

Appendix C

Technical References and Forms

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Technical References

1. "Design Criteria for Potable Water Systems" (Colorado Department of Public Health and Environment- Water Quality Control Division – Revised March 31, 1997)

Section 2.6.2 Parallel Installation: Water mains shall be laid at least ten (10') feet horizontally from any existing proposed sewer. The distance shall be measured edge to edge. Sewers shall be defined as both sanitary and storm sewers.

Section 2.6.3 Crossing: Water mains crossing sewers should be laid to provide a minimum vertical distance of eighteen (18") inches between the outside of the water main and the outside of the sewer. This should be the case where the water main is above the sewer. At crossings, one full length of eighteen (18') foot water pipe should be located so both joints will be as far from the sewer as possible.

Section 2.6.5 Force mains: There shall be at least a ten (10') foot horizontal separation between water mains and sanitary sewer forced mains.

Section 2.6.6 Sewer manholes: No water pipe shall pass through or come within ten (10') feet of a sewer manhole unless adequate protection is provided.

2. "Dual Water Systems" (American Water Works Association Manual M24 Second Edition (AWWA, Denver, CO – 1999, page 59)

This document provides recommended guidelines for planning, designing, constructing, and operating nonpotable water systems, including recycled water systems.

"There should be no permanent, hard connection between a nonpotable and a potable-water system. All such connections (usually for emergency backup) should have an air gap or have a separation for installation of an RPPD at the time the interconnection is needed.

Pipe separation: A nonpotable-water line in the vicinity of a potable-water line is treated like a sewer; a nonpotable-water line in the vicinity of a sewer is treated as a potable-water line. As a rule a ten (10') foot lateral separation should be maintained between the nonpotable line and parallel water or sewer pipelines."

3. 2003 Uniform Plumbing Code

Section 609.1 Installation: All water service yard piping shall be at least twelve (12") inches below average local frost depth. (Pikes Peak Frost depth is approx. five (5') feet deep)

[All water service piping shall be at least sixty (60") inches deep and if plastic shall be installed with copper tracer wire. PPRBC, 1999 Edition, 4th printing, amended April 2001]

Clearance Matrix for Typical Parallel Colorado Springs Utilities facilities:

(All dimensions are in feet) All separations shown are the clear horizontal distance between two objects measured surface to surface (AWWA M24 Dual Water systems – see Water Line Extension and Service Standards, Water Construction Detail A7-9 & A7-10)

Colorado Springs Utilities (Underground):	Potable Water	Non-Potable Water	Waste-water	Storm Sewer	Gas main	Gas mains 150 psig or higher	Electric Primary up to 34.5kV
Potable Water	-	10	10	10	6	10	10*
Non-Potable Water	10	-	10	10	6	10	10*
Wastewater	10	10	-	5/10**	6	10	10*
Storm Sewer	10	10	5/10**	-	6	10	10*
Gas main	6	6	6	6	-	6	6
Gas mains 150 psig or higher	10	10	10	10	6	-	10*
Electric Primary up to 34.5kV	10*	10*	10*	10*	6	10*	-

Clearance Matrix for Typical Crossings of Colorado Springs Underground Utilities:

(All dimensions are in feet) All separations shown are the clear vertical distance between two objects measured surface to surface (AWWA M24 Dual Water systems – see Water Line Extension and Service Standards, Water Construction Detail A7-9 & A7-10)

Colorado Springs Utilities (Underground):	Potable Water	Non-Potable Water	Waste-water	Storm Sewer	Gas main	Gas mains 150 psig or higher	Electric Primary up to 34.5kV
Potable Water	-	1.5***	1.5***	1.5***	1	5*	1
Non-Potable Water	1.5***	-	1.5***	1.5***	1	5*	1
Wastewater	1.5***	1.5***	-	1.5	1	5*	1
Storm Sewer	1.5***	1.5***	1.5***	-	1	5*	1
Gas main	1	1	1	1	-	-	1
Gas mains 150 psig or higher	5*	5*	5*	5*	-	-	5*
Electric Primary up to 34.5kV	1	1	1	1	1	5*	-

- See the Gas Line Extension and Service Standards, page 2-3 for certain exceptions.
- See Electric Line Extension and Service Standards, page 7-4, for residential secondary, 18-304 for primary.
- See Wastewater Line Extension and Service Standards, Chapter 3.18.
- Clearance to other utilities (telecommunication, fiber optics, etc.) or high voltage underground transmission cables shall be determined on a case by case basis by Field Engineering.

- Storm Sewer clearances must be verified by City Engineering.
- 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.
- Additional support structures may be required at crossings.
- *Note: Reduced clearances to these lines must be approved by Field Engineering.
- **Note: All utilities must also be outside of 45 degree excavation envelope above the wastewater line – see Wastewater Line Extension and Service Standards, Wastewater Construction Detail C1-7. (Storm drain of 24” dia. or less requires 5’ min., over 24” dia. requires 10’ min. between utilities)
- ***Note: These utilities require a sleeve when crossing under another utility.

