ENTRY FORM

DVASE
2019 Excellence in Structural Engineering Awards Program

PROJECT CATEGORY (check one):

Buildings under $5M		Buildings Over $100M	x
Buildings $5M-$15M		Other Structures Under $1M	
Buildings $15M - $40M		Other Structures Over $1M	
Buildings $40M - $100M		Single Family Home	

Approximate construction cost of facility submitted:	$230 Million
Name of Project:	Aramark Headquarters
Location of Project:	2400 Market Street, Philadelphia, PA
Date construction was completed (M/Y):	November 2018
Structural Design Firm:	The Harman Group
Affiliation:	**All entries must be submitted by DVASE member firms or members.**
Architect:	Varenhorst Architects
General Contractor:	Fastrack Construction

Company Logo (insert .jpg in box below)

Important Notes:

Please .pdf your completed entry form and email to bsagusti@barrhorstman.com.

Please also email separately 2-3 of the best .jpg images of your project, for the slide presentation at the May dinner and for the DVASE website. Include a brief (approx. 4 sentences) summary of the project for the DVASE Awards Presentation with this separate email.

Provide a concise project description in the following box (one page maximum). Include the significant aspects of the project and their relationship to the judging criteria.

2400 Market, the new Aramark headquarters in Center City Philadelphia, is an 11-story mixed-use development spanning an entire city block. The development includes office space, a lifestyle club, and outdoor terraces.

PROJECT CHALLENGES:

- Adapt a turn-of-the-century, occupied, five-story, concrete automobile warehouse building encompassing a whole city block with diagonal column grids and 40" diameter columns into a functional office building for Aramark's new corporate headquarters and retail space.
- While occupied, complete a six-story steel framed overbuild.
- Cut out the existing concrete slab in two locations and rebuild two lateral concrete cores supported on hundreds of micro-piles.
- Insert a 6,000 square foot atrium and new full building-length promenade for an incredible experience on Philadelphia's urban waterfront.

Overall Structural Solution:

The existing building is a two-way concrete flat plate with concrete columns (mostly circular) that have capitals and drop panels. The grid is on a diagonal pattern called the Morrow System, and the bay spacing is roughly thirty feet square. The vertical expansion is structural steel with a concrete slab on metal deck floor system, steel columns and beams. The lateral load resisting system incorporates concrete shear walls passing down through the existing building and up to the new roof. The new columns are set above the existing columns, therefore creating a diagonal pattern as well with large bay spacing and large cantilevers.

Connections to the Existing Round columns:

Two types of connections were required. One of the connections of the steel beams to the existing round column uses a large collar plate fastened with adhesive anchors. The connection was not able to be achieved at the top of the column because of the capital, therefore the collar plate was wrapped around the concrete column on the floor above and two steel rods pass through the existing floor slab and the new steel beam is hung. Underneath the fifth floor/existing roof, the concrete capital was cut out and a new steel beam was installed over the concrete column. Half of the steel structure was in place above when the capital was cut. Shoring was designed to pick up the steel columns above to erect the new steel transfer girder.

Installation of the Cores for Lateral:

Oversized openings to permit room for formwork and construction were cut into the existing floors requiring careful analysis of the existing concrete structure. Shear walls were formed and placed, formwork removed, then a continuous concrete corbel was installed off of the walls to re-support the existing floor slabs. This corbel serves to tie the existing building into the new shear walls for both gravity and lateral support. In some locations, existing beams, both steel and concrete, were also re-supported on the new shear walls, requiring intricate connection details.

The Promenade:

A main entrance and connection of Market Street to Chestnut Street, the Promenade is constructed of steel that cantilevers out from the existing building. Due to the presence of a major CSX rail line adjacent to the building, large steel plates are attached to the existing concrete columns with adhesive anchors and cantilevered steel beams are supported with braces to the lower part of the columns below.

