

Town Council Meeting Summary

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Meeting adjourned.	19

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Town Council Meeting

March 12, 1985

7:30 p.m.

Council Chambers

A regular meeting of the Wallingford Town Council was held on March 12, 1985 and the meeting was called to order at 7:35 by Chairman Gessert. Answering present to the roll called by the Town Clerk were Council members Bergamini, Diana, Gessert, Holmes, Killen, Krupp, Papale, Polanski and Rys. Mayor Dickinson was also present. The pledge of allegiance was given to the flag.

Invocation by Chaplain Ray Cooley: God we pray for thy wisdom. Be in our midst this evening. Be with this Town Council as they deliberate; help them as they struggle to be fair and honest with all the interests that they have to deal with. Amen.

Public Question and Answer Period

Shirley Calandrella, 17 Laden Avenue referred to a newspaper article and a comment by the Mayor regarding the town receiving a higher percentage of the utilities money which may result in higher electric rates. Mayor Dickinson believes his comment was taken out of context. As the Mayor recalled, the letter he submitted indicated that any time we would use money from the Electric Division for any other purposes, the result could mean higher electrical rates. The Mayor is not advocating this and explained that if the town decided to take profits from the Electric Division and use them for purposes other than the Electric plant improvement, it could mean higher electric rates. We are not advocating that--this was just to make clear to anyone reading the opinion that we cannot easily and without new concern for consequences go to any of the utilities and withdraw for use on other types of projects in town without having an impact on our utility rates--that was the point.

Ms. Calandrella referred to Mr. Killen's statement in the newspaper which indicated that the Pierce Station closed in 1981 and she asked Mr. Killen since when has the utility plant closed and who is paying for the linemen working on the poles and who kicks in the power when it's needed. Mr. Killen explained that the generating plant was closed for all intents and purposes and they have a standby crew and years ago, peak shaving power was generated and now the contract was changed with CL&P and Pierce is not a working station anymore. Ms. Calandrella feels the town should be very grateful for the Pierce plant and she sees no reason why the town should put their hands on the money that plant makes. It should be kept within the Electric Division because they are seeking ways to obtain lower costing fuel and this money is also necessary for repairs needed. Mr. Killen stated that by state statute, the town appropriates the money for the utility divisions and they can do nothing without the money given to them by the town.

Mr. Killen explained that at budget time, all departments have requests to be filled and as it stands now if the Electric Division had \$10,000,000 to sit on and the town needed police cars, snow plows, etc. we could not touch that money. It is up to the wisdom of the Town Council to decide who will get what but if there are certain areas the Town Council cannot touch, what is the sense of this group sitting down and putting a budget together--it doesn't make much sense. Ms. Calandrella stated she did not have too much faith in that.

Mr. Gessert stated that a letter was sent to all Council members indicating that Jim Acton received a request or statement of interest from Mr. Northrop of Rocky Hill who is interested in disassembling the Taber House and rebuilding it in some other community. 153

Mr. Acton stated that the Taber House has become very popular and a man from New York came up last week, somebody today and someone will be here on 3/14/85 in response to an ad in the New York Times and in Connecticut Magazine and there is some keen interest. Mr. Acton wanted Council approval before giving verbal acceptance of any proposals.

Mr. Gessert asked the Council members if they would be willing to consider proposals to move the Taber House and all Council members are willing to listen to alternatives but Messrs. Diana, Gessert, Killen, Krupp, Polanski and Rys would prefer to see the Tab House moved to another site in Wallingford. Mr. Killen indicated that the Town Council will decide the alternative since the town of Wallingford owns the building.

Mr. Killen moved to waive Rule V and this motion was seconded by Mr. Rys and unanimously approved; motion duly carried.

Mr. Killen moved an appropriation of \$600 from A/C 501A-2 Correction to Sanitary Laterals by Preconstruction to A/C 501-002 Capital Kern Level. Mr. Krupp seconded the motion.

Mr. Rys asked Mr. Myers what A/C 501A-2 entailed and Mr. Myers explained it was a section of the Engineering Department called General Improvements--improvements to town roads, streets, etc.

Mr. Gessert's only concern with this appropriation is that he hoped it would not prevent work from being done on laterals which need repair and Mark O'Connell indicated that this occurred 2 or 3 years ago when the installation of storm sewers actually damaged some of the sanitary laterals and money was appropriated in the budget.

Vote: Unanimous ayes; motion duly carried.

Mr. Killen asked, while under Rule V, if the ad in the newspaper the other day concerning the sale of surplus property came before the Council and Mr. Gessert said it did not and asked Mr. Killen to direct a letter to the Purchasing Agent to ask that this matter be brought before the Town Council. (A letter was sent regarding this matter to Mr. Donald Dunleavy on March 14, 1985.)

Mr. Gessert read a letter from Mayor Dickinson regarding the appointment of Robert N. Beaumont as a Commissioner to the Public Utilities Commission and the letter stated many reasons why the Mayor felt Mr. Beaumont would be a fine addition to this Commission.

Mr. Krupp moved confirmation of the Mayor's appointment of Robert N. Beaumont as a Commissioner of the Public Utilities Commission. This motion was seconded by Mr. Polanski.

Mr. Krupp expressed a tremendous amount of respect for Mr. Beaumont and felt he will be an asset to the PUC. Mr. Krupp would like to note for the record the exceptional job Mr. DeMaio has done serving on the PUC and note our appreciation for the service he has given to the community on the PUC. Mr. Gessert also felt Mr. DeMaio deserved to be thanked for the fine service he has performed.

Mr. Diana mentioned to Mayor Dickinson that Mr. DeMaio did a fine job and it's a shame he wasn't picked to return. With all due respect to the Mayor's selection, Mr. Diana congratulated Bob who is a fine individual and will put in fine effort and the choice was a good one.

Mrs. Papale thanked Joe for the fine job for the 6 years he has been on the PUC. He was one of the finest PUC Commissioners, an expert on the water and sewer problems since he worked on the sewer and water department of DeFelice Construction since age 14. The PUC and Town Council has had a good relationship because of Joe's bipartisan approach and knowing Bob Beaumont, she feels this will continue and she wishes Bob Beaumont lots of luck in his new job.

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Mayor Dickinson also added his high regard for Joe DeMaio and he did express to the Mayor interest for anything that should come up in the future and this should be kept in mind. Bob brings high qualifications to the post and we must face the fact that the coming years are going to involve some rate hearings and rates involve pretty close financial analysis of how they are going to impact the town, not only for overall budgets but for property owners. There is a great deal of financial information that goes into rate construction and the consultant's reports that support them. It was not an easy choice but I think we should be well served.

Mr. Edward Musso, 56 Dibble Edge Road felt that Mr. Beaumont has good qualifications but that Mr. DeMaio was an expert in the field and felt that Mr. DeMaio should have remained and another spot chosen for Mr. Beaumont.

Mr. Gessert felt that Mr. Beaumont will do an excellent job and we are looking at very serious funding situations and financial alternatives and Bob will be able to analyze numbers, etc. He worked on Project Catch-Up and brought it to a successful close.

Mr. Killen felt that a letter of appreciation from the entire Council should be sent to Mr. DeMaio and Mr. Gessert agreed.

Vote: Unanimous ayes; motion duly carried.

Mr. Gessert congratulated Bob Beaumont and he received applause from the Council and audience.

Mr. Beaumont thanked Mayor Dickinson for making him his appointee and thanked the members of the Town Council for their support. He looks forward to serving on the PUC and expects it will be a very interesting challenge and he looks forward to helping the town out with the large projects ahead such as sewage treatment plant and water treatment plant.

Mr. Holmes moved confirmation of the appointment of Gary J. Solnik as Alternate to the Zoning Board of Appeals, seconded by Mrs. Bergamini.

Vote: Unanimous ayes; motion duly carried.

Mr. Solnik was sworn in by the Town Clerk at this point in the meeting and congratulated by the Town Council.

Mrs. Bergamini moved confirmation of the appointment of Henry E. Toman to the Planning and Zoning Commission, seconded by Mr. Krupp.

Vote: Unanimous ayes; motion duly carried.

Mrs. Bergamini moved confirmation of Henry E. Toman to the South Central Regional Planning Commission, as requested by Mayor Dickinson. Mr. Krupp seconded the motion.

Vote: Unanimous ayes; motion duly carried.

Mr. Toman was sworn in by the Town Clerk at this point in the meeting as a member of the Planning and Zoning Commission and was congratulated by the Town Council.

Mr. Toman thanked the members of the Town Council for these confirmations and looks forward to working with them for the betterment of Wallingford. Mr. Toman also wanted to publicly state his thanks to the members of the Planning and Zoning Commission for the warm and friendly receptions they have given him during the two meetings held last week and he looks forward to working with the P & Z.

Mr. Killen moved to request that item (8) be moved to this position, seconded by Mr. Holmes; unanimous ayes; motion duly carried.

Mr. Killen moved to establish a new line item A/C 1 601-401 Canvass Cards, seconded by Mrs. Bergamini; unanimous ayes; motion duly carried.

Mr. Krupp moved a transfer of \$1,100 from A/C 1 601-418 to A/C 1 601-401 as requested by the Registrars of Voters. Mr. Holmes seconded the motion; unanimous ayes; motion duly carried.

Mr. Krupp moved the following refunds requested by the Tax Collector:

\$ 50.23 to Mr. John H. Misiaszek
674.25 to Harold & Margie Jackson and/or Jefferson Federal
4.49 to DeForest J. Cooper
29.90 to Evo Qurici
75.95 to Thomas A. or Mary Anne Gorham
62.79 to Franklin Steen

\$897.61 TOTAL

Mr. Killen noted the reason for the refund was not noted on the form for Franklin Steen and Mr. Fields indicated it should be Sec. 12-129 Refund of Excess Payments.

Vote: Unanimous ayes; motion duly carried.

Mr. Krupp moved approval of a merit increase for F. Thomas Dooley, Parks & Recreation, seconded by Mr. Holmes; unanimous ayes; motion duly carried.

Mr. Krupp moved approval of a merit increase for Thomas A. Myers, seconded by Mrs. Papale.

Mr. Holmes commented that Tom Myers is one of the most effective officers in the town of Wallingford who works very hard and is definitely an asset to the town and he is to be commended for his hard work. Mrs. Bergamini noted that the entire Council agrees with that. Mr. Krupp noted that Mr. Myers has been rated above average to superior and from what Mr. Krupp has seen, he would consider that underrating him. Mr. Gessert noted that in addition to his capabilities, his dedication is also noteworthy. He spends a tremendous amount of extra time working for the Town of Wallingford. (The former Town Council secretary always referred to Thomas A. Myers as SUPERSTAR!)

Vote: Unanimous ayes; motion duly carried.

Mr. Krupp moved approval of a merit increase for Vincent Mascia, seconded by Mrs. Papale; unanimously approved; motion duly carried.

Mr. Krupp moved approval of a merit increase for James Kirkland, seconded by Mrs. Bergamini; unanimously approved; motion duly carried.

Mr. Krupp moved approval of a merit increase for Gregory Makuch, seconded by Mr. Holmes; unanimously approved with the exception of Mr. Gessert who voted no; motion duly carried

Mr. Mascia, Kirkland and Makuch are Water & Sewer Division employees.

Mr. Gessert read the 3/5/85 letter from Charlotte C. Collins, agenda item (9), Police Heart & Hypertension.

Mrs. Bergamini asked how much was left in 805-319 and Mr. Myers stated roughly \$120,000.

Mr. Gessert asked Mrs. Collins why the transfer was necessary at this point and Mrs. Collins explained that unexpected occurrences necessitated this. Mr. Gessert indicated that other towns were instituting means to reduce these types of payments and perhaps a plan should be started to reduce risks. Mrs. Collins said this has been tried but has met opposition from the union and she also pointed out that the 5 people including 1 on the fire department that are currently covered under the heart and hypertension were not stress jobs but that does not make any difference and they are still covered under the heart and hypertension act. There are a raft of bills before the legislature. Mr. Gessert felt that a risk reduction such as prevention by an exercise program should be instituted. Mayor Dickinson felt that any schedule for physical conditioning would have to be during the work day, part of union negotiations. The Personnel Office could be made aware of interest in this. Mr. Gessert has spoken with people who are interested in a prevention program and he feels it should be a joint effort with Mrs. Collins, Mr. Seadale and the union.

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Mr. Diana commented that the heart and hypertension law was intended for people in stressful positions. He agreed that an exercise program would be beneficial. In reference to a comment made by Mr. Killen about people holding down an additional job or two besides a position on the police or fire force, the Police Chief or Fire Chief should be aware of any employees who have stressful positions and are also working more than one full time job and are burning themselves out prematurely. It would be helpful to rotate these persons to eliminate stress occasionally. Mrs. Collins pointed out that the five persons currently on heart and hypertension were on a 5 day week, 8 am to 4 pm, desk job and not stressful.

Mrs. Bergamini moved the transfer of \$11,600 from 805-319 to A/C 804-840 Police Heart & Hypertension, requested by Mrs. Collins. Mr. Polanski seconded the motion.

Vote: Unanimous ayes with the exception of Mr. Krupp who voted no; motion duly carried.

Mrs. Bergamini read and Mr. Killen moved the following resolution:
BF IT RESOLVFD: The 1984-85 General Fund budget is amended as indicated herewith:

- (1) Revenue Budget Account 704 - Miscellaneous Revenue increased \$215.00
- (2) Expenditure Budget Account 203Y-600 - Contribution in Memory of Ann Milligan appropriated \$215.00

Mrs. Papale seconded the motion.

Mr. Killen asked if this money will be used at the discretion of the Yalesville Fire Department and Mr. Myers indicated that the money is theirs to use.

Vote: Unanimous ayes with the exception of Messrs. Gessert and Krupp who were not present for the vote; motion duly carried.

Mrs. Bergamini read the 2/20/85 letter from Mr. McElfish, agenda item (11).

Mr. Diana moved the transfer of \$900 from A/C 203R-300 to A/C 203R-170, seconded by Mrs. Papale.

Vote: Unanimous ayes with the exception of Messrs. Gessert, Holmes and Krupp who were not present for the vote; motion duly carried.

Mrs. Bergamini read Mr. McElfish's letter dated 3/6/85, agenda item (12) (a), (b), (c) and (d).

Mr. Killen moved approval of the following transfers:
\$280 from 203R-Capital Telescopic Lens to 203R-Capital Co. I Ceiling
\$120 from 203R-Capital Fire Hose-1 3/4" to 203R-Capital Co. I Ceiling
\$130 from 203R-Capital Fire Hose-2 1/2" to 203R-Capital Co. I Ceiling
\$365 from 203R-Capital Training Tower Roof to 203R-Capital Co. I "
Mr. Krupp seconded the motion.

Mr. Killen asked if all purchases had been made from these capital accounts with this being the residue to which Chief McElfish agreed.

Vote: Unanimous ayes with the exception of Mr. Holmes who was not present for the vote; motion duly carried.

Chief McElfish noted that a physical fitness program is a contractual item which must be negotiated and he is well aware of the benefits and hopes it will come to fruition. Mr. Killen feels it will be beneficial to the men as well as the town.

Mr. Krupp moved the transfer of \$3,000 from 503-135 to 505-500, Public Works, seconded by Mrs. Bergamini.

Mr. Krupp asked Mr. Deak why this transfer was required and Mr. Deak indicated that repairs are necessary on some large pieces of equipment over 10 years old and some of the parts are very expensive. The paving machine needs repairs and the large truck which hauls cover to the landfill needs brakes, etc.

Mrs. Bergamini moved the transfer of \$3,000 from A/C 504-455 to A/C 505-500, seconded by Mr. Rys.

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Vote: Unanimous ayes with the exception of Mrs. Papale who was not present for the vote; motion duly carried.

Mr. Krupp moved to waive Rule V to consider an emergency transfer for Public Works. This motion was seconded by Mr. Holmes; unanimous ayes; motion duly carried.

Mr. Gessert read a letter from Mr. Deak explaining that the compactor broke down and this transfer was necessary to purchase parts and repair it immediately.

Mr. Krupp moved a transfer of \$1,850 from 503-130 to 506-330, Public Works, seconded by Mr. Holmes.

There was some discussion about repairs made to the compactor recently but those repairs were of a different nature. Mr. Deak noted that this piece of equipment originally cost \$150,000.

Vote: Unanimous ayes; motion duly carried.

Mr. Gessert read Mayor Dickinson's 3/5/85 letter, agenda item (14). The Mayor pointed out that the transfer should be a budget amendment and Mr. Myers explained the format to the Council.

Mr. Killen moved the following budget amendment, Building Department:

RESOLVED: Amend the General Fund Revenue Budget A/C 210 Building Department Permits, increasing it \$1,755 and

Amend the General Fund Expenditure Budget A/C 205-890 Permit Refund, increasing it \$1,755

Mrs. Papale seconded the motion.

Vote: Unanimous ayes; motion duly carried.

Mr. Gessert asked how close to the projected figure the permits are which have been taken out to date on Bristol-Myers and Mr. Spiteri indicated that permits have totalled \$31,000,000 and the original projection was \$40,000,000 but certain items such as landscaping, furniture, etc. cannot be included so they may very well make up some of the \$9,000,000 difference. Mrs. Bergamini suggested that the town receive a copy of all contract totals if possible.

Mr. Gessert moved to agenda item (15) (a), (b), (c) and (d).

Mrs. Bergamini moved the transfer of \$3,000 from A/C 623-000 to A/C 925-001, seconded by Mrs. Papale.

Mr. Killen asked if something happened recently and Mr. Denison explained that it was due to an employee with a back injury.

Vote: Unanimous ayes with the exception of Messrs. Diana, Holmes and Krupp who were not present for the vote; motion duly carried.

Mrs. Bergamini moved the transfer of \$8,300 from A/C 920-000 to A/C 926-000, Sewer Division. Mr. Polanski seconded the motion.

Mr. Gessert asked why a transfer was necessary for the pension and benefits account and Mr. Denison explained that the benefits were calculated based upon a figure which was used in the 1983-84 budget and it proved to be underestimated.

Vote: Unanimous ayes with the exception of Mr. Rys who was not present for the vote; motion duly carried.

Mrs. Bergamini moved the transfer of \$12,380 from A/C 343-085 to A/C 346-085, Water Division. Mr. Holmes seconded the motion.

Vote: Unanimous ayes with the exception of Mr. Rys who was not present for the vote; motion duly carried.

Mr. Holmes moved the appropriation of \$10,000 from Estimated Unappropriated Balance to A/C 314-085 Wells & Springs, Water Department. Mrs. Papale seconded the motion.

Mr. Krupp assumes the estimated unappropriated balance is excess but has not seen a financial statement from the utilities division since December. 158

Mr. Killen asked if this was for treatment purposes and Mr. Bruno stated it was exploratory to determine if well locations can be found on the east side of McKenzie Dam which was always felt to be a possibility but was inaccessible because there was no road. The west side is solid rock. Mr. Gessert asked if the Sartori property was a likely site and Mr. Bruno indicated that usually the good areas are along a main body of water. Mr. Gessert asked if this project would go out to bid and Mr. Bruno stated it would not be done in house and he realized anything over \$2,000 would have to go out to bid.

Mr. Killen asked for a breakdown of the \$10,000 and Mr. Bruno said that not all the work was strictly to drill holes. Mr. Killen would prefer to see a breakdown of all costs in the future.

Vote: Unanimous ayes with the exception of Mr. Krupp who passed; motion duly carried.

Mr. Diana noted that item (16), report on town directional sign problem, is being withdrawn for tonight since there will be a hearing on this matter on March 25, 1985. He did request that the first draft of the regulations as they now exist be sent to all Council members for their information. Mr. Gessert asked Mayor Dickinson to request this draft from Miss Bush and after it has been received, it will be placed on a future agenda.

Mr. Gessert moved to item (17), discussion of earnings of the Electric Division and Mr. Killen noted that it is six months to the day when he requested the Council to have an interpretation of what is going to happen to the money that is collected by the utilities. At that time he suggested and later withdrew the motion to have a committee of 3 from the Council meet with the Comptroller, Mayor and Town Attorney to decide what the future would be of those particular earnings of the Electric Division. The Council was told a report would be forthcoming within 30 days from the Comptroller's Office. Mr. Killen was very well aware of the complexity of the issue and wasn't pushing and there is still no report. Mr. Killen wanted this report before budget time and it is a case of what is the law and it can't just be pushed aside until it can be fit into our schedule. At this time, Mr. Killen would like to know where we stand and what we are going to do. Mr. Krupp indicated that the statement was made that the issue would be resolved by the time the next budgets were submitted.

Mayor Dickinson stated that the report was submitted at the last meeting which contained the recommendations. Mr. Killen felt that the letter talks about unappropriated funds and he is not talking in any sense of unappropriated funds but the collection of the dollars per se and the investment per se as they come in. The Mayor indicated that those matters are addressed in that report and what you are doing is looking to place the handling of all funds which would include investing within the Comptroller's Office. Certainly now, they are under his jurisdiction but to further clear the air on the matter, they will be under the position of an accountant to handle those funds. The Mayor is not sure what is left unsettled by the treatment of the whole subject matter in that letter. Mr. Killen felt that the Council is being told to bring in consultants and the Mayor indicated that the reason for that is that Tom Myers is concerned about the cash management--the transfer of these funds to his office. At this time, he doesn't have the mechanisms in place to handle the funds to know what is coming due at what time and would like outside expertise on this matter. The investment has to coincide with when you need funds on a cash flow basis and all of this is involved in an overall view to protect all parties. Mr. Killen felt a subcommittee would have been beneficial and he is not sure a consultant is necessary.

Mayor Dickinson stated that the old ordinance of 55/45 is a guess; who knows what should be retained for replacement of equipment, etc. It would take an accounting firm familiar with utility operations to determine what formula should be used for making sure there are funds available to protect those operations against a time when they need to replace equipment and that formula can be used from then on and this could replace the 55% funding ordinance for the capital and nonrecurring fund. Cash management is within Tom's

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Mr. Myers reported that his major concern is that in private industry, business knows what amount of retained earnings is necessary to sustain the operations. There is an accounting principle called Return on Investment (ROI) which would set a guideline as to what funds should be available, combined with other resources; in the private sector, sale of stock or additional stock output; in our case sales of bonds or notes to either replace existing property or plant or to provide expansion of property and plant. To the best of Mr. Myers' knowledge, we don't have that and no one in the utilities was able to address what amount of retainage we should have in each of our 3 utility operations--we have retainage but we don't know if it is inadequate or adequate. Mr. Killen pointed out that we are responsible for funding them but we are not getting all the benefits of the monies they are accruing.

Mr. Myers asked where interest income should be credited; currently it has been credited to the utility through the rate setting process. Mr. Killen felt this was for the simple reason that the money was not paid over on a timely basis to the town. Mayor Dickinson pointed out that all funds received by the utilities are paid over to the town and everyone must become conversant with the fact that the town of Wallingford is utilities, general government and education. These offices are under the supervision of the Office of the Comptroller for the bookkeeping and accounting matters. The Mayor went on to state that the interest income could be, he supposed, appropriated elsewhere. However, at this time, the rates use the interest income. If that is to be changed, it will affect what those rates are but that has to be addressed at the point you change the rates and that is a process that the Council historically has not gotten intimately involved with--what the rates should be and what its components are and what general impact it has, not only on taxation, but on the health of the utilities. Perhaps in the future the Council should get involved and be well informed in the process. Mayor Dickinson emphasized again that any rate used right now uses the investment income to support the utility and that is a fact. Personally, the Mayor feels that the utility rates should support utilities and taxation should support the general government but that is a matter of some subjective content. Rates will be impacted because of the size of the issues pending and it's a question of how high we want them to go. It should all be public knowledge and the Mayor is looking to the utilities and he is sure he will have cooperation from the Commissioners and staff to fully inform the Council. There is no effort on the part of any office to keep anyone in the dark.

Mr. Krupp brought up two things--

- (1) The Mayor has brought up the fact that we are all the town of Wallingford whether it be the PUC, Board of Education or the General Fund we are dealing with. However, there appears to be some disparity in the way those departments even though we are all part of one family are handled.

Mr. Krupp has never seen a detailed budgetary analysis (other than at budget time) of the Board of Education or PUC such as the Council gets for the town departments. What is received from the PUC right now is running about 2 months behind.

Mr. Krupp is still a little hung up on the 55/45. The PUC computes its estimated needs and what its return will be and what will be put into retained earnings based on that 45% and it may be that 45% is necessary to support that utility. If that 45% is considered to be adequate to support the operation of the Electric Division, then Mr. Krupp would consider that there is no need for splitting the excess 45/55 down the line.

Mayor Dickinson believes the financial statements provided by the utilities are very detailed but are not prepared on the same accounting standards as general government. They were up to date until the beginning of 1985 but the budget process has interfered as well as the sewer plant funding issue and these issues called for many many hours. Mr. Gessert felt that Mr. Lee at the Electric Division was not tied up with the sewer plant funding issue.

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Mr. Raymond Smith indicated that he was instrumental in developing a regular monthly report when he came to the Electric Division. Preparation of these statements is a much different arrangement than the town financial statements. Some January meetings were cancelled which caused a slowdown. Mr. Smith also mentioned that there has been turmoil since he secretary terminated recently. Mr. Smith felt that the January statements were presented to the Mayor's Office by the last week in February but the February statements have not yet been compiled.

Mr. Gessert asked Mr. Smith how he wanted to select an outside firm and what the cost would be and Mr. Smith indicated that he received a cost of \$15,000 to \$18,000 just to review the retained earnings matter for the Electric Division. The Mayor felt this project can be moved on, depending on the wishes of the Council.

Mr. Killen is interested in what happened before the 55/45 split. During the 50's funds came from the Electric Division to build schools. Studies were done 25 years ago and the Electric Division indicated they would turn over \$1,000,000 annually to the town if they were operating by themselves and not allowed to be taken over by United Illuminating which had been suggested. The \$1,000,000 has yet to be received. 55/45 is against the law in the first place and is not necessary and does not make fiscal sense. That really is the decision of the Town Council but priorities cannot be set in a prudent fiscal manner if all information is not available. Someone should determine what system the Electric Division used before the capital and nonrecurring fund went into existence. The law says, "thou shalt" and thou shalt.

Mr. Ray Smith indicated that no money can be spent within the utilities without the permission of the PUC or Town Council.

Mr. Killen referred to a newspaper article which indicated that Water & Sewer should turn their interest over to the town and Mr. Myers explained that he was quoted incorrectly--the interest income is subject to appropriation by the Town Council. In the past if it has been appropriated through the rate, then the Council has adopted that rate through the oversight provision and that is one situation. Mr. Smith stated that the interest income is shown each month.

Mr. Holmes felt an unbiased opinion is necessary and he is concerned about the possibility of the electric rate used as a lever to hold the line on taxes and this is a concern.

Attorney McManus stated that the price that the utility charges is set by statute and it sets out a formula over and above so you can't do that anyway. The ordinance adopted in 1973 with the 55/45 split is not binding on the town--the Council appropriates every last nickel for that Electric Division, exactly like you would if it were Public Works.

Mr. Diana indicated that the PUC has a \$32,000,000 budget and the Board of Education receives 53% of the town's budget which the Town Council appropriates but once appropriated, this money is untouchable by the Town Council. Mayor Dickinson felt that once money is appropriated for a given purpose, you can't recover it but what we are talking about is unappropriated funds and those are open to appropriation and unless there is money from the State such as GTB, those funds go through the Council to be appropriated.

Mr. Gessert felt that this issue has been debated at great length and the bottom line is that by Charter, Mr. Myers does have the responsibility for those funds and he can make a decision about their operating capital and process the funds. The ROI question must be determined and will this be done by an outside accountant; will the bid be waived to accomplish this and are proposals going to be sought? The Mayor felt that the Purchasing Department could seek proposals from accounting firms through the Mayor's Office.

Mr. Smith felt that any recommendation from an accounting firm would entail a look at the system, the age of the lines for Electric, Water & Sewer. Mr. Myers pointed out that the transaction flow must be looked at because right now those funds are independent of the Comptroller's Office. If Mr. Myers does not appoint and does not supervise, he has no authority and that has been made clear. Is there a liability involved? Definitely--there is a direct liability on Mr. Myers' part on the handling of the funds and that is a critical issue and this fact is known by Mr. Killen, Mr. McManus and Mr. Smith. This situation has existed since 1961 since the Charter was formed.

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Mr. Diana strongly feels that the town has the staff available who have all the expertise, intelligence and ability to make a decision on this matter without using an outside firm and he feels there is no reason to go outside whether it costs \$5,000 or \$15,000. Mayor Dickinson indicated that what is vital is that the result of this has credibility and if the Council is not willing to fund it, it will have to be done in house.

