



SOUTHERN STAR

CENTRAL GAS PIPELINE

Land Use Development and Right-of-Way Handbook



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P. O. Box 20010
4700 State Route 56
Owensboro, Kentucky 42301

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Southern Star Central Gas Pipeline, Inc.

I. INTRODUCTION

To all handbook users:

This handbook outlines the standards and procedures to be followed when planning land use development on or near Southern Star Central Gas Pipeline (“Southern Star”) rights-of-way. The handbook is intended for use by city and county planners, engineers, developers, land surveyors, and anyone involved in the initial stages of land development. If Southern Star is included in the initial planning stages, project delays can be avoided and safe development practices in the vicinity of pipelines can be attained.

The handbook is designed to make you aware of the most common standards and procedures Southern Star typically requires to protect its facilities in areas of changing land use. However, each proposed development or activity requires a case-specific evaluation by a qualified Southern Star Representative.

Please become familiar with the contents of this handbook. If you have further questions or need assistance, please contact your local Southern Star office listed below.

If You Need To Contact Us For Business Reasons, Call the Southern Star Office in Your Area			
Colorado		Missouri	
Colby, KS	785-462-4900	Joplin	417-626-3400
Rawlins, WY	307-328-8400	Kansas City	913-422-6300
Kansas		Ottawa	785-830-3800
Alva	580-430-2000	Tonganoxie	913-369-1300
Colby	785-462-4900	Nebraska	
Hesston	620-327-7700	Lyons	620-257-7800
Hugoton	620-657-4120	Tonganoxie	913-369-1300
Independence	620-332-2900	Oklahoma	
Joplin	417-626-3400	Alva	580-430-2000
Kansas City	913-422-6300	Blackwell	580-363-7300
Lyons	620-257-7800	Edmond	405-844-5600
Ottawa	785-229-3800	Independence	620-332-2900
Tonganoxie	913-845-5000	Joplin	417-626-3400
Welda	785-448-4800	Texas	
Wichita	316-529-6600		
Wyoming		Alva, OK	580-430-2000
Rawlins	307-328-8400		

II. SAFETY AND RELIABILITY

Safety

Southern Star is committed to ensuring the safe operation of its natural gas pipeline systems. According to the Federal Department of Transportation, the transmission of natural gas through interstate pipelines is the safest means of transportation in the United States. The industry enjoys an excellent safety and reliability record. However, there are instances of pipeline failure. Damage by outside force from a third-party is the leading cause of pipeline failures.

Reliability

Southern Star is committed to reliable delivery of these products and services. Communities, factories, hospitals, power plants, businesses, and residences depend on our products and services for energy to generate heat and electricity.

Southern Star must and will use every resource to ensure the safety and reliability of its facilities. Southern Star does not encourage nor support any development or encroachment that interferes with the operation or maintenance of its pipelines. In those cases where development or encroachment cannot be avoided, we need your help to ensure the safety and reliability of our facilities. As a responsible developer, contractor, or other party engaged in any ground disturbing activity near pipeline facilities, we urge you to read and understand the guidelines presented in this publication.

III. PIPELINE FACILITIES OVERVIEW

Southern Star owns and operates approximately 5,800-miles of a mid-continent pipeline network. The transmission operation includes high-pressure steel pipeline ranging in diameter from 2" to 36", storage facilities, compressor stations, meter stations, cathodic protection equipment, valve settings, and other facilities.



Map: Southern Star Central Gas Pipeline

In accordance with federal regulations, Southern Star identifies the location of its pipeline facilities by installing permanent pipeline markers, like the ones shown on the following pages, near road, rail, water, fence, and underground utility crossings. Pipeline markers may also be strategically placed in extensive areas of open ground to delineate the location of the pipeline.

The maintenance of pipeline markers and an open clear right-of-way at all times is critical to public safety. Construction or development near transmission pipelines increases the probability of excavation damage. It is the responsibility of Southern Star, individual landowners, and contractors to ensure that all temporary and permanent pipeline markers installed by Southern Star are protected and maintained at all times, especially during construction. Removing or defacing a pipeline marker is a federal criminal offense.



