



# **City of Joliet**

## **Utility Plan Review Guide**

**City of Joliet Department of Public Utilities**  
**150 W. Jefferson Street,**  
**Joliet, IL 60432**

Revised August 20, 2019

Project Title:

Date:

**Plan review has been completed and plans and specifications are in general compliance with City of Joliet Public Utility Design Standards.**

**Project Engineer**

**Deputy Director Engineering**

## STANDARD DETAILS AND SPECIFICATIONS (1.5)

**City of Joliet Standard specifications and details are included as part of the plans & specifications:**

Yes No N/A

Plan materials conform to approved materials list

Standard details used as provided in Appendix B of the COJ-PU Design manual

Plans include the general notes found in Appendix D of the COJ-PU Design Manual

COJ Special Provisions for required materials and construction methods included in specifications

## PERMITS AND FEES (1.6)

Permit applications have been submitted

Water & Sewer Connection fees have been calculated

**Water Fees**

**Sewer Fees**

## WATER AND SEWER EASEMENTS (2.1)

All public water system and sanitary system components are located within a public right of way or public utility and drainage easement, minimum 15-foot wide

Easements required?

**Status**

## UTILITY INSTALLATION RESTRICTIONS (2.2)

No buildings encroach on a water or sewer easement

Buildings have enough setback from the water or sewer pipe (see 2.2 for specifics)

## CRITICAL CUSTOMERS (2.3)

Critical Customer Questionnaire completed

If defined as a critical customer facility, the facility shall be required to provide redundant system infrastructure to protect the occupants of that facility.

## **WATER SYSTEM DESIGN CRITERIA (Section 3)**

Yes No N/A

### **IEPA Permit Required (3.1.2)**

**All engineering plans clearly differentiate between all portions of the public and private water distribution system.**

Water mains are located on the north and west sides of the public right-of-way, if possible

Location considers ease of future maintenance

Location minimizes the amount of pipe that is under PCC pavement and parking stalls.

No water mains less than 8-inch diameter

Consideration of oversizing pipes in order to provide service to additional benefiting properties

At a minimum, water main shall extend across the frontage of the property, at the developer's cost, such that a connection could be made with minimal disturbance in the future

All water main stubs for future extension shall terminate with a valve and hydrant

Restrained joints shall be located 40 feet from the capped end

Each 8- inch diameter water main is looped at a distance not to exceed 1,000 feet.

Each 12- inch diameter and larger water main is looped at a distance not to exceed 3,000 feet.

No dead-end water mains present

Hydrant leads must comply with current IDPH guidance.

Water mains shall be laid at least 10 feet horizontally from any existing or proposed drain, storm sewer, sanitary sewer, sanitary sewer force main, combined sewer or sewer service connection, **OR**

The water main invert is at least 18 inches above the crown of the sewer; **AND**

The water main is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer, **OR**

Drain or sewer is constructed of slip-on mechanical joint cast or ductile iron pipe, or PVC SDR 26 pipe meeting the requirements for water main

**WATER SYSTEM DESIGN CRITERIA (Section 3, cont.)**

Yes No N/A

Water main is 18 inches above the crown of the drain whenever water mains cross storm sewers or sewer service connections, maintained 10 feet horizontally, **OR**

Sewer is constructed of slip-on or mechanical joint cast or ductile iron pipe, or PVC SDR 26 pipe, meeting the requirements for water main, **OR**

A casing pipe can be installed around either the water main or sanitary sewer in lieu of constructing the sewer with water main equivalent pipe (casing pipe must be a material that is approved for use as water main and extend 10 ft on each side of the crossing, **OR**

Storm sewer can be constructed with reinforced concrete pipe using flexible gasket joints meeting ASTM C-361 or ASTM C-443 (installed between adjacent storm structures ) instead of providing a casing pipe or constructing the storm sewer with water main equivalent pipe and extend 10 ft on each side of the crossing

Where a water main passes over an existing or proposed force main, an 18- inch vertical separation is provided at the crossing

**NO** force main is above the water main at any crossing

All pipe is proposed a minimum depth of 5.0 feet measured from the proposed ground surface to the top of the pipe

If water services are to be provided on both sides of a divided highway, parallel water mains are installed in the right of way.

No more than one building is supplied from one service

The service enters the building in a direct line with the curb stop and tap

Service does not cross onto an adjacent property

Water service shut-off valve (B-box) is located at property line

Valves are arranged so that each line can be shut off from the exterior of the building

Shut-off valve locations are shown on drawings

B-box shutoff valves provided for each residential buildings or single-unit Commercial building

B-boxes are not located in driveways or sidewalks.

Separate complete water services shall be required from the water main for each residential, multi-unit, buildings. Each service line shall be separately metered.

**WATER SYSTEM DESIGN CRITERIA (Section 3, cont.)**

Yes No N/A

B-boxes are located together in the same order as the units.

Multi-unit Commercial buildings and units that share a single water service for fire protection and domestic supply, provide one main outside shutoff valve on the service line.

New water main connection to the end of an existing water main is with a valve only

Fire hydrants are located 7.5 feet from the right-of-way within north or west parkways.

All hydrants are within 300 feet of all points of the building, as the hose lays (must be shown on engineering plans).

The linear spacing of hydrants do not exceed 300 feet.

Fire hydrants outside of public rights-of-way are within 10 feet from a paved roadway and 50 feet from a Fire Department connection (Siamese).

