DeRosa University Center Rotary Food Waste Scale

Preliminary Drawings

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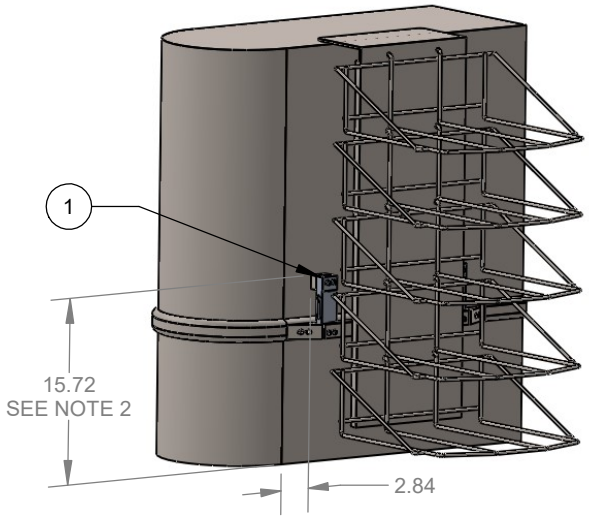
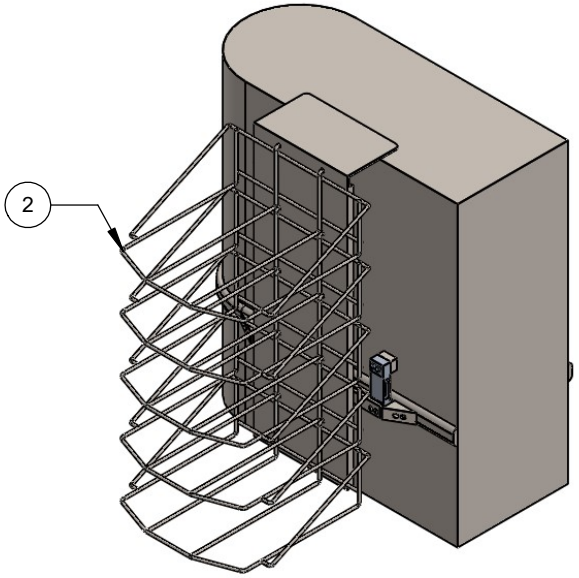
MECH 140

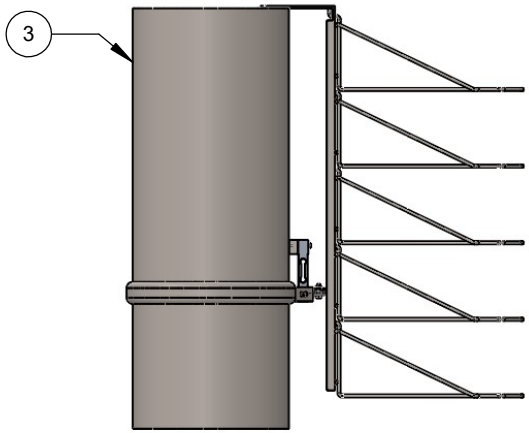
Dr. Watson

December 8, 2022

LIST OF DRAWINGS







ITEM No.	DESCIRPTION	QTY.
1	Load Cell Subassembly	1
2	Shelf System Subassembly	26
3	Wall Subassembly	1

NOTES:
1. ITEM No.'s 2 AND 3 ARE PRE-EXISTING SUBASSEMBLIES IN THE DEROSA UNIVERSITY CENTER.
2. DIMENSIONS PROVIDED ARE TO MARK WHERE ITEM 1b (LOAD CELL BASE) WILL BE ATTACHED ONTO ITEM 3a (ROTARY WALL).

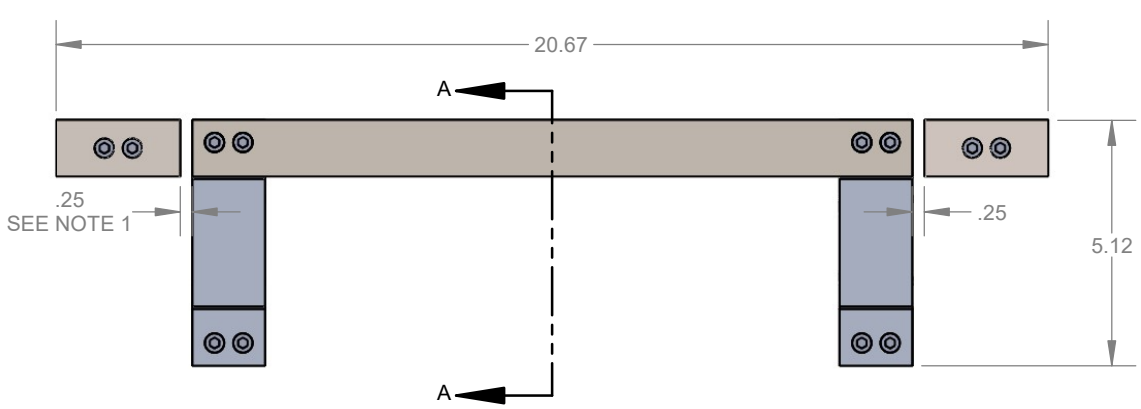
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL SEE ADDITIONAL DRAWINGS	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

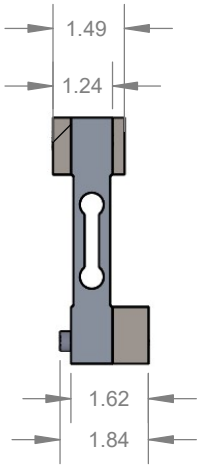
TITLE:

DUC Rotary Food Waste Scale Assembly

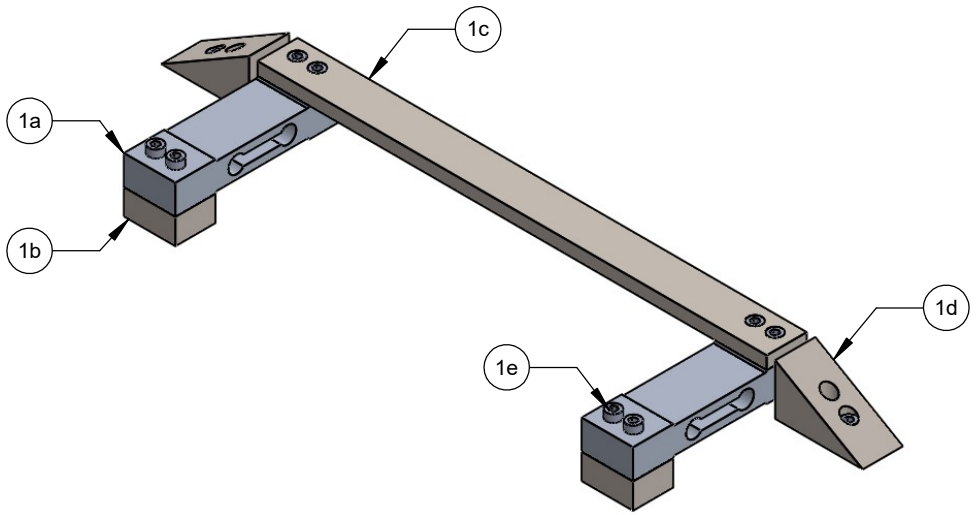
SIZE	DWG. NO.	REV
A	1	

SCALE: 1:16	WEIGHT:	SHEET 1 OF 13





SECTION A-A



ITEM No.	DESCIRPTION	QTY.
1a	Load Cell	2
1b	Load Cell Base	2
1c	Load Cell Platform	1
1d	Load Cell Ramp	2
1e	M6 Bolt	12

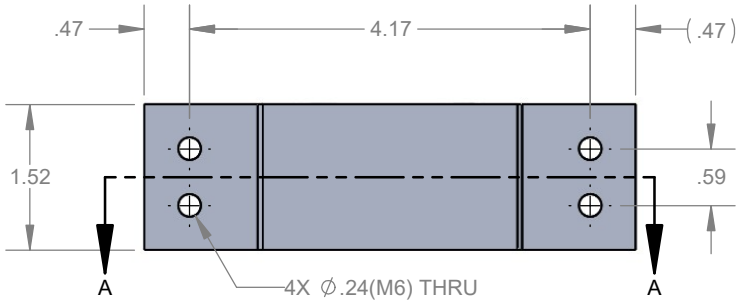
NOTES:
1. QUARTER INCH SPACE BETWEEN RAMPS AND LOAD CELLS TO NOT INTERFERE WITH LOAD CELL READINGS.
2. ITEM No.'s 1d (LOAD CELL RAMPS) WILL BE BOLTED ON TOP OF ITEM No. 3b (TIRE TRACK).

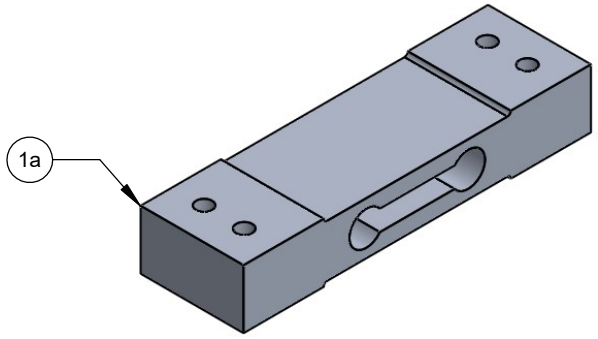
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL SEE ADDITIONAL DRAWINGS	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

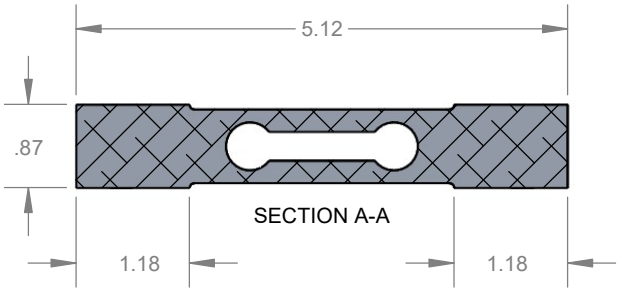
TITLE:

Item 1: Load Cell Subassembly

SIZE	DWG. NO.	REV
A	2	
SCALE: 1:4	WEIGHT:	SHEET 2 OF 13







ITEM No.	DESCIRPTION	QTY.
1a	Load Cell	2

NOTES:
1. LOAD CELLS HAVE BEEN PURCHASED FROM TACUNA SYSTEMS.
2. RATED CAPACITY FOR EACH LOAD CELL IS 50KG.