Typical marker sign



Example of marker

IV. SSCGP RIGHT-OF-WAY AGREEMENTS

A. Description

Most of Southern Star's existing pipeline easements and rights were acquired through right-of-way agreements granting Southern Star the right to construct, operate, maintain, repair, modify, alter, protect, change the size of, remove, replace and access a pipeline or pipelines within its easement. The easement and rights are conveyed with the land in successive purchases and generally allows the current landowner the right to use and enjoy the property as long as that use does not interfere or conflict with Southern Star's rights.

B. Width

When the original pipeline routes were selected, agricultural, forested or rural environments were deliberately chosen whenever possible. In some cases, the original right-of-way agreement did not specify a defined right-of-way width or location on the lands covered by the Agreement, and therefore included large sections of land. In this case, Southern Star is given such rights as are necessary for the reasonable and proper enjoyment of the easement that is granted which then means that Southern Star's blanket easement is generally defined as being 66' in width or 33' on each side from the centerline of the pipeline.

Where defined, Southern Star's rights-of-way vary in width from 10 to 200 feet, depending on the number and diameter of the pipeline(s), terrain, and terms of the right-of-way agreement. Some of Southern Star's rights-of-way agreements include a 50-foot inhabitable building setback requirement, which is strictly enforced by Southern Star.

C. Amendments, Modifications, Partial Releases

As the rural environment is altered and land developments are proposed, Southern Star, at the request of the landowner, may elect to amend or modify the easement to reflect the changing land use. Southern Star may work with developers to incorporate the rights-of-way easement into the project design, including consent to the use of the right-of-way as "greenways" or open space areas, so long as that use does not interfere with Southern Star's ability to use and enjoy the acquired easements and rights.

The pipeline centerline and easement description are based upon field location flagging conducted pursuant to state 811 requirements. Southern Star in no way verifies or warrants the accuracy of the description of the centerline, nor the position of the line itself. Encroaching party, acknowledges and accepts that it relies solely on its own due diligence, inspection, and knowledge of described easement and centerline, and not on any information provided by the Southern Star. Encroaching party waives all objections, actions and claims against Southern Star arising from or related to the descriptions of the easement and centerline.

V. LEGISLATION

A. Federal

Southern Star is regulated by the Department of Transportation, Office of Pipeline Safety. The pipeline safety regulations are administered through Title 49, Code of Federal Regulations, and Part 192.

Part 192 prescribes minimum standards for the safe operation of pipelines. The denser the population, the more stringent the standards for pipeline design, maximum allowable operating pressure, frequency and ability to patrol, and leak surveys.

B. State

All of the states in which Southern Star operates have damage prevention laws for the protection of pipelines and other underground utilities. Most states require one-call system notification by excavators of their excavation plans. Southern Star participates in all one-call systems, which coordinate notice of excavation to participating industries.

Some jurisdictions provide for triple damages resulting from a failure to notify under the one-call system.

C. City and County

Local governments often play a major role in regulating land use by means of comprehensive planning and zoning. Some counties currently offer developer incentives to encourage easement use for parks and open space purposes.

Some counties require an additional building setback from the pipeline easement. Please check local codes before submitting lot layout plans.

VI. ENCROACHMENTS

It is Southern Star’s philosophy to prevent encroachments when possible by working with agencies and developers to design their projects outside the pipeline easement. Many of Southern Star’s easement agreements prohibit encroachments, and you should be aware that Southern Star will enforce applicable provisions in its easement agreements when it believes the continued safe operation and maintenance of the pipeline could be threatened.

Where Southern Star determines that an activity can be undertaken without jeopardy to the pipeline system, Southern Star will require a specific encroachment agreement, issue an encroachment permit, or issue a Letter of No Objection depending on the type and scope of activity proposed.

The encroachment agreement will contain all pertinent conditions to be followed by the encroaching party for the planned activity and may also provide for cost reimbursement to Southern Star. Typically, Southern Star will seek reimbursement for projects that require significant design review, engineering investigation, field inspections, and legal consultation or facility modification.

The encroachment permit will contain all pertinent conditions to be followed by the encroaching party for the activity planned and is generally reviewed and issued to the encroaching party on-site.

Southern Star in no way subordinates or relinquishes any of its rights by allowing such encroachments within its pipeline right-of-way. In the event that during the exercise of its easement rights to construct, maintain and operate the pipeline and appurtenances, Southern Star or its contractors destroy or damage the encroachments herein permitted, all such damage to said permitted items shall be the sole responsibility of the owners, unless Southern Star is negligent in such actions.

A. Specific Encroachment Agreement

1. When is a “Specific Encroachment Agreement” required?

- Activities/works crossing under or over the natural gas pipeline.
- Activities/works extending into the right-of-way.

Examples of such activities/works may include but are not limited to: street and road crossings, ornamental fencing, blasting or use of explosives in the vicinity of Southern Star facilities, heavy equipment crossings, large diameter utility crossings, or permanent facilities associated with adjacent commercial or residential developments. Determinations of other activities subject to an Encroachment Agreement are determined on a case-by-case basis.

In addition, third-party activities/works that necessitate Southern Star facility modifications, such as but not limited to, pipeline casing extensions, pipeline relocations or replacements, and pipeline cathodic protection facility

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modifications are addressed in the Encroachment Agreement. Reimbursement provisions may also be referenced in the Encroachment Agreement.

2. Who initiates the “Specific Encroachment Agreement”?

A Southern Star representative generally initiates the specific Encroachment Agreement. The agreement must be executed before work begins on the **right-of-way**. In the event work commences absent such an agreement, Southern Star may take steps to prevent further activity.

3. Before the Encroachment agreement or partial release can be completed, the encroaching party must provide to Southern Star:

a. Title Evidence. A title policy or a recorded copy of the owner’s deed is needed. If the owner is a partnership, a copy of the partnership agreement showing who has authority to sign the agreement is needed. If the owner is a corporation, Southern Star needs to know the person’s name and title who will be signing the agreement.

b. If applicable, a copy of the recorded plat of the property is needed.

c. A certified survey or final site plan with the centerline of the pipeline surveyed and in relation to all the encroachments, together with the bearing and length of the course of the pipeline and its ties to the property line. Profile drawings of the pipeline in relation to encroachments should be included. If relocation of the pipeline is being requested, the proposed location of the relocated pipeline should be illustrated as well. If relocation is requested, Southern Star will furnish an estimate of the cost of relocating the pipeline, which will be incorporated into the agreement. All actual costs of the relocation will be borne by you, the encroaching party. The Encroaching Party can submit plans for review to the Southern Star Encroachment Team at SSCEncroachments@southernstar.com

d. A comprehensive list of all encroachments, improvements, and construction requirements that will affect the operation and maintenance of Southern Star’s pipelines.

B. Reimbursement and/or Relocation Agreement

1. When is a “Reimbursement and/or Relocation Agreement” required?

A Reimbursement Agreement is typically required for activities/works proposed on the right-of-way, which require extensive preliminary engineering and or field inspection services by Southern Star personnel.

In addition, Southern Star will seek a Reimbursement and Relocation Agreement for any third-party activities/works that require modification to Southern Star facilities. Such modifications include, but are not limited to,

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pipeline casing extensions, pipeline relocations or replacements, and pipeline cathodic protection facility modifications.

2. Who initiates the “Reimbursement and Relocation Agreement”?

The agreement is initiated by a representative of Southern Star and must be executed before any work, preliminary engineering, or field inspection services are performed by Southern Star.

3. Before the Reimbursement Agreement or Partial Release can be completed, the encroaching party must provide the documents shown below to Southern Star

See A.3 above.

C. Letter of No Objection

A letter or email of No Objection is issued when the proposed developments do not interfere with Southern Star’s rights to operate and maintain its facilities.

