



National Fuel[®]
Midstream Company

**PIPELINE
ENCROACHMENT
MANUAL**

TABLE OF CONTENTS

Introduction	ii
Section 1 - Right-of-Way Agreement	1
Section 2 - Encroachment Agreement	2
Section 3 - General Information for Landowners	3
Section 4 - Construction Requirements	5
Section 5 - Logging and Timber Operations	8
Section 6 - Blasting Specifications	9
Section 7 - Proposed Mining Operations	12
Section 8 - Power and Communication Line Crossings	13
Section 9 - Wind and Solar Development	16
Section 10 - One Call System	18
Section 11 - Data Required for Project Review	19
Section 12 - Procedures for Relocation	21
Section 13 - National Fuel Gas Midstream Company Locations	22

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INTRODUCTION

National Fuel Gas Midstream Company, LLC (“NFG Midstream”) and its subsidiaries including NFG Midstream Covington, LLC, NFG Midstream Trout Run, LLC, and NFG Midstream Clermont, LLC (collectively, with NFG Midstream, “Midstream”) is a subsidiary of National Fuel Gas Company. Midstream’s primary business is to build, own and operate natural gas processing and pipeline gathering facilities in the Appalachian region.

This handbook provides basic information for landowners, contractors, and developers with development plans adjacent to or encroaching on Midstream rights-of-way. It is intended to minimize the possibility of damage to Midstream facilities, which will help ensure a safe and reliable pipeline system.

These guidelines will aid in your design of any proposed work that affects Midstream rights-of-way. Please read the guidelines carefully. Your proposal will be processed more efficiently if all necessary information is provided. All development plans that affect Midstream rights-of-way must be approved in writing by Midstream.

These guidelines may not include your particular situation. If you should have any questions, please call the area supervisor or engineer.



A right-of-way agreement is an agreement by which a property owner grants permission to another party to use a portion of his or her land for a specific purpose. Midstream's original rights-of-way, as well as those acquired today, are granted in return for a one-time consideration, which is paid at the time the agreement is acquired. The right-of-way gives Midstream the right to construct, operate, and maintain its pipeline and related facilities which are necessary for the transmission, of natural gas. Midstream also has the free right of ingress and egress to its rights-of-way.

The right-of-way agreement is a right in the land, and the agreement is recorded in the appropriate public records office. It is a legal document. If the land is sold, the rights and responsibilities under the terms of the agreement pass to the new owner.

The right-of-way agreement generally states the width of the right-of-way. However, if there is no width defined, then the right-of-way is considered a "blanket right of way" and its width is deemed to be as wide as reasonably necessary for Midstream's requirements. In this case, Midstream would consider executing an agreement defining the right-of-way width. Each request would be considered on a case-by-case basis.

Our review of any proposed work will focus on the right-of-way area and the lands immediately adjacent to the right-of-way.



SECTION 2

ENCROACHMENT AGREEMENT

An encroachment agreement is required whenever a permanent installation (e.g., utility lines, pipelines, road crossings, above and below ground structures, sheds, swimming pools, trees, berm, shrubs, etc.) or intrusive temporary activity (e.g. construction, logging, mining, blasting, excavating) will encroach into, over, under, or in any way come into proximity of our right-of-way area.

No proposed activity, placement or installation shall occur on our right-of-way area until an encroachment agreement is entered into between the landowner or party seeking to encroach and Midstream. All encroachment agreements covering permanent installations will be recorded in the appropriate public records office. Encroachment agreements covering temporary encroachments will be recorded at the discretion of Midstream. All encroachment agreements will be tailored to the specific permanent or temporary encroachment, and an administrative fee may be required.



SECTION 3

GENERAL INFORMATION FOR LANDOWNERS

It is our desire to keep a clear right-of-way that can be used by our maintenance personnel and one that is clearly visible for our aerial patrolling. We must retain the right of free and ready access to our pipeline, cathodic protection, and/or other facilities along and within rights-of-way across your property in order to properly maintain and operate our facilities in accordance with the applicable regulations.

Under our right-of-way agreement, the landowner may use their land as they see fit provided it does not interfere with the rights granted to us to maintain and operate our pipeline. For safety purposes, we ask all landowners not to carry out any work on the right-of-way without notifying us and giving us an opportunity to be present. Certain activity on the premises unduly interferes with the safety of our pipeline, and we regret that we cannot permit such activity. We have summarized these situations below, and we respectfully request the landowner to cooperate with us in the interest of safety for all.

