Requirements & Restrictions: Overview

This information outlines basic requirements and restrictions for second or third party projects that involve Philadelphia Energy Solutions pipelines. This document should be considered a tool for the property owner, developer or engineering firm to assist in the design and engineering phase of projects to ensure the safe, reliable and environmentally-sound operation of Philadelphia Energy Solutions pipeline facilities. All projects are subject to an engineering and right-of-way review by Philadelphia Energy Solutions. Since all projects have unique situations, especially complex projects, the designer is obligated to maintain good communication with Philadelphia Energy Solutions. It is essential that the requirements and restrictions outlined herein are understood and followed to ensure the integrity of Philadelphia Energy Solutions pipelines, the safety of those affected by those facilities and to avoid unnecessary project delays.

References

OHSA Regulation 1926.651
Department of Transportation Regulation 49 CFR 195.250 and 195.442
PA Underground Utility Line Projection Act (Act 199)
A Guideline for Property Development, Association of Oil Pipelines (AOPL)

Definitions

- **Designer** means any architect, engineer or other person who or which prepares a drawing or plan for construction or other project which includes or requires excavation or demolition work as herein defined.
- **Contractor** means any person who or which performs excavation or demolition work for himself or for another person. This could be a private land owner.
- **Excavation work** means the use of equipment, tools or explosives in the movement of earth, rock or other materials, and includes but is not limited to anchoring, augering, backfilling, blasting, boring, digging, ditching, drilling, driving-in, grading, plowing-in, pulling-in, ripping, scraping, trenching, tunneling, tilling.
- **Demolition work** means the partial or complete destruction of a structure, by any means, served by or adjacent to a line or lines.
- **Involved** means a project that is located near a Philadelphia Energy Solutions pipeline, right-of-way or other facility and requires review and approval by Philadelphia Energy Solutions.
- **Working day** means any day except a Saturday, Sunday or legal holiday as prescribed by the applicable One Call system.
- **Philadelphia Energy Solutions** or PES means Philadelphia Energy Solutions Refining and Marketing, LLC.

Requirements & Restrictions: Step-By-Step

1. The designer must notify Philadelphia Energy Solutions of any drawing or plan prepared for construction or other project which includes or requires excavation, demolition work, subdivision, development, encroachment or other potential impact to Philadelphia Energy Solutions pipeline or right-of-way.

2. The designer must call the appropriate state's One Call center and request a "locate and mark-out" of the exact pipeline location in the vicinity of the proposed project. In some cases, excavation under the direction of Philadelphia Energy Solutions may be required in order to confirm pipe location, depth, material, etc.

3. The designer must survey the located pipeline and clearly depict the pipeline and right-of-way on the proposed project drawings.

4. The designer must incorporate Philadelphia Energy Solutions' "General Requirements & Restrictions" on the proposed project drawings.

5. The designer must submit detailed drawings and plans for any proposed projects within Philadelphia Energy Solutions right-of-way for review to determine to what extent, if any, the pipeline facilities or right-of-way will be affected. Three (3) sets of project plans, including applicable scope of work, drawings, plans, etc. should be mailed to:

   Philadelphia Energy Solutions
   3144 Passyunk Avenue
   Philadelphia, PA 19145
   Attention: DOT Pipeline Dept.

6. Following receipt of all required documents, Philadelphia Energy Solutions will review the proposed project plans. Philadelphia Energy Solutions will respond with a written reply to confirm approval of the plans as received or will provide comments to the designer with additional clarification of Philadelphia Energy Solutions requirements and restrictions.

7. Following approval of plans, the contractor must notify Philadelphia Energy Solutions of the proposed excavation or demolition work at least three working days in advance by contacting the appropriate state's One Call center.

Requirements & Restrictions: General

1. A Philadelphia Energy Solutions representative must be present at the time that any work is done within the Philadelphia Energy Solutions right-of-way.

2. The width of easements vary, but typically structures closer than twenty five feet (25') to an existing pipeline (50' easement) are not permitted. You must contact Philadelphia Energy Solutions to determine the easement width for a specific property.

