

Department of Administration / Division of Purchases  
One Capitol Hill, Providence, Rhode Island 02908-5855  
Web Site: [www.purchasing.ri.gov](http://www.purchasing.ri.gov)

**20 May 10**  
**Addendum # 2**

**RFP # 7325671**

**Title: ARRA- Design-Build of Fire Alarm Systems and Sprinkler Systems @ RI College  
(Horace Mann & Fogarty Life Science.**

**Submission Deadline: 27 May 10 @ 11:00 AM (Eastern Time)**

**This addendum contains:**

- **The RIC Campus Map**
- **2010 Fire Flow tests ( flow tests & map)**
- **Pre-bid meeting summary & attendance sheets**
- **Building & Utility plans are available for review at the RIC Physical Plant Offices.  
To schedule an appointment, contact Kevin Fitta @401 456-9885**
- **Vendor questions / State responses**
- **Whipple Hall Sprinkler layout.**
- **FM Global Special Section**

A handwritten signature in black ink, appearing to read 'Jerome D. Moynihan', is located below the list of items.

Jerome D. Moynihan, C P M , CPPO  
Administrator of Purchasing Systems





**P&P**  
CORPORATION

PROJECT	RIC Water Flow Tests	PROJECT NUMBER	09127.00
SUBJECT	Hydrant Flow Test 1		
COMPUTATIONS BY	M. Dowdell	DATE	12/18/2009
CHECK BY	BPE	DATE	12/30/2009

Purpose: Compute available fire flow at 20 psi residual pressure.

$$Q_R = Q_F \times \left( \frac{H_R}{H_F} \right)^{0.54} \div \left( \frac{H_F}{H_R} \right)^{0.54}$$

where:  $Q_R$  = Flow at a residual pressure of 20 psi (gpm)

$Q_F$  = Observed flow (gpm)

$H_R$  = Pressure drop between static pressure and 20 psi residual pressure

$H_F$  = Pressure drop between static pressure and observed residual pressure

Flow Hydrant

Residual Hydrant

Static Pressure	46 (psi)	Static Pressure	51 (psi)
Residual Pressure	26 (psi)	Residual Pressure	42 (psi)
Flow	860 (gpm)		

Flow calculated at 20 psi residual pressure using residual hydr. pressures (gpm):

**1677**



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PROJECT \_\_\_\_\_ RIG Water Flow Tests PROJECT NUMBER 09127.00  
 SUBJECT \_\_\_\_\_ Hydrant Flow Test 2  
 COMPUTATIONS BY M. Dowdell DATE 12/18/2009  
 CHECK BY BFE DATE 12/30/2009

Purpose: Compute available fire flow at 20 psi residual pressure.

$$Q_R = Q_F \times \left[ \frac{(H_R)^{0.54}}{(H_F)^{0.54}} \right]$$

where:  $Q_R$  = Flow at a residual pressure of 20 psi (gpm)

$Q_F$  = Observed flow (gpm)

$H_R$  = Pressure drop between static pressure and 20 psi residual pressure

$H_F$  = Pressure drop between static pressure and observed residual pressure

Flow Hydrant

Residual Hydrant

Static Pressure	52 (psi)	Static Pressure	46 (psi)
Residual Pressure	33 (psi)	Residual Pressure	40 (psi)
Flow	965 (gpm)		

Flow calculated at 20 psi residual pressure using residual hyd. pressures (gpm):

2130



**PARRE**  
CORPORATION

PROJECT	RIC Water Flow Tests	PROJECT NUMBER	09127.00
SUBJECT	Hydrant Flow Test 3		
COMPUTATIONS BY	M. Dowdell	DATE	12/18/2009
CHECK BY	BRE	DATE	12/30/2009

Purpose: Compute available fire flow at 20 psi residual pressure.

$$Q_R = Q_F \times \left( \frac{H_R}{H_F} \right)^{0.54} \div \left( \frac{H_F}{H_R} \right)^{0.54}$$

where:  $Q_R$  = Flow at a residual pressure of 20 psi (gpm)

$Q_F$  = Observed flow (gpm)

$H_R$  = Pressure drop between static pressure and 20 psi residual pressure

$H_F$  = Pressure drop between static pressure and observed residual pressure

Flow Hydrant

Residual Hydrant

Static Pressure	48 (psi)	Static Pressure	50 (psi)
Residual Pressure	27 (psi)	Residual Pressure	41 (psi)
Flow	875 (gpm)		

