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PROTECTION OF UNDERGROUND METRO-NORTH RAILROAD FACILITIES

A. GENERAL

Metro-North maintains its own network of electrical, communications, gas, oil, sewer, and water facilities. The purpose of the procedures herein is to protect and prevent damage to private underground facilities owned by Metro-North Railroad. While these procedures have been developed in accordance with the requirements established by 16 NYCRR Part 753 and Dig Safely New York for public and private underground facilities, the Contractor is hereby notified that Metro-North Railroad's requirements for protection of its facilities are more restrictive than that of 16 NYCRR Part 753.

The Contractor shall take all necessary precautions to identify, locate, avoid contact with, and protect existing public, private, and Metro-North Railroad facilities. In addition to the requirements of 16 NYCRR Part 753, the Contractor shall provide for the location of Metro-North's facilities in accordance with the requirements herein.

B. DUTY TO PROVIDE NOTIFICATION

NOTE: The requirements herein do not supersede, nor lessen the responsibilities of the Contractor to locate public and private facilities in accordance with the requirements of the 16 NYCRR Part 753, commonly cited as Industrial Code 53 or Code Rule 53, and Section 16-345 of the Regulations of the Department of Public Utility Control for Connecticut.

Excavation shall be conducted in accordance with 16 NYCRR Part 753 for work in New York State, 16-345 for work in Connecticut, and the requirements specified herein. The definition of "Excavation" shall be the same as described in Section 753-1.2 Definitions of 16 NYCRR Part 753. In conformance with previously cited regulations, the Contractor must notify the local One Call Center to allow member agencies to mark locations of underground facilities prior to commencing excavation. Depending on the work location, the Contractor shall contact the appropriate One Call Center.

In addition to contacting the appropriate One Call Center, the Contractor shall request the identification of:

- a) Utilities owned and operated by Metro-North Railroad in accordance with the following process, and
- b) Identification of private utilities along or within the Metro-North Right-of-Way via private utility locate service companies

State	Name	Telephone	
New York	Dig Safely New York	(800) 962-7962	811
	New York City & Long Island (Five Boroughs of New York City and Nassau and Suffolk Counties of Long Island)	(800) 272-4480	
Connecticut	Call Before You Dig	(800) 922-4455	

C. TIMING OF NOTIFICATION

The Contractor shall identify the areas in which they intend to work on the Four Week Look Ahead Schedule presented to Metro-North Railroad during the Bi-Weekly Progress Meeting and/or Weekly Coordination Meeting.

The Contractor shall complete and submit a *Metro-North Railroad Utility Location Request* (see request form at end of this section) identifying locations where excavation or other types of ground disturbance are required. Said request shall be submitted to the Engineer a minimum of three (3) weeks prior to the start date of excavation.

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D. IDENTIFICATION / MARK-OUT PROCESS

1. The Contractor shall physically demarcate / mark out all locations to be disturbed with white paint, flags, or stakes in accordance with the Common Ground Alliance Best Practices prior to submittal of the Utility Location Request. Should the size of the work area preclude the ability to mark the entire excavation area, the Contractor shall utilize flags or stakes to demarcate the limits of the work and paint arrows between the limits. Alternatively, if available, and agreeable to Metro-North Railroad, the Contractor may identify locations to be disturbed on project drawings or plans. Copies of the same shall be attached to and submitted with the Metro-North Railroad Utility Location Request.
2. The Engineer will submit the Metro-North Railroad Utility Location Request completed by the Contractor to the Metro-North Railroad Force Account Manager assigned to the project.
3. The Force Account Manager will distribute the Metro-North Railroad Utility Location Request to the appropriate Metro-North Railroad Departments responsible for conducting utility identification. The Metro-North Railroad Departments included in the utility identification process are Communications and Signal, Power, and Structures.
4. The Metro-North Departments shall conduct the identification; locating and marking the buried utilities, within (2) weeks of receiving the request from the Force Account Manager. Utilities shall be field identified in accordance with the Common Ground Alliance Best Practices utilizing the standard colors for locating utilities. (See Uniform Colors at the end of this section).
5. Upon completion of field identification, a Metro-North Railroad Utility Location Ticket (see ticket at end of this section) shall be completed by each of the responsible departments; Power, Communications, Signal, and Structures, and returned to the Force Account Manager.
6. The Force Account Manager shall review the Metro-North Railroad Utility Location Tickets to verify that they have been satisfactorily completed by each of the appropriate departments and forward them to the Engineer, or other Metro-North Railroad personnel responsible for managing the Contractor activities.
7. The Engineer shall provide copies of the completed Metro-North Railroad Utility Location Tickets to the Contractor and retain the originals for the project files. The Contractor shall review the Utility Location Tickets and compare it against the Utility Location Request form to ensure it has been satisfactorily completed. The Contractor shall review available As Built drawings for the work location(s) and compare the information to the field identified utilities. If a discrepancy exists between what is shown on the As Built drawings and the utilities physically marked out in the field, the Contractor shall immediately notify the Engineer.

