

Chichen Itza and El Castillo cubits

This essay is part of a series which begins by studying the dimensions of the “allotments” of Plato’s Atlantis and finds the most probable stade in use was a stade of 165 feet which was 100 Sumerian cubits of 19.8” making 1,000 cubits per side for the allotment.

Studies were made of canals in Tabasco and Veracruz, Mexico, canals on the Bolivian Altiplano, then, since Sumerian units were also brought to Veracruz by the Spanish conquistadors who used a yard or *Vara* which was 33.0” and identical to the Sumerian yard of 33.0”, the studies were extended to the city of Teotihuacan which was decidedly pre-Conquest and dates to 150 A.D.

Since accurate published survey material was not available for Teotihuacan, measurements were made by satellite using Google Earth.

Survey data has been found for sites in Yukatan, Mexico, at Chichen Itza and Tikal and this essay looks at these these measurements to see if any of them are consistent with “Sumerian” measurements.

The fundamental “Sumerian” units were a “shusi” of 0.66”, link of 7.92”, foot of 20 shusi = 13.2”, cubit of 30 shusi = 19.8” , yard of 50 shusi = 33.0, and double yard of 100 shusi = 66.0”.

‘Egyptian’ cubits of 20.625” are sometimes found alongside ‘Sumerian’ cubits since they are related in the ration of 25/24.

The Megalithic Yard of 32.64” found by prof A. Thom in the British Isles was also related to the Sumerian yard in the manner of the Megalithic Yard relating to a year of 365.24 days while the Sumerian Yard of 33.0” related to the mathematical year of 360 days.

Drawings to a high degree of accuracy were found to be available freely from Cyark <http://archive.cyark.org/>

See: <http://archive.cyark.org/north-elevation-of-el-castillo-with-measurements-media>

The Cyark drawings were then printed and scaled measurements made by J.M. Allen to provide the interpretations found below. Although scaled measurements can be made from the drawings, some drawings had the additional advantage of surveyed measurements incorporated into them.

We do not know which parts of ancient sites may have been set out according to a set plan or even to any degree of accuracy and have to consider also that reconstructions may have been made due to ruinous states of some buildings, but these scaled drawings suggest that the buildings were accurately planned according to a system of “Sumerian” feet, yards and cubits, and corresponding multiples in “Egyptian” royal cubits and Mayan “hunabs” which were 2 x “Egyptian” royal cubits.

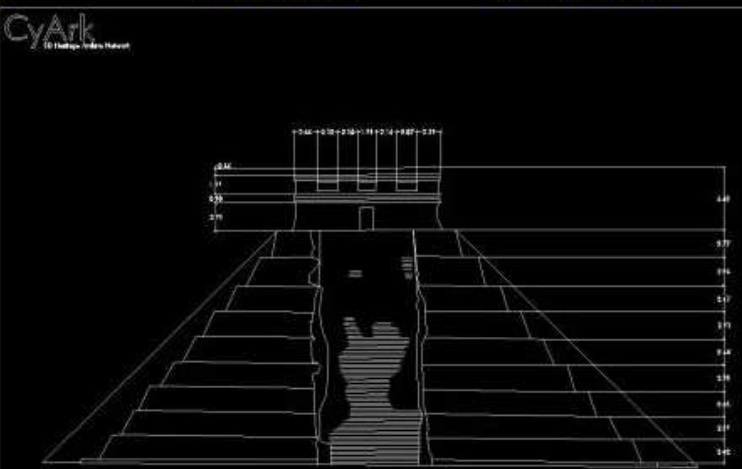
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Chichen Itza, El Castillo, North Elevation

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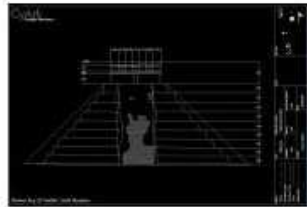
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Project Narrative

In 2007, the Oakland, California-based Chabot Space and Science center, in conjunction with InSight Digital and ArtsLab, embarked upon a mission to produce High Definition laser and photographic data from the ruins of Chichen Itza's civic core for its ambitious Maya Skies Project. CyArk was called upon to spearhead the mission for its expertise in the HD Documentation and Heritage fields. In October 2007 CyArk assembled a documentation team to be sent to the Yucatán, in conjunction with their Michigan partners Metco Services. Over the course of 3 weeks, a highly detailed data set was produced which included HDS, close-range Laser Scanning, panoramic photography, HDR photography, and traditional survey. Dozens of scans were produced from a Leica Geosystems Scan Station laser scanner, including 37 scans of the Caracol structure alone, which was the most complex structure and the main focus of the project. Six other important structures in the civic core were also thoroughly scanned, including El Castillo. A closed site-wide traverse encompassing each of the six focus structures was completed, with 20 primary control points included. The overall angular error of closure was five seconds with an accuracy of 1/32000. The data collected will be used as part of the Chabot Center's Maya Skies Project exhibit, and much will also be accessible online in the CyArk Website Archive. This entire project was made possible by a grant from the National Science Foundation.