Valve boxes are only used for fire lines, less than 8 inches in size

Valve boxes are in a grassy area; or a valve vault is used.

Valves for water mains or fire lines 8 inches or larger are provided with a vault.

All tapping valves 4" and greater are installed in vaults.

Valves are located such that no more than 25 to 30 single-family homes or 50 multi-family residences (excluding apartment buildings) would be shut off at any given time (maximum of 500 feet to 700 feet of main)

Where a "tee" is installed, at least two (2) valves are utilized.

Where a "cross" is installed, at least three (3) valves are utilized.

Critical customers have redundant valves

Water main installed within casing pipes have restrained joint construction the entire length of the casing pipe for future removal if necessary.

The diameter of the casing pipe is a minimum of 12 inches greater than the outside nominal diameter of the water main.

## **SANITARY SYSTEM DESIGN CRITERIA (Section 4)**

Yes No N/A

### **IEPA Permit Required (4.1.2)**

**All engineering plans clearly differentiate between all portions of the public and private sanitary sewers.**

### **Pretreatment Questionnaire COMPLETED by New Businesses**

**Industrial User Discharge Permit subject to the City's Industrial Pretreatment program under 40 CFR 403 required?** (If yes, set up a meeting with the business of interest to discuss the discharge and begin the discharge application process)

Sanitary sewers are located 7.5 feet inside the right-of-way on the south and east sides of the right-of-way, if possible

Curvature of sanitary sewers (simple curve) is ONLY shown for sewers 8 inches to 12 inches in diameter

Sewers are proposed a minimum depth of 7 feet measured from the proposed ground surface to the top of the pipe, unless specifically allowed otherwise

Sanitary sewer and services with ground cover less than 4 feet or more than 25 feet must be constructed of ductile iron class 50 pipe with polyethylene encasement

Sanitary sewers and services with less than 4 feet of cover shall be insulated with a 2-inch exterior grade rigid insulation board

**NO** public sewer is sized less than 8 inches in diameter

Sewer size is designed based on a design average flow of not less than 100 gallons per capita per day and provide a minimum of 2.0 feet per second velocity when flowing

Sewer design considered oversizing or additional depth in order to provide service to additional benefiting properties.

Sanitary sewers are designed for minimum slopes of 6" (1.00%), 8" (0.40%), 10" (0.28%) and 12" (0.23%)

Sanitary sewers slopes do not exceed a maximum of 12%. Drop manhole assemblies are utilized if the sanitary sewer system cannot be designed without exceeding a slope of 12%

Drop manhole assemblies are provided at the junction of sanitary sewers where the difference in grade is in excess of 2 foot (4.3.4)

Sewers extend across the frontage of the property (minimum) to the limit of the development

**SANITARY SYSTEM DESIGN CRITERIA (Section 4, cont.)**

Yes No N/A

Manholes are located at the junction of two sanitary sewer pipes or at any change in grade, alignment or size of pipe

Maximum spacing of manholes is 400 feet

Manholes meet minimum manhole sizing requirements per Table 5 (4.3.2)

Commercial, office, institutional, industrial, and manufacturing buildings have an inspection manhole located outside of the building

Multi- family building with more than six (6) units have an inspection manhole

Clean-outs are provided on multi- family services serving between two (2) and six (6) units.

A clean-out is provided for any service line over 90 feet in length which does not have an inspection manhole.

Grease/oil/sand trap manholes, as required by the Illinois Plumbing Code, are shown on the engineering plans

External grease traps are proposed for new development

Polymer manholes are required for force main discharge manholes

Buoyancy design calculations have been submitted

A separate and independent building sewer service line is provided for every building

The service pipe does not cross onto an adjacent property

The minimum diameter of a gravity service connection is 6-inches with a minimum slope of 1%

A full-size external clean-out is provided at 5' outside the building foundation.

Connections to existing manholes have approval of the Director of Public Utilities

Connections to existing sewers have been reviewed to identify if sewers have CIPP lining. If so, proper measures have been taken.

Existing sewer service lines to be extended are properly routed, have been inspected and testing by the City to meet City Codes, be structurally sound and not a source of infiltration

The diameter of the casing pipe is a minimum of 12 inches greater than the outside nominal diameter of the sewer.

**LIFT STATION REQUIREMENTS (Section 4.6)**

Yes No N/A

Lift stations required because site conditions do not allow for the construction of a functional gravity sewage collection system

Sanitary sewer force main is 4" minimum diameter.

Clean-outs are shown at all vertical and/or horizontal bends, or at 700' minimum intervals in a manhole

Minimum flow velocity of three (3) fps.

Air release valve is located at the high point of the force main.

Lift station design requirements conform to COJ – PU Design Manual, Appendix C – Lift Station Design Requirements.

A lift station design report was submitted and approved

A complete set of shop drawings and product specification information (i.e.: generator, pump, lift station) was provided and approved.

A detailed plan depicting the proposed layout of the lift station, including the location of the generator, control panel, wet and dry wells, access drive, and fencing, lighting, and landscape features was submitted and approved.

A natural gas-powered emergency generator is provided.

A communication connection to the main Wastewater Treatment Plant alarm system is provided through Metropolitan Pump (815-886-9200).

A dedicated lot (40'x40') and paved 12' access drive is provided to the City (plat of dedication)

The drive allows for access to the wet well for pump removal.

Comments for items not yet addressed or where an exception has been given: