Town Copy

1435

ROWE & WENDELL
179 Main Street
Waterville, Maine 04901
ENGINEERING 207-873-5808 SURVEYING

Steve and Dawn Carey
R 3 Box 67
Augusta, Me. 04330

Dear Mr. and Mrs. Carey,

The enclosed papers are not a plumbing permit. Construction of the sewage system should not be started until after the permit is issued by the local plumbing inspector. Additional fees may be levied by the plumbing inspector for violations.

Occasionally, for various reasons, the original design is not approved by the inspector or by the Health Engineering Division of the Department of Human Services. If construction has already started, it is very expensive to change the system to something that will meet approval of the permitting authorities.

Occasionally there may be an error or omission from the HHE 200 Form. Should this happen, or, if you have questions about the report, contact me at your earliest convenience for clarification or corrections. There is no additional charge for short consultations.

This test and papers are good as long as your plumbing inspector will issue a permit based on them. The Maine Plumbing Code does change nearly every year, but there is no general ruling on validity of tests performed before the changes were made.

The lot lines shown on this plan are estimates only. Measurements were to the existing septic system with only a visual check that the fill extension would not extend past the lot lines.

Longevity of the system is unpredictable. Factors affecting longevity are:

(A) QUALITY OF CONSTRUCTION:

1. The vegetation shall be removed from the ground surface under the disposal and fill area. **In this case, the existing fill should be removed down to the original soil.**

There is a lot of fill over part of this expansion area, but the infiltrators should not be set with fill under them.

2. Surface areas under the infiltrators and fill extension should be scarified or tilled to minimize soil glazing of the original soil.

3. Wastewater from a tee set in a corner of the existing bed will travel by gravity to the first string of infiltrators. If (or when) the second string of infiltrators is constructed, the two lines should be connected in series (see 5. below).

4. The distribution within the infiltrators is by gravity along the surface of the exposed soil. If a pump is used to feed the system, an energy dissipating device must be used.

5. This system is designed for serial distribution. When effluent builds up within the first string of infiltrators, an overflow pipe will carry the excess to the second string of infiltrators.

6. Between 6" and 9" of clean sandy loam back fill shall be carefully placed over the high point of the infiltrators.

7. Clean fill is to be placed in 8" layers and then thoroughly compacted as it is placed.

8. The surface of fill shall extend from the disposal area a minimum distance of 3' at a 3 percent slope, then sloped on a uniform grade no greater than 25% (4:1) to meet the original ground. Extending more than 4:1 will result in a lawn area that is safer to mow when the grass is wet or the soil is soft.

9. The perimeter of the disposal area and fill extension shall be graded to divert ground and surface waters when necessary.

10. The disposal area and fill shall be stabilized to prevent erosion.

(B) USE AND MAINTENANCE OF THE SYSTEM

1. This system is designed for 148 gallons per day of domestic sewage for a single expansion string. That should be enough for a family of six. BUT I am concerned that a 2 bedroom system should fail so quickly with the additional use. I would expect the existing system to operate for a very long time before failure. Because of this concern, I have

included the design for yet another string of infiltrators. The septic tank should be cleaned every 2 to 5 years. Failure to have the tank cleaned on a timely basis can result in reconstructing the entire disposal area.

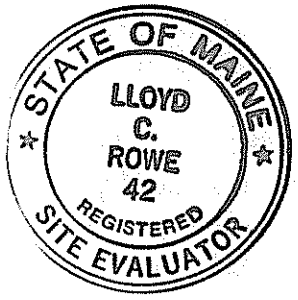
2. Usually the water usage varies considerably from the statistical average. This system should be sufficient for ordinary domestic use by 6 + year round residents. The use of less water than the design figure will result in a much longer life span of the system. The use of significantly more water over short periods of time should have little impact. Using more water over an extended time will result in premature system failure due to inadequate disposal area in the soil.

New systems should last between 10 and 25 years if they are properly designed, constructed and maintained. However, this design and document does not give a guarantee for longevity of the system. I don't know why your existing system failed so quickly, but there can only be 3 possible major reasons with many subheadings under those.

1. The design may be faulty. The class 7 soil is a very unusual soil to find in the area where I usually work. This profile is not typical of a class 7. But in my judgement it is closer to the 7 than any other class. Ordinarily that class consists of a layer of very sandy soil over a relatively abrupt change to silt loam or silt. This soil has a layer of loamy gravel. In my opinion, the soil should be able to function like soil with a medium large size category regardless of whether this in fact class 7 or some other class. Depth to mottling is difficult to determine in some gravelly soils because of a lack of iron compounds in the gravel. The new pit was a casual examination, only dug to determine that the general charactics remained similar to the original pit. The code itself may be incorrect for this type soil.
2. The construction may be faulty. I know the contractor very well and they typically follow the design grades and other specifications quite well. However, this system has a lot of fill under part of the crushed stone. It is very easy to have backfill with too much fine material. Fine grained soil material without the natural root channels, worm holes, and soil structure clogs with organic matter very rapidly.
3. The use of the system may be excessive. Some families use much more water than other families of the same size. The variation is very large. The standard code size of a 20' x 30' crushed stone system is over size for most families of less than 5, but may be inadequate for a particular family of 2 that uses a lot of water.

