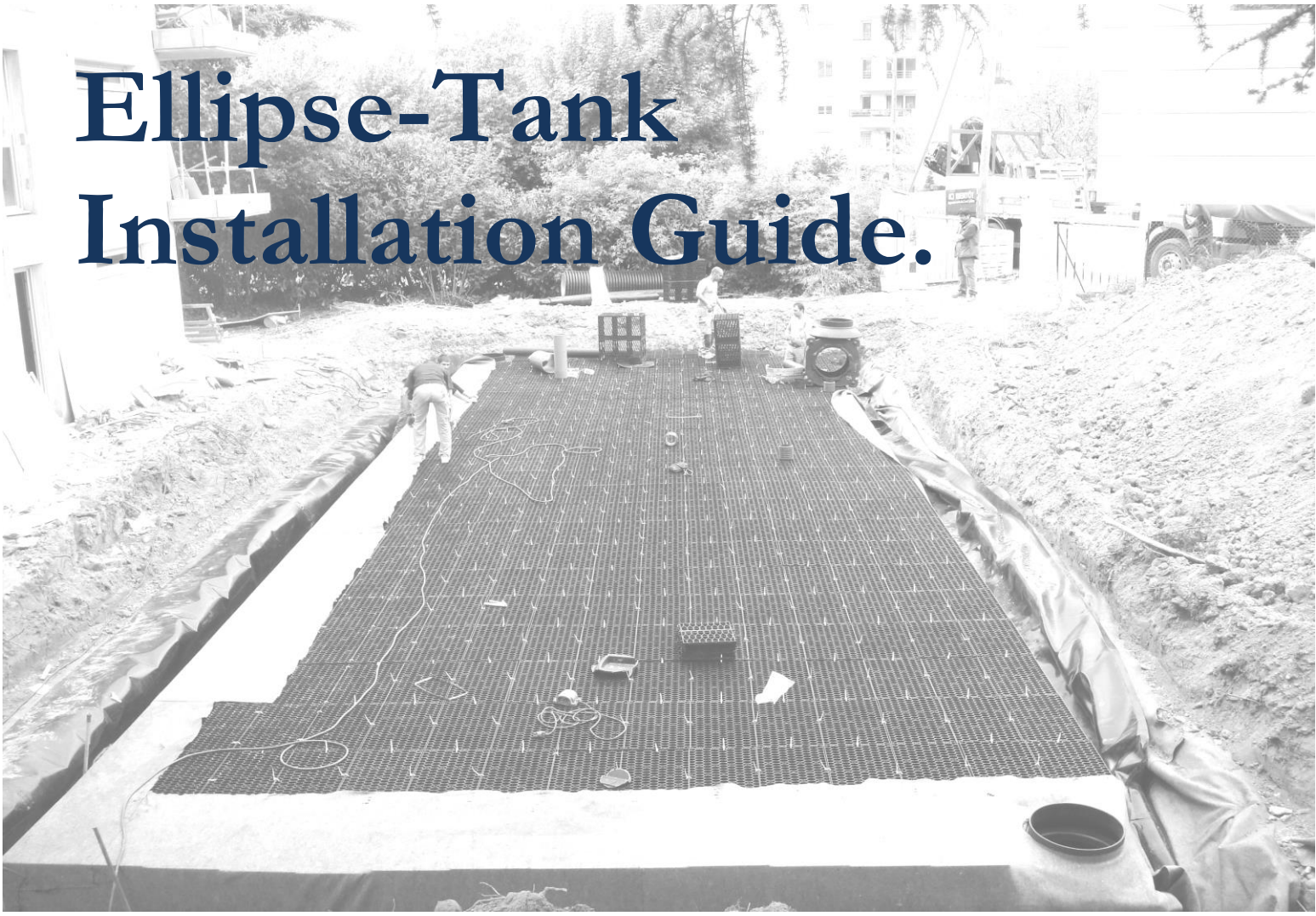
RAINSMART SOLUTIONS

A SMARTER WAY TO MANAGE STORMWATER...

Underground Stormwater Management System.

Ellipse-Tank Installation Guide.