3. In order to maintain immediate and unimpeded access to the pipeline, no trees, shrubs, fences, permanent structures (i.e. buildings, decks, sheds, swimming pools, inlets, drainage structures, hydrants, poles, etc.) or bodies of water shall be constructed or placed within the pipeline right-of-way.

4. Wells, leach beds, cess pools, septic tanks or sewer systems of any type shall not be placed within the right-of-way.

5. A driveway or roadway may cross the right-of-way perpendicularly, but at no time shall it be parallel to, over and within the right-of-way.

6. Proposed crossings by utilities (including sewer drain lines) or underground structures shall be designed and installed to pass UNDER the existing pipeline with a minimum of two feet (2') of vertical clearance.

7. The earth cover over the pipelines shall be maintained and never changed in any manner without the express written consent of Philadelphia Energy Solutions.

8. Proposed parking areas placed over the pipeline must be approved by Philadelphia Energy Solutions. The parking areas shall be subject to an amended right-of-way agreement, entered into by subject parties prior to construction of the same.

9. If vehicles or heavy equipment are to cross the pipeline for any reason, it will be necessary for the owner/developer to provide and maintain a ramp of sufficient material to protect the pipeline for the duration of the proposed crossing activities. Philadelphia Energy Solutions must approve ramps.

10. No blasting is permitted within 1320 feet of a pipeline without an approved pre-work survey or within 500 feet of a pipeline without an approved blasting plan. Refer to Blasting section of Engineering Requirements & Restrictions for details.

Requirements & Restrictions: Engineering

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Project Drawings

- The designer must survey the located pipeline and clearly depict the pipeline and right-of-way on the proposed project drawings.
- The pipeline shall be labeled appropriately as "Philadelphia Energy Solutions Petroleum Products Pipeline". The pipe diameter must be shown where specified (dia)".
- The pipeline right-of-way width shall be clearly depicted and labeled as 50 feet in width, the centerline of which is the existing pipeline, unless otherwise determined by Philadelphia Energy Solutions.
- The designer must incorporate the "General Requirements & Restrictions" on the proposed project drawings.

Encroachments

- The width of the easements vary, but typically structures closer than twenty five feet (25') to an existing pipeline (50' easement) are not permitted. You must contact Philadelphia Energy Solutions to determine the easement width for a specific property.
- In order to maintain immediate and unimpeded access to the pipeline, no trees, shrubs, fences, permanent structures (i.e. buildings, decks, sheds, swimming pools, inlets, drainage structures, hydrants, poles, etc.) or bodies of water shall be constructed or placed within the pipeline right-of-way without Philadelphia Energy Solutions' prior knowledge and consent.
- Landscape ground cover and small trees not greater than three feet in height may be planted with ten feet of pipeline. Vegetation may be cleared periodically within the right-of-way.
- Fences shall be installed to be as perpendicular to the pipeline as possible, but shall maintain a crossing angle of no less than 60 degrees. Fence posts shall not be installed within five feet of the pipeline. Fences installed parallel to the pipeline must be at least ten feet from the pipeline. No masonry, brick or stone fences will be accepted with the pipeline right-of-way.
- No encroachments shall obstruct signage or the view of the easement.
- Wells, leach beds, cess pools, septic tanks, or sewer systems of any type shall not be placed with the right-of-way.

Pipeline Location and Depth Verification

- As required by law, the developer shall contact the appropriate state One Call Center to arrange for field staking of the exact pipeline location and verification of pipeline depth by a Philadelphia Energy Solutions representative.
- The developer shall arrange for a Philadelphia Energy Solutions representative to field verify the location and depth of the pipeline at any proposed utility crossing, both sides of a proposed road crossing, locations of proposed grade cuts and fills and any other critical locations.
- The developer shall arrange for a survey to accurately depict the location of the pipeline, location of pipeline test pits and determined pipeline depths on the project plans.

