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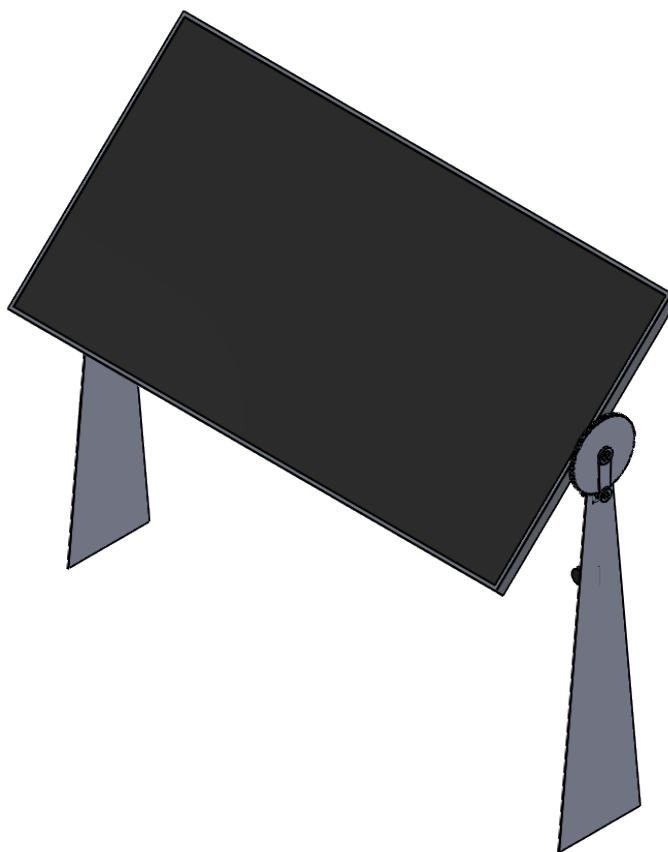
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MACHINE DESIGN CLASS PROJECT

ENME-3511-0

WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke

Dylan Merritt

Evan Spitler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL \pm
 ANGULAR: MACH \pm BEND \pm
 TWO PLACE DECIMAL \pm
 THREE PLACE DECIMAL \pm

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

Machined

DO NOT SCALE DRAWING

NAME

DATE

DRAWN

ES

3/18/19

CHECKED

GRADED:

COMMENTS:

Solar Tracker

TITLE:

Top-Level
Assembly

SIZE

DWG. NO.

REV

A

A-1

SCALE: 1:20 WEIGHT:

