# INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

1455 Kleppe Lane ◆Sparks, NV 89431-6467 ◆(775) 359-4712 ◆Fax (775) 359-7424
E-mail: haws@hawsco.com ◆ Website: www.hawsco.com

No. 0580001085(1)

# Model 8770

**Indoor Overhead Tank Shower and Eyewash System**

**Area Classification - Ordinary**

## DISCLAIMER

### IMPORTANT

Read this installation manual completely to ensure proper installation, then file it with the owner or maintenance department. Compliance and conformity to drain requirements and other local codes and ordinances is the responsibility of the installer.

Separate parts from packaging and make sure all parts are accounted for before discarding any packaging material. If any parts are missing, do not begin installation until you obtain the missing parts.

Flush the water supply lines before beginning installation and after installation is complete. Test the unit for leaks and adequate water flow. Please refer to the enclosed instructions for flushing the unit prior to use.

The ANSI Z358.1 standard requires an uninterrupted supply of flushing fluid. Flushing fluid should be tepid per ANSI Z358.1.

The inspection and testing results of this equipment should be recorded weekly to verify proper operation. This equipment should be inspected annually to ensure compliance with ANSI Z358.1.

Installation and maintenance of this system must be completed by a qualified plumber and electrician in accordance to the information contained in this installation manual and in compliance with all national and local codes. When making electrical connections be sure to follow all lockout-tag out safety procedures.

It is recommended that all water supply and electrical connections be made at temperatures above freezing (32ºF (0ºC)). Failure to do so may result in major product and or property damage.

**For technical support, contact:**
**Haws Services | (800) 766-5612 | www.hawsco.com/services**

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## DESCRIPTION OF PRODUCT

Haws Corporation Model 8770 overhead tank shower is an aluminum structure with high visibility green chemical and UV resistant polyester-based powder coating. Large graphics identify the equipment as an emergency shower/eyewash station and assist in guiding the shower and eyewash.

Tepid water, generated via an immersion heater, is stored in the water tank. The tank temperature is maintained at 85ºF ± 2ºF (29ºC ± 1ºC). The system is designed to flow a maximum of 30gpm for 15 minutes. Flow is maintained at a minimum flowrate of 20gpm for the shower and 3gpm for the eye/face wash through a specially designed redundant siphon system.

The 8770 includes a Haws® combination shower and eyewash that is protected with a scald valve. Optional alarms are activated by proximity switches when the shower and/or eyewash are in use. Dry contacts can be provided for remote alarm notification and/or both visual and audible alarms with a silencing circuit that auto resets can be provided.

## SHIPPING, HANDLING AND STORAGE

| Performance Series Model | Description | Dimensions W x L x H | Weight | Dimensions W x L x H (Crated) | Weight (Crated) |
|---|---|---|---|---|---|
| 8720 | Tank | 56” x 64” x 171” | 1300 lbs. | 62” x 70” x 176” | 1500 lbs. |
| | Shower Enclosure | 66” x 66” x 98” | 900 lbs. | 72” x 72” x 104” | 1100 lbs. |

**Recommended Equipment, Materials and Supplies to be provided by Installer:**

- Existing slab on grade. The installer shall verify that the following minimum requirements of the existing slab-on-grade are satisfied.
    - Allowable Soil Bearing Pressure: 1500 psf
    - Slab-on-grade minimum thickness: 6 inches
    - Compressive Strength of slab, f’c: 3000 psi
    - Adequate footprint area (minimum 6’ x 6’ recommended)
    - Adequate vertical space (minimum 20 ft. recommended, 15 ft. required)
- Recommended anchors (Not Included, customer to determine anchor suitability):
  High strength adhesive anchors (ICC-ES Report ESR-3187): Hilti HIT-HY 200 Safe Set epoxy adhesive anchorage system with Hilti hollow drill bit system with Hilti HIT-Z Rod and ASTM A563 Grade A nuts. Frame Feet mounting holes are 17/32” diameter. Each Frame Foot has four (4) 17/32” diameter clearance holes (16 total anchors).
- A forklift capable of lifting 2,000 lbs. should be utilized to transport the unit from truck to site and to lift tank into position.

<u>Tools and Supplies</u>

- Impact drill/driver with 5/16” nut driver (For Optional Eye/Face Wash Option).
- Steel Strap Shears
- Torque wrench with 7/8” and 9/16” sockets.
- 7/8” and 9/16” box end wrenches.
- Plumbing supply materials including potable water-safe thread sealant for PVC.
  (Automatic refill water connection is 1-1/4” NPT male pipe fitting.)
- Appropriate personal protective equipment including safety glasses and work gloves.

**Storage**

The unit should be stored in a clean, dry place until ready for installation unless otherwise specified.

## INSTALLATION PROCEDURE

a. Remove unit from crate.

b. The unit should be secured on a level site, using the supplied brackets and suitable anchoring devices.

c. If the unit is to be placed over a drain, the drain should be able to handle a flow of 35 GPM; otherwise, the slab should be made to allow the water to drain out the sides and away from the unit (see Figure 1). The unit discharges hundreds of gallons of water, which can cause significant property damage if not drained properly.

**WARNING: Drainage means shall not create an obstruction or tripping hazard.**

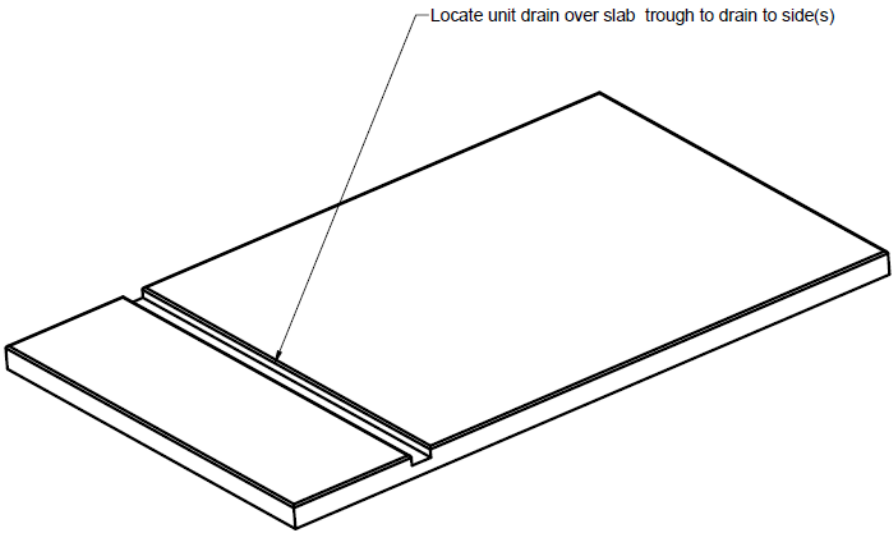



Figure 1. Example of Slab with Drain Trough

**WARNING: Failure to allow water to drain may result in property damage and hazard to personnel.**

d. Attach tank to frame using the supplied hardware. Connect the electrical connections between the frame and the tank.