Mr. Gessert felt he should obtain the opinion of all Council members regarding whether they prefer an outside accounting firm or having the study performed in house.

Mr. Krupp is in favor of an outside firm if it will resolve the issues and the information can be obtained on a timely basis.

Mr. Polanski feels that Mr. Myers knows the operation of his office better than anyone and if he feels an outside consultant is required, Mr. Polanski supports that decision.

Mr. Holmes felt it would be better performed by somebody who doesn't have a direct interest in the matter.

Mr. Rys feels an outside consultant would be preferable to adding people to the payroll in the Comptroller's Office if that is what is required to have this study performed.

Mrs. Bergamini agrees with Mr. Diana and feels that there is nothing involved that Tom Myers cannot answer satisfactorily. All we are trying to tell PUC is that the Council feels they have too much money and we feel the town is entitled to some of it and it is up to Mr. Myers to tell us how we do it.

Mrs. Papale felt that the bottom line is which will take longer-- in house or outside consultant. Mr. Myers has enough to handle.

Mr. Myers feels this topic should be addressed once and for all with an independent complete study and the Mayor, Town Council, Town Attorney and PUC should be informed as the study progresses and before it is finalized. When the study is finalized, it should be adopted and implemented. There are crosses and vague areas in the Charter and this study involves job classes and unions, etc. Mr. Myers indicated that part of the study would be to have some alternative methods given to the town as to what would be a proper retainage for each of the 3 utility operations and there should be some type of guidance for that policy to enable flexibility for projections and the ability to meet goals. There is more involved than what funds are available and from what source, to what extent they will be used and for what reason.

Mr. Diana feels that this is giving the black mask to the executioner. There are the complexities of the Town Charter which an outside firm may not understand and there is still the matter of interpretation which our Town Attorney must work out.

Mr. Killen presumes certain people are hired for their knowledge and expertise and just because this particular issue is clouded by a particular ordinance, there is no reason that the members of the PUC and their in-house staff should not be aware of the general statutes and the Charter governing utilities. With that in mind and with their own attorney to guide them, there is no reason to bring someone in from the outside because that expertise is in place now and if not, there is something radically wrong. Mr. McManus presented one of the finest opinions on this issue. Mr. Killen has ever seen from any town attorney and anyone within the utilities should be able to see where he is coming from.

Mr. Gessert feels that due to the fact that this issue has been unsettled for such a long time, if getting a consultant hired to resolve the issue is what is needed, it is an expenditure which is 10 years overdue and it should be made, the report reviewed, and the recommendations implemented and the issue resolved.

Mr. Gessert indicated that the poll indicated six members in favor of an outside consultant and three preferred to have the study done in house.

Mrs. Bergamini read Mr. Walters' letter dated 2/21/85, agenda item (18).

Mr. Holmes moved the transfer of \$1,500 from A/C 586 to A/C 597, Electric Division. This motion was seconded by Mr. Diana. 162

Vote: Unanimous ayes with the exception of Mr. Gessert who was not present for the vote and Mr. Krupp who passed; motion duly carried.

Mrs. Bergamini moved to agenda item (19), Discussion with Public Utilities Commission regarding options available to the town on the water treatment plant issue, requested by Mayor Dickinson.

Mr. Nunn indicated that the consent order from the state is a request to improve the water system and the PUC has looked at a number of areas and realize it will impose a tremendous financial burden on this community with the impending sewage treatment plant.

The request for exploration of wells is to have additional ground water and change the ratio currently utilized between surface water and reservoirs and ground water. There is treatment involved between the 2 sources but it doesn't require the degree of treatment for ground water.

The second possibility is purchasing water outside from private enterprise such as New Haven Water Company. Mrs. Bergamini felt that many problems exist with the New Haven Water Company supply and North Haven residents are drinking bottled water.

Mr. Nunn presented the third alternative which is to build a new plant and that has alternatives within itself--the year 2000 or 2005, 8 million gallons a day water source or 6 million, not exactly a savings but a 6 million gallon plant will cost less.

There could be a combination of options--have a small plant and more wells or small plant and purchase some water.

There is a new concept--the area of privatization where you allow a private company in to build plants and we would buy the water from them. They will use our reservoirs. There are tax benefits to companies which are constantly changing. Mr. Killen asked if their plant and operation would be taxable under Wallingford and Mr. Bruno thought not.

The last option is a number of new processes for water treatment such as KROFTA. (See Town Council Meeting minutes of March 14, 1985 for the KROFTA presentation.) There is a plant called Microflock and Lamella and others.

The sixth possibility is to do nothing and fight the state in what their mandates are. The state has asked for the signing of the consent order and the PUC has asked for additional time to which they have made no response. Possibilities are being explored and the PUC is looking for assistance and input from the Council and help in making a decision on this matter.

Mr. Gessert's main concern is the financial burden on the town and utilities at this point and he applauds the PUC for looking for alternatives to seek an economic balance to correct the problem and taking a strong look at every option is certainly the correct procedure.

Mr. Krupp is aware that this is an issue dealing with turbidity which is coloration of water and can find nothing to deal with health issues and is there a proven health hazard? Mr. Bruno stated that are definite state regulations with regard to the quality of the water and two of the parameters are color and turbidity, under a certain value at all times and we are not under those values at least 30% to 40% of the year and we are definitely not in compliance with state and federal regulations with respect to those two parameters. Color and turbidity to the extent we have it do not present a critical health hazard. However, turbidity in our case which comes about from organic matter (leaves, etc.), combined with chlorine could be the cause for carcinogenic properties in the water which we do not have at this time. With increased turbidity, that exposure will also increase. Our reservoirs are completely unprotected and any major problem would cause the shutdown of the water supply.

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A major oil spill on I-91 would cause us to shut down McKenzie Reservoir because we have no plant to filter the water through to clean it. The intent of the state is that all surface water supplies in the state should be protected with some kind of treatment facility such as a water treatment plant. Our exposure may be on the low side today but there may be some time when it may be on the high side with no protection.

Mr. Gessert referred to East Haven and Mr. Bruno explained that they could take care of a problem now with their treatment plant.

Mr. Nunn explained that we are now operating 75% to 80% from the reservoir system and the balance wells.

Mr. Krupp asked if the Council would be able to see a 20 year cash flow analysis of each alternative and the net present value analysis of those alternatives. Mr. Nunn commented that the staff felt that Mr. Nunn's request to come before the Council is premature. Answers are not being sought now but this is to make the Council aware of the scenario. All the numbers are not available for the options.

Mr. Holmes asked if there was any possibility of revamping the existing plant to bring the water up to specs and Mr. Bruno said that was one of the alternatives to be looked at--the existing plant in combination with additional well supplies or purchasing some water. Mr. Holmes is intrigued with the privatization concept and Mr. Bruno explained that the least amount of tax benefits are available with water treatment plants as opposed to sewage, etc. so it hasn't been as interesting to investors.

Mr. Diana does not feel Wallingford should tap into the South Central Water Supply and he believes we should retain control of the town's water supply. If it were any other problem but water, he would be the first to spearhead a challenge to the state mandate. Because of the possible health hazards and potential lawsuits down the road, this problem must be dealt with. As costly as it would be, Mr. Diana would be in favor of a new plant.

Mr. Killen asked if the state mandate mentioned that there is no protection for the surface water and Mr. Bruno did not think it was included in written form. Mr. Killen asked why the state is pushing this matter now and Mr. Bruno said that the orders to provide corrective action were given in 1977 and we have taken time to make decisions. A water treatment was designed and has been submitted to the state and now they want to set a definite timetable to get this plant in operation. Mr. Killen feels that the town knows what is going on and they don't need the state looking over our shoulders.

Mrs. Bergamini asked if this matter was brought up before and Mr. Bruno has made the PUC aware of this matter. 2-1/2 years ago there was a state grant for design money and Wallingford applied for and received \$150,000.

Mr. Nunn pointed out there are three stages--feasibility, design and construction. Design stage is finished but not approved. Mrs. Bergamini felt that the town should fight for a grant from the state to go forward with the project. Many towns received money for design; Waterbury floated a \$30,000,000 bond issue to build their plant; Meriden has 3 water treatment plants; Middletown just finished one and is in the process of starting the second. New Haven is in the process of building water treatment plants; they built 3 and have 1 to go; New London is going to bid this spring.

Mr. Gessert asked what the plans cost for design and Mr. Bruno noted they cost \$425,000 completed by the firm of Anderson Nichols. Mr. Gessert recently noted in the PUC minutes a request for \$44,000 for a study to be performed by Anderson Nichols. The implication exists of their being construction engineers on a \$15,000,000 to \$20,000,000 sewage treatment plant and a 6% to 8% engineering fee is easily \$1,000,000 and Mr. Gessert feels Anderson Nichols would be the least biased source to review alternatives and he feels that someone should be sought for an independent analysis who doesn't have a stake in building a new sewage treatment plant. Mr. Bruno stated you will not get this analysis for \$44,000 from a new firm.

Mr. Killen felt that the state should make money available for the building of a treatment plant since they made money available for the design phase of one.

Mayor Dickinson asked about the background data prepared by Anderson Nichols and Mr. Bruno noted the data belongs to the town and the Mayor wanted to know if that material could be made available to another firm and Mr. Bruno said it could be made available but another firm will not take investigatory material and use it because they have to put their name on the line so they want to learn all over again. 16-

Mr. Gessert felt there may be a certain bias with using Anderson Nichols and Mr. Bruno said there may be a certain bias but felt this was being a little negative and a few minutes ago the Council felt the expertise in town should be used and does the Council think the staff will stand by and let them make a decision without staff being convinced? Mr. Bruno would not let a plant be built without a basis for the decision. Mr. Smith agreed that this would have to be justified and substantiated.

Mr. Nunn advised the Council that the PUC has the ax over our head and the state is saying they want us to sign a consent order. The PUC is working with greatest haste to get all the answers but if the mandate comes down and says sign or we will take other action, the Commission has to make a decision. The PUC will take under advisement what the Chairman of the Council says but then the position of signing or not signing has to be made by the Commission and can in turn be handled by Council oversight. A recommendation will be made to the Mayor by the PUC. Mr. Nunn does not know what the timetable is but he believes it's close.

Mr. Gessert thanked the PUC and their staff for their input on this matter.

Mr. Krupp moved to establish A/C 1-111-002 Town Council Furniture, seconded by Mrs. Papale.

Vote: Unanimous ayes with the exception of Messrs. Diana and Holmes who were not present for the vote; motion duly carried.

Mr. Krupp moved the transfer of \$1,999 from A/C 111-602 to A/C 111-002, seconded by Mrs. Bergamini. (WITHDRAWN BELOW)

Mrs. Bergamini does not approve of touching that account. When she asked to put that money in 111-602, I felt it should go for Switzerland and nothing else to research resource recovery. Mrs. Bergamini feels that 805-319 should be tapped for this since it is an emergency.

Mr. Krupp withdrew his motion and Mrs. Bergamini moved an appropriation of \$1,999 from 805-319 to A/C 111-002, Town Council furniture, seconded by Mrs. Papale.

Mr. Killen asked for backup documentation on this item which was given to him by the Town Clerk.

Mr. Gessert is replacing all 11 chairs at the Council table and some of the existing chairs will go to the fire department and some will be placed in storage and maybe used at the Police Department. Prices have been obtained and Mrs. Bergamini and Mr. Krupp requested a five leg chair on casters. She also suggested that just 9 chairs be replaced if there are not sufficient funds to replace all 11 and the other 2 can be replaced at a future date.

Vote: Unanimous ayes with the exception of Messrs. Diana and Holmes who were not present for the vote; motion duly carried. 165

Mr. Killen moved acceptance of the minutes of 2/19/85, seconded by Mr. Krupp; unanimously approved with the exception of Messrs. Diana and Holmes who were not present for the vote; motion duly carried.

Mr. Krupp moved acceptance of the minutes of 2/26/85, seconded by Mr. Rys; unanimously approved with the exception of Messrs. Diana and Holmes who were not present for the vote and Mr. Killen who passed; motion duly carried.

A motion to adjourn was duly made, seconded and carried and the meeting adjourned at 11:35 p.m.

Delores B. Fetta
Substitute Secretary

Approved David A. Gessert
David A. Gessert, Council Chairman

March 26, 1985

Rosemary A. Rascati
Rosemary A. Rascati, Town Clerk

March 26. 1985

Special Town Council Meeting

March 14, 1985

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A special Town Council Meeting was held on Thursday, March 14, 1985 for discussion of the following items:

- (1) Water treatment and water-recycling systems. Present were: Dr. Milos Krofta, President, Krofta Engineering Corporation, Mr. Craig C. Gaetani, Director of Marketing, Krofta Waters, Inc., 101 Yokun Avenue, Lenox, MA 01240 (Telephone (413) 637-0740/0743/0173).

Also present was Mayor Charles L. Smith of Pittsfield, MA.

- (2) Landfill closure report presented by Donald W. Roe and Steven L. Deak.

Chairman Gessert called the meeting to order at 7:50 p.m. Present were Council members Bergamini, Gessert, Holmes, Killen, Papale, Polanski and Rys. Councilmen Diana and Krupp were not present for this meeting.

Mr. Gessert thanked Dr. Milos Krofta, Mr. Gaetani and Mayor Smith for making the trip to Wallingford to be present for this Council meeting to discuss this important issue and present their experience with the Krofta SANDFLOAT water treatment plant.

Mr. Craig Gaetani presented a slide program which is attached EXHIBIT A, PAGE 1 of 17 through PAGE 17 of 17 and explained the complete water filtration plant with backwash and solids removal.

The plant is designed for 1.2 million gallons per day and on July 19, 1985, the plant will have been on line with no difficulties whatsoever, meeting the standards it was required to meet, plus 80%. Exhibit A is the entire water filtration plant for 1.2 million gallons of water per day and it runs itself and is 22 feet in diameter from outside rim to outside rim.

Mr. Gaetani explained that what is critically important here is that the water that is exposed at any time has zero velocity and is quiescent. Sludge is driven to the surface by billions of micron sized bubbles. Water purges down through the sand and becomes crystal clean. The only waste to leave the plant is sludge and in a million gallon per day treatment plant, the rate of sludge flow is 2-1/2 gallons per minute.

All the equipment in the plant is very simple to run. This gives you an idea of why this water treatment plant costs only 1/3 of a conventional water treatment plant--the physical plant is only 1/5 the voluminous area of floor space needed for conventional plants due to the fact that the total retention in the plant itself is only about ten minutes.

Mr. Gaetani referred to EXHIBIT B, page 4 and explained the chart which refers to millions of gallons per day under flow.

Mr. Gaetani explained that an 8 foot unit can treat 160,000 gallons per day and a 62 foot unit can treat 9.61 million gallons per day. A 40 foot unit would require a building 100 feet long by 50 feet wide in size.

The town of Lenox, MA was told it would cost \$1,875,000 to build a conventional plant and this plant was built for less than \$350,000. This unit was fully tested under the auspices of the Massachusetts Department of Environmental Quality Engineering and by the New York State Department of Health and it has won full approval under the most rigorous test and it did pass.

A figure of \$28,000,000 to \$32,000,000 was determined for a conventional treatment plant for Pittsfield, MA and Krofta undertook a 4 month test in Pittsfield at a cost of \$50,000 and submitted all their information to the engineers of Pittsfield who failed to inform the Mayor of this information. Krofta approached the Mayor and the Mayor investigated the system himself.

Mr. Gaetani introduced Mayor Charles L. Smith of Pittsfield, MA who commented on the cleanliness of Wallingford and Mr. Gessert noted that Mr. Deak, Director of Public Works, was present in the audience and he was the man responsible for the clean appearance of the streets in Wallingford. 167

Mayor Smith commented that he spent six years on the City Council in Pittsfield and has been Mayor for the past six years. The water problems began in Pittsfield in the early 1970's and about a million dollars a year was being spent on pipe cleaning. The main problem was that the chlorine was being eaten up before reaching the western part of the city which was furthest away from the reservoir and the water in that area was not fit to drink.

Mayor Smith noted that Pittsfield had engaged the services of a consulting engineering firm since 1927 which he preferred not to name and this firm suggested a conventional water treatment system which the city council voted to approve and the contract was for about \$1,700,000 to begin building a treatment plant with a price tag of about \$30,000,000 to \$40,000,000.

Dr. Krofta invited Mayor Smith and his consulting engineers to view the Krofta water treatment system and the engineers preferred a conventional system. At this point, Mayor Smith spent \$60,000 to \$70,000 and hired CEM which is a Connecticut based consulting engineering firm and obtained an objective feasibility study of the Krofta system and CEM indicated that Krofta was indeed a very worthy system which should be looked at. Mayor Smith welcomed the Wallingford Town Council to all information he had for the study performed for Pittsfield for which they had paid a considerable sum of money. Mayor Smith will be happy to make these documents available to the town of Wallingford for their information.

Mayor Smith then hired the firm of O'Brien & Geer from New York State for another objective study and he deliberately selected firms outside of the State of Massachusetts for totally objective studies.

The end result was that Dr. Krofta came in and offered Pittsfield a plant for about \$5,000,000. This system was put through the most rigorous testing and it survived DEQE in the State of Massachusetts. Had a conventional system been installed, an additional 14 people would have to be hired, possibly even 20 who would have to be on board 7 days per week around the clock to run the plant.

The Krofta system has an alarm which is triggered into the sewer treatment plant 24 hours a day in the event of any problem and there is enough capacity to allow for necessary repairs. The Krofta system may look complex but in reality is very simple and in fact provides a Cadillac for the price of a Volkswagen.

Mayor Smith again offered the town of Wallingford and the Wallingford Department of Utilities all the documentation Pittsfield obtained during a three year study, free of charge, and suggested that Wallingford have a consultant review such documents and felt they would be as impressed. Mr. Gessert thanked Mayor Smith for this very generous offer.

Mr. Gessert asked if any additional personnel would be required to monitor the water treatment facility and Mayor Smith indicated that existing personnel in the sewer treatment facility would be trained and no additional people will be hired.

Mayor Dickinson asked what the nature of the problem was with the water in Pittsfield and Mr. Gaetani indicated that the predominant problem was turbidity in color. One of the problems is caused by leaf matter which falls into the reservoirs in the fall and when this matter comes in contact with chlorine, it forms 1 of 21 known compositions of trihalomethane.

Mayor Dickinson asked if the pipe cleaning was being continued and Mayor Smith indicated most of the larger mains in the distribution system were cleaned and relined. Pittsfield has a significant pressure problem in the western part of the city and this is being equalized to obtain an average of about 85 pounds anywhere in the city.

Mr. Gaetani introduced Dr. Milos Krofta who is a professional engineer and a Ph.D. in chemistry. Dr. Krofta indicated that the cost breakdown of a treatment plant is 50% investment, 30% labor and 20% miscellaneous small items. The town of Lenox, MA treats 250 million gallons of water per year and the original cost was \$1.10 per thousand gallons. Rental of equipment is \$30,000 per year and chemicals \$40,000. 168

Mr. Gaetani indicated that water treatment is very comprehensible and the Krofta system can do everything that a conventional treatment plant can do and with a Krofta system, pre-disinfection is not necessary. Regulatory standards in the State of Connecticut are no difficulty with this system whatsoever.

Mr. Gaetani emphasized that the standards for the State of Connecticut will be met and exceeded by about 80%. He invited officials of the town of Wallingford to view the plant first hand and become involved directly with the manufacturer of the equipment and the probable savings to Wallingford would be around \$7,000,000 to \$8,000,000. A model of exactly how the unit looks was on display and Mr. Gaetani thanked Mr. Gessert for the opportunity to make this presentation this evening.

Mr. Killen said he was very impressed by the Krofta system and was just as impressed by Mayor Smith who seems to know his city very well.

Mr. Costello asked how long a Krofta unit has been in operation and Mr. Gaetani indicated that the unit in Lenox will be in operation 3 years in July, 1985. DEQE put together a blue ribbon task force to put the unit through testing. Mr. Costello asked what material the unit would be constructed with and Mr. Gaetani said that the customer would select the material but reinforced concrete is an excellent construction at one-third of the cost of a conventional plant.

Mr. Raymond Smith asked about the projected life of the Krofta system and Mr. Gaetani indicated that the average life is about 30 years and at that time the unit would be obsolete. There have been no associated costs for maintenance on the Lenox plant in the 3 years it has been on line except for a propeller which ground out in a pump which pulls the debris from the sand. The motor was pulled out but the plant still was functional because it was between the backwash stage and the motor was changed in about 45 minutes. Other than very small things like a sweated pipe joint coming apart which required resoldering, there is no other significant maintenance associated with this plant. Mr. Allen Sykes, Superintendent of the Department of Public Works in Lenox, MA and his two men are responsible for this plant and he can be reached at (413) 637-0815 if any information about the plant's operation is requested.

Mr. Gaetani explained that as individual cells are being cleaned, it makes its rotation, and there is never a period of time when the whole unit is being cleaned all at one time. This particular plant operates as a faucet--it can go from 10% of its flow capacity to full capacity flow within about 2 minutes, automatically, very, very quickly and there is no need for huge storage basins which also add to the cost of conventional systems.

Mr. Gaetani suggested that officials from Wallingford come to Lenox for a demonstration of the Lenox Institute for Research, the analytical laboratory and view an operating plant and make a decision based upon the observations.

Mr. Holmes felt that based upon the presentation this evening, an effort should be made by officials to make a trip to Lenox, Massachusetts and Mr. Gessert agreed this should be done.

Attached as Exhibit C is a list of references for the KROFTA system dated October, 1983, page 1 of 14 through page 14 of 14.

Mr. Nunn asked what the number of gallons per day required to be treated was estimated in the planning stage of the Pittsfield plant and Mr. Gaetani indicated that the original plant for \$30,000,000 would accommodate 25 million gallons. The Krofta plant proposal is a total of 37.5 million gallons.

Mr. Nunn asked what type of installation will be used and Mr. Gaetani explained that the amount of units sized to be installed is only 1/2 the number of units that will be installed in Pittsfield because there is a redundancy requirement in Massachusetts. You must have backup for what you have operating in the event of a breakdown. They have shown that 100% backup can be provided for only 1/3 the cost of a conventional treatment plant. 169

Dr. Krofta noted that the Pittsfield plant cost \$5,200,000 and in Wallingford, the cost would be about \$1,500,000 in Krofta equipment and to this, the cost of the building, piping, etc. must be added. Instead of a \$9,700,000 conventional plant, the Krofta system can be built for about \$2,500,000 with the best type of construction but to lower the cost, you could choose a less expensive construction design.

Mr. Gaetani noted that the total cost for the filtration plant, buildings and everything, is \$9,700,000, of which \$5,200,000 is Krofta equipment. The comparison cost is \$30,000,000 for a conventional plant vs. \$9,700,000 for a Krofta system with an even higher capacity. Mr. Gaetani is confident that whatever the conventional treatment plant cost is, the Krofta system can be built for about one-third of that cost.

Mr. Gessert thanked Dr. Krofta, Mr. Gaetani and Mayor Smith for this informative session and felt that the Council was much better informed about the Krofta system and hoped that the Wallingford Public Utilities Commission would be in touch with Mr. Gaetani in the near future.

Mr. Gessert suggested a ten minute recess before the second half of the meeting and the Council took a brief recess at 9:10 p.m.

Mr. Donald W. Roe began a presentation of item 2 on tonight's agenda, LANDFILL CLOSURE REPORT which follows.

In the fall of 1984, preparation of the development of materials that led to the development of the report which was submitted to the Town Council. Basically, Mr. Roe was trying to put together a data base on which the Town Council could make some decisions about how to deal with the landfill over the next period of time, perhaps as long as 5 years, perhaps longer if the town does not go to resource recovery.

The data base developed examines these things--revenues and expenditures, both in terms of current fiscal year and projected into the future. We examined the volume of refuse received and projected capacities of the landfill based on yearly tonnage. Several operational practices were examined that need some attention and some change has been recommended.

Mr. Roe also included within the report some brief material to update the Council on several projects including the resource recovery project which is moving along. Also included is the fact that the methane ditch is completed and the testing done during the deep freeze during the winter showed success--there is no methane at the dog pound or in the building across the street.

The third item summarized is the metal hydroxide closure project which is staring Wallingford in the face this coming summer.

The findings were a little surprising in some regards. Looking at costs, it became pretty clear that our current projected costs exceed revenues and we are looking at costs in excess of \$20 a ton, in easily documented costs, as the report says. Not factored in are many other costs that could be attributed to the tonnage fee. Everything that ranges from administrative time that is put in to actual payroll items like fringe benefits to such things as recovery of fill. We worked just with the easily identified costs and just at that, came up with costs of \$20 per ton that it takes Wallingford to deal with the garbage or will take to deal with the garbage. We found that we are receiving more tonnage than expected and are receiving approximately 38,000 tons per year. Given that kind of tonnage, we project that we have somewhere between 7 and 9 years of capacity left in terms of the current site and the 2 parts of the expansion site.

Based on those findings, we were led to a series of recommendations, some of which you have and some of which we are still working on. The letter from the Mayor dated March 11, 1985 summarizes the rec-

ommendations which include a change in tip fee, a change in hours that the landfill would be available for commercial and public disposal to increase efficiency and more faithfully utilize the cell method. It encourages us to reject materials that have traces of toxic elements in them. 170

Also proposed is a special fee for tires that would allow us to have the funding to offset the shredding of them in order to dispose of them properly.

Finally, there has been some confusion about personal vehicles and we are suggesting that these be limited to cars, pickup trucks, vans and the trailers that those types of vehicles can pull. What that would eliminate is dump trucks which people are claiming to be using for the hauling of personal garbage.

Attached to Mayor Dickinson's letter of 3/11/85 is a projection of expenditures and revenues which the revenues computed at a suggested tip fee of \$16 to give you an idea of how that would play out.

Also anticipated was submission of drafts of the resolution and the language of the resolution dealing with the fees is still being worked on. The resolution with regard to HOURS OF OPERATION is included. These documents are attached as EXHIBIT E, page 1 of 7 through page 7 of 7.

Mayor Dickinson pointed out that this report constituted a great deal of hard work on the part of Don Roe and Steve Deak and felt that the town officials should be very proud of this fine effort. The Mayor also pointed out the extensive maps drawn by Engineering and the fine job done by John Costello.

Mr. Roe pointed out the southern and western expansion area and the metal hydroxide site on the map; the most northern piece is the regulated site and the older, unregulated site is the product of the former industrial treatment plant.

Mrs. Papale was concerned about the fact that Wallingford was charging a very low dump fee in comparison to surrounding towns. Mr. Roe mentioned that there are communities charging \$30, \$40 and \$50 per ton in comparison to Wallingford's \$8 per ton.

Mayor Dickinson indicated that the purpose of this report was to give the town an idea of what the future holds and as the result of Mr. Costello's engineering study, you are talking 7 to 9 years but, over that period of time, we are really looking to close the landfill and those costs are included in this report. Regardless of what the scenario was over past years, there is an ability now to get a firm grasp of what the town faces in costs and even with the increase in the tipping fee as you can see in the pictures, we are not going to come up with a cost but hopefully it will enable the town to come up with a finance cost for funding the necessity of cover and other improvements in order to meet the state regulations. Even with the increase, the town is not making any profit.

Mr. Rys asked about the progress of the closure of the metal hydroxide site which was brought before the Council in May, 1984. Mr. Roe said the town was required by DEP to prepare a closure plan which has been submitted and is a Part B Permit under RECRA. The state has not yet given Wallingford a permit but the state has indicated that the document is in order; the one part that is still open had to do with the fact that when you run a hazardous waste site, you have to provide financial assurances for a 30 year period of time after closure and several methods are given by which you can provide that. The method that the town wanted to be eligible for was a financial means test--if a company is worth enough, then the federal government will say it's ok. For some reasons, municipalities were exempted from that option but we've now gone through a series of negotiations with DEP and EPA whereby February 19, 1985, a letter was received back from the Commissioner saying essentially that the financial test can be used by municipalities under the following conditions:

- (1) A resolution must be passed which decrees an annual budgetary allotment will be made that is equivalent to twice the most recent annual post closure cost estimate.
- (2) A letter signed by the chief executive officer must be submitted which verifies that the funds have been budgeted to cover the cost of the first two years of post-closure care.

