



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

February 12, 2015

CUST ID No. 1293249

ATTN: Plumbing Inspector

ALAN MAST
 HELLENBRAND INC
 404 MORAVIAN VALLEY RD
 WAUNAKEE WI 53597

MUNICIPAL CLERK
 TOWN OF NEWTON
 4421 COUNTY RD CR
 MANITOWOC WI 54220-9264

CONDITIONAL APPROVAL
PLAN APPROVAL EXPIRES: 02/12/2017

Identification Numbers
Transaction ID No. 2509000
Site ID No. 50271
Please refer to both identification numbers, above, in all correspondence with the agency.

SITE:

Ah Stock Mfg Corporation
 8402 Center Rd
 Town of Newton, 53063
 Manitowoc County; Fire Dept ID: 3611
 SE1/4, SE1/4, S28, T18N, R23E

FOR:

Facility: 50271 AH STOCK MFG CORPORATION
 8402 CENTER RD
 NEWTON 53063
 Plan Type: Addition-Alteration; 1 Interior Fixture(s)

Object Type: Commercial Water Treatment Device Regulated Object ID No.: 1523407

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:

- The point-of-entry (POE) arsenic reduction devices have undergone sufficient testing to document the ability to reduce only those contaminants and/or substances as specified in this approval letter when the product is installed and maintained in strict accordance with the manufacturer's published instructions.
- Where the Department of Natural Resources (DNR) has jurisdiction, a written approval may be required prior to installation of this product in a water supply system to reduce the concentration of a contaminant that exceeds the primary drinking water standards contained in ch. NR 809, Wis. Admin. Code, the enforcement standards contained in ch. NR 140, Wis. Admin. Code, or for a water supply system that is subject to a written advisory opinion by the DNR. For more information contact the DNR Section of Private Water Systems, P.O. Box 7921, Madison, WI 53707, telephone (608) 267-9787.
- If this approved 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 reaffirmed.

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

Phone: 262-354-5167

E-mail: phil.mnuk@wisconsin.gov

When the final inspection has been completed, this department will notify the Wisconsin Department of Natural Resources (WDNR). The WDNR will then monitor the performance of the device(s) to its satisfaction. A suggested frequency and overall duration of monitoring is provided elsewhere in this letter, which the WDNR is free to accept or reject. The WDNR Field Staff person having jurisdiction in this area is Michael Hanaway. Mr. Hanaway can be contacted via the following:

Phone: 920-755-4987

E-mail: michael.hanaway@wisconsin.gov

- If these devices are installed and put in consumptive service prior to obtaining a final inspection by DSPS, then any pertinent approval for the site specific device is immediately rendered null and void and the device may be ordered removed.
- The suggested monitoring interval for this installation is quarterly. As a minimum, the following tests should be performed:

1. total arsenic (i.e. $As^{+3} + As^{+5}$ + particulate arsenic)

The samples should be collected at a time of day when the devices are under stress and at a time most remote from the last regeneration/backwash cycle as possible. Raw water samples should be collected from the well pressure tank tap (i.e. prior to any treatment devices). Treated water samples should be collected downstream of all water treatment devices.

- The anion exchange based arsenic reduction devices being installed are approved under DSPS product file number 20100466. The approval letter can be viewed at:

<http://dsps.wi.gov/sb/docs/sb-ppalopp/wtd/20100466.pdf>

All stipulations displayed in the approval letter for product file number 20100466 must be adhered to.

**HEALTH EFFECTING INORGANIC CONTAMINANT REDUCTION CAPABILITIES
PRODUCT FILE NUMBER 20100466**

TABLE 1 OF 1

Service Flow Rate: AC-14 = 12.9 lpm (3.4 gpm)

Tested Contaminant	Tested Influent Concentration (mg/l) ¹
Total Dissolved Arsenic ($As^{+5} + As^{+3}$)	≤ 0.342

Other conditions: the contaminant reduction capabilities displayed for table 1 of 1 were generated by field testing conducted in a number of locations within the WDNR Arsenic Advisory Area. To qualify for total dissolved arsenic reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are ≤ 0.010 mg/l.

1 = milligrams per liter (mg/l) are equivalent to parts per million (ppm) ± = plus or minus
 \leq = less than or equal to

- The complete system is comprised of two chemical injection pumps, an 18-inch aeration tank followed by four AC-14 units installed in parallel via a balanced manifold; each with a restricted flow rate of 3.4 gpm x 4 = 13.6 gpm maximum flow rate. Of the two chemical injection pumps, one is injecting liquid chlorine (HOCl) to convert any trivalent arsenic (As^{+3}) present to pentavalent arsenic (As^{+5}); the second pump is injecting ferric chloride ($FeCl_3$) to support the desired coprecipitation reaction.