e. The connection provided for the water supply is a 1-1/2" NPT union. The system includes a 30gpm flow control in the water supply line to prevent the unit from being filled too quickly. The water fill

line should run for a few minutes to eliminate any debris before it enters the equipment. Stop filling system when low water indicator light turns off or water begins to drain out of tank overflow.

f. Connect electrical supply to the Power Distribution Block. It is recommended that a Disconnect Switch (see Figure 2) is used to safely interrupt the supply for routine maintenance work. Disconnect switches are available as an option from Haws.

**NOTICE: All Power Connections must be made according to local codes and standards using components which are compliant with the area the unit is being installed in.**

Figure 2. Disconnect Switch Junction Box

**CAUTION: Do not apply power to the unit until all water connections are made and the tank and piping are full of water. Applying power prematurely will damage the equipment.**

g. Once all water and power connections are made, **open an emergency shower or eyewash valve (Figure 3) to eliminate any air that may be in the lines**, and allow water in the system to flow. Inspect plumbing for leaks and repair as necessary. During transit, some plumbing may have become loose, allowing water to leak from the threads. Once the plumbing has been checked, the shower should run for several minutes to evacuate any debris that might have entered the system. Turn shower off once water is clear of debris.

Figure 3. Eyewash

h. Replace any water lost during the previous step and disconnect fill line.

i. At this point the power can be turned on. Heating can take up to 14 hours, depending on supply water temperature and ambient conditions.

**CAUTION: Before turning on the power, close all electrical boxes.**

**WARNING: System is not freeze protected without an energized electrical connection. It is recommended that installation be completed when ambient temperature is above freezing.**

**Checklist for start-up**

| CHECK LIST FOR START-UP | Complete OK | Inspector Initials |
|---|---|---|
| **Pre-connection Check** | | |
| Check all components for any connections or connectors that may have loosened during shipping. | | |
| **System Flush (All Electrical Power off for System Flush)** | | |
| Drain is attached and able to handle a flow of 35 GPM. | | |
| System water supply is connected, and all water supply valves opened. | | |
| Water is clear and free of any contamination, particles or discoloration. | | |
| **Connections** | | |
| System is filled with water. | | |
| Connect remote monitoring via plant control system (if applicable). | | |
| **Applying Power to the System** | | |
| Verify that the proper voltage is present. | | |
| Verify that equipment ground is properly connected. | | |
| Apply power to the system. | | |
| The tank heater set point is preset in the program. It may take 4 to 6 hours for the tank to reach the operating temperature. Once the tank has reached operating temperature for a minimum of 1 hour, press the "↑" arrow and record these values in the chart provided in the Tank Monitor section of the program narrative included in this manual. | | |
| Verify that lights are illuminated (if equipped). The exterior light may flash off for 1 second at 5 second intervals until the tank has reached operating temperature. See Logic Narrative for more information. | | |
| **HAWS® Shower and Eye/Facewash** | | |
| Flow water through an eyewash or shower. | | |
| Verify that the exterior light flashes at 1 second intervals and that the audible alarm sounds. | | |
| Press the alarm silence button and verify that the exterior light is flashing, and the audible alarm is silent. | | |
| Deactivate the shower or eyewash that is active, verify that the exterior light is not flashing at 1 second intervals, and that the audible alarm is silent. | | |
| **Programmable Logic Controller Display** | | |
| Set the current time and date in the controller (see instructions below). | | |

## LOGIC DIAGRAM AND NARRATIVE

The program allows for monitoring and controlling tank temperatures. When no faults are present, the tank temperature, tank heater status, and flow status are displayed (see Figure 5). There are alarm points that are continuously monitored. These alarms are shown on the display if the fault is active. Alarm conditions may also be monitored by connecting to a Distributed Control System (DCS) via interposing relays and terminals provided when provided. See electrical schematic for details. A fault history is also provided to assist in monitoring the system performance. Additionally, the tank heater performance can be monitored to assist in determining when maintenance is required.

Figure 4. PLC Display

Accessing the different functions is accomplished by depressing the appropriate key(s) on the display. The table below lists the key functions:

| Key | Function |
|---|---|
| ← | Display Fault History |
| ↑ | Display Tank Heater Monitor |
| → | Display Current Time |
| ↓ | Display Current Date |
| 0 | Reset High Tank Temp Alarm |
| 0 & 2 | Local Alarm Light Function (Off) |
| 1 & 3 | Local Alarm Light Function (On) |
| Shift + 5 | View Time to Preventative Maintenance |
| Shift + 9 | Toggle Preventative Maintenance Feature On/Off |

The following table lists the inputs and outputs available with the system. System may not contain all components.

| Input | Function | | Output | Function |
|---|---|---|---|---|
| I-00 | Tank Temperature Switch | | Q-00 | Tank Heater Contactor |
| I-01 | Horn Silence Button | | Q-01 | Space Heater Contactor |
| I-02 | Flow Switch or Proximity Switch | | Q-02 | Area/ Alarm Light |
| I-03 | Proximity Switch | | Q-03 | Alarm Horn |
| I-04 | Level Switch | | Q-04 (DO Q-00) | Customer Contact (Common) |
| I-05 | Booth Thermostat | | Q-05 (DO Q-01) | Customer Contact (In Use) |
| I-06 | Door Proximity Switch | | Q-06 (DO Q-02) | Interior Light (Green/White) |
| AI-01 | Tank Temperature Transmitter | | | |

NOTE: For model specific program, please contact Haws Services at 1-800-766-5612.

The program consists of a series of charts (sub-routines) that are grouped according to function. Each chart will be discussed in the following sections.

**Tank Control**

When the tank temperature is below 83°F (28°C), the tank heater contactor will close and the heater elements will be energized. When the temperature rises above 86°F (30°C), the contactor will open and the element will become de-energized.

A low-level condition or an over temperature condition (that has not been addressed) will prohibit the contactor from closing even if the temperature is below the set point. If the tank temperature transmitter reading falls below 4mA a potential transmitter failure is present and the tank heater contactor will not close.