VII. NOTIFICATION AND CONSTRUCTION SAFETY REQUIREMENTS

A. Notification

1. In order to prevent unnecessary delays, Southern Star encourages close communication throughout your entire project, and we will be happy to attend pre-construction meetings and provide a safety/informational presentation to any interested parties including contractors, local government maintenance crews, and developers. Please refer to your specific regional contact number.
2. All of the states in which Southern Star operates have "one-call" laws, which require the excavators to provide at least 48 hours notice, depending on local requirements, before any excavating commences. Your local one-call system will notify all participating utilities in the area of your planned excavation activities.
3. A Southern Star representative will be on-site following 48-hour prior notice for all surface and subsurface activities within the pipeline right-of-way. Any crossings made without a Southern Star inspector on site will have to be re-excavated to provide Southern Star an opportunity to inspect all affected pipeline facilities at excavator's expense.

***Protect yourself, utility companies, and the public –
Call before you dig.***

4. Federal regulations (OSHA 29CFR Ch. XVII-1926.651) also require excavators to notify underground utilities prior to the start of actual excavation. Your state regulations may be more specific, but, in any case, failure to notify underground utility operators of excavation activities could lead to a citation.
5. Southern Star pipelines often operate at high pressures. To ensure the safety and reliability of our facilities, we require a Southern Star representative to be on site while you work around our pipelines. Please contact your local Southern Star office and State One Call System before work commences on or in close proximity to Southern Star right-of-way. A Southern Star representative will be on site to inspect the work and monitor the site until construction is completed.

B. Safety Requirements

1. Excavations must be barricaded to protect pedestrians and vehicles. Proper access into the trench must be provided. Excavations must be properly sloped or shored as required to comply with state and OSHA requirements.
2. Stockpiling brush, trash, or other debris on the easement is prohibited as it may conceal pipeline markers and hinder pipeline inspections or routine maintenance.

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3. Southern Star does not allow burning of brush and etc. on its right-of-ways. May need to discuss this with Operations to see if we are allowing it.

VIII. PLAN DESIGN AND REVIEW REQUIREMENTS

A. Ideal Subdivision Layout

- The entire easement width is reserved as an open space trail.
- Right-of-way identity is clear and easily marked.
- Crews can undertake emergency repairs quickly.
- Fewer landowners are affected by the easement, which reduces the chance of a “dig in.”
- Routine maintenance and inspections are not hindered.

B. Subdivision Plans

1. Southern Star requires a minimum of 60 business days lead-time to review preliminary plans for impacts to the easement and to insure that all proposed improvements are designed in accordance with Southern Star’s Encroachment Specifications.
2. An open space trail free of trees and other deep-rooted plants is the ideal easement use. This reduces the public exposure by minimizing the opportunity for "dig-ins."
3. Lot division on either boundary of the easement is preferable to splitting the easement between lots. A lot division configured on top of the pipeline causes lot loss to the landowners because no fences can be built directly over the pipeline. Construction, maintenance, and routine inspections can be disruptive to the landowners when the easement is split between lots.
4. Southern Star does not allow inhabitable buildings (houses, offices, etc.) to be constructed within its pipeline rights-of-way and recommends that inhabitable buildings be constructed at least 50-feet from its pipeline.
5. An amended or new easement agreement (formal agreement) is usually executed between Southern Star and the developer/landowner to cover the new land use, should the pipeline be relocated.
6. Southern Star representatives will work with your surveyor(s) and stake the location of our pipeline facilities.

C. Street & Road Crossing Plans

1. Southern Star requires a minimum of 60 business days to review proposed road-crossing plans. Additional review time will be necessary for proposed divided highways, interstate highways and other road construction projects that require pipeline modifications.

When submitting your plans, provide a scope of work, description, and plan and profile drawings that clearly depict Southern Star's easement boundaries. Profiles are required to show depth of cover over each Southern Star pipeline (existing and finished grade) and the clearance between Southern Star's pipeline and any utilities. It is the responsibility of the encroaching party to hydro-vac or excavate the pipeline to verify depth, and contact the state one-call system (811) prior to excavation.

Please include a location map showing the project site area, including sufficient geographical references such as legal description (1/4 section-Township-Range) of property lines, roads, and appropriate deed information to the properties impacted.

