

DRILLED/GROUTED AND HOLLOW BAR SOIL NAILING

COST INFORMATION

Commentary

The costs of drilled/grouted soil nails on a highway project are typically captured in the following contract pay items:

- Soil nails measured by the lineal foot (LF) or by each (EA) nail installed
- Drainage system by the square foot (SF)
- Permanent or temporary wall facing by the square foot (SF)

Mobilization, quality control, and load testing associated with the installation of drilled/grouted soil nails may be measured and paid for separately.

Cost Information Summary

The following table lists construction cost items that are associated with drilled-grouted and hollow bar soil nails, along with approximate cost ranges. Cost ranges are based on data from 2010 through 2011. Readers should carefully examine the project characteristics and constraints and determine to what degree if any these factors may influence the actual cost associated with installing drilled/grouted soil nails and wall facings.

Pay Item Description	Quantity Range	Unit	Low Unit Price	High Unit Price	Factors Which May Potentially Impact Costs
Soil Nails	Greater Than 2,500	LF	\$20.00	\$50.00	Soil density, and stability Grout cost is sensitive to materials specified
Temporary Facing	Greater Than 5,000	SF	\$10.00	\$20.00	Shotcrete costs are influenced by cementitious material and aggregate material costs
Drainage Mat	Greater Than 250	SY	\$7.50	\$15.00	Material specifications
Mobilization	1	LS	\$10,000	\$20,000	Equipment mobilized includes drills, compressors, shotcrete mixers and pumps Multiple phases may require multiple mobilizations Mobilizations greater than 500 miles will increase costs
Permanent Facing	Greater Than 5,000	SF	\$-	\$-	Use historical unit prices for MSE or shotcrete that are representative of the region, type of work and estimated quantity

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Historical Cost Information

A sample of actual project costs is shown in the table below.

Pay Item Description	Quantity	Unit	Low Unit Price	High Unit Price	Average Unit Price	No. of Bids	Bid Date	Source/ Agency
Soil Nail – Epoxy Coated	65	EA	\$469.00	\$660.00	\$581.75	12	2/3/2010	Washington DOT
Soil Nail Verification Test and Soil Nail Proof Test	5	EA	\$520.00	\$2,414.00	\$975.34			
Prefabricated Drainage Mat	217	SY	\$4.00	\$67.00	\$12.24			
Shotcrete Facing	2,193	SF	\$10.00	\$18.00	\$14.73			
Soil Nail – Encapsulated	445	EA	\$640.00	\$846.51	\$709.08	10	6/23/10	Washington DOT
Soil Nail Verification Test and Soil Nail Proof Test	22	EA	\$500.00	\$1,209.31	\$726.83			
Prefabricated Drainage Mat	1,992	SY	\$5.00	\$18.00	\$7.97			
Shotcrete Facing	8,110	SF	\$11.49	\$23.00	\$14.16			
Furnish, Drill and Install Soil Nails	7,883	LF	\$28.00	\$55.40	\$37.84	9	10/21/2010	Oregon DOT
Retaining Wall, Soil Nail	8,955	SF	\$30.80	\$80.00	\$55.20			

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Conceptual Cost Estimating Tool

Click the link below to open a cost estimating spreadsheet for producing a preliminary project scoping estimate.

www.geotechtools.org/documents/drillhollow_costtool_r1.xlsx

This conceptual cost estimating tool is intended to be used to develop a preliminary project scoping cost estimate. This preliminary estimate can be based on the typical construction cost item values as contained in the Cost Information product or from user specified cost values when such are known. Users should read and understand the information in Cost Information product prior to using the cost estimating tool.