

COLBURN ENGINEERING, INC.

Registered Professional Engineers and Surveyors

Surveying - Land Development

Structural Design and Analysis

MAIN STREET - P. O. BOX 52
HUDSON, MASS. 01749
562-5247 & 568-8708

September 24, 1984

Acton Conservation Commission
14 Forest Road
Acton, MA 01720

Dear Members:

The following information has been submitted in narrative as indicated under Part II Site Description, Part III Work Description, and Part IV Mitigating Measures, in the Notice of Intent submitted by Five Waltham Street Trust for work proposed at Lot 6, Arlington Street.

Part II-Site Description

This 6.3 acre parcel is located on the east side of Arlington Street, near the intersection of Arlington and Summer Streets. A large, seasonal ponding area and vegetated wetland extend from the corner of Summer and Arlington Streets into the interior of the property. The water from this ponding area exits the property via a drainage ditch which crosses the property. Another drainage channel enters the north corner of the property via a culvert near the intersection of Homestead Street. This channel exits the property, joins the previously mentioned channel off site and ultimately flows into the large wetland D25. The IEP Wetlands Report rates the wetland D25 as having high value for water supply ground water, flood control and storm damage prevention. The interior of the property is an upland knoll which is well suited for the siting of two homes and septic systems.

The FEMA Flood Maps do not designate the area of the driveway crossing as within the 100 year flood zone.

PART III- WORK DESCRIPTION

Driveway Crossings-Limited Projects

The proposed driveway is to be constructed under the provisions of "Limited Projects", section 10.53 (3)(e) of the Mass. Wetland Protection Act. Approximately 264 sq. ft. of wetland area will be filled to provide minimum driveway width and side slopes. No wetlands will be filled other than that which is associated with the crossings. No performance standards are prescribed under "Limited Projects" other than "construction shall not restrict flow of water". However, the following information is submitted to help the Commission to understand the design of the project.

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The proposed driveway, is 12 ft. wide with 2 ft. shoulders. The 48 inch culverts are designed for a 100 year storm event, so as not to restrict flow. Plan 840-1 shows the construction details of the crossings. Document 840-2 shows the drainage calculation for the pipes. Stone rip rap with a minimum diameter of 12 inches will be set in a 12 inch gravel base and will extend for a distance of 10 feet from the inlet and outlet pipes. Staked hay bales will be placed as shown on Plan #840-1 for siltation and erosion control during construction. All slopes will be loamed, seeded, and hay mulched to assure rapid stabilization of disturbed areas.

Driveway and House Construction-Work within the Buffer Zone

Portions of the proposed driveway, house, and septic expansion area, are located within the 100 ft. Buffer Zone. No fill or work will take place within the wetlands or ponding areas, other than that which is associated with the crossings. Runoff from the driveway will be allowed to run over land to provide maximum infiltration into the ground. Staked hay bales will be located as shown on Plan 840-1 for siltation and erosion control during construction. All disturbed areas will be loamed, seeded and hay mulched to assure rapid stabilization of the area.

If you should have any further questions or would like to schedule an on-site inspection, please feel free to call this office.

Sincerely yours,
Colburn Engineering, Inc.

Lynne H. Remington
Lynne H. Remington
Wetland Consultant

DRAINAGE CALCULATIONSAllington Street, ActonBY: COLBURN ENGINEERING, INC.C.B.C., JR. 9/22/84SHEET 1 OF 1

DESIGN STORM: 100 YEAR

WATERSHED: FROM FIELD OBSERVATION AND TOPOGRAPHIC MAPS.

