



TVC Energy is an Energy Services consulting and engineering firm in the State of Connecticut. In recent years we have seen the evolution of photovoltaic systems to provide cost effective options to further utilize parking lot space instead of consuming more green space. We have run into many projects suitable for installing a solar carport over existing impervious surfaces, such as asphalt, blacktop, or concrete pavement, that cannot be installed because of a conflict with the current Connecticut Technical Standard for Subsurface Sewage Disposal.

The Standards classify the photovoltaic carport structures as an “accessory structure.” Table 1 Item N Accessory Structure lists a separation of 10 feet reduced to 5 feet for structures with frost-protected footings.

The current standard prohibits the structure from covering or shading the subsurface sewage disposal system (SSDS), preventing or limiting many owners from producing clean, renewable energy on their site.

We propose that the DPH Code Advisory Panel consider the following potential change to the standards:

Addition of a new standards section or an exemption titled “Elevated Photovoltaic Structure.”

- Separation of 5 feet for footings, columns, or any part of the structure that is below fourteen feet, 10 feet for frost walls
- Elevated Photovoltaic Structures over the SSDS have a minimum clear working height of fourteen feet
 - Elevated structures allowed to cover the SSDS, including the tank, pump chambers, leach field, piping, and all associated components
 - The structure shall not impede service or repair of any part of the SSDS
- Impervious surface covering SSDS or within 10 feet of leach field under impervious surface
 - Water-tight or permeably-spaced modules allowed
- Pervious surface covering SSDS or within 10 feet of leach field under pervious surface
 - Permeably-spaced modules allowed
 - Water-tight module spacing allowed with conditions:
 - If water-shedding is diverted to within ten feet of the leach field
 - Water shedding is diverted to existing storm drains or existing impervious surface

Table 1 Item O. Utility service trench requires 5 foot separation from the SSDS. In the instance where an elevated photovoltaic structure covers over the SSDS and is supported using a frost protected footing, typically conduit would be run from the footing to the building to carry the power produced by the photovoltaic system. The conduit would likely cross the SSDS above ground, as part of and/or affixed to the carport structure, as well as below grade in tight pipe. Table 3 Approved Tight Pipe for Groundwater or Surface Water Piping within 25 feet of a Sewage System



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Potential Change

Table 3 Approved Tight Pipe for Groundwater, Surface Water Piping, or Elevated Photovoltaic Structure Conduit within 25 feet of a Sewage System

- Schedule 40 or schedule 80 PVC, as otherwise required, is approved piping for electrical conductors; we recommend solvent welded only for Electrical conduit, and consistent requirements to other piping in Table 3.
- Exemption for piping or conduits that are above grade and affixed to the carport structure, i.e. these may be designed per the requirements of the prevailing NFPA 70: National Electric Code

II. LOCATION OF SEWAGE SYSTEMS

- Modifications required to add in any adopted changes

Possible Definitions

- Elevated Photovoltaic Structures: This means any structure designed to support photovoltaic modules
- Pervious service: Allows infiltration of water into the soil
- Impervious Surface: Surfaces that do not allow infiltration of water into the soil, such as pavement
- Permeably-spaced modules: Photovoltaic solar panel modules that allow water to drain around the edges, thereby not substantially changing the existing water runoff over the proposed area
- Water-tight modules: Photovoltaic solar panel modules that do not allow water to drain around the edges. Similar to a roof, water will shed off the lowest end or through intentional storm water management systems.