Colorado Springs Utilities

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2026

Natural Gas

Line extension and service standards

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Pursuant to Colorado Springs City Code Section 12.1.110, on December 2nd, 2025, Colorado Springs Utilities provided public notice of its intent to amend the Gas Line Extension and Service Standards. No substantial comments to these Standards and no request for a hearing were received. Therefore, Colorado Springs Utilities does hereby amend the Gas Line Extension and Service Standards as Colorado Springs Utilities policy to become effective on January 1st, 2026.

Somer Mese, Chief Operations Officer

12/2/2025
Date Approved

Nicholas Peters, Chief System Planning & Projects Officer

12/2/2025
Date Approved

COLORADO SPRINGS UTILITIES
GAS LINE EXTENSION & SERVICE STANDARDS

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CHAPTER	TITLE	REVISION DESCRIPTION AND RATIONALE
All	**NA**	Refer to Colorado Springs Utilities as "Utilities"
1.02b)	**General Policy Information**	Changed the reference to Chapter 12 of the City Code
1.02l)	**General Policy Information**	Pikes Peak Regional Building Department (PPRBD) should be contacted regarding the disconnection of customer piping for extended periods to confirm the requirements for retesting prior to use. When existing customer piping is disconnected from the source of supply (gas meter removed, service shut off, etc.) for more than six months, the piping shall be retested in accordance with the requirements of Section 406.4.1 of the International Fuel Gas Code, 2021 Edition. Update to this provided by PPRBD.
1.03a)6)	**Excavation and Boring Requirements near Utility Lines**	Clarified that when working in the County, the County requirements must be met for cleaning up potholing operations.
2.02c)	**Location & Clearances of Gas Lines**	Referenced 49 CFR 192.325 (c) regarding having sufficient clearance from sources of heat so as to prevent the heat from impairing the serviceability of the pipe.
3.01	**Introduction**	Made minor grammatical edits and stated that for purposes of Chapter 3, a "LUSI" refers to any prospective or current LUSI within Utilities' Service Installer program. Requested by CAO
3.02 (applies to entire GLESS)	**Utility Service Installer Licensing Program**	Removed references in Chapter 3 to Operator Qualified (OQ) as the LUSIs are certified and not OQ'd. Requested by Gas Construction and Maintenance Dept. and RCD.
3.02a)1)	**Utility Service Installer License Process**	Noted that Utilities determines the specific tasks required for licensing and gas service installations. Requested by Gas Construction and Maintenance Dept.
3.02a)2)	**Utility Service Installer License Process**	Made adjustments to text to clarify requirements. Requested by CAO
3.02a)3)	**Utility Service Installer License Process**	Changed references from applicant to the LUSI. Requested by CAO
3.02a)4)	**Utility Service Installer License Process**	Removed unnecessary sentence. Requested by CAO
3.02a)5)	**Utility Service Installer License Process**	Made adjustments to text to clarify requirements. Changed references from applicant to the LUSI. Denial of or failure on a third attempt shall deem the LUSI no longer eligible to be qualified for a period of two years **from the date of such denial or failure**. Requested by CAO
3.02a)6)	**Utility Service Installer License Process**	Made adjustments to text to clarify requirements. Requested by CAO
3.02a)7) (deleted 7)	**Utility Service Installer License Process**	Removed reference to OQ training requirements. Requested by Gas Construction and Maintenance Dept. and RCD.
3.02a)8)	**Utility Service Installer License Process**	Made adjustments to text to clarify requirements. Requested by CAO
3.02a)9)	**Utility Service Installer License Process**	Every twelve (12) months during the course of licensure, the LUSI must demonstrate to the satisfaction of GCMD that the LUSI maintains the ability

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		to complete heat socket fusions. Requested by Gas Construction and Maintenance Dept. and CAO.
3.02b)1)	**Certificate of Insurance**	Made adjustments to text to clarify requirements. Requested by CAO.
3.02b)1)	**Certificate of Insurance**	Colorado Springs Utilities shall be designated as an insurance certificate holder. Requested by CAO and Gas Construction and Maintenance Dept.
3.02b)2)	**Certificate of Insurance**	Made adjustments to text to clarify requirements. Requested by CAO.
3.02c)1)	**Drug and Alcohol Program**	A LUSI must participate in a drug and alcohol testing program that complies with the requirements of 49 CFR Parts 40 and 199. Requested by RCD.
3.02c)2)	**Drug and Alcohol Program**	The LUSI company/employer has to be enrolled in DCM. They can't enroll as an individual as the requirements in Part 199 apply to employers, not individuals. Requested by RCD.
3.02c)3)	**Drug and Alcohol Program**	Once licensed, a LUSI's company or employer must complete quarterly submissions to DCM Reporting between the 1st and 30th of the month following each calendar quarter (April 1-30 for quarter 1, July 1-30 for quarter 2, October 1-30 for quarter 3 and January 1-30 for quarter 4). This is not a new requirement, however better clarifies/elaborates on the DCM requirements. Requested by RCD.
3.02c)4)	**Drug and Alcohol Program**	Once licensed, a LUSI's company or employer must submit annual MIS (Management Information System) data to PHMSA of its drug and alcohol testing results no later than March 15th of each year for the prior calendar year. The MIS report must be submitted electronically at http://damis.dot.gov. Requested by RCD.
3.02c)5)	**Drug and Alcohol Program**	If a LUSI experiences a positive, refusal, or non-negative drug or alcohol test (as defined by 49 CFR Parts 40 and 199), the LUSI shall immediately **stop performing work as a LUSI** and notify the GCMD. Requested by RCD.
3.02c)6)	**Drug and Alcohol Program**	Made adjustments to text to clarify requirements. Requested by CAO.
3.02c)7)	**Drug and Alcohol Program**	Clarified that if Utilities or DCM Reporting finds that the drug and alcohol program that one or more LUSIs are enrolled in is not a PHMSA compliant drug and alcohol program, then Utilities shall notify the LUSI and company that the program must be immediately modified to be compliant with 49 CFR Parts 40 and 199. Also added a reference to another section 3.02d. Requested by RCD and CAO.
3.02c)8)	**Drug and Alcohol Program**	If a LUSI is suspended and plans to re-instate the license following the suspension, the LUSI's company must maintain compliance with 49 CFR Parts 40 and 199, must submit all required documentation to DCM Reporting to demonstrate compliance, and must maintain a satisfactory rating throughout the suspension. Requested by RCD.
3.02d)	**Utility Service Installer License Renewal, Suspension, Expiration, and Revocation Process**	Made adjustments to text to clarify requirements for expiration of license and suspensions/revocation. Requested by CAO.
3.02d)4)a)4)	**Suspension or Revocation of a Utility Service Installer License**	**Violation of the DOT and PHMSA drug and alcohol regulations found in 49 CFR Parts 40 and 199** or failure to maintain a compliant drug and alcohol program or otherwise failure to comply with the terms of 3.02 c), Requested by RCD.

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3.02d)4)a)7-10)	**Suspension or Revocation of a Utility Service Installer License**	Added text regarding lapses insurance, failure to complete the license renewal requirements, failure to complete a fusion inspection, and failure to pay fees as grounds for suspension/revocation. Requested by CAO.
3.02d)4)b)	**Immediate Suspension**	New section requested by CAO.
3.02d)4)c)	**Order to Show Cause – Suspension or Revocation**	New section requested by CAO.
3.02d)4)d)	**Reinstatement Following Suspension**	New section requested by CAO.
3.02d)4)e)	**Licensing Following Revocation**	New section requested by CAO.
Ch 4	**All**	Corrected references to QC Pipeline Inspectors and Gas Quality Control Group
4.01	**Introduction**	Changed reference to Section 12.3.301 and 12.3.304 of the City Code. Requested by CAO.
4.01	**Introduction**	Work performed shall be completed using the appropriate level of PPE for the job activities. Requested by QCs.
4.01	**Introduction**	Reorganized text to list various gas service line construction activities and who performs the work. Requested by Standards.
4.01a)	**Service Line Repair or Replacement**	Repairs or replacement of newly installed service lines and risers and prior to tie ins shall be completed by the LUSI at their expense. Repairs or replacement of newly installed service lines and risers and after tie ins shall be completed by Utilities and may be charged to the customer (e.g., LUSI, homebuilder, and/or others) on a Time & Materials (T&M) basis. Moved text for correcting non-plumb risers to another section in Ch 4. Requested by Standards.
4.01b)	**Service Line Relocation**	Any residential or commercial relocation of service lines required due to customer actions is charged to the customer on a Utilities T&M basis. **Actions include but are not limited to grade changes, new buildings/structures or obstructions, addition of electrical sources (e.g., low voltage comms or fiber boxes) or ventilation equipment.** These actions have the potential to create a hazard and/or violation of regulatory requirements to the gas service line. Requested by OEGG.
4.01b)	**Service Line Relocation**	Private utilities, including private fiber and fiber appurtenances, that are installed over gas services or mains and installed in violation of clearance requirements (Table 8) will require the relocation of the private utilities at the private utility's expense. If the relocation of gas facilities became necessary due to the private utility violations, then Utilities would perform the relocation of the gas facilities, and the costs of the relocation charged to the private utility on a Time & Materials (T&M) basis. Requested by Standards and Damage Prevention.
4.01f)	**Gas Service Line Excess Flow Valves and/or Service Valves**	Excess Flow Valves (EFVs) and/or service valves shall be installed on services as required by 49 CFR Part 192. Installation of the EFVs or service valves shall only be performed by operator qualified Utilities staff or

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		operator qualified contractors. **If customer load increases or requested elevated pressures result in a required upgrade to the EFV, the associated costs may be charged to the customer on a Utilities T&M basis.**
4.02c)	**Service Design Checklist**	Updated the list of information submitted to Field Engineering. Requested per OEGG, Standards and FE.
4.03a)1)	**Installation Procedures Summary**	Added compaction to the list as a responsibility of the LUSI. Requested by OEGG.
4.03a)4)	**Installation Procedures Summary**	Each gas service line trench shall be properly padded per 4.03(d) Service Line Installation notes 9 and 10
4.03a)5)	**Installation Procedures Summary**	Changed references to the leak test to a pressure test. This change is made in several other sections of Chapter 4. Requested by OEGG.
4.03a)7)	**Installation Procedures Summary**	Added perform a soap test. Requested by OEGG.
4.03a)9)b)	**Installation Procedures Summary**	Moved text regarding non-plumb risers from earlier in Ch 4 to this section. Requested by Standards.
4.03a)9)c)	**Installation Procedures Summary**	Clarified language that if the configuration is rejected due to the service riser, the LUSI shall coordinate remedial actions with the Gas Quality Control Supervisor. Any costs incurred may be passed on to the LUSI or builder, as appropriate and at the discretion of the Gas Quality Control Supervisor. Requested by OEGG and Standards.
4.03b)	**Service Line Location**	LUSIs are responsible for ensuring that the service line location is at grade or installed according to survey staking provided by the builder with accurate cut/fill measurements. Reinstallation of a service line at proper grade is the responsibility of the LUSI, and a T&M work order will be created for any Utilities' labor charges. If any violation of the service line standard is discovered during an inspection, the LUSI's license may be suspended or revoked at the discretion of the Utilities, Utility Construction and Maintenance Department (see Chapter 3). Requested by QCs
4.03d)	**Service Line Installation**	Changed that a LUSI verifies for gouges rather than self-inspects. The paragraph contains another minor sentence structure change. Requested by Standards.
4.03d)4)	**Service Line Installation**	All socket heat fusions shall be performed in accordance with Utilities O&M Plastic Joining Procedure (see Appendix F for excerpt of the socket fusion procedure). **A LUSI license and required certifications (see Chapter 3) are required for external gas service installers to perform socket heat fusions** and/or install prefabricated service line assemblies in new development construction. Clarification requested by OEGG.
4.03d)10)	**Service Line Installation**	Removed reference to an equivalent sand to the approved padding material. Requested by OEGG.
4.03d)17)	**Service Line Installation**	Changed sentence structure. Requested by Standards.
4.03d)22)	**Service Line Installation**	Rather than internal document referred to the O&M manual.

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4.03e)	**Pressure Test Requirements for New Construction**	Clarified the pressure test procedure. The LUSI is responsible for pressurizing the gas service line, to include the riser valve, using their test assembly threaded to the top of the valve. The riser valve will be installed by Utilities or its contractor. The pressure gauge used by the LUSI for pressurizing the pipe shall be a test gauge with a range of zero to 300 pounds per square inch (psig) and shall be operational and in good working condition. Following pressurization of the service line, Utilities or its contractor will use their calibrated gauge and attach it to the valve on the pressure test assembly to confirm the proper pressurization and perform the official pressure test. The pressure test will be performed in accordance with the Gas Operations and Maintenance Manual. Figure 14 illustrates the pressure test assembly for risers requiring a bypass assembly. Requested by Standards, OEGG, and QCs.
4.03e)3)	**Pressure Test Requirements for New Construction**	Added a note to emphasize that approval is required from the Gas QC Supervisor if a service line is allowed to be installed prior to the gas service stub installation. Requested by OEGG.
4.03f)	**Venting Through Pavement**	**Installation of services under paving shall be avoided.** Where a structure **or paving** abuts a building, a gas service riser vent shall be installed.
4.03g)	**Mobile Home Parks**	Requests for gas main and service extensions for existing mobile home parks that are currently being fed from a master meter shall be discussed with Utilities Field Engineering. Refer to section 4.05)d)4)c) for more information on Master Meter Systems. Requested by OEGG, FE and Standards.
4.04	**Utilities Inspections**	Added Field Ops as being able to inspect the service line (includes riser and any issues with the riser that would prevent installation of a meter). Requested by OEGG.
4.04a)	**Utilities Inspections**	Prior to inspection Utilities Gas Construction **representative** will require bollards, padding, protective sleeve(s) and/or venting **based on the requirements of this document.** Requested by OEGG.
4.04a)18)	**Utilities Inspections**	When gas, electric, and Utilities' **fiber** are approved to be in the same trench, a 12 inch radial separation must be maintained **(see Figures 1B and 1C)**
4.05a)1)	**Fuel Gas Piping, Manifolds and Gas Meters Location**	Any pipe joint shall be threaded or welded within 5 feet of any Utilities owned connection point. Mechanical or press style fittings are prohibited within this 5 foot buffer zone. Requested by Field Ops.
4.05a)2)	**Elevated Pressure**	Utilities reserves the right to deny elevated pressure if the gas system doesn't have adequate pressure to serve the customer.. Customer equipment shall have compatible pressure ratings for the elevated delivery pressure. Field Operations confirms the release of PPRBD elevated pressure request. If this information is not obtained or if the customers gas piping is deemed unsafe, Utilities will not set the meter. Master meter operators will have additional requirements for elevated pressure as well as approvals (e.g., State, Federal, etc.). Refer to section 4.05)d)4)c) for more information on Master Meter Systems. Costs associated with elevated pressure requests are addressed in 4.01c Requested by OEGG.
4.05a)3)	**Fuel Gas Piping, Manifolds and Gas Meters**	All remodels that require a larger meter need to have the gas service line size and EFV re-evaluated by Utilities Field Engineering. Customer equipment shall have compatible pressure ratings for the elevated delivery pressure. Field Operations confirms the release of PPRBD elevated pressure request.

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4.05b)2)	**Prefabricated and Welded Risers**	The final grade shall not be above the buried line of the anodeless riser. Requested by OEGG.
4.05b)3)		A post or riser bracket shall support the meter, regulator and service line [49 CFR 192.375 (a)(2)(ii)] Riser brackets should be installed aboveground. Requested by OEGG.
4.05b)5)		Requirements for welded gas service risers and welded steel multiple meter manifolds are addressed in the Operation and Maintenance Manual.
4.05b)6)		All multiple parallel services shall be constructed and installed in accordance with Figure 6.
4.05b)7)		Removed reference to LUSIs making every effort to use PE multi meter manifolds.
4.05c)	**Above Ground Multiple Meter Manifolds**	Removed references to serve 3 or more individual tenants, owners, etc. Removed approval by FE. Removed reference to unit being leased and requirements associated with that.
4.05c)1)d)	**Procedure**	All anodeless risers for Above Ground Multiple Meter Manifold assemblies shall be a **minimum of** 1-1/4 inch. Requested by OEGG.
4.05c)1)e)	**Procedure**	Fuel lines through structure walls shall be installed in a manner allowed within current codes adopted by the AHJ and be of listed and approved materials. Refer to PPRBD for additional information.
4.05d)1)	**Residential Gas Meter**	Removed language regarding SFR meter requiring a meter bar. Requested by Field Ops.
4.05d)2)	**Commercial Gas Meter**	Added if any unit was to be leased that would require a load to exceed 390,000 BTU's, all costs of adding another service line would be the developer or contractor's responsibility.
4.05d)3)	**Meter Set Location**	Enclosures are not permitted. Removed language regarding exception. Requested by OEGG and Field Ops.
4.05d)3)c)	**Meter Set Location**	Construction Heat: A construction meter will not be allowed unless the customer meets with Utilities Field Services and Field Engineering. Construction meters are determined on a case-by-case basis.
4.05d)3)d)1)b)		Clarified paragraph and merged two paragraphs to state 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 but not limited to electric meter socket and panel, electrical devices, electrical switches, electrical outlets, electrical junction box to include low voltage devices), air intake/exhaust vent (including but not limited to dryer vents, foundation vents, fireplace makeup air inlets, sump pump outlet drains, AC condensing unit, etc), doorway, garage doors, operable window, or any opening to the structure, as outlined in Figure 9[per UPC 1209.6(c), IFGC Table 503.8, 49 CFR 192.353, 357, and chapter VII Office of Pipeline Safety]. All fresh air opening location clearances shall be located per local codes and IMC 401.4 Requested by OEGG and Field Ops.
4.05d)3)d)1)c)		All gas meter loops shall be located a minimum of 6 inches to the right or left from decks, stairways, or other objects which may interfere with gas meter reading or maintenance. Sprinkler stubs, irrigation lines and hose bibs shall not be located above or **behind the meter loop**. **These items may not be located**

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		within 18 inches left or 6 inches right of the meter loop. **Downspouts may not be located behind the meter loop.** Requested by Field Ops.
4.05d)3)d)1)d)		Trimming or removing vegetation or other obstructions may be required if we determine there is a safety hazard, or a maintenance or access issue which interferes with the operation or maintenance of the gas meter or associated piping. Obstructions include, but not limited to, retaining walls, enclosures, and landscaping. **Access to Utilities equipment is at the sole discretion of the Qualified Utilities Employee and may result in red tagging, or Time and Material cost being passed on to the customer if removal or replacement is required.** Requested by OEGG.
4.05d)3)d)1)i)		Referred to Figure 8
4.05d)3)d)1)j)		Refer to 4.05a)2) for additional information on elevated pressure
4.05d)3)d)1)k)		Removed compression fitting sentence. Added any pipe joint shall be threaded or welded within 5 feet of any Utilities owned connection point. Mechanical or press style fittings are prohibited within this 5 foot buffer zone. Requested by Field Ops.
4.05d)3)d)2)a)	**Gas Meter Protection**	Relocated text from another section of Chapter 4. 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 movement, the gas meter set shall be protected by approved bollards installed in accordance with Figure 10 and Figure 15. Note that Federal code requires "each meter and service regulator, whether inside or outside a building, must be installed in a readily accessible location and be protected from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated" (49 CFR Part 192.353). Additionally, Section 12.3.401 of City Code requires that the location of the meter set must be safe from damage and accessible for reading, operation and maintenance. Bollards shall be installed before the meter is set and the lock is removed. All meters located in "drive through" areas shall be approved by Utilities Field Operations. Meters shall not be located in the traffic area of a loading dock.
4.05d)3)d)2)b)	**Gas Meter Protection**	For any new service, any barricade or bollard that is required in accordance with this document, or at the direction of the Utilities representative, shall be installed by a certified LUSI or will be installed on a T&M basis by a qualified Utilities representative and charged back to the developer, builder, or property owner. Requested by OEGG.
4.05d)3)d)2)c)	**Gas Meter Protection**	Minimum separation and protection to gas piping shall be per Figure 15. No excavation on previously installed Utilities infrastructure shall be performed unless by a qualified individual. Requested by OEGG.
4.05d)3)d)2)d)	**Gas Meter Protection**	Where the bollard design or bollard separation cannot be maintained, a variance to the standard may be requested. All variances are to be submitted to a Utilities Representative in written form with detailed documentation of the exact circumstances, terms, and conditions of conflict and proposed solution. Exceptions or variances from the required gas standards may be approved by Utilities Representative prior to a meter being unlocked. Requested by OEGG.
4.05d)3)d)4)a)	**Additional Requirements**	A concrete gas meter pad (**minimum of** 24"x 30"x 4") shall be installed for all gas meters serving total connected gas loads of 1,400,001 BTU/HR and larger. Requested by Field Ops.

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4.05d)3)d)4)c)	**Additional Requirements**	Added language to refer master meter system operators to Fed and State regulators. New form added. Requested by OEGG.
4.05d)3)d)4)d)	**Additional Requirements**	Added note: Under no circumstances will a non-standard loop agreement be provided for any regulator vent clearance or separation from potentially hazardous locations be provided. Reference section 4.05)d)3)d)for additional details Requested by OEGG.
4.05d)3)d)4)f)	**Additional Requirements**	Require a minimum of #16 gauge metal wire for brass tag.
4.05d)3)d)4)g)	**Additional Requirements**	Gas meters, regulators, and piping **are cleaned and coated by qualified Utilities employees with an approved material for corrosion prevention. For this reason, customers are not allowed to paint their meters, regulators or piping.** Requested by Gas Construction and Maintenance.
4.05d)3)e)	**Gas Meter Testing**	Added rotary gas meters are sample tested at 2 percent. Requested by Measurement Engineering.
4.06	**Materials**	Removed reference to the Gas Material Specs. Kept reference to Table 7 in the GLESS for approved materials. Requested by Standards.
4.06a)	**Materials**	Changed sentence structure to LUSIs may only use MDPE pipe and fittings that have a manufactured date less than 3 years prior. Removed text on HDPE fittings. Requested by Standards.
Ch 4 form	**Master Metering Agreement and Statement of Authority**	New form: Master Metering Agreement and Statement of Authority
Table 4	**Minimum Bending Radius**	Removed content not related to LUSIs and external contractors. Requested by Standards.
Table 7	**Materials Approved for Use in Gas/Joint Service Line Construction**	Minor table edit to existing approved material. Requested by Standards.
Table 8	**Clearance Matrix**	Added Telecom/Fiber to Telecom/Fiber separation requirement. Corrected electric primary to gas main clearance. Added note 4 content. Referenced Utilities cross sections. Requested by Standards.
Table 11	**Min/Max Cover for Natural Gas Lines**	Removed reference to Fed code and noted review by Utilities for more/less cover. Requested by Standards.
Figure 5	**Welded Steel Riser**	Consolidated the welded steel riser into one figure.
Figure 6	**Below Ground Multiple Parallel Services**	Edited figure per Field Ops.
Figure 8	**Meter Sets**	Edited figure per Field Ops.
Figure 14	**Riser valve and bypass assembly**	Replaced riser valve and bypass assembly figure. Requested by QCs and Field Ops.
Figure 15	**Bollard Post Installation**	Added note from O&M related to min # of posts. Requested by Standards.

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Appendix E	**Glossary**	Updated a few definitions to match Federal definitions. Requested by Standards.
Appendix F	**Plastic Joining Procedures (Socket Fusion)**	Copied the updated O&M Plastic Fusion procedures for socket fusion to the GLESS. Requested by Standards.
Contact Information	**Phone Numbers and Contact Information**	Updated contact information and Service Area Map Contacts

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CHAPTER 1
General Information

CHAPTER 1

General Information

1.01 Purpose

These standards are issued by Colorado Springs Utilities (Utilities) for 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 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 Utilities. Internal Utilities crews and Utilities' contractors shall comply with the natural gas Operations and Maintenance Manual (O&M Manual) and the Design and Engineering Manual. LUSIs and external contractors shall comply with the Gas Line Extension & Service Standards (GLESS). The regulations and policies described in this manual serve to provide 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 Utilities Field Engineering's, Gas Construction Superintendent ' or Quality Control Supervisor's decision on the appropriate course of action.

Any contractor requesting natural gas service from 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 on the Utilities website (www.csu.org) 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.

b) The Chapter 12 of the City Code 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 the Gas Line Extension & Service Standards are periodically required to ensure compliance with 49 CFR Part 192.

c) As a condition of service, the customer will give the duly authorized agents and employees of 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 Utilities facilities on the premises of the customer or for any other purpose incidental to the gas service supplied by Utilities.

d) Employees of 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 Utilities and of which the customer is already aware.

e) The customer will not bypass, tamper with, engage in unauthorized metering, or otherwise interfere with the proper operation of 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 Utilities to resolve the situation as well as the outstanding charges.

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

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

h) The rates for all types of gas service supplied by Utilities are on file with the City Clerk's Office and on the Utilities website (www.csu.org). Upon request, a representative of Utilities will explain rate schedules and assist in selection of the applicable rate best suited to the customer's requirements.

i) 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. 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.

j) Utilities will not be considered in default of its service agreement and will not otherwise be liable due to failure by 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 Utilities or the customer, action of civil, military, or governmental authority or any other cause beyond the control of Utilities.

k) 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.

l) Pikes Peak Regional Building Department (PPRBD) should be contacted regarding the disconnection of customer piping for extended periods to confirm the requirements for retesting prior to use. When existing customer piping is disconnected from the source of supply (gas meter removed, service shut off, etc.) for more than six months, the piping shall be retested in accordance with the requirements of Section 406.4.1 of the International Fuel Gas Code, 2021 Edition.

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

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

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

1.03 Excavation and Boring Requirements near Utility Lines

a) Chapter 3, Article 3 of Part 2 of the City Code (https://coloradosprings.gov/) 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 or Utilities and dedicated to public use, including the location of any electric or gas service line whether on public or private property. This shall include dedicated but not improved streets in new subdivisions. 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 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 sections 3.3.211, 3.3.216, and 12.10.104 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. Utilities must be notified prior to any construction activities around utility lines and or facilities. The proper way to notify 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, 811, or at Colorado811.org. Colorado 811 must also be notified of any damages to gas facilities. The Colorado Springs Underground Damage Prevention Safety Program and damage reporting requirements are detailed in City Code Chapter 12, Article 10. 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. Colorado statute also requires 911 be notified of any damage that results in a release of gas.

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 to follow safe excavation practices for both open trench and trenchless activities. Once the gas locates are complete and an excavator digs within eighteen inches horizontally from the exterior sides of the marked line, per C.R.S. 9-1.5-103 and City Code sections 3.3.211 and 12.10.104, the excavators are required to use non-destructive means of excavation to expose underground facilities such as by hand digging or using soft digging techniques. When using trenchless excavation methods, City Code requires the excavator to visually observe the safe crossing of marked underground facilities (see Table 8 for potholing requirements for private fiber installation using trenchless technologies near gas mains). For additional excavation and damage prevention information, contact Utilities, Damage Prevention at 719-668-8458. Additionally, in order to further protect the gas lines, we require the use of a reciprocating tip on hydro-vacuum water wands and not a zero or 30 degree tip, as the zero and 30 degree tips cause excessive damage to utility 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 Gas Quality Control Supervisor to have the line re-coated or repaired and comply with the requirements of City Code Chapter 12, Article 10. Failure to report damage or numerous damages from negligent work practices will result in charges and penalties as allowed by City Code. Within City limits, backfill and compaction shall meet City Engineering Public Works specifications. Outside of City limits, requirements of the appropriate jurisdiction must be met.

5) Federal OSHA General Requirements 1926.651 B (1) (3) (4) and DOT regulations 49 CFR 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 Utilities at 719-668-3520 a minimum of three (3) business days in advance to schedule a gas standby appointment. Gas standby appointments are scheduled on a first come first serve basis and a trip fee may be assessed for missed appointments. Gas standby is required 1) prior to exposing any underground gas facility that is four inches (4") or larger in size or any size facility on the high-pressure distribution system (>76 pounds per square inch gauge (psig)) (potholing addressed separately below), 2) excavating/trenching within 6 feet horizontally of any underground gas facility that is four inches (4") or larger size pipe or within 10 feet horizontally of any size facility on the high-pressure distribution system , and/or 3) crossing any underground gas facility that is four inches (4") or larger in size or any size facility on the high-pressure distribution system (see Table 8 for clearance requirements). Gas standby appointments are also required for potholing on the high-pressure distribution system but not required on the low pressure system when only potholing, unless requested by Utilities. These activities will be noted with a "Dig Alert (DA)". Note that with potholing and in order to further protect the coating of gas lines,

water pressure shall be limited to 1700 psi around the natural gas infrastructure, dropping to 1200 psi around tar coat pipes which are more susceptible to coating damage.

No more than a maximum of 40 feet of natural gas main or service line may be exposed at a time. At the discretion of Utilities, Utility Construction and Maintenance Department, Quality Control the exposed footage may be further restricted due to site specific conditions. The exposed span of pipe shall be properly supported and protected from being damaged.

The contractor shall have an adequate amount of approved padding (see Table 7 for Approved Materials) onsite at time of the scheduled gas standby appointment. All Utilities gas infrastructure that is exposed shall have a minimum of six inches of approved padding sand (see Table 7) placed around the entire circumference of the pipe in the area at which it was exposed and/or crossed in its entirety. No other padding materials are approved, even if only used temporarily.

Potholes must be filled in a timely manner and site cleanup must include the removal of the core. Within El Paso County (County), the County's requirements must be met. The County requires that all core holes must be temporarily filled within 24 hours of being drilled into a hard or soft surface and permanently filled within 7 days of being drilled into the surface. If the core holes need to remain open longer than 24 hours, it is acceptable to cover the holes using a metal plate.

Per the City Standard Specifications (Addendum 3: Revision to Section 206), the City requires that non-Utilities personnel filling potholes/keyhole excavations in the public right-of-way must do so with controlled low strength material (CLSM) (Utilities requires 12" of padding above the top of pipe prior to CLSM due to the heat generated. CLSM in joint trench areas behind curb is not allowed). Contractors working within the City shall also comply with the City's pothole/keyhole excavation backfilling requirements. No other type of material(s) than what has been approved by Utilities (see Table 7), even if only used temporarily, shall be used on or around Utilities gas infrastructure or piping after being exposed when backfilling potholes, excavations, etc.

Directional Drilling Crews and/or Potholing Crews shall use all available resources to locate and expose gas mains and service lines before contacting Utilities for assistance (note: crews shall comply with standby requirements as described above).

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.

1.04 Locating Responsibility:

a) Colorado Springs Utilities Locating is responsible to locate:

All gas **mains** on public or private property that are operated and maintained by Utilities; all gas **service lines** that feed from the gas distribution main extending to the gas meter on residential and commercial properties.

b) Colorado Springs Utilities Locating is not responsible to locate:

Any gas **main** that has been identified as being privately owned; any gas **service** that feeds from the private side of the gas riser and is not owned or maintained by Utilities.

COLORADO SPRINGS UTILITIES
Customer Contract Administration
2880 International Cir, Suite 210 • Colorado Springs, CO 80910
Phone (719) 668-8111 cca@csu.org 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 ☐

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

Notes: _____

Meter #'s: _____

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 or main.

WATER *(Please check one)* **Inspections 719-668-3524**

☐ **Service line to be reused within two (2) years:** Any service disconnection and reconnection must follow 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

F01-00778 (08/2019)

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 if such services later appear to have been wrongfully removed or discontinued at the Owner/Agent's request, the Owner/Agent agrees to indemnify and hold harmless Colorado Springs Utilities from any and all claims arising from the removal or discontinuance of said services and to promptly reimburse Colorado Springs Utilities for any and all costs or expenses incurred to reinstall or reconnect such services and any other applicable fees. Colorado Springs Utilities shall not be liable for delays in performing its obligations to the extent the delay is caused by an unforeseeable condition beyond its reasonable control without fault or negligence including strikes, riots, wars, floods, fires, explosions, acts of nature, or labor disturbances. This Request for Removal of Utilities is subject to the applicable provisions of the City Charter, City Code, ordinances, rules and regulations of the City of Colorado Springs as amended as well as applicable provisions of Colorado Springs Utilities' Tariff, as now in effect or hereafter amended. The laws of the State of Colorado will govern this Request for Removal and any interpretation or construction thereof. Owner/agent acknowledges that Colorado Springs Utilities is afforded protections of the Colorado Governmental Immunity Act, C.R.S. §24-10-101, *et seq*.

Additional Fees: Owner/Agent understands that there may be additional fees to reconnect utility service to the above described property and will pay any fees required.

Owner/Agent Signature_____ Address _____

State of Colorado)
County of El Paso)

Subscribed and sworn before me this _____ day of _____ 20____, By _____
(Printed name of owner/agent)

_____ My commission expires: _____
Notary Public

Application may be submitted electronically, by mail or in person.

(For Colorado Springs Utilities Completion)

Premise ID: _____

Additional Information: _____

_____

☐ Electric Primary: _____ Date: _____

☐ Electric Service: _____ Date: _____

☐ Natural Gas Service: _____ Date: _____

☐ Water Service: _____ Date: _____

Place of removal: □ _____ □ Water main

☐ Wastewater Service: _____ Date: _____

Place of removal: □ _____ □ Wastewater main

☐ Complete Demolition ***ONLY***:

Email sent to LBS – 'WRECK' old address: _____ Date: _____

Completed and Customer Contacted: _____ Date: _____

F01-00778 (08/2019)

NATURAL GAS CUSTOMER BURIED PIPING SAFETY NOTICE

Colorado Springs Utilities (Utilities) is committed to providing safe reliable service to our customers. We own, operate and maintain all natural gas piping, from the pipe located beneath streets, sidewalks and yards to the meter. In accordance with federal pipeline safety regulations, this notice is to inform customers of their responsibility for the gas piping installed past the gas meter.

Some examples of buried customer gas piping **not** maintained by Utilities are:

- Buried piping past the outlet of a meter supplying mobile homes;
- Buried piping past the outlet of a meter supplying secondary buildings (e.g., detached garage and workshops);
- Buried piping past the outlet of a meter supplying additional equipment (e.g., gas grill and yard lamps).

In most cases, the gas meter is installed at the wall of the primary structure resulting in no buried piping.

If you have buried customer piping, be advised of the following:

- Buried piping that is not maintained may be subject to the potential hazards of corrosion and leakage.
- Buried piping should be:
  Periodically inspected for leaks;
  Periodically inspected for corrosion if the piping is metallic;
  Repaired or removed from service if any unsafe condition is discovered. Repairs should be performed by a professional; contact a licensed plumbing contractor to perform inspections or make repairs to buried plumbing.
- Before excavating near buried piping, the piping must be located in advance, and excavation done by hand.

Natural gas customers are encouraged to have their buried piping reconfigured and replaced and have the meter relocated by Utilities. All costs associated with the piping reconfiguration and replacement is the responsibility of the customer or property owner. Once the reconfiguration and replacement is complete, Utilities would then be responsible for maintaining the buried piping.

For your safety, remember to call 811 before digging to have utilities marked.

If you have any questions regarding this notice, please call us at 719-448-4800.

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Gas Main/Service Stub Extension

CHAPTER 2

Gas Main/Service Stub Extension

2.01 Introduction

This chapter explains the process for extending gas main lines and service stubs to sites within the Colorado Springs Utilities Gas Certificated Service Territory and summarizes the steps an Applicant will go through when requesting a main line extension. The chapter also explains Utilities' current extension policy as provided for in the Natural Gas Tariff. Extensions and connections to Utilities' facilities will be made in accordance with the Tariff (Utilities Rules and Regulations) and City Code. The application forms can be found at the end of this chapter. The Gas Mainline Cost Recovery Agreement (Recovery Agreement) policy and additional information are available at https://cuc.csu.org/en-US/.

The process for extending gas service includes the following steps:

a) Submittal of **Application for Gas & Electric Line Extension** including required plans and information requested on application form.

b) Determination by Colorado Springs if a main extension is economically sound and feasible.

c) Preparation of **Design** and **Fee Determination**: 1) for the mainline system extension, with pressures less than 150 psig, the fee is determined on a full cost per foot. The fee is determined by Utilities Field Engineering Staff; 2) for the high-pressure distribution system extension, with pressures greater than or equal to 150 psig, the cost is determined by an estimated T&M. Fee is determined by Utilities Gas Advanced Design.

d) Determination and preparation of **Extension Contract**

e) **Payment of Fees** due by Applicant prior to **Execution of Extension Contract**

f) **Construction** by Utilities

g) Reconcile the T&M contract, if applicable

h) Execution of **Recovery Agreement**, if applicable

i) Installation of **Service Lines** by Licensed Utility Service Installer (LUSI)

j) **Meter Set** installations by Utilities

The line extension process begins when the Owner/Developer/Applicant submits an **Application for Gas & Electric Line Extension** and all required plans and information to Field Engineering. Field Engineering then prepares a design and notifies the Applicant of the fee for gas mainline extensions (<150 psig).

Extension requests for the high-pressure distribution system greater than or equal to 150 psig are forwarded to Gas Advanced Design and they design the system with extension costs determined by T&M. Gas Advanced Design also determines the eligibility for the extension to request a Gas Mainline Cost Recovery Agreement and, if eligible, calculates the Gas Mainline Cost Recovery Agreement Charges that may exist on the property.

Costs for extension projects include, but are not limited to, the cost of design, construction, excavation, boring, pipe, welding, x-ray inspection, fittings, sand bed padding, fill and compaction, labor, restoration, permits, easements, and any relevant Recovery Agreement charges. District Regulator Stations required by a development may be charged to the Applicant.

Utilities constructs the high-pressure system, gas mains, service stubs and associated facilities. The Builder contracts with a LUSI to construct the service lines from the service stubs to the buildings (i.e. on the Applicant's private property). The gas meter is set by Utilities.

Utilities shall supply and install remote monitoring systems.

Utility easements that are required within the Developer's property are granted to Utilities and are not recoverable.

2.02 Application

The Applicant initiates the line extension process by submitting an **Application for Gas & Electric Line Extension**, as well as the required plans for design and construction. The application is a standard form that captures pertinent information about the Applicant and the requested extension. A copy of the Application is included at the end of this chapter and online at https://cuc.csu.org/en-US/. The form is also available from Field Engineering.

a) Required Plans:

Along with the application, the Applicant must submit the following plans: water plans, street plans and profiles showing the location and elevation of sanitary and storm sewer lines, service stub plans showing the planned location of utility service stub lines into each lot, and a recorded plat. The Applicant may submit a request without a recorded plat. However, construction will not begin until the Applicant has submitted a recorded plat or an appropriate easement document granting the required rights-of-way to Utilities.

Please Note: Unless the Applicant is extending gas service in existing streets, **a Utilities Addressing Plan (UAP) and/or Utilities Design Cad File (UDCF) must be submitted to the Utilities Facility Information Management Systems (FIMS) Office before any action will be taken on a line extension request.** The UAP/UDCF requirements are included in Appendix B of this document. For more information about UAP/UDCF, please call the Utilities FIMS office (see Contact Section).

b) Private Streets:

For projects with private streets, including most apartments, condominiums, townhouses and commercial projects, the Applicant must also submit site development plans, master facilities plans, and landscaping plans. The Applicant should also pay special attention to the separation

requirements discussed in 2.02(c) "Location of Gas Main Lines", since private streets are typically narrower and thus more challenging to provide required utility separations.

c) Location & Clearances of Gas Lines:

The location of water, electric, sanitary sewer, storm sewer and other underground facilities must provide adequate separation for gas facilities (see Table 8 for Clearance Matrix; See 4.03c for additional Service Line Clearances). At time of installation, typical depths of gas main lines are installed, from top of pipe to grade, between 30 inches minimum and 48 inches maximum for ≤ 76 pounds per square inch gauge (psig) gas mains, and between 48 inches minimum and 72 inches maximum for the high-pressure distribution system (>76 psig). Also note that per 49 CFR 192.325 (c) plastic gas mains must be installed with sufficient clearance, or must be insulated, from any source of heat so as to prevent the heat from impairing the serviceability of the pipe.

1) Gas main lines (≤ 76 psig) shall have the following minimum separations:

a) Minimum 6 foot horizontal separation when installed parallel to other utilities and structures (see Table 8 for additional information and fiber requirements).

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.

d) Minimum 30 inches of cover required.

e) Minimum 6 foot horizontal separation for trees [see c)3) below].

2) High-pressure distribution system main lines operated at >76 psig must have the following separations. Rare exceptions to the below must be approved by Utilities, Utility Construction and Maintenance Department:

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

b) Minimum 15 foot horizontal separation with structures.

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

d) Minimum 10 foot horizontal separation from trees [see c)3) below].

e) Minimum 4 foot cover required.

3) Gas lines (mains and services) shall have the following minimum separation with trees:

a) Trees may not be planted within 10 feet horizontally of the high-pressure distribution natural gas system (>76 psig) and within 6 feet of a natural gas system (≤ 76 psig gas main or service) with limited exceptions listed in the Time of Landscape Plan

Approval table below. Exceptions that allow planting of shallow root medium/small species shall use the Approved Street Tree with Shallow Roots table. The horizontal separation distance is measured from the base of the tree to the gas pipe.

b) When dead trees are replaced per the below table, buried utilities must be located pursuant to Chapter 12 Article 10 of Colorado Springs City Code prior to removing the dead trees and planting the replacement species.

c) Standby requirements (see Section 1.03) apply to activities within 6 feet of a gas pipe that is four inches (4") or larger in size or any size facility on the high-pressure distribution system (>76 psig). In addition to standby requirements, potholing is required when activities are within 6 feet of a gas pipe. These requirements must be met during tree planting/removal/replacement activities.

d) If excavation will occur within 18" from either side of the exterior sides of any marked utility regardless of size, the marked utility must be exposed by **potholing** using non-destructive & non-mechanical means of excavation. Examples: shovel, hand tools, water or air vacuum methods.

e) New or replacement trees, if permitted per the below table, shall have a minimum 1 foot vertical/radial separation between the bottom of the root ball and the gas pipe. The gas pipe must be potholed and visually observed to ensure this vertical separation between the gas pipe and the bottom of the root ball.

