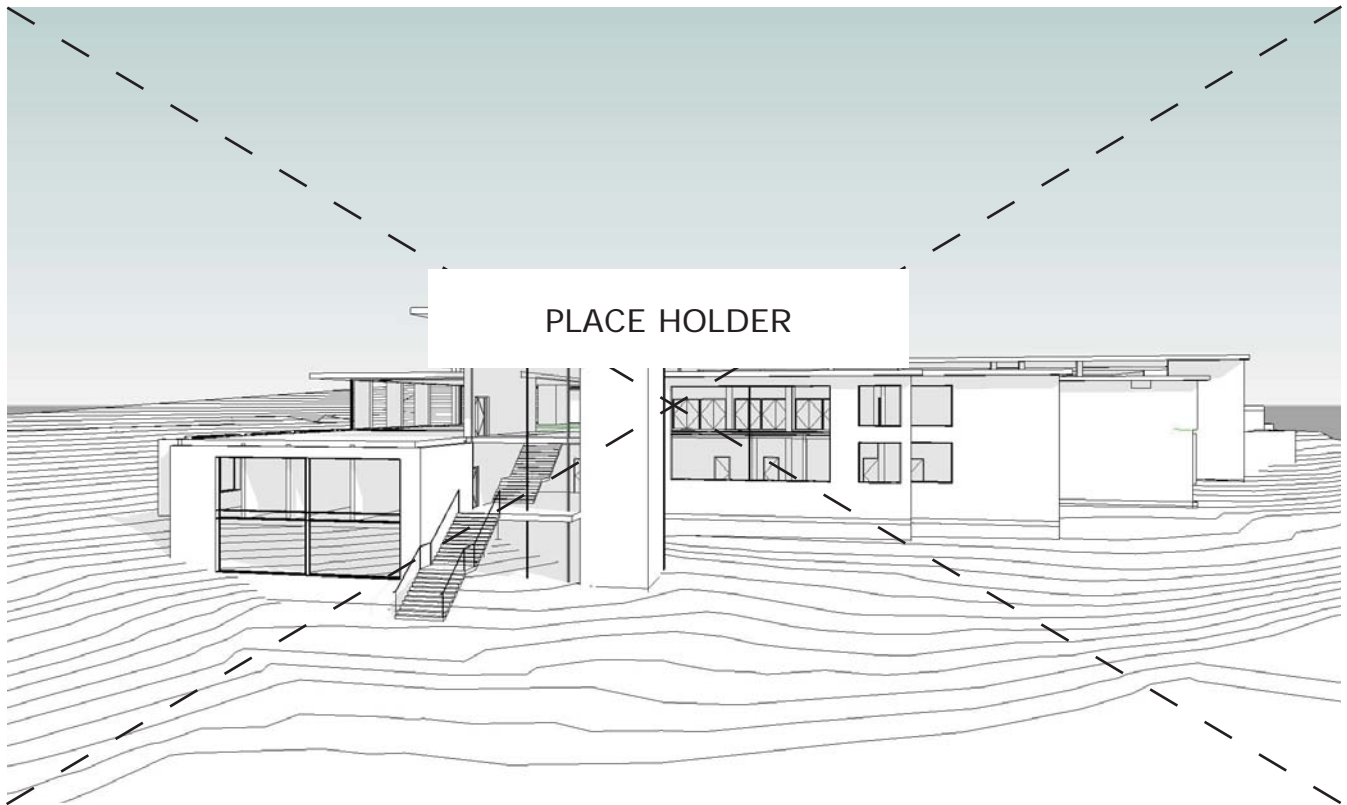


PROGRAMMING & ADVANCED PLANNING SUBMITTAL

SCO No.: 13-10964-01-WCU



DIRECTORY:

WESTERN CAROLINA UNIVERSITY	3476 Old Cullowhee Road Cullowhee, NC 28723	(828) 227-7442	http://www.wcu.edu/about-wcu/campus-services-and-operations/facilities-management/
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CAMACHO ASSOCIATES, INC. (FOOD SERVICE)	6735 Peachtree Industrial Blvd., Suite 120 Atlanta, GA 30360	(770) 582-1144	http://www.camacho-usa.com
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Reggie Daniel, FCSI, CHM, MCFE	Foodservice Consultant & Designer	(770) 582-1144/996	reggied@camachoUSA.com
R.M. RUTHERFORD & ASSOCIATES, INC. (COST CONSULTANT)	3328 Mill Pond Road Charlotte, NC 28226	(704) 556-9725	
Richard M. Rutherford	Cost Estimator	(704) 556-9725	rmrassoc@att.net

TABLE OF CONTENTS:

- A. PROJECT BUDGET
 - 1. TOTAL PROJECT BUDGET FUNDS
 - 2. RESERVE FUNDS
 - 3. OWNER CONSTRUCTION CONTINGENCY
 - 4. DESIGN FEES
 - 5. CONSTRUCTION FUNDS AVAILABLE
- B. SITE EVALUATION
- C. SPECIAL REQUIREMENTS
 - 1. WESTERN CAROLINA UNIVERSITY DESIGN GOALS
 - 2. HAZARDOUS MATERIALS REPORT
- D. DETAILED SPACE PROGRAM
 - 1. DESIGN NARRATIVES
 - a. ARCHITECTURAL NARRATIVE
 - b. STRUCTURAL NARRATIVE
 - c. MEP NARRATIVE
 - i. BUILDING
 - ii. BOILER PLANT
 - 2. PROGRAM OVERVIEW
 - 3. ROOM DATA SHEETS
 - 4. PRE-DESIGN DRAWINGS
- E. PRELIMINARY PROJECT SCHEDULE
- F. FACILITIES CONDITION ASSESSMENT PROGRAM
 - 1. FCAP REPORT
 - 2. DESIGN STRATEGIES TO ADDRESS FCAP ISSUES
 - 3. PRELIMINARY LIFE SAFETY DOCUMENTS
 - 4. HEALTH CODE REVIEWS REQUIRED
- G. ADVANCED PLANNING FOR ENERGY EFFICIENT BUILDINGS
 - 1. BUILDING & SITE ENERGY COSTS
 - a. CONSTRUCTION COST
 - b. DESIGN FEE
 - c. COMMISSIONING COST
 - 2. BUILDING & SITE ENERGY STRATEGIES
 - a. POTENTIAL ENERGY & WATER CONSERVATION STRATEGIES
 - b. ENERGY EVALUATION DIAGRAMS
 - 3. BUILDING & SITE ENERGY EVALUATION
- H. APPENDIX
 - 1. MEETING MINUTES

A. PROJECT BUDGET

1. TOTAL PROJECT BUDGET FUNDS *less*
2. RESERVE FUNDS.....
3. OWNER CONSTRUCTION CONTINGENCY.....
4. DESIGN FEES.....
5. CONSTRUCTION FUNDS AVAILABLE.....



Total Building Construction (New)		\$ 4,899,180
3 Building Construction (existing)		
a. Description		
30,240 sf @ \$185 =	\$5,594,400	
Total Building Construction (Existing)		\$ 5,594,400
4 Plumbing (New Space)		
a. Description		
25,124 sf @ \$28 =	\$ 703,472	
Total Plumbing (New Space)		\$ 703,472
5 HVAC (New Space)		
a. Description		
25,124 sf @ \$32 =	\$ 803,968	
Total HVAC (New Space)		\$ 803,968
6 Electrical (New Space)		
a. Description		
25,124 sf @ \$35 =	\$ 879,340	
Total Electrical (New Space)		\$ 879,340
7 Fire Suppression and Alarm Systems		
a. Description		
25,124 @ \$8 =	\$ 200,992	
Total Fire Suppression and Alarm Systems (New Space)		\$ 200,992
8 Telephone, Data, Video		
a. Communications related infrastructure & components		
25,124 units @ \$2 =	\$ 50,248	
Total Telephone, Data, Video		\$ 50,248
9 Associated Construction Cost		
a. Construction fire alarm testing, signage, staging, lock cores, keys, State Construction Office charges.		
Lump Sum @ \$150,000 =	\$ 150,000	
Total Associated Construction Cost		\$ 150,000
10 Other		
a. Remote location with the region impacting available labor force and material deliveries.		
Lump Sum @ 8% of 50% construction =	\$ 680,100	
Total Other		\$ 680,100
TOTAL CONSTRUCTION COST		\$ 17,161,700
D EQUIPMENT		
1 Fixed		
a. Kitchen equipment and food station equipment		
Lump Sum @ \$246,000 =	\$ 250,000	
2 Moveable		
a. Furniture - Dining tables, seating, etc.		



Lump Sum @ \$ 380,000 =

\$ 400,000

Total Equipment	\$ 650,000
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TOTAL EQUIPMENT COST	\$ 650,000
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TOTAL PROJECT COST	\$ 18,481,700
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A.1 TOTAL PROJECT BUDGET FUNDS - OC-25



B. SITE EVALUATION



Program Considerations

The project program includes renovation of an existing building; including kitchen, catering services, student dining, offices, outdoor patios and gathering areas, utility infrastructure, drainage and erosion control improvements, parking, service yard and utility plant, and improvements to vehicular and pedestrian circulation.

Zoning and Land Use

Jackson County and the City of Cullowhee exclude Western Carolina University from the Cullowhee Planning Area. Therefore, there are no local Zoning or Land Use regulations that will affect his project.

Historic Constraints

Based on our review of the North Carolina State Historic Preservation Office HPOWEB GIS Service, the project will not impact any registered historic or cultural resources, however, design of site improvements shall give appropriate consideration to the historical characteristics of the campus.

Site Constraints

Soils

According to USDA-SCS Soil Survey for Jackson County, the soils in the project area are Cowee-Evard-Urban land complex, 15 to 30 percent slopes (CrD), Hydrologic Soils Group C. A detailed geotechnical investigation of the site has not been performed on the site.

Floodplain

The project is not located within a mapped plain.

Wetlands/Surface Waters

No Wetland or Surface Waters are located within the project site.

Topography

The site slopes generally from northeast to southwest. The ground surface elevation drops approximately 40 feet across the site. Entrances to the existing building are located on multiple floor levels.

LEED Certification



One of the project objectives is to construct a facility that meets LEED Silver Certification requirements using LEEDv3. Civil/Site considerations shall address the following LEED credits;

- Alternative Transportation – Parking Capacity
 - Parking capacity shall not be increased as part of this project.
- Reduced Site Disturbance – Maximizing Open Space
 - Open space shall be provided in excess of local zoning requirements.
- Landscaping to Reduce Heat Islands – Non Roof
 - Hardscape surfaces shall be light-colored and permeable.
- Water Efficient Landscaping
 - Storm water harvesting and reuse shall be installed, and native drought tolerant plant material shall be used.

Traffic Circulation

Deliveries

This facility will receive deliveries from tractor-trailer type vehicles. A portion of Central Drive and the Service Yard driveway will be widened to accommodate truck deliveries. The service yard will be enlarged to provide space for truck turning movements.

The existing Brown Building service yard driveway is also used to access Buchanan Residence Hall service yard. The connection to Buchanan Residence Hall service yard shall remain. Access to the service yard shall be accommodated during construction of the project.

The improvements required for the truck movements will also provide access for emergency vehicles.

Pedestrians

The existing site is used by pedestrians moving from student housing to the campus core. Site improvements included in this project will facilitate safe and efficient pedestrian circulation. During construction of the project, a safe route shall be provided for pedestrians around the site with appropriate signage and protection.

The site is not "ADA" accessible from the surrounding public ways, therefore handicap parking shall be provided as part of the project along with accessible routes from the parking spaces into the building.

Parking

In addition to ADA parking, a limited number of staff and security parking spaces shall be provided as part of the project.

B. SITE EVALUATION



Sanitary Sewer

This project will include construction of a new sanitary sewer service to the building, as well as removal and replacement of all sanitary lines within the building. The new service main will be tapped into the campus wastewater collection system.

The project includes relocation of a portion of the campus wastewater collection system that is currently located under the building footprint.

Domestic Water

This project will include construction of a new domestic water service main to serve the building, as well as removal and replacement of all waterlines within the building. The new service main will be tapped into the campus water distribution system.

The project includes relocation of a portion of the campus water distribution system that is currently located under the building footprint.

Fire Protection

The existing building is not protected by an automatic sprinkler system. The proposed building improvements will include installation of a sprinkler system that will be connected to the campus water distribution system.

Solid Waste Management

A portion of the service yard will be dedicated to the handling of solid waste. This will include a compactor and dumpster for refuse and recycling containers.

Mechanical Systems Infrastructure

Mechanical system improvements are described in the Mechanical section of this narrative.

Natural Gas

Natural gas service requirements for this project are described in the Mechanical section of this narrative.

Telecommunication

14 Telecommunication infrastructure site improvements are described in the Electrical section of this narrative.

B. SITE EVALUATION

Electrical

Electrical system improvements are described in the Electrical section of this narrative.

Storm Water

Roof Drains

Building roof drains will be connected to piped storm water conveyance. Piped storm water will be collected in storage tanks for reuse.

Site Drainage

Existing site topography slopes toward the building from the east, under the building, and continues southwest toward Central Drive. The courtyard within the site also slopes toward the southwest. Courtyard runoff is collected in area drains, which are piped to the southwest under the building.

Site drainage collection and conveyance shall be modified to accommodate building renovations, and storm water reuse.

Permeable pavements and storm water reuse shall be used to provide water quantity and quality controls for the project.

- END ADVANCED PLANNING SITE EVALUATION -

C. SPECIAL REQUIREMENTS

1. WESTERN CAROLINA UNIVERSITY DESIGN GOALS
2. HAZARDOUS MATERIALS REPORT



C. SPECIAL REQUIREMENTS

1. WESTERN CAROLINA UNIVERSITY DESIGN GOALS
2. HAZARDOUS MATERIALS REPORT



Western Carolina University has provided Watson Tate Savory with architectural design goals & guidelines in a MasterSpec format. However, there are no additional design requirements.



C. SPECIAL REQUIREMENTS

1. WESTERN CAROLINA UNIVERSITY DESIGN GOALS
2. HAZARDOUS MATERIALS REPORT





crossroads
environmental, llc

ASBESTOS INSPECTION AND LEAD SAMPLING REPORT

FOR

NEO CORPORATION
389 Silkwood Drive
Canton, North Carolina 28716
(828) 507-7492

LOCATION
Brown Building of Western Carolina University
417 Central Drive
Cullowhee, North Carolina

INSPECTION DATE: October 14-23, 2014
REPORT DATE: October 27, 2014

INSPECTOR

Kay H. Horton – NC-DHHS Accreditation #12058, Exp. 02-28-15
(864) 680-5537

Travis L. Shaw – NC-DHHS Accreditation # 12779, Exp. 04/30/15
(864) 316-9518

for

Crossroads Environmental, LLC
1258 Boiling Springs Road
Spartanburg, South Carolina 29303
(864) 541-8736
CRE Project #13220-IN





CROSSROADS
environmental, llc

October 27, 2014

Mr. Greg Pressley
NEO Corporation
289 Silkwood Drive
Canton, NC 28716

Re: Asbestos Inspection Report
Brown Building of Western Carolina University
417 Central Drive
Cullowhee, North Carolina
CRE Project Number: 13220-IN

Dear Mr. Pressley:

Crossroads Environmental, LLC (CRE) completed an asbestos inspection and lead testing at the Brown building, located on the campus of Western Carolina University on October 14-23, 2014. The inspection was performed by North Carolina Department of Health and Human Services (NC-DHHS) Accredited Asbestos Inspectors and in accordance with the Environmental Protection Agency's (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP 40 CFR 61 Subpart M). **A detailed summary table of the sampling is included in Attachment I; however, this report should be read in its entirety.**

Building Description

The building is a two-story block structure with concrete floors and an exterior brick veneer. The ceilings in most areas are composed of plaster on metal lath that have been covered ceiling tiles in many areas. The ceilings of the former dining rooms have sprayed-on acoustical surfacing on drywall. The floors are covered with a combination of ceramic tile, vinyl floor tile, and carpet. The roof is a flat roof covered with foam insulation board and a rubber (EPDM) membrane.

ASBESTOS

Inspection Strategy/Sampling Protocol

The inspection consisted of grouping suspect asbestos containing materials into homogeneous areas based on the color and texture of the material, and then performing representative sampling of the materials included in those homogeneous areas. The EPA



has requirements for the minimum number of samples that can be collected from each homogeneous area.

Following completion of the on-site inspection/sampling, samples were submitted to an accredited laboratory for analysis.

Results

EPA recognizes a material as Asbestos Containing Material (ACM) if an asbestos content of greater than one percent asbestos is detected in a representative sample analyzed by polarized light microscopy.

Homogenous Areas	Material	Approx. Quantity	Locations
HA02	12”X12” Light Tan Vinyl Floor Tile w/Dark Brown Specs & Adhesive (top layer)	240 sq. ft.	Offices off of kitchen on 1st floor
HA03	Dark Tan Vinyl Floor Tile w/Black Mastic (bottom layer)	Included in above quantity	Offices off of kitchen on 1st floor
HA05	Black Vinyl Floor Tile in Large Former Dining Room (bottom layer)	8,460 sq. ft.	Located throughout the large former dining room area on the 1st floor
HA07	Black Cove Base Glue	300 ln. ft.	Located in the corridor outside of the Mary Will Mitchell Room, the front lobby area, and the locker room
HA09	12”X12” Dark Tan Vinyl Floor Tile w/Black Mastic	176 sq. ft.	Located in office adjacent to bulk storage (former lounge)
HA10	9”X9” Light Brown Vinyl Floor Tile w/Black Mastic	780 sq. ft.	Located in the storage room on the ground floor

Homogeneous Area	Material	Quantity	Locations
HA15, HA16, HA39, HA40, HA45, HA47, and HA51	Fitting Insulation	75 fittings (includes only visible fittings)	Located throughout the building
HA26	Roofing Tar	Unknown (roof is covered with EPDM membrane). The ACM tar was only detected in one sample.	Found around a former HVAC platform
HA31	Silver Color Sealant on Brick	140 ln. ft.	Located on the roof
HA38	Pipe Insulation (large gray vertical line)	24 ln. ft. (includes only what is visible)	Found in the corner of the mechanical room and in bulk storage
HA42	Masonry Caulk	20 ln. ft.	Located on the east side of the building
HA48	Pipe Insulation (aircell)	515 ln. ft. plus 252 sq. ft. of contamination over Can Wash ceiling	Located throughout the building
HA52	Pipe Insulation (layered paper with an ACM layer)	200 ln. ft. (includes only what is visible)	Located throughout the building
HA53	Vibration Dampeners (beige)	2 dampeners (each 12 ln. ft., 3# wide)	Located in mechanical room off of Can Wash

Relevant Regulatory Requirements/Recommendations

Friability-Friable materials are defined as materials that can be reduced to powder by hand pressure. It should be noted that non-friable materials may become friable depending on the method of removal. All non-friable materials must be removed by properly accredited asbestos personnel. If the non-friable materials are removed in a friable manner, then all regulations in regard to friable abatement will apply.

LEAD

Inspection Strategy/Sampling Protocol

The lead testing was performed by an EPA Certified Lead Inspector utilizing Niton XLp 300 (Serial #: 90406) analyzer, which does not require substrate correction. Following proper calibration of the XRF, a representative components and paint colors were tested for lead content. According to the Environmental Protection Agency (EPA), paint containing ≥ 1 mg/cm² of lead (by XRF) or 0.5% by weight (paint chip analysis) is considered lead-based paint (LBP).

Where worker protection is concerned, OSHA does not specify a lead level content in paint chips. The OSHA standard (Lead in Construction Interim Final Rule, 29 CFR 1926.62) indicates that if airborne lead levels exceed the Action Level (AL is 30ug/mm³) from a potential disturbance, then an employee exposure assessment would be required.

Results and Regulatory Information

Table II, included in Attachment I, contains lead results from all locations tested. **In summary, no lead-based paint was detected; however, the ceramic tile on the walls on both floors was found to contain greater than 1 mg/cm² of lead.**

Due to the presence of lead in the ceramic tile, contractors performing renovation activities affecting the tile would be required to have OSHA lead training and the required exposure assessments.

Closing Statements and Limitations

Attachment I includes a table with descriptions, results, and sample locations of the suspect materials. Attachment II includes a copy of the analytical results from the laboratory. Attachment III includes a sketch with sample locations and some photographs for clarification purposes. Attachment IV includes a copy of the NC-DHHS Asbestos Inspectors' Accreditation.

Every effort was made to identify all materials in accessible areas. There is the possibility that suspect materials were not identified in inaccessible areas. If any suspect material is discovered that is not included within this report, it should be sampled before it is physically disturbed.

This document has been prepared by Crossroads Environmental, LLC at the request of and for the exclusive use of NEO Corporation. This report represents the findings from the date that it was inspected, and is limited in scope to that indicated above.

Crossroads Environmental, LLC appreciates the opportunity to provide NEO Corporation with our consultative services. Should you have any questions or need additional information, please do not hesitate to contact us.

