The Friezes of the Temple of Nemesis at Rhamnous
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The only attempt at a definitive publication of the Nemesis temple at Rhammous was made by the Society of Dilettanti in 1817. It appeared in their volume on the " Unedited Antiquites of Attica ". The hasty work which they did at the site resulted in numerous errors some of which have been already corrected. One hitherto uncorrected error is their assumption of a continous, though uncarved, Ionic frieze. This they placed like the friezes of the temple of Hephaistos : in the promaos not only across the antae, but also across the peristyle, while in the rear porch, they thought that the frieze returned at the angles along the flank walls of That they had no blocks upon which they based their reconstruction is the cella. indicated by their drawing showing a section through the temple in front of the The frieze is represented as one extremely long block extending from North to South peristyle. This block would have had to have been over 9 meters long.

This mistake was perpetuated by Lethaby. Taking the Society of Dilettanti as authorities, he commented upon the exact correspondence of the temple at Rhamnous with the " Theseum " in many particulars and especially with reference to the placement of the Ionic cella friezes.

When 4 Orlandos studied the temple at Rhamnous in 1924, he had in mind the correction of all the errors made by the Society of Dilettanti. But since he expressly stated that aside from the fallacies he notes in his article, the former publication is quite accurate, and he does not discuss the type and placement of the cella friezes, it can be assumed that he agreed with the earlier concept.

<sup>\*1.-</sup> Saciety of Dilettanti, Unedited Antiquites of Attica, Chp.VI,pp. 41-49,Pl.1-13.

<sup>\*2.-</sup> Ibid.,p.45.

<sup>\*4.-</sup> Lethaby, Greek Buildings Represented by Fragments in the British Museum, p. 148.

<sup>\*5.-</sup> Orlandos, B.C.H., XLVIII, 1924, pp. 305-320.

Apparently some suspicion regarding the validity of the frieze reconstruction has arisen within the last few years. In Demangel's study of the Ionic frieze
\*1
on Attic Doric temples, he does not mention Rhamnous. In a later article, however,
\*2
Demangel admits the possibility of an Ionic frieze at Rhamnous. In his drawing, he
indicates the problematical character of it by giving its placement in dotted lines.

Though the sole concern of this paper is the friezes of the temple, for their proper reconstruction it will be necessary to begin with a study of the place - ment of the columns.

In the temple of Memesis at Rhamnous, there are twelve stylobate blocks
of the South side still in their original positions. These are the blocks numbering
2-13, counting from the South West angle of the building. Block no. 1 is now on the
ground just below its original place. The setting line for the remainder of this stylobate,
from block 13 on, can be made out on the top of the second step of the crepidoma.

By measuring these lengths, the total length of this stylobate is found to be 21.312 meters.

Though only three blocks of the West stylobate are now extant in situ, their setting lines along the top of the middle step are very plain. The total length of this is 9,850.00.

Excluding the South East in-antis column of the pronaos, there are only five columns of the structure in position. These occur on the South flank. There are centered precisely on the joints which separate stylobate blocks nos, 3 and 4, 4 and 5, 6 and 7, 9 and 10, 11 and 12. The column which was centered on the joint between blocks 7 and 8

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*1.- Demangel, La Frise Ionique, pp. 299-324.
*2.- Demangel, B.C.H., LIX, 1935, p. 3.
*3.- Ibid.,p.4,fig. iv.
*4.- Block 1 - 1.435 Mo/
                                   Block 8 - 0.925 M,
     Block 2 - 1.260 M,
                                   Block 9 - 0.950 M.
     Block 3 - 1.327 /m/
                                   Block 10- 0.945 M.
     Block 4 - 1.903 M/
                                   Block 11- 0.947 A
     Block 5 - 0.933 M,
                                   Block 12- 0.902 M'
     Block 6 - 0,960 M,
                                   Block 13- 0.933 M.
     Block 7 - 1.900 M.
                                           - 5.992 N. the distance from the end of block 13
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to the missing South East corner.

now lies on the ground between the Nemesis temple and the smaller so-called Themis temple, but it left clear traces of its outline on the stylobate. We learn from these columns that the average interaxial spacing is 1.898 meters.