NEROCELL ROOF GARDENS & GREEN BUILDINGS

NEROPAVE PERMEABLE PAVING

NEROTANK TOTAL STORMWATER MANAGEMENT

ellipse TOTAL STORMWATER MANAGEMENT

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Pre-Construction Checklist.

A Tools You'll Need

- Laser or Transit
- Measuring Tape (long enough to mark Rainsmart Tank footprint)
- Razor Knife
- Screw Driver/Nut Driver Set
- String Line
- Marking Line
- Reciprocating Saw (to cut in Inspection & Maintenance Ports
- Metallic Tape

Most contractors find installing a Rainsmart Tank system surprisingly easy.

If you're assembling Rainsmart Tanks:

- Dead-Blow Rubber Mallets
- Work Tables (3/4" Plywood Placed on Assembled Tanks works Well)

B Materials You'll Need

- Rainsmart Tank Module Units
- Geotextile
- Geogrid (Only for Load Bearing Application)
- Impermeable Liner (Only for Retention / Recycling Tank Application)
- Clean Base & Backfill Material (95% Compactable angular stone or sand ½" - 2", free of debris - NO CLAY)
- Pipe Boot Kits (If not using kits, you'll need duct tape and a stainless steel band clamp for each inlet and outlet pipe, and for each inspection or maintenance port.)
- Pipe for Inspection & Maintenance Ports (Typically 6" (150mm) and 12"(300mm) schedule 40 PVC, respectively)
- Ring, collar & cap (to fit all ports)
- Maintenance Port Kits (If not using kits, you will need non corrosive rigid anti-scour pad [15" x 15"] [375mm x 375mm] to fit below Maintenance ports. Plexiglass works well. Fabric pipe boot, duct tape, stainless steel band clamp and H20 loaded ring and cover.)

C Equipment You'll Need

- Forklift and other equipment/tools needed to unload box truck
- Pallet jack (to unload material from box truck)
- Walk-Behind Trench Roller (Plate compactor may work for smaller projects)
- Low Ground Pressure (LGP) tracked Skid Steer or Loader (<7.0 psi Gross Operating Pressure)
- For Larger Projects (>10,000cf):
  - LGP Dozer
  - Roller - 5 Ton Max Gross Vehicle Weight

Note: This list does not include equipment or tools needed to excavate or level the floor of the excavation

D General Notes:

Be sure to contact your local Representative at least two weeks prior to installation. We will provide you with on-site installation support AT NO CHARGE in order to facilitate your installation.

All pictures, illustrations and instructions have been included to guide you through a typical installation. The approved engineering drawings should ALWAYS take precedence over these instructions.

Coordinate the installation of Rainsmart-Tank System at the end of the construction activities to minimize the construction traffic over the system. If the installation is completed during construction activities then the system MUST be roped off and construction traffic routed around the system (including excavators, loaders, dump trucks, forklifts, concrete trucks, material delivery trucks and cranes). The installation contractor is responsible for all loads placed or driven over the R-Tank during the construction process: (including excavators, loaders, dump trucks, forklifts, concrete trucks, material delivery trucks and cranes). Rope off the area to prevent unauthorized traffic from driving over the R-Tank. If sequencing of the project makes this impossible, a construction road or pad may be constructed over the R-Tank System. Consult the project engineer and/or Rainsmart Solutions for assistance before allowing construction traffic on system. (**See Step #12: Secure the Installation** for additional information.)

After installation of the Rainsmart Tank system, stormwater should not be allowed to enter the Tank until the site is completely stabilized and all pre-treatment systems (designed to remove debris and heavy sediment) are active. Otherwise, the R-Tank may become prematurely contaminated with sediments from the project. For more information on Pre-Treatment systems, contact Rainsmart and request a copy of our Pre-Treatment Tech Note.

Throughout this document you will see three types of notes:

TIP: Ideas to improve your profitability on the installation.
IMPORTANT: Steps that require extra attention.
WARNING: Critical issues that MUST be handled correctly to ensure a good installation.

Any questions or issues not covered by these instructions can be directed to Rainsmart Solutions Pty Ltd. 2/12 Stoddart Road, NSW-2148, Australia. (T) +61 2 9631 6555 (F) +61 2 9631 6556 or its closest Agent or Distributor.

