

COUNCIL CHAMBER,
ANN ARBOR, September 4, 1894. }

Adjourned session of September 3, 1894.

Called to order by President Wines.
Roll called.

Quorum present.

Absent—Ald. Wagner, Ferguson, Taylor—3.

Ald. Brown moved to reconsider the vote by which the report of the finance Committee was adopted relative to printing 1,000 copies of the special sewer committee's report. Adopted.

On motion the report was laid on the table.

Ald. Brown moved that the report of the special sewer committee be printed in the proceedings of this council meeting.

Ald. Prettyman moved an amendment that the expert sewer inspectors report be added to said report and printed.

Ald. Manly moved an amendment to the amendment that the testimony given by City Engineer Key, Pres. Keech and Capt. Schuh be printed.

The yeas and nays being called on the amendment to the amendment was lost as follows:

Yeas—Ald. Bodmer, Wood, Manly, Pres. Wines.

Nays—Ald. Martin, Snyder, Brown, Kitson Prettyman—5.

The yeas and nays being called on the amendment, it was adopted as follows:

Yeas—Ald. Bodmer, Martin, Snyder, Brown, Kitson, Prettyman, Pres. Wines—7.

Nays—Ald. Wood, Manly—2.

The original question as amended now being put prevailed as follows:

Yeas—Ald. Bodmer, Martin, Snyder, Brown, Kitson, Prettyman, Pres. Wines—7.

Nays—Ald. Wood, Manly—2.

Ald. Manly explained his vote as being on the ground that it was the understanding of all the members of the committee that the said report

with the testimony annexed, was to be printed for distribution, and for this reason I vote no.

SPECIAL SEWER COMMITTEE'S REPORT.

We, the committee appointed by the Common Council of the city of Ann Arbor to investigate the present condition of the main sewer, hereby adopt the annexed report of our sub-committee as our report of the condition, etc., of the sewer, and respectfully request to be discharged from further consideration of the matter.

Dated, August 16, 1894.

GEO. W. BULLIS,
Chairman.

C. G. DARLING,
ARTHUR J. KITSON,
LEVI D. WINES,
P. L. BODMER,
FRANK WOOD,
C. H. MANLY,
NOAH W. CHEEVER,
HENRY S. DEAN.

REPORT OF SUB-COMMITTEE

in regard to the construction and present condition of the main sewers in the city of Ann Arbor.

The undersigned, as a sub-committee, were directed by the general committee to take the statements of persons connected with the construction of the main sewer and report the results of their investigation, and in pursuance of such instruction the committee employed a stenographer, and examined such persons as could give important information in the matter, and herewith submit the results of the investigation with a copy of the testimony taken attached.

1.—We find that the following persons had charge of the construction of the sewer, viz: "A" That the Board of Public Works under the charter had full control of the construction of this sewer, and that a sewer committee was appointed by the Common Council to act with them in this matter by resolution as follows:

Resolved, That the Board of Public Works do proceed with the construction of the main sewer according to the plans heretofore approved by this council, and such work be done under the direction of the Board of Public Works, with the sewer committee of this council as a consulting committee.

B. That George F. Key, city engineer, with Prof. C. E. Green, as consulting engineer, had full charge of locating the line of the sewer and establishing the grade and making such maps and specifications as were necessary.

C. That George F. Key, city engineer, had the main charge of the construction of the sewer from its mouth at the river to the baggage room of the M. C. depot.

D. That during the absence of George F. Key, city engineer, caused by his sickness, and also his absence caused by the cave in at Laubengayers, it appears that the construction of the sewer proceeded with no other

superintendence than that of Nelson Sutherland, street commissioner, from the east baggage room of the M. C. R. R. depot to the gas house, although his primary duties were only to see to employing the laborers and keeping their time, and he had no experience in the construction of sewers.

E. That J. F. Schuh assumed main charge of the construction of the sewer from Main street south to the terminus on Hill street, except that Mr. Key, city engineer, had charge of that portion of the sewer from Summit st. to Kingsley street and from Madison street to the terminus at Hill street.

F. That we find that the cement at the joints of the tile project into the sewer and form obstructions therein to the serious injury of the use of the sewers, viz:

That from the west end of the iron pipe at the M. C. R. R. passenger depot to the end of the sewer at Hill street, we find that the cement at the joints of the tile in a large number of joints has been forced into the sewer pipe, and formed obstructions therein from one to five inches thick, which is a serious injury to the use of the sewer as material passing through the sewer may catch upon these and finally block up the sewer, and these should be removed before the sewer is used. That exhibits A and B herewith submitted are small specimens of these obstructions.

