

Natural Gas Line Extension & Service Standards

2017 Revision Table

(To the 2016 Natural Gas Line Extension and Service Standards)

CHAPTER	TITLE	REVISION DESCRIPTION AND RATIONALE
1.01	Purpose	Edit text in Section 1.01 to address clarification of standards to address unusual conditions or to address omissions in the standards. Requested by Engineering Standards.
1.01	Purpose	Added text to further clarify the obvious that the CSU standards apply to CSU infrastructure. Requested by Wayne S./ Gas Construction.
1.02	General Policy Information	Added text to indicate GLESS updates are periodically required to address compliance with 49 CFR Part 192. This was added knowing that there may be changes required by 49 CFR Part 192 to address OQ and drug and alcohol testing, both of which will impact the LUSI program.
2.02c)	Location and Clearances of Gas Main Lines	Added note that trees may not be located within 6 feet of a gas main. Currently required as part of the Preliminary Utility Plan. Requested by ENGR Standards.
2.02c)2)a)	Location and Clearances of Gas Main Lines	Edited horizontal separate distance from 150 psig mains to structures (e.g., buildings) from 10' to 15'. This is driven by past issues and a recent issue on Spring Creek with regard to distance from a building to 150 psig system. Often with easements for 150 psig mains CSU gets a 30' easement so this incorporates current practice into the GLESS. Requested by Jared Harp.
4.01f	Gas Service Line Excess Flow Valves	Changed the text to require compliance with EFV regulations, specifically addressing the recently released Final Rule for EFVs that will become effective 4/14/17.
4.03a	Installation Procedures	Added the following text to address 2" services and required size of risers. Requested by Field Engineering. 1-1/4" risers shall be installed for all commercial services unless an alternative is required by Field Engineering or Gas Planning and Design. In those situations where a 2" service line that conveys natural gas to a single service point , a 2" riser will be used due to proposed loads. Most often though a 2" service line will be installed and 1 1/4" riser/risers will be used. This change was required as the 2" insuloks are not manufactured and so the Field Service staff are having to use creative solutions for the 2" risers and this is more expensive and isn't their preference to do, unless really needed.
4.03d	Service Line Installation	Add text to say: Property line valves should be installed when commercial/industrial customers have significant amounts of private utilities that could impede construction crews during future gas work. Submitted by Ginny H./Field Engineering. Also changed the text to require compliance with EFV regulations, specifically addressing the recently released Final Rule for EFVs that will become effective 4/14/17.
4.05d)3)a)	Meter Set Location	Clarified text to say that enclosures are not allowed around gas meter sets unless approved by CSU as it makes it difficult to maintain the meter. Requested by Field Services
4.05d)3)b)	Meter Set Location	Added text to address why CSU has a preferred location of the meter to more strongly state where the meter should best be located, without requiring that it always be in this location. Requested by Field Services

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4.05d)3)d)1)d)	Primary Structures	Clarified the location of gas meter loops (distance right or left of decks, stairways, or other objects). Requested by Field Services
4.05d)3)d)1)e)	Primary Structures	Clarified the final grade needed to install the meter loop. Requested by Field Services
4.05d)3)d)1)k)	Primary Structures	Clarified that the fuel line must be one continuous pipe with no fittings (i.e., couplings). This was done as sometimes the contractors stub the house line out 2" and then in trying to meet CSU specs, they install a coupling which is a leak point on the customer piping that CSU then ends up fixing years later. Requested by Field Services
4.06b	Materials	Added the following text to address 2" services and required size of risers. Requested by Field Engineering. 1-1/4" risers shall be installed for all commercial services unless an alternative is required by Field Engineering or Gas Planning and Design. In those situations where a 2" service line that conveys natural gas to a single service point , a 2" riser will be used due to proposed loads. Most often though a 2" service line will be installed and 1 1/4" riser/risers will be used. This change was required as the 2" insuloks are not manufactured and so the Field Service staff are having to use creative solutions for the 2" risers and this is more expensive and isn't their preference to do, unless really needed.
Appendix-C: Table 7	Materials Approved for Use in Gas/Joint Service Line Construction	Added 2" 3M Scotchrap #50. Submitted by Wayne S./Gas Construction. Also, added Duraline as an approved manufacturer (for MDPE pipe only and not fittings).
Appendix-C: Table 8	Clearance Matrix for Typical Colorado Springs Underground Utilities	Edited table to make the note on telecommunication and fiber optic clearances be more apparent.
Appendix-D: Figure 1	CSU Owned Joint Trench	Clarified depth of trenches to top of gas line. Added note that can only joint trench when in both CSU gas and electric service territory. Added EDCS Figure 19-8 Residential Main Trench figure to the GLESS as Figure 1C. Submitted by Wayne S./Gas Construction
Appendix-D: Figure 5	Service Riser Location Details	Clarify approved anodeless riser wrapping methods. Submitted by Wayne S./Gas Construction
Appendix-D: Figure 6	Below Ground Multiple Meter Manifold	Edited table to indicate that CSU Field Services must be contacted to determine the horizontal distance from the riser to gas piping inlet when loads between 3,500,001 and 10,000,000 BTU/HR. Requested by Field Services
Appendix-D: Figure 8A	Typical Meter Sets: Typical Residential Meter Set	Removed piping shown on right side of figure as the dimensions were not shown and it was confused with the dimensions on the left side of the figure. Also added note that the fuel line must be one continuous pipe with no fittings (i.e., couplings). Changed recommended to required for the distance from finished exterior wall to end of customer fuel piping. Requested by Field Services
Appendix-D: Figure 8B	Typical Meter Sets: 390,001 to 910,000 BTU/HR	Added note that the fuel line must be one continuous pipe with no fittings (i.e., couplings). Changed recommended to required for the distance from finished exterior wall to end of customer fuel piping. Requested by Field Services

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Appendix-D: Figure 8C	Typical Meter Sets: 910,001 to 1,400,000 BTU/HR	Changed recommended to required for the distance from finished exterior wall to end of customer fuel piping. Requested by Field Services
Appendix-D: Figure 9A&B	Typical Residential Grouped Meter Locations at Joint Service Installation	Clarify the intent of note 2 with regard to minimum working space. Added note 3 to discuss the clearance required radially and in front of the gas meter. Submitted by Wayne S./Gas Construction and Field Services.
Appendix-D: Figure 9C	Typical Residential Grouped Meter Locations at Joint Service Installation	Added 36" radius text to the clearance area circled. Submitted by Wayne S./Gas Construction
Appendix-D: Figure 15	Bollards	Added figure to show design requirements for bollards. Requested by Gas Construction QC Inspections
Phone Numbers and Contact Information	Phone Numbers and Contact Information	Updated contact information, including Service Area Map Contacts with revised Field Engineer Areas.
All		Changed Colorado Springs Utilities Energy Construction Operations and Maintenance Department to Colorado Springs Utilities Energy Construction and Maintenance Department

CHAPTER 1

General Information

1.01 Purpose

These standards are issued by Colorado Springs Utilities for Colorado Springs Utilities infrastructure as requirements for obtaining gas service and gas main line extensions and to put forth the service available, conditions for service, and the standards for material and construction. The requirements of the chapter text, tables and drawings apply. The standards herein supersede all previous publications of those standards issued by Colorado Springs Utilities prior to this date and are subject to change without notice.

These standards are provided to assist customers, architects, engineers, contractors, developers, and Licensed Utility Service Installers (LUSI) in planning and applying for gas service from Colorado Springs Utilities. These regulations and policies serve to provide safety guidelines for new service lines and main extensions and procedural direction to expedite service connection by establishing uniform standards for gas service. No one rule or instruction covers all conditions. For conditions not specifically covered within these standards, the customer shall defer to the Colorado Springs Utilities Field Engineering's, Gas Construction Section Leaders' or Quality Control Inspection Supervisor's decision on the appropriate course of action. Because no set rule or instruction will address all conditions, the Colorado Springs Utilities Construction and Maintenance Department will provide clarification of requirements and standards concerning special customer needs or unusual construction and installation conditions. An additional general development guidance document available as a resource to address utilities is the Colorado Springs Utilities Guide for Development and Building found online at <https://www.csu.org/CSUDocuments/developmentguide.pdf>

Any contractor requesting natural gas service from Colorado Springs Utilities is responsible for providing copies of the most recently published specifications to potentially affected subcontractors and bidders responding to solicitations involving work related to new gas service lines. Copies of this manual are available online www.csu.org/Pages/standards-bulletins.aspx or from:

Colorado Springs Utilities
Gas Line Extension & Service Standards
1521 Hancock Expressway (Mail Code 1812)
Colorado Springs, CO 80903

1.02 General Policy Information

a) The standards herein are supplementary to, and are not intended to conflict with, the rules and regulations on file with the City Clerk of the City of Colorado Springs or applicable city ordinances.

a-b) The City of Colorado Springs City Code Chapter 12 requires compliance with the latest version of the US Department of Transportation Safety Code concerning natural gas (i.e., 49 CFR Part 192). Updates to Gas Line Extension & Service Standards are periodically required to ensure compliance with 49 CFR Part 192.

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b)c) As a condition of service, the customer will give the duly authorized agents and employees of Colorado Springs Utilities, when properly identified, full and free access to the premises of the customer at all reasonable hours. This access will be for the purpose of installing, reading, inspecting, adjusting, repairing, maintaining, replacing or removing any of Colorado Springs Utilities facilities on the premises of the customer or for any other purpose incidental to the gas service supplied by Colorado Springs Utilities.

e)d) Employees of Colorado Springs Utilities may not demand nor accept any compensation from a customer for services rendered in the line of duty. However, certain employees do collect money from customers for settlement of accounts due to Colorado Springs Utilities and of which the customer is already aware.

d)e) The customer will not bypass, tamper with, engage in unauthorized metering, or otherwise interfere with the proper operation of Colorado Springs Utilities meter or other equipment or in any way interfere with the proper metering registration.

For violation of this regulation, service will be disconnected without notice to the customer and will not be reconnected until the customer has corrected such violation in accordance with prevailing gas requirements. The customer may be billed the costs incurred by Colorado Springs Utilities to resolve the situation as well as the outstanding charges.

e)f) The customer will protect the property of Colorado Springs Utilities on their premises at all times and will not permit persons other than the employees and agents of Colorado Springs Utilities and other persons authorized by law to inspect, work on, open, or otherwise handle the meters or other facilities of Colorado Springs Utilities. In case of loss or damage to the property of Colorado Springs Utilities due to carelessness, neglect, or misuse by the customer, his family, agents, servants, or employees, the customer will, at the request of Colorado Springs Utilities, pay to Colorado Springs Utilities the cost of any necessary repairs or replacement of such facilities or the value of such facilities.

f)g) Devices or attachments will not be connected to Colorado Springs Utilities facilities in such a manner as to permit the use of unmeasured energy without the prior written consent of Colorado Springs Utilities.

g)h) The rates for all types of gas service supplied by Colorado Springs Utilities are on file with the City Clerk's Office, the Pricing Division, and on the Colorado Springs Utilities website at www.csu.org/pages/rates-tariffs-wwu.aspx. Upon request, a representative of Colorado Springs Utilities will explain rate schedules and assist in selection of the applicable rate best suited to the customer's requirements.

h)i) Colorado Springs Utilities will use reasonable diligence to supply continuous gas service to the customer but does not guarantee the supply of gas service against irregularities or interruptions. Colorado Springs Utilities will not be considered in default of its service agreement with the customer and will not otherwise be liable for any damages incurred by any irregularity or interruption of gas service.

i)j) Colorado Springs Utilities will not be considered in default of its service agreement and will not otherwise be liable due to failure by Colorado Springs Utilities to perform any obligation if prevented from fulfilling such obligation by reason of delivery delays, breakdowns of or damage to facilities, acts of God, public enemy, strikes, or other labor disturbances involving Colorado Springs Utilities or the customer, action of civil, military, or governmental authority or any other cause beyond the control of Colorado Springs Utilities.

jk) The customer may be required to provide a Utilities Addressing Plan (UAP), a Utilities Design CAD File (UDCF) or both in support of a service extension request. Details of the UAP and UDCF are given in Appendix B herein.

kl) When existing customer piping is disconnected from the source of supply (gas meter removed, etc.) in an R-3 occupancy for more than one calendar year, the piping shall be retested in accordance with the requirements of Section 406.4 of the International Fuel Gas Code, 2009 Edition. When existing piping is disconnected from the source of supply (gas meter removed, etc.) in any occupancy other than R-3 for more than six months, the piping shall be retested in accordance with the requirements of Section 406.4 of the International Fuel Gas Code, 2009 Edition.

NOTE: Swimming pool gas meters that have been disconnected are only required to be tested if off for more than one calendar year.

lm) For removal of utilities from a property for demolition or construction purposes, the customer must submit to Colorado Springs Utilities a "Request for Removal of Utilities for Demolition or Construction" (see end of chapter for request form).

mn) Customer owned equipment shall not be physically attached to a Colorado Springs Utilities meter. Any customer equipment found attached to a Colorado Springs Utilities meter will be removed.

1.03 Excavation and Boring Requirements near Utility Lines

a) Chapter 19, Article 5 of Part 2 of the City Code governs excavations in the City and applies to any opening in the surface of a "public place" made in any manner whatsoever. "Public place" is defined to include any public right of way, utility easement, drainage structure, street way, place, alley, sidewalk, park, square, plaza, or any similar public property owned or controlled by the City and dedicated to public use, including dedicated, but not improved streets or portions of streets. Even though many references are made to the "Code for the City of Colorado Springs", by inclusion in our service standards, and to ensure the health and well being of the general public, these excavation requirements apply to all excavations around Colorado Springs Utilities' facilities throughout our Dedicated Service Territories.

Any boring operations underneath the surface of a public place are considered excavation upon a public place and are covered by City Code. The City's requirements for excavation are:

- 1) The first requirement is set out in City Code section 3.3.202 EXCAVATION LICENSE REQUIRED, which provides that "No person shall make any excavation or fill any excavation in any public place without first obtaining a license and permit for the excavation except as otherwise provided in this article". Pursuant to this section of the City Code, the Deputy Licensing Officer may issue cease and desist orders or initiate license suspension or revocation proceedings against any excavator for a violation of the City Code excavation provisions or of the City's General Licensing Code.
- 2) The second requirement, obtain locations of the underground utilities, is set out in the City Code at section 19.5.211 and by Colorado statute at CRS 9-1.5-101, et. seq. C.R.S. 9-1.5-101, et seq. governs excavation requirements throughout the State of Colorado. That statute requires notification to utility companies and the marking of underground

facilities prior to excavation, and provides for civil penalties. The City Code states that no excavation shall take place until location of the facilities has been requested and obtained not more than five working days prior to the excavation. Colorado Springs Utilities must be notified prior to any construction activities around utility lines and or facilities. The proper way to notify Colorado Springs Utilities is through the statewide “One Call” notification system. The statewide “one call” notification system is the Utility Notification Center of Colorado (Colorado 811) which can be reached at 1-800-922-1987 or 811. Colorado Springs Utilities will bill for the cost of repair to its underground facilities including the cost of gas, electric, or water lost and will access penalties as allowed under C.R.S. 9-1.5-101, et seq.

- 3) The third requirement is that one must obtain an excavation permit. City Code section 3.3.204: PERMIT REQUIRED; INSPECTIONS; FEES provides, “A. In addition to the other requirements of this part, no person shall proceed to make or fill any excavation without first obtaining an excavation permit from the City Engineer.”
- 4) The fourth requirement is the requirement that excavators must use the “boring with windows” procedures as required by the City Engineering Division when excavation permits are issued. Because many of the Colorado Springs Utilities gas facilities are plastic lines, which can be easily damaged by underground boring operations, or are steel lines, whose cathodic protection may be jeopardized by contact with a boring machine, or high pressure water or air potholing activities, it is imperative that the exact location of those lines be determined and that reasonable precautions be taken to avoid contact with the lines. Once the gas lines are located, excavators are further required, as they approach the estimated location of such facility to determine the exact location of the gas line and to take reasonable precautions including hand digging at the estimated locations in order to avoid damage to the facility. Additionally, in order to further protect the gas lines, we require the use of a reciprocating tip on your hydro-vacuum water wands and not a zero or 30 degree tip, as the zero and 30 degree tips cause excessive damage to our facilities. The nozzle must be kept 12 inches above utility lines, to prevent damage to the coating, jacket, or material in general. Any damage to the line must be reported immediately to the Quality Control Supervisor to have the line re-coated or repaired. Failure to report damage or numerous damages from negligent work practices will result in charges and penalties as stated above. Backfill and compaction shall meet City Engineering Public Works specifications.
- 5) Federal OSHA General Requirements 1926.651 B (1) (3) (4) and DOT regulations Part 192 require the protection and separation of underground natural gas lines from other structures, including other utilities (see Table 8 for Clearance Matrix).
- 6) Notify Colorado Springs Utilities, Energy Construction ~~Operation~~ and Maintenance Department, Quality Control Supervisor at least 24 hours before exposing any underground gas facility. A maximum of 40 feet of natural gas main or service line may be exposed at a time. This span of pipe shall be supported and protected from being damaged. All Colorado Springs Utilities gas infrastructure that is exposed shall have a minimum of six inches of approved padding sand (see Table 7 for Approved Materials) around the entire circumference of the pipe. Directional Drilling Crew and/or Potholing Crew shall use all available resources to locate and expose gas mains and service lines before contacting Colorado Springs Utilities. The standards herein are supplementary to,



COLORADO SPRINGS UTILITIES
 CUSTOMER CONTRACT ADMINISTRATION
 2880 International Cir, Suite 210 • Colorado Springs, CO 80910
 Phone (719) 668-8111 Fax (719) 668-8130

Date: _____

REQUEST FOR REMOVAL OF UTILITIES - DEMOLITION OR CONSTRUCTION

Property Address*: _____
 *A single application may be submitted for bus shelters, traffic signals or multiple properties of one owner with a separate attachment of additional addresses

Property Use: Residential Commercial

Property Owner: _____ Phone: _____

Contractor: _____ Phone: _____

Notify Upon Completion of Utilities Removal: Owner Contractor

Notes: _____

Requested Services for Removal:

- Electric
- Transformer
- Gas
- Water
- Wastewater

The Owner/Agent understands and agrees as follows:

Owner/Agent requests that Colorado Springs Utilities' (Utilities) electric, natural gas, water and/or wastewater services servicing the property be disconnected prior to proposed demolition or construction.

