



US Army Corps
of Engineers®
New England District

696 Virginia Road
Concord, MA 01742-2751

PUBLIC NOTICE

Date: Oct 12, 2004

Comment Period Ends: Oct 26, 2004

File Number: CENAE-R-20043427

In Reply Refer To: Ted Lento

Notice of a Proposed Permit Amendment

Algonquin Gas Transmission Company (Algonquin), 890 Winter Street, Waltham, Massachusetts, 02451 has requested an amendment to the Corps of Engineers permit number 2000-01078 issued under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act to dredge and place fill material into waterways and wetlands for the installation of a natural gas pipeline off the Massachusetts coastline. The offshore pipeline extends from Beverly to Weymouth and is referred to as the Hubline Project. It has been constructed and is currently in operation; however there are 21 separate locations where the pipeline installation does not conform to the permit requirements.

Based upon the as built survey plans, there are four locations where the pipeline was not placed at the burial depth required by the permit. There are also 17 locations where the pipeline is at the specified burial depth but does not have the minimum depth of cover over the pipe as specified by the permit. These locations are depicted on the attached locus map entitled "Hubline Pipeline Project 30" O.D. Natural Gas Pipeline Depth of Cover" dated 8-25-04 on two sheets with additional details on the attached plans entitled "HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES" on twenty sheets dated 9-23-04. The attached Table 1 entitled "HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES" provides details on the existing and proposed pipeline cover conditions.

Algonquin is requesting the following permit modifications:

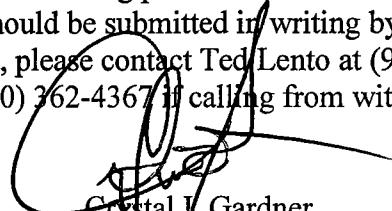
Place fill material to cover the pipeline at locations 1,7,8 and 11 within the time frame of November 1, 2004 to February 15, 2005 in order to achieve minimum depth of cover as specified in the permit.

Accept the remaining 17 locations identified on Table 1 in their current condition as shown on the attached as-built drawings.

Authorize the trench spoils to remain in place at the locations identified in the attached Table 2.

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 have any questions concerning this project, please contact Ted Lento at (978) 318-8863 or use our toll free number (800) 343-4789 or (800) 362-4367 if calling from within Massachusetts.

SEE NEXT PAGE FOR
DETAILS OF EVALUATION
FACTORS


Crystal I. Gardner
Chief, Permits & Enforcement Branch
Regulatory Division

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity in the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which may reasonably accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

Where the activity involves the discharge of dredged or fill material into waters of the United States or the transportation of dredged material for the purpose of disposing it in ocean waters, the evaluation of the impact of the activity in the public interest will also include application of the guidelines promulgated by the Administrator, U.S Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act of 1972 as amended.

Based on his initial review, the District Engineer has determined that the likelihood exists for the proposed work to impinge upon properties listed in, or eligible for listing in, the National Register of Historic Places, and further consideration of the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, is necessary.

Pursuant to the Endangered Species Act, the District Engineer is hereby requesting that the appropriate Federal Agency provide comments regarding the presence of and potential impacts to listed species or its critical habitat.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice.

The following authorizations have been applied for, have been, or will be obtained:

- (X) Permit, License or Assent from State.
- (X) Permit from Local Wetland Agency or Conservation Commission.
- (X) Water Quality Certification in accordance with Section 401 of the Clean Water Act.

The States of Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island have approved Coastal Zone Management Programs. Where applicable the applicant states that any proposed activity will comply with and will be conducted in a manner that is consistent with the approved Coastal Zone Management Program. By this Public Notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.

If you would prefer not to continue receiving public notices, please check here () and return this portion of the public notice to: U.S. Army Corps of Engineers – New England District,

ATTN: Regulatory Branch, 696 Virginia Road, Concord, MA 01742-2751.

NAME:

ADDRESS:

HubLine Pipeline Project
Potential Backfill Sites
September 28, 2004

Site	Dwg. No.	Length ¹	Original Stations	Original Milepost	As Built Station	As Built Milepost	Municipality	Water Depth (MLLW)	Target Depth of Pipeline	Depth of Pipeline ²	Depth of Cover ³
58+25	1003	150	53+25	1.34	58+25	1.10	Beverly	14	3	4.5-6.5'	0.9'
74+60	1003	400	69+60	1.65	74+60	1.41	Beverly	14	3	5'	1.25'
146+75	1004	200	141+75	3.01	146+75	2.78	Salem	40	10	10+	2.5'
263+75	1007	100	258+75	5.23	263+75	5.00	Salem	45	3	5.8'	1.50'
271+00	1007	140	266+00	5.37	271+00	5.13	Salem	45	3	4-7"	0.5'
532+00	1013	245	527+00	10.31	532+00	10.08	Marblehead	130	3	5'	1.5'
792+00	1018	200	786+75	15.23	792+00	15.00	Nahant	90	10	4'	1-2'
971+25	1022	75	965+75	18.62	971+25	18.39	Boston	45	10	3'	1.3'
990+00	1022	150	985+00	18.99	990+00	18.75	Boston	40	3	3.9'	0.5'
1028+40	1023	110	1023+40	19.71	1028+40	19.48	Boston	30	3	2.70	0.9'
1031+25	1023	125	1026+25	19.77	1031+25	19.53	Boston	30	3	1.30	1.20
1073+50	1024	350	1068+50	20.57	1073+50	20.33	Boston	40	3	4'	1'
1118+75	1024	135	1113+75	21.42	1118+75	21.19	Boston	35	3	4.5'	0.8'
1122+55	1025	60	1117+55	21.50	1122+55	21.26	Boston	30	3	3.2'	0.7'
1124+50	1025	75	1120+50	21.55	1124+50	21.30	Boston	30	3	3.0'	0.5'
1172+10	1025	65	1166+75	22.43	1172+10	22.20	Boston	35	3'	4'	1'
1173+65	1025	75	1168+35	22.46	1173+65	22.23	Boston	35	3'	4'	0'
1176+85	1026	215	1171+50	22.52	1176+85	22.29	Boston	35	5.5	5.6'	1.5'
1293+55	1028	50	1288+25	24.73	1293+55	24.50	Hull	30-35	3'	3.3'	0.8'
1301+00	1028	50	1295+65	24.87	1301+00	24.64	Hull	30-35	3'	3.3'	0.5-1'
1376+75	1030	175	1371+50	26.31	1376+75	26.07	Weymouth	10	3'	5.9'	0.1'
1450+65	1031	120	1445+35	27.70	1450+65	27.47	Weymouth	5	3'	4'	0.1'
					3265						

Notes:

- 1 Length identifies entire segment below original grade along the centerline.
- 2 All dimensions regarding pipeline depth and depth of cover are taken from the top of the pipeline.
- 3 Depth of pipeline is measured from original grade (projected) to the top of the pipe.
- 4 Depth of cover is the depth of material over the top of the pipe after backfilling.

Total Length of Pipeline 151,835 feet

Restoration Areas 3,265 feet

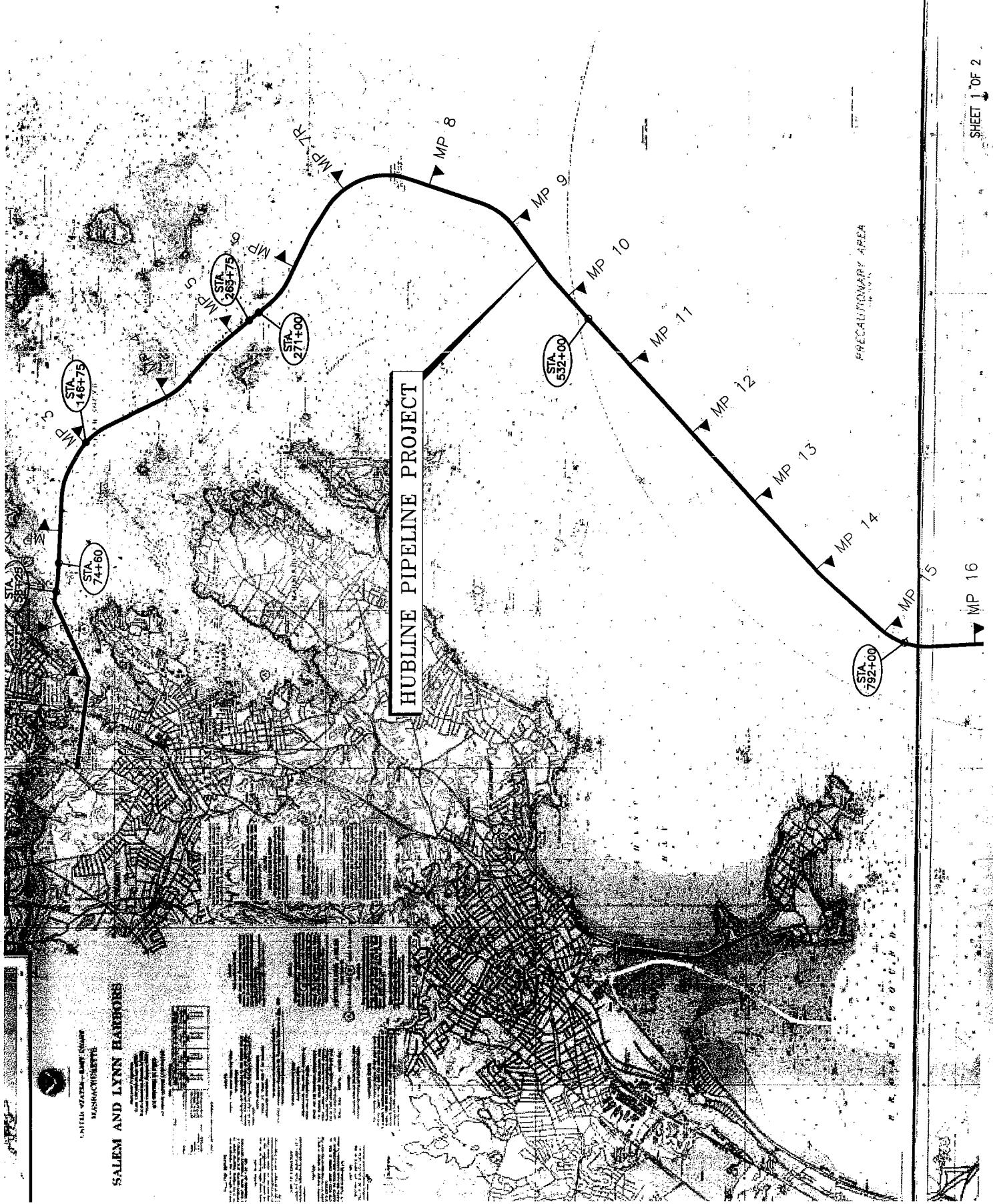
Percent of Total 2.2%

Algonquin has also evaluated the post-construction survey and the as-built alignment sheets to identify locations along the route where some trench spoil above the elevation of the original seafloor remains alongside the pipeline trench, even after completion of the extensive restoration efforts, due to the limitations of the construction equipment and backfill techniques. These locations are presented in the following table.

Table 2: Locations of Trench Spoil Alongside the Pipeline Trench

Drawing #	Location	As-Built Station	As-Built Milepost	Length (ft)
1002	Salem HDD Tie-in	0	790	0.00 0.15 792
1002	Beverly HDD Tie-in	4700	5450	0.89 1.03 739
1004	Contaminated Sediment Area	14700	14950	2.78 2.83 264
1006	Blast Site A	20500	21000	3.88 3.98 528
1019	Deer Island Side Tap	84500	85500	16.00 16.19 1003.2
1025	GI North HDD Tie-in	112700	113375	21.34 21.47 686.4
1025	GI South HDD Tie-in	117000	117550	22.16 22.26 528
1026	GI South HDD Tie-in	117550	118000	22.26 22.35 475.2
1027	Blast Site X9	126250	126750	23.91 24.01 528
1030	Construction Method. Change	135500	135750	25.66 25.71 264

Algonquin requests approval from the ACOE to leave these spoils in place because additional effort to restore the sea bottom will yield negligible benefits and will result in additional disturbance to the sea bottom thereby prolonging the colonization and recovery of affected benthic habitats. Further, since these spoil areas are located in relatively deep water they do not pose any hazards to navigation.



SHEET 2 OF 2

DRUGS MONITORING

HUBLINE PIPELINE PROJECT

09-28-04 11:42 01119 1 KMA



**HUBLINE PIPELINE PROJECT
30" O.D. NATURAL GAS PIPELINE
DEPTH OF COVER**

DRAWN BY: K.M.A. CHK'D. BY: R.P.G.
 DATE: 8-25-04 APPRV. BY: L.E.P.