2. When new rights-of-way are acquired or dedicated, the costs for pipeline modifications will generally be borne by the landowner, developer, state, county, or city highway department.
3. Southern Star must be given the opportunity to make a pipeline inspection prior to the start of road construction.
4. When the proposed development plans call for the dedication of the street/road right-of-way to the city, county, or state, it is important to note that Southern Star's easement is superior to this action and its rights are not diminished. The agency involved may require you to obtain an amended easement or an Encroachment Agreement.

IX ENCROACHMENT SPECIFICATIONS

The following Southern Star specifications are minimum requirements for most proposed encroachments to maintain safety and reliability of the pipelines and to avoid conflicts with federal department of transportation regulations and existing right-of-way agreements. Additional requirements may be imposed depending upon the scope of the proposed encroachment. For a review of your individual situation, please contact your local Southern Star office or email sscencroachments@southernstar.com.

A. General Requirements for Surface Alterations

“One Call” systems require a minimum of 48 hours notice prior to excavation activities. Check your local requirements. Notification is the Law!

1. No structures or appurtenances are to be located within the Southern Star right-of-way.
2. An authorized Southern Star representative may be required to be on site prior to and during any surface disturbing work performed within the right-of-way. Southern Star’s representative will assist you in determining the location of the pipeline, the right-of-way width, and existing cover over the pipeline. It is not the policy of Southern Star to excavate or probe the pipeline to acquire its depth. A Southern Star representative will be present while you pot hole and survey the pipeline elevation.
3. No cut or fill on the right-of-way is permitted without Southern Star approval.
4. Southern Star may require submittal of plan and profile drawings for prior review and approval by Southern Star. All drawings must show, in detail, all of Southern Star facilities & easement boundaries and other features that will allow Southern Star to determine the effects of the proposed construction or maintenance activity on its facilities.
5. Southern Star may request evidence of general liability and other appropriate and usual insurance prior to any activity and/or construction on or near Southern Star rights-of-way. In the event of excavation under Southern Star pipelines, Southern Star may request to be named as additional insured. Any rights of subrogation or recovery will be waived in favor of Southern Star. The insurance limits, terms, and conditions that may be required will be dependent on the specific facilities potentially impacted and what would be usually and prudently obtained in similar industry situations.
6. All foreign lines crossing Southern Star’s right-of-way shall be installed in accordance with all applicable codes and requirements governing such installations.
7. All foreign lines shall cross Southern Star’s right-of-way at an angle as close to 90 degrees as possible. Parallel occupancy of Southern Star’s right-of-

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way shall not be permitted within Southern Star's right-of-way without prior approval.

8. Southern Star pipelines are electrically protected against corrosion. At Southern Star's request, metallic foreign lines that enter or cross Southern Star right-of-way must have test leads installed. In addition, Southern Star personnel must be provided an opportunity to install test leads on Southern Star existing pipelines. All necessary measures (coatings, electrical bonds, etc.) shall be taken to ensure that the proposed pipe or utility is adequately protected from potential interference.
9. All foreign lines crossing Southern Star pipeline or related facilities shall be installed with a minimum of 24 inches of vertical clearance between the existing Southern Star pipeline facilities and the proposed foreign line. The foreign line shall be installed at a uniform depth across the full width of the Southern Star right-of-way. Southern Star may require any foreign lines be installed under its existing pipeline(s) and related facilities and may require additional separation.
10. Southern Star may require that foreign lines be identified with permanent above-ground markers where the lines enter and exit Southern Star right-of-way. It is the line owner's responsibility to obtain any rights to install the markers, and to maintain the markers. A direct burial warning tape identifying the foreign line type (sewer, water, electric, etc.) should be placed 12-18 inches above the foreign line and extend across the entire width of Southern Star right-of-way.

Refer to Southern Star drawing:

STD-ENC-PX-FP, "Standard Encroachment Details for Foreign Pipeline Installation Parallel to or Crossing SSCGP Pipeline"

B. Fences

1. Fence posts shall not be installed within 4 feet of any Southern Star pipeline. Southern Star may require that fence posts installed within close proximity to its facilities be hand dug.
2. Southern Star shall have the free right of ingress and egress. Southern Star may require that new fences have either a 3-foot walk through gate or a 12-foot wide gate installed within the right-of-way at a location approved by Southern Star.

