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REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

RELEASED

Construction Problems With Country Club Estates Merrimack, New Hampshire—A Section 235 Housing Project

Department of Housing and Urban Development

Homes in the federally insured Country Club Estates project had serious problems, such as septic system failures, large pools of water covering yards and driveways, water in basements, and improperly installed chimneys.

These problems could have been detected and corrected if the Department's inspectors had followed prescribed construction inspection procedures.

Further, homeowner complaints about these problems were not processed in accordance with Department procedures nor were adequate documents maintained concerning the disposition of homeowner complaints.

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OCT. 20, 1976

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-171630

DLC 03629

The Honorable Thomas J. McIntyre, United States Senate
The Honorable Norman D'Amours, House of Representatives

In accordance with your joint request of August 7, 1975, we are enclosing information concerning your questions on housing problems experienced by some residents of the Country Club Estates in Merrimack, New Hampshire.

HCC00623

This report contains recommendations to the Secretary of Housing and Urban Development which are set forth on pages 34 and 49. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement of actions taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

As your offices agreed, we are sending copies of the report to the Director, Office of Management and Budget; the Chairmen of the House and Senate Committees on Appropriations and Government Operations; and the Secretary of Housing and Urban Development.

Comptroller General
of the United States

Contents

ABBREVIATIONS

FHA	Federal Housing Administration
GAO	General Accounting Office
HUD	Department of Housing and Urban Development

REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES

CONSTRUCTION PROBLEMS WITH COUNTRY CLUB ESTATES, MERRIMACK, NEW HAMPSHIRE--A SECTION 235 HOUSING PROJECT

Department of Housing and Urban Development

D I G E S T

GAO was asked by Senator Thomas J. McIntyre, and Representative Norman D'Amours to review the Department of Housing and Urban Development's role in the approval and development of the federally insured Country Club Estates project, a section 235 project in Merrimack, New Hampshire. Homeowners had complained about serious problems, such as septic system failures, large pools of water covering yards and driveways, and water in their basements and about the Department's failure to take corrective action on their complaints.

Of the 224 homes in the Country Club Estates project, 213 are insured under section 235 of the National Housing Act which authorizes the Department to assist low- and moderate-income families in becoming homeowners by providing mortgage insurance and subsidizing parts of their monthly payments.

Homeowners in the Country Club Estates project are plagued by

--septic system fluids constantly leaking to the surface or back up into basements,

--large amounts of water accumulating in basements after each rainstorm,

--water standing in yards, and

--chimneys being improperly installed.

In April 1975 the Community Development Committee, which is made up of local residents of the town of Merrimack, reported that 140 homes in the Country Club Estates had one or more of the above-cited problems. (See p. 5.)

GAO interviewed 36 of the 140 homeowners and confirmed that serious problems existed at many of the homes because of the above-cited problems. (See p. 5.)

At present there are open channels throughout the subdivision with poor drainage, as evidenced by standing water in culverts at road crossings and drain inlets. (See p. 10.)

Because documents generally included in a subdivision file were not in the Country Club Estates file at the time of GAO's review, GAO was unable to determine whether the sponsor had failed to revise its street profiles and drainage plans in accordance with the recommendations of the Department engineers or whether the plans had been adjusted but the sponsor had failed to follow them. (See p. 14.)

Examination of four septic systems by a consultant that GAO hired disclosed that

--system failure had resulted from poor design and improper installation;

--homeowners were not at fault;

--the Federal Housing Administration's minimum property standards had been violated in all cases; and

--construction inspections had been inadequate because they had not disclosed that the absorption beds (1) did not terminate in porous formation at least 4 feet thick, (2) were constructed in unstable, filled ground, (3) extended within 2 feet of the water table, (4) did not contain a minimum of 12 inches of stone, and (5) were not large enough for the percolation rate of the soil. (See p. 15.)

At least 89 four-bedroom homes had septic tanks smaller than those required under the Federal Housing Administration's minimum property standards. However, the capacity of the tanks did not appear to have been a major factor in the septic system failures. (See p. 21.)

Chimneys were improperly installed on 169 homes, and soot and smoke escape to the attic area from poorly connected sections of chimney pipes. The Merrimack Fire Department has indicated that the improperly installed chimneys pose a potential fire hazard. Possible solutions to correct the chimney problems were being considered at the time of GAO's review. (See p. 22.)

GAO's review disclosed weaknesses in the Department's inspection of home construction and offsite improvements, such as streets and drainage facilities. (See p. 27.)

The project was approved despite serious questions being raised concerning the feasibility of the site to accommodate individual septic systems. (See p. 27.)

Section 518(a) of National Housing Act authorizes the Department to make expenditures to correct or compensate homeowners for structural defects that seriously affect the livability of the property. The homeowners must file applications for assistance under this program. (See p. 36.)

GAO's review disclosed that, contrary to the Department's procedures, the Department's Manchester Area Office did not process many of the homeowners complaints and did not adequately document the disposition of homeowner complaints. (See p. 38.)

The Manchester Area Office was slow to provide financial assistance under section 518(a) to homeowners whose homes had serious defects. In March 1976 Department officials in Washington, D.C., said that the quality of processing homeowners applications for assistance by the area office must be judged as poor and announced their intentions to provide financial assistance under section 518(a) to all the eligible homeowners in the Country Club Estates project.

The problems with the Country Club Estates project would be a useful case study for the Department's area office training and instructional purposes, because they demonstrate the need for quality inspections and prompt responses to complaints by home purchasers.

GAO's review showed that the complaints officer who handled the homeowners' complaints had previously made construction inspections and/or approved inspection reports prepared by other inspectors on the same houses. The performance of these duties by different individuals would provide better assurance that homeowners complaints are handled fairly and objectively.

GAO met with the project developer to discuss the various construction problems with homes in the Country Club Estates. The officials did not offer any substantive comments. (See p. 26.)

RECOMMENDATIONS

GAO recommends that the Secretary of the Department of Housing and Urban Development insure that responsible department officials are made aware of the problems discussed in this report in an effort to prevent similar problems in future projects constructed under the reactivated section 235 program.

GAO recommends also that the Secretary require that homeowner complaints in the Country Club Estates project be handled promptly and that eligible requests for assistance under section 518(a) be disposed of promptly, to insure that all structural defects are satisfactorily corrected.

GAO recommends further that the Secretary direct that

--the duties of the construction inspector and complaints officer not be performed by the same individual and

--subdivision files which include plans and drawings relating to project approval be retained for a minimum of 4 years, so that responsibility for structural defects evident at Department-insured projects can be assessed.

AGENCY COMMENTS

The Assistant Secretary for Housing agreed with GAO's recommendations (see app. II) and made the following comments.

--The need for additional training of field personnel was recognized, and a 2-day training program on handling homeowner complaints and processing requests for financial assistance under section 518(a) had been developed for presentation to the field offices.

--The central office function would be decentralized directly to the field offices, to speed up processing of section 518(a) requests.

--The duties of the complaints officer and construction inspector no longer would be carried out by the same person.

--Plans and drawings relating to project approval would be retained for 5 years.

The Assistant Secretary said that the area office had been authorized to contract for repairing defective chimneys eligible under section 518(a). Also repairs, and some interim septic tank pumping, had been authorized for all failing septic tank systems.

The Assistant Secretary said that the Department would continue its effort to correct all eligible defects in the Country Club Estates project. He also said that the Department would exert maximum efforts to impress upon its field offices the need for prompt handling of homeowners' complaints and expeditious processing of requests for financial assistance.

CHAPTER I

INTRODUCTION

On August 7, 1975, Senator Thomas J. McIntyre and Representative Norman D'Amours asked us to investigate the role of the Department of Housing and Urban Development (HUD) in a single-family housing development--Country Club Estates--in Merrimack, New Hampshire. HUD insured this development under section 235 of the National Housing Act, as amended. Homeowners had complained about serious problems such as septic tank failures, poor surface water drainage, and basement flooding and about HUD's failure to take adequate and timely corrective action. After visiting the project, the Senator and the Congressman asked us to answer the following questions.

1. Did HUD exercise proper supervision over the siting and construction of the development?

2. Has HUD met its obligations in terms of assisting complaining homeowners?

3. What recommendations can be made for avoiding this type of problem in the future and what can be done for the residents of this development, if HUD has not fulfilled its obligations?

SECTION 235 PROGRAM

Section 235 of the National Housing Act, as amended (12 U.S.C. 1715z), which was added by section 101(a) of the Housing and Urban Development Act of 1968, authorizes HUD to assist low- and moderate-income families in becoming homeowners by providing mortgage insurance and subsidizing parts of their monthly payments. The homeowner is required to pay at least 20 percent of his adjusted income toward the total monthly mortgage payment. HUD pays the balance of the required monthly payments; however, HUD's payment cannot exceed the difference between the total required monthly payment for principal, interest, and mortgage insurance premium and that amount which would be required for principal and interest if the mortgage bore interest at a rate of 1 percent. Purchasers of new houses under section 235 are protected by a warranty requiring builders to correct defects during the first year after purchase.

Effective January 5, 1973, the President suspended most new commitments for subsidized housing, including houses to be insured under section 235, pending an evaluation of the subsidy programs and consideration of alternative programs

to meet the housing needs of low- and moderate-income families. HUD's report, entitled "Housing in the Seventies, indicated that the programs had been suspended because they had developed many basic inequities.

--Comparable subsidy benefits were not being provided for all those with comparable problems.

--Many moderate-income families benefited but most lower income families did not.

--Program beneficiaries lived in units newer and better than could be afforded by millions of people with incomes only slightly above those of the program beneficiaries.

On October 17, 1975, the Secretary of Housing and Urban Development announced reactivation of a revised section 235 program.

Three areas where the new program differs from the old are:

--The homeowner must make a down payment of at least 3 percent of the first $25,000 plus 10 percent of the acquisition cost in excess of $25,000, or 6 percent of the total acquisition cost, which may include payment of items of prepaid expenses.

--The subsidy payment will be based on a minimum mortgage interest cost of 5 percent, rather than 1 percent.

--The number of insured housing units in a subdivision eligible for subsidy payments is limited to 40 percent. The former program had no limitation.

According to HUD the limited subsidy and the increased down-payment requirement will result in the new program's focusing primarily on families which traditionally have been successful homeowners but which are now priced out of the new-home market because of high interest rates and escalations in housing costs. Further, the limitation on the number of units in a subdivision will eliminate concentrations of subsidized housing.

HUD procedures require inspections of house construction and lots on which the Federal Government has made commitments to insure or guarantee loans, to determine whether such construction complies with approved drawings and material specifications and whether minimum property standards of the Federal Housing Administration (FHA) are met. These standards

set forth the minimum level of quality acceptable and are intended to insure that a property has continuing utility, durability, and desirability and that it complies with basic safety and health requirements. Also inspections are required to be made of offsite improvements, such as streets and drainage systems, which are not specifically associated with an individual lot.

