



| REL NO | LTR | NO | REVISION | DWN | CKD | APVD | DATE |
|------------|-----|----|--------------------|-----|-----|------------|---------|
| ECO-165950 | A | 1 | PRODUCTION RELEASE | AGJ | AGJ | M.WICKMANN | 07NOV16 |
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SEISMIC INSTALLATIONS NOTES:

1. THE DESIGN OF POST-INSTALLED ANCHORS IN CONCRETE USED FOR THE COMPONENT ANCHORAGE IS PRE-QUALIFIED FOR SEISMIC APPLICATIONS IN ACCORDANCE WITH "ACI 355.2-07" 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. FOR "CBC 2016" APPLICATIONS.
3. ANCHORS MUST BE INSTALLED IN MINIMUM 3000 PSI COMPRESSIVE STRENGTH NORMAL WEIGHT STRUCTURAL CONCRETE. CONCRETE AGGREGATE MUST COMPLY WITH "ASTM C33".
4. ANCHORS MUST BE INSTALLED TO THE TORQUE SPECIFICATION AS RECOMMENDED BY THE ANCHOR MANUFACTURER.
5. ANCHORS MUST BE INSTALLED IN LOCATIONS SPECIFIED ON THIS INSTALLATION DRAWING.
6. WASHERS MUST BE INSTALLED AT EACH ANCHOR LOCATION BETWEEN THE ANCHOR HEAD AND EQUIPMENT FOR TENSION LOAD DISTRIBUTION. WASHERS MUST BE TYPE A OR B PLAIN WASHERS MEETING ASME B18.21.1-2009. WASHER SIZE TO MATCH ANCHOR DIAMETER.
7. CONCRETE FLOOR SLAB AND CONCRETE HOUSEKEEPING PADS MUST BE DESIGNED FOR SEISMIC APPLICATIONS IN ACCORDANCE WITH "ACI 318-11".
8. ALL HOUSEKEEPING PAD THICKNESSES MUST BE DESIGNED IN ACCORDANCE WITH THE PRE-QUALIFICATION TEST REPORT AS DEFINED IN NOTE 1 OR A MINIMUM OF 1.5X THE ANCHOR EMBEDMENT DEPTH, WHICHEVER IS LARGEST (UNLESS NOTED OTHERWISE).
9. ALL HOUSEKEEPING PADS MUST BE DOWELLED OR CAST INTO THE BUILDING STRUCTURAL FLOOR SLAB AND DESIGNED FOR SEISMIC APPLICATION PER "ACI 318-11" AND AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
10. FLOOR MOUNTED EQUIPMENT (WITH OR WITHOUT A HOUSEKEEPING PAD) MUST BE INSTALLED TO A STEEL REINFORCED STRUCTURAL CONCRETE FLOOR THAT IS SEISMICALLY DESIGNED AND APPROVED BY THE ENGINEER OF RECORD TO RESIST ALL LOADS FROM EQUIPMENT BEING ANCHORED TO THE FLOOR.
11. COORDINATE REINFORCEMENT OF SUPPORT STRUCTURE WITH EQUIPMENT ANCHOR LOCATIONS.
12. ATTACHING SEISMIC CERTIFIED EQUIPMENT TO FLOOR OTHER THAN THOSE DESIGNED TO ACCEPT THE SEISMIC LOADS FROM CERTIFIED EQUIPMENT BY THE STRUCTURAL ENGINEER OF RECORD IS PROHIBITED.
13. INSTALLATION ONTO A STEEL ROOF STRUCTURE OR MANUFACTURED STEEL CURB SHALL BE COORDINATED WITH THE STRUCTURAL ENGINEER OF RECORD.
14. CONNECTIONS TO THE EQUIPMENT, INCLUDING BUT NOT LIMITED TO CONDUIT, WIRING FROM CABLE TRAYS, OTHER ELECTRICAL SERVICES OR OTHER CONNECTIONS, ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND BEYOND THE SCOPE OF THIS DOCUMENT. FLEXIBLE ATTACHMENTS MUST BE USED FOR SEISMIC CONNECTIONS TO ISOLATED COMPONENTS OR ISOLATED EQUIPMENT. THE FLEXIBLE ATTACHMENT MUST PROVIDE FOR ENOUGH RELATIVE DISPLACEMENT TO REMAIN CONNECTED TO THE EQUIPMENT AND FUNCTIONAL DURING AND AFTER A SEISMIC EVENT.
15. REFER TO GENSET OUTLINE DRAWINGS FOR WEIGHT, CG AND CONFIGURATION SPECIFICS.

