

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 Secondary (0-480 Volt)	Telecom / Fiber
Potable Water	X	10	10	10 ^c	10	6	3	10 ^d	3	5
Non-Potable Water	10	X	10	10	10	6	3	10	3	5
Wastewater	10	10	X	10 ^c	10	6	3	10 ^d	3	5
Storm Sewer	10 ^c	10	10 ^c	X	10	6	3	10	3	5
Gas mains 150 psig (MAOP)	10	10	10	10	X	6	6	10	10	10
Gas main	6	6	6	6	6	X	3	6	3	5 ^e
Gas Service	3	3	3	3	6	3	X	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	X

**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 Secondary (0-480 Volt)	Telecom / Fiber
Potable Water	X	1.5 ^a	1.5 ^a	1.5 ^a	5	1	1	1	1	1
Non-Potable Water	1.5 ^a	X	1.5 ^a	1.5 ^a	5	1	1	1	1	1
Wastewater	1.5 ^a	1.5 ^a	X	1.5	5	1	1	1	1	1
Storm Sewer	1.5 ^a	1.5 ^a	1.5 ^a	X	5	1	1	1	1	1
Gas mains 150 psig (MAOP)	5	5	5	5	X		5	5	5	5
Gas main	1	1	1	1		X	1	1/5 ^b	1	1
Gas Service	1	1	1	1	5	1	X	1	1	1
Electric Primary up to 34.5kV	1	1	1	1	5	1/5 ^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	X

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 Electric, Gas, and Colorado Springs Utilities Telecom/Fiber requires a 1' 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.
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>

^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 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.

