



**BRYANT JIMÉNEZ | THESIS 2022**



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## BRYANT JIMÉNEZ

UO Graduate with degrees in Architecture, Digital Arts and Romance languages

**I WANT TO INNOVATE AND IMPROVE ATHLETE PERFORMANCE IN SPORTS**

## POST GRADUATION

I want to pursue Performance Footwear Design either through sample making or 3D Footwear Design



CONVERSE REINVENT



COPA SPEEDHACK



FUTSAL TRACTION

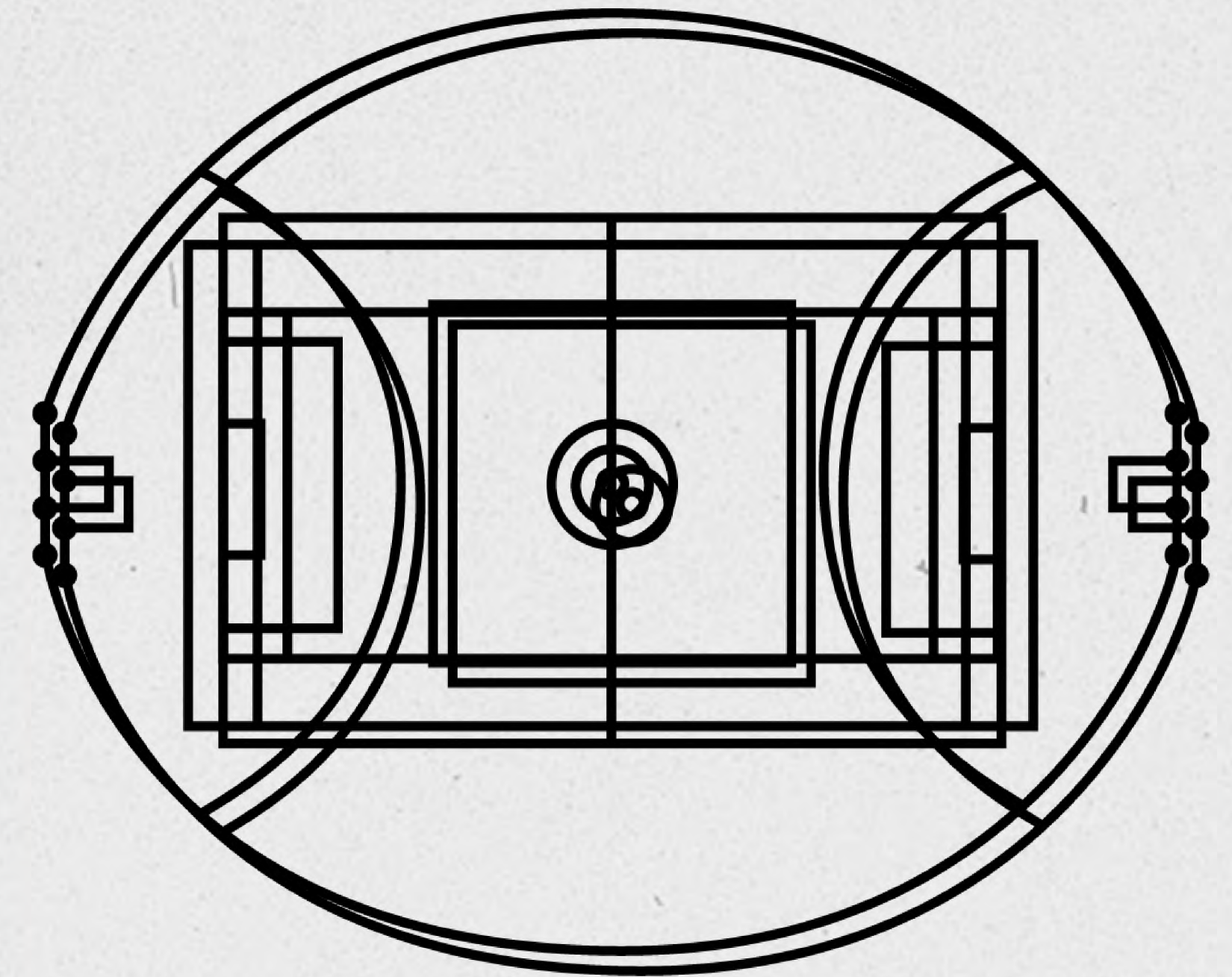




**BRYANT JIMÉNEZ | THESIS 2022**

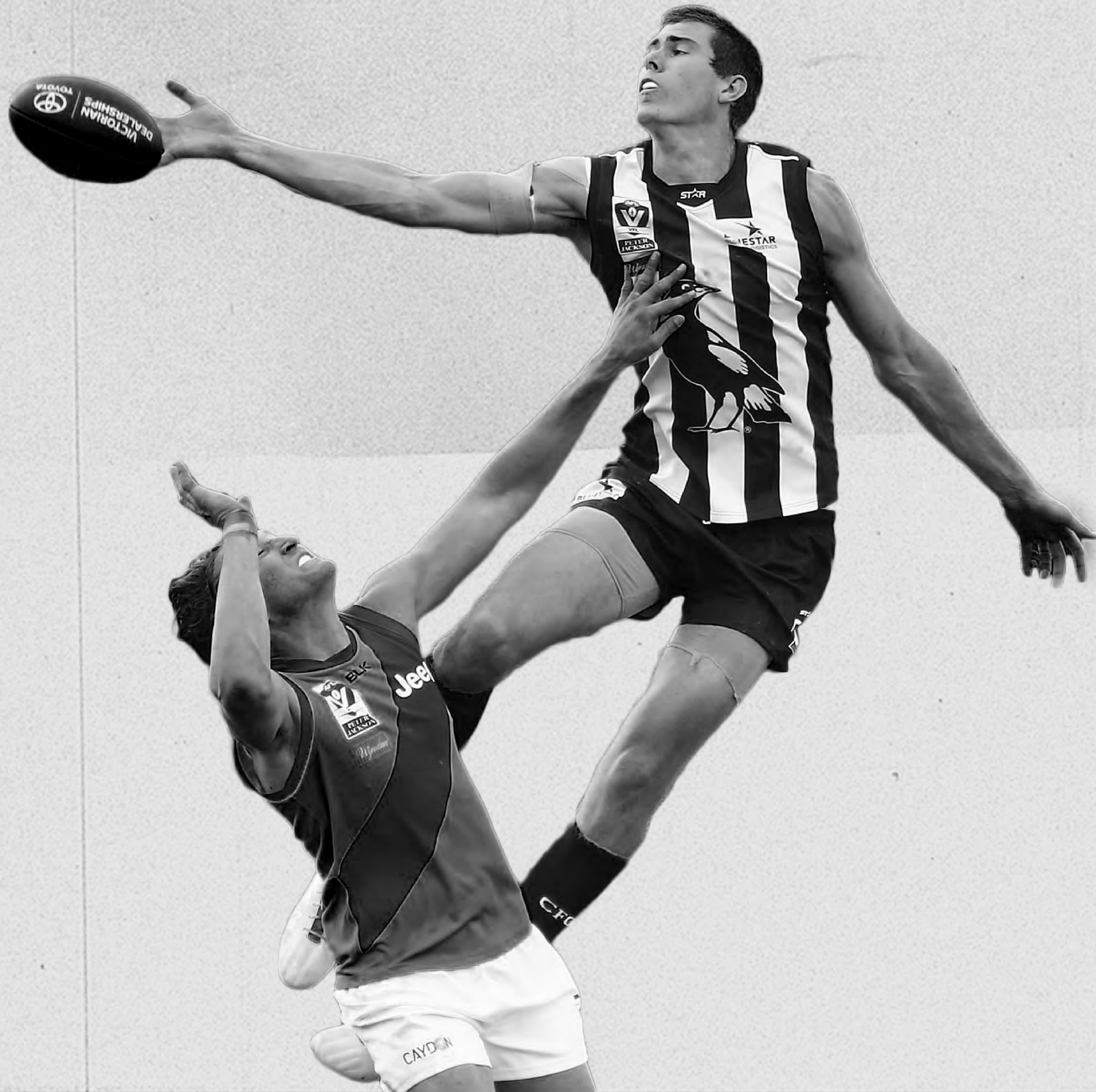


# WHAT IS AUSTRALIAN RULES FOOTBALL?



AUSTRALIAN RULES FOOTBALL  
AUSTRALIAN RULES FOOTBALL





# RUCKMAN

Defensive Giants

Average Height 6'5" +

Aerial Collisions



	<b>CAR</b>	13	3	<b>81</b>	Q3
	<b>MEL</b>	9	7	<b>61</b>	01:30







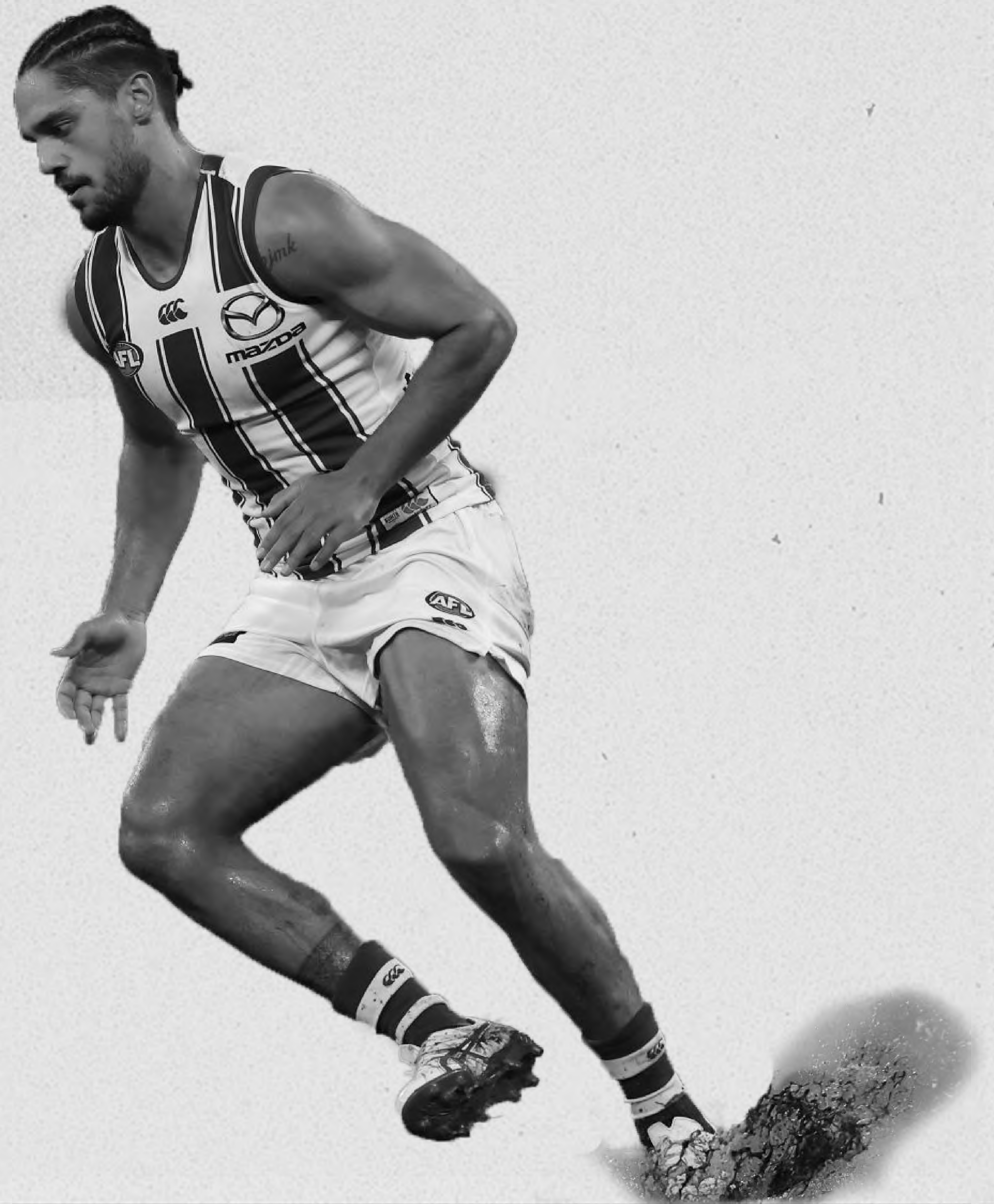


# ROVER

Recovers possession

Longest Average Game Distance

Most Versatile Movement







	<b>CAR</b>	13	3	<b>81</b>	Q3
	<b>MEL</b>	9	7	<b>61</b>	01:07







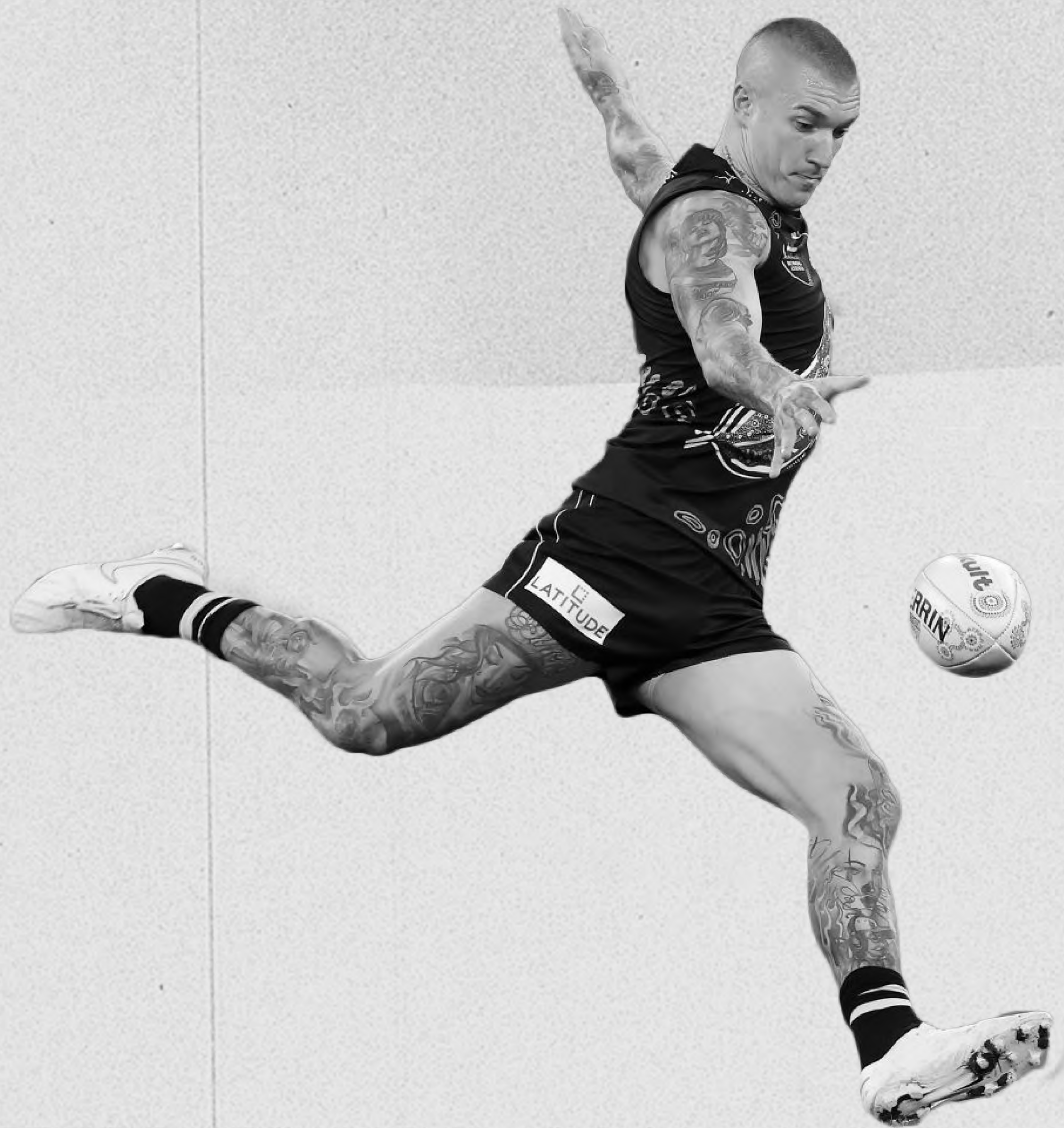


	<b>WB</b>	3	6	<b>24</b>	Q2
	<b>BRI</b>	6	3	<b>39</b>	14:01

  
.COM.AU







# FORWARD

Primary Goalscorer

Most Dynamic Movement

Sprints between 30-60M





**SYD**

4

5

**29**

Q2



**NM**

1

2

**8**

10:30





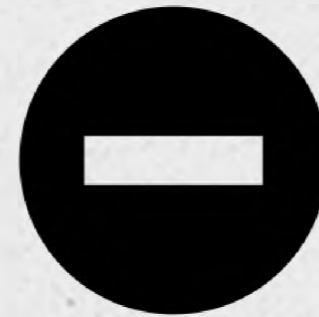




# CURRENT PROBLEMS



Unlike other popular cleated sports, **only two boot manufacture produce a dedicated boot design**