HUBLINE PIPE

MP 17

MP 8

MP 19

MP 20R

MP 20L

MP 21R

MP 21L

MP 22R

MP 22L

MP 23R

MP 23L

STA 97+25

STA 990+00

STA 108+40

STA 103+25

STA 1073+00

STA 118+75

STA 124+50

STA 1173+65

STA 1176+85

STA 205+55

STA 301+00

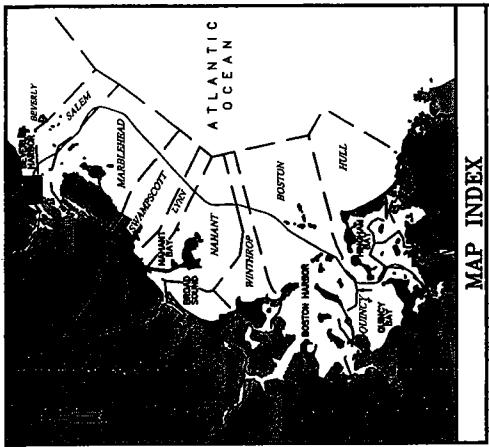
STA 178+00

STA 178+50

VALVE

TANK

ATTACHMENT D
REVISED CROSS-SECTIONS AND PLAN VIEWS



MAP INDEX

LEGEND:

	AS BUILT PIPELINE
	AS BUILT STATION NUMBER
	ORIGINAL STATION NUMBER
	AS BUILT MILE POST
	0.0 MP
	3.0 MP
	ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

Duke Energy Gas Transmission
Alongline Gas Transmission Company
1284 Soldiers Field Road, Boston, MA 02115 (617) 241-4550

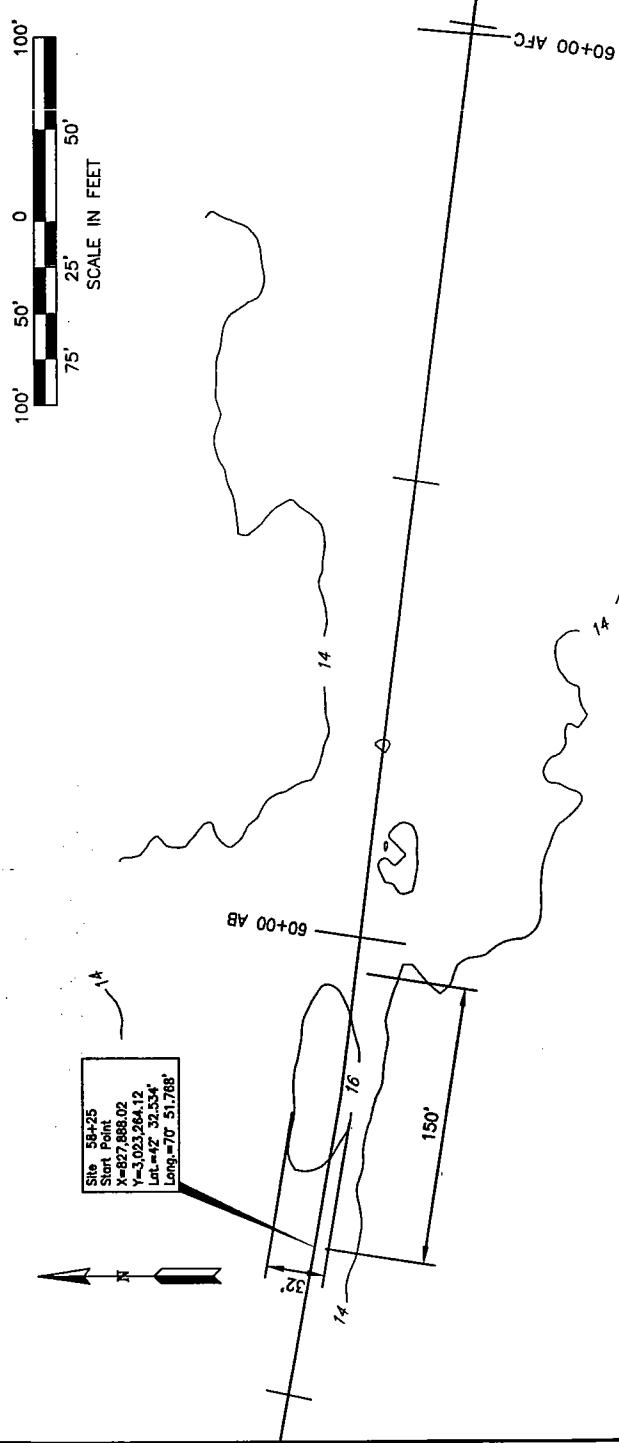
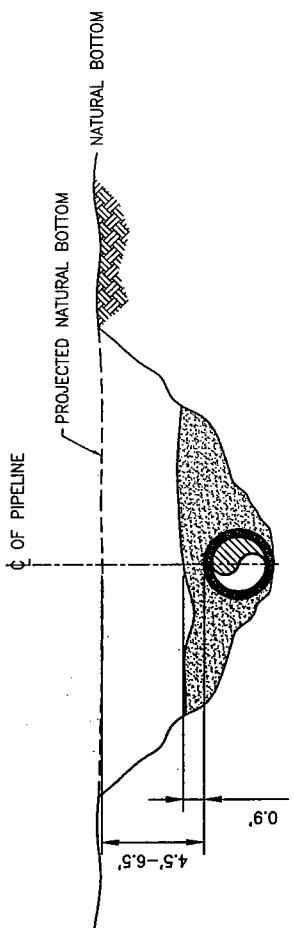
HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 58+25

NOTES:

- ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
- DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
- DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.

SITE 58+25

Typical Cross Section
(NOT TO SCALE)



MAP INDEX

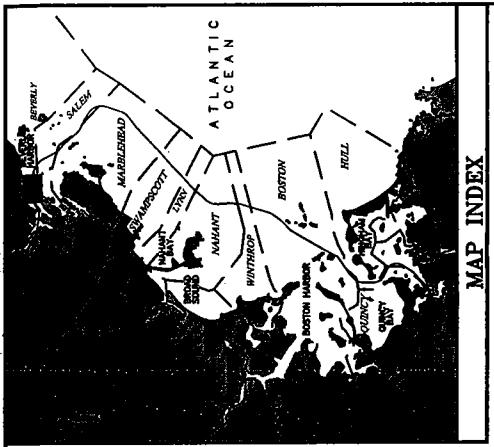
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	AS BUILT STATION NUMBER
	ORIGINAL STATION NUMBER
	AS BUILT MILE POST
	0.0 MP
	3.0 MP
	ORIGINAL MILE POST

DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.

DATE:	9-23-04	APPRV. BY:	L.E.P.

ACOE SUBMITTAL	9-28-04 R.P.G.	DATE	APR.
A			



MAP INDEX

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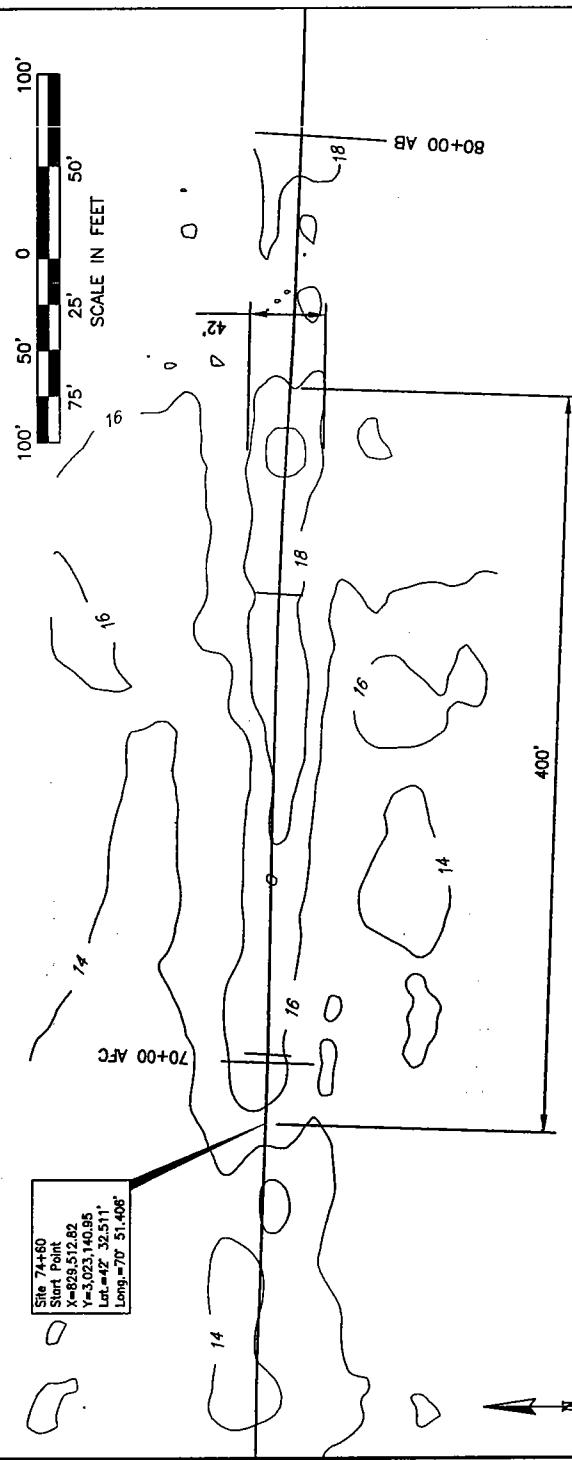
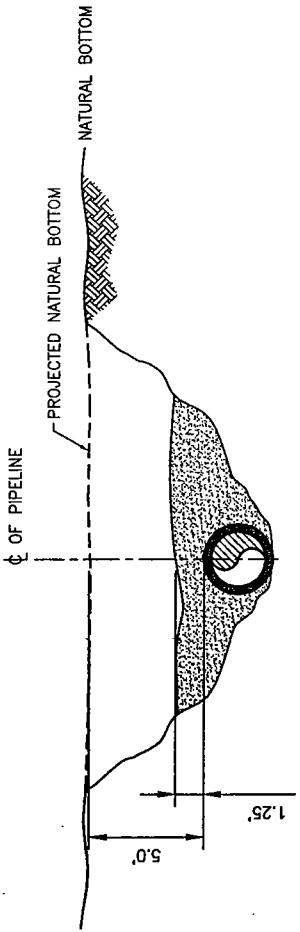
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—1450+00 AFC	ORIGINAL STATION NUMBER
△ 0.0 P	AS BUILT MILE POST
△ ORIG. 3.0 MP	ORIGINAL MILE POST

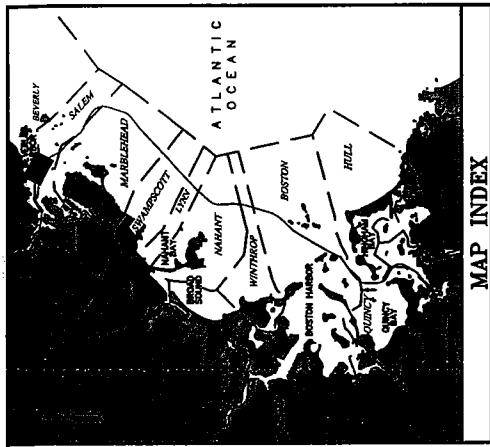
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

 Algonquin Gas Transmission Company 128 Soldiers Field Road, Boston, MA 02115-4660	1 KMA 14-18 04-02 01119 HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES SITE 74+60
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DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
NOTES:	1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE. 2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE. 3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.		
A. ACOE SUBMITTAL NO.	9-26-04 R.P.G.	DWG. NO.	TR-LOC-2
REVISION DATE	APRIL	DATE	REV A

SITE 74+60
Typical Cross Section
(NOT TO SCALE)





MAP INDEX

LEGEND:

—	AS BUILT PIPELINE
—1450+00 AB	AS BUILT STATION NUMBER
—1450+00 AFC	ORIGINAL STATION NUMBER
M 0.0 P	AS BUILT MILE POST
ORG. 3.0 MP	ORIGINAL MILE POST

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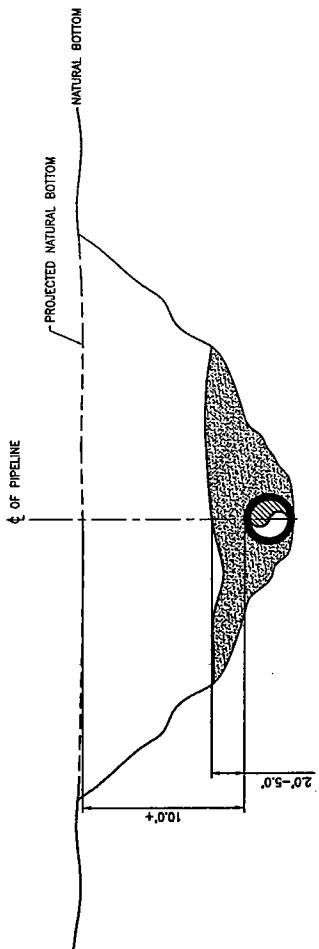
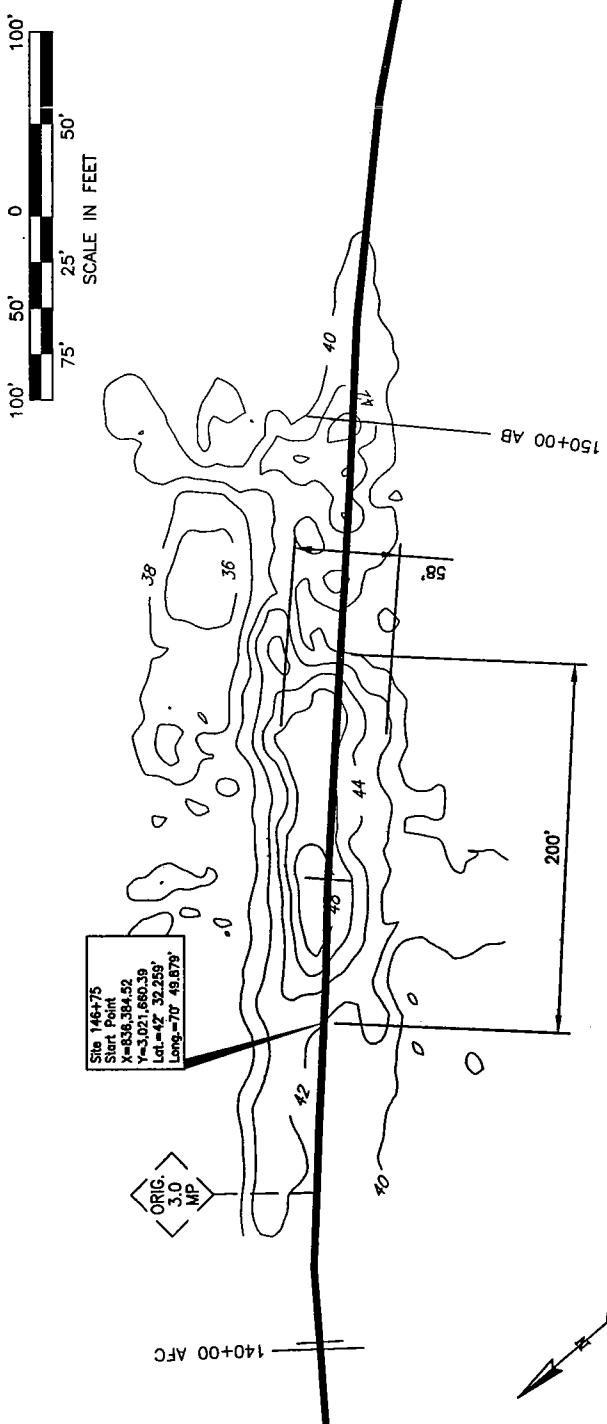
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

Duke Energy Gas Transmission
Aboriginal Gas Transmission Company
220 Sullivan Hill Road, Boston, MA 02125-4260

HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 146+75

DRAWN BY: K.M.A. CHK'D. BY: R.P.G.
DATE: 9-23-04 APPROV. BY: L.E.P.

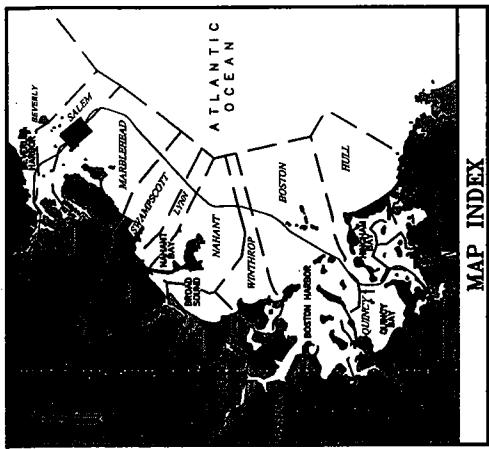
ACOE SUBMITTAL NO. DWG. NO. TR-LOC-3 REV A
DATE APPROV.