4.—From the memorandums made of the examination of the sewer by John Cogger, sewer expert from Detroit, we find the following to be the condition of the sewer.

From west end of iron pipe near the foot of Thirteenth street to the blind manhole in front of the M. C. R. R. station house, there were 446 tiles examined, 117 of which are cracked the whole length of the tile; 20 joints with cement protruding into the sewer from 1 inch to 6 inches; 6 joints open from $\frac{3}{4}$ inch to 2 inches. The amount of sand and mud varied from 0 inches to 6 inches in depth. The amount of water and mud varied from 6 in. to $6\frac{3}{4}$ inches in depth.

Section from blind manhole at M. C. R. R. station house to Main street.

672 tiles examined of which 119 are cracked; 22 joints are open and cement is protruding into the sewer from 1 inch to 3 inches; 20 other joints are open from 1 inch to $1\frac{1}{2}$ inches. The amount of sand and dirt varied from $\frac{1}{2}$ inch to 5 inches. The amount of water and mud varied from 5 inches to 11 inches. In the section from the blind manhole at M. C. R. R. station house to Detroit street, there are 142 tiles of which 92 are cracked. In the section from Fifth avenue to Detroit street the inspector could only go as far as the 68th tile because of the depth of water and mud encountered, it being 11 inches deep at the 68th tile.

Entering this section at the manhole on Detroit street the inspector could only go into the sewer as far as the ninth tile on account of the depth of the mud and water which was 11 inches deep at this point also. There is little doubt but what this section is below grade nearly or quite 8 inches. The iron pipe which was examined from near the foot of Thirteenth street west to the point where the crack tiles begin were found to be open from 1 inch to 2 inches at the joints.

The section from the manhole on Summit street diagonally across to the first manhole on Main street, contained 46 tiles all of which were in perfect condition, and the joints and everything pertaining to the section seemed to be in first-class condition. If the whole sewer had been as good as this section, Ann Arbor would have a first-class sewer.

In the section from the manhole on Main street, near Summit street, to the manhole in front of the old jail, there are 151 tiles all of which are sound there being but two joints through which cement was protruding into the sewer. The water in this section was from 1 inch to 3 inches deep.

5.—We also find that in that portion of the sewer where gaskets were used, and also for about 100 feet west of Summit st. where no gaskets were used but where the tile was carefully laid, that there is little or no cement projecting from the joints of the sewer and it is practically clear, also that there is little or no cement projecting in the sewer from the mouth of sewer west to the iron pipes at about Thirteenth street.

6.—We find a sag or depression of the sewer pipe below grade for a distance of about two hundred feet beginning at west baggage room of the M. C. R. R. depot and running west to the gas house the deepest sag about 8 inches which sag was filled with mud and water which has been flushed out. We also find a sag from 2 to 3 inches below grade in the iron pipe.

7.—We find that most of the water and sand that enters the sewer runs into the joints of the sewer in that portion of the same from which just north of Miller avenue, up the sewer south to Main street and also that at the M. C. R. R. station there is $7\frac{1}{2}$ inches of water running through the sewer.

8.—We find that quicksand enters the sewer at the joints of the pipe at Bodmer's lumber yard and above, and we think that the sewer pipe should be taken up and relaid from Jefferson street east as far as quicksand is found to enter the sewer.

9.—It appears from the statements made to us that in that portion of the sewer between the M. C. R. R. and Fifth avenue, where clay soil was found, no soft earth or sand was provided in which to lay the tile or to pack around and cover it, but that lumps of clay were placed around the tile and tamped down as much as possible. We are of the opinion that had sand or soft earth been provided, and had this been well and thoroughly tamped around the tile, that the tile would not crack or break.

10.—That from mouth of sewer to Fuller st. each joint of the sewer pipe was calked by the use of an oakum gasket and then was filled with cement. Upon this subject of the use of gaskets, the committee would respectfully call attention to the statement of city engineer, Geo. F. Key.

After hearing the statements of the members of the Board of Public Works, the City Engineer and Street Commissioner, your committee are of the opinion that the Board of Public Works who legally had control of the construction of the sewer acted in good faith; but they were without sufficient knowledge or experience to enable them to properly do the work and they failed to give the City Engineer sufficient power or support to enable him to secure the proper construction of the sewer.