SECTION 518(a) PROGRAM

Section 518(a) was added to the National Housing Act by section 121 of the Housing Act of 1964 (12 U.S.C. 1735b). This section authorizes HUD to made expenditures to correct or compensate homeowners for structural defects. According to HUD a structural defect is a major failure which threatens the structural components of a house, including such items as foundation, floors, framing, or roof, and which seriously affects the livability of the house. In September 1973 HUD broadened the meaning of major failure to include such things as dangerous wiring, basement flooding, and septic system failure.

A homeowner, to be eligible for assistance under section 518(a), must establish that he is the owner of a one- to four-family house covered by HUD mortgage insurance, has made reasonable efforts to obtain correction by the builder, and has requested assistance not later than 4 years after the effective date of his HUD mortgage insurance. The house must have been approved for mortgage insurance before the beginning of construction and must have been inspected by either HUD or the Veterans Administration. Section 518(a) provides that HUD may pay expenses for correcting the defect; pay the claim of the homeowner for corrected damages to the property arising out of such defect; or with the approval of the homeowner, acquire title to the property.

COUNTRY CLUB ESTATES

Hilton Development, Inc.,[1] hereinafter referred to as the sponsor, constructed 224 single-family homes in Country Club Estates from 1971 through 1972. HUD provided mortgage insurance on 213 of these homes during that period. A typical lot has a 120-foot frontage and a minimum area of about 20,000

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[1] Hilton Development, Inc., is listed in the subdivision application as the sponsor, builder, and landowner. Other corporate names, such as Squire Homes, Incorporated, and Hilton Homes, Inc., appear in HUD files. These firms have common ownership and the names were used interchangeably.

square feet. The houses have either three or four bedrooms and sold for an average price of $19,700. The development is not connected to a municipal sewage system; each house has a sewage disposal-septic system. Of the insured houses, 169 have oil furnace heat; the remainder have electric heat.

SCOPE OF REVIEW

We made our review at HUD headquarters, Washington D.C.; HUD's Manchester Area Office, Manchester, New Hampshire; the regional office in Boston, Massachusetts; and Country Club Estates. We reviewed the provisions of the National Housing Act and examined the policies and procedures the area office followed with respect to subdivision approval, construction inspections, and homeowner complaints. We interviewed representatives of the New Hampshire Water Supply and Pollution Control Commission; the town of Merrimack; Hilton Development, Inc., and its subcontractors; and a private engineering firm. We also held discussions with 36 homeowners in Country Club Estates. We hired a consultant to give us expert conclusions as to reasons for failure of four septic systems. Also the Soil Conservation Service, Department of Agriculture, analyzed the soil and water conditions in the development for us.

CHAPTER 2

FAULTY CONSTRUCTION OF SECTION 235 PROJECT

The town of Merrimack selectmen appointed the Community Development Committee, made up of local residents, to make a townwide survey of drainage and septic system problems. In April 1975 the committee reported to the town selectmen that a door-to-door canvass had revealed that 140 homes in Country Club Estates had one or more of the following defects.

Problem	Number of homes
Septic system failure	27
Poor surface drainage	118
Water in the basement	75

In May 1975 the town gave this information to HUD's area office. In a followup in June 1975, the committee asked homeowners to complete a questionnaire on problems with their houses. The committee received 110 responses which indicated that extensive problems continued to affect the livability of the houses.

To determine the seriousness of the problems the committee reported, we selected and interviewed 36 of the 140 homeowners who had reported problems with their homes. In making our selection, we included homeowners who had reported each type of problem. We also inspected selected houses throughout the development and a number of houses where the owner had requested HUD's financial assistance under section 518(a).

Of the 36 homeowners interviewed, 34 had major problems with one or more of the following: faulty septic systems, inadequate drainage, and improperly installed chimneys. The following table shows the extent of the problems.

Problem	Number of homes
Faulty septic system	17
Poor surface water drainage	20
Water in the basement	9
Improperly installed chimneys	30
Other (note a)	2

[a] In one house a support column in the basement was not supporting the kitchen floor and the homeowner had installed a temporary support; in the other house mildew

had formed on the ceilings and top of the walls of several rooms and on the exterior of the house.

These defects stemmed primarily from HUD's failure to insure proper area drainage and street construction and to enforce FHA's minimum property standards during construction inspections.

The following examples illustrate some of the homeowners' more prevalent problems.

House A--The owner of home A said that he was having problems with the septic system, surface water drainage, and water in the basement.

The homeowner controls water from entering the basement with a sump pump. Water collects in a hole in the basement floor. When the water reaches a certain level in the hole, the pump automatically turns on and discharges the water through a pipe to the exterior of the house.

The homeowner said that septic system fluid appeared to be seeping into the hole, since there was a foul odor both in the basement and outside the house near the pump discharge area. The homeowner said that the odor was noticeable most of the time. During our visit a foul odor was evident in the homeowner's yard when the pump was running.

We saw a pool of water in the backyard about 20 feet wide and from about 4 to 8 inches deep. We noted another pool of water that appeared to be about one-half the width and depth of the large pool. The homeowner said that the problem occurred after every rainfall and during the spring. His backyard is unusable for outdoor activities until the water dries up.

House B--The homeowner of house B had a problem with the septic system. The absorption bed, located in the front of the house, constantly leaked to the surface and had been doing so since the spring of 1972. The homeowner said that the leakage was greater in the spring. He also said that there was a foul odor in the summer months. He said that after heavy rains the water from the absorption bed ran down the street. We saw a grassy area which was wet and which appeared to be caused by a septic system failure.

The homeowner also said that during heavy rains water leaked through a crack in the basement wall and accumulated to a depth of about one-quarter of an inch over a small area of the basement floor.

HUD officials have determined that 169 homes, including house B, have improperly installed chimneys. (See p. 22.)

The photograph on page 8 shows the leaking septic system we observed during our visit.

House C--The owner of house C said that she had problems with the septic system, surface water drainage, water in the basement, and the chimney.

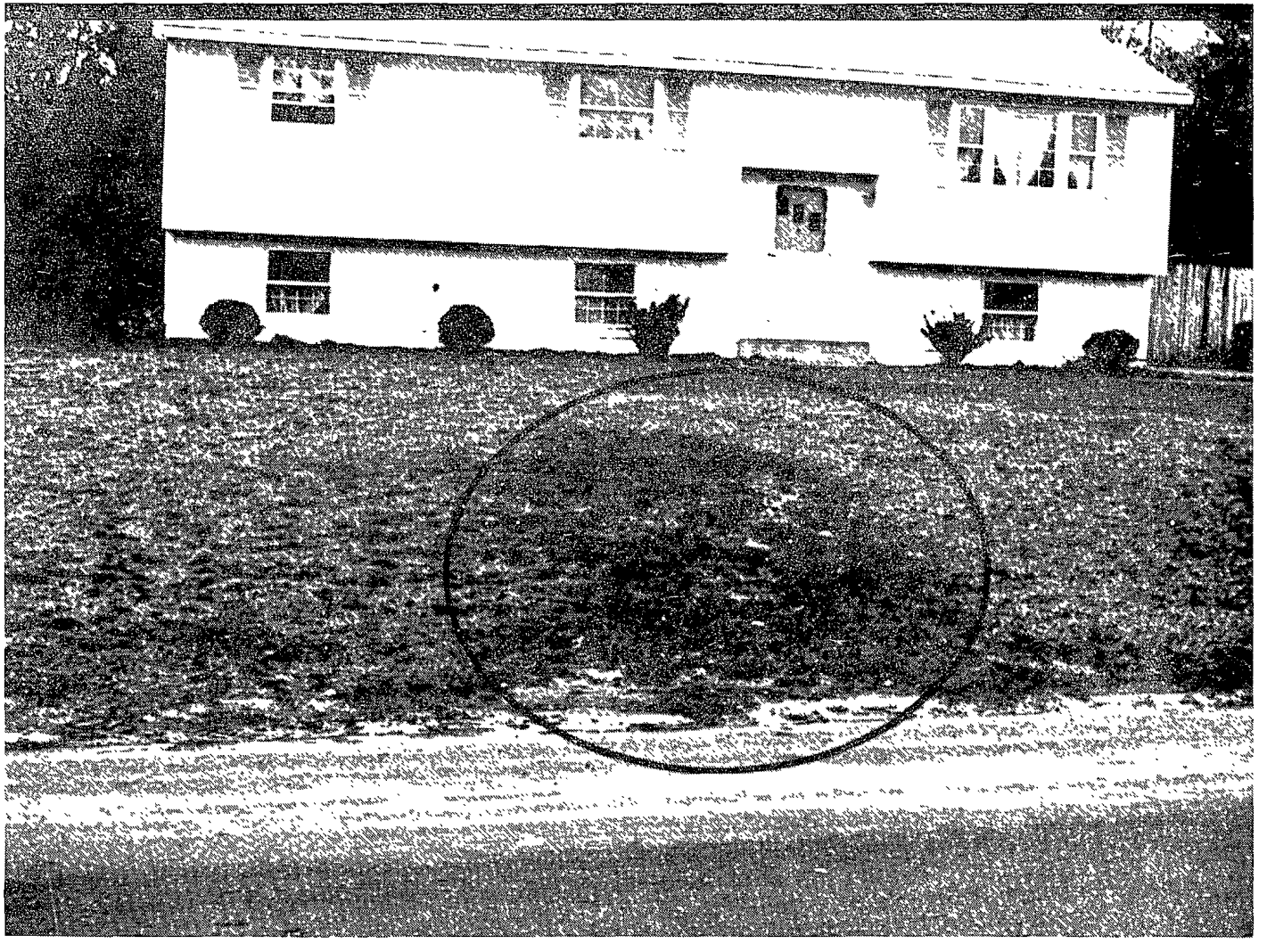
During our visit we noted that a corner of the absorption bed was exposed and stones were visible and that, when the toilet was flushed, water from the system bubbled to the surface and ran down the slope of the yard to a drainage trench. The homeowner noticed a foul odor in the fall of 1971 and initially attributed it to an adjacent swampy area. The foul odor became more noticeable in the spring of 1972 and still exists. The homeowner told us that she washed clothes at night, to minimize the effect of the unpleasant odor on the neighborhood.

The homeowner said that a pool of standing water formed near the house because of improper culvert construction. (See photograph on p. 9.) She said that on occasion the pool covered an area about 20 feet by 30 feet and was about 5 feet deep. The homeowner said that the pool of water posed a dangerous situation because potential for a drowning existed and because it was polluted by the septic system. She said that during the summer months the area almost dried up.

The homeowner said that the floor became damp in one corner of the basement near two foundation cracks. She said that an area in the middle of the basement floor also became wet but not enough to require clean up. The problem began about 1 year after she moved into the house and occurs after rainstorms.

The homeowner also said that the Merrimack Fire Department had told her that the chimney had been improperly installed and would require correction.

Photographs of some of the homeowners problems noted during our visits are shown on pages 8 and 9.



HOME B. DARKENED AREA IS THE LOCATION OF THE LEAKING SEPTIC SYSTEM

HOME C.--PONDED WATER WHICH FORMS BESIDE THE HOUSE.

HOME C.– CIRCLED AREA IS EXPOSED CORNER OF ABSORPTION BED. WHEN THE TOILET IS FLUSHED, WATER FROM THE SYSTEM PERCOLATES TO THE SURFACE AND RUNS DOWN THE SLOPE OF THE YARD.

