GLYPHS IN PROTOTYPE

The specification began with the requirement of no apparent change to the regular weight (CSS 400), which is to be assigned an optical size axis value of 14 pts. and 100% width, (CSS wdth).

The contour point structure had to be designed to enable large amounts of weight and width to be possible as well be suitable outlines for all possible parametric axes.

The lone composite in the ASCII set, “%”, is restructured to match that of the figure zero, and is composed from a superior figure zero and fraction bar.

The alignments of the font match the original on a different size em, changing from 1000 to 2000 to ensure future accuracy of the broad design space.

opsz 14 @14pt

A B C D E F G H I J K L M N O P Q R S T U V

W X Y Z & a b c d e f g h i j k l m n o p q r s t

u v w x y z 0 1 2 3 4 5 6 7 8 9 . , : ; ! ? ( ) [ ]

{ } / | \ # $ % @ ' " * ~ ^ _ ` = + < > -

opsz 14 @42pt

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z & a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 . , : ; ! ? ( ) [ ] { } / | \ # $ % @ ' " * ~ ^ _ ` = + < > -

opsz 14 @28pt

Two ideas altered the design of the printing press radically: First, the use of steam power for running the machinery, and second the replacement of the printing flatbed with the rotary motion of cylinders. Both elements were first successfully implemented by the German printer Friedrich Koenig in a series of press designs devised between 1802 and

opsz 14 @14pt

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HHAHH HHBHH HHCHH HHDHH HHEHH HHFHH HHGHH HHHHH HHIHH HHJHH HHKHH HHLHH HHMHH HHNHH HHOHH HHPHH HHQHH HHRHH HHSHH HHTHH HHUHH HHVHH HHWHH HHXHH HHYHH HHZHH nnann nnbnn nncnn nndnn nnenn nnfnn nngnn nnhnn nninn nnjnn nnknn nnlnn nnmnn nnnnn nnonn nnpnn nnqnn nnrnn nnsnn nntnn nnunn nnvnn nnwnn nnxnn nnynn nnznn 00000 00100 00200 00300 00400 00500 00600 00700 00800 00900 HH<HH HH(HH HH[HH HH{HH HH@HH HH#HH HH$HH HH%HH HH&HH HH?HH HH! HH HH/HH HH|HH HH\HH HH"HH HH~HH HH`HH HH*HH HH^HH HH'HH HH:HH HH;HH HH.HH HH,HH HH)HH HH]HH HH}HH HH>HH

opsz 14 @28pt (on 24 pt linespace)

HHAHH HHBHH HHCHH HHDHH HHEHH HHFHH HHGHH HHHHH HHIHH HHJHH HHKHH HHLHH HHMHH HHNHH HHOHH HHPHH HHQHH HHRHH HHSHH HHTHH HHUHH HHVHH HHWHH HHXHH HHYHH HHZHH nnann nnbnn nncnn nndnn nnenn nnfnn nngnn nnhnn nninn nnjnn nnknn nnlnn nnmnn nnnnn nnonn nnpnn nnqnn nnrnn nnsnn nntnn nnunn nnvnn nnwnn nnxnn nnynn nnznn 00000 00100 00200 00300 00400 00500 00600 00700 00800 00900 HH<HH HH(HH HH[HH HH{HH HH@HH HH#HH HH$HH HH%HH HH&HH HH?HH HH! HH HH/HH HH|HH HH\HH HH"HH HH~HH HH`HH HH*HH HH^HH HH'HH HH:HH HH;HH HH.HH HH,HH

GLYPHS IN PROTOTYPE

The contours are native drawn quadratic beziers.

The figures are Tabular and the width of the default figures is 1/2 em.

The Regular style is a nearly identical match when swapped with the existing Roboto.

