Travis County ESD No. 12

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UNDERGROUND FIRE LINE SUBMITTAL REQUIREMENTS

TCESD No. 12 is governed by the 2015 International Fire Code as amended and adopted. The submittal shall conform to that, and the most current editions of NFPA 13, and NFPA 24 and any requirements of the City of Austin Development Services Department if applicable. The use of newer editions of code references must meet or exceed the requirements of the current adopted editions.

THE INFORMATION IN THIS DOCUMENT IS NOT ALL INCLUSIVE OF POSSIBLE ITEMS REQUIRED PER CODE. IT IS THE RESPONSIBILITY OF THE DESIGNER AND SUBMITTING CONTRACTOR TO INCLUDE ALL THE PERTINENT INFORMATION NOT MENTIONED IN THIS DOCUMENT.

REQUESTS FOR UNDERGROUND FIRE LINE INSPECTIONS WILL ONLY BE ACCEPTED FROM THE LICENSED CONTRACTOR PERFORMING THE INSTALLATION.

- The underground fire line plan shall be approved by TCESD No. 12 prior to the installation of any underground components.
- The approved underground fire line plan shall be on site at all times for TCESD No. 12 inspections. The TCESD No. 12 inspector will not perform the underground fire line inspection without the TCESD No. 12 approved underground fire line plan.
- The cover page shall include:
    - Name of the project
    - Address of the project
    - Vicinity map
    - Project description/scope of work
    - Travis County ESD No. 12 Reviewer Signature Block
    - Contact information for property owner
    - Name and license type of the TDI/SFMO registered design professional (SCR-G/RME-G)
    - Name and license type of the TDI/ SFMO registered installing contractor (SCR-U/RME-U)
    - All applicable codes referenced and applied for the project
    - Specific class of pipe, size and material of all piping and fittings
    - Building construction type
    - Building square footage
    - Fire flow requirements for building(s)

Additional sheets of the plan submittal shall include the following information:

- The TCESD No. 12 Fire Department Notes shall be on the plan.
- All fire hydrants that are approved and installed as a part of the proposed project shall be considered to be part of a fire protection system and installed for the purpose of providing fire protection.
- TCESD No. 12 considers a water line that supplies any number of hydrants and/or any part of a fire sprinkler system to be for the purpose of providing fire protection.

- Underground mains feeding NFPA 13 or NFPA 13R sprinkler systems must be installed and tested in accordance with NFPA 13 or NFPA 13R, the fire code and TCESD No. 12 adopted amendments, by a licensed sprinkler contractor with a plumbing permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections. TCESD No. 12 requires permits, underground fire line plans to be submitted for approval, and inspections to ensure installation compliance.

- Underground mains feeding hydrants shall be installed and tested in accordance with NFPA 24, the fire code and TCESD No. 12 adopted amendments, by a contractor licensed to perform the installation. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.

- TCESD No. 12 considers the piping from the point of connection at the municipal water supply to the fire hydrants and the base of any fire sprinkler riser part of a fire protection system.

- The presence of domestic water supply taps off of the main water line or a shared supply line with fire sprinkler riser does not override any requirements of TCESD No. 12 or NFPA 24. NFPA 24 shall apply to all underground installations and installations shall be permitted and inspected by TCESD No. 12.

- The utility contractor shall consult Travis County ESD No. 12 regarding any jurisdiction requirements for utility contractors.

- The appropriate individual shall consult with Travis County ESD No. 12 (the AHJ) for requirements related to the underground water main pipe and installation of the water main/fire hydrant line.

- A copy of the license of the contractor installing the pipe for the supply to any part of the fire protection system shall be provided to TCESD No. 12 PRIOR to installation of any pipe.

- Underground fire line installations shall be performed by individuals licensed by the State of Texas to install fire protection systems. It shall be considered unacceptable for a licensed company to sub-contract installation work to non-licensed companies.

- A registered firm may not subcontract with an unregistered firm to allow the unregistered firm as an independent contractor to perform any act of a fire protection sprinkler contractor.

- The locations of water mains serving the project, including pipe size and locations of public hydrants within 500 feet of the site shall be shown on the submitted plan.

- Provide the location of all on-site piping, hydrant(s) and riser(s), sectional valve(s), OS&Y valve(s), and post indicator valve(s), as required. Specify class, size and material of all piping and fittings.

- The sprinkler system piping shall not have a separate control valve unless supervised by an approved method found in NFPA 13 or NFPA 13R.

- A minimum of FOUR (4) TCESD No. 12 inspections are required for underground piping serving sprinkler systems and/or private hydrants: (1) Thrust block, (2) Start of 2-hour hydrostatic test, (3) End of 2-hour hydrostatic test and (4) Flush inspection.

- ANY additional inspections beyond the allotted FOUR (4) underground fire line inspections SHALL INCUR A REINSPECTION FEE. If additional inspections are necessary, reinspection fees shall be paid prior to any additional TCESD No. 12 inspections.

