Recommended Practice for Construction Parallel to Existing Underground Transmission Pipelines

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Introduction

Transmission pipelines [1] move large amounts of liquids (petroleum, petroleum products, anhydrous ammonia, or carbon dioxide) and natural gas from producing and/or refining locations to local "outlets," such as bulk storage terminals (for liquids) and natural gas distribution systems. Transmission pipelines are downstream from gathering pipelines (which aggregate gas and liquids from producing areas, for further transmission). Transmission pipelines typically occupy long right of ways. This recommended practice (RP) does not address construction activities in close proximity to distribution systems (which distribute gas through a network of smaller, local pipelines for residential and commercial use).

Outside force damage to underground pipelines and other underground facilities can occur during construction activities, including but not limited to excavation activities. Significant challenges are faced by existing facility owners and operators, line locators, design professionals, one-call center employees, excavators and contractors, and other stakeholders to prevent damage to underground facilities during construction. These challenges are magnified when construction occurs parallel to existing underground facilities. Parallel construction in this environment requires enhanced communication and coordination to avoid excavation damage.

Damage prevention is a shared responsibility.

This RP is intended to address the unique challenges for damage prevention posed by construction of any project parallel to an existing underground hazardous liquid or gas transmission pipeline (a.k.a. "transmission pipelines"), by providing guidance to designers, constructors, operators, and regulators to reduce risks and improve the safety of affected people, property, the environment, and pipelines. Advanced planning, continuous communication, use of one-call systems, accurately locating and marking facilities, safe digging practices, and other tactics are expected to reduce construction related damage.

Representatives from natural gas and liquid petroleum transmission companies, local distribution companies, gathering systems, and the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (U.S. DOT PHMSA), together with respective trade associations (AGA, AOPL, API, and INGAA), have developed this RP. The working group was formed in early 2012. This RP has been developed specifically for the protection of carbon dioxide and energy transmission pipelines operating in the United States, but it may also have use in the protection of other underground facilities. Certain Common Ground Alliance (CGA) *Best Practices* and Pipelines and Informed Planning Alliance (PIPA) RPs may also enhance communications and coordination of construction parallel to existing pipelines. Readers are encouraged to become aware of and implement the respective practices where appropriate. Some of these practices are referenced in this document. This document contains practices in addition to those required or recommended by CGA or PIPA.

This RP is composed of a main body and annexes. The main body of this document contains the general recommendations. The annexes provide additional information and resources.

[1] Transmission pipeline systems can be classified as either "intrastate pipelines," located within one state's borders, or "interstate pipelines" crossing more than one state's borders.

Recommended Practice for Construction Parallel to Existing Underground Transmission Pipelines

1 Scope

Construction activities parallel to existing transmission pipelines, for any distance, are the focus of this recommended practice (RP). Activity of concern includes construction activity that could impact an existing facility, such as excavation or movement of equipment across the pipeline or within the easement that could affect the safe operation of the existing pipeline. This RP is intended as a resource to assist all parties to safely manage construction activities of new or modified facilities parallel to existing underground transmission pipelines.

Legislation and regulation related to excavation damage prevention varies by jurisdiction. For example, damage prevention regulations in Texas are different than in Louisiana. This RP shall not be construed as proposing deviation from any jurisdictional requirements. Likewise, nothing in this RP prevents the parties from agreeing to additional or more stringent measures, regardless of minimum regulatory expectations.

The primary emphasis of these guidelines is on the interaction between existing transmission pipeline operators and those planning to construct in a parallel fashion. These activities may involve many different parties. Contractors working on behalf of the constructing party, including environmental and survey professionals, design engineers, construction contractors, and operators of excavation and earth moving equipment, should engage in work practices that are in conformance with these guidelines, and apply vigilance in identifying unanticipated circumstances that may indicate a problem. This RP refers to all of these entities as the “constructing party.” These guidelines have been developed such that they can be incorporated into contract documents executed with contractors and subcontractors by whichever party is involved in or responsible for construction activities.

2 Normative References

No other document is identified as indispensable or required for the application of this standard.

3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Terms and Definitions

For the purposes of this document, the following definitions apply.

3.1.1
areas
A measured distance from the existing transmission pipeline.

3.1.1.1
active excavation area
An area where the edge of the construction activities (including, but not limited to, excavation) is within 25 ft of the centerline of existing pipeline facilities, unless site-specific conditions require additional clearance.

3.1.1.2
encroachment area [1]
The area where the impact of proposed construction activity is within 50 ft of the centerline of the existing facility, or within the existing pipeline facility’s right-of-way (ROW) or other easement, whichever is greater.

3.1.2
corridor
Strip of land were a proposed facility is to be located.

[1] The definition of “encroachment” applies only to this document and is not a legal definition.

3.1.2.1
survey corridor
The corridor width typically used for biological surveys or environmental impact statements, which should be wide enough to include the potential routes that the proposed project could reasonably be expected to take, including the potentially impacted surrounding areas by project reroutes or temporary construction activities.

NOTE The survey corridor width may vary from 100 ft to 1000 ft or more, based on the existence of wetlands, vegetative cover, topography, geology, pipe diameter, and required work area, among other factors.

3.1.2.2
due diligence corridor
The survey corridor (defined herein) plus 50 ft on each side, wider than the anticipated impacts of the parallel construction project regardless of the route ultimately chosen.

NOTE If blasting is anticipated, the due diligence corridor is usually a minimum of 300 ft from the blasting locations.

3.1.3
constructing party
Any project developer, designer, contractor, property owner, facility owner, or operator involved with the actual construction of the new or modified infrastructure, and their subcontractors.

3.1.4
construction activity
All activity associated with the construction of a facility, including but not limited to excavation, construction survey, site preparation (including removal of surface vegetation), install fencing, site access, staging of materials/equipment, and movement of vehicles/equipment.

NOTE The extent of construction activities is affected by many variables such as side-hill lays, cathodic protection, environmental or engineering conditions, size of pipe and operating equipment, and topography.

3.1.5
designated contact
The single point of contact identified to represent each company or party referenced in this RP (i.e. the existing transmission pipeline facility and each constructing party).

3.1.6
easement
An acquired privilege or right, such as a ROW, afforded a person or company to make limited use of another person or company's real property.

NOTE An easement may give a transmission pipeline operator a temporary or permanent right to use a ROW for the construction, operation, and maintenance of a pipeline and may also include temporary permits, licenses, responsibilities, and other agreements allowing the use of one’s property.

3.1.6.1
exclusive easement
An easement that grants rights exclusively to the individual and/or entity named and identified in the agreement to utilize part of another person's property, typically for a specific purpose.

NOTE 1 No one other than the easement holder, including the landowner, has the rights to utilize the easement and area contained therein with the consent of the easement holder.

NOTE 2 Since the easement is exclusive, the agreement typically defines the easement length and width and does specify acreages.

3.1.6.2
fixed easement
An easement that grants rights to an individual or entity to utilize another person's property for a specific purpose, and the written easement agreement expressly states the specific location as to where such easement will be located on the subject property.

