BULK SEDIMENT ANALYSIS DATA

Project: J. BURR-BARTRAM

Waterway: AUCCOT COVE State: MA Quad: MARH

Application #: 85-0419 Disposal Site: URD

Latitude: 41°40' 23" Date of Testing: 8 / 20 / 85

Longitude: 70° 44' 25" Date of Entry: 8 / 14 / 87

Arsenic (ppm) --		PCB's (ppm) ---	
Cadmium (ppm) --	0.2	Vol. Sol. (%) -	3.1
Chromium (ppm) -	4.8	Oil & Gr. (%) -	.10
Copper (ppm) ---	24	Water (%) -----	
Lead (ppm) -----	31	Gravel (%) ----	0
Mercury (ppm) --	0.11	Sand (%) ------	91.8
Nickel (ppm) ---		Silt (%) ------	4.1
Zinc (ppm) -----		Clay (%) ------	4.1

Bioassay Performed (Y/N) N

Comments:

Project Information Entered On: 8/10/87

By: [illegible]

– compiled from attached sheets.

BULK SEDIMENT CHEMISTRY

Marine Sediments

J. Burr Bartram

Accout Cove, Marion, Massachusetts

Parameter	Concentration	Classification
Cadmium (mg/kg)	0.2	Category I
Chromium (mg/kg)	4.8	Category I
Copper (mg/kg)	24	Category I
Lead (mg/kg)	31	Category I
Mercury (mg/kg)	0.11	Category I
Oil and Grease	0.10%	Type A
Volatile Solids	3.1 %	Type A

EnviroSystems, Incorporated

INCL 3

BRAMAN ENGINEERING COMPANY

J. BURR BARTRAM
AUCOOT COVE, MARION

SIEVE ANALYSIS # 1

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	592.1	622.5	30.4	6.2	93.8
10	509.6	530.7	21.1	4.3	89.5
20	475.0	507.6	32.6	6.7	82.8
40	457.6	537.1	79.5	16.2	66.6
60	326.6	436.0	109.4	22.3	44.3
100	315.2	429.8	114.6	23.4	20.9
200	303.2	363.9	60.7	12.4	8.5
Pan	372.8	414.0	41.2	8.5	0

Weight of Sample = 489.5

civil engineers & surveyors 258 main street buzzards bay, massachusetts 02532 telephone 759-8273

INCL 1

BRAMAN ENGINEERING COMPANY

J. BURR BARTRAM
AUCOOT COVE, MARION

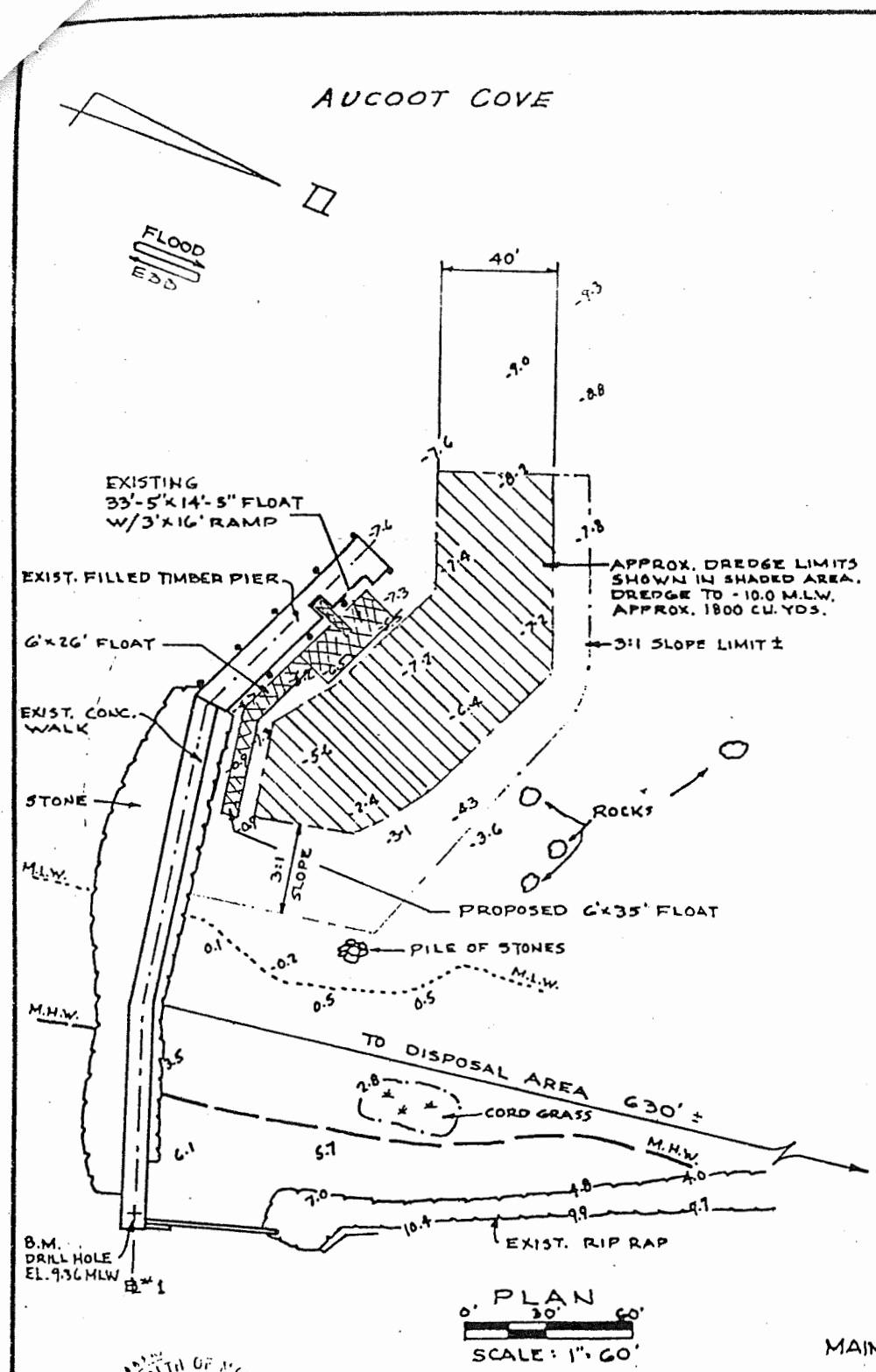
SIEVE ANALYSIS # 2

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	592.1	626.3	34.2	5.6	94.4
10	509.6	540.4	30.8	5.1	89.3
20	475.0	507.1	32.1	5.3	84.0
40	457.6	580.1	122.5	20.2	63.8
60	326.6	492.4	165.8	27.3	36.5
100	315.2	411.0	95.8	15.8	20.7
200	303.2	381.6	78.4	12.9	7.8
				92.2	
Pan	372.8	420.0	47.2	7.8	0

Weight of Sample = 606.9

civil engineers & surveyors 258 main street buzzards bay, massachusetts 02532 telephone 759-8273

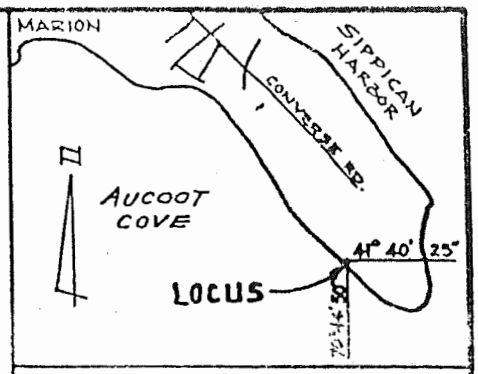
INCL 2



PLAN

0' 30' 60'

SCALE: 1" = 60'



KEY MAP

U.S.G.S. MARION, ONSET QUAD SCALE: 1" = 2000'

NOTES.

1. ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE PLANE OF MEAN LOWWATER. MINUS FIGURES REPRESENT DEPTHS BELOW THAT SAME PLANE.

2. ALL TIMBERS TO BE CCA TREATED @ 1.0 pcf

3. BENCH MARK: DRILL HOLE @ 0+0.0 ⊕ #1

4. PREVIOUS COMM. OF MASS. PERMITS ISSUED: # 613 (1925), #950 (1928) & 1210 (1930) FOR STONE & TIMBER PIER.

ABUTTERS

NORTH: WILLIAM J. DOLAN
100 HIGHLAND ST.
MILTON, MA.

SOUTH: MURIEL A. HOFFACKER
% CLAIRE O. HOFFACKER
1138 PONTIAC AVE.
CRANSTON, R.I. 02920

COMMONWEALTH OF MASS.
ROBERT A. BRAMAN
No. 10905
REGISTERED PROFESSIONAL ENGINEER
CIVIL

Robert A. Braman

MAINTAIN & INSTALL TIMBER FLOATS AND TO DREDGE IN AUCOOT BAY

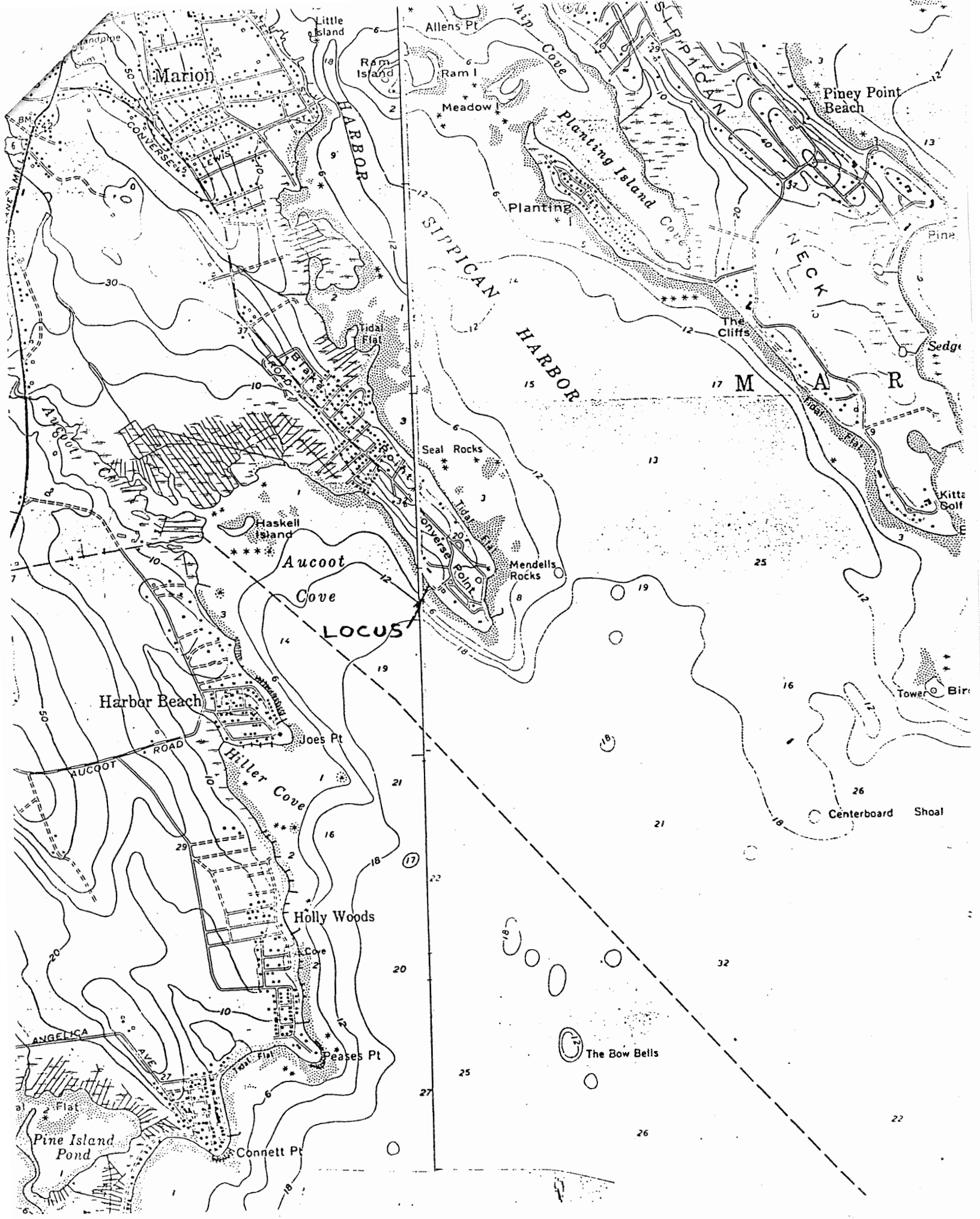
MARION, PLYMOUTH CO. MASS.

APPLICATION BY

J. BURR BARTRAM, JR.

MAY 8, 1985 SHEET 1 of 2

BRAMAN ENGINEERING CO.
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST. BUZZARDS BAY, MA.


Marion
Little Island
Ram Island
Ram I
Allens Pt
Meadow I
Planting Island Cove
Planting
Piney Point Beach
SIPPICAN HARBOR
SIPPICAN NECK
MAR
The Cliffs
Tidal Flat
Seal Rocks
Mendells Rocks
Converse Point
Haskell Island
Aucoot Cove
LOCUS
Harbor Beach
Joes Pt
Hiller Cove
AUCOOT ROAD
Holly Woods
Cove
Peases Pt
ANGELICA AVE
Pine Island Pond
Connett Pt
The Bow Bells
Centerboard Shoal
Tower
Kitta Golf
Sedge
Pine
Lewis
CONVERSE ST
Stark ROAD
Angelica

BULK SEDIMENT ANALYSIS DATA

Project: BRITISH LANDING

Waterway: WAREHAM RIVER State: MA Quad: WARE

Application #: 840914 Disposal Site: VPLD

Latitude: 41°45' 15" Date of Testing: / /

Longitude: 71° 47' 35" Date of Entry: 8 / 14 / 87

Arsenic (ppm) --		PCB's (ppm) ---	
Cadmium (ppm) --	0.39	Vol. Sol. (%) -	4.6
Chromium (ppm) -	11.8	Oil & Gr. (%) -	.10
Copper (ppm) ---	110	Water (%) -----	29.96
Lead (ppm) -----	208	Gravel (%) ----	0
Mercury (ppm) --	.49	Sand (%) ------	98.6
Nickel (ppm) ---		Silt (%) ------	0.71
Zinc (ppm) -----		Clay (%) ------	0.72

