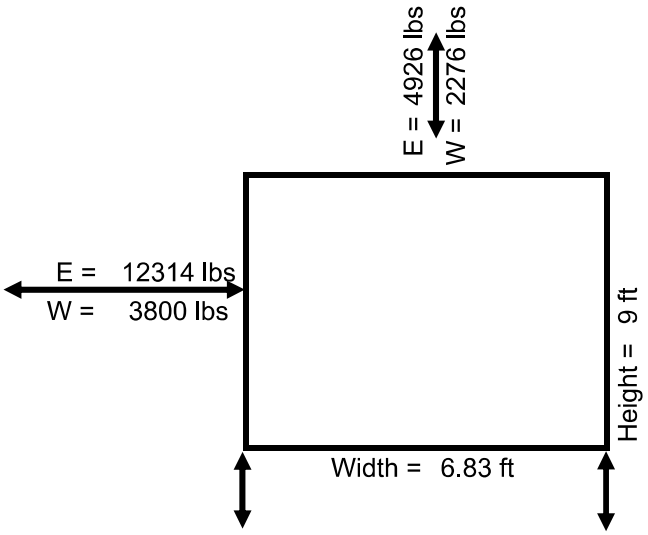
JOB TITLE PSE OTC
GENERATOR PAD
JOB NO. 21239 SHEET NO.
CALCULATED BY DL DATE
CHECKED BY DATE

Calculate Unit Overturning and Shear For Wind & Seismic

Unit: DOAS R-01

Weight =	24098 lbs
Length =	18.5 ft
Width =	6.83 ft
Height =	9 ft

Overturning in Short Direction



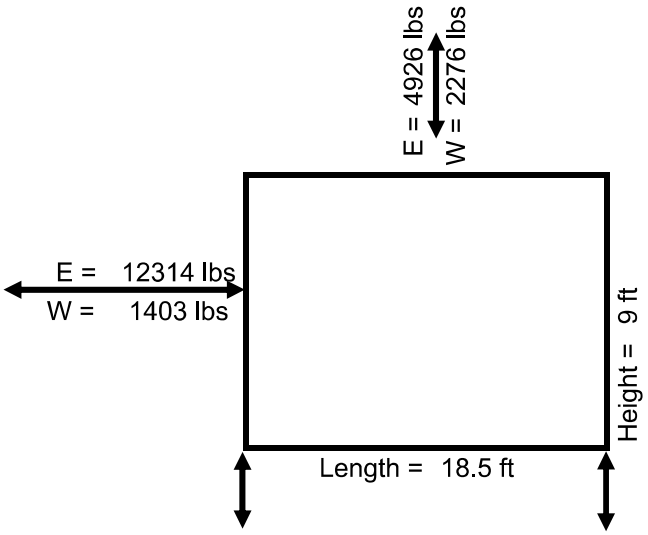
Max/Min Reactions (LRFD)

1.2D+E:	**25035 lbs**
.9D+E:	**268 lbs**
1.2D+W:	18100 lbs
.9D+W:	7203 lbs

Max/Min Reactions (ASD)

D+.7E:	**19452 lbs**
.6D+.7E:	**-174 lbs**
D+.6W:	14234 lbs
.6D+.6W:	5044 lbs
1.0D	12049
1.0E	10576
1.0W	3642

Overturning in Long Direction



Max/Min Reactions (LRFD)

1.2D+E:	**19917 lbs**
.9D+E:	**5386 lbs**
1.2D+W:	15938 lbs
.9D+W:	9365 lbs

Max/Min Reactions (ASD)

D+.7E:	**15870 lbs**
.6D+.7E:	**3409 lbs**
D+.6W:	12937 lbs
.6D+.6W:	6342 lbs
1.0D	12049
1.0E	5458
1.0W	1479

KINGWORKS STRUCTURAL ENGINEERS
600 Dupont St, Suite B
Bellingham, WA 98225
360.714.8260
www.king-works.com

PROJECT	PSE - OTC
DESCRIPTION	GENERATOR PAD

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning | Engineering | Public Works | Fire | Traffic

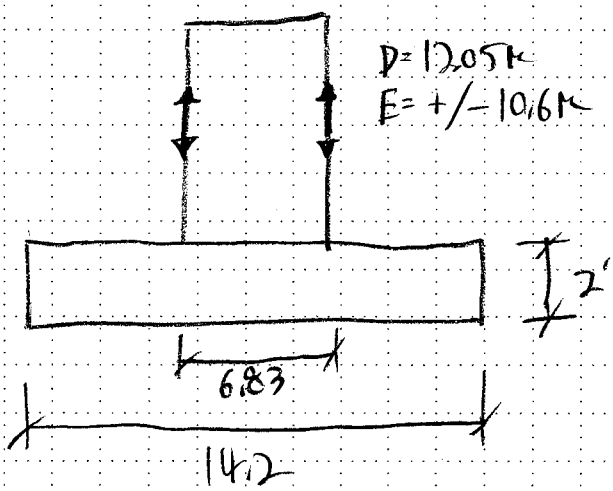
ENGINEER	PROJECT NO.	DATE	PAGE
DL	21239		

GENERATOR FDN

GENSET (WET) WT	4926 #
BELLY TANK	2584
TANK FUEL (500 GAL)	3500
ENCLOSURE	13088
	Σ = 24.1K

← MIN FDN WT = 3(4926) = 14.8K OK ✓

MIN THICKNESS = 24" (R.O.T. METHOD PER ACI 351.3R-04 SEC 4.1.2.1)



OR IN PLF
12.05/18.5 = 0.651 KLF
10.6/18.5 = 0.573 KLF

MAT SELF WT
$w_D = 2(0.15) = 0.3$ KLF
$W_{MAT(TOTAL)} = 0.3(14.2)(23) = 98K$

PER RAM 1' STRIP MODEL $F_{y(ASD,MAX)} = 0.52K$ < 3.0 KSF OK ✓ (SOIL)