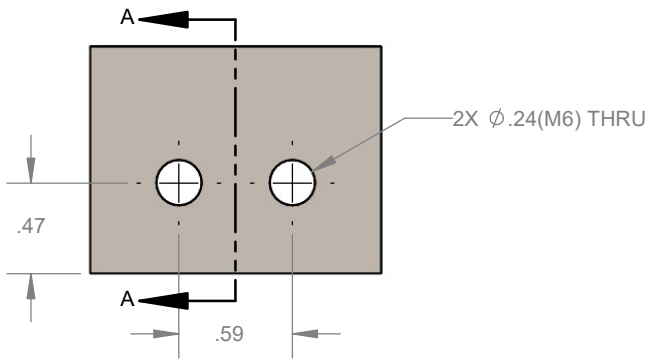
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL ALUMINUM	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

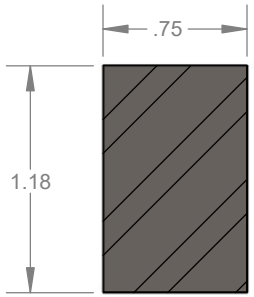
TITLE:

Load Cell

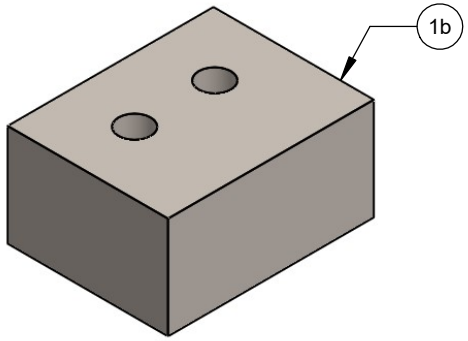
SIZE	DWG. NO.	REV
A	3	

SCALE: 1:2	WEIGHT:	SHEET 3 OF 13





SECTION A-A



ITEM No.	DESCIRPTION	QTY.
1b	Load Cell Base	2

NOTES:
1. LOAD CELL BASES WILL BE FABRICATED.

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
	COMMENTS:		
MATERIAL 304 STAINLESS STEEL			
FINISH			
DO NOT SCALE DRAWING			

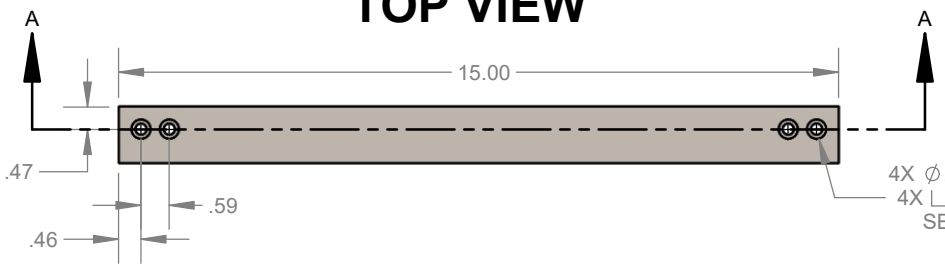
TITLE:

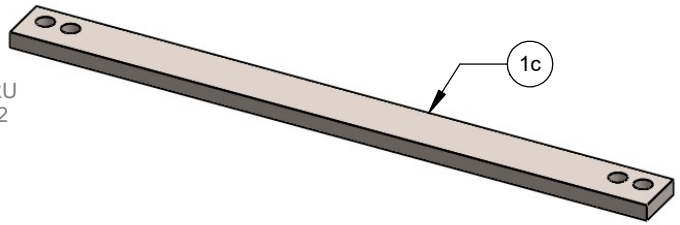
Load Cell Base

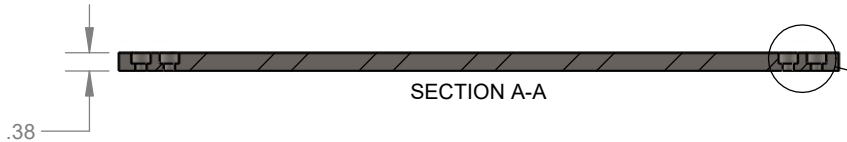
SIZE	DWG. NO.	REV
A	4	

SCALE: 1:1	WEIGHT:	SHEET 4 OF 13

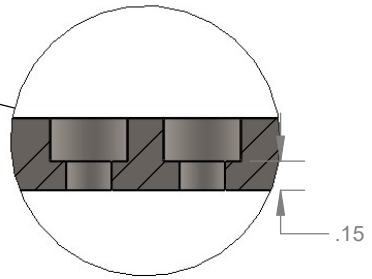
TOP VIEW







SECTION A-A



DETAIL B
SCALE 1 : 1

BOTTOM VIEW

ITEM No.	DESCIRPTION	QTY.
1c	Load Cell Platform	1

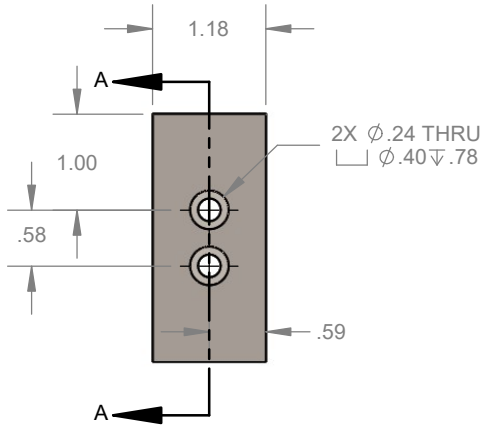
NOTES:
1. HOLES ARE DRILLED SO THAT ITEM No.'s 1e (M6 BOLTS) SIT FLUSH AGAINST THE LOAD CELL PLATFORM.