The customer trouble alarm contacts are monitored in this section of the program. The following conditions will de-energize output Q-04 (customer contact trouble) when a potential fault is present:

**Alarm Modes**

Low Tank Temperature under 75°F (29°C)

High Tank Temperature over 90°F (32°C)

High Tank Temperature over 95°F (35°C) *REQUIRES MANUAL RESET*

Low Tank Level

NOTE: Each alarm mode will display an alarm message on the PLC display and only the external light will flash once every 5 seconds. The Tank high temperature alarm is designed to give a warning by displaying an alarm message, changing the state of the customer contacts, and flashing the exterior light once every 5 second- intervals, 5 degrees before the temperature rises to a point that requires a manual reset of the heating equipment. Should the alarm not be addressed before reaching the high set point, then the system will require additional attention and a manual reset.

**Messages**
The display messages are controlled by the program. When no alarm modes are present, the display will present the following conditions:

Tank Heater On (*when active)*
In Use (*when active)*
Tank Temperature

When a single alarm mode, also called fault condition, is present, the display will indicate which alarm mode is present. If more than one alarm exists, the display will cycle through each alarm at 4 second intervals. Each message will automatically clear when the condition is no longer active or when the corrective action has been taken. This program also records a message to the "Fault History" chart, which will assign the time and date when the alarm occurred using the Real Time Clock (RTC) module. Timer counter (TC-05 in conjunction with TC-06) will keep track of the 4 second timing intervals and advance the message display to the next active alarm (if present).

**Real Time Clock (RTC)**
The RTC module is used to record the date and time for the Fault History (alarm modes) and auto-return to Winter Mode.

NOTE: If "NO RTC" is shown on PLC display (see Figure 5), remove RTC module by disconnecting from PLC, re-attach, and cycle the power. If "NO RTC" is still shown, please contact Haws Services at 1-800-766-5612 as you may need a replacement part.

Figure 5. No RTC - Real Time Clock Display

**Fault History**
The fault history chart keeps track of the time and date of the last occurrence of each fault. When the "left arrow key" is depressed, the time and date of each fault will be listed on the display. There will be a 4 second delay before the first fault is displayed. Each fault will be listed for 4 seconds as long as the "left arrow" key is depressed. The time and date of each fault are stored in registers R-004 through R-021. Once the "left arrow" key is released the display will return to the normal condition display if no faults are present.

If there are faults in the system, the display will return to the fault display when the “left arrow” key is released.

**In Use Alarms**

Shower/eyewash activations are monitored via proximity switches connected to I-02 and I-03. When the shower or eyewash is activated, output Q-05 (in use alarm) will de-energize and engage the customer contacts. The alarm horn will also energize via Q-03. The exterior light is also controlled in this chart. The exterior light remains on during normal operation. When the shower or eyewash is activated, the exterior light will flash on and off at 1 second intervals.

**Fault Condition Notification**

If a fault is active and there is no shower or eyewash activations, the **light will flash once every 5 seconds**. This function gives the user an indication of a fault condition if the unit is not connected to plant Distributed Control System (DCS) via dry contacts provided on the electrical panel layout. To properly connect DCS to dry contacts, please refer to the model-specific electrical schematic. It is possible to override this function by simultaneously depressing the “0” and “2” key. Flag F-026 controls this function. It is set as retentive to maintain the selection after a power outage. These intervals are controlled by TC-00 through TC-04.

NOTE: If a model-specific electrical schematic is not present or additional information is required to connect DCS to unit, please contact Haws Services at 1-800-766-5612.

**Maintenance Required Notification**

On units containing the “Preventative Maintenance Required” notification feature, the area light will flash once every 10 seconds when preventative maintenance is required. The notification is factory set to activate after one year of operation and reactivates each following year.

The operating procedure is as follows:

- To view remaining time until Preventative Maintenance is required, press Shift + 5
- To toggle Preventative Maintenance Required feature on/off, press Shift + 9
    - To reset the timer, turn the Preventative Maintenance Required feature off then back on. The timer will start from 0.
    - On/off toggle can also be triggered by the following push button sequence using the alarm horn silence button.
        - Press 3 times within 2 seconds, wait 2-5 seconds, and press 3 times within 2 seconds
    - Activation of the Preventative Maintenance Required Feature is indicated by 3 short flashes of the area light accompanied by 3 blips of the alarm horn.

- Deactivation of the Preventative Maintenance Required Feature is indicated by 4 short flashes of the area light accompanied by 4 blips of the alarm horn.

**Tank Monitor**

The tank monitor chart provides a means of monitoring the tank heater performance. This chart records the actual amount of time that the tank heater contactor is on via registers R-050 through R-052. Counter TC-14 cycles the chart through the last 3 on/off cycles of the tank heater contactor. TC-13 records the actual on time of the contactor. When the unit is initially placed in service and has reached operating temperature for several hours, the on/off cycles should be recorded in the table below. Pressing the "up arrow" key will display the last three cycles. Each cycle will be displayed for 4 seconds as long as the key is depressed.

| CYCLE | ON/OFF | TIME |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

These values can be checked on a routine basis. If the amount of time that the tank heater is on has increased, it may be an indication that the tank heater needs service or repair.

**Tank History**

This tank history chart controls the display messages recorded by the tank monitor chart. TC-15 sets the time that each message is displayed. TC-16 is used to increment from "Heater on time 1" through "Heater on time 3".

**Setting Current Time and Date on the Controller**

1. Press the "SHIFT" and "OK" buttons to enter the menu.
2. Press "4" to enter setup.
3. Press "1" to set date or "2" to set time.
4. After date or time is set, press the "SHIFT" and "↑" key to return to setup menu.

The Time and Date can be verified by pressing the "→" or "↓" keys while in the normal operating screen.

NOTE: The exterior light may still be flashing for 1 second every 5 seconds if there is a fault in the system.

## PREVENTIVE MAINTENANCE

Note: These are general instructions applicable to all Haws Model 8770 Overhead Tank Shower Units. Additional maintenance activities may apply to particular configurations/options supplied.

**Weekly**

- Verify the tank temperature readout on the display reads. 85ºF ± 2ºF (29ºC ± 1ºC).
- Verify area light is operational.
- Self-contained combination units shall be visually checked weekly to determine if flushing fluid needs to be changed or supplemented. Such inspection shall be conducted in accordance with manufacturer's instructions.