1. No trees shall be planted within the confines of the right-of-way. We consider trees as those plants that grow to an excess of five (5) feet in height at maturity. This would include such species as fir, pine, arborvitae, hemlock, maple, rhododendron, birch, fruit trees, willow, etc. Such trees inhibit access to the pipeline and their roots can damage the pipeline. Shrubs or bushes obtaining maturity of no more than five (5) feet in height may be permitted on Midstream's right-of-way provided they are not planted within ten (10) feet of the pipeline, and/or between our pipelines when multiple lines are present. In either of these cases, Midstream will be glad to locate the pipeline after a request is made via the Pennsylvania One Call System. Permissible shrubs that may be placed in our right-of-way include such species as English and dwarf yews, holly, heather, dwarf rhododendron, azalea, barberry, etc., but in no event shall permanent plantings of any type be allowed within ten (10) feet of our pipeline. Please note under the terms of the right-of-way agreement, Midstream still reserves the right to remove any trees, shrubs or other obstructions, without compensation to you, that interfere with the operation, maintenance or replacement of its facilities.
2. No earth shall be removed from the surface of the right-of-way, for such removal can expose the pipeline to damage. Small amounts of fill may be added with Midstream's approval, provided it is clean fill, free of rocks, stumps and debris. No water impoundment is allowed within Midstream's right-of-way.
3. No structures shall be located on the right-of-way. This includes houses, utility sheds, garages, swimming pools, house trailers, wells, permanent/semi-permanent hunting blinds etc. It is not possible to maintain the pipeline or promptly access it in times of service interruption or emergency with such structures present. Fences, though permanent structures, can be located across the right-of-way only if provisions are made prior to their placement for Midstream crews and equipment to gain access by proper placement of suitable gates.
4. Underground utilities crossing Midstream's pipeline shall be installed below the pipeline, with a minimum of 24 inches clearance so as not to interfere with the pipeline.

Utilities include sewers, drain lines, water pipes, gas pipes, underground electric or telephone cables, etc. These facilities are not to be placed parallel to our pipeline within Midstream's right-of-way and moreover such facilities should be crossed as close to perpendicular as possible. Septic systems shall not be built on Midstream's right-of-way. However, a solid non-leaching septic line may be placed across the right-of-way provided it adheres to the 24-inch clearance previously stated. Sandbag padding is to be installed between Midstream's pipeline(s) and all foreign crossings.

5. No heavy equipment is to be moved across Midstream's right-of-way prior to approval of Midstream's area supervisor. The crossing party may be required, at its sole expense, to install matting, bridging, concrete, or place additional fill over Midstream's pipeline, at Midstream's discretion, to accommodate said heavy equipment crossing, and shall abide by all other requirements set forth in this manual.

Construction plans that affect Midstream's rights-of-way, as outlined in paragraph 4 and 5 above, should be submitted for review and approval before any construction starts. This will save both parties from being involved in any possible misunderstanding and will save you time and money. Please be assured Midstream stands ready to cooperate with you in any reasonable manner possible.

The most helpful contact you have in Midstream is the area supervisor who is responsible for the Company's facilities on your property. Call them if you have a problem or any questions. Their office is open from 8:00 AM to 4:30 PM on normal workdays.

Midstream understands its responsibilities and is attempting to exercise its right-of-way rights with minimal inconvenience to you. Your safety and the safety of the public are our first consideration, so we are asking for your cooperation.



The following list of construction requirements must be met when working near Midstream facilities. Questions related to these requirements should be directed to (814) 871-8654.

1. Midstream's standard right-of-way width is 50 feet, unless otherwise stipulated.
2. Midstream must be notified in advance through a One Call in Pennsylvania (at least 3 full working days – see Section 10 for phone numbers) for any construction, excavation, demolition, blasting, pile driving, or vibratory equipment operation near Midstream facilities. Midstream will have personnel stand-by while these activities take place near our facilities.
3. Maintain a minimum distance of 25 feet between Midstream pipelines, cathodic protection, other facilities, and any permanent structure such as a building or house.
4. No "temporary" storage sheds will be allowed within 25 feet of Midstream pipelines.
5. No excavations, change of grade, or water impoundment within the rights-of-way are to be made without the express written consent of Midstream.
6. No trees or bushes that exceed 5 feet in height at maturity will be allowed within the pipeline right-of-way. Smaller bushes that will not exceed 5 feet in height will be allowed no closer than 10 feet of the pipeline. No permanent plantings of any type within 10 feet of the pipeline.
7. The right-of-way may be crossed, under certain conditions, by roads, pipelines, railroads, streets, and utility lines. However, these facilities are not to be placed parallel to, along or within Midstream's rights-of-way. To accommodate such facilities across the pipeline or to accommodate any allowable change of grade or excavation, Midstream, in many instances, will be required by regulations and company requirements to alter its pipeline facilities. Midstream will require that the party seeking to encroach assume the financial obligation of any such alteration or adjustment.
8. Maintain a minimum of 60 inches of cover over any Midstream pipeline at the crest of any road, 42 inches at a driveway, and 36 inches in a drainage ditch or agricultural fields.
9. No heavy equipment is to be moved across our right-of-way prior to notifying the area supervisor and obtaining their approval. The crossing party may be required, at its sole expense, to install matting, bridging, concrete, or place additional fill over Midstream's pipeline, in Midstream's sole discretion, to accommodate heavy equipment crossing.
10. For property development, an electronic copy or three hardcopy sets of surveyor's plats of the subdivision or project, along with profiles based on actual pipeline elevation of any streets that will cross any Midstream pipelines must be furnished. From this and

Midstream's records, Midstream will determine what alterations will be required, if any, and will then furnish the landowner and/or developer an estimate of costs and a drawing showing the necessary alterations due to our right-of-way.

