



A3C – Final Submission

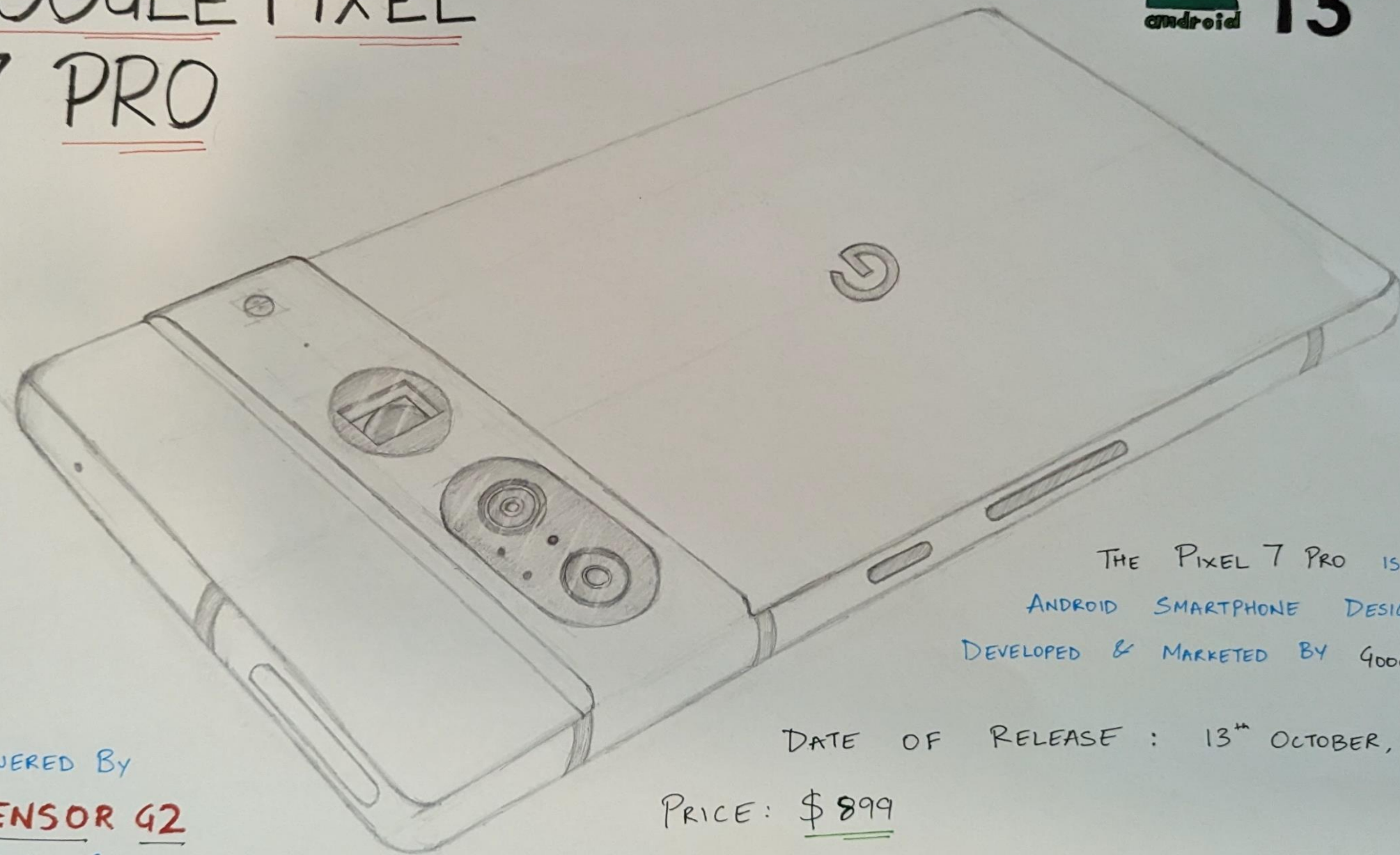
Siddhant Iyer

Detailing Sec- A

GOOGLE PIXEL 7 PRO



13



THE PIXEL 7 PRO IS AN
ANDROID SMARTPHONE DESIGNED,
DEVELOPED & MARKETING BY GOOGLE.

DATE OF RELEASE : 13TH OCTOBER, 2022

PRICE: \$ 899

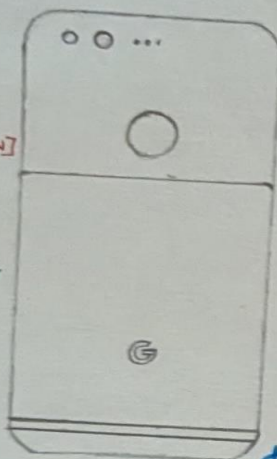
POWERED BY
TENSOR G2
SECOND GENERATION
GOOGLE SILICON

PIXEL

METAL & GLOSSY FINISH
CHIPPED TOO EASILY

NO
OIS
[OPTICAL
IMAGE
STABILISATION]

GOOGLE
ASSISTANT



HDR+
PHOTOGRAPHY

NO WATER+
DUST RESISTANT
RATING

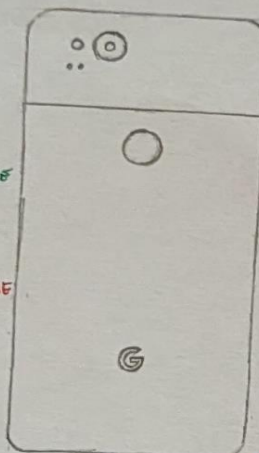
\$649

PIXEL 2

DISPLAY
ISSUES

CAMERA
PERFORMANCE

NO HEADPHONE
JACK



PIXEL
VISUAL CORE
AI + IMAGE
PROCESSING

BATTERY
LIFE

SOFTWARE

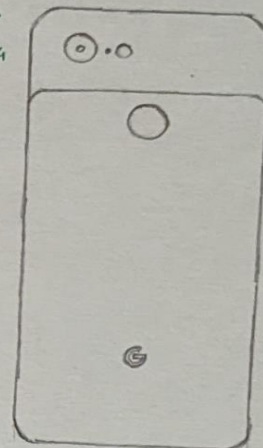
\$649

PIXEL 3

WIRELESS
CHARGING

BATTERY
LIFE

P-OLED
DISPLAY



PRICE
BUMP

WIDE ANGLE
SELFIE CAMERA

IP 68
WATER & DUST
RESISTANCE

\$799

PIXEL 4

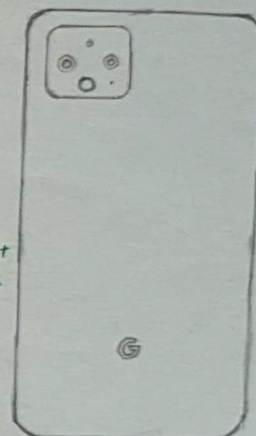
DISPLAY
QUALITY

MOTION
SENSE+
SOLAR RADAR

DUAL REAR
CAMERAS

90HZ DISPLAY

BATTERY
LIFE



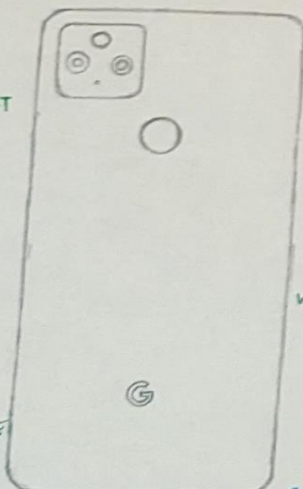
\$799

PIXEL 5a

5G
SUPPORT

SCREEN

AGGRESSIVE
PRICING



IP 67
WATER & DUST
RESISTANCE

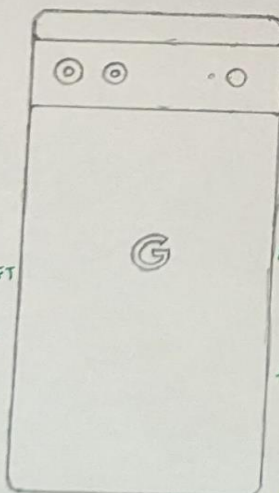
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PIXEL 6

DESIGN

GOOGLE
IN-HOUSE
MADE CHIPSET
THE TENSOR

SOFTWARE



CAMERA
SETUP, QUALITY
& OPTIMISATION

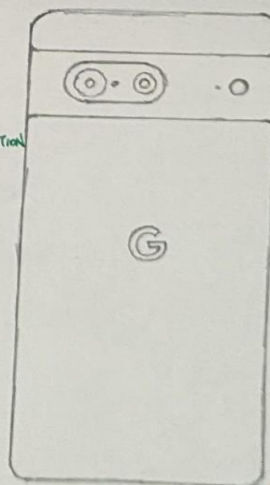
AGGRESSIVE
PRICING

\$599

PIXEL 7

CAMERA
& OPTIMISATION

BATTERY
LIFE



BRIGHT
SCREEN

SOFTWARE

TENSOR
G2

\$599

PIXEL 7 PRO

GOOGLE'S
GREATEST
SMARTPHONE
TO DATE

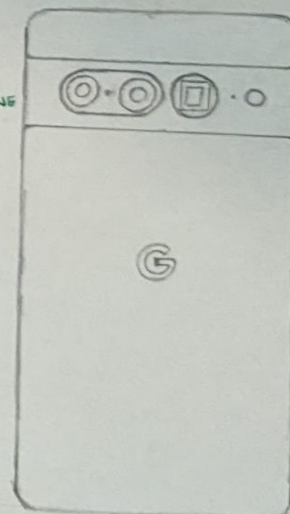
BATTERY
LIFE

SOFTWARE

120HZ VARIABLE
REFRESH RATE

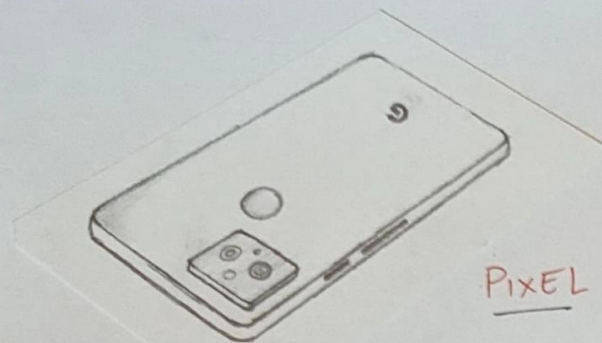
3 CAMERA
SETUP

TENSOR
G2

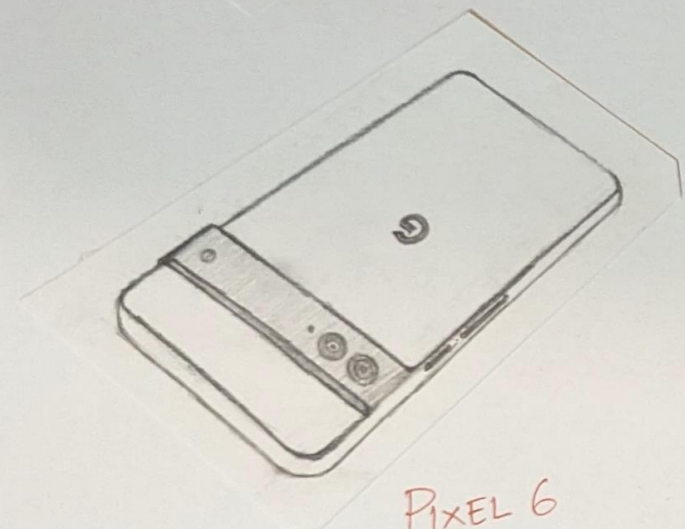


\$899

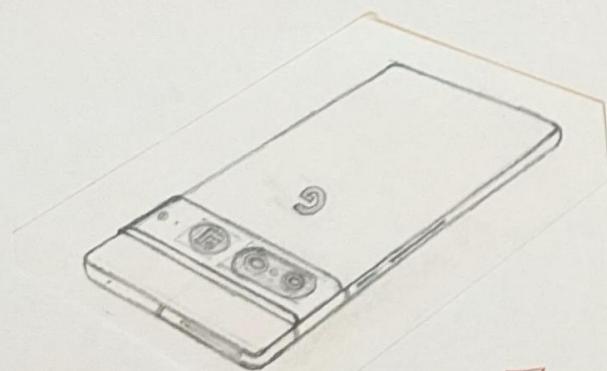
EVOLUTION OF PIXEL PHONES



PIXEL 5a

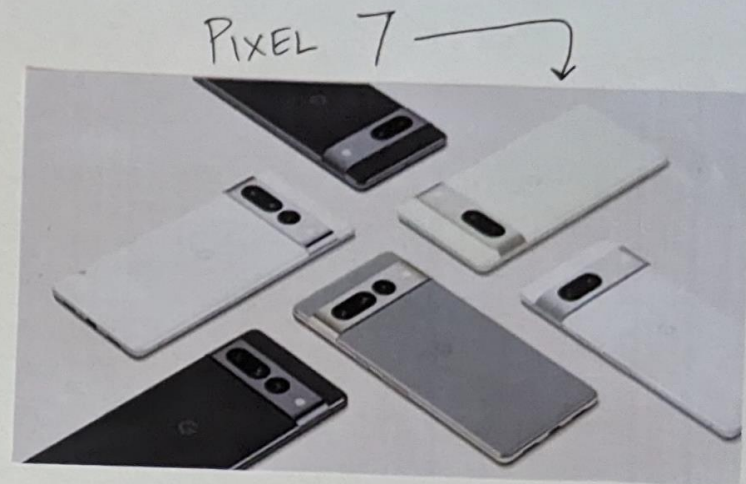
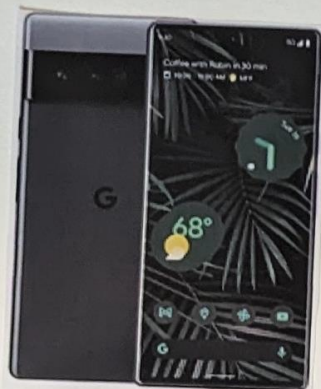


PIXEL 6



PIXEL 7 PRO

PIXEL 5a, 6 & 7 PRO



PIXEL 7

PIXEL 7 SERIES



PIXEL 7 PRO

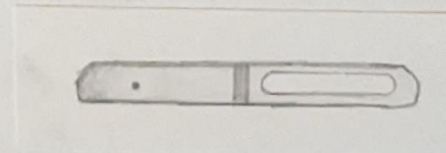
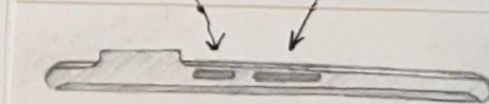
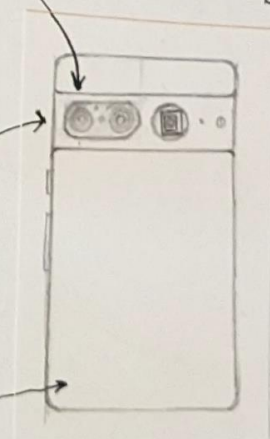
ALUMINIUM
FRAME

CAMERA
ARRAY

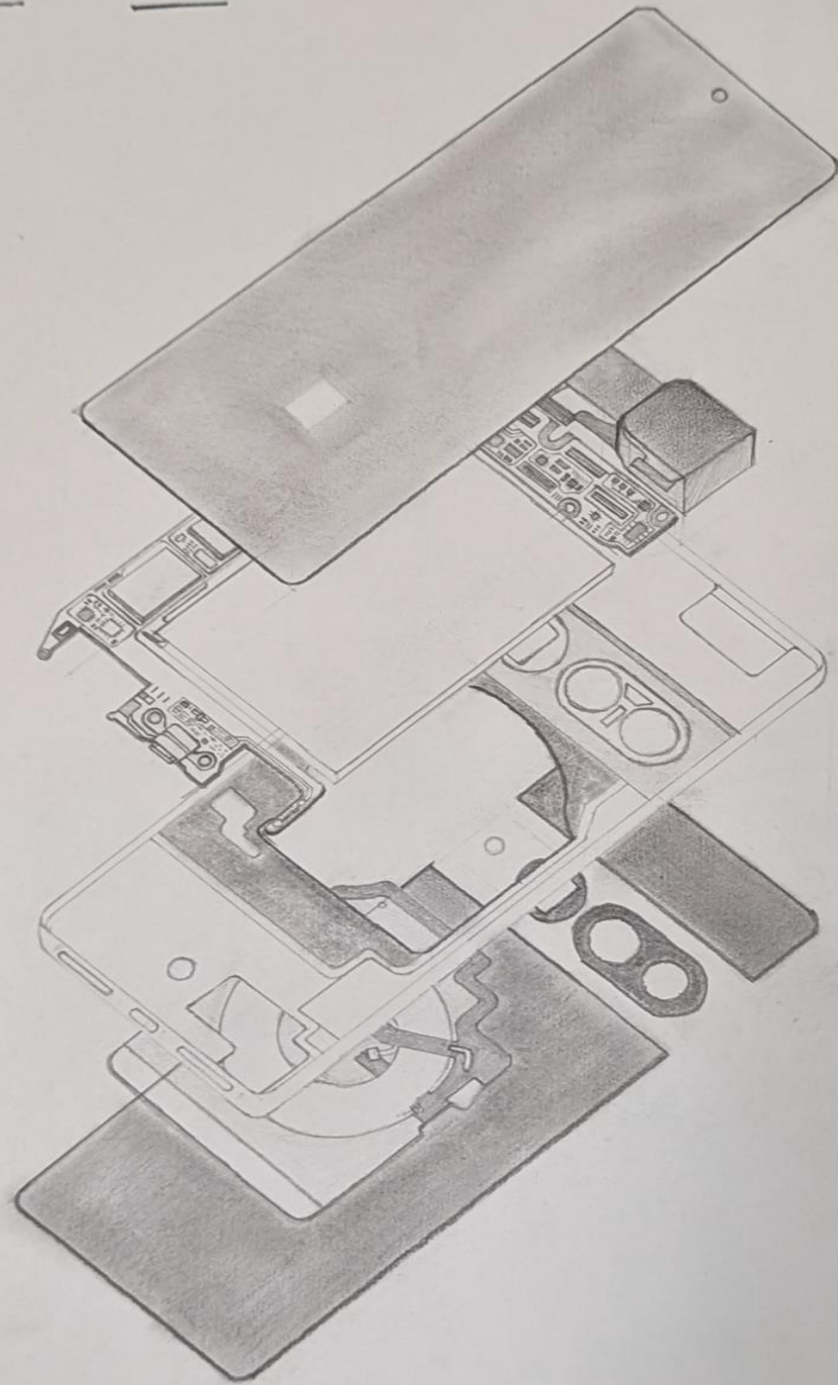
GLASS BACK

POWER
BUTTON

VOLUME
BUTTON



EXPLODED VIEW



PRICING, BRANDING, PLACE OF ORIGIN & MANUFACTURING PROCESS



PRICE: \$ 899

MANUFACTURING PLANT: CHINA AND VIETNAM

MANUFACTURING PROCESS:



1. PROTOTYPING
2. SOFTWARE TUNING & INSTALLATION
3. TESTING PHASE
4. MASS PRODUCTION
5. PACKAGING
6. SHIPMENT

ABOUT THE FRAME

THE FRAME, WHICH INCLUDES THE REAR CAMERA VISOR, IS MILLED OUT OF ~~OF~~ A SINGLE PIECE OF ALUMINIUM.

DESIGN ELEMENTS:

ALUMINIUM VISOR CAMERA NOTCH

CIRCULAR & PILL SHAPED CAMERA CUTOUTS

VOLUME & POWER BUTTON ON THE SAME SIDE

VISOR CAN BE USED TO PROP THE PHONE UP

GLASS BACK WITH GOOGLE BRANDING

DOWN WARDS FACING SPEAKERS





PIXEL 7 PRO

FUNCTIONS, UTILITIES, FEATURES & MATERIALS

FEATURES:

NFC, Qi-CHARGING, MULTI CAMERA SETUP, C-TYPE CHARGING, MULTI-SPEAKER SETUP, LARGE BATTERY, REVERSE CHARGING, FINGERPRINT DETECTION, FACE RECOGNITION

VOICE COMMUNICATION:

AUTOMATIC REDIAL, LAST NUMBER RECALL, CALLER ID, CALL LOGGING, SPEAKERPHONE, SPEED DIALING, VOICE ACTIVATED DIALING, BLOCK UNWANTED CALLERS, SILENT MODE, CUSTOMISABLE RINGTONES

• IMAGE POST PROCESSING

• CAMERA ARRAY

• NFC, Qi CHARGING, Wi-Fi, BLUETOOTH

TEXT & DATA TRANSFER:

PHOTOS, DOCUMENTS, TEXT, INTERNET ACCESS, VIDEOS, WORD PROCESSING, SPREADSHEET, DOCUMENT VIEWING & SHARING.



OTHER APPLICATIONS:

CALENDAR, CALCULATOR, CONTACT LIST, WORD PROCESSING, SPREADSHEET & DOCUMENT VIEWING & EDITING & SHARING, CAMERA, PAYMENT APPS, MOBILE BANKING, INTERLINKING, SOCIAL NETWORKING, GAMING.

MATERIALS:

- ALUMINIUM → FRAME → POLISHED ALUMINIUM
- GLASS → BACK, DISPLAY, LENSES
- PLASTIC → INTERNAL COMPONENTS
- COPPER → INTERNAL WIRING & NFC COILS
- GOLD → CONTACT PADS
- LITHIUM ION → BATTERY

PICTURES OF THE PIXEL 7 PRO



THE COMPETITORS

ONEPLUS:
ONEPLUS 11 5G



APPLE: IPHONE 14 PRO
MAX

THE PIXEL ECOSYSTEM



L-R: PIXEL WATCH, PIXEL 6A (TOP), PIXEL 7 PRO (MIDDLE), PIXEL
BUDS, PIXEL 7 (BOTTOM), PIXEL TABLET (TOP RIGHT).



VIVO: VIVO X80
PRO 5G



MOTOROLA: MOTOROLA
EDGE 30 ULTRA 5G



SAMSUNG: SAMSUNG S23
ULTRA 5G

PROJECT BRIEF

THE AIM IS TO PRODUCE A SMARTPHONE THAT PRIORITIZES MODULARITY, REPAIRABILITY AND UPGRADABILITY. THIS GIVES THE USER MORE CONTROL AND PERSONALISATION OVER THEIR DEVICES. THIS WOULD EXTEND THE PRODUCT LIFECYCLE, REDUCE THE NEED FOR COMPLETE DEVICE UPGRADES, THUS REDUCING ELECTRONIC WASTE. THE RESULTING PRODUCT WILL BE A SLEEK, MINIMAL AND ADAPTABLE DEVICE WITH A CENTRAL MODULAR SPINE THAT HOUSES INTERCHANGEABLE COMPONENTS. THIS WOULD PROVIDE THE USERS, A MODULAR AND REPAIRABLE DEVICE, THAT IS SUSTAINABLE AND USER-CENTRIC.

THINGS THAT USERS LOOK OUT FOR WHILE BUYING A SMARTPHONE:

<u>PRIMARY</u>	<u>SECONDARY</u>
PRICE	PERFORMANCE
CAMERA	ACCESSORIES & ECOSYSTEM
BATTERY LIFE	DISPLAY SIZE & QUALITY
STORAGE	AUDIO QUALITY
OS	ENVIRONMENTAL IMPACT
BRAND REPUTATION	WATER + DUST RESISTANCE
SOFTWARE UPDATES	ERGONOMICS
	REVIEWS & RATINGS
	PREVIOUS ITERATIONS

SOME PAIN POINTS FOR USERS:

- REPAIRS GENERALLY EXPENSIVE
- 3RD PARTY REPAIRS NOT TRUST WORTHY
- LACK OF REPAIRABILITY
- UPGRADABILITY ONLY SOFTWARE BASED
- CAN'T TWEAK OR UPGRADE HARDWARE
- CONSTANT RELEASE OF NEW GENERATION OF PHONES
- VERY LIMITED HARDWARE LEVEL PERSONALISATION / CUSTOMISATION.

THERE WAS AN ATTEMPT:

SOME WORKED, SOME DIDN'T.

1. MOTO ROLA → MOTO Z → MODULAR SMARTPHONE WITH ACCESSORIES (MOTO MODS)
2. GOOGLE → PROJECT ARA → MODULAR SMARTPHONE PROJECT.
3. FRAMEWORK INC. → EASILY REPAIRABLE & UPGRADEABLE LAPTOPS.

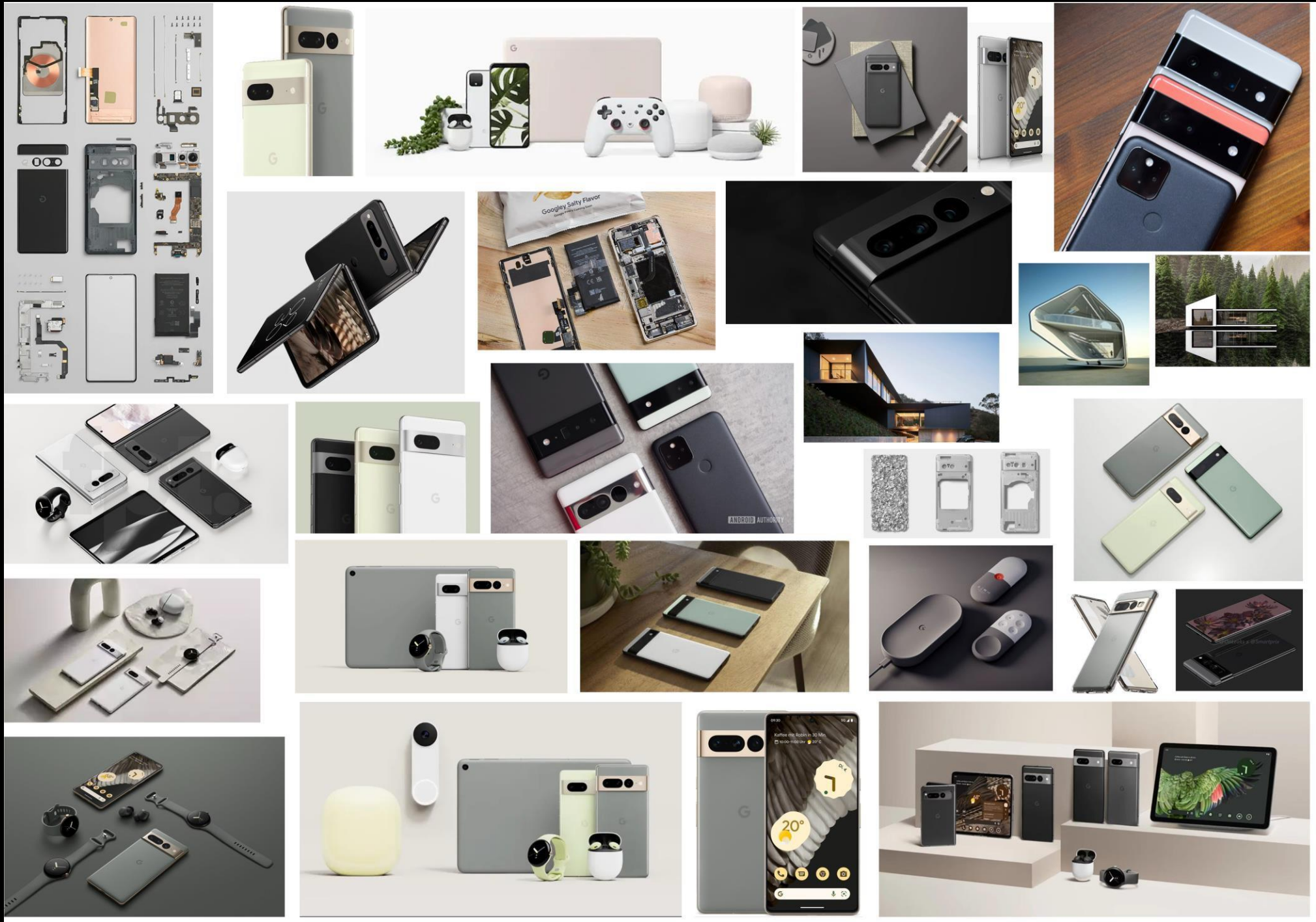
AREAS TO DEVELOP:

MODULARITY → COULD OFFER MORE PERSONALISATION TOO [Ex: MOTO Z & MOTO MODS]

REPAIRABILITY → } EASY TO FIX SMALL ISSUES &
UPGRADABILITY → } UPGRADE TO LATEST SPEC WITH MINIMAL WASTE GENERATED [Ex: FRAMEWORK LAPTOPS]

WHAT DOES THE EXISTING PHONE GET RIGHT?

- EXCELLENT CAMERA & POST PROCESSING & OPTIMISATION
- CLEAN, SMOOTH STOCK ANDROID EXPERIENCE [CLEAN UI AND OS]
- GOOD BATTERY LIFE, DECENT CHARGING SPEED + WIRELESS & REVERSE CHARGING
- SUPER COMPETITIVE PRICING → CHEAPEST AMONG COMPETITORS
- PROCESSOR → TENSOR G2 → GOOD FOR AI & ML CAPABILITIES THAT GOOGLE IS FAMOUS FOR.
- 5 YEARS SECURITY UPDATES
- DESIGN LANGUAGE → ABLE TO SEPARATE ITSELF FROM OTHER SMARTPHONES & BRANDS
- OPTICAL FINGERPRINT SENSOR, FACE UNLOCK, COOLING BETTER THAN PREVIOUS GEN.
- GOOD AUDIO QUALITY & HAPTICS.



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Buyer Persona



Needs: A phone with top-notch performance, high-quality camera capabilities, ample storage, and compatibility with emerging technologies like AR and VR.

Demographics: Aaron is a 28-year-old software developer who lives in a tech-forward urban environment. They have a high income and are always on the lookout for the latest gadgets.

Goals: Aaron is interested in a mobile phone that offers cutting-edge features like the fastest processor, high-resolution camera, and a vibrant display. They want a device that supports intensive multitasking, mobile gaming, and app development.

Behavior: Aaron follows tech blogs, participates in online forums, and frequently upgrades their devices to stay ahead of the curve. They prioritize performance, innovative features, and seamless integration with other tech devices.

: : : : : :

Buyer Persona



Needs: A phone with advanced security options (such as biometric authentication), strong battery life, productivity apps, and compatibility with business software.

Demographics: Bailey is a 35-year-old corporate executive who travels frequently for meetings and conferences. They need a reliable and efficient phone to stay connected and productive.

Goals: Bailey is looking for a mobile phone that offers strong security features, excellent battery life, and seamless integration with productivity tools. They need a device that can handle emails, video conferencing, document editing, and project management on the go.