It will be noted that It has been assumed that there are twelve columns on this flank. This is indisputable. One half of the total length of the stylobate is 10.656% When this distance is measured out from the South West angle of the stylobate, it falls 0.013 beyond the joint between the eighth and nin th stylobate blocks., (10.643 m.) On this South western half of the stylobate there are already four columns, and still another must be restored at the angle. Then, on block no. 2 there is a depressed, smoothed area for the reception of another column, giving in half the stylobate length six columns, or twelve in the total length. Since the West stylobate is approximately one half as long as the flank, it may be assumed that it had half as many columns, i. . . , six.

Though the average interaxial spacing of the columns on this side is known, the amount of contraction which took place in the case of the angle column can not be stated with certainty. If this contraction amounted to 1/3 of the lower column diameter, ( which is here 0.675, measured within the flutes), as it did in the Parthenon, the interaxial space between the first and second columns would be 1.673 Probably, however, it was only 1/4 of the lower diameter, as in the temple of Hephaistos, a temple more comparable to the Nemesis temple in its dimensions. Furthermore, the latter contraction, which amounts to an interaxial spacing of 1.729, gives a more satisfactory ground plan. For if the second column of this flank is centered 1.898 from the third

<sup>1.903,</sup> between the third and fourth columns, the present first and second columns counting from the South west corner. \*1.columns counting from the South west corner.

<sup>1.893</sup> between the fourth and fifth columns.

<sup>1.900,</sup> between the fifth and sigth columns.

<sup>1.900</sup> between the sixth and seventh columns.
1.892 between the seventh and eighth columns.

<sup>\*2 .-</sup> Penrose, Principles of Athenian Architecture, Pl.4. \*3.- Stuart and Revett, Antiquities of Athens, 2nd edition, vol. III, Chp. I, Pl. V.

column and the angle column at 1.729 from this, there is left a distance of only 0.057 m/
from the depth of the central flute of the column to the West edge of this stylobate.

If the same interaxial spacing is restored for the West facade, there is only 0.023 m/
between the depth of the central flute of this same South west angle column and the
South face of the South stylobate, and this infinitesimal setback is seen in reference
to all of the extant columns of the South flank.

These dimensions give us some significant facts about the length of the blocks of the entablature. We should expect to find angle architraves with an approximate length of 1.729 while the other blocks of the same course would be 1.898 M.

on the site there are only six architrave blocks in sufficiently good state of preservation to deserve consideration. From these, however, the dimensions and appearence of both the exterior and interior architraves can be determined. There is no doubt about the correctness of Broneer's attribution of the inscribed architrave block \*1 to a position over the in-antis columns. As he stated, this is conclusively proved by the fact that its left end rested upon one half of an abacus whose total width was 0.650, whereas the external columns had an abacus of 0.755. Six capitals showing the abacus dimension of the exterior peristyme capitals are still on the ground around the temple, and these are two too many for the required number of four in-antis columns. Of these six capitals only one is totally preserved. (Pl.10. But the other five capitals \*1.- Broneer, A.J.A., XXXVI,1932,p.398.

have some dimensions preserved which indicate that they are of the same variety. Apparently no capitals of the in-antis columns are now extant.