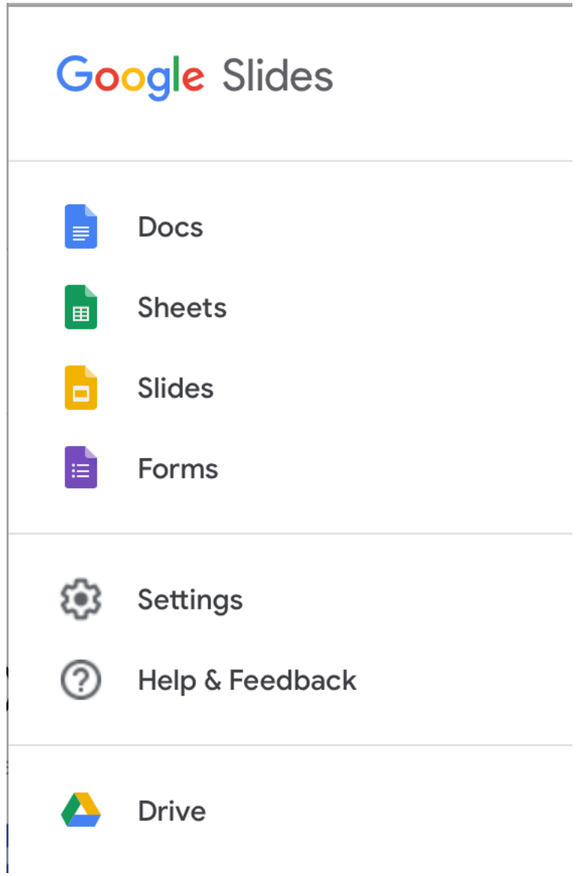
opsz 14 @14pt

A B C D E F G H I J K L M N O P Q R S T U V
W X Y Z & a b c d e f g h i j k l m n o p q r s t
u v w x y z 0 1 2 3 4 5 6 7 8 9 . , : ; ! ? ( ) [ ]
{ } / | \ # $ % @ ' " * ~ ^ _ ` = + < > -

0123456789
1234567890
2345678901
3456789012
4567890123

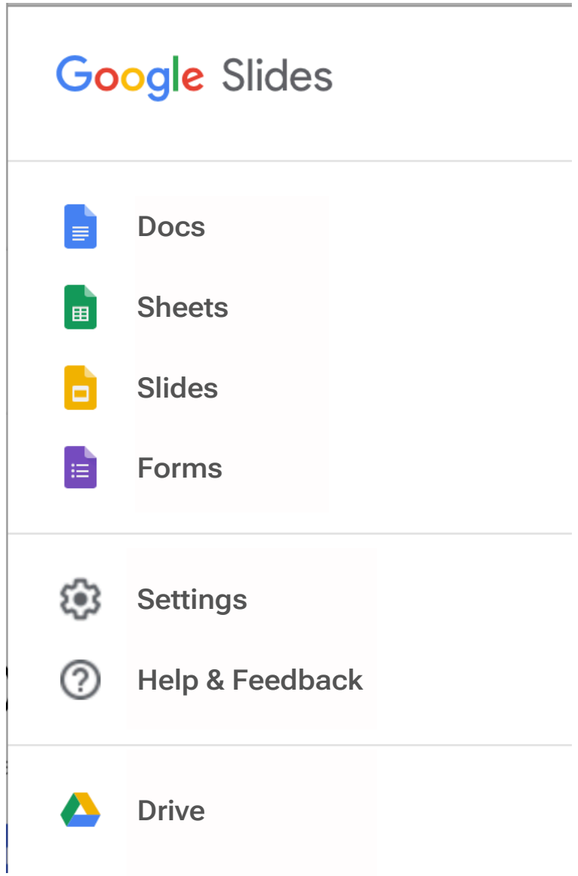
PROTOTYPE In UI

Deployed



Extremo

Matching size and weight



14 pt opsz14 wght550 wdth115

AXES IN ALPHA VF opsz

The design space began with envisioning and then designing an unbalanced range of size masters upon which to base the weight and width axes. the optical sizes floor at 8 point, and ceiling at 72 in the first design space. o as to provide more weight change at larger sizes, where it's possible to use very bold and very light instances, and less range as the optical size of use gets smaller.

opsz 72 @24pt

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ&abcdefg
hijklmnopqrstuvwxyz0
123456789.,:;!?()[]
{}/|\#$%@'"*~^_`=
+<>-

opsz 72 @72pt

ABCDEFGHIJKLMNOPQRST
WXYZ&abcdefghijklmnopqr

opsz 14 @24pt

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m
n o p q r s t u v w x y z 0
1 2 3 4 5 6 7 8 9 . , : ; ! ?
( ) [ ] { } / | \ # $ % @ ' " *
~ ^ _ ` = + < > -

opsz 14 @14pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyz
0123456789.,:;!?() [] {} / | \
#$%@'"*~^_`=+<>-

opsz 8 @24pt

A B C D E F G H I J K L
M N O P Q R S T U V W
X Y Z & a b c d e f g h i j
k l m n o p q r s t u v w x
y z 0 1 2 3 4 5 6 7 8
9 . , : ; ! ? ( ) [ ] { } / | \ # $
% @ ' " * ~ ^ _ ` = + < >
-

opsz 8 @8pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyz
0123456789.,:;!?() [] {} / | \
#$%@'"*~^_`=+<>-