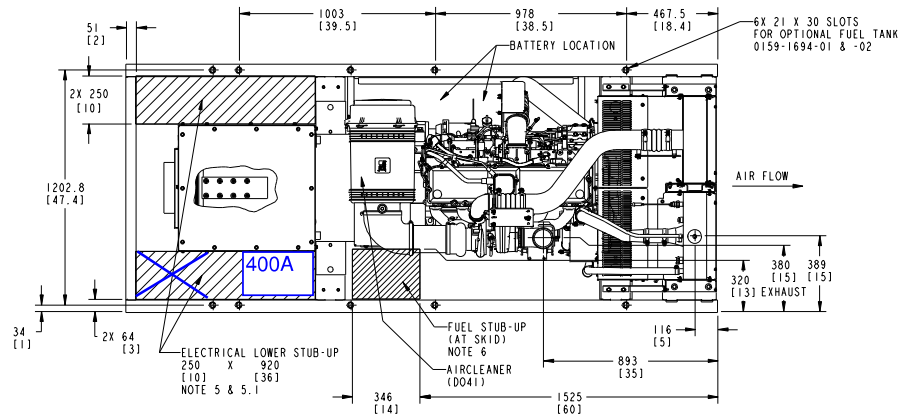
$V_{u(MAX)} = 0.96K$ OK BY INSP ✓

$M_{u(MAX)} = 1.43$ K-FT DNG BY INSP ✓

PROVIDE #6 @ 18 T&B FOR TEMP/SHR. + VIBE INTEGRITY

Pro/ENGINEER

REL NO	LTR	NO	REVISION	DRN	CHD	APVD	DATE
ECO-118662	A	1	PRODUCTION_RELEASE	GWP	HT	H_TRUONG	28OCT11

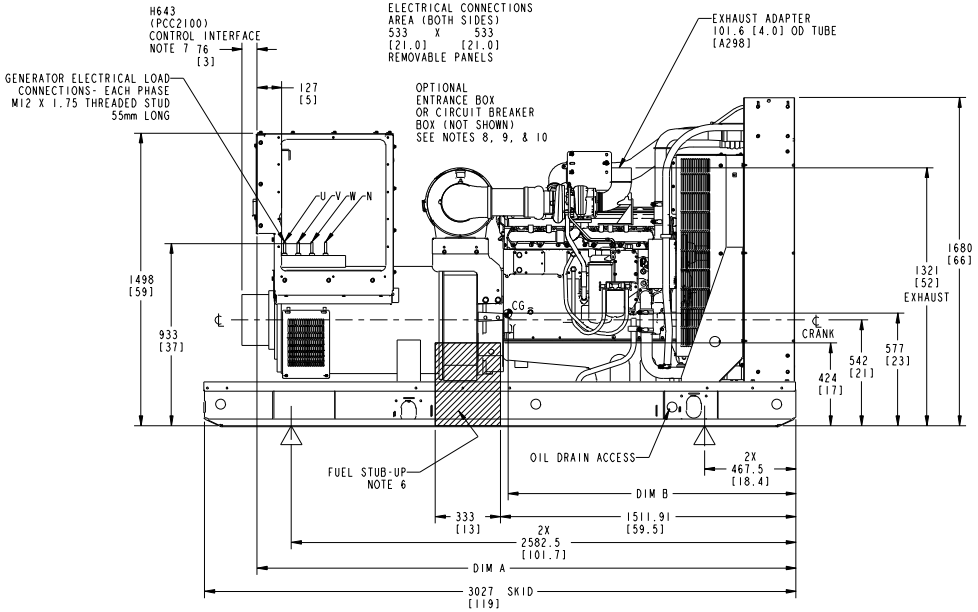


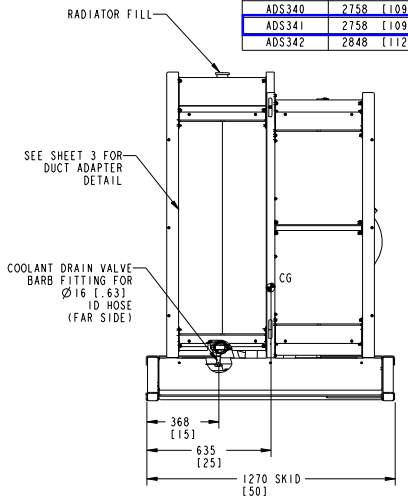
NOTES:

1. DIMENSIONS SHOWN IN [ ] ARE INCH.
2. 23 X 30 SLOTS MARKED BY △ FOR 4 POINT ISOLATION MOUNTING OR SECURING TO MOUNTING SURFACE.
3. GENSET SUPPLIED WITH FLEXIBLE FUEL LINES THAT CAN BE CONNECTED TO GENERATOR SET INTERFACE POINTS.
3.1 FUEL SUPPLY LINE: 1525 [60] LONG WITH 1/2-14 NPT (MALE) TERMINATIONS.
FUEL RETURN LINE: 1780 [70] LONG WITH 3/8-18 NPT (MALE) TERMINATIONS.
4. TABULATED WEIGHT AND CG IS FOR GENERATOR SET WITH NO OPTIONS.
5. REFER TO CIRCUIT BREAKER OUTLINE DRAWING FOR ELECTRICAL STUB-UP AREA FOR SPECIFIC BREAKERS.
5.1 REFER TO SUBBASE FUEL TANK OUTLINE DRAWING FOR ELECTRICAL STUB-UP AREA AVAILABLE WITH FUEL TANKS.
6. FUEL STUB-UP AREA IS NOT AVAILABLE WITH SUBBASE FUEL TANK.
7. CONTROL INTERFACE CONNECTIONS SHOULD BE MADE WITH FLEXIBLE CONNECTIONS, NOT RIGID CONDUIT.
8. FOR ENTRANCE BOX APPLICATIONS SEE APPLICABLE ENTRANCE BOX OUTLINE DRAWING.
9. OPTIONAL ENTRANCE BOX (NOT SHOWN) WILL BE MOUNTED ON THE RIGHT SIDE AS VIEWED FROM THE CONTROL.
10. OPTIONAL BREAKER BOX (NOT SHOWN) WILL BE MOUNTED ON THE LEFT SIDE AS VIEWED FROM THE CONTROL UNLESS OTHERWISE SPECIFIED.

