

BINGO

COMPONENTS

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THESIS AND PROCESS



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SPORTS PRODUCT DESIGN

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Historical References

Modern mountain biking, in a general sense, has roots as far back as 1896 when a group of enlisted African American men rode from Missoula, Montana, to Yellowstone National Park and back to test bicycles for military use ("MOUNTAIN BIKING HISTORY", n.d). Whereas the birthplace of mountain biking as a sport is considered to be the area around Mt. Tamalpais in Marin County California when a group of road racers in the late 1960s and early 1970s started exploring off-road on old, repurposed schwinn cruisers. These single speed, coaster brake, fat tire bikes were stripped of any unnecessary parts such as racks, fenders and chain guards were called Klunkers. These Klunkers would be pushed or shuttled by pickup truck to the top of the mountain and then were ridden down at speeds these bikes were never designed to go. The more these riders did this the more these bikes would mutate. They started adding drum brakes to the front actuated by motorcycle brake levers and adding gears from road bikes to make riding the Klunkers uphill more doable. In 1976 one of local riders in this group, Charlie Kelly, organized the first ever mountain bike race that he called Repack. He called it this because you would have to repack the grease in the rear coaster brake hub after each run due to the burn-up from all the friction during the long descent (Farrell, P. 2017).



By the early '80s the large bike and component companies were working hard to develop new frames and drivetrains to keep up with the increasing demand of the emerging sport. At the forefront, Specialized introduced the first mass produced mountain bike in 1982 spec'd with a hodgepodge of BMX, road touring and motorcycle parts ("The History of the Specialized Stumpjumper" 2018). The following year Japanese component manufacturer, Shimano, released the Deore XT mountain bike group otherwise known as the stag head group because of the embossed deer image on the rear derailleur (History of Shimano, n.d.). Mountain biking went through a huge market boom in the later part of the '80s and through the '90s. This paved the way for the development of numerous smaller mountain bike component brands, that a select few were only able to put their stamp on the sport. Some of these brands include Breezer, Kooka, Ringle, Onza, Salsa, Bontrager and Paul Components just to name a few. A couple of these brands may sound familiar due to their continued existence today in one form or another.

Even though Breezer is a frame manufacturer that existed pre 1980 none of the components today would have been made possible without the production of the first-ever mountain bike

specific bikes that Joe Breeze produced in 1978 (Bikes for Your Everyday Adventure. n.d.). Joe produced ten of the Series I for himself and his friends in the Marin area competing in the, previously mentioned, Repack race series on the Klunkers. These new frame designs took all of the aspects that made the cruisers suitable for off road riding, but made them better. He tweaked the geometry and added provisions for hand brakes and gears that were commonly used for tandems and road touring because of their ability to handle heavier loads and more stress. The Breezer Series I opened the floodgates to what modern mountain biking is today and the brands that followed are direct descendants of this original bike.

Kooka and Ringle are other great examples of iconic bike component brands credited for helping fuel the frenzy of brightly anodized components on the '90s and pushing the boundaries of what bicycle bling can be. Kooka's precision CNC work is still greatly coveted today; vintage cranks can go for over \$400 and the mechanical brake levers selling for more than \$250. Ringle stems regularly sell for over \$100, despite being mostly incompatible with modern bikes. Truly a couple of unique brands that helped bring style to the sport.



Onza is another brand that hit the scene in the late '80s and produced an array of components and accessories including: seatposts, chainrings, headsets, grips, brake parts, tires and even a crank set. The most recognizable and often replicated product that Onza ever produced is the handlebar bar end. First introduced in 1989 and called the Bold Bar End they advertised, "ONZA introduces BOLD BAR ENDS, the latest idea in high performance mountain biking. BOLD BAR ENDS give you more powerful hand positioning for climbing, accelerating and resting. They install in seconds to all chromoly handlebars. Get a grip on power. Get the BOLD BAR ENDS from ONZA!" (MOMBAT/BikeHistoryPages/Onza. n.d). These were introduced at a time when mountain biking was still in its adolescence – bars were narrow and stems were long. Even though bar ends are not common place on modern mountain bikes, the amazing thing about this product is how it crossed over into the recreational bike market and is still extremely popular among people looking

for additional hand positions on their hybrids. Onza no longer produces the bar end or any of its original accessories and had disappeared for nearly a decade, but are making a comeback in the mountain bike world. They are releasing a new line of tires including one of their old classics, the Porcupine, although updated with a more contemporary tread pattern and rubber compound. It will be interesting to see what happens to the brand in the next couple of years.



Two other brands that made the crossover from small independent brands that started in a garage to mainstream cycling industry successes are Salsa Cycles and Bontrager. Neither one of these companies have any relation to their beginnings, but are examples of how the larger bike brands often acquire smaller companies to help both their image and creativity pool. In 1997 the distributor Quality Bike Parts acquired the independent frame and stem company Salsa Cycles, originally founded by Ross Shafer. Vintage Salsa is best known for their steel racing frames and chromoly stems, today the brand makes a whole range of touring and adventure bikes as well as accessories. Another brand that is now associated with Trek Bicycles as their component house brand is Bontrager. Keith Bontrager started building mountain bike frames in his garage located in Sunnyvale, California, and later worked to develop stronger more durable mountain bike rims, stem, and handlebars. In 1993 the majority of the company was sold to Trek Bicycles and Keith continued to develop products for the large cycling company. (Felton, V. 2015)



Finally the last brand that could not go without mentioning is Paul Components. Founded in 1988 by Paul Price after leaving

an engineering job in San Francisco. Paul Comp is still a small, independent company and going strong making high quality bike parts in Chico, California (Story. 2018). After 30 years in business Paul Components is known around the world and has a stellar reputation for making a good product. At the very beginning the first product Paul's sold was a quick release skewer, from there moving on to brakes, levers and derailleurs for a short time (those are still highly coveted and extremely rare to find). Today, Paul has kept up with the current trends and technologies in frame sizing and standards while still maintaining that old school flare. This company is a perfect example of how someone can start with a single product and grow into a long lasting sustaining business. This is the kind of brand BINGO aspires to be.

Sport playing field/ arena/ environment

BINGO is for the adventure cyclist. There are lots of different kinds of adventure cycling, ranging from epic backcountry explorations, to a weekend ride, or to a new picnic spot. Our customer is looking for tools to streamline and add some fun to their bike adventure experience. BINGO recognizes that everyone has a different definition of adventure and we want to be inclusive of whatever that definition is. The thing that unifies all of these cyclists is their limited space and search for tools and accessories that are streamlined and won't complicate their cycling experience. These items are often stowed in a backpack, messenger bag, tool roll, handlebar bag, or even their back pocket. BINGO's priority in developing new products is keeping it fun and keeping out of the way.

Even though BINGO Components has an emphasis on mountain biking, a sport that most often takes place in designated parks on purpose-built trails that require driving to, or alternate means of transportation other than the bike, BINGO realizes that this is not the case for everyone and our products will seamlessly become part of the users everyday ride. That means our components need to, and will function in an array of weather conditions and geographic locations. Sun, heat, rain and snow in urban and rural locations are all conditions the adventure cyclist may encounter in the backcountry looking for the perfect camp location or on their cross-town commute. The products designed by BINGO need to be weather resistant so they do not rust or degradate during years of use, be sturdy enough to handle the abuses of the most technical mountain bike trail, or be locked up in the city where damage can happen when you're nowhere near your bike.

Sport rules and success to winning/ achieving

There are many sub-categories in the cycling industry each with great potential for gaining new customers and building a brand. The biggest goal of any new bike brand is to be creative – make something new and under no circumstances copy someone else's design. The bike market is very fickle and quick to dismiss. There are countless examples of knockoffs and brands that ended before they started due to a poor product release on social platforms. One of the best ways for a bicycle

component company to be successful in the industry is to make the sport of cycling easier and more accessible. There are many obstacles in planning a ride from correct apparel choices, to making sure your gear is in good working order, or even if there is a piece of equipment that can help relieve some of the burden then that ride is a success. Finally, the most important rule for both the rider and brand is to have fun and be authentic.

Athlete/consumer/user data (gender, age, location) and pertinent market size and/or potential.

BINGO's customers support their local bike shop, the one that makes the community part of the shop experience. They support small business even if they are not local, but will also shop online to get the unique product they're looking for. BINGO's target demographic is men and women ages 18 to 64 with a primary concentration on the North American market, but with the hope that increased interest will drive development into secondary and tertiary markets, Japan and Europe. Based on research from the 2018 Sports & Fitness Industry Association (SFIA) bicycling, both on paved and unpaved surfaces, are in the top three outdoor activities for people ages 18 to 64. All demographics share the top three spots with camping as another top outdoor activities in the United States. That indicates there is significant crossover between the two activities. The same report also breaks down the total number of people participating in cycling, 47.4 million nationwide (Fitness, and Leisure Activities Topline Participation Report. 2018). If BINGO can capture two percent of that total, that would result in 9.48 million customers.

Outdoor Sports		All participation figures are in 000s									
	Definition	2012	2013	2014	2015	2016	2017	1 year change	3 year AAG	5 year AAG	
Bicycling (BMX)											
Total participation	1+ times	1,861	2,168	2,350	2,690	3,104	3,413	9.9%	13.3%	12.9%	
Casual	1-12 times	856	1,129	1,205	1,457	1,760	2,039	15.9%	19.2%	19.2%	
CORE	13+ times	1,005	1,039	1,145	1,233	1,344	1,374	2.2%	6.3%	6.5%	
Bicycling (Mountain/Non-Paved Surface)											
Total participation	1+ times	7,265	8,542	8,044	8,316	8,615	8,609	-0.1%	2.3%	3.7%	
Casual	1-12 times	3,270	3,751	3,707	3,862	4,273	4,389	2.7%	5.8%	6.2%	
CORE	13+ times	3,995	4,791	4,336	4,454	4,342	4,220	-2.8%	-0.9%	1.6%	
Bicycling (Road/Paved Surface)											
Total participation	1+ times	39,790	40,888	39,725	38,280	38,365	38,866	1.3%	-0.7%	-0.4%	
Casual	1-25 times	18,966	19,470	19,269	18,845	19,244	20,212	5.0%	1.6%	1.3%	
CORE	26+ times	20,824	21,417	20,456	19,435	19,121	18,654	-2.4%	-3.0%	-2.1%	

Sport positions and/or athlete experience needed to accomplish the sport/activity.

The Sports & Fitness Industry Association breaks down cycling into three main groups, BMX, Mountain/ Non-Paved Surface, and Road/ Paved Surface. BINGO knows that the subcategories of cycling are far more diverse than that. BINGO identified segments include: Road, Cyclocross, Track, Gravel, Touring, Commuter, BMX, Mountain with subcategories being Cross Country, Trail, Enduro, DH, and Bikepacking.

Many of these categories are very different from one another but there is clear evidence that there is crossover in all of these segments. For example, Gravel riding is the descendant of Road and Cyclocross. Mountain bike platform pedals have been

greatly influenced by BMX pedals, and can now even be found on many Commuter bikes. Gear from Bikepacking has found its way onto Track bikes that are used to get around the city. This tells us all of these cyclist share very similar needs to one another, and there can often be cross over in product even when there is limited crossover in the individual participating in the specific activity. The other thing to take into consideration is that each one of these disciplines have their own set of social rules and should not always be lumped together.

Relevant physiological and biomechanical needs of athletes/users for this topic

The products that BINGO intends to produce will aid in the physiological need to fuel the human body and help the biomechanics of the bicycle rider fix flat tires with an unexpected and unique take on the tire lever. The first product in production is the B1 headset spacer. This piece is designed as an easy third point of contact for the feedback style handlebar bag that is popular among bikepackers, endurance mountain bikers and even commuters. This bag was made popular by Relevate Designs based in Alaska and offers a convenient place to store snacks and other helpful items a rider might need at hand. The problem that arises is that modern mountain geometries have changed since the introduction of the bag where stems have gotten shorter making it difficult to anchor the bag for stability. The B1 integrates a small attachment point to a headset spacer making the feedback more stable and accessible for the rider to reach their snacks while riding.

The second planned product is the G23 Widget Spork. This product also aids in fueling the athlete by proving a compact lightweight eating utensil that can be taken with them on any of their adventures but also provides an invaluable tool that every cyclist should always carry with them, the tire lever. This is one of the most useful tools for the professional and amateur bike mechanic. It is imperative in the design of a successful tire lever that the ergonomics of the handle are comfortable enough to apply adequate pressure required and provide a long enough mechanical lever to lift the tire bead over the wall of the rim. There are many poorly designed tire levers on the market and only a handful of good ones. The Widget Spork intends to be one of the good ones and with the added bonus of being able to eat with it.

Current/competitor product research (products, price points, features and benefits).

Paul Comp: Boutique, a little pricey
 Ocean Air: Very small, limited items
 PNW: Mountain Bike and gravel specific
 SnowPeak: Well designed simple camp equipment
 Wolf Tooth: Very component driven, clever solutions

Above is a list of brands that fall into a similar category as

BINGO Components, they vary in size and specialty but share a similar vibe to what BINGO intends to promote. We've already discussed Paul Components and their history so we'll skip that and move on to Ocean Air. Started and run Rob Perks in Ventura, California. (Ocean Air Cycles. n.d.) He wanted to develop a bike that best suited his needs so he designed the frame and produced it through the now defunct Zen Bicycle Frames here in Portland, Oregon (Zelada, J. 2016).



Based on his website the frames are not currently available probably because he is searching for a new manufacturer. Rob has also included in his brand some very clever little accessories such as a stem top cap that doubles as a spinning top, it's super fun and unexpected. Not only has Rob been able to run Ocean Air and keep a full time job to supplement the business he is also credited for starting the hashtag #coffeoutside, a social media tag that has helped promote everyday adventures giving a real sincerity to his brand. His product range in price from \$4 for a useful nut and bolt system for mounting a light to over \$2100 for a frame.

Next on the list is PNW Components, thought a very different company with very different products PNW had a similar start. Founded by a husband and wife duo Aaron Kerson and Emily Stevenson. Both have had extensive experience working in the cycling industry saw a gap for parts and accessories at a better price point than what was being offered. The started by producing a dropper seat post that is less expensive and still good quality. This is very much a mountain bike specific company and does a nice job supporting that. This quote sums up their business model well "While working in the bike industry, we noticed something; by the time products we designed made it all the way to customers hands, too many parties got their hands in the pot which increased cost significantly. We want to change that model. By keeping overhead costs low, working direct with manufacturers and focusing on engineering products that deliver exactly what customers want but within their budget." (Dropper Posts: About Us. n.d.) Their dropper posts retail for \$140 to \$240 depending on the model and features and are at least \$40 less expensive than their competitors. There other products price points are at similar margins.

Snow Peak isn't a bike specific brand but their approach to design and functionality of outdoor equipment is certainly something to aspire to. Their products which focus on quality, functionality, durability and considered design is a lesson that BINGO Components wishes to carry forward in the development of the brand. This is very much a boutique brand and their price points reflect that. Their simple spork starts at \$9.95 but other

items that easily extend into the hundreds.

Wolf Tooth is bike accessory and component company based in Minnesota just outside of the twin cities. This particular brand has the most in common with BINGO in the respects that they are fairly new (within the last 8 year) and domestically produces all of their products. The advantage that they have is that they can produce all of their inventory in house since they are a fully functioning machine shop. They started by being an early producer of the wide-narrow chainring for 1x drivetrains, they have since expanded into making various adapters and other drive train and cockpit parts. They have also diversified into the complete bicycle business by introducing Warkin Bikes and Lithic Components. Thought not as popular, it is an interesting step for them to take and something that is very reminiscent of the mountain bike frame makers of the past.

Anatomy of a typical state of the art product (parts of the product and function related to the sport).

The current products available that most closely relate to BINGO's intended production plan offer some of the same features, but are not as universal or require multiple products to accomplish the same goal. The first example is the Rockgeist Spacelink. A similar style of attachment for a handle bar, but designed to proprietarily work with their own feedbag design. Not only is this particular piece proprietary, it is larger and requires more tooling and a removable bolt to attach the bag, something the B1 headset spacer does not require. This particular component costs \$29.95 a price point BINGO can potentially beat.



The next group of products only accomplish one part of the Widget Spork's dual function. SnowPeaks titanium spork is lightweight simple and elegant but it only provides the single function, same with other products such as Park Tools SPK-1 a stamped piece of stainless steel with their signature blue plasti dipped handle. There are others on the market that can fold to a smaller size, have integrated cutting utensils, or have a completely unique shape but none on the market tailored to the cyclist looking to minimize the number of tools and utensils they

have to carry during a trip. Same thing goes for the design of tire levers, they are typically designed to be lightweight and packable or designed to be heavy duty and use specifically in the shop. The sporks typically retail for \$10 or less and the travel tire levers are typically \$8 or less. BINGO's product will potentially be a little more expensive, but not drastically when you compare the combined prices of carrying multiple tools.



State of the art materials of current relevant products

The specific materials of the products described in the previous section are fairly common. The bag attachment is made from 6061 aluminum with 2.5mm stainless steel bolt. The sporks are made out of either titanium or stainless steel and on the rare occasion injection molded plastic. The same materials are used for the tire levers but in the opposite order. Most are made from injection molded plastic, some are cast stainless steel and very select few are made using titanium.

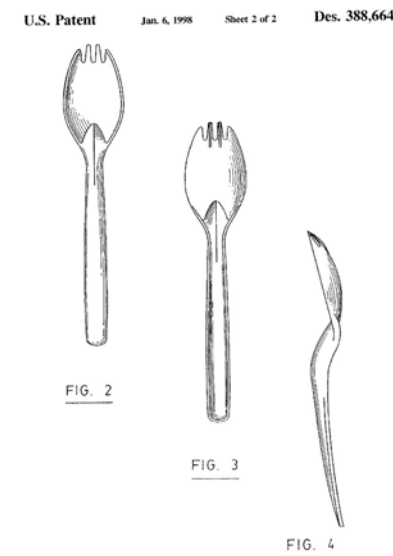
State of the art manufacturing of current relevant products. The manufacturing done for the Rockgeist Spacelink is most likely CNC'd because of the bevel angle around the edge, but it is just as likely that it was cut using water jet. After the product is cut it appears to be anodized black and then laser etched with their logo and torque spec for the fixing bolt (another unneeded complication). The sporks vary in either stamped material (titanium or steel) and the finish with laser etching, or in Park Tools case a trademarked color blue plasti dip with the logo then printed. Finally the majority of tire levers are injection molded by companies that have the resources to make their own molds, something BINGO will be unable to do in the foreseeable future through its startup phase. Other levers made with shop use in mind are made using cast steel, but then in rare cases are made out of titanium rod with stamped end to use for the lip.



Utility patent landscape or protection of the products intellectual property.

There are no patents specifically based on what I am targeting. Cane Creek a company from North Carolina, that is best known manufacturing headset spacers, holds a patent on an interlocking headset spacer design. There is no current company that holds a patent on a spacer that also works as a bag attachment. This is positive as it leaves space for BINGO to grow and develop the tech, but potentially negative if the B1 is launched without a patent as it could easily be duplicated by a larger company with more resources. An example could be the brand Blackburn, who has made increased efforts to build market share in the bikepacking demographic.

The spork on the other hand, has many patents by many different people with many different functions (folding, other utensil integrations, shape), but there are none that incorporate a bicycle tire lever in the design. This is good news for me and BINGO as it shows that there is continued popularity in this product, but it also shows a gap in the product space and that this a unique product. Even though the spork is a popular camping utensil the marketplace is lacking for one designed with the adventure cyclist in mind.



Graphic, logo and color application on current product space.

Logo style and placement vary from company to company. Frequently if products are machined the logo will be CNC'd or laser etched into the product. Aluminum and titanium products require anodization to prevent oxygenation so during that process people will choose to do a variety of colors. If the product is steel it must also be protected, often powder coating is used for this. Trends can emerge quickly in color choices, sometimes it is anodized purple or blue, but that trend can quickly fade. Another relatively common question, is if bicycle components should only be silver or black. Looking back, vintage parts pre 1990s were almost exclusively silver. In response to this paired with changes in manufacturing more contemporary parts have been black. Sometimes there is a complaint to offer things in silver again, but personally, I think it just comes down to people wanting what they can't have.

A SWOT analysis of current product landscape

Strengths: I've talked about the Rockgeist Spacelink in previous section and how I feel that the proprietary nature of the design is something that I want to stay away from it is also a strength of the product because it works as the perfect addition to anyone buying a Rockgeist feedbag. If it's already designed to work only with their bag there is now reason for the customer to look elsewhere for another solution. I think integrated design across a companies products is the smartest way to expand and is a good lesson for BINGO.

Any company that is producing a spork can do so at a relatively low cost which is a huge advantage. Most of these companies are much larger and can produce in higher numbers making the individual piece a lower cost. There are not many "boutique sporks" on the market and the ones that do exist are still at a reasonable price point. Same thing goes for tire levers. The companies that can afford to injection mold and sell them at a much higher quantity and at a lower cost.

Weakness: There are three things I consider a weakness in the Rockgeist Spacelink. First, that its proprietary even though I also said that it is a strength I think that it is unwise to limit the product to your already existing customers. I don't think that the single mounting piece would make someone want to buy their entire line of bags. The advantage that BINGO has is that B1 is already cross compatible, but also offers the opportunity for other products to be designed around it.

The current weakness with the spork is that it is somewhat flimsy and doesn't serve its purpose very well. The spork is a combination of two very useful utensils, but when combined, they're not that great. By including another useful tool BINGO hopes to take this master of none and make it something every cyclist includes in their tool kit. There is another challenge in the tire lever market, there is also a lot of brand loyalty in lever choice. I have my personal favorite and I have a hard time switching to another one even if it's free.

Opportunities: There is never any shortage of opportunities in the cycling industry. For a long time this has been an underserved market to many women and POC. Building a brand around inclusivity is key. There are a handful of advocacy groups and brands working to make the cycling world a more friendly and inviting place. The ones that do this well are not pandering but genuine in this mission. Brands that come to mind are Liv, a division of Giant, and Machines for Freedom, a women’s cycling apparel company not owned by Specialized. These two brands have very different beginnings but have worked to increase the visibility of women in the sport.

I also feel that many cycling brands do not pay close enough attention to the outdoor industry and its changes in demographics and the market. For a very long time the cycling industry has chosen to separate itself from the broader category, proof of this is things like hyper specific trade shows and consumer outreach. An important thing to take note, is that the Latinx market is making a huge impact on the American outdoor industry and is something of which more people in the cycling industry should be aware. Based on the Outdoor Industry Associations 2020 Forecasting Report, the Latinx community makes up 17% of the outdoor market. As of 2015 they had a spending power of 1.5 trillion in the U.S. and it is clear that more are embracing cycling as a favorite sport.

Cycling trends and styles are always changing and that provides opportunity as well. As it has been mentioned above there is often cross over between disciplines and those new disciplines can create new opportunities. We have not mentioned “tracklocross” a hybrid fixed gear/cyclocross race that is another example of how things can mutate quickly and even drive new products to fill that space even if it is a passing fad. This is something a small company can really capitalize on because they can make things quickly and keep a low overhead incase the demand does not continue.

BINGO’s greatest opportunity is to keep exploring simple solutions to gaps in the market and then expanding on those solutions. The current B1 headset spacer is a great platform for other related product that works around that foundational piece and continuing to explore the cross over between various cycling disciplines.

Threats: BINGO’s greatest threats are existing component and accessories companies that have no problem copying ideas. It has been seen before and it continues to happen all of the time. For smaller companies it is harder to acquire patents and lawyers to protect their intellectual property and even if they can, they then have to compete with companies being able to produce something similar, much faster and cheaper.

Capstone: The BINGO Project

This project as a capstone is the perfect outlet for Brendon to showcase all of his skills that he has acquired throughout his academic and professional career. Since the age of twelve Brendon has had an obsession with bikes when he joined a local youth mountain biking team were he would ride his steel

Univega in the wooded parks and rolling hills of suburban Detroit. The next year he started working at the local bike shop, Wahoo Bikes, in Rochester, Michigan breaking down cardboard boxes and building kids bikes. This is when he got his first real mountain bike and started to notice that people could make a living in the world of cycling. His boss Dale Hughes was well known for constructing velodromes around the world including the one used in the 1996 Olympics in Atlanta.

In his late teens to early twenties there was a small break from bikes when Rock’n’Roll and art events consumed his time. In 2004 Brendon left Detroit and went to Minnesota to attend the Minneapolis College of Art and Design where he received a BFA in graphic design. Also while in Minneapolis Brendon noticed a bunch of punk rockers riding cobbled together bikes around the city and realized that one could get around the city by bike and be a punk, something that just didn’t happen in Detroit and the surrounding metro.

Upon graduation in 2007 Brendon worked briefly for the advertising agency Carmichael Lynch Thorburn, but later that year his department was terminated and there wasn’t much work for a junior designer so Brendon ended up working as a mechanic at a bike shop in town. That is were a ten year long career started. After another three years in Minneapolis it was time for a change so Brendon packed up a small U-Haul trailer and moved to New York City. Without any real plan Brendon pounded the pavement and applied at every bike shop in Lower Manhattan and Brooklyn. Through the help of a friend of a friend Brendon ended up finding a spot the legendary L.E.S. shop Bike Works owned by Dave Perry the author of the book Bike Cult which is one of the most comprehensive bicycle encyclopedias available.

After leaving Bike Works to manage a non-profit bike shop just up the street called Recycle-A-Bicycle Brendon received his master course in being a bike mechanic. The New York cycling community is incredibly intense and diverse. It is filled with people that rely on their bike every day for transportation, work and has deep historical passion for cycling. This historical passion has only influenced how Brendon views contemporary cycling.

After five years in New York an opportunity to move to Southern California arised and always looking for the next adventure Brendon headed west. Even though Orange County is a world apart from Brooklyn it is home to some of the worlds biggest cycling brands. Brendon got a job working for Shimano, one of the best component manufacturers in the world. This gave a whole new perspective into what the cycling industry is. Something Brendon noticed is that the people working on the inside often have a very narrow view of their customers and only see what is in front of them, in this case SoCal. Brendon spent three years in Orange County and Los Angeles working service and sales inside the industry before finally realizing that his passion for making was going unfulfilled and that is what finally led him to Portland and being a part of the Sports Product Design program.

Sharing all of this background is important to Brendon because it gives him a unique and broad vision of the cycling industry. He has worked hands on in many different cities with many different kinds of people and has done his best to understand their personal needs. This experience helps Brendon identify incoming trends and gaps in the product space. This one on one time with such an eclectic group of people has also offered insight into what people do and don’t like, what things work for them and what things don’t and kind of things are prone to breaking. This leads Brendon to discover clear and simple solutions to problems that can very easily be overlooked, and that is the core mission of BINGO Components as a brand.

The BINGO project is an opportunity for Brendon to combine his passion for cycling, his years of experience as a mechanic and his education in graphic and product design. All of this knowledge of the industry will lead to innovative, fun and unique products that will improve the adventure cyclist’s experience on and off the bike, while being all tied together into a strong unifying brand identity. Brendon’s goal in developing BINGO Components is to help any cyclist make their adventure as hassle-free and enjoyable as possible.

These combined experiences have the potential to drive Brendons career path in the direction he wants it to go. That direction is towards product or brand management, have the ability to look at a brand in the larger picture and how all of the pieces together can add up to success. As much as he enjoys making, sitting in front of a computer is not one of his favorite things. In addition to working as a product manager Brendon also hopes to one day make BINGO a fully functional and self-sustaining business and eliminate the need for a normal nine to five. Even though the idea of running his own business is many years off this project will help lay the groundwork and aid Brendon in this goal.

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Much of the advice that Bob offered was incredibly valuable and will continue to aid me throughout my business and manufacturing future. While I may not agree with some of the things that Bob believes are necessities of running a business and are not totally applicable to the bike industry, the information was valuable nonetheless.

One of these pieces that Bob offered is to never give anything away, ever. This is something that I do not entirely agree with, as much of the product BINGO intends to produce will rely heavily on athlete feedback and at times will require feedback from more than one tester. One of the challenges of the cycling industry is that it is very driven by unique experiences. Often these experiences may overlap, yet often they may not be based on the individual's riding experience and expectations. That is where the importance of seeding products with select individuals or groups has value to the design process as well as making a name for a new brand. As I've mentioned before, the cycling industry (especially on a small scale) is based on community.

Another person I have spent a fair amount of time speaking with is Erik Olson, he is the co-founder and owner of Portland Design Works. PDW is a very small business that produces bicycle fenders, lights, and other cycling related accessories. We discussed some of my ongoing product designs and alternative ways of making them as well as the importance of social media presence and some of the struggles of starting a new bike brand. Even though PDW produces most of its products overseas there are a lot of similarities that BINGO can pull expertise from.

Aside from the two people I have relied on most heavily for this project I've had the pleasure to meet many other people in the industry who have been able to provide feedback and insight into BINGO's goals. I was able to chat briefly with Jason Goodman the designer and co-owner of Swift Industries, a bag manufacturer based in Seattle. We talked about bag making, bicycle touring and making a product people want to use. I also had a chance to share the B1 with him and received some positive feedback in the form of requesting one when they are finished.

I also had an interesting and intense meeting with Brett Flemming, the owner, machine operator and mad scientist at Efficient Velo Tools (EVT). I have been aware and used his company's tools since I was a rookie mechanic in Minnesota and many of his products provide a very simple solution to many frustrating bike mechanic problems. Brett pulls ideas from his years of being a bicycle mechanic and service manager at River City Cycles here

in Portland and claims responsibility for helping develop the Shimano chain checker (a tool that measures chain wear).

The number one goal of EVT is efficiency for the user which appears to be in conflict with Brett's shop and work style. The shop has a very "old-school" feel with raw materials precariously stacked in every corner, taps and dies are all over the workbench in no particular order and Brett running around as he shows me his operation while working on one thing before moving onto the next — and undoubtedly creating a headache for his one other machinist (who was still being trained among the chaos). It felt like the kind of the bike shop in New York where I used to hang out and drink beers after hours. Yet, he produces some of the best tools in the industry.



