

## GENERAL

---

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

### 1.2 SUMMARY

- A. This specification includes:
1. Furnishing and installing Terravault system, including: geotextile, geogrids, aggregates, sub base material, backfill, drainage system, root barrier, compost, and the installation of planting soil.

### 1.3 DEFINITIONS

- A. Aggregate Sub Base (below Terravault Cell base): Aggregate material between the bottom of the Terravault base and the compacted subgrade below, designed to distribute loads from the units to the subgrade.
- B. Aggregate Base Course (above Cell deck): Aggregate material between the paving and the top of the Terravault deck below designed to distribute loads across the top of the Terravault units.
- C. Aggregate Setting Bed – For Pavers (above Cell deck): Aggregate material between the aggregate base course and unit surface pavers, designed to act as a setting bed for the pavers.
- D. Backfill: The material used to replace or the act of replacing earth in an excavation beside the Terravault units to the excavation extents.
- E. Bridging Slab: Bridging slabs are to be used in locations where spacing larger than 100 mm is necessary between Terravault units.
- F. Compost: Organic material subjected to composting processes



- G. Finish Grade: Elevation of finished surface of planting soil or paving.
- H. Geogrid: Net-shaped synthetic polymer-coated fibers that provide a stabilizing force within soil structure as the fill interlocks with the grid.
- I. Geotextile: A geosynthetic fabric, applied to either the soil surface or between materials, providing filtration, separation, or stabilization properties.
- J. Inspection Riser for Drainage: Vertical, perforated pipe installed at tree openings to allow access for visual inspection of water levels at base of Terravault units. Designers to determine frequency of risers, one riser for every three trees is recommended. *\*\*May be modified to act as a cleanout for drain lines. This variation would not be perforated.*
- K. Inspection Riser for Soil: Vertical pipe installed within pavement section to allow access for visual inspection of soils within Terravault units. Designers to determine frequency of risers based on soil inspection goals. One riser for every two trees is recommended.
- L. Irrigation: Trees planted in the Terravault system must receive adequate water to ensure survival of the living system during periods of drier weather. Harvest of natural rainwater or supplemental water must be a part of the system, either through pressurized or non-pressurized systems, within the soil of the Terravault system.

**NOTE TO SPECIFICATION (Designer):** Water is critical to the success of the trees growing within the Terravault units system. Coordinate with any required irrigation installations. Irrigation should be installed within the entire soil system, not only at the tree opening.

- M. Planting Soil: Soil intended to fill the Terravault system and other planting spaces. Suitable planting soil to promote tree growth is to be determined by the Designer on a species by species basis.
- N. Root Barrier: Plastic root diversion device.
- O. Root package: The earthen package containing the root system of the tree as shipped from the nursery.
- P. Terravault units: Plastic structural Modular cell system, designed to be filled with planting soil for tree rooting and support of vehicle loaded pavements. The soil within the Cells may also be used as part of rainwater filtering, retention and detention systems as well.



- Q. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill.
- R. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- S. Tree: A perennial woody plant with one or several trunks and a distinct crown and intended to become large enough to shade people and or vehicles.
- T. Cable Tie: A tensioning device or tool used tie similar or different materials together with a specific degree of tension.

#### 1.4 SUBMITTALS

- A. Upon (15-45) days prior to start of installation of Terravault, the Contractor shall provide the submittals outlined below to the landscape architect for review and approval.
- B. Product Data: For each type of product, submit manufacturer's product literature with technical data sufficient to demonstrate that the product meets the specifications shown in Part 2 of this document.
  - 1. For bulk materials, including soils and aggregates include analysis of the materials by a recognized laboratory that demonstrates that the material meets the specification requirements.
  - 2. Terravault manufacturer's letter of review and approval of the project, plans, details and specifications for compliance with product installation requirements.
- C. Terravault Installer Qualifications: Submit documentation to demonstrate the experience of the Terravault or Modular tanking system installer in performing tasks described in Part 3. Documentation to including evidence to setting out, levelling, excavation, compaction, installing drainage systems and planting soils to ensure the Installer meets the requirements of paragraph "Quality Assurance".



