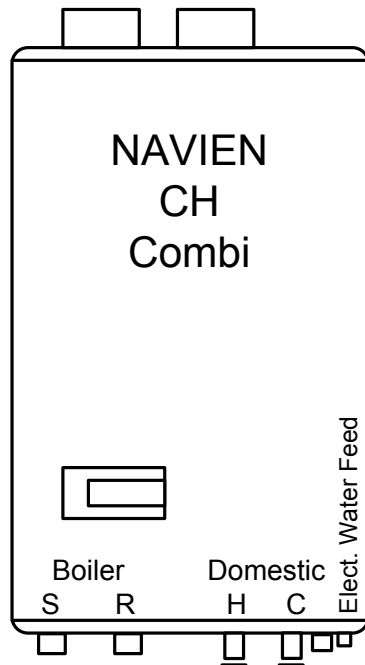
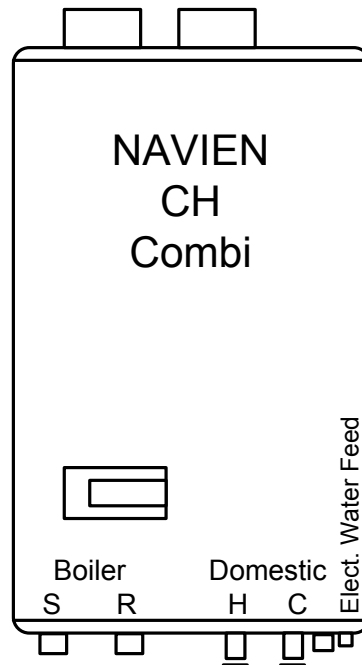


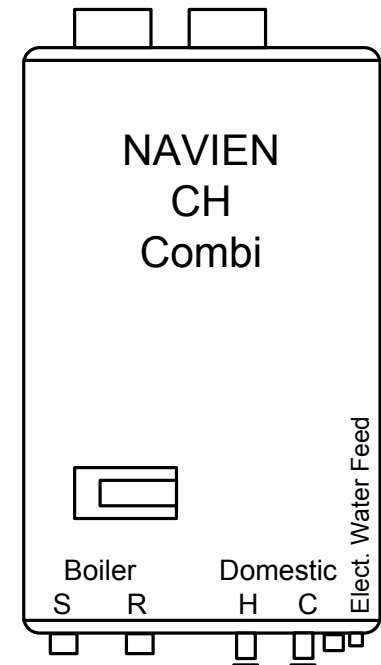
CH Series Application Drawings



CH-240ASME



CH-210ASME



CH-180ASME

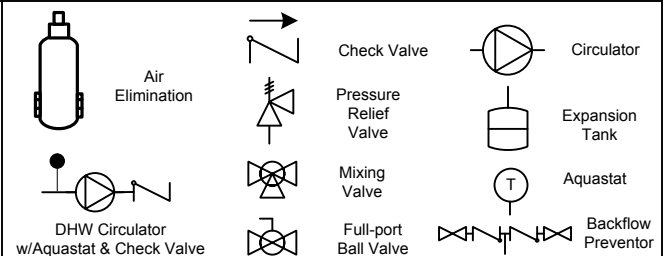


20 Goodyear
Irvine, CA 92618
800-519-8794

www.NavienAmerica.com

Guide Only

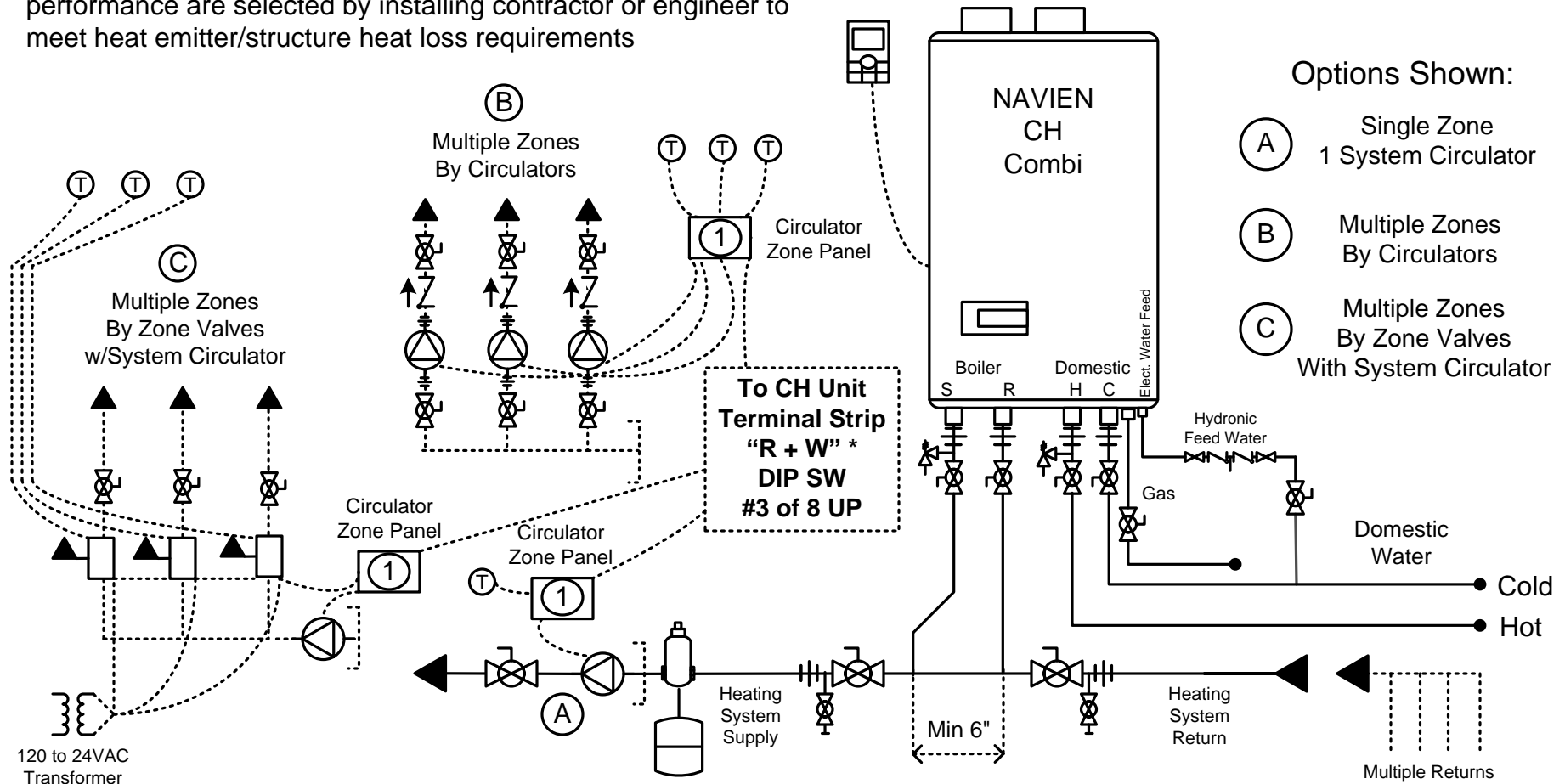
These drawing are intended as a guide only and not as a replacement for professionally engineered project drawings. These concept system drawings do not imply compliance with local building codes. Actual installations may vary depending on installation location & parameters and it must be done in accordance with all local building codes. Verify with local building officials before commencement of system installations.



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

① Field Supplied Circulator Panels Shall have Dry Contacts Closed On Heat Calls Wired to Navien CH Unit "R & W" Terminals To Activate Heat Mode

System circulator, zone circulators & zone valves sizes and performance are selected by installing contractor or engineer to meet heat emitter/structure heat loss requirements



Options Shown:

- (A) Single Zone
1 System Circulator
- (B) Multiple Zones
By Circulators
- (C) Multiple Zones
By Zone Valves
With System Circulator



20 Goodyear
Irvine, CA 92618
800-519-8794

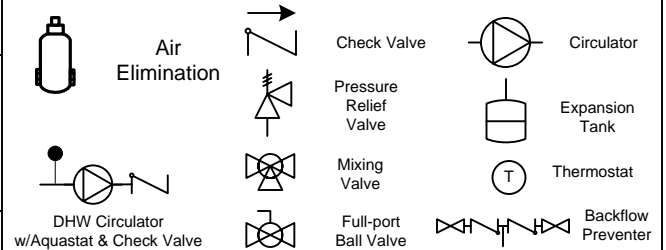
www.navienamerica.com

Navien CH Combi Boiler Application Typical Piping Diagram with Three Zone Options Shown

