Monte Alban cubits and measuring units.

This essay follows on from earlier studies including Teotihuacan and Chichen Itza to determine the measuring units used in ancient Meso America.

It was found in earlier studies that a “Sumerian” foot of 13.2” was used in the above sites, in conjunction with “Sumerian” cubits of 19.8”, “Sumerian” yards of 33.0” which also related to “Egyptian” royal cubits of 20.625” and “Mayan hunabs” which were 2 x Egyptian royal cubits.

All the above measuring units belonged originally to the same measuring system where a double Sumerian yard was 100 Sumerian shusi with Sumerian yard being 50 shusi, Sumerian cubit 30 shusi and Sumerian foot 20 shusi etc.

The Sumerian cubit was 24/25 of the Egyptian royal cubit and may have had its origins in a plot of land which measured 100 Sumerian cubits giving a corresponding distance of 96 Egyptian Royal cubits of 20.625” or 48 Mayan hunabs of 41.25”, the differences being whether you preferred to divide by halves, quarters or thirds etc.

Monte Albán is the **largest archeological site** in Oaxaca. The Great Plaza covers an area of more than three hectares (7.5 - 8 acres). Including the structures adjacent to the plaza, the complex covers 20 hectares (45 acres) at the summit of a hill which rises 400 meters (1320 feet) from the valley floor. Nearly all the buildings, public and residential, are oriented to the cardinal directions.

The first thing that catches one’s attention is that it was built at a height of 1320 feet above the valley floor.
See http://www.oaxacaoaxaca.com/monte-alban.htm

That is remarkable because 1320 ft is 1200 Sumerian feet, or 800 Sumerian cubits, or 480 Sumerian yards or 240 Sumerian double yards of 10 shusi, but in “Mayan hunabs” it would come to an odd number i.e. 384 hunabs. And it appears that 1320 ft or 1200 Sumerian feet is no random number, because ***the mountain top was artificially levelled to build the city.***

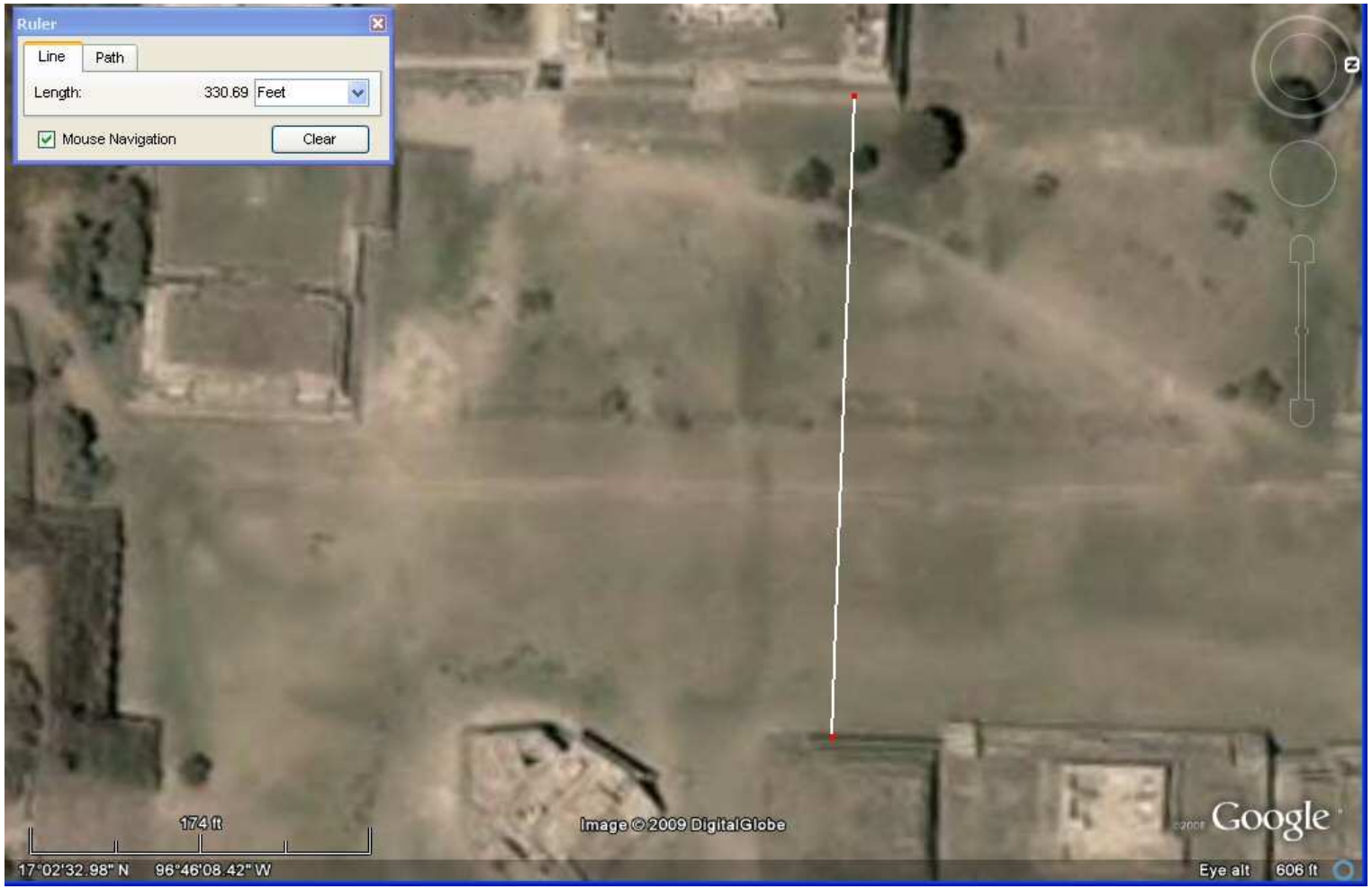
More detailed information is given on the webpage of Michael Blaschke http://blaschke.us/html/MonteAlban.html
“The ancient Zapotec capital Monte Albán, located spectacularly 10 km (6 miles) west of Oaxaca city on an artificially levelled mountain top, is the second largest ceremonial site in Mesoamerica, only exceeded in size by Teotihuacán near Mexico City.