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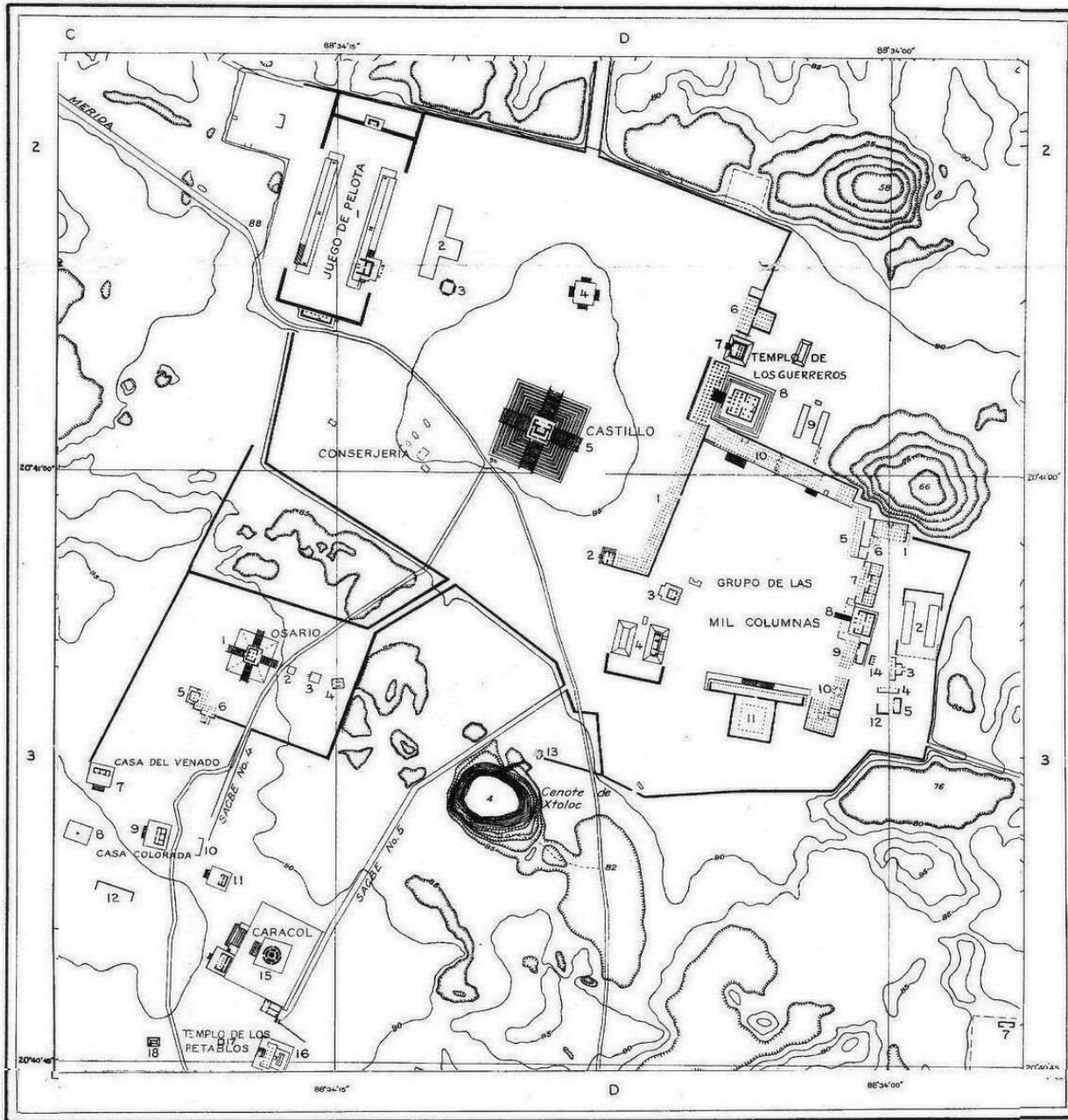


North elevation of El Castillo with measurements

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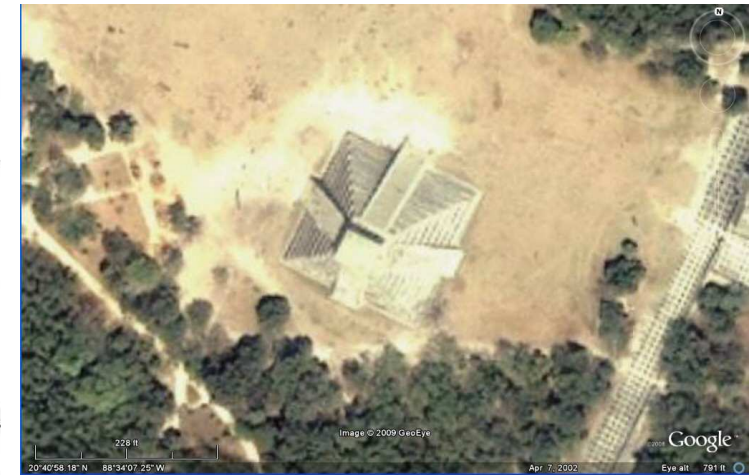
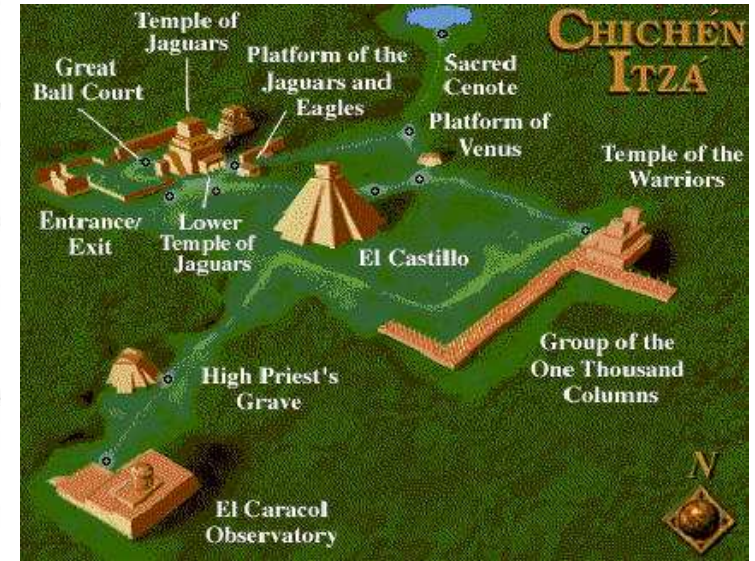
[Drawings to a high degree of accuracy ...](#)