E. DOCUMENTATION & PRESERVATION OF MARKINGS

Upon completion of the utility mark-out and receipt of the Metro-North Railroad Utility Location Tickets, but prior to disturbance, the Contractor shall prepare and provide a photograph or video record of the utility mark-out. The record should include a description of the general location (i.e. state, county, town/village), milepost, control point, track number and include visual landmarks to assist in identification.

It is the responsibility of the Contractor to maintain and preserve the markings provided for the duration of the work. This includes transferring mark outs outside of the work area using offsets. For work within the rail traffic envelope, it is recommended that the contractor transfer markings, or provide offsets on the side of the running rail. If some of the markings may be destroyed during the course of your work, or if the excavation will be taking place over a long period of time, take measurements and photos first. Should the Contractor be negligent in maintaining the markings, and additional work is required to re-identify utilities, the Contractor shall be responsible for the costs associated with providing the extra location services and such shall be deducted from the next progress payment.

F. VERIFICATION OF UNDERGROUND FACILITIES VIA TEST PITTING / POT HOLING

1. The Contractor shall not begin disturbance until having, 1) received the completed Metro-North Railroad Utility Location Tickets, 2) completed video or photo documentation of the mark out, and

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- 3) transferred the marks as necessary to preserve them throughout the course of the work.
2. Where an underground facility has been staked, marked or otherwise identified and the tolerance zone overlaps with any part of the work area, or the projected line of a bore/directional drill intersects the tolerance zone, the excavator shall verify the precise location, type, size, direction of run and depth of such underground facility or its encasement. Verification shall be completed before the excavation or demolition is commenced or shall be performed as the work progresses.
 3. The verification of underground facilities shall be accomplished by exposing the underground facility or its encasement to view by means of hand dug test pits at one or more points where the work area and tolerance zone overlap, or more points as designated by Metro-North Railroad. The Contractor shall excavate Test Pits / Pot Holes to identify the actual locations of the buried utilities/facilities. Unless otherwise identified in the project documents, the Contractor shall assume the following:
 - a) one (1) test pit will be required every twenty-five feet (25') if proposed excavation is within five feet (5') of an existing utility,
 - b) one (1) test pit will be required wherever an excavation is crossing an existing utility,
 - c) within interlockings, one (1) test pit will be required every fifty feet (50') between opposing home signals.
 - d) test pits will be required adjacent to each substation, railroad facility, and abandoned utility, or appurtenances thereto, to determine location and direction of buried utilities emanating from or leaving said facilities
 4. The Contractor is urged to consider use of soft excavation methods (i.e. vacuum excavation).
 5. Powered or mechanized equipment may be used within the tolerance zone for removal of pavement or masonry, but only to the depth of such pavement or masonry. Only when agreed to in writing by Metro-North Railroad, may powered equipment be used within the tolerance zone below the depth of pavement or masonry prior to the verification of the location of facilities.
 6. Metro-North Railroad, or their agents and Contractors working under their direct supervision, may use powered equipment to locate their own facilities within the tolerance zone.
 7. Unless otherwise identified, the minimum size of Test Pits shall be one (1) cubic yard. Should the Contractor not be able to locate the marked utility within the Test Pit area, the Contractor shall enlarge the test pit excavation towards the direction the utility is most likely located, or as directed by the Engineer. Once the test pits confirm utility locations, the Contractor will be released to excavate in that area.
 8. Existing utilities shall be taken out of service (i.e. de-energized, depressurized) and tested to verify the same, prior to being spliced into, demolished, removed, or otherwise disturbed. The Contractor shall implement a means of positively identifying existing utilities to be disturbed during the work. A means of identifying the utility as "in service" or "out of service" shall be implemented and made known to project personnel.