Mr. Roe explained that basically we would be dealing with the metal hydroxide project and the financing of that and dealing with this financial test in the budgetary process for the next fiscal year. 171

Mayor Dickinson emphasized that Don Roe has just gone over something that shows some real planning on the part of the people involved here. We were faced with having to supply a bond as a private company, an insurance bond at a cost of \$50,000 a year, under the EPA regulations. A meeting was planned and Don was instrumental in getting together some other communities who were facing this exact same situation. The Mayor and Don Roe took a trip up to DEP, met with Stanley Pac, got DEP interested and they contacted EPA and it appears that Wallingford has gotten to the point that a yearly figure in the budget will be accepted of say \$10,000 instead of \$50,000 a year. That is a significant step forward and the Mayor wanted the Council aware of the fact that these people and Phil Hamel were responsible for the kind of work that has been done and Mayor Dickinson cannot overstate the credit that should be given.

Mr. Rys read the report submitted very thoroughly and felt that \$16 per ton for a dump fee was a very conservative figure after looking at the average of 12 towns indicated in the report. Mr. Rys felt that after a review of all considerations, it was costing the town of Wallingford \$25 per ton.

Mr. Roe mentioned that some communities operate landfills as enterprise funds and they pay for themselves. Wallingford did consider that aspect but hopes they are in the winter years of running the landfill and if a move were made in that direction, it would take 2-1/2 to 3 years to bring that into reality. It is hoped that Wallingford will only be in the business for another 3 years and it would be to the town's advantage to get out from under it as soon as possible. It is impossible to project what the long term liabilities are going to be.

Mr. Polanski referred to Exhibit E, page 2, and asked where the fee of \$150 per ton for waste tires was obtained. Mr. Roe stated the town wanted to set a fee which was no less than where tires are currently being taken and in addition, the cost of shredding was added on to that.

Mr. Polanski asked what is being done to keep persons from surrounding towns from dumping their trash in Wallingford. Mr. Deak said that Wallingford residents will be required to display a sticker.

Mr. Gessert asked what the figure per ton would be if all associated costs were factored into the current \$20 figure. Mr. Roe projected that if all other costs attributable to the landfill were factored in with the exception of fill and insurance costs or daily cover, the cost would be approximately \$25. In the context of the Community Lake project, because of the fact that Wallingford may only be in the business of recovering fill from there for 2 or 3 more years, where does that leave us vis-vis the development of the Community Lake?

Mr. Roe explained that taking the fill from Community Lake is two projects being accomplished simultaneously--cover is being obtained but the lake is also being dredged so the cost of fill should probably be distributed between those two. That issue will be looked at along with some of the options for the Community Lake project.

Mr. Gessert pointed out that if and when CRRA or ORFA are engaged to dispose of Wallingford's refuse, their projected cost is \$25 per ton. What will the savings be to the town directly attributable to that operation? Mr. Roe referred to Exhibit E, page 6, 1989-1990 budget which shows projected expenditures of \$129,000 and projected revenues of \$35,000. Mr. Roe did not go beyond 1990 because it was felt that would be representative of the future.

Mr. Gessert asked if the ash or other solid material could be used as cover material if it were noncontaminatory material. Mr. Costello felt that at that point in time the landfill would be essentially closed and covered with grass and to cover it with ash, the grass would be killed so another place would have to be found. Maybe the ash from the resource recovery would end up in the Meriden

landfill because they have a lot of volume. Mr. Gessert felt that 38,000 tons of refuse per year may produce 3,000 tons of ash but Mr. Roe felt it would be more than that because essentially resource recovery is a volume reduction plant. Mr. Costello pointed out that there would be more towns participating in resource recovery so the volume would in fact be higher. Mr. Gessert felt that using some of the by-product of resource recovery may be a legitimate way of keeping some of the costs down and Mr. Roe felt this matter could certainly be investigated. Mayor Dickinson felt that a problem may exist with the timing factor involved and he does not know how much time the state would allow to generate the ash to substitute it for soil. Mr. Killen asked if the -0- tipping fee for Branford was correct and Mr. Roe said he had not verified this but assumes it is correct. Mayor Dickinson indicated that Branford is actively involved in COG, Council on Governments, with New Haven and some other areas and they are definitely interested in resource recovery. 172

Mr. Killen mentioned that the figure for the process of removing the fill from Community Lake is not included and asked what it might be. Mr. Roe is not sure those figures are on hand right now but it has been decided to study the fill issue and the data base with that in context with the Community Lake project and looking at how much longer we are going to be doing recovery of fill there and where that project will be left. This has not yet been factored out. Basically, according to Mr. Roe, they tried to put together a data base that was the easiest data to get together and consequently, there are some elements to the data base that are not there, some of the cost factors. Basically, the costs that are documentable got to the \$20 figure and if some of the other costs attributable to the landfill are factored out, it will only raise that per ton cost. Mr. Killen said that one of these days something must be done about Community Lake and one of the figures that is very important is what it is costing us now and Mr. Killen has raised this question time and time again--do we know whether we are making or losing money by having it done this way or by hiring a private contractor?

Mayor Dickinson explained that the first step in that process is to receive a permit from the State of Connecticut to expand our area of excavation and the Engineering Office is working on that. We have a permit for two ponds; the middle of last year we had the permit for the second pond area which we are working on now. What we need to do is get a permit for the rest of that lake area and John Costello is working on that now. At the point we have that area mapped and know what the dimensions are and what depth we can go down to, then we can ask for figures for marine dredging or whatever for costs and do it on a step by step logical basis. Right now, without the figures from Mr. Costello, Mayor Dickinson does not feel the town could realistically talk with anyone in the private sector about doing the work since we don't have any figures to give them about how much we want them to do. Mr. Gessert felt that Mr. Killen's point was well taken since he has been asking that question for a couple of years himself. It is possible that it may be less expensive to hire an outside contractor to haul fill but if we don't know what the cost is of doing our own hauling, we really don't know when you figure the manpower and the rental of equipment, etc. We should be able to have some measure of how many yards were taken out and Mr. Deak indicated that 222,000 yards were removed from the west side.

Mr. Killen stated that ironically now we are talking in terms of closing the landfill in 1990 but 23 years ago, the first study was made on doing something on Community Lake and we still haven't done anything on Community Lake.

Mr. Roe agreed this is a significant piece of data which has not yet been broken out. The fill has been considered not so much in terms of the landfill but in terms of Community Lake because, ideally, we are only going to be in the landfill business another couple of years. You must consider we have been in the landfill business for about 50 years.

Mrs. Bergamini pointed out that there is a firm which will accept tires which it uses to create steam for a tobacco factory. Mr. Killen asked if the ash could be used in any way rather than just piled and Mr. Roe was not aware of the answer to that. Mr. Gessert pointed out that many of the by-products from the ORFA plant could be used as an aggregate for concrete because it was pretty much inert matter. Mr. Killen felt that ways to utilize the by products should be investigated. Mr. Roe mentioned that Phil Hamel is investigating the resource recovery matter and in the near future you will receive an update for the contract and discussions will begin and

provide an opportunity for looking at the proposal that VICOM is making and what that plant can and can't do.

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Mr. Roe felt that this evening's discussion should be limited to landfill.

Mr. Polanski asked what the cost per hour is to run a Public Works truck and what the cost is to hire a private contractor to plow snow. Mr. Deak felt that the cost of a private contract is about \$50 per hour. To obtain such a figure, the average hourly pay rate and cost of equipment must be considered.

Mayor Dickinson indicated that no votes were being requested from the Town Council this evening and the resolution regarding Hours of Operation of the landfill will be revised and will go on an agenda in the near future.

There was some discussion about CRRA and ORFA and resource recovery and Mayor Dickinson asked the Council if they would like a report from Phil Hamel who is involved in these negotiations and Mr. Roe explained that the only thing that has changed is that we are talking about a 420 ton plant at a cost of about \$26,000,000 and we are still working with the 5 towns.

Mr. Killen thanked Mr. Deak, Mr. Costello and Mr. Roe for renewing his faith in the expertise of the town.

A motion was duly made, seconded and carried and the meeting adjourned at 10:25 p.m.

Delores B. Fetta
Substitute Secretary

Approved David A. Gessert
David A. Gessert, Council Chairman

Bohemian Basiate
March 26, 1985
Date

Exhibit A Town Council Minutes
Page 1 of 17 March 14, 1985

Papermill Equipment
Effluent Clarification



LENOX, Massachusetts 01240
101 Yokun Avenue
Phone : (413) 637-0740
Cable : Krofta-Lenox
Telex : 92-6443 krofta leno

SANDFLOAT

The Town of Lenox, Massachusetts, 5000 inhabitants (summer population 10,000 during the Boston Symphony Orchestra Festival in Tanglewood) had continuous problems with high turbidity of drinking water. The Lenox water supply comes from two surface reservoirs. However, after chlorination for disinfection the turbidity remained and was especially high in the spring and after heavy rains. The Lenox population considered the water undrinkable. In some sections of the town the heavy turbidity caused damage when used for household washing.

Dr. Milos Krofta, has been a resident of Lenox for thirty years, and a specialist in flotation and waste water clarification. As President of Krofta Engineering Corporation, with headquarters in Lenox, he submitted a proposal to the Town for a trial installation of a new, advanced-design water treatment plant (SANDFLOAT) which would be entirely financed by his company.

The Lenox Town Selectmen accepted his offer and the water treatment plant has been built using the Krofta proprietary SANDFLOAT Design. The plant was put into operation July, 1982, and will be operated for a six month period using Krofta personnel at Krofta's expense. For the next six month period, the Town of Lenox will operate the unit. After this time period the Town will decide on whether or not to purchase the plant. The expected price is set at approximately \$300,000. for a 1 MGD (one million gallon per day) capacity. The price for a conventional water treatment plant of the same capacity is over \$1,000,000.

The water quality treated by the SANDFLOAT is continuously monitored by the Health Department's laboratory and supervised by the State Department of Environmental Quality Engineering. Results have been excellent. The turbidity is way below the specified 1.0 NTU (Normal Turbidity Units) and the color is zero. The amount of chlorine used for chlorination has been reduced by half.

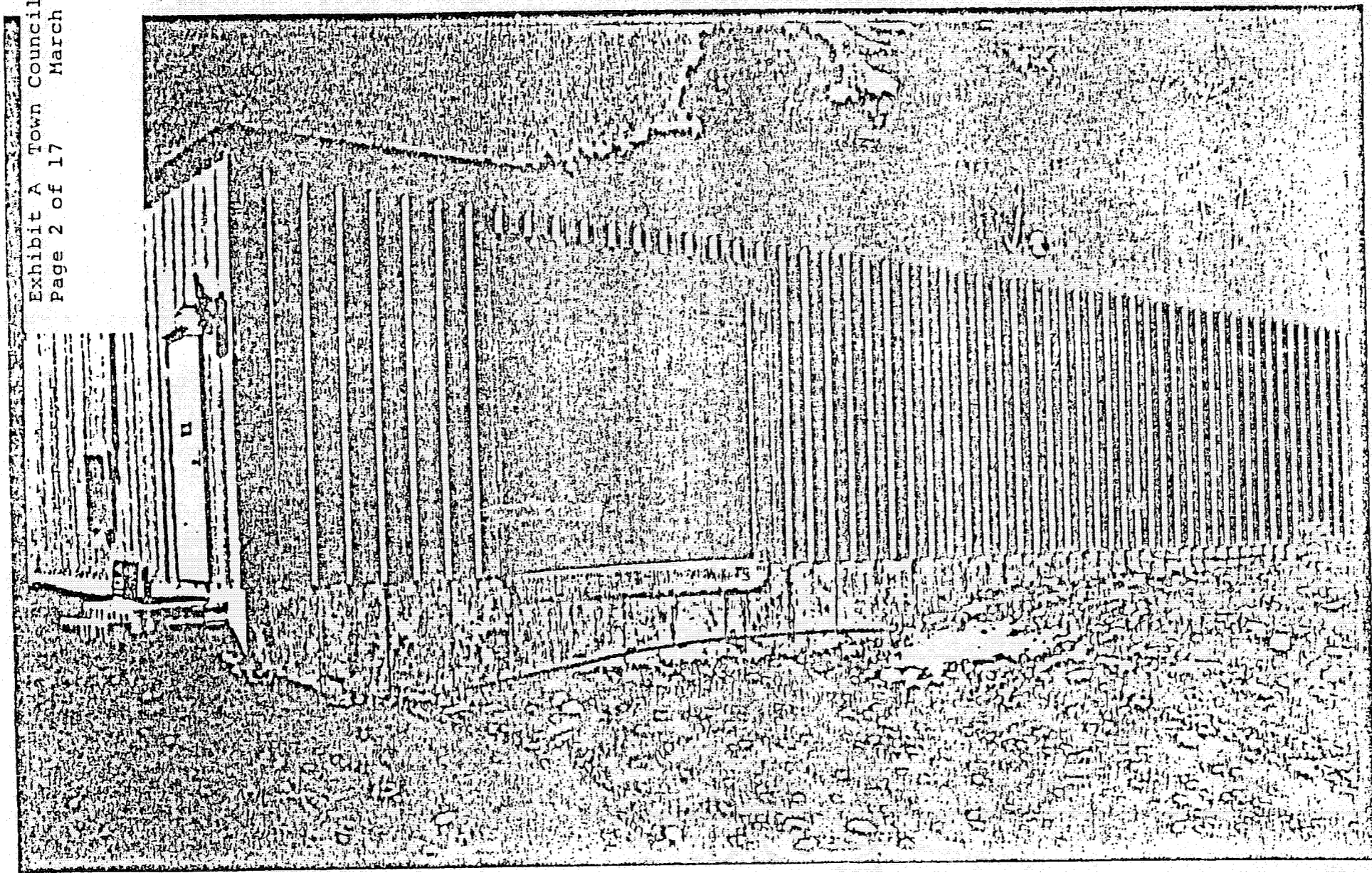
The Krofta SANDFLOAT has obtained a 5 star award for "Best New Development for Potable Water Treatment", by Pollution Engineering Magazine and is being considered for the Gold Medal Award by the World Filtration Congress III.

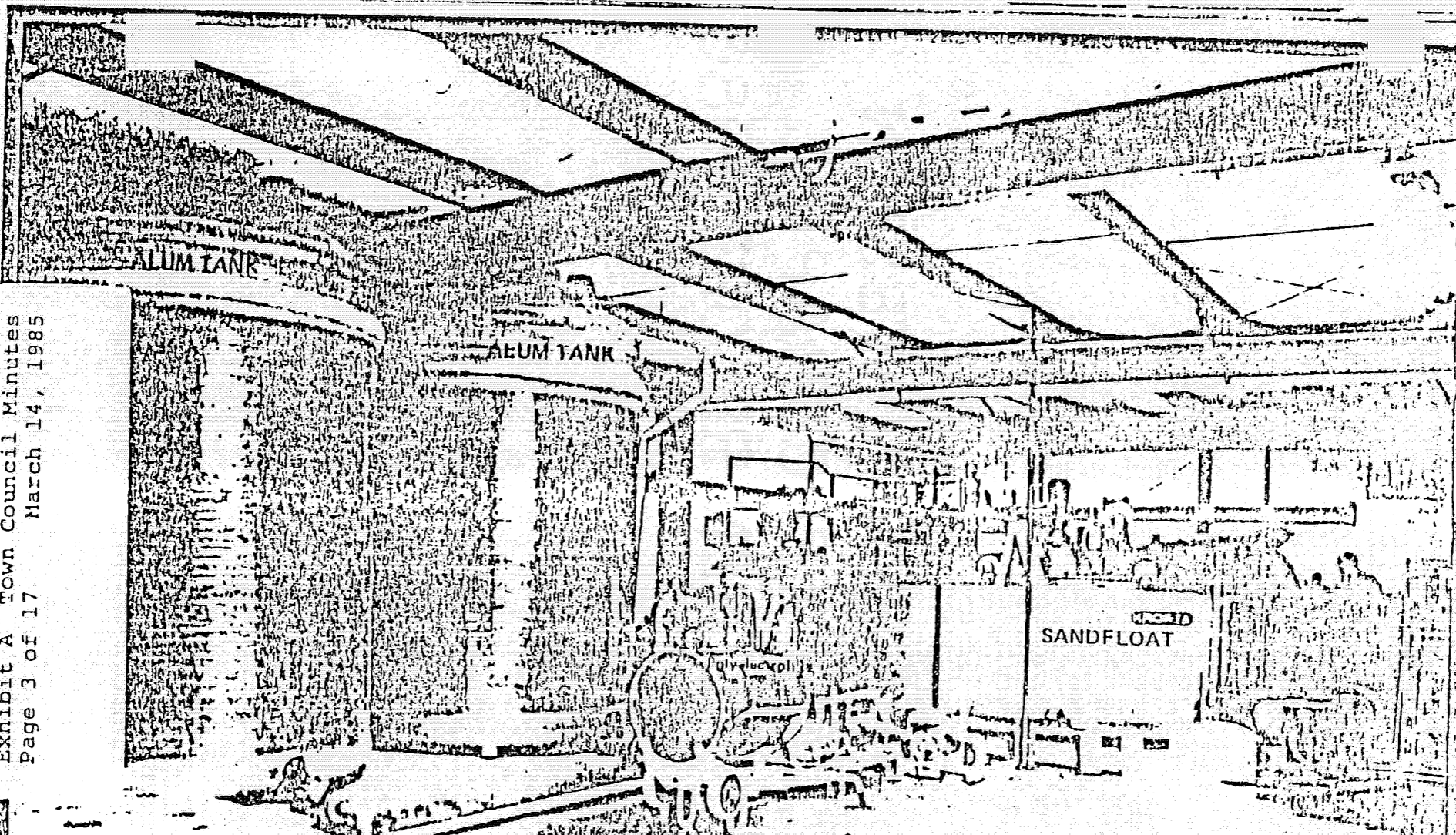
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SANDFLOAT

Potable Water Flotation Clarifier





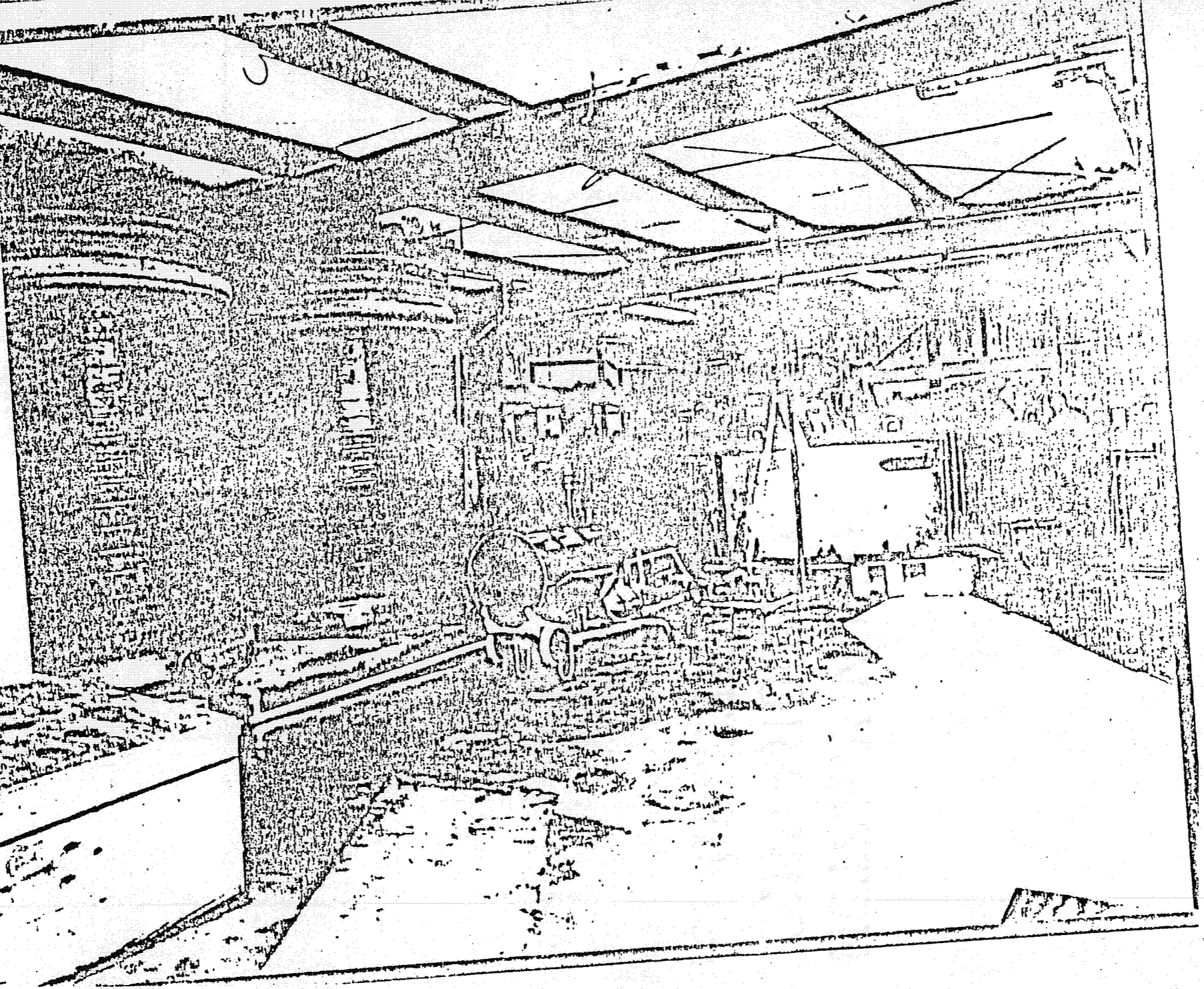
KROFTA SANDFLOAT Type 22 Installation

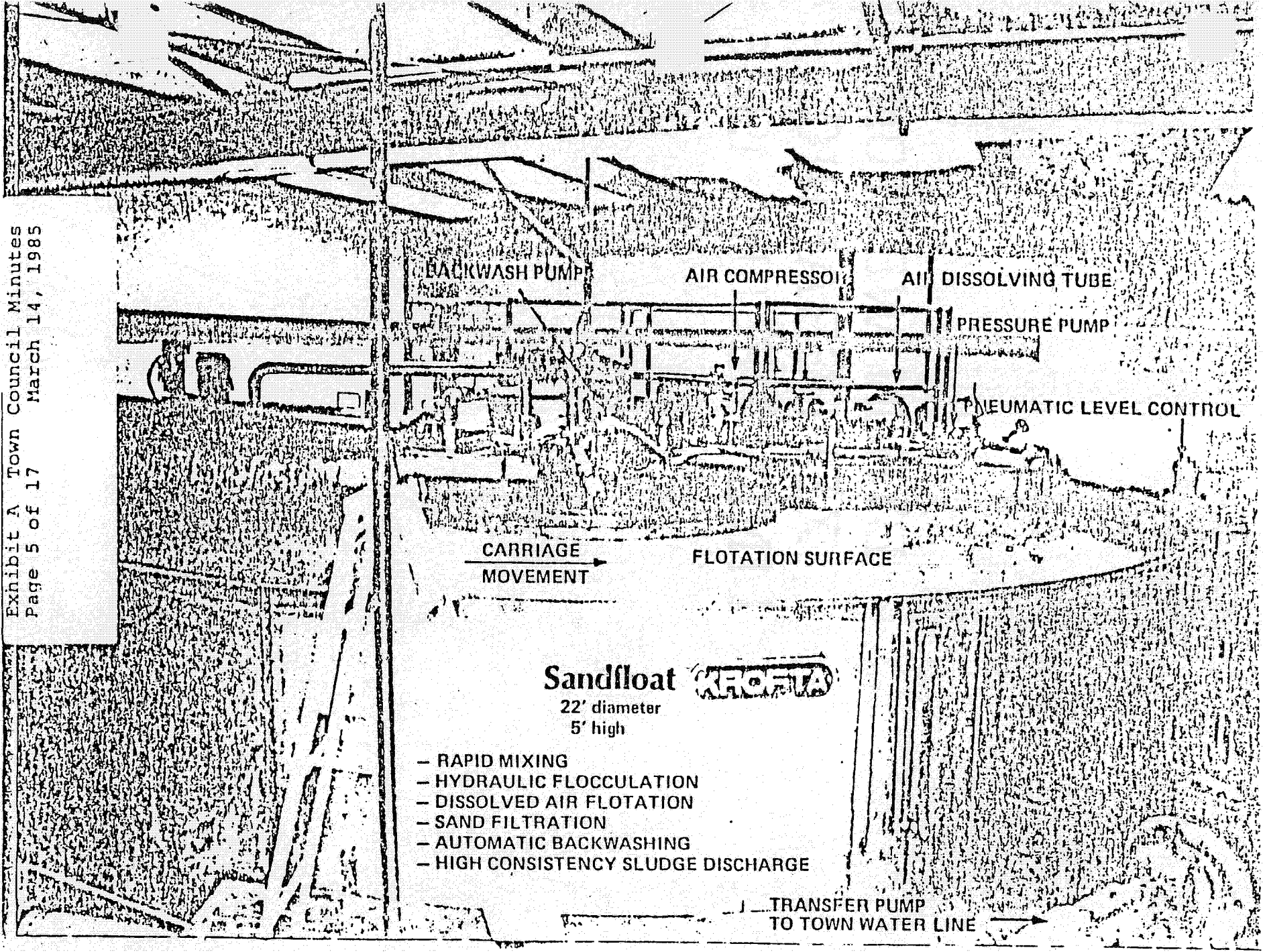
Location : LENOX, Massachusetts, U.S.A.
 Capacity : 1.1 MGD - (4200m³/D)
 Incoming Turbidity : 1.5 - 10 NTU
 Outgoing Turbidity : 0.15 - 0.5 NTU
 Building size : 30'x60'x11'-(9.1mx18.2mx3.4m)

4 months chemical storage requires a large building.
 The location is inaccessible during winter and early spring due to weather conditions.

