

Fire Vault and Building Foundation Evaluation Letter

Engineer: Chon Pieruccioni, PE | Pieruccioni E&C, LLC

Project Name: Easttown Crossing Apartments (Building B)

Site Address: Pioneer and Shaw Rd, Puyallup, WA

Date: 5/7/2025

ISSUE 1:

The fire vault for building B is located within the bearing influence area of the foundation.

Approval 1:

Per the vault manufacturers design the vault has been designed for HS-20 loading which is equivalent to 32,000# along the 8' length of the vault. The maximum possible load on the building foundation is also 4,000 pounds per linear foot (or 32,000#) so the vault is able to carry the maximum potential load of the building foundation. The foundation is approved as constructed with no modifications required. (See AHBL's memo for coordination)



Chon Pieruccioni, PE | Pieruccioni E&C, LLC

PROJECT MEMO



TO: Jason Little, City of Puyallup
FROM: Todd Sawin
Tacoma - (253) 383-2422
DATE: May 7, 2025
PROJECT NO.: 2230752.10
PROJECT NAME: East Town Crossing
SUBJECT: Fire Vaults and Building Footings

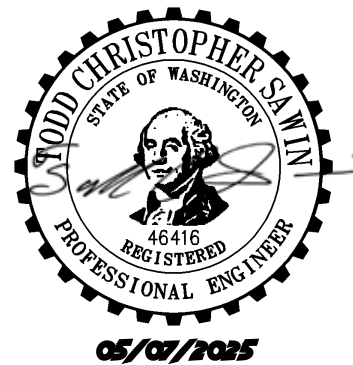
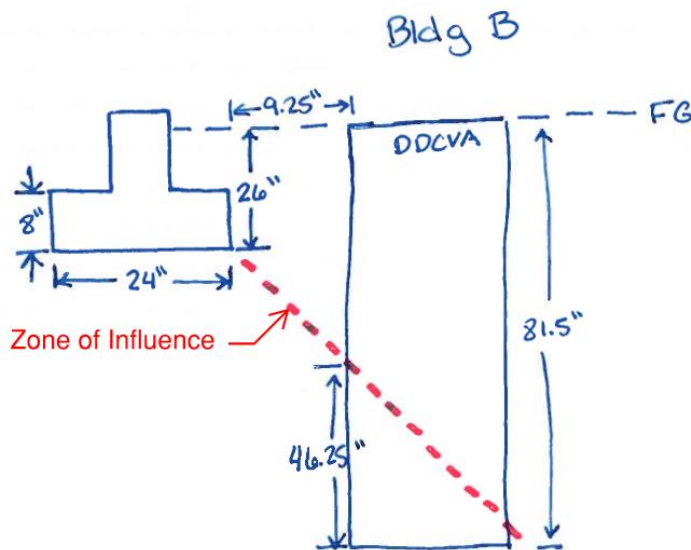
This letter is intended to address the City’s concern on the relationship between the fire vaults and building footings on the East Town Crossing site. In constructed condition, Building B’s fire vault is the closest to the building footing with a separation of 9.25”. This puts the near edge 46.25” into the footings zone of influence. As this is the worst-case condition, this is what has been analyzed. See the sketch below for a depiction.

Vault Impact on Footing

Based on the size disparity between the vault and the building footing, as well as the fact the building footing is above the vaults zone of influence, the fire vault will not compromise the building footing.

Footing Impact on Vault

The fire vault is rated for HS-20 loading per the requirements outlined in Note 2 on the Water Vault Detail (C.O.P Std Dtl 03.11.01 attached below). Based on this rating, the vault is able to withstand a 32-kip axle loading. Per the structural calculations, the building imparts a surcharge load of 4,000 pounds per linear foot. As the long edge of the vault is 8 ft, the total surcharge is 32,000 pounds or 32-kips. As a result, the vault is able to withstand the loadings of the footing and structure.