Flow calculated at 20 psi residual pressure using residual hydr. pressures (gpm):

**1676**



PAGE 1 OF 1

PROJECT \_\_\_\_\_ RIC Water Flow Tests \_\_\_\_\_ PROJECT NUMBER 09127.00  
 SUBJECT Hydrant Flow Test 4  
 COMPUTATIONS BY M. Dawdell DATE 12/18/2009  
 CHECK BY BPE DATE 12/30/2009

Purpose: Compute available fire flow at 20 psi residual pressure.

$$Q_R = Q_F \times \left[ \frac{(H_R)^{0.54}}{(H_F)^{0.54}} \right]$$

where:

$Q_R$  = Flow at a residual pressure of 20 psi (gpm)  
 $Q_F$  = Observed flow (gpm)  
 $H_R$  = Pressure drop between static pressure and 20 psi residual pressure  
 $H_F$  = Pressure drop between static pressure and observed residual pressure

<u>Flow Hydrant</u>		<u>Residual Hydrant</u>	
Static Pressure	40 (psi)	Static Pressure	35 (psi)
Residual Pressure	15 (psi)	Residual Pressure	30 (psi)
Flow	650 (gpm)		

Flow calculated at 20 psi residual pressure using residual hyd. pressures (gpm): 1176



**PARRIS**  
CORPORATION

PROJECT	RIC Water Flow Tests	PROJECT NUMBER	09127.00
SUBJECT	Hydrant Flow Test 5	DATE	12/18/2009
COMPUTATIONS BY	M. Dowdell	DATE	12/30/2009
CHECK BY	BFE		

Purpose: Compute available fire flow at 20 psi residual pressure.

$$Q_R = Q_F \times \left[ \frac{(H_R)^{0.54}}{(H_F)^{0.54}} \right]$$

where:  $Q_R$  = Flow at a residual pressure of 20 psi (gpm)

$Q_F$  = Observed flow (gpm)

$H_R$  = Pressure drop between static pressure and 20 psi residual pressure

$H_F$  = Pressure drop between static pressure and observed residual pressure

Flow Hydrant

Residual Hydrant

Static Pressure	35 (psi)	Static Pressure	39 (psi)
Residual Pressure	21 (psi)	Residual Pressure	36 (psi)
Flow	775 (gpm)		

Flow calculated at 20 psi residual pressure using residual hyd. pressures (gpm):

**2100**



PAGE 1 OF 1

PROJECT RIC Water Flow Tests PROJECT NUMBER 09127.00  
 SUBJECT Hydrant Flow Test 6  
 COMPUTATIONS BY M. Dowdell DATE 12/18/2009  
 CHECK BY BHE DATE 12/30/2009

Purpose: Compute available fire flow at 20 psi residual pressure.

$$Q_R = Q_F \times \left[ (H_R)^{0.54} + (H_F)^{0.54} \right]$$

where:  $Q_R$  = Flow at a residual pressure of 20 psi (gpm)

$Q_F$  = Observed flow (gpm)

$H_R$  = Pressure drop between static pressure and 20 psi residual pressure

$H_F$  = Pressure drop between static pressure and observed residual pressure

Flow Hydrant

Static Pressure 51 (psi)  
 Residual Pressure 8 (psi)  
 Flow 480 (gpm)

Residual Hydrant

Static Pressure 49 (psi)  
 Residual Pressure 18 (psi)

Flow calculated at 20 psi residual pressure using residual hyd. pressures (gpm): 463



# RHODE ISLAND COLLEGE



- 1 Information Services †
- 2 Offices
- 3 Financial Aid/Classrooms/Café
- 4 Bursar/Records †
- 5 Accounting/Payroll/Purchasing †
- 6 Education Management Collaborative
- 7 Sherlock Center on Disabilities
- 8 Outreach Programs †
- 9 School of Social Work †
- 10 Joseph F. Kauffman Center †
- 11 The Sylvan R. Forman Center †
- 12 Nina's House (Former State Home and School)
- 13 Recreation Center †
- 14 Cooperative Preschool
- 15 John Nazarian Center for the Performing Arts
- 16 Lucius A. Whipple Hall
- 17 Dennis J. Roberts Hall
- 18 Art Center
- 19 John Lincoln Alger Hall
- 20 Craig-Lee Hall †
- 21 John Clarke Science Building
- 22 John E. Fogarty Life Science Building
- 23 James P. Adams Library †
- 24 William C. Caille Hall †
- 25 The Murray Center (Health Physical Education Athletics)
- 26 Offices
- 27 Storage Building
- 28 Physical Plant Bldg (College Receiving)
- 29 Offices (RI Geography Alliance)
- 30 Offices
- 31 Offices (RITAP, RI Writing Project)
- 32 President's House
- 33 David E. Sweet Residence Hall
- 34 Rose Butler Browne Residence Hall
- 35 Charles B. Willard Residence Hall
- 36 Mary A. Weber Residence Hall
- 37 Mary Tucker Thorp Residence Hall
- 38 Horace Mann Hall
- 39 Student Union †
- 40 Fred J. Donovan Dining Center †
- 41 Faculty Center
- 42 Henry Barnard Laboratory School
- 43 New Residence Hall