SITE 146+75
Typical Cross Section
(NOT TO SCALE)

NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.



MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- ◊ 0.0 P AS BUILT MILE POST
- ◊ ORIG. 3.0 MP ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

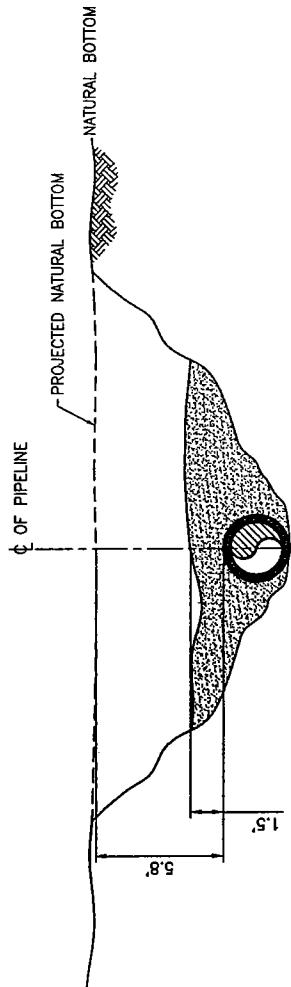
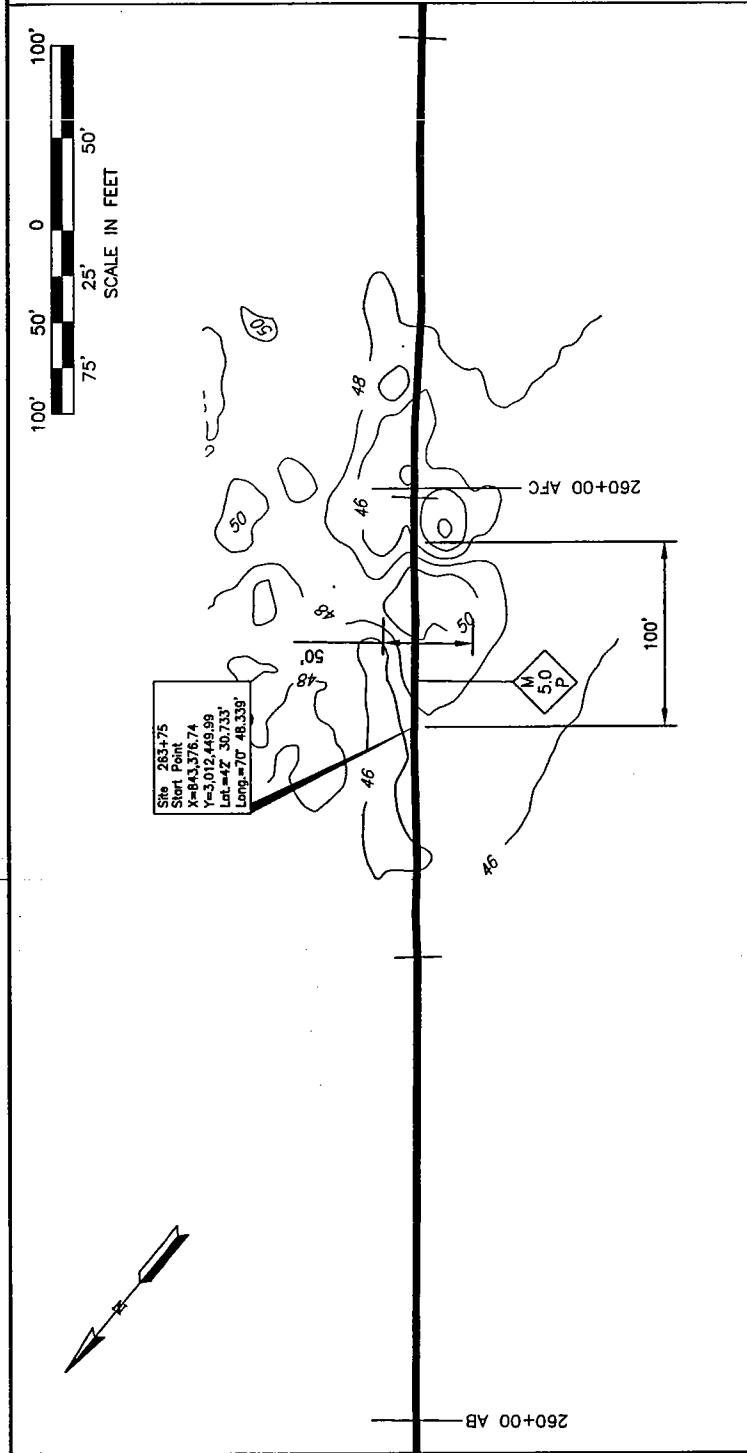


Algonquin Gas Transmission Company
160 Southern Park Road, Boston, MA 02135 617/264-4550

HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 263+75

NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.



SITE 263+75
Typical Cross Section
(NOT TO SCALE)

DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
A. ACQ'D. SUBMITTAL	9-28-04 R.P.G.	DWG. NO.	TR-LOC-4
NO.	REVISION	DATE APPR:	REV:

PuroEnergy
Gas Transmission

Algonquin Gas Transmission Company
120 Summer Field Road, Boston, MA 02135 (617) 254-4660

HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 271+00

NOTES:

- ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
- DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
- DEPTH OF COVER IS THE DEPTH OF MATERIALS COVERING THE TOP OF THE PIPE AFTER BACKFILLING.

SITE 271+00
Typical Cross Section
(NOT TO SCALE)

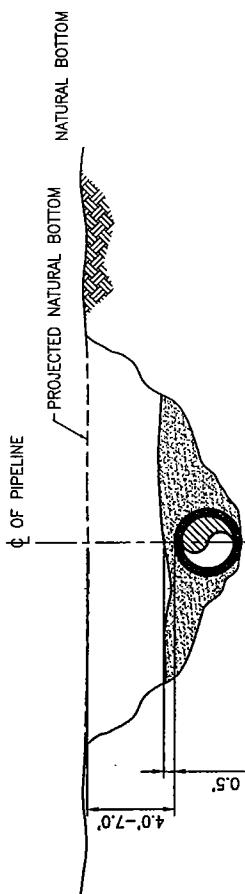
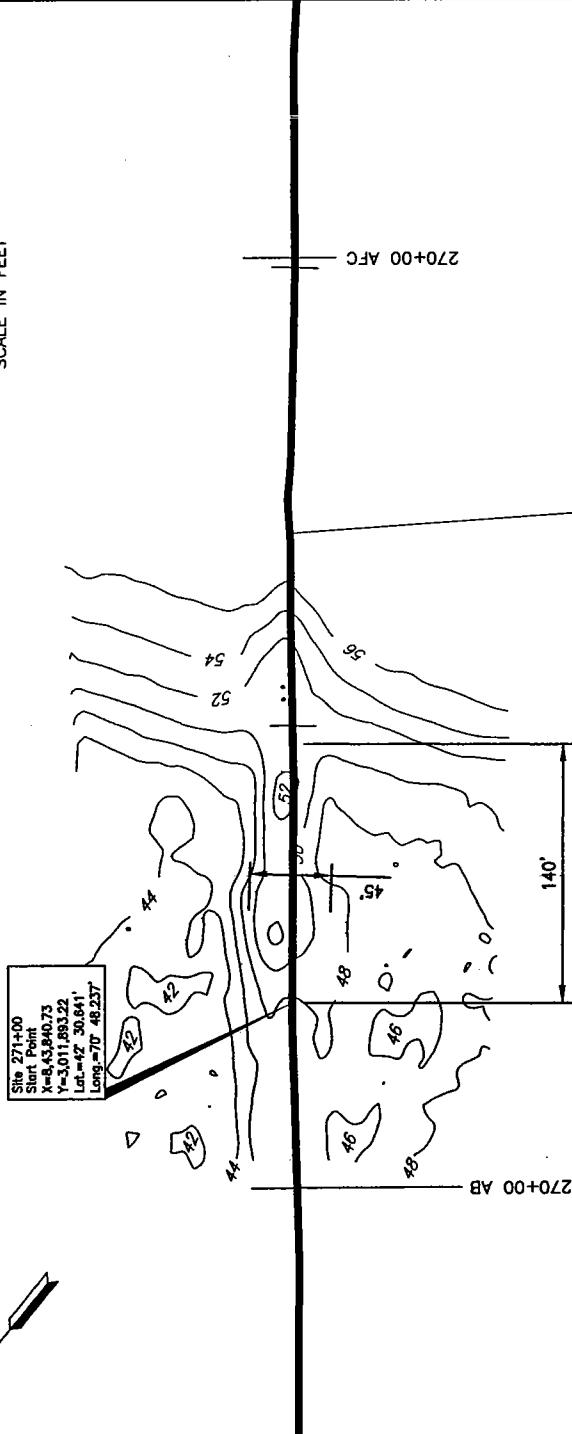
DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
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REVISION	DATE APPROVED	DATE DRAWN	REV.

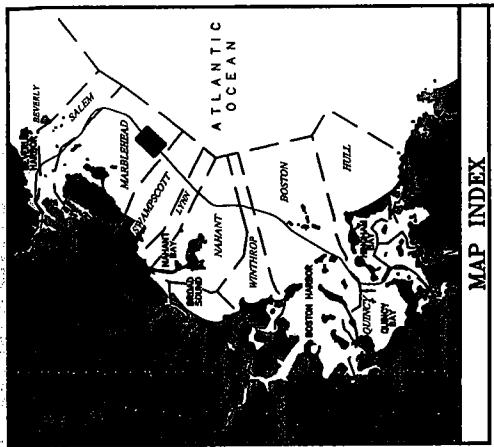
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- △ 0.0 P AS BUILT MILE POST
- △ ORIG. 3.0 MP ORIGINAL MILE POST





LEGEND:

AS BUILT PIPELINE
 AS BUILT STATION NUMBER
 ORIGINAL STATION NUMBER
 AS BUILT MILE POST
 ORIGINAL MILE POST

1450+00 AB
 1450+00 AFC




MASSACHUSETTS STATE FLANE COORDINATE SYSTEM,
ZONE 2001, NAD B3

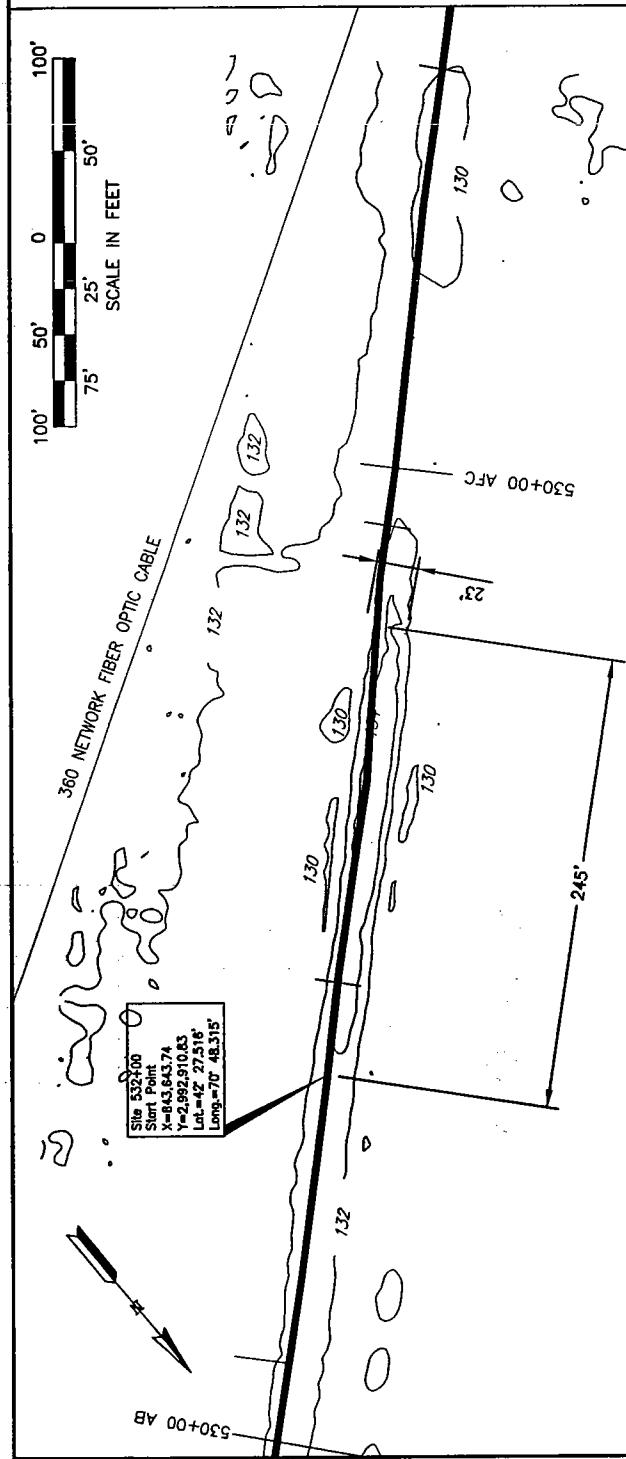


09-24-04 13:43 01119

HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES

SITE 532+00

DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
DWG. NO.	TR-LOC-6	REV.	A
R.P.G.	APPRV.		

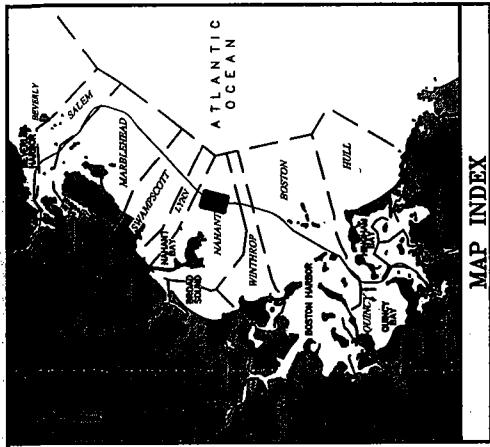


SITE 532+00
Typical Cross Section

(NOT TO SCALE)

NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
 2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
 3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.