Cover and Grading

- The earth cover over the pipelines shall be maintained and never changed in any manner without the express consent of Philadelphia Energy Solutions.
- In areas where the pipeline currently has less than 3 feet (3') of cover, no grade cuts will be allowed. Cover over the pipeline shall be increased to a minimum of 3 feet (3') if there are proposed "improvements" over the pipeline or within the pipeline right-of-way. Proposed road crossings have additional requirements.
- In areas where buildings are proposed within 50 feet (50') of the pipeline facility, vertical cover over the pipeline should be increased to a minimum of 4 feet (4').
- Proposed grading which will place the pipeline at depths greater than seven feet (7') shall require Philadelphia Energy Solutions approval.
- The creation of steep slopes within the pipeline right-of-way that will hinder access for pipeline maintenance shall be avoided.
- The creation of "improvements" which would make the pipeline right-of-way more susceptible to erosion shall be avoided.

Roadway and Driveway Crossings

- Proposed road crossings shall be designed to provide a minimum of four feet (4') (maximum of 7') of vertical clearance between the outside diameter (O.D.) of the pipeline and the finished roadway surface.
- Proposed commercial driveway crossings shall be designed to provide a minimum of four feet (4') (maximum of 7') of vertical clearance between the outside diameter (O.D.) of the pipeline and the finished driveway surface.
- Proposed residential driveway crossings shall be designed to provide a minimum of three feet (3') (maximum of 7') of vertical clearance between the outside diameter (O.D.) of the pipeline and the finished driveway surface.
- Proposed railroad crossings shall be designed to provide a minimum of three feet (3') of vertical clearance between the outside diameter (O.D.) of the pipeline and the finished railroad bed.
- Proposed crossings should be designed to be as perpendicular to the pipeline as possible. Proposed crossings of angles less than 60 degrees will not be accepted. At no time will a roadway or driveway be parallel to, over and within the right-of-way.
- Proposed road ditches shall be designed to provide a minimum of three feet (3') (maximum of 7') of vertical cover between the O.D. of the pipeline and the bottom of the ditch.
- Road under-drains shall maintain two feet (2') or greater minimum vertical clearance from the O.D. of the pipeline.
- Proposed parking areas placed over the pipeline must be approved by Philadelphia Energy Solutions. The parking areas shall be subject to an amended right-of-way agreement, entered into by subject parties prior to construction of the same.

Utility Crossings and Underground Structures

- Proposed crossings by utilities (including sewer drain lines) or underground structures shall be designed and installed to pass UNDER the existing pipeline with a minimum of two feet (2') of vertical clearance. This elevation shall be maintained across the entire width of the right-of-way. Electric power cable and Fiber optic line installations have additional crossing requirements.
- Proposed utilities shall cross as perpendicular to the pipeline as possible and at no less than a 60 degree crossing angle.
- Utility crossings of the pipeline shall be shown on profile with field verified pipeline depths and proposed clearances clearly labeled.
- Warning tape shall be used to indicate the location of a foreign utility crossing or underground structure during any potential excavation activity.
- A tracer wire for a foreign, non-metallic, gas pipeline shall be installed to assist in locating in addition to the above-mentioned warning tape.
- Structures such as guide rails, concrete paving, sidewalks, curbing, etc., shall be designed in a manner that would facilitate their removal in the event of pipeline maintenance or an emergency repair.
- Drainage swales shall maintain a minimum of three feet (3') of vertical clearance between the O.D. of the pipeline and the bottom of the swale. Additional protection may be required in order to minimize erosion susceptibility over the existing pipeline and across its associated right-of-way.
- Proposed gabions and rip-rap structures must adhere to the two feet (2') vertical clearance requirement. Geotextile protection may also be required.

Cathodic Protection

- If any proposed utility is of a metallic material, special precautions must be taken so that Philadelphia Energy Solutions' cathodic protection system does not have any adverse affect on a proposed utility or underground structure. Two (2) options can be utilized:
    - For 150' on each side of the pipeline, the utility should be coated with a suitable, recognized, non-conductive coating. Also, the foreign pipeline crossing shall install cathodic protection bonds and potential leads and terminate them at aboveground locations.
    - Or, for 100' on each side of the pipeline, the utility line should be made of PVC or a similar non-conductive material.
- Installation of magnesium anodes is also beneficial.
- Concrete encasement of metal lines WILL NOT prevent interference with Philadelphia Energy Solutions' cathodic protection system.