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BACKWASH PUMP

AIR COMPRESSOR

AIR DISSOLVING TUBE

PRESSURE PUMP

PNEUMATIC LEVEL CONTROL

CARRIAGE
MOVEMENT →

FLOTATION SURFACE

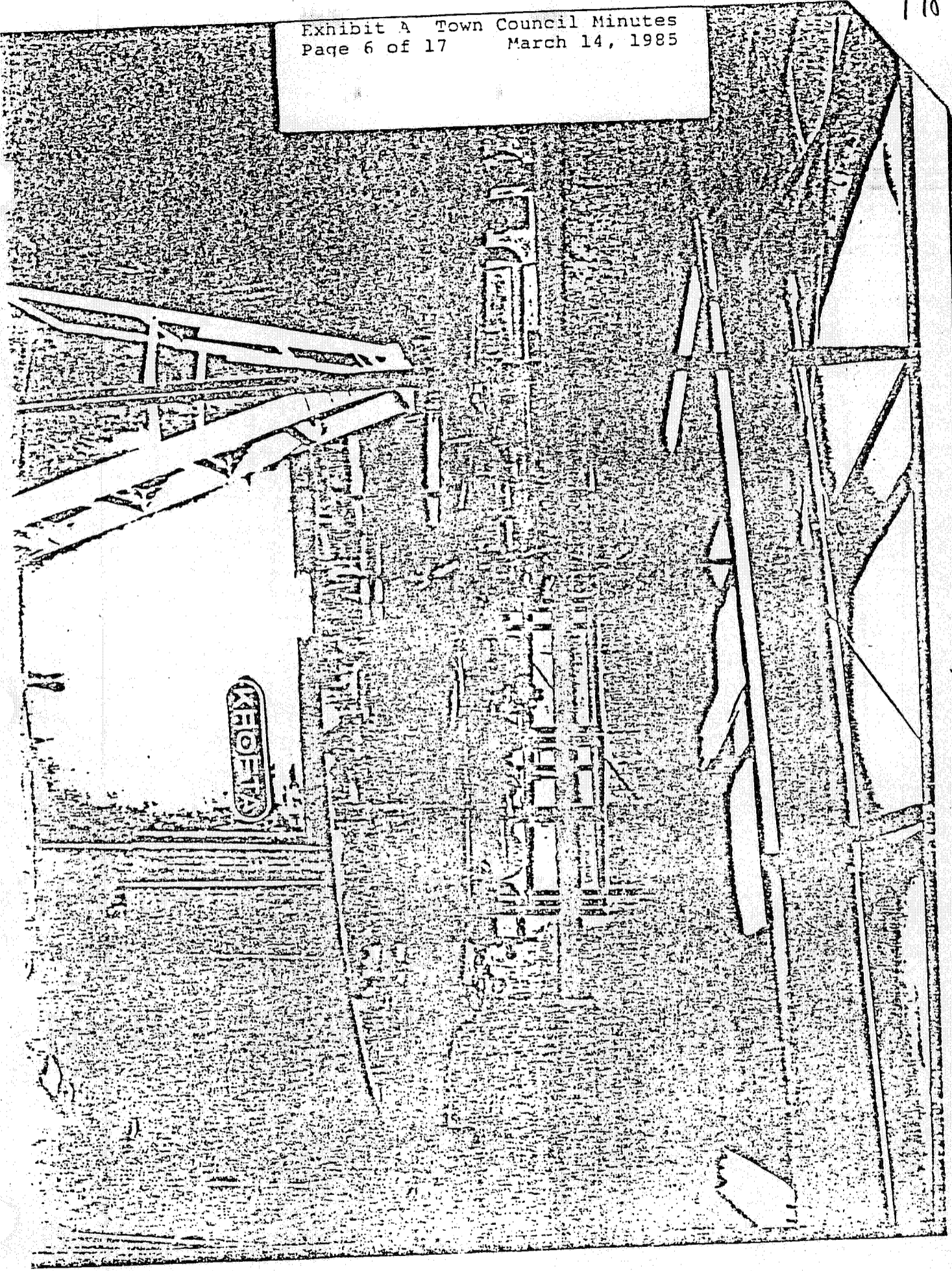
Sandfloat **KROFTA**

22' diameter
5' high

- RAPID MIXING
- HYDRAULIC FLOCCULATION
- DISSOLVED AIR FLOTATION
- SAND FILTRATION
- AUTOMATIC BACKWASHING
- HIGH CONSISTENCY SLUDGE DISCHARGE

TRANSFER PUMP
TO TOWN WATER LINE →

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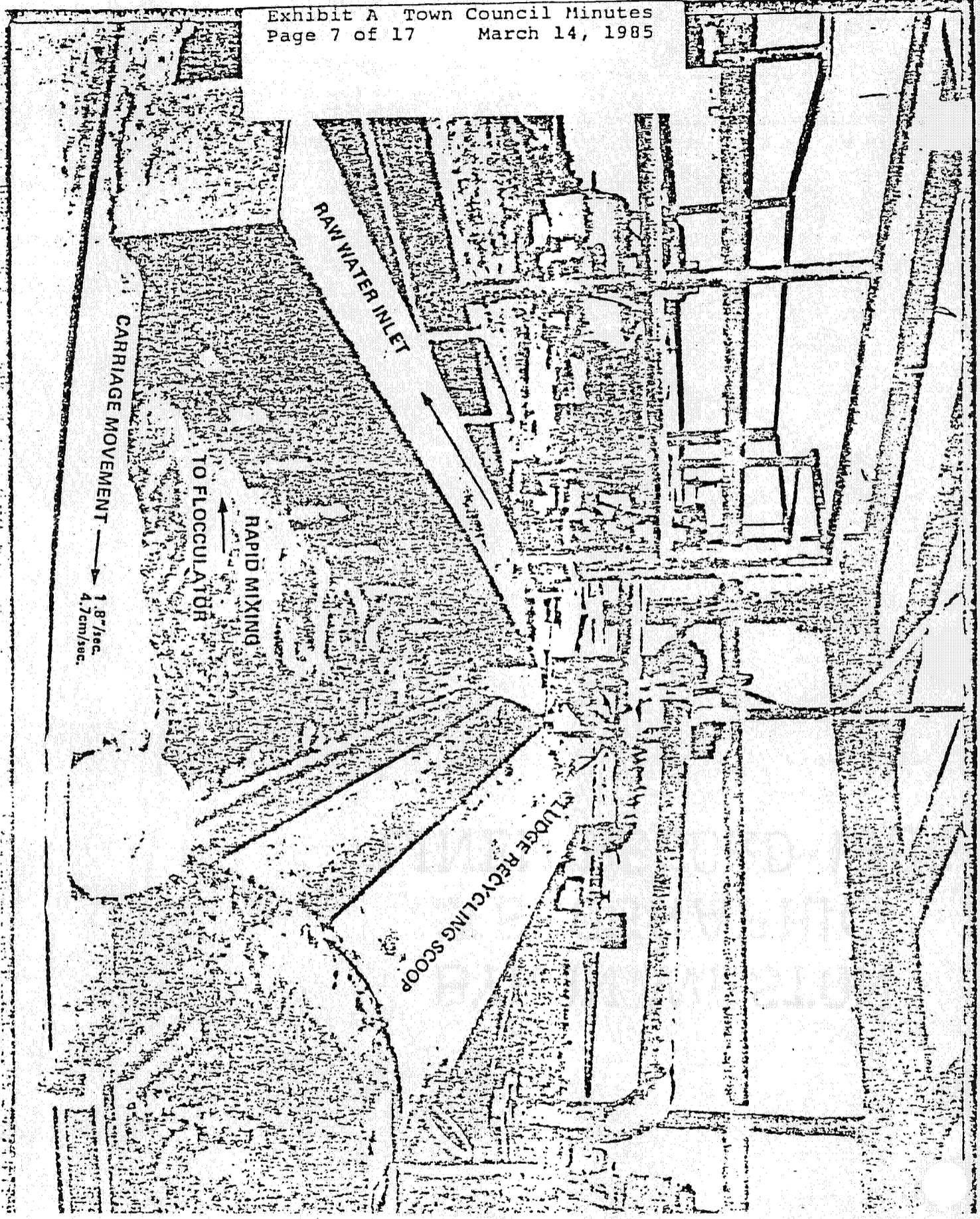
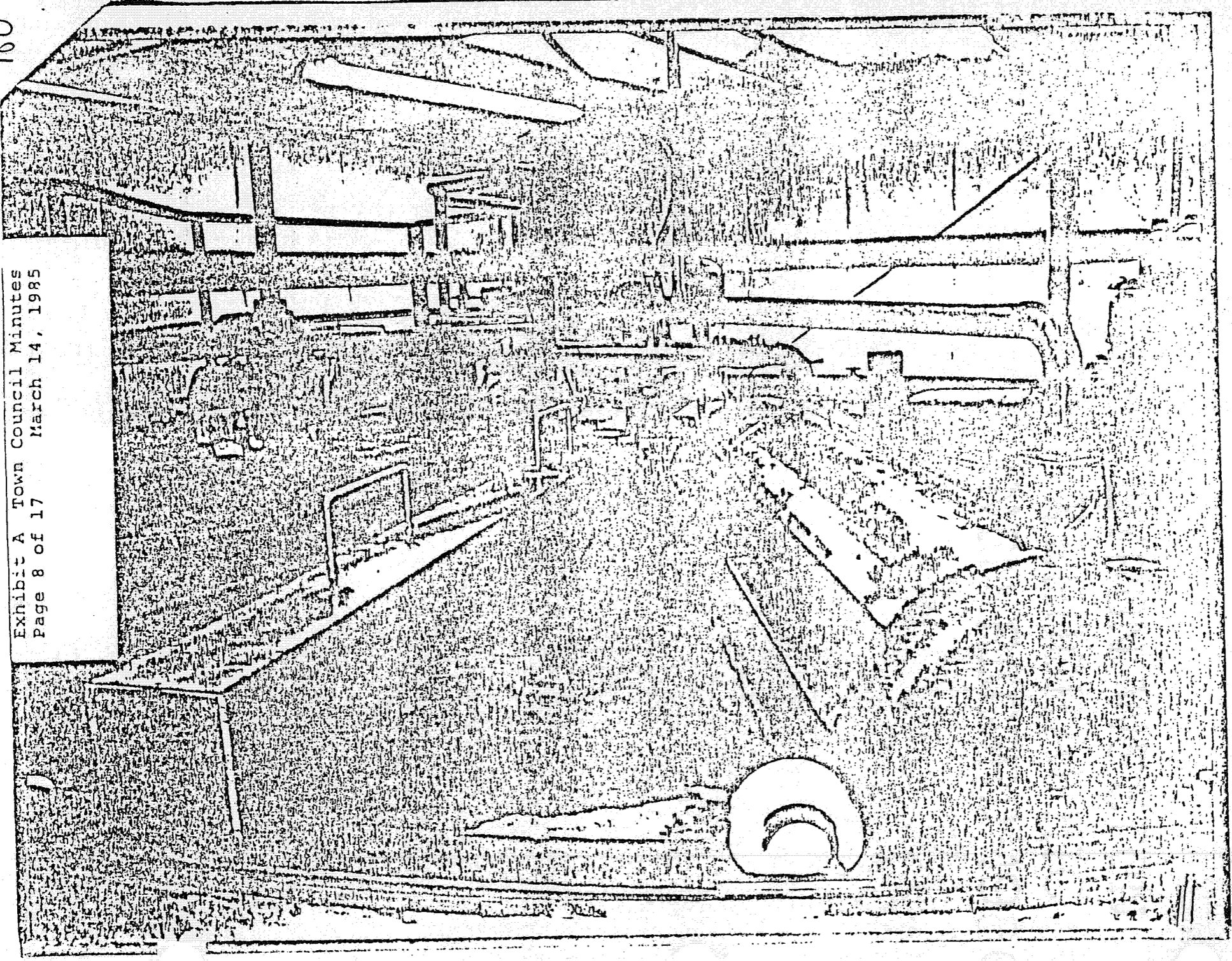
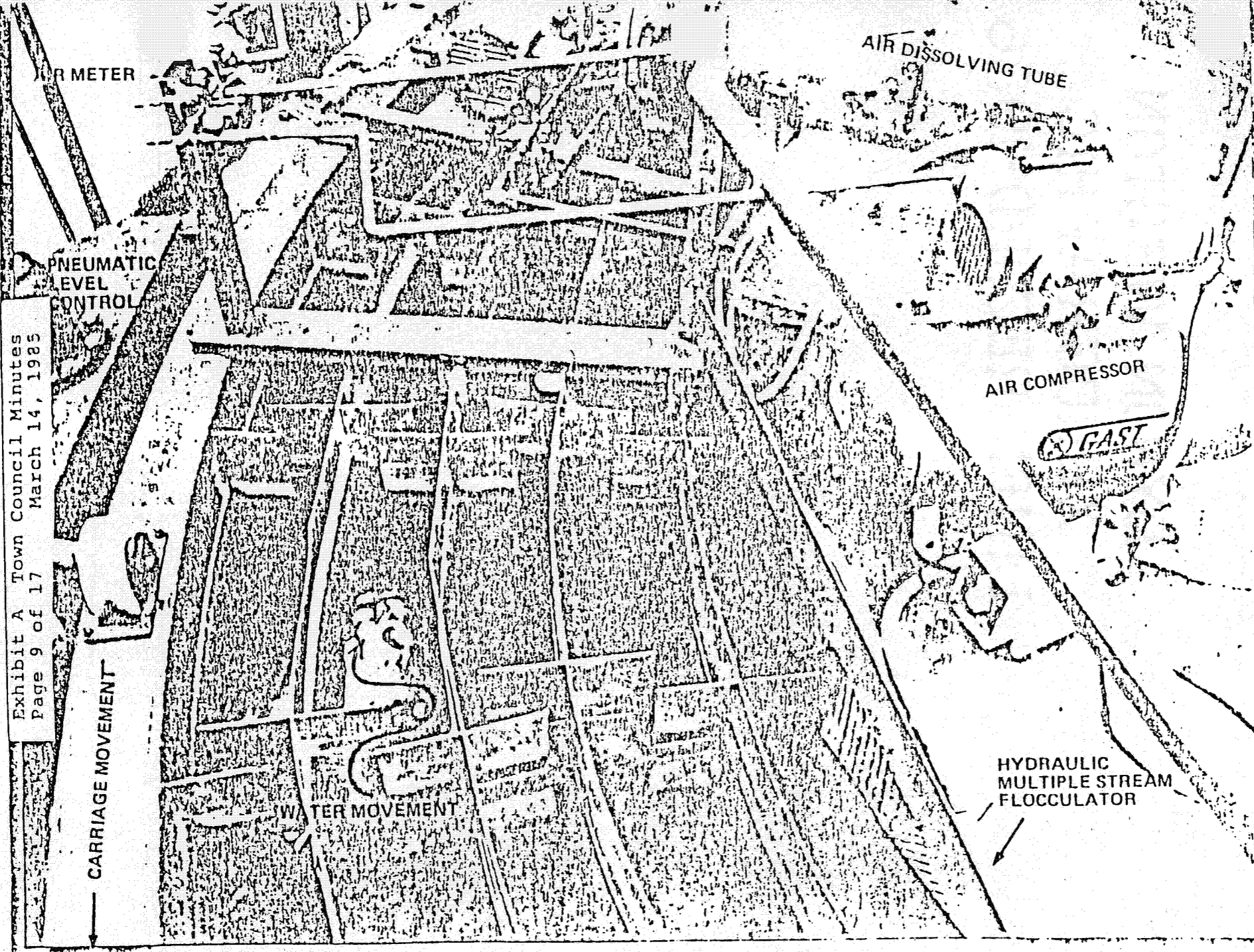


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AIR METER

PNEUMATIC
LEVEL
CONTROL

AIR DISSOLVING TUBE

AIR COMPRESSOR

GAST

HYDRAULIC
MULTIPLE STREAM
FLOCCULATOR

CARRIAGE MOVEMENT

WATER MOVEMENT

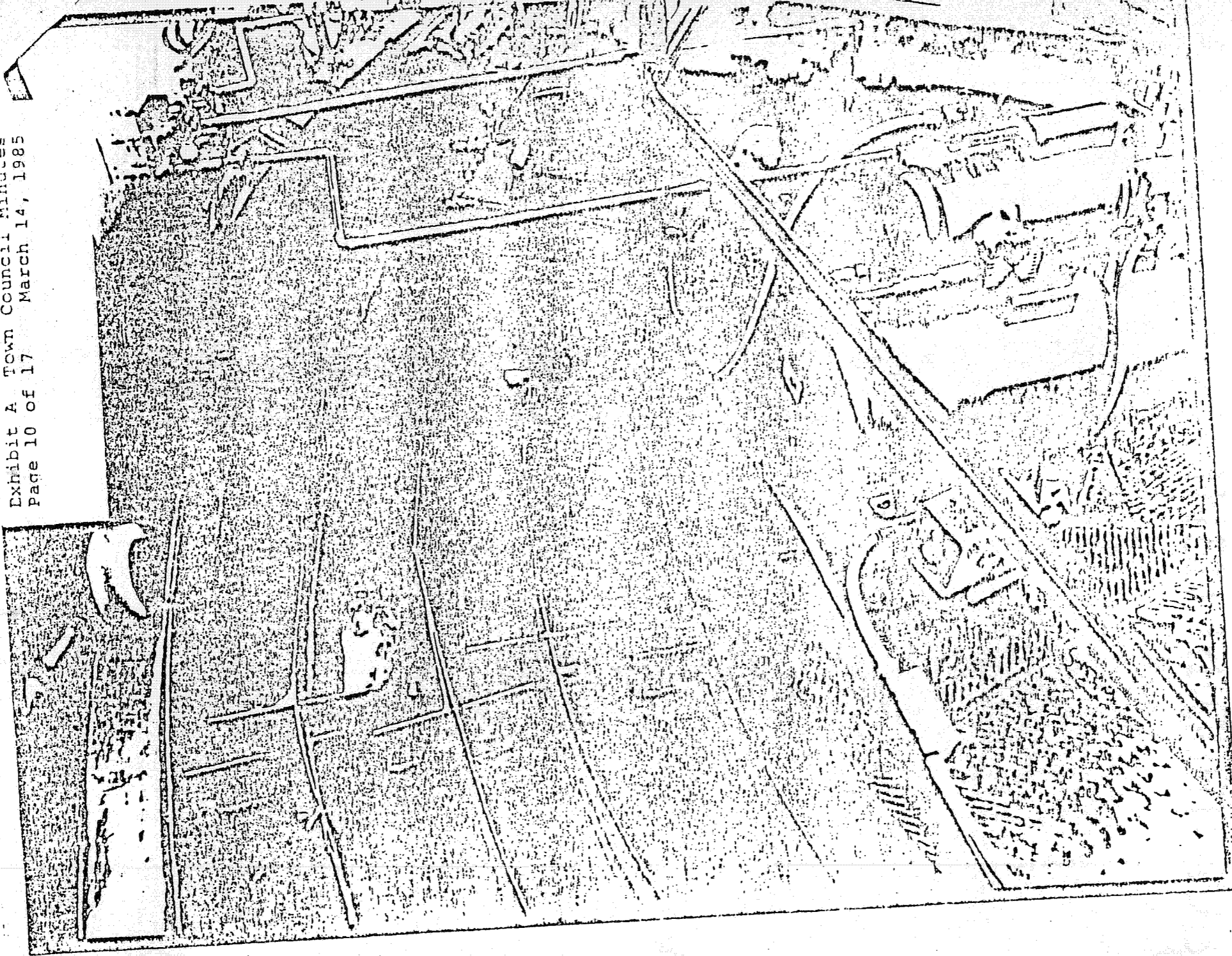


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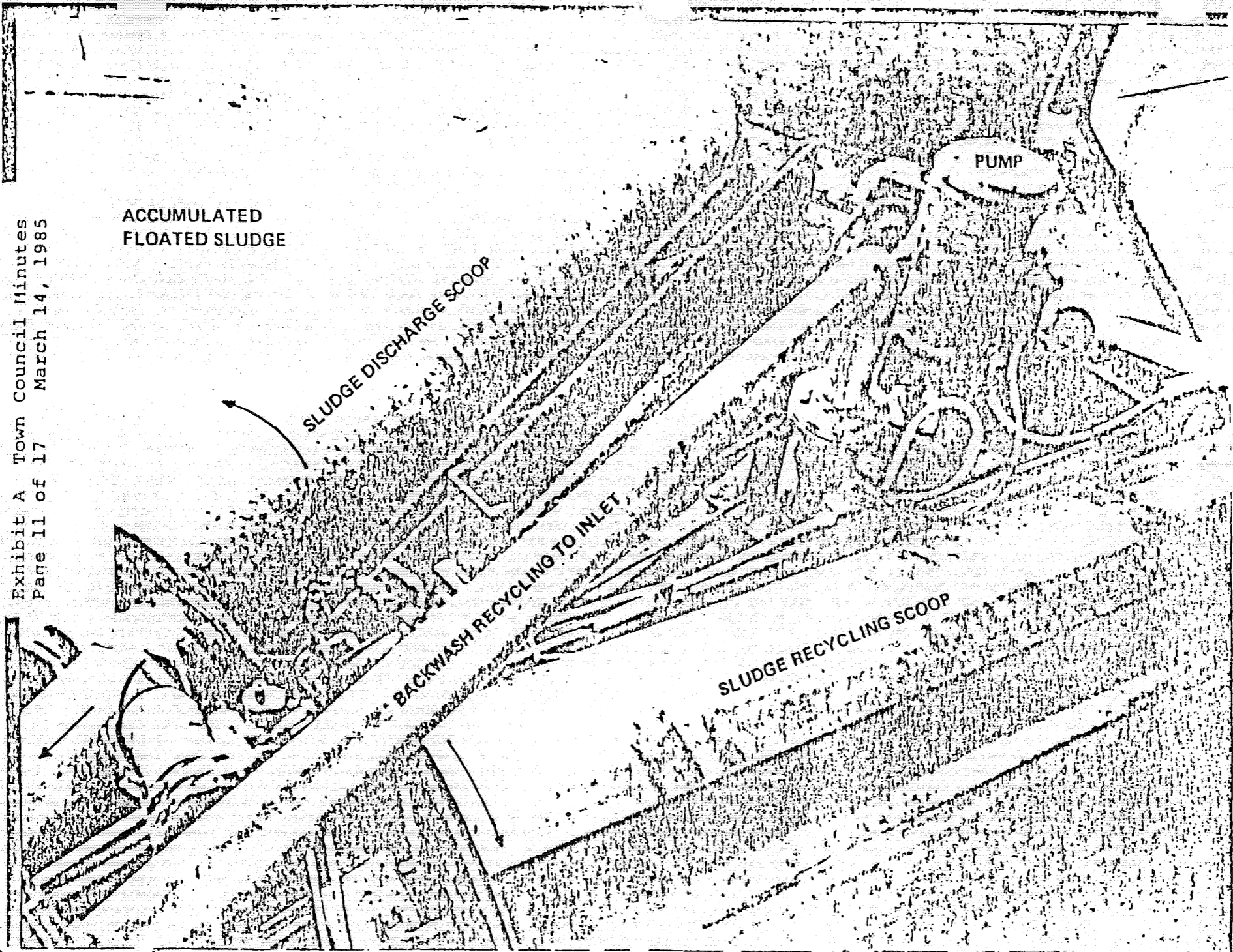


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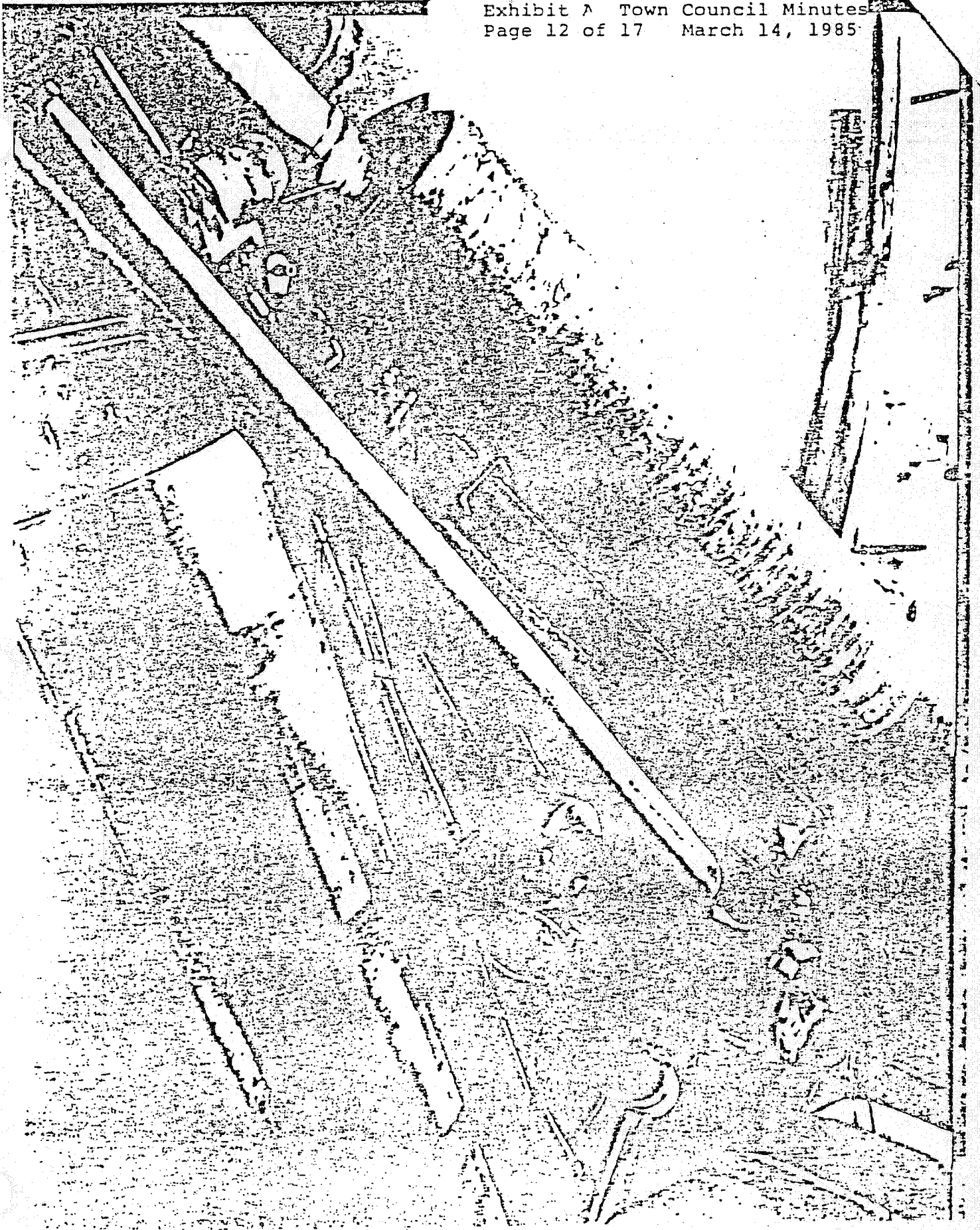
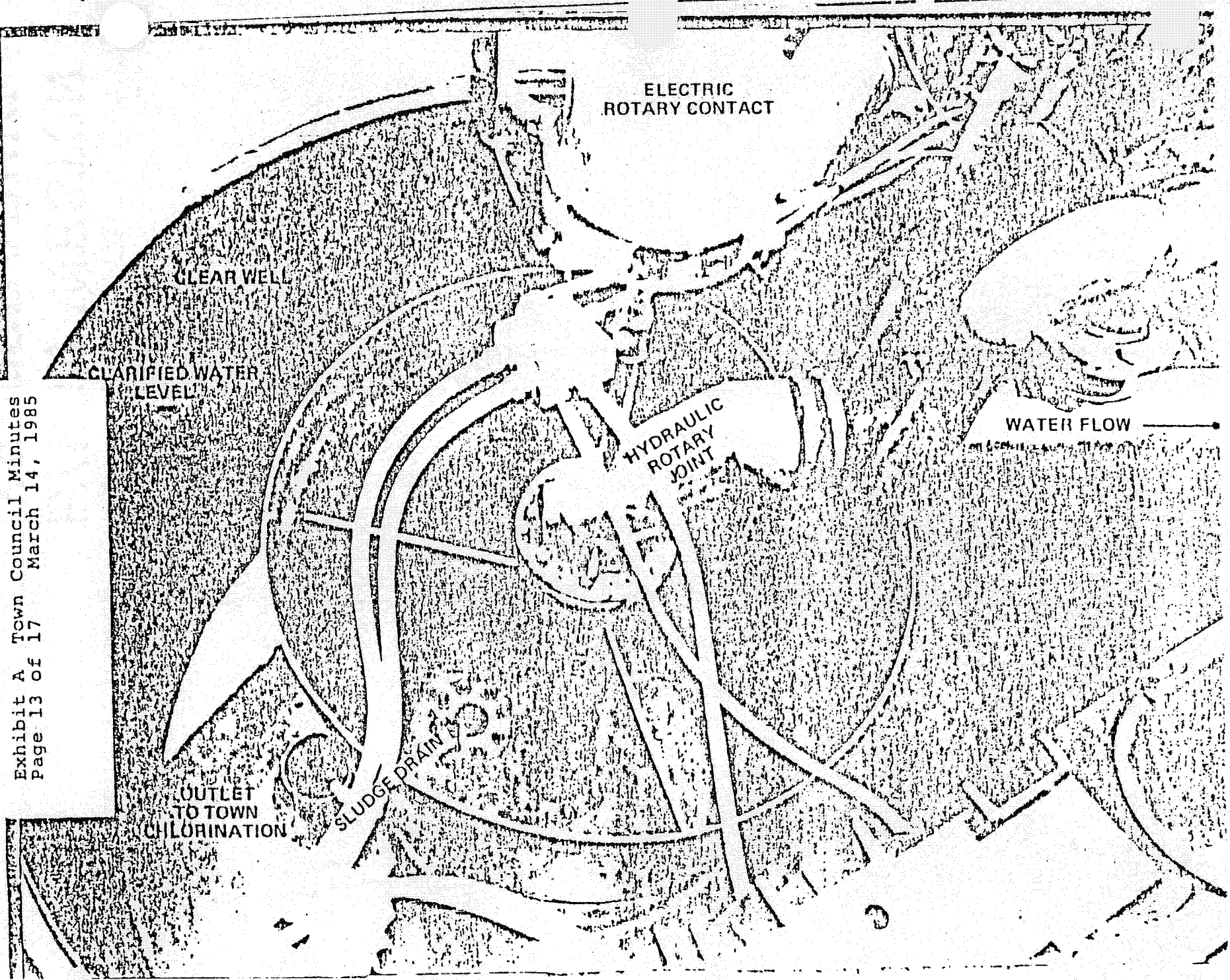