	Time of Landscape Plan Approval[1]		
	Pre-2017	**2017-2021**	**2022 and Forward**
Plant new tree where none existed prior (Note: For all lots regardless of when constructed, **no trees are permitted within 10 feet of the** high-pressure distribution system.)	Unless shown on a pre-2017 approved Landscape Plan (not expired), new trees shall not be planted within 6 horizontal feet of a natural gas pipe. If the exception applies, it is highly recommended they are planted 6 feet away from the gas pipe or use shallow root medium/small species	New trees shall not be planted within 6 horizontal feet of a natural gas pipe unless shown on a pre-2021 approved Landscape Plan (not expired), which will require shallow root medium /small species	New trees shall not be planted within 6 horizontal feet of a natural gas pipe[2] unless shown on a pre-2022 approved Landscape Plan (not expired), which will require shallow root medium/small species
Replacement tree (Note: For all lots regardless of when constructed, **no trees are permitted within 10 feet of the** high-pressure distribution system)	It is highly recommended that replacement trees for trees originally planted per an approved Landscape Plan are planted 6 feet from the gas pipe or with a shallow root medium /small species in the same location.	It is highly recommended that replacement trees for trees originally planted per an approved Landscape Plan are planted 6 feet from the gas pipe. If replacement trees are planted within 6 feet of the gas pipe, it is required that they be planted in the same location as the prior tree and must be shallow root medium /small species.	Not applicable (if Landscape Plan approved prior to 2022, see adjacent columns).

[1] The Landscape Plans referenced shall be reviewed and approved by City Planning. These Landscape Plans are a City requirement for development projects, to include commercial projects and residential subdivisions (common spaces and right of way (ROW)). If approved projects have not been built, the Landscape Plan expires in 6 years. If a project is constructed, the approved Landscape Plan never expires. Individual Single Family Residential lots do not have City specific tree species requirements unless planted in the ROW. Commercial lots have Landscape Plans and specific tree species over the last 20 plus years. Landscape Plans older than that may not have specific tree species requirements.

[2] Joint trench gas mains/services will be typically located under sidewalk and thus protected. In instances where they not located under a sidewalk, protection is provided via the 6 or 10 feet of separation.

Approved Street Tree with Shallow Roots List			
Approved Medium Trees (25-45 ft)		**Approved Small Trees (< 25 ft)**	
Amur corktree *(male only)*	*Phellodendron amurense*	Amur chokecherry	*Prunus maackii*
Golden raintree	*Koelreuteria paniculata*	Newport plum	*Prunus cerasifera*
Japanese pagoda *(protected site)*	*Styphnolobium japonicum*	Princess Kay plum	*Prunus nigra*
Japanese tree lilac *(protected site)*	*Syringa reticulata*	Tatarian maple	*Acer tataricum*
Bigtooth maple *(single stem only)*	*Acer grandidentatum*	Amur maple	*Acer ginnala*
Maple, Miyabe/ State Street	*Acer miyabei*		
Mountain ash	*Sorbus aucuparia*		
Ohio buckeye	*Aesculus glabra*		
Ussurian pear *(fruitless only)*	*Pyrus ussuriensis*		
Turkish filbert	*Corylus colurna*		

Note: Approved Street Tree List for Colorado Springs updated by City Forestry in Oct 2019. The list provided above is a subset of the City's Steet Tree List and includes those with shallow rooting habits. Plant substitutions due to lack of plant availability or seasonal planting constraints may be considered with approval from City Planning and Colorado Springs Utilities, Utility Construction and Maintenance Department.

d) Easements:

Service lines are considered a condition of service as allowed by the Utilities Rules and Regulations and easements may not be required. It's more typical for easements to be required for distribution systems in private streets or rights-of-way. However, City Code (12.3.303) requires that Utilities determines the location or locations at which any owner service line shall be connected to the gas distribution system and that the connection shall be made without entering upon property other than the property of the owner so connected, unless an acceptable recorded utility easement is provided.

The Applicant must submit an acceptable utility easement for private streets and rights-of-way. A standard easement document form is available online at https://cuc.csu.org/en-US/, or through Utilities Field Engineering, and should be submitted with the line extension application as necessary.

The easement widths for underground utilities can vary based on the number of utilities installed in a given area, the size of the utility lines, depth of utilities, multiple utility infrastructure of the same designation (e.g., gas with gas), construction methods, and the pressure of the gas lines. Typical public utility easements are a minimum of 50 feet for a gas main that is part of the high-pressure distribution system and a minimum of 20 feet if part of the less than or equal to 76 psig system and if joint gas/electric trench. An easement table detailing the easement widths for all utilities is found in the Water Line Extension and Service Standards. Utilities Field Engineering, with input from Utilities, Utility Construction and Maintenance Department, will determine the necessary easement required based on site and project specific variables.

2.03 Design and Estimate

Upon receipt of the **Application for Gas & Electric Line Extension** and <u>all</u> required plans, Utilities will begin designing the new gas facilities and estimating the cost of installing these

facilities to include any Recovery Agreement Charges that may be due for the proposed design area. There is a design fee assessed for this work that is included in the cost per foot fee. Projects that are billed on a T&M basis will be charged an estimated design cost. Actual design costs are determined during project reconciliation. Any variations to gas facility designs that are requested different from Utilities current design standards and specifications (e.g., GLESS, Natural Gas Design and Engineering Manual, etc.) will be reviewed to ensure they meet or exceed existing design requirements. If approved, the costs for the variations are charged 100% to the customer with the estimate to be determined at the time of the request and all final costs being reconciled at the end of the project.

Projects are prioritized for design 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.

2.04 Execution of Extension Contract

After the design and estimate are completed, the Applicant receives copies of each document. In addition, the Applicant receives a copy of the applicable Extension Contract, along with a letter requesting execution of the contract and remittance of payments due. The estimated cost of construction for oversized facilities is based on a nominal pipe size. The Extension Contracts detail the terms under which the new gas facilities will be constructed.

2.05 Construction

Gas mains and service stub facilities may be constructed only by Utilities or by a Utilities gas contractor. As described in Chapters 3 and 4, Licensed Utility Service Installers meeting certain criteria can install services lines.

Backfill and compaction occurring with gas main, vaults, and service installation and construction in public streets, city property and rights-of-way shall meet City Engineering Public Works specifications. The onsite materials testing company, developer, or the developer's representative shall be responsible for promptly and consistently providing copies of all completed soil compaction test results taken on all new construction projects where the gas and/or electric utilities are or were installed by Utilities or its designated contractor. The frequency of density tests shall be a minimum of every 250 linear feet of gas / joint / electric mainline trench, at each service stub installed, at all street crossings, and per the City of Colorado Springs specifications for public streets, city property and rights-of-way. The number of density tests may be increased if directed by the Utilities Gas Construction Quality Control Inspector or developer. If flowable fill (CLSM) that meets the City's design requirements is installed, compaction and density tests are not required. Soil compaction test results shall be explained to the onsite Utilities Gas Construction Quality Control Inspector immediately upon the completion of said soil compaction tests and prior to the installation crew leaving and/or moving off the development, subdivision, or jobsite. This is to ensure that any soil compaction test failures or issues that may exist can be remedied prior to the crew moving off or leaving the jobsite. A copy of all soil compaction test reports, including the subdivision name, shall be emailed to compactiontests@csu.org.

a) Construction Scheduling:

Construction of new gas facilities is scheduled after the Applicant has completed all job ready requirements. Examples of job ready requirements include, but are not limited to, activities such as executed an Extension Contract, remitted the appropriate fees, and prepared the site for construction. Installation of all other utilities and construction of curb and gutter are required prior to gas facility construction. Utilities, Utility Construction and Maintenance Department must approve construction if curb and gutter are not constructed. Release for scheduling will occur once all job ready requirements as determined by Utilities are met.

NOTE: The customer (developer or representative of the project) is responsible for providing locates for all private utilities not belonging to Utilities.

Construction scheduling is done weekly by Utilities and is based on field status reports. It is imperative that the Applicant provide construction status updates to Utilities during the course of a project to ensure proper design and construction prioritization. If Utilities crews are delayed due to the construction site not being ready to install facilities after mobilizing to the site, the developer will be charged for the cost of de-mobilizing and re-mobilizing to the site with a Time and Material contract. Construction updates can be provided to Construction Scheduling (see Contact Section).

Prior to scheduling and installation of gas facilities, Utilities must receive full payment and the customer must meet the following conditions:

1) Final grade will be provided within +/-3" at any electric vault, cabinet, transformer, or junction box (J-Box) and within 6" whether curb & gutter or grade stakes are installed.

2) Installation of curb & gutter, excluding curb returns. As an option, Utilities will consider working from curb stakes with final grade and/or finished grade clearly marked. The entire project will have curb & gutter or staking for curb & gutter. However, no combination of curb & gutter and staking will be approved unless a Utilities Gas Construction Quality Control Inspector deems extenuating circumstances exist and it is necessary to move a project forward. The developer and a Utilities representative will be required to sign a "Utility Staking (Verification Form)" before the project is energized. This form will be provided by the construction crew or the quality control inspector. Signatures on this form verify that the gas facilities have been correctly installed relative to the curb stakes and the grade stake references (see Utility Staking forms at the end of this chapter). It is the developers' responsibility to confirm correct staking 24 hours in advance of crew installation activities to ensure staking has not been altered. The developer will incur all costs for improper installation or repositioning of facilities, due to staking errors, staking alterations, or changes in grade.

3) All property pins will be provided. Should these pins be inadvertently removed during construction, it is the responsibility of the customer to replace them.

4) Installation of all electric (unless in joint trench), water and wastewater mains and service stubs, storm drains, and catch basins with trenches associated with these facilities backfilled and properly closed.

5) All trash, construction material, debris, and fences cleared from the proposed gas construction site or path.

6) Certified soil density tests when requested. Developer must provide Utilities or its agents a copy of all compaction test results taken on utility trenches.

7) The installation of the following facilities is preferred after gas:

   f) Sidewalks

   b) Driveways and curb returns

Frost Processes:

1) **Gas Only Project:**

   The Tariff details costs to dig in frost that must be paid by the Developer. Utilities crews must complete the "Payment Itemization" sheet and Utilities' contractors should use the appropriate frost bid units for digging in frost. Field Engineering will reconcile the costs after the project construction is completed. Developers that choose to dig the ditch during frost conditions must complete the Frost Approval Form and follow the process detailed in the form. The costs are determined by T&M and will be absorbed by the developer.

2) **Joint Trench Projects:**

   Developers that choose to dig the joint trench ditch during frost conditions must complete the Frost Approval Form and follow the process detailed in the form.

b) Gas Crossings:

Special Conditions for Gas Crossings– **<u>ONLY Designed Joint Trench Projects:</u>**

1) Definitions:

   a) Gas Carrier Pipe – gas piping installed and used to transport natural gas.

   b) Gas Crossings – gas carrier pipe installed at street crossings.

2) Utilities prefers to have all gas facilities installed using "normal" installation procedures. Normal installation procedures are when the following occur in sequence:

   a) Wet utilities and storm systems are installed;

   b) Curb and gutter is installed, or approved staking is in place;

   c) Gas Carrier Pipe is installed from beginning to end of project ***and is energized;*** and

   d) First lift of asphalt is laid and/or street is paved.

3) Developers will be charged if the first mat of asphalt is laid before a Utilities crew arrives. Work that Utilities crews are required to perform for asphalt removal and related tasks will be billed to the Developer. Billed charges will include the cost for saw cutting, trench

removal, material removal from the job site (if not left onsite), and restoration services needed upon job completion.

If the Developer decides to have Utilities install gas crossings after the final lift of asphalt is laid or after the installation of roadway stabilization, such as Soil Cementing, Utilities will directional bore the gas crossing during the standard scheduled crew installation. The cost for the boring will be estimated and applied to the Extension Contracts at the time of the design.

.

The use of sleeves for crossings is not allowed due to safety and maintenance issues. A gas leak can be difficult or impossible to detect and locate with leak search equipment, and gas would be forced onto customer properties. In addition, sleeves do not allow pipe closure for repairs.

c) Request for Colorado Springs Utilities to Work Overtime:

Developers or other customers may request for a Gas or Electric Extension Crew (Utilities/Contractor) to work overtime (OT) on their projects. Utilities reserves the right to select the crew based on operational and contractual obligations.

The Developer or other customer must submit to Utilities a T&M Overtime Request Letter with relevant information filled in (see form at the end of this chapter). The request letter is available from Utilities Gas Construction Quality Control Inspectors, Utilities Crew Supervisors or Utilities Field Engineering representatives. The OT requests are typically discussed and completed at pre-construction meetings. If an overtime request is approved (contingent upon crew availability), Utilities will create an Overtime T&M work order for the actual cost. Field Engineering will reconcile the OT costs upon completion of the project.

The money received by Utilities Field Engineering will be deposited as Aid to Construction at the respective Field Engineering office. Contact Utilities Field Engineering with questions (see Contact Section).

d) Main Line Relocation:

Any relocation of main lines required due to customer actions is charged to the customer on a Utilities T&M basis (Example: grade changes, new buildings/structures which jeopardize existing gas main lines). Relocation costs charged to the customer would also include any costs for environmental issue abatement as well as proper abandonment and pipe removal per Utilities procedures. T&M contracts are initiated by Utilities Field Engineering Section. Upon completion, the contract will be reconciled for actual costs. Typically, relocations are not eligible for Recovery Agreement.

In the case of any requested vacation of easements, all identified and unknown environmental issues must be addressed at the cost of the requesting customer prior to vacation.

2.06 Execution of Gas Mainline Cost Recovery Agreements

In accordance with Utilities Rules and Regulations, the Owner(s)/Developer may apply for a Gas Mainline Cost Recovery Agreement (Recovery Agreement) for qualifying mainline extensions and extensions of the high-pressure distribution system. Eligibility of a qualifying mainline extension is determined by Utilities, in its own discretion, and Applicant(s) will be notified on the Extension Contract if an extension qualifies for a Recovery Agreement. Recovery Agreements shall have a 20-year term, providing that non-participating property owners benefitting from the extension pay a pro-rata share of all eligible extension costs from qualifying facilities. A Recovery Agreement Charge will be collected from any Owner/Developer requesting natural gas service from Utilities before construction (applies to both high-pressure and non-high pressure mains). If the property Owner(s) or Developer desires to enter into a Recovery Agreement with Utilities, they must submit an Application for Gas Mainline Cost Recovery Agreement within 365 days after the date of establishment of service of a qualifying extension. Details on Recovery Agreements can be found in the Utilities Gas Mainline Cost Recovery Agreement policy.

2.07 Assignment of Agreements

Under the terms of the Recovery Agreement, all Charges collected under a Gas Mainline Cost Recovery Agreement will be refunded directly to the Contract holder unless the Contract holder executes an acceptable Assignment Agreement.

2.08 Installation of Service Lines

The property owner is responsible for the cost of installation of the gas service line on his/her private property. Cost of service lines are not recoverable. No qualifying extensions should have services in their scope.

Polyethylene service lines greater than 2 inches in diameter and all steel service lines are to be installed only by Utilities under a Time and Materials Contract. Polyethylene service lines less than or equal to 2 inches in diameter shall be installed by Utilities, their contractor, or LUSIs under contract with the property owner. For an updated list of LUSIs call the Utilities, Utility Construction and Maintenance Department (see Contact Section). Refer to 4.03(b) for more details about the location at which the service lines shall be installed.

Colorado Springs Utilities
it's how we're all connected

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: **UtilityApplication@csu.org or**

North Work Center Field Engineering
7710 Durant Drive, P.O. Box 1103, Mail Code 2150
Colorado Springs, CO 80947-2150

or

South Work Center Field Engineering
1521 Hancock Expressway, P.O. Box 1103, Mail Code 1812
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 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 Co☐ct [ ]
Note: a meter will not be installed until the person financially responsible for the billing has set up an account with Utilities Development Services (719-668-8111).

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

___ Water System Plan
___ Street Plan & Profiles
___ Utility Service Plan
___ Wastewater System Plan & Profile
___ Storm Drain Plan & Profile
___ Recorded Plat or Utility Easement
___ Utilities Addressing Plan (UAP)*
___ Utilities Design CAD File (UDCF)*
___ 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)

_____
Applicant's Name (Please type or print)

_____
Address

_____
City, State, and Zip Code

_____
Telephone and FAX Numbers

_____
Email Address

_____
Agent's Name (Project Contact)

_____
Address

_____
City, State, and Zip Code

_____
Telephone and FAX Numbers

_____
Cellular/Field Numbers (If Applicable)

_____
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.

07/25/23

Colorado Springs Utilities
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APPLICATION FOR ELEVATED NATURAL GAS PRESSURE APPROVAL

Please fill out all applicable lines, including reason for request. Elevated pressure requests over 2 psig must include documentation from equipment manufacturer showing need for requested pressure.

Location:

Facility Name _____

Street Address _____

Applicant:

Applicant Name _____ Phone _____

Company Name _____ Phone _____

Mailing Address _____

City _____ State _____ Zip _____

Applicant Email _____

Plumbing Co:

Company Name _____ Phone _____

Email Address _____ License Number _____

Facility:

Existing Natural Gas Load _____ BTUH at _____ psig Delivery Pressure

Proposed Natural Gas Load _____ BTUH at _____ psig Delivery Pressure

Note reason for elevated pressure request _____

_____

Signature _____ Date _____

Request cannot be completed without signature.

Email the completed request to UtilityApplication@csu.org or as an alternate, send completed request to appropriate Field Engineering Office (North Work Center handles gas).

North Work Center
7710 Durant Drive
PO Box 1103, Mail Code 2150
Colorado Springs, CO 80947-2150
Phone: (719) 668-4985
Fax: (719) 668-4998

South Work Center
1521 Hancock Expressway
PO Box 1103, Mail Code 1821
Colorado Springs, CO 80947-1821
Phone: (719) 668-5564
Fax: (719) 668-5956

For Office Use Only

Work Order Number(s) _____

FE _____ Phone _____

Form G-41 082021

Colorado Springs Utilities
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APPLICATION FOR NATURAL GAS SERVICE LINE APPROVAL

This form is to be used when requesting a new natural gas commercial service with any load, a new residential natural gas service for any load over 1,000,000 BTU, any service where there is no stub to the property line, or a change to existing gas load. Please fill out all applicable information.

Location:

Facility Name _____

Street Address _____

Applicant:

Applicant Name _____ Phone _____

Applicant Email _____

Plumbing Co:

Company Name _____ Phone _____

Mailing Address _____

City _____ _____ State _____ Zip _____

Email Address _____ License Number _____

Facility: Existing Gas Load: _____ BTUH

Proposed Gas Load: _____ BTUH

*Note: Our standard delivery pressure is 0.25 psig (7" W.C.). If a greater pressure is needed, submit an Application for Elevated Natural Gas Pressure Approval as well.

Signature: _____ Date: _____
Request cannot be completed without signature.

NOTE: Please include a site plan with this request if for new service.

Email the completed request to UtilityApplication@csu.org or as an alternate, send completed request to appropriate Field Engineering Office (North Work Center handles gas).

North Work Center
7710 Durant Drive
P.O. Box 1103, Mail Code 2150
Colorado Springs, CO 80947-2150
Phone: (719) 668-4985
Fax: (719) 668-4998

South Work Center
1521 Hancock Expressway
P.O. Box 1103, Mail Code 1821
Colorado Springs, CO 80947-1821
Phone: (719) 668-5564
Fax: (719) 668-5956

For office use only

Work Order Number(s) _____

FE: _____ Phone: _____

Form G-40 082021

Colorado Springs Utilities
Non-Standard Gas Meter Loop Agreement

The current Colorado Springs Utilities Gas "Line Extension & Service Standards" Manual lists specifications for meter loops depending on total connected load. The specifications are for: 1) The horizontal distance from the Gas service riser to the building wall, 2) The horizontal distance from the gas service riser to the fuel gas piping inlet and 3) The vertical distance from the Gas service riser to the fuel gas piping inlet. The Manual also gives specifications for distances from doors and openings and other safety related items.

Colorado Springs Utilities expects all current Manual standards and specifications to be followed.

From time to time, and only due to unique circumstances, Colorado Springs Utilities may, in its sole discretion, make exceptions to the specifications so long as the exception does not jeopardize safety or in any way create a possible hazard.

Due to such circumstances on this particular job, Colorado Springs Utilities is granting an exception to our standard meter loop specification. Below you will find a detailed description of what the exception is. Only after the work is completed as described below and all applicable inspections have been completed by the Regional Building Department will you be eligible to receive a gas meter.

Exception for:

Address: _____
Contractor: _____

Description of
exception:_____
_____
_____
_____
_____
Drawing:

_____ _____
Contractor signature Colorado Springs Utilities Rep

QC Inspection Sheet

QC Contact

WONUM
Description
Address
Contact
Company
Work Phone
Cell Phone
Work Type
Sub Work Type

Inspector	Date		FIELD NOTES
_____	___/___/___	Received From PA	_____
		WATER / WASTE WATER	
_____	___/___/___	Water Mains Installed	
_____	___/___/___	Sewer Mains Installed	
_____	___/___/___	Storm Sewer/ Drains Installed	
_____	___/___/___	Water Services Installed	
		CURB AND GUTTER	
_____	___/___/___	Curb and Gutter Installed	
_____	___/___/___	Curb Backfilled	
		LOT LOCATIONS	
_____	___/___/___	Front Lot Pins Installed	
_____	___/___/___	Lot Lines Marked On Curb	
_____	___/___/___	Flag Lot Pins Installed	
_____	___/___/___	Rear Lot Pins Installed	
		CURB WAIVER INFO	
_____	___/___/___	Curb Waiver	
_____	___/___/___	Grade Stakes @ 50 ft.	
_____	___/___/___	Grade Within 6" Trench Line	
_____	___/___/___	Grade Within 2" Equip Loc	

Joint Trench ☐ YES ☐ NO

RELEASED TO:

_____ **Date** ___/___/___

North District Fax # 668-4998
South District Fax # 668-5606
Electric Service # 668-5535

I _____ UNDERSTAND ALL OBLIGATIONS I HAVE COMMITTED TO, WILL BE MET BEFORE ARRIVAL OF CSU CONSTRUCTION CREW. FAILURE, WILL RESULT IN THIS PROJECT GOING BACK ON THE 3 WEEK SCHEDULE.

Colorado Springs Utilities

Utility Staking Standards (New Residential and Commercial)

Before Starting Job

When Colorado Springs Utilities' facilities (Electric, Gas, Both – Joint Trench) are to be installed prior to the installation of curb and gutter, in private streets or right-of-way, that are designated as existing public utilities easements, the Developer or Developer's Representative shall adhere to the following staking requirements:

- □ All wet utilities shall be installed prior to gas and electric installation – this includes storm water.
- □ Grade at Transformers, J-Boxes and Vaults to within +/- 3" of sub/final grade. On Streets, Easements and Right-Of-Ways to within +/- 6" of sub/final grade.
- □ Grade staking shall be provided at 25-foot spacing and located in the Right-Of-Way with offsets.
- □ Re-staking and/or additional staking, as needed, shall be provided within 48 hours of notice.
- □ Final grade staking shall have Station Numbers and Cut Sheets provided to a Colorado Springs Utilities Representative.
- □ Grade staking in Cul-De-Sac or Short Radius Turns, shall include Radius Points, Points of Curvature, Tangent Points, and be provided at a maximum of 15-foot spacing.
- □ Grade staking for Vaults, Transformer Pads, J-Boxes and Streetlights, shall have a minimum of two grade stakes, with no more than 5-foot offsets.
- □ Stakes shall be denoted in the format as follows: Station Number, Top Back Curb, Offset, Cut or Fill.
- □ The entire project shall have final staking before construction will commence, or as may otherwise be agreed upon with a Colorado Springs Utilities Quality Control Inspector or appropriate Colorado Springs Representative.
- □ Once construction has commenced, the Developer or Developer's Representative shall work with the Colorado Springs Utilities Representative "on-site", to provide adequate and appropriate staking, to eliminate any delays. Developer shall be responsible for delay costs due to inadequate staking.
- □ Verification survey shots shall be taken for Vaults, Transformer Pads and J-Boxes prior to the Construction Crew leaving the project, and Colorado Springs Utilities verification form shall be signed by the Developer or Developer's Representative, indicating Colorado Springs Utilities' release from the installed facilities.
- □ The Developer will incur all costs for improper installation or repositioning of facilities, due to staking errors or changes in grade. Once this verification form has been signed, the Developer will be responsible for corrections to utility facilities.
- □ The Developer understands that the staking provided may be destroyed upon installation of utilities.

WO#: _____

Job Address: _____

Project Name: _____

Developer / Representative: _____

Colorado Springs Utilities Representative: _____

Signature _____ Date ____/____/____

Colorado Springs Utilities

Utility Staking Standards (Verification Form)

Date: ___/____/____

WO#: _____

Job Address/Project Name:_____

Developer: _____

Springs Utilities Representative _____

I, _____, as developer or developer's representative do hereby verify
(print name)

that the installation of the utilities on _____are now completed
(project name)

as of the _____ day of _____, year_____ and are positioned per the staking that
(Date) (month) (year)

I have provided.

Signature: _____ **Date:** ___/___/____

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

Orig.: PA/QC Copy: Dev.

REQUEST FORM FOR COLORADO SPRINGS UTILITIES TO WORK OVERTIME

Date_____

Re: **T&M Overtime Request**

Colorado Springs Utilities

Field Engineering- North Work Center
7710 Durant Drive
Colorado Springs, CO 80920

Field Engineering- South Work Center
1521 Hancock Expressway
Colorado Springs, CO 80903

Dear Colorado Springs Utilities:

This is a request for the Gas & Electric Extension Crews (Colorado Springs Utilities or Contractor) to work overtime on _____ Subdivision (project name and filing number). Overtime will only be worked as resources are available. The overtime worked will help expedite the process of the installation of the gas and electric extension, which is needed at this time. It is understood that any money paid for overtime work is not part of the base contract and is not recoverable.

Thank you for your assistance in this matter. If you have any questions, please contact me at _____.

Sincerely,

_____(print name)

_____(title)

_____(company name)

_____(billing address)

_____

_____(requested number of overtime hours)

_____(date(s) for requested overtime)

Frost Approval Form (New Residential and Commercial)
Before Starting the Job

When Colorado Springs Utilities' facilities (Gas and Joint Trench) are to be installed during frost conditions, the following processes will be applied.

Gas Only Project:
If frost conditions are encountered during installation, Colorado Springs Utilities will dig the first top 6" of frost at no additional cost. Any additional 6" increments of frost will require additional monies to complete the project. Monies paid per the Tariff to dig in frost will not be refunded as part of any single parcel or mainline contract. Utilities crews must complete the "Payment Itemization" sheet and Utilities' contractors should use the appropriate frost bid units for digging in frost. Field Engineering will reconcile the costs after the project construction is completed.
If the Contractor is already on site, a T&M work order will be created to charge any down time to while Developer's representative excavates the ditches. If the developer chooses not to pay for Colorado Springs Utilities/Contractor excavating in frost and the Contractor must return later, the Developer will incur a remobilization fee.

Gas & Electric Joint Trench Project:

Electric - Installation of the primary conduit and conductors, transformer pads, vaults, and service conductor will be installed by Colorado Springs Utilities. At the discretion of Colorado Springs Utilities, the customer may be required to furnish all necessary trenches, excavations to meet standards set forth by Colorado Springs Utilities. A credit will be given based on average trenching costs to Colorado Springs Utilities in average soils. Colorado Springs Utilities will, in these cases, select the backfill to cover all conductors. If the excavated material contains rock, it will not be satisfactory for backfill and the customer will be required to supply proper fill material and compaction. Any alterations or relocation of the underground electrical lines as installed in said subdivision will be done at the customer's expense. While anyone else digging the ditches is strongly discouraged, and excavations shall meet Colorado Springs Utilities/Contractor standards and all safety requirements.

Gas – If the customer requests Colorado Springs Utilities to excavate the joint trench ditch in frost, customer will be responsible for 50% of the additional monies to complete the project. The remaining additional cost will be charged to electric and absorbed by Colorado Springs Utilities per the Tariff.

By signing this document, the Developer/Representative approves COLORADO SPRINGS UTILITIES and/or their designated contractor to install infrastructure if frost is encountered within the project and agrees to pay the additional cost upon reconciliation.

WO#: _____
Job Address: _____
Project Name: _____
Developer/Representative: _____

Colorado Springs Utilities Representative: _____ **Date:** _____

Developer/Representative: _____ **Date:** _____

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TABLE OF CONTENTS

CHAPTER 3
Utility Service Installer License
Rules and Procedures

CHAPTER 3

Utility Service Installer License Rules and Procedures

3.01 Introduction

These utility service installer License rules and procedures are promulgated by the Chief Executive Officer of Colorado Springs Utilities in accordance with Chapter 12, Article 3, Part 3 of the Code of the City of Colorado Springs 2001, as amended ("City Code"). Colorado Springs Utilities (or "Utilities") and its contractors will follow internal processes to ensure compliance for service installation. Per City Code, a Licensed Utility Service Installer (LUSI) is any natural person licensed by Colorado Springs Utilities to install natural gas service lines. For purposes of this Chapter 3, a "LUSI" refers to any prospective or current LUSI within Utilities' Service Installer program.

3.02 Utility Service Installer Licensing Program:

a) Utility Service Installer License Process:

1) A Utility Service Installer license can be obtained after meeting the requirements listed below.

a) Providing evidence that the LUSI is enrolled in Utilities' drug and alcohol testing compliance monitoring program through DISA Compliance Monitoring (DCM Reporting) and has been issued a satisfactory rating.

b) Providing a current Certificate of Insurance (meeting the Building Contractor "A" requirements of the Pikes Peak Regional Building Code, RBC201.7.1).

c) Attending a Knowledge, Skill and Licensing assessment class; (Optional, proceed to step #d)

d) Passing a written licensing examination; (upon passing, proceed to step #e)

e) Attending a Utilities task training class; (Optional, proceed to step #f)

f) Passing a written task examination; (upon passing, proceed to step #g)

- Utilities determines the specific tasks required for licensing and gas service installations.

g) Passing a practical hands-on task evaluation on the tasks determined by Utilities to be required for gas service installations.

- Utilities determines the specific tasks required for licensing and gas service installations.

2) Utility Service Installer Knowledge, Skill and Licensing assessments (written exams) will be scheduled and held each calendar year. Such written exams will be scheduled throughout the year but typically in the months of January, April, July and October. To sign up for one of these scheduled assessments (or optional training), contact 719-668-2TIE. The LUSI must monitor their license expiration dates, and must sign up for and

attend the scheduled assessments prior to the expiration date printed on their license. Before being eligible to sign up for and take the Knowledge, Skill and Licensing assessment (d above) and/or task exam and task evaluation (f and g above), the LUSI must provide the following to the Colorado Springs Utilities Gas Construction and Maintenance (GCM) Department: a current Certificate of Insurance described in Section 3.02 b), below; and evidence that the LUSI 's company participates in Utilities' drug and alcohol testing compliance monitoring program and has achieved a satisfactory or conditional rating through DCM Reporting.

3) The written licensing examination for the Utility Service Installer Knowledge, Skill and Licensing will cover Chapter 4 of the Gas Line Extension & Service Standards (Service Line Design and Construction). The minimum passing score on each part of the written examination is 80 percent. The LUSI who fails to achieve a passing score on the written licensing examination will be required to retake the exam the following quarter or next available class. When the LUSI achieves a passing score on the written licensing examination, the applicant may proceed to the task portion of the training and assessment.

4) The written task examination will cover topics in the task lesson plan. The plan is provided when the appointment is made. Optional classroom training is provided quarterly by Utilities before the task knowledge assessment (call 719-668- 2TIE to sign up for training). The minimum passing score for the written task examination is 80 percent. If the applicant fails the written task examination, they must wait 24 hours prior to retaking the test. Scheduling of testing is subject to availability of Colorado Springs Utilities' training staff.

5) When the LUSI achieves a passing score on the task written examination , the LUSI may proceed to the hands-on task performance evaluation (TPE) portion of the training and assessment. Colorado Springs Utilities provides maintained and calibrated tools for hands-on testing. After the LUSI is licensed, Colorado Springs Utilities staff or contractor staff may periodically inspect the LUSI's tools in the field to verify that they have been properly maintained. A LUSI in the initial hands-on testing session has a maximum of three attempts to pass the evaluation (three attempts at the same day appointment). A LUSI who fails the initial hands-on task evaluation must wait a minimum of 24 hours prior to retaking the hands-on test and attending a second testing session. Only one attempt is allowed during the second testing session. Re-test scheduling is subject to availability of Colorado Springs Utilities' training staff. A LUSI that fails the task written or hands-on test after two testing sessions (regardless of size of fitting tested on) must have approval from the Gas Construction Quality Control Inspector Supervisor to test again (third test session) on any or all parts of the licensing process. Approval to take the test a third time will be based upon various factors, such as the LUSI's understanding, knowledge, and performance in previous testing. Denial of or failure on a third attempt shall deem the LUSI no longer eligible to be certified for a period of two years from the date of such denial or failure. Utilities determines the specific tasks required for licensing and gas service installations.

6) Amongst other requirements during the TPE portion, the LUSI will be required to demonstrate the ability to make socket heat fusions on all polyethylene pipe sizes for which they desire to be licensed. LUSIs are only licensed to perform fusions on sizes that they were tested on and passed the hands on task evaluation. A LUSI who fails to

demonstrate the ability to make socket heat fusions on all polyethylene pipe sizes for which they desire to be licensed will be required to retake the hands on task evaluation the following quarter. Opportunity to add additional fusion sizes to their license will be provided throughout the year and subject to training staff availability. Typically, LUSIs will not be able to add another fusion size to their license until the following quarterly class.

7) Once licensed, the LUSI shall keep their employment information current with Gas Construction and Maintenance Department (GCMD) at (719) 668-3524, option 2.

8) A Utility Service Installer license will be issued upon successful completion of the items listed above in 3.02 a)1). The LUSI must present the license at the request of any GCMD or Colorado Public Utilities Commission (PUC) employee. Failure to present the license will result in the rejection of service line(s), and may result in a possible suspension or revocation of the license.

9) Every twelve (12) months during the course of licensure, the LUSI must demonstrate to the satisfaction of GCMD that the LUSI maintains the ability to complete heat socket fusions.

b) Certificate of Insurance:

1) A LUSI must present Colorado Springs Utilities Gas Construction and Maintenance with a Certificate of Insurance before the LUSI may install natural gas service lines. The Certificate of Insurance must show proof that the LUSI has the amounts and types of insurance required for Building Contractor "A"s under the Pikes Peak Regional Building Code, RBC201.7.1; the Certificate of Insurance must also include the 10-day Cancellation/Reduction Clause. Colorado Springs Utilities shall be designated as an insurance certificate holder by the Contractor, LUSI or their insurance company. A Certificate of Insurance must be remitted upon renewal of the insurance policy or renewal of the Mechanical Contractor "A" license.

2) If insurance is lapsed, cancelled or reduced, the LUSI cannot install natural gas service lines

3) The lapse, cancellation or reduction of insurance below required amounts shall suspend the LUSI pursuant to the procedure set forth in Rule 3.02 d) below until the required coverage is demonstrated to be reinstated.

c) Drug and Alcohol Program:

1) A LUSI must participate in a drug and alcohol testing program that complies with the requirements of 49 CFR Parts 40 and 199.

2) A LUSI's company or employer must be registered with DCM Reporting to monitor their drug and alcohol testing program for compliance with 49 CFR Parts 40 and 199, must submit all required documentation to demonstrate compliance, and must maintain a satisfactory rating at all times.

3) Once licensed, a LUSI's company or employer must complete quarterly submissions to

DCM Reporting between the 1st and 30th of the month following each calendar quarter (April 1-30 for quarter 1, July 1-30 for quarter 2, October 1-30 for quarter 3 and January 1-30 for quarter 4).

4) Once licensed, a LUSI's company or employer must submit annual MIS (Management Information System) data to PHMSA of its drug and alcohol testing results no later than March 15th of each year for the prior calendar year. The MIS report must be submitted electronically at http://damis.dot.gov.

5) If a LUSI experiences a positive, refusal, or non-negative drug or alcohol test (as defined by 49 CFR Parts 40 and 199), the LUSI shall immediately stop performing work as a LUSI and notify the GCMD.

6) Within 10 days of DCM Reporting's or Utilities' request, the LUSI shall submit any documents requested pertaining to compliance with 49 CFR Parts 40 and 199, including but not limited to a policy and program plan and information regarding testing.

7) If Utilities or DCM Reporting finds that the drug and alcohol program that one or more LUSIs are enrolled in is not a PHMSA compliant drug and alcohol program, then Utilities shall notify the LUSI and company that the program must be immediately modified to be compliant with 49 CFR Parts 40 and 199. Noncompliance, or failure to achieve and maintain a satisfactory rating through DCM Reporting, will result in the suspension or revocation of all LUSIs subject to such program as described in 3.02 d). The LUSI shall be liable for damages that Colorado Springs Utilities incurs based on any such noncompliance with 3.02 c).

8) If a LUSI is suspended and plans to re-instate the license following the suspension, the LUSI's company must maintain compliance with 49 CFR Parts 40 and 199, must submit all required documentation to DCM Reporting to demonstrate compliance, and must maintain a satisfactory rating throughout the suspension.

9) LUSI, as a condition of licensure, must grant Utilities, DCM Reporting, the Colorado PUC, the U.S. Department of Transportation (DOT), and the federal Pipeline and Hazardous Materials Safety Administration (PHMSA) authority and access to audit its drug and alcohol program to ensure compliance with 49 CFR Parts 40 and 199, including but not limited to authority to inspect records maintained by any Third Party Administrator or Service Agent retained for that purpose.

d) Utility Service Installer License Renewal, Suspension, Expiration, and Revocation Process:

1) Each license shall be issued for a term of three (3) years.

2) Renewal of License:

Application for renewal of the license and fulfillment of all renewal requirements must be completed prior to the expiration of the current license. To renew a license, the LUSI must 1) pass written examinations for both the licensing assessment and knowledge assessment; and 2) successfully complete the hands-on task evaluations, to include a practical hands-on socket heat fusion for each size that they wish to be certified pursuant

to the requirements set forth in 3.02 a) above.

3) Expiration of License:

The license expires if the LUSI does not complete the license renewal procedure in 3.02 d) 2) within three (3) years of the issue date of the last license. An expired license is not valid. No LUSI may install natural gas service lines for connection to Utilities' natural gas distribution system while the license is expired.

4) Suspension or Revocation of a Utility Service Installer License:

a) Grounds for Suspension or Revocation: A utility service installer license may be suspended or revoked by Colorado Springs Utilities for any of the following reasons:

1) 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.

2) 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, including task specific procedures.

3) 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 and safety of natural gas service lines.

4) Violation of the DOT and PHMSA drug and alcohol regulations found in 49 CFR Parts 40 and 199, or failure to maintain a compliant drug and alcohol program or otherwise failure to comply with the terms of 3.02 c).

5) The LUSI's conduct, or conduct of any agent or employee of the LUSI, rises to the level of a threat to the health, safety or welfare of the public or Utilities' personnel.

6) A natural gas service line installation performed by the LUSI is deemed unsafe or hazardous in the sole discretion of the GCMD Manager.

7) A lapse, cancellation, or reduction of insurance below the amounts required by paragraph 3.02 b) 1).

8) Failure to complete the license renewal requirements prior to expiration of the current license.

9) Failure to complete a fusion inspection by the GCMD within twelve (12) months of the last inspection.

10) Failure to pay any fees when due to Utilities or charges incurred to Utilities.

b) Immediate Suspension:

1) Where Utilities has reasonable grounds to believe and finds that a LUSI has committed any action that is grounds for suspension of a license pursuant to paragraph 3.02 d) 4) a), Utilities may summarily suspend the license without prior

notice to the LUSI if Utilities finds such immediate suspension is appropriate.

2) For an immediate suspension, Utilities shall issue a written Suspension Order that includes findings setting forth the grounds for suspension and the date, time and location where the LUSI may appear to appeal the suspension. The Suspension Order shall be served on the LUSI by hand delivery to the LUSI, managing agent, or agent for process; or by first class certified mail, postage prepaid; or by email to the last e-mail address furnished by the LUSI to Utilities; or by a combination of these methods. If the LUSI has a permanent business location, service may also be accomplished by affixing a copy of the order to the principal entrance of the LUSI's business premises. Service of the order shall occur within ten (10) days of issuance of the order. The Suspension Order shall be effective immediately upon issuance, and the LUSI must cease and desist installing natural gas service lines for connection to Utilities' natural gas distribution system.

3) A LUSI will be afforded the opportunity to appeal a Suspension Order issued under this part. The Suspension Order will notify the LUSI of the date, time and location of an appeal hearing. The appeal hearing shall be presided over by the Chief Executive Officer of Colorado Springs Utilities or by the Chief Executive Officer's designee and shall be scheduled on an expedited basis. Under no circumstances shall the Chief Executive Officer's designee preside over a suspension hearing if that individual was involved in the issuance of the license or the investigation into the alleged violation(s).