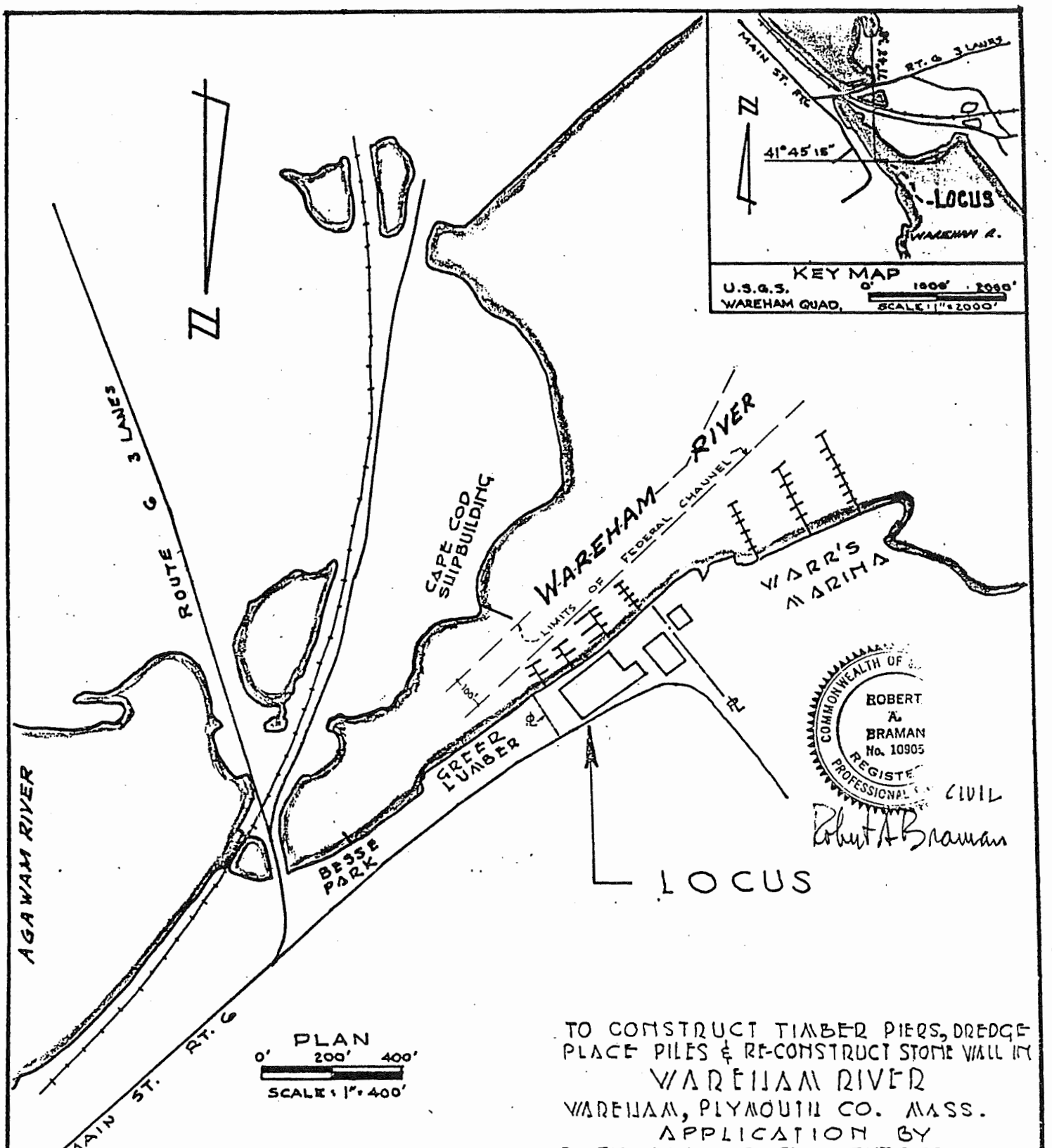
Bioassay Performed (Y/N) N

Comments: III Pb

Project Information Entered On: 8/10/87

By: [illegible]

Note: compiled from attached sheets.



TO CONSTRUCT TIMBER PIERS, DREDGE
PLACE PILES & RE-CONSTRUCT STONE WALL IN
WAREHAM RIVER
WAREHAM, PLYMOUTH CO. MASS.
APPLICATION BY
BRITISH LANDING DEVELOPMENT CORPORATION
NOV. 5, 1984 SHEET 1 of 5
BRAMAN ENGINEERING CO.
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST., BUZZARD'S BAY, MA.

BULK SEDIMENT CHEMISTRY

Marine Sediments

British Landing Corporation

Parameter	Concentration	Classification
Cadmium (mg/kg)	0.39	Category I
Chromium (mg/kg)	11.8	Category I
Copper (mg/kg)	110	Category I
Lead (mg/kg)	208	Category III
Mercury (mg/kg)	0.49	Category I
Oil and Grease	0.10%	Type A
Volatile Solids	4.6%	Type A
Moisture	29.96%	
Solids	70.04%	

94-B

BRAMAN ENGINEERING COMPANY

tested
9/5/84

SIEVE ANALYSIS # 1

BRITISH LANDING DEVELOPMENT CORPORATION

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	593.5	885.8	292.3	31.59	68.41
10	509.5	690.7	181.2	19.58	48.83
20	474.9	610.5	135.6	14.66	34.17
40	457.1	613.6	156.5	16.92	17.25
60	325.5	405.6	80.1	8.66	8.59
100	314.7	363.2	48.5	5.24	3.35
200	303.2	321.0	17.8	1.92	1.43
Pan	373.4	386.6	13.2	1.43	0.00

Weight of Sample = 925.2

95-A

civil engineers & surveyors 444 main street wareham, massachusetts 02571 telephone 295-0637

BRAMAN ENGINEERING COMPANY

tested
9/5/84

SIEVE ANALYSIS # 2

BRITISH LANDING DEVELOPMENT CORP.

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	593.5	677.1	83.6	12.88	87.12
10	509.5	574.1	64.6	9.95	77.17
20	474.9	566.8	91.9	14.16	63.01
40	457.1	605.3	148.2	22.83	40.18
60	325.5	456.3	130.8	20.15	20.03
100	314.7	403.6	88.9	13.69	6.34
200	303.2	332.7	29.5	4.54	1.80
Pan	373.4	385.1	11.7	1.80	0.00

Weight of Sample = 649.2

95 c

civil engineers & surveyors 444 main street wareham, massachusetts 02571 telephone 295-0637

BRAMAN ENGINEERING COMPANY

tested
9/5/84

SIEVE ANALYSIS # 3

BRITISH LANDING DEVELOPMENT CORP.

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	593.5	695.3	101.8	19.95	80.05
10	509.5	598.5	89.0	17.44	62.61
20	474.9	594.1	119.2	23.35	39.26
40	457.1	573.3	116.2	22.77	16.49
60	325.5	376.8	51.3	10.05	6.44
100	314.7	337.2	22.5	4.41	2.03
200	303.2	309.6	6.4	1.25	0.78
Pan	373.4	377.4	4.0	0.78	0.00

Weight of Sample = 510.4

95-E.

civil engineers & surveyors 444 main street wareham, massachusetts 02571 telephone 295-0637

BULK SEDIMENT CHEMISTRY

Marine Sediments

Bass Hole Yarmouth, MA - see attached

Parameter	Concentration		Classification
Sample	1	4	Both
Cadmium (mg/kg)	<0.6	<1	Category I
Chromium (mg/kg)	<3	5	Category I
Copper (mg/kg)	<2	<4	Category I
Lead (mg/kg)	<3	<5	Category I
Mercury (mg/kg)	0.02	0.21	Category I
Oil and Grease	0.3%	<0.01%	Type A
Volatile Solids	0.90%	4.3%	Type A

EnviroSystems, Incorporated

BRAMAN ENGINEERING COMPANY

TOWN of YARMOUTH - BASS HOLE
DISPOSAL AREA SAMPLE

SIEVE ANALYSIS #

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	594.0 grams	724.1 grams	130.1 g	9.8	90.2
10	509.6	571.1	61.5	4.6	85.6
20	474.9	693.7	218.8	16.4	69.2
40	457.1	1035.6	578.5	43.4	25.8
60	325.8	539.4	213.6	16.0	9.8
100	314.9	363.2	48.3	3.6	6.2
200	303.2	383.0	79.8	6.0	0.2
Pan	372.9	373.9	1.0	0.2	0.0

Weight of Sample = 1,331.6 grams

civil engineers & surveyors 258 main street buzzards bay, massachusetts 02532 telephone 759-8273

Public Notice

US Army Corps
of Engineers
New England Division

Date: May 3, 1990

Comment Period Closes: June 4, 1990

In Reply Refer To: Tom C. Bruha

File No. #03-90-0633

424 Trapelo Road, Waltham, MA 02254-9149

Morris I. Johnson, Superintendent, Yarmouth DNR, 1146 Rt. 28, South Yarmouth, MA 02664 has requested a Corps of Engineers permit under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act to replace and maintain an existing unpermitted boat ramp with a reinforced concrete ramp and to dredge and excavate approximately 163 c.y. of clean material. Approximately 145 c.y. of material will be dredged seaward of the new ramp and 18 c.y. of material will be excavated for the proposed ramp. The dredge material will be placed on the adjacent beach within the intertidal zone. The purpose of the project is to provide public access to navigable waters at Bass Hole in Yarmouth, MA.

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you need additional information, please contact Mr. Tom C. Bruha at the above address.

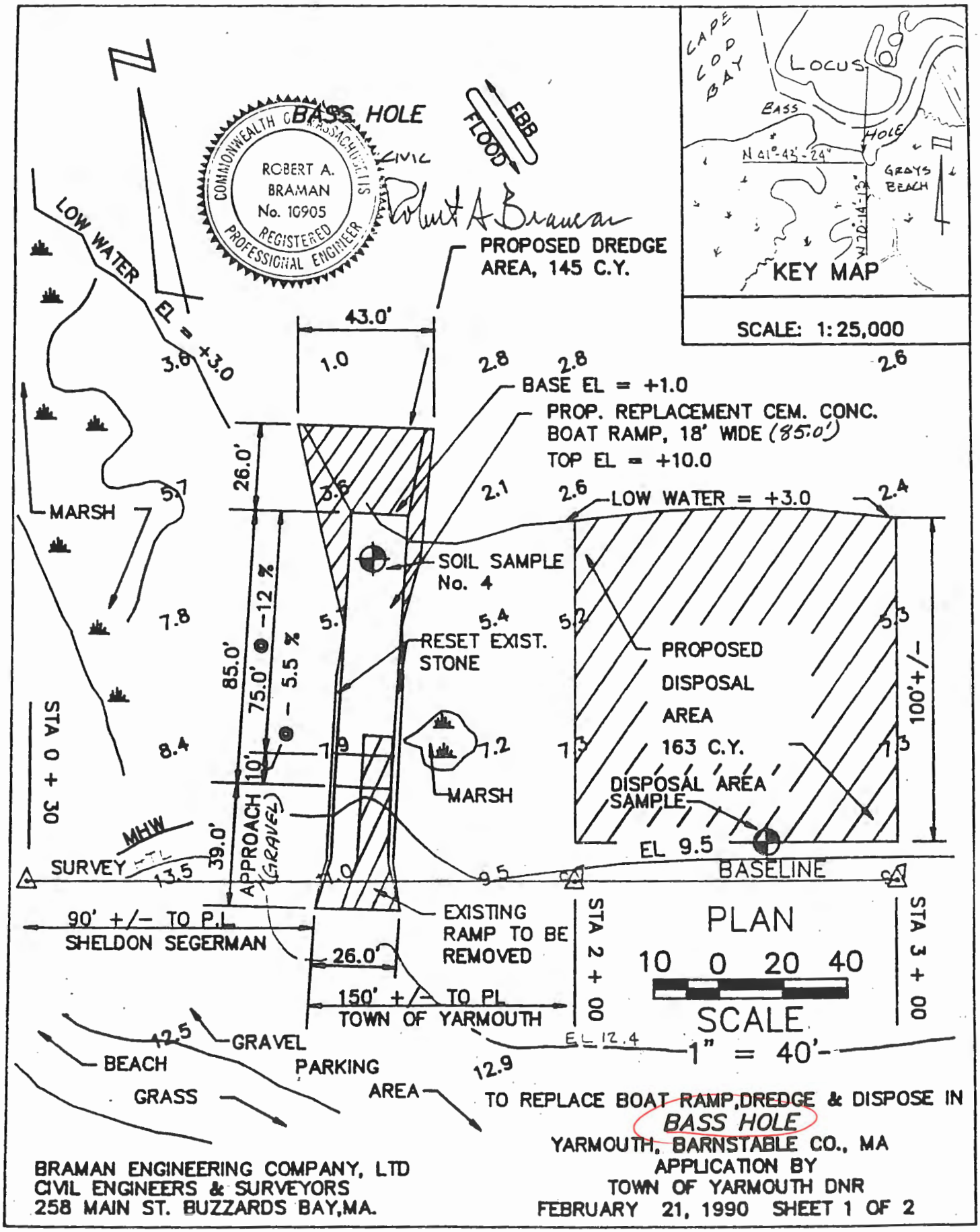
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining public comments, when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

Sincerely,

Karen K Adams

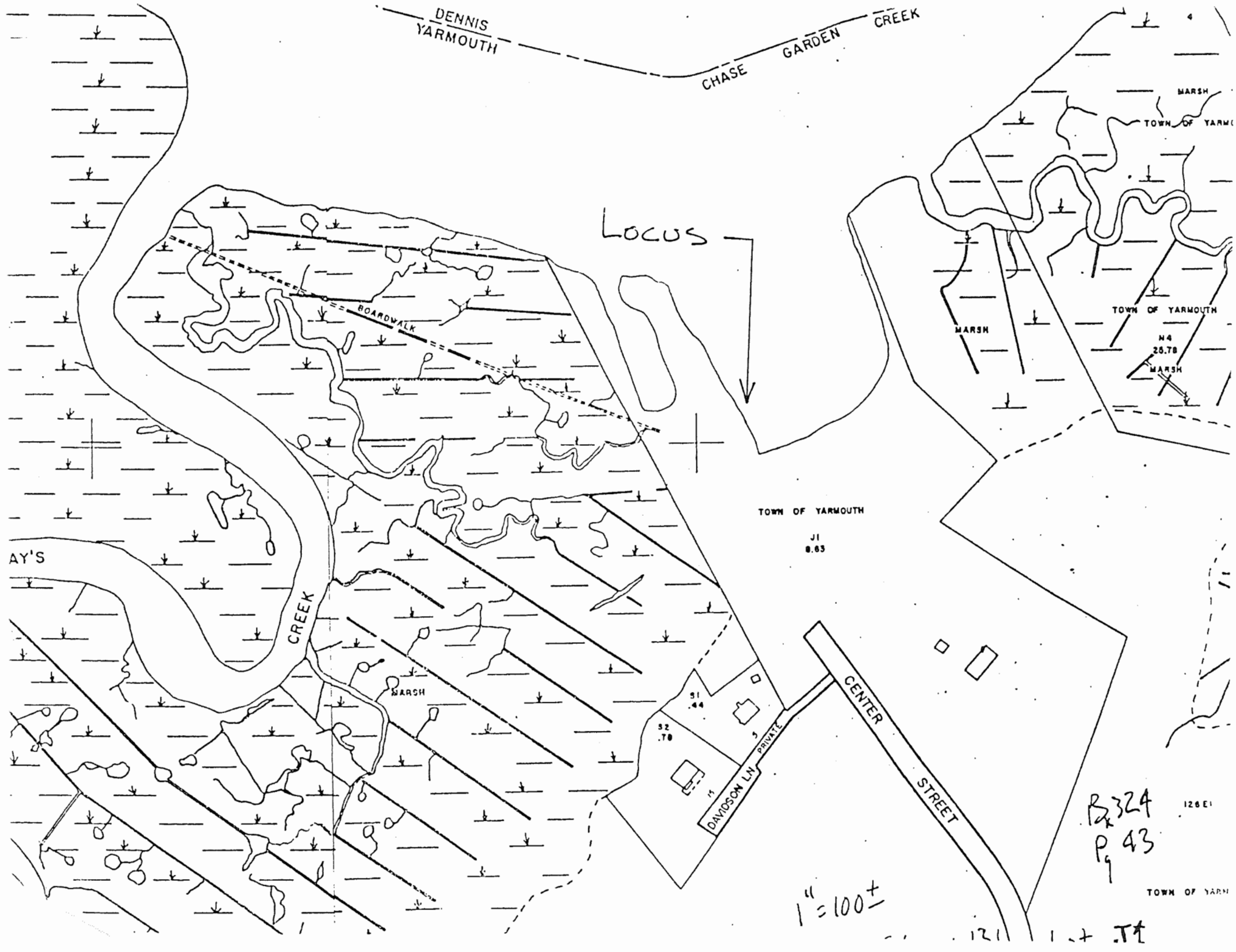
Karen Kirk Adams
Chief, Permit Branch
Regulatory Division

