

4.2.2.3 Mitigation of Miscellaneous Electrical Systems

IT and communications systems such as phone, internet, and cable television (CATV) components should be protected from flooding using methods similar to those of other electrical system components. Primary components like modems, video switches, splitters, and routers should be elevated. Secondary components like outlets and wiring should also be elevated. If outlets must be placed in areas exposed to flooding, the number of outlets should be minimal. GFCIs should be used and electrically isolated from the rest of the system.

4.2.2.4 Other Mitigation Considerations for Electrical Systems

In areas where moving floodwater is anticipated, electrical equipment that cannot be elevated should be installed to reduce the potential for physical damage. In coastal areas, electrical equipment should not be installed on walls designed to break away when exposed to flood loads. Equipment installed below the flood elevation should be routed along the landward side of structural members in coastal areas or along the downstream side in riverine areas. Figure 4-17 depicts electrical equipment routed in that fashion.

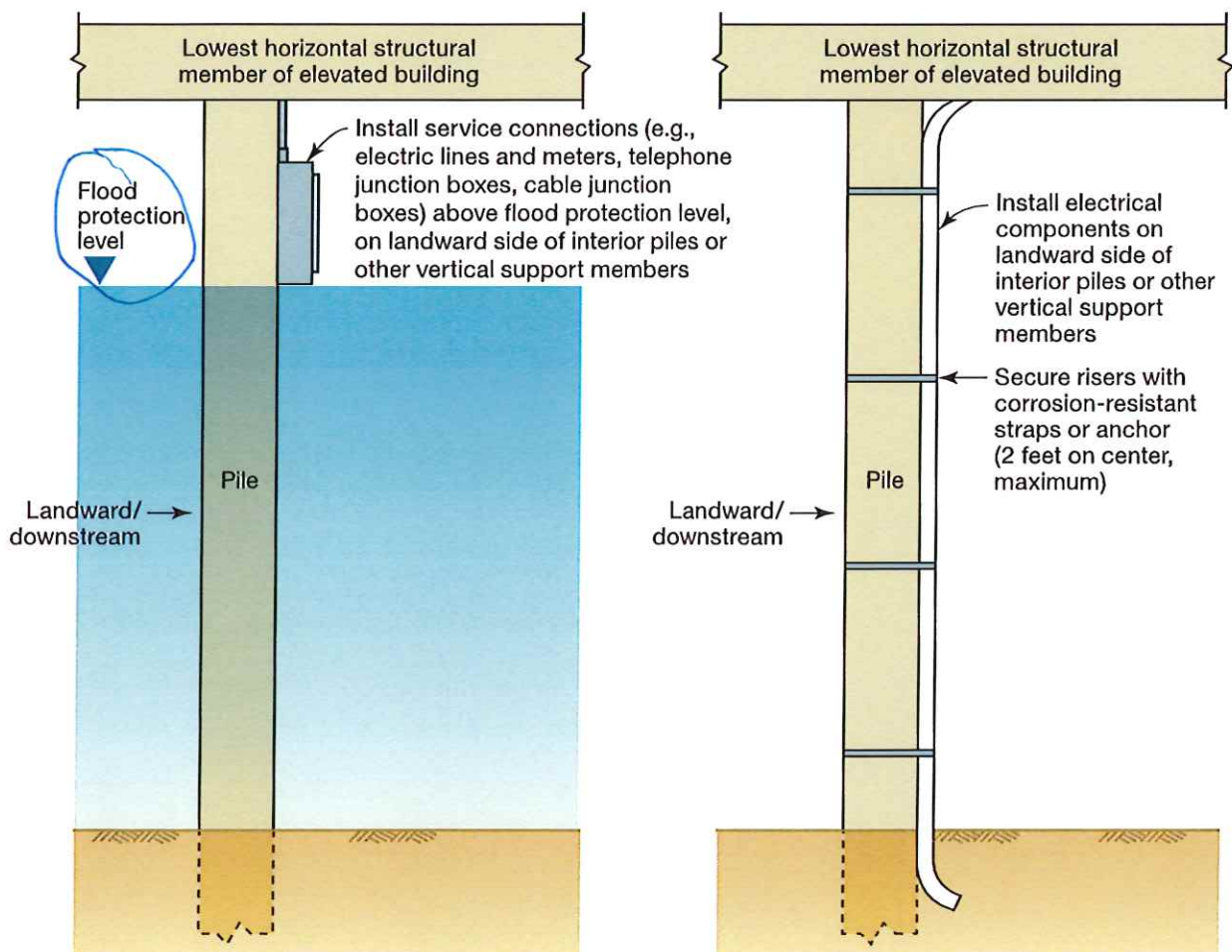
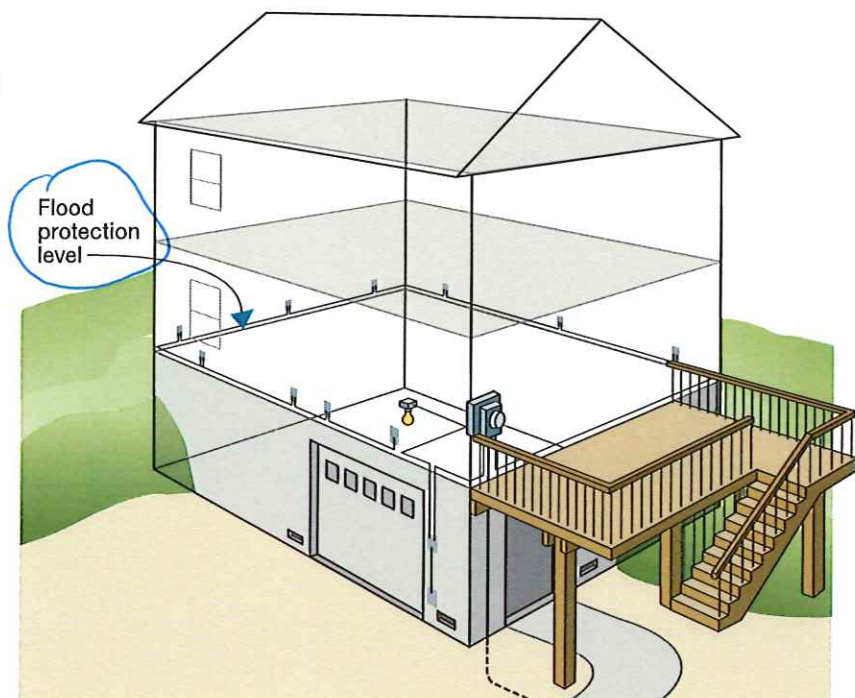