4) If the LUSI does not appear at the appeal hearing, the Suspension Order will be summarily upheld upon a finding that the Suspension Order was properly served pursuant to this paragraph and the LUSI is not present. If the LUSI appears, Utilities will present evidence in support of the Suspension Order. The LUSI may then present evidence to refute Utilities' evidence. At the LUSI's expense, the LUSI may bring its own legal counsel and its own foreign language interpreter for the hearing. As a suspension hearing is an administrative hearing, the Colorado Rules of Civil Procedure and the Colorado Rules of Evidence shall not apply. The Chief Executive Officer or Chief Executive Officer's designee may consider hearsay evidence, or any other evidence reasonably calculated to assist in rendering a decision and may give evidence whatever weight the hearing officer deems appropriate. The Chief Executive Officer or Chief Executive Officer's designee will then decide whether the grounds for suspension have been proven by a preponderance of evidence. If the grounds for suspension are deemed proven, the Suspension Order shall be upheld though the hearing officer may modify the length of suspension. If the grounds for suspension are not proven, the Suspension Order shall be vacated and the license shall be reinstated and valid. Any appeal of the hearing decision shall be in accordance with Colorado Rules of Civil Procedure 106(a)(4).

5) The immediate suspension of a license shall be for a period not to exceed six (6) months.

6) An immediate suspension under this paragraph may be terminated, shortened or extended by agreement of the parties. When an order to show cause has been

served pursuant to City Code § 12.3.308(B), Utilities may extend an immediate suspension until a hearing on the order to show cause can be held pursuant to City Code § 12.3.309.

7) An immediate suspension under this paragraph shall have no impact on proceedings related to an order to show cause under City Code §§ 12.3.308-12.3.311 and paragraph 3.02 d) 4) c).

c) Order to Show Cause – Suspension or Revocation

1) When a LUSI commits one or more grounds for suspension or revocation set forth in City Code § 12.3.307 or paragraph 3.02 d) 4) a), the license may be suspended or revoked pursuant to an order to show cause.

2) Utilities may, but need not, serve a Notice Prior to Suspension or Revocation upon the LUSI before issuing an order to show cause. This notice may set forth the alleged grounds that may lead to license suspension or revocation and a date certain by which those grounds for suspension or revocation must be cured. Service of the notice may be accomplished by hand delivery to the LUSI, or by first class mail, postage prepaid; or by email to the last email address furnished by the LUSI to Utilities; or by a combination of these methods. If the LUSI has a permanent business location, service may also be accomplished by affixing a copy of the order to the principal entrance of the LUSI's business premises. Nothing in this section shall be construed to preclude Utilities from issuing a Suspension Order under paragraph 3.02 d) 4) b) or an Order to Show Cause pursuant to City Code § 12.3.308(B) prior to the date certain where Utilities deems it appropriate to do so.

3) Utility service installer license revocation proceedings shall be initiated by issuance and service of an order to show cause and shall be conducted in accordance with City Code §§ 12.3.308-12.3.312.

4) Pursuant to City Code § 12.3.310, an order to show cause may result in a suspension of the license for a period not to exceed two (2) years or revocation of the license.

d) Reinstatement Following Suspension: A suspended license shall only be reinstated upon completion of the term of suspension, compliance with all conditions for licensure set forth in paragraph 3.02 a), and Utilities' approval of a reinstatement. The license will remain suspended until Utilities approves reinstatement, even if the suspension term has ended.

e) Licensing Following Revocation: If a license is revoked, the LUSI may not seek to obtain a new license for a period of two (2) years following the issuance of the revocation order. A new license application must comply with City Code § 12.3.304 and the process set forth in paragraph 3.02 a).

e) Fees:

1) 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 (Colorado Springs Utilities Gas & Electric) prior to it being allowed to be scheduled with Colorado Springs Utilities for installation.

2) A Training Fee will not be charged for an initial Utility Service Installer License procedure, Knowledge, Skill and Licensing Assessment, written examination and task performance evaluation. When an applicant is required to retake a written exam (Knowledge, Skill and Licensing Assessment) pursuant to 3.02(a)(3) due to failure to achieve a passing score, a Retake Fee of $250 will be charged. When training is required for re-instatement after suspension of the license, a Training Fee of $250 will be charged.

3) There will be no Licensing or Drug and Alcohol Administrative Fees due to Colorado Springs Utilities by the LUSIs as part of this program.

4) The LUSI is responsible for all applicable Return Trip Inspection and Connections Fees as specified in Utilities' Tariff.

5) The LUSI is responsible for all applicable Cancellation Fees as specified in Utilities' Tariff.

6) Fees due from a Licensed Utility Service Installer 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.

7) When required, welded natural gas service risers shall be approved, fabricated, and installed by the Colorado Springs Utilities. Costs to the builder will be based on a Time and Materials contract.

f) Records Management:

GCMD will maintain records of test scores; task evaluations; records of last inspected fusions; records of Insurance Certification; records of violations, suspensions and revocations, records of drug and alcohol program compliance, and records of license dates and license terms for all LUSIs. Records will be maintained as required by law.

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Service Line Design and Construction

4.01 Introduction

Service line design and construction specifications are adopted as rules and regulations by Colorado Springs Utilities (Utilities) in accordance with Section 12.3.301 and 12.3.304 of the City Code. The purpose is to ensure that requirements established in 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 the following specifications includes all new polyethylene gas service lines. Mainlines and related infrastructure are installed by Utilities, Utility Construction and Maintenance Department or their contractors and follow internal design, installation, and operation standards and specifications (e.g., Design and Engineering Manual, Operations and Maintenance Manual, etc.).

A Licensed Utility Service Installer (LUSI) shall only perform installation of the affected gas service lines that they are certified in but in no instances shall be larger than 2 inches nominal diameter. LUSI's are limited to using socket fusion methods. 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 Utilities, Utility Construction and Maintenance Department. Work performed shall be completed using the appropriate level of PPE for the job activities.

The below details various gas service line construction activities and who performs the work.

a) Service Line Repair or Replacement:

Repairs or replacement of newly installed service lines and risers and prior to tie ins shall be completed by the LUSI at their expense. Repairs or replacement of newly installed service lines and risers and after tie ins shall be completed by Utilities and may be charged to the customer (e.g., LUSI, homebuilder, and/or others) on a Time & Materials (T&M) basis.

b) Service Line Relocation:

Any residential or commercial relocation of service lines required due to customer actions is charged to the customer on a Utilities T&M basis. Actions include but are not limited to grade changes, new buildings/structures or obstructions, addition of electrical sources (e.g., low voltage comms or fiber boxes) or ventilation equipment. These actions have the potential to create a hazard and/or violation of regulatory requirements to the gas service line. T&M contracts are initiated by Utilities Field Engineering Section. Upon completion, the contract will be reconciled for actual costs.

Privately-owned utilities, including private fiber and fiber infrastructure, that are installed over Utilities' gas infrastructure or are installed in violation of these Natural Gas Line Extension Service Standards (including, but not limited to, the clearance requirements described in Table 8), must be relocated at the owner's expense. If the owner refuses to relocate the privately-

owned Utilities, or if Utilities' gas infrastructure must be relocated due to such violations, then Utilities shall relocate the Utilities gas infrastructure, and the costs of such work shall be charged to the owner on a Time & Materials (T&M) basis.

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

Work required for 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, shall be performed by Utilities (or their contractor) Operator Qualified (OQ) personnel. The work required is charged to the customer on a Utilities T&M basis.

(Note: 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:

Utilities LUSIs shall be allowed to install all new plastic natural gas service lines 2" or less in diameter for all new structures or existing structures, which require natural gas service and are creating new gas load. Plastic socket fusions shall be performed by the LUSIs in compliance with Utilities Plastic Joining Procedure. Appendix F provides the socket portion of the approved procedure. Updates to this procedure may be necessary at times with some updates requiring an immediate change to the procedure. If this occurs, Utilities, Utility Construction and Maintenance Department QC Pipeline Inspectors will distribute the updated procedure to the LUSIs.

e) Gas Service Lines Being Abandoned:

Abandonment of natural gas service lines within the Utilities gas service area is required for the demolition of a building, home or structure or for conversion to all electric service. Only Utilities personnel or their contractor are qualified to perform work to abandon the service line. Customer piping will be disconnected from the gas supply and sealed. Services are commonly terminated at the main, but if done at the property line, the stub must meet current standards.

f) Gas Service Line Excess Flow Valves and/or Service Valves:

Excess Flow Valves (EFVs) and/or service valves shall be installed on services as required by 49 CFR Part 192. Installation of the EFVs or service valves shall only be performed by operator qualified Utilities staff or operator qualified contractors. If customer load increases or requested elevated pressures result in a required upgrade to the EFV, the associated costs may be charged to the customer on a Utilities T&M basis.

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 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 Utilities Field Engineering if any of the following situations occur:

a) Lot(s) does not have an existing service stub. Field Engineering will determine the installation location of the gas service stub.

1) Scattered Services: Per the Utilities Rules and Regulations, Utilities will provide only one Natural Gas Service Stub to each individual lot, that will extend to the property line where practical, provided a main is located in the street adjacent to the Premises, or will provide a Natural Gas Service Stub to the boundary of its easement when a main is located in an acceptable easement adjacent to the Premises.

2) All necessary permits, fees and public right-of-way restoration costs will be paid by the Owner.

b) Gas load requirements exceed 1,000,000 BTU/HR or as otherwise indicated on the sizing tables (see Appendix C). Note that an Application for Gas Service Line Approval (Chapter 2) is required for new residential gas service for any load over 1,000,000 BTU, a commercial gas service with any load, or any service where there is no stub to the property line.

c) Structure is in a pressure district having pressure less than 56-inch water column pressure.

d) Elevated delivery pressure is required.

e) When converting from propane to natural gas.

f) All branch gas service lines to a brand new and/or existing structure require a gas service design approval from Utilities Field Engineering prior to installation. Additional fees may be applicable.

3) Submit required site plan, building footprint and proposed meter location to Utilities Field Engineering. Utilities will not prepare the design drawing(s) without required site plan, building footprint and meter location.

b) Service Line Sizing:

Gas service lines shall be sized according to guidelines provided in Tables 1 through 3 (see Appendix C). For gas loads or gas service line lengths greater than those included in the tables, contact Utilities Field Engineering. For gas loads and service line lengths that fall between the values shown in the tables, use the next higher listed value. Each table clearly indicates which total connected load and service line length combinations must be sized by Utilities Field Engineering.

1) Service lines that provide a total connected gas load exceeding 1,000,000 BTU/HR must be sized by Utilities Field Engineering.

2) All service lines intended for installation at commercial/industrial sites shall be a minimum of 1-1/4 inch IPS polyethylene.

c) Service Design Checklist:

Utilities Field Engineering requires various information depending on the type of project but may include the below information. For specific submittal requirements, contact Field Engineering (see Contacts and Phone Numbers at the end of GLESS).

1) Site plan showing the location of all property lines, driveways, sidewalks, and a "footprint" of the building(s) located on the property. Note: building footprints are not included for standard single-family projects.

2) Location of outside electrical appliances, transformer(s) and electric meter(s) as applicable.

3) Location of all existing and proposed utilities and/or facilities including drainage. The size, material, and private/public is required.

4) Location of existing gas service stub(s) as applicable.

5) Location of proposed gas meter(s) (see Figure 4). Excludes single-family residential.

6) The individual gas load for each existing and proposed gas appliance(s). Excludes single-family residential.

7) Address and street name of the building(s) to be served.

8) Name and telephone number of Applicant.

*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 Utilities electric and gas service territories where both utilities are owned by Utilities. The LUSI is responsible for providing the trenching, padding & backfilling, compaction, electric wire and gas service lines (see Table 7 for Approved Materials, Table 10 for Inspection Checklist, and Figures 1-9 for installation details).

2) LUSIs shall only install gas service lines smaller than or equal to 2" and only the sizes of pipe that they were tested on and passed qualification requirements.

3) 1-1/4" risers shall be installed for all commercial services unless an alternative is required by Field Engineering or Gas Advanced Design.

4) Each gas service line trench shall be properly padded per 4.03(d) Service Line Installation notes 9 and 10.

5) Prior to inspection, gas service line(s) shall be pressure tested with air in accordance with 4.03(e) Pressure Test Requirements.

6) The LUSI must contact Utilities for an inspection (719-668-3524, option 1). See 4.04 Inspections, for inspection procedure. Questions and/or problems regarding gas service line inspections must be referred to Utilities, Utility Construction and Maintenance Department (719-668-3524, option 1).

7) Upon approval of the LUSI's installation through inspection by a Gas Construction Quality Control (QC) Pipeline Inspector or a Utilities qualified inspection contractor, the Utilities, Utility Construction and Maintenance Department will energize (tie-in) the gas service line(s) and perform a soap test.

8) Once the service line(s) is approved, the LUSI installing the gas service line(s) shall be responsible for backfilling the gas service line(s) trench to existing or final grade at time of tie-in before the operator qualified inspector leaves site. The final backfill procedure should be completed within 24 hours from the time of tie-in to best protect services in the trench.

9) If the service riser and/or fuel gas piping inlet are not located by the LUSI such that a standard meter set can be constructed (see Figures 4, 5 & 8), the configuration will be rejected. Contact Utilities Field Operations (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 for resolving the issue.

b) LUSIs are also responsible for correcting non-plumb risers for installations that they completed and that do not yet have a gas meter installed. In addition, the final grade shall not be above the buried line of the anodeless riser. Riser corrections must be made within 72 hours or 3 business days (whichever comes first) of notification by Utilities. If corrections are not made within this timeframe, the LUSI will not be allowed to perform additional tie ins and the LUSI may be issued a violation, which could result in the temporary suspension of the LUSI's license.

c) If the configuration is rejected due to the service riser, the LUSI shall coordinate remedial actions with the Gas Quality Control Supervisor. Any costs incurred may be passed on to the LUSI or Builder, as appropriate and at the discretion of the Gas Quality Control Supervisor. If 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 (see Figure 1B) owned by any entity other than Utilities are not allowed to be installed in a joint trench with Utilities owned natural gas service lines. See Figure 4B for non-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. Mainline extensions may be required to a lot when there is more than one building on the lot.

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 and Figure 4 for Utility Lot Layout.

LUSIs are responsible for ensuring that the service line location is at grade or installed according to survey staking provided by the Builder with accurate cut/fill measurements. Reinstallation of a service line at proper grade is the responsibility of the LUSI, and a T&M work order will be created for any Utilities' labor charges. If any violation of the service line standard is discovered during an inspection, the LUSI's license may be suspended or revoked at the discretion of the Utilities, Utility Construction and Maintenance Department (see Chapter 3)

2) Joint Trench:

Gas service lines installed in a joint trench with Utilities owned electric and/or communication lines require a 12 inch minimum radial separation (see Figures 1 & 9, as well as the ELESS joint trench lot layout figures). Joint trenches shall not be installed under structures such as walls, sheds, utilities housing or structures, or other appurtenances (excludes sidewalks). This is done for safety and ease of maintenance and locating.

Joint trench is for residential applications. Commercial installations are not to be in a joint trench unless approved by Utilities and joint trench shall not be used with the high-pressure distribution system.

3) Single Trench (Gas Only):

All gas service lines shall maintain the minimum required horizontal separation from other buried utilities, utilities housing or structures, property lines and structures adjacent to the gas service line when installed in a gas only trench (Figure 1A). Gas service lines shall not be installed under structures such as walls, sheds, utilities housing or structures, or other appurtenances (excludes sidewalks) for safety and ease of maintenance and locating.

Where the required horizontal or vertical separation distance cannot be maintained or if the proposed route is determined by Utilities to be unavoidable, a variance to a crossing standard may be requested. All variances are to be submitted to the Gas Quality Control (QC) Supervisor in written form with detailed documentation of the exact circumstances, terms, and conditions of conflict and proposed solution. Exceptions or variances from the

required gas standards may only be approved by the Utilities, Utility Construction and Maintenance Department Gas QC Supervisor.

If exceptions or variances are approved in cases where buried utilities and/or underground structures prohibit adherence to separation requirements, a polyethylene protective sleeve may be required. The protective sleeve shall have an inside diameter sufficient for insertion of the gas service line (and tracer wire) without causing undue resistance and shall be of the same material as the gas service line. A minimum one-foot vertical separation from the gas carrier pipe or protective sleeve to the structure footer shall be required for all unavoidable utility crossings. 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 (see also Section 2.02c and Table 8):

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:

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 verify for gouges greater than 10 percent. LUSIs can use a socket heat fusion on the service lines. All socket heat fusions must be performed using tools and equipment maintained to manufacturer specifications. All fusions shall remain exposed and the trench shall remain open for inspection.

Steel gas service lines shall only be installed by the Utilities, Utility Construction and Maintenance Department or their contractor. Trenching, padding & backfilling for all new services shall be provided by the builder's representative.

Boxed property line valves shall be installed by Utilities or their contractor as required by 49 CFR Part 192. Property Line valves shall also be installed for 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.

Any gas service line that is located within 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 Utilities personnel or Utilities' contractor.

NOTE: Utilities, Utility Construction and Maintenance Department QC Pipeline Inspectors or Utilities operator qualified inspection contractor 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 Utilities, Utility Construction and Maintenance Department (see Chapter 3).

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. Field bends that have fittings within the bend shall only be installed by Utilities, Utility Construction and Maintenance Department or their contractor.

2) Gas service lines shall not be installed under or through buildings/structures such as walls, sheds, utilities housing or structures, or other appurtenances (excludes sidewalks) for safety and ease of maintenance and locating. Nor shall gas service lines or meters be installed within or under partially enclosed surface structures (e.g., tunnel) where gas from potential leaks can accumulate and access and maintenance are challenging. Underground and surface structures include, but are not limited to foundation and basement walls, patios or other sealed surfaces, which abut a building, or its foundation. Excluded from this category are unavoidable structures where a protective sleeve is required.

3) LUSIs fusing gas service line piping up to and including 2" diameter shall be joined by socket heat fusion only.

4) All socket heat fusions shall be performed in accordance with Utilities O&M Plastic Joining Procedure (see Appendix F for excerpt of the socket fusion procedure). A LUSI license and required certifications (see Chapter 3) are required for external gas service installers to perform socket heat fusions and/or install prefabricated service line assemblies in new development construction.

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 the method detailed in the Utilities O&M Plastic Joining Procedure (see Appendix F for excerpt of the socket fusion procedure). See 4.04(d) for Inclement Weather and Show Up Time explanation.

7) For gas service line(s) installed by LUSIs no more than 2 socket fusion couplings between the gas service stub and the gas service riser shall be allowed. Utilities Gas Construction QC Pipeline 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 installed by LUSIs, 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 and risers shall be properly supported on well-compacted soil prior to backfilling.

10) Prior to backfilling, an approved padding material (bedding 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 11 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) Backfill material shall be free of all foreign debris such as bricks, concrete, asphalt, wood, and trash that may damage the gas service line. Utilities, Utility Construction and Maintenance Department reserves the right to excavate any and all service line trenches to ensure that post backfill 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 backfill 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** Utilities, Utility Construction and Maintenance Department shall repair the gas service stub. This will be done at the expense of the LUSI.

18) All Utilities, Utility Construction 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 (see Table 7) 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.

21) The tracer wire shall be continuous (without splices) except where a branch service exists, which makes it necessary to splice additional wire onto the gas service line tracer wire. Where splices are necessary, Utilities, Utility Construction and Maintenance Department approved wire connectors shall be used. All gas service risers shall have tracer wire installed with the riser and adhere to Utilities Operator Qualification requirements.

22) Where welded steel gas service risers are installed, Utilities, Utility Construction and Maintenance Department follows tracer wire installation criteria detailed in Gas Operations and Maintenance Manual..

23) The electric service wire in a joint trench installation with the gas service line shall not be installed until the Utilities Gas Construction QC Pipeline Inspector arrives on site. The electric wire is provided by the LUSI. Additionally, in the event the electric service wire must be installed under a driveway, patio, deck or similar structure, a 2 inch (PVC SCH40) electrical rated (grey) conduit must be installed, extending 24 inches beyond both sides of the obstruction, with a utility-provided locator biscuit installed on each side of conduit for future locating purposes. See Table 7 for Approved Electrical Materials.

24) Refer to theUtilities Electric Line Extension & Service Standards book for additional details.

e) Pressure Test Requirements for New Construction:

The LUSI is responsible for pressurizing the gas service line, to include the riser valve, using their test assembly threaded to the top of the valve. The riser valve will be installed by Utilities or its contractor. The pressure gauge used by the LUSI for pressurizing the pipe shall be a test gauge with a range of zero to 300 pounds per square inch (psig) and shall be operational and in good working condition. Following pressurization of the service line, Utilities or its contractor will use their calibrated gauge and attach it to the valve on the pressure test assembly to confirm the proper pressurization and perform the official pressure test. The pressure test will be performed in accordance with the Gas Operations and Maintenance Manual. Figure 14 illustrates the pressure test assembly for risers requiring a bypass assembly.

1) The tests for new services will be evaluated at a targeted starting point of 125 pounds per square inch, but it is acceptable to start at any pressure between 115 and 135 pounds per square inch. Any pressure difference of +/- 1 pound per square inch, within the approved pressure test time period, will be a failed pressure test.

2) The pressure to which the gas service line is subjected shall be no more than 135 pounds per square inch. If a gas service line is pressurized over 135 psig, installer will be required to replace entire line including the riser.

3) All gas service lines 2" diameter and smaller shall be pressure 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 Utilities Gas Construction QC Pipeline Inspections personnel prior to the gas service stub installation, the service line shall remain under pressure test until a gas service stub is installed by Colorado Springs Utilities. When this occurs, the LUSI shall be billed daily fees for Utilities Gas Construction QC Pipeline Inspections personnel to check and affirm that 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 and must be approved by the Gas Quality Control Supervisor.

4) To help ensure a passing pressure test, it is important to let the pump up air/medium stabilize before starting the pressure test.

5) Additional information on pressure testing requirements is detailed in the Gas Operations and Maintenance Manual Pressure Testing Procedure, to include testing of mixed material pipe segments.

f) 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) Installation of services under paving shall be avoided. Where a structure or paving abuts a building, a gas service riser vent shall be installed. As shown in Figure 2, the gas service riser vent shall consist of a 12 inch by 12 inch opening in the sealed or concrete pavement surface. Field conditions may allow for a 6 inch by 6 inch with approval of the Field Operations Inspector. 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 Utilities, Utility Construction and Maintenance Department.

g) Mobile Home Parks:

Request for gas main and service extensions for new mobile home parks will be installed per Chapter 2 "Gas Main/Service Stub Extensions". The work will be completed on a Line Extension Contract since new load is being added to the gas system.

1) Requests for gas main and service extensions for existing mobile home parks that are currently being fed from a master meter shall be discussed with Utilities Field Engineering. Refer to section 4.05)d)4)c) for more information on Master Meter Systems..

2) 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 Utilities Inspections

Utilities Gas Construction QC Pipeline Inspectors, Field Operations, or Colorado Springs Utilities operator qualified inspection contractor will inspect gas service line installations performed by LUSIs. 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 9 for Appointment & Cancellation Criteria).

a) Prior to inspection, please note the following:

1) Utilities Gas Construction representative will require bollards, padding, protective sleeve(s) and/or venting based on the requirements of this document.

2) All service line trenches will need to remain open for inspection, including all prefab riser and gas line assemblies.

3) Gas service line(s) will not be inspected until gas mains and service stubs have been installed.

EXCEPTION: Gas service line(s) associated with scattered service stub installation. Utilities Field Engineering will determine the proper location of the service stub.

4) No gas service lines shall be installed prior to installation and energizing of gas mains and stubs.

5) Excavation of all gas service stubs shall be performed using careful probing with hand tools only.

6) Building/property address with street name must be visible.

7) Pipe and/or tracer wire must be of proper length.

8) Pressure gauge must be installed on the service line riser/valve .

9) Padding must be 6 inches above and below the gas service line.

10) Yellow paint must mark the proposed gas service riser location at the building wall.

11) The gas service regulator must be greater than 3 feet from operable windows, vents, and sources of ignition (see Figure 9).

12) No more than 2 fusion couplings are permitted on a service line when installed by LUSIs; one at the riser pigtail and one along the length of the service line. Utilities Gas Construction QC Pipeline Inspectors must approve the use of more than 2 socket heat fusion couplings and shall only do so if the service line exceeds 500 feet in length or if there are extenuating circumstances as determined by the Utilities Gas Construction QC Pipeline Inspector that require more fittings to be used.

13) The trench and bell hole must be cleaned out and leveled.

14) Field bends of the service line must meet the minimum bending radius requirements (Table 4).

15) A required minimum one foot of gas service line must be exposed in the bell-hole, centered with at least 2 foot of clearance on each side of the service stub. Also, 6 inches of clearance is required below all polyethylene stubs and 12 inches of clearance below all steel stubs.

16) Utility crossings require a minimum of one foot vertical separation, and 3 feet horizontal separation for parallel facilities (see Table 8).

17) All utility locations must be dimensioned from property lines, building lines, or other permanent landmarks.

18) When gas, electric, and Utilities' fiber are approved to be in the same trench, a 12 inch radial separation must be maintained (see Figures 1B and 1C).

b) Special Conditions:

Utilities, Utility Construction 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 Utilities, Utility Construction 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).

Utilities, Utility Construction 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 Utilities prior to installation.

c) Re-Inspection:

If gas service line(s) fails to pass inspection, the Utilities Gas Construction QC Pipeline 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 10 for Joint Trench Inspection Checklist). Contact Utilities to schedule re-inspection (see scheduling gas inspections in Phone Section).

d) Inclement Weather and Show Up Time:

In the event that inclement weather is encountered, Utilities has adopted Academy School District 20's weather cancellation policy when it comes to determining when it is appropriate to cancel scheduled gas and electric service line inspection and tie in appointments due to inclement weather. Should Academy School District 20 cancel school due to inclement weather, all Utilities gas / electric service line inspection and tie-in appointments scheduled for that day will be cancelled and moved out to the following day. For example, if appointments are cancelled on Wednesday, Wednesday's appointments will be moved to Thursday, Thursday's appointments will move to Friday and Friday's appointments will move to Saturday. If that schedule does not work for the LUSI they will be afforded the option of cancelling and rescheduling their appointments for a future date and time, per availability of appointment time slots. PLEASE NOTE: Should a delayed school start time announcement be made by Academy School District 20, this shall in no way affect or change the start times of your scheduled gas / electric service line inspections and tie-in appointments for that day.

Utility Service Line Installer shall not be entitled to any reimbursement from Utilities. When Utilities contacts the Utility Service Line Installer prior to starting the scheduled work day, and 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.

4.05 Fuel Gas Piping, Manifolds and Gas Meters

a) Fuel Gas Piping:

1) Location:

The fuel gas piping inlet shall be located above ground from the meter outlet and into the primary structure wall in accordance with Figures 6, 8 & 9, unless an approved Above Ground Multi-Meter Manifold is installed (see Figure 7). The required horizontal spread from the riser valve to the fuel gas piping inlet entering the primary structure wall is shown in Figure 8 and eliminates buried customer piping (see Chapter 1). Any pipe joint shall be threaded or welded within 5 feet of any Utilities owned connection point. Mechanical or press style fittings are prohibited within this 5 foot buffer zone.

2) Elevated Pressure:

All elevated pressure requests must be made prior to installation of fuel gas piping to ensure adequate distribution system pressure is available. Elevated pressure requests can be initiated by contacting Utilities Field Engineering. All elevated pressure installations shall be adequately labeled or tagged with the words "Elevated Pressure". Elevated pressure requests over 2 psig must include documentation from equipment manufacturer showing need for requested pressure (see Chapter 2 for form). Utilities reserves the right to deny elevated pressure if the gas system doesn't have adequate pressure to serve the customer.. Customer equipment shall have compatible pressure ratings for the elevated delivery pressure. Field Operations confirms the release of PPRBD elevated pressure request. If this information is not obtained or if the customers gas piping is deemed unsafe, Utilities will not set the meter. Master meter operators will have additional requirements for elevated pressure as well as approvals (e.g., State, Federal, etc.). Refer to section 4.05)d)4)c) for more information on Master Meter Systems.

If changes are made to the total connected load that has been approved, Utilities reserves the right to require a new application be submitted before the gas meter is installed.

Costs associated with elevated pressure requests are addressed in 4.01c.

3) All remodels that require a larger meter need to have the gas service line size and EFV re-evaluated by Utilities Field Engineering.
Customer equipment shall have compatible pressure ratings for the elevated delivery pressure. Field Operations confirms the release of PPRBD elevated pressure request,

b) Meter/Riser Manifolds:

1) Location:

All gas service risers shall be located and installed in accordance with Figures 2 through 9 as applicable. Each gas service riser shall serve only one meter unless an Above Ground Multiple Meter Manifold assembly has been formally approved by Utilities (see Figure 7). The intended gas service riser shall be clearly indicated by a yellow paint mark on the structure foundation prior to service line installation.

2) Prefabricated and Welded Risers:

Prefabricated polyethylene-insert type anodeless gas service risers (includes coiled pipe and tracer wire) and polyethylene-insert type anodeless gas service risers (pigtail only) 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 backfilling and compaction, and to prevent settling. Compaction shall be completed using either hydraulic or pneumatically operated equipment and shall be completed up to the surface level of the bottom of the riser. After backfilling, the gas service riser shall be in a vertical position. The minimum depth shall be 24 inches. The final grade shall not be above the buried line of the anodeless riser.

3) A post or riser bracket shall support the meter, regulator and service line [49 CFR 192.375 (a)(2)(ii)] Riser brackets should be installed aboveground.

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

5) Requirements for welded gas service risers and welded steel multiple meter manifolds are addressed in the Operation and Maintenance Manual.

6) All multiple parallel services 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 Utilities, Utility Construction and Maintenance Department (see Figure 7). All gas service risers shall extend in a straight and perpendicular fashion from the manifold header.

7) Every effort shall be made by LUSIs to utilize prefabricated anodeless risers

c) Above Ground Multiple Meter Manifolds:

1) Procedure:

Residential Above Ground Multiple Meter Manifold systems (no commercial aboveground manifolds allowed) will be considered for potential approval by Utilities if the following requirements are met:

- An approval from Utilities Field Operations
- No meter with a load that exceeds 390,000 BTU's shall be allowed on a manifold. It shall have an individual gas riser.
- All meters on the same manifold are required to have the same delivery pressure.
- .
- All house lines would need to be identified with a brass tag stating address number and unit number.
- The signed agreement would need to be on file before the gas inspection would be approved for meters.

a) Submit to 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.

b) All fuel line and riser configurations must be constructed according to the dimensional requirements indicated in Figure 7, unless otherwise specified in writing by Utilities.

c) All gas service lines shall be constructed according to the specifications of the currently approved Utilities Gas Line Extension and Service Standards Manual. However, the polyethylene service line diameter for an Above Ground Multiple Meter Manifold may be specified by Utilities Field Engineering. Gas service line installations will be individually inspected for workmanship throughout installation process.

d) All anodeless risers for Above Ground Multiple Meter Manifold assemblies shall be a minimum of 1-1/4 inch.

e) Fuel lines through structure walls shall be installed in a manner allowed within current

codes adopted by the Authority Having Jurisdiction (AHJ) and be of listed and approved materials. Refer to PPRBD for additional information. House lines shall be secure and level and shall be one continuous pipe with no fittings.

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 Developer/Owner and the Customer or user.

f) 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 Utilities Field Engineering, the requester must initiate the meter set assembly by calling the Utilities Field Operations (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 Utilities, System Extensions and a Final Heating Inspection from the Regional Building Department have been obtained for each building unit to be served.

g) After installation of an Above Ground Multiple Meter Manifold, any elevated pressure and/or gas load increase requests will 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". See 4.05a) for more information.
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:

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 Utilities Field Operations.

1) Residential Gas Meter:

a) Field Operations will lock the riser valve off if all three of the following conditions have not been satisfied. Lock will be removed after all of the following 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 Operations Inspector (719-668-7350).

b) Field Operations will make the final connection from the outlet side of the gas meter set assembly/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 Utilities Field Operations after the following tasks are completed:

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 Operations Inspector (719-668-7350).

4) If any unit was to be leased that would require a load to exceed 390,000 BTU's, all costs of adding another service line would be the developer or contractor's responsibility

*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 Operations Inspector will determine estimated facility gas loads for meter sizing. A Utilities Service Specialist from Utilities Field Operations will then install the new meter if the above 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

b) Required Utilities single family residential natural gas meter location for new construction is on the side of the structure and within 1 foot minimum and 5 feet maximum 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 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. All meters on townhomes and single-family residential buildings shall be easily accessible for maintenance with no enclosures or fencing. It is preferred to have both the natural gas and electric meters located on the same side of the structure. See Figure 4A.

c) Construction Heat: A construction meter will not be allowed unless the customer meets with Utilities Field Services and Field Engineering. Construction meters are 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 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 but not limited to electric meter socket and panel, electrical devices, electrical switches, electrical outlets, electrical junction box to include low voltage devices), air intake/exhaust vent (including but not limited to dryer vents, foundation vents, fireplace makeup air inlets, sump pump outlet drains, AC condensing unit, etc), doorway, garage doors, operable window, or any opening to the structure, as outlined in Figure 9 [per UPC 1209.6(c), IFGC Table 503.8, 49 CFR 192.353, 357, and chapter VII Office of Pipeline Safety]. All fresh air opening location clearances shall be located per local codes and IMC 401.4. The service regulator vent will be typically located at the same height as the fuel gas inlet piping.

c) All gas meter loops shall be located a minimum of 6 inches to the right or left from decks, stairways, or other objects which may interfere with gas meter reading or maintenance. Sprinkler stubs, irrigation lines and hose bibs shall not be located above or behind the meter loop. These items may not be located within 18 inches left or 6 inches right of the meter loop. Downspouts may not be located behind the meter loop. No gas meters shall be installed at an alley or property line.

d) 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 Operations Inspector or other Utilities Gas Inspector). Final grade from meter loop in all directions shall be no more than 3” drop per one linear foot.

Trimming or removing vegetation or other obstructions may be required if we determine there is a safety hazard, or a maintenance or access issue which interferes with the operation or maintenance of the gas meter or associated piping. Obstructions include, but not limited to, retaining walls, enclosures, and landscaping. Access to Utilities equipment is at the sole discretion of the Qualified Utilities Employee and may result in red tagging, or Time and Material cost being passed on to the customer if removal or replacement is required.

e) Any carport, porch, or patio designed to be installed over any Utilities meter

and/or service line is to remain open on 3 sides with protective bollards installed around the meter/service line, as shown in Figure 10. Bollard installations shall be completed in accordance with Figure 15.

f) 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 Utilities Field Operations. All gas meter sets shall be located such that no part of the set obstructs any portion of a passageway, access or stairway.

g) 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 (see ELESS 18-227 for exceptions for natural gas generators). 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 Utilities Electric Distribution Construction Standards, 18-227, Note 2.

h) 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.

i) The gas fuel line piping inlet shall be located above ground from the meter outlet to the primary structure wall it is serving. . See Figure 8 for additional information.

j) 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 Utilities Field Engineering (form in Chapter 2). All elevated pressure installations shall be adequately labeled or tagged with the words “”. Refer to 4.05a)2) for additional information on elevated pressure.

k) Added gas load tie ins will be inspected by Utilities Field Operations. Tie in location will not be accepted unless tie in point is outside the Utilities meter loop (see Figure 8) Utilities meter bypass will not be approved as a tie in point (see Figure 8b). All house lines will be secured and level before tie ins will be accepted.. Any pipe joint shall be threaded or welded within 5 feet of any Utilities owned connection point. Mechanical or press style fittings are prohibited within this 5 foot buffer zone.

2) Gas Meter Protection:

a) 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 movement, the gas meter set shall be

protected by approved bollards installed in accordance with Figure 10 and Figure 15. Note that Federal code requires "each meter and service regulator, whether inside or outside a building, must be installed in a readily accessible location and be protected from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated" (49 CFR Part 192.353). Additionally, Section 12.3.401 of City Code requires that the location of the meter set must be safe from damage and accessible for reading, operation and maintenance. Bollards shall be installed before the meter is set and the lock is removed. All meters located in "drive through" areas shall be approved by Utilities Field Operations. Meters shall not be located in the traffic area of a loading dock.

b) For any new service, any barricade or bollard that is required in accordance with this document, or at the direction of the Utilities representative, shall be installed by a certified LUSI or will be installed on a T&M basis by a qualified Utilities representative and charged back to the developer, builder, or property owner.

c) Minimum separation and protection to gas piping shall be per Figure 15. No excavation on previously installed Utilities infrastructure shall be performed unless by a qualified individual.

d) Where the bollard design or bollard separation cannot be maintained, a variance to the standard may be requested. All variances are to be submitted to a Utilities Representative in written form with detailed documentation of the exact circumstances, terms, and conditions of conflict and proposed solution. Exceptions or variances from the required gas standards may be approved by Utilities Representative prior to a meter being unlocked.

3) Additional Structures:

Each separate, additional, structure shall be served by a single and separate gas service line, riser and meter where practical. If a property **cannot be separated by sale or lease** and a separate gas service line, riser and meter are impractical and downstream underground piping from the primary meter to additional buildings is required, the following is required **before Utilities will set a meter:**

a) A detailed map showing all additional structures and the underground fuel gas piping.

b) A piping inspection (air test) approved by Regional Building Department or the Code Official who has jurisdiction.

c) Review of the "Natural Gas Customer Buried Piping Safety Notice" fact sheet, making the property owner aware of their responsibility to leak survey and monitor for corrosion on the downstream underground fuel piping located on their property (corrosion protection is required for steel piping). It is crucial that the property owner is aware that they will be held liable for any incident that occurs on this piping.

The "Natural Gas Customer Buried Piping Safety Notice" information is located in Chapter 1 and on the Utilities website.

Please refer to The Code of Federal Regulations (CFR) Sections:

- 192.12 – Customer Notification
- 192.465 – External Corrosion Control; Monitoring
- 192.723 – Distribution Systems; Leakage Surveys

4) Additional Requirements:

a) A concrete gas meter pad (minimum of 24”x 30”x 4”) shall be installed for all gas meters serving total connected gas loads of 1,400,001 BTU/HR and larger unless otherwise specified by the Utilities Field Operations.

b) When numbering or lettering schemes are changed and/or incorrect tagging creates inaccurate information in Utilities records, the owner of such premises shall be responsible for actual T&M fees incurred by Utilities in order to correct the situation.

c) New **Master Meters and/or new Master Meter Systems** are prohibited unless Utilities’, in its sole discretion, gives the customer its express written permission to build the Master Meter System. Exceptions could include assisted living, student housing, apartment buildings (where space for individual meters is not sufficient) or other similar purposes and must be approved by Field Operations and Field Engineering. At least one meter per building is required. A master-metered customer may “check meter” tenants, lessees or other persons to whom the gas is ultimately distributed by an allocation procedure, that the master-metered customer does not receive more than necessary to pay the master-metered bill. Utilities will supply and maintain only one master meter in such an instance. In addition, per the International Fuel Gas Code and as regulated by Regional Building Department, access to a separate shutoff valve must be provided to each tenant.

Master meter system operators must meet specific local, state, and federal requirements. A master meter operator must complete and execute the “Customer Master Meter Acknowledgment” form attached to this Chapter 4. By executing this form, the customer acknowledges that they must comply with applicable State (4 CCR 723-11) and Federal regulations (49 CFR 190-192). Such regulations include customer notification, ongoing maintenance, surveys, mandatory repairs, and reporting requirements.

d) **A non-standard loop agreement** is required on any new residential, commercial or industrial development 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.

NOTE: Under no circumstances will a non-standard loop agreement be provided for any regulator vent clearance or separation from potentially hazardous locations be provided. Reference section 4.05)d)3)d)for additional details.

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 Utilities Field Operations Department. Each fuel gas piping inlet shall be tagged with an approved brass tag, affixed with a minimum of #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.

g) Gas meters, regulators, and piping are cleaned and coated by qualified Utilities employees with an approved material for corrosion prevention. For this reason, customers are not allowed to paint their meters, regulators or piping. In addition, nothing can be attached to gas meter and piping.

h) Back Up Generators for Commercial Properties

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

5) Additional Requirements for School Meters:

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

a) 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 Utilities Customer Services Department.

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

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 Field Operations Industrial Gas Technician.

1) At the time of the meter loop inspection if you have encountered difficulties in carrying out the requirements of these specifications, the Field Operations Industrial Gas Technician 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.

2) The modification(s) will be rejected if it is determined they have the potential to create a safety hazard, lower the integrity of 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) Bollards – (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 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 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:

Gas meter testing is performed by Utilities Meter Shop using internal Standard Operating Procedures (SOPs). A high-level description of the testing procedures is listed below and is provided for customer information only

1) Acceptance testing for new gas meters:

a) All new gas meters received by Utilities are certified and tested by the manufacture for accuracy.

b) Utilities performs a sample test of 2 percent of all new residential gas meters to verify accuracy. Residential gas meters must be plus or minus 1.0 percent error to pass the acceptance testing.

c) 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 1.0 percent error to pass the acceptance testing. Rotary gas meters are sample tested at 2 percent.

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 error 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 Utilities Natural Gas Material Specifications. Only materials that are approved by Utilities shall be used in gas distribution system. Approved materials that can be used by LUSIs are detailed in Table 7.

a) Pipe and Fittings:

Polyethylene pipe and fittings used by LUSIs for construction of gas service lines shall be limited to those listed on Table 7 and shall bare all pertinent markings as specified in the Utilities Natural Gas Material Specifications for polyethylene pipe and fittings.

