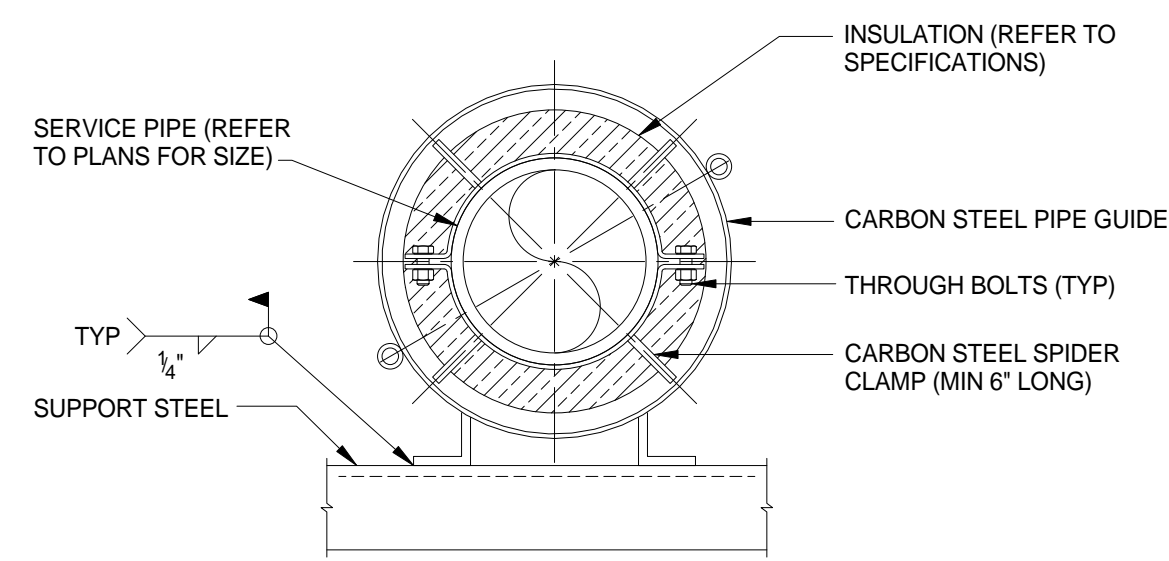


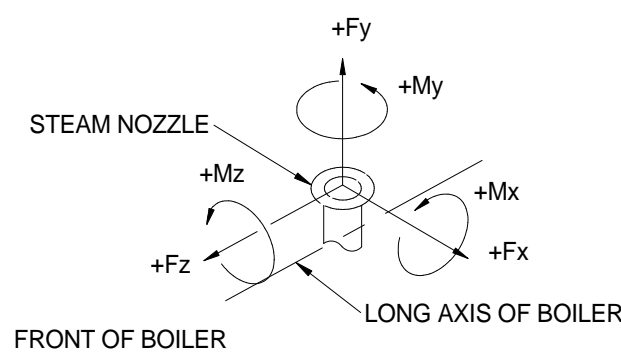
DETAIL - PTFE SLIDE PLATE
SCALE: NONE

- NOTES:
1. THIS DETAIL SHALL BE USED AS A GUIDE. ALL SUPPORTS SHALL MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
 2. INSTALL PTFE SLIDE PLATE PARALLEL WITH PIPE.



DETAIL - PIPE ALIGNMENT GUIDE
SCALE: NONE

- NOTES:
1. THIS DETAIL SHALL BE USED AS A GUIDE. ALL SUPPORTS SHALL MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
 2. INSTALL PIPE GUIDE PARALLEL WITH PIPE.
 3. UTILIZE SPACERS WHEN INSTALLING PIPE GUIDE AND SPIDER CLAMP TO CENTER SPIDER CLAMP INSIDE PIPE GUIDE.
 4. OFFSET SPIDER CLAMP SO THAT UNDER BOTH HOT AND COLD CONDITIONS THE SPIDER IS WITHIN THE PIPE GUIDE.