C. Landscape Guidelines

1. No trees or large, deep-rooted shrubs are permitted on the right-of-way.
2. With prior approval from Southern Star, some types of shrubs may be permitted on the right-of-way provided the plantings do not interfere with the

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operation, maintenance, and inspection of the pipeline and related facilities and provided that the plantings are less than three feet in height (at full maturity) and are at least five feet from the pipeline (at full maturity). Under no circumstances will mechanical equipment be allowed for planting of shrubs within close proximity to its facilities.

3. All sprinkler and/or irrigation systems will require review by a Southern Star representative.

Sprinkler heads will not be permitted within 10 feet of any pipeline. All crossings of the pipeline with feeder lines may be required to be hand dug.

4. Southern Star reserves the right to cut and/or remove Landscape Encroachments on the Southern Star right-of-way as required in the operation, inspection and maintenance of its pipeline facilities; further, Southern Star assumes no responsibility for any cost involved in the replacement of said cut and/or removed landscape plantings.
5. Southern Star may require a recorded Encroachment Agreement. This Encroachment Agreement shall be executed by all parties prior to any landscaping.

D. Streets, Roads, Driveways, and Parking Areas

1. Southern Star must complete a preliminary engineering review for all roads, streets, driveways, parking areas, etc., proposed on the right-of-way. Any concrete slabs, or other protection required by Southern Star shall be installed at no expense to Southern Star. Southern Star may require a pipeline inspection prior to construction.
2. The recommended cover over Southern Star existing pipelines is 66 inches at all driveways, highways, roads, streets, parking areas, etc. Some circumstances may require a depth greater than 66 inches due to the internal and external stresses on the pipeline.

Southern Star will analyze each proposed crossing based on information provided by the encroaching party to determine any additional depth that may be required.

The recommended minimum cover over Southern Star existing pipelines in adjacent borrow ditches is 48 inches.

In special cases new streets, roads, driveways, and parking areas may be constructed with less than the recommended 66 inches of cover if acceptable measures are taken to protect Southern Star's pipelines from external stresses. This must be approved by Southern Star's Engineering Department.

3. Driveways, highways, roads, streets, parking areas, etc., crossing Southern Star's pipeline facilities shall cross at an angle as close to 90 degrees as

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possible. All crossings must be over straight pipe and at locations free of any piping crossovers.

4. Southern Star may require a recordable Encroachment Agreement. Southern Star will retain the right to cut all present and proposed driveways, highways, roads, streets, parking areas, etc. and will have no responsibility for restoration, loss of use or access, or any other costs.
5. Parking areas installed over Southern Star's pipelines will be designed with a 20-foot by 30-foot green space centered over the pipeline (10-feet either side of pipeline and 30-feet along the pipeline). Green spaces will be spaced at intervals not exceeding 40-feet in length.

Refer to Southern Star drawing

STD-ENC-X-RD, "Standard Encroachment Details for Road Crossing"

STD-ENC-X-RDSC, "Standard Encroachment Details for Special Consideration Road Crossings"

E. Temporary Equipment Crossings

1. To protect Southern Star's pipeline from external stresses, Southern Star must perform an engineering evaluation to determine the effects of any proposed equipment use. Mats, timber bridges, or other protective materials deemed necessary by Southern Star shall be placed over Southern Star facilities for the duration of any loading. Protective materials shall be purchased, placed, and removed at no cost to Southern Star. The right-of-way will be restored to its original condition.
2. Southern Star may require markings to identify specific areas where equipment use is authorized. Vibratory compaction equipment shall be limited to walk behind vibratory plate compactors (aka Wacker Packer) within the pipeline right-of-way.
3. The encroaching party will provide to Southern Star the type and weight of all equipment to be used on Southern Star's rights-of-way.