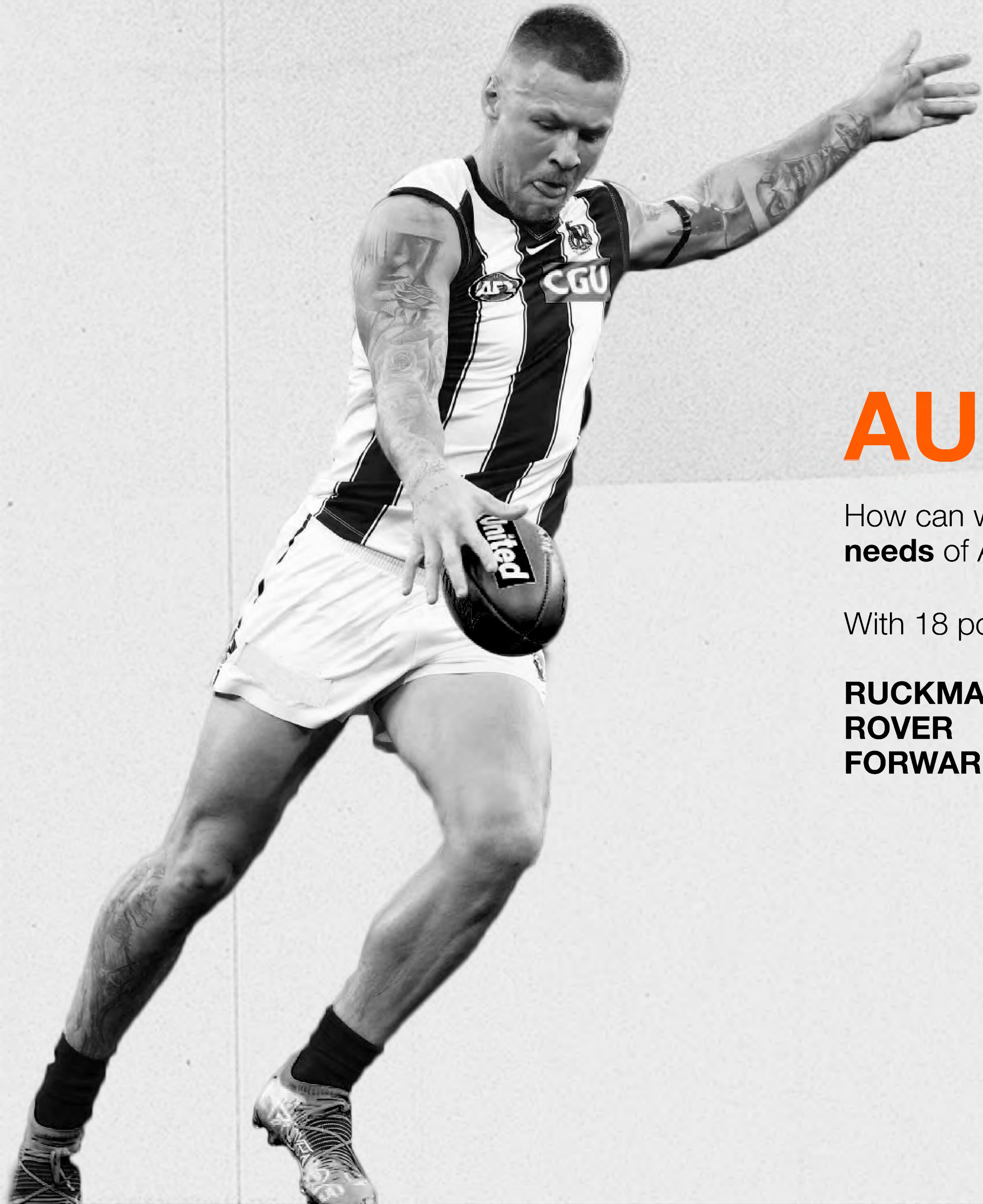


Despite being a **1.2 billion dollar industry** players have to **resort to sporting football cleats as workarounds** due to available solutions not meeting their performance needs



With **only 152 players in the Australian Premiership** is prime for concept runs of cleated footwear





# AUSSIE RULES FOOTBALL

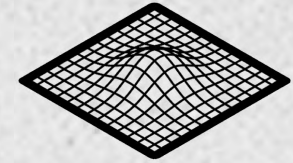
How can we apply **additive manufacturing to address the positional needs** of Australian Football athletes

With 18 positions, the key roles observed are:

**RUCKMAN**  
**ROVER**  
**FORWARD**



# POSITIONAL NEEDS



## LIGHTWEIGHT

Using 3D printed upper components and 3D lattice midsole to allow for easier acceleration



ROVER / FOLLOWER

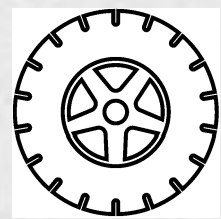


FORWARD



RUCK / RUCK-MAN

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## TRACTION

Developing new stud configurations and shapes to improve forward momentum and reduce foot strain

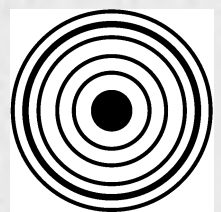


ROVER / FOLLOWER



RUCK / RUCK-MAN

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## ACCURACY

Redesigning the upper construction to improve kick distance and accuracy with new ball shape



FORWARD



**HAVOC PRINT**

---

**Upper + Last Form + Lacing System**

**30% REDUCED WEIGHT**



**BLR SOLEPLATE**

---

**Soleplate + Studs**

**WITHIN 10% TRACTION OF COMPETITORS**

**PRCSN-STRIKE**

---

**Tongue + Upper**

**WITHIN 15% ACCURACY**





# ATHLETE INSIGHTS



**Tom Snee**  
6'4"  
198 Lbs.  
11-11.5 US  
R-Foot Dominant  
**Footy** Copa Mundial  
**Football** Nike Tiempo



**Jeff Melanson**  
6'2"  
178 Lbs.  
11-11.5 US  
R-Foot Dominant  
Adidas Predator



**Race Malhum**  
6'3"  
190 Lbs.  
11.5 US  
R-Foot Dominant  
Nike Mercurial



**Joshua Rambert**  
5'9"  
180 Lbs.  
9.5 US  
L-Foot Dominant  
Flyknit Mercurial



**Will Hutchinson**  
6'4"  
197 Lbs.  
11 US  
R-Foot Dominant  
Nike Tiempo



**Haki Woods Jr.**  
6'5"  
200 Lbs.  
11.5 US  
R-Foot Dominant  
Nike Vapor



01 FIT/SIZING

02 AESTHETICS

03 TRACTION

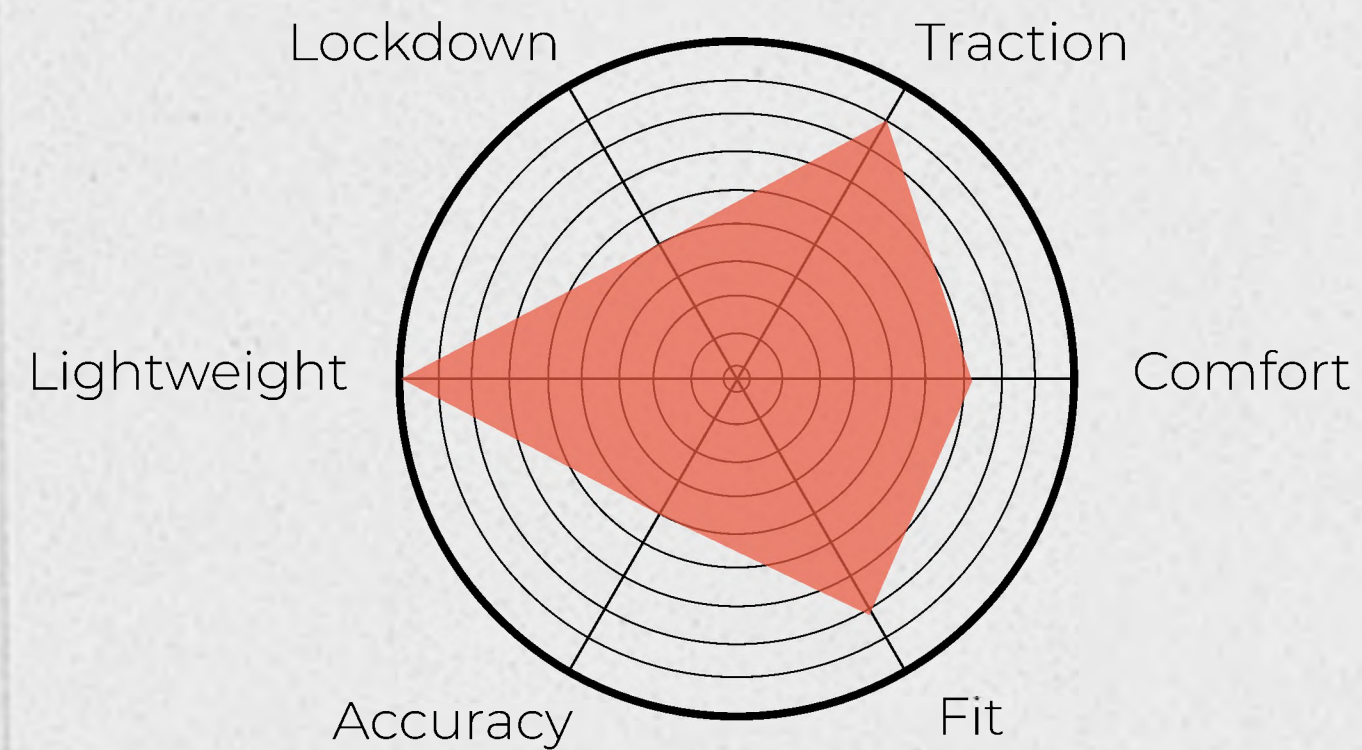
04 KICKING ZONE

05 COMFORT

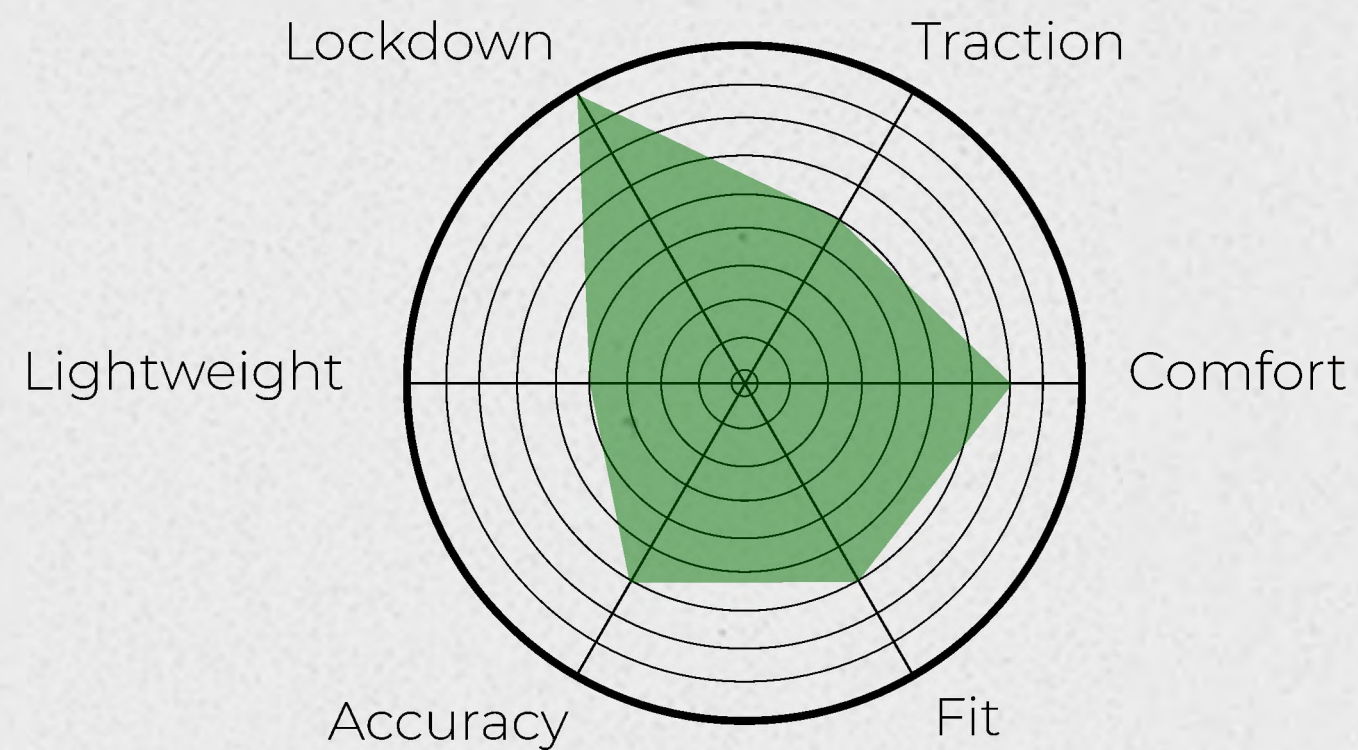
***“THERE’S NOT MANY OPTIONS BESIDES FOOTBALL BOOTS...BUT THEIR TOO NARROW FOR US BIGGER GUYS”***

***ALL OF THE SYNTHETIC OPTIONS LACK PADDING IN THE TOE BOX***

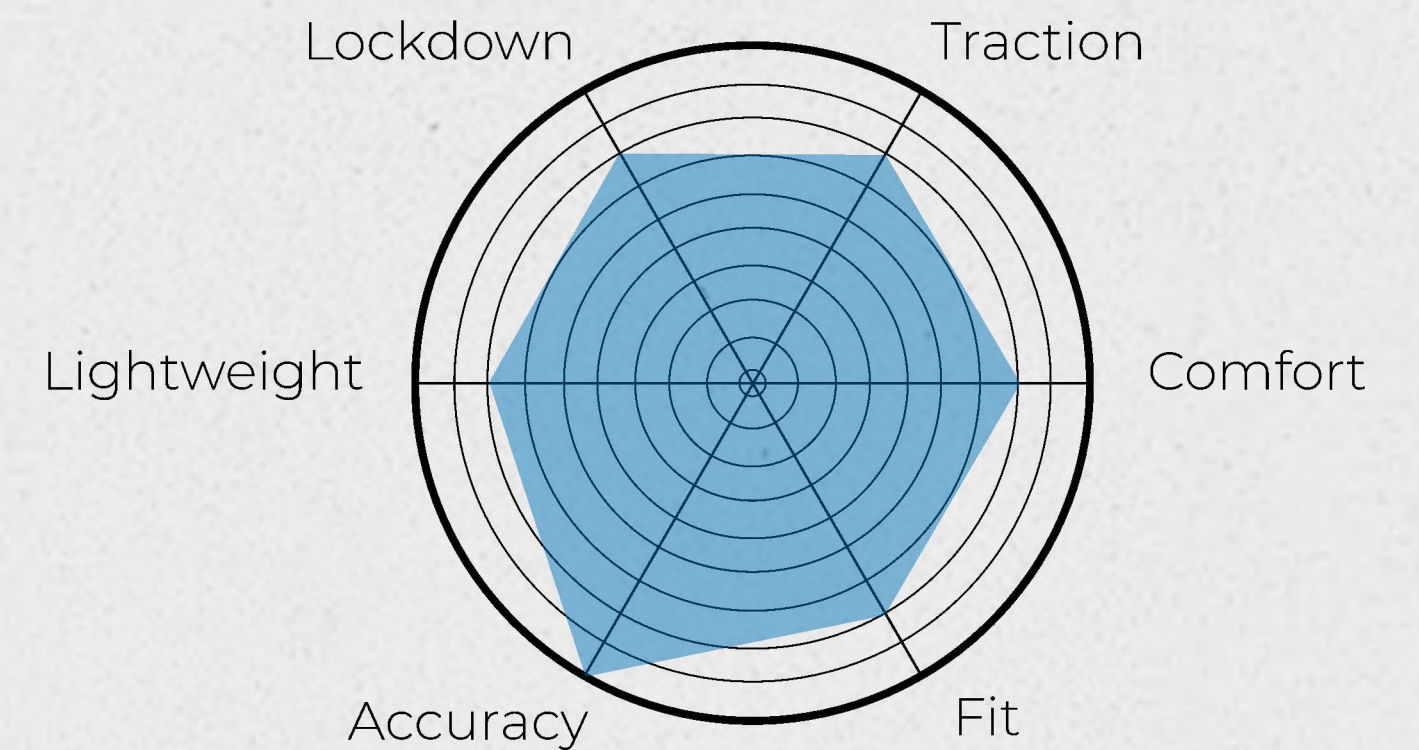
***ALL THOSE TEXTURES DON’T DO ANYTHING FOR US, WE’RE NOT DOING FANCY TRICKS WITH OUR FEET***