Drawn By: B. Fenske

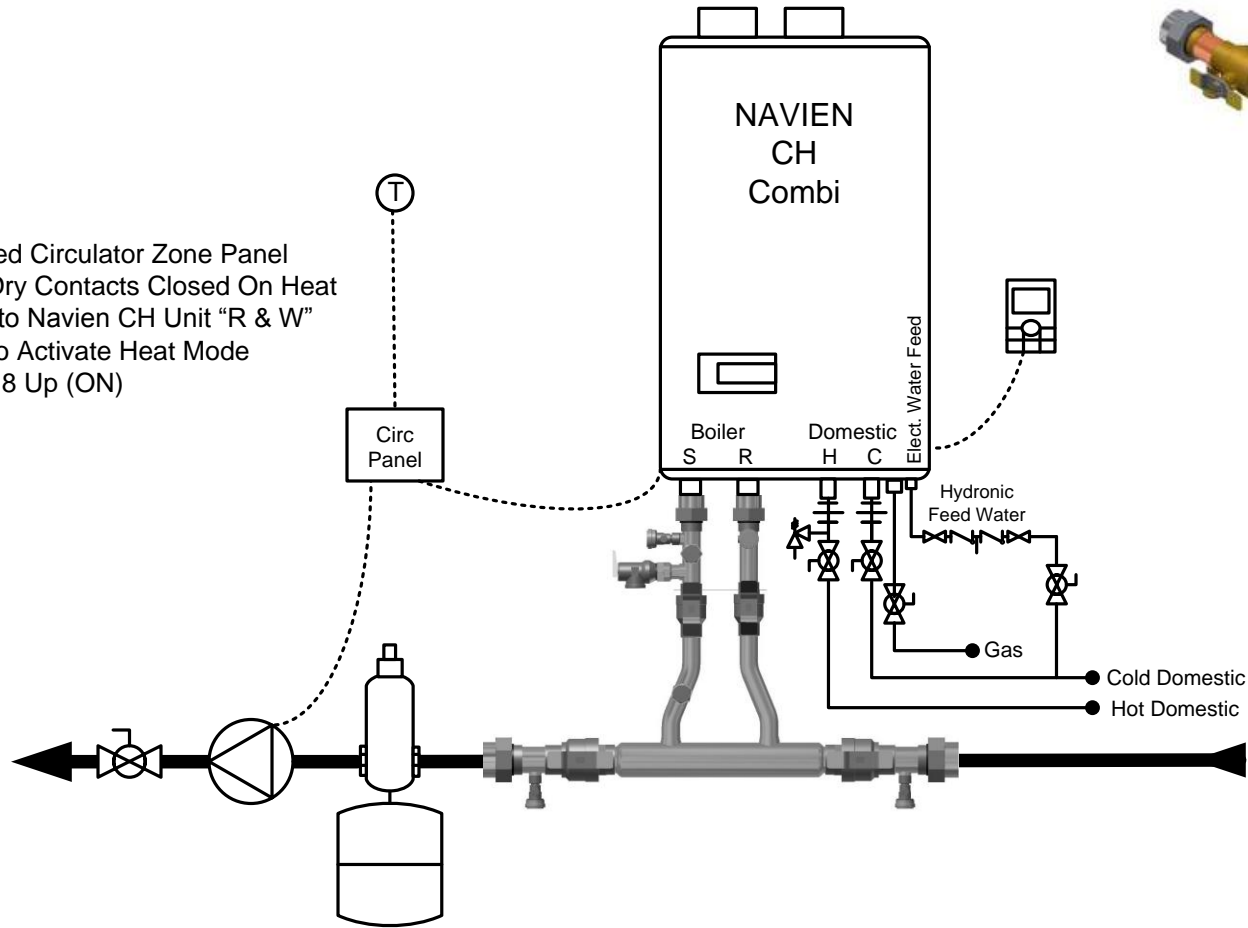
CH-BF01

October 25, 2011



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

Field Supplied Circulator Zone Panel
 Shall have Dry Contacts Closed On Heat
 Calls Wired to Navien CH Unit "R & W"
 Terminals To Activate Heat Mode
 DIP Sw 3 of 8 Up (ON)



20 Goodyear
 Irvine, CA 92618
 800-519-8794

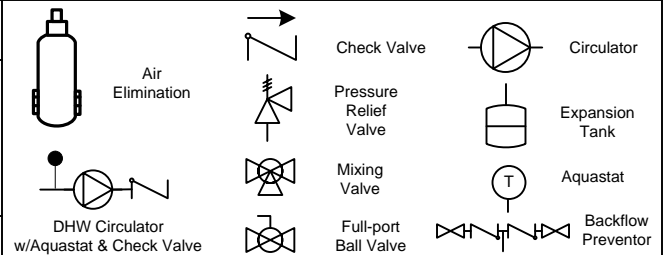
www.navienamerica.com

Navien CH Combi Boiler
 With CH Quik-Install Manifold Kit
 Single System Circulator Shown

Drawn By: B. Fenske

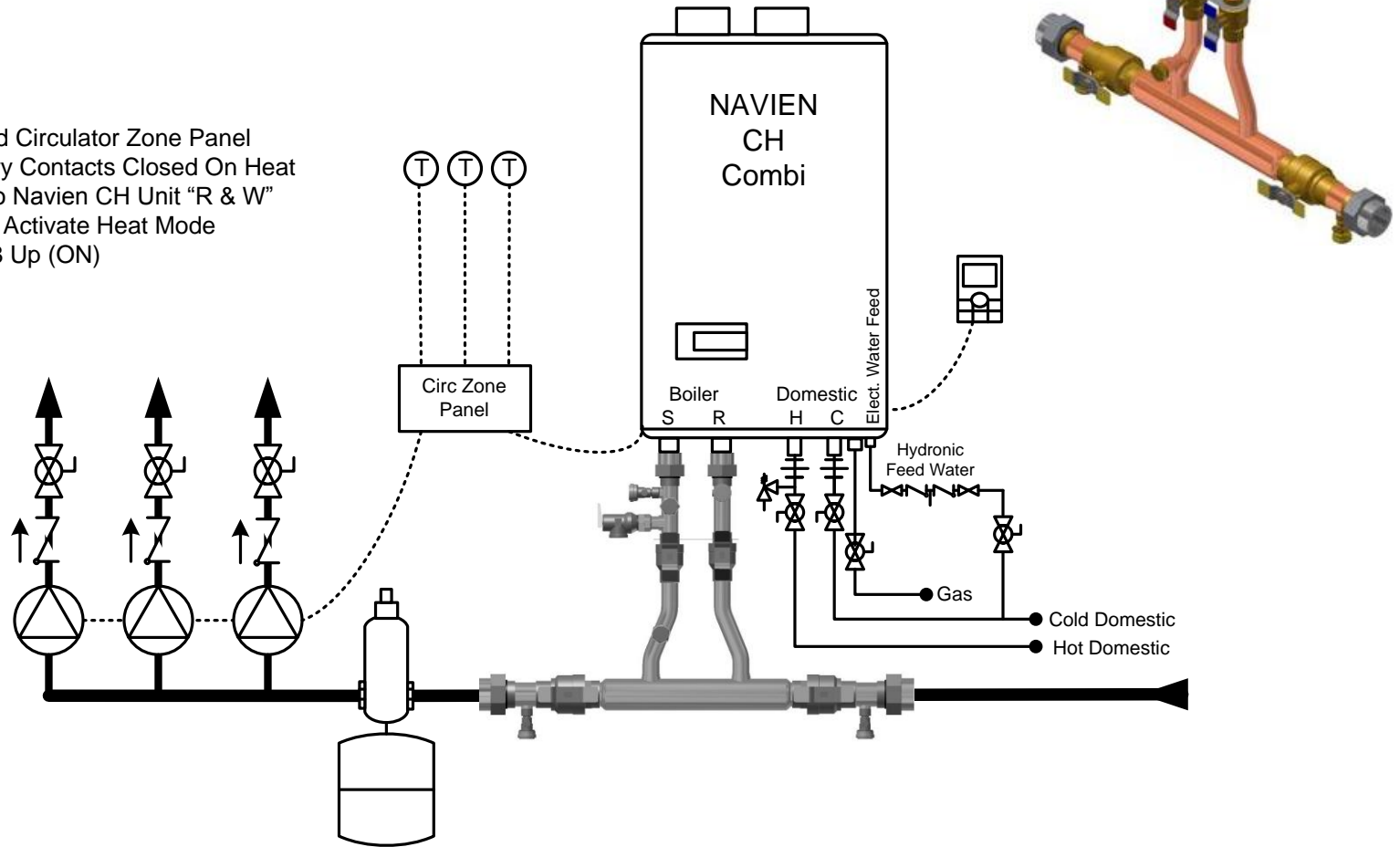
CH-BF-CHQuik1

June 26, 2012



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

Field Supplied Circulator Zone Panel
 Shall have Dry Contacts Closed On Heat
 Calls Wired to Navien CH Unit "R & W"
 Terminals To Activate Heat Mode
 DIP Sw 3 of 8 Up (ON)