Sincerely,



Kay H. Horton
Accredited Inspector

Attachments – (4)

**ATTACHMENT I
ASBESTOS SUMMARY TABLE**



CROSSROADS ENVIRONMENTAL, LLC ASBESTOS INSPECTION REPORT							CRE JOB #13220-IN	
Location:		Brown Building of Western Carolina University, 417 Central Drive, Cullowhee, North Carolina						
Client:		NEO Corporation					DATE: 10-14-15 & 10-15-14	
Key: A=Amosite, C=Chrysotile, Cr=Crocidolite, Tr=Tremolite, Ac=Actinolite Asbestos, Misc.=Miscellaneous, HA#=Homogeneous Area #, PLM=Polarized Light Microscopy, TEM=Transmission Electron Microscopy, /=PLM and/or TEM Analysis Not Required sq.ft.=Square Feet, cu.ft.=Cubic Feet, ln.ft.=Linear Feet, HJI=Hard Joint Insulation, TSI=Thermal System Insulation, BUR=Built-up Roofing, Surf=Surfacing NAD=No Asbestos Detected, SP=Stop Positive, N/A								
HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
01	Misc	Brown Mastic	001	NAD	Kitchen	N/A	Good; Non-Friable	Located on the ceramic flooring in the kitchen area on the 1st floor (appears to have been used to attach equipment, etc. to the floor in the past).
			002	NAD				
02	Misc	12"X12" Light Tan Vinyl Floor Tile w/Dark Brown Specs & Adhesive (Top Layer)	003A Vinyl Floor Tile 003B Adhesive	NAD 2% C	Office by kitchen	240 sq. ft.	Good; Non-Friable	Located in the offices off of the kitchen on the 1st floor.
			004A Vinyl Floor Tile 004B Adhesive	NAD SP	Office by kitchen			
03	Misc	Dark Tan Vinyl Floor Tile w/Black Mastic	005A Layer 1, Mastic 005A Layer 2, Vinyl Floor Tile 005B Mastic	NAD 5% C 2% C	Office by kitchen	240 sq. ft.	Good; Non-Friable	Located in the offices off of the kitchen on the 1st floor under HA 02.
			006	SP	Office by kitchen			

CROSSROADS ENVIRONMENTAL, LLC ASBESTOS INSPECTION REPORT							CRE JOB #13220-IN	
Location:		Brown Building of Western Carolina University, 417 Central Drive, Cullowhee, North Carolina						
Client:		NEO Corporation					DATE: 10-14-15 & 10-15-14	
Key: A=Amosite, C=Chrysotile, Cr=Crocidolite, Tr=Tremolite, Ac=Actinolite Asbestos, Misc.=Miscellaneous, HA#=Homogeneous Area #, PLM=Polarized Light Microscopy, TEM=Transmission Electron Microscopy, /=PLM and/or TEM Analysis Not Required sq.ft.=Square Feet, cu.ft.=Cubic Feet, ln.ft.=Linear Feet, HJI=Hard Joint Insulation, TSI=Thermal System Insulation, BUR=Built-up Roofing, Surf=Surfacing NAD=No Asbestos Detected, SP=Stop Positive, N/A								
HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
04	Misc	Black Vinyl Cove Base & Glue	007A Black Vinyl Covebase 007B Yellow Glue	NAD NAD	Main area of cafeteria-in front of kitchen	N/A	Good; Non-Friable	Located throughout the dining room area on the first floor.
			008A Black Vinyl Covebase 008B Yellow Glue	NAD NAD	Main cafeteria area near computers			
05	Misc	12"X12" Light Tan Vinyl Floor Tile w/Dark Brown Specs over Black Vinyl Floor Tile	009A Lt. Tan/Dk. Brown Vinyl Floor Tile 009B Yellow Mastic 009C Black Vinyl Floor Tile	NAD NAD 3% C	Dining area-near computers	8,460 sq. ft.	Good; Non-Friable	Located throughout the dining room area on the first floor.
			011A Lt. Tan, Dk. Brown Vinyl Floor Tile 011B Yellow, Black Mastic 011C Black Vinyl Floor Tile	NAD NAD 3% C	Dining area-near ping pong tables			

C.2 HAZARDOUS MATERIALS REPORT



CROSSROADS ENVIRONMENTAL, LLC ASBESTOS INSPECTION REPORT								CRE JOB #13220-IN
Location:		Brown Building of Western Carolina University, 417 Central Drive, Cullowhee, North Carolina						
Client:		NEO Corporation				DATE: 10-14-15 & 10-15-14		
Key: A=Amosite, C=Chrysotile, Cr=Crocidolite, Tr=Tremolite, Ac=Actinolite Asbestos, Misc.=Miscellaneous, HA#=Homogeneous Area #, PLM=Polarized Light Microscopy, TEM=Transmission Electron Microscopy, /=PLM and/or TEM Analysis Not Required sq.ft.=Square Feet, cu.ft.=Cubic Feet, ln.ft.=Linear Feet, HJI=Hard Joint Insulation, TSI=Thermal System Insulation, BUR=Built-up Roofing, Surf=Surfacing NAD=No Asbestos Detected, SP=Stop Positive, N/A								
HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
06	Misc	12"X12" Dark Tan Vinyl Floor Tile	010A Dark Tan Vinyl Floor Tile 010B Tan Adhesive	NAD NAD	Dining area-near computers	N/A	Good; Non-Friable	Located throughout the dining room area, the front lobby area, the corridor outside of the "Mary Will Mitchell Room", the rear storage of the serving area, and the "Brown Convenience Store".
			012A Dark Tan Vinyl Floor Tile 012B Black Adhesive	NAD NAD	Dining area-near ping pong tables			
07	Misc	Brown Vinyl Cove Base	013A Brown Vinyl Covebase 013B Brown, Beige Glue	NAD NAD	Corridor outside of Mary Will Mitchell Room	300 ln. ft.	Good; Non-Friable	Located in the corridor outside of "Mary Will Mitchell Room", the front lobby area, and the locker room. Note: Black glue only is positive. For quantification purposes, all cove base was included since the exact location of black glue is unknown without removing all cove base.
			014A Brown Vinyl Covebase 014B Layer 1, Brown, Beige Glue 014B Layer 2, Black Glue	NAD NAD 3% C				

CROSSROADS ENVIRONMENTAL, LLC ASBESTOS INSPECTION REPORT								CRE JOB #13220-IN
Location:		Brown Building of Western Carolina University, 417 Central Drive, Cullowhee, North Carolina						
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Key: A=Amosite, C=Chrysotile, Cr=Crocidolite, Tr=Tremolite, Ac=Actinolite Asbestos, Misc.=Miscellaneous, HA#=Homogeneous Area #, PLM=Polarized Light Microscopy, TEM=Transmission Electron Microscopy, /=PLM and/or TEM Analysis Not Required sq.ft.=Square Feet, cu.ft.=Cubic Feet, ln.ft.=Linear Feet, HJI=Hard Joint Insulation, TSI=Thermal System Insulation, BUR=Built-up Roofing, Surf=Surfacing NAD=No Asbestos Detected, SP=Stop Positive, N/A								
HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
08	Misc	Vinyl Floor Tile & Black Mastic (under carpet)	015A Layer 1, Yellow Carpet Glue 015A Layer 2, Beige Vinyl Floor Tile 015B Black Mastic	NAD 2% C 3% C	Mary Michel Room	690 sq. ft.	Good; Non-Friable	Located in the Mary Michel Room under carpet.
			016	SP				
09	Misc	12"X12" Dark Tan Vinyl Floor Tile w/Black Mastic	017A Dark Tan Vinyl Floor Tile 017B Black Mastic	NAD <1% C	Former lounge (now office)	176 sq. ft.	Good; Non-Friable	Located in the former lounge (office next to bulk storage) on the ground floor.
			018A Dark Tan Vinyl Floor Tile 018B Black Mastic	NAD 2% C				
10	Misc	9"X9" Lt. Brown Vinyl Floor Tile w/Black Mastic	019A Light Brown Vinyl Floor Tile 019B Black Mastic	5% C NAD	Storage room on ground floor	780 sq. ft.	Good; Non-Friable	Located in the storage room (area by access to dirt area) on the ground floor.
			020A 20B Black Mastic	SP NAD				



CROSSROADS ENVIRONMENTAL, LLC ASBESTOS INSPECTION REPORT							CRE JOB #13220-IN	
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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
11	Misc	Black Vinyl Cove Base & Glue	021A Black Vinyl Covebase 021B Layer 1, Yellow Glue 012B Layer 2, Black Glue	NAD NAD <1% C	Storage room on ground floor	N/A	Good; Non- Friable	Located in the storage room on the ground floor (room with 9" tile).
			022A Black Vinyl Covebase 022B Layer 1, Yellow Glue 022B Layer 2, Black Glue	NAD NAD <1% C				
12	Misc	12"X12" Cream Vinyl Floor Tile w/Yellow Glue	023A Cream Vinyl Floor Tile 023B Yellow Glue	NAD NAD	Electrical room by kitchen	N/A	Good; Non- Friable	Located in the electrical room of the rear kitchen area on the first floor.
			024A Cream Vinyl Floor Tile 024B Yellow Glue	NAD NAD				
13	Misc	Carpet Glue	025	NAD	Base camp room (former small dining room)	N/A	Good; Non- Friable	Located in the "Base Camp Room"(former small dining room) on the first floor.
			026	NAD				

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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
14	TSI	Small Pipe Elbow Insulation	027	<1% C	Mechanical room (Room G-23)	See note at bottom	Good; Friable	Located in the mechanical room on the ground floor.
			028	<1% C				
			029	<1% C				
15	TSI	Fitting Insulation	030	20% C	Mechanical room (Room G-23)	See note at bottom	Good; Friable	Located in the mechanical room on the ground floor.
			031	SP				
			032	SP				
16	TSI	Fitting Insulation	033	NAD	Mechanical room (G-23)	See note at bottom	Good; Friable	Located in the mechanical room on the ground floor.
			034	10% C				
			035	SP				



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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
17	Surf	Spray Applied Ceiling Surfacing	051	NAD	Game room (Dining room)	N/A	Good; Friable	Located in the former large dining room and the "Base Camp Room" (former small dining room). *Note: There is also a drywall ceiling in the large former dining room.
			052	NAD	Game room (Dining room)			
			053	NAD	Game room (Dining room)			
			054	NAD	Game room (Dining room)			
			055A White Spray-on Ceiling Surfacing 055B Gray Drywall	NAD NAD	Base camp room			
			056A White Spray-on Ceiling Surfacing 056B Gray Drywall	NAD NAD	Base camp room			
			057A White Spray-on Ceiling Surfacing 057B Gray Drywall	NAD NAD	Base camp room			

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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
18	Surf	Drywall Ceiling Tiles	058	NAD	Serving area	N/A	Good; Non-Friable	Located in the serving area, kitchen area, and ground floor.
			059	NAD	Kitchen			
19	Misc	12" Ceiling Tile	060	NAD	Serving Area	N/A	Good; Friable	Located in the serving area, kitchen area, and downstairs area over drywall ceiling tiles.
			061	NAD	Kitchen			



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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
20	Misc	Ceiling Tile Mastic	062	NAD	Serving area	N/A	Good; Non-Friable	Located in the serving area, kitchen area, and dishwashing area above drywall ceiling tiles.
			063	NAD	Kitchen			
21	Surf	Plaster	064	NAD	Serving "line" area	N/A	Good; Friable	Located throughout building, except for ceiling in dining rooms.
			065	NAD	Serving "line" area			
			066	NAD	Kitchen			
			067 Layer 1, White Plaster Skim Coat 067 Layer 2, Gray Plaster Base Coat	NAD NAD	Electrical room by kitchen			
			068 Layer 1, White Plaster Skim Coat 068 Layer 2, Gray Plaster Base Coat	NAD NAD	Ground floor by elevator			
			069 Layer 1, White Plaster Skim Coat 069 Layer 2, Gray Plaster Base Coat	NAD NAD	Mechanical room			
			070 Layer 1, White Plaster Skim Coat 070 Layer 2, Gray Plaster Base Coat	NAD NAD	1st floor dishwasher area			

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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
22	Surf	Drywall & Joint Compound	071 Layer 1, Gray Drywall 071 Layer 2, White Joint Compound	NAD NAD	Entrance at conference room	N/A	Good; Friable	Located in the conference room area, the first floor lobby area, and limited areas of the large dining room.
			072 Layer 1, Gray Drywall 072 Layer 2, White Joint Compound	NAD NAD	Southwest end of game room (former large dining room)			

C.2 HAZARDOUS MATERIALS REPORT



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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
23	Misc	Black Mastic on Cooler Insulation	073	NAD	Access hatch in kitchen	N/A	Good; Non-Friable	Located in the walls of the coolers. The mastic was accessed from the hatch in the kitchen.
			074	NAD	Access hatch in kitchen			
24	TSI	Blown-in Insulation	075	NAD	South end of game room (former large dining room)	N/A	Good; Friable	Located over ceilings in the former dining rooms.
			076	NAD				
			077	NAD				
25	Misc	Roofing Material	077-B	NAD	Roof 1	N/A	Good; Non-Friable	Located on Roofs 1 and 3.
			078	NAD	Roof 3			
			089	NAD	Roof 3			



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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
26	Misc	Roofing Tar around Equipment	079	NAD	Roof 1-exhaust	Unknown-see comments	Good; Non- Friable	Located on Roofs 1 and 3 around equipment. The equipment doesn't appear to contain flashing, other than metal in some areas. The entire roof is covered with an EPDM membrane; therefore, the quantity of ACM tar cannot be determined.
			080	10% C	Roof 1-former HVAC platform			
			133	NAD	Roof 3-exhaust			
27	Misc	Black Sealant	081	NAD	South end, drain vent pipe	N/A	Good; Non- Friable	Located on Roofs 1 and 3.
			082	NAD	Drain vent pipe, east side near HVAC			
28	Misc	White Sealant	083	NAD	South end-3" pipe vent	N/A	Good; Non- Friable	Located on Roofs 1 and 3.
			084	NAD	Center of roof			
29	Misc	Roof Edge Material	085	NAD	Roof 1-west	N/A	Good; Non- Friable	Located on Roofs 1 and 3. There is wood at the perimeter of the roofs instead of flashing. Samples were collected at the edge where the flashing would be located to ensure that the material is the same as the roof field.
			086	NAD	Roof 2-north			

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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
30	Misc	Roofing Material	087	NAD	Roof 2	N/A	Good; Non-Friable	Located on Roofs 2 and 4.
			088	NAD	Roof 4			
			090	NAD	Roof 4			
31	Misc	Silver Sealant	091	10% C	Roof 3	140 ln. ft.	Good; Non-Friable	Located above the metal flashing on the brick (upper section of dining room/accessed from roof) and roof hatch. This material could be in other areas under the EPDM roof membrane.
			092	SP	Roof 3			
32	Misc	White Glazing on Metal Windows	093	NAD	Roof	N/A	Good; Non-Friable	Located on the exterior windows.
			094	NAD	Roof			
33	Misc	White Sealant on Metal Flashing	095	NAD	Exterior window	N/A	Good; Non-Friable	Located on the exterior windows.
			096	NAD				



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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
34	TSI	Paper Pipe Insulation (canvas over layers of tan paper)	101	NAD	Ground floor mechanical	N/A	Good, Friable	Located throughout the building. Identified and sampled in the ground floor mechanical room. Associated with HA014.
			102	NAD	Ground floor mechanical			
35	TSI	Fiberglass Pipe Insulation with Canvas Wrap	103	NAD	Line labeled mop closet, etc.	N/A	Good, Friable	Located throughout the building. Identified throughout the ground floor. Sampled in the ground floor mechanical room.
			104	NAD	Line labeled employee restroom			
36	TSI	Black Coating on Steam Line	105	NAD	Chiller room	N/A	Good, Coating is Non-Friable	Located in the chiller room. The line is covered with fiberglass insulation which has a black coating on the jacket material. The elbows are PVC.
			106	NAD				
37	TSI	Black Coating on Condensate Line	107	NAD	Chiller room	N/A	Good, Coating is Non-Friable	Located in the chiller room. The line is covered with fiberglass insulation which has a black coating on the jacket material. The elbows are PVC.
			108	NAD	Dirt area			

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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
38	TSI	Pipe Insulation (large gray vertical line)	109 Layer 1, Brown Pipe Insulation 109 Layer 2, Gray Pipe Insulation	NAD 65% C	Corner of the mechanical room	24 ln. ft. exposed	Good, Friable	Located in the corner of the mechanical room and in the bulk storage (vertical line).
			110 Layer 1, Brown Pipe Insulation 110 Layer 2, Gray Pipe Insulation	NAD 65% C	Caged room			
39	TSI	Elbow	113 Layer 1, Gray Fitting Insulation 113 Layer 2, Gray Fitting Insulation	NAD 65% C	Ground floor mechanical	See note at bottom	Good, Friable	Located in the corner of the mechanical room by large gray vertical line.
40	TSI	Elbow	114 Layer 1, Gray Fitting Insulation 114 Layer 2, Gray Fitting Insulation	NAD 65% C	Ground floor mechanical	See note at bottom	Good, Friable	Located in the mechanical room by the air handler (appears to be a condensate line).
41	Misc	Window Glazing	111	NAD	Stairwell	N/A		Located on all windows.
			112	NAD	Dining lobby area side of building			
42	Misc	Masonry Caulk	115	2% C	See comments	20 ln. ft.	Good, Non- Friable	Located at the joint to the right of the 1st floor lobby area entrance (see sketch).
			116	SP				



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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
43	Misc	Window Caulk	117	2% C	Entrance at dining lobby	135 ln. ft.	Good, Non- Friable	Located below the 1st floor windows that are over green panels.
			118	SP				
44	Misc	Duct Insulation Mastic	119	NAD	Access hatch at loading dock	N/A	Good, Non- Friable	Located throughout the building. Accessed above the hatch at the loading dock.
			120	NAD				
45	Misc	Fitting Insulation	121	60% C	Ground floor mech. rm.-elbow	See note at bottom	Good, Friable (where accessible)	Located in the ground floor mechanical room. The insulation is on a large line that starts at the air handler, makes an L, and goes through wall on both ends. The pipe runs are fiberglass. It is likely that this pipes are in other areas of the building that are currently inaccessible.
			122	60% C	Ground floor mech. rm.-end cap			
46	TSI	Pipe Insulation	123	NAD	In Ground floor mechanical room	N/A	Damaged, Friable	Located along wall in ground floor mechanical room (loop under opening in wall). The insulation has the appearance of aircell, but is the same paper insulation that is included in HA034.

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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
47	Misc.	Fitting Insulation	124	35% C	Corner of ground floor mechanical room	N/A	Good, Friable	Located in the corner of the ground floor mechanical room. The jacket is painted gray and there is a yellow piece of duct tape wrapped around it. The pipe runs are covered with fiberglass insulation.
48	TSI	Pipe Insulation (aircell)	125	65% C	Dishwashing	515 ln. ft. observed + 252 sq. ft. of contamination over Can Wash	Friable, Significantly damaged over the storage area off of dishwashing	Located throughout building. The insulation was identified over dishwashing, over the ceiling in the storage area off of dishwashing (Can Wash), mechanical room behind Can Wash, in chase of ground floor hallway, and in small storage area across from bulk storage. It is assumed that it is located in inaccessible areas behind walls and over plaster ceilings.
49	Misc.	Fitting Insulation (painted tan)	127	NAD	Hallway outside of bulk storage	N/A	Good, Friable	Located on the line in the hallway directly outside of the bulk storage.
50	TSI	Pipe Insulation (painted tan)	128	NAD	Hallway outside of bulk storage	N/A	Good, Friable	Located on the line in the hallway directly outside of the bulk storage. The insulation is layers of tan paper with one black layer.



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HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
51	Misc.	Fitting Insulation	129	35% C	Bulk storage	See note at bottom	Good, Friable	Located on the lines that lead out of the mechanical room into bulk storage. The samples were all taken in bulk storage from lines that are small in diameter, painted white, and have non-asbestos pipe insulation. The pipes are not labeled.
			130	35% C	Bulk storage			
			131	35% C	Bulk storage			
52	TSI	Pipe Insulation (tan paper with one white layer)	126-Layer 1, Beige Pipe Insulation 126-Layer 2, White Pipe Insulation	65% C	Bulk storage over near mechanical room wall	200 ln. ft. observed	Good, Friable	Located throughout the building. Identified in the bulk storage area. The line comes out of the mechanical room, runs over ceiling files, and over plaster ceiling towards hallway.
			132-Layer 1, Beige/Tan Pipe Insulation 132-Layer 2, White Pipe Insulation	65% C	Bulk storage over ceiling tiles			
53	Misc.	Vibration Dampeners (beige)	Assumed to contain asbestos (system running)	Not sampled	N/A	2 dampeners (each 12 ln. ft., 3" wide)	Good, Non- Friable	Located in mechanical room behind Can Wash. Any dampeners discovered during renovation should be assumed to contain asbestos.

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Key: A=Amosite, C=Chrysotile, Cr=Crocidolite, Tr=Tremolite, Ac=Actinolite Asbestos, Misc.=Miscellaneous, HA#=Homogeneous Area #, PLM=Polarized Light Microscopy, TEM=Transmission Electron Microscopy, /=PLM and/or TEM Analysis Not Required sq.ft.=Square Feet, cu.ft.=Cubic Feet, ln.ft.=Linear Feet, HJI=Hard Joint Insulation, TSI=Thermal System Insulation, BUR=Built-up Roofing, Surf=Surfacing NAD=No Asbestos Detected, SP=Stop Positive, N/A								
HA#	Type of Material TSI, Surf, Misc	Material Type	Sample Info	Asbestos Content	Location of Sample	Approx. Quantity	Physical Condition	Location/ Comments
<p>NOTES: Although no asbestos was detected in some of the fitting insulation, it is recommended that all fittings be assumed to contain asbestos due to inconsistency in results and inability to distinguish between pipes. Approximate quantity of fittings observed that should be treated as ACM is 75; however, these fittings would also be located behind walls and above plaster ceilings.</p> <p>It is very difficult to distinguish between the pipe insulation that consists of multiple layers of tan paper with no asbestos (HA 34 and HA 46) and the pipe insulation that has multiple layers of paper and one layer of asbestos (HA 51). While this was determined during the inspection on accessible pipe insulation, pipe insulation that is discovered during renovation should either be considered asbestos regardless of appearance, or sampled.</p> <p>Quantities provided for pipe insulation and fitting insulation only include insulation that could be seen (includes pipes observed above ceiling tiles and by means of access hatches).</p>								

C.2 HAZARDOUS MATERIALS REPORT



**ATTACHMENT II
LABORATORY REPORT**





AMENDED

ASBESTOS LABORATORY REPORT

Prepared for

Crossroads Environmental

PROJECT: 13220-IN (Brown Building)

CEI LAB CODE: A14-14543

DATE ANALYZED: 10/17/14

DATE REPORTED: 10/17/14

TOTAL SAMPLES ANALYZED: 58

SAMPLES >1% ASBESTOS: 12

TEL: 866-481-1412

www.ceilabs.com



AMENDED

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: 13220-IN (Brown Building)

CEI LAB CODE: A14-14543

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
001		A1842140	Black,Clear	Hockey Puck Mastic	None Detected
002		A1842141	Black,Clear	Hockey Puck Mastic	None Detected
003		A1842142A	Light Tan ,Dark Brown	Vinyl Floor Tile	None Detected
		A1842142B	Tan	Adhesive	Chrysotile 2%
004		A1842143A	Light Tan ,Dark Brown	Vinyl Floor Tile	None Detected
		A1842143B		Sample Not Analyzed per COC	
005	Layer 1	A1842144A	Yellow	Mastic	None Detected
	Layer 2	A1842144A	Dark Tan	Vinyl Floor Tile	Chrysotile 5%
		A1842144B	Black	Mastic	Chrysotile 2%
006		A1842145		Sample Not Analyzed per COC	
007		A1842146A	Black	Vinyl Covebase	None Detected
		A1842146B	Yellow	Glue	None Detected
008		A1842147A	Black	Vinyl Covebase	None Detected
		A1842147B	Yellow	Glue	None Detected
009		A1842148A	Light Tan ,Dark Brown	Vinyl Floor Tile	None Detected
		A1842148B	Yellow	Mastic	None Detected
		A1842148C	Black	Vinyl Floor Tile	Chrysotile 3%
011		A1842149A	Light Tan ,Dark Brown	Vinyl Floor Tile	None Detected
		A1842149B	Yellow,Black	Mastic	None Detected
		A1842149C	Black	Vinyl Floor Tile	Chrysotile 3%
010		A1842150A	Dark Tan	Vinyl Floor Tile	None Detected
		A1842150B	Tan	Adhesive	None Detected
012		A1842151A	Dark Tan	Vinyl Floor Tile	None Detected
		A1842151B	Black	Adhesive	None Detected
013		A1842152A	Brown	Vinyl Covebase	None Detected
		A1842152B	Brown,Beige	Glue	None Detected
014		A1842153A	Brown	Vinyl Covebase	None Detected
	Layer 1	A1842153B	Brown,Beige	Glue	None Detected





AMENDED

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: 13220-IN (Brown Building)

CEI LAB CODE: A14-14543

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A1842153B	Black	Glue	Chrysotile 3%
015	Layer 1	A1842154A	Yellow	Carpet Glue	None Detected
	Layer 2	A1842154A	Beige	Vinyl Floor Tile	Chrysotile 2%
		A1842154B	Black	Mastic	Chrysotile 3%
016		A1842155		Sample Not Analyzed per COC	
017		A1842156A	Dark Tan	Vinyl Floor Tile	None Detected
		A1842156B	Black	Mastic	Chrysotile <1%
018		A1842157A	Dark Tan	Vinyl Floor Tile	None Detected
		A1842157B	Black	Mastic	Chrysotile 2%
019		A1842158A	Light Brown	Vinyl Floor Tile	Chrysotile 5%
		A1842158B	Black	Mastic	None Detected
020		A1842159A		Sample Not Analyzed per COC	
		A1842159B	Black	Mastic	None Detected
021		A1842160A	Black	Vinyl Covebase	None Detected
	Layer 1	A1842160B	Yellow	Glue	None Detected
	Layer 2	A1842160B	Black	Glue	Chrysotile <1%
022		A1842161A	Black	Vinyl Covebase	None Detected
	Layer 1	A1842161B	Yellow	Glue	None Detected
	Layer 2	A1842161B	Black	Glue	Chrysotile <1%
023		A1842162A	Cream	Vinyl Floor Tile	None Detected
		A1842162B	Yellow	Glue	None Detected
024		A1842163A	Cream	Vinyl Floor Tile	None Detected
		A1842163B	Yellow	Glue	None Detected
025		A1842164	Yellow	Carpet Glue	None Detected
026		A1842165	Yellow	Carpet Glue	None Detected
027		A1842166	Gray	Pipe Insulation	Chrysotile <1%
028		A1842167	Gray	Pipe Insulation	Chrysotile <1%
029		A1842168	Gray	Pipe Insulation	Chrysotile <1%
030		A1842169	Gray	Pipe Insulation	Chrysotile 20%
031		A1842170		Sample Not Analyzed per COC	
032		A1842171		Sample Not Analyzed per COC	