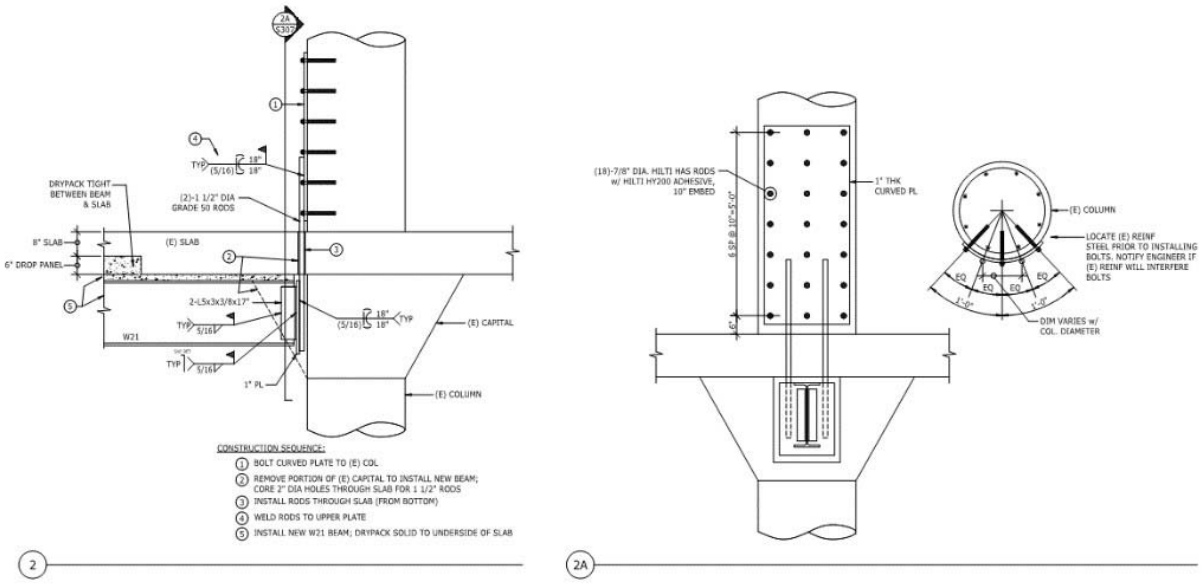
Fitler Club:

Significant upgrades were made to the ground floor, first floor and second floor for the Fitler Club, a new wellness, fitness and entertainment center. Upgrades include addition of a new two-way flat plate concrete mezzanine for a fitness center, pool and spa, a bowling alley and an event ballroom. This mezzanine utilizes the existing columns for support in some locations to accommodate an open layout for the Club on the ground floor below. At the existing columns, the floor is supported with a continuous shelf plate attached to the columns with collar plates affixed with adhesive anchors.

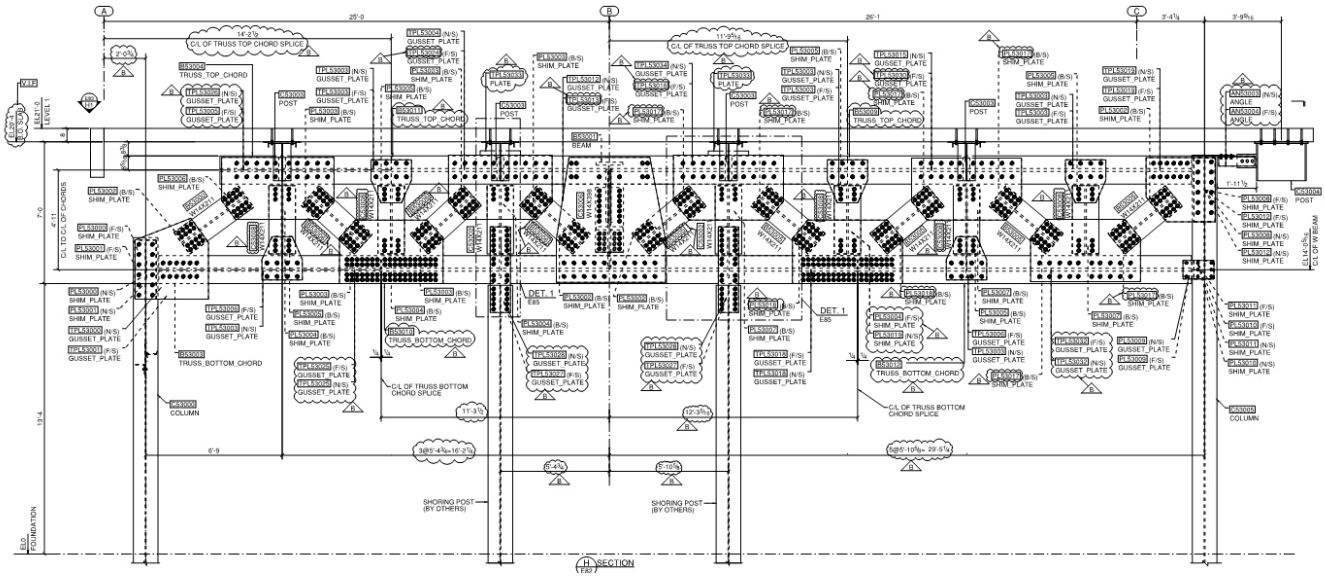
The event space on the ground floor required a large open area. One of the existing concrete columns supporting 10 floors was removed to provide the open area. Two new six-foot-deep steel trusses spanning fifty feet were installed to support a steel transfer girder that carries the column supporting the floors above with a service load of 1680kips. New micropiles were installed under each column. These trusses also provided support for the temporary shoring columns installed at the floors above.