_____ (the undersigned) hereby warrants that he/she is the Owner or Duly Authorized Agent of the Owner (either is referred to herein as "Owner/Agent") of the above described property and hereby authorizes Utilities to remove all requested electric, natural gas, water, and/or wastewater services to the above described property and to execute such work as may be necessary to insure the integrity of Utilities' systems and the safety of all concerned. Owner/Agent agrees at his/her expense to meet all Utilities' requirements, including but not limited to those standards and authorized procedures for removal of said utilities. Such standards may be obtained at www.csu.org/business/development/services/utility_specifications.

(The utility removals are typically completed in 5-10 business days, however, emergency service requirements may affect scheduling.)

ELECTRIC

Commercial Electric Service: After Utilities has disconnected service from Utilities' side of the transformer, the Owner/Agent will have a licensed Electrician remove the Commercial Electric service wires from the secondary bushings at the transformer. This must be performed before any construction or demolition activities to protect the secondary bushings from damage.

Residential Electric Service: Utilities will remove the Residential Electric service wires from the transformer.

NATURAL GAS

Utilities will disconnect and cap the Natural Gas service line at or as close as possible to the property line.

WATER (Please check one)

Inspections 719-668-3524

- Service line to be reused within two (2) years:** Any service disconnection and reconnection must be in compliance with Utilities' Line Extension and Service Standards.
- Service line not to be reused:** If the water service line is not to be reconnected or reused, then the water service line and tap shall be removed by Owner/Agent back to the water main in accordance with Utilities' Line Extension & Service Standards for Water. If Utilities is required to remove the service line and tap, Utilities will invoice the Owner for all removal costs and main line repairs on a time and materials basis; and Owner/Agent will pay any such invoice within thirty (30) days of receipt.
Inspection fees will be paid by the Owner/Agent to Utilities in accordance with Colorado Springs Utilities' Tariff

WASTEWATER (Please check one)

Inspections 719-668-3524

- Service line to be reused within (2) years:** If the wastewater service line will be reconnected, Owner/Agent will have a Licensed Excavator remove and cap (water tight) the wastewater service line in compliance with Utilities' Line Extension and Service Standards and may require CCTV inspection to confirm the integrity of the service line.
- Service line not to be reused:** If the wastewater service line is not reconnected or reused, then the wastewater service line and tap shall be removed by Owner/Agent back to the wastewater main. If Utilities is required to remove the service line and tap, Utilities will invoice the Owner/Agent for all removal costs and wastewater main line capping on a time and materials basis; and Owner/Agent will pay any such invoice within thirty (30) days of receipt.
Inspection fees will be paid by the Owner/Agent to Utilities in accordance with Colorado Springs Utilities' Tariff

GENERAL PROVISIONS

The term "reconnection" as used in this Request for Removal of Utilities applies only when no alterations to the existing service connection points are required either by Owner/Agent or by current Utilities' Line Extension and Service Standards. If for any reason it should become necessary to reinstall or reconnect any of the utility services that have been disconnected pursuant to this Request for Removal of Utilities or



COLORADO SPRINGS UTILITIES
UTILITIES DEVELOPMENT SERVICES
 2880 International Cir, Suite 210 • Colorado Springs, CO 80910
 Phone (719) 668-8111 Fax (719) 668-8130

Date: _____

REQUEST FOR REMOVAL OF UTILITIES - DEMOLITION OR CONSTRUCTION

Property Address*: _____
**A single application may be submitted for bus shelters, traffic signals or multiple properties of one owner with a separate attachment of additional addresses*

Property Use: Residential Commercial

Property Owner: _____ Phone: _____

Contractor: _____ Phone: _____

Notify Upon Completion of Utilities Removal: Owner Contractor

Notes: _____

- Requested Services for Removal:
- Electric
 - Transformer
 - Gas
 - Water
 - Wastewater

The Owner/Agent understands and agrees as follows:

Owner/Agent requests that Colorado Springs Utilities' (Utilities) electric, natural gas, water and/or wastewater services servicing the property be disconnected prior to proposed demolition or construction.

_____ (the undersigned) hereby warrants that he/she is the Owner or Duly Authorized Agent of the Owner (either is referred to herein as "Owner/Agent") of the above described property and hereby authorizes Utilities to remove all requested electric, natural gas, water, and/or wastewater services to the above described property and to execute such work as may be necessary to insure the integrity of Utilities' systems and the safety of all concerned. Owner/Agent agrees at his/her expense to meet all Utilities' requirements, including but not limited to those standards and authorized procedures for removal of said utilities. Such standards may be obtained at www.csu.org/business/development/services/utility_specifications.
(The utility removals are typically completed in 5-10 business days, however, emergency service requirements may affect scheduling.)

ELECTRIC

Commercial Electric Service: After Utilities has disconnected service from Utilities' side of the transformer, the Owner/Agent will have a licensed Electrician remove the Commercial Electric service wires from the secondary bushings at the transformer. This must be performed before any construction or demolition activities to protect the secondary bushings from damage.
Residential Electric Service: Utilities will remove the Residential Electric service wires from the transformer.

NATURAL GAS

Utilities will disconnect and cap the Natural Gas service line at or as close as possible to the property line.

WATER (Please check one)

Inspections 719-668-3524

- Service line to be reused within two (2) years:** Any service disconnection and reconnection must be in compliance with Utilities' Line Extension and Service Standards.
- Service line not to be reused:** If the water service line is not to be reconnected or reused, then the water service line and tap shall be removed by Owner/Agent back to the water main in accordance with Utilities' Line Extension & Service Standards for Water. If Utilities is required to remove the service line and tap, Utilities will invoice the Owner for all removal costs and main line repairs on a time and materials basis; and Owner/Agent will pay any such invoice within thirty (30) days of receipt.
Inspection fees will be paid by the Owner/Agent to Utilities in accordance with Colorado Springs Utilities' Tariff

WASTEWATER (Please check one)

Inspections 719-668-3524

- Service line to be reused within (2) years:** If the wastewater service line will be reconnected, Owner/Agent will have a Licensed Excavator remove and cap (water tight) the wastewater service line in compliance with Utilities' Line Extension and Service Standards and may require CCTV inspection to confirm the integrity of the service line.
- Service line not to be reused:** If the wastewater service line is not reconnected or reused, then the wastewater service line and tap shall be removed by Owner/Agent back to the wastewater main. If Utilities is required to remove the service line and tap, Utilities will invoice the Owner/Agent for all removal costs and wastewater main line capping on a time and materials basis; and Owner/Agent will pay any such invoice within thirty (30) days of receipt.
Inspection fees will be paid by the Owner/Agent to Utilities in accordance with Colorado Springs Utilities' Tariff

GENERAL PROVISIONS

The term "reconnection" as used in this Request for Removal of Utilities applies only when no alterations to the existing service connection points are required either by Owner/Agent or by current Utilities' Line Extension and Service Standards. If for any reason it should become necessary to reinstall or reconnect any of the utility services that have been disconnected pursuant to this Request for Removal of Utilities or

for ≤ 76 psig gas mains, and between 48 inches minimum and 72 inches maximum for 150 psig gas mains. Also note that trees may not be located within 6 feet of a gas main.

1) Gas main lines should have the following minimum separations:

a) Minimum 6 foot horizontal separation when installed parallel to other utilities and structures.

EXCEPTION: Hillside Minor Residential Streets – Minimum 5 foot horizontal separation.

b) Minimum one foot of vertical separation when crossing other utilities.

c) Minimum one foot radial separation when gas, electric, and communication lines are approved to be in the same trench.

2) Gas main lines operated at 150 pounds per square inch gauge (psig) must have the following separations and exceptions to the below must be approved by Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department ~~and should have the following separations:~~

a) Minimum 10 foot horizontal separation when installed parallel to other utilities.

~~a)b)~~ Minimum 15 foot horizontal separation with ~~and~~ structures.

~~b)c)~~ Minimum 5 foot vertical separation when crossing other utilities.

~~e)d)~~ Minimum 4 foot cover required.

d) **Easements:**

The Applicant must also submit an acceptable utility easement for private streets and right-of-ways. A standard easement document form is available online at www.csu.org/Pages/development-files-forms.aspx, or through Colorado Springs Utilities Field Engineering, and should be submitted with the line extension application as necessary.

2.03 Design and Estimate

Upon receipt of the **Application for Gas & Electric Line Extension** and all required plans, Colorado Springs Utilities will begin designing the new gas facilities and estimating the cost of installing these facilities. There will be a specified design fee assessed for this work. Projects are prioritized according to how close they are to being ready for construction of gas facilities. Gas facilities are installed in a joint trench with electric or after all other utilities are installed and the curb and gutter is constructed. Application for line extensions should be made as early as possible in the development process to assure adequate time for design and estimate.

2.10 Installation of Service Lines

The property owner is responsible for the cost of installation of the gas service line on his/her private property. The cost of this installation is not included in the Refund Contract and thus is not eligible for refund. Polyethylene service lines greater than 2 inches in diameter and all steel service lines are to be installed only by Colorado Springs Utilities under a Time and Materials Contract. Polyethylene service lines less than or equal to 2 inches in diameter shall be installed by Colorado Springs Utilities or LUSIs under contract with the property owner. For an updated list of LUSIs call the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department (see Phone Section). Refer to 4.03(b) for more details about the location at which the service lines shall be installed.



Gas Work Order # _____

Electric Work Order# _____
(Internal Use)

APPLICATION FOR GAS AND ELECTRIC LINE EXTENSION

(Residential Electric - Residential and Commercial Gas)

To be submitted to:

North Work Center Field Engineering **South Work Center Field Engineering**
 7710 Durant Drive, P.O. Box 1103, Mail Code 2150 or 1521 Hancock Expressway, P.O. Box 1103, Mail Code 1812
 Colorado Springs, CO 80947-2150 Colorado Springs, CO 80947-1812

Project: _____ **Date:** _____
 (Subdivision, address, or description of project)

Applicant: _____
 (Entity that will enter into contract) Individual () Partnership () Corporation () Limited Liability Company () Other ()

This application is intended for: Gas Electric Both Avg. Building Sq. Footage? _____

Will communications facilities be installed joint trench with electric? Yes No
 Will there be any "Parade / Model" homes built within this project? Yes No
 Will the first lift of asphalt be installed prior to the construction of utilities? Yes No
 Will this project use soil cementing in the roadways? Yes No

Projected date that site will be ready for gas and/or electric installation _____

If an applicant advances funds for construction of Gas Mainline Facilities, they may receive refunds for that facility. The Applicant must notify Colorado Springs Utilities prior to the start of construction if the Applicant desires to enter into a Refund Contract. Please check box to request applicable Gas Mainline Refund Facilities Contract []

Note: a meter will not be installed until the person financially responsible for the billing has set up an account with Utilities Development Services (668-8111).

PLAN REQUIREMENTS (2 sets if submitting for both gas and electric)

Water System Plan Wastewater System Plan & Profile Utilities Addressing Plan (UAP)*
 Street Plan & Profiles Storm Drain Plan & Profile Utilities Design CAD File (UDCF)*
 Utility Service Plan Recorded Plat or Utility Easement Gas loads per building (if commercial)

* See requirements in Appendix B of the Colorado Springs Utilities Line Extension and Service Standards

Applicant agrees to provide Colorado Springs Utilities with a recorded plat or acceptable easements prior to construction. The Applicant agrees to notify Colorado Springs Utilities of any changes following submittal of application that may affect the design, scheduling, and construction of the gas and electric distribution system.

Applicant's Signature (Contract holder)

Agent's Name (Project Contact)

Applicant's Name (Please type or print)

Address

Address

City, State, and Zip Code

City, State, and Zip Code

Telephone and FAX Numbers

Telephone and FAX Numbers

Cellular/Field Numbers (If Applicable)

Email Address

Email Address

Please indicate who the Designs, and Contracts should be sent to: **Applicant** _____ **Agent** _____

Applicant's Signature Authorizing the **Agent** to sign contracts and bind Applicant to such contracts regarding gas and electric.

11/09/16



COLORADO SPRINGS UTILITIES
CUSTOMER-CONTRACT-ADMINISTRATION UTILITIES
DEVELOPMENT SERVICES
2880 International Cir, Suite 210 • Colorado Springs, CO 80910
Phone (719) 668-8111 Fax (719) 668-8130

THIS AGREEMENT (the "Contract"), which becomes effective on the ____ day of _____, _____, the date the gas facilities covered by this Contract were charged with natural gas, by and between the Colorado Springs Utilities, (CSU), an enterprise of the City of Colorado Springs, a home-rule city and Colorado municipal corporation, with its principal place of business at 121 S Tejon Street, Colorado Springs, Colorado 80903, (hereinafter referred to as Colorado Springs Utilities), and _____, a (Corporation, Natural Person, Special District, Govt Entity, etc.), hereinafter referred to as Applicant, for (Project Name), WO# _____.

RECITALS

- A. Applicant has requested that natural gas facilities be constructed by Colorado Springs Utilities in order to supply gas service as shown on the attached map(s); and
- B. Colorado Springs Utilities has constructed requested gas facilities in accordance with its lawful tariffs, rules, regulations and rates (collectively, the Tariffs) under the Extension Contract dated _____, which shall be superseded by this Contract; and
- C. Applicant has advanced the sum of \$(As-Built Cost) to Colorado Springs Utilities (the "Deposit") to reimburse Colorado Springs Utilities for the Applicant's portion of the actual construction costs, and has conveyed all necessary rights-of-way for constructed facilities to the appropriate entity in a form acceptable to Colorado Springs Utilities; and
- D. Colorado Springs Utilities and Applicant desire that their agreement concerning this gas facility extension be in writing.

NOW, THEREFORE, in consideration of the premises and mutual promises of the parties as hereinafter set forth, IT IS AGREED:

CONDITIONS

- 1. For a period of ten years from the date of this Contract, Colorado Springs Utilities shall make a refund to the Applicant for each new gas connection made to the gas facilities described in this Contract. Refunds shall be calculated as specified in the Tariffs in effect at the time of connection, as set forth by the City Council and on file in the Office of the City Clerk/Treasurer. Refunds shall be paid to the Applicant on a periodic basis, without interest.
- 2. Any connections requested by the Applicant or others, to these facilities, shall be subject to the approval of Colorado Springs Utilities and to the availability of gas at the time of request.
- 3. Applicant acknowledges that, depending upon the number and size of the connections, the amounts refunded may be less than the Applicant's Deposit with Colorado Springs Utilities. Applicant further understands that in no event will the total amounts refunded under this Contract exceed the Deposit, nor will any refunds be made after expiration of this Contract's term. Any unrefunded portion of the Deposit which exists at Contract expiration will become a contribution-in-aid of construction to Colorado Springs Utilities, as provided in the Tariffs.

Printed Name

Printed Name

Supervisor, ~~Customer Contract Administration~~ Utilities Development Services

Title

Title

Date

Date

Approved as to form by the City Attorney's Office-Utilities Division:

Sample



COLORADO SPRINGS UTILITIES
**CUSTOMER-CONTRACT-ADMINISTRATION UTILITIES DEVELOPMENT
SERVICES**

2880 International Cir, Suite 210 • Colorado Springs, CO 80910
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THIS AGREEMENT (the "Contract"), which becomes effective on the ____ day of _____, _____, the date the gas facilities covered by this Contract were charged with natural gas, by and between the Colorado Springs Utilities, (CSU), an enterprise of the City of Colorado Springs, a home-rule city and Colorado municipal corporation, with its principal place of business at 121 S Tejon Street, Colorado Springs, Colorado 80903, (hereinafter referred to as Colorado Springs Utilities), and _____, a (*Corporation, Natural Person, Special District, Govt Entity, etc.*), hereinafter referred to as Applicant, for (*Project Name*), WO# _____.

RECITALS

- A. Applicant has requested that natural gas mainline facilities be constructed by Colorado Springs Utilities in order to supply gas service as shown on the attached map(s); and
- B. Colorado Springs Utilities has constructed requested gas facilities in accordance with its lawful tariffs, rules, regulations and rates (collectively, the "Tariffs") under the Extension Contract dated _____, _____. Said Extension Contract shall be superseded by this Contract; and
- C. Applicant has advanced the sum of \$(*As-Built Cost*) to Colorado Springs Utilities (the "Deposit") to reimburse Colorado Springs Utilities for the Applicant's portion of the actual construction costs, and has conveyed all necessary rights-of-way for constructed facilities to the appropriate entity in a form acceptable to Colorado Springs Utilities; and
- D. Colorado Springs Utilities and Applicant desire that their agreement relative to this gas facility extension be in writing.

NOW, THEREFORE, in consideration of the premises and mutual promises of the parties as hereinafter set forth, IT IS AGREED:

CONDITIONS

- 1. For a period of twenty years from the date of this Contract, Colorado Springs Utilities shall make refunds to the Applicant based upon the ratio of actual connected load to expected load. The expected load to be served by the facilities described in this Contract is __MCFH. Refunds shall be calculated as specified in the Tariffs in effect at the time of connection, as set forth by the City Council and on file in the City's Clerk/Treasurer. Refunds shall be paid to the Applicant on an annual basis, without interest.
- 2. Any connections to this main extension requested by the Applicant or others shall be subject to the approval of Colorado Springs Utilities and to the availability of gas at the time of request.
- 3. Applicant acknowledges that, depending upon the build-out rate and the load connections to the system, the amounts refunded may be less than the Applicant's Deposit with Colorado Springs Utilities. Applicant further understands that in no event will the total amounts refunded under this Contract exceed the Deposit, nor will any refunds be made after expiration of this Contract's term. Any unrefunded portion of the Deposit which exists at Contract expiration will become a contribution-in-aid of construction to Colorado Springs Utilities, as provided in the Tariffs.

CHAPTER 3

Utility Service Installer License Rules and Procedures

3.01 Introduction

These Utility Service Installer license rules and procedures and the related licensing program are promulgated as rules and regulations by the Executive Director of Utilities in accordance with Chapter 12, Article 3, Sections 12.3.303, 12.3.304, 12.3.306, 12.3.307, 12.3.309, and 12.3.312 of the Code of the City of Colorado Springs.

3.02 Utility Service Installer Licensing Program:

a) Employees of Colorado Springs Utilities:

Employees of Colorado Springs Utilities may be issued a Utility Service Installer license by Utilities when the employee's Utilities job-related training and testing demonstrates the same level of knowledge and expertise in the installation of natural gas service lines as required of those licensees that are not employees of Colorado Springs Utilities.

Employees of Colorado Springs Utilities are not required to pay to Utilities the fees and expenses related to the Utility Service Installer License program, nor must those employees provide the Certificate of Insurance that is required to be provided under these Utility Service Installer license rules and procedures. However, employees of Colorado Springs Utilities that are issued a Utility Service Installer license are subject to the term of license, records maintenance (as appropriate), suspension and revocation provisions of these Utility Service Installer license rules and procedures and the Code of the City of Colorado Springs.

