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Date: 5/25/2016

Client Name: The Summit

File Number: 73668

Consultant: Soil and Water Consulting

Greensmix : Lab #763 GREENSMIX 90/10 2000TONS

Gravel: Lab #889 3/8" PEA GRAVEL Q.C. 5/2016

GREENSMIX/GRAVEL COMPATIBILITY

Rootzone Sieve Analysis	Particle Diameter (%)							
	2.0 mm	1.0 mm	0.5 mm	0.25 mm	0.15 mm	0.106 mm	0.053 mm	Silt/Clay
% Retained	0.0	4.6	40.8	37.5	10.2	3.0	0.9	3.0

Gravel Sieve Analysis	Particle Diameter (%)							
	12.5 mm	9.5 mm	6.3 mm	4.75 mm	2.36 mm	2.0 mm	1.0 mm	< 1.0 mm
% Retained	0.0	0.1	21.2	45.3	32.4	0.3	0.2	0.5

1. **For Bridging to Occur.** $D_{15}(\text{gravel}) \leq 8 \times D_{85}(\text{rootzone})$ $D_{15}(\text{gravel}) = 3.39$
 $D_{85}(\text{rootzone}) = 0.87$
 $3.39 \text{ mm} \leq 6.96 \text{ mm}$

These Results show that the $D_{15}(\text{gravel})$ at 3.39mm **IS** less than or equal to ($\leq$) $8 \times D_{85}(\text{rootzone})$, which was $8 \times 0.87\text{mm} = 6.96\text{mm}$. Therefore, bridging of the coarsest 15% rootzone particles **SHOULD** occur with the finest 15% of gravel particles. This gravel **IS** compatible with sand.

2. **For Adequate Permeability.** $D_{15}(\text{gravel}) \geq 5 \times D_{15}(\text{rootzone})$ $D_{15}(\text{gravel}) = 3.39$
 $D_{15}(\text{rootzone}) = 0.23$
 $3.39 \text{ mm} \geq 1.15 \text{ mm}$

These Results show that the $D_{15}(\text{gravel})$ at 3.39mm **IS** $\geq 5 \times D_{15}(\text{rootzone})$, which was $5 \times 0.23\text{mm} = 1.15\text{mm}$. Therefore, adequate permeability **SHOULD** occur with this gravel and rootzone sand.

3. **Uniformity Coefficient of Gravel** $D_{90}(\text{gravel})/D_{15}(\text{gravel}) \leq 3.0$ $D_{90}(\text{gravel}) = 8.00$
 $D_{15}(\text{gravel}) = 3.39$
 $2.36 \text{ mm} \leq 3.00\text{mm}$

These Results show that the $D_{90}(\text{gravel})/D_{15}(\text{gravel})$ is 2.36mm which **IS** less than or equal to 3.0. Therefore, the Uniformity Coefficient of gravel **PASSES** this criterion.

Furthermore, the gravel should have 100% particles < 12mm, $\leq$ 10% particles < 2mm, and $\leq$ 5% particles < 1mm.

Reviewed by:

Jackie Brackman