G. UNVERIFIABLE UNDERGROUND FACILITIES

Should the Contractor be unable to verify the location of a facility, after diligent search at a reasonable depth, excavation shall not be allowed to proceed and the Contractor shall notify the Engineer. The Engineer will contact the Force Account Manager and inform them of the inability to locate the previously marked utility. The Force Account Manager will notify the representative of the appropriate Metro-North Department having marked the utility. Within (24) twenty-four hours of notification, this department shall return to the area and attempt to further identify the location of the utility, or use other means mutually agreeable to the Contractor and Metro-North Railroad (ie. continue to hand excavate until utility is located). This department will identify if and where any additional test pits are necessary to locate/expose the utility, or if problem areas exist that could restrict the Contractor's excavation.

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H. COMMENCEMENT OF EXCAVATION OR DEMOLITION

1. The excavator may proceed with excavation or demolition on the stated commencement date if, prior thereto, he or she has received completed Metro-North Railroad Utility Location Tickets from each Metro-North Department identifying that:
 - a. No underground facilities were located in or within fifteen feet (15') of the work area; or
 - b. That any underground facility located in or within fifteen feet (15') of the work area has been marked
2. The excavator may proceed with the excavation or demolition prior to the stated date of commencement only if he or she has received notification from each department that no underground facilities are located in or within fifteen feet (15') of the work area.
3. The excavator shall not commence the excavation or demolition on the stated commencement date if he or she has been notified by Metro-North Railroad that the marking of an underground facility located in or within fifteen feet (15') of the proposed work area will not be completed on the stated commencement date. In such case, Metro-North Railroad shall promptly report such to the excavator and inform of a prompt and practicable completion date, which in no case shall be more than two (2) working days after the excavator's stated commencement date, unless a longer period is agreed to by both parties.

I. RESPONSIBILITIES OF THE EXCAVATOR

1. Every excavator shall be familiar with the provisions of this procedure and 16 NYCRR Part 753, especially those relating to size and depth indications, color coding, center line or offset staking or marking and the location of underground facilities by designations other than staking or marking.
2. Whenever the excavator determines that a review of the staking, marking or other designation is necessary or that additional information is required, he or she shall notify the Engineer.
3. Starting on the stated commencement date, the excavator shall be responsible for protecting and preserving the staking, marking or other designation until no longer required for proper and safe excavation or demolition work at or near the underground facility.
4. Whenever mechanized excavation equipment is utilized within five feet (5') of a facility, a ground spotter shall be provided to oversee the excavation.

J. POWERED EXCAVATION LIMITATIONS

The Contractor shall not proceed with excavation until the locations of the utilities shown on the as-built drawings and those marked in the field are confirmed through manual excavation of test pits. Metro-North Railroad and the Contractor must concur that the procedures herein were followed before production excavation begins.

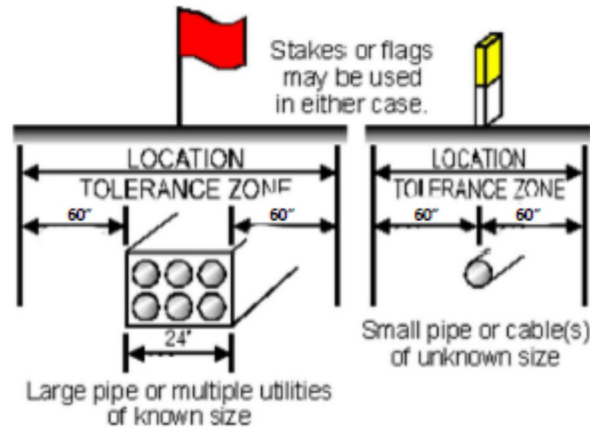
After verifying the location of an underground facility, the Contractor may utilize powered excavation equipment as long as it does not endanger the facility. At no time shall the Contractor employ powered or mechanical excavating equipment closer than twelve inches (12") in any direction from the staked, marked or otherwise designated or known outside diameter or perimeter of such facility or its protective coating unless agreed to in writing by Metro-North Railroad. Upon request, any such written agreement shall be furnished to the Contractor by Metro-North Railroad.