## 1.5 SEQUENCING AND SCHEDULING

- A. General: Prior to the start of Work, prepare a detailed schedule of the work for coordination with other trades.
- B. Schedule all utility installations prior to beginning Terravault installation.
- C. Where possible, schedule the installation of Terravault system after the area is no longer required for use by other trades or work. Protect installed Terravault system from damage in the event that work must occur over or adjacent to the completed Terravault installed system, by suitable barricading system.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Terravault and related products shall be installed by an installer who has demonstrated that their work has resulted in successful installation of planting soils and planter drainage systems, underground piping, chambers and vault structures.
  - 1. Submit list of completed projects of similar scope and scale to the Principal Contractor, demonstrating capabilities and experience.
  - 2. The Installer and the site supervisor shall have a minimum of five years' experience with construction of similar scope in dense urban areas.
  - 3. Installer's Site Supervision: The Installer is required to maintain an experienced full-time supervisor on the Project site when work is in progress. This person shall be identified during the Pre-Construction Meeting with Rainsmart, with appropriate contact information provided, as necessary. The same supervisor shall be utilised throughout the Project, unless a substitution is submitted to and approved in writing by the Principal Contractor.
- B. Manufacturer Qualifications
  - 1. A manufacturer whose product is manufactured in an ISO/9001 & 140001 compliant registered factory
  - 2. A manufacturer with not less than 100 soil cell / Stormwater systems in-place, each system in use for not less than 3 years, confirming durability and longevity of the system.



3. A manufacturer with an established and demonstrated utility service and repair process, including written procedure and photographs demonstrating work.

#### 1.7 LAYOUT AND ELEVATION CONTROL

- A. Provide layout and elevation control during installation of Terravault. Utilise elevation stakes, benchmarks, surveying equipment and other means and methods to assure that layout and elevations conform to the layout and elevations indicated on the contract drawings.

#### 1.8 PERMITS AND CODE COMPLIANCE

- A. Comply with applicable requirements of the laws, codes, and regulations of the National, State and Local Authorities. Obtain necessary permits/approvals from all such authorities.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with national laws, if applicable. Protect materials from deterioration during delivery and while on the project site.
- B. Bulk Materials:
  1. Do not deliver or place backfill, soils and soil amendments in frozen, wet, or muddy conditions.
  2. Provide protection between all bulk materials and any finished surfaces sufficient to protect the finish material.
- C. Provide erosion-control measures to prevent erosion or displacement of bulk materials and discharge of soil-bearing water runoff or airborne dust to adjacent properties, water conveyance systems, and walkways. Provide additional sediment control to retain excavated material, backfill, soil amendments and planting mix within the site boundary as required.
- D. Terravault Modules: Protect Terravault Modules from damage during delivery, storage and handling.



1. Store under cover to protect from sunlight when time from delivery to installation exceeds one week. Storage should occur on smooth surfaces, free from dirt, mud and debris
2. Handling is to be performed with equipment appropriate to the size (height) of Modules and site conditions, and may include hand, handcart, forklifts, extension lifts, or small cranes, with care given to minimize damage to adjacent Terravault units

#### 1.10 PROJECT CONDITIONS

- A. Verification of Existing Conditions and Protection of New or Existing Improvements: Before proceeding with the Terravault installation, the Installer shall carefully check and verify all dimensions, quantities, and levels, and inform the landscape architect immediately of any discrepancies compared to the contract drawings.
1. Carefully examine the civil, record, and survey drawings to become familiar with the existing underground conditions before digging. Verify the location of all above ground and underground utility lines, infrastructure, other improvements, and existing trees, shrubs, and plants to remain including their root system, and take proper precautions as necessary to avoid damage to such improvements and plants.
  2. In the event of conflict between existing and new improvements notify the landscape architect in writing and obtain written confirmation of any changes to the work prior to proceeding.
  3. When new or previously existing utility lines are encountered during the course of excavation, notify the landscape architect in writing and make recommendations as to remedial action. Proceed with work in that area only upon approval of appropriate remedial action. Coordinate all work with the appropriate utility contractors, utility company or responsible public works agency.
- B. Weather Limitations: Do not proceed with the installation when subgrades, soils and planting soils are in a wet, muddy, or frozen condition.
- C. Protect partially completed Terravault installations against damage from other construction traffic with highly visible construction tape, fencing, or other means until construction is complete. Prevent all non-installation related construction traffic over the completed Terravault installation; allowing only loads less than the permanent design loads.





#### 1.11 PROTECTION

- A. Protect open excavations and partially completed Terravault installation from access and damage when work is in progress, and following completion with highly visible construction tape, fencing, or other means until all construction is complete.

#### 1.12 WARRANTY

- A. Terravault manufacturer's product warranty shall apply. Submit manufacturer's product warranty.

