

DRAFT

00100 INSTRUCTIONS TO BIDDERS

COMPLETION DATE/CONTRACT TIME

Construction work must begin within seven (7) calendar days after the date appearing on mailed notice to do so shall have been sent to the contractor and shall be carried on at a rate so as to secure full completion within **NINETY (90) CALENDAR DAYS**, the rate of progress and the time of completion being essential conditions of this Agreement.

PRODUCT OPTIONS AND SUBSTITUTIONS

Materials and equipment for this project shall be from items specified or items approved as equal, in writing, by the Architect **AT LEAST EIGHT (8) DAYS PRIOR TO BID RECEIPT DATE**.

Request for approval of materials or items of equipment as equal to that specified shall be submitted in writing from the General Contractor accompanied by data adequate to establish such equality and by citation of at least two (2) situations where such materials and/or items of equipment have been successfully used including references.

GENERAL INFORMATION

Obtain and pay for permits and fees required for this project.

Obtain and pay for construction sets of plans and specifications required for this project.

Prior to bidding, visit site to become familiar with and verify existing job conditions.

Do not scale drawings for exact dimensions.

Work shall comply with applicable codes and regulations.

Contact **Division Chief Clay Christenson, MADISON FIRE DEPARTMENT, at 266-5959** for site access, coordination of work and material storage area designation.

Perform contract so as to minimize disruption of the operation of the building and personnel. Contractor and subcontractor personnel must check in with site contact person each time they arrive at the site to begin work.

Contractor shall be responsible for restoring, repairing and/or replacing any materials, equipment or site damage caused by the work of this project to its original finish and/or condition.

Work shall be performed by mechanics skilled in the area of work included in this contract; shall be of professional quality; and shall be completed according to the best practice of the trade.

Workers shall be knowledgeable with regard to products used and shall take appropriate precautions required to safeguard health and safety.

Existing building materials that may have hazardous content and are located within the work area (example: floor tile, ceiling tile, pipe insulation) shall be sampled, tested, and removed by the City. If any suspect hazardous building materials are found by the contractor during demolition or renovation work that have not been sampled and tested, work must stop and a certified hazardous

material inspector must be contacted by the City to assess the situation. Inaccessible areas may exist within the facility.

The intent of the plans and specifications is to provide for the construction, execution and completion of a complete work or improvements, which the contractor undertakes to do in full compliance with the plans, specifications, and contract. The Contractor shall perform all items of work covered and stipulated in the proposal and perform altered and extra work necessary to the prosecution and completion of the work.

The Contractor shall take no advantage of any apparent error or omission in the plans or specifications, and the Owner shall be permitted to make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the plans and specifications.

Conditions of the Contract and Division I Specification Sections are applicable to all Divisions (2-16) of the Specifications and Drawings.

QUESTIONS

Questions pertaining to this project shall be directed to Bill Sullivan , Fire Protection Engineer, Madison Fire Department, 261-9658.

01000 GENERAL REQUIREMENTS

01010 SUMMARY OF WORK

Work for this project includes furnishing all labor, materials, equipment and performing all operations necessary to install Fire Protection Systems including piping, fittings, valves, hangers, detection and any other supplemental items necessary to complete the fire protection system.

Project Locations:

Fire Station #4, 1437 Monroe Street, Madison, WI 53711

01045 CUTTING AND PATCHING

Definition:

Cutting and patching shall refer to cutting into existing construction as required for installation and/or performance of work and patching of surfaces to restore them to their original condition.

EXECUTION

Prior to cutting, inspect surfaces and conditions beneath work to be cut for unsafe or otherwise unsatisfactory conditions and inform Architect of such conditions prior to proceeding with work.

Perform cutting and patching by methods, which will prevent damage to other portions of work and will provide proper surfaces to receive new work, installations and/or repair.

Do not cut and patch structural members or work in a manner, which will damage or weaken structural integrity. Obtain written approval from Architect prior to cutting and patching of structural members and work.

Work, which is exposed to view, shall be cut and patched in a manner, which does not noticeably reduce aesthetic and similar qualities as determined by Architect.

Cutting and patching shall be performed in a manner, which does not reduce life, decrease performance or increase maintenance of components and/or elements of work.

Architect's right to order removal and replacement of unsatisfactory cut and patchwork shall not be waived by approval to proceed with cut and patch work.

Materials for patching shall be identical to existing materials.

Provide temporary support of work as required.

01200 SPECIAL PROJECT REQUIREMENTS

All work must be performed during the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday.

No onsite vehicle parking is available for Contractor's use.

No permanently reserved on-site loading zone will be provided for Contractor's use. For loading and unloading, a vehicle-parking stall may occasionally be reserved for a short time duration (e.g. one day) if arranged in advance with the Fire Department Administrator.

Building and site will be occupied during construction. Contractors shall take particular care to avoid disturbance and disruption to the existing building structure and to the ongoing activities of the occupants.

01300 SUBMITTALS

Submit product data, drawings, manufacturer specifications, installation instructions, maintenance instructions and general recommendations for all items to be installed. Include data substantiating that materials comply with requirements.

Submit additional information, which may be required under separate sections of these specifications.

Contractor shall review all submittals and shop drawings for conformity with the contract documents and shall stamp and note their review and approval by initialing document prior to submitting.

01500 TEMPORARY FACILITIES

TEMPORARY CONSTRUCTION

Provide and maintain temporary floor and equipment supports, ramps, bridges, etc., as required to permit full and safe use of building during construction and remove such temporary work as soon as possible.

Provide and set temporary barriers, adjacent to work areas so as to clearly mark and isolate areas under construction, as required by Owner, and remove such barriers as soon as possible.

01600 MATERIAL AND EQUIPMENT

TRANSPORTATION AND PROTECTION

Deliver materials to job site and store in a safe area, out of the way of traffic and stored up off ground surface.

STORAGE AND PROTECTION

Protect materials before, during and after delivery to job site. Contractor shall be responsible for damage to construction materials prior to final acceptance of completed contract.

01710 CLEANING

RELATED WORK

Cleaning required for specific trade or work is specified in sections pertaining to that trade or work.

MATERIALS

Use only cleaning materials recommended and approved by manufacturer for surface to be cleaned.

Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

DURING CONSTRUCTION

At all times keep premises free from accumulations of waste materials or rubbish caused by work for this project. Miscellaneous waste and debris shall be removed from premises daily. Construction area shall be broom clean at the end of each work day.

Lower waste material in controlled manner. Do not drop or throw material from heights. Schedule cleaning operations and provide protection to prevent damage to finish surfaces.

Removed or unused materials and waste shall be taken outside work area and disposed of or stored, in places designated by Owner, immediately upon removal or demolition. Containers for waste disposal shall be supplied by Contractor. Use of existing dumpsters and on site dumping will not be permitted.

FINISH CLEANING

At project completion, clean visible soiling from work, remove temporary labels and leave work clean and ready for Owner use and occupancy.

At completion of contract work, thoroughly police project grounds and ensure that construction debris has been removed.

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FIRE PROTECTION SYSTEMS

15500C-1

SECTION 15500C - FIRE PROTECTION SYSTEMS

PART 1 -GENERAL

1.1 SCOPE OF WORK

This outline specification for fire protection work is a "Performance" specification and intended to be an expression of the design intent and criteria, and is not intended to be complete, encompassing or proprietary to any equipment or product. The Fire Protection Contractor shall prepare drawings in accordance with the basic design shown on the Contract Documents per NFPA 13.

Fire Protection Contractor shall be responsible for submittals to local and state agencies for approval of fire protection systems, along with any submittal fees.

Work includes furnishing of all labor, materials, equipment and performing all operations necessary to install Fire Protection Systems, including piping, fittings, valves, hangers, detection and any other supplemental items necessary to complete the fire protection system.

Work Included:

- Underground water service
- Automatic sprinkler system
- Soffits and ceiling alterations
- Cutting and patching.
- Connections to existing fire alarm systems.

1.2 QUALITY ASSURANCE:

Codes: The systems for this facility will meet all codes and standards set forth in the Wisconsin Administrative Codes, local codes, national codes and related, including but not limited to the following:

- Wisconsin Commercial Building Code
- Wisconsin Plumbing Code
- International Fire Code
- City of Madison General Ordinance
- NFPA 13
- NFPA 24
- NFPA 72

City of Madison Fire Department Requirements.

Prior to installation, complete working drawings and hydraulic calculations must be approved by the City of Madison Fire Department.

Hydraulic Calculations and Pipe Sizing: All Fire Protection piping distribution shall be hydraulically sized in accordance with NFPA 13, using approved calculation software and protection criteria as specified herein.

Design Criteria:

Occupancy/Protection Classifications: 1. Light Hazard Protection: general areas. 2. Ordinary Hazard Protection,

Group II: Apparatus rooms and mechanical rooms

Contractor shall obtain current flow test data from the City of Madison Water Department.

1.3 DESIGN CONCEPT

Automatic Sprinkler System: NFPA 13

Fire Department Connection: Recessed Siamese connection.

1. Areas NOT subject to freezing: Wet system
2. Hose towers and other areas subject to freezing: Antifreeze system

IDENTIFICATION

Valve tags: Identify each valve in system with valve tags in conformity with City of Madison Fire Department's requirements.

Charts: Furnish three charts, listing all valves, giving their location in building and their function in the system.

One chart with glass cover and neat frame; two charts, without frames.

CLEANING OF PIPING SYSTEMS AND EQUIPMENT

Remove excess cutting oil and all metal filings and debris before installing pipe.

At completion of the work, remove protective material from all equipment, all paint and plaster splattering, and clean entire piping systems under this section of work; all items shall be left clean and ready for use.

Remove all markings from pipe that will be exposed.

TESTS

The sprinkler system shall be subjected to hydrostatic pressure test at 200 pounds per square inch for minimum two-hour period. Contractor shall notify Construction Inspector and City Inspector at least 48 hours in advance to witness test and sign Contractor's test certificates.

Dry systems shall be subjected to an air pressure test at 40 pounds per square inch for minimum 24-hour period.

Contractor shall notify Construction Inspector and City Inspector at least 48 hours in advance to witness test.

SHOP DRAWINGS

Submit to owner six (6) copies for approval for:

Sprinklers heads;

Fire protection valves and related fittings;

Fire department connections;

Flow and tamper switches;

Related fire protection equipment;

Fire Protection System Installation and Layout Drawings;

Hydraulic Calculations.

OPERATING INSTRUCTIONS

Contractor shall furnish Owner with two (2) complete sets of printed instructions and/or data covering the proper operation and maintenance of all equipment furnished under these specifications. He shall **also** instruct Owner's representative *in operation of* all fire protection equipment:

CUTTING AND PATCHING

Perform all cutting and patching including necessary materials required, unless noted otherwise.

HOUSEKEEPING AND CLEANUP

Daily remove waste materials and leave areas of workroom clean.

FLOOR, WALL AND ROOF PENETRATIONS

Coordinate the location of openings, chases, furred spaces, etc., with the appropriate contractors. Provide all sleeves and inserts. Penetration through fire and smoke rated construction shall maintain the integrity of that construction.

EQUIPMENT ACCESS

Install all work to permit access to new and existing equipment for maintenance. Require access doors to be of a style applicable to the surrounding surface.

EQUIPMENT SUPPORTS

Provide all supporting steel not indicated on the Drawings as required for installation of equipment and materials, including angles, channels, beams, hangers, etc.

PART 2 – PRODUCTS

FIRE PROTECTION PIPING

Schedule 10 and 40 black and galvanized seamless steel pipe;

Welded, threaded or mechanical joint fittings.

Seamless copper tube, type K, L or M;

Soldered, threaded or mechanical joint fittings.

Fire and smoke rated schedule 40 CPVC plastic piping;

Solvent welded joints and fittings.

Concealed piping in ceiling spaces.

Painting Exposed Piping: Will be completed outside of this contract.

Ceiling Plenums: Designated ceiling plenums for return air shall use smoke and fire rated materials 28 listed for plenum applications

VALVES

All valves must be approved by UL listed or FM approved for fire protection.

Gate Valves: All gate and globe valves 2" and smaller shall be brass or bronze.

All valves 2-1/2" in size or larger shall be of the OS&Y flanged type, 175 psi working pressure.

HANGERS AND SLEEVES

Hangers: Provide all necessary approved hangers in place for supporting the sprinkler piping.

Sleeves: Pipe sleeves to be Schedule 40 steel pipe flush with wall and ceiling surfaces.

Seal all openings around sleeves with fiberglass and G.E. Silicone caulking.

SPRINKLER HEADS

Unfinished areas: Upright and pendant cast brass head, quick response.

Finished exposed areas: Sidewall and upright and pendant cast brass head, quick-response type.

Suspended ceilings areas: Pendant sprinklers shall be semi-recessed, adjustable 2-piece escutcheon plate, quick-response type.

White finish color on sprinkler head and escutcheon plate.

FIRE PROTECTION EQUIPMENT

Siamese fire department connection; recessed flush-mounted polished bronze with label.

Flow and pressure switches with auxiliary switch contacts for fire alarm monitoring.

Supervisor switches with auxiliary switch contacts for fire alarm monitoring.

Horn/strobe with weather proof back box; furnished, installed and wired by FPC .

Pressure gauges.

Sight drain.

Inspector's Test connection.

Double-check valve backflow preventer.

Additional heads, wrench and cabinet.

Auxiliary drains.

Related fittings, valves and related per NFPA 13

Air compressor (if required)

PART 3 - EXECUTIONS

3.1 EXECUTION

Fire Protection Contractor shall provide water service from city water main to the building as Specified herein.

Branch piping, tamper and flow switches shall be provided for each zone.

Provide final testing requirements per NFPA 13, NFPA 72 and local Fire Department's requirements.

Obtain approvals and inspection testing of backflow preventer for fire protection system.

Sprinkler pipe shall be installed above all lay-in ceilings.

Sprinkler pipe shall be installed above dry wall, plaster, or spline ceilings. Contractor shall remove the ceiling to accommodate installation of the sprinkler system.

Sprinkler pipe may be exposed in the Apparatus Bay, mechanical rooms, storage rooms, and closets.

Prior approval from Madison Fire Department is required for other areas before exposed sprinkler pipe may be installed.

3.2 IDENTIFICATION

Identify all piping, valves and related equipment as specified and required per NFPA 13 and required by the local fire marshal.

END OF SECTION



SECTION 15500C -FIRE PROTECTION SYSTEMS**PART 1 -GENERAL****1.1 SCOPE OF WORK**

- A. This outline specification for fire protection work is a "Performance" specification and intended to be an expression of the design intent and criteria, and is not intended to be complete, encompassing or proprietary to any equipment or product. The Fire Protection Contractor shall prepare drawings in accordance with the basic design shown on the Contract Documents per NFPA 13.
1. Fire Protection Contractor shall be responsible for submittals to local and state agencies for approval of fire protection systems, along with any submittal fees.
- B. Work includes furnishing of all labor, materials, equipment and performing all operations necessary to install Fire Protection Systems, including piping, fittings, valves, hangers, detection and any other supplemental items necessary to complete the fire protection system.
- C. Work Included:
1. Underground water service
 2. Automatic sprinkler system
 3. ~~Kitchen hood suppression systems (Alternate #1)~~
 4. Soffits and ceiling alterations
 5. Cutting and patching.
 6. Connections to existing fire alarm systems.

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1.2 QUALITY ASSURANCE:

- A. Codes: The systems for this facility will meet all codes and standards set forth in the Wisconsin Administrative Codes, local codes, national codes and related, including but not limited to the following:
1. Wisconsin Commercial Building Code
 2. Wisconsin Plumbing Code
 3. International Fire Code
 4. City of Madison General Ordinance
 5. NFPA 13
 6. ~~NFPA 17A-NFPA 24~~
 7. NFPA 72
 8. City of Madison Fire Department Requirements.
- B. Prior to installation, complete working drawings and hydraulic calculations must be approved by the City of Madison Fire Department.
- C. Hydraulic Calculations and Pipe Sizing: All Fire Protection piping distribution shall be hydraulically sized in accordance with NFPA 13, using approved calculation software and protection criteria as specified herein.
- D. Design Criteria:
1. Occupancy/Protection Classifications: 1. Light Hazard Protection: general areas. 2. Ordinary Hazard Protection, Group II: Apparatus rooms and mechanical rooms
 2. Contractor shall obtain current flow test data from the City of Madison Water Department.

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1.3 DESIGN CONCEPT

- A. Automatic Sprinkler System: NFPA 13
- B. Fire Department Connection: Recessed Siamese connection.
- C. 1. Areas NOT subject to freezing: Wet system
2. Hose towers and other areas subject to freezing: Antifreeze system

1.4 IDENTIFICATION

- A. Valve tags: Identify each valve in system with valve tags in conformity with City of Madison Fire Department's requirements.
- B. Charts: Furnish three charts, listing all valves, giving their location in building and their function in the system. One chart with glass cover and neat frame; two charts, without frames.

1.5 CLEANING OF PIPING SYSTEMS AND EQUIPMENT

- A. Remove excess cutting oil and all metal filings and debris before installing pipe.
- B. At completion of the work, remove protective material from all equipment, all paint and plaster splattering, and clean entire piping systems under this section of work; all items shall be left clean and ready for use.
- C. Remove all markings from pipe that will be exposed.

1.6 TESTS

- A. The sprinkler system shall be subjected to hydrostatic pressure test at 200 pounds per square inch for minimum two-hour period. Contractor shall notify Construction Inspector and City Inspector at least 48 hours in advance to witness test and sign Contractor's test certificates.
- B. Dry systems shall be subjected to an air pressure test at 40 pounds per square inch for minimum 24-hour period. Contractor shall notify Construction Inspector and City Inspector at least 48 hours in advance to witness test.

1.7 SHOP DRAWINGS

- A. Submit to owner six (6) copies for approval for:
 - 1. Sprinklers heads;
 - 2. Fire protection valves and related fittings;
 - 3. Fire department connections;
 - 4. Flow and tamper switches;
 - 5. Related fire protection equipment;
 - 6. Fire Protection System Installation and Layout Drawings;
 - 7. Hydraulic Calculations.

1.8 OPERATING INSTRUCTIONS

- A. Contractor shall furnish Owner with two (2) complete sets of printed instructions and/or data covering the proper operation and maintenance of all equipment furnished under these specifications. He shall also instruct Owner's representative *in operation* of all fire protection equipment:

1.9 CUTTING AND PATCHING

- A. Perform all cutting and patching including necessary materials required, unless noted otherwise.

1.10 HOUSEKEEPING AND CLEANUP

- A. Daily remove waste materials and leave areas of workroom clean.

1.11 FLOOR, WALL AND ROOF PENETRATIONS

- A. Coordinate the location of openings, chases, furred spaces, etc., with the appropriate contractors.

- B. Provide all sleeves and inserts. Penetration through fire and smoke rated construction shall maintain the integrity of that construction.

1.12 EQUIPMENT ACCESS

- A. Install all work to permit access to new and existing equipment for maintenance. Require access doors to be of a style applicable to the surrounding surface.

1.13 EQUIPMENT SUPPORTS

- A. Provide all supporting steel not indicated on the Drawings as required for installation of equipment and materials, including angles, channels, beams, hangers, etc.

PART 2 – PRODUCTS

2.1 FIRE PROTECTION PIPING

- A. Schedule 10 and 40 black and galvanized seamless steel pipe;
 - 1. Welded, threaded or mechanical joint fittings.
 - 2. Dry system shall be galvanized pipe. Grooved couplings installed on dry system shall have flush seal gaskets.
- B. Seamless copper tube, type K, L or M;
 - 1. Soldered, threaded or mechanical joint fittings.
- C. Fire and smoke rated schedule 40 CPVC plastic piping;
 - 1. Solvent welded joints and fittings.
 - 2. Concealed piping in ceiling spaces.
- D. Painting Exposed Piping: Will be completed outside of this contract.
- E. Ceiling Plenums: Designated ceiling plenums for return air shall use smoke and fire rated materials as listed for plenum applications.

2.2 VALVES

- A. All valves must be approved by UL listed or FM approved for fire protection.
- B. Gate Valves: All gate and globe valves 2" and smaller shall be brass or bronze.
- C. All valves 2-1/2" in size or larger shall be of the OS&Y flanged type, 175 psi working pressure.

2.3 HANGERS AND SLEEVES

- A. Hangers: Provide all necessary approved hangers in place for supporting the sprinkler piping.
- B. Sleeves: Pipe sleeves to be Schedule 40 steel pipe flush with wall and ceiling surfaces.
- C. Seal all openings around sleeves with fiberglass and G.E. Silicone caulking.

2.4 SPRINKLER HEADS

- A. Unfinished areas: Upright and pendant cast brass head, quick response.
- B. Finished exposed areas: Sidewall and upright and pendant cast brass head, quick-response type.
- C. Suspended ceilings areas: Pendant sprinklers shall be semi-recessed, adjustable 2-piece escutcheon plate, quick-response type.
 - 1. White finish color on sprinkler head and escutcheon plate.

2.5 FIRE PROTECTION EQUIPMENT

- A. Siamese fire department connection; recessed flush-mounted polished bronze with label.
- B. Flow and pressure switches with auxiliary switch contacts for fire alarm monitoring.

- C. Supervisor switches with auxiliary switch contacts for fire alarm monitoring.
- D. Horn/strobe with weather proof back box; furnished, installed and wired by FPC .
- E. Pressure gauges.
- F. Sight drain.
- G. Inspector's Test connection.
- H. Double-check valve backflow preventer.
- I. Additional heads, wrench and cabinet.
- J. Auxiliary drains.
- K. Related fittings, valves and related per NFPA 13
- L. Air compressor.

PART 3 - EXECUTIONS

3.1 EXECUTION

- A. Fire Protection Contractor shall provide water service from city water main to the building as Specified herein.
- B. Branch piping, tamper and flow switches shall be provided for each zone.
- C. Provide final testing requirements per NFPA 13, NFPA 72 and local Fire Department's requirements.
- D. Obtain approvals and inspection testing of backflow preventer for fire protection system.
- E. Sprinkler pipe shall be installed above all lay-in ceilings.
- F. Sprinkler pipe shall be installed above dry wall, plaster, or spline ceilings. Contractor shall remove the ceiling to accommodate installation of the sprinkler system.
 - a. Sprinkler pipe may be exposed in the Apparatus Bay, mechanical rooms, storage rooms, and closets. (Exception – where drop ceiling is present)
 - b. Prior approval from Madison Fire Department is required for other areas before exposed sprinkler pipe may be installed.

3.2 IDENTIFICATION

- A. Identify all piping, valves and related equipment as specified and required per NFPA 13 and required by the local fire marshal.

END OF SECTION