Map of the Ruins of
Chichen Itza
Yucatan, Mexico



Surveyed by J.O. Kilmartin
in 1924 and 1928, and
by J.P. O'Neill in 1932

REPRINTED FROM RUPPERT,
1935, WITH REVISIONS



El Castillo
20° 40' 58.18"N 88° 34' 07.25"W



El Castillo seen from east

El Castillo in 1860



El Castillo today

El Castillo elevation

Width of temple adding up measurements provided by CyArk

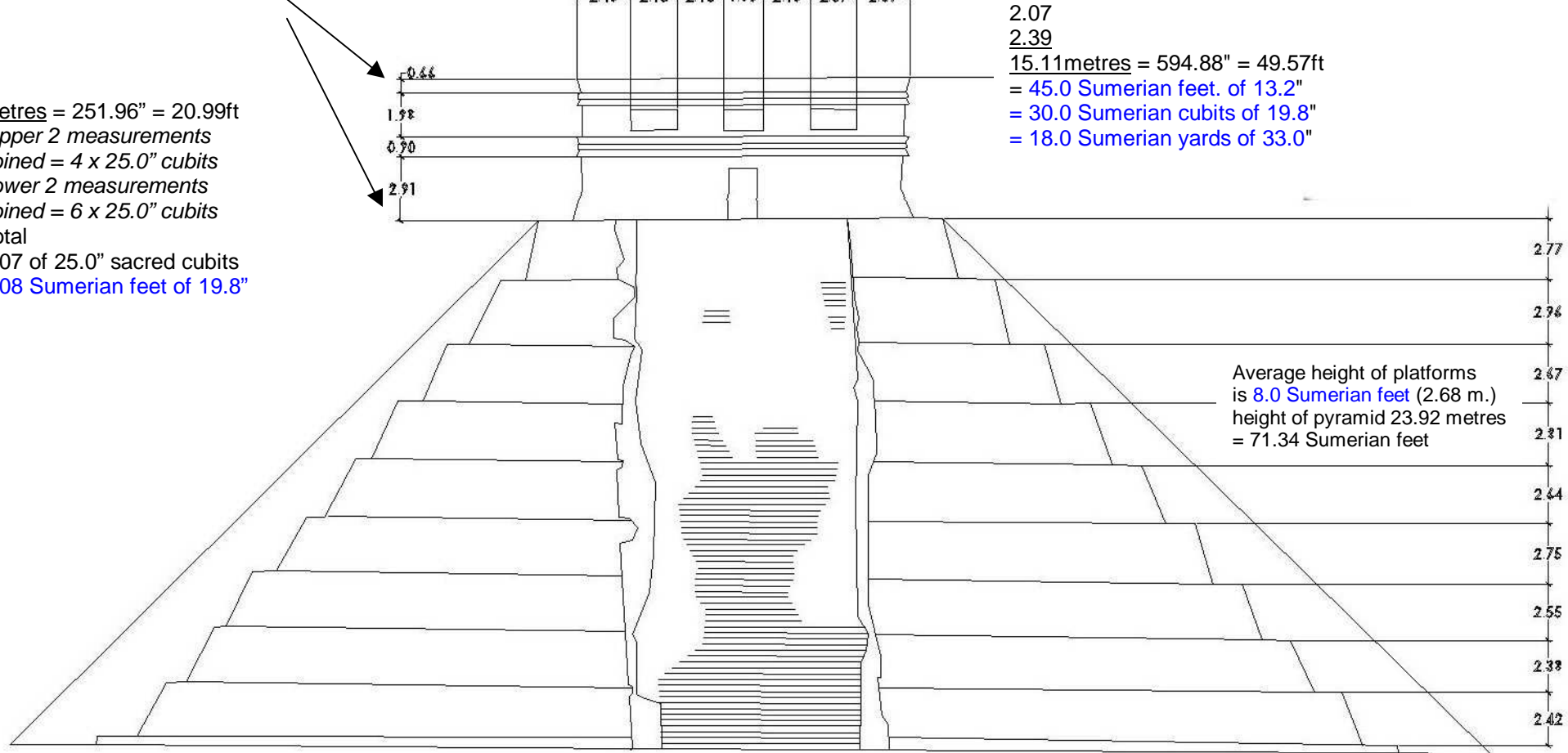
Height of temple adding up measurements provided by CyArk

0.66
1.93
0.90
2.91
6.4metres = 251.96" = 20.99ft
the upper 2 measurements combined = 4 x 25.0" cubits
the lower 2 measurements combined = 6 x 25.0" cubits
the total
= 10.07 of 25.0" sacred cubits
= 19.08 Sumerian feet of 19.8"

18.0 Sumerian yards of 33.0"

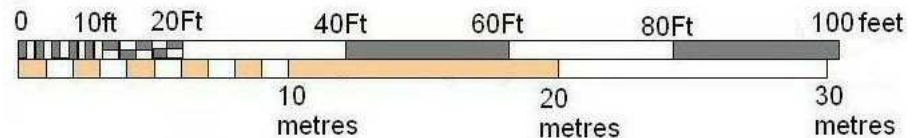
2.46 + 2.10 + 2.10 + 1.83 + 2.16 + 2.07 + 2.39

2.46
2.10
2.10
1.83
2.16
2.07
2.39
15.11metres = 594.88" = 49.57ft
= 45.0 Sumerian feet of 13.2"
= 30.0 Sumerian cubits of 19.8"
= 18.0 Sumerian yards of 33.0"

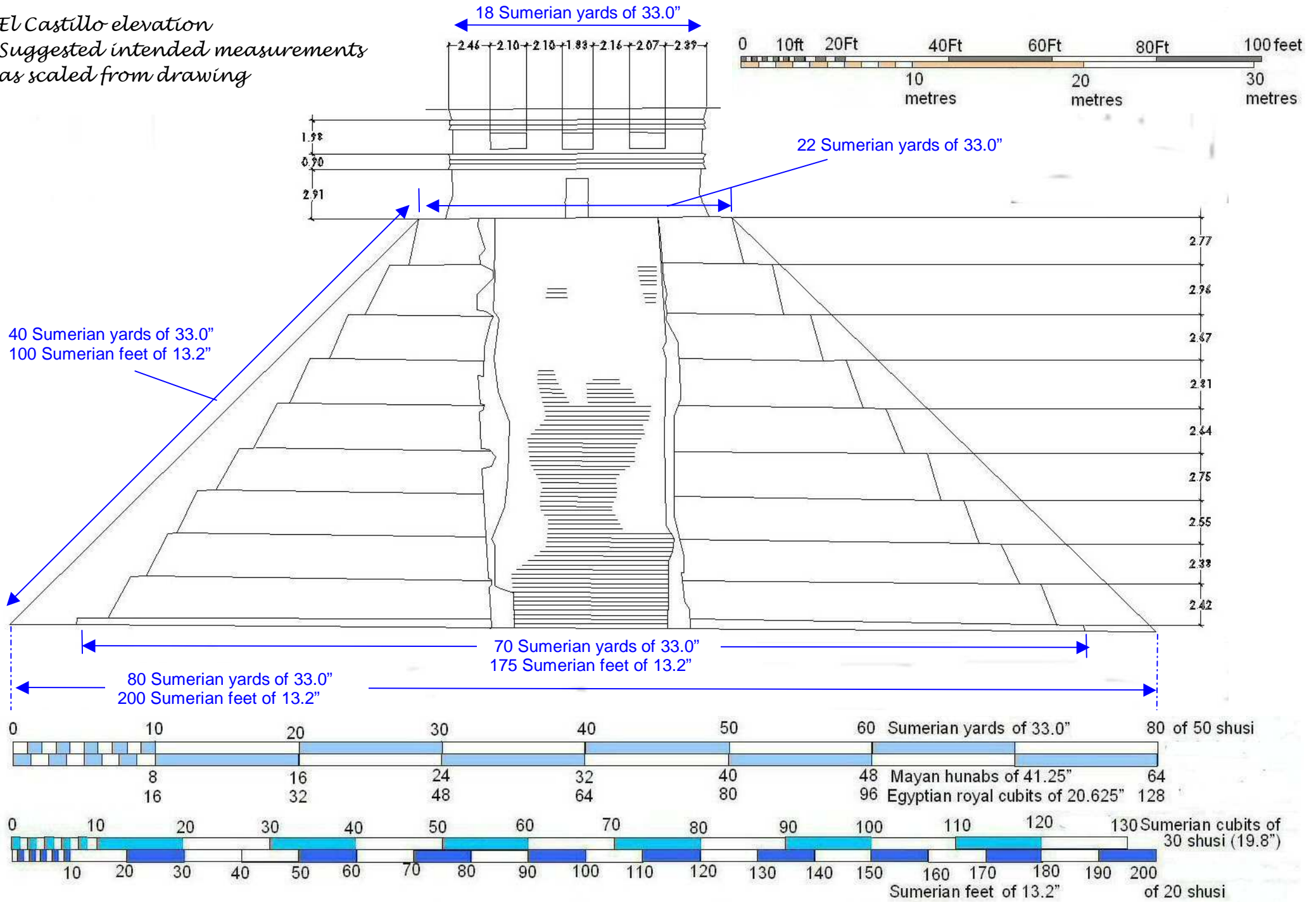


Total height of temple plus pyramid base adding up dimensions is

6.4 metres temple
23.92 metres pyramid
30.32 metres total height
= 99.47ft
= 90.43 Sumerian ft of 13.2" suggested intended height 90 Sumerian feet (30.17 metres)
= 60.28 Sumerian cubits of 19.8" suggested intended height 60 Sumerian cubits.
= 36.17 Sumerian yards of 33.0" suggested intended height 36 Sumerian yards.

