

University of South Carolina
USC Columbia Coker Life Science Floors
Project Number: BC00272052
Project Manager: Dwight Cathcart

Addendum Number One (1)

DATE: July 1, 2014

FROM: Aimee B. Rish, Procurement Specialist

TO: All Bidders

The following items add to, modify, clarify, or otherwise alter the Drawings and/or specifications and will become a part of the Contract Documents. Where a portion of the Drawings and/or specifications is added to, modified, clarified, or otherwise altered, the portion not so affected shall remain. Bidder shall include all effects that these items may have on his proposal.

Pre-Bid Meeting

1. The attendance sign in sheets from the non-mandatory pre bid meetings are attached. One was held at 743 Greene Street, Columbia SC on June 30, 2014 at 10AM. Sign in sheet attached.

General

1. The following pre-approved manufacturer is a substitution allowed for bidding purposes:
 - a. Phoenix Epoxy One-Step Seamless Flooring System – 09670 Fluid Applied Resilient (Resinous) Flooring. Product specifications are attached. Point of contact is Mr. John Upchurch, at 803-528-3454 or johnu@tilerestorationinc.com.
www.tilerestorationinc.com.
2. The two (2) fume hoods currently located in lab #1 room 709, and lab #2 room 710 are to remain. The epoxy flooring system to be provided is to go around these two hoods.
3. No base is to be provided within this scope.
4. 208volt power is available in each lab. Owner will provide receptacle connection for use.
5. Contractor will have FULL access to the site, to include parking, elevator access directly up to the 7th floor, water, entry ways and power.
6. Lighting is installed for use.
7. Mechanical system will be operational for install.
8. Contractor must be ready to install immediately upon issuance of a PO, which can be 72 hours after bid closing. Contractor must complete scope in the ten consecutive business days specified in the contract documents.

9. No restrictions on work days or times.
10. Work area is completely clear with only the walls and two fume hoods in place. Contractor to install the epoxy flooring system in the entire area identified. Do not install flooring system around laboratory equipment, lab benches, millwork, or case work except for the two fume hoods previously identified.

Clarification

1. The finished schedule shown on drawing A8.0 calls for PNT now Epoxy in lab rm 717. Lab room 717 is not part of this project.
2. Drawing A2.7 attached calls out the two (2) locations of the fume hoods already in place. The area identified in red is the area to receive new epoxy floor system as part of this contract.
3. No Change to Bid Closing
4. Deadline for questions is Wednesday, July 2nd at 12:00PM via email to dcathcar@fmc.sc.edu.

Change

1. Bidders are not required to submit the product specifications with their bid. OWNER will allow time to turn in required submittals.

END OF ADDENDUM Number One (1)