- All piping shall be labeled in accordance with Table 382.40-1a.
- The DWV system shall be properly sized to accept the additional loading from the four AC-14 units.
- The installation shall be performed by a properly licensed Wisconsin plumber.
- No bypass piping shall be installed serving the AC-14 devices. If a bypass is desired, then it must be of the locking type.
- Any wall hydrant that is not served by the arsenic treatment devices shall have at least one, or more, 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 indicating the water is unfit for human consumption.
- A complete owner's manual, maintenance and service instructions for all treatment components shall be provided to the system owner.
- The ongoing serviced and maintenance on this system shall be performed by Hein Plumbing, 920-682-3950.
- This device was tested under controlled laboratory, or field, conditions. The actual performance of this device for a specific end use installation will vary from the tested conditions based on local factors such as water pressure, water temperature and water chemistry.

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
 Plumbing Product Reviewer , Division of Industry Services
 (608)267-1401 , Monday-Friday 7:15AM-4:00PM
 glen.schlueter@wisconsin.gov

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

WiSMART code: 7657

cc: Hellenbrand Inc

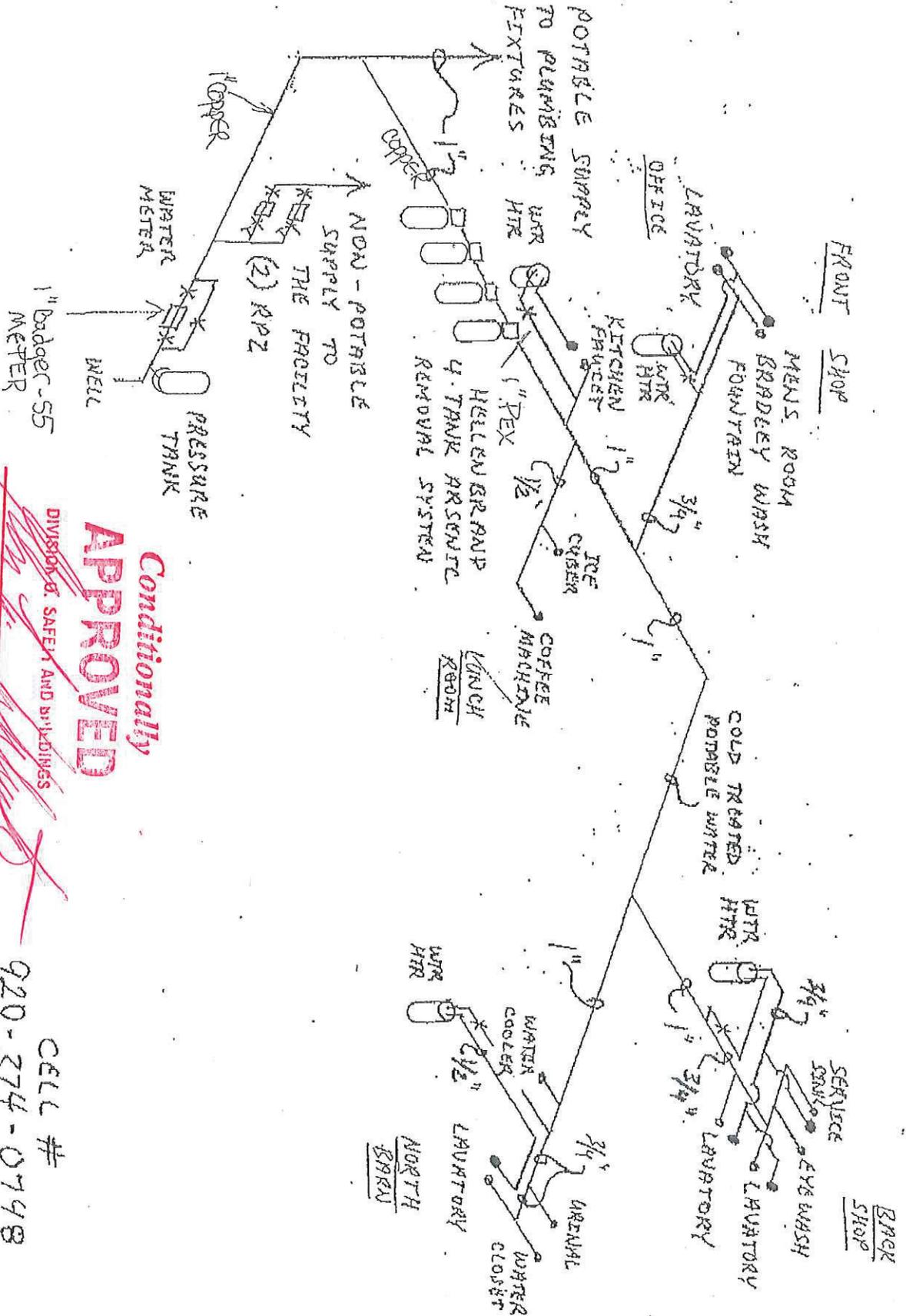
Philip Mnuk, Plumbing Consultant, (262) 354-5167 , M-t 6:00AM-3:30PM -FRI-6:00AM-10:00AM