11. Paving, which must be kept to a minimum, may be permitted within Midstream rights-of-way with our prior written approval. Each paving proposal will be evaluated on its own merits. The landowner and/or developer will be required to pay for the installation of additional test leads and ground to soil test holes along the paved area to allow Midstream to monitor the integrity of its cathodic protection. Repairs to paved area will be at landowner and/or developer's expense. Please note under the terms of the right-of-way agreement, Midstream still reserves the right to remove any paving, without compensation to you, that interfere with the operation, maintenance or replacement of its facilities.
12. In some cases, Midstream may require a grass or gravel island to be left over the pipeline to allow a path for gas to vent in case of leakage.
13. Underground utilities crossing any Midstream pipeline must be installed below the pipeline with a minimum of 24 inches of vertical clearance so as not to interfere with the pipeline. Utilities include sewers, drain lines, water pipes, gas pipes, conduit, underground electric or telephone cables, etc. These facilities are not to be placed parallel to any Midstream pipeline within Midstream's right-of-way. Septic systems shall not be built on Midstream's right-of-way. However, a solid non-leaching septic line may be placed across the rights-of-way provided it adheres to the 24 inches of clearance previously stated. Sandbag padding is to be installed between Midstream's pipeline and any underground utility crossing.
14. Where possible, perforated agricultural field drain tile line crossings are to be installed perpendicular to and with a minimum of 24 inches of vertical clearance to any Midstream pipeline.
15. Any buried metallic structure within any Midstream right-of-way requires the installation of an interference test station. Proper notification needs to be made to Midstream Corrosion Engineering and Operations Departments to review the proposed project to see how this construction could adversely affect the cathodic protection of Midstream facilities.
16. Grading over any Midstream pipeline requires a minimum of 36 inches of cover as verified by our Midstream inspector. Grading equipment with ripping blades shall not be permitted within Midstream rights-of-way.
17. No vibrating equipment is permitted within 50 feet of any Midstream pipeline without submitting a plan of procedures for review and approval by Midstream's Engineering Department.

18. Blasting near pipelines is at the contractor's risk. Midstream must be notified a minimum of two weeks in advance if any blasting is to occur within 200 feet of our pipeline. No blasting is permitted within 200 feet of any Midstream pipeline without submitting a plan of procedures in accordance with Midstream's Blasting Specifications. See Section 6 of this Manual.
19. Vibrating compactors must be monitored by an approved vibration consultant when operating within 50 feet of any Midstream pipeline.
20. No excavating within 25 feet of any Midstream pipeline with heavy equipment. Any excavation within 25 feet shall be done with a small backhoe and require standby by NFG Midstream personnel.
21. If any Midstream pipeline is to be exposed:
 - a) Any exposed unsupported pipeline sections must be supported by nylon slings and suspended from steel I-beams which are placed across the top of the ditch. The maximum unsupported length is 15 feet.
 - b) Midstream will stand by while the pipeline is exposed and shall be notified to inspect the pipeline prior to backfilling operations. Any coating damage will be repaired by Midstream at the contractor's expense prior to backfilling the ditch.
 - c) Select fill is required for the first foot of backfill surrounding the pipeline.
 - d) Coal cinders or coal ashes shall not be used as backfill material.
22. Maintain a minimum of 25 feet between any Midstream pipeline and the base of any berm, for example, around a pond.
23. The contractor shall comply with the instructions of Midstream personnel regarding the procedures to be followed while working within the restricted zone.



SECTION 5

LOGGING AND TIMBER OPERATIONS

All logging activities which occur within the confines of Midstream rights-of-way must be approved prior to the commencement of the activity. In addition, an encroachment agreement covering the installation of land bridges, air bridges, or other temporary crossings, temporary erosion controls, restoration and final inspection of the site, shall be executed by the responsible party before beginning logging activity. A bond may be required to be posted by the logging company to insure the restoration of the right-of-way area.

The Midstream representative overseeing the right-of-way area must be contacted at least four (4) weeks prior to the proposed activity. A Midstream representative will meet on site to discuss the proposed activity. No skidding along or within the right-of-way area will be allowed. No staging areas or stockpile areas will be allowed within the right-of-way. Perpendicular crossings of Midstream rights-of-way will be permitted as long as adequate measures to protect the pipeline are put in place. The logging company will identify their preferred crossing location. A Midstream representative will determine the requirement for mats and logging bridges constructed of wood, or gravel over any Midstream pipeline. Any potential for erosion and temporary erosion control devices within the right-of-way area will be addressed prior to the commencement of the logging activity.

Should the work be suspended for more than 2 weeks, all ruts on the right-of-way area shall be filled and graded and the area seeded with a temporary cover to prevent erosion.

Upon completion of the logging activities, all ruts shall be filled and graded under NFG Midstream supervision. Any permanent erosion control devices removed or destroyed during the logging activity shall be restored. Temporary erosion control devices are to be installed by the logging company to ensure the proper re-vegetation of the right-of-way area. All disturbed areas within the right-of-way shall be seeded and mulched with a conservation blend or a seed approved by Midstream and the Soil Conservation Agent or the State Forester. At least 3 days prior to the completion and restoration of the right-of-way area, the logging company shall meet with a Midstream representative on site to determine if the area has been satisfactorily restored and the site stabilized.

Midstream will require vehicle and equipment type, number of axles, and gross equipment and load weights. Midstream will review this information and determine if special modifications need to be made to the depth of cover on the pipeline. The crossing party may be required, at its sole expense, to install matting, bridging, concrete, or place additional fill over Midstream's pipeline, at Midstream's discretion, to accommodate said pipeline crossing. No heavy equipment is to be moved across Midstream's right-of-way without prior approval of Midstream's area supervisor.



