

**Date:** August 12, 2009

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**To:** ALL BIDDERS

**PGAL Job #:** R0508003.00

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## ARCHITECT'S ADDENDUM 03

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To the Contract Documents for:

**COLLIN COUNTY COURTHOUSE ADDITION  
2100 BLOOMDALE ROAD  
MCKINNEY, TEXAS 75071**

This ADDENDUM is herewith made a part of the Contract Documents dated June 4, 2009, of the above-mentioned project. Except as may be otherwise described, labor and material for the Work hereinafter specified shall conform to all requirements of the Contract Documents.

The Contractor on this project shall read all of the items covered below and shall comply with all of the requirements as set forth, including any necessary refinements or additions generated by the Addendum and required by the intent of the original Contract Documents. The Work is to be carried out in accordance with the following Addendum items issued in accordance with the Contract Documents. The Contractor shall acknowledge receipt of this Addendum in his bid.

This ADDENDUM supersedes and/or supplements all portions of the documents with which it conflicts.

This ADDENDUM supplements and/or amends the original documents as follows:

### DRAWING ATTACHMENTS:

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<b>Sheet #</b>	<b>Title</b>
G0.00	COVER SHEET
G0.01	SHEET INDEX
D2.10	DEMOLITION FLOOR PLAN LEVEL 1
A9.00	MISCELLANEOUS DETAILS
P2.16	PLUMBING DEMOLITION FLOOR PLAN LOWER LEVEL SECTION D

### SPECIFICATION ATTACHMENTS:

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<b>Section #</b>	<b>Title</b>
	Table of Contents – 7 pages
07812	CEMENTITIOUS SPRAYED FIRE-RESISTIVE MATERIALS

## MODIFICATIONS TO DRAWINGS:

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### Addendum #1

#### Sheet #-Item #

- A0.30 02004E (**door type L**),  
02004F (**door type L**),  
02082A (**no glass**),  
02154A (**no glass**),  
02168C (**no glass**),  
02174A (**door type C**),  
02176A (**door type C**),  
02180A (**door type L**),  
02475A (**door type L**),  
02542A (**no glass**),  
02546C (**no glass BUT HAS F2.1 FRAME W/ GL-4**),  
12010B (**door type L**),  
12010D (**door type L**),  
12010E (**door type L**),  
12010G (**door type L**),  
12139A (**no glass**),  
12366A (**no glass**),  
12382A (**no glass**)  
12394A (**door type C**).  
02082A (**frame F2 W/ GL-6**),  
02154A (**frame F2 W/ GL-6**),  
02174A (**frame F2 W/ GL-6**),  
02176A (**frame F2 W/ GL-6**),  
02484A (**frame F2 W/ GL-9**) &  
20004E (**NO FRAME TYPE REFER TO DOOR TYPE**).
- D2.10 Dimensions given for slab cut on existing slab to accommodate new electrical, data and plumbing as scheduled.
- A9.00 Added detail 5/A9.00 to coordinate with slab cut out.
- P2.16 Modifications to slab condition to remove concrete slab in area "D" for power, data and plumbing under slab. Please note: As-built condition has an underfloor drainage system that is to be retained. Select demolition in this area to the slab should not impact the underfloor drainage system. Repair system as necessary.

## MODIFICATIONS TO SPECIFICATIONS:

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### Addendum #1

#### Section-description

- 05530 In addition to Handrail Design Inc. product listed as an acceptable manufacturer, add section 05530/2.01/B/2 to read:  
2. Stainless Steel Systems, Efficient-Tec International LLC.
- 08630 In addition to CPI Daylighting, Inc. as an approved manufacturer, add the following text to section 08630/2.01:  
B. Additional approved manufacturers  
1. Imperial Glass Structures Company.  
2. United Skys, Inc.  
3. Super Sky Products, Inc.

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End of Addendum #3

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ISSUED:

By:   
PGAL Architect of Record

8.12.09  
Date

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## SECTION 07812

### CEMENTITIOUS SPRAYED FIRE-RESISTIVE MATERIALS

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Concealed sprayed fire-resistive materials.

##### 1.03 DEFINITIONS

- A. Concealed sprayed fire-resistive material is applied to surfaces that are concealed from view behind other construction when the Work is completed.

##### 1.04 SUBMITTALS

- A. Product Data: For each fire-resistive product specified.
- B. Shop Drawings: Structural framing plans indicating the following:
  - 1. Locations and types of surface preparations required before applying sprayed fire-resistive material.
  - 2. Extent of sprayed fire-resistive material for each construction and fire-resistance rating, including the following:
    - a. Applicable fire-resistive design designations of a qualified testing and inspecting agency acceptable to authorities having jurisdiction.
    - b. Minimum thicknesses needed to achieve required fire-resistance ratings of structural components and assemblies.
    - c. Designation of restrained and unrestrained conditions based on definitions in ASTM E 119, Appendix X3 as determined by a qualified professional engineer.
- C. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Compatibility and Adhesion Test Reports: For primers and other coatings applied to structural steel. Provide reports from a qualified independent testing and inspecting agency engaged by Contractor. Confirm that primers and coatings proposed for application in shop or field are compatible with fire-resistive material. Instruct laboratory to determine compatibility according to requirements specified in "Quality Assurance" Article.