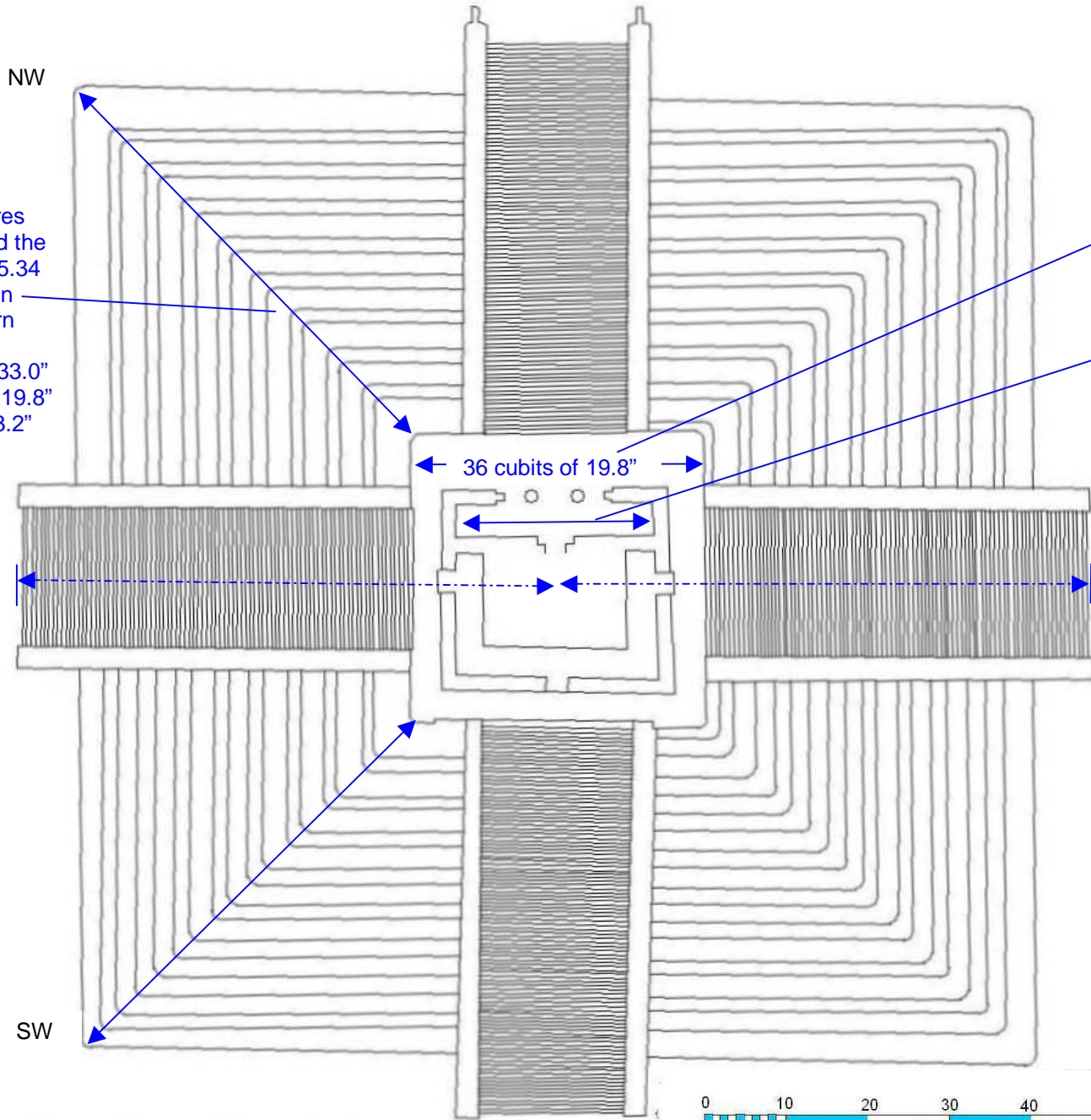


El Castillo elevation
Suggested intended measurements
as scaled from drawing



*El Castillo plan
Suggested
intended measurements
as scaled from drawing*

The NW diagonal measures 36.68 Sumerian yards and the SW diagonal measures 35.34 Sumerian yards making an average of the two western diagonals of 36.00 Sumerian yards of 33.0" 60.00 Sumerian cubits of 19.8" 90.00 Sumerian feet of 13.2" in plan view

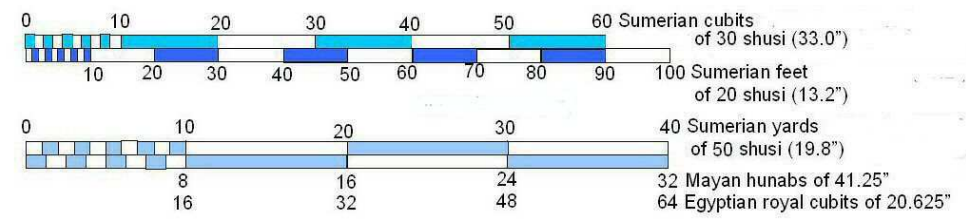
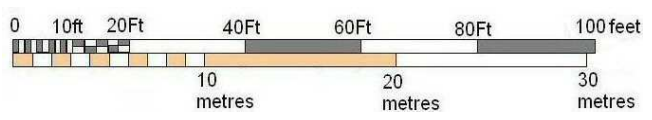