DRAINAGE PROBLEMS

Of the 36 homeowners we interviewed, 20 complained of inadequate drainage and 9 complained of water in their basements. During our review we noted many pools of water in streets and homeowners' yards. This condition is attributable to the high water table in the subdivision and to the poor street profiles and storm drainage facilities.

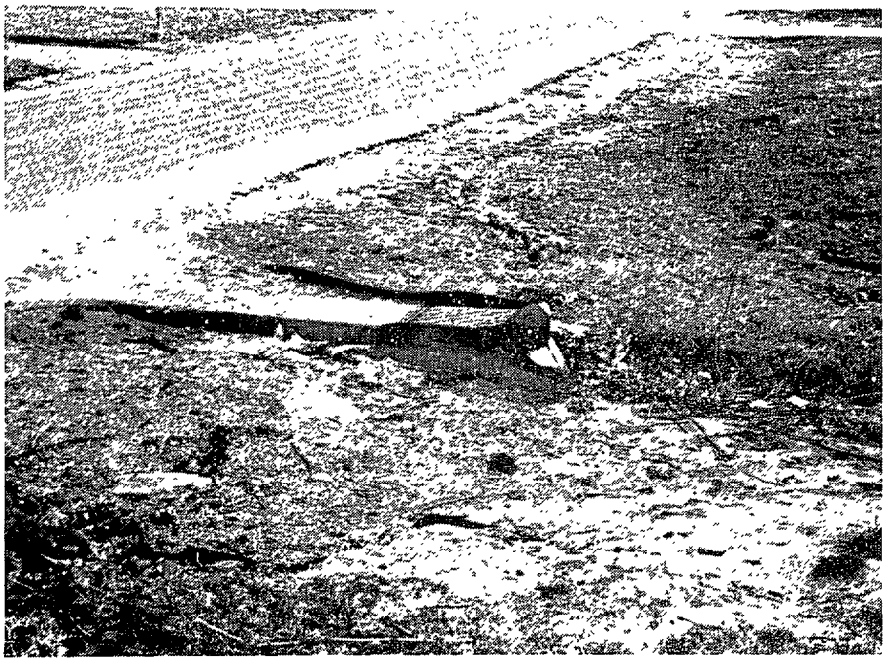
In July 1975 HUD's Boston regional sanitary engineer inspected the subdivision for reported problems concerning septic systems. His report indicated that throughout the subdivision there were over 4,000 feet of open channels with very poor drainage, as evidenced by the pools of water in culverts at road crossings and drain inlets. He said that this condition was contributing to the high groundwater table in this subdivision. A photograph showing open channel drainage is shown on page 11.

At our request the Soil Conservation Service inspected the Country Club Estates area for adequacy of surface water drainage facilities. In a letter dated December 30, 1975, the Service told us that surface water problems appeared to be the result of an inadequately installed storm water management system. The Service said that there appeared to be a lack of properly graded road ditches throughout the development. In many places surface water was not being directed to natural outlets or to installed storm drainage inlets. Further, the Service said that some existing inlets were higher than the surrounding ground and that, as a result, water ponded in low areas in and adjacent to streets.

Photographs of some of the surface water drainage problems are shown on pages 11 thru 13.

OPEN CHANNEL DRAINAGE DITCH NEAR A HOMEOWNER'S PROPERTY. A SIMILAR DITCH EXISTS AT THE REAR OF THE PROPERTY.

SURFACE WATER 2 DAYS AFTER A RAINSTORM.



STORM WATER DAMAGE TO HOMEOWNER'S FRONTYARD.

PONDED WATER SEVERAL INCHES DEEP IN TWO HOMEOWNERS' BACKYARDS.

Both the HUD Boston regional sanitary engineer and the site engineer had questioned the acceptability of the proposed subdivision site for individual septic systems. (See Chapter 3.) Their principal concern dealt with the effect of street profiles and area drainage on the existing high water table.

Because documents generally included in a subdivision file were not in the Country Club Estates file at the time of our review, we were unable to determine whether the sponsor had failed to revise its street profiles and drainage plans in accordance with the recommendations of the HUD engineers or whether the plans had been adjusted and the sponsor had failed to follow them.

KEY DOCUMENTS NOT AVAILABLE

The documents not available include (1) approved street profiles, subdivision plans and specifications, and the subdivision plan[1] and (2) processing forms and documents justifying subdivision approval.

We met with area office officials on several occasions and expressed our concern regarding the missing documents. Area office officials told us that the most probable explanation for the missing documents was that they had been removed from the files in accordance with record disposal procedures. These procedures call for destroying a subdivision file after removal of certain documents, such as exhibits relating to sewage disposal when other than public systems are used. We noted that the files for 44 inactive subdivisions--many dating back to the period of approval of Country Club Estates--were in the area office. Area office officials said that these complete files had been retained because (1) there had been complaints from homeowners and the staff needed to refer to them and (2) they were needed for general reference purposes. It is not clear why the Country Club Estates file was handled differently than the files of the 44 other subdivisions, because, even before its completion, Country Club Estates had been the source of numerous complaints. The Country Club Estates file had not been destroyed--only certain documents are missing.

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[1] A precise and detailed plan showing the proposed subdivision, special features, and users of a land area.

FAULTY SEPTIC SYSTEMS

Of the 36 homeowners we interviewed, 17 complained of faulty septic systems.

HUD guidelines provide that, in determining whether an individual sewage disposal system will adequately serve a property, consideration be given to the type of the proposed system, slope of the natural and finished grades, depth to groundwater, soil permeability[1] and type of soil to a depth of several feet below the surface, proximity of water supply sources, and the possibility of later need for system expansion. In addition, individual systems may be considered acceptable for a proposed residence only when conncection to a satisfactory public or community sewage system is not feasible and it is definitely determined that soil and site conditions are such that the system can be expected to function satisfactorily.

HUD procedures also require that septic systems be approved by local health authorities. The building inspector for the town of Merrimack inspected the septic systems of Country Club Estates for the State of New Hampshire. The State of New Hampshire Water Supply and Pollution Control Commission, to protect the health of the individual families and communities, issues requirements for installation of individual sewage disposal systems. The commission's regulations cover mainly the same items as do the FHA minimum property standards.

The diagrams on pages 17 and 18 show a typical septic system, including the absorption bed.

One town of Merrimack building inspector told us that the inspection included the size of the system, adequacy of construction, and identification of site conditions. He said that proper inspections would have caught the problems and would have led to preventing the serious condition being experienced with the septic systems. He said at the time of approval he expected the Country Club Estates area would be provided with public sewage facilities in about 4 years. He said that he had the contractor, on occasion, make changes to insure the systems would operate as well as possible. The inspector said that he had been under pressure, because (1) the foundations were in place and the houses were being framed, (2) HUD and State officials had approved the subdivision,

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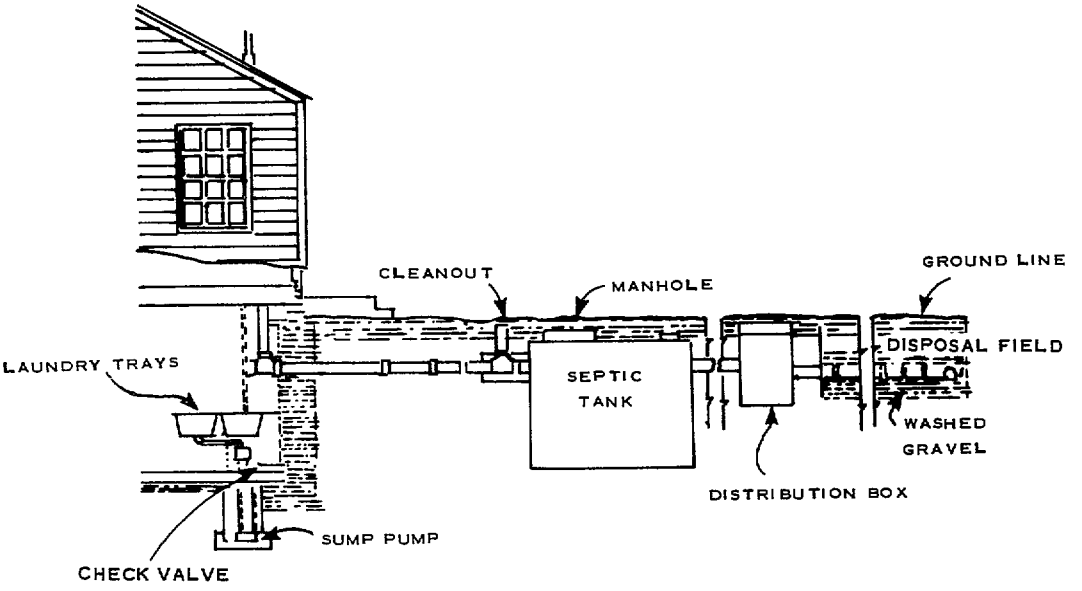
[1]A property of soil which permits liquid to pass through it.

and (3) HUD had approved the septic systems. He said that HUD inspectors had been aware of the poor site conditions in the area, yet they had approved the septic systems. The inspector said that he had rejected three systems that HUD had approved, because he believed that the systems would not function for 4 years.

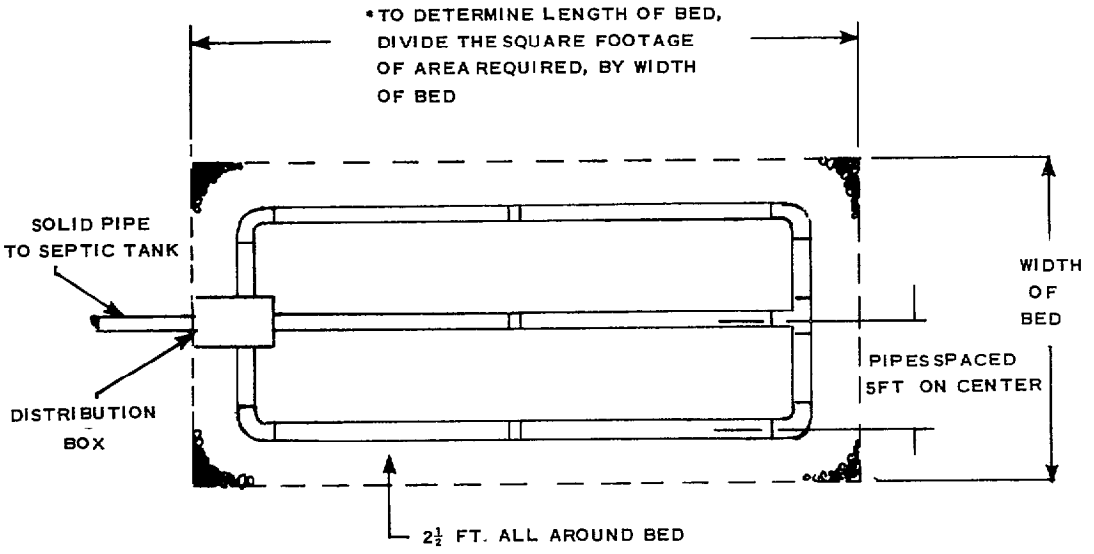
We discussed our findings on the septic systems with an official of the State Water Supply and Pollution Control Commission. He said that inspections of the septic systems at Country Club Estates had been inadequate and that proper inspections would have prevented the serious problems being experienced. He also said that the commission had improved its inspection program. He said that the commission had a larger staff than it had a few years ago and had less need to rely on local inspectors. Further, he said that is was the commission's policy to replace retiring local inspectors who acted as agents for the commission with commission inspectors. He said that the local inspectors had improved their inspection capabilities by working closely with commission inspectors.