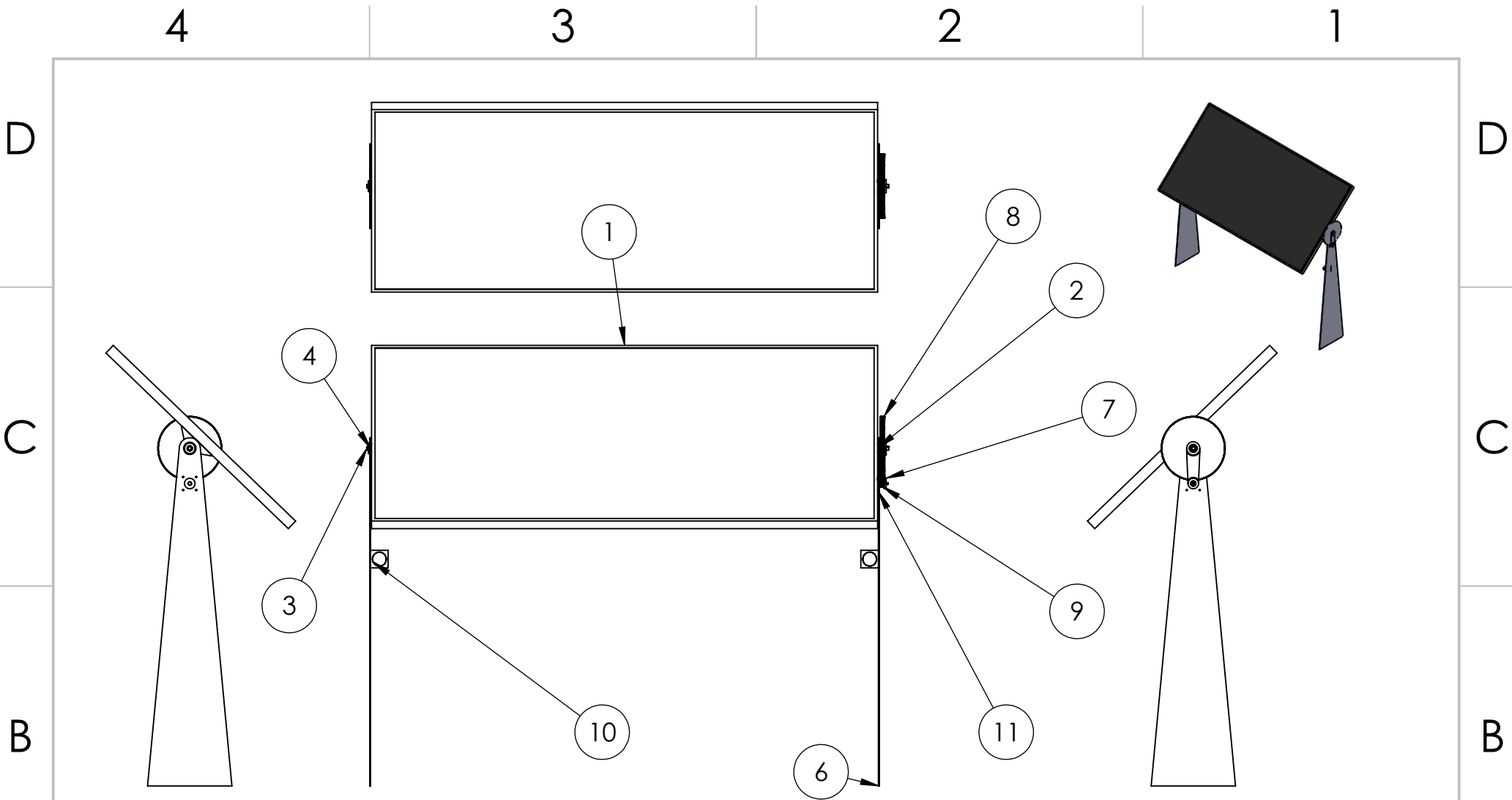
SHEET 1 OF 12

4

3

2

1



MACHINE DESIGN CLASS PROJECT

ENME-3511-0 WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke
Dylan Merritt
Evan Spitler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL \pm
ANGULAR: MACH \pm BEND \pm
TWO PLACE DECIMAL \pm
THREE PLACE DECIMAL \pm

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

Machined

DO NOT SCALE DRAWING

NAME DATE

DRAWN ES 3/18/19

CHECKED

GRADED:

COMMENTS:

Solar Tracker

TITLE:

Assembly

SIZE

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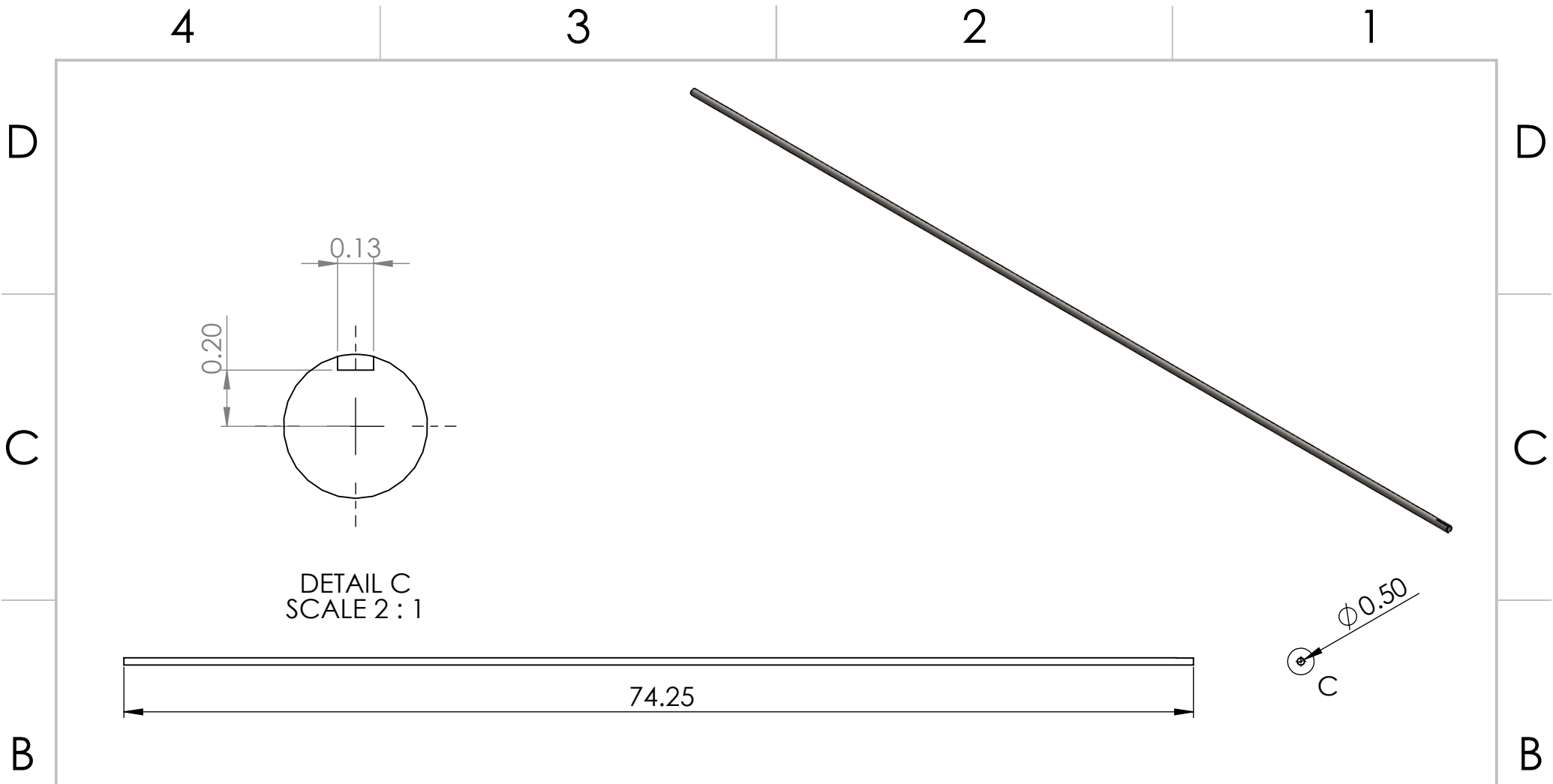
DWG. NO.