All MDPE polyethylene pipe and fittings shall be free of material defects. LUSIs may only use MDPE pipe and fittings that have a manufactured date less than 3 years prior. 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 used by LUSIs shall be approved polyethylene-insert type anodeless risers as noted in Table 7. Four-inch anodeless risers are approved for use in the gas distribution system, however, only Utilities or its' contractors may install the 4-inch prefabricated or welded steel risers fabricated by 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 Advanced Design. Only use anodeless risers that have a manufactured date less than 3 years prior. Sections of the riser with gouges deeper than 10 percent of wall thickness of the pipe shall be removed and replaced.

CUSTOMER MASTER METER ACKNOWLEDGMENT

A. Colorado Springs Utilities ("Utilities") owns, operates, and maintains all natural gas infrastructure within its service territory up to its customer's meter.

B. Some of Utilities' customers may seek to own, operate, or build a Master Meter System within Utilities' service territory.

C. Utilities and owners/operators of Master Meter Systems are required to comply with 49 CFR Part 190-192 (the "Federal Pipeline Safety Regulations"), and 4 CCR 723-11 (the "Colorado Pipeline Safety Regulations").

D. The customer described in Section H, below (the "Customer"), has asked for Utilities' permission to build, own, or operate a Master Meter System.

E. Based on the Customer's description of the infrastructure and metering system that will be built, Utilities believes that such system meets the criteria for a Master Meter System under the Colorado Pipeline Safety Regulations.

F. The Customer is required to execute this Customer Master Meter Acknowledgement and the attached Statement of Authority (collectively, this "Acknowledgment") to (i) build, own, or operate the Master Meter System, and (ii) establish natural gas service for the Master Meter System with Utilities.

G. By executing this Acknowledgment in accordance with Section H, below, the Customer agrees:

   a. To comply with all applicable Utilities' rules, regulations, standards, and Tariffs.

   b. To comply with the Federal Pipeline Safety Regulations and the Colorado Pipeline Safety Regulations, including, but limited to, all applicable regulations regarding ongoing maintenance, surveys, mandatory repairs, and reporting requirements.

   c. That Customer is authorized to execute this Acknowledgment and has provided Utilities with the Statement of Authority attached to this Acknowledgment.

   d. This Acknowledgment incorporates and is controlled by Utilities' Utilities Rules and Regulations and Tariffs as amended from time to time, which includes, but is not limited to, Utilities' right to access Customer's premises.

   e. That Customer is solely responsible for the consequences of failing to comply with this Acknowledgment's requirements.

   f. That if the Customer transfers ownership of the premises on which the Master Meter System is located, then the Customer will notify the new owner/operator of this Acknowledgment and shall require the new owner/operator to execute a then-current Acknowledgment as part of the property transfer.

   g. To always post a written notice within the meter location attesting to the existence of this Acknowledgment and the requirement that any new owner/operator must execute a new Acknowledgment.

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h. To provide Utilities with, if applicable: (i) a key that provides access to a secured meter location, if applicable, (ii) a new key if the lock for the secured meter location is changed or re-keyed, or (iii) reimbursement of Utilities' costs to access the secured meter area if no key has been provided.

i. To provide Utilities with primary and secondary phone numbers that will allow Utilities to contact Customer at any time. Customer will notify Utilities of any changes to these phone numbers within 24 hours of the change:

Primary Contact Name: _____
Primary Contact Phone number: _____
Secondary Contact Phone number: _____

H. After Customers signs this Acknowledgment and has the Statement of Authority notarized, Customer shall deliver those documents to Utilities at the address shown in Section I. This Acknowledgment will be effective on the date that the Customer executes this Acknowledgment (the "Effective Date"). The Master Meter System's location and Customer's information is as follows:

Billing Contact Name: _____
Billing Address:
_____
_____

Customer Name: _____
Property Owner: _____
Property Address: _____
_____

I. Customer shall deliver this Acknowledgment to Utilities at the following address:

Colorado Springs Utilities Representative
Field Engineering (cc Quality Control Inspector)
Colorado Springs Utilities
1521 Hancock Expressway
Colorado Springs, CO 80947-1821

I HAVE READ AND UNDERSTAND THIS ACKNOWLEDGMENT AND I HAVE EXECUTED THIS ACKNOWLEDGMENT VOLUNTARILY.

Customer (Print Name): _____
Customer (Signature): _____
Date: _____
Statement of Authority: Must complete and provide the attached Statement of Authority

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CUSTOMER MASTER METER AGREEMENT STATEMENT OF AUTHORITY

1. This Statement of Authority relates to an entity named: _____
2. The type of entity is a

☐ Corporation
☐ Nonprofit Corporation
☐ Limited Liability Company
☐ General partnership
☐ Limited partnership
☐ Registered limited liability partnership
☐ Business trust
☐ Trust
☐ Other _____
☐ Registered limited liability limited partnership
☐ Limited partnership association
☐ Unincorporated nonprofit association
☐ Government or governmental subdivision or agency

3. The entity is formed under the laws of _____

4. The mailing address for the entity is _____

5. The name and position of each person authorized to execute instruments conveying, encumbering, or otherwise affecting title to real property on behalf of the entity is

_____

6. (*Optional*) The authority of the foregoing person(s) to bind the entity is

☐ not limited ☐ limited as follows: _____

7. (*Optional*) Other matters concerning the manner in which the entity deals with interest in real property: _____

_____

8. This Statement of Authority is executed on behalf of the entity pursuant to the provisions of Section 38-30-172, C.R.S.

Executed this _____ day of _____, 20__.

By: _____

STATE OF COLORADO)
) ss.
County of El Paso)

The foregoing instrument was acknowledged before me this ____ day of _____, 20__ by _____as_____ of _____.

Witness my hand and official seal

My Commission Expires: _____

Notary Public _____

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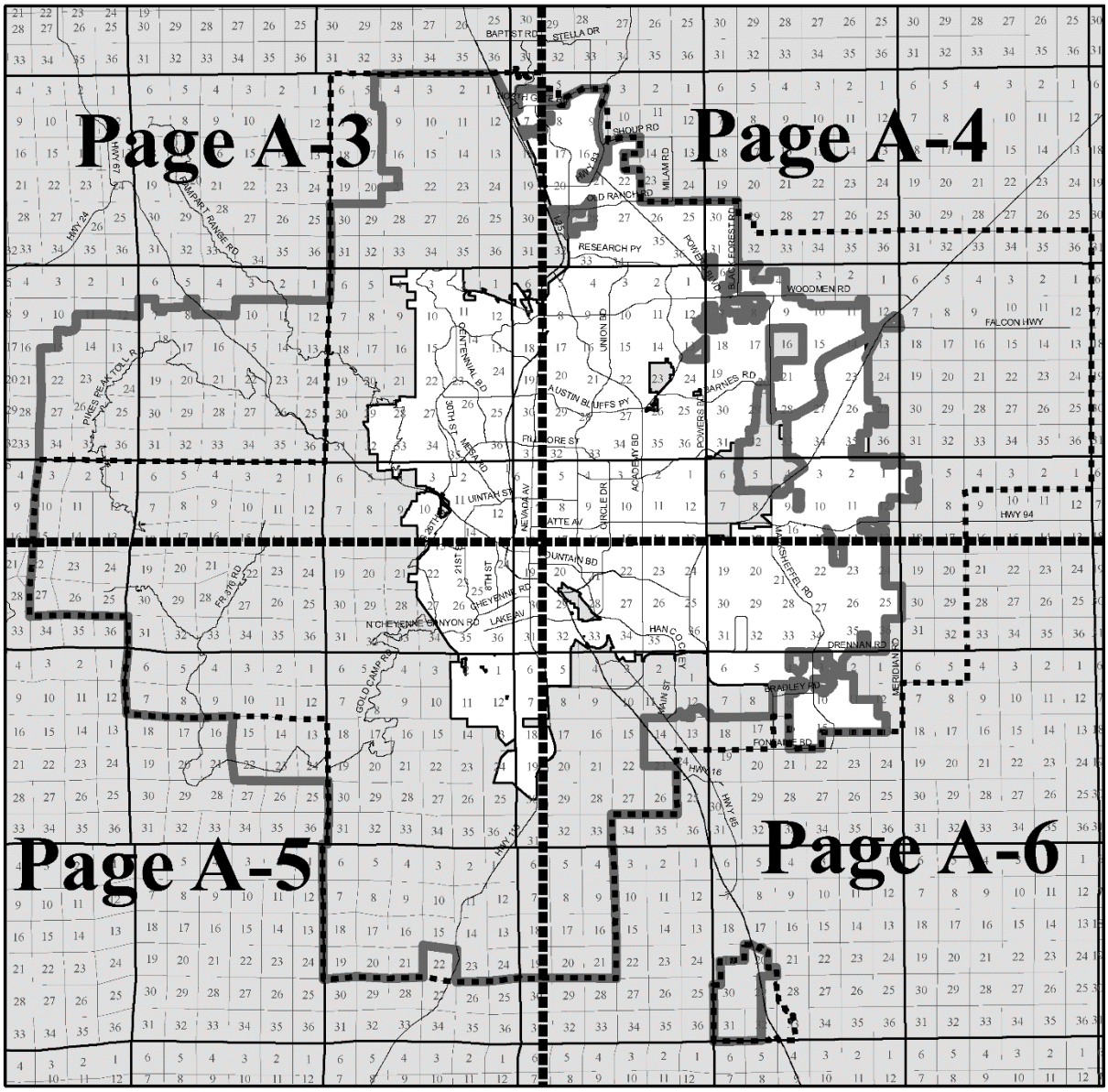
Appendix A
Colorado Springs Utilities Service Area Maps

Appendix A
Colorado Springs Utilities Service Area Boundaries

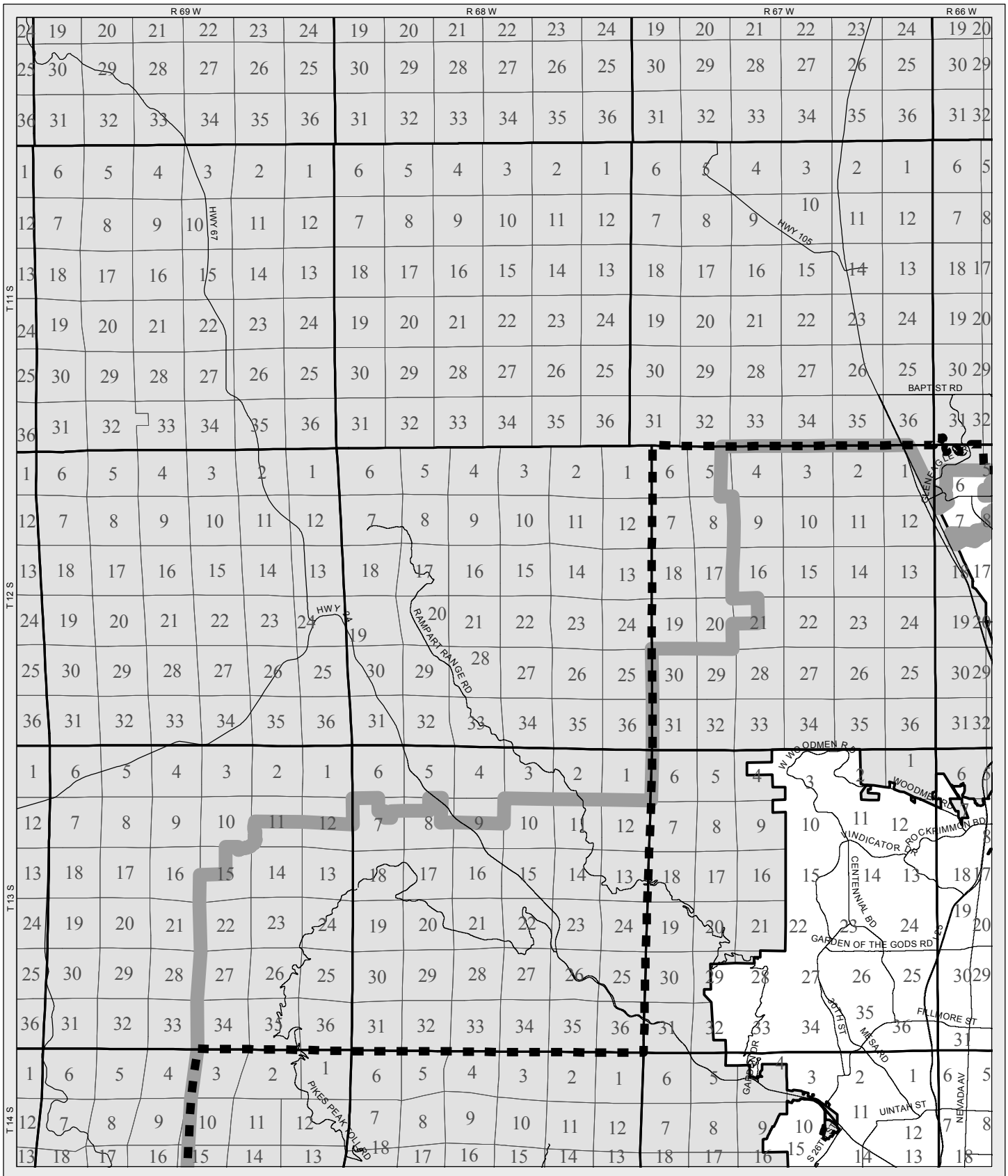
A.1.0 INTRODUCTION

The maps on the following pages depict the Colorado Springs Electric and Gas Service area boundaries as filed with the Colorado Public Utilities Commission and are up to date as of the date of the publication of this manual. The City of Colorado Springs limits are shown from the best information available as of the date of publication. Colorado Springs Utilities water and wastewater service area is generally limited to those areas within the current city limits (see Index Map below). Specific questions regarding utility service should be directed to Colorado Springs Utilities Development Services office.

A more detailed, larger scale version of the service area map can be obtained from the Colorado Springs Utilities web site at www.csu.org.



Index Map



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Scale 1" = 14000'

Legend

- Electric Service Area
- Gas Service Area
- Colorado Springs Boundary
- Section Lines
- Township/Range Lines

Colorado Springs Utilities
Service Area Boundaries

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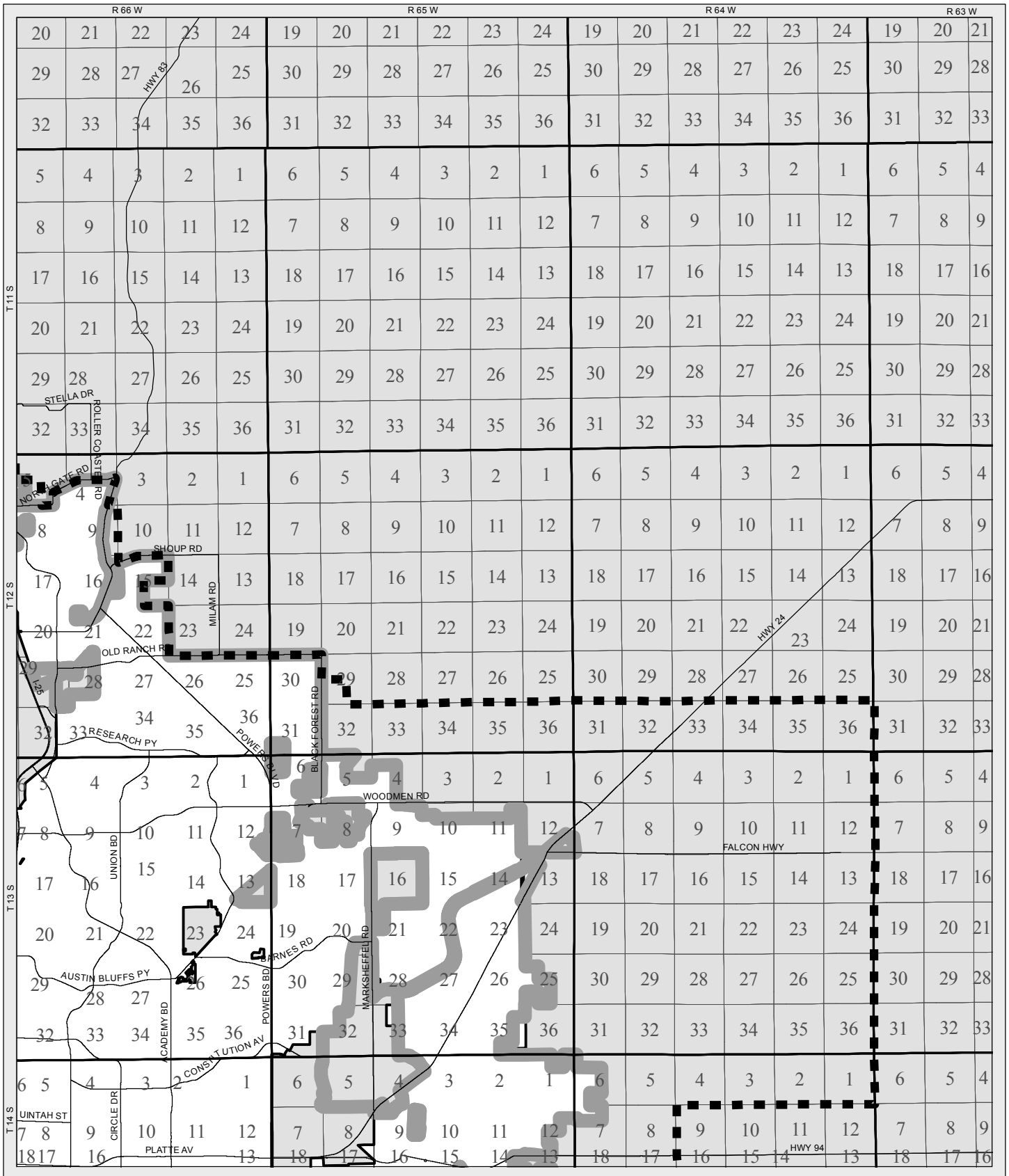

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Scale 1" = 14000'

Legend

- Electric Service Area
- Gas Service Area
- Colorado Springs Boundary
- Section Lines
- Township/Range Lines

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Service Area Boundaries

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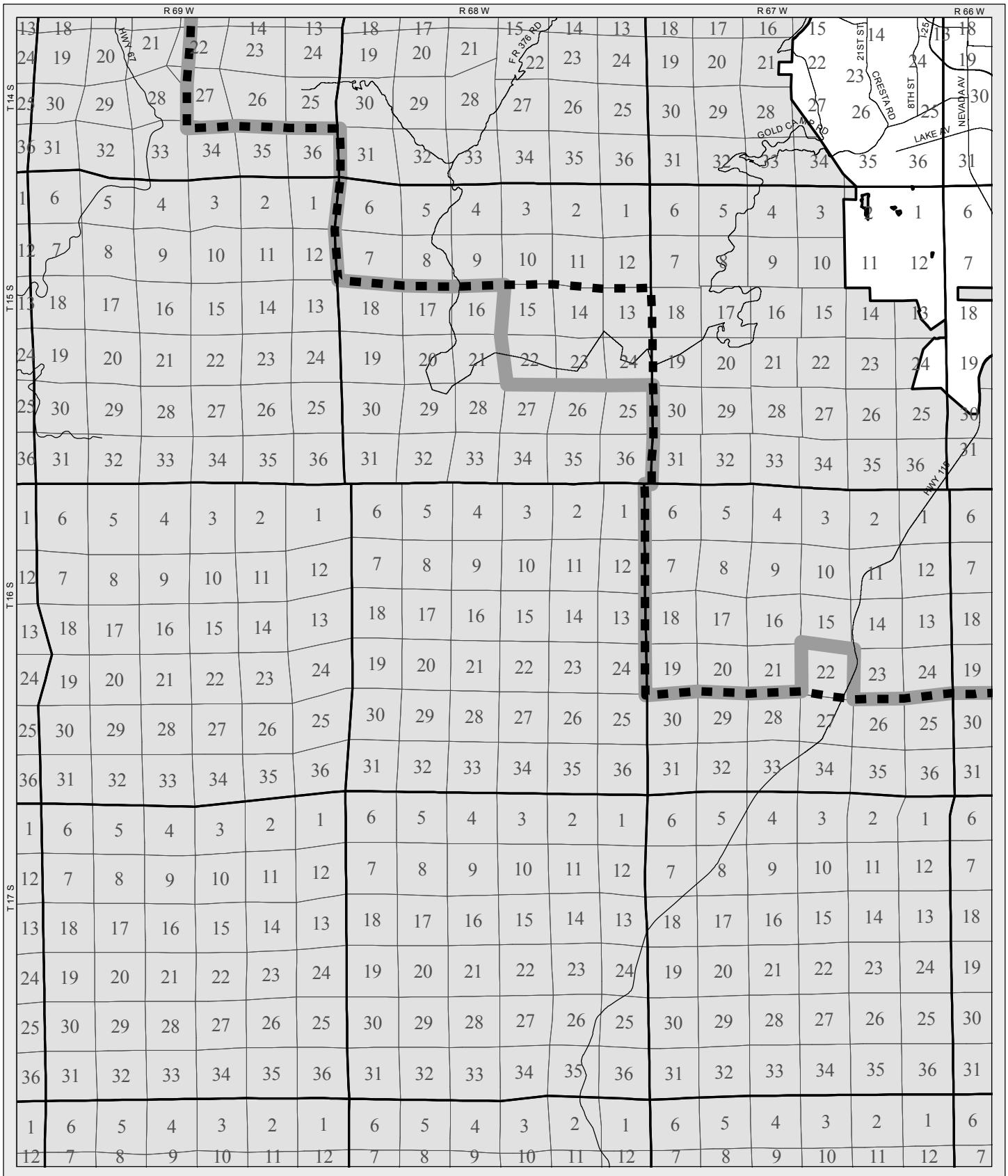

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Scale 1" = 14000'

Legend

- Electric Service Area
- Gas Service Area
- Colorado Springs Boundary
- Section Lines
- Township/Range Lines

Colorado Springs Utilities
Service Area Boundaries

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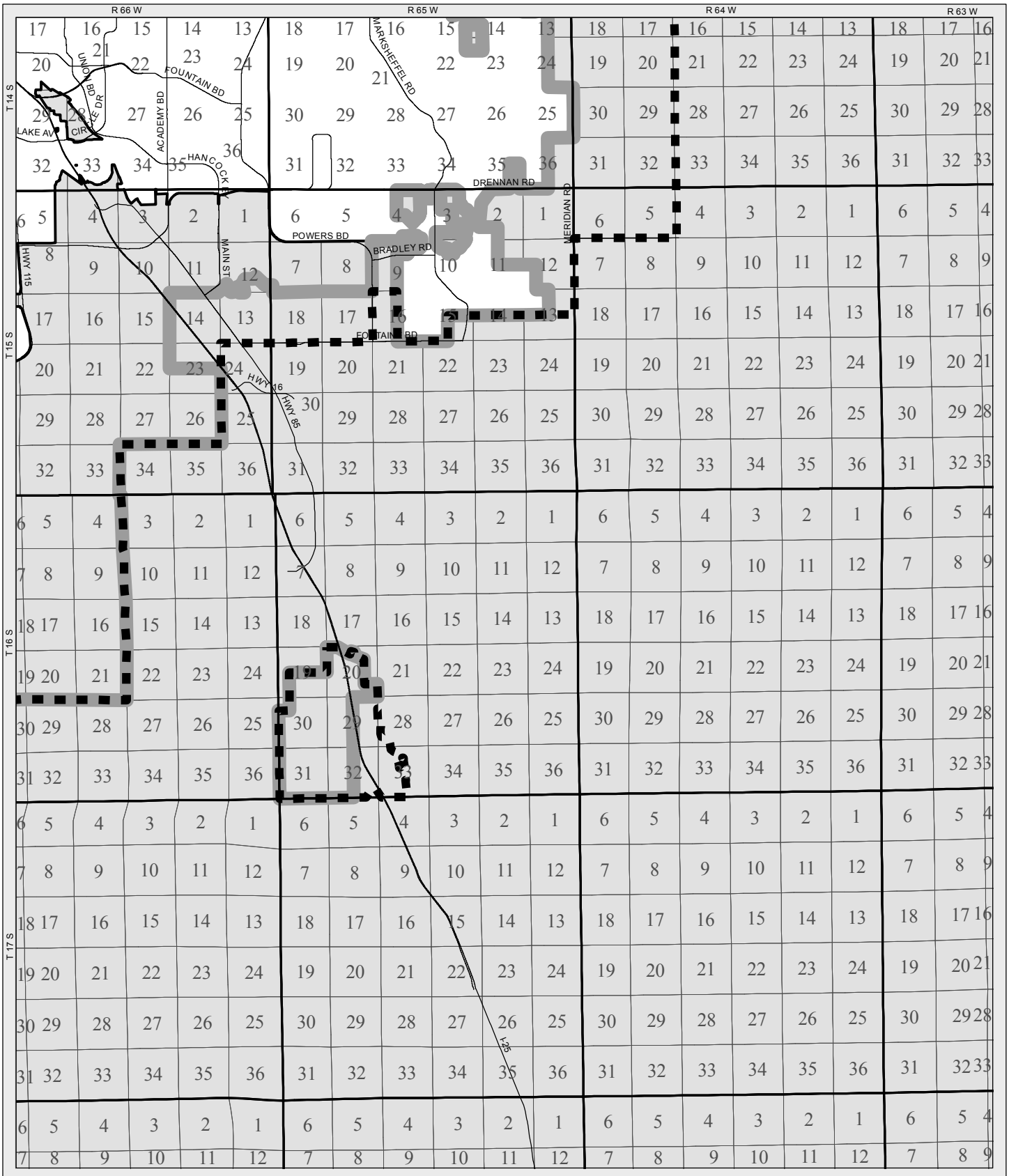

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Scale 1" = 14000'

Legend

- Electric Service Area
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Service Area Boundaries

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Appendix B
Utilities Addressing Plan, Utilities Design CAD File and Easements Policies and Procedures

UTILITIES ADDRESSING PLAN, UTILITIES DESIGN CAD FILE AND EASEMENTS

Policies and Procedures Guide

B.1.0 INTRODUCTION

Interaction with Colorado Springs Utilities (UTILITIES) on any land development project requires supporting documentation. This information is unique to a given type of service (i.e. electric, gas, water or wastewater). There are two types of support data that are universal to all service extensions: the Utilities Addressing Plan (UAP) and the Utilities Design CAD File (UDCF). Depending upon the nature and timing of your project you may need to submit a UAP and/or a UDCF as part of the flow of information to UTILITIES in support of the design or review of your proposed utility infrastructure. It is best to be aware of these two items as well as potential easement requirements in advance of your first contact with UTILITIES regarding a given project. The following Sections describe each item in detail.

B.2.0 UTILITIES ADDRESSING PLAN

The UAP is a submittal that must be made, under certain circumstances, to UTILITIES prior to initiating a request for utility design review or service extension from SU. The content of the UAP is similar to that of a subdivision plat (see FORM 1 for the UAP checklist). In fact, a copy of the subdivision plat prepared per the City of Colorado Springs Code pertaining to Subdivision Platting will suffice as a UAP submittal. Advanced Geomatics (ADG) uses the UAP to obtain addressing from the Regional Building Department's (RBD) enumerator's office for the lots in the project. ADG converts lot geometry for the proposed project to the cadastral layers of the ADG database and create address pointers for the lots. The ADG cadastre, address data and SU's Customer Billing (C2M) system are synchronized using this information.

B.2.1 CONDITIONS CALLING FOR A UTILITIES ADDRESSING PLAN

A Utilities Addressing Plan is required to be submitted to UTILITIES anytime an application for the design of extensions of electric, gas, water or wastewater mains and/or service lines is made and any of the following conditions apply:

- The request for service applies to a parcel of land that does not have a recorded final subdivision plat and assigned addressing in place as of the date of the request.
- The request for service applies to a parcel of land which may have an existing recorded plat in place, but the existing parcel geometry will be modified as part of a land development process and the replat is not yet of record.
- The request for service applies to a parcel of land for which an approved UAP exists, but changes have been made (or are proposed) to the geometry of the development which substantially affects the lot or street configuration of the development.
- The proposed development activity will in any way change approved addressing on the site.

B.2.2 PURPOSE OF THE UTILITIES ADDRESSING PLAN

The UAP serves two critical purposes in the land development process. Information provided on the UAP allows ADG to create preliminary lot and street geometry in the UTILITIES Geographic Information Systems database. Approved addressing is then entered into the addressing database which in turn is tied to the UTILITIES C2M system. With this in mind, consider the UAP as a "Preliminary" version of the final plat. The data elements to be shown are nearly identical to a final plat and in fact, an unrecorded copy of the final plat of the project is an acceptable UAP.

B.2.3 UTILITIES ADDRESSING PLAN SUBMITTAL

The UAP can be submitted in either hardcopy format or electronically. The UAP must be submitted at least ***five (5) working days prior*** to the need for SU's action on a request for service. Requests for service may be submitted concurrently with the UAP but will not be acted upon until after the UAP has been processed.

A revised UAP must be submitted whenever boundary, right-of-way, lot or easement lines or dimensions are revised, or if addresses or street names are changed.

Digital submittal

Digital UAP submittals are the preferred method. Digital submittals may be performed online using the Digital Data Services web link (https://www.csu.org/Pages/GISMapping.aspx). When a submittal is made online, a receipt is emailed to the user. This receipt must accompany the request for utility service, as evidence that the UAP has been processed if the UAP is required (see above section for conditions requirement). A digital submission shall consist of an AutoCAD drawing (.dwg) file with a layout for each sheet (where there are multiple sheets to the plan) of the proposed project including all necessary model and paper space elements to enable ADG staff to print hard copies. For information or assistance in performing online UAP submittal, contact ADG staff at C_ADGSupport@csu.org or (719) 668-7920 or 668-8779.

B.2.4 UAP FREQUENTLY ASKED QUESTIONS

Do I need to have accurate and correct dimensioning for lots and streets centerlines on the UAP?
Although a preliminary version of the plat is acceptable for the UAP, fictitious, incomplete or erroneous plat geometry is not. UTILITIES require sufficient information on the UAP to be able to run coordinate geometry on the boundaries, the rights of way, tracts and each individual lot. Missing or erroneous data will only delay the UAP processing because ADG staff will refer the errors back to the submitter for correction before completing the UAP.

B.3.0 UTILITIES DESIGN CAD FILE

The Utilities Design CAD File (UDCF) is an AutoCAD (.dwg format) drawing file which contains specific point, line and text features related to the design and analysis of new utility lines in proposed land developments and public works projects. Defining the content and structure of the CAD data to be received allows ADG to position the UDCF file when necessary, enabling UTILITIES system designers to provide a more efficient design process for each land development customer. The primary use of the UDCF is to meet the requirements of the water, gas and electric system designers. It will contain electronic feature data (see TABLE A for a list of recommended features) needed to do CAD based

system design and analysis on new service system extensions. For residential projects, the UDCF contains most of the features on the water service plan. For commercial, multifamily and industrial projects, the UDCF will include the features from the site plan or site/utility plan. A secondary use of the feature data contained in the UDCF will be to update the planimetric base and utility mapping used by UTILITIES.

All dimensional data shall use AutoCAD drawing units of:

- Length: Decimal (Precision 0.000)
- Angle: Surveyor's units (Precision N 0d 00' 00" E)
- Insertion Scale: Unitless.

B.3.1 CONDITIONS CALLING FOR A UTILITIES DESIGN CAD FILE

A Utilities Design CAD File is to be submitted:

- For all projects that require utility system extensions or relocations.
- For all single-family residential projects that create new lots or rights of way through the subdivision platting process.
- For all mobile home parks, multifamily residential developments, commercial and industrial projects.

B.3.2 PURPOSE OF THE UTILITIES DESIGN CAD FILE

The Utilities Design CAD File will be used by the water system planners to model pressure zones, by the gas and electric system designers as a background environment to support their system extension design, and possibly by UTILITIES's Asset Management department to update planimetric base or utility mapping. The customer is responsible for ensuring that the project data supplied to UTILITIES is current through all project design phases. If UTILITIES does not have the most up to date version of project data, its construction schedule could be negatively impacted. The customer consents to UTILITIES use of the electronic data being used to update UTILITIES/ADG base mapping.

B.3.3 UTILITIES DESIGN CAD FILE SUBMITTAL

A Utilities Design CAD File (UDCF) is to be submitted to the Colorado Springs Utilities (UTILITIES) prior to or at the same time any application for water or wastewater plan review or service extension design is initiated. It may be submitted at the time of a UAP submittal or any time thereafter. A final submission of the UDCF is required and time of Development Services plan approval. The final UDCF must accurately match the approved plans. The file is to be submitted to UTILITIES's via an Internet application (https://www.csu.org/Pages/GISMapping.aspx). It is requested that the customer provide the UDCF file in the FIMS horizontal coordinate system. UTILITIES/ADG will process the file by registering it to the FIMS horizontal coordinate system when necessary and making it available to all UTILITIES departments.

The CAD file to be submitted shall be a .dwg format file containing all *applicable* feature elements listed in Table A in model space. The Utilities Design CAD File shall be complete. One and only one file is to be submitted. Any XREFs need to be bound to the parent file. Features shall be placed on separate layers. Processing can be expedited if the layer organization delineated in Table A is followed. Residential subdivision projects shall include pertinent elements checked under the **Residential** column

of **Table A**. All other development types (commercial, multifamily residential, industrial and mobile home parks, Municipal and State projects) shall require that the CAD file include pertinent feature types checked under the column titled **All Others**. Generally speaking, on residential projects, the UDCF will contain the same feature data as the water service plan and on commercial and multifamily projects the UDCF will contain the same feature data as the site plan or the site/utility plan.

B.3.4 UDCF FREQUENTLY ASKED QUESTIONS

What is the UDCF used for?
The UDCF is needed for efficient system modeling and design of new utility infrastructure. The UDCF is processed by ADG to position the model space features contained in the file onto the FIMS horizontal datum. The file structure is checked to ensure the file will be readable by all CAD desktops within UTILITIES and is then made available on a server that is accessible to all UTILITIES system designers.

The UDCF data may be used to maintain the FIMS planimetric database. Certain features will be verified and converted to keep the planimetric base mapping up to date. It is hoped that UTILITIES will realize long term cost savings for our ratepayers by reducing the number and frequency of aerial mapping projects needed to map areas of development activity.

I have several .dwg files that are not XREF'd for my project, how can I submit them?
Although we accept zipped files for large .dwg files we cannot accept multiple files zipped together, they must be merged into one .dwg file (using the X-REF/BIND command in AutoCAD). Do not use the re-submit option as a method to upload multiple files.

Does the UDCF have to conform to a certain layering standard?
No. Although Appendix A indicates the recommended layer structure, this is not a requirement. Processing the file can be made more efficient if the file conforms to the recommended layering structure, but it is not a requirement of the process.

Who will be responsible for assuring that the UDCF is accurate, complete and up to date?
Ultimately, the customer is responsible for the content of the file. ADG will perform a quick check ensure the file appears to be complete. If obvious inadequacies exist, UDS will contact the customer to remedy the situation. Missing or inaccurate data may affect the timing of design or construction schedules. The customer will be responsible for submitting an amended file should any of the projects feature details change after the time of the initial submittal but prior to completion of the use of the data by water, gas, and electric designers. The online application was designed to make iterative resubmission of data more convenient for the UTILITIES's customers. UTILITIES representatives will make every effort to remind the customer at each application stage to keep the file up to date.

What about projects that are not done using CAD?
It is recognized that there are still some small projects that may not be designed using CAD tools and there are still some design firms that do not employ CAD to accomplish project design. This submittal is not required if CAD data is not available. It should be recognized that plan review and new system design can be greatly expedited if a Utilities Design CAD File is supplied; otherwise UTILITIES system designers will have to spend time manually creating key planimetric features to complete their work. The whole point in acquiring the file is to make the design process for each department more efficient.

B.4.0 EASEMENTS

Development activity often requires an extension of UTILITIES's infrastructure, which in turn may lead to the need for an easement or executive agreement. Across City property (not a Public Right – Of – Way), an Executive Agreement is required. On private property, Easements are required when infrastructure is placed outside of a public right-of-way. Easements are typically granted either by a Subdivision Plat or by a Permanent Easement Agreement. Easements granted by Subdivision Plat are governed by the City of Colorado Springs Code pertaining to Subdivisions, as modified by the Terms & Conditions recorded at Reception Number 212112548. Easements obtained through a Permanent Easement Agreement are controlled by the Utilities' Standard Procedures for Easement Acquisition and Reference (SPEAR) process. The Spear Easements process now goes through the Construction & Development Hub. At this location users can select the "Development Process" link to see Utilities' Development process and all the phases within. Under the Construction Phase, the user can select Easement Submittal link that will provide access to the Utilities Easement Procedures along with Easement Preparation Checklists. The user will also find a series of Permanent Easement Templates for different types of easements. This information will guide the user through the easement Submittal process where the required checklist can be submitted to Development Services for review.

***** Please note, the Land Management team (Jessica Davis) should be used to help acquire any new easements or for changes to existing easements. Please call 688-7581 for help. *****

B.4.1 CONDITIONS CALLING FOR AN EASEMENT

If utilities are installed outside of a public right-of-way or existing UTILITIES utility easement, then a UTILITIES utility easement must be granted. The need for an easement may be triggered by a neighboring development or even a UTILITIES initiated project that requires the installation of utilities across the property and not falling within a dedicated right-of-way or existing easement. These circumstances would require the recording of a Permanent Easement Agreement

B.4.2 REQUIRED EASEMENT ELEMENTS

SU's Permanent Easement Agreement has a standard set of Terms & Conditions, and three (3) exhibits. Exhibit A is a description of the parcel burdened by the easement. This description could consist of a reference to a platted lot, a metes and bounds description or an existing reception number / book and page. Exhibit B is a description of the easement area. Exhibit C is a graphical representation of the easement area described in Exhibit B. UTILITIES require that Exhibit B be prepared, signed and sealed by a Colorado Professional Land Surveyor.

UTILITIES staff reviews the easement document for conformance to the design specification, and generally accepted surveying standard of care. During the review process comments may be referred back the Land Developer for review or revision. Upon acceptance by UTILITIES the easement is recorded at the Clerk & Recorders Office, and a recorded copy provided to the Land Developer.

B.4.3 EASEMENT SUBMITTAL PROCESS

Most easements dedicated to UTILITIES are initiated by the developer of the property in order to receive utility service. The need for a utility easement is identified during the Development Plan review process. The submittal process is explained on the UTILITIES website at the link given in 4.0 above.

Some of the key aspects are:

1. Always download the latest easement agreement forms from the UTILITIES website.
2. A licensed professional land surveyor must sign and certify that the exhibits prepared under their direct supervision, are accurate and correct to the best of their knowledge. Please see Advanced Geomatics if any questions arise about this item.
3. All owners and any Deed of Trust holders must sign the easement and ensure that their signatures are notarized.

B.4.4 EASEMENT FREQUENTLY ASKED QUESTIONS

How wide of an easement do I need to grant?
In general, a water or wastewater main requires a 30' easement width and a multi-utility easement is required to be 50' wide. Sometimes a wider easement is required based on characteristics of the line such as size, pressure, slope or depth of installation. Contact Development Services or refer to the appropriate standards to understand what the easement width might be for your utility installation project.

Can the utility be installed within an existing access easement?
Not typically. Not all existing easements have full rights for utility infrastructure. The Terms and Conditions of the actual easement agreement would need to be reviewed for language permitting the installation, maintenance and access to the infrastructure.

I need to dedicate an easement across multiple lots. What is the best way to do this?
If the multiple lots are owned by the same legal entity, the easement could be granted on a single easement. If the easement would include multiple owners, it is required that the easement be split into multiple sections so that each easement is granted by a single legal entity. The exception to this is for property held jointly for which a standard easement agreement was prepared.

What rights do I, as the owner, retain within the easement area?
Springs Utilities Permanent Easement Agreement is very specific on what rights are granted to the City of Colorado Springs and what rights are retained by the property owner. Please refer to the easement agreement, contact Development Services or seek legal counsel for answers to more specific questions.

FORM 1

UTILITIES Addressing Plan Check List

1 Name of the Utilities Addressing Plan

2 Name and address of the legal owner and/or manager of the project.

3 Name and address of the preparer of the Utilities Addressing Plan

4 Date of preparation

5 North arrow

6 Vicinity Map

7 Graphic scale

8 Delineate all lands to be conveyed or reserved for public use or reserved for the common use of all property owners in the proposed subdivision/project.

9 The dimensions of the exterior boundary of the proposed project, which must be the result of a boundary survey. All lines are to be annotated with a bearing and distance. All curved lines should be annotated with a minimum of three curve elements. Non-tangent curves should have a bearing reference (i.e., bearing to radius point or chord bearing).

10 The dimensions of all interior streets and lots. All lines are to be annotated with a bearing and distance. All curved lines should be annotated with a minimum of three curve elements. Non-tangent curve should have a bearing reference (i.e., bearing to radius point or chord bearing).

11 Lot and block numbers

12 Dimensions sufficient to clearly locate and define the extents of all easements to allow for the final design of the associated utilities. Side and rear lot easements may be described as text rather than graphical if a blanket statement is possible.

13 Names of the public or private streets or other public or private ways. Any private street name shall be clearly labeled "Private".

14 Area in square feet of each lot within the Utilities Addressing Plan.

15 Addressing is complete and legible (If Addressing is obtained from the Enumerator prior to UAP submittal. Note: This will not speed up the processing as UTILITIES will need to get verification from Enumerator that addressing is correct). If addressing has not been obtained prior to the UAP submittal, please indicate the location of addresses requested with “( )” .

NOTES:

1) Although not a requirement for the acceptance or approval of a UAP, in the instances of multi-family, commercial, or industrial developments where the plans for the development have progressed to the point of having final building locations and configurations, this plan may (at the discretion of the submitter) accompany the UAP submittal to assist the enumerator in assigning addresses to the project.
2) A final plat document prepared in accordance with City of Colorado Springs specifications will be acceptable as a UAP document.