##### 1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer certified, licensed, or otherwise qualified by sprayed fire-resistive material manufacturer as having the necessary experience, staff, and training to install manufacturer's products according to specified requirements. A manufacturer's willingness to sell its sprayed fire-resistive materials to Contractor or to an installer engaged by Contractor does not in itself confer qualification on the buyer.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of sprayed fire-resistive materials that are similar to those indicated for this Project in material, design, and extent.

- C. Testing Agency Qualifications: An independent testing and inspecting agency with the experience and capability to conduct the testing indicated without delaying the Work, as documented according to ASTM E 699.
  - D. Testing of Fire-Resistive Materials: By a qualified testing and inspecting agency engaged by Contractor or manufacturer according to the following requirements:
    - 1. Sprayed fire-resistive materials are randomly selected for testing from bags bearing the applicable classification marking of UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
    - 2. Testing is performed on specimens of sprayed fire-resistive materials that comply with laboratory testing requirements specified in Part 2 and are otherwise identical to installed fire-resistive materials, including application of accelerant, sealers, topcoats, tamping, troweling, rolling, and water overspray, if any of these are used in final application.
    - 3. Testing is performed on specimens whose application the independent testing and inspecting agency witnessed during preparation and conditioning. Include in test reports a full description of preparation and conditioning of laboratory test specimens.
  - E. Testing for Compatibility and Adhesion: Engage a qualified testing and inspecting agency to prepare compatibility and adhesion test reports required in "Submittals" Article based on testing that complies with the following requirements:
    - 1. Testing for bond per ASTM E 736 and requirements specified in UL's "Fire Resistance Directory" about coating materials.
    - 2. Verify that manufacturer of fire-resistive material has not found primers or coatings to be incompatible with fire-resistive material based on its own laboratory testing or field experience.
  - F. Source Limitations: Obtain each type of sprayed fire-resistive material from one source and by a single manufacturer.
  - G. Fire-Test-Response Characteristics: Provide sprayed fire-resistive materials and assemblies identical to those tested for the following fire-test-response characteristics per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify packages (bags) containing sprayed fire-resistive material with appropriate markings of applicable testing and inspecting agency.
    - 1. Fire-Resistance Ratings: As indicated by reference to fire-resistive designs listed in UL's "Fire Resistance Directory," or in the comparable publication of another testing and inspecting agency acceptable to authorities having jurisdiction, for sprayed fire-resistive material serving as direct-applied protection, tested per ASTM E 119.
    - 2. Surface-Burning Characteristics: As indicated for each sprayed fire-resistive product required, tested per ASTM E 84.
  - H. Provide products containing no detectable asbestos as determined according to the method specified in 40 CFR, Part 763, Subpart E, Appendix E, Section 1, "Polarized Light Microscopy."
- 1.06 DELIVERY, STORAGE, AND HANDLING
- A. Deliver products to Project site in original, unopened packages with intact and legible manufacturers' labels identifying product and manufacturer; date of manufacture; shelf life, if applicable; and fire-resistance ratings applicable to Project.
  - B. Use materials with limited shelf life within period indicated. Remove from Project site and discard materials whose shelf life has expired.
  - C. Store materials inside, under cover, aboveground, so they are kept dry until ready for use. Remove from Project site and discard materials that have deteriorated.
- 1.07 PROJECT CONDITIONS
- A. Environmental Limitations: Do not apply sprayed fire-resistive material when ambient or substrate temperatures are 40 deg F(4 deg C) or lower, unless temporary protection and heat is provided to maintain temperatures at or above this level for 24 hours before, during, and for 24 hours after product application.
  - B. Ventilation: Ventilate building spaces during and after application of sprayed fire-resistive material. Use natural means or, where this is inadequate, forced-air circulation until fire-resistive material dries thoroughly.

## 1.08 SEQUENCING

- A. Sequence and coordinate application of sprayed fire-resistive materials with other related work specified in other Sections to comply with the following requirements:
1. Provide temporary enclosures for interior applications to prevent deterioration of fire-resistive material due to exposure to unfavorable environmental conditions.
  2. Avoid unnecessary exposure of fire-resistive material to abrasion and other damage likely to occur during construction operations subsequent to its application.
  3. Do not apply fire-resistive material to metal roof deck substrates until roofing has been completed; prohibit roof traffic during application and drying of fire-resistive material.
  4. Do not begin applying fire-resistive material until clips, hangers, supports, sleeves, and other items penetrating fire protection are in place.
  5. Defer installing ducts, piping, and other items that would interfere with applying fire-resistive material until application of fire protection is completed.
  6. Do not install enclosing or concealing construction until after fire-resistive material has been applied, inspected, tested, and corrections have been made to defective applications.