KD Navien

20 Goodyear
 Irvine, CA 92618
 800-519-8794

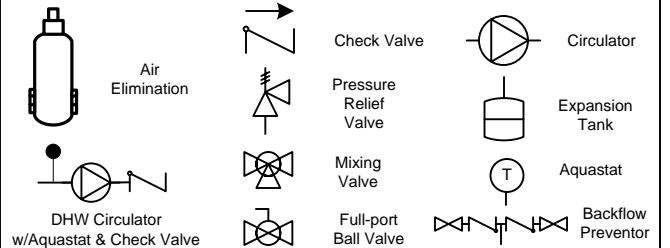
www.navienamerica.com

Navien CH Combi Boiler
 With CH Quik-Install Manifold Kit
 Multiple System Circulators Shown

Drawn By: B. Fenske

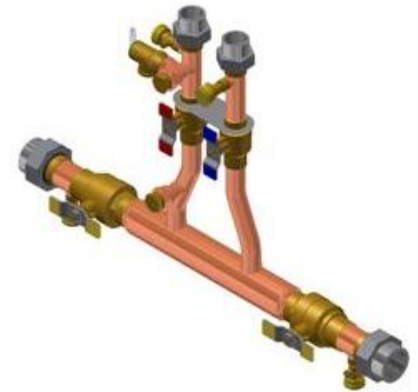
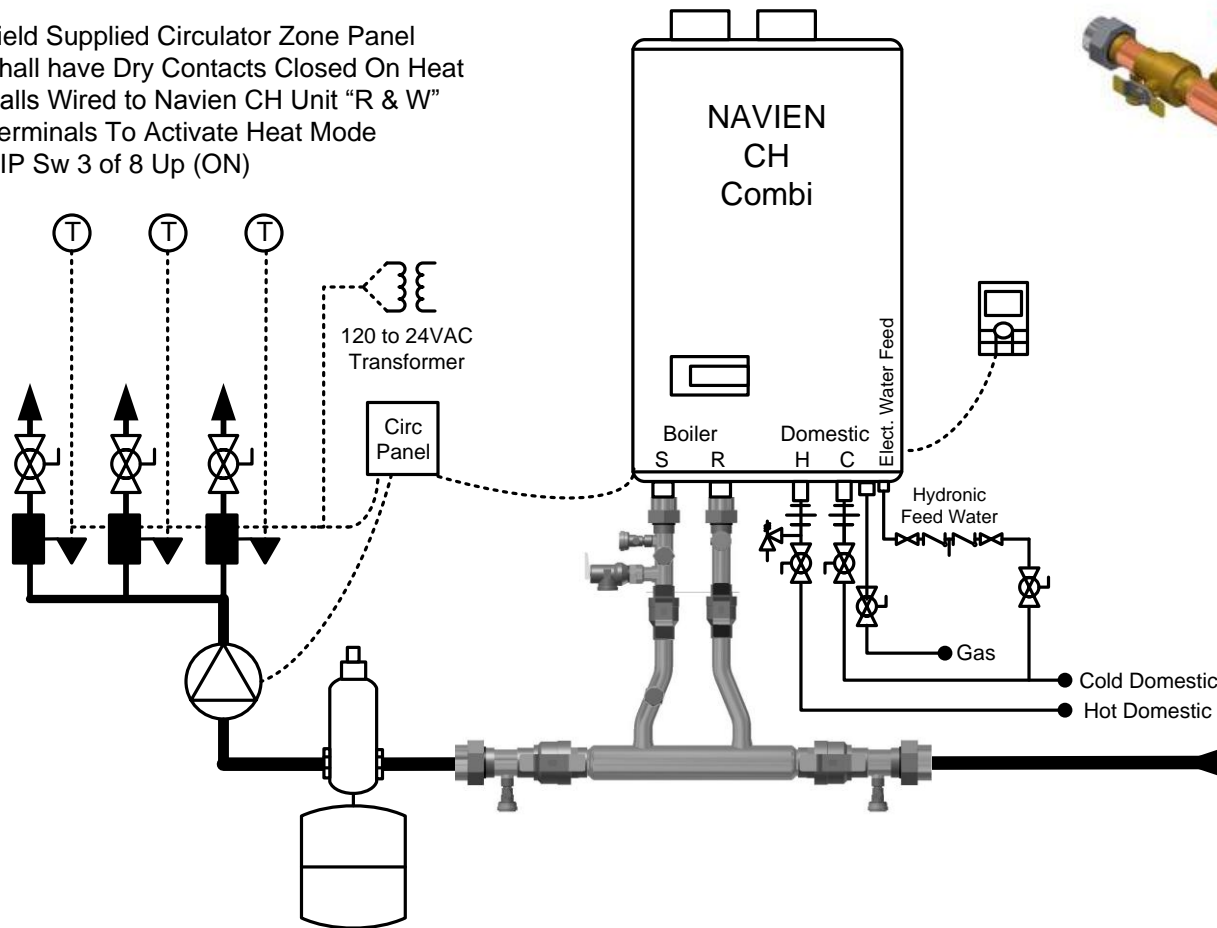
CH-BF-CHQuik2

June 26, 2012



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

Field Supplied Circulator Zone Panel
 Shall have Dry Contacts Closed On Heat
 Calls Wired to Navien CH Unit "R & W"
 Terminals To Activate Heat Mode
 DIP Sw 3 of 8 Up (ON)



20 Goodyear
 Irvine, CA 92618
 800-519-8794

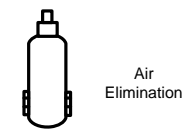
www.navienamerica.com

Navien CH Combi Boiler
 With CH Quik-Install Manifold Kit
 Multiple Zone Valve System Shown

Drawn By: B. Fenske

CH-BF-CHQuik3

June 26, 2012



Air Elimination



DHW Circulator w/Aquastat & Check Valve



Check Valve



Pressure Relief Valve



Zone Valve



Full-port Ball Valve



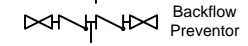
Circulator



Expansion Tank



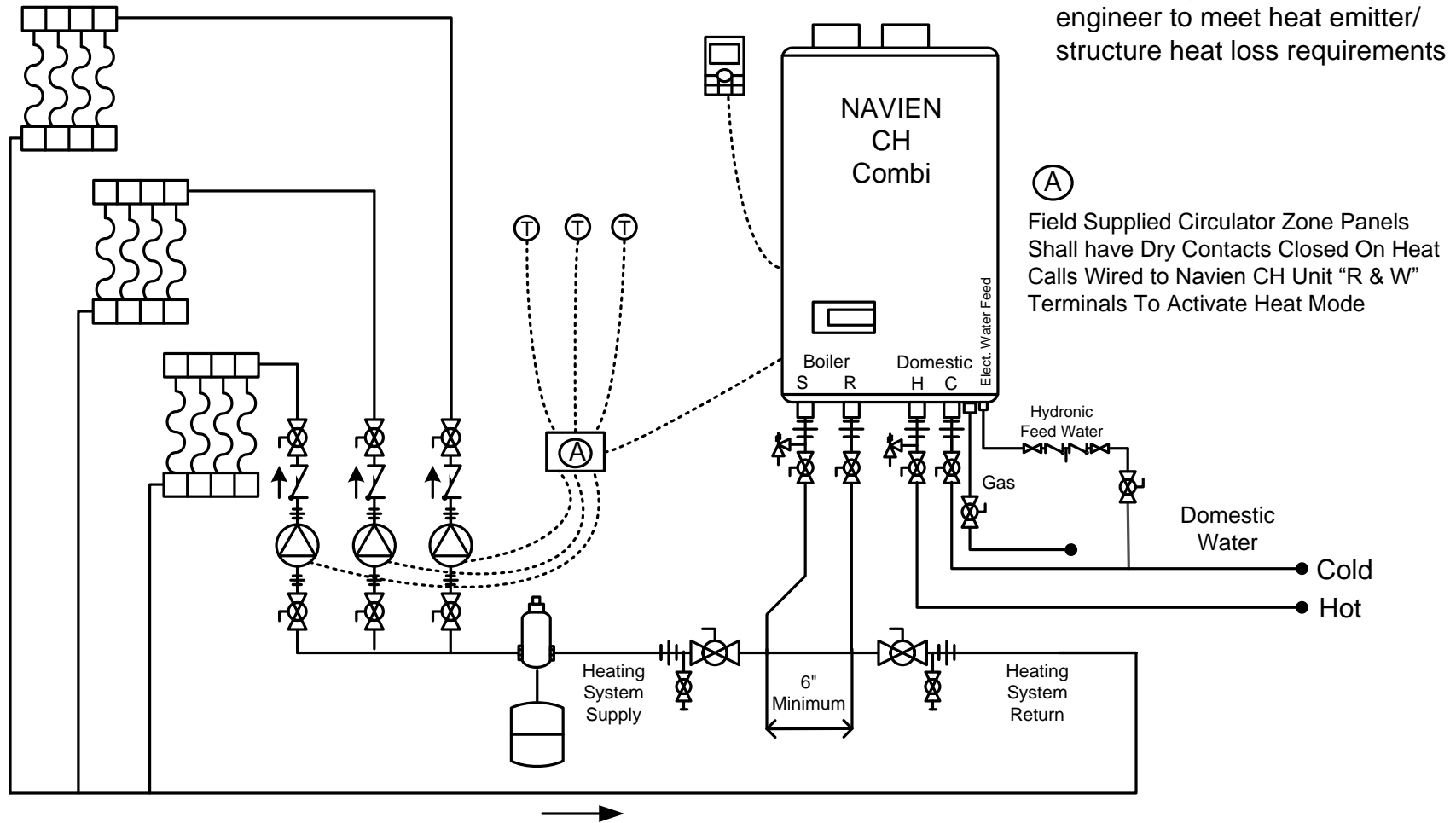
Aquastat



Backflow Preventor

This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

System circulator, zone circulators & zone valves sizes and performance are selected by installing contractor or engineer to meet heat emitter/structure heat loss requirements



