



FORTIDEN I TRONDHEIM BYGRUNN:
FOLKEBIBLIOTEKSTOMTEN

MEDDELELSER NR. 3

MAGASINEKS.

Må ikke finnes!



BRIAN J. HODKINSON

STRATIGRAFISK ANALYSE

DELFELT FE OG FF



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fra prosjektet
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Riksantikvaren, Utgravningskontoret for Trondheim

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FORORD

Den stratigrafiske analysen - målsetting.

Den foreliggende rapporten er en av i alt 7 delrapporter der det blir redegjort for resultatene av den stratigrafiske analysen av kulturlagene på Folkebibliotekstomten.

Målsettingen med den stratigrafiske analysen har vært å danne et grunnlag for

- a) å kunne sammenstille samtidig eksisterende konstruksjoner og anlegg fremgravd og dokumentert på de enkelte delfeltene,
- b) å kunne inndeles bebyggelsen i et antall faser (bebyggelses-sjikt som omfatter eksisterende bebyggelse innenfor et kortere eller lengre tidsrom), på en slik måte at fasene enkeltvis og samlet reflekterer signifikante trekk i bebyggelsens struktur under en gitt periode samt endringer i denne strukturen over tid.

Stratigrafirapportene - innhold og oppbygning.

Stratigrafirapporten er oppdelt i 7 delrapporter som hver inneholder en standardisert redegjørelse for den stratigrafiske analysen utført på de enkelte delfeltene (feltets inndeling: se nedenfor). Deretter vil følge en sammenfattende rapport som vil gjøre rede for den stratigrafiske sammenkjøringen av delfeltene, faseinndelingen og en generell beskrivelse av den samlede bebyggelsesutviklingen på Folkebiblioteksfeltet. I en egen rapport vil det bli redegjort for et første dateringsforsøk av bebyggelsesfasene.

Delrapportene er utformet med henblikk på å formidle

- a) basale stratigrafiske data (lagrelasjoner), samt forhold av ytre karakter som kan ha påvirket dokumentasjonen og tolkningen av kulturlagtilveksten i området,
- b) beskrivelser av de ulike konstruksjons- og anleggstypene og deres stratigrafiske tolkningsgrunnlag,

- c) anskueliggjøre og gi muligheten til kontroll av den stratigrafiske analysen og anleggsbeskrivelsene gjennom minimatriser og faseplaner,
- d) gi en generell innføring i bebyggelsesutviklingen på delfelt-nivå.

Hovedformålet med å utgi stratigrafirapportene er for det første at de samlet skal fungere som et funksjonelt hjelpemiddel, en håndbok for forskere som i fremtiden ønsker å benytte seg av det arkeologiske materialet fra Folkebibliotekstomten, for det andre at de skal fungere som et henvisningsgrunnlag for den type grunn-data som det ikke er nødvendig å belaste prosjektets syntese-dannende sluttpublikasjon med.

I hver enkelt delrapport vil det bli redegjort for hvordan den stratigrafiske analysen er utført i praksis. Variasjoner m.h.t. utgravningsteknikk, dokumentasjonsnivå og bevaringsforhold har gjort det nødvendig med en viss individuell tilpasning til de generelle prinsippene for den stratigrafiske analysen. Disse vil det bli redegjort for samlet i faserapporten.

Endel av rapportene er utformet før prosjektet var startet og hadde lagt faste retningslinjer for anvendt metodikk og rapport-utformning. Disse rapportene har det, i større eller mindre grad, vært nødvendig å redigere for at de skal få et så enhetlig preg som mulig og dermed oppfylle deres tiltenkte funksjon på best mulig måte. Allikevel vil noen rapporter ha en noe avvikende detaljutformning. Endelig skal det opplyses at rapportene vil bli utgitt på det språk de opprinnelig er skrevet. Forfatterne står ansvarlige for delrapportenes innhold og språklige utformning.

Feltinndeling.

Gjennom undersøkelsesperioden (1973-85) har feltgrensene på Folkebibliotekstomten vært gjenstand for mange justeringer: Feltet er utvidet og nye delfelt er tatt opp, samtidig som andre er slått sammen eller delt. Slike justeringer har skyldtes praktiske og tolkningsmessige forhold: Den vanligste årsaken til forskyvninger i delfeltenes feltgrenser har vært at man i mest mulig grad har villet ta hensyn til en samlet utgravning og dokumentasjon av

ulike anlegg. Hus, passasjer o.l. som har krysset delfeltgrenser har ofte vært årsak til at en del av et mindre felt er fraskilt og lagt til nabofeltet. Men store gjennomgående konstruksjoner, slik som f.eks. Krabugatas trebrolagte forløper, er utgravd og dokumentert på flere ulike delfelt. Dette har skapt både fordeler og ulemper i det senere sammenkjørings- og faseinndelingsarbeidet (mer om dette i faserapporten).

Da undersøkelsene startet i 1973, ble det bestemt å dele undersøkelsesområdet (UO) i mindre delfelt som fikk betegnelsen FA, FB, FC, osv. I perioden 1973-76 ble dette kjernefeltet utgravd i to etapper. Det besto da av delfeltene FA, FB, FC, FD (FB og FC kom senere til å inngå i FA, mens FD utgikk som eget delfelt), FE, FF, FH, FK og FL. På grunn av endringer i byggeplanene ble feltet senere utvidet i flere omganger: I 1978 ble UO utvidet mot nord med delfeltene FM, FP, FR og FS, samt mot vest med delfeltene FT og FU. I 1979 ble feltet utvidet mot øst med delfeltene FX, FZ, FY og FO, samt mot syd med delfelt FW. I 1981 ble en gjenstående del i nord undersøkt sammen med en mindre utvidelse mot nordvest (FG-øst og FG-vest). I 1984 ble feltet ytterligere utvidet mot syd med delfeltene FJ og FN. UO fikk da kontakt med Olavskirkens kirkegård i nord.

Delstratigrafirapportene vil omfatte redegjørelsen for 2-3 delfelt som stratigrafisk og tolkningsmessig har nære tilknytningspunkter.

Axel Christophersen
Prosjektleder

Summary.

This report is one of in all 7 fascicules which describe the stratigraphic analysis of the occupation deposits on Folkebibliotekstomten in Trondheim, excavated between 1973 and 1985.

Because of the size of the site it was originally divided into a number of smaller areas. Many of these have, for various reasons, during the course of the excavation moved their boundaries. Similarly the repeated expansion of the site has resulted in a series of new areas being added, in all the site was divided into

22 areas. The stratigraphy reports will follow these divisions.

Each fascicule will consist of 2-3 areas which, on the basis of stratigraphy and interpretation, are closely connected.

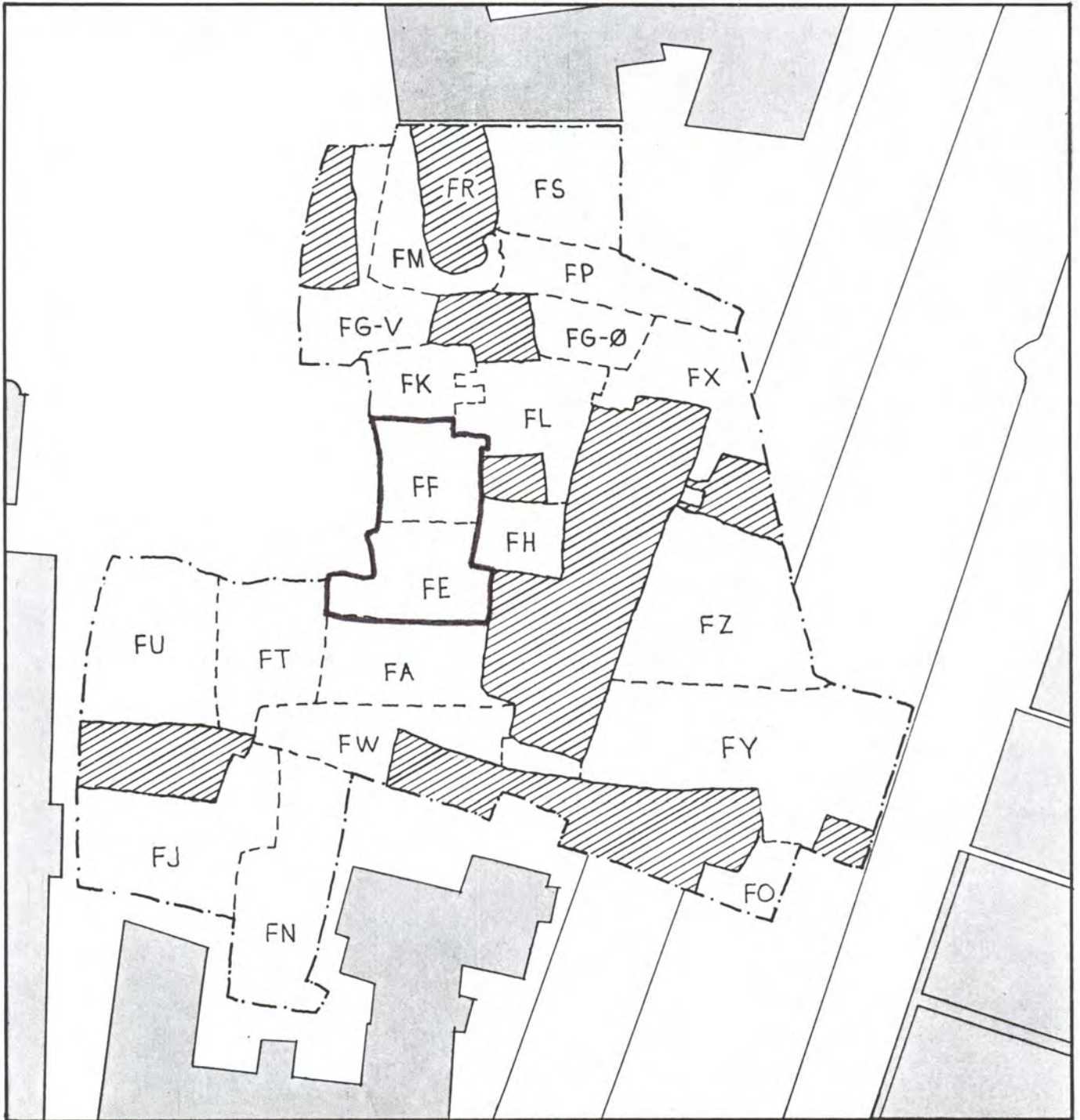
The aim of this stratigraphic analysis is to form a basis for 1) correlating all the features excavated and documented on the individual sites, and 2) dividing the buildings into a number of building levels which together reflect significant traits in the settlement development.

The reports contain an account of the results of the stratigraphic analysis, descriptions of the different types of buildings and constructions together with a general overview of the settlement development on each site.

The stratigraphy reports are intended to function as an aid to future researchers who wish to use the archaeological material from Folkebibliotekstomten.

The stratigraphy reports will be followed by a report describing the phasing and settlement development of the site as a whole.


Translation: Ian Reed.



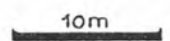
Folkebibliotekstomten

Oversikt over delfelt



 Etterreformatorisk kjeller

1:500



Site FE

by

Brian J.Hodkinson

Introduction.

FE was excavated between 1974 and 1976 and originally covered the rute J11, J12, K11, K12 and L12. The two southern ruter, J11 and K11 had already been partially excavated in 1973 as part of FC. As work progressed and the structure of the whole of F site became clearer the boundaries of FE were changed. L12 and part of K12 to the east of the north-south road were ceded to FH and H11 and H12 which had been part of FA became part of FE. To the south in the HJK-ruter the boundary with FA became the northern edge of the FA buildings and, because of fluctuations in the building line, the boundary between the two sites varies slightly from phase to phase. In the north the boundary with FF was a originally a baulk. This was removed first in 1975 as part of FF and, when it became clear that it contained the continuation of FE buildings, FE took over responsibility. The northern boundary therefore also is by no means stationary.

At the time of excavation FE formed the western edge of F-site. This boundary was later changed with the excavation of FT in 1978 and 1985.

The site leaders were as follows:

1974. Chris Spencer and Steve Coll

1975. Per Smed Philipsen, Martin Howe and Chris Spencer

1976. Jonathan Wordsworth and Martin Howe

Additional notes were made by Per Smed Philipsen (1974) and Brian Hodkinson (1975). Except for Per Smed Philipsen who recorded in Danish the site leaders recorded in English.

Principles and methods of excavation.

The site record consists of 3 A-4 note books, one for each season, 175 plan drawings, 84 detail drawings and 4 section drawings as well as a large, but for these purpose uncounted, number of photographs listed in the F-site photo journals. In addition there is a report for FE compiled in 1982 which the present report is a revised and edited version of.

Each note book contains a diary of events on site, observations and a layer list. The standard of recording varied from site leader to site leader and in some cases layer relationships were not recorded with the thoroughness one might desire. In some cases it has been necessary to infer relationships from plans or sketches in the note books.

In 1974 an attempt was made to keep the site in phase and this principle was followed in the first part of 1975, but towards the end of the season the road area was excavated ahead of the main body of the site. In 1976 the main body of the site was in phase but it was soon decided to dig the northern part in advance of the southern half. This excavation of different parts of the site as small units has led to some problems in correlating the site, especially in the lower levels where there were few wooden remains to aid correlation.

There were a number of modern disturbances on the site which cut through all or most of the medieval deposits. The main one was a deep east-west service trench running under Skjoldagerveita which cut the site into two. A sewer trench ran from the northern edge of the trench to serve Kjøpmannsgaten 24. This trench stopped just short of yet another disturbance which was shared with FF, i.e. the foundations for a safe in Kjøpmannsgaten 24. These two disturbances almost cut the northern part of the road off from the rest of the northern half of the site. All these disturbances have of course led to difficulties in correlating the site both under excavation and at the post excavation stage. A fourth disturbance was a well shared between FE, FA and FT.

In general the state of preservation of organic material was good all over the site but the south and western parts of the site were better than the north and east. A good example of the state of preservation was a painted wooden stick from the south of the site.

STRATIGRAPHY AND PHASING.Principles and methods applied in the post excavation analysis.

As previously stated this report builds upon the 1982 report which presented the stratigraphic analysis in 4 ways:

1. A written description of the building phases.
2. Plans based on 1.
3. A context list.
4. A matrix showing the relationships between earth layers. It was meant that the plan drawings should be "slid in" at each phase boundary on the matrix.

In the following report there have been minor revisions to 2, 3 and 4 above.

It should be remembered that the upper levels of FE were excavated partly as FA-FC and for these phases this report should be read in conjunction with FA.

The site was divisible into several areas, a north-south road, an east-west passage and several building areas. Phasing of the site has its starting point in events to the west of the road i.e. new buildings or occasionally a passage level or more commonly both a new building and passage level. In the earlier phases especially there was a gradual uninterrupted development, buildings were replaced as the need arose and so it is hard to draw a definite line through the site and say this is a phase. Because of this difficulty an attempt was made in the original report to group phases into periods which had clearly definable limits e.g. a fire layer terminating them.

In the matrix some layers have been difficult to phase e.g. because of missing information about the layer or because of uncertainty in the correlation. These layers are therefore left hanging. In some cases a layer's relationship to a building may be unclear and so some adjustment to the matrixes may be necessary when the finds have been considered. It is hoped that such changes will be minimal and involve only the movement of a layer immediately adjacent to a phase division up or down. It should be remembered that if such changes prove to be necessary then the context list should be adjusted accordingly.

General description of the development of the site.

From the earliest phase it is possible to trace a pattern which holds through the medieval period. There are east-west boundaries, believed to be property boundaries, in the north and south of the site and so FE is believed to form a single property. An east-west passage running across the south of the site is believed in the first three phases to lie on the FA side of the boundary but from phase 4 onwards, after a slight displacement northwards, becomes part of the FE property. This development is described in greater detail in the FA report. The passage runs out to a north-south road at the east end of the site. West of the street and north of the passage was the building plot and here it is possible to identify 4 areas which can be recognised in most phases. From the road westwards it reads, building, corridor, building, building the last named lay for the most part under the section and has now been excavated as part of FT.

It should be noted that the pattern of buildings is similar to that on FA and it is here suggested that it has evolved in the same way. On both sites the earliest buildings seem to have been on the western part of the site and the area next to the road has been open. On FA there are good reasons to suggest that the door to the building was in the east wall and that when it was decided to build next to the street it was necessary to leave a corridor between buildings to maintain access. This pattern then fossilised to become the pattern for most of the medieval period. It seems reasonable therefore to postulate a similar process on FE.

It is difficult to say a great deal about the road for it is quite badly disturbed and at no point is it possible to see the full width for a stretch of over 1m. Nevertheless it is possible to see a mid line division in most if not all phases. In some phases it is also possible to see within the structure of the road where the passage meets the road. This observation may be useful for interpretation on other sites further to the north where the remains on the building plots are very fragmentary or non-existent due to later intrusions.

PHASE 1.General characteristic.

Before considering the details of this phases it should first be pointed out that there are reasons to suggest that K1 can be put together with K5 in phase 2 and K8 in phase 3 to form one building. The evidence for this will be discussed in greater detail under phase 3.

K1 is interpreted as a building surrounded by an eaves-drip trench, probably with the entrance in the west wall. South of this building is a ca. 3m wide open area between K1 and the next building K2. Along the middle of this area ran a ragged east-west line of post holes K3 which is interpreted as the line of an east-west property boundary. The features to the south of this line in phases 1, 2 and 3 are believed to be part of the FA property even though they were excavated as FE. In phase 1 this applies to K2 which was the revetting of the sand platform/terrace on which the first FA building stood. A small hearth 1267 also probably belongs on FA and may foreshadow the events further north on FE in phase 2.

In the street G1 was given to a single log 1274 and there is no evidence that the street or rather the paved street can be traced back to this phase. However the factor which forced the street into a change of alignment from FA to FE was already present at this early stage for K1 and K2 are not parallel but each is at right angles (roughly) to the later road.

Stratigraphic description.

In these levels most of the layers are described as clay or sand and this presumably reflects the nature of the underlying natural which changes from sand/gravel to clay from north-east to south-west. There are no layers which can give an immediate indication of the use of the area.

Layers in phase 1:

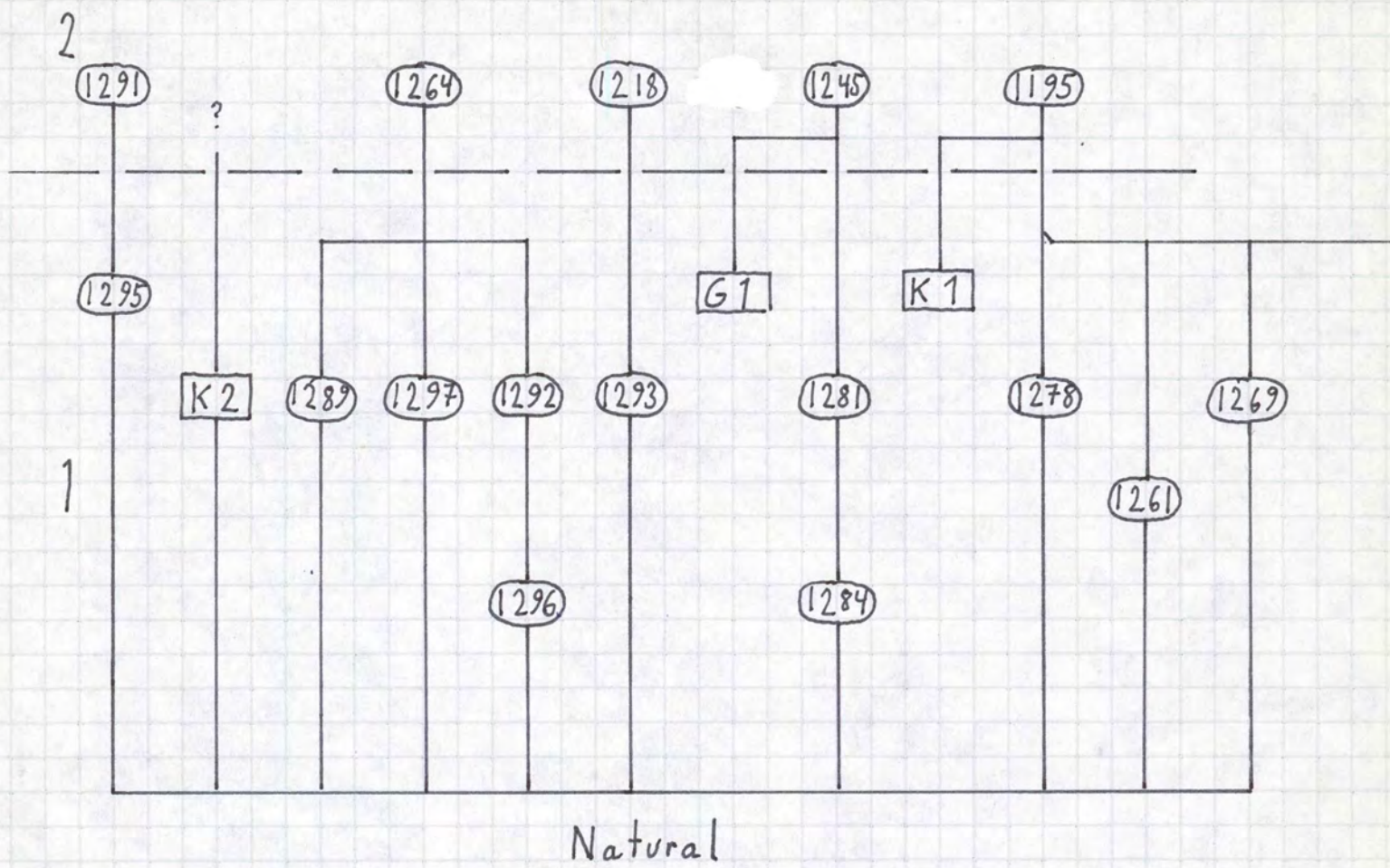
1230	1261	1284	1293
1256	1269	1287	1295
1257	1278	1289	1296
1258	1281	1292	1297

Description of the constructions.

K1, a building? The main feature of this construction is a shallow trench 1296 which runs roughly east-west then swings through 90 degrees to run north-south and fades away just short of the FF boundary. The area enclosed by this ditch is what becomes the second building back from the street and the corridor between the first and second building. Within the enclosed area were two rows of stones 1277 which are interpreted as sill supports, one of which forms the west wall and one the south wall. These two rows converge on a post hole 1294, which must therefore be interpreted as the south west corner post. The ditch is interpreted as an eavesdrip trench around the building. Within the building is a shallow bark lined pit 1177 which is sealed by K5 in phase 2. If, as will be suggested in phase 3 K5 and K1 form part of the same building complex, then this feature is clearly earlier than the building, however if the suggestion about K1 and K5 is wrong then 1177 lay within the building. What its function has been is difficult to say but one thing should perhaps be borne in mind and that is what happens further to the east in the next phase. Here a metal working area is established with parallels to that on Norges Bank site (NB). One of the features in the NB metal working area was lined with bark and one therefore wonders if there could be any sort of connection between the two.

K2 revetting. This was a wattle fence 1251 which acted as the retaining wall for the sand of the FA platform. It has also an FA construction number K2.

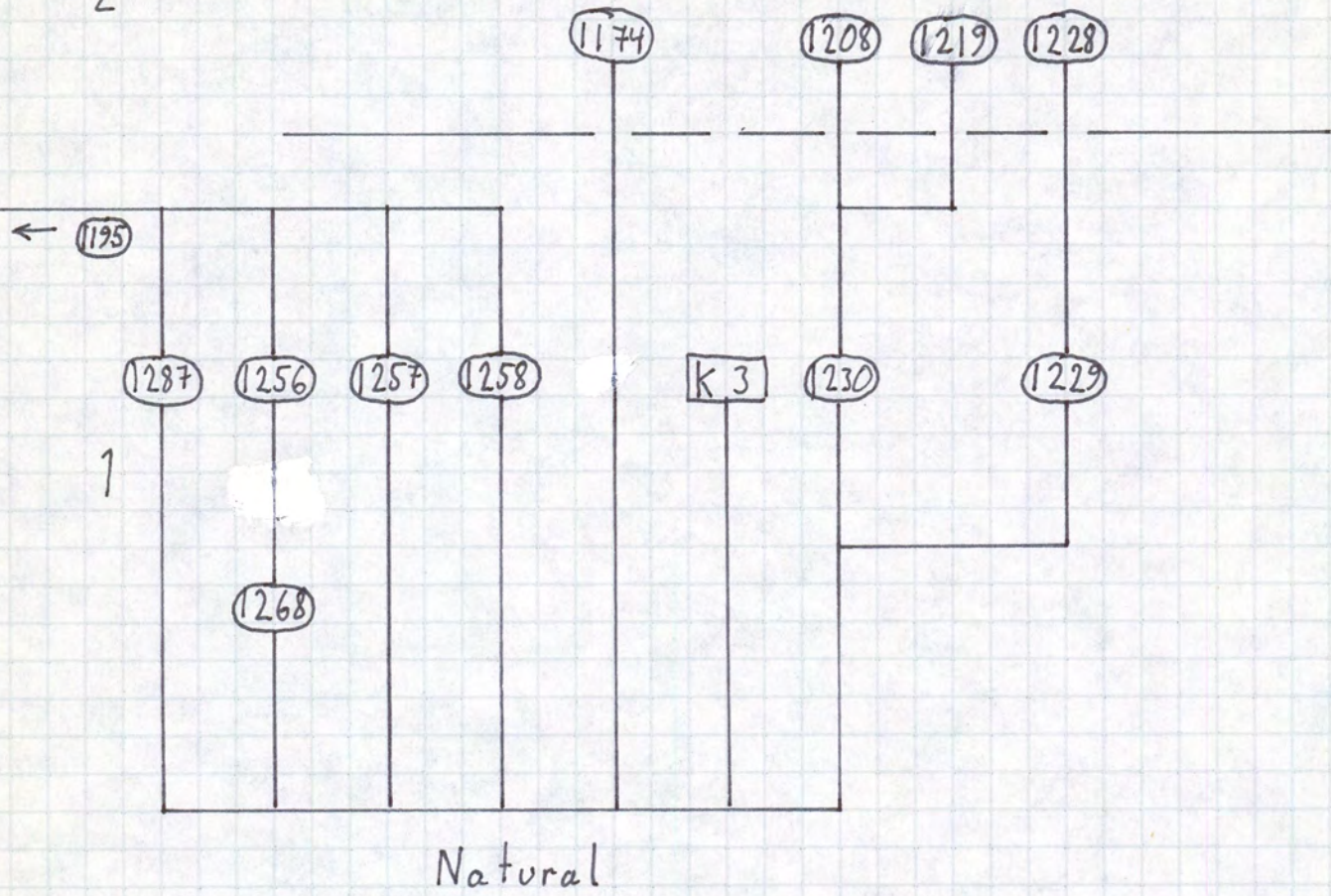
K3 a ragged east-west line of posts 1250, 1259, 1268, 1222, 1283, 1285, 1286, 1260, 1301, 1302, 1303, 1299 and 1300. All these posts appear to fit in at this level but there is no corresponding row either parallel or at right angle with which to make a structure. The conclusion is therefore that these must represent either an east-west linear structure or each post has functioned individually. Given that the line is very close to that proposed as the north edge of the FA property they may have functioned as some sort of boundary marking.



FE,
 Mini matrix, phase 1, nr. 1.

continued →

2



FE

Minimatrix, phase 1, nr. 2

PHASE 2.General characteristic.

In this phase the structure of the site is becoming much clearer. K4 is an east-west passage running along the north edge of K2 which is still in use and swinging slightly more north-east south-west. Further to the north K5 must be interpreted as a wall alignment. This lays within the area of K1 but lies slightly further west than the east edge of K1. To the west of K5 lay a group of features which have been given the number K6. These appear to form a series of hearths presumed to be for metal working. As the features cut one another they are clearly not all contemporary so it is possible that some may be taken down or moved up a phase. The area of these hearths appears to have been open for only on the east edge of the area are there a couple of posts which one could interpret as having for example held an awning.

The street seems to have been laid out at this level with the logs of G2 possibly having received a plank boardwalk. The form of this street level, large logs lying over a shallow north-south ditch has much in common with the early phases on FF and especially FK and so there is the possibility of a connection through these three sites.

Stratigraphic description.

Obviously at this level the layers connected with the hearths are going to arouse most interest as they will, hopefully, give a good indication as to the use of the area. At the moment it looks as though they are connected with the working of non-ferrous metals. It appears that the fills of the features were often given the number of the feature themselves so the feature numbers are listed below. There is some uncertainty in the stratigraphy around the features caused by the digging of the features into earlier but similar layers. Because of this the following layer list includes a few layers which might belong to a slightly higher level and these are marked by a phase number in brackets.

Layers in phase 2:

1154 (4)	1201 (3)	1210	1228	1254
1174	1202	1218	1237	1255
1178 (3)	1203	1219	1239	1263
1179 (3)	1206	1225	1245	1264
1195	1208	1227	1249	1282
				1291

The pits and hearths.

1133	1181	1186	1231
1176	1182	1189	1234
1180	1185	1190	1240

Description of the constructions.

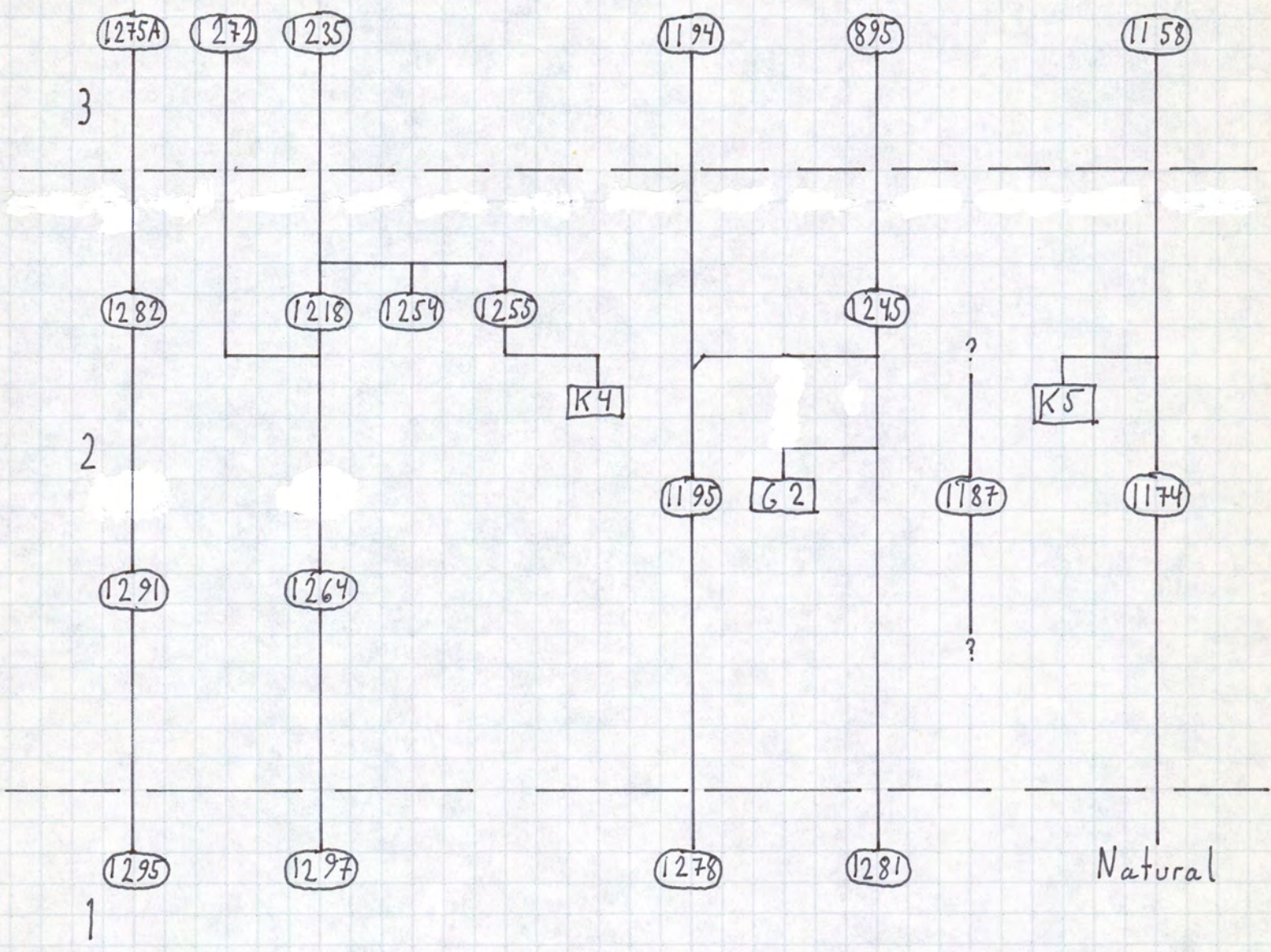
K4 a passageway. K4 lies immediately north of K2 and runs almost due east-west from the west section to the H11/J11 border where it swings to a more north-east south-west course. The structure can be divided into two parts east and west. The eastern part consists of 2 planks 1217 and is a clumsy extension of the western part which is extremely well made. The surface of the western part of the passageway consists of north-south halvkløvninger 1220 with their flat sides down. The ends of these logs are chamfered and pegged to east-west beams 1223, 1224 and possibly 1243 which are shaped to receive the logs. The supporting frame for the halvkløvninger rests in turn on north-south beams 1251, 1262, 1238, 1270 and 1271.

K5 a building? This consists of a north-south row of stones 1168 which has partially sunk into the feature 1177 of phase 1. The stones run out to the sewer trench but do not appear on the south side of it. Immediately east of and parallel to the stones were two planks 1153 which seem to be associated with the structure. Just north of the planks and stones were two fragments 1175 which according to the day book were lafted together. If this observation is correct then this would appear to be the north east corner of the building which has slipped slightly from its sill 1168. South of the sewer trench in what must be the house area was a scatter of wood 1193. The two

post holes 1197 and 1198 seem to belong here.

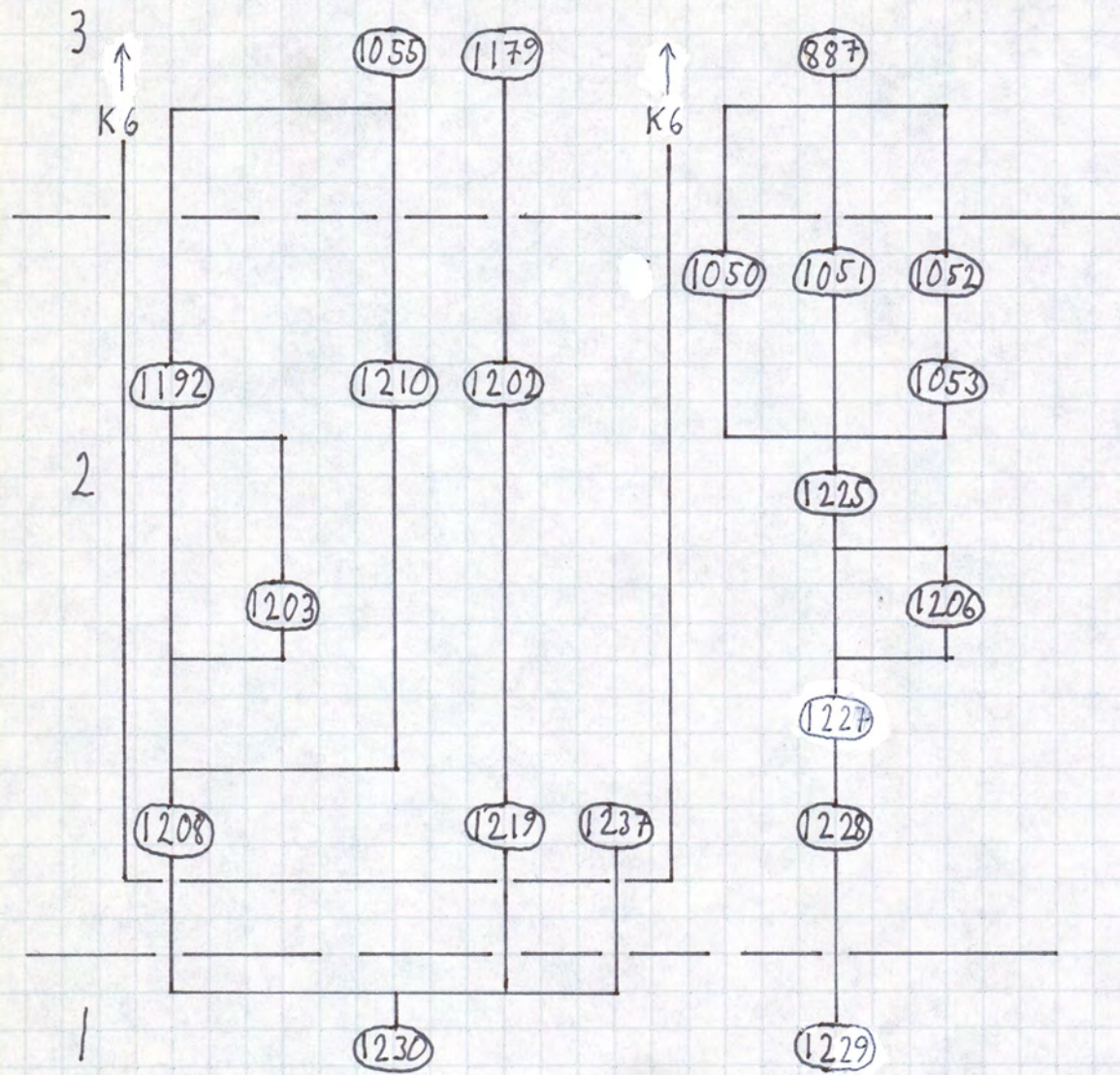
K6 hearths. This number was given to a series of features which do not form a single construction but which should be dealt with as a unit. These pits and hearths were numbered 1133, 1176, 1180, 1181, 1182, 1185, 1186, 1189, 1190, 1231, 1234 and 1240. Associated with all these features were layers and lenses of charcoal and gravel as well as many small stakes which were impossible to associate with specific features. The hearths were superimposed on one another and thereby represent a chronological sequence but how this relates to the surrounding area is difficult to say. It may be that there was intensive use over a short period or there may have been occasional use over a long period in which case it is not unreasonable to think that some of the features should perhaps have been drawn at phases 1 and 3 as well. The features 1133, 1180 and 1182 were lined with 2 planks at right angles. Why this frame should only be on two sides is difficult to explain, presumably it must be for some technical reason. It is worth noting however that similar features were noted in the excavation NB in Kongens gate 1. 1234 was lined on one side with a large stone which may have functioned in a similar manner to the wooden linings. 1189 was somewhat bigger than the other features and the fill suggested that it may not have been a hearth as such but a place to dump material from the hearths. Within the area were a few post holes as well. 1191, 1216 and 1233. On the western edge 1204 and 1205 may form a row of three with 1173 on the south side of the sewer trench. If this is a row then it runs parallel to and on the outside of the phase 1 eavesdrip trench.

G2 road level. This is the first definite trace of activity in the road. 1248 is a shallow trench which runs north-south from the intrusion between FE and FF to the FE/FA border where it stops on the line of the projection of the K2 alignment. Spanning this trench were two logs 888 and 1226. Both of these had been shaped, by flattening the mid section, to receive planks. It is not clear whether the trench and logs represent one build or whether the trench had an independent existence before being covered with the logs, however it is interesting to note that



FE
 Minimatix, phase 2, nr. 1.

continued →



FE

Minimatrix, phase 2, nr. 2.

PHASE 3.General characteristic.

The changes in this phase are minimal, with a new passage level K7 and beam slot K8 in the area which K1 and K5 occupied in phases 1 and 2. The two beams 1252 and 1253 and the stones 1171 may indicate some activity further to the west of K8 but it is difficult to interpret what this may be. The planks and beams 1196 and 1197 are placed in this phase though their stratigraphic relationships are not given in the day books. These fragments must however predate phase 4.

At this point I would like to consider an alternative interpretation of K1, K5 and K8. If we superimpose all three constructions then we see that all the wood etc falls within the shallow eavesdrip trench. The beam slot K8 lay directly over phase 1 sill supports 1277 and 1175 not only forms the northern end of the sill supports 1168 but also coincides with the point at which the eavesdrip faded away. As none of the three constructions amount to much independently it seems reasonable to suggest that they are all part of the one. This way we have four walls to a building. The reason that there is an apparent chronological difference between the constructions is probably to do with the differing nature of each construction e.g. the beam slot appears later than the stones because layers have built up around the beam but covering the stone. If this picture is correct then we have one building which stood through 2 phases of the passage, the laying out of the road as a regulated unit and the establishment and decline of a small metal working area. It was because of this apparently uninterrupted development that these three phases were grouped together in the original report and called period 2.

Stratigraphic description.

There are no layers which stand out for special mention but it is worth noting that there is no destruction level which terminates phase 3. The change to phase 4 occurred peacefully.

Layers in phase 3:

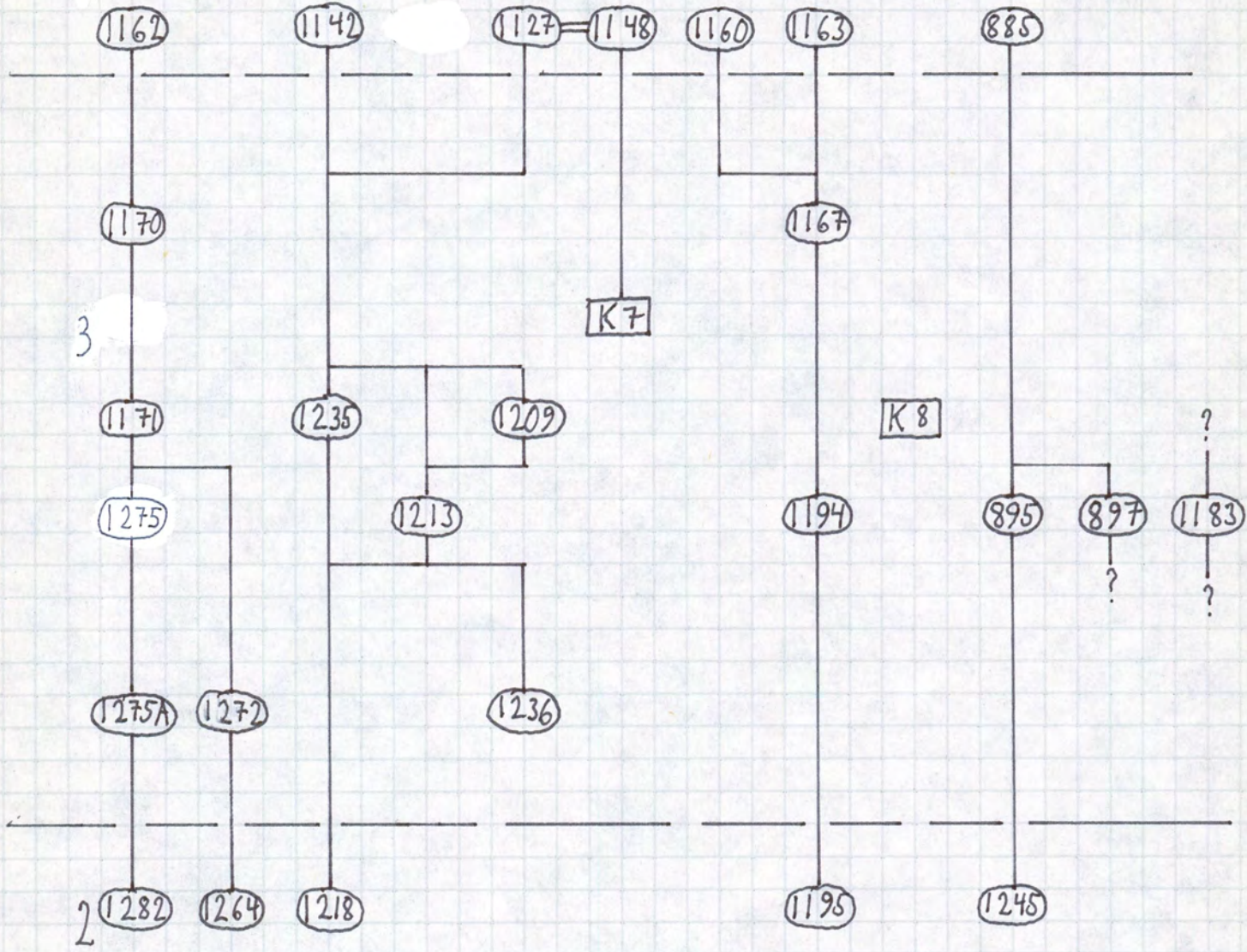
895	1167	1179	1209	1272
897	1170	1183	1213	1275
1157	1171	1194	1235	
1158	1178	1201	1236	

Description of the constructions.

K7 a passage. It consists of east-west planks 1144 lying upon north-south beams 1130. Unlike the passage in the previous phase the whole length of K7 runs parallel with the K1 orientation. The southern boundary no longer appears to be the wattle fence K2 which has fallen out of use but now seems to be a plank standing on edge, 1214 possibly held in position by a couple of stakes.

K8 a beam slot. This was a shallow north-south depression which is interpreted as a beam slot. It lies immediately over the sill supports 1277 in phase 1 and may therefore be connected. If the building had stood for some length of time and there had been a build up of deposits around it half burying the lowest omfar then when the lowest omfar was removed it would leave its imprint which would appear to be chronologically later than the sill to which it belongs.

4

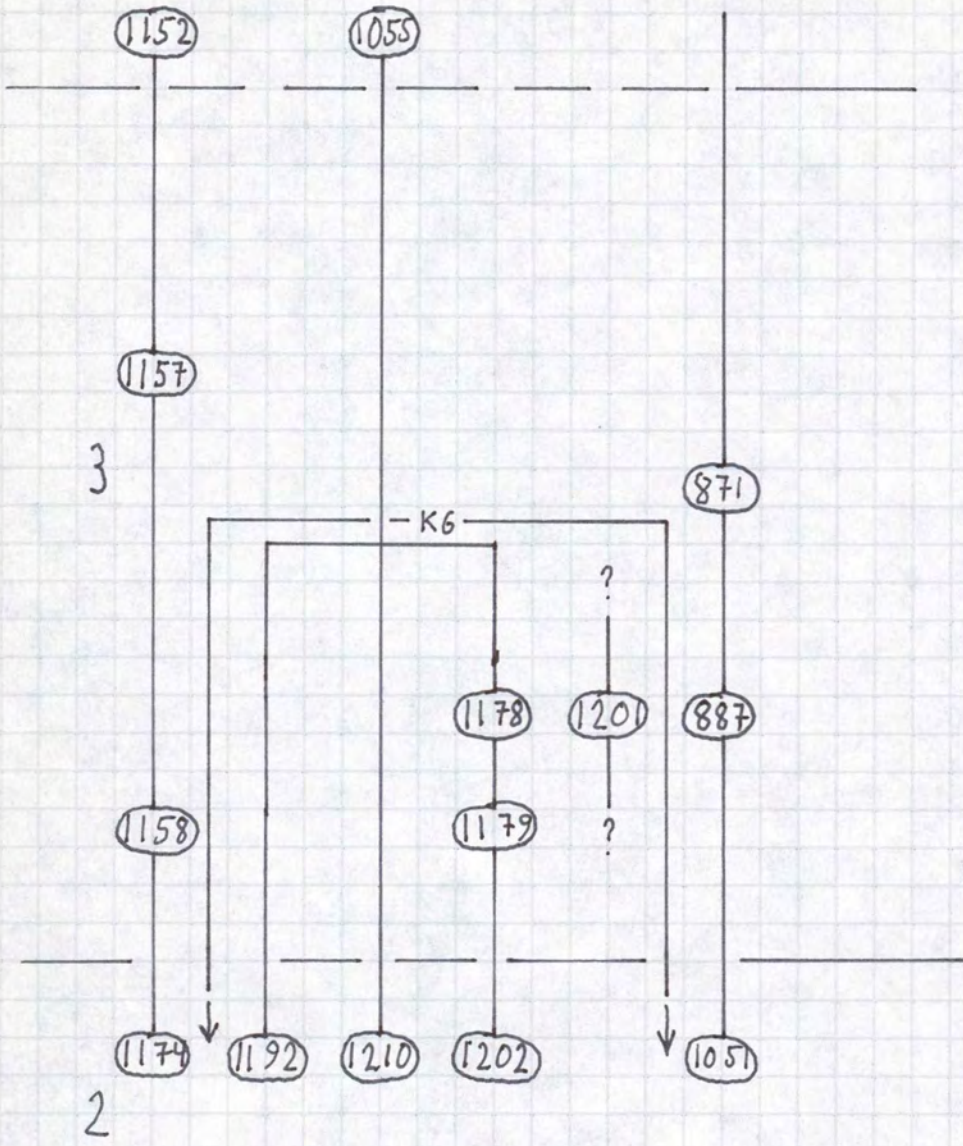


FE

Minimatrix, phase 3, nr 1.

continued →

4



FE

Minimatrix, phase 3, nr. 2.

PHASE 4.General characteristic.

It is at this level that there is a marked change in the placing of the passage for there is a marked shift northwards and it is definitely now on the FE property. This change seems to coincide with events on FA where a passage is introduced across the centre of the site. It is suggested that the phase 2 and 3 passages were on FA property but possibly shared with FE and that in phase 4 access to FA was changed depriving the FE property of use of the passage so that FE found it necessary to relocate the passage this time on their own property. K9 is this new passage. The southern edge of the passage and thereby the FE/FA boundary is marked by a row of stakes and stake holes. It is thought unlikely that the ditch under the passage ever had a separate existence since the whole passage appears to be planned as a unit. It is worth noting that the passage widens out at the west end and that this is just west of the area occupied by the K1, K5, K8, building so it seems that the passage is respecting more than one alignment on its north side. K10 is something of a problem building for there are no definitely identified walls to it so that the exact extent of the building is unclear. It is also slightly difficult to place in time i.e. it could possibly fit into the later part of phase 3, as well as 4.

Stratigraphic description.

Within this phase a couple of layers 1060 and 1163 are described as containing charcoal, however these do not seem to be destruction levels because there is no sign that the phase 4 constructions burnt. Otherwise most of the layers are described as variations of treflis.