K. TOLERANCE ZONE

1. Before mechanized digging equipment is used in a Tolerance Zone, the presence and location of the facility must be verified. Refer to the diagram for an understanding of the Tolerance Zone.

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2. For markings that indicate the width of the facility, the tolerance zone is the width of the facility plus an additional five feet (5') on either side of the facility. For example, the facility on the left is marked as being twenty four inches (24") wide. So five feet (5') on either side gives us an approximate location or Tolerance Zone of twelve feet (12'). (see diagram)
3. For markings that do not indicate the width of the facility, the tolerance zone is five feet (5') on either side of the markings. No width is provided for the facility on the right, so five feet (5') on either side gives us an approximate location or Tolerance Zone of ten feet (10'). (see diagram)



L. DISCOVERY OF UNKNOWN FACILITIES

1. Should the Contractor uncover, unearth, or otherwise identify an unmarked / unknown facility, excavation that may further disturb said utility shall cease, and the Contractor shall immediately notify the Engineer. Excavation shall not proceed until the utility is identified and a determination can be made on how to proceed by Metro-North Railroad.
2. The Engineer will contact the Force Account Manager and inform them of the unmarked/unknown facility.
3. The Force Account Manager will notify the representatives of the appropriate Metro-North Departments.
4. Within twenty-four (24) hours of notification, these departments shall return to the area and attempt to identify the utility. The responsible department will identify if and where any additional test pits are necessary to locate/expose the unmarked utility, and test the utility as necessary to determine if the utility is in service or out of service / abandoned. If abandoned or no longer in service, the responsible department may authorize the immediate removal of the interference, or will provide direction as how to handle the unmarked utility as soon as possible, but no longer than twenty-four (24) hours from time of field identification by the department.
5. The Contractor is hereby notified that Metro-North Force Account Departments are subject to call out for Railroad emergencies. In this case, the Contractor is advised to identify other work that can be completed in addition to the anticipated week's production.

M. DAMAGE TO UNDERGROUND FACILITIES

1. Excavators shall take all reasonable precautions to prevent contact or damage to underground facilities and their protective coatings, including but not limited to, compliance with accepted engineering practices and any reasonable directions provided by Metro-North Railroad.
2. In the event of contact with or damage to an underground facility, the excavator shall immediately notify the Engineer. All excavation or demolition in the immediate vicinity of the contacted or damaged portion of the underground facility shall be suspended until such portion is repaired and the Engineer advises the excavator that excavation or demolition may proceed.

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3. No backfilling shall be done by the excavator in the vicinity of the contact or damage until Metro-North Railroad conducts an inspection and makes any necessary repairs; and, the excavator shall undertake no repairs unless and until authorized by Metro-North Railroad.
4. Should damage to an underground facility occur and it be determined that the Contractor is negligent in its actions; it did not exercise reasonable precautions to prevent contact or damage to underground facilities and their protective coatings, the Contractor is responsible for all costs associated with the repair and restoration of the damage facility. Such costs shall be deducted from the Contractor's next progress payment.

N. IDENTIFICATION OF UNDERGROUND FACILITIES IN DANGER OF FAILING

1. An excavator who by removing the surrounding materials exposes an underground facility which in his or her judgment appears to have failed or to be in potential danger of failing from corrosion or other causes shall immediately report such condition to the Engineer.
2. The excavator shall delay any further work in the immediate vicinity of such underground facility which could jeopardize it but may proceed in areas not affecting the questionable facility.
3. The excavator may proceed in such immediate vicinity after the Engineer responds and takes necessary action in regard thereto and advises the excavator that he or she may proceed.