Behavior: Bailey values professionalism and efficiency. They use their phone for work-related tasks more than personal use. They prioritize a phone that supports multitasking and has a streamlined user interface.

: : : : : :

Buyer Persona



Needs: A phone with a high-quality front and rear camera setup, creative software for content editing, a visually appealing design, and easy integration with social media apps.

Demographics: Sasha is a 22-year-old college student majoring in marketing. They are an avid social media user and content creator, focusing on platforms like Instagram, TikTok, and Snapchat.

Goals: Sasha wants a mobile phone that excels in photography and video capabilities, with features like AI-powered filters, video editing tools, and seamless social media sharing. They also prioritize a trendy and stylish design.

Behavior: Sasha spends a lot of time on social media platforms, capturing moments, editing photos and videos, and engaging with their followers. They value a phone that helps them create and share content effortlessly.

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Buyer Persona

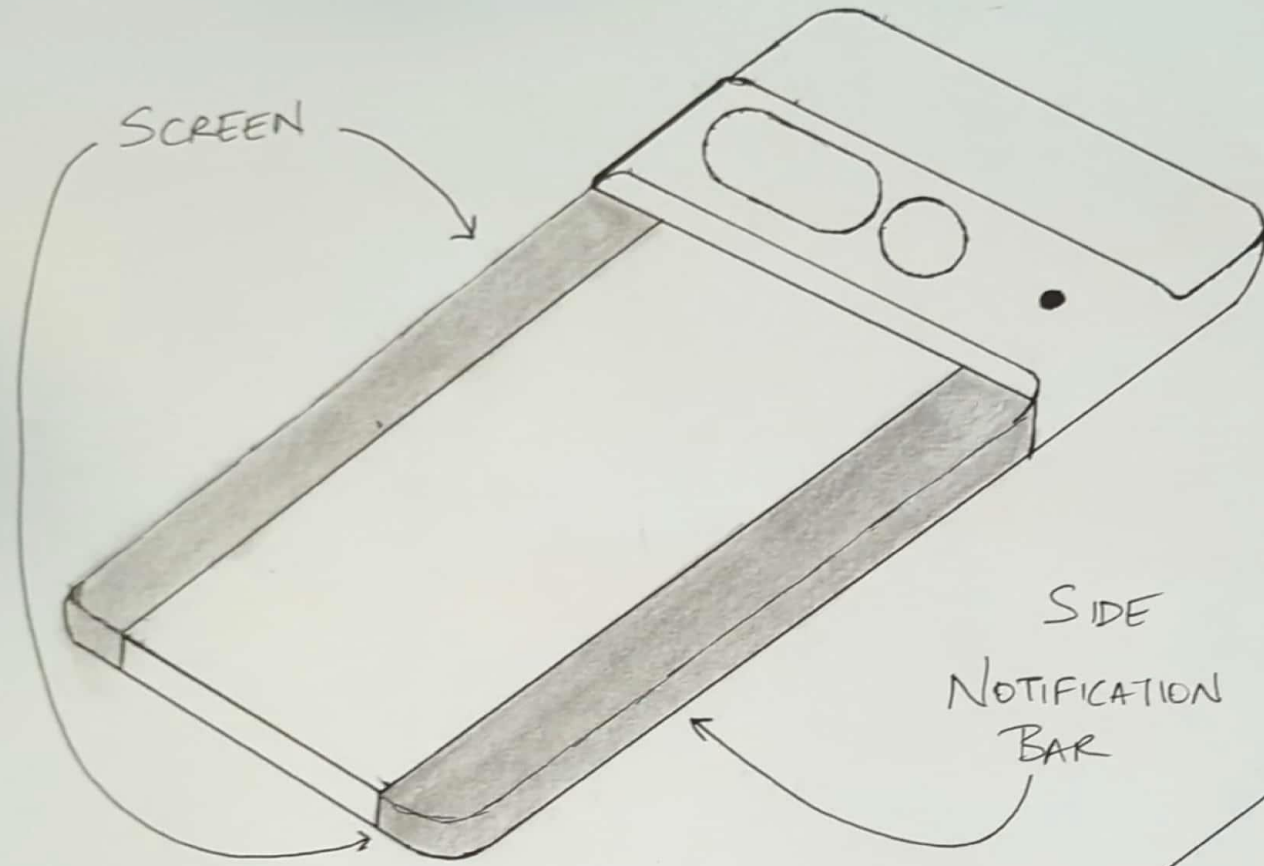


Needs: A phone with good battery life, multitasking capabilities, access to educational apps, a decent camera for casual photography, and support for messaging and social media.

Demographics: Alex is an 18-year-old high school student who is preparing for college. He lives in a suburban area and is an active participant in extracurricular activities.

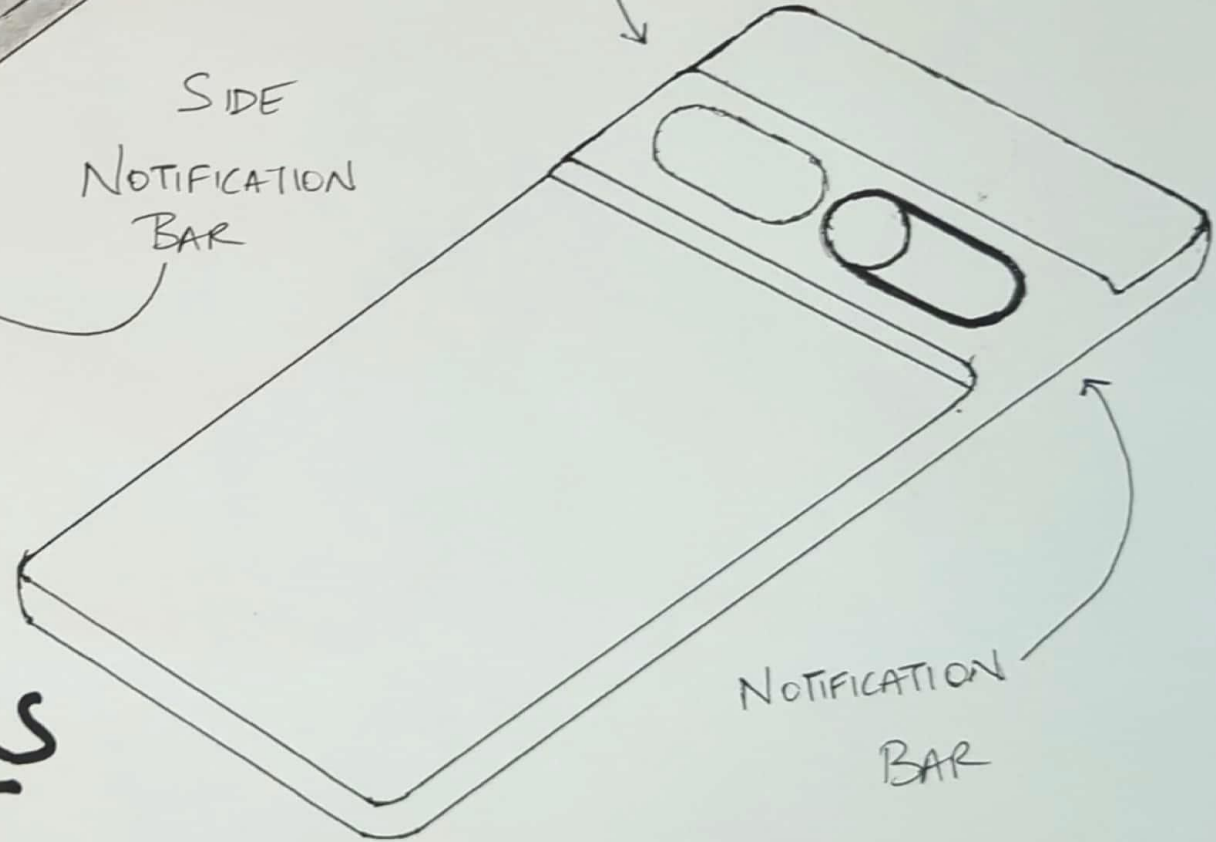
Goals: Alex is looking for a mobile phone that helps him stay organized, manage his studies, and connect with friends and classmates. He values affordability and features that aid his educational journey.

Behavior: Alex uses his phone for note-taking, accessing educational apps, setting reminders for assignments, and staying updated on social media. She also enjoys taking casual photos and using messaging apps to stay in touch.



TOP
NOTIFICATION
BAR

SIDE
NOTIFICATION
BAR



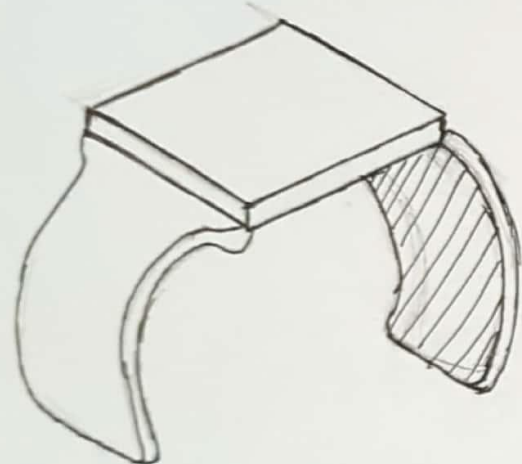
NOTIFICATION
BAR

PHONE WITH
NOTIFICATION BARS

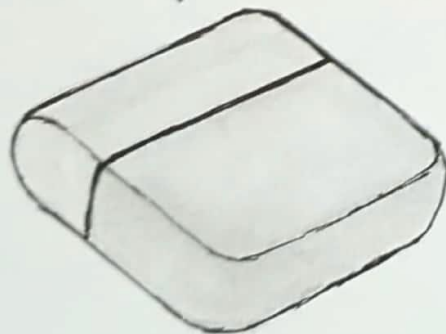
PHONE + SMARTWATCH / EARPHONES

SEAMLESS INTEGRATION
BETWEEN THE CHOSEN
DEVICES.

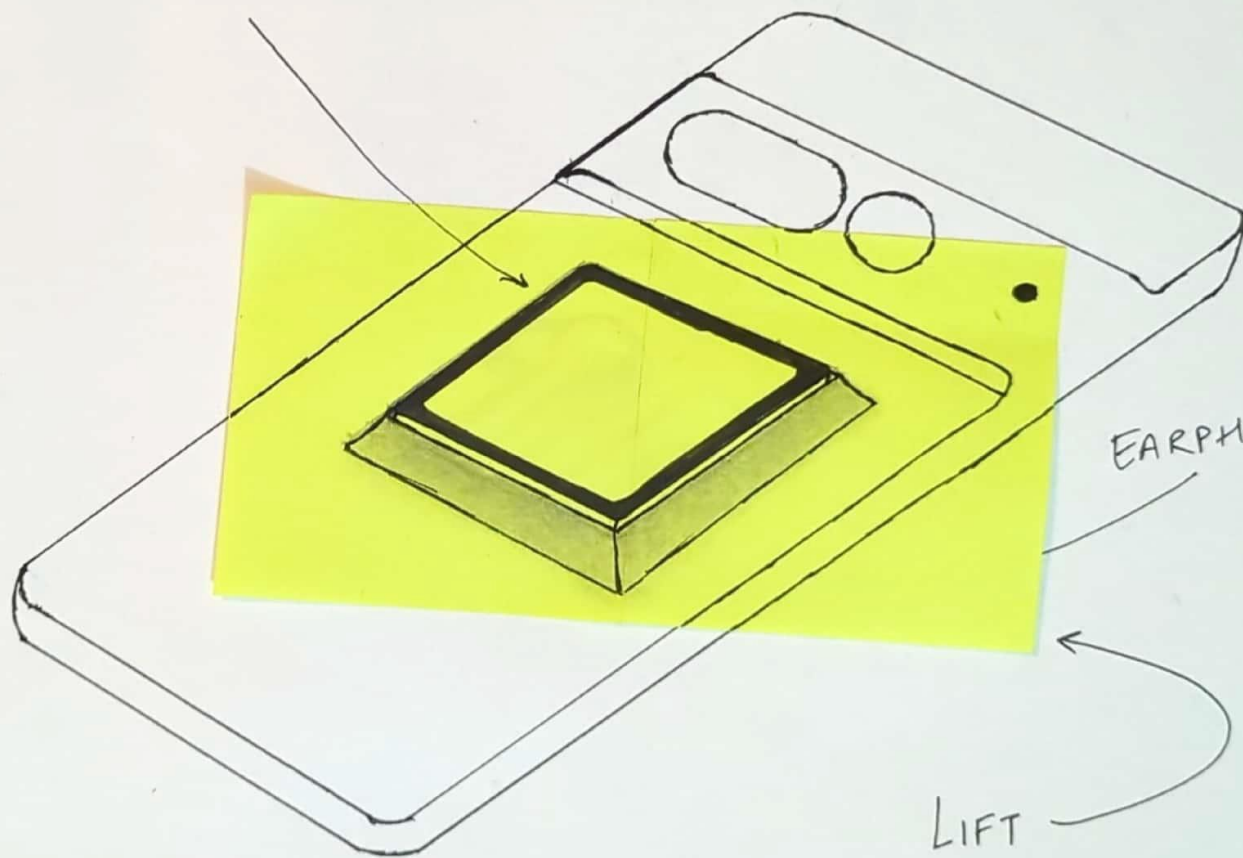
SMARTWATCH



EARPHONES



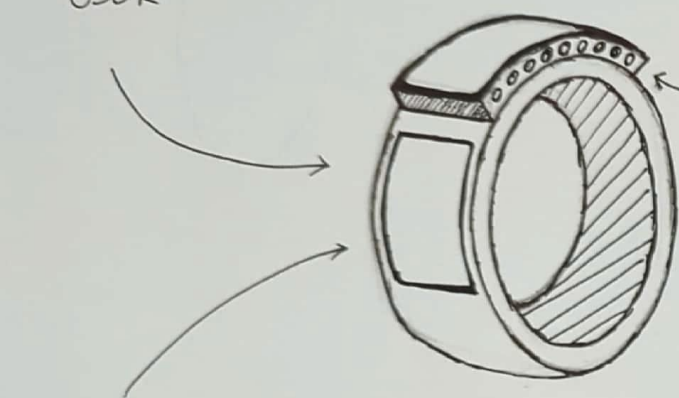
SMARTWATCH



EARPHONES

LIFT

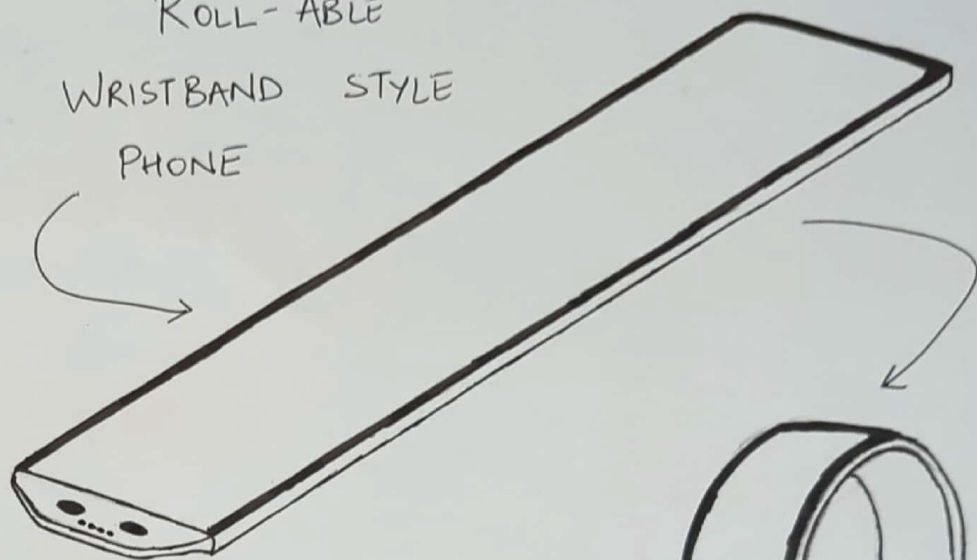
WRISTBAND
THAT PROJECTS ONTO
THE PALM OF THE
USER



TOUCH SCREEN

PROJECTOR
LENSES

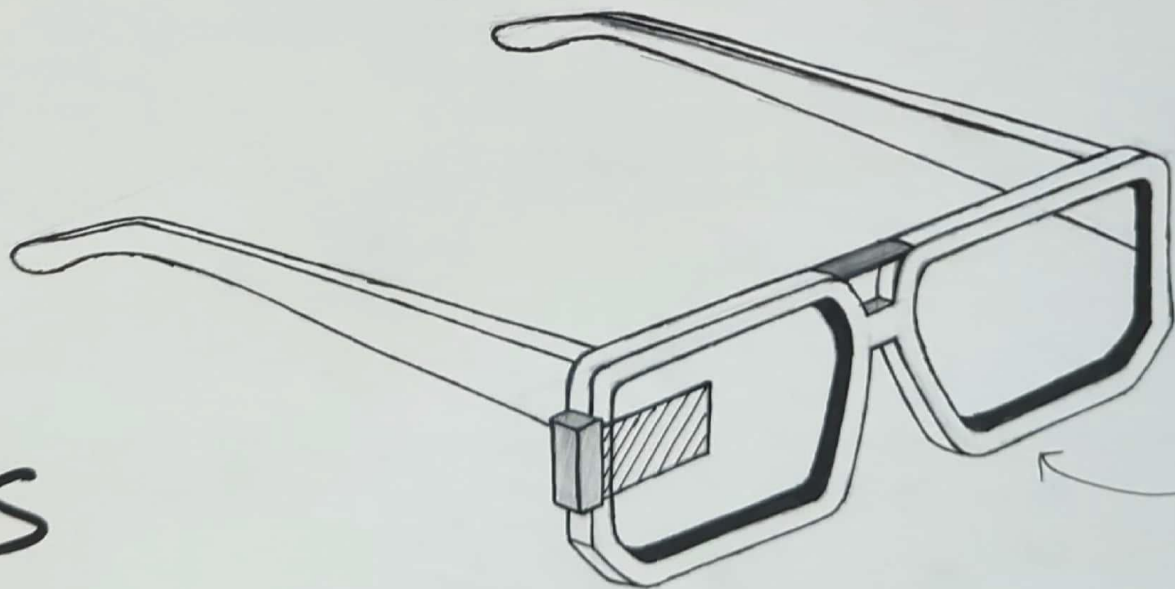
ROLL-ABLE
WRISTBAND STYLE
PHONE



CONNECTOR +
CHARGING PORT

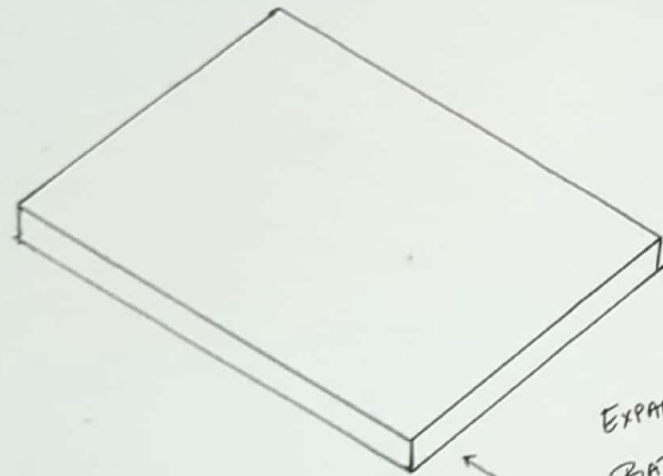


PHONE
AS
WEARABLES

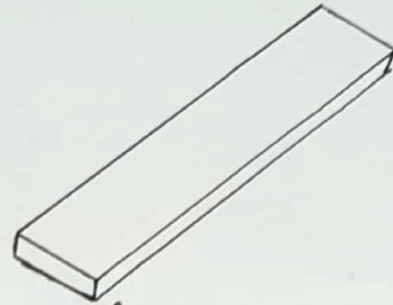


SMART
GLASSES

MODULAR PHONE

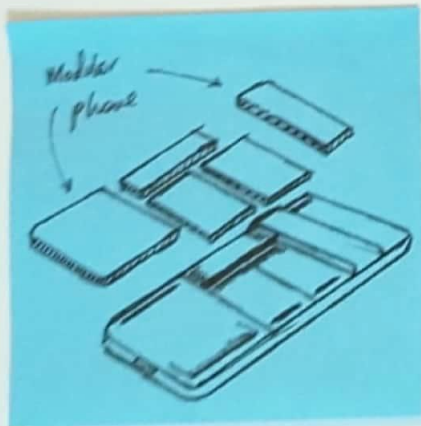
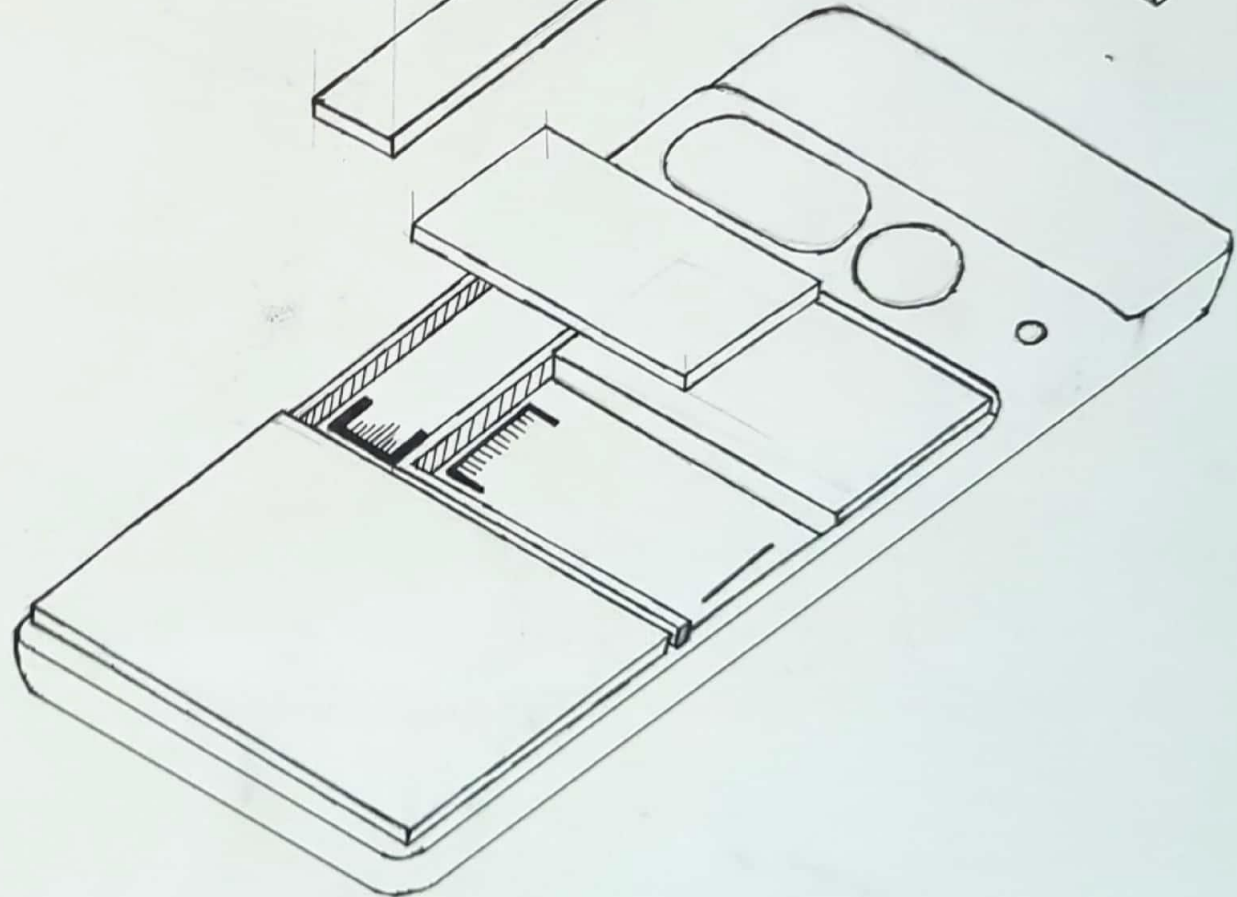
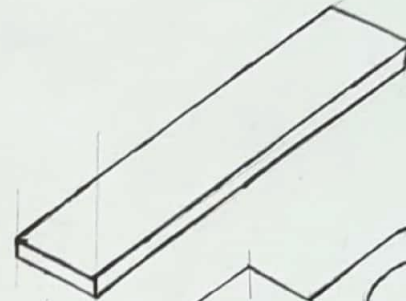
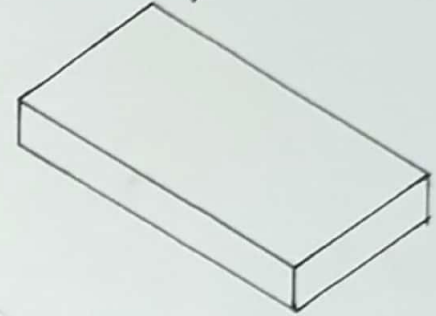