A-2

REV

SCALE: 1:20 WEIGHT:

SHEET 2 OF 12

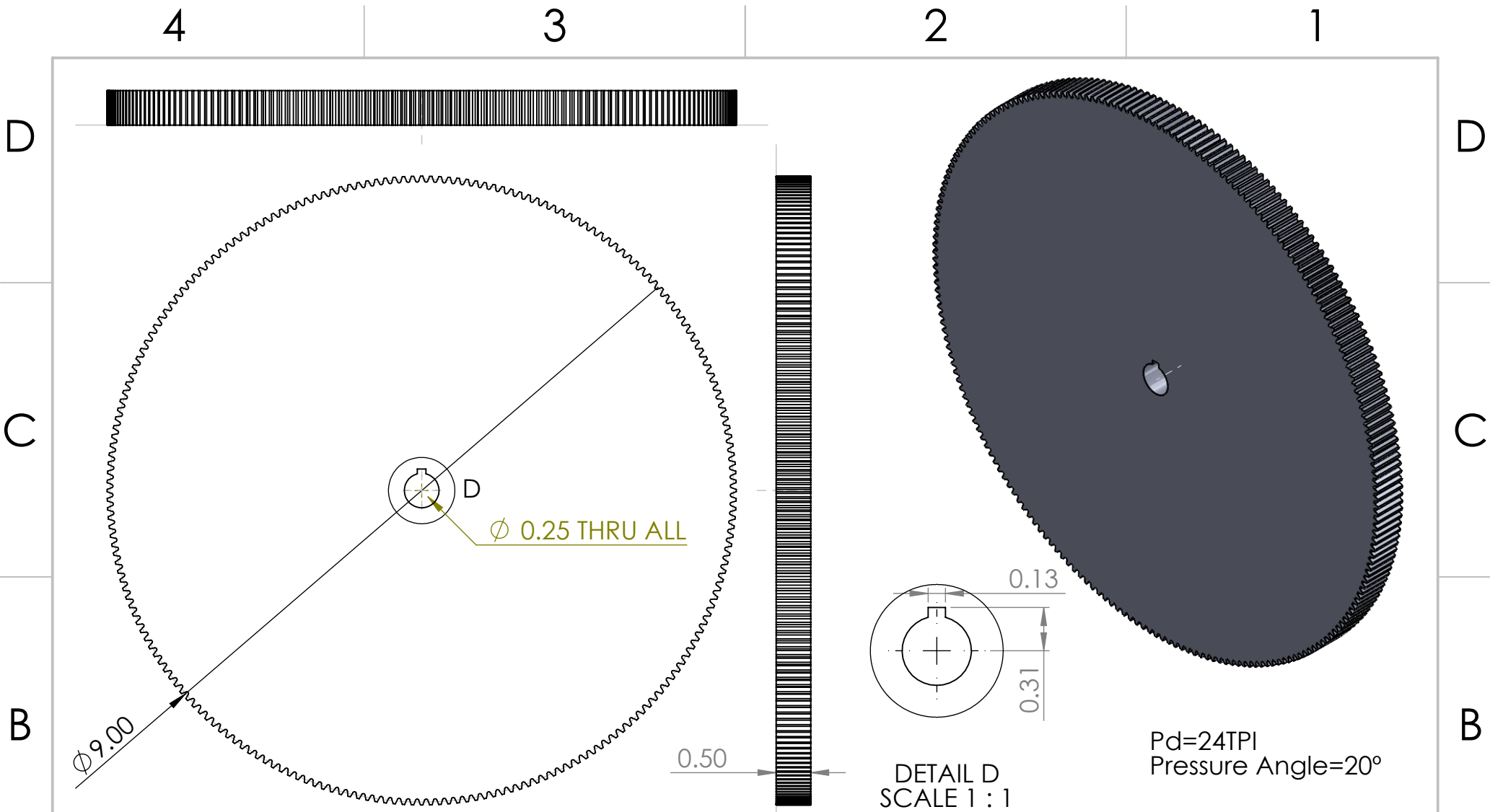


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SCALE 2 : 1

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| MACHINE DESIGN CLASS PROJECT | | UNLESS OTHERWISE SPECIFIED: | | NAME | | DATE | | Solar Tracker | | | | | |
| ENME-3511-0 | | WINTER 2019 | | DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ± | | DRAWN | | ES | | 3/18/19 | | TITLE: Drive Shaft | |
| UNIVERSITY OF DENVER | | CHECKED | | | | | | | | | | | |
| | | GRADED: | | | | | | | | | | | |
| | | COMMENTS: | | | | | | | | | | | |
| DESIGN TEAM: | | | | | | | | | | | | | |
| Joseph Burke | | | | | | | | | | | | | |
| Dylan Merritt | | | | | | | | | | | | | |
| Evan Spittler | | | | | | | | | | | | | |
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MACHINE DESIGN CLASS PROJECT