1 Excavation

The excavation limits and the location of the Ellipse Tank System should be staked out. The design drawings should be used to determine these locations. If the excavation limits are not shown on the plans, then add 2' (500mm-600mm) on each side of the R-Tank System to determine the limits.

Excavate the designated surveyed area according to plans following all relevant local, state and OHS guidelines. Typical excavations should include:

Fig. 4 Excavate according to plans, following all Government & OHS Regulations

Excavation - Continued

- Two foot (500mm-600mm) perimeter around R-Tank to allow for proper compaction of backfill.
- Enough depth to accommodate a minimum 3-5" (50mm-100mm) base below the Ellipse Tanks.

Level the bottom of the excavation (Fig. 4) as shown on plans. Most excavations have a flat bottom.

Prepare the subgrade according to plans. Base of excavation shall be smooth, level and free of debris. Compact to at least 95% Standard Proctor Density (or as required by Engineer) unless infiltration of stormwater into sub grade is desired. A thin layer (3-4") 100mm of material is recommended to establish a level working platform. (May not be needed in areas with sandy soils). A CBR > 5 must be achieved prior to beginning installation of Ellipse Tanks.

If the subgrade is pumping or appears excessively soft, the design engineer should be consulted for advice. In many cases a stabilization Geotextile and 6" of compactable material that drains well will be sufficient to amend the bearing capacity of the soil.

2 Assemble Rainsmart Tank Units

If Ellipse Tank units arrive on your project in flat panels they will need to be assembled on-site. Building the units should take 2-3 minutes per segment. This is a conservative estimate used to approximate the total man hours needed for assembly. The estimate includes the workers doing the assembly as well as material handling people to keep the assembly workers moving.

Units	Time
Half	2-3 Minutes
Single	2-3 Minutes
Double	4-6 Minutes
Triple	6-9 Minutes
Quad	8-12 Minutes
Penta	10-15 Minutes

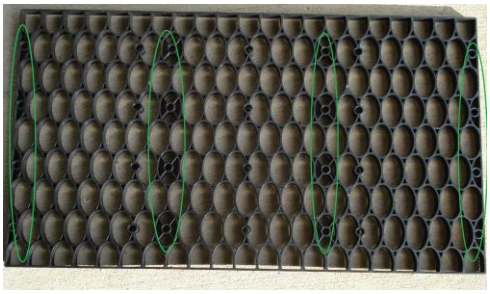

Fig. 1 Attach Small Plates at locations circled in Green such that all small and large Pegs on same side.

Fig. 2 Follow these steps to assemble a Std 4-Plate Ellipse Tanks

Assembly Instructions - following the drawings in Fig. 2: Connect four small panels (B) into one large panel (A) using the short pegs (not the long pegs). Attach small panels onto the large panel at the locations marked in white on Fig. 1. Do NOT use the row of pin-holes directly in the centre or the two middle rows nearest the edges, as marked in red on Fig. 1 unless you are building a 5-plate Ellipse Tank. Use 5-plate units for installation with more than 7' (2.1m) of cover, and for installations beneath traffic loads with less than 24" (600mm) of cover.

Fig. 3 Installation can be speeded up by either assembling the tanks in the excavation or placing the preassembled tanks in the excavation.

Next, working from one end to the other, attach a second large plate (A) on the opposite side of the first. Once the top and bottom large plates are attached, two more side plates (A) are attached to complete the sides of the R-Tank unit. This is a SINGLE Ellipse Tank.

Assembly - Continued

To build a DOUBLE unit (or larger), follow the directions above, starting at "Assembly Instructions:" using the top of the existing unit as the large plate.
Completed Ellipse Tank units should be staged as close to the installation area as possible.

TIP: To increase the speed of the installation, many contractors choose to assemble the Ellipse Tank unit's prior to or during excavation (Step 2) and base preparation (Step 3). Other contractors wait until these steps are completed and then perform the assembly IN THE EXCAVATION (Fig. 3) allowing completed units to be placed into their final location as they are assembled. Consider which option will work best for your project.