SECTION SHOWING A TYPICAL SEWAGE DISPOSAL SYSTEM



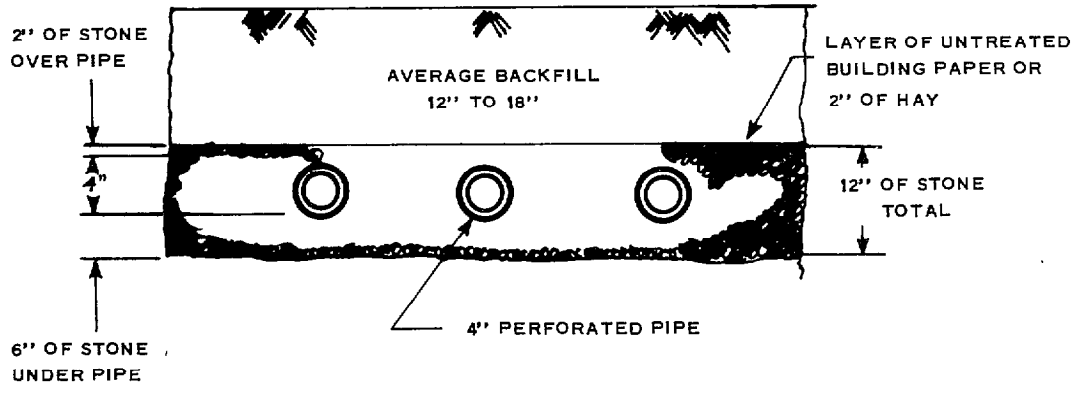
ENVIRONMENTAL SANITATION BY JOSEPH A. SALVATO, JR. MCE,PE.
1958 EDITION, PUB. JOHN WILEY AND SONS, INC. N.Y. , N.Y.

TYPICAL ABSORPTION BED



*THIS FORMULA CAN BE USED FOR ALL BEDS USING 2,3 OR MORE LINES

TYPICAL CROSS SECTION OF ABSORPTION BED



SOURCE: GUIDE FOR THE SUCCESSFUL DESIGN OF SMALL SEWAGE DISPOSAL SYSTEMS, NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION, DECEMBER 1974

The HUD inspectors told us that the septic system inspection included the septic tank; distribution box; and the size, depth of stone, and pipe construction of the absorption bed. Also they said that site conditions--depth of the water table, type of soil, and fill material--had not been closely checked because this information required too much time to establish. The inspectors said that they had relied on the information the sponsor submitted.

In September 1975 HUD authorized the evaluation of septic systems on three selected lots and the modification of those systems, if feasible. A fourth lot was later included in the evaluation.

HUD's area office retained an engineering firm to supervise and report on the evaluation and to recommend possible corrections. We hired a septic system consultant and also asked representatives of the Soil Conservation Service to independently examine soil conditions in the test area and participate in the evaluation. The septic systems were inspected on November 12, 1975. Our consultant gave us the following reasons for failure of the four systems inspected.

Lot 1--The groundwater was 1 foot below the bottom of the absorption bed and the soil between was saturated. The fill material under and around the absorption bed was composed of silt and fine sand with a clay content which had become compacted and had lost much of its porosity when run over by heavy equipment.

Lot 2--The failure of the absorption bed was due to its being located at the edge of the raised filled in backyard. There was approximately 1 foot of fill, instead of the required 10 feet, beyond the edge of the bed. There was reason to believe that extention of the fill would be only a temporary solution because the fill below the bed was poor and because the natural topsoil and the partially decayed leaves and twigs making up the forest floor had been left in place. The latter condition retarded water absorption. Also the bed was of insufficient size for the number of house occupants.

Lot 3--This bed failed because of the slow percolation of the fill composed of muck, stones, and stumps that lie directly below it.

Lot 4--The primary reason for failure was that the field was too small for the type of soil in which it was built. In addition, although the design called for a 10-foot by 30-foot

absorption bed suitable for a three-bedroom house, a four-bedroom house was constructed. Test pits indicate that the field was no wider than 10 feet. A field twice its size should have been designed.

In November 1975 the engineering firm HUD hired expressed similar reasons for the failures of the four systems and estimated that design and construction costs for necessary repairs on each lot would cost about $4,000.

Our consultant concluded that one or more of the following FHA minimum property standard violations existed in each of the four systems.

--The bottom of the absorption bed did not end in a porous formation at least 4 feet thick,

--The absorption bed was constructed in unstable, filled ground,

--The absorption bed excavation extended within 2 feet of the water table,

--The absorption bed did not contain a minimum of 12 inches of stone,

--The absorption bed was too small for the percolation rate of the soil.

Our consultant concluded that (1) failure of the septic systems had resulted from poor design and improper installation, (2) homeowners were not at fault, (3) FHA minimum property standards and State requirements had been violated in all cases, (4) designs submitted were questionable, and (5) construction inspections had been careless. He said that corrections could be made on all four systems. Each lot will require a new absorption bed as well as extensive excavation and replacement with clean fill.

To get some insight into the possible causes for the poor construction of the septic systems, we met with the representative of a contractor that had installed 147 of the systems. He told us that he was aware that the septic systems' construction was deficient but that he had no control over the action of the sponsor who had:

--Furnished 900-gallon septic tanks rather than the required 1,000-gallon tanks.

--Provided insufficient stone for the absorption bed to meet the 12-inch requirements (6 inches of stone was about average).

--Placed fill on lots with whatever soil was available and had not removed topsoil before placing fill.

--Provided some pipes and elbows which were not compatible.

--Permitted heavy trucks and bulldozers to travel over the absorption beds.

FHA's minimum property standards require that a septic tank's capacity be based on the number of bedrooms proposed or the number that can be reasonably anticipated in a house. A three-bedroom house requires at least a 900-gallon tank, and a four-bedroom house requires at least a 1,000-gallon tank. Also HUD requires that proposed septic systems be accompanied by a plot plan showing the location and essential parts of the system.

HUD approved plot plans the sponsor's engineer had submitted for individual lots for the Country Club Estates project. Our examination of 162 of these plans showed that they all specified 1,000-gallon tanks, regardless of the number of bedrooms.

A manufacturer delivered 209 septic tanks to Country Club Estates, and nearly all were 900-gallon tanks. Of the 209 manufacturer's invoices, 191 show the tank size and the designated lots but 18 did not have enough information to determine the lot designation. A breakdown, by house size, of the septic tanks delivered by the manufacturer to the individual lots is shown below.

	Number of tanks		
House size	900-gallon	1,000-gallon	Total
Three-bedroom	83	7	90
Four-bedroom	89	1	90
Undetermined	11	-	11
Total	183	8	191

As can be seen in the above table, 89 four-bedroom homes had 900-gallon septic tanks, which did not meet the FHA minimum property standard of at least a 1,000-gallon tank.

The manufacturer of the septic tanks told us that the sponsor had placed its orders by telephone. The sponsor had given the purchase order numbers, and the sizes and quantities of septic tanks and distribution boxes needed and had designated the lots where the tanks were to be delivered.

Two HUD inspectors said that the sizes of the tanks had been verified during house construction inspections. They said that the sponsor had put 1,000-gallon tanks in all houses, although such tanks were not required for three-bedroom houses. The inspectors told us that they determined the size of a tank visually.

We examined HUD's inspection reports on the 89 properties where the manufacturer had delivered 900-gallon tanks to the 4-bedroom-house lots. None of these reports indicated deficiencies in septic tank sizes.

The price of a 1,000-gallon tank was $132.00, and the price of a 900-gallon tank was $123.20, a difference of $8.80. Our consultant indicated that the tank capacities did not appear to have been a major reason for septic system failures; however, New Hampshire's regulations indicate that capacity is one of the most important considerations in septic system design. Studies have proven that a liberal capacity not only is functionally important but also is economical.

IMPROPERLY INSTALLED CHIMNEYS

Of the 36 homeowners we interviewed, 5 complained of improperly installed chimneys.

In the subdivision 169 houses heated by oil have factory-built chimneys. Such chimneys meet FHA minimum property standards, if the materials used are approved by Underwriters Laboratories and if they are installed in accordance with the manufacturer's instructions.

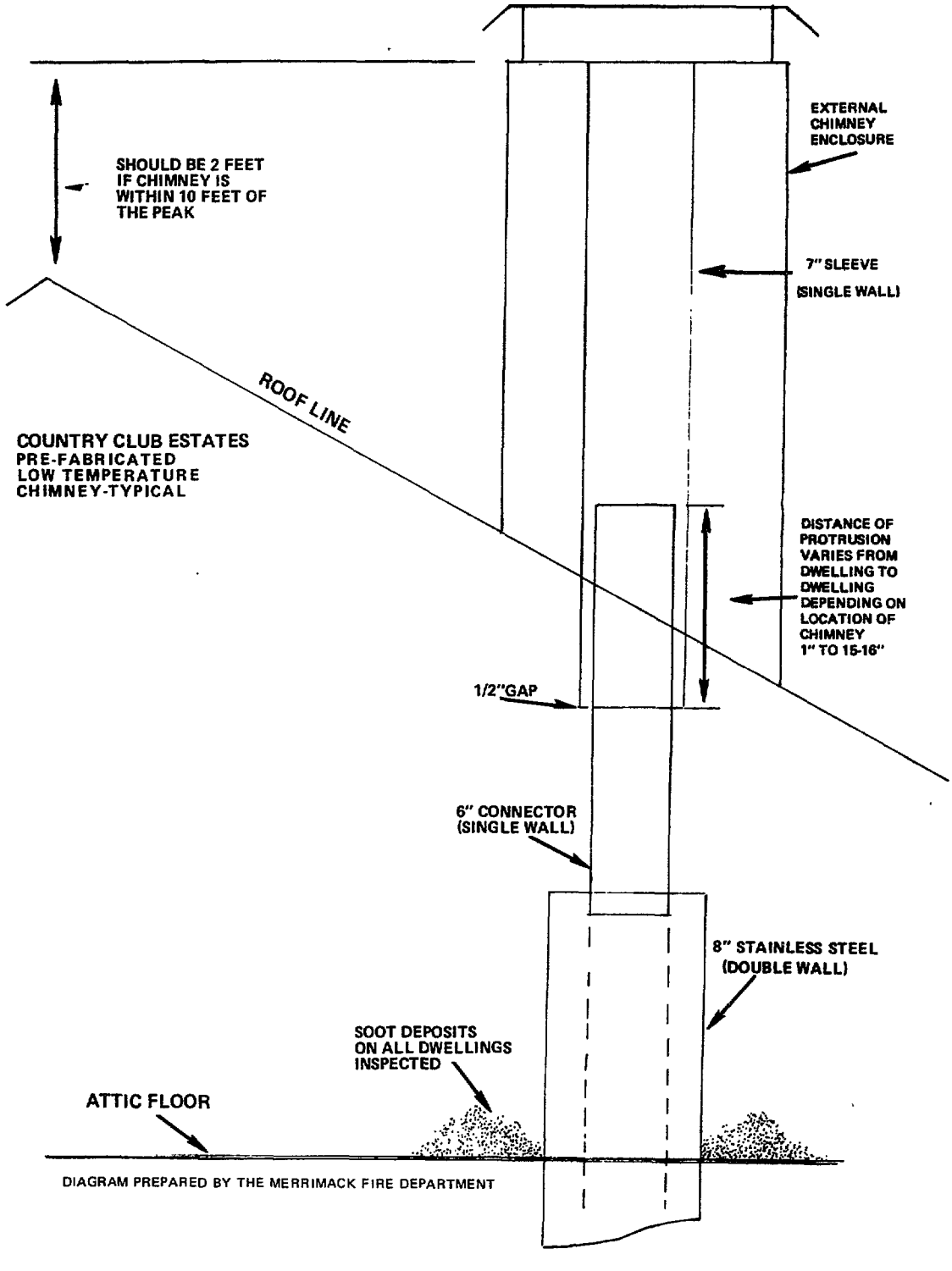
Although a subcontractor used an acceptable chimney, it was improperly installed. The factory-built chimney used in the 169 houses is made of double-wall stainless steel with insulation between the walls. The exterior diameter is 8 inches and the interior is 6 inches. This chimney must extend from the furnace through the roof and into an external chimney enclosure. In addition, it must be insulated at points where it comes within 2 inches of wooden parts of the structure. The exterior chimney, if it is within 10 feet of the peak, must extend 2 feet above the highest point of the roof.