ENME-3511-0

WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke

Dylan Merritt

Evan Spitler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL \pm
ANGULAR: MACH \pm BEND \pm
TWO PLACE DECIMAL \pm
THREE PLACE DECIMAL \pm

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL
Case-Hardened Steel

FINISH
Machined

DO NOT SCALE DRAWING

DRAWN

NAME

ES

DATE

3/18/19

CHECKED

GRADED:

COMMENTS:

Solar Tracker

TITLE:

Drive Gear 9"

SIZE

A

DWG. NO.

P-2

REV

SCALE: 1:2

WEIGHT:

SHEET 4 OF 12

4

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2

1

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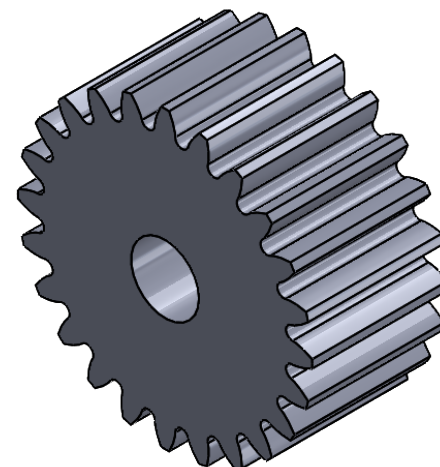
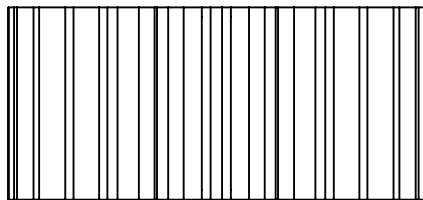
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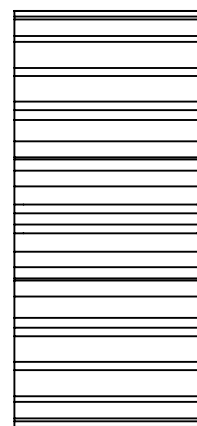
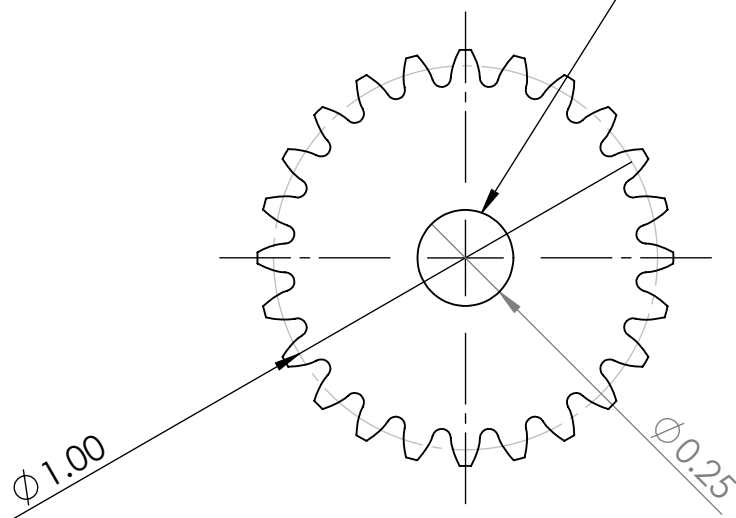
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Pd=24TPI
Pressure Angle=20°

0.50

MACHINE DESIGN CLASS PROJECT

ENME-3511-0

WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke

Dylan Merritt

Evan Spitler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL \pm
ANGULAR: MACH \pm BEND \pm
TWO PLACE DECIMAL \pm
THREE PLACE DECIMAL \pm

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL
Case-Hardened Steel

FINISH
Machined

DO NOT SCALE DRAWING

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NAME

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DATE

3/18/19

CHECKED

GRADED:

COMMENTS:

Solar Tracker

TITLE:

Drive Pinion 1"

SIZE

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DWG. NO.