3 Prepare Base

Examine prepared excavation and conditions for smoothness, compaction and level. Do not start Ellipse Tank installation until unsatisfactory conditions are corrected. Check for presence of high water table, which must be kept at levels below the bottom of the Ellipse Tank structure at all times. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance. If existing conditions are found unsatisfactory, contact Project Manager for resolution.

Fig. 5 Base must be smooth to ensure units fit together without gaps.

Standing water in the excavation will prevent proper base preparation and must be removed, if present. In regions with sandy soils meeting the requirements noted and where the subgrade elevation is above the groundwater table, imported backfill materials may not be needed.

Install base materials. Base materials must be:

Compaction	95% Compactable
Shape	Angular
Size	Not Larger than 1" in Diameter (10-20mm dia is ideal)
Consistency	Free of Lumps, debris and sharp objects that could puncture the Geotextile
Applicability	Stone or sand is acceptable if it meets these requirements.
	In **NO** case shall clays be used

Grade and level base as shown on plans with more than 1/2" variance. Base must be free of debris and large rocks.

TIP: Creating a smooth, level platform will allow for faster installation of Ellipse Tanks, as they will fit together evenly, eliminating detail work that can delay your progress (Fig. 5).

4 Place Geotextile

Geotextile will be required below the Ellipse Tank on most projects, but not all. Check your plans to ensure that geotextile is to be placed between the base and the Ellipse Tank units.

Cut full-width strips of Geotextile to the proper length and place them over the base, covering the floor of the excavation. The Geotextile should extend at least 2' beyond the edge of the Ellipse Tank footprint. This will enable the whole unit to be able to be wrapped to the dimensions required. All overlaps are then to be suitably secured, weighted down tapped or stapled in order to minimize the ingress of deleterious materials.

Fig 6: Pull Wrinkles out of Geotextile so Material lays flat.

TIP: Some contractors choose to cut the Geotextile strips long enough to wrap up the sides and over the top of the Ellipse Tank in a single piece (Fig. 6). If space allows and the folded flaps of Geotextile will not slow our progress, you may want to consider doing this. If a liner is required on your project, this method should be used to protect the liner.

Geotextile are flammable. No smoking should be permitted on the Geotextile.

Adjacent panels of material should be overlapped by 12" (300mm) or more, as shown on the plans (Fig. 7). Use pins, staples, sandbags or other ballast to hold the Geotextile in place, preventing it from blowing or sliding out of position. Patch any holes made in the Geotextile by placing a small patch of fabric over the damaged area. The patch must be large enough to cover the damaged area with at least 12" (300mm) of overlap on undamaged material.

If a liner and/or additional Geotextile are required per plans, install these now as shown on the project plans.

Fig 7: Overlap Geotextile by minimal 12" (300mm) or more.

5 Install R-Tanks

Determine the starting location. It is often helpful to use an inlet or outlet pipe to guide you. Using a string line, establish two adjacent edges of the Ellipse Tank footprint. Ensure that your corner is square. Mark these two edges with marking paint and remove the string line (Fig. 8 & 8A).

IMPORTANT: If using a liner, be careful not to puncture it with stakes or pins while placing your string line.

Fig 8: Use a String line & marking paint to square the system footprint.

Begin placing Ellipse Tanks in the corner of the marked area. Do NOT place units on their sides, as this will void the warranty. Check your plans to ensure correct orientation of the Ellipse Tanks (Fig. 9).

Check the plans to ensure the Ellipse Tanks are running in the correct direction (North/South vs. East/West) to match the footprint shown.

- Ellipse Tank Width - 15.75" (400mm)
- Ellipse Tank Length - 28.15" (715mm)

Fig 8A : Use a String line & marking paint to square the system footprint.

TIP: Moving Ellipse Tank units into the excavation quickly is essential to a profitable installation. Many contractors fabricate a platform that can be lifted by their forklift to quickly move a large number of units with each trip.

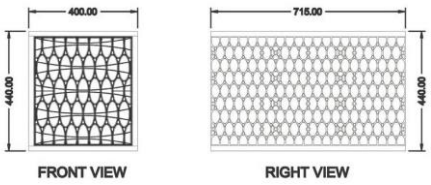

Fig 9 : Make Sure the tanks are oriented Properly and correct way in the excavation.