Field Work:

What were your research questions?

I started by questioning where there are product gaps in the market that riders would find useful to their cycling endeavors and adventures — that can be made domestically at a reasonable price. Next I interviewed owners of local bike related (and non-bike related) companies, first asking some fundamental questions about their design process and what made them want to start their own company. I used these meetings to gain knowledge and information but also as a way to introduce myself since this is still a very tight-knit community — and you never know who knows who.

I also used this opportunity to gather manufacturing ideas and asked where their products are produced. The answers were varied; some manufactured their products in-house, others through local machinists, while others have items manufactured overseas.

Whenever an interviewee stated that they sourced locally in the Portland area I would seek and get a name, which was usually provided. Some of these fabricators proved to be too large to produce the low quantities I'm looking for.

Where did you go and who did you talk to?

I have talked to a wide variety of people in a variety of industries. I've had extensive meetings with Bob Peterson, owner of Allied Power as well as several subsidiary companies. We discussed a range of topics from the intricacies and challenges of the manufacturing processes to starting a new business from the ground up.

What did you learn (key findings)?

Brett did have some great insight into what makes a specific bespoke company where people want to spend their money. Key takeaways: Make the user more efficient

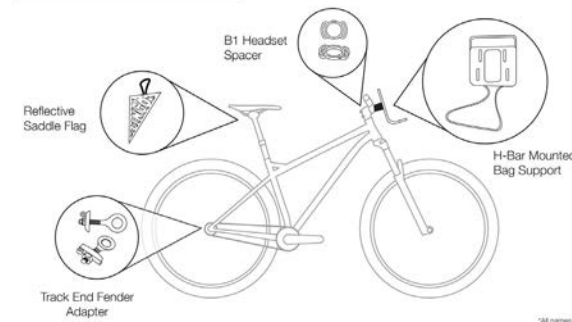
How can you prevent damage to a customer's bike?

What are the finishing touches that makes a product special and worth the money? One of the best pieces of advice Brett offered is to source whenever you can. There is no need to make something yourself that already exists, I think that this something that seems obvious but is often not followed by designers. I hope to take that advice forward when working on my projects. The intention is not to cut corners but to help aid in my efficiency and keep my costs low.

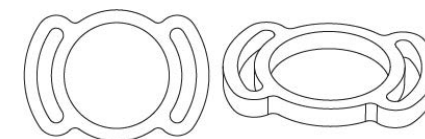
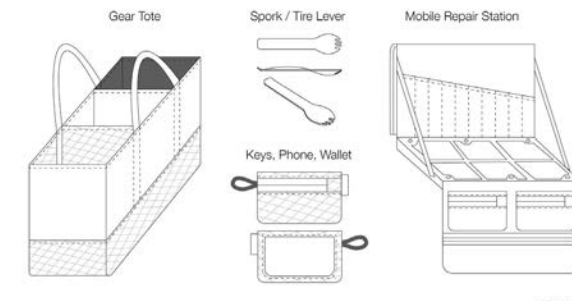
Design priorities and design brief(s).

Since BINGO is putting together a collection of items, I will go through each product and discuss what the product is looking to solve through individual design briefs:

BINGO ON THE BIKE



BINGO OFF THE BIKE



B1 Headset Spacer: The B1 is designed to add a third point of connection for the feedback style of handlebar bag on bikes that have short stems and to accommodate modern mountain bike geometry.

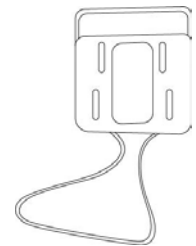
Consumer segment: MTB, Bikepacking, endurance cycling, bike touring
Season: Summer 2020
Price: FOB: \$7.02 Retail: \$15 to \$18 (tbd)

B2: This is an expansion on the B1 Headset Spacer. In this version there is an integrated headset top cap for the rider who wants to run the B1 at the top of their steer tube above the stem and offers a clean streamline finish for your cockpit.

Consumer Segment: MTB, bikepacking, touring, road cycling, gravel, commuting, etc.
Season: Summer 2021
Price: FOB: \$10 (estimate) Retail: \$35

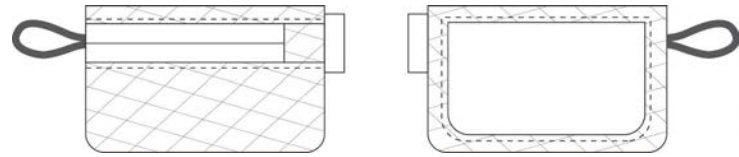
B3: Similar to the B1 and B2, the B3 is all about organizing your cockpit and cutting down the number of straps, and adapters. The B3 is designed to integrate the B1 headset spacer with a headset compression top cap and a mounting point for a Garmin or Wahoo GPS cycling computer. The B3 has a replaceable plastic insert that mounts the computer but breaks away in a crash preventing any damage to the electronics. This is the perfect addition to anyone with a crowded cockpit looking to improve organization and usability.

Consumer Segment: MTB, bikepacking, touring, road cycling, gravel, commuting, etc
Season: Summer 2021
Price: FOB: \$10 (estimate) Retail: \$35



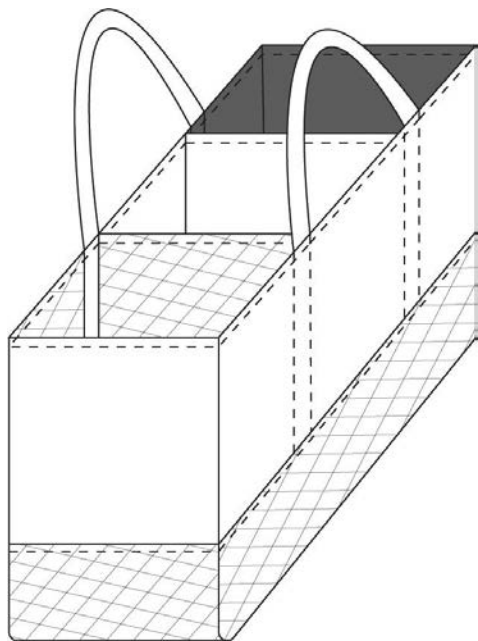
Handlebar Mounted Bag Support: At some point in recent history, bike-packers and cyclo-tourists decided that racks were out of fashion and frame bags were in. More recently there has been another change in style where a more minimal version of racks have started to show up in combination with some of these frame and handlebar mounted bags and packs. Some of these racks require attachment points that are welded onto the fork of the bicycle and will not accommodate any suspension. I have designed a rack that does not require any contact with the fork but still provides adequate support for large handlebar mounted bags, allowing for suspension compatibility and free movement of brake and shift cables.

Consumer segment: MTB, bikepacking, touring, road cycling, gravel, commuting, etc
 Season: Summer 2021
 Price: FOB: \$45 (estimate) Retail: \$110



Keys, Phone, Wallet: This small bag is designed to keep your house or car key, cell phone, and credit cards and ID close at hand and away from sweat or moisture when you're riding. Every cyclist knows that a ziploc bag is great for keeping all your important things dry when out for a ride and we always tell ourselves that we'll use it again and again, but do we? Made from lightweight, waterproof, and extremely durable xpac material with a clear vinyl window on one side that is touch screen compatible, this the perfect reusable bag for the important things on your ride.

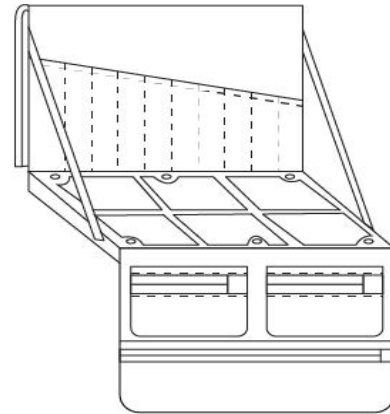
Consumer Segment: MTB, bikepacking, road cycling, commuting, hiking, camping, etc.
 Season: Summer 2020
 Price: FOB: \$15 (estimate) Retail: \$35.00



Gear Tote: The large gear tote (final name tbd) is designed to reduce the time you spend getting ready to head out the door for a ride on the trail or your daily work commute and make it easier and more organized. Current duffle bags offer one large compartment where the bulk of your gear is stored. This causes a problem when you have dirty shoes next to a fresh clean change of clothes, and prevents your metal cleats from scraping against your pristine helmet. This tote has removable subdividers that allow you to easily separate your gear into its designated place. The compartment for shoes will be lined with waterproof nylon for easy cleaning, the clothing will be separate and the helmet compartment will be made using a soft to the

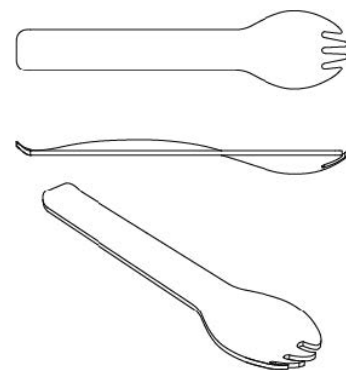
touch flannel lining keeping everything organized and looking good. Also with the open tote design you will be able to quickly and easily see that you've packed all your gear. There is nothing worse than showing up to a group ride and realizing that you've forgotten your shoes. Now this won't be a problem.

Consumer Segment: MTB, cyclocross, road cycling, hiking, camping,
 Season: Summer 2020
 Price: FOB: \$40 (estimate) Retail: \$175.00



Mobile Work Station: This is the solution to working on your bike when you're traveling by car to a ride or a race and there is no place to easily and neatly set out your tools or spare parts for pre-ride maintenance and prep. This product is designed to be shut in the car door and unfolds to expose your tools on a small work surface with pockets for additional tools or parts that may be needed. This is also designed with the car camper in mind who needs a little extra storage for their camp kitchen; it's easy to use and set up, even with limited space.

Consumer Segment: MTB, cyclocross, gravel, road, hiking, camping,
 Season: Summer 2020
 Price: FOB: \$35 (estimate) Retail: \$150.00



Widget Spork: A long time ago when I was a mechanic in the shop I had a friend named Widget and he would eat his couscous with a cone wrench. I think it was just because he wanted to eat his lunch with bike tools. Now you can without it being gross. Spork on one side, tire lever on the other, Perfect for your messenger bag, tool kit, camp kitchen or even work bench. A fun, buzz-worthy gift item. EDIT: This product

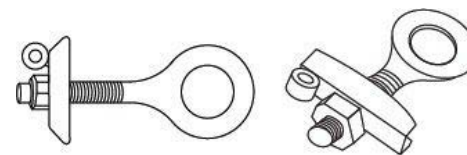
did not go any further than the drawing and first 3D printed prototype. There was not available resources, funding or time to accomplish this product to its idea. This is something that will still be considered as the BINGO brand continues to grow and progress.

Consumer Segment: MTB, cyclocross, road cycling, commuting, messenger, hiking, camping, etc.
 Season: Summer 2022
 Price: FOB: \$10 (estimate) Retail: \$20.00



BINGO Saddle Flag: The saddle flag is more of a marketing tool than an innovative product but I feel that it is worth mentioning because it is something that I don't leave without putting on the back of my bike while on tour. This simple highly reflective saddle flag is designed to strap onto either the rails of your saddle or off of a rear facing bag in order to help boost your visibility so the rearward approaching traffic knows you're there. This can help save your life while riding along a country road where drivers are not accustomed to seeing many cyclists. Plus with the BINGO logotype on there people will know you're stoked to rep the BINGO brand.

Consumer Segment: MTB, bikepacking, touring, road cycling, gravel, commuting, etc
 Season: Summer 2020
 Price: FOB: \$5 (estimate) Retail: \$15



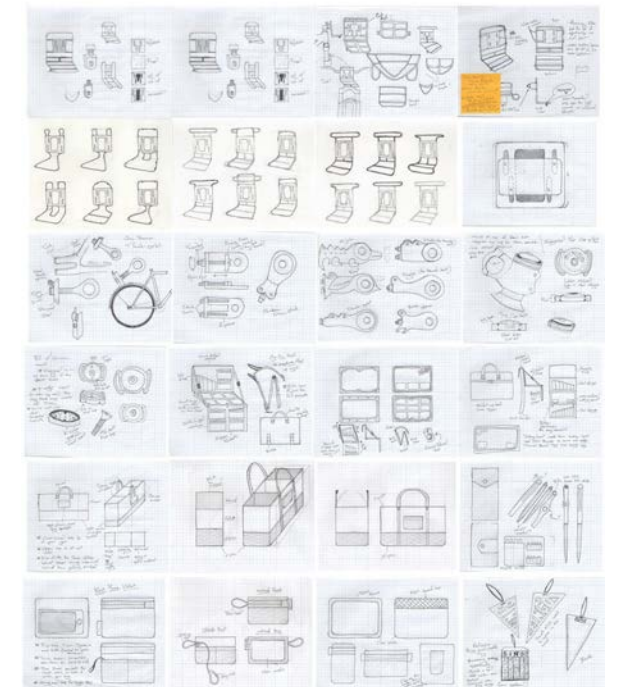
Track-end Fender Adapter: The track-end fender adapter is admittedly a very niche product but there will no doubt be cyclists that will be in need of this product. As I mentioned before cycling trends are always changing and disciplines fall in and out of style. I believe the fixed gear trend is catching another wave of popularity due to the new race style Tracklocross, a combination of the fixed gear criterium and cyclocross. This has bred a new style of racing track bikes that are designed around traditional track geometry but with larger tire clearances. What happens when these riders grow tired of racing and or want to commute through the winter months on these very utilitarian style bikes that were never designed to accommodate full fenders? That's where this adapter comes in handy. Made using a traditional steel chain tensioner with a small stainless steel fender eyelet welded on this will quickly make your tracklocross bike a super commuter. Future variations of this product with me CNC'd aluminum with integrated threaded eyelets and fun designs.

These may also be useful for people wanting to install fenders on other single speed specific bikes that use the same style of rear entry drop out.

Consumer Segment: Tracklocross, Commuters, SSMTB, SSCX, Bike Messengers
 Season: Summer 2020
 Price: FOB: \$3.84 Retail: \$10 (as design becomes more complex the price will increase.)

Ideation process: Methods used

Sketching, wire model building, prototype making, miscellaneous fabrications in the shop. Through the tinkering in the shop I was able to assess and deconstruct existing products finding areas of frustration and room for improvement. This also something that I have been doing throughout my career as a bike mechanic. The wire model making was used to help me ideate for the handlebar mounted bag support where some interesting and unique shapes were developed. It wasn't until I started bending full scale steel rod was I really able to see the vision take shape. Sketching was used among all the products to help define some unifying shapes and forms as well as refine some initially cluttered designs. For the fabric based product I made rough paper patterns then made multiple working prototypes out of canvas and cordura nylon to test the finish capabilities of the laser cutter (I did not have access to the laser cutter and ended up cutting everything by hand and sealing with a lighter). These ideation methods have been extremely helpful in the development of these products as well as providing some organization to the variety of products I intend to produce.





Validation plan: What must you prove with the new product(s)? This should reflect your design priorities.

Is the rack strong enough to handle the stress and loads of bike packing? Is the mobile work station useful and modular? Do the bags make packing for a ride easier and more organized? Is the fender adapter strong enough? The biggest thing that I want to validate is consumer interest. Are these products going to sell?

Test methods that you will use to validate the product. Name 2-3 methods of validation.

During the last two to three weeks my plans for validation and product testing have vastly changed. The original plan was to attend the Sea Otter Classic with an accompanying road trip that would provide the opportunity to do real world product testing as well as receive industry and consumer feedback. That event has been rescheduled for October due to the Coronavirus; I am in the process of determining my next steps. The original back-up plan was to visit Topanga Creek Outpost in Los Angeles and participate in a near weekly bikepacking trip with the shop owner Chris Kelly and a group of his shop regulars. This would have been a great opportunity for athlete feedback, product testing, and content building. This plan also looks like it will not be an option due to virus related concerns and I will likely have to fall back on plan three.

I will do a short two to three day bikepacking trip in Eastern Oregon a little later in the spring so that there is time for the climate to warm up and the snow to melt. This plan will give me a little more time to finalize the working prototypes and I will layout and build the website and marketing material. It will also enable me to go into the trip with a set photo shot list of images that I can edit and place when I return to Portland. Prior to the trip I will also conduct shorter local rides to conduct some preliminary stress tests on the rack to insure that it won't fail while in a remote area.

EDIT: Due to the cancelation of all industry trade shows and "Safer at Home" orders all testing and validation will be done close to home and through virtual data collection. I will still seed product to select athletes and gather feedback via surveys and video conferences.

Layout validation testing (how many subjects, samples, timing, surveys, etc.).

Seeding B1 to Seth Holmes, and Lauren Abrahamian. Develop a short survey for initial feedback and a longer term test. Gear tote: Use during short term testing rides. Note my impressions and potential improvements

Results and findings (show imagery and discuss what worked/didn't work)

The best validation that I have received is from members of the riding community. They have shown personal excitement and joy towards some of the products and a genuine interest in when they may become available. Another truly exciting reaction is from individuals willingness to help make BINGO a reality. From local entrepreneurs sharing their time or offering discounts to personal friends helping with fabrication and other non-product related design branding (I have an illustrator friend working on something I am very excited about).

Concepts that have proven to work and have genuine interest are the B1 Headset spacer, the spork tire lever, the KPW and the travel tote. I have also seen indications that the chain tensioner fender adapter has piqued some interest but since it is such a niche product the value will not be totally understood until it is needed. I hold out hope that it will be successful. I look forward to using the V1 myself and proving its validity.

During prototyping of the bags I have discovered some quality issues but hope to have those resolved during final production. I'm most concerned about the large gear bag being able to hold its shape while partially empty and currently working to find a good solution for the collapsible dividers.

KPW: same testing as gear tote. Make one for RoseMary to use on the road

Chaintensioner / Fender Adapter: Mount on personal track bike for product testing.

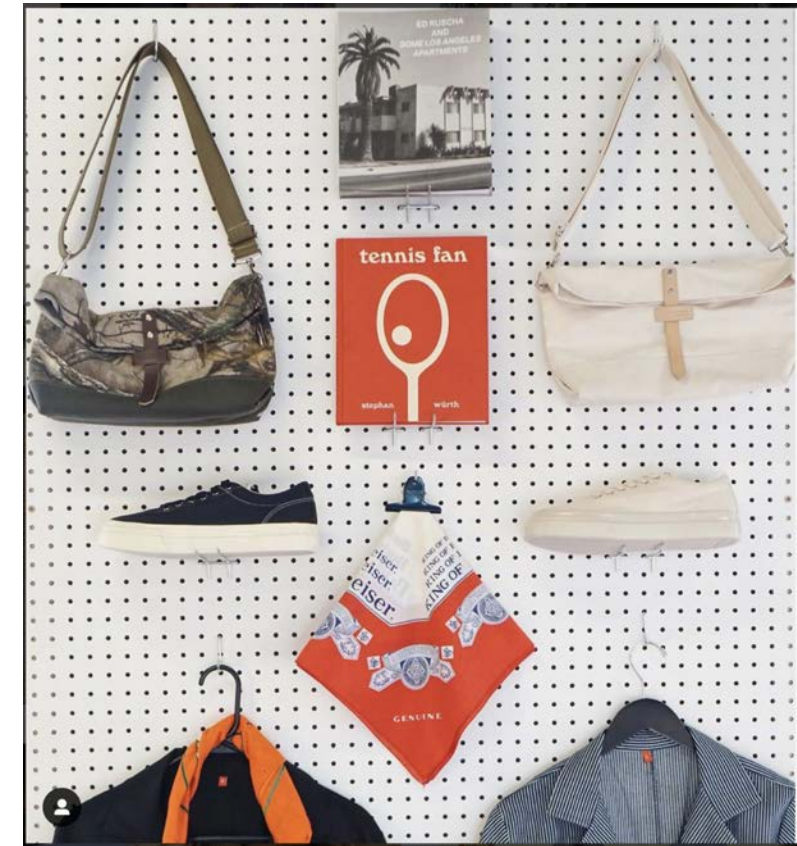
Mobile Work Station: Same as the gear tote. I will load the work station with necessary tools I would need to fix most problems on the road and then during one of my more local rides I will perform routine bike maintenance at the trailhead.

Rack Testing: Rides and stress test in nearby trails (faux bikepacking ride) Two to three day bikepacking trip where I will document in writing and photography what my impressions of the bag support are and how well it holds up to the strain.

Presentation plans for Spring Term: How will you display the work?

Work will be displayed as an industry trade booth layout. There will be three walls and a table. The three walls will be constructed using gridwall with white peg board neatly zip tied; pegboard display hooks will be used to either hang the product or support the product from underneath. Products that exceed ten or more will be available for cash only sale. These products will include proper pricing and packaging. Along with the unique BINGO products there will be additional branded products for sale such as laser etched headset top caps, water bottles (budget permitting), stickers and potentially some screen printed t-shirts. I will also provide non-alcoholic beverages served out of a BINGO branded vintage Coleman cooler. There will also be a bike on display with all applicable BINGO products installed to provide clear representation of the products intended use. Size and specific layout of the booth are still to be determined but will be finalized closer to the final presentation.

EDIT: Since the final review will not be held in person due to COVID I will display the final product on pegboard located behind me during review. In addition all the the product will be on display at BINGOcomponents.com in addition, the B1 headset spacer, saddle flag and stickers available for immediate purchase.



How will you market the work (packaging, video, hang tags, website, press, etc.)

The work will be presented as it would be in a retail environment. There will be packaging, labels, hang tags, prices where applicable, an instagram page (that will be launched post BLM protests) and an accompanying website where products will be available for purchase through Paypal.

Spring Term work plan: Prototyping plan

My current prototyping will continue where the winter term has left off. I still have some unresolved issues with the gear tote and how I would like the dividers to collapse. Once that is addressed I can finalize the pattern pieces and make an accurate materials quantity estimate, make the fabric order and send the patterns, fabric and protos off to my sewer. Prior to that I will also need to figure out my branding tag. Currently, I would like to get the BINGO logo printed on a white cotton material that can be sewed into the seam of the bags. Exact placement and style will be finalized once the bag designs are finished. (EDIT: All prototypes have been produced by myself. There are still future plans to work with a sewer to produce BINGO bags.)

The KPW bag is currently a little bit of an unknown right now. The original plan was to have this product be included in the end of term pop-up shop for sale but there may be some unforeseen

production issues due to the lack of access to a laser cutter (another Coronavirus issue). The original plan was to send off the cut pieces along with the material for the gear tote but I could not cut until I had made my materials order. Now due to the studio shut down for at least the next four weeks that could cause an issue on how many bags can be made. That said, the design of the KPW is in a good place and only some minor adjustments need to be made. (EDIT: All KPW pieces have been cut by hand and burned to prevent fraying and sewn in house. This did mean that a more limited quantity has been produced.)

The last product that requires sewing is the mobile work station. Since this prototype is designed to only be a one-off (or maybe two-off) all of the sewing will be handled here by myself. There are still a couple of design revisions required and a final choice for hardware but that can be made in the next couple of weeks when I place my larger fabric order.

One small problem may be getting the work surface portion of the product CNC'd. The original plan was do the cutting myself in the university shop but since that will be closed indefinitely I will have to find an alternative. Fortunately, I have a personal acquaintance who owns a router and have offered up their services but I will have to double check that it is large enough to accommodate my design. (EDIT: The CNC process of the board was outsources and easily produced.)

The handlebar mounted bag support is in its final design stages and is nearly ready for me to make the final materials order and begin the preparations for the welder. I have not heard from any steel distributors about possible closures due to the virus but that could change at any time. There could also be complications with my welder. The original plan was to be on site during the welding process and assist where I can as well as gain a better understanding of the process and technique with the hopes that could eventually handle all production on my own. As an alternative I may just have to drop off the materials and instructions and let the welder work alone. This also affects the prototyping of the fender adapter in the same way but should not impact the final product. (EDIT: All material pre-prepped with plans were delivered to the welder and the job was completed without complication.)

Since much of the resources needed to complete portions of my project may be unavailable for a while I may have to restructure my prototyping plan. I was originally going to hold off on any of the products that required being made in Rhino and 3D printed but I may move those projects forward and complete any 3D rendered models while confined to my home. This way when the Nucleus Lab reopens I can send my files to James right away and hopefully avoid delays as we near the end of the term. This will also give me the opportunity to catch up on any other unfinished products, if needed. There are currently four products that require 3D modeling; the B2 spacer and top cap; the B3 spacer and computer mount, the spork/ tire lever, and a future version of the chain tensioner fender adapters. Since these were originally planned to be presented as 3D prints only the original design plans should not be affected. (EDIT: No additional 3D printing was necessary.)

Unfortunately due to unforeseen events my production plan has to change from the original. I will have to rearrange my originally assumed timeline but should have something more concrete be the first week of the spring term.

Validation plan

As workflow and external events continue to change so does the validation plan. Currently since I would like to leave air travel to a minimum and do a two to three day bikepacking trip somewhere in Oregon within a 4 to 6 hour drive from Portland. Fortunately there is no shortage of wilderness destinations in Oregon so finding the right trip to test my equipment will not be too challenging. I will need to do more research on exactly when and where to go, and as snow can linger well into late spring in parts of the state. I would prefer to avoid any unnecessary cold weather. (EDIT: Due to “Safer at Home” orders not traveling outside of Portland was possible.)

I will also be sending out a few of the B1 headset spacers to some endurance cyclists for feedback. So far these athletes are: Seth Holmes in Boulder Colorado who is a cross-country mountain bike racer, gravel cyclist, and cyclocross racer. He is currently training for the 2020 World Endurance Mountain Bike Organizations Americas Solo 24 hour mountain bike championships in Bend Oregon currently scheduled for July 11.

Lauren Abrahamian is a bikepacker and shop manager located in Los Angeles California with miles of experience and unique perspective on bicycles in both an athletic and cultural pursuit. With these athletes' feedback I will be able to tailor any revisions to the second round of production for the B1 as well as use any of their endorsements for content and testimony on the website.

Presentation plan

As stated above, the final presentation plan for BINGO components will be a “Pop-up shop” located in the atrium of the White Stag Building with a variety of unique and BINGO branded merchandise for sale. There will also be one-off products and prototypes of future products that will help illustrate where the brand intends to go post graduation. The space will be constructed using grid wall and pegboard that will be on loan from Portland Design Works, allowing me to keep my presentation budget low and apply money toward more promotional materials such as stickers and water bottles (the business cards of the bike world). I will also include a bike that will be set up for bike packing to help illustrate how all the bingo products are intended to be used.

The goal of this first shop is to be a prototype for future pop-ups. BINGO intends to visit other bike shops in the Portland, Seattle and Los Angeles areas to promote and grow the brand through limited branded pop-ups that will introduce this unique product line to their markets and spur orders for BINGO Components.

EDIT: Due to COVID I was unable to present the BINGO Components pop-up shop but BINGOcomponents.com is up

and has seen steady traffic including my first sale! BINGO still does not have an instagram due to the cultural timing and out of respect for the protests for George Floyd and the efforts of Black Lives Matter. I do not believe that it is in BINGOs best interest to promote a new leisure brand when other voices should be promoted. There will be a time in the near future that promotion on Instagram will be acceptable and that is when BINGO Components on IG will launch. In conclusion the BINGO Components project for the the SPD program has ended well even though there is still plenty of work to be done to become a successful brand. Now that there is a strong product foundation I can continue to build the brand story and and marketing collateral in a compelling and dynamic way that will build a strong following and consumer base.

BINGO

COMPONENTS

WINTER TERM 2019
RESEARCH AND IDEATION



UNIVERSITY OF
OREGON

COLLEGE OF DESIGN

SPORTS PRODUCT DESIGN

2020

WHAT IS BINGO?

BINGO Components is a bicycle accessories brand established by Brendon Brogan that is reminiscent of a time in the 1980s and '90s when a dedicated community of weirdos, kooks and forward thinking entrepreneurs were revolutionizing mountain biking. These products were fun, unique, and utilitarian.

The mission of BINGO Components is to continue the legacy of finding innovative solutions to problems that big bike manufacturers often overlook.

CYCLING IS ALWAYS EVOLVING

- Bicycle disciplines change
- Frame geometry changes
- Products intended uses change
- Fashion and styles change



MARKET POTENTIAL: U.S. Population, Ages 6+

2018 SFIA Topline Report

Sport & Fitness Industry Association Sports, Fitness, and Leisure Activities
Topline Participation Report



Road/Paved Surface

38.8 million



Mountain/Non-Paved Surface

8.6 million

146.1M North Americans participate in outdoor activity with 7.5% growth over the past 10 years

Mintel's Active Outdoor Enthusiasts 2019; The Outdoor Foundation

Bicycling, both on paved and unpaved surfaces, are most commonly in the top three outdoor activities for people ages 18 to 64.

People who chose cycling share the one of the top three spots with camping as another top outdoor activity. That indicates there is a significant crossover between the two activities.

Cycling industry has an average growth rate of 1.39% over the next 5 years

I also believe the popularity of E-Bikes will help fuel that growth.

BINGO IS FOR THE ADVENTURE CYCLIST

BINGO is for the adventure cyclist.

There are lots of different kinds of adventure cycling, ranging from epic back country explorations, to a weekend ride to a new picnic spot.

BINGO Components is bicycle accessories brand geared toward the mountain bike, gravel grinding, and adventurous cyclist.



I'M A SHOP RAT

I've spent countless hours riding solo and with company and have had endless conversations on how to make things better. I've also been a professional bike mechanic for over a decade. My goal with BINGO Components is to take that experience and make collection of products other adventure cyclist want to use.