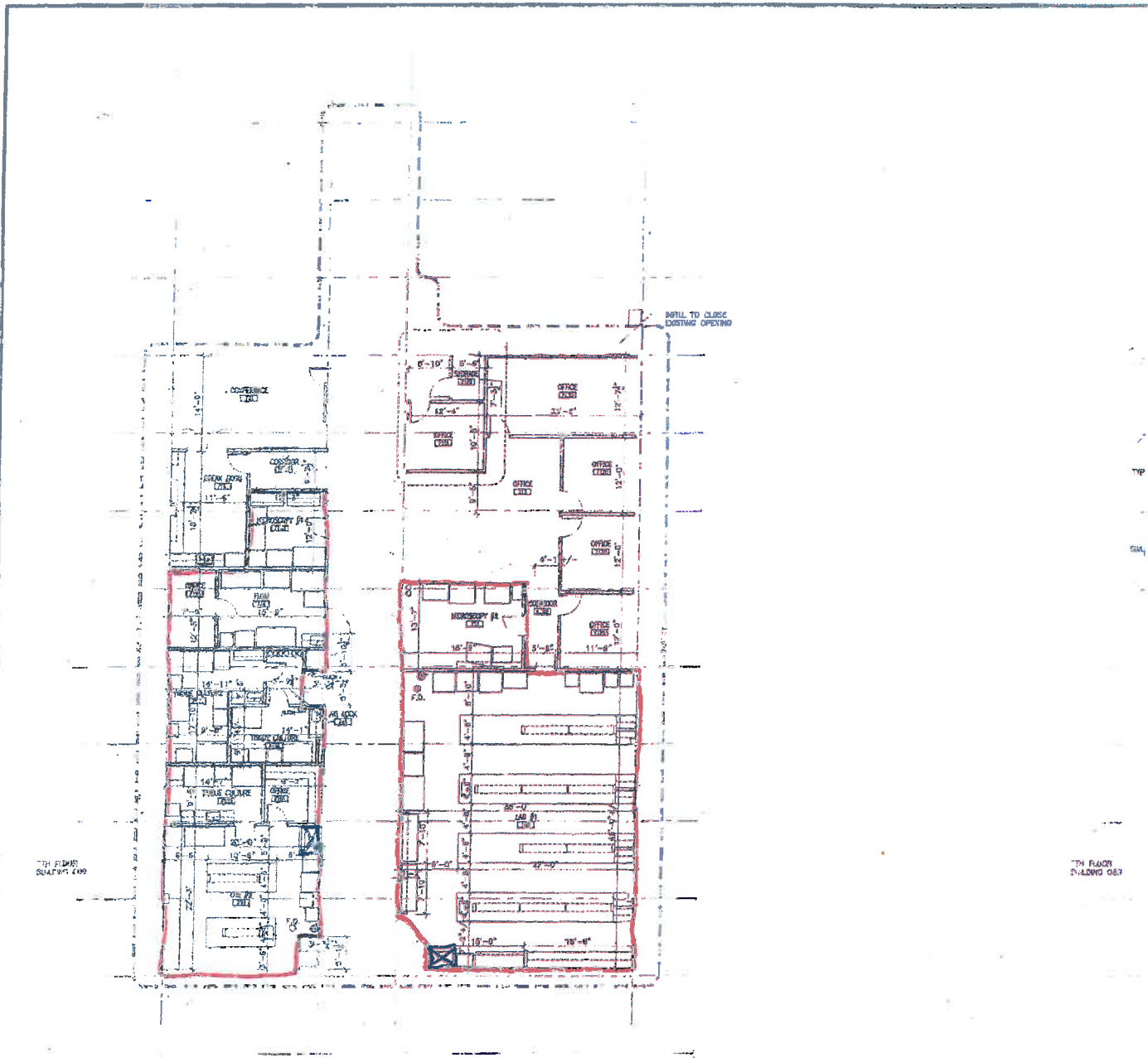


University of South Carolina Pre Bid Conference Sign In Sheet
Columbia, South Carolina

Project Name, Number & Project Manager: USC Columbia Coker Life Science Flooring/BC00272052/Dwight Cathcart
Pre Bid Conference Date & Time: June 30, 2014 10:00AM Conference Room 053

Name	Company	Address	Phone #	Email
Dwight Cathcart	USC Facilities Dir 743 Greene St. Col. 29208	"	803-240-5394	dcathcar@usc.edu
JOHN UCHUREH	Tile Restoration, Inc.	3053 McNaughton Switz #1, Columbia, SC 29223	803.528.3454	johnu@tilerestorationinc.com
Juaguana Brookens	743 Greene St USC Columbia SC	Contract Bldg Systems LLC	803.777.8596	jbrooken@usc.edu
Bill Davis	114 BUNKER DR W. Cole St. 29172	"	803-955-4444	WDavis4305c.rr.com
Shannon Groud	W. Calhoun 29172	"	803-743-2450	ShannonG@usc.edu

*Please make sure you list your company name as registered with LLC.
*By signing and providing your email address, you are authorizing the University of South Carolina to send you information electronically.



