Fire Sprinkler Submittal Requirements and Acceptance Testing

To all Registered Fire Sprinkler Planners and Professional Engineers:
The 2012 Edition of the International Fire Code mandates in Chapter 9 that "Construction
documents for fire protection systems shall be submitted for review prior to system installation." This
requirement applies to new system installations and any renovations. Understanding that in some
instances work must be initiated before the plans are approved, requests will be considered on an
individual basis to allow contractors to proceed with the initial installation of stub-outs and
underground piping. Further clarifications may be faxed to the number above or emailed to
fireprevention@mylubbock.us please include STEP 2, item 1 below with correspondence. Once
submitted, plans will be reviewed on a first-come, first-served basis. A submittal form has been
included at the end of this document for your convenience. In addition, please verify that your
system design and submittal packet complies with the requirements set forth in the Texas Insurance
Code Chapter 6002, http://www.tdi.state.tx.us/fire/fmlisprinkler.html including the Texas Insurance
Code Chapter 6003 Fire Protection Sprinkler System Service and Installation, and 28 TAC 34.700
The Fire Sprinkler Rules, 2010 NFPA 13 Standard for the Installation of Sprinkler Systems and the
2010 NFPA 24 Standard for the Installation of Private Fire Service Mains,

STEP 1. - FLOW TEST
As a method of checks and balances for the City of Lubbock, Fire Flow tests will be conducted by
the installing company and observed by an agent of this office. The method for obtaining the
necessary static and residual measurements follows:

1. The hydrants used for a flow test are designated as either the Test or the Flow hydrants.
The Test hydrant will be located nearest to the property being surveyed.
2. Since the water systems of Lubbock are in a loop configuration, the Flow hydrants should be
   the two nearest, one on either side of the Test hydrant, and on the same main.
3. When conducting a flow test, one 2-1/2” opening on each of the two flow hydrants will be opened, to draw enough water from the main to causing a 25% drop from the static pressure reading.

4. It is preferable to use a hydrant cap with a 0-200 psi pressure gauge on the TEST HYDRANT equipped with a petcock and bleeder. A 0-100psi gauge should be used on each of the flow hydrants. This will produce adequate results for obtaining the necessary readings. The Contractor is responsible for providing all test equipment.

5. Upon completion of the actual flow test, the static and residual readings from the Test hydrant and the flow readings from the Flow hydrants will be sent to you on our Letterhead. A “PLANS REVIEW SUBMITTAL REQUEST” form, included at the end of this document, must accompany all flow test requests. This form is self-explanatory and must include the actual numbered street address (building permit address) for the site upon which the system will be installed. A fee of $40.00 must be included. The contractor will receive a completed Flow Test Data Sheet from this office.

**STEP 2 – SUBMITTAL PACKAGE shall include:**

1. A cover page including the company name, address and telephone/fax number, Texas fire sprinkler license numbers and a contact person. This cover page shall include a brief narrative describing the scope of work to be performed.

2. Follow all the guidelines addressed in 2010 NFPA 13, chapter 22, see attached check list.

3. Include specific, detailed drawings of any unclear or unique construction such as soffits, furred-downs, partitions, basement wells, displays, etc. that may affect the normal operation of the fire protection system. To avoid confusing and overcrowded plans, electrical, HVAC layouts and sprinkler installation tents should not be included unless requested by the reviewer.

4. To avoid confusion and questions about unclear areas, indicate the location of every fire sprinkler control valve, emergency generator, fire pump, elevator and applicable pre-engineered suppression system in or to be installed within the building. This is required even if these elements are not to be connected to the fire sprinkler system, and even if they are not within the scope of the planned work.

5. Bear the signature and license number of the Texas licensed Responsible Managing Employee or Professional Engineer, the date of installation, alteration, or addition and the Certificate of Registration number of the registered firm.
6. Any substantial changes that occur, after plan review by the Fire Marshal’s Office, shall require RE-SUBMITTAL for review.

7. Three (3) complete sets of plans/calculations/data sheets are to be submitted for review. One set will be retained by this office. One set, bearing the REVIEWED stamp along with a letter or comments (if any), shall remain on the work site at all times. One set is to be kept on file by the contractor. Once the plans have been reviewed, notification will be made to the contractor or his office that they are ready to be picked-up. Plans that are left in our office will be discarded if not retrieved within ten (10) working days after notification.

8. A “PLANS REVIEW SUBMITTAL REQUEST” form, included at the end of this document, must accompany all plans. This form is self-explanatory and must include the actual numbered street address (building permit address) for the site upon which the system will be installed. A fee of $40.00 must be included and covers plans review and inspections. (If plans are rejected, a new submittal fee will be required.)