Of the six architrave blocks, one other in addition to the inscribed block belongs to the interior order, ( Pl. ), three belong to the exterior order and one fragment, now located on the ground near the East end of the temple opposite the North flank, has no significant features preserved to aid in its attribution. Its preserved length is only 0.750 / The blocks, both interior and exterior, have the same taenia height, (0.045), and the same regula height, (0.048). The significant varying dimension between the external and the internal architrave is that the former is 0.570 M. a height of 0,575 m. high and the latter is 0.575 h The inscribed architrave black has its interior position il affirm its position eve the whemme of the promotor the promotor. affirmed by having this height of 0.575). It is not preserved in its total length. Its width at the top is 0.338 This dimension includes the projection of the taenia over the front face of the block. The widths of all of these blocks vary regardless of their exterior or interior position. The variation must have been rectified by corresponding variations in the widths of the backers. The other architrave block whose height indicates an interior position is practically totally preserved. It is lying on the ground at the \*1.- a - totally preserved capital, on the ground North east of the temple. total height - 1.455 M. . height of abacus - 0.127 %, length of abacus - 0.755 m, diameter within flutes - 0.530 M/

width of flute - 0.090 M, b- battered capital, North east of " a "/ radius within the flutes - 0.265 M.

width of Thate - 0.090 M/ battered capital, 'North of temple, West of center of North side. height of abacus - 0.127 M. radius within flutes - 0.265 po,

width of flute - 0.090 M/ d- battered capital East of North east corner of temple.

radius within flute - 0.265 Mg/ width of flute - 0.090 M,

e- battered capital , middle of East front of temple. radius within flutes - 0.265 m,

width of flute - 0.090 fm,

f- capital in bushes, North of center of North flank of temple. length of abacus - 0.755 /m/

North east angle of the temple. It is an angle block with the regula and its guttae turning the corner. Its total length is 2.080 had the left end of the block there is a flaring cutting on the face which measures 0.080 deep,01255 wide at the base and 0.272 high. Two clamps going to its backer are present in the upper face. The width of the block at the top is 0.355, but it is 0.325 wide at the return on the right end. Since the latter dimension gives the proper width of the block without including the projection of the taenia, we may deduce that the latter projected 0.030 m.

Because of its present position, we may assume that this block belongs to the promace epistyle. Its position over the North east anta is indicated by its having the angle regula at the right end of the block. Since we know that the length of the architrave block extending from the center of one in-antis column to the outer face of the anta is 2.08, we may restore an equally long block on the corresponding position on the other side. The length of the central architrave block is deduced from the super - imposed frieze blocks to have been 1.890 as will be later demonstrated.

There is preserved another of the epistylia which shows the taenia and the regula turning the corner, (Pl.SI). This is lying on the ground at the South east corner of the temple. It has the height of the external order and further shows itself man follow man follo

after measurement

the North flank. Only the left end of the block is preserved. Its extant length is 0.66 and its extant width is 0.265 p.

Lying on the ground around the temple there are frieze blocks of two highphs different types. One of these is a long block composed of a motor, a triglyph, a metope and a triglyph, (Pl. 4). The triglyphs average 0.380 wide, and the metopes, 0.565 M. This gives a total length of block of 1.890 which corresponds to some of the smaller interaxial spaces of the columns, though the average distance is 1.898 A distinctive feature about these frieze blocks is that over the metope the taenia is 0.055 M. high, while over the triglyph it is 0.083 high.

right ends and a metope at the left, (Pl. 8). The metopes of these blocks are normally o.575 wide, while the triglyphs are 0.370 wide. As a variation from the other frieze, the taenia here is constant in height. It is 0.083 over both triglyphs and metopes.

Some blocks which are totally preserved in their long dimension show this to be 0.945 M, which figure checks with the added width of a metope and a triglyph.

blocks belong to two different friezes. The evidence from the difference in heights is conclusive. The long blocks are 0.580 high, though Orlandos gave 0.570 as the height of \*2 the exterior frieze. The shorter blocks have a height of 0.575 We have already noted that the interior architraves is 0.005 higher than the exterior one. We now find that the interior frieze, as the shorter blocks in reconstruction will prove themselves to be, is 0.005 lower than the exterior frieze. Thus the total height of architrave and frieze of both peristasis and porch is the same - 1.150. This would give alevel in erece section through the temple at the top of the frieze course. At this height on the \*1.- Orlandos, op.cit., p.312, gives 0.378 as the width of the exterior triglyphs.
\*2.- Ibid., p.315.

exterior frieze and its backer the geison blocks were bedded, while over the interior frieze and its backers were set the epicranitis blocks with the curiously archaic hawksbeak discussed by Miss Shoe.