O. SUPPORT AND PROTECTION FOR UNDERGROUND FACILITIES

1. An excavator shall provide prompt and adequate support and protection for every underground facility located in the work area as is reasonably specified by the Engineer.
2. In the absence of any specifications, the excavator shall provide support and protection in accordance with generally accepted engineering practice, including but not limited to shoring and bracing.
3. Support shall be at least equivalent to the previously existing support and shall protect the underground facility against freezing and against traffic and other loads.
4. Support shall be maintained during excavation, during backfilling and, if necessary, after backfilling is completed.
5. Metro-North Railroad may, in agreement with the excavator, provide such support.

P. BACKFILLING REQUIREMENTS

1. An excavator performing excavation or demolition at an underground facility shall backfill such excavation with materials and in such manner as specified by the Engineer or, in the absence of such specifications, with suitable materials and in such manner as will avoid damage to, and provide proper support for, such underground facility and its protective coating both during and after backfilling operations.
2. The excavator shall not place large rock, frozen earth, rubble, debris or other heavy or sharp materials or objects which could cause damage to or scraping against any underground facility.
3. The backfill beneath and around any underground facility shall be properly compacted in accordance with generally accepted engineering practice.
4. Heavy loads and excessive forces shall not be imposed on any exposed underground facility at any time during backfilling operations.

Q. EMERGENCY REQUIREMENTS

1. In the event of an emergency involving danger to life, health or property as a result of damage to an underground facility containing gas or liquid petroleum products or as a result of an electrical short or escape of gas or hazardous fluids, the excavator shall:
 - a. Proceed to evacuate his or her employees and all other endangered persons from the

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immediate vicinity to the best of his or her ability;

- b. Immediately call 911 and the Engineer to inform of the exact location, nature of the emergency and type of underground facility which is affected.

R. RESPONSIBILITY TO EMPLOYEES

Every excavator subject to the provisions of this Part shall make certain that all of his or her employees directly involved in excavation or demolition are thoroughly familiar with the applicable provisions of this Part and especially the provisions of this Subpart relating to their safety.

S. DOCUMENTATION & MARKING OF FACILITIES

1. As to facilitate future identification, the Contractor shall identify all in service and abandoned utilities on As Built drawings.
2. The Contractor shall mark all new buried utilities with warning tapes specifically designed and manufactured for subgrade utility identification. The warning tape shall be of durable impervious material, designed to withstand extended underground exposure without material deterioration or fading of color. All tapes, unless otherwise directed by the specific utility, shall be detectable to a depth of at least three feet (3') with a commercial radio-type metal locator. The tape shall be of the color assigned to the type of facility and shall be durably imprinted with an appropriate warning message. The tape shall also comply with the specific requirements of the utility that owns the facility.
3. Warning tapes shall be installed the entire length of the utility, in one continuous unbroken length. Tapes shall be located a minimum of twelve inches (12") above the buried utility unless the excavation's depth, other underground facilities, or other engineering considerations make this minimum separation infeasible. The tapes shall extend a minimum of two feet (2') above grade and be tied or otherwise secured to the utility where it exits the ground. This is to facilitate access to the tape to allow sending of an electronic signal to aid in future identification of the utility.

T. MEASUREMENT & PAYMENT

Not Used.

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UNIFORM COLOR CODE - UTILITY IDENTIFICATION ASSIGNED COLORS	
White	To delineate proposed excavation site
Pink	Survey markings
Green	Storm and sanitary sewers and drainage systems, including force mains and other non-hazardous materials
Blue	Water
Orange	Communication lines or cables, including, but not limited to, those used in, or in connection with, telephone, telegraph, fire signals, cable television, civil defense, data systems, electronic controls, track signal and control, and other instrumentation
Red	Electrical power lines, electrical power conduits and other electrical power facilities, railroad traction power (i.e. 3rd rail or catenary), traffic signals and appurtenances and illumination facilities
Yellow	Gas, oil, petroleum products, steam, compressed air, compressed gases and all other hazardous liquid or gaseous materials except water
Brown	Other
Purple	Radioactive materials, reclaimed water, irrigation

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LIST OF LOCATING COMPANIES FOR PRIVATELY OWNED FACILITIES

(This is not a comprehensive listing; check local listings for more alternatives.)