Ellipse Tank units should fit together evenly. Minor gaps between units (< ½") or variations in the height of the units (< ½") are acceptable (Fig. 9A), but reasonable efforts should be made to minimize these variations. Minor gaps will be eliminated during compaction of side backfill material.
No lateral connections between adjacent Ellipse Tanks are required, but frame Modules can be cable tied as a housekeeping measure.

TIP: Moving Ellipse Tank units into the excavation quickly is essential to a profitable installation. Many contractors fabricate a platform that can be lifted by their forklift to quickly move a large number of units with each trip.

Fig 9A: Minor variations(less than width of the top plate) in height are acceptable.

The large side plate of the tanks should be placed on the perimeter of the system. This will require that two ends of the tank area will have a row of tanks placed perpendicular to all other tanks (Fig. 10).

Option 1: End column should cover 75% of the final row.
Option 2: End column may extend beyond the final row.

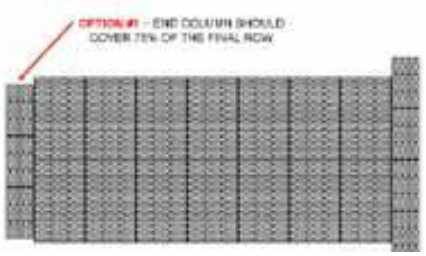

Fig 10: Plan view showing the end row turned perpendicular, corners may not matchup, so 2 options shown.

After placement of Rainsmart® tanks, wrap with geotextile which is brought up around the sides and lapped over the top of the full structure. Should any gaps be evident additional fabric can be cut and placed over any of these areas. Fold excess fabric at corners to lay flat against sides of structure, securing folds and seams with staples or similar methods.
Identify locations of inlet, outlet, inspection ports, and any other penetrations. All pipes should be positioned at 90 degree to the tank structure. Any inlets, outlets etc should be installed flush (butted up) to the tank and the geotextile fabric shall be cut to enable hydraulic continuity at the inlet and outlet and secured around the pipe using a suitable coupling or a stainless steel clamp prior to backfilling.
Tanks require ventilation for proper hydraulic performance, number of pipes and

vents will depend on the size of the tank. Vents are often installed using a 90 degree elbows etc with PVC pipe into soft landscape area with 'U' bend or venting bollard to inhabit the ingress of debris, alternatively a ground level concrete steel cover can be fixed to suit.

6 Install Inspection /Maintenance Ports

All ports should be made from pipe long enough to extend from the bottom of the R-Tank to finished grade. They are typically Schedule 40 PVC pipe, but can be formed from other types of pipe, as well.

Identify the location of all ports and remove the Ellipse Tank from each location.

Fig 11: Installed inspection Port

Inspection Ports:

Typically made from 6" (150mm) Schedule 40 PVC pipe, cut the pipe to length, leaving enough excess to trim the top when final grade is reached (Fig. 11).

TIP: If the location of Inspection Ports is not shown on your plans, use a single Inspection Port located in the middle of the field of Ellipse Tank units.

If the pipe is not already perforated, cut several horizontal slots in the pipe starting at the bottom. Perforations should extend as high as the height of the Ellipse Tank units being used. No perforations should be visible above the top of the Ellipse Tank once the port is in place.

Using your reciprocating saw, cut the horizontal Ellipse Tank plates (Fig. 12) in the centre, between the two internal plates, to accommodate the port. If the pipe will not fit between the two interior plates, one or both plates may be moved to the outer connection locations on the large plate (Fig. 13). All horizontally oriented plates will need to be cut EXCEPT FOR THE BOTTOM PLATE. In total you will need to cut:

Fig 12: Cut the Horizontal Plates to accommodate all ports.

UNIT	CUT
SINGLE	1 PLATE
DOUBLE	2 PLATES
TRIPLE	3 PLATES
QUAD	4 PLATES
PENTA	5 PLATES

Fig 13: Additional Space for port can be created by moving the internal plates towards the ends

IMPORTANT: Do not over-cut the Ellipse Tanks Plates, Minimize the gaps between the pipe and the Ellipse tank plates. This is particularly important with the top plate**.**

For all units larger than a Single Tank, you will need to disassemble the Ellipse Tank in order to cut the interior plates. Reassemble the E Tanks when cutting is completed, and replace the R-Tank into the proper location. (Fig: 15 & 16)

TIP: If using Prefabricated Pipe Boot Kits, install them onto the pipe now, leaving the band clamps loose so that final adjustments may be made in Step 7.