Because of the variation of the interaxial spacings of the columns of the exterior peristyle, it is impossible to assign each frieze block to its proper place, but the general order of the blocks can be determined. There are still extant around the temple two angle frieze blocks of the long variety which preserve the triglyphs turning the angle at the right hand corner of the block. This gives a possibility of four positions on the building for the two blocks, or two possible positions for each. Such a block, with the angle triglyph at its right end , could go on the North west corner with its length on the North side, on the South west corner with its length on the West facade, on the South east corner with its length on the South flank, or on the North east corner with its length on the East facade. From their finding places, we may conclude that block " A ", which is lying on the ground opposite the South east corner of the temple belongs to that angle of the building. A similar deduction about the position of black " B " can not be a saide from the fact that it probably went at the West end of the temple, for it is now lying on the ground in two pieces, one half opposite the South west angle of the temple, ( Pl.6), and the other half near the North west corner of the temple, ( Pl.7). At whichever place it belonged, it was the last block set in place, since in each half of the block, on its upper surface, is preserved one half of a nicely cut pair of tong cuttings. Orlandos appears to assume that such cuttings are present only in architrave blocks and their backers. Apparently he missed this example. Both of these blocks have the characteristic height of 0.580%, and a width of 0.300 M,

<sup>\*1.-</sup> Orlandos, op.cit., p.316, fig.8.

<sup>13 -</sup> Orlandor appear to assume that such cultings are present only in each trave blocks and their backer, up. cit., p. 314

angle frieze blocks quite accurately. Block "A", (Pl.8), is battered on its left end and block "B" is in two pieces whose broken ends it is difficult to match because the pieces are rather widely separated. These blocks can not be a slong has the corner interaxial space of 1.729, because the preserved left end of block "B" indicates that they ended in metopes at that end, hence the triglyph which was centered over the second column from the angle was contained in the next block. This is verified by the fact that all of the other frieze blocks of this 0.580 height begin at their right ends with triglyphs.

Starting with one of the usual blocks, showing, from right to aeft, a triglyph, a metope, a triglyph, a metope, with its right end triglyph centered over the second column from the West on the North flank, there were ten blocks of this type along this flank until the North east angle was reached. The angle triglyph for this corner was centained at the right end of a now missing block, which was similar to blocks "A" and "B" and whose length was on the East face of the structure. Then come four more blocks of the usual variety beyond this up to the South east corner. Here the angle triglyphs were those on the right end of our block "A". Beyond "A" went ten of the normal blocks up to the South west corner of the temple. The now missing angle block here must have faced on the West. Then four of the customary blocks until the North west corner where block "B", facing on the North, was the last to be put in place by a pair of lifting tongs. (fig. 1).

There are two practically completely preserved blocks of the usual triglyphmetope form, North of the temple, near its East end. They both have the metope-triglyph-metope form, North of the temple, near its East end. They both have the same dimensions; height - 0.580, length - 1.89, width - 0.300. There are halves of double "T" clemps at their right and left ends and one in the middle of the back, the two former connecting with similar blocks to right and left and the latter indicating the attachment to the backer. There are also dowards on the upper surface, slightly to the left of the two triglyphs, for the fastening of the geisa to these blocks.

There are eleven less well preserved frieze blocks of the usual form. They (11 show the characteristic 0.580 height, and those which are preserved in this dimension have a width of 0.300 In addition there are six fragmentary blocks all to be found on the ground North east of the temple. There lengths are ; 0.600,0.580,1.030, 1.080,0.680, and 0.950 pc (77)

From the placement scheme , it is evident that four angle blocks of the character of blocks " A " and " B " are required and 28 others of the triglyphmetop-triglyph-metope form. These latter blocks were not all of the same length, Four of these which were set at the corners, at right angles to blocks " A " ," B ", etc., flust have been less than 1.898, for they were above the 1.729 interaxial space and though one end overlapped one half a triglyph width beyond the center of the second column from the angle, their other end stopped at the contracted triglyph which went over the angle column.