The following 5 pages (maximum) can be used to portray your project to the awards committee through photos, renderings, sketches, plans, etc…

Overall construction photo of 2400 Market with steel overbuild



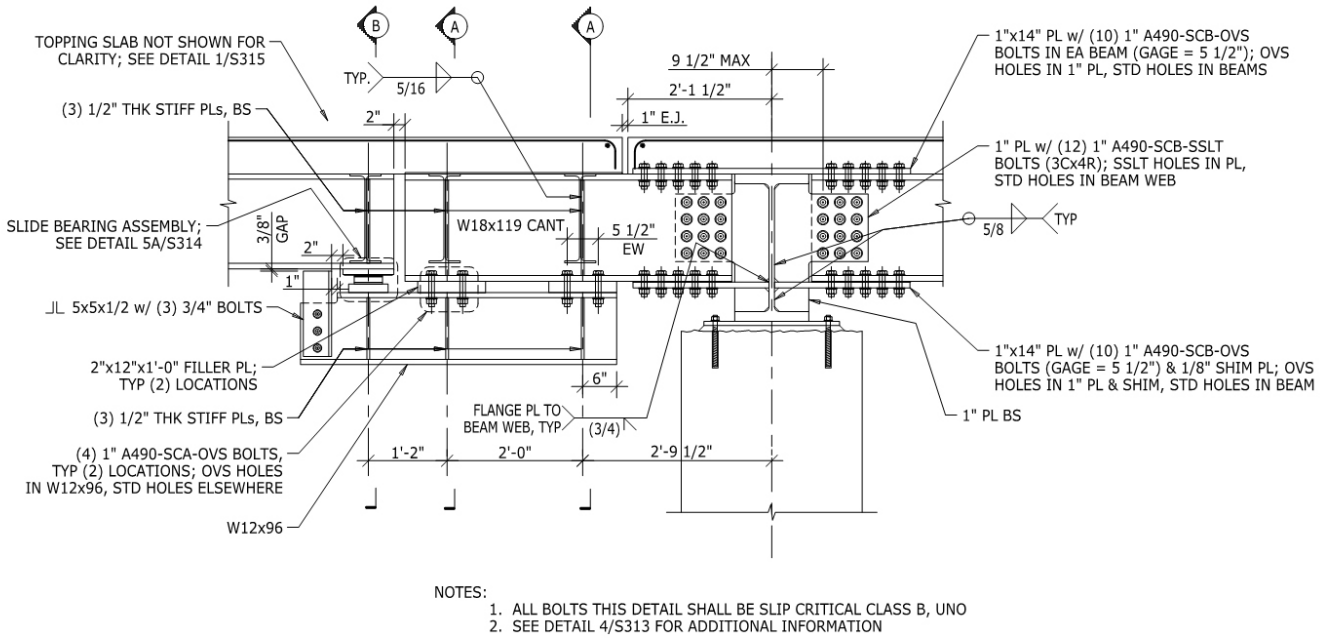
Connection of a new steel beam to the existing concrete column at the connection above the floor framing. Steel rods support the shear tab of the connection of the beam below.



Steel truss supporting the transfer girder which supports 10 floors above.

p

Steel transfer beam over existing concrete column where concrete capital was cut.



NOTES:
1. ALL BOLTS THIS DETAIL SHALL BE SLIP CRITICAL CLASS B, UNO
2. SEE DETAIL 4/S313 FOR ADDITIONAL INFORMATION

Steel slide bearing connection at new promenade connection Market and Chestnut Streets

Steel framing for the new promenade connecting Market and Chestnut Streets.

By signing, signatory agrees to the following and represents that he or she is authorized to sign for the structural design firm of record:

All entries become the property of DVASE and will not be returned. By entering, the entrant grants a royalty-free license is granted to DVASE to use any copyrighted material submitted.

If selected as an award winner, you may be offered the opportunity to present your project at a DVASE breakfast seminar. Would you be willing to present to your colleagues? ☑ ***YES*** ***NO***

Submitted by:

Print name: **Jan Vacca**	**Signature:** 	**Date:** **3/13/19**

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