610 Huntington Ave,

Boston, MA 02115

04/20/2021

Professor R. Roberts

Online

Wentworth Institute of Technology, Boston, MA 02115

Dear Professor Roberts,

Attached is my final project of the wheel assembly. The task of this project is to model all parts of this wheel assembly as well as constructing appropriate drawings of the parts and exploded assembly. Also required is an interface checklist showing tolerances within the assembly.

Using SolidWorks design software, I was able to model each individual part and then create the assembly. Using the same software, technical, multi-view drawings were created of each part and finally a bill of materials was created and added to the exploded assembly drawing.

Using techniques learned in Engineering Graphics (MECH2300), I was able to complete the project as required and is attached for your grading.

Thank you,

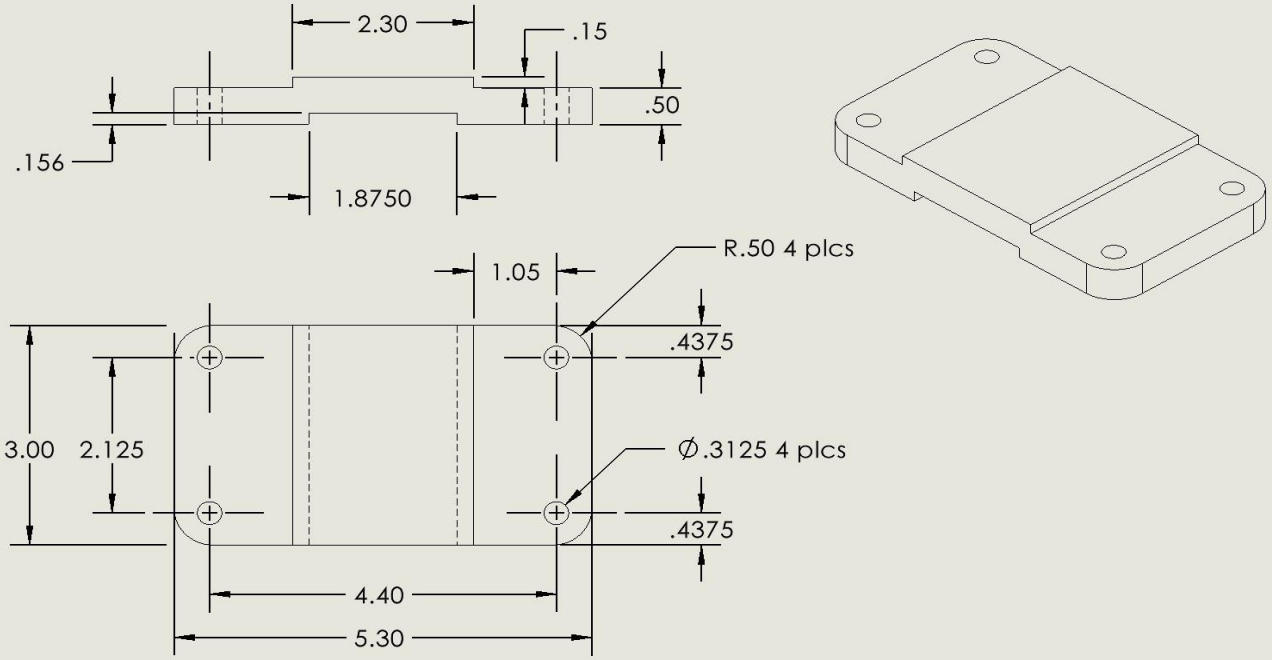
Hideyuki Nakanishi

Electromechanical Engineering

Wentworth Institute of Technology ‘23

Email/phone number: nakanishih@wit.edu / +1 617-818-3938

Wentworth INSTITUTE OF TECHNOLOGY



PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WENTWORTH INSTITUTE OF TECHNOLOGY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WENTWORTH INSTITUTE OF TECHNOLOGY IS PROHIBITED

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: ROUNDS & FILETS: TWO PLACE DECIMAL: 0.01± THREE PLACE DECIMAL: 0.005± FOUR PLACE DECIMAL: 0.0005±	DRAWN	H.N	4/20/21
	CHECKED		
	ENG APPR.		
	MFG APPR.		
	Q.A.		
INTERPRET GEOMETRIC TOLERANCING PER:	Material		
	Cast Iron		
FINISH			
DO NOT SCALE DRAWING			

Wentworth Institute of Technology

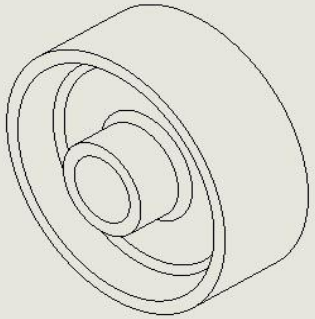
TITLE:

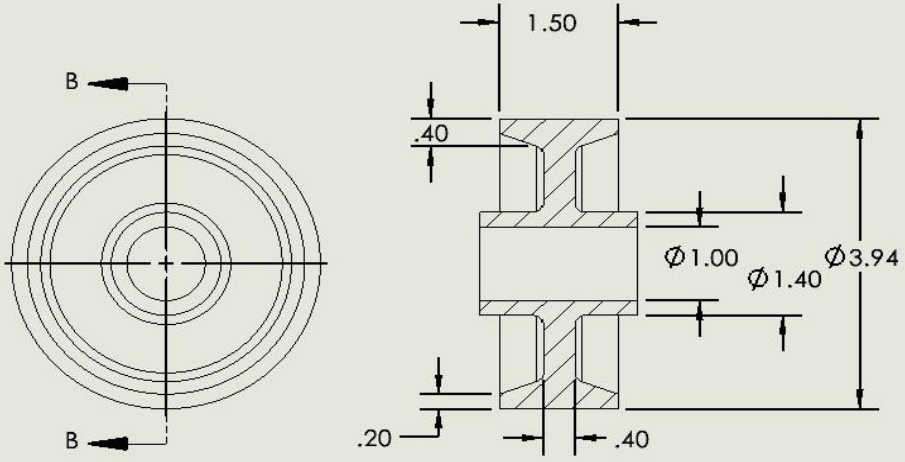
Base Plate

SIZE	DWG. NO.	REV
A	Base Plate	

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

Wentworth INSTITUTE OF TECHNOLOGY





SECTION B-B

		NAME	DATE
UNLESS OTHERWISE SPECIFIED:	DRAWN	H.N	4/20/21
DIMENSIONS ARE IN INCHES TOLERANCES: ROUNDS & FILLETS: R.125 TWO PLACE DECIMAL: 0.01± THREE PLACE DECIMAL: 0.005± FOUR PLACE DECIMAL: 0.0005±	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
	Material: Cast Iron		
FINISH			
DO NOT SCALE DRAWING			

Wentworth Institute of Technology

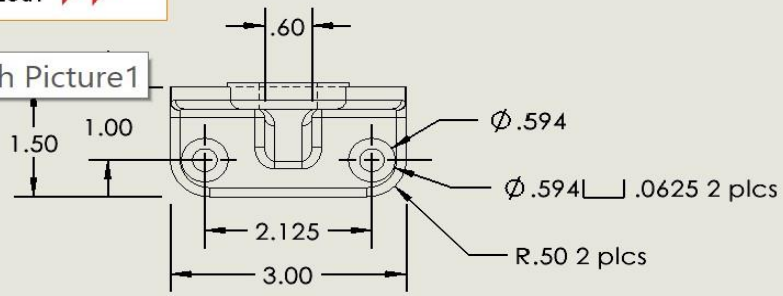
TITLE: Wheel

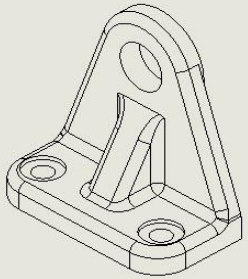
SIZE	DWG. NO.	REV
A	Wheel	

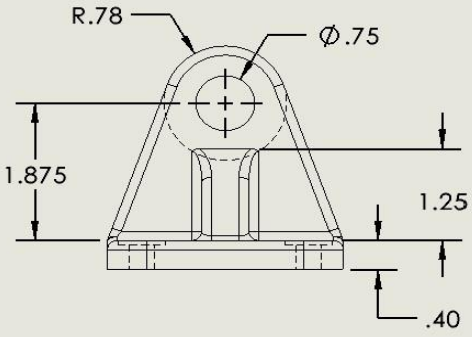
SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

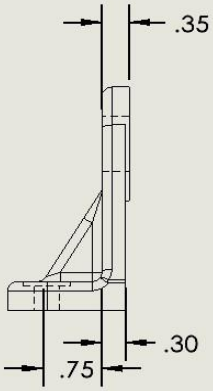
Wentworth INSTITUTE OF TECHNOLOGY

Sketch Picture1









PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WENTWORTH INSTITUTE OF TECHNOLOGY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WENTWORTH INSTITUTE OF TECHNOLOGY IS PROHIBITED

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: ROUNDS & FILLETS: R.125 TWO PLACE DECIMAL: 0.01 THREE PLACE DECIMAL: 0.005 FOUR PLACE DECIMAL: 0.0005	DRAWN	H.N	4/20/21
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
FINISH	Material: Cast Iron		
DO NOT SCALE DRAWING			