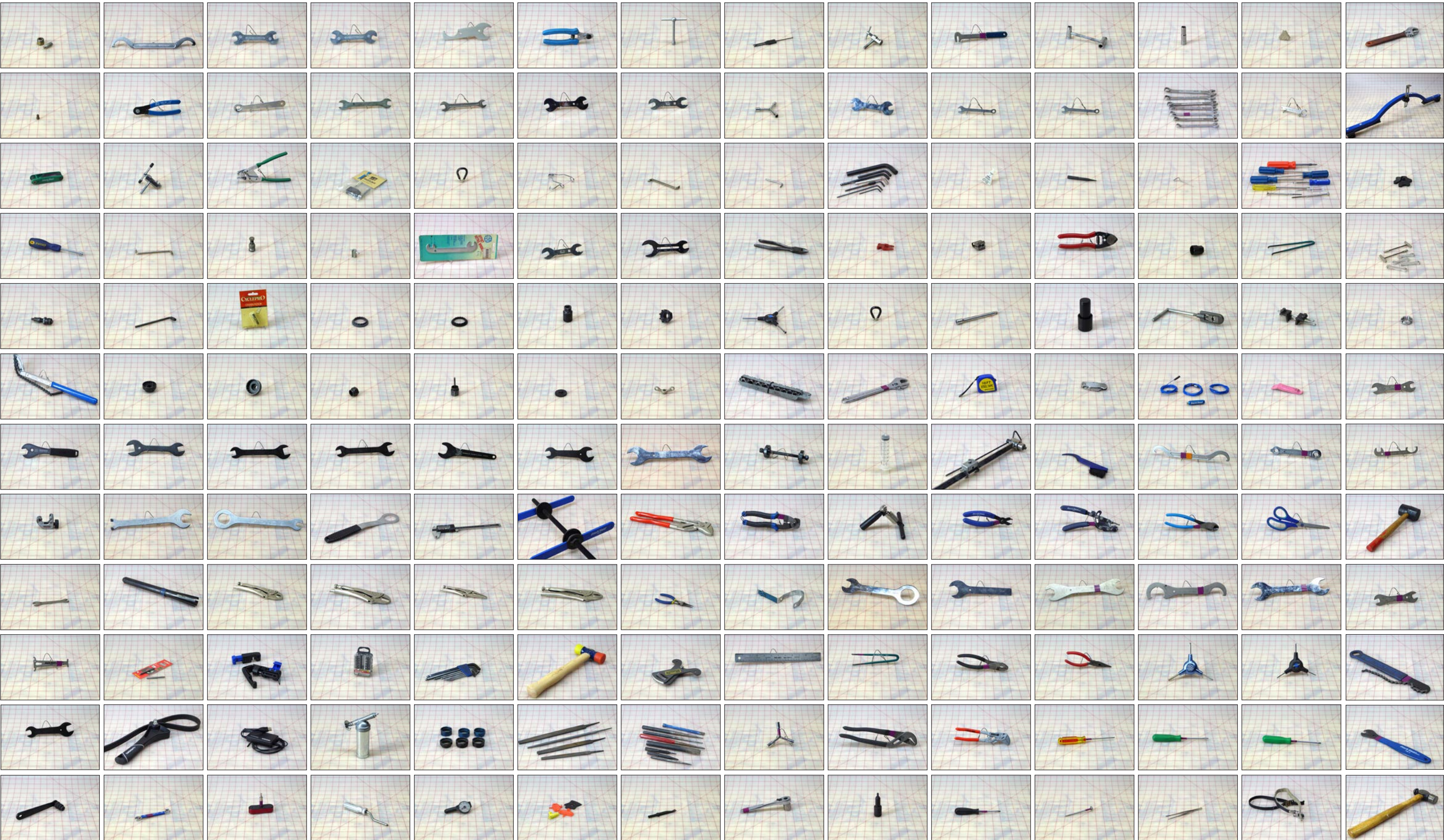


Along the Oregon Timber Trail just past Bend, OR. (2019)



Brendon Brogan after a long day in the shop. (New York, 2012)

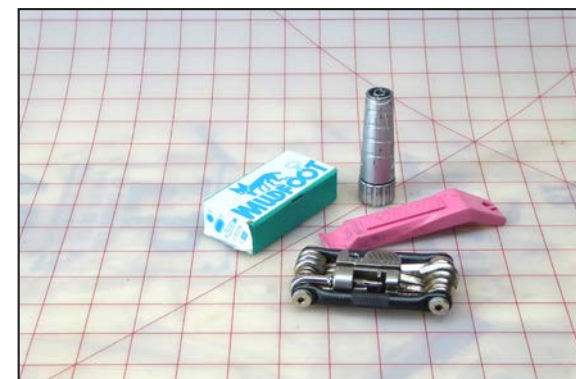
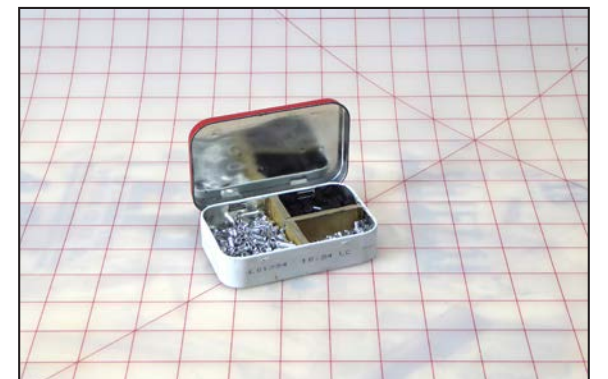
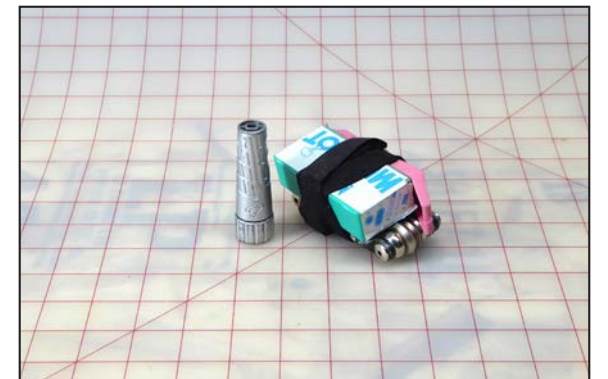
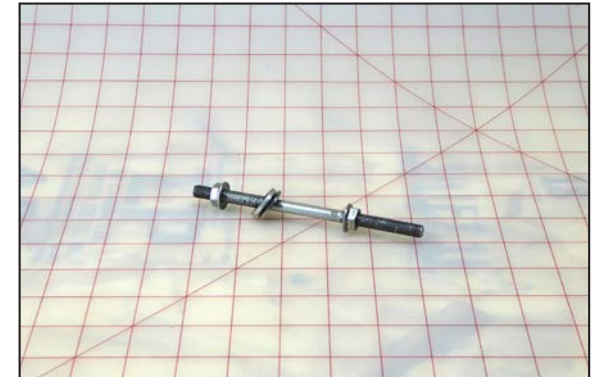
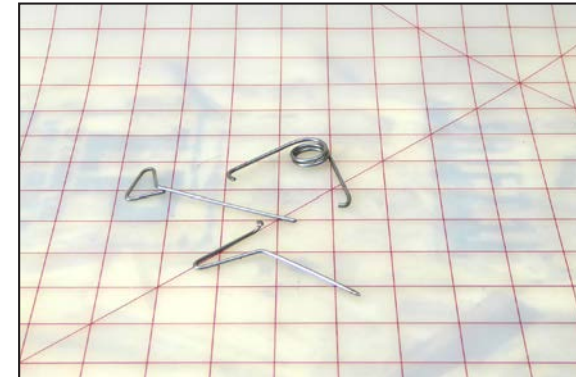
ABBREVIATED TOOL CATALOG



INNOVATIONS FROM THE SHOP

As any experience cyclist or mechanic now is that there is not always the right tool for the job and sometime you need to take thing into your own hands.

BINGO Components works to find those gaps in the accessory and tool world and strives to find elegant simple solutions that make getting your bike out on the trail. Sometimes a solution is so simple it makes you say BINGO!



INSPIRATION AND COMPETITION

Maillard Heliomatic freewheel removal tool from the late 70s. For the first time cycle tourists could replace spokes with only a small key for the lock-ring and little effort. This tool was inexpensive, light weight, had two spoke wrenches and a bottle opener.



WOLF TOOTH “B-RAD SYSTEM”

This product is design to reposition a water bottle cage when clearance is an issue. Very helpful for modern full suspension mountain bikes.

MSRP: \$19.95



PAUL COMP “THUMBIE”

This allow a bar-end or down tube shifter to be mounted to the handle bars. A little old school but still super popular.

MSRP: \$109.50 per pair



REVELATE DESIGNS “FEED BAG”

A stem and handlebar mounted bag that allows the rider to carry extra snacks, water, or anything else that is needed close at hand.

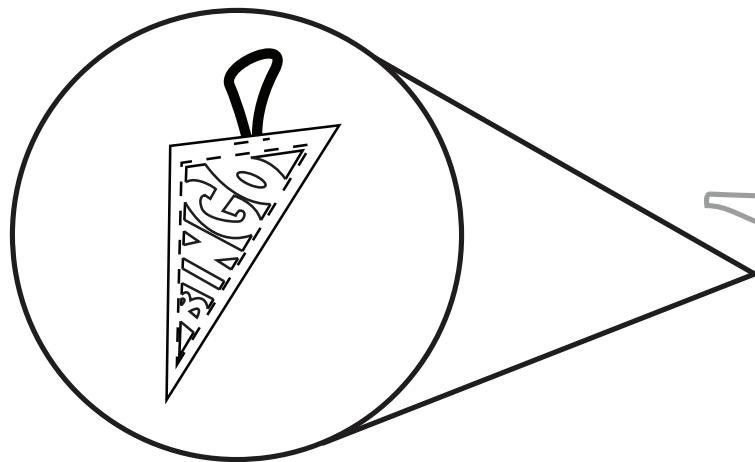
MSRP: \$49.99

WHAT IS BINGO SOLVING?