In June 1975 the Director of the area office, in response to an inquiry from Senator McIntyre concerning chimney problems at the subdivision, said that he had heard about the chimney problem 2 weeks earlier from the town building inspector. The Director said that he had told the town inspector that this situation could be serious and that either the building inspector or the local fire department should notify each homeowner to check the installation of his chimney.

The Merrimack Fire Department later inspected 18 houses, because it had received a complaint from a homeowner that his chimney stopped in the attic and was not connected to the exterior chimney and that an area about 10 feet in diameter around the chimney was covered with about 4 to 6 inches of soot. Although the inspection did not disclose similar situations at the remaining homes, it did show that all 18 chimneys had been improperly installed.

In January 1976 we asked a HUD official what actions had been taken regarding the chimney problem. He said that the area office had taken no further action because the problem did not appear to be widespread.

The double-walled chimney in question is reduced to a single-wall piece of metal flue pipe (6 inches in diameter in the attic) which extends into a 7-inch sleeve of the exterior chimney. Where the smaller pipe connects to the larger pipe, there is a 1/2-inch gap which allows soot to escape. The Merrimack Fire Department, in a report dated January 14, 1976, said that this condition represented a fire hazard should a downdraft occur and force a hot carbon spark onto the attic floor. A fire department official told us that although under normal conditions the chance of a fire would be remote, a malfunctioning furnace would increase the chance of a fire. He also said that, if a homeowner attached a wood-burning stove, the fire hazard would be increased. In addition, the fire department reported that many of the external chimneys included in its inspection did not extend to points at least 2 feet above the highest parts of the roofs. None of these chimneys meet the minimum property standards because double-wall construction does not extend from the furnace to the roof, the chimney does not extend at least 2 feet above the highest part of the roof, and soot is allowed to escape. A diagram of the chimney installation is shown on page 24.


SHOULD BE 2 FEET
IF CHIMNEY IS
WITHIN 10 FEET OF
THE PEAK
EXTERNAL
CHIMNEY
ENCLOSURE
7" SLEEVE
(SINGLE WALL)
ROOF LINE
COUNTRY CLUB ESTATES
PRE-FABRICATED
LOW TEMPERATURE
CHIMNEY-TYPICAL
DISTANCE OF
PROTRUSION
VARIES FROM
DWELLING TO
DWELLING
DEPENDING ON
LOCATION OF
CHIMNEY
1" TO 15-16"
1/2"GAP
6" CONNECTOR
(SINGLE WALL)
8" STAINLESS STEEL
(DOUBLE WALL)
SOOT DEPOSITS
ON ALL DWELLINGS
INSPECTED
ATTIC FLOOR
DIAGRAM PREPARED BY THE MERRIMACK FIRE DEPARTMENT

In December 1975 one of the homeowners we interviewed told us that the fire department had examined her chimney and had indicated that it had been improperly installed. Later we inspected the chimney and it was obvious to us that it had been improperly installed. A fire department inspector told us that this installation was one of two his department had inspected that were considered hazardous, because sections of the chimneys were in contact with roof rafters. We told the homeowner that the fire department considered her chimney hazardous, and she, in turn, so notified the area office.

On December 12, 1975, an area office inspector examined the chimney and concluded that the insulated metal chimney was intact and that all parts were in place. However, he indicated that the chimney was very loose and could be easily moved and that there was a residue of fine soot in the immediate area of the chimney as well as in the chimney joints. On the same day the area office wrote the homeowner stating that a fire department inspector had suggested that a piece of 1/4-inch asbestos, placed between the chimney and the rafter being touched, would remove any potential fire hazard. On January 9, 1976, we accompanied an area office inspector who reexamined the chimney in question and another one. Both chimneys were found to have been improperly installed.

As a result of our efforts, on February 4, 1976, a representative of the subcontractor that had installed the chimneys and a representative of the chimney manufacturer examined the construction and installation of the two chimney systems. Both agreed that the chimneys had been improperly installed and said that they should be corrected as soon as possible. The subcontractor agreed to repair all defective chimneys at no cost to the homeowners or to the Federal Government. He estimated the repairs would cost about $60 a house.

In February and March 1976, HUD inspected the chimneys in the 169 houses with oil-fired furnaces, to determine the extent of noncompliance with HUD's minimum property standards and to record data the subcontractor required. HUD's inspection showed that all 169 chimneys had been improperly installed. The HUD inspection disclosed that the metal sections of one chimney had been installed upside down and that an attic section of another chimney was missing. Because the situation was so serious on the latter home, the chimney was repaired immediately. Repairs on the other homes were scheduled to begin in April 1976. However, on March 27, 1976, HUD told us that the subcontractor's proposal to correct the chimneys was not satisfactory, because it did not meet installation instructions and was contrary to the recommendations of the manufacturer's representative. This matter had not been resolved at the time of our review.

We discussed the chimney situation with two HUD inspectors who had made inspections during the construction of the Country Club Estates project. Both said they were aware of how the chimneys should have been installed. They said that the chimneys normally are inspected on the second or final inspection. Our examination of the inspection reports on the 18 homes that the fire department reported as having chimney problems did not show that the HUD inspectors had indicated noncompliance on chimney installations.

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After our review, we met with Hilton Development, Inc. officials to discuss the various construction problems with homes in the Country Club Estates. The officials did not offer any substantive comments.

CHAPTER 3

WEAKNESSES IN HUD'S CONSTRUCTION INSPECTIONS

HUD's inspections of both house construction and offsite improvements, such as streets and drainage systems, if adequately made, should have detected the improperly installed chimneys and septic systems. In addition, inspections of offsite improvements were not made in accordance with HUD's procedures.

Inspections of house construction and lots on which the Federal Government has made commitments to insure or guarantee loans are required to determine whether such construction complies with approved drawings and material specifications and whether minimum property standards of FHA are met. These standards set forth the minimum level of quality acceptable and are intended to insure that a property has continuing utility, durability, and desirability and that it complies with basic safety and health requirements. Concomitantly, HUD's inspections if properly made assure the home buyer that he is not purchasing a home with serious defects.

Inspections are made of offsite improvements, which are items not specifically associated with an individual lot, such as streets and drainage systems. Inspections of offsite improvements are made to insure that such improvements conform to the HUD-approved subdivision plans and specifications.

HUD is required to make at least three inspections on each new house. The initial inspection is made during preliminary construction, generally when the excavation or foundation is completed. The second inspection covers the heating, plumbing, electrical, and other items which will be concealed when interior walls and ceilings are installed. The third inspection covers all construction, including the house ready for occupancy; landscaping; and other items the plans require. In addition, HUD inspects individual septic systems.

Our review raised serious questions regarding the adequacy of HUD's inspections and approval of the construction site and the offisite improvements.

QUESTIONS CONCERNING SITE APPROVAL

Serious questions were raised concerning the feasibility of the site to accomodate individual septic systems. Because key documents were missing from HUD files, we were unable to determine how or whether such questions were resolved before HUD approved the subdivision. (See p. 14.)

In April 1970 the sponsor submitted an application to the area office for the development of Country Club Estates. The application included general subdivision information and numerous subdivision plans, including topography, street profiles,[1] drainage plans, percolation test data,[2] and a soil report.

When analyzing the data furnished with the application, HUD's chief underwriter asked for technical assistance from the Boston regional office. He asked a sanitary engineer to analyze the suitability of the area for installation of individual septic systems and a site engineer to analyze proposed street gradings and drainage facilities.

In April 1970 the Boston regional site engineer, after analyzing the plan the sponsor submitted, said that:

1. The street profiles should be adjusted. The drainage scheme, which included profiles, was not feasible as shown.

2. Groundwater would be a problem but that correction was feasible. However, feasibility would depend, to a high degree, on the sponsor's attitude toward changing street profiles and the drainage scheme. With soils prevalently so wet and slopes so flat in many instances, the groundwater problem would be augmented by sewage effluent.

In May 1970, after reviewing the plans and making a field investigation, the sanitary engineer reported that existing test pits, which were 5 feet deep, had an average of 2 to 3 feet of water in them. He concluded that the high groundwater conditions were not favorable for the continuous and satisfactory operation of onlot septic systems, especially for the initial and ultimate number of systems proposed for the area. The sanitary engineer said that an alternative which might be considered would be for the sponsor to investigate the feasibility of connecting into the town of Merrimack's proposed interceptor sewer or of constructing a community waste disposal system.

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[1]A map of a vertical section of a road or similar structure to show the original and final elevations.

[2]A percolation test measures the capacity of a soil to absorb water.

On June 5, 1970, the area office chief appraiser concurred with the recommendation of the two regional office engineers. Accordingly, he recommended to the chief underwriter that the proposal was not feasible and recommended that further consideration be given the proposal only if:

--Public sewage was feasible.

--Drainage and profiles were redesigned for proper area drainage, even with public sewers.

--Open drainage channels were eliminated, except in one area.

In June 1970 the Director of the area office told the sponsor that the area was not considered suitable for the concentrated installation and long-term operation of septic systems. He also said that further consideration would be contingent on the resolution of the items the chief appraiser specified.

The available records show that the Boston regional site engineer met with the sponsor's representative on several occasions to discuss the sponsor's plans. On June 24, 1970, he reported to the area office chief appraiser that there was no new evidence to change his April 1970 recommendations. He also said that the sanitary engineer's report pointed out that correction of groundwater conditions would be prohibitively expensive.

