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ART. 11. HISTORIC ARCHEOLOGY AT FORT PITT, 1953

(ANTHROPOLOGICAL SERIES, NO. 4)

By JAMES L. SWAUGER* AND ARTHUR M. HAYES†

INTRODUCTION

During the period from January 15, through December 31, 1953, the Section of Man, Carnegie Museum, conducted archeological salvage work at the site of the Point State Park in Pittsburgh. Until the latter part of February, the work was done as a part of the Section's program under the Fund for the Study of Man, a project sponsored by the Sarah Mellon Scaife Foundation.

A Service Purchase Agreement was executed between Carnegie Museum and the Department of Forests and Waters of the Commonwealth of Pennsylvania, effective February 26, 1953, and from that time forward the Section worked as part of the Commonwealth's general Point State Park program. Under the terms of this agreement, the Section was able to broaden and intensify its activities.

A mimeographed interim report, "Archeological Salvage at the Site of Fort Pitt, 1953," dated September 15, 1953, was prepared by the authors for the Pennsylvania Department of Forests and Waters. Copies of it were distributed to interested persons. The interim report was written at that time because actual earth-moving operations at Point State Park, the phase of operation promising most likely reward for the archeologists, had ceased. We considered it desirable to inform the Department of gross results obtained as of the date of the report, since we did not believe site activity through the rest of the year would yield important results. This belief was borne out by events.

This present report is based in large degree on the 1953 interim report; in fact, some of the interim report material will be found here verbatim. In a sense this present article is an expanded version of the interim report with the addition of information not present or not understood in September 1953.

PURPOSE OF THE ARCHEOLOGICAL WORK

The Historical Advisory Committee of the Point Park Committee of the Allegheny Conference on Community Development recommended to the Department of Forests and Waters that, in conjunction with grading operations to be conducted at the site of the Point State Park, effort be made to rescue whatever items of historical significance might come to light and be useful in development of general Point State Park plans. This recommendation was favorably received by the Department and was made part

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of the General and Specific Conditions of the interim Point State Park contract.*

Three specific duties were the responsibility of the Section of Man under this contract:

1. Collecting of all pre-1800 man-made objects.
2. Salvaging of bricks from walls that would be inaccessible later because of planned highway developments.
3. Recording of gross fort features not previously discovered by archeological methods, and any previously discovered for comparison with known maps and plans of the fort complex in the Point State Park area.

A fourth responsibility not stated in the contract but naturally assumed by the Section was the maintenance of proper records: the taking, numbering, listing, and initial storage of specimens and photographs; the preparing of necessary maps and drawings; the keeping of journals; the organizing of data for study and report; the keeping of strict financial records; and other normal field and laboratory routine procedures.

PERSONNEL

The following persons were the staff under direct supervision of the Section of Man during the Point State Park work. The specific Park duty of each is given in capital letters:

James L. Swauger, ARCHEOLOGIST, Curator, Section of Man, Carnegie Museum.

Lawrence S. Thurman, HISTORIAN, Curator, Old Economy, Ambridge, Pa.

Arthur M. Hayes, ASSISTANT ARCHEOLOGIST, Section of Man, Carnegie Museum.

Mrs. Dorothy E. Dragoo, CLERICAL AND LABORATORY ASSISTANT, Section of Man, Carnegie Museum.

Swauger was active throughout the whole period. Thurman worked from January 15 through May 17, when, in a letter to Swauger, he announced cessation of regular Point State Park activity because of pressure of his work at Old Economy and his poor health. Hayes worked from January 26 through June 9 when he left for summer field work with the Section's regular field crew as agreed at the time of his hiring. Mrs. Dragoo was on part-time status from January 16 through August 19.

At various times services were hired from Frank Bryan, Inc., McKees Rocks, Pa., for excavation work; Surveys, Inc., and Braun and Fulton, Pittsburgh, Pa., for surveying work; Pittsburgh Photographic Library, University of Pittsburgh, for photographic work; Frederick R. Matson, Pennsylvania State University, University Park, Pa., for ceramic study; and Carnegie Museum office staff for routine processing and final preparation of financial records and the like.

*Contract for Development of Point State Park (clearing, grading, miscellaneous work), Pittsburgh, Allegheny County, Pennsylvania. Project No. 1440-1. Commonwealth of Pennsylvania, John S. Fine, Governor, Harrisburg, Pennsylvania. Department of Property and Supplies, Alan D. Reynolds, Secretary. Ralph E. Griswold & Associates, Landscape Architects, 206 Gladstone Road, Pittsburgh, Pennsylvania. Nov. 18, 1952.

Our indebtedness to numerous persons who voluntarily assisted us in one way or another should be acknowledged here. There were so many it would be folly to list them all, but in particular Edwin V. Pugh, Wells-ville, Ohio; Miss Rose Demorest and her staff of the Pennsylvania Room, Carnegie Library of Pittsburgh; Ralph A. McGiffin of the Department of City Planning, Pittsburgh; David W. Rial, Wilkinsburg, Pa.; and Dr. O. E. Jennings and Dr. E. R. Eller of Carnegie Museum furnished valuable information.

A special note of praise must be sounded for the contractor's men and the Commonwealth's inspectors at the Point State Park. Clauses in the contract provide for co-operation of the excavator's people with the archeologists. The employees of the Frank Bryan company adhered not only to the letter but also to the spirit of these clauses and even exceeded them in their aid to the archeologists. C. L. Smith, Superintendent, Howard Mauk and Anthony Vice, foremen, were tireless in making certain that all curious objects and structures encountered were reported, in advising as to potential use of items of their equipment, and in suggesting ways and means to further the investigation. Not once was there any indication of impatience or lack of either interest or warm good will. They went so far as to furnish many services without charge and on their own initiative which made the archeologists' lot not only more pleasant but also more useful.

The same spirited interest was shown by the Commonwealth's inspectors, John H. Reish, District Supervisor, and the resident inspectors, James K. Chambers and James K. Warren. It was a pleasure to work with these men.

METHOD

Time for research prior to commencement of excavations at Point State Park was limited. On January 12, three days prior to the beginning of excavation and more than a month before formal hiring, the Section was reliably informed it would be retained to perform its salvage task. Most of the Section's preparation for its work went on while the job was in progress, but the conditions under which the Section operated were such that this simultaneous preparation and action procedure was not a serious handicap.

Most of the library research was done by Hayes. Particularly during the first three months of work there were many, many days on which the soggy condition of the site's soil prevented digging by the contractor, days on which he could only break sidewalks or tear down stone walls. Advantage of this situation was taken by Hayes to do library work as a result of which he assembled a mass of information concerned primarily with physical features of the fort complex at the site. Both Swauger and Thurman did some library work. Miss Demorest and her staff were most helpful to us in this study.

John A. Renner of Ralph E. Griswold & Associates supplied us with a set of maps prepared in 1943 for the Point Park Commission of the City of Pittsburgh by the Department of City Planning, with copies of the Grading Plan and Salvage and Construction Plan for the interim Point

State Park project, and with a copy of the Bliss report.* This report contains a vast amount of material concerning the fort complex. It was compiled by Wesley A. Bliss, archeologist for the Point Park Commission's 1942-1943 investigations at the site of the Point State Park, is based largely on the archeological work done there during the three years 1941 through 1943, but also contains much other information. Without these maps and the Bliss report, we would have had no reliable guides for our own planning, work, and interpretation. The thoroughness of the Bliss report is evidenced by the fact that every check we made of his record against actual fort conditions as we found them proved accurate within reason. We added but little to his compilation. Rial later donated a copy of the Bliss report to the Section.

Through Pugh we met McGiffin. Bliss had lodged with McGiffin while doing his work at the site of the Point State Park. McGiffin had intimate knowledge of Bliss's work not only because of his close association with Bliss but also because much of the research on which the 1943 Department of City Planning maps were based was his. He talked to us of Bliss's work, showed us objects recovered by Bliss, and permitted us to borrow bricks from Bliss's pit "B" with which we could compare those we would find.