Install Inspection Maintenance Ports: - Continued

Install the pipe into the Ellipse Tank unit (Fig: 17)

Seal the opening on top of the pipe with a cap or temporary lid to prevent debris from entering the system.

Maintenance Ports:

Typically made from 12" (300mm) Schedule 40 PVC pipe (check plans for actual type and size of pipe), cut the pipe to length, leaving enough excess to trim the top when final grade is reached.

TIP: If the location of Maintenance Ports is not shown on your plans, include a port within 10' (3mts) of all inlet and outlet pipes(a single maintenance Port can cover multiple pipe connections), and include additional Maintenance Ports, as needed, to prevent the distance between ports from exceeding 65 feet (20mts).

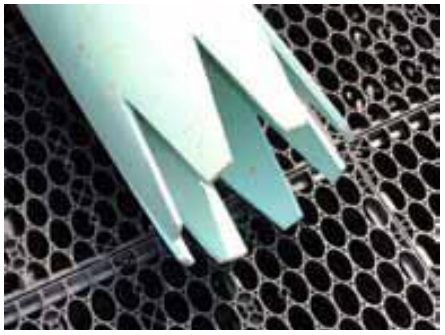

Fig. 14 Cut 8" (200mm) notches into the bottom of Maintenance Port.

Using your reciprocating saw, cut several 8" notches into the bottom of the pipe as shown on plans (Fig. 14).

Using your reciprocating saw, cut the horizontal Ellipse Tank plates in the centre, between the two internal plates, to accommodate the port. If the pipe will not fit between the two interior plates, one or both plates may be moved to the outer connection locations on the large plate (Fig. 13). All horizontally oriented plates will need to be cut EXCEPT FOR THE BOTTOM PLATE. In total you will need to cut:

UNIT	CUT	MOVE
MINI	1 LARGE PLATE	2 SMALL PLATE
SINGLE	1 LARGE PLATE	2 SMALL PLATE
DOUBLE	2 LARGE PLATE	4 SMALL PLATE
TRIPLE	3 LARGE PLATE	6 SMALL PLATE
QUAD	4 LARGE PLATE	8 SMALL MODULE
PENTA	5 LARGE PLATE	10 SMALL PLATES

Fig. 15 if after adjusting the internal plates, the pipe will not fit, the top plate can be cut off-centre and one of the internal plates can be removed.

For all units you will need to disassemble the Ellipse Tank in order to cut and/ or move the interior plates.

IMPORTANT : Do not over-cut the Ellipse Tank plates. Minimize the gaps between the pipe and the R-Tank plates. This is particularly important with the top plate (Fig. 16).

Fig. 16 Installed maintenance port

Reassemble the Ellipse Tank when cutting is completed (Fig. 16). Remember to insert the non-corrosive anti-scour pad in the bottom of the Ellipse Tank (should fit directly below the Maintenance Port), and replace the Ellipse Tank into the proper location

TIP: If using Prefabricated Pipe Boot Kits, install them onto the pipe now, leaving the band clamps loose so that final adjustments may be made in Step 7.

Fig. 17 Install port into R-Tank..

(Fig. 15 and 16).
Install the pipe into the Ellipse Tank unit (Fig. 17)
Seal the opening on top of the pipe with a cap or temporary lid to prevent debris from entering the system.

7 Seal Tanks with Geotextile

Clean off any debris that may be lying on top of the exposed Geotextile around the perimeter of the Ellipse Tank.
Cut strips of geotextile to fit over the top and down both sides of the Ellipse Tank with at least 2' of excess material on each side of the system. This 2' flap should overlay the geotextile placed below the Ellipse Tank units, creating a clean 24" overlap to seal the system.
Adjacent strips of geotextile should overlap at least 12" or as shown on plans. Use duct tape, sand bags or other ballast to temporarily secure overlaps (Fig. 18).