**Monthly**

- Check for evidence of leakage on freeze and scald valves.

**Quarterly**

- Flush Y – strainers (if installed)
- Verify eyewash flows. Alarm light and horn should activate when water is flowing. Verify that remote alarms connected to plant controls are functioning.
- Verify shower flow. Alarm light and horn should activate when water is flowing. Verify that remote alarms connected to plant controls are functioning.
- Drain and refill tank with fresh potable water. Add suitable amount and anti-microbial solution to tank.
- Take proper precautions to help prevent the growth of potentially harmful bacteria in flushing fluid tanks. We recommend **either** of the following procedures:
    - Procedure 1: Use suitable Sterile Antimicrobial Preservative Model 9082 to help prevent the growth of bacteria in flushing fluid tank. The flushing fluid tank should be drained, flushed and refilled with clean potable water and Sterile Antimicrobial Preservative Model 9082 as directed by the preservative's manufacturer.

NOTE: Disconnect Model from power source before performing maintenance.

- Procedure 2: Use suitable immersible cleansing stick Model 9084 to help prevent the growth of bacteria in flushing fluid tank. Model 9084 last up to 3 years and requires inspection every 6 months.
- Procedure 3: Drain, flush and refill portable units with clean potable water at least once every week. Thoroughly cleanse tank at least once every month.

- After activating the units for whatever reason, ensure the following steps are implemented:
    - Refill tank with potable water to the full level.
    - If water is discharged for any reason – follow Procedure 1 or 3 above to ensure that water quality is maintained.

**Annually**

- Check tank heater and tank for deposit buildup. Drain tank and clean/replace heater if necessary.
- All valves should be periodically tested; at least once a year, more often if water is dirty.
- Drain tank and verify level switch operation.
- All emergency showers and eye/face washes shall be inspected annually to assure conformance of ANSI Z358.1. This includes, but not limited to, proper installation, accessible locations, proper flow rate and temperature of flushing fluid. Please refer to the most current standards document for more information.

## MAINTENANCE, TESTING, REPAIR

**Combination Shower/Eyewash**

Verify shower and eyewash flow per ANSI requirements.

NOTE: If shower and/or eyewash does not flow per ANSI requirements or at all, consult Haws Services.

**Freeze and Scald Valve**

Scald valve is designed to open before internal water temperature exceeds 100°F (37.8°C).

Freeze is designed to open before internal water temperature drops below 35°F (1.7°C).

NOTE: If valve does not fully open/close, check valve seat for debris or scale build. If no debris or scale present, consult Haws Corporation.

**CAUTION: Extreme hot/cold temperatures may cause valves to open.**

**For technical support, contact:**
**Haws Services | (800) 766-5612 | www.hawsco.com/services**

## TROUBLESHOOTING

| TROUBLE | REPAIR CHECKLIST |
|---|---|
| Tank temperature too cold (set point 85°F (29ºC)): | **a)** Used recently? Full recovery for each tank and heater size below:<br>• 530 gallon/4kW, 14 hours<br>**b)** Check controller setting (85ºF). Check for heater on display if below 85ºF.<br>**c)** Check controller for alarms.<br>**d)** Check heater circuit fuses F1.<br>**e)** Check control voltage and power supply fuses PFU & CFU. |
| Tank temperature too hot: | **a)** Check controller setting.<br>**b)** Check alarms on controller. |
| Uneven water flow to eyewash: | **a)** Eyewash must be level.<br>**b)** Clogged eyewash head. Clean or replace eyewash head. |
| Insufficient water flow to eyewash or shower: | **a)** Check ball valves. Must be open and unclogged.<br>**b)** Clogged or malfunctioning siphon |
| Clear exterior light off: | **a)** Check LED.<br>**b)** Check fuses PFU & CFU |
| Exterior light does not flash and alarm does not sound when shower or eyewash is activated: | **a)** Check proximity switch actuation.<br>**b)** Check proximity switch wiring connections.<br>**c)** Confirm that Q2 and Q3 are powered. |
| Exterior alarm does not flash but alarm is sounding when shower or eyewash is activated: | **a)** Check LED.<br>**b)** Check wiring to light. |
| If “NO RTC” is present on PLC display: | **a)** Reset by removing and reattaching module. If “NO RTC” is still present, a replacement part is required. |