20 Goodyear
Irvine, CA 92618
800-519-8794

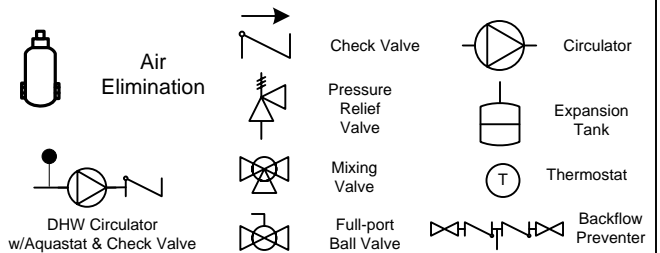
www.navienamerica.com

Navien CH Combi Boiler Application Typical Piping Diagram with Three Radiant Zones Shown

Drawn By: B. Fenske

CH-BF01-3RZ

December 3, 2011

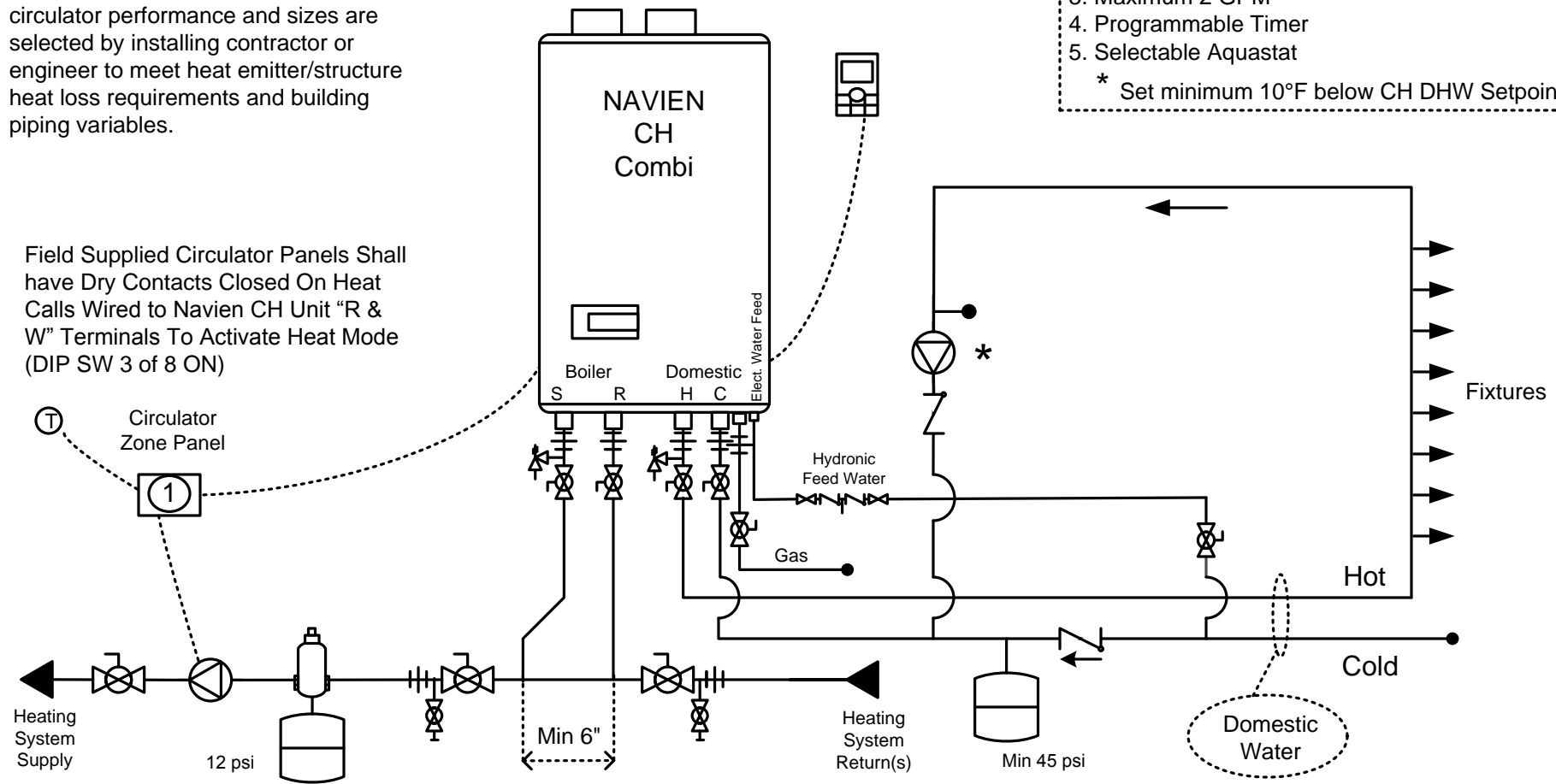


This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

- DHW Circulator Requirements:**
1. S.S. or Bronze Body & Impeller
 - * DHW Side 2.5 PSI Pressure drop @ 2 GPM
 2. > 0.5 GPM to Activate Burner
 3. Maximum 2 GPM
 4. Programmable Timer
 5. Selectable Aquastat
 - * Set minimum 10°F below CH DHW Setpoint

System circulator, zone circulators & zone valves, domestic hot water circulator performance and sizes are selected by installing contractor or engineer to meet heat emitter/structure heat loss requirements and building piping variables.

Field Supplied Circulator Panels Shall have Dry Contacts Closed On Heat Calls Wired to Navien CH Unit "R & W" Terminals To Activate Heat Mode (DIP SW 3 of 8 ON)