| | | | | | | | | | | |
|---|--|--|---|--|------------------|--|---|--------------------------|--------------|--|
| UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS | | | DIM TO NONE | | DWN A. JOHNSON | |  | CUMMINS POWER GENERATION | | |
| DO NOT SCALE PRINT | | |  | | CKD A. JOHNSON | | | INSTALLATION, GENSET | | |
| DATE 07NOV16 | | | SITE CODE | | APVD M. WICKMANN | | SEISMIC REQUIREMENTS | | | |
| ANG TOL: ± 1.0° | | | SCALE: 1/1 | | DATE 07NOV16 | | PGF | | SHEET 1 OF 4 | |
| - CONFIDENTIAL - | | | FIRST USED ON | | ARROW | | D A056M541 | | REV A | |

| REL NO | LTR | NO | REVISION | DWN | CKD | APVD | DATE |
|------------|-----|----|--------------------|-----|-----|------------|---------|
| ECO-165950 | A | 1 | PRODUCTION RELEASE | AGJ | AGJ | M.WICKMANN | 07NOV16 |
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GRADE MOUNTED GENERATOR SETS

| CUMMINS GENSET MODEL | CONFIGURATION | ATTACHMENT TO CONCRETE | | | | |
|-------------------------|---|--|------------------|------------------|----------------|-----------------------------|
| | | EVALUATION PARAMETERS | CONCRETE ANCHORS | ANCHOR EMBEDMENT | ANCHOR SPACING | DISTANCE TO NEAREST EDGE |
| C125 N6 C150 N6 | GENERATOR SET WITH OR WITHOUT ENCLOSURE | CBC 2016/IBC 2015 S _{ds} ≤ 2.5 I _p ≤ 1.5 a _p /R _p ≤ 2.5/2.0 z/h = 1.0 Ω = 2.5 | | | | SEE NOTE |

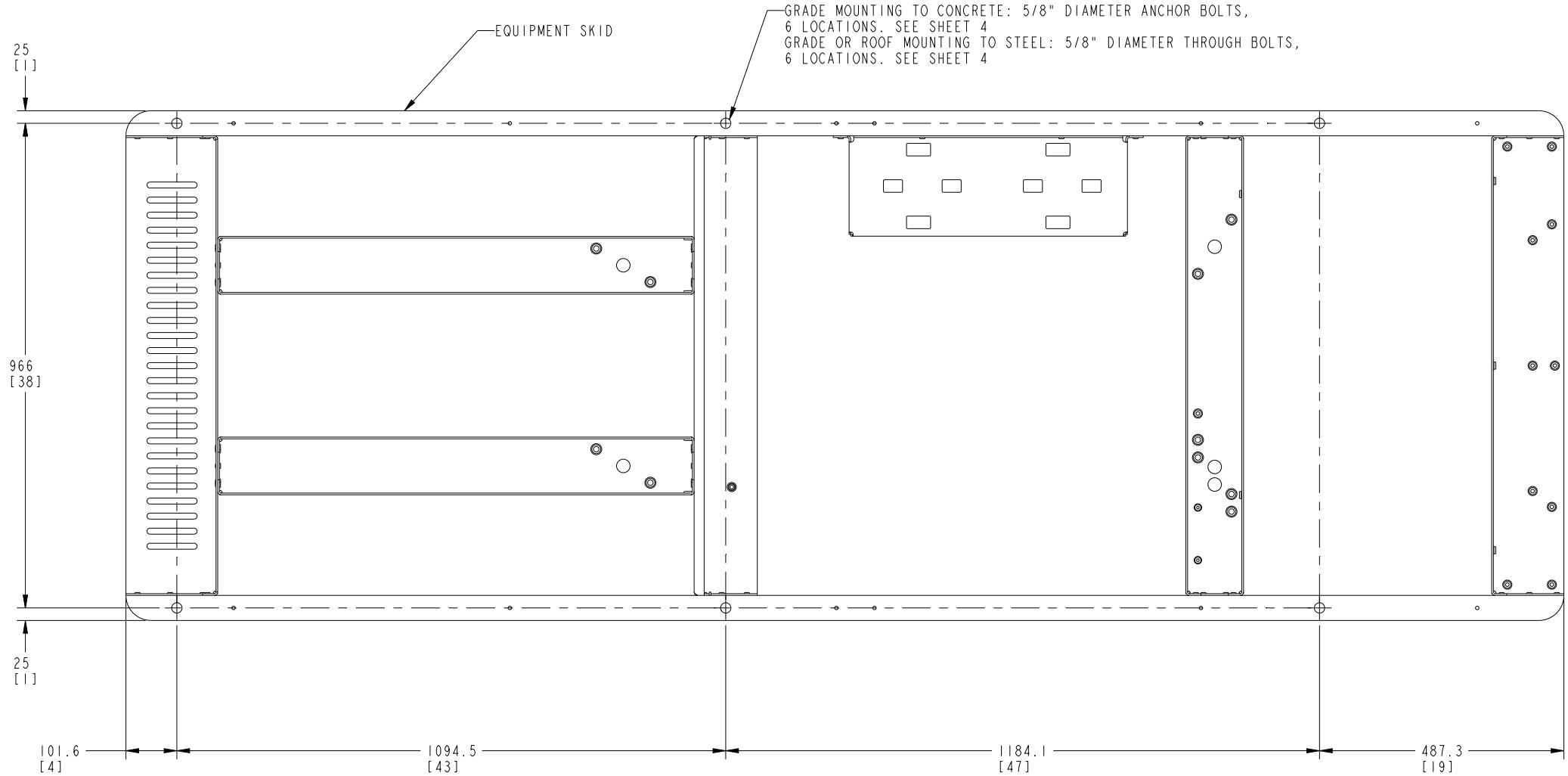
NOTE: TYPE OF ANCHOR, ANCHOR ATTACHMENT SPECIFICS AND MINIMUM SLAB THICKNESS TO BE DESIGNED BY ENGINEER OF RECORD.