C.2 HAZARDOUS MATERIALS REPORT





AMENDED

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: 13220-IN (Brown Building)

CEI LAB CODE: A14-14543

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
033		A1842172	Gray	Pipe Insulation	None Detected
034		A1842173	Gray	Pipe Insulation	Chrysotile 10%
035		A1842174		Sample Not Analyzed per COC	
051		A1842175	White	Spray-on Ceiling Surfacing	None Detected
052		A1842176	White	Spray-on Ceiling Surfacing	None Detected
053		A1842177	White	Spray-on Ceiling Surfacing	None Detected
054		A1842178	White	Spray-on Ceiling Surfacing	None Detected
055		A1842179A	White	Spray-on Ceiling Surfacing	None Detected
		A1842179B	Gray	Drywall	None Detected
056		A1842180A	White	Spray-on Ceiling Surfacing	None Detected
		A1842180B	Gray	Drywall	None Detected
057		A1842181A	White	Spray-on Ceiling Surfacing	None Detected
		A1842181B	Gray	Drywall	None Detected
058		A1842182	White	Ceiling Tile	None Detected
059		A1842183	White	Ceiling Tile	None Detected
060		A1842184	Off-white	Ceiling Tile	None Detected
061		A1842185	Off-white	Ceiling Tile	None Detected
062		A1842186	Brown	Ceiling Tile Mastic	None Detected
063		A1842187	Brown	Ceiling Tile Mastic	None Detected
064		A1842188	Gray	Plaster	None Detected
065		A1842189	Gray	Plaster	None Detected
066		A1842190	Gray	Plaster	None Detected
067	Layer 1	A1842191	White	Plaster Skim Coat	None Detected
	Layer 2	A1842191	Gray	Plaster Base Coat	None Detected
068	Layer 1	A1842192	White	Plaster Skim Coat	None Detected
	Layer 2	A1842192	Gray	Plaster Base Coat	None Detected
069	Layer 1	A1842193	White	Plaster Skim Coat	None Detected
	Layer 2	A1842193	Gray	Plaster Base Coat	None Detected
070	Layer 1	A1842194	White	Plaster Skim Coat	None Detected
	Layer 2	A1842194	Gray	Plaster Base Coat	None Detected
071	Layer 1	A1842195	Gray	Drywall	None Detected





AMENDED

Asbestos Report Summary

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CEI LAB CODE: A14-14543

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A1842195	White	Joint Compound	None Detected
072	Layer 1	A1842196	Gray	Drywall	None Detected
	Layer 2	A1842196	White	Joint Compound	None Detected
073		A1842197	Black	Mastic	None Detected
074		A1842198	Black	Mastic	None Detected
075		A1842199	Beige	Insulation	None Detected
076		A1842200	Beige,Pink	Insulation	None Detected
077		A1842201	Beige	Insulation	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
001 A1842140	Hockey Puck Mastic	Heterogeneous	75%	Mastic	None Detected
		Black,Clear	10%	Silicates	
		Non-fibrous	15%	Binder	
		Bound			
002 A1842141	Hockey Puck Mastic	Heterogeneous	75%	Mastic	None Detected
		Black,Clear	10%	Silicates	
		Non-fibrous	15%	Binder	
		Bound			
003 A1842142A	Vinyl Floor Tile	Homogeneous	100%	Vinyl	None Detected
		Light Tan ,Dark Brown Non-fibrous Bound			
A1842142B	Adhesive	Homogeneous Tan Non-fibrous Bound	98%	Mastic	2% Chrysotile
004 A1842143A	Vinyl Floor Tile	Homogeneous	100%	Vinyl	None Detected
		Light Tan ,Dark Brown Non-fibrous Bound			
A1842143B	Sample Not Analyzed per COC				
005 Layer 1 A1842144A	Mastic	Homogeneous	100%	Mastic	None Detected
		Yellow			
		Non-fibrous Bound			





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
 1258 Boiling Springs Road
 Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
Layer 2 A1842144A	Vinyl Floor Tile	Homogeneous Dark Tan Non-fibrous Bound	95%	Vinyl	5% Chrysotile
A1842144B	Mastic	Homogeneous Black Non-fibrous Bound	93% 5%	Mastic Silicates	2% Chrysotile
006 A1842145	Sample Not Analyzed per COC				
007 A1842146A	Vinyl Covebase	Homogeneous Black Non-fibrous Bound	75% 25%	Vinyl Binder	None Detected
A1842146B	Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
008 A1842147A	Vinyl Covebase	Homogeneous Black Non-fibrous Bound	75% 25%	Vinyl Binder	None Detected
A1842147B	Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
009 A1842148A	Vinyl Floor Tile	Homogeneous Light Tan ,Dark Brown Non-fibrous Bound	100%	Vinyl	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
A1842148B	Mastic	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
A1842148C	Vinyl Floor Tile	Homogeneous Black Non-fibrous Bound	97%	Vinyl	3% Chrysotile
Lab Notes: No mastic present					
011 A1842149A	Vinyl Floor Tile	Homogeneous Light Tan ,Dark Brown Non-fibrous Bound	100%	Vinyl	None Detected
A1842149B	Mastic	Homogeneous Yellow,Black Non-fibrous Bound	<1%	Cellulose 100% Mastic	None Detected
A1842149C	Vinyl Floor Tile	Homogeneous Black Non-fibrous Bound	97%	Vinyl	3% Chrysotile
Lab Notes: No mastic present					
010 A1842150A	Vinyl Floor Tile	Homogeneous Dark Tan Non-fibrous Bound	100%	Vinyl	None Detected
A1842150B	Adhesive	Homogeneous Tan Non-fibrous Bound	100%	Mastic	None Detected





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ASBESTOS BULK ANALYSIS

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1258 Boiling Springs Road
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Date Received: 10-16-14
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Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
012 A1842151A	Vinyl Floor Tile	Homogeneous Dark Tan Non-fibrous Bound	100%	Vinyl	None Detected
A1842151B	Adhesive	Homogeneous Black Non-fibrous Bound	<1%	Cellulose	100% Mastic None Detected
013 A1842152A	Vinyl Covebase	Homogeneous Brown Non-fibrous Bound	75%	Vinyl	25% Binder None Detected
A1842152B	Glue	Homogeneous Brown,Beige Non-fibrous Bound	100%	Mastic	None Detected
014 A1842153A	Vinyl Covebase	Homogeneous Brown Non-fibrous Bound	75%	Vinyl	25% Binder None Detected
Layer 1 A1842153B	Glue	Homogeneous Brown,Beige Non-fibrous Bound	100%	Mastic	None Detected
Layer 2 A1842153B	Glue	Homogeneous Black Non-fibrous Bound	97%	Mastic	3% Chrysotile





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
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CEI Lab Code: A14-14543
Date Received: 10-16-14
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Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
015 Layer 1 A1842154A	Carpet Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
Layer 2 A1842154A	Vinyl Floor Tile	Homogeneous Beige Non-fibrous Bound	98%	Vinyl	2% Chrysotile
A1842154B	Mastic	Homogeneous Black Non-fibrous Bound	97%	Mastic	3% Chrysotile
016 A1842155	Sample Not Analyzed per COC				
017 A1842156A	Vinyl Floor Tile	Homogeneous Dark Tan Non-fibrous Bound	100%	Vinyl	None Detected
A1842156B	Mastic	Homogeneous Black Non-fibrous Bound	<1%	Cellulose 100% Mastic	<1% Chrysotile
018 A1842157A	Vinyl Floor Tile	Homogeneous Dark Tan Non-fibrous Bound	100%	Vinyl	None Detected
A1842157B	Mastic	Homogeneous Black Non-fibrous Bound	<1%	Cellulose 98% Mastic	2% Chrysotile





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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Date Received: 10-16-14
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Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
019 A1842158A	Vinyl Floor Tile	Homogeneous Light Brown Non-fibrous Bound	95%	Vinyl	5% Chrysotile
A1842158B	Mastic	Homogeneous Black Non-fibrous Bound	100%	Mastic	None Detected
020 A1842159A	Sample Not Analyzed per COC				
A1842159B	Mastic	Homogeneous Black Non-fibrous Bound	100%	Mastic	None Detected
021 A1842160A	Vinyl Covebase	Homogeneous Black Non-fibrous Bound	75% 25%	Vinyl Binder	None Detected
Lab Notes: Samples A1842160 to a1842201 analyzed by Lynn Burkholder.					
Layer 1 A1842160B	Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
Layer 2 A1842160B	Glue	Homogeneous Black Fibrous Bound	100%	Mastic	<1% Chrysotile
022 A1842161A	Vinyl Covebase	Homogeneous Black Non-fibrous Bound	75% 25%	Vinyl Binder	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
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CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
Layer 1 A1842161B	Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
Layer 2 A1842161B	Glue	Homogeneous Black Fibrous Bound	100%	Mastic	<1% Chrysotile
023 A1842162A	Vinyl Floor Tile	Homogeneous Cream Non-fibrous Bound	100%	Vinyl	None Detected
A1842162B	Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
024 A1842163A	Vinyl Floor Tile	Homogeneous Cream Non-fibrous Bound	100%	Vinyl	None Detected
A1842163B	Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
025 A1842164	Carpet Glue	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

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Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
026 A1842165	Carpet Glue	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
027 A1842166	Pipe Insulation	Heterogeneous Gray Non-fibrous Bound	10%	Cellulose	75%	Binder	<1% Chrysotile
			10%	Fiberglass	5%	Paint	
028 A1842167	Pipe Insulation	Heterogeneous Gray Non-fibrous Bound	10%	Cellulose	75%	Binder	<1% Chrysotile
			10%	Fiberglass	5%	Paint	
029 A1842168	Pipe Insulation	Heterogeneous Gray Non-fibrous Bound	10%	Cellulose	75%	Binder	<1% Chrysotile
			10%	Fiberglass	5%	Paint	
030 A1842169	Pipe Insulation	Heterogeneous Gray Non-fibrous Bound	10%	Cellulose	55%	Binder	20% Chrysotile
			10%	Fiberglass	5%	Paint	
031 A1842170	Sample Not Analyzed per COC						
032 A1842171	Sample Not Analyzed per COC						
033 A1842172	Pipe Insulation	Heterogeneous Gray Non-fibrous Bound	10%	Cellulose	75%	Binder	None Detected
			10%	Fiberglass	5%	Paint	





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ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
034 A1842173	Pipe Insulation	Heterogeneous	10%	Cellulose	65%	Binder	10% Chrysotile
		Gray	10%	Fiberglass	5%	Paint	
		Non-fibrous Bound					
035 A1842174	Sample Not Analyzed per COC						
051 A1842175	Spray-on Ceiling Surfacing	Heterogeneous	98%	Cellulose	2%	Paint	None Detected
		White Fibrous Loosely Bound					
052 A1842176	Spray-on Ceiling Surfacing	Heterogeneous	98%	Cellulose	2%	Paint	None Detected
		White Fibrous Loosely Bound					
053 A1842177	Spray-on Ceiling Surfacing	Heterogeneous	98%	Cellulose	2%	Paint	None Detected
		White Fibrous Loosely Bound					
054 A1842178	Spray-on Ceiling Surfacing	Heterogeneous	98%	Cellulose	2%	Paint	None Detected
		White Fibrous Loosely Bound					
055 A1842179A	Spray-on Ceiling Surfacing	Heterogeneous	98%	Cellulose	2%	Paint	None Detected
		White Fibrous Loosely Bound					
A1842179B	Drywall	Heterogeneous	20%	Cellulose	75%	Gypsum	None Detected
		Gray	5%	Fiberglass			
		Fibrous Bound					





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ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
056 A1842180A	Spray-on Ceiling Surfacing	Heterogeneous White Fibrous Loosely Bound	98%	Cellulose	2%	Paint	None Detected
A1842180B	Drywall	Heterogeneous Gray Fibrous Bound	20%	Cellulose	75%	Gypsum	None Detected
			5%	Fiberglass			
057 A1842181A	Spray-on Ceiling Surfacing	Heterogeneous White Fibrous Loosely Bound	98%	Cellulose	2%	Paint	None Detected
A1842181B	Drywall	Heterogeneous Gray Fibrous Bound	20%	Cellulose	75%	Gypsum	None Detected
			5%	Fiberglass			
058 A1842182	Ceiling Tile	Heterogeneous White Fibrous Bound	20%	Cellulose	70%	Gypsum	None Detected
			5%	Fiberglass	5%	Vinyl	
059 A1842183	Ceiling Tile	Heterogeneous White Fibrous Bound	20%	Cellulose	70%	Gypsum	None Detected
			5%	Fiberglass	5%	Vinyl	
060 A1842184	Ceiling Tile	Heterogeneous Off-white Fibrous Bound	95%	Fiberglass	5%	Paint	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
061 A1842185	Ceiling Tile	Heterogeneous Off-white Fibrous Bound	95%	Fiberglass	5%	Paint	None Detected
062 A1842186	Ceiling Tile Mastic	Homogeneous Brown Fibrous Bound	<1%	Talc	100%	Mastic	None Detected
063 A1842187	Ceiling Tile Mastic	Homogeneous Brown Fibrous Bound	<1%	Talc	100%	Mastic	None Detected
064 A1842188	Plaster	Homogeneous Gray Fibrous Bound	<1%	Hair	100%	Plaster	None Detected
065 A1842189	Plaster	Homogeneous Gray Fibrous Bound	<1%	Hair	100%	Plaster	None Detected
066 A1842190	Plaster	Homogeneous Gray Fibrous Bound	<1%	Hair	100%	Plaster	None Detected
067 Layer 1 A1842191	Plaster Skim Coat	Homogeneous White Non-fibrous Bound			100%	Plaster	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %	
			Fibrous	Non-Fibrous		
Layer 2 A1842191	Plaster Base Coat	Homogeneous Gray Fibrous Bound	<1%	Hair	100% Plaster	None Detected
068 Layer 1 A1842192	Plaster Skim Coat	Heterogeneous White Non-fibrous Bound			95% Plaster 5% Paint	None Detected
Layer 2 A1842192	Plaster Base Coat	Homogeneous Gray Fibrous Bound	<1%	Hair	100% Plaster	None Detected
069 Layer 1 A1842193	Plaster Skim Coat	Homogeneous White Non-fibrous Bound			100% Plaster	None Detected
Layer 2 A1842193	Plaster Base Coat	Homogeneous Gray Fibrous Bound	<1%	Hair	100% Plaster	None Detected
070 Layer 1 A1842194	Plaster Skim Coat	Homogeneous White Non-fibrous Bound			100% Plaster	None Detected
Layer 2 A1842194	Plaster Base Coat	Homogeneous Gray Fibrous Bound	<1%	Hair	100% Plaster	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
071 Layer 1 A1842195	Drywall	Heterogeneous	20%	Cellulose	75%	Gypsum	None Detected
		Gray	5%	Fiberglass			
		Fibrous Bound					
Layer 2 A1842195	Joint Compound	Heterogeneous			75%	Calc Carb	None Detected
		White			20%	Binder	
		Non-fibrous Bound			5%	Paint	
072 Layer 1 A1842196	Drywall	Heterogeneous	20%	Cellulose	75%	Gypsum	None Detected
		Gray	5%	Fiberglass			
		Fibrous Bound					
Layer 2 A1842196	Joint Compound	Heterogeneous			75%	Calc Carb	None Detected
		White			20%	Binder	
		Non-fibrous Bound			5%	Paint	
073 A1842197	Mastic	Homogeneous	5%	Fiberglass	94%	Tar	None Detected
		Black Fibrous Bound					
074 A1842198	Mastic	Homogeneous	5%	Fiberglass	94%	Tar	None Detected
		Black Fibrous Bound					
075 A1842199	Insulation	Homogeneous	100%	Cellulose			None Detected
		Beige Fibrous Loosely Bound					





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14543
Date Received: 10-16-14
Date Analyzed: 10-17-14
Date Reported: 10-17-14

Project: 13220-IN (Brown Building)

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
076 A1842200	Insulation	Homogeneous Beige, Pink Fibrous Loosely Bound	100%	Cellulose	None Detected
077 A1842201	Insulation	Homogeneous Beige Fibrous Loosely Bound	100%	Cellulose	None Detected





AMENDED

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

Due to the limitations of the EPA 600 Method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarizing light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

CEI Labs, Inc. can perform positive stop analysis if requested by customer. However, it is the responsibility of the customer to determine if the samples grouped together are in fact the same type of material and belong to the same homogeneous area.

This report may not be reproduced, except in full, without written approval by CEI LABS. CEI LABS makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U. S. Government.

ANALYST: Samantha Card
Samantha Card

Lynn Burkholder
Lynn Burkholder

APPROVED BY: Tianbao Bai
Tianbao Bai, Ph.D.
Laboratory Director



FW: CEI Lab Code A14-14543 (CRE Project #13220-IN)

From: Anna Malmberg

Sent: Fri, Oct 24, 2014 at 12:31 pm

To: Laura Bostwick

Anna Malmberg
Asbestos Laboratory Manager
CEI Labs, Inc.
107 New Edition Court
Cary, NC 27511
(919)481-1413
asbestos@ceilabs.com

-----Original Message-----

From: "Travis Shaw" <tshaw@crossroadsenv.net>

Sent: Friday, October 24, 2014 12:09pm

To: "CEI Labs, Inc. (asbestos@ceilabs.com)" <asbestos@ceilabs.com>

Cc: "Kay Horton" <khorton@crossroadsenv.net>

Subject: CEI Lab Code A14-14543 (CRE Project #13220-IN)

To Whom It May Concern:

CEI Lab Code A14-14543 (CRE Project #13220-IN)

For sample #009 (A1842148C), Can an analyst please check to see if there is black mastic present on the black tile, and also can sample #011 (A1842149C) be analyzed as well?

Thanks,

Travis Shaw
Crossroads Environmental, LLC
P.O. Box 5685
Spartanburg, SC 29304
Office (864) 541-8736
www.crossroadsenv.net

FW: CEI Lab Code A14-14543 (CRE Project #13220-IN)

From: Anna Malmberg
Sent: Fri, Oct 24, 2014 at 2:45 pm
To: Laura Bostwick

Anna Malmberg
Asbestos Laboratory Manager
CEI Labs, Inc.
107 New Edition Court
Cary, NC 27511
(919)481-1413
asbestos@ceilabs.com

-----Original Message-----

From: "Travis Shaw" <tshaw@crossroadsenv.net>
Sent: Friday, October 24, 2014 2:40pm
To: "CEI Labs, Inc. (asbestos@ceilabs.com)" <asbestos@ceilabs.com>
Subject: CEI Lab Code A14-14543 (CRE Project #13220-IN)

Hi,


Would it be possible to get those samples analyzed today? (009 and 011)

Thanks,

Travis Shaw
Crossroads Environmental, LLC
P.O. Box 5685
Spartanburg, SC 29304
Office (864) 541-8736
www.crossroadsenv.net



A14-14543 (62)
A1842140-A1842201

Client: Crossroads Environmental Contact: Kay H. Horton Address: P. O. Box 5685 Phone: 864-541-8736 Fax: 864-541-8776 Email: results@crossroadsenv.net Project: 13220-IN (Brown Building) Client Notes: NC Samples P.O. #: Date Submitted: 10/15/2014 0:00 Analysis: PLM TurnAroundTime: 24hr	Relinquished By  Fedex #: 8037-4970-7174 ALL SAMPLES ARE STOP POSITIVE EXCEPT FOR HA17, HA18, HA21, & HA22	CEI Labs, Inc 107 New Edition Ct. Cary, NC 27511 919-481-1413
--	--	---

Sample Number	PLM/TEM	Sample Description	HA #
<<			
001	PLM	Hockey Puck Mastic	HA01
002	PLM	Hockey Puck Mastic	HA01
003	PLM	12"X12" Lt. Tan VFT w/Dark Brown Specs & Adhesive	HA02
004	PLM	12"X12" Lt. Tan VFT w/Dark Brown Specs & Adhesive	HA02
005	PLM	Dark Tan Vinyl Floor Tile w/Black Mastic	HA03
006	PLM	Dark Tan Vinyl Floor Tile w/Black Mastic	HA03
007	PLM	Black Vinyl Cove base & Glue	HA04
008	PLM	Black Vinyl Cove base & Glue	HA04
009	PLM	12"X12" Lt. Tan VFT w/Dark Brown Specs & Mastic	HA05
011	PLM	12"X12" Lt. Tan VFT w/Dark Brown Specs & Mastic	HA05
010	PLM	12"X12" Dark Tan VFT w/Adhesive	HA06
012	PLM	12"X12" Dark Tan VFT w/Adhesive	HA06
013	PLM	Brown Vinyl Cove base & Glue	HA07
014	PLM	Brown Vinyl Cove base & Glue	HA07
015	PLM	Vinyl Floor Tile & Black Mastic (Under Carpet Glue)	HA08
016	PLM	Vinyl Floor Tile & Black Mastic (Under Carpet Glue)	HA08
017	PLM	12"X12" Dark Tan VFT w/Black Mastic	HA09
018	PLM	12"X12" Dark Tan VFT w/Black Mastic	HA09
019	PLM	9"X9" Lt. Brown Vinyl Floor Tile w/Black Mastic	HA10
020	PLM	9"X9" Lt. Brown Vinyl Floor Tile w/Black Mastic	HA10
021	PLM	Black Vinyl Cove base & Glue	HA11
022	PLM	Black Vinyl Cove base & Glue	HA11
023	PLM	12"X12" Cream Vinyl Floor Tile w/Yellow Glue	HA12
024	PLM	12"X12" Cream Vinyl Floor Tile w/Yellow Glue	HA12
025	PLM	Carpet Glue	HA13
026	PLM	Carpet Glue	HA13
027	PLM	Small Pipe Elbow Insulation	HA14
028	PLM	Small Pipe Elbow Insulation	HA14
029	PLM	Small Pipe Elbow Insulation	HA14
030	PLM	Pipe Insulation on Public Restroom Line-Elbow	HA15
031	PLM	Pipe Insulation on Public Restroom Line-Elbow	HA15
032	PLM	Pipe Insulation on Public Restroom Line-Elbow	HA15
033	PLM	Pipe Elbow Insulation	HA16
034	PLM	Pipe Elbow Insulation	HA16
035	PLM	Pipe Elbow Insulation	HA16

RECEIVED by CEI
 BY: *JM*
 DATE: 10/16/14 9:15

A14-14548

051	PLM	Spray Applied Ceiling Surfacing	HA17
052	PLM	Spray Applied Ceiling Surfacing	HA17
053	PLM	Spray Applied Ceiling Surfacing	HA17
054	PLM	Spray Applied Ceiling Surfacing	HA17
055	PLM	Spray Applied Ceiling Surfacing	HA17
056	PLM	Spray Applied Ceiling Surfacing	HA17
057	PLM	Spray Applied Ceiling Surfacing	HA17
058	PLM	Drywall Ceiling Tiles	HA18
059	PLM	Drywall Ceiling Tiles	HA18
060	PLM	12" Ceiling Tile	HA19
061	PLM	12" Ceiling Tile	HA19
062	PLM	Ceiling Tile Mastic	HA20
063	PLM	Ceiling Tile Mastic	HA20
064	PLM	Plaster	HA21
065	PLM	Plaster	HA21
066	PLM	Plaster	HA21
067	PLM	Plaster	HA21
068	PLM	Plaster	HA21
069	PLM	Plaster	HA21
070	PLM	Plaster	HA21
071	PLM	Drywall & Joint Compound	HA22
072	PLM	Drywall & Joint Compound	HA22
073	PLM	Black Mastic on Cooler Insulation	HA23
074	PLM	Black Mastic on Cooler Insulation	HA23
075	PLM	Attic Insulation	HA24
076	PLM	Attic Insulation	HA24
077	PLM	Attic Insulation	HA24

