

Arizona Ellipse Terrace Patio Table , Designed and Constructed by Mark Langlois



About the man behind the design of the Arizona Ellipse Terrace Patio Table and its construction.

Name: Mark Bradford Langlois

Status: Married with Children, Grandchildren

Education: B.S. Liberal Arts, Central Michigan University
Sociology, Industrial Technology, Computer Science

Career: Design, Engineering, Product Life Cycle
Management, IT Consultant, Software Development

Music: J.J. Cale, Jackson Brown, Mark Knopfler, Snowy
White, Buddy Miller, Jazz, Classical

Favorite Book: Catcher in the Rye, by J.D. Salinger

Drink: Oban Single Malt Scotch, Jack Daniels or
whatever you have

Cigar: Rocky Patel Vintage 1990, 1992, Undercrown
Maduro Robosto

Hobbies: Travel, Photography, Music, Art, Creative
Design and Engineering, Metalworking.

Author: Mark Langlois

Photography: Mark Langlois

Book Completion Date: July 10, 2024



Certification of Authentication and Registration Of Ownership

Arizona Ellipse Terrace Patio Table

Arizona Ellipse Terrace Patio Table: From the Mark Langlois Catalog of Designs, Iteration Number 121775-9A, 00001. Construction: .250" Thick Steel Plate, 1.250 Diameter Steel Tube, Welded Construction, Design Creation Date, April, 2024.

Original Design By Mark Langlois, Created By Mark Langlois

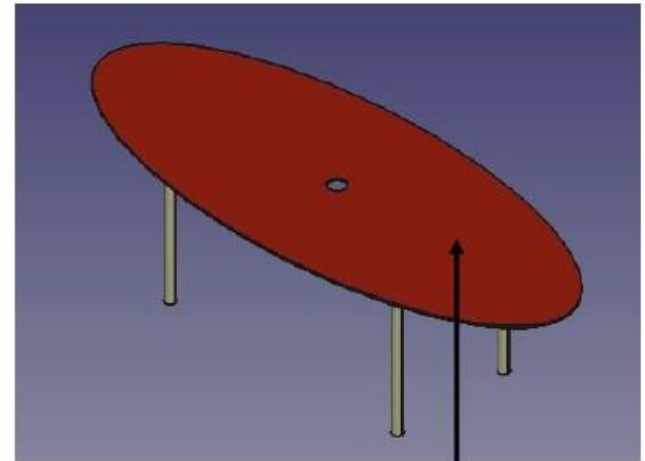
Purchased By Gifted To Mark & Marianne Langlois

Date June 10th, 2024

Color Prismatic Color: Illusion Copper- PMS 4623, Clear Vision-PPS 2974

Design Iteration Number: **121775-9A**

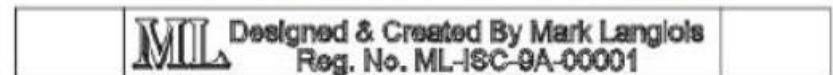
Registration Number: **ML-ISC-9A-00001**



Signature Plate Located
Under Top Plate In Back Center



ILLUSION COPPER



Introduction:

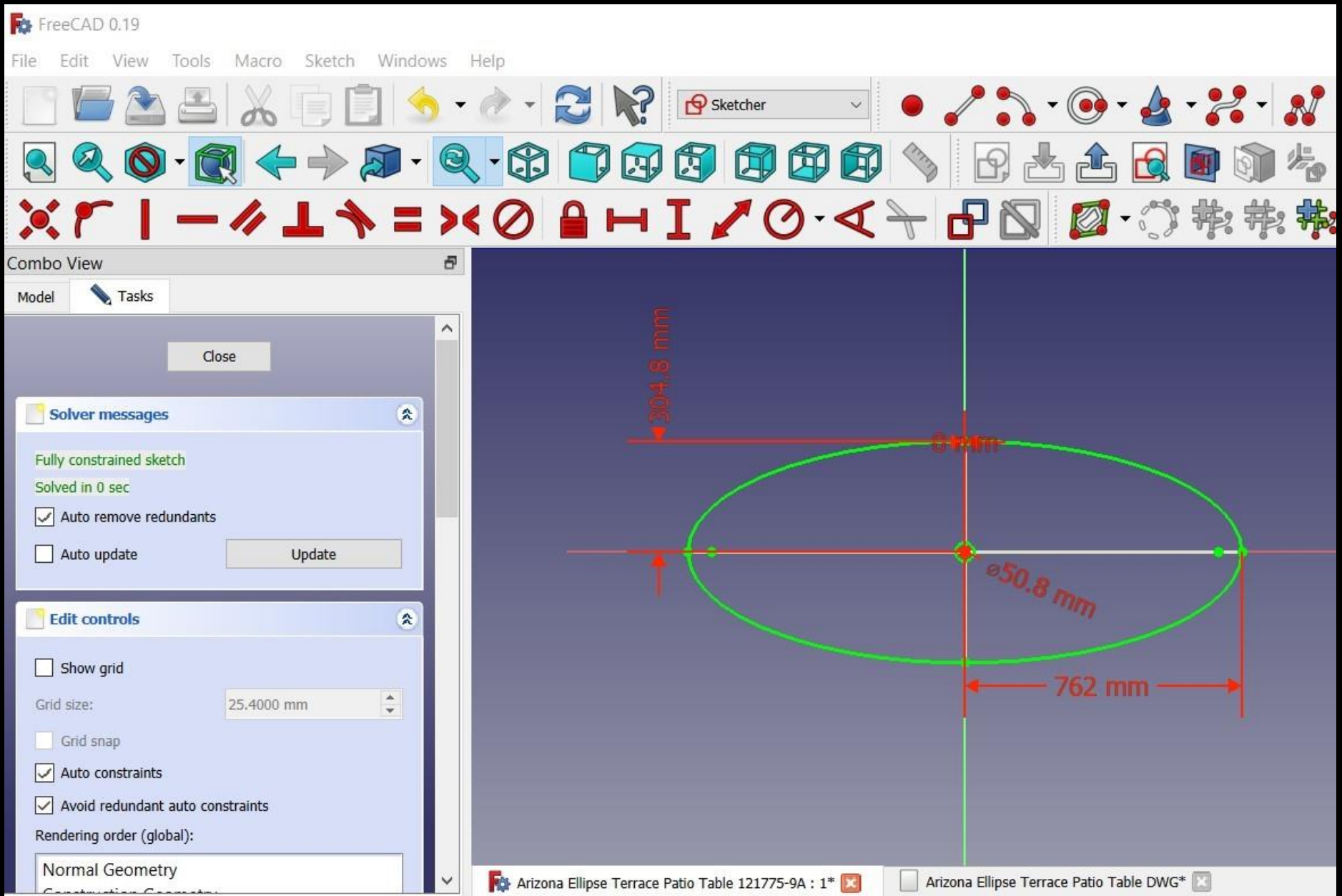
The creation of the Arizona Ellipse Terrace Patio Table was driven by a desire to provide our adjacent, small ten foot diameter patio with a functional table unique to this space.