Employees of Colorado Springs Utilities that are issued a Utility Service Installer license and that subsequently cease employment with Utilities become subject to the provisions of these Utility Service Installer license rules and procedures that apply to non-employees of Colorado Springs Utilities upon the day following the day of the employee's cessation of employment with Utilities.

b) Utility Service licenses for persons that are not employees of Colorado Springs Utilities:

1) Certificate of Insurance:

A current Certificate of Insurance provided by the Contractor or by the Utility Service Installer must be on file with the Colorado Springs Utilities Energy Construction-~~Operations~~ and Maintenance Department before the Contractor or Utility Service Installer may install natural gas service lines. The types of insurance and amount of coverage required are the same as for Building Contractor "A", licensed according to the Pikes Peak Regional Building Code, RBC201.7.1. The Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department shall be designated as an insurance certificate holder by the Contractor, Utility Service Installer or his/her insurance company. A Certificate of Insurance must be remitted upon renewal of the insurance policy or renewal of the Heating Contractor

“A” license. If insurance is lapsed, cancelled or reduced, the Contractor or Utility Service Installer will no longer be permitted to install natural gas service lines, and the lapse, cancellation or reduction of insurance shall automatically suspend the Utility Service Installer license until the required coverage is reinstated.

2) Utility Service Installer License Process:

- a) A Utility Service Installer license can be obtained by:
 - 1) Paying all applicable training and license fees;
 - 2) Attending a Knowledge, Skill and Licensing assessment;
 - 3) Passing a written examination; and
 - 4) Successfully completing a practical hands-on socket heat fusion evaluation.
- b) There will only be four Utility Service Installer Knowledge, Skill and Licensing assessments scheduled and held during each calendar year. It shall be the responsibility of the Licensed Utility Service Installer (LUSI) to monitor their license expiration date and to sign up and attend one of the scheduled assessments prior to the expiration date printed on their license. The four assessments shall be scheduled in the months of January, April, July and October. If the attendance exceeds what can be accommodated for and/or managed, an additional class shall be scheduled in the same week for that month. To sign up for one of these scheduled assessments, contact Service Installation Support at 719-668-7646.

The written examination is conducted in two parts: the first covering aspects of Chapter 4, Service Line Design and Construction and the second covering aspects of the heat fusion process. The minimum passing score on each part of the written examination is 80 percent. An applicant who fails to achieve a passing score on either part of the written examination will be required to retake the class.

- c) When a passing score has been achieved on the written examination, the applicant may proceed to the practical portion of the evaluation. During the practical evaluation, applicants will be required to demonstrate the ability to make socket heat fusions on all polyethylene pipe sizes for which they desire to be licensed.
- d) Applicants who have successfully completed the written examination and are scheduled to take the practical hands-on fusion evaluation must provide all of their own pipe and fittings for the sizes they wish to be evaluated on and licensed for. Each person or company must bring their own socket heat fusion equipment and tools to the hands-on fusion evaluation, for inspection by Colorado Springs Utilities personnel, to make sure the equipment and tools are in good working condition. All socket heat fusion tools brought into the practical evaluation must be in good working order or the testing will be cancelled.
- e) Once licensed, the Utility Service Installer shall keep the licensee’s employment information current with Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department (719-668-7646).

3) License:

- a) A Utility Service Installer license will be issued upon successful completion of the written examination and the practical portions of the evaluation. The Utility Service Installer must present the license at the request of any authorized employee of Colorado Springs Utilities Energy Construction ~~Operations~~—and Maintenance Department or Public Utilities Commission of Colorado. Failure to present the license will result in the rejection of service line(s), as well as possible suspension or revocation of the license.
- b) Each license shall be issued for a term of 3 years. Prior to the expiration of the term and upon application for renewal of the license, the Utility Service Installer must pay all applicable training and license fees, attend a Knowledge, Skill and Licensing assessment; pass a written examination; and successfully complete a practical hands-on socket heat fusion evaluation.
- c) In addition to performing a minimum of one inspected polyethylene socket heat fusion annually for each of the sizes licensed for, Utility Service Installers must attend a Knowledge, Skill and Licensing assessment, pass a written examination with a score of 80% or better, and successfully complete a practical hands-on socket heat fusion evaluation within every 3 year license term in order to maintain a valid license status. If a 12 month period has elapsed since the last fusion inspection, or if the Utility Service Installer does not attend a Knowledge, Skill and Licensing assessment, pass a written examination, and successfully complete a practical hands-on socket heat fusion evaluation within 3 years of the issue date of the license, then the Utility Service Installer's license will be automatically suspended until a re-instatement procedure is successfully completed.
- d) Grounds for Suspension of a Utility Service Installer License.
 - 1) Failure to pay fees when due or failure to pay charges incurred.
 - 2) Violation of any provision of the Code of the City of Colorado Springs pertaining to the license or of any regulation or order relating to the license lawfully made under the authority of that Code.
 - 3) Violation of any provision of these Utility Service Installer license rules and procedures, Colorado Springs Utilities' Tariffs or Colorado Springs Utilities' Line Extension and Service Standards.
 - 4) Violation of any law of the United States, of the State of Colorado or of the City of Colorado Springs when the violation concerns conduct or activity related to the installation of natural gas service lines.
- e) A Utility Service Installer license may be suspended by a Utilities Energy Construction ~~Operations~~—and Maintenance Department Manager for a minimum period of 30 days, but not more than 90 days, when a Utility Service Installer has accumulated one or more violations within a 6 month period. Utilities will notify the Utility Service Installer of the suspension of the license and the Utility Service

Installer may request a review of the suspension of the license by the General Manger of the Utilities Energy Construction ~~Operations~~ and Maintenance Department. The decision of the General Manager of the Utilities Energy Construction ~~Operations~~ and Maintenance Department shall be final regarding the suspension. Prior to re-instatement of the Utility Service Installer license after a suspension, the licensee must complete a re-instatement procedure. The re-instatement procedure following a suspension includes all three components of the initial Utility Service Installer license procedure: Knowledge, Skill and Licensing assessment, written examination, and hands-on fusion evaluation.

- f) Any violation occurring within one year of a reinstatement of a Utility Service Installer license after suspension will result in a 6 month suspension of the Utility Service Installer license from the date of that violation. Utilities will notify the Utility Service Installer of the suspension. Prior to instatement of the Utility Service Installer license after a suspension, the licensee must complete a re-instatement procedure. The re-instatement procedure following a suspension includes all three components of the initial Utility Service Installer license procedure: Knowledge, Skill and Licensing assessment, written examination, and hands-on fusion evaluation.
- g) Revocation of Utility Service Installer license will occur pursuant to the Code of the City of Colorado Springs when a Utility Service Installer has accumulated more than 3 violations in a one year period, or may occur for any other reason provided for by the Code. Pursuant to Section 12.3.310 of the Code of the City of Colorado Springs re-licensing cannot occur until 2 years from the date of the revocation of the license. The re-licensing procedure following a revocation includes all three components of the initial Utility Service Installer license procedure: Knowledge, Skill and Licensing assessment, written examination, and hands-on fusion evaluation.
- h) A Utilities Energy Construction ~~Operations~~ and Maintenance Department Manager may summarily suspend the license of any Utility Service Installer when a natural gas service line installation is deemed unsafe or hazardous.

4) Fees:

- a) An Inspection and Connection Fee as specified in Utilities' Tariffs will be paid by the Owner, Builder, Developer or Customer for the inspection and connection of the natural gas service line, electric service line or joint trench service lines (CSU Gas & Electric) prior to it being allowed to be scheduled with Colorado Springs Utilities for installation.
- b) A license Fee of 50 dollars will be charged for each 3 year license period. The fee shall be paid upon application for the license or upon renewal application for the license.
- c) A Training Fee of 150 dollars will be charged for the Utility Service Installer license procedures: Knowledge, Skill and Licensing assessment, written examination, and hands-on fusion evaluation. The fee shall be paid upon application for the license, upon renewal application for the license, or prior to any training for re-instatement after suspension of the license.

- d) The LUSI is responsible for all applicable Return Trip Inspection and Connections Fees as specified in Utilities' Tariff.
- e) The LUSI is responsible for all applicable Cancellation Fees as specified in Utilities' Tariff.
- f) Fees due from a Utility Service Installer licensee will be billed on a monthly basis. The Utility Service Installer's license will be automatically suspended when any bill for fees due remains unpaid after 30 days from the date of the bill's due date. Nonpayment of fees is grounds for revoking a Utility Service Installer license.
- g) When required, welded natural gas service risers shall be fabricated by the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department Machine Weld Shop for installation by a LUSI. All welded natural gas service risers must be approved by Colorado Springs Utilities Field Engineering prior to fabrication. A 100 dollar fee will be charged to fabricate each custom riser.

5) Records Management:

The Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department will maintain records of test scores; records of last inspected fusions; records of Insurance Certification; records of violations, suspensions and revocations, and records of license dates and license terms for all LUSIs.

CHAPTER 4

Service Line Design and Construction

4.01 Introduction

Service line design and construction specifications are adopted as rules and regulations by Colorado Springs Utilities in accordance with Chapter 12, Article 3, Sections 12.3.301 and 12.3.304 of the Code of the City of Colorado Springs. The purpose is to ensure that requirements established in Colorado Springs Utilities Natural Gas Tariffs/Rules and Regulations, and the U.S. Department of Transportation Minimum Federal Safety Standards for Natural Gas Pipelines (49 CFR Part 192), are adhered to by all persons engaged in design and/or construction of natural gas service lines.

The scope of these specifications include all new polyethylene gas service lines measuring 2 inches nominal diameter or smaller. A Licensed Utility Service Installer (LUSI) shall perform installation of the affected gas service lines. The contractor and/or LUSI shall be held responsible for the integrity of gas service line installations for a period of 3 years beginning the day final approval is granted by the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department.

Colorado Springs Utilities Gas Construction personnel shall evaluate each of the following, on a case by case basis to determine the best course of action.

a) Service Line Repair or Replacement:

For single family residential property, all repairs or replacement of service lines shall be completed by Colorado Springs Utilities. For any property other than single family residential, all repairs or replacement of service lines shall be completed by Colorado Springs Utilities and may be charged to the customer on a Time & Materials (T&M) basis.

Per the requirements of the Public Utilities Commission as it pertains to non-residential service lines, "Service lines installed prior to 9/1/1984 which require repair or renewal due to leakage shall be repaired or renewed by the Division (Colorado Springs Utilities) at the owner's expense." In addition, for pre 9/1/1984 installed non-residential service lines, Colorado Springs Utilities will replace, at the owner's expense, substandard material not consistent with gas industry standards of that time period (i.e. installation of PVC pipe, clear plastic pipe, sprinkler hose, etc.).

b) Service Line Relocation:

Any residential or commercial relocation of service lines required due to customer actions is charged to the customer on a Colorado Springs Utilities Time & Materials (T&M) basis (Example: grade changes, new buildings/structures which jeopardize existing gas service lines). Time & Material contracts (T&M) are administered by Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department.

c) Gas Service Line to an Existing Structure that has Natural Gas Service:

Any structure that already has a natural gas service line and now requires the gas service line to be relocated, upgraded, replaced, to have additional risers installed, to have a branch service installed, or the gas meter to be moved for any reason, this work shall be performed by Colorado Springs Utilities Operator Qualified personnel.

(A branch gas service line is a gas service line which intersects, attaches, and is fed from an existing natural gas service line.)

d) Gas Service Line to a New Building or Existing Buildings that have not had previous Natural Gas Service:

Colorado Springs Utilities LUSIs shall be allowed to install all new natural gas service lines for all brand new structures or existing structures, which require natural gas service and are creating new gas load.

e) Gas Service Lines Being Killed:

All natural gas service lines within Colorado Springs Utilities gas service area that are being killed, for the demolition of a building, home or structure, shall always be killed and capped at the designated property line of the address and an electronic marker placed at this location.

All natural gas service lines that are servicing any buildings, homes or structures within Colorado Springs Utilities gas service area, that are being demolished and no building, home or structure shall be rebuilt in its place, the lot or property is to remain vacant or may become a parking lot, and no longer requires natural gas service, the gas service line shall be killed and capped at the main.

f) Gas Service Line Excess Flow Valves:

Excess Flow Valves (EFVs) shall be ~~required installed as required by 49 CFR Part 192. for ALL new and replaced Single Family Residential service lines, regardless of size and regardless of Pressure District. The EFV shall be installed as close to the tapping tee/main as possible.~~

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~~For replaced service lines, EFVs will only be installed when the tapping tee is exposed. NOTE: Single Family Residential is defined as one residential house on one lot.~~

4.02 Pre-Installation Procedure

a) Summary:

The following summary may be used as a guide when designing a gas service line installation.

- 1) Contact Colorado Springs Utilities (719-668-3524) to request gas service, determine pressure available, and gas service stub location for the subject premises prior to installation of the gas service line.
- 2) Contact Colorado Springs Utilities Field Engineering if any of the following situations occur:

- 2) Location of outside electrical appliances, transformer(s) and electric meter(s).
- 3) Location of all existing and proposed underground facilities including drainage.
- 4) Location of existing gas service stub(s) as applicable.
- 5) Location of proposed gas meter(s).
- 6) The individual gas load for each existing and proposed gas appliance(s).
- 7) Address and street name of the building(s) to be served.
- 8) Name and telephone number of Applicant.
- 9) Detail drawing of multiple meter steel manifolds, as applicable.

*Any changes that have been made to the service design which has been approved, including, but not limited to the gas meter location, individual appliance load, total connected load, metering pressure, address or street number may delay the installation of the gas meter. We reserve the right to hold the installation of the gas meter and require you to resubmit the correct information to Field Engineering.

4.03 Installation Procedures

a) Summary:

The following summary may be used as a guide to accomplish installation tasks for gas service lines:

- 1) The typical residential service line installation utilizes a joint trench for both electric and gas services. NOTE: Joint trenching of electric and gas service lines shall only occur when an address being served resides within both Colorado Springs Utilities electric and gas service territories where both utilities are owned by Colorado Springs Utilities. The LUSI is responsible for providing the trenching, padding & backfilling, electric wire and gas service lines (see Table 7 for Approved Materials, Table 11 for Inspection Checklist, and Figures 1-9 for installation details).

- 2) 1-1/4" risers shall be installed for all commercial services unless an alternative is required by Field Engineering or Gas Planning and Design.

- 2)3) Contact Colorado Springs Utilities Machine Weld Shop *if* a steel multiple meter manifold *or* steel gas service riser(s) is required. All gas service risers larger than 2 inches shall be welded steel risers. Colorado Springs Utilities Machine Weld Shop will fabricate all steel multiple meter manifolds and all steel gas service risers. **EXCEPTION:** Approved multi-meter above ground manifolds.

NOTE TO INSTALLERS: If installing a welded steel riser, Colorado Springs Utilities Gas Construction Quality Control Inspections (719-668-3667) must be contacted a minimum of 5 working days prior to the scheduled appointment so arrangements can be made for a Colorado Springs Utilities welder to be on site for the scheduled appointment to weld the steel valve onto the riser.

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Contact Colorado Springs Utilities Machine Weld Shop at least 10 working days prior to installation date of manifold or riser (719-668-5384).

~~3)4)~~ Prior to inspection, gas service line(s) shall be leak-tested with air in accordance with 4.03(e) Leak Test Requirements. Also, each gas service line trench shall be properly padded per 4.03(c) Service Line Installation notes 9 and 10.

~~4)5)~~ Contact Colorado Springs Utilities for an inspection (719-668-3524). See 4.04 Inspections, for inspection procedure. Questions and/or problems regarding gas service line inspections must be referred to Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department (719-668-7646).

~~5)6)~~ Upon approval through inspection, the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department will energize (tie-in) the gas service line(s).

~~6)7)~~ Once the service line(s) is approved, the LUSI installing the gas service line(s) shall be responsible for back-filling the gas service line(s) trench to a minimum cover of 12 inches at time of tie-in before inspector leaves site. The final back-fill procedure should be completed within 24 hours from the time of tie-in to best protect services in the trench.

~~7)8)~~ If the service riser and/or fuel gas piping inlet are not located such that a standard meter set can be constructed (see Figures 5 & 8), the configuration will be rejected. Contact Colorado Springs Utilities Field Services (719-668-7350) for questions and/or problems with the rejection.

- a) If the configuration is rejected due to the fuel gas piping, the Builder will be responsible to resolve the issue.
- b) If the configuration is rejected due to the service riser, Colorado Springs Utilities will be responsible, unless the service riser location provided by the Builder proves incorrect at time of meter set, the Builder will be responsible.

b) Service Line Location:

Any utility service lines (other than communication as shown in Figure 1B) owned by any entity other than Colorado Springs Utilities are not allowed to be installed in a joint trench with Colorado Springs Utilities owned natural gas service lines. See Figure 4B for non- Colorado Springs Utilities owned electric utility lot layout requirements.

1) Each gas service line shall be located within the property lines of the lot that is intended to serve. Utilities will provide only one Natural Gas Service Stub to each individual lot that will extend to the property line where practical. Each separate and/or additional structure/building shall be served by a single or separate gas service line, riser and meter where practical. All gas service lines shall be installed in the most direct, straightest and practical path possible from the gas service stub location to the gas service riser and meter location. See 2.02c for Location & Clearances of Gas Main Line.

2) Joint Trench:

Gas service lines installed in a joint trench with Colorado Springs Utilities owned electric and/or communication lines require a 12 inch minimum radial separation (see Figures 1 & 9).

3) Single Trench (Gas Only):

Due to the imperfect science related to service line locates all gas service lines shall maintain the minimum required horizontal separation from other buried utilities, property lines and underground structures which run parallel to the gas service line when installed in a gas only trench. Where the required horizontal separation distance cannot be maintained, a reasonable separation distance between one and three feet will be considered at the discretion of the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department Gas Quality Control Supervisor and/or the Gas Construction Section Leader only. Any and all exceptions or variances that may be granted for the required gas standards by the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department Gas Quality Control Supervisor and/or the Gas Construction Section Leader, shall be formerly documented in detail and state the exact circumstances, terms and conditions for future reference.

A one foot vertical separation shall be required for all unavoidable utility crossings and when crossing under a retaining wall or its footing.

Where buried utilities and/or underground structures prohibit adherence to separation requirements, a polyethylene protective sleeve must be installed with prior approval from the Colorado Springs Utilities Energy Construction ~~Operations~~—and Maintenance Department. The protective sleeve shall have an inside diameter sufficient for insertion of the gas service line without causing undue resistance, and shall be of the same material as the gas service line. The protective sleeve shall extend a minimum of 3 feet beyond the perimeter of the conflicting structure.

c) Service Line Clearances:

Gas service lines should have the following minimum separations:

- 1) Minimum 3 foot horizontal separation from property lines, above or below ground structures, and/or other utilities.