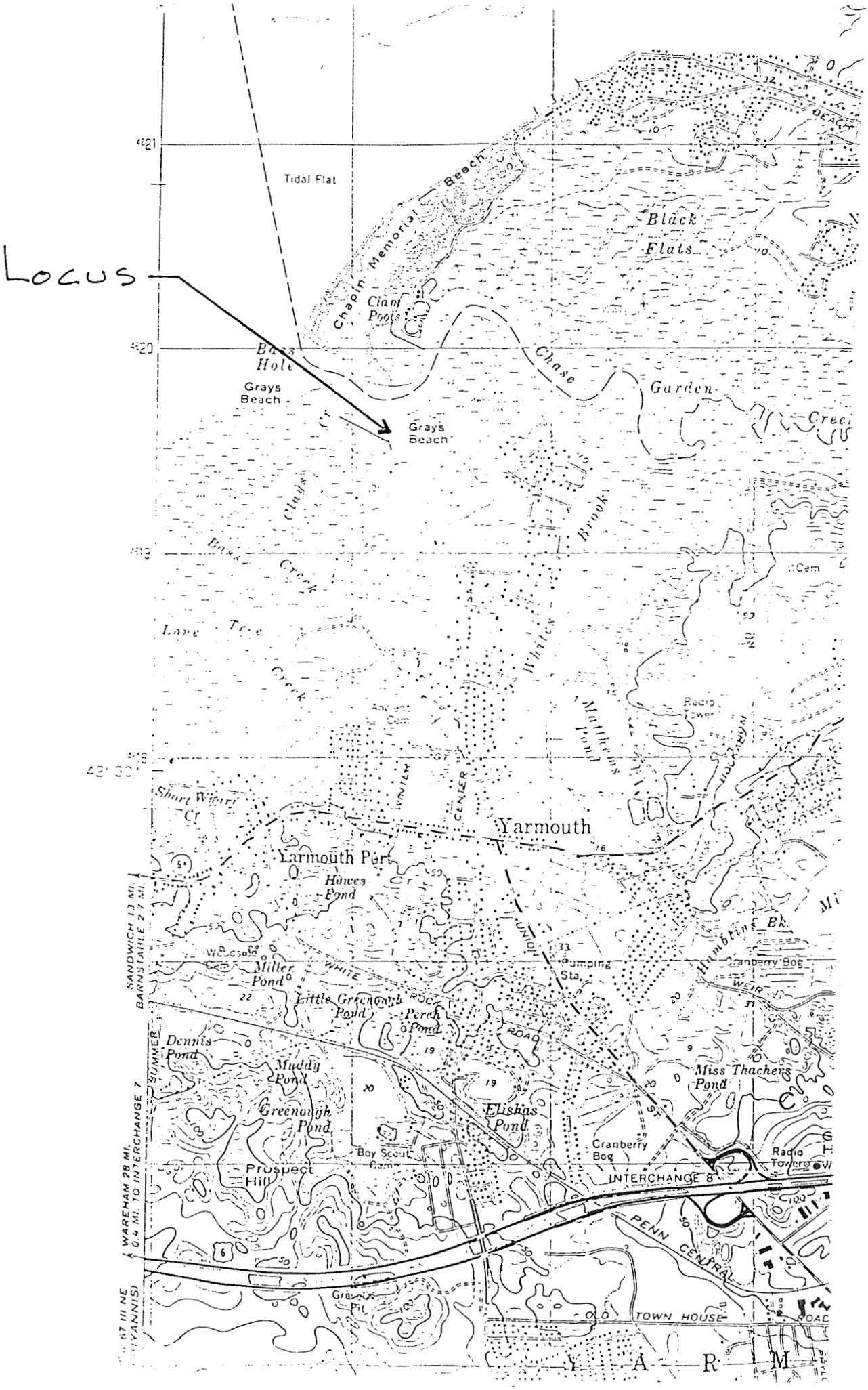
SEE REVERSE SIDE FOR
DETAILS OF EVALUATION
FACTORS

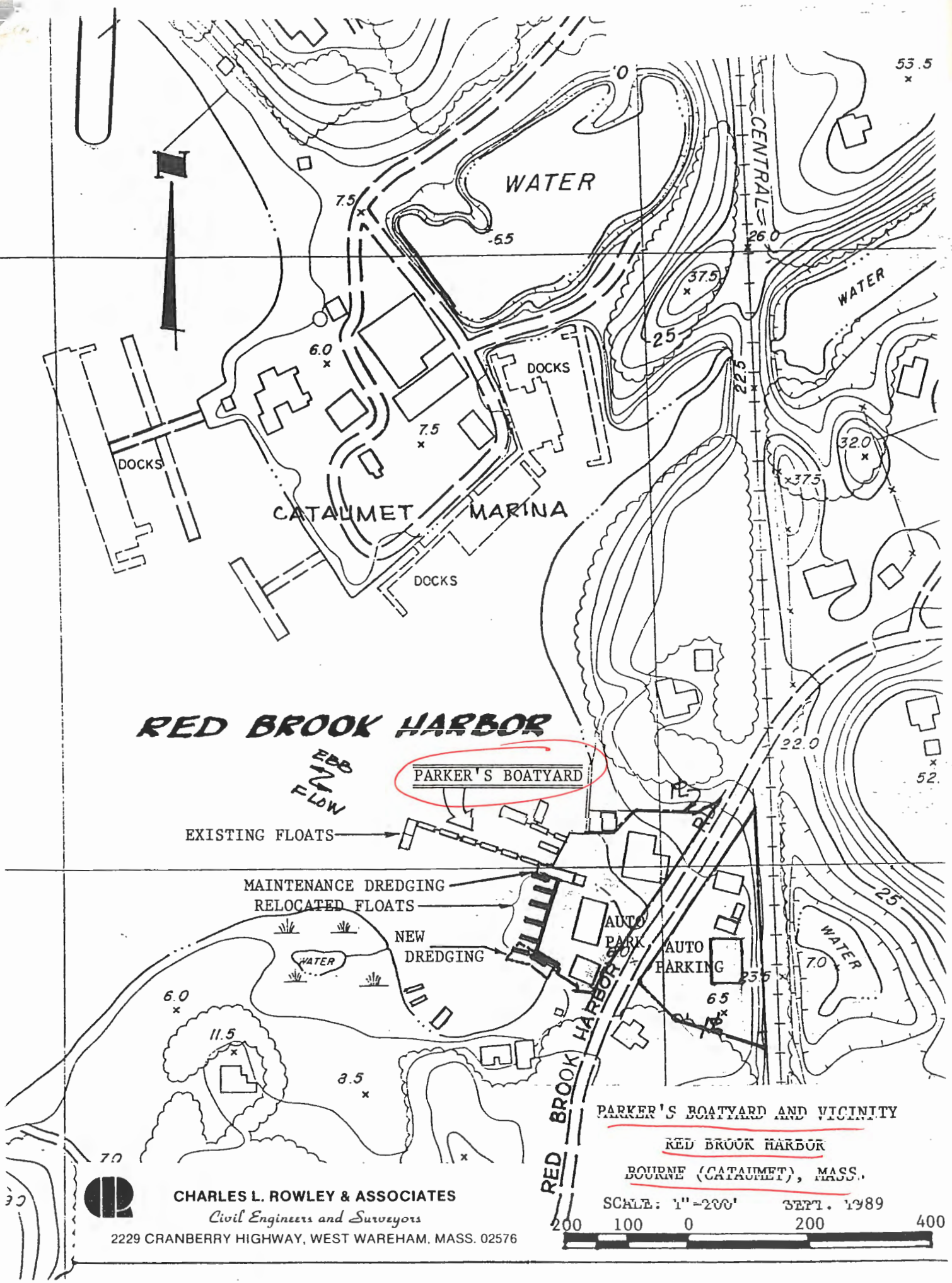


TO REPLACE BOAT RAMP, DREDGE & DISPOSE IN BASS HOLE
YARMOUTH, BARNSTABLE CO., MA
APPLICATION BY
TOWN OF YARMOUTH DNR
FEBRUARY 21, 1990 SHEET 1 OF 2

BRAMAN ENGINEERING COMPANY, LTD
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST. BUZZARDS BAY, MA.


DENNIS
YARMOUTH
CHASE GARDEN CREEK
LOCUS
BOARDWALK
MARSH
TOWN OF YARMOUTH
TOWN OF YARMOUTH
J1
8.63
H4
25.78
MARSH
MARSH
MARSH
AY'S
CREEK
MARSH
S1
.44
S2
.78
S
DAVIDSON LN
PRIVATE
CENTER
STREET
Bk 324
Pg 43
1" = 100±
TOWN OF YARM


Locus
Tidal Flat
Chapin Memorial Beach
Black Flats
Clam Pools
Bass Hole
Grays Beach
Grays Beach
Chase Garden
Creek
Claus Cr
Bass Creek
Lane Tree Creek
Whites Brook
Matthews Pond
Radio Tower
Ancient Cem
Short Wharf Cr
Yarmouth
Yarmouth Port
Howes Pond
Miller Pond
Little Greenough Pond
Perch Pond
Dennis Pond
Muddy Pond
Greenough Pond
Elishas Pond
Miss Thachers Pond
Pumping Sta.
Cranberry Bog
Humbling Bk.
Boy Scout Camp
Prospect Hill
Radio Tower
INTERCHANGE 8
PENN CENTRAL
OLD TOWN HOUSE ROAD
SANDWICH 1.3 MI.
BARNSTABLE 2.7 MI.
WAREHAM 28 MI.
0.4 MI. TO INTERCHANGE 7
WHITE ROCK ROAD
SUMMER ST
UNION ST
CENTER ST
WEIR
Y A R M


WATER
CENTRAL
WATER
DOCKS
DOCKS
CATAUMET MARINA
DOCKS
RED BROOK HARBOR
EBB FLOW
PARKER'S BOATYARD
EXISTING FLOATS
MAINTENANCE DREDGING
RELOCATED FLOATS
NEW DREDGING
AUTO PARK
AUTO PARKING
WATER
WATER
RED BROOK HARBOR
PARKER'S BOATYARD AND VICINITY
RED BROOK HARBOR
BOURNE (CATAUMET), MASS.
SCALE: 1"=200'
SEPT. 1989
200 100 0 200 400
CHARLES L. ROWLEY & ASSOCIATES
Civil Engineers and Surveyors
2229 CRANBERRY HIGHWAY, WEST WAREHAM, MASS. 02576

GHR ANALYTICAL, INC.
26 MAIN STREET
LAKEVILLE, MA 02347
(617) 947-5077

REPORT OF ANALYSIS

Client: Parker's Boat Yard Inc.

Job No. : 28-386

Project: Sieve Analysis

Date: May 12, 1986

Date Samples Collected: Unknown

Collected by: Bruce Parker

Sample Location:	Area #1 Travel Lift	Area #2 Easterly End of Southerly Bulkhead	Area #3 Westerly End of Southerly Bulkhead
GHR Lab ID:	54605	54606	54607
Size Fraction		**% of Total**	
Coarse Gravel (≥ 64mm)	<0.1	<0.1	<0.1
Fine Gravel (2-64 mm)	7.1	7.4	15.5
Sand (0.063-2 mm)	91.9	51.9	31.9
Silt & Clay (<0.004-0.063 mm)	0.4	40.7	52.6

Approved by: L E S Cobb

Leanne E.S. Cobb, Laboratory Manager
GHR Analytical, Inc.

GHR
ANALYTICAL INCORPORATED

Report of Analysis

Client: Parker's Boat Yard, Inc.
Project: Sediment Analysis

Job No: 28-386
Date: May 12, 1986

Sample A Area #1 Travel Lift
Sample B Area #2 Easterly End of Southerly Bulkhead
Sample C Area #3 Westerly End of Southerly Bulkhead
Sample D Composite of Area #1,#2, and #3
Sample E
Sample F Detection Limit

Test Results in mg/kg (dry weight) unless noted otherwise.

	A	B	C	D	E	F
Sample Log Number	546Ø5	546Ø6	546Ø7	546Ø5-Ø7		
Type of Sample	Sediment	Sediment	Sediment	Sediment		Detection
Date Collected	Unknown	Unknown	Unknown	Unknown		Limit
Time Collected	Unknown	Unknown	Unknown	Unknown		
Collected By	B.Parker	B.P.	B.P.	B.P.		
% Water (%)	14.4	59.1	74.6			
% Volatile Solids (%)	Ø.4	3.6	2.8			
Oil & Grease (%)	BDL[1]	BDL	Ø.Ø24			Ø.Ø1
Mercury	Ø.166	Ø.664	Ø.992			
Cadmium	BDL	BDL	1.38			Ø.42
Lead	6.4	75.1	96.Ø			
Arsenic	1.26	1Ø.8	15.5			
Chromium	4.1	22.4	35.6			
Copper	1Ø.5	134	174			
Nickel	3.6	13.5	24.8			
PCB's				BDL		Ø.5Ø

Comments: 1. BDL= Below Detection Limit.
See attached sheet for Classification of Dredge Material.