When blasting within 200 feet of any Midstream pipeline, the following will be required:

1. All parties associated with the blasting operations will comply with Title 25, Chapter 211 of the Pennsylvania Code and all other applicable federal, state, and local regulations.
2. Contractors will submit a written blasting plan to our company representative at least two (2) weeks before blasting commences. Midstream Engineering Department will review the parameters of the blasting plan based on the current American Gas Association (AGA) published data concerning blasting effects on pipelines. The blasting plan should include the following information at a minimum:
 - ◆ Explosive type
 - ◆ Delay types and intervals
 - ◆ Delay pattern
 - ◆ Maximum shot hole depth and diameter
 - ◆ Hole spacing
 - ◆ Drilling pattern - show plan view and profile in relation to Midstream facilities
 - ◆ Maximum charge per hole
 - ◆ Maximum charge per delay
 - ◆ Type of protective blasting mat used, if any and method of placement

No more than one charge will be fired during each delay period.

3. Prior to actual blasting, all non-explosive means must be explored (i.e., S-Mite - a silent non-explosive).
4. The drilling pattern and initiation procedure must provide the greatest relief possible in a direction away from any Midstream pipeline and must minimize vibration and ground movement. The use of stress relieving trenches may be required.
5. All blasting operations will be conducted by experienced, trained, and state-licensed personnel, each of whom shall be in good standing with the licensing entities. Documentation of licensed blasters will be provided to Midstream authorized representative prior to any blasting.
6. All blasting will be done with the Midstream authorized representative present.
7. The contractor will supply a seismograph and qualified operator, jointly acceptable by both the contractor and Midstream, at contractor's expense. Seismograph readings taken over Midstream's affected pipeline(s) and facilities will be recorded for each blast. Results will be provided to Midstream's authorized representative after each blast.

8. A peak particle velocity of 2 inches per second shall not be exceeded at any Midstream facility. Peak particle velocities shall be recorded in the longitudinal, transverse, and vertical directions.
9. Midstream may elect to hire its own blasting consultant. The expense for same will be borne by contractor.
10. Any deviation from the guidelines of the blasting plan reviewed by Midstream will require prior written approval from Midstream's Engineering Department. In the event the plan's peak particle velocities are exceeded, the contractor will be liable to pay the full cost of inspecting Midstream's facilities and any repairs and replacements resulting from such occurrence, as well as any other costs directly resulting from such occurrence.

Compliance with these standards does not suggest or imply that the contractor, its contractors, blasters, consultants or any other associated party is relieved of any responsibility or liability in the event any of Midstream's facilities are damaged in any way before, during, or after blasting operations. Midstream will hold all parties responsible for costs incurred for any breach of pipeline or facility integrity.

Additionally, the contractor, its contractors, blasters, consultants and any other associated party will indemnify, defend, and hold harmless Midstream against any and all losses, claims, and actions of any kind arising from or incident to any blasting operations. Further, contractor, its contractors, blasters, consultants and other associated parties hereby waive any and all claims against Midstream and release Midstream from any and all liability related to the operation of its pipelines and facilities in the blasting area.

NATIONAL FUEL GAS BLASTING INFORMATION REQUEST

Date: _____, 20 ____

Blasting Contractor: _____

Contact Name: _____

Contracted by: _____

Phone Number: _____

Date of Blasting: _____ Month: _____ Day: _____ Year: 20 ____

Blasting Location: _____

Pipeline or Station Name: _____

Closest Location of National Fuel Gas Facility: _____

EXPLOSIVE SECTION

Type of Explosives: _____

Equivalent Energy Release: _____

Specific Energy Release: _____

Maximum Charge / Hole (lbs.): _____

Charge Weight / Delay (lbs.): _____ Charge Delay (ms): _____

Charge Pattern: *(Draw sketch on reverse side. Include all depths and measurements and delay patterns relative to the piping involved and each charge.)*

Depth of Charge (ft.): _____

Diameter of Charge (in.): _____

Type of Rock to Be Blasted: _____

Mass Density of Rock (lbs. / cu. ft.): _____

Expected Peak Soil Particle Velocity *(at National Fuel Gas facility in inches per second)*: _____

Were non-explosive means explored (yes / no)? _____

Completed By: _____

TO BE COMPLETED BY NATIONAL FUEL GAS Midstream COMPANY

Received by: _____

Date: _____

Approved by: _____

Date: _____

Comments: _____



To initiate a mining operation, first confirm in writing the arrangements made during a meeting with Midstream's representative. The following are Midstream's minimum requirements:

1. If the top edge of slope of the high wall is to remain less than 30 feet in height, then no excavation shall be allowed within 25 feet of the pipeline(s).
2. If the top edge of slope of the high wall is greater than 30 feet in height, then the top edge of the slope will be maintained 25 feet plus 1/2 the height of the high wall from the pipeline. The stripping operation must be completed and overburden replaced on one side of the pipeline(s) before stripping begins on the opposite side.
3. Blasting operations conducted within 200 feet of any Midstream facilities must comply with Blasting Specifications, Section 6 of this Manual.
4. There shall be no auguring from the area being left to support and protect the pipeline and right-of-way area. Rights-of-way crossings for water drainage and vehicle haul roads will be designed, constructed, and placed as directed by Midstream's area representative. There shall be no overburden placed within any Midstream rights-of-way except for haul roads as directed above. These crossings shall be removed by the contractor/owner when no longer necessary. The rights-of-way are to be returned to their original condition.
5. The use of these standards by the mining contractor's personnel or assignees does not give, imply, or suggest that the contractor/owner is relieved of any responsibility in the event that the gas service is interrupted or the pipeline damaged in any manner before, during, or after the mining, blasting, or stripping operations. Midstream will hold the landowner and mine operator as permitted by the PA DEP responsible for all costs incurred for any breach of integrity of the pipeline(s) attributable to the mining operations.