Capital letters on map designate parking areas. Some of these may be restricted

- Designates handicap access
- ★ Blue Light Emergency Phones



### † Gender Neutral Restrooms

Single occupancy restrooms located throughout campus. heretofore assigned by gender but in practice often used irrespective of gender, have been designated as gender neutral. These converted units address concerns about gender imbalance and gender identity in the availability of restroom facilities. Each unit is ADA compliant and provides a private, family friendly facility for occasions when the gender of a parent differs from that of a child or for when a caregiver must tend to an individual in need of assistance.

I have 2 questions that pertain to all 5 of the RIC projects bids RFP 7325669, 7325671, 7325672, 7325673, 7325674

Question No. 1

I have a question pertaining to E-Verify for the RIC Projects.

We have registered with E-Verify and received our MOU with a Company ID Number on it, have a Vender Certification Form and are registered to use the E-Verify site. I am wondering, specifically, which document you will require to submit with the bid package to prove that our Company has registered with E-Verify?

**Answer:** A completed and signed RIVIP Bidder Certification form (3 pages) and a completed and signed W-9.

Question No. 2

On Bidders instructions it states that you will require 2 Envelopes for each of the RIC Bids: One Envelope for the Original and CD Rom and one envelope for the 3 Copies. Is this correct or can all originals, copies and CD Rom be submitted in the same envelope?

**Answer:** The original response and the CD can be included in a single package, with the multiple copies requested. Please indicate which proposal is the *original* and include the electronic file with that document.

**Summary of May 17, 2010 Pre-Bid Meeting**  
**Rhode Island College Fire Alarm System & Sprinkler System Design-Build Projects**  
**RFP #s 7325671, 7325672, 7325673, 7325674, & 7325699**

General

The pre-bid meeting was for the following five (5) design-build projects:

Fire Alarm Systems & Sprinkler Systems

- Horace Mann & Fogarty Life Science ( RFP #7325671)
- Adams Library ( RFP #7325672)
- Craig Lee Hall (RFP #7325673)

Fire Sprinkler Systems Only

- Gaige Hall & Clarke Science (RFP #7325674)

Fire Alarm Systems Only

- Whipple Hall, Forman Center, and Building 26 (RFP #7325699)

1. Attendees: Attached is a sign-in sheet from the pre-bid meeting.
2. Bids are due: May 27, 2010, 11 am
3. Submittals shall be per instructions of State Purchasing Website and RFPs
4. Design-bid projects - All design and construction in conformance with applicable codes and laws. Design must be approved by State Fire Marshall and FM Global (College's insurer).
5. Proposal – Qualifications, pricing, references, subcontractors, etc. per RFPs.
6. Award of projects shall be based on the criteria and scoring described in RFPs. In the case of Craig Lee Hall (RFP # 7325673) the project will be awarded to the fully qualified bidder submitting the lowest Total Bid (Base Bid plus Add Alternate One plus Add Alternate Three).
7. ARRA funded projects – Vendors should carefully review ARRA Supplemental conditions. Award of these projects is contingent on funding.
8. Schedule – Projects are to be completed within six (6) months from date of award exclusive of review times. In the case of Craig Lee Hall (RFP # 7325673), all work must be complete by February 28, 2011. Note that buildings are occupied and work will be required outside of

normal work hours. This means that work will be required on nights and weekends to complete the projects.

9. Fire Flow tests – 6 tests conducted in 2010. Will be available in addendum

### Questions & Answers

1. Can a contractor be awarded all contracts or just one? *There are five separate proposals and there will be five separate awards. It is possible that a contractor be awarded more than one contract. However, the vendor must be able to demonstrate that they have sufficient capacity to complete the projects within the specified project schedule*
2. Is RIC looking for separate price for fire alarm system on projects that include fire sprinklers? *Each project is a lump sum fee for both fire alarm systems and sprinkler systems. Fee shall be detailed per instructions in RFP*
3. Are there drawings available for the specified projects? *Yes, the drawings are currently provided in PDF format on the State of Rhode Island, Division of Purchasing website. These drawings have a scale bar and also show dimensional information. Adams Library PDF drawings were posted in Addendum #2. DWG drawings of the building floor plans will be provided to the vendors who are awarded the projects. DWG drawings for Craig Lee Hall will be issued as an addendum.*
4. Are AIA documents required to be submitted for payment request? *Yes, AIA documents are required per the RFP*
5. Is design-build insurance required? *No. Insurance requirements are stipulated in State of Rhode Island General Conditions of Purchase*
6. Is a bond required? *Yes. Bidder's security shall be in an amount equal to five percent (5%) of the amount of the bid.*
7. Are general contractors allowed to bid on this project? *Yes. However, as stated in the RFP no more than 50% of the work can be completed by sub-contractors (75% in the case of Craig Lee Hall)*
8. Can potential bidders come back and visit the project sites? *No. This pre-bid is the only opportunity to review the sites.*
9. Will you be posting the sign-in sheet on the State Purchasing Website? *Yes*
10. Is today's pre-bid meeting mandatory? *No.*
11. Will the vendor be required to furnish CAD drawings? *Yes, in addition a P.E. stamp will be required on all drawings per the RFPs.*

12. Is the contractor responsible for water main connections? *Yes, the contractor is responsible for the water main connections which are part of the design and build.*
13. Are any different types of systems for suppression going to be required in cases like the libraries or other storage areas? *No, wet sprinkler systems, or in some cases, dry systems will be installed. FM200 or similar systems will not be required.*
14. How is the piping to be supported under the mezzanine in the library? *In this case, the piping may be installed, exposed, but supported by the underside of the mezzanine in a fashion to which the code allows.*
15. Does the library have sprinkler systems? *The only sprinklers in the library are in the 4<sup>th</sup> floor mechanical room. The rest of the facility has stand pipes.*
16. Can the mezzanine in the library roof support the sprinkler pipe? *In this case, the piping may be installed, exposed, but supported by the under side of the mezzanine in a fashion to which the code allows*
17. Is the contractor responsible for covering the removed existing pull stations junction boxes? *Yes, the contractor shall install a baked on enamel plate over the junction boxes. Samples are to be provided prior to installation by the contractor.*
18. Is contractor liable for damages to plaster ceilings? *All areas damaged by construction shall be restored to a "like new" condition.*
19. Is above-ceiling protection required (all buildings)? *Protection to be provided per code Where above-ceiling protection is required Protectorwire shall be used.*
20. How should systems be installed? *All systems shall be installed per applicable code.*
21. Is sprinkler piping to be exposed or concealed (all buildings)? *All sprinkler piping is to be concealed unless otherwise noted RIC reserves the right to agree to exposed installation on a case-by-case basis in consideration of a contract deduct.*
22. Can any of the existing fire alarm be re-utilized(all buildings)? *No conduit materials and components can be re-utilized. The intent is to keep the existing fire alarm system in operation until the new system is commissioned.*
23. The Clark Science room (125) has an unconventionally contoured ceiling. Do the sprinkler pipes have to be concealed? *Yes, all of the sprinkler pipes must be concealed This applies to fire alarms also.*
24. Are the contractors liable for damages during construction? *The contractor is responsible for all repairs, clean up and disposal as per contract.*

25. Is the contractor required to attach supports to the ceiling or to the under decking? *All fastening is to be as per NFPA 13.*
- 26 The following questions were asked regarding Whipple Hall:
- Is there any detection above the ceiling? *No*
  - Is there duct detection? *Yes*
  - Where is there existing sprinkler coverage? *There is sprinkler coverage in front lobby, first floor ladies room, room #102, and room #101 only (see attached drawing)*
27. Where in the Forman Center shall the fire alarm panel be located? *The fire alarm panel will be located in the lobby and will replace the existing remote enunciator*
28. Specifically, where does the voice evacuation and above ceiling heat detection need to be installed? *Refer to answer to #30 for voice evacuation. Above the ceiling, coverage shall be monitored by Protector wire in all above ceiling spaces*
- 29 Can the sprinkler pipe be exposed in the Horace Mann building? *No, all pipes need to be concealed*
30. Where does the voice evacuation mandate apply? *Voice evacuation shall be installed in all locations where required by code as part of these contracts. Currently, there is voice evacuation in Gaige Auditorium RIC has preliminarily identified Clarke Science Room 125 as being the only other space in these projects that requires voice evacuation. However, it is the vendor's responsibility to confirm this and verify that no other locations require voice activation by code.*
- 31 Where are the code compliant elevators that have elevator recall? *Regardless of code compliant elevator recall, technology is to be brought into all areas specified in the R.I Uniform Fire Code There shall be elevator capture installed in all areas including elevator lobbies, machine rooms, and shafts. RIC shall be responsible for tying in the 3 relays in cases where capture is not available*
- 32 Questions relating to Building 26.
- Does it have a master box? *No*
  - Will it have a master box? *No*
  - Is there an above ceiling detection required throughout the building? *Yes, only on the second floor.*
  - Is there an attic? *No*

Rhode Island College  
Pre - Bid Meeting

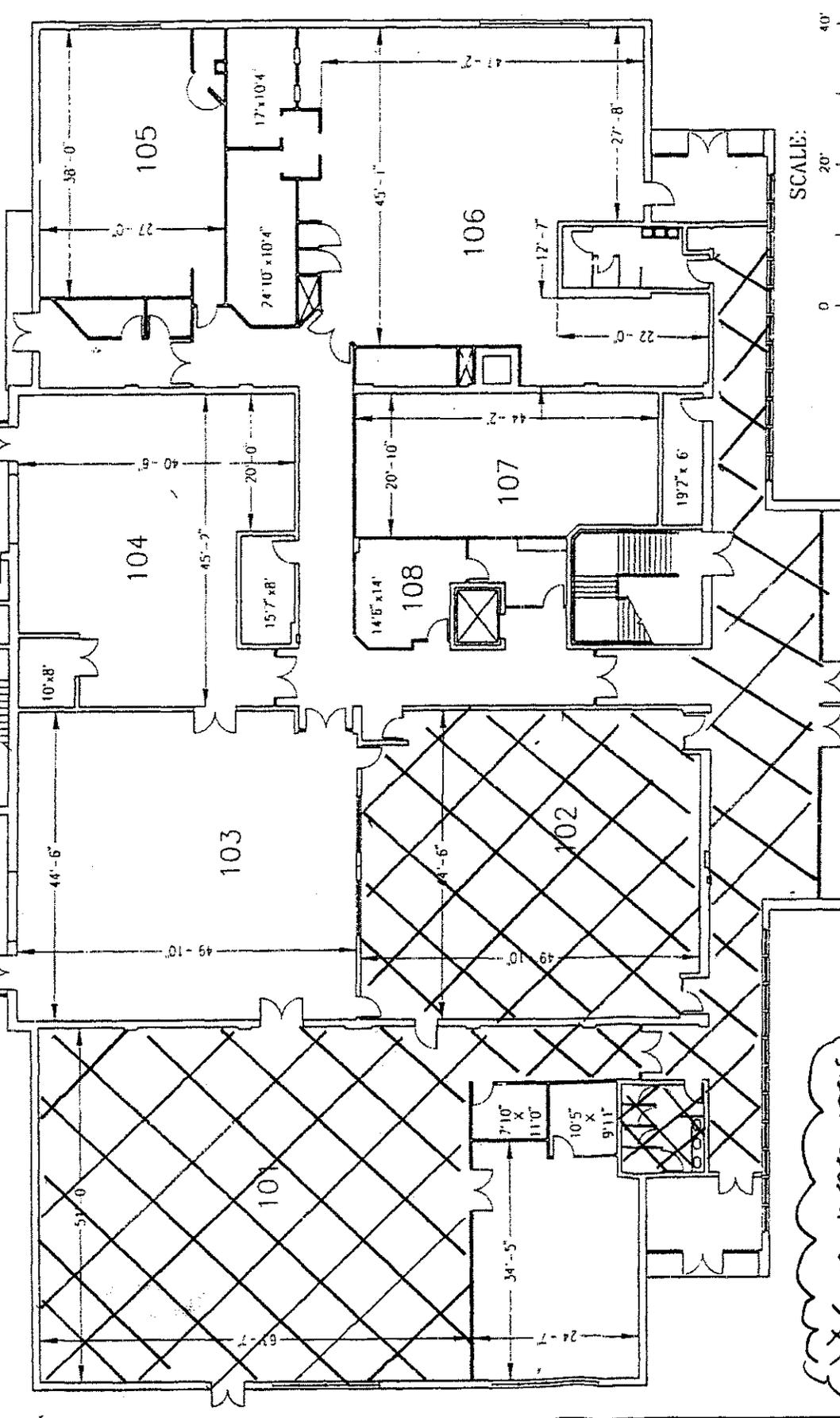
5/17/2010 9:00am

Fire Alarm and Fire Sprinkler Projects

Contractor	Representative	Phone No.	Fax
JC CAULFIELD	SUSAN HALL	607-926-0092	607-926-1099
ESSG	KEVIN MURPHY	401-365-1114	401-365-1131
ESSG	CHRIS JOHNSON	401-365-1114	401-365-1131
AERO MECH	STEVE GRAY	401-751-8880	401-751-7595
GASBELL ASSOC	JEFF WILKINSON	401-781-4200	401-781-1411
<del>ESSG</del> Gasbell Assoc	Bill Bruin	401-781-4800	401-781-1411
Gasbell Associates	Robert Bravo	401-781-4000	401-781-1411
National Security	Roy Larsson	401-938-8880	401-938-3510
Steve Lyndon	Steve Lyndon	401-461-2770	401-461-2770
CONTRACTOR NETWORK INC	FRANK A. ROCHFORD	508-336-2825	508-336-2826
PLUMBING ENVIRONMENT	BILL SKWIRZ	401-438-7733	401-438-7630
DAN DAILEY ESSG	DAN DAILEY	401-641-8976	401-365-1131
Dave Thompson	Aurora Fire	860-246-7711	860-246-1254
Tosel Construction Corp	SARAJEVOSSA	943-0110	944-4041
<del>ESSG</del>			
Reactive Construction Corp.	ANGEL VERA	401-438-7733	401-438-7626
Shind Electronics	Terry Kelly	401-439-8745	401-431-9111
Emerging Fire Systems	Scott Colver	401-410-0352	401-891-8366
WORDENS BAND EXCAVATING	KEVIN SWART	401-218-7784	401-789-2417
Engineering Design Services	John Gibbons	(401) 765-7659	(401) 765-2934
Off of Administration	J.P. BOLT	202-5801	



101 RHODE ISLAND COLLEGE Whipple Hall



SCALE: 0 20' 40'  
(IN FEET)

J. Vickers, Plant Engineer

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SPRINKLED AREAS

PLAN: FIRST FLOOR

## SECTION 01431C FM GLOBAL CRITERIA

### PART 1 - GENERAL

- 1.01 Rhode Island College properties are insured with FM Global. All facilities projects and other work at Rhode Island College shall comply with FM Global specifications and recommendations where applicable. All materials, specifications, methodologies, and design criteria shall comply with applicable FM Global Loss Prevention Data Sheets.
- 1.02 Facilities work and projects at Rhode Island College fall into one of the following three categories:
- A) Work with no impact on building elements of concern to FM Global. Where FM Global Loss Prevention Data Sheets do not apply to the scope of work, no compliance effort is required.
  - B) Work requiring FM Global review for use of approved products, assemblies, and methods. Review packages for FM Global are required. Completed work shall comply with FM Global specifications.
  - C) Significant renovations and new construction projects that receive complete FM Global plans and specifications review, and require project coordination with and field acceptance by FM Global. Close coordination with FM Global is required to ensure compliance with FM Global specifications.
- 1.03 FM Global Plan Review has summarized their services as excerpted below:

Plan Review services are offered by FM Global to help incorporate loss prevention features into the initial planning stages of a project. Submittals of plans shall be addressed to

FM Global  
Boston Operations  
Attn: Plan Review  
500 River Ridge Drive  
Norwood, MA 02062

Each transmittal shall clearly identify the account name ("Rhode Island College"), location with address (Project location and address), and contact name and phone number (Project Manager) in case questions arise during the review

For all projects the following plans should be submitted:

#### **CONSTRUCTION:**

- 1 Site Plans - These should include finished floor elevations, finished grading elevations and details on additions and modifications to the yard mains, control valves and fire hydrants.
2. Construction Drawings- Architectural and structural drawings should be submitted. Along with the basic construction details, these should include finished roof elevations of both new and any adjacent, existing buildings. For "pre-

engineered” metal buildings, complete construction drawings and roof load calculations are required for a thorough review.