Armed with the Bliss report, the City Planning maps, the interim project maps, and the McGiffin samples, we proceeded with assurance in this otherwise unfamiliar historical-archeological project.

On the site we depended on observation and movement for result. Hayes worked each day from his hiring until he left. Thurman and Swauger worked alternate days until Thurman's withdrawal from active participation, and Swauger full time from June 9 until the middle of July, and at odd intervals thereafter. Most of the time two men, and sometimes three, were at the site following shovels, bulldozers, high-lifts, rollers, motor cranes, and laborers as they dug into and moved the earth. Aided by known provenience of fort features and levels as determined by Bliss and shown on the City Planning maps, we were able to check against the grading and salvage and construction plans to predict likely areas for important finds. We used the grading plan grid system as our own grid for location of finds.

Although we knew most of the area from which soil was being removed (roughly the space bounded by Duquesne Way, Barbeau Street, Penn Avenue, and a north-south line slightly east of the Block House) was composed of fill laid down about 1900, we hoped residue of the forts and of buildings possibly made of fort material might be found as part of this fill. This hope also kept us attentive to digging done in areas outside the known fort perimeter.

To expose a portion of Fort Pitt's brick and stone wall along Liberty Avenue (a wall now permanently covered by a ramp for the new highway development) we hired a bulldozer, pumps, and motor crane with clamshell

*"Bliss report" is the commonly used term for the unpublished "Part One of the Report of the Point Park Commission," Pittsburgh, Pa., December 31, 1943. It was copyrighted in 1944 by the Point Park Commission. So far as the writers can discover, only 12 copies of this report were prepared. The copy donated to the Section by Rial is copy 9.

bucket from the Bryan people. To assist in removing and transporting bricks and stones from the three pits dug here, indicated as C.M. 1, C.M. 2, and C.M. 3, we hired power hammers, trucks, and, again, a motor crane. Fig. 1 shows location of test pits (C.M. 1, C.M. 2, C.M. 3, C.M. 4 and C.M. 5) dug by Carnegie Museum, and also identifies the location of the earlier pits dug by Bliss. All of the sample removal in C.M. 1 and most of that in C.M. 3 was done by hand by Hayes and Swauger. To expose a portion of a palisade north of Penn Avenue in C.M. 4, we hired a bulldozer and high-lift for rough work, and finished off by hand. The filling of these pits was done by bulldozers.

Although empowered to stop the excavator from working in any given area for fear of his damaging significant materials, we had to use this power only twice. Once north of Penn Avenue we stopped the motor crane when uncertain as to the importance of a brick structure revealed when a sewer pit was being dug. The structure proved of no value to us. Once we stopped the power shovel when we feared it might cut through the palisade in C.M. 4, and this stoppage proved wise.

Fort Pitt had five bastions. Names applied to these are of relatively recent origin, but are accepted in literature concerning the fort. That pointing northeast is the Music Bastion; that pointing southeast, the Grenadier Bastion; that pointing south, the Flag Bastion; that pointing southwest, the Monongahela Bastion; and that pointing northwest, the Ohio Bastion.

The important gross features encountered—the wall between the Flag and Grenadier Bastions exposed in C.M. 1, C.M. 2, and C.M. 3 on the south side of the fort, and the wall between the Music and Ohio Bastions, C.M. 4, on the north side, were mapped by professional surveyors. Levels on these walls were taken for us by Mauk, Grade Foreman for the Bryan company, as well as by the surveyors. We, of course, also made our own maps and drawings of these features and elements thereof.

We devoted considerable attention to the making of a photographic record. All activities at the Point State Park excavation, not only of the strictly archeological work but also of the general excavation and grading procedures, were recorded in both black and white and in colored photographs. The Section took 196 black and white photographs and 349 colored slides, the Pittsburgh Photographic Library took 42 black and white photographs. Rial volunteered his services for the production of a group of colored slides of bricks, stones, mortar, and logs from the Fort Pitt walls, and a series of fort complex maps and diagrams in black and white transparencies.

In the laboratory, activity centered on numbering, describing, and cataloguing specimens and photographs, mounting colored slides, and preparing jackets for black and white photographs. Mrs. Dragoo did most of this work after initial recording of essential data by Hayes and Swauger. For recording of exact colors of Fort Pitt bricks, Mrs. Dragoo used Robert Ridgway's "Color Standards and Color Nomenclature," although for practical purposes we follow Matson's advice* and refer to bricks in their general color range as medium red, deep red, brown, etc. In the laboratory also,

*Memorandum to Swauger, June 29, 1953.

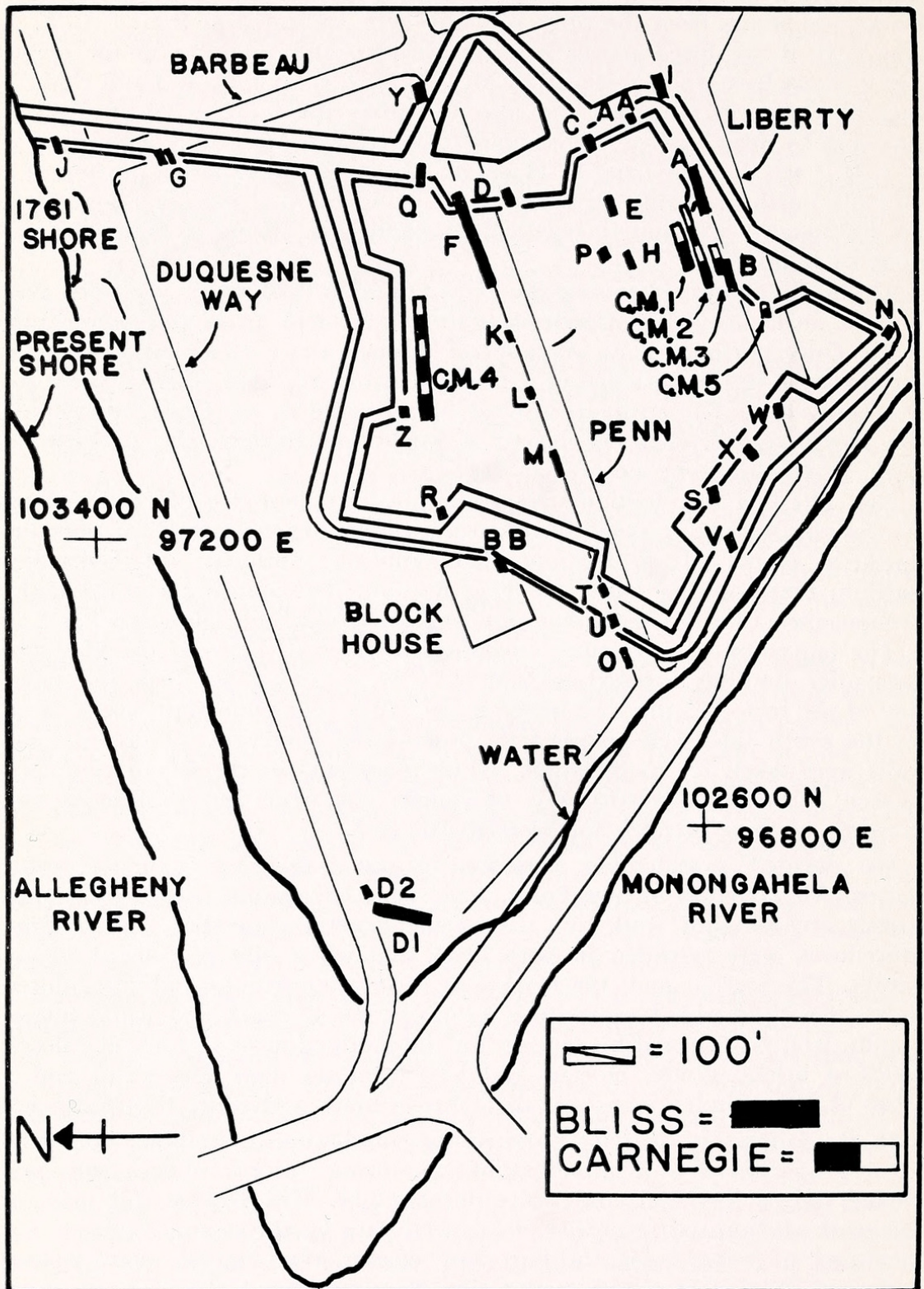


Fig. 1. Location of Fort Pitt, and positions of archeological test pits

were finished journals, maps, and drawings necessitated by the project, and were prepared routine and special reports and letters. So far as maps are concerned, ours are mostly of detailed portions of the fort structures since the Bliss report maps are excellent and quite sufficient for general overall presentation.