ISOMETRIC VIEW

MAXIMUM ALLOWABLE LOAD ON BOILER STEAM NOZZLE (200# DESIGN)

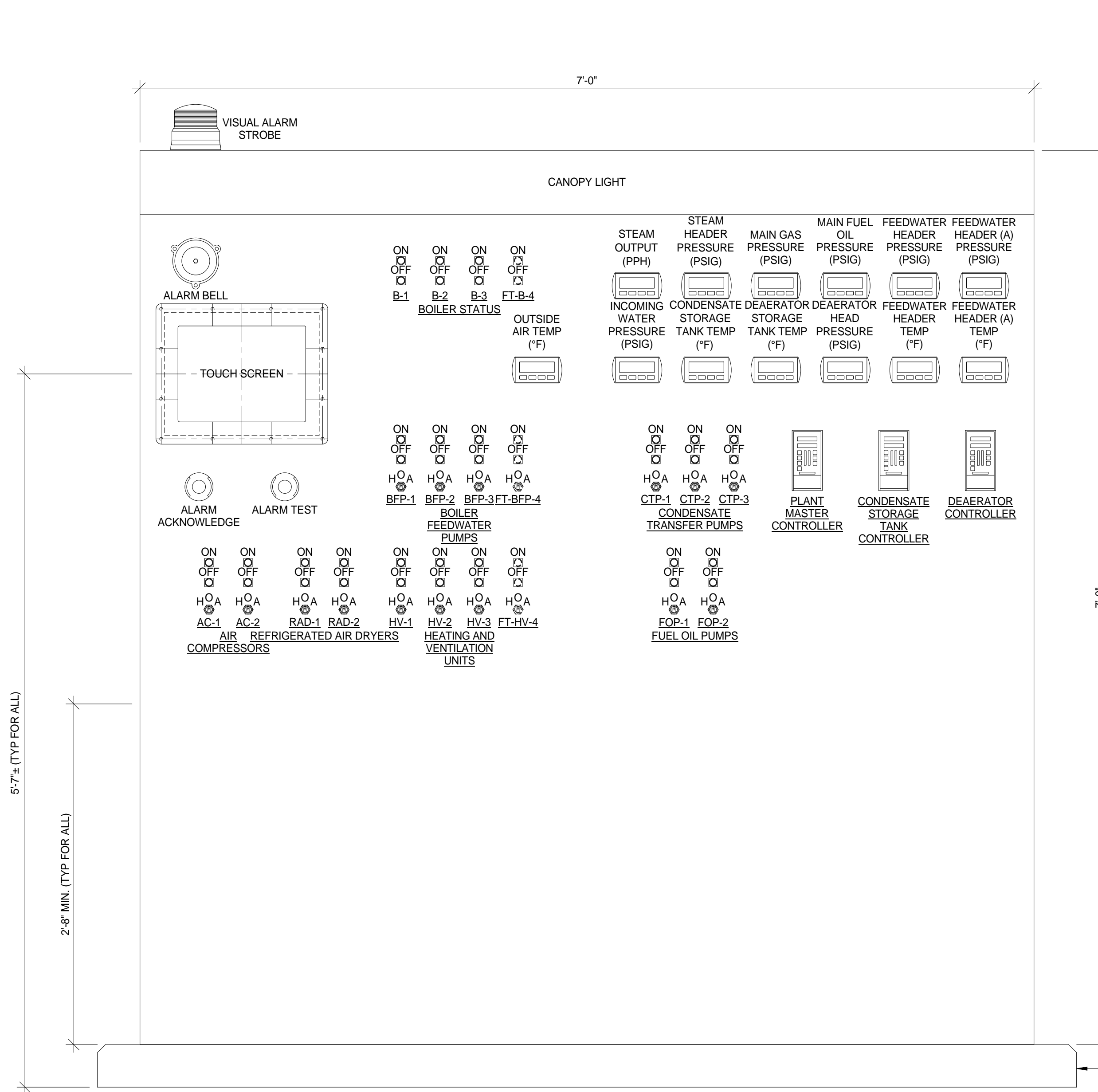
BOILER	Fx LB	Fy LB	Fz LB	Mx IN LB	My IN LB	Mz IN LB
600 HP	4,000	2,000	4,000	4,000	4,000	4,000

TABLE OF FORCES AND MOMENTS DUE TO THERMAL EXPANSION AND WEIGHT OF STEAM LEAD AND VALVES

BOILER	Fx LB	Fy LB	Fz LB	Mx IN LB	My IN LB	Mz IN LB
B-1 (1170)	-40.37	-234.23	-21.00	-1,934.29	-7.94	1,452.47
B-2 (2180)	-60.98	-209.53	-5.16	-2,037.55	236.02	1,576.29
B-3 (3180)	-180.62	-387.17	21.30	-1,442.35	68.83	-728.50