EXPANSION
BATTERY



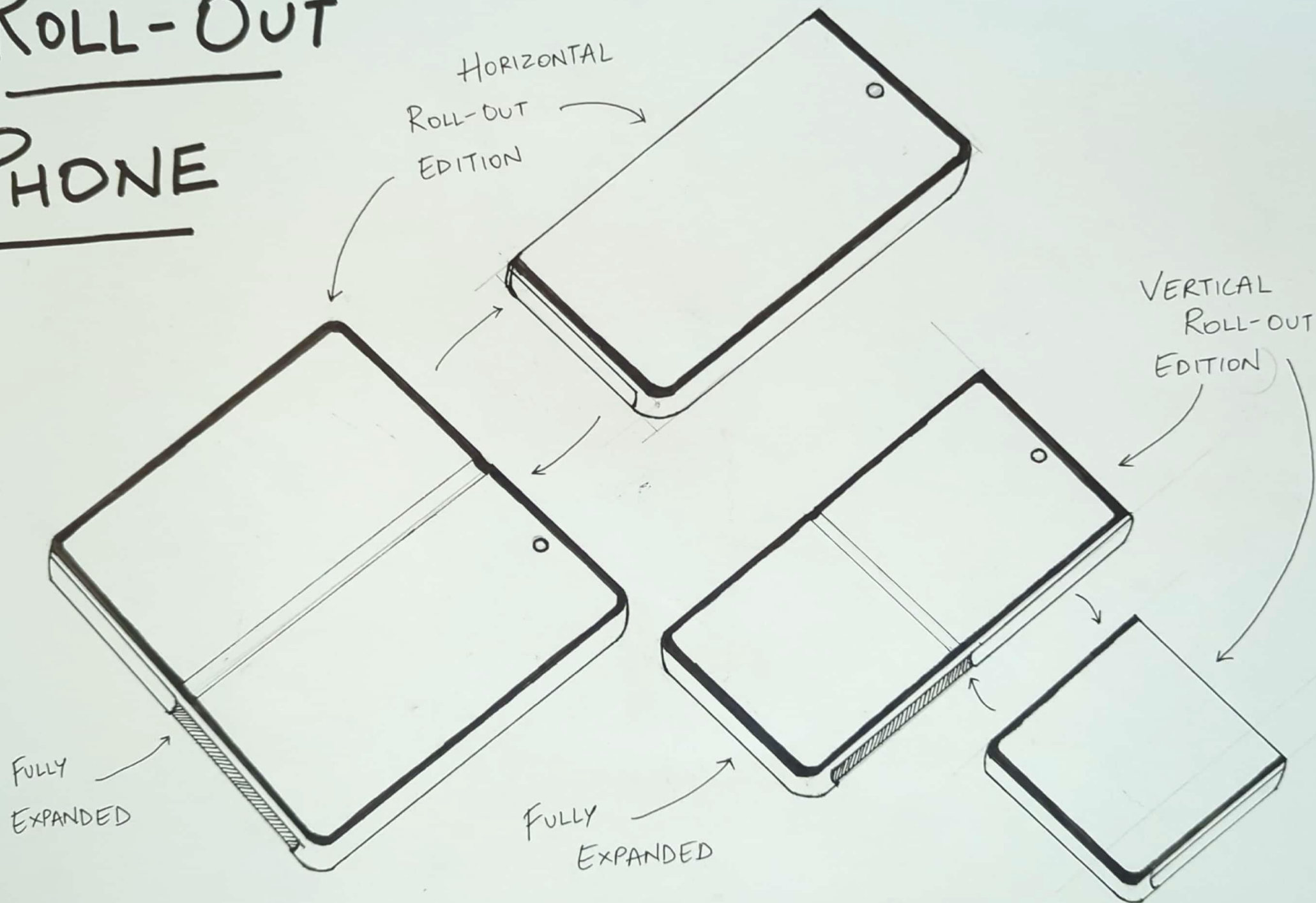
STORAGE
UPGRADE

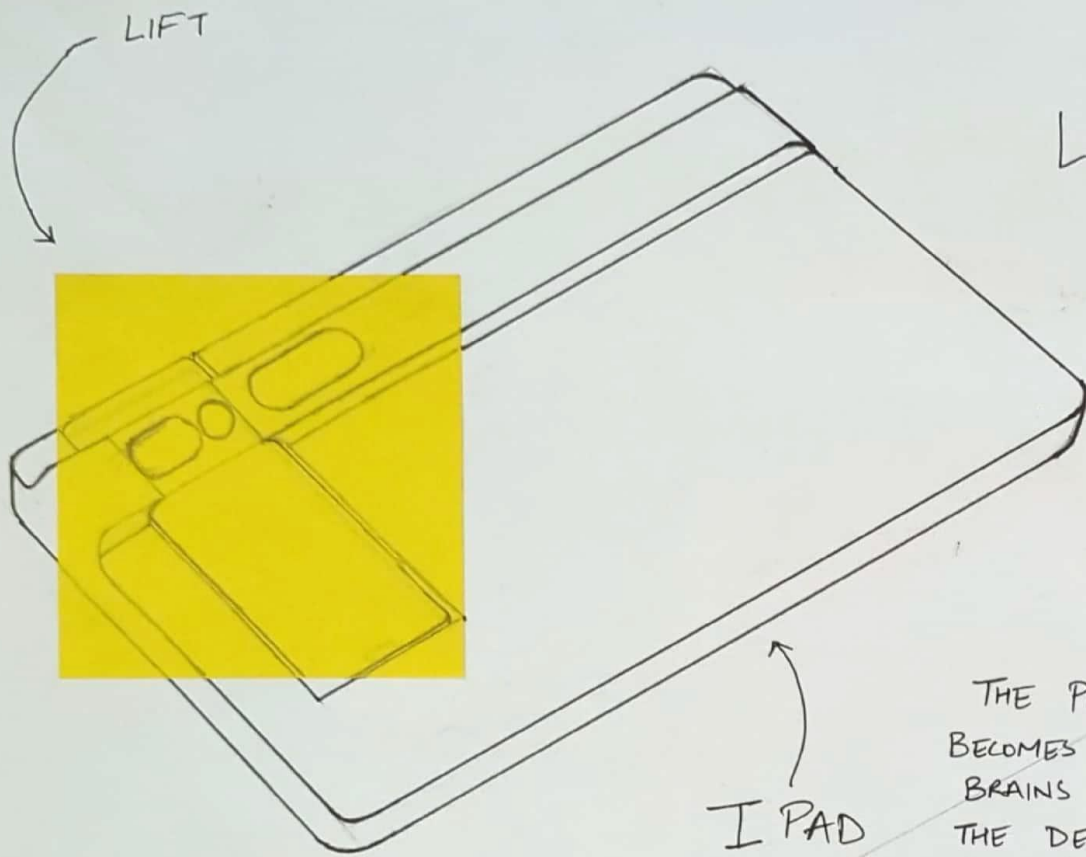
PROCESSOR +
RAM UPGRADE
MODULE



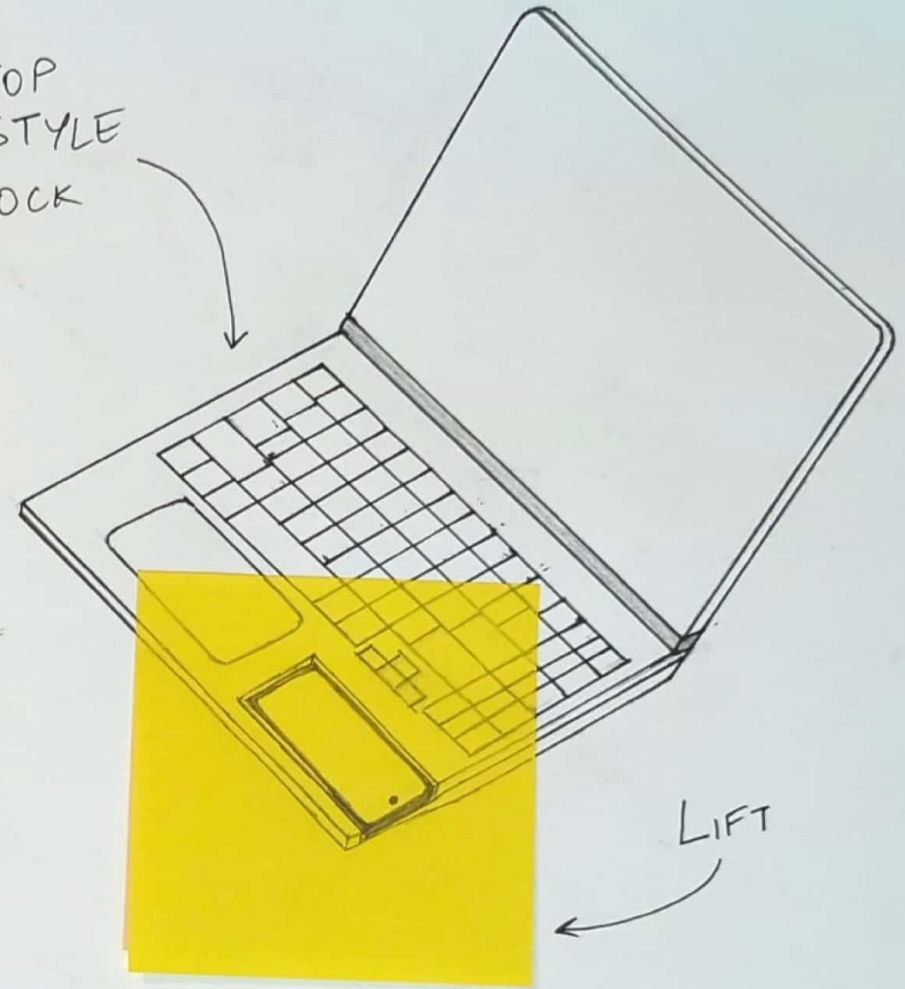
ROLL-OUT

PHONE



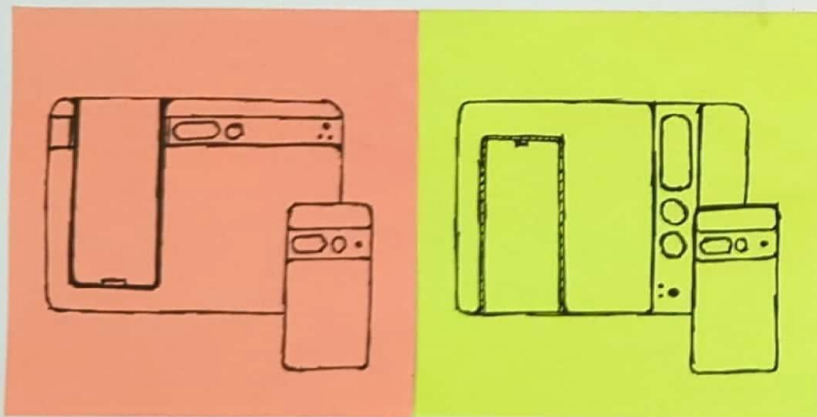


LAPTOP
STYLE
DOCK



THE PHONE
BECOMES THE
BRAINS FOR
THE DEVICE
IT IS DOCKED
INTO.