TABULATION

ALT. DATA SHT #	DIM. A mm	DIM. A inch	DIM. B mm	DIM. B inch	ESTIMATED GENSET DRY WT. KGS.	ESTIMATED GENSET DRY WT. LBS.	ESTIMATED GENSET WET WT. KGS.	ESTIMATED GENSET WET WT. LBS.
ADS339	2758	[109]	1470	[57.9]	2009	[4430]	2060	[4542]
ADS340	2758	[109]	1504	[59.2]	2099	[4628]	2150	[4740]
ADS341	2758	[109]	1535	[60.4]	2184	[4814]	2234	[4926]
ADS342	2848	[112]	1581	[62.2]	2319	[5113]	2370	[5225]





UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS	DIM ID	DRN G_POWERS		CUMMINS POWER GENERATION	
DIM: X ±1, .X ±0.8, .XX± 0.38	DO NOT SCALE PRINT	CHD H_TRUONG		OUTLINE,GENSET	
TOL: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13		APVD H_TRUONG			
ANG TOL: ± 1.0°	SCALE: 3/32	DATE 28OCT11	SITE CODE PGF	SIZE D	DWG NO A041F591
CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	TOP INTERPRETATION OF DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994	FIRST USED ON DQDAA,AB,AC		SHEET 1 of 3	REV A

PTC® Creo® Parametric

TABULATION										
TANK/LIFT BASE FEATURE CODE	TANK CAPACITY	TANK WEIGHT DRY KG (LBS)	DIM_D	DIM_E	DIM_F	DIM_H	DIM_I	DIM_J	DIM_K
C201	300	1060 (2338)	2643 (104)	183 (7.2)	305 (12)	526 (20.7)	1126 (44.3)	1122 (44.2)	614.7 (24.2)
C202/C242	400/270	1105 (2438)	2694 (106)	234 (9.2)	356 (14)	577 (22.7)	1177 (46.3)	1173 (46.2)	665 (26.2)
C203	500	1171 (2584)	2743 (108)	284 (11.2)	406 (16)	627 (24.7)	1228 (48.3)	1224 (48.2)	716.3 (28.2)
C204	600	1253 (2765)	2819 (111)	361 (14.2)	483 (19)	704 (27.7)	1304 (51.3)	1300 (51.2)	792.5 (31.2)
C205	660	1295 (2857)	2858 (112.5)	399 (15.7)	521 (20.5)	742 (29.2)	1343 (52.8)	1339 (52.7)	830.6 (32.7)
C206	720	1275 (2814)	2895 (114)	437 (17.2)	559 (22)	780 (30.7)	1381 (54.3)	1377 (54.2)	868.7 (34.2)
C207	850	1445 (3189)	2997 (118)	538 (21.2)	660 (26)	881 (34.7)	1481 (58.3)	1478 (58.2)	970.3 (38.2)
F214	NA	NA	2540 (100)	81 (3.2)	203 (8)	424 (16.7)	1024 (40.3)	1021 (40.2)	513.1 (20.2)

TABULATION							
TANK/LIFT BASE FEATURE CODE	TANK CAPACITY	DIM_G QSL9 L-FRAME	DIM_G QSL9 P-FRAME	DIM_G QSM11 L-FRAME	DIM_G QSM11 P-FRAME	DIM_G QSX15 L-FRAME	DIM_G QSX15 P-FRAME
C201	300	1457.2 [57.37]	1309.4 [51.55]	1495.3 [58.87]	1347.5 [53.05]	1707.9 [67.24]	1560 [61.42]
C202/C242	400/270	1508 [59.37]	1360.2 [53.55]	1546.1 [60.87]	1398.3 [55.05]	1758.7 [69.24]	1610.9 [63.42]
C203	500	1558.8 [61.37]	1411 [55.55]	1596.9 [62.87]	1449.1 [57.05]	1809.5 [71.24]	1661.7 [65.42]
C204	600	1635 [64.37]	1487.2 [58.55]	1673.1 [65.87]	1525.3 [60.05]	1885.7 [74.24]	1737.9 [68.42]
C205	660	1673 [65.87]	1525.3 [60.05]	1711.2 [67.37]	1563.4 [61.55]	1923.8 [75.74]	1776 [69.92]
C206	720	1711.2 [67.37]	1563.4 [61.55]	N/A	N/A	N/A	N/A
C207	850	N/A	N/A	1851 [72.87]	1703.1 [67.05]	2063.5 [81.24]	1915.7 [75.42]
F214	N/A	1355.6 [53.37]	1207.8 [47.55]	1393.7 [54.87]	1245.9 [49.05]	1606.3 [63.24]	1458.5 [57.42]

REL NO	LTR	NO	REVISION	DRN	CHD	APVD	DATE
ECO-149575	E	1	NOTE 3: L116 & L120 (FLORIDA & MICHIGAN TANKS) WAS L116 (FLORIDA TANKS)	CJF	KK	K KISHORE	10FEB15
		2	NOTE 3: [62.6 [6.4] WAS 105.6 [4.16]	CJF	KK	K KISHORE	10FEB15
		3	SEE SHEET 4	CJF	KK	K KISHORE	10FEB15
		4	SEE SHEET 4	CJF	KK	K KISHORE	10FEB15
		5	SEE SHEET 4	CJF	KK	K KISHORE	10FEB15
		6	SEE SHEET 4	CJF	KK	K KISHORE	10FEB15
		7	RMV DIM_G DFEG,DFEH,DFEJ,DFEK, DIM_G DQHAA,DQHAB, & DIM_G DQDAA, DQDAB, DQDAC COLUMNS FROM TABULATION	CJF	KK	K KISHORE	10FEB15
		8	ZN D-3: ADD DIM_G TABULATION	CJF	KK	K KISHORE	10FEB15