Layers in phase 4:

885	1104	1127	1152	1163
1055	1109	1142	1156	1164
1058 in 1160?	1111	1148	1160	1169
1060	1126	1150	1162	

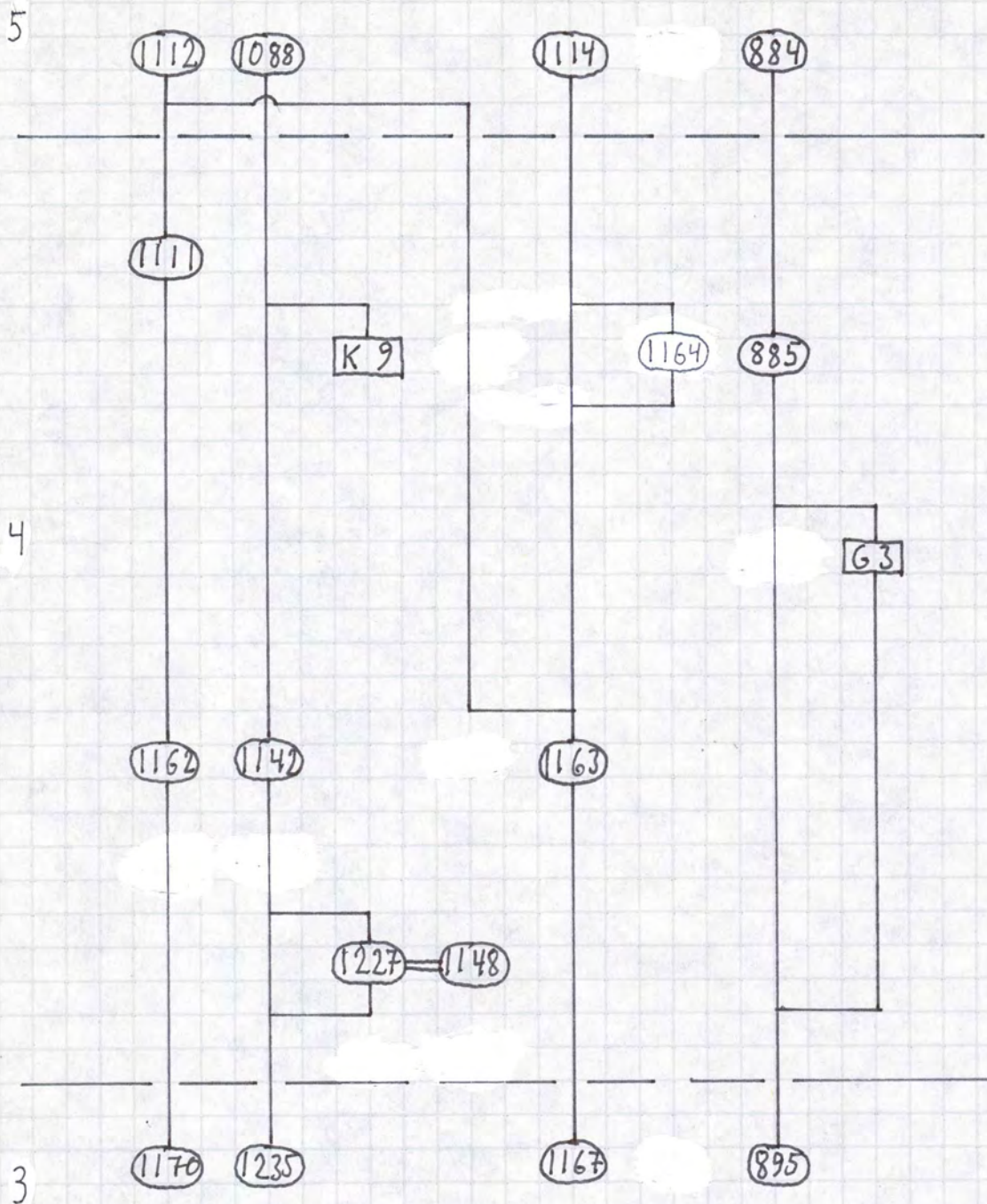
Description of the constructions.

K9 a passage. This construction consists of a narrow east-west ditch 1122 spanned by joists 1081. The joists have carried east-west planking but only a few scattered bits of planking remain, 1107, 1108, 1098, 1100 and 1105. Immediately south of the planks and joists were stakes 1006, 1087 and 1215 which formed a southern boundary to FE. Some of these stakes may belong to phase 5 but some undoubtedly belong to this phase. The westernmost joist of 1081 projects much further north than the rest and it is interesting to note that this point marks the western edge of the second house area back from the street. It therefore seems as though the passage broadens out at this point having passed by a building. There is however little trace of this building.

K10 a building. There are no immediately obvious walls to this building. The number of pegs and peg holes in 1071 A and B suggests that they were joists and the same may be true of 1071 C which is much shorter and on the line where one might expect a wall line. Two pieces 1048 and 1090 which continue the line of 1071 C look as though they could have been wall supports and thus 1071 was a wall, but then the plank 1071 which lay over 1071 B and C suggests the opposite. None of the joists continued on the south side of the trench which suggests that the south wall must have lain in the area removed by the trench. There are two post holes 1145 and 1147 either one of which could be the south-west corner of the building. It is interesting to note that the beam 1071 C lines up with 1145 which is another possible factor for thinking that the beam is a wall beam. There are no remains to the west of this beam which suggests that the area may have been open. The post-hole 1075 seems to fit in at this level and is therefore interpreted as part of the east wall alignment. The line of the north wall is not clear from the remains at this level though it probably ran along the east-west property boundary which formed the FE/FF boundary.

G3. In the southern part this level of road consisted of north-south beams 890 and 1113 with east-west beams 889 and 896 to the north. On the other side of the trench there were a few

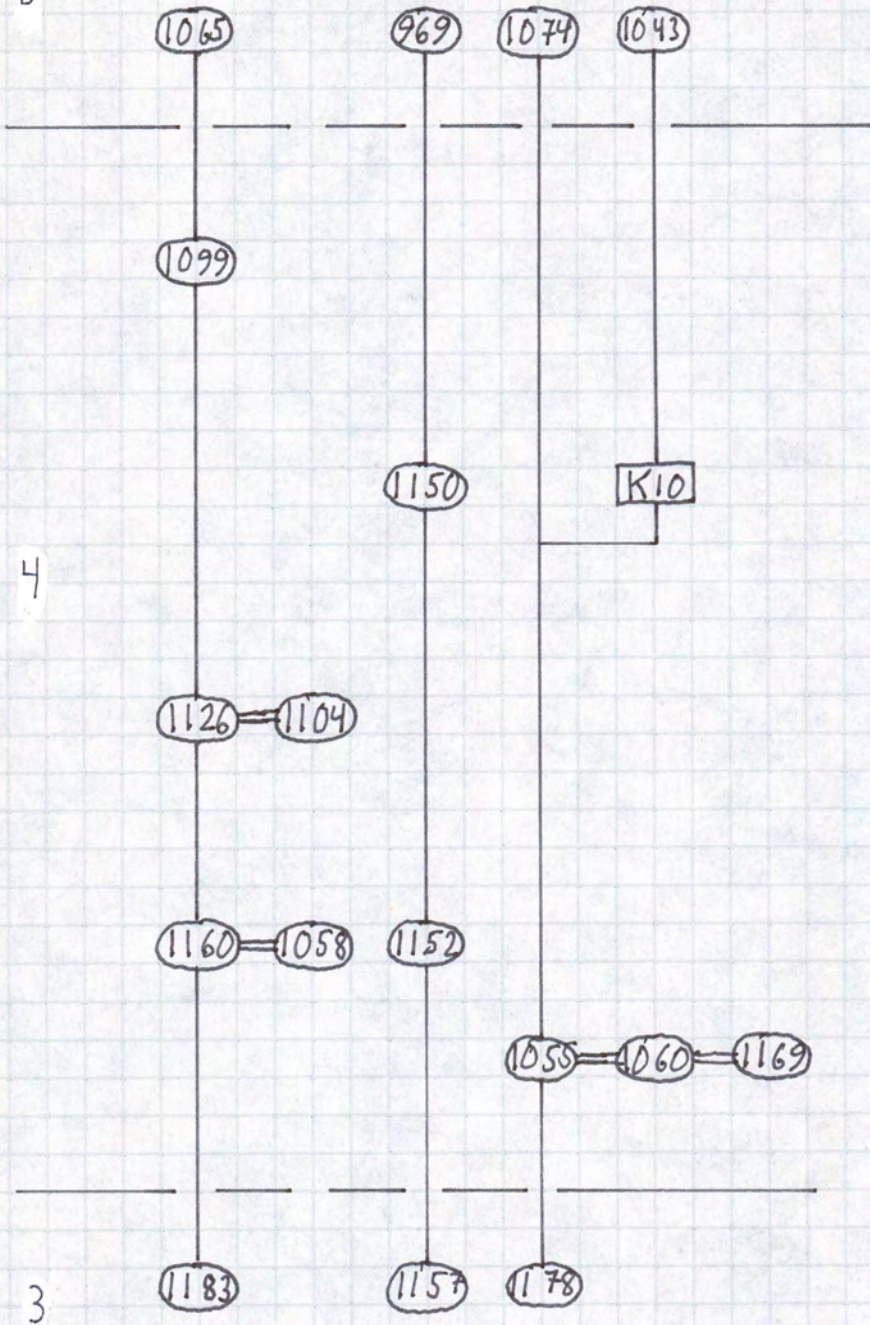
fragments which were not numbered on FE but were taken from drawing number 2036. The beams in this level are of course interpreted as joists and are presumed to have carried planks so it is interesting to note a change in the direction of planking in the southern section. The exact significance of this is unclear because it is not clear how far south into FA the north-south beams continue, but the change does occur where the passage meets the road so it may be that there is just a small area of north-south beams at this junction.



FE
 Mini matrix, phase 4, nr 1.

continued →

5



4

3

FE

Minimatrix, phase 4, nr 2.

PHASE 5.General characteristic.

It is in this phase that we can say that the FE pattern of buildings is clearly established. The elements are there in previous phases but this is the first time that we see it in its full glory. K13 is the first building back from the street G4 and a small corridor K14 separates this from K11 the next building. K11 occupies the space of the second and third building back from the street (see introductory general description) and this building seems to have two elements to it. Firstly there is a building continuing into the western section i.e. the third area and then it seems as though this building was extended eastwards to the corridor area. It therefore looks as though this phase could cover a long period of development and this is possibly borne out by the development in the passage and corridor where there is evidence for possibly two phases.

There are traces of burning in all of the buildings and parts of the passage and it therefore seems that this phase was terminated by a fire. It is this fire which in the original report marked the end of period 2. It also marks the end of period 2 on FA.

Stratigraphic description.

This phase is terminated by a fire which is highly visible on the structures but does not seem to be well represented by layers. In the northern area 962 and 983 are clearly the burnt level but further south and west the destruction level is not so clear. In the K11 area 984 is possibly remains of the fire level but this is separated from the floor of the building by layer 1032 and 1070. If 984 is correctly identified then this would make 1032 and 1070 brukslag par excellence as both lay within the building. 963 must be another brukslag and this layer is covered in a layer of small twigs 972. Both 962 and 972 are assumed to have built up under the floor of the building which was raised off the ground. Most of the other layers are described as forms of treflis and presumably represent both construction levels and brukslag.

Layers in phase 5:

871	972	1059	1084	1106
877	983D	1063	1085	1112
884	984D	1065	1086	1114
908	1022B	1066	1088	1115
962D	1043	1068	1099D	1120
963B	1044	1070	1102	
969	1048	1074	1103	

Description of the constructions.

K11 a building. This building consists of two rooms whereof the eastern room appears to have been built onto the western. The limits of the western room are shown by the lafted corner 1003 and 1004 with 956 and 991 as a possible second omfar to the east wall. Within the western room was a planked floor 1076. It is not clear how the eastern room was jointed to the western but one thing is certain and that is that it must have been (!) for the eastern room cannot stand as a structure in its own right because it would then lack a west wall. Beams 990, 993, 994 and 978 give the line of the south wall of the room. The last named beam was jointed (laft) into 977 the east wall. 977 continued north of the sewer trench where it was numbered 959. Within the room the burnt beams 985 are interpreted as the joists and 986 as a possible remaining fragment of the floor itself. On the outside of this extension there is an arrangement of timbers which seems to belong to the building rather than being part of the passageway. The east wall 997 terminates with its laft-head by post 946, but 998/1083 a plank on edge seems to be sandwiched between the post and laft-head. This plank ran westwards parallel to the south wall but ca. 50cms from it and it stopped quite a way short of the corner of the west room but more or less on a line with the east end of one of the passage planks 1038. There was no corresponding arrangement at this end to hold the plank upright, though it is possible that the later post hole for 880 has removed it. The whole arrangement looks as though it is deliberately planned and intended to be part of something which had height to it,

hence the plank on edge. It is therefore provisionally interpreted as a possible wall bench. Furthermore, on the basis that it stopped short of the wall of the western room and the fact that the passage planking continued past the west room, the area immediately east of 1003 is interpreted as an entrance way. There is a somewhat similar arrangement to the east of the building as well with another plank on edge 958/1033 running northwards from the post 946. This time however the plank does not run parallel to the wall of K11 but seems to run parallel to the building to the east which is at a different angle to K11. As it starts very close to the wall and then diverges from it the plank does not seem to have formed a bench. One would also have to ask oneself what the purpose of a bench along a narrow corridor between buildings would have been?

K12 a passage. The passage widens out once it has passed around the outside of K13. In the section outside K13 there is clearly only a single level of planking but further west there are traces of two and may be even three levels. These cannot however be interpreted as separate levels and must be interpreted as resurfacing for repair. The plank surfacing received several numbers, 1002, 1022, 1030, 1039, 1035, 1036, 1037, 1038, 1040 and 1041. All these planks ran east-west but in the area of the corridor between K11 and K13 there were a couple of planks 1020 which ran north-south. These run in the same direction as those in the corridor K14 and may be part thereof. The joists for the passage were numbered 927, 1080, 1064 and 1061, the last named outside K13 being much shorter than the rest. Above the surface just described were several scraps and planks some of which showed signs of burning. The planks were numbered 996, 999, 1019 and 1026, 894 was a joist and the other scraps were 995, 992, 1013, 1016, 1017 and 1014. All these may have formed part of a second surface in the passage which has then been almost totally removed. Along the southern edge of the passage on the border with FA were two planks on edge, slightly overlapping one another. The tops of the planks leaned in towards FE and on the northern side of them were some stakes 1006 which seem to have been deliberately placed to retain the planks. Further to the west plank 1007 may be a more

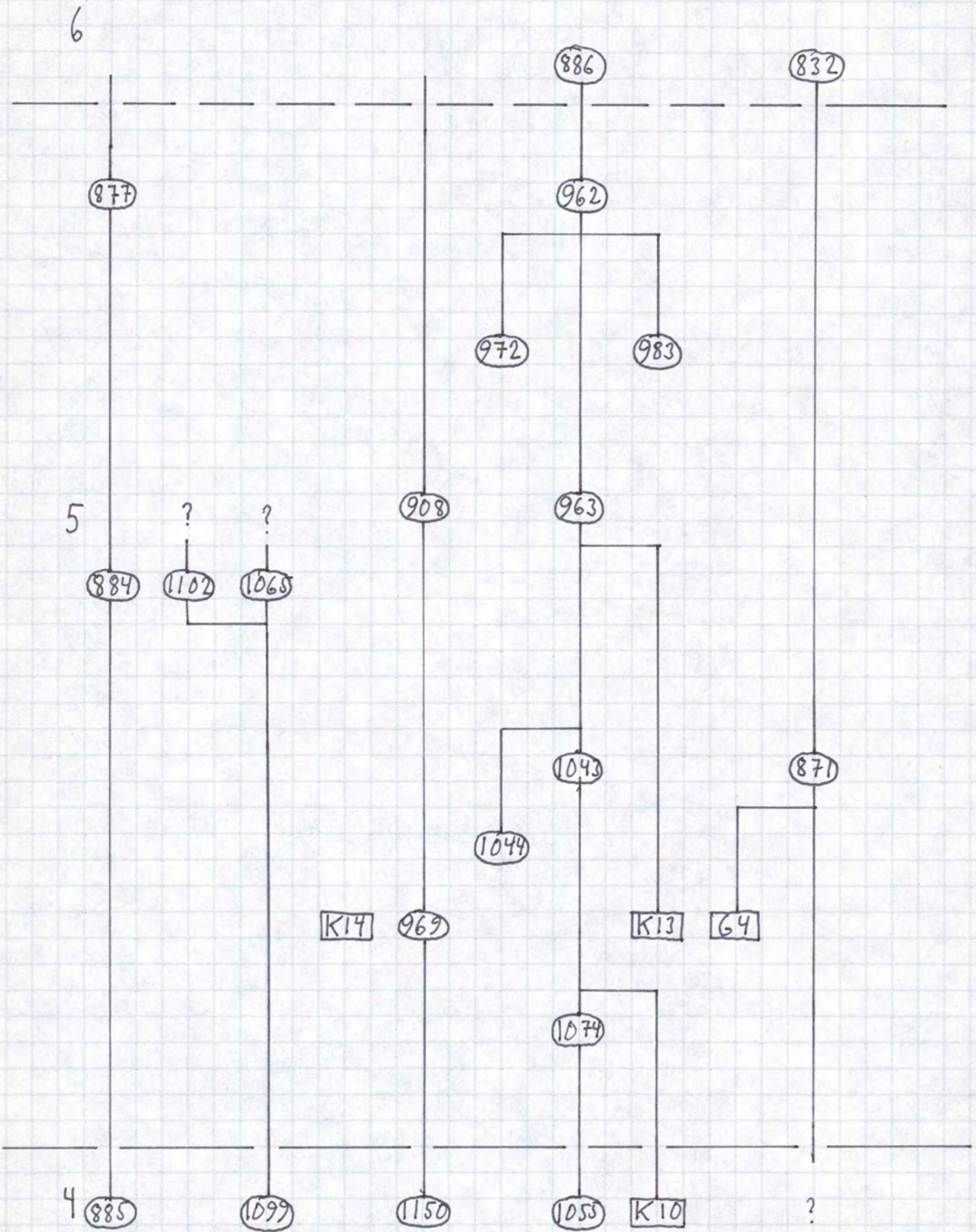
collapsed version of 1005. The purpose of these planks would seem to be torevet the FA deposits which must have been slightly higher than those on FE. This is not an unreasonable expectation if we remember that in the first few phases there was a revetted sand terrace in this area of FA and that there was a considerable difference in height just here.

K13 a building. As with the previous building which occupied this area there are problems in defining the walls and again part of the interpretation of the building must be negative reasoning, i.e. in the absence of a positively identified wall one has to use the extent of the surrounding structures to suggest an a maximum extent to a building. Thus the southern edge of the building is assume to be the passage and the eastern edge the road. This time there is a wall beam along the north wall. This is numbered FF1102 part of FF construction K24. The western wall line is possibly shown by the beam 960. Within the building were many scraps of wood only one group of which 1067 were numbered. There were a number of short lengths of beams which may have acted as joist support 1047, 1010, 1009 and 966 and there was one considerable sized beam cut from the branching point of the tree 973 which had a groove cut into it possibly to take a joist. From its dimensions it looks as though 967 would have been of similar size to 973 had it not been mostly removed by the sewer trench. What may be a section of flooring remains i.e. the planks 1045 lying on beam 971. These planks continued into the baulk between FE and FF but when the baulk was removed the continuation of some of the planks was either not found or found but not drawn. The plan therefore looks a little odd in this area. It seems from the evidence that this building rested on the ground for no posts can be immediately associated with the building. However reference should be made to phase 6a K16 where the southern posts of K20 in phase 6b come under discussion. It is suggested there that these two posts could have formed the southern edge of buildings in phases 5, 6a and 6b.

K14 is the corridor between K11 and K13. The arrangement along the west side of the corridor has already been discussed under K11 i.e. 958 and 1033. There are two possible levels of planking within the area and so there appears to have been

a resurfacing. Planks 862 and 1034 form the upper of these levels and 907, 918, 961 and 1081 the possible lower level.

G4 the street. As in the previous phase there is the possibility of a change of direction in the planking of the street in the area where the passage meets the street. 875 and 883 are two north-south logs and 876 possibly the remains of an east-west plank. There is very little left between these remains and the southern edge of the sewer trench but on the northern side were north-south planks 867 and 872 which lay over joists 868 and 869. The latter beam continued into FH and may be useful in the correlation of FH with FE. 868 was a reused trough.



FE

Minimatrix, phase 5, nr.2.

PHASE 6a.General description.

At this level there is a considerable change to the 1982 report but the original phase numbering has been retained. There are very good grounds for treating this as a separate phase to 6b and instead of using a and b the phase numbers should have been changed instead.

There is no great change to the pattern seen in the previous phase. The most significant change is that the area previously covered by the extended building K11 now seems to contain two separate units K17 and K18 and the corridor area to the east of K11 is now much narrower. Out by the street there again seems to have been extensive clearing of the remains and K16 has no really clear boundaries to it. In the passageway K15 outside the building K17 there is an arrangement of beams which could suggest a possible sval outside the building. Alternatively this could be interpreted as some sort of base to a step up into the building.

In the street it is possible to trace the mid-line division. On the east side the planking stops on a line and it is worth speculating whether the ends of these planks (856) could coincide with a boundary to the east of the street. This may mark the southern edge of the passage which ran along the southern edge of FH.

Stratigraphic description.

Several of the constructions in this phase are burnt but it is very difficult to find the fire layers associated with the burning. This is especially strange when in the next phase, which is physically very close to phase 6a, there is the appearance in some areas of two levels of burning. Try as one might however it does not seem possible to pull one level down to be the fire level of phase 6a. The explanation for the apparent lack of fire layers may lie in the change of site leader which occurred at about this stage of the excavation. A couple of the layers in this phase are termed "mixed" e.g. 844 and 807 and it is hard to know, after the event, what is meant by this term. If this could be taken to mean the presence of

characoal then these levels could be the destruction levels. However it must be stressed that this is by no means certain. Other than these the layers were for the most part described as variants of treflis.

Layers in phase 6a:

807D?	844D?	980	1001
811	886	981	1021
815	919	987	1025
839	964	997	1028
			1042

Description of the constructions.

K15 passage. In common with the passage at the previous level the passage widens after it has passed the building by the street. In the narrower part outside K16 only the joists 833 remained. These ran north-south and rested upon east-west supports. Both the joists and the supports were heavily burnt. Further west a few of the planks which formed the surface survived 913,922. Much of the joisting associated with the plank surface had been removed but there were traces along the whole of the passage, 901, 902 and 945. Outside the building K17 there was a separate arrangement which could be part of the passage or could also be interpreted as part of the building. Two beams 944 run out from under the sill beam of K17 ca. 90cms into the passage and another beam 949 runs between the two. This arrangement is clearly distinct from the rest of the passage, and is centrally placed in relation to K17. It can be interpreted in two ways, either as a sval or as a support under a slightly raised entrance to the building. Of the alternatives the latter is perhaps the better since if it was a sval then it does not run the length of the building.

K16 a building. In common with several of the buildings in this area in other phases the building seems to have been extensively cleared. No wall lines as such survive but there are indications where these might have been. The east wall is taken to have run on the line of the post 863. This post was originally believed to be part of K20 in phase 6b but this

cannot be because the beam of K20 rests on a stone which in turn rests on the post. 903 may also belong to this level rather than being a support for K20. The southern wall of the building is taken to lie along the north edge of the passage. There are no definite remains here but it is worth noting a couple of facts about the features in the next phase. The post holes of the two corner posts of K20 i.e. 772 and 780 appear at a much lower level than phase 6b but what is perhaps more significant they cover a much larger area than the posts and the area they cover is partially sealed by pre 6b features. There are therefore good reasons to suggest that the posts are in fact being reused in phase 6b. The posts can be definitely traced back to phase 6b and they can even possibly explain the lack of features associated with K13 in phase 5. They may therefore have formed the south wall of buildings in phases 5, 6a and 6b. The other features of K16 are a log 960 which does not appear to be in situ and a spread of stones which does. This concentration of stones 839, lies in the eastern part of the building. As far as one can tell from the plans it seems to have a more or less straight edge to the east but to be spread out to the north and west. Presumably therefore the east edge must have been up against the wall of the building. There does not seem to be any definite structure to the stone and in the day book they are described as cobbling. One possibility that must be dismissed is that the stones represent the collapse from a fire place. There was no trace of ash or burning associated with the stones and also their position seems to be wrong. The fireplaces on the Library site are all either centrally placed with in the room or corner fireplaces. This if it was a fireplace must have been sited against the wall and away from the corner for they do not appear to the south of the sewer trench.

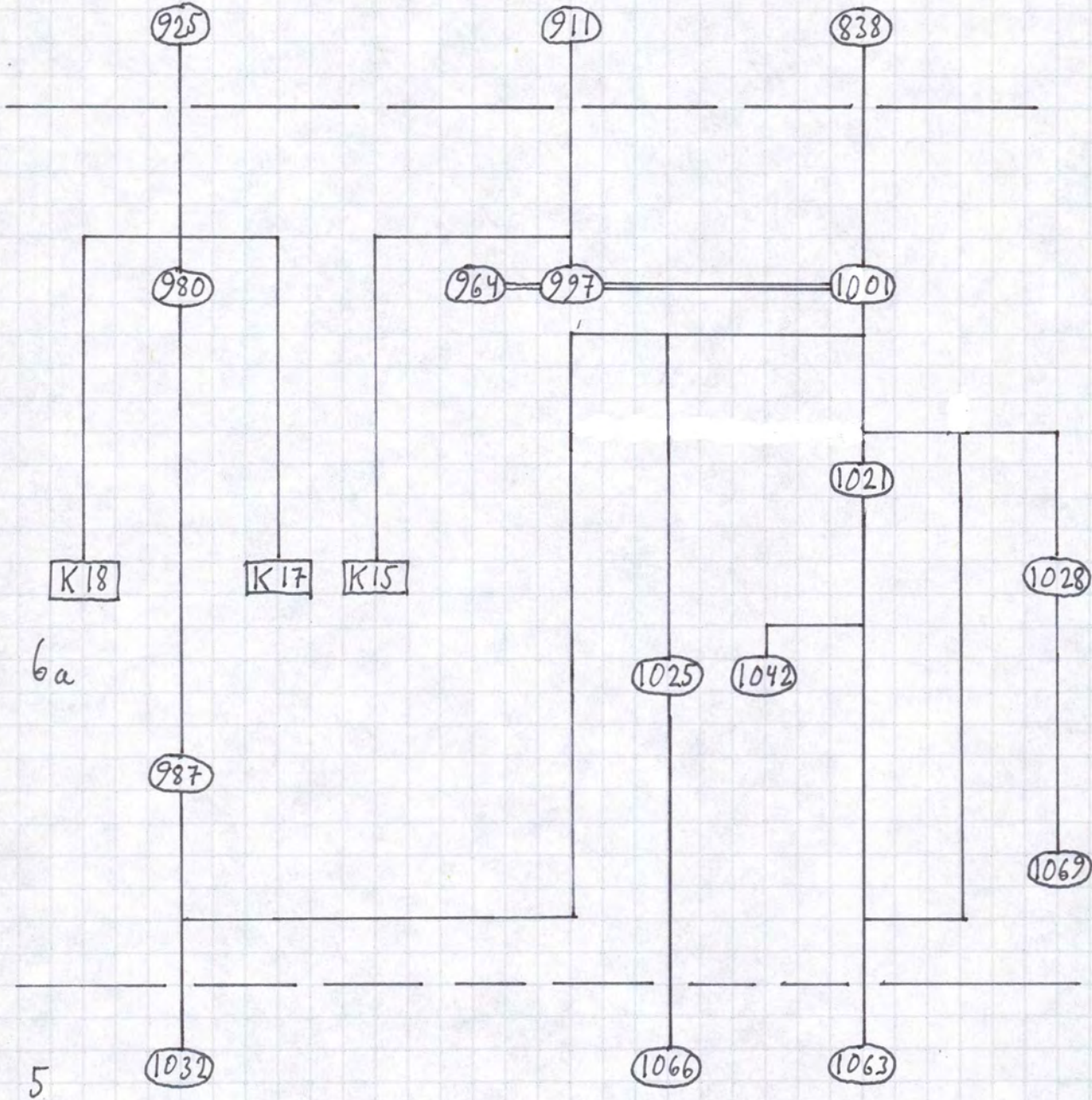
K17. A building. This building was burnt especially on the southern edge. This building and K21 in phase 6b were sandwiched very close together physically and in places it was difficult to sort out which elements belonged to which building. The east wall was formed by the beam 841=843 resting on post 917. There is a piece jointed into this wall about half way along which could possibly be the remains of an east-west joist

or dividing wall. A stub projecting from the west section seems to line up on this joint. The southern wall line was represented by the beam 912 which is interpreted as having run over post 880 and out to 906 the south-east corner post. The southern and eastern walls converge on the edge of the sewer trench and any corner post could have been removed by that intrusion, but there is also a post hole 1027 which may belong to the building though it is slightly off line. One of the timbers of 933 is interpreted as having formed the west wall. Within the building there were no traces of plank floor but a set of east-west joists 905, 974, 955 and 975. None of these joists seem to have spanned the building and therefore the floor must have been a flytegulv. If this is so then it is unlikely that the joint on the east wall represents a joist and we can therefore suggest that the building was divided into two rooms. The possible step arrangement outside the building has already been described under K15.

K18 a building. This lay to the west of K17. Since we have the western wall of K17 falling just within the site then the parallel log 953 which has a joint on its southern end must be explained somehow. It is therefore interpreted as the eastern wall of a building most of which lay to the west upon FT.

G5. In the street it is possible to trace the mid-line division but at this level there does not seem to be a different arrangement of planks or joists in the area where the passage meets the road. There does however seem to be a division on the eastern part of the road and it will be interesting to see if this can indicate the southern edge of the passage along the southern edge of FH. If it does then this level could possibly be used to help reconstruct how the FY and FZ properties continued westwards to meet the road. The joists of the western half of the road were numbered 858, 851, 849, 859 and 852 whilst the planking was numbered 766, 811, 767, 854 and 855. On the eastern half of the road the joists were numbered 850 and 866 whilst the planks were numbered 856. In the north some planks were unnumbered.

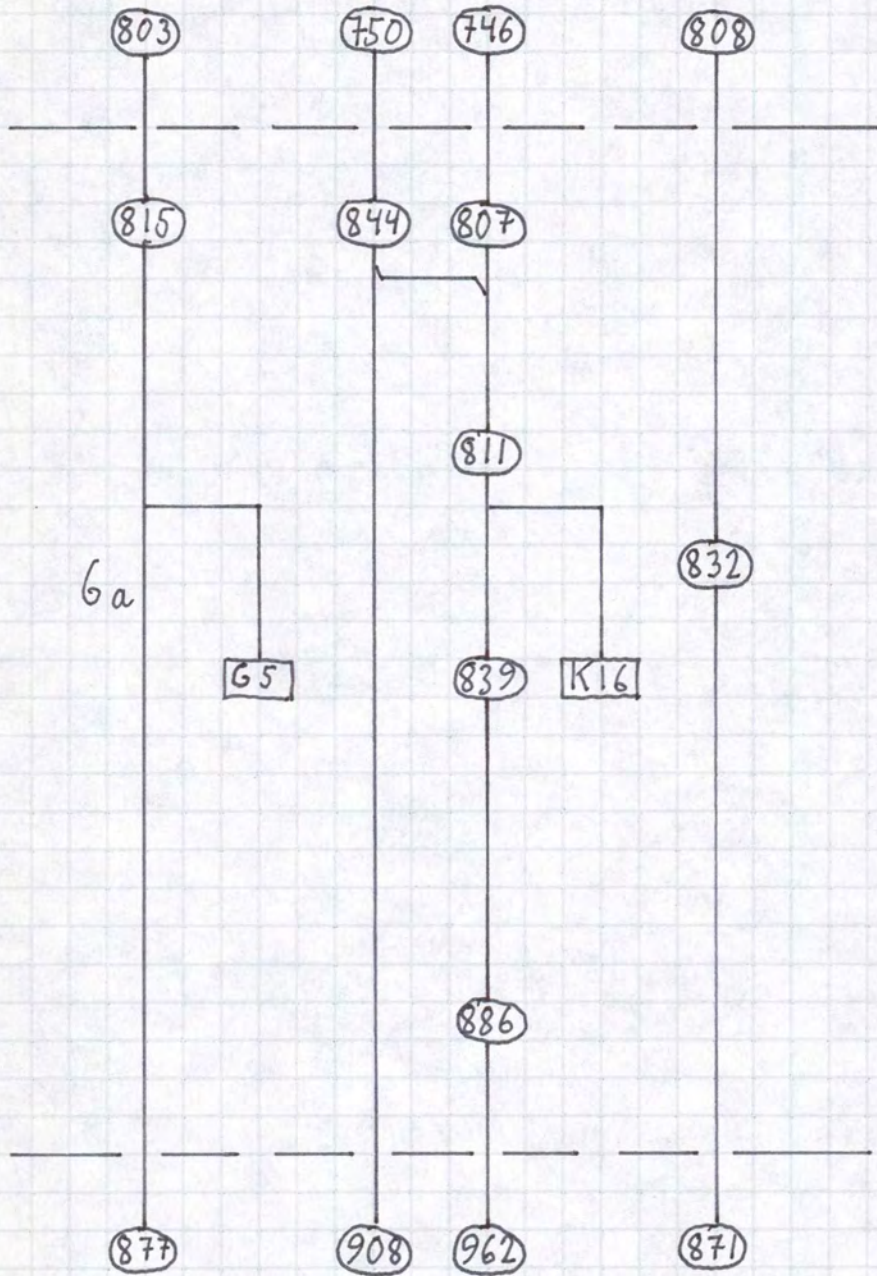
6b



FE

Minimatrix, phase 6a, nr. 1.

6b



5

FE

Minimatrix, phase 6a, nr. 2.

PHASE 6b.General characteristic.

There is no great change in the pattern of building at this phase. By the street K20 replaces K16 on exactly the same alignment whilst to the west the corridor between buildings is slightly wider than in the previous phase and a single building K21 occupies the area previously occupied by K17 and K18. The passage K19 is more uniform at this level for there does not seem to be any step like arrangement outside the buildings as in phase 6b. One change however is that there is a plank lined drain under the passage which seems to start outside the second building from the street i.e. K21. In the street the joists seem to stretch for the full width of the road and this is the first phase where the mid-line division cannot be traced. One of the beams gives a possible link into FH to the west.

Stratigraphic description.

In this phase there seems to be some confusion with the destruction levels. In places there seems to be two burning levels but only one burnt level to go with them. The possibility that the "extra" burning level could be that for phase 6a has already been dismissed. We are therefore left with the problem of fitting the fire levels to the remains at this level. In the day book are a number of mini-matrixes which show one fire layer separated from another by treflis layers. However if one looks at the areas occupied by the fire layers they are in many cases almost mutually exclusive, i.e. a slight overlapping at the edges and it is possible to suggest that the impression of overlapping is due to the moving about of deposits when clearing after a fire. This does however solve the problem completely and there does seem to be some disagreement with the FT phasing at this level. It may be that the correlation with FT can solve the problem. Other layers were mostly described as variations of treflis and that includes the fill of the ditch under the passage.

Layers in phase 6b:

647D	724	751D	812	846 fill in ditch
665D	725D	752	814D	864
706D	730	779	818D	873
714	745D	795	819D	891
716D	746	803	834D	910
720	747D	804	837	911
721D	748	805	838	925
722	749D	806	840D	926
723	750	808	845	

Description of the constructions.

K19 a passage with associated drain. The passage broadens out having rounded the first building from the street and the drain starts outside the second building. The drain consists of overlapping planks on edge, 929, 930, 931, 932, 934, 935 and 936. These planks were held in place by stakes 928 which were paired one either side of the drain. Between the pairs of stakes were braces 892 and 893 to hold the planks apart and stop the drain collapsing in on itself through pressure on the surrounding earth. The drain was the subject for a number of detail drawings. Over the drain were a series of joists 878 which supported planks 827. Slightly further east past the east end of the drain was more of a confusion of joists 794, 793, 792, 881, 786, 899 and 789 with a few scraps of planking. The somewhat more confused pattern of joists is believed to be explained by the fact that the corridor between K20 and K21 joins the passage at this point. Further east again outside K20 are joists 770. Another feature of the passage which must be mentioned is the occurrence on the south side of two large shaped logs 835 and 836. These lay next to one another and were similarly shaped with a flat seating in the centre of the log. These have been tentatively identified as the base for a stair. The presence of two side by side suggests that they are not in situ which is lucky for a flight of steps on the south side of the passage would certainly change the received wisdom about which property the passage belonged to and the means of access to the properties. Both the beams were drawn in detail.

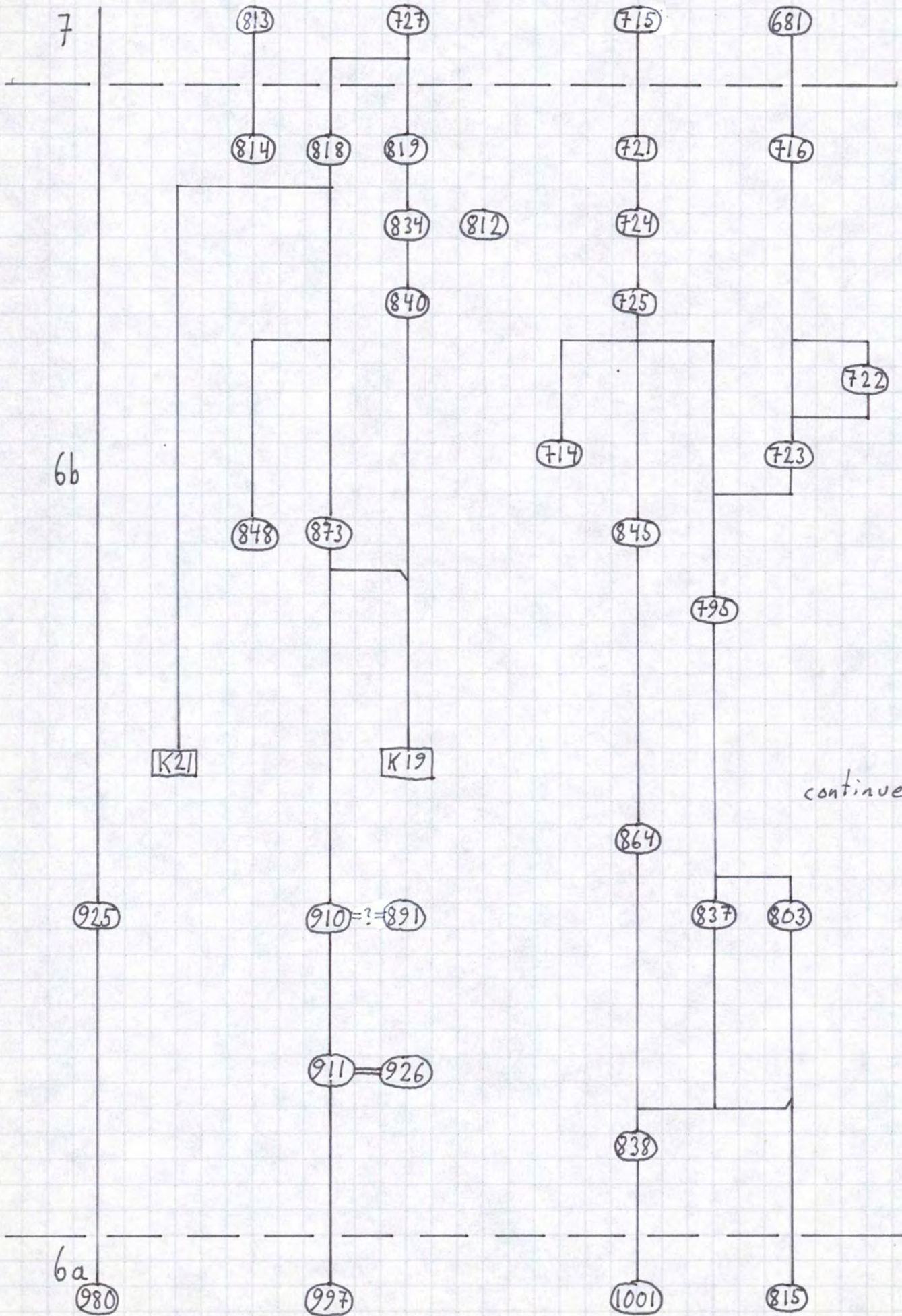
K20 a building. K20 was a somewhat more complex building than usual for the west wall looks as though it must have had a post which locked different sections of wall and joist. The west wall consists of two beams both of which are numbered 710 and meet at the post numbered 665. The northern section appears to be round whilst the southern section was more trapezoidal with a slight groove (plank-seating?) along the inside. Both beams are tenoned at the post end and the tenons rest upon the east-west joist 711 which in turn rests upon the post. The whole arrangement was such that the only way it could have been held together was with an upright shaped to fit over and therefore lock everything in place. The southern wall 718 and 719 was trapezoidal and originally rested in the two posts 772 and 780. There was no definite evidence as to how the east and west walls were jointed to it. Part of west wall 717 did overlie the stub of the south wall beam 718 which lay on the post but there was no definite joint. A reference to a laft notch on 718 seems to refer to a hack on the east end where it seems to have been cut so that a road level can be fitted around it. There were several scraps of planking within the building 773=860, 774, 755, 756 and 757 which may be the remains of flooring. If this is the correct interpretation then they originally lay on the two joists 709 and 711. These joists are interesting for both of them run under the bottom omfar of the west wall and out into the corridor between K20 and K21 where they form the joists under the planking (800) of the eastern half of the corridor. The floor has obviously been a flytegulv. North of the joist 711 were two north-south beams uncovered first on FE but only numbered, FF1074 and 1075, on FF. These seem to belong at this level and must be interpreted as possible joist. If this is so then the area to the north of 711 had planking running at right angles to that further south and we must therefore consider the possibility that there were two rooms within the house. It should therefore be noted that the division occurs on a line where we have already seen a division in the east wall. Furthermore it should also be remembered that the shape of 710 north of the post seems to be different to the southern section.

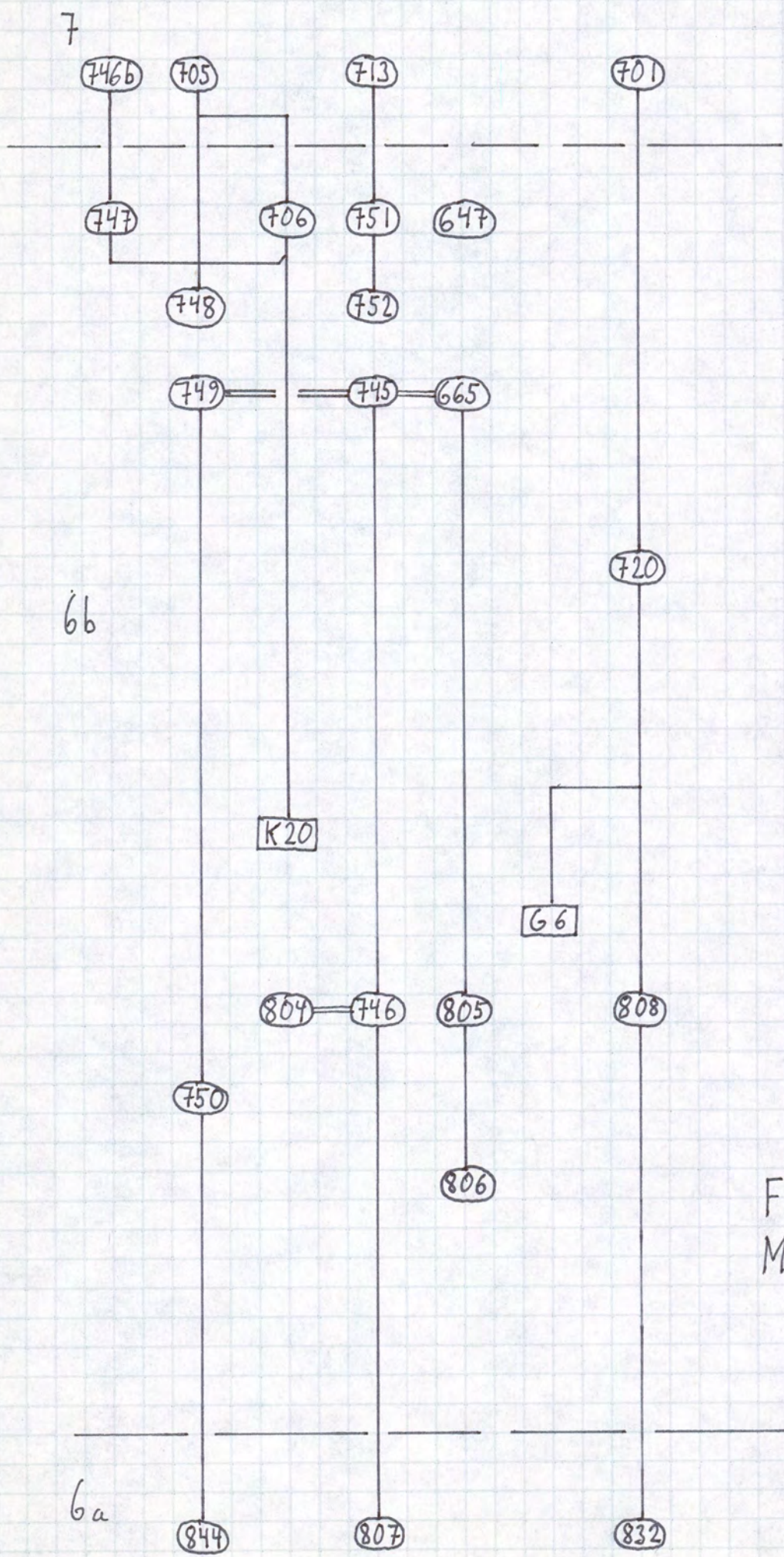
K21 a building. This building continued into the west section where it has subsequently been excavated as part of FT.

The east wall of the building 802 lay slightly further west than the previous wall line in this area. It ran out to the sewer trench and must have met the south wall in the area destroyed by the trench. The south wall consisted of beams 879 and 915 which are believed to have rested on post 653. Within the building was a plank floor 860 which rested on joists 916. There is no indication of any internal division within the building.

G6 is the first level of street on FE where the joists span what is believed to be the full width of the street. Only a few scraps of the planking remains, 758 and 760 and the joists are numbered 764, 765, 768, 769, 829 and 830. There does not appear to be any special arrangement in the street in the area where the passage joins the street.

FE, minimatrix, phase 6b, nr.1.

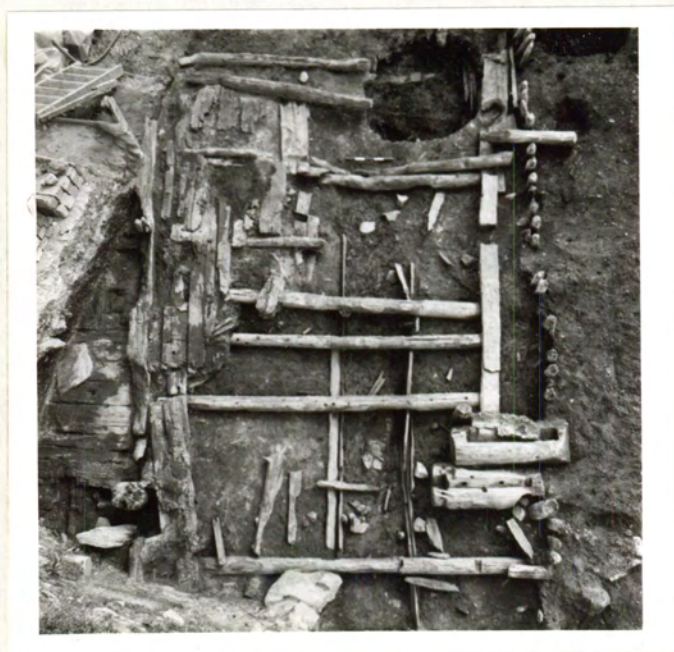






FE phase 6b.

Detail of joint in west wall of K20.



FE phase 6b.

Looking east. Passage K19 and building K21. The line of posts to the right is FA K17.

PHASE 7.General characteristic.

This phase seems to have lasted a considerable time so that there are several subphases, however all this activity seems to occur within an unchanging framework. In other words there is no evidence for a gradual replacement of the buildings such as has been seen elsewhere but rather a modification of the existing buildings. In the case of the K22 building this assessment is based on analogy with the contemporary level of FA whilst with K24 there seems to be no alternative explanation. To the south of the passage the situation with K27 and K28 is quite clear for these constructions are the northern parts of buildings excavated and more fully described on FA. Synchronous with these internal changes are repairs and or resurfacings of the external surfaces, i.e. the street and passage and the passage K23 between buildings (if this was external). There seems to be four levels of street G7-10 which belong here but the number of passage phases is much more difficult to determine. Here there is an amazing jumble of wood and it is well nigh impossible to decide which pieces have functioned in a passage and which have achieved their present drawn positions by accident. There is a definite concentration along the north wall of K27 which seems to be deliberately placed to support that building and it is possible to say that there were at least two levels of passage. These two have been labeled but it is possible that these hide more phases. In order to present an understandable phase plan it has been necessary to edit out many of the scraps which belong to each phase of the passage. The corridor between buildings also has a minimum of two phases.

Stratigraphic description.

This phase is somewhat enigmatic in that it is hard to find the burning layer which connects to the phase! In the south 301 is clearly connected to the FA buildings but further north there is no trace of burning to account for the charring on the walls of K24 unless it is possible to pull layer 235 down from phase 8. The only other layers described as containing

burnt material are 323 and 429 which seem to occur at a much lower level of the stratigraphy. K22 by the road also contains no burning level but here at least there is no clear indication that the building has burnt.

Otherwise virtually all the layers at this level are described as variants of treflis. There seems to have been problems with the stratigraphy in places or at least, correlations are never made. For instance 416 is described as the extension of 323 under floor 271 whilst 376 is treflis under 247. Since 247=271 one would expect the conclusion that 416 is the equivalent of 376. This does not appear in the day book and if one looks at the plans then it seems that the floor joists for 247=271 rest upon 605 another treflis layer but separated from 416 by a considerable number treflis layers. All in all there seem to have been some confusion as to what had been happening in this corner of the site. I suspect that part of the trouble is that the building has been excavated a little prematurely because it stands proud of the adjacent passage. In addition we are in this area near the top of the stratigraphy excavated as FE and that it is possible that in part features have been already excavated as FA/FC. This confusion is reflected in the matrix where it is very difficult to draw out a proper sequence.

Layers in phase 7:

248	322	429D	609	697
253	323D	431	610	700
259	325	443	616	701
264	376	450	648	705
272	384	452	657	707
274	404	459	658	708
300	405	556	680	713
301D	407	557	681	715
305	416	571	682	726
314	427	605	696	727
				746

Description of the constructions.

K22 a building with two phases. Because it is difficult to be sure about the wall lines of this building there is a

possibility that there have in fact been two separate buildings rather than one building with two phases. The reason that it has been interpreted as one building is that had there been two buildings, one replacing the other, then one would have to seek two wall lines in a situation where it is difficult enough to find one. An analogy can also be made with site FA where at the same phase and in the same position on the site, i.e. by the street, there is a building with the remains of two phases. This building on FA is adjacent to an even better preserved unequivocal building with two phases.

The passage street and corridor between buildings provide a limit to the building and there are a few features along these lines which may be remains of the wall line. To the south were a number of posts which form a rough line, i.e. 534, 588, 393, 394, but this is not a really convincing wall line for the posts are clustered at the one side of the building. However the wall must lie roughly along this line if the northern edge of the passage marks its line. The stones 656 and the post 449=510 may show the line of the west wall and the east wall alignment may be shown by 318 and the unnumbered post on the edge of the sewer trench. The north wall lay on FF.