C.2 HAZARDOUS MATERIALS REPORT





AMENDED

ASBESTOS LABORATORY REPORT

Prepared for

Crossroads Environmental

PROJECT: Brown; 13220-IN

CEI LAB CODE: A14-14786

DATE ANALYZED: 10/22/14

DATE REPORTED: 10/22/14

TOTAL SAMPLES ANALYZED: 37

SAMPLES >1% ASBESTOS: 8

TEL: 866-481-1412

www.ceilabs.com



AMENDED

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Brown; 13220-IN

CEI LAB CODE: A14-14786

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
077B		A1845753	Gray	Roofing	None Detected
078		A1845754	Gray	Roofing	None Detected
079		A1845755	Black	Flashing	None Detected
080		A1845756	Black	Flashing	Chrysotile 10%
081		A1845757	Black	Sealant	None Detected
082		A1845758	Black	Sealant	None Detected
083		A1845759	White	Sealant	None Detected
084		A1845760	White	Sealant	None Detected
085		A1845761	Gray	Flashing	None Detected
086		A1845762	Gray	Flashing	None Detected
087		A1845763	Gray	Roofing	None Detected
088		A1845764	Gray	Roofing	None Detected
089		A1845765	Gray	Roofing	None Detected
090		A1845766	Gray	Roofing	None Detected
091		A1845767	Silver	Sealant	Chrysotile 10%
092		A1845768		Sample Not Analyzed per COC	
093		A1845769	White	Window Glazing	None Detected
094		A1845770	White	Window Glazing	None Detected
095		A1845771	White	Sealant	None Detected
096		A1845772	White	Sealant	None Detected
101		A1845773	Brown	Pipe Insulation	None Detected
102		A1845774	Brown	Pipe Insulation	None Detected
103		A1845775	Gray	Pipe Insulation W/ Wrap	None Detected
104		A1845776	Gray	Pipe Insulation W/ Wrap	None Detected
105		A1845777	Black	Jacket	None Detected
106		A1845778	Black	Jacket	None Detected
107		A1845779	Black	Jacket	None Detected
108		A1845780	Black	Jacket	None Detected
109	Layer 1	A1845781	Brown	Pipe Insulation	None Detected
	Layer 2	A1845781	Gray	Pipe Insulation	Chrysotile 65%
110	Layer 1	A1845782	Brown	Pipe Insulation	None Detected

C.2 HAZARDOUS MATERIALS REPORT





AMENDED

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Brown; 13220-IN

CEI LAB CODE: A14-14786

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A1845782	Gray	Pipe Insulation	Chrysotile 65%
111		A1845783	White	Window Glazing	None Detected
112		A1845784	Gray	Window Glazing	None Detected
113	Layer 1	A1845785	Gray	Fitting Insulation	None Detected
	Layer 2	A1845785	Gray	Fitting Insulation	Chrysotile 65%
114	Layer 1	A1845786	Gray	Fitting Insulation	None Detected
	Layer 2	A1845786	Gray	Fitting Insulation	Chrysotile 65%
115		A1845787	Tan	Masonry Caulk	Chrysotile 2%
116		A1845788		Sample Not Analyzed per COC	
117		A1845789	Tan	Below Window Caulk	Chrysotile 2%
118		A1845790		Sample Not Analyzed per COC	
119		A1845791	Black	Duct Insulation Mastic	None Detected
120		A1845792	Black	Duct Insulation Mastic	None Detected
121		A1845793	Gray	Fitting Insulation W/ Mastic	None Detected
122		A1845794	Brown	Pipe Insulation W/ Mastic	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14786
Date Received: 10-21-14
Date Analyzed: 10-22-14
Date Reported: 10-22-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
077B A1845753	Roofing	Heterogeneous	50%	Cellulose	20%	Tar	None Detected
		Gray	5%	Fiberglass	10%	Perlite	
		Fibrous			15%	Foam	
		Bound					
078 A1845754	Roofing	Heterogeneous	40%	Cellulose	5%	Tar	None Detected
		Gray	5%	Fiberglass	10%	Perlite	
		Fibrous			40%	Foam	
		Bound					
079 A1845755	Flashing	Homogeneous			100%	Tar	None Detected
		Black Non-fibrous Bound					
080 A1845756	Flashing	Homogeneous			90%	Tar	10% Chrysotile
		Black Fibrous Bound					
081 A1845757	Sealant	Homogeneous			100%	Binder	None Detected
		Black Non-fibrous Bound					
082 A1845758	Sealant	Homogeneous			100%	Binder	None Detected
		Black Non-fibrous Bound					
083 A1845759	Sealant	Homogeneous			100%	Binder	None Detected
		White Non-fibrous Bound					





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14786
Date Received: 10-21-14
Date Analyzed: 10-22-14
Date Reported: 10-22-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
084 A1845760	Sealant	Homogeneous White Non-fibrous Bound	100%	Binder			None Detected
085 A1845761	Flashing	Heterogeneous Gray Fibrous Bound	60% 5%	Cellulose Fiberglass	5% 30%	Tar Perlite	None Detected
086 A1845762	Flashing	Heterogeneous Gray Fibrous Bound	60% 5%	Cellulose Fiberglass	5% 30%	Tar Perlite	None Detected
087 A1845763	Roofing	Heterogeneous Gray Fibrous Bound	55% 5%	Cellulose Fiberglass	10% 30%	Tar Foam	None Detected
088 A1845764	Roofing	Heterogeneous Gray Fibrous Bound	55% 5%	Cellulose Fiberglass	10% 30%	Tar Foam	None Detected
089 A1845765	Roofing	Heterogeneous Gray Fibrous Bound	55% 5%	Cellulose Fiberglass	20% 20%	Tar Perlite	None Detected
090 A1845766	Roofing	Heterogeneous Gray Fibrous Bound	40% 5%	Cellulose Fiberglass	5% 50%	Tar Foam	None Detected





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14786
Date Received: 10-21-14
Date Analyzed: 10-22-14
Date Reported: 10-22-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous	Non-Fibrous			
091 A1845767	Sealant	Heterogeneous	85%	Tar		10% Chrysotile	
		Silver	5%	Paint			
		Non-fibrous					
		Bound					
092 A1845768	Sample Not Analyzed per COC						
093 A1845769	Window Glazing	Heterogeneous	95%	Binder		None Detected	
		White	5%	Paint			
		Non-fibrous					
		Bound					
094 A1845770	Window Glazing	Heterogeneous	95%	Binder		None Detected	
		White	5%	Paint			
		Non-fibrous					
		Bound					
095 A1845771	Sealant	Homogeneous	100%	Binder		None Detected	
		White					
		Non-fibrous					
		Bound					
096 A1845772	Sealant	Homogeneous	100%	Binder		None Detected	
		White					
		Non-fibrous					
		Bound					
101 A1845773	Pipe Insulation	Heterogeneous	85%	Cellulose	5%	Tar	None Detected
		Brown	5%	Fiberglass	5%	Binder	
		Fibrous					
		Bound					
102 A1845774	Pipe Insulation	Heterogeneous	85%	Cellulose	5%	Tar	None Detected
		Brown	5%	Fiberglass	5%	Binder	
		Fibrous					
		Bound					





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14786
Date Received: 10-21-14
Date Analyzed: 10-22-14
Date Reported: 10-22-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
103 A1845775	Pipe Insulation W/ Wrap	Heterogeneous Gray Fibrous Bound	40%	Cellulose	5%	Binder	None Detected
			50%	Fiberglass	5%	Paint	
104 A1845776	Pipe Insulation W/ Wrap	Heterogeneous Gray Fibrous Bound	40%	Cellulose	5%	Binder	None Detected
			50%	Fiberglass	5%	Paint	
105 A1845777	Jacket	Homogeneous Black Fibrous Bound	10%	Fiberglass	90%	Tar	None Detected
106 A1845778	Jacket	Homogeneous Black Fibrous Bound	10%	Fiberglass	90%	Tar	None Detected
107 A1845779	Jacket	Homogeneous Black Fibrous Bound	10%	Cellulose	90%	Tar	None Detected
108 A1845780	Jacket	Homogeneous Black Fibrous Bound	10%	Cellulose	85%	Tar	None Detected
					5%	Binder	
109 Layer 1 A1845781	Pipe Insulation	Heterogeneous Brown Fibrous Bound	85%	Cellulose	5%	Tar	None Detected
			5%	Fiberglass	5%	Paint	





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14786
Date Received: 10-21-14
Date Analyzed: 10-22-14
Date Reported: 10-22-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 2 A1845781	Pipe Insulation	Homogeneous Gray Fibrous Bound	35%		Binder		65% Chrysotile
110 Layer 1 A1845782	Pipe Insulation	Heterogeneous Brown Fibrous Bound	85%	Cellulose 5%	5% Tar 5% Paint		None Detected
Layer 2 A1845782	Pipe Insulation	Homogeneous Gray Fibrous Bound	35%		Binder		65% Chrysotile
111 A1845783	Window Glazing	Heterogeneous White Non-fibrous Bound	95%		5% Binder 5% Paint		None Detected
112 A1845784	Window Glazing	Heterogeneous Gray Non-fibrous Bound	95%		5% Binder 5% Paint		None Detected
113 Layer 1 A1845785	Fitting Insulation	Homogeneous Gray Fibrous Bound	10%	Cellulose 10% Fiberglass	75% Binder 5% Paint		None Detected
Layer 2 A1845785	Fitting Insulation	Homogeneous Gray Fibrous Bound	35%		Binder		65% Chrysotile





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
 1258 Boiling Springs Road
 Spartanburg, SC 29303

CEI Lab Code: A14-14786
Date Received: 10-21-14
Date Analyzed: 10-22-14
Date Reported: 10-22-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
114 Layer 1 A1845786	Fitting Insulation	Homogeneous	10%	Cellulose	75%	Binder	None Detected
		Gray	10%	Fiberglass	5%	Paint	
		Fibrous Bound					
Layer 2 A1845786	Fitting Insulation	Homogeneous			35%	Binder	65% Chrysotile
		Gray					
		Fibrous Bound					
115 A1845787	Masonry Caulk	Homogeneous			98%	Caulk	2% Chrysotile
		Tan					
		Fibrous Bound					
116 A1845788	Sample Not Analyzed per COC						
117 A1845789	Below Window Caulk	Heterogeneous			93%	Caulk	2% Chrysotile
		Tan			5%	Paint	
		Fibrous Bound					
118 A1845790	Sample Not Analyzed per COC						
119 A1845791	Duct Insulation Mastic	Homogeneous	5%	Fiberglass	95%	Tar	None Detected
		Black					
		Fibrous Bound					
120 A1845792	Duct Insulation Mastic	Homogeneous	5%	Fiberglass	95%	Tar	None Detected
		Black					
		Fibrous Bound					





AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14786
Date Received: 10-21-14
Date Analyzed: 10-22-14
Date Reported: 10-22-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
121 A1845793	Fitting Insulation W/ Mastic	Homogeneous	5%	Cellulose	85%	Binder	None Detected
		Gray	10%	Fiberglass	<1%	Mastic	
		Fibrous Bound					
122 A1845794	Pipe Insulation W/ Mastic	Homogeneous	90%	Cellulose	5%	Binder	None Detected
		Brown			5%	Tar	
		Fibrous Bound					



LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate


METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020


The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

Due to the limitations of the EPA 600 Method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarizing light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

CEI Labs, Inc. can perform positive stop analysis if requested by customer. However, it is the responsibility of the customer to determine if the samples grouped together are in fact the same type of material and belong to the same homogeneous area.

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ANALYST: 
Lynn Burkholder

APPROVED BY: 
Tianbao Bai, Ph.D.
Laboratory Director



FW: RE: A14-13786
From: Anna Malmberg
Sent: Fri, Oct 24, 2014 at 11:38 am
To: Laura Bostwick

Anna Malmberg
Asbestos Laboratory Manager
CEI Labs, Inc.
107 New Edition Court
Cary, NC 27511
(919)481-1413
asbestos@ceilabs.com

-----Original Message-----
From: "Kay Horton" <khorton@crossroadsenv.net>
Sent: Friday, October 24, 2014 11:32am
To: "Anna Malmberg" <asbestos@ceilabs.com>
Subject: RE: A14-13786

Sorry. It's A14-14786.

Kay H. Horton, President
Crossroads Environmental, LLC
Certified Woman-Owned Business
1258 Boiling Springs Rd.
Spartanburg, SC 29303
864-541-8736 (office)
864-541-8776 (fax)
864-680-5537 (cell)
www.crossroadsenv.net

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From: Anna Malmberg [mailto:asbestos@ceilabs.com]
Sent: Friday, October 24, 2014 11:25 AM
To: Kay Horton
Subject: RE: A14-13786

Hi Kay, I don't think that project number is right. What is your project name?

Anna Malmberg
Asbestos Laboratory Manager
CEI Labs, Inc.
107 New Edition Court
Cary, NC 27511
(919)481-1413
asbestos@ceilabs.com



-----Original Message-----

From: "Kay Horton" <khorton@crossroadsenv.net>
Sent: Friday, October 24, 2014 11:18am
To: "asbestos@ceilabs.com" <asbestos@ceilabs.com>
Subject: A14-13786

For A14-13786, please analyze samples 110 and 114 (4 hr. trnd.). Thanks.

Kay H. Horton, President
Crossroads Environmental, LLC
Certified Woman-Owned Business
1258 Boiling Springs Rd.
Spartanburg, SC 29303
864-541-8736 (office)
864-541-8776 (fax)
864-680-5537 (cell)
www.crossroadsenv.net

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ASBESTOS LABORATORY REPORT

Prepared for

Crossroads Environmental

PROJECT: Brown; 13220-IN

CEI LAB CODE: A14-14980

DATE ANALYZED: 10/24/14

DATE REPORTED: 10/24/14

TOTAL SAMPLES ANALYZED: 13

SAMPLES >1% ASBESTOS: 11

TEL: 866-481-1412

www.ceilabs.com



Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Brown; 13220-IN

CEI LAB CODE: A14-14980

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
121		A1849174	White	Fitting Insulation	Chrysotile 60%
122		A1849175	Beige	Fitting Insulation	Chrysotile 60%
123		A1849176	Beige	Pipe Insulation	None Detected
124		A1849177	Off-white	Fitting Insulation	Chrysotile 35%
125		A1849178	White	Pipe Insulation	Chrysotile 65%
126	Layer 1	A1849179	Beige	Pipe Insulation	Chrysotile 2%
	Layer 2	A1849179	White	Pipe Insulation	Chrysotile 65%
127		A1849180	Off-white	Fitting Insulation	None Detected
128		A1849181	Tan,Black	Pipe Insulation	None Detected
129		A1849182	Off-white	Fitting Insulation	Chrysotile 35%
130		A1849183	Off-white	Fitting Insulation	Chrysotile 35%
131		A1849184	Off-white	Fitting Insulation	Chrysotile 35%
132	Layer 1	A1849185	Beige,Tan	Pipe Insulation	Chrysotile 2%
	Layer 2	A1849185	White	Pipe Insulation	Chrysotile 65%
133		A1849186	Black	Flashing	None Detected





ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
 1258 Boiling Springs Road
 Spartanburg, SC 29303

CEI Lab Code: A14-14980
Date Received: 10-24-14
Date Analyzed: 10-24-14
Date Reported: 10-24-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
121 A1849174	Fitting Insulation	Homogeneous	35%	Cellulose	Binder	60% Chrysotile	
		White	5%	Silicates			
		Fibrous					
		Loosely Bound					
122 A1849175	Fitting Insulation	Homogeneous	35%	Cellulose	Binder	60% Chrysotile	
		Beige	5%	Silicates			
		Fibrous					
		Loosely Bound					
123 A1849176	Pipe Insulation	Heterogeneous	80%	Cellulose	5% Paint	None Detected	
		Beige	15%	Binder			
		Fibrous					
		Bound					
124 A1849177	Fitting Insulation	Heterogeneous	5%	Cellulose	35% Binder	35% Chrysotile	
		Off-white	15%	Fiberglass	5% Silicates		
		Fibrous			5% Paint		
		Loosely Bound					
125 A1849178	Pipe Insulation	Heterogeneous			35% Binder	65% Chrysotile	
		White					
		Fibrous Bound					
126 Layer 1 A1849179	Pipe Insulation	Heterogeneous	85%	Cellulose	13% Binder	2% Chrysotile	
		Beige					
		Fibrous					
		Bound					
Lab Notes: Analyst opinion: Contamination from positive Pipe Insulation							
Layer 2 A1849179	Pipe Insulation	Heterogeneous			35% Binder	65% Chrysotile	
		White					
		Fibrous					
		Bound					





ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14980
Date Received: 10-24-14
Date Analyzed: 10-24-14
Date Reported: 10-24-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
127 A1849180	Fitting Insulation	Heterogeneous	5%	Cellulose	65%	Binder	None Detected
		Off-white	15%	Fiberglass	10%	Silicates	
		Fibrous			5%	Paint	
		Loosely Bound					
128 A1849181	Pipe Insulation	Heterogeneous	60%	Cellulose	5%	Metal Foil	None Detected
		Tan,Black	5%	Fiberglass	10%	Tar	
		Fibrous			20%	Binder	
		Bound					
129 A1849182	Fitting Insulation	Heterogeneous	5%	Cellulose	35%	Binder	35% Chrysotile
		Off-white	15%	Fiberglass	5%	Silicates	
		Fibrous			5%	Paint	
		Loosely Bound					
130 A1849183	Fitting Insulation	Heterogeneous	5%	Cellulose	35%	Binder	35% Chrysotile
		Off-white	15%	Fiberglass	5%	Silicates	
		Fibrous			5%	Paint	
		Loosely Bound					
131 A1849184	Fitting Insulation	Heterogeneous	5%	Cellulose	35%	Binder	35% Chrysotile
		Off-white	15%	Fiberglass	5%	Silicates	
		Fibrous			5%	Paint	
		Loosely Bound					
132 Layer 1 A1849185	Pipe Insulation	Heterogeneous	85%	Cellulose	13%	Binder	2% Chrysotile
		Beige,Tan					
		Fibrous					
		Bound					
Lab Notes: Analyst opinion: Contamination from positive Pipe Insulation							
Layer 2 A1849185	Pipe Insulation	Heterogeneous			35%	Binder	65% Chrysotile
		White					
		Fibrous					
		Bound					





ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Crossroads Environmental
1258 Boiling Springs Road
Spartanburg, SC 29303

CEI Lab Code: A14-14980
Date Received: 10-24-14
Date Analyzed: 10-24-14
Date Reported: 10-24-14

Project: Brown; 13220-IN

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %
			Fibrous	Non-Fibrous		
133 A1849186	Flashing	Heterogeneous Black Fibrous Bound	20%	Synthetic Fiber 20%	Tar 60% Binder	None Detected





LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

Due to the limitations of the EPA 600 Method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarizing light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

CEI Labs, Inc. can perform positive stop analysis if requested by customer. However, it is the responsibility of the customer to determine if the samples grouped together are in fact the same type of material and belong to the same homogeneous area.

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ANALYST: Samantha Card
Samantha Card

APPROVED BY: Tianbao Bai
Tianbao Bai, Ph.D.
Laboratory Director





107 New Edition Court, Cary, NC 27511
 Tel: 866-481-1412; Fax: 919-481-1442

CHAIN OF CUSTODY

LAB USE ONLY:	
CEI Lab Code:	A14-14980 (13)
CEI Lab I.D. Range:	A1849174-A1849186

COMPANY CONTACT INFORMATION	
Company: CROSSROADS ENVIRONMENTAL, LLC	Client #:
Address: 1258 BOILING SPRINGS RD.	Job Contact: Kay H. Horton
SPARTANBURG, SC 29303	Email: RESULTS@CROSSROADSENV.NET
	Tel: 864-541-8736
Project Name: Brown	Fax: 864-541-8776
Project ID #: 13220-IN	P.O. #:

ASBESTOS	METHOD	4 HR*	8 HR*	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	X					
TEM BULK	CHATFIELD						
PLM POINT COUNT (400)	EPA 600						
PLM POINT COUNT (1000)	EPA 600						
PLM GRAVIMETRIC	EPA 600						
PLM GRAV w POINT COUNT	EPA 600						
OTHER:							

POSITIVE STOP ANALYSIS	
SOUTH CAROLINA SAMPLES	
NORTH CAROLINA SAMPLES	X

TEM INSTRUCTIONS	
BEGIN TEM ANALYSIS AFTER NEGATIVE PLM	N/A
ANALYZE TEM SAMPLES SIMULTANEOUSLY WITH PLM	

		<input checked="" type="checkbox"/> Accept Samples <input type="checkbox"/> Reject Samples	
Relinquished By:	Date/Time	Received By:	Date/Time
<i>Kay H. Horton</i>	10/23/2014 17:00:	<i>KH</i>	10/24/14 9:50A

*Call to confirm RUSH analysis.