#### 1.13 PROJECT WORK

- A. Coordinate installation with all other work that may impact the completion of the work.

#### 1.14 PRECONSTRUCTION MEETING

- A. Prior to the start of the installation of Terravault, meet at the site with the landscape architect, general contractor and the Terravault installer to review installation layout, procedures, means and methods.

### **PART 2 - PRODUCTS**

---

#### 2.1 TERRAVALT MODULES

- A. Industrial graded Polypropylene and COPO Polymer structures including base unit and top cover plate designed to support footpath (pavement) loads and designed to be filled with soil for the purpose of providing free space for growing tree roots, and rainwater filtering, detention and retention.
- B. Terravault - I dimensions: 715mm x 400mm x 440mm/ 860mm/ 1280mm high
- C. Terravault - II dimensions: 600mm x 600mm x 360mm/ 690mm/ 1020mm high
- D. Manufacturer: Rainsmart Solutions Pty Ltd. 25 Lidco Street, Arndell Park, NSW-2148 Australia. (T) + 61 2 9678 9667 (F) + 61 2 9678 9670 (E) [info@rainsmartsolutions.com](mailto:info@rainsmartsolutions.com)



- E. Substitutions: Manufacturers seeking approval of their products are required to be compliant with the requirements of section 2.1 above. Submit proposed substitutions to the [Landscape Architect] [Architect] [Engineer] not less than [7] days prior to the date for receipt of Bids.

## 2.2 SOLID AND PERFORATED DRAIN LINES

- A. Any solid or perforated drain lines to be specified by project engineer.

## 2.3 INSPECTION RISER FOR DRAINAGE (where specified by the designer):

- A. Rigid, PVC schedule 40 pipe, 90/110mm diameter.
- B. Cap: Ductile iron inspection chamber cover, solid threaded cleanout designed to fit standard PVC schedule 40 pipe-fittings.

## 2.4 INSPECTION RISER FOR SOIL (where specified by the designer):

- A. Rigid, PVC schedule 40 pipe, 110mm diameter.
- B. Cap: Ductile iron inspection chamber cover, solid threaded cleanout designed to fit standard PVC schedule 40 pipe-fittings.

## 2.5 GEOGRID

- A. Geogrid shall be woven polypropylene/ polyester fabric with PVC coating, biaxial geogrid, inert to biological degradation, resistant to naturally occurring chemicals, alkalis, and acids.

The geogrid shall meet as a minimum requirement:

1. Tensile strength at ultimate: 27.0 kN/m minimum (tested following BS EN 10319:2015 or ASTM D6637)
2. Grid aperture size (MD): 20 mm minimum
3. Grid aperture size (CD): 35 mm maximum

Preferred additional characteristics





4. Creep reduced strength: 14.6 kN/m minimum (tested following PD ISO/TR 20432:2007 or ASTM D5262)
5. Long term allowable design load: 13.9 kN/m minimum (tested following GRI GG-4)
6. Roll size varies: 1.8m width is preferred, up to 5.4m

## 2.6 GEOTEXTILE

- A. Geotextile shall be nonwoven polypropylene fibers, inert to biological degradation and resistant of naturally occurring chemicals, alkalis and acids.

The geotextile shall meet as a minimum requirement:

1. Grab tensile strength: 900 N/m minimum (*tested following BS EN 10319:2015, or ASTM D4632*)
2. CBR puncture strength: 2225 N minimum (*tested following BS EN ISO 12236:2006, or ASTM D6241*)
3. Apparent opening size: 0.18 mm maximum (*tested following BS EN ISO 12956:2010, or ASTM D4751*)
4. Flow rate: 3870 l/min/m<sup>2</sup> minimum (*tested following BS EN ISO 11058:2010, OR ASTM D4491*)
5. UV Resistance (at 500 hours): 70% strength retained

Preferred additional characteristics

6. Elongation: 50% maximum (*tested following BS EN 10319:2015, or ASTM D4632*)
7. Trapezoid tear strength: 350 N minimum (*tested following ASTM D4533*)
8. Mullen burst strength: 2400 kPa minimum (*tested following ASTM D3786*)
9. Puncture strength: 490 N minimum (*tested following ASTM D4833*)

- B. Products meeting this specification:

## 2.7 AGGREGATE SUB BASE (BELOW Terravault units)

- A. Sub-base Type 1 (unbound mixture) – Specification for Highway Works Series 800 – Clause 801 and 803

1. Type 1 unbound mixture shall be made from crushed rock, crushed slag, crushed concrete, recycled aggregates or well burnt non-plastic shale and may content



up to 10% by mass of natural sand that passes the 4mm test sieve. The mixture shall comply with BS EN 13285.