① PARTIAL SEVENTH FLOOR DIMENSION PLAN
1/8" = 1'-0"

②

☒ - Fume Hoods

Red line shows area
to receive epoxy floor



SPECIFICATIONS FOR PHOENIX EPOXY ONE-STEP SEAMLESS FLOORING SYSTEM

09670

FLUID APPLIED RESILIENT (RESINOUS) FLOORING

NOTE: This specification covers The Phoenix Epoxy One-Step Seamless Floor System. Other resinous flooring systems although similar may differ significantly in physical and chemical properties. We encourage prospective users to compare these properties to see the performance advantage of the Phoenix System.

PART 1 GENERAL:

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 307-99 Tensile strength of chemical-resistant mortars, grouts and monolithic surfacing

ASTM C 501-84 (R2002) Relative resistance to wear of unglazed ceramic tile by Taber Abrasion

ASTM C 531-00 Linear shrinkage and coefficient of thermal expansion of chemical-resistant mortars, grouts and monolithic surfacing

ASTM C 579-01 Compressive strength of chemical-resistant mortars, grouts and monolithic surfacing

ASTM C 580-98 Flexural strength and modulus of elasticity of chemical-resistant mortars, grouts and monolithic surfacing

Specifications for Phoenix One-Step Flooring System
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ASTM D 696-98 Coefficient of linear thermal expansion of plastics

ASTM D 570-98 Water absorption of plastics

ASTM D 2047-99 Static coefficient of friction of polish coated floor surfaces

ASTM D 2794-93 (R1999) Resistance of organic coatings to impact

ASTM D 4541-02 Pull off strength of coatings using portable adhesion testers

ASTM E 84-01 Surface burning characteristics of building materials

ASTM E 648 Critical radiant flux of floor covering systems using a radiant heat source

ASTM E 662 Specific optical density of smoke generated by solid materials

MILITARY SPECIFICATIONS (MIL)

MIL-D-24613 Type III Deck Covering Materials – Resinous Flooring requiring no bond coat, grout coat or sealer. Installed in one application and meeting fire retardant requirements.

1.2 SUBMITTALS

1.2.1 Instructions and Manufacturer's "Directions for Application"

1.2.2 Qualifications of Installers
Submit a written statement from the floor manufacturer stating that the installer is certified and acceptable.

1.2.3 Samples
Submit cured samples of each floor finish or color combination

1.2.4 Maintenance Instructions
Submit manufacturer's recommendations for cleaning and maintenance.

1.3 **DELIVERY AND STORAGE**

Deliver the materials to the project site in unopened 5 gallon containers clearly labeled with the manufacturer and type of material. Store materials away from fire or sparks. Maintain the storage area at a minimum of 50° F.

Specifications for Phoenix One-Step Flooring System
Page 3 of 6

1.4 **ENVIRONMENTAL CONDITIONS**

Maintain the ambient room temperature at 70°F or above for a period of 24 hours before installation and during the installation and curing times. Do not apply if the floor temperature is below 50°F. (See Manufacturer's Directions for Application). Concrete to receive surfacing shall have been cured for at least 28 days per inch of thickness and shall have been free of water for at least 7 days. Concrete moisture should not exceed 5 lbs per 1000 square feet. Wood substrates shall have a measured moisture content of no more than 10 percent prior to application.

1.5 **PROTECTION**

Protect adjacent surfaces not scheduled to receive the flooring by masking or by other means to maintain these surfaces free of the flooring materials. Protect the installed and cured flooring by covering with 30 pound building paper or by other equally effective means until final acceptance of the project.

2.0 **MATERIALS**

2.1 **EPOXY FLOOR COVERINGS**

2.1.1 **EPOXY**

Epoxy should be approved under MIL-Spec MIL-D-24613 Type III and be 100% solids, non-toxic containing no solvents or thinners. **ROCK to RESIN RATIO MUST BE LESS THAN 3LBS of AGGREGATE PER POUND OF EPOXY RESIN (EXCLUDING TOP COAT).**

2.1.2 **AGGREGATE**

Select the desired color patterns consisting of marble, silica sand and quartz.