The reconstruction of the triglyph frieze over the two antae and two in-antis columns of the porches is quite obvious, thoughat present there are preserved only the setting bed for the South east anta, and the lower column drum of the South east column, now slightly shifted from its original position. The normal Fifth century arrangement for spanning this space would have been by three architrave blocks, the side one completely covering the antae and terminating over the axis of the nearer column, while the central block would have reached from column center to column center.

<sup>\*1.-</sup>a - opposite the South east angle of the temple, length - 1.755 plus.

<sup>-</sup>b- adjacent to "a", length -1.085 plus. -c - near the South west angle of the temple, broken in two parts, length -1.810 plus.

<sup>-</sup>d - opposite the middle of the West end of the temple, lying on its face, right -e - North of the North west angle of the temple, right end missing, length -1.430, plus.

<sup>-</sup>f - North of the temple, near its West end, lying on its top, length - 1.860 plus.

gg- to West of block "f", very badly weathered, length 0.900 plus.

<sup>-</sup>h - just to East of block "g", very badly preserved, length 1.000 plus.

<sup>-</sup>i - just to East of block " h", top and upper from surface smashed, both ends missing, length - 1.370 plus.

<sup>-</sup>j - to East of block " i", badly preserved, length - 1.150 plus. -k - North of the temple, near its East end, left end preserved, right end missing,

length - 1.500%, plus.

Fortunately we have the North east promacs block preserved in its total length of 2.080 M. In the entire frieze above a distyle -in - antis porch it is normal to have seven triglyphs and six metopes, i.e., triglyphs centered over the in- antis columns, at the very end of the frieze, ( over the ends of the antae), and in the three intermediate spaces. Hence over the end architrave block there would have been two whole triglyphs, two whole metopes and a half triglyph at the end which was centered over the column. We know the length of the North east architrave - 2.080 We also know accurately the width of the triglyphs - 0.370 and that of the metopes - 0.575 The sum total of the widths of two and a half triglyphs and two metopes is 2.075 Since this coincides within a margin of 0.005 with the length of the architrave block, the correctness of this arrangement is demonstrated. The discrepancy in dimension is taken care of by the contraction of the width of the angle triglyph, which willbe discussed later. By analogous reasoning we may now restore the width of the central architrave block as 1.890, for above its left and right ends were a half triglyph and in the middle, a metope, a triglyph and a metope. (Fig. 2). is further while cated by the president of the author inscription in the presence of the president of the authority of

frieze. From these eight specimens it is deduced that the normal blocks of this frieze were 0.575 high, 0.945 long and 0.275 wide. They all show the triglyph at the right end of the block and the metope at the left. The length of the block checks with the added width of one triglyph and one metope. The dimensions and scheme of the porch

of double "T" clamp at its left end, dowel near its right end. Height - 0.575, length - 0.945, width 0.270 plus.

c- to East of block "b", all surfaces except the back preserved, but weathered, one half of double "T" clamps at each end, dowel near the right end.

Height - 0.575, length 0.945, width - 0.270 plus m.

d- near South east corner of the temple, left and right end clamps and one for backer.

Height - 0.575 1 length -0.945 width - 0.275 /h. e- opposite North west angle of temple, no attachments preserved, right end missing.