Approved by: [signature]

26 MAIN STREET • LAKEVILLE, MASSACHUSETTS 02346 • (617) 947-5077 • (617) 763-8404

BULK SEDIMENT CHEMISTRY

Marine Sediments

P & J Realty Trust

Falmouth Inner Harbor

Falmouth, Massachusetts

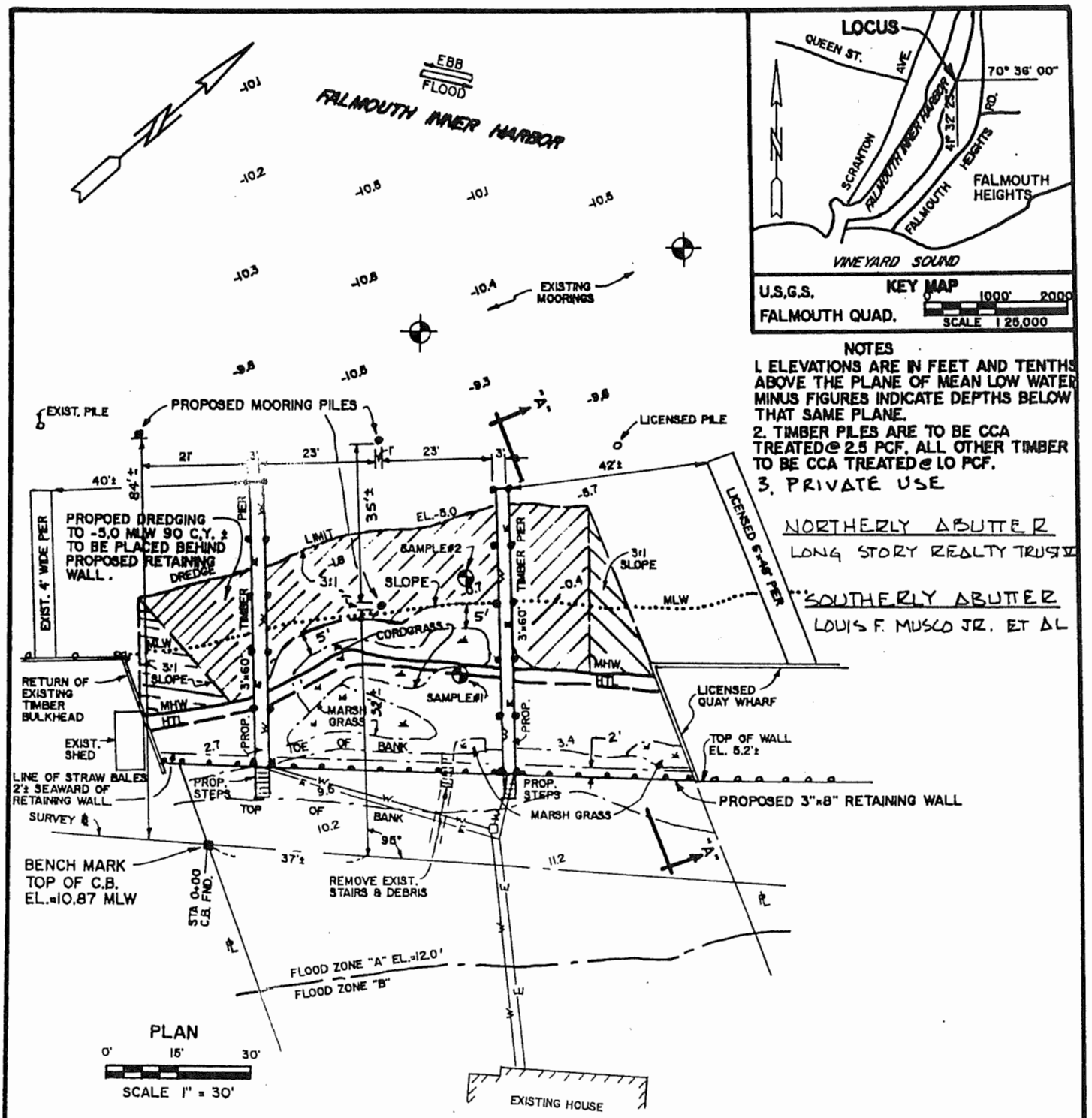
Parameter	Concentration	Classification
Cadmium (mg/kg)	<0.30	Category I
Chromium (mg/kg)	2	Category I
Copper (mg/kg)	10	Category I
Lead (mg/kg)	5	Category I
Mercury (mg/kg)	0.11	Category I
Oil and Grease	<0.05%	Type A
Volatile Solids	0.38%	Type A

BRAMAN ENGINEERING COMPANY

SIEVE ANALYSIS # 2 P & J REALTY

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	560.1	778.1	218.0	28.4	71.6
10	508.4	654.3	145.9	19.0	52.6
20	480.2	678.1	197.9	25.8	26.8
40	456.1	593.3	137.2	17.9	8.9
60	325.2	371.2	46.0	6.0	2.9
100	313.9	329.8	15.9	2.1	0.8
200	301.6	305.7	4.1	0.5	0.3
Pan	372.5	375.7	3.2	0.3	0.0

Weight of Sample = 768.2 grams



NOTES

1. ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE PLANE OF MEAN LOW WATER MINUS FIGURES INDICATE DEPTHS BELOW THAT SAME PLANE.
2. TIMBER PILES ARE TO BE CCA TREATED @ 2.5 PCF. ALL OTHER TIMBER TO BE CCA TREATED @ 1.0 PCF.
3. PRIVATE USE

NORTHERLY ABUTTER
LONG STORY REALTY TRUST

SOUTHERLY ABUTTER
LOUIS F. MUSCO JR. ET AL

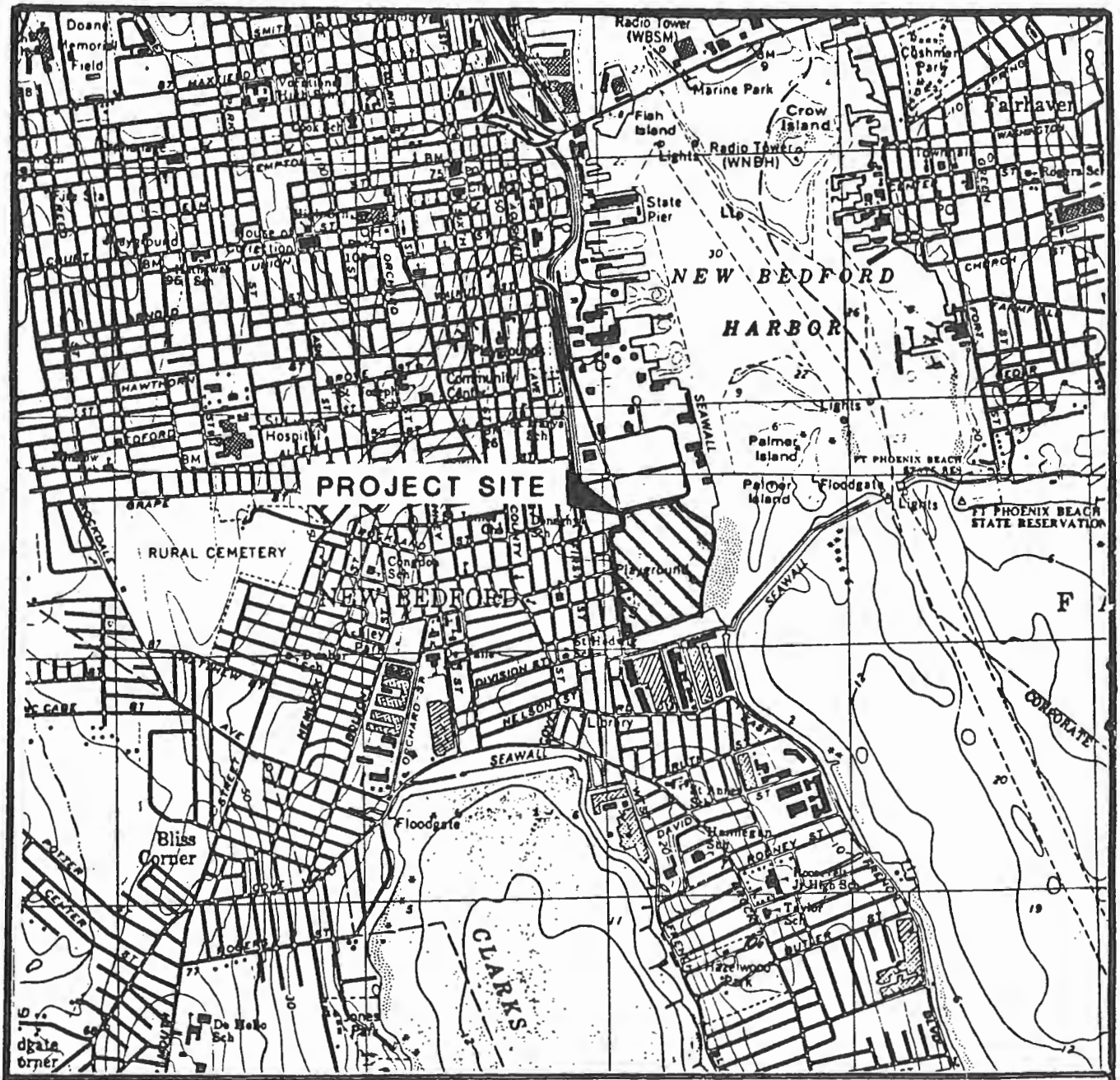
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. BRAMAN
No. 10905
REGISTERED PROFESSIONAL ENGINEER
CIVIL

PROPOSED TIMBER PIER, RETAINING WALL AND DREDGING IN *FALMOUTH INNER HARBOR* FALMOUTH, BARNSTABLE CO., MA.
APPLICATION BY
P & J REALTY TRUST

AUG. 9, 1988 SHEET 1 OF 2

BRAMAN ENGINEERING COMPANY, LTD.
CIVIL ENGINEERS & SURVEYORS
258 [illegible] ST., BUZZARDS BAY, MA.

KURZ ASSOCIATES, INC.



U.S.G.S. NEW BEDFORD QUADRANGLE SCALE 1:25,000

SITE LOCUS PLAN

FRONT STREET (VACANT LOT)

NEW BEDFORD, MASSACHUSETTS

FIGURE 1

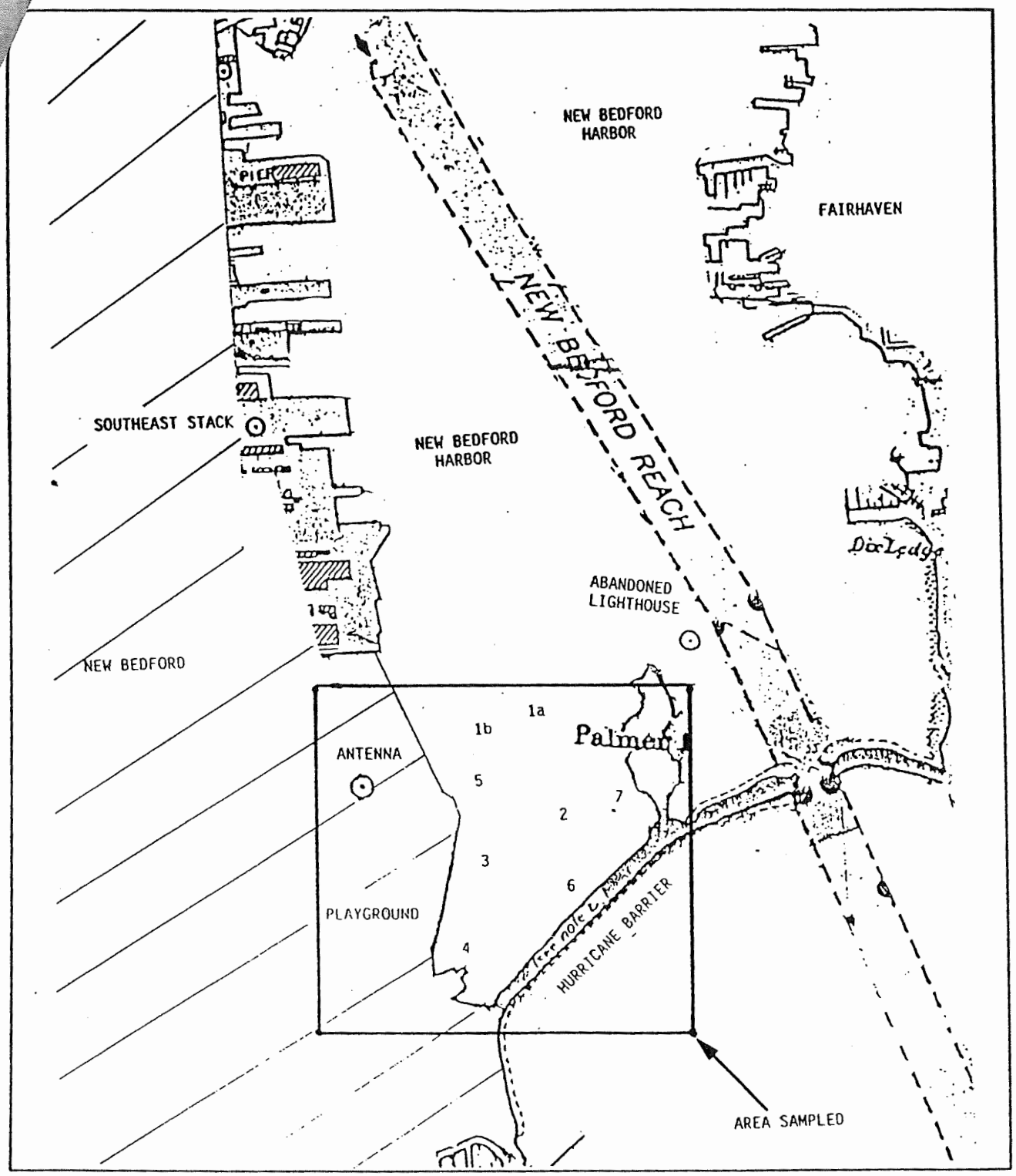


Figure 1. Sampling station locations for sediment analysis in Palmers Cove in New Bedford Harbor in New Bedford, Massachusetts.

III. RESULTS

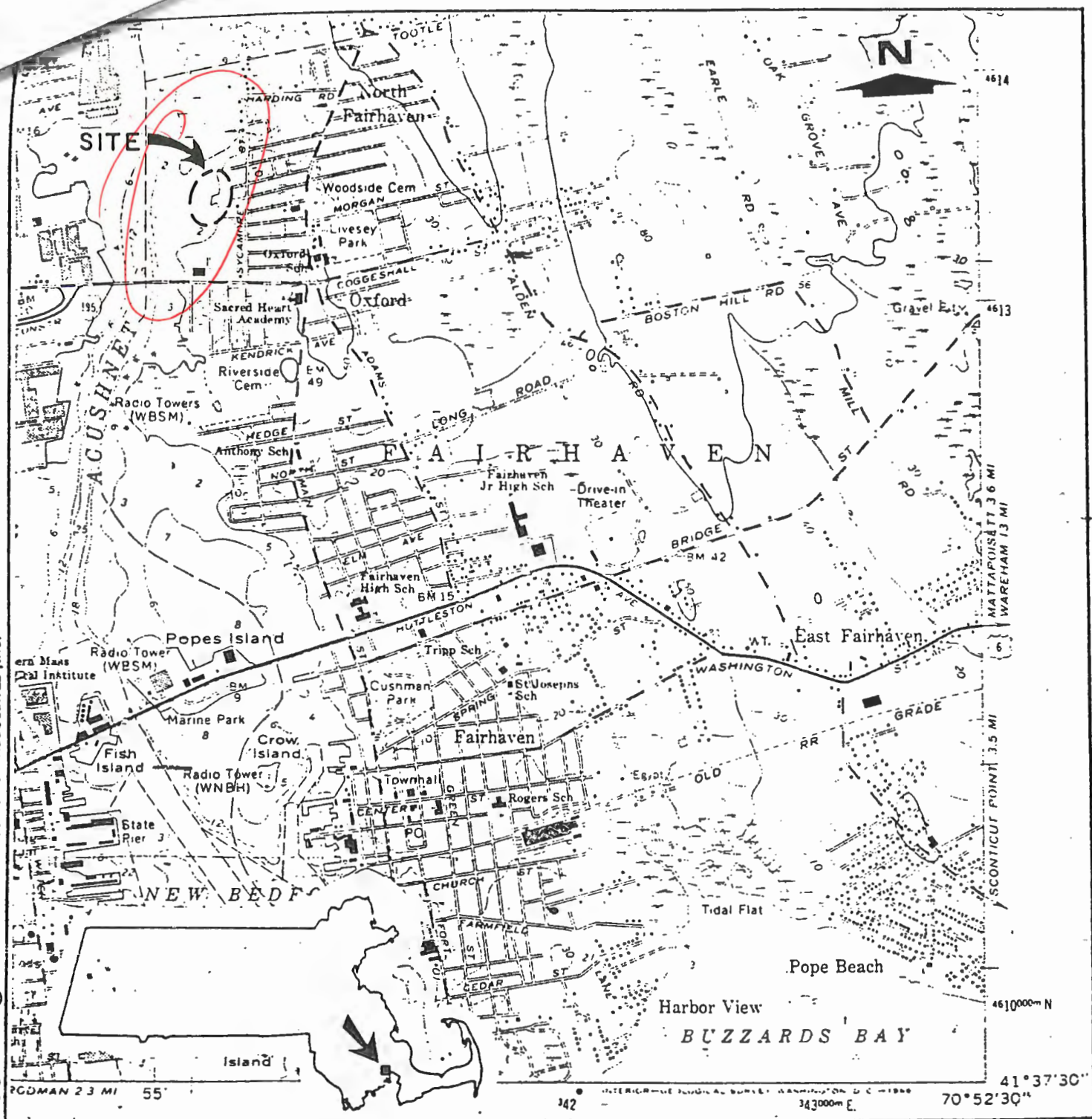
The five sediment samples collected for this evaluation ranged from grey fine to medium sand at the nearshore stations NB1b, NB3 and NB7 to grey organic silt in the deeper water stations NB2 and NB6. The depth of the existing silt layer at each station is as follows:

NB1a = 6" - 8" silt w/ sand below
NB1b = 10" - 15"
NB2 = 6" - 8"
NB3 = none (no silt, all sand)
NB4 = none
NB5 = none
NB6 = ~~10" - 20"~~ (top 3" was silt)
NB7 = none

Results of bulk analysis of the sediment are presented in Table 1 and the results of elutriate analysis are presented in Table 2.