Nonpotable Water Plan Notes

Springs Utilities does not guarantee nonpotable water to the subject area. Allocation of nonpotable water to serve this area will depend upon the supply available at the time of application. Springs Utilities' policy is first come, first-served.

NOTE: Corrosion Protection shall be furnished according to Section 2.03

All ductile iron pipe, to include fittings and valves will be wrapped with purple polyethylene tubing (or purple tape) bonded at each joint and electronically isolated as specified in the Springs Utilities Standard Specifications. Insulating couplings or flanges and test stations shall be installed where indicated. Magnesium anodes shall be installed whenever a (A) is indicated on this plan and at all reverse anchors and/or plugs. The Contractor will furnish all anodes to be installed on piping and fittings.

1. THE CONTRACTOR IS REQUIRED TO NOTIFY SPRINGS UTILITIES PIPELINE INSPECTION OFFICE TWO (2) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION. IF THIS PROJECT INVOLVES A TAP, DO NOT CALL TO SCHEDULE THE TAP UNTIL THE PIPELINE INSPECTION NOTIFICATION HAS BEEN GIVEN.
2. All bends shall be field staked prior to construction, for nonpotable main and service lines.
3. Ductile Iron Pipe or steel is required for all thirty-inch diameter mains and larger.
4. Minimum 30' Nonpotable water main easement required in open spaces, nonpotable line to be centered within easement (i.e. outside of Public right-of-way). Plan and Profile is required for the nonpotable water main and service.
Easement Forms and documentation are located on Colorado Springs Utilities web site under Business → Development Services
5. PVC/HDPE is not acceptable for nonpotable water mains/services that exceed 170-psi operating pressure.
6. The contractor shall at his expense, support and protect all nonpotable water mains so that they function continuously during construction. Should a main fail as a result of the contractor's operations it will be repaired immediately by either the contractor or the Springs Utilities Construction Department at the full cost of labor and materials to the contractor.
7. It shall be the contractor's responsibility to coordinate any interruptions to existing nonpotable water mains and services.
8. Indicate where lowering [detail(s) to be included on plans, showing stations and elevations] is required, according to Nonpotable Water Construction Drawings.
9. All nonpotable water piping, valves, outlets and fixtures, and other appurtenances shall be color coded in conformance with the (NICC), as follows: All new buried distribution piping in the nonpotable water distribution system shall be colored purple pipe, Pantone 522, and

embossed or be stamped/marked “**CAUTION-NONPOTABLE WATER DO NOT DRINK**”; or be installed with a purple identification tape, or a purple polyethylene vinyl wrap, color to be Pantone 528, as approved by the Springs Utilities.

10. All nonpotable water valves, outlets, public entrances and boundaries of areas irrigated with nonpotable water shall be tagged or signed with the following words “**NONPOTABLE WATER-DO NOT DRINK.**” (Reference Nonpotable Water Standard Specifications)
11. Tracer wire is required to be laid with both PVC and HDPE nonpotable piping installations.
12. Locking hose bibs maybe required in areas on nonpotable water over-spray. This will be evaluated on a case-by-case basis by Springs Utilities.
13. The valves shall be the same size as the nonpotable main/fitting. Valves installed on nonpotable water lines shall open to the **left (counter-clockwise)** with a purple operating nut.

NONPOTABLE WATER FACILITIES EXTENSIONS

Nonpotable Water Statement

The undersigned owner/developer agrees that the installation of these proposed nonpotable water facilities will be made in accordance with Springs Utilities standards and specifications and shall provide a minimum of five feet (5'-0") and a maximum of six feet (6'-0") of cover over the nonpotable water main(s). Any changes required to meet the above stipulations shall be at the expense of the owner/developer.

The approval date on the plan(s) expires in **one (1) year and shall require re-submittal for signature if construction does not begin during this period.**

Signed _____ Date _____
Owner/Developer

Printed Name

DBA _____

Address _____

Nonpotable Water Installation Corrosion Control Requirements: See plan for placement location

Nonpotable Water Plan Approval

Signed _____ Date _____
Colorado Springs Utilities

PRIVATE NONPOTABLE WATER FACILITIES EXTENSIONS

Private Nonpotable Water Statement

The undersigned owner/developer agrees that the Installation of these proposed nonpotable water facilities will be made in accordance with Springs Utilities standards and specifications and shall provide a minimum cover as indicated for the specified pipe be used (i.e. nonpotable main, service irrigation main or service/lateral). The undersigned understanding that all Nonpotable water mains, service and irrigation lines and appurtenances as indicated on this Nonpotable water installation plan shall remain the property of the owner and shall be maintained by the owner.

The approval date on the plan(s) expires in **one (1) year** and shall require re-submittal for signature if construction does not begin during this period.