36 Sumerian cubits of 19.8"

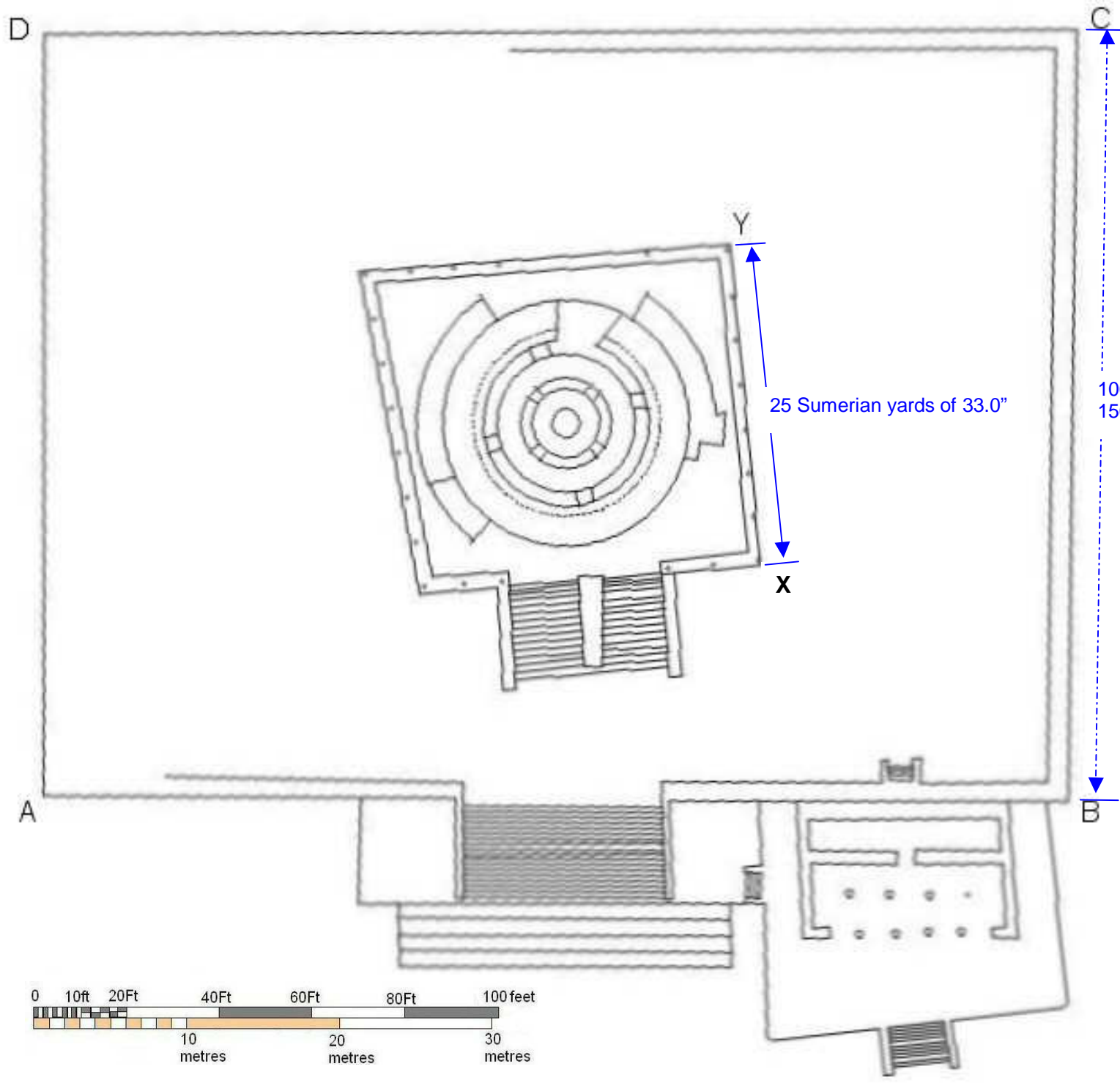
36 Sumerian feet of 13.2"

100 Sumerian feet of 13.2"

The half width of the pyramid is the same length as the sloping diagonal of the stairs on the preceding drawing, both 100 Sumerian feet

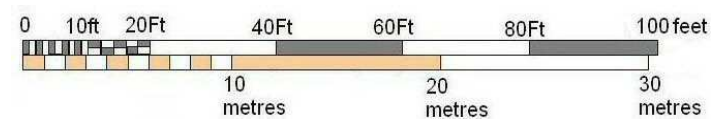


*El Caracol plan
Suggested
Intended
measurements
as scaled from
drawing*

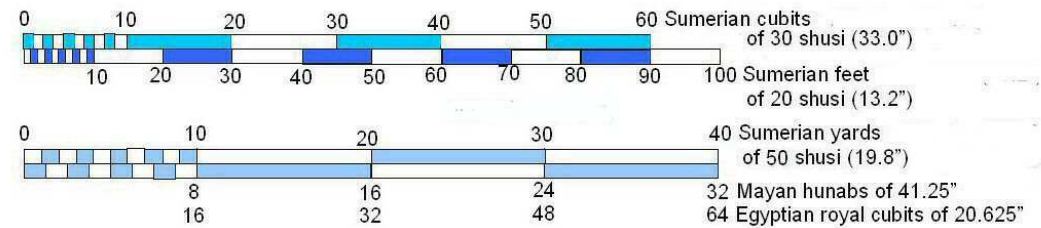
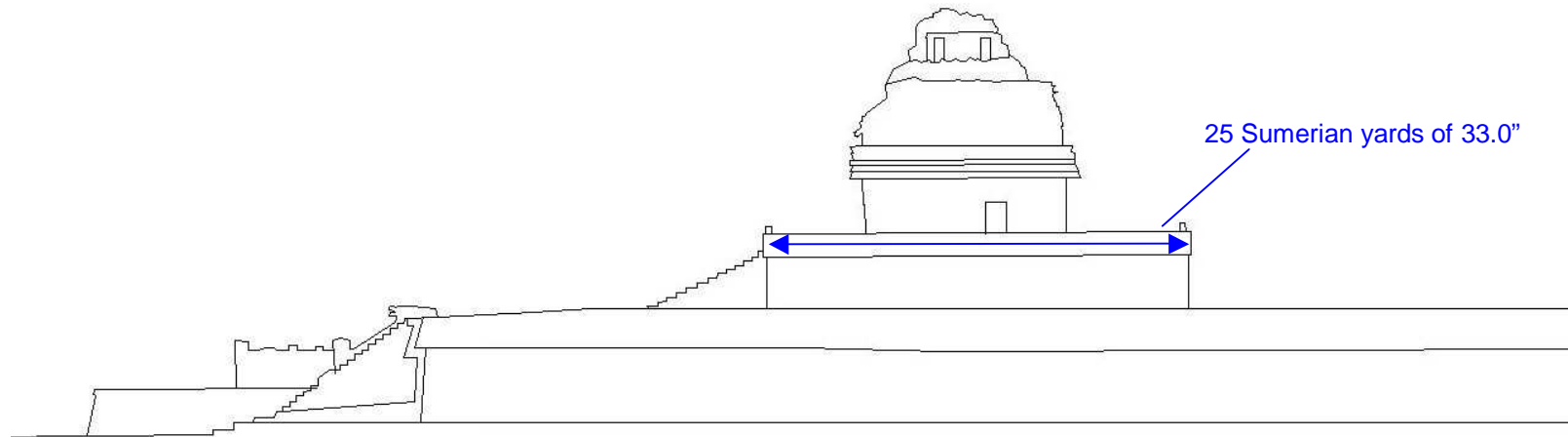
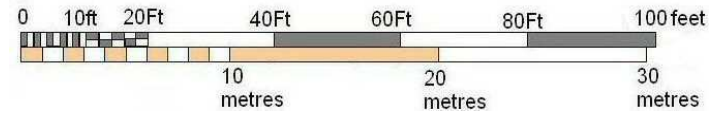