EXCEPTION: Minimum 2'-6" (30 inch) horizontal separation from property lines, above or below ground structures, and/or other utilities, shall only be allowed where and when residential structures are built on less than a 6 foot setback from the side property line (distance of less than 6 feet between the side wall of the structure and the side property line). See Figure 4A.

- 2) Minimum one foot vertical separation when crossing other utilities.
- 3) Minimum 24 inch cover required.

Note: separations are measured from the outside diameters of the utility lines.

d) Service Line Installation:

Colorado Springs Utilities allows the use of prefabricated service line assemblies, but only for 3/4 inch service lines, and only where the line does not exceed a length of 120 feet.

Prefabricated service line assemblies include an approved anodeless riser, up to 120 feet of factory-installed polyethylene gas piping, and tracer wire. LUSIs who install these types of lines need to self-inspect for gouges greater than 10 percent. A socket heat fusion is allowed on these lines. All fusions shall remain exposed and the trench shall remain open for inspection.

Steel gas service lines shall only be installed by the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department. Trenching, padding & backfilling for all new services shall be provided by the builder's representative.

Boxed property line valves shall be installed by Colorado Springs Utilities as required by 49 CFR Part 192, on all services 2" and larger. Property Line valves ~~shall~~ also ~~to~~ be installed; ~~regardless of size, forat new or replaced services 2" or larger or services~~ designed for public assemblies including, but not limited to; schools, churches, hospitals, and nursing homes. Property line valves should be installed when commercial/industrial customers have significant amounts of private utilities that could impede construction crews during future gas work.

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Any gas service line that is located within Colorado Springs Utilities natural gas service territory that needs to be relocated and or replaced after the initial installation, that has had natural gas being delivered through it to the point of sale (the meter) shall require any and all such work to be performed by Colorado Springs Utilities personnel.

NOTE: Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department Inspectors will examine all trenches and padding. If any violation of the service line installation standard is discovered during an inspection, the Utility Service Installer's license may be suspended or revoked at the discretion of the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department.

- 1) All gas service lines shall be installed in the most direct, straightest and practical path possible from the gas service stub location to the gas service riser. Where field bends are necessary, the radius of the bend shall not be smaller than specified in Table 4.
- 2) Gas service lines shall not be installed under any building/structure. Underground and surface structures include, but are not limited to foundation and basement walls, patios or other sealed surfaces, which abut a building, or it's foundation. Excluded from this category are public sidewalks and unavoidable structures where a protective sleeve is required.
- 3) Gas service line piping shall be joined by socket heat fusion only.
- 4) All socket heat fusions shall be performed in accordance with Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department Joining Specifications. Only persons who are LUSIs shall perform socket heat fusions and/or install prefabricated service line assemblies.
- 5) **NOTE:** Due to the thermal expansion & contraction of polyethylene, sufficient pipe length shall be provided by installer (polyethylene pipe changes in length one inch for every 100 feet for every 10 degrees Fahrenheit).
- 6) Cold weather (below 55°F) fusions shall be performed using 4.03(d) Cold Weather Handling Procedures (see Table 5 for Heating/Cooling Times).

- 7) For gas service line(s) no more than 2 socket fusion couplings between the gas service stub and the gas service riser shall be allowed. Colorado Springs Utilities Gas Construction Quality Control Inspectors must approve the use of more than 2 socket fusion couplings. All couplings must be exposed for inspection. The minimum pipe lengths between adjacent socket fusions, except for those associated with field bends, are detailed in Table 6.
- 8) No gas service line shall be installed in an “over dig” area of a building foundation prior to it being completely backfilled and appropriately compacted. After the entire “over dig” area of the foundation is backfilled and compacted, a separate trench shall be dug for the installation of the gas only service line or joint trench service lines.
- 9) All gas service lines shall be properly supported on well-compacted soil prior to back-filling.
- 10) Prior to back-filling, an approved padding material (bedding sand), equal to manufactured sand (see Table 7 for Approved Materials), shall be used to:
 - a) Line bottom (below pipe) of the Joint Trench and Gas Only service line trench with a minimum of six inches (6”) of approved padding material.
 - b) Place over the pipe an additional 6 inches of approved padding material.
 - c) Backfill completely around both the Jbox and the temporary electric pedestal at the time when it is relocated from the property line and installed at the house or foundation.
- 11) The trench depth shall be adjusted such that the depth of the gas only service line is a minimum of 24 inches, 32 inches for joint trench with electric, and a maximum of 48 inches below existing grade and proposed final grade, including the required padding. The cover above the gas service line shall be provided over the entire length of the gas and electric service lines including the top layer of padding material as shown in Figure 1. See Table 13 for Minimum & Maximum Cover for Natural Gas Lines.
- 12) All gas only service line trenches shall be a minimum of 12 inches wide throughout the vertical depth. Joint trench service line trenches shall be a minimum of 24 inches wide throughout the vertical depth (see Figure 1).
- 13) Back-fill material shall be free of all foreign debris such as bricks, concrete, asphalt, wood, and trash that may damage the gas service line. Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department reserves the right to excavate any and all service line trenches to ensure that post back-fill padding requirements have been met.
- 14) A bell-hole shall be provided by the LUSI at the property line or easement line in order to facilitate the tie-in of the gas service line.
 - a) For 3/4 inch and one inch gas service lines the bell hole shall be a minimum of 4 feet long by 4 feet wide.
 - b) For 1-1/4 inch and 2 inch gas service lines the bell-hole shall be a minimum of 7 feet long by 4 feet wide.

- c) The length and width are to be measured along the bottom of the bell-hole and centered about the existing gas service stub. All back-fill material shall be placed no closer than 2 feet from the edge of the bell-hole.
 - 1) The depth of the bell-hole for polyethylene facilities shall be 6 inches deeper than the existing polyethylene service stub.
 - 2) The depth of the bell-hole for all steel facilities shall be 12 inches deeper than the existing steel gas service stub.

NOTE: Contractor shall provide shoring or benching if depth exceeds 5 feet or warranted by soil conditions.

- 15) A minimum of 12 inches of the existing gas service stub shall be exposed during excavation of the bell-hole.
- 16) If gas service stubs are damaged such that greater than 10 percent of the wall thickness is gouged, stripping back of the trench shall be required in order to replace the entire portion of damaged pipe.
- 17) If gas service stubs are damaged, (including cuts, kinks, breaks and/or those that are leaking) the damage shall be treated as an emergency, call (719-448-4800). **ONLY** Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department shall repair the gas service stub, at the expense of the LUSI.
- 18) All Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department-owned electronic markers are to remain in the trench.
- 19) The new gas service line shall extend a minimum of 12 inches alongside the existing gas service stub and shall be at the same elevation as the end of the existing gas service stub. The existing gas service stub shall not be realigned or moved.
- 20) A #12 tracer wire shall be installed with each gas service line. The tracer wire shall be taped to the gas service line in at least three locations and not to exceed 10 feet from each other. The tracer wire shall be brought above existing grade adjacent to the building side of the riser and taped securely in 3 places to the contour of the gas service riser. See Figures 5 & 6 for tracer wire installation details included on service risers and manifolds.
- 21) The tracer wire shall be continuous (without splices) except where multiple meter manifolds with at least one lateral over 6 feet long make it necessary to splice additional wire(s) onto the gas service line tracer wire. Where splices are necessary, Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department approved wire connectors shall be used.
- 22) Where welded steel gas service risers are installed, follow the same tracer wire installation criteria for anodeless risers. Also, a one pound magnesium anode shall be thermite welded to the riser below grade. Tracer wire is not to be thermite welded to any steel riser.
- 23) The electric service wire in a joint trench installation with the gas service line shall not be installed until the Colorado Springs Utilities Gas Construction Quality Control Inspector arrives on site. The electric wire is provided by the LUSI. Additionally, in the event the

- 3) All gas service lines 2" diameter and smaller shall be leak tested for a minimum of 15 minutes for lengths less than or equal to 200' prior to tie-in. For pipe lengths greater than 200' air test for 15 minutes for every 200 feet in length (e.g., 201' to 400' test for 30 minutes; 401' to 600' test for 45 minutes, 601' to 800' test for 1 hour, etc.). When the gas service line is allowed to be installed with the prior approval of Colorado Springs Utilities Gas Construction Quality Control Inspections personnel prior to the gas service stub installation, the service line shall remain under leak test until a gas service stub is installed by Colorado Springs Utilities. When this occurs, the licensed Utility Service Line Installer shall be billed daily fees for Colorado Springs Utilities Gas Construction Quality Control Inspections personnel to check and affirm that leak test pressure is maintained, and that the gas service line has not been unknowingly damaged. NOTE: This is not the preferred process or method of installation.

g) Venting Through Pavement:

Except as specified in this paragraph, gas service line(s) shall not be located below or pass through any underground or surface structure.

- 1) Where a structure abuts a building, a gas service riser vent shall be installed. The gas service riser vent shall consist of a 12 inch by 12 inch opening in the sealed or concrete pavement surface. The top 6 inches of the gas service riser vent opening shall be fitted with dirt, loose gravel or rock, as outlined in Figure 2. Other gas service riser vents may be used only with prior approval from the Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department.

h) Mobile Home Lots:

In addition to other requirements detailed in this manual, a gas service line serving a mobile home lot shall be designed and installed in accordance with Figure 3. No more than 10 mobile home lots in a single mobile home park will be scheduled for inspections during a single business day.

4.04 Inspections

Colorado Springs Utilities Gas Construction Quality Control Inspectors will inspect gas service line installations. For requesting a Gas Service Line Inspection contact Colorado Springs Utilities between 7:30 a.m. and 2:00 p.m., Monday through Friday, excluding holidays (see scheduling gas inspections in Phone Section). Appointments need to be scheduled a minimum of 3 business days before the requested appointment date, and no more than 3 weeks before the scheduled appointment date (see Table 10 for Appointment & Cancellation Criteria).

- a) Prior to inspection, please note the following:
- 1) Colorado Springs Utilities Gas Construction Quality Control Inspectors may require guard posts, padding, protective sleeve(s) and/or venting, at their discretion.
 - 2) All service line trenches will need to remain open for inspection, including all prefab riser and line assemblies.
 - 3) Gas service line(s) will not be inspected until gas mains and service stubs have been installed.

Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department reserves the right to grant partial inspections of gas service line(s) for flag lots. A gas service line may be extended up to the flag portion of the lot only if Applicant has obtained Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department approval and water and sewer services have been installed.

Special conditions may warrant a partial inspection of gas service line(s) in order to allow for paving installation prior to final approval and tie-in of the completed gas service line(s). Colorado Springs Utilities Energy Construction ~~Operations~~ and Maintenance Department must pre-approve this type of installation.

Under certain circumstances where service lines cannot be installed prior to installation of retaining walls, driveways, etc., a protective sleeve may be required. This sleeve, and its intended use, must be approved by Colorado Springs Utilities prior to installation.

c) Re-Inspection:

If gas service line(s) fails to pass inspection, the Colorado Springs Utilities Gas Construction Quality Control Inspector will present an Inspection Checklist to the LUSI with the rejection issues listed. All deficiencies must be corrected/remedied before a re-inspection may be requested and scheduled (see Table 11 for Joint Trench Inspection Checklist). Contact Colorado Springs Utilities to schedule re-inspection (see scheduling gas inspections in Phone Section).

d) Inclement Weather and Show Up Time:

For each scheduled work day, Colorado Springs Utilities shall determine if weather conditions will permit a productive workday. However, it shall be the responsibility of the Utility Service Line Installer to contact the Colorado Springs Utilities representative no earlier than 30 minutes prior to the start of the workday to determine if weather conditions will allow work. If no contact is made and work is cancelled due to weather conditions, the Utility Service Line Installer shall not be entitled to any reimbursement from Colorado Springs Utilities.

Utility Service Line Installer shall not be entitled to any reimbursement from Colorado Springs Utilities. When Colorado Springs Utilities contacts the Utility Service Line Installer prior to starting the scheduled work day, and Colorado Springs Utilities has determined that weather conditions will not allow for a productive work day, no reimbursement shall be due to the Utility Service Line Installer for any show up time.

If Colorado Springs Utilities determines weather conditions will not allow for a productive workday, than all appointments for that day and all other appointments for that work week will shift out one day or to the first day weather permits a productive workday. This could require appointments shifting to the Saturday or Sunday of that week. Colorado Springs Utilities will make every effort to bring on additional inspection/tie-in crews to complete the appointments as soon as possible. Colorado Springs Utilities will notify everyone whose appointments have been impacted by cancelled day(s) as soon as the revised appointment dates have been determined.

Some weather conditions which could result in cancellation of appointments include:

Prefabricated polyethylene-insert type anodeless gas service risers shall not be bent or altered. Heating or welding of polyethylene-insert type anodeless gas service risers is prohibited. All gas service risers and gas service line connections shall be properly supported on well-compacted soil to prevent damage during back-filling and compaction, and to prevent settling. After back-filling, the gas service riser shall be in a vertical position. The minimum depth of the entire Manifold assembly shall be 24 inches.

- 3) All 1-1/4 inch and larger risers shall have a bypass installed.

EXCEPTIONS: Buildings with multiple risers shall have a bypass installed every 10 to 12 feet, instead of every riser. If the distance between the risers on the underground manifold exceeds 12 feet, a bypass shall be installed on every riser.

- 4) All welded gas service risers and welded steel multiple meter manifolds shall be field wrapped in accordance with Figure 11.
- 5) All polyethylene multiple meter manifolds shall be constructed and installed in accordance with Figure 6. Horizontal stair stepping or vertical stacking of multiple meter manifolds is prohibited unless Above Ground Multiple Meter Manifold assemblies have been formally requested by the LUSI, Developer, and/or property owner, and approved by the Colorado Springs Utilities Energy Construction Operations and Maintenance Department (see Figure 7). All gas service risers shall extend in a straight and perpendicular fashion from the manifold header.
- 6) Every effort shall be made by LUSIs to utilize prefabricated anodeless risers or polyethylene multiple meter manifolds.

c) Above Ground Multiple Meter Manifolds:

1) Request Procedure:

- a) Requests for Above Ground Multiple Meter Manifold systems will only be considered for structures intended to serve 3 or more individual residential tenants, owners or occupants.
Multiple unit commercial structures intended for business use will not be considered.
- b) Submit to Colorado Springs Utilities Field Engineering a fully dimensioned project drawing indicating all building footprints, proposed meter set locations, proposed number of meters per set location, electric meter locations, air supply/heating vents, and other sources of migration and/or ignition.
- c) All fuel line and riser configurations must be constructed according to the dimensional requirements indicated in Figure 7, unless otherwise specified in writing by Colorado Springs Utilities.
- d) All gas service lines shall be constructed according to the specifications of the currently approved Colorado Springs Utilities Gas Line Extension and Service Standards Manual. However, the polyethylene service line diameter may be specified by Colorado Springs Utilities Field Engineering. Gas service line installations will be individually inspected for workmanship throughout installation process.

- e) All anodeless risers for Above Ground Multiple Meter Manifold assemblies shall be 1-1/4 inch, unless otherwise specified.
- f) All fuel lines through structure walls shall be black iron threaded piping unless otherwise specified in writing by Colorado Springs Utilities Field Engineering. House lines shall be secure and level.

All fuel lines are required to be labeled with a stamped brass tag attached with #12 wire which clearly identifies the premise it serves. If incorrect tagging or addressing creates inaccurate information in Utilities records, the owner of such premises will be responsible for actual time and material charges incurred by Utilities to correct the situation. The resolution of billing inaccuracies due to incorrect tagging or addressing will be the responsibility of the Owner and the Customer or user.

- g) After a request has been approved and the requester has completed construction of the fuel line and riser configuration according to Figure 7, and/or other specified dimensions required by Colorado Springs Utilities Field Engineering, the requester must initiate the meter set assembly by calling the Colorado Springs Utilities Field Services (719-668-7350). This process will include an inspection for adherence to applicable dimensional requirements. The inspection will be scheduled after a Gas account from Colorado Springs Utilities ~~Contract Administration~~ Utilities Development Services and a Final Heating Inspection from the Regional Building Department have been obtained for each building unit to be served.
- h) The Colorado Springs Utilities Field Services will provide all meter set assembly materials with the exception of the service line, riser and fuel lines.
- i) After installation of an Above Ground Multiple Meter Manifold, any elevated pressure and/or gas load increase requests may require the construction of a new and separate service line and meter set. Since all meters on the manifold assembly must operate at the same pressure, an elevated pressure would require the entire manifold to operate at the proposed elevated pressure. The cost associated with additional construction shall be borne by the owner or tenant of the structure requesting elevated pressure and/or a load increase. All elevated pressure installations shall be adequately labeled or tagged with the words "Elevated Pressure".
Note: Before the lock is removed from the gas meter manifold a permanent address is required for each separate premise.

If addresses are changed after the Certificate of Occupancy has been issued, the owner of such premises will be responsible for actual time and material charges incurred by Utilities to correct the situation. The resolution of billing inaccuracies due to changes in addresses will be the responsibility of the Owner and the Customer or user.

d) Meter:

Colorado Springs Utilities meters will be sized and installed according to current load. Future loads will be re-evaluated as appliance(s) are inspected and approved by Regional Building. The final meter size shall be determined by Colorado Springs Utilities Field Services.

1) Residential Gas Meter:

a) On single family residential construction where the total connected load is 390,000 BTU/HR or less, a gas meter bar/meter will be installed (3/4 inch and one inch risers only). Field Service will lock the meter valve off at the time of the installation if all three of the following conditions have not been satisfied. Lock will be removed after all are completed:

- 1) Heating inspection or construction meter inspection is completed by Pikes Peak Regional Building Department (719-327-2883)
- 2) The property owner has set up an account with the Customer Service Department for billing (719-448-4800)
- 3) The site has been inspected by a Field Service Inspector (719-668-7350).

b) Field service will make the final connection from the outlet side of the gas meter bar/meter to the fuel line stub.

2) Commercial Gas Meter:

a) Commercial gas meters or gas meters with a total connected load greater than 390,000 BTU/HR will only be installed by Colorado Springs Utilities Field Services after the following three things take place:

- 1) Heating inspection or construction meter inspection is completed by the Regional Building Department (719-327-2883)
- 2) The property owner has set up an account with the Customer Service Department (719-448-4800)
- 3) The site has been inspected by a Field Service Inspector (719-668-7350).