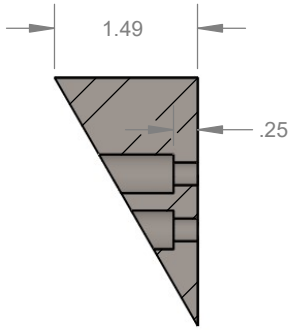
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
	COMMENTS:		
MATERIAL 304 STAINLESS STEEL			
FINISH			
DO NOT SCALE DRAWING			

TITLE:

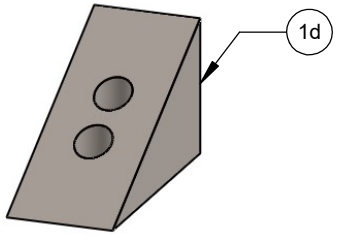
Load Cell Platform

SIZE	DWG. NO.	REV
A	5	
SCALE: 1:4	WEIGHT:	SHEET 5 OF 13





SECTION A-A



ITEM No.	DESCIRPTION	QTY.
1d	Load Cell Ramp	2

NOTES:
1. LOAD CELL RAMPS WILL BE SPACED A QUARTER OF AN INCH FROM ITEM No.'s 1a (LOAD CELL) TO AVOID ANY INTERFENCE WITH LOAD CELL MEASUREMENTS.
2. LOAD CELL RAMPS WILL BE BOLTED ON TOP OF ITEM No. 3b (TIRE TRACK).

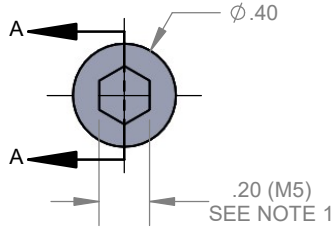
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL 304 STAINLESS STEEL	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

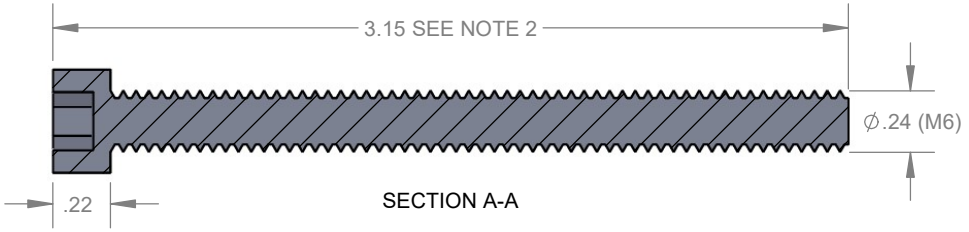
TITLE:

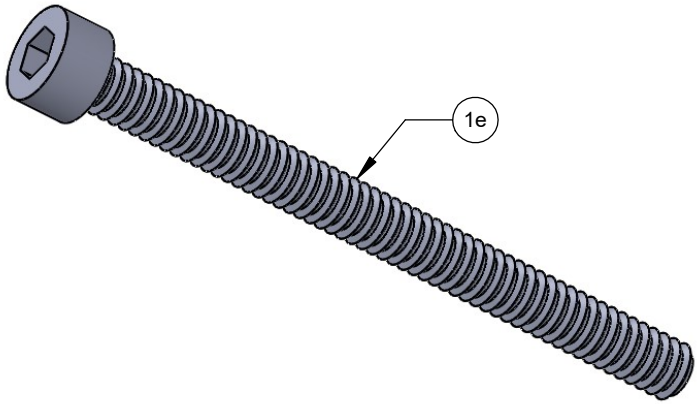
Load Cell Ramp

SIZE	DWG. NO.	REV
A	6	

SCALE: 1:2	WEIGHT:	SHEET 6 OF 13







ITEM No.	DESCIRPTION	QTY.
1e	M6 Bolt	12

NOTES:
1. M6 BOLTS REQUIRE AN M5 HEX SOCKET DRIVE TO FASTEN.
2. M6 BOLTS WILL BE PURCHASED FROM HOME DEPOT WITH A LENGTH OF 80MM (3.15 IN.). LENGTHS WILL BE MODIFIED DEPENDING ON WHERE THEY WILL BE INSTALLED IN ITEM No. 1 (LOAD CELL SUBASSEMBLY).

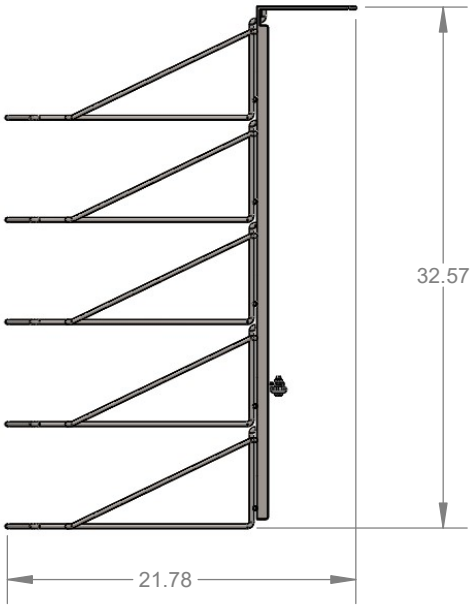
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL STEEL	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

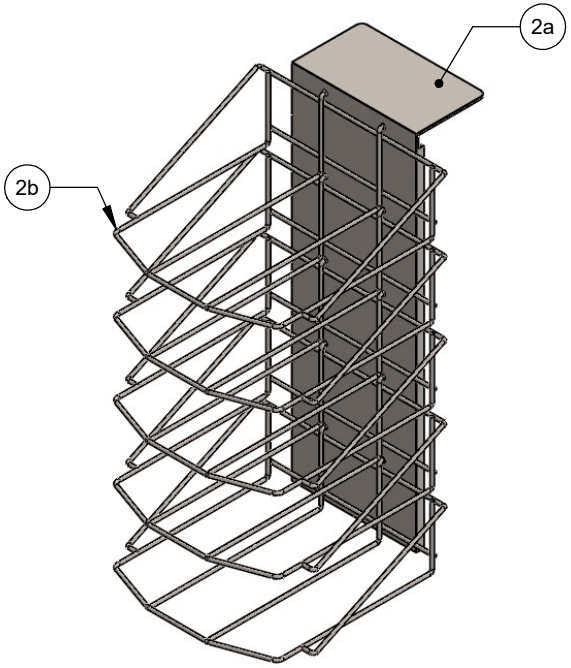
TITLE:

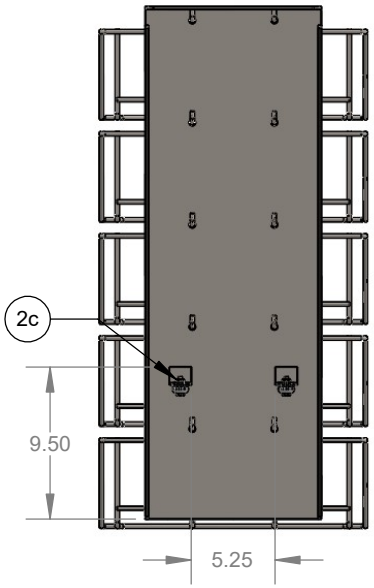
M6 Bolt

SIZE	DWG. NO.	REV
A	7	

SCALE: 1:0.75	WEIGHT:	SHEET 7 OF 13







ITEM No.	DESCIRPTION	QTY. PER SUBASSEMBLY	QTY. FOR ROTARY SYSTEM
2a	Rack	1	26
2b	Shelf	5	130
2c	Tire Assembly	2	52

NOTES:
1. THE ENTIRE SHELF SYSTEM SUBASSMEBLY ALREADY EXISTS IN THE DEROSA UNIVERSITY CENTER AND REQUIRES NO FURTHER FABRICATION.
2. THE ENTIRE ROTARY SYSTEM CONSISTS OF 26 SHELF SYSTEM SUBASSEMBLIES. EACH SHELF SYSTEM SUBASSEMBLY CONSISTS OF 1 RACK, 5 SHELVES, AND 2 WHEEL ASEEMBLIES, AS LISTED IN THE TABLE. THIS TOTALS IN 26 RACKS, 130 SHLVES, AND 52 WHEEL ASSEMBLIES.

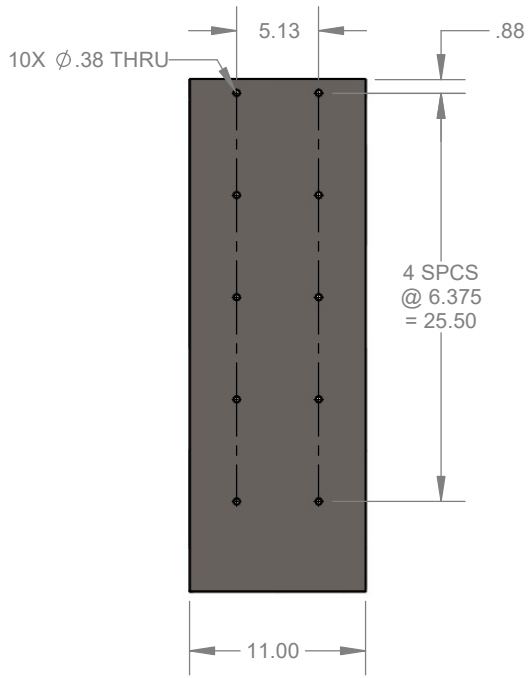
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL SEE ADDITIONAL DRAWINGS	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

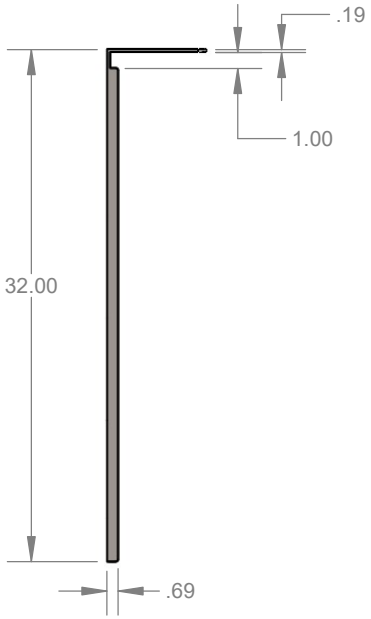
TITLE:

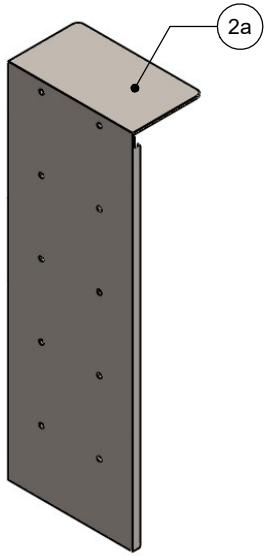
Item 2: Shelf System Subassembly

SIZE	DWG. NO.	REV
A	8	

SCALE: 1:12	WEIGHT:	SHEET 8 OF 13







ITEM No.	DESCIRPTION	QTY. PER SUBASSEMBLY	QTY. FOR ROTARY SYSTEM
2a	Rack	1	26

NOTES:
1. RACK IS CONNECTED TO TOP OF WALL SUBASSEMBLY BY BOLT CONNECTION. MEASUREMENTS COULD NOT BE TAKED OF CONNECTION SO IT IS NOT SHOWN IN DRAWINGS.
2. AS MENTIONED IN SHELF SYSTEM SUBASSEMBLY DRAWING, THERE ARE A TOTAL OF 26 EXISTING SHELF SYSTEM SUBASSEMBLIES IN THE DUC. EACH SHELF SYSTEM CONSISTS OF 1 RACK, AS SHOWN IN TABLE, WHICH TOTALS 26 RACKS FOR ENTIRE ROTARY SYSTEM.
3. NO FURTHER FABRICATION REQUIRED.