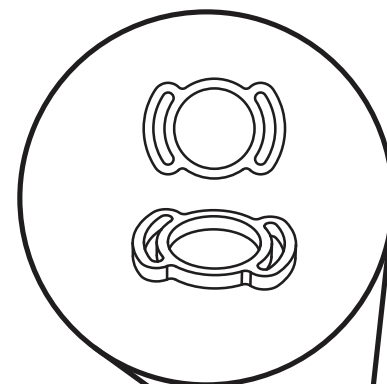


BINGO ON THE BIKE

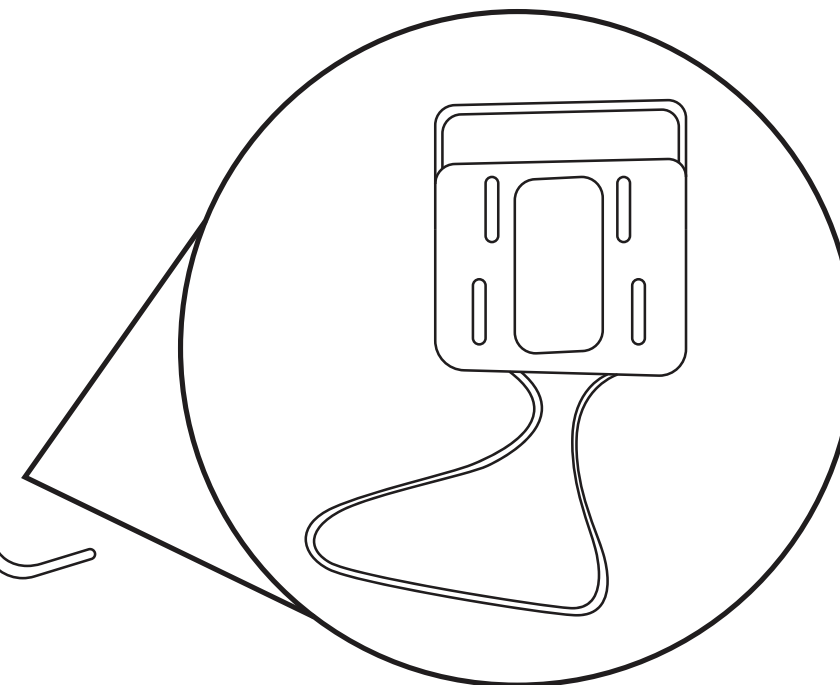
Reflective
Saddle Flag



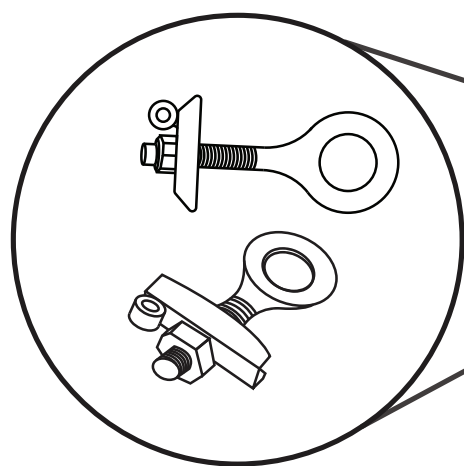
B1 Headset
Spacer



H-Bar Mounted
Bag Support

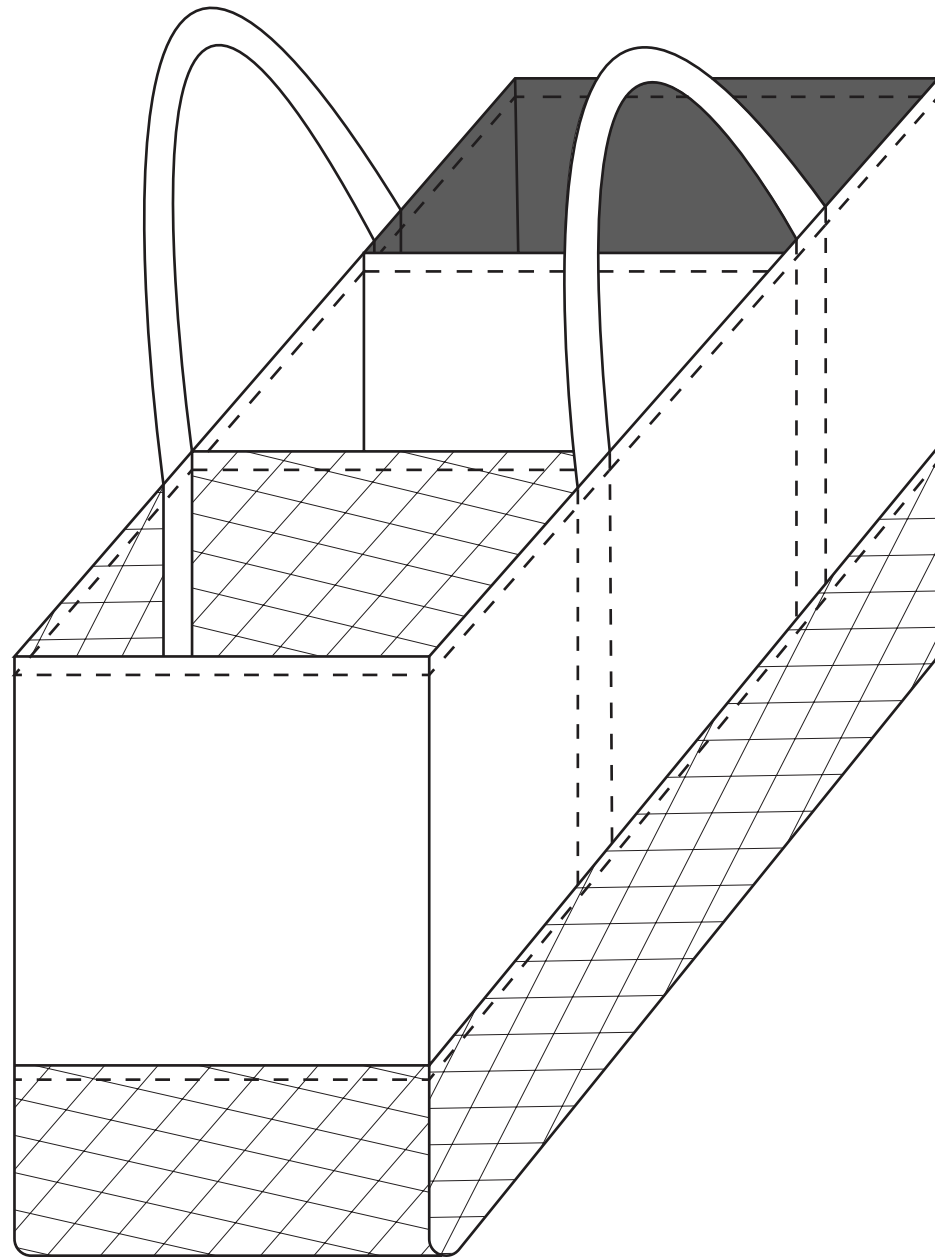


Track End Fender
Adapter

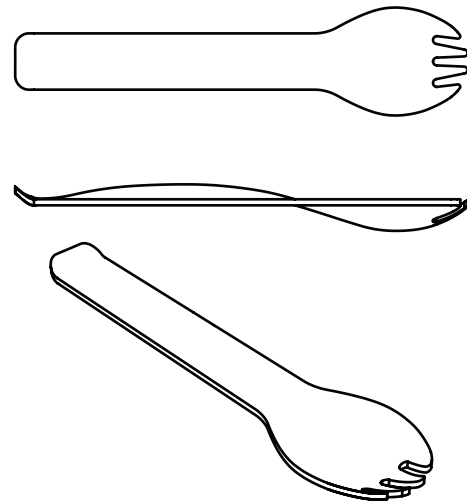


BINGO OFF THE BIKE

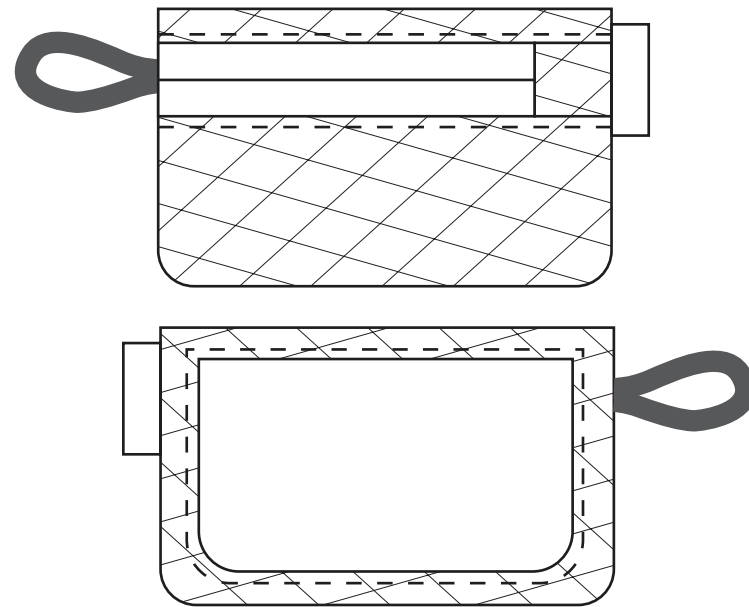
Gear Tote



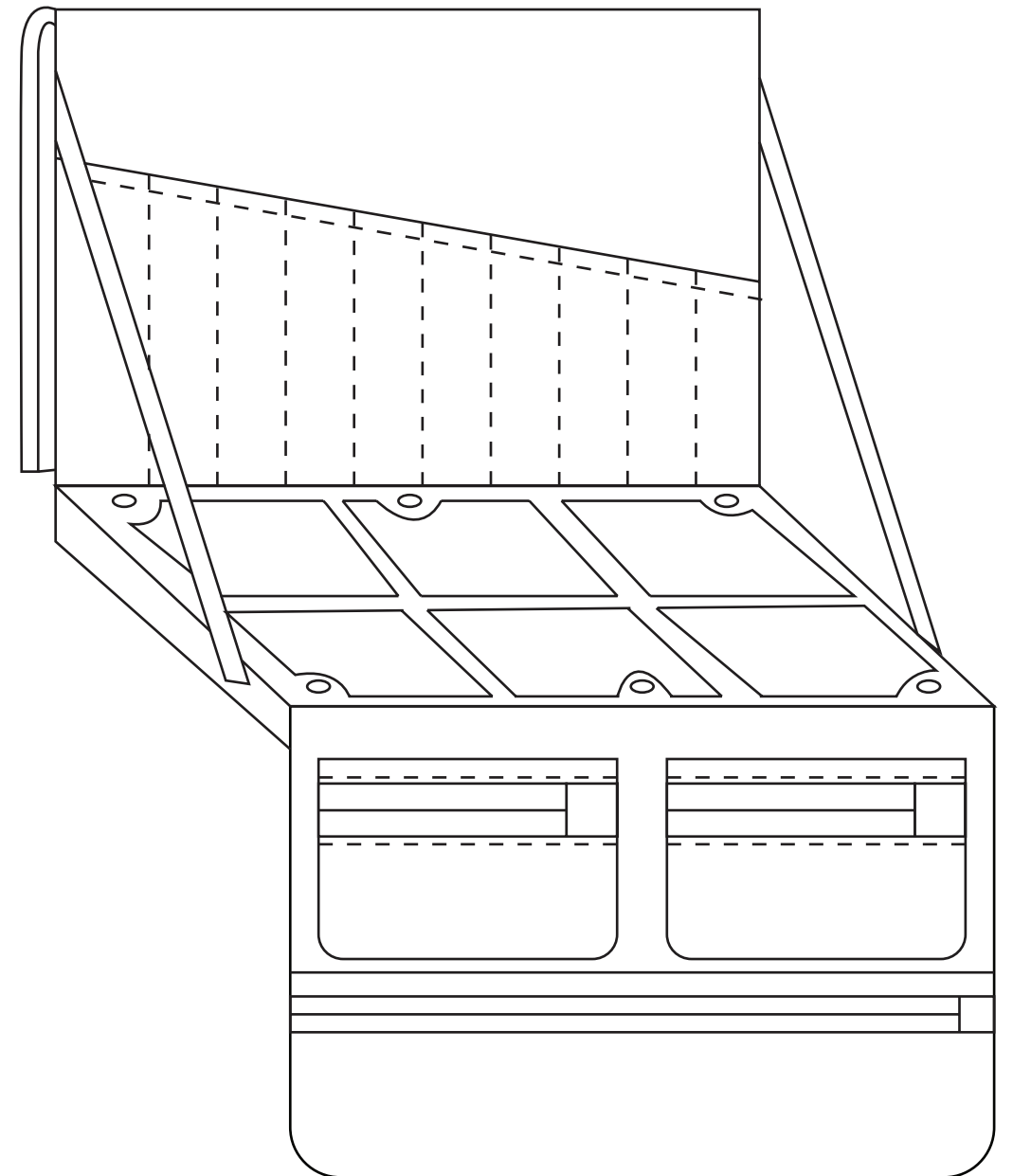
Spork / Tire Lever



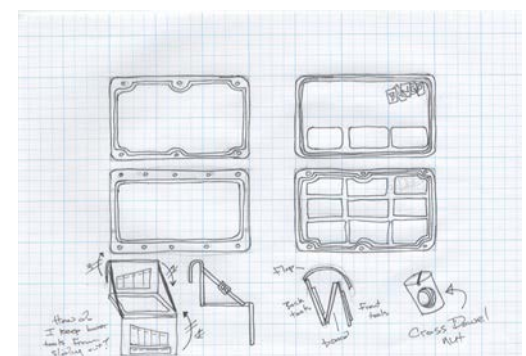
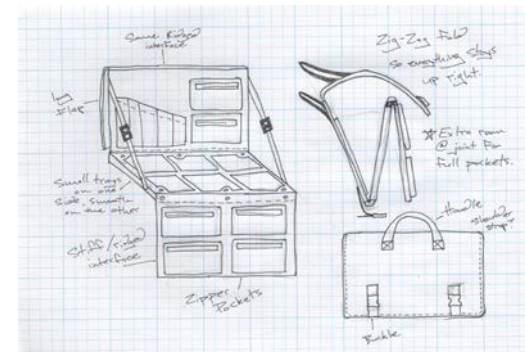
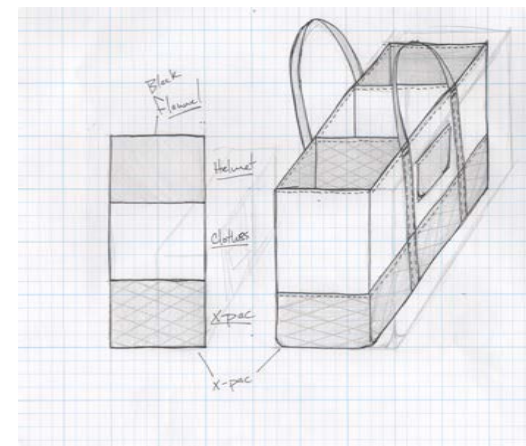
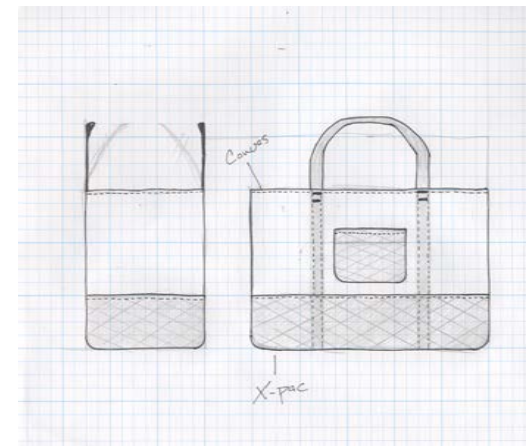
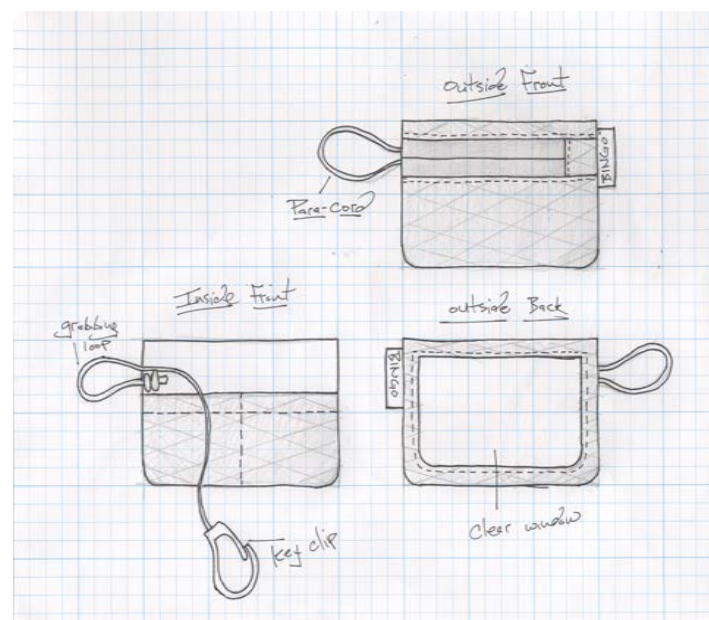
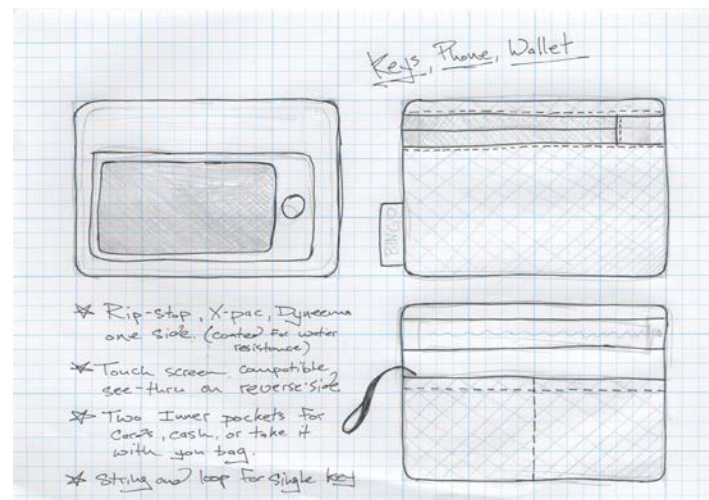
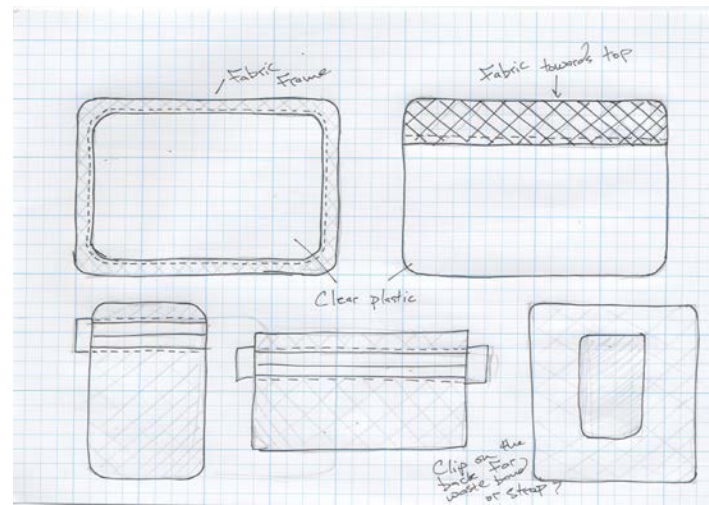
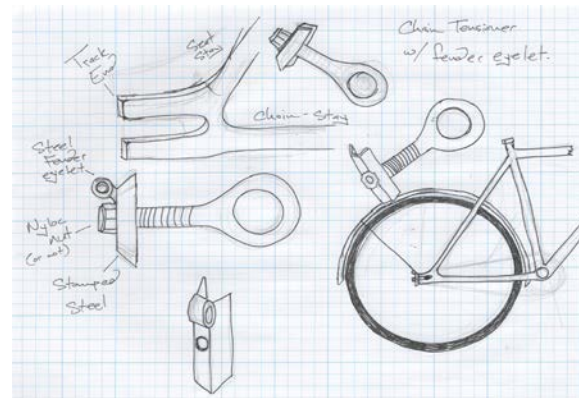
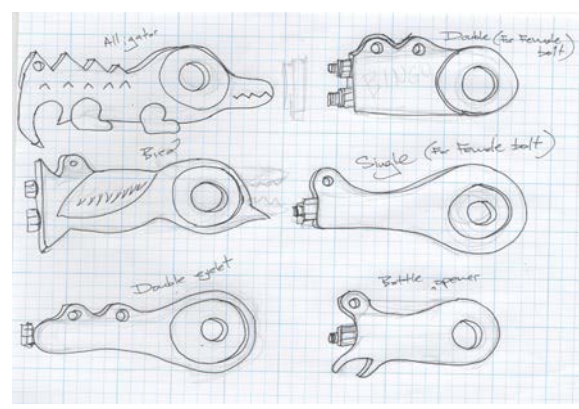
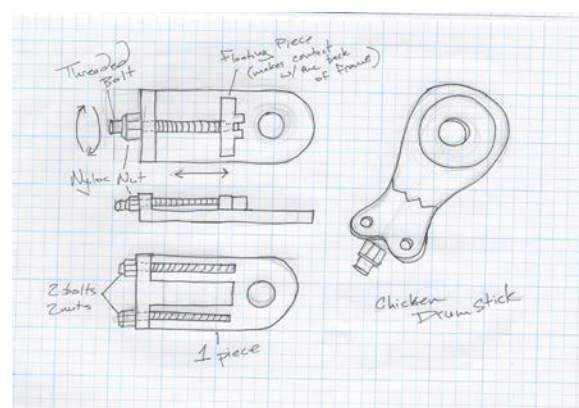
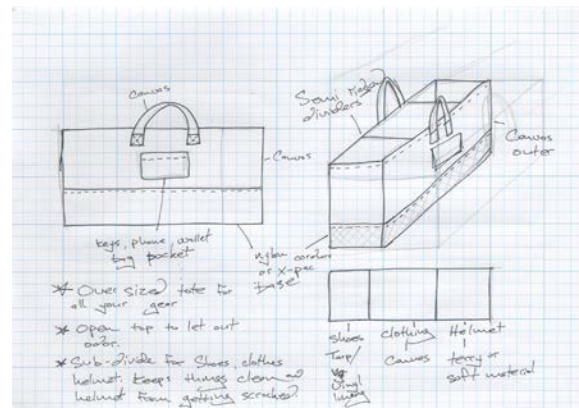
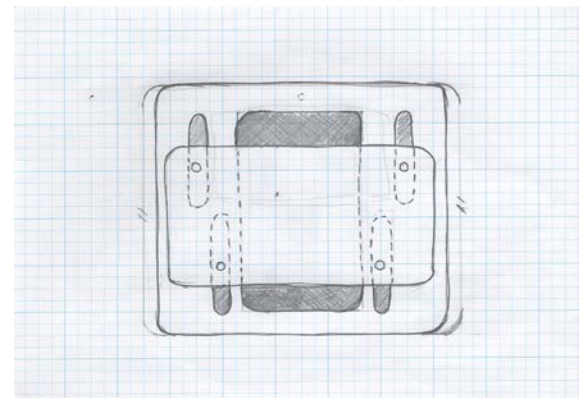
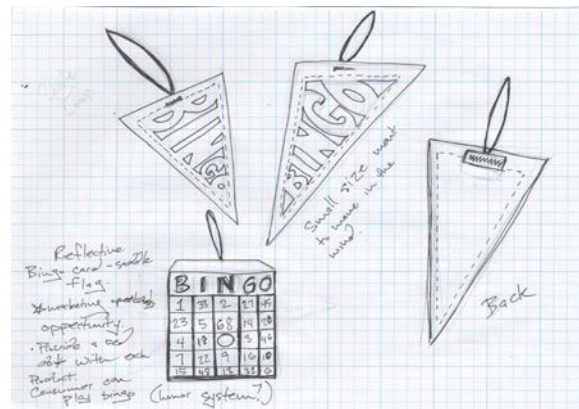
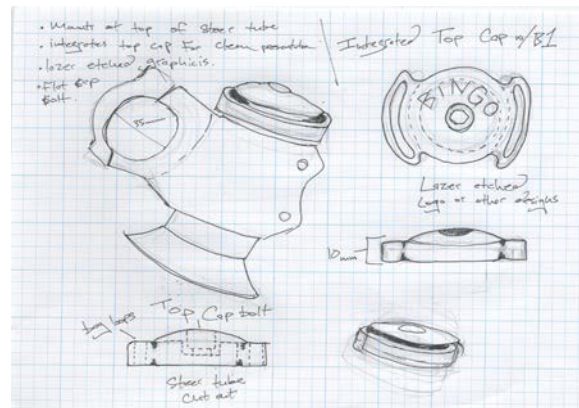
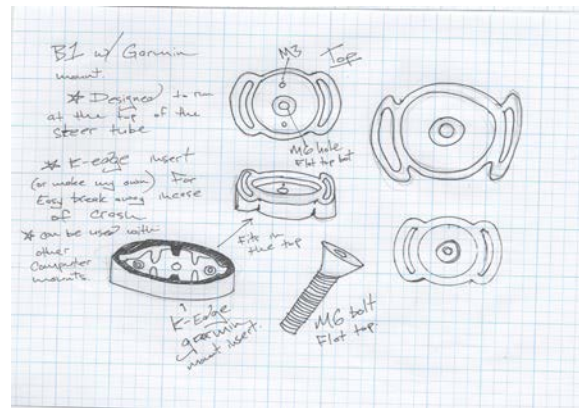
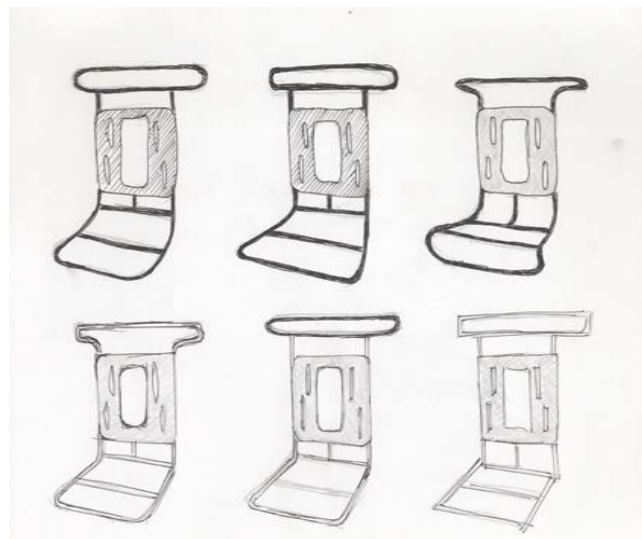
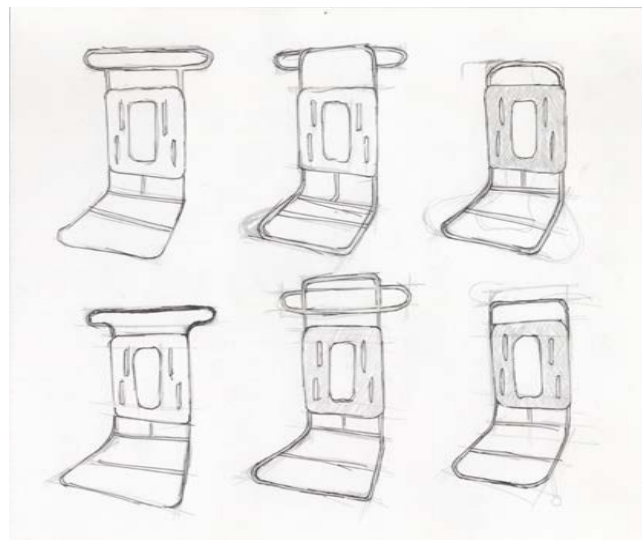
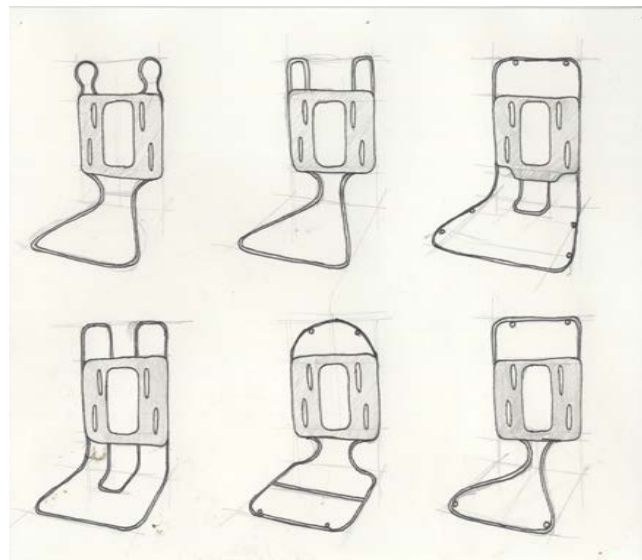
Keys, Phone, Wallet



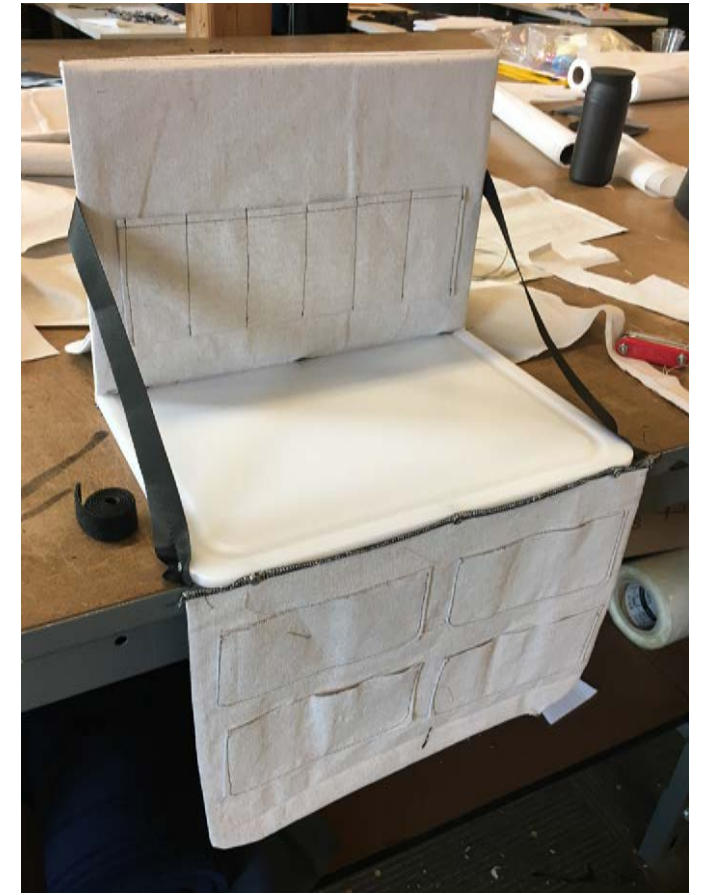
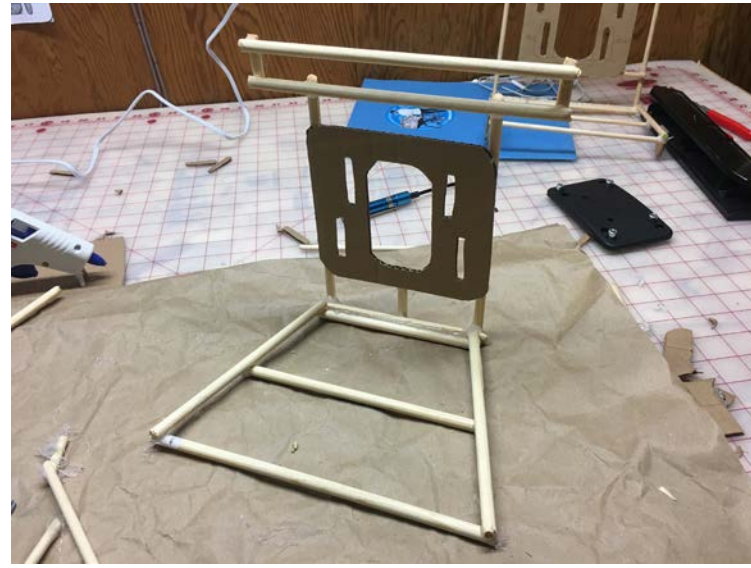
Mobile Repair Station



IDEATION



PROTOTYPES



VALIDATION



BACK-UP PLANS:

Send out finished B1s for athlete feedback

Attend an “Unpredict your Wednesday” with the crew at Topanga Creek Outpost for athlete and consumer feedback

Solo bikepacking trip in eastern Oregon in early spring for product testing and content building.

Exact dates TBD

BINGO'S FUTURE

As the brand grows it can follow the bingo style.

Each letter can stand for a different category of the company. For example all the “B” labeled products could be for the cockpit, “I” can stand for touch points, “N” for apparel and so on.

For the final presentation of the thesis project BINGO will set up a small pop-up shop in the atrium. This will include a small selection of unique BINGO product as well as fun branded products for purchase along with stickers and beverages. There will also be one-off and prototype products that will offer a window into the future of the brand.



BINGO

COMPONENTS

SPRING TERM 2020
PRODUCTION AND VALIDATION



UNIVERSITY OF
OREGON

COLLEGE OF DESIGN

SPORTS PRODUCT DESIGN

2020



BINGO

COMPONENTS

FUNCTIONAL

CLEVER

AUTHENTIC

BINGO

Cycling is rooted in tradition but is also always evolving. The evolution and innovation of the cycling industry has often been born in the shop and in the garage then taking those ideas out to the trail. That is exactly how BINGO was created. By choosing materials that are made to last, fabrics with high abrasion resistance as well as steel and alloys that are resistant to fatigue BINGO Components will last many miles.

The goal of BINGO is to make the bike you have the bike you want. You may not own the ideal bikepacking bike but you have a really nice trail bike. BINGO can help make the integral changes necessary to make your adventure reality with some clever problem solving.

BRENDON BROGAN

FOUNDER OF BINGO COMPONENTS

12 Years Bike Industry Experience

2020 Master of Science graduate
in Sports Product Design

Brendon has spent countless hours riding solo and with company and has had endless conversation in the shop on how to make things better. Brendon is also a professional bike mechanic with over a decade of experience. The goal of BINGO Components is to use his years of experience and make a collection of products other adventure cyclists want and need.



BINGO'S CUSTOMER

BINGO is for the adventure cyclist. Ranging from epic back country explorations, to a weekend ride to a new picnic spot.

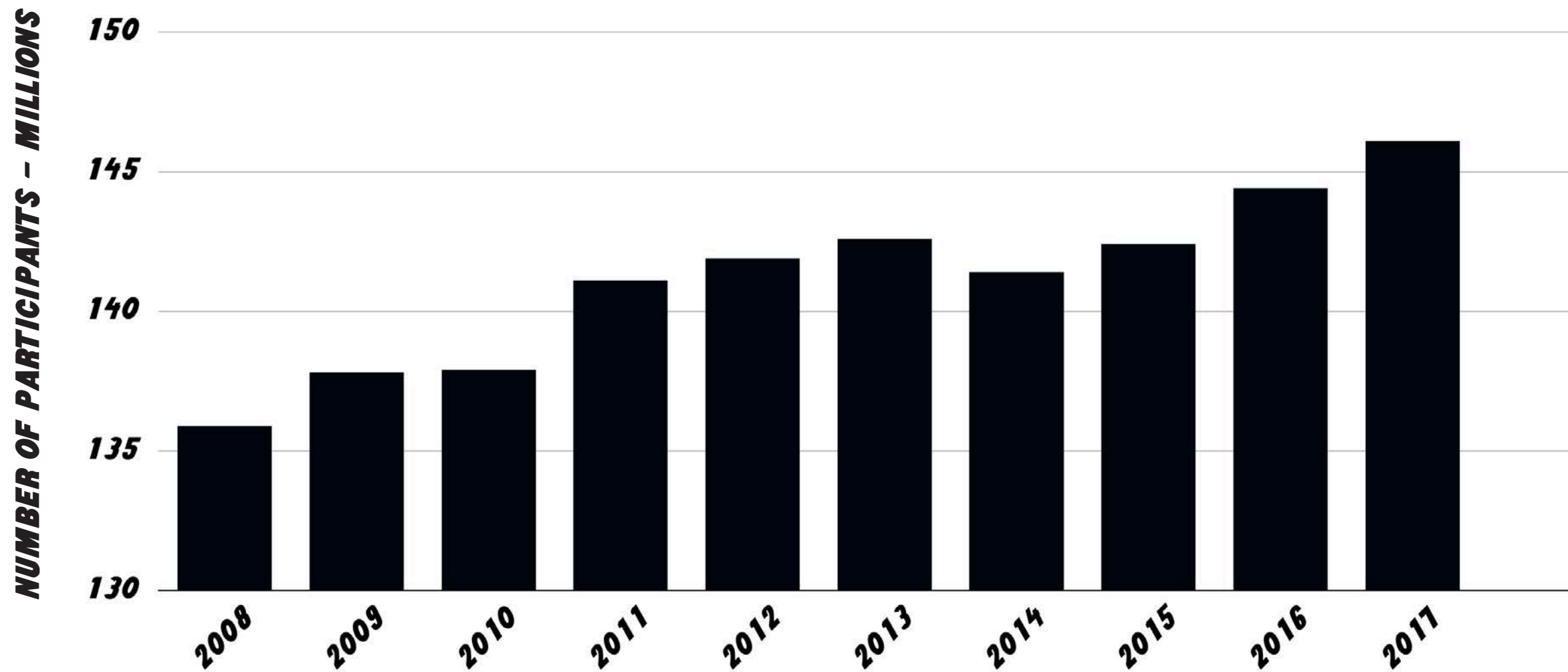
BINGO's customer is looking for the tools to streamline their bike adventure experience and transform the bike they have to the bike they want.



MARKET SHARE

OUTDOOR INDUSTRY

Increasingly health-conscious Americans are expected to spend more time participating in outdoor sports at an annualized growth rate of nearly 1.5%.



MARKET SHARE

OUTDOOR INDUSTRY

- 146.1M people in North America are participating in outdoor activity annually with a 7.5% growth over the past 10 years.*
- 1/3 of Americans are spending more time outdoors than the previous year.

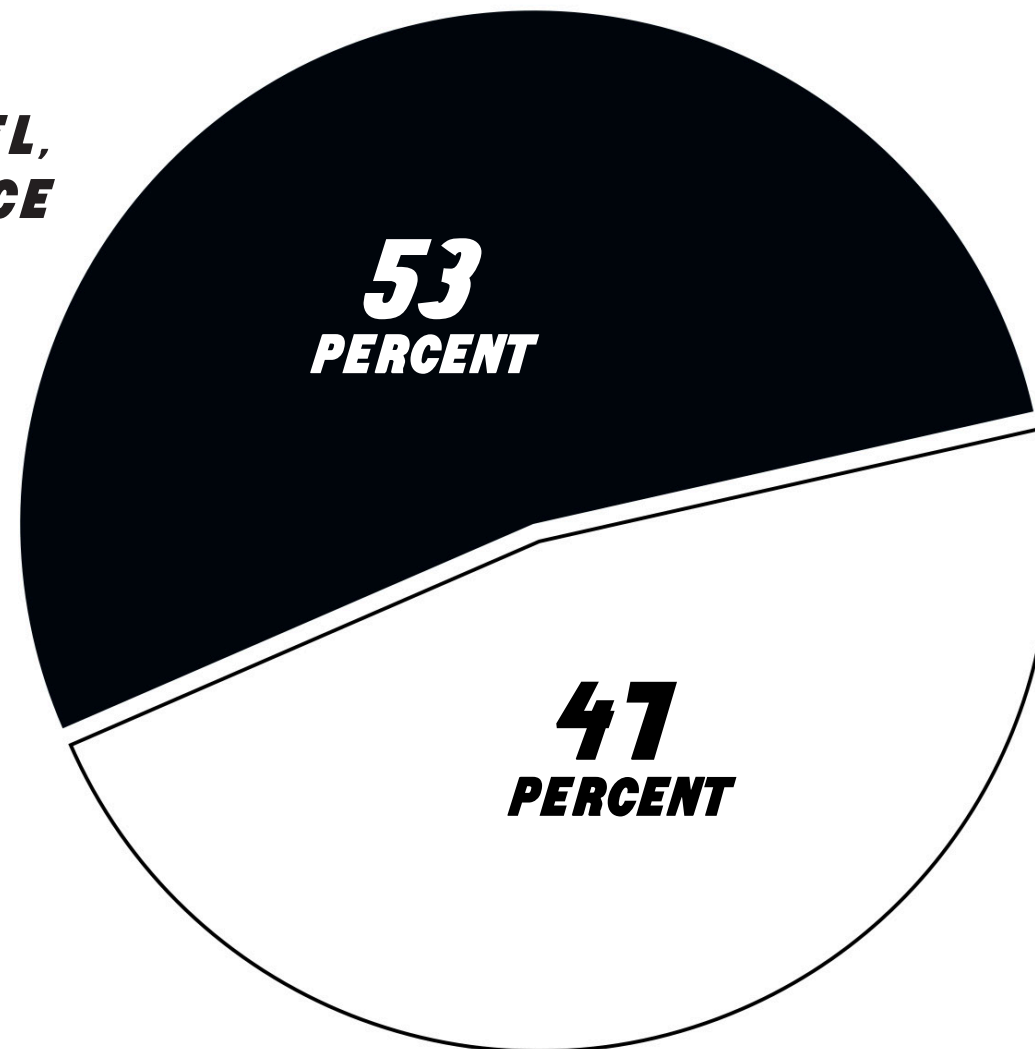


MARKET SHARE

CYCLING INDUSTRY

53% of sales in specialty shops are from accessories, apparel, equipment and repairs, not from new bikes or whole bike sales.*

**ACCESSORIES, APPAREL,
EQUIPMENT, AND SERVICE**



**NEW BIKE
SALES**

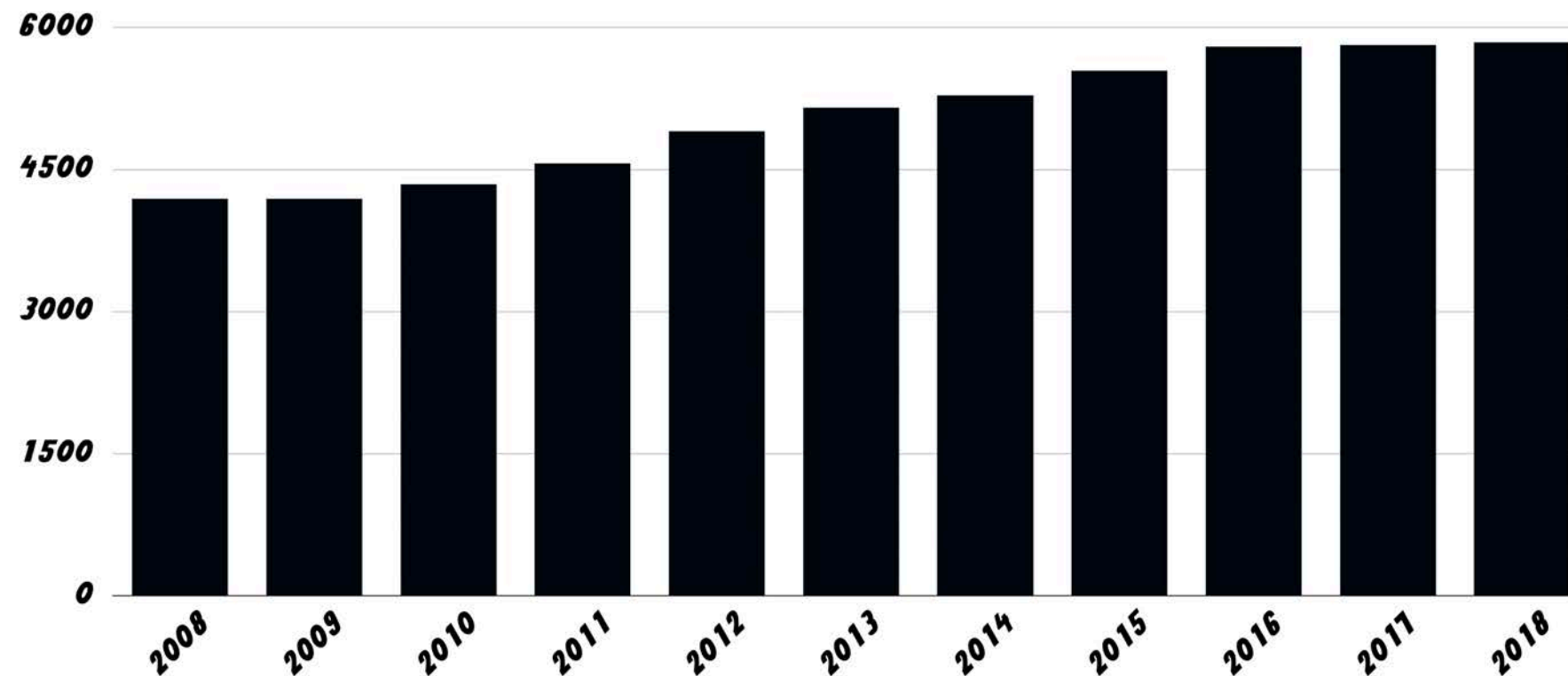
There is a strong market for accessories and components.

MARKET SHARE

CYCLING INDUSTRY

- There are 47.4 million people nationwide participating in cycling.*
If BINGO can capture two percent of the total, that would result in 9.48 million customers.
- Bicycling, both on paved and unpaved surfaces, are in the top three outdoor activities for people ages 18 to 64.**

US BICYCLES AND ACCESSORIES PERSONAL CONSUMPTION EXPENDITURES, 2008 – 2018 (US\$ MIL)



* "Fitness, and Leisure Activities." Topline Participation Report. 2018.

** Sports & Fitness Industry Association (SFIA). 2018.

CURRENT CLIMATE

COVID-19 EFFECT ON CYCLING

Britain's biggest cycle retailer said sales of some cycling equipment had risen 500% at the start of the lockdown, while bike sales this month have been double normal levels.

- The Guardian

New York City Department of Transportation reported a 50% surge in cycling over the East River bridges compared to the same time last year.

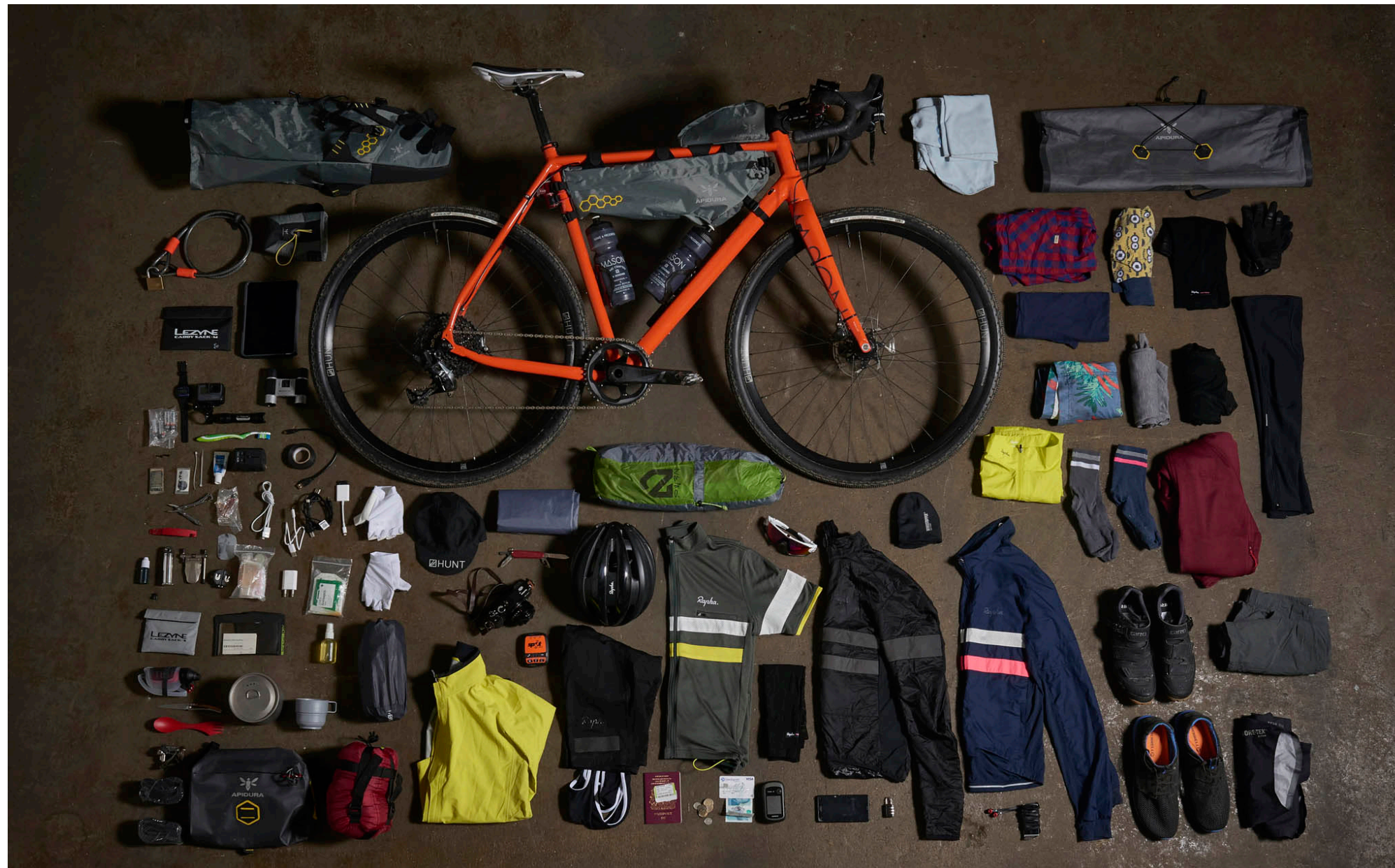
- Outside Magazine

Due to the current events and the surge in cycling for transportation, fitness and general well-being now is an ideal time to introduce a bicycle accessories brand that is focused on getting people to get out and ride the bikes they have. For many, this is a rediscovered passion that will not go away when the world gets back to business as usual.

