



WATER MAIN EXTENSION CONSTRUCTION PERMIT REVIEW CHECKLIST & SUPPLEMENT

PROJECT NAME: DATE: LOCATION: CITY OR COUNTY: OWNER: DEVELOPER: DESIGN REGISTRATION ENGINEER: NO:

Check the box if the item has been properly addressed. If a box has been left unchecked, comment in the space provided at the end of this checklist or on a separate paper.

- 1. Construction "Schedule 1a" is signed and dated.
2. The appropriate construction schedules are complete.
3. The engineering plans are signed and certified by a Professional Engineer.
4. Reference is made on the plans to the use of Cedar Rapids METRO Specifications.
5. Water main minimum size is based on a 20-year design (or greater) life.
6. The system is designed to maintain a minimum pressure of 20 psi or greater at ground level at all points in the distribution system under all flow conditions.[See Fire Flow Analysis on page 3.]
7. The mains are at least 3 inches in diameter for systems not providing fire protection and at least 6 inches in diameter for systems providing fire protection.
8. The minimum flow requirement for water main serving hydrants is met.
9. All materials conform to the Cedar Rapids METRO Specifications.
10. Dead-ends are minimized by looping wherever possible.
11. Dead-ends terminate with an approved flushing device.
12. No hydrant, blow-off, flushing device, or other water line appurtenance is connected to any sewer.
13. Valves are provided so that inconvenience or safety hazards to water users are minimized. No more than four city blocks or 2.5 miles of rural water main must be isolated for any repair work.
14. Fire hydrant leads are a minimum of 6 inches in diameter and independently valved.
15. Where the ground water rises and the existing soil does not provide adequate drainage, the hydrant ports are plugged prior to construction.
16. Water mains are laid to avoid high points where air can accumulate.
17. Chambers, pits or manholes are not connected to any sewer.
18. Water mains and sewer separation distances conform to the current Iowa design standards.
19. There is adequate cover over the mains to prevent frost heave or freezing problems
20. Installation of water mains will be in conformance with Cedar Rapids METRO Specifications.
21. Leakage pressure tests will be conducted in accordance with the AWWA Standards (Cedar Rapids METRO Specifications).
22. Disinfection will be conducted in compliance with the Cedar Rapids METRO Specifications.
23. The Service Agreement is complete. N/A

Remarks:

CHECKLIST SUPPLEMENT

Cedar Rapids Water Department Construction Permit Application for Water Distribution System Improvements (Public and Private Water Mains and Large Water Services)

Proj. No.:	
Permit No.:	

PLEASE RESPOND TO ALL REQUESTED INFORMATION AND QUESTIONS		YES	NO	✓
24.	Is the anticipated minimum static pressure for any service less than 45 psig? .			
25.	Is the anticipated maximum pressure for any service greater than 90 psig?			
26.	At least 10 feet of horizontal separation is provided for all <u>proposed</u> sanitary sewers and force mains?			
27.	At least 10 feet of horizontal separation is provided for all <u>existing</u> sanitary sewers and force mains?			
28.	At least 1½ feet of vertical separation is provided for all <u>proposed</u> sanitary sewers and force main crossovers?			
29.	At least 1½ feet of vertical separation is provided for all <u>existing</u> sanitary sewer and force main crossovers?			
30.	If easements are required, have they been shown on the plans included with this submittal?			
31.	Is the entire project proposed to be constructed within 1-year ? If not a phasing plan may be required.			
32.	Water demands added to the Cedar Rapids Water Distribution System as a result of this project include:			
	<u>Count</u>	<u>Demand</u>		
	_____ Residential Services for an added demand of	_____ gpm	<i>(Based on 0.5 gpm per residence)</i>	
	_____ Commercial Services for an added demand of	_____ gpm	<i>(Determined by Consultant)</i>	
	_____ Industrial Services for an added demand of	_____ gpm	<i>(Determined by Consultant)</i>	
	_____ Other Services for an added demand of	_____ gpm	<i>(Determined by Consultant)</i>	
	TOTAL DEMAND ADDED	_____ gpm		

Fire Flow Analysis:

33. The basis of design for fire flow requirements and the calculated available fire flow requirements are:

Basis of Design: Fire Flow of _____ gpm with _____ psig Residual Pressure

Analysis shows (Worst Case): This system should deliver _____ gpm with a Residual Pressure of _____ psig, at: _____ (describe location on the plan set)

Note: Use standard engineering methods to determine headloss and calculated fire flow based on the field test stated below and the proposed improvements.

34. Is applicable fire flow test information available from the City of Cedar Rapids? YES NO ✓

If YES, calculated available fire flow is based on an actual hydrant test performed on _____ (date).

The test hydrant is located at: _____

The flowing hydrant is located at: _____

Field test results were:

Test Hydrant: Static Pressure: _____ psig

Residual Pressure: _____ psig

Flow Rate: _____

Flowing Hydrant: Nozzles: _____ (number and size)

If NO, did you request assistance from the Cedar Rapids Utilities Dept., to provide simulated fire flow information based on the water system hydraulic model? Yes No