The lower phase of the building is made up of the following. South of the sewer trench was a long rounded but badly decayed beam 526 which may be a joist or possibly even a displaced wall beam, together with another rounded beam 523 which does not span the building probably because the sewer trench has removed the eastern part of it. 527 and 524 were planks. In this area were two posts 551 and 590 which seem to belong to this phase. The latter lay under 526 and they may therefore have functioned as joist supports, for there are similarly sited posts further north in the building. North of the sewer trench were a couple of east-west joists 666 and 478 both of which lay next to a couple of posts, the former next to 340 and 341 the latter by 477 and 571. These posts must be interpreted as joist supports. However in this area there are a number of short rounded timbers crudely paired 667, 675 and 842, which also look as though they may have been joist supports. There were also a few scraps of planking.

The upper phase within the building is more substantial. 312 and 453 to 457 inclusive are interpreted as planking in situ, with 313, 321, 480, 482 and 485 as displaced planking 479 and

494 are the joists and 525 a scatter of fragments.

K23 the corridor between buildings. There is much confusion here as to what actually constitutes a surface and what is accidental. In the early stage the planking seem to extend to the south wall line of K22 but in its later form it seems to stop on a line with K24, and the passage planking appears to have extended right out to K22. The lowest level is made up of east-west planks 635 and 654 resting on joists 655. 535 and 586 are probably repair planks. North of the sewer trench 669 seems to be the continuation of the planking and 733 the continuation of the joists. This arrangement stops just north of the sewer trench and in the northern part of the corridor is a much more confused arrangement. 735, 736, 728, 737, 738 and 739 is a jumble of planks and beams but over this lay a set of north-south planks 672 so the jumble seems to have been a bedding upon which 672 lay. The upper phase consists of north-south plank 386 and possible joist 387 on the south side of the sewer trench and planks 487, 488 and 489 resting on more planks 572, 577 and 578 to the north side of it.

K24 a building with two phases. The construction of this building seems a bit odd but there does not seem to be any alternative interpretation. The oddness is the arrangement of the south wall in respect to the earliest floor within the building. North of the sewer trench the floor is numbered 670 and 734 whilst to the south it received the numbers 247 and 271. The joists were 731 and 732 to the north and to the south 309=460, 508, 370 and 371. The south ends of the planks were also pegged, planks 271 to beam 518 and some of 247 to beam 461. The beams therefore seem to have functioned as joists and one would expect to find the wall line immediately south of the planks but there is nothing which can have represented this line. However resting directly on the planks over the beams were two beams 290 and 308 both of which seem to represent a wall alignment. It therefore seems that the wall of the building is resting directly on its floor! At the west end of the wall is a corner post 299 and there is another post 244 in the centre of the wall but there does not seem to be a post at the east end, 308 stopping short of the east wall beam 287 which rests on a stub of a log 520.

Both the wall beams are rectangularish in section and 308 has a groove along the top which matches up with a slot on the side of the centre post. Although heavily burnt there were traces of planking sitting in the groove. There were also indications of a groove on 290. It therefore seems as though this central post was roof supporting and that the south wall was of upright planking. How this arrangement was stabilised at the east corner is hard to say, but there may have been a corner post which locked the corner much in the manner of that within the building K20 in the previous phase. There is I think a parallel for the arrangement where the wall sits on the floor from Nedre Lang gate in Tønsberg, 1981. The eastern wall beam 287 and 91 ran to a post 499=703. There was no indication as to whether this post was roof bearing or whether the beam had originally run over it. The west wall consisted of the beam 293=362=599 and there was a post 229 immediately adjacent to the beam. It may be that the wall beam had slipped off this post.

The upper phase of the building was less well preserved and may even represent two phases. A pair of planks 284 rested upon a beam 285. Further west was another beam numbered 285 which looked as though it was the continuation of the eastern 285. The western 285 rested upon some planks 289. Therefore if we accept that the two parts of 285 are one and the same beam then we have two phases of flooring but if, as I favour, they are two separate beams then we have only the one phase with some scraps on the floor. 286 was another plank of the floor and 292 another joist.

K25 and K26 passages. Whilst it is possible to trace a development of the passage and say that there was more than one phase it is difficult to say a) exactly how many phases there were and b) exactly which phase the individual pieces of wood belonged to. It was therefore decided to give the two definite phases a construction number each but to describe them together because of the uncertainties.

The lower phase K25 consists of the east-west beams 637 and 592=597 (a reused timber, bete?) outside K24 and 591 and 593 outside the corridor area and part of K22. Outside the eastern half of K22 the joists appear to be north-south, with 679, 539=595, 607 and 555. At this point there is some possibly

in situ planking remaining 531 and 552. At the west end the joist 637 lies a good way out in the passage and there is no parallel beam between it and the wall. It thus seems that unless the planking rested on the wall of K22 for which there is no evidence the beam 637 must mark the approximate north edge of the planking. It is therefore interesting to note that between 637 and the wall of K24 are a number of north-south beams 651, 517, 638 and 639. These can be interpreted as joists for a sval outside K24. Along the south side of the passage 399, 400, 511, 512, 513, 514 and 603 are an assortment of timbers supporting the north wall of K27. The only system to these is that they lie roughly east-west and they have the impression of being unplanned, i.e. stuck in as the need arose rather than all at once.

Associated with this level is an amazing jumble of timbers. More or less at the K25 level were a scatter of "offcut" size planks and beams 646, 649, 674, 675, 640, 676, 796, 797, 798 and 799 whilst above that were lots of small plank scraps 580, 602, 581, 582, 367, 505, 506 and 536. These look as though they could possibly be "offcuts" from the surface which had been removed. It was upon this latter level of plank bits that the upper K26 was laid.

The upper level in the passage K26 is more structured with a number of north-south joists. These seem to occur in groups; 278, 363, 364, 365 and 501 form one group, the pair 296 and 297 a second group, 337, 338 and 339 a third, and the two joists numbered 382 and 406 a fourth group. In the area outside K24 only 381 and 327 are isolated joists. These concentration seem to be unnecessary if there has been only the one surface associated with them. There are however indications of a chronology within the groups for instance in the western group 501 is overlain by 278 and 363 whilst the fact that 278 extends much further north than the rest may be another and in the group 337 to 339, 338 lies under 339 and is separated from it by a fragment of planking 372. This effect may easily have arisen when the passage was stripped of its planking but it could also be an indicator of two phases. Some of the joists rest upon east-west beams in the 503 and 507 whilst 297 actually fits into a cut on the wall beam of K24. 366, 372 and 360 and 447 are possible plank remains.

To sum up the upper level outside K24 there is the likelihood that this number covers two phases of passage a question which may be resolved by the FT analysis. The fact that 278 extends further north than the rest of the joists could be that it lies to the west of K24 and that the facade line of the building in this area was drawn back. If this interpretation is right then post 380 may be this facade line.

To the east outside K22 the upperlevel was more scrappy 329 and 390 were possible north-south joists whilst 401, 402 and 403 were scraps.

K27 a lafted building. This is the northern part of an FA building. The wall beam 298=FA262.

K28 a corridor. The beam 398 and post 175 form the northern edge of the corridor between the two FA buildings. The log 330 probably supported the corner of the building to the east of the corridor but is added here to save giving an extra K-number to a single log.

G7. Road with a mid-line division. The eastern part of the road consists of the east-west joists 688, 691, 694, 695 and 664 together with some unnumbered timbers south of the sewer trench. The western part consists of east-west joists 663, 692, 685, 686, 687 and a north-south plank 689.

G8. Mid-line division again more or less stripped of planks. Western half consists of east-west joists, part of 441, 641, 642, 643, 624, 625, 626, 628 and 629. The eastern part 644, 618, 622 and 623 with 619, 620 and 621 as planks.

G9 mid-line division. Western half, planks 560, 562, 563 and 435 on joists 432, 434, 559 and 561. Eastern half, planks 437, 439, 566, 567 and 568 on joists 440, 558 and 569.

G10 mid-line division. Western half north-south planks 467 and 282 on joists 465. Eastern half planks 280, 472 and 473 on joists 469 and 471. At the southern end where the passage meets the street there is a change in the planking with 302 running east-west. The remains here were very fragmentary

and it was difficult to understand the situation but the planks 302 were lower in the centre than the edges suggesting that there may have been a open room beneath them. If this is so then it must be interpreted as a drain, though there is no western continuation on the natural fall line.



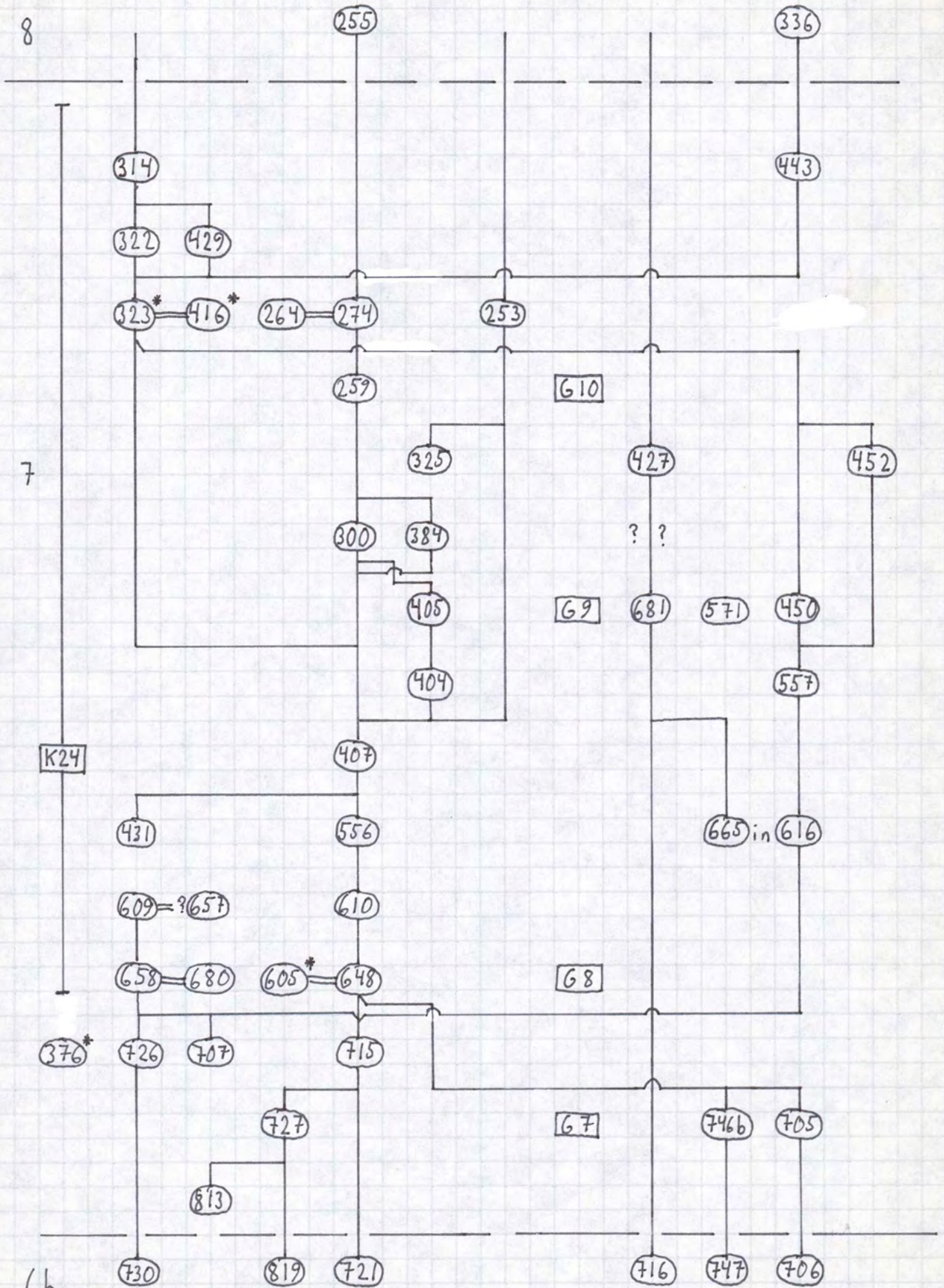
FE phase 8.

Barrel pit together with stone make up under K32. K33 is visible in the left of the picture.



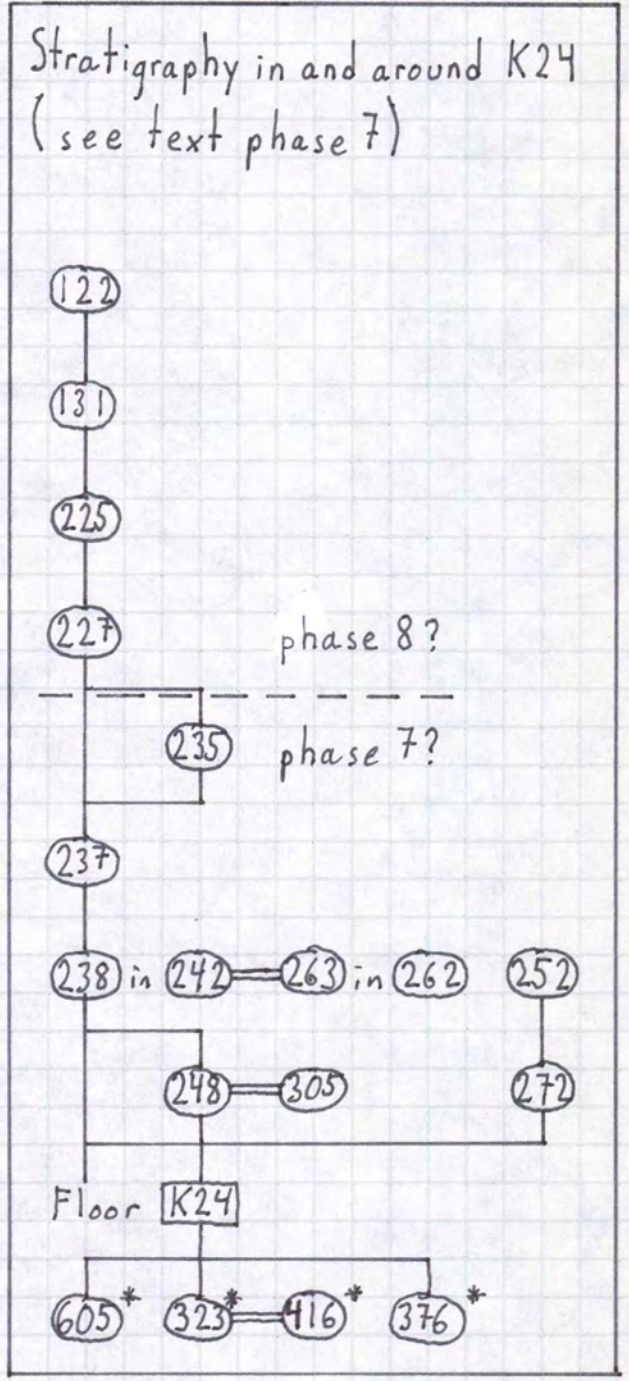
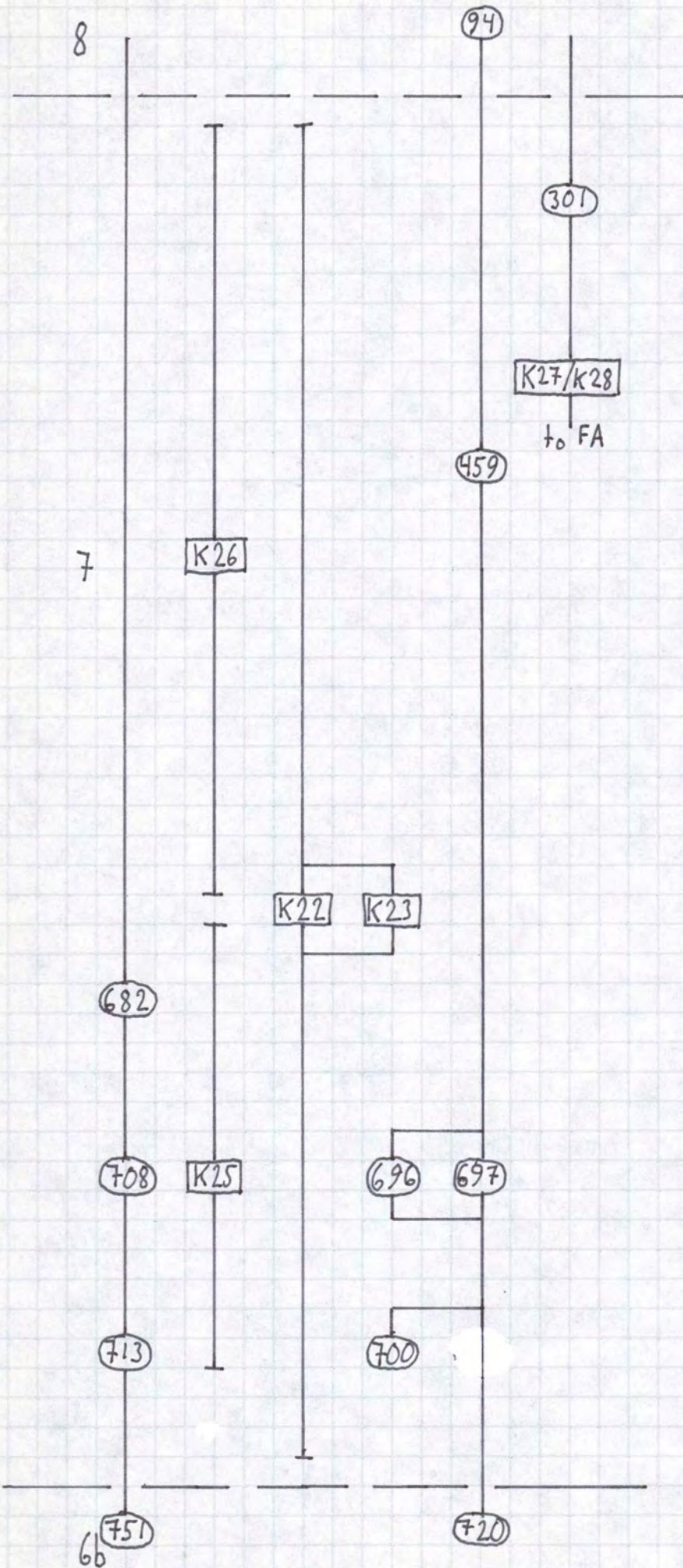
FE phase 7.

From the west showing passage K26 and building K24. Note the loom weights in the east of the house.



66

FE, mini matrix, phase 7, nr. 1. * see detail matrix, nr. 2. continued →



PHASE 8.General characteristic.

This was the last full phase on FE. To the south of the sewer trench there were several phases which follow on from 8 but these were excavated as part of the FA/FC complex and are described in that report (period 7 onwards on FA). The area north of the sewer trench, which was opened up by machine, has several layers but no definite structures which post date 8.

The pattern at this level is yet another repeat of that seen from at least phase 5. K29 and K31 are two buildings on either side of a narrow corridor K30. The passage K32 as we have seen so many times before is narrower at the east end than the west, but at this level is a feature that has not occurred before. At the point at which the passage opened out, i.e. outside the corridor K30 was a barrel which had been buried under the passage level. What purpose this has had is difficult to say though analysis of the contents, which were sampled, may throw some light on the subject. South of the passage lay the long building K33 which is the northern part of an FA building (FA K24) and more fully described in the FA site report.

Stratigraphic description.

This phase clearly ended with a fire though it is not possible to trace it over the whole site. It seems to be notably lacking to the north of the sewer trench which is unfortunate for it is just here that we have evidence for comb making on the site. There are several layers which can be connected with this craft and one of them even lies directly upon the floor of K29. However it is difficult to attribute all these layers to the phase. When we consider that the floor of the building has been largely removed then we must begin to question whether a layer directly upon what remains of the floor is a reflection of the activities carried on in the house or is it a reflection of the immediate post-house use of the area? In the absence of a destruction level both explanations are equally possible. With this in mind it was decided to include the comb working within this phase for otherwise there were no clear remains for it to go with.

Another potentially interesting feature of the stratigraphy is the occurrence here and there of layers sandwiched between the destruction level and the floor of the features. A definite example of this is 109 but there are several layers which have been correlated as identical with 109 and therefore in potentially the same position. These are marked B.

Layers in phase 8:

51?	103	129	250	267 fill of barrel pit
61	106B?	132	251	279
72?	108B	133B?	252	281
75	109B	135	255	336
79A	115D	143	257	343A
92	116D	145B?	262	345
94	121B?	146	263	347
95	123B?	227B?	265	358A
102	124B?	242	266	fill of barrel

Description of the constructions.

K29 a building resting on posts. The south wall consists of posts 167, 168, 209 and 210, and the badly fractured beams between them, i.e. 170, 172 and 213 are presumed to be the remains of the wall beam which has broken over the posts. Post 426 is interpreted as marking the line of the east wall and posts 193 and 85 together with the beam 80 and fragment 194 the west wall. The north wall lay under the baulk between FE and FF and has presumably been excavated as part of the latter site. Within the building were the remains of a north-south plank floor which had for the most part been removed. The planks, 84, 418, 342, 59 and 424 rested upon east-west joists 82, 83, 419, 420, 93 and 425. Two of the joists have mid supports 422 and 423 but it is not possible to say whether the joists were jointed into the wall or not.

K30 corridor between buildings. Planks 81 and 195 running north-south with the badly preserved east-west wood 88 as a possible earlier level or more likely joists.

K31 a building? It should be said immediately the this

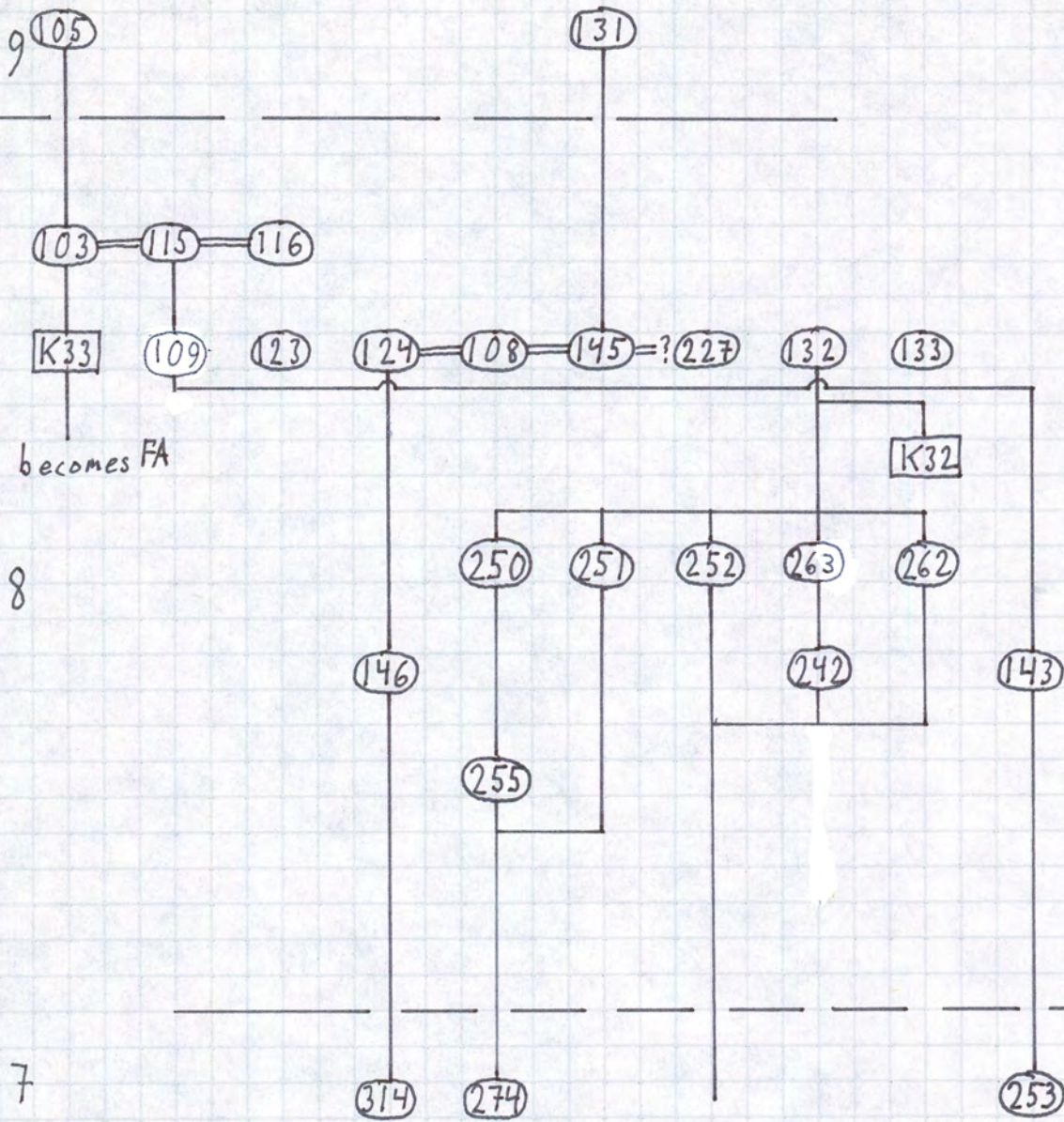
building is very conjectural, being a collection of features which were "left over". It consists of two FA numbered posts FA98 and FA100 together with FA221 which are interpreted as a south wall line. Posts 231 and 276 are added as internal posts but a large question mark should hang on the end of this interpretation. The fragments 87 are interpreted as belonging here as well. In the northern part of this proposed construction and in the area of the corridor as well were a large number of stones 92. These were at the lower level of this phase's stratigraphy and are interpreted as a make-up layer in much the same manner as the stones under the passage.

K32 the passage. At the western end of the passage at this level is a very well preserved north-south plank surface, numbered FA95, 159, 196, 245 and 256. These planks rested on joists FA148 and FE161, 162 and 163 which in turn rested upon a spread of stones FA134 and FE255. The stones were clearly used to level up the area prior to the laying of the passage. The north-south paving stopped short of the corridor area and here, under the passage was a barrel set into a pit. One of the joists of the passage, 162, continued eastwards to partially seal the pit. This barrel does not seem to have been used for drainage for there is no channel leading away from it and it is also too shallow to be a well. The interpretation of its use must therefore be as some sort of storage, but what and why in the passage? At the time of excavation there were several ideas including butter and fish. If one might be allowed to add a further suggestion based on what is happening in contemporary (?) levels then might it be connected with the comb working. Could it be for soaking the antler before use? This is of course speculation and the samples from the barrel and surrounding area may enlighten us.

Further east the passage narrows down and the planking runs east-west. The planks 181, 172, 174, 182, 187, 188, 191 and 217 lie over joists 164, 173, 183, 184, 186 and 328. One possibly interesting feature is the post 207 which stands on the south side of the passage by the street. It has no immediately obvious function but posts in similar positions on other sites have lead one to wonder if it might be some sort of gate post and that the passages were therefore closed off a night.

K33 this is the building which was initially excavated as part of FE but which was handed over to FA. A fuller description is therefore to be found in the FA report. The north wall beam was very fragmentary having broken its back around the posts upon which it was supported. The beam, or more likely beams, (though no joint can be demonstrated), was numbered 153, 154, 155, 156, 199, 139 and the posts 153, 110, 111, 112, 113, 202 with 114 at the north-east corner. The west wall was numbered 120 and 205 and one post 127 supported it on FE. The building had internal partitions 118, 117 and 201 whilst the floor was numbered 119 and 136. A joist at the east end which was exposed before handing over to FA was numbered 203.

G11. The street at this level has a mid-line division and there is also a change on the line of the north-wall of K33. The possible division is based on the extent to which planking has been removed rather than a change in direction or quality of planking. The change is to be seen on the western half of the road, largely because most of the eastern part of the road in this area has been removed by the cellar. Outside K33 the planks 206, 107 and 128 (part of) run to the mid-line of the road. North of K33 the plank surface is almost totally removed, only the joists remaining. These are apparently largely unnumbered but are taken from the nivå E plan. 204, 142, 215 and 216 are also joist. On the eastern half of the road are the remaining planks of 128, which run out to the sewer trench but do not appear on the northern side of it. Could it be that there is a division in the area of the trench reflecting the property divisions to the east of the road? There is a division to the south of FH which should meet the street in this sort of area. North of the sewer trench were a few scraps of planking 64, 70 and 74 and joists 63 and 69.

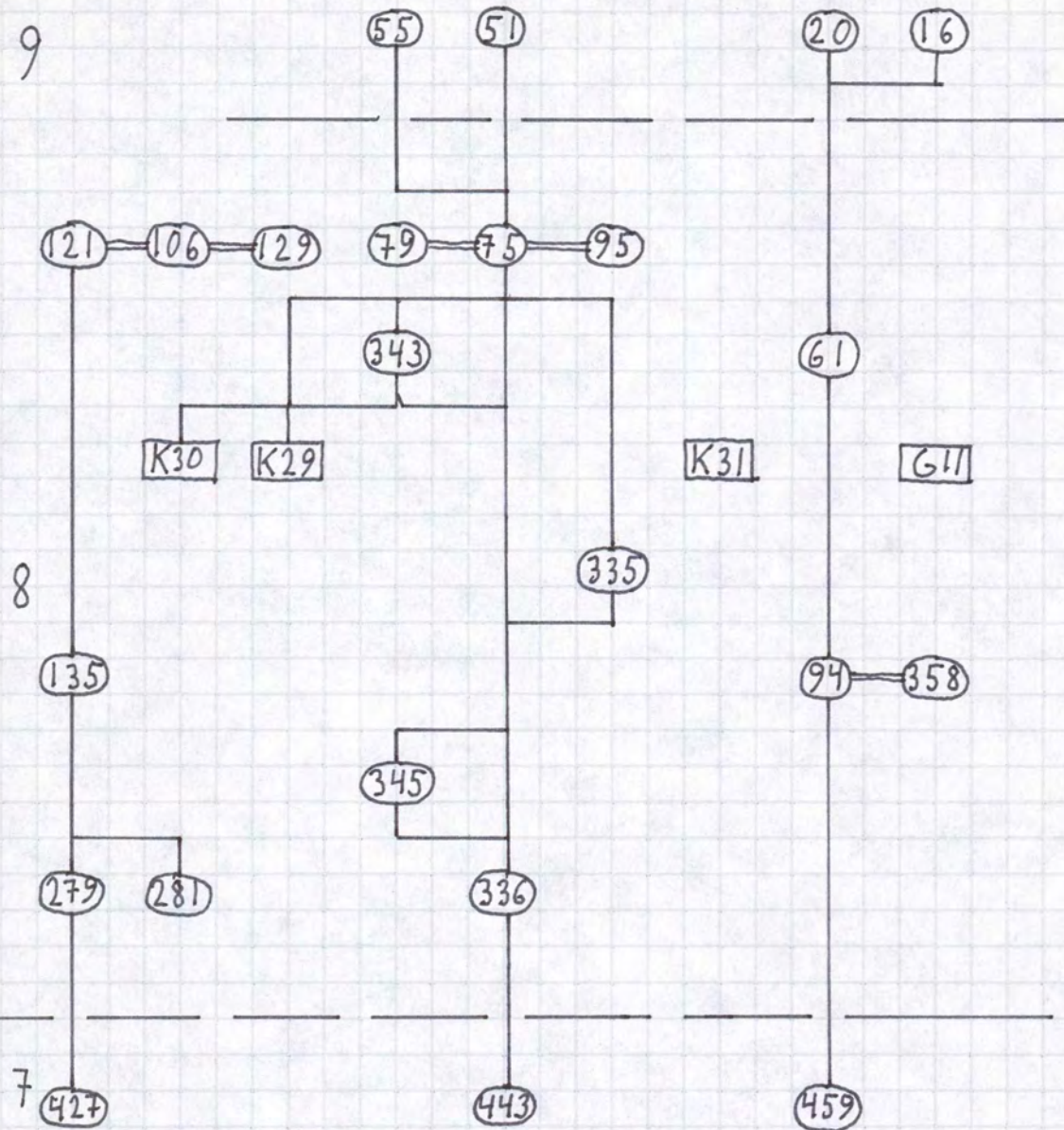


FE

Mini matrix, phase 8, nr 1.

continued →

9



FE

Minimatrix, phase 8, nr. 2.

PHASE 9 AND LATER.

To the south of the sewer trench phase 9 is followed by FA phase 7 (drawing 10). To the north the position is by no means as clear as there are few structural remains and it is really only possible to divide the layers into those which are post phase 8 and those which are modern. An analysis of the finds should give finer detail to the picture. It is perhaps worth noting that on FA it is suggested that this phase ended with a fire and it is possible that 24 which is some way above the phase 8 remains could be the equivalent of this layer which could then make 51 and 72 belong to phase 9 as well. There is a degree of uncertainty about the placing of these layers and they were only placed into a phase 8 context because of their possible relationship to the comb making. It is not unlikely that the comb making could have carried on either side of the fire at phase 8 and so some belong above and some below the destruction.

A number of contexts at the east end of the site were handed over to FH to be excavated and cannot therefore be fitted into the FE pattern until the site is correlated with FH:

Layers at phase 9 and later:Phase 9:

24d?	51?	57?a	72
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Phase 9 or later (to be decided by the finds):

9	51	70	133	227
10	52	73	166	228
16	53	74	210	229
19	54	86	211	230
20	55	89	212	233
21	56	105	220	234
22	57	106	222	246
23	61	122	223	
24d?	63	130	224	
25	64	131	225	
26	69	132	226	

Phase 10 is reserved for layers which can be moved from the post 9 category.

Phase 11 (modern contexts).

1	5	13	847	1094
2	7	17	1054	1116
3	11	27	1062	1131
4	12	50	1089	

Layers numbers ceded to FH:

14	32	38	44	65
15	33	39	45	66
28	34	40	46	67
29	35	41	47	68
30	36	42	48	
31	37	43	49	

X=given to situation in photo

NE=non existant

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
1	11	41	FH	81:	8	121=FC133	8
2	11	42	FH	82=486?	8	122=FA143	post 8
3	11	43	FH	83	8	123=109?	8
4	11	44	FH	84	8	124	8
5	11	45	FH	85	8	125	8 in 109
6	8? in 124?	46	FH	86	post 8 from 61?	126	8 in 109
7	11	47	FH	87	8	127	8
8	?	48	FH	88	8	128=FC146	8
9	post 8	49	FH	89	post 8 in 55	129	8
10	post 8	50	11	90	8 in 75	130=122?	post 8
11	11	51	post 8	91	7	131=FA143	post 8
12	11	52	post 8	92	8	132	post 8
13	11	53	post 8	93	8	133	post 8
14	FH from 29	54	post 8	94	8	134	NE?
15	FH	55	post 8	95=75	8	135	8
16	post 8	56	post 8	96	8 in 75	136=FC152,160	8
17	11	57	post 8?	97	8 in 75	137	8
18	?	58	8?	98	8 in 75	138=FC148,141	8
19	post 8	59	8	99	8 in 75	139	8
20	post 8	60	NE	100	?	140	8
21	post 8	61	post 8?	101	?	141	8
22	post 8	62	11	102	8	142	8
23	post 8	63	post 8?	103= ^{115,116?} FC148 FC141	8	143	8?
24	post 8	64	post 8?	104	8 in 116	144	8
25	post 8 in 24	65	FH	105	post 8	145=108?=227	8
26	post 8	66	FH	106=FC133	post 8	146	8
27	11	67	FH	107	8	147	8
28	FH in 15	68	FH	108=FA134	8	148	8
29	FH	69	post 8?	109	8?	149=FC163	8
30	FH	70	post 8?	110=FC275	8	150	8
31	FH	71	8	111=FC275	8	151	8
32	FH	72	post 8	112=FC275	8	152	8
33	FH	73	post 8 in 51	113=FC275	8	153=FA145	8
34	FH	74	post 8 in 61?	114=FC275	8	154	8
35	FH	75	8	115=103?	8	155	8
36	FH	76	8 in 75	116= ^{103?} FC141 /148	8	156	8
37	FH	77	8 in 75	117=FC162	8	157	8
38	FH	78	8 in 75	118=FC103	8	158	8
39	FH	79	8	119=FC159	8	159=FA95	8
40	FH	80	8	120=FC161	8	160	8

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
161	8	201	8	241	8 in 146	281=FA236	8
162=FA148	8	202=FC275	8	242	8	282	7
163=FA148	8	203=FC178	8	243	?	283	8 in 281
164	8	204	8	244	7	284	7
165	8 in 108?	205=FC161	8	245	8	285	7
166	post 8	206	8	246	post 8?	286=284?	7
167	8	207	8	247	7	287	7
168	8	208	8	248	7	288	7
169	8	209	8	249	7 in 248	289	7
170	8	210	post 8	250=FA130	8	290	7
171	8	211	post 8	251	8	291	7
172	8	212	post 8 in 211	252	8	292	7
173	8	213	8	253	7	293	7
174	8	214	8	254	8	294	8?
175	7	215	8	255=FA134	8	295=FA150	7
176	8	216	8	256	8	296	7
177	8	217	8	257	8	297	7
178	8	218	8	258	8 in 257	298=FA265	7
179	7	219	8	259	7	299=FA99	7
180	8	220	post 8	260	8 in 250	300	7
181	8	221	8	261	8 in 251	301=FA172	7
182	8	222	post 8	262	8?	302	7
183	8	223	post 8	263	8?	303	7 in 300-
184	8	224	post 8	264=274	7	304	7 in 305
185	8	225	post 8?	265	8	305	7
186	8	226	post 8	266	8	306	7 in 322
187	8	227	post 8?	267	8	307	8
188	8	228	post 8	268	8 in 257	308	7
189	8	229	post 8	269	8 in 252	309=371	7
190	8	230	post 8	270	8 in 267	310	8
191	8	231	8	271	7	311	8
192	8	232	8	272=248	7	312	7
193	8	233	post 8	273	7 in 272	313	7
194	8	234	post 8	274=264	7	314	8
195	8	235	8?	275	7 in 248	315	8 in 146, 314
196	8	236	NE?	276	8	316	8 in 315
197	8	237	8?	277	FT	317	7
198	8 in 124	238	7-8?	278	7	318	7
199	8	239	8 in 146	279	8	319=778 to FA?	?
200	8	240	8 in 146	280	7	320	7

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
321	7	361	7 in 300	401	7	441	7
322	7	362=599	7	402	7	442	7 in 323
323	7	363	7	403	7	443	7
324	7	364	7	404	7	444	7 in 443
325	7	365	7	405	7	445	7 in 443
326	7 in 325	366	7	406	7	446	8 in 94
327	7	367	7	407	7	447	7
328	8	368	FA	408=532	7	448	7
329	7	369=790	?	409	FA	449=570	7
330	7	370	7	410	FA	450	7
331	7 in 253	371	7	411=555	7	451	7 in 450
332	7 in 322	372	7	412	NE	452	7
333	8 in 146	373	7	413	7	453	7
334	7 in 322	374	7	414	FA	454	7
335	8	375	7	415=FA288	?	455	7
336	8	376	7	416=323	7?	456	7
337	7	377=583	7	417	7 in 407	457	7
338	7	378=540	7	418	8	458	7 in 450
339	7	379	7?	419	8	459	7
340	7	380	7?	420	8	460=309	7
341	7	381	7	421	8?	461	7
829	6b	869	5	909=FF873	?	949	6a
830=773	6b	870	5	910=891	6b	950	6a
831	?	871	4-5?	911=926	6b	951	6a
832	5-6?	872	5	912	6a	952	6a
833	6a	873	6b	913	6a	953	6a
834	6b	874=900	6a	914	6a	954	NE?
348	7 in 322	388	7	428	7 in 407	468	7
349	7 in 322	389	8 in 314	429	7	469	7
350	8 in 345	390	7	430	7 in 407	470	7
351	8 in 345	391=243?	7	431	7	471	7
352	8 in 345	392	7	432	7	472	7
353	8 in 336	393=782	7	433	7	473	7
354	8 in 336	394	7	434	7	474	7
355	8 in 94	395	7	435	7	475	7
356	7 in 322	396	8/7 in 322	436	7	476	NE
357	8 in 94	397	7	437	7	477	7
358	8 in 94	398	7	438	7	478	7
359=92	8	399	7	439	7	479	7
360	7	400	7	440	7	480	7

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
481	7	521	7	561	7	601=636	7
482	7	522	7	562	7	602	7
483	NE	523	7	563	7	603	7
484	NE	524	7	564	7	604	7
485	7	525	7	565	7	605	7
486=82?	8?	526	7	566	7	606	7
487	7	527	7	567	7	607	7
488	7	528	7	568	7	608=662=772a	?
489=FA286	7	529	7	569	7	609=657?	7
490	7	530	7	570=449?	7	610	7
491	7 in 450	531	7	571	7?	611	NE
492	? in 476	532=408	7	572	7	612	NE
493	7-8 in 459	533	7	573	7	613	NE
494	7	534=737	7	574=667?	7	614	NE
495	7	535	7	575	7	615	NE
496	7	536	7	576=668=710	6	616	7
497	7	537	7	577	7	617=688	7
498	7	538	7	578	7	618	7
499=703	7	539=595?	7	579	7	619	7
500	7	540=378	7	580	7	620	7
501	7	541	NE	581	7	621	7
502	7	542	NE	582	7	622	7
503	7	543	NE	583=377	7	623	7
504	7	544	NE	584	7	624	7
505	7	545	NE	585	7	625	7
506	7	546	NE	586	7	626	7
507	7	547	NE	587	7	627	7
508	7	548	NE	588	7	628	7
509	7	549	NE	589	7	629	7
510	7	550	7	590=781	7	630	7 in 616
511	7	551	7	591	7	631	7 in 616
512	7	552	7	592	7	632	7 in 616
513	7	553	7	593	7	633	7 in 616
514	7	554	7	594	FA	634	7 in 556
515	7	555	7	595=539?	7	635	7
516	7	556	7	596	7	636=601	7
517	7?	557	7	597	7	637	7
518	7	558	7	598	7 in 557	638	7
519	7	559	7	599=362?	7	639	7
520	7	560	7	600	7	640	7

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
641	7	681	7	721	6b	761	6b
642	7	682	7	722	6b	762=809	6a
643	7	683=788?	FA	723	6b	763=851	6a
644	7	684	7?	724	6b	764	6b
645	7	685	7	725	6b	765	6b
646	7	686	7	726	7	766	6a
647	6b	687	7	727	7	767	6a
648	7	688	7	728	7	768	6b
649	7	689	7	729	6b	769=FH402?	6b
650	7	690	7	730	7	770	6b
651	7	691	7	731	7	771	6b
652	7	692	7	732	7	772=603=662	6b
653	5/6	693	7	733	7	773=830	6b
654	7	694	7	734	7	774	6b
655	7	695	7	735	7	775	6b
656	7	696	7	736	7	776	FA
657=609?	7	697	7	737	7	777	FA
658	7	698	7 in 648	738	7	778	FA
659	7	699	11	739	7	779 a	6b
660 =740	7	700	7	740=660	7	779 b	6b-7
661	7	701	7	741	7	780 =785	6b
662 =608=772a	6	702	7 in 616	742	7	781 =590	7
663	7	703=499=801	7	743	7	782 =393	7
664	7	704	7 in 659	744	7	783 =679	6b
665	6b	705	7	745	6b	784	FA
666 =712?	7?	706	6b	746a	6b	785 =780	6b
667 =574?	7	707	7	746b	6b-7	786	6b
668 =576=710	6	708	7	747	6b	787 =534	7
669	7	709	6b	748	6b	788 =683	FA
670	7	710=576=668	6b	749	6b	789	6b
671	7	711	6b	750	6b	790 =369	FA
672	7	712=666	7?	751	6b	791	6b
673	7	713	7	752	6b	792	6b
674	7	714	6b	753=665	6b	793	6b
675	7	715	7	754	?	794	6b
676	7	716	6	755	6b	795	6b
677	7	717	6b	756	6b	796	7
678	6	718	6b	757	6b	797	7
679=783	7	719	6b	758	6b	798	7
680	7	720	6b	759=821?	6b?	799	7
				760	6b	800	6b

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
801=703	7	841=843	6a	881	6b	921	?
802	6b	842	x	882	6b	922	6a
803	6b	843	6a	883	5	923	7?
804	6b in 746a	844	6a	884	4	924=904	6b
805	6b	845	6a	885	4?	925	6b
806	6b	846	6b	886	6a	926=911	6b
807	6a	847	11	887	3?	927	5
808	6b?	848	6a/b	888	2?	928	6b
809=762	6a	849=810	6a	889	4	929	6b
810=849	6a	850	6a	890	4	930	6b
811	6a	851=763	6a	891=910?	6b	931	6b
812	6b	852	6a	892	6b	932	6b
813	6b-7	853	6a	893	6b	933	6a
814	6b	854	6a	894	5?	934	6b
815	6a	855	6a	895	3?	935	6b
816	6b	856	6a	896	4	936	6b
817	6b	857	6a	897	3	937=FF851	?
818	6b	858	6a	898	6b	938=FF850	?
819	6b	859	6a	899	6b	939=FF849	?
820	x	860	6b	900=874	6a	940	7?
821=759?	6b	861	6a	901	6a	941	7
822	x	862	5	902	6b	942	7?
823	x	863	6a	903	6a	943	7?
824	x	864	6b	904=924	6b	944	6a
825	x	865	6a/b in 838	905	6a	945	6a
826	x	866	6	906	6a	946	5
827	6b	867	5	907	5	947	6b
828	6	868	5	908	5?	948	NE?
829	6b	869	5	909=FF873	?	949	6a
830=773	6b	870	5	910=891	6b	950	6a
831	?	871	4-5?	911=926	6b	951	6a
832	5-6?	872	5	912	6a	952	6a
833	6a	873	6b	913	6a	953	6a
834	6b	874=900	6a	914	6a	954	NE?
835	6b	875	5	915	6b	955	6a
836	6b	876	5	916	6b	956	5
837	6b	877	5	917	6a	957	?
838	6b	878	6b	918	5	958	5
839	6a	879	6b	919	6a	959	5
840	6b?	880	6a	920=FF907	?	960	6a

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
961	5 in 908	1001	6a	1041	5	1081	4
962	5	1002	5	1042	6a	1082	5
963=FF1131	5	1003	5	1043	5	1083	5
964=997	6a	1004	5	1044	5	1084	5
965	6a	1005	5	1045	5	1085	5
966	5	1006	5	1046	5?	1086	5
967	5	1007	5	1047	5	1087	4/5
968	5	1008	6a	1048	5	1088	5
969=919	5-6	1009	5	1049	?	1089	11
970	5?	1010	5	1050	1/2?	1090	4?
971	5	1011	5	1051=FH881?	1/2?	1091=1046?	4?
972	5	1012	5	1052	1/2?	1092	6a?
973	5-6	1013	5	1053	1/2?	1093	6a?
974	6a	1014	5	1054	11	1094	11
975	6a	1015	6	1055	4	1095	4
976	?	1016	5	1056=1071	4	1096=1141?	?
977	6a	1017	5	1057=1143,1073	4	1097	4
978	5	1018	6	1058	2?in 1206?	1098	4
979	6a	1019	5	1059	5	1099	5
980	6a	1020	5	1060	4	1100	4
981=1001	6a	1021	6a	1061	5	1101	3?
982	-	1022	5	1062	11	1102	5
983	5	1023	5	1063	5	1103	5?
984	5-6	1024	5-6 in 1025	1064	5	1104	4
985	5	1025	6a	1065	4-5	1105	4
986	5	1026=1023	5-6	1066	5	1106	5
987	6a	1027	6b?	1067	5	1107	4
988	5	1028	6a	1068	5	1108	4
989	5	1029	5	1069	6a	1109	4
990	5	1030	5	1070	5	1110	2/3
991	5	1031=1023,1026?	?	1071=1056	4	1111	4
992	5?	1032	4-5	1072	4	1112	5
993	5	1033	5	1073=1057	4	1113	4?
994	5	1034	5	1074	5	1114	5
995	5?	1035	5	1075	?	1115	5
996	5?	1036	5	1076	5	1116	11
997	6a	1037	5	1077	NE?	1117	3
998	5	1038	5	1078	5	1118	5?
999	5?	1039	5	1079	4-5	1119	4
1000	6b?	1040	5	1080	5	1120	5

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
1121	4	1161=1216	2?	1201	3	1241	1
1122	4	1162	4	1202	2	1242	2
1123	6 fill of 1134	1163	4	1203	2	1243	2
1124	4	1164	4	1204	2	1244	1-2?
1125	4 fill of 1145	1165	3	1205	2	1245	2
1126=1104	4	1166	3	1206	2	1246	2
1127=FA648?	4	1167	3	1207	3	1247	2
1128	3?	1168	2	1208	2	1248	2
1129	3	1169	4	1209	3	1249	2
1130	3	1170	3	1210	2	1250	1
1131	11	1171	3	1211	2	1251	1
1132	3?	1172	3	1212	2	1252	3
1133	2	1173	3	1213	3	1253	3
1134	6	1174	2	1214	3	1254	2
1135	6	1175	2	1215	4	1255	2
1136	4?	1176	2	1216	2	1256	1
1137	2/3?	1177	1	1217	2	1257	1
1138	4?	1178	3	1218	2	1258	1
1139	4?	1179	3	1219	2	1259	1
1140	3	1180	2	1220	2	1260	1
1141=1096	?	1181	2	1221	2	1261	1
1142	4	1182	2	1222	1	1262	2
1143= ^{1057?} _{1073?}	4?	1183	3?	1223	2	1263=1015	2
1144	3	1184	2	1224	2	1264	2
1145	4?	1185	2	1225	2	1265	1
1146	4?	1186	2	1226	2	1266	1
1147	4	1187	2	1227	2	1267	1
1148	4	1188=1177	1	1228	2	1268	1
1149	6a	1189	2	1229	1	1269	1
1150	4	1190	2	1230	1	1270	2
1151	3	1191	2	1231	2	1271	2
1152	4	1192	2	1232	?	1272	3
1153	2	1193	2	1233	2	1273=FA719	FA
1154=FA1010	FH	1194	3	1234	2	1274	1
1155	3?	1195	2	1235	3	1275	3
1156	4	1196	3	1236	3	1276	2
1157	3	1197	3	1237	2	1277	1
1158	3	1198	2	1238	2	1278	1
1159	11	1199	2	1239	2	1279	2
1160	4	1200	2	1240	2	1280	2

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
1281	1	1321		1361		1401	
1282	2	1322		1362		1402	
1283	1	1323		1363		1403	
1284	1	1324		1364		1404	
1285	1	1325		1365		1405	
1286	1	1326		1366		1406	
1287	1	1327		1367		1407	
1288	1	1328		1368		1408	
1289	1	1329		1369		1409	
1290	2	1330		1370		1410	
1291	2	1331		1371		1411	
1292	1	1332		1372		1412	
1293	1	1333		1373		1413	
1294	1	1334		1374		1414	
1295	1	1335		1375		1415	
1296	1	1336		1376		1416	
1297	1	1337		1377		1417	
1298	?	1338		1378		1418	
1299	1	1339		1379		1419	
1300	1	1340		1380		1420	
1301	1	1341		1381		1421	
1302	1	1342		1382		1422	
1303	1	1343		1383		1423	
1304		1344		1384		1424	
1305		1345		1385		1425	
1306		1346		1386		1426	
1307		1347		1387		1427	
1308		1348		1388		1428	
1309		1349		1389		1429	
1310		1350		1390		1430	
1311		1351		1391		1431	
1312		1352		1392		1432	
1313		1353		1393		1433	
1314		1354		1394		1434	
1315		1355		1395		1435	
1316		1356		1396		1436	
1317		1357		1397		1437	
1318		1358		1398		1438	
1319		1359		1399		1439	
1320		1360		1400		1440	

Site FF

by

Brian J.Hodkinson

Introduction.