Jill Mcdonald , Hellenbrand Inc

Dave Stock, A H Stock Mfg Corp

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CELL #
 920-374-0798

[Signature]
 MP6694

TYPE OF FIXTURE	QTY	HOT	COLD	QTY TOTAL	FIX UNTS	FOM-SJU	FT-WU
auto ciths wshr. indiv.	2.00	2.00	2.00	3.00	0	2	2
auto ciths wshr. lg cap				3.00	0	3	3
bathub, w or w/o show hd	2.00	2.00	2.00	3.00	0	4	4
coffeemaker			0.50	0.50	0.5	5	4.5
dishwasher, commercial			0.50	1.00	0	6	5
drink dispenser			0.25	0.25	0	7	6
drinking fountain			0.25	0.25	0.25	8	6.5
glass filler			0.50	0.50	0	9	7
hose: 1/2" diameter			3.00	3.00	0	10	8
3/4" diameter			4.00	4.00	0	20	14
icemaker			0.50	0.50	0.5	30	20
lavatory	0.50	0.50	0.50	1.00	4	40	24
shower, per head	2.00	2.00	2.00	3.00	0	50	28
sinks: bar & fountain	1.50	1.50	1.50	2.00	0	60	32
barber & shampoo	1.50	1.50	2.00	2.00	0	70	35
bed pan washer			2.00	2.00	0	80	38
cup			0.50	0.50	0	90	41
flushing rim			7.00	7.00	0	100	42
hand wash	0.50	0.50	0.50	1.00	0	120	48
kit. & food prep., per faucet	2.00	2.00	2.00	3.00	0	140	53
kitchen kettle fill faucet			2.00	2.00	0	160	57
					0	180	61
laboratory- Kitchen sink	1.00	1.00	1.00	1.50	1.5	200	65
medical exam & treatment	1.00	1.00	1.00	1.00	1	250	75
service	2.00	2.00	2.00	3.00	3	300	85
surgeon wash-up	1.50	1.50	1.50	2.00	0	400	105
urinal: siphon jet			4.00	4.00	0	500	125
washdown			2.00	2.00	2	600	143
wall hydrant, hot & cold mix 1/2" d	2.00	2.00	2.00	3.00	0	700	161
3/4" d	3.00	3.00	3.00	4.00	0	800	178
wash fountain: semicircular	1.50	1.50	1.50	2.00	0	900	195
circular	2.00	2.00	2.00	3.00	3	1000	208
water closet: flushometer			7.00	7.00	0	1250	240
gravity type flush tk	0.00		3.00	3.00	3	1500	267
Total WSFU's				18.75		1750	294

Peak GPM Demand 13.3

	SFU	GPM
Next Larger SFU/GPM	20	14
NextSmaller SFU/GPM	10	8

FIX UNTS	FOM-SJU	FT-WU
1	1	1
2	2	2
3	3	3
4	10	4
5	15	4.5
6	18	5
7	21	6
8	24	6.5
9	26	7
10	27	8
20	35	14
30	40	20
40	46	24
50	51	28
60	54	32
70	58	35
80	62	38
90	65	41
100	68	42
120	73	48
140	78	53
160	83	57
180	87	61
200	92	65
250	101	75
300	110	85
400	126	105
500	142	125
600	157	143
700	170	161
800	183	178
900	197	195
1000	208	208
1250	240	240
1500	267	267
1750	294	294
2000	321	321
2250	348	348
2500	375	375
2750	402	402
3000	432	432
4000	525	525
5000	593	593

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DIVISION OF SAFETY AND BUILDINGS

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 SEE COMMENTS

INFORMATION REQUIRED TO SIZE WATER SERVICE AND WATER DISTRIBUTION:		
1-	Demand of building in water supply fixture units (WSFU);	(WSFU) <u>18.75</u>
1.a.	Demand of building in WSFU converted to Gallons Per Minute: (Table 82.40-3)	(GPM) <u>13.3</u>
2-	Elevation difference from main or external pressure tank to building control valve; (feet)	_____
3-	Size of water meter (when required) 5/8" _____ 3/4" _____ 1" _____ other _____	_____
4-	Developed length from main or external pressure tank to building control valve; (feet)	_____
5-	Low pressure at main in street or external pressure tank.	(psi) _____

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) _____

- 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"** _____
 Subtotal _____

- 8- Determine pressure loss or gain due to elevation,
 (multiply the value of # 2 above by .434) **Subtract value of "8"** _____

- 9- Available pressure after the bldg. control valve. Subtotal _____

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

- B. Available pressure after the bldg. control valve. (from "9" above) Value of "B" 40

- C. Pressure loss of water meter (when meter is required) **Subtract value of "C"** -- NA--
 Subtotal 40

- D. Pressure at controlling fixture*.
 (Controlling fixture is: urinal in north barn). **Subtract value of "D"** 8
 (*Controlling 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.)
 Subtotal 32

- E. Difference in elevation between building control valve
 and the controlling fixture in feet; _____ X .434 psi/ft. **Subtract value of "E"** 0
 Subtotal 32

Water Calc Worksheet

AH Stock

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; As Curtain Sys+ Hellenbrd. meter).