Electric Power Cable Installations

- Primary Crossings (greater than 440 Volts) must be installed UNDER the pipeline (unless otherwise approved by Philadelphia Energy Solutions), with a minimum two feet six inches (2'-6") vertical clearance between the pipeline O.D. and the top of the electric cable. The cable shall be placed in conduit for the width of the pipeline right-of-way. The conduit shall be protected by pouring of 2000 psi concrete, dyed red, into the ditch for a minimum distance of five feet (5') on both sides of the pipeline. The concrete must span the width of the ditch. A minimum two feet (2') vertical clearance must be maintained between the O.D. of the pipeline and the top of the concrete.
- Secondary Crossings (less than 440 Volts) must be installed UNDER the pipeline (unless otherwise approved by Philadelphia Energy Solutions), provided the two feet (2') minimum vertical clearance is maintained between the bottom of the pipeline and the top of the conduit. The cable must be placed in conduit for the width of the right-of-way.
- For all electrical crossings, a drive post with a utility marker shall be placed and maintained on each side of the pipeline right-of-way. The marker shall be equipped with a decal displaying the name of the electric company and contact information including phone number.
- Overhead cables must be installed to maintain a minimum height of 20 feet above grade for a distance of twenty-five feet (25') each side of the right-of-way. No part or portion of mechanical supports and service drops, including poles, towers, guy wires, ground rods, anchors, etc. shall be within twenty-five feet (25') of the pipeline.

Fiber Optic Cable Installations

- The cable must be installed UNDER the pipeline with a minimum two-feet six-inches (2'-6") vertical clearance between the pipeline O.D. and the top of the fiber optic cable.
- Fiber optic cables must be encased in six inches (6") of concrete, dyed orange, for the width of the pipeline right-of-way.
- Fiber optic company markers must be installed and maintained at the crossing location on both sides of the pipeline right-of-way. The markers shall be equipped with a decal displaying the name of the fiber optic company and contact information including phone number.
- Fiber Optic installations require a License Agreement to cross prior to installation.

Field Tile and Deep Plowing

- A Philadelphia Energy Solutions representative must be present at the time that any of this type of work is done within the Philadelphia Energy Solutions right-of-way or within 50 feet of the pipeline.
- Field Tile and Deep Plowing projects must be planned, reviewed and accepted by Philadelphia Energy Solutions prior to commencement of any work.

Boring, Drilling & Tunneling

- A Philadelphia Energy Solutions representative must be present at the time that any of this type of work is done within the Philadelphia Energy Solutions right-of-way or within 50 feet of the pipeline.
- Boring, drilling and tunneling projects must be planned, reviewed and accepted by Philadelphia Energy Solutions prior to commencement of any work.

Construction Restrictions

- As required by law, the developer shall contact the appropriate State One Call Center to arrange for field staking of the exact pipeline location verification of pipeline depth by a Philadelphia Energy Solutions representative.
- A Philadelphia Energy Solutions representative must be present during construction within the Philadelphia Energy Solutions right-of-way.
- If vehicles or heavy equipment are to cross the pipeline for any reason, it will be necessary for the owner/developer to provide and maintain a ramp of sufficient material to protect the pipeline for the duration of the proposed crossing activities. Philadelphia Energy Solutions must approve ramps. Philadelphia Energy Solutions will make the decision as to how much fill and what other type of protective structure, if any, will be required for the ramp. Upon completion of construction and discontinuation of heavy equipment passage over the pipeline, the ramp may be removed.
- No materials (i.e. soil, stone, etc.) or equipment is to be stored within the existing pipeline right-of-way without prior consent from a Philadelphia Energy Solutions representative.
- Construction items such as temporary drainage swales, silt fencing, gates, signs, etc., are still required to meet the Philadelphia Energy Solutions clearance requirements.
- Trenching activities shall be designed as to avoid adversely affecting the integrity of the pipeline and the stability of the pipeline trench.