GRADE/ROOF MOUNTED GENERATOR SETS

| CUMMINS GENSET MODEL | CONFIGURATION | ATTACHMENT TO STEEL | |
|-------------------------|---|---|---|
| | | EVALUATION PARAMETERS | STEEL BOLTS |
| C125 N6 C150 N6 | GENERATOR SET WITH OR WITHOUT ENCLOSURE | CBC 2016/IBC 2015 S _{ds} ≤ 2.5 I _p ≤ 1.5 a _p /R _p ≤ 2.5/2.0 z/h ≤ 1.0 | (QTY 6) 5/8" DIAMETER ASTM A325N OR A490 BOLTS WITH WASHERS THROUGH THE BASE RAIL MOUNTING HOLES. |

| | | | | | | |
|---|---------------------------------|--|---------------------|-----------|--------------------------|-----------|
| UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS | | SH TO NONE | DWN A. JOHNSON | | CUMMINS POWER GENERATION | |
| DIM | X ± 1 .X ± 0.8 .XX ± 0.38 | DO NOT SCALE PRINT | CKD A. JOHNSON | | INSTALLATION, GENSET | |
| | 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 | APVD M. WICKMANN | SITE CODE | SEISMIC REQUIREMENTS | |
| ANG TOL: ± 1.0° | SCALE: 1/1 | | DATE 07NOV16 | PGF | DWG FILE | A056M541 |
| | | FOR INTERPRETATION OF DIMENSIONS AND TOLERANCING, SEE ASME Y14.5M-1994 | FIRST USED ON ARROW | SHEET | 2 OF 4 | DWG REV A |

| REL NO | LTR | NO | REVISION | DWN | CKD | APVD | DATE |
|------------|-----|----|--------------------|-----|-----|------------|---------|
| ECO-165950 | A | 1 | PRODUCTION RELEASE | AGJ | AGJ | M.WICKMANN | 07NOV16 |
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25 [1]

966 [38]

25 [1]

101.6 [4]

1094.5 [43]