Definitions:

1. Power Lines:

Power lines are defined as conductors for transmitting a supply of energy, either direct current (DC) or alternating current (AC), at any voltage, supplying power of more than 150 watts.

2. Communication Lines:

Communication lines are defined as conductors for telephone, telegraph, signal, control, telemeter and television antenna systems. These circuits may be private or public and operate at not exceeding 400 volts to ground or 750 volts between any two points of the circuit. The transmitted power on these lines does not exceed 150 watts.

Buried Crossings

Buried power or communication lines shall cross the pipelines at right angles and should be located so they subject the pipeline to the least practicable disturbance.

All buried conductors, whether in conduit or direct burial cable, are to be installed in accordance with requirements of the National Electric Safety Code (National Bureau of Standards Handbook 81) and the National Electrical Code (NFPA No. 70: ANSI C1 - latest editions). The latest editions of these codes are to apply, the appropriate sections being minimum requirements.

All power and communications lines crossing the Midstream right of way shall be laid with at least twenty-four (24) inches separation between the cable/conductors and the pipeline, and are to be protected by a non-metallic conduit. Conduits encasing power lines exceeding 600 volts shall be covered with a minimum of three (3) inches of concrete. Conduits and concrete shall extend a minimum of ten (10) feet each side of the pipeline crossing.

In addition to the above, all power and communication lines crossing the Midstream right of way shall include marking tape laid above the protective conduit and covering that indicates the presence of the buried electrical or communications line.

Any crossing of Midstream's right-of-way is to be approved only after an encroachment agreement containing an indemnification clause in favor of Midstream has been signed by both parties.

Midstream personnel are to be present during installation of the conductor and any associated conduit. All buried cable crossings shall be permanently marked with signs showing the location of the cable and/or conduit. Markers or signs shall be placed above ground on both sides of the pipeline at the point directly above the crossing line(s) and just inside the 10 (ten) foot buffer zone containing the conduit casing.

Overhead Crossings

At grade and above grade power line and communication line structures, including but not limited to poles, towers, grounding, and anchors must be outside of Midstream's pipeline right-of-way and at least 25 feet away from any Midstream facility.

For overhead power lines less than 60 kV and communication lines the minimum vertical clearance must be 25 feet from the top of grade to any cable, line, or associated appurtenances crossing Midstream's right-of-way. Minimum vertical clearance for power lines 60 kV or higher vary and shall be determined in consultation with Midstream.

Information Required for Each Transmission Power Line

The following information is required for each transmission power line equal to or greater than 60 kV near a Midstream pipeline.

Crossing and Encroachment Guide and Requirements Checklist

Items to Include on Overhead Transmission Power Drawings	
Power circuit number, ID number and name:	
System voltage (line to line):	
☐	Staking list showing chainages and GPS coordinates of all structures: from substation to substation for parallel ¹ studies, and at least five structures upstream and downstream of crossing locations without parallel ¹ .
☐	Cross-section drawings of the power lines structures, showing the positions of all conductors (phase conductors, shield wires), including: • vertical and horizontal clearance between conductors • average height of conductors, or height of conductors at the tower and at mid-span • circuits and phase arrangement for each circuit (i.e., A-B-C top-bottom) Please indicate the direction looking at the structure at each cross-section
☐	Shield wire information: • # of shield wires • shield wire size, type (material) • shield wire resistance, (ohm/unit length) • continuous or segmented • continuous with substation grounding at extremities

☐	Tower grounding: • typical grounding details (drawing or sketch), if grounding electrodes are used • tower foundation details (suspension towers only), to estimate the resistance of the “natural grounding” provided by the tower foundation • grounding resistance of each tower, if known, or an average grounding resistance • details of counterpoise, if any • details of guy wire anchors, if any
☐	Locations and details of any phase transpositions along the common right-of-way (pipeline chainage or GPS coordinates of the transposition towers or marking on the drawings). Please indicate the phase arrangement at each transposition tower.
☐	Phase current loading: • peak annual • peak projected • average annual • average projected • emergency
☐	Line-to-ground fault currents: a. at beginning of common right-of-way: • total fault current • fault current contributions from the north/east • fault current contributions from the south/west b. at middle of common right-of-way: • total fault current • fault current contributions from the north/east

Notes: ¹ “Parallel” refers to the pipeline(s) and power line(s) situated side-by-side or low angle (<45 degree) crossings.

General

Changes in power line or communication line operating characteristics or configuration (e.g., increased maximum load, introducing or removing a phase transposition) must be reviewed and approved by Midstream prior to changes.

Midstream may provide the given information to a third-party AC mitigation and interference contractor for review, the cost of which shall be the responsibility of the developer. The developer will also bear the expense of revising plans and for paying Midstream for needed mitigation and/or installation material.