Fig. 18 Maintain 12" (300mm) overlap

Where the geotextile intersects an Inspection or Maintenance Port, cut an "**X**" into the geotextile and pull it over the pipe. The flaps of the "**X**" should point AWAY from the Ellipse Tank (Fig. 19). Use stainless steel band clamp to seal the flaps to the pipe.

Fig. 19 Cut an "X" into textile to accommodate pipe penetration.

Fold geotextile for outside corners similar to sheets on a bed, and lay excess material flat against Ellipse Tank. Leave corners loose to avoid creating weak spots in the material. Temporarily secure excess fabric with duct tape (Fig. 20).

IMPORTANT: Take special care with Inside Corners on the footprint of the system. Cut geotextile as needed to ensure that it lays flat against the Ellipse Tank.
Use additional pieces of geotextile to seal the corner and any cuts that are made (12" overlap).

TIP: If using Prefabricated Pipe Boot Kits, install them onto the Inlet and Outlet Pipes, leaving the band clamps loose so that final adjustments may be made.

Fig. 20 Encapsulate R-Tanks with geotextile

Connect Inlet & Outlet Pipes

WARNING: Inlet and Outlet pipes must make DIRECT contact with the R-Tank, allowing effluent to flow directly into or out of the Ellipse Tank without filtering through the geotextile. Failing to correctly connect pipes to the Ellipse Tank will void the warranty.

Where the inlet and outlet pipes connect to the Ellipse Tank, cut an "**X**" into the geotextile so that the pipe makes DIRECT contact with the Ellipse Tank. Pull the flaps of the "**X**" over the pipe so that the flaps of the "**X**" point AWAY from the Ellipse Tank. Use a stainless steel band clamp to seal the flaps to the pipe.

If used, adjust all pipe boots so that the fabric lays snug against the Ellipse Tank.Tighten the band clamps with a screw/nut driver. Use duct tape to secure the boot flap to the outside of the geotextile envelope (Fig. 21). Walk bottom edge of geotextile to eliminate gaps between the fabric and the bottom corner of the Ellipse Tank (Fig. 22).

Fig. 21 Seal the pipe boot with band clamps and duct tape.

8 Backfill Sides

Place Backfill material (same as Base Materials in Step 3) around perimeter of the Ellipse Tank, distributing the material

IMPORTANT: Vibratory compaction of the side backfill (Fig. 23) is a critical step that both compacts the backfill and eliminates the minor gaps between individual Ellipse Tank units. While some backfill materials will yield a 95% proctor density without compaction, ***vibratory compaction of the material must be completed to ensure the stability of the system.*** Skipping this step will void the manufacturer's warranty.

Fig. 22 "Walk" the geotextile into the corner to eliminate folds & air gaps.

Use a trench roller or plate compactor to compact backfill in 12" (300mm) lifts.

Continue placing and compacting backfill in 12" (300mm) lifts until the material reaches the top of the Ellipse Tank units.

Fig. 23 Vibratory compaction of side backfill is always required , regardless of what backfill material is used.

9 Backfill Top.

Dump backfill material adjacent to the Ellipse Tank and, using your LGP Skid Steer or Dozer, push the material over the Ellipse Tank system (Fig. 24).

Largest Track Dozers that can be used with 18" (450mm)of cover over the Ellipse Tank.

MACHINE	Operating Weight ***(imp)***	Operating Weight (metric)	Track Dimensions ***(imp)***	Track Dimensions (metric)	Ground Pressure ***(imp)***	Ground Pressure (metric)
Case 850K LGP	20,700 lbs	9.38 t	28" x 92.6"= 2593 si	0.7m x 2.35m = 1.67 sqm	4.0 psi	2.8 t/sqm
Caterpillar D5K LGP	21,347 lbs	9.68 t	26" x 91"= 2366 si	0.66m x 2.31m =1.52 sqm	4.52 psi	3.17 t/sqm
John Deere 550J LGP	18,252 lbs	8.27 t	24" x 86"= 2064 si	0.61m x 2.18m = 1.33 sqm	4.2 psi	2.95 t/sqm
Komatsu D39PX-21	19,620 lbs	8.90 t	25" x 93"= 2325 si	.635m x 2.36m = 1.49 sqm	4.27 psi	3.00 t/sqm
New Holland D95 LGP	20,700 lbs	9.38 t	28" x 93"= 2604 si	0.71m x 2.36m = 1.68 sqm	4.0 psi	2.81 t/sqm