Table 1. Results of bulk analysis of sediment from Palmers Cove in New Bedford Harbor in New Bedford, Massachusetts

Type of analysis (unit of measurement)	Stations				
	NB1b	NB2	NB3	NB6	NB7
Grain size distribution (wt.%)					
sand (≥0.0625 mm)	89%	32%	97%	23%	97%
silt (0.0625-0.0039 mm)	7%	60%	2%	49%	1%
clay (<0.0039 mm)	4%	8%	1%	28%	12%
Volatile solids (wt.%)	1.8	5.7	0.64	7.3	1.2
Water content (%)	29.6	51.7	26.4	58.8	33.8
Trace metals (µg/g, dry wt.)					
Arsenic (As)	1.5	6.2	<1	<10	<10
Cadmium (Cd)	0.75	4.4	<0.5	1.5	0.6
Chromium (Cr)	34	190	12	72	15
Copper (Cu)	80	380	19	230	46
Mercury (Hg)	0.23	0.44	<.10	0.65	0.11
Lead (Pb)	31	110	9.6	100	14
Nickel (Ni)	6.4	23	<4	16	<4
Zinc (Zn)	75	240	21	180	33
Organics					
PCBs (µg/g, dry wt.)	2.7	27	0.37	6.0	0.38
Oil and grease (% wet wt.)	0.7	1.2	0.2	0.55	0.23



0' 1000' 2000' 4000'

SCALE 1" ≈ 2000'

FROM USGS NEW BEDFORD NORTH, MASS.
QUADRANGLE MAP (1964)

GZA	PURPOSE: RESTORE WETLAND DATUM: MLW ADJACENT PROPERTY OWNERS: 1. CGI MANAGEMENT, INC. 2. ANNA & ROSE COUTO	LOCUS PLAN MEDEIROS BUS COMPANY 72 SYCAMORE STREET FAIRHAVEN, MASS.	PROPOSED WETLAND RESTORATION IN: ACUSHNET RIVER COUNTY OF: BRISTOL APPLICATION BY: MEDEIROS BUS CO. SHEET 1 OF 3

© 1987 GOLDBERG-ZOINO & ASSOCIATES, INC.

FILE No. N-10160

Job#: N 10160
Date Sampled: 10/5-10/8/87
Date Tested: 10/28/87

GZA SCREENING ANALYIS FOR
PCB'S AND PESTICIDES
(mg/Kg DRY SOIL)

GOLDBERG-ZOINO & ASSOCIATES
320 NEEDHAM STREET
NEWTON UPPER FALLS, MA
02164
(617) 969-0050

Sample#	B-1	B-4	B-7	B-11/S-3	B-12/S-3
Lab#	00930-PCB	00931-PCB	00932-PCB	00933-PCB	00934-PCB
AROCLOR 1260	ND	ND	ND	ND	ND
AROCLOR 1254	ND	5.5	ND	TRACE	TRACE
AROCLOR 1248	ND	ND	ND	ND	ND
AROCLOR 1242	ND	ND	ND	ND	ND
ALPHA-BHC	ND	ND	ND	ND	ND
BETA-BHC	ND	ND	ND	ND	ND
LINDANE	ND	ND	ND	ND	ND
HEPTACLOR	ND	ND	ND	ND	ND
ALDRIN	ND	ND	ND	ND	ND
HEPTACLOR EPOXIDE	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND
P,P'-DDE	ND	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND	ND
O,P'-DDD	ND	ND	ND	ND	ND
P,P'-DDT	ND	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND	ND

Comments:

1) PCB's and pesticides are identified by gas chromatography. The analysis was performed with a Hewlett Packard 5890A equipped with an electon capture detector and an SP-2100 glass column.

2) Compounds are identified by comparison of peak patterns and relative retention times to that of standards.

3) The method detection limit is 0.1 ppm (weight/weight of soil or water), levels between 0.1 and 0.5 are reported as "Trace".

4) The above method provides reliable analytic data when used in conjunction with quality control samples analyzed by approved EPA methods.

ANALYSED BY KW
REVIEWED BY A.

Date Sampled: N-10160 10/7/87
Date Tested: 10/8/87

GZA SCREENING ANALYIS FOR
PCB'S AND PESTICIDES
(ng/Kg DRY SOIL)

GOLDBERG-ZO...
320 NEEDHAM STREET
NEWTON UPPER FALLS, MA
02164
(617) 969-0050

Sample	Fill B-3,B-6,B-9	B-10, FILL	Fill B-2,B-5,B-8	Fill B-1,B-4,B-7	B-12, FILL	B-11, FILL
Lab	00856-PCB	00857-PCB	00858-PCB	00859-PCB	00860-PCB	00861-PCB
AROCLOR 1260	ND	ND	ND	ND	ND	ND
AROCLOR 1254	ND	TRACE	ND	ND	ND	ND
AROCLOR 1248	ND	ND	ND	ND	ND	ND
AROCLOR 1252	ND	ND	ND	ND	ND	ND
ALPHA-BHC	ND	ND	ND	ND	ND	ND
BETA-BHC	ND	ND	ND	ND	ND	ND
LINDANE	ND	ND	ND	ND	ND	ND
HEPTACLOR	ND	ND	ND	ND	ND	ND
ALDRIN	ND	ND	ND	ND	ND	ND
HEPTACLOR EPOXIDE	ND	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND	ND
P,P'-DDE	ND	ND	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND	ND	ND
O,P'-DDD	ND	ND	ND	ND	ND	ND
P,P'-DDT	ND	ND	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND	ND	ND

ID based on indefinable chromatogram
Based on previous 1248 at 18ppm nearby - this is probably 1248. The trace chromatogram makes it difficult to make positive ID.

Comments:

1) PCB's and pesticides are identified by gas chromatography. The analysis was performed with a Hewlett Packard 5890A equipped with an electon capture detector and an SP-2100 glass column.

2) Compounds are identified by comparison of peak patterns and relative retention times to that of standards.

3) The method detection limit is 0.05 ppm (weight/weight of soil or water), levels between 0.05 and 0.5 are reported as "Trace".

4) The above method provides reliable analytic data when used in conjunction with quality control samples analyzed by approved EPA methods.

ANALYSED BY ALL
REVIEWED BY JSM

SCREENING PROCEDURE OF PCB'S IN SOIL

The methodology used by GZA to determine the level of PCB's in soil is taken from the method developed by Dr. Thomas J. Spittler, U.S. EPA Region 1. The method has been used successfully on several occasions where GZA was retained to perform analyses for PCB's in soil. The sample is first extracted with a 3:1 solution of methanol and water by agitation for 1 minute. A second extraction with 4 milliliters of pesticide grade methanol is performed by agitation for 1 minute. After allowing approximately 5 minutes for settling of suspended particulate matter, 1.0-2.0 uls of the extract injected directly into the gas chromatograph. If the sample is very oily a clean-up procedure is employed. The extract is eluted through a column containing anhydrous sodium sulfate and florisil to remove water and oil interferences.

The gas chromatograph is Hewlett Packard 5890A GC equipped with a Ni-63 electron capture detector. The analytical column is a 6' x 0.25" glass packed with 3% SP-2100 on 100/120 mesh Supelcoport (Supelco, Bellefonte, Pennsylvania). The carrier gas is Ultra High Purity 5% methane/95% argon (Northeast Cryogenics, Newtonville, Massuchusetts) with a flow rate of 40 ml/min. The signal from the GC is sent to a Nelson Analytical 760 series interface and then transmitted to an IBM AT for quantification. Quantification is based on the daily analysis of PCB standards.

REFERENCES

Spittler, T.M., "Field Measurement of PCB's in Soil and Sediment Using a Portable Gas Chromatograph", Paper presented at the 4th national conference on management of hazardous waste sites- Washington, D.C., October 1983

Boe, B. and Egaas, E., "Qualitative and Quantitative Analyses of Polychlorinated Biphenyls by Gas-Liquid Chromatography", Journal of Chromatography, 180(1979) 127-132.

Method 608, Federal Register, "Guidelines for Established Test Procedures for the Analysis of Pollutants", July 1982.

JSM July 1987

Job#: M10160
Date In: 5/11/87
Date Tested: 5/21/87

GZA SCREENING ANALYIS FOR
PCB'S AND PESTICIDES
(mg/Kg DRY SOIL)

Sample#	0-2.5' A	0-2.0' B	0-2.0' C	0-1.0' D	0-1.0' E	0-2.5' F
Lab#	00734-PCB	00735-PCB	00736-PCB	00737-PCB	00738-PCB	00739-PCB
AROCLOR 1260						
AROCLOR 1254						
AROCLOR 1248	4.1	0.9	TRACE	TRACE	TRACE	1.0
AROCLOR 1252						
ALPHA-BHC						
BETA-BHC						
LINDANE						
HEPTACLOR						
ALDRIN						
HEPTACLOR EPOXIDE						
DIELDRIN						
P,P'-DDE						
ENDRIN						
O,P'-DDD						
P,P'-DDT						
P,P'-DDD						

Comments:

1) PCB's and pesticides are identified by gas chromatography. The analysis was performed with a Hewlett Packard 5890A equipped with an electon capture detector and an SP-2100 glass column.

2) Compounds are identified by comparison of peak patterns and relative retention times to that of standards.

3) The method detection limit is 0.1 ppm (weight/weight of soil or water), levels between 0.1 and 0.5 are reported as "Trace".

4) The above method provides reliable analytic data when used in conjunction with quality control samples analyzed by approved EPA methods.

ANALYSED BY AJI
REVIEWED BY JSM

nseco

METALS

Client Name: Goldberg-Zoino & Associates, Inc.

Client ID: B-1

Laboratory ID: 5553-01

Matrix: Solid Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/08/87 Prepared: 10/26/87 Analyzed: 11/02/87

Parameter	Result	Units	Theoretical Reporting Limit*	Analytical Method
Arsenic	55	mg/kg (dry wt)	0.3	7060
Cadmium	ND	mg/kg (dry wt)	1	6010
Chromium	59	mg/kg (dry wt)	2	6010
Copper	410	mg/kg (dry wt)	2	6010
Lead	1,240	mg/kg (dry wt)	5	6010
Mercury	0.38	mg/kg (dry wt)	0.1	7471
Nickel	73	mg/kg (dry wt)	4	6010
Zinc	880	mg/kg (dry wt)	2	6010

Solid content = 58.3%

*Reporting limit based on 100% solid.

ND = Not detected.

Reported by LAS Approved by CAK

METALS

Client Name: Goldberg-Zoino & Associates, Inc.

Client ID: B-4

Laboratory ID: 5553-02

Matrix: Solid Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/08/87 Prepared: 10/26/87 Analyzed: 11/02/87

Parameter	Result	Units	Theoretical Reporting Limit*	Analytical Method
Arsenic	1.2	mg/kg (dry wt)	0.3	7060
Cadmium	0.71	mg/kg (dry wt)	0.5	6010
Chromium	21	mg/kg (dry wt)	2	6010
Copper	61	mg/kg (dry wt)	2	6010
Lead	27	mg/kg (dry wt)	5	6010
Mercury	ND	mg/kg (dry wt)	0.1	7471
Nickel	ND	mg/kg (dry wt)	4	6010
Zinc	83	mg/kg (dry wt)	2	6010

Solid content = 80.8%

*Reporting limit based on 100% solid.

ND = Not detected.

Reported by LKB Approved by CMC

METALS

Client Name: Goldberg-Zoino & Associates, Inc.

Client ID: B-7

Laboratory ID: 5553-03

Matrix: Solid Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/08/87 Prepared: 10/26/87 Analyzed: 11/02/87

Parameter	Result	Units	Theoretical Reporting Limit*	Analytical Method
Arsenic	1.7	mg/kg (dry wt)	0.3	7060
Cadmium	ND	mg/kg (dry wt)	0.5	6010
Chromium	6.7	mg/kg (dry wt)	2	6010
Copper	6.1	mg/kg (dry wt)	2	6010
Lead	ND	mg/kg (dry wt)	5	6010
Mercury	ND	mg/kg (dry wt)	0.1	7471
Nickel	5.2	mg/kg (dry wt)	4	6010
Zinc	14	mg/kg (dry wt)	2	6010

Solid content = 82.3%

*Reporting limit based on 100% solid.

ND = Not detected.

Reported by LKS Approved by OAK

PETROLEUM HYDROCARBON ANALYSIS BY IR

EPA Method 418.1

Client Name: Goldberg-Zoino & Associates, Inc.
Client ID: B-1
Laboratory ID: 5553-01
Matrix: Soil Sampled: 10/05/87 Received: 10/08/87
Authorized: 10/08/87 Prepared: 10/09/87 Analyzed: 10/13/87

Parameter	Result	Units	Reporting Limit
Petroleum hydrocarbon ----------	150	µg/g (dry wt)	40

Solid content = 81%

Reported by AN Approved by MEF

nseco

PETROLEUM HYDROCARBON ANALYSIS BY IR

EPA Method 418.1

Client Name: Goldberg-Zoino & Associates, Inc.

Client ID: B-4

Laboratory ID: 5553-02

Matrix: Soil Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/08/87 Prepared: 10/09/87 Analyzed: 10/13/87

Parameter	Result	Units	Reporting Limit
Petroleum hydrocarbon ----------	580	µg/g (dry wt)	80

Solid content = 83%

Reported by AN Approved by MEF

PETROLEUM HYDROCARBON ANALYSIS BY IR

EPA Method 418.1

Client Name: Goldberg-Zoino & Associates, Inc.

Client ID: B-7

Laboratory ID: 5553-03

Matrix: Soil Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/08/87 Prepared: 10/09/87 Analyzed: 10/13/87

Parameter	Result	Units	Reporting Limit
Petroleum hydrocarbon	ND	µg/g (dry wt)	20

Solid content = 81%

ND = Not detected.

