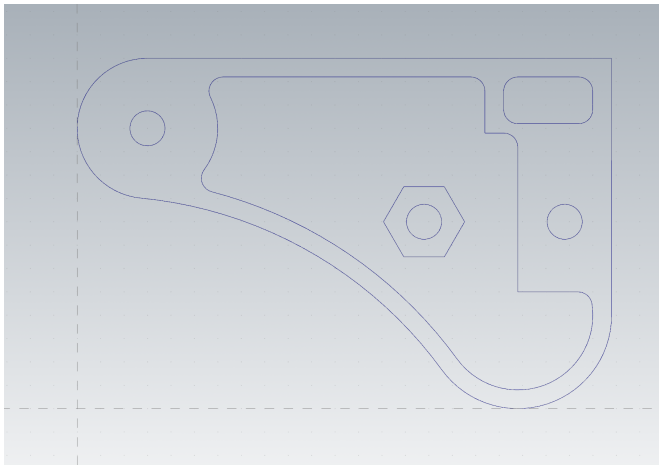
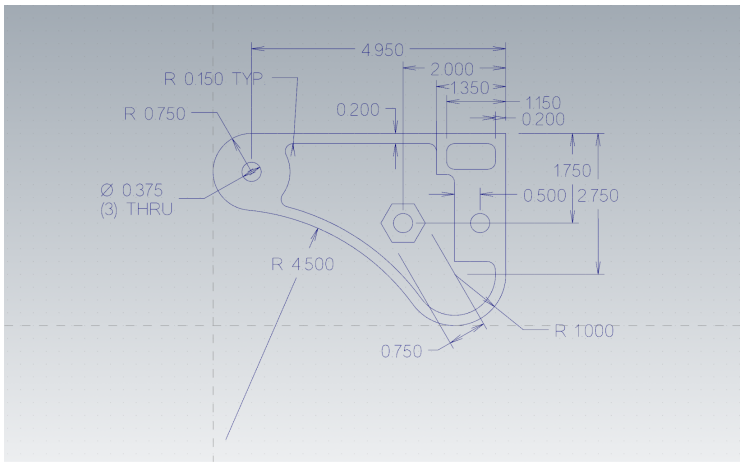
Report by Weston Shakespear
Spring 2023

CCET 3680
Mill Lesson 8 First Exercise

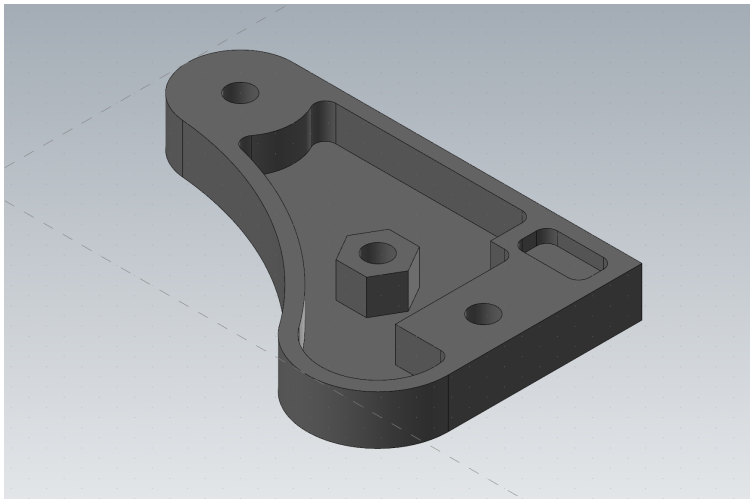
I. Wireframe:



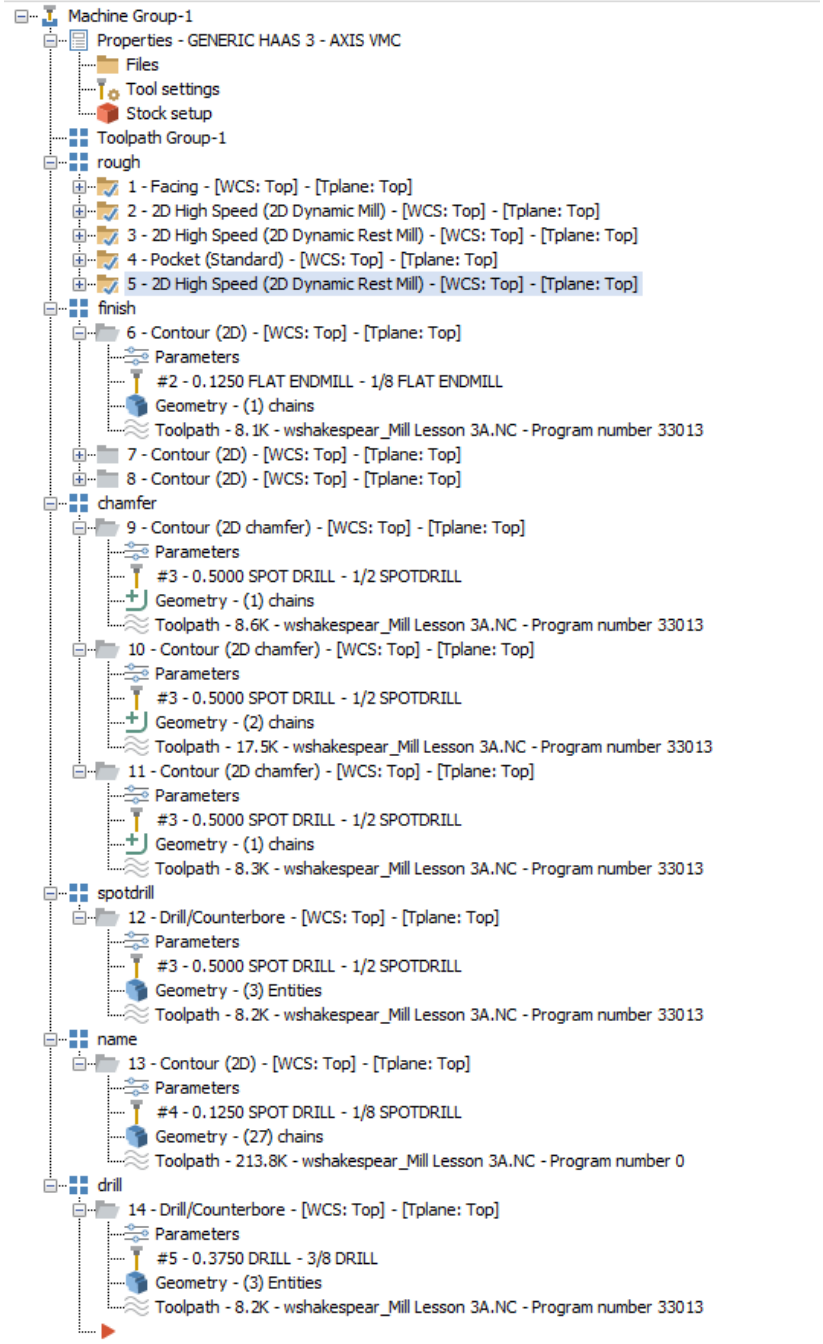
II. Dimensions:



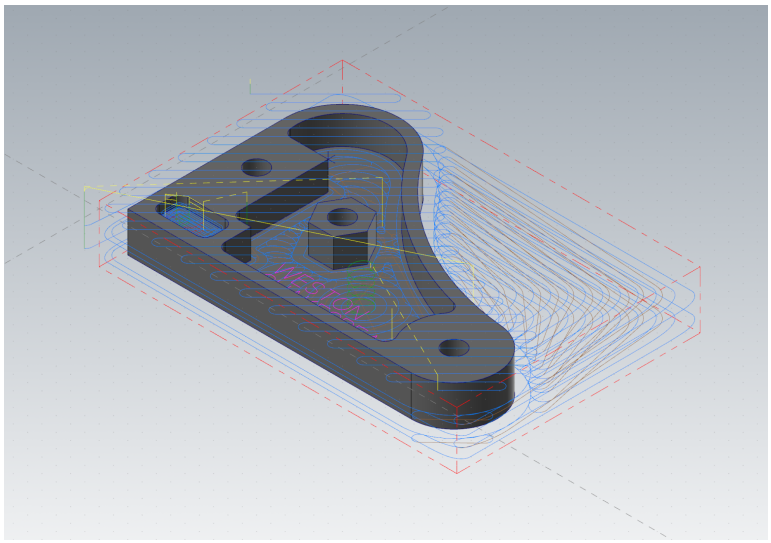
III. Solid:



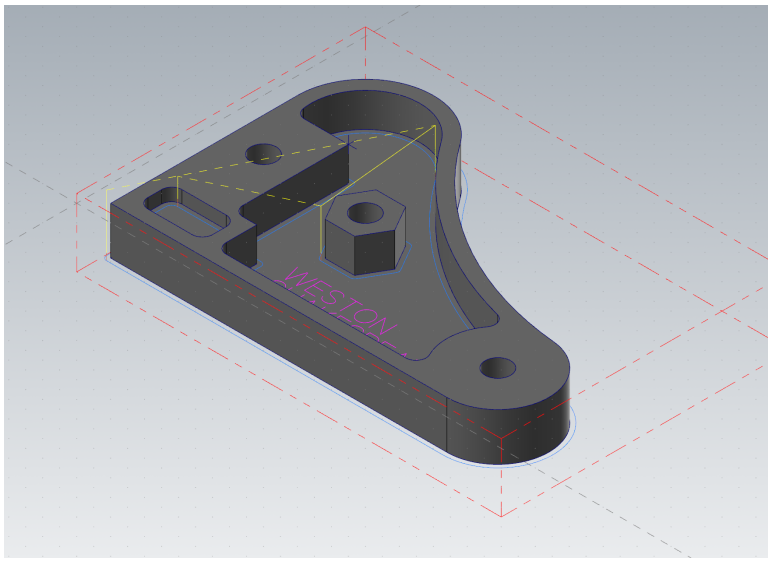
IV. Toolpath:


Machine Group-1
Properties - GENERIC HAAS 3 - AXIS VMC
Files
Tool settings
Stock setup
Toolpath Group-1
rough
1 - Facing - [WCS: Top] - [Tplane: Top]
2 - 2D High Speed (2D Dynamic Mill) - [WCS: Top] - [Tplane: Top]
3 - 2D High Speed (2D Dynamic Rest Mill) - [WCS: Top] - [Tplane: Top]
4 - Pocket (Standard) - [WCS: Top] - [Tplane: Top]
5 - 2D High Speed (2D Dynamic Rest Mill) - [WCS: Top] - [Tplane: Top]
finish
6 - Contour (2D) - [WCS: Top] - [Tplane: Top]
Parameters
#2 - 0.1250 FLAT ENDMILL - 1/8 FLAT ENDMILL
Geometry - (1) chains
Toolpath - 8.1K - wshakespear_Mill Lesson 3A.NC - Program number 33013
7 - Contour (2D) - [WCS: Top] - [Tplane: Top]
8 - Contour (2D) - [WCS: Top] - [Tplane: Top]
chamfer
9 - Contour (2D chamfer) - [WCS: Top] - [Tplane: Top]
Parameters
#3 - 0.5000 SPOT DRILL - 1/2 SPOTDRILL
Geometry - (1) chains
Toolpath - 8.6K - wshakespear_Mill Lesson 3A.NC - Program number 33013
10 - Contour (2D chamfer) - [WCS: Top] - [Tplane: Top]
Parameters
#3 - 0.5000 SPOT DRILL - 1/2 SPOTDRILL
Geometry - (2) chains
Toolpath - 17.5K - wshakespear_Mill Lesson 3A.NC - Program number 33013
11 - Contour (2D chamfer) - [WCS: Top] - [Tplane: Top]
Parameters
#3 - 0.5000 SPOT DRILL - 1/2 SPOTDRILL
Geometry - (1) chains
Toolpath - 8.3K - wshakespear_Mill Lesson 3A.NC - Program number 33013
spotdrill
12 - Drill/Counterbore - [WCS: Top] - [Tplane: Top]
Parameters
#3 - 0.5000 SPOT DRILL - 1/2 SPOTDRILL
Geometry - (3) Entities
Toolpath - 8.2K - wshakespear_Mill Lesson 3A.NC - Program number 33013
name
13 - Contour (2D) - [WCS: Top] - [Tplane: Top]
Parameters
#4 - 0.1250 SPOT DRILL - 1/8 SPOTDRILL
Geometry - (27) chains
Toolpath - 213.8K - wshakespear_Mill Lesson 3A.NC - Program number 0
drill
14 - Drill/Counterbore - [WCS: Top] - [Tplane: Top]
Parameters
#5 - 0.3750 DRILL - 3/8 DRILL
Geometry - (3) Entities
Toolpath - 8.2K - wshakespear_Mill Lesson 3A.NC - Program number 33013