AXES IN ALPHA VF: MASTERS Default wght & wdth

The maximim and minimum weights and widths for 14 point were then drawn and tested at actual size.

opsz 14, wght and wdth masters @14pt

MEMORABLE Planning sessions

MEMORABLE Planning sessions

MEMORABLE Planning sessions

MEMORABLE Planning sessions

MEMORABLE Planning sessions

opsz 14 wght 900 @24pt

A B C D E F G H I J K L
M N O P Q R S T U V W
X Y Z & a b c d e f g h i j
k l m n o p q r s t u v w
x y z 0 1 2 3 4 5 6 7 8
9 . , : ; ! ? ( ) [ ] { } / | \ # $
% @ ' " * ~ ^ _ ` = + < > -

opsz 14 wdth 50 @24pt

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z & a
b c d e f g h i j k l m n o p q
r s t u v w x y z 0 1 2 3 4 5 6
7 8 9 . , : ; ! ? ( ) [ ] { } / | \
$ % @ ' " * ~ ^ _ ` = + <
> -

opsz 14 @24pt

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m
n o p q r s t u v w x y z 0
1 2 3 4 5 6 7 8 9 . , : ; ! ?
( ) [ ] { } / | \ # $ % @ ' " *
~ ^ _ ` = + < > -

opsz 14 wdth 125 @24pt

A B C D E F G H I J K L
M N O P Q R S T U V W
X Y Z & a b c d e f g h i
j k l m n o p q r s t u v
w x y z 0 1 2 3 4 5 6 7 8
9 . , : ; ! ? ( ) [ ] { } / | \ # $
% @ ' " * ~ ^ _ ` = + < > -

opsz 14 wght 100 @24pt

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z &
a b c d e f g h i j k l m n o p
q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 . , : ; ! ? ( ) [ ] { } / |
\ # $ % @ ' " * ~ ^ _ ` = +
< > -

AXES IN ALPHA VF: MASTERS
Paramteric Axes

Parametric axes, i.e. variations to the underlying single parameters that combine to make the changes from one stye to another, and from one size master to another, were drawn. These include the six axes shown here. XTRA modifies the counter width of glyphs. YTUC cjhanges uppercase height. YTLC changes lowercase height. XOPQ changes stem weight. YTAS changeslowercase ascender height and YOPQ changes hairline weight.

opsz 14 XTRA minimum

A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z & a b c
d e f g h i j k l m n o p q r s t u

opsz 14 XTRA maximum

A B C D E F G H I J K L
M N O P Q R S T U V
W X Y Z & a b c d e f

opsz 14 YOPQ minimum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 YOPQ maximum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 YTUC minimum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 YTUC maximum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 @24pt

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m
n o p q r s t u v w x y z 0
1 2 3 4 5 6 7 8 9 . , : ; ! ?
( ) [ ] { } / | \ # $ % @ ' " *
~ ^ _ ` = + < > -

opsz 14 YTAS minimum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 YTAS maximum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 YTLC minimum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 YTLC maximum

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m

opsz 14 XOPQ minimum

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z & a
b c d e f g h i j k l m n o p q r s

opsz 14 XOPQ maximum

A B C D E F G H I J K
L M N O P Q R S T U V
W X Y Z & a b c d e f g

AXES IN ALPHA VF: Corners

Together with the wght and wdth masters, (grey), and the default in the middle, the combination of five masters define their combinations, (black). The parametric axes were used to make minor adjustments to for the completed style sof the 14 point master.

opsz 14, wght and wdth masters @14pt

MEMORABLE Planning sessions
MEMORABLE Planning sessions
MEMORABLE Planning sessions
MEMORABLE Planning sessions
MEMORABLE Planning sessions