The committee are of the opinion that had oakum gaskets been used and proper means taken to keep the trench dry while laying the tile that the cement would not have worked into the tile and formed obstructions at the joints on the inside of the sewer. And the committee also think that if these precautions had been taken that the joints would be water-tight so that neither water nor sand would work into the sewer, and we would have a practically dry sewer.

That Mr. Sutherland reports that he has cleaned out all the cement and stones from

inside of the sewer from between Williams and Jefferson streets to the mouth of the sewer so that this portion of the sewer is now practically clear of cement and other obstructions.

The committee are also of the opinion that the defects found in this sewer were caused as follows:

1.—By not having some one person in charge of the work who would have absolute control of it and held responsible that the work should be properly done.

2.—That complete specification should have been prepared for the construction of the sewer.

3. That a sewer inspector should have been employed to be constantly on the ground to see that the work was properly done according to written specifications furnished.

4.—That work of this nature should always be let to responsible parties who will give adequate bonds that the work will be properly done and be constantly under the supervision of a competent sewer inspector, and the defects found were largely due to the failure to adopt this course.

Your committee recommend that the sewer tile from the end of the iron pipe on the south side of the M. C. R. R. track to the gas house be taken up and relaid with iron pipe before the sewer is used for general sewer purposes, and then the sewer may be used up as far as William street.

Your committee also recommend that the manholes be numbered consecutively from the mouth of the sewer by painting the number on the inside of the manholes.

We refer to the stenographer's notes of the statements made to us, and the report of John Cogger, sewer expert from Detroit, which is hereto attached and made a part of this report.

Dated, August 16, 1894.

NOAH W. CHEEVER,
GEO. W. BULLIS,
LEVI D. WINES,
HENRY S. DEAN.

REPORT OF INSPECTION OF THE ANN ARBOR MAIN SEWER, BY JOHN COGGER, OF DETROIT.

1. Does the main sewer contain any serious leakages? Yes.
2. Between what points are these leakages situated? In all that district where quick-sand is found.
3. Are there any serious breaks or cracks in any of the pipes? Yes.
4. Where are those breaks or cracks located? From the iron pipe on the river bank west to Fifth Avenue.
5. What is the nature of those breaks or cracks? All cracked lengthwise of the pipe.
6. In your judgment what was the probable cause of those breaks and cracks? The material with which the pipes were packed was not the proper kind, nor thoroughly tamped, hence the tile were not properly laid.
7. Would you advise a renewal of the pipe in those places containing such pipes? To insure certain and perfect working of the sewer, the pipes should be renewed, but would recommend leaving the sewer in its present condition till further accident or necessity required a change.
8. Did you find cement protruding into the pipes at the joints? Yes.
9. In what localities was such the case? Between M. C. R. R. Depot and University sewer.

10. How much did the cement protrude? From 1 inch to 6 inches—i. e. the diameter of the pipe is shortened by said amount and stops the flow.
11. Would such obstruction cause deposits of sediment in the pipes? Yes, such as rags, grease, sticks, etc.
12. Did the pipes in any place appear to be seriously lower than the grade for any considerable distance? Yes, on Depot street, about 300 feet (between Fifth Ave. and 25 feet east of manhole on Detroit street); also between manhole 9 and 10, 6 inches of sand was found.
13. At what localities are these depressions noticeable? At about 130 feet east of Fifth Ave.
14. Did the line of the pipes differ materially from a straight line? They did at certain places in the quick-sand district.
15. Were the pipes well jointed together? No.
16. About what was the least and what was the greatest distances between the socket end of one pipe and the spigot end of its immediate neighbor? From 0 inches for the least, to 2½ inches for the greatest.
17. Have any obstructions been removed from the pipes during your inspection? Yes, 1 inch board, 8 inches by 12 feet, in one of the joints, a croquet ball.
18. Do you find the manholes in proper condition? Nothing serious the matter except on outsides.
19. Do you think the covers to manholes too small? Think a larger cover and manhole is preferable.
20. Is it necessary to stop the leaks? Yes, if it can be done
21. What procedure do you recommend for doing that work? Practically relaying pipe properly.
22. Do you find anything other than water entering the pipes at the points of leakage? Yes, quick-sand in the quick-sand district.
23. What is your general opinion of the present condition of the main sewer? It is generally in a poor condition.
24. What recommendation do you suggest in remedy of the existing difficulties? Renewal of the broken pipe, protection of manholes on outsides, manholes increased in size and provided with iron steps, lamp holes at least each two hundred feet.
25. How many damaged pipes did you find outside of the 24? None.
26. Give your judgment as to the diminution of the capacity of sewer on account of leakage? Capacity will not be impaired for a number of years.
27. Can the sewer in its present condition be safely attached to, i. e., Is there any serious objection to connecting the lateral sewer to the main sewer? It is perfectly safe so to do till some accident happens in the questionable district.
28. What is your full name? John Cogger.
29. Place of residence? 824 Fourth Ave., Detroit, Mich.
30. Your business? Inspector of sewers, and mason by trade.
31. By whom recommended for the present work? Joseph Granger, chief sewer inspector of Detroit, Mich.
32. Number of years experience? Been engaged in sewer work for 32 years.
33. How long as sewer inspector in Detroit? Over four years.