THE PROBLEM

Most cyclists don't own different bikes for every discipline, but they desire to use their current bicycle for new adventures.

Limited time can be an obstacle for getting out for a ride. As a cyclist there is a long list of items that need to be done, packed, and organized before the ride even starts.



THE SOLUTION

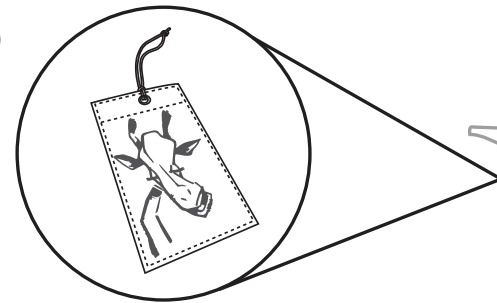
BINGO is about organization and simplification.

Whether it is convenient, easy to use bag attachments that doesn't interfere with the rest of your components or a bag or pouch so you know you have all of your essentials ready to go. BINGO will let you stress less about getting ready and spend more time enjoying the ride and insure that the bike you have is the bike you want.

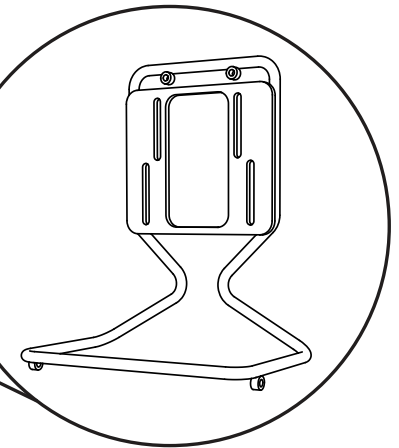
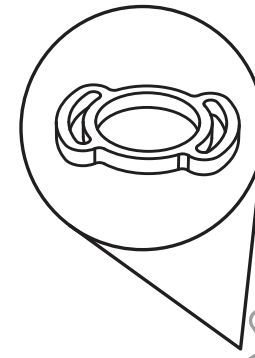
Here are the current BINGO Components in development for the avid cyclist both on and off the bike. Further product descriptions, information and brand elements are located in the appendix.

Retail prices range from \$13 to \$185

Reflective Saddle
Flag
MSRP: \$13
Cost: \$4.20

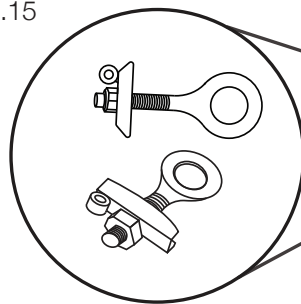


B1 Headset
Spacer
MSRP: \$17
Cost: \$7.28

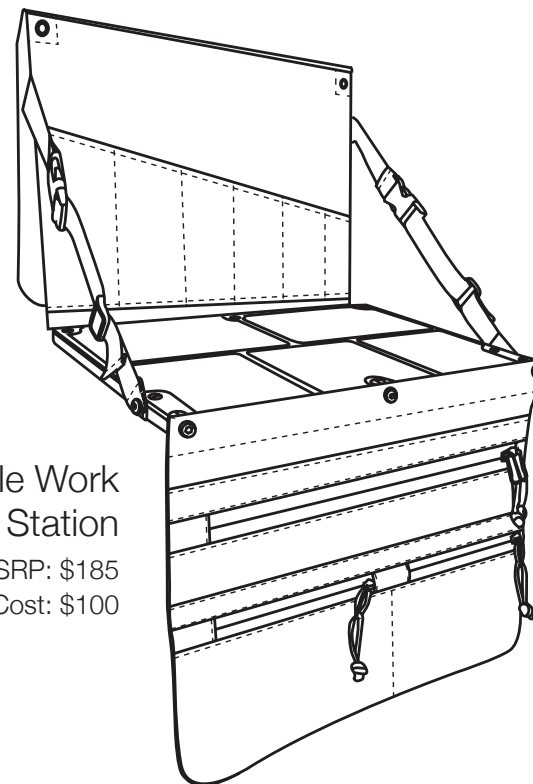


Handlebar Mounted
Bag Support
MSRP: \$150
Cost: \$74.50

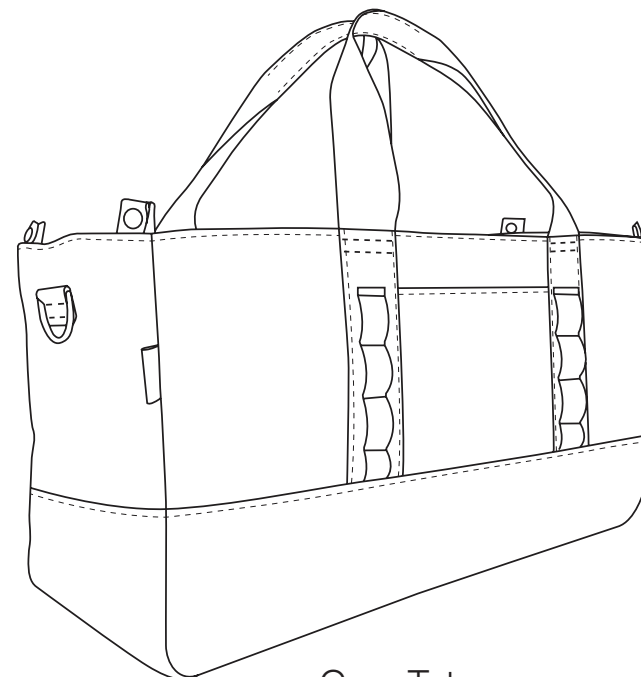
Track End Fender
Adapter
MSRP: \$15
Cost: \$5.15



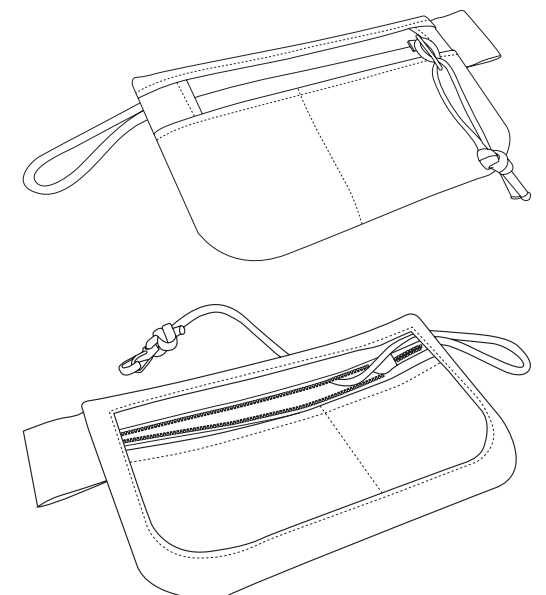
Mobile Work
Station
MSRP: \$185
Cost: \$100



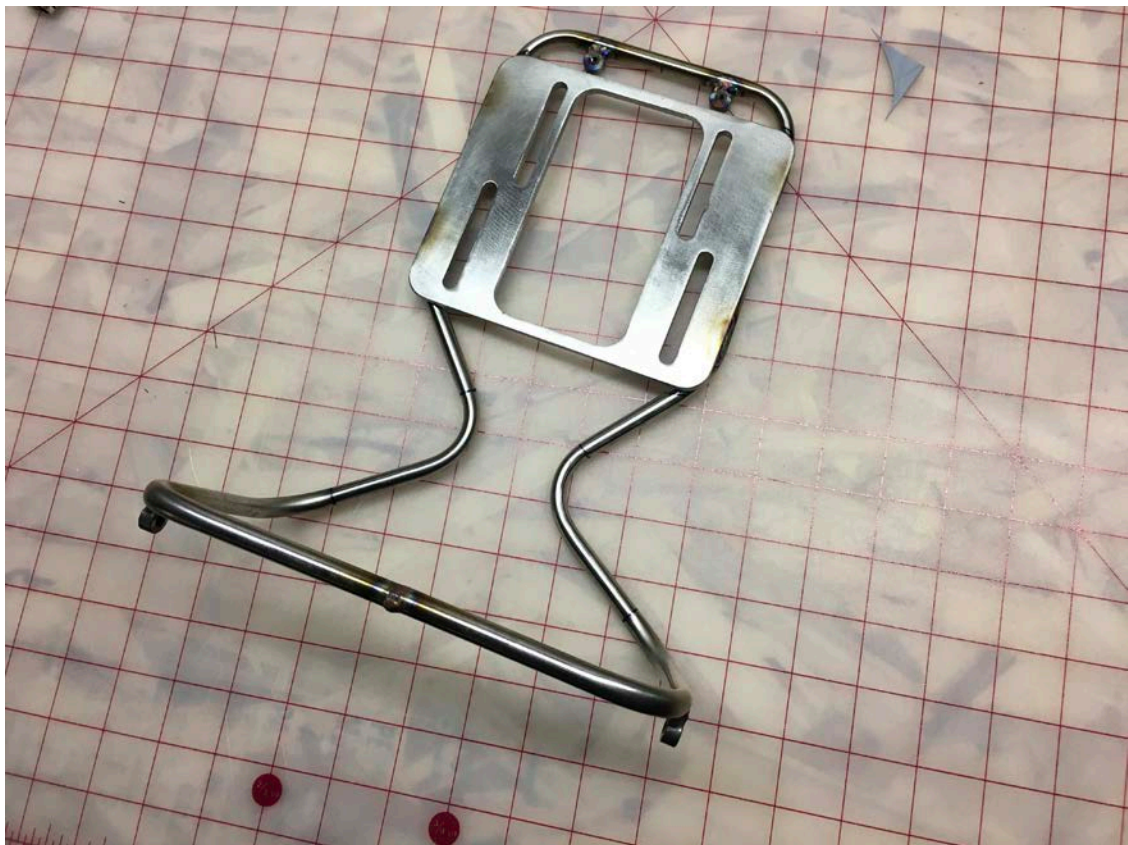
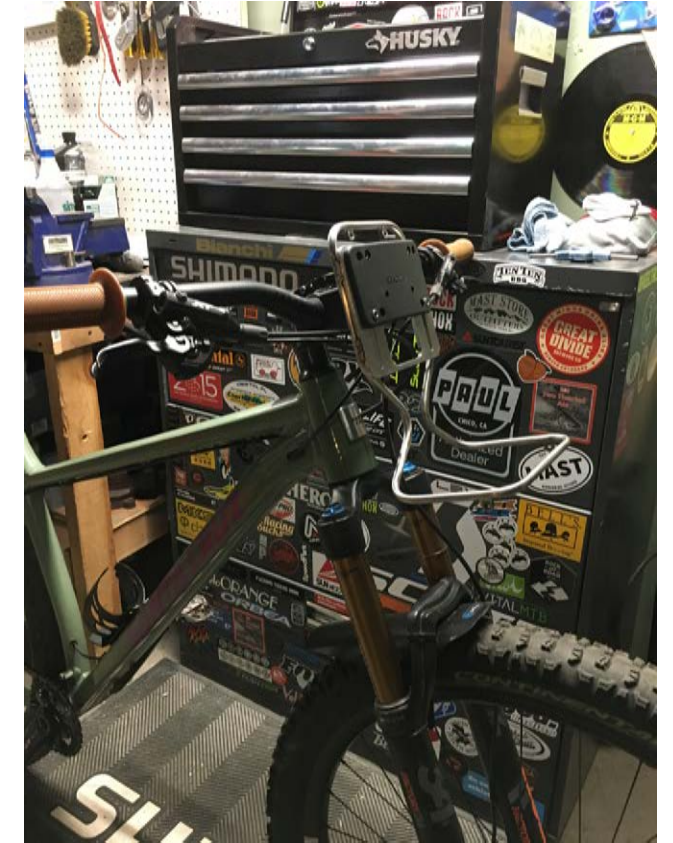
Gear Tote
MSRP: \$150
Cost: \$85



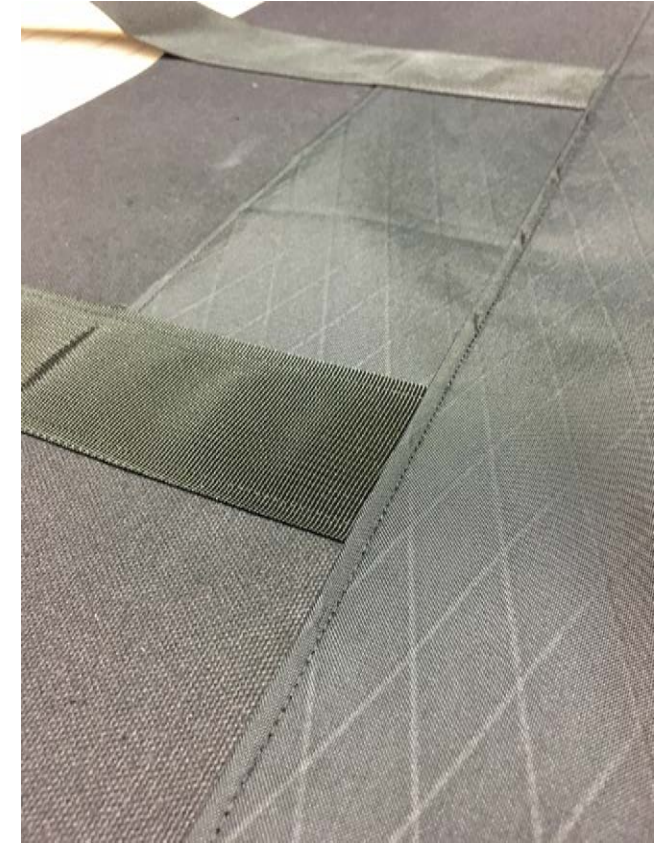
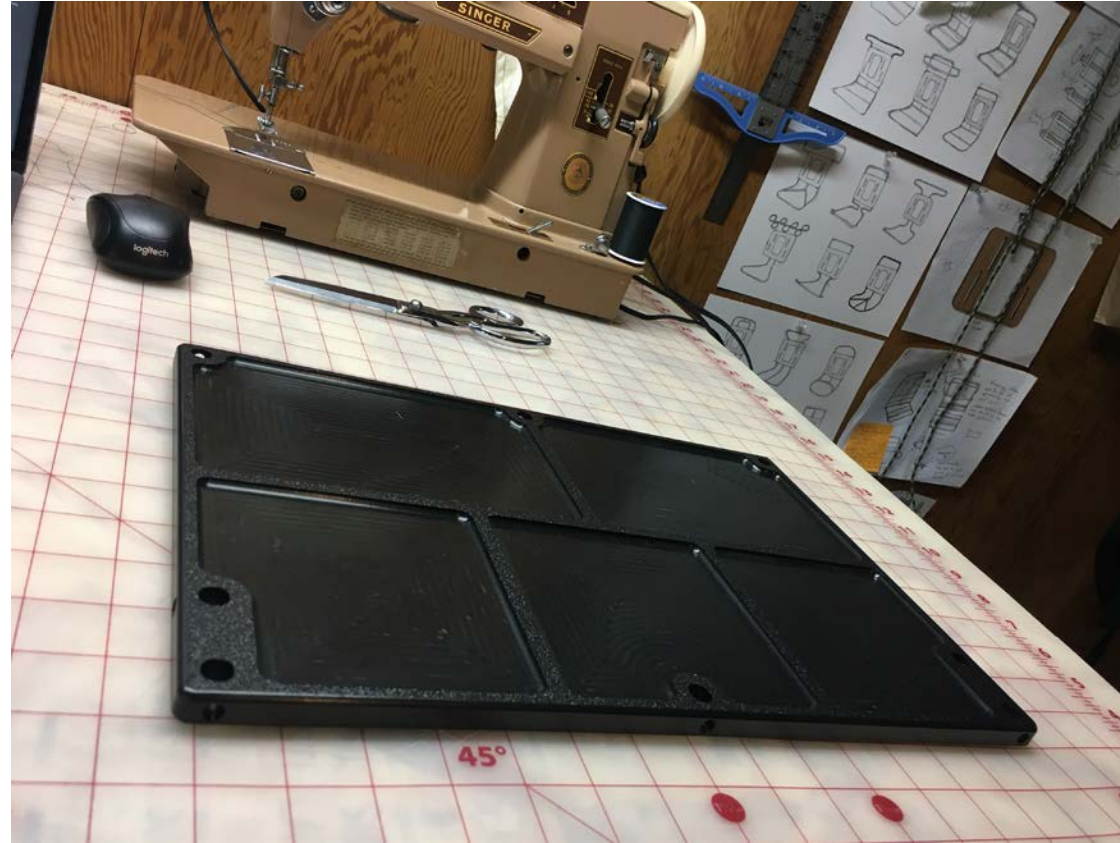
Keys, Phone, Wallet (KPS)
MSRP: \$20 Cost: \$10



PROTOTYPES



PROTOTYPES



TESTING



B1 PRODUCT TESTING

The B1 is in the early stages of production, the first fifty have been made and a couple have been distributed to two athletes. Seth Holmes, a competitive endurance mountain biker based in Boulder Colorado and Lauren Abrahamian in Los Angeles California a gravel rider and avid bikepacker. Initial feedback has been positive and I will continue to correspond with these athletes for longer term reviews.

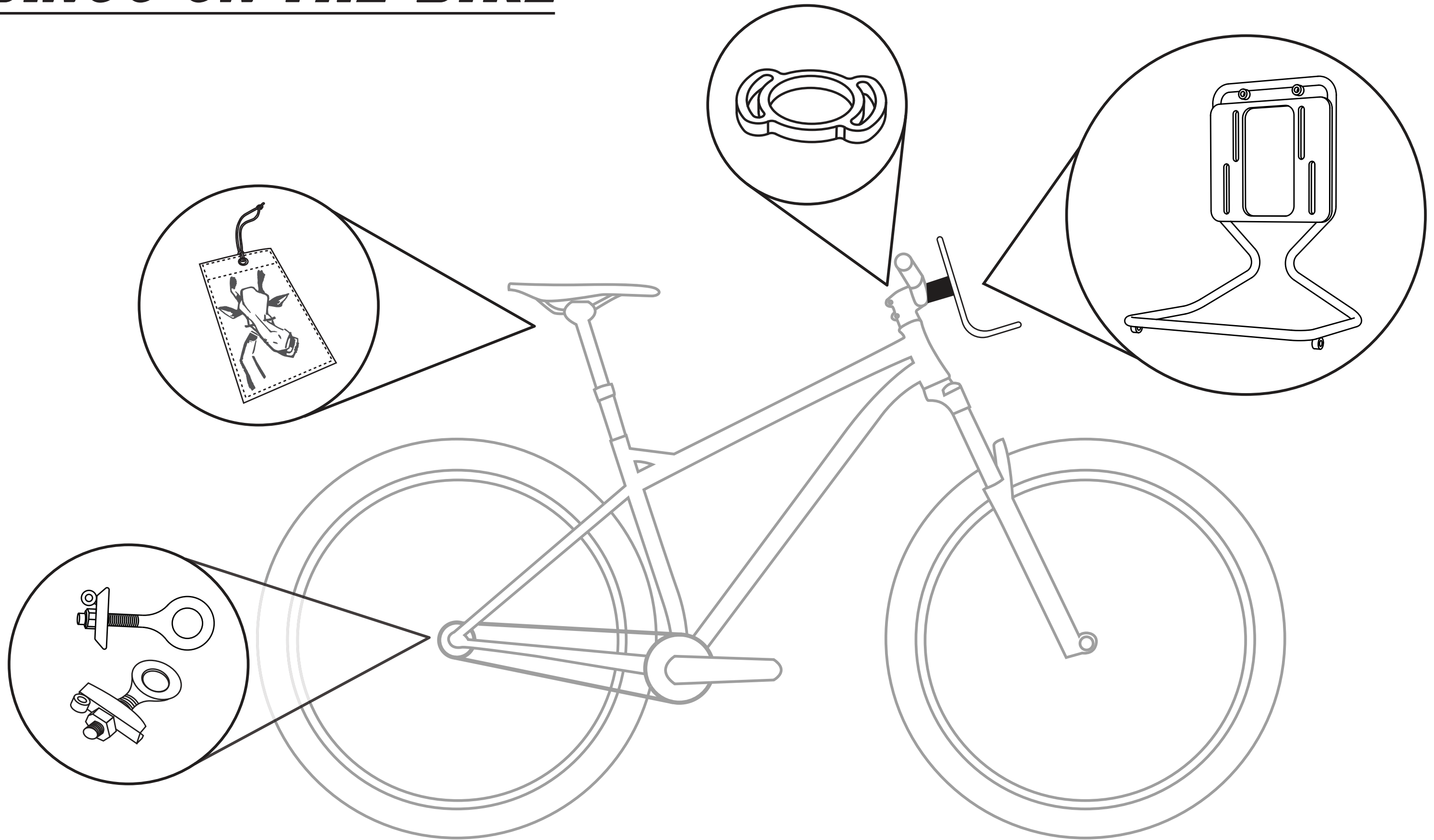


Rad idea! Didn't realize how helpful it would be when it was originally explained to me, but after installing and using for a week, I don't have any reason to take it off my bike, and would likely put on each of my bikes.



It actually worked great, the placement was in the right spot for the type of bag. I like a matte finish as opposed to a gloss, so that's great!

BINGO ON THE BIKE



B1 HEADSET SPACER

B1 Headset Spacer: The B1 is designed to add a third point of connection for the feedbag style of handlebar bag on bikes that have short stems and to accommodate modern mountain bike geometry.

B2: This is an expansion on the B1 Headset Spacer. In this version there is an integrated headset top cap for the rider who wants to run the B1 at the top of their steer tube above the stem and offers a clean streamline finish for your cockpit.

B3: Designed to integrate the B1 headset spacer with a mounting point for a Garmin or Wahoo GPS cycling computer. The B3 has a replaceable plastic insert that mounts the computer but breaks away in a crash preventing any damage to the electronics. This is the perfect addition to anyone with a crowded cockpit looking to improve organization and usability.

Technologies:

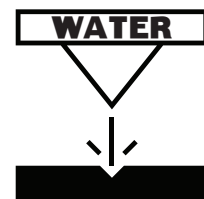
- Adapts “Feedbags” to modern mountain and gravel frame geometries
- Helps organize handlebar cockpits
- 6061 water jet cut aluminum
- 1 1/8” steer tube compatible
- Lightweight and low profile

MSRP: \$17

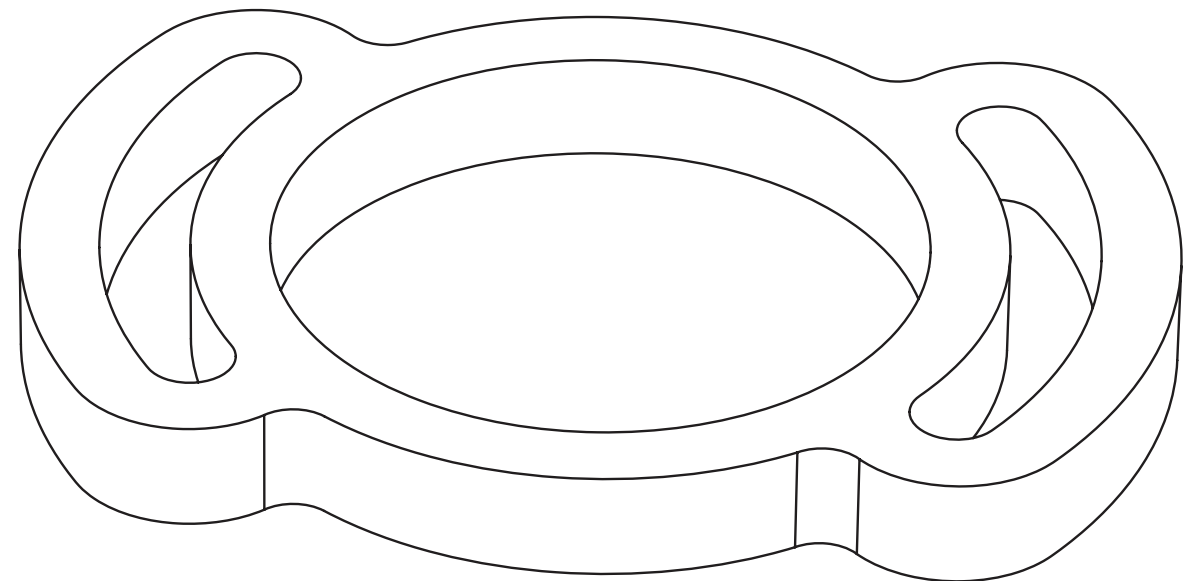
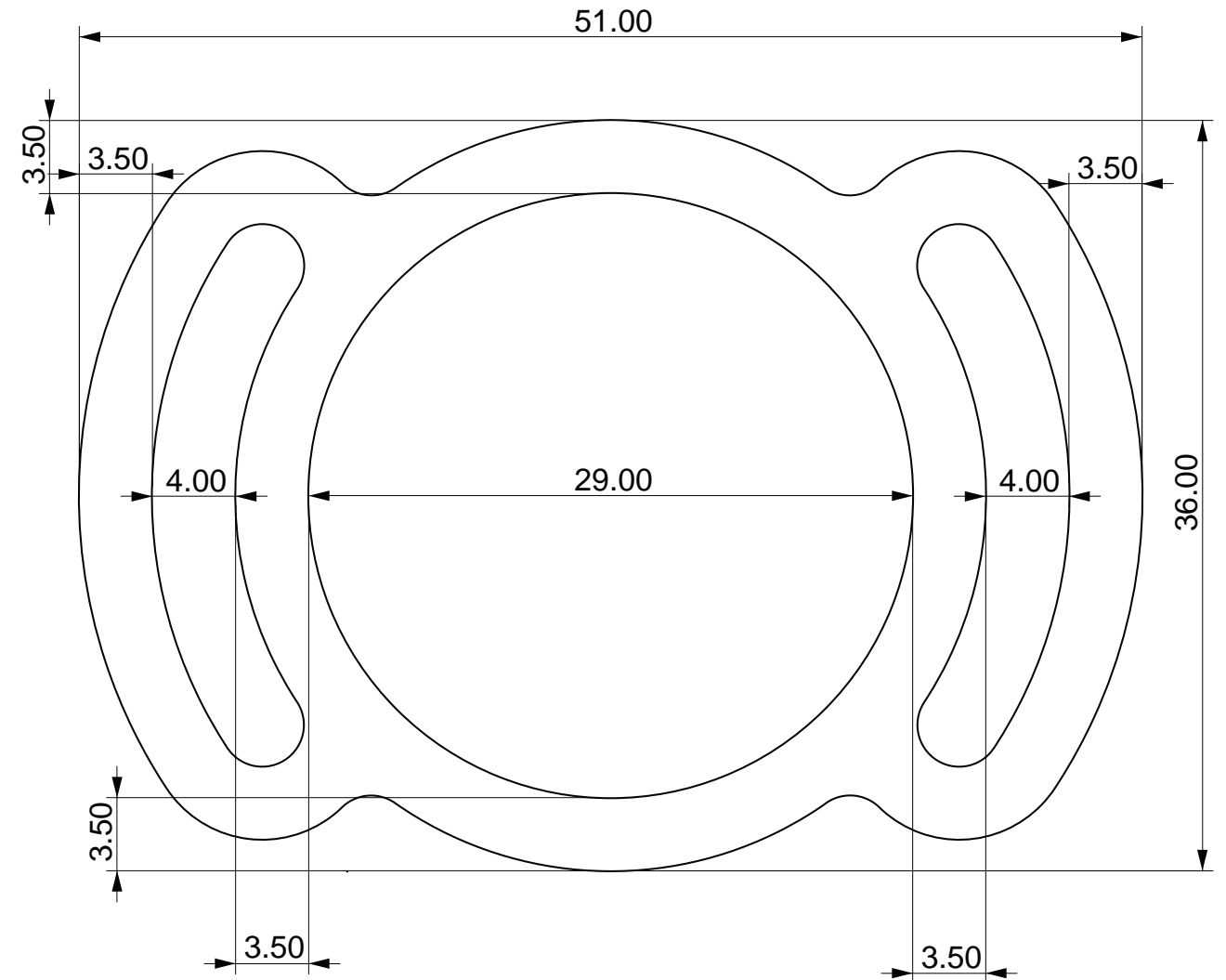
Cost: \$7.28

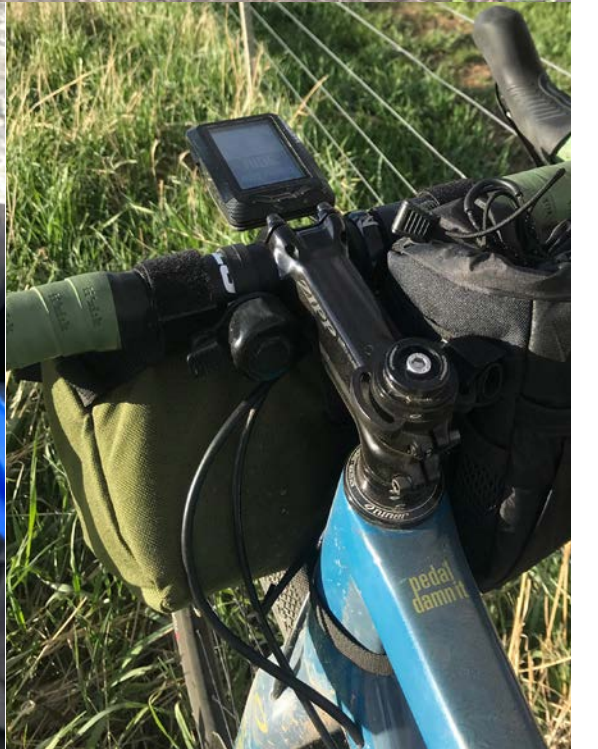
6061
ALUMINUM

SOFT
ANODIZED



1 1/8 STEERER
TUBE





HANDLEBAR MOUNTED BAG SUPPORT

At some point in recent history, bike-packers and cyclo-tourists decided that racks were out of fashion and frame bags were in. More recently there has been another change in style where a more minimal version of racks have started to show up in combination with some of these frame and handlebar mounted bags and packs. Some of these racks require attachment points that are welded onto the fork of the bicycle and will not accommodate any suspension. I have designed a rack that does not require any contact with the fork but still provides adequate support for large handlebar mounted bags, allowing for suspension compatibility and free movement of brake and shift cables.