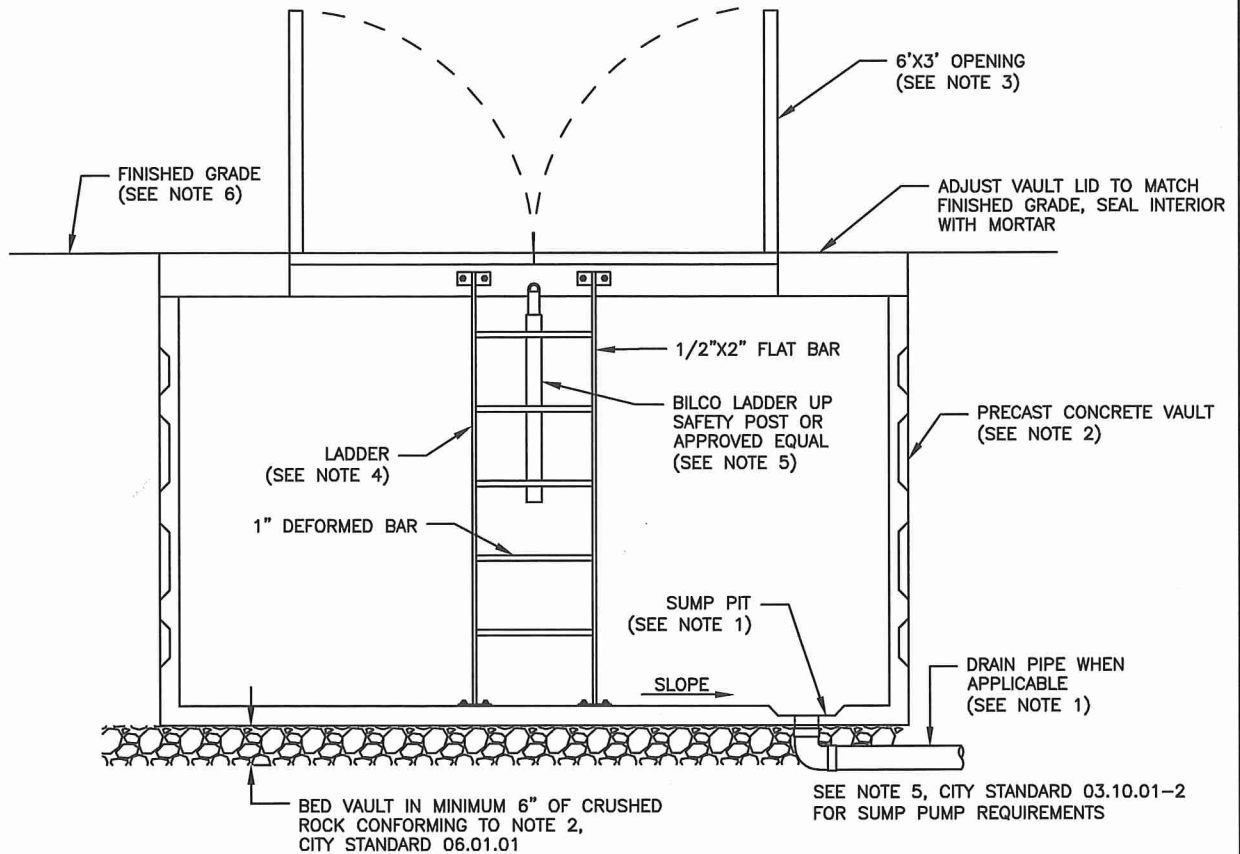


Based on this worst case scenario, by inspection, all other vaults are able to withstand the force of the building and vice versa.



CJW/

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NOTES:

1. IF POSSIBLE, DRAIN VAULT TO DAYLIGHT OR APPROVED STORM DRAINAGE STRUCTURE (2% MINIMUM SLOPE). VAULT DRAIN SHALL BE 4" SCH 80 PVC PIPE WITH 1/4" GALVANIZED MESH SCREEN OR APPROVED EQUAL AFFIXED TO PIPE INLET AND OUTFALL. MASTIC AND MORTAR SEAL WHERE DRAIN PIPE PASSES THROUGH SUMP PIT AT FLOOR OF VAULT. WHEN VAULT DRAIN IS INFEASIBLE, A SUMP PUMP SHALL BE INSTALLED MEETING THE REQUIREMENTS OF NOTE 5, CITY STANDARD 03.10.01-2
2. THE VAULT SHALL BE A PRECAST CONCRETE, SIZED TO MEET THE MINIMUM CLEARANCE REQUIREMENTS SHOWN ON DETAILS 03.03.03, 03.09.01, OR 03.10.01-1. VAULT SHALL BE RATED FOR HS-20 LOADING. NO MODIFICATIONS TO PRECAST CONCRETE VAULT WALLS WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM PRECAST SUPPLIER AND/OR ENGINEER OF RECORD.
3. REMOVABLE DOORS SHALL BE A MINIMUM OF 6'-0" X 3'-0" ALUMINUM DIAMOND PLATE HINGED LOCKING DOORS, WITH HINGES LOCATED AT EACH END OF OPENING, AND WITH COVERED RECESSED PADLOCK HASP. DOORS SHALL BE SPRING LOADED AND LOCK IN THE OPEN POSITION. DOOR AND FRAME SHALL BE RATED FOR HS-20 LOADING.
4. A GALVANIZED LADDER SHALL BE SET INSIDE THE VAULT FOR ACCESS. IT SHALL BE SECURED TO THE VAULT WITH 1/2" DIA. BOLTS EPOXIED TO THE VAULT LID AND FLOOR.
5. A BILCO LADDER UP SAFETY POST MODEL NO. 2 (OR APPROVED EQUAL) SHALL BE ATTACHED TO AND CENTERED ON THE LADDER STEPS.
6. THE VAULT SHALL BE PLACED IN A UTILITY EASEMENT OUT OF VEHICLE AND PEDESTRIAN TRAFFIC.
7. CAST-IN-PLACE VAULTS SHALL BE PERMITTED BY THE CITY'S BUILDING DIVISION PRIOR TO CONSTRUCTION.



CITY OF PUYALLUP
 OFFICE
 of
 THE CITY ENGINEER

APPROVED FOR PUBLICATION



DATE SEALED: 10/15/2019

WATER VAULT DETAILS

(NOT TO SCALE)

CITY STANDARD
03.11.01

FILE NAME: Y:\SHARED\DRAWINGS\CITY STANDARDS\2018\02 - PART 2 - STANDARD DETAILS\CAD\300\03.11