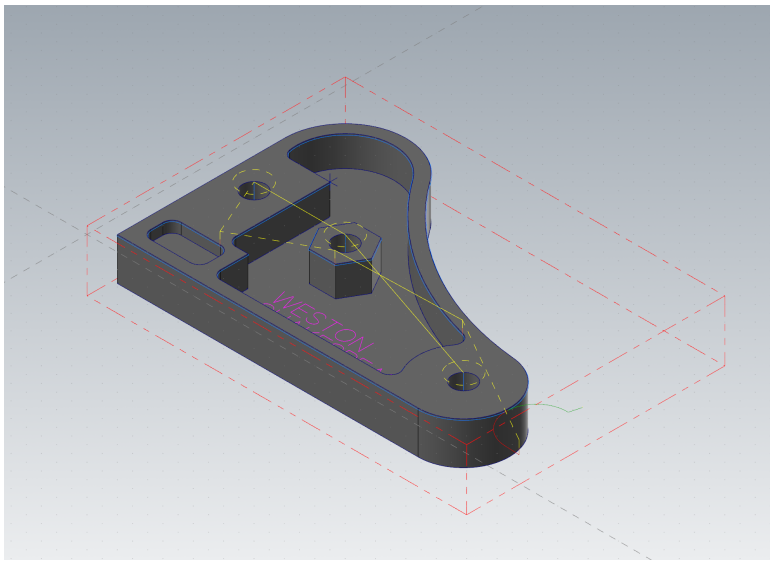
V. ⅜” Endmill:



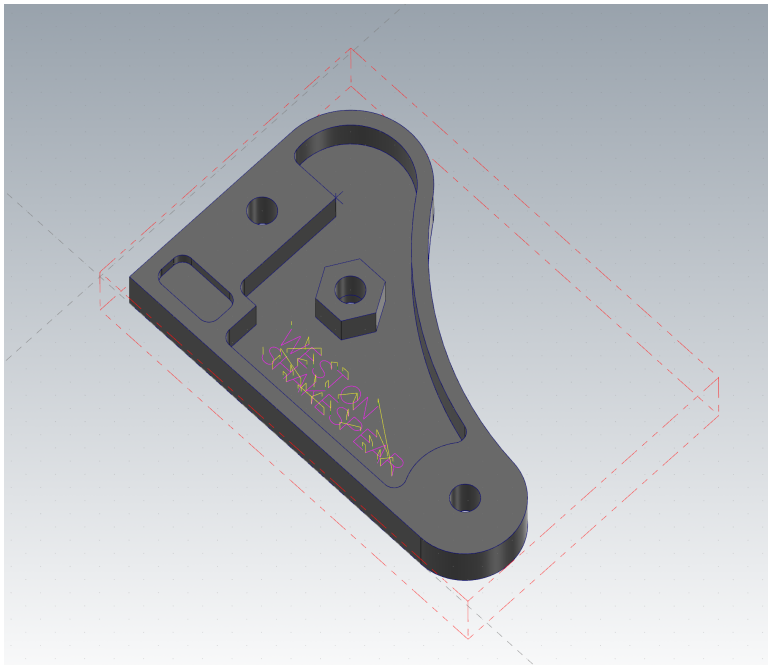
VI. ⅛” Endmill:



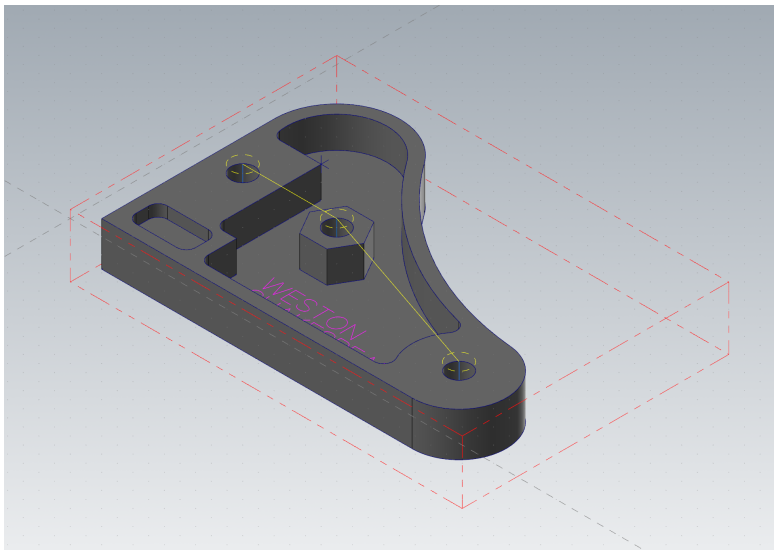
VII. ½” Spot Drill:



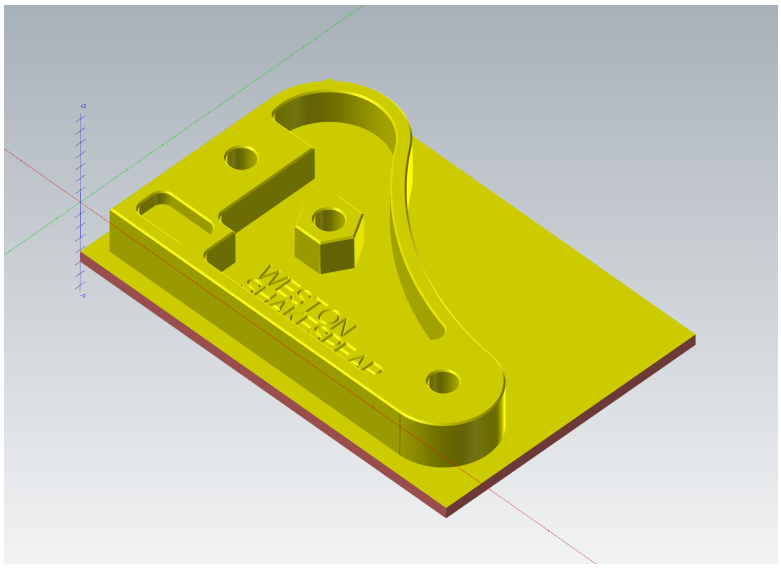
VIII. ⅛” Spot Drill:



IX. ⅜” Drill:



X. Final Solid:



XI. Method:

For this part I drew the radii in and then the rest of the features using the x,y coordinates of them.

XII. GCode Changes

To modify my gcode to be compatible with the machine I first made sure the HAAS 3 axis post processor was selected when exporting the gcode. Then I removed the long lines at the beginning and edited the last G28 home command to not zero the x axis.

XIII. Finished Part

XVI. Quality Report

Outside X: 3.7510in
Outside Y: 5.7960in
Hex Width: 0.7553in
Hole Diameter Average: 0.3786in