**ROOFS:**

1. **Structural Prints** - These should include information such as drawings of the roof installation, flashing installation, and roof design load (both live and dead load)
2. **Roof Drainage System** - Drawings should show drain sizes, locations with respect to building columns, and the number of drains to be installed. Roof drainage calculations should be submitted proving that the design drainage is adequate for the anticipated rainfall intensity.
3. **Snow Loading Calculations** - When applicable, these should be submitted to ensure that the average snow load due to an unbalanced snow load does not exceed the design live load of the roof.
4. **Wind Uplift Rating** - The uplift rating of the roofing system should be specified to ensure that it is properly designed to withstand the anticipated uplift pressures.
5. **Specific Roof Flashing Details**
6. **Roof Specifications, including:**
  - o Materials (Manufacturers, model and size for insulation boards, vapor barriers, adhesives, membranes and any other component of the system.)
  - o Roofing System specifications, if approved as a system.
  - o Fastening specifications, including the manufacturer’s name, model, and the proposed fastening density

**Re-roofing Projects**

All of the above information is also applicable to re-roofing projects. Information such as design load, snow loading, etc. is not only critical if the new roofing system will encroach on the design live load of the roof (i.e., if an existing mechanically fastened single-ply membrane is to be replaced with a ballasted single-ply membrane.)

FM can be contacted to obtain information regarding the anticipated wind uplift pressures, rainfall and snowfall intensities for a specific project

**AUTOMATIC SPRINKLER PROTECTION:**

The following are needed to conduct a thorough review of plans for automatic sprinkler systems:

- A) Prints of the proposed automatic sprinkler system
- B) Occupancy layout and commodity description
- C) Hydraulic Calculations
- D) Specifications for the materials that are to be used.
  - Sprinkler heads
  - Sprinkler pipe
  - All valves
  - Any peripheral equipment including tamper alarms, waterflow alarms, etc.
  - Occupancy Details - In order to review submitted plans to ensure adequate protection, accurate occupancy details must be provided. These include, but are

not limited to, materials being stored, storage height, storage arrangement, processes present, etc.

- E) The Contractor's Materials and Test Certificate Form No. 85 should be completed by the installing contractor for all installations and submitted to FM.

### **Fire Pump/Booster Pump Installations**

#### **For all Pump Installations:**

1. Prints of the fire pump/booster pump installation
2. Manufacturer's Cut Sheets for the fire pump, driver, controller, etc.
3. Manufacturer's Specifications for all materials and peripherals
4. Manufacturer's Certified Bench Curve for the pump.
5. Pump House Design & Layout information including:
  - Location
  - Construction

#### **For all Electric Pump Installations:**

1. Single Line Diagram showing the electric feed arrangement to the pump.

### **ALARM SYSTEMS**

FM reviews plans for fire alarm system installations to ensure that the system provides the required level of detection in the area of installation and that all equipment is FM approved either as a system or on a component basis. The following information is necessary in order to review alarm system plans:

1. **Manufacturer's Information** including name and model number(s):
  - For the entire system, if applicable
  - For all system components and options, if applicable.
2. **Manufacturer's Specifications** for all equipment.
3. **Prints showing:**
  - System component layout
  - Control panel wiring
  - Battery backup, if required

### **FUEL-FIRED EQUIPMENT**

FM reviews plans for fuel-fired equipment installations to ensure that all necessary controls and safeguards are included in the installation, all equipment used is FM approved, and that all safeguards are configured and wired for proper sequence of operation. The following information is needed to conduct a thorough review of plans involving fuel-fired equipment installations:

1. Fuel Train Piping Diagram
2. Electrical Ladder Diagram or Controller Program Logic
3. Equipment and Materials List, including manufacturers name and model number for all equipment
4. Safety Ventilation Calculations for ovens
  - Direct fired ovens
  - Ovens processing materials containing flammable solvents.
5. Satisfactory completion and submittal of the Manufacturer's Application for Acceptance of Oven/Furnace Installations Form No 69 or the Installer's

Application for Acceptance - Automatic Lighted Boiler Safety Combustion Control System Form No 82, which is used for boiler installations. (See Appendix B for examples of the Applications for Acceptance for Oven/Furnace Installations and Boiler Installations).

END OF SECTION