FF was excavated between 1974 and 1976. Originally it was planned that the site should consist of the ruter J13&14 and K13&14 and have 1m wide baulks between it and FK to the north, FH to the east and FE to the south. As the structure of the site became clear there were some adjustments to the eastern boundary. An extension of FL to the south brought it into contact with FF & at the same time the western edge of FH was moved westward. This resulted in the eastern 2m of K13&14 being ceded to the other sites.

In 1975 it was eventually decided to remove the baulks to the N&S of the site because these ran along and obscured east-west boundaries. The northern baulk was excavated as part of FK and so the FK border moved south into the northern part of J14&K14. The boundary eventually stabilised along the E-W "property boundary". The southern baulk was excavated by FF so for a time FF included the northern part of J12&K12. Here too the border eventually stabilised along the line of the "property boundary".

Towards the end of 1975, the road area on the eastern side of FF was treated as a separate unit and in 1976 a separate note book was kept for this part of the site.

In all 8 site leaders, writing in 4 languages, were responsible for excavating the site. They were:

- | | | |
|-------|---------------------|------|
| 1974. | Svend Aage Knudsen | (DK) |
| | Stefan Kihlberg | (S) |
| 1975. | Robert Milne | (GB) |
| | Michael Knight | (GB) |
| | Magnar Dalland | (N) |
| 1976. | Penny Butler | (GB) |
| | Sonja Thingstad | (S) |
| | Axel Christophersen | (N) |

Additional notes were made e.g. during illness of site leader, by Celie O' Rahilly (IRL), Ray Collins (GB) and Clifford Long (GB).

Principles and methods of excavation.

The uppermost deposits ca. 0,80 - 1,5m were removed by machine under archeological supervision. The machine was stopped ca. 20-30cms above obviously dark organic layers which were believed to be the top of the medieval deposits. From this level the site was excavated stratigraphically by hand.

In general the deposits sloped down from east to west and from north to south. The level of preservation of organic materials ranged from good to excellent. It was however possible to demonstrate that the layers had been subject to considerable compression and distortion. The best example of this is described below under phase 6.

There were a number of modern disturbances which had removed considerable volumes of medieval deposits but none of these stretched down to the natural subsoil.

To the west of the site the boundary followed the line of the foundation trench of a post-medieval cellar. The entrance to the cellar extended into the site in the upper deposits. At the S.end of K13 were the foundations of a safe in Kjøpmannsgt. 24. To the east in K13-K14 was a 17th century which, once identified, was excavated as part of FH even though it fell within FF's original boundaries. Just north of the cellar was a post medieval wood lined cess pit and west of that a modern manhole from which radiated a number of pipe trenches. In the upper layers these trenches split the northern part of the site into a number of small pillars of stratigraphy, or islands, which proved difficult to phase.

The site record consists of 5 A-4 daybooks, 185 plan-drawings and a large but uncertain number of black & white photographs and colour slides. The photographs are recorded by year and film number and stored by that number, i.e. in chronological order for the appropriate year.

The daybooks are in 4 different languages and 8 standards of recording. In general the standard of recording and information retrieval was better in the second half of the excavation. The introduction of page indexes, layer lists and cross referencing lightened the post-excavation load considerably. Michael Knight is especially to be congratulated for introducing matrixes into the recording for 1975. This probably knocked

a week or two off the time it would have taken for post-
excavation analysis.

STRATIGRAPHY AND PHASING.Principles applied in the post-excavation analysis.

The site is effectively divided into 2 areas, a building plot with a north-south road to the east of it. The phases described below are based upon events on the building plot where there has been much less activity than in the road. Therefore there are, in some phases, two or more levels of street per phase.

Construction (K-) numbers were given to each identified/interpreted building. Numbers were given as and when the need arose so that number a building received does not place it in any definite chronological sequence. The street phases on the other hand were given G-numbers and the sequence is chronological. G1 is the youngest and G19 the oldest.

Mini-matrixes are presented for each phase. These do not purport to show every context number. Where features have been grouped together into K- or G-numbers, only those numbers are shown on the matrix. Basically therefore it is only the earth layers which are shown.

In the following layer lists the type of layer is indicated whenever this is possible, the following abbreviations were used D=destruction level, K=construction level, B=occupation level, A=waste material indicating industry or craft, PH=post hole.

In the present analysis only those finds mentioned in the day-book have been considered. No attempt has been made to analyse the assemblages of finds in a layer. Once this has been done then it should be possible to add a large number of Bs (for brukslag) to the layer lists included in each phase.

General description of the development of the site.

As previously stated the site can be divided into 2 main areas, a north-south road with a building plot to the west of it. There were building plots to the east of the road, but on FF they were heavily disturbed by later intrusions and only occasionally were there remains in this area. Further east these plots were part of FH+FL and analysis of these areas will probably clear up some of the problems associated with the area east of the road.

To the north and south, the boundaries of the building plot west of the road were established at a very early stage and remained constant throughout the medieval period. The only movement of both boundaries is the slight changes for ease of rebuilding.

Within the building plot there have been changes in the disposition of the area through time. Basically 2 patterns can be discerned though after the second pattern had been established for sometime there was a return to the original disposition. There was only one clear unambiguous phase of buildings, phase 6 with one building stretching from the FK boundary in the north to ca. 1,5m north of the southern boundary. A ca. 1,6m wide east-west passage ran along the south side of the building. To the south of the passage was the north wall of a building which belongs to FE (site). This pattern seems to be a repeat of that seen in the preceding but less well preserved phase 5. In the earlier and later phases this pattern cannot be recognised. From phases 2 to 4 inclusive there are indications of a building occupying only the northern half of the plot, or at least an east-west division across the centre of the area. This division can be traced in phases 7 to 9 as well. What we seem to have is a central passageway/access route with buildings on either side stretching to the north and south boundaries.

It seems therefore that the original pattern was interrupted for 2 phases, but then returned to. It is interesting to note that in phase 6 the younger of the 2 interruption phases, coincides with a similarly well preserved phase on FK. There is some evidence, i.e. uniformity of dimensions, to suggest that at this level the FK and FF properties may have been amalgamated or at

least were in common ownership (see phase 6). Phase 2 on FF also sees FF&FK sharing a common feature, this time a north-south ditch with associated features. That the two sites can be linked together at several levels is perhaps an interesting line for further investigation.

In the road it is possible to trace a mid-line division in all of the paved surfaces bar one, G14. In most cases this is shown by two sets of joists, one for each half of the road. In G14 the joists span the full width of the road. The mid-line can however be traced back to the earliest unpaved levels for the north-south ditch in phase 2 follows the mid-line. One can therefore suggest that the law of 1284 enforcing upon householders the maintenance of the road to the mid-line was a codification of existing practice rather than a newly introduced principle.

In many cases it is possible to see the divisions observed on either side of the street reflected in the structure of the street e.g. by a change in direction of planking. This is perhaps worth noting for future reference, when attempting to locate boundaries in areas where the more direct evidence is lacking e.g. between FA and FY.

PHASE 1.General characteristic.

Phase 1 consists of K18, K19, K20 and G19.

K18 was a shallow north-south ditch with two rows of stakes, K19 and K20, associated with it. K19 stood within K18 whilst K20 lay just to the east of the ditch. These three features are clearly related to one another but there is only one clear stratigraphic relationship which is that K19 is either contemporary with or later than K18. The function of the three features is by no means clear. To the east there is a smattering of stake holes, a single post hole 2166 and G19. There is in other words no trace of a return or parallel comparable feature. By analogy with sites FE and FA it is therefore suggested that the alignments of the three features may represent the eastern edge of features or constructions further to the west. On both FE and FA the earliest buildings seem to have been set back from the street area and only later extended eastwards to the street. If this interpretation is correct then the features are more likely to have been the remains of fence lines or possibly, though less likely, buildings rather than part of a terracing à la FA.

G19 was a pair of shallow parallel trenches which must be interpreted as either wheel or sled marks. They occupy the area which later becomes the east half of the road. A group of post holes 1328 A-C, on a line with the southward projection of the eastern rut, appeared under the same layer as the wheelmarks. It is not possible therefore to give any chronological relationship between the two though logic implies that they are not strictly contemporary. Without any direct evidence I would suggest that the ruts predate the post holes. This problem may be solved when the site is correlated with FH to the east. From the recorded stratigraphy it is not possible to say whether G19 is earlier, later or strictly contemporary with the features to the west (i.e. K18 etc.).

Stratigraphic description.

In the road area it is difficult to connect any layers to phase 1 because G19 appeared under 1317 which directly overlay

natural. Further west however two layers, 2151 and 2159, appear to be associated with phase 1 and both of these layers contain burnt material. Not all layer relationships have been recorded in these lower levels so it is difficult to place some of the layers. Two layers which might be associated with phase 1 are 2155 and 2156 both of which contained "much leather offcuts". I do not like to draw a hard and fast upper limit to phase 1 because I have the feeling that it probably evolved into phase 2 rather than catastrophic events causing an abrupt change.

In the following list post holes are marked with PH. In most cases the post hole and its fill carry the same context number and so there may be finds from what are at first glance apparently features.

1328PH	1330PH	2151	2156?	2161
1329PH	1331PH	2155?	2159	2165

Description of constructions.

K18 was a shallow ca. 20cm wide north-south ditch 2165 which fades out rather than having a definite terminus at either end. In the north it stops just short of a post hole 2164 and the east west wattle fence which forms the FF/FK boundary. To the south the end was removed by a later post hole but it is highly probable that it stopped at what was seen in the later phases to be an east-west boundary. In rute J13 a later post hole 2107 cuts the ditch. This post hole marks the northern limit of K19 and the south end of K20, both of which appear to be associated with the ditch. This raises the possibility that there may have been two ditches one north and one south of the post hole. However was no stratigraphic evidence to suggest this so the fact that the two parts of the ditch line up so well is taken to indicate that they are part and parcel of the same ditch.

K19 was a north-south row of stakes 2123 standing within K18. The northern limit is the post hole described above under K18 whilst the southern limit appears to stretch slightly further south than the ditch. There are three stakes on the same alignment to the south of the post hole marking the south terminus of K18.

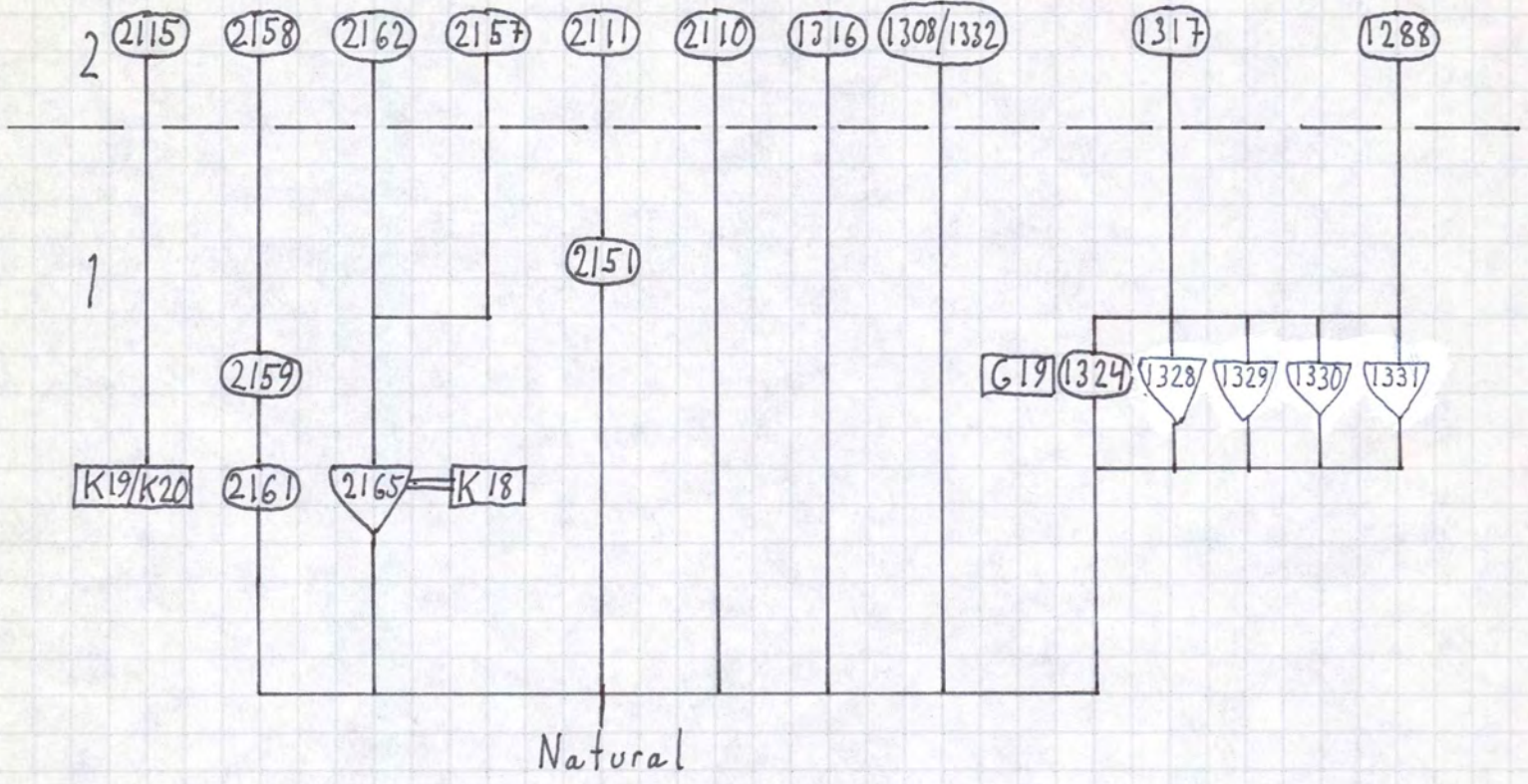
K20 was a north south row of stakes ca. 10-20cms to the east of K18 and north of K19. These stakes do not continue the line of K18 to the north but are slightly offset to the east.

A number of stakes, context numbers 2125 to 2147 inclusive, could belong to this phase but could equally well be at home in phases 2 and 3.

G19 consisted of two parallel shallow trenches ca. 0,7m apart. These continued northwards into FK. In the south they faded out in the middle of rute K13. They are interpreted as wheel or sled marks.



FF Phase 1 1:50



FF
Minimatrix, phase 1.

PHASE 2.General characteristic.

Phase 2 consists of K21, G17 and G18.

K21 is tentatively identified as a ground wall under a sill beam. There are no comparable features running at right angles or parallel to K21 which might help to confirm this interpretation, but it appears to be a fairly safe conclusion when one compares this phase with the subsequent one. If this analogy with phase 3 holds good then the building lay to the west of the row of stones.

To the south of K21 it was not possible to identify any posts or post holes that go together with this level. It therefore appears that the southern part of the area lay open. Only one feature, an east west ditch 3000 probably belongs here. This is interpreted as the boundary between the properties on FE and FF. It is interesting to note that the southern end of the G18 ditch lines up with this feature.

To the east in the road there were a number of features G17-18 which may even continue in use into the next phase. G18 is interpreted as a boundary ditch rather than a drain because of its relationship to the topography and the natural subsoil i.e. it runs across the natural direction for drainage and "drains" from sand/gravel into clay. If this interpretation is correct then it is interesting to note that the feature continues northwards into FK, thereby binding the two sites together. This has already been discussed above in the general introduction to the phases.

G17 was a number of stones set along the ditch G18. These would probably not have been considered significant had FK not been finished before they were exposed. In FK it was possible to see that there were paired stones one either side of the ditch. There was only the one pair on FF but a couple of single stones are probably what is left of a pair. The stones seem to have been the foundation of some sort of paving over the ditch. There does however seem to be a time lag between the excavation of G18 and the covering of it. A number of the stones lie slightly over the ditch suggesting that its edges might have been obscured possibly by fill before K17 was laid out.

Stratigraphic description.

To the west of the road area the descriptions of the layers show that in general they become more organic up in time. There seems to be a marked east-west division in the layers with a less confused picture to the north which possibly reflects the fact that a building has covered the area. The southern edge of layer 2115 which is described as "greasy orange cassy soil with treflis" may mark the southern edge of K21. This layer is partially covered by a burnt patch 2150 which could be interpreted as a destruction level, but the layer is not entirely convincing in that role.

In the road the layers were more organic and there seems to have been a number of pebble spreads and odds and ends of twigs and timbers scattered about.

Layers which can only be phased 1/2:

1300	1305	1316	1319
1301	1306	1317	1320 PH
1302	1307	1318	1321 PH

Layers only phased 2/3:

1250	1292	1309	1323
1287	1294	1310	1332
1288	1308	1311	

Difinitely in 2:

2150D	2153	2156A	2158
2152	2155A	2157	2162

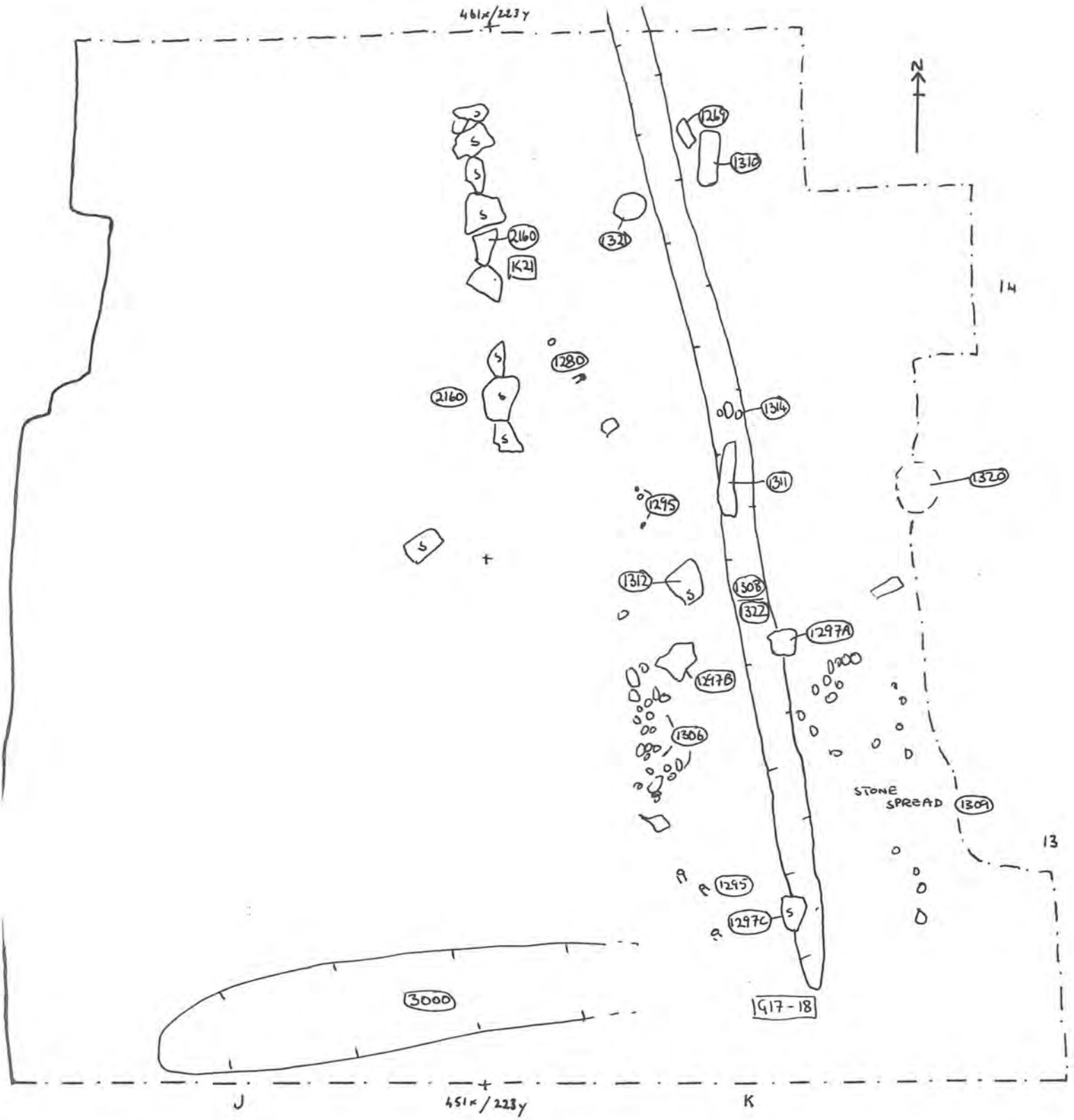
Description of constructions.

K21 a north-south row of single stones, on the north part of the building plot area. To the north and south the stones terminate at later post holes and so the full extent of the line is lost. It is however possible by analogy with phase 3 to suggest that it originally continued to the FF/FK border in the north and for another ca. 70cms to the south. There is no return to the line and no parallel feature. The building is assumed to have lain to the west of the line of stones.

G18 is a shallow north-south ditch 1308&1332 running from the east-west boundary separating FE and FF in the south and into FK in the north. This ditch runs more or less parallel to and ca. 50cms to the west of the wheel marks of G19. It seem likely that the ditch was laid out to respect these tracks.

G17 was the number given to stones set along the edge of the ditch G18. There was one pair of stones 1297 a and b and two single stones 1297 and 1269.

A number of stakes 1280 and 1295 appear to be associated with these levels and a couple of post holes 1320 and 1321 appear to also belong here but not fall into any recognisable pattern.

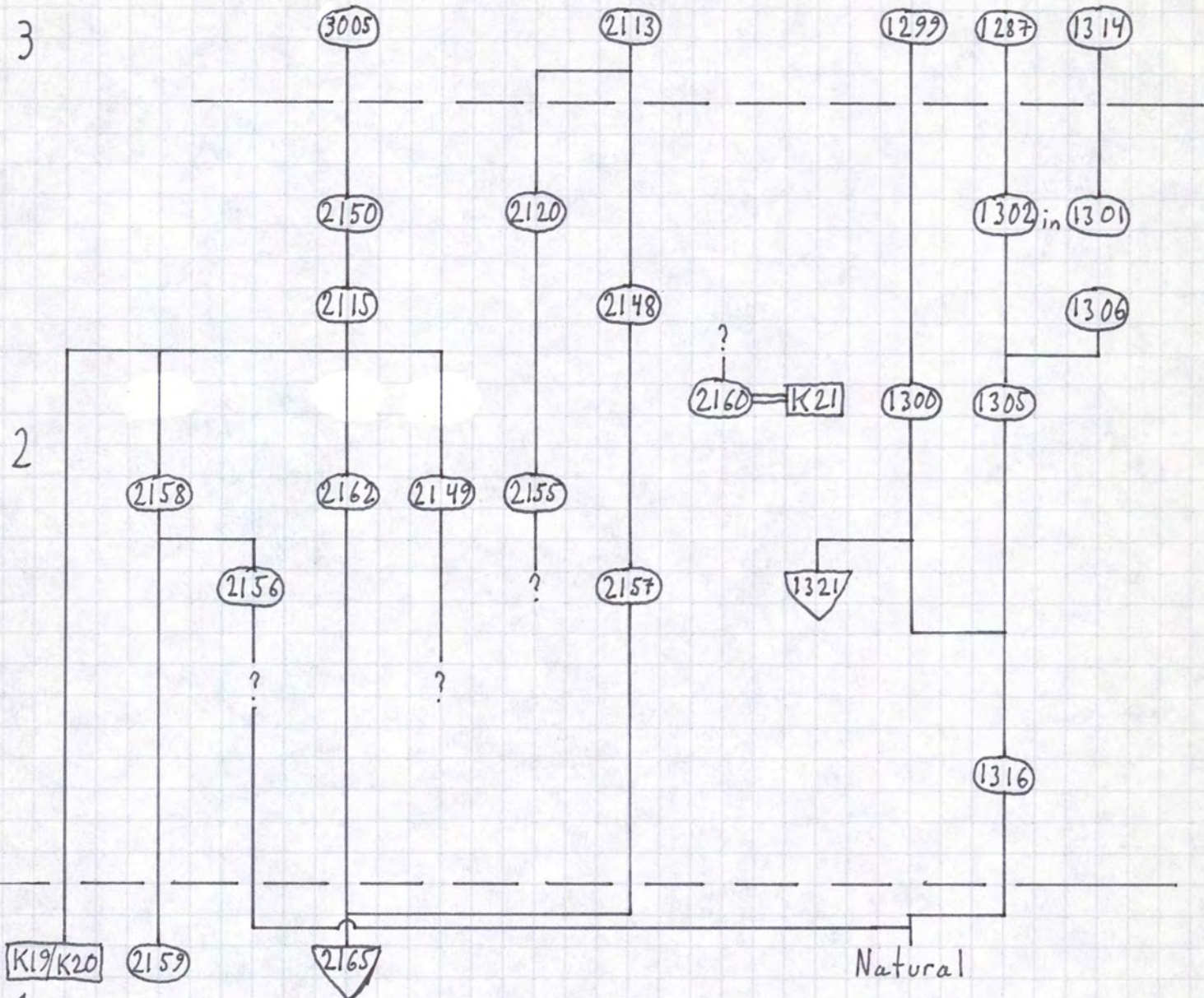


FF Phase 2 1:50

3

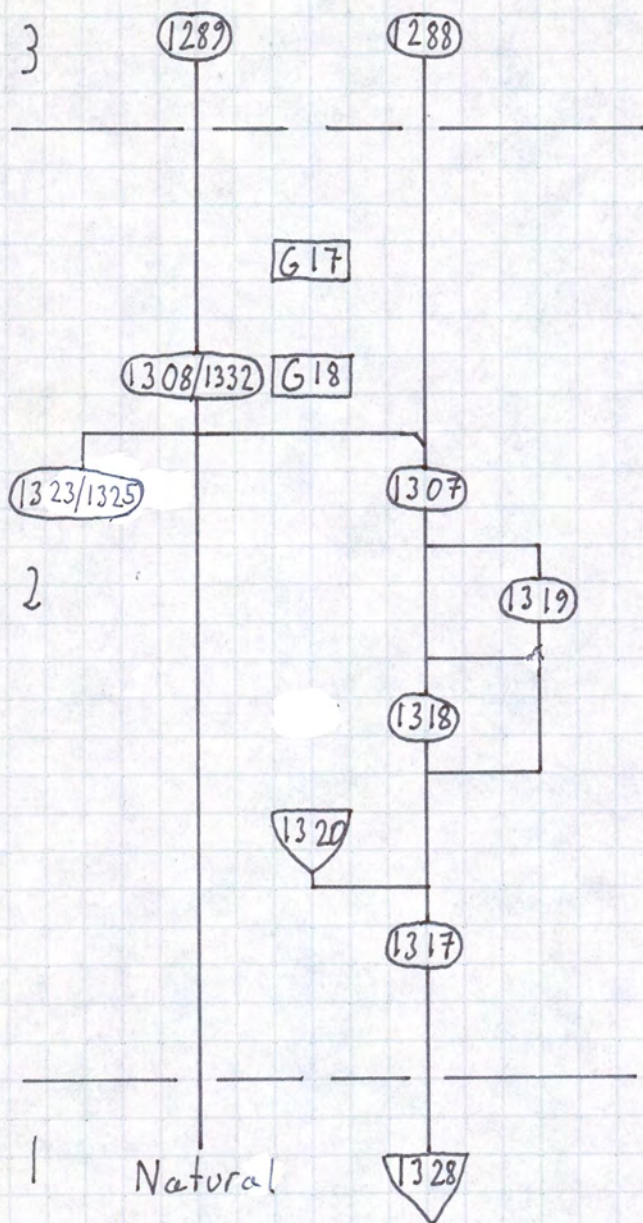
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1



FF,
 Minimatix, phase 2, nr. 1.

continued →



FF

Minimatrix, phase 2, nr. 2.

PHASE 3.General characteristic.

This phase consists of K22 and K23 which existed contemporary with the lifetime of the street levels G17 and G18. K22 is interpreted as the ground wall for a building. Within the area of the building there was no definite floor level but there was an interesting sequence of layers which might well represent different floor levels. Here treflis layers alternated with sand/gravel layers. The full sequence is as follows; g=gravel, t=treflis. 2032 over 2054t over 2055g over 2060t over 2061g over 2086g over 2090t over 2091g over 2092t. The upper layer 2032 was a burnt clay layer which probably represents the destruction layer of the construction.

Further to the south K23 was really a number given to denote a group of features rather than a definitely identified building. The posts in the area form a rough rectangle which is presumed to have been a building area. It is however impossible to say whether there one or two phases of building here. A possible indicator of more than one phase comes from the area separating K22 and K23. If the buildings on either side stretch to the boundaries to the north and to the south then this area must have been the access route to the site. Here there were several levels of stones, e.g. 2089 and 2098 which at the time of excavation were interreted as possible pathways to K22. In the case of 2098 part of the stones may be the pathway and part a sill support in the manner of K23.

As stated earlier the events in the street which are represented by G17-18 appear to have occurred contemporary with the phases 2 and 3.

Stratigraphic description.

In the area of K22 the stratigraphic sequence has already been discussed, however it is worth noting one point about the early part of the phase. The burnt layer which was taken to be the possible end of phase 2 was covered by a "mixed treflis" layer which was covered inturn by a layer 2092 described as "burnt clayey gravel". This has probable equivalents in 3010, 2079 and possibly 2096 and 2070. As such it represents a much

more continuous and widespread level than 2150. This burnt level occurs stratigraphically at just the point where K22 was inserted so it is possible that this new burnt level rather than 2150 is the real end of phase 2. In the matrix all the layers between 2092, 3010, 2079 etc. and the line for the end of phase 2 should be regarded as potentially phase 2. It is better to date too late rather than too early.

Layers in phase 3: (PH=post-hole)

1248	2049	2076	2100PH	2122PH
1254	2051	2079D	2105PH	3001PH
2009D	2053	2080	2106PH	3002
2024	2054B K22	2081D	2107PH	3003
2028	2055B K22	2082	2109	3004
2029	2060B K22	2084	2110	3005
2032D K22	2061B K22	2086B K22	2111	3006PH
2033PH	2063PH	2087	2112	3007
2035	2064PH	2088	2113	3009PH
2037	2066	2089	2114PH	3010D
2038	2068	2090B K22	2116	3011PH
2039PH	2069	2091B K22	2117	3012PH
2040PH	2070D	2092D	2118	3014
2046PH	2073	2094	2119	3015PH
2047PH	2074	2096D	2120	3016
2048	2075	2097PH	2121PH	3017

Description of the constructions.

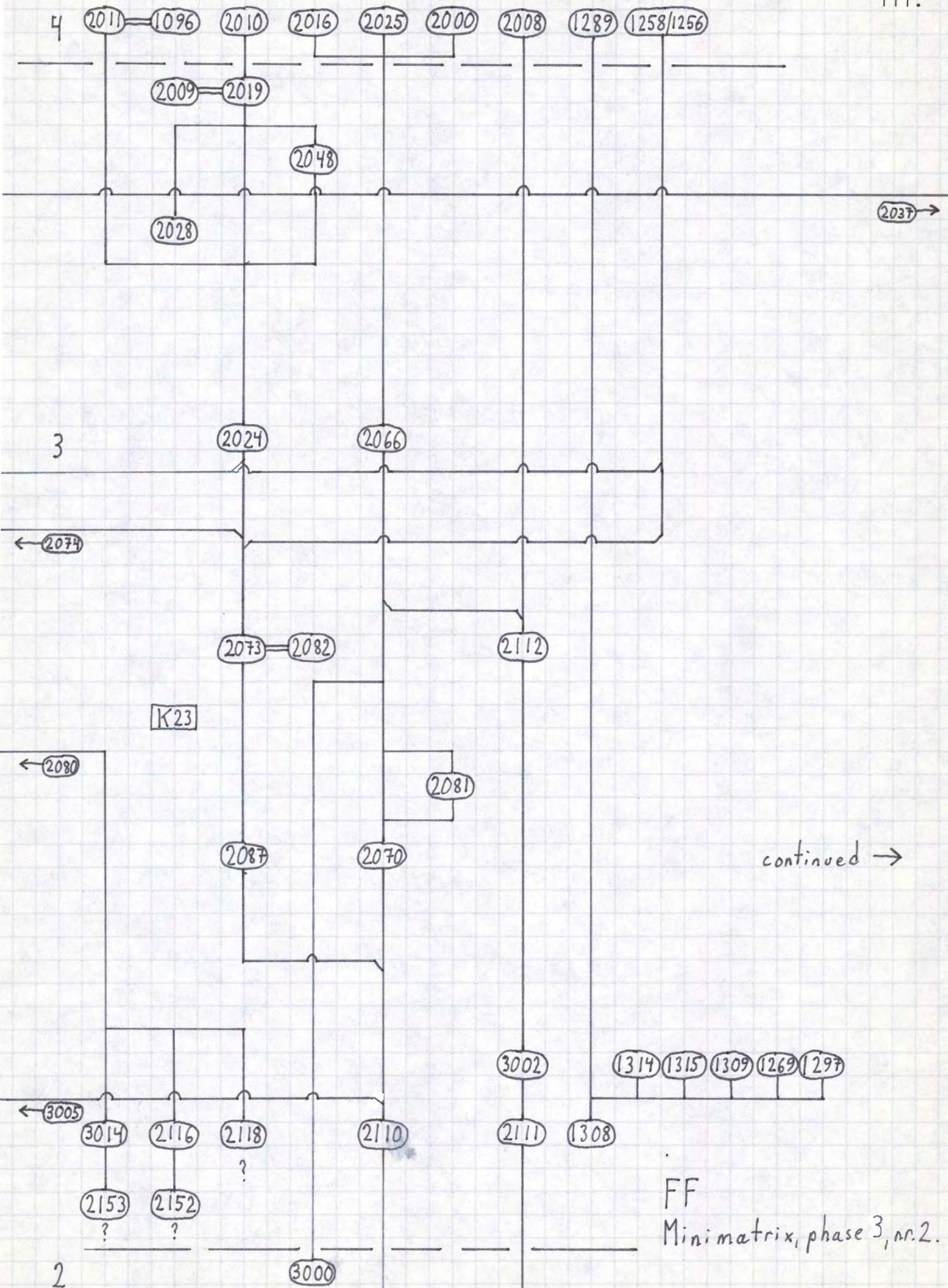
K22 was another stone feature, 2065, similar to but more substantial than K21. A north-south row of stones with two courses lay ca. 30-40cms to the west of K21. Unlike K21 there were alignments of stones at right angles these were also numbered 2065. These latter alignments gave the line of the north and south walls. At the north-east and south-east corners were post holes 3015 and 2033, which were interpreted as the corner posts for a building in which the sill beam rested on the stones. Other posts, 2100, 2052, 2101 and 3017, which lay to the east of 2065 are interpreted as belonging to this phase but their function is by no means clear. The post hole 2099 is interpreted as a

support under the middle of the north wall. Because there is no corresponding north-south line to the west of 2065 the west wall of the building is presumed to have lain outside the site. Within the building there was no definite floor level but there was an interesting sequence of layers contained within the K22 area which may represent a series of earth floors. This sequence has been discussed earlier in the phase description.

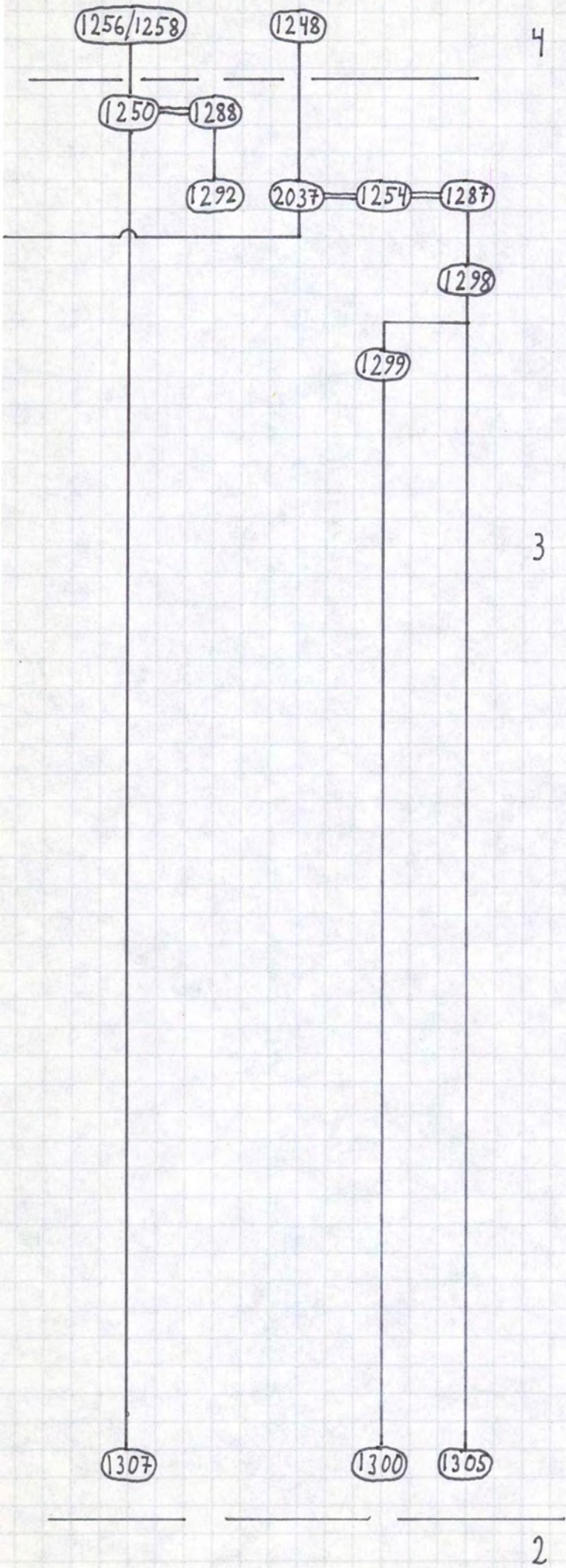
A number of stakes also belong here, 2041, 2042, 2043, 2044, 2046, 2056, 2058 and 2124.

K23 is the area to the south of K22. In this area there were a number of features which formed a rough rectangle but which may represent more than one building phase. It is not possible to separate out stratigraphically more than one building but the pattern of the post holes in themselves suggest that there were two phases or at least a large scale repair of a standing building. The posts and post holes have the following numbers, 2063 which cut 2107, 2064, 3011, 2104, 3001, 3009, 3006, 3012, 2097 which cut 2106, 3003 which cut 2105, 2122 and 2114. Between K22 and K23 were several levels of stones 2089 and 2098 which were interpreted as a pathway between the K22 and K23. Part of 2098 could be a sill support for K22. Under these stones were 3 unnumbered beams, shown on plan, which could conceivably represent some form of internal division within K23.

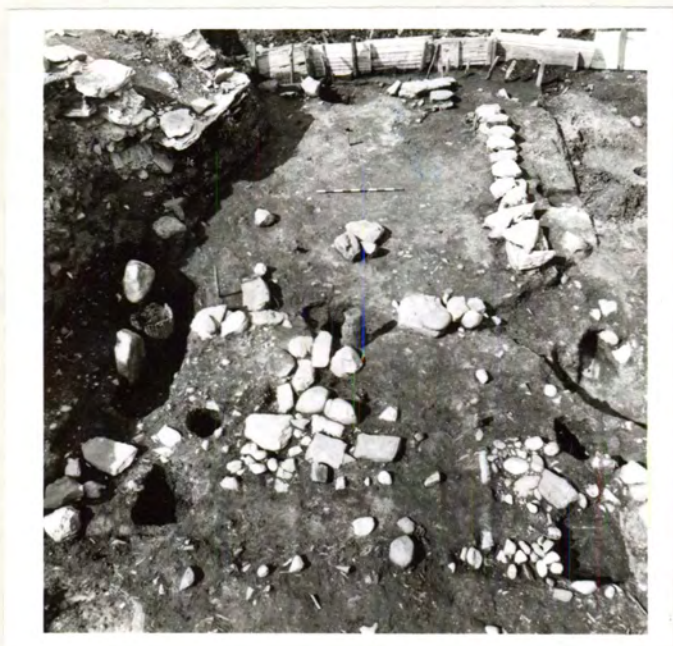
Street levels G17+G18, described in phase 2 were contemporary with this phase as well.



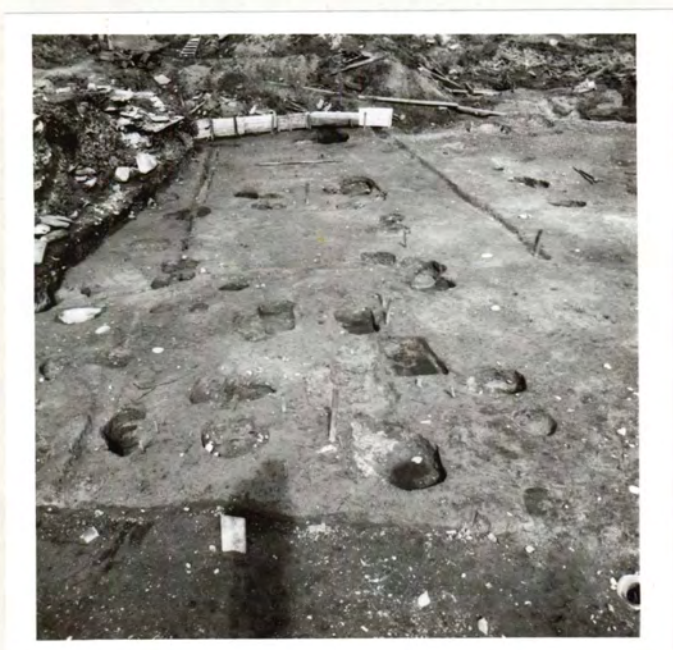
112.



FF
Minimatrix, phase 3, nr.3.



FF phase 3.
K22 looking north.



FF. At natural looking
north. Ditch under G17/18
on right, ditch K18 on left.

PHASE 4.General characteristic.

In this phase it is difficult to interpret the area to the west of the street because the remains were very scrappy. A further complicating factor was that this level was reached at the end of a season, so that with a change of site leader the following year the style of recording changed and several layers seem to have disappeared during the winter.

K24 is the north end of a building which was excavated for the most part by FE. K25 occupies much the same space as K23 and like the previous building consists of a number of posts and post holes which form a rough rectangle. It is not possible to say much more about the nature of this building. To the north of K25 there were fewer remains three post holes and a few stakes together with a further three stakes which could belong at either this or the next phase. There does not seem to be a pattern to the posts so it possible that we have here an open area.

To the west the road area is much better documented and there appears to be four levels G13-16 which are contemporary with the events to the east. The earliest of these phases, G16, is more of a collection of scrap timbers in the area of the street than a planned road surface. It is with G15 that one can begin to see the beginnings of a structured paved street. Here it is possible to see the start of the longitudinal mid-line division which is to be a familiar characteristic of the street in subsequent phases. Besides the mid-line division there were a number of other interesting alignments worth noting. In the south there were two posts 1128 and 1197 on the mid-line division. The former post lay directly over the south end of the north-south ditch described in phase 2 and at the same time it seems to mark the eastern terminus of the "property boundary" between FE and FF. It is therefore possible that this post marks the junction of three different areas. 1197 to the south possibly has a similar function, marking the mid-line of the road and the western end of a boundary running across the centre of FH to the east. Another noteworthy alignment, which in fact runs right across the street, is the line 1166-1206-1169 coinciding with the northern edge of K25. It is approximately on this line

that there is a slight change in alignment in the planking of the next level G14.

G14 is the first level with a really well preserved paved surface. This is the one level where there is no mid-line division and the whole stretch of FF street has the feel of having been built as one. There is one slight shift of alignment which was commented upon in discussion of G15. This change is from an almost due north-south division to a more north-north-west south-south-east alignment. In the north there appears to be a narrowing down of the road. This could possibly be the result of later disturbances but there are good grounds for suggesting that this is not the case. This narrowing down of the street occurs by the east-west planks 1068. These planks lay in the area where a passage joins the street in subsequent phases. It is therefore reasonable to interpret 1068 as passage at this phase. So it seems that we have a passage which probably coincides with a property boundary which is the logical place to expect a narrowing of the road.

Stratigraphic description.

No particular layers stand out for special mention. Most of the layers in the house and road area are described as variations of treflis. The phase does however terminate with layers 1139, 1132 and 1089 which are burnt. These cover much of the southern part of the site where there are in fact buildings and do not extend northwards into what has been interpreted as an open area.

Layers in phase 4: (PH=post-hole)

1041 A	1095	1147	1188 K for	944?	1258
1042	1096	1155	1199		2000
1044	1097 PH	1172	1232		2001 D
1048	1098 PH	1173	1233		2002 D
1049	1131	1174	1234		2003
1055	1132 D	1176	1251		2004 PH
1056	1139 D	1177	1252		2005 PH
1089 D	1145	1182	1256		2006
1092	1146	1187	1257		2007

			<u>Phase 4 or 5:</u>	
2008	2016	2031 K	993 PH	2034 PH
2010	2020	2062	995 PH	2071 PH
2011	2024 B	2077	1108	2072 PH
2012	2025	2078	1109	2085 PH
2014	2026	2095 PH	1110	
2015	2030		2027 PH	

Description of constructions.

K24 lay south of the southern east-west boundary and was the northern end of an FE building. It consisted of four east-west planks 1101, 1102, 1103, 1133 and post 969 standing in post hole 2071. From the lie of the planks it is possible to say that they were not in situ. The post was probably a support under the middle of the north wall. The two corner posts of the building were removed by later disturbances.

K25 to the north of K24 occupies the same area as K23 in the previous phase and like K23 consists of a number of posts and post holes which form a rough rectangle. There is the added complication that it is uncertain whether the following post and post holes belong to this or the next phase, 910, 973, 993, 1097=2004, 1104, 1105, 2085, 890 standing in 2034 and 921 standing in 2072. The full list of post and post holes which may be part of K25 is as follows running anti-clockwise from the south-west corner: 2095, 2103, 910 in 1098=2008, 2104, 1071, 977 in 994, 1002 in 2022, 921 in 2027, 2036, 890 in 2034, 2045, 830 in 2085, 1128, 973, 993, 1097=2004 and two posts lying within the rectangle 1104 and 1105. Just by looking at the pattern of the posts it is possible to see that there is a likelihood of more than one phase being contained within K25. For instance the concentration of posts at the south-west corner seems to be too many too close together to be one building. Within the area of K25 there were a few scatters of stones and wood, none of which formed any obvious pattern, they were 1107, 1112, 1113, 1093, 1094, 1086, 1140 and 1085. A number of stakes probably also belong here, 1134, 1135, 1116, 1157, 1156, 1141 and 1142. As previously stated the area to the north of K25 appears to have been open.

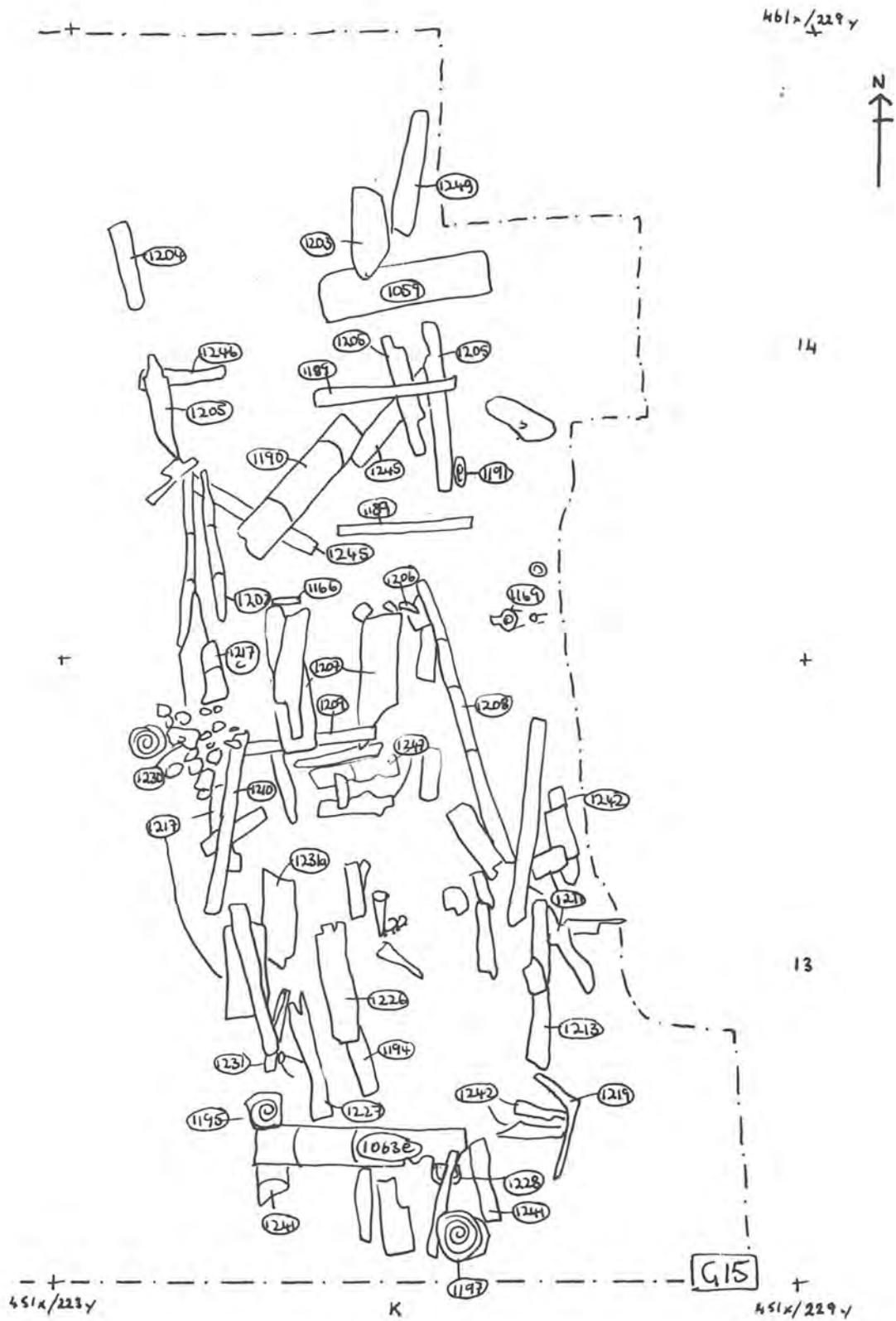
G16 was a collection of scrap timbers in the road area. There is a more or less north-south orientation to the wood. The timbers are numbered as follows, 1240, 1255, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1271, 1272, 1273, 1274, 1275, 1276, 1278, 1279, 1283, 1284, 1286, 1290 and 1291.