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ELECTRIC
ROTARY CONTACT

CLEAR WELL

CLARIFIED WATER
LEVEL

HYDRAULIC
ROTARY
JOINT

WATER FLOW

OUTLET
TO TOWN
CHLORINATION

SLUDGE DRAIN

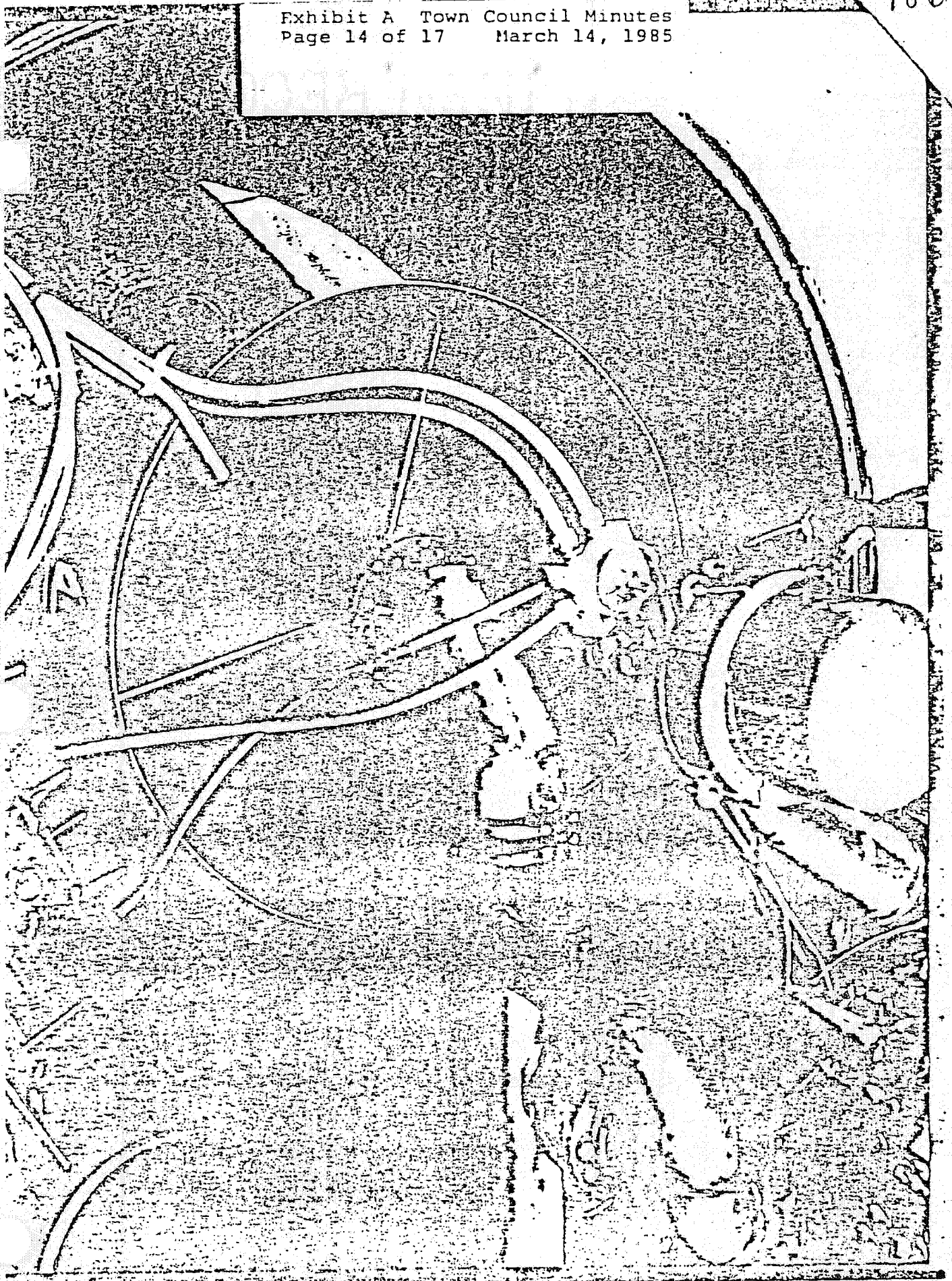


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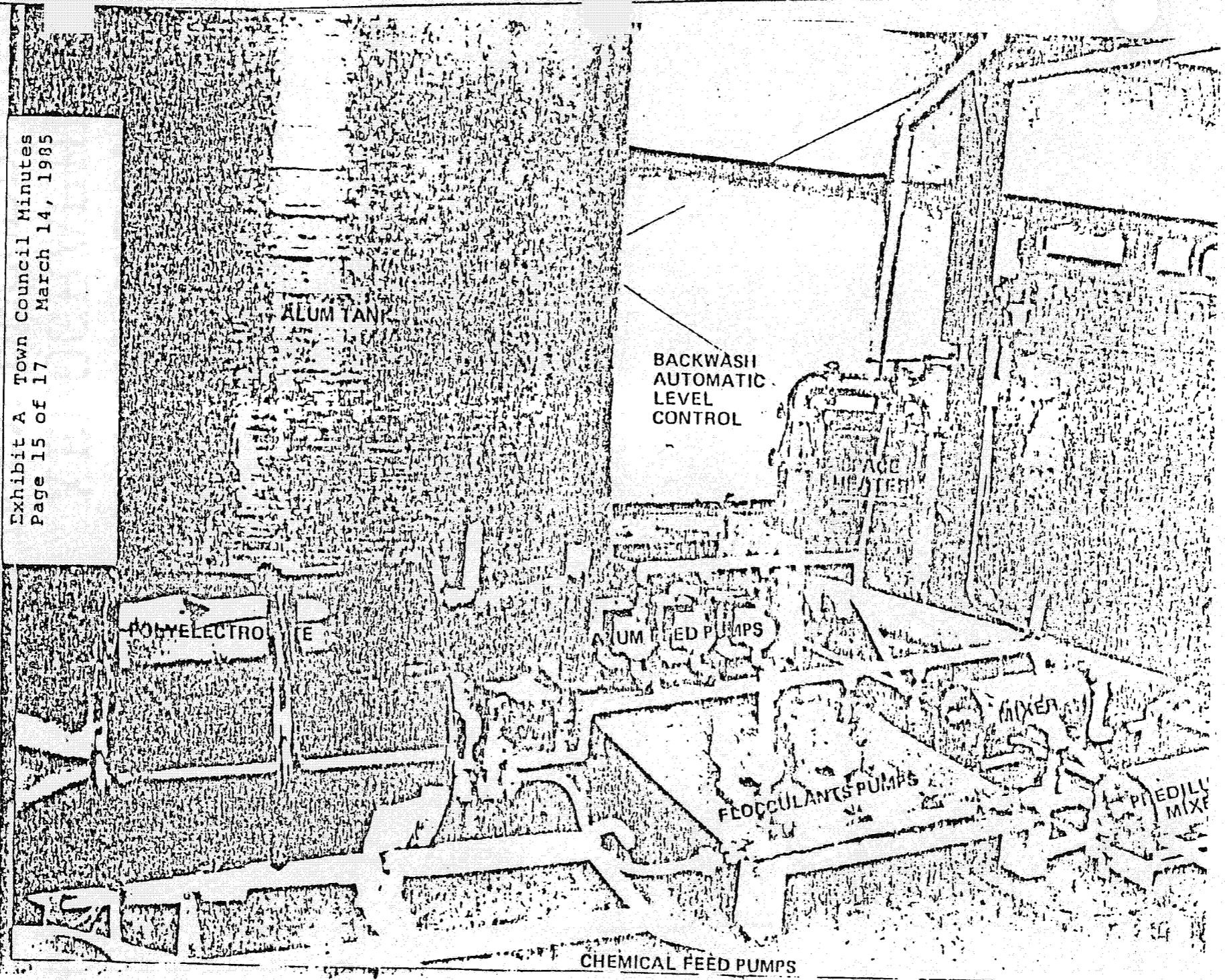
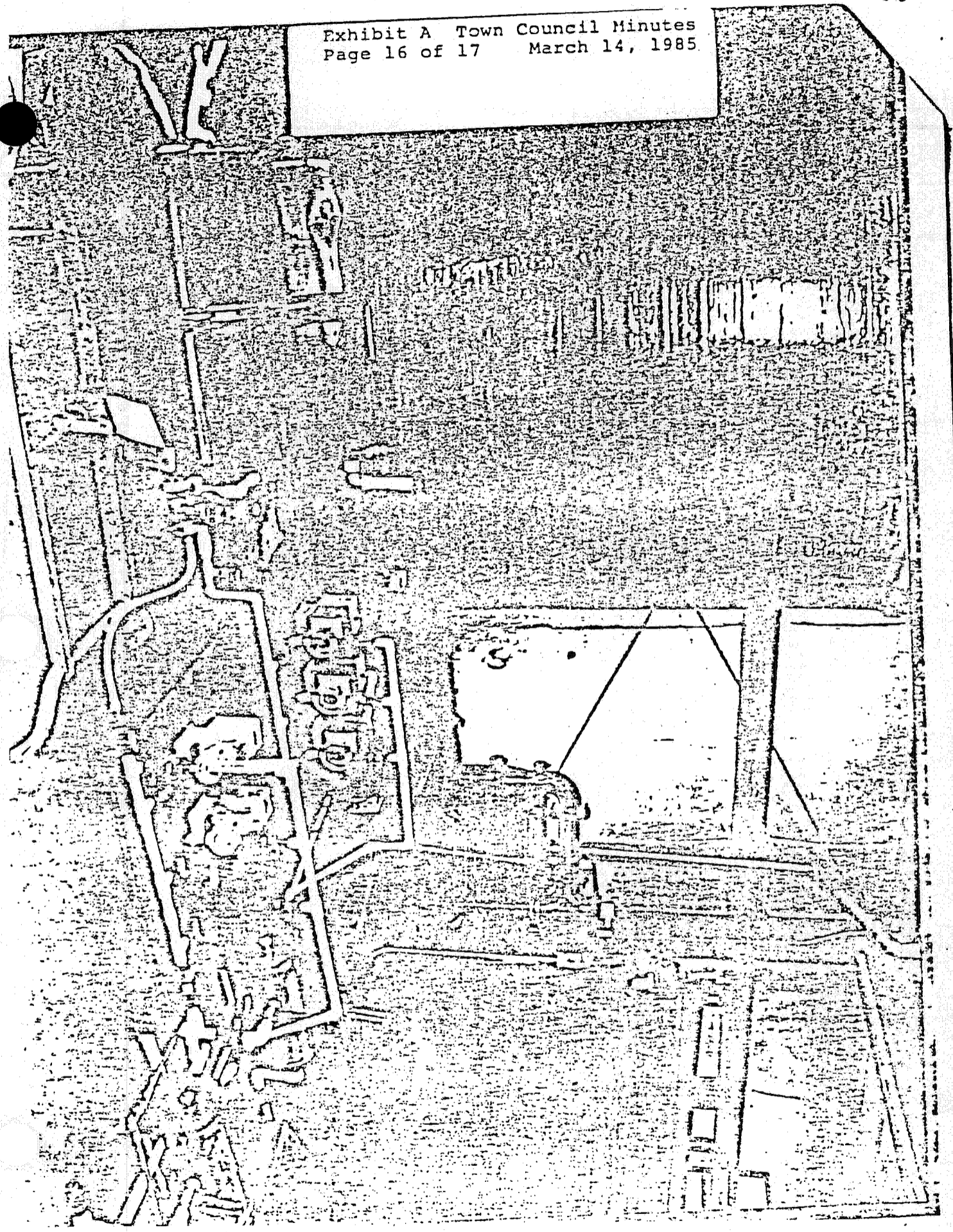


Exhibit A Town Council Minutes
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Sandfloat Type 22
(US and foreign patents pending)

Bulletin 8204 E

Exhibit A Town Council Minutes
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KROFTA ENGINEERING CORPORATION
101 Yokun Avenue
LENOX, Ma. 01240
USA
Tel. (413) 637-0740
Telex krofta 92-6443
leno

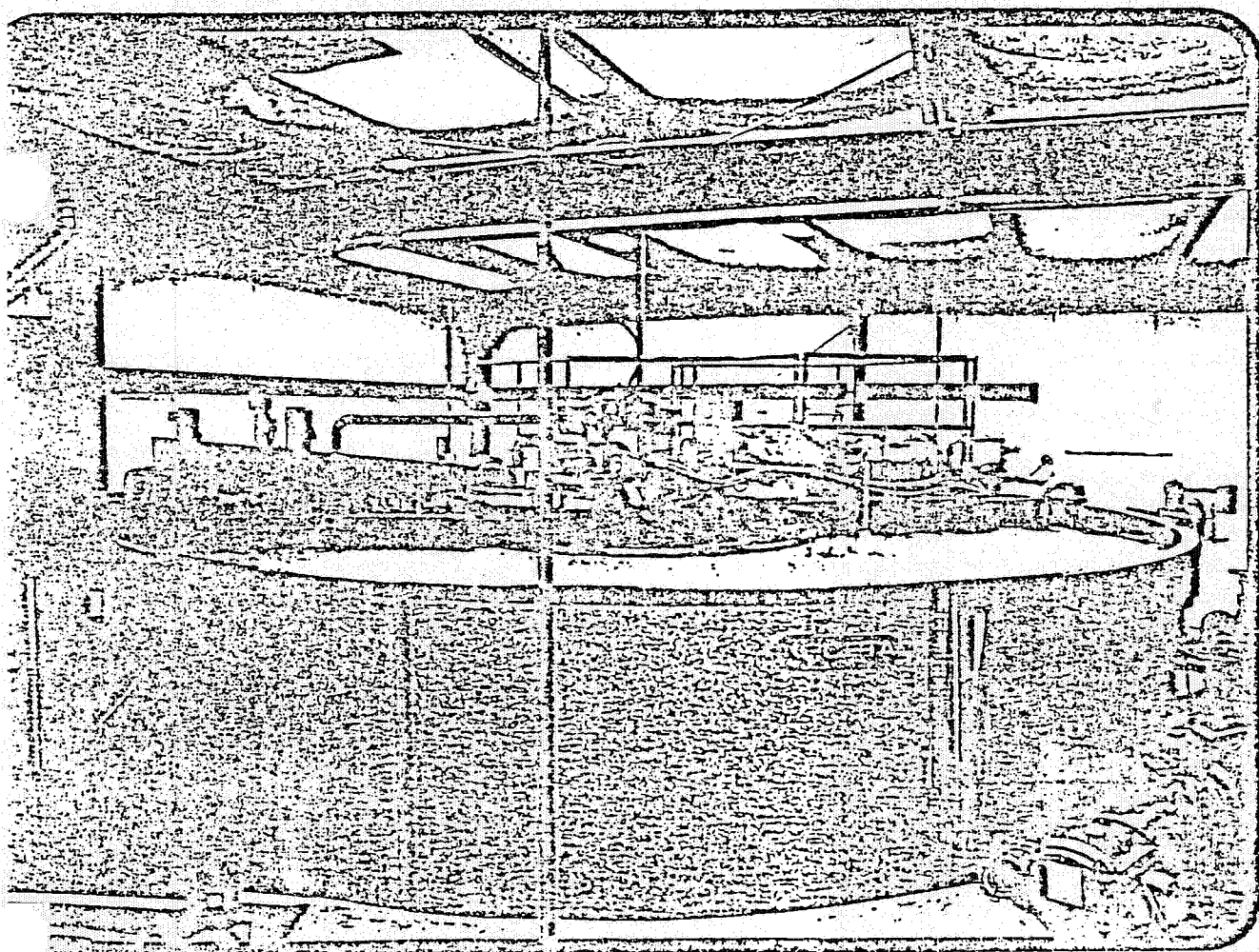
U.K. FLACKWELL HEATH 1A White Pitt Lane Rushmore HP 10911R	SWITZERLAND CH-8900 LUGANO via Baruffio 6	ITALY 20122 MILANO via Fontana 11	FRANCE F 75018 PARIS 21, Av. Perichon	SPAIN SAN SEBASTIAN 2 Paseo de Colon 5	GERMANY D 6370 OBERHASEL Altkönigsplatz 61	AUSTRIA 8020 GRAZ Alte Poststr. 35B	NORWAY N-OSLO 4 Michelsberggt. 65	FINLAND SF 00101 HELSINKI 10 Katajanminkatu 2	BRAZIL 01010 SAO PAULO Rua Bahia 883	JAPAN MEGURO KU, TOKYO Himonya 2 21 6 311	INDIA NEW DELHI 110048 N 127, Greater Kailash
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TECHNICAL DATA SHEET

KROFTA[®]

Bulletin 8302-E

SANDFLOAT (Coagulation-Dissolved Air Flotation-Sandfiltration) Combined in one **COMPACT CLARIFIER** Producing drinking water of highest purity.



SANDFLOAT SAF 22, LENOX, Ma. USA



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GENERAL

The KROFTA SANDFLOAT (USA & foreign Patents applied for) is an advanced clarification system, using combined Chemical Flocculation, Dissolved Air Flotation and Rapid Sand Filtration in one unit.

The unique compact and efficient design is made possible by the use of the principle of "zero" velocity eliminating internal turbulence.

ADVANTAGES

Lowest installation cost compared with existing water treatment plant with the same high grade performance.

Compact construction incorporates flocculation, dissolved air flotation and sand filtration in one unit.

Dissolved air flotation with 10 minutes retention time replaces sedimentation with retention time of several hours.

Housing cost is reduced and land requirement limited.

Immediate changes from zero to full flow in few minutes. No clearwell storage required. The raw water reservoir is the storage when suddenly an increase is required.

Very dirty raw water can be fully clarified with chemical flocculation, dissolved air flotation and sand filtration.

Sandfilter Backwash is made during the operation by backwashing individual sandbed sections and immediately recycling the dirty backwash water back to the inlet of the flocculator for immediate recycling. Sandbed washwater and washwater tanks are eliminated.

Sludge is discharged at high consistency of 0.5 - 1.0 % allowing for easy additional implant thickening to 2 - 3% with a small additional dissolved air flotation thickener and Filterpress producing disposable sludge of 15 - 30 % dryness.

APPLICATIONS

DRINKING WATER production from surface reservoirs, lakes or rivers -

- reduction of turbidity below required standards
- reduction of color
- reduction of THM precursors
- reduction of other materials by adequate chemical flocculation

DRINKING WATER production from groundwater -

- elimination of hardness
- elimination of other pollutants

PHOSPHORUS REMOVAL from final municipal effluents for final stage clarification

OILY WATER CLARIFICATION by simultaneous

- elimination of suspended solids
- elimination of turbidity
- elimination of color

LAKE RESTORATION by recycling lake water through floating SANDFLOAT installation

AUTOMATIC CONTROLS

The operation of the SANDFLOAT is completely automatic.

The outlet is connected to the distribution piping system and varying demand is automatically adjusted by the inlet flow regulating valve which maintains a constant level in the flotation tank.

The Backwashing system is automatically operated by a clearwell level control and a timer.

The SANDFLOAT Installation is equipped with an Alarm System that transmits a beeper signal via telephone and radio to an on call maintenance man. There is no around the clock on site assistance or servicing required. Normally one person visits the SANDFLOAT installation once a day for approx. 1 hour to perform water tests and inspection.

SANDFLOAT

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DESCRIPTION OF THE SANDFLOAT

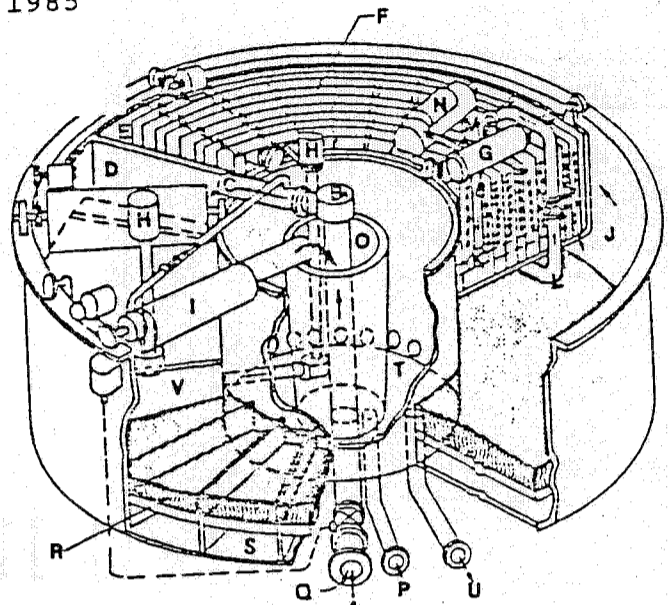
The influent raw water or waste water enters the inlet at the center near the bottom (A) and flows through a hydraulic rotary joint (B) and an inlet distributor (C) into the rapid mixing section (D) of the slowly moving carriage. The entire moving carriage consists of rapid mixer, (D), hydraulic static flocculator (F), air dissolving tube (G), backwash pumps (H) and sludge discharging spiral scoop (I). To floc out colloids and suspended solids, alum is added at (Q) at the inlet (A). For additional improvement of flocculation, polyelectrolytes can be added at the same inlet (A).

From the rapid mixing section (D), the water enters the hydraulic static flocculator (F) gradually building up the flocks by gentle mixing during the passage through the flocculator. The flocculated water moves from the flocculator into the flotation tank (J) clockwise with the same velocity as the entire carriage (E), including flocculator (F) which moves counter-clockwise simultaneously. The outgoing flocculator effluent velocity is compensated by the opposite velocity of the moving carriage, resulting in a "zero" horizontal velocity of the flotation tank influent. The flocculated water thus stands still in the flotation tank with minimum turbulence for optimum clarification.

At the outlet of the flocculator on the carriage, pressurized water with dissolved air is added (D). At the bottom of the carriage (L) a small volume of the water preclarified by dissolved air flotation is taken by a pressure pump (M) that feeds an Air Dissolving Tube (G) where compressed air is added from a separate compressor (N) riding with the pressure pump, and Air Dissolving Tube (G) on the carriage. Air is dissolved under pressure in the water and mixed with the flocculated raw water at the outlet of the flocculator.

The flocks and suspended solids are floated to the water surface. The floating scum or sludge accumulated on the water surface is scooped off by a sludge discharging spiral scoop (I) and discharged into the center sludge collector (O), where there is a sludge outlet (P) to an appropriate sludge treatment facility.

The bottom of the SANDFLOAT is composed of multiple sections of sand filter beds (R) with individual clear wells (S) below them. The outlets from the individual clearwells discharge into a center clearwell (T) where there is an outlet for the SANDFLOAT clear effluent (U).



- A - RAW WATER INLET
- B - HYDRAULIC JOINT
- C - INLET DISTRIBUTOR
- D - RAPID MIXING
- E - MOVING SECTION
- F - STATIC HYDRAULIC FLOCCULATOR
- G - AIR DISSOLVING TUBE
- H - BACKWASH PUMPS
- I - SPIRAL SCOOP
- J - FLOTATION TANK
- K - DISSOLVED AIR ADDITION
- L - BOTTOM CARRIAGE
- M - PRESSURE PUMP
- N - AIR COMPRESSOR
- O - CENTER SLUDGE COLLECTOR
- P - SLUDGE OUTLET
- Q - CHEMICAL ADDITION
- R - SAND FILTER BEDS
- S - INDIVIDUAL CLEAR WELLS
- T - CENTER CLEAR WELL
- U - CLEAR EFFLUENT OUTLET
- V - TRAVELING HOOD

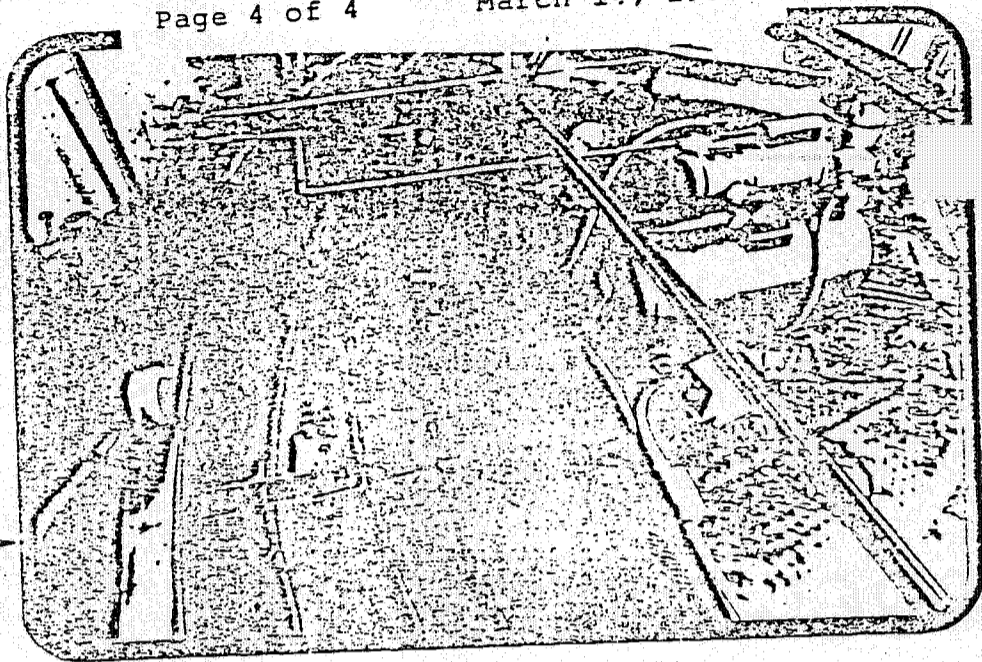
BACKWASHING

For backwashing of the sandbeds two pumps (H) ride on the carriage. One pump is in the center clearwell taking clear water and pumping it during the backwash cycle back into the individual clearwell (S) compartments backwashing the sand that is fluidized. The dirty backwash water is collected with a traveling hood (V), where the second backwash pump (H), collects the dirty water and discharges it into the rapid mix inlet section (D), for repeated flotation. The backwash water is immediately recycled and backwash dirt removed by flotation to the water surface.

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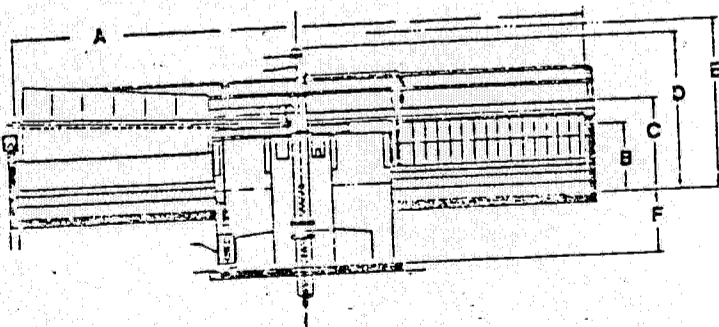
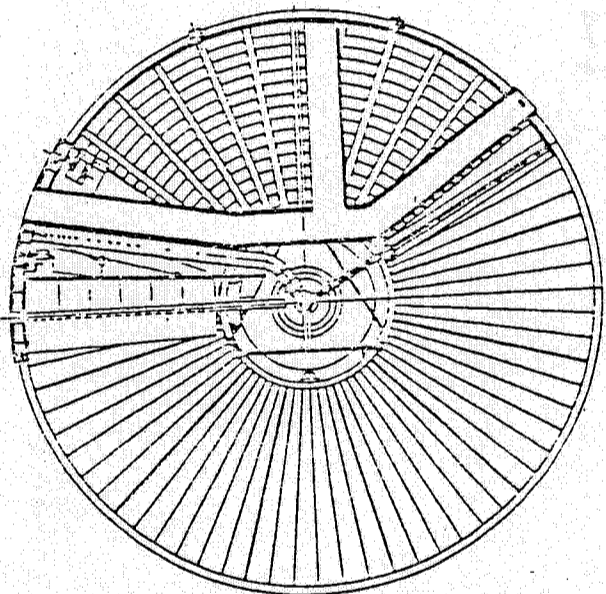
KROFTA®
SANDFLOAT

The SANDFLOAT is normally built with internal parts in stainless steel or marine grade aluminum and the outside tank for large installations is concrete or tile.