**ROVER**



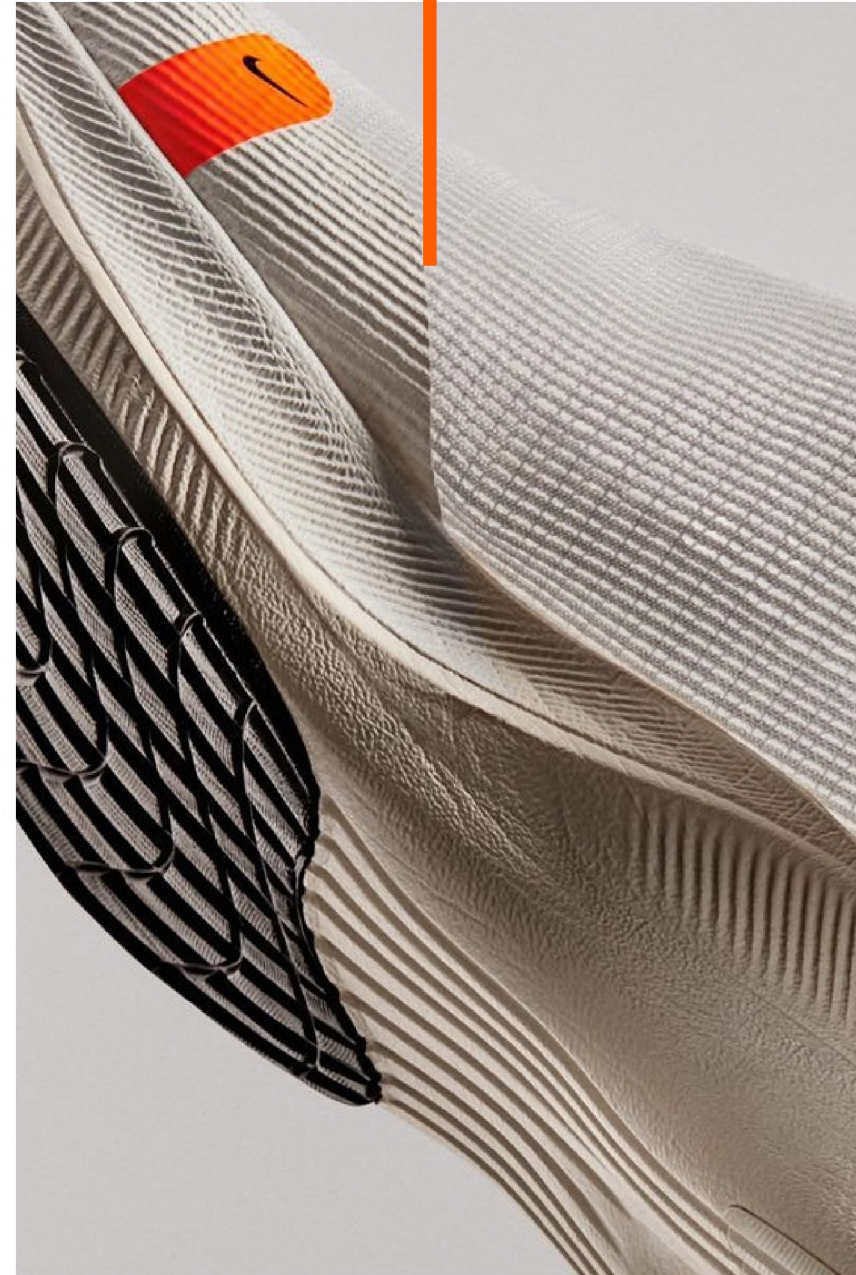
**RUCKMAN**



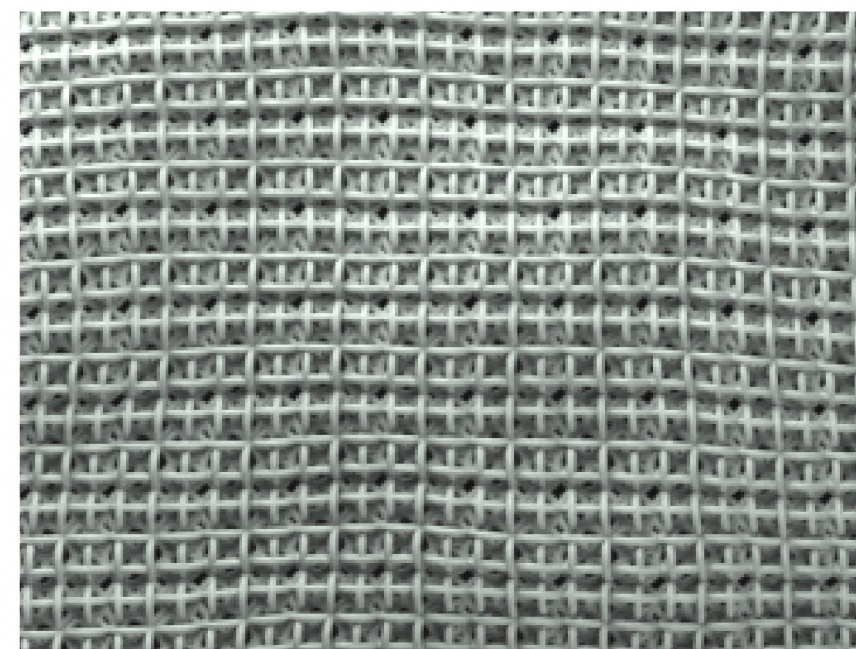
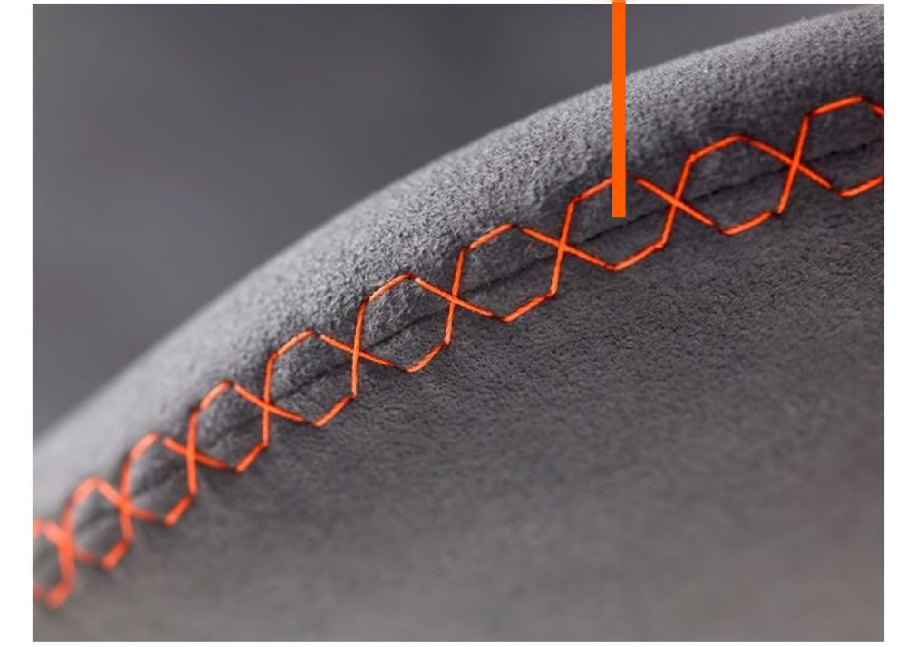
**FORWARD**



**SPOT COLOR**



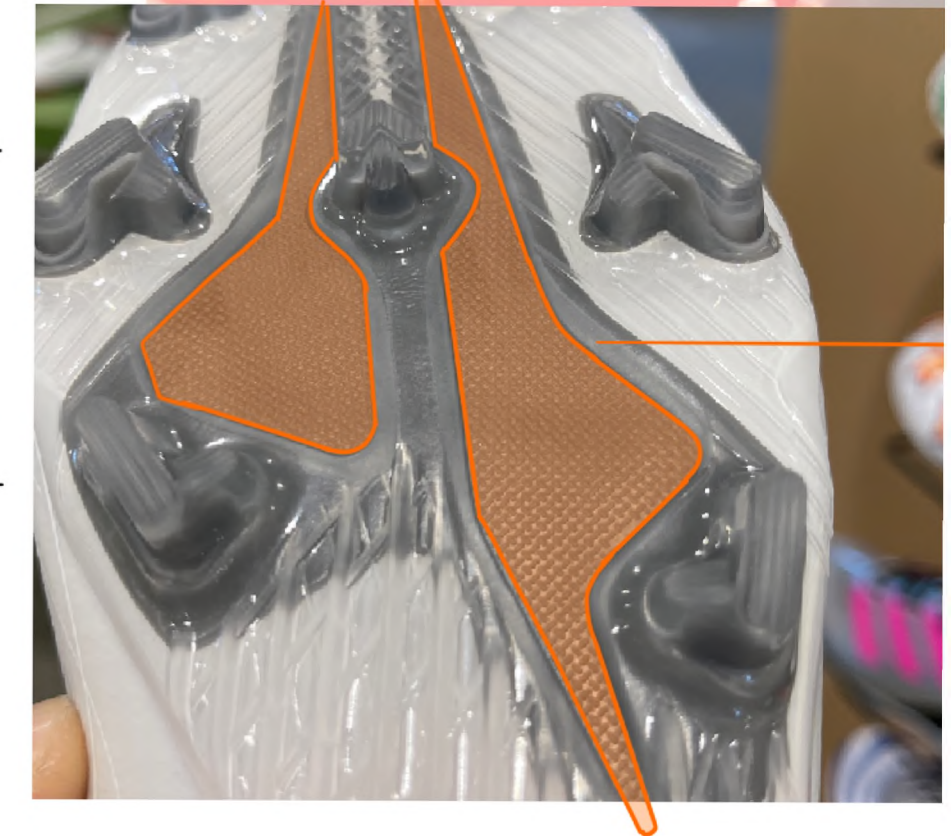
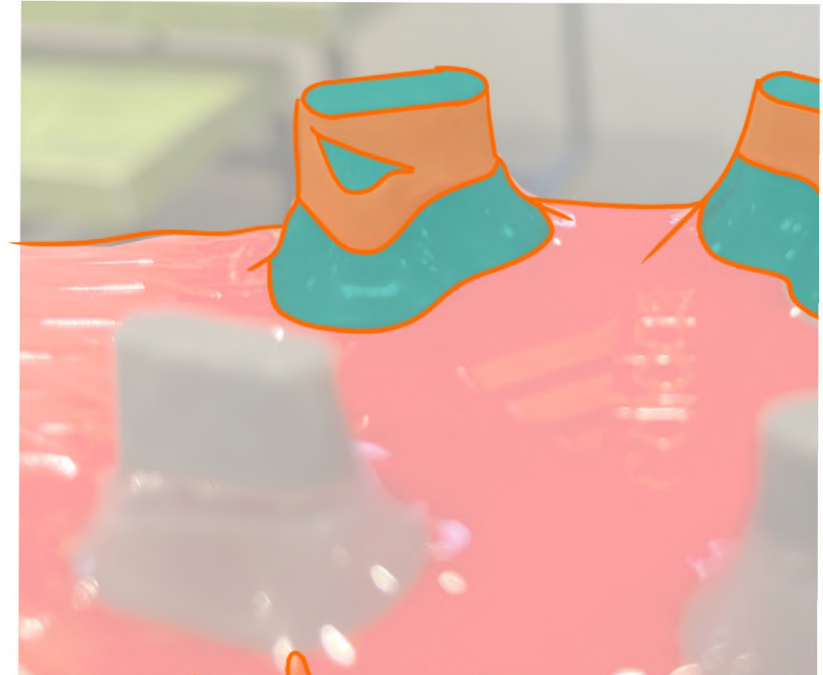
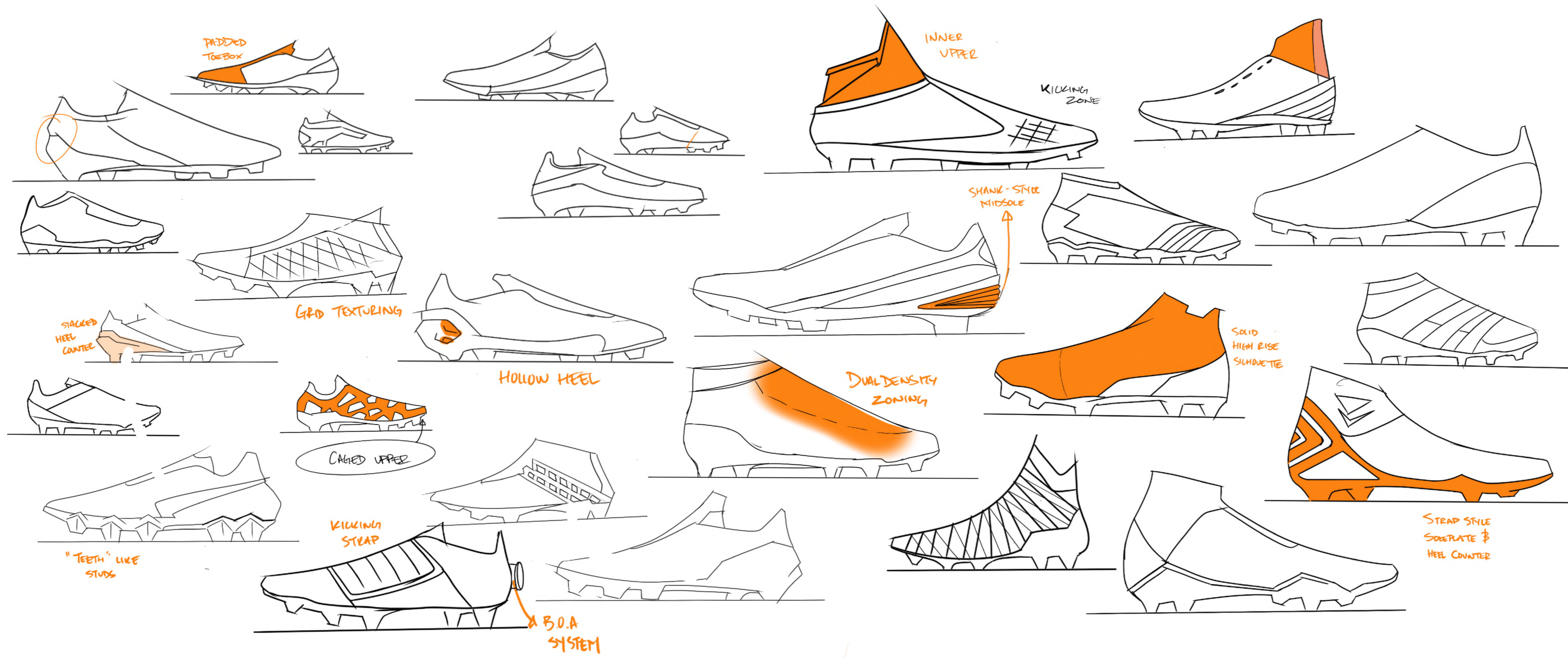
**STITCHING ACCENT**