G15 was another scrappy phase but the beginnings of the mid-line division can be discerned. On the west side of the road there were the remains of north-south planks 1205a, 1207, 1244, 1210, 1193, 1231, 1226, 1194, 1227, 1231, 1220 lying on east-west joists 1246, 1245, 1247, 1209 and 1063. There were also a few scraps which did not fit easily into either of the two categories, i.e. 1202, 1190, 1217, a spread of stones 1230 and two upright planks 1166 and 1206 at the north end of planks 1207. On the eastern side of the road there was a less definite structure. In the north there were north-south planks 1203, 1249 and 1205 on east-west joist timbers 1059 and 1188 but further to the south there was more of a scatter of, on the whole round logs, 1208, 1211, 1242, 1239, 1213, 1242, 1219 and 1241. Posts 1191 and 1169 may be connected with the road.

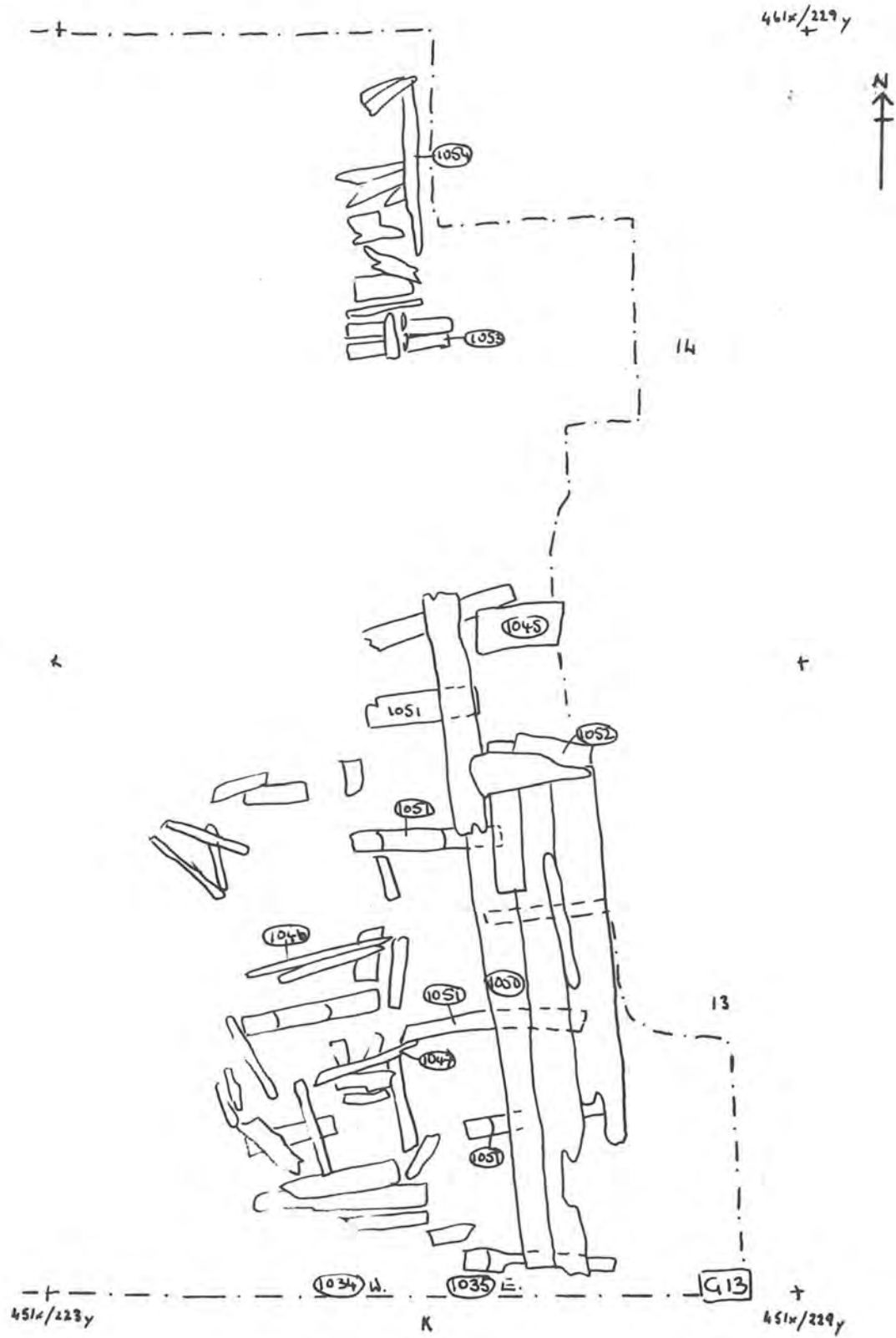
G14 was the first well paved surface and there was no mid-line division at this level. There is a possible narrowing down of the width of the street in the north on the eastern side. Two numbers 1036 and 1037 were given to the whole road surface and the individual elements were also numbered. The plank surface received the context numbers 1163, 1068, 1067, 1064, 1062, 1060, 1057, 1161, 1162 and the joists 1061, 1063, 1058, 1153, 1184, 1185 and 1186. To the east of the road planks 1158, 1159 and 1069 together with the plank scraps 1070+1160 and short joists 1211b and 1212 may form a separate little area of planking in the southern part of the road. A rounded beam 1065 may mark the change between the main street and this little area. The area lay to the south of the east-west planks 1068 which are interpreted as the western end of a passageway which ran across FL. The possible narrowing occurs to the north of these planks.

G13 appears to be a repair or resurfacing of G14. In this case there is a definite mid-line division. The general number

1035 was given to the east side of the street, and some elements received individual context numbers. These were the north-south planks 1050 resting on joists 1051, north-south planks 1054 resting on joists 1053, and a few scraps 1045 and 1054. The western half of the road received the general number 1034 and consisted for the most part of joists from which the planking was removed. Two plank fragments received the individual numbers 1046 and 1047.

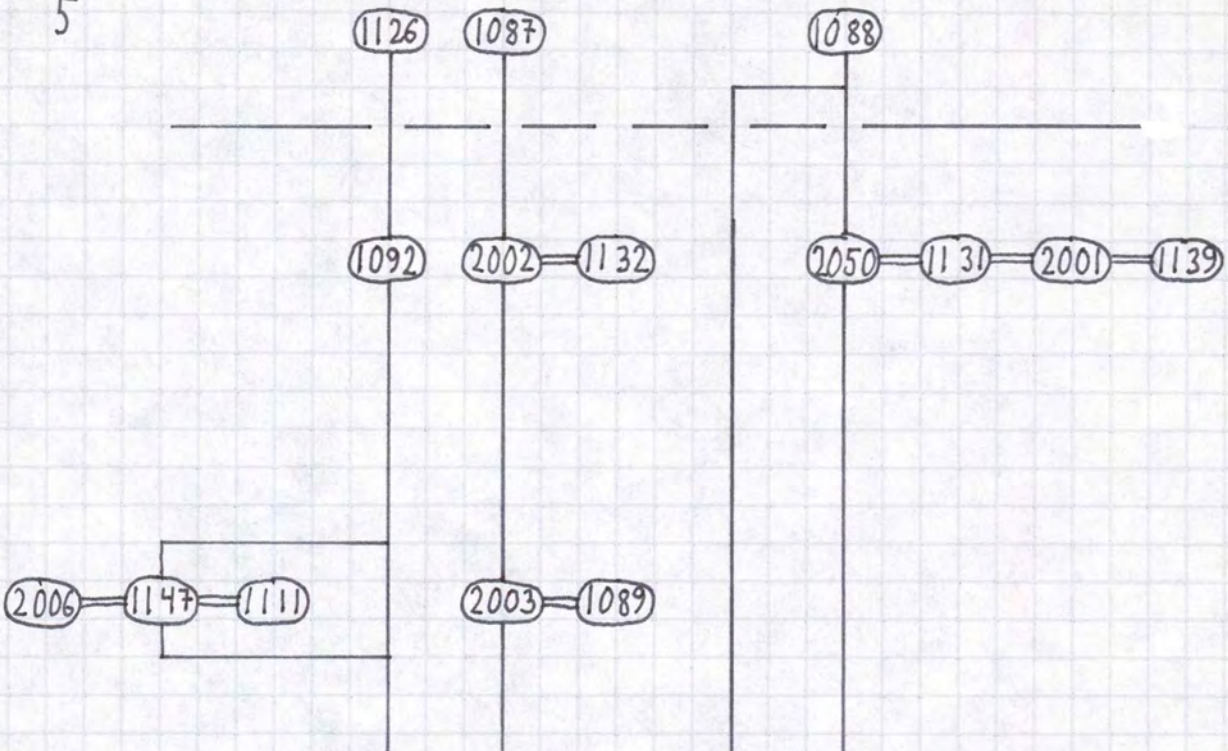


FF Phase 4/G15 1:50

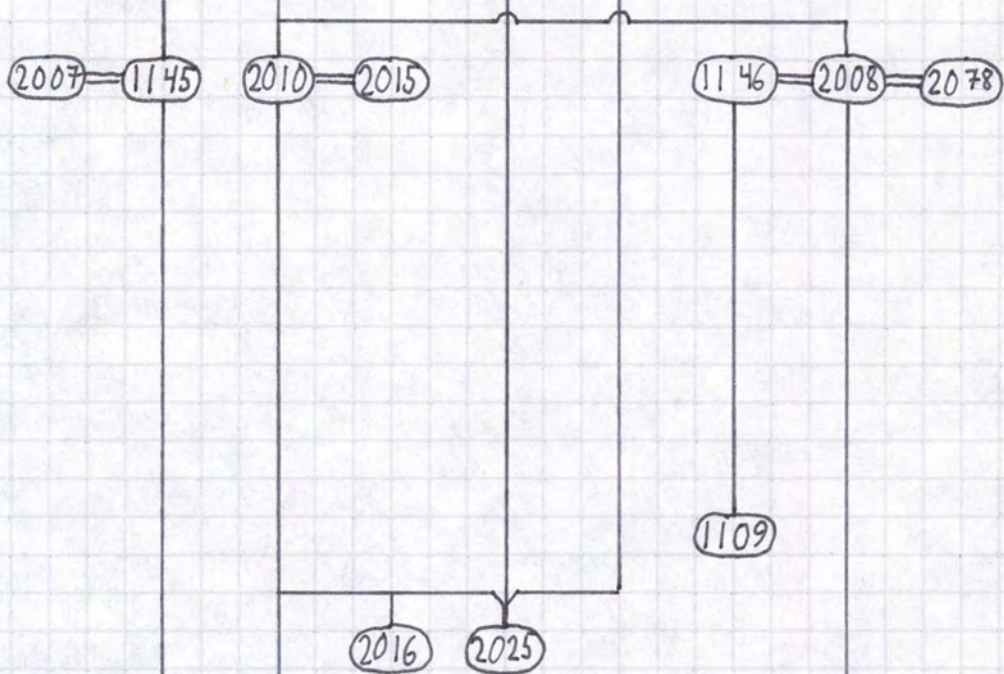


FF Phase 4/G13 1:50

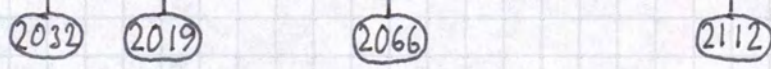
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4



3



FF

Minimatrix, phase 4, nr.1.

continued →

PHASE 5.General characteristics.

This is the first phase where there is an identifiable building to the east of the road i.e. K14 & K29 and it is also the first of two phases where there is a marked change in disposition of the area to the west of the road. The passageway which ran across the centre of the site was moved southwards to the southern edge of the site and one long building occupied the area north of it up to the FK boundary. K26 was the building and K27 the passage whilst K28 was the northern part of a building dug mostly as part of FE.

There were three levels of street that go with this phase and there was a marked advance westwards of the eastern edge of the street which brought the properties to the east into the site in the form of K14 and K29. There was no corresponding shift of the western side of the road so in this phase the street has narrowed down. K14 fell between the two east-west boundaries discussed above and is interpreted as a building. K29 is a building which for the most part was excavated as FL. Between K14 and K29 there ran a passage, nothing of which remains at this phase. The three road levels all have a mid-line division.

Description of the stratigraphy.

No layer stands out for special mention. In the house area most of the layers in this phase are described as various forms of treflis. The exceptions are 1076 which is described as a clay patch, 1079 a faces layer and 965=943 and 1013 the burnt destruction level which seals the area. In the street there is a little conundrum with the burnt layers 902 and 905 which are interpreted as the destruction level of the phase. These two layers are awkward to place because they cannot move up to be the destruction level of phase 6 because layer 866 fulfills that role. However at this level they lie slightly above G10 which is largely unburnt. Here we must perhaps speculate that the street was largely undamaged and stripped of planks before the fire layer was spread in the road.

Layers in phase 5:

902 D	948	998	1027	1084
903	965 D	1011	1028	1087
904	978	1013 D	1076	1088
905 D	979	1017	1077	1178
919	983	1023	1079	
920	984	1024	1080	
943 D	985	1026	1083	

Description of the constructions.

K14, a building. 727 was the south-west corner post with vertical slots to receive the south and west wallbeams. The two wall beams had a trapezoidal cross section and were cut to fit the post. The south wall was numbered FH390 and further details should therefore be sought in the FH report. The west wall 881 rested on a row of stone sill supports 1025 and its northern end was cut by a later post hole. It is therefore suggested that the wall originally continued ca. 70cms to the north. The west wall ran parallel with the street and forms an obtuse angle with the south wall. K14 was destroyed by fire.

K26 is another vague structure in the manner of those seen to the south of the site in the previous phases. By analogy with the following phase it must be interpreted as a long building, but exactly which posts and post holes form the construction is difficult to decide. Only 992 and 1010 can be said to certainly belong here together with a plank 1106. The other posts and post holes either belong to this or the previous phase. These were 889, 890, 995, 830 in 2085, 973, 993, 1104, 1105 and 921 in 2072.

K27 the passageway consisted of north-south beams 1014 and 1015 together with plank 1016. It is interpreted as a passage by analogy with the much better preserved phase 6.

K28 is the northern end of an FE building. Post 1010 is interpreted as the north west corner of the building and 1073, 1074 and 1075 are internal beams which have been recorded

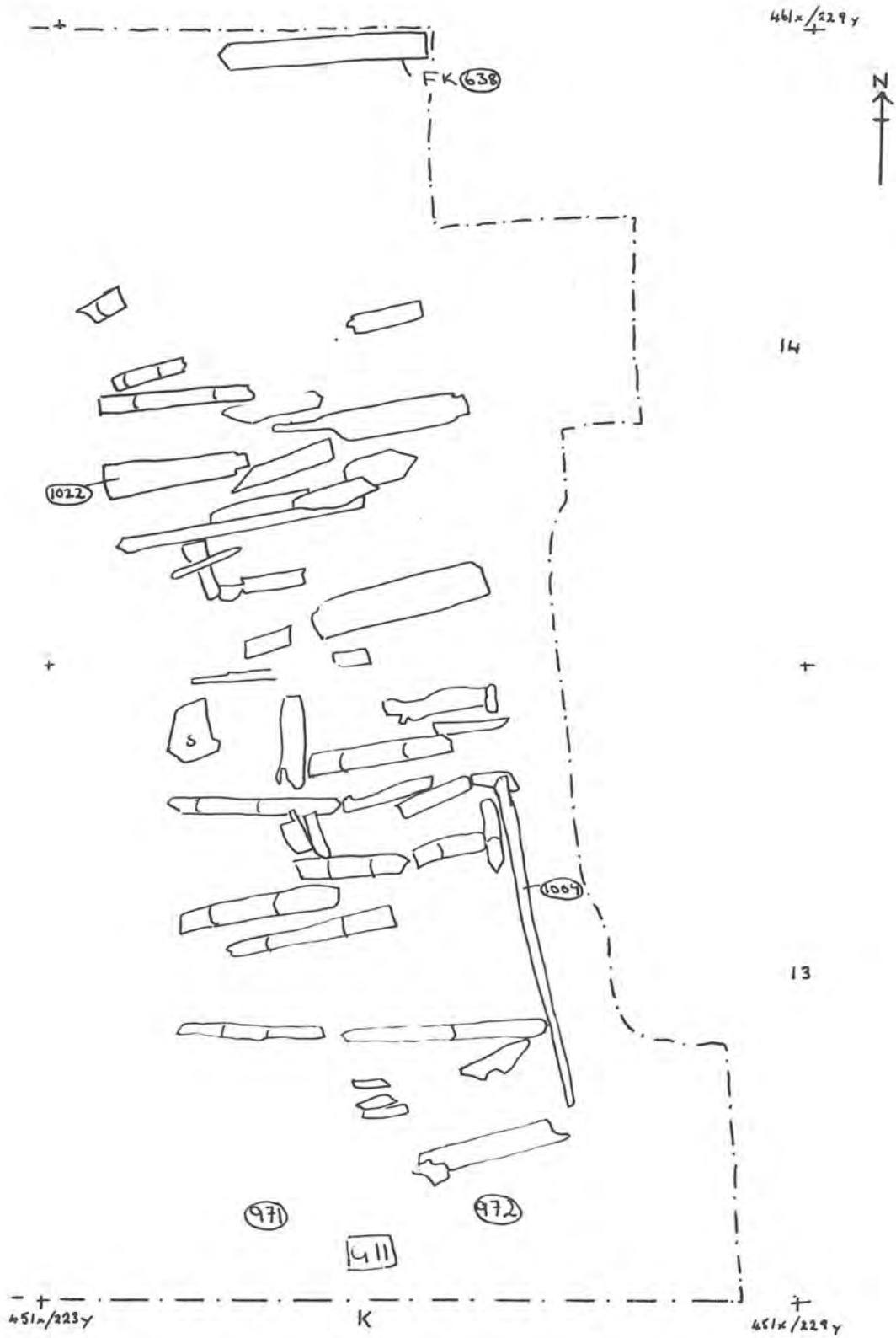
in FE as well. Post 1006 appears to fit in at this level.

K29 lay to the north of K14 and forms the west wall of a building which must have been seen on FL. 829 is a beam grooved on the top which has been heavily disturbed by later intrusions. The south-west corner of the building has presumably been removed by later intrusive features, i.e. a post hole. This building should be easier to understand when site FL is correlated with FF.

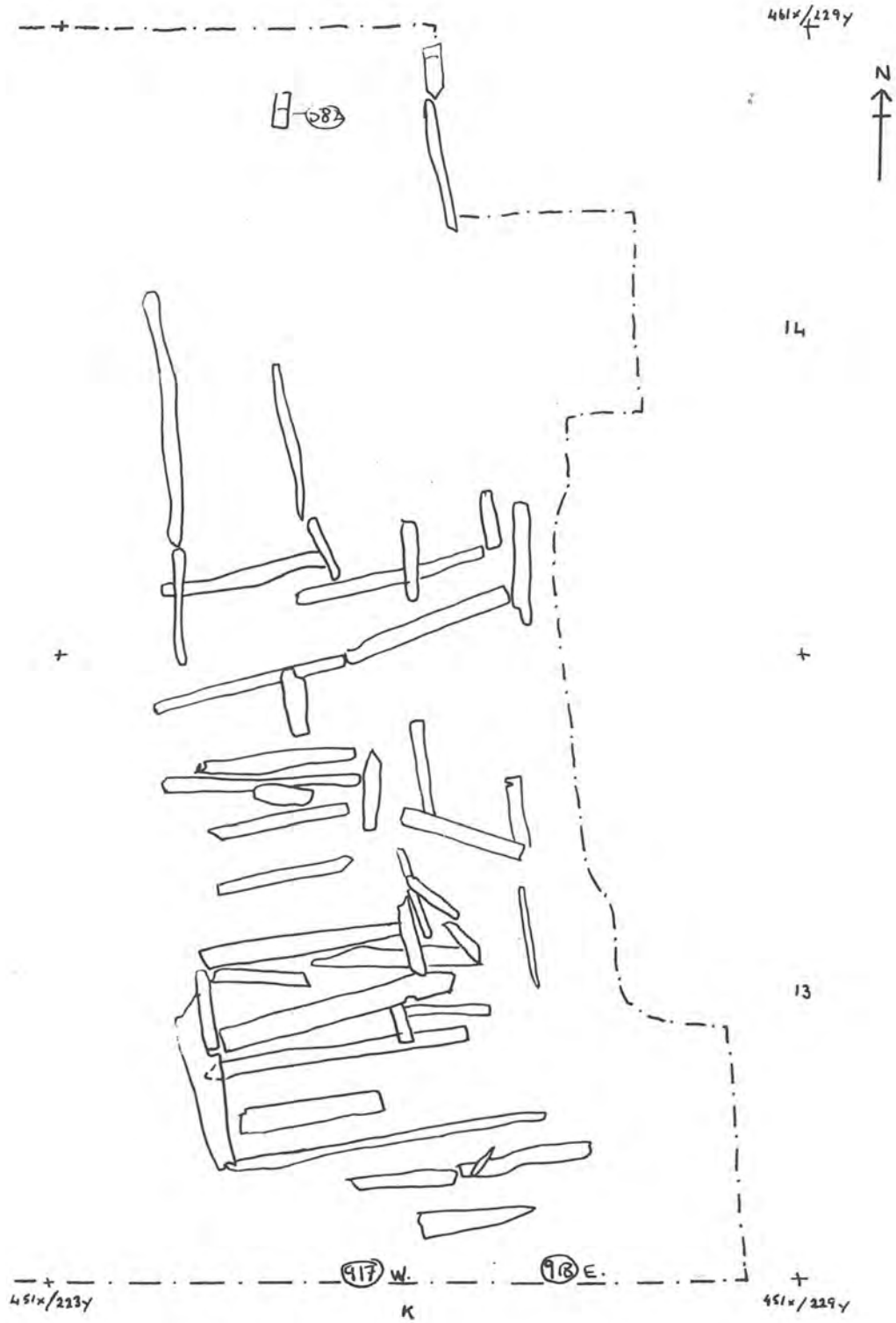
G12 clearly goes together with the construction level of K14 to the east, for the timbers in the street closely follow the line of stone sill supports in that building. There is a clear mid-line division to the street and the timbers to the west were given the number 1020 and those to the east 1021. On both sides it appears that the planking has been removed down to the joist level, only one plank 1038 and a few fragments remaining. The joists were mostly re-used timbers and a number were marked out for detailed drawing 1031, 1032, 1033, 1039 and 1040.

G11 was another level in which the plank surface seems to have been removed to leave the joists which were numbered 971 on the west side and 972 to the east, were less closely spaced than in the underlying G12. There was one remaining plank 1009 and one of the joists was given the number 1022 and was described as a stave.

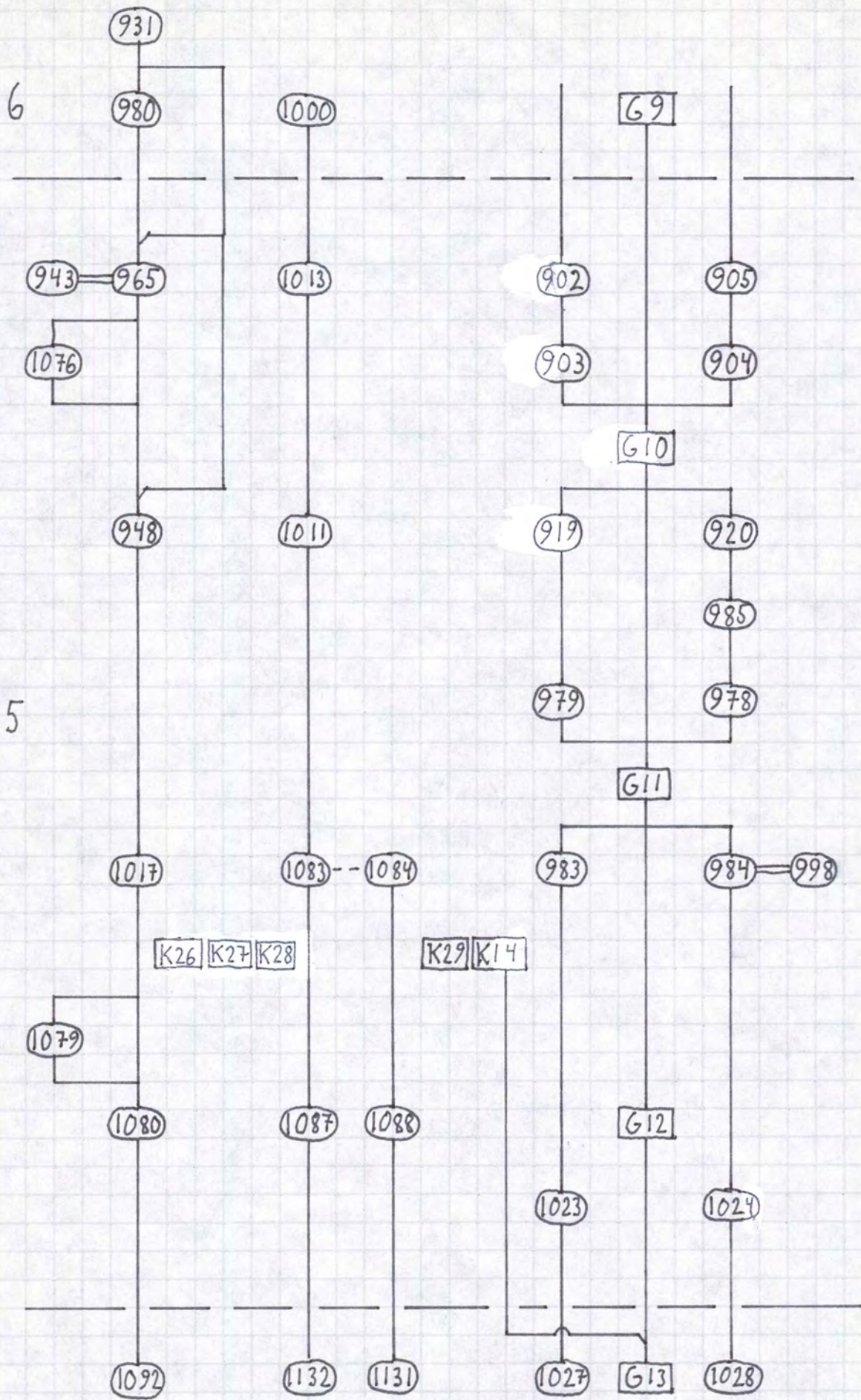
G10 was yet another level of street from which the plank surface has been removed. The joists are mostly east-west but in the northern part of the site they change to north-south. The wood on the west side was numbered 917 and that to the east 918. In the far north the timber 582 was added at this level. The placing of this piece here is uncertain.



FF Phase 5/G11 1:50



FF Phase 5/G10 1:50



4 FF
Minimatrix, phase 5.

PHASE 6.General characteristic.

This is probably the clearest phase on the site especially to the west of the road. Here the pattern seen in phase 5 was repeated with K11 as the northern building, K12 as the east-west passage and K13 the north wall of an FE building. To the east of the road as well there seems to be a repeat of the previous pattern with buildings K16 and K17 on either side of passage K15. At this level there was only one phase of road.

There are good reasons to suggest that this phase may have been laid out as a single unit. Taking the alen to be 555.3cm long then in this phase the street is 6 alen wide, the passage K12, 3 alen wide and K11 is 14 alen long by 8 alen wide. The joists in the building are spaced at 3 alen intervals measuring from the south wall. The width of the plot against the street is 17 alen and it is interesting to note that the FK plot at this level is 17 alen and the joists in the FK building are spaced at 3 alen intervals. Could this be taken to mean that FF and FK at this level were in common ownership? In this respect it should be noted that this is not the first time that the two sites share features, see phase 2 for example.

There were no layers or features to indicate the function of the buildings with the possible exception of a small birch lined pit numbered 896 in which according to the day book there were remains of egg shells.

Stratigraphic description.

This phase ended in a fire which can be traced over much of the site, but apart from that there were no layers which stand out. Most of the layers are as usual described as variations on treflis. Some of these were mixed with hazel nuts and in the list which follows this is taken to be the criterion for deciding to set the letter B for Brukslag behind the layer numbers. One layer of interests was 989 which during excavation was described as "patchy layers of excessive thinness" possibly "wind blown deposits" or "dust layers from the house".

Layers in phase 6:

764	894	931	944 D	980 B
809	895	932 D	950 D	987
818	897	933 D	951 D	989
855 D	914	934	953	990 B
878	927	935	959	991
880 D	929 D	941	967	1000
887	930 D	942 D	970 B	1043

Description of the constructions.

K11 was a ca. 7.5 by 4.5m lafted building shared partly with site FK. The gable end of the building ran at right angles to the street. Only the south eastern corner survived to show that it was lafted. The building was supported on posts at the corner and there were a number of posts under the long wall. There were three east-west joists jointed into the top of the two long wall beams. In the case of the southern joist only the laft cuts on the wall beam and a support beam in the centre indicate its position, but in the case of the other two joists the beams themselves survive in part. There is the possibility that there was a fourth joist which has been destroyed by later intrusions. The argument for the fourth joist runs as follows; the joists are evenly spaced, i.e. 3 alen apart, there is therefore room for a fourth joist between the third and the north wall. The point at which this joist would have met the east wall is damaged just here and the west wall does not survive this far north so it is possible that all traces of the beam have been removed. Against this interpretation is the possibility that there is a different arrangement in the northern part of the building. The two southern joists are supported in the middle by horizontal short logs 960 and 961 whilst the third potentially has support from post 962. However from immediately north of the second joist support there runs a possible row of three posts 843, 844 and 835. This could indicate that in this part of the building there was some form of north south division. No trace of an entrance was noted. To the west of the building there was a single plank 952 which may have been part of a north-south corridor to the west of the building.

The elements in K11 were as follows.

The east wall 859, 861, 863 and FK516 supported by posts 857 and FK480 at the corners and along the length by 1137, 1138, 1130, 1005, 1001, 1081, 865, 968, 981, 982, 964 and 988.

The south wall beam was 858 and it ran to corner post 786 standing in post hole 2023. 938 and 940 formed the west wall and 860, 868 and 936 the joists. 960, 961 and 962 were joist supports and posts 843, 844 and 835 the possible north-south row of posts. 937 and FK515 were loose scraps of wood.

This building is an excellent example of the amount of sinkage, compression and distortion of layers on the site. A point on the wall at the north-east corner reads 7.64 a.s.l. whilst the lowest reading on the west wall which is the same omfar (course) in the building is 6.82m a.s.l. In other words one part of the building has sunk ca. 80cms in relation to the rest of the building.

K12 is the east-west passage to the south of K11. It consists of planks 839 and 976 and joists 879 and 975. All the wooden remains are burnt and are concentrated to the south-west of K11 it appears that the stretch of planking directly south of K11 has been salvaged.

K13 is the northern part of an FE building. The northern wall of this presumably lafted building was 911, 909 was the north-west corner post and 963 a support under the sill. The north-east corner of the building was destroyed by a modern intrusion. 923 is interpreted as a support post for the (no longer extant) west wall and 1001 is interpreted as an internal post within the building.

K15. From its position between K16 and K17 this construction must be interpreted as a passageway. It consists of the single plank 884.

K16 consists of a short length of beam 752 resting upon the post 769. A short beam or plank 762 and post 772 with some associated wood are tentatively placed in this construction. These pieces lay to the north of the site in the area where there are poor stratigraphic links to the body of the site.

The beam may be a wall support and the same may be the case with the post. The building is presumed to have been lafted a presumption which can be confirmed or disproved when the continuation of the building to the east in FL is examined together with the FF information.

K17. Is presumed to have been a lafted building. Two short lengths of wall beam 882 and 883 cross on top of the north-west corner post 869. Further south the two posts 870 and 728 are tentatively added to this construction. In common with K14 most of the building was destroyed by the FH cellar but there are connections through to FH to the south of the cellar and so analysis of FH can contribute further information about the nature of this building.

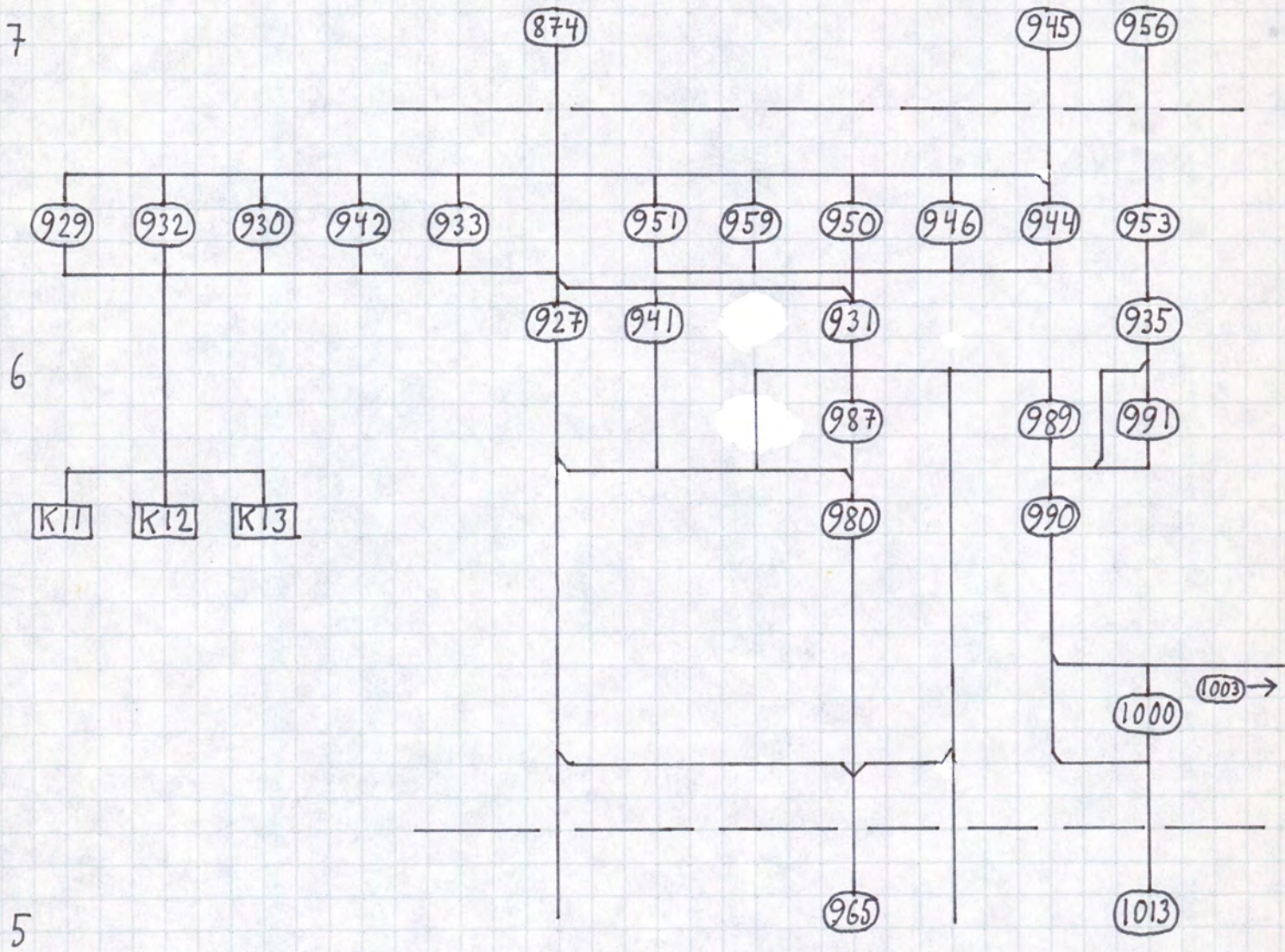
G9 has a clear mid-line division. 892 was the general number given to the western side of the road and 893 to the east. On both sides it consisted of charred east-west logs which can only be interpreted as joists. Here and there were scraps of north-south planking. Three of the joists 837,900 and 901 were marked out for detailed drawing. Most of the timber appeared to be reused. 898 was a plank which sat upon the laft head of one of the joists of K11.



FF phase 8.
Looking north.



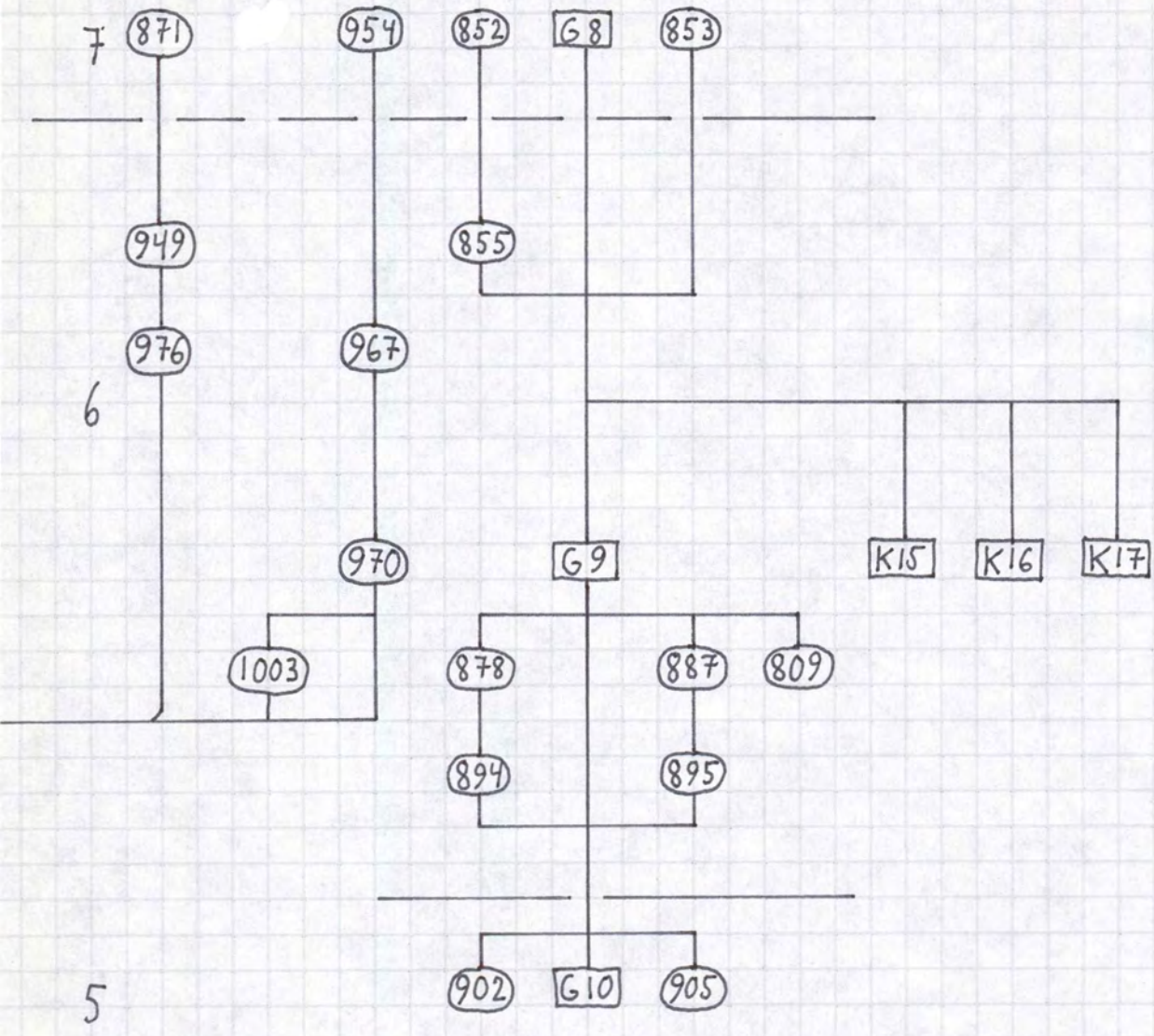
FF phase 6.
From above.



FF

Minimatrix, phase 6, nr.1.

continued →



FF

Mini matrix, phase 6, nr. 2.

PHASE 7.General characteristic.

In this phase there appears to be a return to the pattern seen in the phases prior to phase 5, i.e. a central passage with buildings on either side rather than a long building with a passage on the south side. K9 is interpreted as the remains of this passage and K8 and K10 are the buildings to either side. In both buildings the remains are very scrappy and it is difficult to give any certain wall-lines or details of construction. In the case of K8 the remains are so fragmentary that it is possible to suggest that it may have continued in use through phase 8 as well.

It does perhaps seem excessive that three phases of street G6-8 go with this level, but it is not possible to escape the fact that the joisting in phase 6 does project into the building area. Nor can G8 drop down to the previous phase for G9 was burnt and therefore fits with the rest of the site where a fire terminated that phase. It is however possible to see G6-8 as a basic street level which then undergoes a series of repairs and resurfacings. The structure of the street hardly changes with the mid-line division and north-south planks on east-west joists. One possible point of interest to note is that in the western half of the road in G6 and 7 there is a change of sorts at the south side of the passage. This may be the reintroduction of the east-west division which has been discussed in earlier phases.

Stratigraphic description.

It should be stated straight away that the upper limit drawn on the mini-matrix is arbitrary in the building plot area west of the road. This is because the phase was not destroyed by fire and so seems to have evolved peacefully into phase 8.

Yet again there were no layers which in themselves could be used to determine the function of the buildings etc. Most layers were described as variants on trellis.

<u>Layers in phase 7:</u>			<u>Phase 7 or 8:</u>
716 contains 721	872	945	697
719	874	947	698
810	876	955	700
852	896	956	701
853	915	958	702
854	924		703
871	925		704

Description of the constructions.

K8 was a building on posts which stretched from K9 to the border with FK. It may have continued in use through phase 8. It is impossible to give any indication of the form of the superstructure of the house, though if the interpretation that it continues in use to phase 8 is correct then the burnt plank floor at that level must have rested on joists which were jointed into the east and west walls. The elements of K8 are shown on the phase drawings for both phase 7 and 8. This takes account of the problem of interpretation. Those elements shown on the lower drawing are the ones which belong to the lower phase if it is later determined that the building has to be split into two phases. The south wall consists of posts 710, 773 and 788, the east wall posts 202=625 and 241=621 and the north wall post 658. 709, 707, 766 are probable internal posts as are 833, 822, 796, 639, 632 and 240=622. 811 was some scrappy planking and if the interpretation of continuity into phase 8 is accepted then part of planking 672 should be included here.

K9 was the east-west alleyway across the centre of the site. It consisted of two pairs of beams 812 and 813 running east-west. Two posts 714 and 715 separate the logs of each pair and the posts themselves seem to form a pair. The alignment of the beams on either side of the posts is different, so it is not a case of the posts cutting what was originally longer beams. The beams are pegged to receive north-south planking and in the west 814, 815 and 816 are possible remains of that planking. The edges of the passage are believed to have been just north and just south of the east-west beams.

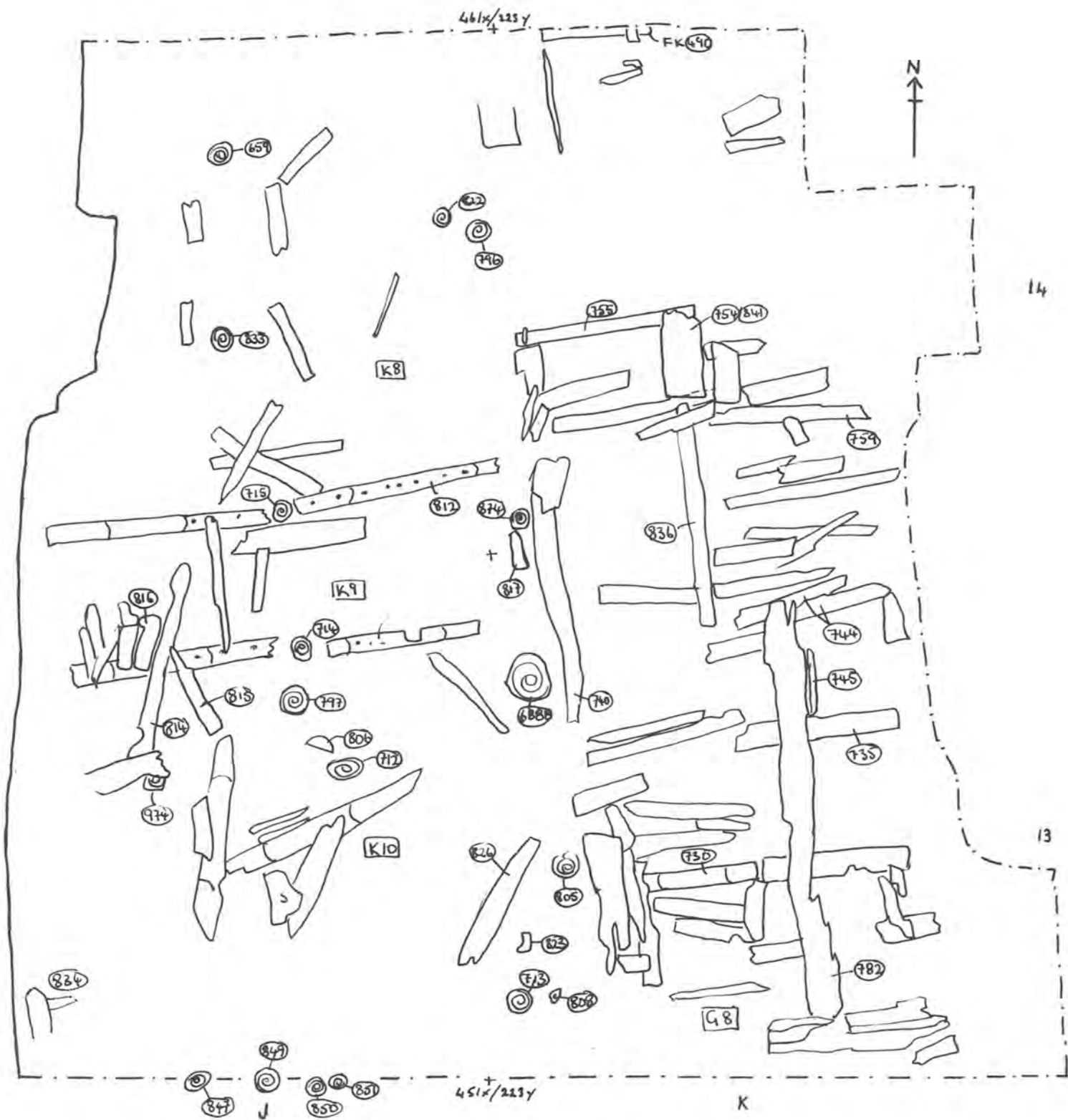
K10 was another building on posts in which it is impossible to reconstruct the superstructure with any certainty. In the

south it is unclear which posts go with the building and which may belong to the northern part of the FE building. 638B and 797 are interpreted as the posts of the north wall and 823, 712, 806 and 974 as possible internal joist supports. The south wall is to be found among the posts 847, 848, 849, 850 and 851 with post 713 and 808 possibly belonging at this level. Within the building was a spread of timber which was largely unnumbered except for 826.

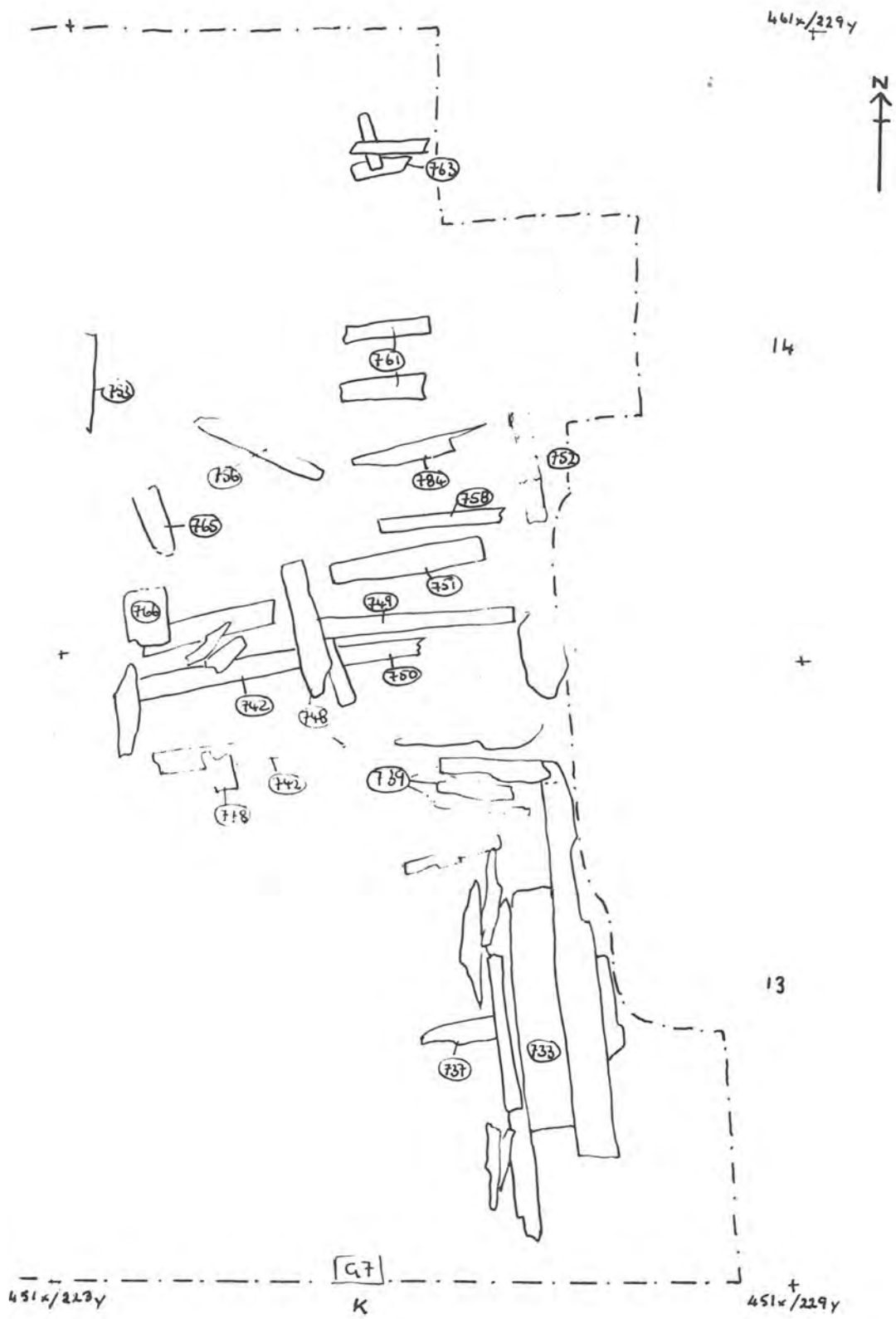
G8 was the lowest street level which can be connected to this phase. As usual there is a longitudinal mid-line division in the road. On the east side planks 732 and 743 rested upon joists 735=738, 729, 744 and 759. To the west planks 730, 740, 836, 754=841 rested on joists 755. In the north of the site some unnumbered timbers from drawing numbers 2021 and 2033 in rute K14 were tentatively added here.