MAP INDEX

LEGEND:

—	AS BUILT PIPELINE
—1450+00 AB	AS BUILT STATION NUMBER
—1450+00 AFC	ORIGINAL STATION NUMBER
◊ M 0.0 P	AS BUILT MILE POST
◊ ORIG. 3.0 MP	ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

**Puerto Energy
Gas Transmission**
Algonquin Gas Transmission Company
25 Soldiers Field Road, Boston, MA 02117-4050

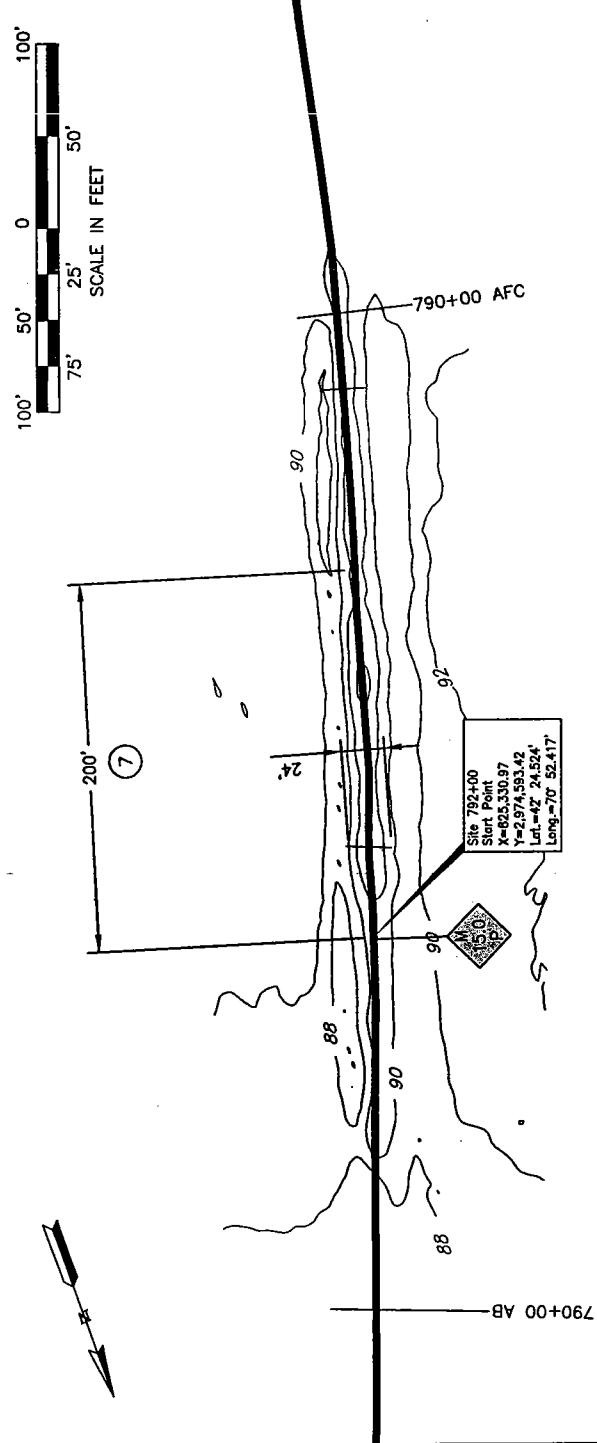
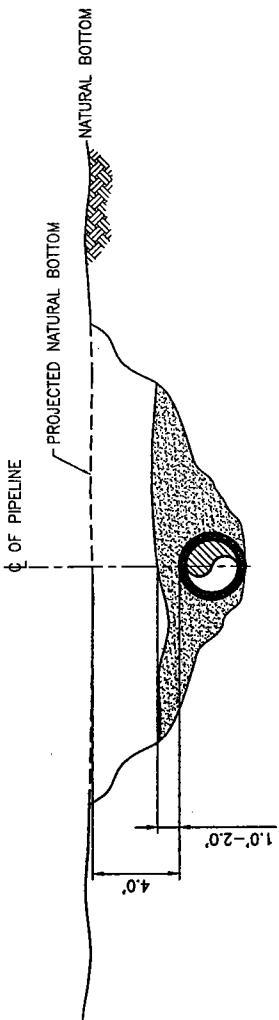
**HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 792+00**

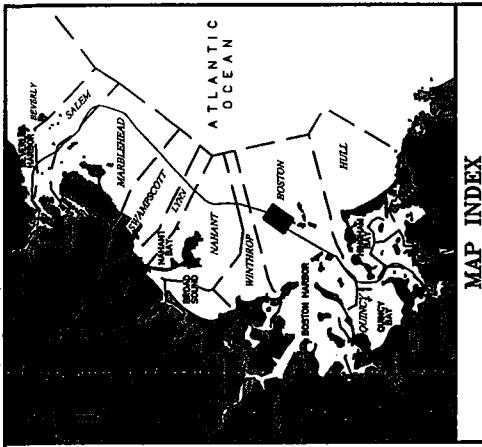
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- NOTES:
1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
 2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
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SITE 792+00
Typical Cross Section

(NOT TO SCALE)





MAP INDEX

LEGEND:

	AS BUILT PIPELINE
	AS BUILT STATION NUMBER
	ORIGINAL STATION NUMBER
	AS BUILT MILE POST
	ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

Puget Energy Gas Transmission
Algonquin Gas Transmission Company
124 Sackler Field Road, Boston, MA 02117-2446

HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 971+25

09-24-04 13:41 01119 1 KMA

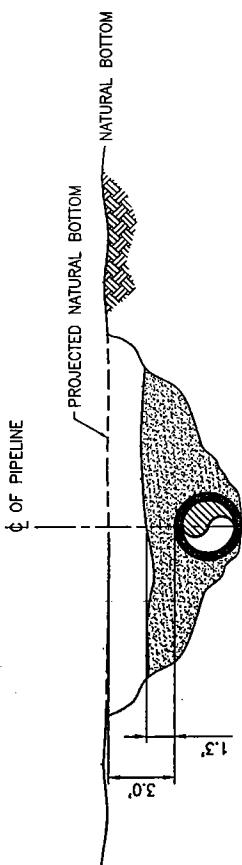
DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
A ACOE SUBMITTAL	9-28-04 R.P.G.	REV DWG. NO.	TR-LOC-8 A
NO.		REVISION	DATE APPROVED

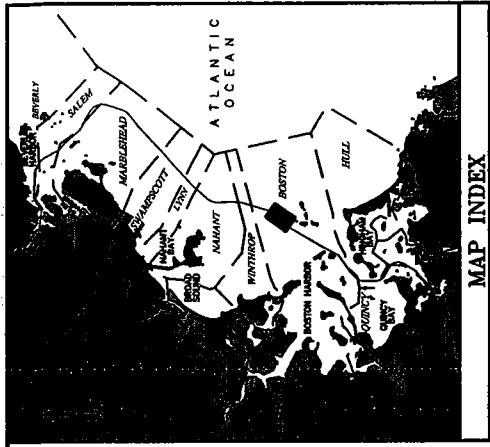
- NOTES:
 1. ALL DIMENSIONS REGARDING PIPELINE, DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
 2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
 3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.

SITE 971+25

Typical Cross Section

(NOT TO SCALE)





MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- △ AS BUILT MILE POST
- ◇ ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83



Algonquin Gas Transmission Company

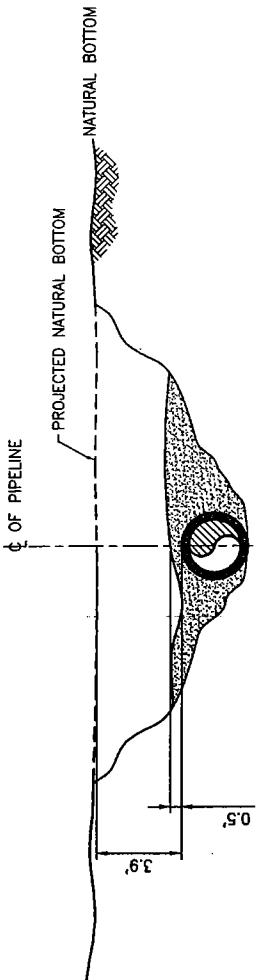
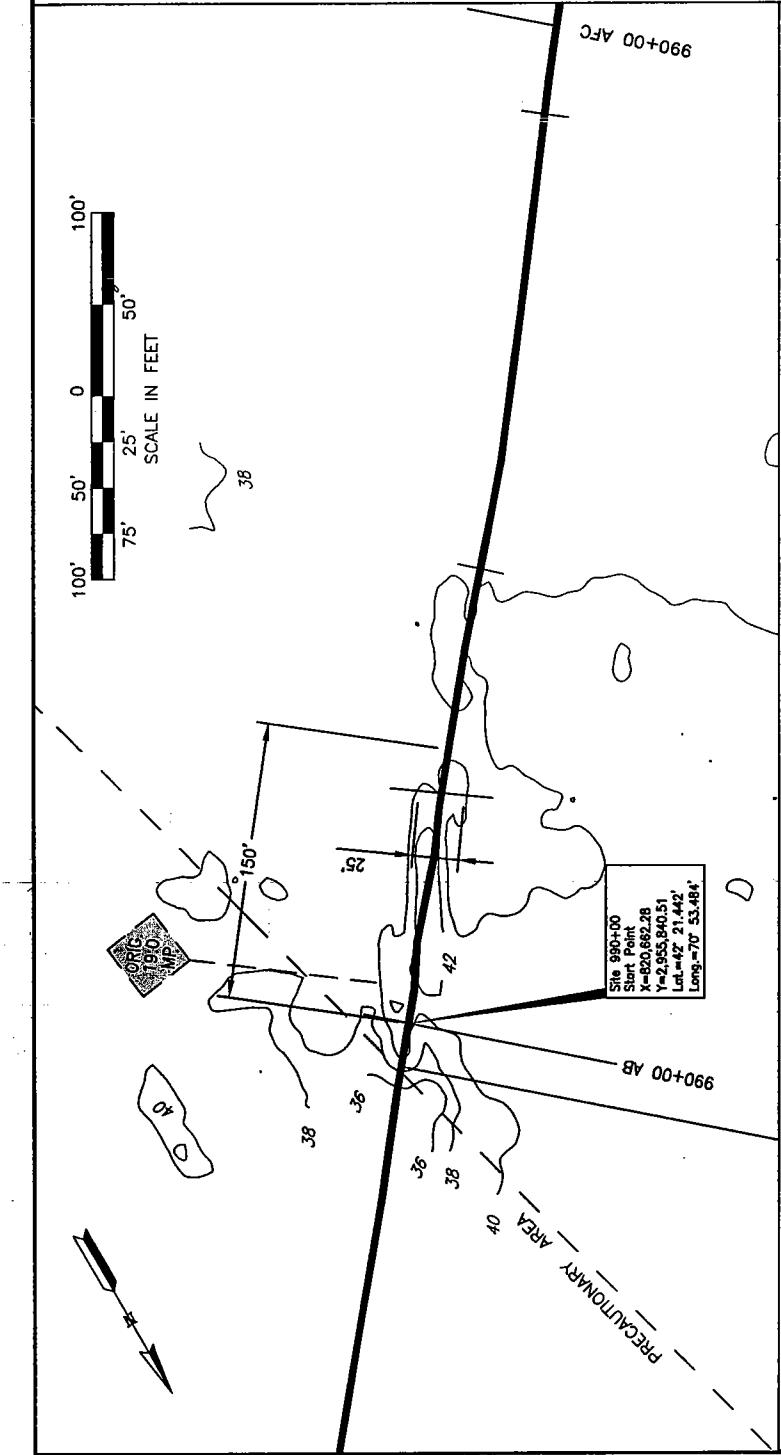
125 South Main Street, Boston, MA 02117-2410

HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES SITE 990+00

DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
A. ACCE SUBMITTAL	9-28-04 R.P.G.	DWG. NO.	TR-LOC-9 REV A
NO.	DATE	APPR.	

NOTES:

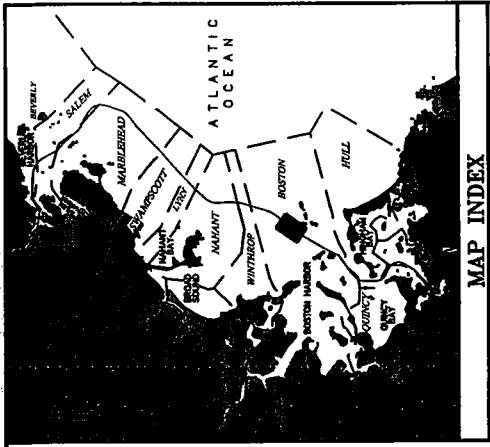
1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF NATURAL BOTTOM (NOT THE DEPTH OF THE PIPE AFTER BACKFILLING).



Site 990+00

Typical Cross Section

(NOT TO SCALE)



LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- △ 0.0 AS BUILT MILE POST
- △ 3.0 ORIG. MP ORIGINAL MILE POST

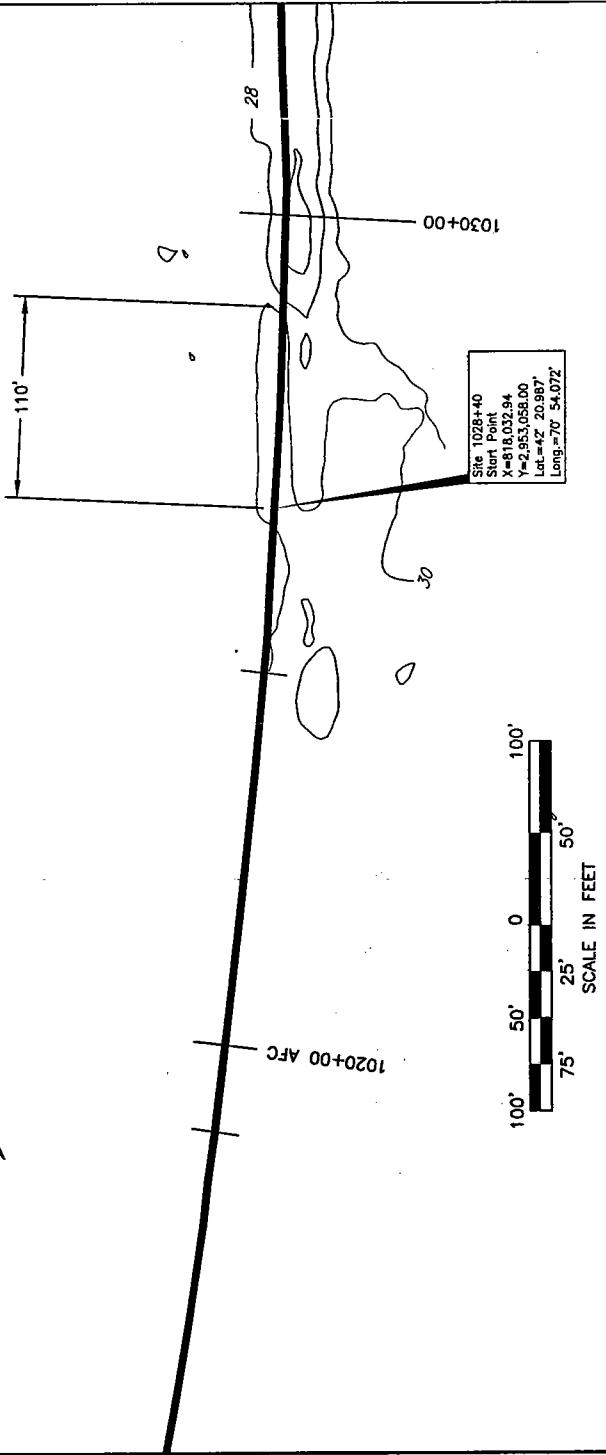
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83



Algonquin Gas Transmission Company
125 S. Southern Pkwy, Boston, MA 02115 617/244-4550

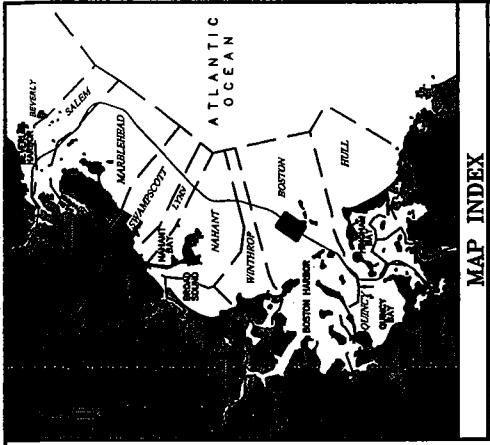
**HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 1028+40**

NOTES:		DRAWN BY: K.M.A. CHK'D. BY: R.P.G.
1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.		DATE: 9-23-04 APPRV. BY: L.E.P.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.		
3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.		
A. ACOE SUBMITTAL No. _____ REVISION _____	9-28-04 R.P.G. DWG. NO. TR-LOC-10 A REV. DATE APPR.	



