

Septic Tank/Effluent Pump (STEP) System Installation

General Description

As delineated in the Lissara Subdivision Disclosures, the Lissara Homeowners Association will execute and manage the installation of STEP systems on each individual lot at as a cost of construction similar to that of a low-pressure pump septic tank system. The installation of STEP systems is regulated by the North Carolina Department of Environment and Natural Resources (NCDENR) through our National Pollutant Discharge Elimination System (NPDES) permit as issued by NCDENR.

The combination of STEP systems, a low-pressure sewer collection system and waste-water treatment plant were chosen at Lissara for several reasons. First, is to protect the waters of Lake Lissara and downstream to the Yadkin River and beyond by eliminating the need to disturb, clear and grade large amounts of space needed for conventional septic tank systems. With the cost of clearing and hauling debris to a registered landfill there is a significant offset to construction cost which makes our system a reasonable alternative. Second, septic tank systems can have a wide-range of life expectancies with certain rates of failure resulting in potential damage to water quality and excessive cost to the owner. Third, the low-pressure sewer collection system utilized at Lissara eliminates significant excavation and clearing of trees as the sewer collection lines follow the path and grade of our roadways. The end-result is lower-impact to the land, preservation of the natural landscape, vegetation and tree canopy; with a relatively low-cost installation.

Cost and Coordination

The subdivision disclosures estimate the cost of installation of the STEP system to be \$7,750.00 which is the actual current cost of a standard system, not including extraordinary circumstances which may be experienced in some situations. Extraordinary circumstances include but are not limited to; access for installation requiring a crane for tank installation, pressure-line (from tank to service location at the street) distances in excess of two-hundred (200) linear feet, excessive rock excavation, incurring non-excavatable rock (rock which is unable to be excavated utilizing a standard rubber-tired backhoe (i.e. Case 410 Excavator, or equal) and interference with other trades or installations which causes excessive work and/or delays in the installation. (i.e. work done out of sequence requiring working around or under driveway and sidewalk paving). All STEP system costs are passed-through to the owner at the exact cost of the work. The Lissara HOA has received competitive bids for this work through reputable local suppliers and contractors and is therefore confident we are utilizing the most cost-effective approach. Due to the need for materials, equipment and installation consistency, quality-control inspections for each installation and NPDES requirements of engineer certification of the system in its entirety; only those installations made, installed, inspected, certified and placed into operation by the Lissara HOA will be approved for connection to our system.

It is highly recommended that each lot Owner and/or their Building Contractor meet early in the construction planning process to agree on location and schedule parameters before commencing construction. Please note that there are some STEP installations, depending upon the location of the house on the lot and foundation elevation, where access may be impossible or extremely difficult once footing and foundation work begins.

Procedure

It is the intent of this procedure to simplify and expedite the STEP installation to the highest extent possible. Once the pre-construction meeting has been accomplished it is reasonable to expect the system can be installed as easily as the Owner/Building Contractor making two phone calls: 1) Scheduling installation thirty (30) days prior to need; and 2) Upon Certificate of Occupancy to perform start-up. While this is optimal and achievable we understand other coordination may be required.

1) Pre-Construction. Lot Owner, schedules meeting with Lissara HOA and Building Contractor on-site to determine location and elevation of foundation and STEP system.

2) Pre-Construction. Determine location of control panel. Must be located in direct line-of-sight of the pump/tank location.

General Installation Criteria to Consider

The tank may be located no closer than ten (10) feet to the foundation. The pump/tank may be as far as thirty (30) feet away from the control panel at no additional charge. Distances further than thirty (30) feet can be as required at a cost of two-dollars per linear foot (\$2.00 per LF) for electrical service. Pressure-line distances (from the pump/tank to the street service location) are included up to two-hundred (200) linear feet. Pressure-line distances greater than 200' will be installed at a total cost of two-dollars per linear foot (\$2.00 per LF).

3) Owner/Building Contractor must provide an initial stub-out for the waste-water drain a minimum of five (5) feet outside of the foundation toward the area agreed for STEP location. Care must be exercised in establishing the depth of the waste-water stub-out in relation to the established location of the pump/tank; keeping in mind the maximum depth of the top of the pump/tank should be 24" to 27". Once the tank is set, Owner/Building Contractor connects to the pump/tank. (See Installation - Day One)

4) Owner/Building Contractor will provide two (2) dedicated circuits and a phone line through the exterior foundation at the agreed location within direct line-of-sight to the pump/tank location. Wiring will penetrate the foundation wall through a single sleeve to protect the wires from abrasion against wall materials. The penetration can be either left or right of the control panel and 14" to 18" below proposed panel mounting height. The panel must be located 30" to 36" above finished grade. One circuit is to be a 12-2 gauge wire with a 20 amp circuit breaker for pump power wiring. The second circuit is to be a 14-2 gauge wire with a 15 amp circuit breaker for pump float switch and alarm wiring. The control panel location must be directly above the waste-water drain to allow for electrical conduits and wiring to be in the same ditch. Should the Lissara HOA be required to provide two (2) separate ditches for electrical and plumbing; we will provide as instructed at the cost of two-dollars per linear foot of excavation (\$2.00 per LF).