Monte Albán I: Starting from the first occupation about 500 BC, up to about 200 BC, most probably by the Zapotecs, although it likely had early cultural connections with the Olmecs to the northeast. The top of the mountain, a stubborn quartzite, was hewn off with stone chisels until a flat area was formed 3,117 feet long and 1,476 feet wide, and the debris was used to fill crevasses on the edges of the platform. Temples and probably palaces were built, and a town of 10,000 or more people grew on the hillsides.”

East side of Gran Plaza and North Platform

Buildings known as Sistema L, danzantes and M

The satellite measures the sunken plaza of the North platform as 220 ft which would be 200 Sumerian feet.



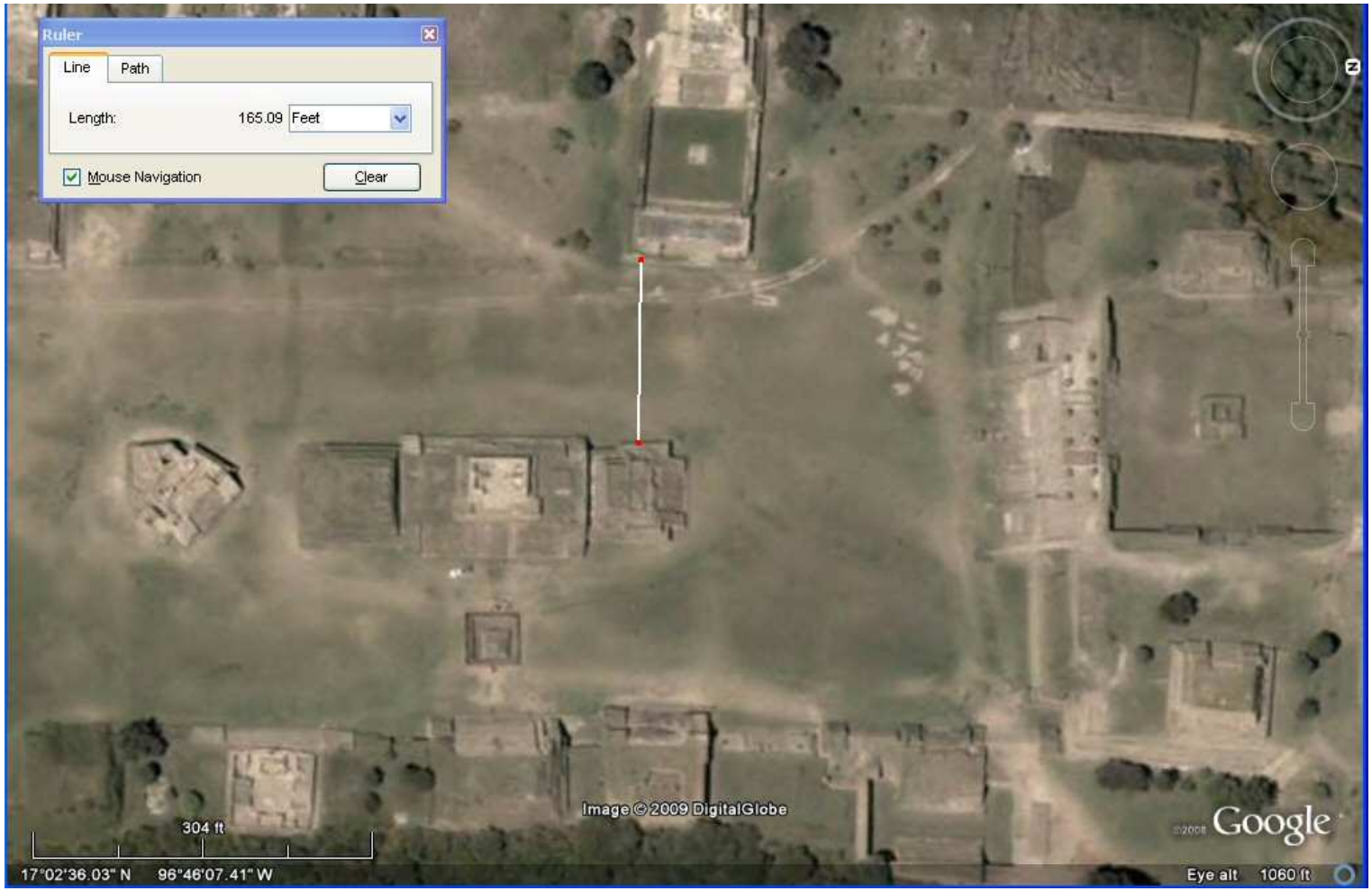
This part of the gran plaza measures 330ft which is 300 Sumerian ft or 200 Sumerian cubits wide or 2 x stades of 165ft (150 Sumerian ft)