Although the available files contained no evidence that the initial objections the HUD site engineer raised were resolved, on August 28, 1970, the site engineer found it was feasible to build houses in sections IA and IB of the subdivision. Later 62 homes were built in these two sections.

The site engineer, who is now retired, told us that his involvement was limited to sections IA and IB. He said that, at the time he approved these sections, he had doubts that the sponsor would construct the expensive drainage scheme required by the flat terrain and the area's poor hydraulics. In addition, he said that it had not been the general practice of the area office to get involved with street and drainage improvements.

On October 30, 1970, the area office approved sections IA and IB. The sponsor was told that additional applications would be accepted for mortgage insurance on individual properties.

Our review showed that the area office had not formally approved the balance of the subdivision. It accepted applications on an individual-house-lot basis. On March 19, 1971, the Director of the area office told the sponsor that the office would accept applications for mortgage insurance on 25 lots in section IC on the condition that the New Hampshire Water Supply and Pollution Control Commission accepted the lots for septic system installations. It appears that this practice was followed for the remaining houses developed in the project.

The commission inspected the proposed Country Club Estates project site before approval by HUD. A commission representative said that he was aware of the poor site conditions mentioned by HUD's site engineer and sanitary engineer. He said that the lots, in his opinion, could have been made acceptable for septic systems, if the sponsor had taken the necessary steps to improve the storm drainage facilities and/or had added fill material to raise the absorption bed on certain house lots.

The commission required that construction plans for individual lots and plot plans submitted by the developer be approved by it. These plot plans showed the locations of the houses, septic tanks and absorption beds and included data on percolation tests, depth of the water table, soil conditions, and the distances to the nearest body of water. An official of the commission said that the Country Club Estates plot plans were approved by it, on the basis of the information the sponsor submitted without verification.

Regarding the questions raised about the feasibility of the site, the Director of the area office said that he was under tremendous pressure from HUD's Washington office and regional office to build as many housing units as possible at the time the area office was considering the Country Club Estates proposal. He said that the area office had not approved any areas that obviously were not suitable for development. Also he said that the area office's review of the Country Club Estates proposal had not disclosed any information that was overwhelmingly against its approval.

INSPECTION OF OFFSITE IMPROVEMENTS

HUD's procedures for inspecting offsite improvements require the inspectors to pay particular attention to such improvements, to insure that sound planning and construction practices are followed. Under this procedure street inspections are made in three phases--subgrade, base grade, and the completed street. The drainage inspection, usually

made in the subgrade phase, includes location of manholes, catch basins and inlets, and location and details of surface drainage channels shown on approved drawings. In addition, when they make the final inspection on an individual property, inspectors are required to report on completion of offsite improvements.

The Country Club Estates subdivision file contains only one subdivision inspection report. The report dated April 27, 1972, indicated four problem areas.

Lot number	Problem
77	Catch basin too high to allow low spot to drain. Muddy, swampy area created.
17	Same as lot 77.
28	Standing water 12 to 18 inches over a large area will kill trees and create a swamp, if allowed to remain.
509, 510, and 511	This swamp must be drained.

The photographs on page 32 show the swamp mentioned above.

We discussed the above report with the now-retired HUD inspector who prepared it and he said that, to his knowledge, the problems noted in his report had not been corrected. These same problems existed at the time we made our observations.

Another inspector said he had made several additional subdivision inspections at Country Club Estates that disclosed problems with streets and catch basins. He said that the sponsor had made the necessary corrections. These reports are not in the subdivision file.

This inspector said that the drainage problems were caused by the streets' being higher in some locations than the house lots. He said that the inspectors had been unable to anticipate problems from looking at rough-cut streets as they did not know what the final grade would be. The HUD inspector told us that required completed-street inspections generally had not been made because the inspectors had been more concerned with onsite construction activities than with offsite improvements.

SWAMP BEHIND LOTS 509, 510, AND 511. THIS AREA ON SUBDIVISION PLAN IS DESIGNATED AS A PARK.

Action not taken to insure proper completion of offsite improvements

HUD requires that offsite improvements be completed before mortgage insurance is approved, or, if completion is unavoidably delayed beyond the completion date of the onsite improvements, adequate assurance of such completion must be obtained, as follows:

--When completing improvements is the responsibility of the municipal or governmental authority having jurisdiction, a statement from the appropriate authority that the improvements will be completed according to the approved plans and specifications on or before an acceptable date shall be furnished. This statement must be signed by an authorized officer of such authority.

--When completing improvements is the responsibility of an individual sponsor or subdivider, an escrow agreement providing for the deposit of an amount of money with an acceptable corporate escrow agent to insure the completion of all work involved shall be furnished. HUD must review the escrow agreement to insure that the amount is sufficient, and construction must be acceptably completed before HUD approves release of the escrow money.

HUD's final inspection reports for houses in the subdivision indicate that offsite improvements had not been completed and that completion was to be insured by the town of Merrimack. Because the sponsor was responsible for completing all offsite improvements, HUD should have required the establishment of an escrow account to insure the completion of all required work. This was not done.

An area office official told us that the area office had not followed the above procedures because the offsite improvements would become the property of the town of Merrimack.

We believe that the area office should have followed HUD's procedures which required an escrow agreement signed by the sponsor.

CONCLUSIONS

Many of the homeowners who purchased homes in the HUD-insured Country Club Estates project are plagued by such problems as inadequate drainage, faulty septic systems, and

improperly installed chimneys. These problems affect the livability of the homes and the health and safety of the occupants and cannot readily be repaired or corrected by the homeowners.

Under the HUD-administered section 235 program, homes are made available to low- and moderate-income families, many of whom would not otherwise be able to afford homeownership. Selling homes with major defects requiring expensive repairs tends to defeat the objective of providing homes to low- and moderate-income families. The financial constraints of the low- and moderate-income families may be such that they are unable to afford repairs and have no choice other than to abandon the homes. If so, this results in additional costs to the Federal Government to manage and dispose of the vacant properties.

HUD inspections of the homes which are approved for mortgage insurance are required during construction, to insure that materials and construction practices meet FHA minimum property standards and that the construction is in accordance with approved plans and drawings. Concomitantly, HUD inspections if properly made assure the homeowner that he is acquiring a home that is free of serious structural defects.

We believe that the serious and widespread problems with septic systems, surface water, water in basements, and improperly installed chimneys that exist at Country Club Estates could have been detected and corrected if HUD inspectors had adequately followed HUD's construction inspection procedures.

With respect to the destruction of documents in the subdivision file in accordance with HUD's record disposal procedures, we believe that such files should be retained for a minimum of 4 years--the period specified in section 518(a) for requesting financial assistance for structural defects.

RECOMMENDATIONS

We recommend that the Secretary of HUD insure that responsible department officials are made aware of the problems discussed in this report in an effort to prevent similar problems in future projects constructed under the reactivated section 235 program.

We recommend further that the Secretary of HUD direct that subidivision files which include plans and drawings relating to project approval be reatined for a minimum of 4 years, so that responsibility for structural defects evident at HUD-insured projects can be assessed.

AGENCY COMMENTS

The Assistant Secretary for Housing, in commenting on this report (see app. II), agreed with our recommendations. He said that he recognized the need for additional training of field personnel and that a 2-day training program on handling homeowner complaints and processing requests for financial assistance under section 518(a) had been developed for presentation to the field staff.

The Assistant Secretary also agreed to require that plans and drawings relating to project approval be retained for 5 years.

CHAPTER 4

IMPROVEMENTS NEEDED IN RESOLVING HOMEOWNER COMPLAINTS

The area office did not follow HUD's prescribed procedures in handling homeowners' first-year complaints nor had it met its obligation to assist homeowners in obtaining financial assistance under section 518(a) of the National Housing Act. Consequently, many homeowners are dissatisfied with their houses, and this increases the risk of mortgage defaults.

We believe that the area office's failure to take aggressive action to require the sponsor to correct known defects during the warranty period will result in a large Federal expenditure under section 518(a). The full amount of this expenditure is not currently known, because only a few requests for assistance under 518(a) had been processed at the time of our review.

CONSTRUCTION COMPLAINT PROCEDURES

HUD policy requires prompt, courteous, and aggressive action to resolve homeowner complaints expeditiously and satisfactorily. HUD procedures require the homeowner to notify the builder and HUD, in writing, of any complaints within 1 year of occupancy--the period during which the builder's warranty is binding on justifiable complaints. If the complaints have not been satisfactorily corrected by the end of the year, HUD can process a request for financial assistance under section 518(a).

According to HUD a structural defect is a major failure which threatens the structural components of a house, including such items as foundation, floors, framing, or roof, and which seriously affects the livability of the property. In September 1973, HUD broadened the meaning of major failure to include such things as dangerous wiring, basement flooding, and septic system failure.

Upon receiving a complaint, the HUD complaints officer is required to notify the builder, in writing, and to request a reply. After the builder replies that it either has taken or plans to take corrective action, HUD must notify the homeowner, in writing, and close the complaint case. Presumably, the homeowner will resubmit his complaint if the repair work was not done satisfactorily.

When the builder does not make the repairs, the complaints officer is required to notify the builder that future applications involving it as a builder of properties intended for sale or rental under HUD programs will no longer be accepted. Subsequently, the homeowner is to be advised that HUD will accept an application for financial assistance under section 518(a).

Upon receipt of a homeowner's application for financial assistance, the complaints officer determines administrative eligibility--whether the homeowner is properly insured, has made reasonable efforts to obtain correction from the builder, and has filed his request within 4 years after the effective date of the insurance. If the homeowner is ineligible, the application is returned with a letter citing the reason for the rejection. If the homeowner is determined eligible, the property is inspected and all pertinent information on the defect is forwarded to HUD's Structural Defects Committee. The Structural Defects Committee, composed of five members of HUD's Housing Production and Mortgage Credit Division, determines the homeowner's eligibility, the type and amount of assistance for which he is eligible under section 518(a), and whether he will be given such assistance. If such assistance is approved, the area office tells the homeowner of the type and amount of assistance and how it will be made available. If assistance is disapproved, the homeowner is so notified.

SPONSOR FAILED TO CORRECT REPORTED DEFECTS

Because homeowners were dissatisfied with the sponsor's effort to make necessary corrections of reported defects, the area office met with the sponsor in August 1972, at which time the sponsor agreed to make a special effort to quickly complete all necessary repairs. In April 1973, 8 months later, the area office notified the sponsor that 46 complaints--many outstanding for 6 months or more--had not been closed and threatened to place it on the regional precautionary list.[1] The sponsor again, in May 1973, assured the area office that corrections would be made expeditiously.

During September and October 1973, more than a year after the sponsor's promised corrective action was to have been completed, the area office reported that actions taken

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[1]Currently called the unsatisfactory risk determination list. A sponsor on this list is ineligible for HUD mortgage insurance.

by the sponsor were either inadequate or unsatisfactory. The records indicate that two of the sponsor's letters said that 16 corrections had been made, whereas the area office found that only 8 were acceptable. The area office again told the sponsor that it would be placed on the regional precautionary list and asked that all 23 outstanding complaints be corrected by November 1, 1973. In early November 1973, the complaints officer reported that all but one complaint was resolved.