## 1.09 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty, executed by Contractor and cosigned by Installer, agreeing to repair or replace sprayed fire-resistive materials that fail within the specified warranty period.
1. Failures include, but are not limited to, cracking, flaking, eroding in excess of specified requirements; peeling; and delaminating of sprayed fire-resistive materials from substrates due to defective materials and workmanship within the specified warranty period.
  2. Not covered under the warranty are failures due to damage by occupants and Owner's maintenance personnel, exposure to environmental conditions other than those investigated and approved during fire-response testing, and other causes not reasonably foreseeable under conditions of normal use.
- C. Warranty Period: 2 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.01 CONCEALED SPRAYED FIRE-RESISTIVE MATERIALS

- A. General: For concealed applications of sprayed fire-resistive materials, provide manufacturer's standard products complying with requirements indicated in this Article for material composition and physical properties representative of installed products.
- B. Material Composition: Cementitious sprayed fire-resistive material consisting of factory-mixed, dry formulation of gypsum or portland cement binders and lightweight mineral or synthetic aggregates mixed with water at Project site to form a slurry or mortar for conveyance and application.
- C. Physical Properties: Minimum values, unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, measured per standard test methods referenced with each property listed as follows:
1. Dry Density: 15 lb/cu. ft. (240 kg/cu. m) for average and individual densities regardless of density indicated in referenced fire-resistive design, or greater if required to attain fire-resistance ratings indicated, per ASTM E 605 or AWCI Technical Manual 12-A, Appendix A, "Alternate Method for Density Determination."

2. Thickness: Provide minimum average thickness required for fire-resistive design indicated according to the following criteria, but not less than **0.375 inch(9 mm)**, per ASTM E 605.
    - a. Where the referenced fire-resistive design lists a thickness of **1 inch(25 mm)** or greater, the minimum allowable individual thickness of sprayed fire-resistive material is the design thickness minus **0.25 inch(6 mm)**.
    - b. Where the referenced fire-resistive design lists a thickness of less than **1 inch(25 mm)** but more than **0.375 inch(9 mm)**, the minimum allowable individual thickness of sprayed fire-resistive material is the greater of **0.375 inch(9 mm)** or 75 percent of the design thickness.
    - c. No reduction in average thickness is permitted for those fire-resistive designs whose fire-resistance ratings were established at densities of less than **15 lb/cu. ft.(240 kg/cu. m)**.
  3. Bond Strength: **150 lbf/sq. ft.(7.2 kPa)** per ASTM E 736 under the following conditions:
    - a. Field test sprayed fire-resistive material that is applied to flanges of wide-flange structural-steel members on surfaces matching those that will exist for remainder of steel receiving fire-resistive material.
    - b. If surfaces of structural steel receiving sprayed fire-resistive material are primed or otherwise painted, perform series of bond tests specified in UL's "Fire Resistance Directory" for coating materials.
    - c. Minimum thickness of sprayed fire-resistive material tested in laboratory shall be **0.75 inch(19 mm)**.
  4. Compressive Strength: **5.21 lbf/sq. in.(35.9 kPa)** as determined in the laboratory per ASTM E 761. Minimum thickness of sprayed fire-resistive material tested shall be **0.75 inch(19 mm)** and minimum dry density shall be as specified, but not less than **15 lb/cu. ft.(240 kg/cu. m)**.
  5. Corrosion Resistance: No evidence of corrosion per ASTM E 937.
  6. Deflection: No cracking, spalling, delamination, or the like per ASTM E 759.
  7. Effect of Impact on Bonding: No cracking, spalling, delamination, or the like per ASTM E 760.
  8. Air Erosion: Maximum weight loss of **0.025 g/sq. ft.(0.27 g/sq. m)** in 24 hours per ASTM E 859. For laboratory tests, minimum thickness of sprayed fire-resistive material is **0.75 inch(19 mm)**, maximum dry density is **15 lb/cu. ft.(240 kg/cu. m)**, test specimens are not prepurged by mechanically induced air velocities, and tests are terminated after 24 hours.
- D. Fire-Test-Response Characteristics: Provide sprayed fire-resistive materials with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
1. Flame Spread: 10 or less.
  2. Smoke Developed: 0.
  3. Fungal Resistance: No observed growth on specimens per ASTM G 21.
- E. Products: Subject to compliance with requirements, provide products by one of the following:
1. Monokote MK-6/HY by W.R. Grace & Company.
- 2.02 AUXILIARY FIRE-RESISTIVE MATERIALS
- A. General: Provide auxiliary fire-resistive materials that are compatible with sprayed fire-resistive materials and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistive designs indicated.
- B. Substrate Primers: For use on each substrate and with each sprayed fire-resistive product, provide primer that complies with one or more of the following requirements:
1. Primer's bond strength complies with requirements specified in UL's "Fire Resistance Directory" for coating materials based on a series of bond tests per ASTM E 736.
  2. Primer is identical to those used in assemblies tested for fire-test-response characteristics of sprayed fire-resistive material per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