Edifice L measures 165ft which is 150 Sumerian feet or 100 Sumerian cubits

Edifice M measures 165ft which is 150 Sumerian feet or 100 Sumerian cubits

Edifice H measures 165ft which is 150 Sumerian feet or 100 Sumerian cubits

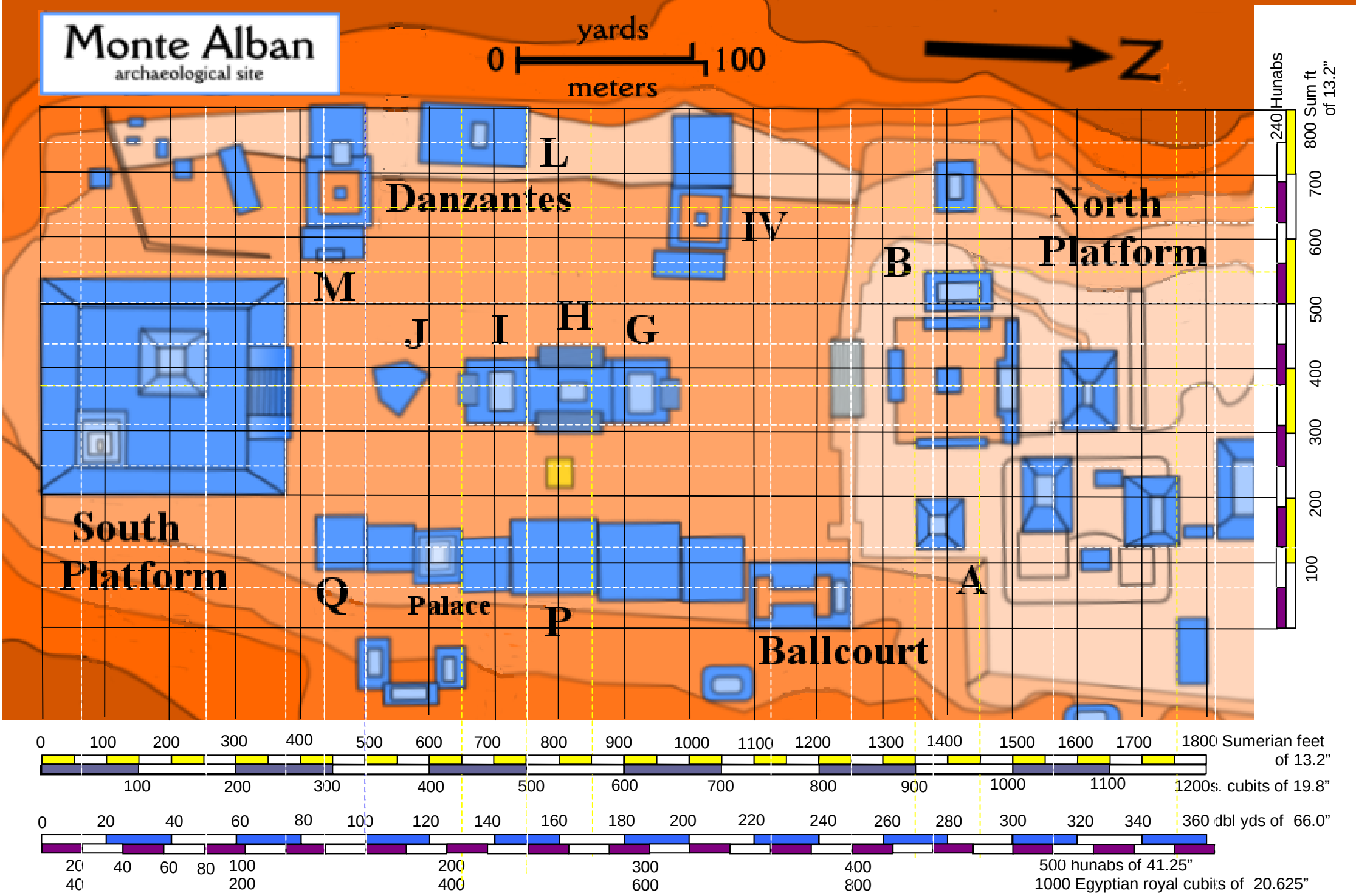
Edifice I measures 88 ft which is 80 Sumerian feet



This part of the plaza measures 165ft which is 150 Sumerian feet or 100 Sumerian cubits wide.

Although the satellite images may not be as accurate as measurements on the ground, at the same time many of these ancient sites have been “reconstructed” and we don’t know if they were set out with any particular degree of accuracy to begin with.

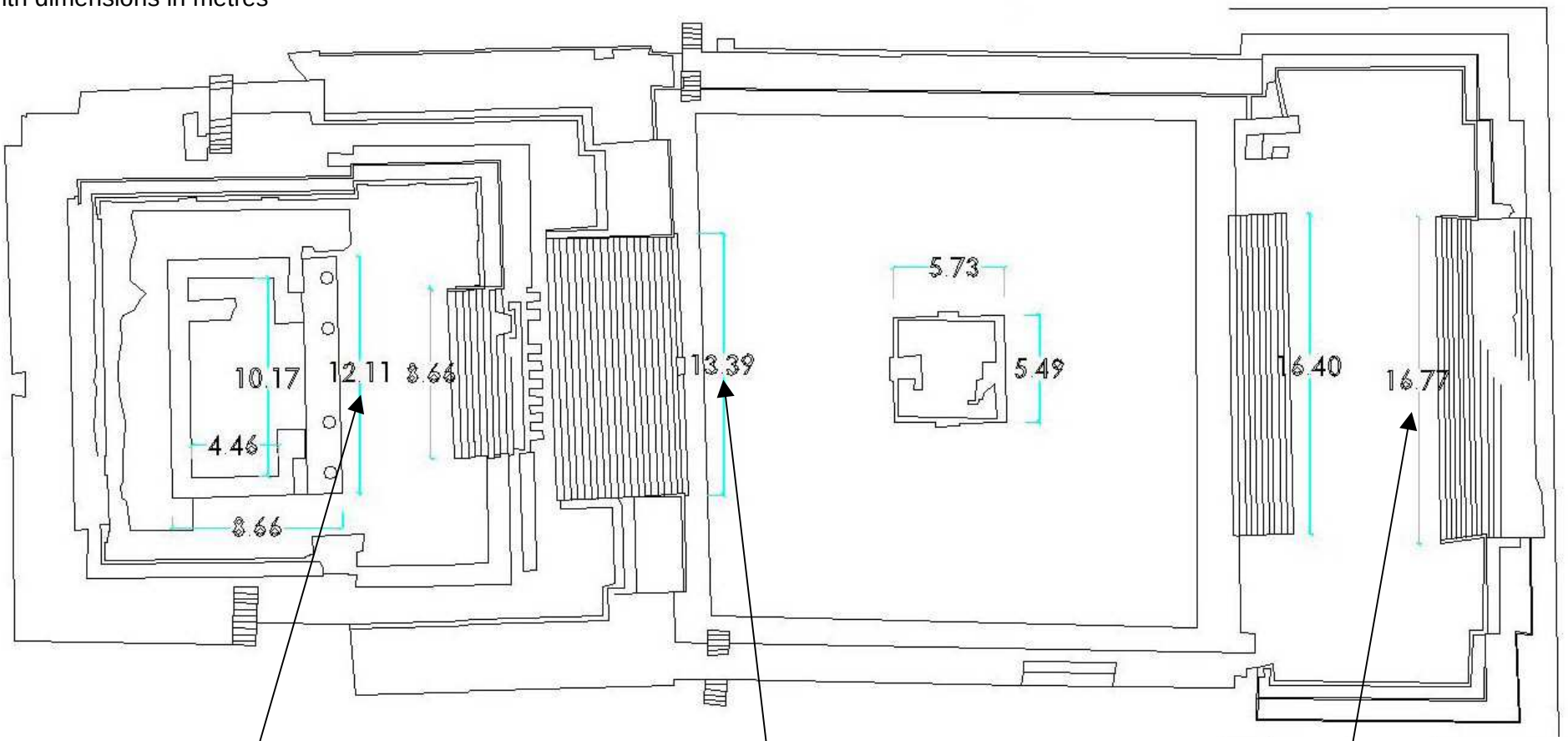
However, the measurements enable us to reconstruct a system of measurement which seems to have become fractured and dissipated throughout the world with Mexico remaining one of the places where all the various aspects of this system can still be detected.