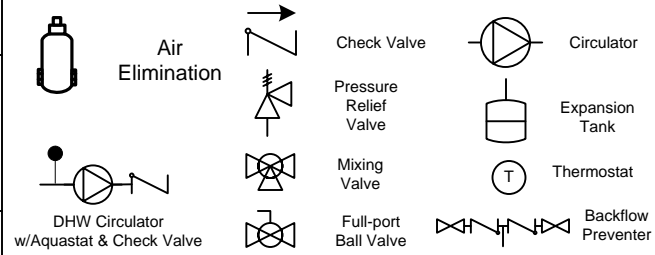


20 Goodyear
Irvine, CA 92618
800-519-8794

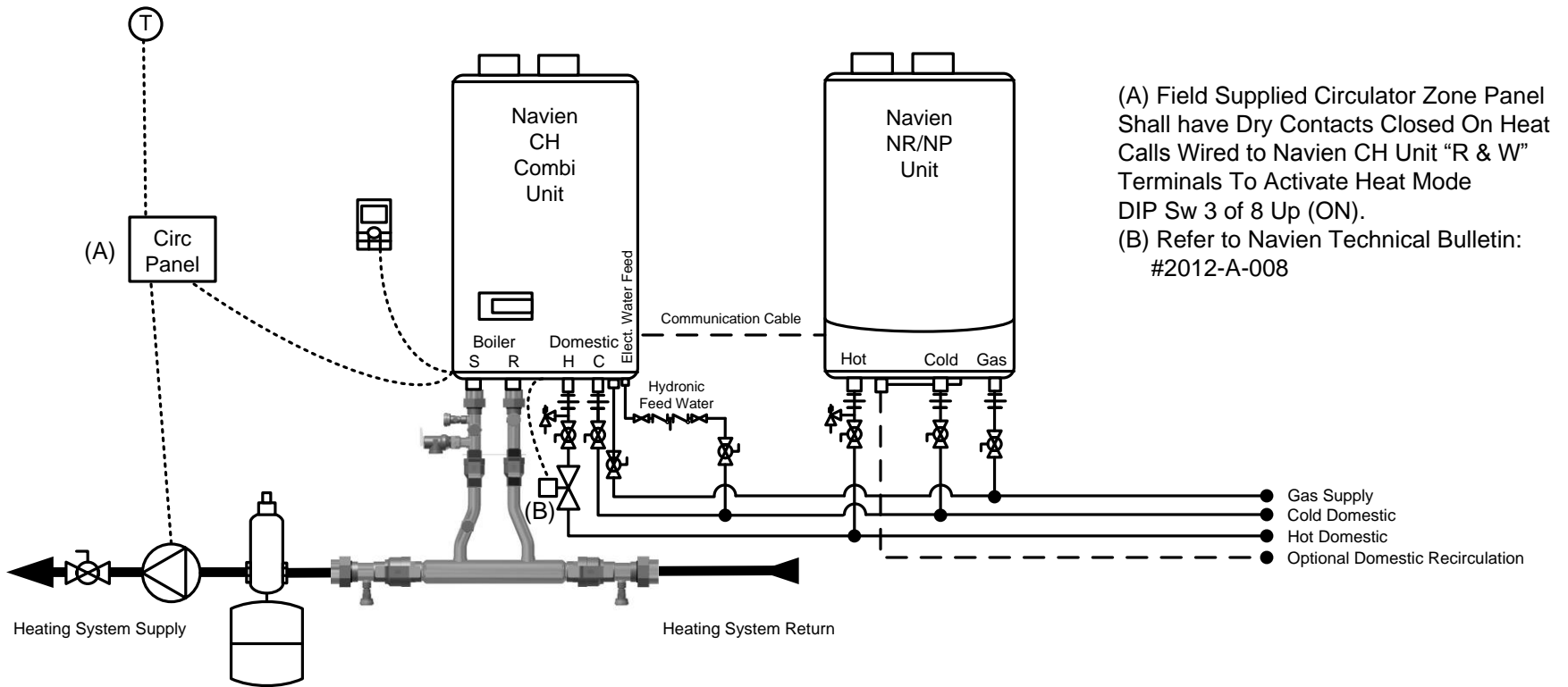
www.navienamerica.com

Navien CH Combi Boiler Application
Typical Piping Diagram with Domestic Hot
Water Recirculation

Drawn By: B. Fenske | CH-BF01-DHWC | November 29, 2011



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.



KD Navien

20 Goodyear
 Irvine, CA 92618
 800-519-8794

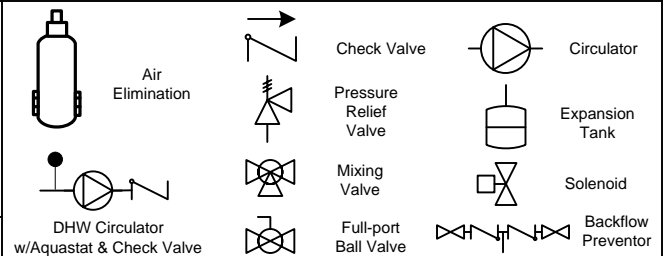
www.navienamerica.com

Navien CH Combi Boiler
 With CH Quik-Install Manifold Kit
 Single System Circulator Shown
 With Cascaded NR/NP

Drawn By: B. Fenske

CH-BF-CHQuik1-NR-NP

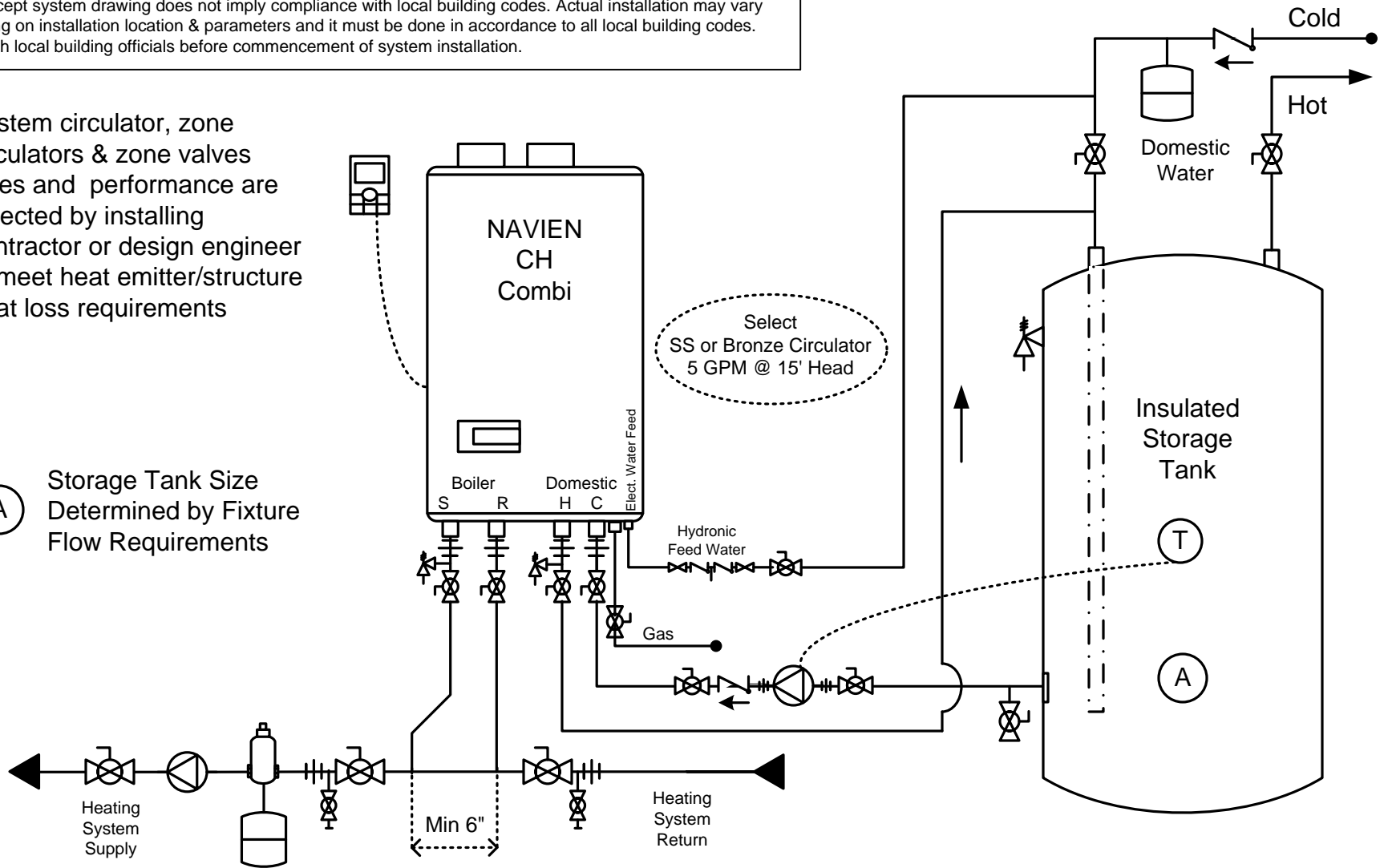
October 31, 2012



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

System circulator, zone circulators & zone valves sizes and performance are selected by installing contractor or design engineer to meet heat emitter/structure heat loss requirements