Sieve	Percent Passing
63 mm	100
31.5 mm	75-99
16 mm	43-81
8 mm	23-66
4 mm	12-53
2 mm	6-42
1 mm	3-32
0.063 mm	0-9

## 2.8 AGGREGATE BASE COURSE (ABOVE Terravault Units)

A. *SEE AGGREGATE SUB BASE 2.7*

## 2.9 AGGREGATE BASE COURSE FOR POROUS PAVEMENT (ABOVE Terravault units)

A. Granular material: Coarse aggregate category G<sub>c</sub> 80-20 – UK Specification for Highway Works Series 500: 503.3 - Table 5/3

1. The granular material shall consist of natural and/or recycled coarse aggregate or recycled concrete aggregate complying with BS EN 13242.
2. The base course for porous pavement shall consist of 200mm depth 20/50 or 40/75 graded clean crushed rock, below 100mm depth of 4/20 open graded crushed rock.
3. The source of the 4/20 open graded crushed rock shall be approved by the Site Engineer and meet the following gradation in accordance with BS7533-13:2009 Table A.1 and Table A.3.

Sieve	Percent Passing
40 mm	100
31.5 mm	98-100
20 mm	90-99
10 mm	25-70
4 mm	0-15
2 mm	0-5



2.10 SETTING BED FOR UNIT PAVERS (ABOVE Terravault Unit)

- A. The source of the material shall be approved by the Project Engineer and meet the following gradation in accordance with BS 7533-13:2009 Table A.2

Sieve	Percent Passing
14 mm	100
10 mm	98-100
6.3 mm	80-99
2 mm	0-20
1 mm)	0-5

For further information about the use of pavers refer to BS7533-13:2009, or Interpave - The Precast Concrete Paving and Kerb Society, ([www.paving.org.uk](http://www.paving.org.uk)).

2.11 BACKFILL MATERIAL (ADJACENT TO Terravault Modules):

- A. Granular material Type B, UK Specification for Highway Works series 500: 505.3.
- B. Backfill material shall be free of organic material, trash and other debris, and shall be free of toxic material injurious to plant growth.

2.12 PLANTING SOIL: Suitable planting soil to promote tree growth is to be determined by the Designer on a species by species basis.

2.13 ROOT BARRIER

- A. Root Barrier shall be as specified in project drawings, manufactured Material: Black, injection molded panels or rolls , 1.5 mm wall thickness; manufactured with a minimum 90% post-consumer recycled polypropylene plastic with UV inhibitors; recyclable. Integrated zipper, joining system providing for instant assembly by sliding one panel into another if molded panels.



### PART 3 - EXECUTION

**NOTE TO SPECIFICATION EDITOR (Designer):** The Terravault system does not fully meet Category G loading described in Table 6.7 of BS EN 1991-1-1:2002 until the final paving is installed. No equipment shall be used on top of the system until paving installation has been completed.

#### 3.1 LAYOUT APPROVAL

- A. Prior to the start of work, layout and stake the limits of excavation and horizontal and vertical control points sufficient to install the Terravault units and required drainage features in the correct locations.

#### 3.2 EXCAVATION

- A. Excavate to the depths and shapes indicated on the drawings. Base of excavation shall be smooth soil, level and free of lumps or debris.
- B. Do not over-excavate existing soil beside or under the limits of excavation required for the installation. If soil is over-excavated, install compactable fill material in lifts not more than 200 mm deep and compact to the required density.
- C. Confirm that the depth of the excavation is accurate to accommodate the depths and thickness of materials required throughout the extent of the excavation.
- D. Confirm that the width and length of the excavation is a minimum of 300mm, in all directions, beyond the edges of the Terravault units.

#### 3.3 SUBGRADE COMPACTION

- A. Check compaction of the subgrade below the Terravault units and confirm that the subgrade soil is compacted to a minimum of 95% of maximum dry density at optimum moisture content in accordance with requirements.
- B. Proof compact the subgrade with a minimum of three passes of a suitable vibrating compacting machine or apply other compaction forces as needed to achieve the required subgrade compaction rate.



- C. Apply additional compaction forces at optimum water levels.