Figure 4-17. Placing electrical components to reduce risk from moving floodwater.

The ability to elevate electrical meters is often limited by dependence on the local utility company to enable access for reading the meter and removing it when electrical power needs to be interrupted. Typically meters need to be placed five feet above grade, which often exposes it to flood damage. One mitigation option is to mount electrical meters over elevated decks or platforms so that the meter is above the required flood elevation. Those decks or platforms typically cannot be used only for meter access because single use decks or platforms can fall into disrepair and become a hazard for personnel reading the meters. Owners who are considering elevating their electric meter should contact the local electrical utility to identify and coordinate meter relocation to meet the utility's criteria.

Figure 4-15 shows an example of an elevated deck that allows an electrical meter to be relocated above the required flood level. The dual nature of the deck is conducive to performing adequate maintenance.

Figure 4-15. Deck provides meter access and allows the meter and main service panel to be elevated and protected from flooding. Electrical components placed below the flood protection level remain vulnerable to flood damage.



Component Protection (Dry floodproofing): Dry floodproofing can be considered as an interim mitigation option for electrical system components in existing homes that are not Substantially Improved. Dry floodproofing will not lead to full compliance with building codes, standards or the NFIP.

4.2.2.2 Mitigation of Secondary Components

As with the primary components of an electrical system, the preferred approach to mitigate secondary components is to place as many as possible above the required flood elevation. For new construction and Substantial Improvement to residences where interior finishes are typically removed to create access for installing secondary components, this approach is almost always feasible. For existing homes that are not undergoing Substantial Improvement, many electrical components can be elevated or relocated.