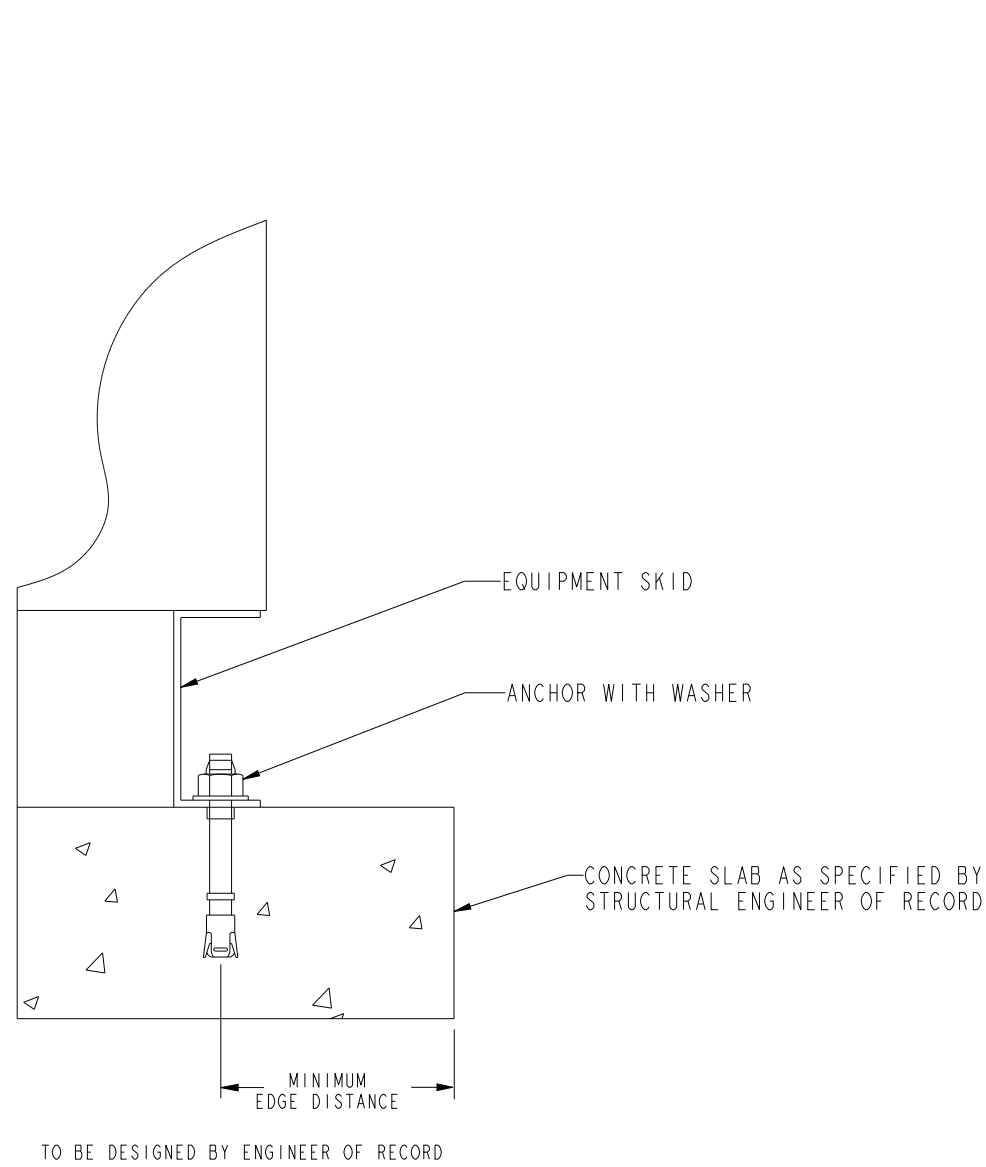
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487.3 [19]

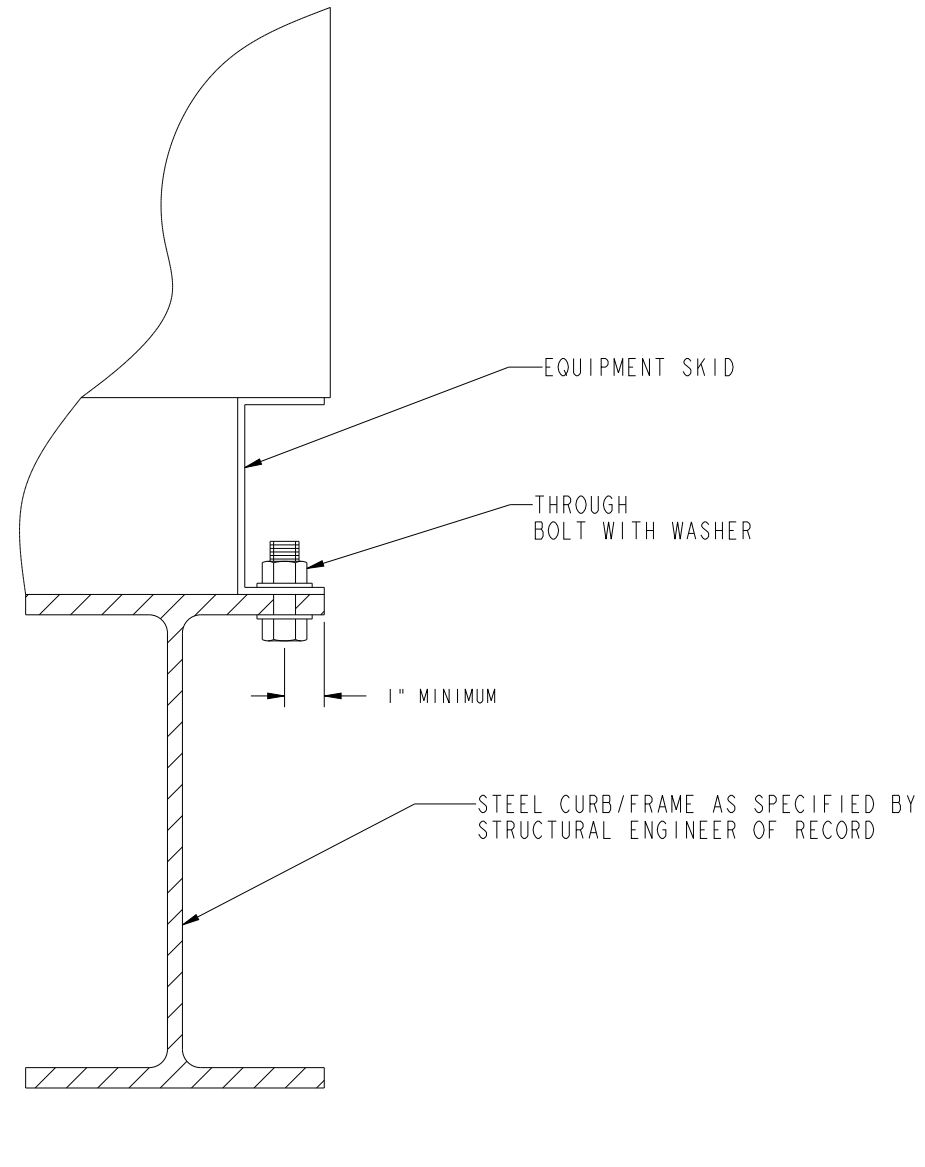
SCALE 3/16

| UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS | | DIM TO NONE | | DWN A. JOHNSON | | | CUMMINS POWER GENERATION | | | | | | | | | | | | | | | | | | | | |
|---|-----------|---------------|-------------|----------------|-----|------------|--------------------------|-------------|-------------|----------|--|-------------|-------------|------------|--|---------------|-------------|--|--|---------------|-------------|--|--|------------------|--|----------------------|--|
| DO NOT SCALE PRINT | | | | CKD A. JOHNSON | | | INSTALLATION, GENSET | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <th>DIM</th> <th>TOLERANCE</th> <th>MIN</th> <th>MAX</th> </tr> <tr> <td>X ± 1</td> <td></td> <td>0.00 - 4.99</td> <td>+0.15/-0.08</td> </tr> <tr> <td>.X ± 0.8</td> <td></td> <td>5.00 - 9.99</td> <td>+0.20/-0.10</td> </tr> <tr> <td>.XX ± 0.38</td> <td></td> <td>10.00 - 17.49</td> <td>+0.25/-0.13</td> </tr> <tr> <td></td> <td></td> <td>17.50 - 24.99</td> <td>+0.30/-0.13</td> </tr> </table> | | DIM | TOLERANCE | MIN | MAX | X ± 1 | | 0.00 - 4.99 | +0.15/-0.08 | .X ± 0.8 | | 5.00 - 9.99 | +0.20/-0.10 | .XX ± 0.38 | | 10.00 - 17.49 | +0.25/-0.13 | | | 17.50 - 24.99 | +0.30/-0.13 | | | APVD M. WICKMANN | | SEISMIC REQUIREMENTS | |
| DIM | TOLERANCE | MIN | MAX | | | | | | | | | | | | | | | | | | | | | | | | |
| X ± 1 | | 0.00 - 4.99 | +0.15/-0.08 | | | | | | | | | | | | | | | | | | | | | | | | |
| .X ± 0.8 | | 5.00 - 9.99 | +0.20/-0.10 | | | | | | | | | | | | | | | | | | | | | | | | |
| .XX ± 0.38 | | 10.00 - 17.49 | +0.25/-0.13 | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 17.50 - 24.99 | +0.30/-0.13 | | | | | | | | | | | | | | | | | | | | | | | | |
| ANG TOL: ± 1.0° | | SCALE: 1/1 | | DATE 07NOV16 | | SITE CODE | | | | | | | | | | | | | | | | | | | | | |
| - CONFIDENTIAL - | | FIRST USED ON | | PGF | | D A056M541 | | | | | | | | | | | | | | | | | | | | | |
| PROPERTY OF CUMMINS POWER GENERATION GROUP | | ARROW | | 3 OF 4 | | REV A | | | | | | | | | | | | | | | | | | | | | |

