SECTION 01066 - SUBWAY/ELEVATED SAFETY REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

This Section specifies the general requirements and safety regulations governing the Contractor's activities when its work impacts an active Subway/Elevated Line.

1.02 RELATED WORK

Section 01060 Regulatory Requirements and Safety

1.03 QUALITY ASSURANCE

Refer to Section 01060 - 1.04

1.04 SAFETY REQUIREMENTS

A. General:

The information contained in this Section is intended to provide guidance and safety precautions to the Contractor when working on a live rail line. The Contractor is advised that SEPTA shall operate trains over this location during the performance of Work under the Contract, except as specified otherwise. The Contractor shall comply with all parts of this Section, as well as with the general intent of this Section.

B. Responsibility:

The Work covered by the Contract shall involve safety of persons and property on a live electrified rail line. Therefore, relevant skill and experience is required of the Contractor to do its work safely. The Contractor shall be responsible for the safety of its construction operations. The Contractor shall, therefore, be expected to post adequate watchpersons and/or protective devices to protect its work crews, equipment and the work site. Pertinent safety rules, which shall be followed, are listed in, but not limited, to Paragraphs F, G, and H of this section. The Contractor shall exercise proper care at all times.

C. Operations:

When work is being performed under active SEPTA train operations the
safety and continuity of train operation shall be of the first importance. Train operation shall, at all times, be protected and the Contractor shall arrange Work accordingly. Whenever the Work may affect the safety or movement of trains, the method of doing such Work, together with the proposed sequence of operations and time schedules for same, shall be submitted to the Project Manager for approval.

1. No work shall be prosecuted until such approval has been obtained. However, such approval of the Project Manager or a duly authorized representative shall not be considered as a release of the Contractor from responsibility for any damage to SEPTA by the acts of the Contractor, its employees, and/or its subcontractor's employees.

2. In the event of an unplanned discontinuation of train service due to the Contractor's operations, the Contractor is not only liable for any injury or damage that might occur, but also for the full cost of any detour of train traffic, shuttle bus service and any associated costs.

D. SEPTA Personnel:

1. Flagperson: SEPTA Flagpersons are responsible for the safety and continuity of operations. The SEPTA Flagperson shall have authority to direct the stoppage of trains. Any sharing of protective duties between SEPTA and the Contractor within the work site can be considered coincidental.

2. Pilots: If the Contractor wishes to occupy live or operating tracks with on-track equipment, the Contractor shall request a SEPTA pilot who will obtain exclusive track occupancy on the live track. All SEPTA pilots shall be requested from the Project Manager a minimum of 1 week in advance of the required starting time.

3. Project Manager: The Project Manager or a duly authorized representative shall have complete authority in matters related to the safety of SEPTA's operations and facilities.

4. Qualified Protection Employee (QPE): A SEPTA employee qualified on operating rules, physical characteristics, and on-track protection procedures and is responsible for establishing on-track protection and safety. The QPE is responsible for conducting Job Briefings relative to on-track protection, and works with the Contractor’s PAR to ensure proper oversight of activities.

E. Contractor's Personnel:

1. Protection Assurance Representative (PAR): The Contractor’s Protection
Assurance Representative (representative) may be the Superintendent, Safety Officer or responsible foreperson. The representative shall be present at all times when the Contractor’s employees are working within the SEPTA operating envelope and under the requirements of this Section. In general the PAR shall be responsible for day to day oversight of the Contractor’s watchperson and employees so that they are working safely, according to all parts of this Section, to coordinate construction activities with SEPTA’s Flagging personnel.

2. Watchperson: The role of the Contractor’s watchperson is solely for the safety for the Contractor’s employees when external influences, i.e. rail traffic, shall expose the workers to a safety hazard. The watchperson must be on site with each work crew at all times. If it becomes necessary for the watchperson to leave the site, work shall be suspended until he/she returns or is replaced by another qualified watchperson.

F. Right of Way Restrictions:

1. SEPTA shall protect its service from the Contractor's operations in the Contractor's work area by establishing SEPTA Work Zones. Within a SEPTA Work Zone are one or more SEPTA Work Areas. A SEPTA Work Zone is the pre-arranged limits of a work project along the right-of-way, which is then defined for operational safety purposes in bulletin information disseminated to SEPTA personnel. A SEPTA Work Area is the actual working limits within the pre-defined boundaries of the SEPTA Work Zone. The SEPTA Work Area is more clearly defined visually in the field by the erection in place of specific SEPTA Work Area signage.

a. A SEPTA Work Zone will be established by SEPTA for fouling type work on or about the operating tracks as follows:

1) For Maintenance or work that is unable to normally clear 15 seconds before train arrival.

2) For Contractor's work which extends off the edge of a station platform that is unable to normally clear 15 seconds before train arrival.

3) For Contractor's work which is outside of the above limits that may foul.

4) For track(s) adjacent and accessible to tracks placed out of service for work.