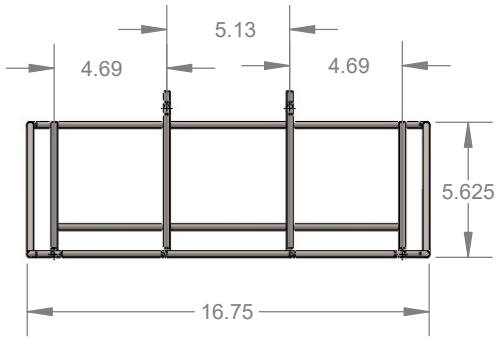
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL 201 STAINLESS STEEL	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

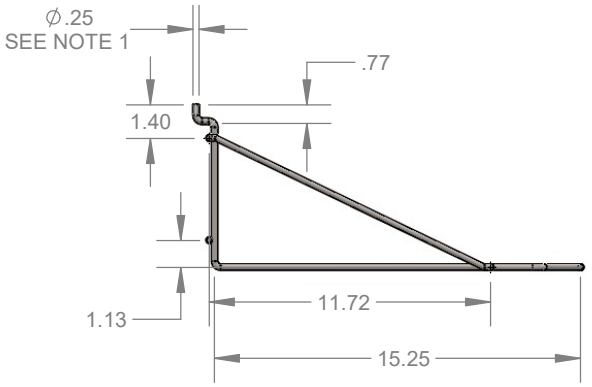
TITLE:

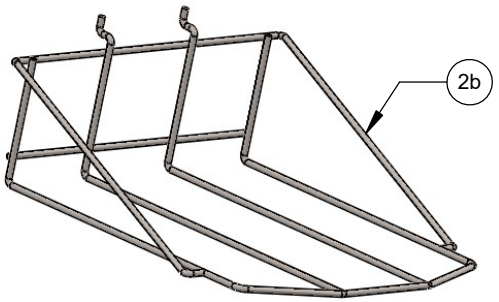
Rack

SIZE	DWG. NO.	REV
A	9	

SCALE: 1:12	WEIGHT:	SHEET 9 OF 13







ITEM No.	DESCIRPTION	QTY. PER SUBASSEMBLY	QTY. FOR ROTARY SYSTEM
2b	Shelf	5	130

NOTES:
1. DIAMETER IS CONSISTENT THROUGHOUT ENTIRE SHELF.
2. AS MENTIONED IN SHELF SYSTEM SUBASSEMBLY DRAWING, THERE ARE A TOTAL OF 26 EXISTING SHELF SYSTEM SUBASSEMBLIES IN THE DUC. EACH SHELF SYSTEM CONSISTS OF 5 SHELVES, AS SHOWN IN THE TABLE, WHICH TOTALS 130 SHLEVES FOR ENTIRE ROTARY SYSTEM.
3. NO FURTHER FABRICATION REQUIRED.

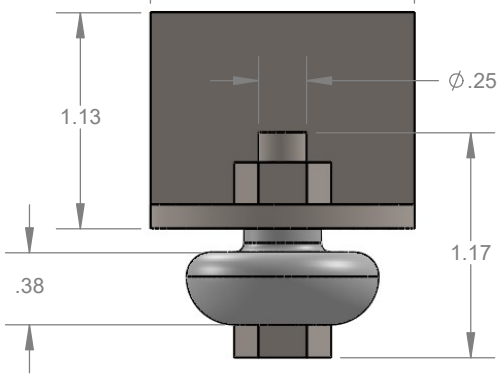
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL 201 STAINLESS STEEL	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

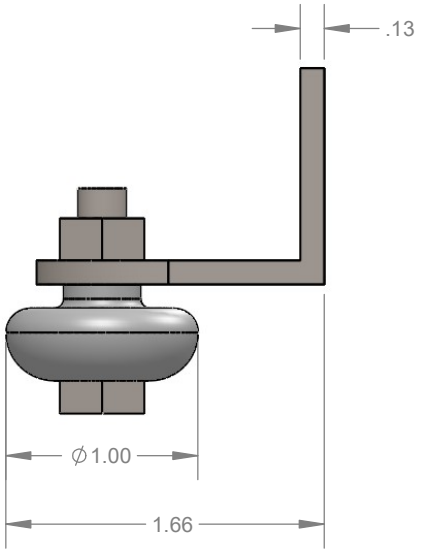
TITLE:

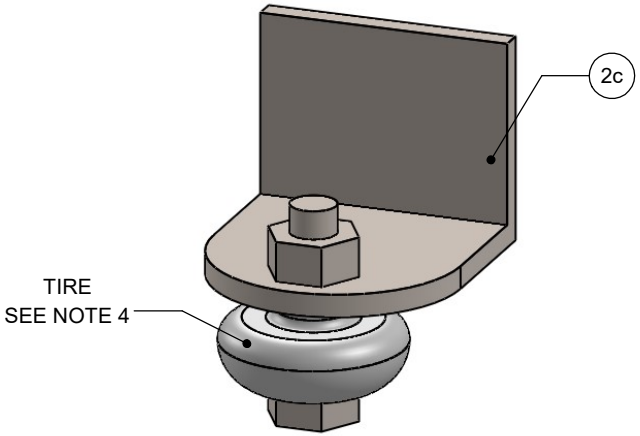
Shelf

SIZE	DWG. NO.	REV
A	10	

SCALE: 1:8	WEIGHT:	SHEET 10 OF 13







NOTES:
1. TIRE ASSEMBLY IS WELDED ONTO BACK OF RACK AS SHOWN IN SHELF SYSTEM SUBASSEMBLY DRAWING.
2. AS MENTIONED IN SHELF SYSTEM SUBASSEMBLY DRAWING, THERE ARE A TOTAL OF 26 EXISTING SHELF SYSTEM SUBASSEMBLIES IN THE DUC. EACH SHELF SYSTEM CONSISTS OF 2 TIRE ASSEMBLIES, AS SHOWN IN THE TABLE, WHICH TOTALS 52 TIRE ASSEMBLIES FOR ENTIRE ROTARY SYSTEM.
3. TIRE ASSEMBLIES ARE SPACED 5.25 INCHES FROM EACHOTHER AS SHOWN IN SHELF SYSTEM SUBASSEMBLY DRAWING.
4. ENTIRE TIRE ASSEMBLY IS MADE FROM 201 STAINLESS STEEL EXCEPT THE TIRES THEMSELVES. THEY APPEAR TO BE MADE OF PLASTIC BUT CANNOT BE CONFIRMED UNTIL WE GET IN CONTACT WITH ROTARY SYSTEM MANUFACTURER.
5. NO FURTHER FABRICATION REQUIRED.

ITEM No.	DESCIRPTION	QTY. PER SUBASSEMBLY	QTY. FOR ROTARY SYSTEM
2c	Tire Assembly	2	52

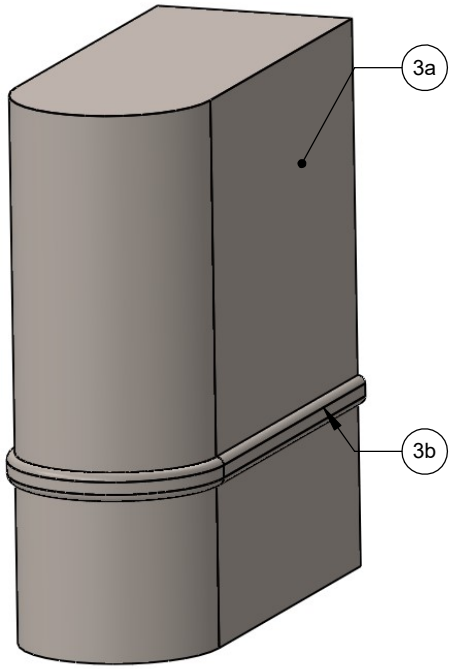
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL SEE NOTE 4	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

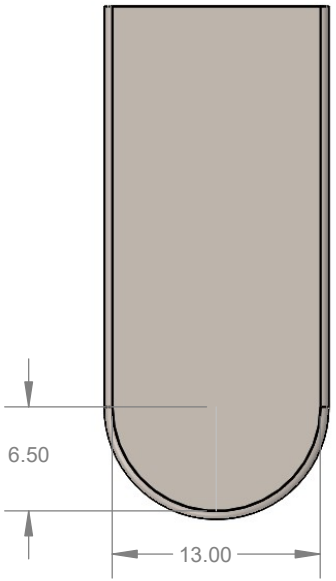
TITLE:

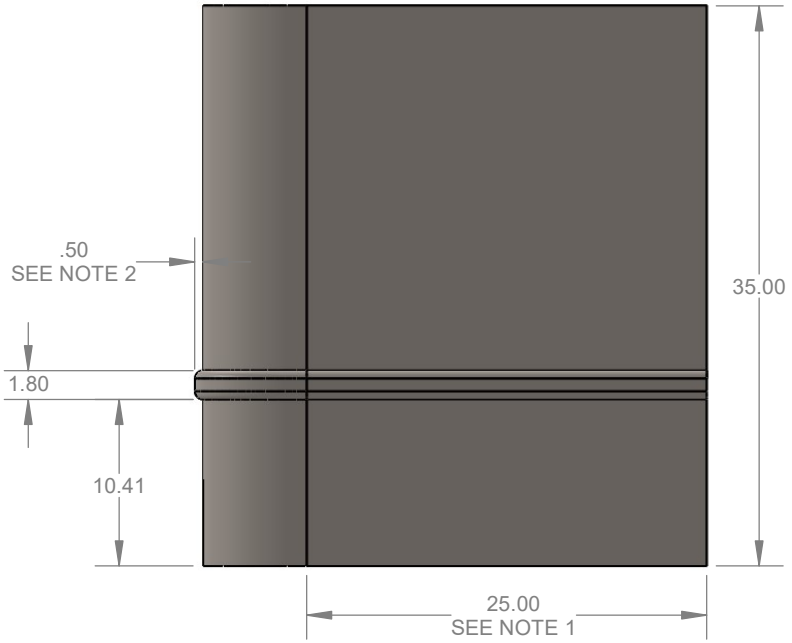
Tire Assembly

SIZE	DWG. NO.	REV
A	11	

SCALE: 1:1	WEIGHT:	SHEET 11 OF 13







ITEM No.	DESCIRPTION	QTY.
3a	Rotary Wall	1
3b	Tire Track	1

NOTES:
1. ENTIRE ROTARY WALL FOLLOWS PATH SHOWN IN ROTARY SYSTEM PATH DRAWING. WE WILL BE INSTALLING LOAD CELL SUBASSEMBLY IN THIS PARTICULAR POSITION OF THE ENTIRE ROTARY SYSTEM.
2. THICKNESS OF TIRE TRACK THAT EXISTS IN THE DUC IS 0.5 INCHES.
3. NO FURTHER FABRICATION REQURIED.