- C. Adhesive for Bonding Fire-Resistive Material: Product approved by manufacturer of sprayed fire-resistive material.
- D. Metal Lath: Expanded metal lath fabricated from material of weight, configuration, and finish required to comply with fire-resistive designs indicated and fire-resistive product manufacturer's written recommendations. Include clips, lathing accessories, corner beads, and other anchorage devices required to attach lath to substrates and to receive sprayed fire-resistive material.

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine substrates, with Installer present, to determine whether they are in satisfactory condition to receive sprayed fire-resistive material. A substrate is in satisfactory condition if it complies with the following:
  - 1. Substrates comply with requirements in the Section where the substrate and related materials and construction are specified.
  - 2. Substrates are free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt, or other foreign substances capable of impairing bond of fire-resistive material with substrate under conditions of normal use or fire exposure.
  - 3. Objects penetrating fire-resistive material, including clips, hangers, support sleeves, and similar items, are securely attached to substrates.
  - 4. Substrates are not obstructed by ducts, piping, equipment, and other suspended construction that will interfere with applying fire-resistive material.
- B. Conduct tests according to fire-resistive material manufacturer's written recommendations to verify that substrates are free of oil, rolling compounds, and other substances capable of interfering with bond.
- C. Do not proceed with installation of fire-resistive material until unsatisfactory conditions have been corrected.

#### **3.02 PREPARATION**

- A. Clean substrates of substances that could impair bond of fire-resistive material, including oil, grease, rolling compounds, incompatible primers, and loose mill scale.
- B. Prime substrates where recommended in writing by fire-resistive material manufacturer, unless compatible shop primer has been applied and is in satisfactory condition to receive fire-resistive material.
- C. Cover other work subject to damage from fallout or overspray of fire-resistive materials during application. Provide temporary enclosure as required to confine spraying operations, protect the environment, and ensure maintenance of adequate ambient conditions for temperature and ventilation.

#### **3.03 INSTALLATION, GENERAL**

- A. Comply with fire-resistive material manufacturer's written instructions for mixing materials, application procedures, and types of equipment used to convey and spray on fire-resistive material, as applicable to particular conditions of installation and as required to achieve fire-resistance ratings indicated.
- B. Install metal lath, as required, to comply with fire-resistance ratings and fire-resistive material manufacturer's written recommendations for conditions of exposure and intended use. Securely attach lath to substrate in position required for support and reinforcement of fire-resistive material. Use anchorage devices of type recommended in writing by fire-resistive material manufacturer. Attach lathing accessories where indicated or required for secure attachment to substrate.
- C. Coat substrates with adhesive before applying fire-resistive material where required to achieve fire-resistance rating or as recommended in writing by fire-resistive material manufacturer for material and application indicated.

- D. Extend fire-resistive material in full thickness over entire area of each substrate to be protected. Unless otherwise recommended in writing by fire-resistive material manufacturer, install body of fire-resistive covering in a single course.
- E. Spray apply fire-resistive materials to maximum extent possible. Following the spraying operation in each area, complete the coverage by trowel application or other placement method recommended in writing by manufacturer.

3.04 INSTALLING CONCEALED SPRAYED FIRE-RESISTIVE MATERIALS

- A. Apply concealed fire-resistive material in thicknesses and densities indicated, but not less than those required to achieve fire-resistance ratings designated for each condition, and comply with requirements for thickness specified in Part 2 "Concealed Sprayed Fire-Resistive Materials" Article.

3.05 CLEANING, PROTECTING, AND REPAIR

- A. Cleaning: Immediately after completing spraying operations in each containable area of Project, remove material overspray and fallout from surfaces of other construction and clean exposed surfaces to remove evidence of soiling.
- B. Protect fire-resistive material, according to advice of product manufacturer and Installer, from damage resulting from construction operations or other causes so fire protection will be without damage or deterioration at the time of Substantial Completion.
- C. Coordinate application of fire-resistive material with other construction to minimize the need to cut or remove fire protection. As installation of other construction proceeds, inspect fire-resistive material and patch any damaged or removed areas.
- D. Repair or replace work that has not been successfully protected.

**END OF SECTION 07812**