Height - 0.575% lenght - 0.715% plus, width - 0.275% Height - 0.575% length - 0.715% plus, width - 0.275%, length - 0.890 plus, width - 0.275%, emiddle of North of temple, Height - 0.560 plus, length - 0.945 width - 0.270 plus, length - 0.945 width - 0.275% he North east of the temple, Height - 0.575 Length 0.920 plus, width - 0.275%.

a- opposite middle of East front of the temple, bottom and both side surfaces not \*1.preserved, one half of double " T " clamp at its left end, dowel near its right end Height - 0.540 plus, length - 0.850 plus, width - 0.275 m. b- in front of the temple, nearer the South east corner than no. " a ", one half

friezes requires for each porch four blocks of this normal variety , or eight blocks for both porches. We have all of these. Both end blocks of each frieze over each porch are missing. These were of two types. Over the North east architrave for the East porch, and over the South west architrave for the West porch was a block consisting of an angle triglyph at its right end and a metope at its aeft end. From the preserved North east architrave block of the East porch we know that the regula which returns at the angle is 0.325, long. We may restore a triglyph of the same width above it. Hence the lengthened metope must have been 0.625 wide. The total length of the block would have been 0.950 Me,

The blocks at the other end of the frieze, over the South east architrave for the East porch and the North west architrave for the West porch, would have had at their left end a contracted triglyph 0.325 wide, then a lengthened metope of 0.625 and at its right end a triglyph of normal width - 0.370, or a total length of 1.3200. The sum total of the lengths of these frieze blocks gives 6.05 for each porch, which checks with the lengths of the architrave blocks.

There are seven backing blocks lying around the temple in sufficiently In trying to assign these backers good state of preservation to deserve consideration.

a- East of the temple, near the South corner, left end missing, one half of double \*1.-"T" clamp at its right end, dowel near the present left end of the block. Height - 0.575 length - 1.580 plus, width - 0.320 plus.

b- opposite the South east corner of the temple, lying on its face.

Height - 0.575; length - 1.870 plus, width - 0.240 plus.

e- opposite the North west angle of the temple, one half of double " T " clamp at the right end, another at 1.100 from the right end, joingin the block to its backer, dowel at 0.790 from the right end of the block. Height - 0.575 plus, length - 1.660 plus, width 0.315 plus. d- opposite the North west angle of the temple, battered on all sides, clamp at its

right end, also two to its backer.

Height - 0.565 plus, length - 1.600 plus, width - 0.305 plus.

o- opposite the middle of the North flank, battered on all sides.

Height - 0.565 plus, length - 1.270 plus, widht - 0.280 plus. f -near the North east angle of the temple, clamps at both ends, dowels near both

ends, clamp to the backer. Height - 0.580, 'length - 1.899, width 0.335, g- North of center of North flank of temple, clamp at right end of block.

Height - 0.580, length - 1.120 plus, width - 0.335 m.

to their proper positions we begin with block "f", since it is the only one preserved in all three significant dimensions. Of the four types of blocks which would have backers, the exterior architrave and frieze blocks, the interior architrave and frieze blocks, its height agrees only with that of the exterior frieze - 0.580. Its face its perfectly plain, as Orlandos states, but it is 0.010 higher than his measurement of 0.570%. Its length indicates that it belongs with one of the longer blocks, (1.398). The other backer of the same height (block "g"), also went with the exterior frieze. We can not tell from its preserved length whether it went with one of longer or with the shorter blocks. Also belonging to this same course is block "c", since it couldn't back the exterior architrave course which is only 0.570 high, or the interior architrave or frieze which are both precisely 0.575 high. Its length indicates that it probably backed one of the longer frieze blocks.

Backing blocks "a" and "b" have a height which would correspond to that either of the interior architrave or the interior frieze. But since they are longer than the frieze blocks of 1.320,0.945 or 0.950, each of which must have had its individual backer, as indicated by their clamps, they can be assigned with assurance to the architraves. It can not be determined whether they backed the 2.080 blocks or the 1.890 blocks. We know of their width only that they were somewhat more than 0.320 M.

Backers "d" and "e" are not totally preserved in any of their significant dimensions. Since their preserved height is less than that of any of the four courses under consideration, their height could be restored to go with any one of them. Their length immediately eliminates them as possible backers of the interior frieze. Since their faces are perfectly plain, they are eliminated as possible backers to the exterior architrave, for this would have been crowned by a taenia. Hence these

<sup>\*1.-</sup> Orlandos, op.cit.,p.315.