SECTION 9

WIND AND SOLAR DEVELOPMENT

Wind and solar development projects include but are not limited to the installation of wind turbines, solar panels, and related facilities. These developments are often complex and large-scale projects. As such, each project in proximity to Midstream's facilities shall be reviewed and approved by Midstream on a case-by-case basis.

At minimum, Midstream shall require the developer to follow the applicable requirements contained within this Manual. A partial list of requirements includes:

1. Maintain a minimum distance of 25 feet between Midstream pipelines, cathodic protection, other facilities, and any at grade or above grade structure.
2. Maintain a minimum distance of 200 feet between Midstream gas wells and any at grade or above grade structure.
3. Underground utilities crossing Midstream's pipeline shall be installed below the pipeline, with a minimum of 24 inches clearance so as not to interfere with the pipeline.
4. Submit all data required for project review found in Section 11 of this Manual.
5. Follow all requirements and provide all data related to power and communication line crossings as specified in Section 8 of this Manual. As noted, Midstream may provide the given information to a third-party AC mitigation and interference contractor for review, which the developer will provide payment for the review. The developer will also revise plans and/or provide any payment necessary for the mitigation material and installation if needed.
6. Vibrations resulting from wind turbines must be considered in the placement of turbines to avoid damage to Midstream pipeline(s) and related facilities. Midstream may provide the wind development plans to a third-party party contractor for review, the cost of which shall be the responsibility of the developer. The developer will also bear the expense of revising plans and for paying Midstream for needed mitigation and/or installation material.
7. If hauling or traveling across Midstream's right-of-way must occur, vehicle, equipment, and load information shall be supplied to Midstream in advance and requirements set forth herein followed. This information includes vehicle and equipment type, number of axles, and gross equipment and load weights. Midstream will review this information and determine if special modifications need to be made to the depth of cover on the pipeline. The crossing party may be required, at its sole expense, to install matting, bridging, concrete, or place additional fill over Midstream's pipeline, at Midstream's discretion, to accommodate said pipeline

crossing. No heavy equipment is to be moved across Midstream's right-of-way without prior approval of Midstream's area supervisor.



SECTION 10

ONE-CALL SYSTEM - IT'S THE LAW

The One-Call System is a communication system that has been established to provide one telephone number for excavating contractors and the general public to call for notification of their intent to use equipment for excavating, blasting, tunneling, or other similar work.

Excavators and contractors are required to notify facility owners through the One-Call System prior to excavation or demolition work. Definition of excavation: to drill, blast, auger, bore, grade or trench. **Failure to notify is a direct violation of the law and penalties can be enforced.**

The One-Call Systems within our Division are working to promote public safety and eliminate service interruptions to all utilities.

PENNSYLVANIA

Pennsylvania One-Call System, Inc.

811 or 1-800-242-1776

Borland Complex, 925 Irwin Run Road, West Mifflin, PA 15122-1078

Coverage: Statewide

Request Time:

1. For excavation or demolition work, not less than 3 nor more than 10 working days prior notice.
2. Designers are required to request information not less than 10 nor more than 90 working days before the final design. Design should not come within 18 inches of existing facility. Plans must show the serial number and either the 811 or 1-800-242-1776 telephone number.