Table A – UDCF Feature List

***** Following this Feature List Guide, helps to get CAD files approved and ingested as quickly as possible. CSU staff thanks you for using and following this information! *****

Recommended Feature Data	Residential	All Others	Recommended CAD Layer Name
Lot Lines	X	X	xx-lots-ln
Project Exterior Boundary Lines	X	X	xx-sub-bdy
Street Lines	X	X	xx-row-street
Easements	X	X	**see list below**
			xx-esmt-access
			xx-esmt-avig
			xx-esmt-drain
			xx-esmt-pub
			xx-esmt-scenic
			xx-esmt-trail
			xx-esmt-util
			xx-easmt-util-gas
			xx-easmt-util-elec
			xx-easmt-util-water
			xx-easmt-util-ww
			xx-esmt-util_drain
			xx-esmt-util_pub
			xx-esmt-util-misc
Building Footprints		X	xx-building-ftprnt
Water Lines	X	X	xx-water-line
Water Services	X	X	xx-water-serv
Water Valves		X	xx-water-valve
Fire Hydrants	X	X	xx-water-fh
Gas main lines (proposed)	X	X	pp-gas-line
Gas service lines (proposed)	X	X	pp-gas-stub
Electric lines (proposed)	X	X	pp-elec-line-ug (underground)
			pp-elec-line-ug (overhead)
Transformer Location		X	pp-elec-tr_pad
Elec sevice attachment points (proposed)		X	pp-elec-serv_att_pt
Secondary Electric		X	xx-electric-line-ug (overhead)
			xx-electric-line-ug (underground)
Sanitary Sewer Lines	X	X	xx-ww-line
Sanitary Sewer Manholes	X	X	xx-ww-mh
Sanitary Sewer Services	X	X	xx-ww-serv
Underdrains	X	X	xx-drain-udline
Storm Sewer Lines	X	X	xx-drain-line
Storm Sewer Inlets (Catch Basins)	X	X	xx-drain-catch
Curb Lines	X	X	xx-curb-back
			xx-curb-fl
			xx-curb-lip
Hard Surfaces (Paved Areas)		X	**see list below**
			xx-alley-pvd
			xx-drain-chan-lnd
			xx-drain-cross
			xx-drive-pvd

Recommended Feature Data	Residential	All Others	Recommended CAD Layer Name
			xx-parking-pvd
			xx-sidewalk-ln
			xx-street-pvd
			xx-trail-rec
Private Lighting		**X**	xx-landscape-light
Private Signs		**X**	xx-sign-post
Grading / Contours		**X**	xx-cont-index
			xx-cont-int
Project Phase Lines		**X**	xx-devel-phase
Existing Adjacent Utilities (non Colorado Springs Utilities)		**X**	**see list below**
			xx-phone-serv
			xx-phone-line-oh (overhead)
			xx-phone-line-ug (underground)
			xx-phone-mh
			xx-phone-pole
			xx-phone-riser
			xx-phone-vault
			xx-pipeline-oh (overhead)
			xx-pipeline-ug (underground)
			xx-tower-loc
			xx-catv-line-oh (overhead)
			xx-catv-line-ug (underground)
			xx-catv-riser
			xx-fibop-line
			xx-fibop-box
Annotation			
Lot Dimensions	**X**	**X**	xx-lot-anno
Lot/ Block Numbers	**X**	**X**	xx-lots-anno
Addresses	**X**	**X**	xx-building-add

TABLE OF CONTENTS

APPPENDIX C
Tables

SERVICE LINE SIZING GUIDE

(Reference Tables 1-3)

Table 1	**Service Line Sizing, PRESSURE DISTRICT WITH MAXIMUM ALLOWABLE OPERATING PRESSURE LESS THAN 10 PSIG**
Table 2	**Service Line Sizing, PRESSURE DISTRICT WITH MAXIMUM ALLOWABLE OPERATING PRESSURE GREATER THAN OR EQUAL TO 10 PSIG, *BUT* LESS THAN 60 PSIG**
Table 3	**Service Line Sizing, PRESSURE DISTRICT WITH MAXIMUM ALLOWABLE OPERATING PRESSURE GREATER THAN OR EQUAL TO 60 PSIG**

REMINDER: Service lines that provide a total load **exceeding 1,000,000 BTU/HR MUST BE** sized by Colorado Springs Utilities Field Engineering

TOTAL CONNECTED LOAD = THE SUMMATION OF THE NAMEPLATE INPUT RATINGS FOR ALL GAS APPLIANCES THE SERVICE LINE IS TO SUPPLY. TYPICALLY REPORTED IN BTU/HR.

Service Line Length = The total length of the service line between the main and the riser.

Example Problem:

A residence has a 45,000 BTU/HR water heater and an 80,000 BTU/HR furnace. The distance from the main to the riser is 200 feet. The residence is located in a pressure district with a maximum allowable operating pressure of 15 psig. Find the required service line size.

Solution:

1. Look up the sizing table. You will need to use Table 2 (Service Line Sizing, Pressure District with Maximum Allowable Operating Pressure Greater Than or Equal to 10 PSIG, But Less Than 60 PSIG) for determining the correct service line size.
2. Add up the total connected load: 45,000 BTU/HR + 80,000 BTU/HR = 125,000 BTU/HR.
3. Note that the service line length at the residence is 200 feet long.
4. Look on Table 2 and find the intersection of the row containing the 125,000 BTU/HR total connected load and the column showing the 200 feet long service line. The intersection falls within shaded area “B”. According to the legend, “B” = 3/4” IPS polyethylene.

TABLE 1

SERVICE LINE SIZING, PRESSURE DISTRICT WITH MAXIMUM ALLOWABLE OPERATING PRESSURE LESS THAN 10 PSIG

REMINDER: Service lines that provide a total load **exceeding 1,000,000 BTU/HR must be** sized by Colorado Springs Utilities Field Engineering

TOTAL CONNECTED LOAD (1000 BTU/HR)	SERVICE LINE LENGTH (FEET)															
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
75	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
100	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C
125	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C
150	B	B	B	B	C	C	C	C	C	C	C	C	C	D	D	D
175	B	B	B	C	C	C	C	C	C	C	D	D	D	D	D	D
200	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D
250	B	C	C	C	C	D	D	D	D	D	D	D	D	D	D	E
300	B	C	C	D	D	D	D	D	D	D	D	E	E	E	E	E
350	B	C	D	D	D	D	D	D	E	E	E	E	E	E	E	E
400	C	C	D	D	D	D	E	E	E	E	E	E	E	E	E	E
450	C	D	D	D	D	E	E	E	E	E	E	E	E	E	E	E
500	C	D	D	D	E	E	E	E	E	E	E	E	E	E	E	E
600	C	D	D	E	E	E	E	E	E	E	E	E	E	E	E	E
700	D	D	E	E	E	E	E	E	E	E	E	E	E	E	E	
800	D	D	E	E	E	E	E	E	E	E	E	E				
900	D	E	E	E	E	E	E	E	E	E			CONTACT FIELD ENGINEEERING			
1000	D	E	E	E	E	E	E	E								

NOTE: All commercial and industrial lines shall be 1-1/4" IPS minimum.

LEGEND:

B	=	3/4"	IPS Polyethylene Service Line
C	=	1"	IPS Polyethylene Service Line
D	=	1-1/4"	IPS Polyethylene Service Line
E	=	2"	IPS Polyethylene Service Line

TABLE 2

SERVICE LINE SIZING, PRESSURE DISTRICT WITH MAXIMUM ALLOWABLE OPERATING PRESSURE GREATER THAN OR EQUAL TO 10 PSIG BUT LESS THAN 60 PSIG

REMINDER: Service lines that provide a total load **exceeding 1,000,000 BTU/HR must be** sized by Colorado Springs Utilities Field Engineering

TOTAL CONNECTED LOAD (1000 BTU/HR)	SERVICE LINE LENGTH (FEET)															
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
75	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
125	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
150	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
175	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
200	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
250	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
300	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
350	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
400	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C
450	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C
500	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C
600	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C
700	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C
800	B	B	B	B	C	C	C	C	C	C	C	C	C	D	D	D
900	B	B	B	C	C	C	C	C	C	C	C	D	D	D	D	D
1000	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D

NOTE: All commercial and industrial lines shall be 1-1/4" IPS minimum.

LEGEND:

B	=	3/4"	IPS Polyethylene Service Line
C	=	1"	IPS Polyethylene Service Line
D	=	1-1/4"	IPS Polyethylene Service Line
E	=	2"	IPS Polyethylene Service Line

TABLE 3

SERVICE LINE SIZING, PRESSURE DISTRICT WITH MAXIMUM ALLOWABLE OPERATING PRESSURE GREATER THAN OR EQUAL TO 60 PSIG

REMINDER: Service lines that provide a total load **exceeding 1,000,000 BTU/HR must be** sized by Colorado Springs Utilities Field Engineering

TOTAL CONNECTED LOAD (1000 BTU/HR)	SERVICE LINE LENGTH (FEET)															
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
75	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
125	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
150	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
175	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
200	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
250	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
300	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
350	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
400	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
450	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
500	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C
600	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C
700	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C
800	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C
900	B	B	B	B	C	C	C	C	C	C	C	C	C	C	D	D
1000	B	B	B	B	C	C	C	C	C	C	C	C	D	D	D	D

NOTE: All commercial and industrial service lines shall be 1-1/4" IPS minimum.

LEGEND:

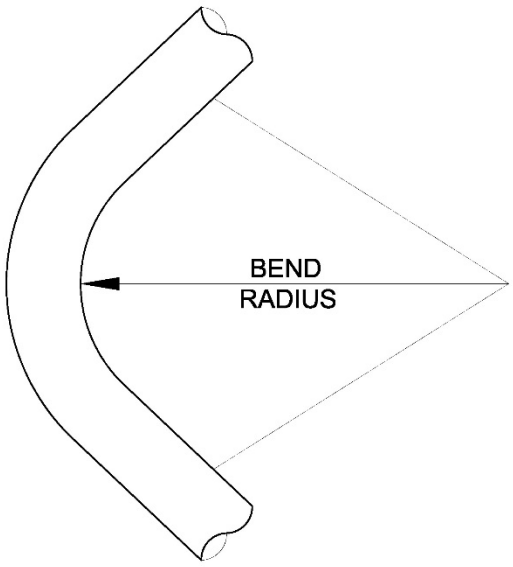
B	=	3/4"	IPS Polyethylene Service Line
C	=	1"	IPS Polyethylene Service Line
D	=	1-1/4"	IPS Polyethylene Service Line
E	=	2"	IPS Polyethylene Service Line

TABLE 4

MINIMUM BENDING RADIUS FOR POLYETHYLENE PIPE

NOMINAL PIPE DIAMETER	OUTSIDE DIAMETER	MINIMUM DISTANCE TO NEAREST FUSION (5xOD)	MINIMUM BENDING RADIUS (A)	
		(B)	(C) NO FUSIONS 25xOD	(D) WITH FUSION JOINT 100xOD
3/4", SDR 11	1.050"	6"	27"	NA
1", SDR 11	1.315"	7"	33"	NA
1-1/4", SDR 10	1.660"	9"	42"	NA
2", SDR 11	2.375"	12"	60"	NA

A smaller bend radius results when the curvature of the pipeline is tightened. Plastic pipe cannot be installed with a bend radius that is less than the minimum bend radius specified by the manufacturer for the diameter of the pipe being installed.



(A) The minimum bend radius is the smallest radius to which the pipe can safely be curved.

(B) The minimum distance to the nearest fusion shall mean the distance measured along the pipe from the nearest socket fusion to the point at which the bend radius begins.

(C) No fusions are allowed within the bend.

(D) LUSIs are not permitted to install fittings within the bend.

TABLE 5

NORMAL FUSION HEATING/COOLING TIMES

See Appendix F for the Colorado Springs Utilities Plastic Joining Procedures (socket portion only)

.

TABLE 6

MINIMUM DISTANCE BETWEEN FUSIONS*

PE PIPE SIZE (IPS)	MINIMUM PIPE LENGTH (INCHES)
3/4”	12
1”	12
1-1/4”	15
2”	15

*Applies to LUSIs completing socket fusion

TABLE 7

MATERIALS APPROVED FOR USE IN GAS/JOINT SERVICE LINE CONSTRUCTION (1)

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 2708, ASTM D2513 < 3 yrs. Old 3/4", 1", 2" SDR 11 1-1/4" SDR 10		Performance Pipe JM Eagle Duraline/PolyPipe (pipe only)
Service Risers	Polyethylene Insert, Anodeless		R. W. Lyall, Perfection Corporation, Georg Fischer Central Plastics (GFCP) (1) Only with QC Inspector Supervisor approval
	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	
	3/4" IPS SDR 11 Vertical Riser (1)		
Service Riser Bracket	T-41 (1-1/4" diameter pipe, adjustable 6"-10")		Energy Control Systems, Inc.
Tape	130C Linerless Rubber Splicing Tape 33+, 3/4" Tape		3M Scotch
	Wrap- Primerless Tapecoat, M50RCG (2", 4" & 6") Wrap – Gray Pipe Wrap Tapecoat, H35 UV Resistant (2") Scotchrap #50 (2")		The Tapecoat Company 3M
Thermite Weld Cartridge	15 Gram Charge		CadWeld
Copper Sleeve	For Tracer Wire		Continental A-200
Wire Connector	Direct Burial Split Bolt		Burndy Mechanical or Equiv.
Tracer Wire	Tracer wire, #12 high strength, soft-drawn CCS (copper clad steel), HDPE/ HMWPE yellow insulation, 30 mils, 30 VAC (wire to be labeled minimum interval of every two feet with "Gas" (preferred), Manufacturers name (or manufacturer's code), 12 AWG, CCS TRACER WIRE, 30V, 30M HDPE all other labeling will be rejected)		Kris-Tech Wire Company Copperhead Industries, LLC Proline Agave Wire, Ltd. (Note that Lyall risers, a division of Continental, use Agave Wire but label it as Continental)

Item Description	Designation	Approved Manufacturer
Gas Caution Tape (optional for services)	Yellow, Caution, Buried Gas Line Tape, min of 3 inches wide, 4 mil thick (non-detectable)	Brady
Padding (Bedding Sand)	Fine Material able to pass a #40 sieve and retained on a #200 sieve.	Holcim Daniels Sand, Cone Sand (multiple suppliers sell material from approved manufacturer)
4/0 AWG AL with 2/0 AWG AL Neutral Service Wire	600V UD "SureSeal" or "SuperSeal" Self-repairing wire types only	Southwire (SureSeal): • Wesco- Utility, Denver • Western United Electric Supply Pirelli/ Prysmian (SuperSeal): • Wesco- Utility, Denver • Utility Products Supply
350 MCM AL with 4/0 AWG AL Neutral	Abuse-Resistant type only	Southwire Pirelli (Prysmian) Alcan General Cable (BICC)
2" SCH 40 PVC	Electrical Rated (grey only)	All manufacturers including: Prime Cantex Heritage
3" & 4" DB120 or SCH 40 PVC	Electrical Rated (grey only)	All manufacturers including: Prime Cantex Heritage

(1) approved items have material specifications or long descriptions that are available from Engineering Standards.

TABLE 8

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

TYPICAL PARALLEL/HORIZONTAL CLEARANCE MATRIX FOR 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 Second-ary (0-480 Volt)	Telecom / Fiber
Potable Water	5	10	10	10 [c]	10	6	3	10 [d]	3	5
Non-Potable Water	10	5	10	10	10	6	3	10	3	5
Wastewater	10	10	5	10 [c]	10	6	3	10 [d]	3	5
Storm Sewer	10 [c]	10	10 [c]	X [f]	10	6	3	10	3	5
Gas mains 150 psig (MAOP)	10	10	10	10	10	6	6	10	10	10
Gas main	6	6	6	6	6	6	3	6	3	5 [e]
Gas Service	3	3	3	3	6	3	3	3	3	3
Electric Primary up to 34.5kV	10 [d]	10	10 [d]	10	10	6	3	X	3	5 [e]
Electric Secondary (0-480 Volt)	3	3	3	3	10	3	3	3	X	5 [e]
Telecom / Fiber	5	5	5	5	10	5 [e]	3	5 [e]	5 [e]	2

TYPICAL CROSSINGS/VERTICAL CLEARANCE MATRIX FOR 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 Second-ary (0-480 Volt)	Telecom / Fiber
Potable Water	1.5	1.5 [a]	1.5 [a]	1.5 [a]	5	1	1	1	1	1
Non-Potable Water	1.5 [a]	1.5	1.5 [a]	1.5 [a]	5	1	1	1	1	1
Wastewater	1.5 [a]	1.5 [a]	1.5	1.5	5	1	1	1	1	1
Storm Sewer	1.5 [a]	1.5 [a]	1.5 [a]	X [f]	5	1	1	1	1	1
Gas mains 150 psig (MAOP)	5	5	5	5	5	5	5	5	5	5
Gas main	1	1	1	1	5	1	1	1/3 [b]	1	1
Gas Service	1	1	1	1	5	1	1	1	1	1
Electric Primary up to 34.5kV	1	1	1	1	5	1/3 [b]	1	X	0	1
Electric Secondary (0-480 Volt)	1	1	1	1	5	1	1	0	X	1
Telecom / Fiber	1	1	1	1	5	1	1	1	1	1

NOTES:

1. If compliance with these separation requirements, or those set forth in the Clearance Matrix cannot be met they will be addressed on a case-by-case basis following variance procedures described in the applicable Line Extension and Service Standards book. This includes areas of redevelopment within alleys. Colorado Springs Utilities subject matter experts for the utility being impacted will make the determination regarding clearances.
2. These clearance matrix table dimensions are for separate trenches. Joint trench between Gas and Colorado Springs Utilities Telecom/Fiber requires a 1' radial separation. Joint trench between Electric and Colorado Springs Utilities Telecom/Fiber requires a 3" in concrete and 6" in fill earth radial separation.
3. See the Gas Line Extension and Service Standards, 2.02c for certain exceptions, including tree separation requirements.
4. See Water & Wastewater Line Extension and Service Standards, latest edition for additional horizontal and vertical separation requirements, (WLESS Sections 2.7.F & 2.7.G) (WWLESS Section 2.6.D).
5. Clearance to other Colorado Springs Utilities infrastructure (telecommunication, fiber optics, etc.) or high voltage underground transmission cables shall be determined on a case-by-case basis by Field Engineering.
6. Storm Sewer clearances must be verified by City Engineering.
7. 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.
8. Additional support structures may be required at crossings.
9. For separation from trees to gas and electric lines, see GLESS 2.02c and ELESS 4.02c1.
10. See City of Colorado Springs Standard Drawings #1 "Street Cross Sections" and Drawings #2 "Street Sections Plan View" at the following web address link: https://coloradosprings.gov/public-works/page/standard-drawings. See Colorado Springs Utilities "Street Cross Sections" within the Water & Wastewater Line Extension and Service Standards at the following web address link: https://www.csu.org/building-development/construction-standards

[a] These utilities require a sleeve when crossing under another utility.
[b] 1' separation from electric primary to plastic pipe gas main and 3' separation from electric primary to metallic gas main.
[c] Exception: Minimum 5' separation if meets the means of secondary containment listed in the Water Line Extension and Service Standards Book 2.6.G.2 Separation Criteria and Wastewater Line Extension and Service Standards Book 2.5.D.2 Separation Criteria.
[d] Exception: Minimum 6'-10" clearance from Electric Primary to Potable Water and Wastewater.
[e] Exception: Telecom/fiber may be permitted to have a 3' horizontal separation from gas mains, electric primary or electric secondary in locations where the gas main and electric primary or secondary are behind the curb and either in the tree lawn or under sidewalk. The exception may be allowed when the following requirements are met:

1) potholing and exposing the pipe every 50 feet must occur when directional drilling is within 5 feet of the electric or gas pipe;
2) the use of pneumatic missiles must be in compliance with City Policy and may prohibit the use of pneumatic methods for installation of underground utilities in the right-of-way and public utility/improvement easements. If the City Policy does allow for the use of pneumatic methods to install underground utilities, then potholing and exposing the pipe every 25 feet is required when pneumatic missiles/moles are used within 5 feet of electric or gas pipe;
3) for bores less than 50 feet and within 5 feet of electric or gas pipe (regardless of trenchless technology used), a minimum of one pothole is required;

4) potholing and exposing electric or gas pipe where points of typical deviation may occur (e.g., hydrants, transformers, etc.) and;

5) compliance with all State and local excavation, boring, and damage prevention rules and regulations.

All other scenarios must comply with clearance requirements in Table 8. **If any one of the 5 listed requirements are not met, then per the Table 8, a 5-foot clearance is required.** In all cases, the high pressure gas main requires a 10-foot horizontal clearance with no exceptions. The horizontal clearance distance also applies to fiber appurtenances, to include boxes (boxes must be the required horizontal and vertical distance away from gas and electric and shall not be placed over electric or gas pipe.) Additional excavation requirements are listed in the GLESS Section 1.03.

[f] Clearances for stormwater facilities to other stormwater facilities are determined by the City of Colorado Springs. Refer to the City of Colorado Springs standards and regulations.

TABLE 9

JOINT TRENCH INSPECTION APPOINTMENT SCHEDULING & CANCELLATION CRITERIA

3 weeks to 4 business days prior to scheduled appointment date	3 business days prior to scheduled appointment date	2 business days prior to scheduled appointment date	1 business day prior to scheduled appointment date	Scheduled appointment date
Call any business day between 7:30 am and 2pm to schedule an appointment	Last day to call for appointment (between 7:30am and 2pm)			
Cancel anytime **No fee charged**	Cancel anytime and provide an alternate address **No fee charged**	Cancel anytime = incur **Step 2 fee** (25% of return trip fee)	Cancel anytime = incur **Step 3 fee** (50% of return trip fee)	Cancel anytime = incur **Full return trip fee charged**
	Cancel before 11:00 a.m., no alternate address = incur **Step 1 fee** (Cancellation fee - 10% of return trip fee)			
	Cancel after 11:00 a.m., no alternate address = incur **Step 2 fee** (25% of return trip fee)			

NOTES:

1. See 4.04c for Inclement Weather and Show Up Time explanation.

2. Once a licensed utility service installer schedules an address for a Joint Trench Service Line, Gas Only Service Line and/or an Electric Only Service Line Inspection and Tie-In appointment, the licensed utility service installer will only be allowed to move and/or reschedule that address appointment one time. At that point, it must be completed on the scheduled date and time or the appointment will "Fail" and incur a return trip fee.

TABLE 10

JOINT TRENCH INSPECTION CHECKLIST

Joint Service Inspection Checklist		
Number	**Inspection Area**	**Item**
1	Non Technical	• Installer is a “no-show”. Not at job site within 15 minutes of scheduled appointment time.
2		• Service not ready for inspection within 15 minutes of scheduled appointment time.
3		• No visible address at inspection location.
4		• Service location not marked on foundation.
5		• Installer does not have valid Utility Installer license on person.
6		• Installer not licensed.
7		• Installer’s license suspended.
8		• Installer’s license revoked.
9	Trench	• No trench.
10		• Trench obstructed.
11		• Trench caved in.
12		• Trench not proper width.
13		• Trench not proper depth.
14		• Improper separation between trench and other utilities and/or structures.
15		• Improper clearance between spoil pile and trench.
16		• Required shoring and/or sloping not present for trenches 4’ or deeper.
17	Bell Hole	• No bell hole.
18		• Improper bell hole size.
19		• Bottom of bell hole not level.
20		• Required shoring and/or sloping not present at bell hole.
21		• Bell hole not proper depth below polyethylene or steel gas stub.
22		• Improper clearance between spoil pile and bell hole.
23	Padding	• No padding.
24		• Unapproved padding material.
25		• Improper padding depth.
26	Backfill	• Backfill contains foreign material.
27		• Service not covered with at least 12” of padding / backfill.
28	Gas Pipe	• No gas pipe.
29		• Unapproved pipe material.
30		• Gas service line not sized for BTU load as specified.
31		• Labels or identification on pipe/fitting not clear and visible.

Joint Service Inspection Checklist		
Number	**Inspection Area**	**Item**
32		• Damage to pipe wall is greater than 10% of wall thickness.
33		• Kink in polyethylene pipe.
34		• Improper snaking of pipe in trench.
35		• Improper placement of gas pipe in a joint service trench.
36		• Improper separation between gas service and electric conductor.
37		• Improper separation between pipe and other utilities or structures.
38		• Polyethylene pipe is out of date.
39		• Gas service line installed at property that does not have a main and stub.
40		• Polyethylene pipe not extended to stub as per specifications.
41		• Stub not exposed for fusion as per spec.
42		• Inadequate amount of stub exposed behind squeeze mark, damage, etc.
43	Fusions	• Improper fusion.
44		• Unapproved connection.
45	Tracer Wire	• No tracer wire.
46		• Unapproved tracer wire.
47		• Improper gauge of tracer wire.
48		• Tracer wire not taped properly or adequately.
49		• Tracer wire not secured properly to riser.
50		• Tracer wire spliced at location other than tie-in point.
51		• Tracer wire not full length of service.
52		• Coating damage to wire.
53		• Unapproved tracer wire splice.
54		• Split bolt connection not wrapped properly.
55		• Tracer wire wrapped around gas service.
56	Pressure Test	• No gauge installed.
57		• Over-pressurization of line.
58		• Under-pressurized line.
59		• Falsifying air pressure test.
60	Riser Bracket	• No riser bracket.
61		• Unapproved riser bracket.
62		• Unapproved attachment method (riser bracket to foundation).
63		• Riser bracket not straight and level.
64		• Riser bracket not securely attached to foundation.

Joint Service Inspection Checklist		
Number	**Inspection Area**	**Item**
65	Riser	• No riser.
66		• Unapproved riser.
67		• Riser not straight and level.
68		• Riser not at specified height.
69		• Distance between riser and openings into building not per spec.
70		• Improper riser clearance from foundation.
71		• Riser unable to be used.
72	Electric Conductor.	• No electric conductor.
73		• Unapproved electric conductor.
74		• Electric conductor not adequately sized for load.
75		• Electric conductor damaged.
76		• Electric conductor too short.
77		• Improper separation between electric conductor and gas service.
78		• Wrong size of electric cable; cable must match what is stubbed into the lot (size and number), but the wire must be no smaller than 4/0.
79		• Splice present in service line run.
80	Conduit	• Required conduit not installed.
81		• Conduit too short.
82		• Conduit not proper size.
83		• Conduit not proper type.
84		• Pull string not installed through conduit.
85		• Pull string not proper strength.

TABLE 11

MINIMUM & MAXIMUM COVER FOR NATURAL GAS LINES

Colorado Springs Utilities requires for new development a minimum cover to protect our facilities from anticipated external loads, and requires a maximum cover for reasonable access to these facilities for future maintenance. Colorado Springs Utilities may specify when more/less cover is needed according to DOT code or operations and maintenance requirements.

NATURAL GAS LINE TYPE	MINIMUM COVER	MAXIMUM COVER
Gas Service Line	24	48
Gas Main with Pressure ≤ 76 psig	30	48
Gas Main with Pressure > 76 psig (High-Pressure Distribution System)	48	72

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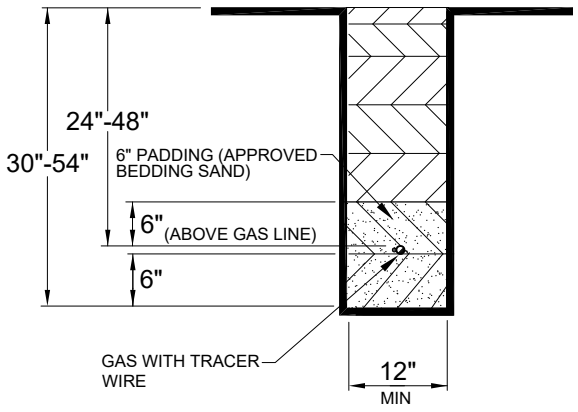
APPPENDIX D
Figures

FIGURE 1
COLORADO SPRINGS UTILITIES OWNED TRENCH DIAGRAMS

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)

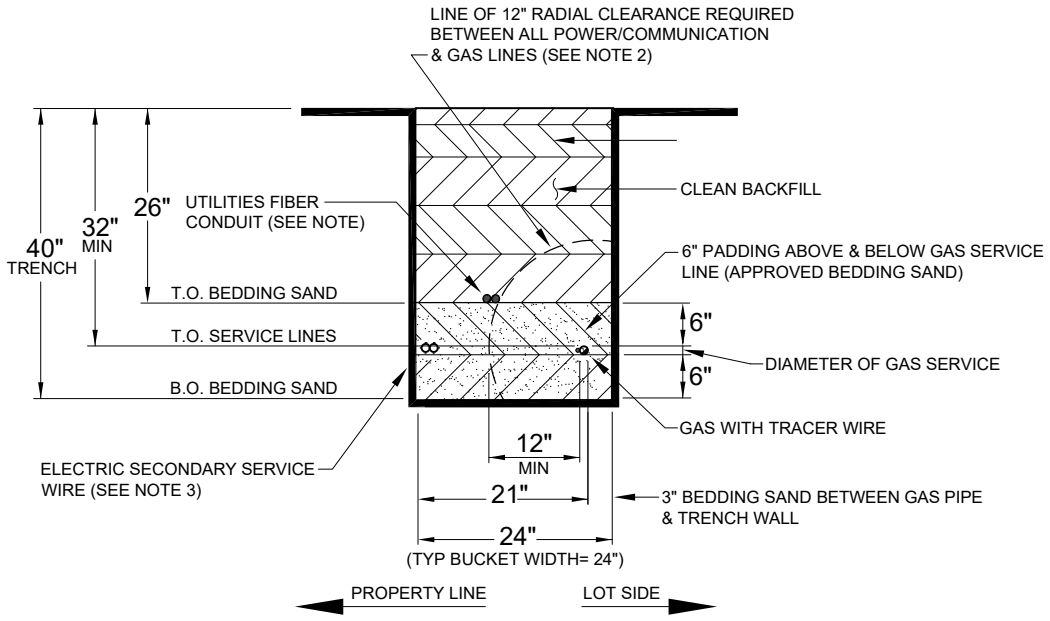
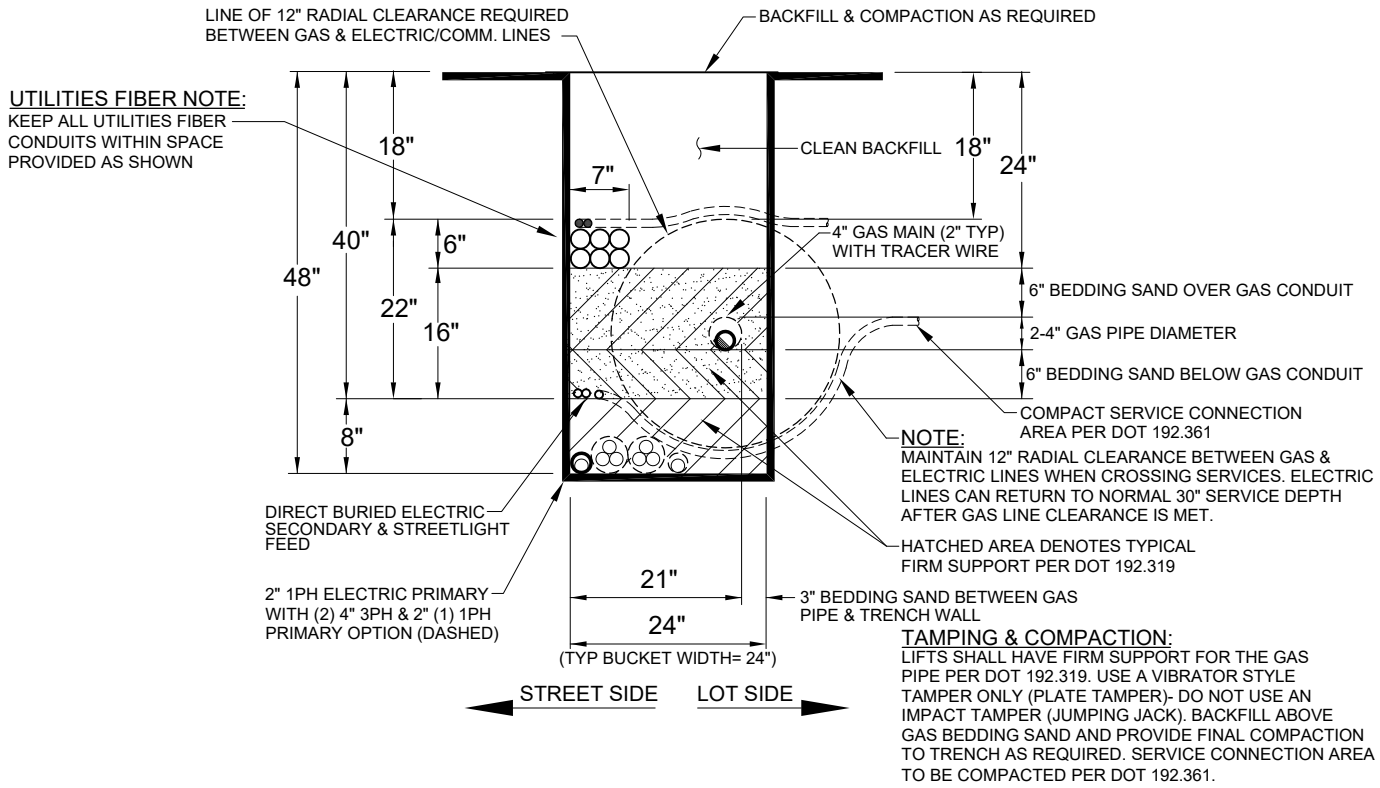


FIGURE 1
COLORADO SPRINGS UTILITIES OWNED TRENCH DIAGRAMS

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



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 Utilities' Fiber, Colorado Springs Utilities 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.

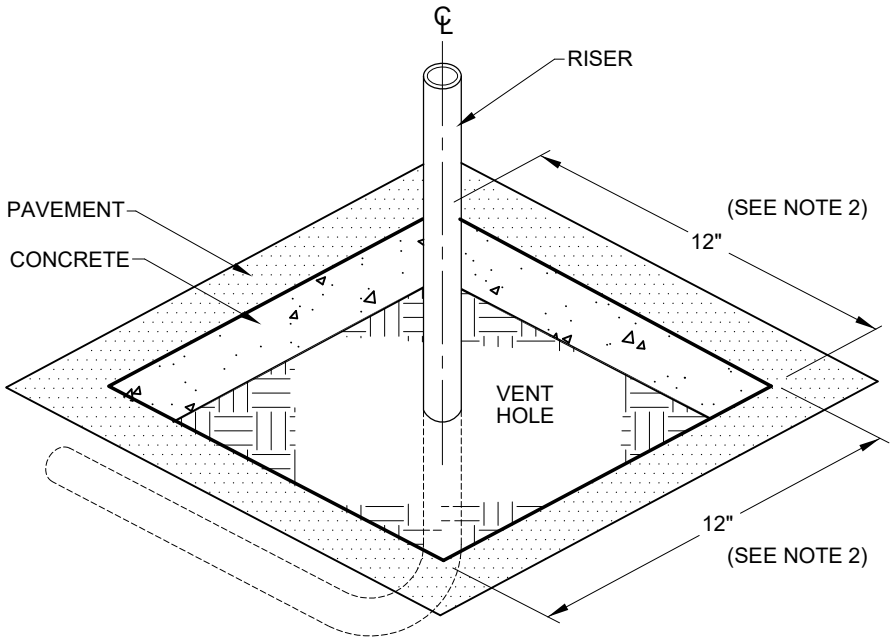
4. Residential joint trenching shall only be allowed when in both the Colorado Springs Utilities electric and gas service territory.

5. Commercial service installations are not to be joint trenched unless with approval of Colorado Springs Utilities.

6. Gas only projects are required to be in the roadway and not behind curb.

7. Backfill and compaction occurring with gas main, vaults, and service installation and construction in public streets, city property and rights-of-way shall meet City Engineering Public Works specifications.

FIGURE 2
RISER VENTING THROUGH ASPHALT & CONCRETE



NOTES:
1. The top 6" of vent hole must be filled with dirt, loose gravel or rock to final grade.
2. If the gas meter has been installed before the asphalt or concrete a Field Service Inspector will perform a follow up inspection to verify the 12” x 12” vent hole. As field conditions allow and with Colorado Springs Utilities approval, this can be reduced to a 6" x 6" vent hole with the possible addition of a 4" sleeve or
   larger around the riser. If the vent hole has not been installed Field Service reserves the right to lock off and/or remove the gas meter until the vent hole is cut into the finished surface.
3. Vent hole is for gas service riser only, and not to be used as a drain or any other application.

FIGURE 3
MOBILE HOMES

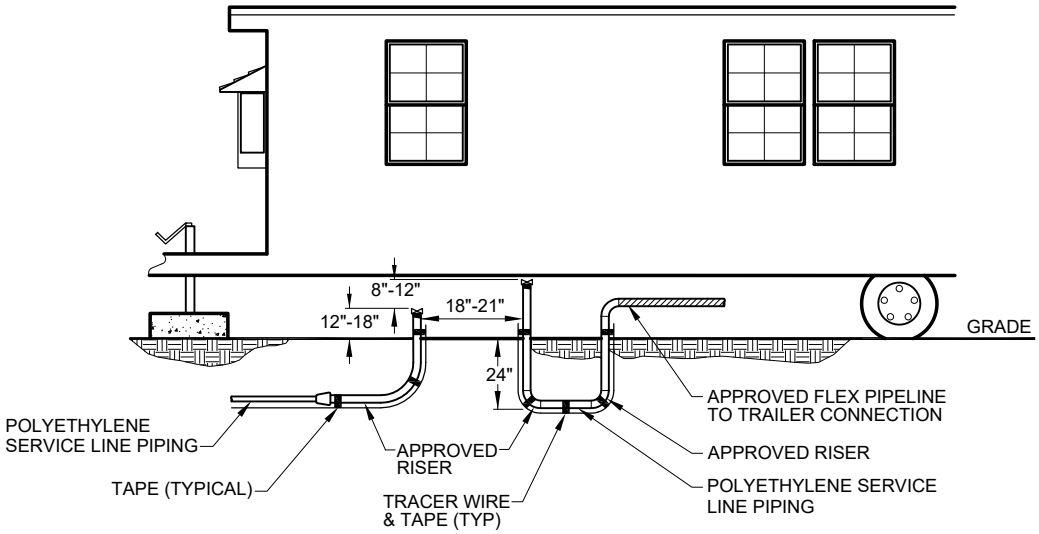
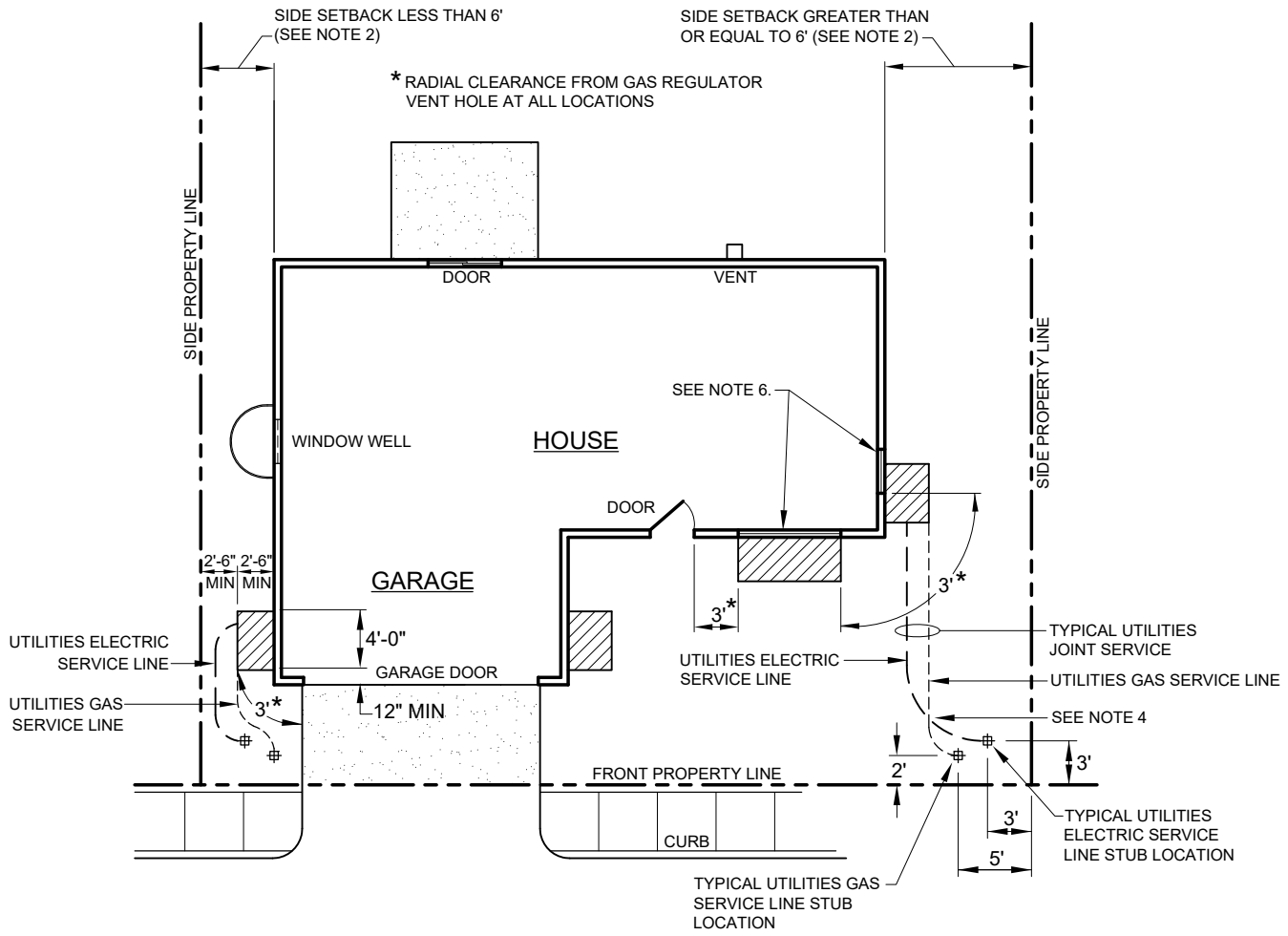


FIGURE 4
UTILITY LOT LAYOUT

FIGURE 4A
COLORADO SPRINGS UTILITIES OWNED JOINT/ SEPARATE TRENCH GAS UTILITIES LOT LAYOUT



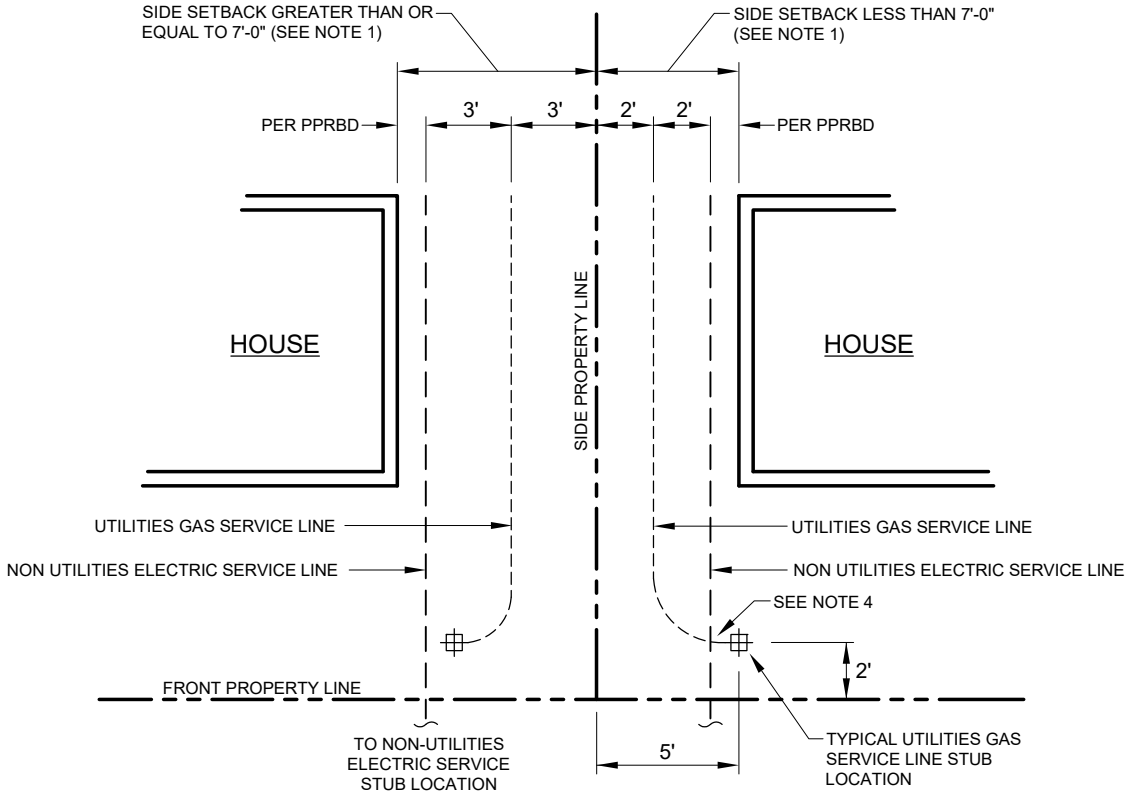
GAS METER LOCATION  Gas meter location at front wall or front side wall at 1' minimum and 5' maximum from front corner of building.