Swauger attended several conferences concerned with the work at Point State Park; Thurman attended some; Hayes, none.

Daily journals were maintained in triplicate by each of the persons under direction of the Section. The original copy is held by the Section, the first carbon copy by the person preparing it, and the second carbon copy accompanies the bulk of the specimens in storage. The original was held in the contractor's office at the Point State Park for ready reference by interested persons throughout the project. Forms for these journals were prepared by the Museum office staff and, after her hiring, Mrs. Dragoo. Forms were also prepared for entry of photographic data and expense accounts.

Matson visited the site on June 29, made an examination of the bricks removed as well as those on the site, and forwarded a general memorandum to Swauger as of June 29. A representative collection of bricks and mortar was forwarded to Matson on December 22. These he will use as samples for laboratory ceramic study and as part of a collection of bricks from known sites to be assembled at the Pennsylvania State University.

Dr. Jennings made identifications of timbers removed from the north wall in C.M. 4, and Dr. Eller performed the same service for glass and bottles collected from the whole site.

RESULTS

Objects recovered

Accomplishment of the Section's first responsibility in this work in Point State Park, the rescuing of 18th century objects, was a dismal failure. So far as we can determine, we recovered not one single object except pieces of the actual fort wall which can confidently be given a pre-1800 date. We can not explain this lack of specimens. It is not due to our carelessness or lack of ability, for certainly we were diligent and equally certainly the three men who worked are capable of differentiating between late 18th century or even early 19th century objects on which some doubt might be held and late 19th or early 20th century material. We saw nothing we would hesitate to place chronologically as anywhere but in the late 19th or early 20th centuries.

This conclusion as to date is readily understandable so far as most of the material moved by the Bryan company is concerned. Before we began work we knew the area had suffered flood, fire, construction disturbance, and finally a fill about 1900 covering much of it to a depth of 8 to 12 feet. But we certainly hoped to get something from work along the fort walls.

The fill was disappointing. The Section had hoped to be able to accumulate a collection from a stratified section of the fill which would give a chronological story of the city as told by its rubbish. Even this hope was dashed, for the fill was a homogeneous mass of all sorts of litter—broken

crockery, glass, sewer pipes, machine-stitched shoes, charred lumber, piles of ashes, slag, bricks, cement, tar paper, metal conduit, gas lines, etc.

The size of the tools used and the immense amounts of earth displaced at one time were detrimental to locating specimens. For instance, much of the earth was torn from place by a power shovel with a bucket having a capacity of two cubic yards. The shovel took three bites to fill a truck which carried the dirt to the new fill area and dumped it. A bulldozer flattened the dumped earth. A sheeps'-foot roller rolled and tamped it. The process consumed about ten minutes per load and posed a pretty problem in speedy observation for the archeologists.

However, the face of the shovel made a clean horizontal cut on the surface of the ground. The bucket dribbled from its mouth as it swung to the truck. The truck's dumping made a pile with the surface easily scanned, and the edges free from packing which might hide objects. The bulldozer's blade packed in the center of its sweep but feathered dirt out at its edges to reveal objects. The rollers churned the dump as they went bringing some things to the surface even as they tamped others down. We saw thousands of objects, and it is unlikely chance alone prevented our seeing 18th-century material. A small collection of this late fill material was made—crockery fragments, bottles, and metal objects.

The work along the fort walls was begun initially with heavy machinery and was thus subject to the same handicap as work in the fill areas proper so far as observation was concerned; but all work along these walls was finished by hand and the opportunity to see was optimum. Here again we found dozens of objects, and here again we found nothing we are confident dates from the 18th century.

Bliss worked many more pits than did we, and did them largely by hand, yet his experience with artifact recovery was no happier than ours. He was no more successful than were we in dating as 18th century any pieces recovered that were not definitely part of the fort structure. The following statements are from the Bliss report:

"The few artifacts recovered could not be definitely placed stratigraphically. Crockery, pottery, shoes, bones, fragments of iron utensils, bricks, bottles, glass, logs, stockade posts, and boat fragments made up most of the material that came out of the test pits." p. 73.

"Fragments of corckery (sic), bottles, pottery, shoes, bones, utensils, wire, nails, etc. came out of the test pits." p. 74.

With Bliss we must assume that there probably are relics of the 18th century at the site of Fort Pitt because of literary reference to the finding of such objects in the past (Bliss report, p. 75). All we are certain of is that we found none.

The following categories and numbers of objects were recovered and catalogued:

| | |
|---|-----|
| Bricks and brick fragments..... | 357 |
| Mortar and boxes of crushed mortar..... | 53 |
| Stone from fort walls..... | 19 |
| Boxes of rubble..... | 4 |
| Bone | 1 |

| | |
|---------------------------------------|-----|
| Oyster shell | 1 |
| Metal fragments | 5 |
| Pottery and crockery fragments..... | 20 |
| Bottles and glass fragments..... | 54 |
| Stone paving blocks..... | 5 |
| Logs and bark and bark fragments..... | 14 |
| Cement block | 1 |
| Marble slab | 1 |
| Metal ball from Mt. Washington..... | 1 |
| Motorcycle license | 1 |
| Unidentified | 4 |
| | — |
| Total | 541 |

Of the 541 objects catalogued, 466 numbered items were taken to the building of the Historical Society of Western Pennsylvania at 4338 Bigelow Boulevard, Pittsburgh, on December 16, 1953. They remain there until the construction of a museum building at Point State Park permits their display in their area of origin, or until other use is found for them by the Historical Advisory Committee. The other 75 items were retained by Carnegie Museum as Accession 15661, in its permanent collection as a representative series of objects from the 1953 work at Fort Pitt. Of these 75 items 22 were forwarded to Matson on December 22, for his study. Six items were given as tokens of appreciation to persons instrumental in the Fort Pitt operations. Record of the distribution of numbered items is in the catalogue book.

Brick salvage

We were more successful in the task of salvaging bricks. Pits C.M. 1, C.M. 2, and C.M. 3 were dug specifically to locate the fort walls to be covered by a highway ramp paralleling Liberty Avenue to the north and to remove from them all bricks that could be saved. As will be explained in more detail in discussion of fort features, brick wall was found in C.M. 1 and C.M. 3; none in C.M. 2. All bricks taken from C.M. 1 and a few of those from C.M. 3 were retained as samples. Most of the bricks from C.M. 3 were salvaged for later usage at Point State Park.

Initially we removed bricks by hand with hammers, chisels, and bars. The bricks are so soft however, the mortar so hard, relatively, that the pounding necessary to separate bricks from mortar shattered so many bricks we estimate a loss of 50% in C.M. 1 from this process. Finding the same situation recurring in C.M. 3, we decided to use power tools, deliberately losing some rows of bricks in order to get out great chunks of brick wall. This process was far more successful than the first tried, and we estimate a loss not exceeding 30%. Several hundred good bricks in great blocks and many loose ones were removed by use of power hammers, lifted by motor crane, taken by truck to the northwest corner of the intersection of Penn Avenue and Barbeau Street, and there buried by motor crane.

We salvaged by no means as many bricks as were desired to carry out initial restoration plans for the Monongahela and Ohio Bastions as outlined for us at the beginning of the project. This is due in part to the

difficulty of pulling good whole bricks from their seats in the walls, but mostly to the fact that there are not nearly so many bricks left in the walls as had been hoped. Salvage operations by 18th century contractors were evidently very thorough,* and they didn't leave many bricks for us to recover. Those bricks we did salvage, however, will aid in the manufacture of new bricks on the old model for the restoration work.