*All commercial gas meter sets require a minimum 1-1/4 inch riser. The riser shall be installed 16 to 18 inches out from the final exterior finish of the structure.

b) For additional commercial meter equipment see Figures 12 & 13.

c) The Field Service Inspector will determine estimated facility gas loads for developer refund calculations and meter sizing. A Utilities Service Specialist from Colorado Springs Utilities Field Services will then install the new meter if the following conditions are satisfied:

3) Meter Set Location:

a) All gas meter sets shall be in an outside location adjacent to a building easily accessible for gas meter reading and maintenance. Enclosures are not allowed, unless approved by CSU for safety reasons and the enclosure does not interfere with meter communications.

Commented [LR1]: Per field services

b) Preferred CSU residential natural gas meter location is on the side of the structure and within 5 feet of the front corner of the structure closest to the gas main, or on the front wall of the structure facing typical public access, or that which is nearest to the gas main. Placement of the meter in this location is for the safety of Colorado Springs

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Utilities' staff that need access to the meter for periodic leak search and maintenance, emergency shutoff, and other activities. Accessibility, also therefore, impacts the safety of the residents. It is preferred to have both the natural gas and electric meters located on the same side of the structure. See Figure 4A.

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c) Construction Heat: A construction meter will not be allowed unless the customer meets with Colorado Springs Utilities Field Engineering and receives a Non Standard Meter Loop agreement form. This will be determined on a case-by-case basis.

d) All gas meter sets shall be in accordance with the following requirements:

1) **Primary Structure:**

a) A separate gas meter location shall be provided for each building, unit or structure which can be individually separated by sale or lease unless Multi-Meter Above Ground Manifolds have been formally requested by the LUSI, Developer and/or property owner and approved by Colorado Springs Utilities. Each separate structure shall have a plainly visible address attached, as applicable.

b) All gas service risers are to be located such that the service regulator vent will be at least 3 feet radially from any potential source of ignition (to include electric meter socket and panel), doorway, electrical device, garage door, electrical outlet, operable window, or any opening to the structure, as outlined in Figure 9 [per UPC 1209.6(c), DOT 192.353(c), 49CFR192.355, 356, and chapter VII Office of Pipeline Safety]. The service regulator vent will be typically located at the same height as the fuel gas inlet piping.

c) All gas service risers are to be located such that the service regulator vent will be at least 3 feet from any forced air intake/exhaust vent (including dryer vents, foundation vents, fireplace makeup air inlets and/or sump pump outlet drains), as outlined in Figure 9. All fresh air opening location clearances shall be located per local codes and IMC 401.4.

d) All gas meter ~~sets~~loops shall be located a minimum of 6 inches to the awayright or left from decks, stairways, or other objects which may interfere with gas meter reading or maintenance. A 3 foot meter clearance needs to be maintained from openings and electrical sources (Refer to Figure 9 for additional clearances). No gas meters shall be installed at an alley or property line.

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e) As a condition of utility service, it is necessary for Utilities to have access to the final gas meter location at all times for the purpose of: Installing, constructing, renewing, replacing, removing, relocating, operating, maintaining, reading, inspecting, repairing, testing and test upgrading of any portion of the distribution system located on or within the boundaries of the premises. Gas meter loop locations shall be located where there is minimum slope between the riser and house line (to be determined by the Field Service Inspector). Final grade from meter loop in all directions shall be no more than 3" drop per one linear foot.

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Trimming or removing vegetation or other obstructions may be required if we determine there is a safety hazard or access issue which interferes with the operation or maintenance of the gas meter or associated piping, including, but not limited to, retaining walls, enclosures, and landscaping.

- f) Any carport, porch, or patio designed to be installed over any Colorado Springs Utilities meter and/or service line is to remain open on 3 sides with protective guard posts (bollards) installed around the meter/service line, as shown in Figure 10.
- g) All gas meter sets shall be located clear of direct water contact from sprinklers and/or roof runoff to include gutters and roof drains. Where it is impractical to avoid roof runoff, gas meter sets shall be covered by a means approved by the Colorado Springs Utilities Field Services. All gas meter sets shall be located such that no part of the set obstructs any portion of a passageway, access or stairway.
- h) All gas meter sets shall be located clear of vehicular traffic. Where it is impractical to avoid vehicular traffic or the meter is to be installed within 3 feet of a curb, parking lot or vehicular thoroughfare, the gas meter set shall be protected by approved guard posts (bollards) installed in accordance with Figure 10. Bollards shall be installed before the lock is removed. All meters located in “drive through” areas shall be approved by Colorado Springs Utilities Field Services. Meters shall not be located in the traffic area of a loading dock.
- i) The minimum distance that padmount transformers and generator equipment may be located from any part of a gas meter, gas regulator, or gas meter piping is 15 feet. This distance may be reduced to 6 feet minimum if a solid masonry wall is built between the two. The minimum distance from the masonry wall to the gas meter, or any portion of the meter set piping, shall not be less than 3 feet. The masonry wall must be made of reinforced concrete, reinforced brick, or reinforced concrete block, with a minimum 3 hour fire rating. The wall must be at least twice the width of the transformer or generator, and at least 6 feet tall. If the generator equipment is greater than 6 feet in height, the wall must be equal to or greater in height than the equipment. The wall shall be anchored to the footing to withstand a minimum of 5 lbs. per square foot of wind load, and meet all applicable local building codes. See Colorado Springs Utilities Electric Distribution Construction Standards, 18-227, Note 2.
- j) Gas meter sets located near a Fire Department Connection (FDC) must be no closer than 3 feet to the left or right (not above) of the subject FDC.
- k) The gas fuel line piping inlet shall be located above ground from the meter outlet to the primary structure wall it is serving. This must be a continuous pipe with no fittings (i.e., couplings)
- l) Elevated Pressure: All elevated pressure requests must be made prior to the installation of fuel gas piping to ensure adequate distribution system pressure is available. Elevated pressure requests can be initiated by contacting Colorado

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- c) Except as allowed by Colorado Springs Utilities, new Master Meters and/or new Master Meter Systems shall be prohibited. Exceptions include assisted living, student housing, or other similar purposes, and must be approved by Field Engineering. At least one meter per building is required. An existing master-metered customer may “check meter” tenants, lessees or other persons to whom ultimately the gas is distributed by an allocation procedure, provided the master-metered customer does not receive more than necessary to pay the master-metered bill. Colorado Springs Utilities will supply and maintain only the one master meter in such an instance.
- d) A non-standard loop agreement is required on any residential, commercial or industrial gas meter loop that deviates from the following specifications as set forth in this manual (see form at the end of Chapter 2 & Figure 6):
 - 1) Horizontal distance from the gas service riser to the finished exterior building wall
 - 2) Horizontal distance from the gas service riser to the fuel gas piping inlet
 - 3) Vertical distance from the gas service riser to the fuel gas piping inlet
 - 4) Vertical distance from finish grade to the top of inlet shut off valve and,
 - 5) If the total connected load meets or exceeds 910,001 BTU/HR and meter dimensions require the set to be right-to-left.
- e) When a gas service line has been disconnected and the gas meter is found to be located at an unacceptable location, such as the property line, the gas meter shall be relocated in accordance with these specifications before service is re-instated.
- f) Gas meters may be situated in “meter banks” where more than one building unit is served within a single building and only when approved by Colorado Springs Utilities Field Service Department. Each fuel gas piping inlet shall be tagged with an approved brass tag, affixed with #16 gauge metal wire, which indicates the address served by the fuel gas piping. Gas meters will not be installed until all gas meter loops are properly tagged.

5) Additional Requirements for School Meters:

The gas meter for a school is set by Colorado Springs Utilities Field Services after the following conditions take place (all must be met):

- a) Colorado Springs Utilities Field Engineering has received and approved a fully dimensional project drawing indicating **ALL** primary structure and modular(s) building footprints with the proposed meter set locations.
- b) A final piping inspection (air test) has been completed on the interior fuel line and approved by the code official who has jurisdiction. Typically, this is either the State of Colorado or The Pikes Peak Regional Building Department.
- c) An account for billing has been created by Colorado Springs Utilities Customer Services Department.

A separate billing address is required for each separate building, modular or structure.

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d) Service Line has been tied-in.

e) A gas meter loop inspection has been completed along with an itemized load breakdown. This inspection is completed by a Colorado Springs Utilities Industrial Gas Fitter.

1) At the time of the meter loop inspection if you have encountered difficulties in carrying out the requirements of these specifications, the Field Services Industrial Truck Gas Fitter has the authority to grant modifications for individual cases provided you have exhausted every option available to you. The details for requesting the modifications must be in writing on the non-standard loop agreement form.

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2) The modification(s) will be rejected if it is determined they have the potential to create a safety hazard, lower the integrity of Colorado Springs Utilities gas distribution system or create unnecessary work for Spring Utilities personnel.

f) Permanent meter protection is in place:

1) A 6 foot high fence with a 6 foot by 6 foot access gate opening (this is mandatory).

2) Guard Posts – (only when meter is in a location of vehicular traffic)

g) The gas service riser, gas meter and fuel line piping shall be secured in a protected area by the following:

1) Gas meter sets located at all schools shall have a 6 foot high fence with a 6 foot by 6 foot access gate enclosing the gas meter set. The meter set shall be located adjacent to a building. Minimum clearance of 3 feet is required from the front of the meter to the fence for meter maintenance.

2) For the safety of all Colorado Springs Utilities' employees who need access to the protected area for any gas meter related work a service road needs to be provided for a vehicle to get as close as possible.

h) Back Up Generators for Schools:

1) If a natural gas backup generator is required, contact Colorado Springs Utilities Field Engineering to determine if a separate gas service line, riser and meter are required.

6) Re-Inspection Fees:

a) A graduated fee will be assessed for **ALL** repeat inspections. Absence of a visible address with a street name at the inspection location will result in a fee for re-inspection. In the absence of permanent street name signs, a temporary street name sign will be required.

e) Gas Meter Testing:

- 1) Acceptance testing for new gas meters:
 - a) All new gas meters received by Colorado Springs Utilities are certified and tested by the manufacture for accuracy.
 - b) Colorado Springs Utilities performs a sample test of 10 percent of all new residential gas meters to verify accuracy. Residential gas meters must be plus or minus 0.5 percent accurate to pass the acceptance testing.
 - c) Colorado Springs Utilities performs a sample test of 100 percent of all new commercial and industrial gas meters to verify accuracy. Commercial and industrial gas meters must be plus or minus 0.5 percent accurate to pass the acceptance testing.
 - d) All rebuilt or repaired gas meters will follow the same accuracy limits as denoted in 4.05(e)1b & c before being placed in service.
- 2) Gas Meter Periodic Test Schedule:
 - a) Gas meters not tested since original acceptance test will be periodically tested. Gas meters must be plus or minus 2 percent accurate to pass the periodic test.

4.06 Materials

All materials covered in this manual shall be new and free from obvious or visible defects and shall conform to the Colorado Springs Utilities Natural Gas Material Specification Manual. Materials approved for use in gas service line construction are detailed in Table 7.

a) Pipe and Fittings:

Polyethylene pipe and fittings shall be limited to those listed on Table 7 and shall bear all pertinent markings as specified in the Colorado Springs Utilities Natural Gas Material Specification Manual for polyethylene pipe and fittings.

All polyethylene pipe shall be free of material defects. Sections of pipe with gouges deeper than 10 percent of wall thickness of the pipe shall be removed and replaced.

b) Risers:

All gas service risers shall be approved prefabricated polyethylene-insert type anodeless risers as noted in Table 7, unless fabricated by Colorado Springs Utilities. All gas service risers larger than 2 inches shall be welded steel risers fabricated by Colorado Springs Utilities Machine Weld Shop. 1-1/4" risers shall be installed for all commercial services unless an alternative is required by Field Engineering or Gas Planning and Design.

NOTE TO INSTALLERS: If installing a welded steel riser, CSU Gas Construction Quality Control Inspections (719-668-3667) must be contacted a minimum of 5 working days prior to the scheduled appointment so arrangements can be made for a Colorado Springs Utilities welder to be on site for the scheduled appointment to weld the steel valve onto the riser.

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TABLE 7

MATERIALS APPROVED FOR USE IN GAS/JOINT SERVICE
LINE CONSTRUCTION

Item Description	Designation	Approved Manufacturer
Anodes	1 pound, bare, magnesium alloy	Galvotec Alloys Inc. Farwest Corrosion Control Corrpro Co. Anode Systems
Pipe/Socket Fittings	PE 2406/2708, ASTM D2513 < 3 yrs. Old 3/4", 1", 2" SDR 11 1-1/4" SDR 10	Performance Pipe JM Eagle <u>Duraline (pipe only)</u>
Service Risers	Polyethylene Insert, Anodeless	
	PE Size	THREADS
	1" IPS SDR 11	1" NPT
	1-1/4" IPS SDR 10	1-1/4" NPT
	3/4" IPS SDR 11	1" NPT
	2" IPS SDR 11	2" NPT
Service Riser Bracket	T-41 (1-1/4" diameter pipe, adjustable 6"-10")	Energy Control Systems, Inc.
Tape	Split Bolts	3M Scotch 130C Linerless Rubber Splicing Tape 3M Scotch 33, 3/4" Tape
	Wrap- Primerless Tapecoat, M50RCG (2", 4" & 6") Wrap - Gray Pipe Wrap Tapecoat, H35 UV Resistant (2") <u>Scotchrap #50 (2")</u>	The Tapecoat Company <u>3M</u>
	Thermite Weld Cartridge	15 Gram Charge
Copper Sleeve	For Tracer Wire	Continental A-200
Wire Connector	Direct Burial Split Bolt	Burndy Mechanical or Equiv.
Tracer Wire	Tracer wire, #12 soft-drawn CCS (copper clad steel), hdpe white insulation, 30 VAC (wire to either have nothing printed on it, or labeled "Natural Gas" or "Gas Pipeline"- all other labeling will be rejected)	Kris-Tech Wire Company Copperhead Industries, LLC Agave Wire, Ltd.

TABLE 8
CLEARANCE MATRIX FOR TYPICAL
COLORADO SPRINGS UNDERGROUND UTILITIES
(Separate Trenches)

HORIZONTAL CLEARANCE MATRIX FOR TYPICAL
COLORADO SPRINGS UNDERGROUND UTILITIES

(all dimensions in feet) All separations shown are the clear horizontal distance between two objects measured surface to surface

Colorado Springs Utilities (Underground):	Potable Water	Non-Potable Water	Waste-water	Storm Sewer	Gas mains 150 psig (MAOP)	Gas main	Gas Service	Electric Primary up to 34.5kV	Electric Secondary (0-480 Volt)
Potable Water	X	10	10	10	10	6	3	10	3
Non-Potable Water	10	X	10	10	10	6	3	10	3
Wastewater	10	10	X	10*	10	6	3	10	3
Storm Sewer	10	10	10*	X	10	6	3	10	3
Gas mains 150 psig (MAOP)	10	10	10	10	X	6	6	10	10
Gas main	6	6	6	6	6	X	3	6	3
Gas Service	3	3	3	3	6	3	X	3	3
Electric Primary up to 34.5kV	10	10	10	10	10	6	3	X	3
Electric Secondary (0-480 Volt)	3	3	3	3	10	3	3	3	X

VERTICAL CLEARANCE MATRIX FOR TYPICAL
COLORADO SPRINGS UNDERGROUND UTILITIES:

(all dimensions in feet) All separations shown are the clear vertical distance between two objects measured surface to surface

Colorado Springs Utilities (Underground):	Potable Water	Non-Potable Water	Waste-water	Storm Sewer	Gas mains 150 psig (MAOP)	Gas main	Gas Service	Electric Primary up to 34.5kV	Electric Secondary (0-480 Volt)
Potable Water	X	1.5**	1.5**	1.5**	5	1	1	1	1
Non-Potable Water	1.5**	X	1.5**	1.5**	5	1	1	1	1
Wastewater	1.5**	1.5**	X	1.5	5	1	1	1	1
Storm Sewer	1.5**	1.5**	1.5**	X	5	1	1	1	1
Gas mains 150 psig (MAOP)	5	5	5	5	X		5	5	5
Gas main	1	1	1	1		X	1	1/5***	1
Gas Service	1	1	1	1	5	1	X	1	1
Electric Primary up to 34.5kV	1	1	1	1	5	1/5***	1	X	0
Electric Secondary (0-480 Volt)	1	1	1	1	5	1	1	0	X

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All private telecommunication and fiber optic cables when being installed in a separate trench and which is paralleling Colorado Springs Utilities infrastructure (Electric, Gas, Water and Wastewater) must maintain a minimum radial distance of 5' (feet) from any Colorado Springs Utilities infrastructure (Electric, Gas, Water and Wastewater).

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NOTES:

1. These clearance matrix table dimensions are for separate trenches. Joint trench between Electric and Gas requires a 1' radial separation.
2. See the Gas Line Extension and Service Standards, 2.02c for certain exceptions.
3. See Water & Wastewater Line Extension and Service Standards, latest edition.
4. Clearance to other CSU utilities (telecommunication, fiber optics, etc.) or high voltage underground transmission cables shall be determined on a case by case basis by Field Engineering.
5. Storm Sewer clearances must be verified by City Engineering.
6. Larger clearances than shown may be required – clearances must meet all requirements set forth in all four of the Colorado Springs Utilities Line Extension and Service Standards, Colorado Springs City Codes, NEC, and NESC, latest editions.
7. Additional support structures may be required at crossings.

~~Note: All private telecommunication and fiber optic cables must maintain a minimum radial distance of 5' (feet) from any Colorado Springs Utilities infrastructure (Electric, Gas, Water and Wastewater).~~

*Note: All utilities must also be outside of 45 degree excavation envelope above the wastewater line—see Wastewater Line Extension and Service Standards, Wastewater Construction Detail C1-7.

**Note: These utilities require a sleeve when crossing under another utility.

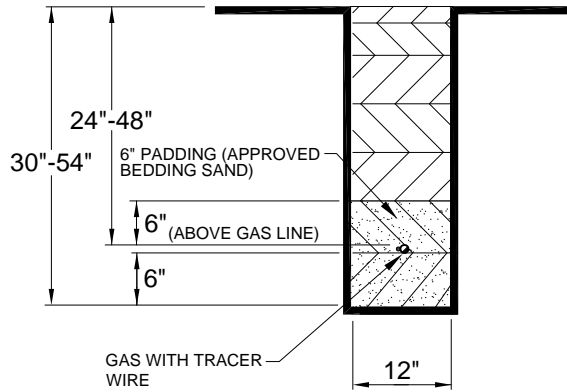
***Note: 1' separation from electric primary to plastic pipe gas main and 5' separation from electric primary to metallic gas main.