The criteria for the table design included two things. First, I wanted it to be similar in height to a standard coffee table; something you could rest your feet on while sitting in the surrounding chairs. The second design component, was that the table be compact and maximize the utilization its surface space for guests sitting around the table.

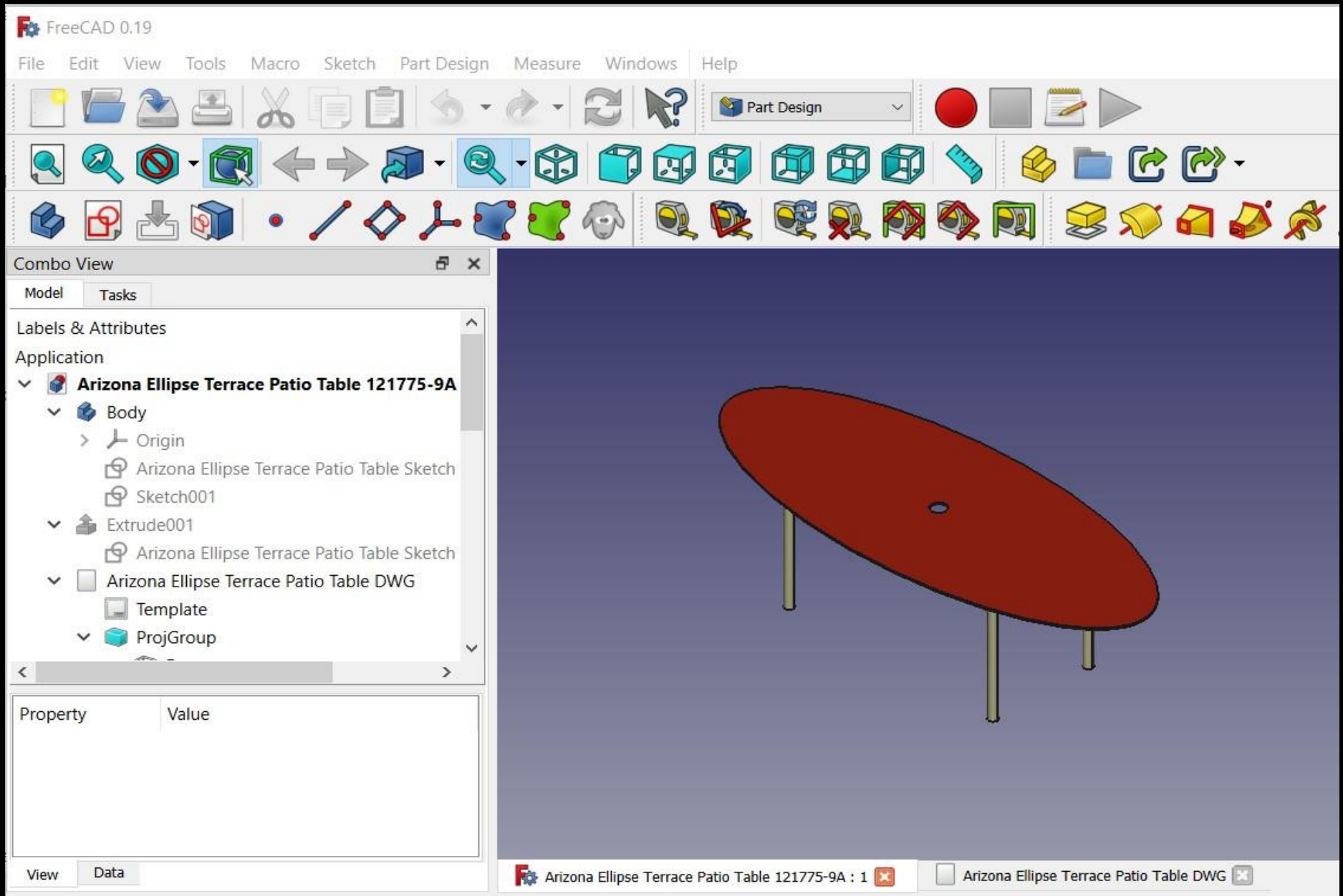
I decided that a table in the shape of an Ellipse would be the most efficient for the 10 foot circular diameter and surrounding chairs on this patio. I also incorporated a two inch umbrella hole in the center. This patio needed an umbrella to provide shade from the sun and added a unique astatic touch to the design. I spaced the legs apart wide and high enough to allow an umbrella base to fit under the table in the center.

The table is an ellipse, 60" long and 24" wide. It was laser cut from A36 steel plate .250" thick, with a 2" center hole. The table is supported by 1.25" diameter steel tube legs with a wall thickness of .120". The legs are 17" in length and have leveling feet.

