

Earth Retaining Structure Selection Matrix

GDM Section 18.4

SCDOT v1.1 - 03/06/2020

ISF ¹		Ground Type	Groundwater	Construction Considerations	Speed of Construction	ROW	Aesthetics	Environmental Concerns	Durability and Maintenance	Tradition	Contracting Practice	Cost	Displacement	X ⁸	X ⁸	X ⁸	Total Weighted Rating (WR _T)
ERS Type ^{5,6}	IR ^{2,7}	1	1	3	3	1	2	1	3	2	2	3	3				
	SF ³	3	3	2	2	2	3	4	4	3	4	2	4				
RSS	WR ⁴	3	3	6	6	2	6	4	12	6	8	6	12	0	0	0	74
	SF	2	3	2	2	2	4	4	4	4	4	1	3				
MSE Wall	WR	2	3	6	6	2	8	4	12	8	8	3	9	0	0	0	71
	SF	3	3	4	3	2	3	4	4	1	3	3	4				
Soil Nailing	WR	3	3	12	9	2	6	4	12	2	6	9	12	0	0	0	80
	SF	2	2	1	1	2	3	4	3	2	4	1	2				
Concrete Cantilever	WR	2	2	3	3	2	6	4	9	4	8	3	6	0	0	0	52
	SF	2	2	3	3	2	2	4	2	2	3	3	3				
Sheetpile Wall	WR	2	2	9	9	2	4	4	6	4	6	9	9	0	0	0	66
	SF	2	2	3	3	2	1	4	2	2	3	3	3				
Soldier Pile and Lagging Wall	WR	2	2	9	9	2	2	4	6	4	6	9	9	0	0	0	64
	SF																
	WR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SF																
	WR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

¹Importance Selection Factor

²Importance Rating - Ranges from 1, least important, to 3, most important

³Suitability Factor - Ranges from 1, least suitable, to 4, most suitable

⁴Weighted Rating - Product of IR * SF

⁵ERS type per Chapter 18 of latest version of GDM

⁶Reinforced Soil Slopes (RSS) may be used as an ERS

⁷GEOR to provide written justification for selection of IRs by **project team**

⁸Additional ISFs may be added; however, GEOR to provide written justification for additional ISFs as well as selection of IRs by **project team**