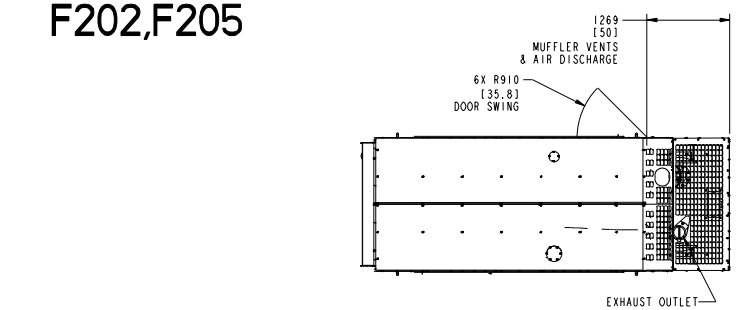
OPTIONAL FEATURE
F202,F205

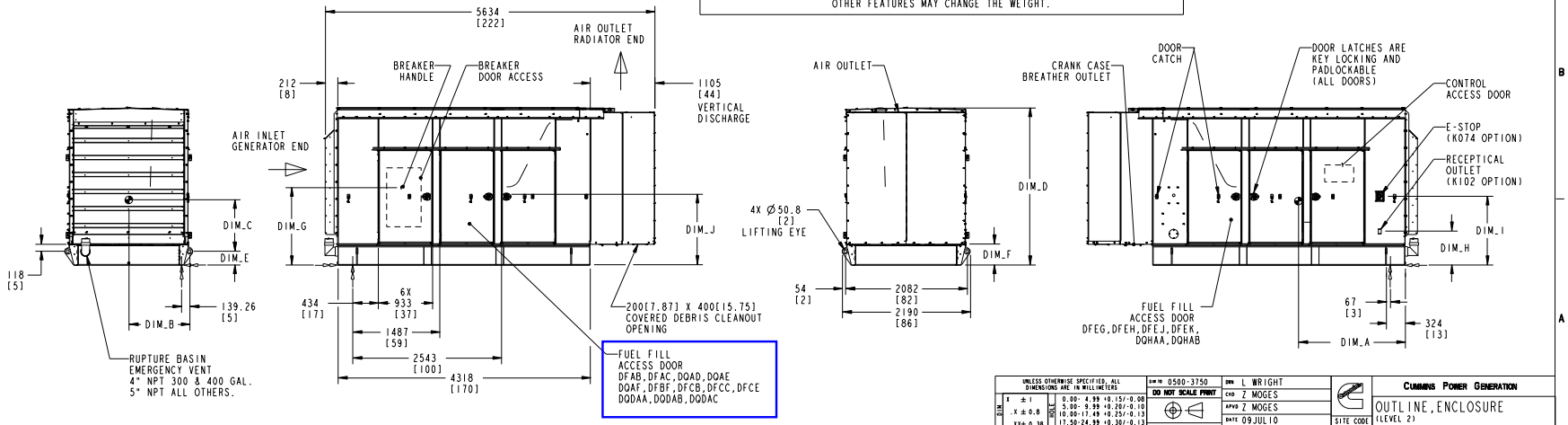
TABULATION						
MODEL	KW	CG_DIM "A"	CG_DIM "B"	CG_DIM "C"	STEEL ENCLOSURE WEIGHT KG (LBS)	ALUMINUM ENCLOSURE WEIGHT KG (LBS)
DFAB	230	2111 [83.1]	1041 [41]	869 [34.2]	5755 (12688)	5265 (11598)
DFAC	250	2103 [82.8]			5823 (12838)	5333 (11748)
DQAD	250			866 [34.1]		
DQAE	275	2093 [82.4]		869 [34.2]	5914 (13038)	5424 (11948)
DQAF	300	2085 [82.1]		871 [34.3]	6027 (13288)	5537 (12198)
DFBF	275	2049 [80.7]		881 [34.7]	6387 (14078)	5897 (12988)
DFCB	300	2035 [80.1]		884 [34.8]	6522 (14378)	6032 (13288)
DFCC	350	2014 [79.3]		886 [34.9]	6635 (14628)	6145 (13538)
DFCE	400	1999 [78.7]		889 [35.0]	6735 (14848)	6245 (13758)
DFEG	350	1994 [78.5]		734 [28.9]	7743 (17072)	7253 (15982)
DFEH	400	1976 [77.8]			7873 (17358)	7383 (16268)
DFEJ	450	1956 [77.0]		737 [29.0]	8026 (17696)	7536 (16606)
DFEK	500	1933 [76.1]			8162 (17996)	7672 (16906)
DQDAA	250	1927 [75.9]		723 [28.5]	5957 (13088)	5467 (11998)
DQDAB	275					
DQDAC	300	1945 [76.6]		724 [28.5]	6057 (13388)	5567 (12298)
DQHAA	275	2093 [82.4]		869 [34.2]	6271 (13826)	5781 (12736)
DQHAB	300	2085 [82.1]		871 [34.3]	6384 (14076)	5894 (12986)

***WEIGHT & CG'S ARE SHOWN WITH HIGHEST GALLON FUEL TANK, ENCLOSURE, AND STANDARD WET GENSET. ADDITION OF OTHER FEATURES MAY CHANGE THE WEIGHT.

