

Project Location:

Portland,
Oregon

Main Contractor:

MJ Hughes Construction,
Gresham, OR

Project period

May 2011 - July 2011

Method Applied:

429 columns (= 42,900 lin. ft)
Dry Bottom Feed Vibro
Displacement Stone Columns
to a maximum depth of 100 ft
(= 30 m)

Technical Requirements:

Provide Ground improvement from -50 ft to - 100 ft to mitigate lateral spreading of an existing and upgraded port facility by installing 30 inch to 36 inch diameter stone columns with a 8% replacement ratio.



Vibro B27 Dry Bottom Feed rig, left: ready for 100 ft penetration depth, middle: at target depth

Quality Control Testing:

Verification testing was by Cone Penetration Tests (CPTs), supported by digital process data from Vibro rigs. Desired average cone penetration value of 20 to 30 MPa.

Quality was assessed also by controlling the specified 8% replacement factor and by liquefaction calculations based on post treatment digital CPT data.

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