P-3

REV

SCALE: 2:1

WEIGHT:

SHEET 5 OF 12

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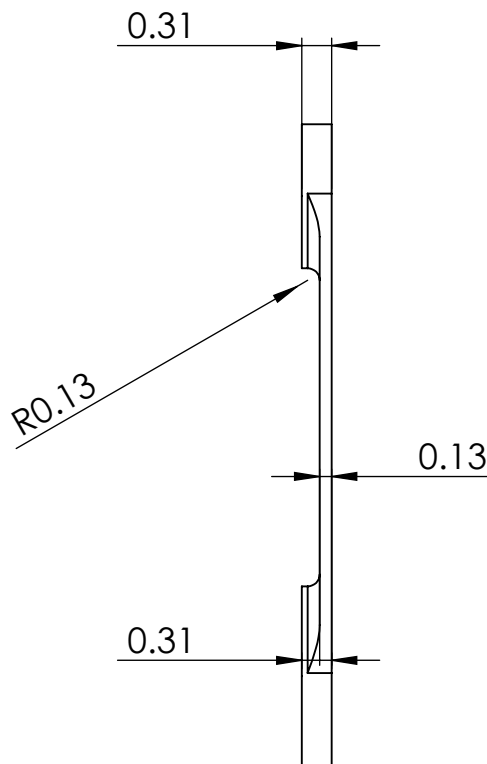
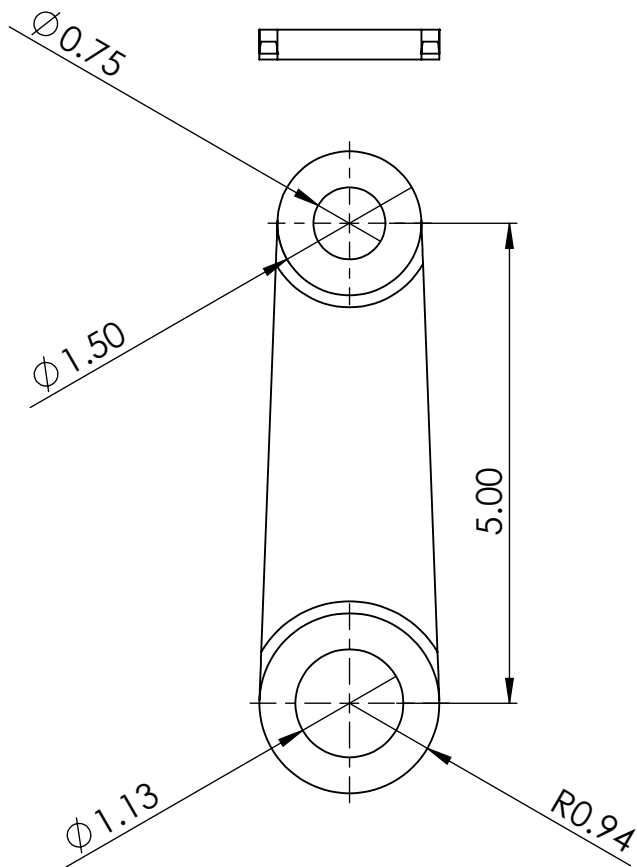
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MACHINE DESIGN CLASS PROJECT

ENME-3511-0

WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke

Dylan Merritt

Evan Spittler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL \pm
 ANGULAR: MACH \pm BEND \pm
 TWO PLACE DECIMAL \pm
 THREE PLACE DECIMAL \pm

INTERPRET GEOMETRIC
TOLERANCING PER:MATERIAL
6061-T6 AluminumFINISH
Machined

DO NOT SCALE DRAWING

DRAWN

NAME

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DATE

3/18/19

CHECKED

GRADED:

COMMENTS:

Solar Tracker

TITLE:

Shaft-Binding
Gusset

SIZE

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DWG. NO.

P-4

REV

SCALE: 1:2

WEIGHT:

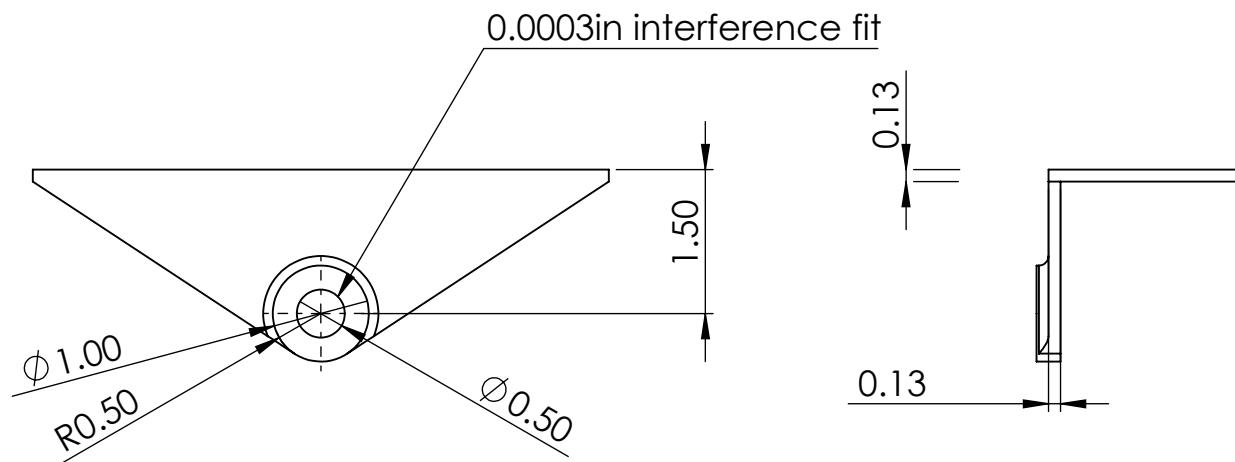
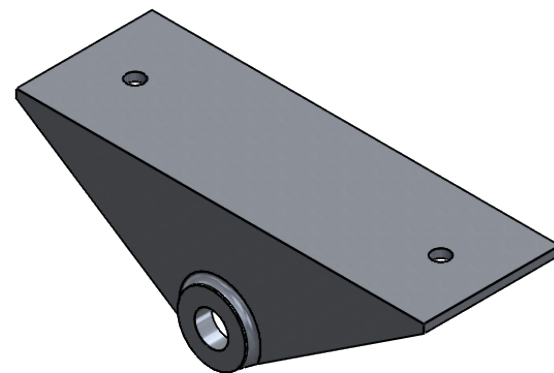
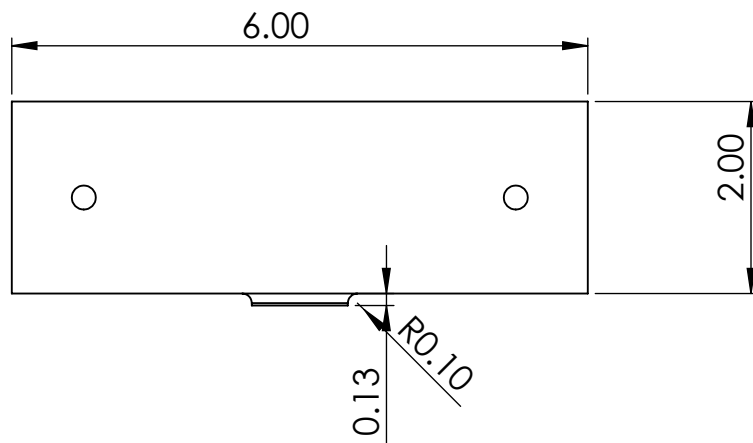
SHEET 6 OF 12