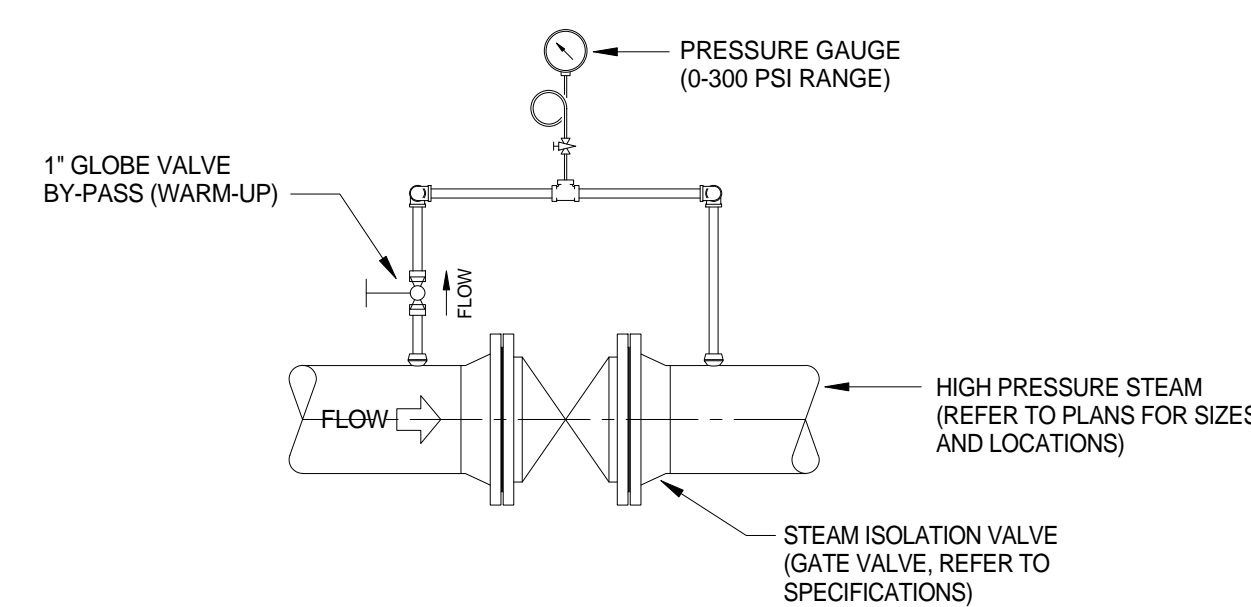
- NOTES:
1. BOILERS SHALL BE DESIGNED TO WITHSTAND THE FORCES AND MOMENTS SHOWN ABOVE.
 2. ADD ANY Fy FORCE (500 LB (230 Kg) MINIMUM) AS AN ESTIMATION OF THE WEIGHT EFFECT OF THE STEAM LEAD AND VALVE ON THE BOILER. BOILER AND PIPE HANGER SUPPLIERS SHALL COORDINATE TO DETERMINE THE EXACT Fy FORCE WHICH WILL BE IMPOSED ON THE STEAM NOZZLES.

FORCES AND MOMENTS ON BOILER STEAM NOZZLES
SCALE: NONE

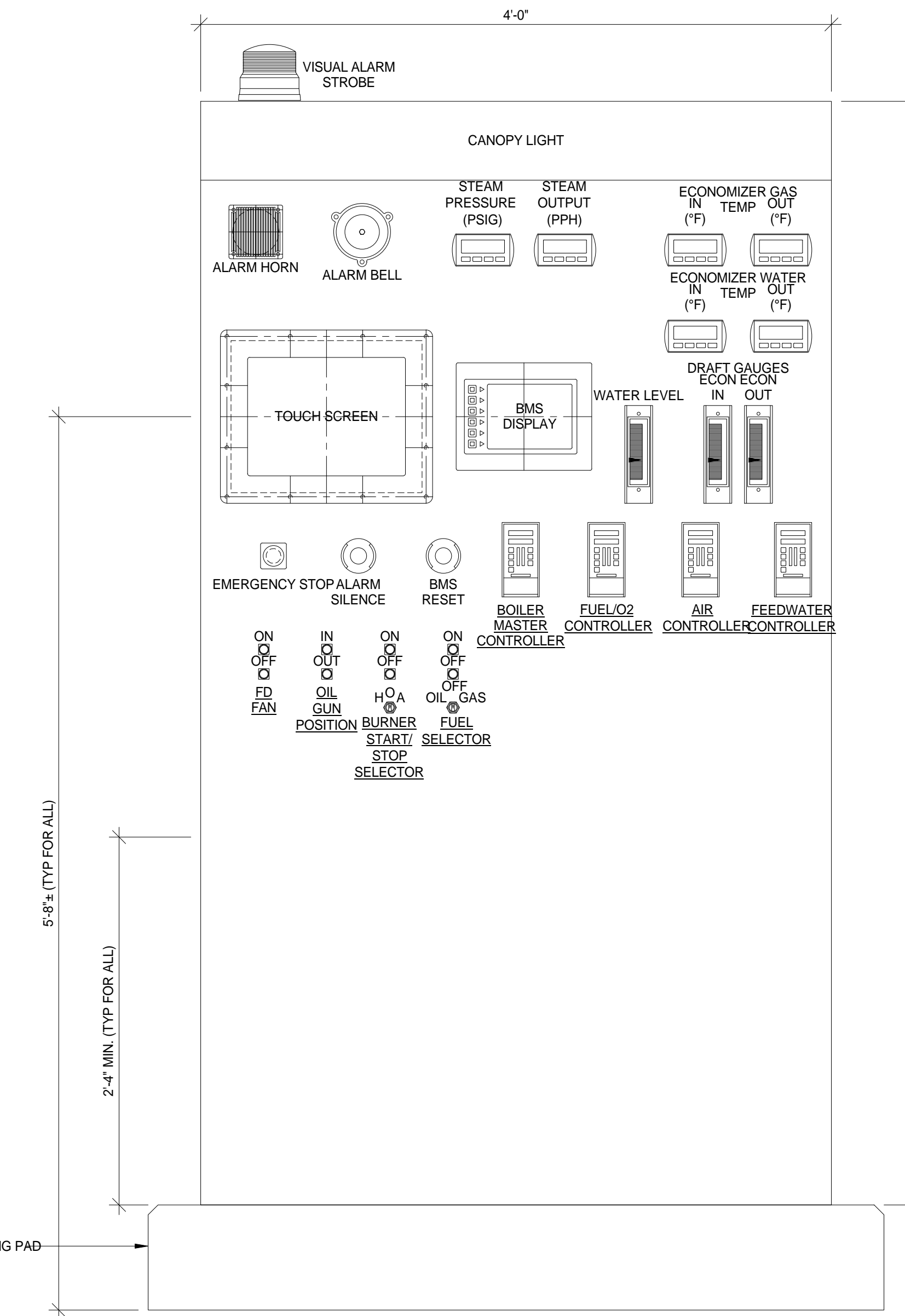


BOILER PLANT MASTER CONTROL PANEL
SCALE: NONE

- NOTES:
1. ITEMS NOTED AS "SPARE" SHALL BE PROVIDED. NO CONNECTION TO FIELD DEVICE IS REQUIRED.
 2. PANEL SHALL BE TWENTY-FOUR INCHES (24") DEEP WITH FRONT HINGED ENTRY DOORS.
 3. REFER TO SPECIFICATION SECTION 23 09 11 FOR ADDITIONAL REQUIREMENTS.
 4. ALL ALARM, CONTROL AND MONITORING POINTS SHALL BE COMMUNICATED TO THE SCADA CPU LOCATED IN THE CONTROL ROOM VIA MODBUS.