### 3.4 INSTALLATION OF GEOTEXTILE OVER SUBGRADE

- A. Where indicated on drawings, install geotextile over compacted subgrade.
- B. Removal of the geotextile as a standard component of the Terravault units must be determined by professional civil or geotechnical engineer.
- C. Install the geotextile with a minimum joint overlap of 300 mm between sections of material. Ensure geotextile is laid flat with no folds or creases.

### 3.5 INSTALLATION OF INSPECTION RISERS FOR DRAINAGE

- A. Cut PVC pipe to fit vertically from Terravault units deck to finish surface.
- B. Manually perforate riser. Pipe should be rigid at level of pavement section, and perforated through level of Terravault units.
- C. Wrap pipe in geotextile and secure with cable ties. Brace riser for the remainder of installation to secure its location and elevation.
- D. Install caps on top of each riser flush with grade.

### 3.6 INSTALLATION OF AGGREGATE SUB BASE BELOW TERRAVALT UNITS

- A. Install aggregate sub base to the depths indicated on the drawings, under the Terravault units. Sub base aggregate shall extend a minimum of 150mm beyond the edge of the units bases.
- B. Compact aggregate sub base layer to a minimum of 95% of maximum dry density at optimum moisture content in accordance with requirements. Compact the subgrade with a minimum of three passes of a suitable vibrating compacting machine or apply other compaction forces as needed to achieve the required subgrade compaction rate.
- C. The maximum slope on the surface of the sub base shall be >2%. Where proposed grades on finished paving are greater than 2%, the units shall be stepped to maintain proper relationships to the finished grade.



- D. The grade and elevations of the base under the Terravault units shall be approved by the Site Engineer prior to proceeding with the installation of the Terravault Units.

### 3.7 INSTALLATION OF TERRAVALT UNITS, PLANTING SOIL, GEOGRID, AND BACKFILL

- A. Identify the outline layout of the structure and the edges of paving around tree planting areas on the floor of the excavation, using spray paint or chalk line.
- B. Lay out the Terravault units on the prepared sub base. Verify that the layout is consistent with the required locations and dimensions of paving edges to be constructed over the Terravault units.
- C. Check each Terravault units for damage prior to placing in the excavation. Any cracked unit shall be rejected.
- D. Place Terravault Units tightly butt up against each other. If spacing between Cells exceeds 100 mm, bridging slab details and methods shall be used to span these gaps.
- E. Install Terravault units around, over, or under existing or proposed utility lines as indicated on plans. Units can be unassembled to feed the utilities through it and re assembled.
- F. Where any two adjacent Terravault units must be installed at different elevations, the upper base shall be supported by aggregate sub base with a maximum slope of 1:1. This may require installation of aggregate sub base within the adjacent lower unit. No two adjacent bases shall differ in elevation by more than 440 mm.
- G. Assure that each Terravault units sit solidly on the surface of the sub base. Bases shall not rock or bend over any stone or other obstruction protruding above the surface of the sub base material. Units shall not bend into dips in the sub base material.
- H. Adjust sub base material including larger pieces of aggregate under each base to provide a solid base of support.

### 3.8 BACKFILLING AND INSTALLING PLANTING SOIL

- A. It is not required, but where required, place the geogrid curtain along the outside of the limit of the Terravault units. Geogrid curtains are required vertically between the edge of the Terravault units and any soils to be compacted to support paving beyond the area of





Terravault system. Do not place geogrid curtains in between the edge of the Terravault area and any planting area adjacent to the units.

- B. Pre-cut the geogrid to allow for 150 mm minimum under lapping below backfill, and 300 mm minimum overlapping top of Terravault units. When splicing is necessary, provide a minimum of 300 mm overlaps between different sheets of geogrid.
- C. Wrap geogrid around the outside perimeter of the assembled Terravault units. Attach the geogrid to the Terravault units posts using long cable ties. Attach vertically with cable ties at every alternate module if possible.
- D. Carefully install side backfill material in the space between the Terravault units and the sides of the excavation in lifts that do not exceed 300 mm simultaneously. But do not compact at this point.
- E. Bring planting soil to the site using equipment and methods that do not overly mix and further damage soil peds within the soil mix. Soil mixes shall not be blown or pumped into the Cells using soil blowing equipment.
- F. Infill the planting soil in the Terravault modules until it the soil reaches the midpoint. Level the soil using proper hand equipment.
- G. Once the planting soil has been placed to the midpoint and walked over, compact the backfill material previously placed between the Terravault units and the sides of the excavation to a minimum of 95% of density using a powered mechanical compactor. Add and compact backfill material until the compacted backfill material is level with the planting soil in the system. Then install one additional 200 mm lift of backfill material, but do not compact it.
- H. Install a second lift of planting soil in the system. Compact the planting soil by walking over it. Add additional planting soil as needed to keep the level of the planting soil up to the top required level.
- I. \*Note: prior to installing top plates, confirm that all irrigation, water harvesting, electrical lines and a like that need to run through the system have been installed
- J. Finish adding and compacting backfill between the Terravault units and the walls of the excavations until the compacted backfill material is even with the top of the units, make sure the terravault units are also well filled and loosely compacted to the top.



