**GENERAL**

* 1. Related Documents
		1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
	2. Summary
		1. Section Includes:
			1. Furnishing and installation of Geomembrane
		2. Related Sections:
			1. Division 32 – Exterior Improvements
	3. Definitions
		1. Geomembrane: Thin, smooth plastic sheet material used as a mechanical barrier in a variety of applications:
			1. Root block for utilities or other structures.
			2. Bamboo barrier for invasive species, to prevent root growth in undesired locations.
			3. Water barrier for controlling water flow, prevention of lateral water migration into hardscapes.
	4. Submittals
		1. Product data: Manufacturers standard literature defining materials for use on the Project.
		2. Samples, if required by Architect:
			1. Geomembrane: One linear foot.
		3. Quality control: Complete installation instructions specified, may be combined with product data.
	5. Quality Assurance
		1. Manufacturer’s qualifications:
			1. Minimum twenty-five (25) years experience in tree and plant protection.
	6. Delivery, Storage and Handling
		1. Packing and Shipping
			1. Provide materials in original, unopened packaging with manufacturer’s labels intact and legible.
		2. Acceptance at Site
			1. Damaged materials will not be accepted, as determined by visual inspection.
			2. Rejected materials shall be removed from project site immediately.
		3. Storage and Protection
			1. Store materials in dry area in manufacturer’s protective packaging, in original containers with labels and instructions intact.

**PRODUCTS**

* 1. MANUFACTURERS
		1. Acceptable manufacturers:
			1. Products specified as standard of quality are manufactured by DeepRoot Green Infrastructure, LLC. (DeepRoot), 530 Washington Street, San Francisco, CA 94111; 800.458.7668; fax 800.277.7668; [www.deeproot.com](http://www.deeproot.com)
			2. Products meeting standards listed within this specification may be acceptable for use subject to approval of product list and samples.
	2. MANUFACTURED UNITS
		1. Geomembrane - 0.030” (0.76 mm) thick
			1. Material: 100% post-consumer high density polyethylene (HDPE)
			2. Dimensions: 0.030”(0.76 mm) thick, available in 18”(460 mm), 24”(610 mm), 30”(760 mm), 36”(910 mm) or 48”(1220 mm) wide rolls of 100’(30.48m) or 300’(91.44m) lengths.
			3. Accessories:
				1. Manufacturer’s standard sealing tape
				2. Silicone sealant, depending on application.
		2. Geomembrane - 0.040” (1.02 mm) thick
			1. Material: 100% post-consumer high density polyethylene (HDPE)
			2. Dimensions: 0.040” (1.02 mm) thick, available in 24”(610 mm) or 30”(760 mm) wide rolls of 100’(30.48m) or 300’(91.44m) lengths.
			3. Accessories:
				1. Manufacturer’s standard sealing tape
				2. Silicone sealant, depending on application.
		3. Geomembrane - 0.060” (1.52 mm) thick
			1. Material: 100% post-consumer high density polyethylene (HDPE)
			2. Dimensions: 0.060” (1.52 mm) thick, available in 30”(760 mm) or 36”(910 mm) wide rolls of 100’(30.48m) or 300’(91.44m) lengths.
			3. Accessories:
				1. Manufacturer’s standard sealing tape
				2. Silicone sealant, depending on application.
		4. Geomembrane - 0.080” (2.03 mm) thick
			1. Material: 100% post-consumer high density polyethylene (HDPE)
			2. Dimensions: 0.080” (2.03 mm) thick, available in 30”(760 mm) or 36”(910 mm) wide rolls of 100’(30.48m) or 200’(60.96m) lengths.
			3. Accessories:
				1. Manufacturer’s standard sealing tape
				2. Silicone sealant, depending on application.

**INSTALLATION**

1. General
	* 1. For all applications:
			1. Install as indicated on shop drawings in accordance with manufacturer’s installation instructions.
			2. Use specified material widths required for project conditions.
			3. Where applicable, seal to hardscape surfaces with specified sealant.
		2. Seaming
			1. Where material requires seaming at the end of the roll, overlap geomembrane at minimum two widths of sealing tape, approximately 6” (150mm), using manufacturer’s standard sealing tape.
			2. Where material requires seaming to create a larger sheet-like material, overlap geomembrane at minimum two widths of sealing tape, approximately 6”(150mm).
			3. Ensure consistent seal across entire seam.
2. Utility Applications
	* 1. For installation as utility separation device.
			1. Ensure utility company is aware of and approves of proposed application.
			2. Verify any utility requirements for depth, distance, compaction or other requirements they may have in regard to geomembrane installation.
			3. Install geomembrane as close to utility as allowed.
				1. Generally, geomembrane should be installed vertically in order to adequately compact backfill on both sides of the membrane. Where necessary, geomembrane may also be laid across the top of a compacted utility trench. See manufacturer’s product information for details.
3. Bamboo Barrier Applications
	* 1. Geomembrane may be used as a root barrier for Bamboo or other aggressive plant species.
			1. Install geomembrane vertically in desired perimeter around bamboo planting area, or as shown on project drawings.
			2. Overlap ends of barrier by 4’ (1219.2mm) and apply sealant tape within the seam. Ensure a tight seal.
			3. Top of root barrier should be 2” (50.8mm) above finish grade of planting soil.
4. Water Barrier Applications
	* 1. For installation to control water flow.
			1. Geomembrane may be used to direct water to specific locations.
			2. Install in locations shown on project drawings.
			3. Install geomembrane vertically wherever possible.
			4. When used to direct water, installation of drainage systems at the end of flow route is recommended. Install per project specifications.
		2. For prevention of lateral water migration into hardscapes.
			1. Install in locations shown on project drawings.
			2. Install geomembrane vertically, immediately adjacent to structure that requires protection from lateral water migration.
				1. Where installation occurs at the surface of planters or pavements, top of geomembrane shall be installed ½” (12.7mm) above grade of planting soil.