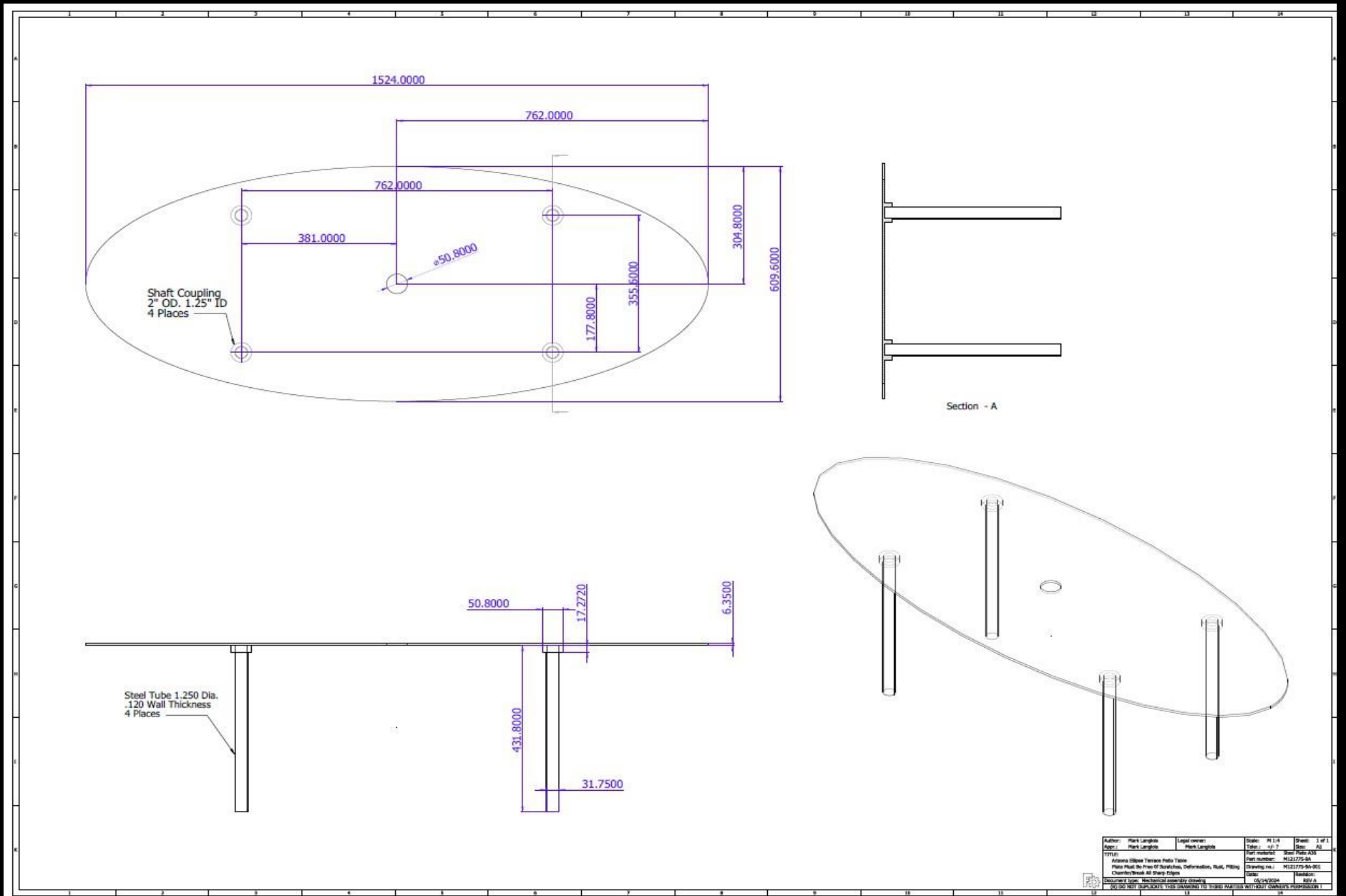
The Arizona Ellipse Terrace Patio Table is part of a catalog of my other designs. The Arizona Ellipse Terrace Patio Table is design iteration number ML-ISC-121775-9A-00001.



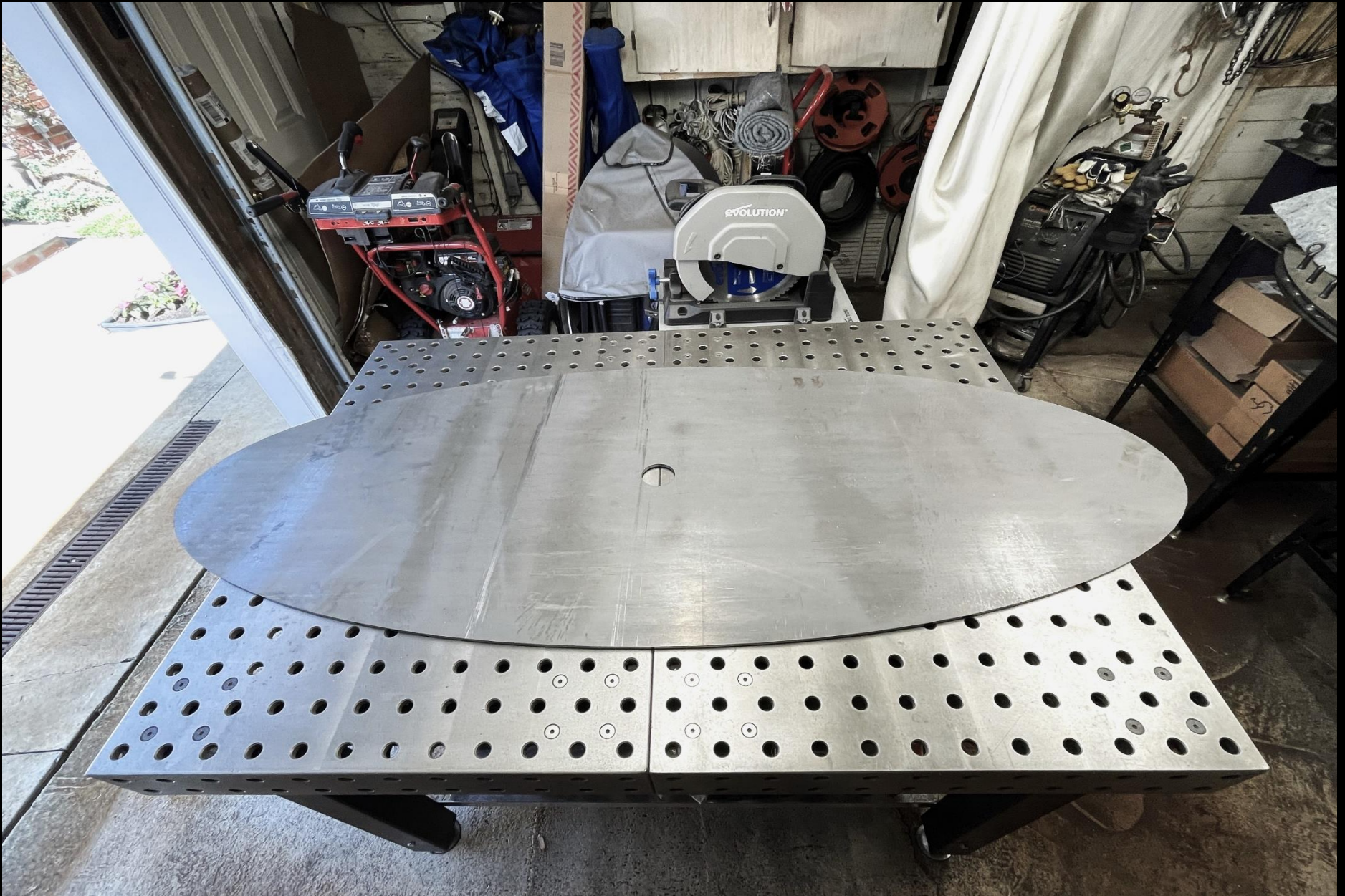
Parametric Sketch Of Arizona Ellipse Terrace Patio Table Base Profile In FreeCAD



Parametric Solid Model of Arizona Ellipse Terrace Patio Table In FreeCAD.