- K. Place the Top plate on the units and lock it in place with a Dead blow rubber hammer. Additional planting soil can be filled and brushed into the top plate surface.
- L. Place Geogrid over the top of the filled and capped Terravault system and extend the geogrid beyond the footprint of the Terravault units system to the edge of the excavation.
- M. Install the aggregate base course (including aggregate setting bed if installing unit pavers) over the Geogrid immediately after completing the installation of the grid. Work continuously from one end to the other to assure that the grid and aggregate conforms to the cell deck contours. Do not apply aggregate in several positions at the same time.
- N. Aggregate base course shall be a minimum of 100 mm thick under poured in place concrete paving.
- O. Aggregate base course shall be a minimum of 300 mm thick under unit pavers, asphalt paving, or porous paving.
- P. Load the aggregate from equipment that is outside the limits of the excavated area. Work over material already in place. For large or confined areas, where aggregate cannot easily be placed from the edges of the excavated area, obtain approval for the installation procedure and types of equipment to be used in the installation from the Terravault manufacturer. Compact aggregate base course(s) in lifts not to exceed 150 mm in depth, to 95% of maximum dry density. Utilize a roller or plate compactor with a maximum weight of 450 kilograms. Make sufficient passes with the compacting equipment to attain the required compaction.

### 3.9 INSTALLATION OF PAVING ABOVE THE TERRAVALT SYSTEM

- A. Place paving material over Terravault units per project specifications. Take care when placing paving or other backfill on top of Terravault system not to damage the system components. Turn down edge of all concrete paving to Cell deck along the edges of all planting areas to retain the aggregate base course.
- B. When paving is a unit paver or other flexible material, provide a concrete kerb under the paving at the edge of the Terravault units to retain the aggregate base course material. Concrete curbs are necessary within the Terravault system along all planting areas and tree openings in order to retain the aggregate base course from migrating into the planting soil. This must be coordinated with project details.



- C. If spacing is required between the terravault units, please refer to Terravault units gap bridging details or contact Rainsmart Solutions or one of its Local Distributor directly.

### 3.10 INSTALLATION OF ROOT BARRIERS

- A. Install root barrier in accordance with manufacturers reviewed installation instructions.

### 3.11 INSTALLATION OF PLANTING SOIL WITHIN THE TREE PLANTING AREA

- A. Prior to planting trees, install additional planting soil, to the depths indicated, within the tree opening adjacent to paving supported by Terravault units.
- B. Remove all rubble, debris, dust and silt from the top of the planting soil that may have accumulated after the initial installation of the planting soil within the Terravault units.
- C. Assure that the planting soil under the tree root ball is compacted for the entire soil depth to 85-90% to prevent settlement of the root ball. Appropriate anchoring system must be used, to secure the tree root ball.
- D. The planting soil within the tree opening shall be the same soil as in the adjacent Terravault units.
- E. Cover the planting soil finished grade with 50 mm of mulch, or as defined in Project specifications

### 3.12 REPAIR OF CUT GEOTEXTILE

- A. In the event that any Geotextile/Geogrids over subgrades or the Terravault units must be cut during or after installation, repair the seam with a second piece of geotextile that overlaps the edges of the cut by a minimum of 300mm in all directions prior to adding aggregate material.

### 3.13 PROTECTION

- A. Ensure that all construction traffic is kept away from the limits of the Terravault units until the final surface materials are in place. No vehicles shall drive directly on the Terravault deck or aggregate base course.
- B. Provide fencing and other barriers to keep vehicles from entering the area with Terravault units supported pavement.



- C. Maintain a minimum of 100 mm of aggregate base course over the geotextile material during construction.

### 3.14 CLEAN UP

- A. Perform cleanup during the installation of work and upon completion of the work. Maintain the site free of soil and sediment, free of trash and debris. Remove from site all excess soil materials, debris, and equipment. Repair any damage to adjacent materials and surfaces resulting from installation of this work.

END OF SPECIFICATION