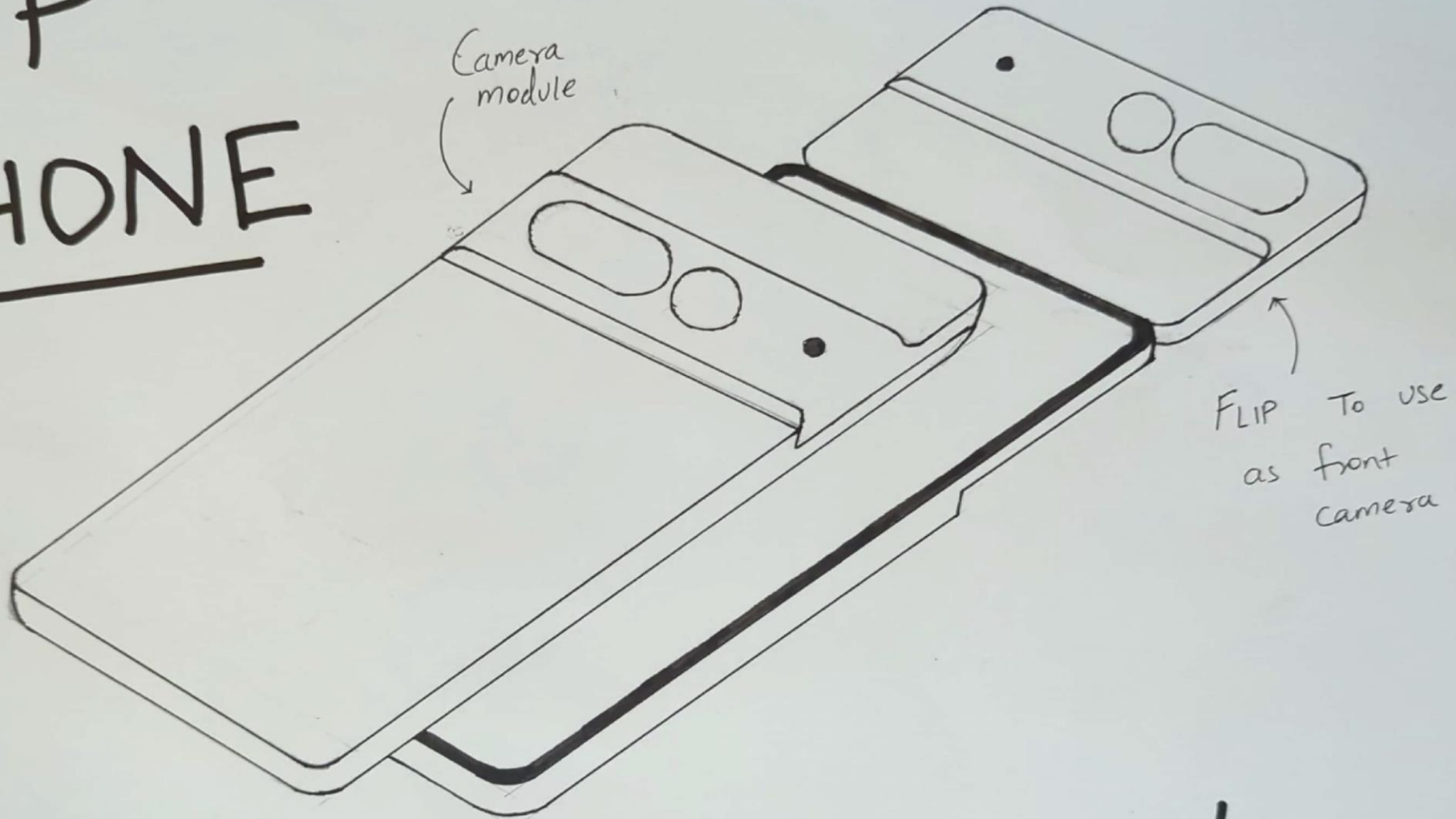
IPAD
STYLE
DOCK



VARIATIONS

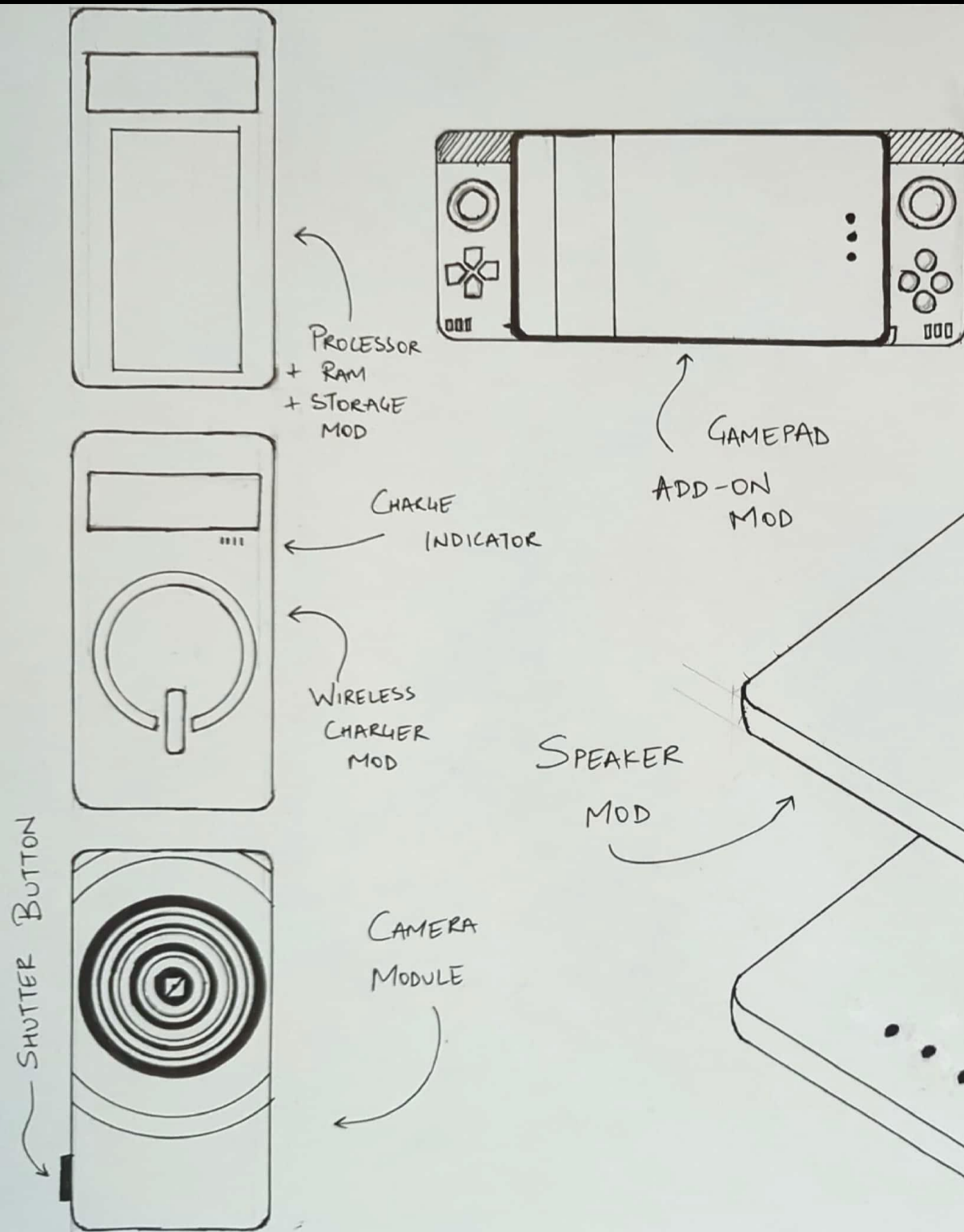
PHONE WITH DOCKING MECHANISM

FLIP PHONE

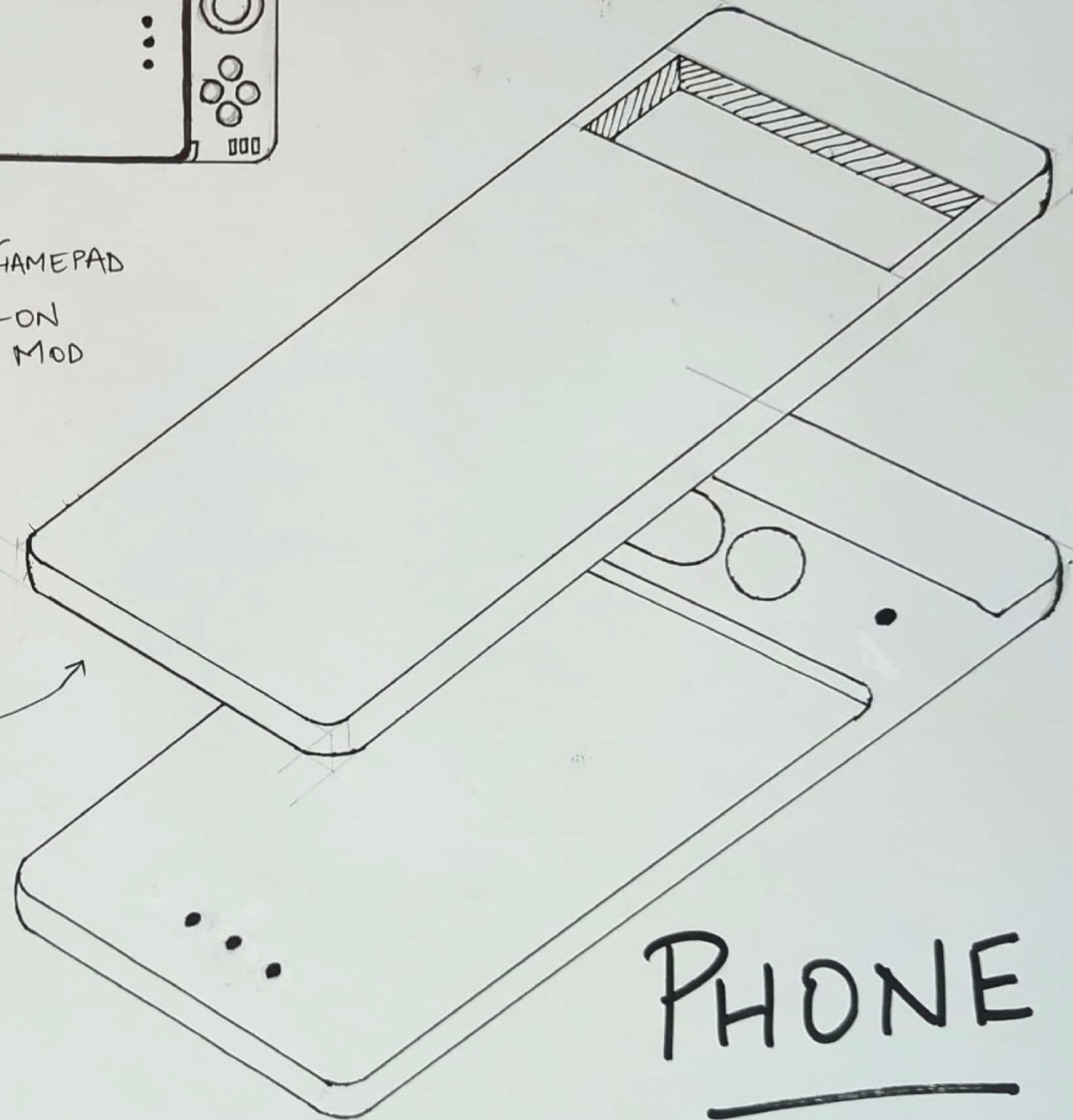


W/ FLIP UP
REAR CAMERA

MODULAR



SPEAKER
MOD



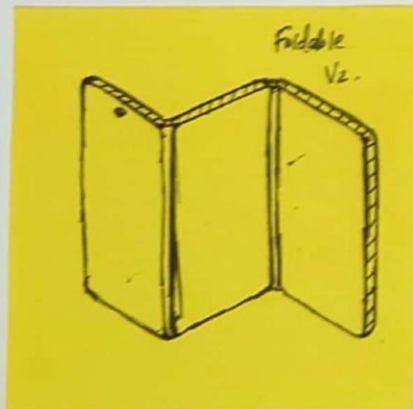
PHONE

MULTI-FOLD PHONE

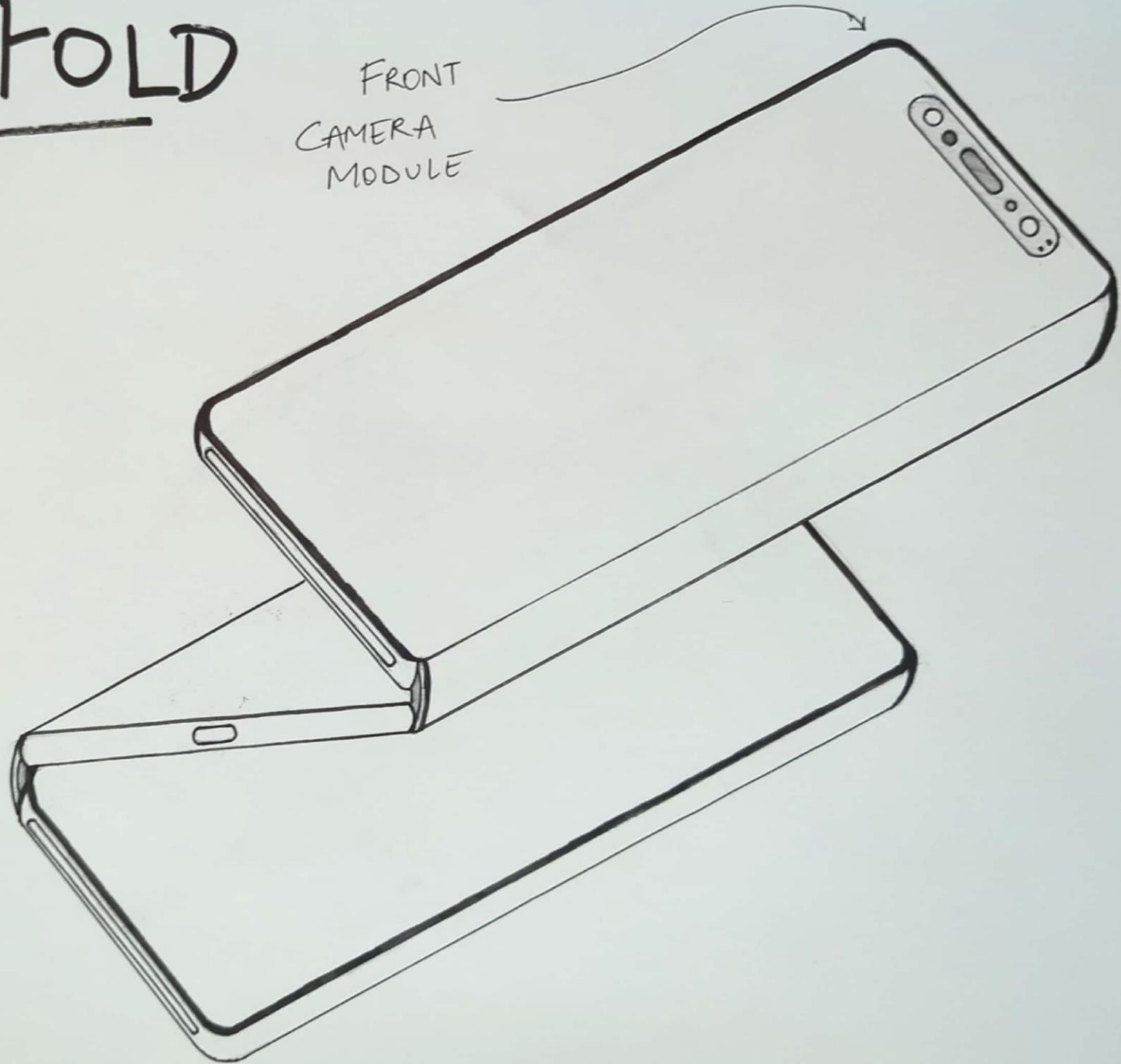
REGULAR FOLD

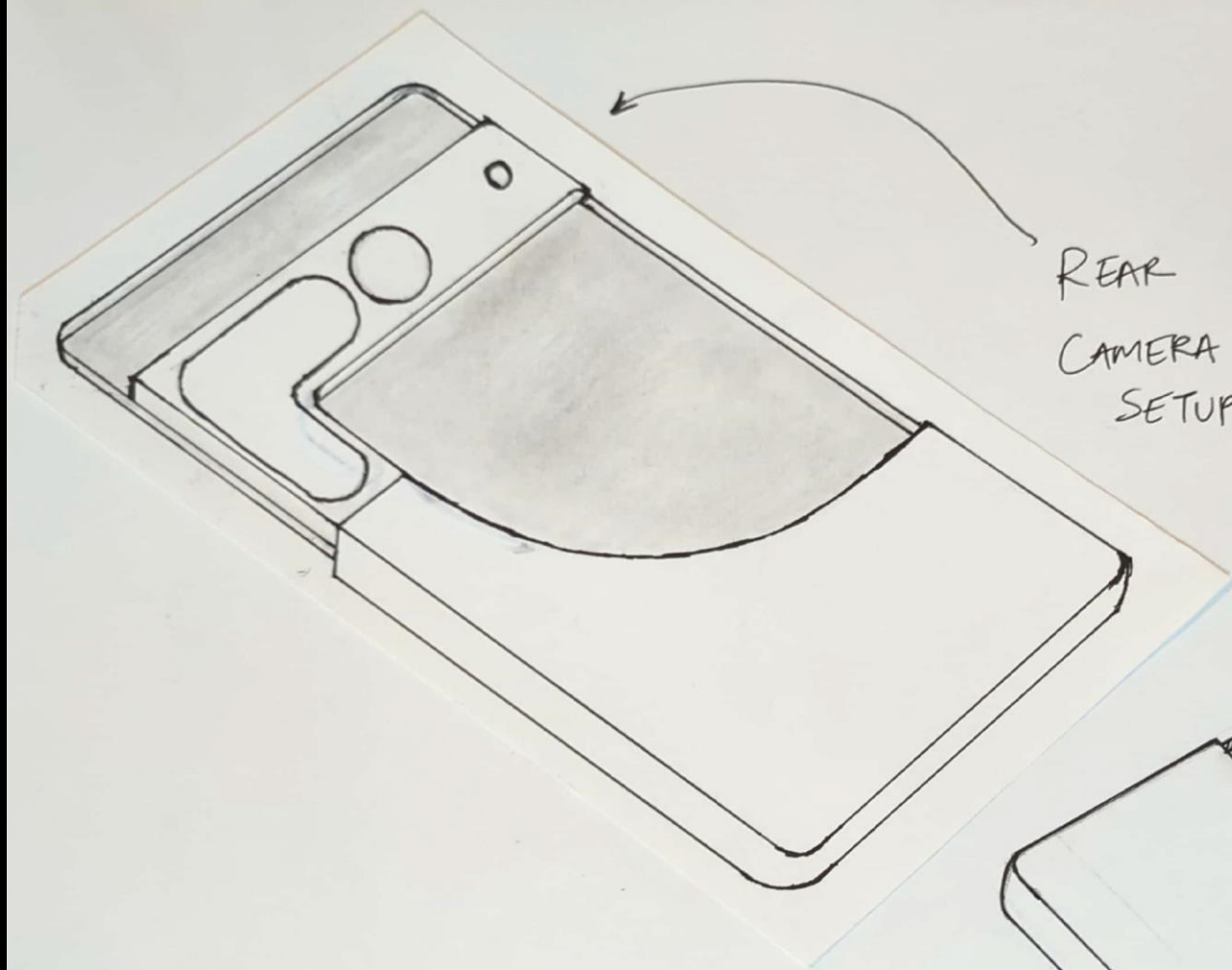


MULTI-FOLD

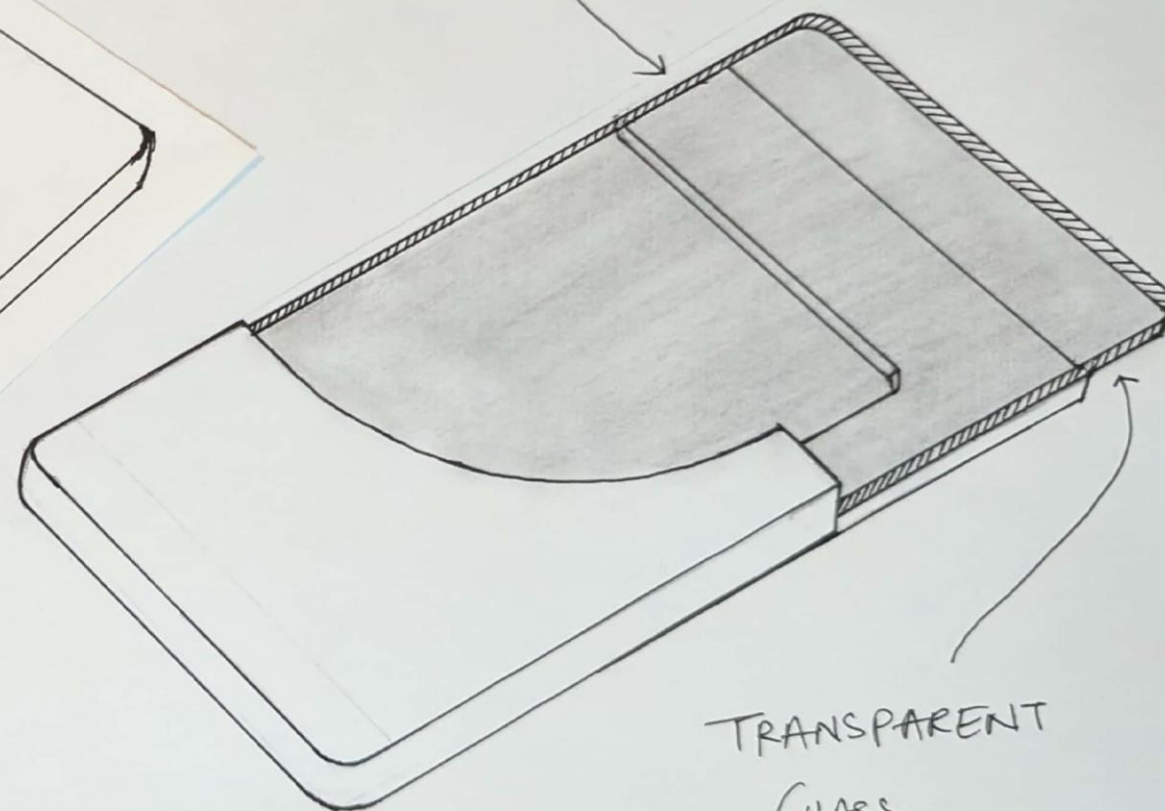


FRONT
CAMERA
MODULE



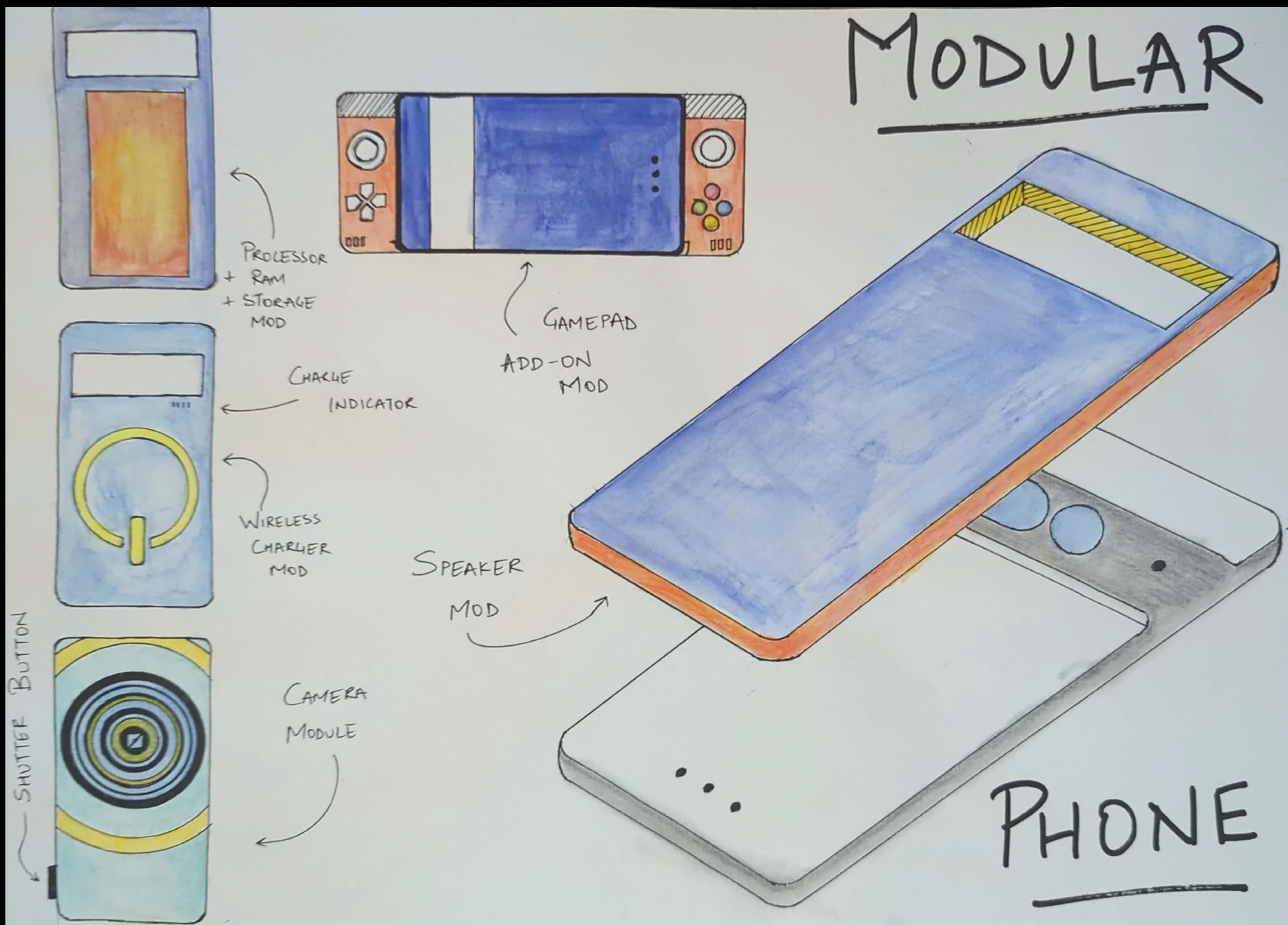


REAR CAMERA
BUMP

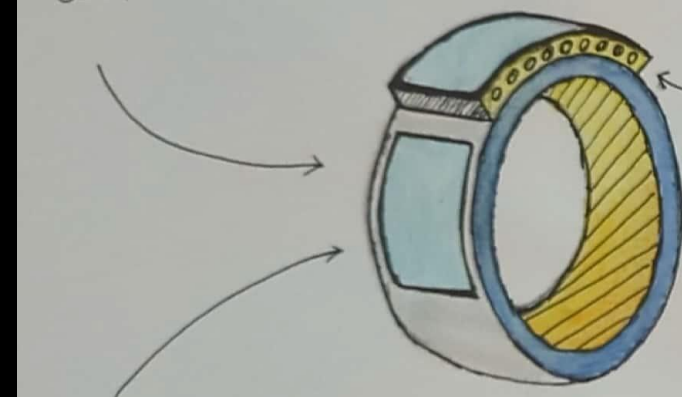


PHONE WITH
TRANSPARENT
SCREEN

MODULAR



WRISTBAND
THAT PROJECTS ONTO
THE PALM OF THE
USER



TOUCH SCREEN

PROJECTOR
LENSES

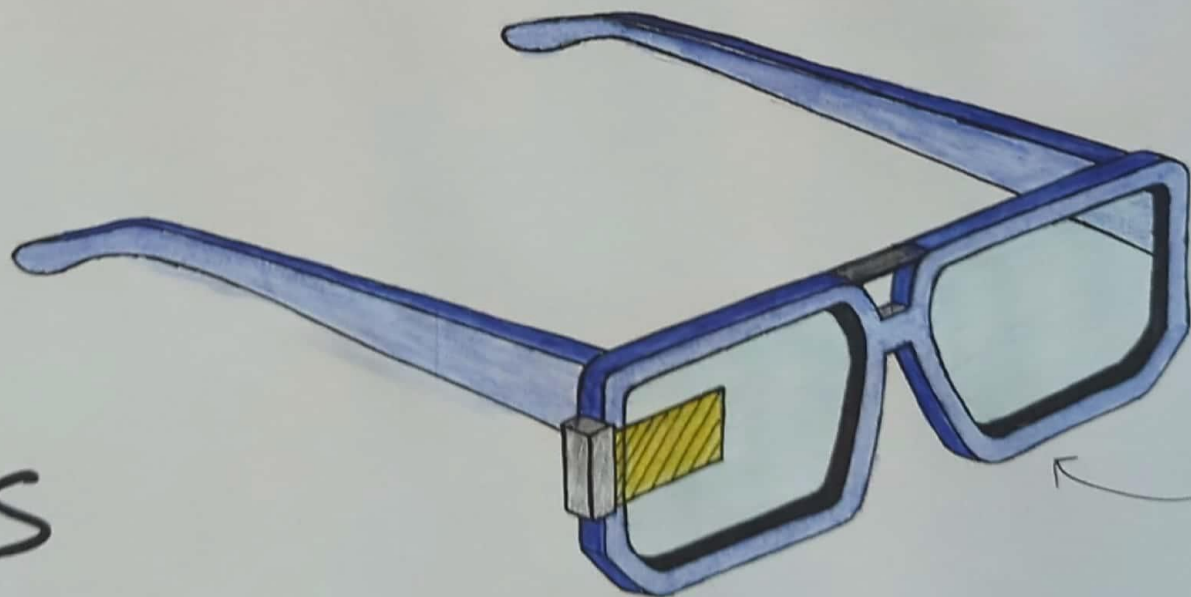
ROLL-ABLE
WRISTBAND STYLE
PHONE



CONNECTOR +
CHARGING PORT



PHONE
AS
-
WEARABLES

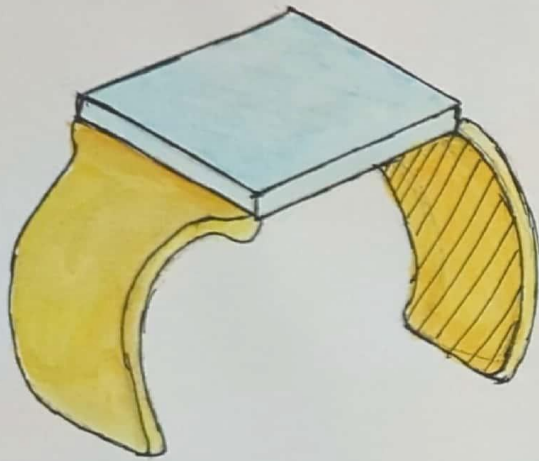


SMART
GLASSES

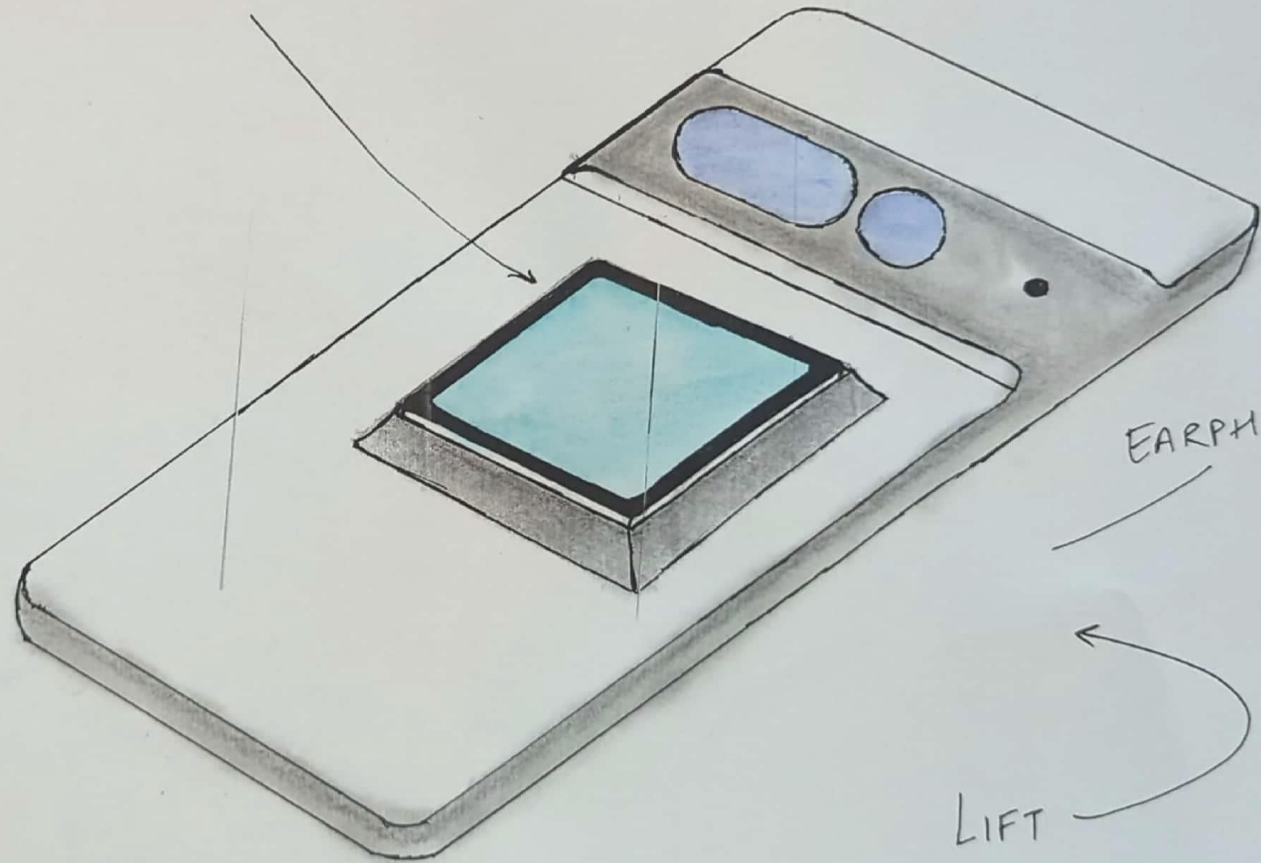
PHONE + SMARTWATCH / EARPHONES

SEAMLESS INTEGRATION
BETWEEN THE CHOSEN
DEVICES.