Personal habits have a great impact on a leach field. This home has an extra large tub, and a "pig" under the sink.

There are so many other variables that contribute to the longevity of a system, that any problems must be resolved with the owner, contractor, plumbing inspector, designer, and possible the Division of Health Engineering, Department of Human Services, State of Maine. For recent work which I have performed, the following note is attached to my system designs. "I personally consider site evaluation as a non professional activity, and do not plan to extend any warranties beyond three years whether construction has commenced or not."



SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 289-3826

6 - 79

AUGUSTA PERMIT # 1,435 TOWN COPY

Date Permit Issued: 9,27,88 $ 30.00 FEE ☐ If Double Fee Charged

Gary R. Fuller
Local Plumbing Inspector Signature

L.P.I. # 850

PROPERTY ADDRESS

Town Or antation	Augusta
Street Subdivision Lot #	Edward Street Box 67

PROPERTY OWNERS NAME

Last: Carey First: Steve & Dawn

Applicant Name:	same
Mailing Address of Owner/Applicant (If Different)	R.F.D. # 3, Box 67 Augusta, Me. 04330

Owner/Applicant Statement

I certify that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Local Plumbing Inspector to deny a Permit.

Signature of Owner/Applicant — Date

Caution: Inspection Required

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules.

Gary R. Fuller
Local Plumbing Inspector Signature — 10-19-88 Date Approved

PERMIT INFORMATION

THIS APPLICATION IS FOR:

1. ☐ NEW SYSTEM
2. ☐ REPLACEMENT SYSTEM
3. ☒ EXPANDED SYSTEM
4. ☐ SEASONAL CONVERSION
5. ☐ EXPERIMENTAL SYSTEM

THIS APPLICATION REQUIRES:

1. ☒ NO RULE VARIANCE REQUIRED
2. ☐ NEW SYSTEM VARIANCE Attach New System Variance Form
   ☐ REPLACEMENT SYSTEM VARIANCE Attach Replacement System Variance Form
3. ☐ Requiring Local Plumbing Inspector Approval
4. ☐ Requires State and Local Plumbing Inspector Approval

INSTALLATION IS:

COMPLETE SYSTEM

1. ☐ NON-ENGINEERED SYSTEM
2. ☐ PRIMITIVE SYSTEM (Includes Alternative Toilet)
3. ☐ ENGINEERED (+2000 gpd)

INDIVIDUALLY INSTALLED COMPONENTS:

4. ☐ TREATMENT TANK (ONLY)
5. ☐ HOLDING TANK
6. ☐ ALTERNATIVE TOILET (ONLY)
7. ☒ NON-ENGINEERED DISPOSAL AREA (ONLY)
8. ☐ ENGINEERED DISPOSAL AREA (ONLY)
9. ☐ SEPARATED LAUNDRY SYSTEM

IF REPLACEMENT SYSTEM:

YEAR FAILING SYSTEM INSTALLED 1985

THE FAILING SYSTEM IS:

1. ☒ BED 3. ☐ TRENCH
2. ☐ CHAMBER 4. ☐ OTHER: _____

DISPOSAL SYSTEM TO SERVE:

1. ☒ SINGLE FAMILY DWELLING
2. ☐ MODULAR OR MOBILE HOME
3. ☐ MULTIPLE FAMILY DWELLING
4. ☐ OTHER _____ SPECIFY

SIZE OF PROPERTY	ZONING
1 Ac.	RU

TYPE OF WATER SUPPLY

drilled well ?

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

1. ☐ SEPTIC: ☐ Regular ☐ Low Profile
2. ☐ AEROBIC

SIZE: _____ GALS.

WATER CONSERVATION

1. ☒ NONE
2. ☐ LOW VOLUME TOILET
3. ☐ SEPARATED LAUNDRY SYSTEM
4. ☐ ALTERNATIVE TOILET

SPECIFY: _____

PUMPING

1. ☒ NOT REQUIRED
2. ☐ MAY BE REQUIRED (DEPENDING ON TREATMENT TANK LOCATION AND ELEVATION)
3. ☐ REQUIRED

DOSE: _____ GALS.