Refer to Southern Star drawing:

STD-ENC-X-TTB1, "Standard Encroachment Details for Temporary Timber Bridge to Cross SSCGP Pipeline" – Sheets 1 and 2

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F. Drainage, Impoundment of Water and Erosion Control

1. Southern Star may conduct preliminary engineering studies for any proposed drainage channels or ditches within the right-of-way. Drainage channels or ditches must be adequately protected from erosion and provide a minimum of 48 inches of cover over the pipeline(s). Altering (clearing, re-grading or changing alignment of) an existing drainage channel or ditch requires approval from Southern Star.
2. Impoundment of water on the right-of-way is not permitted. Soil erosion control measures shall not be installed within the right-of-way without Southern Star approval.

G. Excavations and Blasting

1. Plans for excavation on the ROW require prior approval by Southern Star. **No machine excavation shall be performed within 24 inches of Southern Star's pipeline(s).** Southern Star's on-site representative may require hand digging at a distance greater than 24 inches.
2. When a backhoe is used, the bucket teeth should be curled under each time the bucket is brought back into the ditch to reduce the chance of the teeth contacting the pipeline. Southern Star may require a bar be installed across the teeth and side cutters from the bucket.
3. Prior to any plowing or ripping of soil on the right-of-way, particularly in association with agricultural activities, your plans should be reviewed with your local Southern Star representative to ensure that proper cover exists.
4. Southern Star may require engineering evaluation of all excavation activities which necessitate unsupported pipeline spans 10 feet in length or greater.
5. Southern Star will require that a detailed blasting plan be submitted for review and authorization prior to any proposed blasting within 250 feet of Southern Star pipeline facilities (pipeline, underground storage, etc.) or within 1,500 feet for surface mining activities. If deemed necessary by Southern Star, the blasting contractor may be required to perform seismic monitoring.

H. Buried Communication (Telephone, TV, Data Transmission, Fiber Optic) and Buried Power Line Crossings

1. Buried telephone and cable TV (other than single residential telephone and cable TV) crossing Southern Star facilities shall be installed in rigid conduit (minimum of Schedule 40 for steel and minimum of Schedule 80 for plastic) for the full width of the right-of-way. Southern Star will require safety ribbon installed 12 to 18 inches above encroachment.

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2. All buried electric cables and fiber optic cables (including single residential service drops) crossing Southern Star facilities shall be installed in rigid conduit (minimum of Schedule 40 for steel and minimum of Schedule 80 for plastic) for the full width of the right-of-way. Southern Star may require safety ribbon installed 12 to 18 inches above encroachment. Southern Star may require a minimum thickness of 4 inches of red concrete encasement.
3. All buried single residential telephone; cable TV and 24 volt DC power lines may be requested to be encased in plastic conduit for the full width of the right-of-way.

Refer to Southern Star drawings:

STD-ENC-P-UPL, "Standard Encroachment Details for Installation of Underground Power Lines and Fiber Optic Lines Parallel to SSCGP Pipeline"

STD-ENC-PX-TC, "Standard Encroachment Details for Standard Telephone or Cable TV Installation Parallel to or Crossing Existing SSCGP Pipeline"

STD-ENC-X-EC, "Standard Encroachment Details for Electrical or Fiber Optic Cable Installation Crossing SSCGP Pipeline"

I. Sanitary Sewer and Water Crossings

All sewer and water lines with diameters greater than 4 inches shall be either: (1) ductile iron or steel pipe (adequately protected from Southern Star cathodic protection system), or (2) plastic pipe installed in rigid conduit (minimum of Schedule 40 for steel or Schedule 80 for plastic) for the full width of the right-of-way. No piping connections will be allowed within 5 feet of any Southern Star pipeline.

J. Combustible Material Lines

1. All plastic combustible material lines with diameters greater than 4 inches shall be installed in rigid conduit (minimum of Schedule 40 for steel or Schedule 80 for plastic) for the full width of the right-of-way.
2. Southern Star may require that steel combustible material lines (adequately protected from Southern Star cathodic protection system) be installed under the existing SSCGP pipeline facilities.

Refer to Southern Star drawing:

STD-ENC-PX-FP, "Standard Encroachment Details for Foreign Pipeline Installation Parallel to or Crossing SSCGP Pipeline"

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K. Bored Crossings

1. Southern Star existing pipeline facilities shall be test pitted (soil evaluation) prior to any proposed boring operations.