Technologies:

- Replaceable handlebar attachment in case of crash
- Stainless steel support construction
 - will not rust
 - fully repairable
- Lightweight construction to maintain handling
- Compatible with a variety of bags
- Suspension compatible
- Provides ample tire clearance

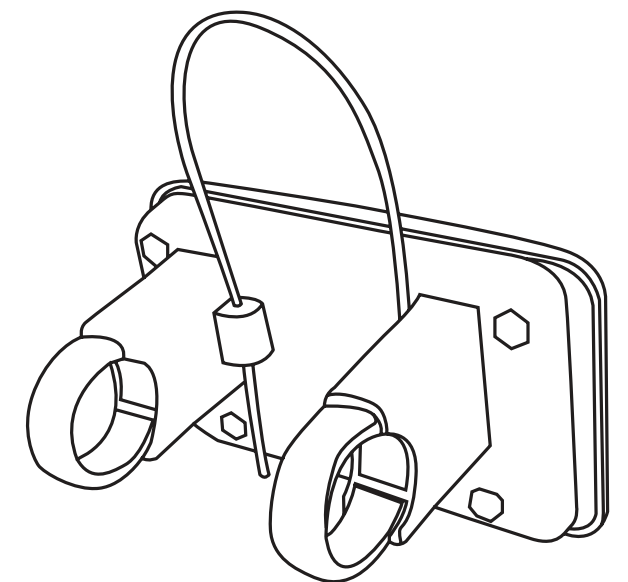
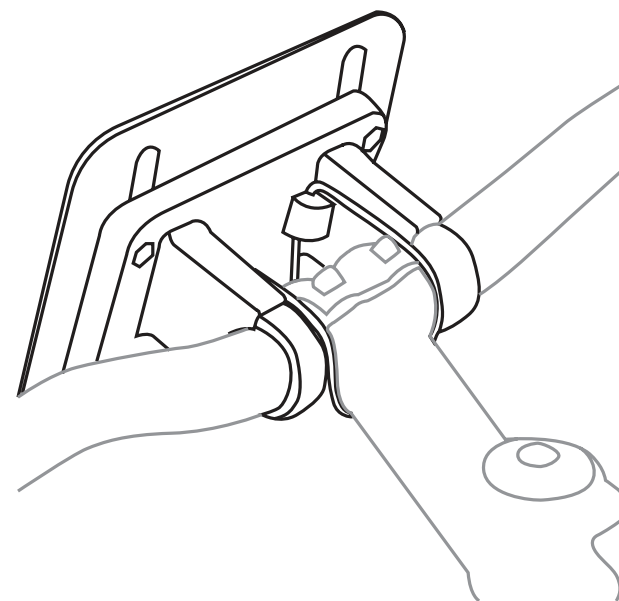
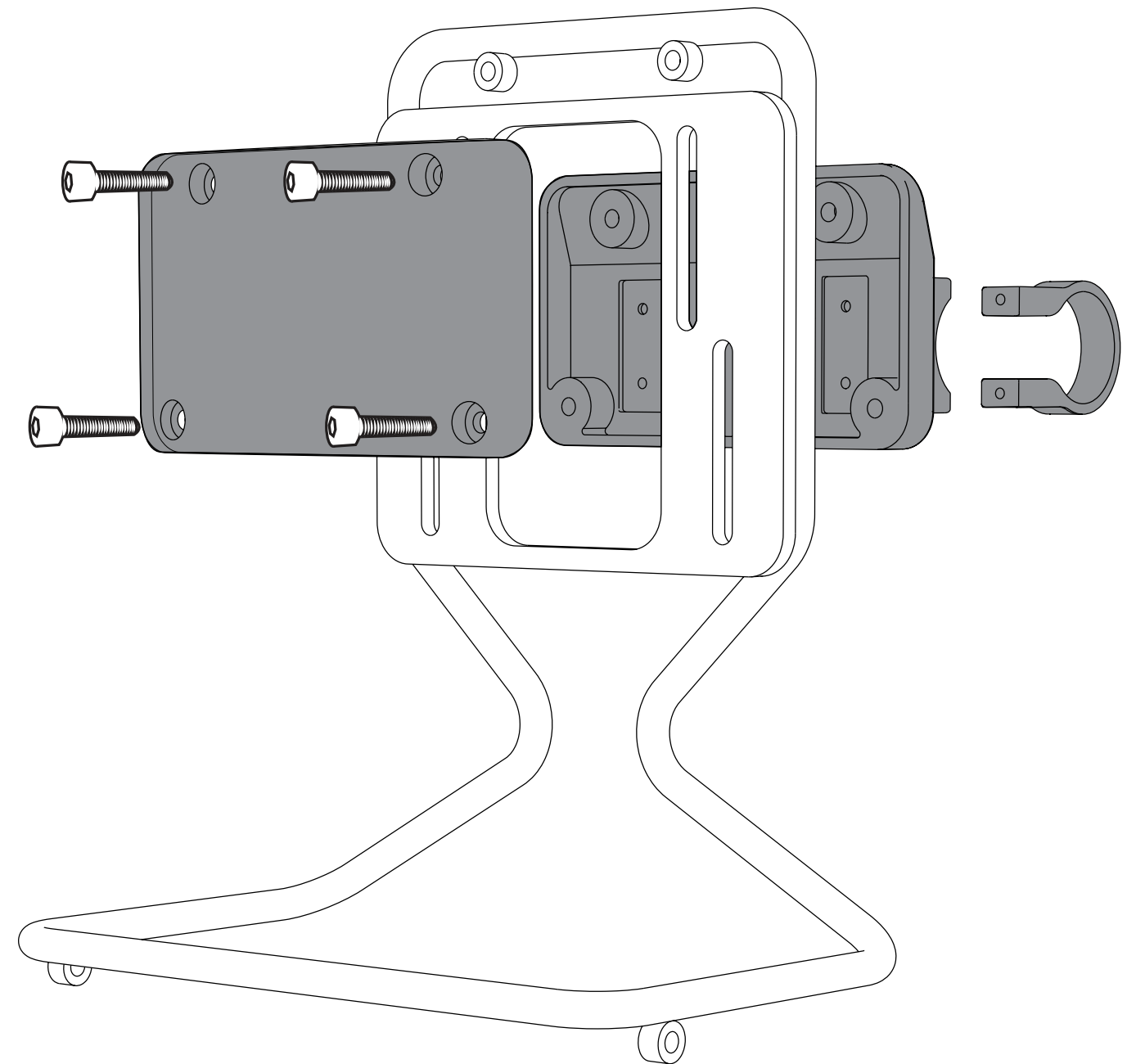
MSRP: \$150

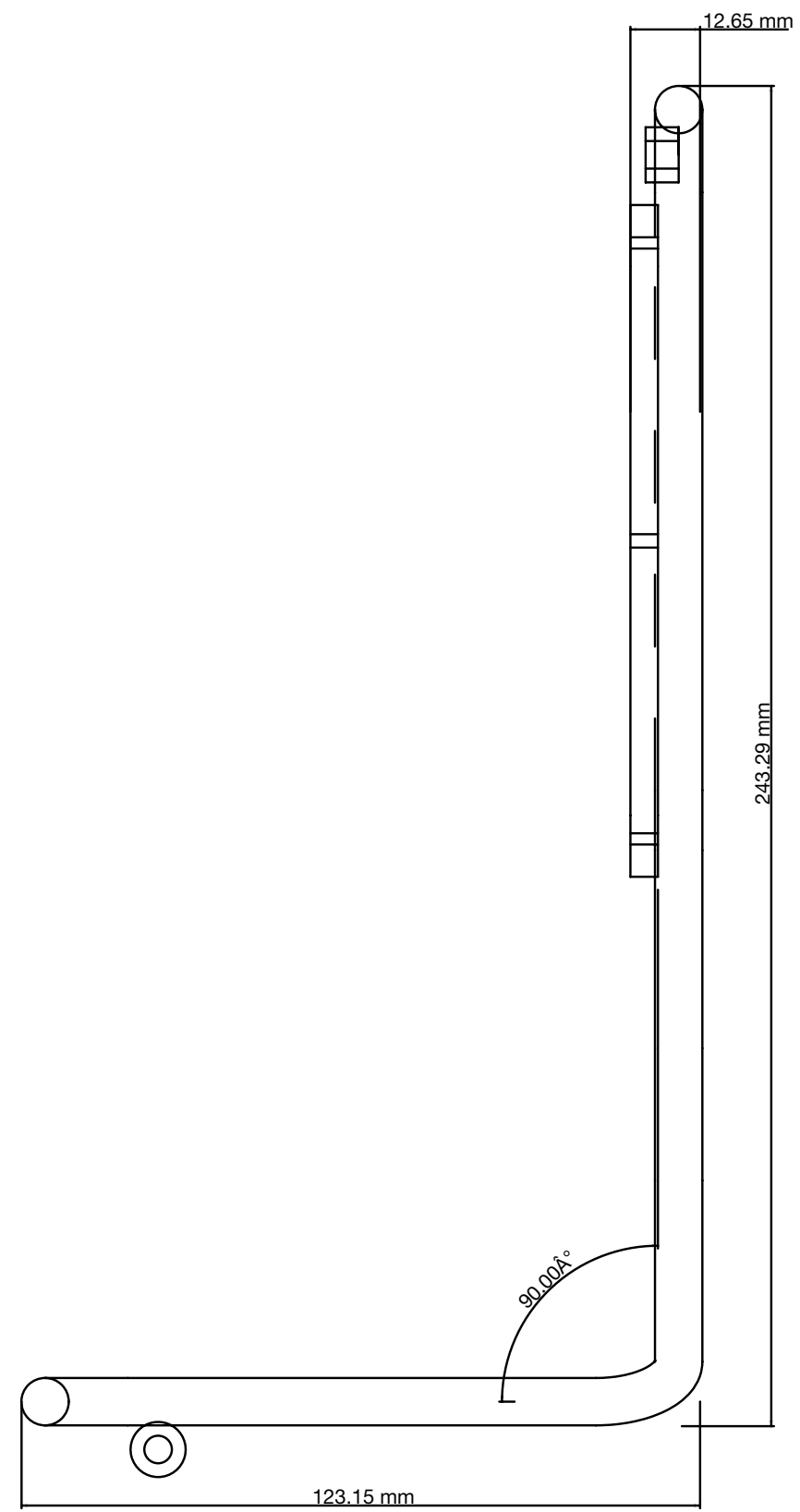
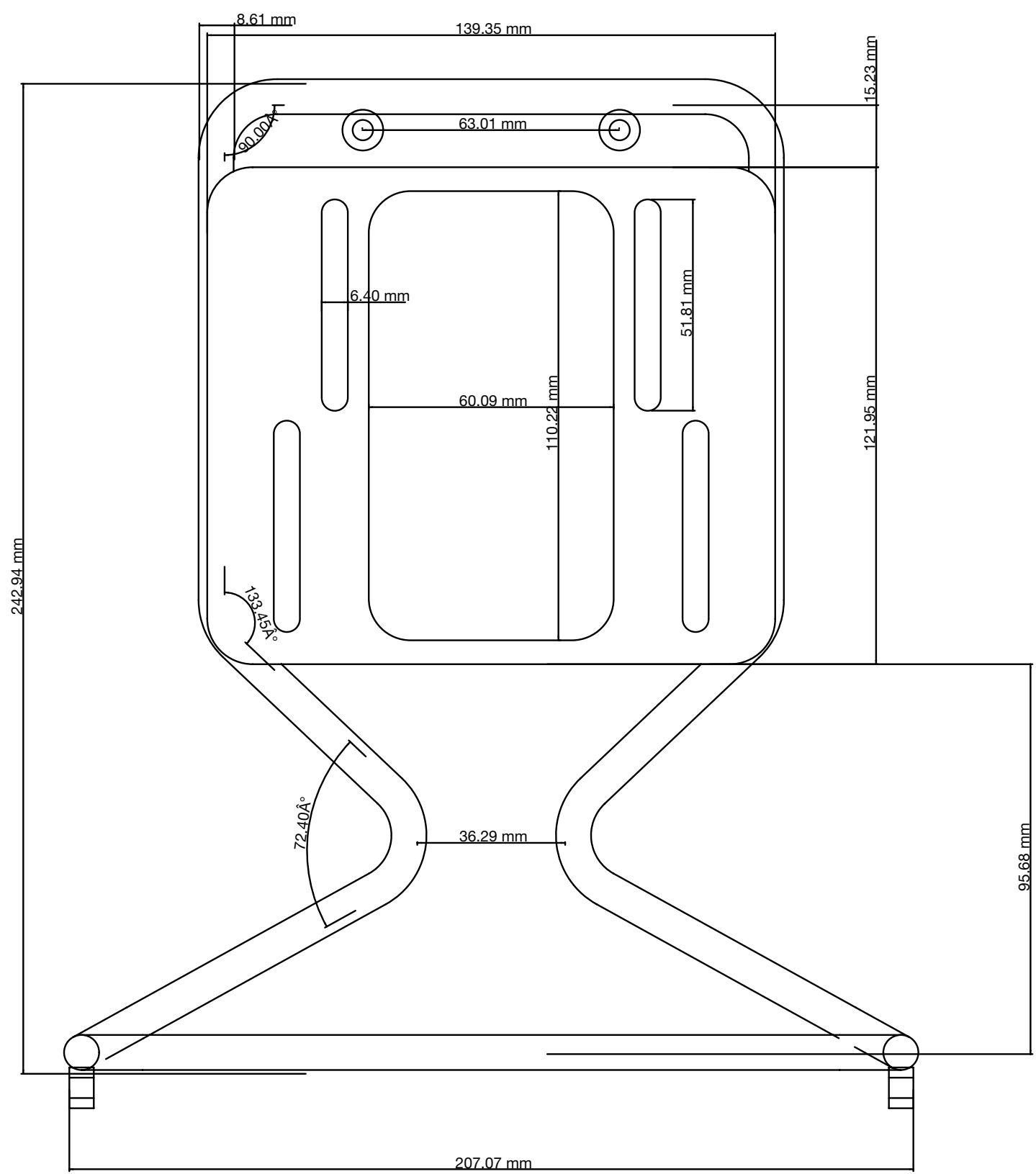
Cost: \$74.50



M5
THREADING

KLICKfix



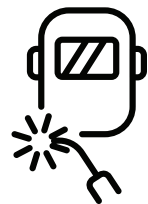
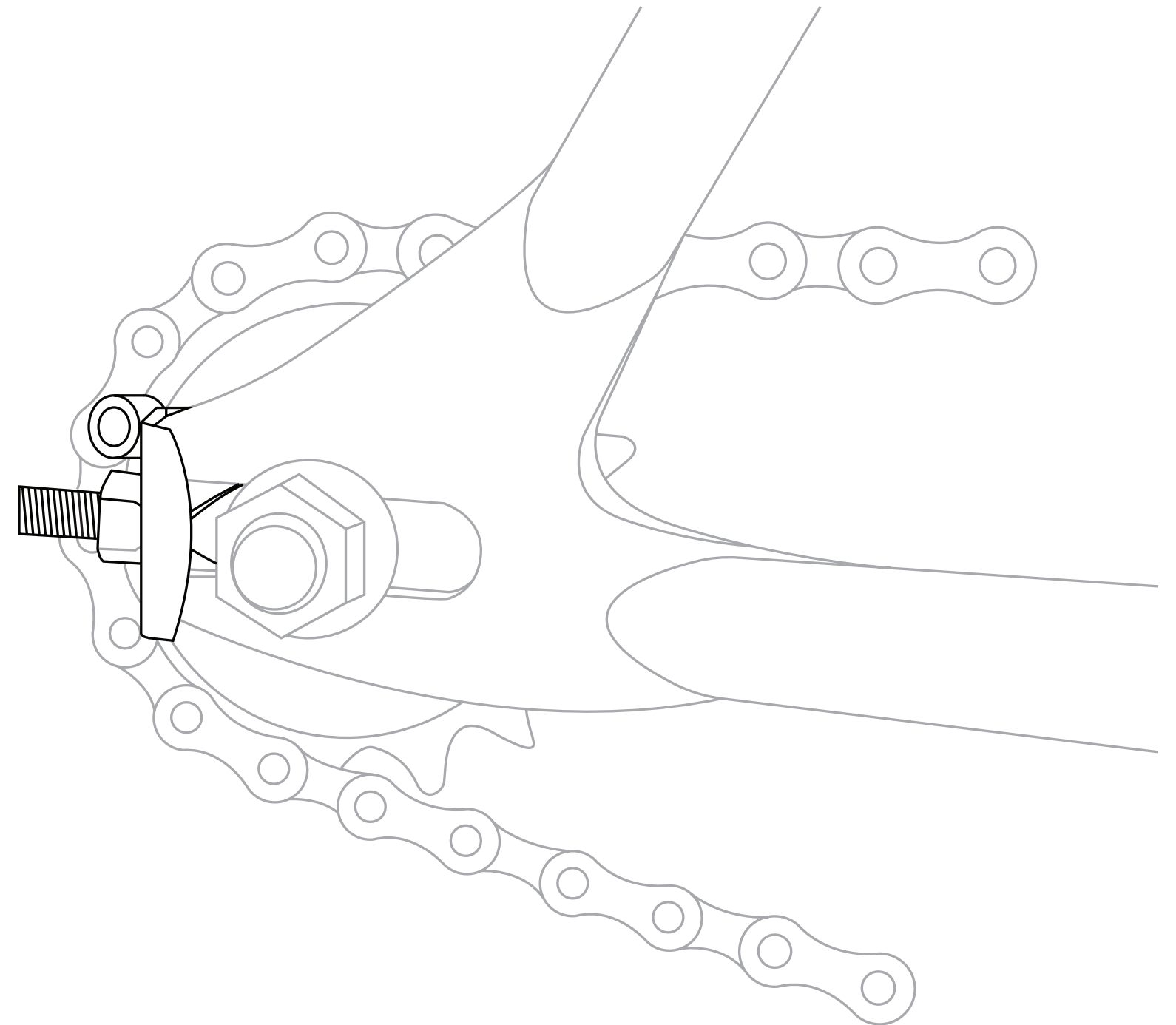


BRENDON BROGAN University of Oregon SPD2020	Project Name: BINGO Components Thesis Project	Date: 06/08/2020	Page
	Drawing Title: H-Bar Mounted Bag Support	Scale: varied	

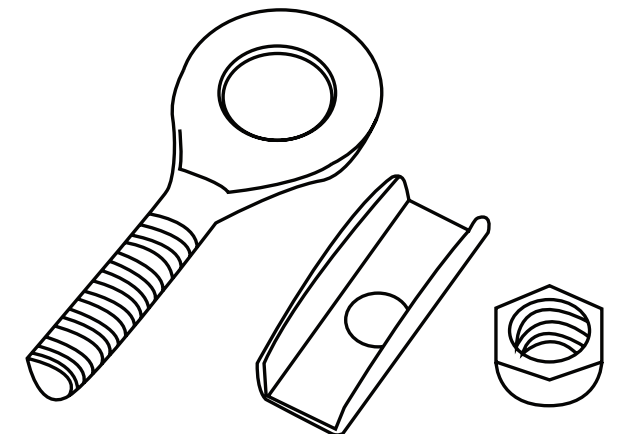
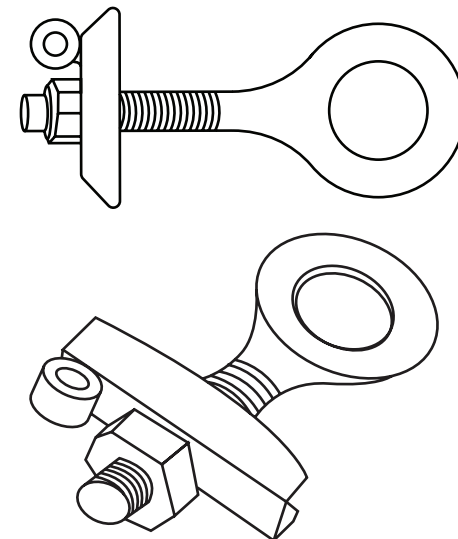


TRACK-END FENDER ADAPTER

The track-end fender adapter is admittedly a very niche product but there will no doubt be cyclists that will be in need of this product. As I mentioned before cycling trends are always changing and disciplines fall in and out of style. I believe the fixed gear trend is catching another wave of popularity due to the new race style Tracklocross, a combination of the fixed gear criterium and cyclocross. This has bred a new style of racing track bikes that are designed around traditional track geometry but with larger tire clearances. What happens when these riders grow tired of racing and or want to commute through the winter months on these very utilitarian style bikes that were never designed to accommodate full fenders? That's where this adapter comes in handy. Made using a traditional steel chain tensioner with a small stainless steel fender eyelet welded on this will quickly make your tracklocross bike a super commuter. Future variations of this product with me CNC'd aluminum with integrated threaded eyelets and fun designs. These may also be useful for people wanting to install fenders on other single speed specific bikes that use the same style of rear entry drop out.



**M5
THREADING**





BINGO SADDLE FLAG

The saddle flag is more of a marketing tool than an innovative product but I feel that it is worth mentioning because it is something that I don't leave without putting on the back of my bike while on tour. This simple highly reflective saddle flag is designed to strap onto either the rails of your saddle or off of a rear facing bag in order to help boost your visibility so the rearward approaching traffic knows you're there. This can help save your life while riding along a country road where drivers are not accustomed to seeing many cyclists. Plus with the BINGO logotype on there people will know you're stoked to rep the BINGO brand.

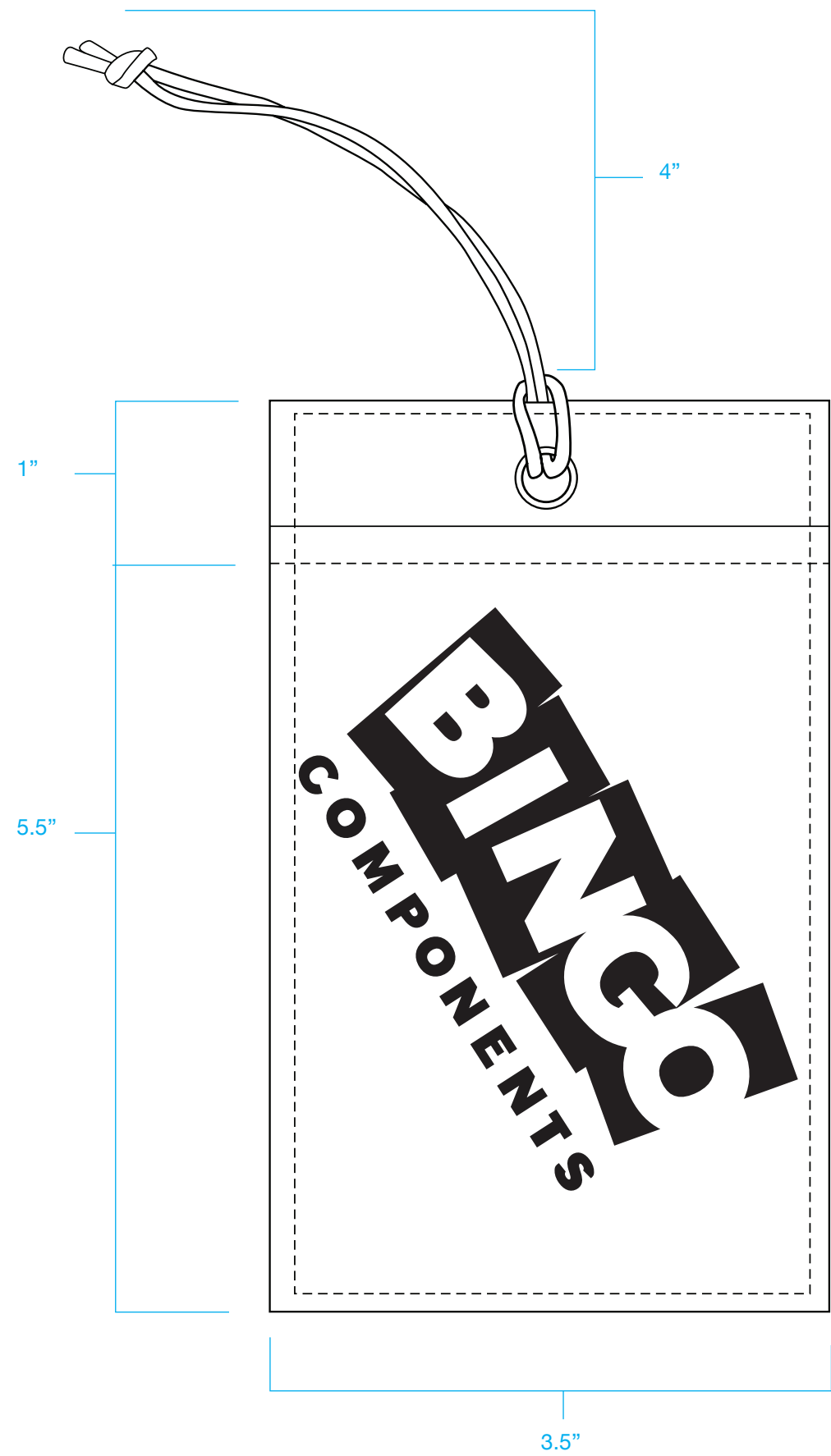
Technologies:

- Provides enhanced visibility of rider
- Can be added to any saddle
- Can also be attached to backpacks
- Lightweight
- Fun!