(A) Storage Tank Size Determined by Fixture Flow Requirements



Select SS or Bronze Circulator 5 GPM @ 15' Head



20 Goodyear
Irvine, CA 92618
800-519-8794

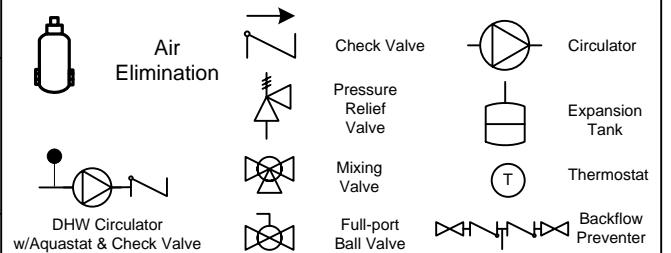
www.navienamerica.com

Navien CH Combi Boiler Application With Domestic Hot Water Storage

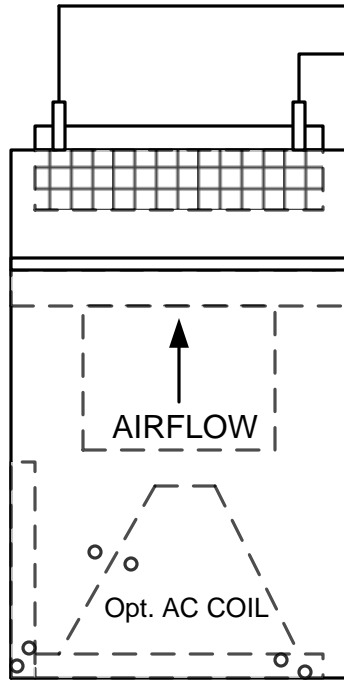
Drawn By: B. Fenske

CH - ST - BF01

October 26, 2011

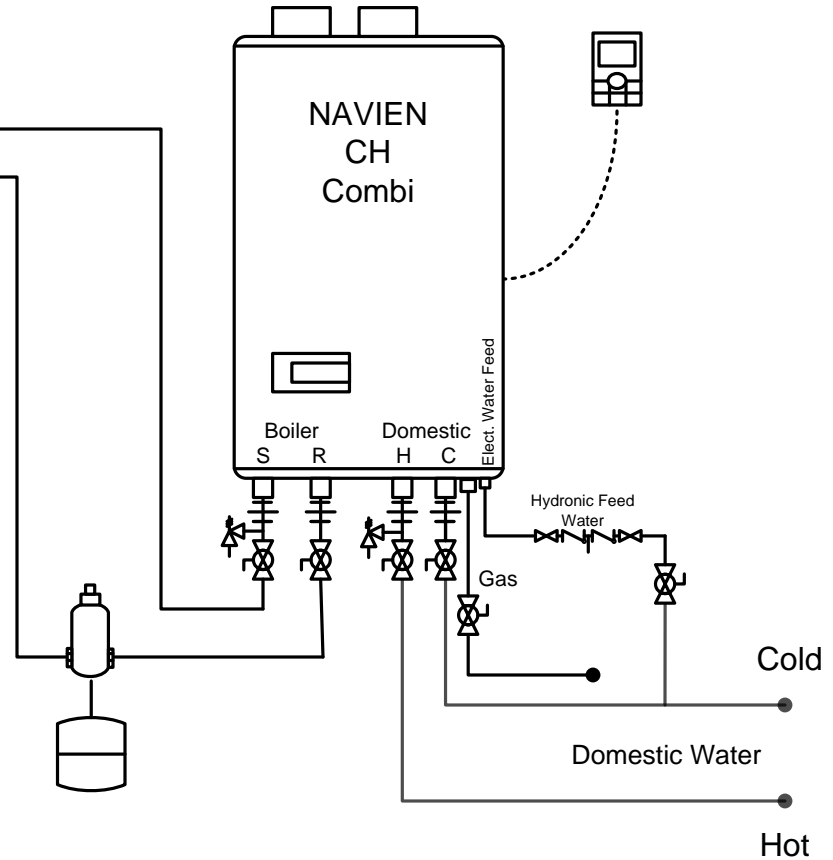


This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.



Installation Notes:

1. 25' Total Maximum Boiler-Side Piping Connection Length Allowed.
2. Boiler-Side Pipe Length Exceeding 25' Total or a 50MBTUH Coil Output or More Requires Primary/Secondary Piping Configuration with Separate System Circulator.
3. Air Handlers with Internal or External Circulator Requires Crossover Pipe at A/H Unit or CH Unit to Complete Primary/Secondary Configuration. (Circulators must not function in series)



20 Goodyear
Irvine, CA 92618
800-519-8794

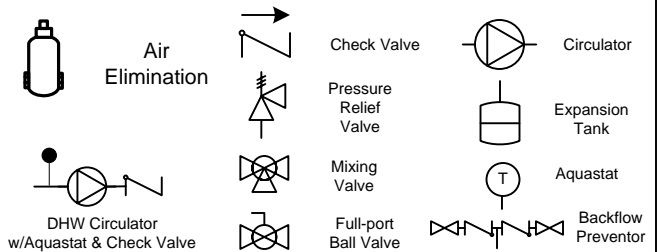
www.navienamerica.com

**Navien CH Combi Boiler Application
with Air Handler - Direct Connection**

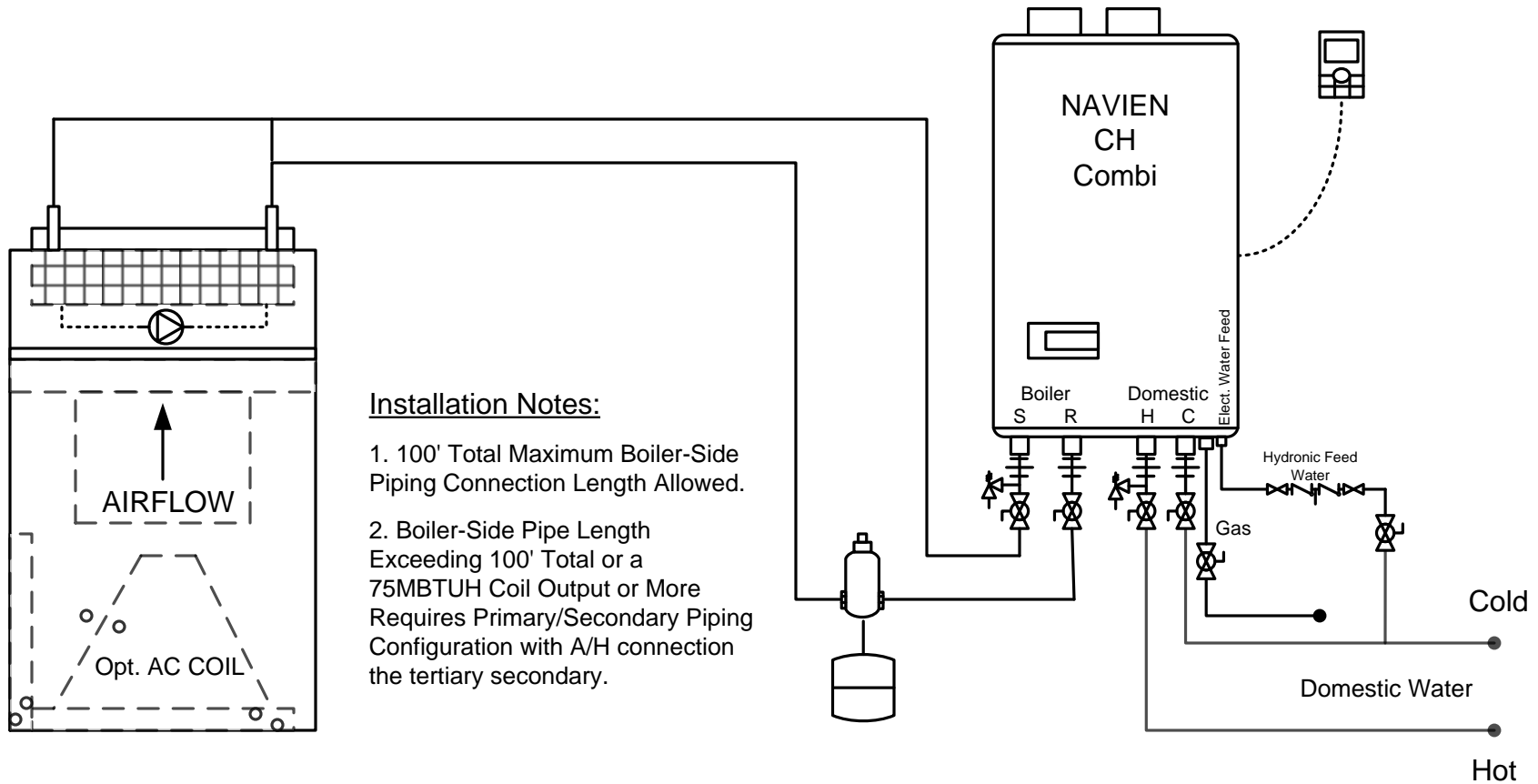
Drawn By: B. Fenske

CH-AH-BF01

October 14, 2011



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.