JOHN COGGER,

Signed, July 18th, 1894.

Chairman Kitson, of the Committee on Sewers, made a verbal report, stating that the Committee on Sewers had duly considered the specifications for the construction of sewers in this city, as submitted by the Board of Public Works, and the Committee would recommend a few minor changes, as they are read. The Committee had also invited the members of the Board of Public Works and City Engineer to be present at this meeting. All members were present.

On motion the Board of Public Works were invited to seats inside the railing.

City Engineer Key then proceeded to read the specifications and on motion the following changes were recommended to be made in the specifications:

1st. The title to be changed to read: "Established by the Board of Public Works. Confirmed and approved by the Common Council."

2nd. Section 3 of the specifications be stricken out.

3d. Sections 38, 39, 40 of the specifications be amended so that the use of okum gaskets and pure cement shall be required for making joints.

4th. Section 114 of the specifications be amended to read as follows:

"It is made a part of any and all contracts with the city of Ann Arbor for the construction of any lateral sewer that the contractor shall employ as trenchmen and shovelers only such persons as have been residents of the city of Ann Arbor for six months preceding the date of any such contract, so long as such laborers can be employed for not more than fifteen cents an hour."

FROM THE SIDEWALK COMMITTEE.

By Ald. Manly:

Resolved, That Mrs. Hill residing on the corner of Thayer and Hill streets, be permitted to build her walk six

inches above the established grade at the N. E. corner of Hill and Thayer streets till such time as the Council shall deem it necessary to make it conform to the established grade. Also that the walk along J. Wahl's property on the east side of S. Fourth Ave., be made 5-ft wide and 4-ft from the property line and laid on the established grade.

Adopted as follows;

Yeas—Ald. Bodmer, Martin, Allmendinger, Wood, Snyder, Brown, Manly, Kitson, Prettyman, President Wines—10.

Nays—None.

To the Common Council:

Your committee on sidewalks would report there being a necessity for grading and construction of sidewalks where stated, your committee caused to be prepared and herewith submit the proper resolution ordering the same and recommend that it be adopted.

Respectfully submitted,

C. H. MANLY,
C. J. SNYDER,
ARTHUR J. KITSON,
D. F. ALLMENDINGER,
Sidewalk Committee.

Accepted, and leave being granted the following resolution was offered:

By Ald. Manly:

Resolved, That the grading and construction of the sidewalks hereinafter mentioned is deemed and declared a necessary public improvement; therefore

It is hereby ordered that plank sidewalks be graded, built and constructed on and along the following property in the city of Ann Arbor, viz:

On the east side of Seventh street, from the north line of the property of Mr. Groves to Huron street, said walk to be built 4 feet in width.

On Spring street, in front of Mrs. Foley's property.

That all such sidewalks be built, graded and constructed in the manner, within the time and of the material prescribed by the provision of an ordinance entitled "An Ordinance Relative to Sidewalks," and on the grade to be established.

Adopted as follows:

Yeas—Ald. Bodmer, Martin, Allmendinger, Wood, Snyder, Brown,

Manly, Kitson, Prettyman, President
Wines--10.

Nays--None.

Charles Worden was granted the floor and stated that the Street Railway linemen had fastened a stay wire to one of his shade trees on William street.

Ald Prettyman moved that it is the sense of this council that the board of public works, do order the street commissioner to cut said wire.

Adopted.

Ald. Kitson moved that the vote by which the resolution of Ald. Wood was adopted, ordering the board of

public works to proceed with the repairs of the main sewer, be reconsidered.

Adopted.

Ald. Brown moved as a substitute for the resolution that the board of public works be ordered to prepare plans and estimate of the cost of rebuilding the main sewer, as recommended by special sewer committee, if they find such repairing necessary, and report at our next council meeting.

Adopted.

On motion the council adjourned.

W. J. MILLER,

City Clerk.