Typical Cross Section

- ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
- DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
- DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.

**LEGEND:**

—	AS BUILT PIPELINE
—1450+00 AB	AS BUILT STATION NUMBER
—1450+00 AFC	ORIGINAL STATION NUMBER
△ M 0.0 P	AS BUILT MILE POST
△ ORIG 3.0 MP	ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83



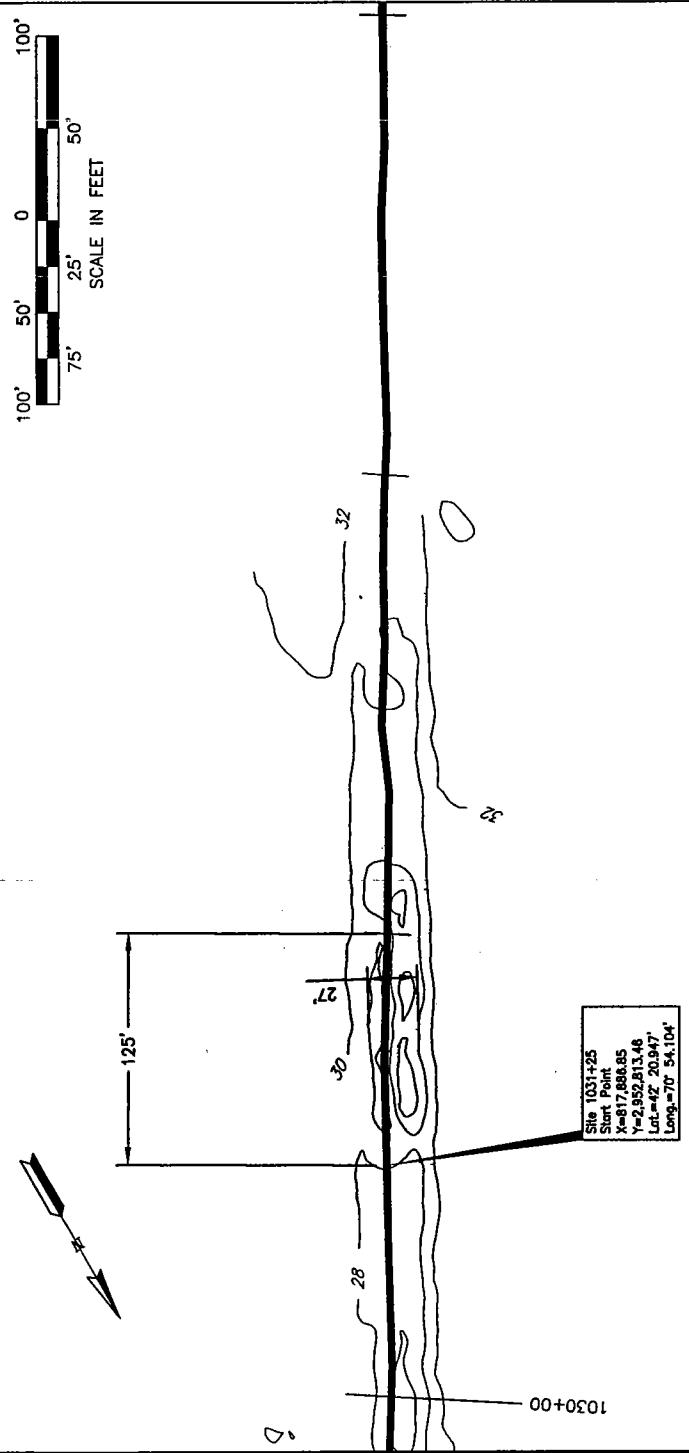
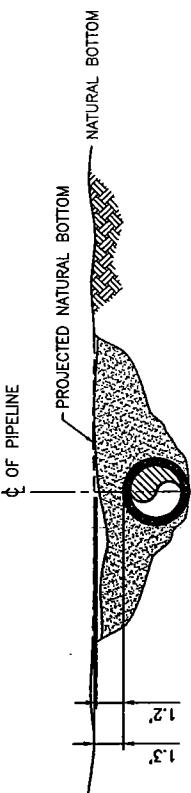
Algonquin Gas Transmission Company
120 S. Summer St., Suite 1000, Boston, MA 02111-25450

**HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 1031+25**

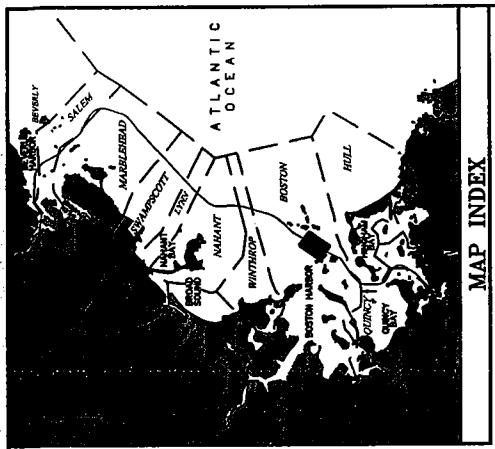
NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.

SITE 1031+25
Typical Cross Section
(NOT TO SCALE)



DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
A. ACCE SUBMITTAL	9-28-04 R.P.G.	DWG. NO.	TR-LOC-11
NO.	DATE APPR.	REV.	A



LEGEND:

AS BUILT PIPELINE
 —1450+00 AB AS BUILT STATION NUMBER
 —1450+00 AFC ORIGINAL STATION NUMBER
 AS BUILT MILE POST

 ORIG.


MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

KI

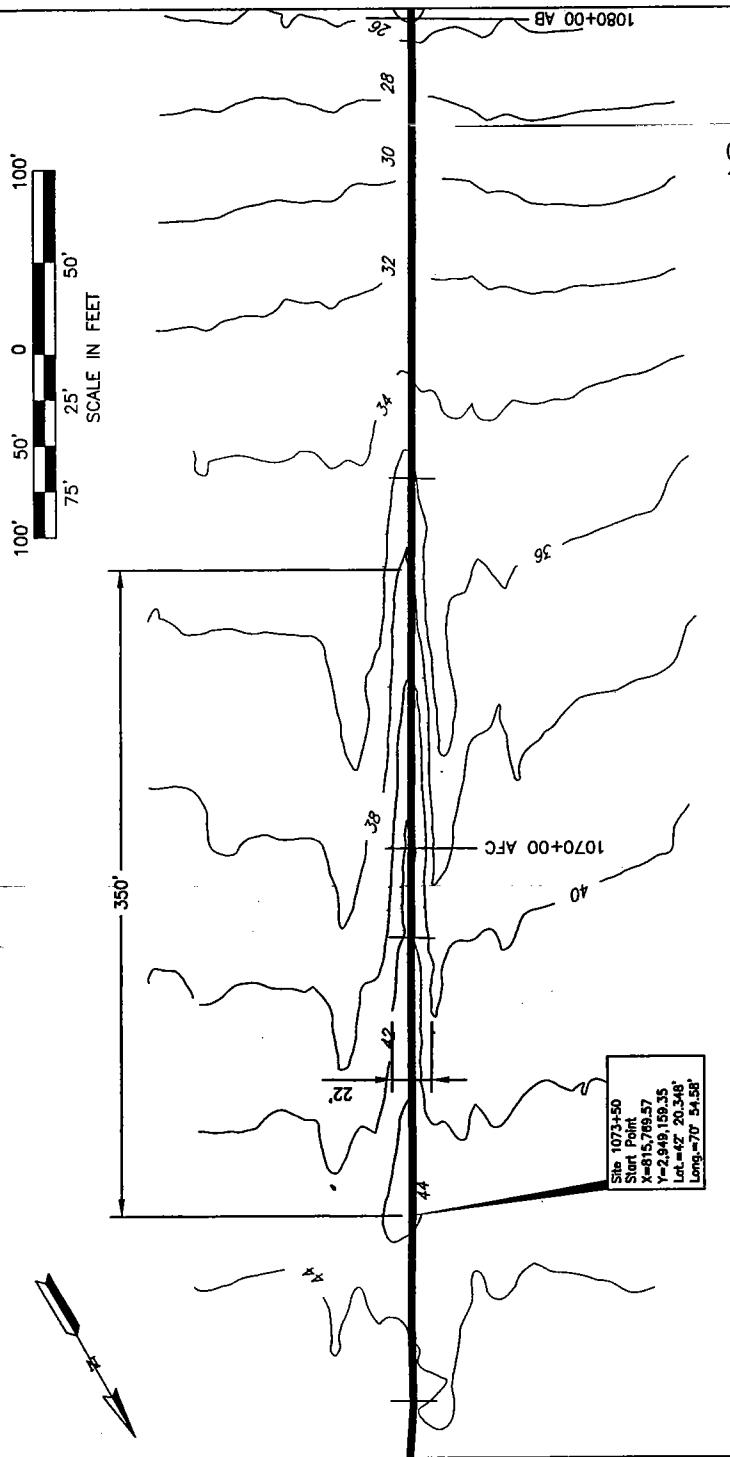
09-24-04 13:39 01119 1

Algonquin Gas Transmission Company
1000 Peachtree Street, N.E., Suite 1000 • Atlanta, Georgia 30367-4100

HUBLINE PIPELINE PROJECT
POTENTIAL BACKFIRE SITE

SITE 1073+50

DRAWN BY: K.M.A. CHK'D. BY: R.P.G.
 DATE: 9-23-04 APPROV. BY: L.E.P.
 DWG. NO. TR-LOC-12 REV A

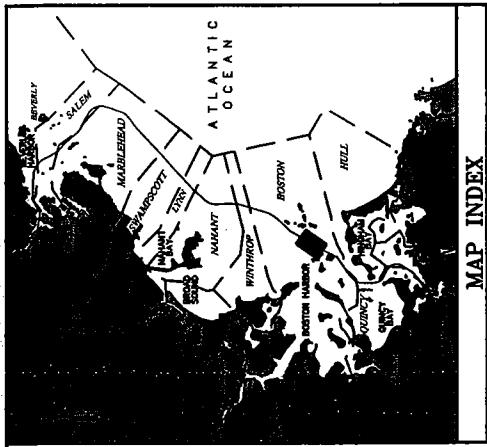


SITE 1073+50
Typical Cross Section
(NOT TO SCALE)

(NOT TO SCALE)

NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
 2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
 3. DEPTH OF COVER IS THE DEPTH OF THE GROUND SURFACE (PROJECTED) TO THE TOP OF THE PIPE, AFTER BACKFILLING.