Signed _____ Date _____
Owner/Developer

Printed Name

DBA _____

Address _____

Nonpotable Water Installation Corrosion Control Requirements: See plan for placement location.

Nonpotable Water Plan Approval

Signed _____ Date _____
Colorado Springs Utilities

NOTICE OF PRIVATE NONPOTABLE WATER SYSTEM

This Notice of Private Nonpotable Water System, dated _____, 200 , is executed by _____ as the present owner of Lot(s) _____, El Paso County, Colorado, as reflected on the plat recorded at reception number _____ with the Clerk and Recorder of El Paso County, Colorado (the "Property").

All parties who now have, or who may hereafter acquire, any interest in the Property, or any portion thereof, are hereby notified that the entire Nonpotable Water System which services the Property is privately owned by the owner(s) of the Property, or any portion thereof, and such system shall continue to be so owned upon the sale or other transfer of all or any portion of the Property.

The Nonpotable Water System, for purposes of this notice, shall include, but is not limited to, all nonpotable water pipes, valves, manholes, conduits, and any other items which are necessary, including all appurtenances (the "Improvements"), in order to enable nonpotable water to be transferred from Colorado Springs Utilities' (an enterprise of the City of Colorado Springs, a home rule city and municipal corporation) nonpotable water mains to the Property, or any portion thereof, regardless of whether such items are located on the Property or within rights-of-way, easements, or roadways held by Colorado Springs Utilities, the City of Colorado Springs, or others. Nothing contained herein shall, however require the owners of the Property to be responsible for any public nonpotable water mains, public pipelines, or other public items, which are necessary to service properties other than, or in addition to, the Property. Due to the private nature of the Nonpotable Water System, owner(s) of the property shall collectively be responsible for all matters regarding the Nonpotable Water System, including, but not limited to, all repairs and maintenance.

Until such other agreement is reached by the owner(s) of the Property and properly recorded with the Clerk and Recorder of El Paso County, Colorado, all matters regarding the Nonpotable Water System, including, but not limited to, all repairs and maintenance related to the Nonpotable Water System shall be borne and equitably shared by the owner(s) of the Property, or any portion thereof.

This Notice shall be deemed to run with the land and touch and concern the land.

Executed as of the date first written above.

Signed

STATE OF COLORADO)
) ss.
COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this _____ day of _____, 200 , by _____. Witness my hand and official seal.

My Commission Expires: _____

Notary Public

Application for Nonpotable Water Availability

Submit to:

Colorado Springs Utilities

Attn: Account Management Nonpotable Water Coordinator
111 S. Cascade Ave., P.O. Box 1103, Mail Code 1025
Colorado Springs, CO 80947-1015

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

Type of Use: _____
(Irrigation or non-residential use)

Applicant: _____
Individual () Partnership () Corporation () Limited Liability Company () Other ()

APPLICATION REQUIREMENTS FOR PROJECT REVIEW

___ Nonpotable water demand per building (GPM) ___ Internal plumbing plans(industrial use only)
___ Nonpotable irrigation water demand per site (GPM) ___ Nonpotable water system plan
___ Preliminary landscape plan include sq ft (irrigation only) ___ Nonpotable site irrigation plan

Projected date that site will be ready for nonpotable water service _____

Applicant agrees to provide Utilities with a recorded plat or acceptable easements prior to construction. The Applicant agrees to notify Utilities of any changes following submittal of application that may affect the need for water and wastewater service.

Applicant's Signature NOTES: _____

Applicant's Name (Please type or print)

Address

Telephone Number FAX Number

Internal Use
Work Order Number _____ RMS Number _____

Notice of Acceptance of Application for Availability

Applicant: _____

Address: _____

City, State, Zip Code: _____

Phone Number: _____

Project name and location: _____

Has been: Approved Disapproved for nonpotable water service

The source of the nonpotable water service will will not contain a blend of raw water and reclaimed water.

By: _____
(Name and title) (Date)

Reason for disapproval: _____

Applicant notified by: _____
(Name and title) (Date)

Next Steps:

1. Please submit engineered construction plans to Mr. Peter Bond, Engineering Standards Coordinator, for review and approval. Information regarding design and construction can be found in SU's Nonpotable Water Standards located at www.csu.org > Business > Development Services > Utility Specifications > Nonpotable water standards. Mr. Bond can be contacted at:

1521 South Hancock Expressway
Colorado Springs, CO 80910
719-668-8799

2. If your source of nonpotable water will contain a blend of raw water and reclaimed water, you will be notified by our Environmental Services group to complete a User Plan to Comply form. Environmental Services will review and submit to the Colorado's Department of Public Health and Environment for approval. You will be notified by Environmental Services when the State's approval is received.

Internal Use
Work Order Number _____ RMS Number _____

Copy Application Approval to: Water Engineering Standards, Environmental Services – Regulation, Customer Contract Administration

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