Plan of Monte Alban. Some alignments relate to a grid of 100 Sumerian feet whilst others relate to a sub grid in units of Mayan hunabs which are double Egyptian royal cubits.
Both belong to the same system and give round numbers depending on whether you divide by 10’s, 12s, eights, halves or quarters and so on.

Group IV plan

Original plan by CyArk
with dimensions in metres

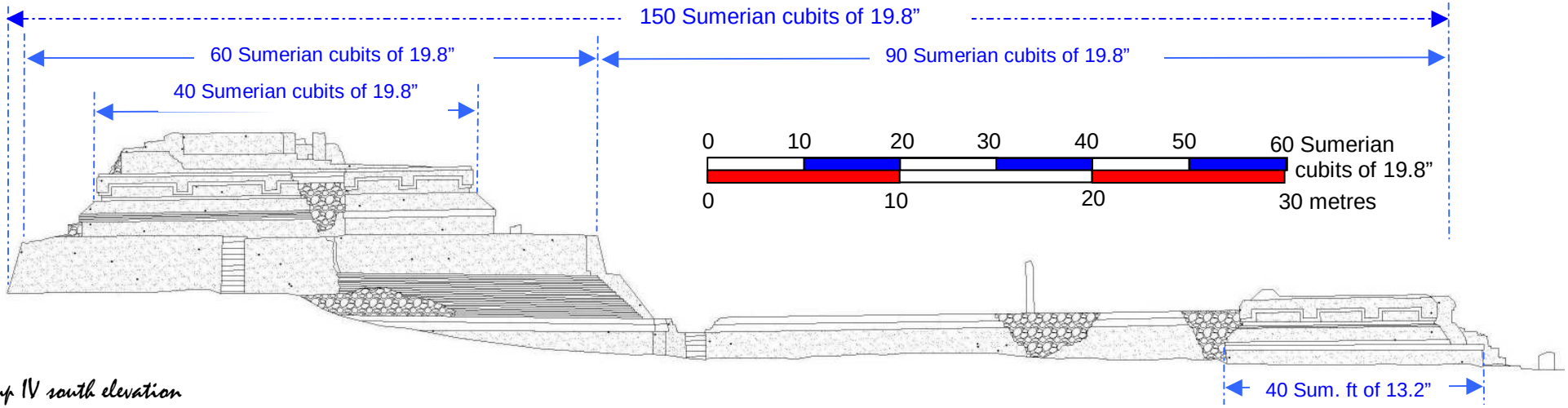


CyArk measurement 12.11 metres
= 36 Sumerian ft of 13.2” (36.11)
= 24 Sumerian cubits of 19.8” (24.07)
= 60 Sumerian yards of 33.0” (60.19)

CyArk measurement 13.39 metres
= 40 Sumerian feet of 13.2” (39.93)
= 16 Sumerian yards of 33.0” (15.97)

CyArk measurement 16.77 metres
= 50 Sumerian ft (50.01)
= 20 Sumerian yards of 33.0” (20.007)
= 10 Sumerian double yards of 66.0” (10.003)
= 32Egyptian royal cubits of 20.625” (32.01)
= Mayan hunabs of 41.25” (16.005)
= 1000 Sumerian shusi of 0.66” (1000.35)

