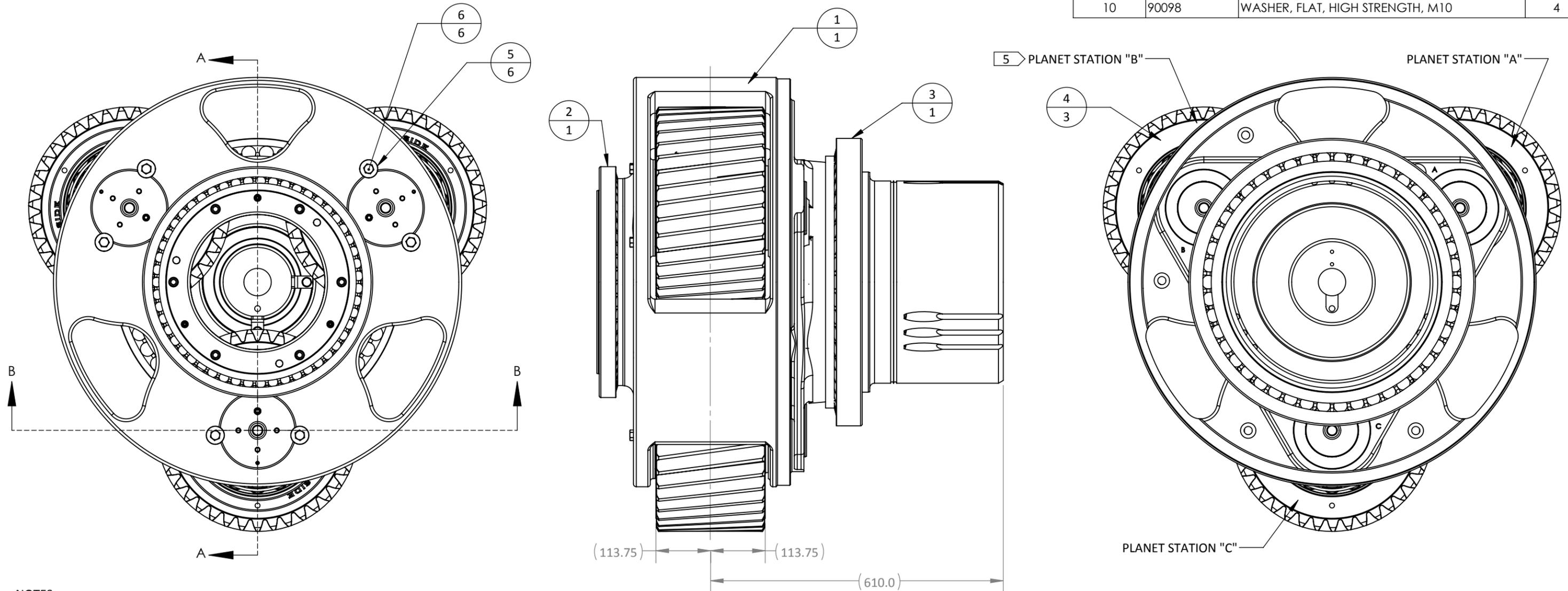


| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 254594 | PLANET CARRIER STAGE 1 (FINAL MACH & ASS'Y) | 1 |
| 2 | 93231 | BEARING SINGLE ROW TAPER (PLC) | 1 |
| 3 | 93230 | BEARING PLC A UPWIND | 1 |
| 4 | 254595 | PLANET GEAR ASS'Y (CARRIER) | 3 |
| 5 | 90246 | WASHER, M24 LG DIA, ZINC PLTD | 6 |
| 6 | 90142 | HEX HD CAP SCREW, M12-1.25 x 30 GR 8.8 | 6 |
| 7 | 251546 | BRACKET, SENSOR MOUNTING | 2 |
| 8 | 251564 | BRACKET, SENSOR MOUNTING | 2 |
| 9 | 90128 | HEX HD CAPSCREW, M10 x 20, GR 8.8 | 4 |
| 10 | 90098 | WASHER, FLAT, HIGH STRENGTH, M10 | 4 |



NOTES:

- USE LOCTITE 577 THREAD SEALANT ON ALL THREADS PER INSTRUCTIONS
- LUBRICATION SYSTEM TO BE FLUSHED CLEAN PRIOR TO ASSEMBLY
- FOR ASSEMBLY, SEE DOCUMENT 1509-DC-035 PLANET STAGE ASSEMBLY PROCEDURE
- INSTRUMENTATION TO BE COMPLETED PRIOR TO ASSEMBLY PER LAYOUT DRAWINGS 1551-LY-111, 1551-LY-112, AND 1551-LY-121.
- THE PLANET GEAR ASSEMBLY WITH THE MOST INSTRUMENTATION SHALL BE DESIGNATED AS UNIQUE ASSEMBLY "B" AND MUST BE INSTALLED INTO PLANET STATION "B" OF THE CARRIER.

| REV | CHANGED FROM | BY | DATE | APRD |
|-----|---|-----|---------|------|
| A | PRE-RELEASE | CPS | 1/14/13 | |
| B | CHANGES PER NREL DRW REVIEW. UPDATE BORDER | CPS | 3/14/13 | |
| C | RELEASE FOR PRODUCTION | CPS | 4/19/13 | |
| D | CHANGES PER MANUFACTURER REVIEW AND INSTRUMENTATION | CPG | 3/20/14 | |
| E | CHANGES PER MFG REVIEW | CPG | 1/18/16 | |

REPORT ERRORS & CHANGES
REMOVE ALL BURRS AND SHARP EDGES
DIMENSIONS ARE IN MILLIMETERS.
UNSPECIFIED TOLERANCES:

DECIMALS: FINISH: ANGLES:

X. ±1.0 6.3 $\sqrt{\mu\text{m Ra}}$ $\leq \pm 0.5^\circ$
.X ±0.5
.XX ±0.25

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NOT TO BE REPRODUCED OR USED TO MAKE
OTHER DRAWINGS OR MACHINERY

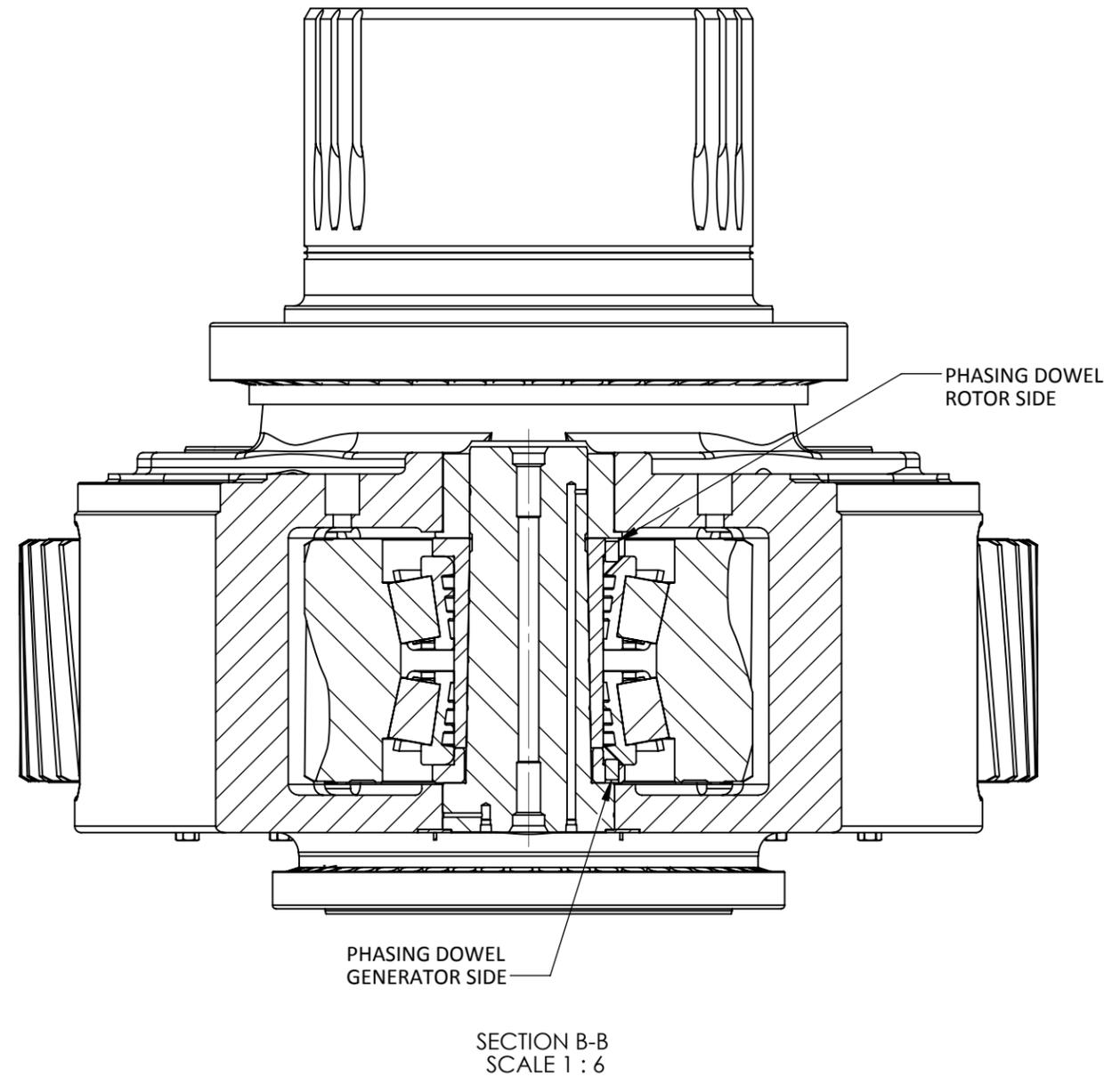
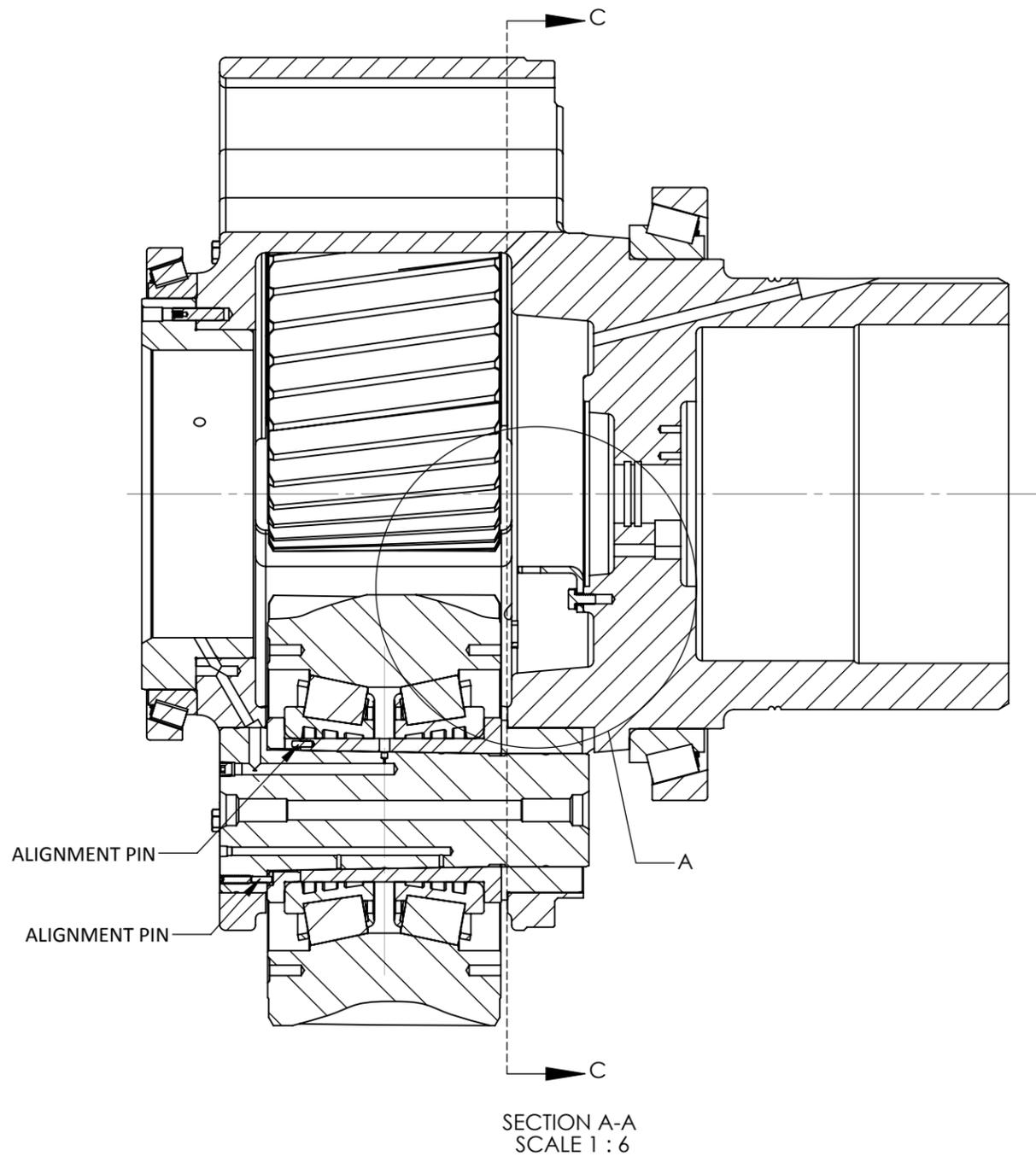
DRAWN CPS DATE: 1/14/13
CHECKED NJB THIRD ANGLE PRJ