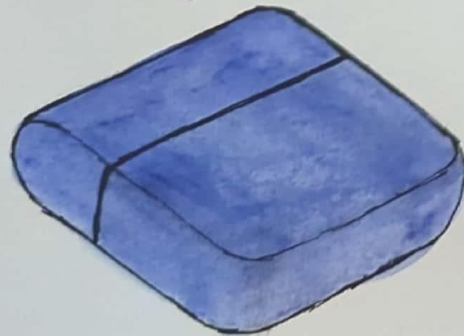
SMARTWATCH



SMARTWATCH



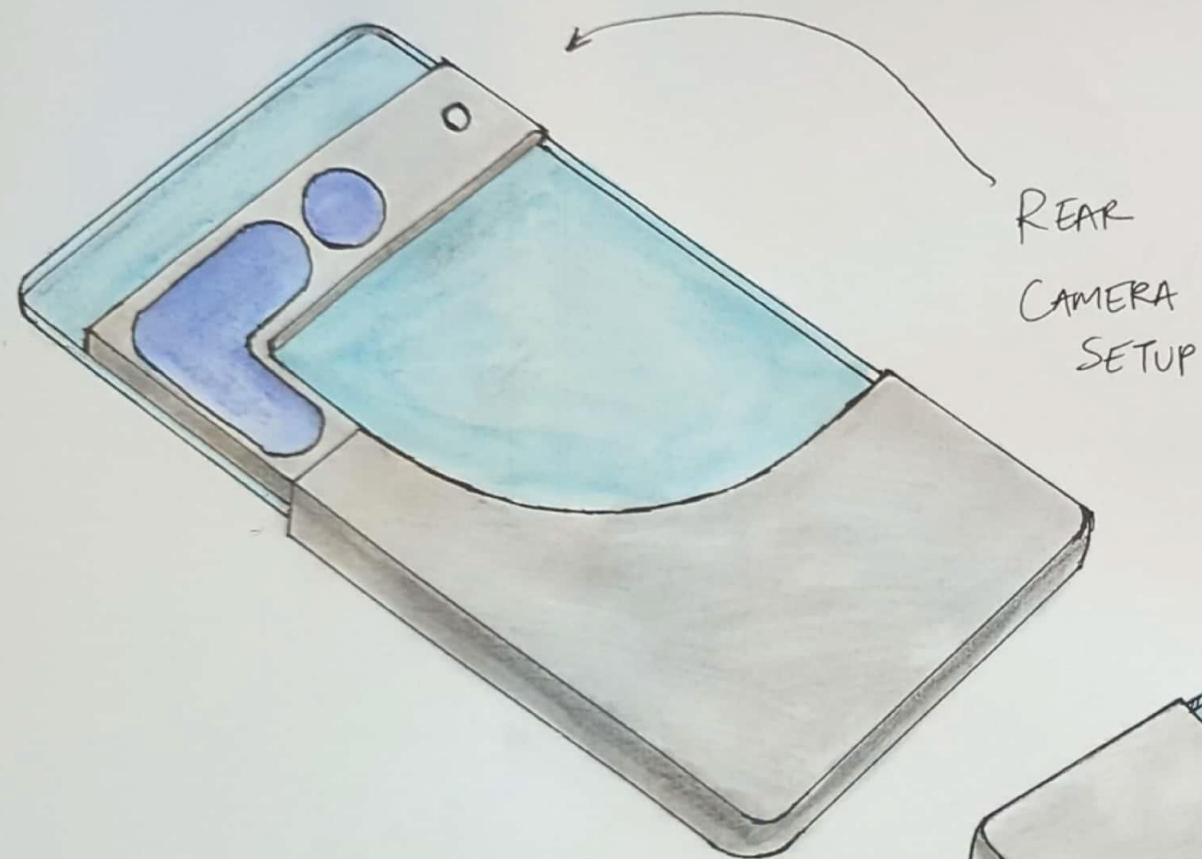
EARPHONES



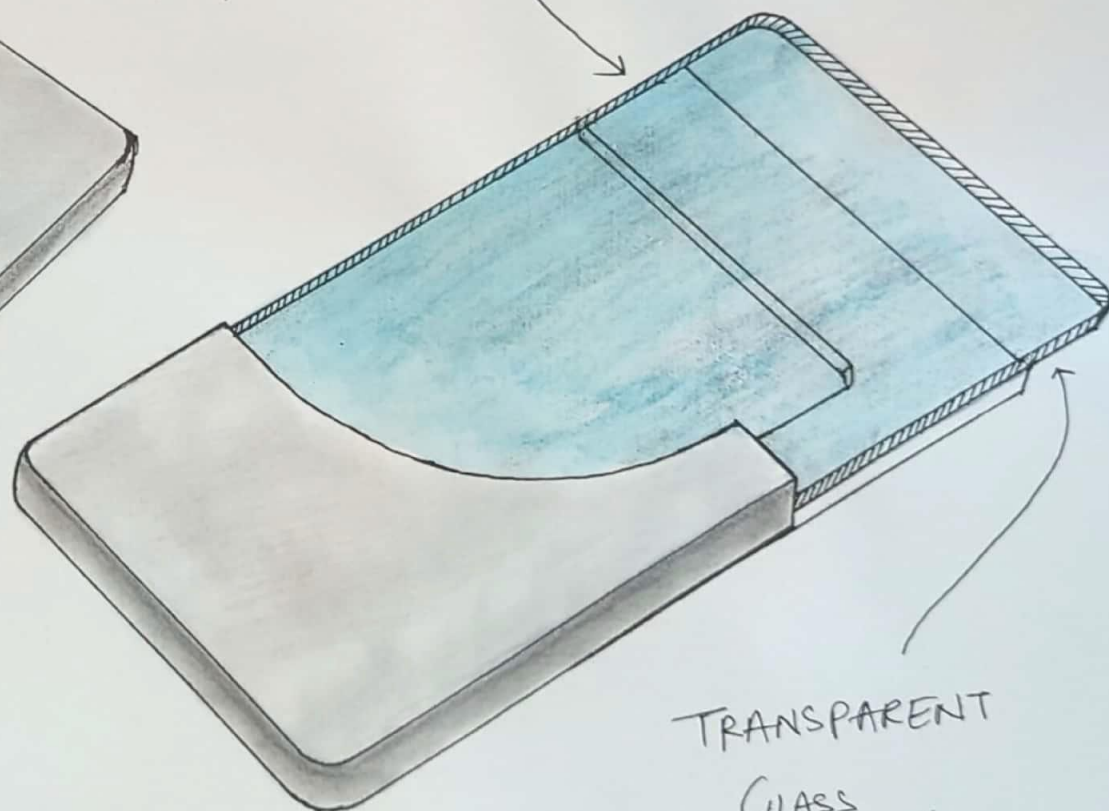
EARPHONES

LIFT

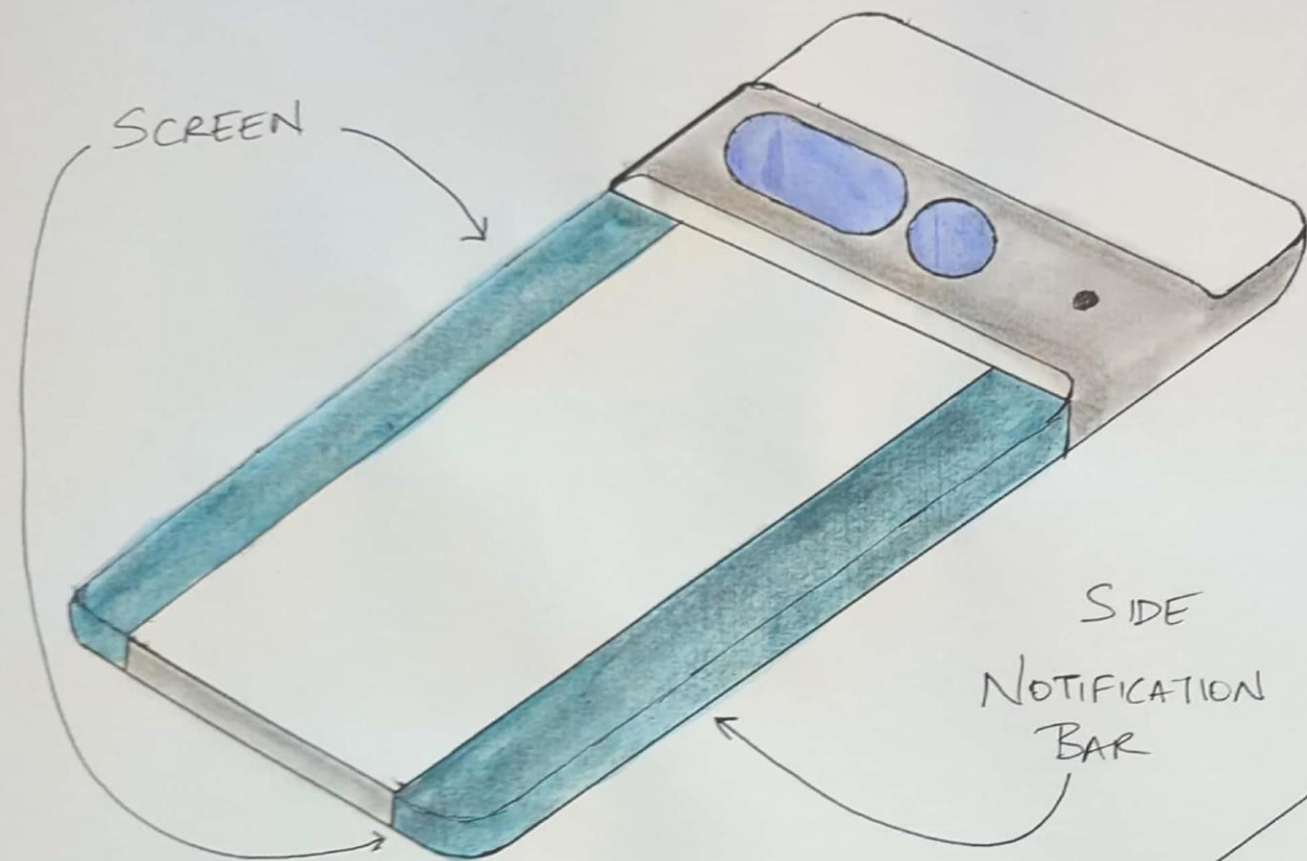




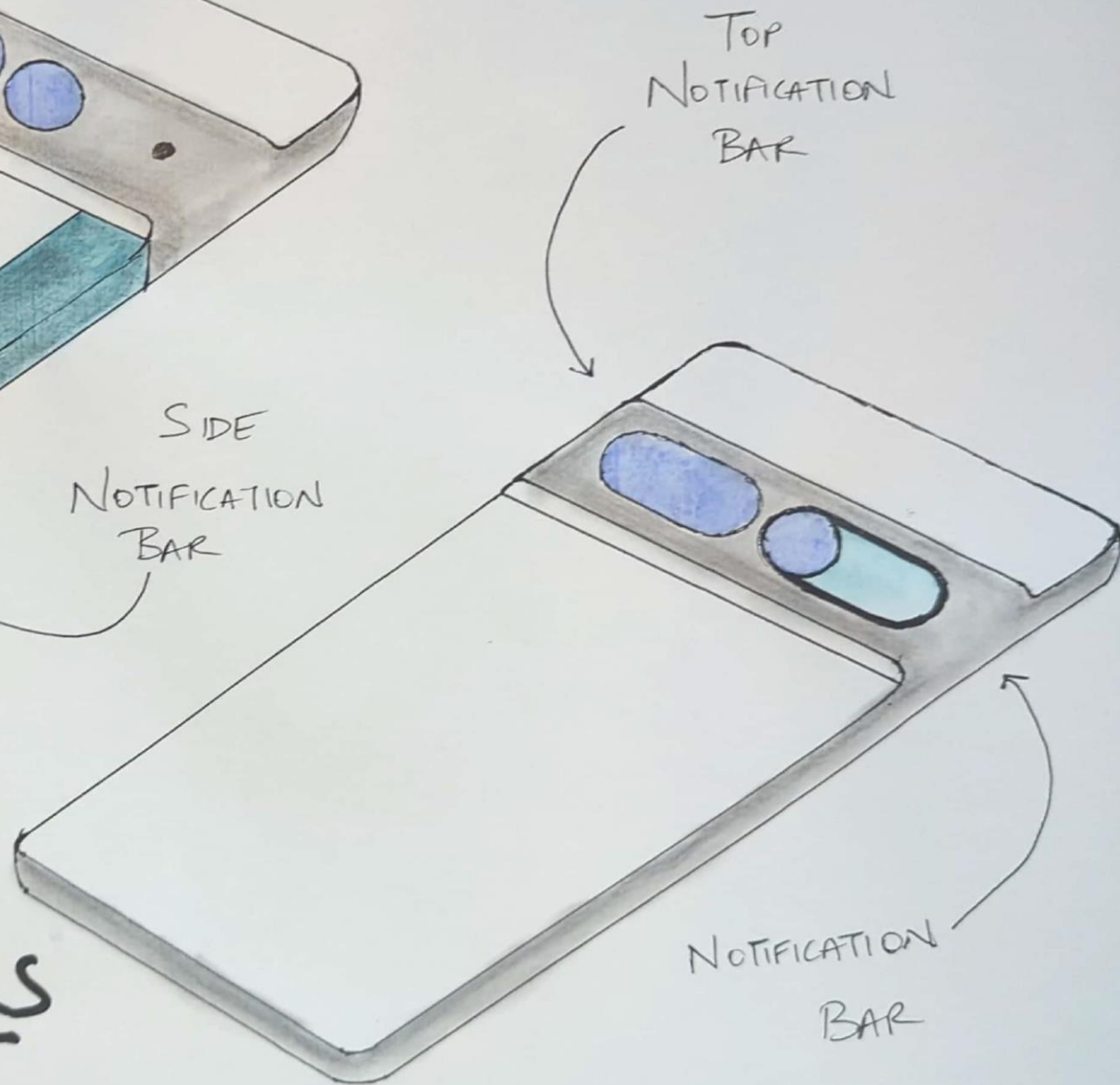
REAR CAMERA
BUMP



PHONE WITH
TRANSPARENT
SCREEN



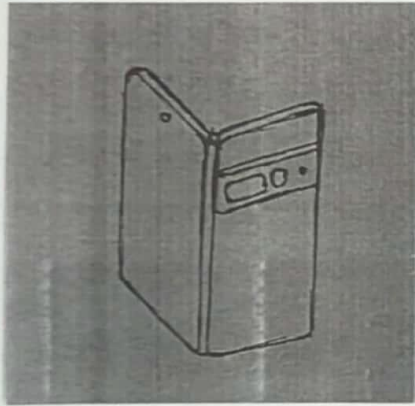
PHONE WITH NOTIFICATION BARS



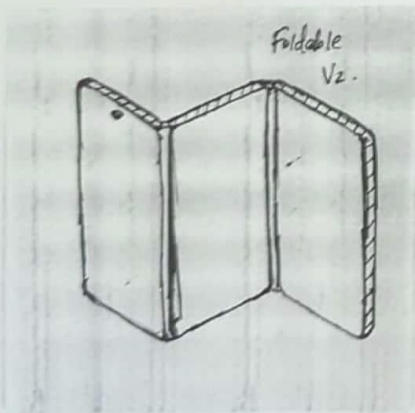
MULTI - FOLD

PHONE

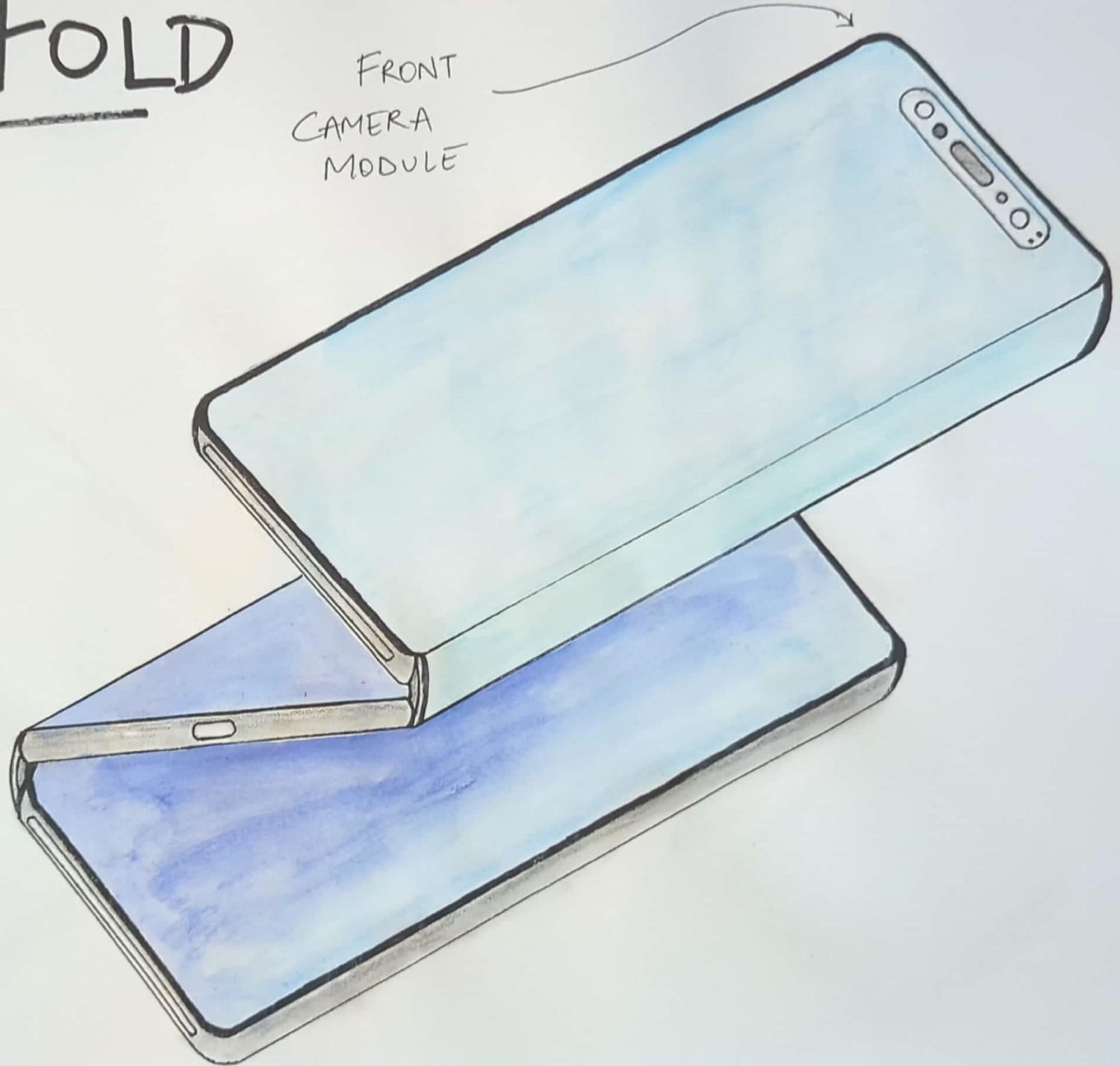
REGULAR FOLD



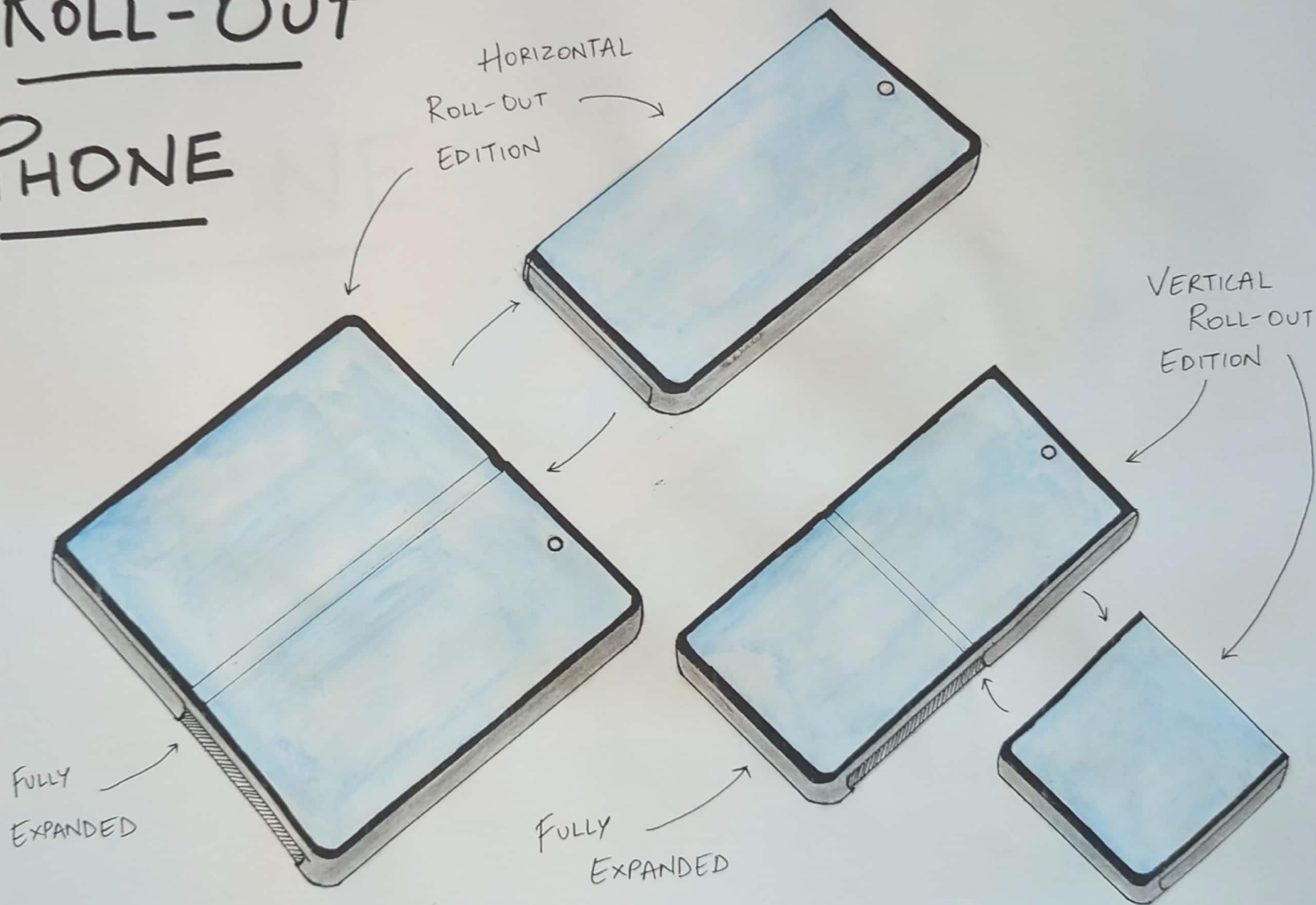
MULTI - FOLD



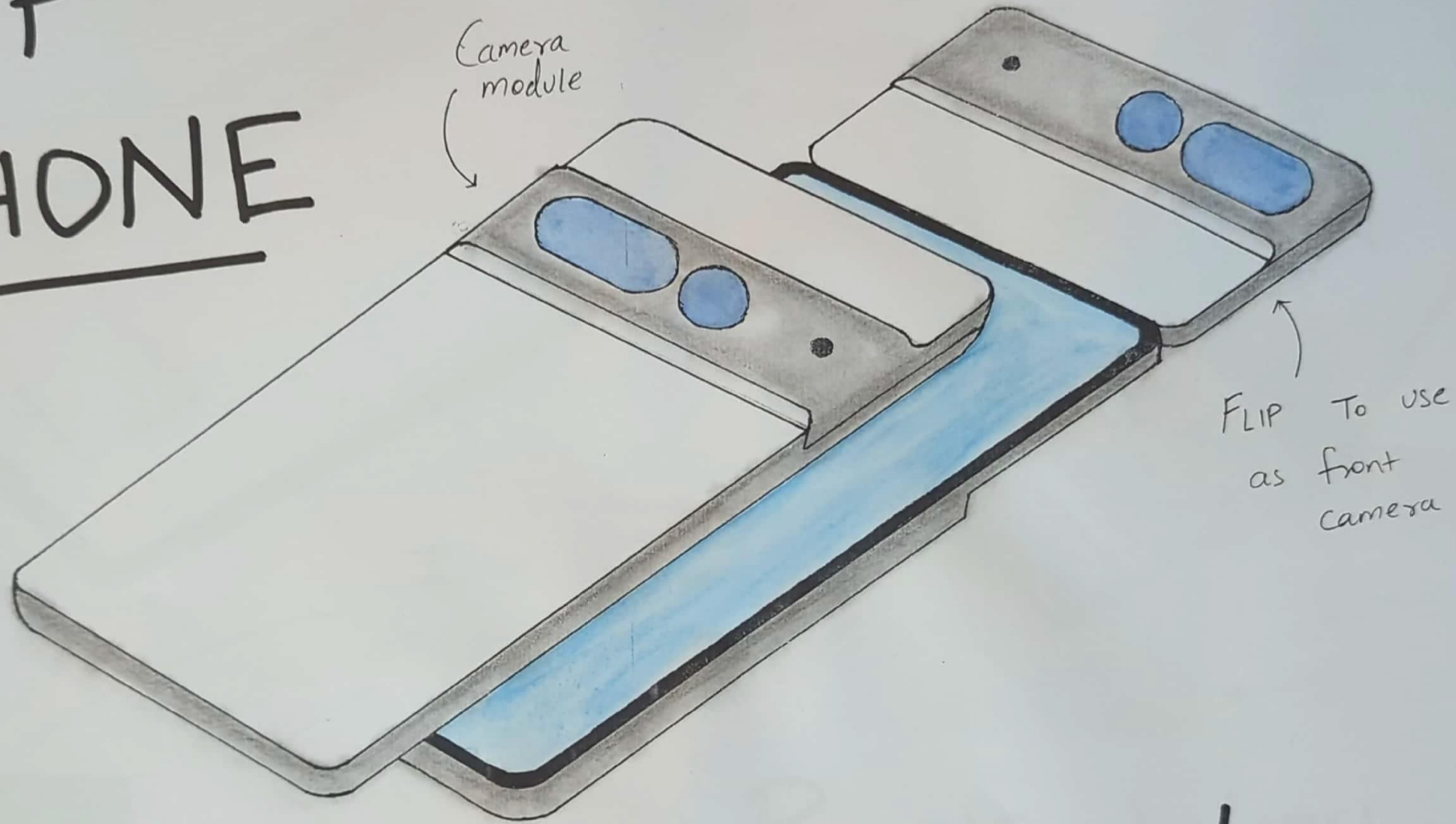
FRONT
CAMERA
MODULE



ROLL-OUT PHONE

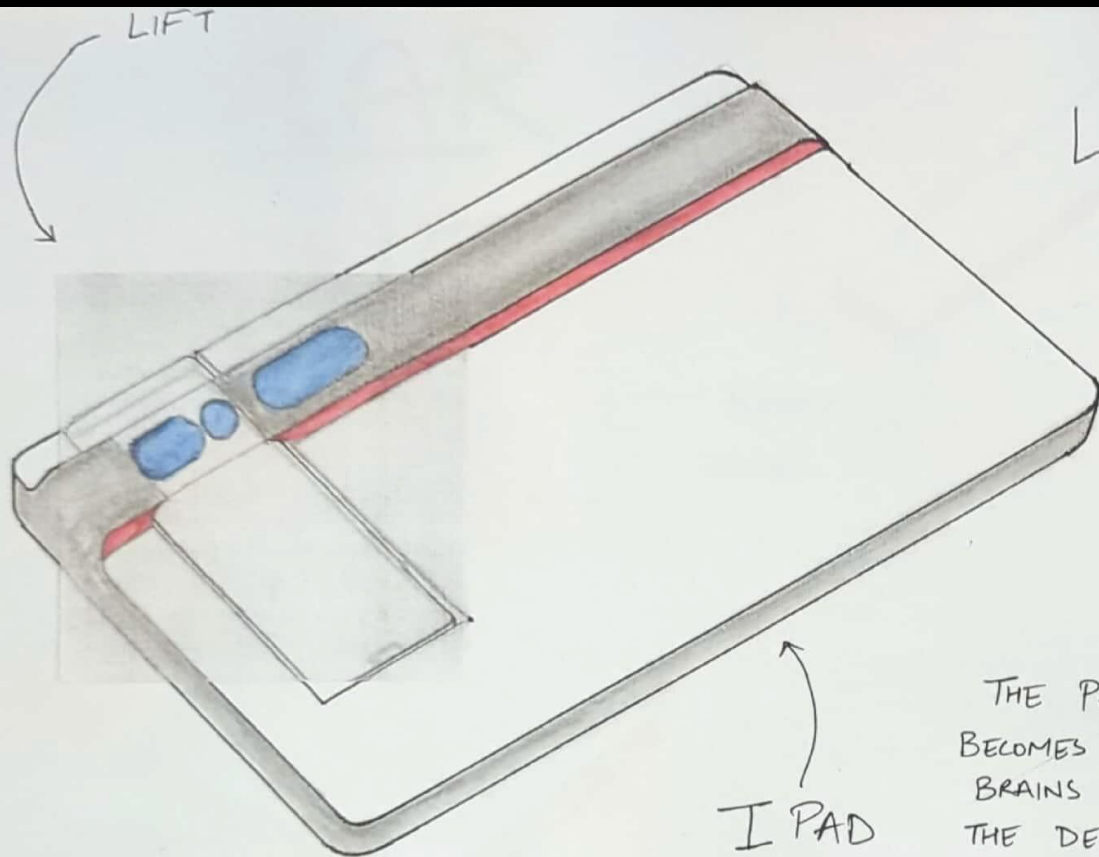


FLIP PHONE

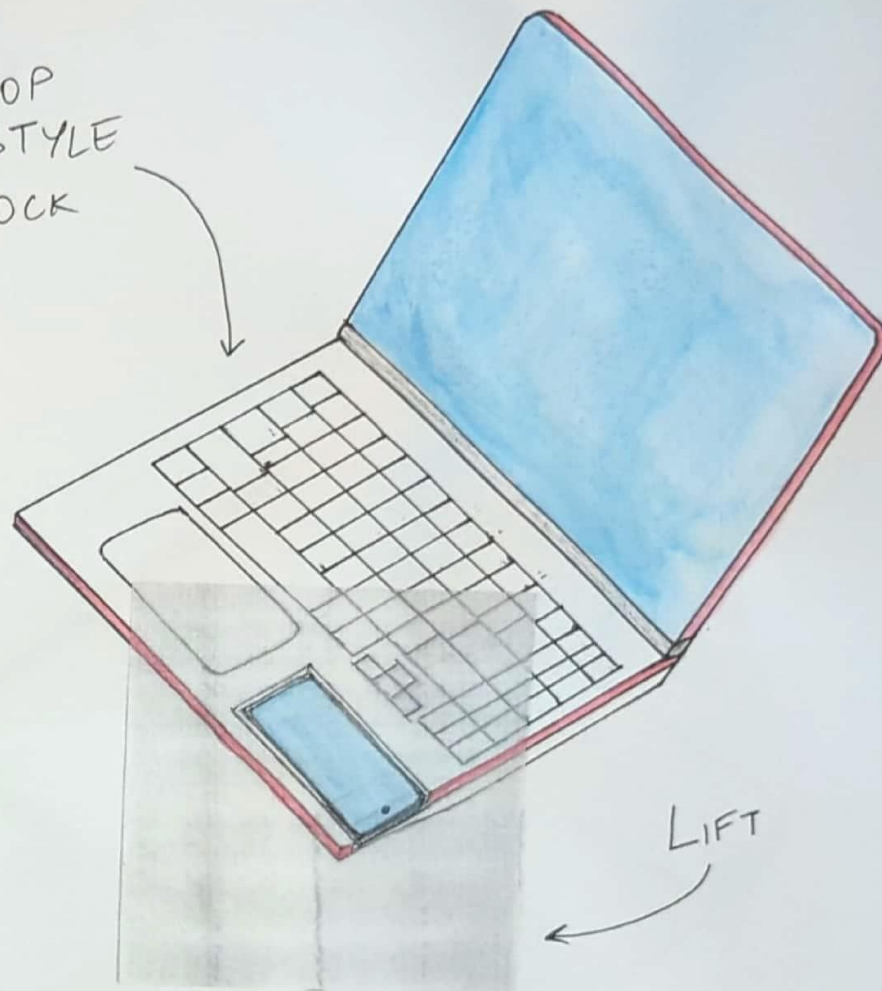


PHONE

W/ FLIP UP
REAR CAMERA

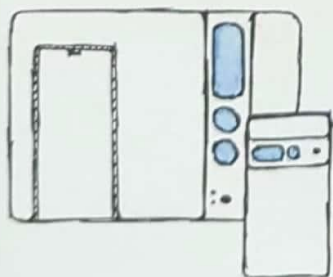
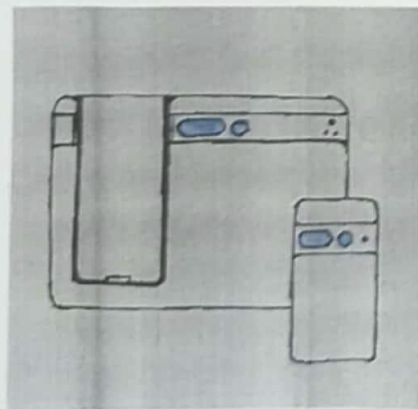


LAPTOP
STYLE
DOCK



THE PHONE
BECOMES THE
BRAINS FOR
THE DEVICE
IT IS DOCKED
INTO.

I PAD
STYLE
DOCK



VARIATIONS

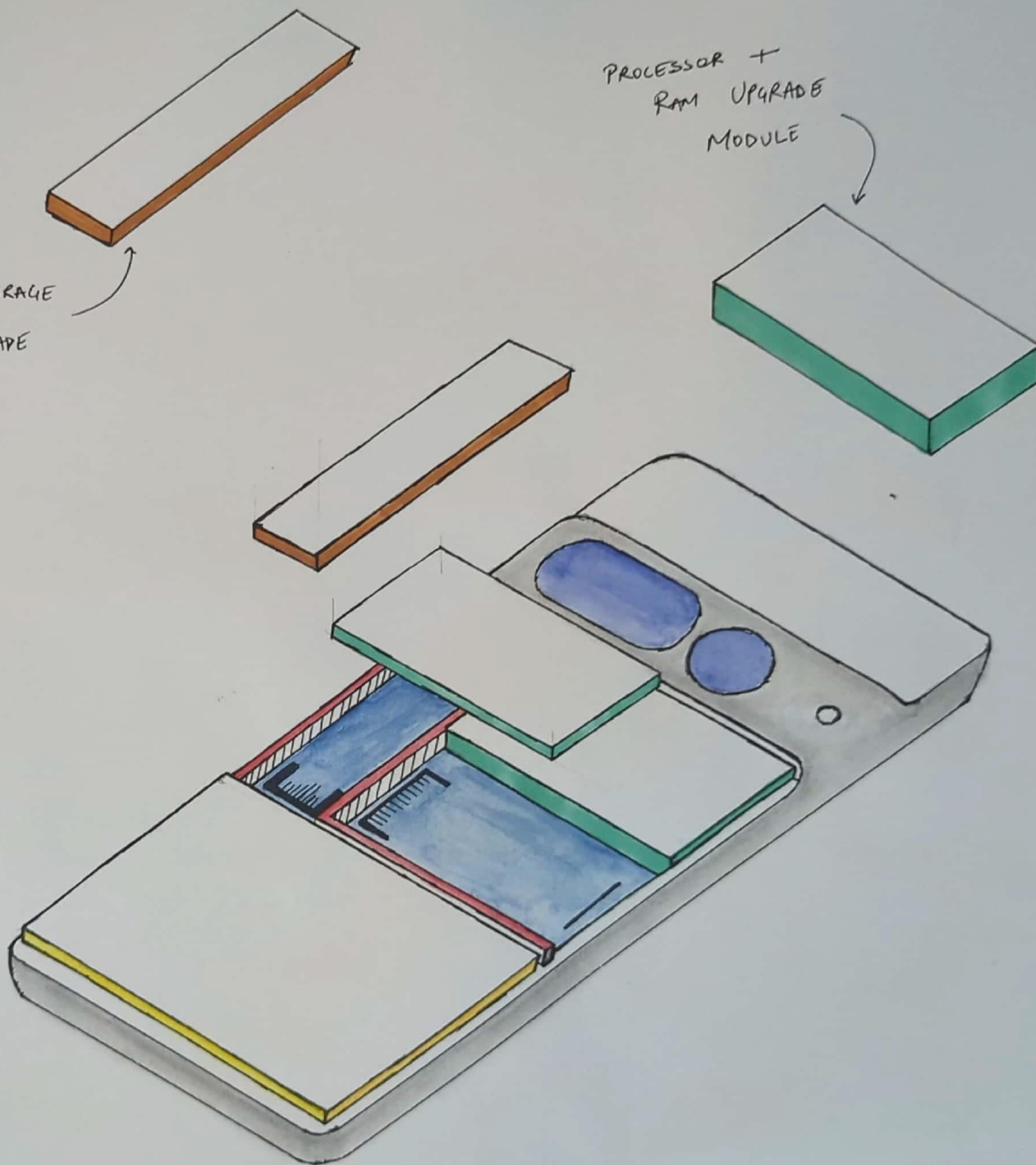
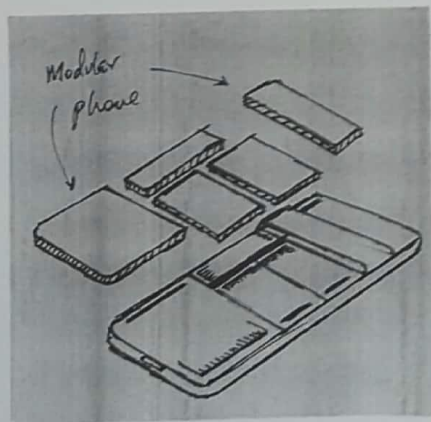
PHONE WITH DOCKING MECHANISM

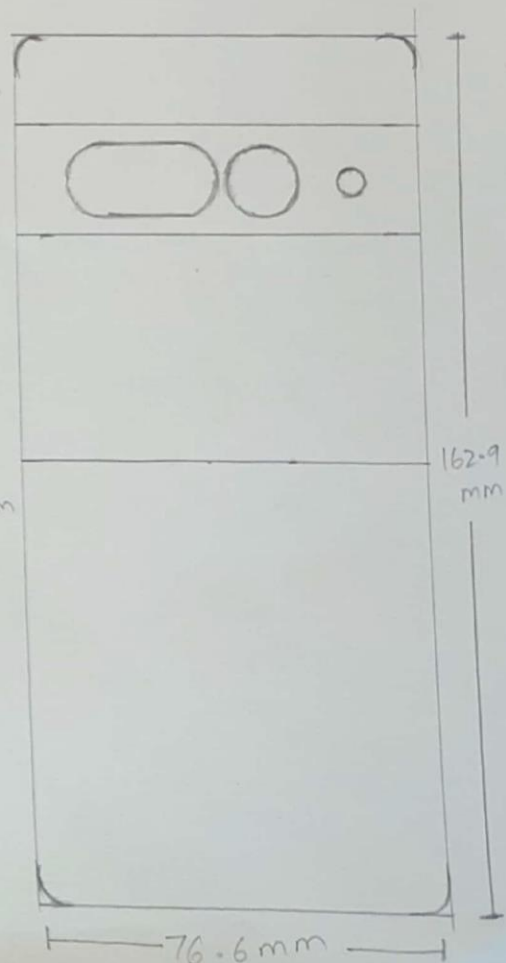
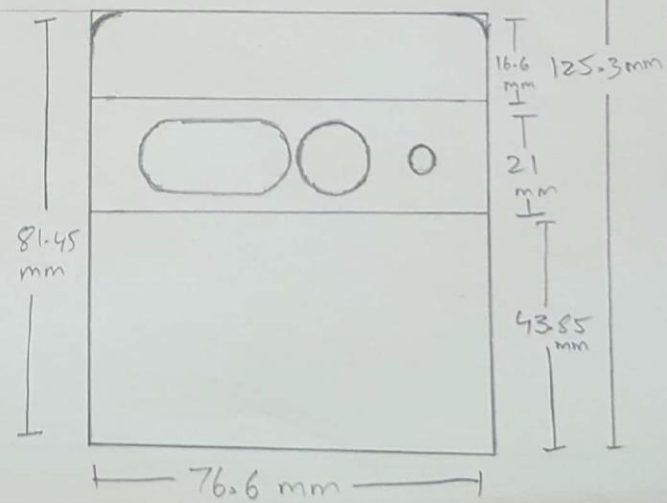
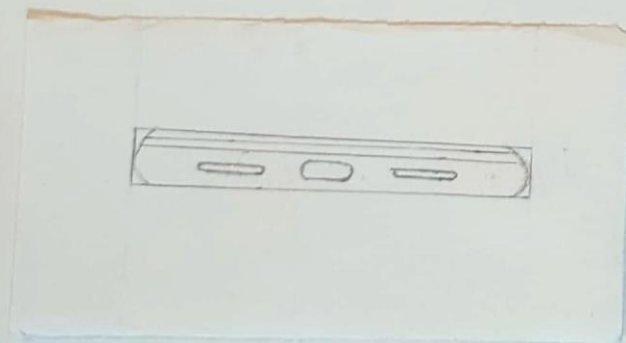
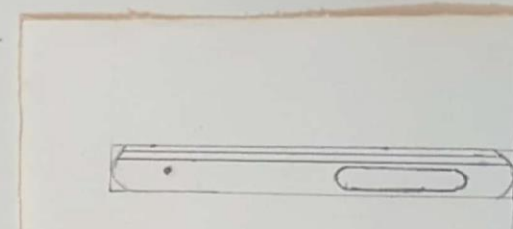
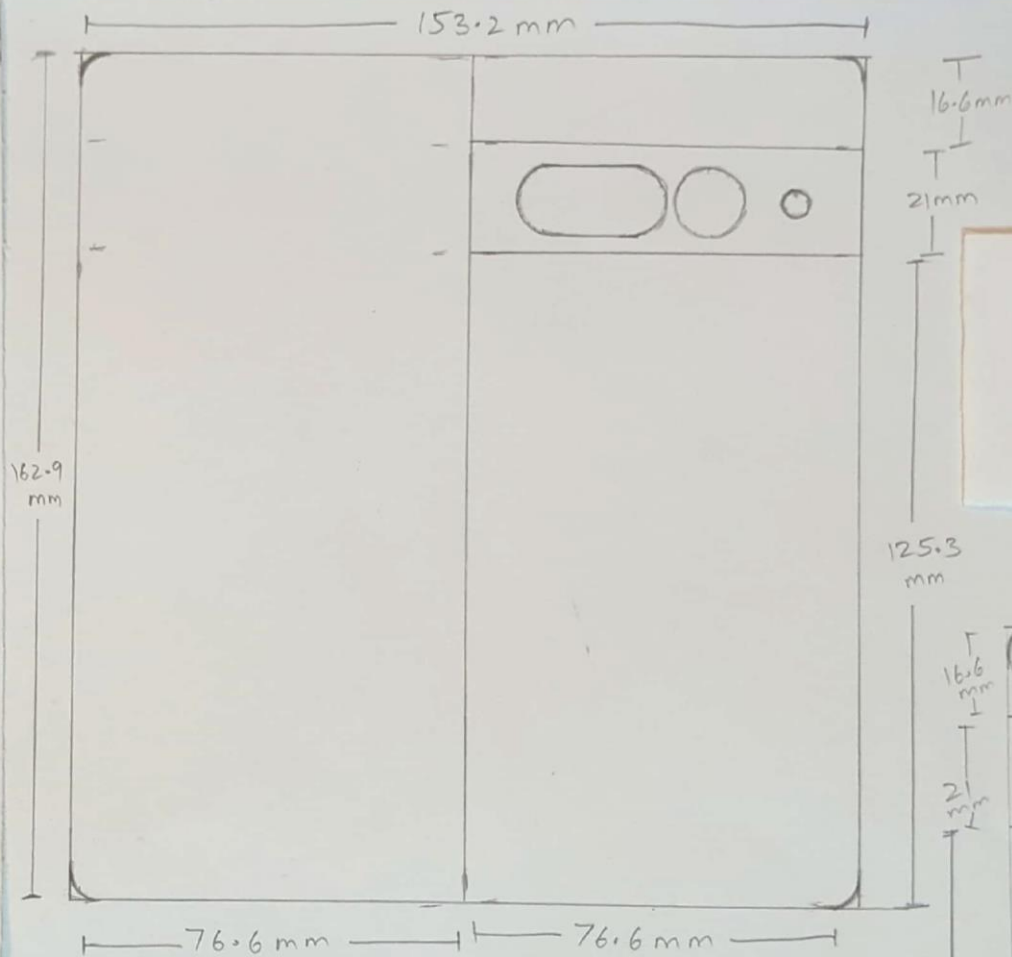
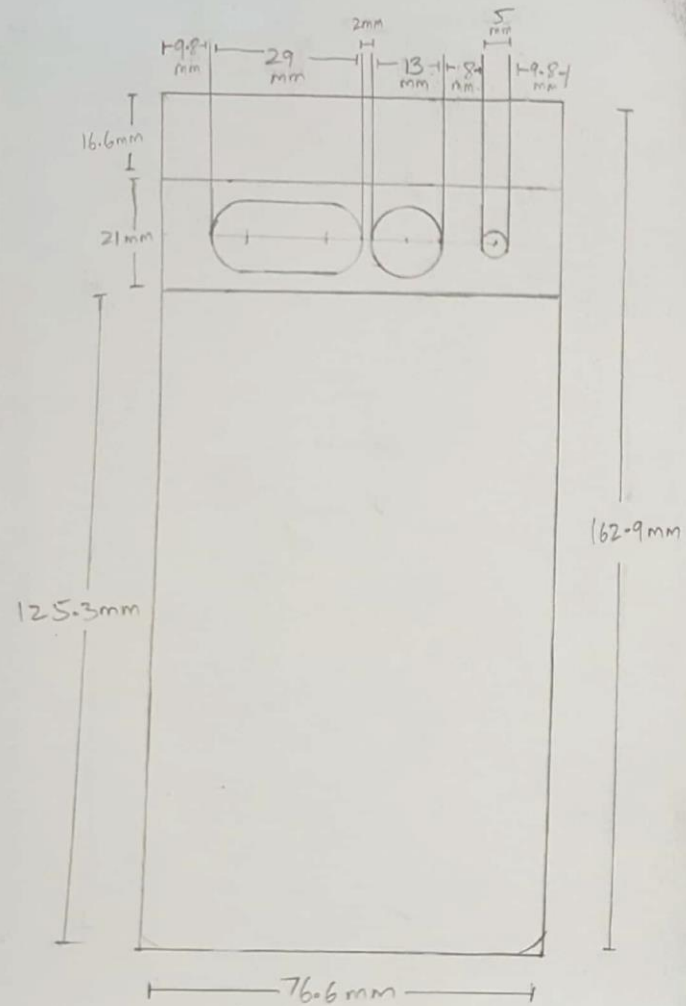
MODULAR PHONE

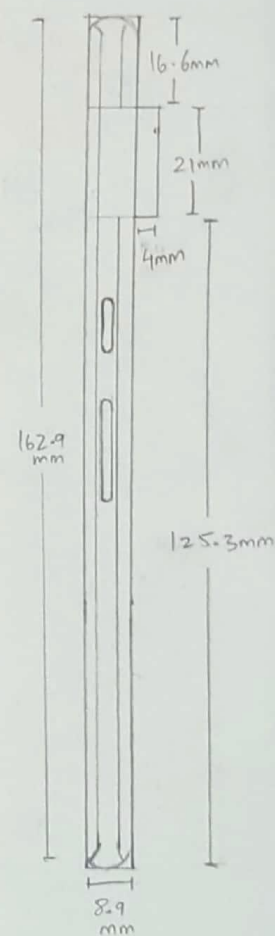
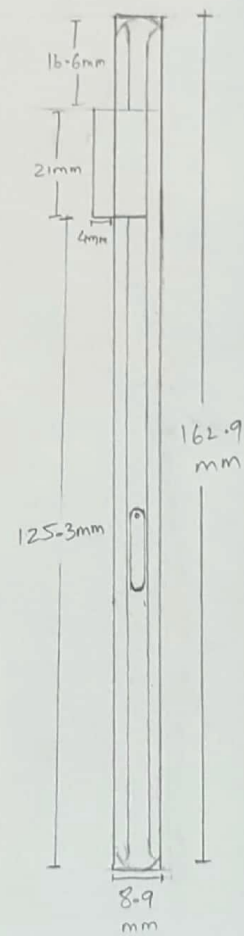
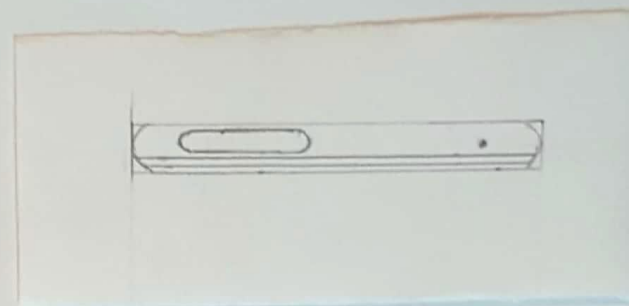
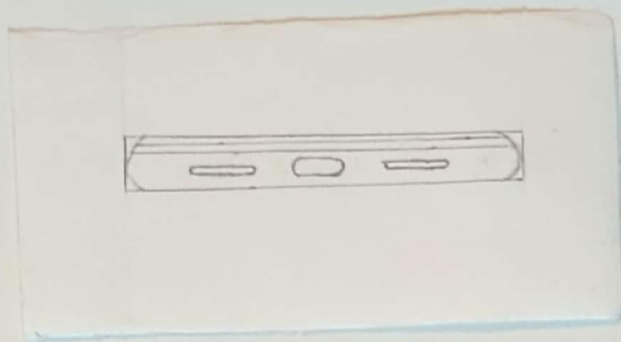
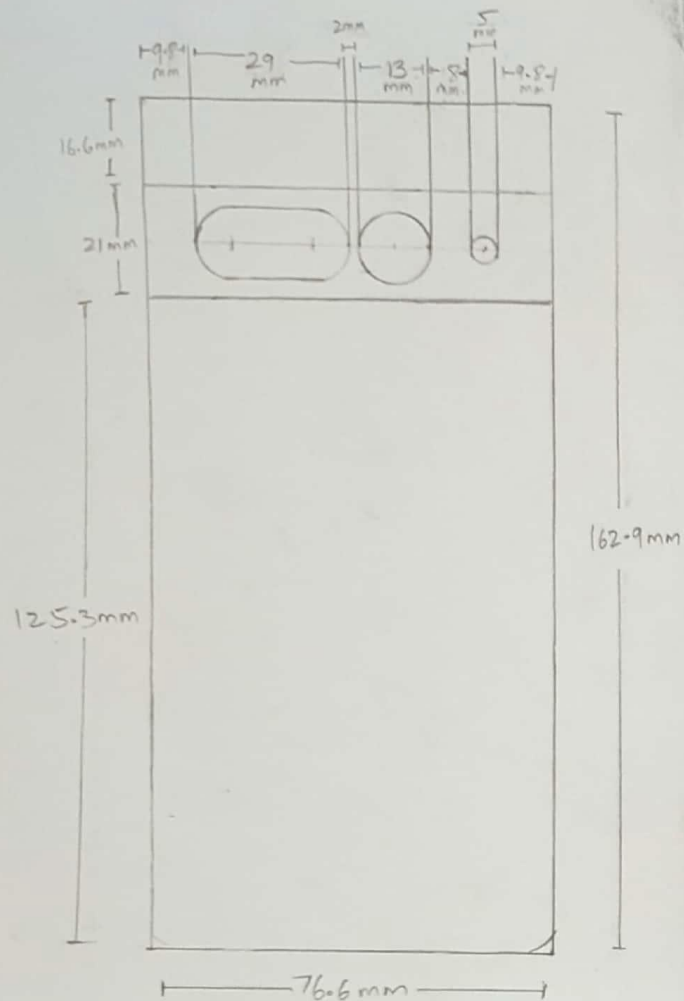
STORAGE
UPGRADE

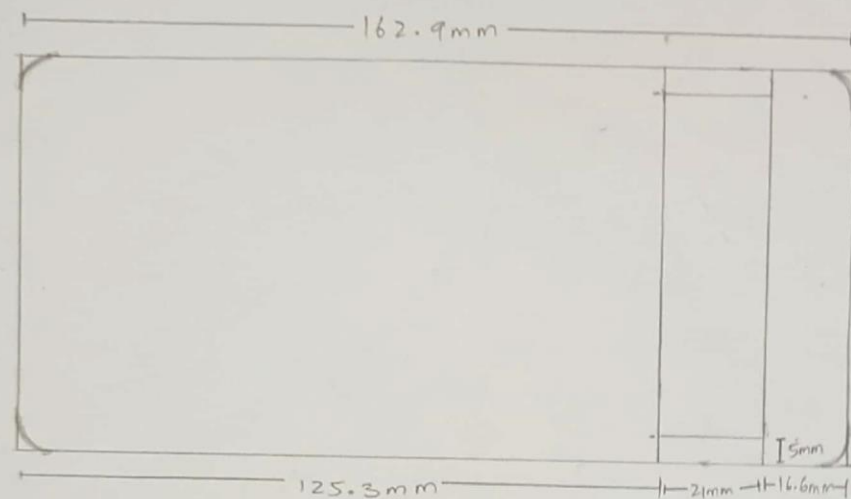
PROCESSOR +
RAM UPGRADE
MODULE

EXPANSION
BATTERY

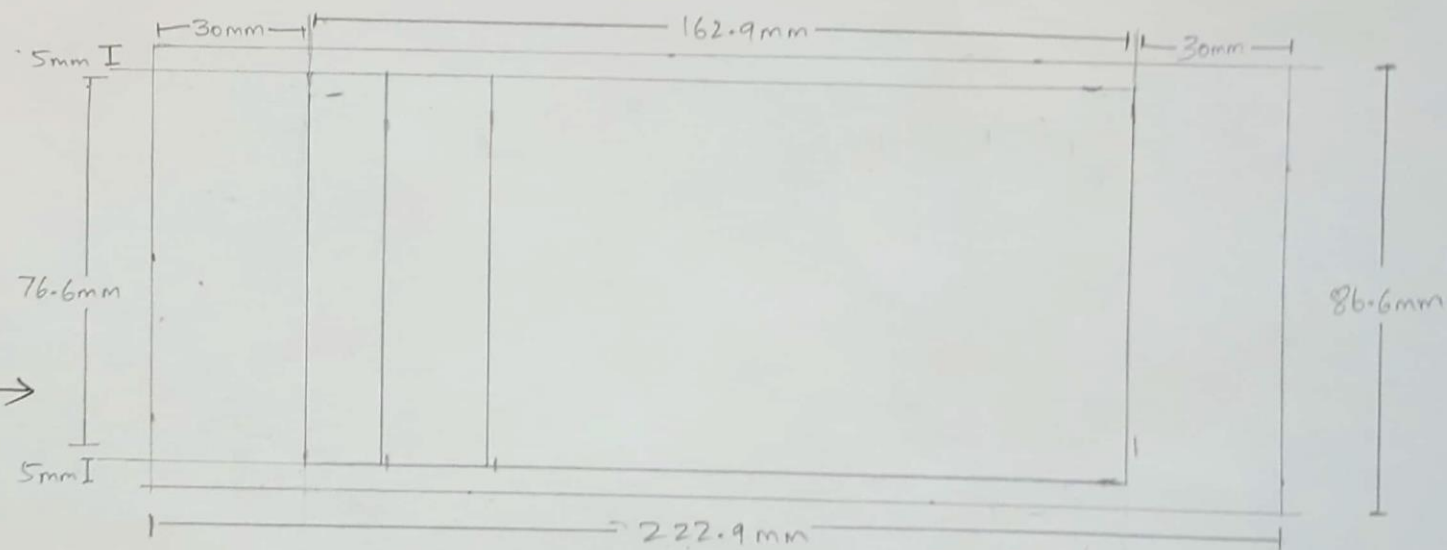




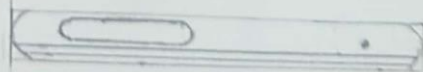
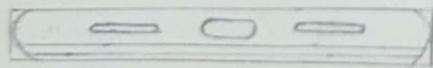
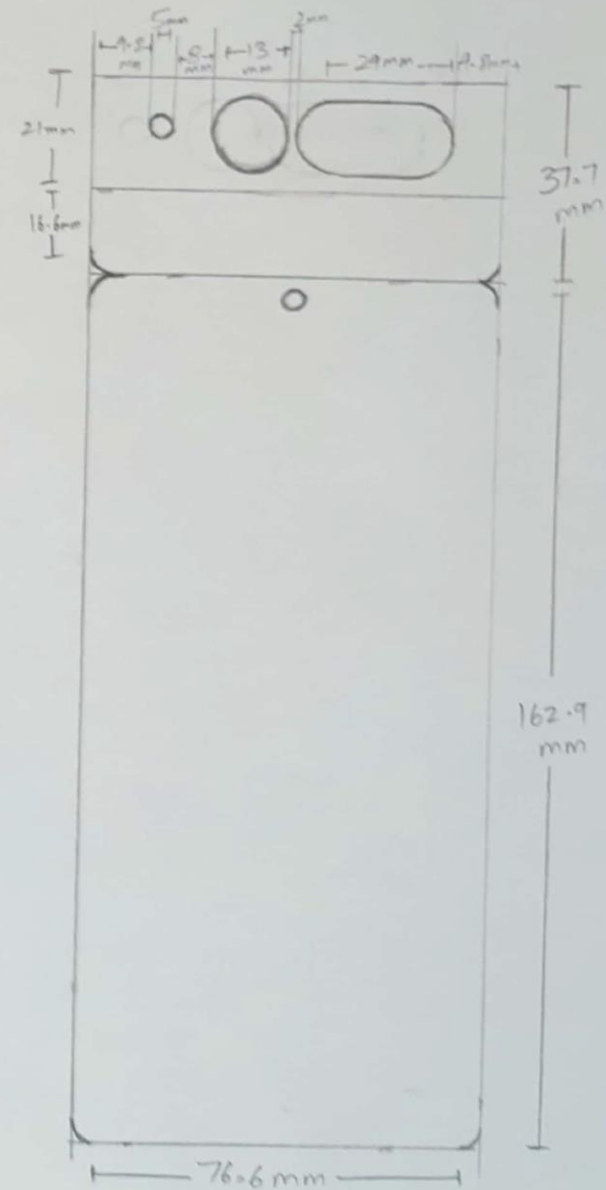
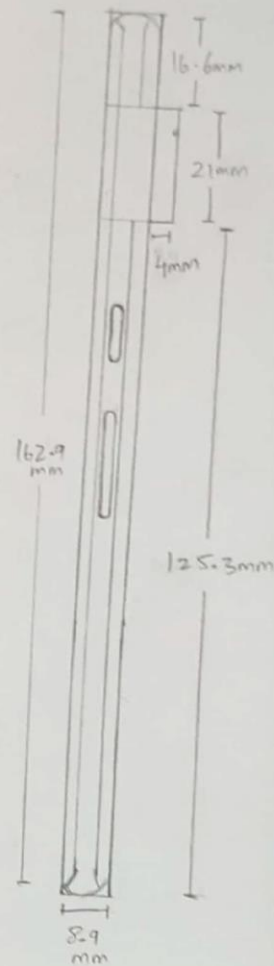
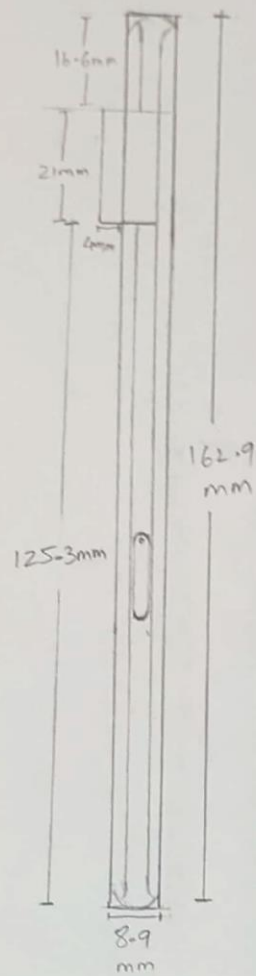
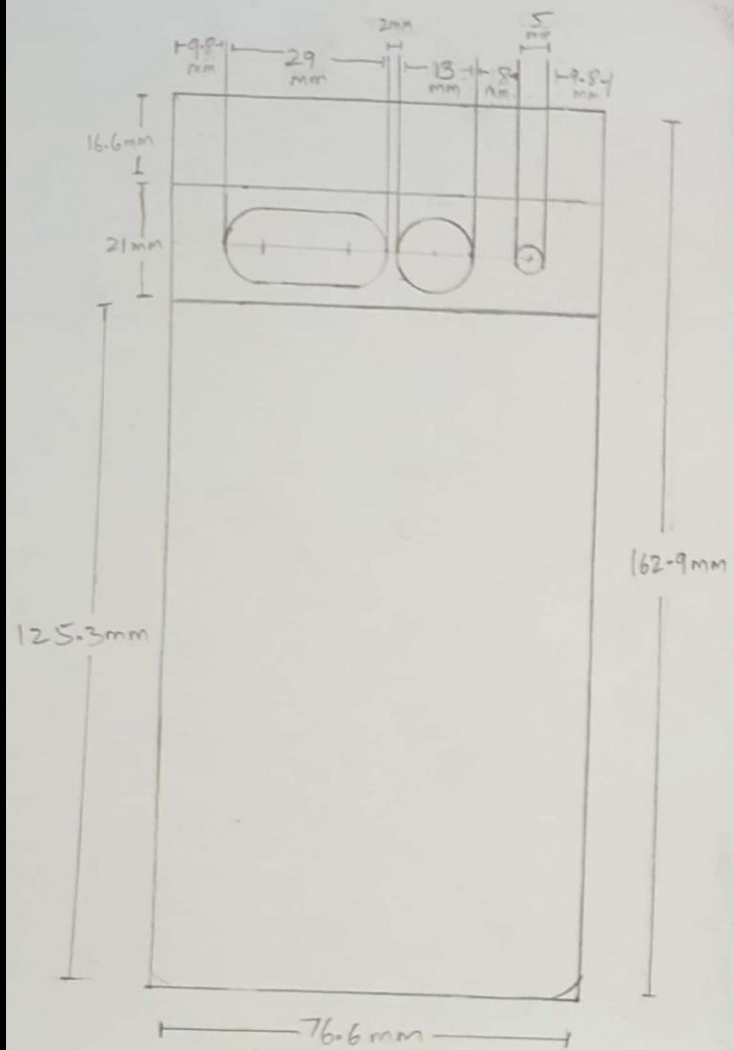




TEMPLATE FOR
REGULAR MODS



TEMPLATE FOR
GAMEPAD MOD



UPGRADE MODULES

CAN BE USED ON THE EXPANSION SLOTS.

STORAGE
UPGRADE

PROCESSOR
+ RAM UPGRADE

A PORTION OF THE
BACK GLASS LIFTS
UP TO REVEAL

EXPANSION
SLOTS

MATERIALS: ALUMINIUM
(FRAME)
GLASS (BACK)

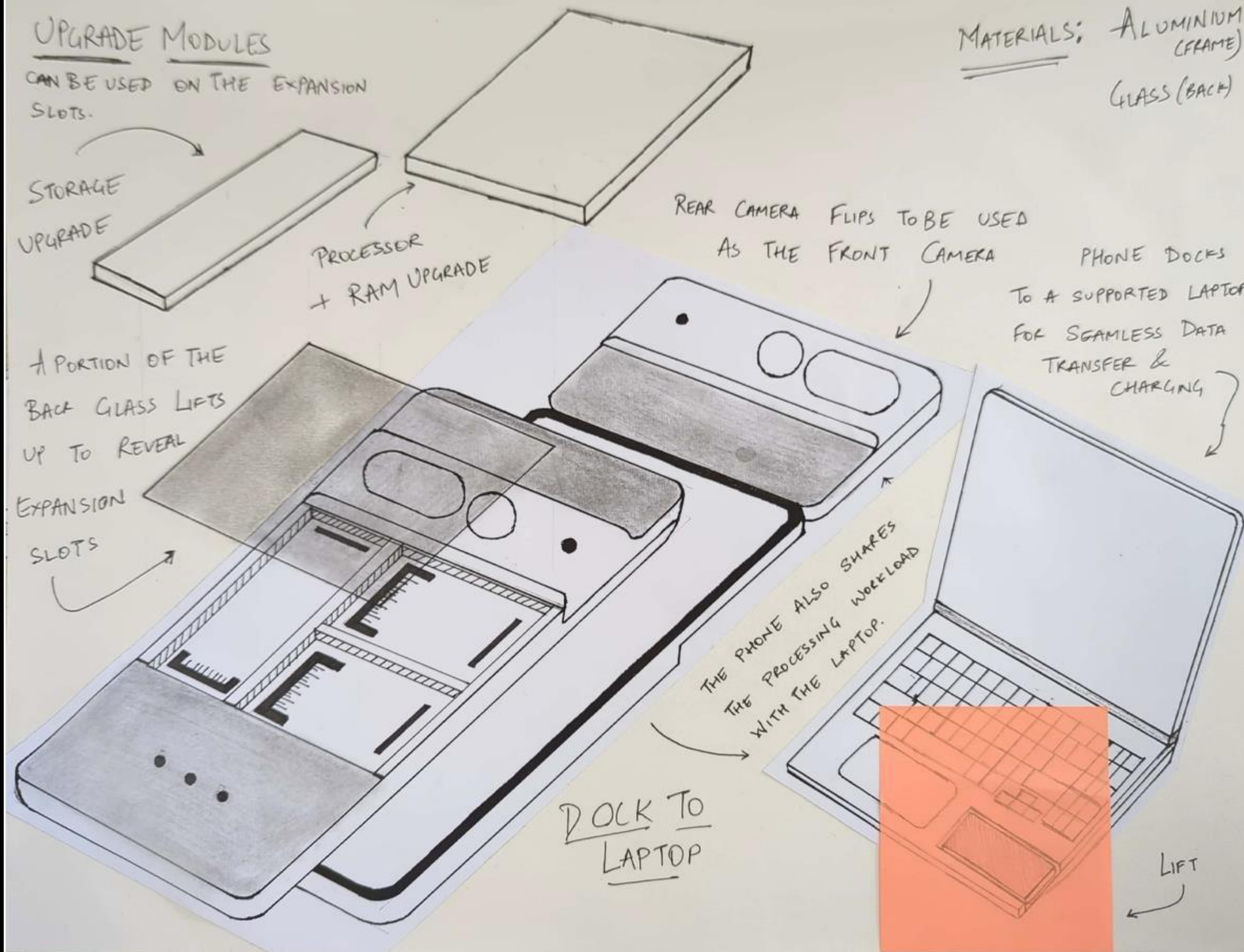
REAR CAMERA FLIPS TO BE USED
AS THE FRONT CAMERA

PHONE DOCKS
TO A SUPPORTED LAPTOP
FOR SEAMLESS DATA
TRANSFER &
CHARGING

THE PHONE ALSO SHARES
THE PROCESSING WORKLOAD
WITH THE LAPTOP.

DOCK TO
LAPTOP

LIFT



MODS

RAM +
PROCESSOR
MOD

ATTACHED TO THE
PHONE WITH THE
CONTACT PADS ON
THE BACK OF
THE
PHONE

WIRELESS
CHARGER
MOD

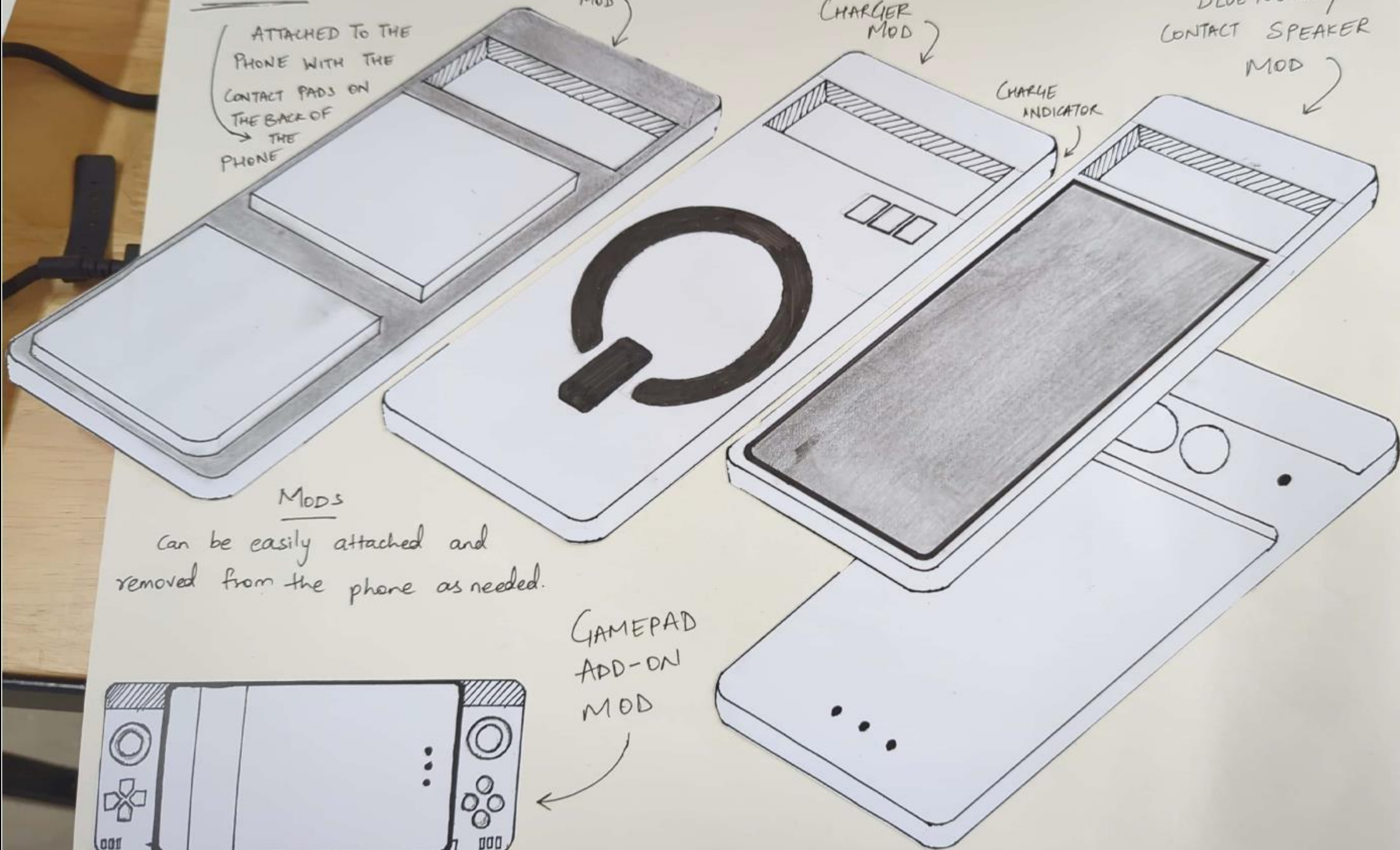
BLUETOOTH /
CONTACT SPEAKER
MOD

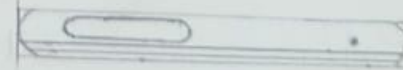
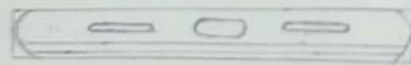
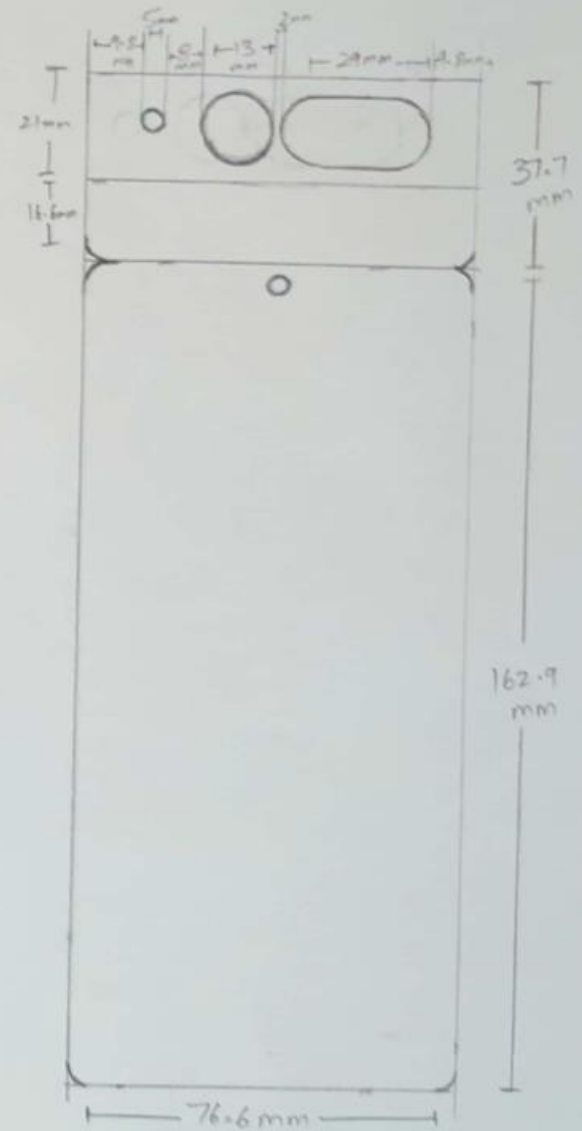
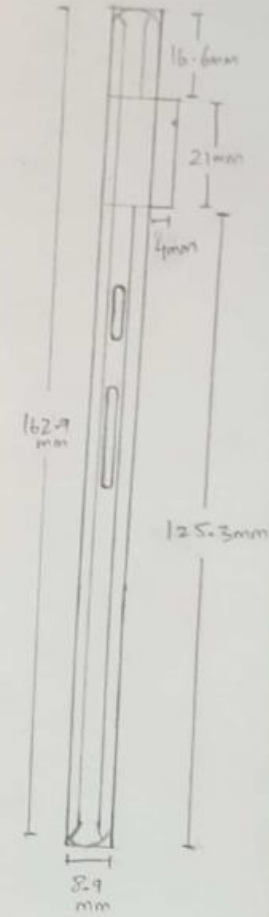
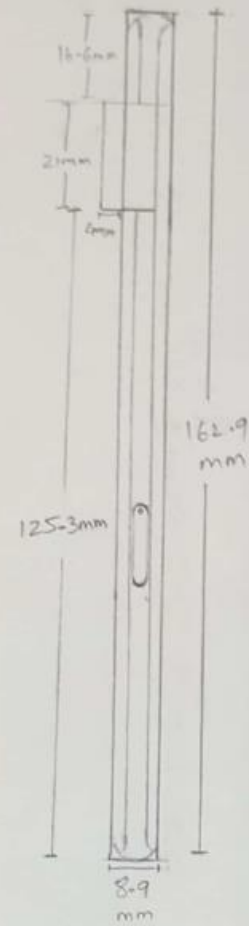
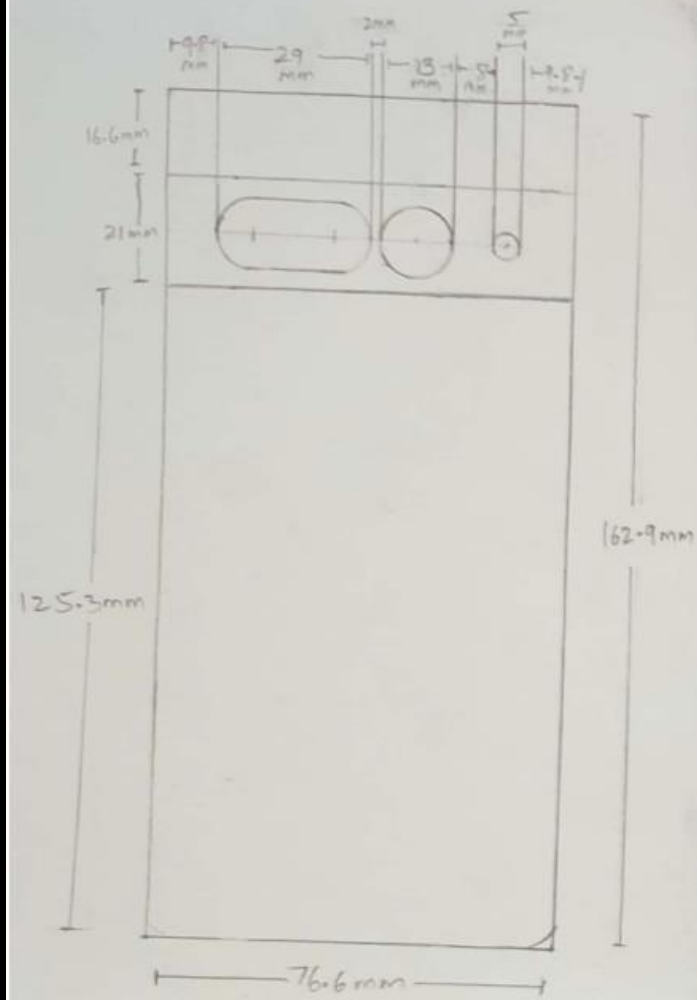
CHARGE
INDICATOR

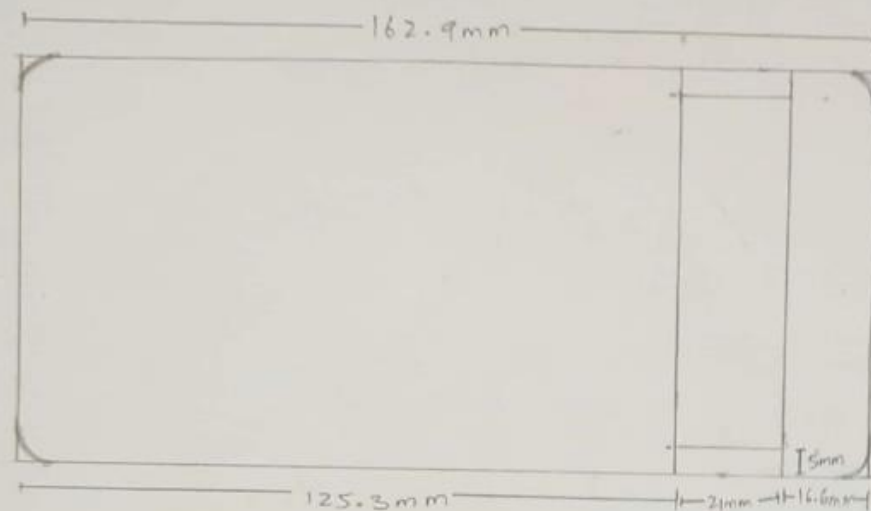
MODS

can be easily attached and
removed from the phone as needed.