Horizontal Directional Drilled (HDD) crossings for utilities with a diameter greater than 4 inches will have a minimum of 60 inches vertical clearance below Southern Star's pipeline.

HDD crossings for utilities with a diameter equal to or less than 4 inches and Jack & Bore / Auger boring will have a minimum of 24 inches of vertical clearance from Southern Star's pipeline.

Southern Star may require submittal of both plan and profile drawings for appropriate review prior to any proposed boring operations.

2. Prior to any boring, inspection holes may be required to be excavated to verify the depth of the bore as it approaches each pipeline. The contractor shall provide and maintain instrumentation to accurately locate the boring head.

Refer to Southern Star drawing:

STD-ENC-X-BU, "Standard Encroachment Details for Bored Electrical or Fiber Optic Cable Installation Crossing Below SSCGP Pipeline"

L. Overhead Line Crossings

1. Overhead line crossings shall be installed with a minimum of 30 feet of vertical clearance above the Southern Star right-of-way to provide adequate equipment clearance. No poles or appurtenances shall be located on the Southern Star right-of-way without prior approval.
2. Overhead line crossings shall not be installed within 25 feet (measured horizontally) of any gas vent (e.g., relief valve, blow-down vent).
3. Overhead lines shall cross at an angle as close to 90 degrees as possible. Parallel occupancy of the Southern Star right-of-way will not be permitted without approval.

Refer to Southern Star drawing:

STD-ENC-P-OPL, "Standard Encroachment Details for Installation of Overhead Power Lines Parallel to SSCGP Pipeline"

M. Disposal Systems

No septic tanks, liquid disposal systems, or hazardous waste disposal systems will be allowed on the right-of-way or within 25 feet of Southern Star facilities.

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This prohibition includes, but not be limited to, facilities that have the potential of discharging effluent from sewage disposal systems, the discharge of any hydrocarbon substance, the discharge, or disposal of any regulated waste, or any other discharge that may prove damaging or corrosive to Southern Star facilities.

Remember: Before you dig call 811 or the appropriate number shown below.

One Call Telephone Numbers	
Colorado	800-922-1987
Kansas	800-344-7233
Missouri	800-344-7483
Nebraska	800-331-5666
Oklahoma	800-522-6543
Texas	800-245-4545
Wyoming	800-849-2476

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ENCROACHMENT SPECIFICATIONS

*If you are reading this document online from the Southern Star O&M Manual and want to view a drawing, highlight the hyperlinked drawing number and press **Control** on your keyboard while **clicking the left mouse button**. The drawing will open as a PDF file in Adobe Reader.*

STD-ENC-X-RD	Standard Encroachment Details for Road Crossing
STD-ENC-X-RDSC	Standard Encroachment Details for Special Consideration Road Crossing
STD-ENC-X-TTB1	Standard Encroachment Details for Temporary Timber Bridge to Cross SSCGP's Pipeline Sheet 1 of 2
STD-ENC-X-TTB2	Standard Encroachment Details for Temporary Timber Bridge to Cross SSCGP's Pipeline Sheet 2 of 2
STD-ENC-PX-FP	Standard Encroachment Details for Installation of Foreign Pipeline Parallel to or crossing SSCGP's Pipeline
STD-ENC-P-OPL	Standard Encroachment Details for Installation of Overhead Power Lines Parallel to SSCGP's Pipeline
STD-ENC-P-UPL	Standard Encroachment Details for Installation of Underground Power Lines And Fiber Optic Lines Parallel to SSCGP's Pipeline
STD-ENC-PX-TC	Standard Encroachment Details for Installation of Standard Telephone or Cable TV Installation Parallel to or Crossing Existing SSCGP's Pipeline.
STD-ENC-X-BU	Standard Encroachment Details for Installation of Bored Utility Crossing Below SSCGP's Pipeline
STD-ENC-X-EC	Standard Encroachment Details for Installation of Electrical or Fiber Optic Cable Installation Crossing SSCGP's Pipeline