Drawing of Arizona Ellipse Terrace Patio Table Base & Legs In FreeCAD.



Arizona ellipse table base laser cut from the CAD I sent to my supplier. My first job is to clean the plate and sand it to remove scratches and any sharp edges.



I ordered a bar of 1.25 diameter steel tube with a .120 wall thickness. I cut the bar down into 17" lengths to use for the table legs.



I also ordered 1.25" ID shaft collars to weld onto the table base and hold the legs. The legs will be drilled and tapped for the 3/-16 screw size on the shaft collar.



The shaft collars came coated in black oxide. I lightly ground off the coating so I have the bare metal surface to weld onto the base plate.



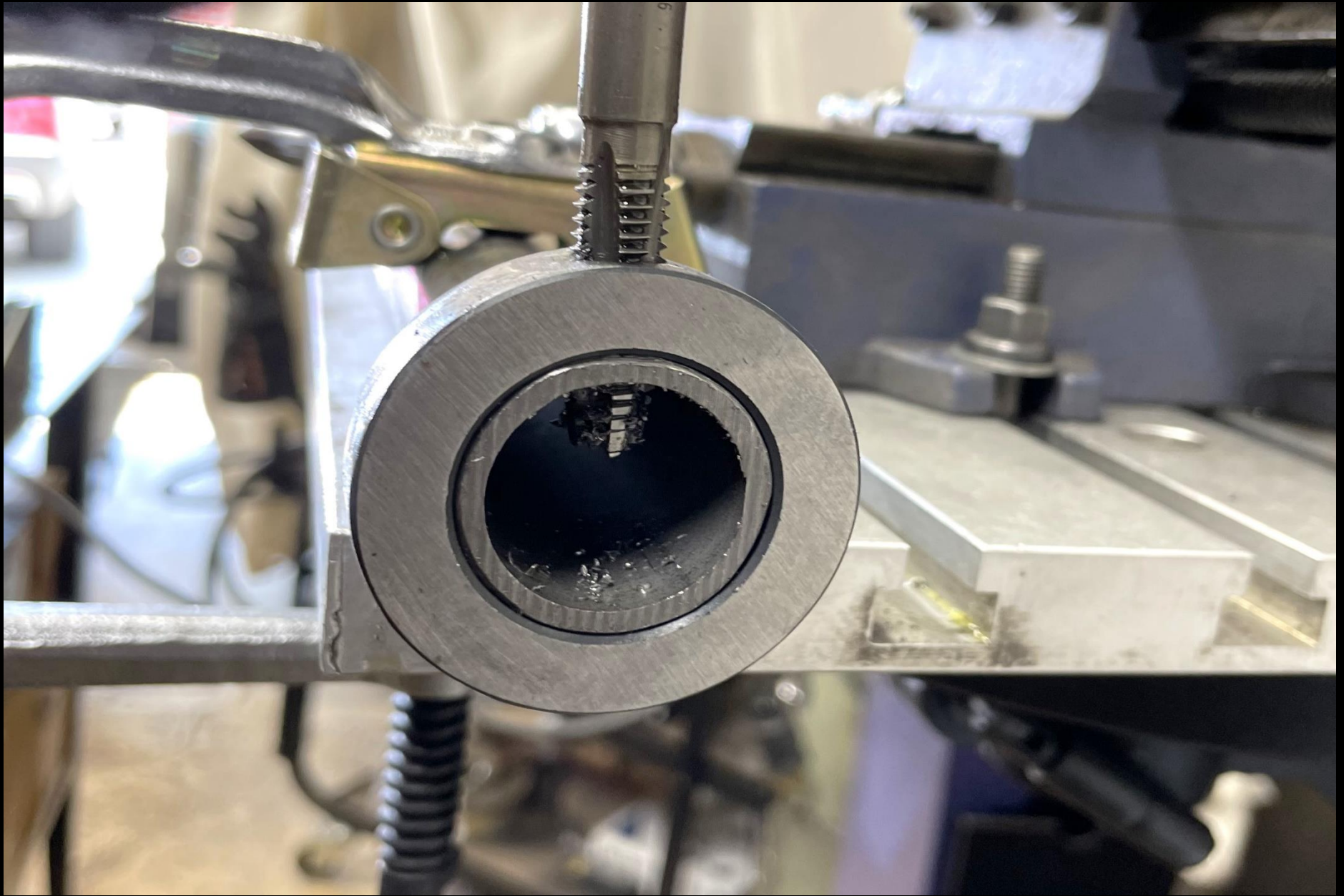
I will replace the set screws with longer 3/8-16 cap screws. The cap screws will thread into the legs and lock them into shaft collars, so I can remove the legs from the base.