RUNOFF METHOD: RATIONAL FORMULA1ST CULVERT (@ SEC A-A)

AREA	LAND USE	I	AXI
1.50	PAVEMENT	0.90	1.35
24.90	FLAT, RESID., SOME PONDING	0.40	10.00
26.40		0.43	11.35

$$t_c = \frac{700 \text{ ft}}{1.5 \text{ ft/sec} \times 60} = 8 \text{ min.}$$

$$R_{100} = 6.94 \text{ in/hr}$$

$$Q_{100} = \text{AIR} = 26.4 (0.43) (6.94) = 79.0 \text{ cfs.}$$

PROVIDE 48" R.C.P. @ 0.30% SLOPE

BASED ON MANNING FORMULA, $n = 0.13$

$$Q_{\text{DESIGN}} = 80.5 \text{ cfs}$$

$$VEL = 6.2 \text{ ft./sec.}$$

2ND CULVERT (@ SEC. B-B)

AREA	LAND USE	I	AXI
0.90	PAVEMENT	0.90	0.81
18.30	FLAT, RESIDENTIAL	0.40	7.32
1.40	POND	0.90	1.26
20.60		0.46	9.39

$$t_c = \frac{300}{1.5 \times 60} + \frac{600}{6 \times 60} = 5 \text{ min.}$$

