DIVISION OF INDUSTRY SERVICES
PO BOX 7162
MADISON WI 53707-7162
Contact Through Relay
http://dsps.wi.gov/programs/industry-services
www.wisconsin.gov

Scott Walker, Governor
Dave Ross, Secretary

March 18, 2015

CUST ID No. 1293249

ATTN: Plumbing Inspector

ALAN MAST
HELLENBRAND INC
404 MORAVIAN VALLEY RD
WAUNAKEE WI 53597

MUNICIPAL CLERK
CITY OF PEWAUKEE
W240 N3065 PEWAUKEE RD
PEWAUKEE WI 53072-4044

CONDITIONAL APPROVAL
PLAN APPROVAL EXPIRES: 03/18/2017

Identification Numbers
Transaction ID No. 2524982
Site ID No. 799745
Please refer to both identification numbers, above, in all correspondence with the agency.

SITE:
Christian Education Leadership Academy
W262N4685 Ryan St
City of Pewaukee, 53072
Waukesha County

FOR:
Facility: 739041 CHRISTIAN EDUCATION LEADERSHIP ACADEMY
W262N4685 RYAN ST
PEWAUKEE 53072
Plan Type: New; 1 Interior Fixture(s)

Object Type: Commercial Water Treatment Device Regulated Object ID No.: 1528450

The submittal described above has been reviewed for conformance with applicable Wisconsin Administrative Codes and Wisconsin Statutes. The submittal has been CONDITIONALLY APPROVED. The owner, as defined in chapter 101.01(10), Wisconsin Statutes, is responsible for compliance with all code requirements.

No person may engage in or work at plumbing in the state unless licensed to do so by the Department per s.145.06, stats.

The following conditions shall be met during construction or installation and prior to occupancy or use:

- This cation exchange device has undergone sufficient testing to document the product's ability to reduce non-radioactive, naturally occurring, strontium as specified in this approval letter when the device is installed and maintained in strict accordance with the manufacturer's published instructions.
- The ongoing maintenance of this device shall be performed by the Guthrie & Frey Company, 608 W. North Shore Dr., Hartland WI 53029, 262-646-6330, www.guthriefrey.com.

  A complete set of installation, operation and maintenance instructions shall be provided to the system owner.
- Where the Wisconsin Department of Natural Resources (WDNR) has jurisdiction, a written approval may be required prior to installing this device in a water supply system to reduce the concentration of a contaminant(s) that exceed the primary drinking water standards contained in ch. NR 809, Wis. Adm. Code, the enforcement standards contained in ch. NR 140, Wis. Adm. Code, or for a water supply system that is subject to a written advisory opinion by the WDNR. For more information contact Steven B. Elmore, DNR public water supply section chief, 608-264-9246, Steve.Elmore@wisconsin.gov.
- If this device is modified, or additional assertions of function or performance are made, then this approval shall be considered null and void unless the change is submitted to the department for review and the approval is reconfirmed.

- This installation must undergo a final inspection. The Plumbing Consultant having jurisdiction in this area is Phil Mnuk. Mr. Mnuk can be contacted via the following:

  Phone: (262) 354-5167
  Email: phil.mnuk@wisconsin.gov

  However, it should be understood that this is a preexisting softener installation. This is not a new installation, rather a previous installation now being used for a new application (i.e. strontium reduction).

  When the final inspection has been completed and passed, this department shall notify the Wisconsin department of Natural Resources (WDNR). The WDNR will then monitor the performance of the devices to its satisfaction. Monitoring advice, which the WDNR is free to accept or reject, is provided elsewhere in this letter.

- The WDNR field staff having authority over this well is Jesse Jensen. Mr. Jensen can be contacted via the following:

  Phone: (414) 263-8774
  Email: jesse.jensen@wisconsin.gov

- The suggested monitoring interval for this installation is quarterly. As a minimum, the following test should be performed:

  1. Total hardness
  2. Strontium

  It should be understood that because of the relationship between strontium (Sr) and calcium (Ca) and magnesium (Mg) in Group 2 of the periodic table, total hardness (i.e. Ca + Mg) may be used as a surrogate for Sr reduction. This is possible because Sr is more strongly attracted and held by the cation exchange resin, thus Ca and Mg will appear in the effluent prior to Sr as the cation resin column is exhausted.