MEMORABLE Planning sessions
MEMORABLE Planning sessions
MEMORABLE Planning sessions

opsz 14 wght 900 wdth 50 @24pt

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
& a b c d e f g h i j k l m n
o p q r s t u v w x y z 0 1 2
3 4 5 6 7 8 9 . , : ; ! ? ( ) [ ]
{ } / | \ # $ % @ ' " * ~ ^ _
` = + < > -

opsz 14 wght 900 @24pt

A B C D E F G H I J K L
M N O P Q R S T U V W
X Y Z & a b c d e f g h i j
k l m n o p q r s t u v w
x y z 0 1 2 3 4 5 6 7 8
9 . , : ; ! ? ( ) [ ] { } / | \ # $
% @ ' " * ~ ^ _ ` = + < > -

opsz 14 wght 900 wdth 125 @24pt

A B C D E F G H I J K
L M N O P Q R S T U V
W X Y Z & a b c d e f
g h i j k l m n o p q r
s t u v w x y z 0 1 2 3
4 5 6 7 8 9 . , : ; ! ? ( ) [ ]
{ } / | \ # $ % @ ' " * ~ ^

opsz 14 wdth 50 @24pt

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z & a
b c d e f g h i j k l m n o p q
r s t u v w x y z 0 1 2 3 4 5 6
7 8 9 . , : ; ! ? ( ) [ ] { } / | \
$ % @ ' " * ~ ^ _ ` = + <
> -

opsz 14 @24pt

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m
n o p q r s t u v w x y z 0
1 2 3 4 5 6 7 8 9 . , : ; ! ?
( ) [ ] { } / | \ # $ % @ ' " *
~ ^ _ ` = + < > -

opsz 14 wdth 125 @24pt

A B C D E F G H I J K L
M N O P Q R S T U V W
X Y Z & a b c d e f g h i
j k l m n o p q r s t u v
w x y z 0 1 2 3 4 5 6 7 8
9 . , : ; ! ? ( ) [ ] { } / | \ # $
% @ ' " * ~ ^ _ ` = + < > -

opsz 14 wght 100 wdth 50 @24pt

A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z & a b c
d e f g h i j k l m n o p q r s t u
v w x y z 0 1 2 3 4 5 6 7 8
9 . , : ; ! ? ( ) [ ] { } / | \ # $ %
@ ' " * ~ ^ _ ` = + < > -

opsz 14 wght 100 @24pt

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z &
a b c d e f g h i j k l m n o p
q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 . , : ; ! ? ( ) [ ] { } / |
\ # $ % @ ' " * ~ ^ _ ` = +
< > -

opsz 14 wght 100 wdth 125 @24pt

A B C D E F G H I J K L M
N O P Q R S T U V W X Y
Z & a b c d e f g h i j k l m
n o p q r s t u v w x y z 0
1 2 3 4 5 6 7 8 9 . , : ; ! ?
( ) [ ] { } / | \ # $ % @ ' " *
~ ^ _ ` = + < > -

AXES IN ALPHA VF

These weights and widths were then extrapolated to the optical size maximum for approval of the larger appearences. Projection of the lightest weight at 72 point was determined to be too light for some rendering, so the maximum opticala size was doubled to 144 pt, in effect doubling the minimum weight at the maximum size, far safe rendering on all modern platforms.

opsz 144 @24pt

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ&abcdefg
hijklmnopqrstuvwxyz0
123456789.,:;!?()[]
{}/|\#$%@'"*~^_`=
+<>-

opsz 14 @24pt

ABCDEFGHIJKLM
NOPQRSTUVWXY
Z&abcdefghijklm
nopqrstuvwxyz0
123456789.,:;!?
()[]{}/|\#$%@'"*
~^_`=+<>-

opsz 8 @24pt

ABCDEFGHIJKL
MNOPQRSTUVW
XYZ&abcdefghij
klmnopqrstuvwx
yz0123456789
.,:;!?()[]{}/|\#$
%@'"*~^_`=+<>
-

opsz 72 wght 100 wdth 125, 100 & 25 @72pt

ABCDEFGHIJKLMNOPQRST
abcdefghijklmnopqrstuvwxy

opsz 144 wght 100 wdth 125, 100 & 25 @144pt

ABCDEFGHIJK
PQRSTUVWXY
abcdefghijklmn

AXES IN ALPHA VF

The same stage included designing the width axes to narrow more than the default 14 pt width axes narrows. So the 144 pt masters produce dense fonts with counters as small as most rendering allows.