Homeowner complaints not resolved

Our review of homeowner's complaints showed that they had not been resolved satisfactorily and that many reported defects had not been corrected. Seventeen homeowners told us that they had complained to the area office during the warranty period about problems with septic systems, water in basements, and surface water. We selected 9 of the 17 complaints for review. Although documentation on HUD's followup on the complaints was limited, we found that the sponsor had made some attempt to correct six problems, but the homeowners were dissatisfied as the action taken by the sponsor was ineffective or superficial. The area office had no records of two complaints. The area office first recorded another complaint in April 1974 but has been unsuccessful in getting the sponsor to make repairs. At the time of our review, the area office was processing a complaint under section 518(a) about a septic system failure. (See p. 44.)

HUD procedures require that a homeowner be notified, in writing, that the builder is not responsible for resolving the complaint or that the builder either has taken or plans to take corrective action. The complaints officer told us that such letters had not been sent to any homeowners because he had not known of the requirement. He told us that he had done his best to satisfactorily resolve complaints and believed that, despite our findings on some of the complaints, all complaints had been resolved. He said that he was the only person handling complaints and that he did not document the files, contrary to the requirements set forth in HUD's complaints handbook, because he did not have the time.

We believe that the homeowners should be advised of any actions taken or promised by the sponsor concerning their complaints. By this means HUD can monitor the actions of the sponsor, particularly when the repairs were not done or were unsatisfactory.

The complaints officer who handled most of the complaints of Country Club Estates homeowners had previously made construction inspections of these houses and/or had approved inspection reports prepared by other area office inspectors. It appears to us that good management practices would preclude the same individual from making construction inspections and later evaluating the merits of homeowner complaints as the complaints officer. The performance of these duties by different individuals would better assure that homeowners complaints are handled fairly and objectively.

DELAYS IN IMPLEMENTING SECTION 518(a)

Under section 518(a) of the National Housing Act, HUD is authorized to provide financial assistance to homeowners for correction of structural defects. Although it is too early to assess the adequacy of HUD's effort to process all the applications for section 518(a) assistance, we noted numerous instances when, we believe, the area office had misled and discouraged homeowners from seeking assistance. The area office:

--Did not promptly inform homeowners about the availability of section 518(a) financial assistance.

--Did not process homeowner's applications promptly.

--Classified homeowners' problems as maintenance or as being outside the scope of available HUD assistance.

--Rejected homeowners' applications for financial assistance without authority.

Homeowners were not aware of section 518(a) program

As discussed on page 5, the Community Development Committee developed data which showed that 140 homes were having problems with septic systems, surface water drainage, and water in the basements. The area office did not take necessary actions to evaluate and resolve the homeowner complaints nor did it advise the homeowners of the availability of the section 518(a) financial assistance.

Of the 36 homeowners we interviewed, 30 had learned about the 518(a) program through either the Community Development Committee or a joint letter sent by Senator Thomas J. McIntyre, Senator John A. Durkin, and Congressman Norman D'Amours to each Country Club Estates homeowner on

October 17, 1975. Only three of the remaining six homeowners had learned about the program from HUD.

Homeowners' applications not processed promptly and effectively

Homeowners in the Country Club Estates project told us that they had had septic system failures as early as 1971. Although the area office had been aware of septic system problems since 1973, it did not promptly assist homeowners under section 518(a). Instead, the area office continued to pursue the sponsor for correction even though its performance in resolving homeowner complaints had been unsatisfactory.

In April 1975 the area office and the Boston regional office processed one application for repairs to a septic system. The application was returned to the regional office by the Structural Defects Committee three times for additional information, and in May 1976 the Committee approved a reimbursement of about $1,800 to the homeowner for repairs. In August 1975 the area office processed 15 additional applications for section 518(a) assistance--14 for septic system failures and 1 for water in the basement. The area office recommended that the failing septic systems be corrected by enlarging or replacing the existing absorption beds at an estimated cost ranging from $350 to $1,000 each.

As discussed in chapter 2, in September 1975 HUD authorized the evaluation of septic systems on four selected lots and the modification of the systems, if feasible. Lessons learned from the four septic systems were to be applied to the remaining systems. The reasons for failure of the four systems were determined, and corrective action was to be taken. In March 1976 the Boston regional office forwarded the remaining 10 complaints to the Committee. As of May 20, 1976, the Committee had approved repairs for nine complaints and was reviewing the remaining complaint. The homeowner who had water in the basement was reimbursed for the repairs he had made. This homeowner installed an underground pipe to the street. The discharged water, however, now accumulates and freezes on the street during winter months, creating a hazard for motorists and pedestrians.

Initially the area office rejected 22 requests for financial assistance--14 because the homeowners had not filed within the 4-year eligibility period and 8 because the area office did not consider the defects to be structural.

The area office complied with its regulations on the 14 applications rejected because the applications had not been filed within the 4-year eligibility period. However, in a letter dated March 29, 1976, HUD's Assistant Secretary for Legislative Affairs told Senator McIntyre and Congressman D'Amours that:

> "Ordinarily, those seeking relief under Section 518(a) must request assistance from HUD within four years of insurance of the mortgage. In the case of this subdivision, however, HUD has taken the position that it will consider for assistance under Section 518(a) any homeowner who had made a complaint, oral or written relating to structural defects within the applicable four year period."

The area office exceeded its authority in rejecting the eight cases in which it did not consider the defects to be structural, because responsibility for this type of determination rested solely with the Structural Defects Committee. The Committee instructed the area office to reopen these applications and to forward them to the Committee for its review.

The area office had classified major problems with surface drainage, water in basements, and chimney defects either as maintenance or as being outside the scope of available HUD assistance.

In a letter dated March 31, 1976, the Structural Defects Committee told the HUD Boston Regional Administrator that there had been an unacceptable delay in the area office's processing and forwarding of section 518(a) cases to the Committee for action. The Committee said that the quality of processing in the cases received to date must be judged as poor.

As of April 15, 1976, 70 additional homeowners had filed for financial assistance under section 518(a). The principal complaints of these homeowners concerned septic system failures, surface water drainage, and water in basements. Of the 70 homeowners, 36 are seeking assistance for septic system failures.

The status of these 70 cases is as follows:

Forwarded to the Boston regional office	33
Awaiting inspection by the Boston regional sanitary engineer	23
Awaiting inspection by the area office	11
Rejected because house was not insured by HUD	3
Total	70

Homeowner complaints

The area office's lack of prompt and effective action in getting the sponsor to correct construction deficiencies and provide assistance to homeowners under section 518(a) is illustrated in four examples below.

HOMEOWNER A--The homeowner wrote the area office on May 10, 1972, about 6 months after purchasing the property, concerning construction problems, including poor drainage and foundation cracks. On June 6, 1972, the homeowner forwarded to the area office a construction complaint itemizing these problems.

On June 9, 1972, the area office forwarded the homeowner's complaint to the sponsor, stating that HUD had not made an inspection. Although the area office asked the sponsor to respond to each complaint item by June 23, 1972, there is no evidence in HUD's files that the sponsor replied.

On June 26, 1972, the area office inspected the property and wrote the sponsor that it was the sponsor's responsibility to:

--Properly regrade the frontyard, to eliminate pooling of water on lawn areas on both sides of the driveway.

--Correct improperly installed cellar door and doorframe.

--Correct excessive separation of the hardwood floor at the front entry.

--Replace damaged exterior plywood siding.

The area office inspector considered the foundation and floor cracks as minor and not the sponsor's responsibility. The area office asked the sponsor to tell the office, within 10 days, the approximate dates the sponsor planned to start and complete the work. There is no indication in HUD's files that the sponsor replied to this request.

In April 1973, about 10 months after filing his initial complaint, the homeowner again complained to the area office. In May 1973 the sponsor told the area office that the homeowner's problems had been corrected and asked for an inspection to close the case. The files do not indicate whether HUD made the inspection.

We visited the homeowner's property during a rainfall in December 1975 and saw 2 to 3 inches of water over a large area of the frontyard. The homeowner told us that the ponding water had been a continuous problem since the spring of 1972. According to the homeowner, runoff flows onto his lot before it reaches the existing drainage facilities. The homeowner also told us that, although the sponsor had delivered some fill material, the land remained well below the street level and that ponding water still was a problem. The homeowner told us that the sponsor had put a filler in the foundation cracks but that the filler had dried and flaked off.

The homeowner further told us that he might have a septic system problem since there was an unpleasant odor in the basement and outdoors. He said that the septic system fluid was seeping into the basement drains and was being pumped from the basement to a rock-filled barrel about 45 feet from the foundation.

In November 1975 the homeowner submitted a request to the area office for financial assistance under section 518(a), which included six items. After inspecting the home, the area office considered two items--the septic system and the surface water problems--to be structural defects which affected the livability of the home. The area office recommended to the Structural Defects Committee that the yard be regraded to direct the flow of the water away from the foundation and to prevent flooding of the front and side lawn areas. The area office considered four items--foundation cracks, water in the basement, chimney problems, and debris left on property by the sponsor--to be nonstructural and therefore not HUD's responsibility.

The homeowner said that the inspector had not examined the chimney. The inspector told us this was true. He said that he could make his decision without examining the chimney. Later, however, he acknowleged that he should have examined the chimney. On March 26, 1976, the area office forwarded this case to the Boston regional office, recommending approval of the septic system and surface water drainage problems for HUD assistance. The Boston regional

office forwarded the case to the Structural Defects Committee on April 7, 1976. The case was under review at the time of our fieldwork. Action on chimney problems has been initiated on a projectwide basis. (See p. 25.)

HOMEOWNER B--The homeowner told us that he telephoned the area office in April 1974, about 26 months after the insurance commitment date, and reported that the septic system fluid was leaking to the surface. The Boston regional sanitary engineer inspected the property on May 21, 1974, and reported that a bog area behind the property was used as a holding area for surface runoff. Also he said the area was used for the septic system. He said the hydraulics of the drainage ditches was poor, resulting in standing water at the rear of the property. He observed that water beneath the septic system absorption bed and surface water flowing over it prevented the system from working satisfactorily. He recommended adding a leaching trench to the existing field and changing the drainage system to eliminate surface water from crossing the absorption bed.

The area office wrote the sponsor on May 30, 1974, asking what it intended to do to correct homeowner's problems. In a reply dated June 7, 1974, the sponsor said that it would like to be of assistance but that its responsibility had ended with the expiration of the 1-year warranty period. On June 19, 1974, the homeowner submitted a construction complaint to the area office. Subsequently the complaints officer, the Boston regional sanitary engineer, and the town inspector proposed enlarging the leach field by installing two trenches. The homeowner, dissatisfied with the proposed solution, called in the State commission which requested new data, including the results of test pits and percolation tests and a system plan.

On October 23, 1974, the area office again contacted the sponsor and asked to be told its position on the matter not later than November 18, 1974. The sponsor replied on December 10, 1974, wanting to know the regulation specifying that a builder was required to give a 4-year warranty on a septic system as the sponsor was aware of only the 1-year warranty.

In April 1975 an area office official visited the property and observed that the same problem--septic system fluid was still surfacing at one end of the absorption bed and was visible and malodorous. He again recommended installing trenches to relieve the absorption bed overflow.

