IOWA DEPARTMENT OF NATURAL RESOURCES
WATER SUPPLY ENGINEERING SECTION

CONSTRUCTION PERMIT APPLICATION

SCHEDULE-11, Cation Exchange Softening

Date Prepared _____ Date Revised _____	Project Name/Description

1. Design Data:

   Softener: _____ Pressure: _____ Downflow: _____

Unit Number	Unit #	Unit #	Unit #
Capacity (gpm)			
Dimensions (inches)			
Operating Pressure (psi)			
Softening Rate (gpm/ft^2)			
Backwash Rate (gpm/ft^2)			
Duration of backwash (minutes)			
Resin			
Technical Name			
Exchange Capacity			
Salt Regeneration (lb. NaCl/ft^3)			
Volume of Resin (ft^3)			
Depth of Resin (ft)			

2. Provide the following salt storage information:

   a. Capacity: _____ lbs; _____ days

   b. Above or below ground: _____ Wet or dry: _____

   c. Type of structure: _____

3. 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
Brine Distribution	
Cross Connection Control	
Bypass	
Sampling Taps	
Brine and Salt Storage	
Salt Storage Housing	

4. How large an air gap is provided between the backwash water outlet & the receiving sump? _____ inches

   Spec. Page No. _____

5. Are automatic regeneration controls provided? ☐ Yes ☐ No Spec. Page No. _____

   Describe the regeneration procedure:

   _____

6. Can all automatically controlled switches and valves be manually operated? Yes ☐ No ☐
7. Is salinity testing equipment provided? ☐ Yes ☐ No Spec. Page No. _____
8. Are valve operators located within five feet of the operating floor? ☐ Yes ☐ No Spec. Page No. _____
9. Are drains provided for each salt storage structure and brine tank? ☐ Yes ☐ No

   How large an air gap is provided between the drain outlet and the receiving sump? _____ inches

10. Are all gauges placed so as to be easily read from the normal operating floor? ☐ Yes ☐ No

    Spec. Page No. _____