NOTES:

1. DIMENSIONS SHOWN IN [ ] ARE INCHES.
2. FOUNDATION REFERENCE POINT (⊂⊃). SEE FOUNDATION DRAWING FOR DETAILS.
3. FOR FEATURE CODE L116 & L120 (FLORIDA & MICHIGAN TANKS) ADD 162.6 [6.4] TO DIMS D-J
4. SEE SHEET 2 FOR TANK VENT LOCATIONS.
5. EXCESSIVE TWISTING OF THE FUEL TANK, WHEN FASTENING IT TO A FOUNDATION, MAY RESULT IN STRUCTURAL FAILURE OF THE TANK. TO INSURE THE INSTALLATION DOES NOT EXCESSIVELY TWIST THE FUEL TANK, THE FOLLOWING PROCEDURE MUST BE OBSERVED:
   - 5.1 REFER TO ONAN APPLICATION MANUAL T030 FOR GENERAL GENSET/TANK MOUNTING GUIDELINES.
   - 5.2 (NOTE REMOVED)
   - 5.3 (NOTE REMOVED)
   - 5.4 (NOTE REMOVED)
   - 5.5 TIGHTEN TANK HOLD DOWN MOUNTING FASTENERS.

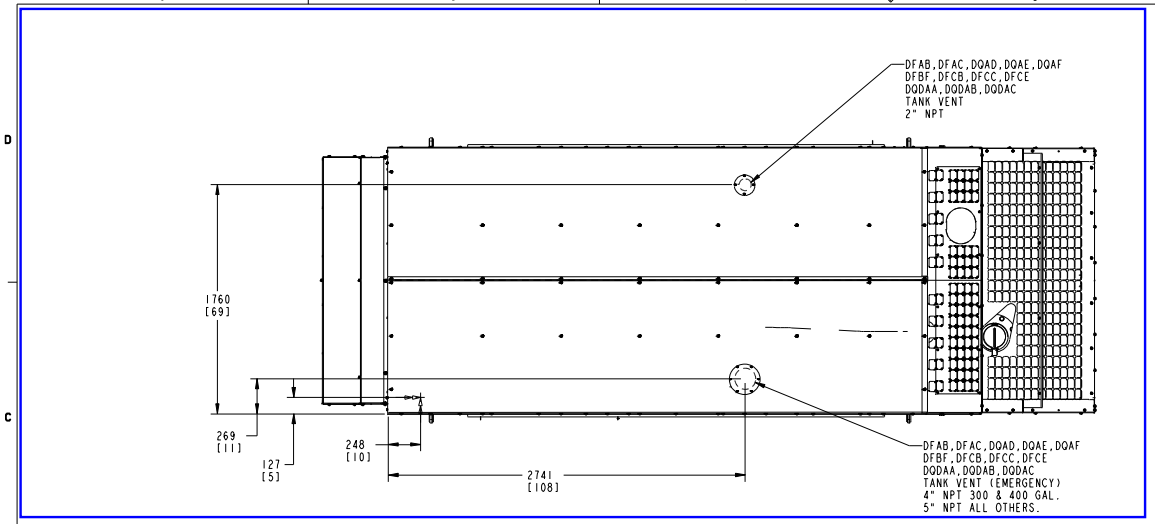


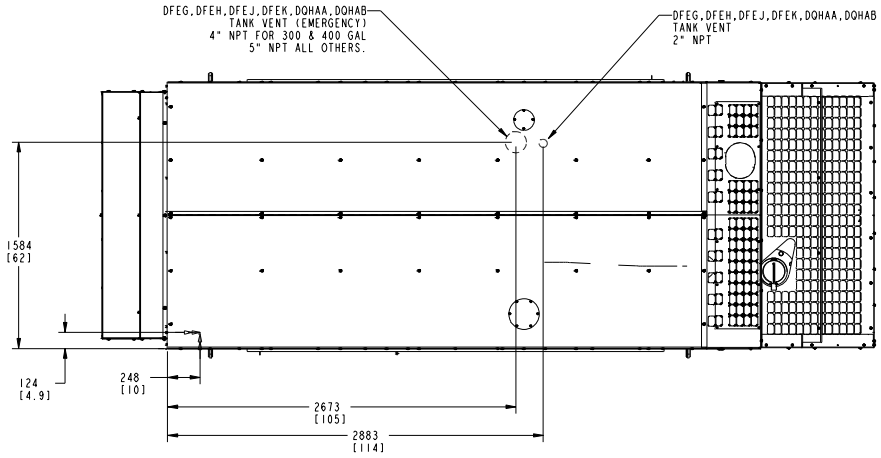


UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS	DWG NO 0500-3750	DRN L WRIGHT	CUMMINS POWER GENERATION		
DIM: # ±1, .X ±0.8, .XX± 0.38 / WELD: 0.00- 4.99 +0.15/-0.08, 5.00- 9.99 +0.20/-0.10, 10.00-17.49 +0.25/-0.13, 17.50-24.99 +0.30/-0.13	DO NOT SCALE PRINT	CHD Z MOGES	OUTLINE, ENCLOSURE (LEVEL 2)		
ANG TOL: ± 1.0° / SCALE: 1/32	CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD Z MOGES	SITE CODE PGF	SIZE D	A034J589 SHEET 1 of 4 REV E
	TOP INTERPRETATION OF DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994	DATE 09JUL10 / FIRST USED ON DFA-DFE			

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DRN	CHD	APVD	DATE
ECO-149575	E	--	-----	CJF	KK	K KISHORE	10FEB15





UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS
DIM: X ±1, .X ±0.8, .XX± 0.38
RULE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13
ANG TOL: ± 1.0° SCALE: 1/16
DWG NO 0500-3750
DO NOT SCALE PRINT
DRN L WRIGHT
CHD Z MOGES
APVD Z MOGES
DATE 09JUL10
CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP
TOP INTERPRETATION OF DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994
FIRST USED ON DFA-DFE
SITE CODE PGF
CUMMINS POWER GENERATION
OUTLINE, ENCLOSURE (LEVEL 2)
SIZE D | A034J589 | SHEET 2 of 4 | REV E