2.1.3 **TOP COATING**

If desired, a top coat consisting of the manufacturer's MIL-Spec approved epoxy can be installed either as a clear coating or pigmented your choice of solid color.

2.1.4 PHYSICAL PROPERTIES

2.1.4.1	Compressive Strength	ASTM C-579	17,800 psi after 7 days
2.1.4.2	Tensile Strength	ASTM C-307	7,100 psi after 7 days
2.1.4.3	Flexural Strength	ASTM C-580	10,000 psi after 7 days

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2.1.4.4	Coefficient of Linear Expansion	ASTM D-696	2.5×10^{-5}
2.1.4.5	Adhesion Strength	ASTM-D-4541	>500 psi with 100% concrete failure
2.1.4.6	Flame Spread	MIL-D-24613, MIL-STD-1623	PASSED
	Flammability	ASTM E-84 ASTM D-570	<3 Class A Self Extinguishing
	Critical Rad Flux	E-648	>1.07 w/cm ²
2.1.4.7	Smoke Developed Smoke Density	MIL-D-24613, MIL-STD-1623 ASTM E-662	PASSED <3
2.1.4.8	Abrasion Resistant	MIL-D-24613, MIL-STD-1623 ASTM C-501	42 mg 18 mg
2.1.4.9	Impact Resistant	MIL-D-24613 ASTM D-2794	No cracking or delamination >24,000 psi
2.1.4.10	Odor	ASTM D-2794	Free from objectionable odors
2.1.4.11	Indentation	ASTM D-2794	Shall not exceed 1%. RESULTS 0.8%
2.1.4.12	Temperature Resistance	ASTM D-2794	150-200°F No visible softening, cracking or delaminating

2.1.4.13	Weight	ASTM D-2794	1.2 lbs/ft ² @ 1/8" thickness
2.1.4.14	Linear Shrinkage	ASTM C-531	<.02%
2.1.4.15	Water Absorption	ASTM D-570	<.2%

Specifications for Phoenix One-Step Flooring System
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2.1.4.16	Slip-resistance Properties With one coat of Sealer	ASTM D-2047	ADA Compliant	
	<u>Static</u>	<u>Dry</u>	<u>Wet</u>	<u>Oily</u>
	Leather	0.85	1.05	-----
	Rubber	0.94	1.10	0.55
	<u>Sliding</u>	<u>Dry</u>	<u>Wet</u>	<u>Oily</u>
	Leather	0.58	0.74	-----
	Rubber	0.67	0.72	0.41

2.1.4.17 Chemical Resistance
Although our product is considered to have excellent chemical resistance, this is a general term. Specific chemicals not listed and concentrations and amount of time the said chemicals will be in direct contact can be calculated and reported if requested. The following table represents a list of most commonly used materials:

Chemical Resistance @ 25°C (77°F) after curing 7 days

<u>Duration in weeks</u>	<u>1</u>	<u>2</u>	<u>4</u>	<u>8</u>
Distilled water	+	+	+	+
Sea water	+	+	+	+
Sulfuric acid, 30%	+	+	+	+
Sulfuric acid, 70%	+	+	+	+
Hydrochloric acid, 10%	+	+	+	+
Hydrochloric acid, 20%	+	+	+	+

Acetic acid, 5%	+	+	+	+
Ammonia, 10%	+	+	+	+
Toluene	a	a	a	a
MIBK	a	a	a	a
Ethanol, 50%	a	d	d	d
Gasoline, high test	+	+	+	+
Pine oil	+	+	+	+

+ = Resistant
a = Affected
d = Destroyed

Film thickness 12 – 16 mils
Cure Schedule 7 days at 21°C
Substrate, Sandblasted steel