Electrical devices and wiring should be located above the required flood elevation. In cases where they must be placed below this elevation and exposed to floodwater, they should be suitable for submerged locations. However,

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as possible to the electric meter. This arrangement is intended to minimize the length of service conductors exposed to damage that are only protected from overcurrent devices in the utility system.

When the service disconnect is close to the utility meter and the meter is exposed to flooding, the service disconnect is also exposed to flooding. Preferably, the meter, service disconnect, and main service panel (if separate from the service disconnect) should all be placed above the required flood elevation. When the meter cannot be elevated, one option is to install a combination meter socket and service disconnect. This configuration allows the main service panel equipment to be elevated even if elevating the electric meter is not possible. Figure 4-12 shows an example of a combination meter socket and circuit breaker, which serves as the service disconnect, and depicts a combination meter socket and circuit breaker that allows the main panel to be elevated when the meter cannot be moved.

The service disconnect provides overcurrent protection for downstream equipment, alleviates the minimum distance requirement, and allows the main service panel to be elevated above the meter. Occasionally, the main service panel can be elevated above the meter without installing a combination meter and service disconnect. This can be done by routing the wiring between the meter and the main service panel outside of the home. However, this approach should be discussed with local electrical inspectors and the utility company to confirm if it is a viable option.

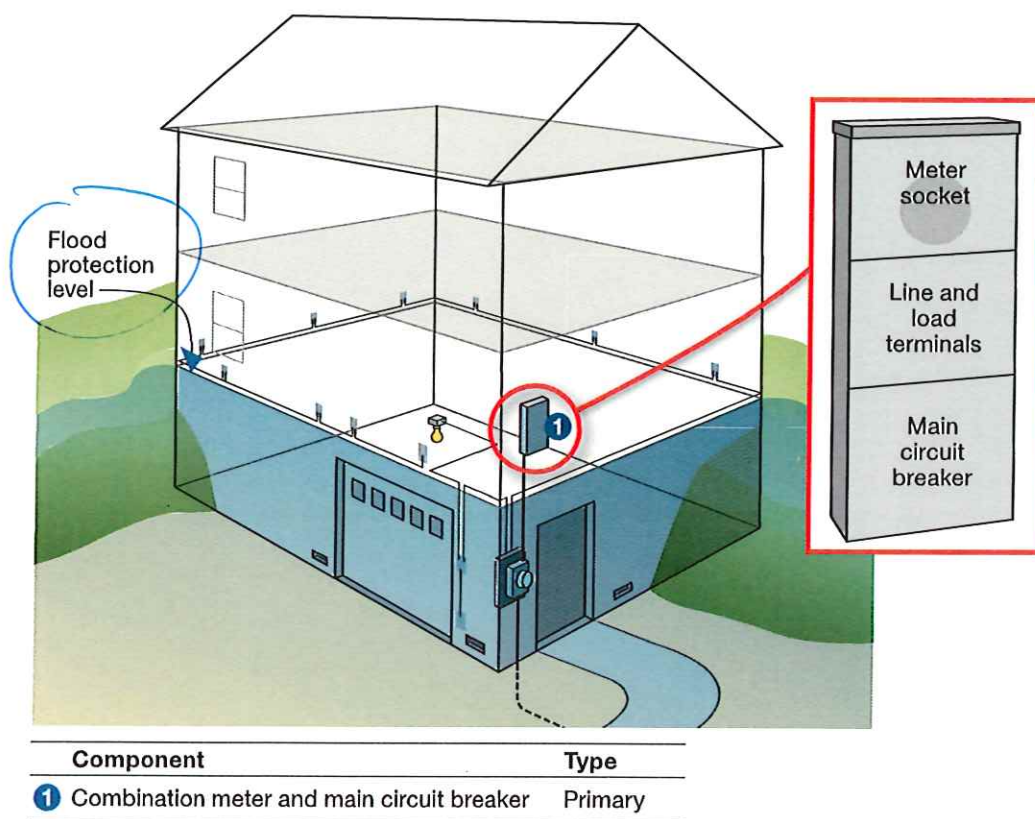


Figure 4-12. Combination meter socket and circuit breaker service disconnect used to allow a main panel to be elevated and protected from flooding when the electrical meter cannot be moved.