These are the principal entrance steps to the complex



Group IV south elevation

Suggested planned dimensions

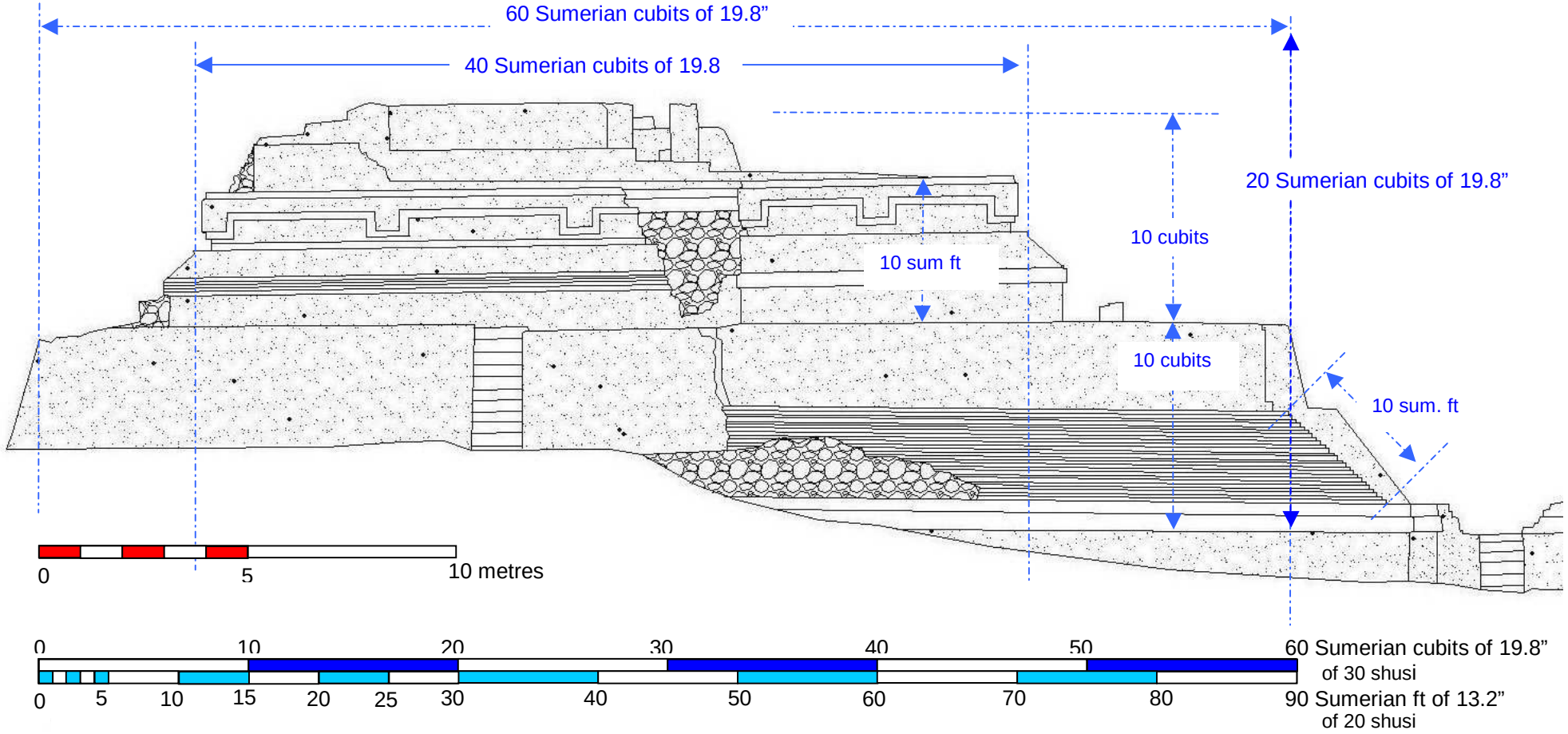


Chart showing how Sumerian feet, cubits and yards are part of the same system with Egyptian royal cubits and Mayan hunabs

25 Sumerian feet of 13.2”
10 Sumerian yards of 33.0”
5 Sum.double yds of 66.0”
16 Egy royalcubits of 20.625”
8 Mayan hunabs of 41.25”
1000 barleycorns of 0.33”

50 Sumerian feet of 13.2”
20 Sumerian yards of 33.0”
10 Sum.double yds of 66.0”
32 Egy r.cubits of 20.625”
16 Mayan hunabs of 41.25”
1000 shusi of 0.66”

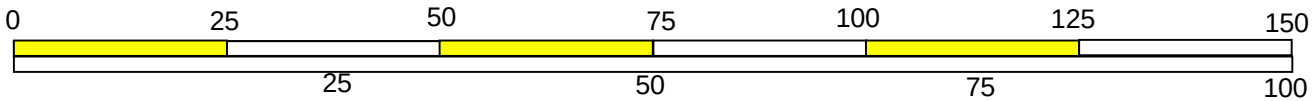
100 Sumerian feet of 13.2”
40 Sumerian yards of 33.0”
20 Sum.double yds of 66.0”
64 Egy r.cubits of 20.625”
32 Mayan hunabs of 41.25”
2000 shusi of 0.66”