Checklist for system design and submission.

1. Incoming fire line: Show pipe size and written detail, pipe type and detail of thrust block calculated per NFPA 24 or 13.

2. For fire pump: Provide complete pump data which shall include
   a. Indicate diesel or electric
   b. Pump curve
   d. Pump testing form indicating all required settings per system demand two (2) weeks prior to testing date for LFMO review.
   e. Pump power supply provider (for electric), phase available for the pump, etc.
   f. Fuel tank size in gals ---------------(for diesel)
   g. Jockey pump specification

3. For Dry/Pre-action system: show dry pipe detail, system capacity etc.
   a. Compressor data sheet.
   b. Indicate slope.
   c. Drum drip.
   d. Source of power for the compressor.

4. Indicate any alarm bell or weather proof horn strobe if required.

5. For stand pipe system follow 2010 NFPA 14.

6. Locate FDC per 2010 NFPA 13, 14, or 24 as applicable.
7. Size of FDC to be 2 ½” per AHJ requirement.
8. Indicate check valve with ball drip valve which drains outside or to a floor drain.
10. Indicate calculated area.
11. Indicate North arrow.
12. Indicate area of work on "Key Plan."
13. Indicate all existing conditions of the sprinkler system with unique line type and showing their sizes.
15. Hanger detail.
17. Floor control valve assembly detail.
18. Provide key notes indicating any different items not specified in general note or specification.
19. Check any specific requirement for AHJ prior to design for any question or confusion.
20. Show size of main drain and express drain, and their location if applicable.
21. Zones determined and indicate with unique line type on the floor plan.
22. Zone control valve specified on drawing.
23. Submit all applicable product data.
24. Calculations:
   a. **Design safety factor to be 10% or minimum 10psi.**
   b. Show node to node connection from branch line to sprinkler head. If equivalent K is used show separate calculation.
   c. For extended coverage sprinkler, use pressure and flow requirement from manufacturer.
   d. Avoid flex connection to the extended coverage head unless calculation is provided to prove that it works with flow and pressure as required.
   e. For antifreeze systems, follow NFPA 2010 chapter 7.6.2 Antifreeze Solutions.
      7.6.2.1 Except as permitted in 7.6.2.2 antifreeze solutions shall be LISTED for use in sprinkler systems.
      7.6.2.2 Premixed antifreeze solutions of propylene glycol shall be permitted to be used with ESFR sprinklers where the ESFR sprinklers are listed for such use in a specific application.
STEP 3. - INSPECTIONS

1. The contractor must call 806-775-2646 to request one of the inspections listed below. These requests are scheduled by the inspector, not the office, and will be on a first-in, first-out basis.

2. During construction, this office will perform visual inspections and hydrostatic tests that will consist of the following:

   a.) **Visual Inspection** – A visual inspection of the sprinkler system will be required, and a written Inspection Report issued for each phase. The inspection will consist of a visual check of the installation of:
       1. **Underground** - underground piping, thrust blocks and tie-ins.
       2. **Aboveground** – unions, hangers, piping, sprinkler spacing and coverage.

   b.) **Hydrostatic Test** – The contractor’s RME, or the company’s designated representative will conduct a test of 200 psi for 2 hours. An Inspector from this office will witness the test and issue a written Inspection Report. Contractor shall provide and sign 3 copies of the State form (SF0-41 or SF0-42).

   c.) **Flushing Underground** – Shall be witnessed by an Inspector from this office prior to the assembly of the riser piping.

The contractor is responsible for requesting inspections and hydrostatic tests upon completion of the Underground portion and before covering it up. Likewise, the contractor will request an inspection and testing of the Aboveground portion before the installation of drop ceilings or other coverings that conceal the piping or hangers from view or prevent water leaking from it to hit the floor.
PLANS REVIEW SUBMITTAL REQUEST

PLEASE PRINT

Date: ____________________________

Paid by □ Check (payable to City of Lubbock)

□ Cash □ Credit/Debit Card

Contractor Name: ____________________________  Contact Person: ____________________________

Telephone No.: ____________________________

Facility Name: ____________________________

Facility Legal Address: ____________________________

Type of Plan:

□ Fire Alarm System □ Fire Sprinkler System □ Clean Agent System

□ Flow Test □ Kitchen Hood Suppression System

□ Other: ____________________________

OFFICE USE ONLY

Time: ____________  Date Reviewed: ____________  Reviewed By: ____________________________

Person Notified: ____________________________  Date: ____________________________

Contractor or Representative ____________________________  Date ____________________________

(To be signed at the time plans are picked up)