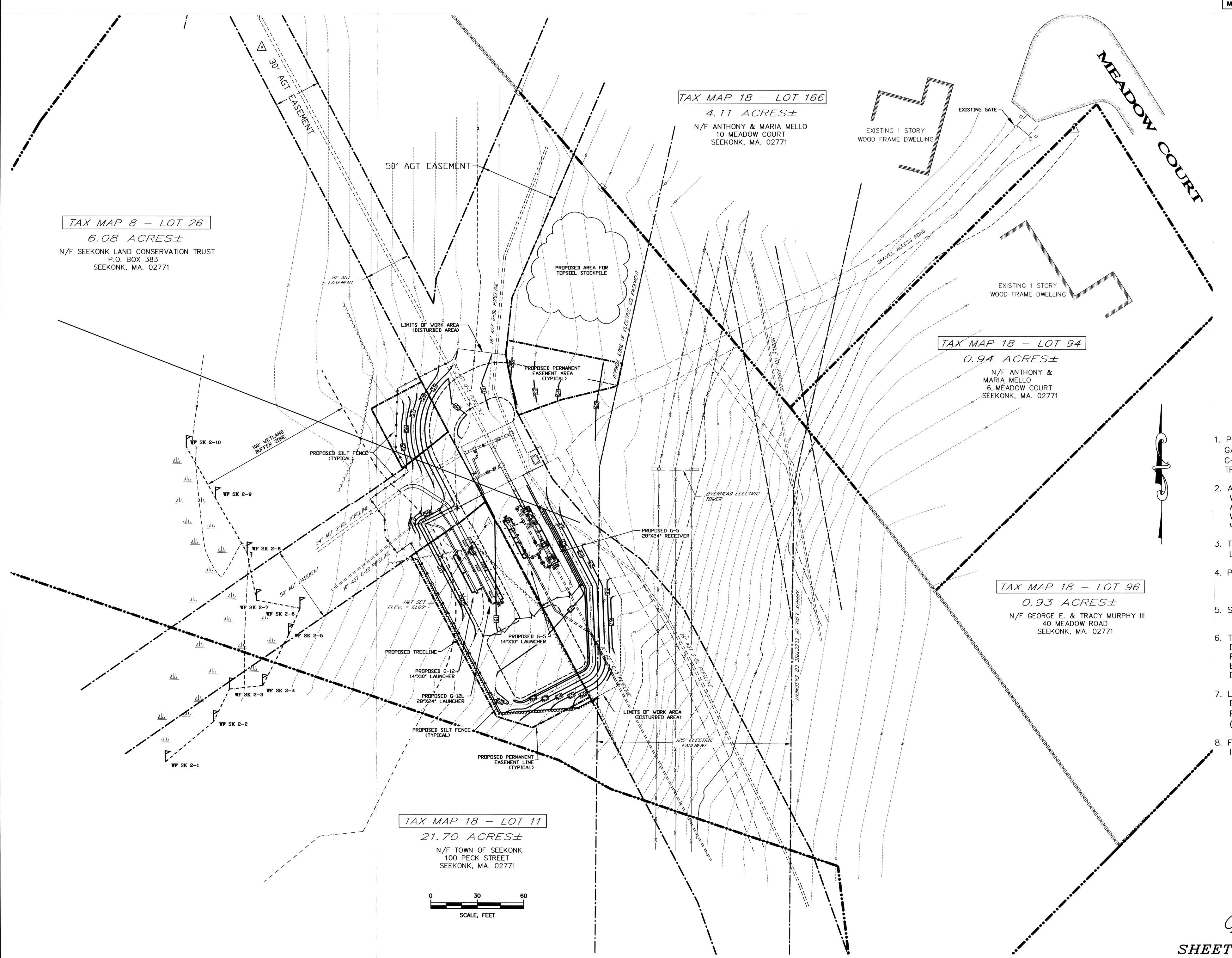


NOTES

1. PLAN DRAWN TO SHOW PROPOSED LAUNCHER & RECEIVER SITE AT THE ALGONQUIN GAS TRANSMISSION G–5 24" & G–5 10" NATURAL GAS PIPELINE TERMINUS AND G–12L 24" & G–12 10" TAP POINT PREPARED FOR SPECTRA ENERGY TRANSMISSION.
2. ALL WETLAND RESOURCE AREAS WERE FIELD DELINEATED IN MARCH 2009 BY WETLAND BIOLOGISTS FROM TRC ENVIRONMENTAL CORPORATION. RESOURCE AREAS WERE IDENTIFIED IN ACCORDANCE WITH THE MASSACHUSETTS WETLANDS PROTECTION ACT METHODOLOGIES IN ADDITION TO SEEKONK WETLAND DYLAWS.
3. TOTAL LIMITS OF WORK AREA FOR PROJECT = 35,254 S.F. / 0.81 ACRES
LIMITS OF WORK WITHIN 100' WETLAND BUFFER ZONE = 1,738 S.F / 0.04 ACRES
4. PROPERTY OWNED BY: SEEKONK LAND CONSERVATION TRUST
P.O. BOX 383
SEEKONK, MA. 02771
5. SITE LOCATION: OFF MEADOW COURT
SEEKONK, MA 02771
6. THIS PLAN REFERENCES:
DRAWING # 2009–1605, WORKSHEET, TAX MAP 18, LOT 26
PREPARED FOR NORTHSTAR INDUSTRIES, LLC
BY: S.E.C. & ASSOCIATES, INC.
DATED: MARCH 23, 2009
7. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD BY THE APPROPRIATE UTILITY COMPANY PRIOR TO ANY CONSTRUCTION. PLEASE CALL DIG SAFE @ 1(888)DIG–SAFE (344–7233).
8. FINAL LOCATION OF EROSION & SEDIMENT CONTROL MEASURES TO BE DETERMINED IN THE FIELD BY SPECTRA ENERGY INSPECTOR.

o Pamdenlane

RDA

ISSUED FOR PERMITTING

ALBERT T. TRUDEL No. 36869 — COMMONWEALTH OF MASSACHUSETTS — REGISTERED PROFESSIONAL LAND SURVEYOR

SURVEYING SERVICES PROVIDED BY: S.E.C. & ASSOCIATES, INC.
SURVEYING & ENGINEERING CONSULTANTS
P.O. BOX 1337 – PLAISTOW, NH 03865 PHONE: (603)–382–5065

SHEET 1 OF 3

NORTHSTAR INDUSTRIES
128 MERRIMACK STREET • METHUEN, MA 01844

ENGINEERING APPROVALS	BID		CONSTRUCTION	
DRAWN BY	C. FREY	5/22/09		
CHECKED BY	A. GONTHIER	6/1/09		
DESIGN ENGINEER				
PROJECT MANAGER	A GONTHIER			
	SIGNATURE	DATE	SIGNATURE	DATE

PERMITTING PLAN
ALGONQUIN GAS TRANSMISSION
G-5 24", G-5 10", G-12L 24", & G-12 10"
2009 PIPELINE INTEGRITY PROGRAM
LOC. MEADOW COURT, SEEKONK, MA.
YEAR: 2009 | W.O. 004120069 | SCALE: 1"=30' | DWG. SPE-0074-C10 | REV. A

Spectra Energy

ISSUED FOR PERMITTING (6-1-09)