F1. WSFU Downstream of Water Treatment Device; 18.75

F2. Convert wsfu to GPM using **Table 82.40-3**: 13.3

or

F3. Convert wsfu to GPM using **Table 82.40-3e***
(For individual dwellings only)

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

Subtract value of F4 7.4

Subtotal 24.6

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 82.40-3)
Refer to manufacturer's pressure loss graph to determine loss at the required GPM;

 pressure loss. **Subtract value of "G"** --NA--

Subtotal 24.6

H. Developed length from building control valve to controlling fixture in feet 376.7 X 1.5

Divide by value "H" 565

Subtotal 0.0435

Multiply by: 100

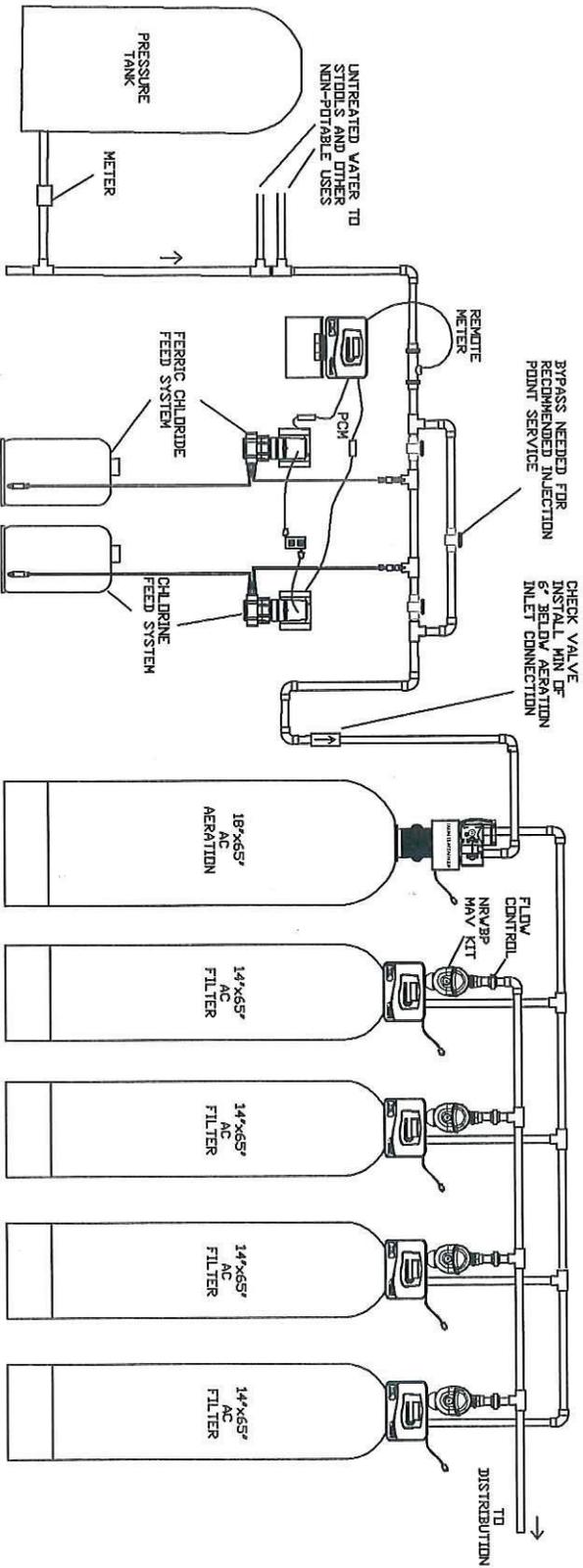
A. Pressure available for uniform loss **"A" =** 4.35

Water distribution piping is: 1" Copper & 1" PEX

*Note: The "A" value obtained by using Table 82.40-3e 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.

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INTERCONNECT PIPING SUPPLIED BY INSTALLER

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QUADPLEX ARSENIC FILTER SYSTEM AH STOCK MANUFACTURING		
DWG # 79-ARSENIC CURTAIN-4 AH STOCK 2-6-15	dwg by: A,MAST	
Approved by Engineer:		A,MAST