  The effluent hardness of the treated water shall not exceed 1.0 grains per gallon (gpg).

  We suggest, but do not require, that potassium chloride (KCl) be used to regenerate the softeners rather than sodium chloride (NaCl). This is to avoid adding unnecessary sodium to the dietary intake of students and staff.

- Flow controls shall be installed to prevent the softeners from exceeding their maximum rated service flow rates.

- Any wall hydrants, or other potable water fixtures designed for consumptive use, must have at least one of the following:

  1. The handles of the hydrant shall be removed;
  2. The hydrant shall be capped and sealed using solder; or
  3. Signage shall be posted immediately above the hydrant of fixture indicating the water is unfit for human consumption.

- All piping shall be labeled in accordance with Table SPS 382.40-1a.

- No bypass piping shall be installed serving these devices.

  If a bypass is strongly desired, then it must be of the locking type.

A full size copy of the approved plans, specifications and this letter shall be on-site during construction and open to inspection by authorized representatives of the Department, which may include local inspectors. If plan index sheets were submitted in lieu of additional full plan sets, a copy of this approval letter and index sheet shall be attached to plans that correspond with the copy on file with the Department. If these plans were submitted in an electronic form, the designer is responsible to download, print, and bind the full size set of plans along with our approval letter. A department electronic stamp and signature shall be on the plans which are used at the job site for construction. All permits required by the state or the local municipality shall be obtained prior to commencement of construction/installation/operation.

In granting this approval the Division of Industry Services reserves the right to require changes or additions should conditions arise making them necessary for code compliance. As per state stats 101.12(2), nothing in this review shall relieve the designer of the responsibility for designing a safe building, structure, or component.

Inquiries concerning this correspondence may be made to me at the telephone number listed below, or at the address on this letterhead.

Sincerely,

Glen W Schlueter
Engineering Consultant – Plumbing Product Reviewer
Division of Industry Services
(608)267-1401 , Monday-Thursday 8:30AM-5:30PM, Friday 8:30AM 12:30PM
glen.schlueter@wisconsin.gov

cc: Hellenbrand Inc
Philip Lawson Mnuk, Plumbing Consultant, (262) 354-5167, M-Thr.6:00AM-3:30PM -Fri-6:00AM -10:00AM
Christian Education Leadership Academy

Fee Required $ 160.00
Fee Received $ 160.00
Balance Due $ 0.00

WiSMART code: 7657

Note: Effective January 1, 2012, all codes under the jurisdiction of the Division of Industry Services (formerly Safety & Buildings) will be modified. Code references with prefixes starting with "Comm" have been replaced with "SPS" to recognize the relocation of the Division of Industry Services from the former Department of Commerce to the Department of Safety & Professional Services. Additionally, all IS (formerly S&B) codes have been renumbered and addressed in a "300" series. For future reference, the Wisconsin Commercial Building Code will be addressed by SPS Chapters 360-366.

Water Calc. Worksheet Christian Leadership Academy

Name of Project

INFORMATION REQUIRED TO SIZE WATER SERVICE AND WATER DISTRIBUTION:

1-	Demand of building in water supply fixture units (WSFU);	(WSFU)	623.5
1.a.	Demand of building in WSFU converted to Gallons Per Minute: (Table SPS 382.40-3)	(GPM)	160
2-	Elevation difference from main or external pressure tank to building control valve; (feet		22
3-	Size of water meter (when required) 5/8"____ 3/4" ____ 1" ____ other ____		0
4-	Developed length from main or external pressure tank to building control valve;	(feet)	0
5-	Low pressure at main in street or external pressure tank.	(psi)	80

CALCULATE WATER SERVICE PRESSURE LOSS

(unnecessary for internal pressure tanks)

6-	Low pressure at main in street or external pressure tank. (value of # 5 above)		80
7-	Determine pressure loss due to friction in _____ inch diameter water service. Water service piping material is _____ Pressure loss per 100 ft. = _____ X _____ (decimal equivalent of service length, i.e. 65 ft = 0.65)	**Subtract value of "7"**	0
		Subtotal	80
8-	Determine pressure loss or gain due to elevation, (multiply the value of # 2 above by .434)	**Subtract value of "8"**	0
9-	Available pressure after the bldg. control valve.	Subtotal	80

CALCULATE THE PRESSURE AVAILABLE FOR UNIFORM LOSS (VALUE OF "A")