Some mention must be made of the bane of the archeologists' existence—souvenir hunters. From beginning to end of the excavation we were badgered by spectators for pieces of brick and stone, mortar and wood, from the fort walls. We did give away some valueless fragments of authentic material and some whole bricks, chiefly to members of the Bryan company and other persons who were working with us on the site. We also gave away, and people took, modern bricks from the fill, fragments of cement from the railroad retaining walls, chunks of slag and cinders, bags of earth from the fill, and the like. Some of the more persistent souvenir seekers were apparently quite satisfied with bricks from the sidewalk on Liberty Avenue, bricks stamped plainly "Toronto" and "Pittsburgh Buffalo Co.", which they evidently mistook for Fort Pitt bricks. For future reference, only those objects carrying the catalogue designation "PPP/number" on a square of yellow paint, or those authenticated by a certificate signed by Hayes or Swaunger should be considered actual Fort Pitt material.

Fort features

General. Gross features of the fort were located in the four pits dug at the request of the Section and numbered C.M. 1, C.M. 2, C.M. 3, and C.M. 4. It is likely part of the wall between the Flag and Grenadier Bastions was found in a hole dug to cap a water line under Liberty Avenue. This pit we numbered C.M. 5. We did no work with C.M. 5 except to collect bricks as samples and to photograph the wall since it was inexpedient to close Liberty Avenue to traffic. Fig. 1 gives the positions of these features.

Test pit C.M. 1. In this pit, 38.35 feet of the fort wall were uncovered. This portion of the fort's eastern wall is the angle at the southwest corner of the Grenadier Bastion and is composed of part of the southwest arm of that bastion (We call this the eastern arm of the angle) and part of the arm running more southerly into Liberty Avenue where it angles more or less east into the Flag Bastion (We call this the western arm of the angle). These arms are illustrated in Fig. 2. Both arms of the angle are interrupted by a cement wall 14.43 feet from the corner along the eastern arm, 23.92 feet along the western arm.

Only part of the original wall exists. In the corner of the angle were perhaps two hundred whole bricks and many fragments. Most of the whole bricks were removed for samples, those directly at the corner being left for the benefit of future diggers. A section was taken through the stone body of the wall to determine its form (Fig. 6) and a profile cut was made at the foundation's southern face to determine structure and depth. Stones from the wall were removed for samples. Mortar samples were taken from both the brick facing and the stone wall.

**Pennsylvania Archives*, 1854, v. 10, p. 483.

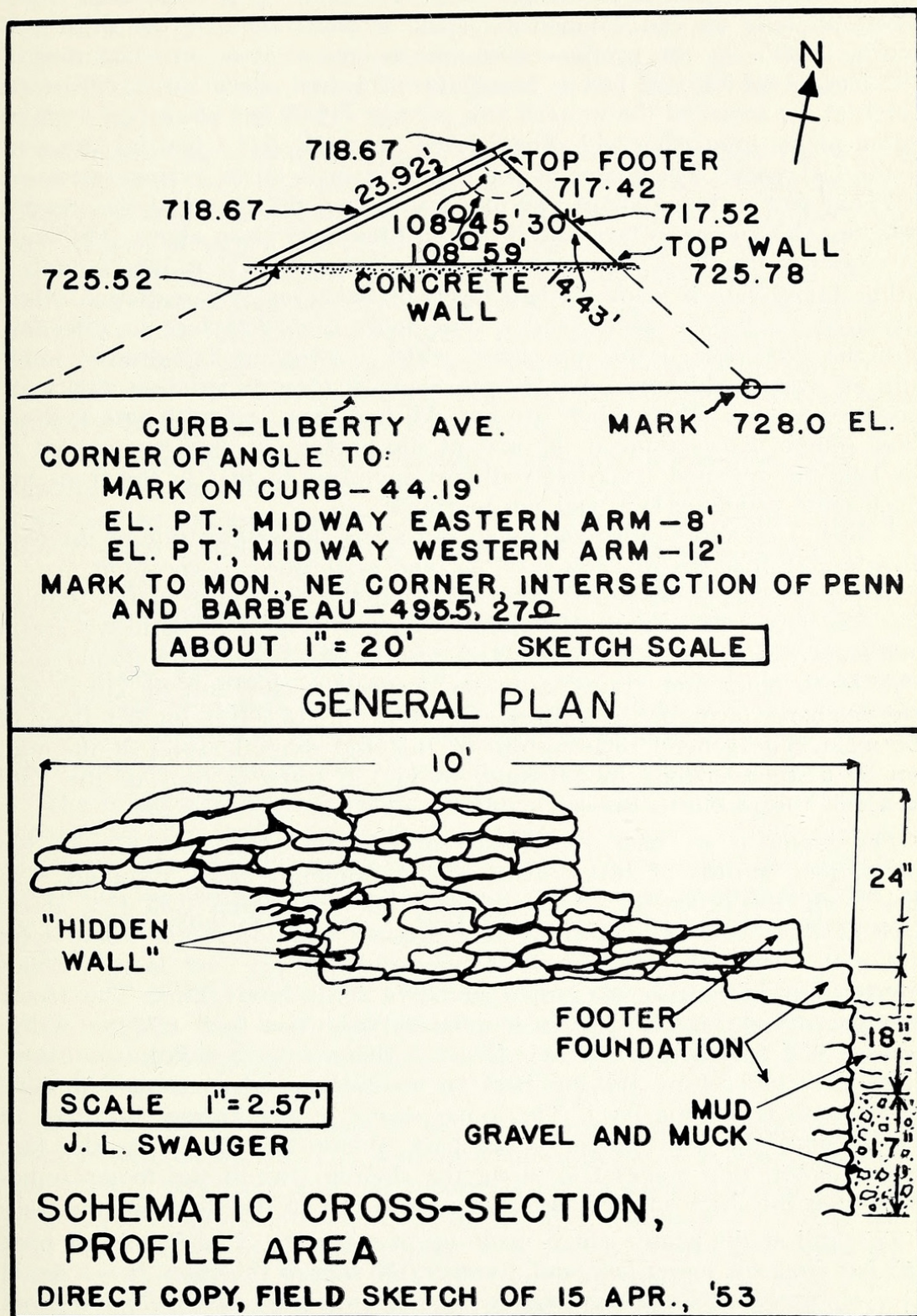


Fig. 2. Location of test pit C.M. 1

The wall averages 8 to 10 feet in width. It is made up of four "steps". The lowest of these we call "foundation"; the second, "footer"; the third and fourth, "wall". At the profile section the height of structure remaining is 4.92 feet, of which 2.92 feet is foundation; 0.5 foot, footer; 1.55 feet, wall. Levels at the footer of the western arm average 718.67 feet above the sea-level datum plane, comparing with Bliss's levels averaging 718.4 feet for this part of the fort wall.* The footer of the eastern arm is at an average elevation of 717.52 feet, it being about one foot lower than the footer of the western arm, and this compares favorably with the Bliss level given above. The highest elevation for the portion of wall remaining in C.M. 1 is 720.17 feet.

The foundation is made of eight layers of flat, roughly face-dressed stones averaging 1.5 feet in width, and a little more than 0.25 foot in thickness, with the exception of the top course which is carefully face-dressed stone, with an average thickness of 0.33 foot. Some of these foundation stones are mortared to each other; others are not. All had been laid with care and are quite plumb. Excavations at the rear of the profile cut were not carried to the base but revealed a vertical wall corresponding to that in the front but much more carelessly laid, and not mortared.

A ditch, commonly called the moat, ran along the eastern side of the fort. Bliss located it in his first test pit, "A," and established its elevation.