Samples will be disposed of 30 days after analysis





SAMPLING FORM

A14-14980

COMPANY CONTACT INFORMATION	
Crossroads Environmental, LLC	Job Contact: Kay Horton
Project Name: Brown	
Project ID #: 13220-IN	Tel: 864-541-8736

SAMPLE ID#	HA	DESCRIPTION / LOCATION	TEST			
			PLM	X	TEM	
121		Fitting Insulation	PLM	X	TEM	
122		Fitting Insulation	PLM	X	TEM	
123		Pipe Insulation	PLM	X	TEM	
124		Fitting Insulation	PLM	X	TEM	
125		Pipe Insulation	PLM	X	TEM	
126		Pipe Insulation	PLM	X	TEM	
127		Fitting Insulation	PLM	X	TEM	
128		Pipe Insulation	PLM	X	TEM	
129		Fitting Insulation	PLM	X	TEM	
130		Fitting Insulation	PLM	X	TEM	
131		Fitting Insulation	PLM	X	TEM	
132		Pipe Insulation	PLM	X	TEM	
133		Flashing	PLM	X	TEM	



Reading No	Time	Type	Units	COMPONENT	SUBSTRATE	COLOR	EXT./INT.	FLOOR	ROOM	Results	Depth Index	Action Level	PbC	PbL
399	10/15/2014 14:22	SHUTTER_ CAL	cps										5.69	0.93
400	10/15/2014 14:26	PAINT	mg / cm ^2	WALL	CONCRETE	TAN	INTERIOR	GROUND	HALL	Negative	1	1	< LOD	< LOD
401	10/15/2014 14:27	PAINT	mg / cm ^2	WALL	CONCRETE	BROWN	INTERIOR	GROUND	HALL	Negative	1	1	< LOD	< LOD
402	10/15/2014 14:28	PAINT	mg / cm ^2	WALL	CONCRETE	BROWN	INTERIOR	GROUND	HALL	Negative	1.82	1	< LOD	< LOD
403	10/15/2014 14:28	PAINT	mg / cm ^2	WALL	CONCRETE	WHITE	INTERIOR	GROUND	HALL	Negative	1.01	1	< LOD	< LOD
404	10/15/2014 14:29	PAINT	mg / cm ^2	DOOR	METAL	GREEN	INTERIOR	GROUND	HALL	Negative	1.06	1	< LOD	< LOD
405	10/15/2014 14:30	PAINT	mg / cm ^2	WALL	CERAMIC	BEIGE	INTERIOR	GROUND	HALL	Positive	2.09	1	2	2
406	10/15/2014 14:31	PAINT	mg / cm ^2	WALL	CONCRETE	WHITE	INTERIOR	GROUND	HALL	Negative	1	1	< LOD	< LOD
407	10/15/2014 14:31	PAINT	mg / cm ^2	TRIM	METAL	WHITE	INTERIOR	GROUND	HALL	Negative	7.39	1	< LOD	< LOD
408	10/15/2014 14:33	PAINT	mg / cm ^2	WALL	CONCRETE	WHITE	INTERIOR	GROUND	STORGE	Negative	1.17	1	< LOD	< LOD
409	10/15/2014 14:35	PAINT	mg / cm ^2	WALL	CONCRETE	GREEN	INTERIOR	FIRST	STORGE	Negative	1	1	< LOD	< LOD
410	10/15/2014 14:36	PAINT	mg / cm ^2	WALL	CONCRETE	YELLOW	INTERIOR	FIRST	GAME ROOM	Negative	1	1	< LOD	< LOD
411	10/15/2014 14:37	PAINT	mg / cm ^2	WALL	DRYWALL	GREEN	INTERIOR	FIRST	GAME ROOM	Negative	1.12	1	< LOD	< LOD
412	10/15/2014 14:38	PAINT	mg / cm ^2	TRIM	METAL	BLUE	INTERIOR	FIRST	GAME ROOM	Negative	1	1	< LOD	< LOD
413	10/15/2014 14:38	PAINT	mg / cm ^2	TRIM	METAL	YELLOW	INTERIOR	FIRST	GAME ROOM	Negative	1	1	< LOD	< LOD
414	10/15/2014 14:39	PAINT	mg / cm ^2	TRIM	METAL	ORANGE	INTERIOR	FIRST	GAME ROOM	Negative	1.88	1	< LOD	< LOD
415	10/15/2014 14:39	PAINT	mg / cm ^2	DOOR	METAL	GREEN	INTERIOR	FIRST	GAME ROOM	Negative	1	1	< LOD	< LOD
416	10/15/2014 14:41	PAINT	mg / cm ^2	WALL	DRYWALL	BLUE	INTERIOR	FIRST	LOBBY	Negative	1	1	< LOD	< LOD
417	10/15/2014 14:41	PAINT	mg / cm ^2	WALL	DRYWALL	YELLOW	INTERIOR	FIRST	LOBBY	Negative	2.99	1	< LOD	< LOD

C.2 HAZARDOUS MATERIALS REPORT

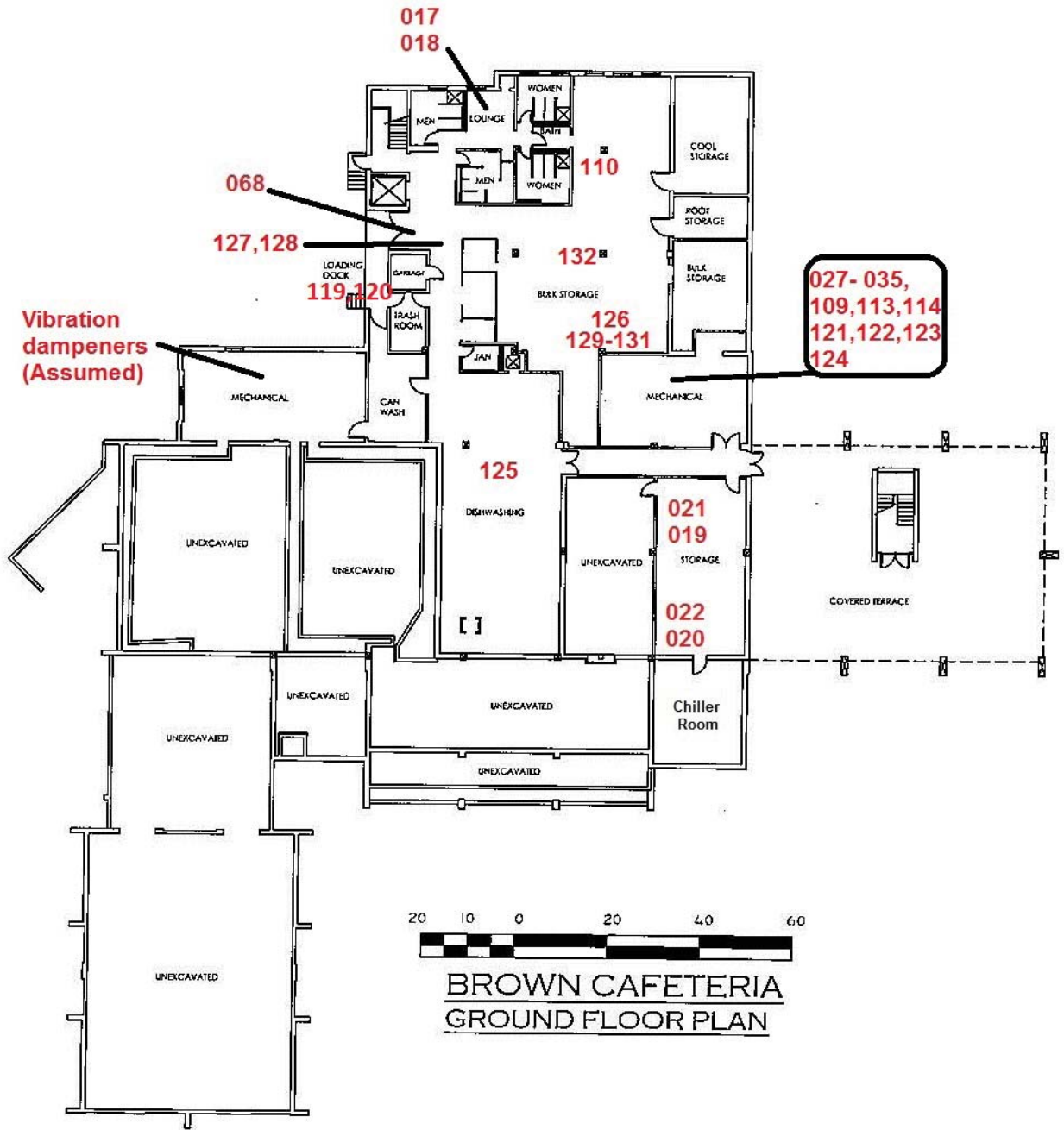


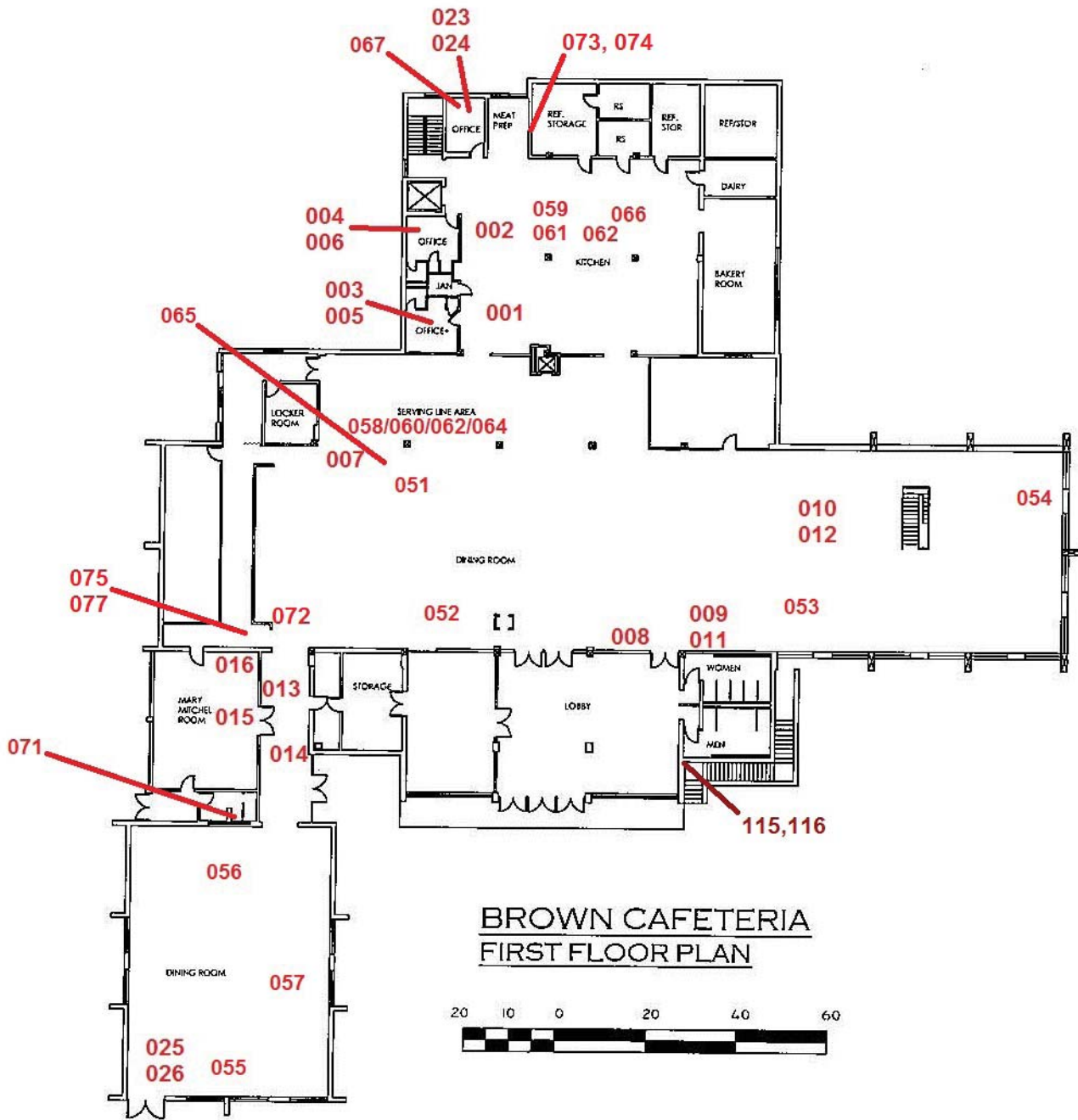
Reading No	Time	Type	Units	COMPONENT	SUBSTRATE	COLOR	EXT./INT.	FLOOR	ROOM	Results	Depth Index	Action Level	PbC	PbI
418	10/15/2014 14:42	PAINT	mg / cm ^2	WALL	CONCRETE	GREEN	INTERIOR	FIRST	LOBBY	Negative	2.66	1	< LOD	< LOD
419	10/15/2014 14:43	PAINT	mg / cm ^2	WALL	CONCRETE	YELLOW	INTERIOR	FIRST	GAME ROOM	Negative	1	1	< LOD	< LOD
420	10/15/2014 14:46	PAINT	mg / cm ^2	WALL	CERAMIC	BEIGE	INTERIOR	FIRST	SERVING LINE	Positive	1.96	1	2.4	2.4
421	10/15/2014 14:48	PAINT	mg / cm ^2	WALL	CONCRETE	BEIGE	INTERIOR	FIRST	BASE CAMP	Negative	1.14	1	< LOD	< LOD
422	10/15/2014 14:49	PAINT	mg / cm ^2	WALL	CONCRETE	GRAY	INTERIOR	FIRST	HALLWAY	Negative	6.01	1	< LOD	< LOD
423	10/15/2014 14:51	PAINT	mg / cm ^2	FLOOR	CERAMIC	GRAY	INTERIOR	FIRST	HALLWAY	Negative	1.2	1	< LOD	< LOD
424	10/15/2014 14:52	PAINT	mg / cm ^2	WINDOW	METAL	BEIGE	INTERIOR	FIRST		Negative	1.27	1	< LOD	< LOD
425	10/15/2014 14:52	PAINT	mg / cm ^2	WINDOW	METAL	BEIGE	INTERIOR	FIRST		Negative	1	1	< LOD	< LOD
426	10/15/2014 14:53	PAINT	mg / cm ^2	WINDOW	METAL	OFF WHITE	INTERIOR	FIRST		Negative	1	1	< LOD	< LOD
427	10/15/2014 14:55	PAINT	mg / cm ^2	WALL	CONCRETE	OFF WHITE	INTERIOR	FIRST		Negative	1	1	< LOD	< LOD
428	10/15/2014 15:05	PAINT	mg / cm ^2	WINDOW	METAL	BEIGE	EXTERIOR	FIRST		Negative	1	1	< LOD	< LOD

C.2 HAZARDOUS MATERIALS REPORT

ATTACHMENT III
SAMPLE LOCATION SKETCH AND PHOTOGRAPHS

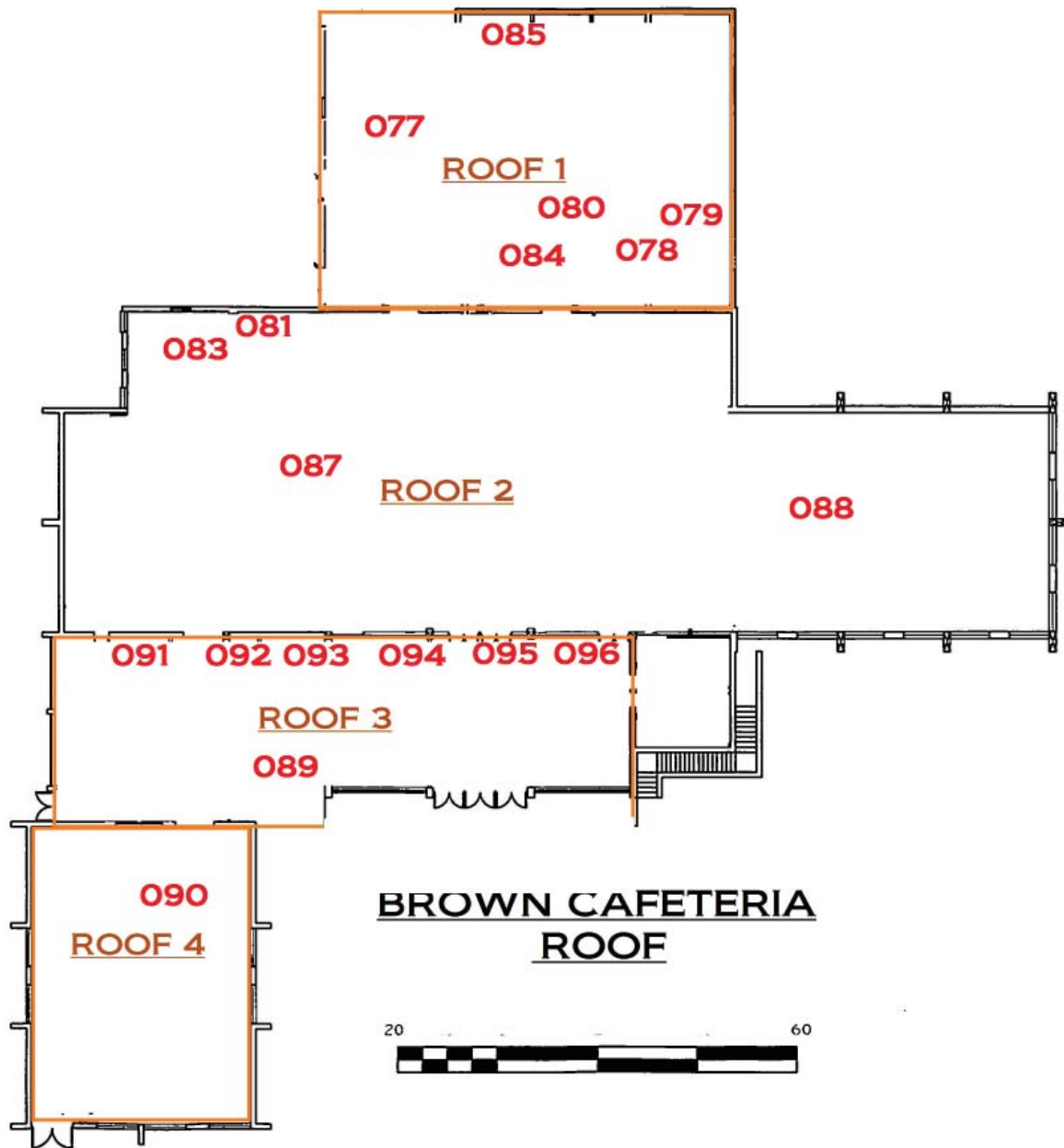






C.2 HAZARDOUS MATERIALS REPORT





Photographs for Clarification
Western Carolina University
Brown Building
CRE Project Number 13220-IN



Pipe insulation with multiple layers of non-asbestos paper and 1 layer of ACM



Pipe insulation with multiple layers of paper (no ACM)



Pipe in Bulk Storage
ACM Pipe Insulation (paper with one ACM layer)
All fittings (elbows) in photo contain asbestos

Photographs for Clarification
Western Carolina University
Brown Building
CRE Project Number 13220-IN



Over ceiling in Can Wash (room adjacent to dishwashing)




Area where ACM tar was identified (under rubber membrane)

**ATTACHMENT IV
INSPECTORS' NC-DHHS LICENSES**




**North Carolina
Asbestos Accreditation**



Kay H Horton
1258 Boiling Springs Rd
Spartanburg, SC 29303
103308

EXPIRATION			
02-28-2015			
DOB	SEX	HT	WT
07-24-1975	F	5'9"	132
CLASS	#	EXP	
AIR MONITOR	80705	12-14	
DESIGNER	40409	02-15	
INSPECTOR	12058	02-15	
MGMT PLANNER	20859	02-15	

**North Carolina
Asbestos Accreditation**



Travis L Shaw
276 Stonewood Crossing Dr
Boiling Springs, SC 29316
103713

EXPIRATION			
04-30-2015			
DOB	SEX	HT	WT
01-04-1984	M	5'8"	220
CLASS	#	EXP	
AIR MONITOR	80837	03-15	
INSPECTOR	12779	04-15	

**NORTH CAROLINA
LEAD CERTIFICATION**



Kay H Horton
1258 Boiling Springs Rd
Spartanburg, SC 29303

DOB	SEX	HT	WT
07-24-1975	F	5'9"	132
DISCIPLINE	#	LAST COURSE	EXPIRATION
RISK ASSESSOR	120233	INS 08-19-2013 RIS 08-20-2013	08-31-2015

D. DETAILED SPACE PROGRAM

1. DESIGN NARRATIVES
 - a. ARCHITECTURAL NARRATIVE
 - b. STRUCTURAL NARRATIVE
 - c. MEP NARRATIVE
 - i. BUILDING
 - ii. BOILER PLANT
2. PROGRAM OVERVIEW
3. ROOM DATA SHEETS
4. PRE-DESIGN DRAWINGS

D. DETAILED SPACE PROGRAM

1. DESIGN NARRATIVES
 - a. ARCHITECTURAL NARRATIVE
 - b. STRUCTURAL NARRATIVE
 - c. MEP NARRATIVE
 - i. BUILDING
 - ii. BOILER PLANT
2. PROGRAM OVERVIEW
3. ROOM DATA SHEETS
4. PRE-DESIGN DRAWINGS

EXISTING BUILDING DESCRIPTION

General

The Brown Dining Hall is located on the "Upper Campus" of Western Carolina University along Central Drive, near the intersection of Bird Building Lane. It was built in 1958 as a dining hall and cafeteria for Western Carolina. In 1968, a Dining Annex and new lobby were added onto the east side of the building. The space was primarily the dining hall for the original campus, with a full kitchen and dining room, along with ground floor mechanical rooms and dry storage rooms, a covered terrace and supporting facilities. The building is two stories.

- Level 2 (Existing Ground Floor) square footage is 10,094 GSF.
- Level 3 (Existing First Floor) square footage is 23,294 GSF.

The ground floor has a substantial amount of unexcavated space with underslab crawl space area.

Currently the building serves as a gaming space for students, outdoor adventure equipment space and a warehousing space. The functions currently using the building do not represent a challenge for relocation for WCU, and there is no anticipated scheduling or phasing issues in the project outside of an aggressive construction schedule. Early packages for site work and hazardous materials removal/ partial demolition should be considered.

Existing Materials Available for Reference:

DRAWINGS:

1. "A Dining Hall and Kitchen" Construction Documents by Six Associates dated 1958.
2. "Cafeteria Additions at Western Carolina College" by C.M. Sappenfield, AIA Architect dated 1964

HAZ MAT REPORT:

3. Crossroads Environmental Asbestos and Lead Sampling Report dated October 27, 2014. The existing dining hall has hazardous materials, and a report was completed and included in this package for reference and quantities where noted. Both lead and asbestos were discovered. The inspector was unable to access concealed areas, and there should be a contingency noted for additional hazardous materials in the project.

SITE SURVEY:

4. Topographical Survey for Western Carolina University showing an area surrounding Brown Cafeteria on the WCU Campus dated October 23, 2014.

GEOTECHNICAL REPORT

5. No geotechnical report is available at this point in the project.



EXISTING PHOTOS

6. Existing photos are available for download at:
<https://watsontatesavory.sharefile.com/d/sd0de9e8c47b407e8>

7. Bing Maps:
<http://www.bing.com/maps/#Y3A9MzUuMzA0Njk1fi04My4xODY0MjkmbHZsPTE2JnN0eT1yJnE9d2VzdGVybiUyMGNhcm9saW5hJTlwdW5pdmVyc2l0eQ==>

NORTH CAROLINA STATE CONSTRUCTION OFFICE FACILITY ASSESSMENT REPORTS

8. SCO FCAP Reports dated 10/29/2014

- END EXISTING BUILDING DESCRIPTION -

ADVANCED PLANNING ARCHITECTURAL DESIGN NARRATIVE

The existing Brown Building will be completely renovated to house the dining spaces, kitchen and server on level one and to house service spaces, and office & conference space on the ground level. Work includes repairing and removing skin, providing window replacement, roof replacement and removing all finishes, equipment, fixtures, and hazardous materials for the square footages (gross) as follows:

- Level 2 (Existing Ground Floor) renovation square footage is 10,094 GSF.
- Level 3 (First Floor) square renovation footage is 23,294 GSF.
- The underside of the existing breezeway will be captured for a new boiler plant. This will require excavating and additional 4'-0" below the slab height, removing the existing stairway and infilling the openings between columns with louvers. In addition, there will need to be a high STC and NRC wall – double CMU wall - rated) between this space and the new addition to the west.

The existing southwest stair and elevator will remain, but be refurbished (assume new finishes, handrails, and elevator controls, operating parts and cab finishes). The northwest corner of the existing building will be cut and re-structured for a new 4000lb elevator. A more detailed breakdown of systems follows:

EXISTING ENVELOPE: Existing Conditions and Renovation/Demo required.

EXISTING WALLS: The original building is brick unit masonry mass masonry walls Bluestone panel accents (photo 7) at the exterior. Existing walls are uninsulated.

Repair/Renovation: Large Portions of the existing brick wall will be opened to the new addition to allow for the new and existing dining spaces on level one and the office suites on the ground level to flow. The existing bluestone accents will be removed. The existing brick masonry will have to be evaluated and estimator should considering re-pointing brick along with some repair and replacement at existing openings. Existing walls will be insulated with a 2 ½" framing with spray polyisocyanurate insulation and sheetrock walls (up to deck)

EXISTING GLAZING: The existing glazing is comprised of steel window units with single pane clear glass. There are large expanses of clerestory glass along the primary spine of the existing building.

Repair/Renovation: Existing glazing and frames will be removed along with all associated flashing, panning, sealants and glazing putty. Existing openings will be re-glazed with new insulated window systems. Clerestory openings shall be replaced with new glazing.



EXISTING ROOF: The roof is a 2 inch gypsum roof deck, sheetrock formboard and rigid insulation with a built-up roof. At some point in time, the built up roof has been covered by an EPDM membrane.

Repair/Renovation: Existing roof will be removed (see abatement report for locations of hazardous materials) with a complete rip and replace of the entire roof system down to the deck. New roof will be a 20 year warranted three ply modified bitumen roof membrane system to match the new addition. There will be a minimum of 5 inches (average) of rigid insulation with cover board on top of the roof for an R-30. The cap sheet shall be a white granular surfaced product. Roof scuttles, vents, drains, overflows, coping and penetrations will all be removed and replaced.