CRITERIA USED FOR DESIGN FLOW (BEDROOMS, SEATING, EMPLOYEES, WATER RECORDS, ETC.)

expand a 2 bedroom system to a 3 + bedroom system
* 25 sq.ft. allowed per infiltrator
180 for existing
147 for extension

DESIGN FLOW: 327 (GALLONS/DAY)

SOIL CONDITIONS USED FOR DESIGN PURPOSES

PROFILE	CONDITION
7	C

DEPTH TO LIMITING FACTOR: 25

SIZE RATINGS USED FOR DESIGN PURPOSES

1. ☐ SMALL
2. ☐ MEDIUM
3. ☒ MEDIUM-LARGE
4. ☐ LARGE
5. ☐ EXTRA LARGE

DISPOSAL AREA TYPE/SIZE

1. ☐ BED _____ Sq. Ft.
2. ☒ CHAMBER 250* Sq. Ft.
   ☐ REGULAR ☐ H-20
3. ☐ TRENCH _____ Linear Ft.
4. ☐ OTHER: _____

SITE EVALUATOR STATEMENT

☐ SITE EVALUATION WAIVED BY LOCAL OPTION

On September 10, 1988 (date) I conducted a site evaluation for this project and certify that the data reported is accurate. The system I propose is in accordance with the Subsurface Wastewater Disposal Rules.

Lloyd C Rowe
Site Evaluator Signature — 42 SE# — Sept 16, 1988 Date

* Local Plumbing Inspectors Signature if a Local Site Evaluation Waiver under a Local Option

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering

Town, City, Plantation: Augusta

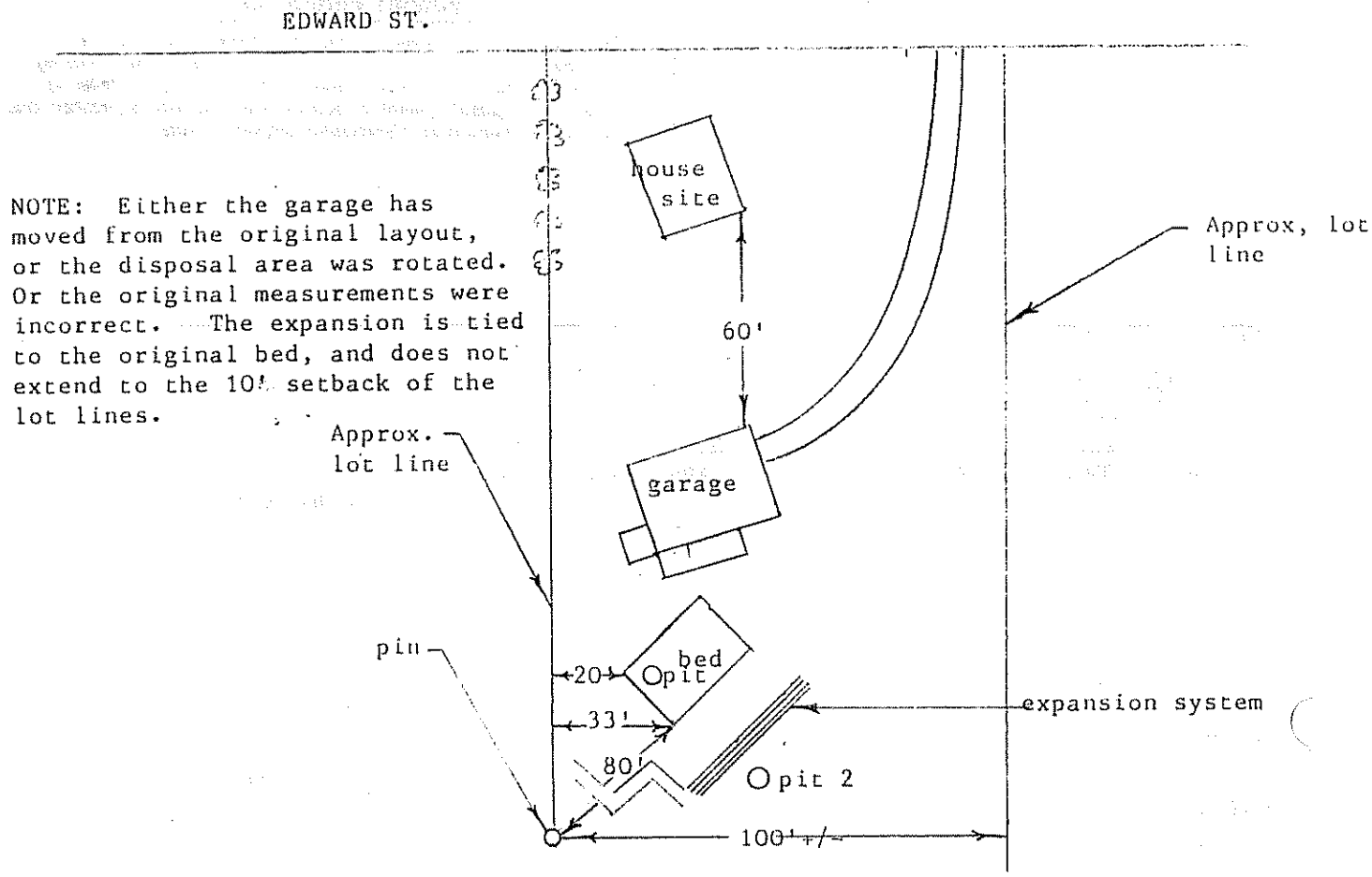
Street, Road, Subdivision: Edward St.