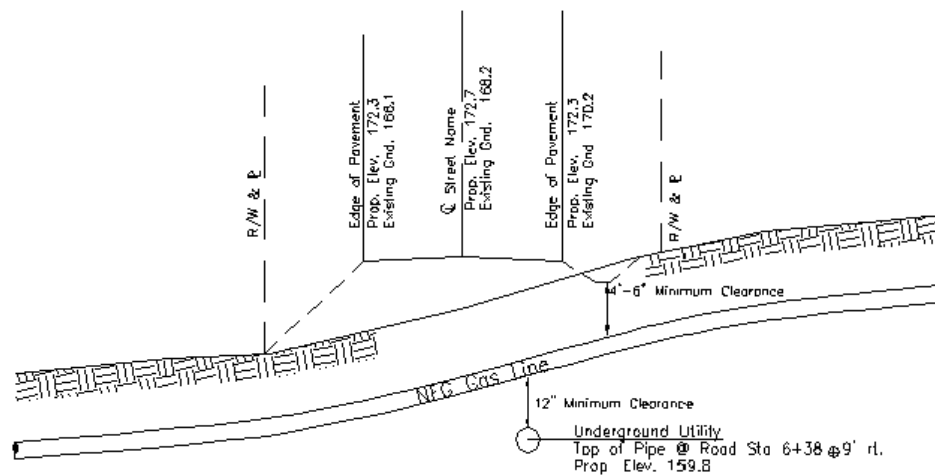
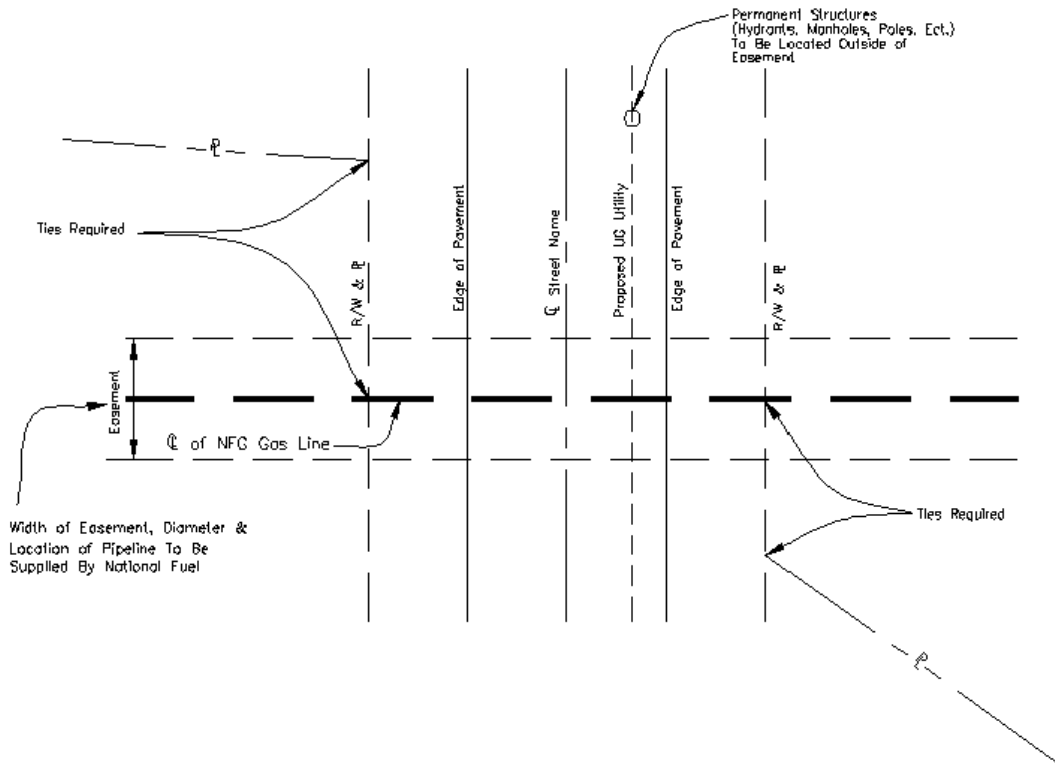


SECTION 11

Data Required for Project Review

All requests for review of projects involving potential encroachment of Midstream rights-of-way must include the following information:

1. A cover letter describing in detail the proposed project. It must include the name, address, and telephone number of the owner/developer.
2. An electronic copy or three (3) complete sets of hardcopy drawings of the project including the following information:
 - a) A plan of the project drawn to scale, which shows location of the project. Where changes in grade are proposed in the pipeline right-of-way, existing and proposed elevations must be shown. Also, the existing pipeline elevation must be shown. You may contact our local office to coordinate excavations to determine actual pipeline elevations.
 - b) A ground profile where changes in grade are to be made in the right-of-way for things such as road crossings, excavations, fill, etc. A typical profile drawing can be found on the following page of this handbook. The drawing must be done by a registered land surveyor.
 - c) If hauling or traveling across Midstream's right-of-way must occur, vehicle, equipment, and load information shall be supplied to Midstream in advance and requirements set forth herein followed. This information includes vehicle and equipment type, number of axles, and gross equipment and load weights. Midstream will review this information and determine if special modifications need to be made to the depth of cover on the pipeline. The crossing party may be required, at its sole expense, to install matting, bridging, concrete, or place additional fill over Midstream's pipeline, at Midstream's discretion, to accommodate said pipeline crossing. No heavy equipment is to be moved across Midstream's right-of-way without prior approval of Midstream's area supervisor.
3. Following receipt of the proposed project by Midstream, please allow up to four weeks for project review. This time frame will depend on project complexity.



Notes.

1. Depth of pipe is to be determined by National Fuel at Contractor Expense.
2. The Developer must furnish National Fuel with profiles of any proposed road crossing.
3. Crossings must be made as near to a 90° angle as practicable.
4. Sketch must be prepared by a Registered Land Surveyor.



TYPICAL INFORMATION & DRAWING
FOR
ROAD CROSSING
OF
NFG HIGH PRESSURE GAS PIPELINE

DRAWN BY: M. Torr	FILE NAME: K:\Library\roadxlng.dwg
CHECKED BY: M. Wallace	SCALE: 1"=60'
APPROVED BY:	DATE: 11-5-98



The procedures for relocating one of Midstream's facilities will be the following:

1. Midstream receives notification from the owner/developer requesting facility relocation.
2. The owner/developer provides Midstream with three sets of plans for the proposed project including their desired location for the relocated pipeline. The plans must indicate the location of the existing pipeline. For the location and depth of the existing pipeline, contact the area office closest to the proposed project. Also, the plans must be of sufficient detail for Midstream to prepare a cost estimate.
3. Midstream will conduct an on-site inspection to determine the feasibility of the proposed relocation.
4. If Midstream determines that the relocation is not feasible, the owner/developer will be notified.
5. If relocation is determined to be not feasible, or impractical, a possible alternative could be to inspect and rehabilitate the existing pipe and leave it in place. This is accomplished by uncovering the line and inspecting the entire surface for defects and imperfections which affect the integrity of the pipe. These defects would be removed or repaired and the pipeline would then be coated, cathodically protected, and reburied. This would be at the total discretion of Midstream and would follow the same procedure as outlined below.
6. If relocation or rehabilitation is found to be feasible, the owner/developer must request a cost estimate.
7. A cost estimate will be prepared and forwarded to the Land Department. They will then inform the owner/developer of the expected cost.
8. Upon owner acceptance, the Land Department will prepare the proper agreement and collect the corresponding fees.
9. Prior to the commencement of work by Midstream, the owner/developer shall pay Midstream the total estimated cost by certified check. Upon completion of the relocation, should the advanced payment be insufficient to pay for the actual costs and expenses of the work, the owner/developer shall pay the additional sum that was necessary to complete the work. If the advanced payment exceeded the total costs and expenses to do the work, the owner/ developer will be reimbursed for the difference.