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MACHINE DESIGN CLASS PROJECT

ENME-3511-0

WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke

Dylan Merritt

Evan Spittler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL \pm
 ANGULAR: MACH \pm BEND \pm
 TWO PLACE DECIMAL \pm
 THREE PLACE DECIMAL \pm

INTERPRET GEOMETRIC
TOLERANCING PER:MATERIAL
601-T6 AluminumFINISH
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DO NOT SCALE DRAWING

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DATE

3/18/19

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COMMENTS:

Solar Tracker

TITLE:

Panel Bracket

SIZE

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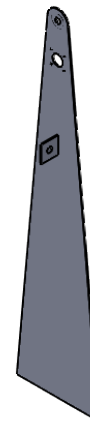
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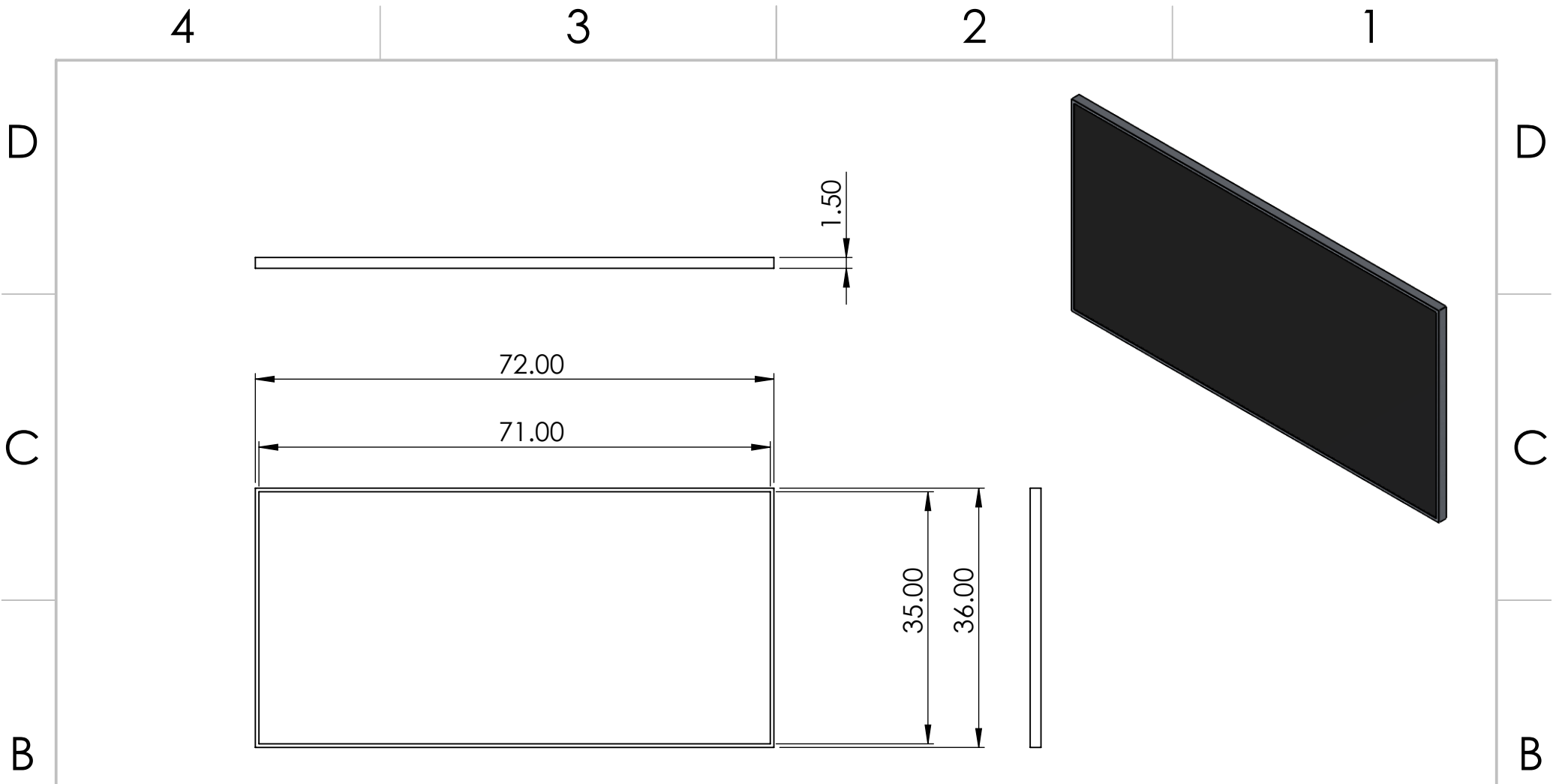
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SHEET 7 OF 12