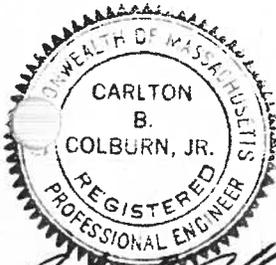
$$R_{100} = 7.80 \text{ in/hr.}$$

$$Q_{100} = \text{AIR} = 20.60 (0.46) (7.80) = 73.7 \text{ cfs}$$

PROVIDE 48" R.C.P. @ 0.30% SLOPE

AS ABOVE, $Q_{\text{DESIGN}} = 80.5 \text{ cfs}$

$$VEL = 6.2 \text{ ft./sec.}$$



Carlton B. Colburn, Jr.
 DIEZGEN (2005) Eng. Training Value

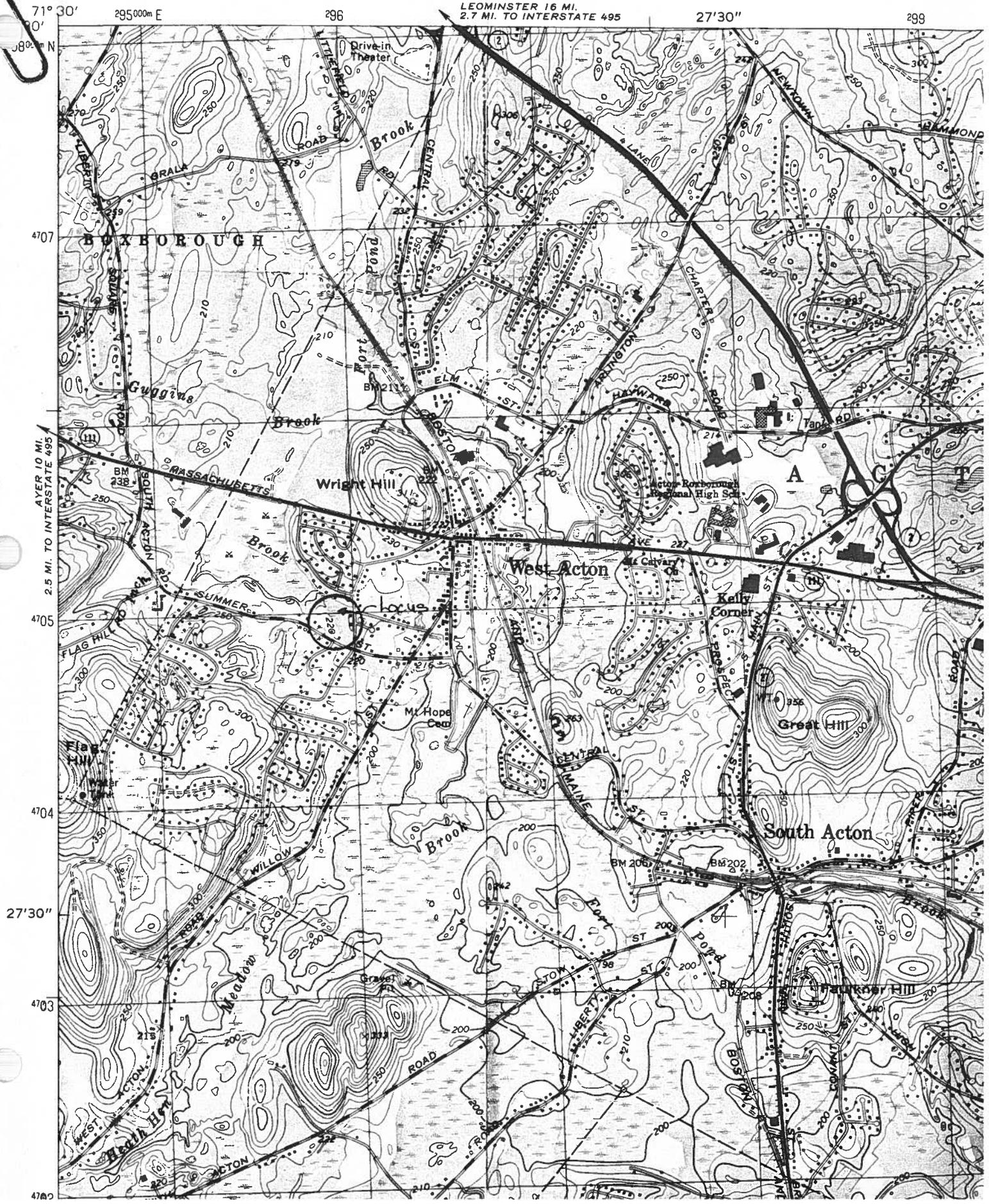
840-4

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION

6669 J 55
(AYER)



LEMINSTER 16 MI.
2.7 MI. TO INTERSTATE 495

71° 30'
30'
70'
71° 30' N
4707
4705
4704
4703
4702

299

27' 30"

4702

AYER 10 MI.
2.5 MI. TO INTERSTATE 495



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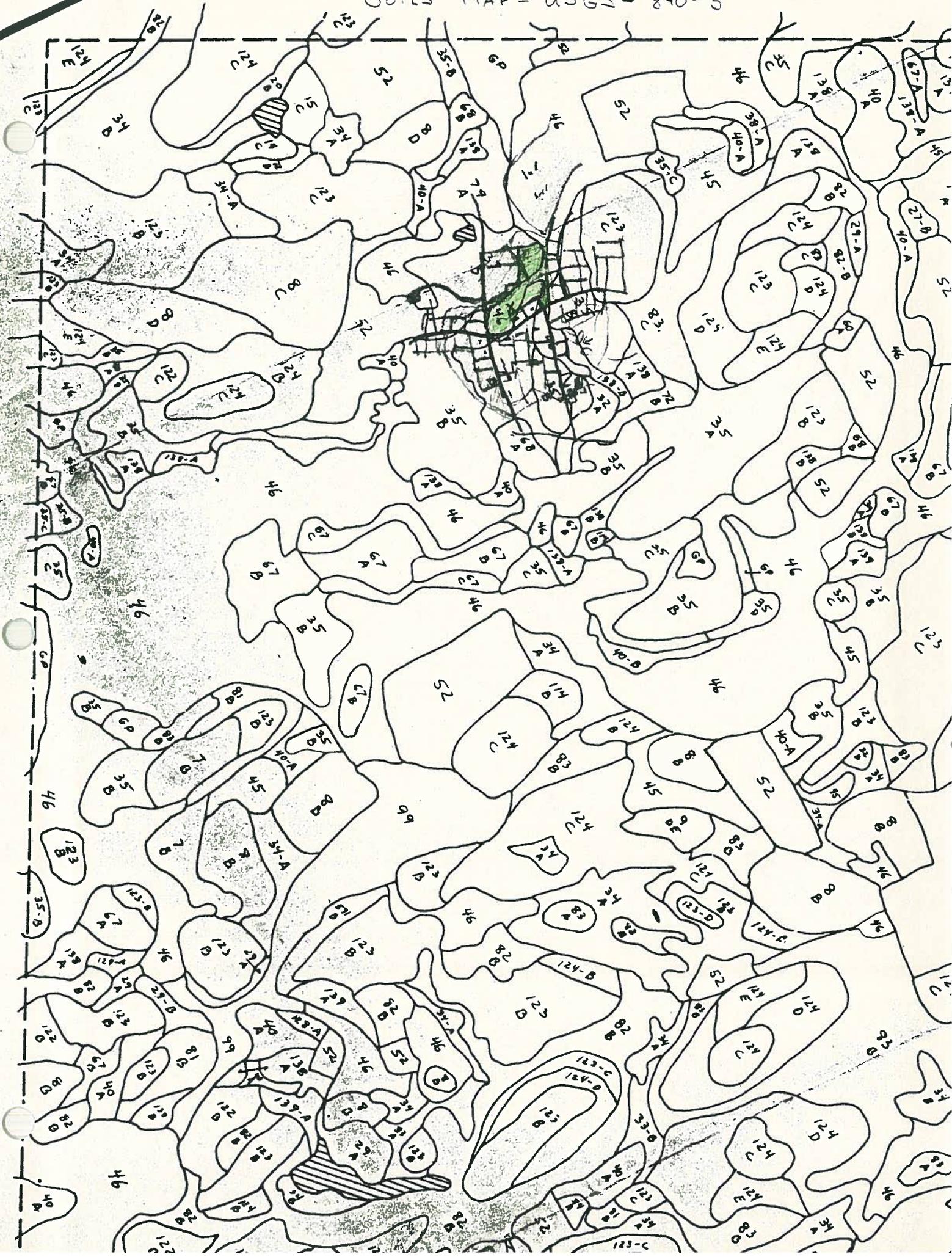
Document # 840-3