NOTE 1 Such easement typically have a legal description included that identifies easement by way of a metes and bounds and/or centerline description.

NOTE 2 It may include a survey property plat that will identify easement length, width, and acreage contained therein.

3.1.6.3
floating/blanket easement
An easement that grants rights to an individual or entity to utilize another person's property for a specific purpose, but the written easement agreement does not expressly state a specific location as to where such easement will be located on the subject property, i.e. the agreement does not define the easement length and width and/or specify acreages contained therein.

NOTE A floating easement is similar to those easements that are more commonly known as "blanket" or "on over and across" easements as generally utilized in the 1920s to 1970s.

3.1.6.4
nonexclusive easement
An easement that grant rights, typically for a specific purpose, to an individual and/or entity names and identified in the agreement to utilize a part of another person's property.

NOTE 1 Anyone has the rights to utilize the easement area contained therein, inclusive of the landowner, as long as the same person does not unreasonably interfere with the rights of the original easement holder.

NOTE 2 The landowner may grant other easement agreements that can and do overlap the previously granted nonexclusive easement area.

3.1.7
easement agreement
The terms of easement are typically written in an easement agreement.

3.1.8
encroachment
For purposes of this document, an encroachment is an activity near or within the easement holder's ROW that may harm the easement holder's assets or rights if not evaluated, adjusted, or stopped.

3.1.9
encroachment agreement
An agreement to document the allowed terms for encroachment (either temporary or permanent) within the pipeline ROW.

3.1.10
excavation
Any operation using nonmechanical or mechanical equipment or explosives to move earth, rock, or other material below existing grade, including but not limited to, augering, blasting, boring, digging, ditching, dredging, drilling, driving-in, grading, plowing-in, pulling-in, ripping, scraping, trenching, and tunneling.

3.1.11
existing pipeline facility company representative
The person designated by the existing transmission pipeline facility's company to monitor and inspect when excavation equipment is operating in the active excavation area (see API 1166).

3.1.12
one-call center
The organization that receives notifications of proposed excavations, identifies possible conflicts with nearby underground facilities, processes the information, and notifies potentially affected facility owners/operators so that they can mark their buried facilities in advance of excavation.

3.1.13
one-call system
A system that enables an excavator to communicate through a one-call center to the operators of underground facilities, to provide notification of their intent to excavate by gathering information about the intended excavation and notifies potentially affected operators.

NOTE 1 The operators mark the location of their potentially affected facilities (such as pipelines) before the excavation begins, and the excavator uses these marks to avoid damage to existing buried facilities.

NOTE 2 All 50 states with the United States are covered by one-call systems, and most states have laws requiring the use of the one-call system at least 48 hours before beginning an excavation.

NOTE 3 This type of modification can be made by calling 8-1-1.

3.1.14
operator
All entities, including utilities, municipalities, authorities, political subdivisions, or other persons or entities that operate transmission pipelines within the scope of this RP.

3.1.15
parallel construction
Activities related to the development of new facilities alongside existing underground pipeline facilities.

NOTE The extent of parallel construction is established by the beginning and end of the encroachment area; this RP applies regardless of the length the existing and proposed facilities are in parallel.

3.1.16
pipeline right-of-way (ROW)
A ROW is a defined strip of contiguous properties on which easements have been acquired along which the pipeline operator has rights to construct, operate, and maintain a pipeline.

NOTE The operator may own a ROW outright, or an easement may be acquired for specific use of the ROW. ROW easements contain restrictions on certain activities within the ROW to protect the public, the landowner, and the pipeline.

3.1.17
subsurface utility engineering
SUE
An engineering process for accurately identifying the quality of underground utility information needed for excavation plans and for acquiring and managing that level of information during the development of a project as described in ASCE 38-02, *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*, 2002.

3.1.18
subsurface utility engineering quality levels
A set of expectations for accuracy of information concerning the location of buried facilities, known as “SUE Level” A, B, C, or D. Although the standard is more detailed and comprehensive, the following is a brief summary of the quality levels defined therein:

— D: utility records research and interviews with knowledgeable utility personnel;

— C: surface survey and identifying and recording aboveground features of subsurface utilities, such as manholes, valves, and hydrants;

— B: application of “surface geophysical methods,” such as EM-based locating instruments, GPR, radar tomography, metal detectors, and optical instruments, to gather and record approximate horizontal (and, in some cases, vertical) positional data;

— A: physical exposure via “soft-digging” (vacuum excavation or hand-digging), providing precise horizontal and vertical positional data.

3.1.19
zone
Area immediate adjacent to the existing facility.

NOTE The term “zone” is used to comport with existing damage prevention regulations in the various states, although various states may have their own definition of excavation tolerance zone that differs from the one below.

3.1.19.1
excavation tolerance zone
An area within 2 ft (24 in.) of the edge of the existing facilities, or the distance mandated by state law where applicable, whichever is greater.

3.2 Acronyms and Abbreviations

CGA	Common Ground Alliance
PIs	points of inflection
ROW	right-of-way
SUE	subsurface utility engineering

4 Parallel Construction Excavation Damage Prevention Guidelines

This RP provides guidance for all five stages of new construction activity:

1) preliminary design (when the route of the proposed facility is selected);

2) final design (when the route and engineering details of the proposed facility are finalized);

3) preconstruction (action taken immediately prior to beginning construction);

4) construction (actions taken during construction, through the completion of the new facility);

5) post-construction (actions taken after the completion of construction of the new facility).

Actions to be taken during each of these stages are described in more detail below. Communications and coordination between the existing pipeline operator and the constructing party take place during each of these stages and should meet or exceed the minimum expectations described below.

5 Preliminary Design

During preliminary design, the initial route of the proposed facility is selected based on a set of initial surveys. A “corridor survey” is typically conducted to determine potential environmental impacts and other issues that may arise during the construction of the proposed facilities. This survey assists with the selection of a route for the proposed facilities. The width of the survey corridor depends upon a multitude of factors and may range from 100 ft to 1000 ft in width, or more. A typical proposed facility, and associated survey corridor, is depicted in Figure 1.