**PERFORATIONS**

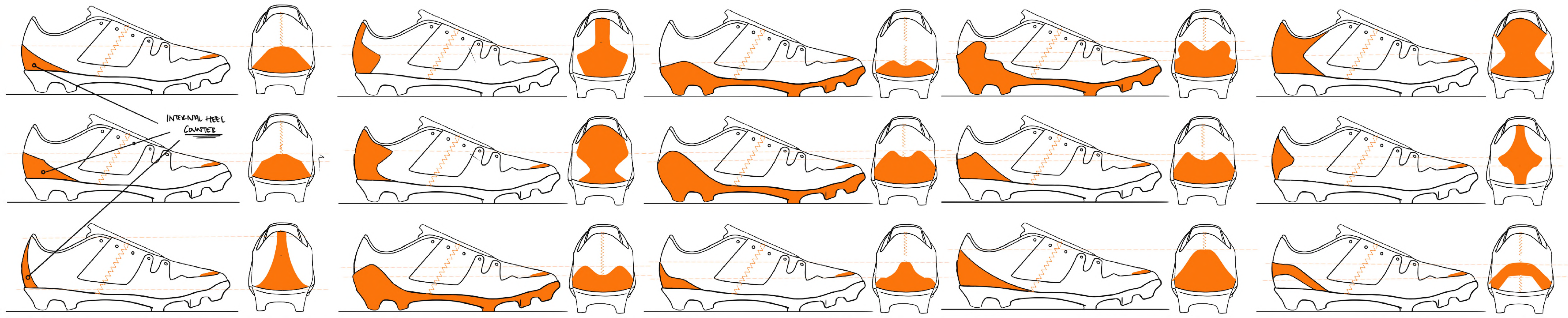
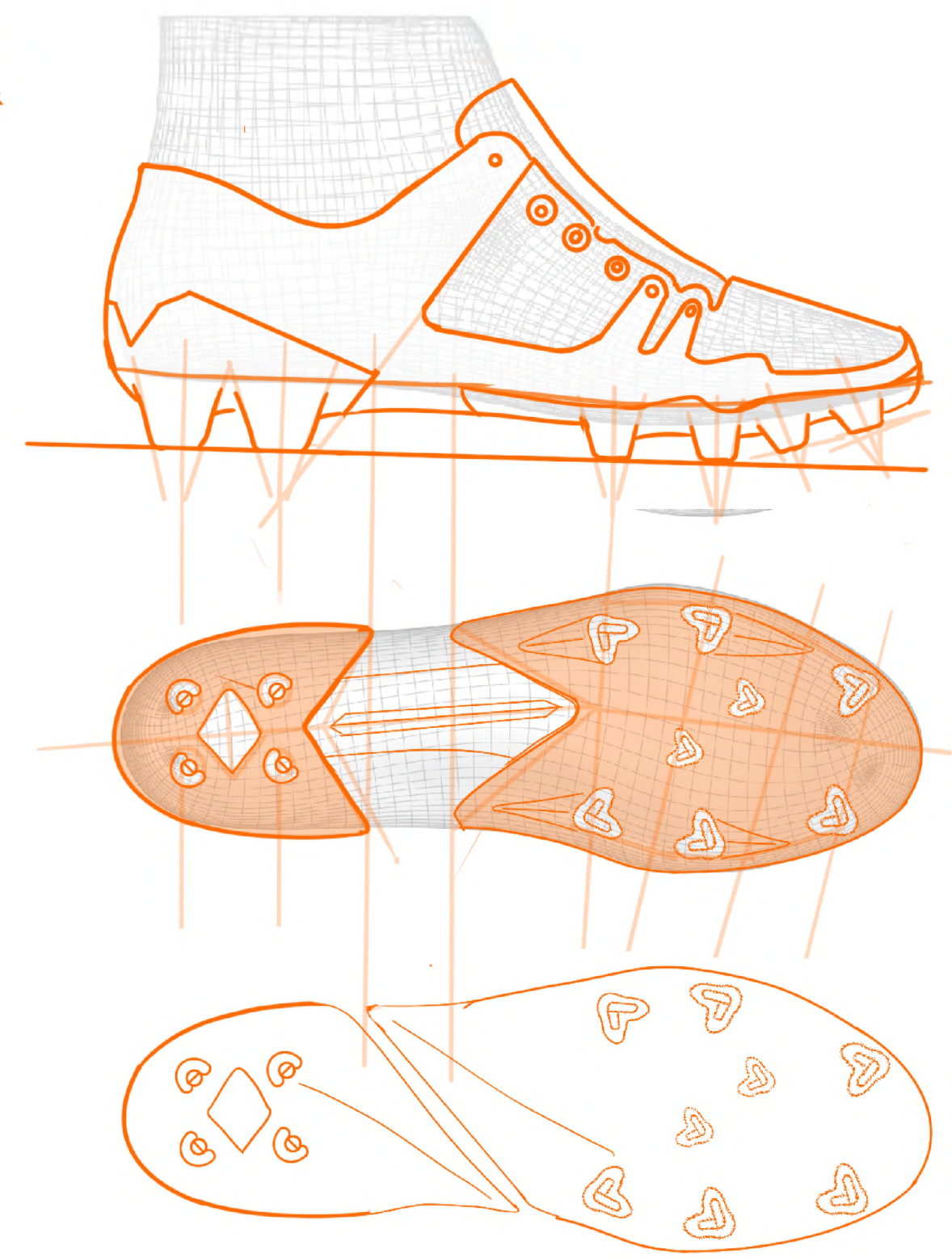
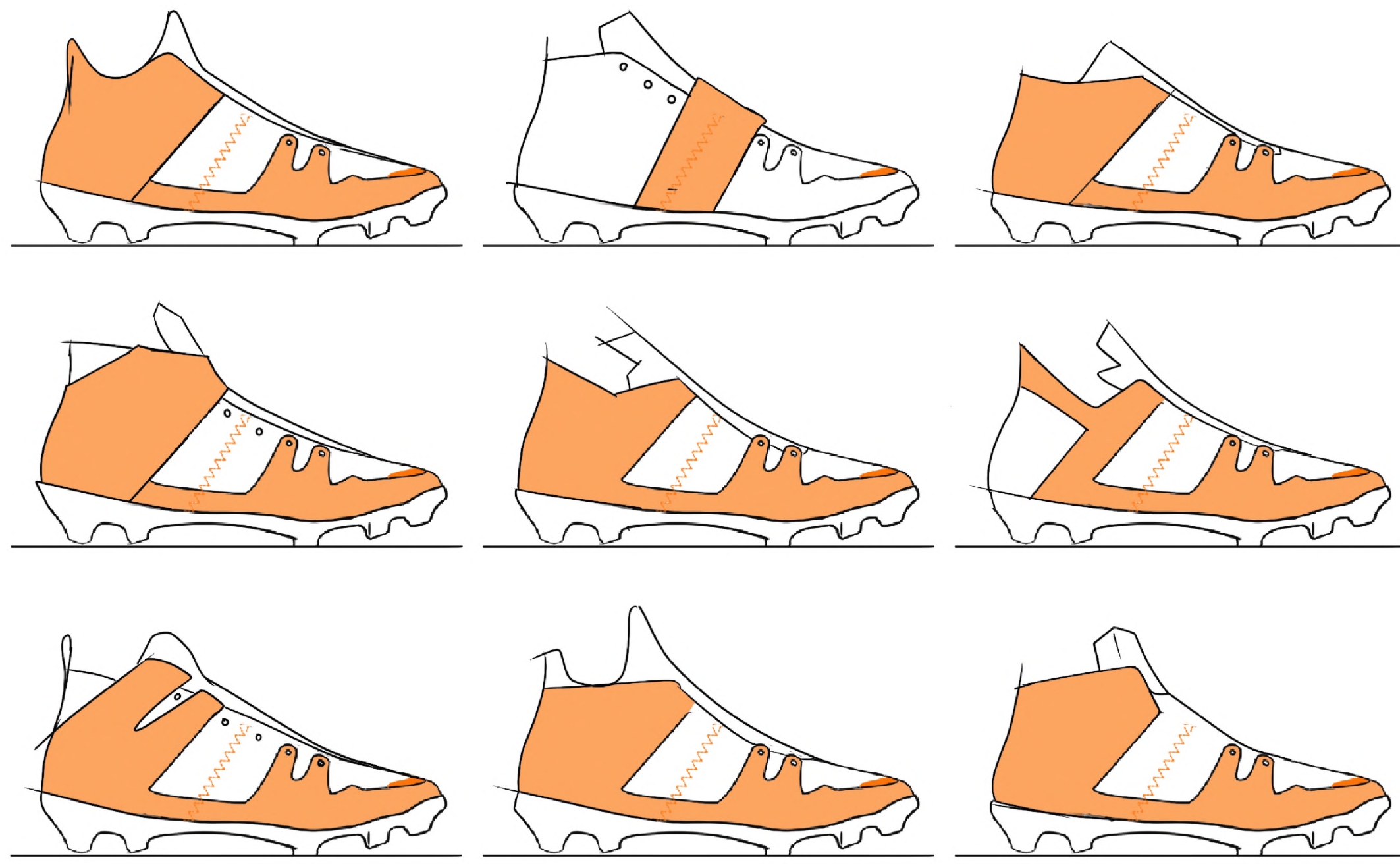
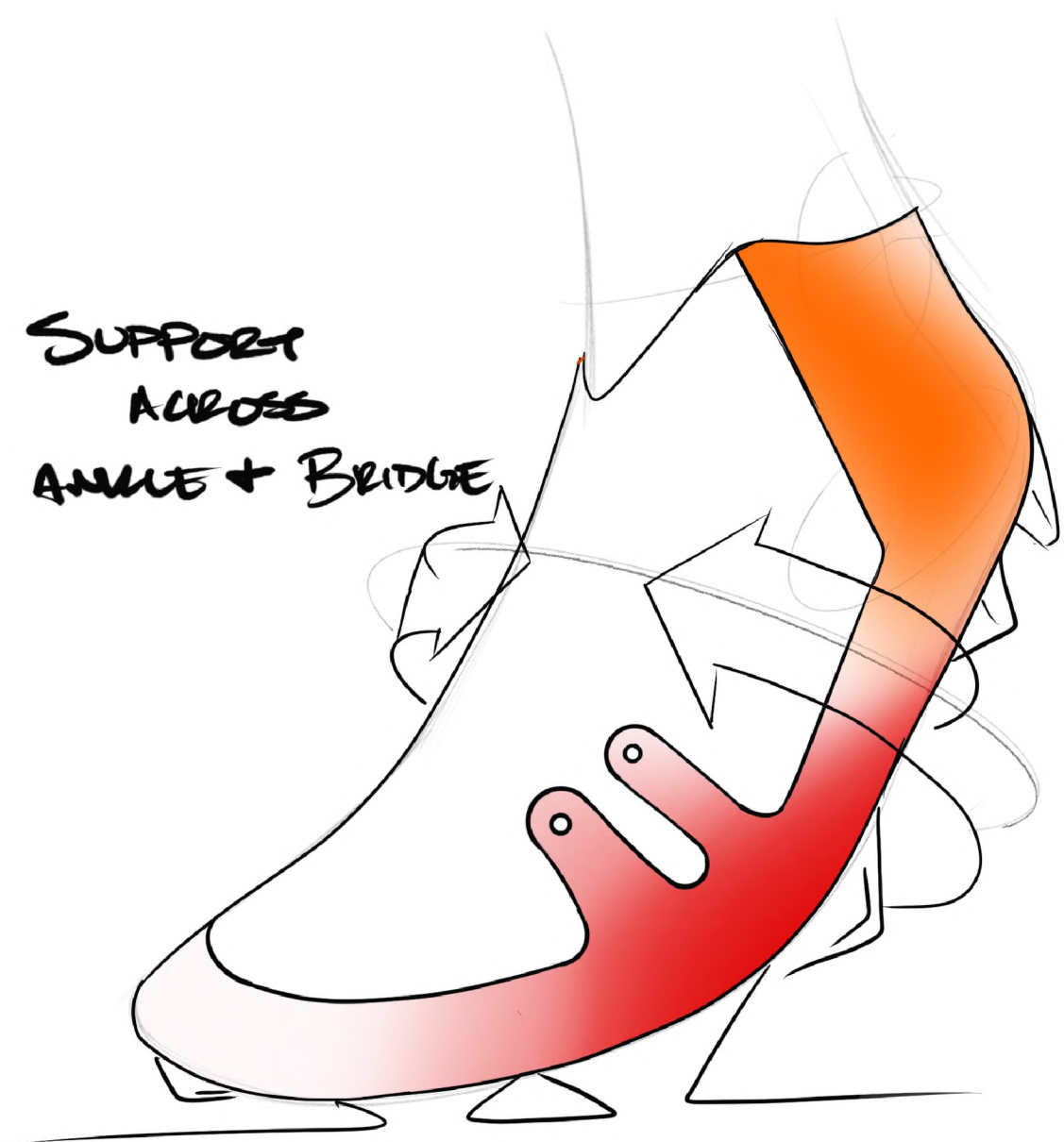
**TRANSPARENCY**