20 Goodyear
Irvine, CA 92618
800-519-8794

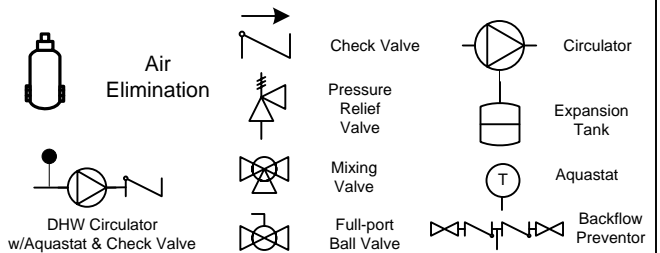
www.navienamerica.com

Navien CH Combi Boiler Application with Air Handler and A/H Internal Pump

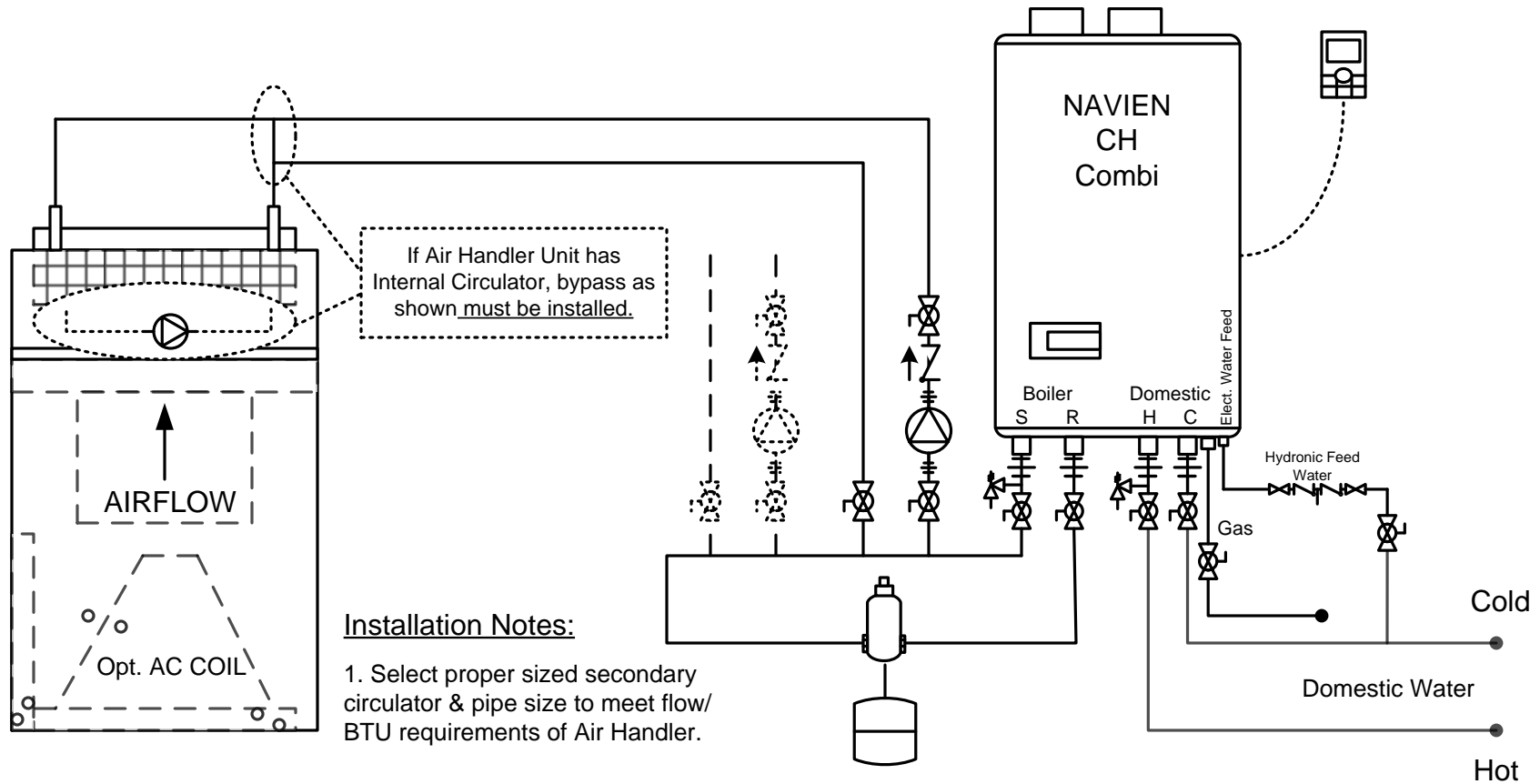
Drawn By: B. Fenske

CH-AH-BF02

October 14, 2011



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.



Installation Notes:

1. Select proper sized secondary circulator & pipe size to meet flow/ BTU requirements of Air Handler.



20 Goodyear
Irvine, CA 92618
800-519-8794

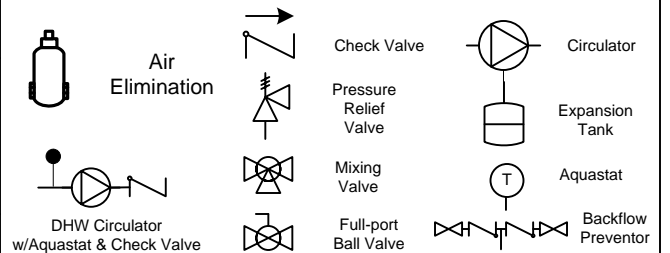
www.navienamerica.com

Navien CH Combi Boiler Application
with Air Handler and A/H Internal Pump
Primary/Secondary Configuration

Drawn By: B. Fenske

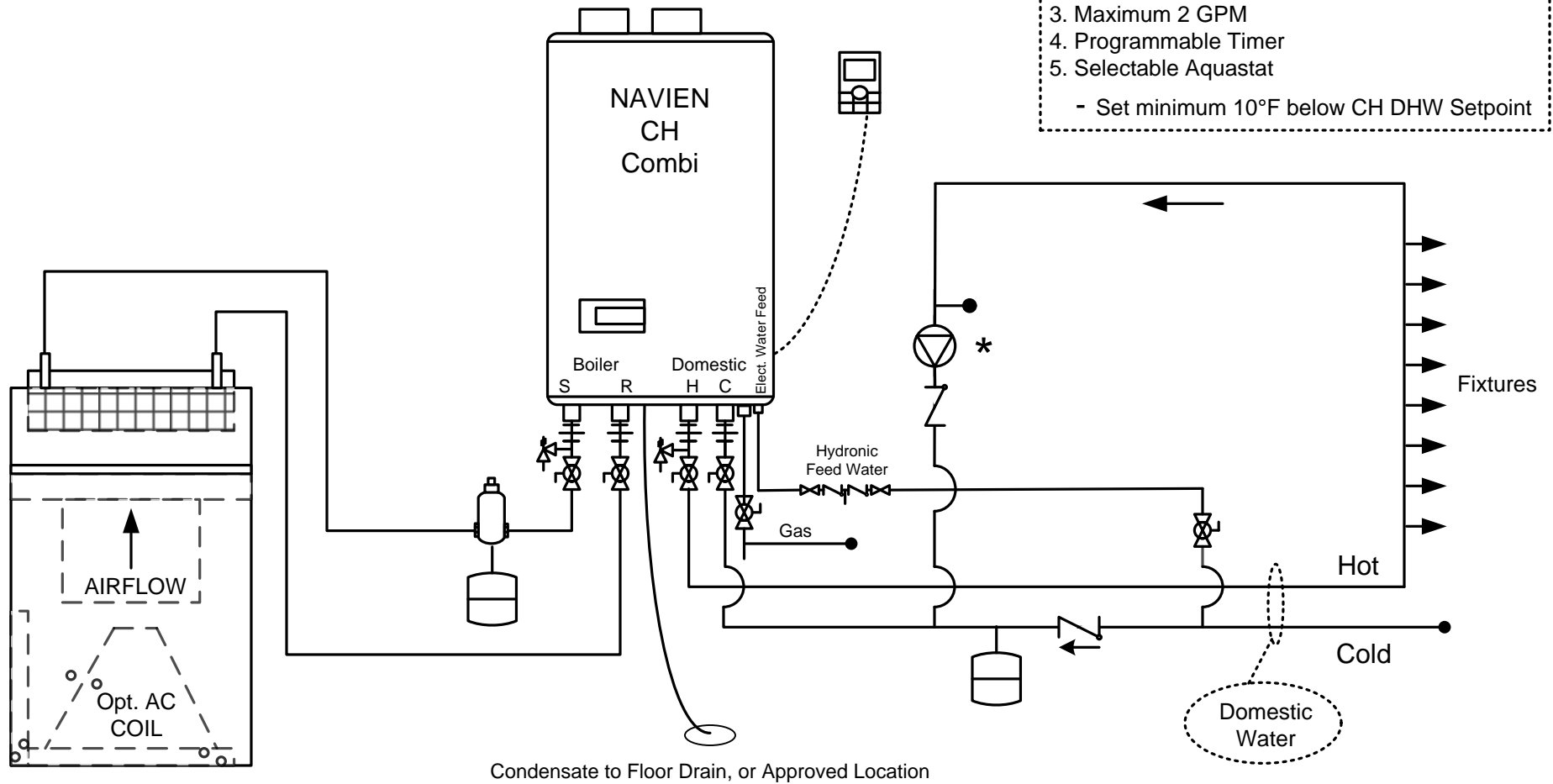
CH-AH-BF03

October 14, 2011



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

- * DHW Circulator Requirements:**
1. S.S. or Bronze Body & Impeller
 - DHW Side 2.5 PSI Pressure drop @ 2 GPM
 2. > 0.5 GPM to Activate Burner
 3. Maximum 2 GPM
 4. Programmable Timer
 5. Selectable Aquastat
 - Set minimum 10°F below CH DHW Setpoint