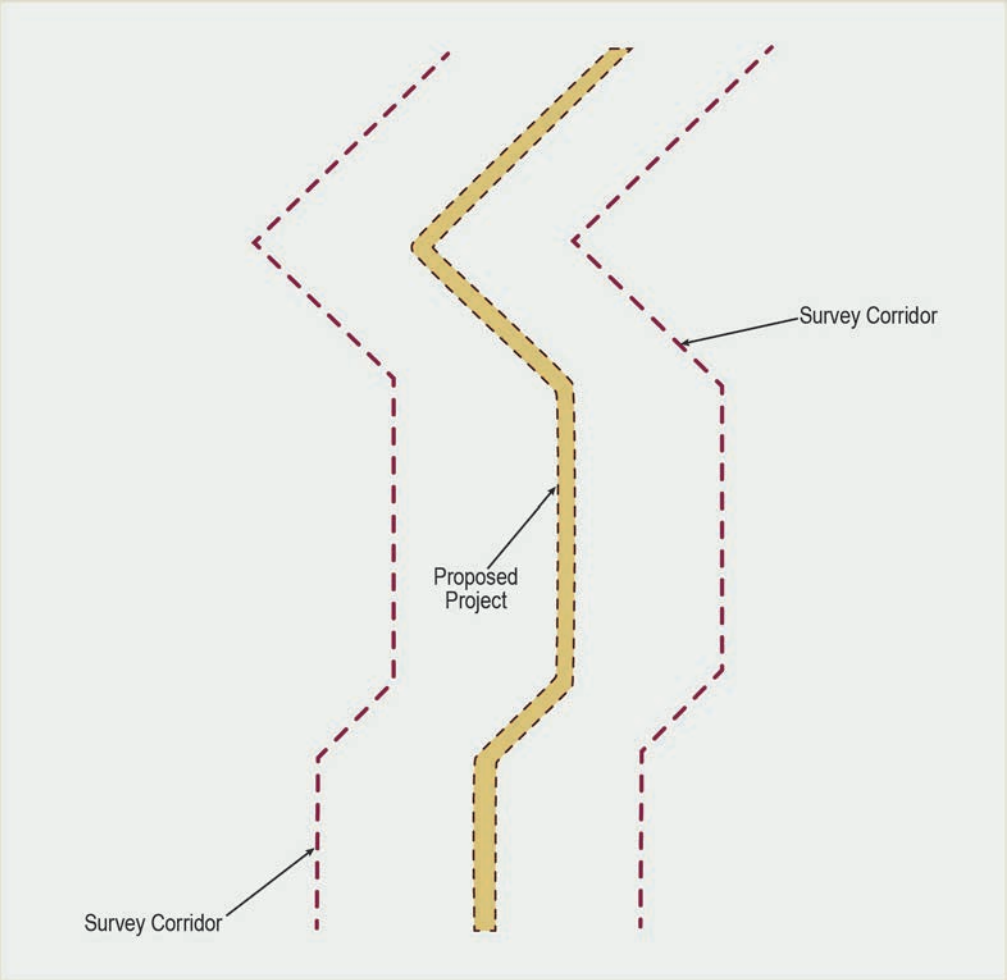

Figure 1—Proposed Facility and Associated Survey Corridor

This RP defines a due diligence corridor that extends 50 ft beyond the normal survey width, as shown in Figure 2, because potential impacts to existing underground facilities can expand beyond the boundaries of the traditional survey corridor. The survey should not focus only on environmental issues but should also consider potential impacts on adjacent facilities such as transmission pipelines. This should ensure that all potentially affected existing facilities have been identified and can be protected during the construction project.

During the corridor survey (and prior to final design), the constructing party should learn of the existence and acquire additional information regarding existing pipelines and other facilities within the due diligence corridor [2]. The constructing party shall contact the operators of existing facilities and the property owner as early in the routing process as possible (prior to finalizing routing and design), to arrange a planning and design review meeting [3] (see Annex A). The intent of the planning and design review meeting is for the parties to exchange key information about their existing and proposed facilities, to work through and agree upon respective work processes and procedures, to establish clear lines of communication, and to discuss any other details needed to assure that the proposed facility may be constructed safely and efficiently, while simultaneously protecting the existing facility from damage.

2 By using the one-call system where a design ticket is available by calling 811 (see CGA 2-2 and 3-15).
3 See CGA *Best Practices*, Section 2 for reference.

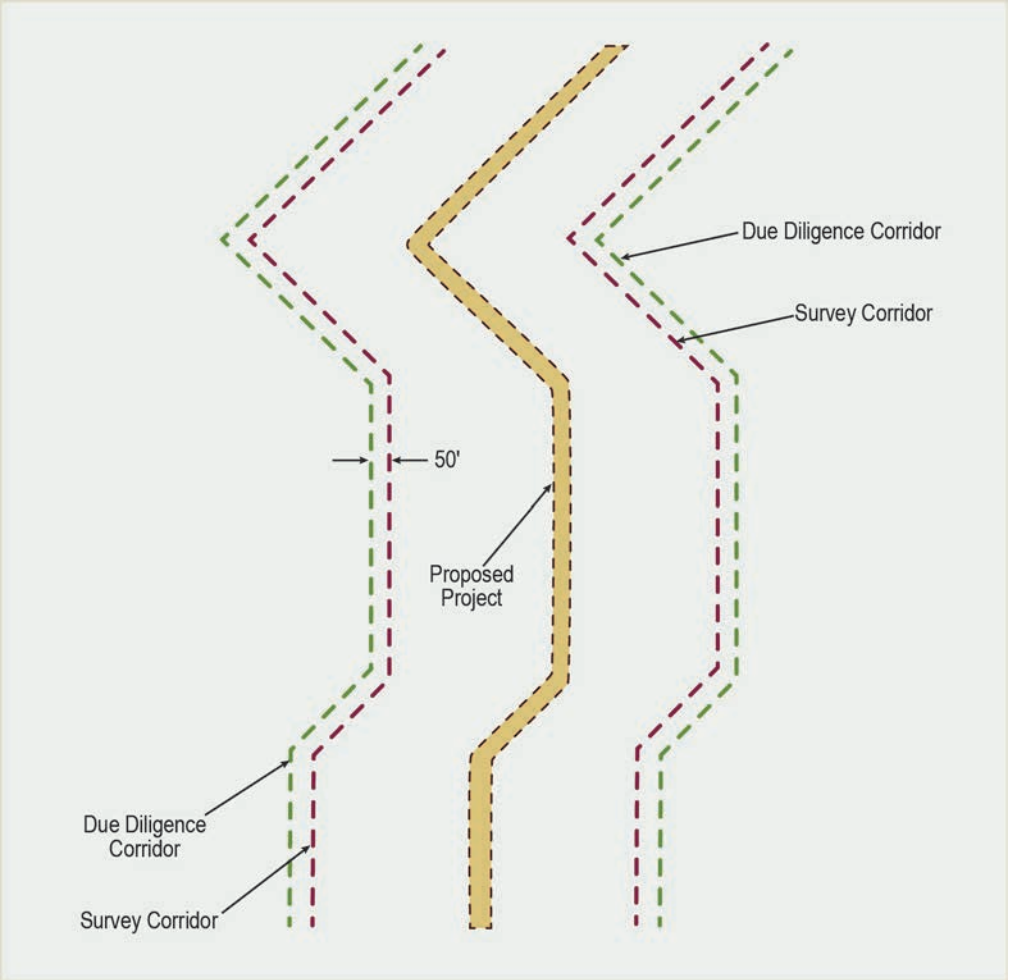

Figure 2—Proposed Facility Along with Associated Survey Corridor and Due Diligence Corridor

At this stage, for each existing utility, the constructing party should determine its:

1) operator [possible sources of this information include the one-call center and provide the due diligence corridor information for a design ticket, where allowed, the National Pipeline Mapping System (NPMS) https://www.npms.phmsa.dot.gov/PublicViewer/, or on pipeline markers in the pipeline ROW];

2) location, to at least subsurface utility engineering (SUE)[4] Quality Level C (using available utility records research and interviews with knowledgeable utility personnel, and using surface surveys and identifying and recording aboveground features of subsurface utilities, such as manholes, valves, and hydrants) as described in CGA Practice 2-14;

3) requirements and constraints of the existing facility easements;

4) type, product [pipeline (water, petroleum, or gas), electric power line, sewer, water, telecommunication, or cable], and potential hazards;

[4] ASCE 38-02, *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*, 2002.