Note: The Lissara HOA STEP installation includes all electrical connections at the control panel complete to the pump/tank. The Lissara HOA will obtain a separate electrical permit to be inspected and certified under the NPDES permit. 24 volt control wiring and 115 volt power wiring will be run in two separate weather-proof conduits to the pump/tank.

5) Call. At the agreed scheduling period the Owner/Building Contractor will contact the Lissara HOA to provide thirty (30) days notice for STEP installation. The Lissara HOA will schedule the contractors and materials for the agreed date.

6) All STEP systems will begin installation the morning of the agreed schedule date and will last two days - weather permitting. Depending upon the location of the pump/tank and path of pressure-line there is the strong possibility that jobsite access may be interrupted or stopped by our operation. Pump/tank installation and pressure-line installation will occur only in areas previously cleared, graded and prepared. The pressure-line path will follow the edge of clearing along driveways of wooded lots. On cleared and open lots the pressure-line will take the most direct route to the street service connection. Construction activities must be planned accordingly to eliminate interference and allow the uninterrupted flow of work for our installation. No additional clearing will be done by the Lissara HOA.

Note: Delivery of the pump/tank will be by an approved tank truck. Access must allow for the tank truck to back to edge of the excavation for the tank. It may, in some installations, be impossible to achieve close access for the tank truck. For such cases the Lissara HOA has obtained the services of a local truck-crane company. The size and cost of the truck-crane will depend upon the required lift and reach to set the tank. Again, the Lissara HOA will invoice the Owner the direct cost of the crane as an extra to the STEP installation.

Note: Lissara HOA STEP installations will endeavor to excavate a reasonable distance from existing trees and existing erosion control measures where adequate space is allowed. The Lissara HOA will not be responsible for the repair or replacement of trees or erosion control measures. Any erosion control measures removed or damaged in the execution of the STEP installation must be promptly repaired/replaced by the Owner/Building contractor to remain in compliance with erosion control requirements of the Lissara HOA, US Army Corps of Engineers, NCDENR, and WS/FC Inspections Division.

Note: No part of the STEP system installation may pass into the boundary of any stream or lake conservation easement or preservation area. Care must be taken by the Owner/Building Contractor in planning for adequate space for the complete STEP installation.

7) Installation

Day One - Morning - Excavate and set pump/tank. Excavate wiring path 18" deep from pump/tank to control panel. Excavate pressure-line path 18" deep from pump/tank to street.

Day One - Afternoon - Install electrical conduits and wire from panel to pump/tank. Install pressure-line and pressure test. Engineering and installation inspection of tank stone, level, risers, pressure -line pressure test. Visual inspection and photograph installation. Call for electrical underground conduit inspection for the following morning.

Day One - Afternoon - Owner/Building Contractor - complete connection of waste-water drain-line to pump/tank. Call for plumbing underground waste-water inspection for connection to pump/tank for the following morning.

Day One - Afternoon - Pump/tank will be partially backfilled leaving electrical conduit and plumbing connections visible for inspection.

Day Two - Morning - Inspections of underground piping and electrical conduit connections.

Day Two - Afternoon - Complete backfilling and rough-grade.

Note: The Lissara HOA will spread additional soil remaining from excavation and roughly smooth near existing grades. If excess rock or unsuitable fill was incurred during excavation we will leave material piled in a suitable location to be removed at the discretion of the Owner/Building Contractor.

8) Billing. The Lissara HOA will invoice the Owner/Building Contractor the total amount of the complete system upon completion of the installation to this point. Payment must be received within thirty (30) days at our business office, noted below.

Lissara HOA - STEP Installation
P. O. Box 10
Bethania, NC 27010

9) Post-Installation. The Lissara HOA STEP system electrical contractor will return to make final terminations and schedule his completed rough-in inspection.

Note: STEP system pump/tanks are designed to allow for a maximum of 36" of fill over the tank. Our typical system is designed for a minimum fill of 24" and can accommodate up to 30" without modification. In the event the pump/tank depth needs to be increased up to 36"; extension risers may be utilized at a minimal extra cost to the Owner/Building Contractor. Finished grade must remain 3" below the finished top of each riser.

Note: Protection of STEP system. It is the responsibility of the Owner/Building Contractor to advise, monitor and enforce that no foreign matter, noxious materials, solvents or other controlled substances and dangerous or damaging chemicals are introduced into the system. The cost of repairs necessary to correct any resulting damage to the system will be at the expense of the Owner/Building Contractor. The Owner/Building Contractor is responsible for the cost of any repairs necessary resulting from cutting or damaging the STEP system underground electrical or pressure-line. All damage to STEP system equipment must be repaired by the Lissara HOA through our approved suppliers and subcontractors.

10) Call. Upon issuance of the Certificate of Occupancy from the WS/FC Inspections Division, Owner/Building Contractor will make application for permanent power and telephone service. Upon confirmation of connection of permanent power and phone service; the Owner/Building Contractor will contact the Lissara HOA providing 72 hour notice for final inspection, certification and confirmation of telecommunication with our online monitoring and maintenance service.

Buyer(s) _____

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Date _____