200 Sumerian feet of 13.2”
80 Sumerian yards of 33.0”
40 Sum.double yds of 66.0”
128 Egy r.cubits of 20.625”
64 Mayan hunabs of 41.25”

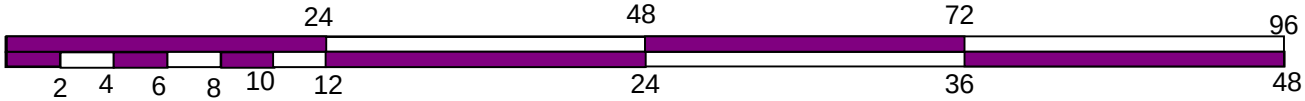
1200 Sumerian feet of 13.2”
800 Sumerian cubits of 19.8”
480 Sumerian yards of 33.0”
240 Sum.double yards of 66.0”
768 Egy royalcubits of 20.625”
364 Mayan hunabs of 41.25”

1800 Sumerian feet of 13.2”
1200 Sumerian cubits of 19.8”
720 Sumerian yards of 33.0”
480 Sum. double yards of 66.0”
1152 Egy royal cubits of 20.625”
576 Mayan hunabs of 41.25”

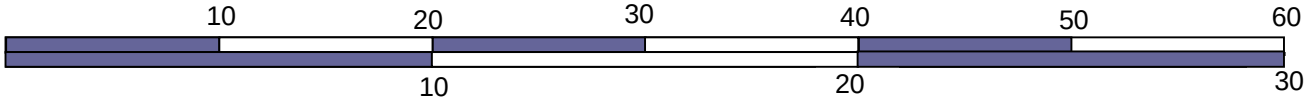
1 stade of 100 cubits (165 English feet)



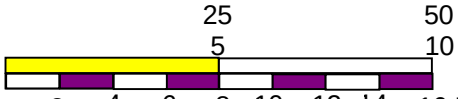
150 Sumerian feet of 13.2” (20 shusi)
100 Sumerian cubits of 19.8” (30 shusi)



96 Egyptian royal cubits of 20.625”
48 Mayan hunabs of 41.25” (2 x double Egyptian royal cubits)



60 Sumerian yards of 33.0” (50 shusi)
30 Sumerian double yards of 66.0” (100 shusi)



50 Sumerian feet of 13.2” (1000 shusi)
10 Sumerian double yards of 66.0” total 10,000 shusi
16 Mayan hunabs of 41.25” (2 x double Egyptian royal cubits) = 10,000 shusi

25 Sumerian feet of 13.2” (500 shusi or 1000 Sumerian barleycorns of 0.33”)
8 Mayan hunabs of 41.25” (2 x double Egyptian royal cubits)
= 500 shusi or 1,000 Sumerian barleycorns of 0.33”

Looking at the following chart we can see why Plato said the numbers 5 and 6 did “honour to the odd and even”.

Taking the circumference of the world as 360º, each degree comprises 60 “geographic” or “nautical” miles. We can then choose to divide the geographic mile by 6,000 for geographic feet, or by 5,000 for Egyptian remen.

But first, we have four different ways to calculate the geographic mile. We could take the polar diameter x π and divide by 360 x 60.
Or we could take the equatorial diameter x π divided by 360 x 60.

There again we could take a minute of latitude of where we lived and use that as our geographic mile which would vary depending on whether we lived in Greece, Athens or Babylonia, or alternatively, for a more Universal geographic mile we could take the mean figure for a minute of latitude and use that.

The Greeks to calculate the Greek mile or geographic mile used a 1/6000th part of a minute of latitude in Greece.

In Egypt on the other hand, they took a 5,000th part of a geographic mile based on the mean figure for a geographic mile and called this distance 1 x remen. From the base of a square of 5,000 remen, they obtained a diagonal which became 5,000 Egyptian Royal Cubits.

This was very useful for land surveying since in order to set out a square of 100 royal cubits, all they had to do was to set out a base line of 200 remen and intersect two arcs of 100 royal cubits on one side of the base line, and intersect 2 arcs of 100 royal cubits on the other side of the base line.

The Egyptian royal cubit comprised 28 fingers which was 7 palms, whereas 6 palms or 24 fingers made the regular Egyptian cubit and 4 palms or 16 fingers made the Egyptian foot.