5) status (active or abandoned) [5];

6) size (diameter);

7) materials of construction (steel, plastic, etc.);

8) anticipated future construction plans and site usage.

The constructing party should incorporate as much information about the existing facilities as may be necessary. A typical preexisting pipeline, affected by the proposed facility, is depicted in Figure 3. Note that information about the existing facility has been obtained outside as well as within the due diligence corridor.

The constructing party should review this information with the existing facility operator(s) to evaluate design options and construction requirements in the encroachment area and active excavation areas. This review should cover not only the proposed facility but also access roads and equipment staging areas, as shown in Figure 4. Topography, soil stability, and benching requirements should also be considered. At the end of this review, the constructing party should be able to select a final design option that minimizes potential risks to the existing facilities. The existing facility operator should utilize this final design to determine potential risks to their facility and implement the appropriate mitigation.

6 Final Design

During the final design phase, the route of the proposed facility should be finalized and the extent of anticipated excavation or other physical activities should be determined. This enables the constructing party to identify with confidence the potentially impacted existing facilities. The constructing party (or others as agreed with the operator) shall conduct subsurface utility engineering (SUE) [6] Quality Level C surveys [7]. The constructing party should supplement with indirect locating (SUE Level B) in the encroachment area, and the proposed facility design should be updated to incorporate this more precise information about the location of existing facilities. This information should be reviewed with the existing facility operator(s) to identify planned construction areas that are in the encroachment area and active excavation areas. This review should cover not only the proposed facility but also access roads, as shown in Figure 4.

The constructing party should provide the existing operator with details about the physical extent of anticipated construction activities, as depicted in the diagram below within the survey corridor, the type of excavation equipment to be used, duration of the excavation project, dynamic loading over the pipeline, and other technical information in order for the pipeline operator to perform an engineering evaluation of the effects on the pipeline. Construction activities normally fall within the survey corridor, as shown in Figure 5.

Engineering issues for each aspect of the route should be addressed prior to the design being considered final, including all appropriate requirements to protect the existing facilities. The constructing party should obtain the existing transmission pipeline facility operator's requirements for design, construction, excavation, restoration, and recordation in the operator's ROW and incorporate that detailed information into their final plan documents. For example, the existing pipeline operator may require additional measures be taken to protect the pipeline for the following types of issues.

— *Loading*—Additional dirt cover and/or mats, timber bridges, or other protective materials deemed necessary by the transmission pipeline operator may be placed over the pipeline for the duration of any loading.

— *Vibration*—Vibration equipment is usually not permitted within the transmission pipeline ROW.

[5] Abandoned facilities may pose special challenges, because they may not be recorded in the one-call system and may not be located by prior operators. They also may be confused for other, active systems.

[6] ASCE 38-02, *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*, 2002.

[7] Making use of records tied to aboveground facilities.

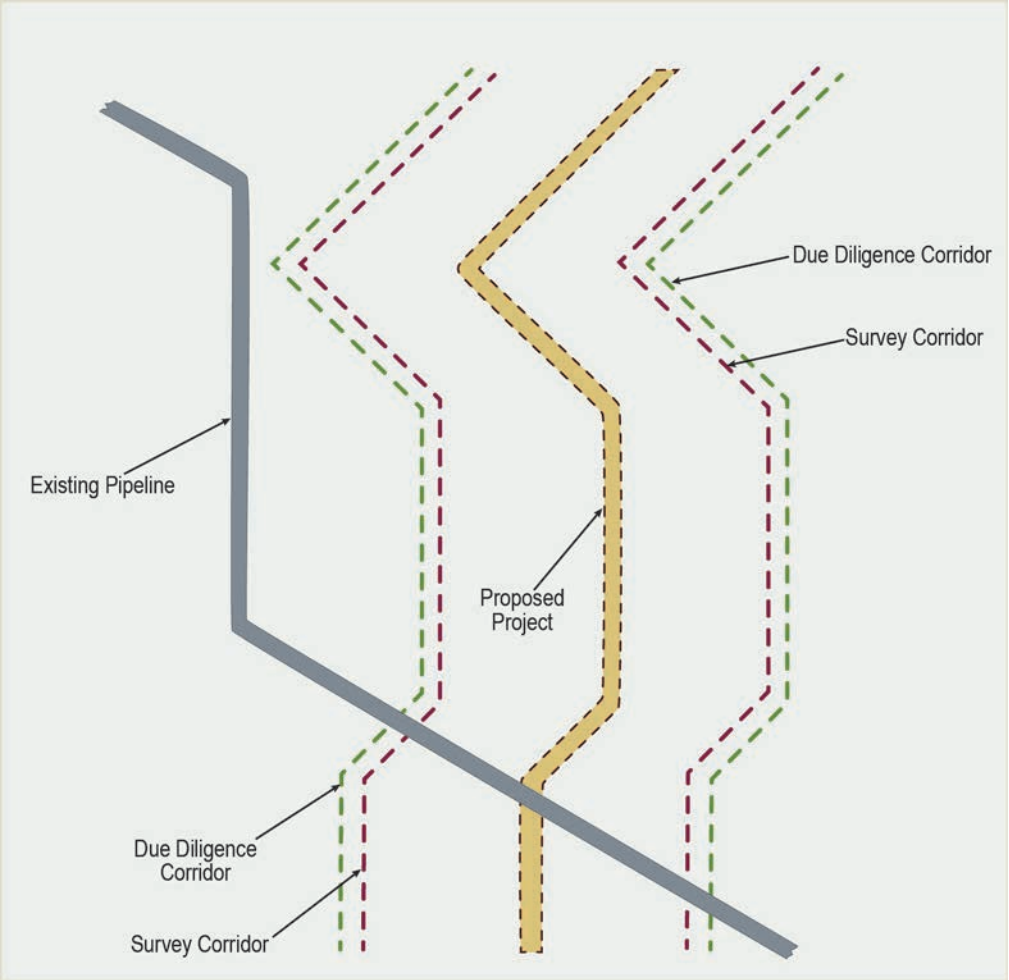

Figure 3—A Preexisting Pipeline Affected by the Proposed Facility

— *Blasting*—Blasting is of particular importance to underground pipelines, and the constructing party shall identify areas where blasting will be used along the route within 300 ft of the existing facilities. Blasting has the potential to affect soil stability or lead to movement or settling of the ground surrounding the transmission pipeline. The party performing the blasting should contact the existing pipeline operator to determine if the blasting could affect the existing pipeline. A blasting plan should be developed as required by appropriate regulations, industry guidelines, and standards. The blasting plan must be reviewed and agreed to by all affected parties. Appropriate local government agencies should be engaged in the permitting or licensing process for blasting, well in advance of the actual blasting operation, when transmission lines may be impacted. Transmission pipeline operators should be notified of the planned blasting operation as part of the permitting or licensing process by local government.