NOTES:

1. Residential natural gas meters shall be located 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. It is preferred, but not mandatory, to have both the natural gas and electric meters located on the same side of the structure.
2. Minimum 2'-6" 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). Side setbacks greater than or equal to 6 feet will require the typical 3'-0" horizontal separation. Separation clearances at the structure are measured from walls or projections such as foundations, window wells, etc.
3. Typical window well sizes may encroach into the required gas service line clearance space and prohibit installation of the gas service line past that point. The electric service wire may be able to pass by the window well as long as there is the required 12" clearance from the electric service wire to both the window well and the property line.
4. 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.
5. See Figure 4B for Non-Colorado Springs Utilities Lot Layout .
6. Operable window requires 3' radial separation from gas regulator vent hole. Non-operable window is required if located within 3' of gas regulator vent hole (typical).
7. See Figure 9A, 9C and notes for additional requirements regarding meter location.
8. All meters on town homes and single family residential buildings shall be easily accessible for maintenance with no enclosures or fencing.

FIGURE 4
UTILITY LOT LAYOUT

FIGURE 4B
NON-COLORADO SPRINGS UTILITIES OWNED ELECTRIC UTILITY LOT LAYOUT
(WHEN IN COLORADO SPRINGS UTILITIES NATURAL GAS TERRITORY)



NOTES:

1. For Non-Colorado Springs Utilities service lines (electric or gas) being installed in separate trenches, maintain 3 feet minimum horizontal separation between service lines where the distance between side property line and building is 7 feet or greater. Where and when residential structures are built on a 7 feet or less setback from the side property line (distance of 7 feet or less between side wall of the structure and side property line), reduced clearances shall be allowed as shown in Figure 4B above. For these reduced clearances, maintain 2 feet minimum horizontal separation between gas and electric (or other utility) service line conduit, 2 feet minimum horizontal clearance between gas service line and the building, and 2 feet minimum horizontal clearance between gas service line and the property line. The minimum horizontal separation from electric service line conduit and building and/or property line shall be per Pikes Peak Regional Building Department (PPRBD).
2. Non Colorado Springs Utilities electric service wire shall be installed in a grey electrical rated conduit, which has a minimum diameter of 2" and be either schedule 40 or 80, in all areas where this electric service line has less than 3 feet of horizontal separation from the Colorado Springs Utilities gas service line. This electric conduit shall be placed in the ditch and be ready to be inspected by Colorado Springs Utilities personnel at the same time the gas service line has been scheduled for an inspection and tie-in, so that all clearances and the size and type of conduit can be verified, and its installation approved.
3. 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.
4. 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.

FIGURE 5
SERVICE RISER LOCATION DETAILS

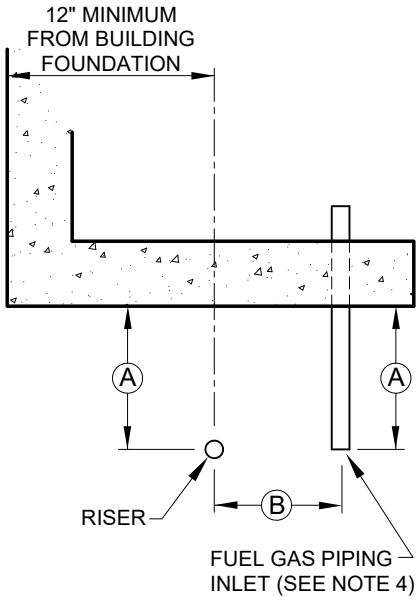


FIGURE 5A
TOP VIEW

TYPICAL 3/4" TO 2" IPS POLYETHYLENE

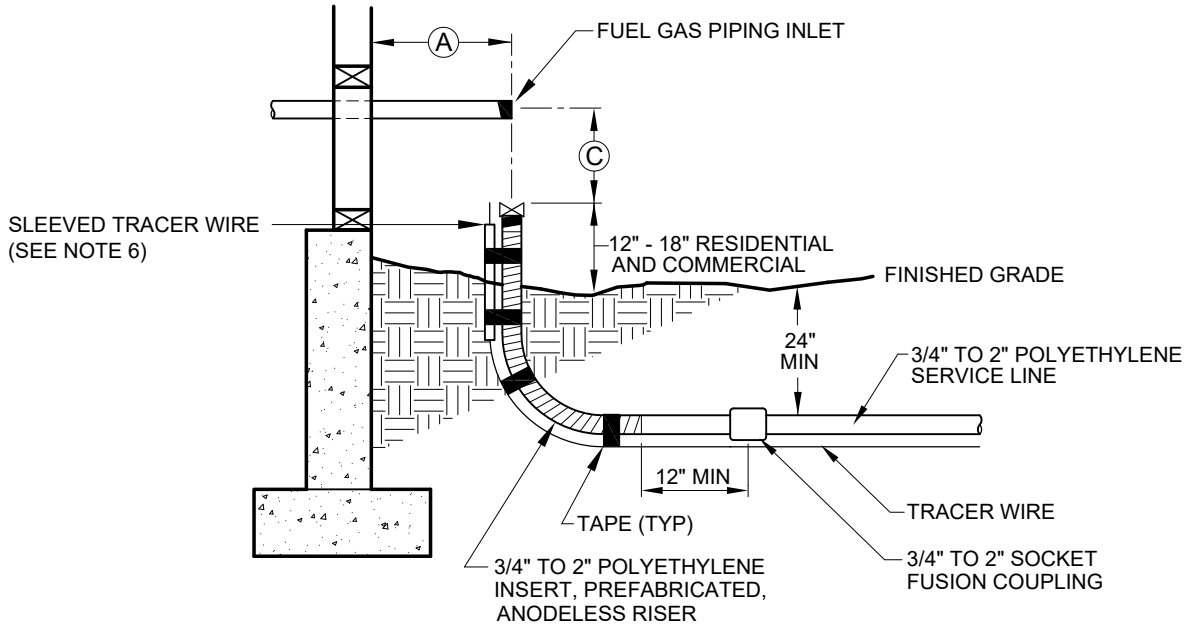


FIGURE 5B
SIDE VIEW

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 LUSIs to use 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.
6. Tracer wire in 1/2IN PE sleeve will extend 6IN below finished grade to the maximum buried depth marked on the riser. The sleeve will be taped to the riser.

FIGURE 5
SERVICE RISER DETAIL

FABRICATED STEEL RISER

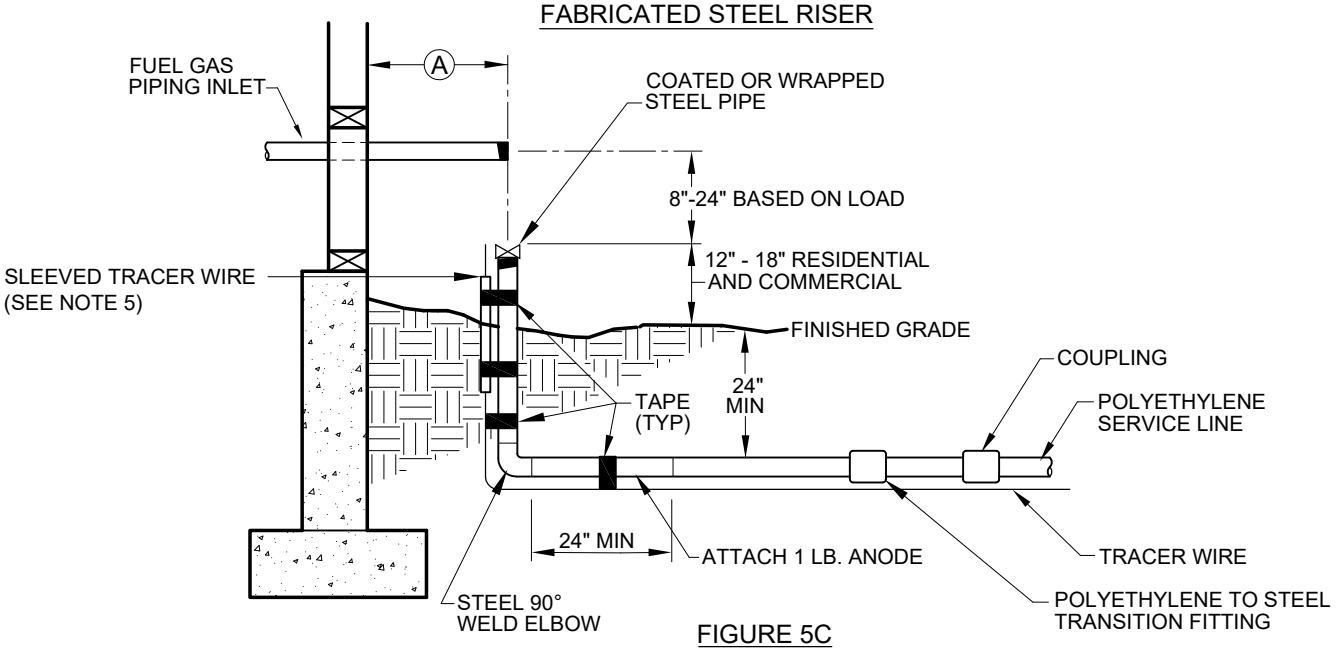


FIGURE 5C
SIDE VIEW

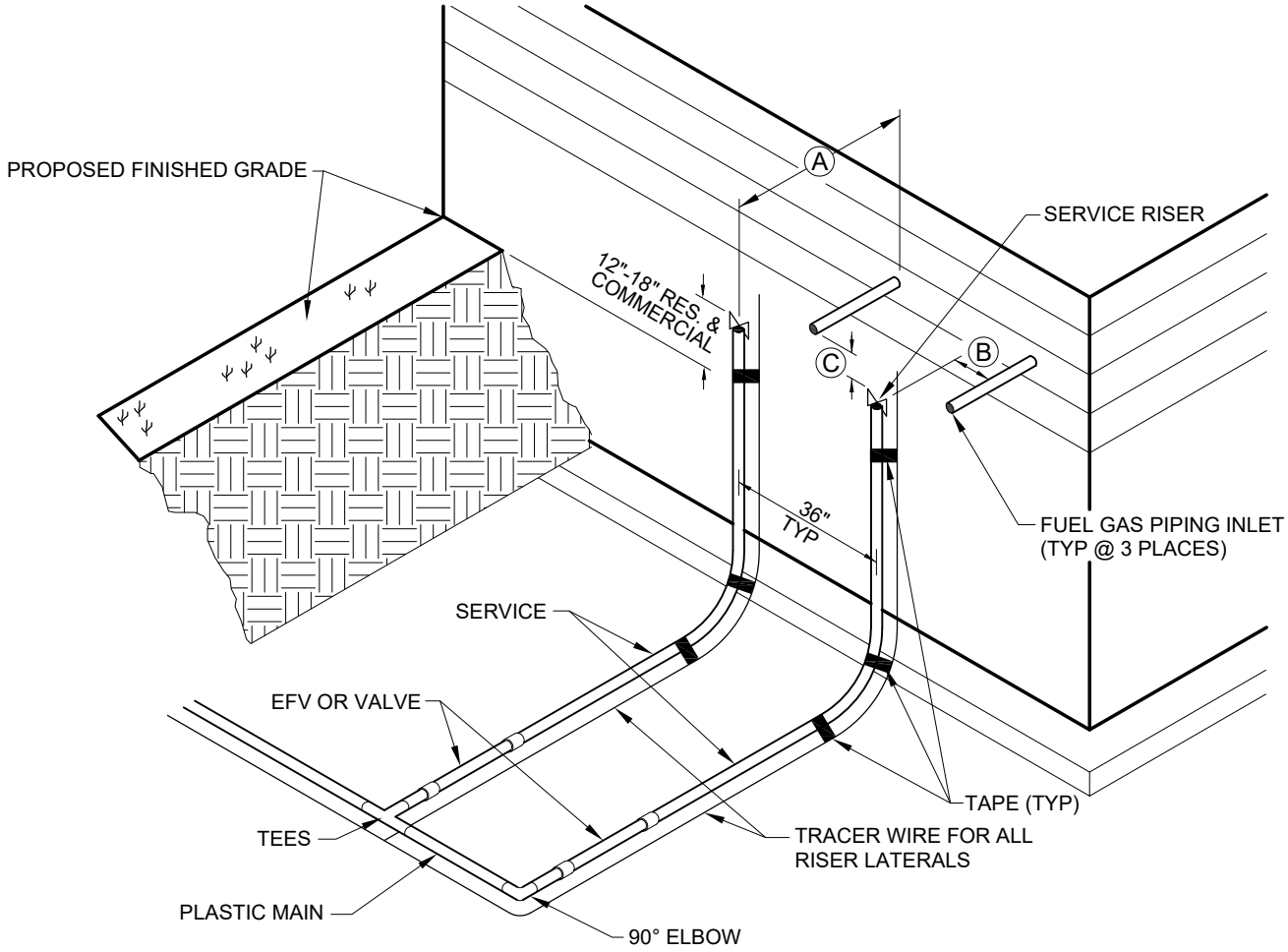
NOTES:

1. Install 1 lb. of magnesium anode to riser for all steel welded risers.
2. Service Riser and Transition Fitting should be supported on well compacted soil.
3. All uncoated portions of the riser, below existing grade, are to be wrapped with primerless tapecoat in accordance with Figure 11.
4. See Figure 6 for A dimensions.
5. Tracer wire in 1/2IN PE sleeve will extend 6IN below finished grade to the maximum buried depth marked on the riser. The sleeve will be taped to the riser.
6. Commercial uses may include a bypass valve.

FIGURE 6

BELOW GROUND MULTIPLE PARALLEL SERVICES

(3/4"-2" IPS POLYETHYLENE)



DEPTH OF ENTIRE ASSEMBLY SHALL BE 24" MINIMUM

NOTES:

1. IPS Polyethylene insert riser required for sizes 3/4" to 2".
2. After backfilling, the above ground portion of each riser shall be vertical.
3. Install the tracer wire along all risers.

TOTAL CONNECTED LOAD (BTU/HR)	(A) END OF FUEL GAS PIPING & HORIZONTAL DISTANCE FROM RISER TO BUILDING WALL	(B) HORIZONTAL DISTANCE FROM RISER TO FUEL GAS PIPING INLET	(C) VERTICAL DISTANCE FROM RISER TO FUEL GAS PIPING INLET
0-910,000	16"- 18"	24"- 28"	15"- 24"
910,001-1,400,000*	16"- 18"	3'	15"- 24"
1,400,001-3,000,000*	16"- 18" (*19"- 21")	6'	15"- 24"
3,000,001-10,000,000*	18"- 20" (*21"- 23")	**	15"- 24"
GREATER THAN 10,000,000**	TO BE SPECIFIED BY FIELD ENGINEERING		

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

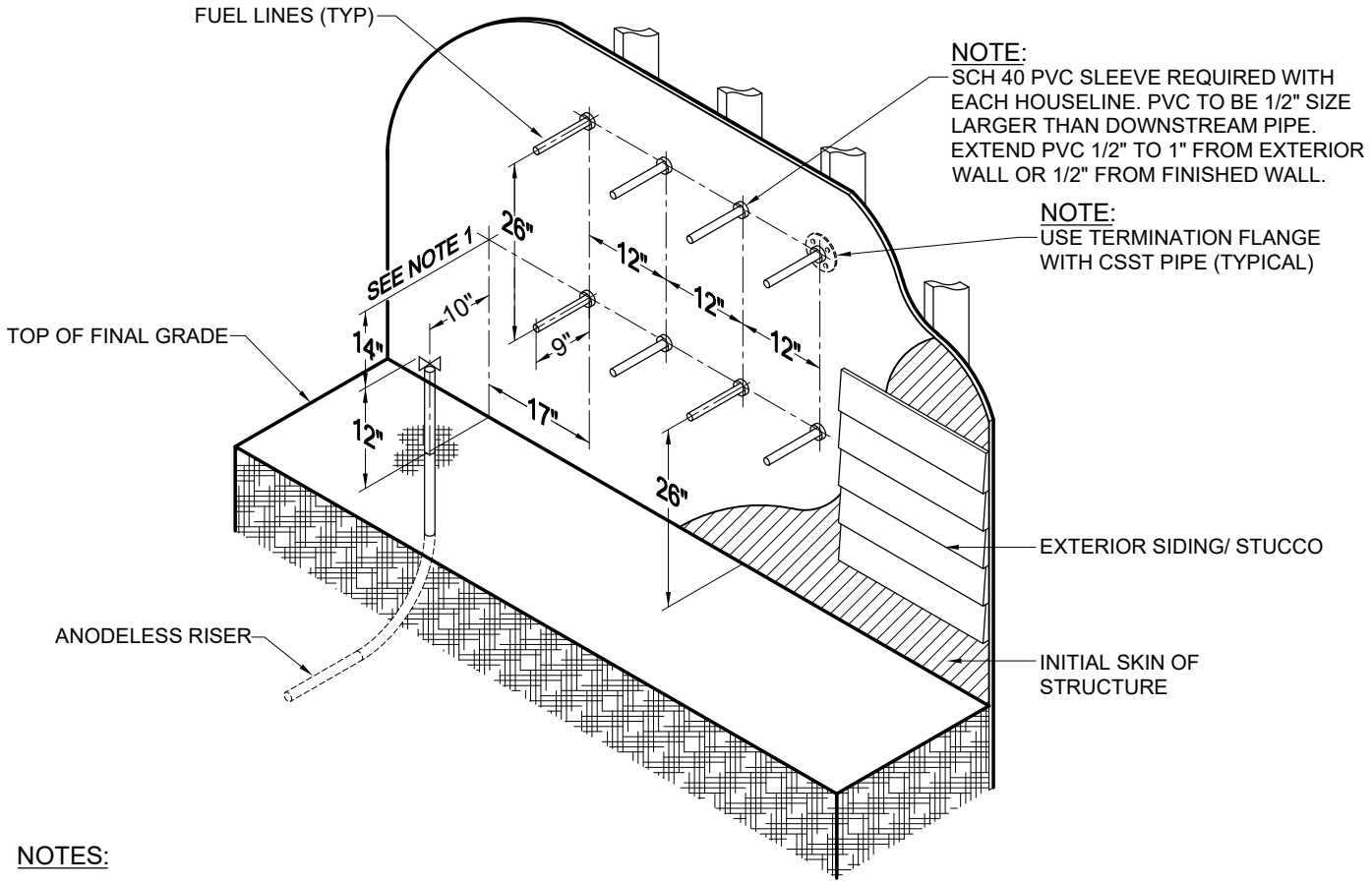
* 1,400,001 BTU/HR and larger require a concrete meter pad. Dimension "A" requires additional 3" clearance.

** Contact Colorado Springs Utilities Field Service Department/ New Construction (719-668-7350).

*** For core and shell buildings, where load is unknown, all risers shall be 36" apart and horizontal distance from riser to fuel gas piping inlet shall be 30".

FIGURE 7

ABOVE GROUND MULTIPLE METER MANIFOLD
FUEL LINE/RISER CONFIGURATION
RESIDENTIAL ONLY (NO COMMERCIAL)



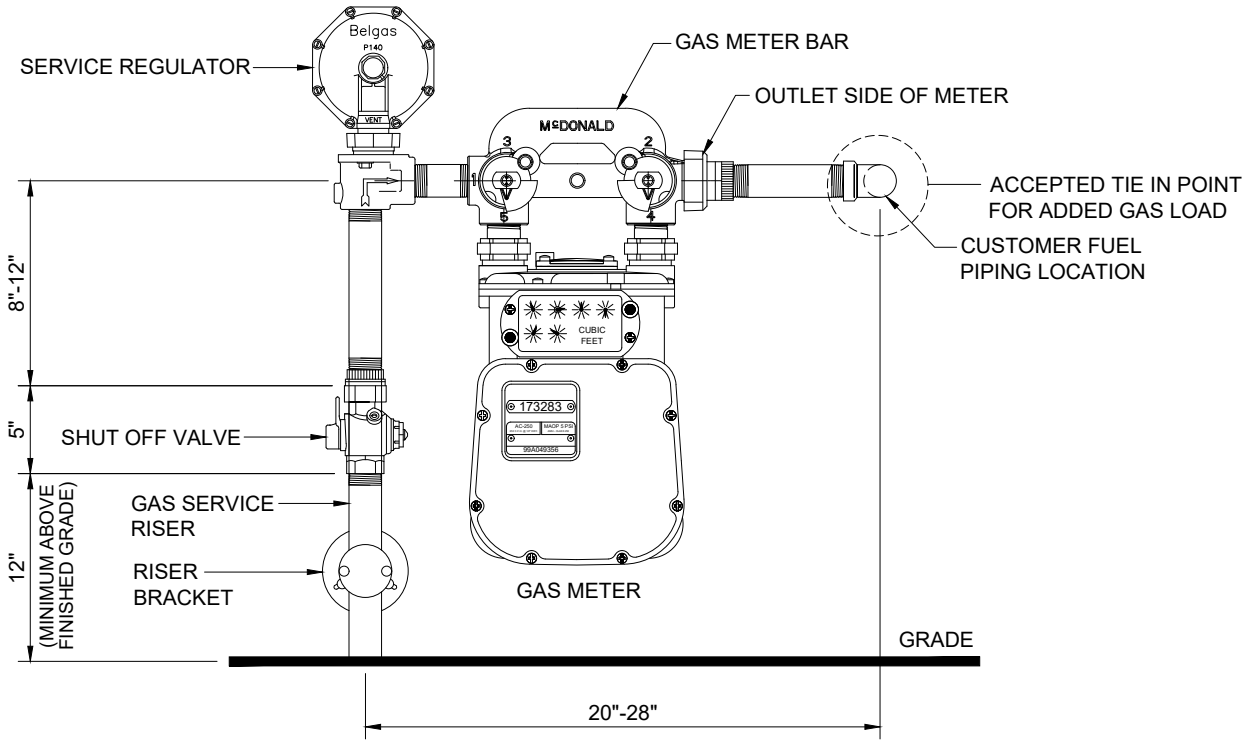
NOTES:

1. FUEL LINES TO BE 14" ABOVE THE TOP OF VALVE BODY (TYPICAL)
2. Centerline of riser must be 10" from final exterior finish. For any questions on manifold design, service riser placement, or customer fuel piping measurements, please call 668-7350 for further instructions.
3. All fuel lines shall be 1" or 3/4" black iron threaded piping, depending on load of each unit, otherwise approved in writing by Colorado Springs Utilities Planning and Engineering Department, Field Engineering. Fuel lines shall extend 9" from the final finish of the structure. (Final finish shall mean the outside surface layer, such as stucco or other final exterior siding). Whenever corrugated stainless steel piping (CSST) is used as interior piping, black iron threaded piping and termination flange must be used for the portion of the fuel piping that extends through the structure wall.
4. Maximum number of meters is 24 (3 rows of 8).

POTENTIAL METER CONFIGURATION

FIGURE 8
TYPICAL METER SETS

FIGURE 8A
TYPICAL RESIDENTIAL METER SET
0 - 1,200,000 (BTU/HR)



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

METER LOOP SPECIFICATIONS:

APPLICATION: TOTAL CONNECTED LOAD OF 1,200,000 BTU/HR OR LESS

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

REQUIRED DISTANCE FROM FINISHED EXTERIOR WALL TO END OF CUSTOMER FUEL PIPING IS 1" SHORTER THAN CENTER OF RISER VALVE. MUST BE ONE CONTINUOUS PIPE WITH NO FITTINGS (I.E., COUPLINGS) *NOTE: AN ELBOW AND NIPPLE MAY BE ADDED TO ACHIEVE APPROVED VERTICAL SPREAD.

HORIZONTAL SPREAD: 20" - 28" (CENTER OF GAS RISER TO CENTER OF FUEL LINE)

VERTICAL SPREAD: 8" - 12" (TOP OF GAS RISER VALVE TO FUEL LINE INLET)
: 12" - 16" (VERTICAL SPREAD WITH 2" RISER)

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

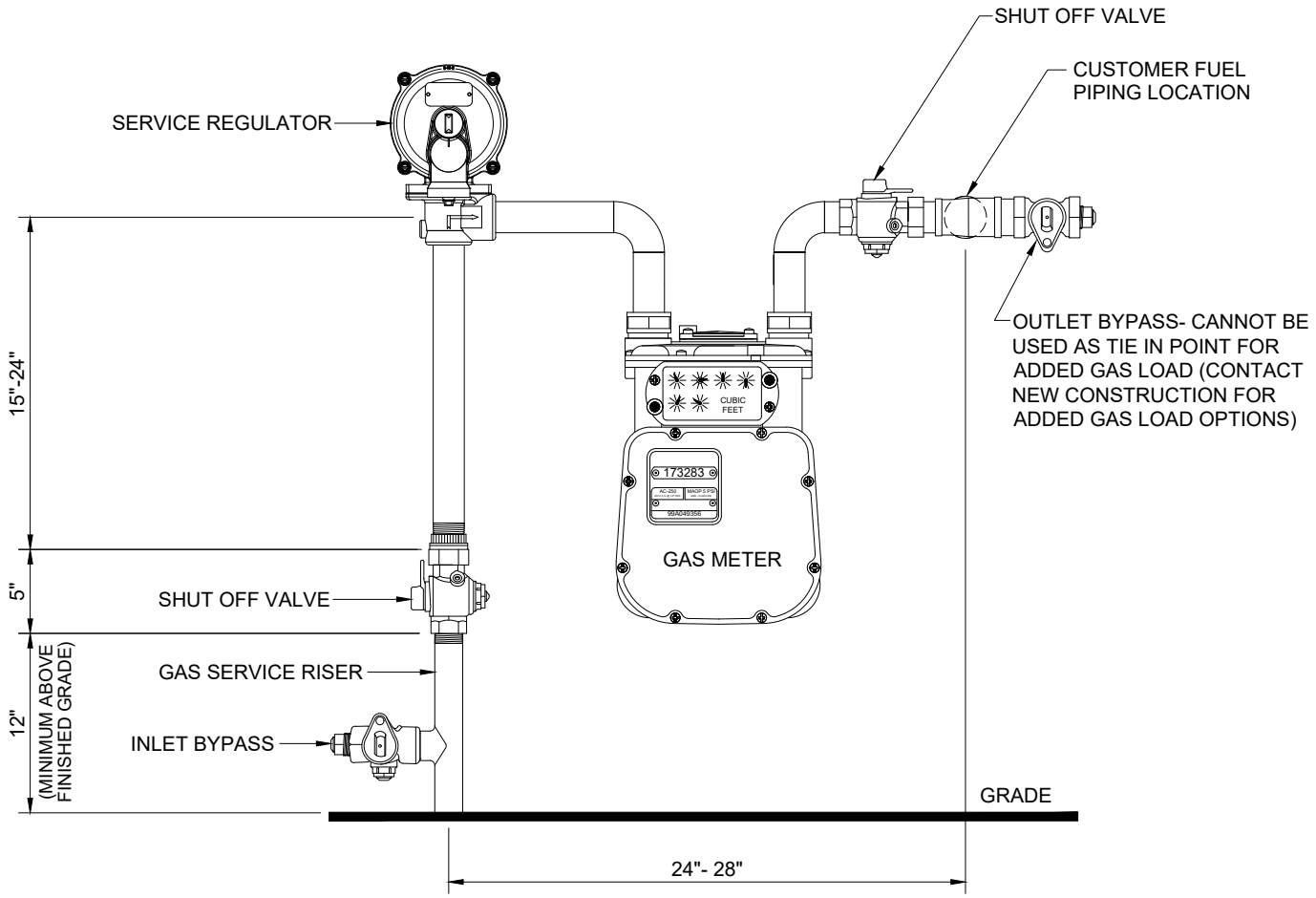
LOAD INCREASES IN WHICH THE TOTAL LOAD EXCEEDS 1,000,000 BTU CONTACT FIELD ENGINEERING FOR SERVICE LINE APPROVAL.

SEE CHAPTER 4 [4.05d)3)d)1)i)] FOR ADDITIONAL REQUIREMENTS WHEN METERS ARE LOCATED NEAR TRANSFORMERS AND GENERATORS.

NO MEGAPRESS FITTINGS WITHIN 5' OF THE TIE IN POINT TO THE HOUSELINE.

FIGURE 8B

TYPICAL COMMERCIAL METER SET
0 - 1,200,000 (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: 16" - 18" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

COMMERCIAL RISERS: 16" - 18" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

REQUIRED DISTANCE FROM FINISHED EXTERIOR WALL TO END OF CUSTOMER FUEL PIPING IS 1" SHORTER THAN CENTER OF RISER VALVE. 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: 15" - 24" (TOP OF GAS RISER VALVE TO FUEL LINE INLET)

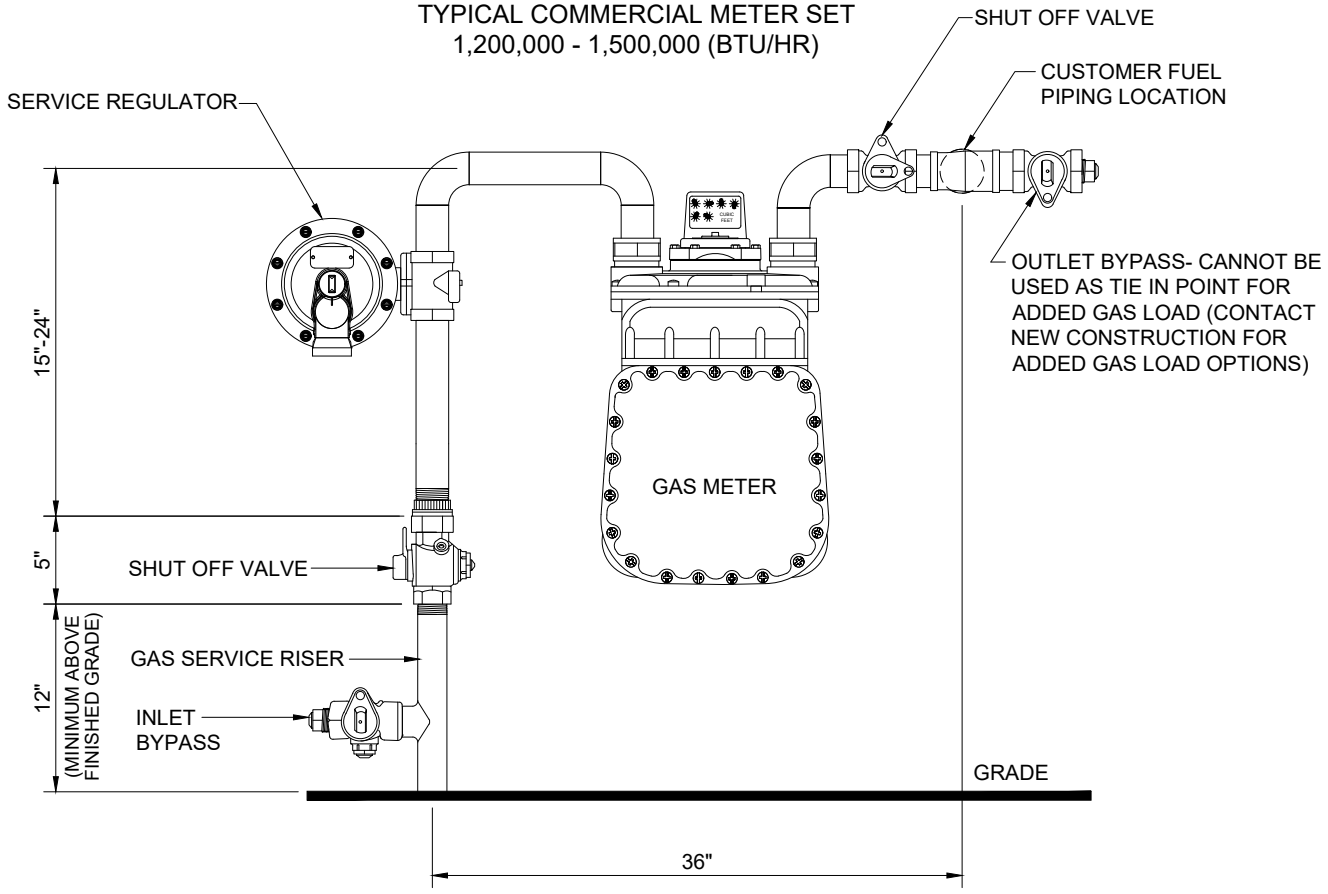
GAS RISER SHUT OFF VALVE: NEED TO BE A MINIMUM OF 12" FROM FINISHED GRADE

SEE CHAPTER 4 [4.05d)3)d)1)i)] FOR ADDITIONAL REQUIREMENTS WHEN METERS ARE LOCATED NEAR TRANSFORMERS AND GENERATORS.

NO MEGAPRESS FITTINGS WITHIN 5' OF THE TIE IN POINT TO THE HOUSELINE.

FIGURE 8C

TYPICAL COMMERCIAL METER SET
1,200,000 - 1,500,000 (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 1,200,000 - 1,500,000 BTU/HR OR LESS

GAS SERVICE RISER: 16" - 18" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

COMMERCIAL RISERS: 16" - 18" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

REQUIRED DISTANCE FROM FINISHED EXTERIOR WALL TO END OF CUSTOMER FUEL PIPING IS 1" SHORTER THAN CENTER OF RISER VALVE. MUST BE ONE CONTINUOUS PIPE WITH NO FITTINGS (I.E., COUPLINGS)

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

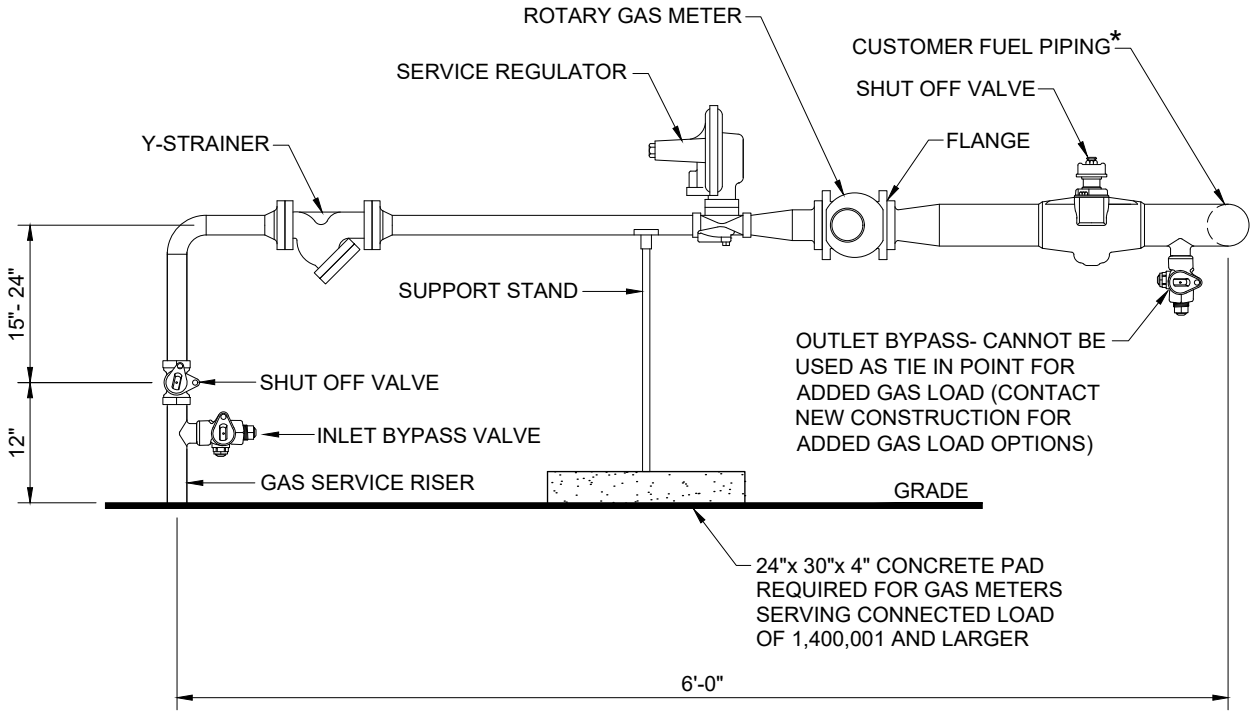
LOAD INCREASES IN WHICH THE TOTAL LOAD EXCEEDS 1,000,000 BTU CONTACT FIELD ENGINEERING FOR SERVICE LINE APPROVAL.

SEE CHAPTER 4 [4.05d)3)d)1)i)] FOR ADDITIONAL REQUIREMENTS WHEN METERS ARE LOCATED NEAR TRANSFORMERS AND GENERATORS.

NO MEGAPRESS FITTINGS WITHIN 5' OF THE TIE IN POINT TO THE HOUSELINE.

FIGURE 8D

TYPICAL COMMERCIAL METER SET
1,501,000 AND GREATER (BTU/HR)



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

METER LOOP SPECIFICATIONS:

APPLICATION: TOTAL CONNECTED LOAD OF 1,501,000 AND GREATER BTU/HR

GAS SERVICE RISER: 16" - 18" OUT FROM THE FINAL EXTERIOR FINISHED SURFACE

FUEL LINE STUB: EQUAL DISTANCE OUT FROM THE FINAL EXTERIOR FINISHED SURFACE AS RISER

HORIZONTAL SPREAD: 6' (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

CONFIGURATION: NORMAL (AS PICTURED ABOVE; GAS RISER LEFT OF GAS METER) OR VERTICAL (TOP INLET) ONLY. REVERSE LOOPS ARE PROHIBITED.

* SEE CHAPTER 4 [4.05d)3)d)1)i)] FOR ADDITIONAL REQUIREMENTS WHEN METERS ARE LOCATED NEAR TRANSFORMERS AND GENERATORS.