Reported by AN Approved by MEF

INORGANIC PARAMETERS

Client Name: GOLDBERG-ZOINO & ASSOCIATES, INC.

Client ID: B-1

Laboratory ID: 64740-001 Enseco ID: 5553-01

Matrix: Solid Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/09/87

Parameter	Result	Units (as received)	Reporting Limit	Analytical Method	Analyzed
Total Solids	67.7	%	0.1	D-2216	10/20/87
Total Organic Carbon	4.3	%	0.03	9060	10/21/87

N.D. = Not detected

Approved by: Lindsay Breyer

Sample: 64740-001

INORGANIC PARAMETERS

Client Name: GOLDBERG-ZOINO & ASSOCIATES, INC.

Client ID: B-4

Laboratory ID: 64740-002 Enseco ID: 5553-02

Matrix: Solid Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/09/87

Parameter	Result	Units (as received)	Reporting Limit	Analytical Method	Analyzed
Total Solids	85.5	%	0.1	D-2216	10/20/87
Total Organic Carbon	0.69	%	0.03	9060	10/21/87

N.D. = Not detected

Approved by: Lindsay Breyer

Sample: 64740-002

INORGANIC PARAMETERS

Client Name: GOLDBERG-ZOINO & ASSOCIATES, INC.

Client ID: B-7

Laboratory ID: 64740-003 Enseco ID: 5553-03

Matrix: Solid Sampled: 10/05/87 Received: 10/08/87

Authorized: 10/09/87

Parameter	Result	Units (as received)	Reporting Limit	Analytical Method	Analyzed
Total Solids	82.9	%	0.1	D-2216	10/20/87
Total Organic Carbon	0.28	%	0.03	9060	10/21/87

N.D. = Not detected

Approved by: Lindsay Breyer

Sample: 64740-003

BULK SEDIMENT ANALYSIS DATA

Project: LONG ~~SHORE~~ STORY REALTY TRUST

Waterway: INNER HARBOR FALMOUTH State: MA Quad: FALM

Application #: 25-860003 Disposal Site: UPLD

Latitude: 41° 33' Date of Testing: 8/12/85

Longitude: 70° 36' 07" Date of Entry: 8/24/85

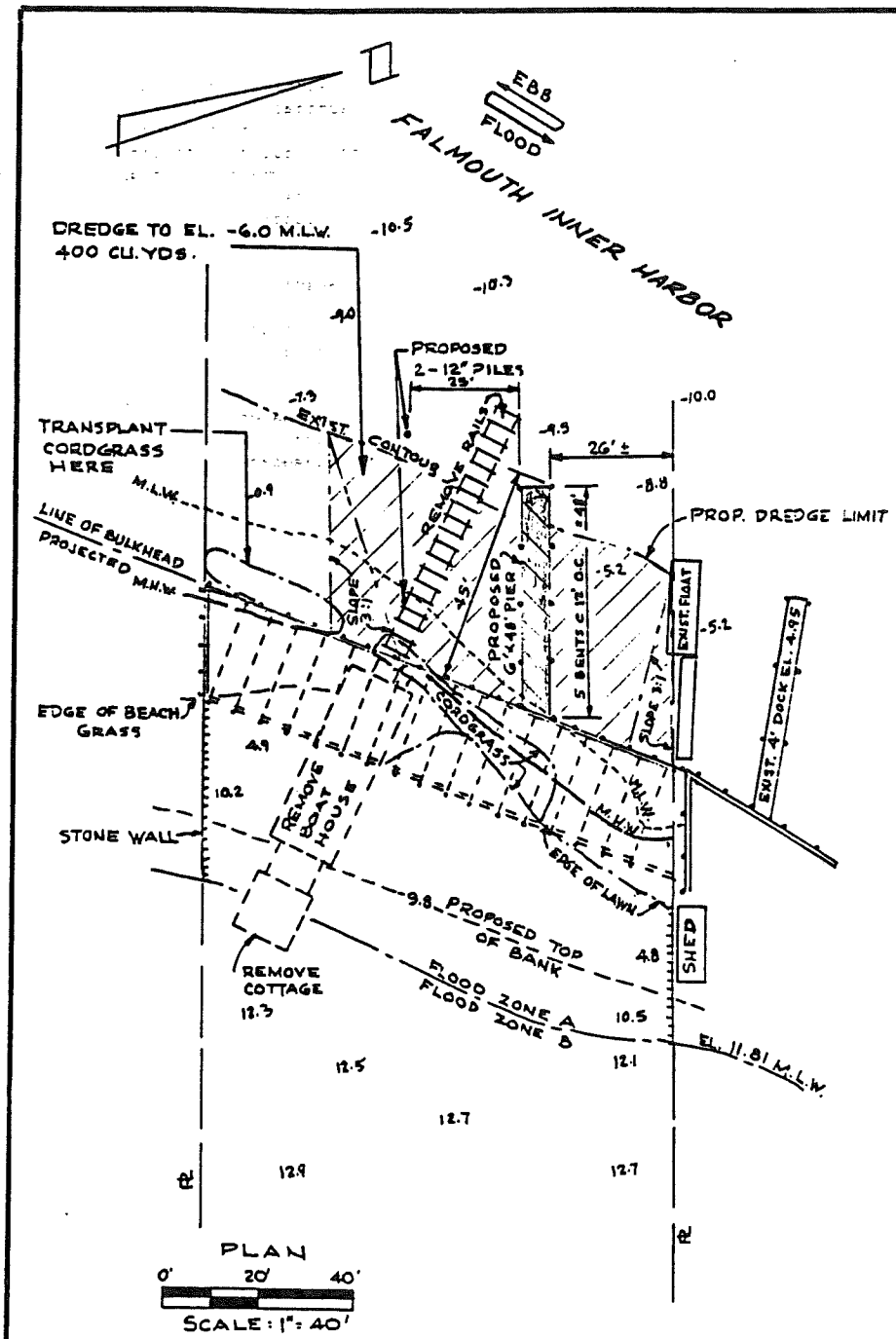
Arsenic (ppm) --		PCB's (ppm) ---	
Cadmium (ppm) --	0.4	Vol. Sol. (%) -	.51
Chromium (ppm) -	2.8	Oil & Gr. (%) -	.01
Copper (ppm) ---	14	Water (%) -----	
Lead (ppm) -----	16	Gravel (%) ----	—
Mercury (ppm) --	.52	Sand (%) ------	99.59
Nickel (ppm) ---		Silt (%) ------	.20
Zinc (ppm) -----		Clay (%) ------	.21

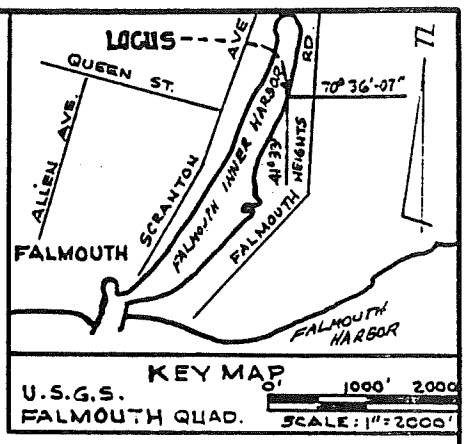
Bioassay Performed (Y/N) _____

Comments: ND Cd; DL 0.4ppm; NA As, Ni, Zn; PCB

Project Information Entered On: 8/24/85

By: MJS





NOTES:

ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE PLANE OF MEAN LOW WATER. MINUS FIGURES INDICATE DEPTHS BELOW THAT SAME PLANE.

TIMBER PILES ARE TO BE C.C.A. TREATED @ 2.5 p.c.f. ALL OTHER TIMBER TO BE C.C.A. TREATED @ 1.0 p.c.f.

COMMONWEALTH OF MASSACHUSETTS
ROBERT A. BRAMAN
No. 10905
REGISTERED PROFESSIONAL ENGINEER
CIVIL

Robert A. Braman

TO CONSTRUCT TIMBER BULKHEAD, TIMBER PIER & DREDGE IN FALMOUTH INNER HARBOR

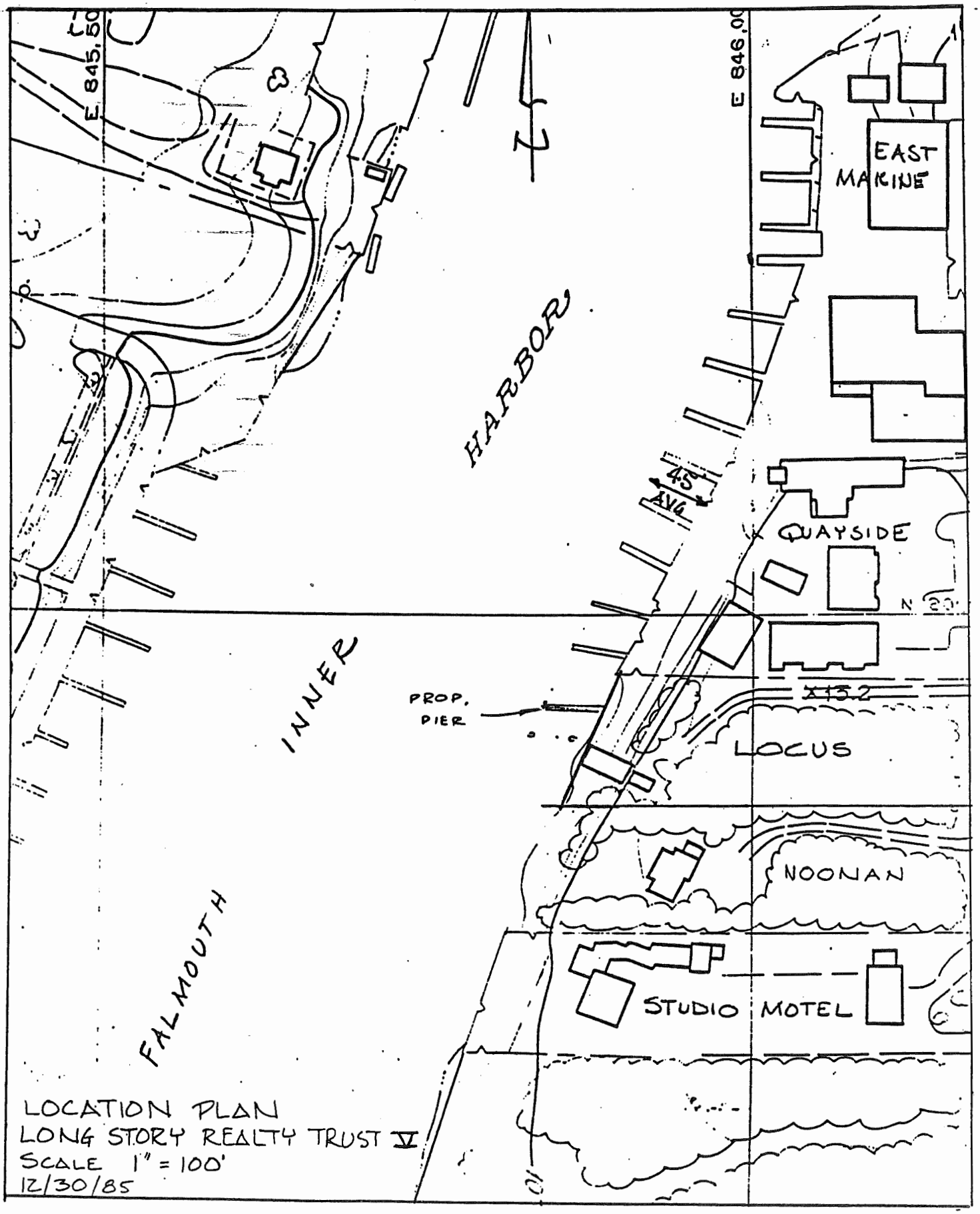
FALMOUTH, BARNSTABLE CO., MA.

APPLICATION BY

LONG STORY REALTY TRUST

NOV. 12, 1985 SHEET 1 of 2

BRAMAN ENGINEERING CO.
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST. BUZZARDS BAY, MA.



LOCATION PLAN
LONG STORY REALTY TRUST V
SCALE 1" = 100'
12/30/85

EnviroSystems, Incorporated
One Lafayette Road, P.O. Box 4778, Hampton, New Hampshire 03842
603-926-3345

August 12, 1985

Mr. Robert Braman
Braman Engineering Company
258 Main Street
Buzzards Bay, MA 02532

Dear Bob:

Enclosed are the results of bulk sediment analysis performed on sediment samples we recently received. Evaluation of the sediments followed protocol published in Standard Methods for the Examination of Water and Waste; Sections 303A and 303F for metals and 209G for volatile matter. Oil and Grease analysis utilized a soxhlet extraction.

Review of the data, including concentrations of trace metals and organics plus standards used by the Massachusetts DEM to classify sediments are presented indivdually in the following table.

If you have any questions regarding the data, please call.

Sincerely,

Kenneth A. Simon
President

KAS:pks
Enclosure

BULK SEDIMENT CHEMISTRY

Marine Sediments

Long Story Realty

Inner Harbor, Falmouth, Massachusetts

Parameter	Concentration	Classification
Cadmium (mg/kg)	<0.4	Category I
Chromium (mg/kg)	2.8	Category I
Copper (mg/kg)	14	Category I
Lead (mg/kg)	16	Category I
Mercury (mg/kg)	0.52	Category II
Oil and Grease	0.01%	Type A
Volatile Solids	0.51%	Type A

BRAMAN ENGINEERING COMPANY

LONG STORY REALTY TRUST

SIEVE ANALYSIS # 2

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	592.5	776.0	183.5	25.22	74.78
10	509.6	655.6	146.0	20.07	54.71
20	475.8	672.5	196.7	27.04	27.67
40	458.4	592.5	134.1	18.43	9.24
60	326.8	373.5	46.7	6.42	2.82
100	315.2	329.6	14.4	1.98	0.84
200	303.3	306.4	3.1	0.43	0.41
Pan	372.7	375.6	3.0	0.41	0.00

Weight of Sample = 727.5

civil engineers & surveyors 258 main street buzzards bay, massachusetts 02532 telephone 759-8273