MAP INDEX

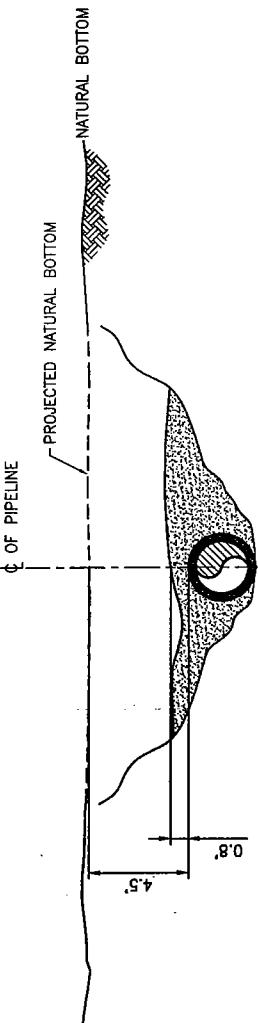
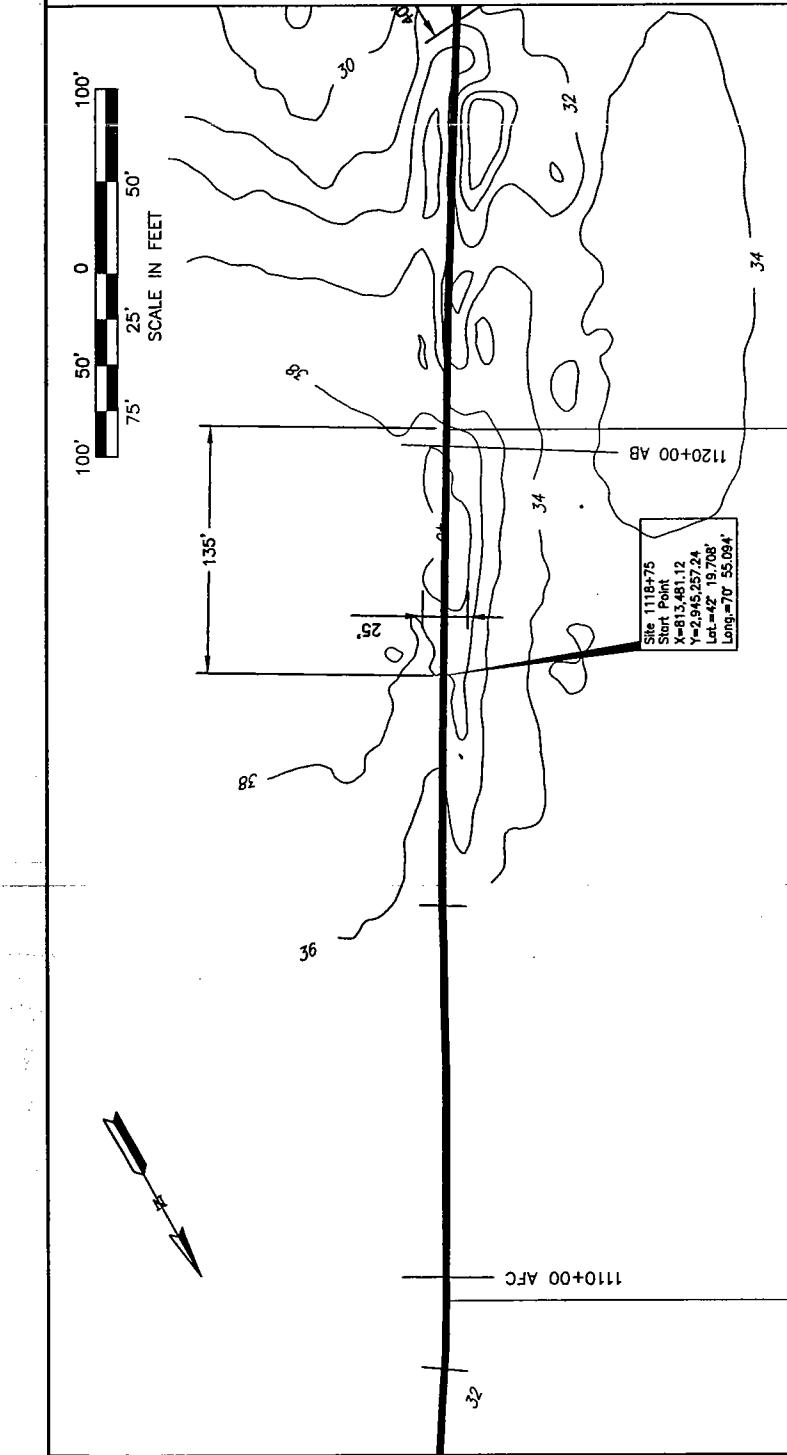
LEGEND:

- AS BUILT PIPELINE
- AS BUILT STATION NUMBER
- ORIGINAL STATION NUMBER
- AS BUILT MILE POST

—1450+00 AB —1450+00 AFC







SITE 1118+75

Typical Cross Section

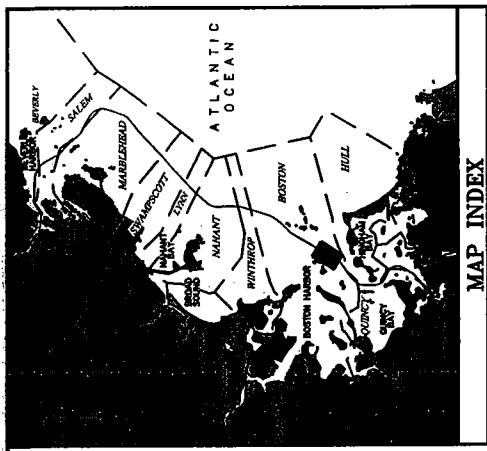
(NOT TO SCALE)

- NOTES:
1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
 2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
 3. DEPTH OF COVER IS THE DEPTH OF GROUND SURFACE (TOP) OF THE PIPE AFTER BACKFILLING.

Duke Energy Gas Transmission
Algonquin Gas Transmission Company
128 Sabina Park Road, Boston, MA 02125-4650

HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 1118+75

DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
A COE SUBMITTAL	9-26-04 R.P.G.	DWG. NO.	TR-LOC-13
REVISION NO.	DATE APPROVED		A



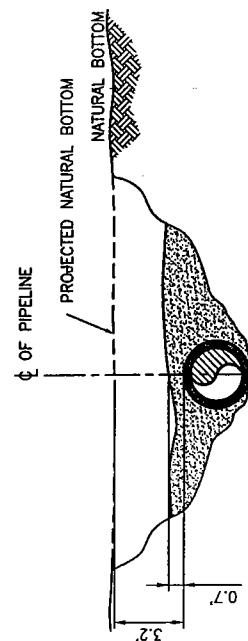
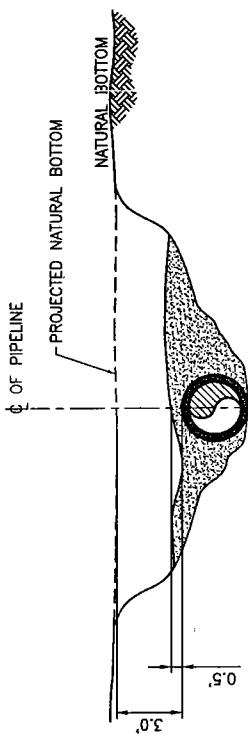
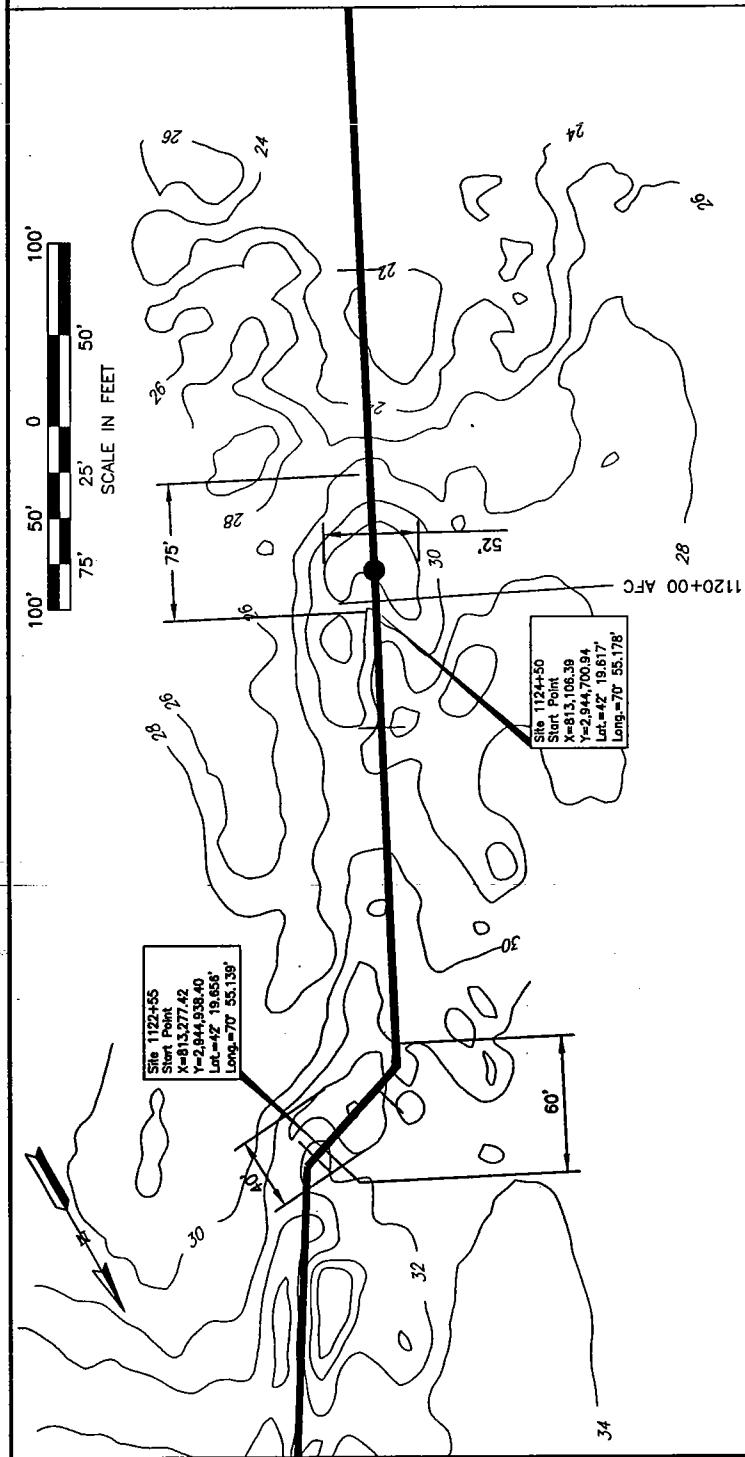
MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- ◊ M 0.0 P AS BUILT MILE POST
- ◊ ORIG. 3.0 MP ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM.
ZONE 2001, NAD 83

1 KMA	
13:38 01119	
09-24-04	013:38 01119
Algonquin Gas Transmission Company 120 Suhama Field Road, Boston, MA 02135 617-254-4500	
HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES SITE 1122+55 & 1124+50	



SITE 1124+50

Typical Cross Section

(NOT TO SCALE)

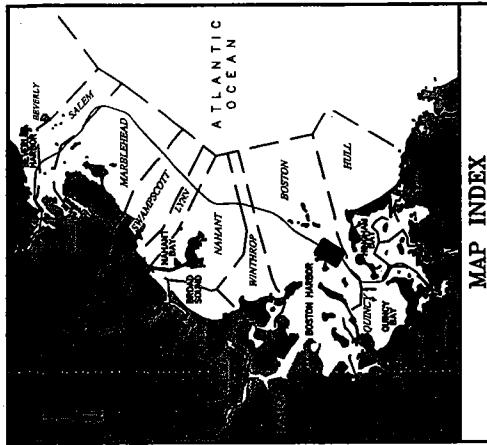
SITE 1122+55

Typical Cross Section

(NOT TO SCALE)

NOTES:
1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF WATER IN FEET. THE DEPTH AFTER BACKFILLING.

DRAWN BY: K.M.A.	CHK'D. BY: R.P.G.
DATE: 9-23-04	APPRV. BY: L.E.P.
A. ACOE SUBMITTAL	
NO. 9-28-04 R.P.G.	DWG. NO. TR-LOC-14
REVISION DATE APPROVAL DATE	REV A



MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- AS BUILT STATION NUMBER
- 1450+00 AB
- 1450+00 AFC
- 1450+00 ORGINAL STATION NUMBER
- AS BUILT MILE POST
- AS BUILT MILE POST
- ORIG. 3.0 MP

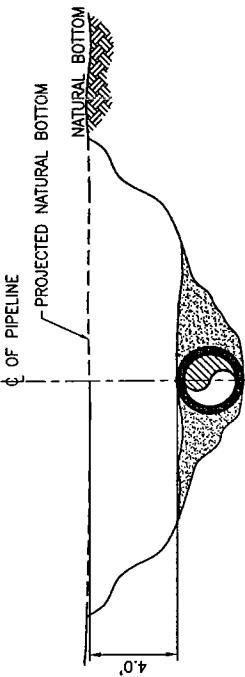
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

1 KMA	
01119	
09-24-04	13:38
128 Submits Full Name, Block, MA, Date: 01/17/2016	
HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES SITE 1172+10 & 1173+65	
DRAWN BY: K.M.A.	CHK'D. BY: R.P.G.
DATE: 9-23-04	APPRV. BY: L.E.P.
AACOE SUBMITTAL NO.	REV. A
REVISION DATE	DWG. NO. TR-LOC-15

SITE 1173+65

Typical Cross Section

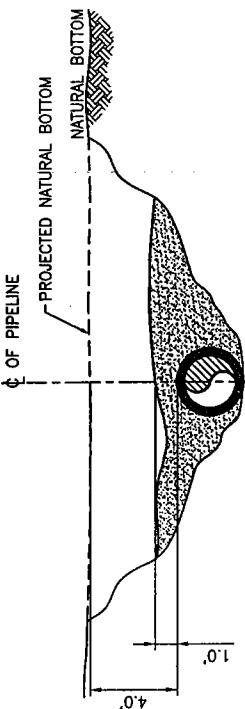
(NOT TO SCALE)



SITE 1172+10

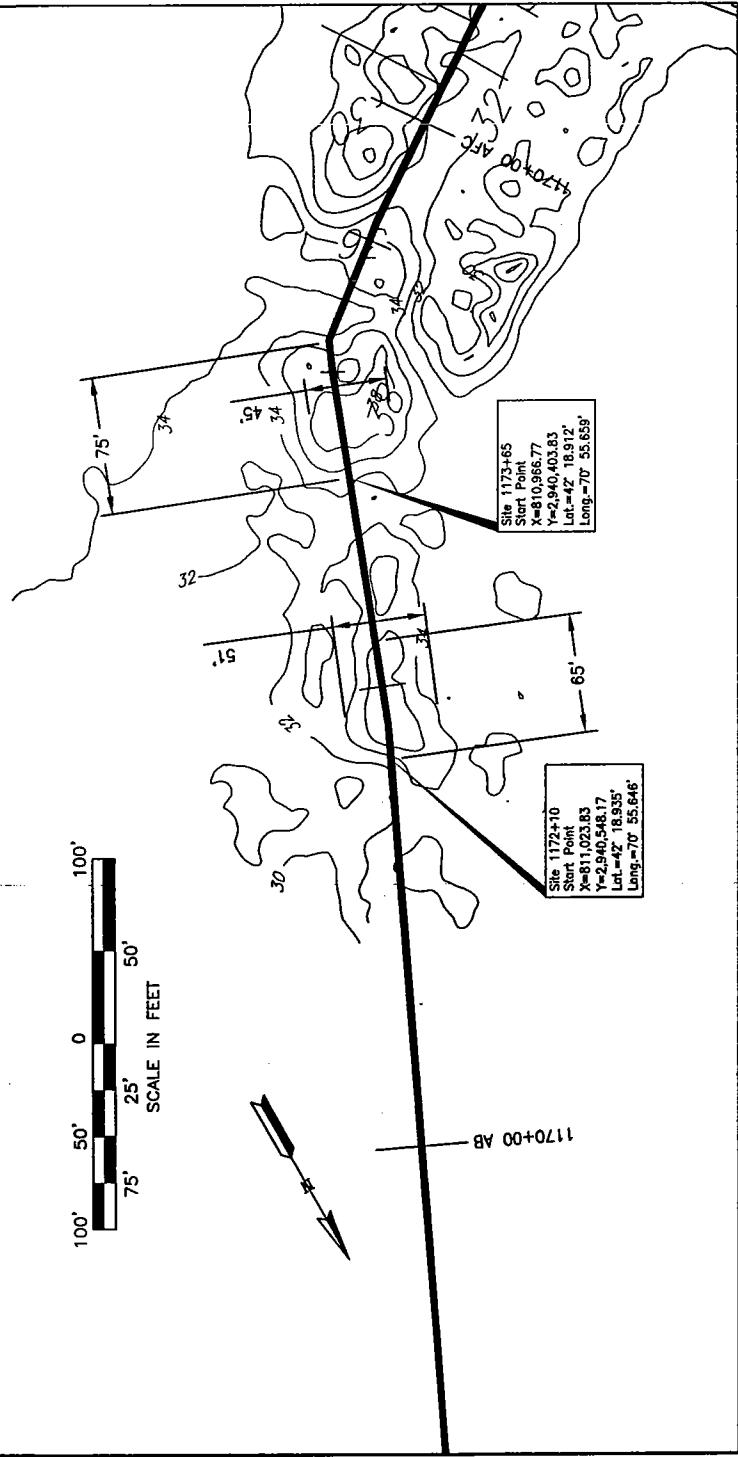
Typical Cross Section

(NOT TO SCALE)



NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF MATERIALS OVER THE TOP OF THE PIPE AFTER BACKFILLING.