(Fig 1) Existing Brown Roof Photo)

Attachments:

See Demolition Diagrams for Scope of Repair, Replacement and Renovation.

EXISTING INTERIOR SPACE: Existing Conditions and Renovation/Demo required. Please refer to the roof data sheets provided for new finish requirements.

EXISTING CEILINGS: The original ceilings consist of an undulating plaster ceiling with a sprayed acoustic treatment in the Dining Room. (Photo 4) light fixtures are surface mounted fixtures and will be removed though out the building. Ground floor ceilings are a combination of sheetrock, exposed ceiling structure with exposed ductwork and perimeter soffits and tile.

Repair/Replacement: All ceilings, fixtures and equipment shall be removed.

The dining room ceiling will be removed to the structure. See the hazardous materials report concerning the spray acoustic ceiling material for removal. The lay-in acoustical tile ceilings in the existing kitchen and server will be removed. All ceilings shall be replaced per the descriptions on the new roof data sheets.

EXISTING FLOORS: The original floors in the dining room are a combination of vinyl asbestos tile, marble tile (kitchen), and quarry tile.

All floor finishes are to be removed. See the abatement report of quantities of hazardous materials including wall base.

EXISTING WALLS: The existing walls are mass masonry, as stated in the exterior skin description. The mass masonry walls have plaster finishes in dining rooms, ceramic tile (see Haz Mat Report for lead content). The ground floor finishes primarily are comprised of CMU (painted) and tile (see Haz Mat Report for lead content).

Finishes of walls to be removed or encapsulated, which remains to be determined.

Attachments:

See Demolition Diagrams for Scope of Repair, Replacement and Renovation.

NEW ADDITION:

New Addition General: WTS is proposing to add a 3 story addition to the existing Brown Building. There are three sections of additions. The first addition is a new east entrance and expansion for a brand concept for the restaurant (Chili's Too). This will be a one story addition to expand pinched corners of the building and expand the dining area. The second addition is a small one story outparcel addition for a coffee shop brand to the north east of the building. This will house the Starbucks. Although this addition is one story, it is built on the edge of the existing grade and will require retaining on the west side. The third addition is the long bar addition that runs east/west on the site, providing a west entrance to the Brown Dining Hall. This bar takes advantage of the existing topography to capture a lower level to house a convenience store and an entrance to a lobby to get visitors up from closer to Central Avenue to level 1. The ground floor addition houses the residence life offices and captures the existing breezeway space to house a new upper campus regional boiler plant. The level one addition of the bar, houses dining space and a new roof terrace. The atrium (no smoke exhaust required) will house a monumental stair). The new elevator occurs in the existing building footprint.

New Addition SF:

New lower level – 3112 GSF

Ground Floor: 12,228 including renovated boiler plant @ existing breezeway.

Level 1: 10,574 GSF

The new addition will be Type IIB non separated mixed use occupancy and follow the 2012 NCSBC, ANSI 2003, and ADA.

New Addition Envelope:

EXTERIOR WALLS: Brick Unit Masonry on cold formed metal framing with minimum of 2 inches of rigid insulation, fluid applied air and vapor barrier and siliconized sheathing. Precast accents for sills and lintels.

GLAZING: West wall will be curtain wall – 10 inch deep system with integral steel, prefinished 2 coat fluoropolymer finish and prefinished sunshade devices to match. Other large sections of glazing will be a stacked window system. The glazing will be clear low-E low iron glazing, 1" thick.

FOUNDATION WALLS: Foundation walls/building retaining walls shall have waterproofing system (Cetco or bentonite clay) with drainage board.

ROOF: New roof to be a 20 year warranted three ply modified bitumen roof membrane system. There will be a minimum of 5 inches (average) of rigid insulation with cover board on top of the roof for an R-30. Coping to be prefinished metal.

New Interiors:

Lower Level: The lower level C-store should have 2 toilets, c-store office and the c-store. The lower atrium finishes should be nice and durable. Assume terrazzo floor, steel stair and solid terrazzo precast treads.

Ground Level:

OFFICES & CONFERENCE: The ground level offices shall be 40% glazing between offices with window and general office space. Non-glazed partitions shall be insulated GWB for typical offices. Walls at larger offices and conference rooms shall be double layer and continue to structure above. Interior doors shall be prefinished wood with lites. Floor will be carpeted with resilient base. Assume minimal millwork at the reception, LED lighting and ceiling tile equivalent to an Armstrong Optima.

TOILET ROOMS: Toilet rooms shall have solid plastic toilet compartments, full height mirrors, solid surface tops with underslung laboratories and full height tile. Floors shall be tiled.

CORE SPACE: Mechanical rooms, electrical rooms and data shall be sealed concrete and painted. No ceiling.

Level 1:

SERVERY: The server will house 4-5 concepts with exhibition display. Finishes in this area will be required to be washable, but upper end – such as nice tile and terrazzo floors, higher end LED lighting and a combination of ceiling systems and heights.

DINING: The dining areas are to be higher end finishes – wood ceilings with a “lodge” feel, terrazzo flooring, and glass separation doors between venue spaces. Lighting will be warm LED and have a combination of decorative and general lighting to create atmosphere. There will be a large gas fireplace, open to both sides of dining of stone.

Chilis and Starbucks to resemble both concepts as you would see them in commercial environments.

KITCHEN: More information to be provided by Food Service Consultant, but the finishes will be FRP panels to 8'-0", epoxy paint, washable ceiling tiles, utilitarian lensed fixtures (LED), Floors to be an epoxy poured floor such as Stonhard. Equipment costing is to be provided with more guidance from Camacho Food Service Consultants. They have given \$125/sf as a basis to start with. This space will include food prep, cooking, catering, storage for dry, refrigerated and frozen goods, receiving, dishwashing (including conveying) and staff office, toilet, and locker areas.

ROOF TERRACE: The roof terrace is to be pedestal mounted pavers (precast – Wassau) with some planted areas on a 20 year bentonite or hot fluid applied waterproofing system. TBD.

TOILET ROOMS: Toilet rooms shall have solid plastic toilet compartments, full height mirrors, solid surface tops with underslung laboratories and full height tile. Floors shall be tiled.

- END ADVANCED PLANNING ARCHITECTURAL DESIGN NARRATIVE -

ADVANCED PLANNING ARCHITECTURAL SITE NARRATIVE

General: The civil and landscaping narrative has provided more detailed information on most site elements, but below is a summary of the spaces:

East Site: The existing courtyard will be pervious pavers with a fire and water feature. Provide an allowance for a fountain and a fire pit feature. In addition, there will be planters incorporated.

West Site: The new addition will require demolishing the existing asphalt paving, transformer, leaving switches and grading into the hill for the c-store. Pervious pavers and planter shall be incorporated into the plaza. A sloped ramp will be provided. The large monumental exterior stair will have precast concrete treads with a limestone finish. Handrail shall be stainless steel.

North Site: The north side of the site will have to incorporate a bio-swale for drainage along the north side of the building along the east west access. A new path will be planned to join paths along the topography to the north. This area will be where new storm drainage and gas lines are located.

South site: The existing roadway will be widened ten feet up the hill which will require the removal of a 3'-0" stone retaining wall. New wall to be concrete and reuse existing stone along with new stone for added height (1-2 feet). Road is to incorporate paving for full tractor trailers.

Southeast site: There is an existing parking lot on the southwest side of the site. This lot will be demolished and reconfigured to allow for service access with the tractor trailers from the southwest. New retaining walls will be required at the east side of the lot to hold back grade and at the east of the lot to allow for a new loading dock and parking for 2 semis. There will be a new screen wall of brick masonry and "Greenscreen" elements to conceal the air cooled chiller, dumpster and compactor. Dumpster and chiller to have gates. 8 new parking spaces, for accessibility and catering vehicle s are to be provided. The pavement shall be demarcated for pedestrian travel across truck loading. Underneath the new concrete drive, there will be a large storage tank for boiler fuel. See MEP narrative. *Estimator to price burying the tank. In addition, there shall be a choice between two tanks or one tank depending on re-fuel tolerances by WCU. Cost to be estimated to help WCU make a choice.*

Southwest site The southwest site will remain a small loading area, while housing a new generator and a buried grease interceptor. The existing loading dock will be repaired, new handrails provided on ramps and the planters will require restoration. New paving should be planned for the road in this area.

- END ADVANCED PLANNING ARCHITECTURAL SITE NARRATIVE -



Building Description:

General

The existing building is a steel framed structure bearing on interior steel columns and exterior columns or masonry bearing walls. The existing building was built in two phases in 1958 and 1964. Steel joists spaced approximately 24" and 48" on center create the floor and roof framing, respectively. The existing structure is generally in good condition. There were a few locations observed with brick cracking near the existing loading dock. As a kitchen and serving facility, there numerous floor depressions or trenches that will be filled in during the renovation of the building. Interior non-bearing walls will be demolished to create the new program spaces. The modifications to the existing building will be analyzed as the program space is defined to determine the effects to the existing building.

Foundations

Site specific geotechnical information is not available. A current specific geotechnical investigation will be performed on this site during the schematic design phase of the project.

Existing building foundations consist of continuous spread footings below interior and exterior bearing walls and shallow footings below isolated columns. New footings should will likely be similar to the existing foundation. We anticipate shallow foundations will be used for the new addition of reinforced concrete spread footings in conjunction with continuous strip footings. Refer to the materials section for the concrete and steel materials which will be utilized for the footings. The footings will likely vary in size between 3'x3' up to 10'x10' below each of the columns. Footings under exterior walls will be continuous strips footing which will be 24"-to-36" wide by 12" deep. Thickened slabs 2'-0" wide by 8" thick will be used under interior non-load bearing CMU walls over 12'-0" tall. Any elevator pits will be constructed of 8" thick reinforced cast in place concrete walls on a 1'-0" thick reinforced concrete pit slab. Where new footings are adjacent to the existing building foundations, the new footing elevation will match the existing footing and dowel into the existing footings to prevent differential settlement between the new and existing footings.

Foundation walls and retaining walls will be located on three sides of the new C-Store and Coffee shop. Foundation or retaining walls will also be installed where required by grade. These walls are required due to the site grading requirements. The concrete retaining or basement walls will be constructed with 12" to 15" concrete reinforced with dowels in both faces of the walls. The footing design for the walls will be coordinated with the construction manager to determine if the walls need to be designed as a retaining condition (no wall bracing required) or a retaining wall (wall braced until the elevated structure is installed). The below grade walls around the construction labs will likely be designed as retaining walls since the roof structure in the tall volumes will not support the retained earth load.

Slab on Grade

We anticipate typical slabs on grade will be 4" thick concrete in office spaces, retail, and other program spaces. Slabs on grade in the mechanical and boiler rooms will be 6" thick. The 4" thick slab on grade will be reinforced with 6x6 W2.1x2.1 welded wire fabric and the 6" thick slab on grade is reinforced with #3@12" OC each way. Both slabs will be placed over a 10-15 mil vapor barrier over 4" of compacted #57 stone. The slab will have saw cut control joints spaced at approximately 15 feet in both directions.

Framing Systems

The superstructure of the building will be designed to support the code required gravity vertical loads and the horizontal lateral loads imparted by seismic and wind. The design will be based on strength of members along with stiffness to control deflection and vibration throughout the building.

Elevated floor structures in the building will consist of composite steel beams supporting a 5¼" lightweight concrete composite slab on 2" steel deck. 2" deep 20 gage composite metal deck will be used with 3¼" lightweight concrete to create the 5¼" thick slabs. The composite steel beams will be spaced approximately 9' on center. The beams will span between composite steel girders which will frame into

steel columns. This floor system will also be used for any green or planted roofs. The roof framing will slope as required to drain water.

The roof framing supporting typical roof construction will be open web steel bar joists spaced approximately 6'-0" on center supporting 1½" 22 gage metal roof deck. The joists will span between steel girders which will be supported by steel columns.

Miscellaneous Framing

The exterior walls will have brick veneer with 8" or 12" CMU or light gage metal studs as a backup. Loose lintels will be utilized where possible to carry brick over window and door openings. Masonry or metal stud box lintels will span the smaller openings. At large openings steel beam and plate lintels will be used to support the openings in masonry walls or steel tube framed openings in metal stud walls. Continuous edge angles will be installed over the steel framing at exterior walls to support the decking and transfer lateral roof loads. Existing floor openings or depressions will be in-filled as required. Steel framing will be added around any new openings in the floors or roofs.

Lateral Design

The lateral system of the building will also be designed to meet the strength and deflection criteria specified in the design criteria section. The lateral system will be designed to support the lateral forces imparted by the wind and seismic loads indicated in the building code. This building will incorporate the use of steel vertical braced frames and steel moment frames to transfer horizontal forces to the foundation.

Special Inspections

Special Inspections will be required for this project based on the building classification. The construction documents will include a Statement of Special Inspections which will outline the inspection types required for the project.

Design Criteria:

Codes and Standards

- North Carolina State Building Code- 2012 Edition based on IBC 2009
- North Carolina State Construction Manual
- ASCE 7-05 Minimum Design Loads for Buildings and Other Structures
- ACI 318-08 Building Code for Reinforced Concrete
- Specification for the Design, Fabrication and Erection of Structural Steel for Buildings (AISC 360-05)
- ACI 530-08 Building Code Requirements for Masonry Structures
- AISI 2007 Cold Formed Steel Design Specification (2010 Supplement)

Materials

- Concrete
 - Elevated Slabs on metal deck 4,000 psi, light weight
 - Foundations/Footings 3,000 psi, normal weight
 - Retaining and Basement Walls 4,000 psi, normal weight
 - Slab on Grade 3,000 psi, normal weight
 - Reinforcement: all ASTM A615 Grade 60

- Structural Steel
 - W Shapes ASTM A992
 - Plates, Channels, and Angles ASTM A36
 - Hollow Structural Sections ASTM A500, Grade B
 - Pipe ASTM A501, Grade E
 - Miscellaneous Steel ASTM A36, Fy=36 ksi

- Steel Bar Joists K-series or LH-series

- Steel Deck
 - Floor 2"-20 Ga Composite (Galv)
 - Roof 1-1/2"-22 Ga Type B (Galv)

- Masonry
 - CMU f'm= 1,500 psi
 - Mortar Type S - ASTM C270 28 day
Compressive strength=1,900 psi

- Cold Formed Steel
 - Metal Studs Manufacturer's standard shaped steel
Per ASTM C955

- END ADVANCED PLANNING STRUCTURAL DESIGN NARRATIVE -

This portion of the conceptual design document addresses the existing and proposed Mechanical, Electrical, Plumbing and Fire Protection systems. All proposed systems in this portion of the conceptual design document will meet the following design criteria:

- All applicable North Carolina building codes
- North Carolina State Construction Office design guides, including “major facilities” design criteria of Life Cycle Cost Analysis and Sustainable Energy Efficient Buildings per Senate Bill 668. Associated Energy Model per ASHRAE 90.1-2007 Appendix-G, Performance Rating Method.
- LEED v3 for New Construction. Associated Energy Model per ASHRAE 90.1-2007 Appendix-G, Performance Rating Method.
- Facility specific end-user and owner requirements

Mechanical Systems (Heating, Ventilation and Air-Conditioning Systems)

Existing Conditions

The existing building is not provided with air conditioning (cooling). Heating is provided via the WCU campus steam loop (a shell/tube converter in mechanical room provides hot water to finned tube convectors, unit heaters and unit ventilators). The building is provided with mechanical ventilation to supplement the existing kitchen hoods. Due to the project’s design criteria, age of existing equipment, current code requirements, inefficiency and end-user input, removal and replacement of all mechanical systems is proposed, with the exception as noted below. The only system component to remain shall be the existing steam pressure reducing station installed in the lower level mechanical room. The steam station provides low pressure steam to the Brown Building as well as an adjacent residence hall (Albright-Benton) and shall remain in service throughout the duration of the project.

Mechanical Codes and Standards

All mechanical systems proposed for this building will be designed in accordance with the following codes and standards:

- *North Carolina State Mechanical Code*, 2012 edition (modeled after the 2009 IMC with NC Amendments)
- *North Carolina State Energy Conservation Code*, 2012 edition (modeled after the 2009 IECC with NC Amendments)
- *State of North Carolina – State Construction Manual*, 9th Edition, January 2006, with Energy Revisions, October 2008

- ASHRAE 90.1-2007 – American Society for Heating Refrigeration and Air-Conditioning Engineers –Energy Standards for Buildings Except Low-Rise Residential Buildings
- ASHRAE 62.1-2007 – American Society for Heating Refrigeration and Air-Conditioning Engineers – Ventilation for Acceptable Indoor Air Quality – 2007 edition
- ASHRAE 55-2007 – American Society for Heating Refrigeration and Air-Conditioning Engineers – Thermal Environmental Conditions for Human Occupancy – 2005 edition.
- SMACNA – Sheet Metal and Air Conditioning Contractor’s National Association
- NFPA 90A – National Fire Protection Association – Standard for the Installation of Air- Conditioning and Ventilating Systems – 2002 edition.
- NFPA 90B – National Fire Protection Association – Standard for the Installation of Warm Air Heating and Air-Conditioning Systems – 2006 edition.

Outdoor Design Conditions

Outdoor design conditions for this project will be based on outdoor design temperatures corresponding to ASHRAE 99% and 99.6% values for cooling and heating respectively. The outdoor design conditions that will be used for the project are:

Location	Winter °F	Summer °F	
	99.6% Design DB Temperature	99% Design DB Temperature	99% Design WB Temperature
Asheville, NC (Cullowhee)	12.2°F	85.8°F	71.3°F

Indoor Design Conditions

Indoor design conditions for this project will be as indicated in the North Carolina Mechanical Code, as recommended by ASHRAE 55-2007, or established good engineering practices. Design criteria for indoor conditions are indicated in Table 1-2 below, and will be maintained throughout the year. Range of controllability for temperature will be ± 2°F of set point.

In general, humidification will not be provided in the building. Humidity levels will vary with the outdoor air humidity level but will generally fall within the range indicated below. Cooling systems will maintain a high humidity level of 60%. If humidification is required for specific areas, it will be provided by self contained duct humidifiers with electric steam generators, using purified water.

Area / Occupancy / Use	Summer (Cooling °F db)	Winter (Heating °F db)	Humidity Range (% RH)
Office / Business	75°F	70°F	Varies (<60%)
Multipurpose	75°F	70°F	Varies (<60%)
Kitchens	75°F	70°F	Varies (<60%)

Dining Areas	75°F	70°F	Varies (<60%)
Public Spaces	75°F	70°F	Varies (<60%)
Study Lounges	75°F	70°F	Varies (<60%)
Mechanical Spaces	Ventilated Only	65°F	Varies
Equipment Rooms	75°F - 80°F	None	Varies (<60%)

It is our general intent to design the entire facility at minimum energy demand and consumption.

Occupancy Load and Ventilation Requirements

Shown in Table 1-3 are the assumptions used in determining the internal heat gains for the project. Occupancy levels are for people heat gain and ventilation calculations, not for egress, and comply with the requirements of the 2012 edition of the North Carolina International Mechanical Code. Outdoor air ventilation rates listed are the greater of those required by ASHRAE 62.1-2007 or the North Carolina Mechanical Code 2012 edition. Lighting values are minimum values as identified by ASHRAE 90.1-2007, and actual design values will attempt to reduce the allowable lighting power density.

Mechanical ventilation will be provided to all spaces and provide an overall building positive pressure.

Table 1-3: Internal Heat Gains, Occupancy and Ventilation Requirements

Area / Occupancy / Use	Maximum Lights, Watts / S.F.	Equip Watts / S.F.	Occupancy, Density # / 1000 S.F.	People Sensible Heat Gain BTUH / Person	People Latent Heat Gain BTUH / Person	Outdoor Air, CFM / Person	Outdoor Air, CFM / S.F.
PUBLIC SPACES							
Lounges	1.2	2	20	250	200	7.5	0.06
Public Circulation	0.5	-	-	-	-	0	0.06
Restrooms	0.9	-	-	-	-	75 CFM / Fixture	
Storage	0.8	-	-	-	-	0	0.12
Equipment Rooms	1.5	**	-	-	-	*	*
ADMINISTRATION / OFFICES							
Offices	1.1	2.0	5	250	200	5	0.06
Conference Rooms	1.3	0.5	50	245	155	5	0.06
COMMON SPACES							
Dining Rooms	0.9	0.1	100	275	275	7.5	0.06
Kitchen	1.2	**	-	275	475	7.5	0.12
* Ventilation will be provided as required to maintain a negative pressure in the space.							
** Equipment load will be determined based on actual equipment loads in the space.							

Sound, Noise, and Vibration Considerations

The following Noise Criteria (NC) ratings are the recommended maximum background noise level criteria for the design of the mechanical systems.

Table 1-5: Design Guidelines for HVAC – Related Background Noise Level Criteria	
Sound Critical Spaces	Noise Criteria (NC)
Public Spaces	NC 30
Multipurpose	NC 30
Storage Areas	NC 40-45
Dining Rooms	NC 30-35

Building Diversity

The internal heat gains identified above indicate the maximum assumed amount for each area and type of space in the project. For central cooling plant (block load) load calculations, it has been assumed that it is highly unlikely that every space will be fully occupied during all times of the day. The block cooling load calculations considers the diversity in the amount of people, lights and equipment actually contributing to the load.

Building Load and Energy Analysis

Design heating and cooling load calculations will be performed using the Trane Trace 700 load and energy estimating program. The Trane Trace 700 program is a commercial load calculation program and is widely used throughout the HVAC design industry for load and energy modeling calculations. Using the design considerations, indoor and outdoor design conditions presented earlier, the preliminary building heating and cooling loads are:

Total Cooling Load Requirements: 200 Tons
 Total Heating Load Requirements: 2475 MBH

Proposed Mechanical Systems

Site utilities:

Albright-Benton:

Provide new 2" underground schedule 80 steam condensate piping installed adjacent to the existing underground low pressure steam and condensate lines along the front of the building; provide new entrance and connection inside each mechanical room (east & west mechanical room). The new 2" condensate line will replace the existing 2" condensate line that will be abandoned in place.

Provide new 6" LPS steam line connection from MH141A to existing low pressure steam line from MH137, provide isolation valves at all points of connection for upper steam line isolation and abandonment.

Boiler Plant:

A new Regional Boiler Plant will be included as part of the building expansion. The new Regional Boiler Plant will be connected to the existing campus steam distribution system utilizing the existing 6" HPS line serving the Brown Building. The boiler plant will be sized to provide steam to the upper campus and will be designed for three boilers at

300 BHP each with an ultimate capacity of approximately 900 BHP. Base bid will include the first 300 BHP boiler with alternates for the second and third 300 BHP boilers. Boilers will be 4-pass wetback firetube boilers and will be dual fuel, natural gas (primary) and fuel oil (back-up). Boiler plant will be designed with ancillary equipment to include deareator tank, surge tank, boiler feed and transfer pumps, condensate receiver and pumps, plant control system and piping as required to support the ultimate capacity of 900 BHP as base bid.

Underground dual wall fuel oil storage tank(s) will be provided for fuel oil storage with submersible fuel oil pumps (2 per tank), dual wall containment underground fuel oil piping, and leak detection/monitoring system will be provided. A fuel polishing system will also be provided. Base bid will be a 30,000 gallon tank with an alternate for (2) 25,000 gallon tanks.

A new 4" steam condensate line from the new boiler plant to the existing campus condensate system at MH141B, provide isolation valves at all points of connection

Building:

The existing building (approximately 30,000 sf) with new addition (approximately 25,000) will be approximately 55,000 sf total. The proposed new HVAC system will be a 4-pipe chilled water/hot water variable volume air handling unit system consisting of an air-cooled chiller, steam to hot water heat exchanger and indoor modular VAV AHU's.