NOTES:

LOADS BETWEEN 1,400,001 AND 1,600,000, CONTACT COLORADO SPRINGS UTILITIES FIELD SERVICE DEPARTMENT NEW CONSTRUCTION AT (719) 668-7350 PRIOR TO HOUSE LINE INSTALLATION.

FIGURE 9
METER LOOP LOCATION & CLEARANCES

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

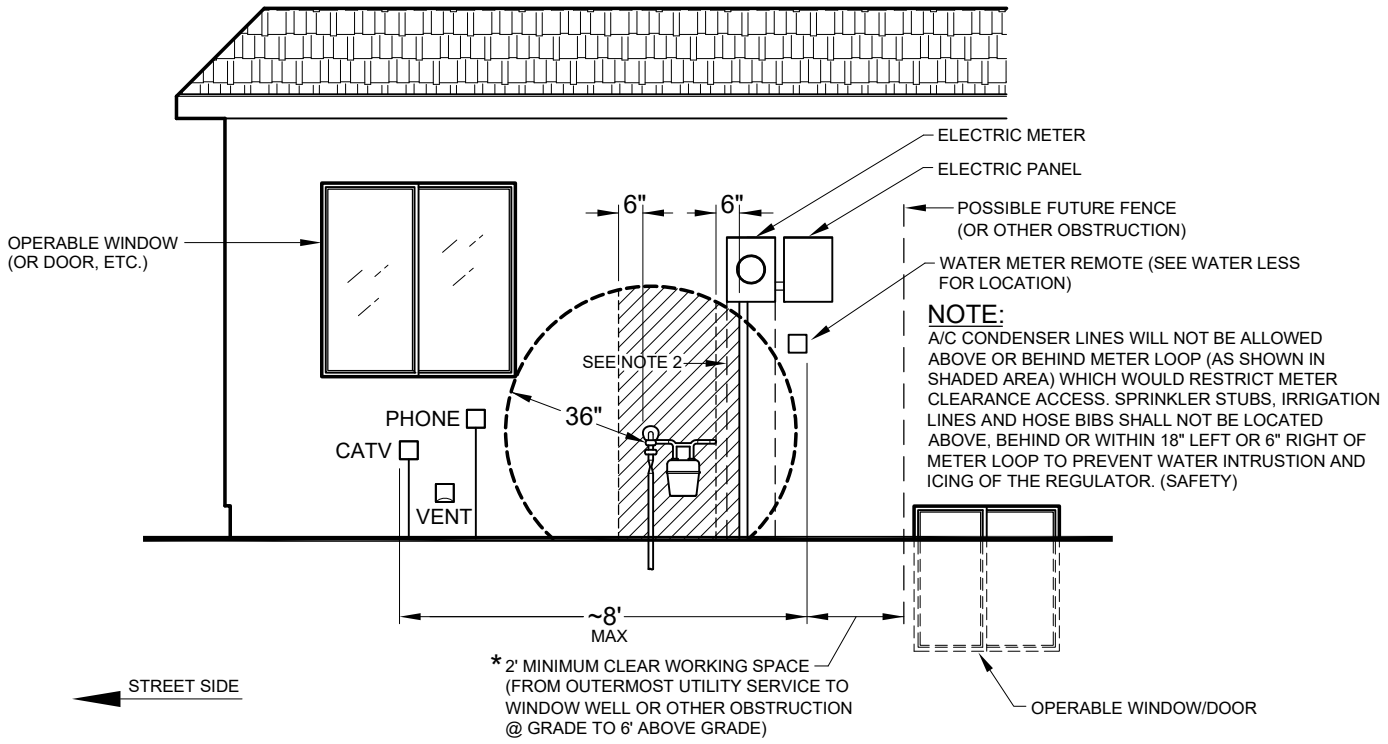
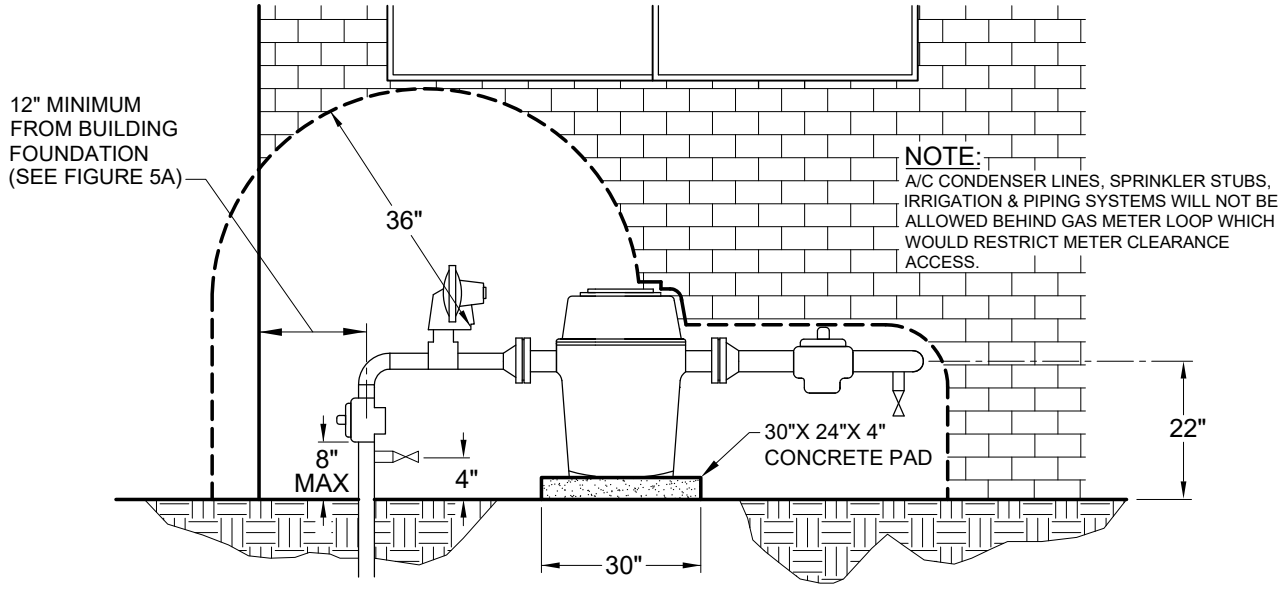


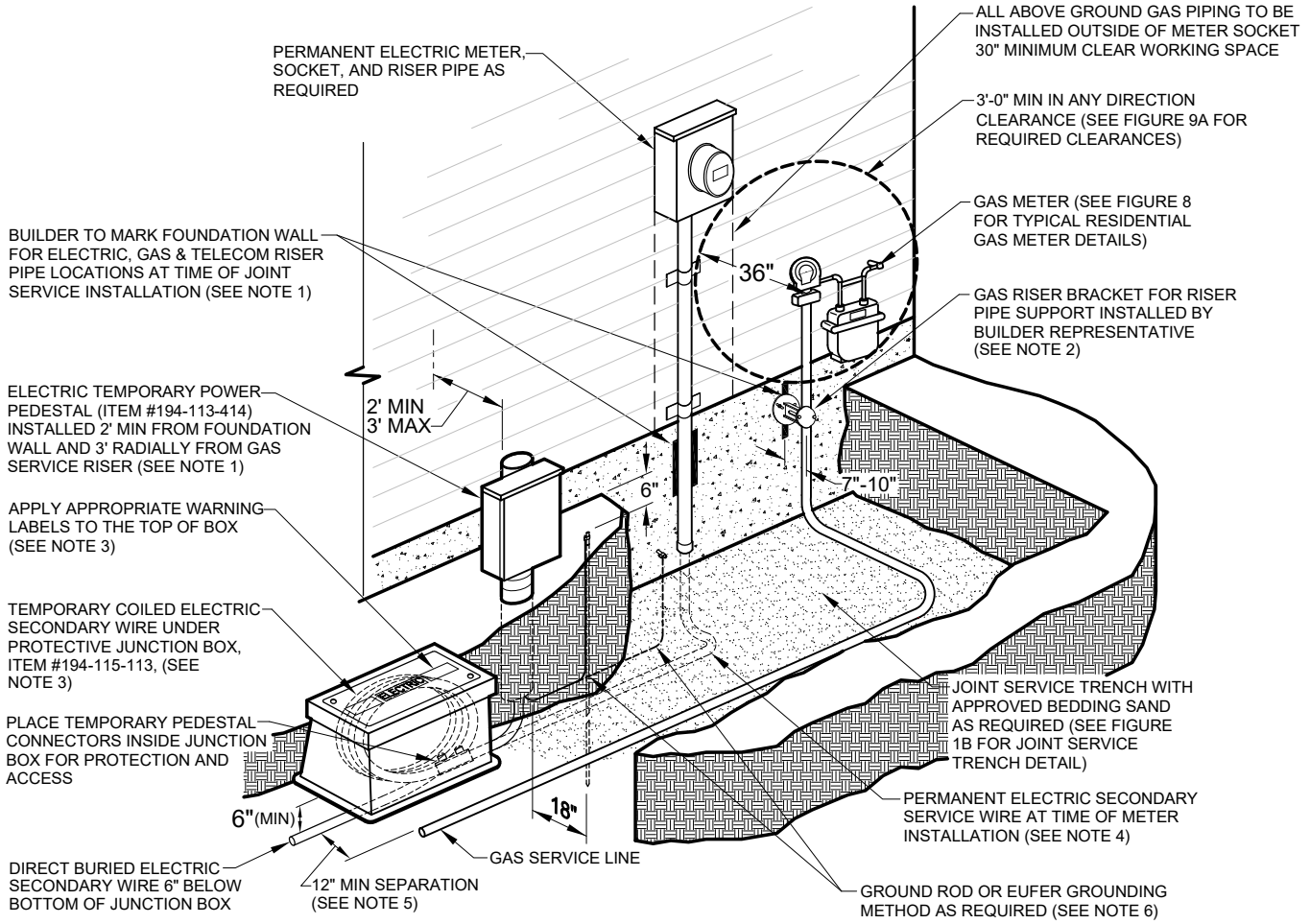
FIGURE 9B
TYPICAL COMMERCIAL METER LOCATION



NOTES:

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 Colorado Springs Utilities 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).
4. For generator separation distance to gas meter, see ELESS 18-227.
5. It is preferred that natural gas generators, in commercial applications, be installed with their own separate meter.

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

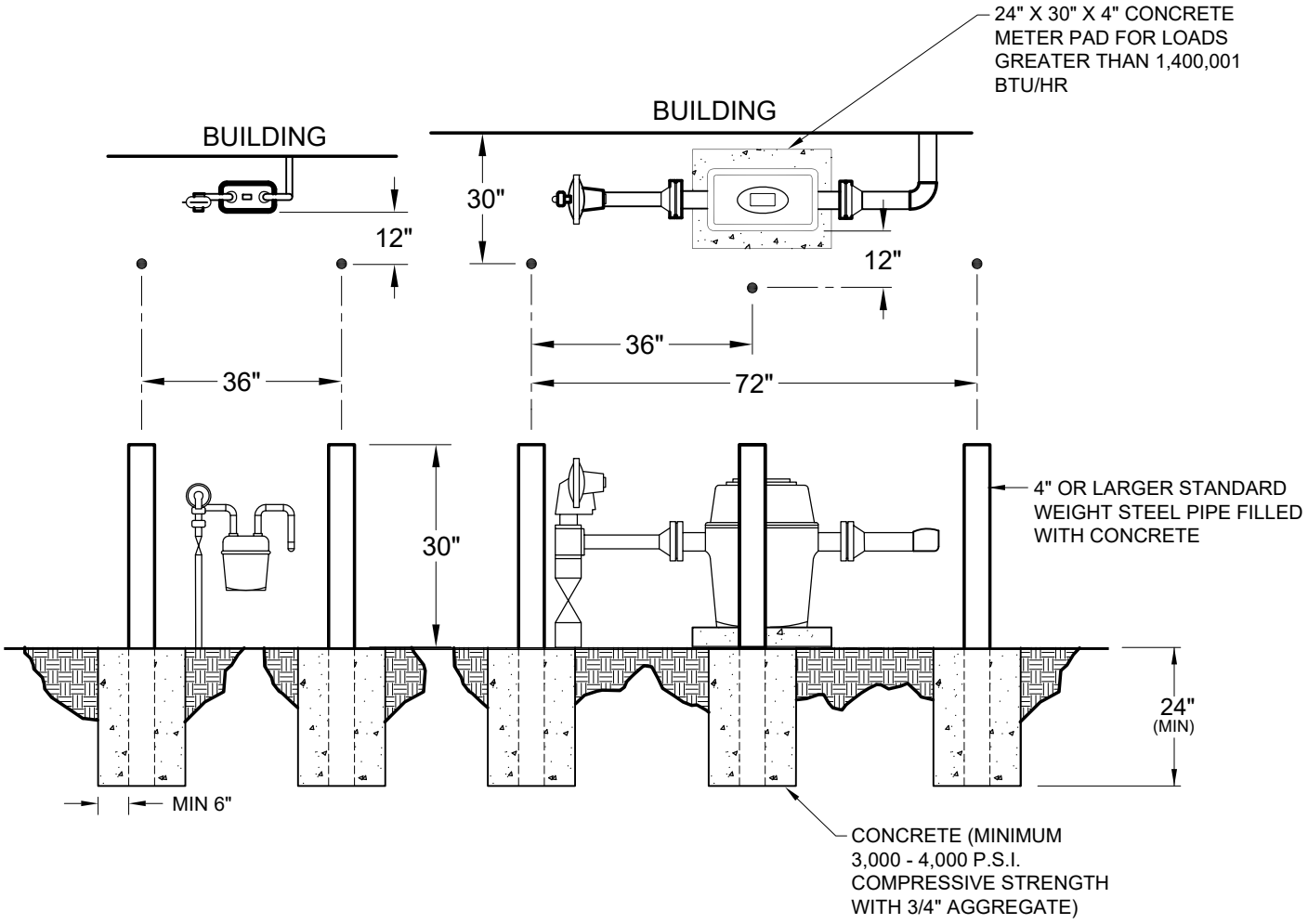


JOINT SERVICE TRENCH (GAS & ELECTRIC) RESIDENTIAL METER LOCATION

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. Builder's representative shall use the concrete anchor bolts (unless equal size and quality substitute is approved by the QC Inspector Supervisor) and materials included with the riser bracket for installation to the foundation. See Table 7 for riser bracket and riser pipe approved manufacturers.
3. Coil 15-20 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 Eufer grounding method as required.

FIGURE 10
METER PROTECTION



NOTE:

1. All guard posts (bollards) must be installed before meter is set.
2. If additional hazards arise in the future, Colorado Springs Utilities reserves the right to require additional meter protection at owner's expense.
3. See Figure 15

FIGURE 11
FIELD WRAPPING

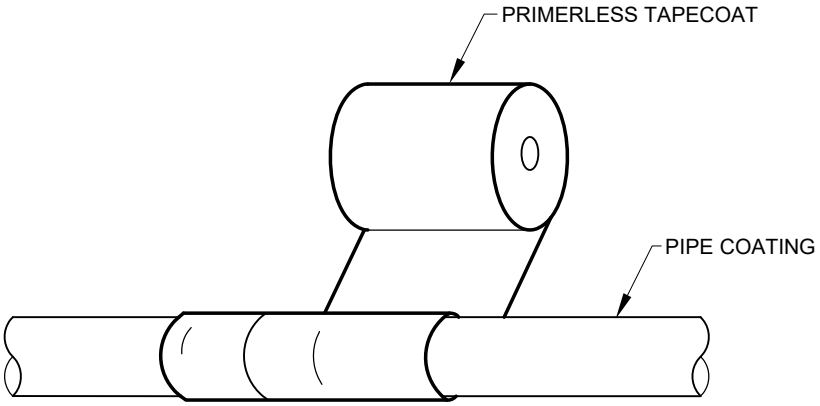
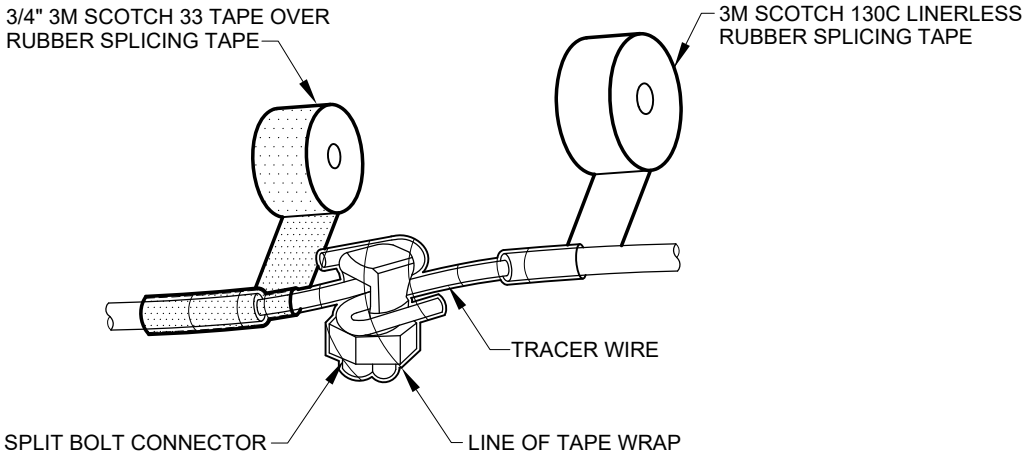


FIGURE-A



SPLIT BOLT TAPING

NOTES:

1. All welded joints, bare steel pipe, fittings or damaged portions of the pipe coating shall be wrapped as shown in Figure-A.

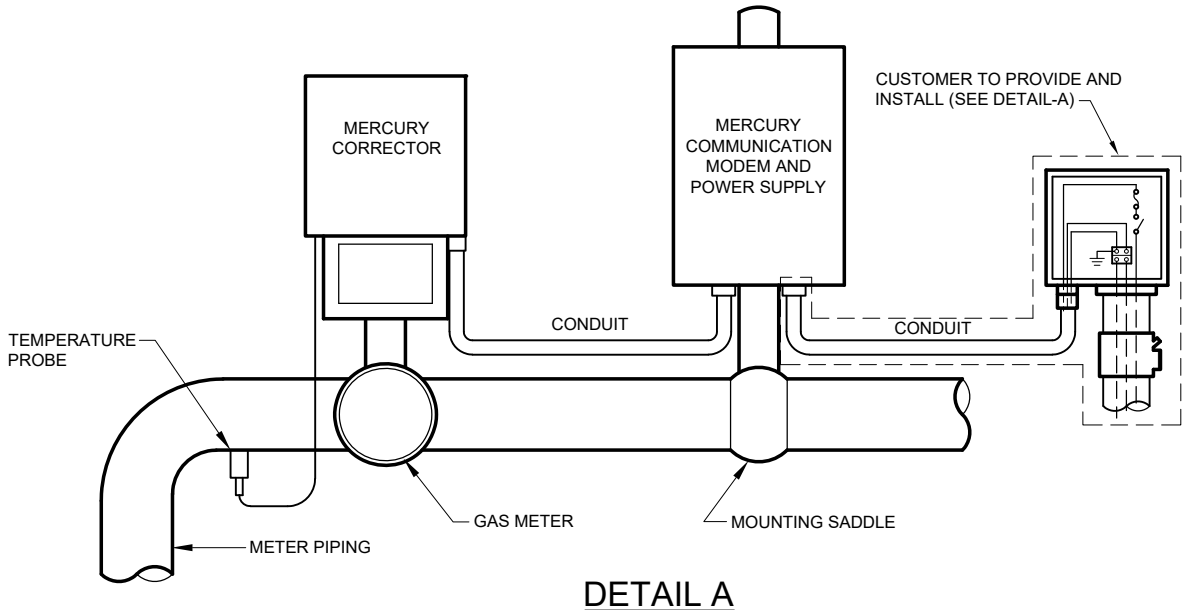
2. Trim any loose or disbonded coating from pipe. Remove dirt and moisture from pipe coating area where tape is to be applied.

3. Apply primerless tapecote a minimum of 2" beyond damaged portion of coating, bare pipe, fittings, wire connection or weld joint. Firmly apply tape.

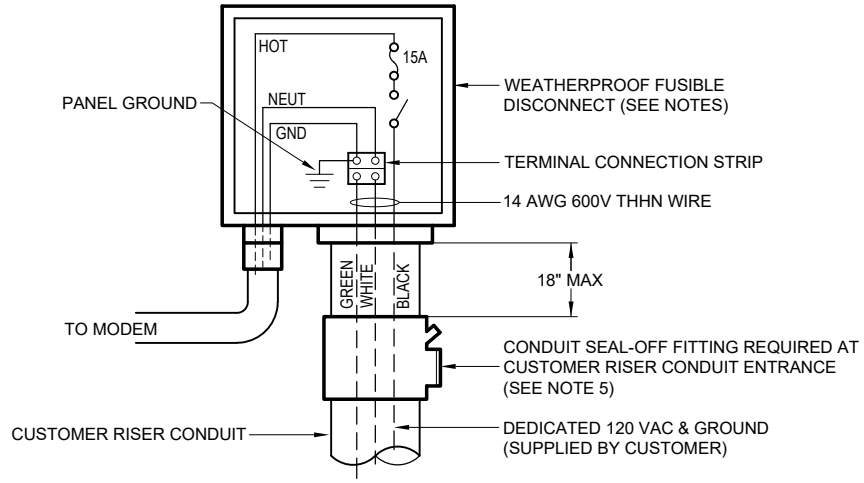
4. Wrap all Tracer Wire split bolt connectors using 3/4" 3M Scotch 130C linerless rubber splicing tape, with 3/4" Scotch 33 tape over. Extend wrap 2" on both sides of connector.

5. Wrap tape around tracer wire and service line a minimum of 3 wraps every 8' to 10' of service line and riser.

FIGURE 12
MERCURY CORRECTOR & COMMUNICATION MODEM



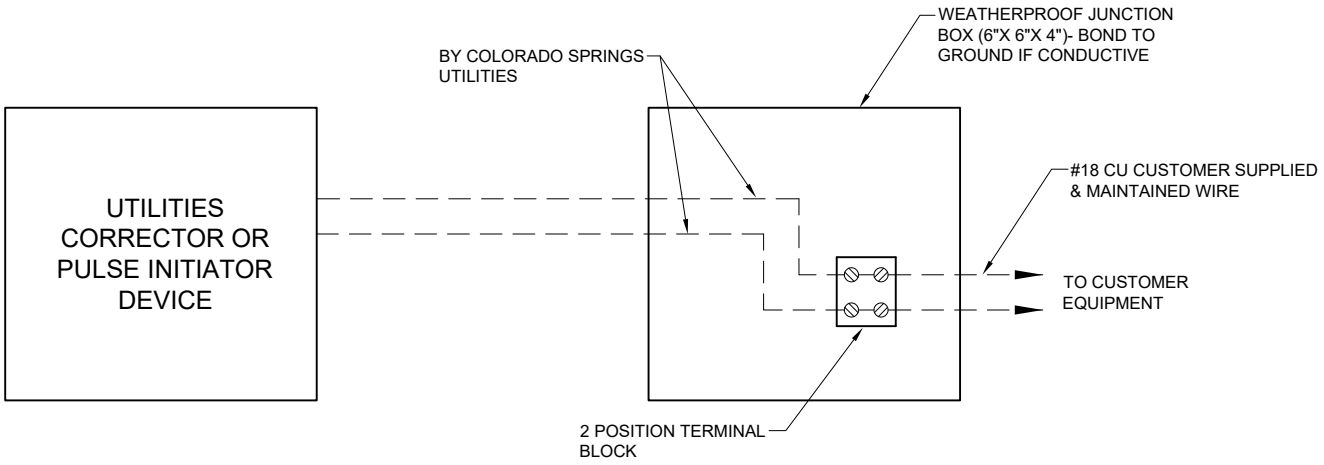
DETAIL A
TYPICAL WIRING DIAGRAM



NOTES:

1. The Mercury Corrector and Communication Modem monitors and adjusts pressure and temperature on customer natural gas lines, and communicates this information to the MV90 system.
2. Any gas meter installation which requires a compensation instrument and associated communication device for a specific gas tariff the customer will be required at their cost to provide a dedicated 120V electric circuit to the gas metering facility. Connections of the 120V circuit to Utilities' equipment will also be provided at the customers cost, per URR Natural Gas 28, Sheet 52.
3. All 120V electrical wiring requirements/activities and permitting shall be the responsibility of the customer, to include termination at the Mercury Communications Modem & Power Supply.
4. Maintain 3' minimum radial separation between any source of ignition and gas regulator vent, per NFPA 54-2009 5.8.5.1(3). Do not exceed 10' from meter location.
5. All enclosures, raceways, and connections within 3' of the regulator shall be constructed together in a manner to provide intrinsically safe equipment and barriers between potential ignition sources and natural gas. Use "liquid tight" style flexible conduit and connectors between components and seal-off connectors at the Nema 3 enclosure opening.
6. As per NEC 500.5(B)2, this installation falls into a Class 1, Division 2 area, as such the requirements for sealing off the customer riser conduit shall comply with NEC 501.15. Seal Off fitting shall be installed within 18" of the steel enclosure.
7. Customer to provide and install a Cutler Hammer Fusible Disconnect (Model #DPF221RP), or equal per Note 3. CSU will provide fuses upon installation of the metering instruments.
8. The Mercury Corrector and Communication Modem shall be installed on same side of the insulating gasket assembly to maintain proper cathodic protection.

FIGURE 13
PULSE-INITIATING DEVICE TO MONITOR GAS USAGE



GAS PULSE-INITIATING DEVICE INSTALLATION

NOTES:

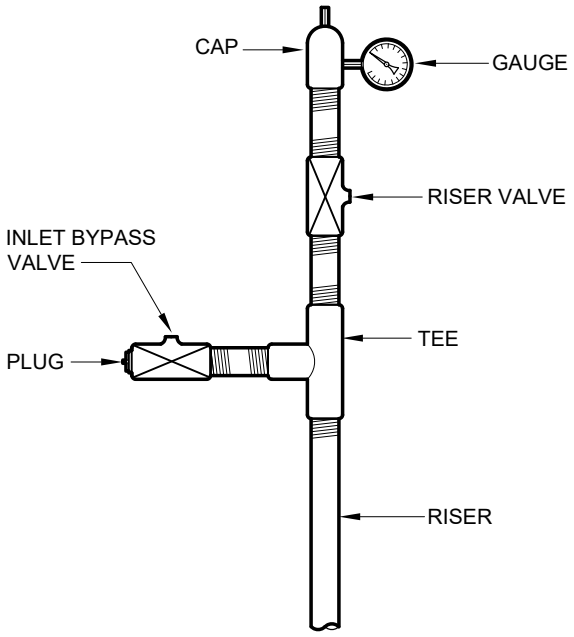
1. Upon the customer's request, Colorado Springs Utilities will install a pulse-initiating device on a customer's existing gas meter with an additional installation charge and a monthly charge. To initiate a request for a pulse-initiating device, the customer shall contact the Advanced Measurement Technologies Supervisor (see Phone Section). Colorado Springs Utilities will determine what type of pulse and the pulse value for customers.

2. To get the pulse-initiating device installed, the customer will install a weatherproof junction box at least 36 inches from the gas regulator but not to exceed 5 feet from the meter, and a 2 position terminal block inside of the junction box. The customer will also furnish and install a low voltage DC 2 to 5 conductor wire not to exceed 24 volts DC, and maintain the wiring from the 2 position terminal block to the customer's monitoring equipment. This wiring will be in accordance with the requirements of the electrical code governing such installations with Colorado Springs. Colorado Springs Utilities will then install the pulse-initiating device and wiring from the gas meter to the terminal block.

   Note: Colorado Springs Utilities responsibility and liability ends at the line side of the terminal block.

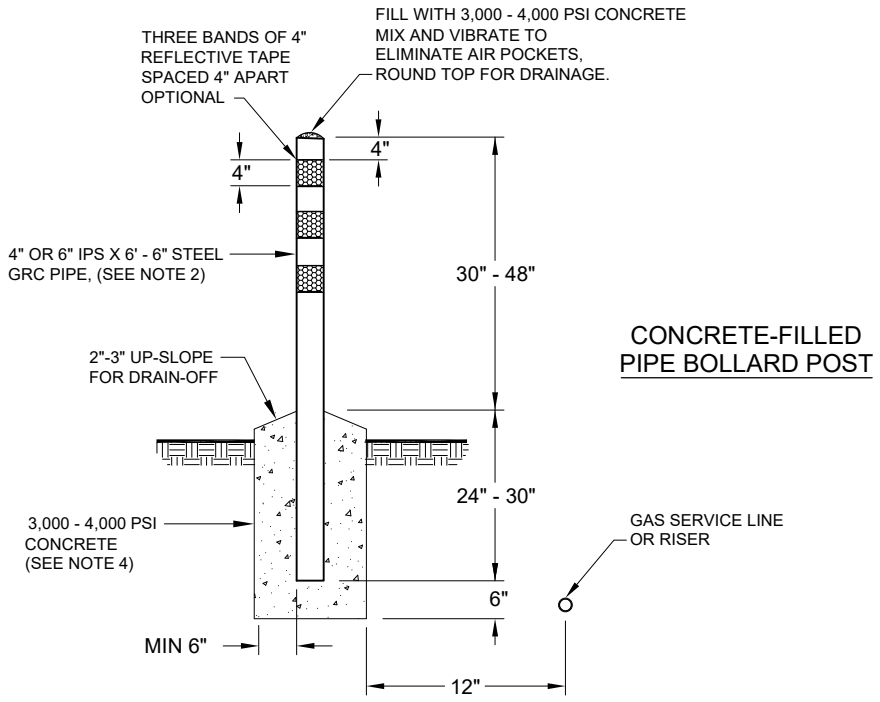
FIGURE 14

RISER VALVE AND BYPASS ASSEMBLY



NOTE:
This assembly shall be provided by the Licensed Utility Service Installer on all 1-1/4" or 2" welded steel or anodeless gas service riser installations.

FIGURE 15
BOLLARD POST INSTALLATIONS



CONCRETE-FILLED PIPE BOLLARD POST

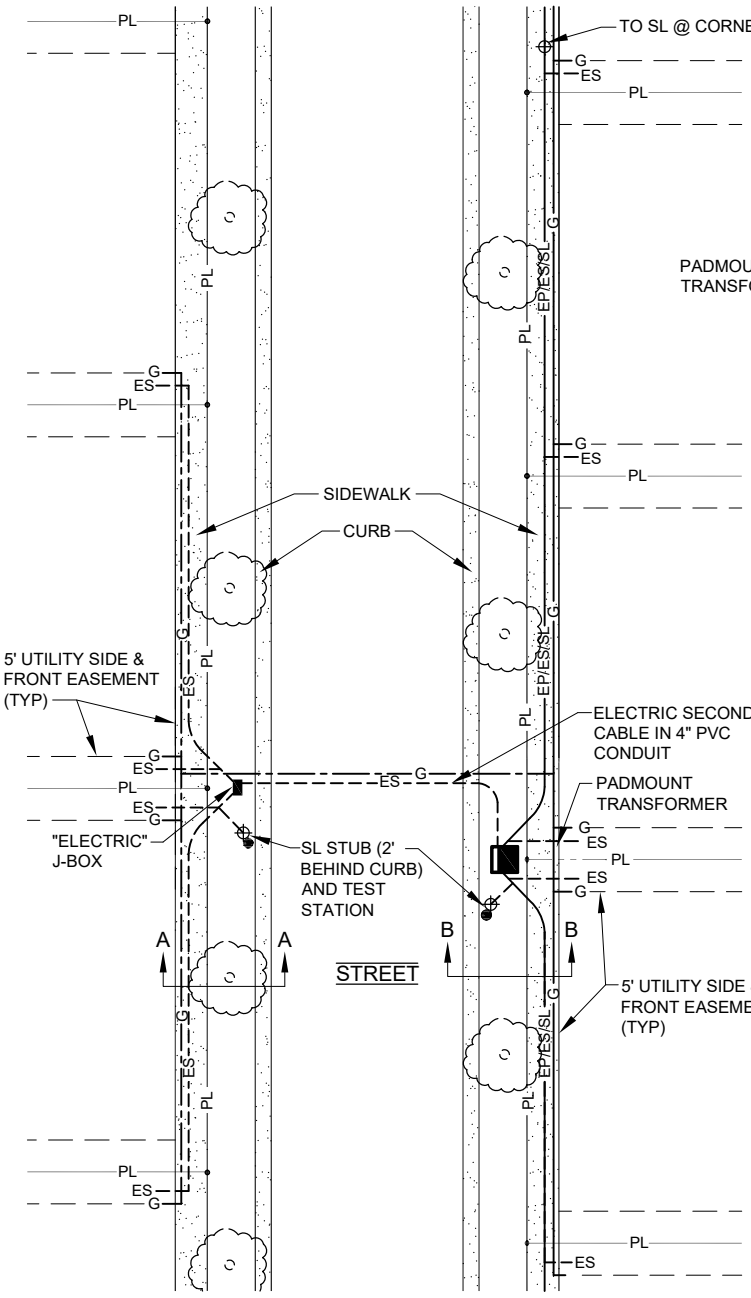
NOTES:

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 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 3,000 - 4,000 psi, approximately 8.3 Cu.Ft./Pole.
5. Optional - 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.
6. See Figure 10 for meter protection; however, Field Engineering will make the determination on bollard height requirements. All bollards at the same site will be the same height.
7. Space posts to prevent vehicle from contacting meter set but leave room for meter access and maintenance. A minimum of two guard posts are required in industrial or commercial areas. The location and number of guard posts is determined in a manner to give the meter set adequate protection.
8. Bollards may not be installed directly over utility infrastructure and the horizontal base of the concrete must be located a horizontal distance of 12" from a gas service line.
9. Bollards must be installed using hydroexcavation or hand dug within 18" of service line. Use of sonotubes is encouraged.

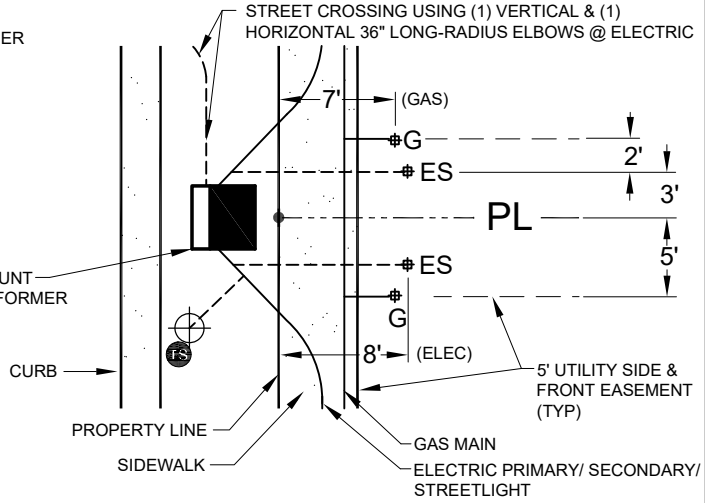
FIGURE 16

JOINT TRENCH - FRONT LOT LAYOUT WITH DETACHED SIDEWALKS AND TREES BEHIND CURB

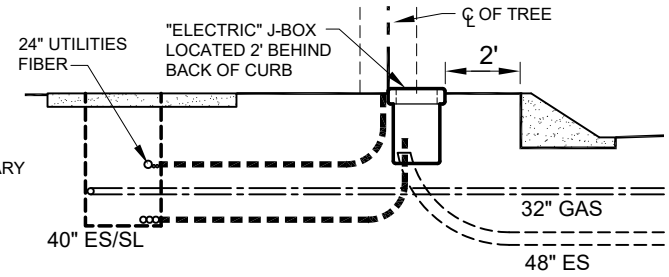
(THIS LAYOUT ACCOUNTS FOR 6' SEPARATION FROM ELECTRIC AND GAS LINES TO TREES) (50' R.O.W. AND 5' SIDEWALKS)



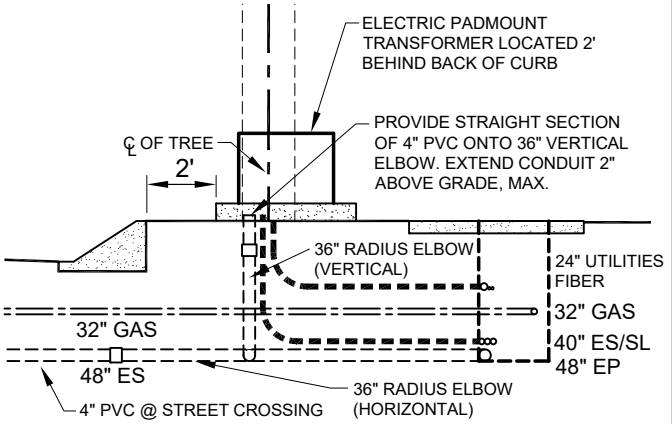
FRONT LOT LAYOUT PLAN VIEW



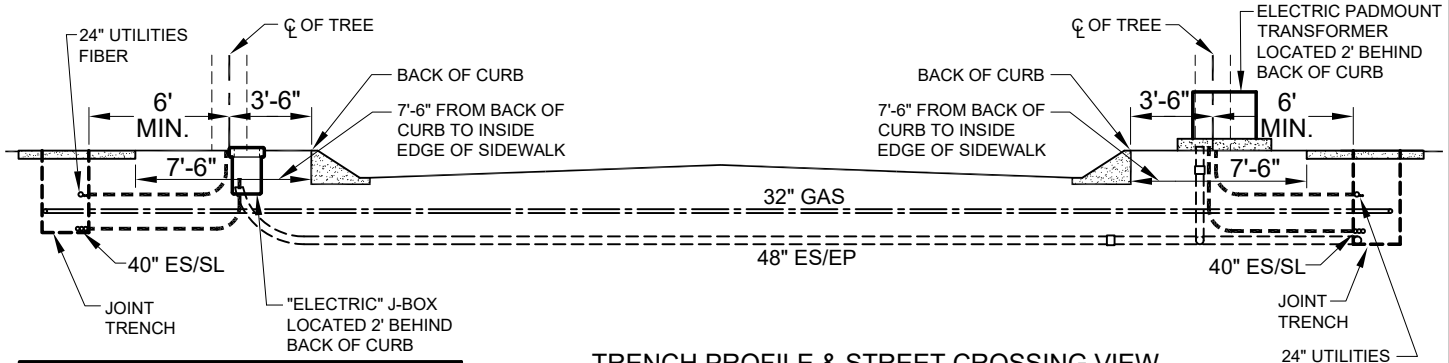
SIDE EASEMENT DETAIL



STUBS TRENCH PROFILE @ J-BOX (A-A)



MAIN TRENCH PROFILE @ TRANSFORMER (B-B)



TRENCH PROFILE & STREET CROSSING VIEW

(50' R.O.W. AND 5' SIDEWALKS)

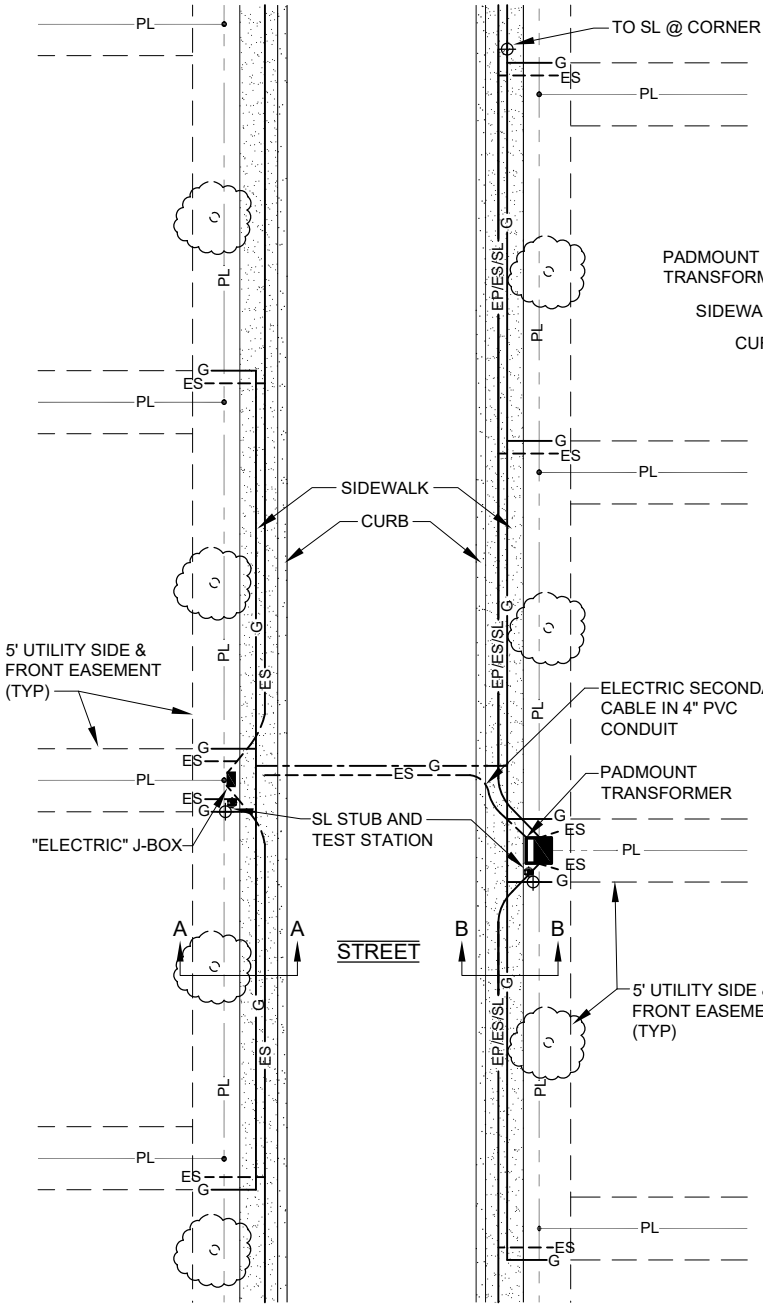
LEGEND	
EP= ELECTRIC PRIMARY	G= GAS
ES= ELECTRIC SECONDARY	W= WATER
SL= ELECTRIC STREETLIGHT	WW= WASTEWATER
PL= PROPERTY LINE	

NOTE: WHEN UPDATING ANY PART OF THIS GLESS FIGURE 16 DRAWING, PLEASE ALSO UPDATE OR REFERENCE THE EDCS 19-8 ELECTRIC STANDARD.