G7 seems to be a repair or resurfacing of the road. There is the usual mid-line division. The southern part of the west side has no remains which may reflect the ownership of the properties to the west. This emptiness may be the result of G8 not needing resurfacing, or total removal of the G7 surface outside this property. On the west side planks 748, 765, 766, 778 and 753 lay on joists 742, whilst on the east side planks 733 rested on joists 737, 739, 750, 749, 751, 758 and 761. The few fragments 763 are tentatively added to this phase.

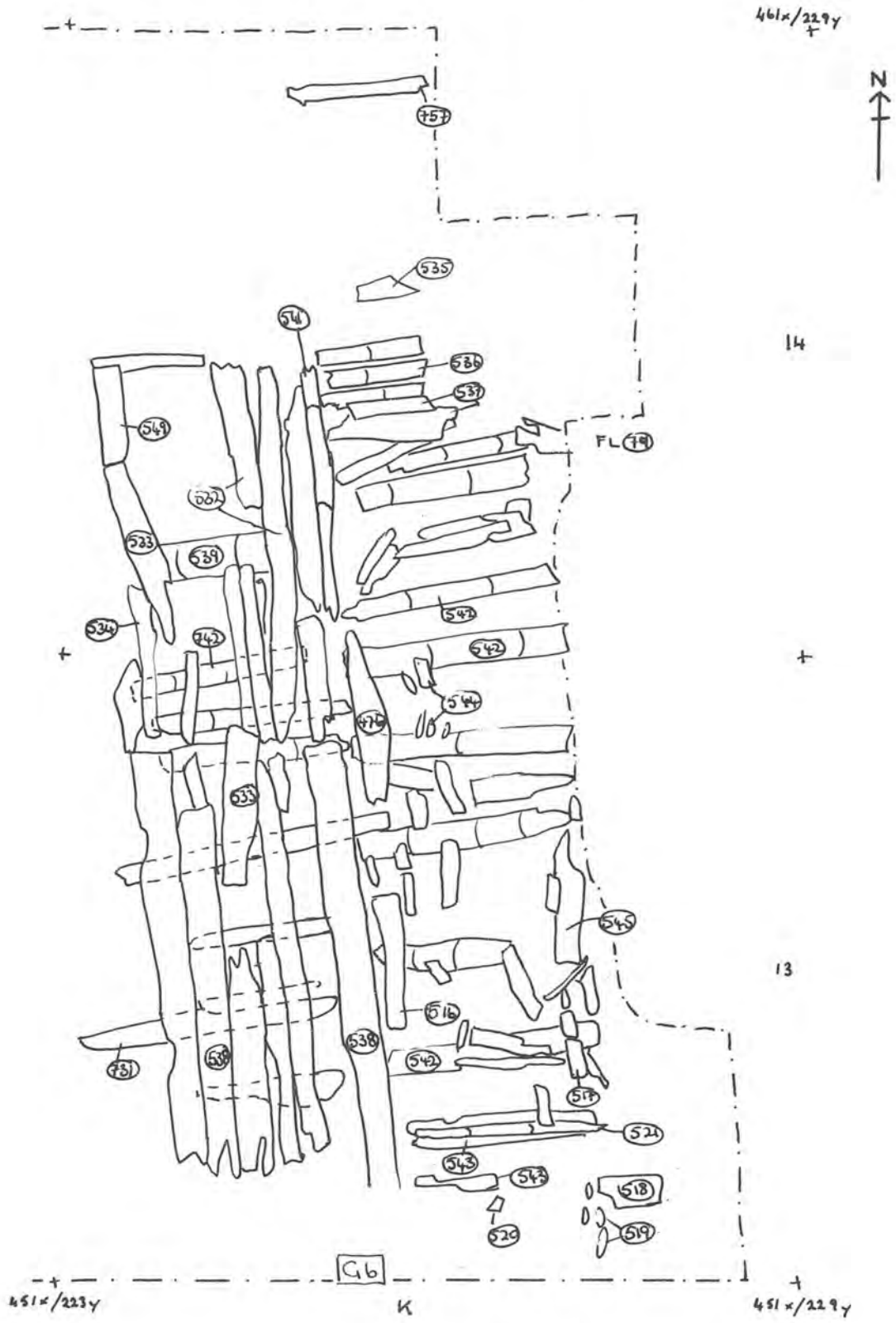
G6. There is a clear mid-line division at this level and possibly even a beam 541 marking the line of it. The western side is the better preserved. If one is looking for boundaries on either side of the road which may be reflected in the structure of the road, then there are two possibilities at this level. On the west side the junction of planks 532 and 538 coincides roughly with the south side of K9 and on the east side in the area of 536 and 537 the joists are much more closely packed and may be supporting the junction of passage and street. To the west planks 532, 533, 534 and 538 lay on joists 539=747, 731, 741 and 742; to the east planks 516, 517, 519, 535, 537, 544 and part of 476 lay upon joists 542, 543 and 536.



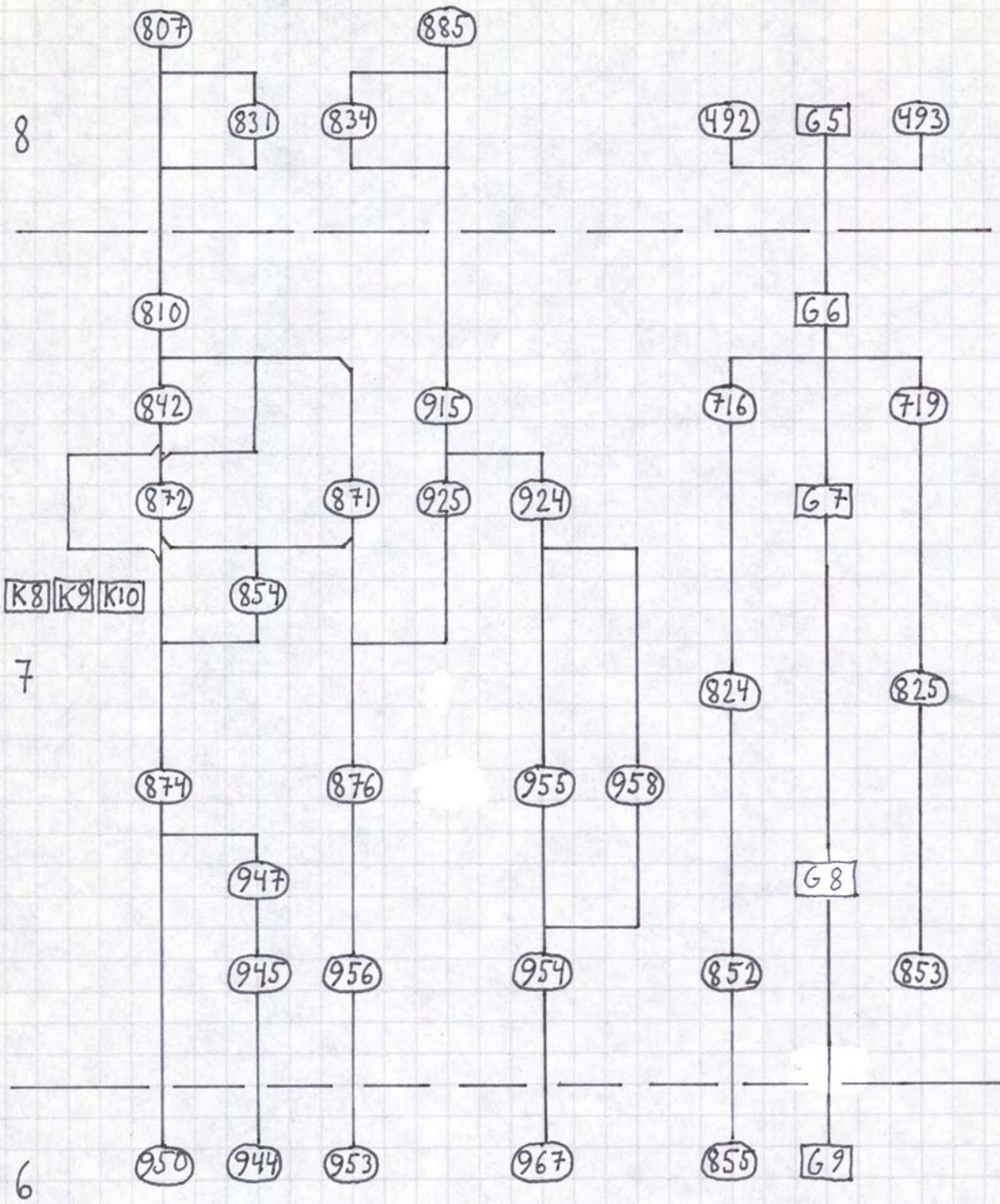
FF Phase 7 1:50



FF Phase 7/G7 1:50



FF Phase 7/G6 1:50



FF

Minimatrix, phase 7.

PHASE 8.General characteristic.

This phase is basically a repeat of the phase 7 pattern and K8 has probably even continued in use from that phase. The passage across the centre is however a little narrower. There are two levels of street G4 and G5 which go with this phase. The phase ended with a fire.

K6 is probably the building which will receive most attention at this level because it appears to have had open corners in the manner of the well known examples from Bergen. Unfortunately therefore, the situation is not 100% clear and there is a large degree of interpretation in the construction. However with these reservations it should be said that it is hard to interpret the evidence in any other way. The building is tentatively identified as a store e.g. for drying fish.

Description of the stratigraphy.

In common with the previous phases the majority of the layers at this level are described as varieties of trefflis. However two layers 794 and 832 are described as manure type layers. The phase is terminated by a fire layer and there is one layer/patch of burning appearing quite low down in the stratigraphy which is obviously not part of the destruction level. This layer, 800, lay in the area of K6.

Layers in phase 8:

297	667D	723	795	824
369	668D	781B	798	825
398	674	782	799	831
399	686	783	800D	832
492	687D	793B	802	834
493	692	794	807	873
				885

Description of the constructions.

K6. This is an open cornered building and because this is obviously going to be a much discussed building it is necessary

to describe it and the interpretation of it in some detail. There can be no doubt about the south wall, where the beams 681 and 682 link the three posts of the wall. The east wall by the street, 438=645, 441=653 and 654, falls neatly into line with the street levels G4 and G5 which are on a slightly different alignment to G3 in phase 9. The north wall is interpreted as following the line of posts 631, 711 and 774, and the spacing of these posts is closely paralleled in the south wall i.e. ca 1,7m apart. There is no definite trace of a west wall. We therefore have three rows of three posts which do not meet but if one measures the distance from centre of post to centre of post between the easternmost post of the north and south walls and the east wall then the distance is the same in both cases. The northern half of the building is a mirror image of the southern half. The building seems to have been built in sleppvegg for the central post of the east wall seems to have a U shaped notch in which lay the remains of the wall beam. Unfortunately the other posts were not examined in great detail to see if they had similar notches, but a perusal of the photographs turned up at least two others which possibly had a similar notch. These were post 650 (photo number, b/w film 16, exposure 5 in 1975) and post 438=645 (b/w 56 exposure 2 in 1975). The latter may however be the result of rot rather than deliberate shaping. The floor of the building was raised off the ground on posts but there was no evidence to show how the joists were jointed to the walls.

In detail the elements which go to make up K6 were as follows. The south wall beams 681 and 682 connected posts 649, 650 and one which did not receive a number. The west wall was made up of an unnumbered fragment of wall beam resting in the notch on post 441=653, posts 438=645 and 654 plus 608 which was a short length of beam which may have functioned as wall support. The north wall consisted of posts 631, 711 and 774. The burnt floor of the building was that part of the burnt planking 672 which lay to south of the north wall. No joists survived under the planking but there were two gaps in the planking where these are believed to have lain. In each of the gaps there was a row of posts which are believed to have been joist supports. The two rows were 677, 712 and 652 and 655, 656 and 714.

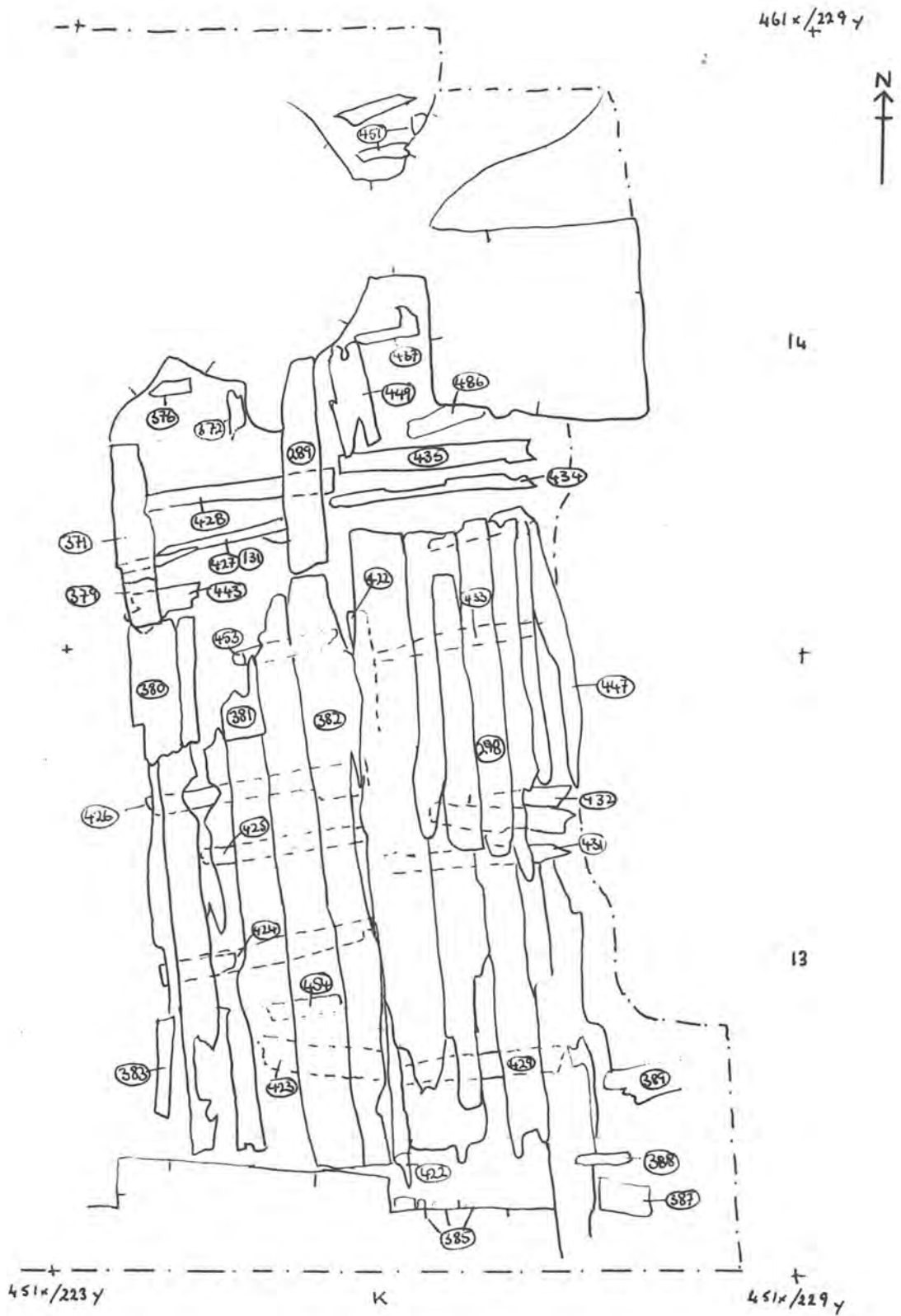
K7 was the passageway between K6 and K8, and consisted of that part of the burnt planks 672 which lay between the north wall line of the former and the south wall line of the latter. There were no obvious joists under the planking.

K8 is believed to have continued in use through phase 7 and to have burnt in the same fire which destroyed K6 and K7.

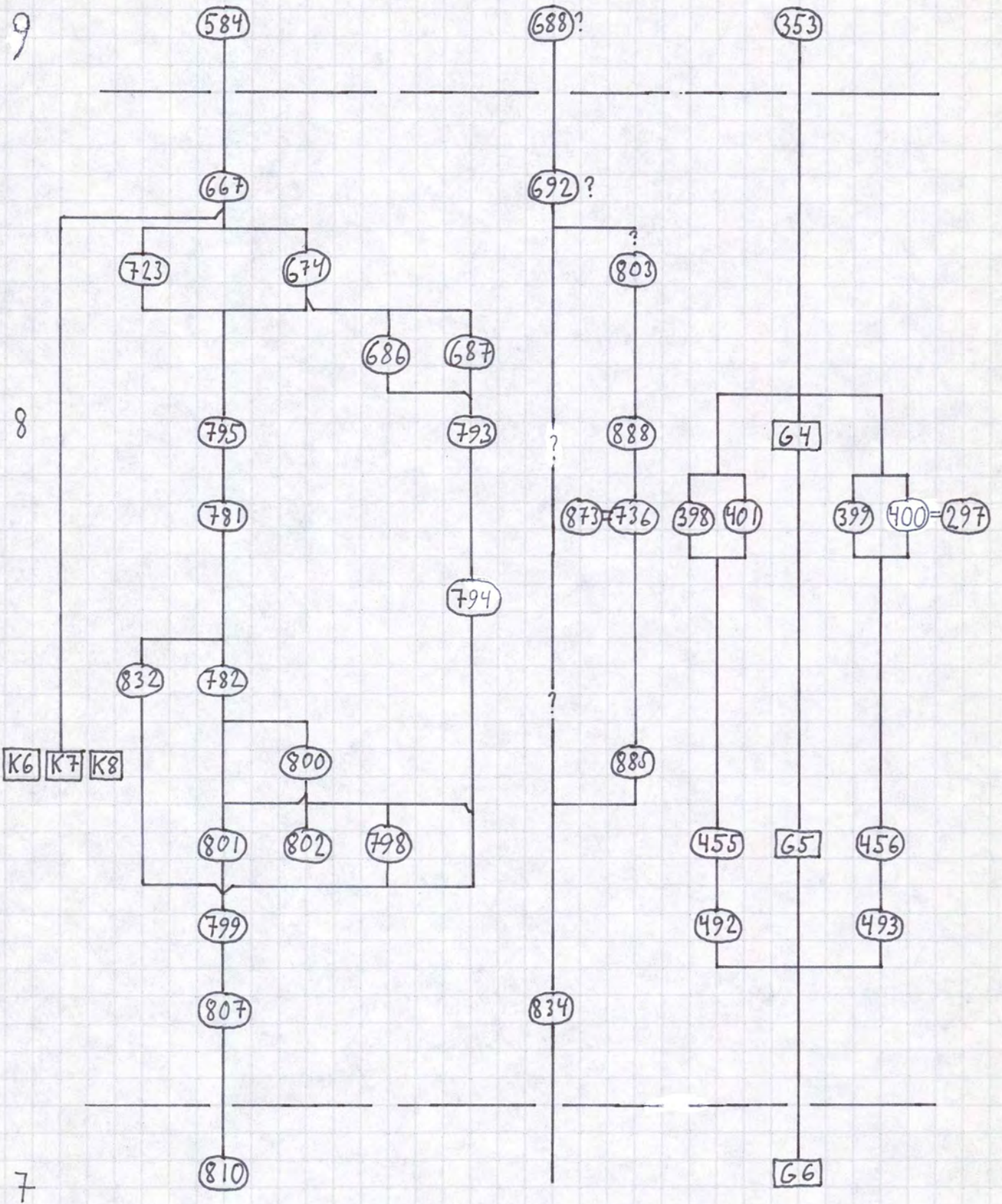
G5. As usual there is a mid-line division in the street and at this level there seems to be a change/division in the eastern part of the street where the FL passage can be expected to join it. In the western part of the street there are only a few scrappy remains of the north-south planking 467, 483, 484, part of 510, 511, 489, 549 and 509. The surfacing has for the most part been stripped away to reveal the underlying joists 465, 466, 480=515, 479, 485=510 and 540. In the eastern half of the road at the southern end scrappy plank remains 473 and parts of 447 and 476 lay on east-west joists 430 and 469. To the north of this where the FL passage is expected to join the street there is a set of east-west planking 433 and 448 overlying joists 447 and 471. To the north of this there may be another change though the evidence is difficult to interpret. The north-south beam 481 would seem to indicate east-west planks but 490=513 with the north-south plank 514 on top of it would seem to indicate the opposite. A possible explanation to be considered when FF and FK are correlated is that 481 might be the southern end of a beam marking the mid-line of the street in the manner seen at roughly corresponding levels in FK. If this is the case the former of the two alternatives is correct. It should be noted that in the on-site numbering at this level there has been confusion with 484 which appears in several forms. It has not been possible to resolve the problems with this context number.

G4. In this phase in the southern part of the street the mid-line is marked by a north-south beam under the plank surface. This is possibly a feature which is also present in the corresponding phase in FK and could possibly be yet another feature which binds the two sites together. On the western half of the road, north-south planks 380, 381, 382, 289, 371 and 379 lay upon joists 423, 424, 425=396, 426=395, 427, 428, 453 and 454. Under the planking in the area outside the passage K7 there are a number

of fragments 378, 377, 408, 374, 391, 443 and 404 which may in fact be part of an earlier surface. This would of course mean that the G4 plan shows a repair or it is possible that the road has been deliberately built up at just this point for access to K7. To the east the north-south planks 298, 447 and 449 lay on joists 429, 431, 432, 433, 434 and 435. The change seen in the eastern part of the road in the previous level i.e. where the FL passage meets the road, can be noted again this time indicated by the absence of planks to the north. The fragments 451 are tentatively placed here.



FF Phase 8/G4 1:50



7

FF

Minimatrix, phase 8.

PHASE 9.General description.

The interpretation of this phase must be the same as for phase 8, with buildings on either side of a central passage, K4. The southern building K3 appears to probably have been a lafted construction and not with the open corners as seen in the building which occupied this area in the previous phase. To the south of K3 the posts 846, 224=64 and 67=647 form the northern wall alignment of the FE building. To the north K5 was another building on posts but there were not enough remains to suggest the type of superstructure. Under both the passage and K5 was a spread of wood 591 and 601 which may represent an earlier phase. It is difficult to make much sense out of this wood. At this level there is a large number of loom weights spread across the site.

To the east the road had a slightly different alignment to that seen in the previous phase. The street line has moved slightly westwards to cover the former facade line.

This phase was terminated by a fire.

Stratigraphic description.

As with the previous levels the descriptions of the layers are mostly treflis, though there is a greater usage of the terms "sandy" and "humusblandet". This could however reflect the change of site leader rather than a real change in the nature of the layers. There is a spread of loom weights at this level and 673 was a small concentration of antler chips.

Layers in phase 9:

98D	316	352	571	595	683
161D	317	353	573	606	684B
162	319	555	575	607	688
163D	321	557	577	611	689
165D	323	562B	578	661	690
223	341	565	580	665	693
313	342	566B	581D	666D	694
314	344	567	583D	673A	
315	349	570	584	676	

Description of the constructions.

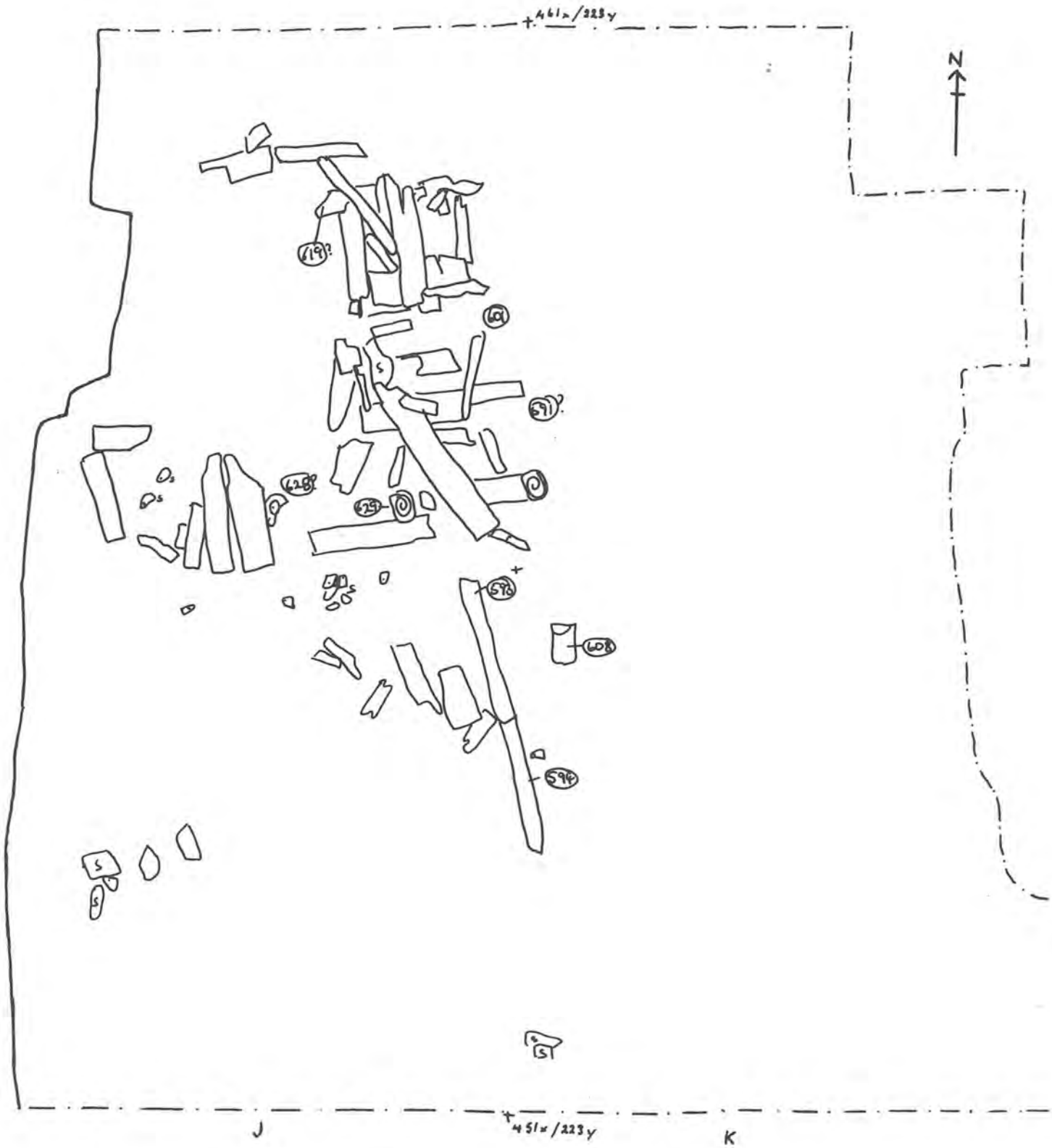
K3 was a small presumably lafted building in the area previously occupied by K6. It does not seem to have had the open corners of K6, but in common with that building has a floor which was raised off the ground on posts. Only parts of the north and south wall beams survive and the line of the east wall is shown by a row of posts. The south wall was one of the many beams which were numbered 69 and rested on posts 66 and 642. The posts of the east wall were 25=635, 26=638A, 27=640, 28=641 and 29=644. 222 is interpreted as the remains of the north wall beam and 216=633 a wall post. The west wall seems to have lain outside the site. Posts 219=671, 636, 678, 648 and 651 appear to fit at this level and are interpreted as joist supports. The floor planks which are heavily burnt were not given a number.

K4 was the passageway between K3 and K5. It consisted of part of the set of north-south burnt planks 556.

K5 was a building with possibly two phases, the earlier being numbered K5A. The upper phase consists of the remaining planks not included in K4, east wall posts 140, 241=624 and 140=626, north wall posts 237=657 and possibly 238=660 and 705 as well as 239=706 and 240=622 which are interpreted as joist supports. Beneath this construction is some earlier wood 601 and 591 which is associated with an east-west row of posts 627, 628 and 629. It is suggested that this row of posts may represent an earlier south wall alignment of K5 which was replaced and moved slightly further northwards. It is impossible to get all the timbers associated with K5 and K5A to form one building, however the whole complex of timbers etc. fits together with the one phase to the south.

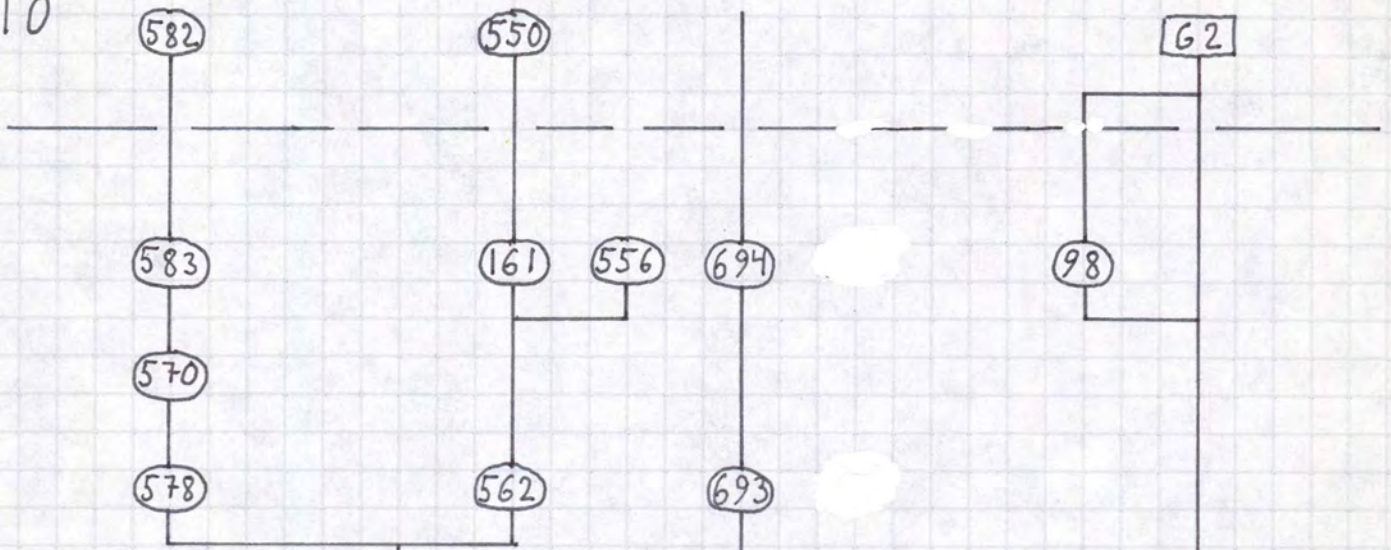
G3. Yet again there is a mid-line division in the street but this time it is not possible to trace any east-west division. On both sides there were north-south planks on east-west joists. The planks on the west side were numbered 112=293, 294=311, 92, 36, 41 and 42 and lay upon joists 186, 78, 54, 288, 198, 197, 281, 364, 365, 363 and 384. To the east the planks 287, 309, 312 and 308 lay upon joists 304, 305, 306, 299, 290, 291, 227, 228 and 386. The fragments 339 are tentatively added to the northern part of the plan. At this level the road has moved

slightly westwards and covers the facade line of the previous phase.

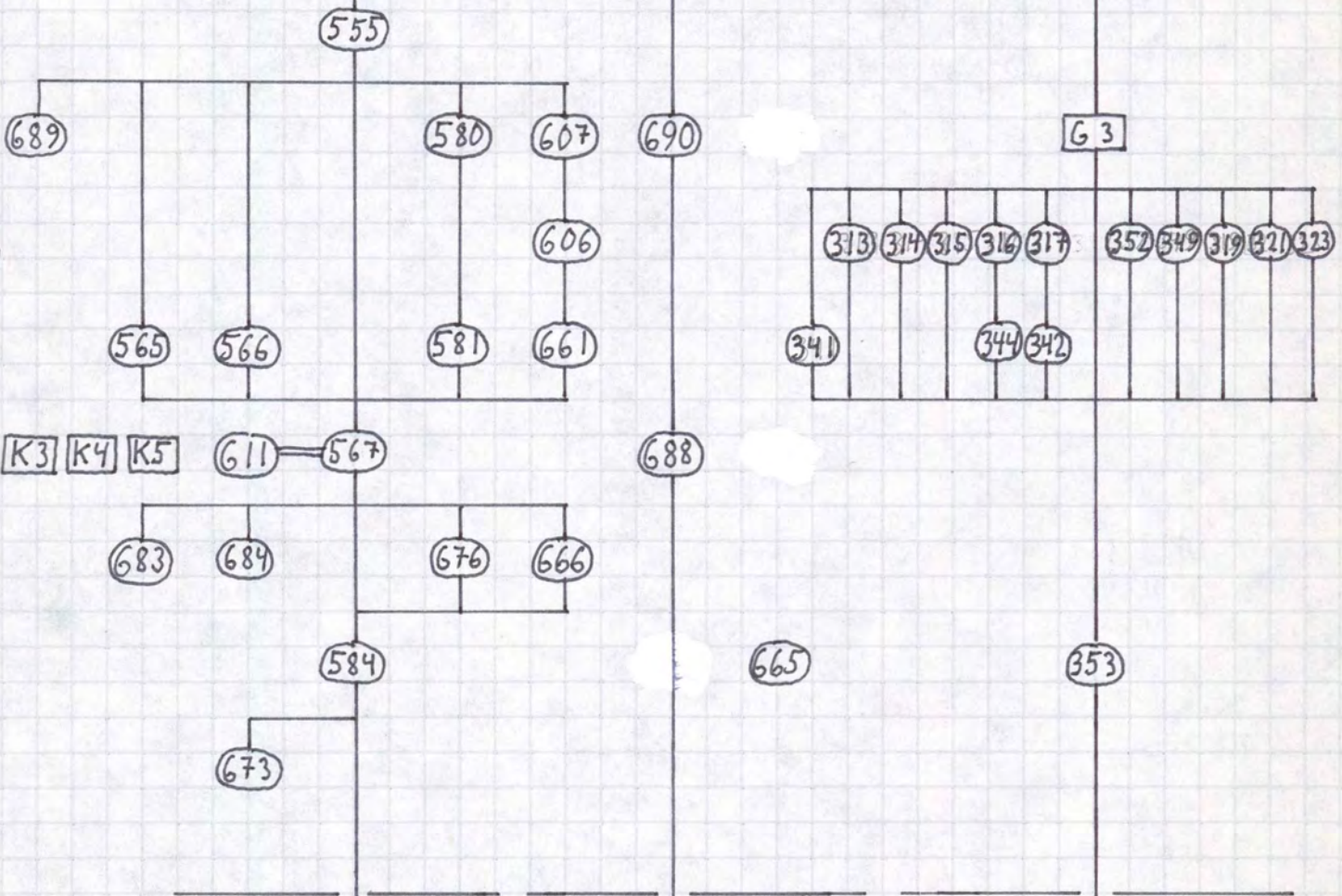


FF Sub phase in phase 9 1:50

10



9



8

FF

Minimatrix, phase 9.

PHASE 10.General characteristic.

This is the uppermost level with preserved wooden remains. These remains are so fragmentary that it is impossible to interpret them with any certainty and so all the wood in the area to the west of the road was given one construction number K2. Within K3 there is an east-west row of posts along the line of the north wall of K3 but this is not really enough evidence to say that the previous pattern repeats itself.

The road appears to have moved slightly westwards again but it is not 100% clear where the west edge is. It is tempting to place it along the line of the beam marked 30 but there is some wood to the west of it which could possibly be the remains of planking. G1 and G2 both have the mid-line division.

Stratigraphic description.

Unlike the previous three phases, this one was not terminated by a fire and without a clearly marked end, it is not clear whether these remains represent a long time span or not. Here we are then up against the problem of the late medieval period, does it exist or does it not. In the case of FF it looks as though the answer should be that it is a bit of both. We have seen at an earlier stage that the deposits sloped down to the west. In the road there was very little above G1 and here it is not impossible that the late medieval period has been removed by machine. To the west however we have a stratigraphic sequence which continues up in time with phase 11 which is possibly a post medieval phase, possibly of 17th century date. Here then there must be deposits laid down in the late medieval period unless the whole area was scraped clear of deposits in the, say, 16th century. The implication of this is that the buildings which are represented by K2 may have existed for an extremely long period of time.

Yet again the layers are described in terms of humus, sand and treflis. Sand plays a greater part in the descriptions but one wonders whether the layers are truly sandier or whether they have lost a greater percentage of their organic content by decay and therefore appear sandier, 155 contained a concentration of

"bone and horn offcuts".

Layers in phase 10:

104	117	123	170	257
107	118	124	171	258
113	119	125	206	270
114	120	155A	208	271
115	121	157	213	273
116	122	158	214	277

Description of the constructions.

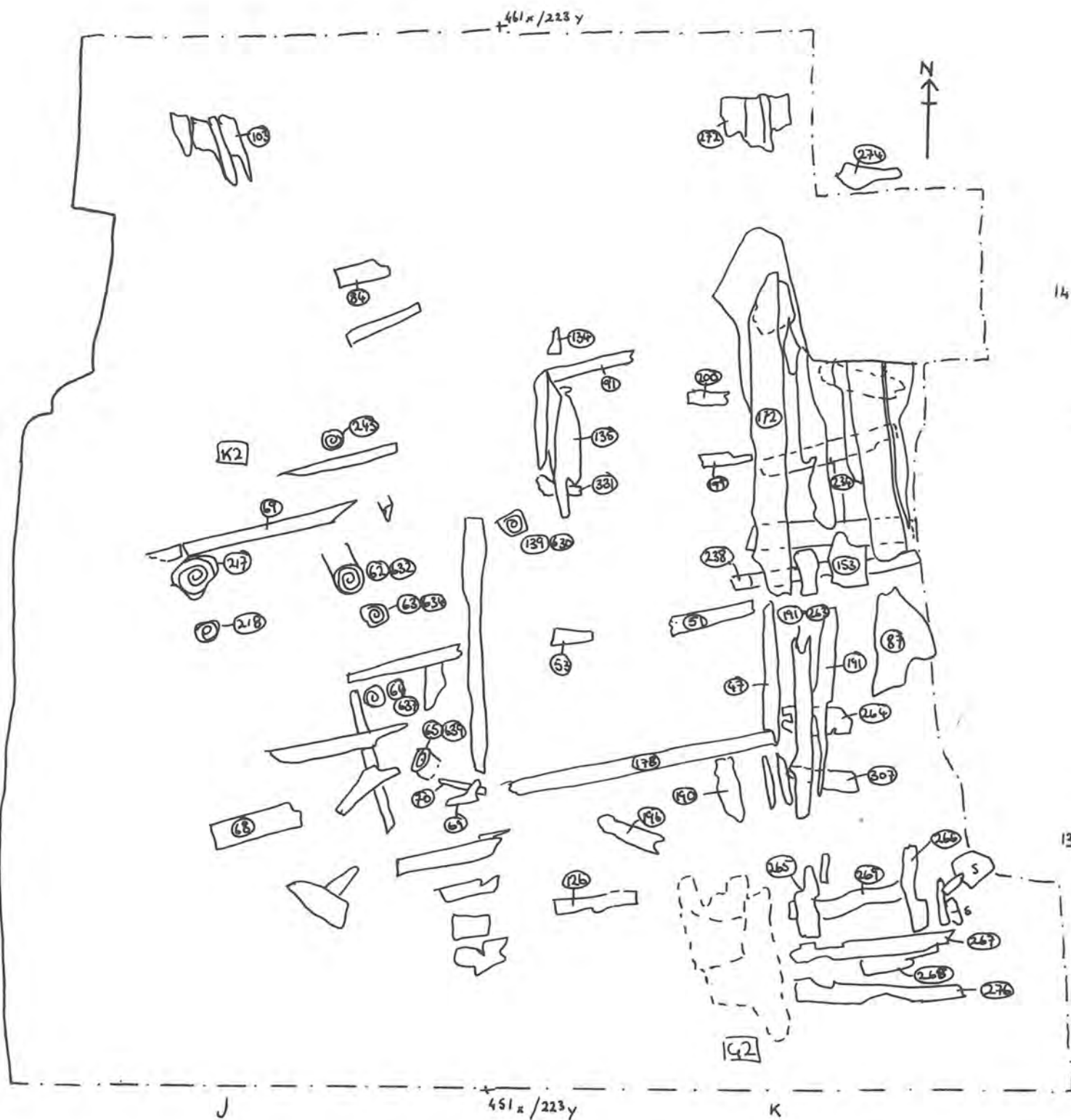
K2 consists of a number of both north-south and east-west orientated planks or beams in a poor state of preservation. These were numbered 68, 70, 103 and 69 (N.B. one beam of 69 formed part of the building K3 in the previous phase). In addition there were a number of posts which do not form any definite pattern though there is one possible line of three. The posts were numbered as follows, 65=639, 243, 244=629, 63=634, 64=637, 218, 217, 62=632 and 139=630. The last three form a possible east-west line.

G2. This phase of street again has a mid-line division with north-south planks resting on east-west joists on either side. The eastern half is much better preserved than the west where the plank surface seems to have been removed in antiquity. On the west side of the road the planks were numbered 47, 135, 136 and 137 and the joists 53, 178, 51, 53, 126, 91, 331, 199, 200. To the east the planks were numbered 172, 173, 191=263, 265, 266 and 153 and the joists 276, 268, 267, 269, 264, 233, 234, 231, 226, 225, 236 and 307. Planks 87 were interpreted as belonging to this level and 272 and 274 in the north were tentatively placed in this phase.

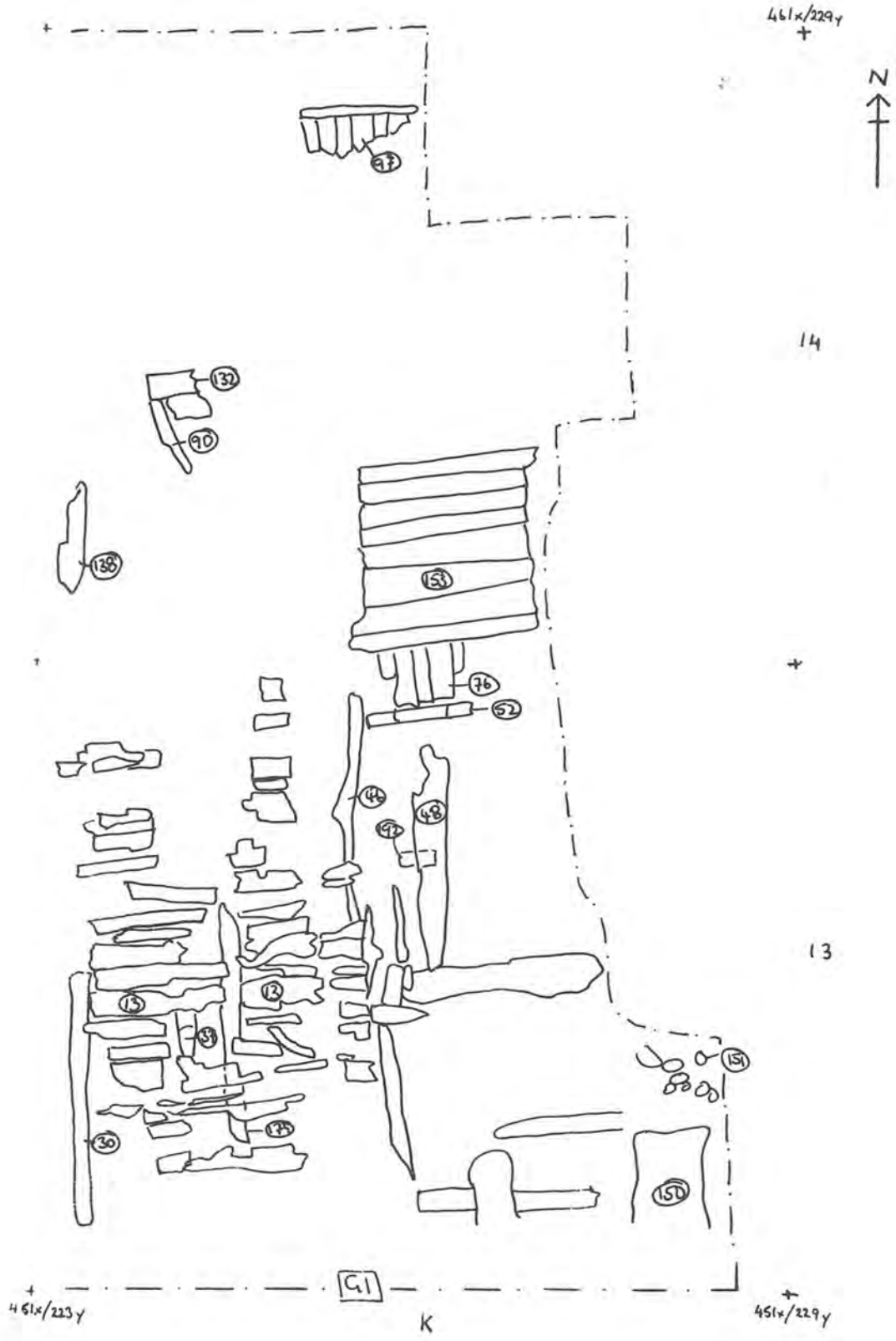
G1. This was the uppermost phase of the street, and again there is the mid-line division. This time there is, however, a slight change with the planking of each side running in opposite directions, at least in part of the street. The eastern side has planking running north-south in the southern part and east-

west in the north. This presumably reflects the property divisions to the east of the road.

On the west side of the road planks 13 and 132 lay on joists 30, 179, 46, 37, 45, 138 and 90. To the east of the road 153 was the set of east-west planks and 76 the north-south planks resting on joist 52. 48, 49, 50, 58 and 181 are interpreted as the southern continuation of planks 76 which thereby makes 99 and 180 joists. In the far north planks 97 were tentatively added to this level. There was no clear stratigraphic link between these planks and the rest of the site so they can be said to have been placed by "feel" and assessment of the lower levels of planking in this area and their relationship to the rest of the site. If they are correctly placed then there is second change in direction of planking at G1. This would make 153 possibly the extension of the passage into the street.

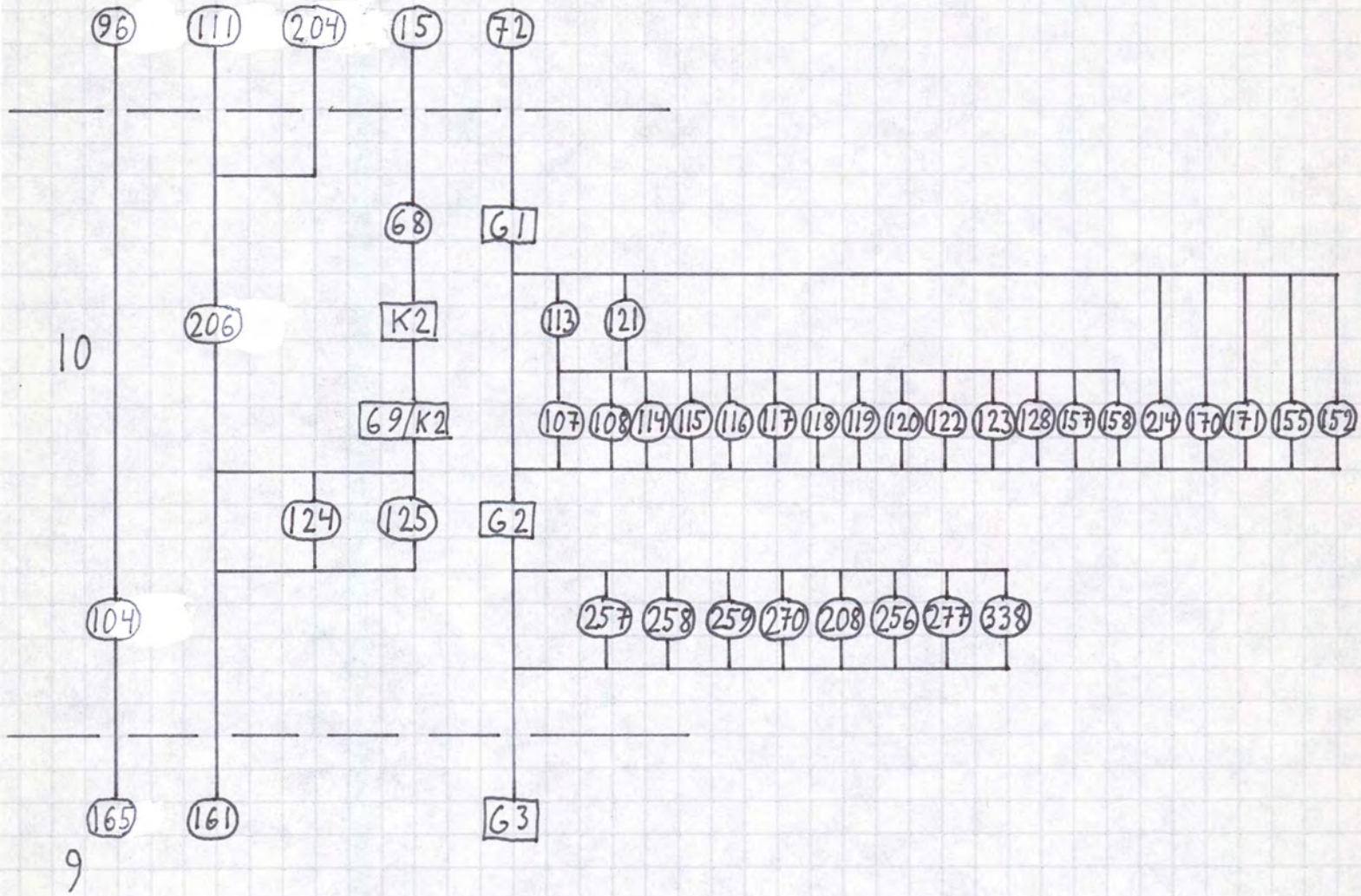


FF Phase 10 1:50



FF Phase 10/G1 1:50

11



FF

Minimatrix, phase 10.

PHASE 11.General characteristic.

In this phase there were only remains on the western part of the site, the eastern part having been disturbed by machine. The only construction was the stone setting labeled K1 which is interpreted as the foundation of a fireplace in the south-east corner of a building. The eastern edge of K1 is therefore also interpreted as showing the facade line of the building against the street. Although there is no paved street level at phase 11 the street is interpreted as having extended up to the edge of K1. This of course means that the road has been considerably widened between phases 10 and 11.

Stratigraphic description.

Apart from the clay layer 15 which bound the stones together the layers of interest were 203 and 205. These were burnt layers associated with K1 but whether these represent destruction or use is difficult to say.