The comparative line lengths show that the 14 pt has narrowed around 2 characters from A to T, while the 144 pt has narrowed around 10 characters over the same text.

The boldest most condensed 144 pt (far right), shows the impactful density of black allowed in the design and spacing at large sizes, compared to the boldest most condensed 14 pt (left and enlarged below), where more generous interior and inter-character spaces presents the user with better readability.

opsz 14 wght 400 wdth 25 @144pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&

abcdefghijklmnopqrstuvwxyz

0123456789 . , : ; !? () [] {} / | \

#$%@'"*~^_`=+<>-

opsz 14 wght 400 wdth 100 @14pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&

abcdefghijklmnopqrstuvwxyz

0123456789 . , : ; !? () [] {} / | \

#$%@'"*~^_`=+<>-

opsz 14 wght 900 wdth 25 @14pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&

abcdefghijklmnopqrstuvwxyz

**0123456789 . , : ; !? () [] {} / | **

#$%@'"*~^_`=+<>-

opsz 14 wght 900 wdth 25 @144

PQ

opsz 144 wght 400 wdth 25 @144pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&

opsz 144 wght 400 wdth 100 @144pt

ABCDEFGHIJK

opsz 144 wght 900 wdth 25 @144pt

ABCDEFGHIJK

PQRSTUVWXY

abcdefghijkl

AXES IN ALPHA VF

The same stage included designing the width axes to widen more than the default 14 pt width axes. So the 144 pt masters produce loose fonts with counters as large as the design allows.

The comparative line lengths show that the 14 pt has narrowed around 2 characters from A to T, while the 144 pt has narrowed around 10 characters over the same text.

opsz 14 wght 400 wdth 151 @144pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyz
0123456789 . , : ; !? () [] {} / | \
#$%@'''*~^_`=+<>-

opsz 144 wght 400 wdth 151 @144pt

ABCDEFG

opsz 14 wght 400 wdth 100 @14pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyz
0123456789 . , : ; !? () [] {} / | \
#$%@'''*~^_`=+<>-

opsz 144 wght 400 wdth 100 @144pt

ABCDEFGHIJK

opsz 14 wght 900 wdth 151 @14pt

ABCDEFGHIJKLMNOPQRSTUVWXYZ& abcdefghijklmnopqrstuvwxyz
**0123456789 . , : ; !? () [] {} / | **
#$%@'''*~^_`=+<>-

opsz 144 wght 900 wdth 151 @144pt

ABCDE

PQ HIJKLM

AXES IN Beta VF

The specification began with envisioning and designing a range of size masters upon which to base the weight and width axes, so as to provide more weight change at larger sizes, where it's possible to use very bold and very light instances, and less range as the optical size of use gets smaller.

opsz 144 @24pt

ABCDEFGHIJKLMNOPQ
RSTUVWXYZ&abcdefg
hijklmnopqrstuvwxyz0
123456789.,:;!?()[]
{}/|\#$%@'"*~^_`=
+<>-

opsz 14 @24pt

ABCDEFGHIJKLM
NOPQRSTUVWXY
Z&abcdefghijklm
nopqrstuvwxyz0
123456789.,:;!?
{}/|\#$%@'"*~^_`
=+<>-

opsz 8 @24pt

ABCDEFGHIJKL
MNOPQRSTUVW
XYZ&abcdefghij
klmnopqrstuvwx
yz012345678
9.,:;!?()[]{}/|\#$
%@'"*~^_`=+<>
-

	25	50	75	100	110	120	150
900	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow
800	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow						
700	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow						
600	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow						TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow
500	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow					TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow
400	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow			TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow
300	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow			TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow
200	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow		TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow
100	TRANS Alpine meadows in sprintime blossom in rare shades of blue, purple and delicate yellow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow	TRANS Alpine meadows in sprintime blossem in rare shades of blue, purple and delicate yelllow