**For technical support, contact:**

**Haws Services | (800) 766-5612 | www.hawsco.com/services**

## SPARE PARTS

Please call Haws Services to order spare parts: 1-800-766-5612

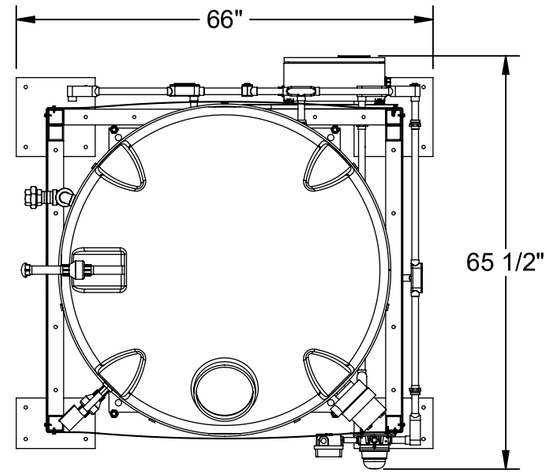
# DRAWINGS

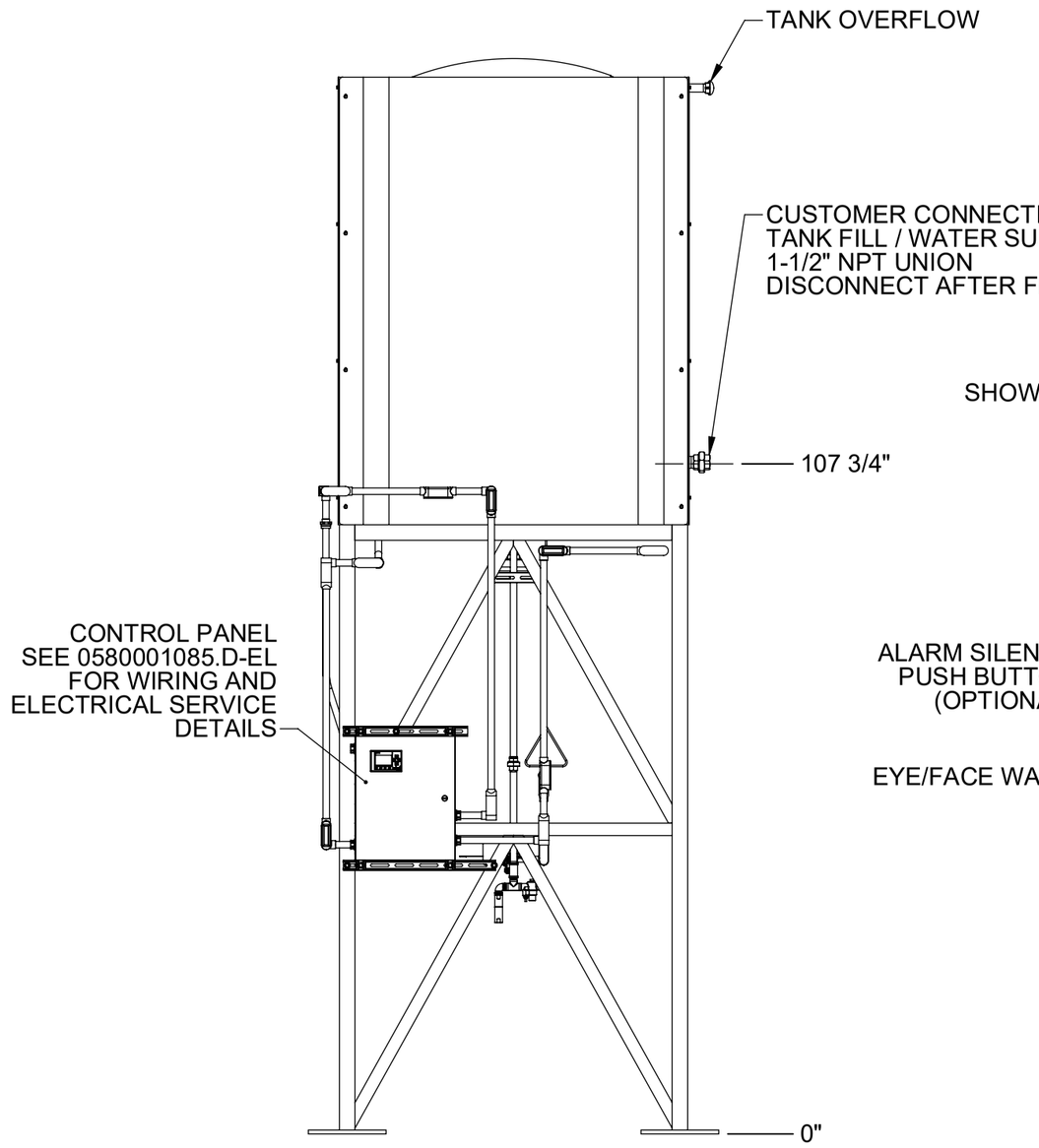
**General Arrangement Drawing (0580001085.D-GA)**

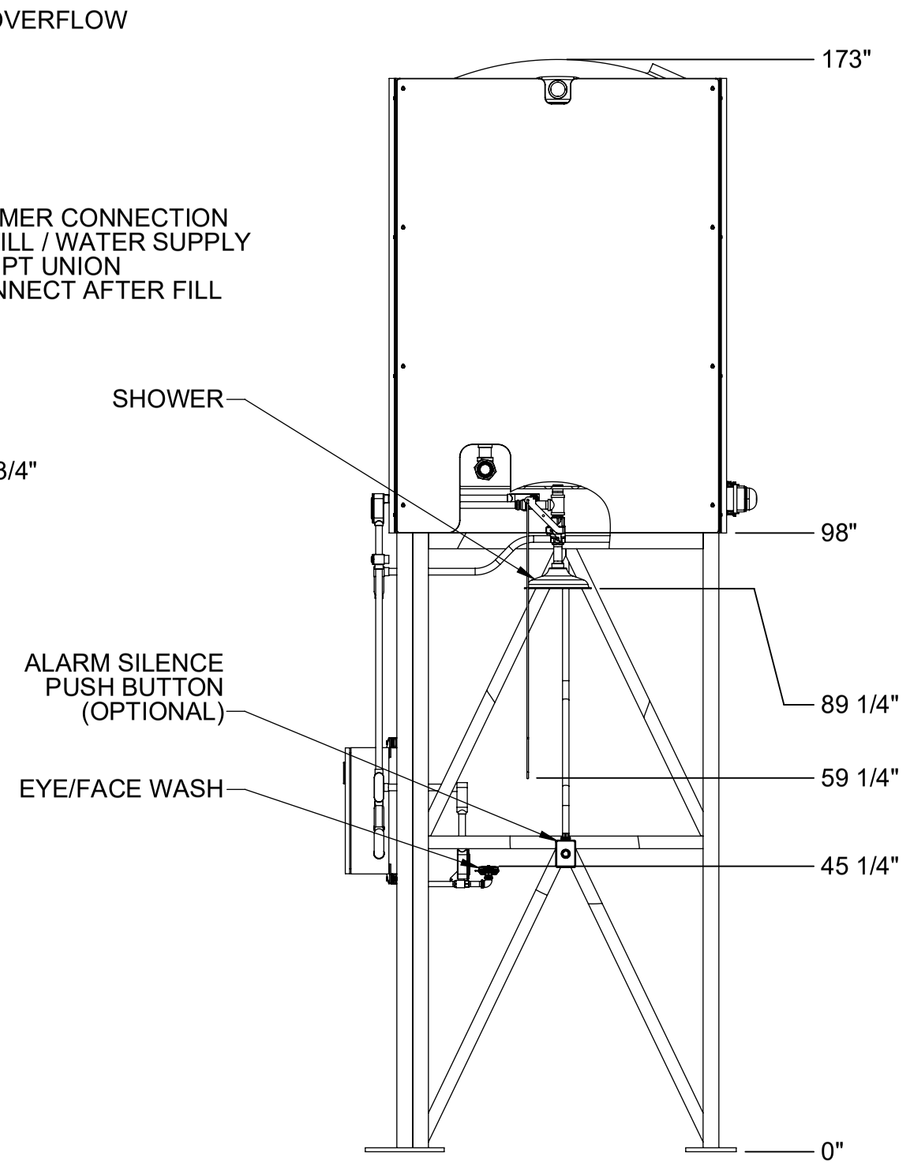
NOTES:

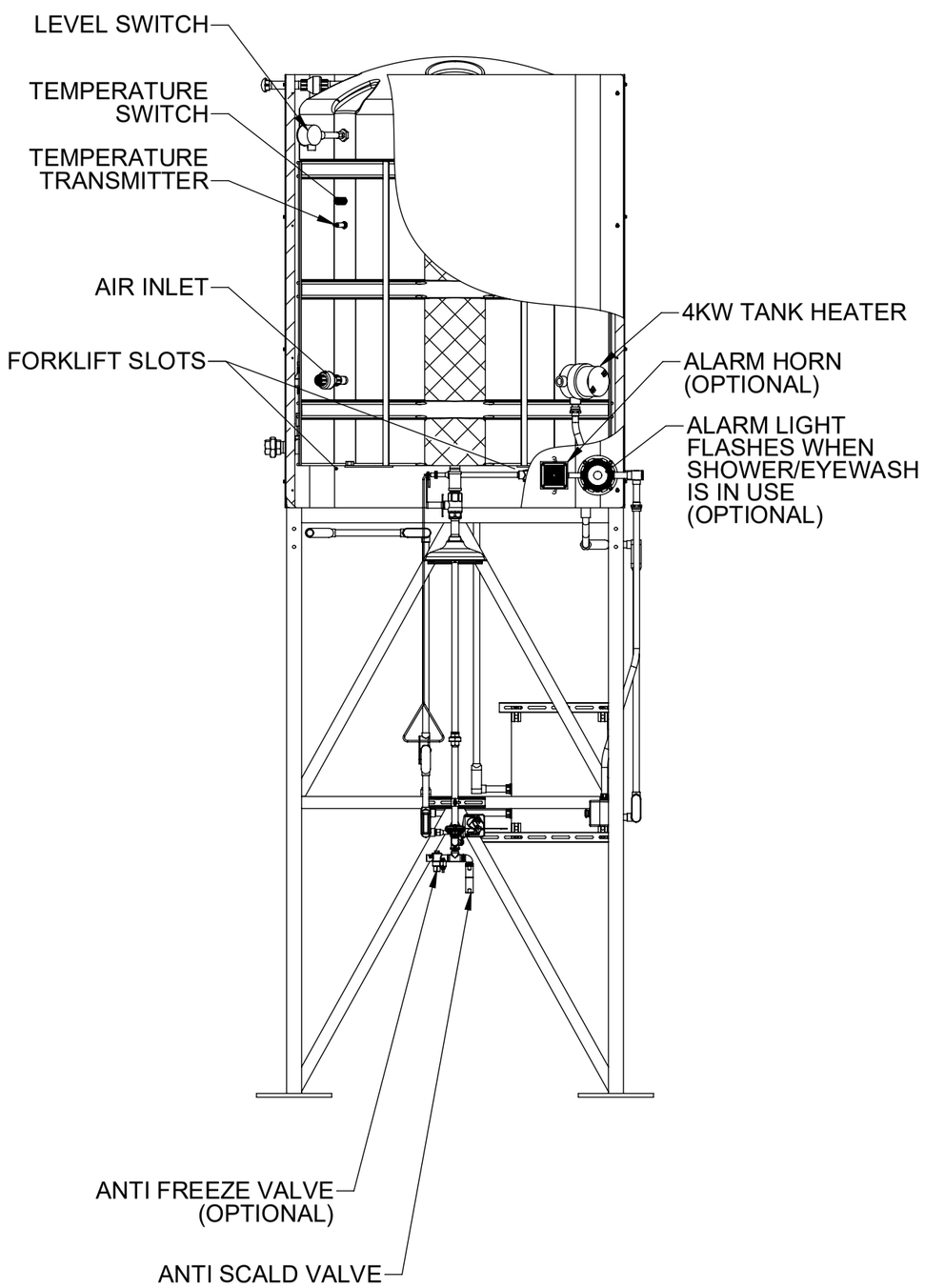
1. DIMENSIONS IN INCHES
2. ALL TOLERANCES: ±1/2"
3. ESTIMATED WEIGHT:
   DRY: 1500 LBS
   WET: 5920 LBS
4. AREA CLASSIFICATION: ORDINARY
5. AVAILABLE AMBIENT TEMPERATURE RANGE: 35°F - 120°F
6. RATINGS: CONFIGURABLE WITH TYPE 4/4X JUNCTION BOX FOR INDOOR LOCATION
7. NOT ALL FEATURES ARE STANDARD

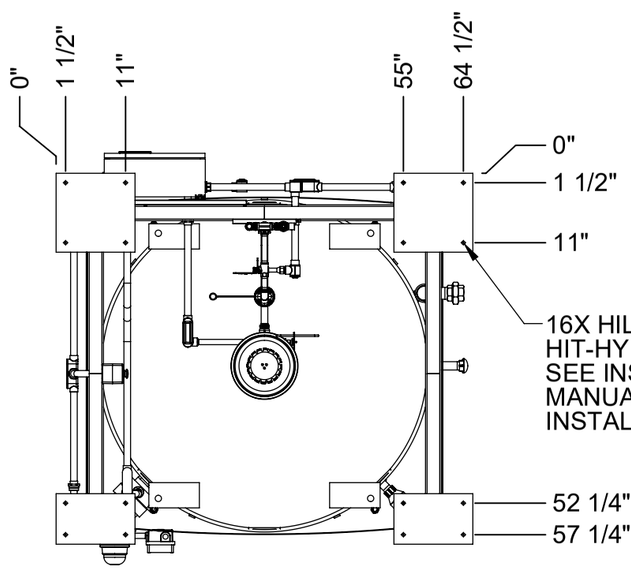
| REVISIONS | | | | |
|---|---|---|---|---|
| REV | DESCRIPTION | ECN | DATE | BY |
| 1 | INITIAL RELEASE | 5589 | 9/16/2020 | IR |




| | |
|---|---|
| CUSTOMER INFO/TAG #: | |
| JOB NUMBER: | |
| DRAWN BY: | |
| DRAWN DATE: | |
| CHECKED BY: | DB |
| CHECKED DATE: | 09/23/20 |
| APPROVED BY: | DB |
| APPROVAL DATE: | 09/23/20 |