— *Directional Drills*—Buried pipelines are subject to potential damage due to misaligned horizontal directional drills. The constructing party should work with the facility operator to plan preventative measures for conflict with existing facilities or assets, such as continuous monitoring and appropriate deviation tolerances for drilling alignment and profile, and potential exposure of underground assets at designated excavation tolerance zones.

— *Operational Conditions That May Impact Adjacent Pipelines*—Sufficient separation distance should be ensured to minimize impacts from service conditions, e.g. pipelines in hot oil service.

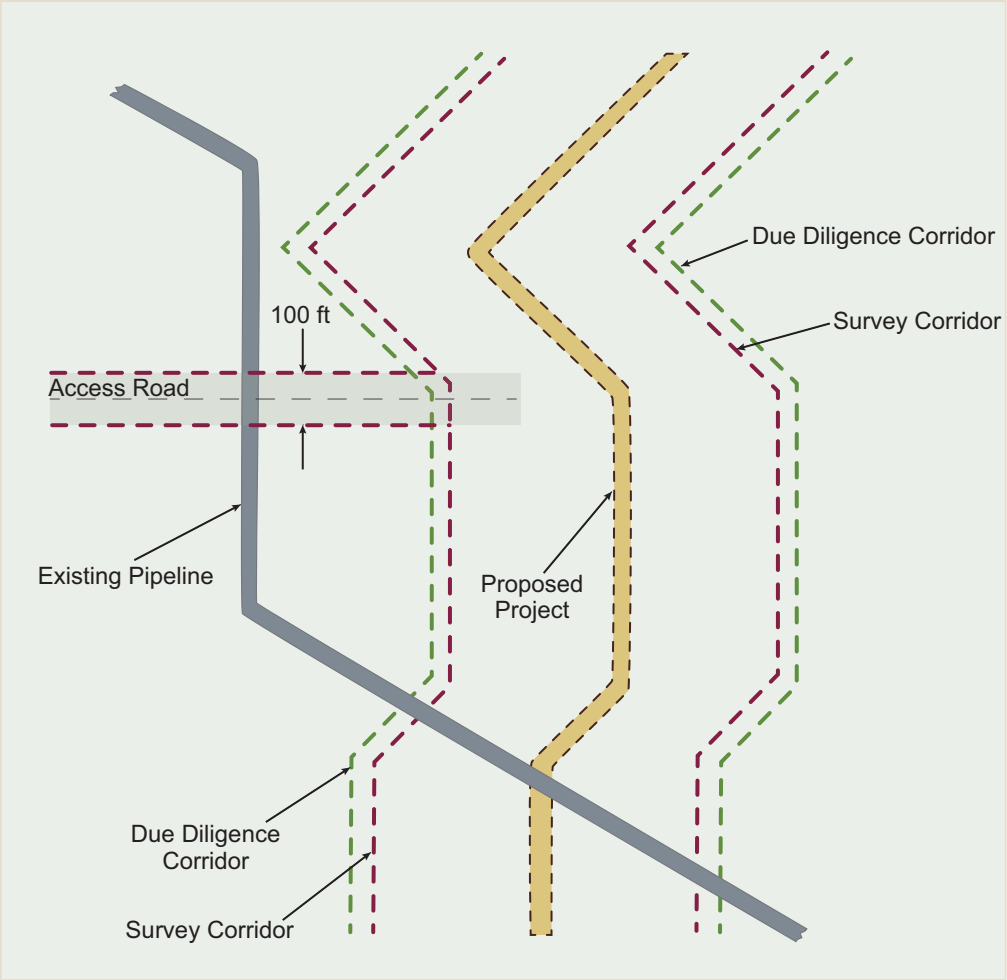

Figure 4—An Access Road in the Vicinity of the Existing and Proposed Pipeline

For proposed construction within the encroachment area, the constructing party should enter into an agreement with the existing facility operator in the form of an encroachment agreement, if requested by the existing facility operator. The constructing party identifies and proposes plans for all crossings (both temporary and permanent) of the existing pipeline(s), and such plans are agreed upon by both parties. Each crossing should be addressed in an encroachment agreement. Changes to crossing plans and locations should require modification of the encroachment agreement. The constructing party should incorporate the relevant terms of the encroachment agreement into all supporting prime and subcontract agreements.

The parties specifically address protection of existing facilities, including cathodic protection facilities. Coordination between parties include the existing and proposed cathodic protection, location of concentrated ground beds, distributed anodes, test stations, rectifiers, a process for analyzing, remediating, and a timeframe for taking prompt remedial action, potential interference currents, electrical isolation, AC mitigation, bonding, etc. The parties may also discuss sharing the timing and the results of external corrosion control monitoring and integrity assessments.

The parties should also discuss potential safety risks resulting from a pipeline strike and/or loss of containment. Discussion between the parties should include response plans and muster points.