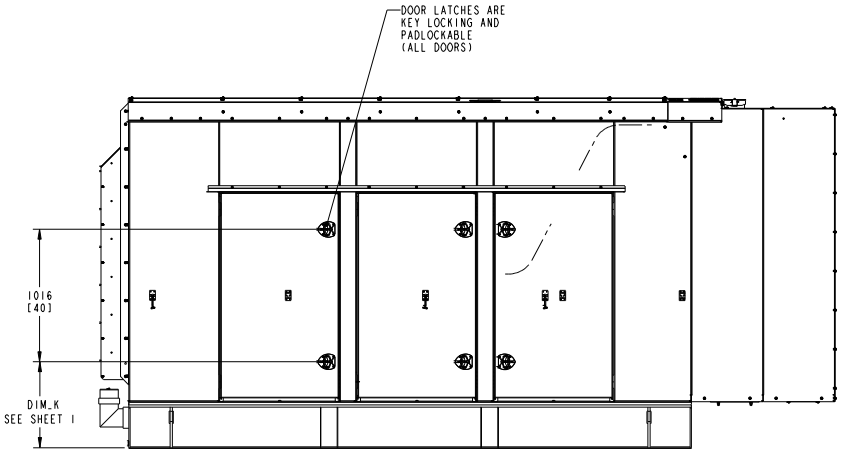
PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DRN	CHD	APVD	DATE
ECO-149575	E	--	-----	CJF	KK	K KISHORE	10FEB15

OPTIONAL FEATURE
150 MPH RATING
F206

NOTES:

1. ALL DIMENSIONS NOT SHOWN ARE INDENTICAL TO THOSE SHOWN ON SHEET 1.
2. THE ENCLOSURE IS ENGINEERED TO MAINTAIN IT'S INTEGRITY WITH A 150 MPH WIND LOAD CONDITION.

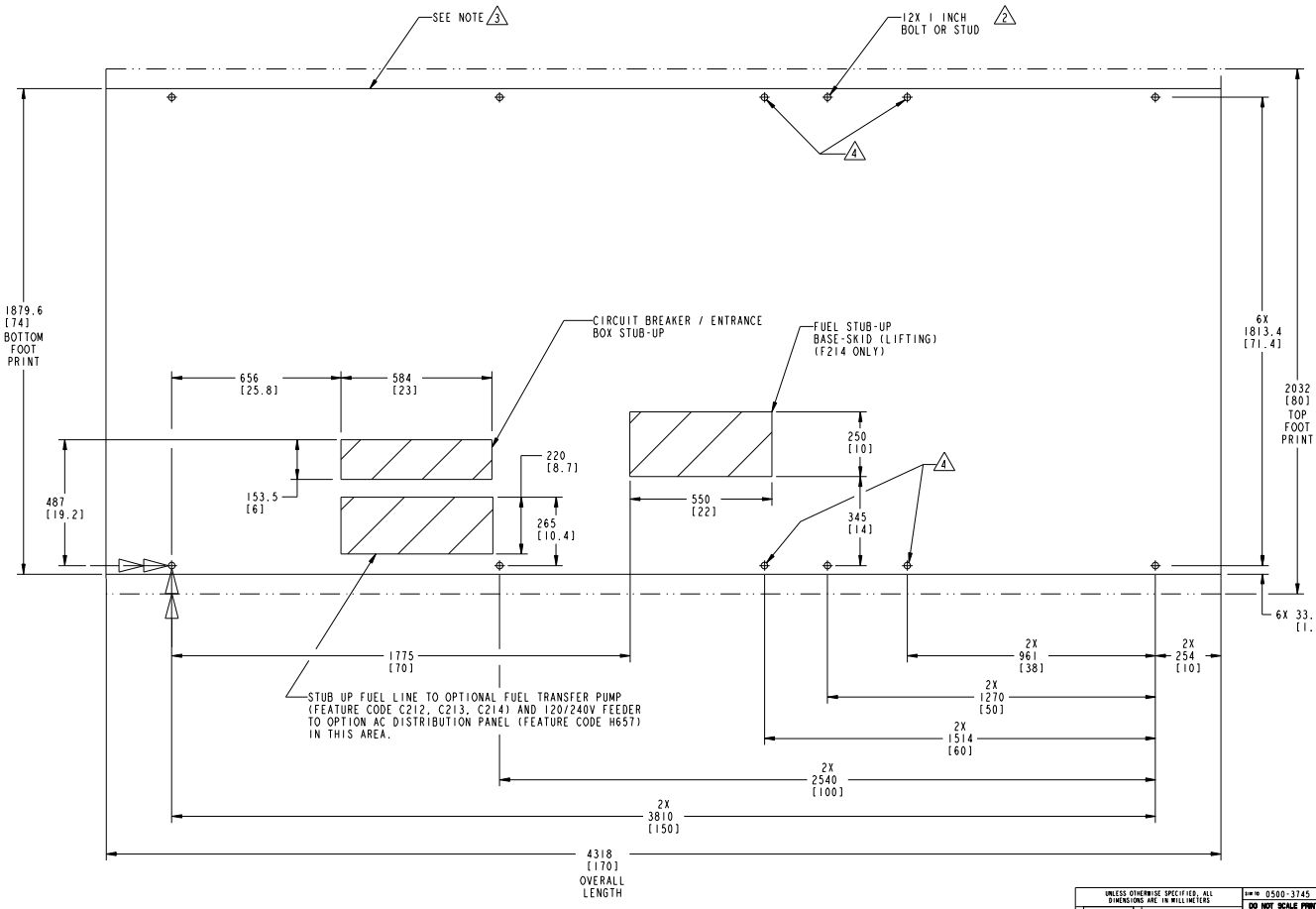


UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS	DIM ID 0500-3750	DRN L WRIGHT		CUMMINS POWER GENERATION	
DIM: X ±1, .X ±0.8, .XX± 0.38 / RULE: 0.00- 4.99 +0.15/-0.08, 5.00- 9.99 +0.20/-0.10, 10.00-17.49 +0.25/-0.13, 17.50-24.99 +0.30/-0.13	DO NOT SCALE PRINT	CHD Z MOGES		OUTLINE, ENCLOSURE (LEVEL 2)	
ANG TOL: ± 1.0°	SCALE: 1/32	APVD Z MOGES	SITE CODE PGF	SIZE D	A034J589 SHEET 3 of 4 REV E
* CONFIDENTIAL * PROPERTY OF CUMMINS POWER GENERATION GROUP		DATE 09JUL10	DFA-DFE		