25 Sumerian yards of 33.0"

100 Sumerian cubits of 19.8"
150 Sumerian feet of 13.2"

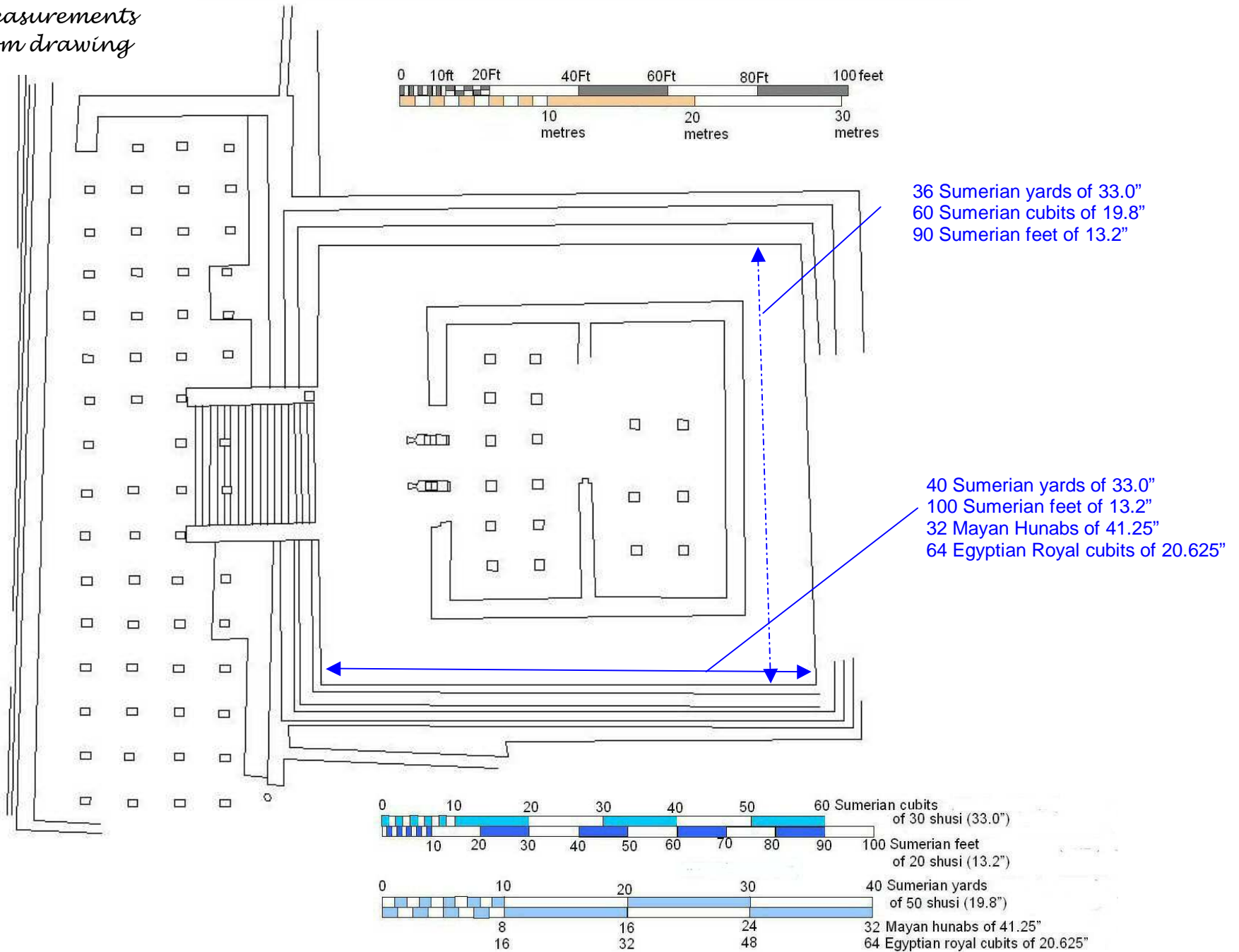


*El Caracol elevation
Suggested
Intended measurements
as scaled from drawing*

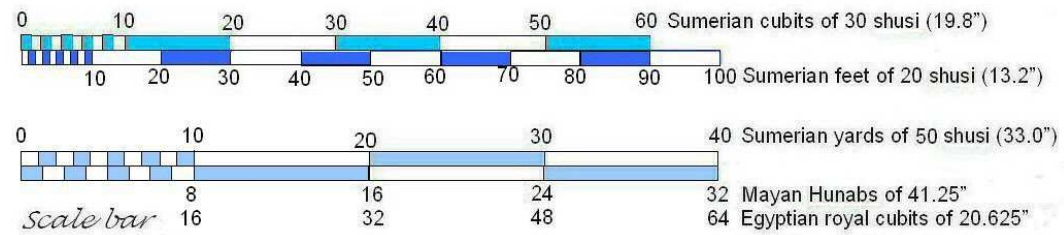
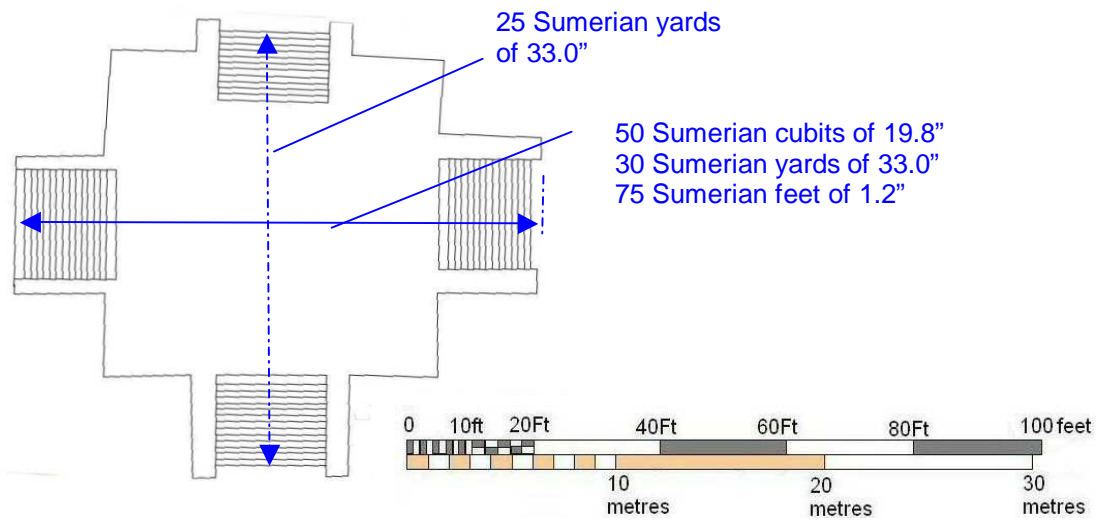