EROSION AND SEDIMENTATION CONTROL NOTES

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITHIN THIS PLAN.
2. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON–SITE FLOWS PRIOR TO DISCHARGE OR OF STABILIZING THE SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED BY THE PERMITTEE TO ELIMINATE ALL SUCH PROBLEMS.
3. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY.
4. THE CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO PREVENT SEDIMENT FROM ENTERING ROADWAY OR ADJACENT PROPERTIES.
5. STORM WATER MANAGEMENT DEVICES INCLUDING, BUT NOT LIMITED TO, SILT FENCES AND TIRE SCRUBBERS ALONG WITH ALL OTHER EROSION AND SEDIMENTATION CONTROL DEVICES, ARE TO BE CONSTRUCTED PRIOR TO SITE DEVELOPMENT
6. ON–SITE GRADING DURING CONSTRUCTION SHALL BE LIMITED AND RESTRICTED TO ONLY THAT IMMEDIATE AREA REQUIRED FOR THE CONSTRUCTION PROCEDURE. NATURAL COVER ALONG ABUTTING PROPERTY LINES SHOULD BE PRESERVED.
7. IN WOODED AREAS, ONLY THOSE TREES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED.
8. SILT FENCE SHALL BE MAINTAINED AND REPLACED, IF NECESSARY, DURING THE ENTIRE CONSTRUCTION PERIOD UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.
9. A CRUSHED STONE TIRE SCRUBBER (STABILIZED CONSTRUCTION ENTRANCE) SHALL BE PLACED ACROSS THE CONSTRUCTION ENTRANCE IN ORDER TO PREVENT THE TRANSPORTATION OF SEDIMENT ONTO ADJACENT ROADWAYS.
10. TOPSOIL TAKEN FROM THE CONSTRUCTION AREAS SHALL BE STOCKPILED FOR REUSE IN FINISH GRADING AND SEEDED WITH ANNUAL RYE GRASS AT A RATE OF 100 LBS. PER 1,000 SQ. FT. SILT FENCE SHALL BE DUG IN AND STAKED DOWN SLOPE OF THE STOCKPILE AREA.
11. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER AND BE COVERED AT THE END OF EACH CONSTRUCTION DAY TO PREVENT SILT RUNOFF IF RAIN EVENTS OCCUR.
12. ALL GRADED AREAS ARE TO BE TEMPORARILY SEEDED AND MULCHED IMMEDIATELY FOLLOWING EARTHMOVING PROCEDURES. SEED SHALL BE ANNUAL RYE GRASS APPLIED AT THE RATE OF 3 LBS. PER 1,000 SQ. FT. MULCH SHALL BE HAY OR STRAW APPLIED AT A RATE OF 100 LBS. PER 1,000 SQ. FT.
13. STOCKPILES OF MULCHES, SUCH AS, WOOD CHIPS, CRUSHED STONE, HAY OR STRAW, AND JUTE MESH, SHOULD BE AVAILABLE TO DEAL WITH EROSIVE CONDITIONS AS THEY ARISE.
14. ESTABLISH PERMANENT SEEDING AS SOON AS POSSIBLE AFTER FINAL GRADING IS COMPLETE.
15. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED.
16. THE CONTRACTOR IS TO MANAGE AND DISPOSE OF ALL CONSTRUCTION WASTES IN ACCORDANCE WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION'S WASTE MANAGEMENT REGULATIONS.
17. IF ANY SIGNIFICANT CHANGES ARE TO BE MADE TO THE LIMITS OF DISTURBANCE OR TO THE EROSION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR WILL CONTACT THE SEEKONK CONSERVATION COMMISSION OR THEIR AGENT WITH NOTIFICATION OF THE CHANGES.

GENERAL NOTES:

1. AREAS TO BE EXCAVATED, FILLED, OR GRADED SHALL BE CLEARED AND GRUBBED PRIOR TO START OF EXCAVATION OR FILLING OPERATIONS ON THESE AREAS. IN AREAS TO BE EXCAVATED, STUMPS, ROOTS, ETC. SHALL BE REMOVED TO A DEPTH OF AT LEAST 6 INCHES BELOW THE BOTTOM OF THE EXCAVATION AND TO A DISTANCE OF AT LEAST 2 FEET BEYOND THE EXCAVATION LIMITS. REMOVE STUMPS, ROOTS, ETC., TO A DEPTH OF 12 INCHES BELOW THE EXISTING GROUND SURFACE IN AREAS TO RECEIVE FILL OR IN AREAS REQUIRING GRADING. HOLES REMAINING AFTER REMOVAL OF STUMPS, ROOTS, ETC., SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO AT LEAST THE DENSITY OF THE ADJACENT UNDISTURBED MATERIAL.
2. EXCAVATIONS SHALL BE PERFORMED INSOFAR AS PRACTICABLE IN THE DRY. PROPER DRAINAGE FOR EXCAVATED AREAS SHALL BE MAINTAINED TO PREVENT THE PONDING OF WATER AND CONTROL OF RUNOFF.
3. BEFORE PLACING FILL MATERIALS, THE SUBGRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES, MOISTURE–CONDITIONED, AND RE–COMPACTED TO THE SPECIFIED PERCENT OF MAXIMUM DENSITY (SEE NOTE 5). THIS REQUIREMENT SHALL APPLY UNDER ROADS, PARKING AREAS, PAVED AREAS, AND AS SHOWN ON THE DRAWINGS.
4. AFTER AREAS TO RECEIVE FILL HAVE BEEN PROPERLY PREPARED, MATERIAL SHALL BE PLACED AND SPREAD IN LOOSE LIFTS NOT EXCEEDING 8 INCHES, UNLESS SPECIFIED OTHERWISE, ACROSS THE ENTIRE FILL OR BACKFILL SECTION. LESSER THICKNESS SHALL BE USED IF NECESSARY TO ACHIEVE SPECIFIED COMPACTED DENSITY(SEE NOTE 5).
5. ALL FILLS, UNLESS NOTED OTHERWISE, SHALL BE UNIFORMLY COMPACTED TO NOT LESS THEN 90% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT. MAXIMUM DENSITY SHALL BE DETERMINED IN ACCORDANCE WITH THE "STANDARD TEST FOR MOISTURE DENSITY RELATIONS OF SOIL" AS SPECIFIED. COMPACTING FOR BASE COURSE FOR ASPHALT PAVING, SUBGRADE BELOW ASPHALT PAVING (UPPER 12 INCHES) AND WHERE SPECIFIED ON DESIGN DRAWINGS SHALL ACHIEVE A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT BY D1557.
6. FILL MATERIAL FROM OFF SITE SOURCES OR FROM DESIGNATED BORROW AREAS SHALL BE APPROVED BY THE COMPANY BEFORE PLACEMENT IN THE PERMANENT WORK. PLASTICITY INDEX OF IMPORTED FILL SHALL BE LESS THAN 15 AND LIQUID LIMIT LESS THAN 30. FILL MATERIAL SHALL BE WELL–GRADED COMPACTABLE MATERIAL, INERT AND FREE FROM VEGETATION, TRASH, DEBRIS, ORGANIC MATERIAL, STONES EXCEEDING 3 INCHES IN THE LARGEST DIMENSION, CHUNKS OF HIGHLY PLASTIC CLAY, METAL, CONCRETE OR OTHER DELETERIOUS MATERIAL. FILL MATERIAL MAY BE OF ONE OF THE FOLLOWING:
   1) EXCAVATED MATERIALS, IF SUITABLE AND AGREED TO BY COMPANY.
   2) SAND WITH A MAXIMUM GRAIN SIZE OF 1/4 INCH.
   3) GRAVEL WITH A MINIMUM PARTICLE SIZE OF 1/4 INCH.
   4) A MIXTURE OF (2) AND (3) ABOVE.
7. CUT AND FILL SLOPE SHALL BE 3 HORIZONTAL : 1 VERTICAL RESPECTIVELY.