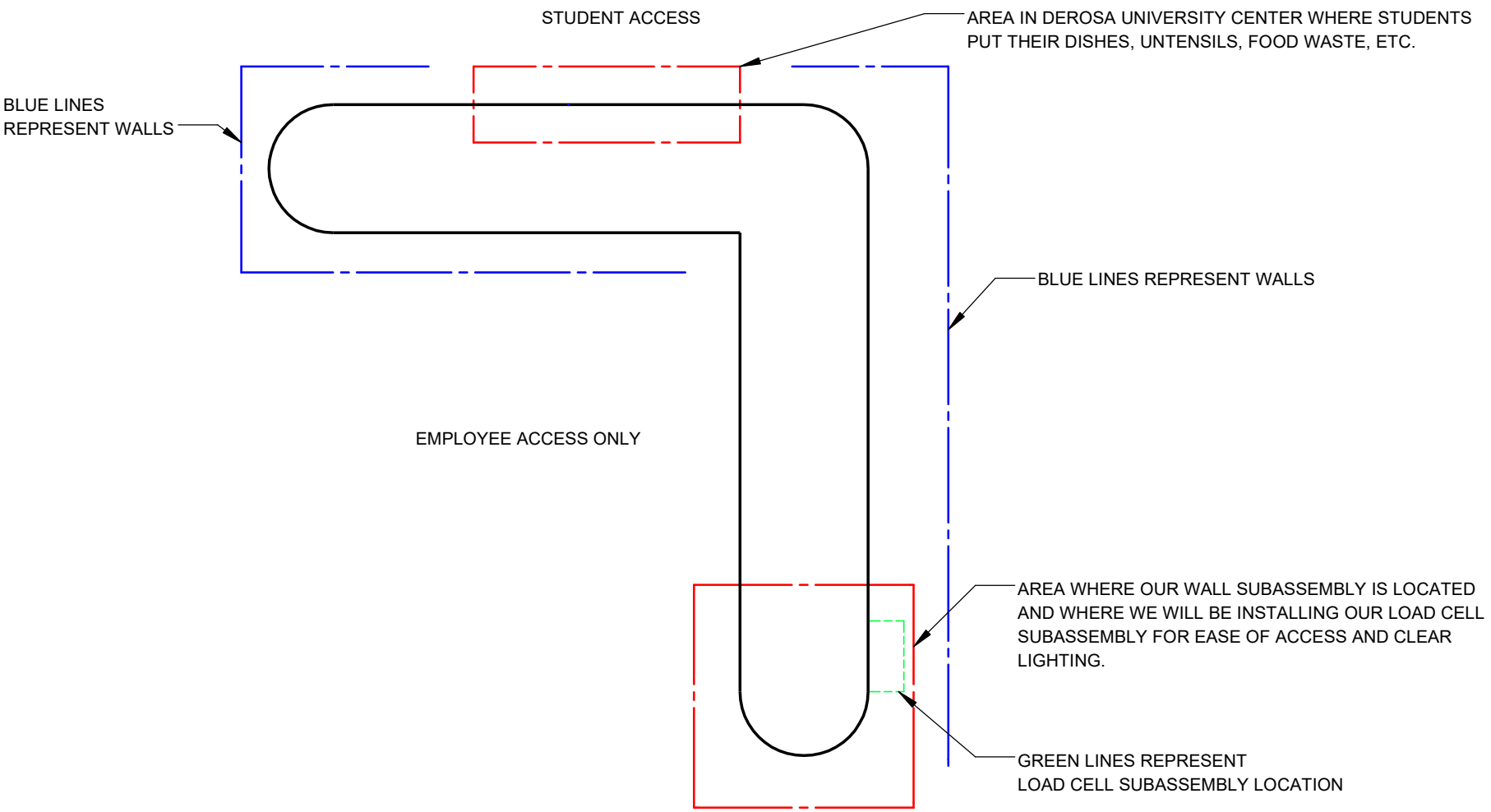
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL 201 STAINLESS STEEL	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

TITLE:

Item 3: Wall Subassembly

SIZE	DWG. NO.	REV
A	12	

SCALE: 1:12	WEIGHT:	SHEET 12 OF 13



NOTES:
1. AS SHOWN IN THE DRAWING, THE ENTIRE ROTARY SYSTEM IN THE DUC IS QUITE LARGE AND WE WILL BE WORKING IN ONE PARTICULAR AREA OF THE ROTARY SYSTEM.
2. THE BLUE LINES REPRESENT WALLS IN THE DUC. THESE WALLS INTERFERED WITH OUR ABILITY TO GET DIMENSIONS SO ROTARY SYSTEM PATH IS NOT DRAWN TO SCALE.

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
	COMMENTS:		
MATERIAL N/A			
FINISH			
NOT DRAWN TO SCALE			

TITLE:

Rotary System Path

SIZE	DWG. NO.	REV
A	13	
NOT DRAWN TO SCALE	WEIGHT:	SHEET 13 OF 13

MATERIALS LIST

Item No.	Description	Fabrication Material	Vendor	Cost	Qty.
1	***Load Cell Subassembly***	***See Below***			
1a	*Load Cell*	N/A	Tacuna Systems	$90.00	2
1b	*Load Cell Base*	304 SS	TBD	TBD	2
1c	*Load Cell Platform*	304 SS	TBD	TBD	1
1d	*Load Cell Ramp*	304 SS	TBD	TBD	2
1e	*M6 Bolts*	N/A	Home Depot	$2.75/2 Bolts	6
2	***Shelf System Subassembly***	Entire Subassembly Exists in DUC, No Purchase or Fabrication Required.			
2a	*Rack*				
2b	*Shelf*				
2c	*Tire Assembly*				
3	***Wall Subassembly***	Entire Subassembly Exists in DUC, No Purchase or Fabrication Required.			
3a	*Rotary Wall*				
3b	*Tire Track*				