Static-hydraulic FLOCCULATOR

Sizes - Capacities



TYPE	FLOW				
	A ft	A ϕ mm	US MGD	US GPM	3 m ³ /min.
8	2400	0.16	110	0.42	25.2
10	3200	0.25	174	0.66	39.6
12	3900	0.36	250	0.95	57.0
15	4500	0.56	390	1.48	88.8
18	5500	0.81	562	2.14	128.4
20	6100	1.00	694	2.64	158.4
22	6700	1.21	840	3.19	191.4
24	7200	1.44	1000	3.80	228.0
27	8100	1.82	1270	4.81	288.6
30	9000	2.25	1560	5.93	355.8
33	10000	2.72	1890	7.18	430.8
36	11000	3.24	2250	8.55	513.0
40	12200	4.00	2730	10.55	633.0
44	13400	4.84	3360	12.77	766.2
49	14800	6.00	4170	15.83	949.8
55	16800	7.56	5250	19.95	1197.0
62	18800	9.61	6670	25.35	1521.0

- A - INSIDE TANK DIAMETER (varies with TYPE)
- B - HEIGHT OF TANK 6'-0" - 1830 mm
- C - " OF CARRIAGE WALKWAY 8'-0" - 2440 mm
- D - " MAX. OF EQUIPMENT 13'-4" - 4060 mm
- E - " MIN. OF HEAD CLEARANCE 14'-6" - 4420 mm
- F - TANK DEPTH 5'-0" - 1520 mm

KROFTA ENGINEERING CORP.
100 Valley Ave. LENOX, Ma. 01240

KROFTA TEX Inc.
525 North Belt, Suite 110, HOUSTON, Tx. 77209
Tel. (713) 947-1888. Tlx. 790 87



REFERENCES



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GLOSSARY

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GERMAN - ENGLISH

Asbestpappen	asbest board
beschwerte Papiere	clay filled papers
Bitumen-Pappen	asphalt board
Druckpapiere	printing papers
einf. Packpapiere	wrapping papers
eins. glatte Papiere	M.G. (machine glazed) papers
farb. Spezialkartons	colored board
Fein- und Druckpapiere	fine and printing papers
feine Packpapiere	quality wrapping papers
fotograf. Papiere	photographic papers
gestrichene Papiere	coated papers
graphische Papiere	printing papers
Graukarton	gray board
Handtuchkrepp	towel tissue
Industriedruck	printing papers
Karton	board
Kondensatorpapiere	condensor papers
Kraftpapiere	kraft papers
Krepp	crape papers
Laminatpapiere	laminated papers
mittelf. Druck- und Schreibpapiere	groundwood print. writing papers
Packpapiere	wrapping papers
Pappe	board
Pergament-Ersatz	parchmentlike papers
	press board

Schreibpapiere	writing papers
Seidenpapiere	tissue papers
Serviettenpapiere	napkin tissue
Spezialkarton	speciality board
techn. Ronnpapiere, Feinpapiere	technical tracing base, fine papers
Vollcappen	solid board
Wellenstoff	fluting
Zellstoffwatta	cellulose wadding
Zigarettenpapiere	cigarette papers

ITALIAN - ENGLISH

carta bibbia e da scrivere	bible and writing papers
carta da stampa	printing papers
carta scrivere	writing papers
carta per decorativi	laminating papers
carta tissue	tissue papers
carta da scrivere e da stampa	writing and printing papers
cartone	board
cartone ondulato	fluting
cartapaglia	straw papers
cartoncino duplex, triplex, camoscio	multilayer, unbleached board
crepata, igienica	creped toilet tissue
kraft e uso kraft	kraft, kraftlike papers
pergamina	parchmentlike papers

FRENCH - ENGLISH

bico kraft, cannelure	jute fluting
biscuits	effluent from biscuit manufacturing
couverture carton	board liner
couverture de caisse cannelure	liner board, fluting
emballage	wrapping board
emballage frictionné	M.G. (mach. glazed) wrapping papers
emballage moulé	wrapping moulds
ouate de cellulose	cellulose wadding
papier autocopiant	one-time carbon paper
papier cigarette	cigarette paper
papier hygiénique	toilet tissue
traitement boues biologiques	biological effluent treatment

SPANISH - ENGLISH

aglomerado plano	plain chipboard
aglomerado ondulado	corrugated chipboard
Cartón	board
cartón amianto	asbest board
cartón embreado	asphalt board

SPANISH - ENGLISH

cartón gris	gray board
cartón compacto	press board
cartones especiales	speciality board
cubierta de ondulado	fluting
efluente final	final effluent
guata de celulosa	cellulose wadding
papel autocopiante	one-time carbon paper
papel condensador	condensor paper
papel copia y OTC	fine and one-time copy papers
papel crepado	crepe paper
papel embalaje	wrapping paper
papel embalaje de calidad	quality wrapping paper
papel escritura	writing paper
papeles especiales satinados	M.G. (machine glazed) special papers
papel estucado	coated paper
papel fino	fine paper
papel fotográfico	photographic paper
papel de fumar	cigarette paper
papel higiénico	toilet tissue
papel impresión	printing paper
papel impresión y escritura	printing and writing papers
papel Kraft	kraft paper
papel laminado	laminated paper
papel parchemin	parchmentlike paper
papel satinado una cara	M.G. (machine glazed) papers
papel tissue	tissue paper
tissue servilletas	napkin tissue
tissue de toallas	towel tissue
tratamiento biológico de efluentes	biological effluents treatment
tripa para ondular (papel paja)	straw papers

PORTUGUESE - ENGLISH

canelado	fluting
canelado de juta	jute fluting
cartão	board
cartão asbesto	asbest board
cartão asfalto	asphalt board
cartão de aparas, simples	plain chipboard
cartão de aparas, ondulado	corrugated chipboard
cartão capa	board liner
cartão capa canelado	liner board fluting
cartão cinzento	gray board
cartão colorido	colored board
cartão especial	speciality board
cartão prensado	press board
cartão não branqueado, multi-camada	multilayer unbleached board

(KROFTA)

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cartao sólido	solid board
celulose em rama	cellulose wadding
efluente final	final effluent
efluente de manufatura de biscoito	effluent from biscuit manufacturing
embalagem moldado	wrapping moulds
papel acetinado	machine sized papers
papel acetinado de embalagem	machine sized wrapping papers
papel bíblia e de cigarro	bible and cigarette papers
papel carbono one-time	one-time carbon paper
papel cigarro	cigarette paper
papel com caulim	clay filled papers
papel compacto	condensor papers
papel couché	coated papers
papel crepe	crane papers
papel embalagem	wrapping papers
papel embalagem de qualidade	quality wrapping papers
papel escrita e impressão	writing and printing papers
papel fino e de impressão	fine and printing papers
papel fino para desenho	technical tracing base fine paper
papel fotográfico	photographic papers
papel de impressão	printing papers
papel impressão-escrita (Madeira)	groundwood print-writing papers
papel kraft	kraft papers
papel laminado	laminated papers
papel palha	straw papers
papel pergaminho	parchmentlike papers
papel tecido (tissue)	tissue paper
papel tipo kraft	kraftlike papers
tecido guardanapo	napkin tissue
tecido higiênico	toilet tissue
tecido higiênico crepado	creped toilet tissue
tecido toalha	towel tissue
tratamento efluente biológico	biological effluent treatment

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BELGIQUE - BELGIUM

Oudegem	printing papers	Flotator	18S
Willebroek	fine wrapping papers	Unitfloat	6M12P

BRAZIL - BRAZIL

M. Alegre, Pr	printing papers	Supracell	22
S. Miguel, Sp	fluting	Supracell	10
Braganca, Sp	tissue	Sedifloat	22
Cordeirópolis, Sp	wrapping papers	Sedifloat	22
Cubatão, Sp	paper, cardboard	Twin wire Press	1000
Limeira, Sp	paper, cardboard	Sedifloat	36
Limeira, Sp	coated board	Shower self cleaning	
Santania, Rj	special papers	Shower self cleaning	
São Paulo, Sp	papers	Pressure Tank 2000 L	
Pirituba, Sp	papers	Pressure Tank 2000 L	
Piracicaba, Sp	kraft tissue paper	Shower self cleaning	
Santania, Rj	special papers	Shower self cleaning	
Caetés, Sp	corrugated, laminated	supracell	48
Embu, Sp	paper, cardboard	Sedifloat	36
Pinda, Sp	paper, cardboard	Supracell	20
Jundiaí, Sp	compensated wood panels	Shower self cleaning	
Santo Amaro, Ba	kraft	Supracell	20
Suzano, Sp	pulp and paper	Pressure tank 4000 lt	
Sorocaba, Sp	refresh, beverages	Sludge Thickening Drum	45/96
Recife, Pe	paper, cardboard	Sedifloat	30
Recife, Pe	paper, cardboard	Supersieve	8
Bragana, Sp	tissue	Sedifloat	24
Mogi das Cruzes, Sp	tissue	Sedifloat	18

CANADA

New Westminster	tissue	Supracell	23
New Westminster	tissue	Supracell	23
Kingsey Falls, Ont	tissue	Supracell	12
Kingsey Falls, Ont	tissue	Spray Filter	2000
Kingsey Falls, Ont	tissue	Sludge Press	0.5M
Cap-de-la-Madeleine	asbestos papers	Supracell	20
Napanee, Ont	paperboard	Supracell	22
Thorold, Ont	newsprint deinking	Supracell	24
Thorold, Ont	newsprint deinking	Supracell	33
Thorold, Ont	newsprint deinking	Supracell	33
Vancouver, B.C.	line papers	Supracell	24
Annacis Island, B.C.	line papers	Supracell	24
Chabree, Quebec	deinking	Dissolving Tube	500
Toronto, Ont	board	Supracell	27
Mississauga, Ont	board	Supracell	30
New Westminster, B.C.	tissue	Supracell	24
Beaupré, Quebec	clmp effluents	Supracell	27
Lachute, Quebec	tissue	Supracell	10
Scarborough, Ont	linerboard	Supracell	18
Scarborough	deinking	Supracell	18
Scarborough	deinking	Supracell	18
Scarborough	deinking	Spray Filter	3000
Scarborough	deinking	Spray Filter	3000
Scarborough	deinking	Supracell	18
Scarborough	deinking	Supracell	18
Scarborough	deinking	Spray Filter	3000
Scarborough	deinking	Spray Filter	3000
Scarborough	deinking	Air Dissolving Tube ADT	3000
Scarborough	deinking	Air Dissolving Tube ADT	2000
Rimontville	deinking effluent	Supracell	15

REP. OF CHINA

Taiwan	tissue paper	Supracell	15
Taiwan	tissue paper	Supracell	12
Taipei	pilot	Supracell	3
Taipei	pilot	Sandfloat	8

CSSR - CZECHOSLOVAKIA

Paskov	Zelststoff	Spray Filter	4500
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DANMARK

Grenaa	board	Flotator	15
Naestved	wrapping	Superfloat	10S3
Naestved	tissue	Superfloat	10S3
Naestved	wrapping	Superfloat	10S3
København	board mill	Superfloat	9S2
Naestved	wrapping	Superfloat	11S2
Naestved	tissue	Superfloat	10S3
Naestved	tissue	Superfloat	10S3
Grenaa	final clarification	Supercell	24
Grenaa	testliner, fluting	Supercell	22

DEUTSCHLAND - W. GERMANY

Nielsen	mittelfeine Schreib und Druckpapiere	Flotator	12
Albbruck	beschwerte Papiere	Flotator	30
Raubach	Zellstoffwatte	Flotator	10
Raubach	Zellstoffwatte	Flotator	10
Hoven	Pergament-Ersatz	Flotator	10
Raubach	Zellstoffwatte	Superfloat	9S3
Ettlingen	feine Packpapiere	Flotator	15
Roigheim	Preßspan	Flotator	12
Ettlingen	Packpapiere	Flotator	12
Stotzheim	Seidenpapiere	Luftaufbereitung für bestehende Unitfloat Anlage	
Wendhausen	Bitumen/Pappen	Superfloat	9S3
Ratzen	Druckpapiere	Flotator	15
Repenhagen	einfache Packpapiere	Superfloat	9S2
Aschaffenburg	Pergament Ersatz	Flotator	15
Holzminnen	Packpapiere	Superfloat	10S2
Malsch	Wellenstoff	Flotator	18S
Solingen	Spezialkarton	Flotator	10S
Ettlingen	Druckpapiere	Superfloat	7S2
Frankfurt	Asbestpappen	Flotator	15
Ettlingen	Packpapiere	Superfloat	9S3
Neidenfels	Kondensatorpapiere	Flotator	10
Weisenbach	Schreibpapiere	Flotator	18
Ahrbruck	Wellenstoff	Luftaufbereitung für bestehende Unitfloat Anlage	
Freyung	Graukarton	Flotator	15S
Scheer	Druck- und Schreibpapiere	Unitfloat	4M8P
Neidenfels	Kondensator und Seidenpapiere	Flotator	10
Neidenfels	Sammelabwasser	Flotator	22S
Darmstadt	Photograf. Papiere	Unitfloat	3M7P

CENTRAL AMERICA

Bermuda	hotel laundry	Supracell	5
Costa Rica	tissue	Supracell	18
Costa Rica	tissue	Supracell	18
Panama	tissue	Supracell	12
Colombia	board	Supracell	10
Colombia	tissue paper	Shower sell cleaning	
Colombia	molded products	Supracell	10

Neidentels	Sammelabwasser	Platfloat	3M6P
Rhumspringe	Schrenz, Wellpappen	Sedifloat	18
Furschenbach	Packpapiere	Unitfloat	3.2M4P
Rhumspringe	Schrenz, Wellpappen	Sedifloat	18
Erssen	Tissue, Packpapiere	Flotator	12
Munchen	spez. Papiere	Superfloat	752
Munchen	spez. Papiere	Superfloat	752
Neidentels	Zigarettenpapiere	Superfloat	1053
Duren	Wellenstoff	Sedifloat	20

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DEUTSCHLAND - W.GERMANY

Solingen	farb Spezialkartons	Supercell	20
Bensheim	Spezialkarton	Supercell	20
Alfeld	graphische Papiere	Supercell	22
Bensheim	Spezialkarton	Supercell	15
Muschede	Tissue, Seidenpapier	Schlammpresse	
		IDEAL	
Duren	gestrichene Papiere	Supercell	18
Duren	Feinpapier	Flotationsanlage	
Alfeld	Kraftpapiere	Supercell	22
Wiedien	Vollpappe	Supercell	10
Levung	Spezialkarton	Sedifloat	365K
Muschede	Tissue, Seidenpapier	Supercell	15
Muschede	Tissue, Seidenpapier	Supercell	15
Wersbagen	Tissue	Schlammpresse	520
Wunnen	Laminatpapier	Supercell	18
Wunnenheim	Handtuchkrepp	Supercell	18
Wunnenheim	Schrenz	Supercell	20
Wunnenrodeck	Kraftpapiere	Luftaufbereitung	
Wunnenrodeck	Schrenz	Supercell	20
Wunnenrodeck	Tissue	Supercell	18
Wunnenrodeck	Preßspan	Supercell	15
Wunnenrodeck	gestrichene Papiere	Supercell	20
Wunnenrodeck	Tissue, Seidenpapier	Supercell	24
Wunnenrodeck	mittl Wellenstoff	Supercell	24
Wunnenrodeck	Duplex		
Wunnenrodeck	Tissue	Supercell	30
Wunnenrodeck	Preßspan	Supercell	12
Wunnenrodeck	mittl Wellenstoff	Supercell	24
Wunnenrodeck	Duplex		
Wunnenrodeck	Krepp	Supercell	20
Wunnenrodeck	Bitumenpappe	Supercell	12
Wunnenrodeck	spez Feinpapiere	Supercell	15
Wunnenrodeck	Kondensatorpapiere	Supercell	15
Wunnenrodeck	Tissue	Supercell	20
Wunnenrodeck	spez Papiere	Supercell	12
Wunnenrodeck	Zigarettenpapiere	Supercell	18
Wunnenrodeck	Zigarettenpapiere	Supercell	15
Wunnenrodeck	Gelatine	Supercell	10
Wunnenrodeck	Tissue	Schlamm	
Wunnenrodeck		Presse	500/50
Wunnenrodeck	Handtuch und Toilettenkrepp	Supercell	27
Wunnenrodeck	Dehpapiere	zusätzliche Luftaufbereitung AD	1000
Wunnenrodeck	Toilettenkrepp	Supercell	27
Wunnenrodeck	Packpapiere	Supercell	10
Wunnenrodeck	Tissue	Schlamm	
Wunnenrodeck		Presse	500/50
Wunnenrodeck	Karton	Supercell	18
Wunnenrodeck	Endkloranlage	Supercell	18
Wunnenrodeck	Gelatine	Supercell	10
Wunnenrodeck	Gelatine	Unitfloat	
Wunnenrodeck	Gelatine	Schlamm	
Wunnenrodeck		Presse	520/50
Wunnenrodeck	Laminatpapier	Supercell	15
Wunnenrodeck	Endkloranlage	Supercell	24
Wunnenrodeck	Endkloranlage	Schlamm	
Wunnenrodeck		Presse	500/50
Wunnenrodeck	Feinpapiere	Supercell	12
Wunnenrodeck	Endkloranlage	Supercell	27
Wunnenrodeck	Toilettenpapiere	2 Dissolving Tubes	
Wunnenrodeck		Type	2000
Wunnenrodeck	Karton	Supercell	15
Wunnenrodeck	feine Packpapiere	9 Spritzrohre 2,3m	
Wunnenrodeck	Tapetenpapiere	10 Spritzrohre 2,3m	
Wunnenrodeck	feine Packpapiere	3 Spritzrohre 2,3m	
Wunnenrodeck	Feinpapiere	Supercell	24
Wunnenrodeck	Feinpapiere	Spray Filter	1000
Wunnenrodeck	Bitumenpappe	Supercell	2 x 12
Wunnenrodeck	Shuhofenpappen		
Wunnenrodeck	Karton	Supercell	24
Wunnenrodeck	Karton	Spray Filter	1000
Wunnenrodeck	Endkloranlage	Supercell	24

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DEUTSCHLAND - W.GERMANY

Muschede	Drinking	Supercell	40
Muschede	Drinking	Spray Filter	4500
Raubach	Drinking	Supercell	33
Muschede	Drinking	Spray Filter	4500
Alfeld	Streichereabwasser	Supercell	12
Ratingen	Haltige Papiere	Supercell	15
Oberschnitten	Endklärung	Float Press	15200
Elmshausen	Bitumenpappe	ADT	1000

DDR - E. GERMANY

Penig	Laminatpapiere	Superfloat	903
Penig	Laminatpapiere	Superfloat	903

EGYPT

El Tabia	printing papers	Superfloat	803
Rakta	writing printing paper	ADS	1500
		(Air diss Tubel)	

ESPAÑA - SPAIN

Arrigorriaga (Bizkaia)	papel impresion escritura	Supercell	30
Andoain (Gipuzkoa)	papel impresion escritura	Supercell	18
Villareal (Castellon)	papel copia v otc	Supercell	18
Villaba (Navarra)	carton	Supercell	30
Amezketta (Gipuzkoa)	papeles especiales satinados	Sedifloat	36
Amezketta (Gipuzkoa)	papeles especiales satinados	Sludge Press	1M
Villaba (Navarra)	carton	Spray Filter	1000
Tolosa (Gipuzkoa)	papel impresion escritura	Supercell	15
Villaba (Navarra)	carton	Spray Filter	4500
Tolosa (Gipuzkoa)	papel impresion escritura	Supercell	15
San Juan de Mozarrilla (Zaragoza)	embalaje y papeles especiales	Supercell	18
Balaquer (Lerida)	papel Kraft	Supercell	30
	test line		
La Pobla de Claramunt (Barcelona)	papel biclase v embal.	Supercell	30
Iruia (Gipuzkoa)	papel impresion escritura	Supercell	18
Duenas (Palencia)	biclase v embalaje	Supercell	24
Duenas (Palencia)	biclase v embalaje	Spray Filter	2000
Rosello (Lerida)	Kraft de sacos	Supercell	40
La Pobla de Claramunt (Barcelona)	carton	Supercell	24
La Pobla de Claramunt (Barcelona)	carton	Spray Filter	1000
Villaba (Navarra)	carton	Spray Filter	4500
Legazpia (Gipuzkoa)	papel Kraft	Supercell	22
Legazpia (Gipuzkoa)	papel Kraft	Spray Filter	1000
Navalcarnero (Madrid)	cartoncillo	Spray Filter	4500
Tolosa (Gipuzkoa)	papel impresion escritura	Supercell	12
Zalla (Bizkaia)	papel impresion escritura	Supercell	12
Villaba (Navarra)	carton	2 tubos dilucion	
		tipo	2000
Orio (Gipuzkoa)	laminillas refractarias	Supercell	6
Villareal (Castellon)	papel copia v otc	Supercell	18
Apamonoasterio (Bizkaia)	celulosa moldeada		

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SUOMI - FINLAND

Inkeroinen	folding board	Superfloat	953
Heinoia	semichemical corru	Airfloat	36
	gated medium		
Tervakoski	cigarette papers	Supercell	15
Lohja	fine wrapping	Supercell	15
Lohja	food packing	Supercell	15
Kirkkiammi	magazin paper	Supercell	20

GRIECHENLAND - GREECE

Pelagia	Stromkarton	Sedifloat	10
Rovies	mittelf Papiere	Sedifloat	18
Veio	Pack u Schreibpapiere	Supercell	18
Ethiotis	mittelfeine Druck u. Schreibpapiere	Sedifloat	22
Athen-Moschaton	Karton	Sedifloat	22
Athen-Aspropyrgos	Schreibpapier	Supercell	20
Xanthi	Drinking	Sedifloat	18

FRANCE

Saint Clair-sur-Epte	couverture de caisse cannelure	Sedifloat	49
Thonon	papier autocopiant	Flotator	185
Thonon	papier cigarette	Superfloat	952
Domene	ouate de cellulose	Flotator	185
Monodouville	ouate de cellulose	Flotator	12
Uzercher	cannelure bico kraft	Supersieve	6
Uzerche	couverture de caisse	Sedifloat	20
Le Pontet	offset	Supercell	18
Quimperle	papier cigarette	Sedifloat	44
Quimperle	papier cigarette	Sedifloat	49
Spay	papier cigarette	Supercell	15
Spay	traitement boues biologiques	Sedifloat	30
Chateaufeul-de-Gadagne	ouate de cellulose	Supercell	20
Ouezy	biscuits	Supercell	8
Fismes	emballage	Sedifloat	18
Fismes	emballage	Supercell	18
La Rochette	couverture carton	Supercell	12
St. Amant	emballage, frictionne	Supercell	18
Aries	couverture cannelure	Sedifloat	36
Redon	emballage moule	Supercell	12
Chateaufeul-de-Gadagne	papier hygienique	Supercell	12
Sin-La-Noble	effluent communal	Sedifloat	49
Lancey	carton TMP	Supercell	18
La Rochette	carton	Supercell	24
Monodouville	ouate de cellulose	Supercell	18
Amiens	effluent pharma ceutique	S. Clarifier	2
Boffres	effluent ind. aliment.	S. Clarifier	2
Vitry-le-Francois	desencrage	Supercell	22
Pierrepoint & Avre	couverture cannelure	Supercell	22
Pierrepoint & Avre	couverture cannelure	Supersieve	6
Pierrepoint & Avre	couverture cannelure	Supersieve	6
Kaysersberg	desencrage	Supercell	24
Cranen	lanterie	Supercell	15
Flins	effluent electrophorese	Supercell	30
Gien	tissue	Supercell	22
Gien	effluent Lalex	Supercell	8
Josselin	abattoir	Sedifloat	15
Ham	oxydes metalliques	Supercell	15
Fougeres	abattoirs	Sedifloat	27
Fougeres	abattoirs	Sandfloat	8
Tuerheim	desencrage	Spray Filter	4500
Pontcharra	desencrage	Supercell	22
Pontcharra	desencrage	Spray Filter	4500
St Fulgent	abattoirs	Supercell	15
St Fulgent	abattoirs	Sandfloat	12
Ecully	bianchisserie	Supercell	4

INDIA

Poona	fine wrap papers	Supracell	15
Poona	fine wrap papers	Spray Filter	2000
Ajanta	fine wrap papers	Supracell	12
Ajanta	fine wrap papers	Supracell	12

INDONESIA

Djakarta Mekaboa	fluting	Supracell	22
Pakerin	paral.coated papers	Supracell	16

IRAN

Teheran	wedding	Flotator	10
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ITALIA - ITALY

Isola del Liri	carta da scrivere	Flotator	12
San Cesario (Mi.)	pergamini	Flotator	18
San Cesario (Mi.)	cartone	Flotator	20
Isola del Liri (Frosinone)	carta da scrivere e da stampa	Flotator	10
Toscolano del Garda (Brescia)	carta da scrivere e da stampa	Flotator	12
Serravalle Sesia	carta bibbia e da sigarette	Flotator	15
Riva di Trento	carta da scrivere e da stampa	Flotator	20
Riva di Trento	carta da scrivere e da stampa	Flotator	24
Bologna	carta bibbia e da sigarette	Flotator	10
Isola del Liri	carta da scrivere e da stampa	Flotator	12
Foggia	carta da stampa	Flotator	185
Foggia	carta da stampa	Flotator	185
Foggia	carta da stampa	Flotator	205
Derivio (Como)	cartone ondulato	Flotator	125
Calotricorte (Bergamo)	cartone	Airfloat	22
Besozzo (Varese)	carta per decorativi	Unifloat	2.3M4P
Toscolano del Garda	carta da scrivere e da stampa	Unifloat	4.5M12P
Mandello Lario	cartoncini	Sedifloat	6
Basaldella di Udine	Kraft e uso Kraft	Airfloat	22
Isola del Liri (Frosinone)	carta da scrivere e da stampa	Flotator	205
Toscolano del Garda	carta da scrivere e da stampa	Unifloat	4.5M12P
Isola del Liri (Frosinone)	carta da scrivere e da stampa	Flotator	205
Besozzo (Varese)	carta per decorativi	Unifloat rotondo	UF R 22
Momo (Novara)	carta da scrivere	Unifloat	3M6P
Ponte all'Ania	cartapaglia	Sedifloat	24
S.Maria Zevio (Verona)	carta tissue	Sedifloat	15
Repubblica	cartapaglia	Sedifloat	20
San Marino			
Rossano Veneto (Venezia)	carta da stampa e da scrivere	Superfloat	105JM



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ITALIA - ITALY

Vorno (Lucca)	igienea crespata	Supercell	15
Vicenza	Kraft e uso Kraft	Sedifloat	20
Bagni di Lucca	cartoncini duplex triplex camoscio e paglia	Sedifloat	18
Pratovecchio	carta igienica	Sedifloat	12
Latina Scalo	igienea crespata	Sedifloat	15
Carno (Brescia)	cartoni per valigeria	Sedifloat	15
Verona	Kraft e uso Kraft	Sedifloat	22
Verona	Kraft e uso Kraft	Sedifloat	22
Concesio (Brescia)	carta da frutta	Supercell	8
Riva di Trento	carta da scrivere e da stampa	Unifloat	4.5M12P
Nave (Brescia)	Kraft e uso Kraft	Supercell	15
Pasian di Prato	Kraft e uso Kraft	Sedifloat	20
Rossano Veneto (Venezia)	carta da stampa e da scrivere	Sedifloat	30
Subiaco (Roma)	carta da stampa	Superfloat	1152
Caselle Torinese	cartone ondulato	Sedifloat	15
Montichiari (Brescia)	Kraft	Sedifloat	22
Arsiero (Venezia)	carta da sigarette e filtri	Supercell	12
Mesola (Ferrara)	Kraft e camoscio	Sedifloat	30
Nave (Brescia)	carta da imballo	Supercell	8
Isola del Liri	carta uso Kraft	Supercell	12
Fabriano (Ancona)	carta filigranata	Supercell	10
Fabriano (Ancona)	carta filigranata	Supercell	12
Fabriano (Ancona)	carta filigranata	Supercell	10
Scafati (Salerno)	carta da imballo	Sedifloat	22
Fiscano Scalo	carta da imballo	Sedifloat	15

ITALIA - ITALY

Rovereto (Trento)	carta da imballo per tabacchi	Supercell	18
Vigevano (Pavia)	caltex per calzatura	Sedifloat	27
Verzuolo (Torino)	scarico disinchiostroazione	Supercell	22
Allife (Caserta)	carta per filtri	Sedifloat	12
Tirano (Sondrio)	carta da scrivere e da stampa	Sedifloat	36
Pasian di Prato (Udine)	carta da scrivere e da stampa	Supercell	20
Front Canavese (Torino)	carta Kraft	Supercell	15
Coperchia di Pallezzano (Salerno)	carta per ondulatori	Sedifloat	22
Imola (Bologna)	carta per ondulatori	Supercell	24
Cernobbio (Como)	carta da scrivere e da stampa - offset	Supercell	15
Momo (Novara)	cartoncini duplex e triplex	Supercell	20
Pietrabuona	carta da imballo	Supercell	8
Pescia (Pistoia)			
Consiglio Rumo (Como)	carta feltro, lana monolucida, imballo	Supercell	12
Avezzano (L'Aquila)	carta da stampa	Sedifloat	55
Savignano sul Panaro (Modena)	trasformazione cartaccia	Supercell	27
Colle Val D'Elsa (Siena)	carta per ondulatori	Supercell	8
E.N.C.C. (Roma)	impianto pilota	Supercell	8
Rivignano (Udine)	carta da stampa	Supercell	18
	supporto da politenare		