TABLE 9

FIGURE 1
CSU OWNED TRENCH DIAGRAMS

24" to top of pipe

FIGURE 1A
GAS ONLY SERVICE TRENCH



NOTE:
No other utility or utility conduit is to be installed in a gas only trench. Gas only trenches shall be backfilled completely before the tie-in and inspection personnel leaves the jobsite address.

FIGURE 1B
RESIDENTIAL JOINT SERVICES TRENCH
(WITH HORIZONTAL SEPARATION)

32" to top of service line

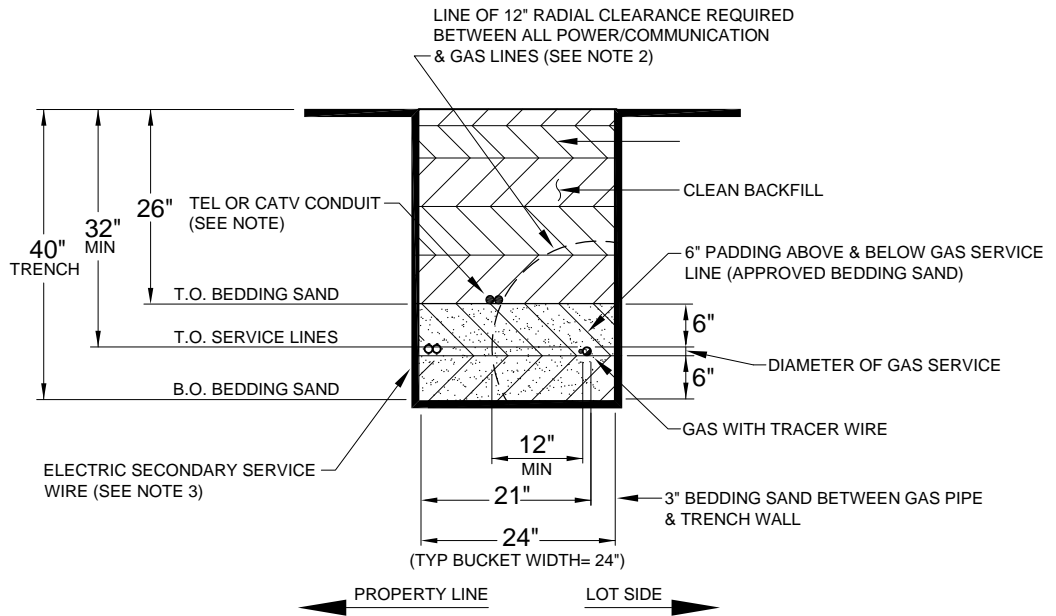
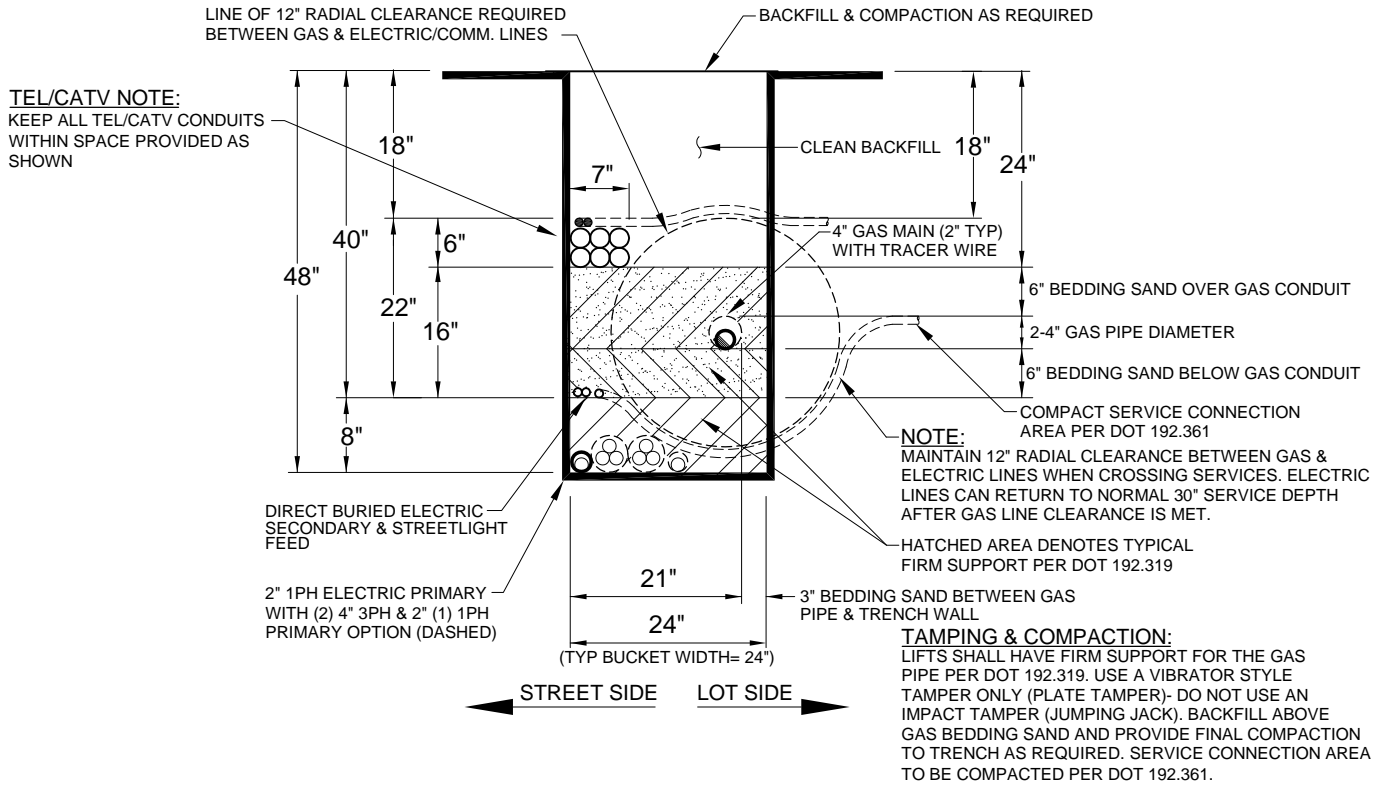


FIGURE 1
CSU OWNED TRENCH DIAGRAMS

added figure from
electric standards

FIGURE 1C
RESIDENTIAL MAIN JOINT TRENCH
(WITH HORIZONTAL SEPARATION)



Added notes 4 and 5

NOTES:

1. Licensed Utility Service Installer (LUSI) is responsible for sand padding 6" around the gas service line with 12" of spoil on top of the sand, before the tie-in and inspection personnel leaves the jobsite address.
2. Maintain 12" minimum separation between TEL/CATV, CSU electric & gas lines as required by Colorado Springs Utilities policy.
3. If electric and gas service lines ever need to cross each other, maintain 12" vertical separation between the crossing lines, and maintain 6" bedding sand above and below gas service line.
4. Residential joint trenching shall only be allowed when in both the CSU electric and gas service territory.
5. Commercial service installations are not to be joint trenched unless with approval of Colorado Springs Utilities.

FIGURE 5
SERVICE RISER LOCATION DETAILS

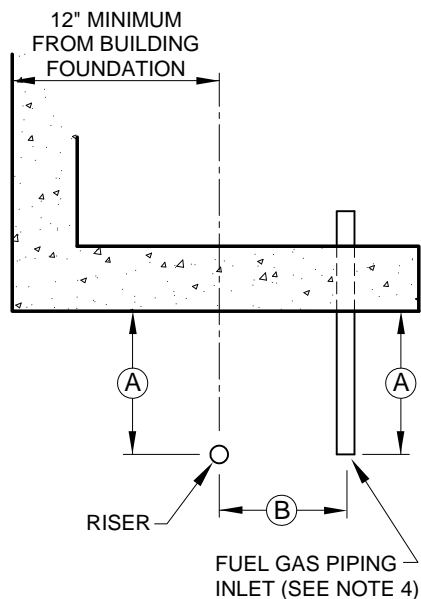


FIGURE 5A
TOP VIEW

TYPICAL 3/4" TO 2" IPS POLYETHYLENE

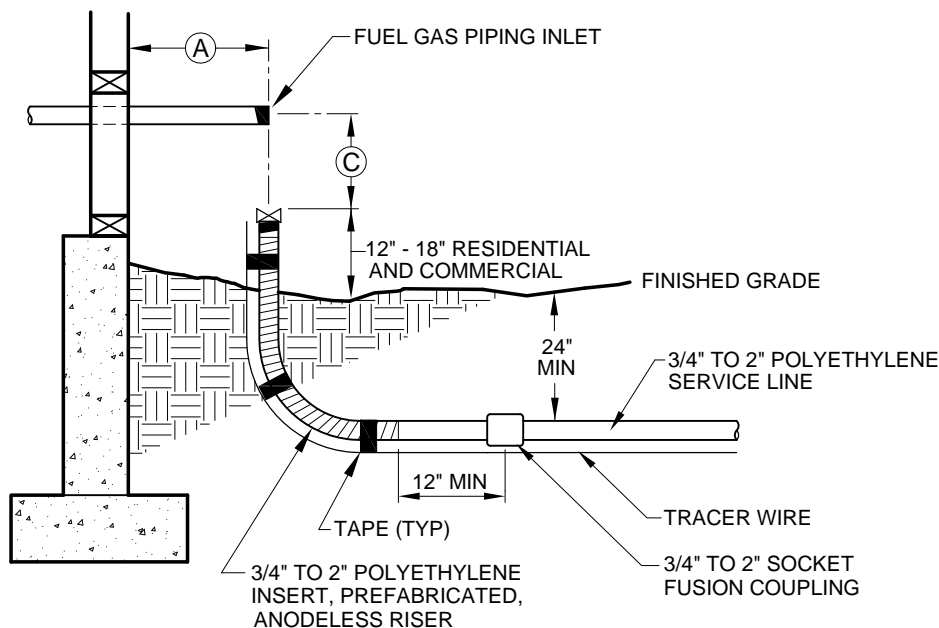


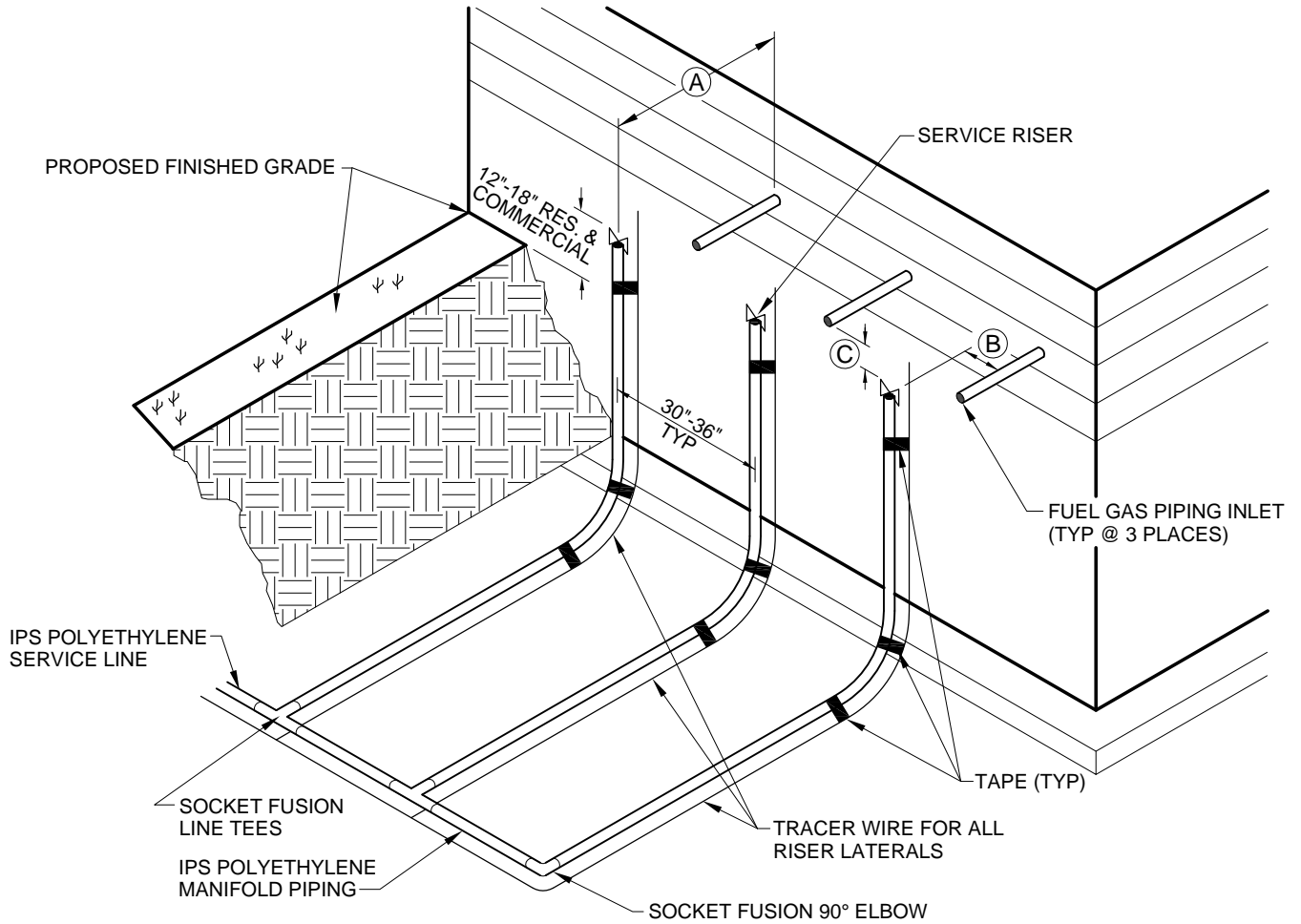
FIGURE 5B
SIDE VIEW

clarified note 2 and wrapping method

NOTES:

1. After back-filling, the above ground portion of the riser shall be vertical.
2. Starting at the bottom of the anodeless riser, the entire casing shall be field wrapped with an approved UV resistant tape in accordance with Figure 11. There are two options for wrapping: The first option requires field wrapping the riser with H35 UV resistant primerless gray pipe wrap tapecoat with a *recommended* top layer of 3M Scotchrap #50. The second option requires wrapping the riser with M50RCG primerless gray pipe wrap tapecoat and *requires* a layer of UV resistant 3M Scotchrap #50 over the tapecoat. The recommended overlap is 1" or 20% of the tape width, whichever is greater.
3. Contact Colorado Springs Utilities at 668-3570 when expected load exceeds 1,400,001 BTH/HR.
4. All horizontal piping shall be properly secured (i.e., unistrut) to building or structure, as approved by utility inspector.
5. See Figure 6 for A, B & C dimensions.

FIGURE 6
BELOW GROUND MULTIPLE METER MANIFOLD
 (3/4"-2" IPS POLYETHYLENE/ STEEL)



DEPTH OF ENTIRE MANIFOLD ASSEMBLY SHALL BE 24" MINIMUM

NOTES:

1. IPS Polyethylene insert riser required for sizes 3/4" to 1-1/4". Steel fabricated riser required for 2" size.
2. After backfilling, the above ground portion of each riser shall be vertical.
3. Install the tracer wire along all risers.
4. For 2" size, a 1lb. Magnesium Anode must be installed on each riser. The connection shall be field wrapped in accordance with Figure 11.
5. A non-standard gas meter loop agreement is required if unable to meet the horizontal and/or vertical loop specifications.

	Ⓐ	Ⓑ	Ⓒ
TOTAL CONNECTED LOAD (BTU/HR)	END OF FUEL GAS PIPING & HORIZONTAL DISTANCE FROM RISER TO BUILDING WALL	HORIZONTAL DISTANCE FROM RISER TO FUEL GAS PIPING INLET	VERTICAL DISTANCE FROM RISER TO FUEL GAS PIPING INLET
390,000 AND LESS	7" - 10"	18" - 21"	8" - 12"
390,001-910,000	7" - 10"	24" - 28"	8" - 12"
910,001-1,400,000 *	7" - 10"	3'	15" - 24"
1,400,001-3,500,000 *	16" - 18" (* 19" - 21")	6'	14" - 16"
3,500,001-10,000,000 *	18" - 20" (* 21" - 23")	**	14" - 16"
GREATER THAN 10,000,000 **	TO BE SPECIFIED BY FIELD ENGINEERING		

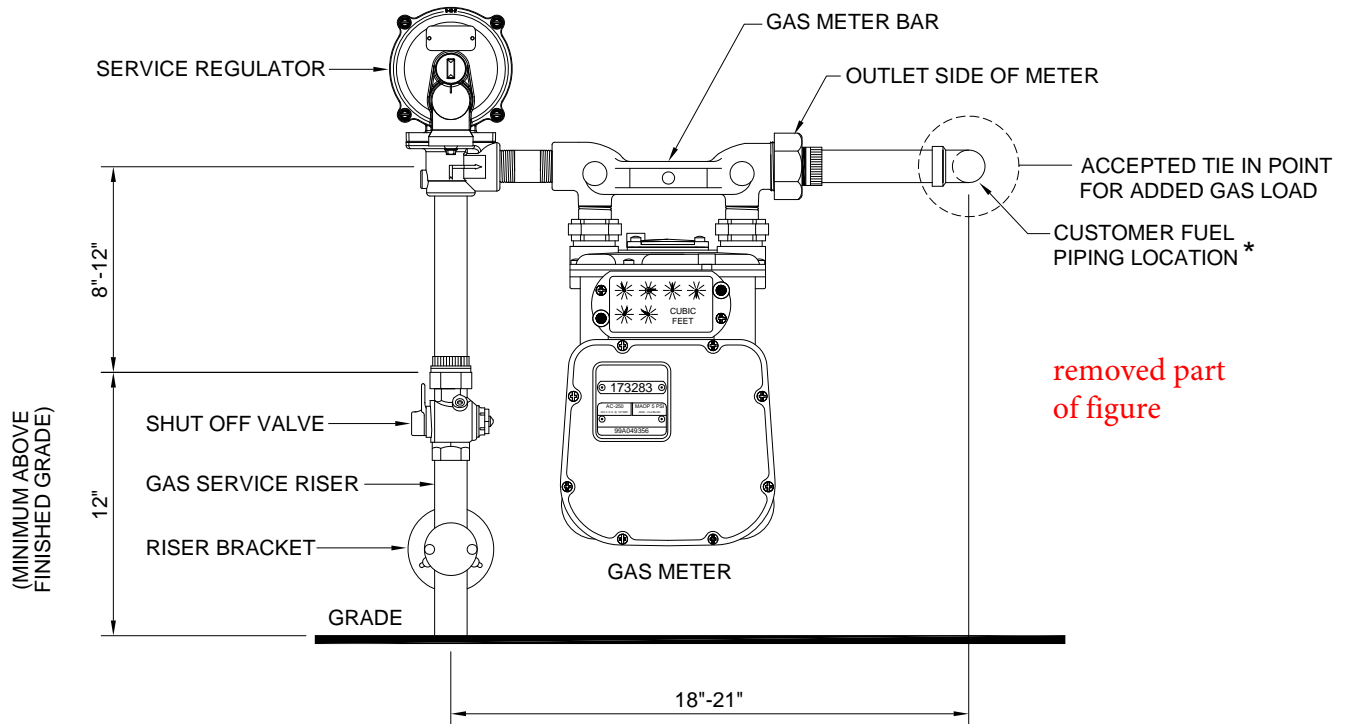
NOTE: All commercial gas meter sets require a minimum 1-1/4" riser. All commercial risers shall be installed minimum 16" to 18" out from the final exterior finish of the structure.