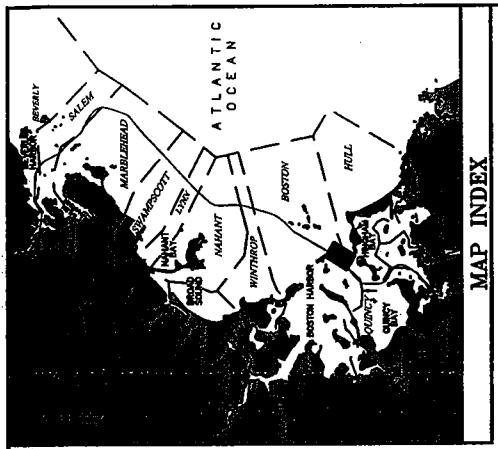


Site 1173+65
Start Point
X=410.936577
Y=-940.40383
Lat.=42° 18.912'
Long.=70° 55.555'

Site 1172+10
Start Point
X=411.93283
Y=-940.45817
Lat.=42° 18.935'
Long.=70° 55.646'

100'
100'
75' 50' 0 25' 50' 75' 100'
SCALE IN FEET

1170+00 AB



MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- AS BUILT MILE POST
- ORIGINAL MILE POST
- ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83



Duke Energy
Gas Transmission

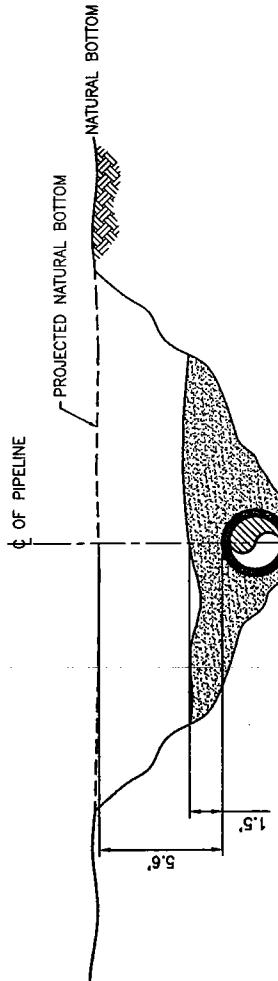
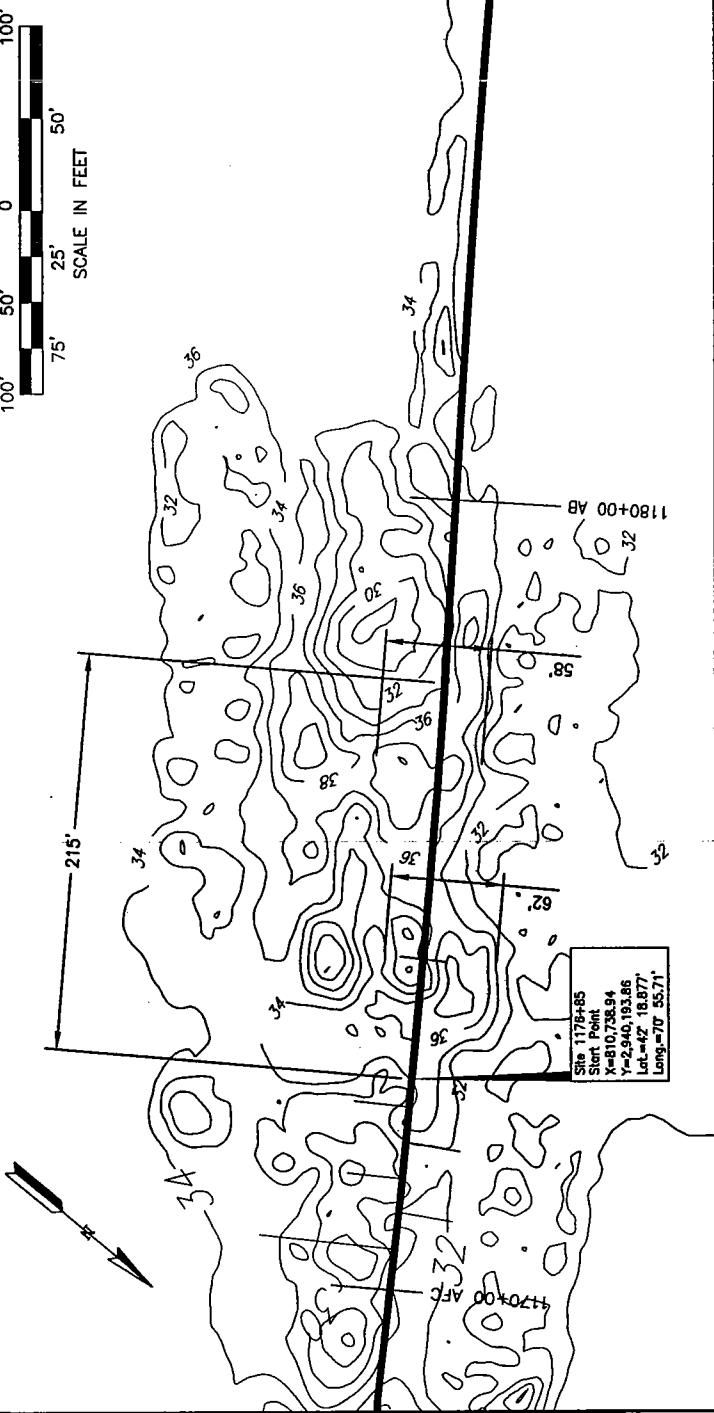
Algonquin Gas Transmission Company

128 Sabin's Field Road, Boston, MA 02175-4580

HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES SITE 1176+85

(NOT TO SCALE)

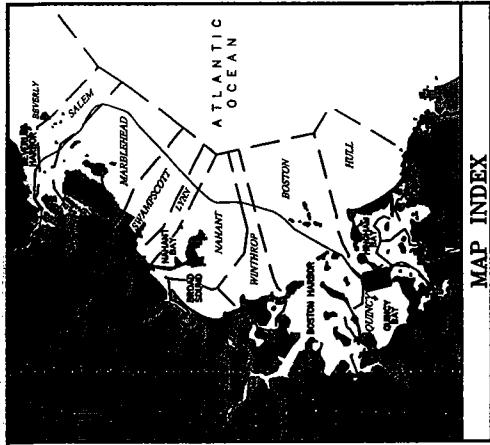
SITE 1176+85



NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.

DRAWN BY:	K.M.A.	CHK'D. BY:	R.P.G.
DATE:	9-23-04	APPRV. BY:	L.E.P.
DWG. NO.	TR-LOC-16	REV.	A
DATE:	9-28-04 R.P.G.	APPRV. BY:	
NO.		REVISION	



MAP INDEX

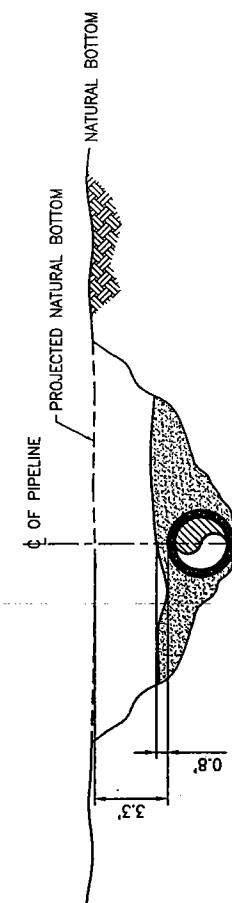
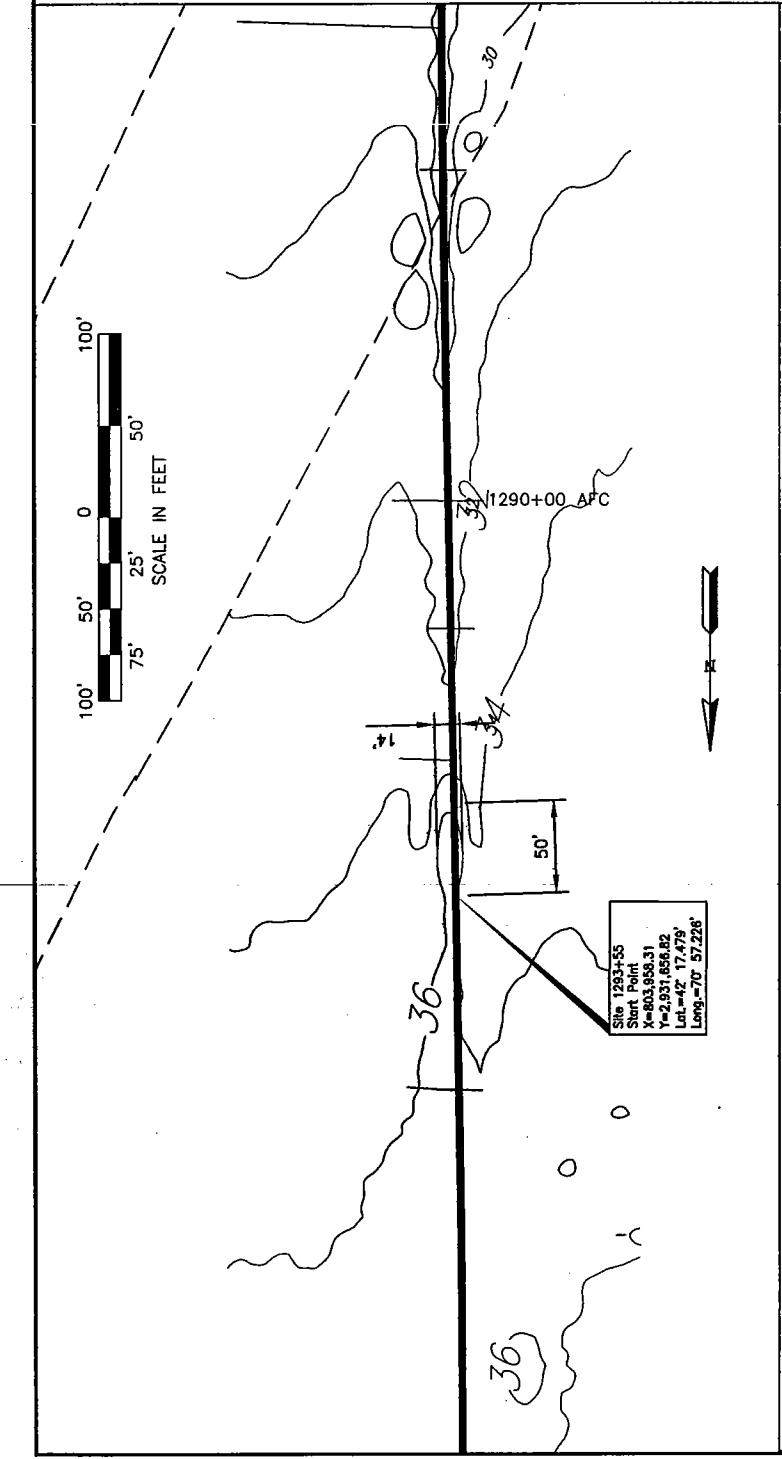
LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- AS BUILT MILE POST
- ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

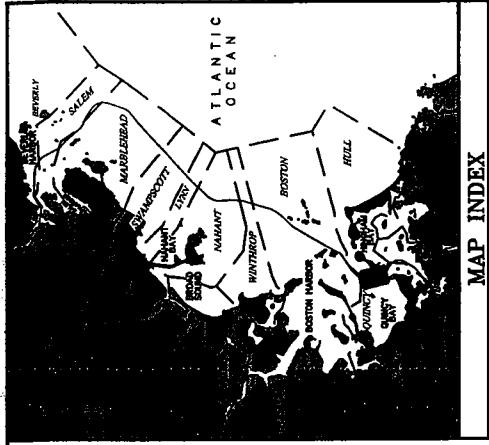
Duke Energy Gas Transmission	
Algonquin Gas Transmission Company 128 Sabine Field Road, Boston, MA 02117-4650	
HUBLINE PIPELINE PROJECT	
POTENTIAL BACKFILL SITES	
SITE 1293+55	
DRAWN BY: K.M.A.	CHK'D. BY: R.P.G.
DATE: 9-23-04	APPRV. BY: L.E.P.
AACOE SUBMITTAL	9-26-04 R.P.G.
NO. REVISION	DATE APPROVED

09-24-04 13:36 01119 1 KMA



SITE 1293+55
Typical Cross Section
(NOT TO SCALE)

- NOTES:
- ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
 - DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
 - DEPTH OF COVER IS THE DEPTH OF PIPELINE ABOVE THE TOP OF THE PIPE AFTER BACKFILLING.