<p>Absolute Locating 24/7 2713 West Main Street, Unit 2, Wappingers, NY 12590 Phone: (845) 750-3157 Contact: Ryan Craven</p>	<p>Pipedream Services www.pipedreamservice.com 10 Fronckowiak Ave, Cheektowaga, NY 14227 Phone: (716) 894-9236 Contact: Steven L. Craft</p>
<p>Accumark, Inc.  www.accumark.us 668 Stony Hill Rd, Suite 107, Yardley, PA 19067 Phone: (215) 369-3569 Contact: Van Singer, P.E.</p>	<p>Premier Utility Services, LLC  www.premierlocatingllc.com 100 Marcus Blvd, Hauppauge, NY 11788 Phone: 1-800-262-8600 Contact: Ed Heaney</p>
<p>ACS Underground Solutions  underground solutions www.acsunderground.com P.O. Box 448, Georgetown, CT 06829 Phone: (203) 544 7190 Contact: Ian Beaver</p>	<p>ProTek Locating  www.proteklocating.com 10-37 51st Ave, 1st Floor, Long Island City, NY 11101 Phone: (718) 472-2304 Contact: Craig Anderson</p>
<p>Eastern Locating Services Inc.  www.easternlocating.com PO Box 9485, Trenton, NJ 08650 Phone: (607) 585-0577 Contact: Ken Samu</p>	<p>Puls Inc.  www.pulsinc.com 2299 Broadhead Road Suite G-1, Bethlehem, PA 18020 Phone: (610) 419-1232 Contact: Stanley Kalsky</p>
<p>ECSM Utility Contractors, Inc www.ECSMINC.com 1200 Walnut Bottom Rd, Suite 101, Carlisle, PA 17015 Phone: (717) 258-8001 Contact: Gerald L. Redden</p>	<p>Underground Surveying, LLC  www.undergroundsurveying.com 152 Deer Hill Ave Suite 207, Danbury, CT 06810 Phone: (203) 312-9844 Contact: Peter C. Viola</p>
<p>Master Locators Inc.  www.masterlocators.com 2426 East Helms Manor, Boothwyn, PA 19061 Phone: (610) 358-0172 Contact: Art Worthman</p>	<p>Utility Survey Corp.  www.u-survey.com 87 East Main Street, Washingtonville, NY 10992 Phone: 1-800-825-9283 Contact: Garry Williams</p>

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UTILITY LOCATION REQUEST
(TO BE COMPLETED & SUBMITTED BY CONTRACTOR)

Date Request Submitted			
Contract Number		Project Description	
General Contractor Company Name			
Address			
Field Contact		Telephone	
Excavating Contractor Company Name			
Address			
Field Contact		Telephone	
Excavation Site Information			
State (circle appropriate)	NY		CT
City, Town, Village	County		
Street Address			
Excavation site is located between... (Describe two closest intersecting streets)	1)		
	2)		
Milepost	Control Point	Track Number(s)	
Excavation Dimensions (in feet)	Length	Width	Depth
Has proposed excavation been field identified with white paint?		YES	NO
Project drawings/plans identifying proposed excavation attached?		YES	NO
Describe work causing disturbance			
Describe equipment to be used			
Excavation Start Date	Approximate Duration (days)		
Other			
MNR Resident Engineer/Construction Manager			
Name		Phone	
MNR Force Account Manager			
Name		Phone	

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UTILITY LOCATION TICKET

(TO BE COMPLETED BY METRO-NORTH RAILROAD & RETURNED TO CONTRACTOR)

Check the box applicable to the represented department

- | | |
|--|--|
| <input type="checkbox"/> Power Department | <input type="checkbox"/> Signal Department |
| <input type="checkbox"/> Communications Department | <input type="checkbox"/> Structures Department |

Contact's Name

Phone

Date location request received

Date location completed

Field Mark Out complete?

YES

NO

Utilities identified within the demarcated area?

YES

NO

If Yes,
Describe

Problems encountered during utility identification/mark out?

YES

NO

If Yes,
Describe

Recommended locations of Test Pits have been marked out?

YES

NO

Additional Test Pits Required?

YES

NO

If Yes,
Describe

Notes / Special
Instructions

Response provided to the Metro-North personnel responsible for managing the Contractor's work?

YES

NO

If Yes, provide contact's name and date notified

Date