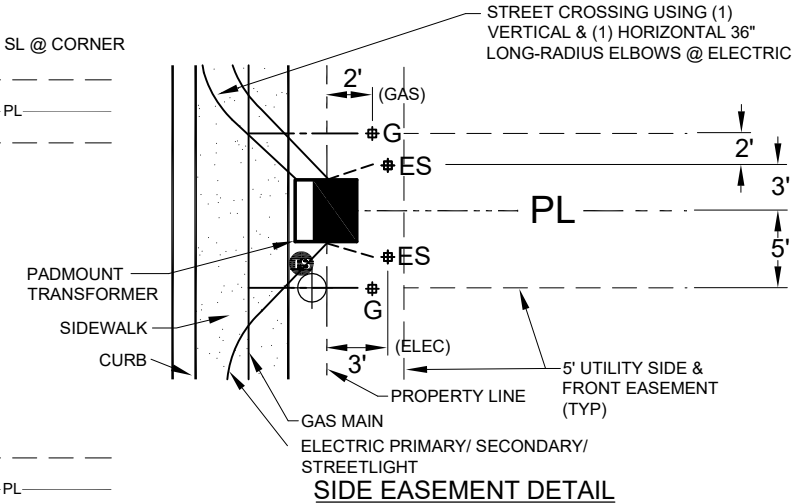
FIGURE 16

JOINT TRENCH - FRONT LOT LAYOUT WITH ATTACHED SIDEWALKS AND TREES BEHIND SIDEWALK

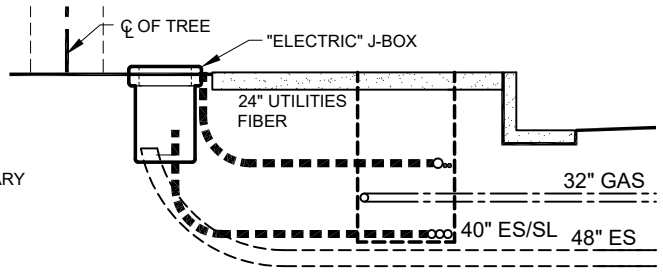
(THIS LAYOUT ACCOUNTS FOR 6' SEPARATION FROM ELECTRIC AND GAS LINES TO TREES)
(ATTACHED SIDEWALKS WILL TYPICALLY ONLY BE LOCATED ON CUL-DE-SACS) (50' R.O.W. AND 6' SIDEWALKS)



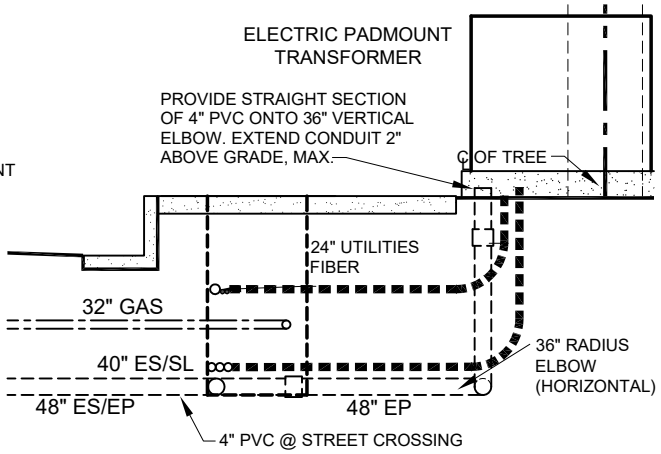
FRONT LOT LAYOUT PLAN VIEW



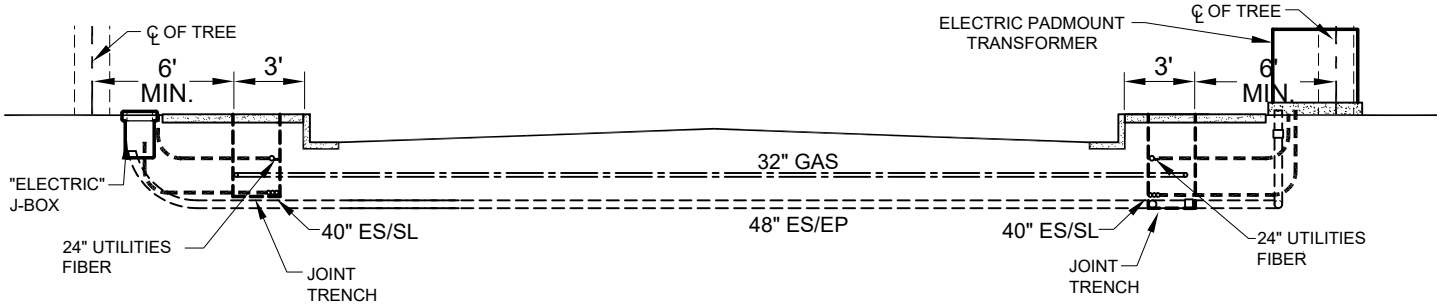
SIDE EASEMENT DETAIL



STUBS TRENCH PROFILE @ J-BOX (A-A)



MAIN TRENCH PROFILE @ TRANSFORMER (B-B)



TRENCH PROFILE & STREET CROSSING VIEW

(50' R.O.W. AND 6' SIDEWALKS)

LEGEND	
EP= ELECTRIC PRIMARY	G= GAS
ES= ELECTRIC SECONDARY	W= WATER
SL= ELECTRIC STREETLIGHT	WW= WASTEWATER
PL= PROPERTY LINE	

NOTE: WHEN UPDATING ANY PART OF THIS GLESS FIGURE 16 DRAWING, PLEASE ALSO UPDATE OR REFERENCE THE EDCS 19-8 ELECTRIC STANDARD.

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APPPENDIX E
Glossary

APPENDIX E: GLOSSARY

TERMS AND ABBREVIATIONS

Applicant - A person or entity applying for a gas extension.

Application for Extension of Gas Mains and Services - A standard letter requesting Colorado Springs Utilities to extend its facilities to a specified site.

Agent - The Applicant's representative who is authorized to act for or in the place of the Applicant.

Bell-Hole - An excavation which is deep enough and wide enough to facilitate a gas service line tie-in at the gas service stub end.

Branched service line - a distribution line that delivers gas to an end user, is considered a service line if it serves a single property, two adjacent properties, or an assembly containing multiple meters. If two properties are not adjacent, the pipe from the branch and upstream of that point becomes the main. In context of 192.383, a branched service line is a gas service line that begins at the existing service line or is installed concurrently with the primary service line but serves a separate residence.

Building - A structure (permanent or temporary) containing one or more habitable units covered by a single roof (e.g., shed, house, mobile home, apartment, office, retail establishment, warehouse, etc.).

Contractor - A person who is financially or contractually responsible to undertake the installation of gas service lines for a prospective customer. This person may also be a Certified Service Line Fitter.

Customer - Any person or company applying for, receiving, using or agreeing to take a class of gas service or other services supplied by Colorado Springs Utilities.

Excavation - any operation in which earth is moved or removed by means of any tools, equipment, or explosives and includes augering, backfilling, boring, ditching, drilling, grading, plowing-in, pulling-in, ripping, scraping, trenching, hydro excavating, postholing, and tunneling. Excavation also includes stump grinding and concrete form stakes. For examples of what "Excavation" does not include, see Colorado Revised Statutes § 9-1.5-102

Existing Gas Service Line - A gas service line currently connected to the gas distribution system.

Extension Contract - A contract between the Applicant and Colorado Springs Utilities that describes the terms under which the new facilities (line extension) will be built.

Footprint - The location of a building(s) on a site plan including the location of all operable windows, doors, vents and the proposed meter location.

Fuel Gas Piping - Gas piping which is owned and maintained by the owner of the premises being served; typically the gas piping downstream from the gas meter.

Gas Mainline Cost Recovery Agreement - An Agreement between the Owner/Developer and Colorado Springs Utilities for the collection of a pro rata share of the eligible cost of qualifying facilities and interest as provided within the Colorado Springs Utilities Rules and Regulations from the property owner(s) or Developer of such unserved or undeveloped lands, and for the refund of such costs to the Owner/Developer as provided in the Gas Mainline Cost Recovery Agreement.

Gas Mainline Cost Recovery Agreement Charge – Charge collected pursuant to a Gas Mainline Cost Recovery Agreement, which is collected at time of Extension Contract for pro rata contribution to qualifying facilities.

Gas Service Riser - That portion of a gas service line which makes a vertical 90 degree turn rising from the ground to be connected to a gas service riser shutoff valve and gas meter set.

Gas Service Riser Shutoff Valve - A valve located between the gas service riser and gas meter set piping.

Gas Service Riser Vent - A 12 inch by 12 inch opening in a sealed pavement surface from which a gas service riser exits.

Gas Service Stub - Underground gas piping extending from a gas main to the property or utility easement line.

Leak Test - Pressurization of a gas service line with air to ensure installation integrity.

Line Extension - A term used to describe the processes of constructing new gas facilities to serve a specific site.

Load Requirements - The total of all gas appliance input requirements taken from individual manufacturer badges on each appliance. This value may be expressed in British Thermal Units per Hour (BTU/HR) or Cubic Feet per Hour (CFH). (This term may be used synonymously with "total connected load").

L.U.S.I. - Licensed Utility Service Installer

Main - A distribution line that serves as a common source of supply for more than one service line.

MAOP – Maximum Allowable Operating Pressure

Master Meter System – a pipeline system for distributing gas within, but not limited to, a definable area (such as a mobile home park, housing project, or apartment complex) where the operator purchases metered gas from an outside source for resale through a gas distribution pipeline system. The gas distribution pipeline system supplies the ultimate consumer who either purchases the gas directly through a meter or by other means, such as by rents. (49 CFR 192.3)

Master Meter definitions per 4 CCR 723-11

- "De minimis gas system" means a non-utility underground pipeline system used for transport and distribution of natural gas to less than ten customers within a definable private (i.e., non-municipal or public) area (e.g., a mobile home park or resort) and that does not cross a public right-of-way.
- "Master meter operator (MMO) gas system" means a non-utility pipeline system used for transport and distribution of natural gas to ten or more customers within a definable private (i.e., non-municipal or public) area (e.g., a mobile home park or resort), or less than ten customers if the system crosses a public right-of-way.

- "Minor MMO/LPG system" means any MMO or LPG pipeline system serving between 20 and 99 customers.
- "Major master meter operator (MMO)/LPG system" refers to any MMO or LPG pipeline system serving 100 or more customers.

Meter - An instrument installed and maintained by Colorado Springs Utilities to measure the volume of gas delivered to a customer.

Meter Bank - A group of co-located meters serving a single building with multiple units.

Meter Set - Gas piping, fittings, regulator(s), meter(s) and associated equipment installed between the gas service riser shutoff valve and the connection to the fuel gas piping.

Multi-Meter above Ground Manifold - A manifold specially designed for supplying gas to multi-family structures.

Natural Gas Tariffs - The rules and regulations that Colorado Springs Utilities operates under. These tariffs are established and maintained by the Utilities Board (City Council).

Padding - A back-fill material free of rock, gravel, asphalt and debris. The padding shall be a fine-grained fill material that will pass through a Number 40 sieve and be retained by a Number 200 sieve.

Property Line Valve - A valve installed at or near the property line.

Protective Sleeve - A segment of straight polyethylene plastic pipe used to shield or protect a gas service line from damage where other utility crossings occur or where other underground structures may conflict with separation requirements of a gas service line installation.

Reinstatement - Restoration of a Service Line Fitter's "Certified" status after a period of suspension.

Rejection - Action taken by a Colorado Springs Utilities Construction and Maintenance Department Inspector disapproving an unsatisfactory gas service line installation.

Scattered Service Stub - A service stub installed from an existing main to serve one building.

Service Line - A distribution line that transports gas from a common source of supply to an individual customer, to two adjacent or adjoining residential or small commercial customers, or to multiple residential or small commercial customers served through a meter header or manifold. A service line ends at the outlet of the customer meter or at the connection to a customer's piping, whichever is further downstream, or at the connection to customer piping if there is no meter.

Standard Easement Document - A standard document to be used when installing utilities in private streets or right-of-ways.

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.

Utilities Design CAD File (UDCF) - UDCF is a computerized system, which allows Developers, Engineers and Architects, remotely from their offices, to electronically submit development plans and requests, as well as the ability to download utilities land base information

Utilities Addressing Plan (UAP) - A plan that gives general information about a project including the geometry of the site.

Vent - An intake or exhaust port (e.g., fresh air intake ducts, dryer exhausts, range hood exhausts, fireplace makeup air ducts, etc.).

Violation - Unsatisfactory installation resulting from improper work practices, material, methods or procedures, including but not limited to:

- A kink or unacceptable gouge(s) in the pipe,
- An improper plastic fusion,
- Use of unapproved materials,
- Covering or turning face down the identification print line of plastic pipe or the identification label of a plastic fitting,
- Deception, (i.e., alteration of a gas service stub, pressurization of a gas service line with air prior to inspection to disguise leakage, changing identification labels on fittings, unauthorized use of a Certified Service Line Fitter Certification Card, etc.),
- Failure to properly size service lines,
- Removal of Colorado Springs Utilities electronic markers, both flat and spherical,
- Failure to have back-fill material a minimum of 2 feet from the edge of the bell-hole,
- Failure to display a visible foundation mark and/or address,
- Failure to display a temporary street name whenever permanent street signs are not present.

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APPPENDIX F

Colorado Springs Utilities Plastic Joining Procedure (Socket only)

APPENDIX F: SOCKET FUSION

1. Socket Fusion Description

This technique involves simultaneously heating the outside surface of a pipe end and the inside surface of a fitting socket, which is sized to be smaller than the smallest outside diameter of the pipe. After the proper melt has been generated at each face to be mated, the two components are joined by inserting the pipe into the fitting. The fusion is formed at the interface resulting from the interference fit. The melts from the two components flow together and fuse as the joint cools.

1.1. Equipment

Per 49 CFR Part 192.756, all fusion equipment shall be maintained per manufacturer's recommended practices and specifications. Equipment requiring calibration must meet calibration requirements or be replaced.

A socket heat-fusion joint must be joined by a device that heats the mating surfaces of the pipe or component, uniformly and simultaneously, to establish the same temperature. The device used must be the same device specified in the operator's joining procedure for socket fusion (49 CFR Part 192.281)

It is the responsibility of the onsite qualified fusion operators to inspect tools and equipment before fusing on the gas system. Damaged or worn equipment or tools should not be used until repaired.

Ensure you have the following equipment for this fusion:

- *chamfer tool*—a device that is used to chamfer the outside edge of the pipe. The chamfer allows the pipe end to easily enter the pipe heater face and easily enter the heated fitting.
- *depth gage*—a device that is used to locate the rounding clamp a prescribed distance from the end of the pipe. Often part of the chamfer tool.
- *heating tool*—a device used to heat the heater faces. In order to obtain a proper melt, it is necessary for a uniform temperature to be maintained across the heating tool faces. An electrical tool shall have sufficient wattage and control to maintain the specified surface temperature of the tool faces.
- *fitting heater face or adapter*—A block of heat conducting material that attaches to the heating tool and is dimensioned to melt the internal surface of the fitting socket.
- *pipe heater face or adapter*— A block of heat conducting material that attaches to the heating tool and is dimensioned to melt the external surface of the pipe.
- *rounding clamp or cold ring*—a device that is clamped around the pipe to round the pipe and limit the distance the pipe end goes into the pipe heater face and the socket fitting.
- *Isopropyl alcohol wipes* (96% or higher concentration isopropyl alcohol) to clean pipe and fitting.
- *Clean, dry, lint free cloth or paper towel*.

1.2 Safety

2. Use appropriate personal protective equipment (PPE) when fusing plastic pipe (e.g, gloves, hard hat, and eye protection).
3. Although the fusion irons are not hot enough to ignite natural gas, they are hot enough to seriously burn/injure an employee. Follow all safety precautions in the fusion equipment manuals.
4. Keep a fire extinguisher on the fusion site and when in a gaseous atmosphere must be manned.

5. Static electricity can build up inside and outside of plastic pipe and a static spark is hot enough to cause personal injury and ignite natural gas. Properly ground plastic pipe squeezers before cutting or fusing.
6. Electrical shock can occur as electrical generators are used to supply the electricity necessary to heat the fusing irons. Always use a three-prong grounding plug with the heating irons and avoid fusing while standing in water.
7. Check the power cord of the fusion iron for any frays or cracks. If it shows any damage, repair or replace it.
8. It's very important NOT to contaminate the fusion surfaces with dirt, grit, body oils, perspiration, or other contaminants.

1.3 Procedure

1.3.1 Preparation

Cut the pipe end squarely.

Clean the inside and outside of the pipe or fitting (components) ends and areas to be fused by wiping with a new alcohol wipe (preferred) or with a clean, dry, lint free cloth or paper towel. Remove all foreign matter. Never use a petroleum-based cleaner or soap solution as they can prevent a perfect bond.

After the fusion areas of the pipe have been cleaned, do not touch them with bare skin as the oils in your skin can also prevent a perfect bond from developing.

Periodically check the faces of the heating iron prior to fusing to make sure they are clean and smooth so they won't collect dirt and will transfer heat into the pipe ends equally.

If the faces are scratched or gouged, they should be replaced.

If they need to be cleaned, use a new alcohol wipe or a clean, dry, lint free cloth. Synthetic materials leave a residue that may hinder the fusion.

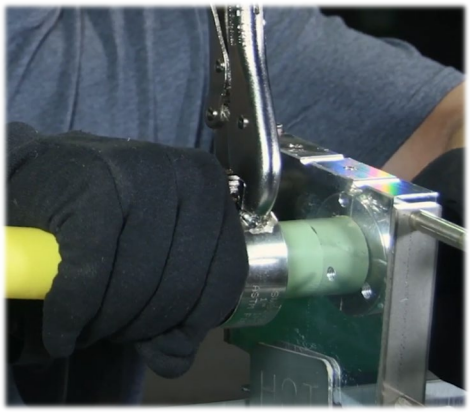
Verify heating temperature of the heating iron is within the specified temperature range ($490^{O}F - 510^{O}F$).

In order to obtain a proper melt, a uniform temperature must be maintained across the heating surface. All points on both heating surfaces where the heating surfaces will contact the pipe and fitting must be within the prescribed minimum and maximum temperatures.

Chamfer the outside edge of the pipe end slightly. The pipe should be free of debris and burrs.

Place the cold ring on the pipe as determined by the depth gauge/chamfer tool. Place the depth gauge over the chamfered end of the pipe.

Clamp the cold ring immediately behind the depth gauge.



1.3.2 Heating

Review the recommended heating times in Table 1. Insert the fitting onto the male heating face. The fitting should be held against the back surface of the male heater face.

Insert the pipe into the female heating face. The female socket heating face should be against the cold ring clamp.

The heating time begins after this has been completed. Hold the pipe and fitting in place against the heater faces for the recommended heating time as shown in Table 1.

TABLE 1 HEATING AND COOLING TIMES

Pipe Size	Heating Time seconds	Cooling Time seconds
3/4" IPS	8 – 10	30
1" IPS	10 – 12	30
1-1/4" IPS	12 – 14	45
2" IPS	16 – 19	45

1.3.3 Fusing and Cooling

At the end of the heating time, simultaneously remove the pipe and fitting straight out from the tool using a "snap" action. Do not torque or twist the pipe or fitting during removal.
A quick inspection should be made of the melt pattern on the pipe end and fitting socket. If there is evidence of an incomplete melt pattern, do not continue with the fusion procedure.
Immediately insert the pipe straight into the socket of the fitting so that the cold ring is flush against the end of the fitting socket.

For services that are socket fused by LUSIs: record the LUSI ID, Company name, inspector EWN number, Company name, and rough handling on the fused pipe.

While cooling, pressure should be maintained on the fusion per the recommended cooling time shown in Table 1 before removing the cold ring.
Allow the joint to cool 5 minutes before removing the cold ring. An additional 10 minutes of cooling time is recommended before exposing the joint to any type of stresses (i.e., burial or testing).

1.3.4 Inspection

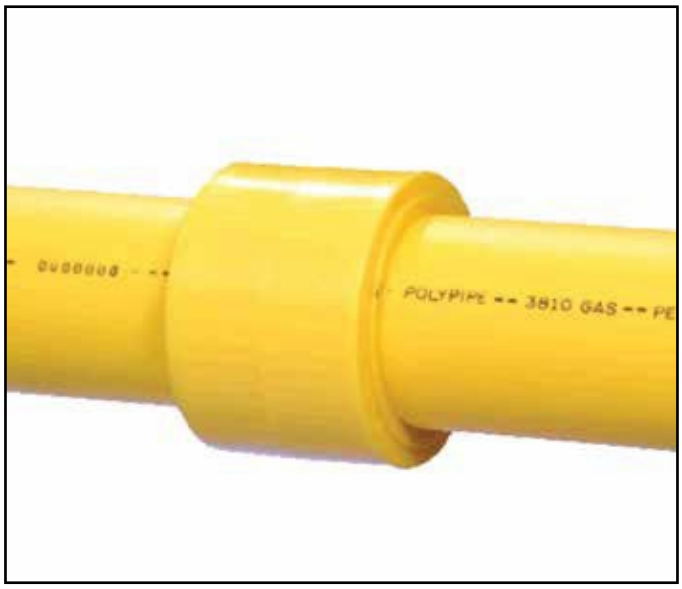
Visually inspect fusion joint. A complete impression of the rounding clamp should be visible in the melt pattern at the end of the socket. There should be no gaps, voids or unbonded areas. Review Table 2 for possible issues.

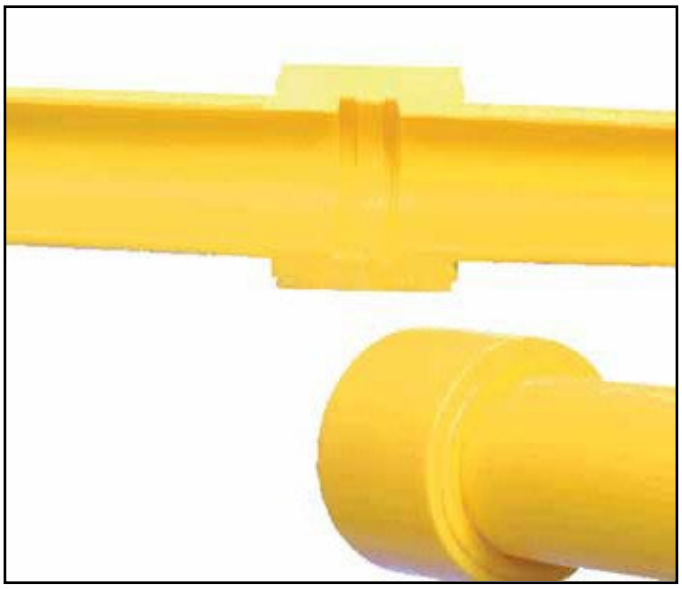
1.3.5 **Cold Weather Considerations** (fusing below 55°F)

The pipe and fitting surfaces to be joined or held in clamps shall be dry and clean and free of ice, frost, snow, dirt, and other contamination. If ice or frost is present in the fusion area, remove it by lightly tapping or scraping the area.
Shield the heating iron and fusion area from any wind, snow and freezing rain.
Make sure the heater iron faces maintain a temperature of 500°F (± 10°F).
Conduct a test melt on cold scrap pipe. If the initial melt pattern is incomplete, try a 3 second longer cycle on another cold piece of scrap pipe. Continue until a uniform melt pattern is obtained on the fitting and the pipe.
Do not increase the pressure to compensate for the cold.
Socket fusion shall not be performed below 4°F (-15.6°C).

1.3.6 Fusion Issues

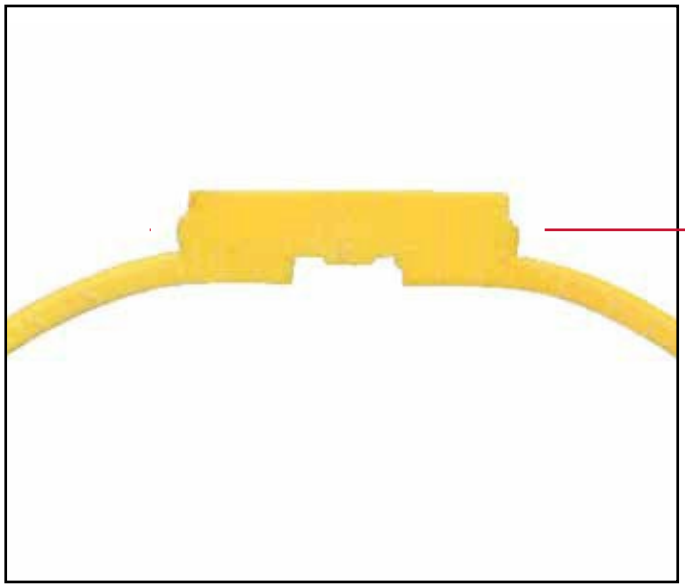
ACCEPTABLE FUSIONS





Proper Alignment and Stab Depth
Melt Bead Flattened Due to Cold Ring - No gaps or voids

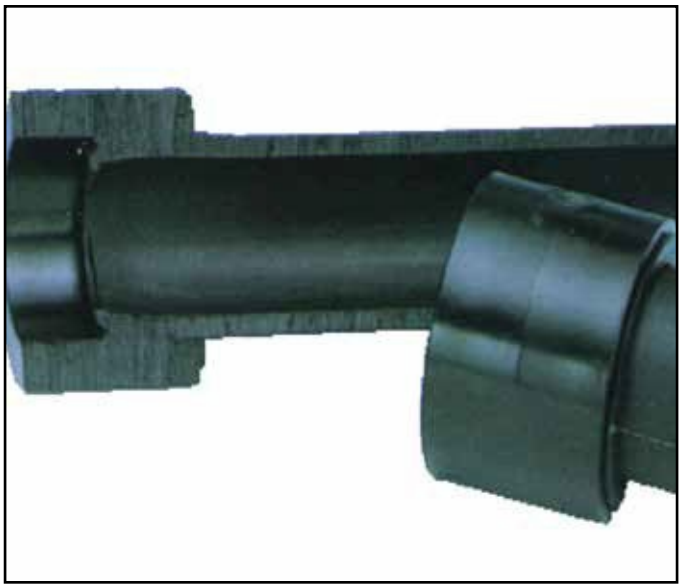
Area where likely gaps and voids might occur



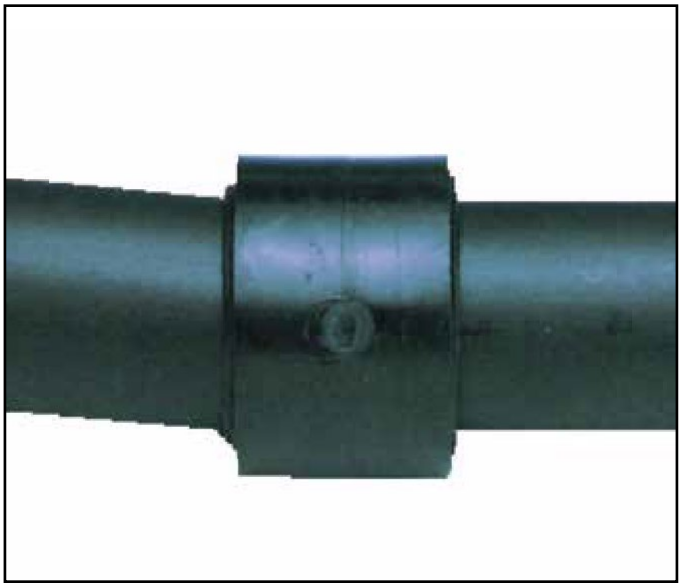
Area where likely gaps and voids might occur

Bend Back Testing - No Gaps or Voids

Short Stab Depth Caused by Failure to Use a Depth Gauge



Excessive Stab Depth Caused by Failure to Use a Cold Ring



Misalignment

TABLE 2
SOCKET FUSION TROUBLESHOOTING GUIDE

	Possible Cause
• No evidence of cold-ring impression in socket fitting melt bead	• Insufficient heating time •Depth gauge not used • Cold ring not used • Cold ring set at incorrect depth
• Gaps or voids around the pipe at the socket fitting edge	• Pipe or fitting not removed straight from heater face • Components not joined together straight when fusing • Cold ring not used • Cold ring set at incorrect depth
• Wrinkled or collapsed pipe end	• Cold ring not utilized • Cold ring set at incorrect depth • Incorrect heating sequence
• Voids in fusion bond area	• Pipe or fitting not removed straight from heater face • Components not joined together straight when fusing • Cold ring not used • Cold ring set at incorrect depth
• Unbonded area on pipe at end of pipe	• Cold ring not used • Cold ring set too deep
• Socket melt extends past end of pipe	• Cold ring set too shallow
• Rough, sandpaper-like, bubbly, or pockmarked melt bead surface	• Hydrocarbon (gasoline vapors, spray paint fumes, etc.) contamination

Resources

Duraline, 2018. Heat Fusion Joining Procedures.

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 668-4985
Field Engineering South 668-5564

Utilities Development Services 668-8259
Customer Contract Administration 668-8111

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 Management 668-4405
Land Base Maps, Plat Maps 668-8779
Utilities Addressing Plan (UAP) and Utilities Design CAD Files (UDCF) 668-7920

Design of Main Line Extensions
Field Engineering North 668-4985
Field Engineering South 668-5564

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

Name	Title	Area	Office	Cell
Tim Benedict	**Field Engineering Supervisor**	**Field Engineering**	**719-668-3574**	**719-661-5505**
Justin Noel	**Field Engineer**	**Gas**	**719-668-4872**	**719-377-0419**
Jason Luukkonen	**Field Engineer**	**Gas**	**719-668-8331**	**719-318-8963**
Santiago Tijerina	**Field Engineer**	**Gas**	**719-668-3572**	**719-828-1772**
Dylan Quintana	**Engineering Support Supv**	**Joint Trench**	**719-668-8330**	**719-675-0099**
Andrea Andersen	**Field Engineer**	**Joint Trench**	**719-668-4409**	**719-756-2160**
Tony Guis	**Field Engineer**	**Joint Trench**	**719-668-3575**	**719-500-1943**
Tim Wendt	**Field Engineer**	**Joint Trench**	**719-668-4962**	**719-237-7968**

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

Name	Title	Area	Office	Cell
Dave Coker	**Field Engineer**	**Electric**	**719-668-8796**	**719-649-2665**
Rudy Duran	**Field Engineer**	**Electric**	**719-668-8762**	**719-464-7961**
Chris Graves	**Field Engineer**	**Electric**	**719-668-7886**	**719-641-9963**
Mike Garcia	**Field Engineer**	**Electric**	**719-668-7887**	**719-756-1716**
Josh Hoepfner	**Field Engineer**	**Electric**	**719-668-3242**	**719-322-6048**
Kyle Leibhart	**Field Engineer**	**Electric**	**719-668-8767**	**719-313-1504**
John Martinez	**Field Engineer**	**Electric**	**719-668-3244**	**719-323-4778**
Joe Reuter	**Engineering Engr Supv**	**Electric**	**719-668-7885**	**719-499-5798**

Gas Main Pressure 668-3524

Gas Service Stub Location 668-3524

Elevated Delivery Pressure & Propane Conversion Requests
Field Engineering North 668-4985

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

Colorado Springs Utilities Construction Scheduling 668-3524

Quality Control & Inspections 668-3667

S E R V I C E I N S T A L L A T I O N

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

Gas Construction Operations and Maintenance Department Manager 668-3664
Ops/Field Support 668-8352

Appointment Scheduling Gas/Electric Service Inspection & Tie-Ins 668-2TIE
Gas Standby 668-3520

Gas Field Service Inspections/Meter Sets 668-7350

Advanced Metering Technologies Group (AMT) 668-5525
Supervisor 668-3505

OTHER TELEPHONE NUMBERS

Colorado Springs Utilities Customer Service 448-4800

Gas Utility Emergencies 448-4800

Damage Claims 385-5960

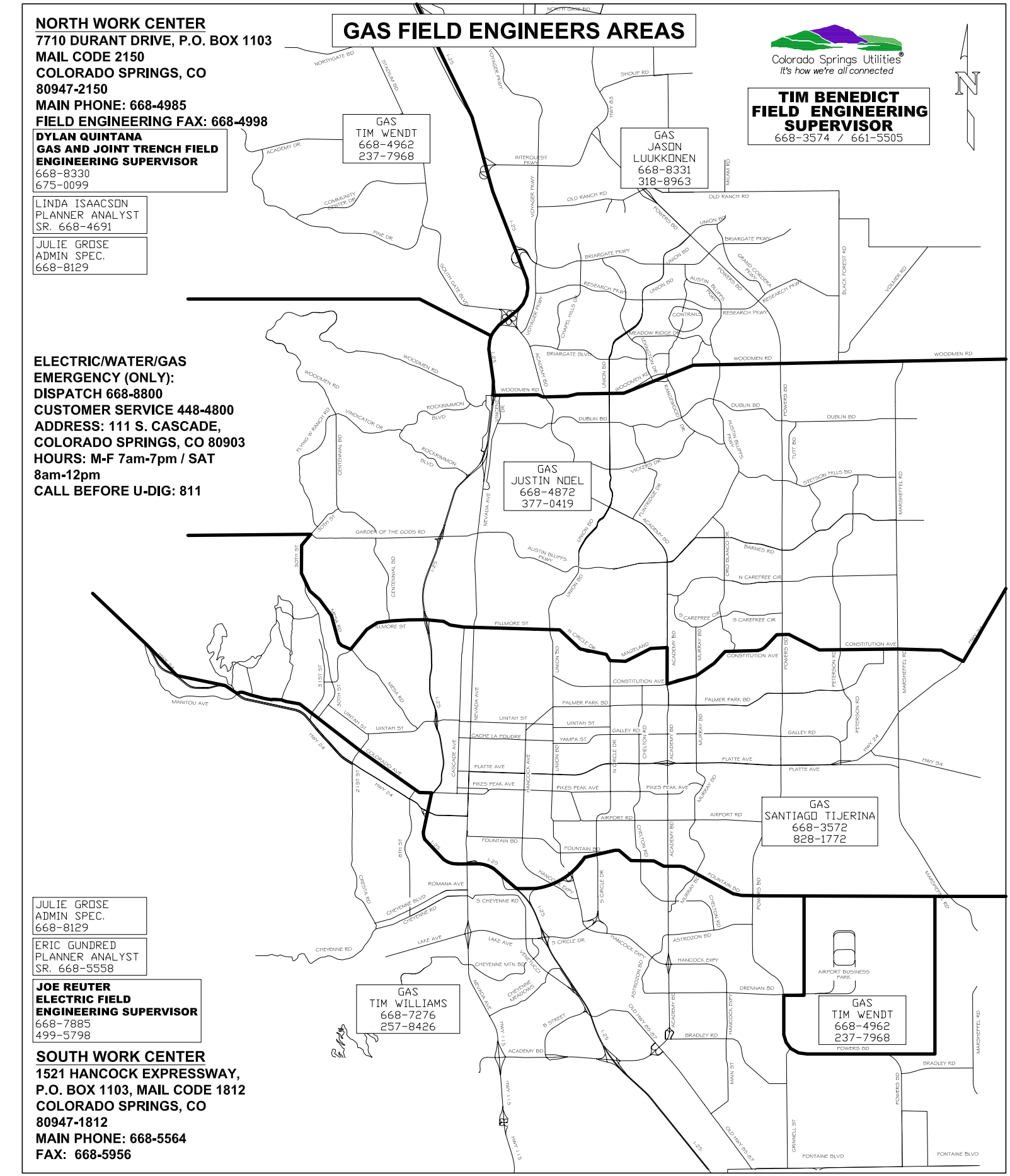
General Accounting (Inquiry for Time-and-Material Refunds) 668-8550

City of Colorado Springs Revocable Permit Coordinator 385-5905

Utility Safety Outreach and Education 668-4621
Call for free utility safety outreach and education (or email communityrelations@csu.org)

Warehouse
North Work Center 668-4981
South Work Center 668-5550

GAS FIELD ENGINEERS AREAS



Colorado Springs Utilities
It's how we're all connected

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

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

DYLAN QUINTANA
GAS AND JOINT TRENCH FIELD ENGINEERING SUPERVISOR
668-8330
675-0099

LINDA ISAACSON
PLANNER ANALYST
SR. 668-4691

JULIE GROSE
ADMIN SPEC.
668-8129

ELECTRIC/WATER/GAS
EMERGENCY (ONLY):
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

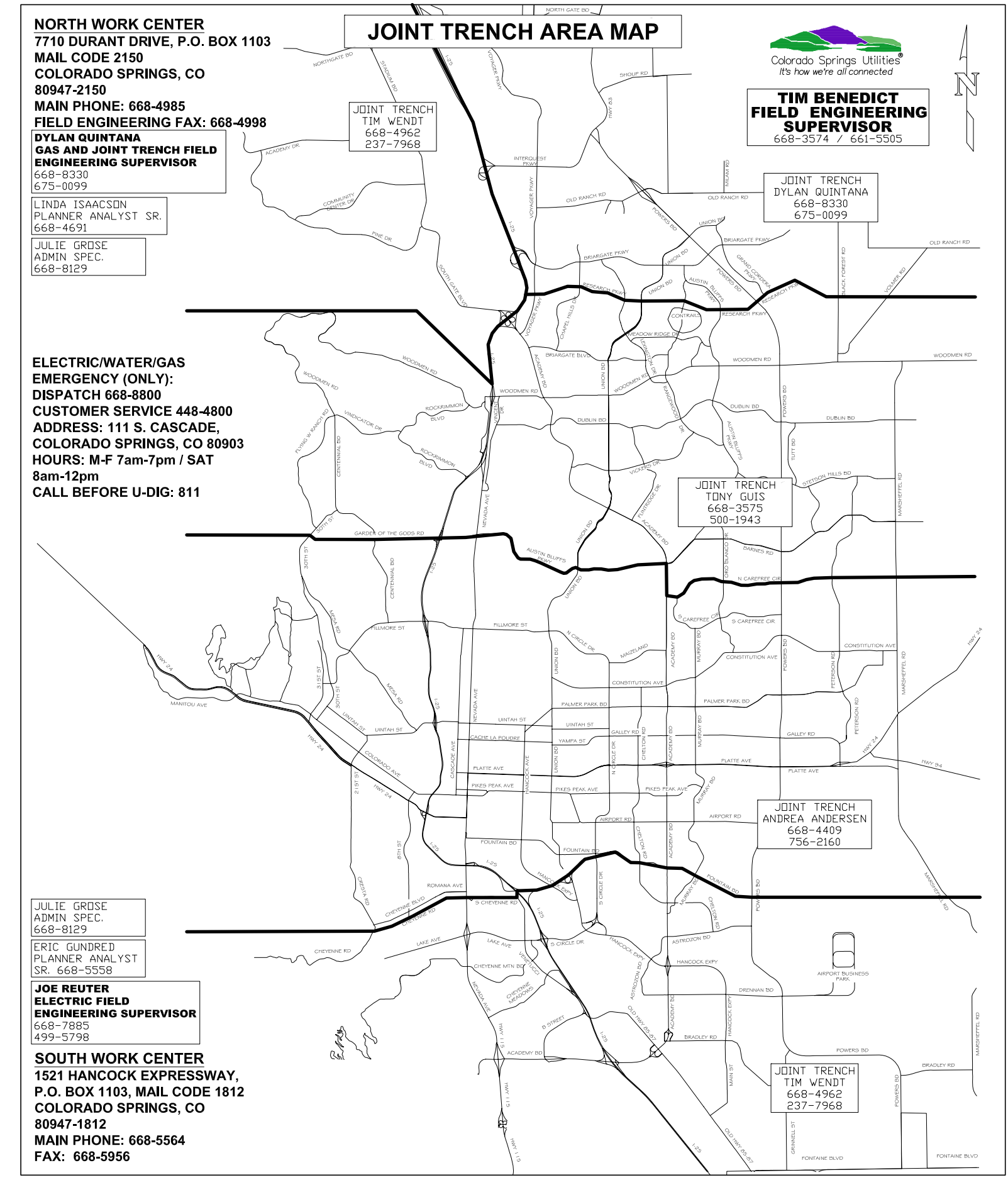
JULIE GROSE
ADMIN SPEC.
668-8129

ERIC GUNDRED
PLANNER ANALYST
SR. 668-5558

JOE REUTER
ELECTRIC FIELD ENGINEERING SUPERVISOR
668-7885
499-5798

SOUTH WORK CENTER
1521 HANCOCK EXPRESSWAY,
P.O. BOX 1103, MAIL CODE 1812
COLORADO SPRINGS, CO
80947-1812
MAIN PHONE: 668-5564
FAX: 668-5956

JOINT TRENCH AREA MAP



NORTH WORK CENTER
7710 DURANT DRIVE, P.O. BOX 1103
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COLORADO SPRINGS, CO
80947-2150
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668-8330
675-0099

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MAIN PHONE: 668-5564
FAX: 668-5956

NOTES

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Colorado Springs Utilities
It's how we're all connected