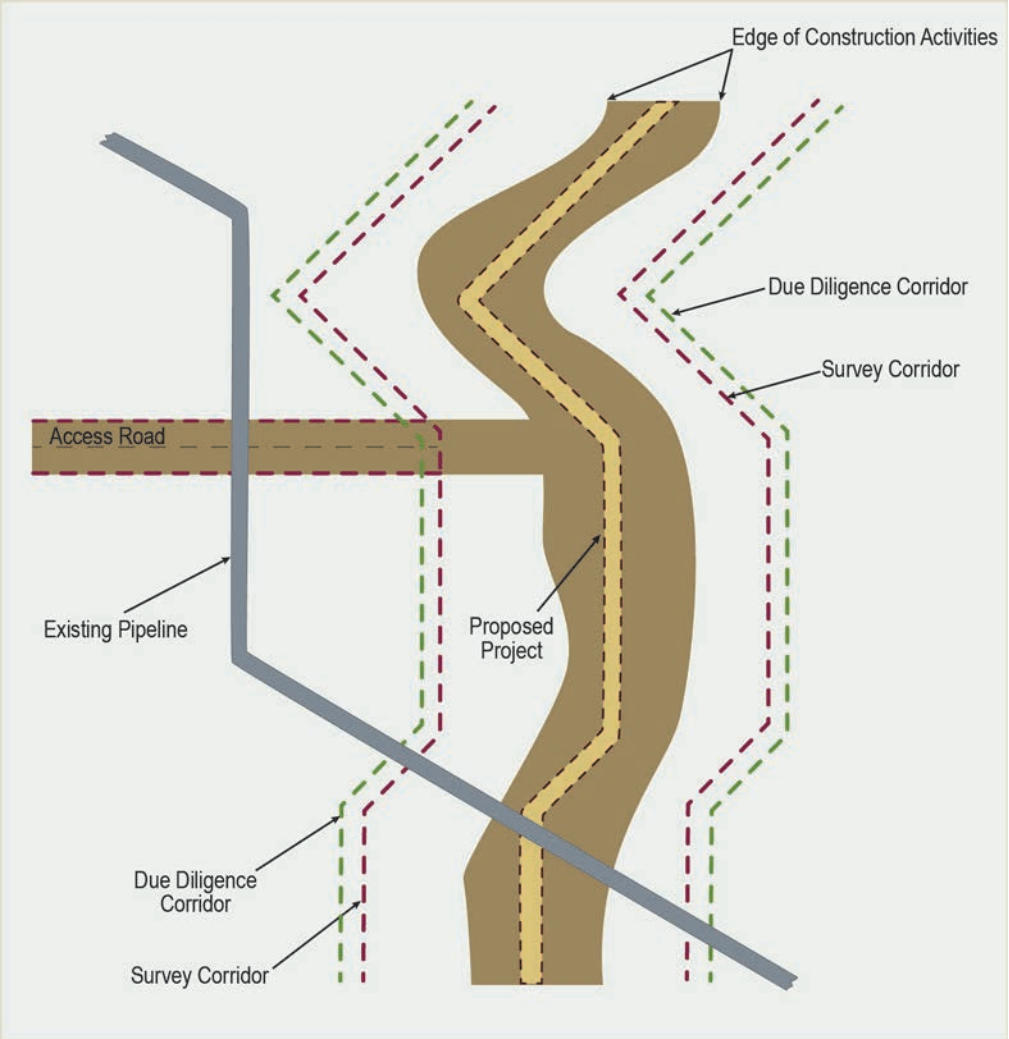

Figure 5—Edge of Construction Activities for the Proposed Pipeline

7 Preconstruction Activities

The constructing party contacts the existing facility operator at least 30 days prior to commencement of construction activities in the encroachment area [8].

By this stage any discrepancies between existing facility records and the SUE QL B locations should have been resolved within the encroachment areas and properly incorporated into the design documents and plans. Abandoned facilities that are known to exist in the area should also be clearly identified and marked. The procedures and responsibilities for identification and marking of all underground facilities, areas, corridors, and zones should be clearly understood by all parties.

Prior to the beginning of construction, the constructing party places a one-call notice and the operator or their delegate will cause [9] its facilities to be located and marked using appropriate line location methods that ensures the

[8] Maintenance activities, such as anomaly digs, are not included in the scope of this document, and they do not fall under the 30 day advance notification requirement.

[9] The phrase, “will cause” is used to indicate that the existing operator may elect to locate and mark the line, or through agreement allow the new pipeline or it’s agent to locate and mark the line.

accurate placement of the markers in the encroachment area at a maximum spacing not to exceed 200-ft intervals or line-of-sight, whichever is closer, and all points of inflection (PIs), see Figure 6. This temporary staking may occur in conjunction with construction staking. This temporary staking may be in addition to whatever other pipeline marking may be required by local damage prevention/one-call system requirements. The constructing and existing facility operators should reconcile any discrepancies between markings and design information.

8 Construction Activities

8.1 Construction in All Locations

Construction parallel to existing facilities may occur over a period of many months and many miles. This type of project may require the existing facility operator to allocate additional resources to oversee activities for part or all of the project length or duration. A single notification or conversation for this type of project is not sufficient. The constructing party should use the 811 system as required by law but also communicate regularly and update the existing facility operators concerning the status of the project and construction plans. Depending on the nature of the activity, it could be appropriate to have the existing facilities operator attend daily construction progress meetings.

Prior to any excavation, the constructing party should make all required notifications to the one-call center per local regulations. Affected facility operators mark their facilities per regulations and their established procedures, and the existing facility designated contact notifies the constructing party designated contact that there is no conflict or that the line is to be marked (referred to as “positive response) [10]. (Consistent with CGA, Locating and Marking, Practice 4-9.) The constructing party shall validate that all positive responses have been received and that all affected underground facilities have been located and marked.

The existing facility’s representative has the authority to halt dangerous excavation activities that may damage their pipelines and potentially cause an immediate threat to life or property at any time he/she believes the safety of personnel or existing facilities are endangered [11]. Work should not proceed until the existing facility operator agrees that the issues have been resolved. The constructing party may be responsible for all damages, repairs, and rehabilitation caused by its construction activities, as well as restoration of disturbed portions of the existing facility ROW, to the satisfaction of all parties, including the existing facility operator and any authorizing agencies.

Notwithstanding any other one-call system notification requirements, the constructing party should notify the existing facility operator’s designated contact not less than 24 hours prior to beginning blasting at each location according to the agreed upon plan.

NOTE Changes to the agreed upon blasting plan must be submitted for approval. During blasting activities, the transmission pipeline operator should evaluate blasting survey data and continually evaluate any movement of the pipeline to ensure that acceptable stress levels in the pipeline are not exceeded. See API 1117, *Recommended Practice for Movement in In-service Pipelines* for more information on monitoring the movement of in-service pipelines.

8.2 Construction in the Encroachment Area

Prior to construction activities within an encroachment area (see Figure 6), the existing and new facility operators should conduct an on-site meeting at a mutually agreed upon time to determine actions or activities required to ensure protection of the pipeline and to ensure that all encroachment agreement terms and other existing facility company policies are being satisfied, prior to the start of activity.

The existing facility operator will, or by delegation, cause its facilities to have marks placed at a maximum spacing not exceeding 50 ft, including all PIs. This can be adjusted at the discretion and agreement of both parties. The marks are

[10] A one-call request at this stage results in a design ticket in some states. In some states this requires only an exchange of information. It is the intent of this agreement that existing lines be marked if they are within the due diligence corridor.

[11] PIPA RP BL16: Practice Statement—Transmission pipeline operators should have procedures and established contacts with local enforcement personnel in order to act appropriately to halt dangerous excavation activities that may damage their pipelines and potentially cause an immediate threat to life or property.