Pro/ENGINEER

REL NO	LTR	NO	REVISION	DRN	CHD	APVD	DATE
ECO-118385	C	1	6X 1813.4 WAS 1803.4, ZONE C2	WGM	BJD	K.KISHORE	27JUL11
		2	6X 33.1 WAS 38.1, ZONE B2	WGM	BJD	K.KISHORE	27JUL11
		9	345 WAS 340, ZONE B3	WGM	BJD	K.KISHORE	27JUL11
		10	265 WAS 260, ZONE B4	WGM	BJD	K.KISHORE	27JUL11
		11	487 WAS 482, ZONE B6	WGM	BJD	K.KISHORE	27JUL11

DQDAA, DQDAB, DQDAC
(C201-C207, C242, F214)



NOTE:

1. DIMENSIONS IN [ ] ARE IN INCHES.
2. SKID-BASE (LIFTING) AND FUEL TANK HAVE A FLANGE THICKNESS OF 4.76mm [.19 INCHES], (FLORIDA UNITS WITH FEATURE CODE L116) 8.76mm [.35 INCHES]. ALLOW EXTRA LENGTH ON HARDWARE FOR UNEVENESS OF MOUNTING SURFACE.
3. LIFTING BASE OR FUEL TANK PERIMETER IS SHOWN. FOUNDATION SHOULD BE EXTENDED BEYOND THIS PERIMETER. SEE (T030) APPLICATION MANUAL.
4. FEATURE OPTION F214-2 DOES NOT USE THIS BOLT.

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS
DIM: # ±.3; .X ±0.8; .XX±0.38
HOLE: 0.00-4.99 +0.15/-0.08; 5.00-9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13
ANG TOL: ± 1.0° SCALE: ~1/8
DWG TO 0500-3745 DO NOT SCALE PRINT
DRN M.JOHNSON
CHD Z.MOGES
APVD Z.MOGES
DATE 10JAN11
* CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP
TOP INTERPRETATION OF DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994
FIRST USED ON DFEK
SITE CODE PGA
CUMMINS POWER GENERATION
OUTLINE,GENSET (FOUNDATION)
SIZE D A035F947 SHEET 3 of 3 REV C

PTC® Creo® Parametric

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-172465	G	1	UPDATED TABLES	MI	CF	M.WINGFIELD	25SEP17
		21	ZONE D-6, C-6: A034E951 WAS A034E948	MI	CF	M.WINGFIELD	25SEP17
		22	ZONE C-6 (2X): A034E948 WAS A034E944	MI	CF	M.WINGFIELD	25SEP17
		23	ZONE C-6 (2X): A030W097 WAS A034E951	MI	CF	M.WINGFIELD	25SEP17
		24	ZONE A-5, THOR---270-702 GAL ROW: ASTM A325 WAS ASTM A307	MI	CF	M.WINGFIELD	25SEP17
		25	ZONE A-5, THOR---1470 GAL ROW: GRADE 2 WAS GRADE 5	MI	CF	M.WINGFIELD	25SEP17
		26	ZONE A-2, THOR---2050 GAL ROW: 7.717" WAS 7.771"	MI	CF	M.WINGFIELD	25SEP17

SPRING-ISOLATED GENERATOR SETS: GROUND LEVEL INSTALLATIONS

CUMMINS GENSET MODEL	CONFIGURATION	SEISMIC ISOLATOR		ATTACHMENT TO STEEL		ATTACHMENT TO CONCRETE					
		MODEL	QTY	SEISMIC LEVEL	ISOLATOR ATTACHMENT TO STEEL	SEISMIC LEVEL	ISOLATOR ATTACHMENT TO CONCRETE	MINIMUM ANCHOR EMBEDMENT	MINIMUM EDGE DISTANCE (FROM ANCHOR LOCATION)	CONCRETE COMPRESSIVE STRENGTH	MINIMUM SLAB THICKNESS
DQDAA DQDAB DQDAC	OPEN OR WITH F183 ENCLOSURE	A034E951 (PRIMARY) A049W413 (ALTERNATE)	4	SDS=2.48 Z/H=0.0	(4) PER ISOLATOR (16 TOTAL) Ø3/4" GRADE 2/ASTM A307 BOLTS	SDS=2.48 Z/H=0.0	(4) PER ISOLATOR (16 TOTAL) KWIK BOLT TZ-CS 3/4	4.75"	11.0"	4000 PSI MIN.	12.0"
	OPEN LIFT BASE MOUNTED GENSET	A034E948 (PRIMARY) A049W413 (ALTERNATE)	8		(4) PER ISOLATOR (32 TOTAL) Ø3/4" GRADE 2/ASTM A307 BOLTS		(4) PER ISOLATOR (32 TOTAL) KWIK BOLT TZ-SS-316 3/4		6.5"		8.0"
	THOR LIFT BASE MOUNTED GENSET	A030W097 (PRIMARY) A049W413 (ALTERNATE)					(4) PER ISOLATOR (32 TOTAL) HIT-RE 500 V3 + HAS B7 3/4	7.362"	11.0"		12.0"

