

MEMORANDUM

To:	Agustin Enriquez	From:	Nick Pavaglio, P.E.
Company:	NBP Capital and Eastbank Development c/o GBD Architects	Date:	August 4, 2022
Address:	1120 NW Couch Street, Suite 300 Portland, OR 97209		
cc:	Daniel Bradbury, GBD Architects (via email only) Nick Stephens, Andersen Construction (via email only) Andi Camp, KPFF Consulting Engineers (via email only)		
Project No.:	PathPDX-1-02		
RE:	Temporary Support of Existing Walls Demolition Riverplace – Phase 1 Portland, Oregon		

NV5 has prepared this memorandum to discuss temporary support of building walls during demolition of the existing structure associated with Phase I of the Riverplace development in Portland, Oregon.

Based on correspondence with the design team, demolition sequencing for the western portion of the existing building requires removal of the roof structure, which supports lateral loading of the existing buried walls. In order to brace the walls after removal of the roof structure, the team plans to stockpile concrete rubble against the walls.

Provided minor movement of the existing walls is acceptable and the rubble pile is constructed prior to removal of the roof structure and as described below, it is our opinion that this a feasible approach to temporary support the existing walls. The rubble pile should have a minimum 2-foot-wide bench at the top of the walls where it cannot be cantilevered followed by a slope no steeper than 1H:1V. The rubble pile should be placed in maximum 3-foot-thick lifts and tamped into place with an excavator bucket. It should be noted that the rubble does not need to be placed as structural fill. The maximum height of the rubble pile should be less than 25 feet. Refer to the Attachment for a visual representation of the recommendation and a calculation of the factor of safety of the proposed system. The factor of safety is approximately 1.5 for the temporary wall conditions, which is acceptable.

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Please call if you have questions concerning the information provided.

NNP:kt

Attachment

One copy submitted (via email only)

Document ID: PathPDX-1-02-080422-geom.docx

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ATTACHMENT

Resisting Soil (Rubble/Fill):
 $\phi = 32$ degrees
 $k_p = 0.6$ (assumes 1H:1V slope)
 $\gamma = 115$ pcf
 Max H = 25 feet

Driving Soil (Native/Fill Silt):
 $\phi = 28$ degrees
 $k_a = 0.36$
 $\gamma = 115$ pcf
 Max H = 25 feet

$$P_p = 0.5(0.6)(115 \text{ pcf})(25'^2) = 21,562 \text{ lbs}$$

$$P_a = 0.5(0.36)(115 \text{ pcf})(25'^2) = 12,937 \text{ lbs}$$

$$250 \text{ psf Vehicle Load}$$

$$P_a = (0.36)(250 \text{ psf})(25') = 2,250 \text{ lbs}$$

Max Slope = 1H:1V

2' min

25' max

Existing Slab/Subgrade

Existing Soil

$$FOS = (21,562 \text{ lbs}) / ((12,937 \text{ lbs}) + (2,250 \text{ lbs})) = 1.47$$

Drawing is not to scale.

DATE CHECKED	CHECKED BY	JOB NUMBER	NNP	8/2/2022	CALC. NO.	SHEET NO. 1/1
PathPDX-1-02		Backfill pressure for temporary rubble support of existing buried wall				
PROJECT		SUBJECT				