MSRP: \$13

Cost: \$ 4.20



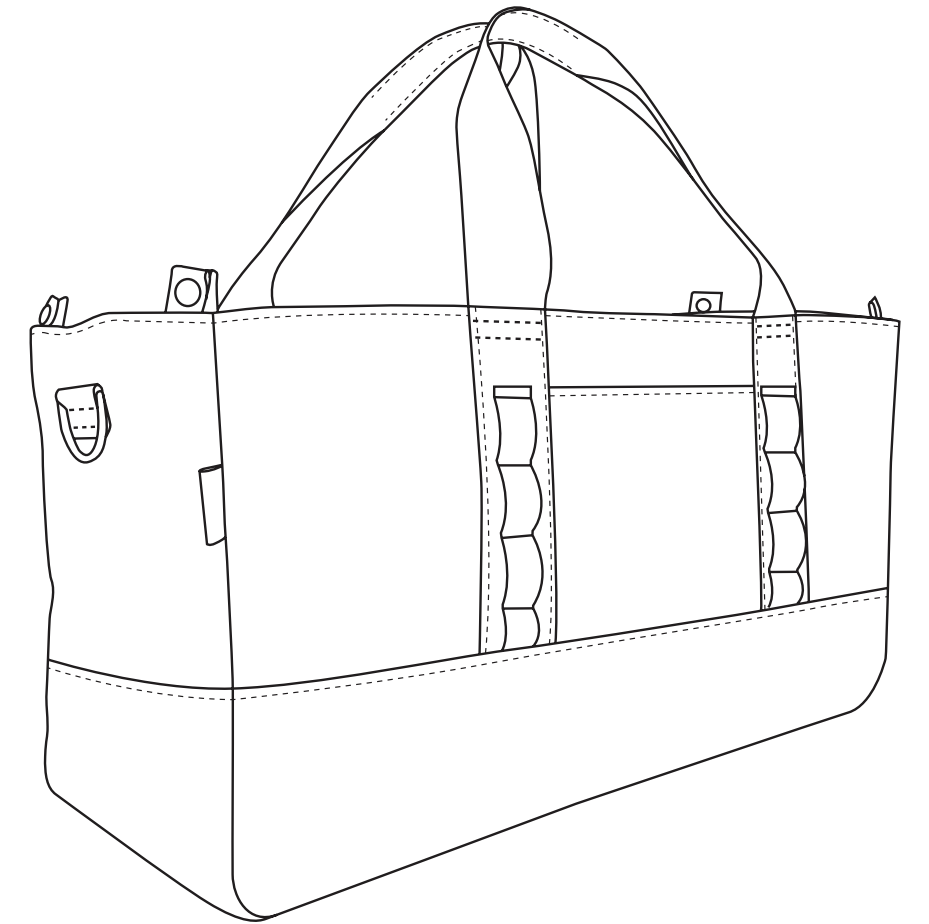
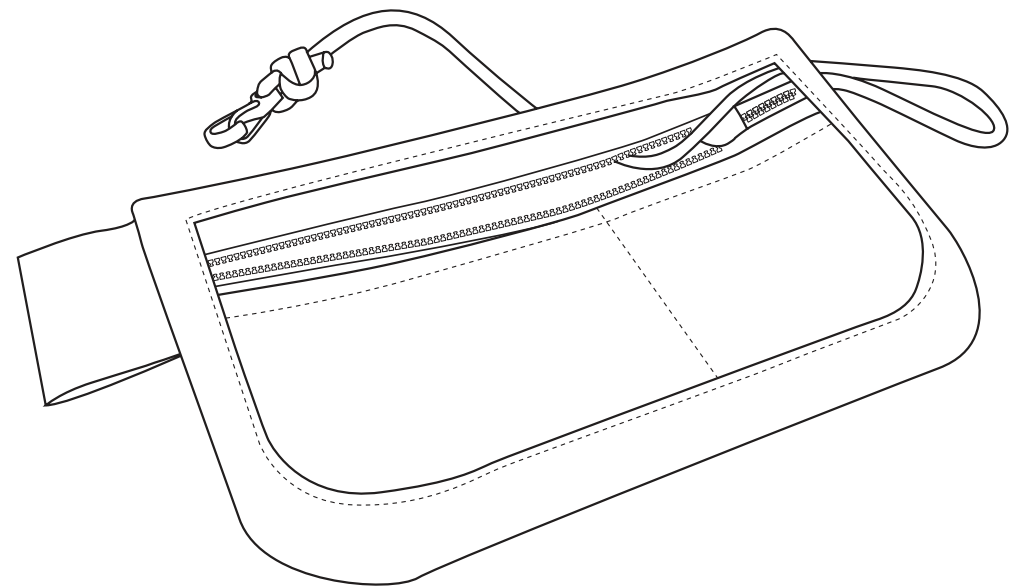
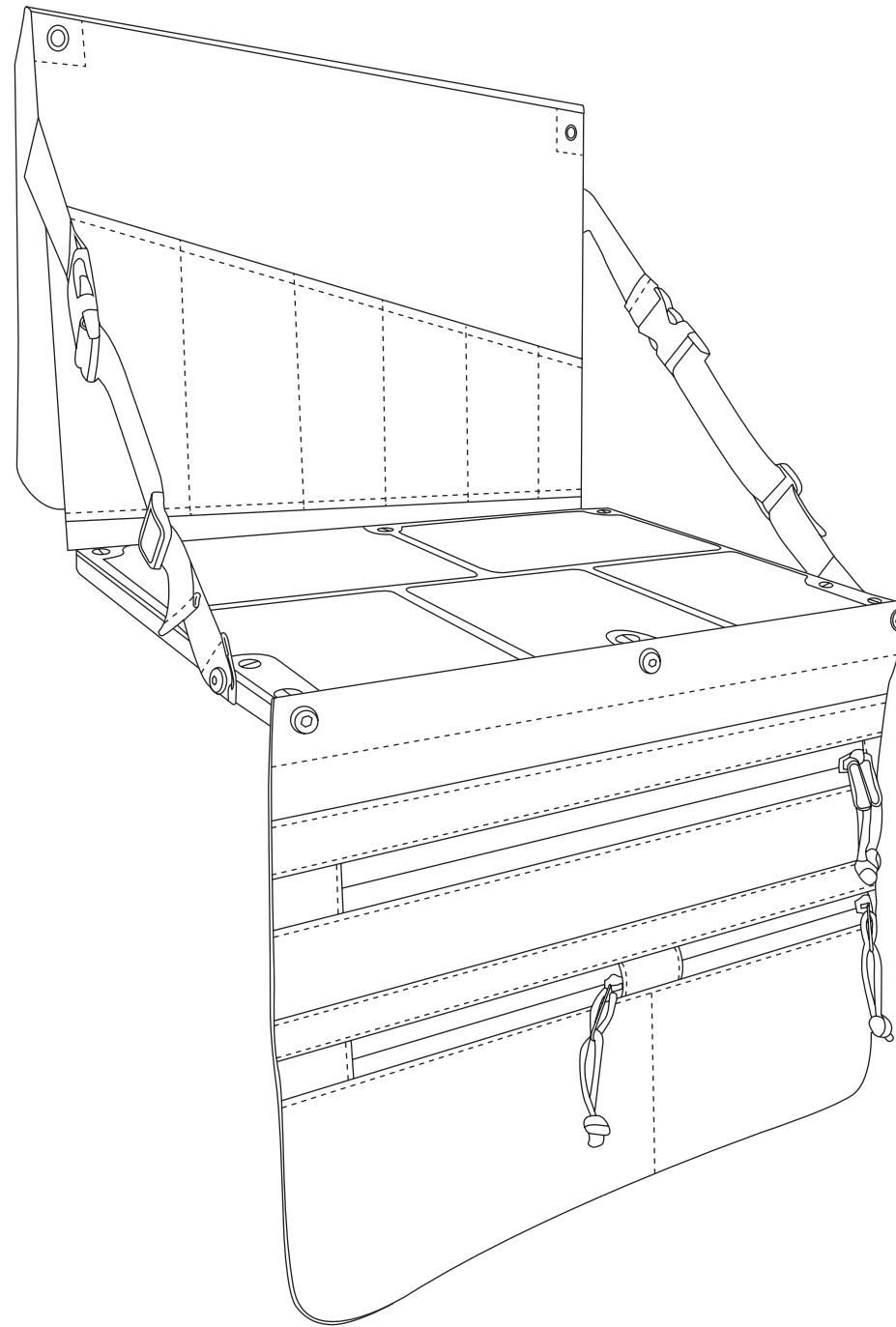
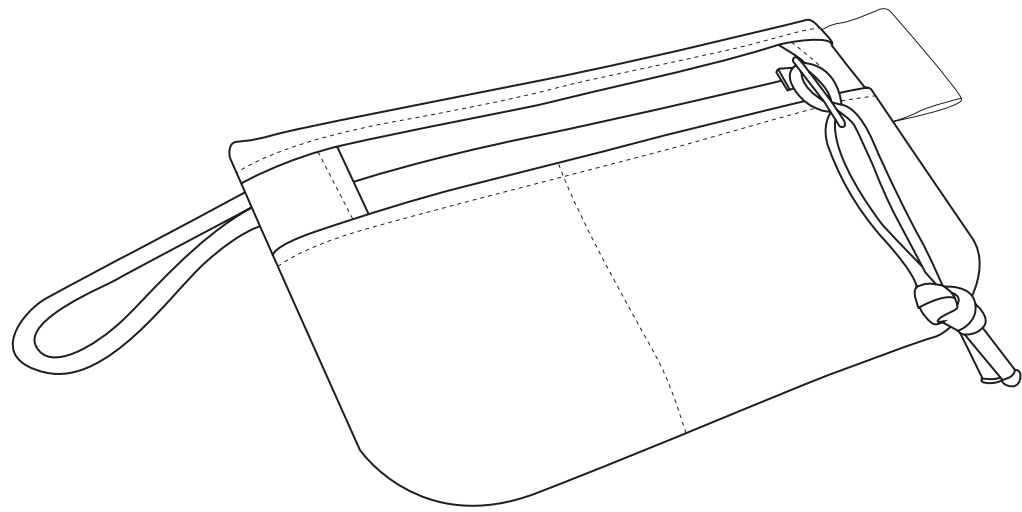


- 301 Cover stitch - 10 spi
- Nylon Xpack vx21 black
- Guangyintiong Reflective Heat Transfer Vinyl Decals
- Hi-vis 3mm paracord
- Metal 3/8" eyelet

BRENDON BROGAN University of Oregon SPD2020	Project Name: BINGO Components Thesis Project	Date: 06/08/2020	Page
	Drawing Title: Saddle Flag	Scale: varied	



BINGO OFF THE BIKE

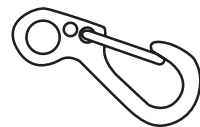


KEYS, PHONE, WALLET

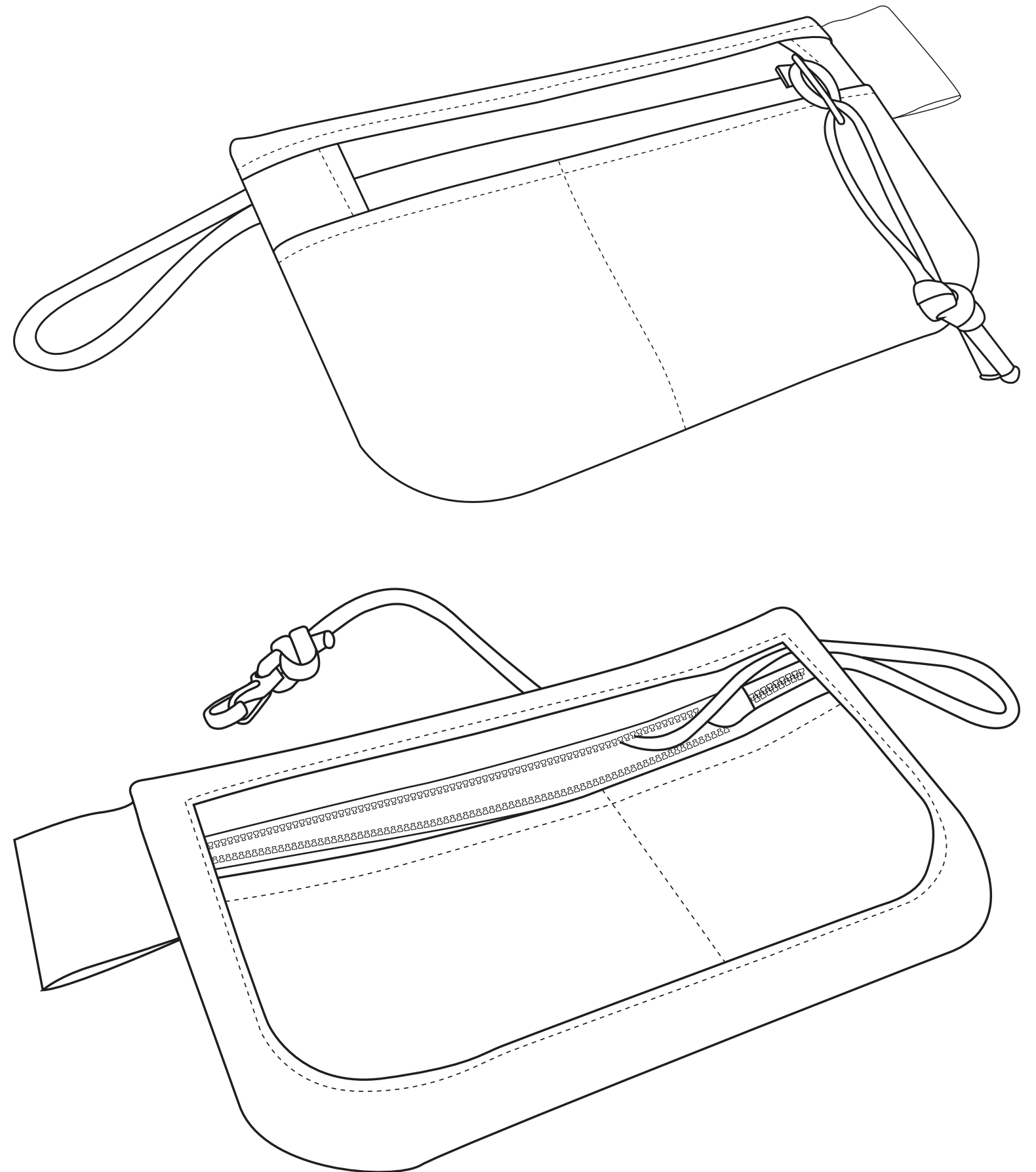
This small bag is designed to keep your house or car key, cell phone, and credit cards and ID close at hand and away from sweat or moisture when you're riding. Every cyclist knows that a ziploc bag is great for keeping all your important things dry when out for a ride and we always tell ourselves that we'll use it again and again, but do we? Made from lightweight, waterproof, and extremely durable xpac material with a clear vinyl window on one side that is touch screen compatible, this the perfect reusable bag for the important things on your ride.

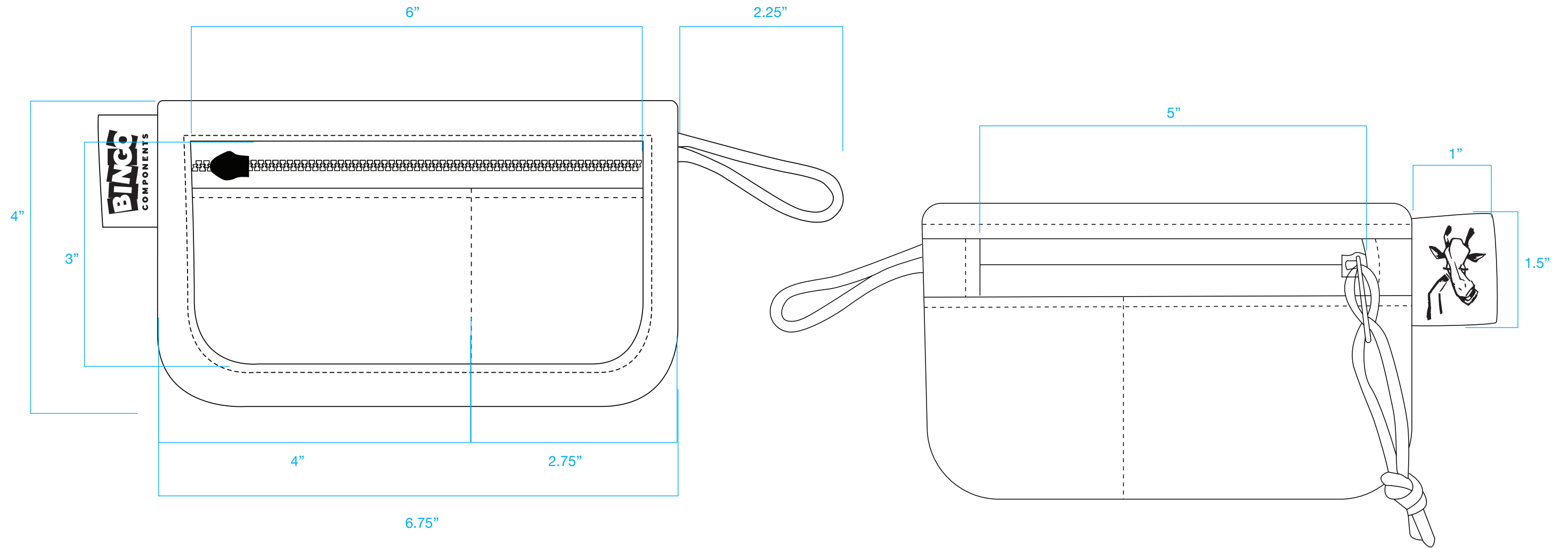
Technologies:

- Slim profile to fit in a jersey pocket or hip-pack
- Keeps your ID, cash, cards keys and phone in on protected spot
- touch screen compatible window
- Water and sweat resistant xpac
- Water proof zipper



**X-PAC
NYLON**





301 ISO Cover stitch - 10 spi

Nylon Xpack vx21 black

HHH Waterproof zippers

550 Black Paracord

Mid-weight Clear Vinyl

BRENDON BROGAN University of Oregon SPD2020	Project Name: BINGO Components Thesis Project	Date: 06/08/2020	Page
	Drawing Title: Keys, Phone, Wallet	Scale: varied	



MOBILE WORK STATION

This is the solution to working on your bike when you're traveling by car to a ride or a race and there is no place to easily and neatly set out your tools or spare parts for pre-ride maintenance and prep. This product is designed to be shut in the car door and unfolds to expose your tools on a small work surface with pockets for additional tools or parts that may be needed. This is also designed with the car camper in mind who needs a little extra storage for their camp kitchen; it's easy to use and set up, even with limited space.

Technologies:

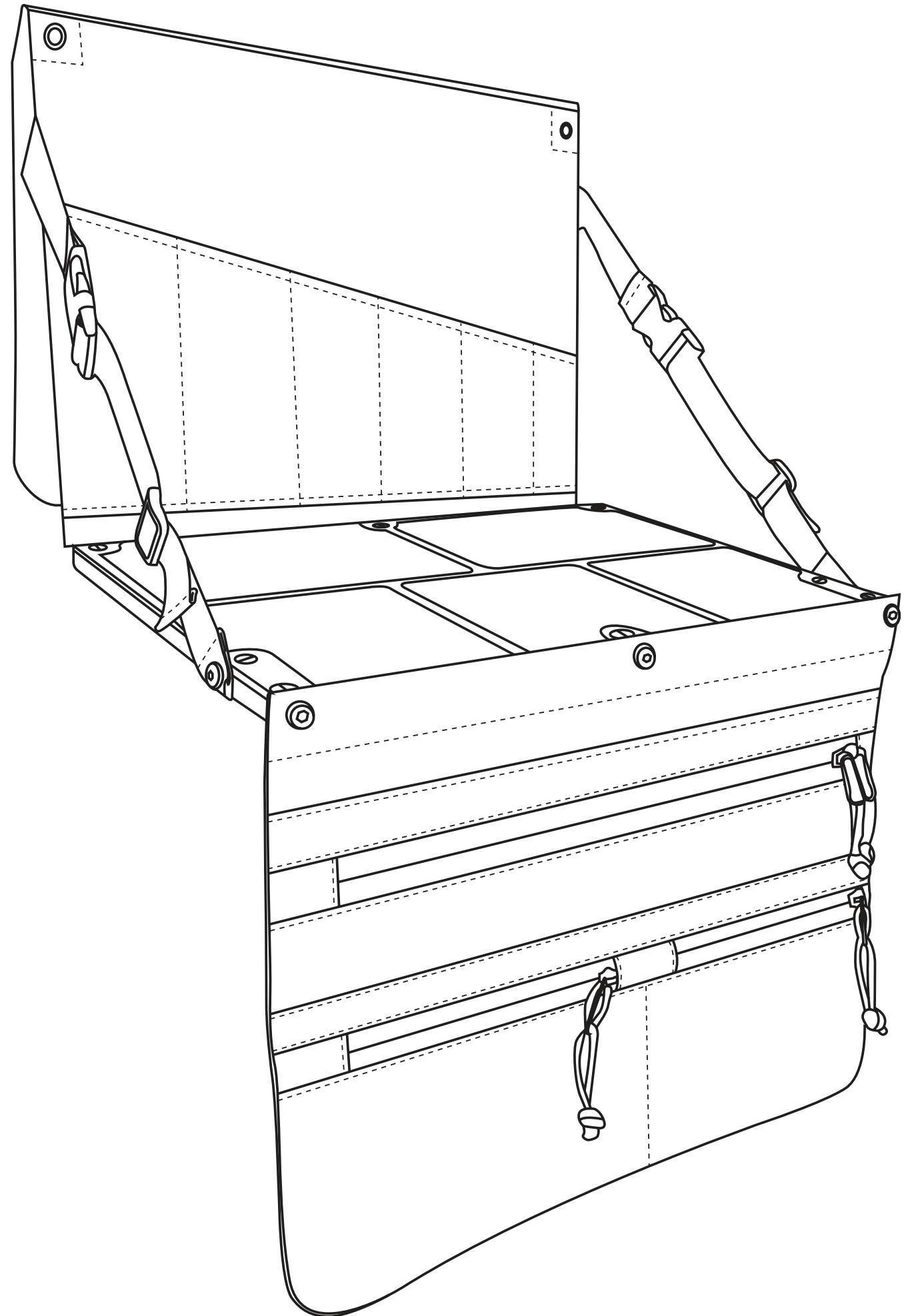
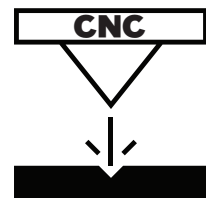
- Slim profile to fit in narrow spaces when space is at a premium
- Keeps tools organized and easy to access
- Provides clean workspace when away from the shop
- Water resistant and hi abrasion resistance xpac material

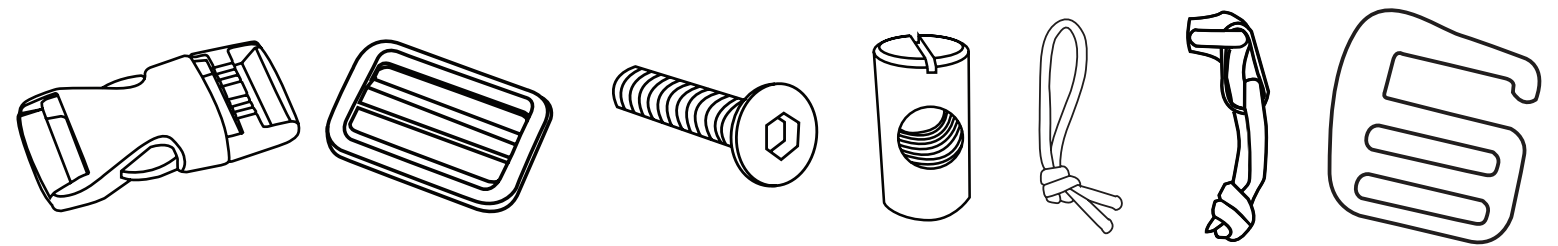
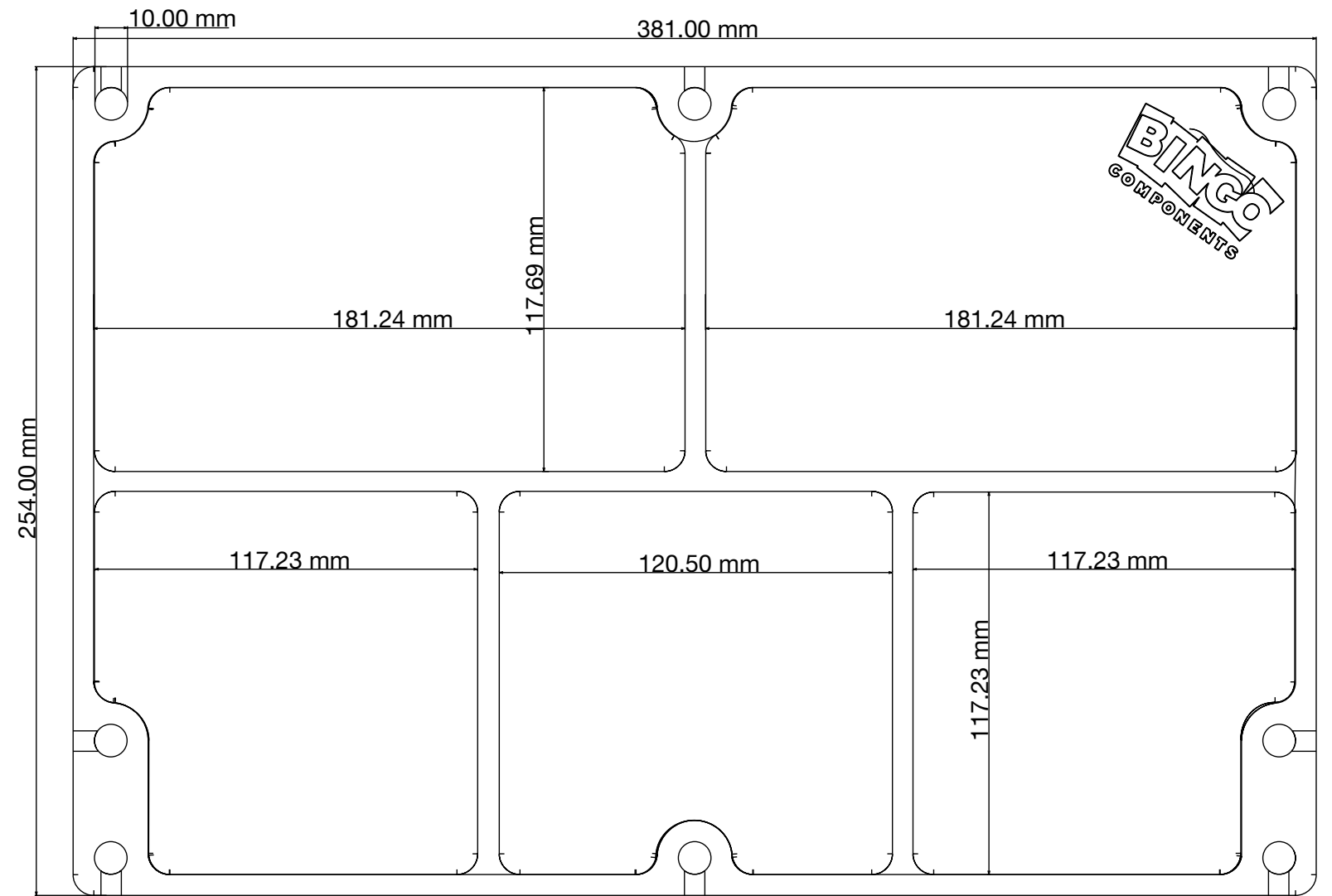
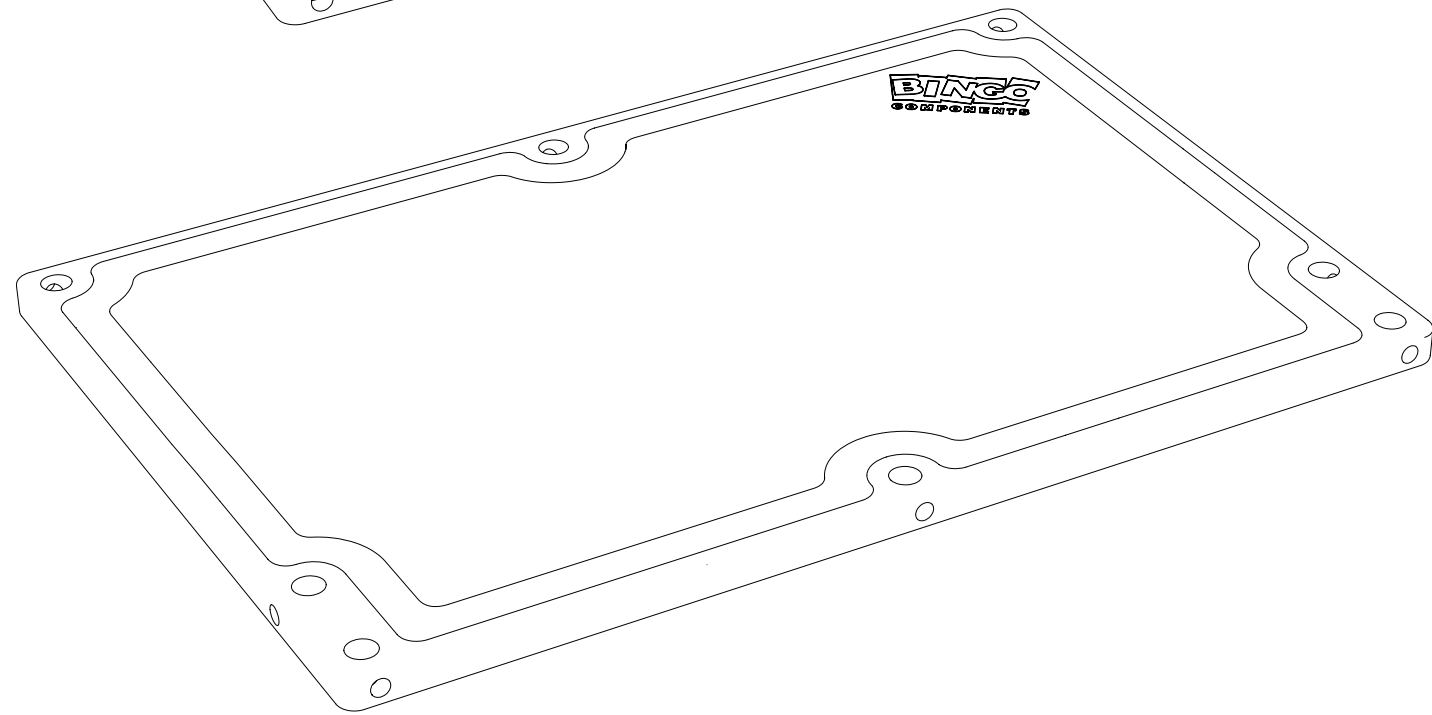
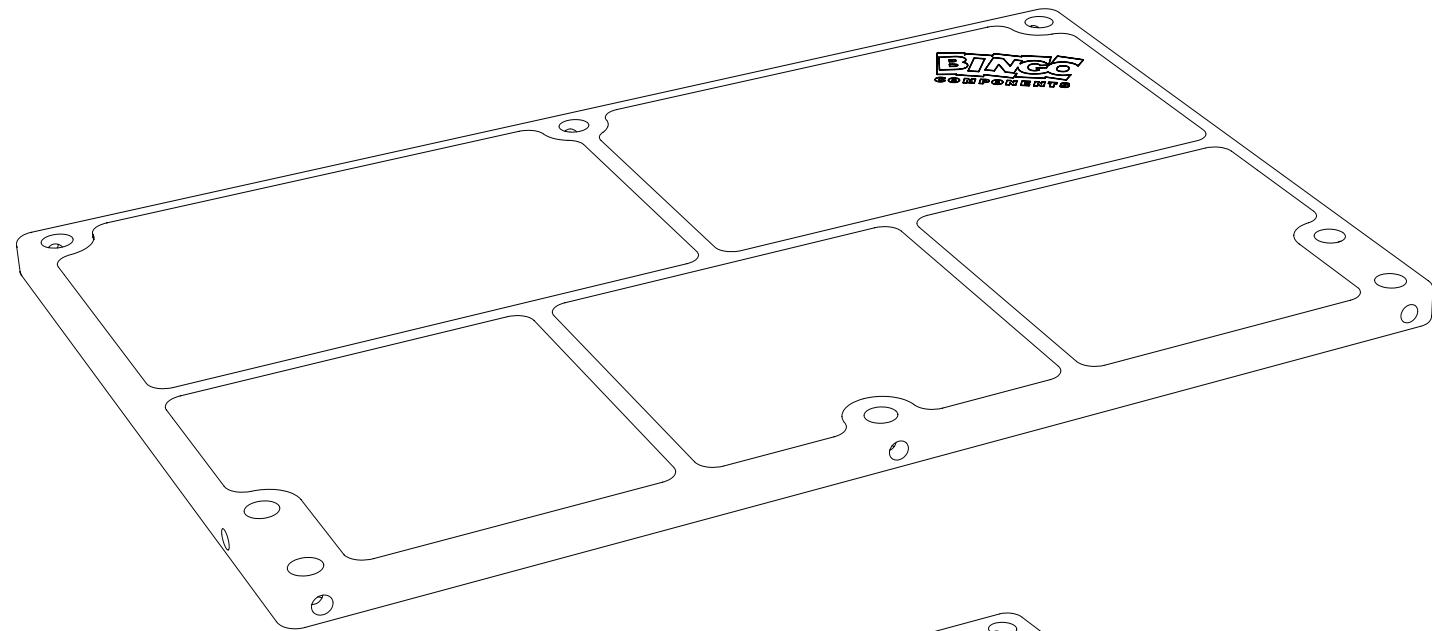
MSRP: \$185