SPRING-ISOLATED GENERATOR SETS: ROOF LEVEL INSTALLATIONS

CUMMINS GENSET MODEL	CONFIGURATION	SEISMIC ISOLATOR		ATTACHMENT TO STEEL		ATTACHMENT TO CONCRETE					
		MODEL	QTY	SEISMIC LEVEL	ISOLATOR ATTACHMENT TO STEEL	SEISMIC LEVEL	ISOLATOR ATTACHMENT TO CONCRETE	MINIMUM ANCHOR EMBEDMENT	MINIMUM EDGE DISTANCE (FROM ANCHOR LOCATION)	CONCRETE COMPRESSIVE STRENGTH	MINIMUM SLAB THICKNESS
DQDAA DQDAB DQDAC	OPEN OR WITH F183 ENCLOSURE	A034E951 (PRIMARY) A049W413 (ALTERNATE)	4	SDS=2.00 Z/H=1.0	(4) PER ISOLATOR (16 TOTAL) Ø3/4" GRADE 2/ASTM A307 BOLTS	SDS=2.00 Z/H=1.0	(4) PER ISOLATOR (16 TOTAL) KWIK BOLT TZ-CS 3/4	4.75"	11.0"	4000 PSI MIN.	12.0"
	OPEN LIFT BASE MOUNTED GENSET	A034E948 (PRIMARY) A049W413 (ALTERNATE)	8		(4) PER ISOLATOR (32 TOTAL) Ø3/4" GRADE 2/ASTM A307 BOLTS		(4) PER ISOLATOR (32 TOTAL) KWIK BOLT TZ-SS-316 3/4		6.5"		8.0"
	THOR LIFT BASE MOUNTED GENSET	A030W097 (PRIMARY) A049W413 (ALTERNATE)					(4) PER ISOLATOR (32 TOTAL) HIT-RE 500 V3 + HAS B7 3/4	7.362"	11.0"		12.0"

RIDGID MOUNTED GENERATOR SETS: GROUND LEVEL INSTALLATIONS

CUMMINS GENSET MODEL	CONFIGURATION	ATTACHMENT TO STEEL		ATTACHMENT TO CONCRETE					
		SEISMIC LEVEL	SKID/TANK ATTACHMENT TO STEEL	SEISMIC LEVEL	SKID/TANK ATTACHMENT TO CONCRETE	MINIMUM ANCHOR EMBEDMENT	MINIMUM EDGE DISTANCE (FROM ANCHOR LOCATION)	CONCRETE COMPRESSIVE STRENGTH	MINIMUM SLAB THICKNESS
DQDAA DQDAB DQDAC	OPEN OR WITH F183 ENCLOSURE	SDS=2.48 Z/H=0.0	(4) TOTAL Ø3/4" ASTM A307 BOLTS	SDS=2.48 Z/H=0.0	(4) TOTAL HIT-RE 500 V3 + HAS B7 3/4	6.22"	10.0"	4000 PSI MIN.	10.0"
	OPEN LIFT BASE MOUNTED GENSET		(4) TOTAL Ø3/4" ASTM A307 BOLTS		(8) TOTAL KWIK BOLT TZ-CS 3/4	4.75"	6.0"		8.0"
	OPEN SUB-BASE FUEL TANK (270-720 GAL)		(12) TOTAL Ø5/8" GRADE 2/ASTM A307 BOLTS		(12) TOTAL HIT-RE 500 V3 + HAS B7 5/8	5.433"	10.0"		10.0"
	OPEN SUB-BASE FUEL TANK (1470 GAL)		(10) TOTAL Ø5/8" GRADE 5/ASTM A325 BOLTS		(10) TOTAL HIT-RE 500 V3 + HAS B7 5/8	10.748"	14.0"		14.0"
	OPEN SUB-BASE FUEL TANK (2050 GAL)		(12) TOTAL Ø5/8" GRADE 2/ASTM A307 BOLTS		(12) TOTAL HIT-RE 500 V3 + HAS B7 5/8	12.48"			
	THOR LIFT BASE MOUNTED GENSET		(8) TOTAL Ø3/4" ASTM A307 BOLTS		(8) TOTAL KWIK BOLT TZ-CS 3/4	4.75"	6.0"		8.0"
	THOR LIFT BASE MOUNTED GENSET with fuel tank 270-702 GAL		(12) TOTAL Ø5/8" GRADE 2/ASTM A325 BOLTS		(12) TOTAL HIT-RE 500 V3 + HAS B7 5/8	4.528"	10.0"		10.0"
	THOR LIFT BASE MOUNTED GENSET with fuel tank 1470 GAL		(10) TOTAL Ø5/8" GRADE 2/ASTM A307 BOLTS		(10) TOTAL HIT-RE 500 V3 + HAS B7 5/8	8.071"	11.0"		
	THOR LIFT BASE MOUNTED GENSET with fuel tank 2050 GAL		(12) TOTAL Ø5/8" GRADE 2/ASTM A307 BOLTS		(12) TOTAL HIT-RE 500 V3 + HAS B7 5/8	7.771"			

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS
DIM: X ±1; .X ±0.8; .XX± 0.38
HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13
ANG TOL: ± 1.0° SCALE: 1/1

SIM TO A030B114
DO NOT SCALE PRINT
- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP
FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994

DWN L WRIGHT
CKD Z MOGES
APVD Z MOGES
DATE 10MAR10
FIRST USED ON DQDAA

SITE CODE PGF

CUMMINS POWER GENERATION
INSTALLATION, GENSET
SEISMIC REQUIREMENTS
DWG SIZE D | A030W791 | SHEET 4 OF 7 | DWG REV G

Regulatory Review and Approval is required prior to changing this item per PGG 1-01-01-116. This item impacts compliance with these External Regulations:
IBC