5) For Contractor's employee(s) requiring protection when working on or about operating tracks.
b. Contractors Work Area

1) Fouling is defined as any type of work that may strike or interfere with the safe passage of trains.

2) The limits of the SEPTA Work Area, in accordance with SEPTA operating rules, is visually identified in the field by a Stop Sign (or substitution of a Work Area Speed Limit Sign by the Flag person) AND a Work Area Resume Speed Sign. The approach to the Work Area is visually identified in the field by an Approach Sign.

2. The SEPTA Work Zones established by SEPTA for the control of train operations are defined by applicable Work Area signs or portable signals, set at prescribed distances from the Contractor's actual work area. The spacing of the SEPTA Work Areas and positioning of SEPTA Flagperson are prescribed based on safe stopping distances or emergency situations. The Contractor's employees shall confine themselves to stay within the limits of their SEPTA Work Area at all times. Movement out of the SEPTA Work Area into another SEPTA Work Area or another SEPTA Work Zone with personnel, equipment and/or material shall not be permitted and shall be considered a violation of the safety regulations.

Note that a SEPTA Work Zone is not required when the Contractor’s work is two (2) feet or less from the trackside edge of a station platform, and not fouling. The Contractor however is responsible for placing workers portable warning signals at the entrance to the platforms in accordance with SEPTA's safety rules.

3. The Contractor shall insure that the Contractor's equipment will not foul any track until proper protection has been afforded. While trains or cars are passing on an adjacent track, any work that has the potential to foul shall be stopped.

4. The Project Manager shall have the right to restrict the operations of fouling or on-track equipment when, in the Project Manager's opinion, the equipment is not in satisfactory condition to be safely operated or where operation will adversely affect the track structure. The Project Manager shall also have the right to prohibit the operation of any fouling or on-track equipment by any Contractor-employed operator who is, in the Project Manager's opinion, not qualified or able to operate said equipment in a safe manner.

5. When the Contractor is working outside of an area as defined in 1.04 F.1. above, where fouling is not possible or if working in de-energized tracks of the Market Frankford Subway/Elevated (MFSE) or a de-energized track which can be physically separated from an adjacent Broad Street Subway
(BSS) or (MFSE) track provisions, of 1.04 G3 are revised as follows: The Contractors non-certified employees are allowed to work in such areas. The Contractor's supervisors and foreperson shall attend the track safety seminar and obtain certification in accordance with 1.04 G3 below.

6. When any excavation extends below the bottom of the crossties, or where the stability of the railroad embankment and/or structure may be affected by excavation, such excavation shall be adequately braced by the Contractor. Prior to starting any such excavation, detailed drawings of the proposed bracing method shall be prepared and submitted to the Project Manager for approval. When deemed appropriate by SEPTA’s Project Manager, the shop drawings shall be accompanied by structural calculations. Both the shop drawings and calculation shall be sealed by a Professional Engineer licensed in the Commonwealth of Pennsylvania.

G. General Safety Rules:

The following safety rules of SEPTA are applicable to all of the Contractor's employees and those of its subcontractors in regard to conduct while on or close to the track area:

1. At all times while working on or adjacent to operating tracks, the Contractor, its subcontractors, and all of their employees, shall closely observe the applicable flagging rules and regulations of SEPTA.

2. The Contractor shall be responsible to ensure that all of its employees and the employees of its subcontractors are familiar with the safety rules, safety instructions and safe performance of work. These employees shall so conduct themselves so as not to violate any of such flagging or safety rules.

3. Prior to the start of construction, all of the Contractor’s employees scheduled to work on or near trackage shall attend a safety seminar on track safety rules conducted by SEPTA. If these individuals are replaced, during the course of the Project, the replacements and any other new employees shall also be required to attend this seminar, before being able to work. The attendance certification is logged into SEPTA’s database. Re-certification is required on an annual basis.

4. Before permitting workperson on the track, the Contractor shall hold a Job Briefing conducted by the contractor-employed Protection Assurance Representative and/or SEPTA QPE (as prescribed by SEPTA’s Rail Construction Safety Plan) and verify and document that the foreperson and watchperson have an understanding with all employees as to the location they will go when necessary to clear for trains. The Contractor’s PAR shall make certain that the SEPTA QPE responsible for track safety explains the track safety methods being utilized during the work. These Job Briefings will be documented by the Contractor at the time of the briefing(s). The record of “Job Briefings” shall be maintained by the Contractor for inspection by
5. The Contractor's watchperson must give their entire attention to watching for trains and warning the employees and are prohibited from performing any other duties. They must not leave their posts until instructed by SEPTA that the protection is unnecessary or other watchperson have been assigned and are in position and watching in the direction of an approaching train.

6. The Contractor's Protection Assurance Representative shall be responsible to insure the safety of all personnel. The Contractor shall furnish and equip its foreperson or watchperson with audible and visible warning devices to warn personnel of the approach of trains.

