



IOWA DEPARTMENT OF NATURAL RESOURCES
 WATER SUPPLY ENGINEERING SECTION
CONSTRUCTION PERMIT APPLICATION
 SCHEDULE-12, Filters

Date Prepared _____	Project Name/Description
Date Revised _____	

1. Design Data:

Filter Type:				
Unit:	Unit #	Unit #	Unit #	Unit #
Filter Area (sq. ft)				
Filtration Rate (gpm/ft ²)				
Backwash Rate (gpm/ft ²)				
Backwash Duration (minutes)				

Media:	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5
Type (material)					
Depth (inches)					
Effective Size (mm)					
Uniformity Coefficient					

Gravel:					
Size (inches)					
Depth (inches)					

2. For the following, reference the page of the plans or specifications where the description can be found.

Materials and Construction Details	Plan or Specification Page Number
Backwash Troughs	
Backwash Equipment	
Filter Media Installation	
Filter Bottoms and Strainers	
Structural and Hydraulics	
Sanitary Storm Drainage	
Surface/Subsurface Wash	
Appurtenances	

3. Filter bottom and strainer system:

- a. Type: _____ Spec. Page No. _____
- b. Ratio of the open area of the strainer system to the filter area: _____
- c. Ratio of the cross-sectional area of the laterals to the open area of the final strainer: _____
- d. Ratio of the cross-sectional area of the manifold to the cross-sectional area of the laterals: _____



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4. Filter Backwash:
- a. Freeboard at maximum rate of wash: _____ inches
 - b. Vertical distance between bottom of washwater trough or collector and the filter media: _____ inches
 - c. Horizontal distance between washwater troughs (edge to edge): _____ inches
 - d. Washwater drain hydraulic capacity: _____ gpm
 - e. How large of an air gap is provided between the backwash water outlet and the receiving sump? _____ inches
5. Surface or subsurface wash: N/A
- a. Type: _____
 - b. What is water (air) pressure? _____ psi Rate of flow? _____ gpm/ft² (cfm)
 - c. Is the surface or subsurface wash water supply protected with a cross connection control device which meets AWWA standard C-506 and is approved by the USC Testing Lab? Yes No N/A
6. Structural Details:
- a. Depth of gravity filter box or pressure filter sidewall: _____ inches
 - b. Minimum depth of water over filter media: _____ inches
 - c. Maximum velocity of treated water in conduits and pipes to filters: _____ inches
7. List the location of all sampling taps located on the filter sidewall:
- _____
- _____
- _____
- _____
8. Filter controls: Rate Level
- Describe the type of mechanism and method of control:
- _____
9. Are all valve operators located within five feet of the operating floor? Yes No
10. Are all gauges easily read from the operating floor? Yes No
- Has the filter influent and effluent piping been arranged such that any filter cell can be removed from service for maintenance without affecting the remaining filter units? Yes No
11. _____