National Renewable Energy Laboratory

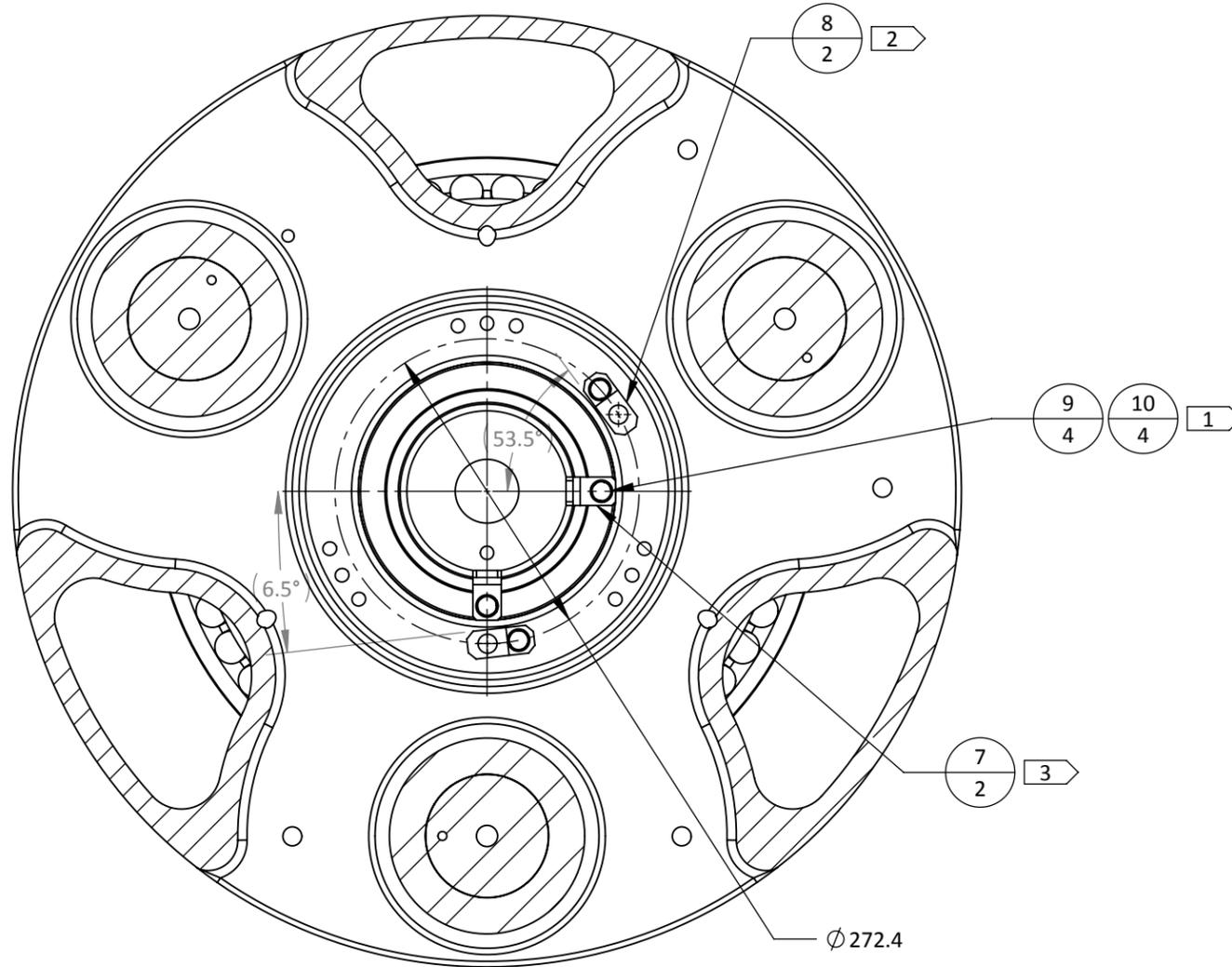
TITLE: PLANET CARRIER BEARINGS AND PLANETS ASS'Y

SIZE **B** DWG. NO. 254714 REV **E**

SCALE: 1:8 WEIGHT: 1232.10 kgs SHEET 1 OF 3



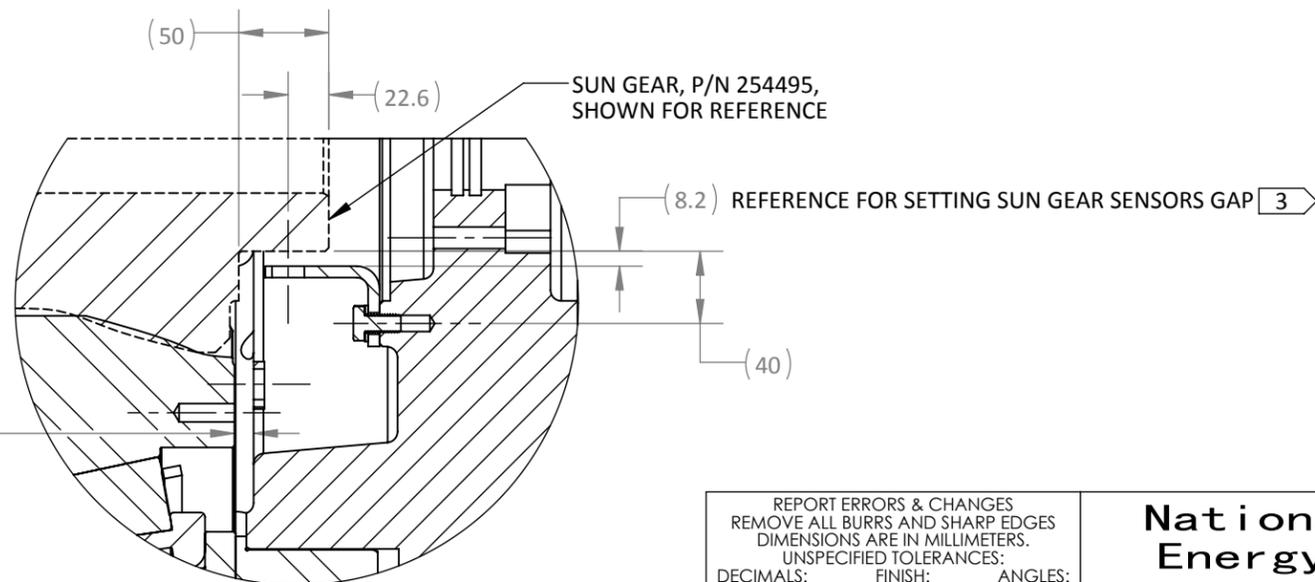
| | | | | | |
|---|--------------------------------|----------------------------------|---|---------------------------|---|
| REPORT ERRORS & CHANGES REMOVE ALL BURRS AND SHARP EDGES DIMENSIONS ARE IN MILLIMETERS. UNSPECIFIED TOLERANCES: DECIMALS: FINISH: ANGLES: | | | National Renewable Energy Laboratory | | |
| X. ±1.0 .X ±0.5 .XX ±0.25 | 6.3 $\sqrt{\mu\text{m Ra}}$ | $\leq \pm 0.5^\circ$ | | | TITLE: PLANET CARRIER BEARINGS AND PLANETS ASS'Y |
| COPYRIGHT © NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY | | | SIZE B | DWG. NO. 254714 | REV E |
| DRAWN CHECKED | CPS NJB | DATE: 1/14/13 THIRD ANGLE PRJ | SCALE: 1:6 | WEIGHT: 1232.10 kgs | SHEET 2 OF 3 |