*N.B. This section appears to have been made parallel to X – Y in previous drawing and therefore the lower platform B – D appears at a skewed angle.
The lower platform as shown appears to include B – D as on previous drawing and distance B – C is not shown.*

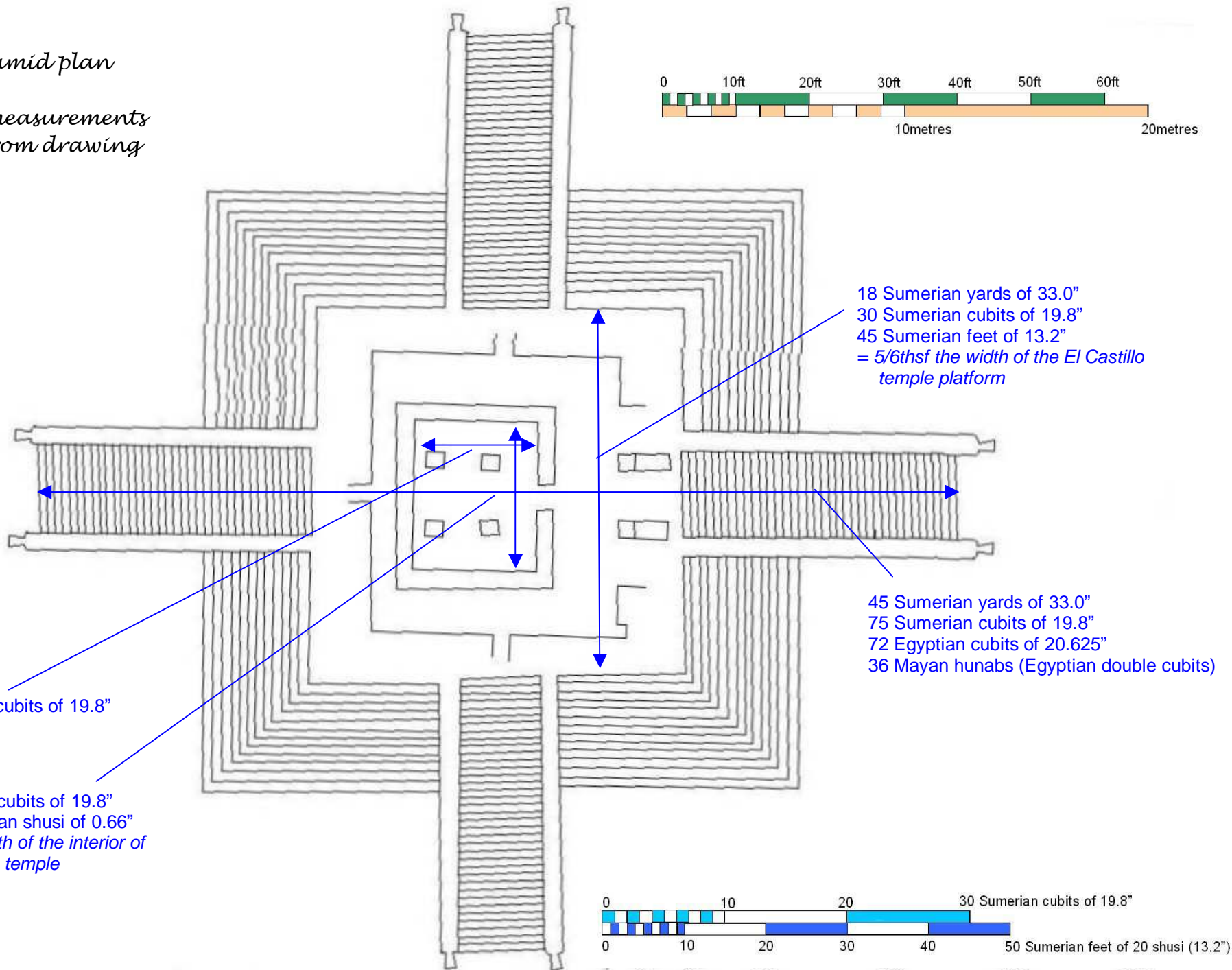
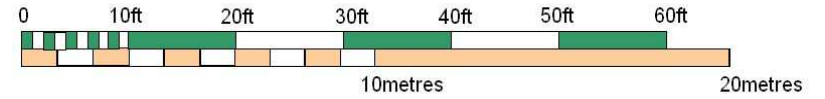
Temple of the Warriors plan
Suggested
intended measurements
as scaled from drawing