7. The Contractor's Protection Assurance Representative shall, before permitting employees on or close to the track, ensure that:
   a. All employees shall have an understanding as to where they shall go when necessary to clear for trains.
   b. All employees performing work on or about operating energized tracks may use worker's portable warning signal if deemed necessary in accordance, with SEPTA's Operating Rules. The warning signal can be a Starlight Lantern, Model 215-TL or approved equal. Contractor shall have to replace with a "Amber" lens cover to be in conformance with these regulations.

8. The Contractor's job forepersons presence at the work site is mandatory while the work is being performed on or close to the track area.

9. A maximum of five non-certified contractor's employees who are not performing work may enter track areas where third rail power is energized accompanied by a certified employee, (SEPTA or Contractor's) with the approval of the Train Dispatcher or a duly authorized representative.

10. While working with scaffolding or non-conductive ladders on the platform, the Contractor’s employees shall secure scaffolding/ladder to eliminate rolling or falling.

11. When small hand tools or construction equipment are used in electrified territory, the Contractor shall exercise due care including the clearance requirements to safeguard persons and property in the area. If the required clearance cannot be maintained or any hazards are involved, prior guidance from SEPTA's Project Manager shall be requested.

12. The Contractor's employees shall consider all tracks as operating tracks and be on the alert for trains operating in either direction at all times. When it is
necessary to walk in the track area, it is the Site Superintendent and/or Foreperson/Watchpersons responsibility to let the train operator’s know where the employees are. To do this, first notify and gain approval of the Train Dispatcher, protect the employees by displaying a lighted lantern, flashlight, and/or flags at all times. At first indication of an approaching train, get off the track promptly, and conceal light from train operator’s view.

13. Any employee leaving the work area for any reason shall receive permission from the on-site safety supervisor and protect himself with a lighted lantern or flashlight. He shall follow route to and from the work location designated by the foreperson in order to avoid crossing of track insofar as possible.

14. When standing in the track area, the Contractor’s employees shall allow sufficient room for the car and third rail shoes, which extend beyond the car body to clear body, clothing, or any object they may have in their hands. This includes keeping their coats buttoned up so that they cannot catch on any part of a moving car.

15. The Contractor’s employees shall not step on track behind stopped trains, particularly those that have just arrived at stations, due to possibility of train having overrun the platform and being reversed to place doors properly for opening.

16. The Contractor’s employees shall carry hand held flashlights at all times when working at night, in the tunnel area or when visibility is restricted.

17. Contractor’s employees provided with a flag person, when hearing flag persons whistle and/or watchpersons horn warning of the approach of a train, shall place tools and material clear of the track and depart the track area immediately to the nearest platform or place of safety without interfering with the pathway of passengers.

18. Contractor’s employees shall avoid track switches by walking around them.

19. Contractor’s employees shall observe and acknowledge whistle signals as required. A warning whistle from vehicle operator must always be acknowledged by a proper hand, lighted lantern or flashlight signal to proceed when you are in the clear except when you are working under protection of flag person. If carrying a light, it must be concealed after proceed signal is given.

H. THIRD RAIL SAFETY:

1. Contractor shall require each employee to:

   a. Not stand on, walk on, sit on, or use the third rail or protection
board/cover as a step.

b. Not come in contact with the third rail unless specifically required in the performance of duty. When working directly on the third rail, it shall be de-energized by SEPTA.

c. Not carry metal objects when close to the third rail.

d. Keep as far as possible from the third rail during wet conditions.

e. Never assume that the third rail is dead. When directed by SEPTA that it is de-energized, remain isolated from the circuit if it is necessary to work close to it. Avoid stepping on loose material piled close to the third rail.

f. Not come in contact with any third rail shoe of a car, as all third rail shoes are energized if at least one shoe is in contact with the third rail.

g. Not walk between the running and third rail of any track.

h. Avoid additional tripping hazards and be aware of third rail anchors (braces) and cable feeds.

i. Not look at train collector shoes during movement, particularly at tracks switches (turnouts) and third rail gaps.

j. Metal and/or electrically conductive ladders shall not be used.

2. EMERGENCY GUIDELINES

The following procedures shall be observed by the Contractor's personnel in the event of any emergency:

a. When an emergency occurs endangering life of a person that requires the power off, contact the Train Dispatcher. Contact the Train Dispatcher by the fastest means available, either by radio, emergency call box located on platforms, or telephone (215) 580-8555. Give the proper location requiring de-energizing by indicating the closest station, proper track number, and line.

b. In such a case of electrical contact, personal judgment and initiative has to be used: bearing in mind that the rescuer's safety should not be imperiled. Contact with a live third rail may prove fatal in a matter of seconds. The most important thing is to stop the flow of electricity through the victim's body and then apply mouth-to-mouth
resuscitation (or CPR when necessary and if qualified to do so) until he or she recovers consciousness or trained help arrives. Once a victim is freed from the third rail, do not move him or her unless they can do so under their own power. Except for qualified rescuers, moving an injured person may result in further injury.

c. If a fire in the vicinity of the third rail can be readily extinguished, use a dry chemical extinguisher, do not use water.

END SECTION