STATEMENT CONCERNING TITLE 5

Board of Health permits have not been obtained as of this date. However, soil testing has been conducted in the upland area and is well suited for septic systems. No problems are anticipated with locating the systems as proposed on the plans. All systems will be designed in accordance with Title 5 and the more stringent Town of Acton Board of Health Regulations.

WATER SUPPLY

The proposed project is within the Guggins Brook Watershed and is approximately one-half mile upstream from the nearest municipal well.





Anthony D. Cortese ScD.
Commissioner

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Quality Engineering
Central Region
75 Grove Street, Worcester, Massachusetts 01605

RECEIVED
OCT 9 1984
ACTON CONSERVATION COMMISSION

Date: October 2, 1984

This Department is in receipt of the following application filed in accordance with the Wetlands Protection Act, General Laws, Chapter 131, Section 40 ("the Act")

Name Five Waltham Street Trust
5 Waltham St. Maynard, MA. 01754

Owner of Land Paul and Janet Marino

City/Town Acton Location Arlington and Summer St.

This project has been given the following Wetlands file number in accordance with the Act 85-151;

The following information is missing and must be forwarded to this office for a complete filing in accordance with the Act:

- () ~~Map of Intent~~ () ~~Environmental Data Form~~ () ~~Income Map~~
- () ~~Plans~~

() The plans for the sewage disposal system appear not to meet the requirements of Title 5 of The State Environmental Code for the following reason(s):
Review with the Board of Health.

- (X) A Chapter 91 License or Permit is not required by the Division of Waterways.
- () Application has been forwarded to the Division of Waterways to determine if a Chapter 91 License or Permit is required. A decision regarding Chapter 91 jurisdiction will be issued by the Division of Waterways no later than _____

Issuance of a file number indicates only completeness of the file and not approval of the application.

cc: Applicant:
Colburn Engineering, Inc.
P.O. Box 52
454 Main Street
Hudson, MA. 01749

For the Commissioner
Silbert T. Joly PE
Regional Environmental Engineer