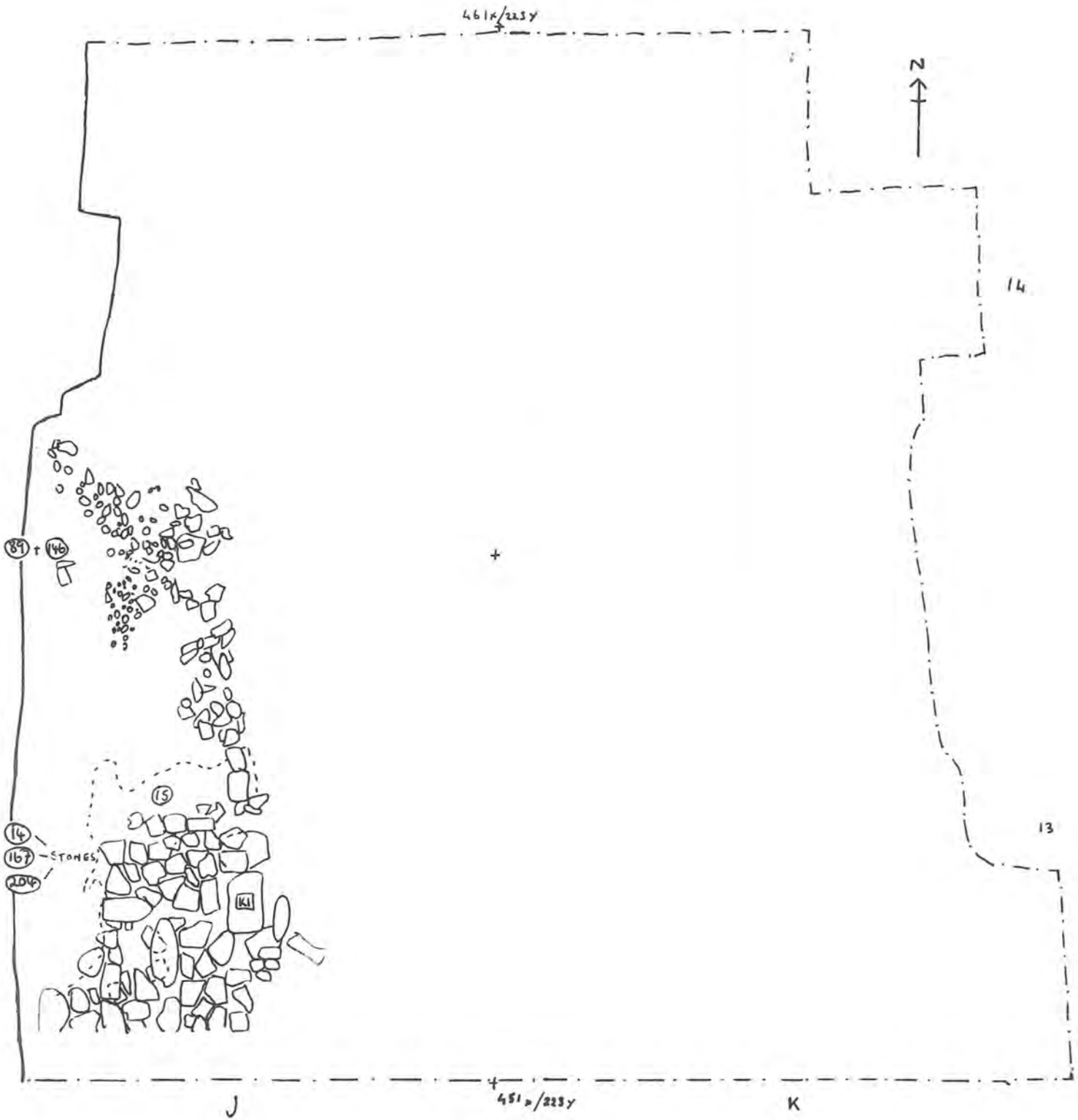
Layers in phase 11.

15	110	168	552
89	111	203D assoc. w.K1	599
102	146	205D assoc. w.K1	

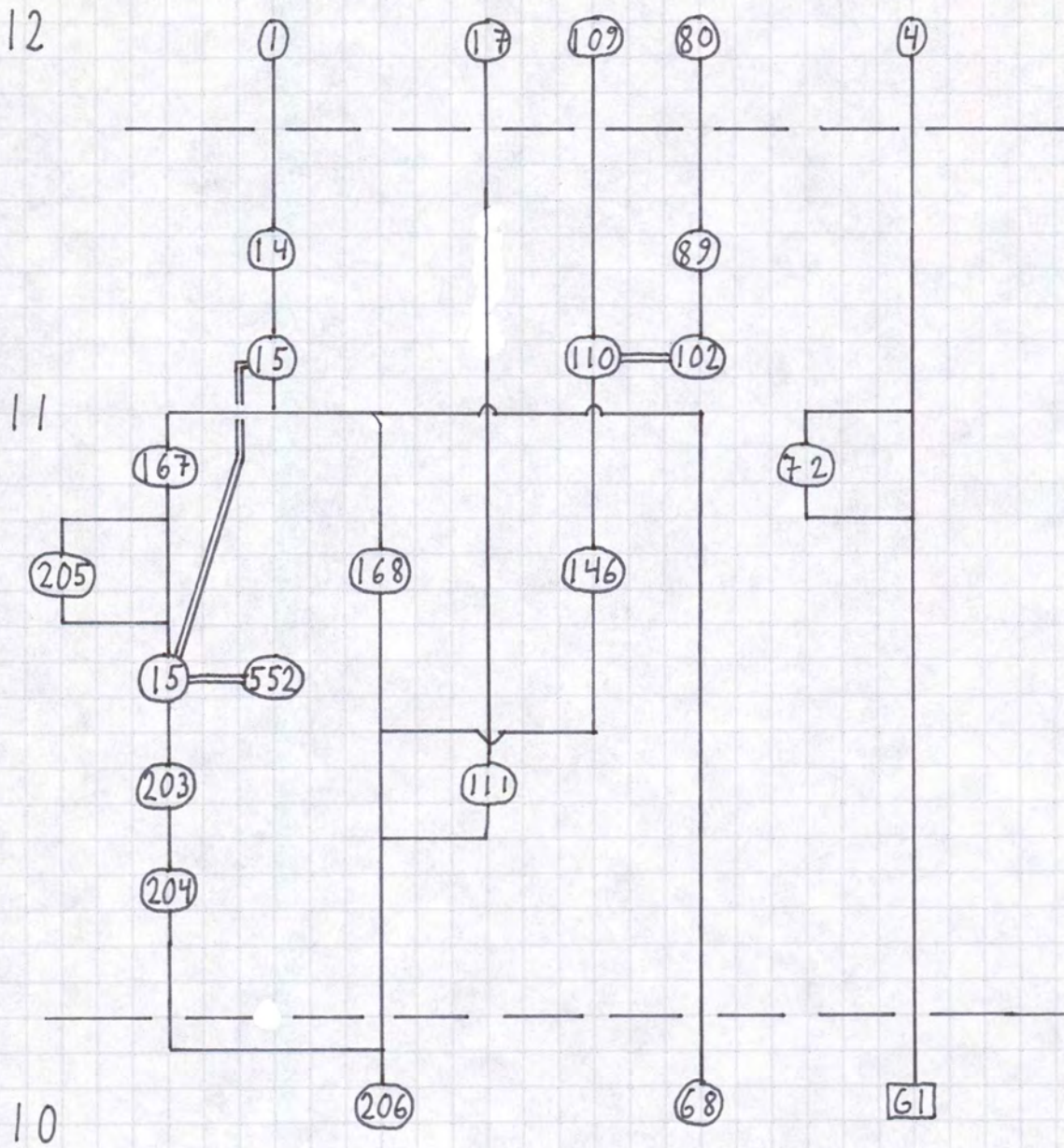
Description of the construction.

K1 was a stone feature consisting of 14, 167, 204 and 89 and 146. In the south K1 is cut by an intrusion which is assumed to be a late cellar foundation trench, but despite this it is possible to suggest that the stones form a rough rectangle with a spread of smaller stones running to the north. On the east edge there was a line of stones which looks as though it may have been a sill support. In the southern part of the construction, i.e. 14, 167 and 204, the stones are set in blue clay. Further north 89 and 146 are not bonded and the stones are smaller and do not appear to be deliberately set. These stones have the appearance of having collapsed out from the southern part. Because

of the rectangularity of the feature and its placement in what may be the south-east corner, K1 is interpreted as a foundation for a corner fireplace. This interpretation is possibly supported by the two layers with burning mentioned earlier.



FF Phase 11 1:50



FF

Minimatrix, phase II.

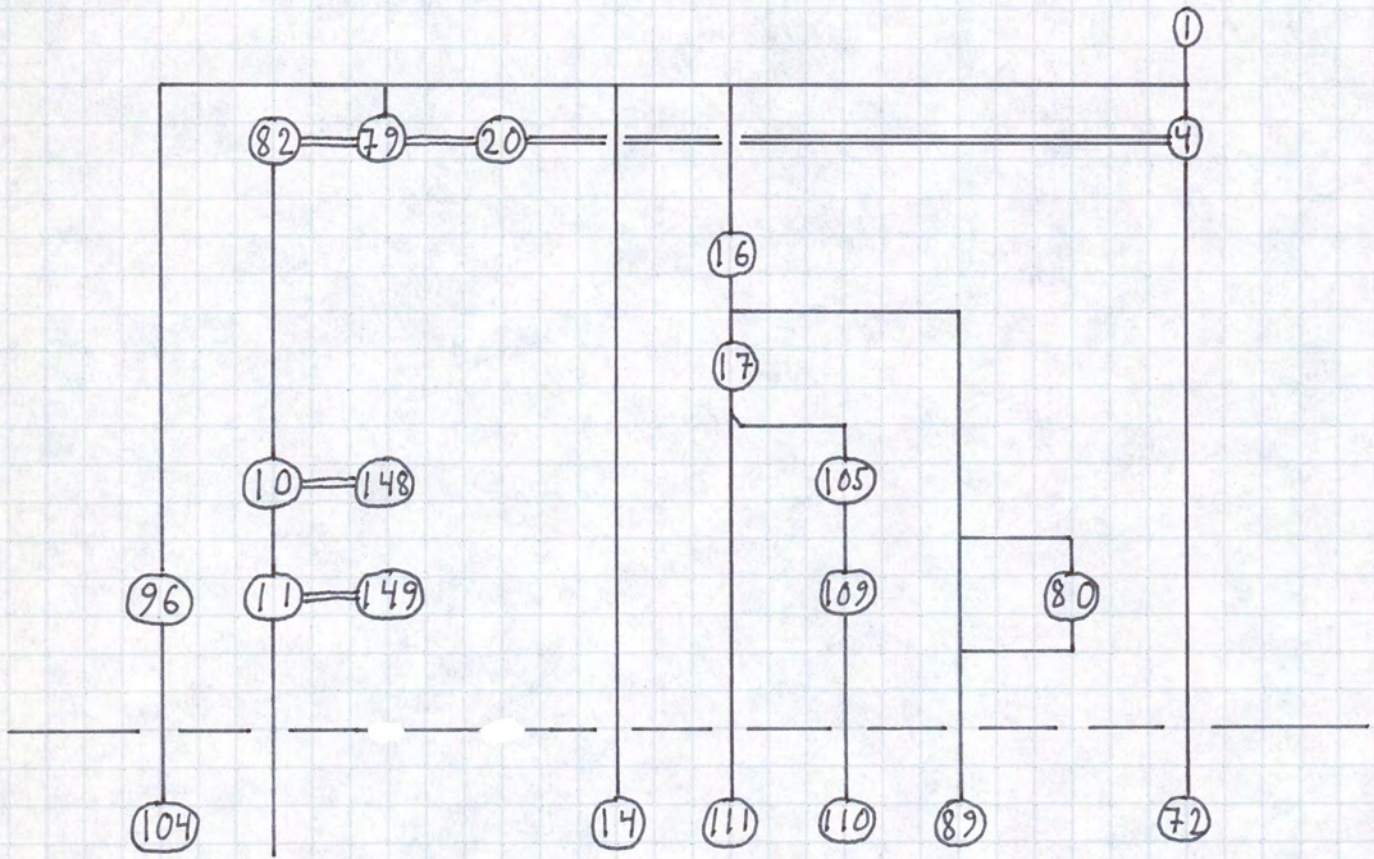
PHASE 12.General characteristic.

Phase 11 marked the last phase with horizontally stratified features and K12 is therefore a collection of all the intrusive features. It therefore covers a wide span of time with preliminary dating from the 17th century to the early 20th century. All these features can be dated relative to each other from the finds and they are therefore presented in probable chronological order.

- 1) A wooden lined cellar to the east of the site and which was excavated as part of FH. On FF the construction itself and the layers it contained were numbered as follows, 7, 8, 9, 19, 85, 86, 88, 100, 101, 106, 147, 154, 209, 211, 212, 459, 460, 867.
- 2) A wooden lined cess pit to the north of the wood lined cellar. Numbered 23 and 95.
- 3) A cellar or possibly cellars to the west of the site the foundation trench of which formed the western site boundary. It consists of the numbers, 6, 18, 80, 553, 558, 559, 560, 561, 574, 669, 670, 680, 939, 1090, 1099, 1125, 1127 and 1180.
- 4) A circular stone lined manhole with pipe trenches radiating from it. 3, 5, 159, 766, 877, 1236.
- 5) Stone foundation at the south of the site. This may have been the foundations for the safe in Kjøpmannsgaten 24. Context numbers 60, 1179 and 3008.

In addition to the above there were one or two bits of layer which belong here, they were, 17, 20, 79 and 82.

12



11

FF

Minimatrix, phase 12.

Glossary of Norwegian words used in the text.

Flytegulv	A floor whose joists are not jointed into the wall but rest directly upon the earth.
Laft	A type of joint (see Long, 1975, 11 note 35).
Moldbenk	Wall bench.
Omfar	A round of logs in a lafted building.
Rute	Grid square.
Slepvegg	A type of walling in which horizontal logs are shaped to slot between posts with vertical grooves (see Long, 1975, 13).
Sval	A roofed gallery or pentice.
Treflis	Literally: wood chips. This word has been anglicised in the day books etc. to mean a layer containing wood chips. As such it has become a very imprecise description of a layer.

Bibliography.

- Long, C.D. 1975 Excavations in the Medieval City of Trondheim. Medieval Archaeology. XIX 1975.

F=funn

Lagnr.	Fasenr.	Lagnr.	Fasenr.	Lagnr.	Fasenr.	Lagnr.	Fasenr.
1		41=185?	9	81	9	121	10
2		42=185?	9	82	12	122	10
3	12	43=179	10	83	10	123	10
4	12	44=179	10	84	10	124	10
5	12	45	10	85	12	125	10
6	12	46	10	86	12	126	10
7=19=147	12	47	10	87	10+12*ikke11	127=311,39?	9
8	12	48	10	88	12	128	10
9	12	49	10	89	12	129 F i 69	9/10?
10=149	11/12	50	10	90	10	130	10?
11=148	11/12	51	10	91	10	131=428	8
12	12	52	10	92=133	9	132	10
13	10	53	10	93=282?	9	133=92	9
14	11	54	9	94 F i 92	9?	134	10
15=552	11	55=178	10	95	12	135	10
16	12	56=178	10	96	11/12	136	10
17	12	57=178	10	97	10?	137	10
18	12	58	10	98	9	138	10
19=7=147	12	59	10	99	10	139=630	10
20	12	60	12	100	12	140=626	9
21	11/12	61=556	9	101	12	141=627	9
22=FL8	?	62=632	10	102=110	11	142=540	8
23	12	63=634	10	103	10	143=532	7
24=153	10	64=637	10	104	10	144=427	8
25=635	9	65=639	10	105	12	145	8
26=638	9	66=643	9	106	12	146	12
27=640	9	67=647	9	107	10	147=7=19	12
28=641	9	68	10	108	10	148=11	11/12
29=644	9	69A	10	109	12	149=10	11/12
30	10	69B	9	110=102	11	150	10
31=177,311,295	9	70 F i 69	10?	111	11	151	10
32=177,311	9	71	9	112=293	9	152	9/10
33=177,311	9	72	10-12	113	10	153	10
34=177,311	9	73	9/10	114	10	154	12
35=294	9	74	10	115	10	155	10?
36	9	75	9/10	116	10	156	12
37=38	10	76	10	117	10	157	10
38=37	10	77	10	118	10	158	10
39=127?	9	78=293,78,318	8+9	119	10	159	12?
40=179	10	79	12	120	10	160	-

Lagnr.	Fasnr.	Lagnr.	Fasnr.	Lagnr.	Fasnr.	Lagnr.	Fasnr.
161	9	201=228	9	241=624	9	281	9
162	9	202=625	8	242=621	8	282=93?	9
163	9	203	11	243	10	283=364	9
164	9	204	11	244=629	9	284	9
165	9	205	11	245 F i 69	9	285=373	8
166	9	206	10	246	9?	286=363	9
167	11	207 F i 206	10?	247 F i 179	10	287=232	9
168	11	208	10	248 F i 46	10	288	9
169	11	209	12	249 F i 187,191	10	289	8
170	10	210	9	250 F i 151	10	290	9
171	10	211	12	251 F i 178	10	291	9
172	10	212	12	252 F i 195	9	292	9
173	10	213	10	253 F	10	293=112	9
174	9/10	214	10	254 F i 24	10	294=311	9
175	9/10	215	10?	255 F i 199	10	295=31	9
176	10	216=633	9	256	10	296	-
177= ⁶ 31, ³² 33, ⁹ _{34,311}		217	10	257	10	297	8
178=55,56,57	10	218	10	258	10	298	8
179=40,43,44	10	219=671	9	259	10	299	9
180	10?	220	8	260 F i 99	10	300	9
181	10?	221	9	261	9?	301	9
182=265	10	222	9	262	9?	302	9
183	10?	223	9	263=191	10	303	9
184	10?	224=646	9	264	10	304	9
185=311	9	225	10	265=182	10	305	9
186	9	226	10	266	10	306	9
187	10	227	9	267	10	307	10
188=310,311	8	228=201	9	268	10	308	9
189=310	8	229	10	269	10	309	9
190	10	230	10	270	10	310=188,189	8
191=263	10	231	10	271	10	311= ^{177,127,185,9} _(188,193)	9
192	10	232=287	9	272	10	312	9
193=311	9	233	10	273=271	10	313	9
194=191a	10	234	10	274	10	314	9
195	9	235	9	275	12?	315	9
196	10	236	10	276	10	316	9
197	9	237=657	9	277	10	317	9
198	9	238=660	9	278	9	318=382	8
199	10	239=706	9	279=331	10	319	9
200	10	240=622	9	280	9	320 F	10

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
321	9	361 F i 349	9	401	8	441=653	8
322 F i 317	9	362	8?	402 F i 401	8	442	8
323	9	363=286	9	403 F i 399	8	443	8
324 F i 323	9	364=283	9	404 F i 399	8	444	8
325 F i 323	9	365	9	405 F i 399	8	445	8
326 F i 297	8	366	8	406 F i 399	8	446	8
327 F i 323	9	367	8	407=422	8	447	8
328 F i 316	9	368 F i 353	9	408	8	448	8
329 F i 321	9	369A F i 339	9	409	8	449	8
330 F i 313	9	369B	8	410 F i 400	8	450	8
331=279	10	370	?	411 F i 399	8	451	8
332	9	371	8	412 F i 399	8	452 F i 398	8
333	9	372	8	413 F i 399	8	453	8
334	9	373=285	8	414 F i 399	8	454	8
335	9	374	8	415 F i 399	8	455	8
336	9	375	8	416 F i 399	8	456	8
337 F i 338	9	376	8	417 F i 400	8	457 F i 455	8
338	9	377	8	418 F i 400	8	458 F i 455	8
339	9	378	8	419	8	459 F i 212	12
340	8	379	8	420 F i 401	8	460 F i 212	12
341	9	380	8	421 F i 401	8	461 F i 456	8
342	9	381	8	422=407	8	462 F i 456	8
343 F i 342	9	382=318	8	423	8	463 F i 455	8
344	9	383	8	424	8	464 F i 455	8
345 F i 244	9	384	9	425=396	8	465	8
346	8	385	8	426=395	8	466	8
347 F i 321	9	386	9	427=144	8	467	8
348 F i 349	9	387=FH150	8?	428=131	8	468	8
349	9	388=FH298	8?	429	8	469	8
350 F i 349	9	389=FH298	8?	430	8	470=542	7
351 F i 321	9	390	8	431	8	471	8
352	9	391	8	432	8	472=542	7
353	9	392	8	433	8	473	8
354 F i 353	9	393=453	8	434	8	474	8
355 F i 353	9	394	?	435	8	475	8
356 F i 321	9	395=426	8	436	8	476	7+8
357 F i 353	9	396=425	8	437	8	477	8
358 F i 349	9	397	8	438=645	8	478	8
359 F i 353	9	398	8	439	9	479	8
360 F i 321	9	399	8	440	8	480=515	8
		400	8				

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
481	8	521	7	561	12	601	9
482	8	522 F i 493	8	562	9	602 F	9
483	8	523 F i 493	8	563 F	9	603 F i 565?	9
484	8	524 F i 493	8	564 F i 555	9	604 F i 607	9
485=510	8	525 F i 493	8	565	9	605 F i 565	9
486 F i 455	8	526 F i 493	8	566	9	606	9
487 F i 455	8	527 F i 493	8	567	9	607	9
488 F i 455	8	528 F i 493	8	568	9	608	8
489	8	529 F i 493	8	569	9	609 F i 565	9
490=513	8	530 F i 492	8	570	9	610 F i 565	9
491	?	531 F i 492	8	571	9	611	9
492	8	532=143	7	572	12?	612	8
493	8	533	7	573	9?	613 F i 565	9
494 F i 492	8	534	7	574	12	614 F i 565	9
495 F i 492	8	535	7	575	9?	615 F i 565	9
496 F i 493	8	536	7	576 F i 555	9	616 F i 584	9
497 F i 493	8	537	7	577	9?	617 F i 584	9
498 F i 492	8	538	7	578	9	618 F i 565	9
499 F i 493	8	539=747	7	579	?	619	9?
500 F i 492	8	540=142	8	580	9	620	-
501 F i 492	8	541	8	581	9	621=242	8
502 F i 492	8	542=472,470	7	582	9/10	622=240	9
503 F i 493	8	543	7	583	9	623	8
504 F i 493	8	544	7	584	9	624=241	9
505 F i 493	8	545	7	585 F i 555	9	625=202	8
506 F i 493	8	546	7	586 F i 555	9	626=140	9
507 F i 493	8	547	8	587 F i 555	9	627=141	9?
508 F i 493	8	548	8	588 F i 555	9	628	9?
509	8	549	7	589 F	9	629=244	9?
510=485,510	8	550 F	?	590	-	630=139	10
511	8	551 F i 161	9	591	9	631	8
512	8	552=15	11	592	-	632=62	10
513=490	8	553	12	593	9	633=216	9
514	8	554 F i 161	9	594	9	634=63	10
515=480	8	555	9	595	9	635=25	9
516	7	556	9	596 F i 584	9	636	9
517	7	557	9	597	8	637=64	10
518	7?	558	12	598	8	638 A=26	9
519	7	559	12	599	11	638 B	7
520	7	560	12	600	8	639=65	10
						640=27	9

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
641=28	9	681	8	721 F i 716	7	761	7
642	9	682	8	722	7	762	6?
643=66	9	683	9	723	8	763	7
644=29	9	684	9	724 F i 672	8	764	6?
645=438	8	685	-	725 F i 672	8	765	7
646=224	9	686	8	726 F i 672	8	766	7
647=67	9	687	8	727=FH433	8	767 F i 723	8
648	9	688	9?	728	6?	768	7
649	8	689	9	729	7	769	6
650	8	690	9?	730	7	770 F i 723	8
651	9	691	8?	731	7	771 F i 723	8
652	8	692	8	732	7	772	6?
653=441	8	693	9?	733	7	773	7/8
654	8	694	9?	734	7	774	8
655	8	695	7/8	735=738	7	775	6
656	8	696	7/8	736	8?	776	7
657=237	9	697	7/8	737	7	777	7
658	8	698	7/8	738=735	7	778	7
659	7	699	7/8	739	7	779 F i 723	8
660=238	9	700	7/8	740	7	780 F i 723	8
661	9	701	7/8	741	7	781	8
662 F i 661	9	702	7/8	742	7	782	8
663	-	703	7/8	743 F i 672	8	783	8
664	9	704	7/8	744	7	784	7
665	9	705	9	745	7	785	6?
666	9	706=239	9	746	8	786	6
667	8	707	8	747=539	7	787	8
668	8	708	7	748	7	788	8
669	12	709	8	749	7	789 F i 723	8
670	12	710	8	750	7	790 F i 723	8
671=219	9	711	8	751	7	791 F i 723	8
672	8	712	7/8	752	6?	792 F i 723	8
673	9	713=845?	7/8	753	7	793	8
674	8	714	7/8	754=841	7	794	8
675	9?	715	7	755	7	795	8
676	9	716	7	756	7	796	7
677	8	717	8	757	7	797	7
678	9	718	8	758	7	798	8
679	?	719	7	759	7	799	8
680	12	720	7	760	?	800	8

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
801	8	841	7	881	5	921	4/5
802	8	842	7	882	6	922	6?
803	9?	843	6?	883	6	923	6
804	7	844	6	884	6	924	7
805	7	845=713?	7/8	885	8?	925	7
806	7?	846	9	886	6	926	12
807	8	847	7/8	887	6	927	6
808	?	848	7/8	888	9?	928	6-8
809	6	849	7/8	889	5	929=897	6
810	7	850	7/8	890=2034	4/5	930	6
811	7	851	7/8	891	4-6	931	6
812	7	852	7	892	6	932	6
813	7	853	7	893	6	933	6
814	7	854	7	894	6	934=980	6
815	7	855	6	895	6	935	6
816	7	856	6	896	7	936	6
817	7	857	6	897=929	6	937	6
818	6?	858	6	898	6	938	6
819=FL190?	6?	859	6	899	6	939	12
820	8	860	6	900	6	940	6
821	7/8	861	6	901	6	941	6
822	7	862	7	902	5	942	6
823	5/8	863	6	903	5	943=965	5
824	8	864	flere	904	5	944	6
825	8	865	6	905	5	945	7
826	7	866	12	906	7/8	946	6
827	flere	867	12	907	7/8	947	7
828	flere	868	6	908	7/8	948	5
829=FL215 FK496	5?	869	6	909	6	949	6
830	4/5	870	6	910	4/5	950	6
831	8	871	7	911	6	951	6
832	8	872	7	912	6	952	6
833	7	873=FE909	8?	913 F i 905	5	953	6
834	8	874	7	914	6	954	7
835	6	875	?	915	7	955	7
836	7	876	7	916	6	956	7
837	6	877	12	917	5	957	6
838	5/6?	878	6	918	5	958	7
839	6	879	6	919	5	959	6
840	6	880=949	6	920	5	960	6

<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
961	6	1001	6?	1041=1028?	4	1081	6
962	6	1002	4	1042	4	1082	4/5
963	6	1003	6	1043	6	1083	5
964	6	1004	5	1044	4	1084	5
965=943	5	1005=999	6	1045	4	1085	4
966	6?	1006	5	1046	4	1086	4
967	6?	1007	4/5	1047	4	1087	5
968	6	1008	4/5	1048	4	1088	5
969	4	1009	5	1049	4	1089=2003,2004	4
970	6	1010	5	1050	4	1090	12
971	5	1011	5	1051	4	1091	6
972	5	1012	5	1052	4	1092	4
973	4/5	1013	5	1053	4	1093	4
974	7	1014	5	1054	4	1094	4
975	6	1015	5	1055	4	1095	4
976	6	1016	5	1056=1177	4	1096=2011	4
977	3-6	1017	5	1057	4	1097=2004	4
978	5	1018	?	1058	4	1098=2005	4
979	5	1019	5	1059=592	4	1099	12?
980=934	6	1020	5	1060	4	1100	4
981	6	1021	5	1061	4	1101	4
982	6	1022	5	1062	4	1102	4
983	5	1023	5	1063	4	1103	4
984	5	1024	5	1064	4	1104	4/5
985	5	1025	5	1065	4	1105	4/5
986	5	1026	5	1066	4	1106	5
987	6	1027	5	1067	4	1107	4
988	6	1028=1041	5	1068	4	1108	4/5
989	6	1029	5	1069	4	1109	4/5
990	6	1030	5	1070	4	1110	4/5
991	6	1031	5	1071	4	1111	4
992	5	1032	5	1072	?	1112	4
993	4/5	1033	5	1073	5	1113	4
994	4	1034	4	1074	5	1114	4/5
995	4/5	1035	4	1075	5	1115	4
996	6?	1036	4	1076	5	1116	4
997	6	1037	4	1077	5?	1117	7?
998	5	1038	5	1078	12	1118	4/5
999=1005	6	1039	5	1079	5	1119	4/5
1000	6	1040=FK641-645	5	1080	5	1120	4/5

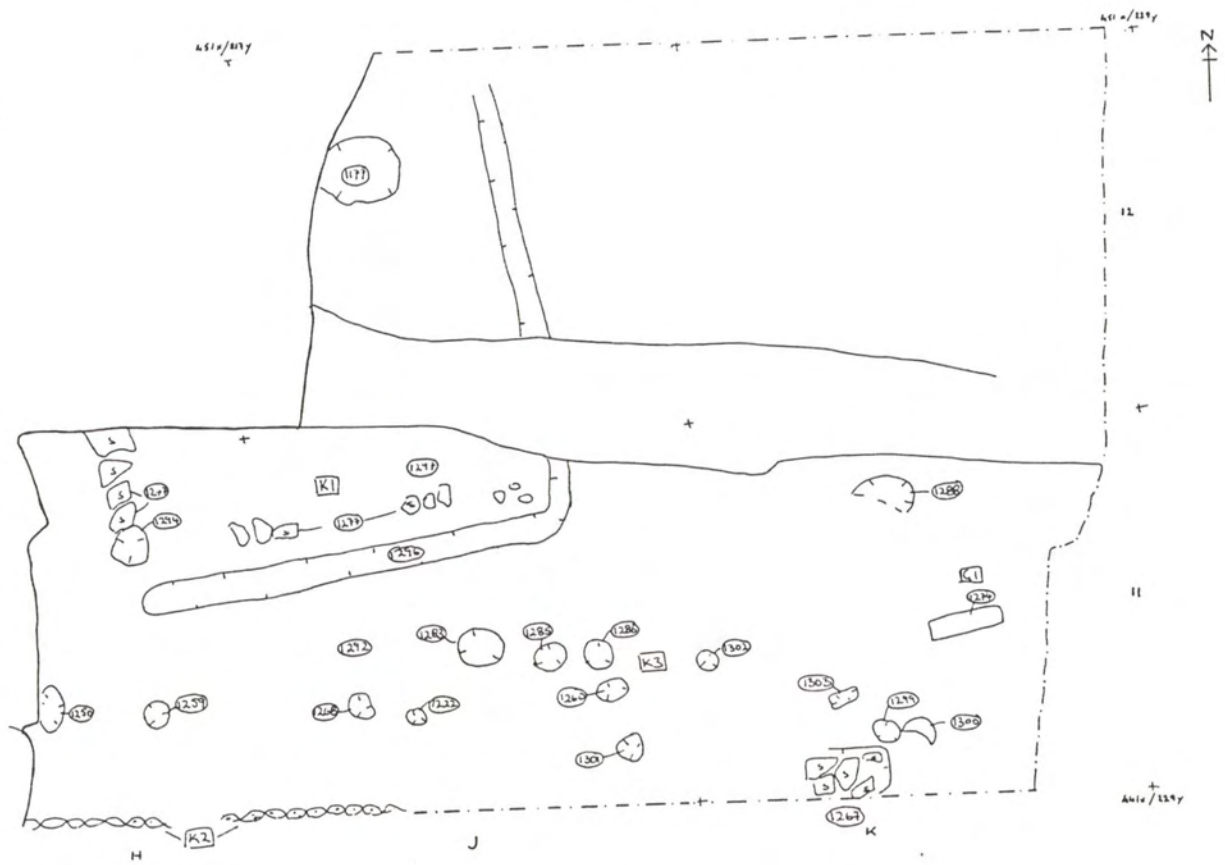
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1121	4/5	1161	4	1201	4	1241	4
1122	4/5	1162	4	1202	4	1242	4
1123	4/5	1163	4	1203	4	1243	4
1124	4/5	1164	5	1204	4	1244	4
1125	12?	1165	5	1205	4	1245	4
1126	4/5	1166	4	1206	4	1246	4
1127	12	1167	4	1207	4	1247	4
1128	4	1168	4	1208	4	1248=2053	3?
1129	4	1169	4	1209=1192	4	1249	4
1130	6	1170	4	1210	4	1250=FM876	2/3
1131=2000	4	1171	4	1211	4	1251	4
1132=2002	4	1172=1177	4	1212	4	1252	4
1133	3	1173	4	1213	4	1253=2021	6
1134	4	1174=1182	4	1214	4	1254=2037	3
1135	4	1175	5	1215	6?	1255	4
1136	4	1176=1056,1172	4	1216	4	1256	4
1137	6	1177=1056,1172	4	1217	4	1257	4
1138	6	1178=1027	5	1218	4	1258	4
1139=2001	4	1179	12	1219	4	1259	4
1140	4	1180	12?	1220	4	1260	4
1141	4/5	1181=1235	6	1221	4	1261	4
1142	4/5	1182=1174	4	1222	4	1262	4
1143	4/5	1183	12	1223	4	1263	4
1144	3	1184	4	1224	4?	1264	4
1145=2007	4	1185	4	1225	4?	1265	4
1146=2008	4	1186	4	1226	4	1266	4
1147=2006	4	1187	4	1227	4	1267	4
1148	4	1188	4	1228	4	1268	-
1149	4	1189	4	1229=FM839	4?	1269	2/3
1150	4	1190	4	1230=2031	4?	1270	2/3
1151	4	1191	4	1231	4	1271	4
1152	4	1192=1209	4	1232 = ^{2007?} _(FM816)	4	1272	4
1153	4	1193	4	1233	4	1273	4
1154=1018	4/5	1194	4	1234 = ^{FM788} _(1182?)	4	1274	4
1155	4?	1195	4	1235=1181	6	1275	4
1156	4/5	1196	4	1236=877=5	12	1276	4
1157=2017,2018	4/5	1197	4	1237	4	1277	4
1158	4	1198	4	1238	4	1278	4
1159	4	1199	4	1239	4	1279	4
1160	4	1200	4	1240	4	1280	2/3

<u>Lagnr.</u>	<u>Fasenr.</u>	<u>Lagnr.</u>	<u>Fasenr.</u>	<u>Lagnr.</u>	<u>Fasenr.</u>	<u>Lagnr.</u>	<u>Fasenr.</u>
1281	3/4	1321	1/2	1361		1401	
1282	3/4	1322	2/3	1362		1402	
1283	4	1323	2/3	1363		1403	
1284	4	1324	1	1364		1404	
1285	4	1325	2/3	1365		1405	
1286	4	1326	1	1366		1406	
1287	2/3	1327=1228	4	1367		1407	
1288=FK791	2/3	1328	1	1368		1408	
1289=FK826	4	1329	1	1369		1409	
1290	4	1330	1	1370		1410	
1291	4	1331	1	1371		1411	
1292	2/3	1332=1308	2/3	1372		1412	
1293	4	1333		1373		1413	
1294	2/3	1334	forts. nr. 2000	1374		1414	
1295	2/3	1335		1375		1415	
1296	2/3	1336		1376		1416	
1297	2/3	1337		1377		1417	
1298	2/3	1338		1378		1418	
1299	2/3	1339		1379		1419	
1300	1/2	1340		1380		1420	
1301	1/2	1341		1381		1421	
1302	1/2	1342		1382		1422	
1303	1/2	1343		1383		1423	
1304	1	1344		1384		1424	
1305	1/2	1345		1385		1425	
1306	1/2	1346		1386		1426	
1307	1/2	1347		1387		1427	
1308=FK826 1332	2/3	1348		1388		1428	
1309	2/3	1349		1389		1429	
1310	2/3	1350		1390		1430	
1311A	2/3	1351		1391		1431	
1311B	2/3	1352		1392		1432	
1312	2/3	1352		1392		1432	
1313	2/3	1353		1393		1433	
1314	2/3	1354		1394		1434	
1315	2/3	1355		1395		1435	
1316	1/2	1356		1396		1436	
1317=FK825	1/2	1357		1397		1437	
1318=FK906	1/2	1358		1398		1438	
1319	1/2	1359		1399		1439	
1320	1/2	1360		1400		1440	

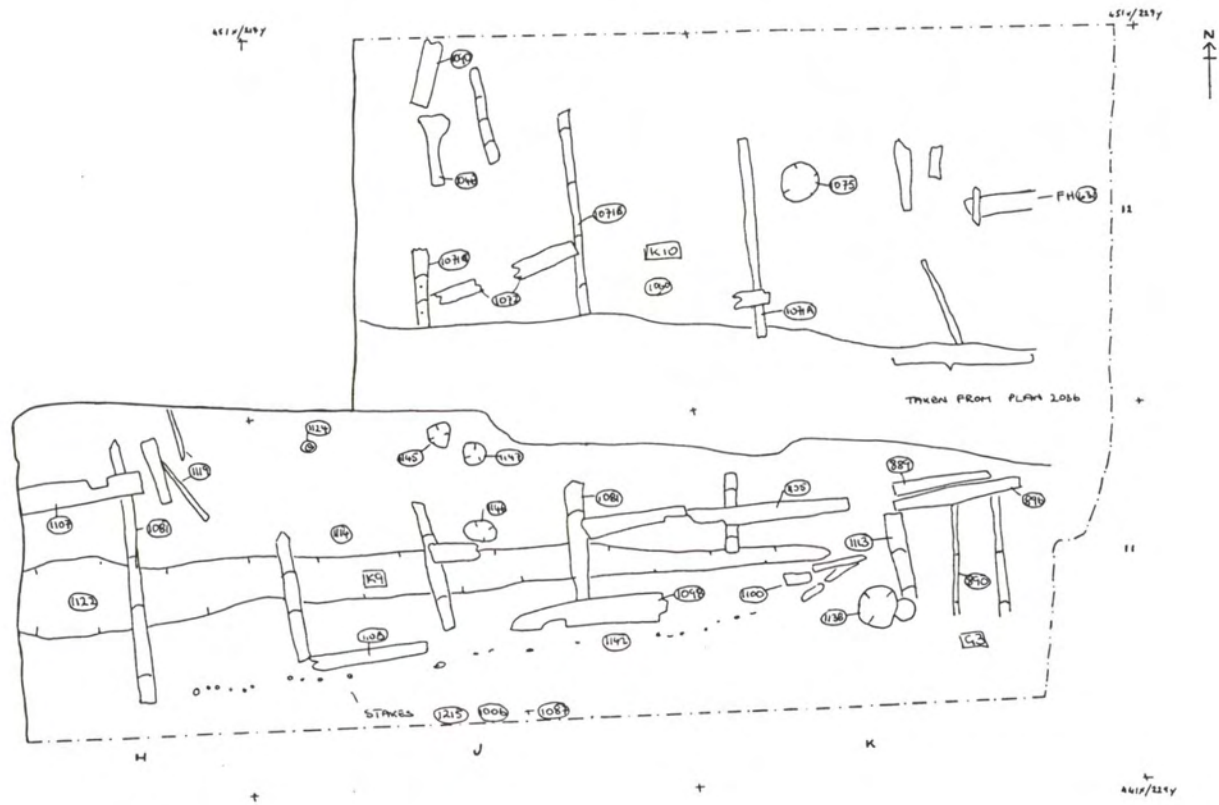
<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>	<u>Lagnr.</u>	<u>Fasnr.</u>
1921		1961		2001=1139	4	2041	3
1922		1962		2002=1132	4	2042	3
1923		1963		2003=1089	4	2043	3
1924		1964		2004=1097	4	2044	3
1925		1965		2005=1098	4	2045	4
1926		1966		2006=1147	4	2046=2033	3
1927		1967		2007=1145	4	2047	3?
1928		1968		2008 = ¹¹⁴⁶ 2078	4	2048	3
1929		1969		2009 =2019	3	2049	3
1930		1970		2010 =2015	4	2050	6
1931		1971		2011 = ¹⁰⁹⁶ 2062	4	2051 = ²⁰⁷⁹ 3010	3
1932		1972		2012	4	2052	3
1933		1973		2013 =1141?	4	2053=1248	3?
1934		1974		2014	4	2054	3
1935		1975		2015 =2010	4	2055	3
1936		1976		2016	4	2056	3
1937		1977		2017 =1157	4/5	2057	3?
1938		1978		2018 =1157	4/5	2058	3
1939		1979		2019 =2009	3	2059	3?
1940		1980		2020 =2007	4	2060	3
1941		1981		2021 =1253	6	2061	3
1942		1982		2022	4	2062=2011	4
1943		1983		2023	6	2063	3
1944		1984		2024	3	2064	3
1945		1985		2025	4	2065	3
1946		1986		2026	4	2066	3
1947		1987		2027	4/5	2067	5?
1948		1988		2028	3	2068=2084	3
1949		1989		2029 =1089	3?	2069	3
1950		1990		2030	4	2070	3
1951		1991		2031 =?=1230	4	2071	4/5
1952		1992		2032	3	2072	4/5
1953		1993		2033 =2046	3	2073	3
1954		1994		2034 =890	4/5	2074	3
1955		1995		2035	3	2075	3
1956		1996		2036	4	2076	3
1957		1997		2037 =1254	3	2077	4
1958		1998		2038	3	2078=2008	4
1959		1999		2039	3	2079 = ²⁰⁵¹ 3010	3
1960		2000=1131	4	2040	3	2080	3

<u>Lagnr.</u>	<u>Fasenr.</u>	<u>Lagnr.</u>	<u>Fasenr.</u>	<u>Lagnr.</u>	<u>Fasenr.</u>	<u>Lagnr.</u>	<u>Fasenr.</u>
2081	3	2121	3	2161	1	2201	
2082	3	2122	3	2162	2	2202	
2083	3	2123	1	2163	?	2203	
2084=2068	3	2124	3	2164	1	2204	
2085	4/5	2125	1/3	2165	1	2205	
2086	3	2126	1/3	2166	1	2206	
2087	3	2127	1/3	2167	?	2207	
2088	3	2128	1/3	2168		2208	
2089	3	2129	1/3	2169	forts nr. 3000	2209	
2090	3	2130	1/3	2170		2210	
2091	3	2131	1/3	2171		2211	
2092	3	2132	1/3	2172		2212	
2093	3	2133	1/3	2173		2213	
2094	3	2134	1/3	2174		2214	
2095	4	2135	1/3	2175		2215	
2096	3	2136	1/3	2176		2216	
2097	3	2137	1/3	2177		2217	
2098	3	2138	1/3	2178		2218	
2099	3	2139	1/3	2179		2219	
2100	3	2140	1/3	2180		2220	
2101	3	2141	1/3	2181		2221	
2102	3	2142	1/3	2182		2222	
2103	4	2143	1/3	2183		2223	
2104	4	2144	1/3	2184		2224	
2105	3	2145	1/3	2185		2225	
2106	3	2146	1/3	2186		2226	
2107	3	2147	1/3	2187		2227	
2108	3	2148	2	2188		2228	
2109	3	2149	2	2189		2229	
2110	3	2150	2	2190		2230	
2111	3	2151	1	2191		2231	
2112	3	2152	2	2192		2232	
2113	3	2153	2	2193		2233	
2114	3	2154	?	2194		2234	
2115	2	2155	2	2195		2235	
2116	3	2156	2	2196		2236	
2117	3	2157	2	2197		2237	
2118	3	2158	2	2198		2238	
2119	3	2159	1	2199		2239	
2120	3	2160	2	2200		2240	

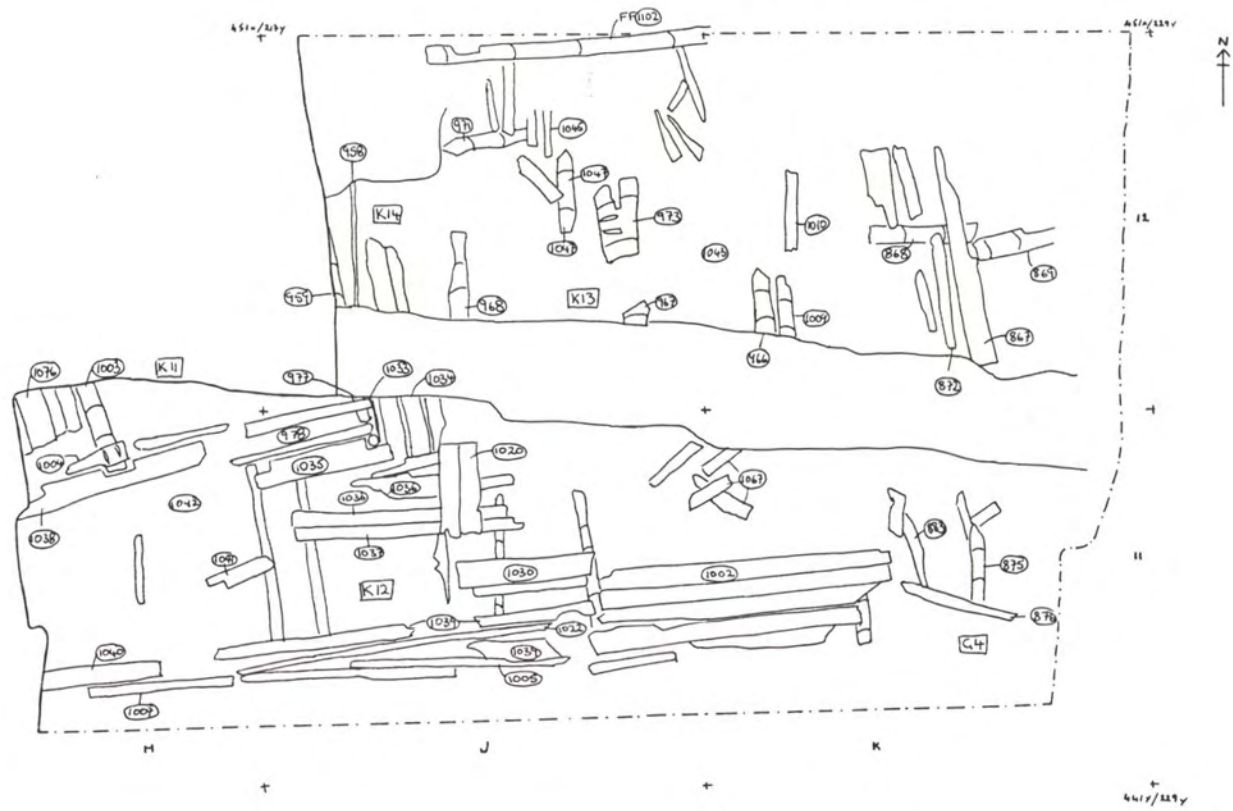
<u>Lagnr.</u>	<u>Fasenr.</u>
3000	2/3?
3001	3?
3002	3
3003	3
3004	3
3005	3
3006	3
3007	3
3008	12
3009	3
3010=2079	3
3011	3
3012	3
3013	3
3014	3?
3015	3
3016	3
3017	3