THRUST BLOCK INSPECTION: A visual inspection will be required before the fire mains are covered to verify location of valves, pipe type, size, wrapped joints and proper installation of restraints. If the pipe is covered up prior to the inspection, the inspection will be terminated and the pipe WILL BE REQUIRED TO BE UNCOVERED.

- A 6-inch bed of clean fill sand shall be provided below the pipe and 12-inches above the pipe (total of 18 inches plus outer diameter of the pipe).

- Pipe shall be buried at least 36” where subject to loading (e.g., driveways, parking lots) and at least 30” elsewhere. Trenches shall be of sufficient depth to account for potential freezing conditions and to allow the required cover above the pipe.

- All pipe shall be approved for use in fire service systems. The pipe used must meet the minimum standards of the water purveyor supplying the water for the project. Class 150 will be used at a minimum, and class 200 pipe shall be used where the water pressure exceeds 150 psi. The use of galvanized pipe is PROHIBITED when a portion of the system is buried.

- All ferrous pipe and fittings shall be protected with a loose 8-mil polyethylene tube. Use of any polyethylene material without ANSI/AWWA information will not be accepted. The ends of the polyethylene tube and any splices made for tees or other piping components shall be tightly sealed with two-inch tape that is approved for underground use. Duct tape and other common household or industrial tape will not be accepted without manufacturer specifications indicating the tape is approved for underground use.

- Bolts used for underground connections, including T bolts, shall be cleaned and thoroughly coated with asphalt or other corrosion retarding material after assembly and prior to the installation of polyethylene tube.

- Sectional valves shall be provided at appropriate points within piping sections such that the number of fire protection connections between sectional valves does not exceed six.

- Sectional valves are necessary to allow isolation of piping sections to limit the number of fire protection connections impaired in the even of a break or to make repairs or extensions to the system. Fire protection connections can consist of sprinkler system lead-ins, hydrants, or other fire protection connections.

- Thrust blocks, or another approved method of thrust restraint, shall be provided wherever pipe changes direction.

- Care shall be taken when forming and pouring thrust blocks so that fittings and joints are not buried in concrete.

- A minimum two-inch clearance shall be provided where the pipe passes through slabs or walls.

- Underground system shall terminate at the riser flange and placed a maximum of 18 inches from an exterior wall and 6 inches above the slab.

- The FDC shall contain a minimum of two 2 ½" inlets. When the system design demand, including the interior hose stream demand or a standpipe, is a minimum 500 gpm, four 2 ½" inlets shall be provided.

- Pipe running under a building or building foundation shall be stainless steel and shall not contain mechanical joints.

HYDROSTATIC TESTING: Thrust blocks shall be poured and in place. Pipe shall be center-loaded with clean sand to prevent uplift, but all joints shall remain exposed.

- The underground main shall be able to be isolated off the existing main and at the point it terminates to the building.

- All piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at 200 psi or 50 psi in excess of the system working pressure, whichever is greater, and shall maintain that pressure +/- 5 psi for 2 hours.

- The hydrostatic test shall commence upon the arrival of the TCESD No. 12 inspector and shall end upon the return of the TCESD No. 12 inspector. Unwitnessed hydrostatic tests will not be accepted.

FLUSH INSPECTION: All portions of the underground system shall be flushed to remove debris prior to connection to overhead piping in compliance with NFPA 13.

- Underground piping, from the water supply to the system riser, and lead-in connections to the system riser shall be completely flushed before the connection is made to downstream fire protection system piping.

- Flow shall be through a minimum of a four-inch hose or pipe, unless otherwise approved by the TCESD No. 12 fire code official prior to scheduling the flush.

- Hose or pipe shall be restrained to prevent injury and damage. Discharged water shall be collected or diverted in accordance with applicable water collection provisions. The local public works department, water district, and/or other applicable agency shall be notified of the scheduled flush by the contractor

- The minimum rate of flow shall be not less than one of the following:

    - (1) The hydraulically calculated water demand rate of the system including any hose requirements,
    - (2) Flow necessary to provide a velocity of 10 feet/second. (4 inch lines – 390 gpm),
    - (3) The maximum flow rate available to the system under fire conditions.

- If underground piping is connected to overhead sprinkler piping without an approved TCESD No. 12 flush inspection, the overhead sprinkler system will require extensive testing to ensure no obstructions are present. This includes, but is not limited to, removal and replacement of sprinkler heads, backflushing the system and denial of occupancy until the issue is resolved to NFPA standards and the requirements set forth by the TCESD No. 12 Fire Marshal.

- Post indicator valves and remote FDC's require signage to indicate the building and/or area served. Address signs shall be securely attached to the device and be of a durable, weatherproof and fade resistant material which is visible and legible from the fire lane.

- Per NFPA 24, the installing contractor shall be responsible for completing and signing the Contractor's Material and Test Certificate for Underground Piping. The completed and signed certificate shall be provided to all required parties, including TCESD No. 12. This certificate certifies the installation was in accordance with Chapter 6003 of the Texas Insurance Code and guidelines set forth by the SFMO.

- Submit the signed TCESD No. 12 Underground Fire Line Submittal Checklist with your submittal.