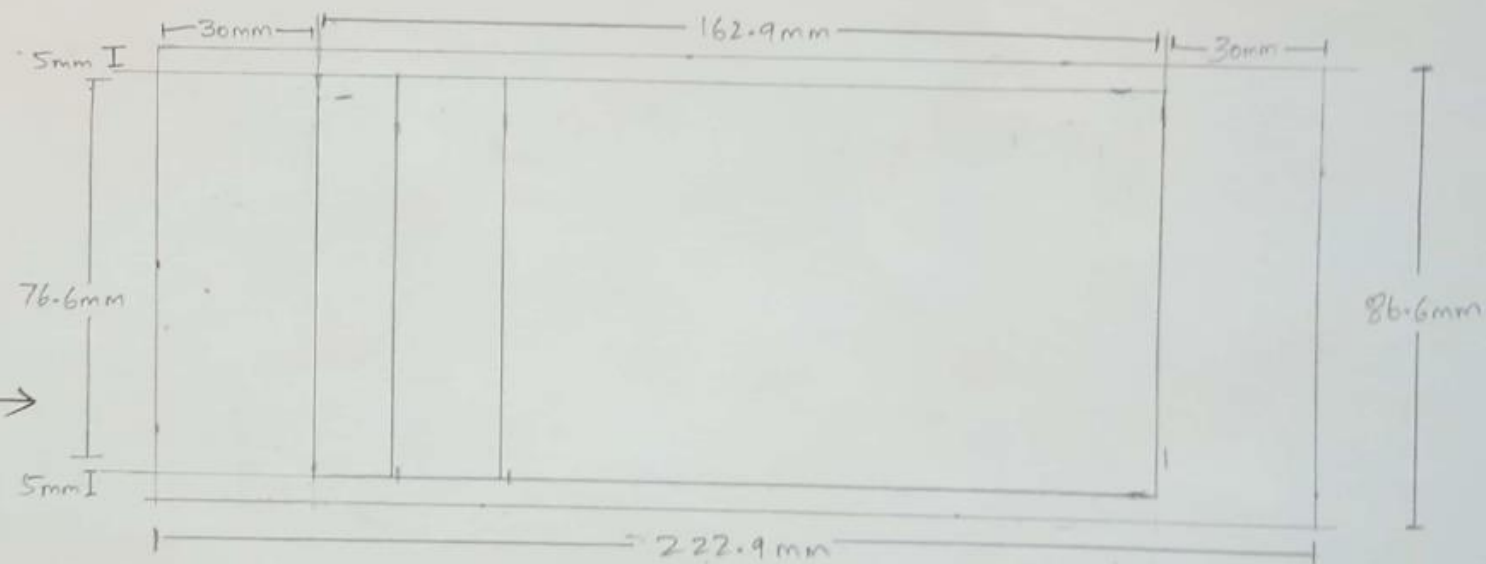
GAMEPAD
ADD-ON
MOD



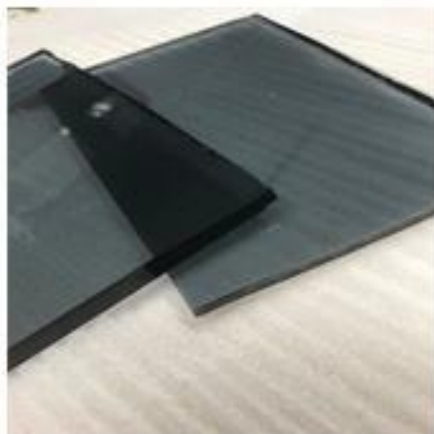
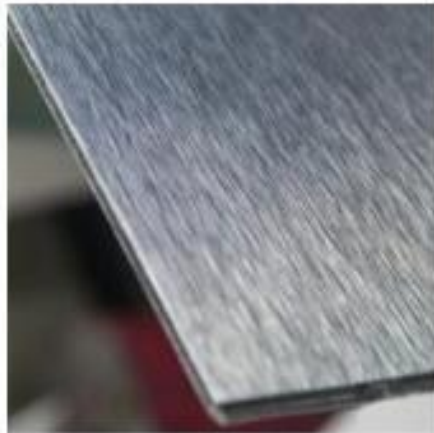
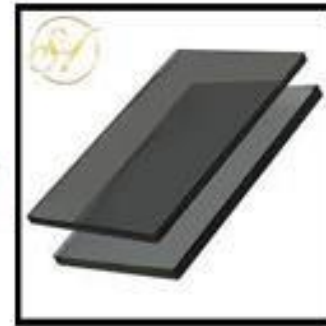




TEMPLATE FOR
REGULAR MODS

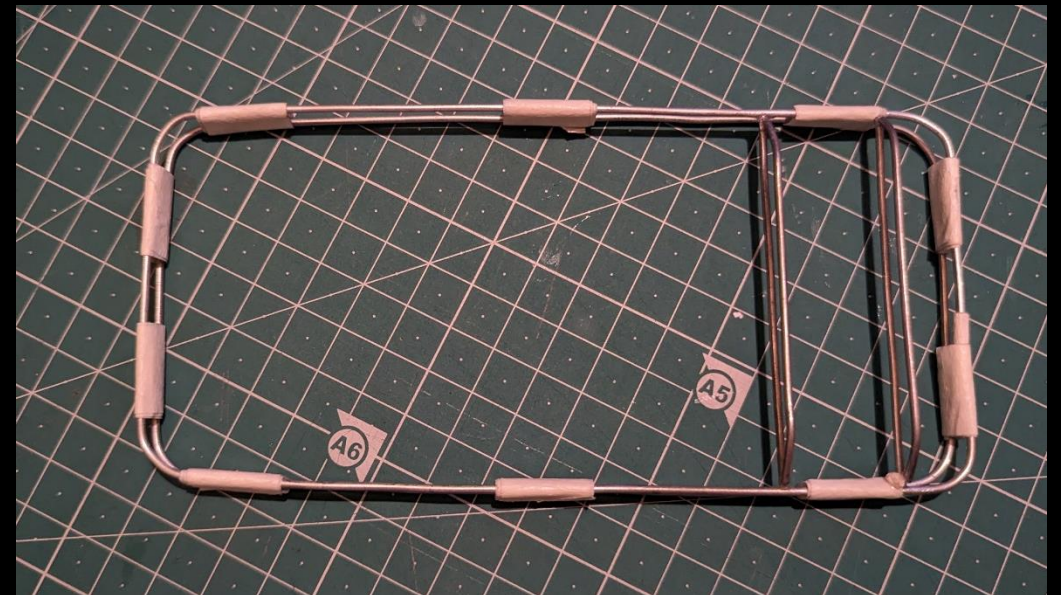
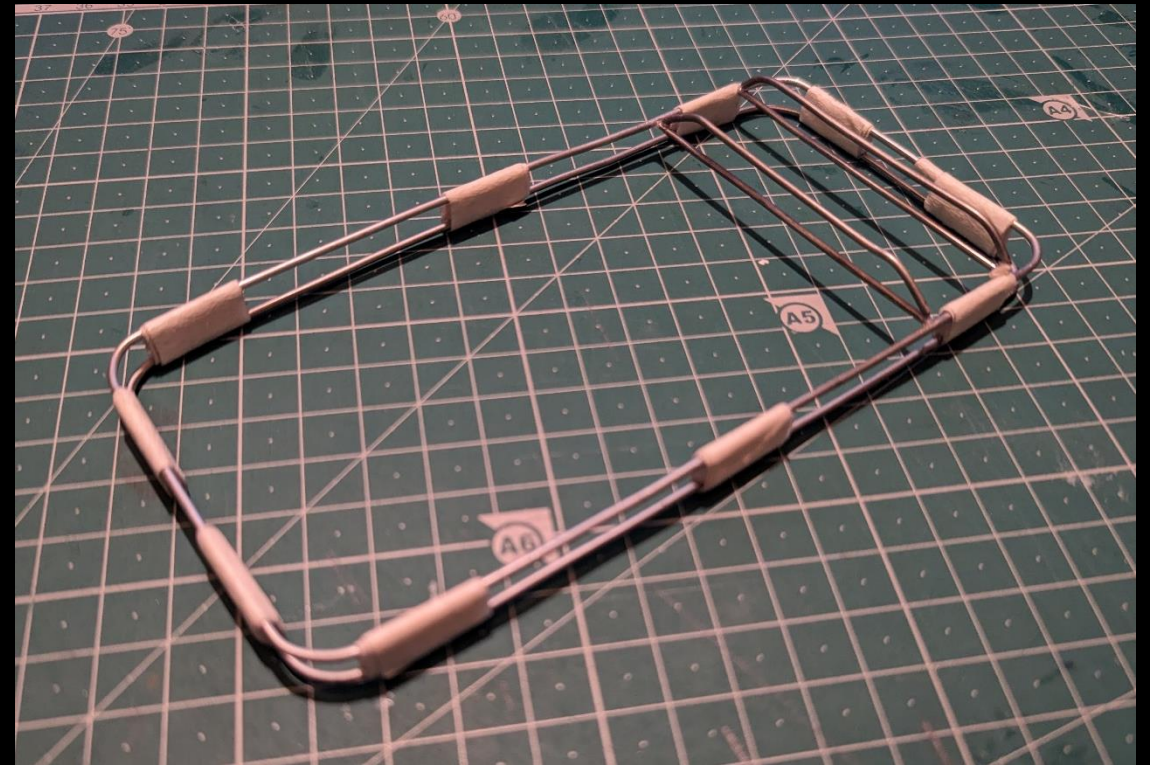
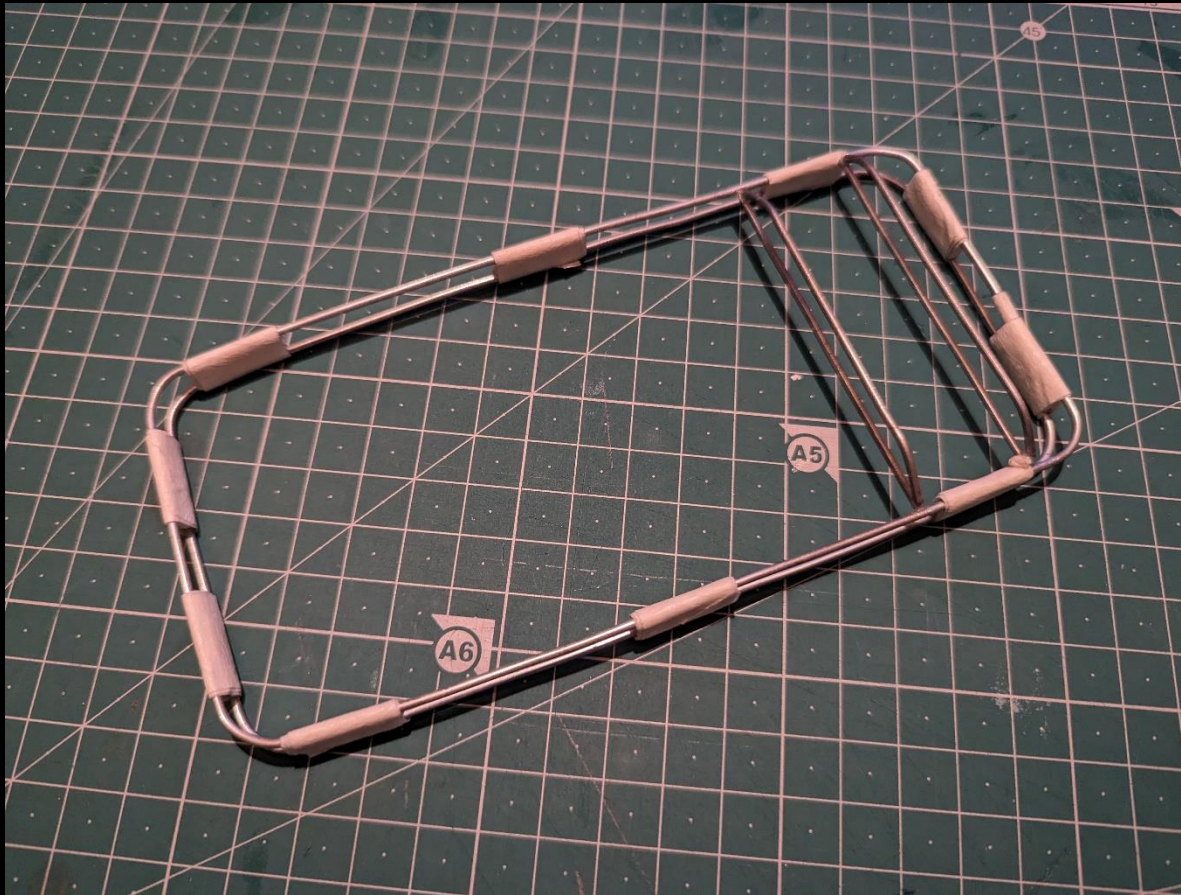


TEMPLATE FOR
GAMEPAD MOD



PROTOTYPE 01 – Wireframe

Material – Metal Wire



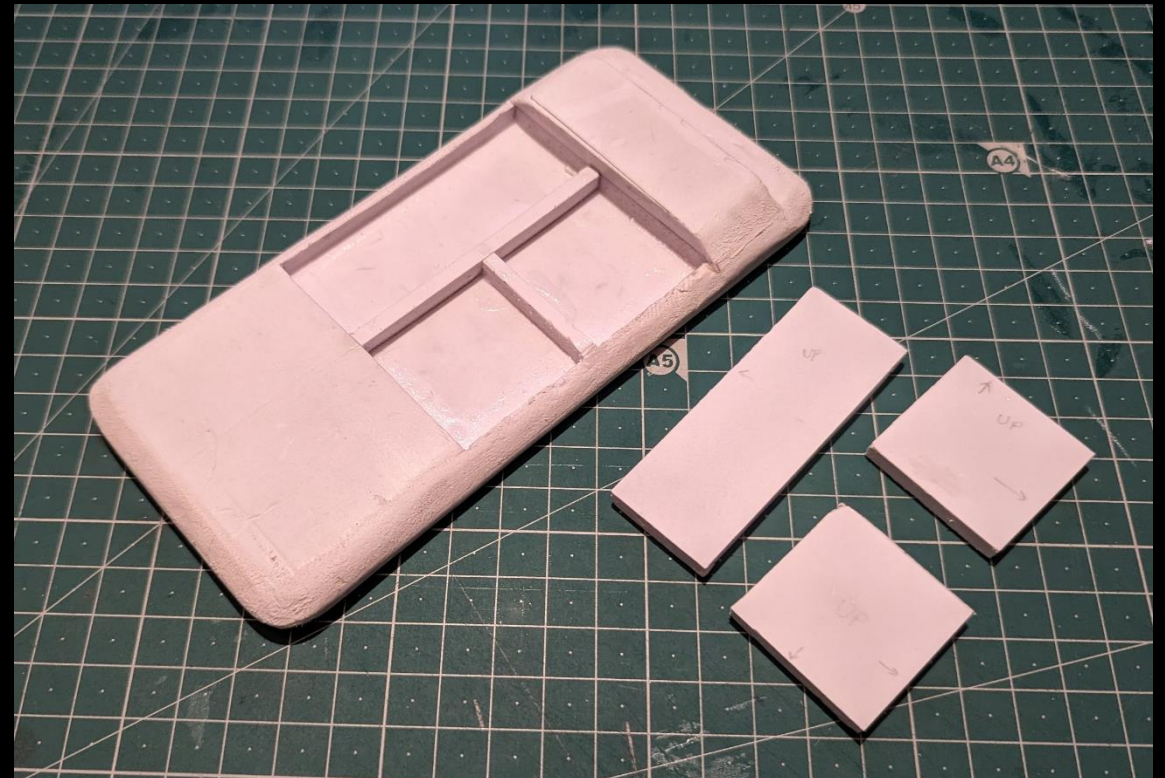
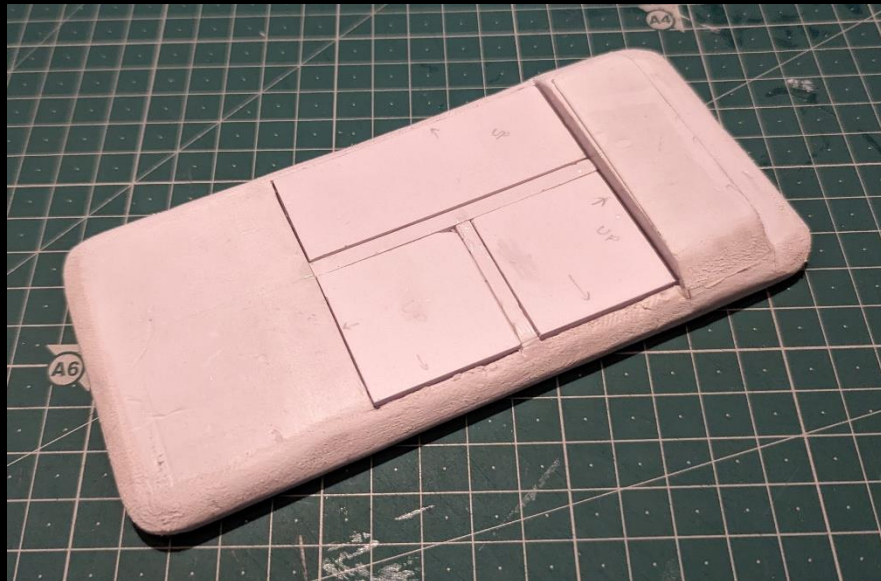
PROTOTYPE 02

Material – Corrugated Sheet



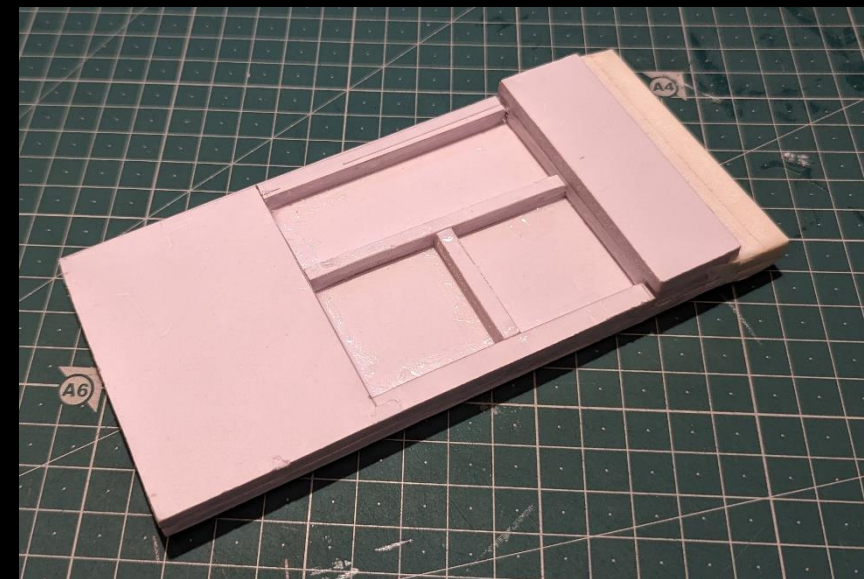
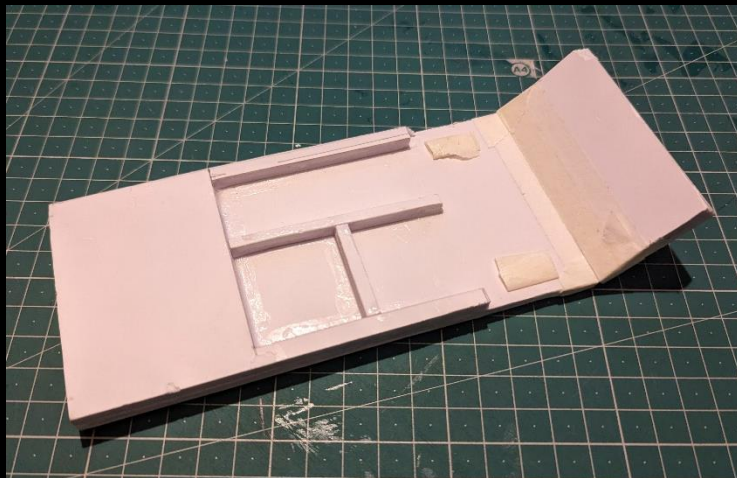
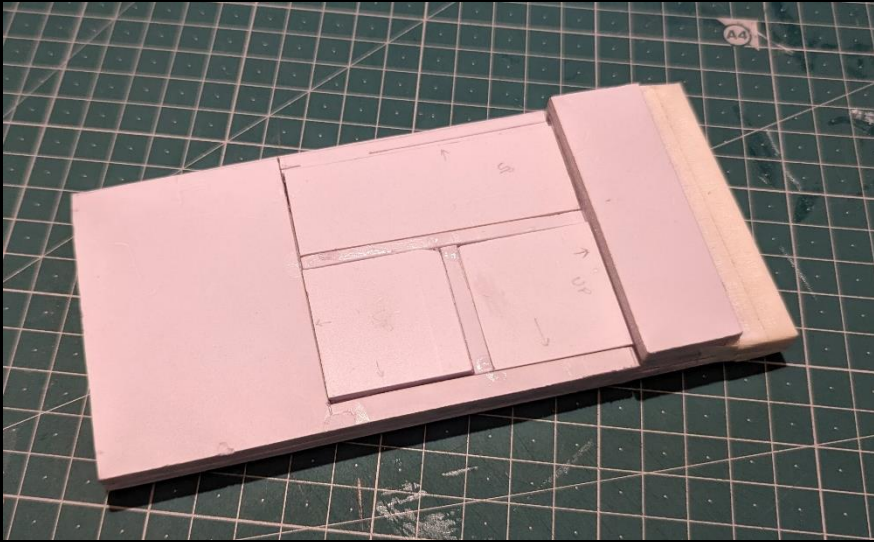
PROTOTYPE 03 – No Flip Mechanism

Material – Sunboard



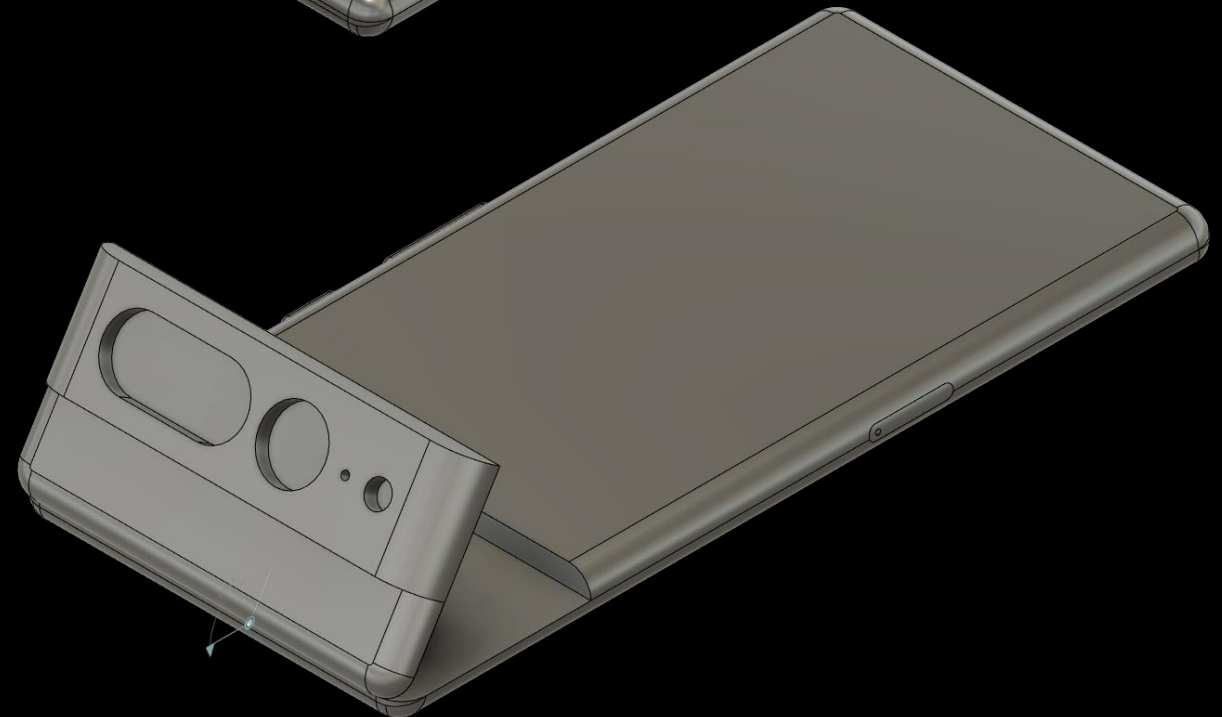
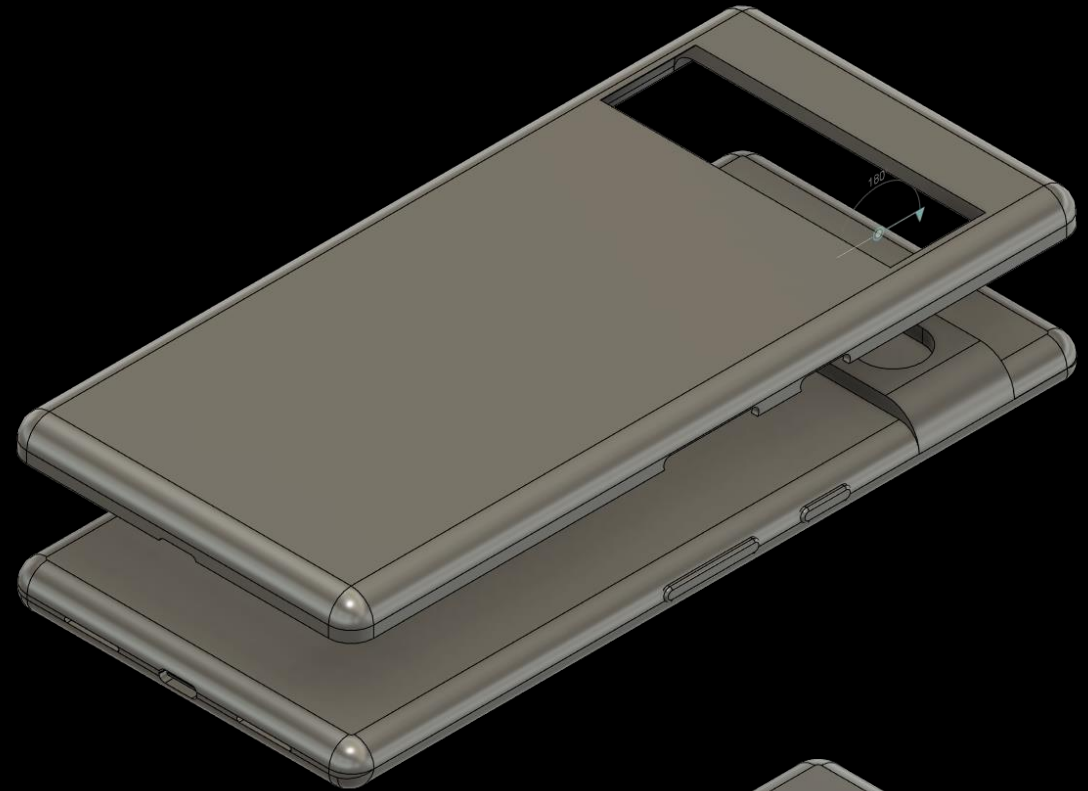
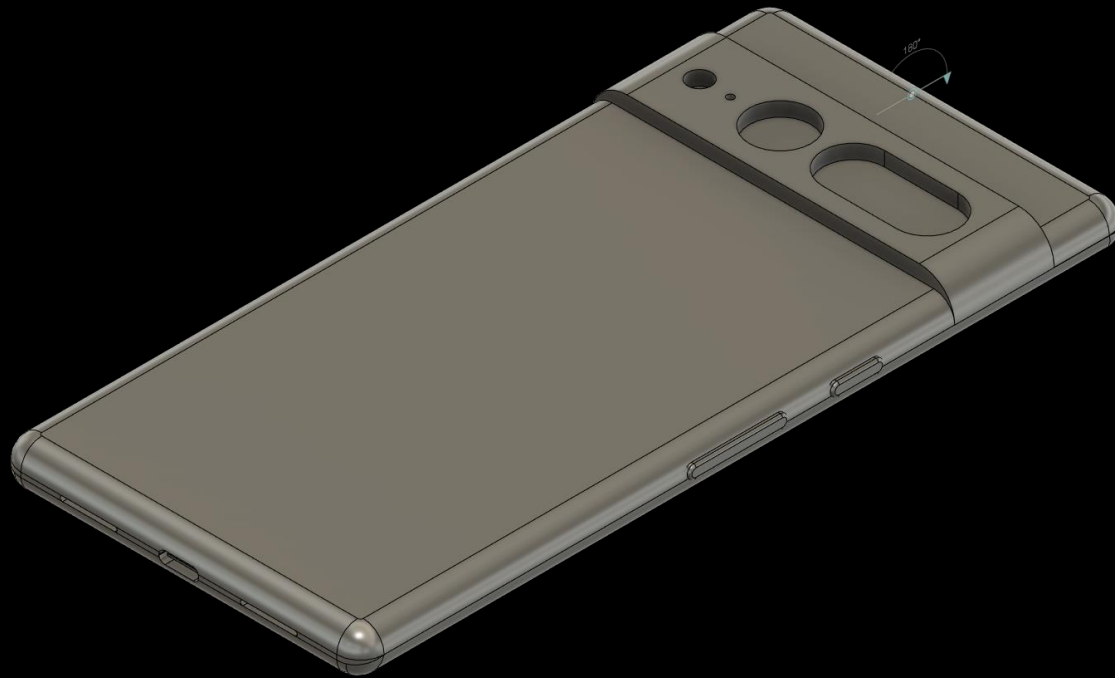
PROTOTYPE 04 – With Flip Mechanism