CONSTRUCTION SEQUENCE

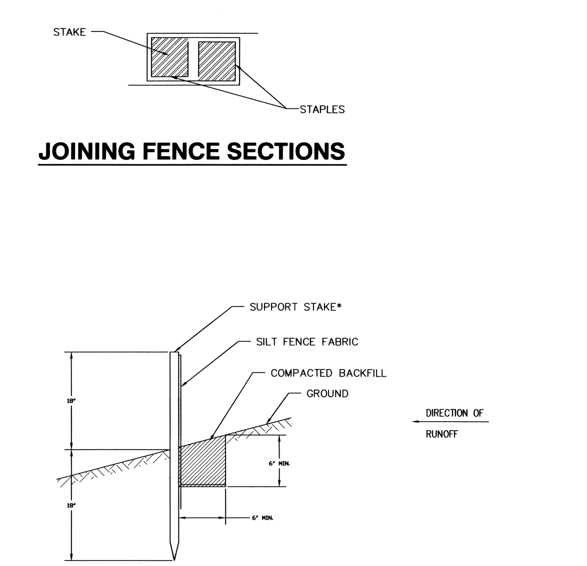
1. FOLLOW ALL GUIDELINES AND PROCEDURES STATED IN EROSION AND SEDIMENTATION CONTROL NOTES DURING ENTIRE CONSTRUCTION PROCEDURE.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE. STABILIZED CONSTRUCTION ENTRANCE FOR DRIVEWAY MUST BE IN PLACE BEFORE THE DEVELOPMENT OF SITE BEGINS.
3. CONSTRUCT SILT FENCE BELOW DISTURBED AREAS. CONSTRUCT ANY OTHER EROSION AND SEDIMENTATION CONTROL DEVICES INVOLVED IN SITE DEVELOPMENT PRIOR TO ANY LOT IMPROVEMENTS.
4. CLEAR AND GRUB SITE.
5. UPON GRADING, SEED AND MULCH ANY DISTURBED AREAS WITHIN 72 HOURS.
6. EXTREME CARE SHOULD BE TAKEN TO REMOVE ONLY THE MINIMUM AMOUNT OF EXISTING VEGETATION AS REQUIRED FOR CONSTRUCTION AND GRADING OF THE SITE.
7. MAINTAIN AASHTO #1 ROCK ENTRANCE.
8. FINE GRADE DRIVEWAY AND PLACE BASE COURSE.
9. SITE DEVELOPMENT: STABILIZE CONSTRUCTION AREA WITH RYE GRASS, MULCH, AND SILT FENCE.
10. INSTALL NATURAL GAS FACILITIES.
11. INSTALL 6" OF 3/4" STONE WITHIN FENCED AREA.
12. INSTALL NEW PERIMETER SECURITY FENCE.
13. ESTABLISH PERMANENT VEGETATIVE COVER.
14. REMOVE THE SILT FENCE ONCE THE AREA HAS BECOME PERMANENTLY ESTABLISHED. SEED AND MULCH ANY DISTURBED AREAS.
15. REMOVE ASSHTO #1 ROCK ENTRANCE.

ISSUED FOR PERMITTING

SHEET 2 OF 3

EROSION CONTROL DETAILS
ALGONQUIN GAS TRANSMISSION
G-5 24", G-5 10", G-12L 24", & G-12 10"
2009 PIPELINE INTEGRITY PROGRAM
LOC. MEADOW COURT, SEEKONK, MA.
YEAR: 2009 | W.O. 004120069 | SCALE: NTS | DWG. SPE-0074-C10 | REV. A

JOINING FENCE SECTIONS



* STAKES SPACED @ 8' MAXIMUM. USE 2" X 2" WOOD OR EQUIVALENT STEEL STAKES.

FILTER FABRIC FENCE MUST BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.

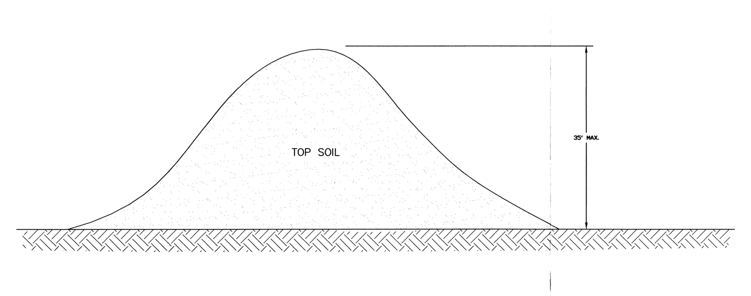
SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.

SILT FENCE

SCALE: N.T.S.

FIGURE 1

DETAIL: SILT FENCE — ALGONQUIN GAS TRANSMISSION — 2009 PIPELINE INTEGRITY PROGRAM
PROJECT NO. SPE–0074 BY CAM DATE 5/12/09 — A. GONTHIER, PROJECT MANAGER
DWG NO. FIGURE 2 | SCALE: NTS | REV. A



TYPICAL TOPSOIL STOCKPILE CROSS SECTION

SCALE: N.T.S.

FIGURE 2

ISSUED FOR PERMITTING

SHEET 3 OF 3

EROSION CONTROL DETAILS
ALGONQUIN GAS TRANSMISSION
G-5 24", G-5 10", G-12L 24", & G-12 10"
2009 PIPELINE INTEGRITY PROGRAM
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