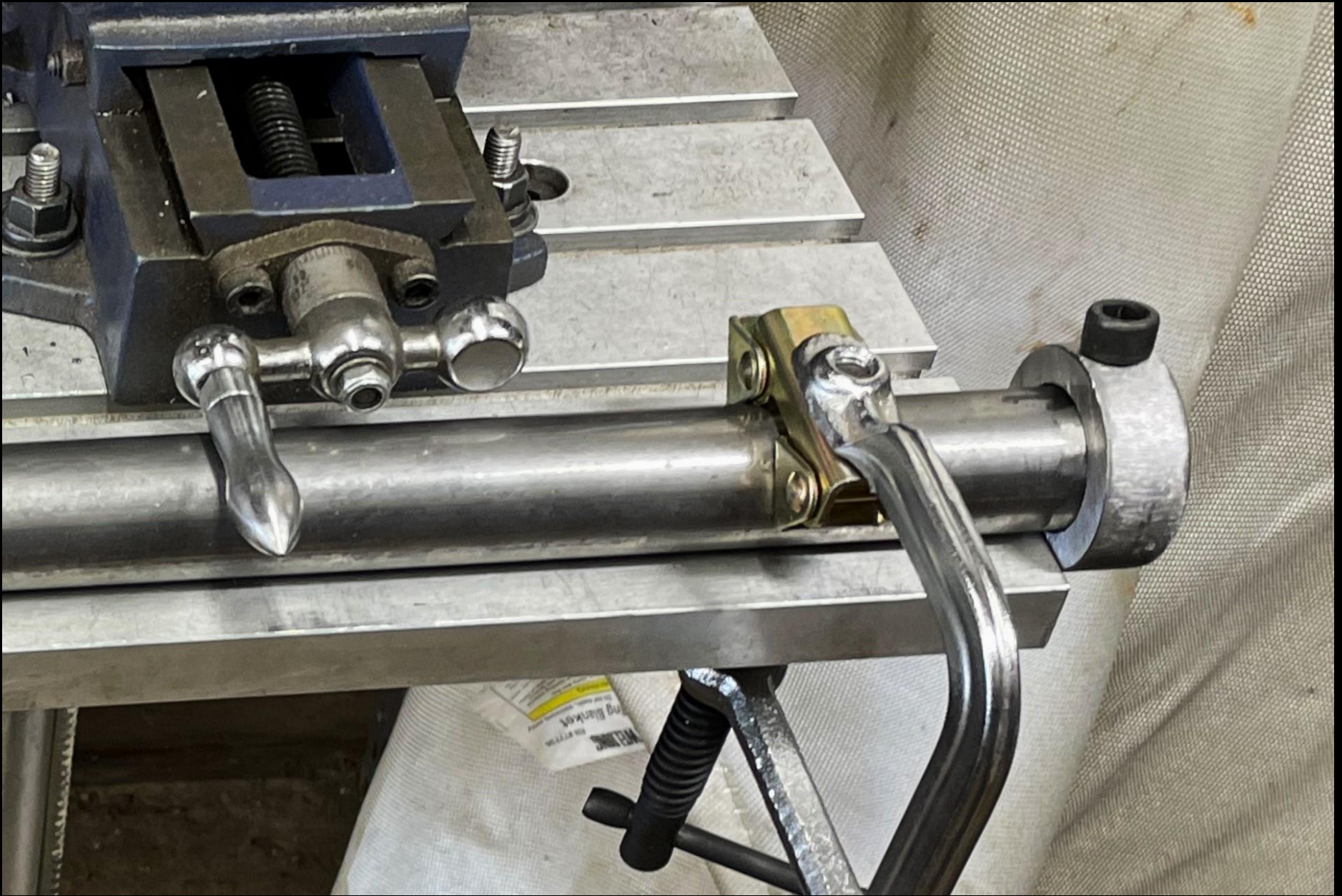
I located the center of the shaft collar hole on each of the legs and tap drilled a hole for the 3/8-16 tap.



I used the shaft collar threads as a gauge to align and center the tap for the hole in the legs.



Using the shaft collar threads as a gauge, I felt more confident that I would get a clean thread engagement using the longer 3/8-16 cap screws threaded through both parts.



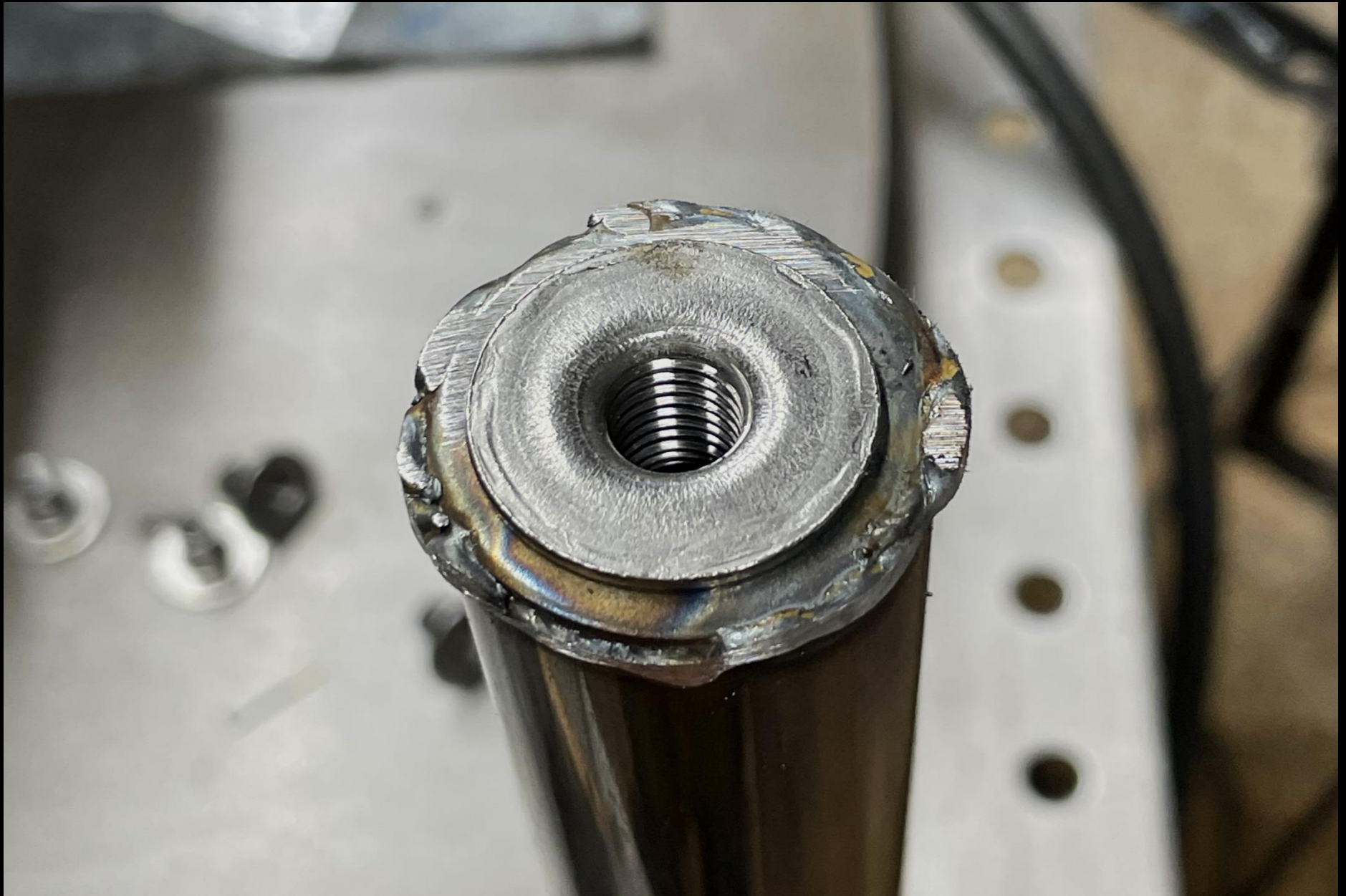
The 3/8-16 cap screws threaded through both the shaft collar and table legs nicely.