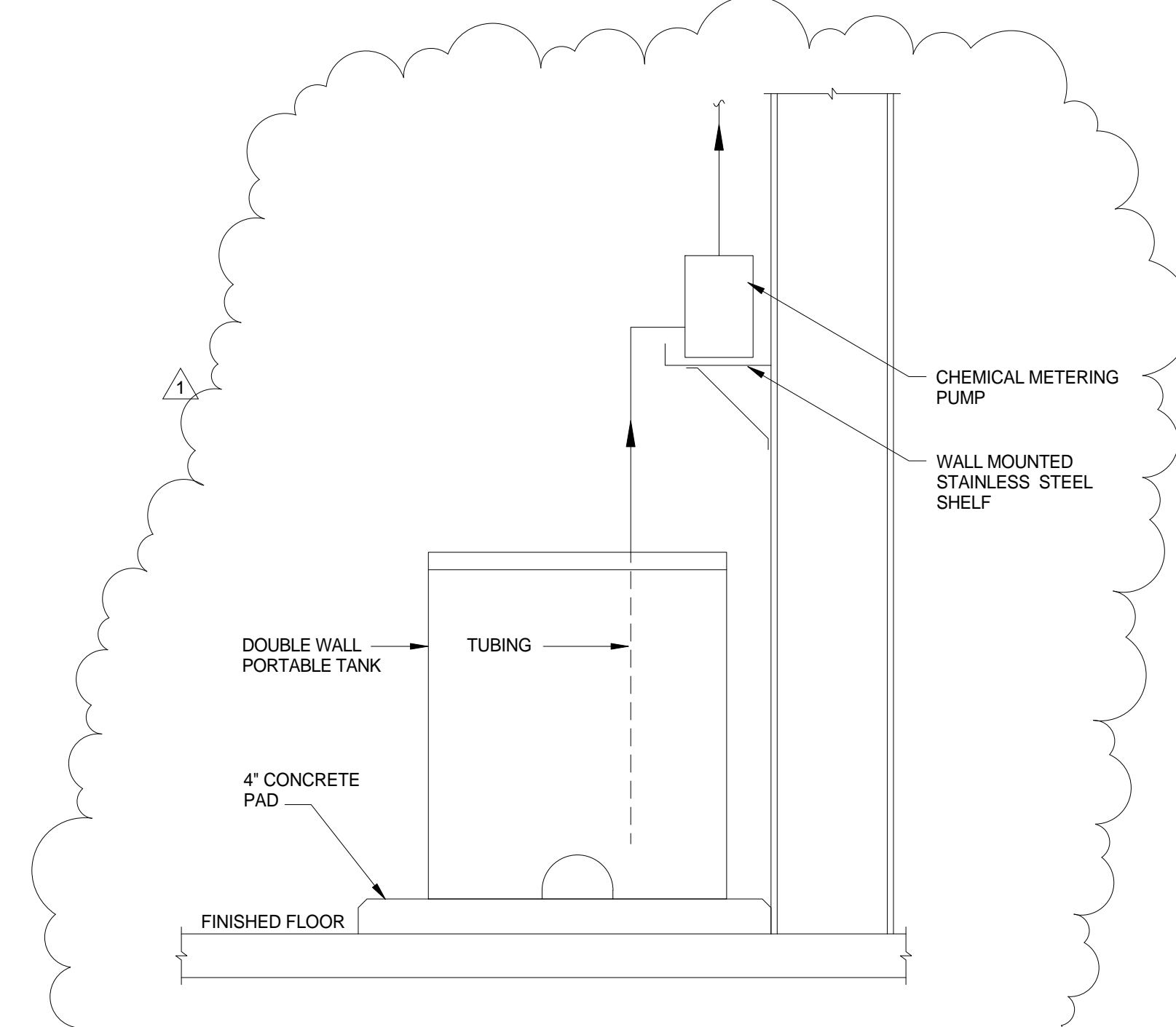


DETAIL - TYPICAL STEAM VALVE INSTALLATION
SCALE: NONE



TYPICAL BOILER CONTROL PANEL
SCALE: NONE

- NOTES:
1. ITEMS NOTED AS "SPARE" SHALL BE PROVIDED. NO CONNECTION TO FIELD DEVICE IS REQUIRED.
 2. PANELS SHALL BE EIGHT-TEEN INCHES (18") DEEP WITH FRONT HINGED ENTRY DOORS.
 3. CONTRACTOR SHALL INTERLOCK H.O.A. SWITCH WITH MOTOR CONTROL CENTER.
 4. ALL DRAFT GAUGES SHALL BE ELECTRONIC FLUSH PANEL MOUNTED.
 5. ALL ALARM, CONTROL AND MONITORING POINTS SHALL BE COMMUNICATED TO THE SCADA CPU LOCATED IN THE CONTROL ROOM VIA MODBUS.



CHEMICAL FEED TANK ELEVATION
SCALE: NONE

FINAL DESIGN
APPROVED FOR CONSTRUCTION

Revisions:	Date
1 - Addendum #3	09/08/17

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AKEA Project No. 083-14

Drawing Title
MECHANICAL DETAILS

Approved: Project Director

Project Title
REPLACE BOILERS - FCA D, ENERGY AT THE MALCOM RANDALL VAMC

Location
GAINESVILLE, FLORIDA

Date
JULY 8, 2016

Checked
JSN

Drawn
RWD

Project Number
573-14-600

Building Number

Drawing Number
MP505

Office of Construction and Facilities Management