2.1.4.18 ASTM D 2240 Hardness, @ 14 days Shore D 80

Specifications for Phoenix One-Step Flooring System
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3.0 **SURFACE PERPARATION**

Note: Resinous floor systems should not be installed over loose resilient tile or sheet flooring. If existing concrete substrates are badly cracked, crumbling, or deeply contaminated with oil or fat, a new concrete topping of proper thickness and strength should be applied. Wood floors that are poorly supported, badly worn, splintered, grease or oil soaked should be renovated prior to application of resinous flooring.

3.1 Completely remove all dirt, dust, debris, paint, laitance, grease, oil, animal fats and loose particles by; sanding, sandblasting, chipping, bush hammering, wire brushing or high pressure water blasting. Substrate should then be rinsed, squeeze-dry mopped and allowed to dry.

Wood surfaces should be sanded to remove all latent contaminants, then swept and vacuumed. Joints should be filled with an elastomeric compound and covered with reinforced fiberglass tape to help prevent cracking. An elastomeric membrane may also be glued to the entire floor prior to installation of the floor system, again to reduce the probably of cracks developing as a result of movement commonly associated with wood floors.

3.2 Remove any loose areas of substrate, chip out swollen or cracked areas. Then fill any cracks, joints or other depressions with an epoxy underlayment as recommended by the manufacturer to be compatible with the floor surfacing material.

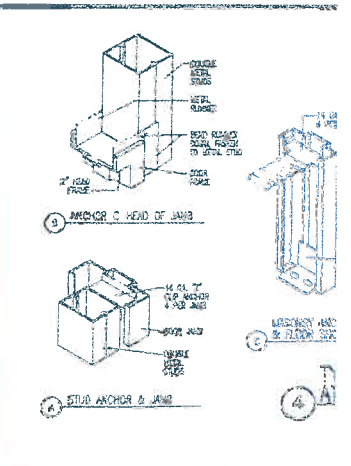
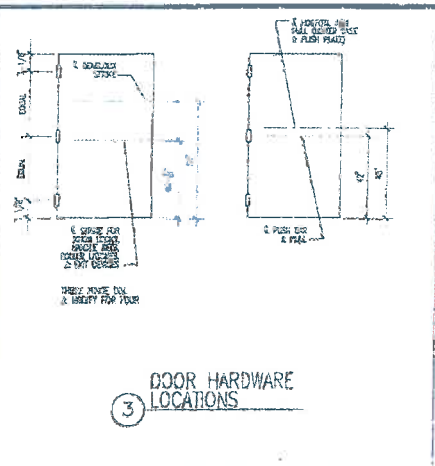
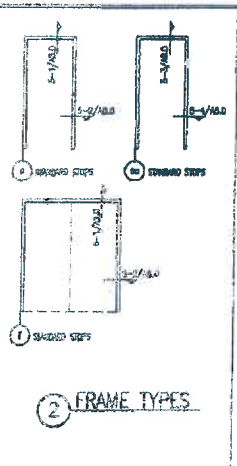
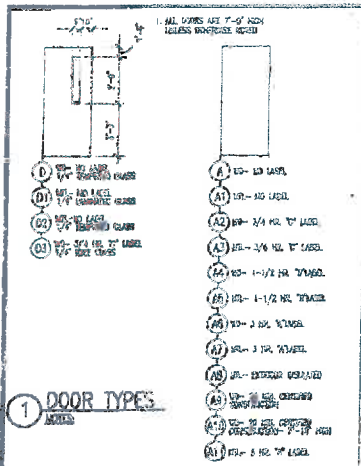
3.3 See **Manufacturer's Directions For Application** for complete instructions.