Owners Name: Steve & Dawn Carey

SITE PLAN

Scale 1" = 50 Ft.

SITE LOCATION PLAN (Attach Map from Maine Atlas for New System Variance)



NOTE: Either the garage has moved from the original layout, or the disposal area was rotated. Or the original measurements were incorrect. The expansion is tied to the original bed, and does not extend to the 10' setback of the lot lines.

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 1 ☒ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0–18	18" sandy loam	26" friable	8" dk. brown	25" none
18–26	4" loamy gravel		14" light brown	
26–50	26" silt loam	32" somewhat firm to firm	8" olive brown 18" olive to grey	23" few faint to many prominent

Soil	Classification	Slope	Limiting Factor	
7 (Profile)	C (Condition)	12 %	25	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock

November 1984

Lloyd E. Rowe

Observation Hole 2 ☒ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0–13	13" sandy loam	13" friable	6" dk. br.	20" none
13–15	8" loamy gravel	8" loose	15" light brown	
15–19	4" loam	4" friable	4" olive	4" many
19–50	bottom of hole digger.	partial pit dug with post		

Soil	Classification	Slope	Limiting Factor	
7 (Profile)	C (Condition)	12 %	20	☒ Ground Water ☐ Restrictive Layer ☐ Bedrock

Sept 1988

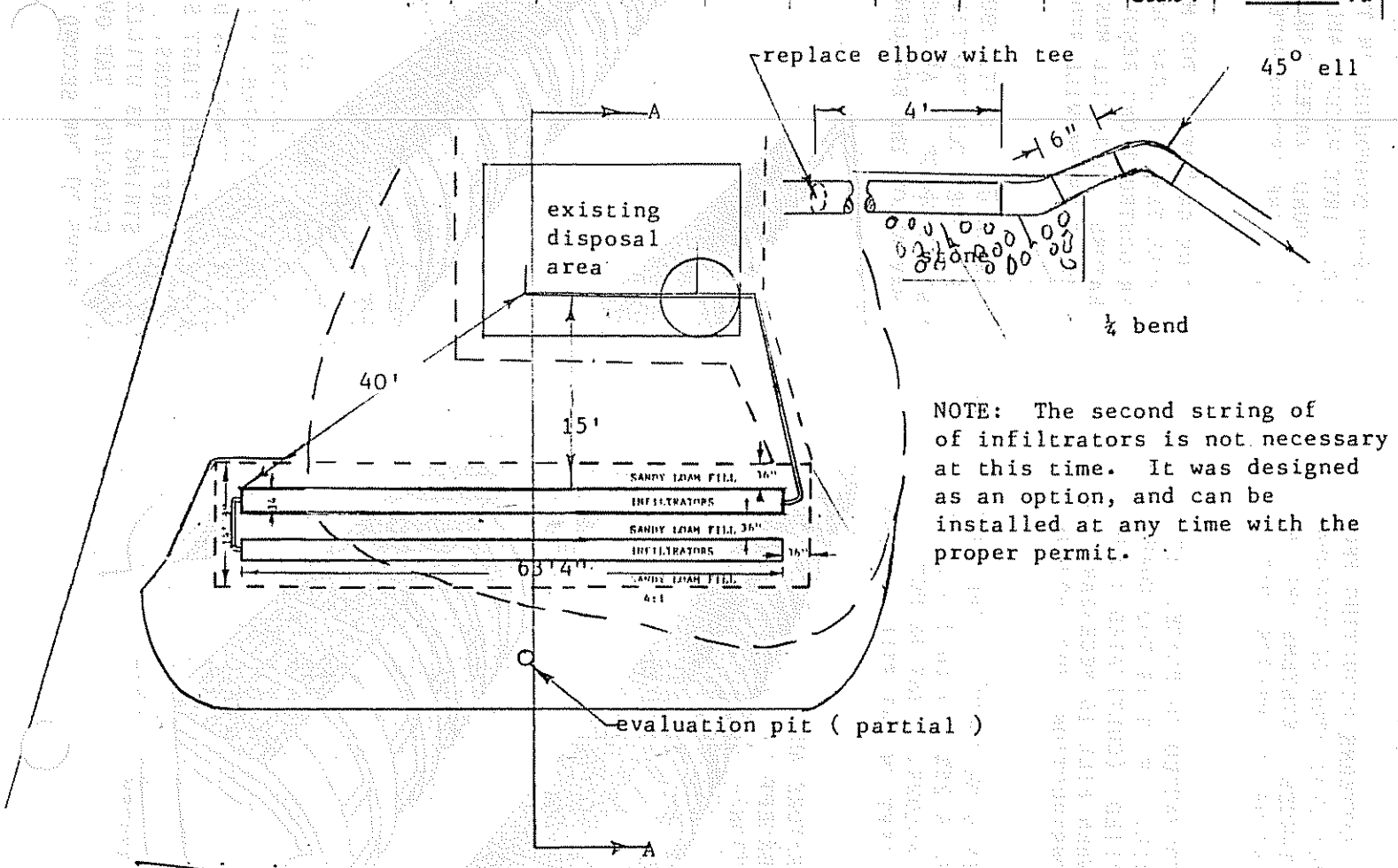
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering

Town, City, Plantation: Augusta
Street, Road, Subdivision: Edward Street
Owners Name: Steve & Dawn Carey

SUBSURFACE WASTEWATER DISPOSAL PLAN

Scale 1" = 20 Ft.

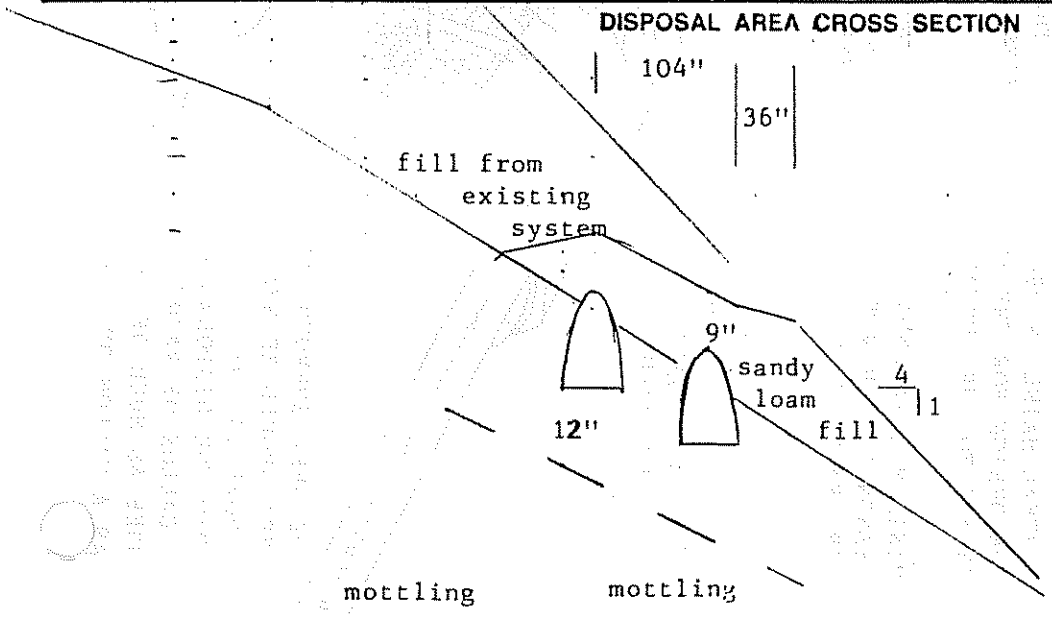


NOTE: The second string of of infiltrators is not necessary at this time. It was designed as an option, and can be installed at any time with the proper permit.

FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT LOCATION & DESCRIPTION
Depth of Fill (Upslope)	11+"	Reference Elevation is	100' 00"	top of elbow in existing system.
Depth of Fill (Downslope)	11+"	Bottom of Disposal Area	-74" & -83'	
		Top of Distribution Lines or Chambers	-59"	

DISPOSAL AREA CROSS SECTION

Scale:
Vertical: 1 inch = 2½ Ft.
Horizontal: 1 inch = 10 Ft.