A new variable speed high efficiency air-cooled chiller with a capacity of 200 tons will be located on grade in the service entrance area. Underground pre-insulated piping will extend from the chiller to the building. Chilled water distribution will be a primary/secondary pumping system with base mounted centrifugal chilled water pumps located on the lower level of the existing building. Primary/Secondary pumping system will consist of (2) parallel 400 GPM constant speed primary pumps (primary/stand-by) and (2) parallel 400 GPM variable speed secondary pumps with variable speed drives controlled based on differential pressure in the building's piping system.

A 2500 MBH steam-to-hot water heat exchanger will convert steam to hot water for building heating. The hot water pumping system will consist of (2) parallel 200 GPM variable speed parallel base-mounted centrifugal pumps for heating hot water service. The hot water pumps will be provided with variable frequency drives and controlled based on differential pressure in the building's piping system.

The building will be served by multiple variable volume air handling units with chilled water and hot water coils, variable speed supply and return fans and air side economizers. A ceiling plenum return system will be utilized along with terminal units with hot water reheat to condition renovated and new spaces. The new addition will be

comprised of mainly office space and will be served by a VAV air handling unit with terminal units with hot water re-heat. A VAV air handling unit with terminal units with hot water re-heat will serve the lower level of the existing building and addition. The kitchen area and adjacent dining spaces will be served a VAV air handling unit with terminal units with hot water re-heat.

(3 - AHUs – 30,000 CFM, 25,000 CFM 15,000 CFM)

All air distribution systems will be fabricated sheet metal, constructed in accordance with the latest SMACNA standards (seal class-A). All supply, return, outside air and exhaust air ductwork will be insulated with 2” duct wrap. Flexible duct systems at air distribution inlets and outlets are not to exceed 5 feet in length.

Retail Outlet Areas (Chili’s & Starbucks) will be served by a separate air-cooled DX split system with hot water heating coils. Dedicated exhaust fans for restroom and kitchen functions will be provided as applicable to the specific space.

(10 Ton system for Chili’s and 7.5 ton system for Starbucks)

For the commissary space dedicated roof mounted kitchen supply and exhaust fans will be provided for individual kitchen hoods. All exhaust ductwork for kitchen hoods will be welded black steel with 2 layers of fire wrap. All dishwashers will be provided with dedicated exhaust fans with stainless steel ductwork.

Equipment rooms will be provided with dedicated fan coil units and dedicated hot water unit heaters for areas where conditioning is not required.

All building toilet, shower and housekeeping rooms will be exhausted by a general exhaust system.

Tele/Data rooms will be served by dedicated variable refrigerant volume (VRV) ductless split systems or a dedicated ventilation fan as determined by the equipment heat load.

Ventilation air will be introduced through the air handling units by mixing with the return air. CO2 sensors shall be located in all multi-occupant spaces to take advantage of demand control ventilation.

Building Control and Energy Management System

Controls for the building systems will incorporate a full-building, centralized, direct digital control (DDC) technology for precise control functions. The user interface for the building control system will utilize web based technology, allowing individual users to control the temperature set point from their workstation. The system will interface with the existing WCU campus front-end.

The system shall be accessible from any standard web browser with out the need of special software. Position indicator switches will be provided on windows located in the

office area to allow for positive shutoff of the associated terminal unit to allow for natural ventilation and cooling during economizer time periods.

Measurement and Verification

The building automation system will monitor, measure and trend all water and electric consumption. All electrical loads: lighting, HVAC and process loads will be sub-metered in order to help troubleshoot unexpected energy consumption as well as to compare to the energy model simulations. Optima Engineering will coordinate directly with the commissioning agent during both design and construction to ensure proper building systems operation.

Testing, Adjusting and Balancing

Testing, Adjusting and Balancing (TAB) will be performed on all mechanical equipment and systems. All equipment and air and water systems will be balanced to deliver +/- 5% of design capacity and flow. Each system and component will be balanced in accordance with the Associated Air Balance Council (AABC) guidelines. AABC certified TAB agents are typically contracted separately by the Owner. Being separately contracted, they can provide the Owner with an independent, unbiased, opinion as to the capacity and installation of the systems.

Plumbing Systems

Codes and Standards

All plumbing systems proposed for this building will be designed in accordance with the following codes and standards:

- *North Carolina State Plumbing Code*, 2009 edition (modeled after the 2006 IPC with NC Amendments)
- *State of North Carolina – State Construction Manual*, 9th Edition, January 2006, with Energy Revisions, October 2008.
- *NFPA 13 – National Fire Protection Association – Standard for the Installation of Sprinkler Systems* – 2002 edition
- *NFPA 14 – National Fire Protection Association – Standpipe and Hose Systems* – 2003 edition
- *ADA – Americans with Disabilities Act*

Existing Conditions

The existing hot water system consists of one instantaneous steam fired water heater. With the installation of new high efficiency fixtures and low flow lavatories, all existing domestic water and sanitary waste piping will be removed on every floor.

Due to design criteria, age, excessive water consumption and code requirements all existing plumbing fixtures and all equipment are recommended for removal and replacement.



Proposed Plumbing Systems

Plumbing systems will be provided in accordance with all-applicable laws, regulations and codes governing the construction. Water and sewage utilities for the facilities will be by the local utility service providers.

Sanitary Waste and Vent System

Sanitary waste drainage from the building will generally discharge by gravity to the site sewers. Plumbing design will stop five feet outside the building and the sanitary sewer system will be continued from this point to the sewer main as part of the site civil work. Below grade piping will be extra heavy duty cast iron, above grade will be normal service weight cast iron. This system serves water closets, urinals, lavatories and equipment. Grease waste piping system for kitchen equipment and drains will be provided and piped to a 2,000 gallon pre-manufactured fiberglass reinforced polyester grease interceptor located near the existing loading dock. Discharge from the grease interceptor will be connected to the building sanitary sewer system. Sewage pumping systems are not anticipated for this project.

Domestic Water System

A new 4" domestic cold water service will enter the Boiler Plant and route to the existing building and new addition for service. Make-up water to mechanical systems shall be protected against backflow by means of a reduced pressure zone backflow preventer.

Domestic water piping below grade shall be type K copper or ductile iron pipe. Above grade domestic water piping shall be hard drawn type L copper. Domestic hot and cold water piping above grade shall be insulated with glass fiber insulation having a vapor barrier and jacket.

Domestic hot water will be provided by two instantaneous steam fired water heaters located in the Boiler Plant and shall serve a domestic hot water loop on the first and lower level to accommodate all fixtures and equipment requiring connection. A new 140° F line shall be extended to new food service areas. Hot water delivery temperature shall not exceed 116° F and both loops shall be maintained by a multi-zoned hot water circulation system.

Plumbing Fixtures

All fixtures will be low-flow type for water reduction to meet the State of North Carolina energy initiatives.

Water closets will be vitreous china, siphon jet type, with flush valves in accordance with ASME/ANSI A112.19.2. Fixtures shall use no more than 1.28 gallons per flush.



Urinals will be vitreous china, with flush valves in accordance with ASME/ANSI A112.19.2. Fixtures shall use no more than 0.125 gallons per flush.



Lavatories will be vitreous china, wall hung or counter top mounted in accordance with ANSI/ASME A112.19.2. Faucets in public toilet rooms will be sensor operated and programmed to limit the flow to 0.5 GPM.

Mop receptors in janitor's closets will be floor mounted; 24" x 24" terrazzo, with rim guards and with hose end type of faucet with a vacuum breaker. Faucet shall conform to ANSI/ASME A112.18.1.

Floor drains and other suitable waste receptors will be provided in the mechanical rooms, toilet rooms, and equipment rooms. Floor drains shall conform to ANSI/ASME A112.21.1. All drains will be connected into the sanitary drainage system and shall include trap primers for trap seal maintenance.

Storm Drainage System

Storm drainage from the building will generally discharge by gravity to the site storm drainage system. Plumbing design will stop five feet outside the building and the storm drain system will be continued from this point to the storm main as part of the site civil work.

The storm drain piping above and below grade shall be Schedule 40 normal weight service pipe and socket fittings with solvent weld joints. All horizontal storm drain piping inside the building shall be insulated including roof drain bodies.

Natural Gas System

Natural gas piping and fitting above and below grade shall be schedule 40 black steel piping, type s, seamless, grade b with 150 psi malleable black iron fittings.

Fire Protection System

Existing Conditions

The existing facility is not provided with an existing fire protection system.

Proposed Fire Protection Systems

The facility shall be protected by an automatic wet sprinkler system. The fire protection system shall be designed with hydraulic density of 0.15 GPM / sq. ft. over the most remote 1500 sq. ft. Minimum coverage per sprinkler head shall be 130 sq. ft. Water supply for the fire suppression systems will be from the new water service. Dry stem sprinkler heads will provide coverage of the coolers and freezers in kitchen spaces.

A new flow test has not been provided for this submission, however based on existing information, a new fire pump is not anticipated.



Electrical / Fire Alarm System



Codes and Standards

All electrical systems proposed for this building will be designed in accordance with the following codes and standards:

- *State of North Carolina* – State Construction Manual, 9th Edition, January 2006, with Energy Revisions, October 2008.
- *NEC National Electric Code* – 2008 edition
- *IES* – Illuminating Engineering Society
- *ANSI* – American National Standards Institute
- *NFPA 72 – National Fire Protection Association* – National Fire Alarm Code – 2002 edition
- *NFPA 780 – National Fire Protection Association* – Standard for the Installation of Lightning Protection Systems – 2004 edition

Proposed Electrical Service

Medium Voltage Distribution:

The building will be connected to the existing University utility system utilizing the existing 15 KV switch on site. Provide a concrete encased 2-way 4" PVC ductbank from existing medium voltage switch the building transformer. Provide and install 15KV cables via the ductbank from the switch to the transformer. Cables shall be copper, single conductor MV-105, tape shielded EPR with 133% insulation and PVC jacket.

Pad Mounted Transformers:

A new pad mounted transformers shall be provided and installed. The estimated size is 1500KVA, 277/480V.

Emergency Power System:

Furnish and install a complete emergency diesel engine generator package including engine/generator set, transfer switches, muffler, exhaust piping, wiring, etc., as necessary to provide a complete emergency power system. Unit shall be mounted outside building in a weatherproof enclosure. An integral skid mounted diesel tank with a minimum of 24 hours of fuel.

The generator will be for life safety lighting, fire alarm, and generator auxiliaries. The generator will also supply optional standby electrical loads i.e. refrigeration equipment. Separate transfer switches shall be utilized for each category. A separate electrical room will be required for all emergency panels.



The new engine generator shall be rated 200 kW continuous standby, 277/480 volt, 1800 rpm maximum, 60 hertz, 0.8 power factor, and diesel engine driven. Rating is for continuous electrical service during interruption of normal utility service.



Interior Electrical Distribution Service:

From the medium voltage switch, power will be provided to the building via an underground connection to a 2,000A MCB switchboard. Sub-metering will be provided to monitor building load and energy usage for systems as needed (HVAC, Lighting, and Receptacle). Surge protection will be provided at the two services only.

The 2,000A service entrance switchboard will be provided with SPD, metering, and ground fault protection. A separate kilowatt demand (kWD) meter will be provided at the main switchboard consistent with other buildings on campus. The switchboard will use bolt-on circuit breakers. Electronic trip units including 5 adjustable functions, minimum, will be provided for all circuit breakers greater than 250 amps.

Panelboards: Provide dead-front safety-type panelboards, with fully-rated bolt-on molded case circuit breakers, full neutral bar, and an uninsulated grounding bar. Provide sheet steel enclosures, NEMA type 1 with hinged door-in-door construction. Enclosure shall be 20 inches wide minimum. Panelboards with feed-thru type lugs and/or series rated circuit breakers will not be permitted. Arc flash labeling for each panel shall be provided. Provide current transformers in panels and switchgear for connection to the Measurement and Verification System.

Branch Circuits – Wiring:

Circuiting shall be in compliance with the National Electrical Code. Wiring shall be installed in conduit. Wiring shall be XHHW or THHN/THWN copper, solid for No. 10 and 12 AWG, stranded for No. 8 and larger. Minimum size shall be No. 12 AWG. Conductors used for lighting fixtures lead splices shall be not rated less than 90°C.

All conductors No. 8 and smaller shall be spliced by means of securely twisting UL listed, pressure type conductors (wire nuts) of the same temperature rating as the conductors. No crimp or solder splices shall be permitted.

All conductors No. 6 and larger shall be spliced by approved mechanical connectors plus gum tape, friction tape, or plastic tape UL listed for use as sole insulation. Solderless mechanical connectors for splices and taps, provided with UL listed insulating covers may be used instead of mechanical connectors plus tape.

Branch circuit conductors shall be not smaller than No. 12 AWG, except that conductors for branch circuits where length from panel to center of load exceeds 75 feet shall be not smaller than No. 10 AWG from the panel to the first outlet box in the circuit.

Conductors shall be color coded brown, orange, yellow for 277/480 volt systems and black, red, blue for 120/208 volt systems, for A, B and C phases respectively. Neutral shall be white, grounding conductor shall be green. Insulation tape of the proper color shall be used for phase conductor identification of sizes No. 8 and larger.



Branch Circuits – Conduit:

Install wiring in rigid metal or rigid PVC raceways. Raceways shall be concealed, except in mechanical rooms, electrical closets, exposed overhead structure and where indicated on the plans.

Provide rigid metal or intermediate metal conduit for raceways in exposed installations where subject to damage. Provide rigid galvanized steel or intermediate metal conduit for raceways embedded in concrete exposed to weather or at conduit stub-ups.

Rigid non-metallic conduit, RNC, may be used underground and under slab on grade. RNC shall be UL listed for 75°C conductors, schedule 40 polyvinyl chloride. Installation shall be in strict accordance with Article 347 of the NEC and manufacturer's instruction. All conduit fittings shall be UL listed for concrete-tight and rain-tight construction.

Provide flexible raceways for all motor connections and equipment subject to vibration or movement. Liquidtight flexible conduit shall be used for all exterior locations. Equipment grounding conductor shall be installed in flexible conduit.

MC Cable or Electrical Metallic Tubing (EMT) may be used for general branch circuits unless otherwise noted. All EMT fittings shall be hexagonal compression type of galvanized steel throughout with insulated throats. Indenter type EMT fittings shall not be used. All conduit entrance fittings shall provided with insulated throats.

Branch Circuits – Wiring Devices:

Receptacles shall be flush mounted NEMA 5-20R duplex type. Ground fault interrupters shall be provided for outdoor locations, bathrooms, near service sinks, and break/kitchen areas as required by National Electric Code.

Switches shall be 20 ampere flush mounted and switch control shall be as indicated. Switches adjacent to doors shall be on strike side.

Device plates shall be 302 stainless steel in finished areas.

Lighting System – Interior:

As a minimum all interior lighting will meet or exceed the requirements as identified in ASHRAE 90.1 – 2007, Table 9.6.1 for *Lighting Power Densities Using the Prescriptive Method*. Automatic control devices will be used, such as occupancy sensors and occupancy schedules. Dual level switching will be used in offices, meeting rooms, etc... to provide flexible light levels for the user. Exterior lighting will be controlled by photocell. Recessed down lights and lay-in 2x4 fixtures will be utilized in areas with lay-



in ceilings. LED lighting will be provided in lieu of fluorescent where it is cost effective and will be studied in detail during the schematic design phase LCCA.



Design light levels for area type:

- Offices – 40fc
- Storage rooms – 20fc
- Work/copy rooms – 40fc
- Reception areas – 30fc
- Conference rooms – 60fc
- Break rooms – 40fc
- Dining seating areas / multipurpose rooms -40fc
- Dining serving areas with food stations – 60fc
- Commercial Kitchens – 60fc
- Commercial Dishwashing areas – 60fc
- Refrigerated storage – 30fc
- Locker rooms – 30fc
- Restrooms – 30fc

Lighting System – Exterior:

Roadway, parking and pedestrian walkway lighting will be provided as required in areas directly impacted by the new building and road construction. The site lighting will include underground distraction, poles, fixtures, grounding, and controls as required to provide a complete useable system. .

Low Voltage Systems

Fire Alarm System:

An addressable fire alarm system with battery backup and graphic annunciator will be provided for the facility. Audio-visual and visual only alarm devices will be provided throughout the building.

Addressable smoke detectors will be provided in the storage spaces, equipment rooms, fire alarm control panel locations and corridors. Addressable duct mounted smoke detectors will be provided for the central air handlers. Addressable heat detectors will be provided where there is cooking equipment.

Addressable fire alarm pull stations will be provided at the egress doors. Additional pull stations will be provided in the mechanical rooms.

All work shall be in accordance with the recommendations of the N.C. Department of Insurance Guidelines for the Fire Detection and Alarm Systems. EMT conduit will be provided for fire alarm cable raceways. Red MC cable will not be accepted.



Flow switches shall be connected to the fire alarm system. Valve tamper switches shall be connected to annunciate trouble signal only, both audibly and visibly.

Site Telecommunications:

A new telecom service entrance to the building will be included to tie in the campus telecom network. PVC conduits encased in concrete will be installed from an existing telecom manhole near the site to the Building Main Telecom Room. Separate fiber and copper cabling will be provided to tie in the campus network. Outside plant fiber and copper will be provided to the building from the existing campus connection points in other campus buildings directed by the University.

Interior Telecommunications:

Provide a complete building backbone and horizontal distribution system including, but not limited to, wiring, pathway systems (conduit, cable tray, etc.), racks, backboards, cross connects, patch panels, outlet boxes, 110 blocks for voice cross connects, telephone/data/TV jacks, cables, and cover plates. Network switches and special electronics shall be provided by the Owner. The standard telecommunication outlet will consist of the following jacks, two (2) data and one (1) voice.

Voice and data outlets will be provided in office areas and multipurpose areas.

Provide empty conduit raceway system to all security camera locations from local network racks.

Door Access System:

A card reader system will be provided and installed by the owner. Raceways, j-boxes, power, and electric strikes are provided and installed by the contractor.

Energy Analysis

Building Envelope

The building envelope is a key component in meeting the energy efficiency requirements of General Statute 143-135.35 through 143-135.40. The balance between energy efficient construction and budget will be studied in the schematic and design development phases for all wall, roof, and glazing systems. Glazing types and various insulating strategies for the walls and roof will be explored thru the energy model to determine those best suited. Placement and expanse of glazing will also be studied further to maximize daylighting while controlling its effect on thermal loading. In addition, building orientation of the new addition will continue to be explored in order to respond to both site topography and solar orientation.

Mechanical (HVAC) Systems

HVAC systems to be utilized for the project during subsequent design phases will be evaluated in detail. The following primary HVAC system types will be used to evaluate

and determine the most cost effective and energy efficient system for this project that will also work with the construction budget:



- Baseline System (State Construction ASHRAE 90.1 – 2007):
 - Packaged DX VAV with Reheat / Hot Water Fossil Fuel Boiler
- Alternative 1:
 - Air Cooled Chiller / Steam Boiler (Regional Plant)
- Alternative 2 :
 - Air Cooled Chiller / Condensing Hot Water Boiler (Dedicated Building Equipment)
- Alternative 3 :
 - Water Cooled Chiller / Steam Boiler (Regional Plant)
- Alternative 4 :
 - Water Cooled Chiller / Condensing Hot Water Boiler (Dedicated Building Equipment)

The maintenance and replacement costs utilized for the life cycle cost estimates will be based upon capital costs (taken from 2012 RS Means mechanical costs), summation of estimates for maintenance, data from the LCCA for State Facilities handbook and coordination with the project's construction management team.

Secondary mechanical system options, including; heat recovery from system reheat from associated air or water cooled chiller, Natural ventilation economizer operation with window/terminal unit interlock, and BAS control system options will also be evaluated during the LCCA study.

Lighting Systems

Lighting systems to be utilized for the project during subsequent design phases will be evaluated in detail. The following primary lighting system types will be used to evaluate and determine the most cost effective and energy efficient system for this project that will also work with the construction budget:

- Baseline Lighting System:
 - Linear fluorescent T8 lamp technology with electronic ballasts for fixtures used in dining areas, offices, mechanical/electrical rooms, administration, etc.
 - Compact fluorescent lamps with electronic ballast for recessed can lights mainly used in corridors, alcoves, lobbies, etc.
- Alternative Lighting System 1:
 - Linear fluorescent T5 lamp technology with electronic ballasts for fixtures used in dining areas, offices, mechanical/electrical rooms, administration, etc
 - LED lamp and driver technology for recessed can fixtures used mainly in corridors, alcoves, lobbies, etc.
- Alternative Lighting System 2:

- LED lamp and driver technology for fixtures used in dining areas, offices, mechanical/electrical rooms, administration, etc
- LED lamp and driver technology for recessed can fixtures used mainly in corridors, alcoves, lobbies, etc.



The maintenance and replacement costs utilized for the life cycle cost estimates will be based upon capital costs (taken from 2012 RS Means mechanical costs), summation of estimates for maintenance, data from the LCCA for State Facilities handbook and coordination with the project's construction management team.

Domestic Water Heating Systems

Domestic water heating systems to be utilized for the project during subsequent design phases will be evaluated in detail. The following system types will be used to evaluate and determine the most cost effective and energy efficient system for this project that will also work with the construction budget:

- Baseline System: 80% AFUE gas-fired storage-type water heaters
- Alternative 1: 96% AFUE gas-fire condensing water heaters
- Alternative 2: steam fired instantaneous water heaters

The maintenance and replacement costs utilized for the life cycle cost estimates will be based upon capital costs (taken from 2012 RS Means mechanical costs), summation of estimates for maintenance, data from the LCCA for State Facilities handbook and coordination with the project's construction management team.