In the moat area, measured vertically from the top course of the foundation, we have 1.83 feet of clay and fine gravel to a layer of heavy gravel and black muck which continues 1.42 feet to the base of the foundation. This black muck and gravel layer has a superior elevation of 716.67 feet and compares favorably with Bliss's elevation of 716.6 feet for the floor of the moat. The general relationships of this and other features of the wall can be best understood by reference to Fig. 2, where a copy of the field sketch of the profile is shown.

The footer is set back an average of 0.67 foot from the face of the foundation, consists of two courses, one a shimming layer averaging 0.17 foot thick, the other the footer stones proper averaging 0.33 foot thick. Each of these courses is carefully face dressed, and the footer stones were laid with such precision that it is impossible to pry one loose without levering out its neighbors to right and left at the same time. The footer facing stones average 1.5 feet in length, and maintain their 0.33-foot thickness for 0.75 foot back from their faces to where, from a definite transverse ridge, they taper from the top back to an average thickness of 0.22 foot, the bottoms remaining level. The footer stones proper average one foot in width. Since the wall proper is set back almost two feet from the face of the footer, thin stones laid along the sloping rear of the footer stones carry their line back into the wall where it is lost in the stones of the wall.

The wall at the profile cut is made up of two steps. The first is set back 1.92 feet from the footer face, and averages 0.33 foot in thickness. It is a single layer of carefully face-dressed stones. The second is set back 2.75 feet from the footer face, and averages 1.25 feet in thickness. It is made up of four layers of roughly face-dressed stones. Most of the wall stones average a little

*Bliss report, p. 76.

more than one foot in width, and are roughly rectangular in most instances, but there is great variation in shape of those which are not rectangular. These eccentric stones were undoubtedly used to fill gaps in the more regular courses where errors of judgment as to size on the part of the masons had to be rectified.

Corresponding to the superior elevation of the foundation and 6.42 feet back from its face is a peculiar set of two "steps" completely incased in other wall stones. The lower of these is 0.83 foot thick and is made up of four courses of stone. The higher is 0.46 foot thick and is composed of two layers of stones. All stones used average 0.75 foot in width. All are carefully face dressed and are tightly mortared together. The presence of this subsidiary and "hidden" wall suggests that after the foundation had been laid a mortared wall was built up corresponding to the front vertical wall face and more than half way to the rear face. We can conjecture no specific purpose behind this method of construction.

Most of the wall stones are carefully mortared for two rows back of the interior wall discussed above. The final two or three courses, however, are carelessly set in mud packing. This is as true of the highest remaining layers of the wall as of the rear of the footer and foundation.

We were impressed by the exceeding hardness of the mortar used and by the great quantity used. In many instances it was easier to chisel stone away from mortar than mortar away from stone while the profile cut was being made. In many areas of the profile cut, we found the mortar was thicker than the stones it held together. Almost it looks as if the masons had poured great batches of mortar over a layer of stones and set the next course on the mortar to sink to position by weight alone.

The bricks were used as facing for the stone wall. In test pit C.M. 1 the bricks had been worked at so much in times past that it is now difficult to determine the number of bricks used in each course either horizontally or vertically. In test pit C.M. 3 the number was more readily apparent and a full discussion of the bricks will be given in the section devoted to that pit.

A total of 111 bricks and brick fragments, 50 mortar samples, 18 wall stone samples, and some miscellaneous boxes of rubble, bone, shell, glass, and metal pieces were removed from C.M. 1. We can not say that anything but the bricks, mortar, and stones are 18th century.

Test pit C.M. 2. Less than 10 feet of the arm running south into Liberty Avenue were uncovered. The position is shown in Fig. 3. It is only foundation, footer, and very little wall, all corresponding to those elements in C.M. 1. No bricks are present. Since at the time C.M. 2 was opened we were searching primarily for bricks, the portion here had no bricks and could tell us nothing we had not learned in C.M. 1, and by contract we were expected to get on with our work as rapidly as possible, we did no work at this portion of the wall once its general character had been ascertained.

This decision was productive of good results, for Smith, with Renner's approval, diverted into C.M. 2 a sewer line planned to run directly through