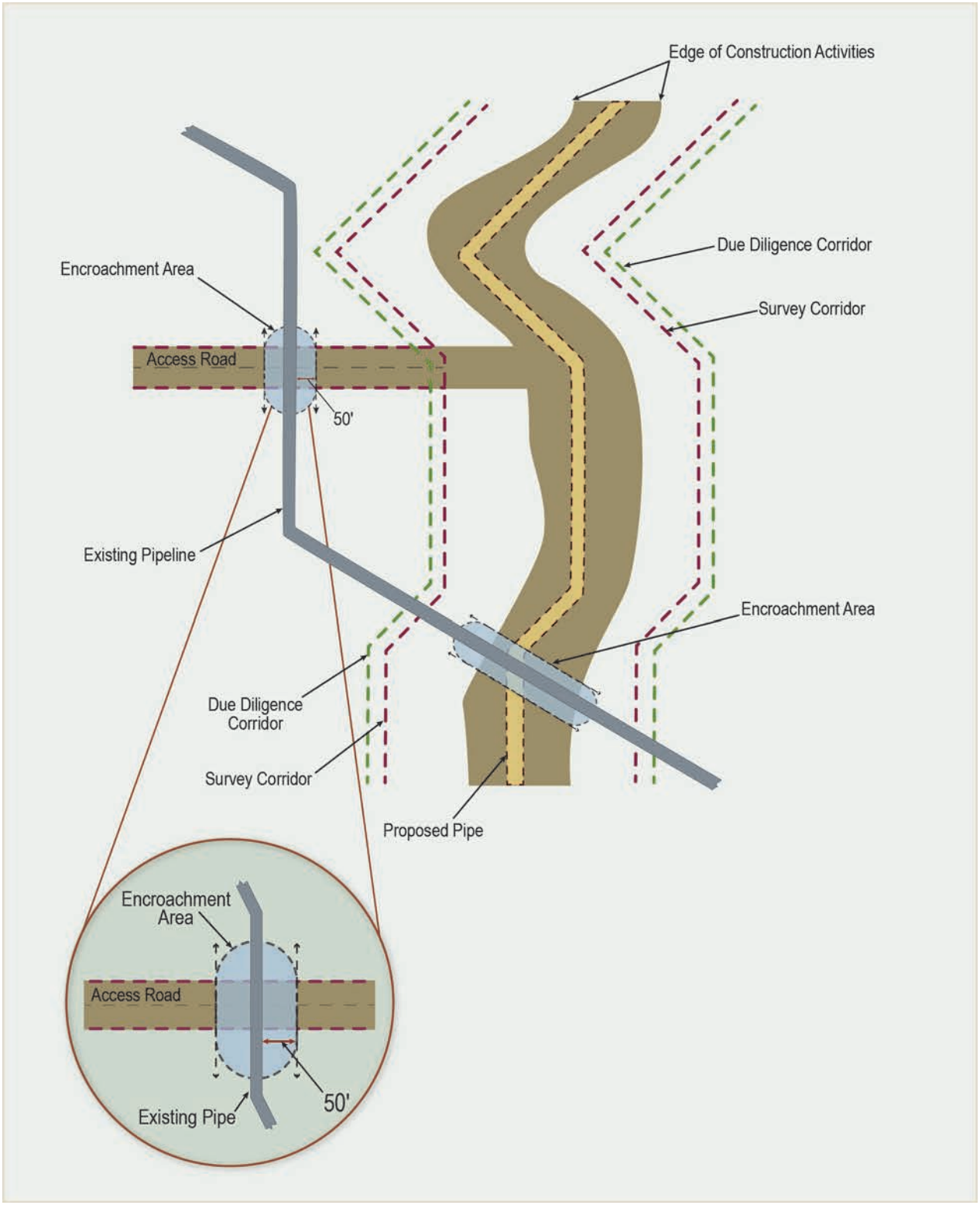

Figure 6—Encroachment Areas of the Existing Pipeline

maintained for the duration of work planned in the encroachment area. The constructing party shall respect the marks, confirm them during excavation, and bring any observed discrepancies to the attention of the operator.

The constructing party provides weekly updates, or as deemed necessary by the existing pipeline facility operator, during the construction process until such time that the new pipeline's activities are no longer in the encroachment area. The end of the process is specified as the completion of final restoration and any associated follow-up.

If at any time during the project, the existing facility operator learns that excavation is occurring in an encroachment area without the existing facility operator's knowledge, the designated contact shall immediately inform the constructing party of the unauthorized excavation. The constructing party shall cease excavation or construction until approved by the existing facility designated contact. An incident review should be undertaken to determine the cause of the unauthorized excavation and corrective actions should be identified and implemented.

8.3 Construction in the Active Excavation Area

The active excavation area and excavation tolerance zones are depicted in Figure 7.

The following requirements apply in the active excavation area, in addition to the requirements in the encroachment area.

— The constructing party shall contact the existing facility designated contact 24 hours prior to beginning excavation in any active excavation area. Excavation shall not commence until the existing facility designated contact has been notified and has an excavation monitor or observer on site, or authorizes the constructing party in writing to commence excavation without an observer or monitor [12]. Any changes to the excavation design or work plan in the active excavation area must be explicitly approved by the existing facility operator's on-site representative (consistent with API 1166).

— The constructing party shall not excavate in the active excavation area unless the existing pipeline has been marked by the existing facility operator in accordance with the prior agreement. The constructing party shall respect the marks, confirm them during excavation, and bring any observed discrepancies to the attention of the operator.

— The constructing party ensures that excavation equipment with teeth, such as on a backhoe bucket, is barred and side cutters removed when working in an active excavation area, except where a site-specific plan allowing their use has been approved by the existing facility operator.

— Visual verification is by "soft digging" (vacuum excavation or hand-digging), providing precise horizontal and vertical positional data.

8.4 Construction in the Excavation Tolerance Zone

All requirements for the active excavation area also apply to the excavation tolerance zone, plus the following.

— The constructing party ensures that only agreed to techniques are used within the excavation tolerance zone and for excavations that may expose the existing facility.

— The existing facility operator must have a representative on site for all excavation activity (and construction activities, as agreed) in the excavation tolerance zone unless a written agreement states otherwise.

— Any contact with the pipeline requires that work cease immediately and the operator's designated contact be contacted. In addition, if a product release occurs, the constructing party must call 911 and operator pipeline control and activate the emergency response plan. In general, all parties should evacuate the area and ensure others do not enter the area. Do not start equipment or vehicles, use electronic equipment, or cause any spark in the release area.

[12] Many existing facility operators require an observer on site during any ground disturbance in the active excavation area even if the activities follow the plans established in the design review and subsequent meetings.

