

April 2, 2019

Josh Higgins  
 Building Maintenance Manager  
 Poudre School District  
 2407 LaPorte Ave  
 Fort Collins, CO 80521

Reference: *Boiler Replacement – Support Services Building*  
 2407 LaPorte Ave, CO 80521  
 PEC Project No. 190168-000

To Whom it May Concern,

This letter is written in regard to the proposed boiler replacement at the Poudre school district support administration building, located at the above referenced address. It was requested that PEC perform an analysis to determine if the existing mechanical platform is adequate for the increased weight of the replacement boilers (1850lb each). Information provided to PEC for analysis included the existing structural and architectural plans. From these documents we have determined the following:

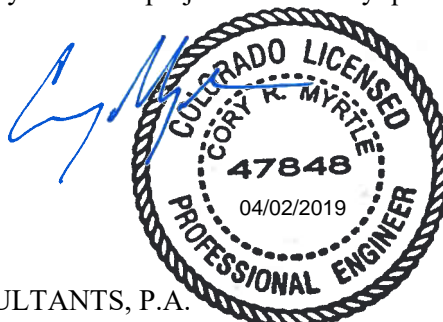
- The building was constructed in 1957 and is constructed of site-cast and pre-cast concrete elements.
- The mechanical platform was added in 1996 and consists of wide flange beams supported by HSS tube legs. The support platform is placed above concrete columns from the main structure
- The original boiler weight, including expansion tank is approximately 1000 lbs per unit.

Boiler replacement has been evaluated using two guidelines. The International Existing Building Code allows for a stress increase in gravity loading of up to 5% of the design stresses. The added weight of the new boiler as it is supported by the main structure has been evaluated using this criteria and it has been found that the stress increase in each existing columns is less than 2%. Additionally, the roof platform has been analyzed using the known sizes and an estimated material property of 36 ksi. It was found that the support structure main frame could adequately support a uniform safe load of up to 250 psf, the new equipment is 200psf. Additional supports at the feet of the new equipment are recommended to transfer the weight to the outer wide flange beams. At the equipment support, provide C6X10.5 channels, laid flat, spanning between each W10X22 and welded to the existing platform with 3/16" fillet welds at a 1"-12" pattern, each side.

The existing roof consists of precast double tee's spanning up to 52'-2". Mechanical openings may be cut in to the existing double tee roof for relief ducts, reference mechanical for locations. The centerline of each opening must be within 10'-0" from the end of each double tee. The maximum allowable dimensions are 3'-0" x 5'-0". New openings in the existing roof must not cut through tendons or the web of existing double tee's. Before drilling through existing pre-cast roof, confirm location of double tee webs and steel tendons with GPR.

Thank you for the opportunity to work with you on this project. Should any questions come up please don't hesitate to contact me.

Sincerely,



Cory R. Myrtle, PE  
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.