BULK SEDIMENT ANALYSIS DATA

Project: DAVID GILLMORE

Waterway: FIDDLER'S COVE State: MA Quad: HYANNIS

Application #: 29-87-1024 Disposal Site: UPLD

Latitude: 41° 38' 20" Date of Testing: 4/22/87

Longitude: 70° 38' 47" Date of Entry: 7/8/87

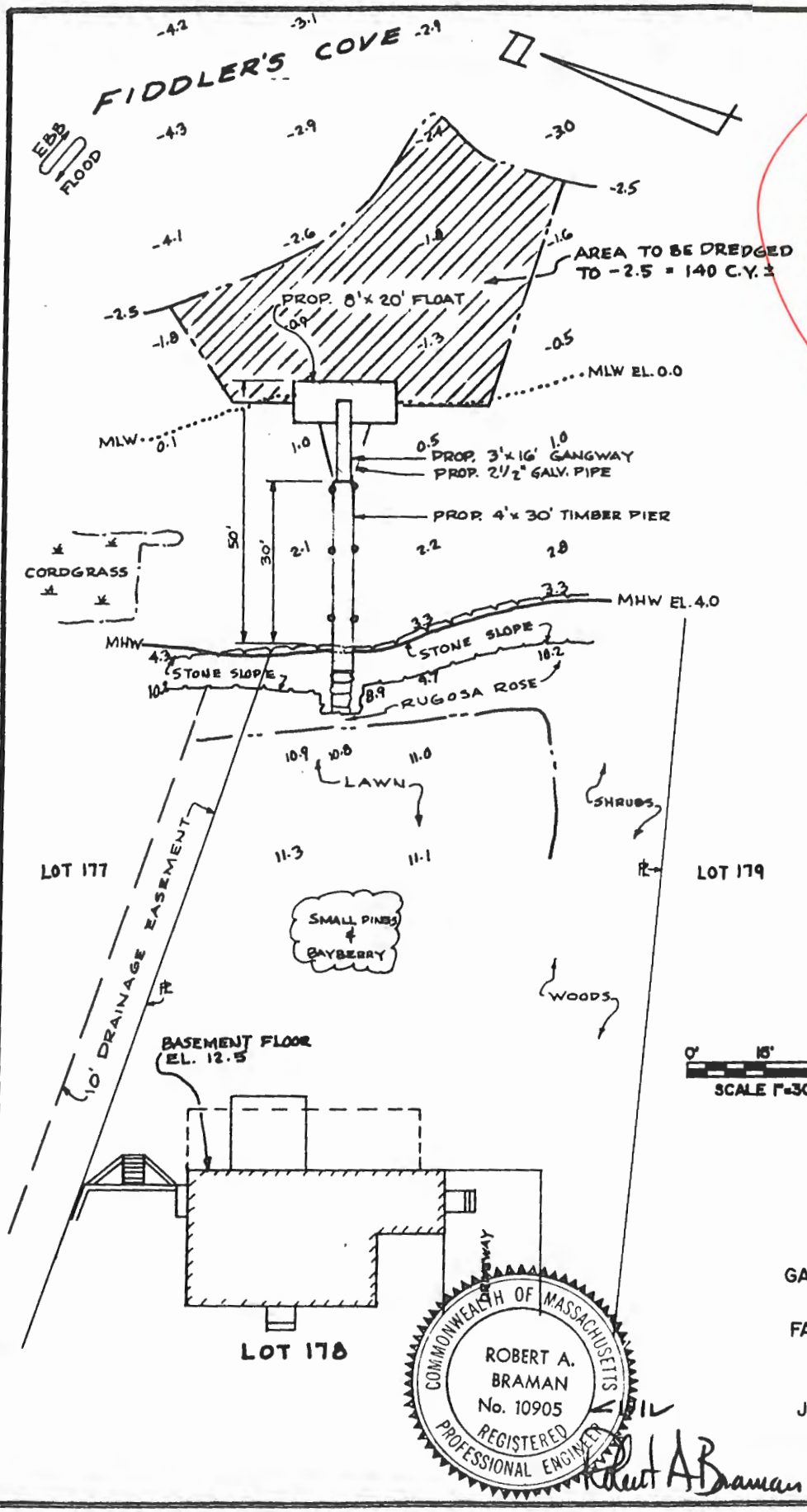
Arsenic (ppm) --	0	PCB's (ppm) ---	0
Cadmium (ppm) --	1.3	Vol. Sol. (%) -	0.46
Chromium (ppm) -	5.02	Oil & Gr. (%) -	.02
Copper (ppm) ---	3.24	Water (%) -----	0
Lead (ppm) -----	15.23	Gravel (%) ----	24
Mercury (ppm) --	0	Sand (%) ------	76
Nickel (ppm) ---	0	Silt (%) ------	0
Zinc (ppm) -----	0	Clay (%) ------	0

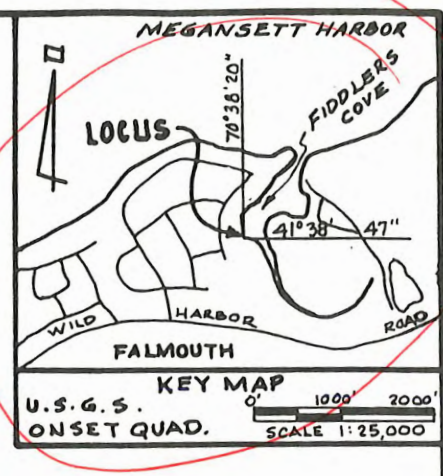
Bioassay Performed (Y/N) N

Comments: 0 = NOT REQUIRED

Project Information Entered On: 7/8/87

By: STEVE CONGDON





1. ELEVATIONS SHOWN ARE IN FEET AND TENTHS ABOVE THE PLANE OF MEAN LOW WATER. MINUS FIGURES INDICATE ELEVATIONS BELOW THAT SAME PLANE.

2. TIMBER PILES TO BE CCA TREATED @ 2.5 PCF. ALL OTHER TIMBER TO BE CCA TREATED @ 1.0 PCF.

3. ALL HARDWARE SHALL BE GALVANIZED.

4. HATCHED AREA REPRESENTS AREA TO BE DREDGED.

ABUTTERS

LOT 179
CAVARETTA, ALFRED S. ET AL
TRUSTEES FIDDLER RLTY TR.

LOT 177
LIGHTMAN, BERNARD & BARBARA

0' 15' 30'
SCALE 1"=30'

COMMONWEALTH OF MASSACHUSETTS
ROBERT A. BRAMAN
No. 10905
REGISTERED PROFESSIONAL ENGINEER

TO CONSTRUCT TIMBER PIER, GANGWAY, FLOAT AND DREDGING IN

FIDDLER'S COVE

FALMOUTH, BARNSTABLE CO. MA.

APPLICATION BY

DAVID GILLMORE

JUNE 2, 1987 SHEET 1 OF 2

BRAMAN ENGINEERING COMPANY
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST. BUZZARDS BAY, MA.

BRAMAN ENGINEERING COMPANY

DAVID GILLMORE
FIDDLERS COVE

SIEVE ANALYSIS # 1

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	591.79	1011.49	419.7	23.7	76.3
10	942.41	510.39	432.02	24.40	51.90
20	474.93	811.60	336.67	19.01	32.89
40	457.12	870.59	413.47	23.35	9.54
60	325.95	443.54	117.59	6.64	2.90
100	314.90	354.99	40.09	2.26	0.64
200	303.21	309.85	6.64	0.38	0.26
Pan	372.49	376.91	4.42	0.26	0.00

99.74 %

Weight of Sample = 1770.60

civil engineers & surveyors 258 main street buzzards bay, massachusetts 02532 telephone 759-8273

ERTIFICATE OF ANALYSIS

CLIENT: Braman Engineering Co.

ANALYSIS REQUESTED: As listed below

TOXIKON NUMBER: 87C-0311
DATE SAMPLED: 04/10/87
DATE REPORTED: 04/22/87

CLIENT IDENT: David Gilmore, Falmouth, MA. Dredge Sample
SAMPLE LOCATION:
SAMPLE DESCRIPTION: water soil oil sludge solid XX other:Sediment
SAMPLE CONTAINER: glass 1 plastic VOA vial
FIELD PREP:

PARAMETER	RESULT	UNITS	MDL*	INST.	REF.**	DATE EXTRACT	DATE ANALYZE
% Volatile Solids	0.46 L	%	0.1	Grav.	2		04/20/87
Oil & Grease	.0160 L	mg/Kg	1	Grav.	2		04/22/87
Mercury	ND L	mg/Kg	0.1	CV*1	2	04/14/87	04/20/87
Cadmium	1.3 L	mg/Kg	0.5	ICP	2	04/14/87	04/20/87
Lead	15.23 L	mg/Kg	2.5	ICP	2	04/14/87	04/20/87
Chromium	5.02 L	mg/Kg	0.5	ICP	2	04/14/87	04/20/87
Copper	3.24 L	mg/Kg	0.5	ICP	2	04/14/87	04/20/87

* 1 - Cold Vapor.

*MDL - Method Detection Limits (same units as the Results).
**REF - Reference as cited on the cover (first) page of this report.
1ug/L or 1ug/Kg is equal to 1ppb. 1mg/L or 1mg/Kg is equal to 1ppm.

BULK SEDIMENT ANALYSIS DATA

233

Project: NUOVO + ANGUS

Waterway: CAPE COD BAY State: MA Quad: SAGA

Application #: 850552 Disposal Site: UPAD

Latitude: 41°44'22" Date of Testing: 2/14/85

Longitude: 70°37'25" Date of Entry: / /

Arsenic (ppm) --		PCB's (ppm) ---	
Cadmium (ppm) --	.22	Vol. Sol. (%) -	1.6
Chromium (ppm) -	6.6	Oil & Gr. (%) -	.09
Copper (ppm) ---	18	Water (%) -----	
Lead (ppm) -----	3.3	Gravel (%) ----	0
Mercury (ppm) --	.07	Sand (%) ------	100
Nickel (ppm) ---		Silt (%) ------	0
Zinc (ppm) -----		Clay (%) ------	0

Bioassay Performed (Y/N) _____

Comments: _____

Project Information Entered On: / /

By: _____

BRAMAN ENGINEERING COMPANY

NUOVO & ANGUS
Cohasset Narrows

SIEVE ANALYSIS # 1 (taken Feb. 14, 1985)

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained%	Pass%
4	591.6	633.3	41.7	8.45	91.55
10	508.0	571.1	63.1	12.79	78.76
20	474.7	568.7	94.0	19.04	59.72
40	456.7	573.4	116.7	23.63	36.09
60	327.5	423.6	96.1	19.46	16.63
100	314.8	367.5	52.7	10.67	5.96
200	303.1	321.8	18.7	3.79	2.17
Pan	372.8	383.6	10.8	2.17	0.0

Weight of Sample = 493.8

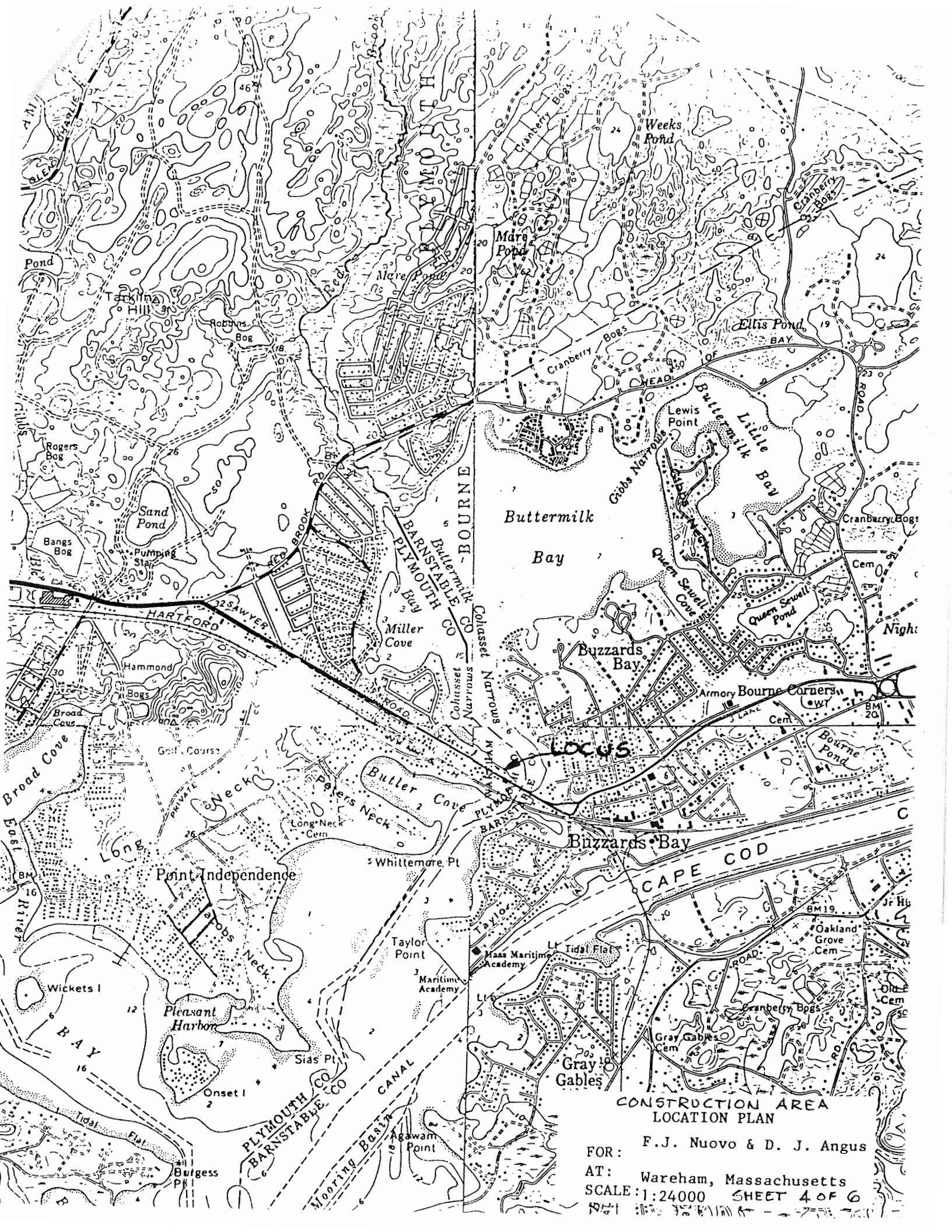
civil engineers & surveyors 258 main street buzzards bay, massachusetts 02532 telephone 759-8273

BULK SEDIMENT CHEMISTRY

Marine Sediments

Angus and Nuovo

Parameter	Concentration	Classification
Cadmium (mg/kg)	0.22	Category I
Chromium (mg/kg)	6.6	Category I
Copper (mg/kg)	18	Category I
Lead (mg/kg)	3.3	Category I
Mercury (mg/kg)	0.07	Category I
Oil and Grease	0.09%	Type A
Volatile Solids	1.6%	Type A