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| MACHINE DESIGN CLASS PROJECT | | UNLESS OTHERWISE SPECIFIED: | | NAME | DATE | Solar Tracker | |
| ENME-3511-0 | WINTER 2019 | DIMENSIONS ARE IN INCHES | | DRAWN | ES | 3/18/19 | TITLE: Solar Panel |
| UNIVERSITY OF DENVER | | TOLERANCES: | | CHECKED | | | |
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| DESIGN TEAM: | | THREE PLACE DECIMAL ± | | | | | |
| Joseph Burke | | INTERPRET GEOMETRIC | | | | | |
| Dylan Merritt | | TOLERANCING PER: | | | | | |
| Evan Spitler | | MATERIAL | | | | | |
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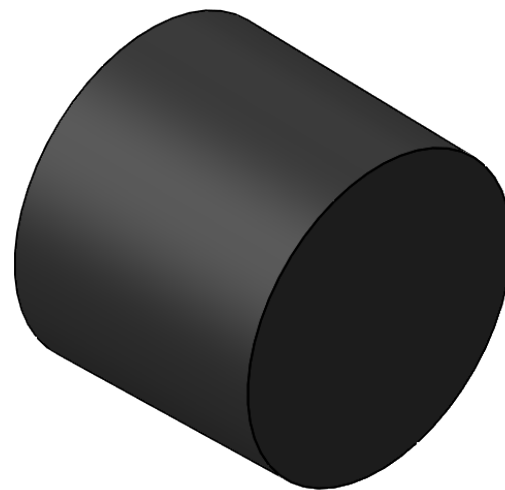
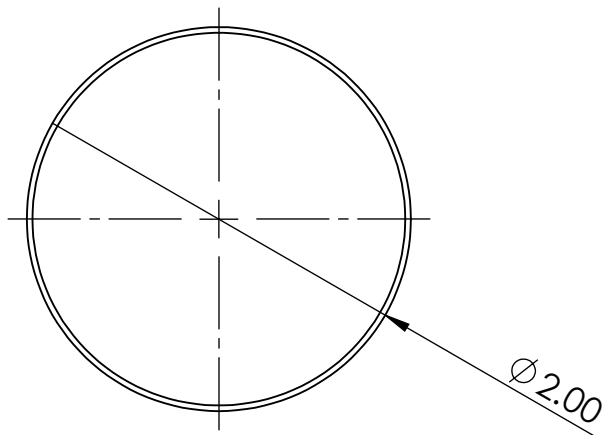
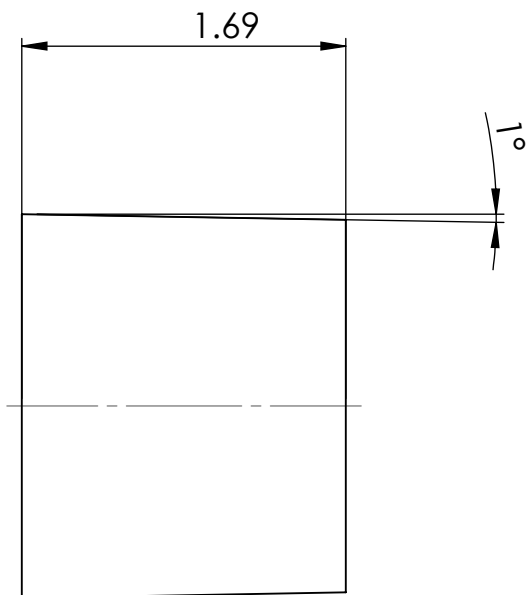
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MACHINE DESIGN CLASS PROJECT

ENME-3511-0

WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke

Dylan Merritt

Evan Spitler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL ±
 ANGULAR: MACH ± BEND ±
 TWO PLACE DECIMAL ±
 THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL Rubber

FINISH As-cast

DO NOT SCALE DRAWING

DRAWN

NAME

ES

DATE

3/18/19

CHECKED

GRADED:

COMMENTS:

Solar Tracker

TITLE:

Pivot Stopper

SIZE

A

DWG. NO.