SECTION 13

NATIONAL FUEL GAS Midstream Company Locations

The following is a list of area office locations. The location numbers in bold correspond to the location numbers on the map on the last page of this manual.

Pennsylvania Field Locations

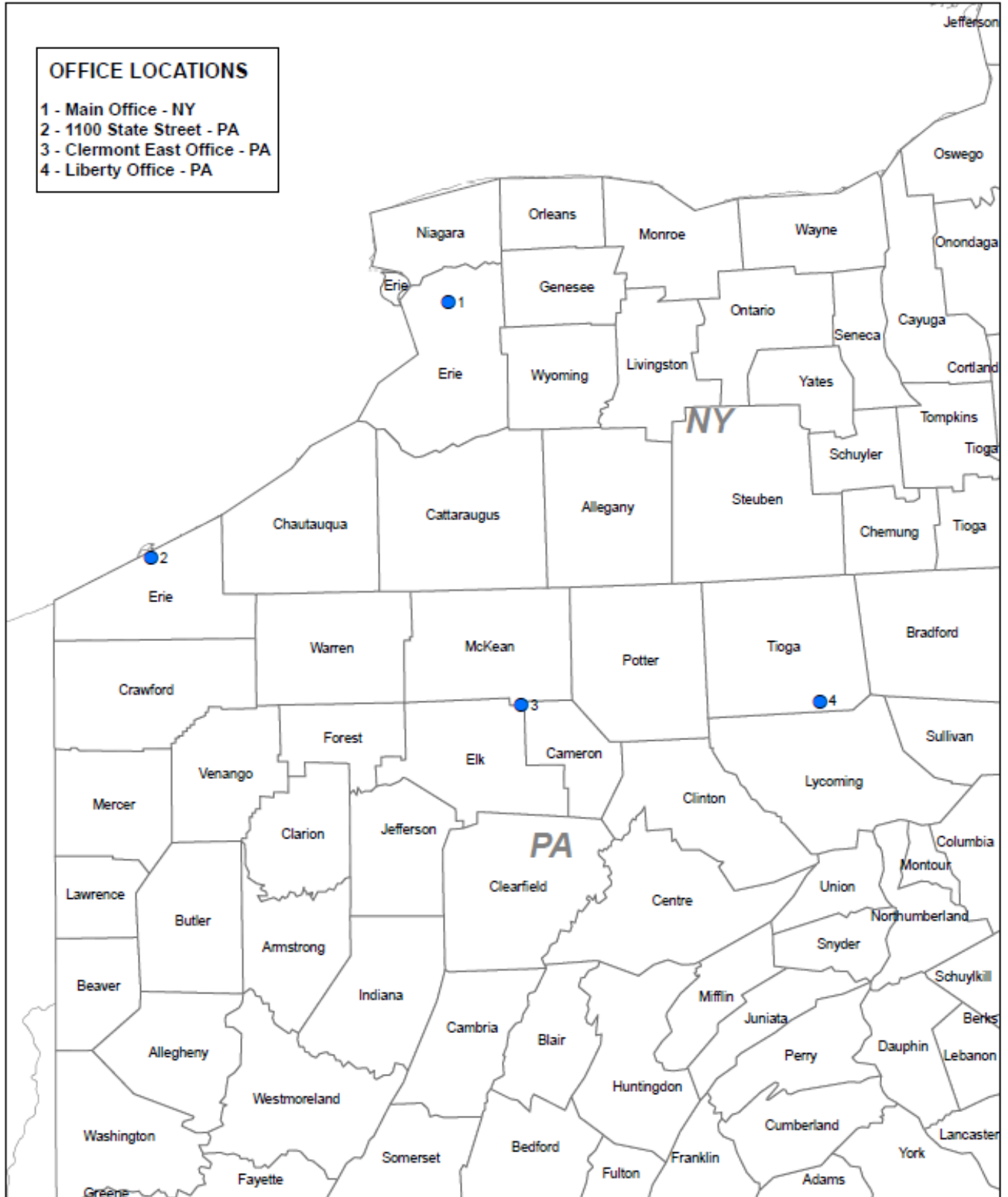
- 1-** Erie, PA Office
1100 State Street
Erie, PA 16501
- 2-** Clermont East Office
70 Billy Buck Tie Road
Wilcox PA 15870
- 3-** Liberty Office
644 Vail Town Road
Liberty PA 16930

NY Office Locations

- 1-** Main Office
6363 Main Street
Williamsville, NY 14221

OFFICE LOCATIONS

- 1 - Main Office - NY
- 2 - 1100 State Street - PA
- 3 - Clermont East Office - PA
- 4 - Liberty Office - PA



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