Site Evaluator or Professional Engineer's Signature

42
SE # / PE #

Sept 17, 1988
Date

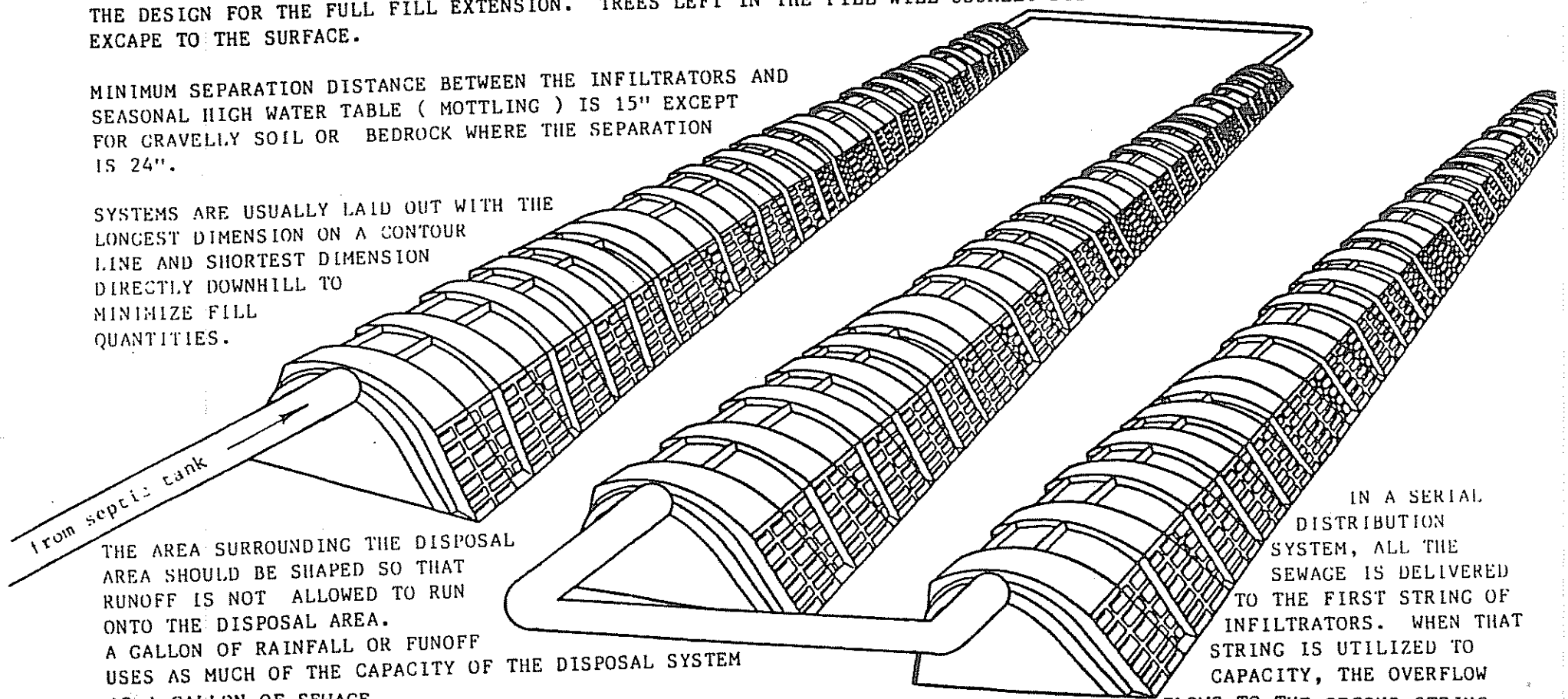
MOTTLING IS A PARTICULAR CONDITON OF SOIL COLOR PATTERNS RESULTING FROM CHANGES IN THE IRON COMPOUNDS IN THE SOIL. THE MAINE PLUMBING CODE USES MOTTLING AS THE ONLY INDICATOR OF SEASONAL HIGH WATER TABLE. TRUE WATER TABLE CANNOT BE READILY DETERMINED UNDER MOST CIRCUMSTANCES. SYSTEMS ARE INSTALLED ABOVE THE GROUND WATER TABLE, AND ABOVE BEDROCK IN AN EFFORT TO MINIMIZE THE AMOUNT OF POLLUTANTS THAT CAN BE TRANSPORTED TO THE GROUND WATER TABLE AND SUBSEQUENTLY TO SURFACE WATER BODIES OR WELLS.

FILL MATERIAL MUST BE CAREFULLY SELECTED AND COMPACTED IN PLACE. IF THE SOIL IS TOO FINE GRAINED (TOO MUCH CLAY) IT WILL TEND TO POND THE EFFLUENT WITHIN THE FILL. IF IT IS TOO COARSE, THE EFFLUENT WILL TEND TO LEAK OUT THE DOWNHILL SLOPE. ORIGINAL SOIL SHOULD BE SCARIFIED (CULTIVATED) AND STUMPS AND OTHER OBSTRUCTIONS REMOVED PRIOR TO GRADING THE AREAS FOR INFILTRATORS. WHEN FILL IS NECESSARY UNDER THE INFILTRATORS, THAT FILL MUST BE PROPERLY COMPACTED TO AVOID SETTLEMENT AFTER CONSTRUCTION, BUT SHOULD NOT BE OVER COMPACTED WHICH WILL REDUCE THE PERCOLATION THROUGH THE FILLED AREA.