Cost: \$100

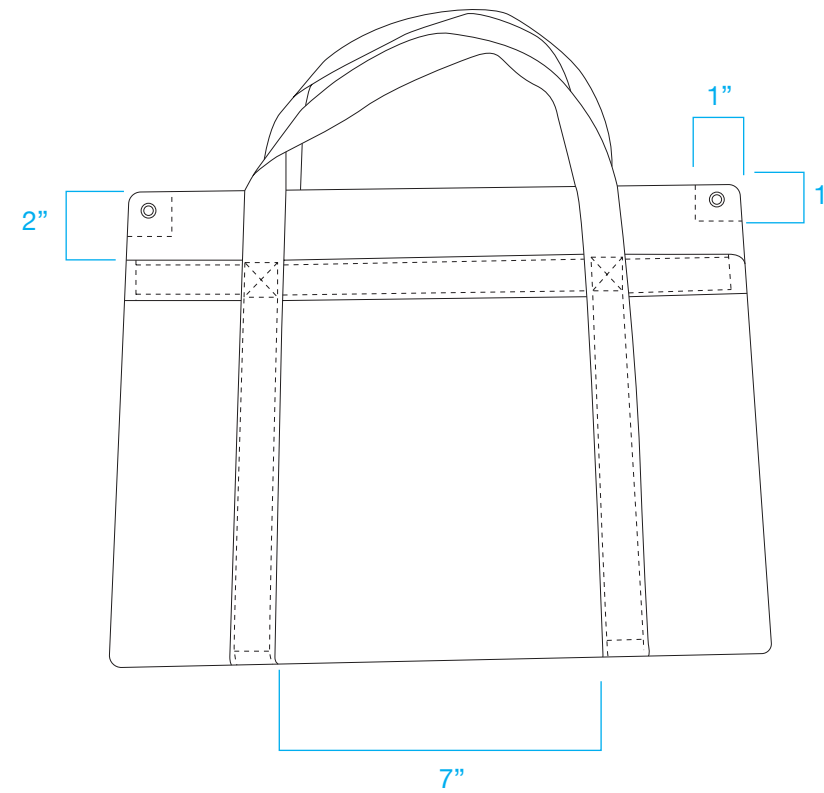
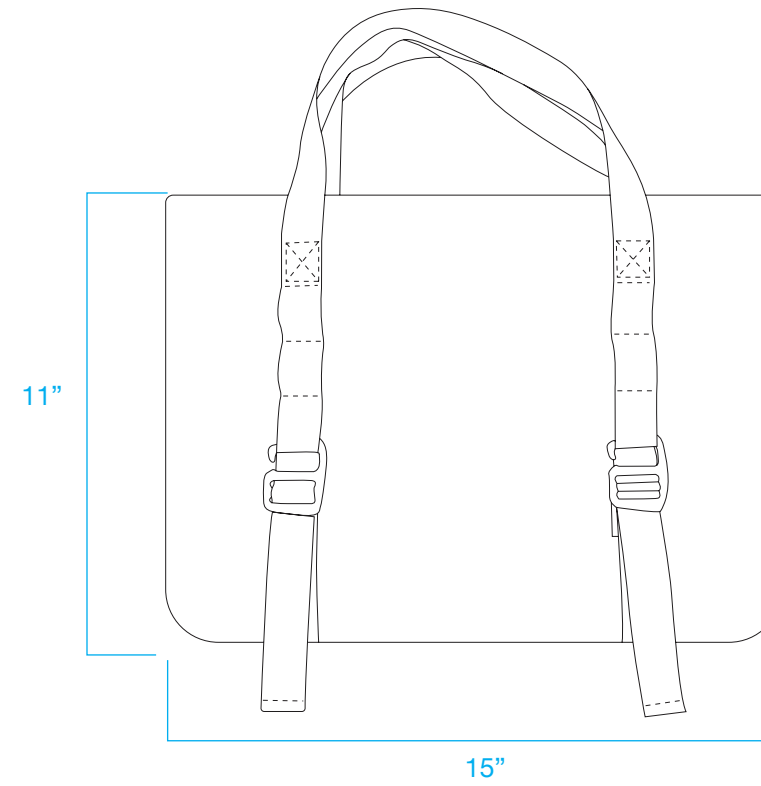
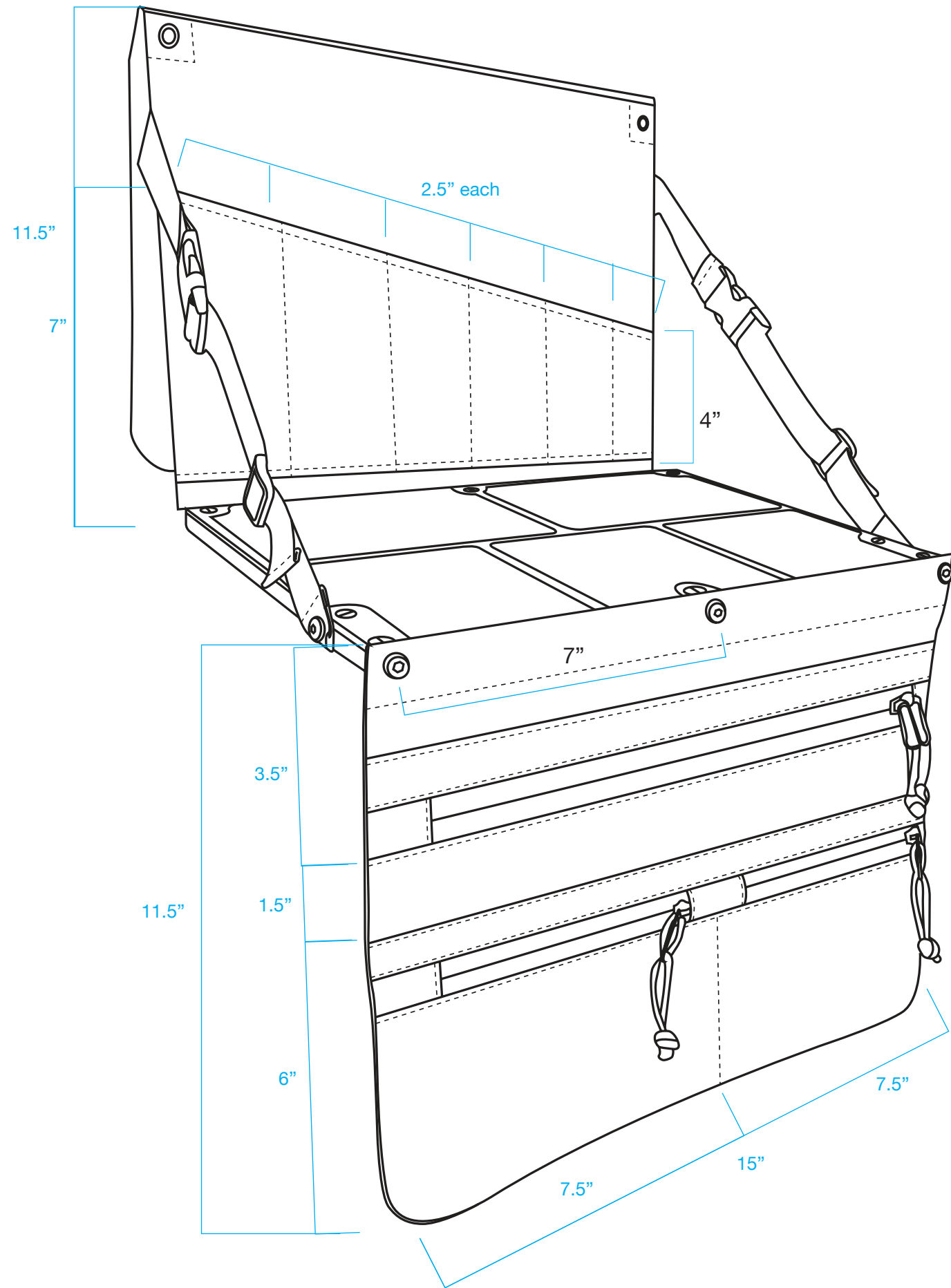
**X-PAC
NYLON**

**ABRASION
RESISTANT**



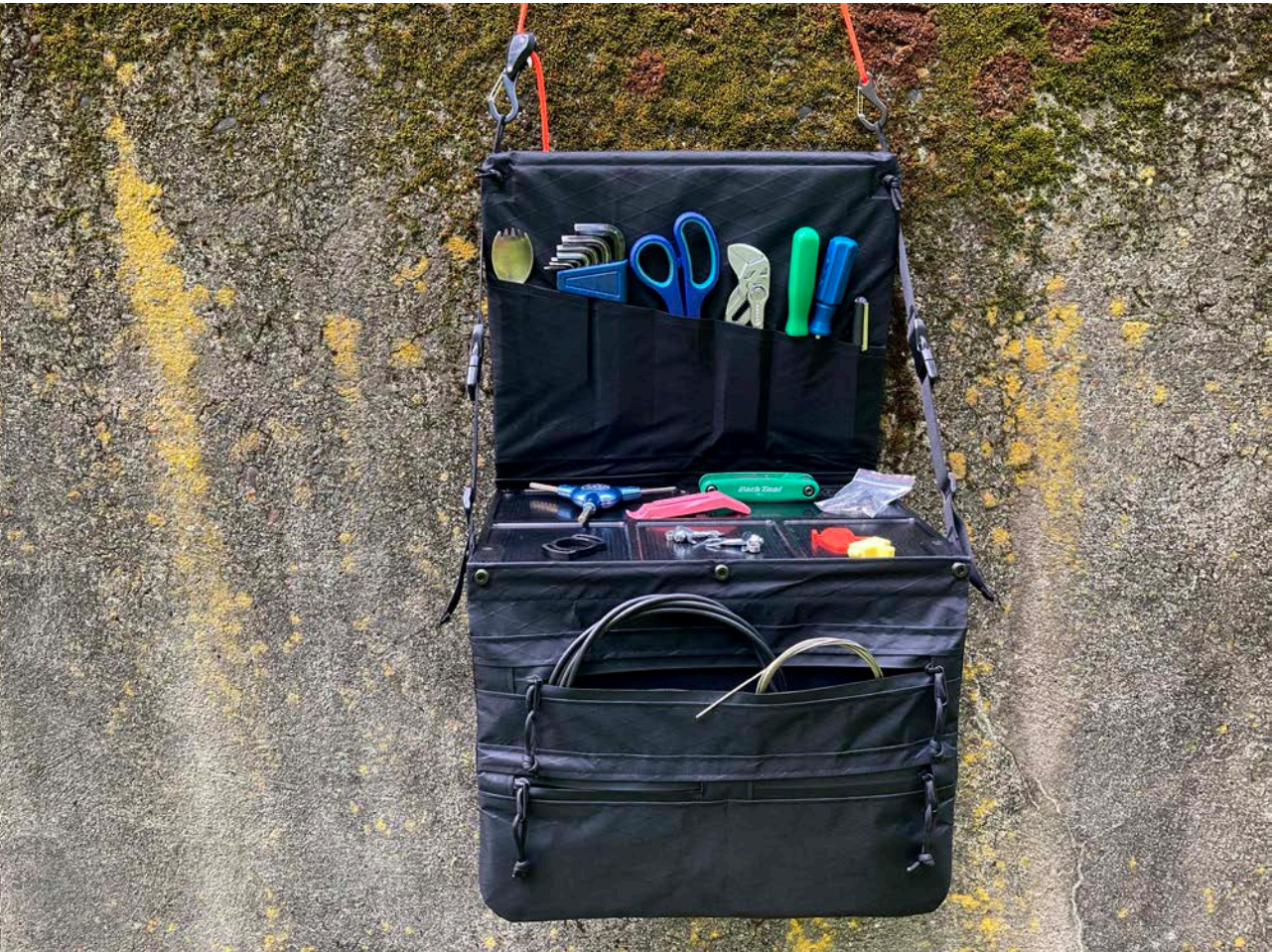


BRENDON BROGAN University of Oregon SPD2020	Project Name: BINGO Components Thesis Project	Date: 06/08/2020	Page
	Drawing Title: Mobile Work Station	Scale: varied	



- 301 ISO Cover stitch - 10 spi
- 101 ISO Bartack
- Nylon Xpack vx21 black
- HHH Waterproof zippers
- M6 barrel nut and bolt
- HDPE CNC'd deck
- 1" Nylon Webbing
- 1" Plastic clips and slides
- Aluminum Trimmers G-hook
- Metal 3/8" eyelet

BRENDON BROGAN University of Oregon SPD2020	Project Name: BINGO Components Thesis Project	Date: 06/08/2020	Page
	Drawing Title: Mobile Work Station	Scale: varied	



GEAR TOTE

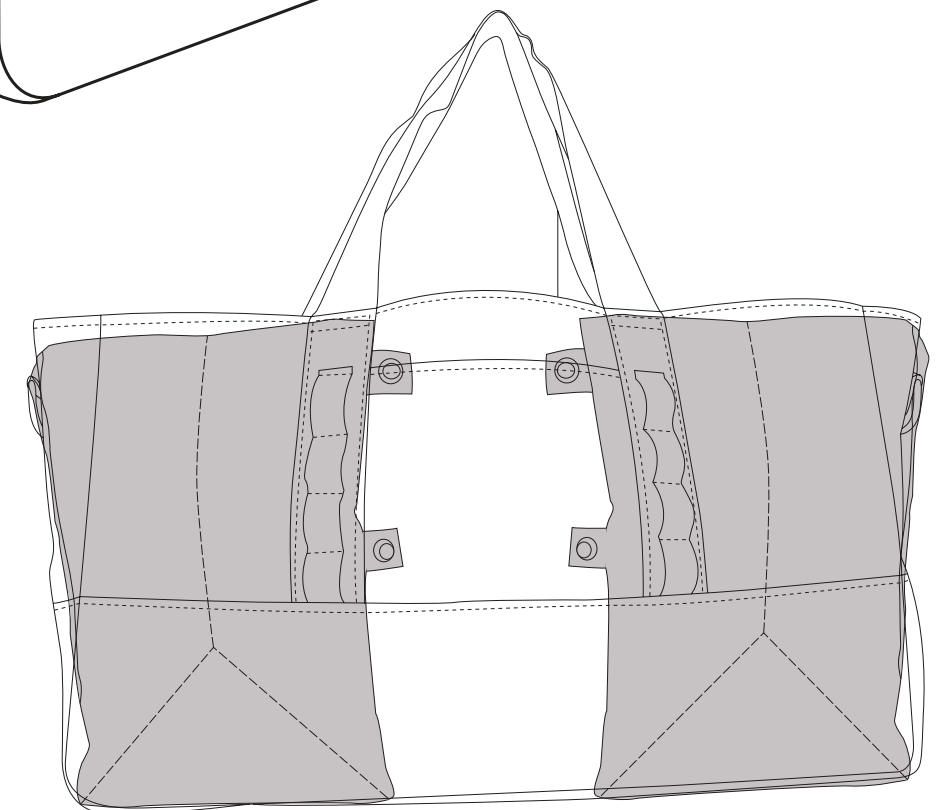
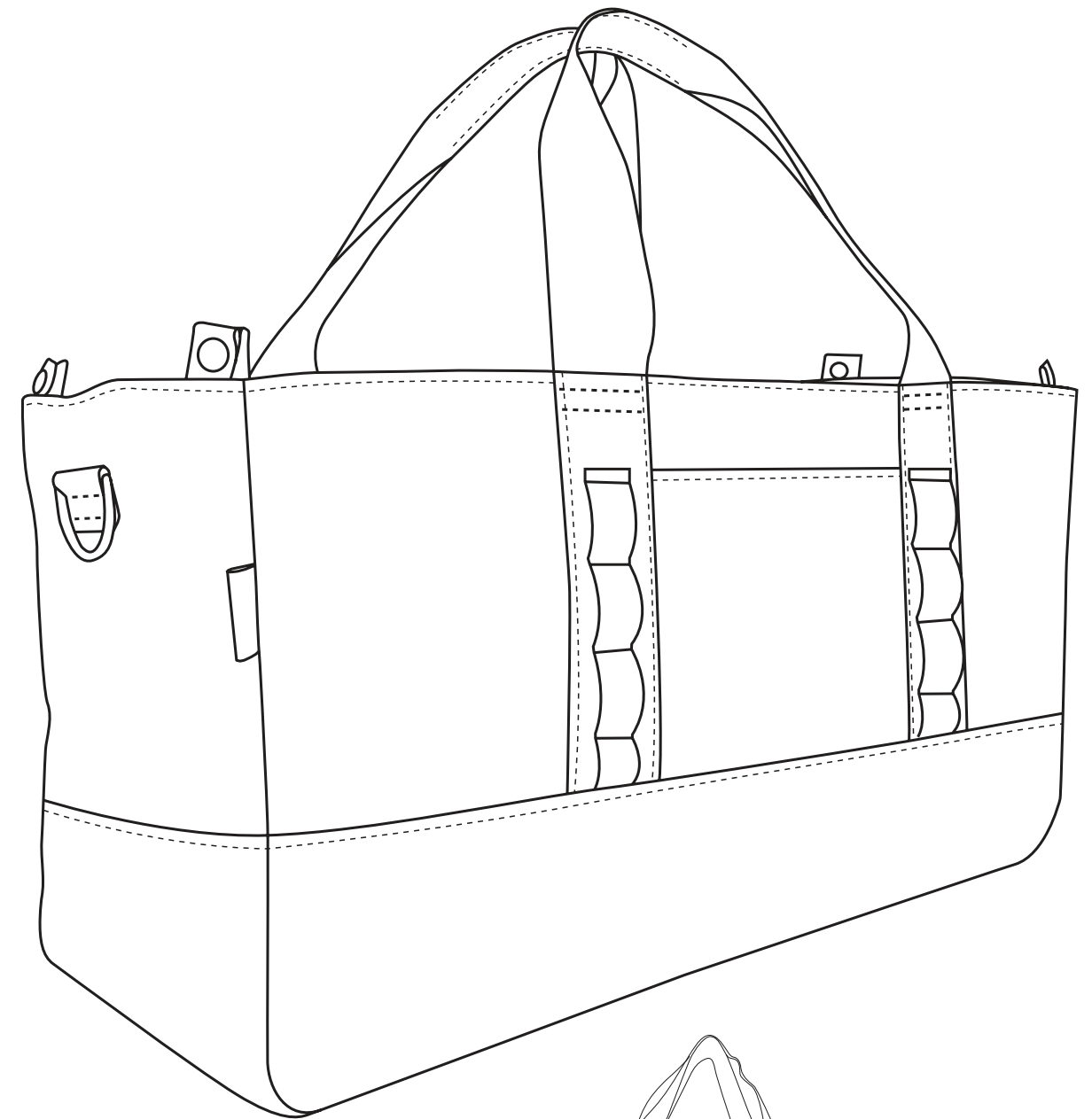
The large gear tote (final name tbd) is designed to reduce the time you spend getting ready to head out the door for a ride on the trail or your daily work commute and make it easier and more organized. Current duffel bags offer one large compartment where the bulk of your gear is stored. This causes a problem when you have dirty shoes next to a fresh clean change of clothes, and prevents your metal cleats from scraping against your pristine helmet. This tote has removable subdividers that allow you to easily separate your gear into its designated place. The compartment for shoes will be lined with waterproof nylon for easy cleaning, the clothing will be separate and the helmet compartment will be made using a soft to the touch flannel lining keeping everything organized and looking good. Also with the open tote design you will be able to quickly and easily see that you've packed all your gear. There is nothing worse than showing up to a group ride and realizing that you've forgotten your shoes. Now this won't be a problem.

Technologies:

- Voluminous open design for easy access
- Water resistant and easy to clean section for shoes
- Soft flannel lined section to protect your helmet
- Abrasion resistant bottom
- Organic cotton canvas upper portion

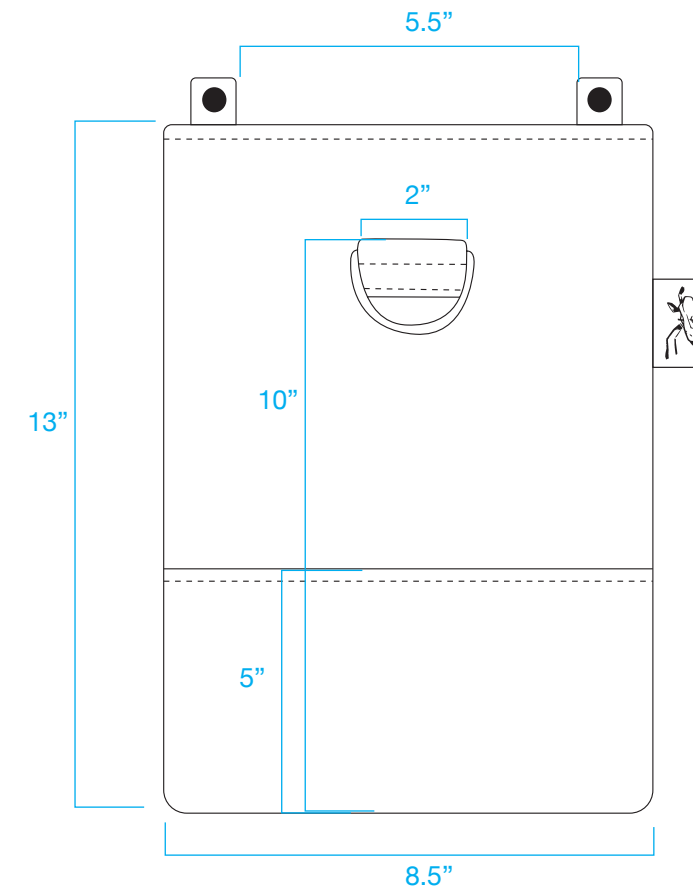
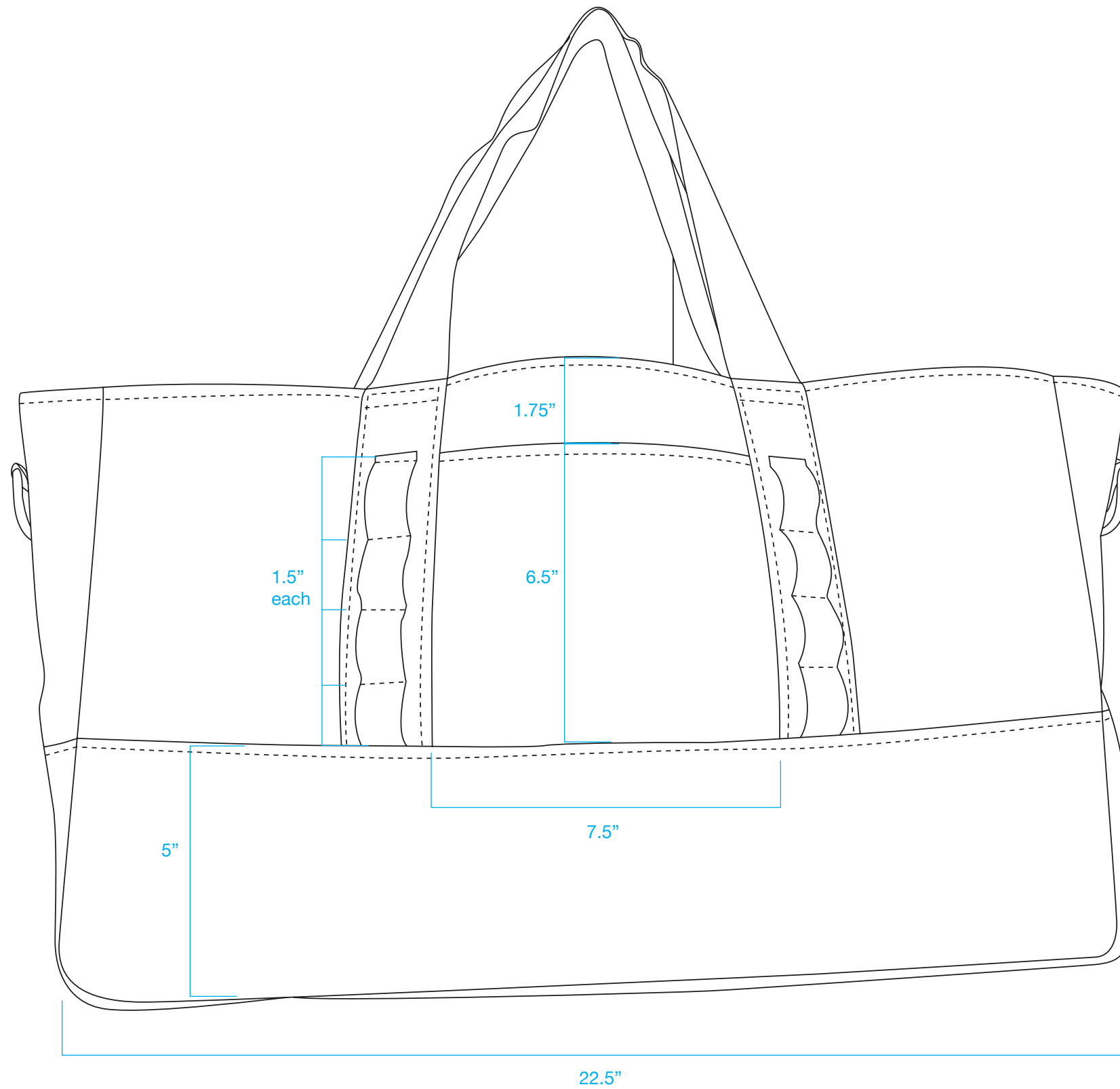
MSRP: \$150

Cost: \$85

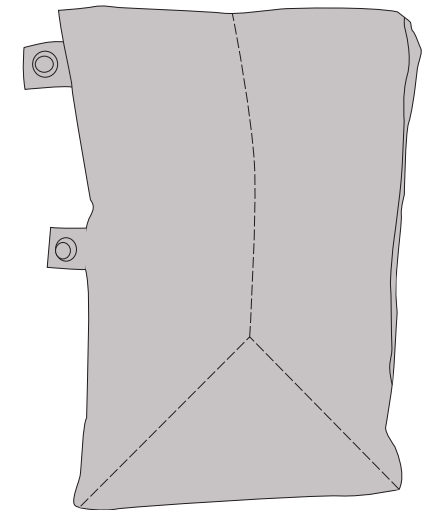
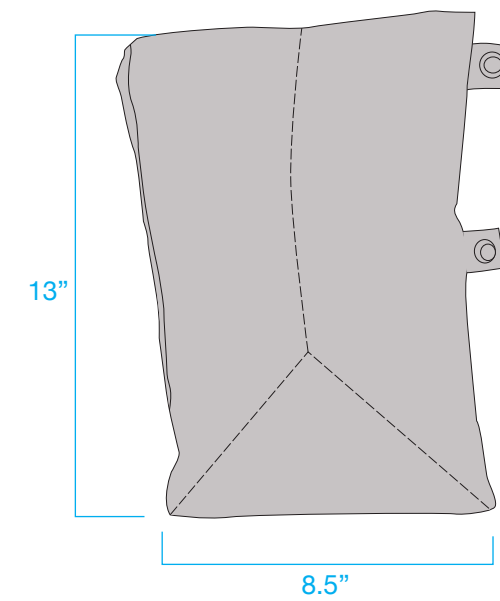


**X-PAC
NYLON**





- 301 Cover stitch - 10 spi
- Nylon Xpack vx21 black
- Cotton Canvas Black
- Cotton Felt Black
- 2" metal D ring
- 3/4" Metal snaps
- 2" Nylon Webbing
- 1" Nylon Webbing



**BRENDON
BROGAN**
University of Oregon
SPD2020

Project Name:
BINGO Components Thesis Project

Drawing Title:
Gear Tote

Date:
06/08/2020

Scale:
varied

Page



BINGO STYLE GUIDE: LOGO HANDLING AND FONTS



TITLE FONT

CA KISSKISSBANGBANG
ALL UPPERCASE

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K L M N O P Q R S
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Body Font

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a b c d e f g h i j

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EXAMPLE:



B1 HEADSET SPACER

Designed to fit 1 1/8" steer tubes as a headset spacer, above or below the stem.

The provided straps attach any feed bag style handlebar bag through the loop, handlebar, and fork.

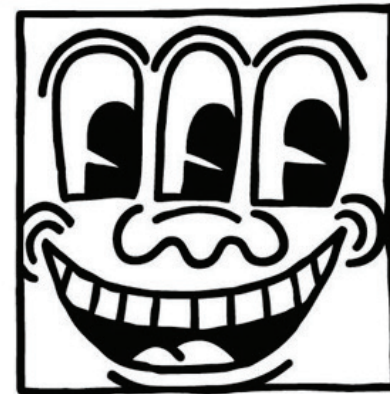
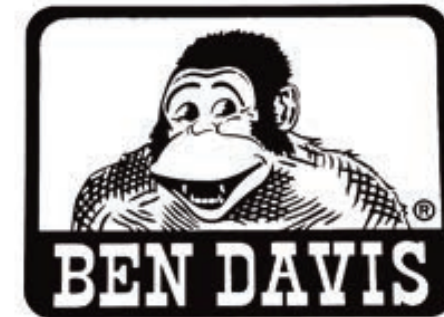
The spacer is water jet cut using 5mm thick 6061 Aluminum, cut and anodized black locally in Portland, Oregon

BINGO STYLE GUIDE: MASCOT AND CREATIVE INSPIRATION

BINGO
THE GIRAFFE



DESCENDENTS



Kick Hany



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Vinyl Stickers



Custom rubber stamp



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