Haws®
1455 KLEPPE LANE
SPARKS, NEVADA 89431
USA

TITLE
INDOOR OVERHEAD TANK
COMBINATION SHOWER

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THIRD ANGLE PROJECTION

| SCALE | SIZE | PART NO. | REV. |
|---|---|---|---|
| 1:32 | C | 0580001085.D-GA | 1 |

GA | SH 1 OF 1

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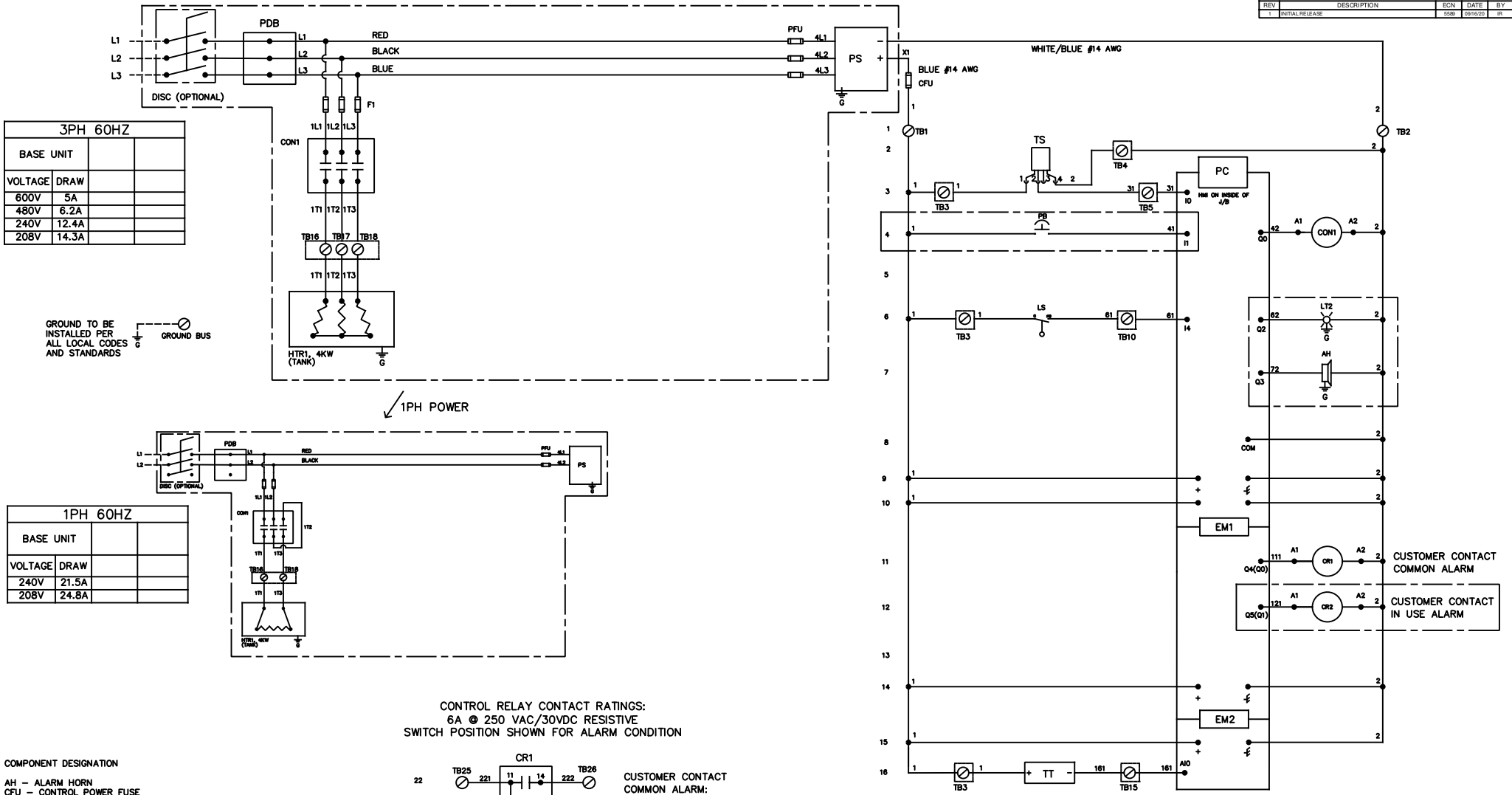
**Electrical Schematic (0580001085.D-EL)**

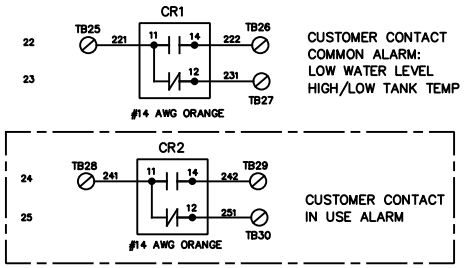
| REVISIONS | | | | |
|---|---|---|---|---|
| REV | DESCRIPTION | ECN | DATE | BY |
| 1 | INITIAL RELEASE | 5580 | 09/16/20 | IR |




| 3PH 60HZ | | | |
|---|---|---|---|
| BASE UNIT | | | |
| VOLTAGE | DRAW | | |
| 600V | 5A | | |
| 480V | 6.2A | | |
| 240V | 12.4A | | |
| 208V | 14.3A | | |

| 1PH 60HZ | | | |
|---|---|---|---|
| BASE UNIT | | | |
| VOLTAGE | DRAW | | |
| 240V | 21.5A | | |
| 208V | 24.8A | | |

CONTROL RELAY CONTACT RATINGS:
6A @ 250 VAC/30VDC RESISTIVE
SWITCH POSITION SHOWN FOR ALARM CONDITION




COMPONENT DESIGNATION

AH – ALARM HORN
CFU – CONTROL POWER FUSE
CON1 – CONTACTOR 3 POLE, TANK HEATER
CR1 – CONTROL RELAY FOR ALARM NOTIFICATION
CR2 – CONTROL RELAY FOR ALARM NOTIFICATION
DISC – DISCONNECT SWITCH, OPTIONAL
EM1 – EXPANSION MODULE (I/O MODULE)
EM2 – EXPANSION MODULE (2 ANALOG INPUT)
F1 – TANK HEATER FUSE
F3 – TRANSFORMER PRIMARY FUSE
F4 – TRANSFORMER SECONDARY FUSE
HMI – HUMAN MACHINE INTERFACE
HTR1 – HEATER, TANK, 4KW
LS – LEVEL SWITCH
LT2 – OUTSIDE AREA LIGHT/ALARM LIGHT
PB – SILENCE PUSH BUTTON
PDB – POWER DISTRIBUTION BLOCK
PFU – PRIMARY FUSE
PC – PROGRAMMABLE CONTROLLER
PROX1 – SHOWER PROXIMITY SWITCH
PROX2 – EYEWASH PROXIMITY SWITCH
PS – POWER SUPPLY, 120W @ 24VDC
TB – TERMINAL BLOCK
TS – TEMPERATURE SWITCH (HIGH LIMIT)
TT – TEMPERATURE TRANSMITTER