FILL SHALL BE EXTENDED AT LEAST 3' BEYOND THE ENDS OR EDGES OF THE INFILTRATORS AT 3% GRADE OR A CONTINUOUS GRADE SIDES OF THE EMBANKMENT SURROUNDING THE 3% FILL IS 25% (4 to 1) OR FLATTER. ACTUAL FINISHED CONSTRUCTION IN CENTRAL MAINE IS USUALLY STEEPER THAN THE CODE ALLOWS. THAT IS NOT A DESIGN PROBLEM SINCE SPACE IS ALLOWED IN THE DESIGN FOR THE FULL FILL EXTENSION. TREES LEFT IN THE FILL WILL USUALLY DIE AND MAY ALLOW THE EFFLUENT TO EXCAPE TO THE SURFACE.

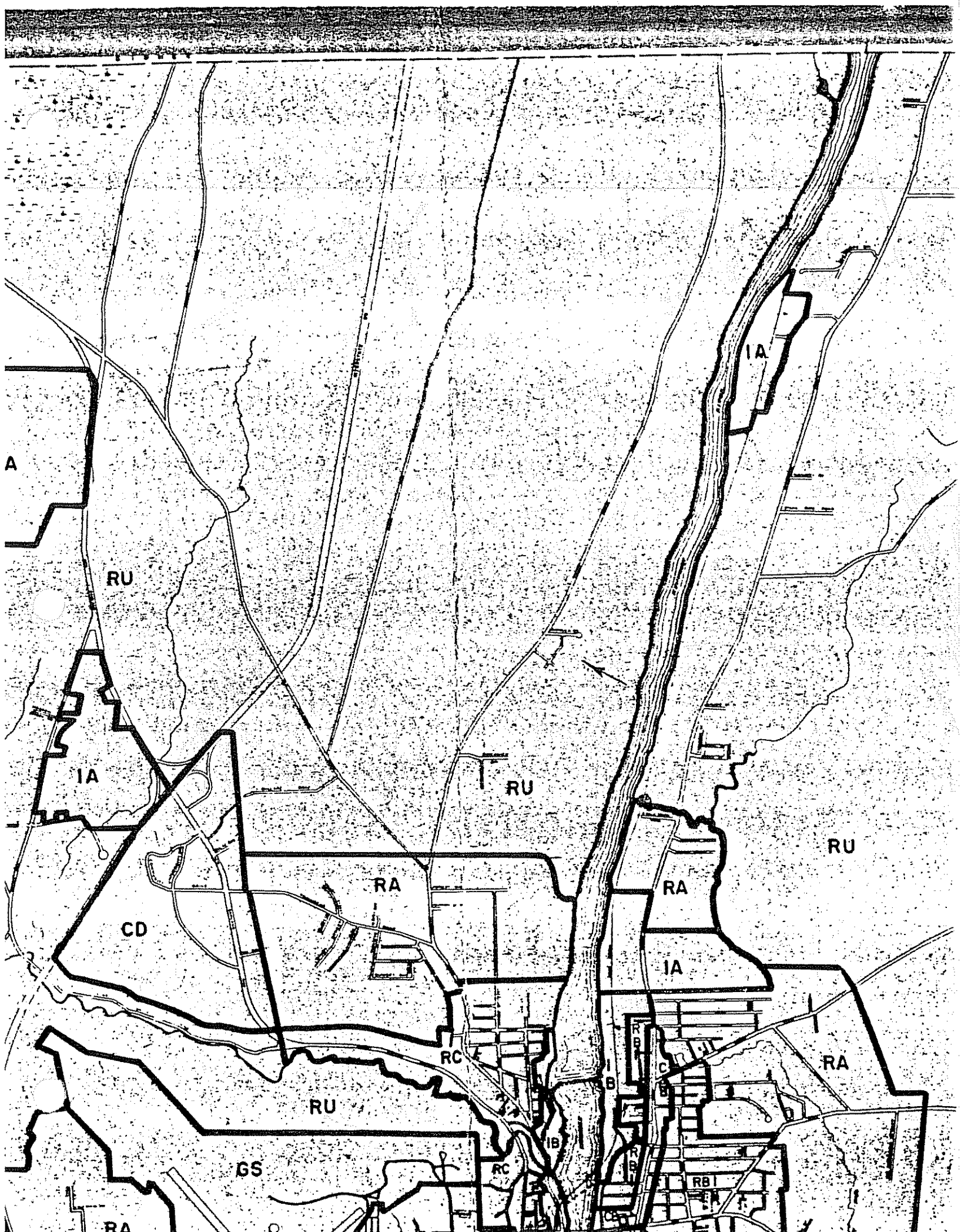
MINIMUM SEPARATION DISTANCE BETWEEN THE INFILTRATORS AND SEASONAL HIGH WATER TABLE (MOTTLING) IS 15" EXCEPT FOR GRAVELLY SOIL OR BEDROCK WHERE THE SEPARATION IS 24".

SYSTEMS ARE USUALLY LAID OUT WITH THE LONGEST DIMENSION ON A CONTOUR LINE AND SHORTEST DIMENSION DIRECTLY DOWNHILL TO MINIMIZE FILL QUANTITIES.