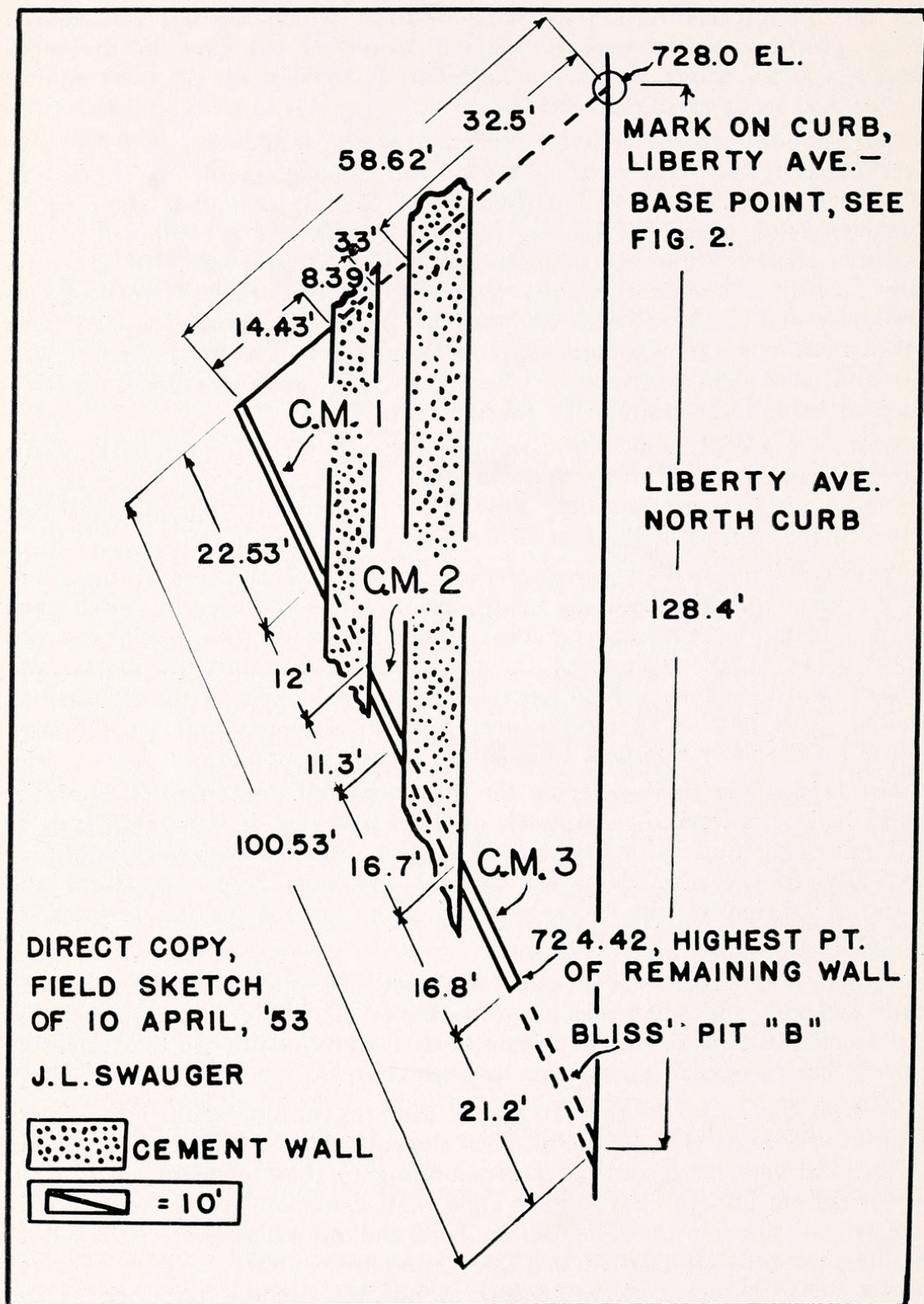


Fig. 3. Location of test pits C.M. 1, C.M. 2 and C.M. 3

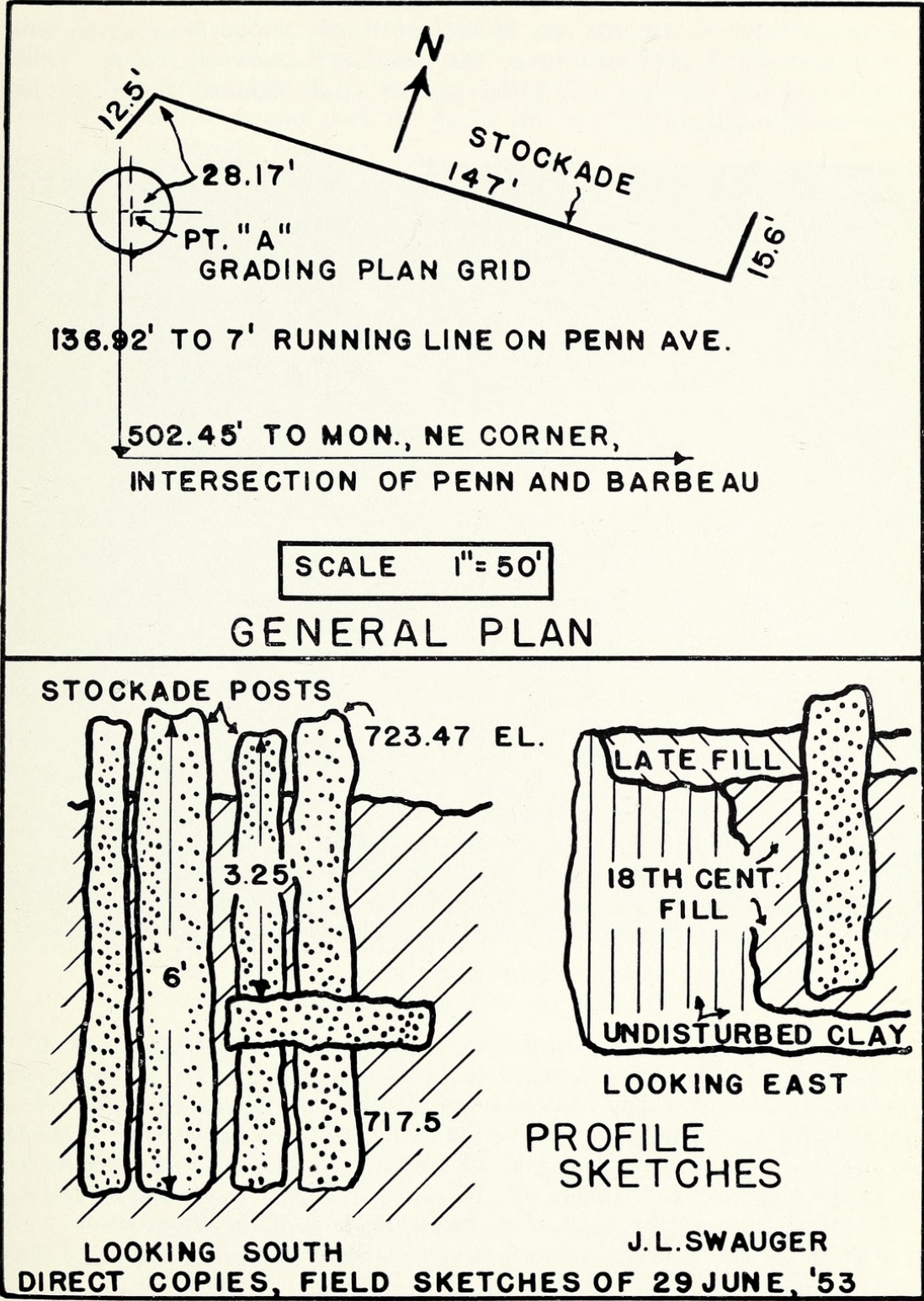


Fig. 4. Location of test pit C.M. 4

C.M. 3 at almost footer depth, and we were thus free to work in C.M. 3 without interference.

Test pit C.M. 3. In this pit, 33.92 feet of the arm coming south from C.M. 1 and C.M. 2 were uncovered. The position is shown in Fig. 3. The excavation for this pit ran into Bliss's pit "B" and included about ten feet of the wall he found.



Fig. 5. Portion of wall of Fort Pitt between Grenadier and Flag Bastions.
Test pit C.M. 1

Here is a section of wall consisting of 1.83 feet of foundation with a top elevation of 718.37 feet, comparing favorably with Bliss's elevation for this element,* and a base elevation of 716.54 feet where it is bedded in gravel below a layer of muck. Above the footer, which is of the same character as in C.M. 1, is a brick wall laid in English bond, 2.17 feet high with a backward slope of 1.02 inches in this height. There is then a stone wall 2.67 feet high above the brick wall. From the face of the foundation to the rear of the stone wall the average distance is 9.67 feet. Fig. 7 gives a good general view of test pit C.M. 3.

The stone wall is built in a series of four steps above the footer. Bricks are in place on the footer, as shown in Fig. 8, and for a height of a little

*Bliss report, p. 76.

over two feet above it, but it is probable they once faced the whole wall. The bricks are only four layers wide on the footer but due to their "reverse step" method of laying, they run eight to ten layers wide two feet above it. They tie into the stone wall not only by means of the "reverse steps," but also by heavy mortar bedding. In one or two places, stones for the wall above a layer of bricks extend over the layer and are mortared to them. This is a random occurrence, however.



Fig. 6. Section through wall of Fort Pitt between Grenadier and Flag Bastions. Test pit C.M. 1

Bricks average 8.5 inches long, 3.5 inches wide, and 2.25 inches thick. Exceptions to this standard occur, particularly among those bricks resting directly on the footer, and usually the eccentricity is in length, some bricks being as much as 11 inches long. A few bricks, too, are not truly rectangular on all faces but are chopped and hewed to different angles and curves to fit special niches in the walls where bricks of standard size and shape were not efficient. A representative two-square-foot section of the wall shows in its face 12 stretchers and 24 headers. Fig. 9 gives a good view of the brick wall.

The bricks, and here we derive most of our information from Matson's memorandum of June 29, are of a red burning clay with a light intermixture of river sand or a clay rich in fine-grained sand. Some of the brick are dense, heavy for their size, others almost punky in texture, light for their

size. Probably these discrepancies are due to positions of bricks in the kiln. In color they fall generally into the deep and medium red classes (We here follow Matson in describing in a few general visual categories rather than in the specific categories used by Mrs. Dragoo in preparing her catalogue descriptions) with some pale orange, and some brown bricks. Some are burned black around the edges. Some have vitreous glazing over portions of them.



Fig. 7. Brick facing on wall of Fort Pitt between Grenadier and Flag Bastions. Test pit C.M. 3

The bricks were made in a mold, probably one of wood. This mold formed three sides and both ends of the bricks, the upper broad surface being formed by tamping with fingers or palms of hand. There usually is a little overhang on the upper surfaces, and in broken bricks, the irregular upper surfaces are clearly seen.

The mortar is light brown, a clayey, sometimes muddy looking mixture, with considerable lime washing and lumps included. Some brick lumps are found in the mortar but Matson does not believe they were included as grog. There is a great deal of variation in the amount of mortar used in any two groups of bricks, and an even greater variation among groups of stones in the wall.

Construction of the wall, details of the foundation and footer, and stratigraphy in the moat area are the same as in C.M. 1.

The situation in regard to specimens is also the same as that in C.M. 1; that is, only objects pulled from the wall can be considered 18th century material. Altogether, 216 bricks and brick fragments, two mortar samples,



Fig. 8. Detail of brick facing at footer of wall of Fort Pitt between Grenadier and Flag Bastions. Test pit C.M. 3

and one stone sample were removed from C.M. 3 and kept as specimens. Many other bricks and some stone, as noted earlier, were buried.