If you set out a square whose sides were 2400 Egyptian royal cubits of 20.625”, and then divided by 2500 you would then have units of Sumerian cubits of 19.8”

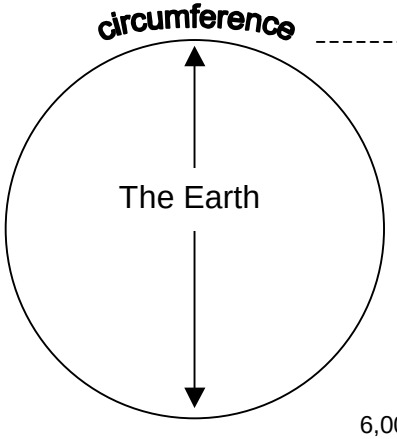
100 of these cubits made an “Atlantean” or “Olmec” stade which comprised 150 Sumerian feet, 60 Sumerian yards, or 30 Sumerian double-yards of 100 Sumerian shusi while if you divided it by 96 it became 96 Egyptian royal cubits or dividing by 48 gave Mayan hunabs so 1 x Mayan hunab was 2 x Egyptian royal cubits.

The differences arose depending on your preferred mathematical method, whether you divided by halves, quarters or eighths or by thirds while the Babylonians/Sumerians generally preferred 60’s, the Egyptians 10’s and the Mayans 20’s ….

J.M. Allen 3 July 2009
www.atlantisbolivia.org

Origin of Egyptian royal cubit, Sumerian cubits and geographic cubits

J.M. Allen www.atlantisbolivia.org



360º x 60 minutes or geographic miles

1 geographic mile
=6076.884ft
(Egyptian estimate)
=6076.824ft
(modern estimate)

1 second of arc = 100 geographic feet of 12.153" (308.7mm)

1 second of time = 1,000 geographic cubits of 18.23" (463.0mm)

divided by 6,000
= 1 geographic foot of 12.153"

6,000 geographic ft

= 6,000 geographic feet square mile

radius = 10,000,000 sacred cubits
diameter = 20,000,000 sacred cubits
30" great cubit = 6 x 5" hands
25" sacred cubit = 5 x 5" hands
12" foot
10" foot
6" hand
5" hand
3" palm filled with water = 1lb
1"
½"

When derived from minute of latitude of observer

Greek foot 12.136" (308.3mm) = 16 Greek digits
The Parthenon is 100ft of these feet wide.
Greek cubit 18.205" (462.4mm) = 18 Greek digits.
Greek stadium 600 Greek feet (184.96metres)
Roman foot was 24/25 of Greek foot
= Roman foot 11.65" (295.92mm)

When derived from mean of latitude if 6076.884ft/mile
Geographic foot = 12.153" (308.7mm)
Geographic cubit = 18.23" (463.0mm)

divided by 5,000 = 14.58" = 1 Egyptian remen

5,000 remen of 14.58"

5,000 royal cubits of 20.625"

5,000 remen of 14.58"

Egyptian royal cubit of 20.625"
= 7 palms = 28 fingers of 0.73" (18.7mm)
cubit = 6 palms of 24 fingers = 17.67" (450mm)
foot = 4 palms of 16 fingers = 11.78" (300mm)

When derived from mean of latitude, base of 5,000 remen of 14.58" gives diagonal of square as 5,000 royal cubits of 20.625"

A plot of 2,500 royal cubits of 20.625"

from 2,500 royal cubits of 20.625"

take 2,400 royal cubits of 20.625"

2,400 royal cubits of 20.625"

= 2,500 Sumerian cubits of 19.82"

2,500 royal cubits of 20.625"
2,500 royal cubits of 20.625"
2,500 royal cubits of 20.625"
2,500 royal cubits of 20.625"

A square of 100 Egyptian royal cubits of 20.625" = 1 setat

1 khet = 100 of these cubits of 20.625" linear distance
1 setat = plot of 100 x 100 of these cubits
the standard allotment was a strip of 10 setat
The Great Pyramid in Egypt is 440 of these cubits.

165ft 100cubits
165ft 100cubits

100 Sumerian cubits of 19.8" = 1 x 165ft stade of Atlantis and Olmecs

= 96 Egyptian royal cubits of 20.625" or 48 Mayan hunabs of 41.25"

100 Sumerian cubits of 19.8" = 1 x 165ft stade of Atlantis and Olmecs

2 x 165ft stades
= 330ft Atlantis stade

2 x 330ft Atlantis stades
= 1 x 660ft Furlong = 600 Sumerian feet

Sumerian cubits of 19.82"
ratio = 24/25
of Egyptian cubit

Division by halves, quarters = 50, 25 Sumerian cubits

Division by thirds
2/3 = 100 Sumerian feet of 13.2"
divide by 1/3, = 50 Sumerian feet = 1,000 shusi
1/6,= 25 Sumerian feet = 1,000 barleycorns

= 16 Egy r. cubits
= 8 Mayan hunabs of 41.25"

Division by halves, quarters, eights
= 48, 24, 12, 6, 3
Egyptian royal cubits