THE AREA SURROUNDING THE DISPOSAL AREA SHOULD BE SHAPED SO THAT RUNOFF IS NOT ALLOWED TO RUN ONTO THE DISPOSAL AREA. A GALLON OF RAINFALL OR FUNOFF USES AS MUCH OF THE CAPACITY OF THE DISPOSAL SYSTEM AS A GALLON OF SEWAGE.

IN A SERIAL DISTRIBUTION SYSTEM, ALL THE SEWAGE IS DELIVERED TO THE FIRST STRING OF INFILTRATORS. WHEN THAT STRING IS UTILIZED TO CAPACITY, THE OVERFLOW FLOWS TO THE SECOND STRING.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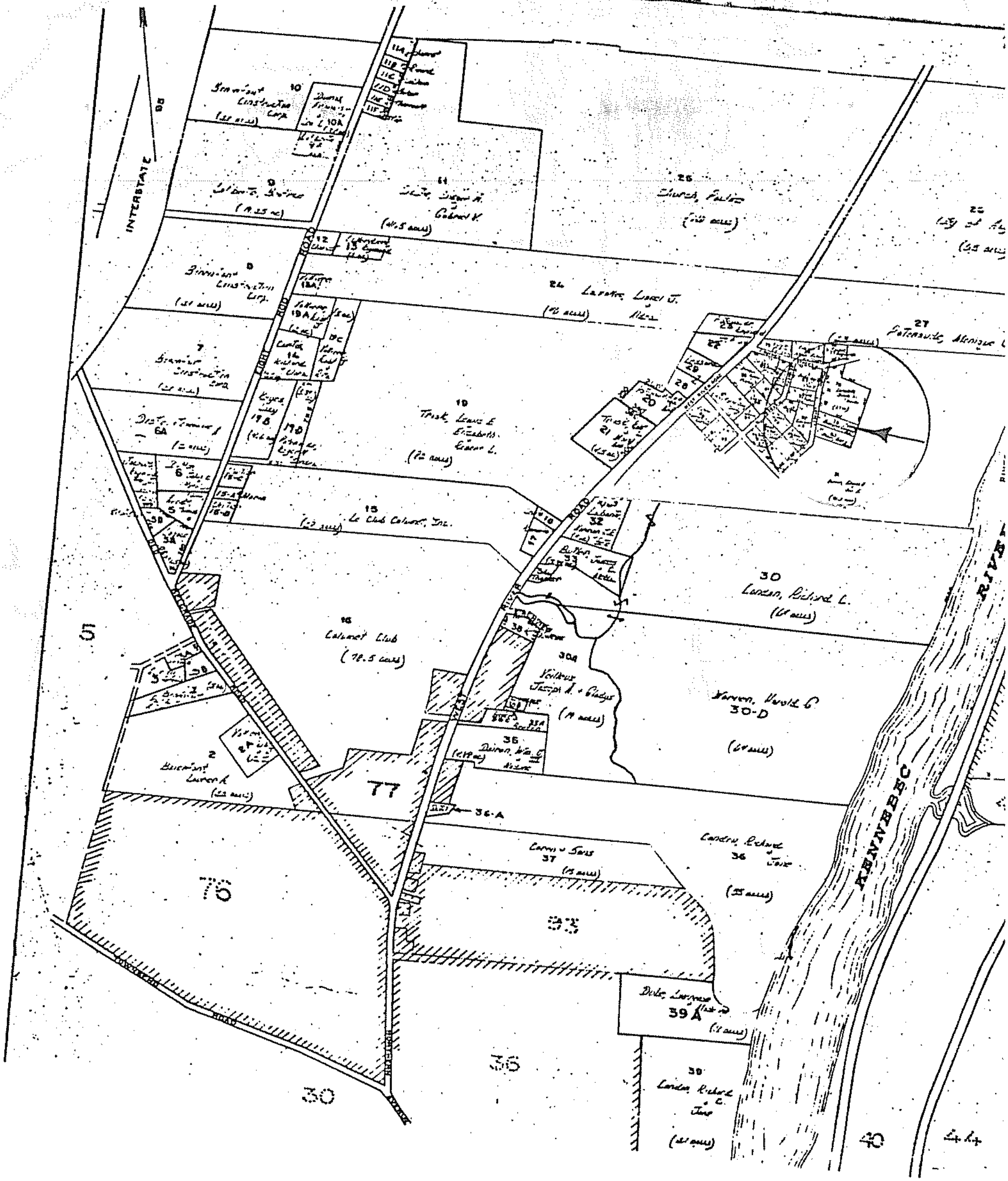
INTERSTATE
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ROAD
RIVER ROAD
KENNEBEC
RIVER
51
30
36
40
76
77
93
19
24
25
27
30
30-D
36-A
39A
Calumet Club
(78.5 acres)
Le Club Calumet, Inc.
Warren, Harold C.