

## **TERRE ARCH™48 PERFORMANCE, DESIGN & INSTALLATION SPECIFICATIONS**

The Terre Arch™48 is a precast concrete modular roman arch structure with 5000psi compressive strength consisting of three connected parallel vaults for subsurface storage of stormwater.

1. Infiltration to recharge the ground water; detention where site conditions require
2. HS-25 load rating on the crown of the arch; no minimum cover or fill requirements; no requirement for stone between the arches or above the structure; direct access for heavy installation equipment. (Perimeter stone fill is required prior to installation equipment access);
3. Minimum stone sub-base depth of six (6") inch with a minimum subsurface bearing capacity of 3000 PSF; stone base may be increased by Engineer, if required to balance loads;
4. Maximum cover up to 20 ft. (verify sub-base depth and soil bearing capacity);
5. A Water Quality Treatment device, such as Terre Kleen™, should be placed upstream from the Terre Arch™ to prevent entry of sediment, oil, grease, litter, and debris into Terre Arch
6. 160 Ft<sup>2</sup> (8 feet by 20 feet) infiltration surface per structure;
7. 638 Ft<sup>3</sup> (5.32Ft<sup>3</sup>/Ft<sup>2</sup>) of in customary installation (i.e. 6" stone bed (5" #8 and 1" #5 stone) and valleys between arches filled with 4" of stone to the top of the buttresses & 6" of stone cover);
8. Terre Arch™48 weighs 15,700 lbs.; placement from truck into the prepared excavation by crane;
9. Vent and drain holes cast at the top of the arch and in the valley areas of the Terre Arch™;
10. Distribution holes are cast into the legs of the arches to allow flow between all sections;
11. The anti-scour and erosion mat required under manifold and Terre Arch where inflow occurs;
12. No grade subsidence or misalignment with proper installation;
13. No requirement for spacing or backfilling between each structure;
14. No requirement for geotextile separation layer below. Use filter fabric or geotextile where silt migration from the sides or top into the stone's void space is possible.
15. Manufacturer shall submit shop drawings and such other information requested by Engineer;
16. Each Terre Arch™ shall have four (4) lifting points with Uni-lift pins. Contractor shall provide equipment with sufficient lifting capacity to unload and set the Terre Arch™;
17. Contractor shall excavate, dewater and shore as required by Engineer or safety regulations;
18. Terre Arch Distribution Box shall include riser sections that extend to grade with manhole access into entire Terre Arch system.
19. Warranty: 4 years from date of substantial completion for labor and material in the event that the material supplied is not free from defects; structure shall be installed only for the particular application for which it was specifically manufactured;
20. Terre Arch™ installation may require distribution box(es) and end caps as shown on the Drawings.

## **PRODUCT SUBSTITUTION PROCEDURES**

1. No substitute system shall be approved as equivalent to Terre Arch™ system unless the Engineer shall receive and approve drawings and specifications stamped and sealed by a professional engineer showing the following:
  - a. project specific sizing calculations clearly showing that the unit meets or exceeds the Performance, Design and Installation Specifications of the Terre Arch™.
  - b. System shall allow access from grade through manhole into the entire underground system

## **MAINTENANCE PROCEDURES**

1. When a proper water quality device is placed in front of the Terre Arch™ system no clean out or maintenance is anticipated;
2. Inspection can be accomplished from grade with proper equipment, by entry through the manhole openings in the Distribution Manifold.
3. System shall contain sufficient Distribution Manifolds to allow entry for inspection and maintenance into each arch row of each Terre Arch.