* All reverse loops must be approved by CSU Field Service Department/ New Construction (719-668-7350). 1,400,001 BTU/HR and larger require a concrete meter pad. Dimension "A" requires additional 3" clearance.

** **Contact** CSU Field Service Department/ New Construction **(719-668-7350).**

FIGURE 8
TYPICAL METER SETS

FIGURE 8A
TYPICAL RESIDENTIAL METER SET
0 - 390,000 (BTU/HR)



NOTE:
SEE TABLE 7 FOR APPROVED MANUFACTURERS
FOR TYPICAL METER SET MATERIALS.

METER LOOP SPECIFICATIONS:

APPLICATION: TOTAL CONNECTED LOAD OF 390,000 BTU/HR OR LESS

GAS SERVICE RISER: 7" - 10" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

FUEL LINE STUB: 7" - 10" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE. **MUST BE ONE CONTINUOUS PIPE WITH NO FITTINGS (I.E., COUPLINGS)**

HORIZONTAL SPREAD: 18" - 21" (CENTER OF GAS RISER TO CENTER OF FUEL LINE)

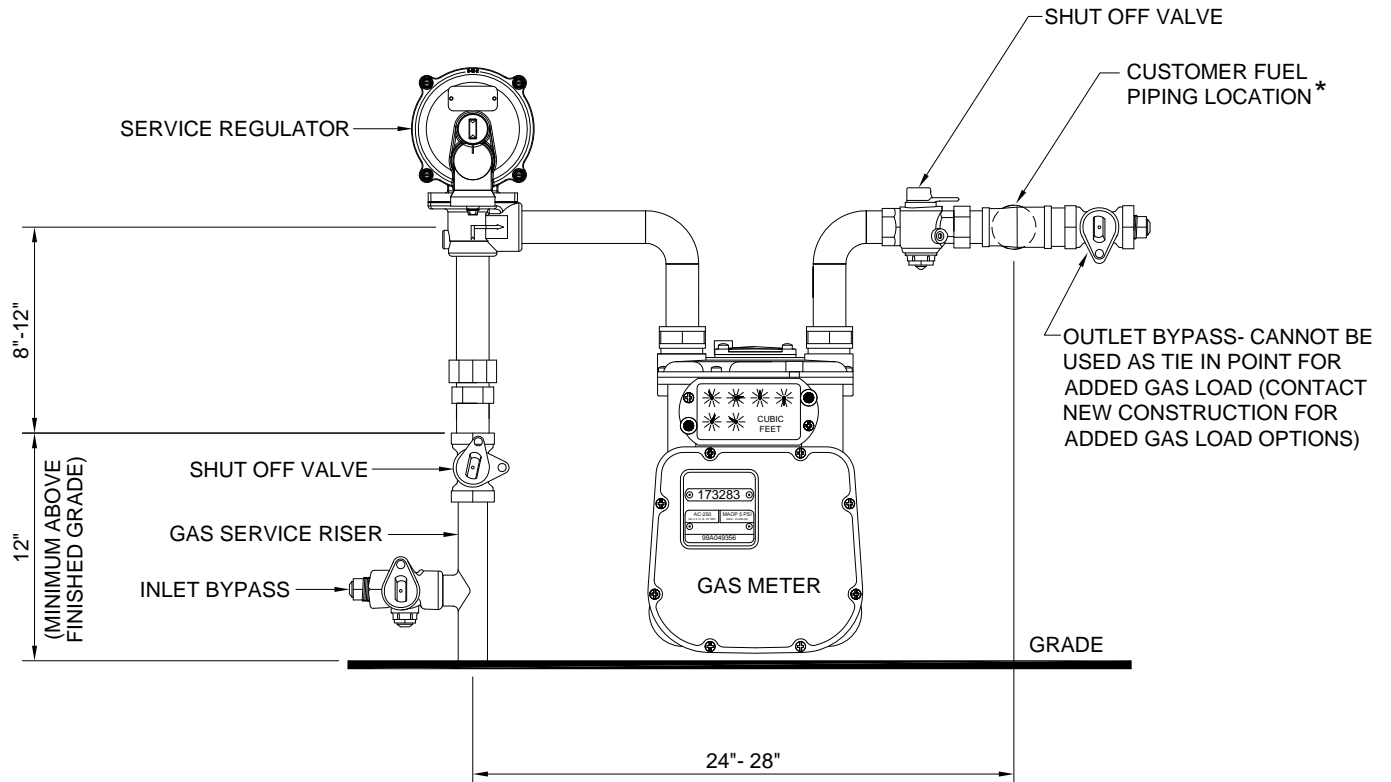
VERTICAL SPREAD: 8" - 12" (TOP OF GAS RISER VALVE TO FUEL LINE INLET)

GAS RISER SHUT OFF VALVE: NEED TO BE A MINIMUM OF 12" FROM FINISHED GRADE

* **REQUIRED** DISTANCE FROM FINISHED EXTERIOR WALL TO END OF CUSTOMER FUEL PIPING IS 1" SHORTER THAN CENTER OF RISER VALVE.

FIGURE 8B

390,001 - 910,000 (BTU/HR)



NOTE:
SEE TABLE 7 FOR APPROVED MANUFACTURERS
FOR TYPICAL METER SET MATERIALS.

NOTE:
RISER BRACKETS ARE NOT REQUIRED ON COMMERCIAL
INSTALLATIONS (PENDING FINAL APPROVAL FROM
FIELD SERVICES)

METER LOOP SPECIFICATIONS:

APPLICATION: TOTAL CONNECTED LOAD OF 390,001 - 910,000 BTU/HR OR LESS

GAS SERVICE RISER: 7" - 10" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

FUEL LINE STUB: 7" - 10" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE. **MUST BE ONE CONTINUOUS PIPE WITH NO FITTINGS (I.E., COUPLINGS)**

HORIZONTAL SPREAD: 24" - 28" (CENTER OF GAS RISER TO CENTER OF FUEL LINE)

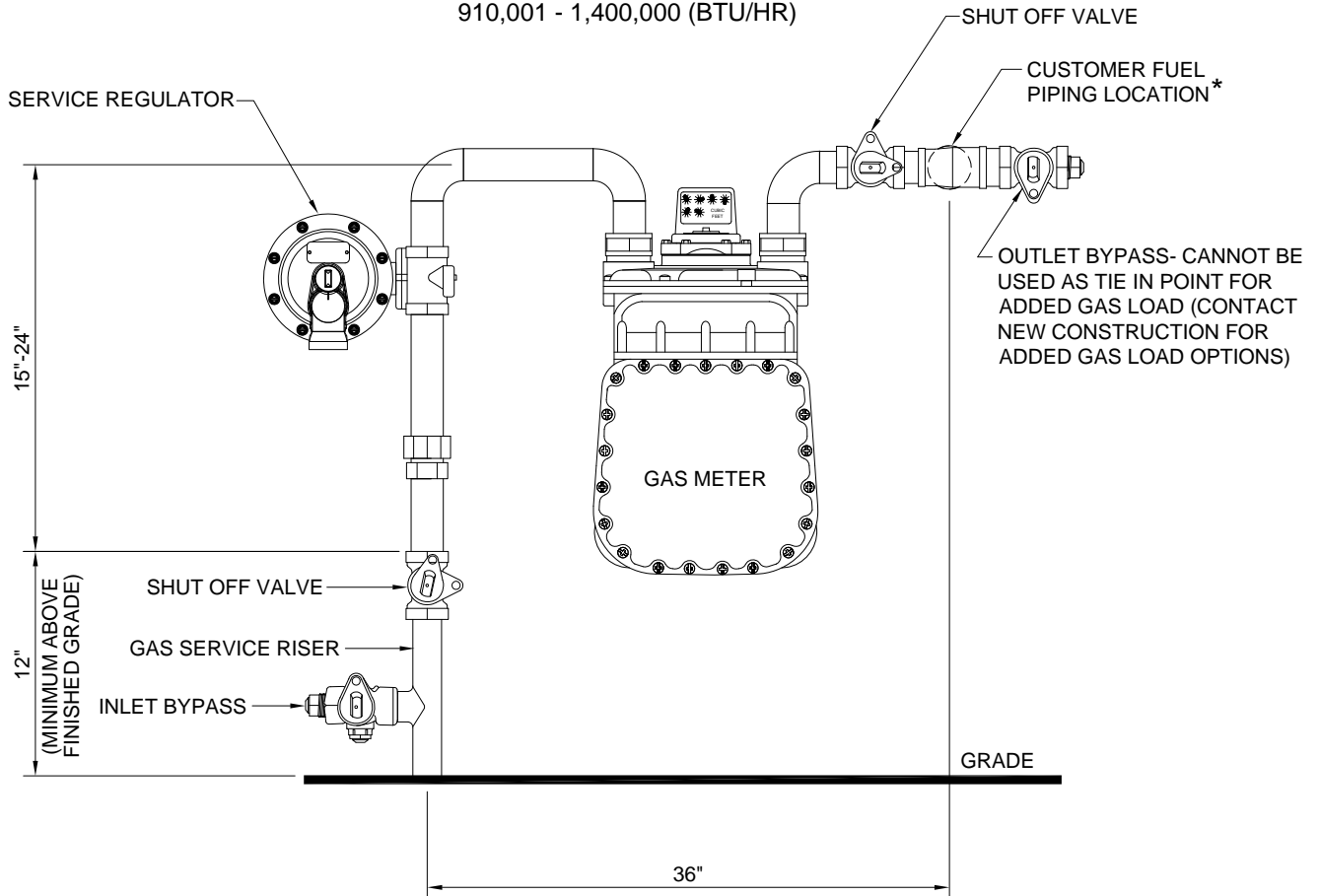
VERTICAL SPREAD: 8" - 12" (TOP OF GAS RISER VALVE TO FUEL LINE INLET)

GAS RISER SHUT OFF VALVE: NEED TO BE A MINIMUM OF 12" FROM FINISHED GRADE

* **REQUIRED** DISTANCE FROM FINISHED EXTERIOR WALL TO END OF CUSTOMER FUEL PIPING IS 1" SHORTER THAN CENTER OF RISER VALVE.

FIGURE 8C

910,001 - 1,400,000 (BTU/HR)



NOTE:
SEE TABLE 7 FOR APPROVED MANUFACTURERS
FOR TYPICAL METER SET MATERIALS.

NOTE:
RISER BRACKETS ARE NOT REQUIRED ON COMMERCIAL
INSTALLATIONS (PENDING FINAL APPROVAL FROM
FIELD SERVICES)

METER LOOP SPECIFICATIONS:

APPLICATION: TOTAL CONNECTED LOAD OF 910,001 - 1,400,000 BTU/HR OR LESS

GAS SERVICE RISER: 7" - 10" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

FUEL LINE STUB: 7" - 10" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

HORIZONTAL SPREAD: 36" (CENTER OF GAS RISER TO CENTER OF FUEL LINE)

VERTICAL SPREAD: 15" - 24" (TOP OF GAS RISER VALVE TO FUEL LINE INLET)

GAS RISER SHUT OFF VALVE: NEED TO BE A MINIMUM OF 12" FROM FINISHED GRADE

* **REQUIRED** DISTANCE FROM FINISHED EXTERIOR WALL TO END OF CUSTOMER FUEL PIPING IS 1"
SHORTER THAN CENTER OF RISER VALVE.

FIGURE 9
METER LOOP LOCATION & CLEARANCES

FIGURE 9A
TYPICAL RESIDENTIAL METER LOCATION
(GROUPED ELECTRIC, GAS, WATER)

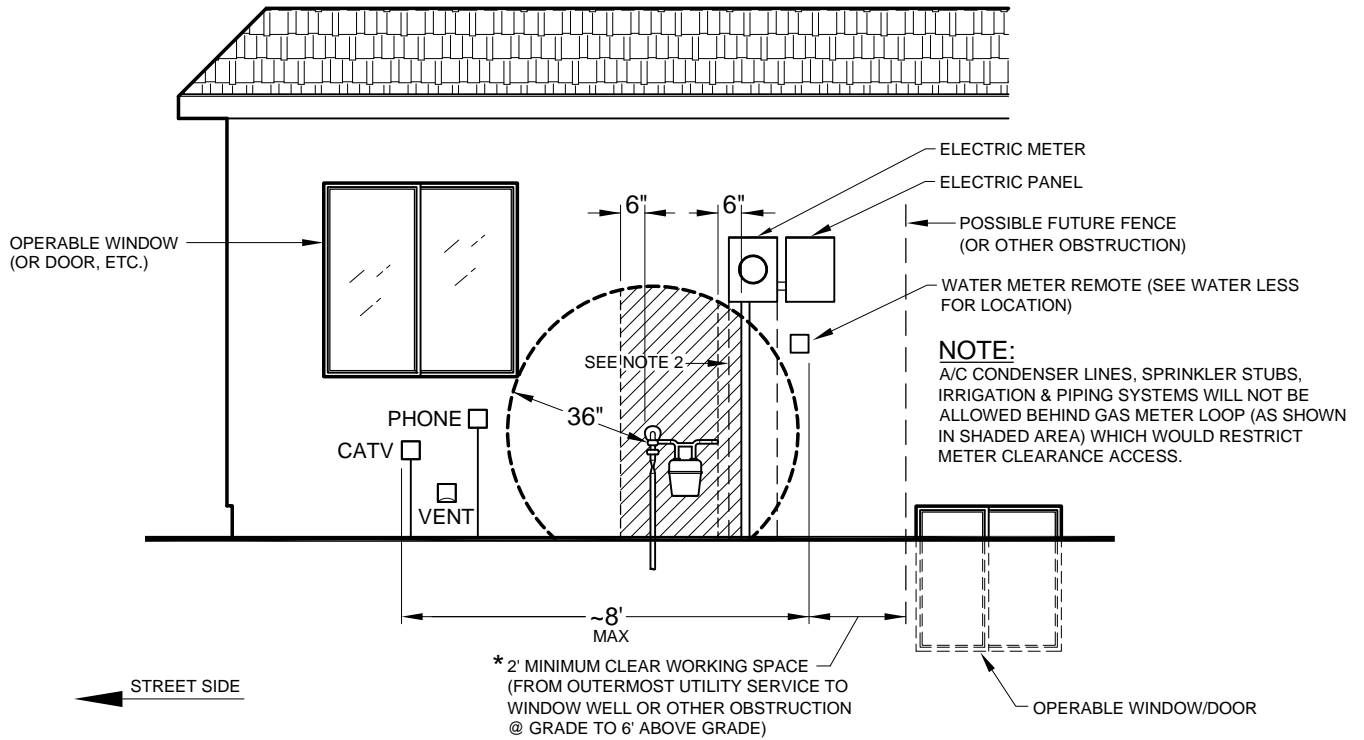
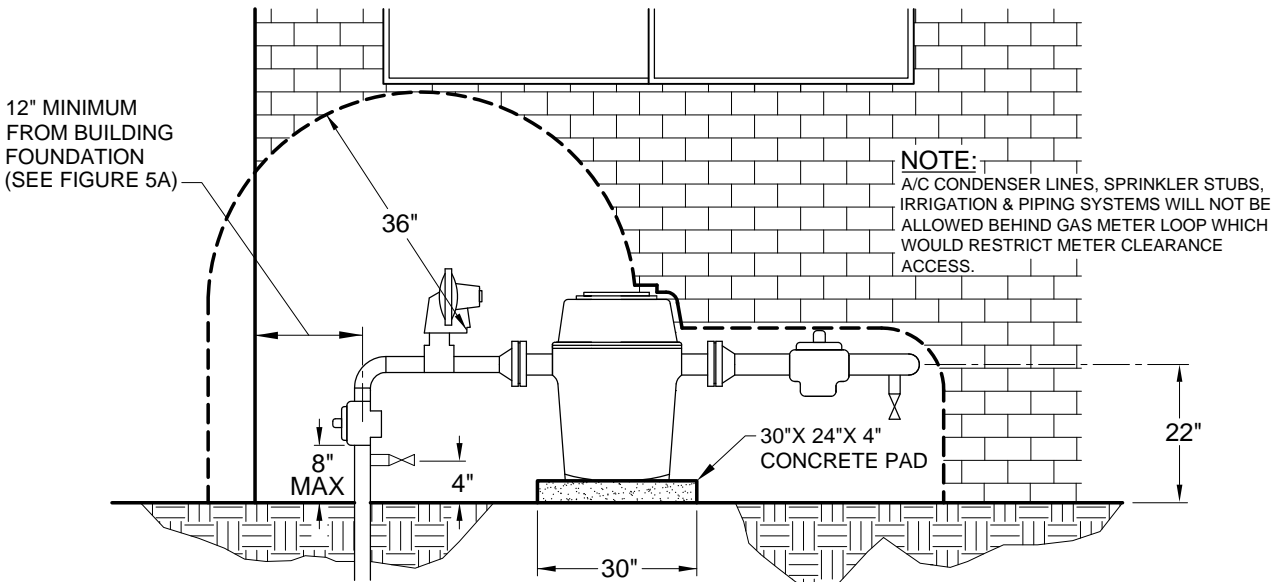