NOTES:
1. AREA CLASSIFICATION: ORDINARY
2. AVAILABLE AMBIENT TEMPERATURE RANGE: -50°F - 120°F
3. RATINGS: CONFIGURABLE WITH TYPE 4/4X JUNCTION BOX FOR INDOOR OR OUTDOOR LOCATION

OPTIONAL FEATURE THAT CAN BE CONFIGURED WHEN PURCHASED

THE ATTACHED DESIGNS ARE CONSIDERED TRADE SECRETS AND POTENTIALLY PATENTABLE. IN ACCORDANCE WITH CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT, THESE DESIGNS IN ACTUAL OR CONCEPTUAL FORMS CANNOT BE DISCLOSED, REPRODUCED OR USED WITHOUT HAWS' EXPRESS WRITTEN CONSENT.

| APPROVALS | DATE |
|---|---|
| DRAWN IR | 09/18/20 |
| CHECKED DB | 09/22/20 |
| APPROVED DB | 09/22/20 |
| JOB NUMBER | |
| CUSTOMER INFO/TAG #: . | |

Haws
1455 KLEPPE LANE
SPARKS, NEVADA 89431
USA

TITLE: 8770 - INDOOR OVERHEAD TANK COMBINATION SHOWER

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THIRD ANGLE PROJECTION

ELECTRICAL

SH 1 OF 1

| SCALE | SIZE | PART NUMBER | REV |
|---|---|---|---|
| 1 | C | 0580001085.D-EL | 1 |

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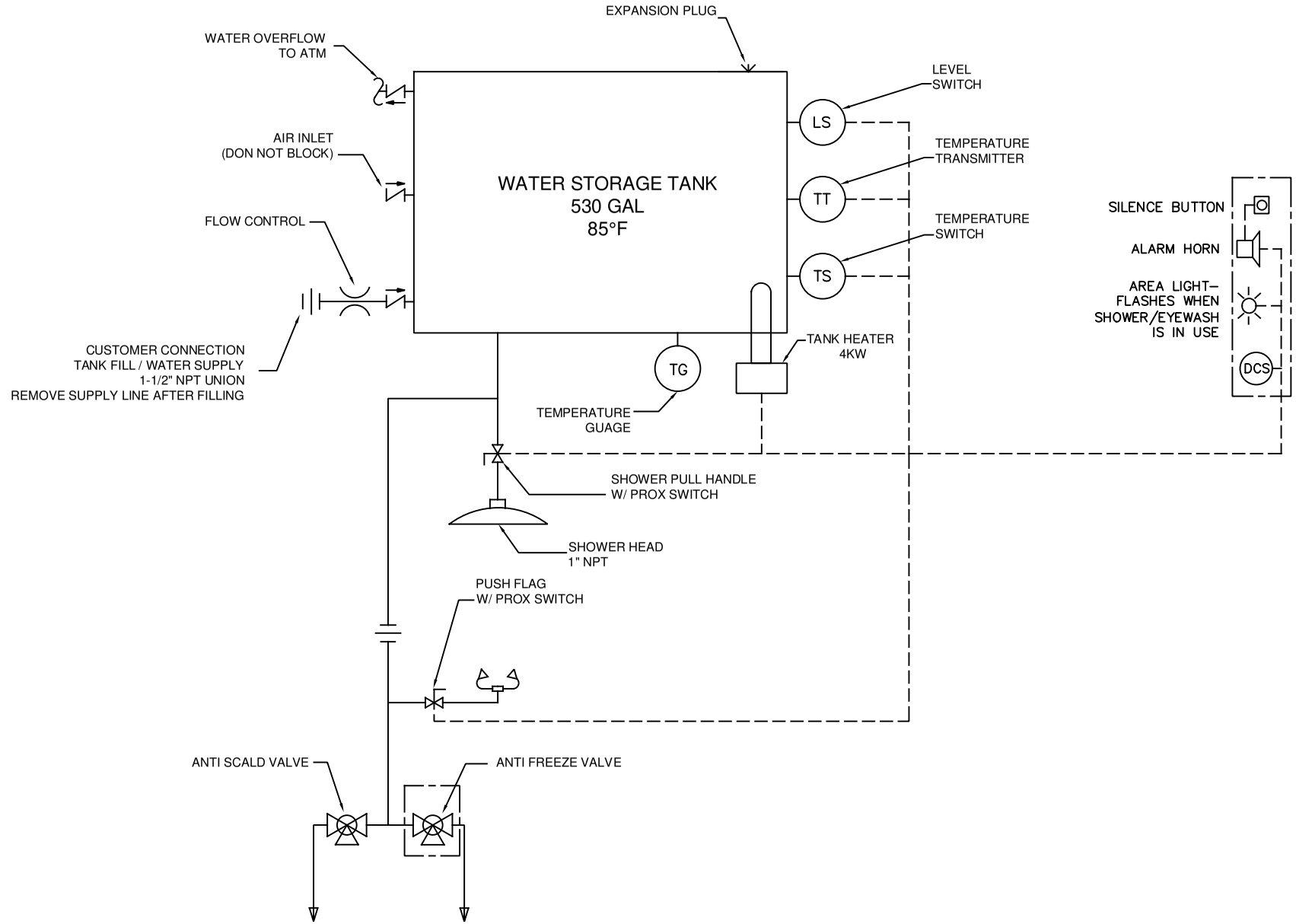
**Piping and Instrumentation Diagram (0580001085.D-PID)**

| REVISIONS | | | | |
|---|---|---|---|---|
| REV | DESCRIPTION | ECN | DATE | BY |
| 1 | INITIAL RELEASE | 5580 | 09/16/20 | IR |




OPTIONAL FEATURE THAT CAN BE CONFIGURED WHEN PURCHASED

NOTES:
1. AREA CLASSIFICATION: ORDINARY
2. AVAILABLE AMBIENT TEMPERATURE RANGE: 35°F - 120°F
3. RATINGS: CONFIGURABLE WITH TYPE 4/4X JUNCTION BOX FOR INDOOR LOCATION

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THIRD ANGLE PROJECTION

P&ID | SH 1 OF 1

| SCALE | SIZE | PART NUMBER | REV |
|---|---|---|---|
| N/A | C | 0580001085.D-PID | 1 |

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| | |
|---|---|
| **HAWS SERVICES:** | **1-800-766-5612** |
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