Isalerno			
Milano	cartoni e cartoncini	Supercell	12
Milano	cartoni e cartoncini	Supercell	12
Milano	cartoni e cartoncini	Supercell	12
S. Giustina	cartoni e cartoncini	Supercell	18
Bellunese			
Roma	carta da stampa e imballo	Supercell	18
Brivio (Como)	pergamini	Sedifloat	27
Sora (Frosinone)	carta da stampa	Sedifloat	55
Isola del Liri (Frosinone)	carta da stampa	Supercell	12
Carsoli (L'Aquila)	carta da imballo	Sedifloat	10
Flumefreddo di Sicilia	imbelli per frutta	Supercell	12
Pian di Mura-Casto (Brescia)	Kraft	Sedifloat	10
Romagnano Sesia (Novara)	carta tissue	Supercell	27
Romagnano Sesia (Novara)	carta tissue	Sedifloat	36
Varotavecchia (Brescia)	carta da frutta	Supercell	10
Broccostella (Frosinone)	cartoni e cartoncini	Sedifloat	27
Broccostella	cartoni e cartoncini	Supersieve	6
Ponte all'Ania (Lucca)	cartapaglia	Sedifloat	30
Caino (Brescia)	cartoncini	Sedifloat	30
Caino (Brescia)	carta da frutta	Supercell	8
Pontelucano (Tivoli)	cartapaglia	Sedifloat	49
Pontelucano (Tivoli)	cartapaglia	Filtropressa	
Pontelucano (Tivoli)	cartapaglia	Sedifloat	36
Pontelucano (Tivoli)	cartapaglia	Supersieve	6
Odolo (Brescia)	carta da frutta	Supercell	8
Caino (Brescia)	carta da frutta	Supercell	10
Sora (Frosinone)	carta da stampa	Sedifloat	55
S. Giovanni di Duino (Trieste)	carta da stampa	Sedifloat	55
Ovaro (Udine)	cartoni e cartoncini	Sedifloat	40
Ovaro (Udine)	cartoni e cartoncini	Supersieve	8
Caino (Brescia)	carta camoscio	Supercell	15

Arzano (Napoli)	carta da pacco	Supercell	12
Jesi (Ancona)	carta igienica	Supercell	12
Pompei (Napoli)	carta da imballo per tabacchi	Supercell	22
Lucrezia di Cartoceto (Pesaro)	trasformazione cartaccia	Supercell	27
Montelupone (Macerata)	cartoni	Supercell	22
Lallio (Bergamo)	cartoni	Supercell	22
Maslianico (Como)	tissues chiarificazione finale	Sedifloat	12
S. Giovanni di Duino (Trieste)	carte naturali e patinate	Sedifloat	55
Isola del Liri (Frosinone)	carte cartoncini periodici	Sedifloat	55
Chieti Scalo (Chieti)	carte fini cre/s/legno	Sedifloat	55
S. Maria di Zevio (Verona)	carte speciali cartoncini	Supercell	18
Verona	carte crescate e tissues	Supercell	8
Maglio di Goito (Mantova)	carta paglia	Supercell	8
Bubano di Mordano (Bologna)	carta da imballo	Supercell	12
Mesola (Ferrara)	clupak	Air Dissolving Tube tipo 2000	
Meina (Novara)	Kraft e uso Kraft	Supercell	15
Vicenza	Kraft	Supercell	18
Riva del Garda (Trento)	carte naturali e patinate fini e finissime	Supercell	36
Chieti Scalo (Chieti)	carte patinate	Cono Sedimentatore SD 300	
Toscolano (Brescia)	carte patinate	Cono Sedimentatore SD 300	
S. Maria di Zevio (Verona)	carte crescate e carte tissues	Foamer tipo 20	
S. Angelo Lodigiano (Milano)	cartoncini	Stock Washer 2m	
Pescia-Pietrabuona (Pistoia)	carte da imballo in genere	Supercell	24
Tivoli-Pontelucano (Roma)	carta Kraft	Supercell	10
S. Pietro in Campo-barga (Lucca)	camoscio	Supercell	12
Francavilla di ...	carta paglia	Supercell	15

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ALY			
	contenitori per imballaggio	Supercell	22
	carta tissue	Supercell	12
	carte veline	Supercell	10
	carte uso Kraft	Supercell	12
	Similcuoio	Supercell	10
	Similcuoio	Supercell	10
	carte igieniche	Supercell	10
	carte per sacchetti	Supercell	18
	carte monocarbon	Supercell	22
	carte veline	Supercell	22
	carte da scrivere e da stampa	Sedifloat	44
	carte da scrivere e da stampa	Supercell	30
	copertine per ondulati	Supercell	22
	disinquinazione	Spray Filter tipo	4500
	valicovattina	Supercell	15
	carta da stan da patinata e non	Sedifloat	55
	carte fini varie	Sedifloat	55
	carte da scrivere e da stampa	Supercell	24
	carte e cartoncini per uso industriale e airm	Sedifloat	55
	carte Kraft liscia ed estensibile	Spray Filter tipo	4500
	disinquinazione	Supercell	36
	cellulosa semichimica	Supercell	18
	bianchita e sembianchita di pino	Supercell	20
	cartoni	Supercell	15
	carta camoscio	Supercell	22
	carta da sigarette	Supercell	10
	carte fini e speciali	Supercell	15
	carte filtranti	Supercell	15
	carte filtranti	Supercell	24
	carte da imballo	Supercell	3000
	carta igienica	Spray Filter	10
	carta igienica	Supercell	15
	cartone fibrato	Supercell	15
	carte patinate	Air Dissolving Tube tipo	3000
	carta da imballo	Supercell	4500
	carta igienica	ph. metro	
	cartone e cartoncini	Supercell	27
	carta lana	Spray Filter	1000
	carta da imballo	Supercell	22

JAPAN

Osaka	waste paper recycling	Sedifloat	24
Tokyo	wrapping paper	Sedifloat	44
Tokyo	waste sludge	Sedifloat	20
Mobara City, Chiba	laundry effluents	Supercell	756
Kanatsu City	board paper	Airfloat	44
Ichinoseki City	wrapping paper	Sedifloat	65
Ichinoseki City	newsprint	Sedifloat	24
Sofue, Aichi	wrapping paper	Sedifloat	36
Shimizu, Shizuoka	fine paper	Sedifloat	36
Fushiki, Toyama	printing, writing paper	Sedifloat	85
Akita	final effluents	Sedifloat	100
Hirada Shizuoka	fine papers	Sedifloat	44
Osaka	closed system	Supercell	22
Osaka	closed system	Supercell	24
Osaka	closed system	Supercell	24
Hokkaido	Yufutsu Mill	Supercell	40
Hokkaido	Yufutsu Mill	Supercell	40
Shizuoka	Fuji Mill	Supercell	27
Hokkaido	fine paper white water recovery	Supercell	22
Shizuoka	fine papers	Supercell	27
Ehime	newsprint	Supercell	44
Saga	corrugated medium	Supercell	18
Shizuoka	closed water system	Supercell	18
Niigata	tissue papers	Supercell	27
Niigata	fine papers	Supercell	27

JUGOSLAVIA - YUGOSLAVIA

Krsko	Zeitungsdruck	Flotator	24
Krsko	Zeitungsdruck	Flotator	24
Drvar	Zeitungsdruck	Flotator	18
Drvar	Zeitungsdruck	Flotator	15
Ljubljana Polje	Schreibpapiere	Flotator	15
Ljubljana Polje	Schreibpapiere	Flotator	15
Ljubljana Polje	Schreibpapiere	Flotator	12
Radece	Feinkarton	Supercell	1053
Radece	Feinkarton	Supercell	952
Radece	feine Schreibpapiere	Auto Reinigung	1053
Radece	feine Schreibpapiere	Auto Reinigung	1053
Radece	feine Schreibpapiere	Auto Reinigung	952
Radece	feine Schreibpapiere	Auto Reinigung	952
Siadivrh	Serviettenpapiere	Supercell	36
Siadivrh	Serviettenpapiere	Supercell	952
Kolicevo Domzate	Karton	Flotator	30
Fuzine	Holzschnitt	Sedifloat	12

mezzo paste
 Air Dissolving
 Tulle tipo 2000

RO
 KROFTA

200
 Fuzine Holzschliff
 Fuzine Holzschliff
 Cacak feine Druckpapiere
 Cacak mittelfeine holzfreie
 Papiere
 Cacak mittelfeine Kartone
 Banja Luka Endklaranlage
 Zagreb Wellenstoff
 Novi Knezevac Strohpapier Karton
 Lipjan Strohpapier Karton
 Cazin Karton

Filter-press
 Sedifloat
 Unifloat
 Unifloat
 Sedifloat
 Sedifloat
 Sedifloat
 Sedifloat
 Supercell

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KOREA

Seoul Tissue Supracell 20

MAGYAR - HUNGARY

Labatlan Endklarung Sedifloat 18

MEJICO - MEXICO

Mexico, D.F. box board Flotator 20
 Mexico, D.F. fine papers Flotator 12

NEDERLAND

Wapenvelden feine Papiere Flotator 12
 Roermond Mittelwellenrohnpapier Sedifloat 30
 Doetinchen Endklaranlage fur 4PM Sedifloat 30
 Cuyk Seidenpapier Supercell 10
 Cuyk Seidenpapier Supercell 18
 Meerssen Feinkarton Supercell 12
 Swalmen Altpapier Sedifloat 15
 Hoogkerk Karton Sedifloat 30
 Hoogkerk Graupappe Supersieve 8
 Nieuweschans Karton Sedifloat 36SK
 Coevoerden Feinkarton Sedifloat 30
 Meerssen Feinkarton Supercell 10
 Meerssen Feinkarton Supercell 10
 Renkum Deinking Supercell 33
 Renkum Deinking Supercell 18
 Doetinchem Schrenzpapier Supercell 15
 Apeldoorn Feinkarton Supercell 12
 Apeldoorn Feinkarton Schlammpresse 550
 Dollard Karton Spray Filter 3000
 Doetinchem Deinking Supercell 20
 Doetinchem Deinking Spray Filter 3000

NORGE - NORWAY

Tyrstrand tissue Supercell 12
 Tyrstrand tissue Supercell 12
 Tyrstrand tissue Supercell 10
 Tyrstrand tissue Supercell 10
 Tyrstrand tissue Supercell 10
 Tyrstrand tissue Supercell 8
 Honefoss moids Spray Filter 2000
 Stabekk tissue Supercell 18
 Rena board Supercell 24
 Tofte in Hurum Kraft pulp-paper Supracell 12

OSTERREICH - AUSTRIA

Graz Fein u. Druckpapiere Unifloat 2M5P
 Graz Fein u. Druckpapiere Unifloat 2M5P
 Graz Fein u. Druckpapiere Unifloat 2M7P
 Gratkorn Feinpapiere Unifloat 2.5M7P
 Gratkorn Feinpapiere Unifloat 2.5M7P
 Timmersdorf/St Pappen Unifloat 2M4P
 Niklasdorf/St. Fein u. Druckpapiere Unifloat 3M5P
 Laakirchen mittelf Druck und Flotator 12
 Schreibpapiere
 Laakirchen mittelf Druck und Flotator 20
 Schreibpapiere
 Wattens/Tirol Kondensator Fein Flotator 20
 und Druckpapiere
 Grummenstein Zellstoffwatte Flotator 8
 Niklasdorf/St Fein u. Druckpapiere Supersieve 6
 Niklasdorf/St. Fein u. Druckpapiere Sedifloat 27
 Graz Fein u. Druckpapiere Sedifloat 30
 Ortman/N O Hygiene Papiere Sedifloat 30
 Theresienthal/N O Feinpapiere Sedifloat 44
 Theresienthal/N O Feinpa. re Flotator 15
 Steyeruni/O O mittelfeine Papiere Supercell 22
 Traun Zigarettenpapiere Supercell 8
 Feinpapiere
 Graz mittelfeine Papiere Sedifloat 10
 Graz Fein u. Druckpapiere Supercell 30
 Frantschach/K Kraftpapiere Supercell 18
 Frantschach/K Kraftpapiere Supercell 18
 Timmersdorf/St Pappen Luftaufbereitung
 Wattens/Tirol Zigarettenpapiere Supercell 27
 Ortman/N O Endklarung Sedifloat 44
 Frantschach/K. Kraftpapiere Supercell 18
 Frantschach/K. Kraftpapiere Supercell 22
 Wien Mullaufbereitung Supercell 36
 Grummenstein Zellstoffwatte Sedifloat 24
 Steinleud Spezialpappe Supercell 12

POLSKA - POLAND

Ostroleka Kraftpapiere Flotator 12
 Ostroleka Kraftpapiere Flotator 12
 Ostroleka Kraftpapiere Flotator 12
 Ostroleka Kraftpapiere Flotator 12
 Poznan Laminatpapiere Supercell 20

PORTUGAL

Marco de Canavezes papel Kraft Supercell 10
 Lisboa tissue Supercell 15
 Lisboa tissue Supercell 20
 Lisboa tissue Spray Filter 1000
 Lisboa tissue Spray Filter 2000
 Almonda tissue Supercell 20
 Almonda tissue Effluent Samplers

SCHWEIZ - SVIZZERA - SWITZERLAND

Thal ST Gallen Pappen Flotator 12
 Alesheim Packpapiere Flotator 18
 Gillingen feine Druckpapiere Luftaufbereitung
 Landquart Schreib und Druck Supercell 15
 papiere
 Landquart Schreib und Supercell 20
 Druckpapiere
 Lupano oli vegetati Supercell 4
 Moigen Tissue Seidenpapiere ADT 150
 Luftaufbereitung

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SAUDI ARABIA

Riyadh molded products Supracell 10

SVERIGE - SWEDEN

Little Falls, N Y one time carbon, tissue Flotator
 Port Huron, Mich printing press Supercell 1059
 Big Island, Va NSSC pulp Airfloat 36
 E Hartford, Conn. tissue and wadding Unifloat 37M5P

Marrestad	tissue	Airfloat	15
Marrestad	tissue	Airfloat	20
Lilla Eoel	deinking	Supracell	49
Marrestad	tissue	Supracell	22

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Breckville, Ohio	board (waste paper)	Sedifloat	18
N Rochester N H	specialty boards/stell	Supracell	10
Rochester N H	board	Supracell	10
Covington, Tenn	specialty boards	Supracell	15
	ishoost		
Green Bay, Wisc	tissue	Supracell	12
Green Bay, Wisc	tissue	Supracell	20
Green Bay, Wisc	tissue	Supracell	21
Green Bay, Wisc	tissue	Supracell	24
Fulton, N Y	tissue	Supracell	5
Hinsdale, N H	tissue	Supracell	10
Hinsdale, Vermont	deinking	Supracell	11
Hinsdale, Vermont	deinking	Supracell	11
Baldwinville, Mass	deinking	Supracell	11
Lincoln N H	deinking	Supracell	23
St Paul, Minn	board	Supracell	20
St Paul, Minn	board	Supracell	20
Rothschild, Wisc	activated sludge	Sedifloat	11
Lewes, Delaware	clam & shrimp processing	Sedifloat	11
Stevens Point, Wisc	fine papers	Spray Filter	4500
Stevens Point, Wisc	fine papers	Spray Filter	4500
Macon, Georgia	egg cartons	Supracell	22
Muscogee, Okla	tissue	Supracell	27
Menasha, Wisc	tissue	Spray Filter	2000
Covington, Tenn	shoe board	Supracell	15
Oregon City, Oreg	newsprint, deinking	Spray Filter	1000
Oregon City, Oreg	newsprint, deinking	Supracell	12
Boulder, Colo	laundry waste	Supracell	6
St Louis, Mo	laundry waste	Supracell	3
Wells River, Vt	tissue, kraft paper	Supracell	10
St Paul, Minn	board	Supracell	20
S Lee, Mass	laminated papers	Supracell	10
Portland, Oreg	newsprint, deinking	Supracell	24
Portland, Oreg	newsprint, deinking	Spray Filter	2000
Portland, Oreg	newsprint, deinking	Spray Filter	2000
Hutchinson, Kans	board	Supracell	20
Hutchinson, Kans	board	Supracell	11
Menasha, Wisc	deinking (ledger)	Supracell	20
Menasha, Wisc	deinking (ledger)	Spray Filter	4500
Jersey City, N J	board	Supracell	16
Aurora, Ill	board	Supracell	18
La Verne, Cal	wadding	Sludge Press	0.5
Dalton, Mass	deinking pilot plant	Supracell	3
Franklin, Ohio	paperboard	Supracell	15
Washington, D C	laundry	Supracell	10
Sioux Falls, S D	pilot plant	Supracell	4
Alaska	laundry	Supracell	5
Syracuse, N Y	deinking pilot plant	Supracell	4
Harrisburg, Pa	coated papers	Supracell	10
Harrisburg, Pa	coated papers	Supracell	10
Houston, Texas	laundry	Supracell	18
San Francisco, Cal	laundry	Supracell	12
Detroit, Mich	laundry	Supracell	18
Bellows Falls, Vt	groundwood specialties	Supracell	15
Muskogee, Okla	toweling	Supracell	27
So. Lee, Mass	laminated and specialty grades	Supracell	10
Denver, Colorado	paperboard	Supracell	22
Houston, Texas	iron works	Supracell	8
Green Bay, Wisc	stickies removal	Supracell	14
Philadelphia, Pa	deinking pilot plant	Supracell	4
Snowflake, Arizona	newsprint, deinking	Supracell	10
Snowflake, Arizona	newsprint, deinking	Supracell	30
Osago, Mich	stickies removal	Supracell	6
Freeport, Texas	biological sludge	Supracell	4
Philadelphia, Pa	deinking pilot plant	Supracell	4
Lena, Mass	deinking pilot plant	Supracell	1
Monroe, N C	chicken processing	Air dissolving tube ADT	2000

UNITED KINGDOM

Dartford, Kent	fine papers	Superfloat	752
Dartford, Kent	fine papers	Superfloat	753
Dartford, Kent	fine papers	Superfloat	753
Dartford, Kent	fine papers	Superfloat	753
High Wycombe, B	fine papers	Superfloat	952
High Wycombe, B	writing, printing pap	Superfloat	952
Guard Bridge, File	writing, printing pap	Superfloat	952
Guard Bridge, File	writing, printing pap	Superfloat	953
Guard Bridge, File	writing, printing pap	Superfloat	753
Midlothian, Scott	esparto pulp bleaching	Flotator	8
Neison, Lanc	sanitary napkins	Flotator	15
Saltley, Birmingham	tissue	Flotator	155
Saltley, Birmingham	tissue	Flotator	155
Larkfield, Kent	tissue	Superfloat	953
Larkfield, Kent	tissue	Superfloat	953
Larkfield, Kent	wallpaper base	Sedifloat	44
Larkfield, Kent	wallpaper base	Sedifloat	36
Bathgate, W Loth	writing, printing pap	Superfloat	953
Tamworth, Staffs	straw and board mill final clarification	Airfloat	28
Ivybridge, Devon	printing papers	Superfloat	551
Ivybridge, Devon	printing papers	Superfloat	551
Lurgan, N Ireland	molded dishes	Flotator	15
Gravesend, Kent	fine papers	Flotator	8
Gravesend, Kent	fine papers	Flotator	8
Gravesend, Kent	fine papers	Flotator	8
Bucksburn, Aberd	final effluent	Airfloat	36
Bucksburn, Aberd	final effluent	Airfloat	36
Greenfield, York	cigarette papers	Superfloat	952
Greenfield, York	cigarette papers	Superfloat	952
Stoneclough	tissue	Superfloat	952
N Manchester			
Cardiff	writing, printing pap	Flotator	12
Glamorganish			
Belfast	chicken processing	Sedifloat	22
Armagh	chicken processing	Sedifloat	23
Dungannon	chicken processing	Sedifloat	36
Linwood	insulating papers	Disc Filter	250
Helston	final effluent	Sedifloat	24
Peterborough			
Tipton, Staffs	abattoir	Sedifloat	8
Ramsbottom, Nr B	wrapping papers	Sedifloat	18
Walsley, Somerset	wrapping papers	Sedifloat	44
Wharfedale, Otley	mixed effluent	Flotator	24
Wolvercotle, Oxford	printing papers	Superfloat	952
Passfield, Liphook	fibre tubes	Flotator	8
Greenhithier, Kent	wallpaper base	Sedifloat	44
Larkfield, Kent	wallpaper base	Sedifloat	55
Walsley	deinking	Supracell	12
Ramsbottom	deinking	Supracell	30
Walsley, Bolton	deinking pilot plant	Supracell	4
Walsley, Bl com	deinking, pilot plant	Spray Filter	200
Hayfield, Cheshire	water from left pit	Supracell	6
Ellesmere Port	deinking	Supracell	62
Aberdeen Scott	final effluent	ADT	2000
		Air dissolv.	
Stoneclough	cigarette papers	Supracell	12
Larne	tissue paper	Supracell	33
Seaisand	chemicals	Supracell	6
Aberdeen	fine papers	Supracell	15

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USA

Middletown, Ohio	Deinking (ledger)	Supracell	40
New Johnsonville, Tenn	linerboard reverse cleaning rejects	Float Skimmer	
Winslow, Maine	ledger deinking	Supracell	33
Winslow, Maine	ledger deinking	Supracell	33
Winslow, Maine	ledger deinking	Supracell	20
Menasha, Wisc	deinking plant	Supracell	20
Camp Hill, Pa	coating waste	Sedimentation Cone	20
S Glens Falls, N.Y	deinking plant	Air dissolving tube type	3000
Winslow, Maine	ledger reverse cleaning rejects	Float Skimmer	
Fernandina Beach	linerboard reverse cleaning rejects	Float Skimmer	
Lutkin, Texas	biological sludge	Supracell	55
Ogdensburg, N.Y	ledger reverse cleaning rejects	Float Skimmer	
Orange, Texas	linerboard reverse cleaning rejects	Float Skimmer	
Center, Texas	chicken processing	Supracell	33
Sylva, N.C	linerboard reverse cleaning rejects	Float Skimmer	
Seguin, Texas	chicken processing	Supracell	33
Beloit, Wisc	paper board	Supracell	10
Laverne, Cal	deinking	Spray Filter	4500
North Bend, Oreg	linerboard reverse cleaning rejects	Float Skimmer	
Monroe, N C	chicken processing	Air dissolving tube ADT	2000

San Leandro, Calif	processing reverse cleaner rejects	Float	FSK 15
		Skimmer	
Greenwich, NY	deinking	Supracell	33
Hampton Park, NJ	water treatment	Air dissolving tube	ADT 3000
Green Bay, Wisc	tissue	Supracell	27
Augusta, Maine	deinking	Supracell	15
Monominee, Mich	reverse cleaner rejects	Float	FSK 22
		Skimmer	
Menasha, Wisc.	fine papers	Supracell	18
Madsenville, KY	filter papers	Supracell	12
Wabash, Indiana	reverse cleaner rejects	Float	FSK 18
		Skimmer	
Fulton, NY	tissue	Spray Filter	1000
Memphis, Tenn	deinking	Supracell	33
Memphis, Tenn	deinking	Supracell	33
Baltimore, Ohio	corrugated medium	Supracell	33
Miami, Fla	tissue	Supracell	15
Rockingham, N C	wadding	Supracell	12

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SURVEYS

IOFTA

SURVEYS - Closed water circuits - Final effluent clarification

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BELGIEUE - BELGIUM		
Dudegem	PM - board and wrapping	Improvement of water circuit, closed circuit
DANMARK		
Kobenhaven	2 KM	closed circuit
DEUTSCHLAND - GERMANY		
Walsum	2 PM - coated papers	final effluent clarification
Fulda	1 PM - corrugated medium	final effluent clarification
Ratingen	1 PM - printing papers	closed circuit
Dusseldorf	4 PM - fluting, wrapping	closed circuit
Varel	4 PM - board	improvement of circuit
Furschenbach	1 PM - wrapping	final eff. clarification
Trauchgau	1 PM - board	biol. treatment
Emmendingen	1 PM - writing, printing papers	final effluent clarification
		improvement of water circuit
Essen	1 PM - board	
Freyung	1 PM - board	closed circuit
Forchheim	4 PM - tissue, fluting	stock recovery
Julich	3 PM - wrapping, fine wrapping papers	closed circuit
Mittenberg	3 PM - tissue	closed circuit
Tornesch	2 PM - wrapping paper, fluting corrugated medium	closed circuit
Solingen	2 PM - fine boards	reduction of fresh water

ITALIA - ITALY

Sora, Frosinone	2 PM - coated papers	Improvement of water circuit
Villanovetta	2 PM - tissue	Improvement of water circuit
Romagnano	1 PM - tissue	Improvement of water circuit
Arbatax di Tortoli	2 PM - newsprint	stock recovery, pollution
San Giovanni di Duino	2 PM - newsprint incl. groundwood	red. effl. treatment reduction of fresh water consumption

NEDERLAND

Sappemeer	4 PM - fluting, corrugated medium	closed circuit stock recovery
Eerbeek	4 PM - fluting	closed circuit
	1 Pulp mill - pulp	
Cuyk	5 PM - tissue, wrapping	prelim. design final eff. clar.
N. Pekela	19 PM - (5 mills)	iflication improvement of water circuit, stock recovery
O. Pekela	2 PM - board	closed circuit
Hoogezand	3 PM - board, partly MG	effluent treatment
Veendam	5 - board machines	effluent treatment closed water circuit
N. Pekela	2 board machines	closed water circuit

Aizenau	2 PM - corrugated medium	consumption improvement of close circuit
Smund	1 PM - fine papers	flocculation and elimination of starch
Seidenfels	4 PM - fine papers	extension of existing installation
Subeck	2 PM - board	closed circuit
Orms	2 PM - board	final effluent clarification
Orms (DLW)	2 PM - board	stock recovery closed circuit
Wienberg	2 PM - Tissue	closed circuit
Wostheim	2 PM -	inplant clarification
Wustadt	4 PM -	inplant clarification
Wohlf	2 PM -	inplant clarification
Wuchenbach	2 PM -	closed circuit - inplant clarification
Wienheim		gelatin effluent
Wenzingen		gelatin effluent
Wernborn		abbator effluent
FRANCE		
Wimberlé	6 PM - cigarette papers	biol. treatment, sludge recovery
Wurlandon	1 PM - wrapping papers	improvement of water circuit
Wies	3 PM - printing papers	closed circuit
Wisme	1 PM - wrapping papers	stock recovery final clarification
INDIA		
Wardh Mill	3 PM - integrated pulp and paper mill, chem. pulp	closed circuit
W Delhi	2 PM - integrated pulp and paper mill	closed circuit
W Bombay	3 PM - integrated pulp and paper mill	closed circuit
W Sravathi	3 PM - integrated pulp and paper mill	closed circuit

G. Pekala	2 KM - strawboard	straw production
Stadskanaal	2 PM -	closed circuit
Oss	carpet (textiles)	mechanical clarification and effluent recycling
Aoelidoorn	3 PM	effluent reduction

NORGE - NORWAY

Rena	2 KM - board	stock recovery reduction of pollution
Honefoss	2 PM - molds	stock recovery pollution control
Vennesla	6 PM - integrated pulp and paper mill	extension of existing installations
Lillehammer	3 KM	inplant effluent treatment, final clarification
Drammen	2 PM	improvement of inplant clarifier for stock recovery
Hokksund	1 PM - integrated pulp and paper mill	final effluent clarification
Honefall Follum		de-barking, inplant clarification

SCHWEIZ - SWITZERLAND

Grettingen	2 PM - tissue	closed circuit
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FINLAND

Myllykoski	4 PM - newsprint	inplant clarification
Kaipola	4 PM - newsprint	inplant clarification

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KROFTA

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U.K.	
Krofta Engineering Ltd. FLACKWELL HEATH, 3A White Pitt Lane Bucks. HP 109HR	Telex 849 813 Tel. (062) 852 6654
LLANARMON Y.I. Mill Lane, CLWD	Telex 612 66 Tel. 08243 393
SWITZERLAND	
Krofta S.A. CH - LUGANO, via Baroffio 6	Telex 731 59 Tel. (091) 23 85 86
ITALY	
Krofta Italia S.r.l. 20122 MILANO, via Fontana 11	Telex 313 108 Tel. (02) 545 7727
FRANCE	
Krofta Engineering S.à.r.l. F-75016 PARIS 21, avenue Ferrichont	Telex 614 740 Tel. (01) 224 0847
SPAIN	
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Krofta Apparatebau GmbH D-6370 OBERURSEL Altkönigstrasse 61	Telex 410 749 Tel. (06171) 3041
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Krofta Apparate 8020 GRAZ, Alte Poststrasse 359	Telex 313 74 Tel. (316) 27 14 44
NORWAY	
Krofta c/o Falkenberg A/S N-OSLO 4, Chr. Michelsensgt 65	Telex 717 89 Tel. (02) 37 31 30