Blasting Requirements & Restrictions

- Any outside party contemplating or proposing blasting operations within one-fourth mile (1320 feet) of a Philadelphia Energy Solutions pipeline, pipeline facility or right-of-way shall submit a pre-work survey for review and approval, in accordance with the blasting requirements and restrictions outlined in this section.
    - The pre-work survey shall be complete with a written report documenting any special conditions or proposed adjustments which shall be incorporated into the seismic testing or blasting activity plan to prevent possible damage to pipeline systems. This survey shall be performed by an accredited third-party surveyor.
- Any outside party contemplating or proposing blasting operations within 500 feet (500') of a Philadelphia Energy Solutions pipeline, pipeline facility or right-of-way shall submit a blasting plan for review and approval, in accordance with the blasting requirements and restrictions outlined in this section.
    - The blasting plan must include size of holes, depth, spacing, burden, soil types and amounts, type of delays, delay sequence, maximum amount of explosives on any one delay period, depth of blast area, and depth of overburden, if any.
- **If blasting takes place within 500 feet of the pipeline Right-of-Way, a Philadelphia Energy Solutions representative must be present.**
- If blasting is to be performed within 500 feet of the pipeline, a seismic monitoring program shall be instituted by the contractor. A seismic monitoring unit shall be inserted directly over the pipeline and covered with sandbags if soil conditions prevent adequate insertion.
- The party responsible for the seismic testing or blasting operations shall comply with all applicable local, state, and federal regulations and requirements.
- All seismic testing or blasting operations shall be conducted by experienced personnel who are trained and certified in such operations and who are aware of the hazards involved.
- If the outside party anticipates using explosives within 200 feet of the pipeline, test blasts, monitored by a seismograph, must be conducted.
    - A maximum of one pound per delay charge shall be used during the initial test blast.
    - Subsequent test blasts may be made if the seismograph readings indicate that further blasting can be safely conducted. The particle velocity of any one component of the three-component seismograph reading must not exceed 2.0 inches per second as recorded on a seismograph placed over the pipeline.
    - Routine blasting may continue after test blasts, with the allowable charge per delay based on the seismograph vibration recordings of the blasts. All blasting shall be continuously monitored by a seismograph to ensure the recorded peak particle velocity components do not exceed the 2.0 in/sec limits as noted in the paragraph above.
    - Seismograph readings over the pipeline are to be recorded and submitted to Philadelphia Energy Solutions each day after blasting.
    - The blasting operations must be conducted using a drilling pattern and blast initiation procedure that will provide the greatest relief possible in a direction away from the pipeline, as to keep the resulting vibration and actual ground movement to the lowest possible level.
    - In the event that the peak particle velocity of **any one component** exceeds the 2.0 in/sec limit, Philadelphia Energy Solutions must be contacted in order to review results. No additional blasting may take place unless authorization is given by the Philadelphia Energy Solutions representative.
    - No more than one charge shall be fired during any delay period.

- Seismic testing with steady state vibrator or thumper sources is prohibited within 150 feet of the pipeline right-of-way. All other non-explosive seismic sources, including the use of air guns, are prohibited within 600 feet of the pipeline right-of-way.

- No blasting shall be conducted closer than 50 feet to the pipelines unless special precautions are taken, such as hiring a consulting firm that specializes in underground blasting to conduct the seismograph survey, provide calculations showing anticipated impact loads on the pipelines, conduct the seismograph survey, and certify the results.
- Firm which conducts the seismographic surveys shall be approved by Philadelphia Energy Solutions prior to the commencement of any blasting operations.
- If seismograph readings in excess of the limit, as stated above are recorded, Philadelphia Energy Solutions may elect to expose the pipeline to inspect for damage. The expense of such exposure, and any subsequent repair necessitated by the blasting, shall be borne by the party using the explosives.

Any exceptions to these restrictions require the approval of Philadelphia Energy Solutions.
If any questions or need for additional information arises, please contact us.