Test pit C.M. 4. As illustrated in Fig. 5, 175 feet of a stockade line paralleling the wall between the Music and Ohio Bastions were exposed. The position of this line as surveyed by Braun & Fulton does not correspond exactly to features given in Sheet A2 of 7, "Forts and Fort Features . . .", of the Department of City Planning maps. It is our opinion that it represents the



Fig. 9. Detail of brick facing of wall of Fort Pitt between Grenadier and Flag Bastions. Test pit C.M. 3

interior line of the earth wall structure between the Music and Ohio Bastions.

The portion of the fort revealed by excavation at C.M. 4 consists chiefly of a stockade line 147 feet long running almost due east and west, its eastern end lying 356.26 feet west of the monument at the northeast corner of the intersection of Penn Avenue with Barbeau Street, and 101.94 north of the 7-foot running line on the north Penn Avenue sidewalk. Its western end is 494.8 feet west of the monument, 146.06 feet north of the running line. It is interrupted in several places by gas lines, by intrusive buildings, and by blank areas which have suffered disturbance but of exactly what type we did not determine. In general it is whole, and, as illustrated in Fig. 10, it is quite plain.

At the eastern end of the main part of the stockade, 15.6 feet of stockade incline almost due north. It is a clearly defined section but is interrupted by a fill at its northern end. We excavated across the line of its direction north of its last post, but although we went to a cement railroad retaining wall, we had no success.

At the western end of the main part of the stockade, about 12.5 feet of post line is barely discernible inclining to the south. We traced it by



Fig. 10. Top of line of stockade posts, north wall of Fort Pitt.
Test pit C.M. 4

means of organic smudges, remnants of posts, as illustrated in Fig. 11, and one fairly well preserved post top, this latter the most southerly element found. Excavation out its line of departure met with no success.

Elevations taken for us by Mauk average 720 for the tops of the stockade posts. We doubt that these levels are significant so far as the wall itself is concerned, but they may be in establishing the height of the parade ground, for obviously the posts had been chopped off almost at ground level at some time in the past probably so buildings could be constructed with either foundations or even first floors at this 720-foot level.

The stockade, as shown in Fig. 12, is composed of two types of posts, large ones averaging 0.83 to 1 foot in diameter, with six feet of their length well preserved and in place, and smaller ones averaging 0.33 to 0.5 foot in



Fig. 11. Smudges and remnants of west portion of line of stockade posts, north wall of Fort Pitt. Test pit C.M. 4

diameter, with an average length of three feet well preserved and in place. The large posts had not been sharpened, had not been driven into position in the wall by mauls, but had been stood in a ditch dug to receive them as indicated in Fig. 4. Earth had then been tamped in around them. At the one vertical section cut, a short horizontal log was still in place lying snug against the northern face of the post line and covered with tamped earth.

The shorter posts had been sharpened and driven into the filled ditch to strengthen the post line and to fill interstices between the large posts. While it is difficult to be certain of the number of posts remaining, since the entire stockade line was not completely cleaned and profiled, 159 large and small post tops were counted in the wall, and it is likely the exact total is not significantly different. Logs brought to the museum as samples were identified by Dr. Jennings as elm and black oak.



Fig. 12. Profile cut revealing stockade posts in place, north wall of Fort Pitt.
Test pit C.M. 4

The superior level of a representative post at the vertical section is 723.47 feet. Subtracting the post's length, six feet, from this figure, gives a level for the base of this particular post, and essentially a practical level for the posts in the section, of 717.47 feet, very nearly the elevation for the footing of the stone wall.* This is, of course, slim evidence, but it may indicate an effort to have the bases of all walls at nearly the same level.

East of the stockade line and to all practical purposes on line with it at a distance of 10 feet is a burned stump chopped off at a level corresponding to the tops of the stockade posts; beyond that 3.83 feet a square-cut post, that we do not believe is contemporary with the fort, chopped off at the same level; and beyond that 8.17 feet another burned stump chopped off as was

*Bliss report, p. 76.

the first. Ten feet beyond this stump, 32 feet from the stockade line, and still on line with it, were found three sharpened stakes which were recovered. These average a little over three feet in length, and, as identified by Dr. Jennings, are hickory, red oak, and beech. It has been conjectured they were *cheveaux de frise*, but since they are not robust, they may have been impaling stakes for sinking in the moat with their points up, or they may have been only stakes used in stretching lines.

From test pit C.M. 4, six bricks and brick fragments, three pieces of crockery, and 13 pieces of wood and bark were removed as samples. The wood and bark we are certain are 18th century. The bricks and crockery we feel sure are 19th or early 20th.

Test pit C.M. 5 was not dug at the request of the Section of Man but is numbered and mapped. Its potentials were discussed, earlier, and its position is shown in Fig. 1.

The pump. The map Sheet A2 of 7 mentioned on page 266 shows a pump about sixty feet south of the west end of the stockade line. At approximately this position normal grading operations uncovered a tub-like structure with its exterior made of vertical staves like those of a barrel, and its interior made of alternating circles of bricks and curved pieces of wood. Digging in this structure revealed only a mass of fine, dark dust shot with silvery specks of metal. The bricks were inspected by Matson during his visit on June 29, and he agreed with our conclusion that they do not resemble known fort bricks. The contractor was told the element was not of consuming interest to us, and it was covered as part of the regular grading work. Since that time, however, we have seen an illustration* of a 17th century well barrel at Jamestown, Va., which to some extent resembles the structure described above except for the interior lining. It is not impossible that this may have been part of the catch basin for the pump indicated on the "Forts and Fort Features . . ." plan although it is not probable.

RECORDS

Note-books, journals, correspondence, etc.

Considered as an integral part of the collection of material made during work at the Point State Park are the records maintained. These are briefly discussed here with notice as to their locations, copies, and the like, for the benefit of future workers at the Fort Pitt site.

Journals were kept by Hayes, Thurman, and Swauger. The books themselves remain in the possession of those who made them, but typed copies are held by the Section, as well as a copy of the journal prepared by Mrs. Dragoo. Duplicate copies of these journals accompany the specimens at present in the building of the Historical Society of Western Pennsylvania. They will move with the objects to the Point State Park museum. In such records, of course, the Bliss report must be given a place. It is history of the Point area, of forts such as was Fort Pitt, specific discussion of specific items, and discussion of specific archeological activities.

*Fig. 195, illustration for Jean C. Harrington, "Historic Site Archeology in the United States." In "Archeology of Eastern United States," James B. Griffin, ed., University of Chicago Press, Chicago, 1952.

Swauger's field note-book, a mining transit book, remains in the Section's possession. It contains only a few items of textual information not contained in the journal but does contain sketches which may be of future use including, for instance, one showing the location of the burial pit for bricks and stones from C.M. 3.

Copies of all reports made to the director of the museum or to various officers of the Historical Committee are kept by the Section. These include progress reports, estimates of the situation as the excavations developed, and the like. The Matson memorandum of June 29 is held with these reports.

A detailed descriptive catalogue of the objects recovered, giving assigned number, origin within the excavated area, full description, and disposition of each object was drawn up by Hayes, Mrs. Dragoo, and Swauger. The original is in two volumes. Typed copies were also made. One of these is held by the Section; one accompanies the specimens.

Copies of correspondence are kept in the Point State Park record books by the Section. Used in concert with the journals, these copies provide an excellent listing of persons concerned with the project either officially or with only a general interest.

The Section has kept a fairly full publicity record of its activities at the Point State Park. At present the clippings which compose this record are kept in the Point State Park record books but in time they will be transferred to the Section clipping file where they will always be available for study.

Maps and drawings

The following groups of maps and drawings are held by the Section as part of the Point State Park records. The first seven are those prepared by the Department of City Planning of the City of Pittsburgh for the city's Point Park Commission in 1943. Their scale is 1"=50'.