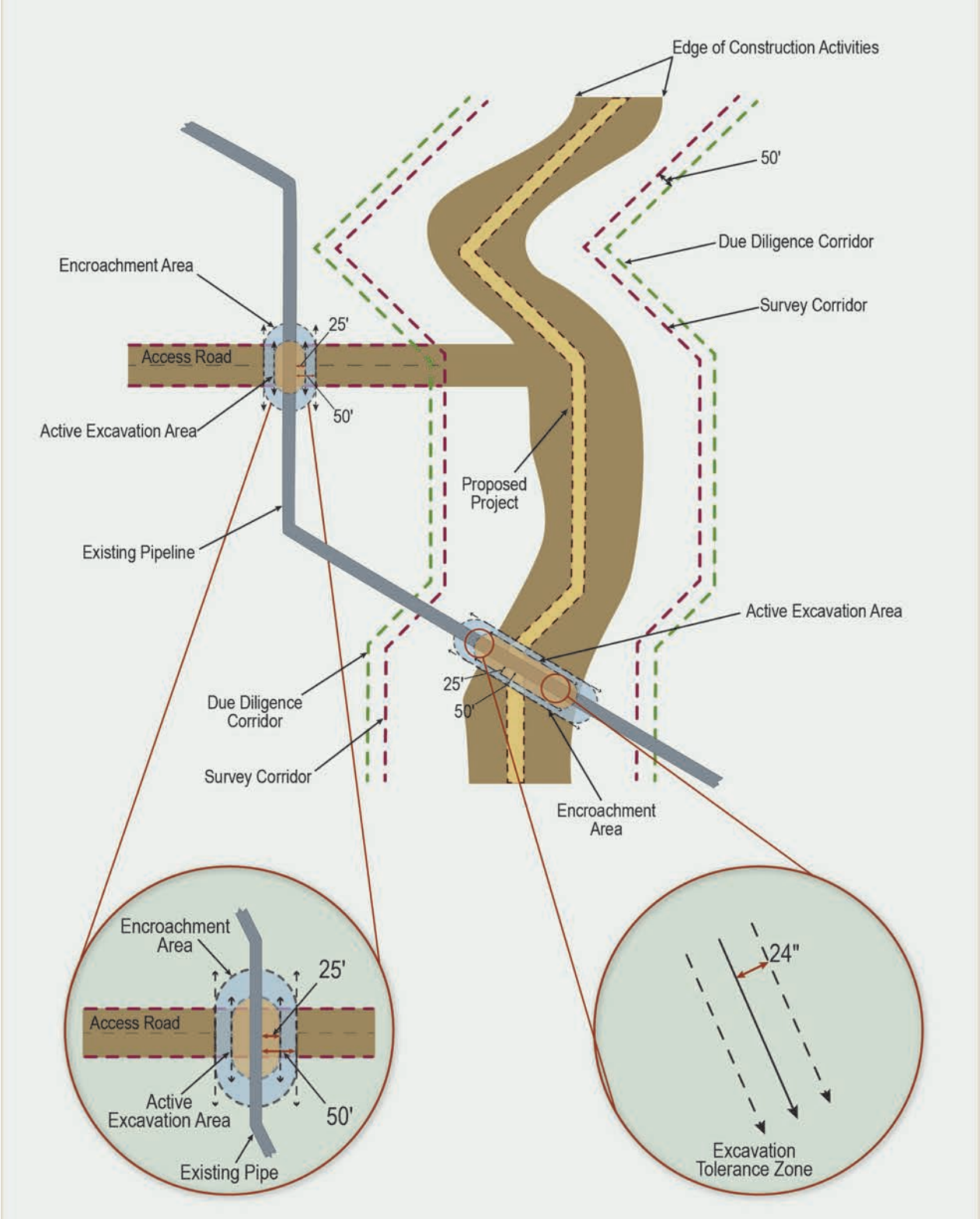

Figure 7—Active Excavation Area and the Excavation Tolerance Zones of an Existing Pipeline

9 Post-construction Activities

The parties affected by this RP and any related agreements should consider holding a post-construction review meeting before final demobilization to identify problems and issues during the project, review the effectiveness of the guidelines, procedures, and agreements, and define remedies or corrective actions. The Post-construction Review and Lessons Learned Meeting should include input from all the parties affected by this RP and any related agreements. This should, at a minimum, include the constructing party, all existing facility operators, and the new facility operator. The constructing party documents the meeting and distribute to all affected parties (refer to Annex B).

As-built center line survey data for the new facility are provided to the existing facility operator to assist them in identifying the location of the new facility during future maintenance and expansion activities. The constructing party should record the facilities and easements on the plat and other recorded land records. Any deviations from the encroachment agreements during construction should be recorded with updates to the relevant documents. They should also identify the facility operators (PIPA RP ND 10).

Annex A
(informative)

Planning and Design Review Meeting(s) Agenda

The Planning and Design Review meeting normally includes several representatives from the proposed facility team and the existing facility operator. This meeting provides an important opportunity for the proposed and the existing facility operators to share important information concerning the following topics. Many of these issues require further discussion. The Planning and Design Review Meeting is the beginning of this coordination process, not its end.

1) Who will be the single point of contact (referred to as “designated contact”) for each organization?

2) What are the potential hazards for this project? Who are the safety contacts for each organization?

3) Who are the emergency response contacts for each organization? How will each organization’s emergency response plans be impacted? Will the existing facility operators be required to update their emergency plan? Will the new facility operator reach out to the emergency management to explain the potential impacts of the new facility, and their contacts? What are the response capabilities for each organization, and how will a response be coordinated in the event of an emergency?

4) How will public awareness notifications be coordinated? How will the stakeholders along the pipeline be notified of these new activities?

5) What types of easements are existing or proposed (e.g. exclusive/nonexclusive; fixed/floating, blanket)?

6) What is the proposed route for the new facilities?

7) What information can be shared about the existing facilities, what is its accuracy, and how will it be validated?

8) Where are the parallel segment begin-end points, and how can they be accurately determined (such as alignment drawings and GPS coordinates)?

9) What separation distances and other design constraints are required adjacent to the existing facility?

10) Where will construction occur in close proximity to the existing facility, including crossings and directional drills?

11) What are the existing facility’s encroachment and crossing agreement requirements and other requirements for hand excavation or other excavation techniques around underground facilities?

12) Where will existing and proposed aboveground and belowground appurtenances be located?

13) What construction and excavation methods and practices are proposed? What type of equipment excavation equipment will be used? Will there be any blasting? Will there be directional drills? Will there be static loads, such as storage of materials? What type of dynamic loading could occur over the pipeline, including heavy equipment travel and vibration equipment? What other technical information might be required for the pipeline operator to perform an engineering evaluation of the effects of the new facility and its construction on the pipeline (from PIPA BL 15)?

14) Are there any unique landscape, terrain, or environmental situations in this area?

15) What are the existing facilities requirements for operations, maintenance, and integrity management? Are there any future planned repairs, maintenance, or upgrades to the existing pipeline that need to be considered? Will the proposed facility impact existing maintenance or integrity management activities?

16) What is the proposed schedule for construction, including ground disturbance timing?

17) How will maintenance and operations be coordinated? Will there be opportunities to coordinate leak surveys, conduct surveillance and ROW patrols, determine HCAs, clear ROWs, manage encroachments, etc.?

18) Who is responsible for submitting one-call requests?

Annex B
(informative)

Post-construction Review and Lessons Learned Meeting Agenda

Purpose:

— identify problems and issues during the project;

— review the effectiveness of the guidelines, procedures, and agreements;

— define remedies or corrective actions.

Attendees—The parties affected by this RP and any related agreements should attend or provide input for this meeting, including at a minimum:

— the constructing party;

— all existing facility operators;

— the new facility operator.

Issues to be discussed during this meeting include the following.

1) Did communications between all parties occur effectively and as planned?

2) Did all markings occur effectively and as planned? Were there any inaccurate markings?

3) Did the existing facility operator ever have to stop the construction work? Were there any near misses or actual damage to existing facilities? Were these properly investigated, and corrective action taken?

4) Were there any changes between final design and construction? Were these changes managed appropriately? Have they been properly documented by all parties?

5) Have all encroachments been properly documented, with updates as needed?

6) How else could this process be improved to be both safer and more efficient?

The participants should note any suggested improvements to address these issues, and identify the responsible party.

Any suggested improvements to this RP can be forwarded to API as described in the Foreword.

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