FIGURE 9B
TYPICAL COMMERCIAL METER LOCATION

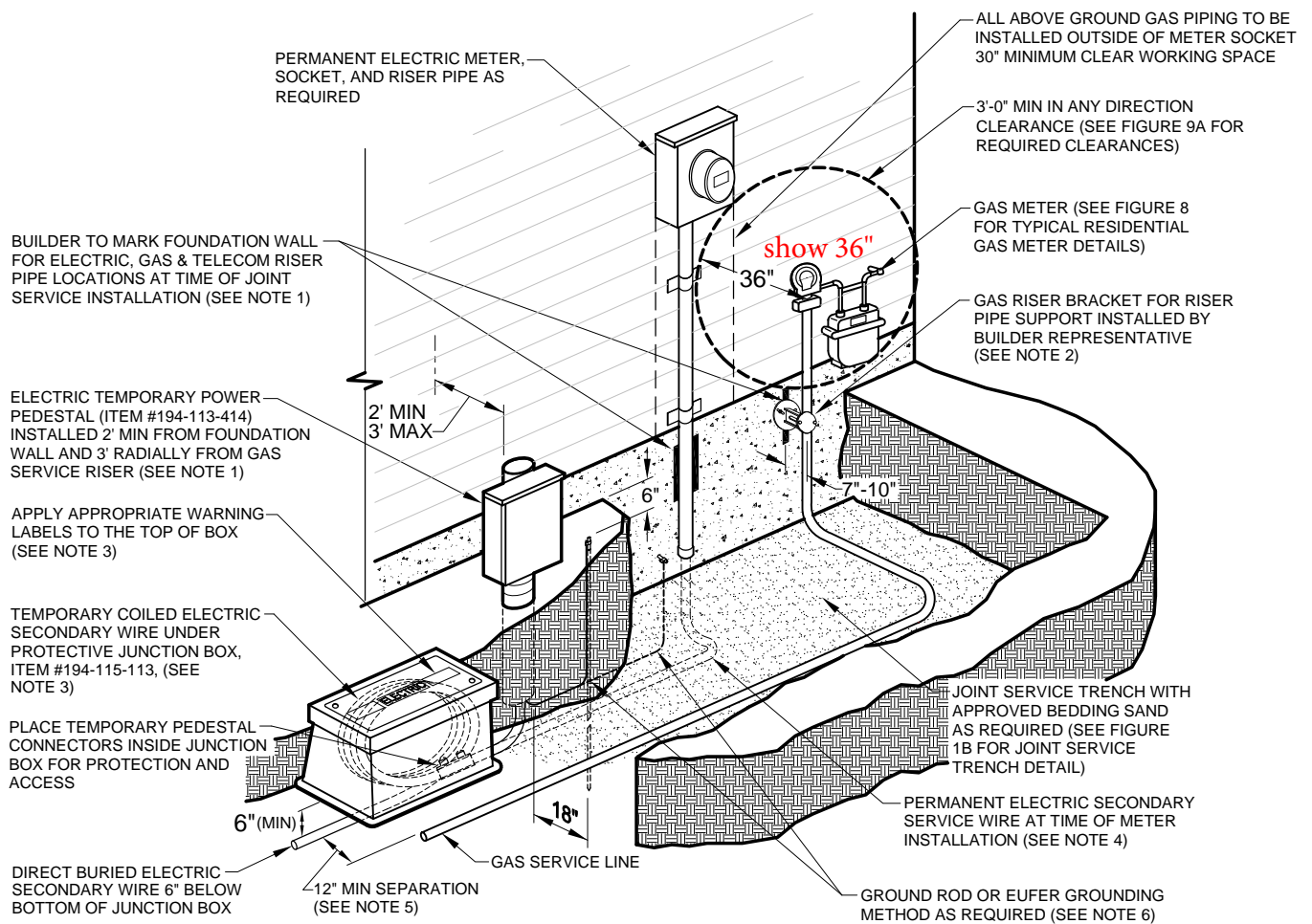


NOTES:

edited note 2 and added noted 3

1. No vents, sump pump vents, operable windows, doors, chimney, air conditioning units, heat generating devices, sources of ignition (to include electric meter socket and panel), or other openings into the building allowed within 3 feet of the regulator vent hole (The service regulator vent hole is at the same height as the fuel gas piping inlet).
2. All above ground CSU meter loop must maintain 36" minimum clear working space to include landscaping (e.g., trees, bushes).
3. Three feet (3'-0") clearance required in front and radial of the meter (with exception of bollards).

FIGURE 9C
TYPICAL RESIDENTIAL GROUPED METER LOCATIONS
AT JOINT SERVICE INSTALLATION (GAS & ELECTRIC)



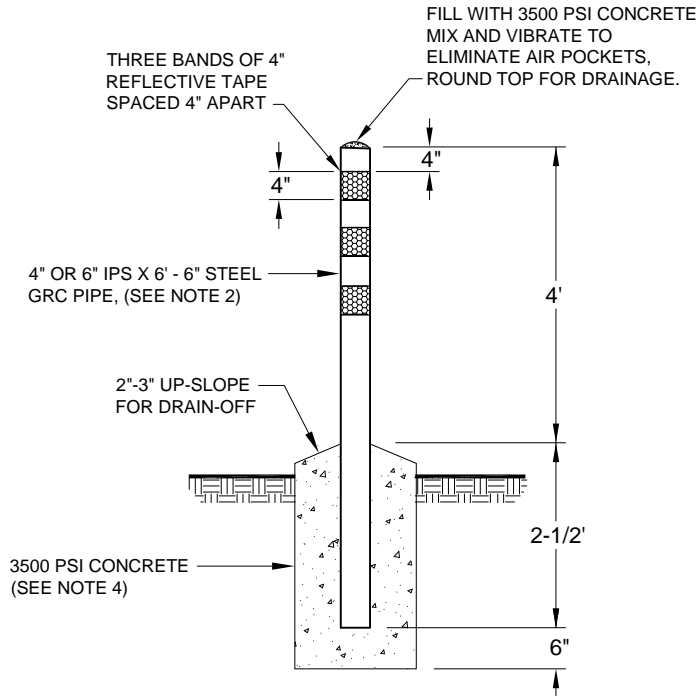
JOINT SERVICE TRENCH (GAS & ELECTRIC) RESIDENTIAL METER LOCATION

NOTES:

1. Joint Service trench to be installed at the foundation stage of the residence construction. As part of the trench installation, the electric temporary power pedestal is to be relocated from the property line to 3 feet (maximum) from the foundation wall of the residence. Install the gas service line in same trench. The builder is required to mark the foundation wall for the electric, gas and telecom riser pipe locations (use red for electric, yellow for gas, and orange for telecom). The electric temporary power pedestal shall maintain a 3 foot radial clearance from the gas riser pipe location (see Figure 9A for required radial clearances). See Electric DCS 8-6 for temporary power pedestal details.
2. Builder's representative to install gas riser support bracket to foundation wall and connect to gas riser pipe at time of riser pipe installation. Use 1-1/2" to 2" long anchors set with a powder actuated tool to attach bracket to foundation wall (refer to manufacturer's instructions for proper load size). See Table 7 for riser bracket and riser pipe approved manufacturers.
3. Coil 10-15 feet of extra secondary electric wire vertically in a 24" minimum diameter loop and store below grade under a protective junction box. Keep box and loop close to the temporary power pedestal and 12" minimum distance from the gas service line. At time of permanent electric meter installation, remove temporary power pedestal and terminate coiled wire into permanent meter socket after passing required electric inspection. Apply warning labels to the top of the protective box, Item Number 194-113-417 (english), and Item Number 194-113-418 (spanish). See Electric DCS 8-6 for protective box details.
4. Provide 6" cable slack at bottom of electric riser for possible future grade settling.
5. Maintain 12" minimum clearance at all times between the gas and electric service lines (CSU owned services only).
6. Effectively ground temporary power pedestal utilizing either a ground rod or Euferr grounding method as required.

FIGURE 15
BOLLARD POST INSTALLATIONS

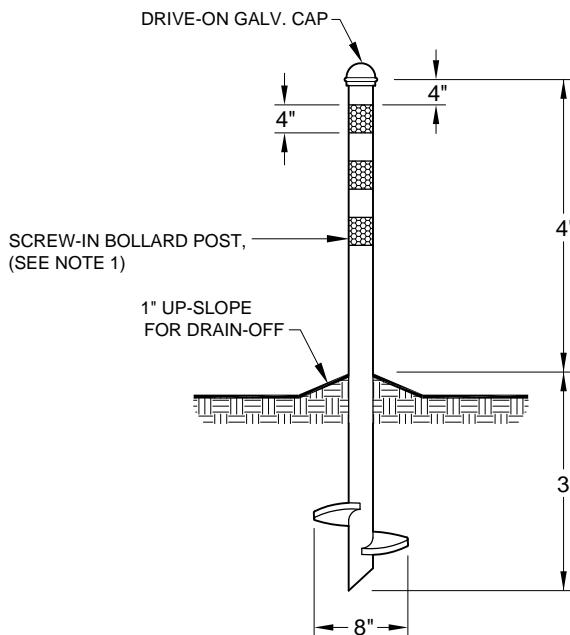
new figure from
electric standards



**CONCRETE-FILLED
PIPE BOLLARD POST**

NOTES:

1. Bollard posts to be installed plumb and level across the tops from one to another when two are used.
2. Use scrap 4" or 6" GRC pipe and paint with two coats of silver or yellow paint, unless conduit piece is new.
3. Dig 20" x 36" hole- conduit to be centered in hole.
4. Concrete for anchoring posts to be 3500 psi, approximately 8.3 Cu.Ft./Pole.
5. Use bands of reflective tape on top of posts to warn motorists, cyclists, etc. The first band should be no lower than 4" from the top of the post.



**SCREW-IN
BOLLARD POST**

NOTES:

1. Bollard post to be installed plumb and level across the tops from one to another when two are used.
2. Post is galvanized- no painting required.
3. Post can be filled with sack mix of concrete.
4. Post requires 3,000-4,000 ft-lbs. installation torque.
5. Use bands of reflective tape on top of posts to warn motorists, cyclists, etc. The first band should be no lower than 4" from the top of the post.

COLORADO SPRINGS UTILITIES GAS LINE EXTENSION/SERVICE INSTALLATION

Phone Numbers and Contact Information

P L A N N I N G

Gas Plan Review

Field Engineering North.....668-5928
 Field Engineering South.....668-5564

Customer Contract Administration– Gas Contracts & Refunds.....668-8111

Utilities Development Services.....668-8259

Underground Utility Line Locations

Colorado 811/UNCC/Before you dig (All Colorado Utilities) - Call 3 business days before digging.....
811
 Central Locating Dispatch (For Design of Colorado Springs Utilities gas, electric, water and wastewater)
 Main Number.....668-7205

D E S I G N

FIMS

Service Lines/ Plat Cards- Records Management668-4405
 Land Base Maps, Plat Maps.....668-8332
 Utilities Addressing Plan and Utilities Design CAD Files.....668-8340

Design of Gas Main Line Extensions

Field Engineering North.....668-5928
 Field Engineering South.....668-5564

North Workcenter Field Engineering

7710 Durant Drive, Colorado Springs, CO 80947-2150/ Fax: 719-668-4998

Name	Title	Office	Cell
Tim Benedict	Field Engineering Supervisor	719-668-3574	719-661-5505
Anne Aldrich	Project Engineer	719-668-8707	719-499-6260
Angela Buchanan	Field Engineer	719-668-8330	719-499-5465
J.C. Butterfield	Field Engineer	719-668-5618	719-650-3485
Janis Iverts	Field Engineer	719-668-4983	719-351-4527
Todd Sturtevant	Field Engineer	719-668-3556	719-440-9975
Ben Schmitt	Field Engineer	719-668-4462	719-233-9302
Tim Wendt	Field Engineer	719-668-4962	719-237-7968

South Workcenter Field Engineering

1521 Hancock Expressway, Colorado Springs, CO 80947-1812/ Fax: 719-668-5956

Name	Title	Office	Cell
Dan Skokan	Field Engineering Supervisor	719-668-4978	719-659-1973
Dee Dee Brook	Field Engineer	719-668-4510	719-499-6174
Tony Colvin	Field Engineer	719-668-5768	719-648-0869
Rob Estes	Field Engineer	719-668-5904	719-649-3228
Ginny Halvorson	Field Engineer	719-668-5567	719-491-8420
Mary Hoaglund	Project Manager	719-668-4083	719-650-9151
Cindy-Lou Hyde	Field Engineer	719-668-5887	719-661-3880
Dawna Schawe Kennedy Knutson	Field Engineer	719-668-5572	719-649-3274 719-396-1723

Gas Main Pressure	668-3524
Gas Service Stub Location	668-3524
Elevated Delivery Pressure & Propane Conversion Requests	
Field Engineering North.....	668-5928
Field Engineering South.....	668-5564

C O N S T R U C T I O N

	668-5557
Colorado Springs Utilities Construction Scheduling	668-3525
Quality Control & Inspections	668-5638

S E R V I C E I N S T A L L A T I O N
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Building Permits (Regional Building Department)	327-2880
Houseline Inspections (Regional Building Department)	327-2883
Gas Meter Inspections/Scheduling.....	668-7350
Colorado Springs Utilities Machine Weld Shop	668-5384
North Energy Construction Operations and Maintenance Department Manager	668-3506
Administrative Support.....	668-7646
South Energy Construction Operations and Maintenance Department Manager	668-3630
Administrative Support.....	668-4608
Appointment Scheduling Gas/Electric Service Inspection & Tie-Ins	668-3524
Gas Field Service Inspections	668-7350
Advanced Metering Technologies Group (AMT)	668-5525
Supervisor.....	668-3505

O T H E R T E L E P H O N E N U M B E R S
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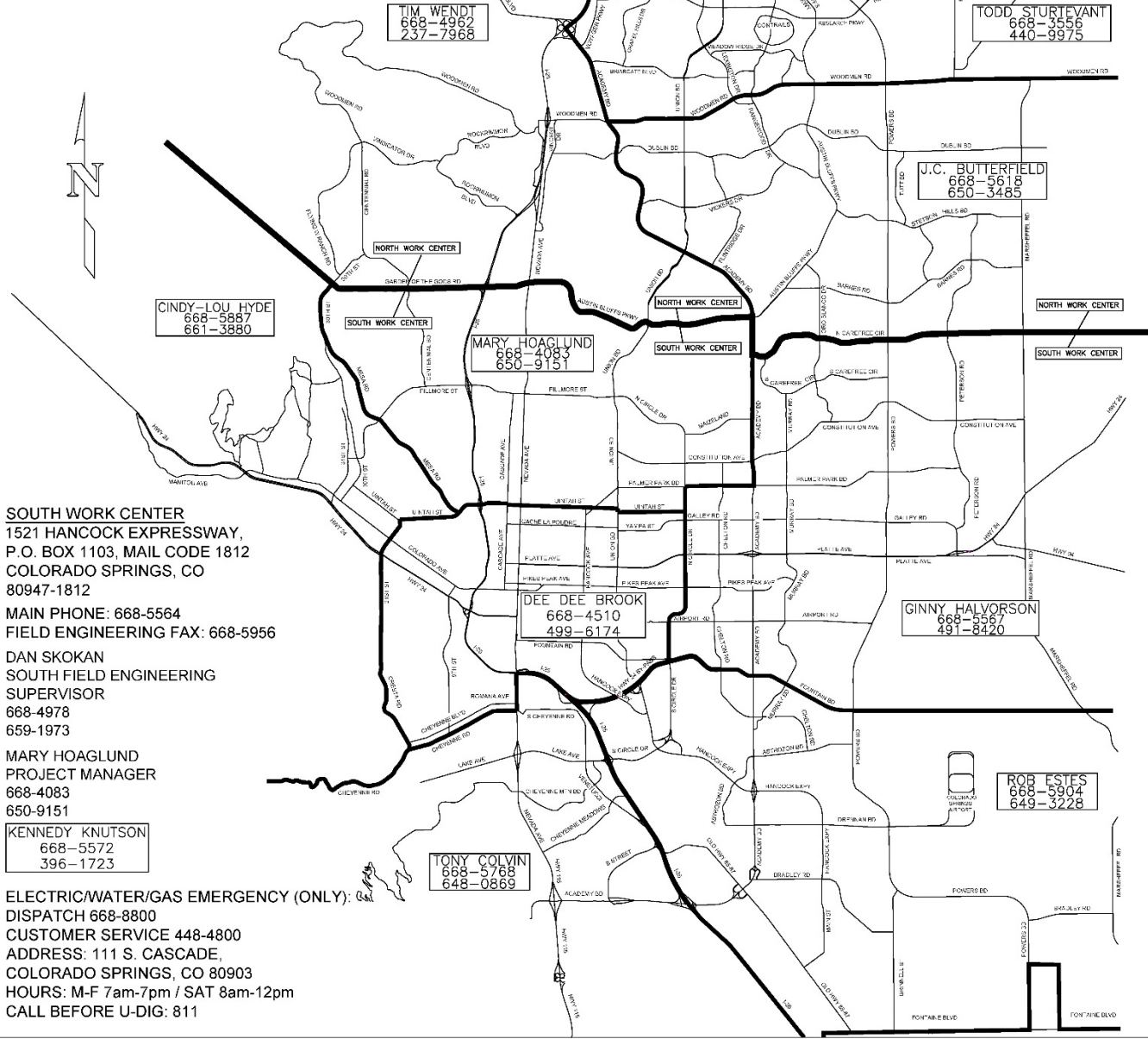
Colorado Springs Utilities Customer Service	448-4800
Gas Utility Emergencies	448-4800
Damage Claims	385-5960
General Accounting (Inquiry for Time-and-Material Refunds).....	668-8550
City of Colorado Springs Revocable Permit Coordinator	385-5355
Warehouse	
North Work Center..... 668-4981	South Work Center..... 668-5550

SERVICE AREA MAP CONTACTS

NORTH WORK CENTER
 7710 DURANT DRIVE, P.O. BOX 1103,
 MAIL CODE 2150
 COLORADO SPRINGS, CO 80947-2150
 MAIN PHONE: 668-4985
 FIELD ENGINEERING FAX: 668-4998

TIM BENEDICT
 NORTH FIELD ENGINEERING
 SUPERVISOR
 668-3574
 661-5505

ANNE ALDRICH
 PROJECT ENGINEER
 668-8707
 499-6260



SOUTH WORK CENTER
 1521 HANCOCK EXPRESSWAY,
 P.O. BOX 1103, MAIL CODE 1812
 COLORADO SPRINGS, CO
 80947-1812

MAIN PHONE: 668-5564
 FIELD ENGINEERING FAX: 668-5956

DAN SKOKAN
 SOUTH FIELD ENGINEERING
 SUPERVISOR
 668-4978
 659-1973

MARY HOAGLUND
 PROJECT MANAGER
 668-4083
 650-9151

KENNEDY KNUTSON
 668-5572
 396-1723

ELECTRIC/WATER/GAS EMERGENCY (ONLY): Call
 DISPATCH 668-8800
 CUSTOMER SERVICE 448-4800
 ADDRESS: 111 S. CASCADE,
 COLORADO SPRINGS, CO 80903
 HOURS: M-F 7am-7pm / SAT 8am-12pm
 CALL BEFORE U-DIG: 811