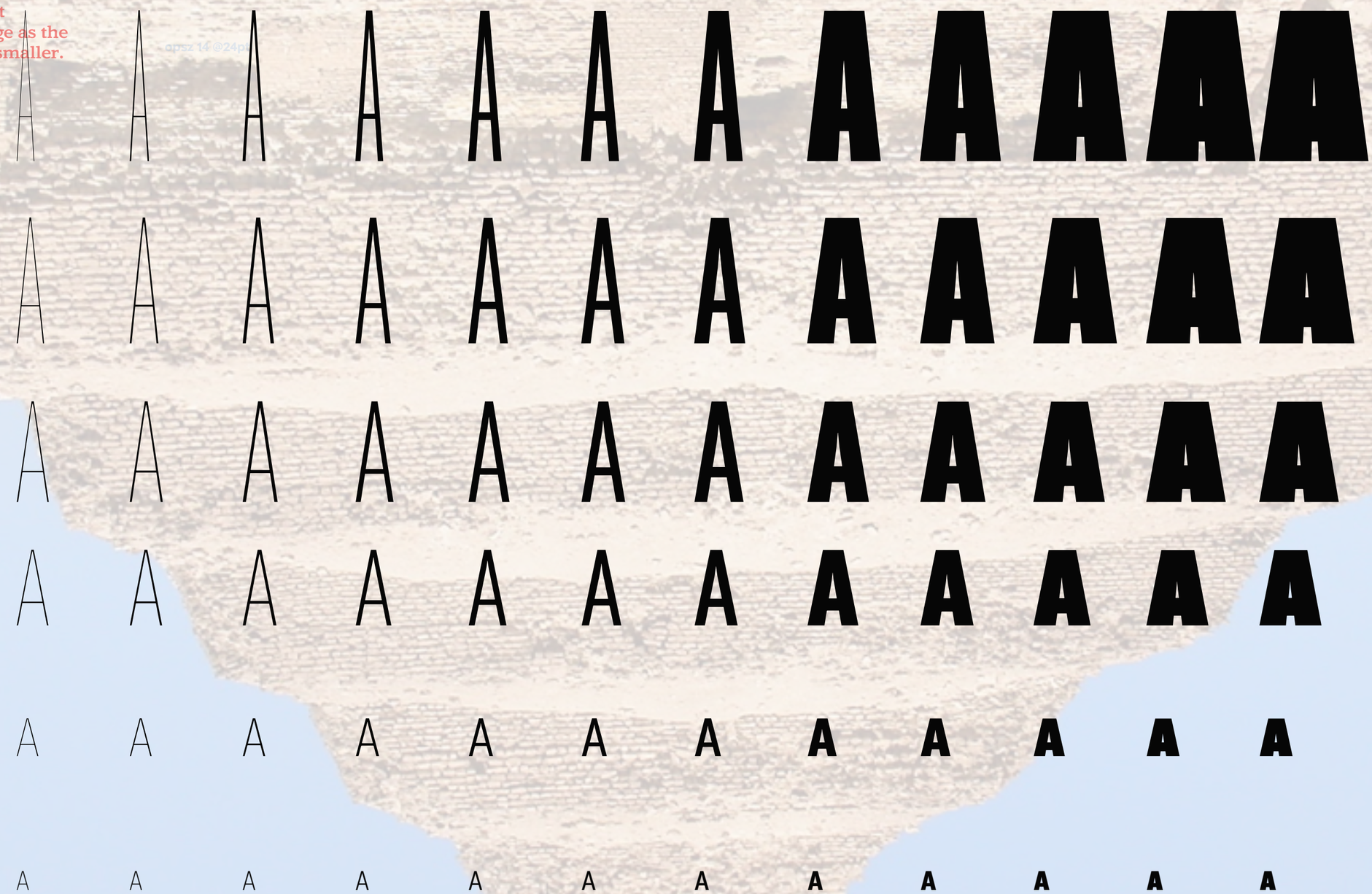
The specification began with envisioning and designing a range of size masters upon which to base the weight and width axes, so as to provide more weight change at larger sizes, where it’s possible to use very bold and very light instances, and less range as the optical size of use gets smaller.

AXES IN Beta VF

The specification began with envisioning and designing a range of size masters upon which to base the weight and width axes, so as to provide more weight change at larger sizes, where it's possible to use very bold and very light instances, and less range as the optical size of use gets smaller.

AXES IN Beta VF

The specification began with envisioning and designing a range of size masters upon which to base the weight and width axes, so as to provide more weight change at larger sizes, where it's possible to use very bold and very light instances, and less range as the optical size of use gets smaller.



AXES IN Beta VF

The specification began with envisioning and designing a range of size masters upon which to base the weight and width axes, so as to provide more weight change at larger sizes, where it's possible to use very bold and very light instances, and less range as the optical size of use gets smaller.