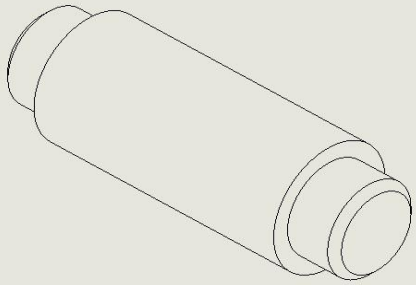
Wentworth Institute of Technology

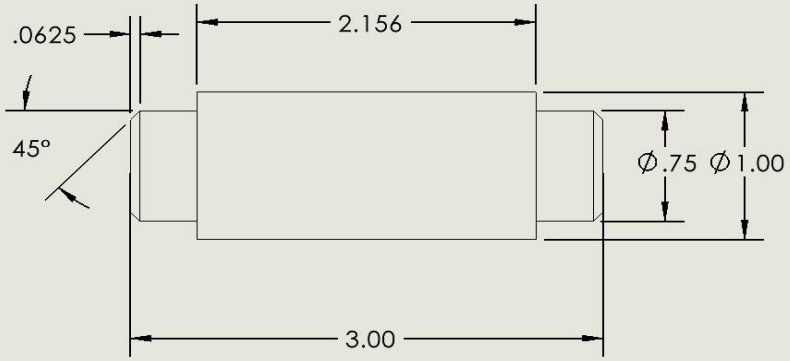
TITLE: Bracket

SIZE	DWG. NO.	REV
A	Bracket	

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

Wentworth INSTITUTE OF TECHNOLOGY





UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: ROUNDS & FILETS: CHAMFER: 45 DEG x .0625 TWO PLACE DECIMAL: 0.01 ± THREE PLACE DECIMAL: 0.005 ± FOUR PLACE DECIMAL: 0.0005 ±	DRAWN	H.N	4/20/21
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
	Material		
FINISH	Alloy Steel		
DO NOT SCALE DRAWING			

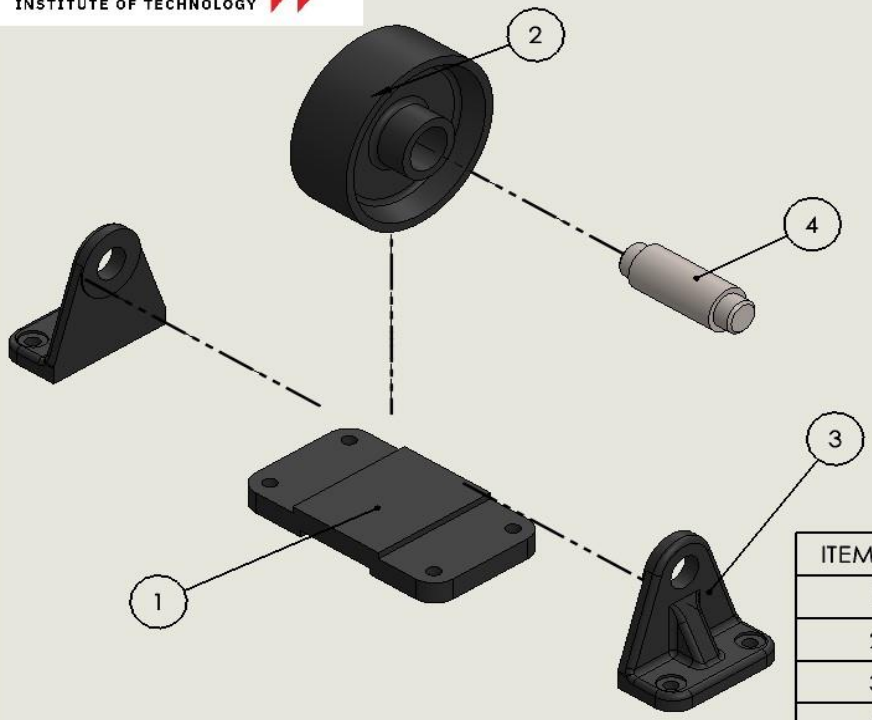
Wentworth Institute of Technology

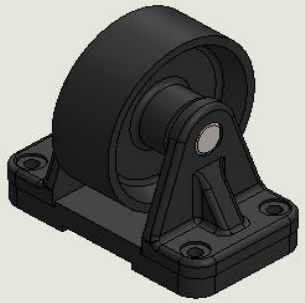
TITLE: Axle

SIZE	DWG. NO.	REV
A	Axle	

SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

Wentworth INSTITUTE OF TECHNOLOGY





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Base Plate	Cast Iron	1
2	Wheel	Cast Iron	1
3	Bracket	Cast Iron	2
4	Axle	Alloy Steel	1

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WENTWORTH INSTITUTE OF TECHNOLOGY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WENTWORTH INSTITUTE OF TECHNOLOGY IS PROHIBITED

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: ROUNDS & FILLETS: R.125 CHAMFER: 45 DEG .0625 TWO PLACE DECIMAL: 0.01 ± THREE PLACE DECIMAL: 0.005 ± FOUR PLACE DECIMAL: 0.0005 ±	DRAWN	H.N	4/20/21
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

Wentworth Institute of Technology

TITLE:

Wheel Assembly

SIZE	DWG. NO.	REV
A	Assembly	
SCALE: 1:3	WEIGHT:	SHEET 1 OF 1

Interface Number	Interface Description	Part	Nominal Size, Inch	FITS	Min Hole	Max Hole	Min Shaft	Max Shaft	L.F.	T.F.
1	Bracket to Axle	3,4	0.750	FN5	0.75	0.7512	0.7522	0.753	-0.001	-0.003
2	Wheel to Axle	2,4	1.00	RC8	1.00	1.0035	0.9935	0.9955	0.01	0.0045

General tolerances are provided in report requirement file

Part Number	Part Description	mponent or Material Selecti	Additional Notes
1	Base Plate	Cast Iron	
2	Bracket	Cast Iron	
3	Wheel	Cast Iron	
4	Axle	SAE 1112	