** This list is not intended to be all inclusive, but representative.

If your machine is not listed, you'll need to find your vehicle's Operating Weight and measure the area where the tracks contact the ground. Take these dimensions and multiply them (Length x Width), then multiply by 2 (since the machine has two tracks), then divide the Operating Weight by the total square inches (sqm) of contact area to determine the contact pressure of the machine. If the contact pressure is less than 7.0 (4.8 t) and the operating weight is less than 20,000 lbs(9.0 t) the machine will work with 18" (450mm) of cover.

TIP: When pushing backfill over Ellipse Tank units, work in the direction of the geotextile overlap to avoid shoving material between the fabric layers.

Fig. 24 Use an LGP dozer to push backfill over Ellipse Tank units.

WARNING: A minimum of 18" (450mm) of material must be maintained between the Dozer tracks and the top of the Ellipse Tank. For best results, push at least 20" (660mm) or more if needed of backfill over the units so that as the material compacts beneath the dozer, a 18"(450mm) minimum lift is maintained. It is recommended that the dozer drive straight on and then back straight off of the system during backfill placement. Turning or manovering movements are likely to shove the backfill material, reducing the thickness of the lift and potentially damaging the units. Hence not recommended.

Compact top backfill to 95% standard proctor density or as shown on plans using your walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 5 tons) may be used.

WARNING: Dump trucks should not drive over or dump material on top of the Ellipse Tank without a minimum of 36" (900mm) of cover, plus Geogrid.

WARNING: Some materials will compact significantly while others may shove excessively as you work. Never allow your lift thickness to compact to less than 12" without adding more material.

10 Place Geogrid.

Geogrid is required for all load-bearing applications (Fig. 25), such as systems placed beneath parking lots and roads. It is not required above systems used in open space where traffic is prohibited, such as sport fields or natural areas.

Geogrid must be placed 12" (300mm) above the Ellipse Tank. Overlap adjacent panels by 18"(450mm) minimum or as specified in plans. Roll out Geogrid over the top of the system, with the edges of the grid extending 5' from Ellipse Tank footprint or 3' from edge of excavation or more as show on plans (refer to CAD detail H20 loads).

Fig. 25 Overlap Geogrid 18" (300mm) or as required by plans.

11 Place Additional Cover Material As Needed

If additional cover or pavement base is required by the plans, begin placing and compacting material in the same manner as discussed in Step 9. Push cover material parallel to the geogrid for best results (Fig. 26).

TIP: To achieve proper compaction requirements, it may be beneficial to begin placing material in 6" (150mm) lifts.

Fig. 25 Overlap Geogrid 18" or as required by plans.

Minimum top cover shall be 450mm for Landscape/ green Space application and 750-800mm for light Carpark Traffic application.
Maximum cover for Ellipse Tank system is 1.5mts with 4 internal plates or 1.80m with 5 internal plates. If your system exceeds these limits, contact a Rainsmart Representative.

12 Secure the Installation.

The Ellipse Tank System should be secured to prevent damage from construction equipment once it has been installed.

Rope Off Area (preferred method)
Use warning tape or temporary fencing to prevent unauthorized traffic from driving over the Ellipse Tank.

Regardless of which method is selected to secure the installation, it must remain in place until one of the following conditions is met:
- Pavement has been placed
- Construction activity at the site has been completed.

Fig. 27 Secured Ellipse Tank installation using Jersey Barriers.

IMPORTANT: Some projects require the use of cranes above the Ellipse Tank. While it is advisable to avoid this scenario, it may be feasible to utilize a crane over the Ellipse Tank based on the depth of the Ellipse Tank installation and the size and weight of the crane. Please consult the project engineer or Rainsmart for assistance prior to allowing a crane to drive over Ellipse Tank system.

13 Install a Pre-treatment Devices.

Install pre-treatment devices prior to activating R- Ellipse Tank System to keep any debris from entering the system.