B.	Available pressure after the bldg. control valve. (from "9" above)	Value of "B"	80
C.	Pressure loss of water meter (when meter is required)	**Subtract value of "C"**	0.0
		Subtotal	80
D.	Pressure at controlling fixture*. (Controlling fixture is: furthest upstairs toilet). (*Contolling fixture is the fixture with the most demanding pressure to operate properly which includes the following when determining fixture performance; loss due to instantaneous water heaters, water treatment devices, and backflow preventers which serve the controlling fixture.)	**Subtract value of "D"**	20
		Subtotal	60
E.	Difference in elevation between building control valve and the controlling fixture in feet; 22 X .434 psi/ft.	**Subtract value of "E"**	9.55
		Subtotal	50.45

Water Calc Worksheet Christian Leadership Academy
Name of Project

F. Pressure loss due to water treatment devices and backflow preventers which serve the controlling fixture. (Water softeners, filters, etc.)

(Pressure loss due to; softener & nitrate reduction system).

F1. WSFU Downstream of Water Treatment Device; _____

F2. Convert wsfu to GPM using **Table 382.40-3**: _____

or

F3. Convert wsfu to GPM using **Table 382.40-3e*** 325
(For individual dwellings only)

F4. Refer to manuf. graph to obtain pressure loss: 7 psi with 3
(If no water treatment device enter "0")

Subtract value of F4 7

Subtotal 43.45

G. Pressure loss through tankless water heaters, combination boiler / hot water heaters, heat exchangers which serve the controlling fixture;

Hot water WSFU's; _____ convert to; GPM = _____ (Table 382.40-3)
Refer to manufacturer's pressure loss graph to determine loss at the required GPM;

_____ pressure loss. **Subtract value of "G"** 0

Subtotal 43.45

H. Developed length from building control valve to controlling fixture in feet 580 X 1.5 **Divide by value "H"** 870

Subtotal 0.0499

Multiply by: 100

A. Pressure available for uniform loss **"A" =** 4.99

Water distribution piping is: 4" Copper

*Note: The "A" value obtained by using Table 382.40-3e can only be used for an individual dwelling when sizing the water treatment device (water softeners, etc) and no hose bibbs, hydrants, or high flow fixtures are being served by the water treatment device.

Note: High flow fixtures are defined as fixtures that exceed a flow rate of 4 gpm @ 80 psi, and water velocity not exceeding 8 ft. per second.

Conditionally APPROVED
SEE CORRESPONDENCE
PE 19002-6

Written Description of Equipment

A Hellenbrand H300-300-30 Tri-plex Demand Flow water softener is currently installed in the facility; Christian Leadership Academy located at W262 N4685 Ryan St, Pewaukee, WI. They now want it to also be approved for Strontium Removal. Since the cation exchange resin used in the water softener has a stronger affinity for Strontium than hardness so it can be presumed that if the water is less than 1 gpg then the Strontium will also have been removed.