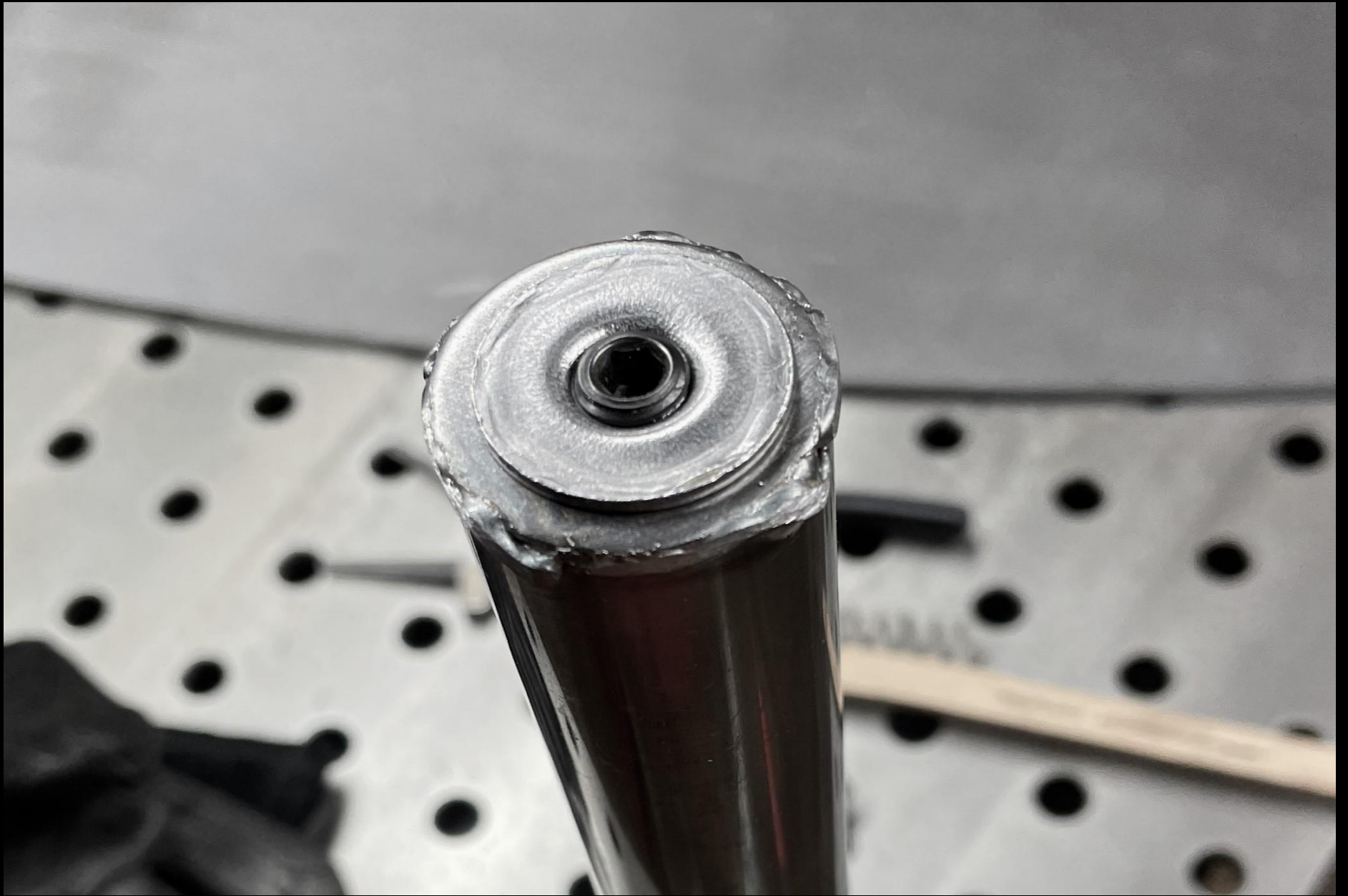
The bottom of the leg will get a leveling foot. I am using two 1.25" dia. washers with a 1/2" hole to close off the end of the steel tube and accommodate the 3/8-16 weld nut.



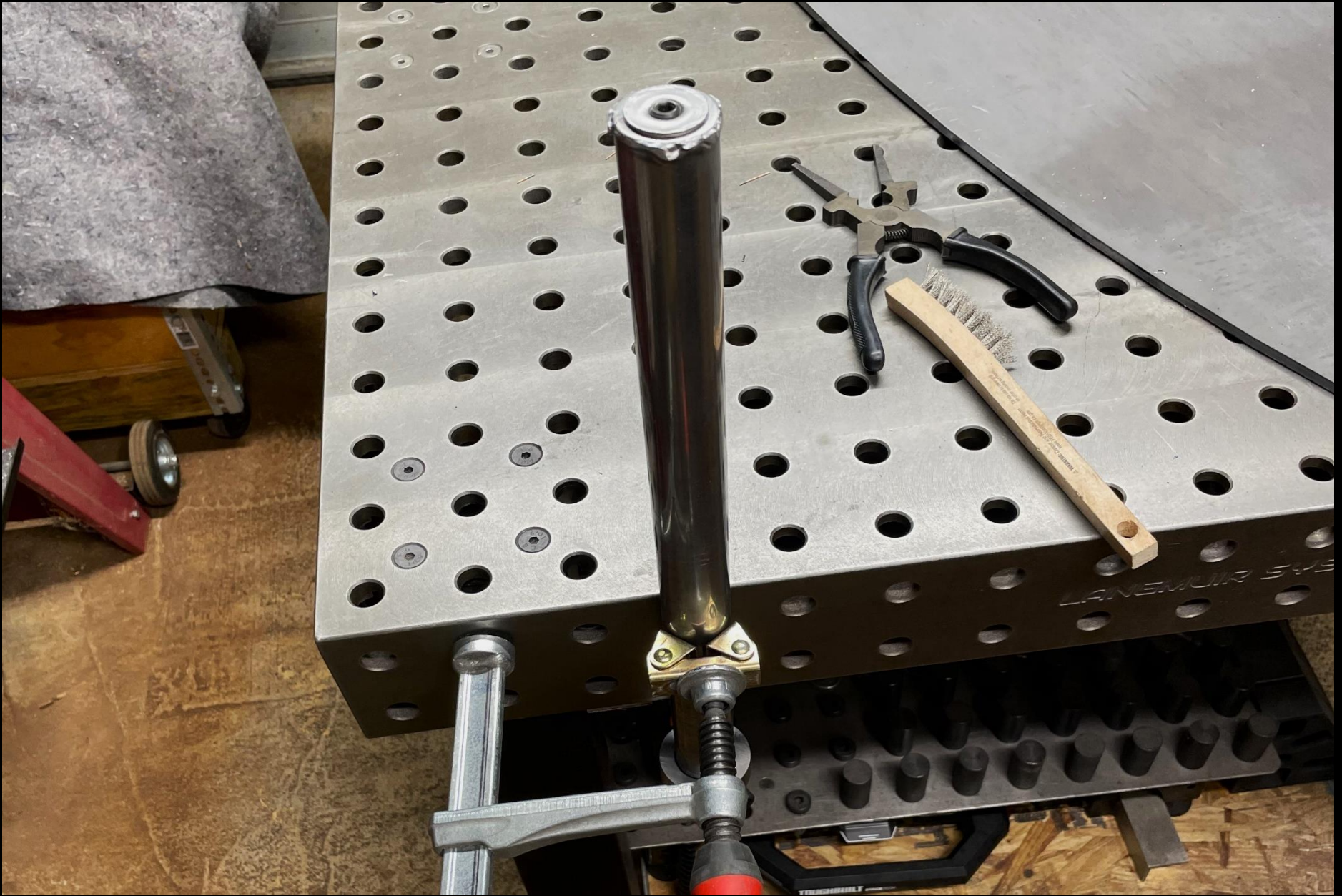
I used the welding magnet to hold the washers in place to tack weld them in and then finished the weld all the way around the leg.



The 3/8-16 weld nut goes into the 1/2' hole to get tack welded into place.



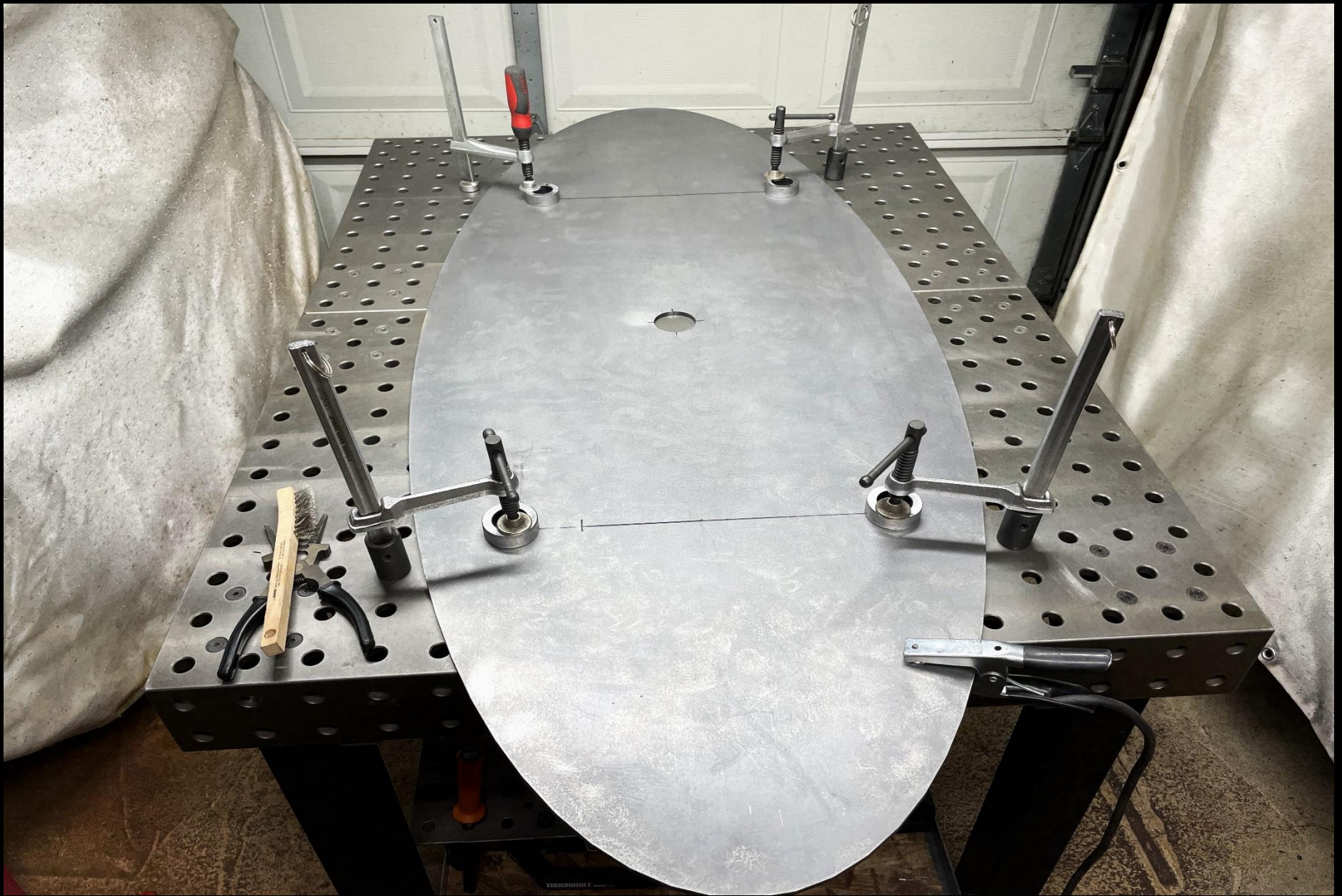
I put a 3/8-16 set screw into the weld nut thread to keep weld splatter out of the threaded hole.



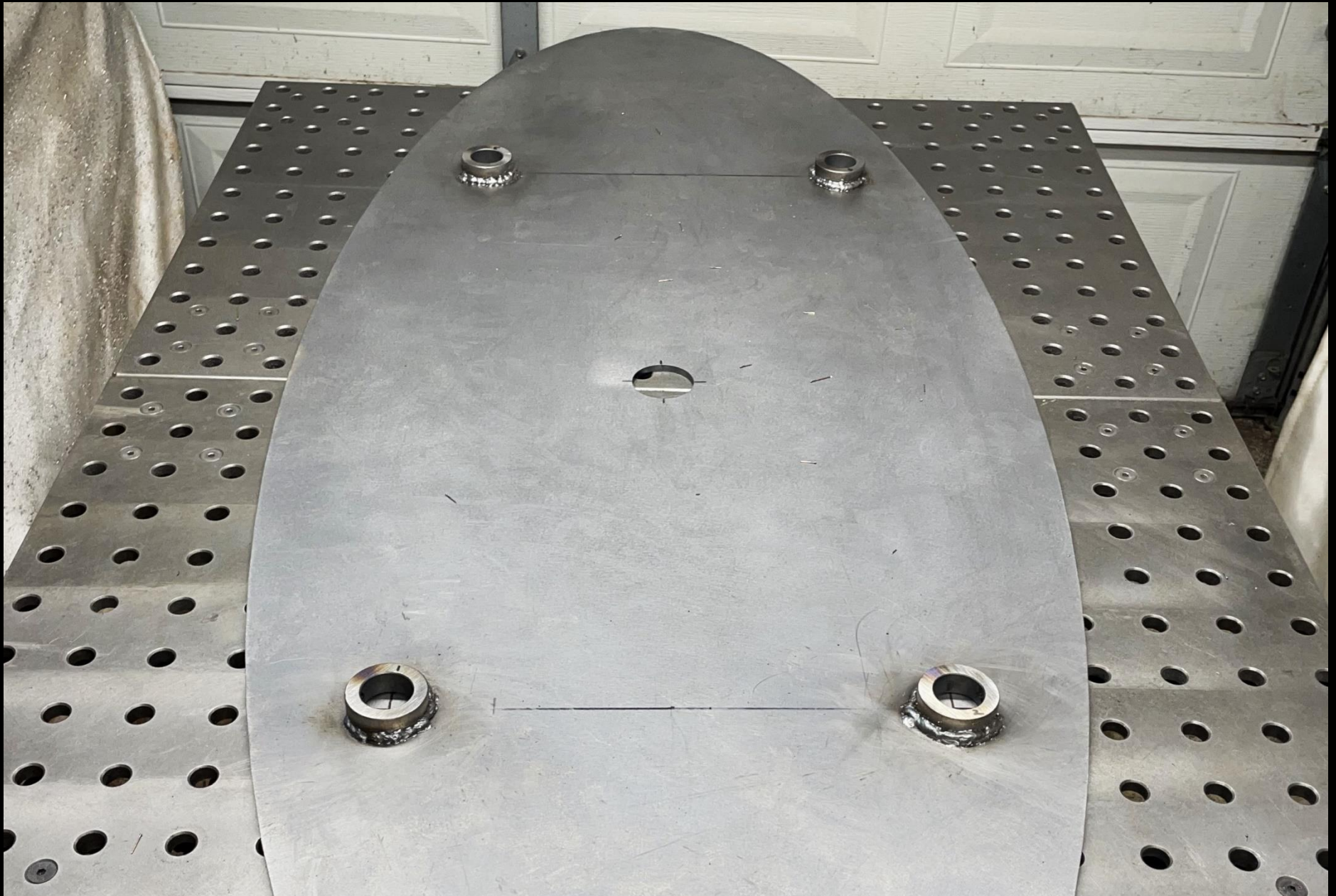
Finish welding the weld nuts on all four legs.



The table legs are now finished and ready to be located and welded onto the table base.



I laid out and positioned the shaft collars on the table base. I will tack weld them in place and then remove the clamps to complete the welds.



The shaft collars are now welded onto the table base. I had to make sure to keep weld away from the shaft collar threaded holes.



My last task is welding on my stainless steel signature plate to register the table.



I installed the leveling feet in the legs to make sure they all thread full length.



The table is very level and stable. The table is heavy, close to 90 lbs. , so it's going to stay put once in place.

Bill To:

Mark Langlois

Customer: Mark Langlois

Arizona Ellipse Terrace Patio Table

ML-ISC-9A-00001

Prismatic Color: Illusion Copper

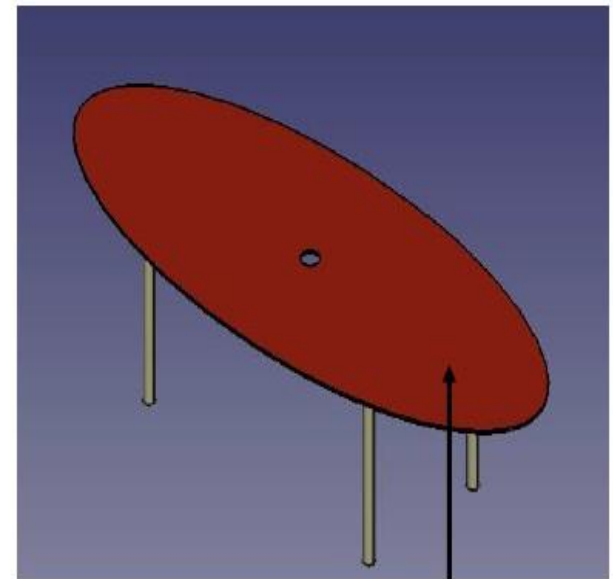
Color Number: PMS 4622

Top: Clear Vision PPS 2974

- 1) Mask off Signature Plates on Arizona Table Before Sand Blasting
- 2) Sand Blast Arizona Table If Needed
- 3) Mask off Signature Plates on Arizona Table Before Powder Coat
- 4) Powder Coat Arizona Table-- Colors must match registration Numbers On Arizona Table



ML Designed & Created By Mark Langlois
Reg. No. ML-ISC-9A-00001



Signature Plate Located
Under Top Plate In Back Center

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The table now will go to my powder coating supplier.



Arizona Ellipse Terrace Patio Table back from powder coating and installed, complete with umbrella.

Arizona Ellipse Terrace Table Construction Data	
Design Iteration Number	ML-ISC-121775-9A
Ellipse Size	L 60" x W 24" x Thickness .250"
Material	A36 Steel Plate .250 Thickness, Center Hole 2" Dia
Construction	Welded Construction
Steel Plate	7.85 Square Feet
Steel Base, 4 Legs, 1.250 Dia. Steel Tube	5.66 Linear Feet
Steel Shaft Collars With Set Set Screws, 4 Pieces	2" OD, 1.25" ID
Steel Base, Plate Weight	79.1 lbs.
Steel Legs, Weight, 4 Legs	8.2 lbs.
Shaft Collars, Weight, 4 Collars	2.3 lbs.
Total Weight of Arizona Ellipse Terrace Table	89.6 lbs.
Steel Cost, Steel Plate, Legacy Metal Laser Cut	\$204.06
Steel Tube, Legs	\$46.84
Shaft Collars Cost, 4 Collars	\$33.52
Steel Washers Cost	\$7.15
Steel 3/8-16 Weld Nuts Cost	\$6.81
Leveling Feet	4 3/8-16 Leveling Feet
Leveling Feet Cost	\$30.36
Number of Welds	16
Welding Wire	.035"
Hobart Welder Settings--Voltage	#2
Welding Wire Speed	#2
Finish: Powder Coat	Illusion Copper, PMS4622, PPS 2974
Powder Coat Cost	\$183.00
Arizona Ellipse Terrace Table Material Cost	\$511.74
Apprximate Man Hours To Construct	40

Arizona Ellipse Terrace Patio Table Construction Data.