On May 20, 1975, the area office contacted the sponsor and said that permission had been received from the State commission to make repairs to the system without a requirement for new data. Accordingly, the sponsor was asked to submit a written report stating its position by May 30, 1975. HUD files do not indicate whether the sponsor responded.

In April 1975, 1 year after the initial complaint, the area office sent the homeowner the forms for requesting assistance under section 518(a), and in August 1975 it forwarded this case to the Boston regional office for processing. In March 1976 the regional office forwarded the request to the Committee which authorized $3,500 for repairs in April 1976.

We visited the home on December 15, 1975, and observed problems with the septic system, water in the basement, and surface drainage. We noted the absorption bed area was spongy and bright green; leakage was visible and there was a foul odor.

HOMEOWNER C--The homeowner submitted a complaint to the area office dated June 12, 1972--about 11 months after he moved into the property. The homeowner complained of an open ditch beside the house, which was a breeding place for mosquitos and which had a foul odor.

On June 14, 1972, the area office forwarded the complaint to the sponsor, requesting its position, in writing, before June 29, 1972. HUD files do not indicate the disposition of this matter.

The homeowner told us the sponsor had placed pipes in a small section of the ditch and had filled it in. The sponsor, however, had promised to do this to the entire ditch. The sponsor said a HUD representative had visited the property and told him that the condition was an eyesore, unhealthy, and a problem; however, no further action has been taken to correct the condition. The complaints officer told us that brush and debris prevented proper drainage. Although the complaints officer said the problem was caused by a lack of maintenance, the homeowner said that HUD had never told him that the problem was one of maintenance. Also he said that he and his neighbor had cleaned debris from the ditch; however, despite the cleaning, the water did not flow properly.

We visited the property in September and December 1975 and again in April 1976, and on each visit we observed standing water in the drainage ditch.

HOMEOWNER D--The homeowner told us that he telephoned the area office on April 15, 1975, about water entering the basement from two foundation cracks and a problem with the septic system. The homeowner's 1-year builder's warranty period expired in January 1973.

On April 23, 1975, an area office inspector, a town building inspector, and the HUD Boston regional sanitary engineer visited the home. The HUD inspector reported that a sump pump was operating to keep the basement dry but that the homeowner could help with the water problem by filling in low spots around the foundation. The report stated that there was no evidence of any surfacing of septic fluid, except that the surface area above the absorption bed was somewhat damp and that water appeared when the ground was tamped.

On May 12, 1975, the homeowner submitted a request for financial assistance under section 518(a). The homeowner complained about water in the basement from foundation cracks, a septic system problem, and several minor items. On July 10, 1975, the area office wrote the homeowner that his request was ineligible because (1) there is no visible evidence that the absorption bed was failing and (2) the remaining items did not affect livability and should have been reported within the 1-year builder's warranty. The complaint case was closed on July 8, 1975. The area office rejected this homeowner's request for assistance even though it did not have the authority to do so; this authority rested with HUD's Structural Defects Committee.

On November 5, 1975, the homeowner again wrote to the area office about the same items. On December 4, 1975, the complaints officer and the Boston regional sanitary engineer examined the property and found that the absorption bed was failing. The complaints officer reported that water did seep through the doorway to the basement and through foundation cracks but that he did not consider the problem to be a structural defect because of poor grading around the foundation and excess amounts of iron oxide in the groundwater, which he believed clogged the foundation drainage system located beneath the basement floor. The drainage system consisted of a pipe with small holes that collected water under the foundation. Water in the pipe flowed to a sump hole in the basement floor from where it was pumped to the outside.

The complaints officer, on January 16, 1975, explained to us that the septic system problem had been reopened

because a Structural Defects Committee representative told him that wetness over the absorption area was a sign of septic system failure. The complaints officer said that the water in the basement was not a structural defect because the problem did not affect livability to the point that the homeowner would have to move out of the house but that it was a maintenance problem.

On March 9, 1976, the complaints officer and an assistant town of Merrimack building inspector found that septic tank waste had backed up into the cellar through a washing-machine drain. The Structural Defects Committee subsequently authorized HUD to pay for the septic tank to be pumped out periodically until the absorption bed could be repaired. On March 23, 1976, the area office forwarded the homeowner's request for assistance to the Boston regional office, recommending installation of a new leaching system. At the time of our review, the request was still pending.

We visited the homeowner's basement in December 1975 and April 1976 after rainstorms. On the first visit, we observed 2 inches of water over a large area, including the area around the furnace. On the second visit, 2 days after a moderate rainfall, we observed a similar water condition as well as septic system waste which had backed up into the cellar through a washing-machine drain and which covered a large part of the laundry area. A photograph showing water leakage into the basement is on page 48.

HOMEOWNER'S BASEMENT WITH ABOUT 2 INCHES OF WATER AT THE TIME OF OUR APRIL 1976 VISIT. THE HOMEOWNER REPORTS THAT THIS OCCURS AFTER EVERY RAINSTORM.

CONCLUSIONS

HUD's stated policy requires prompt, courteous, and aggressive action to expeditiously and satisfactorily resolve homeowner complaints.

Many of the homeowners' complaints in Country Club Estates were not satisfactorily processed by the area office. As a result, many homeowners are dissatisfied with their homes. Also they do not have the funds for making the costly repairs needed to make the homes livable. The area office did not

--followup with written letters to homeowners to let them know what the sponsor planned to do about reported complaints, contrary to HUD's procedures,

--maintain adequately documented files on disposition of homeowners' complaints,

--promptly notify the homeowners of the financial assistance available under the section 518(a) program, and

--promptly process homeowners' applications under section 518(a).

The complaints officer who handled the homeowners' complaints had previously made construction inspections and/or approved inspection reports prepared by other inspectors. If these duties were carried out by different individuals, homeowners would be better assured that their complaints will be handled fairly and objectively.

HUD's failure to require the sponsor to correct known defects that are covered by the builder's warranty will result in large Federal expenditures under section 518(a). The extent of this liability is not known because only a few requests for assistance under 518(a) were processed before our review.

RECOMMENDATIONS

We recommend that the Secretary of HUD require that homeowner complaints in the Country Club Estates project be handled promptly and that eligible requests for assistance under section 518(a) be disposed of promptly, to insure that all structural defects are satisfactorily corrected. We recommend further that the Secretary direct that the duties of construction inspectors and complaints officer not be performed by the same individual.

AGENCY COMMENTS

The Assistant Secretary for Housing agreed with our recommendations and has taken or has agreed to take the following actions.

To speed up processing of section 518(a) requests, the central office function will be decentralized directly to the field offices. The area office has been authorized to contract for repairing defective chimneys eligible under section 518(a). Repairs, and some interim septic tank pumping, have also been authorized for all failing septic tank systems.

The Assistant Secretary said that the duties of the construction inspector and complaints officer no longer would be carried out by the same person and that HUD would continue its effort to correct all eligible defects in the Country Club Estates project.

APPENDIX I

COMMITTEES:
ARMED SERVICES
CHAIRMAN: SUBCOMMITTEE ON RESEARCH AND DEVELOPMENT
BANKING, HOUSING AND URBAN AFFAIRS
CHAIRMAN: SUBCOMMITTEE ON FINANCIAL INSTITUTIONS
SELECT COMMITTEE ON SMALL BUSINESS
CHAIRMAN: SUBCOMMITTEE ON GOVERNMENT REGULATION

United States Senate
WASHINGTON, D.C. 20510

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August 7, 1975

Honorable Elmer B. Staats
Comptroller General of the United States
General Accounting Office
Washington, D. C. 20548

Dear Mr. Staats:

We are writing to request a G.A.O. investigation of the role of the Department of Housing and Urban Development in connection with a Section 235 housing development known as Country Club Estates in Merrimack, New Hampshire.

This development is made up of approximately 250 houses, although it was originally planned to be twice that size. It has been plagued by widespread and serious problems; chronic septic system failures and construction defects including foundation cracks, pipes to septic fields which were never connected, and furnaces not connected to flues. In addition, the project has a very serious problem with surface water runoff which aggravates the septic problems and causes substantial erosion of roads and lawns as well as basement flooding.

Residents of the development have been working with the community on an application for community development funds to start work on a storm drainage system. This will help, but is by no means an answer to the many troubles of the residents.

We have visited the development and are shocked by the conditions there. Our offices have been working with the residents to assist them in getting relief. This experience has raised some fundamental questions which we wish to have G.A.O. pursue.

1. Did H.U.D. exercise proper supervision over the siting and construction of the development? The soil on which Country Club Estates was built is not suitable for septic systems, yet this very large development was constructed. Moreover, serious defects in construction have been found. Could these problems have been forestalled?

2. Has H.U.D. met its obligations in terms of assisting complaining homeowners? Residents allege that those who have made complaints by telephone have never been advised of the procedures for filing formal complaints; or that they have been discouraged from pursuing those claims. Many of the residents are not aware of their rights under Section 518(a).

APPENDIX I

Honorable Elmer B. Staats August 7, 1975

3. What recommendations can be made for avoiding this type of problem in the future, and what can be done for the residents of this development, if in fact the Department of Housing and Urban Development has not fulfilled its obligations?

Our staffs have received substantial information from residents of Country Club Estates, and will shortly be in touch with your staff to arrange for a complete briefing.

We hope that an investigation and recommendations can be forthcoming soon. The problems of Country Club Estates have been lingering on for several years, and its residents feel that the Federal government has first failed them and then ignored them.

Thank you for your assistance.

Sincerely,

Norman D'Amours
Member of Congress

Thomas J. McIntyre
United States Senator

APPENDIX II

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20410

OFFICE OF THE ASSISTANT SECRETARY FOR
HOUSING-FEDERAL HOUSING COMMISSIONER

IN REPLY REFER TO:

AUG 16 1976

Mr. Henry Eschwege
Director
Community and Economic Development
Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

Secretary Hills has asked me to reply to your letter of July 14, 1976, concerning your proposed report on Construction Problems with Country Club Estates - a Section 235 Project.

We have carefully reviewed the draft report and are in general agreement with its content.

During the past several years, the Structural Defects Committee has observed a need for additional training of field office personnel in handling homeowner complaints and processing Requests for Financial Assistance under Section 518(a). A two day training program on the subject has been developed and has been presented to many of our field offices. In a further attempt to speed processing of 518(a) requests, the Central Office function is being decentralized directly to the field offices.

Your recommendation that the duties of construction inspector and complaint officer not be performed by the same person is accepted. We will also retain certain architectural/engineering exhibits for five years.

The Manchester Area Office has been authorized to contract for repair of defective chimneys eligible under 518(a). The Structural Defects Committee has also authorized repairs, and in some cases interim septic tank pumping, on all failing septic tank systems that have been submitted. We will continue our effort to authorize correction of all eligible structural defects in Country Club Estates.

APPENDIX II

We appreciate the efforts of the General Accounting Office and assure you that we will exert maximum effort to impress upon our offices the need for prompt handling of homeowner complaints and expeditious processing of Requests for Financial Assistance.

Sincerely,

John T. Howley for

James L. Young
Assistant Secretary

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