4.0 **MIXING AND APPLICATION**

Note: Mixing and application of the flooring material, underlayment and any desired top coat should be done in strict compliance with the **Manufacturer's Directions for Application**. **Only applicators Certified and Verified in writing by Phoenix Epoxy Systems, Inc., should be allowed to install product and a manufacturer's representative must be on-sight during installation.**

5.0 **WARRANTY**

Phoenix Epoxy Systems offers a full year limited warranty on materials from date of purchase. Warranty will provide free material replacement of the product in the event that Phoenix Epoxy Systems, Inc., materials prove defective and provided materials are installed in strict compliance of Phoenix Epoxy Systems, Inc., "**Directions for Application**" by a **certified applicator**.



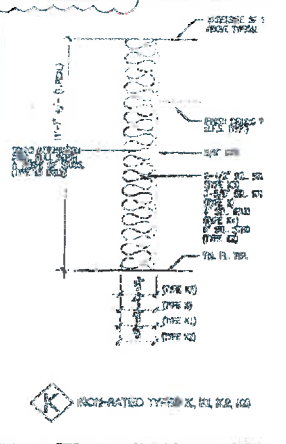
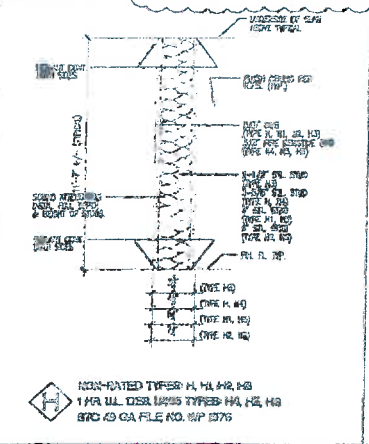
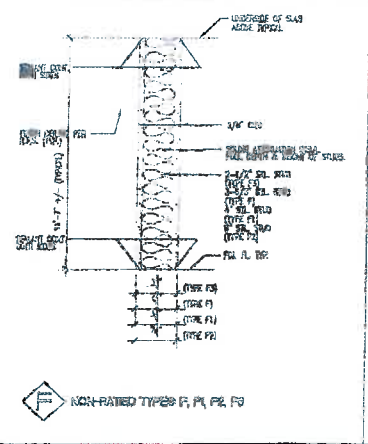
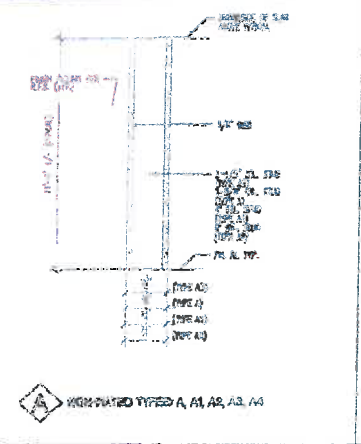
ROOM NO.	ROOM NAME	SURFACE	FINISH		GRADE	WALLS		CEILING		FLOORING		REMARKS
			TYPE	NOTED		TYPE	NOTED	TYPE	NOTED	TYPE	NOTED	
1001	CORRIDOR		VCT		RB	PNT		ACT				* SEE AC TILE IN EXISTING COR.
1005	CORRIDOR		VCT		RB	PNT		ACT				
1006	CORRIDOR		CPT		RB	PNT		ACT				
708	LABORATORY #1		PNT		RB	PNT		ACT				
710	LABORATORY #2		PNT		RB	PNT		ACT				
711A	OFFICE		CPT		RB	PNT		ACT				
7100	TISSUE CULTURE		PNT		RB	PNT		ACT				
711	MICROBIOLOGY #2		PNT		RB	PNT		ACT				
712	LABORATORY		PNT		RB	PNT		ACT				
712A	TISSUE CULTURE		PNT		RB	PNT		ACT				
712B	TISSUE CULTURE		CPT		RB	PNT		ACT				
713	OFFICE		CPT		RB	PNT		ACT				
713A	OFFICE		CPT		RB	PNT		ACT				
713B	OFFICE		CPT		RB	PNT		ACT				
713C	OFFICE		CPT		RB	PNT		ACT				
713D	OFFICE		CPT		RB	PNT		ACT				
714	FLOOR		PNT		RB	PNT		ACT				
714A	OFFICE		PNT		RB	PNT		ACT				
714B	MICROBIOLOGY #1		PNT		RB	PNT		ACT				
718	CONFERENCE		CPT		RB	PNT		ACT				
1120	BIOL. ROOM		VCT		RB	PNT		ACT				
117	LABORATORY		PNT		RB	PNT		ACT				* ALL NEW FINISHES TO MATCH EXISTING ONLY TOUCH UP AS REQUIRED
717A	OFFICE		CPT		RB	PNT		ACT				
717B	STORAGE		VCT		RB	PNT		ACT				