S-2

REV

SCALE: 1:1

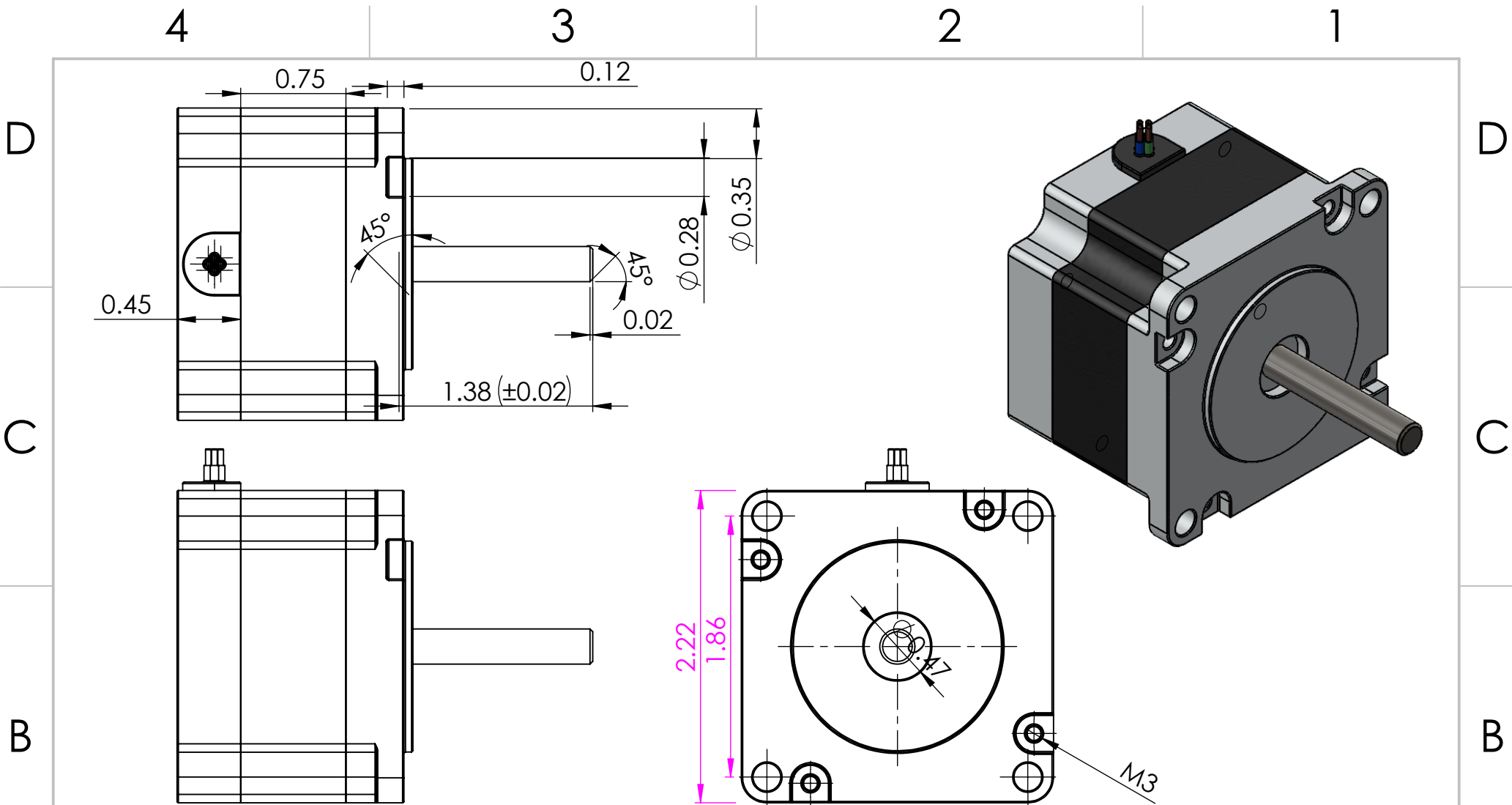
WEIGHT:

SHEET 10 OF 12

3

2

1



MACHINE DESIGN CLASS PROJECT

ENME-3511-0

WINTER 2019

UNIVERSITY OF DENVER

DESIGN TEAM:

Joseph Burke

Dylan Merritt

Evan Spittler

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL
OTS Component

FINISH

DO NOT SCALE DRAWING

DRAWN

NAME
See Bleow

DATE
3/18/19

CHECKED

GRADED:

COMMENTS:

Stepper Drawn by
Darko Sarek Lukendic
for Grabcad
<https://grabcad.com/library/nema23-57bygh627-1>

Solar Tracker

TITLE:

NEMA-23
Stepper Motor

SIZE

A

DWG. NO.

S-3

REV

SCALE: 1:2

WEIGHT:

SHEET 11 OF 12