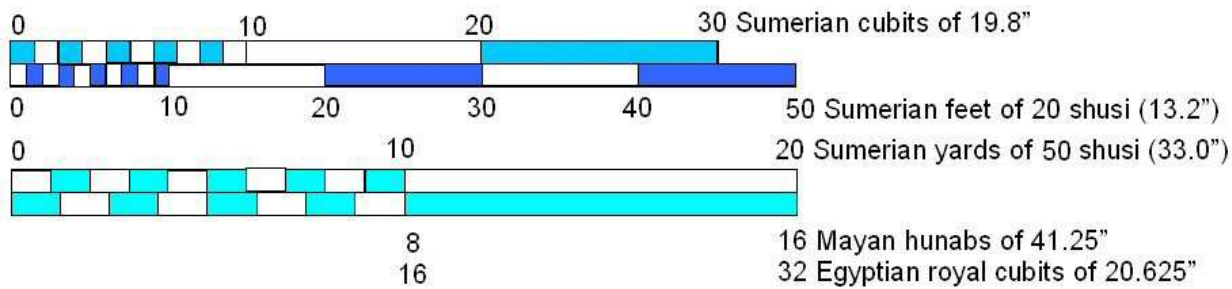
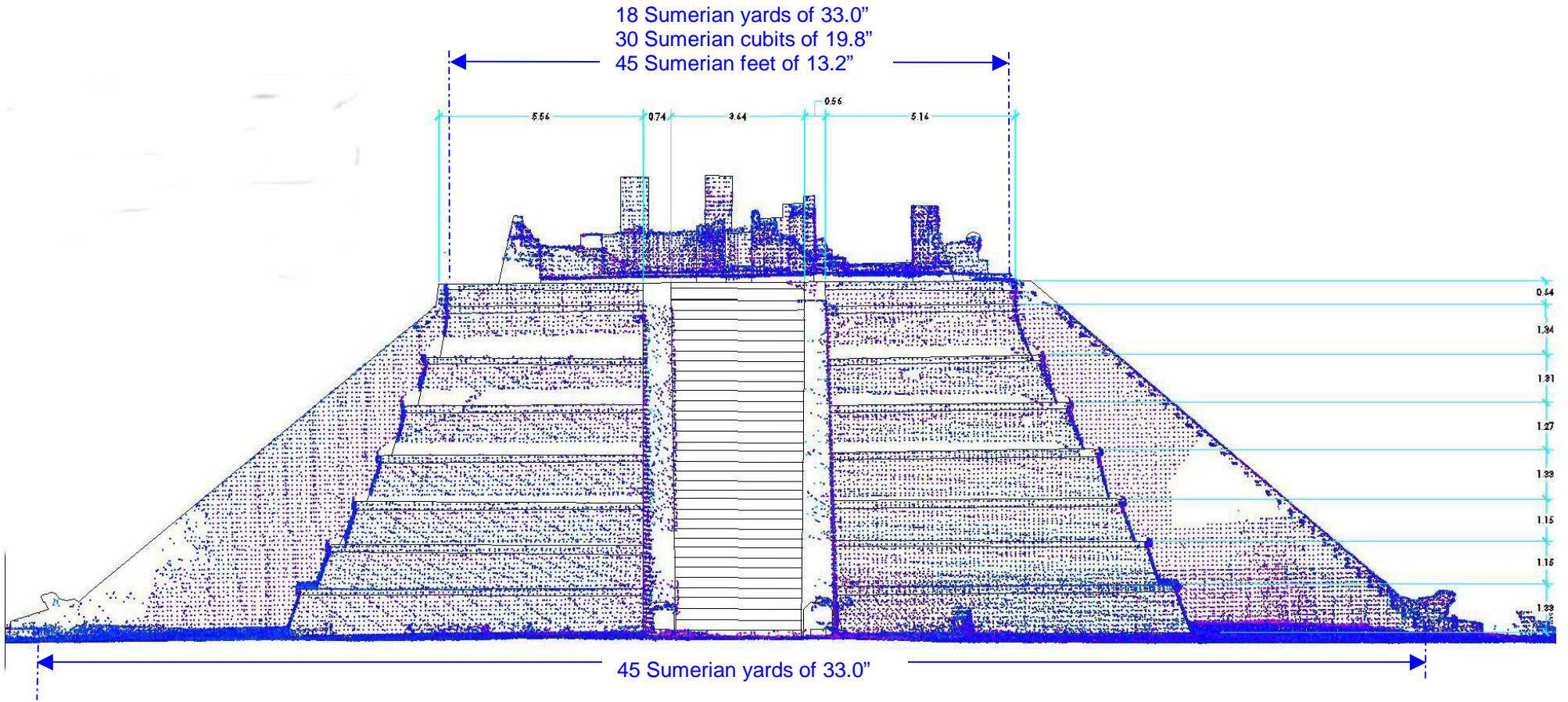
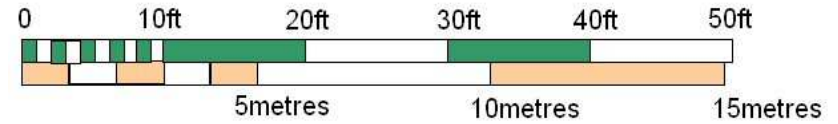
Venus Platform plan
 Suggested
 intended measurements
 as scaled from drawing



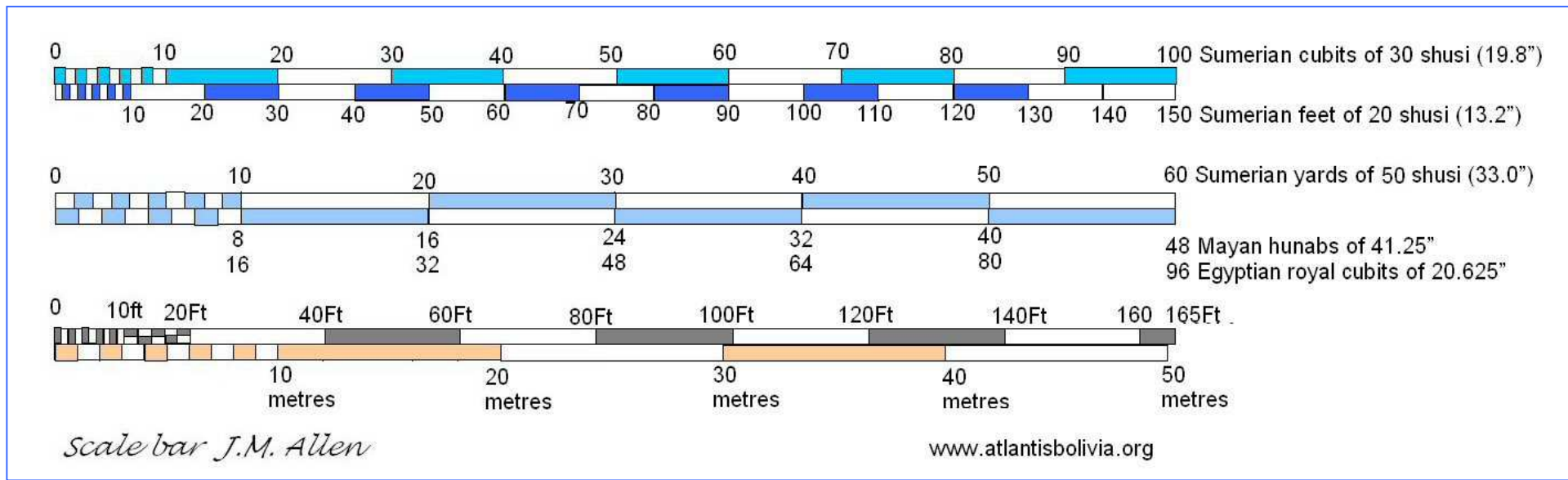
*Osario Pyramid plan
Suggested
intended measurements
as scaled from drawing*



*Osario Pyramid north elevation
Suggested
intended measurements
as scaled from drawing*



n.b. in the preceding drawings, the scale bars have been reproduced in size appropriate to the drawings



This unified scale bar shows the relationship between the "Sumerian" feet, cubits and yards and the "Mayan" and "Egyptian" cubits or units, all part of the same system which previously have been identified by separate names due to works undertaken in separate countries, some preferring decimal systems of numeration others favouring 64, 32, 16, 8 etc giving halves and quarters, others preferring multiples of 60's, 360's etc

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