1. Archaeological Excavations of 1942-1943, Location of Test Pits and Fort Features. *Sheet A-1 of 7.*

2. Forts and Fort Features of 1754 to 1792 Superimposed upon a 1942 Map of Point Area. *Sheet A-2 of 7.*

3. Undisturbed Sub-surface Relevant to Surface and Sub-surface Fort Features Showing Basement Areas. *Sheet A-3 of 7.*

4. Physiographic Changes from 1754 to 1942 Relevant to Surface and Sub-surface Fort Features Superimposed upon a 1942 Map of Point Area. *Sheet A-4 of 7.*

5. Sub-surface Utilities Relevant to Surface and Sub-surface Fort Features Superimposed upon a 1942 Map of Point Area. *Sheet A-5 of 7.*

6. Owners of Record and Character of Buildings as of 1940. *Sheet A-6 of 7.*

7. Land and Buildings Assessed Values as of 1940. *Sheet A-7 of 7.*

The next four maps were prepared by Ralph E. Griswold & Associates in 1952.

8. Plot Plan, Point State Park. Scale 1"=50'.

9. Survey Diagram, Point Park. Scale 1"=100'.

10. Grading Plan, Point State Park. Scale 1"=50'.

11. Salvage and Construction Plan, Point State Park. Scale 1"=50'.

The surveyors hired by the Section produced these maps:

12. Carnegie Museum Pit 1, Point Park project. Rudolph Agresti. March. 1953. Scale 1"=5'.

13. Uncovered Portion of Stockade of Original Fort Pitt in Point Park. Braun and Fulton. July, 1953. Scale 1"=50'.

Swauger prepared two drawings labeled "Sketch Maps" on tracing paper for overlay use during the excavation work. Their scale is 1"=50'. They are:

14. Sketch Map no. 1, Excavations and Results, Bliss Test Pits. February 21, 1953.

15. Sketch Map no. 2, Probable Excavation Area, P.P.P. February 22, 1953.

Swauger and Hayes prepared a series of drawings labeled "Charts" for use in both planning and record procedures. Their scales vary from chart to chart and in instances within charts for either horizontal or vertical readings. In such instances, the first scale given is horizontal, the second, vertical. In the listing given here, Swauger's charts are identified by the initials "J.L.S."; Hayes's by "A.M.H."

16. Chart 1. Point Park Elevation Chart, No. 1: "O" line. Feb. 4, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

17. Chart 2. Point Park Elevation Chart, No. 2: "N-1" line. Feb. 4, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

18. Chart 3. Point Park Elevation Chart, No. 3: "N-2" line. Feb. 7, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

19. Chart 4. Point Park Elevation Chart, No. 4: "N-3" line. Feb. 7, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

20. Chart 5. Point Park Elevation Chart, No. 5: "N-4" line. Feb. 9, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

21. Chart 6. Point Park Elevation Chart, No. 6: "S-1" line. Feb. 9, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

22. Chart 7. Point Park Elevation Chart, No. 7: "S-2" line. Feb. 9, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

23. Chart 8. Point Park Elevation Chart, No. 8: "S-3" line. Feb. 9, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

24. Chart 9. Point Park Elevation Chart, No. 9: "S-4" line. Feb. 9, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

25. Chart 10. Stratigraphic Charts, Wesley Bliss test pits. Feb. 21, 1953. J.L.S. No horizontal scale; vertical scale, 0.2"=1'.

26. Chart 11. Stratification, Bliss test pits, Land Wall. Feb. 22, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

27. Chart 12. Stratigraphic Charts, Contours and Pits, S6-S7 Contours, Pits "A" and "B." Feb. 24, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

27. Chart 13. Stratification and Horizontal Plan, Land Wall. Feb. 24, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

28. Chart 14. Stratification in Pits, Southeast Wall. March 14, 1953. J.L.S. Scale 1"=50'; 0.2"=1'.

29. Chart 15. Pit Stratification, C.M. 1, Bliss pits "A" and "B." March 22, 1953. J.L.S. No horizontal scale; vertical scale, 1"=1'.

30. Chart 16. Archeological Knowledge, Southeast and East Walls of Fort Pitt. (Prepared for presentation with report of April 7, 1953, to Griswold from Swauger.) April 7, 1953. J.L.S. Scale $1''=50'$; $0.2''=1'$.

31. Chart 17. Point Park Project, Miscellaneous Figures, Carnegie Museum pit 1. March 22, 1953. J.L.S. Varying scales.

32. Chart 18. Point Park Project, Miscellaneous Figures, Carnegie Museum pit 1. March 22, 1953. J.L.S. Varying scales.

33. Chart 19. First, second and third sections, Retaining wall, C.M. 1. March 25, 1953. A.M.H. $0.1''=1''$.

34. Chart 20. Various views, Wall in C.M. 3. A.M.H. April 10, 1953. $1''=2'$.

35. Chart 21. Fourth and fifth sections, Retaining wall, C.M. 1, April, 1953. A.M.H. $1''=1'$.

36. Chart 22. Various views, Wall in C.M. 3. A.M.H. April 22 to May 1, 1953. A.M.H. Varying scales.

Photographic records

There are three categories in the photographic record:

1. Kodachromes taken chiefly by Swauger and Rial.
2. Black and white photographs taken chiefly by Swauger.
3. Black and white photographs taken by the Pittsburgh Photographic Library.

Kodachromes, negatives and prints of Swauger's black and white photographs are in the possession of the Section, held as part of the Point State Park record, and are entered and numbered in routine fashion in the Section's photographic file. Prints of the Pittsburgh Photographic Library's black and white photographs are held by the Section; the negatives are retained by the Pittsburgh Photographic Library, where prints can be obtained. The prints from the Pittsburgh Photographic Library bear that Library's numbers.

Not all the photographs taken by Swauger (and his pictures form the bulk of the photographic record) are good photographs. However many that are blurred in places through being out of focus or because of movement are retained because portions of the slide or print retain sharp impressions of part of the work. They are part of the listing below which gives the categories of subjects, the kind of picture, the taking agency, and the proper reference numbers in the files of the taking agencies. A complete descriptive list, slide by slide, print by print, that includes an estimate of the condition of the slide as a photograph is held by the Section.

List of photographs

| <i>Kodachromes</i> Swauger and Rial | <i>Black and white</i> Swauger | <i>Black and white</i> Pittsburgh Photographic Library |
|--|---|--|
| <hr/> General views of the site <hr/> | | |
| 901-905, 908, 911, 912, 918, 919, 923- 936, 939-958, 1561, 1567-1573, 1576- 1578, 1591-1602, 1605, 1612, 1619, 1656, 1661, 1663- 1681. | 678, 679, 686-690, 746, 747, 818-822, 829-834. | |
| <hr/> Historic markers, buildings, etc. <hr/> | | |
| 913-917, 920, 921, 937, 938, 1581-1590. | | |
| <hr/> General use of heavy equipment <hr/> | | |
| 906, 907, 909, 910, 922, 951-954, 1532- 1537, 1562-1566, 1574, 1575, 1579, 1580, 1603, 1604, 1606-1611, 1613- 1618, 1652, 1655, 1657-1660, 1662, 1678. | 680-685, 691, 692, 770, 789, 807-817, 823-828, 835-837, 868-874. | 11608-11611. |
| <hr/> Test pit C.M. 1. <hr/> | | |
| 959-999, 1500-1506, 1508-1513, 1524-1531, 1540. | 700-745, 748-764, 769, 771-774, 778- 781. | 11600-11607, 11621- 11623. |
| <hr/> Test pit C.M. 2. <hr/> | | |
| 1518. | | |
| <hr/> Test pit C.M. 3. <hr/> | | |
| 1507, 1514-1517, 1519-1523, 1538, 1539, 1541-1560, 1643. | 765-768, 776, 777, 782-788, 790-806, 854. | 11593-11599, 11612- 11620. |
| <hr/> Test pit C.M. 4. <hr/> | | |
| 1620-1642, 1644- 1651, 1653. | 838-853, 855-867. | 11566, 11568-11580. |
| <hr/> Test pit C.M. 5. <hr/> | | |
| 1683-1750. | 693-697. | |
| <hr/> Miscellaneous <hr/> | | |
| 1654, 1682. | 698, 699. | 11577. |



Swauger, James L. and Hayes, Arthur M. 1959. "Historic archeology at Fort Pitt." *Annals of the Carnegie Museum* 35, 247-274.

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