



Fire Suppression Services Incorporated  
3802 South 2300 East, Millcreek Lake City, UT 84109. Ph (801) 277-6464

## Scope of Work

### PE/NICET/All Design Engineering

Contract

## Design Team

This is an update to the Scope of Work for a Design Team. It is not all inclusive; make sure you cover all 'bases'

It is to be sent to said team upon award, and returned signed to FSS.

## Updates:

2019-09-06 added 3x3 AHJ stamp space

2019-02-10 added sheet size minimum

2018-10-10 corrected address to Millcreek

2018-09-27 added reference to NFPA 170 Emergency Symbol standards

2018-05-02 changed phrasing of Symbol listing requirement

2017-08-15 added Acord requirements

2017-07-17 Included Div-31/33 Underground

2017-07-02 Added warning about Cert expiration

2017-04-24 UFA requirements, from USFPP meeting

2017-01-18 Added AHJ requirement for CET# & SqFt

2016-11-20 Dwg/pdf sizes

2016-11-10 incomplete Div-31-33

2016-07-01 checked Riser Drawing on separate sheet is required. Added Letterhead.


2015-10-10 added ... Designers/PE/NICETS **pay attention to bid docs.**

2014-07-11 In-Complete Partial

## Scope:

**Design Scope for all those designing for all disciplines in: Div-10, 21, 28, 31 & 33.**

## General Requirements for all Design work:

1. All Designers must have, on file with FSS, a CURRENT Acord or equivalent document evidencing having GL/Auto & Workers comp. AND Errors and Omissions insurance
2. ALL Drawings must have a Title Block with correct spelling of Clients name and address, and Designers Name/Address & Contact information.
3. ALL Drawings must have within the Title Block the
  - Fire Suppression Services logo and the words **Fire Suppression Services Inc.**  
3802 South 2300 East. Millcreek. UT 84109. Ph. (801) 277-6464
4. All drawings must conform to, and use symbols adopted by, the American Institute of Architects (AIA) & the American National Standards Institute (ANSI).
  - a. A Symbol List/Legend is required, of all the symbols, drawn and lettered on each set of working drawings. Should you modify some of these symbols for reasons of clarity, add an explanation.
  - b. Refer NFPA 170 Standard for Fire Safety and Emergency Symbols
5. Provide a 3" x 3" space at the bottom right corner of every sheet for Fire Prevention Division's approval stamp.
6. Each drawing must show a directional symbol, usually an arrow labeled [N] to enable a reader of your drawing to orient it North. (Compass points)
7. Every consecutive issue of YOUR drawing must have a Revision History Block, showing correct dates; and a Revision section consecutively numbered. Each page must have the appropriate Delta numbering that reflects revision level/s. 
8. Changes may be made by adding, deleting, or crossing out the information or by re-drawing the drawing.
9. ALL designs must be able to be installed using your drawing set on site, so that at final AHJ tests, your designed system will work according to their Code/s.
10. All drawing sheets AND Calculation Sheets MUST have imprinted conspicuously on them your CET number, your Certificate Discipline (PE, FPE, NICET or other) & the Certificate Level
  - a. Your License must be CURRENT.
11. All drawings must include



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- a. Owner Certificate as in:
    - i. Building Use,
    - ii. Occupancy Type/Count, and
    - iii. Storage Classification (where appropriate).
    - iv. Provide a 3" x 3" space at the bottom right corner of every sheet for Fire Prevention Division's approval stamp.
  - b. If you miss any of the above 3 items, Plan Review will be negated
    - i. (AHJ gives a REJECT- 'Do Again'). (as at 2017-04-24)
12. All Drawing sheets must CLEARLY identify the approximate working square footage of every area being covered by the suppression/alarm/electrical/underground system.
13. ALL Drawings must have scale
- a. Drawings shall be drawn to a scale that depicts all details of the item clearly and accurately
  - b. In the case of diagrams, pictorials, schematics, cable assemblies, tabulated and other drawings not prepared to any scale, the word "NONE" shall be entered after "SCALE" in the space provided on the drawing format/block.
  - c. Each sheet must include a bar scale.
14. The notes area of a drawing shall be identified with the heading "NOTES"
15. All sheets shall be a minimum 24"x36" (all sheets to be the same size)
- a. all printed plan sets shall be stapled and folded to an approximate size of 8"x10"

### Requirements

**Fire Suppression Services Inc.** requires that all members of the design team:

#### Design ...

... According to all applicable International, Federal, State and local codes, including Building, Fire & Life Safety, Residential, Utility AND ...

... Pay particular notice of, and liaise with, the FSS Estimator, who Bid the Job. He used specific parts! (Brand names)

#### Produce:

1. Drawings and Submittals (Specs & Cut sheets) for  
(See '[Standards](#)' below for document requirements)
  - a. The General Contractor AND
  - b. The AHJ (multiple copies may be required) AND
  - c. One copy for FSS PM. AKA s "bound set" (pdf)
2. A minimum of
  - a. three (3) (PE or NICET) Stamped, & AHJ Approved hard copy sets
    - i. One for our on-site fitters/technicians in One-Eighth scale (1/8)
    - ii. One for FSS records
    - iii. One for the General Contractor site Office

And so as FSS/Client can re-print as required...

  - iv. one Adobe (pdf) file copy including hydraulic calculations and battery calculations AND
  - v. one AutoCAD file copy of:
    1. Alarm Shop Drawings including:
      - a. Part listing with part numbers of the FACP, Annunciators and all other Fire Alarm devices.



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2. Sprinkler Shop Drawings
  - a. Part listing with part numbers of the Riser Room components, heads and all other Sprinkler devices and alarm and FE & FEC devices where applicable
  - b. And HLF files for pre-fabricating contractor. (Reliable or FFAB or HD)
3. The Utility Supply Drawings
  - a. From Utility supply Tap, to Riser flange, showing thrust block, joint restrainers, depths, wall offsets. Key valve/PIV/Hydrant locations.
3. Final drawings (As-Built) drawings from the red-line set for Alarms, Sprinklers, & Underground etc.
  - a. Updated AutoCAD files of finals will be required. (As-Builds)
  - b. This set to be Revision: FINAL

#### Submit to, and obtain from:

4. The local AHJ
  - a. All permits and approvals in order to fulfill the Fire Suppression Installation Contract requirements of the Architect/Owner/General. (see '[Standards](#)' below for document requirements)

#### Liase / Co-Ordinate closely

5. with FSS designated PM
6. with Field technicians by carrying out site visits

#### Advise on Code & Design features and changes

7. Which includes telling me (FSS/PM) about difference between Arch/Elec/Util 'their' specs design  
...  
AND
8. Code. Assume that their specs/designers do not know code, and may have missed some things. BECAUSE,
9. if Code/AHJ/FM requires me to add it, I must be able to recuperate that cost from Owner/Arch. (SCO/PCO/CCO)

#### For Finals

Before any retention can be paid,

Design Team (PE or NICET) **must** produce and supply to FSS PM:

1. ALL as-built drawings in both hard copy and in electronic AutoCAD and pdf format for Alarms, Sprinklers, FE and FEC & Underground. These to be supplied to FSS PM.
2. An Electronic (pdf) form of the Riser Room Schematic for mounting in said room for Owner's Maintenance staff.
  - a. Minimum size to be 8.5 by 11 inches. Maximum size to be 11 by 17 inches.
  - b. This doc will be either framed or plastic coated by FSS upon approval.
  - c. It must be a simplified version for staff viewing.
  - d. Must include the underground supply from the street to the riser flange.
3. Head box Inventory sheet per NFPA-13 for mounting in the head box/s

#### Preferred Suppliers

#### Div-21 Fire Suppression

#### Scope

General Requirements [above](#) and ...



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Must include

- Location of all offsite and onsite fire hydrants including those used for water flow test data
- Flow Data, Hydraulic calculation data and square footage on drawings.
- Location of fire department connection (FDC) and post indicator (PIV) valve
- A pdf of the hydraulic calculations.
- A stock listing of material for fabrication is to be provided where applicable

And ...

Unless otherwise specified:

#### Preference is for:

- Riser valves to be Victaulic FireLock.
- Back-Flow-Preventer: Ames
- Air compressors to be General Air Products Tank-mounted, 3-phase Oil-less Piston Quiet.
- Wet and dry heads (Note: Protective head cages for Freezer & Cooler sprinkler heads)
  - First preference: Victaulic.
  - Second preference: RASCO

## Div-28 Life Safety

### Design Scope

General Requirements [above](#) and ...

Must include

1. Fire Alarm Shop drawings
2. Battery Calculations & Riser sheet
3. Recreated floor plans in CAD from scans where applicable
4. Parts list and quantities of each device. So suppliers can bid/price quote
5. Stock listing of material for fabrication is to be provided where applicable.

And so as FSS can re-print as required...

- a. As-Builds (Finals in CAD/pdf)
- b. one Adobe (pdf) file copy AND
- c. one AutoCAD file copy of:
  - i. shop drawings with the changes

#### Preference is for:

1. Silent Knight,
2. Vigilant

## Div-31 & 33 Underground

### Design Scope

General Requirements [above](#) and ...

Must include

6. Shop Drawings and As Builds, to include and label all shut-offs
7. Location of all offsite and onsite fire hydrants including those used for water flow test data
  - a. Flow Data, Hydraulic calculation data and square footage on drawings.
  - b. Location of fire department connection (FDC) and post indicator (PIV) valve



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- c. Fire department connections shall be located not more than 100 feet from the nearest fire hydrant connected to an approved water supply. [NFPA 14 6.4.5.4, A 6.4.5.4]
8. Certificate number and level.
  - a. Your Certificate: Type Number and Level and must be Current.
  - b. If it is expired (i.e. NICET expired: AHJ rejects designs)
9. Bacteria test data (AKA: BAC-T), with AHJ sign-off

### Standards:

#### For ALL PDF DOCUMENTS

#### For ALL CAD DWG's


For ProjectDOX permit uploading. (SLC Corp)

Each Project must contain an 8 1/2 x11 sheet index containing a list of every uploaded drawing with a description of each.

This should be the first file in the Drawings folder.

First sheet MUST have a block that shows Square footage, Occupancy count, Type & NFPA Code with year.

Each sheet must:

1. Be oriented so that no rotation of the document is required. (landscape)
2. Have a Title block
3. Have a description of the 'scope' of the sheet
4. Have a Date Drawn label with the date.
5. Have a Revision Number / Version Number
6.  Delta markings showing change number

### Sheet & File Names

Each sheet or file name must be preceded by a 3 or 4 digit number, a discipline designator with sheet number, and a file name.

For example: 0001\_Index (8-1/2x11 - see above)

0002\_T.1\_A Title Sheet  
0003\_A.1\_Floor Plan  
0004\_S.1\_Structural Floor Plan  
0001\_F.1\_FA first floor  
0002\_F.2\_FA second  
0001\_FA Fire Alarm

With the exception of the leading 3 or 4 digit number, the naming convention should follow industry standards. The important distinction is that the sheets should upload in exactly the same order we would receive them if they were printed.

Added by Arun

### Design Standards to keep in mind:

1. International Code Council (ICC) Codes, latest edition:
  - i. International Building Code (IBC)
  - ii. International Fire Code (IFC)



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- iii. International Mechanical Code (IMC)
- iv. International Plumbing Code (IPC)
- v. International Residential Code (IRC)
2. National Fire Codes, National Fire Protection Association, Latest Version, and their appendices.
3. All items must comply with US & UL standards
4. FM Global Loss Prevention Data Sheets MAY be required: Check Job Specifications
5. System reliability, longevity, and serviceability shall be included as criteria in specifying fire protection and life safety system components and in design decisions
6. Antifreeze may be deprecated by 2022, if not extended by the Utah State Legislature.

Per Utah Admin Code R710: When construction is proposed in sprinkled or non-sprinkled occupancies, the Owner or Architect shall provide an engineer's Water Supply Analysis to the Fire Marshal's office during the preliminary design phase of the proposed construction. **It must be placed on the Plan Review Submittal document, else REJECT.**

So, we provide it to the above as proxy.