| REL NO | LTR | NO | REVISION | DWN | CKD | APVD | DATE |
|------------|-----|----|--------------------|-----|-----|------------|---------|
| ECO-165950 | A | 1 | PRODUCTION RELEASE | AGJ | AGJ | M.WICKMANN | 07NOV16 |
| | | | | | | | |
| | | | | | | | |



CONCRETE CONNECTION



STEEL CONNECTION

| | | | | | | | | | | | | | |
|---|-------------------------|--|-----------------|-----------------------|--------------------------|-----------------------|------------|-------------------------|--|-------------------------|-------------------|----------------------|--|
| UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS | | SIM TO: NONE | DWN: A. JOHNSON | | CUMMINS POWER GENERATION | | | | | | | | |
| DO NOT SCALE PRINT | | | CKD: A. JOHNSON | | INSTALLATION, GENSET | | | | | | | | |
| DIM | TOLERANCE | <table border="1"> <tr> <td>X ± 1</td> <td>0.00-4.99 +0.15/-0.08</td> </tr> <tr> <td>.X ± 0.8</td> <td>5.00-9.99 +0.20/-0.10</td> </tr> <tr> <td>.XX ± 0.38</td> <td>10.00-17.49 +0.25/-0.13</td> </tr> <tr> <td></td> <td>17.50-24.99 +0.30/-0.13</td> </tr> </table> | X ± 1 | 0.00-4.99 +0.15/-0.08 | .X ± 0.8 | 5.00-9.99 +0.20/-0.10 | .XX ± 0.38 | 10.00-17.49 +0.25/-0.13 | | 17.50-24.99 +0.30/-0.13 | APVD: M. WICKMANN | SEISMIC REQUIREMENTS | |
| X ± 1 | 0.00-4.99 +0.15/-0.08 | | | | | | | | | | | | |
| .X ± 0.8 | 5.00-9.99 +0.20/-0.10 | | | | | | | | | | | | |
| .XX ± 0.38 | 10.00-17.49 +0.25/-0.13 | | | | | | | | | | | | |
| | 17.50-24.99 +0.30/-0.13 | | | | | | | | | | | | |
| ANG TOL: ± 1.0° | | SCALE: 1/1 | DATE: 07NOV16 | SITE CODE: PGF | FIRST USED ON: ARROW | | | | | | | | |
| | | | | DWG FILE: D | A056M541 | SHEET 4 OF 4 | | | | | | | |

Part A056M541 A

| Description | Legacy Name | External Regulations | Application Status | Release Phase Code | Security Classification | Alternates |
|---------------------|-------------|----------------------|--------------------|--------------------|-------------------------|------------|
| INSTALLATION,GENSET | A056M541 | IBC,OSHPD | Production Only | Production | Confidential | |

Part Specifications :A056M541 A

| Name | Description | Legacy Name |
|----------|------------------------|-------------|
| A030B356 | SPECIFICATION,MATERIAL | CES10903 |
| A056M542 | DRAWING,ENGINEERING | A056M542 |