SECTION C-C

SENSOR INSTALL NOTES:

- 1. WHEN INSTALLING THE SENSOR BRACKETS, PARTS 251546 AND 251564, APPLY A SMALL AMOUNT OF THREAD LOCKING LOCTITE TO THE THREADS OF 90128 AND TORQUE CAPSCREW TO 51 Nm / 451 in-lbf.
- 2. ADJUST SENSORS (NOT SHOWN) TO A DISTANCE OF 3 ± 2 MM FROM PLANAR FACE OF THE PLANET GEARS TO FACE ON SENSOR. SEE DETAIL A FOR REFERENCE. LOCK WITH JAM NUT SUPPLIED WITH SENSOR (REFER TO INSTRUMENTATION DRAWINGS).
- 3. ADJUST SENSORS (NOT SHOWN) TO A DISTANCE OF 3 ± 2 MM FROM CYLINDRICAL FACE OF THE SUN GEAR TO FACE ON SENSOR. SEE DETAIL A FOR REFERENCE. LOCK WITH JAM NUT SUPPLIED WITH SENSOR (REFER TO INSTRUMENTATION DRAWINGS).



2 REFERENCE FOR SETTING PLANET GEAR SENSORS GAP (10.6)

DETAIL A
SCALE 1 : 4

| | | |
|--|-----------------------------|----------------------|
| REPORT ERRORS & CHANGES REMOVE ALL BURRS AND SHARP EDGES DIMENSIONS ARE IN MILLIMETERS. UNSPECIFIED TOLERANCES: | | |
| DECIMALS: | FINISH: | ANGLES: |
| X. ±1.0 .X ±0.5 .XX ±0.25 | 6.3 $\sqrt{\mu\text{m Ra}}$ | $\leq \pm 0.5^\circ$ |
| COPYRIGHT © | | |
| NOT TO BE REPRODUCED OR USED TO MAKE OTHER DRAWINGS OR MACHINERY | | |
| DRAWN | CPS | DATE: 1/14/13 |
| CHECKED | NJB | THIRD ANGLE PRJ |

**National Renewable
Energy Laboratory**

TITLE: **PLANET CARRIER BEARINGS
AND PLANETS ASS'Y**

| | | |
|------------|---------------------|--------------|
| SIZE | DWG. NO. | REV |
| B | 254714 | E |
| SCALE: 1:6 | WEIGHT: 1232.10 kgs | SHEET 3 OF 3 |