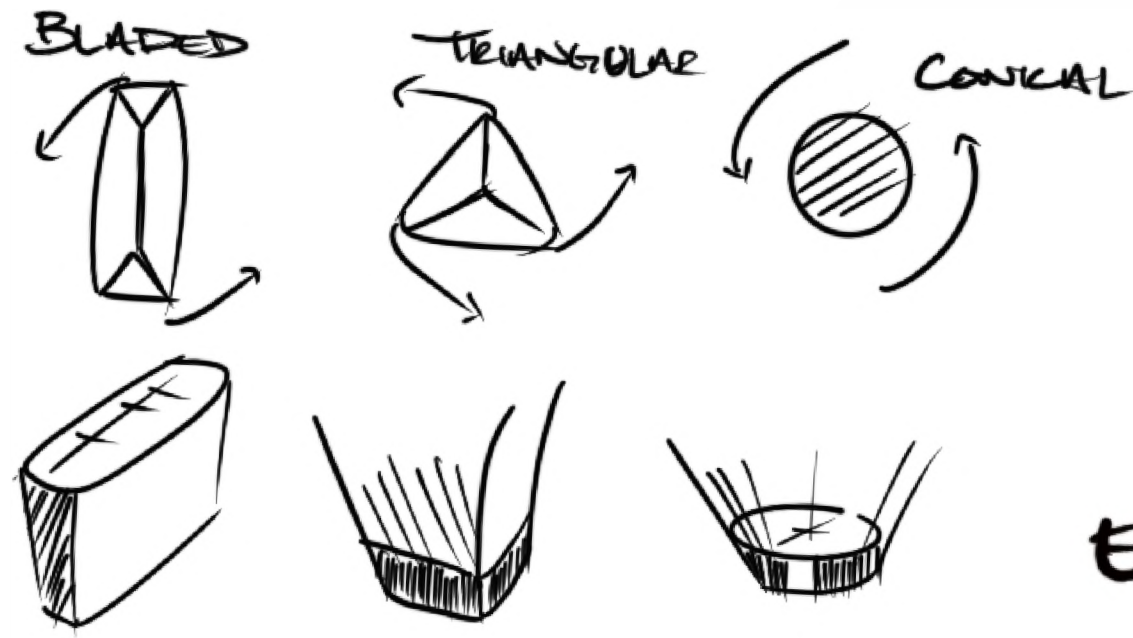


SUPPORT  
ACROSS  
ANKLE + BRIDGE



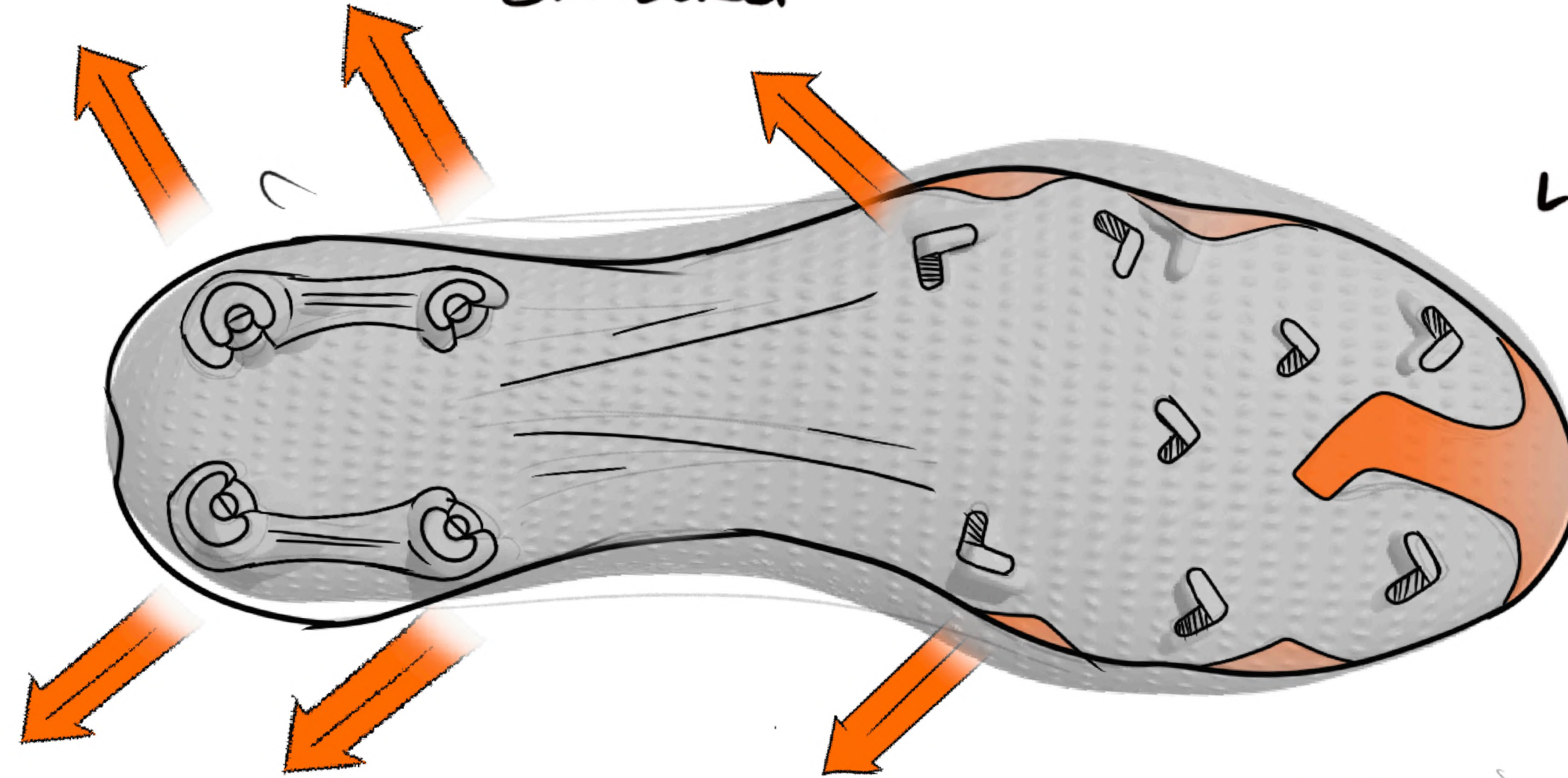
INTERNAL HEEL  
COUNTER





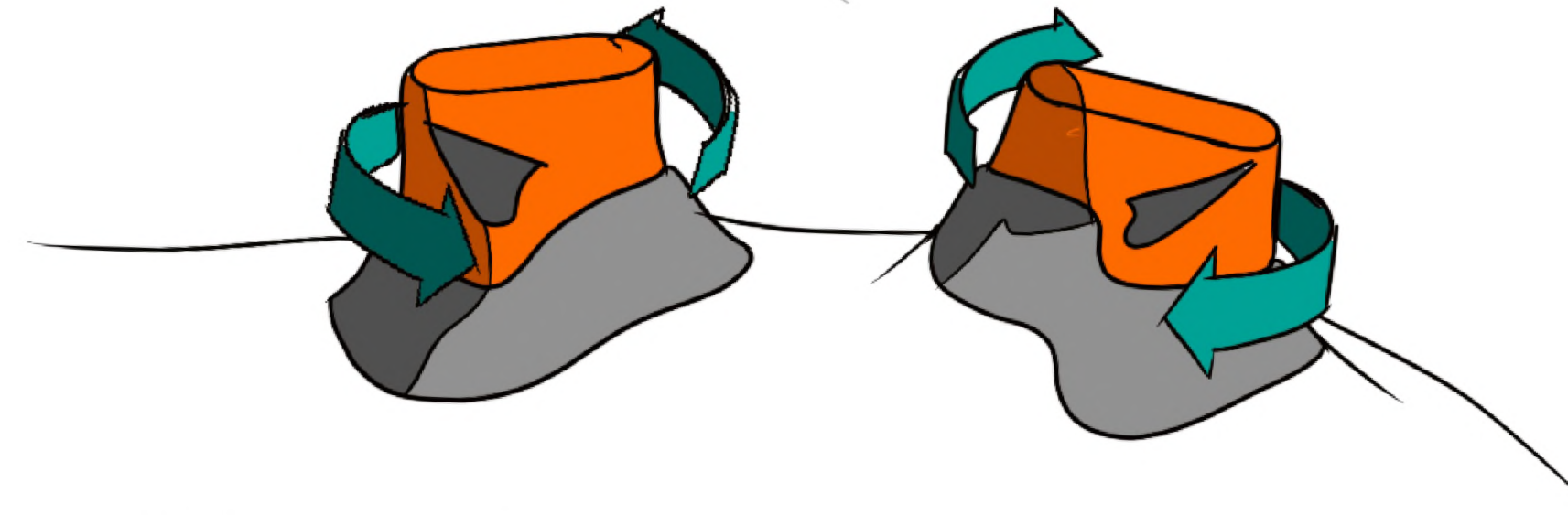
# SOLEPLATE DESIGN

EMPHASIS ON BRAKING



LIGHTWEIGHT TRACTION

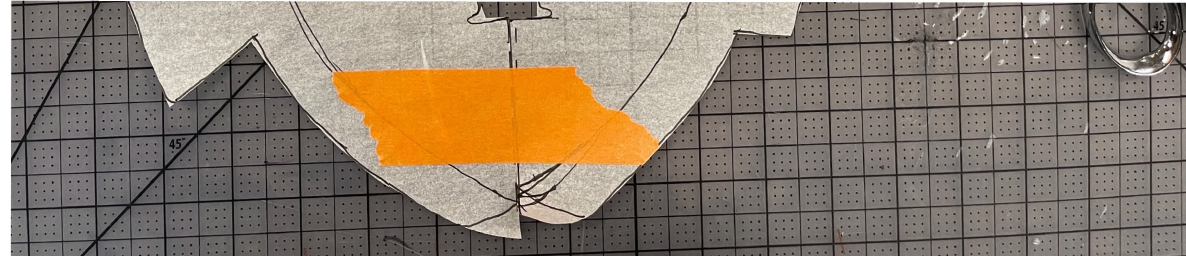
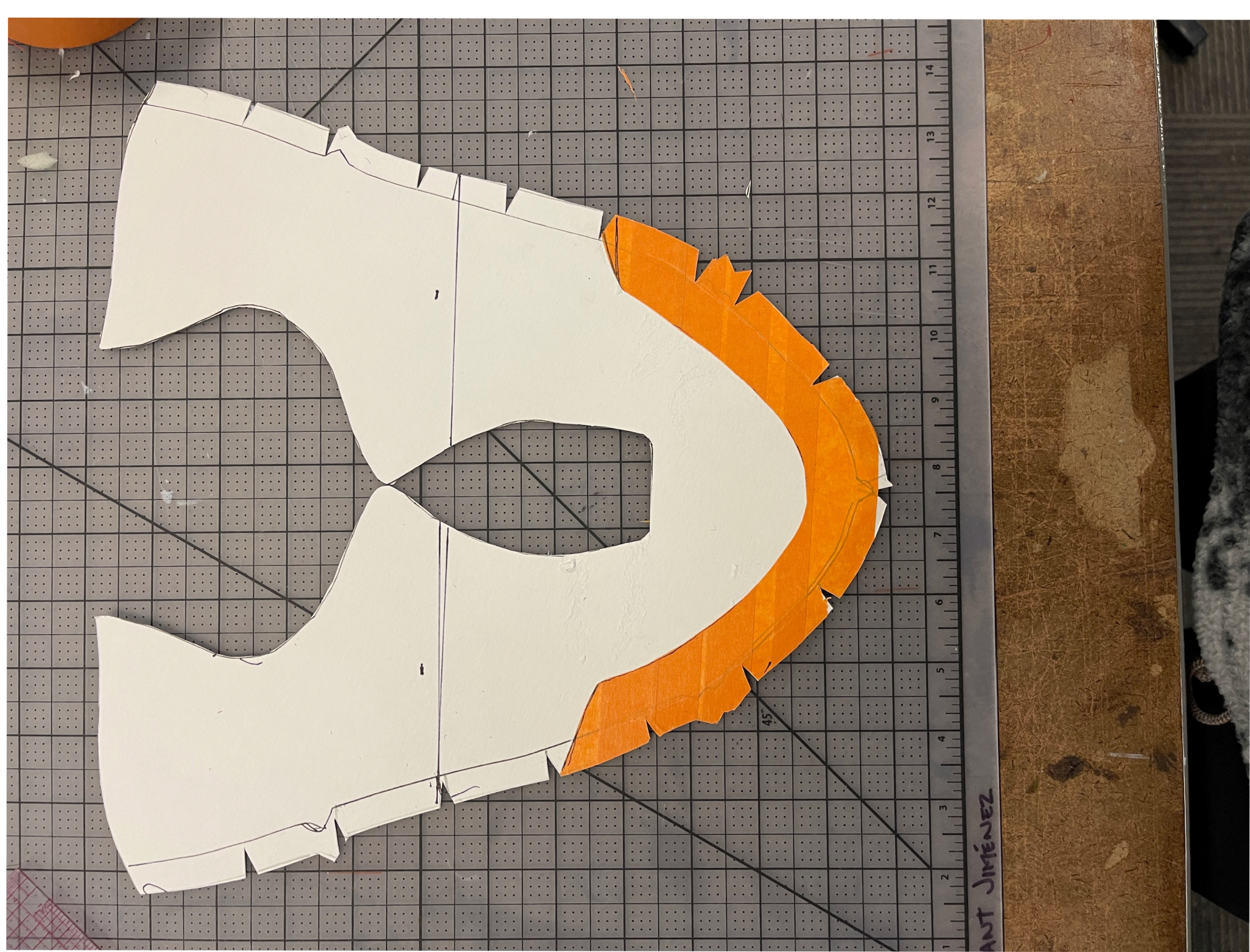
REINFORCED TORSION PANKIPS ACROSS UNDERFOOT



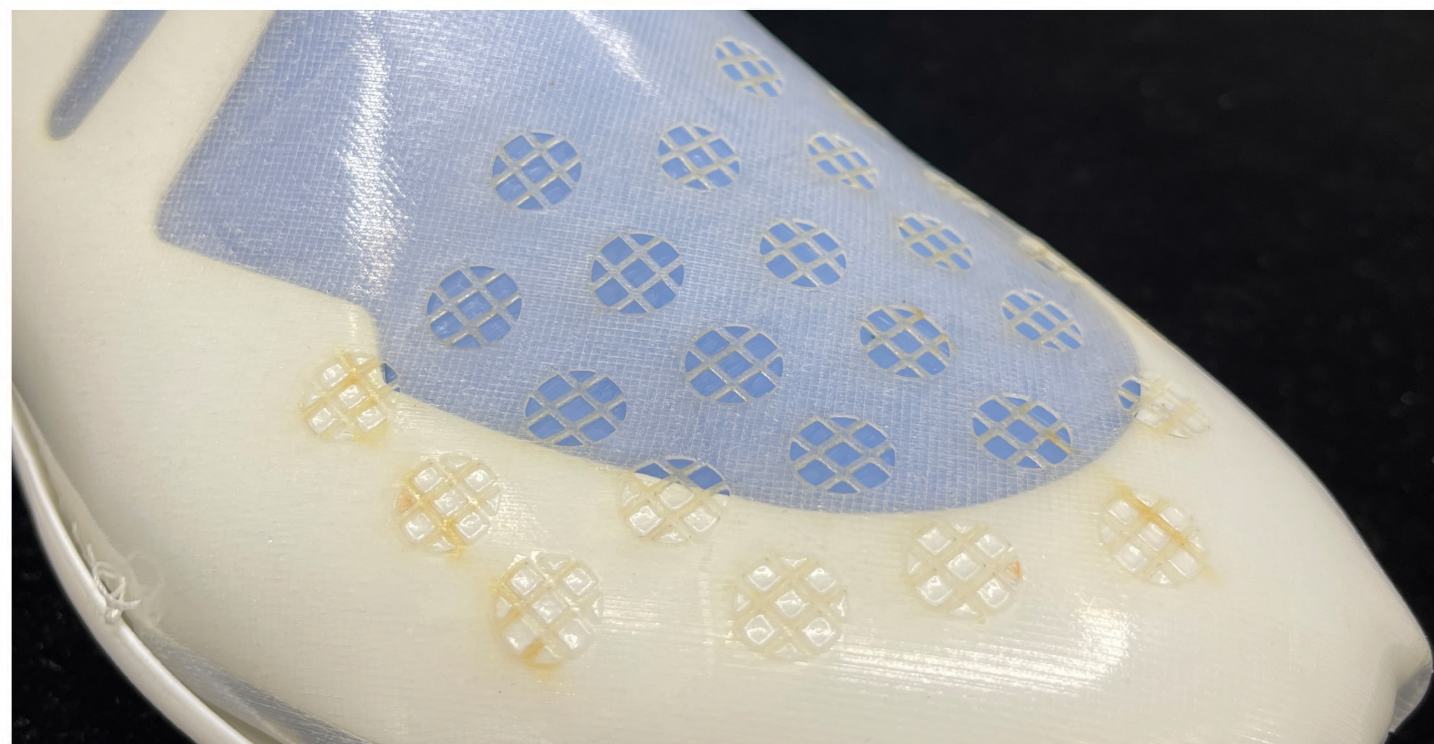
MULTI-DIRECTIONAL STUDS ALLOW FOR ROTATION + FLEX



# PROTOTYPES















Kleina Hlcau /  
HESION - 006/04 /  
25. Feb. 2022

BEWA  
VOR  
DIEB



# TESTING









# KEY OUTCOMES

**SILHOUETTE**

**PERFORATIONS**

**MULTI DIRECTIONAL  
TRACTION**

**PADDING**



# AMELIA ARUNDALE

## BIOMECHANIST/PLAYER

Wrote a dissertation on the biomechanics of Aussie Rules Football and then worked with the AFL-W League

“

**THE IMPACT ABSORPTION FROM THE KICKING PAD ... WOULD ALLEVIATE THE STRESS SEEN FROM DROP PUNT STYLE KICKS...THE SILHOUETTES ALLOW FOR DYNAMIC MOVEMENT AND THE RUCK MANS LANDINGS**

”