MAP INDEX

LEGEND:

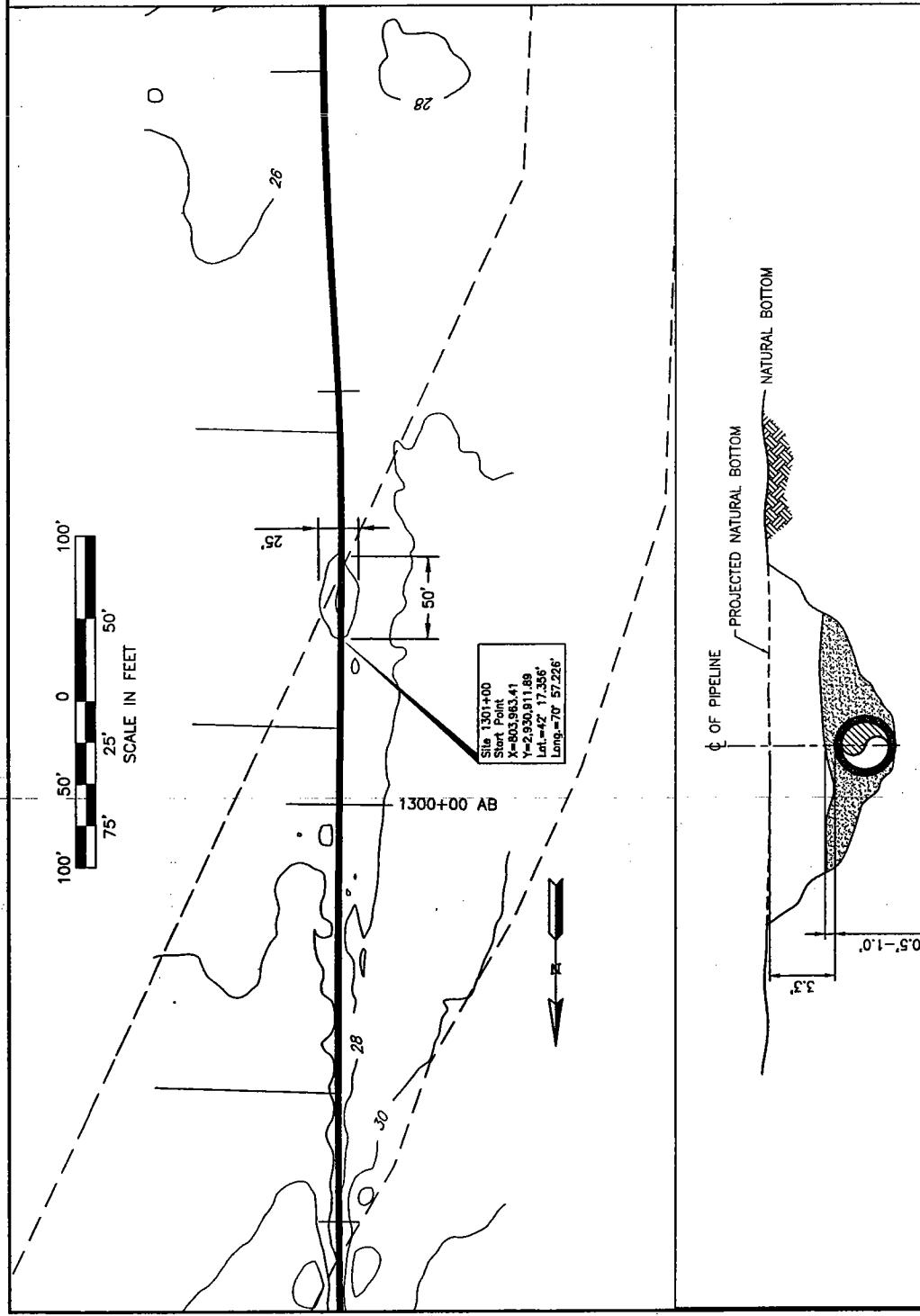
- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- △ 0.0 AS BUILT MILE POST
- △ 0.0 P ORIG. 3.0 MP

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83



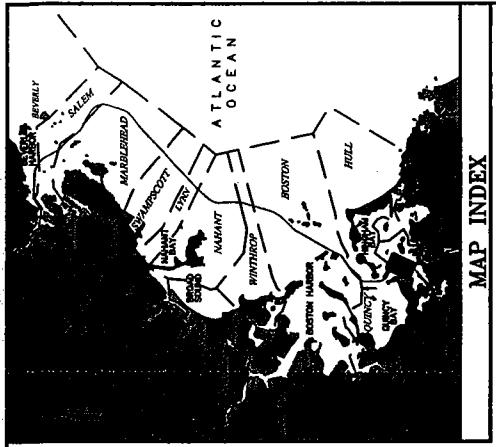
Algonquin Gas Transmission Company
120 Sutter Field Drive, Meriden, MA 01455 (800) 254-0600
HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 1301+00

DRAWN BY: KMA CHK'D. BY: R.P.G.
DATE: 9-23-04 APPRV. BY: L.E.P.
DWG. NO. TR-LOC-18 REV A
09-24-04 13:36 01119 1 KMA



SITE 1301+00
Typical Cross Section

- NOTES:
1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
 2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
 3. DEPTH OF COVER IS THE DEPTH OF WATER OVER THE PIPE AFTER BACKFILLING.



MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- △ AS BUILT MILE POST
- △ ORIG. 0.0
3.0 MP ORIGINAL MILE POST

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

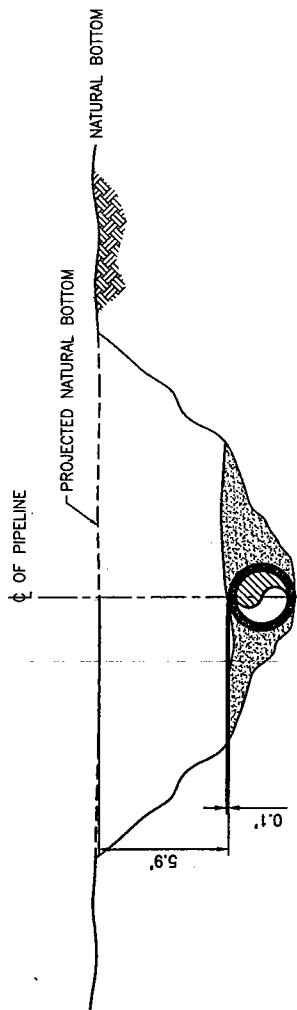
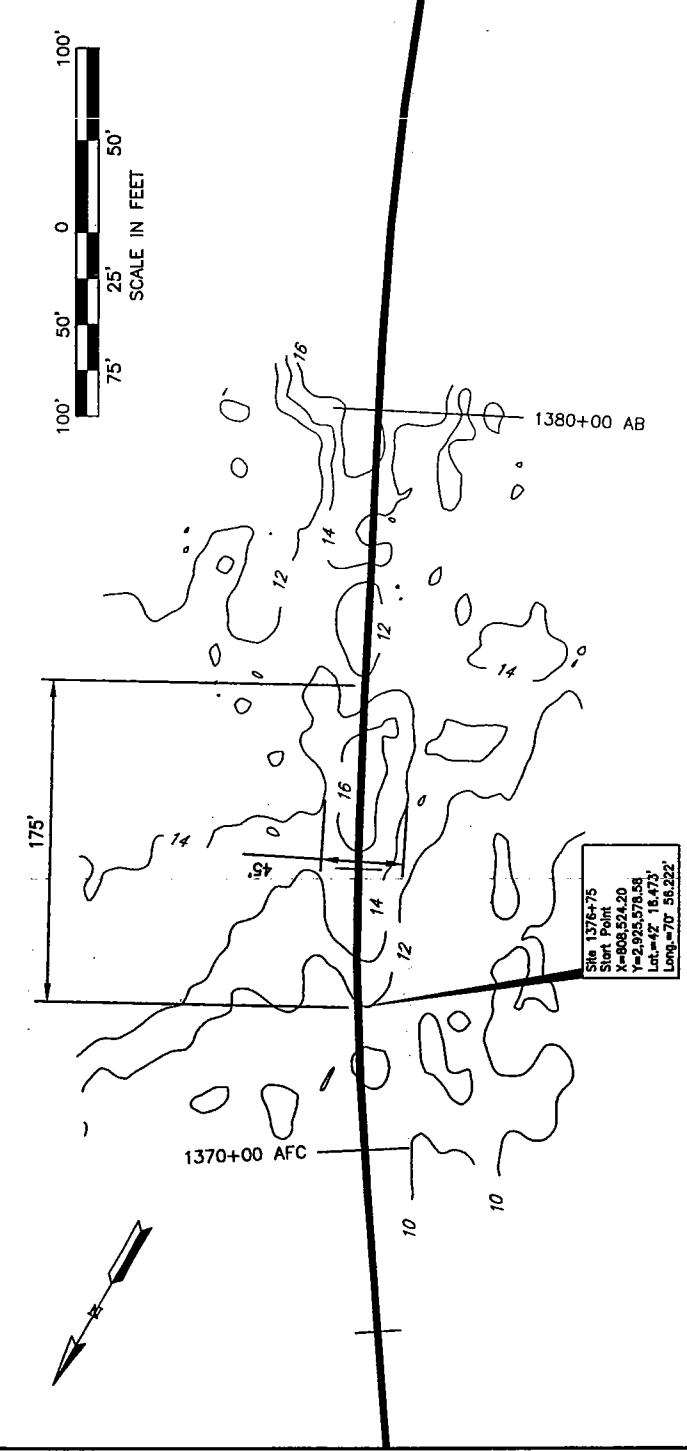


Algonquin Gas Transmission Company
162 Sargent Field Road, Boston, MA 02172-4400

HUBLINE PIPELINE PROJECT POTENTIAL BACKFILL SITES SITE 1376+75

NOTES:

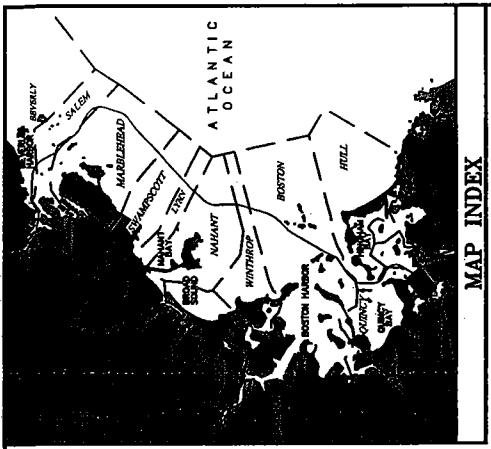
1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF MATERIAL OVER THE TOP OF THE PIPE AFTER BACKFILLING.



SITE 1376+75 Typical Cross Section (NOT TO SCALE)

09-24-04 13-33 01119 1 KMA

			DRAWN BY: K.M.A. CHK'D. BY: R.P.G.
A. ACOE SUBMITTAL	9-28-04 R.P.G.	DATE:	9-23-04 APPRV. BY: L.E.P.
No.	REVISION	DATE	DWG. NO. TR-LOC-19 REV A



MAP INDEX

LEGEND:

- AS BUILT PIPELINE
- 1450+00 AB AS BUILT STATION NUMBER
- 1450+00 AFC ORIGINAL STATION NUMBER
- △ AS BUILT MILE POST
- △ ORIG. MP ORIGINAL MILE POST

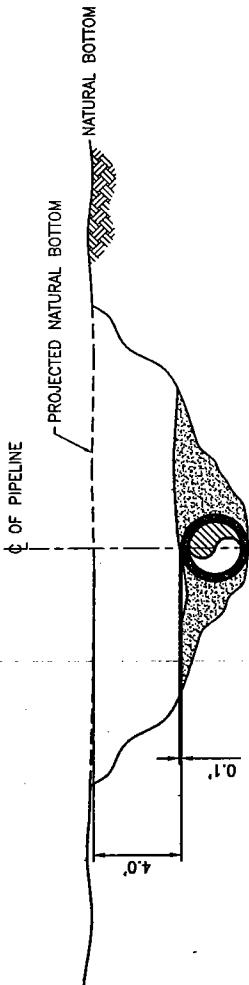
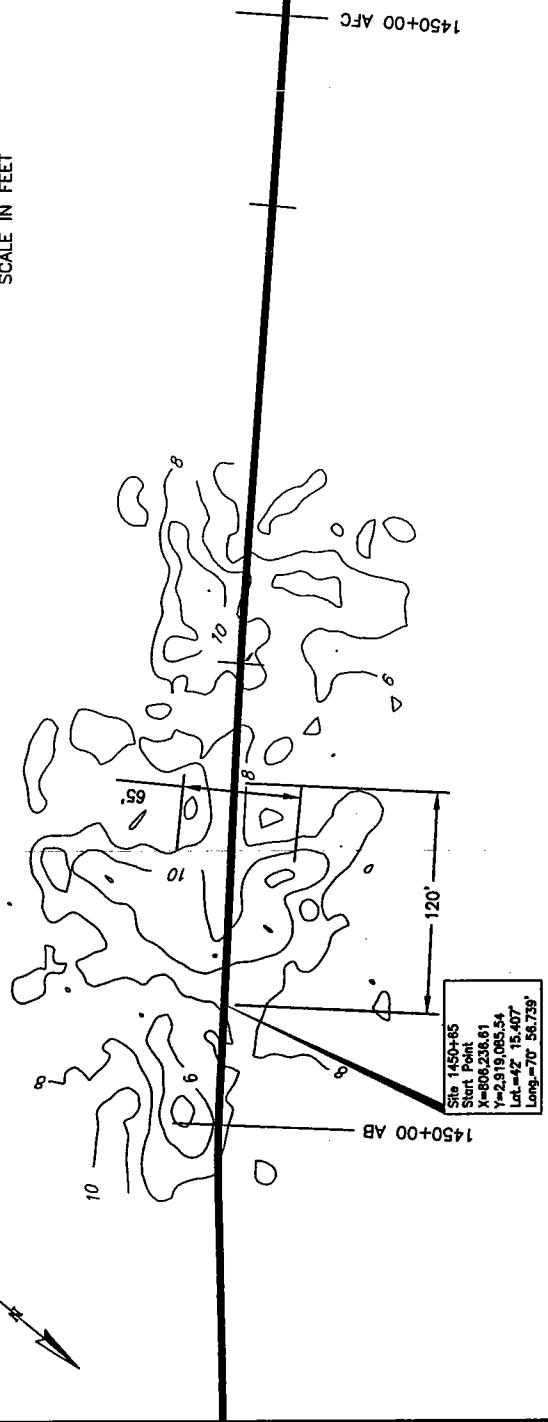
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM,
ZONE 2001, NAD 83

1 KMA
09-24-04 13:33 01119
Duke Energy Transmission
Algonquin Gas Transmission Company
124 Sacken Rd, Boston, MA 02117-25450
HUBLINE PIPELINE PROJECT
POTENTIAL BACKFILL SITES
SITE 1450+65

DRAWN BY: K.M.A. CHK'D. BY: R.P.G.
DATE: 9-23-04 APPRV. BY: L.E.P.
A ACCE SUBMITTAL 9-28-04 R.P.G.
DWG. NO. TR-LOC-20 REV A
DATE APRV.

NOTES:

1. ALL DIMENSIONS REGARDING PIPELINE DEPTH AND DEPTH OF COVER ARE TAKEN FROM THE TOP OF THE PIPELINE.
2. DEPTH OF PIPELINE IS MEASURED FROM ORIGINAL GRADE (PROJECTED) TO THE TOP OF THE PIPE.
3. DEPTH OF COVER IS THE DEPTH OF WATER OVER THE TOP OF THE PIPE AFTER BACKFILLING.



SITE 1450+65

Typical Cross Section

(NOT TO SCALE)