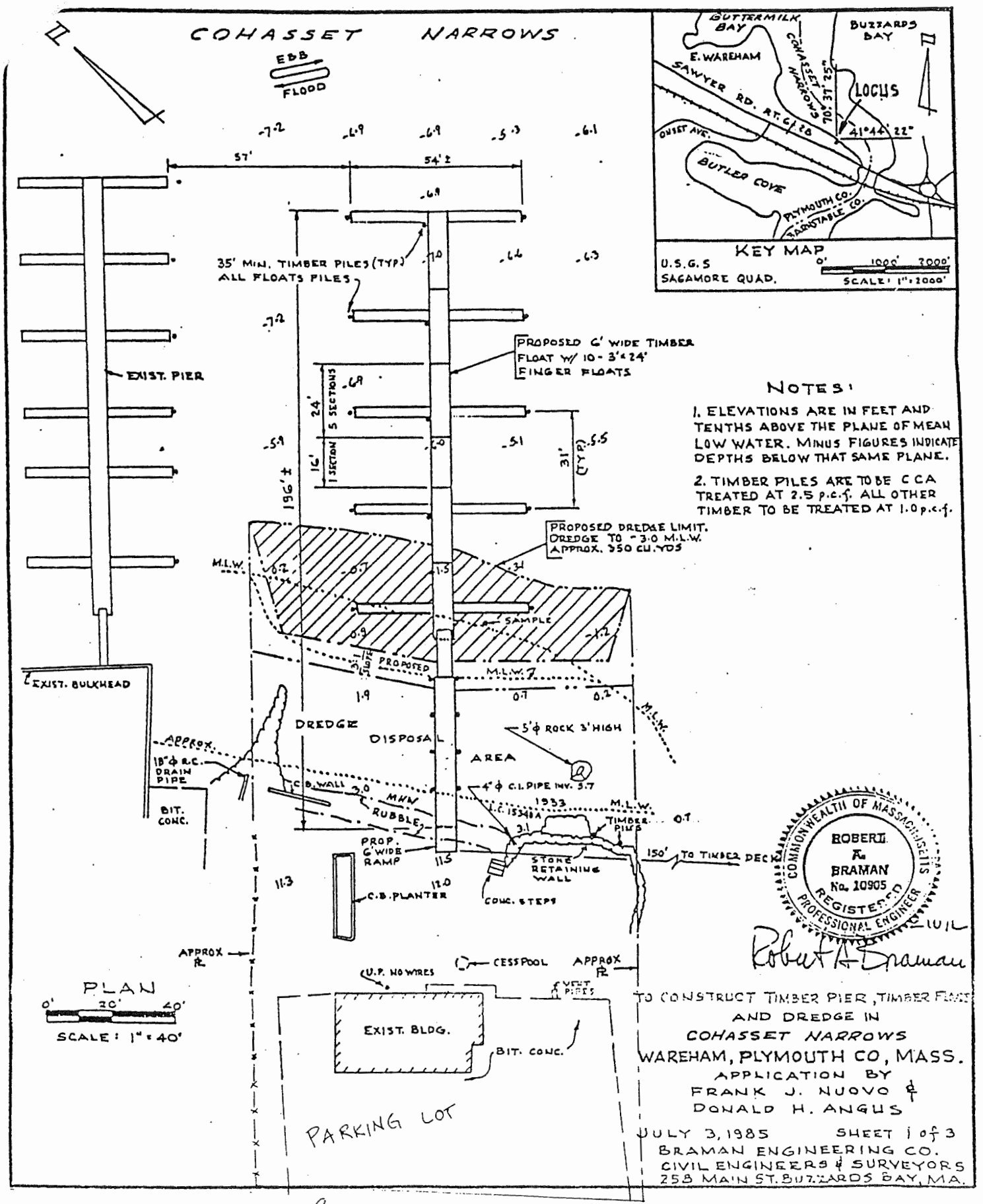


CONSTRUCTION AREA
LOCATION PLAN

FOR: F.J. Nuovo & D. J. Angus

AT: Wareham, Massachusetts

SCALE: 1:24000 SHEET 4 OF 6


COHASSET NARROWS
EBB
FLOOD
57'
54'±
35' MIN. TIMBER PILES (TYP)
ALL FLOATS PILES
PROPOSED 6' WIDE TIMBER
FLOAT W/ 10 - 3'×24'
FINGER FLOATS
EXIST. PIER
24'
5 SECTIONS
16'
1 SECTION
31'
(TYP)
196'±
PROPOSED DREDGE LIMIT.
DREDGE TO -3.0 M.L.W.
APPROX. 350 CU.YDS
M.L.W.
SAMPLE
PROPOSED
M.L.W.
EXIST. BULKHEAD
DREDGE
DISPOSAL
AREA
5'ϕ ROCK 3' HIGH
APPROX.
18"ϕ R.C.
DRAIN
PIPE
BIT.
CONC.
C.B. WALL
4"ϕ C.I. PIPE INV. 3.7
1933
M.L.W.
MHW
RUBBLE
TIMBER
PILES
PROP.
6' WIDE
RAMP
STONE
RETAINING
WALL
150'
TO TIMBER DECK
C.B. PLANTER
CONC. STEPS
APPROX
CESSPOOL
APPROX
U.P. NO WIRES
VENT
PIPES
EXIST. BLDG.
BIT. CONC.
PARKING LOT
PLAN
0'
20'
40'
SCALE: 1" = 40'
BUTTERMILK
BAY
BUZZARDS
BAY
E. WAREHAM
COHASSET
NARROWS
SAWYER RD. RT. 6 & 28
LOCUS
41°44' 22"
ONSET AVE.
BUTLER COVE
PLYMOUTH CO.
BARNSTABLE CO.
KEY MAP
U.S.G.S
SAGAMORE QUAD.
0'
1000'
2000'
SCALE: 1" = 2000'
NOTES:
1. ELEVATIONS ARE IN FEET AND TENTHS ABOVE THE PLANE OF MEAN LOW WATER. MINUS FIGURES INDICATE DEPTHS BELOW THAT SAME PLANE.
2. TIMBER PILES ARE TO BE CCA TREATED AT 2.5 p.c.f. ALL OTHER TIMBER TO BE TREATED AT 1.0 p.c.f.
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. BRAMAN
No. 10905
REGISTERED
PROFESSIONAL ENGINEER
Robert A. Braman
TO CONSTRUCT TIMBER PIER, TIMBER FLOATS
AND DREDGE IN
COHASSET NARROWS
WAREHAM, PLYMOUTH CO, MASS.
APPLICATION BY
FRANK J. NUOVO &
DONALD H. ANGUS
JULY 3, 1985
SHEET 1 of 3
BRAMAN ENGINEERING CO.
CIVIL ENGINEERS & SURVEYORS
258 MAIN ST. BUZZARDS BAY, MA.

Routes 16 & 28

BEC
BRAMAN ENGINEERING COMPANY LTD

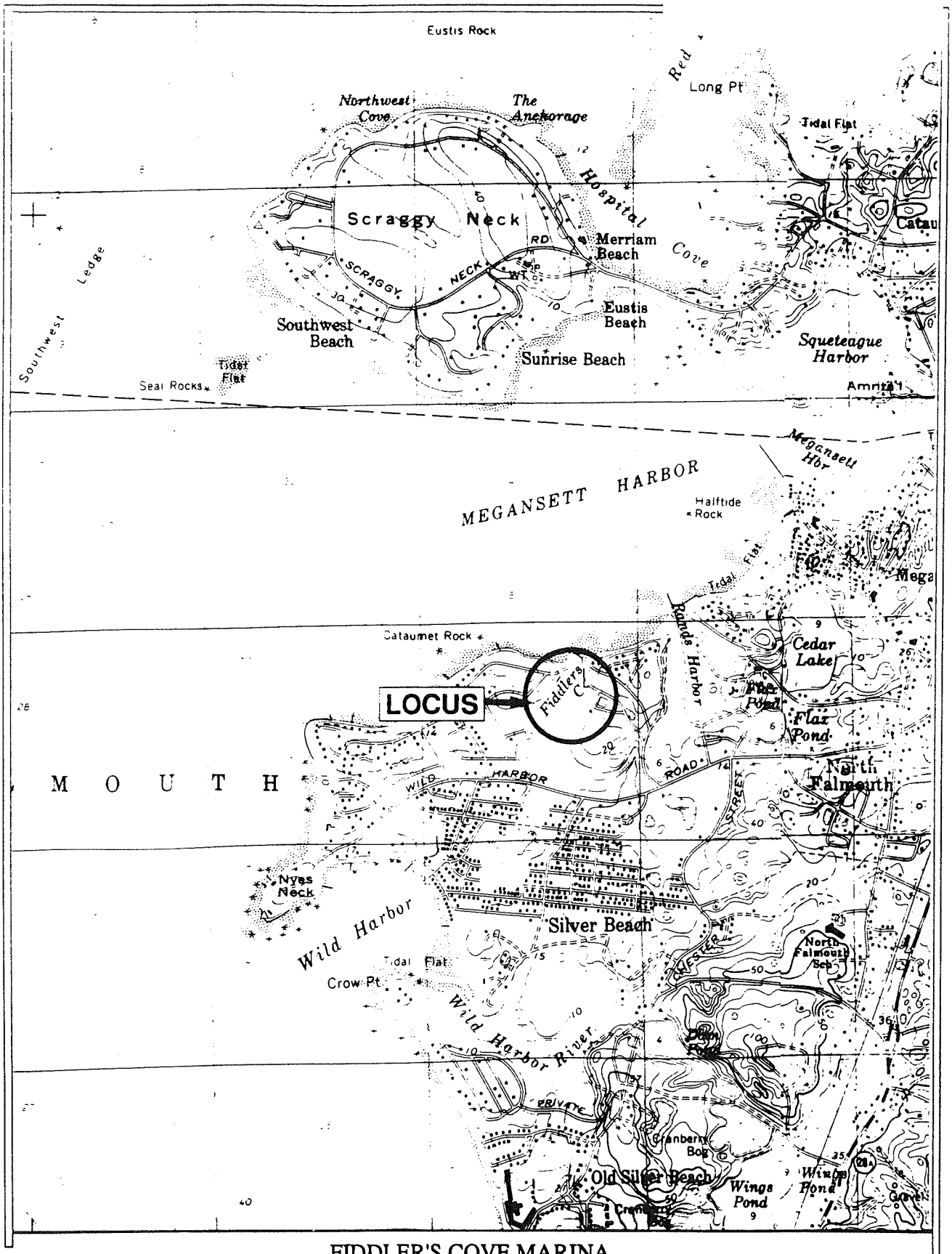
NUOVO AND ANGUS

SIEVE ANALYSIS #

Sieve #	Weight of Sieve	Weight of Sieve & Sample	Net	Retained %	Pass %
4	593.10	705.50	112.40	16.08	83.92
10	509.10	618.39	109.29	15.63	68.29
20	474.81	603.33	128.52	18.38	49.91
40	456.61	616.92	160.31	22.93	26.98
60	325.72	438.65	112.93	16.15	10.83
100	314.70	379.63	64.93	9.25	1.54
200	302.95	312.19	9.24	1.32	0.22
Pan	372.12	373.62	1.5	.22	0.00

Weight of Sample = 699.12

CIVIL ENGINEERS 258 MAIN STREET BUZZARDS BAY, MASSACHUSETTS 02532
Tel. (508) 759-8273 / (508) 759-8148 Fax. (508) 759-6244



FIDDLER'S COVE MARINA
LOCATION PLAN
Page 1 of 1

GHR

FINAL REPORT

Holmes & McGrath, Inc.
200 Main Street
Falmouth, MA 02630

Attention: Mr. A. Lombardo

PROJECT: Project #88234
Fiddler's Cove

GHR ANALYTICAL JOB NUMBER: 37-1024

PREPARED BY: GHR Analytical

DATE PREPARED: December 29, 1988

RECEIVED
JAN 3 1989
HOLMES AND McGRATH, INC

GHR ANALYTICAL
26 MAIN STREET
LAKEVILLE, MA
02347
617-947-5077
617-763-8404

GHR ANALYTICAL
A DIVISION OF GHR ENGINEERING ASSOCIATES, INC.
26 MAIN STREET
LAKEVILLE, MA 02347
(508) 947-5077

REPORT OF ANALYSIS

INORGANICS

Client: Holmes & McGrath, Inc. Job No: 37-1024
Project: Job #88234 Fiddler's Cove

Date Collected: November 22, 1988
Collected by: Client

Sample ID:	Composite of B-1 dredge	Composite of B-2 dredge
GHR Lab ID:	89433	89434
Parameter		
% Water	13.3	40.4
% Volatile Solids	0.37	10.6

26 MAIN STREET
LAKEVILLE, MA 02347
(508) 947-5077

REPORT OF ANALYSIS

ORGANICS

Client: Holmes & McGrath, Inc. Job No: 37-1024
Project: Job #88234 Fiddler's Cove

Date Collected: November 22, 1988
Collected by: Client

Sample ID:	Composite of B-1 dredge	Composite of B-2 dredge	Detection Limit
GHR Lab ID:	89433	89434	
Parameter			
% Oil & Grease(1)	BDL (2)	0.08	0.01

(1) Samples were extracted with Hexane.
(2) BDL = Below Detection Limit.

26 MAIN STREET
LAKEVILLE, MA 02347
(508) 947-5077

REPORT OF ANALYSIS

TRACE METALS

Client: Holmes & McGrath, Inc. Job No: 37-1024
Project: Job #88234 Fiddler's Cove

Date Collected: November 22, 1988
Collected by: Client

Sample ID:	Composite of B-1 dredge	Composite of B-2 dredge	Detection Limit
GHR Lab ID:	89433	89434	

Parameter	Test Results in mg/kg(ppm)(dry wt)		
Arsenic	1.30	1.71	
Cadmium	BDL (1)	BDL	1.00
Chromium	2.0	17.6	
Copper	4.1	33.8	
Lead	BDL	BDL	10.0
Mercury	BDL	BDL	0.10
Nickel	8.2	22.0	
Vanadium	BDL	BDL	20
Zinc	12.2	20.6	

(1) BDL = Below Detection Limit.

26 MAIN STREET
LAKEVILLE, MA 02347
(508) 947-5077

REPORT OF ANALYSIS

PCB's

Client: Holmes & McGrath, Inc. Job No: 37-1024
Project: Job #88234 Fiddler's Cove

Date Collected: November 22, 1988 Date Extracted: November 28, 1988
Collected by: Client Analyzed by: DMJ

Sample ID:	Composite of B-1 dredge	Composite of B-2 dredge
GHR Lab ID:	89433	89434

Parameter	Concentration in mg/kg(ppm)(dry wt)	
Aroclor 1016	BDL(1)	BDL
Aroclor 1221	BDL	BDL
Aroclor 1232	BDL	BDL
Aroclor 1242	BDL	BDL
Aroclor 1248	BDL	BDL
Aroclor 1254	BDL	BDL
Aroclor 1260	BDL	BDL

(1) BDL = Below Detection Limit.
Detection Limit = 0.05 mg/kg (ppm)(dry wt).

GHR ANALYTICAL
A DIVISION OF GHR ENGINEERING ASSOCIATES, INC.
26 MAIN STREET
LAKEVILLE, MA 02347
(508) 947-5077

REPORT OF ANALYSIS

Client: Holmes & McGrath, Inc. Job No: 37-1024
Project: Job #88234 Fiddler's Cove

Date Collected: November 22, 1988
Collected by: Client

Sample ID: Composite of B-1 dredge
GHR Lab ID: 89433

Mesh Size(mm)	Sieve No.	% Retained	%Passing	Type of Separate
4.760	4	16.1	83.9	Gravel
2.00	10	2.4	81.5	Coarse Sand
0.425	40	22.9	58.6	Medium Sand
0.149	100	51.0	7.6	Fine Sand
0.074	200	6.3	1.3	Very Fine Sand
<0.074	Pan	1.3	-	Silt & Clay

Note: 1mm = 0.03937 inches.

GHR ANALYTICAL
A DIVISION OF GHR ENGINEERING ASSOCIATES, INC.
26 MAIN STREET
LAKEVILLE, MA 02347
(508) 947-5077

REPORT OF ANALYSIS

Client: Holmes & McGrath, Inc. Job No: 37-1024
Project: Job #88234 Fiddler's Cove

Date Collected: November 22, 1988
Collected by: Client

Sample ID: Composite of B-2 dredge
GHR Lab ID: 89434

Mesh Size(mm)	Sieve No.	% Retained	%Passing	Type of Separate
4.760	4	16.1	83.9	Gravel
2.00	10	6.8	77.1	Coarse Sand
0.425	40	46.9	30.2	Medium Sand
0.149	100	25.7	4.5	Fine Sand
0.074	200	4.0	0.5	Very Fine Sand
<0.074	Pan	0.5	-	Silt & Clay

Note: 1mm = 0.03937 inches.