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Krofta Engineering PVT.Ltd.
Sco 55, Madhya Marg, Sector 26
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Telex 395 316 abc in

Tel. (172) 32886

TURKEY

Krofta c/o Tek-Ser
Ciraagan Cad. 20 1-2
BESIKTAS, ISTANBUL

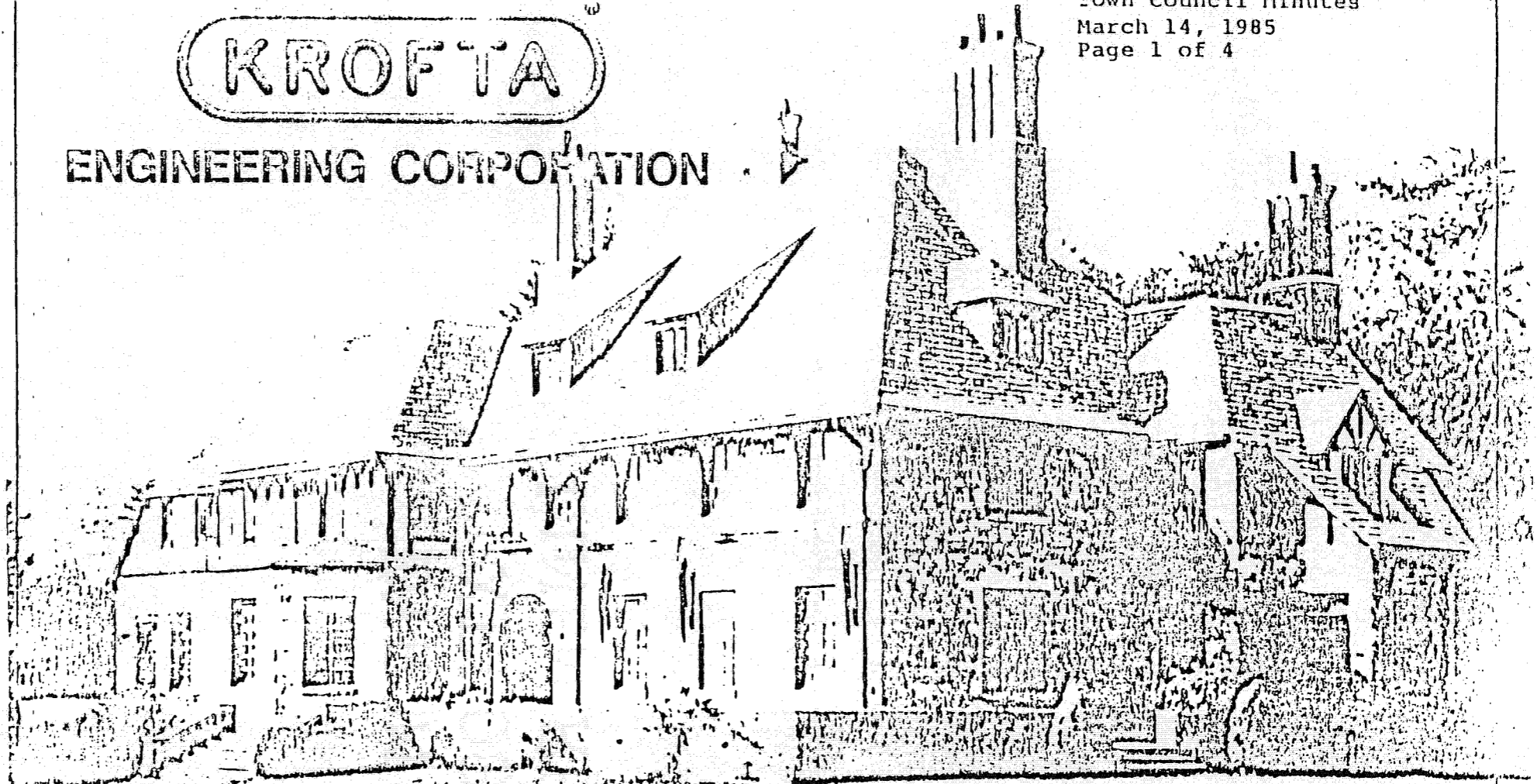
Telex 264 65

Tel. 61 84 50

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KROFTA

ENGINEERING CORPORATION



Manufacturer of Waste Water Treatment
and Water Recycling Systems
for the pulp, paper, and process industries.
Established 1947.

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SDF / Sedimentation-Flotation Clarifier

KROFTA type SDF CLARIFIERS have been in successful operation since 1965. Hundreds of units are installed in the United States of America, throughout Europe, and in Japan.

Clarification is achieved by a combination of flotation with dissolved air and sedimentation. It is a self-cleaning unit for continuous operation. Sizes available range from 100 to 10,000 USGPM (0.5 to 50m³/min.).

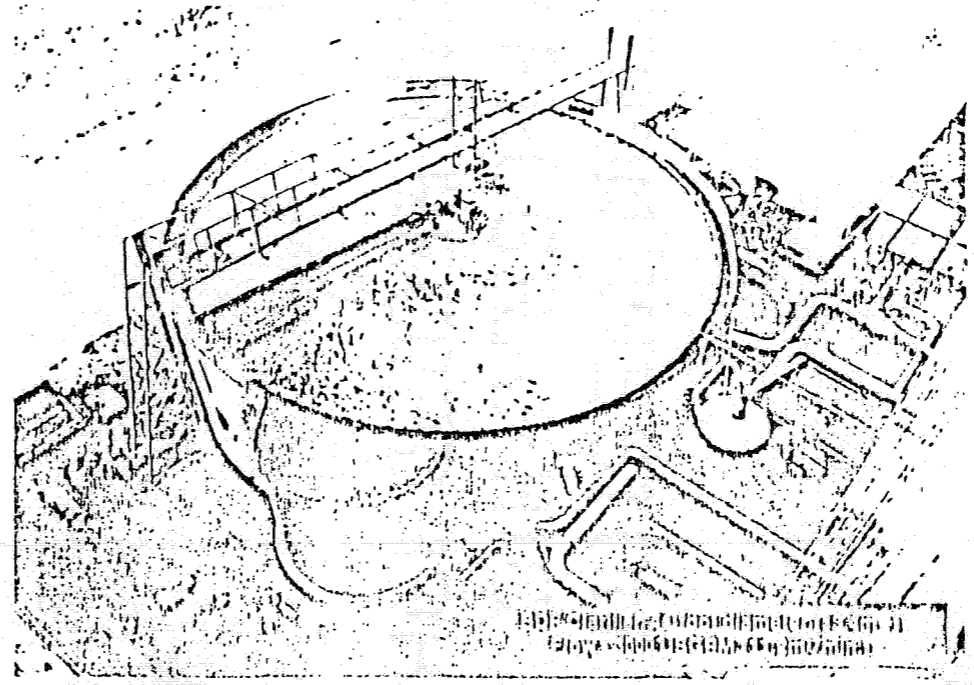
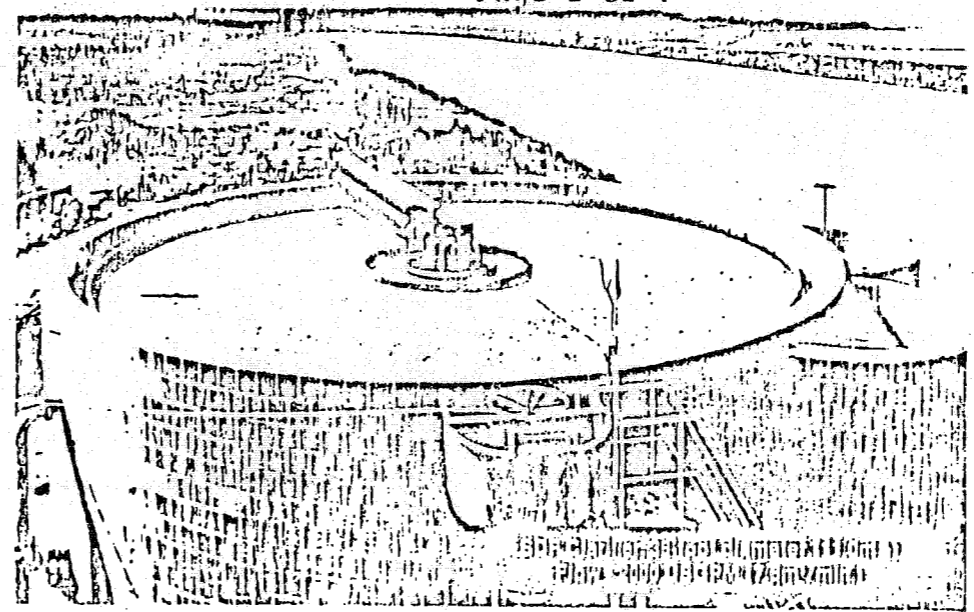
Successful applications include:

- final clarification of paper and board mill effluents,
- thickening of secondary biological sludges,
- processing of waste in the food industry.

Advantages of the

KROFTA SDF CLARIFIER:

- the patented "Spiral Scoop" provides for high sludge consistency.
- It handles heavy contaminants.
- very simple construction and operation.
- highest effluent clarity.
- low cost both for installation and operation.



SUPRACELL / Flotation Clarifier

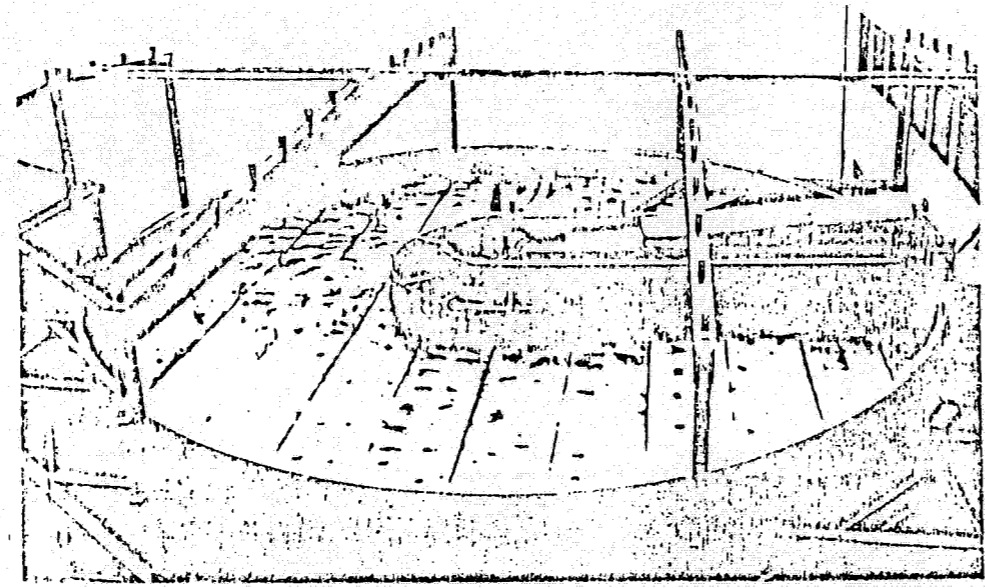


Figure 1: SUPRACELL Flotation Clarifier

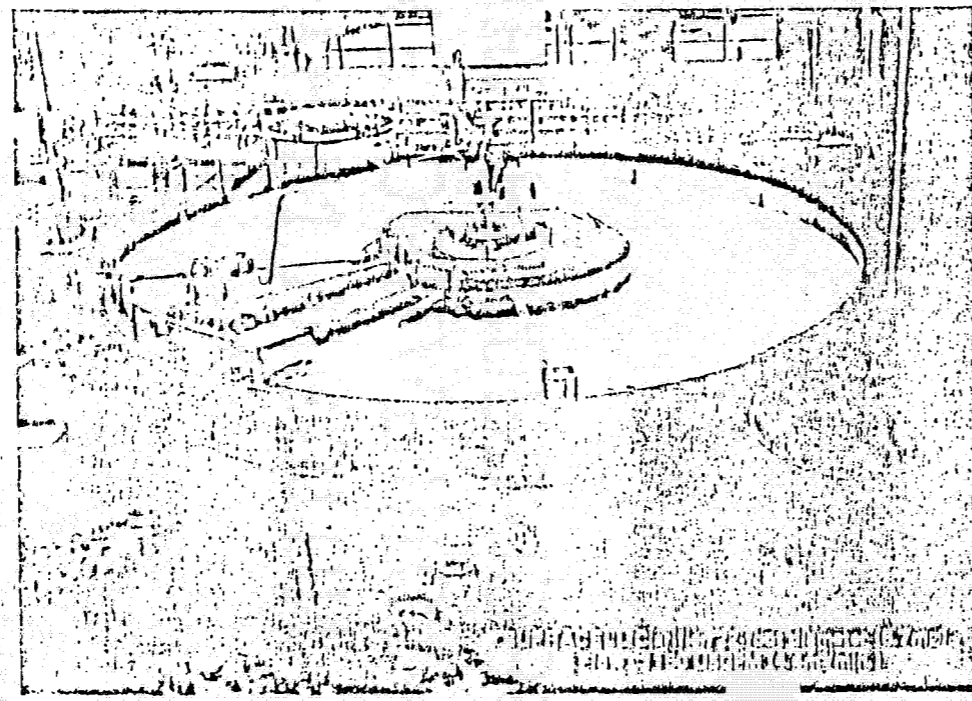


Figure 2: SUPRACELL Flotation Clarifier

KROFTA SUPRACELL CLARIFIER is a breakthrough in the flotation field. Water depth is only 16 inches (40.6cm). This is by far the smallest clarifier using flotation sedimentation techniques. The high performance is possible through the use of a unique "zero-velocity" water distribution.

Since its introduction in 1973, many units have been installed and are in successful operation in pulp and paper mills for closed-water systems, and also in food processing plants.

Advantages of the

KROFTA SUPRACELL CLARIFIER:

- very small in size and weight.
- lowest installed cost.
- high performance and utmost reliability.
- completely prefabricated construction.

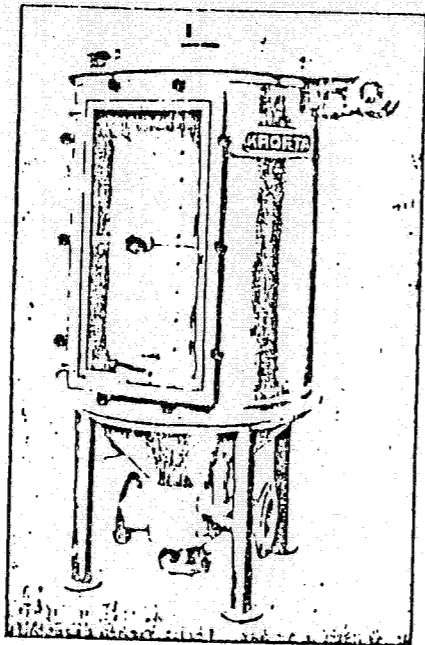
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KROFTA

Spray Filter

A simple, reliable self-cleaning fractionating filter.

- highest flow rates.
- prescreening before flotation.
- separation of clay and fiber.
- separation of ink and fiber.
- filtering of water for reuse.

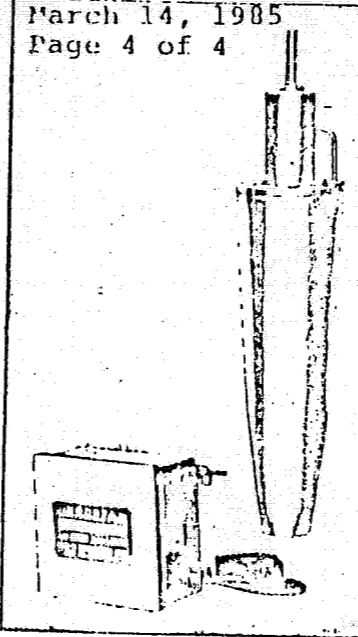


KROFTA

Effluent Samplers

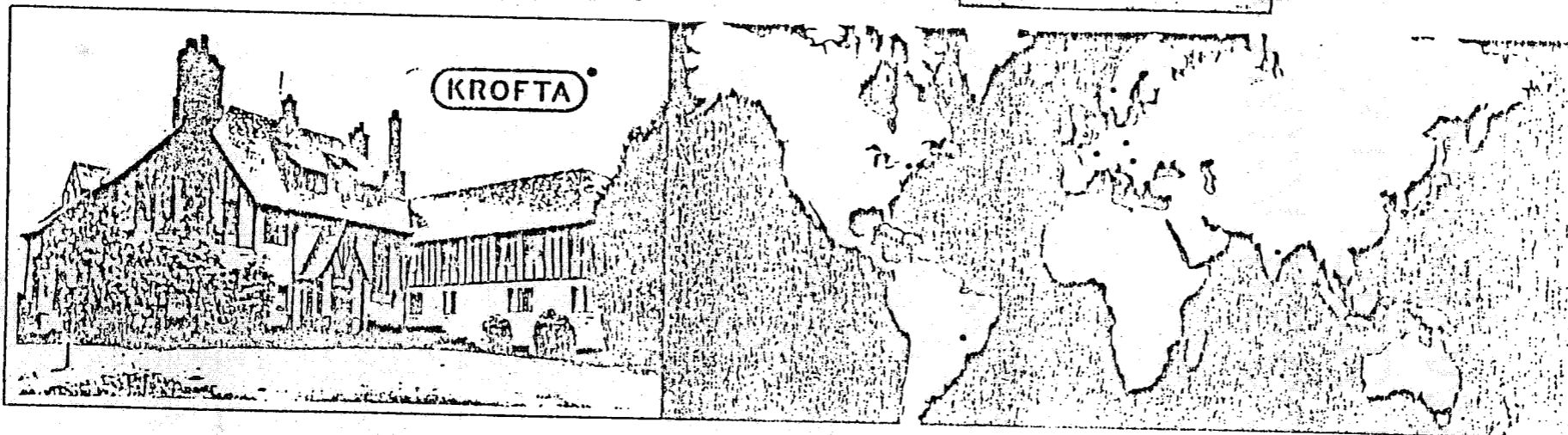
- hundreds of successful installations.
- only one moving part.
- all stainless steel construction.
- simple pneumatic operation.
- for all flumes and weirs.
- proportional samples without a flowmeter.

Exhibit D Town Council Minutes
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Other KROFTA Products and Services:

- closed-water system surveys.
- white water showers and other specialty equipment
- special flotation systems (SUPERFLOAT, UNIFLOAT, AIRFLOAT, PLATEFLOAT, FLOTATOR).
- laboratory and pilot testing services.



KROFTA ENGINEERING CORPORATION

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Hietaniemenkatu 2

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Rua Galo 893

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Hirayama 2 21 6 311



WILLIAM W. DICKINSON, JR.
MAYOR

OFFICE OF THE MAYOR
TOWN OF WALLINGFORD
CONNECTICUT

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March 11, 1985

Wallingford Town Council
Wallingford, Connecticut

ATTENTION: Mr. David Gessert, Chairman

Dear Council Members:

When we gave you the report on the Wallingford Landfill at your meeting of 2/26/85, we promised to make recommendations for addressing the problems posed in the document. Enclosed are 2 resolutions which, we feel, incorporate changes that deal with each problem delineated. These recommendations are made as the result of lengthy meetings involving my office, Public Works, Engineering, the Grants office and the Town Attorney.

Wallingford is bringing its landfill up to environmentally acceptable standards to prevent erosion, reduce leachate and minimize threats to health caused by exposure of refuse. The cost however is high comparable to the cost of resource recovery. The risk of long term liability is also high and will increase if the State is successful in forcing the Town to accept special wastes. It is in the best interest of the Town to get out of the landfill business as quickly as possible and into a resource recovery project.

Since the cost of landfill greatly exceeds revenues, and the Town tip fee is so low as to encourage importation of waste, the Town should seriously consider raising its tip fee to \$16.00 per ton, a rate more in keeping with the cost of operation and with other tip fees charged in the region. According to census data, the average Wallingford family size is less than 3 people. The state estimates that each person generates about 7 tenths of a ton of refuse per year (the rest is generated by commercial and institutional enterprises). Using these figures, the additional cost to an average Wallingford family, based on a tip fee of \$16.00 per ton, would be about \$1.50 per month.

TOWN OF WALLINGFORD

Exhibit E
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Enclosed for your information is a copy of the expenditure and revenue projections included in the original report, but revised to show revenues if the tip fee were raised to \$16.00 per ton effective June 1, 1985. As you can see, revenues for the period between July 1, 1984 and June 30, 1988 increase to \$1,490,000 or only about 54.2 percent of the \$2,747,852 of identified expected costs. Moreover, it is likely that if we increase rates, refuse volume will drop, thereby lowering the revenues. At best, we can expect to recover about 50 percent of identifiable costs and about 42 to 45 percent of total costs through an increased tip fee. The

increase though, would allow us to bond less for the capital improvements at the landfill so that we could use our bonded indebtedness for other pressing projects. From an over planning perspective on town finances, this makes sense.

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Landfill personnel now have inadequate time to properly prepare cells for the disposal of refuse. Reduction of the hours of operation at the landfill will allow personnel to prepare cells in advance, thereby minimizing total cover requirements. Closing at 3 P.M. each day and 2 P.M. on Saturday would not greatly inconvenience the public. The enclosed resolution suggests hours of operation and holiday closing that we feel would minimize disruption to the public and improve the efficiency at landfill operations.

Under current statutory requirements each municipal authority must make provision for the safe and sanitary disposal of all solid wastes which are generated within its boundaries excluding, however, wastes which are toxic or hazardous. The statute, as presently drafted, does not contain a definition of toxic or hazardous waste. The State DEP, at times, interprets the language to mean that if a waste contains toxic matter but is not hazardous under current guidelines, the waste is acceptable at solid waste landfills. The Town, however, has taken the position that if a waste contains toxic matter it is excludable under the statute. Although we run the risk of litigation, we recommend the Town continue its present policy and refuse to accept any waste which contains toxic matter and, of course, any waste which is hazardous. For wastes that require special handling, we should establish, on a case-by-case basis, a fee and procedure that is based on all costs of disposal determined by the Town whether this is for disposal at our landfill or elsewhere.

Tires are becoming a serious problem because, if they are not shredded, special handling is required to landfill them. It is therefore recommended and proposed in the resolution establishing fees, that the Town Council establish a fee of \$150.00 per ton for waste tires from cars, pick-ups, vans and trucks. This will allow us to hire a contractor to shred the tires.

WALLINGFORD

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Finally, we have written into the enclosed resolution a definition of the vehicles we feel should be allowed to transport personal household refuse to our landfill. Only cars, pick-ups and vans are considered. This should eliminate some of the questions about whether the contents are, in fact, personal.

I hope these recommendations meet with your approval. We feel each is necessary to insure proper and efficient operation of our landfill in the future.

Sincerely,

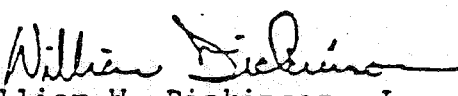

William W. Dickinson, Jr.
Mayor

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HOURS OF OPERATION
R E S O L U T I O N

This resolution was presented for information only and not acted upon on 3/14/85. It will be presented on a future agenda.

WHEREAS, on June 29, 1976, the Town Council enacted Ordinance #218 entitled, "AN ORDINANCE REGULATING STORAGE COLLECTION, TRANSPORTATION AND DISPOSAL OF GARBAGE, RUBBISH AND WASTE MATERIAL, AND USE AND OPERATION OF THE TOWN SOLID WASTE DISPOSAL AREA, AND REPEALING ORDINANCE FILE NUMBERS 17, 18, 68, 113 and 143";

AND WHEREAS, Section 6 of said Ordinance provides that the Director of Public Works shall designate the hours of operation of the Town Solid Waste Disposal Area, subject to approval by resolution of the Town Council;

AND WHEREAS, said Director of Public Works has presented this Council with a proposed schedule of hours of operation and dates of closing;

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NOW, THEREFORE, BE IT ENACTED BY THE TOWN COUNCIL IN SESSION:

The Town Solid Waste Disposal Area shall be open for disposal on the following hours: Monday thru Friday from 8:00 a.m. to 3:00 p.m. and Saturday 8:00 a.m. to 2:00 p.m.

It shall be closed on Sundays and the following holidays:

New Year's Day	Labor Day
Lincoln's Birthday	Columbus Day
Washington's Birthday	Veteran's Day
Good Friday	Thanksgiving and day after
Memorial Day	Christmas
Independence Day	

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ANTICIPATED EXPENDITURES AND REVENUES
FOR SOLID WASTE DISPOSAL BY FISCAL YEAR
WITH TIP FEE AT \$16.00 PER TON AS OF JUNE 1, 1985

4-85	EXPENDITURES (DOLLARS)	REVENUES (DOLLARS)	NOTES	TE JOB #
landfill budget	206,947		(1)	
thane ditch	150,000			
drox closure (cap)	.50,000		(2)	(2)
tip fees		209,000	(3)	
TOTAL 1984-85	406,947	209,000		
<hr/>				
5-86				
landfill budget	172,905		(1)	
over exposed slopes	170,000			(1)
hydroxide closure	175,000		(2)	(2)
fill wells	3,000			(3)
fill and cap wells	5,000			(4)
soil and seed	125,000			(5)
landfill gas revenue		15,000	(5)	
tip fees		460,000		
TOTAL 1985-86	650,905	475,000		
<hr/>				
6-87				
landfill budget	183,000		(1,4)	
over exposed slopes	170,000			(7)
soil and seed	125,000			(8)
landfill gas revenue		25,000		
tip fees		472,000	(6)	
TOTAL 1986-87	478,000	497,000		
<hr/>				
7-88				
landfill budget	122,000		(8)	
over exposed slopes	170,000			(9)
soil and seed	125,000			(10)
landfill refuse disposal	25,000		(9)	
landfill gas revenue		25,000		
tip fees		284,000		
TOTAL 1987-88	442,000	309,000		

TE JOB # refers to task # of Town Engineer's Landfill Closure Plan.

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ANTICIPATED REVENUES AND EXPENDITURES FOR MSW
 NOTES CONTINUED

Because the resource recovery plant is expected to be on line by the end of 1987, normal landfill budget costs and revenues during 87-88 represent only those for six months.

Landfill costs are estimated at \$97,000 for the first 6 months of the year and \$25,000 for maintenance during the second 6 months.

is the anticipated cost of delivering solid waste from Public Works and other municipal agencies to the resource recovery facility for the last half of 87-88.

The Town agencies are now generating more than 2200 tons of solid waste each year. The 88-89 payment was based on an estimate of 2500 tons at \$22.50 per ton. Later year calculations assume a tip fee escalation rate of 4.5%.

The Town is expected to maintain a skeleton force at the landfill to handle construction waste and other fill as well as maintain the closed landfill.

The town should have 435,000 cubic yards of capacity left at the landfill if the resource recovery plant comes on line when expected. It was assumed that the town would lease the landfill to CRRA for disposal of ash, bulky wastes, or bypass.

ANTICIPATED REVENUES AND EXPENDITURES FOR MSW

	EXPENDITURES (DOLLARS)	REVENUES (DOLLARS)	NOTES	Exhibit E Town Council M March 14, 1985 Page 6 of 7
87-89				
refuse disposal	56,000		(10)	TE JOB #
cover exposed slopes	470,000			(13)
land seed	350,000			(14)
monitoring	10,000		(11)	
landfill Maintenance	60,000			
methane gas revenue		25,000		
landfill lease - CRRA		10,000	(12)	
TOTALS 1988-89	946,000	35,000		
88-1990				
refuse disposal	59,000			
monitoring	10,000			
landfill Maintenance	60,000			
methane gas revenue		25,000		
landfill lease - CRRA		10,000		
TOTALS 1989-90	129,000	35,000		

TOTALS 1990 and after -- FY89-90 should be representative.

* * NOTES * *

Does not represent true landfill budget because additional Public Works personnel are used to generate material for daily cover, and several trucks are used to carry material to landfill.

The \$50,000 budgeted during 84-85 will be used in 85-86 to do the hydroxide closure project. Balance-\$175000-to be budgeted 85-86.

Tip fees are based on an anticipated 35% increase in refuse after October, 1984, and a tip fee of \$16 per ton as of 6/1/85.

For projection purposes, landfill budget is escalated at 6%.

Wehran may possibly begin its sale of gas during 85-86. While no one knows how much revenue will be produced, annual Town revenues were estimated at \$25,000 per year. The 85-86 figure is for a partial year.

Based on prior year data, refuse generation is escalated at three percent per year, thereby increasing revenues.