KD Navien

20 Goodyear
Irvine, CA 92618
800-519-8794

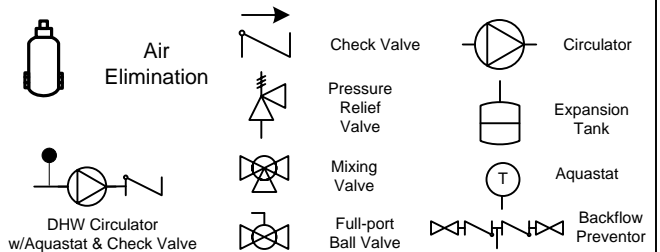
www.navienamerica.com

**Navien CH Combi Boiler Application
with Air Handler - Direct Connection**

Drawn By: B. Fenske

CH-AH-R-BF01

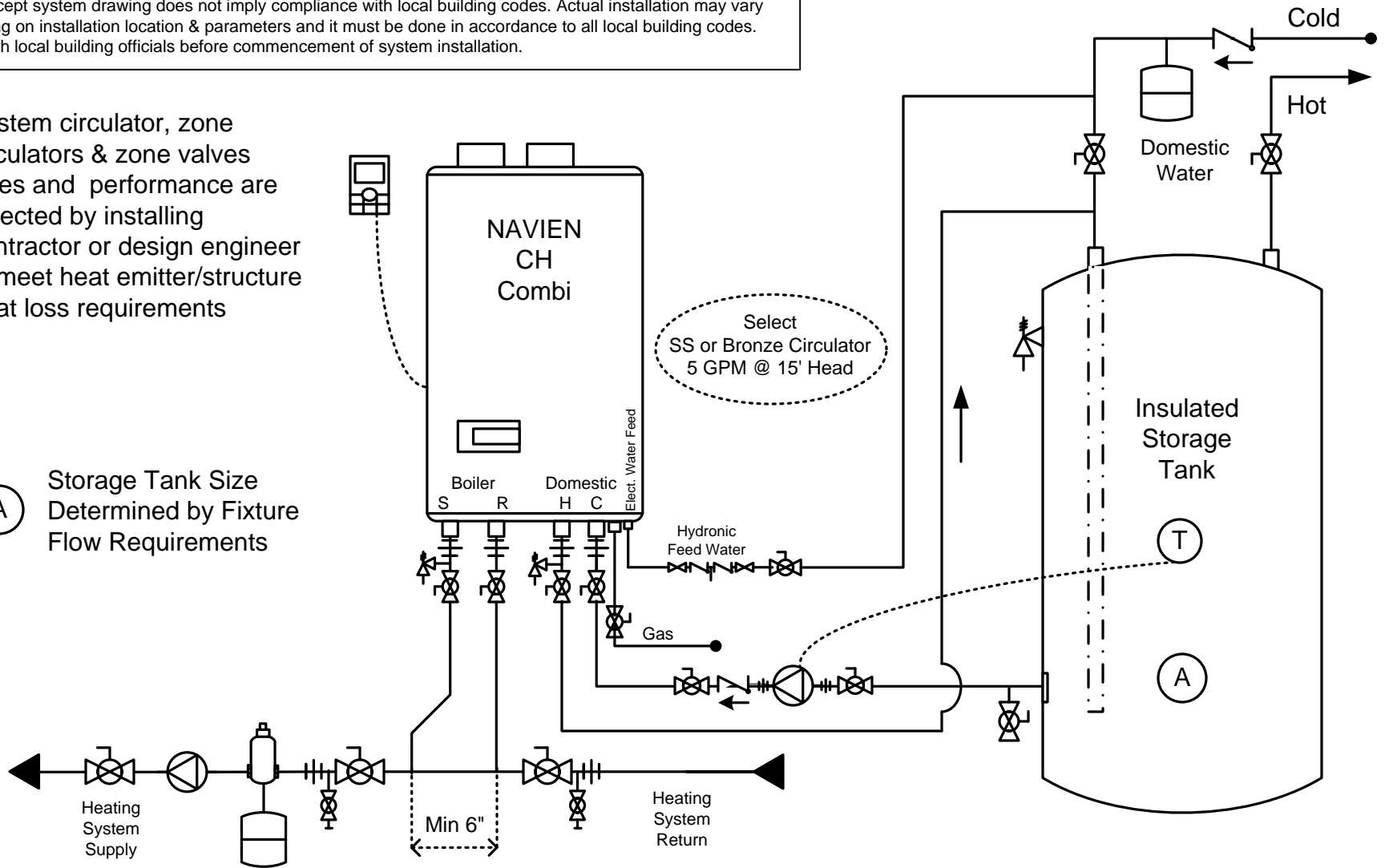
February 27, 2012



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

System circulator, zone circulators & zone valves sizes and performance are selected by installing contractor or design engineer to meet heat emitter/structure heat loss requirements

(A) Storage Tank Size Determined by Fixture Flow Requirements



KD NAVIEN

20 Goodyear
Irvine, CA 92618
800-519-8794

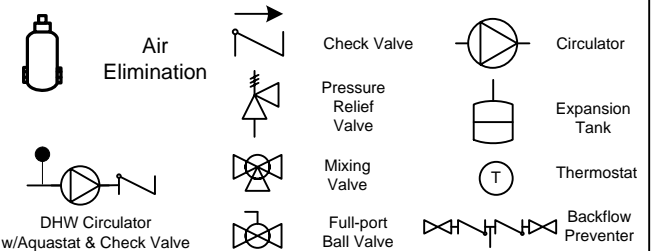
www.navienamerica.com

Navien CH Combi Boiler Application With Domestic Hot Water Storage

Drawn By: B. Fenske

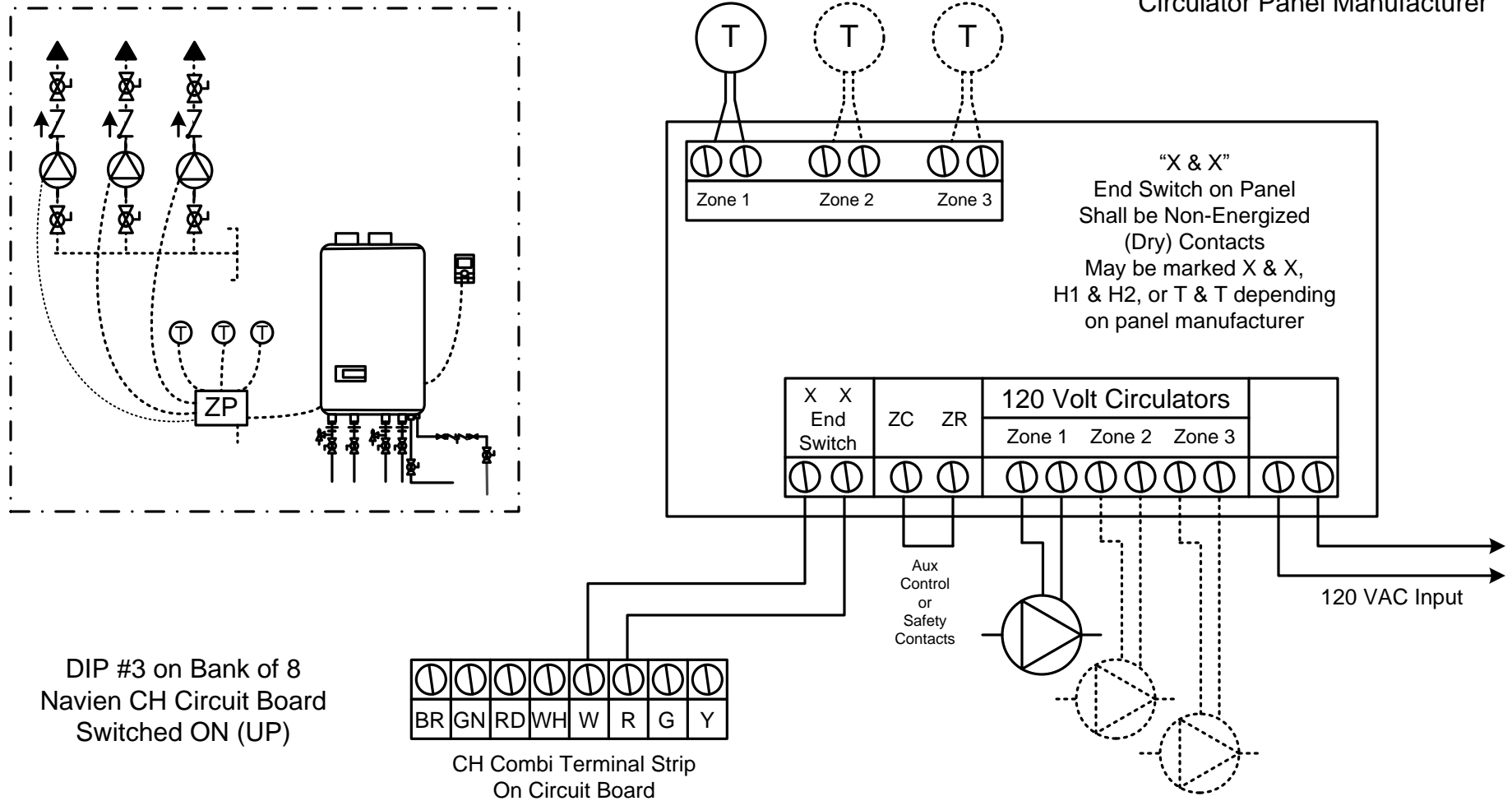
CH - ST - BF01

October 26, 2011



This drawing is intended only as a guide and not as a replacement for professionally engineered project drawings. This concept system drawing does not imply compliance with local building codes. Actual installation may vary depending on installation location & parameters and it must be done in accordance to all local building codes. Verify with local building officials before commencement of system installation.

Example Circulator Zone Panel
Shown Provided By Contractor
Follow Proper Instructions per
Circulator Panel Manufacturer



20 Goodyear
Irvine, CA 92618
800-519-8794

www.navienamerica.com

CH Combi Control Wiring Supplement - 01

Navien CH Combi Boiler Application
Typical Zone Circulator Wiring
(Three Zone Panel Shown)

Drawn By: B. Fenske

CH-EL-BF01

November 10, 2011



Circulator



Thermostat



Circulator
Zone Panel



Full-port
Ball Valve



Check Valve



Zone Valve