LEGEND:
 VCT - VINYL
 RB - RUBBER
 PNT - PAINT
 CPT - CARPET
 ACT - ACETYLENE
 W - WOOD
 G - Gypsum
 S - STONE
 GL - GLASS
 M - METAL
 F - FIBER
 P - PAPER
 L - LEAD
 C - CEMENT
 S - SAND
 G - GRAVEL
 F - FLOOR
 P - PAINT

GENERAL NOTES:
 1. FINISHES TO BE APPLIED TO ALL WALLS UNLESS OTHERWISE NOTED.
 2. FINISHES TO BE APPLIED TO ALL CEILINGS UNLESS OTHERWISE NOTED.
 3. FINISHES TO BE APPLIED TO ALL FLOORS UNLESS OTHERWISE NOTED.
 4. FINISHES TO BE APPLIED TO ALL DOORS UNLESS OTHERWISE NOTED.
 5. FINISHES TO BE APPLIED TO ALL WINDOWS UNLESS OTHERWISE NOTED.
 6. FINISHES TO BE APPLIED TO ALL PARTITIONS UNLESS OTHERWISE NOTED.
 7. FINISHES TO BE APPLIED TO ALL STAIRS UNLESS OTHERWISE NOTED.
 8. FINISHES TO BE APPLIED TO ALL ELEVATORS UNLESS OTHERWISE NOTED.
 9. FINISHES TO BE APPLIED TO ALL CORES UNLESS OTHERWISE NOTED.
 10. FINISHES TO BE APPLIED TO ALL RISERS UNLESS OTHERWISE NOTED.
 11. FINISHES TO BE APPLIED TO ALL TREADS UNLESS OTHERWISE NOTED.
 12. FINISHES TO BE APPLIED TO ALL BALUSTRADES UNLESS OTHERWISE NOTED.
 13. FINISHES TO BE APPLIED TO ALL HANDRAILS UNLESS OTHERWISE NOTED.
 14. FINISHES TO BE APPLIED TO ALL SIGNAGE UNLESS OTHERWISE NOTED.
 15. FINISHES TO BE APPLIED TO ALL LIGHT FIXTURES UNLESS OTHERWISE NOTED.
 16. FINISHES TO BE APPLIED TO ALL ELECTRICAL BOXES UNLESS OTHERWISE NOTED.
 17. FINISHES TO BE APPLIED TO ALL TELEPHONE BOXES UNLESS OTHERWISE NOTED.
 18. FINISHES TO BE APPLIED TO ALL FIRE ALARMS UNLESS OTHERWISE NOTED.
 19. FINISHES TO BE APPLIED TO ALL SMOKE DETECTORS UNLESS OTHERWISE NOTED.
 20. FINISHES TO BE APPLIED TO ALL SPRINKLER HEADS UNLESS OTHERWISE NOTED.

DOOR HARDWARE:
 1. ALL DOOR HARDWARE TO BE MATCHED TO EXISTING.
 2. ALL DOOR HARDWARE TO BE MATCHED TO EXISTING UNLESS OTHERWISE NOTED.
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GLASS DOOR HARDWARE:
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