\*2.- Ibid.,p.314. Orlandos found East peristyle architrave backers with a taenia equivalent in height to the height of the exterior taenia and regula. None of these blocks are now to be found on the site..

blocks must be backers for either the exterior frieze or for the interior architrave. Since they both show tong cuttings on their top surfaces, indicating that they were the last blocks to be set in place in their respective courses, they can not both belong to the same course. Their preserved lengths unfortunately do not indicate which block backed the exterior frieze and which, the interior architrave.

As a result of this study the Nemesis temple at Rhamnous can no longer be classed along with the Poseidon temple at Sounion, the Parthenon and the temple of Hephaistos as a Doric temple with a continuous Ionic frieze on its cella, for it has been proved beyond doubt that the porches had the usual triglyph frieze of the Doric order.

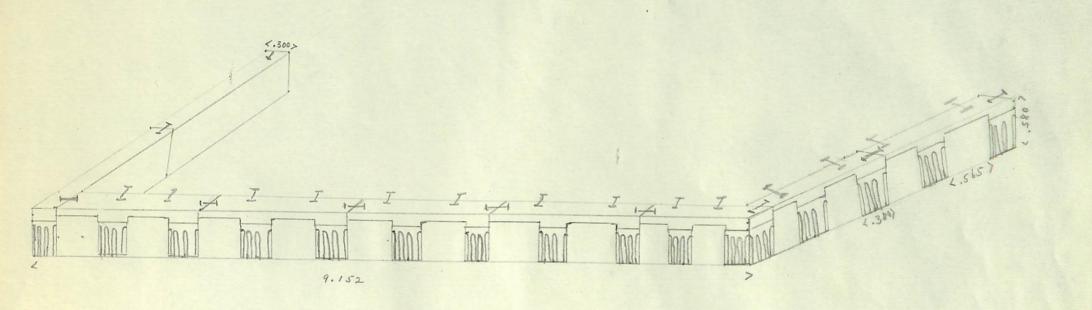


FIG. 1 - SCHEMATIC RECONSTRUCTION OF EXTERIOR FRIEZE OVER EAST FACADE

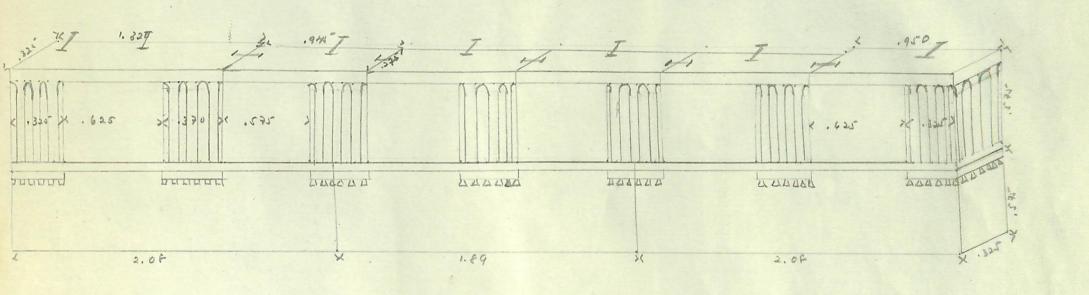


FIG. 2 - RECONSTRUCTION OF EAST PORCH FRIEZE



PLis- Normal exterior frieze Block.



PLANTRIGHT and of Exterior frieze BLOCK "B".



PL. 7- Left end of exterior frieze Block "B"



PL.B. Exterior frieze BLOCK "A".



PL. 1.- Capital on ground N.E. of the temple.



Phis-Interior Architrave belonging over the N.E. anta



Phis-Exterior architrary S.E. of the temphe



Ph. 4 - Interior friege BLOCK.