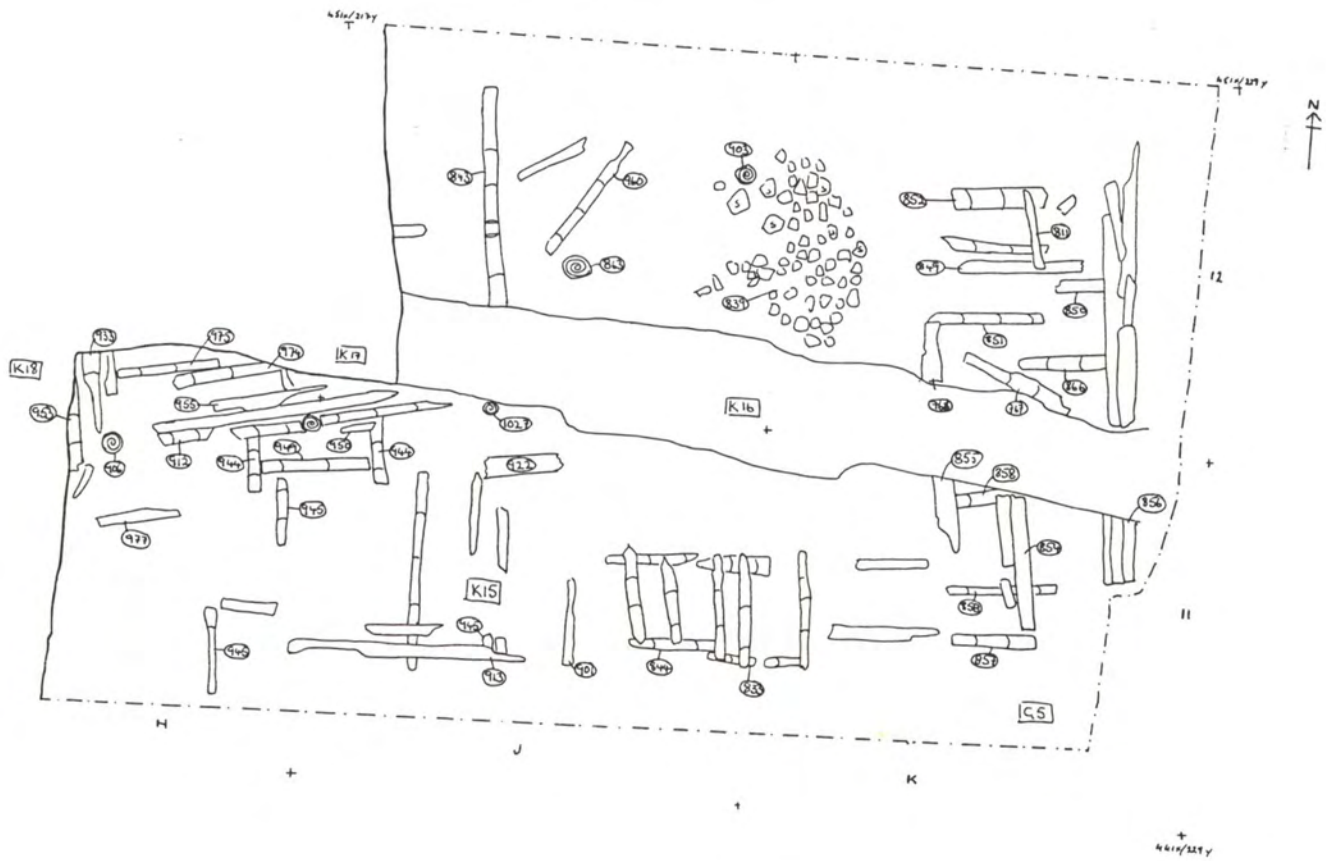
FE Phase 1 1:100



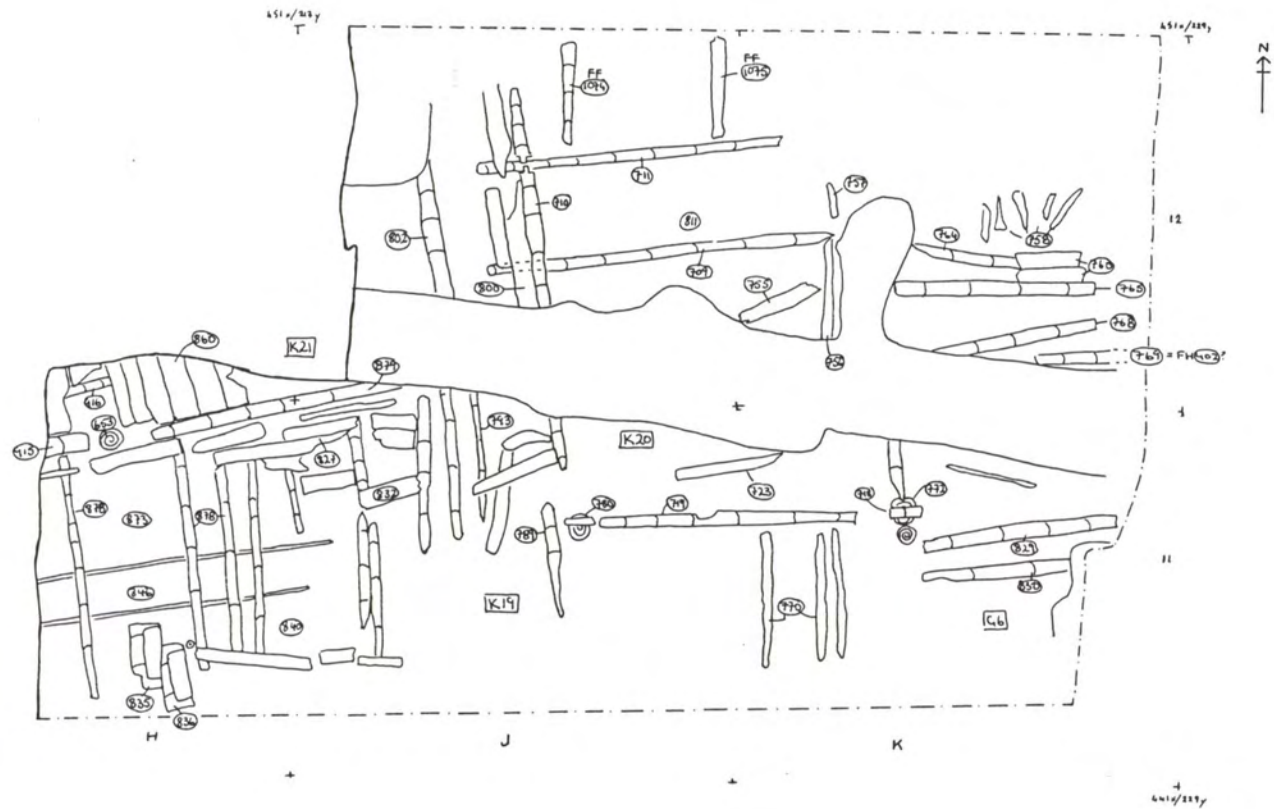
FE Phase 4 1:100



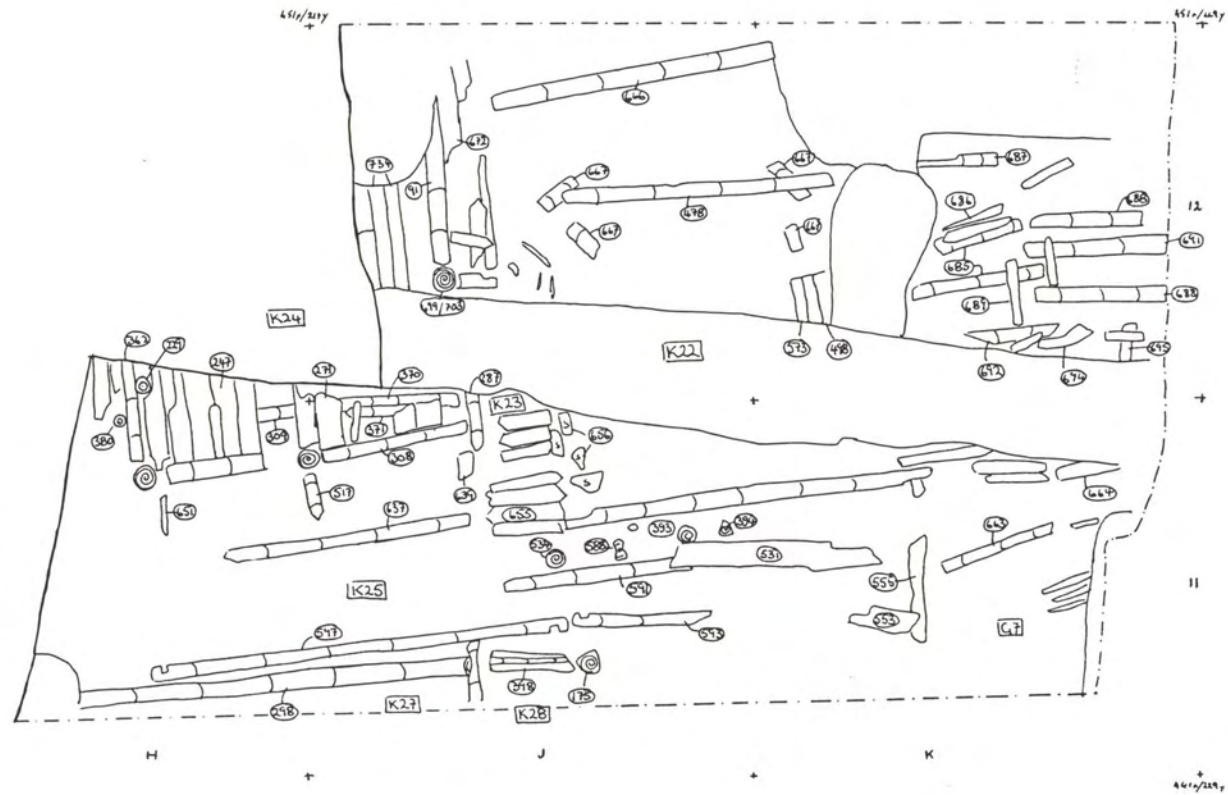
FE Phase 5 1:100



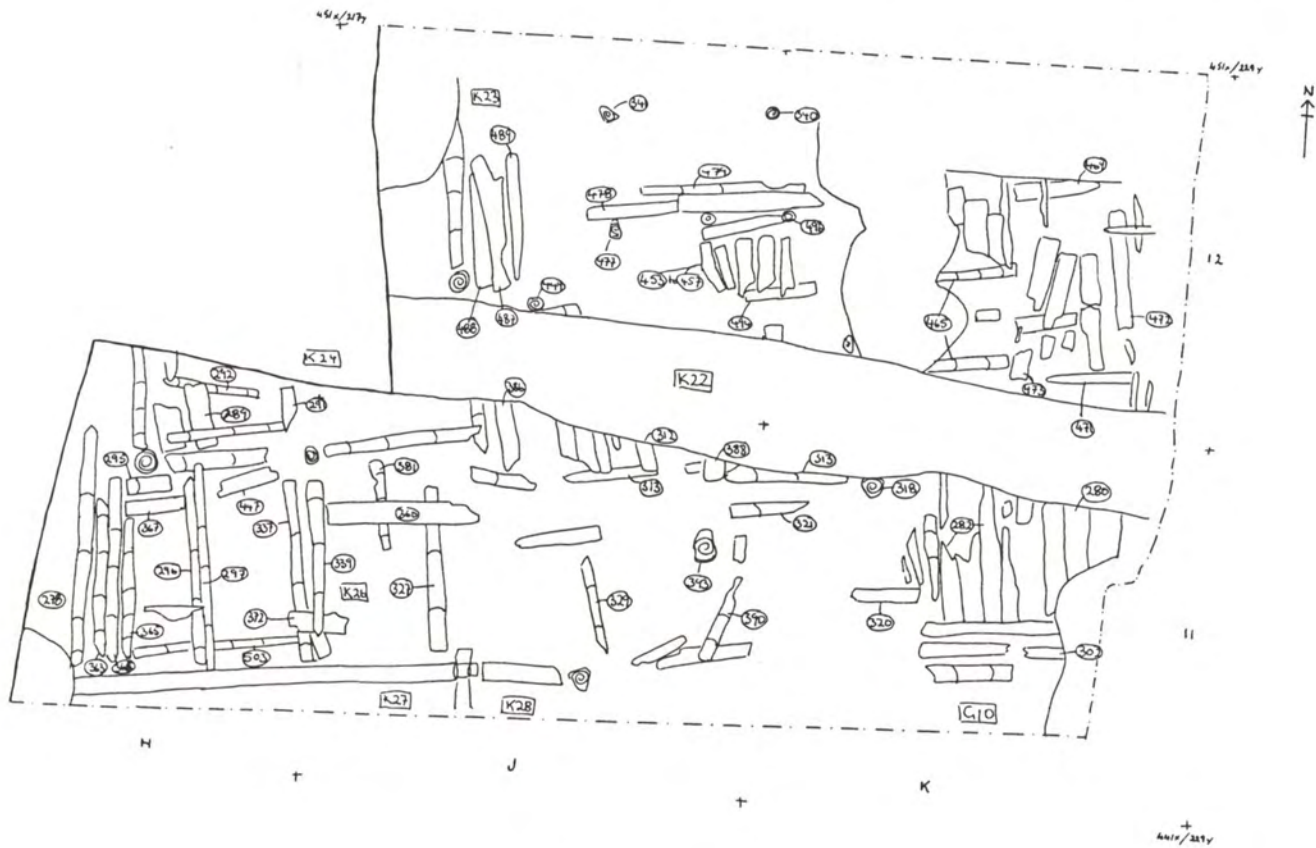
FE Phase 6a 1:100



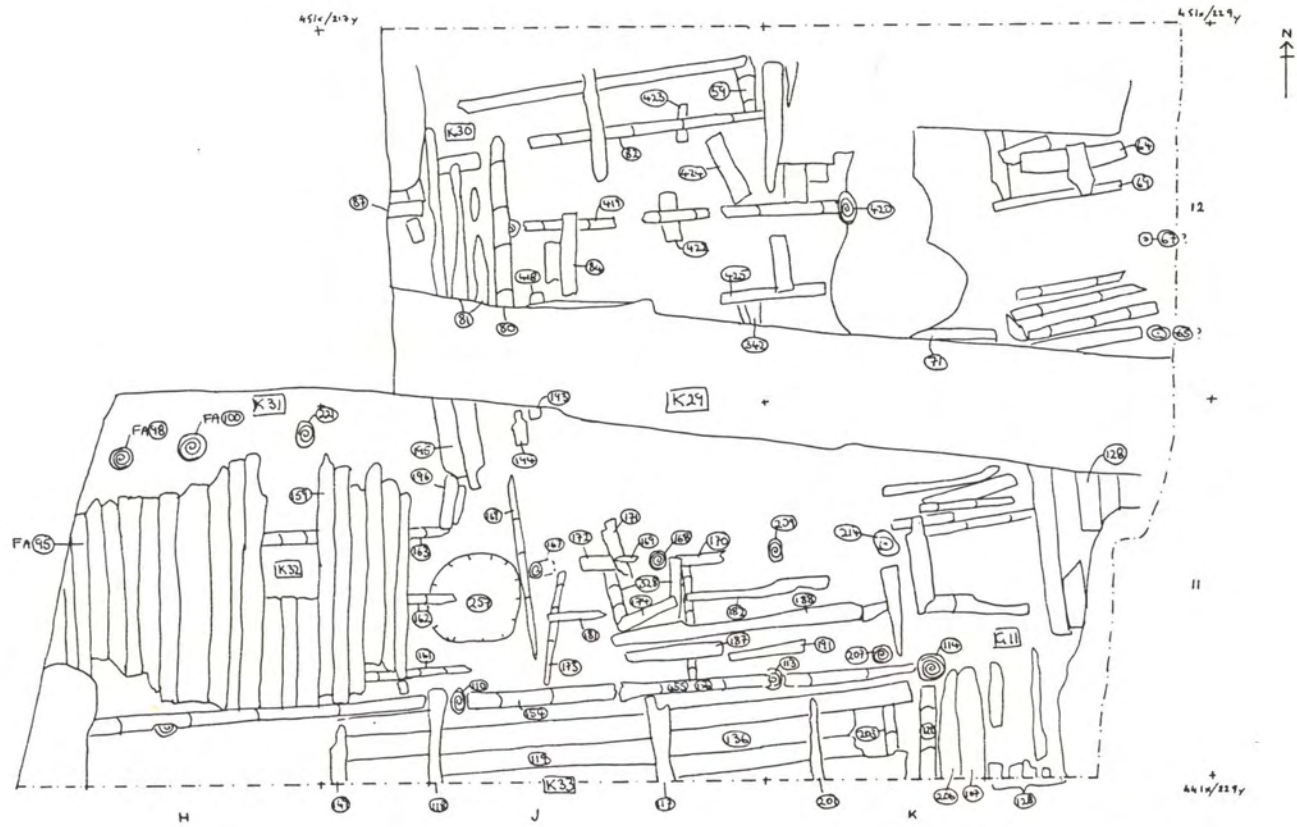
FE Phase 6b 1:100



FE Phase 7a 1:100

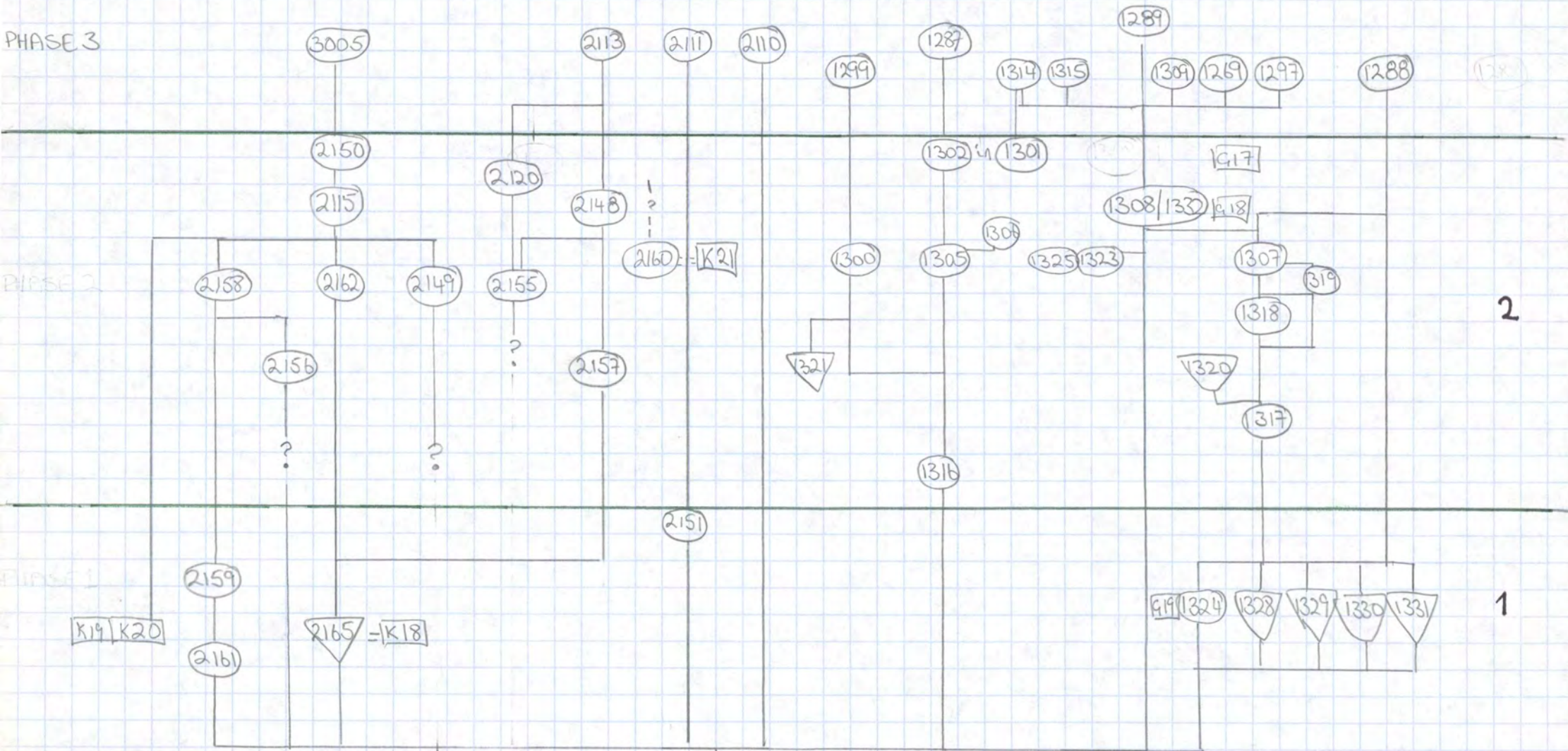


FE Phase 7b 1:100



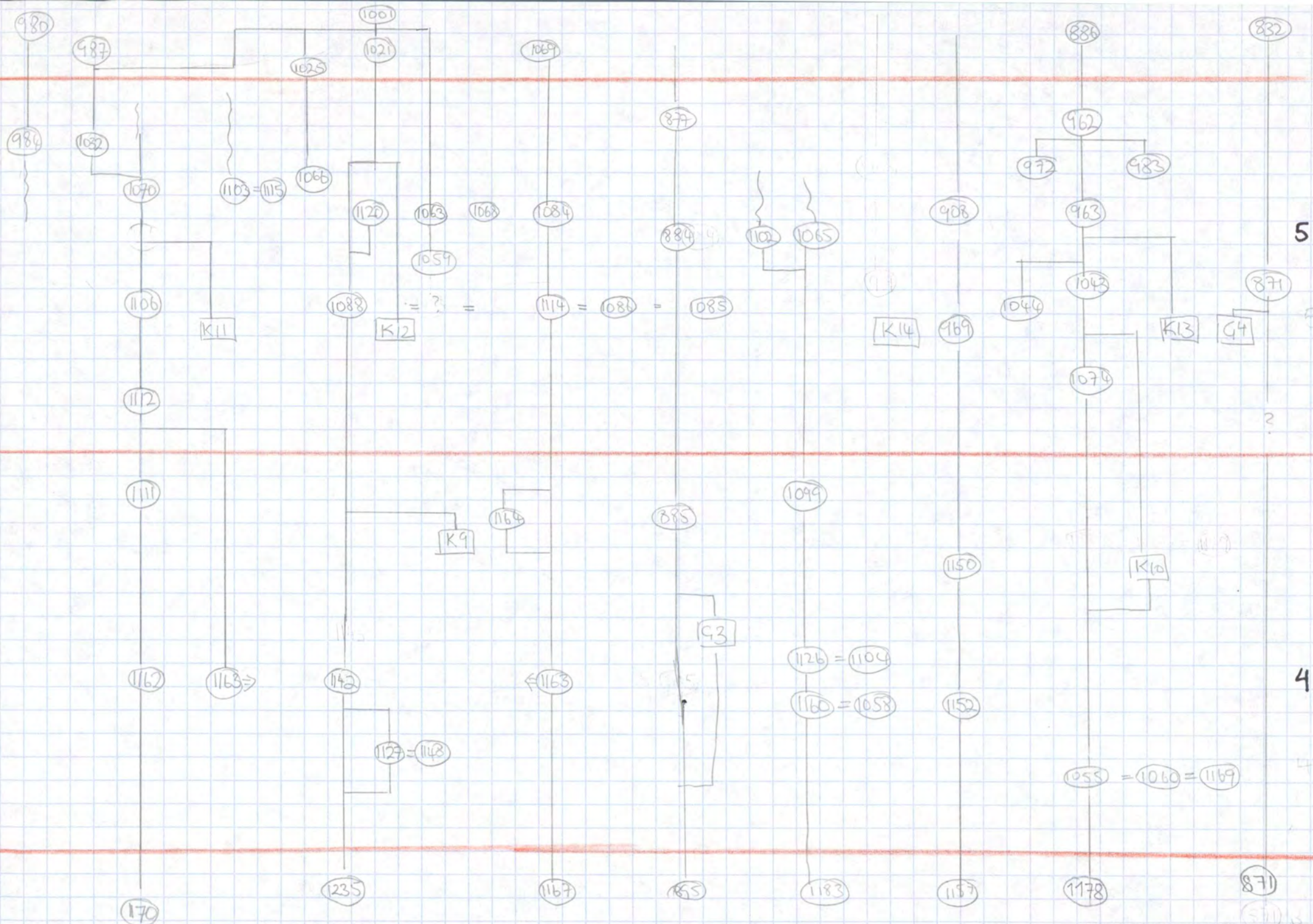
FE Phase 8 1:100

MINIMATRIX PHASE 1 AND 2



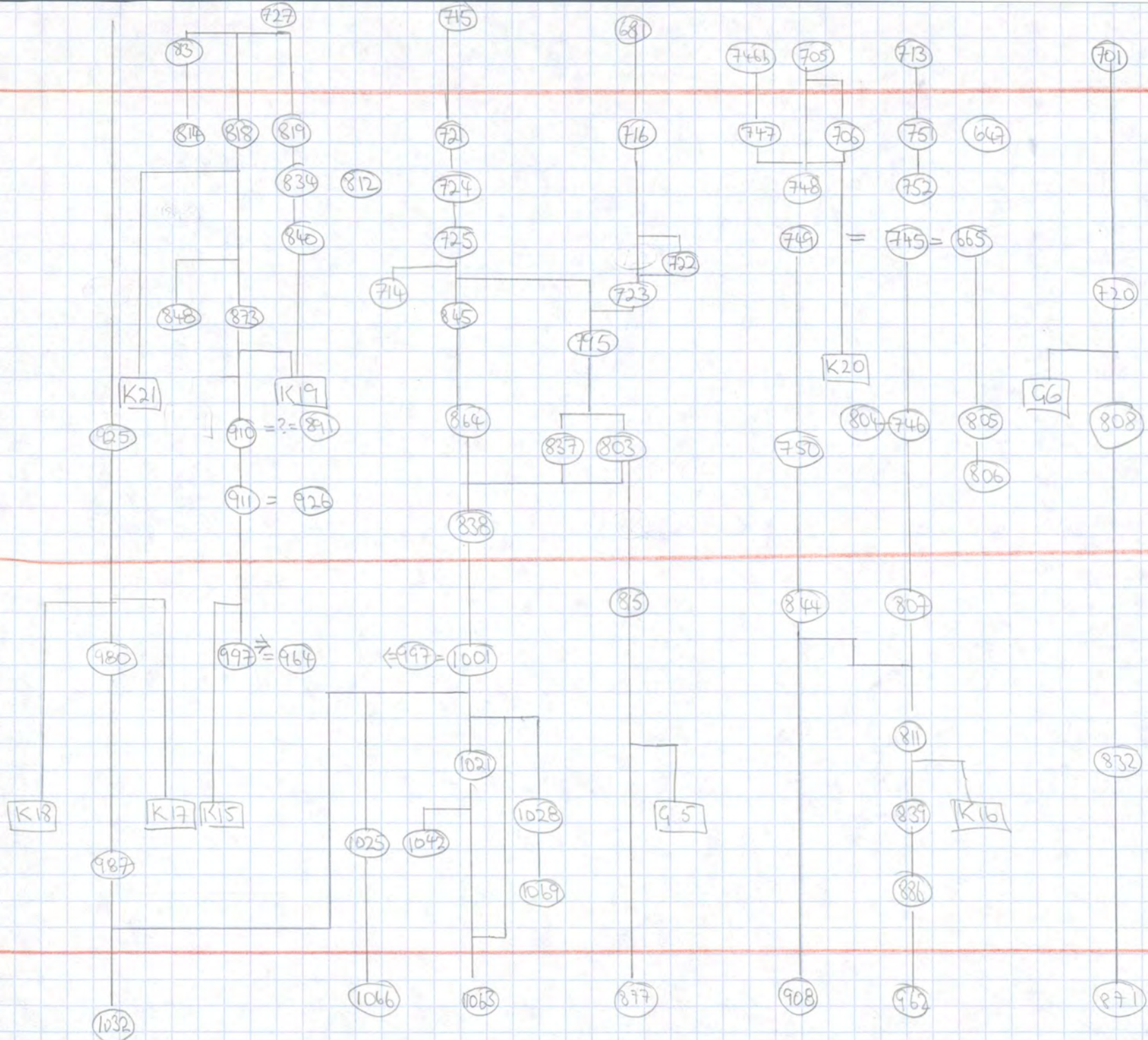
NATURAL

FF minimatrix phases 1 - 2



FE MINIMATRIX PHASE 4-5

FE minimatrix phases 4-5



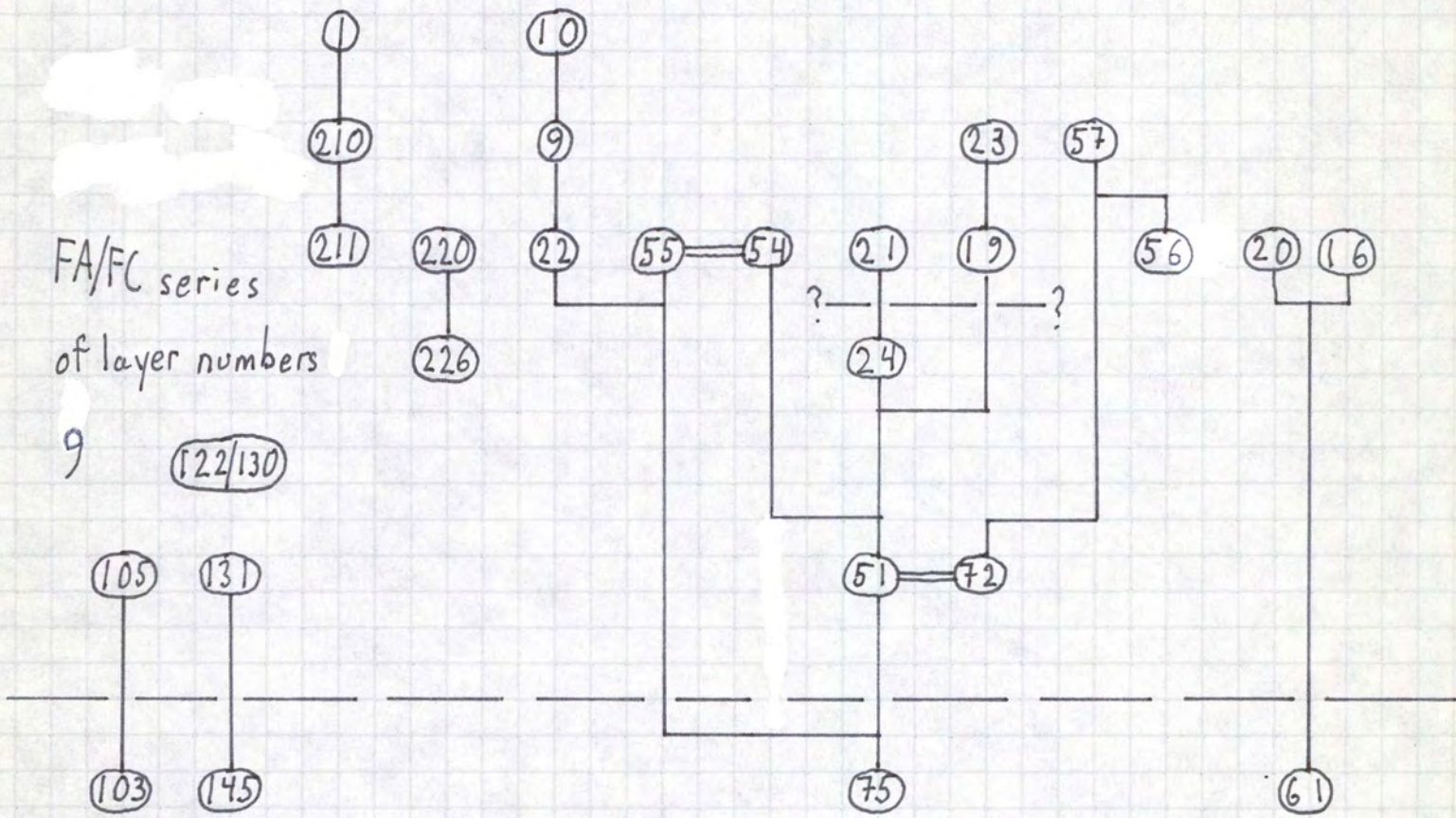
6b

6a

FE minimatrix
phase 6a - 6b

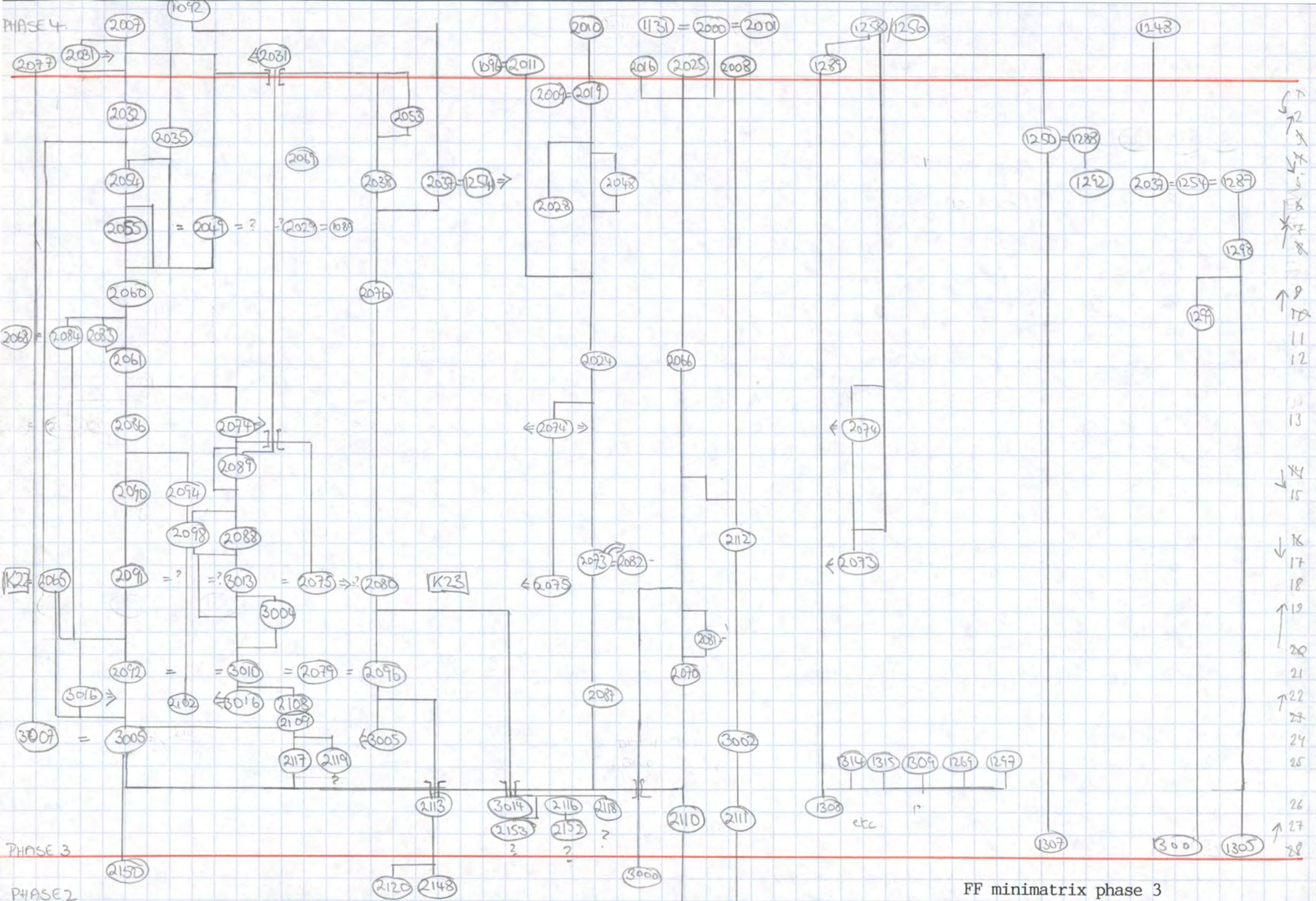
FA/FC series
of layer numbers

9 (122/130)

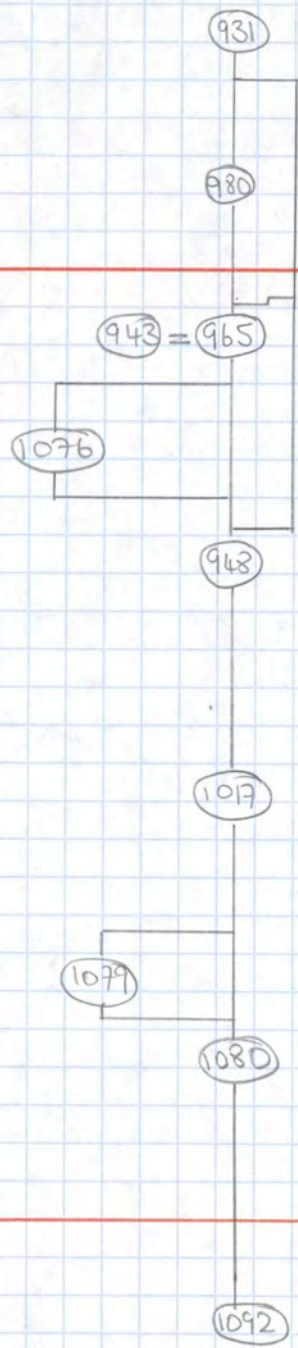


8
FE

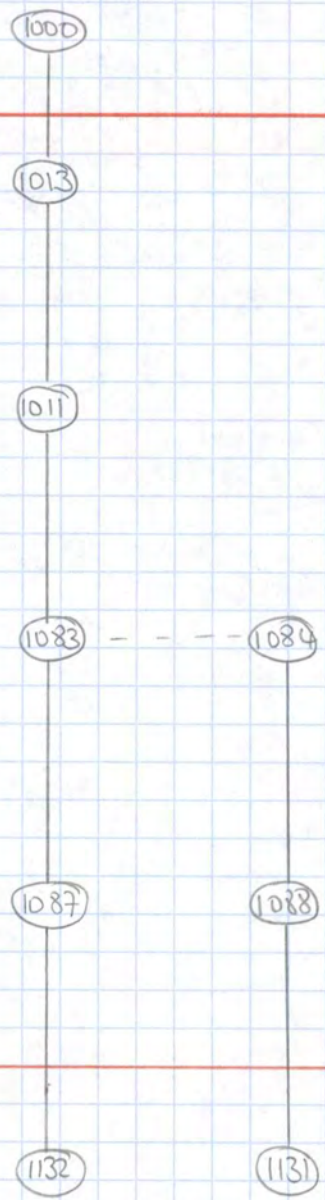
Minimatrix, phase 9.



FF minimatrix phase 3

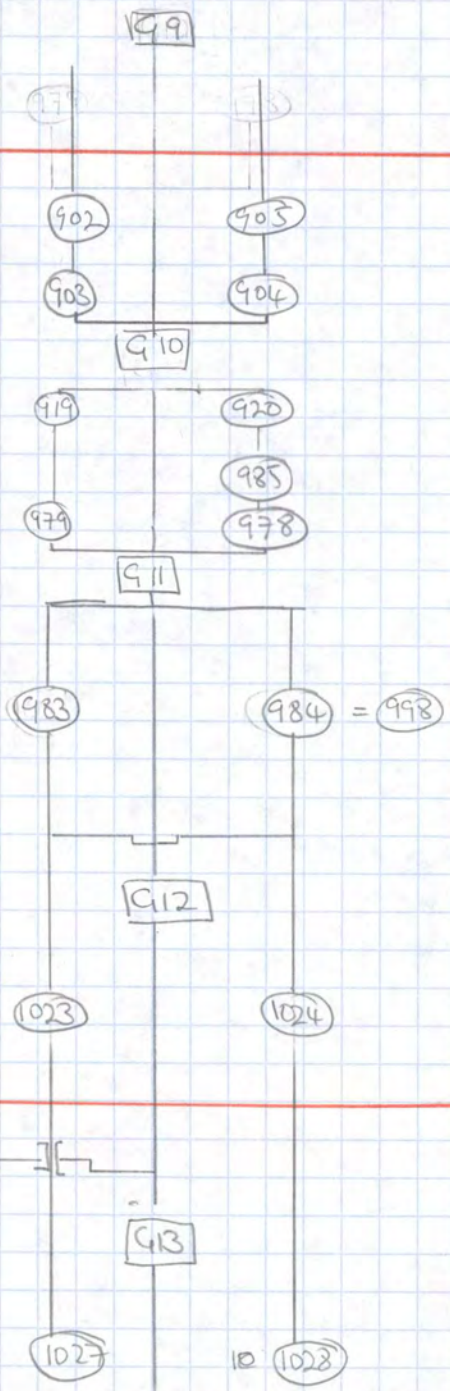


K26 | K27 | K28



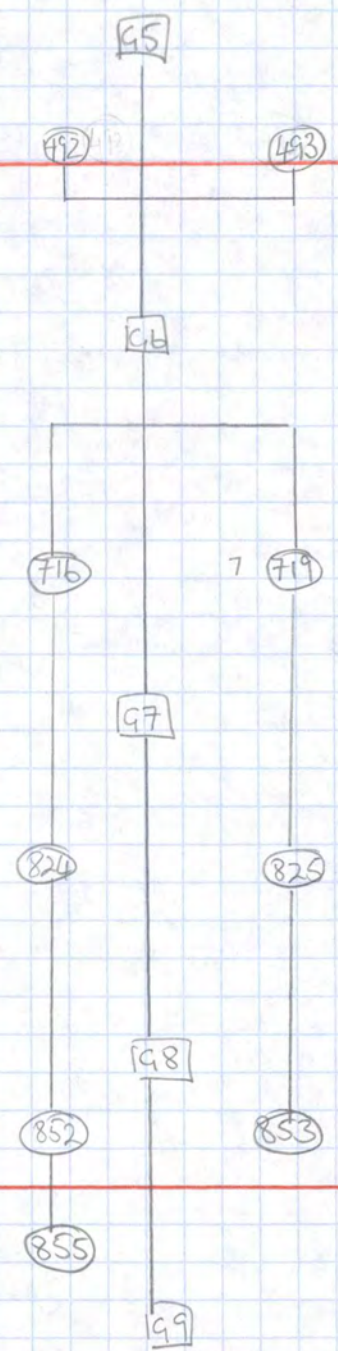
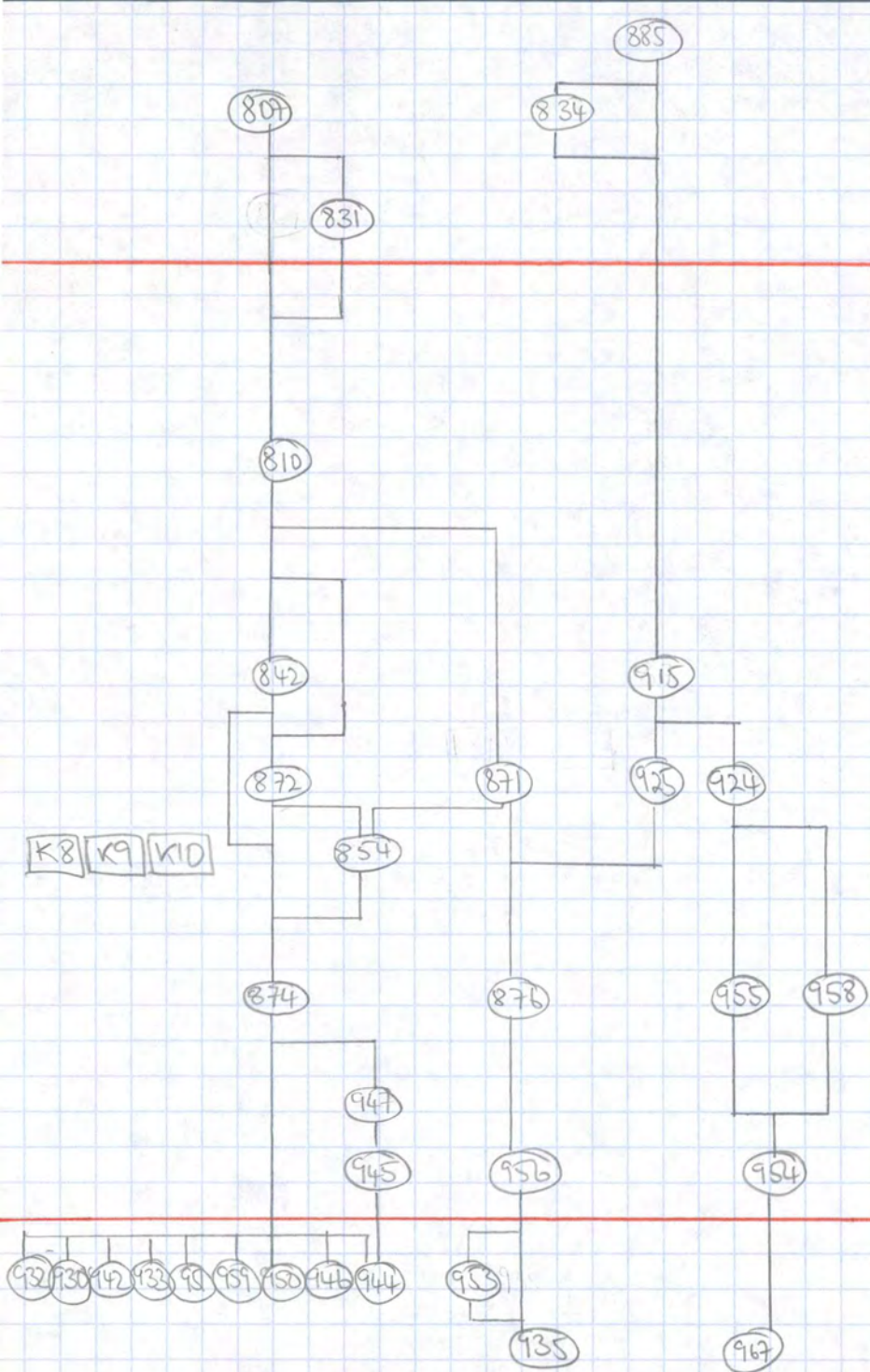
K29 | K14

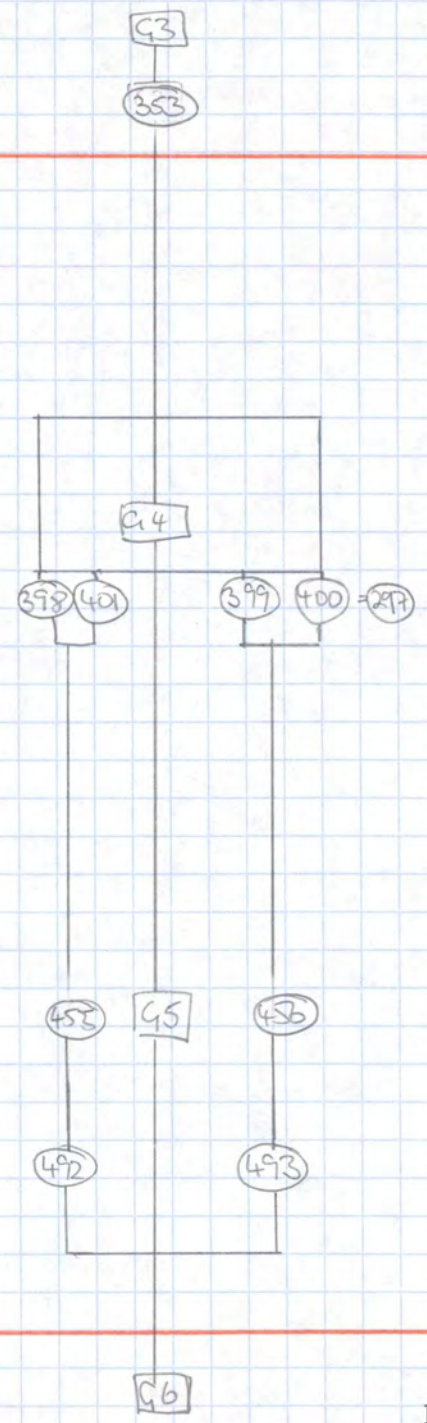
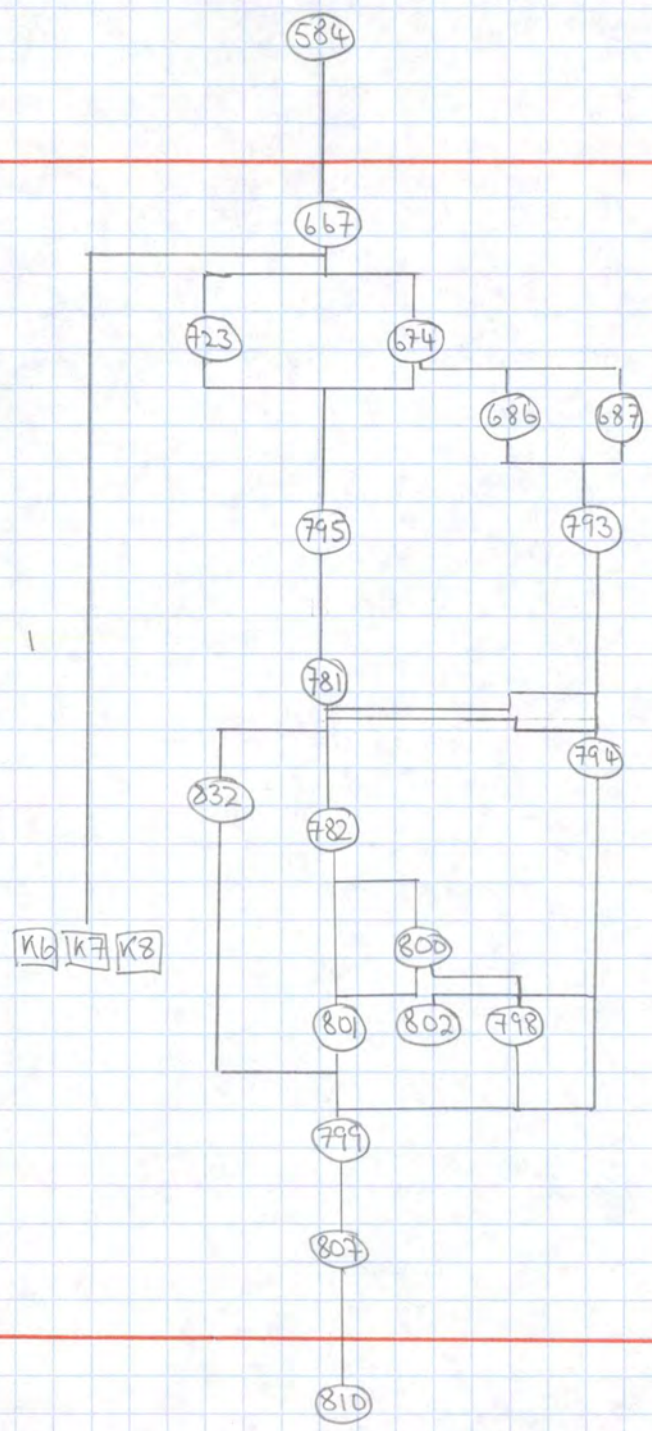
FF minimatrix phase 5



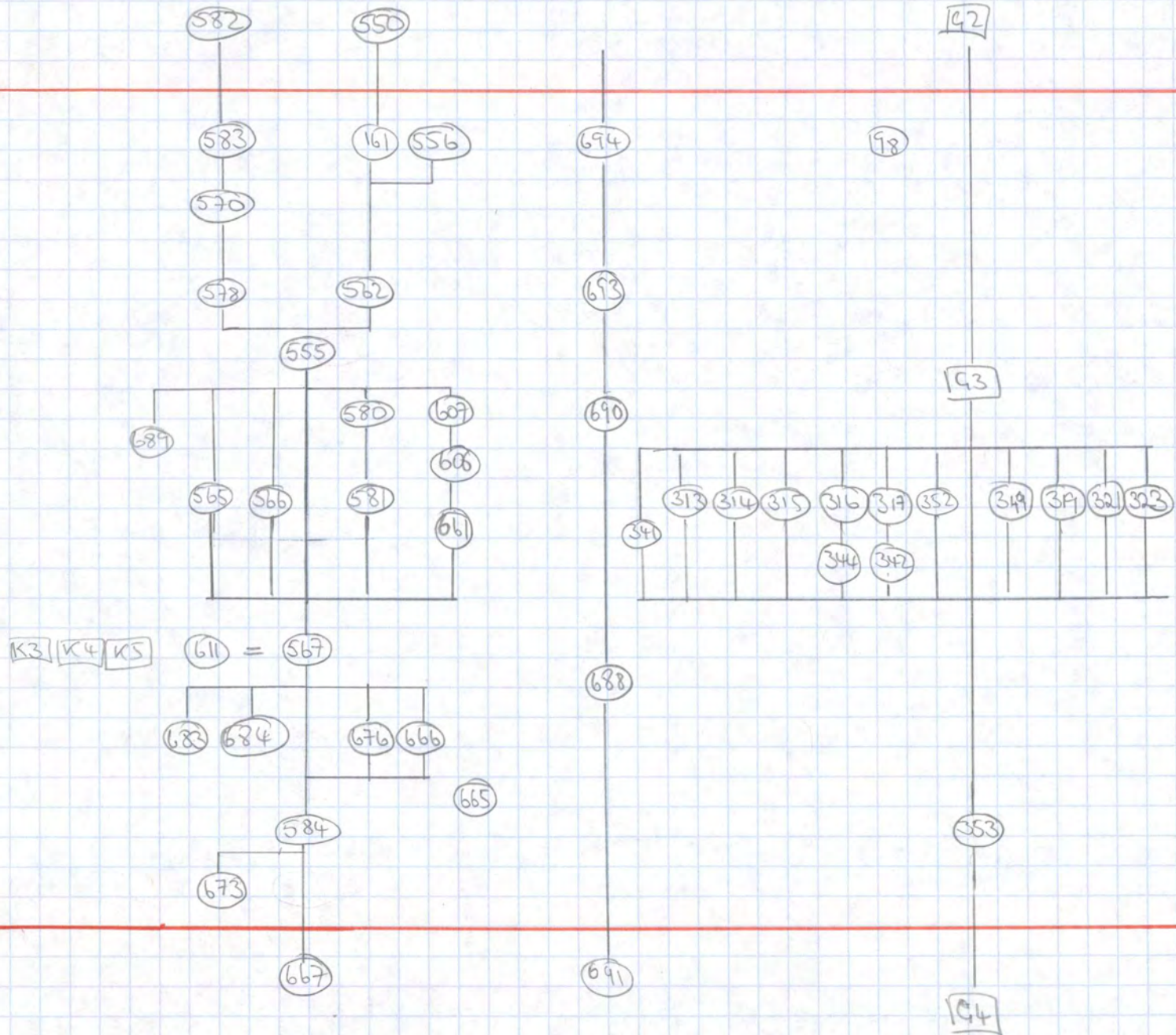
6
Phase 5

5
Phase 4





8



MINIMATRIX PHASE 9

PHASE 9
PHASE 8