**HAVOC**



# ROVER

INTERNAL FOAM LINER  
FOR INCREASED PROTECTION

REINFORCED PADDING ON TONGUE  
FOR ENHANCED KICKING  
PERFORMANCE

VAMP PERFORATIONS  
FOR INCREASED BREATHABILITY

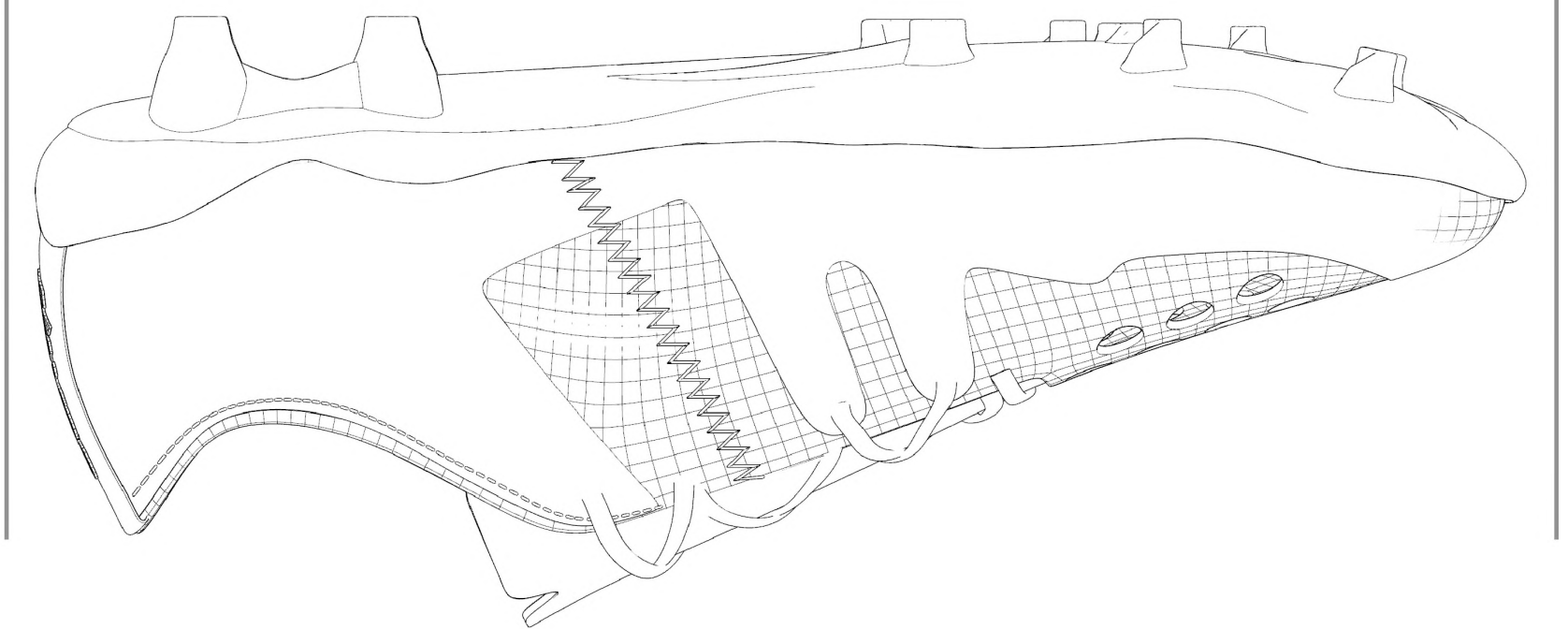
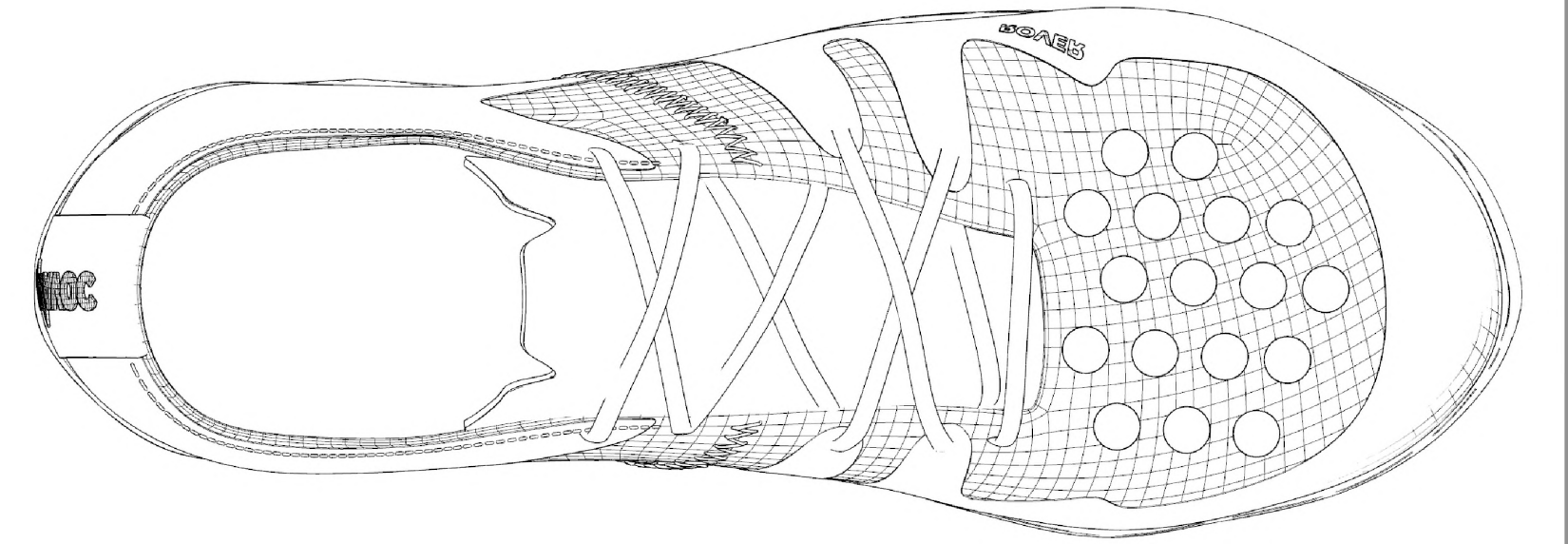
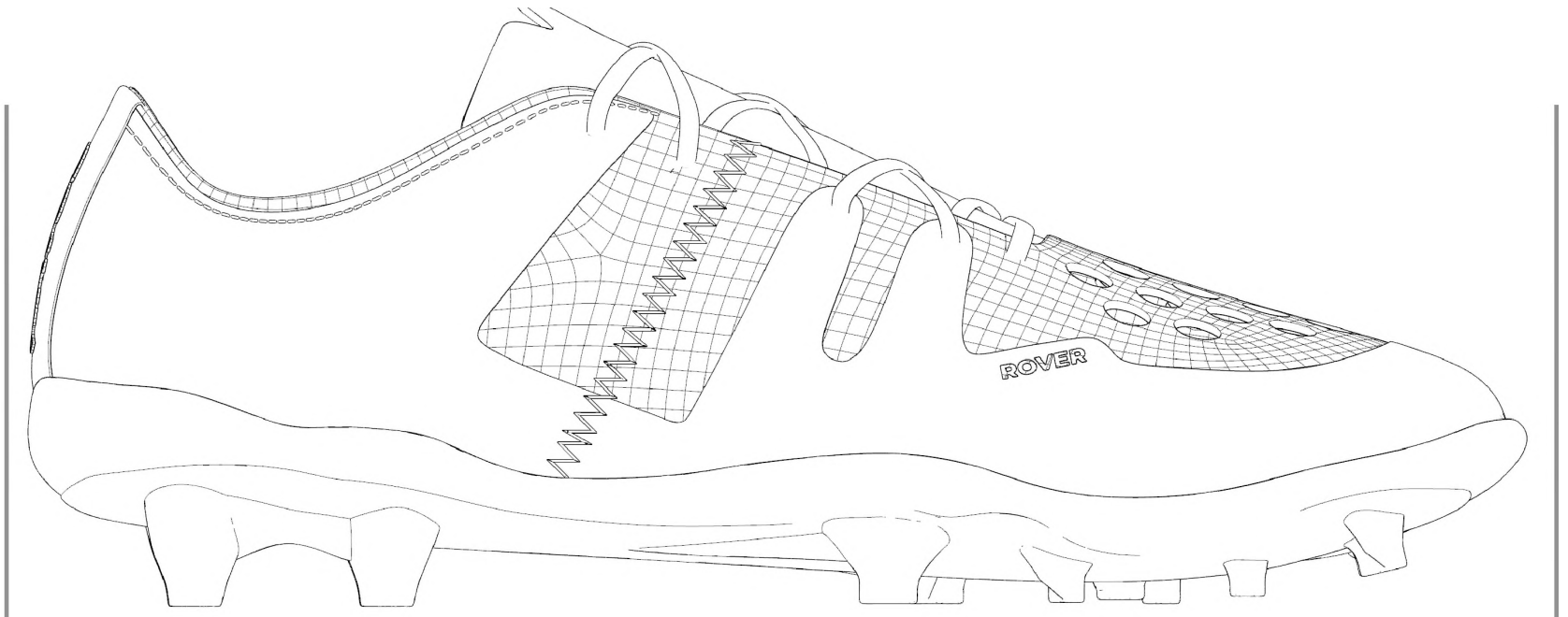
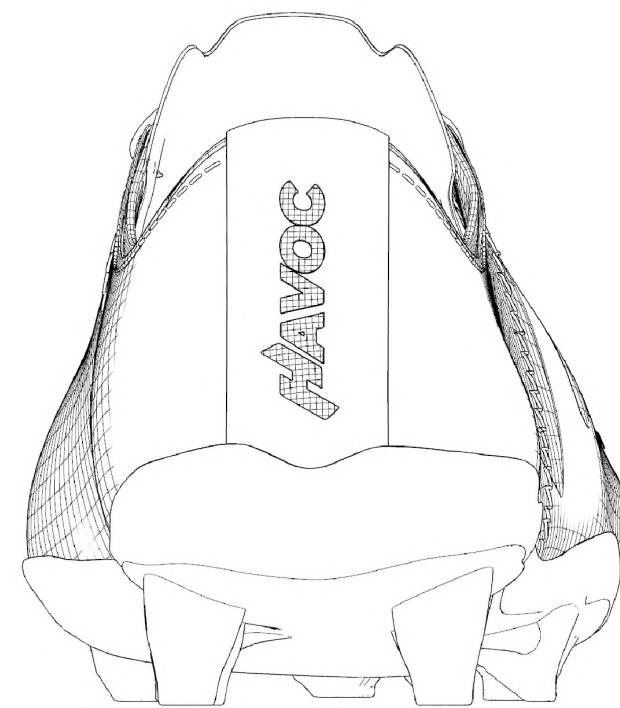
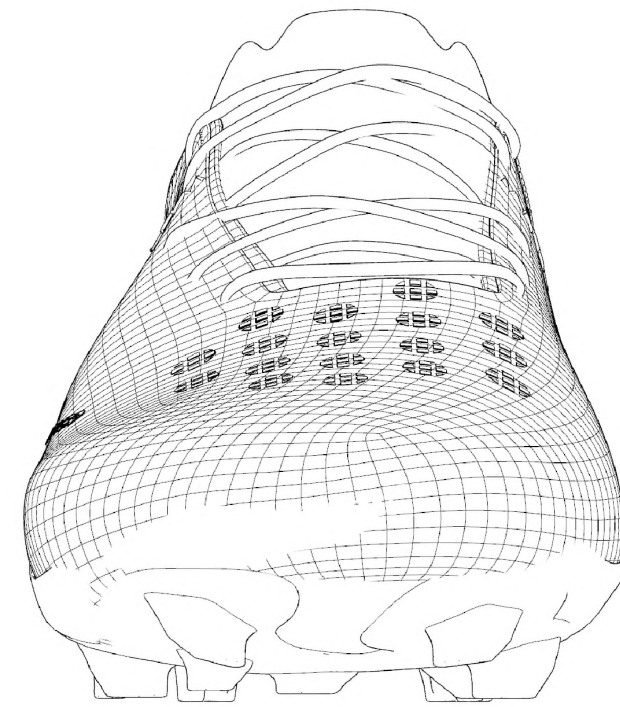
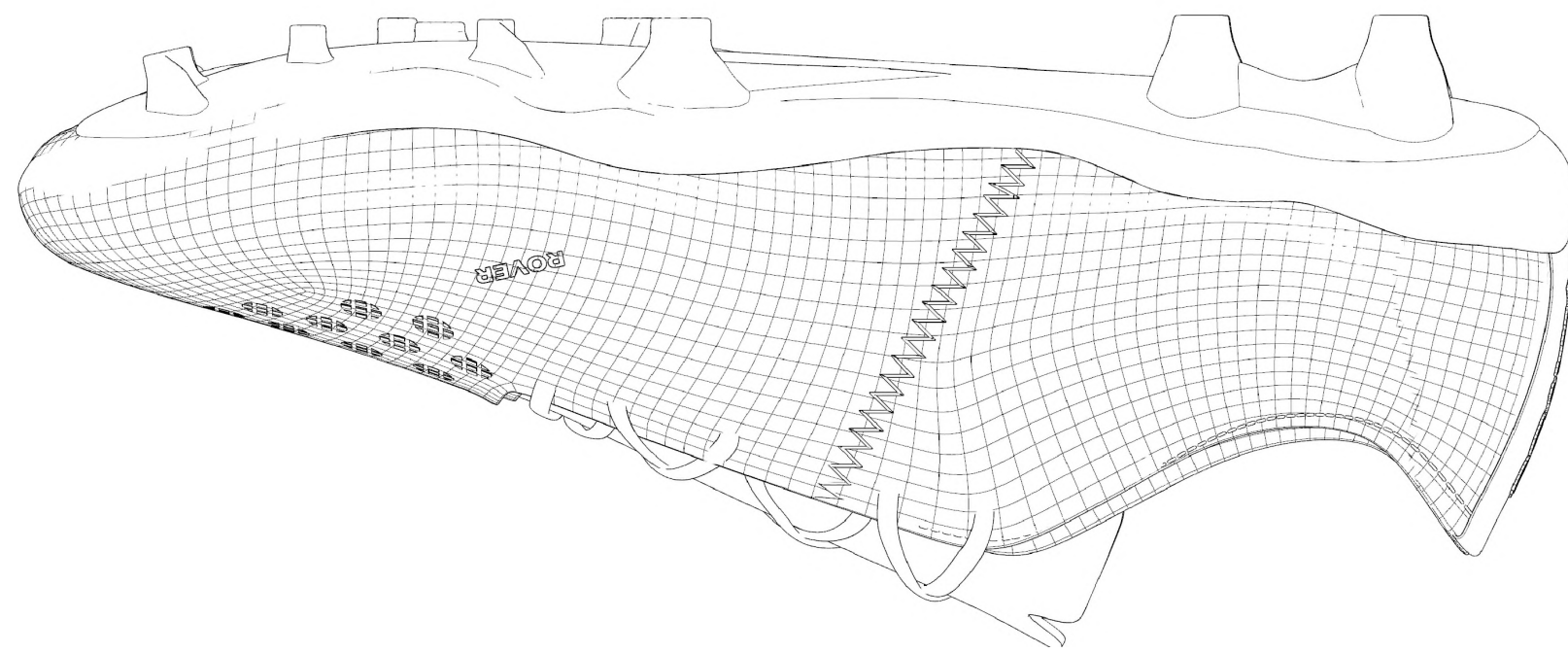
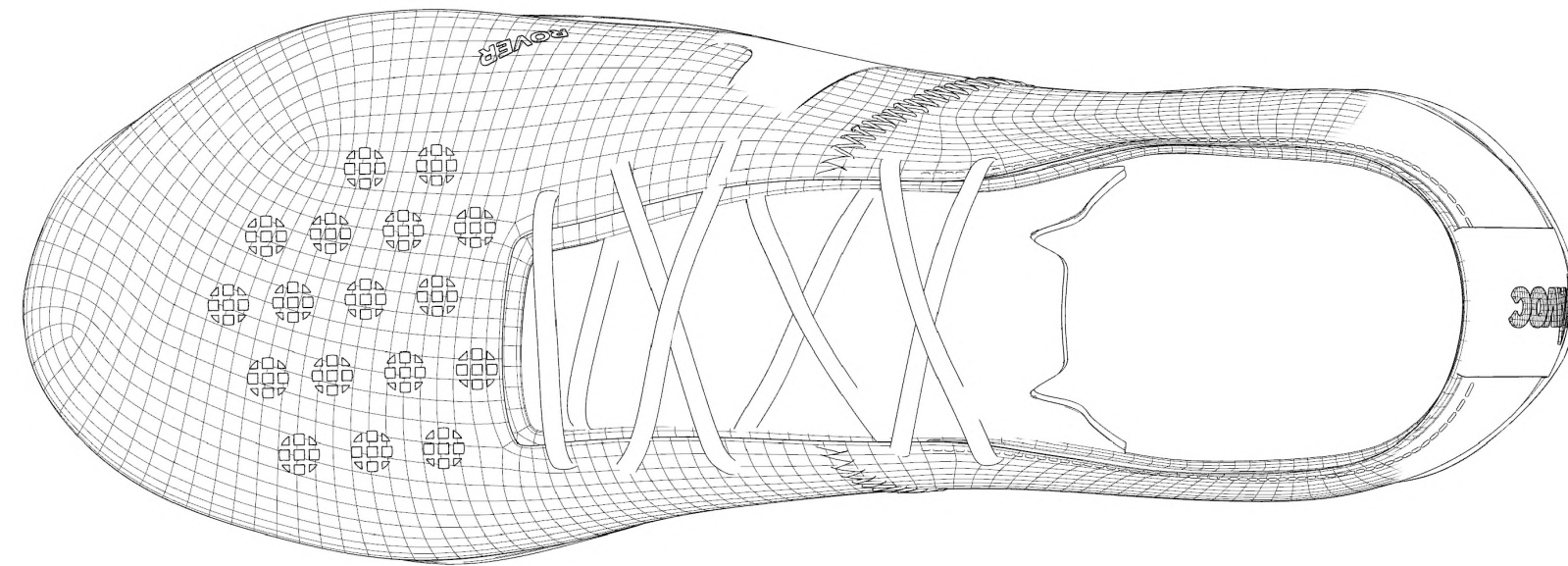
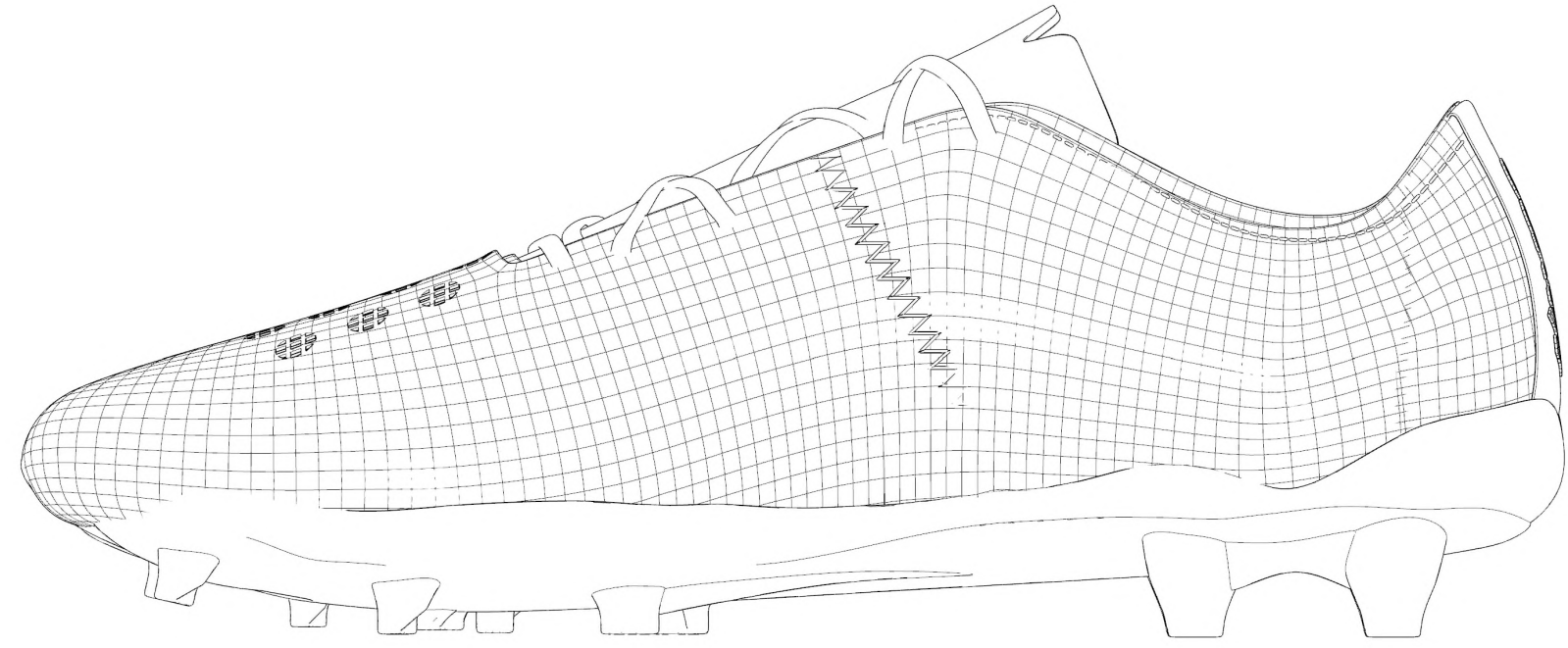
TPU OUTER SHELL  
FOR BETTER FIT

TPE INNER UPPER  
FOR INCREASED STRUCTURE AND  
LOCKDOWN





# TECHPACK





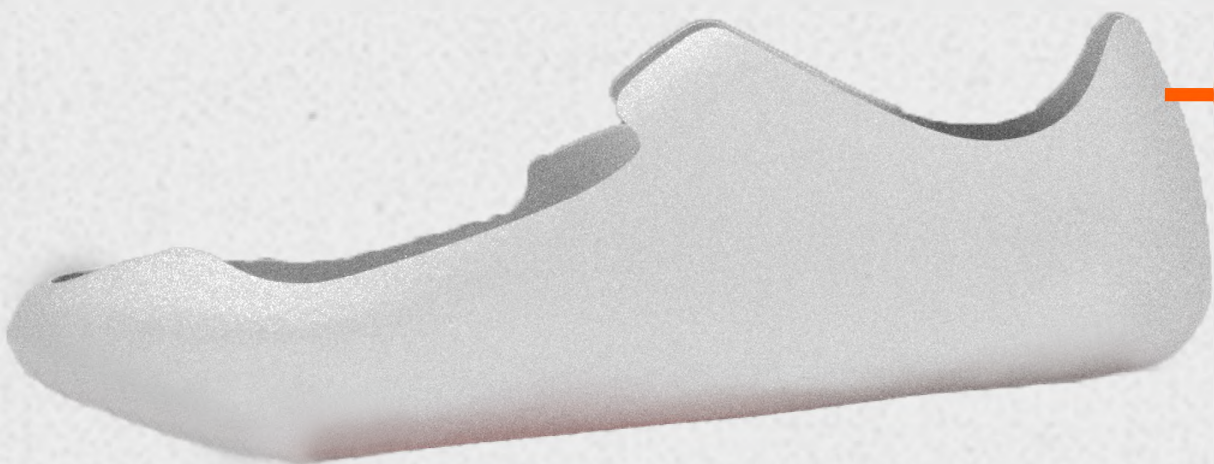
# FORWARD



TPE ENGINEERED KICKING PAD  
FOR MORE POWERFUL AND PRECISE  
SHOT ON TARGET



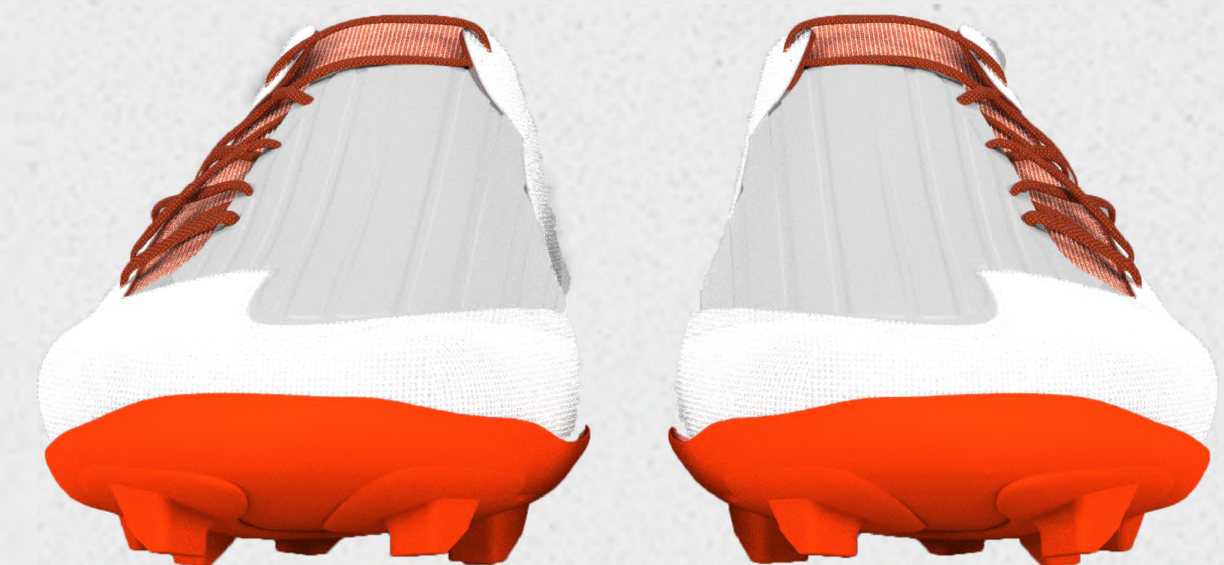
TPE INNER UPPER  
FOR INCREASED STRUCTURE



TPU OUTER SHELL  
FOR BETTER FIT

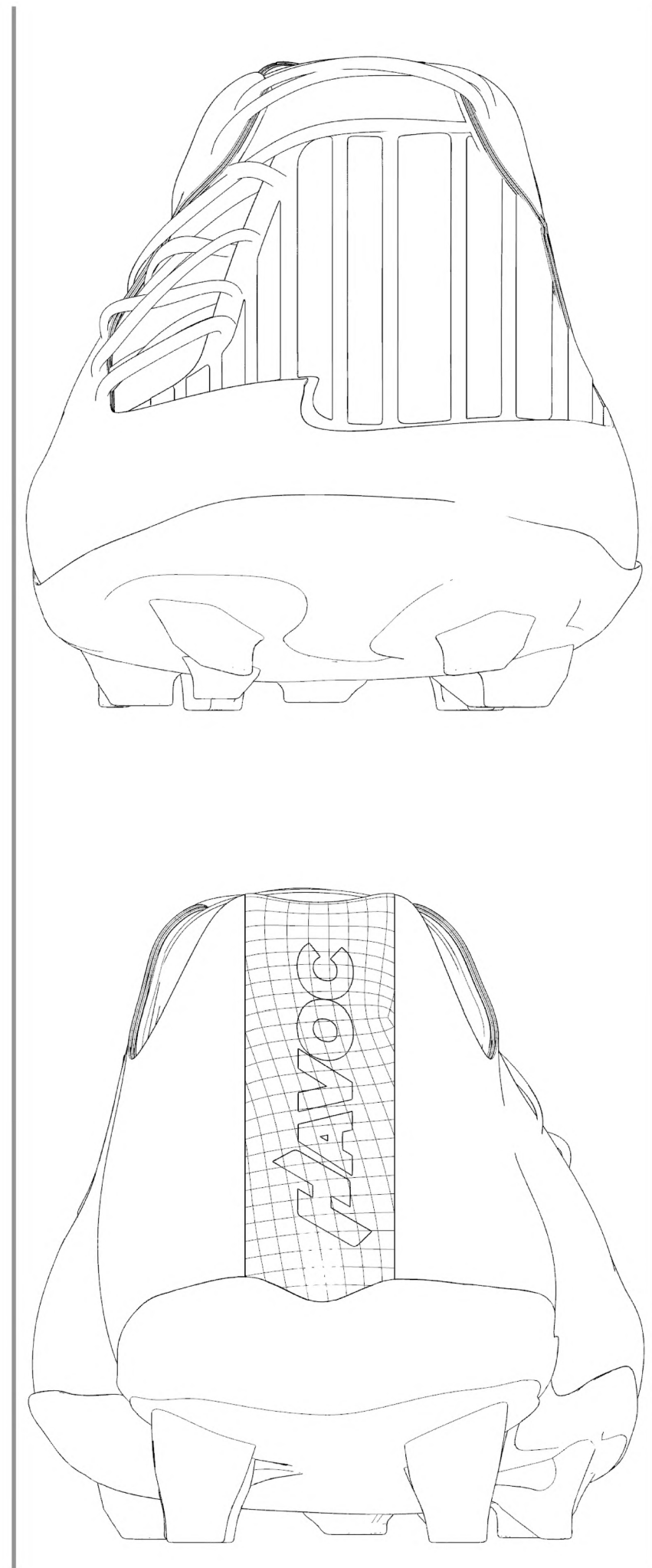
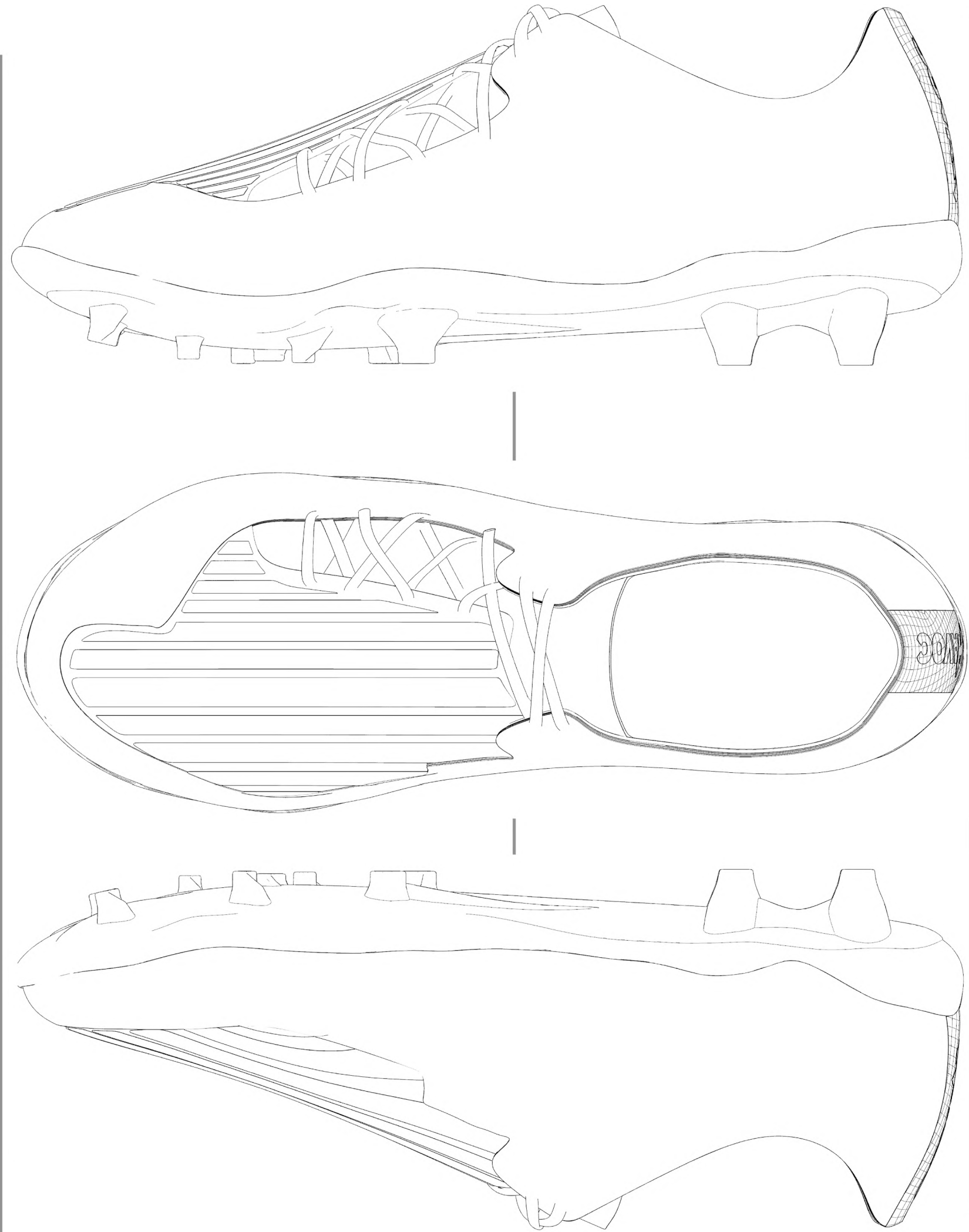


INTERNAL FOAM LINER  
FOR INCREASED PROTECTION





# TECHPACK





# RUCKMAN

MID TOP SILHOUETTE  
FOR INCREASED LOCKDOWN

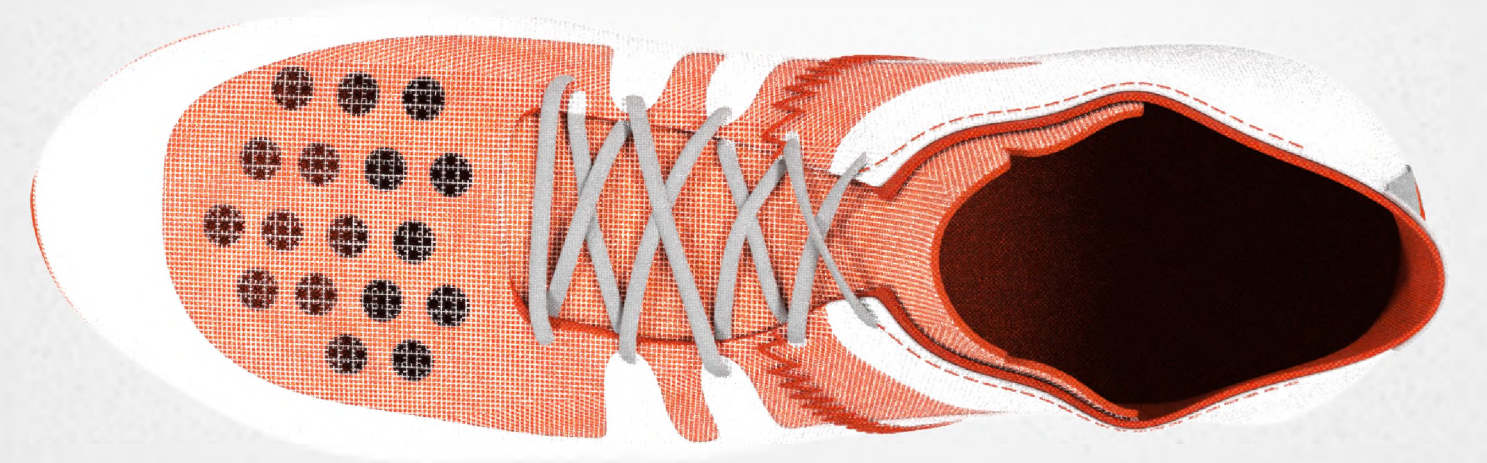
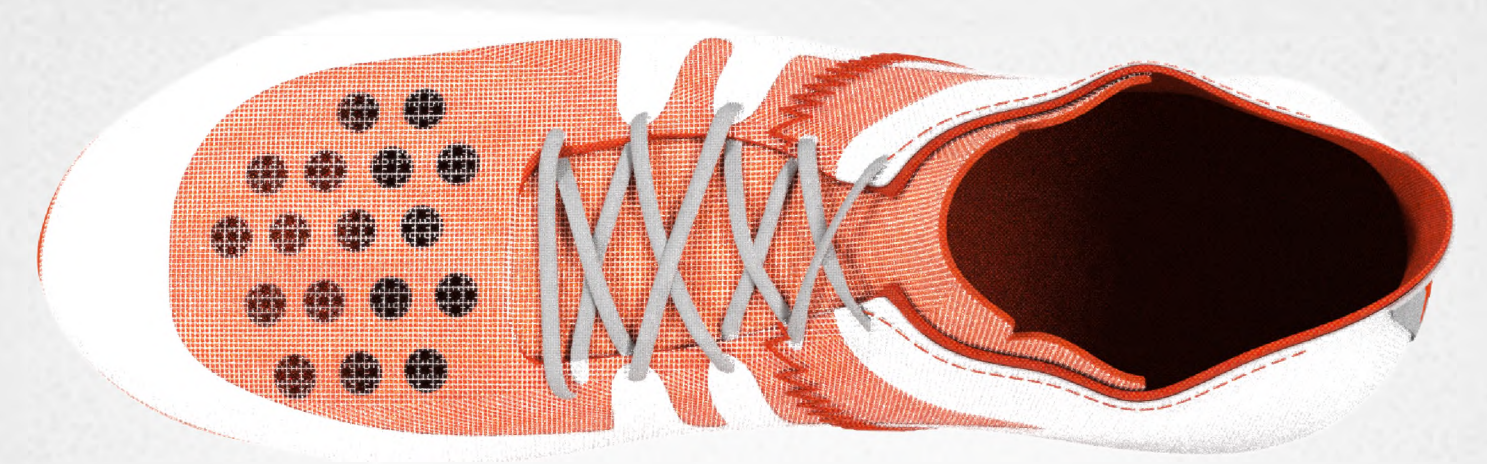
REINFORCED PADDING ON TONGUE FOR  
ENHANCED KICKING PERFORMANCE

VAMP PERFORATIONS  
FOR INCREASED BREATHABILITY

TPU OUTER SHELL  
FOR BETTER FIT

TPE INNER UPPER  
FOR INCREASED STRUCTURE AND  
LOCKDOWN

INTERNAL FOAM LINER  
FOR INCREASED PROTECTION



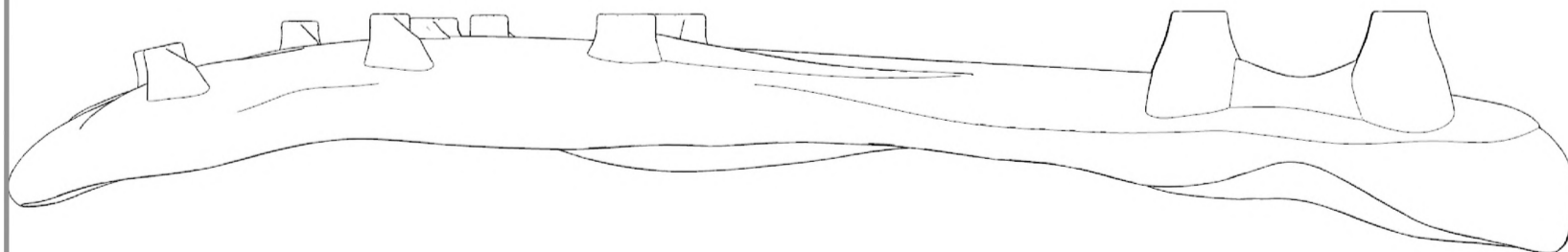
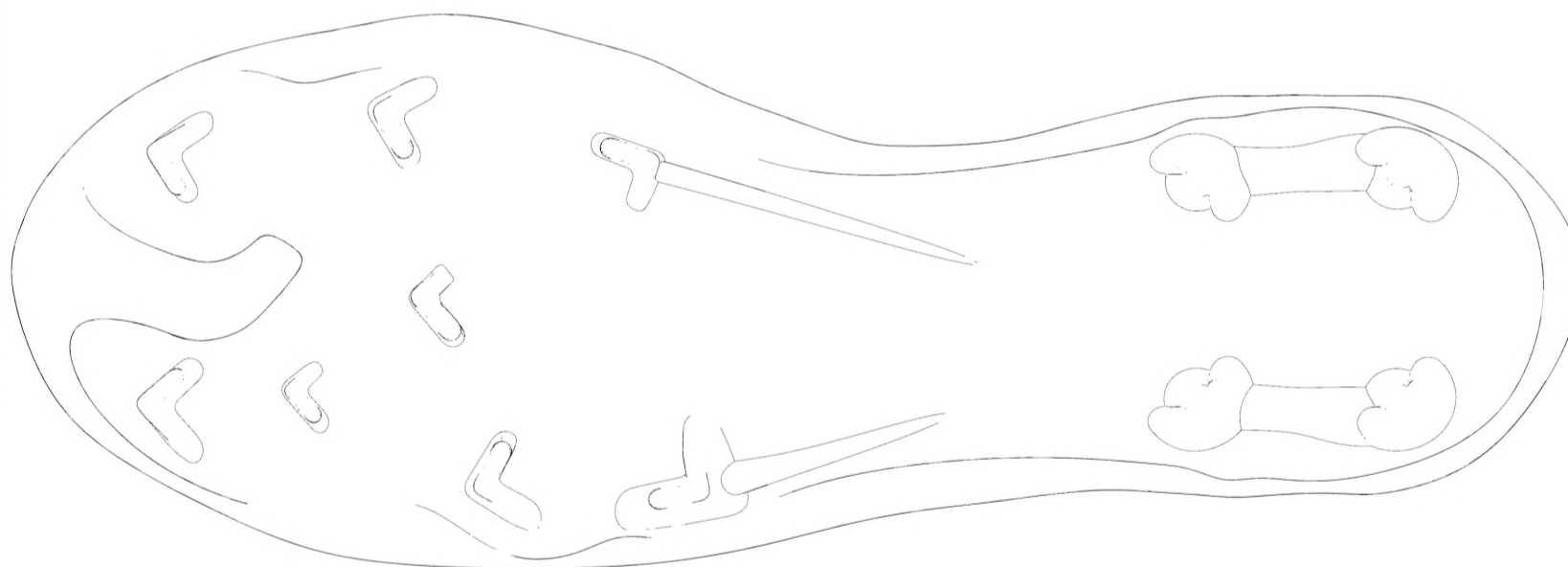
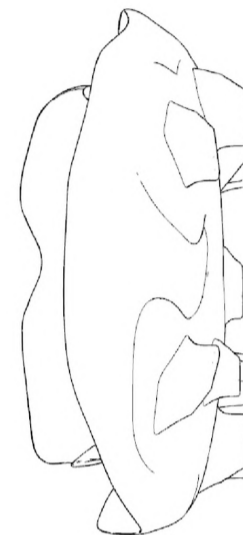
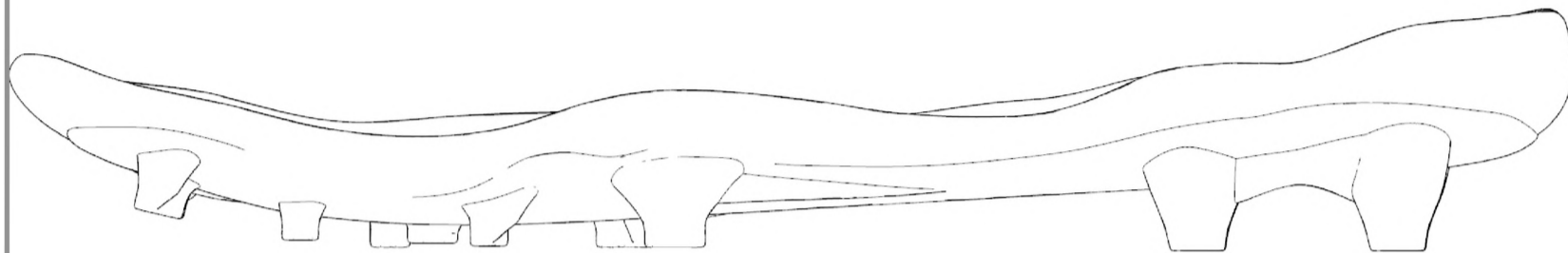


# TECHPACK

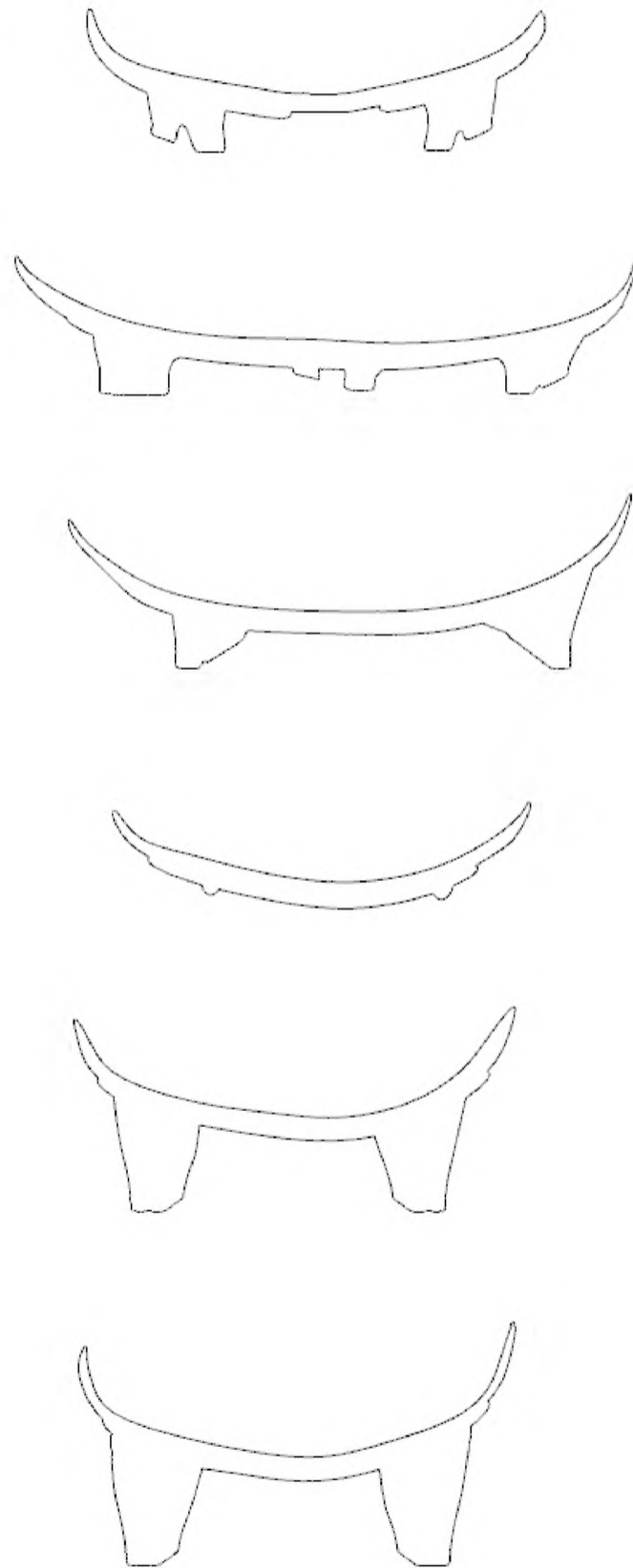
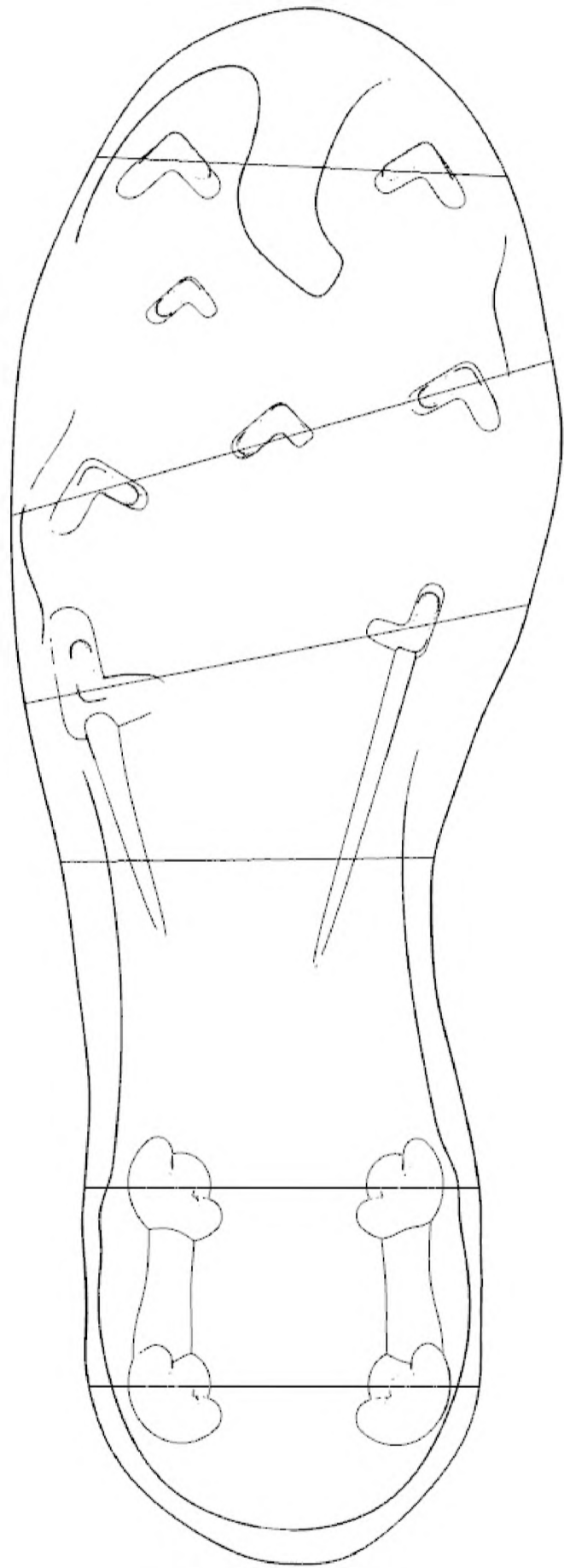




# TECHPACK

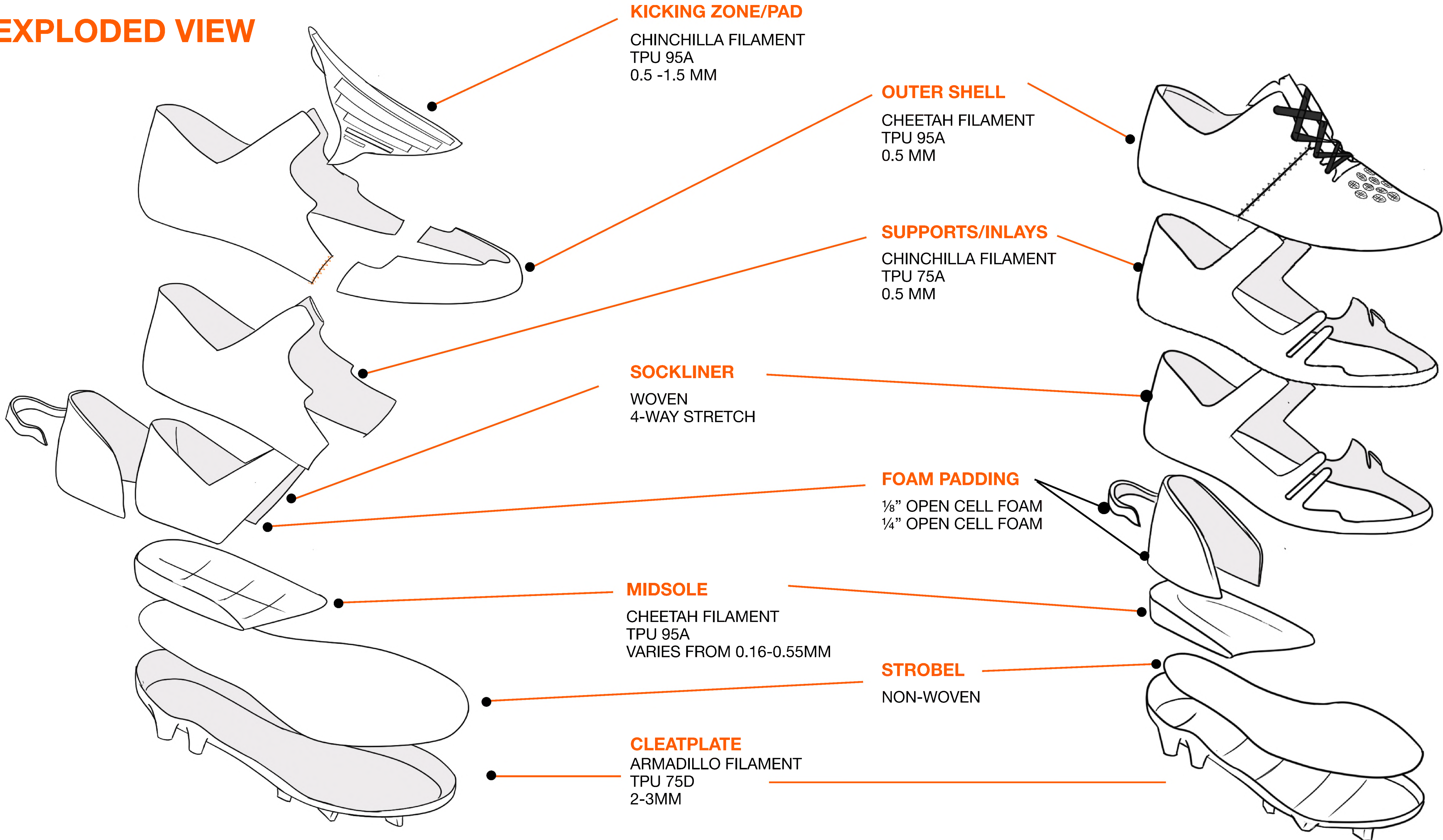








# EXPLODED VIEW





# PACKAGING





















**THANK YOU**





# ***SPECIAL THANKS***

***NATHAN SCHULTZE  
AMELIA ARUNDALE***