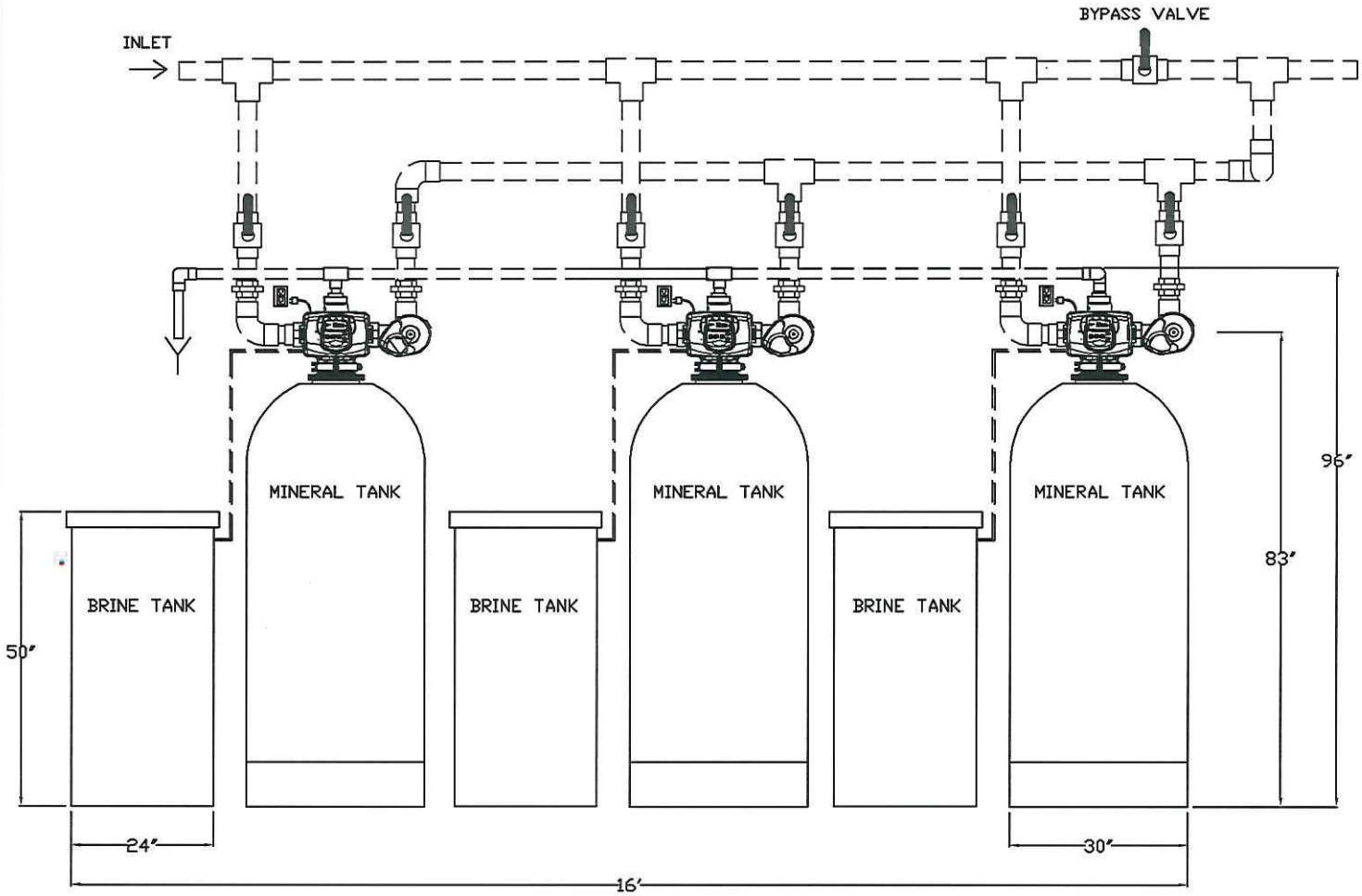
The water softener is a configured as a tri-plex demand flow system is designed to provide 24/7 treated water to the facility. One of the three softeners is always on line and others may be called into service during high flow demand occurrences. The entire water supply is treated with the EXCEPTION of the outside hose bibs.

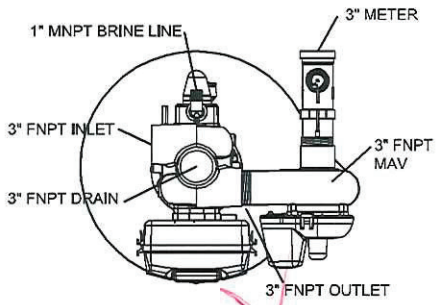
A proposed maintenance plan is also provided to assure that the system is operation as designed.

Conditionally
APPROVED
SEE CORRESPONDENCE

RECEIVED
MAR 17 2015
INDUSTRY SERVICES

PE 19982-6





Conditionally APPROVED
SEE CORRESPONDENCE

— — — — SUPPLIED BY INSTALLER

INTERCONNECT PIPING IS FOR INSTALLATION REFERENCE ONLY AND IS TO BE SUPPLIED BY INSTALLER

1" HARD PIPED BRINE LINE MUST BE WELL SECURED AND SUPPORTED FOR PROPER OPERATION

6" BETWEEN ALL TANKS

ALL DIMENSIONS +/-2"

PE 19062-6

H300-300-30 TRIPLEX DEMAND RECALL	
DWG # 73-H300-300-30-TRI-DR	Hellenbrand It's what you don't see that counts
4-29-13	
dwg by: J.WAACK	Waunakee, WI 53597 (608)849-3050
Approved by Engineer:	A. MAST