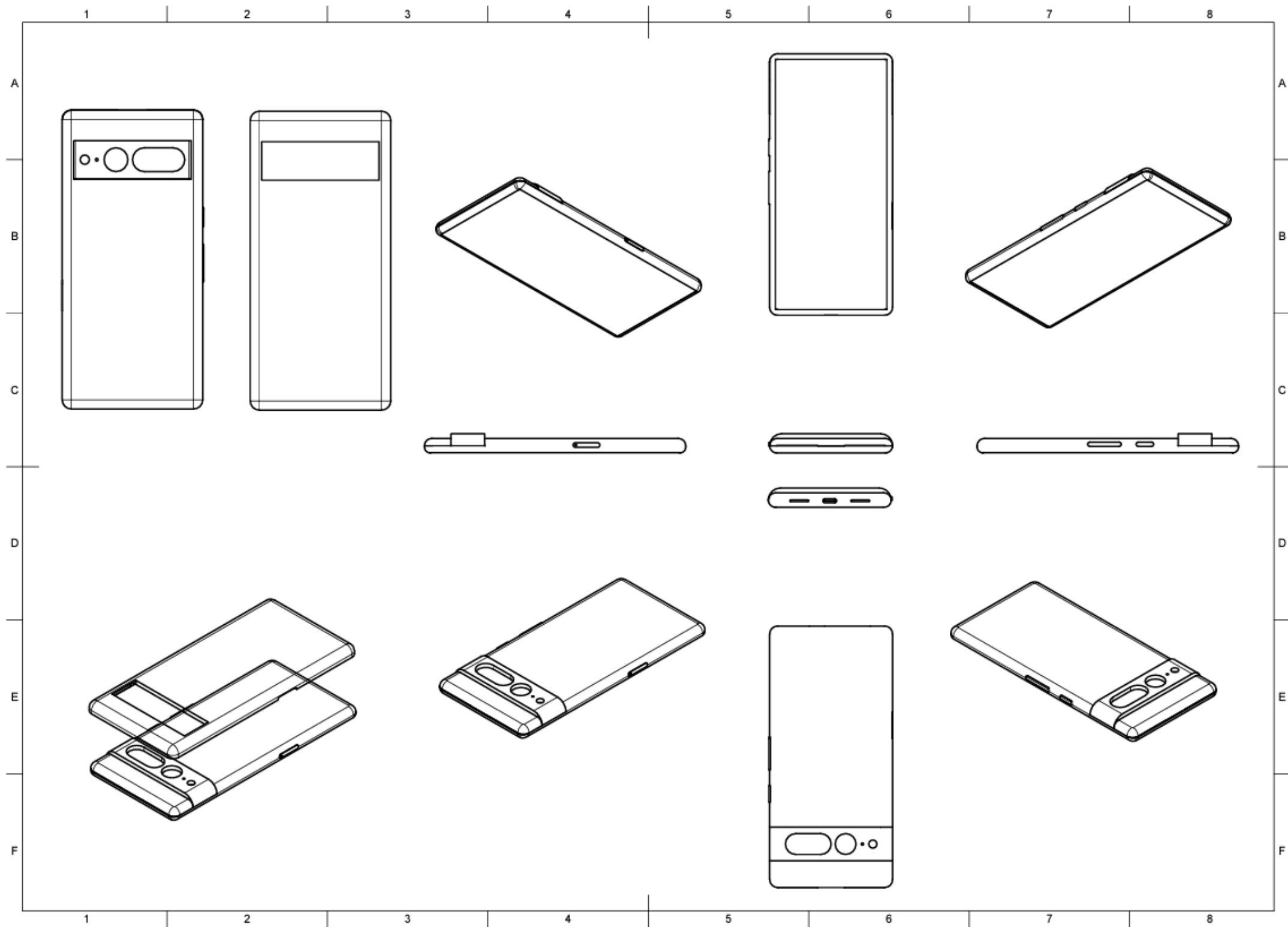
Material – Sunboard

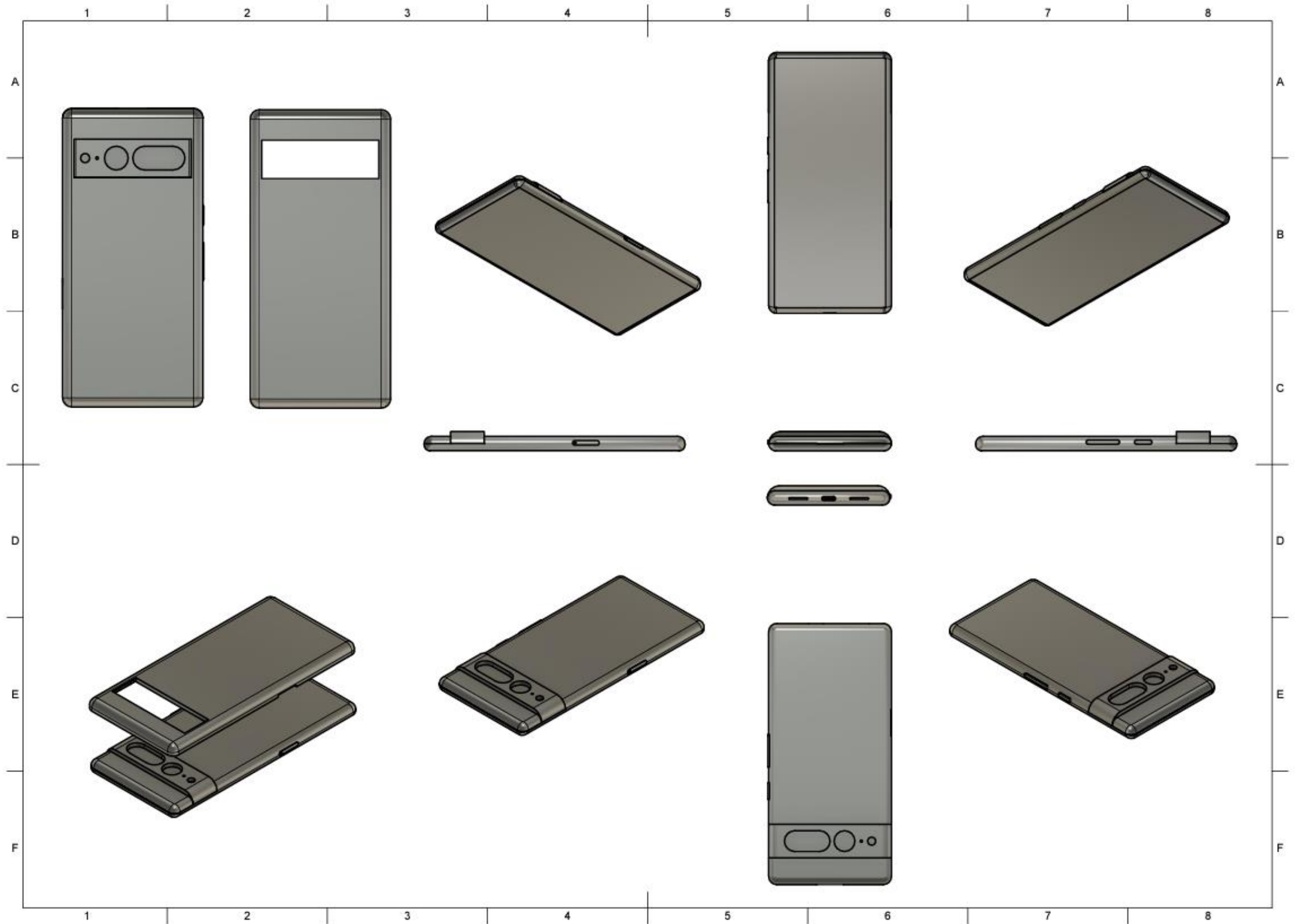


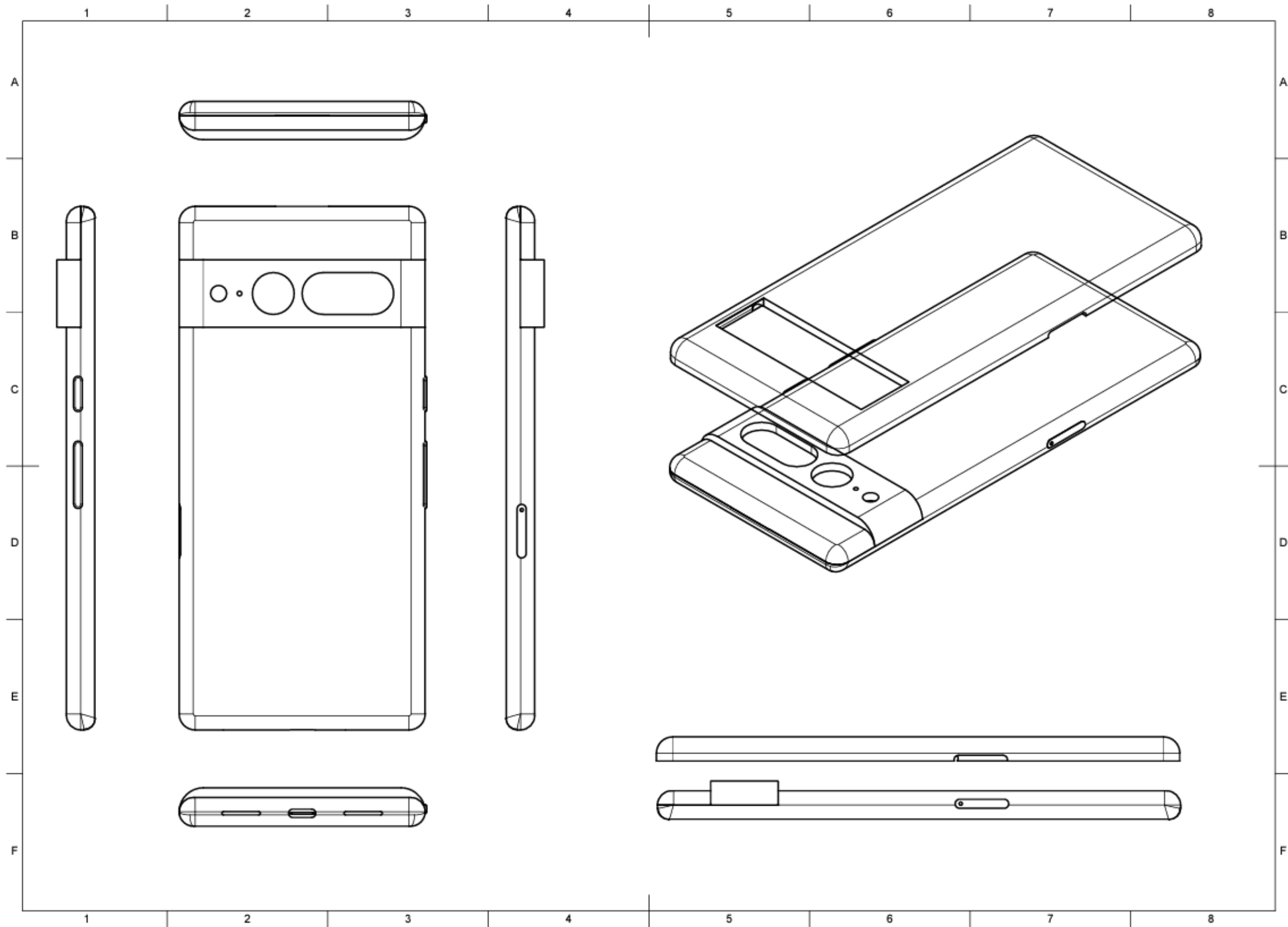
PROTOTYPE 05 – Digital Model

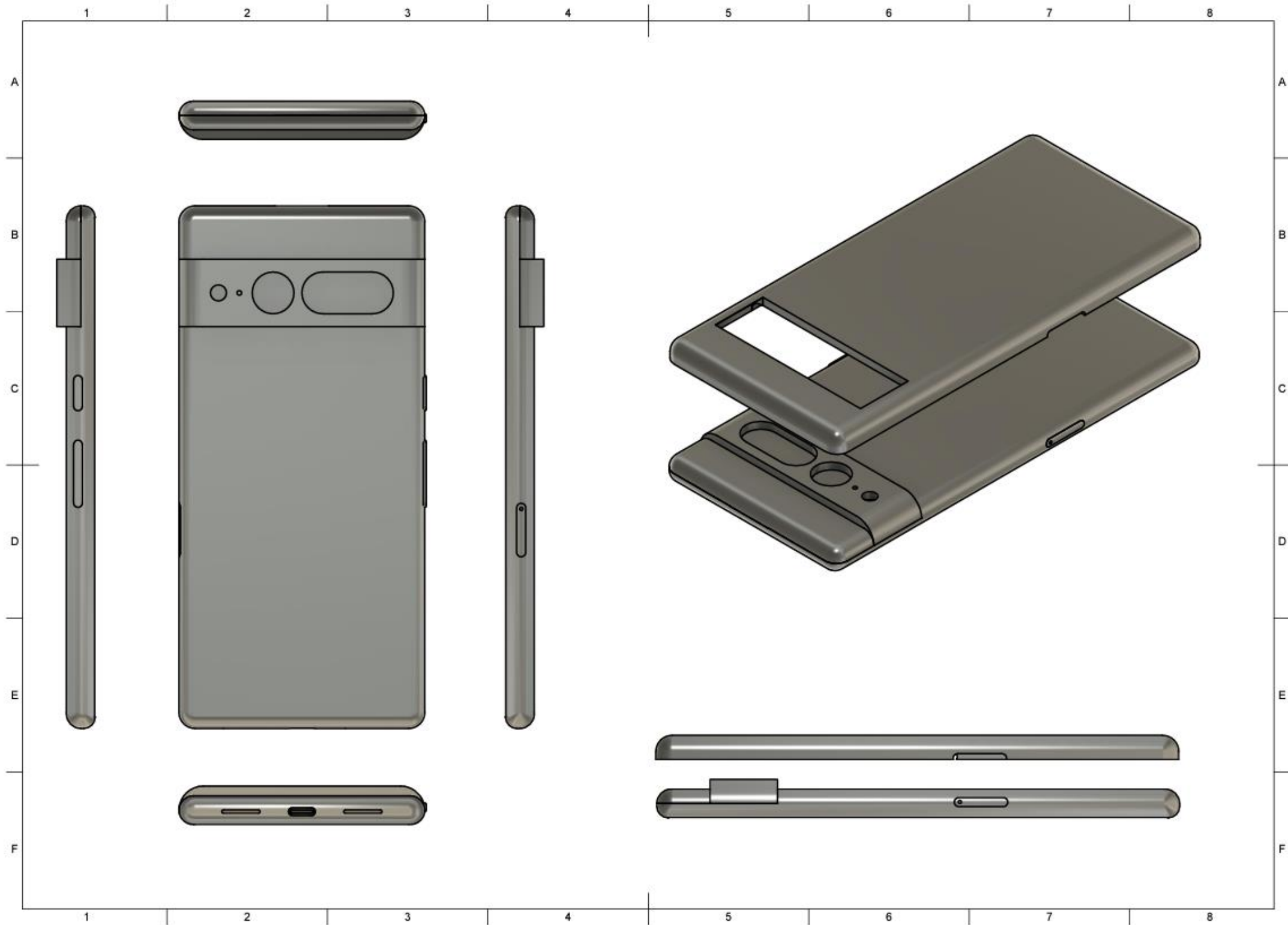
Made Using – Fusion 360











UPGRADE MODULES

CAN BE USED ON THE EXPANSION SLOTS.

STORAGE
UPGRADE

PROCESSOR
+ RAM UPGRADE

A PORTION OF THE
BACK GLASS LIFTS
UP TO REVEAL
EXPANSION
SLOTS

MATERIALS: ALUMINIUM (FRAME)
GLASS (BACK)

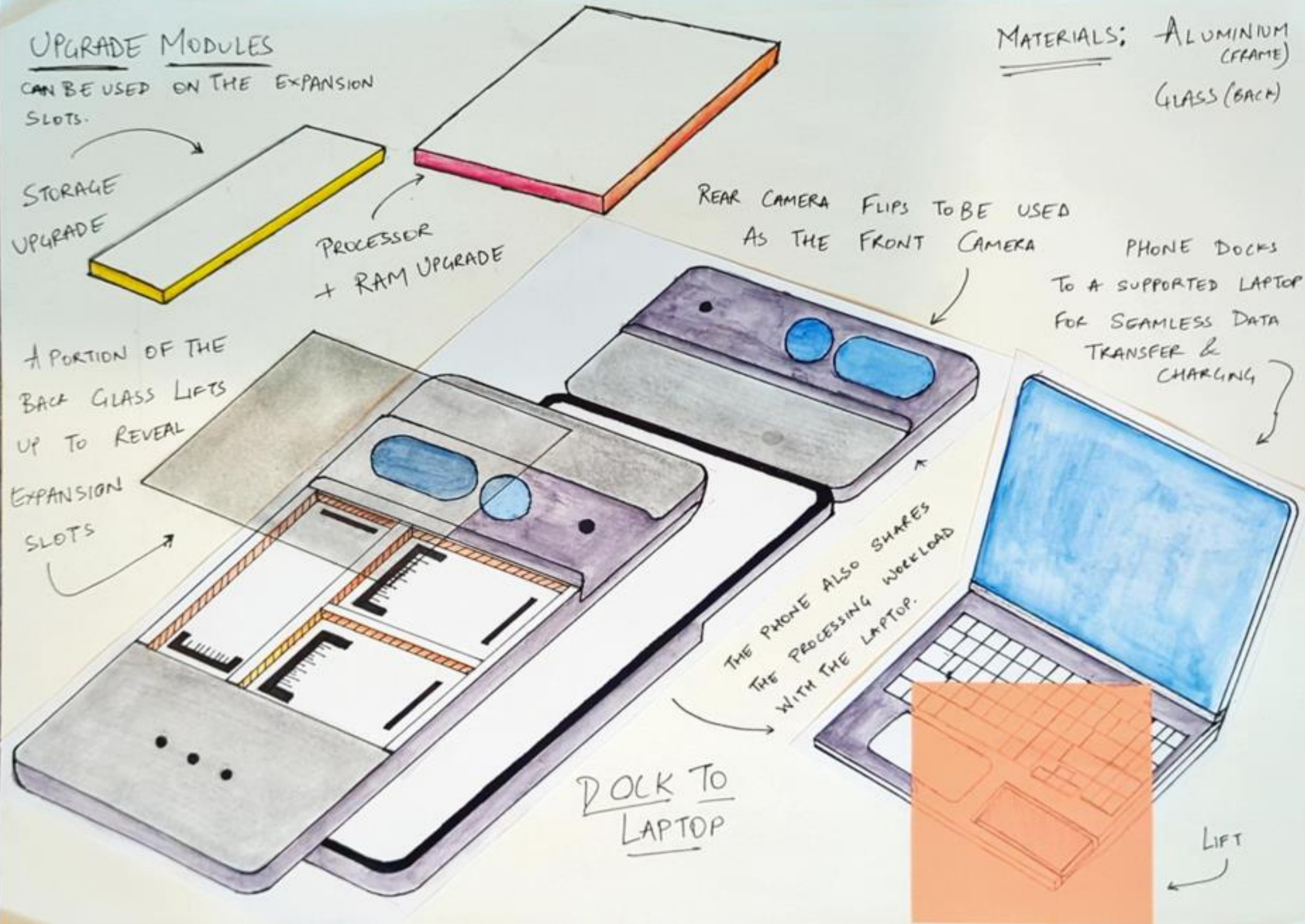
REAR CAMERA FLIPS TO BE USED
AS THE FRONT CAMERA

PHONE DOCKS
TO A SUPPORTED LAPTOP
FOR SEAMLESS DATA
TRANSFER & CHARGING

THE PHONE ALSO SHARES
THE PROCESSING WORKLOAD
WITH THE LAPTOP.

DOCK TO
LAPTOP

LIFT



MODS

ATTACHED TO THE
PHONE WITH THE
CONTACT PADS ON
THE BACK OF
THE
PHONE

RAM +
PROLESSOR
MOD

WIRELESS
CHARGER
MOD

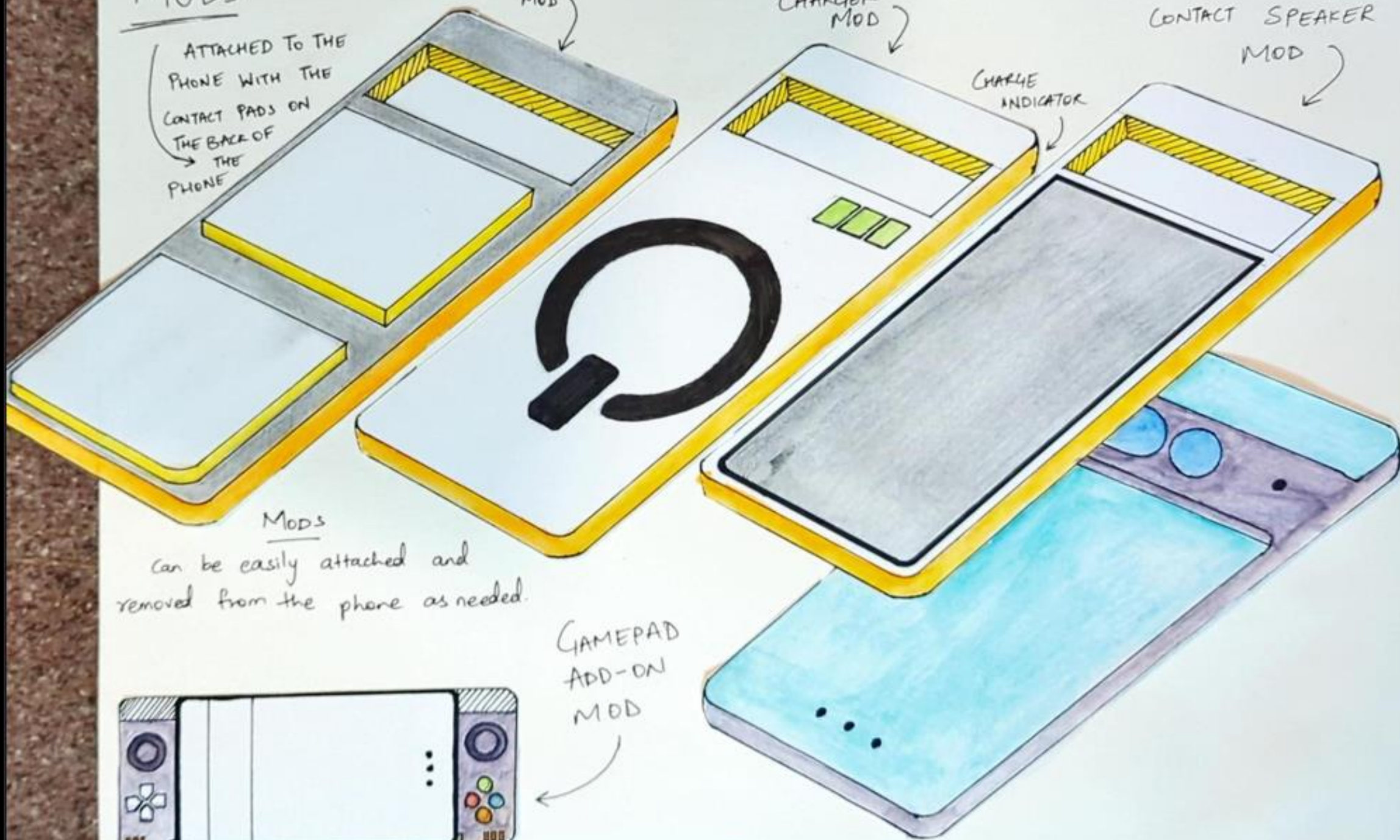
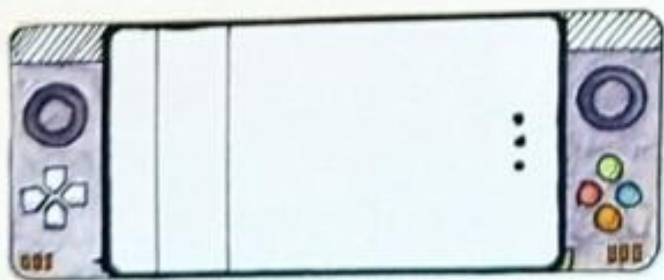
BLUETOOTH /
CONTACT SPEAKER
MOD

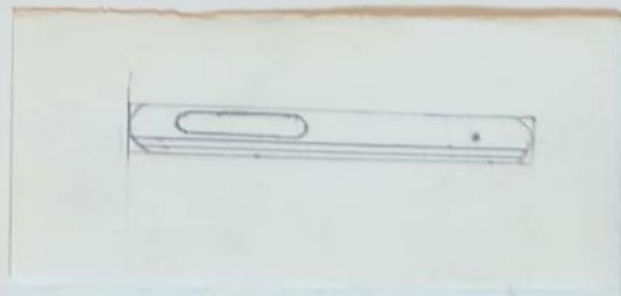
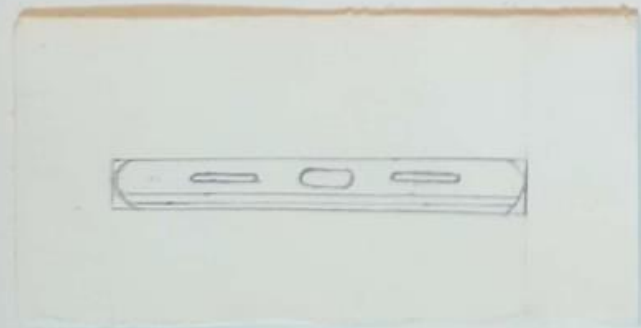
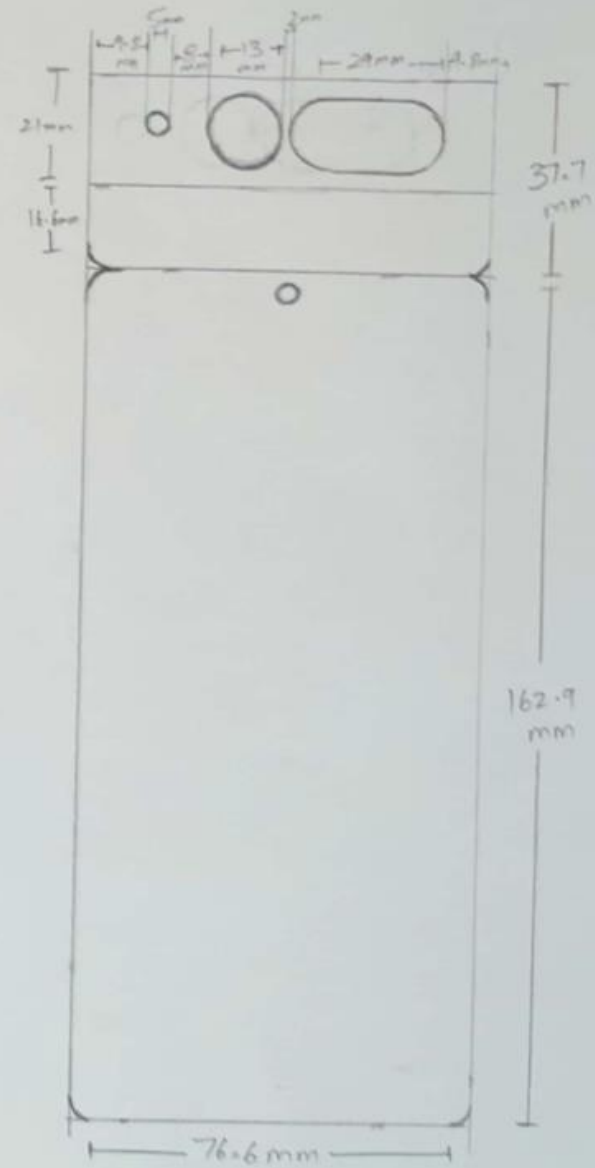
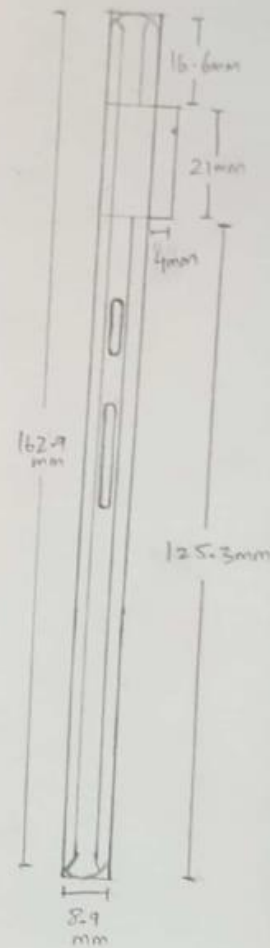
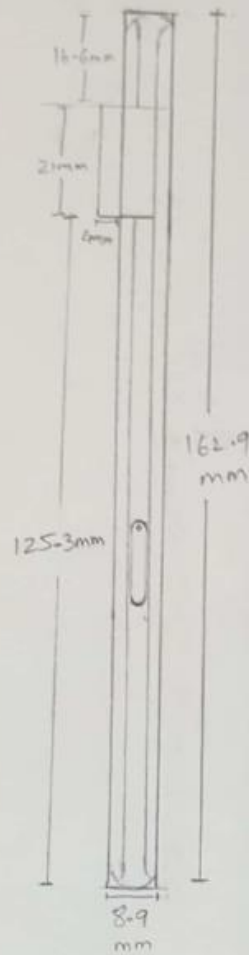
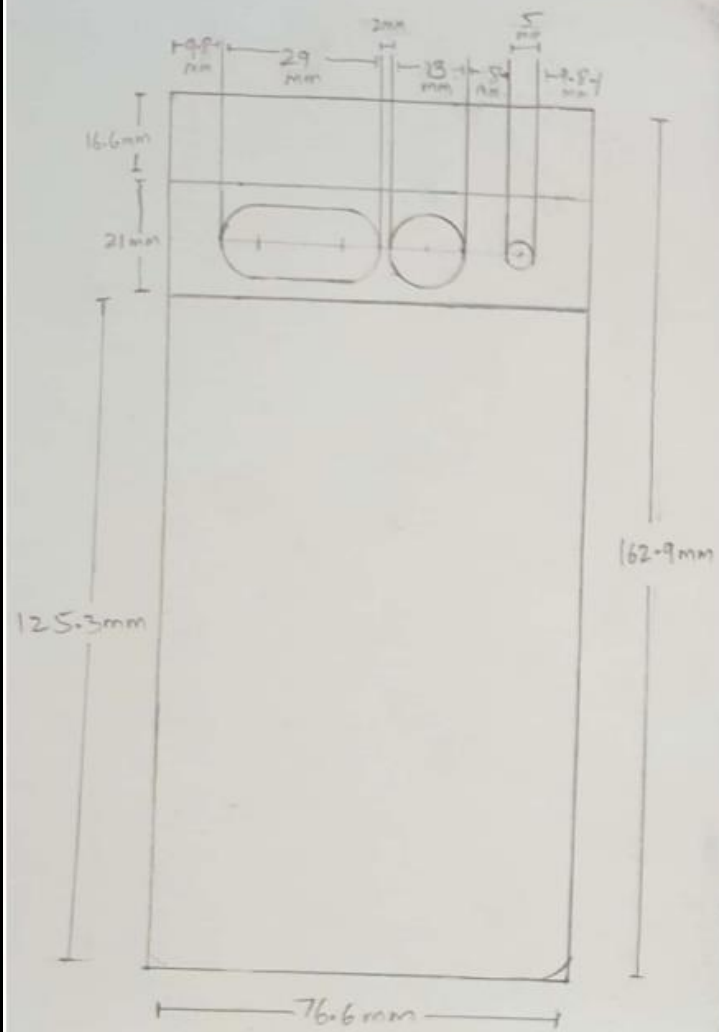
CHARGE
INDICATOR

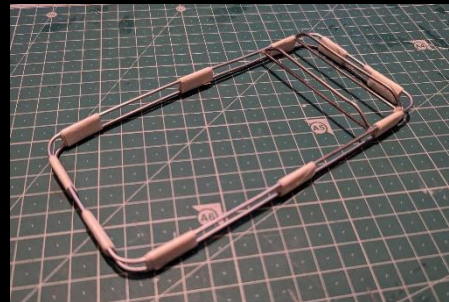
MODS

can be easily attached and
removed from the phone as needed.

GAMEPAD
ADD-ON
MOD



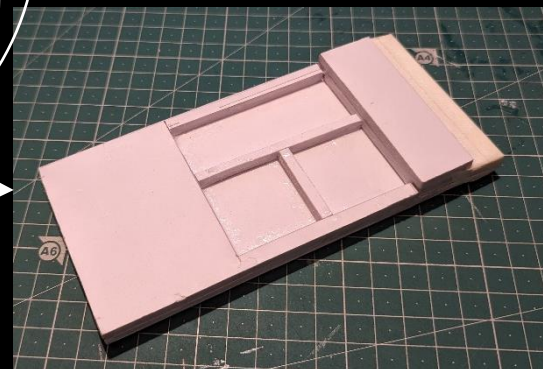




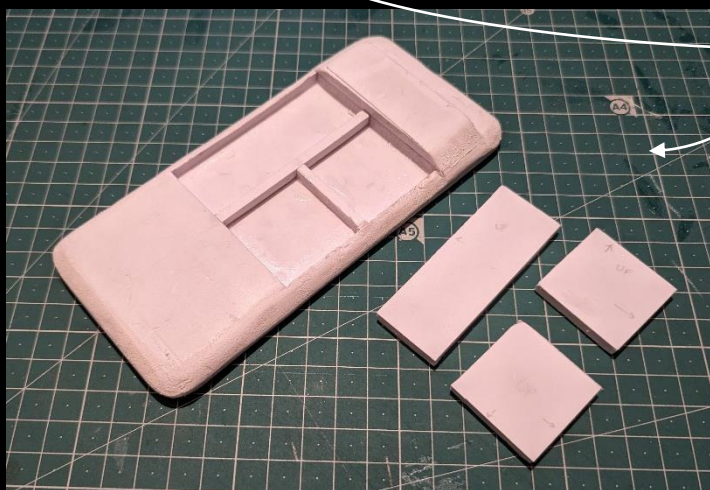
Wireframe



With Flip Mechanism

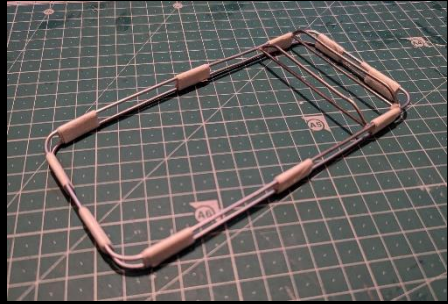


Without Flip Mechanism



Corrugated Sheet





All Mock-ups