- END ADVANCED PLANNING MEPFP DESIGN NARRATIVE -



New Construction

Piping (Boiler Plant)

Natural Gas	4"	NG piping to boilers with meter and pressure regulators NG Gas Train to each installed boiler	
Domestic Water	2"	Make up domestic water meter Makeup water softener Makeup water RPBFPP Makeup water control valve solenoids (DA Tank & Surge tank) Make up water piping (drain after coolers/blow down separators, boiler quick fill, sample cooler) Make up water chemical treatment and chemical feed equipment (meter valves, pumps, polypropylene tanks) Softened water makeup water piping to (DA Tank & Surge Tank)	
Steam Cond	4"	Steam Condensate return piping Steam Condensate Flow Meter Steam Condensate Receiver & Duplex Pump with Controller Steam Condensate Valving (Checks and Isolation)	
Boiler Feedwater	2"	Boiler Feed piping (individual to each boiler) Boiler Feed Pumps Boiler Feed make up valve assemblies Boiler Feed recirc lines with fixed flow orifices and suction inducers Boiler Feed Flow Meter and pressure Controller	
Vent	6",4"	Relief Vent piping (From DA tank, Surge tank, Boilers, Blow Down Separator, flash tank, etc) Drain Piping (From Flash Tank, Surge Tank, DA Tank, sample cooler, Blow down separator)	
Drain	2",1"	Blowdown Piping (Bottom and Surface Boiler Blowdown Piping) Manual Meter Surface Blowdown Valve & Motorized Valve for conductivity controller Tri-cock Boiler Level Controller blow down piping Quick and Slow open blow down valves	
Fuel Oil	1.5"	Fuel Oil Piping from fuel oil tanks to boiler burners	U/G Piping Leak Detection System
Comp. Air	1"	Compressed Air Piping (to pneumatically controlled steam control valves)	
High Press. Steam	6"	High Pressure steam piping (from Boilers to main steam header, header to extg PRV) High Pressure Steam Header High Pressure Steam Traps High Pressure Steam Flow Meters at each Boiler High Pressure Steam Silencer and Drain High Pressure Steam Continuous Blow down piping to Samper Cooler High Pressure Steam Line to Burner	
Low Pressure Steam	4"	Low Pressure steam piping from extg PRV station to:	Blow Down Separator Surge Tank DA Tank
Heating Hot Water	4"	Hot water piping	

			<u>Equipment</u>
1 base 2 future	Boilers	300 BHP Superior 4 pass Wetback	Control System GUI/Panel Non return main vavle Level Controllers Draft damper Conductivity Controller Master Plant Controller Flow Meter Digital Readout Display Relief Vents Flue Piping
1 base	Surge Tank	800 gal Superior S-7	Control System GUI/Panel Level Controllers After Coolers Transfer Pumps Steam Control Valve Makeup water control valves Vents Chemical Feed
1 base	DA Tank	675 gal 11 min storage Superior SS-30	Control System GUI/Panel Level Controllers After Coolers Boiler Feed Pumps Steam Control Valve Makeup water control valves Sample Cooler Overflow Drainer Automatic Gas Dispeller Vent Vent Chemical Feed
1 base	Chemical Feed		Tanks Pumps Controller
1 base	Blowdown Separator	Superior SBDS	Aftercooler piping - Vent, surface & bottom blowdown piping
1 base	Flash Tank	Wilson/Ind. Steam	HPR/LPR flashing
1 base	Water Softener		housekeeping pad and Salt Storage
1 base	Fuel Oil Tank	30,000 gal Xerxes IMO Pumps Veeder Root	Underground Fuel oil tank with manhole, fill caps, vents Dual Wall HS-20 Rated Tank Submersible Pumps Leak detection System
2 base	Sample Cooler		Floor Support Rack Associated Valving
2 base	Ventilation Fans	Cook 24 CAC	Man Cooler Fan with wall support
1 base	Air Compressor		Control Air Compressor with Dryer, Filter, & PRV

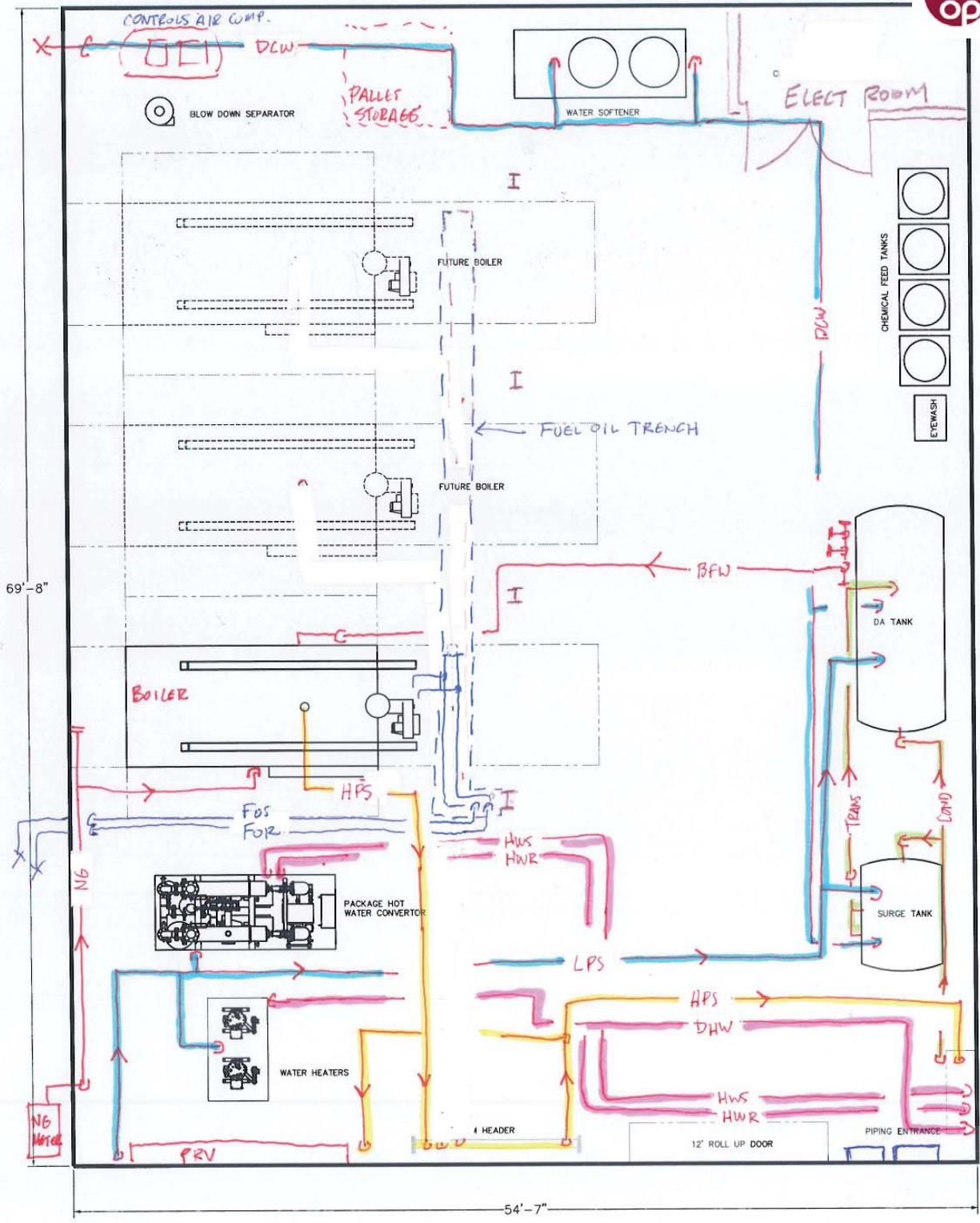


2 base	Steam Water Heaters	Aerco B+II	Instantaneous Steam Water Heaters 24" high housekeeping pad for condensate drainage Domestic Water piping Mixing valve Recirc. Pump
1 base	Hot Water HEX (Packaged Equipment)	2500 MBH B&G Hyfab Packaged Heat Transfer Skid	Shell & Tube HEX Duplex Condensate Pump Control Panel base mounted Hot Water Pumps Air Separator Expansion Tank
1 base	Control System		Boiler Plant Master Controller & Sequencer M&V items on all utilities and production steam/hot water

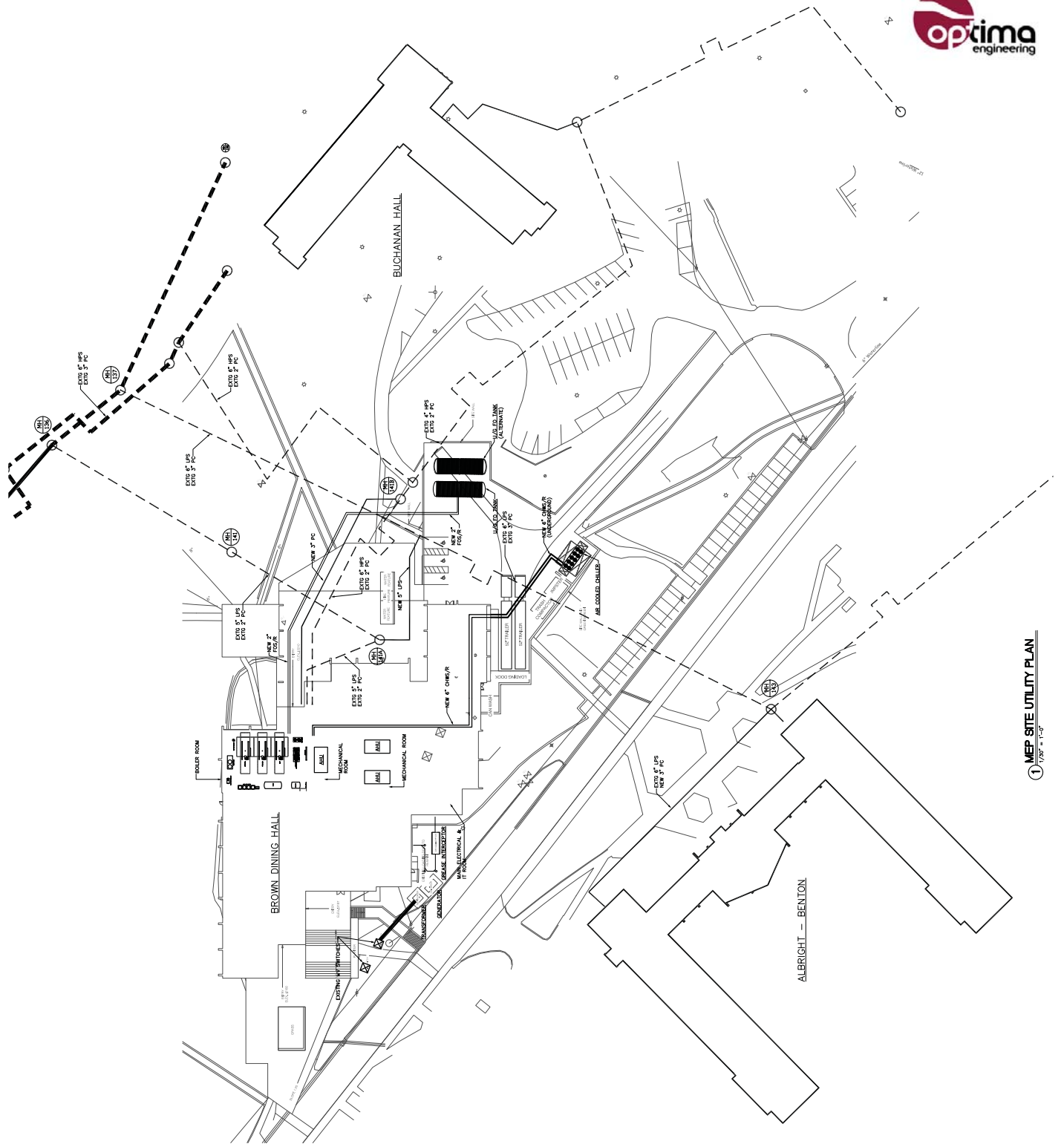
Misc Items / Equipment

House keeping Pads	4" min
Ventilation / Combustion Air Louvers	Sized per NCMC requirements
Propane Tanks	Piping and tank pad for burner fuel oil ignition





WCU BROWN BOILER PLANT



① MEP SITE UTILITY PLAN
1/32" = 1'-0"

From: Chad Hancock <chancock@optimapa.com>
Sent: Friday, October 24, 2014 9:29 AM
To: Jana Hartenstine; Michael Watson; Chris Erario; James Baysinger
Cc: Ron Almond
Subject: WCU Brown Fuel Oil Tanks
Attachments: 12' - 30,000 gal UG FO tank.pdf; 10' - 25,000 gal UG FO tank.pdf

See attached and below for fuel oil tank sizes and installation requirements. WCU has requested 7 days worth of storage, that would push them to (2) 10' - 25,000 gal tanks, with 3' between them and end distances as noted below.

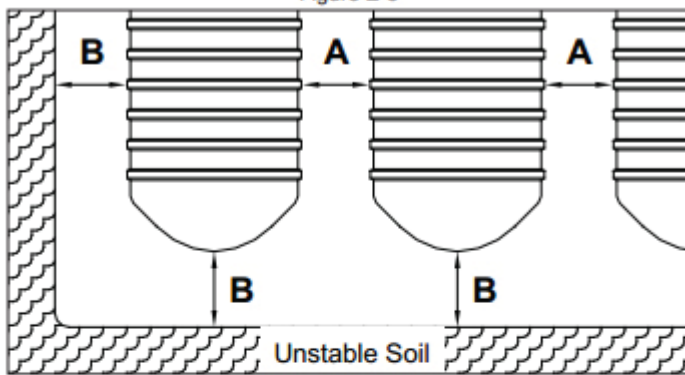
A more reasonable amount would probably be (1) 12' - 30,000 gal tank, that gives them 4-5 days depending on load and firing rate of the boilers.

Just wanted to get this to you to help plan the site layout. We will need to discuss with WCU what is required vs possible with our site restrictions (installation, refueling, etc).

Let me know if you have any questions.

Thanks,
Chad

Figure E-3



- 12' tanks need a minimum cover of 48" backfill or 36" backfill plus 6" reinforced concrete.

Figure G-3

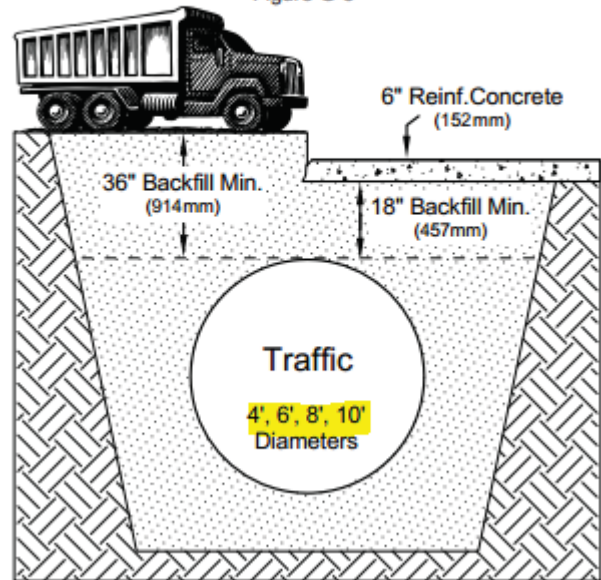


TABLE E-4

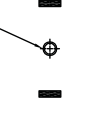
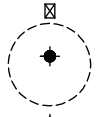
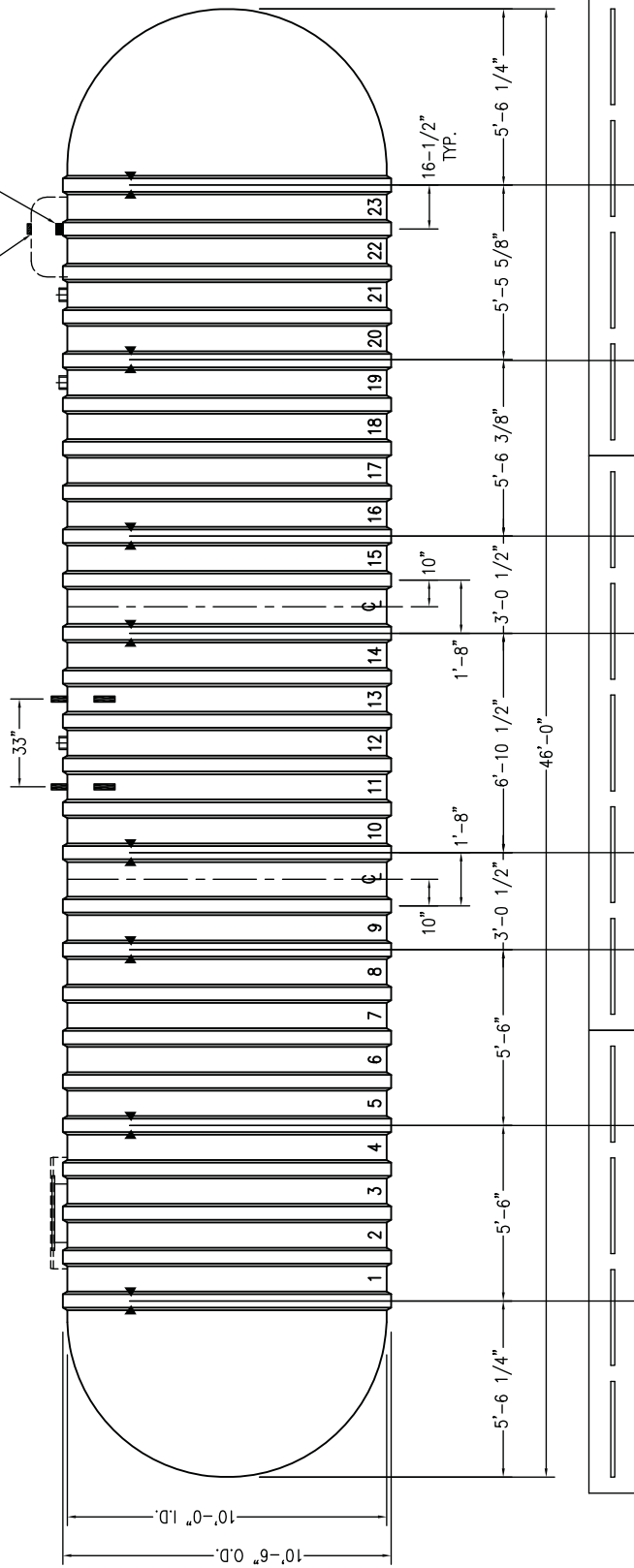
4', 6', 8' Diameter Tanks		
	Minimum	w/ 12" x 12" CSI Deadmen
A	18" (457mm)	24" (610mm)
B	½ Tank Dia.	½ Tank Dia.
10' Diameter Tanks		
	Minimum	w/ 18" x 8" CSI Deadmen
A	18" (457mm)	36" (914mm)
B	½ Tank Dia.	½ Tank Dia.
12' Diameter Tanks		
	Minimum	w/ 18" x 8" CSI Deadmen
A	24" (610mm)	36" (914mm)
B	½ Tank Dia.	½ Tank Dia.

SHELL CODES: 2-EXD10SD, 1-OXD06SD

OPTIONAL 42" CONTAINMENT COLLAR

OPTIONAL R-41 RESERVOIR

OPTIONAL R-41 RESERVOIR



NOTES:

- ☒ HOLD DOWN STRAP CLIP
- ▲ HOLD DOWN STRAP LUG LOCATION
- TYPE "13" LIFT LUG - SD
- TYPE "13" LIFT LUG - HD

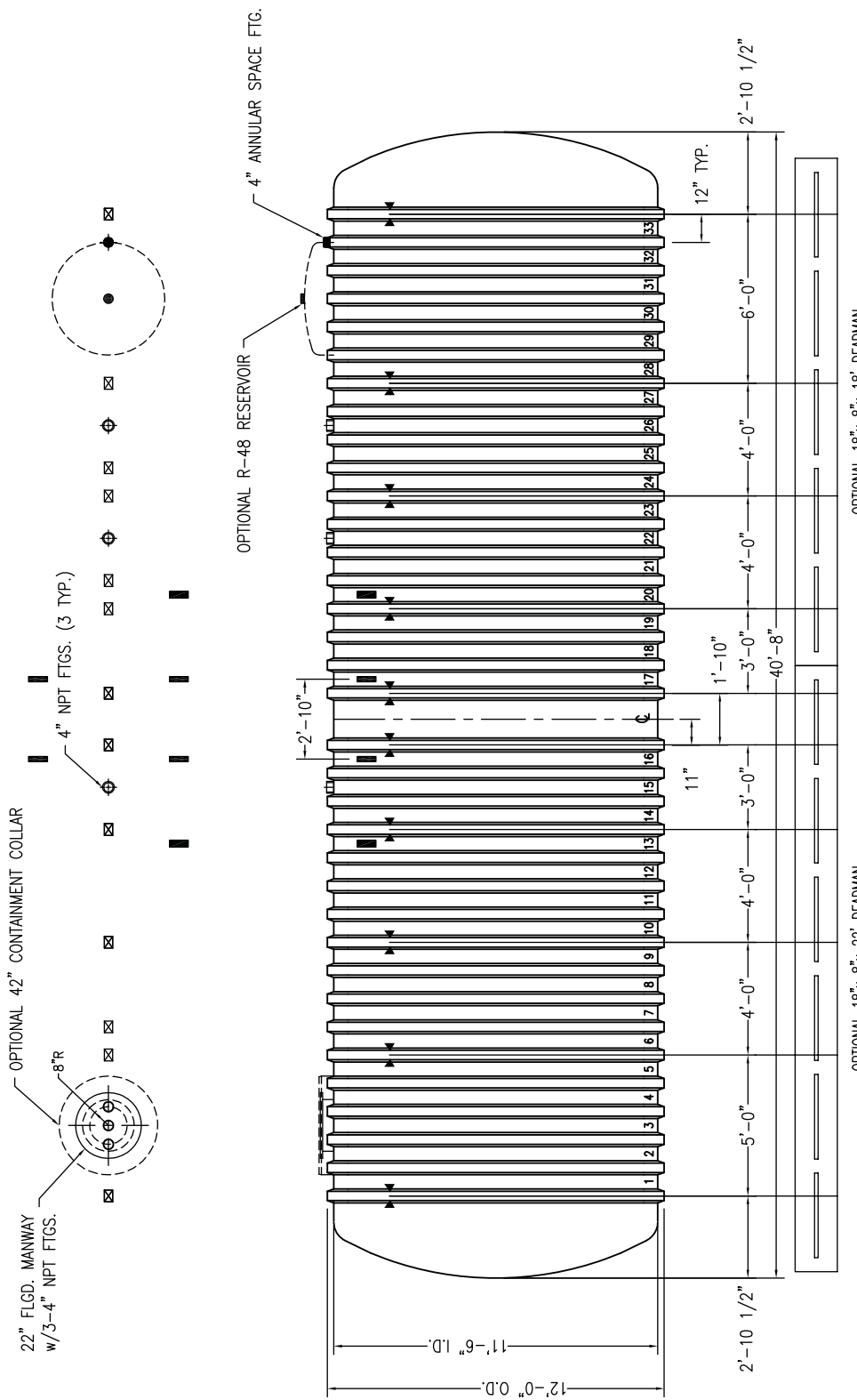
DATE:	1/1/2014
DRAWN BY:	K.A.SOEDER
REVISED:	
CAPACITY:	24,970
WEIGHT: DRY/WET	12250/17100
DWG NUMBER:	1025DW6S

CONTAINMENT SOLUTIONS



D.1.c.ii DESIGN NARRATIVES - MEP - BOILER PLANT - FUEL OIL TANK OPTIONS





DWT 6 (12')-30000	DATE: 1/1/2014
	DRAWN BY: R.OXNER
	REVISED:
CONTAINMENT SOLUTIONS	CAPACITY: 30,147
	WEIGHT: DRY/WET: 22800/30350
	DWG. NUMBER: 12-30DW6S



- NOTES:
- ☒ HOLD DOWN STRAP CLIP
 - ▲ HOLD DOWN STRAP LOCATION
 - TYPE "13" LIFT LUG - SD
 - TYPE "13" LIFT LUG - HD



D. DETAILED SPACE PROGRAM

1. DESIGN NARRATIVES
 - a. ARCHITECTURAL NARRATIVE
 - b. STRUCTURAL NARRATIVE
 - c. MEP NARRATIVE
 - i. BUILDING
 - ii. BOILER PLANT
2. PROGRAM OVERVIEW
3. ROOM DATA SHEETS
4. PRE-DESIGN DRAWINGS

OFFICE/ADMINISTRATION

	Room/Area Name	QTY.	PEOPLE	NSF/P	NSF/RM	NSF	FACTOR	ASF	PROVIDED NSF	Notes
1	RESIDENTIAL LIVING SUITE					4395		6153		
1.1	Director of Residential Living	1	1	200	200	200	1.4	280	225	
1.2	Director of Facilities Services	1	1	180	180	180	1.4	252	209	
1.3	Director of Residence Life	2	1	180	180	360	1.4	504	209	
1.4	Director of Operations	1	1	180	180	180	1.4	252	209	
1.5	Asst. Director of Facilities	1	1	120	120	120	1.4	168	209	
1.6	Asst. Director Residence Life	2	1	120	120	240	1.4	336	120	
1.7	Asst. Director Academic Initiatives	1	1	120	120	120	1.4	168	120	
1.8	Asst. Director Operations	1	1	120	120	120	1.4	168	120	
1.9	Financial Transactions Manager	1	1	120	120	120	1.4	168	120	
1.10	Room Assignments	2	1	120	120	240	1.4	336	120	Place closest to visitors (most visited suite)
1.11	Operations Assistant	1	1	120	120	120	1.4	168	120	
1.12	Growth Space	1	1	120	120	120	1.4	168	120	
1.13	Large Conference	1	20	25	500	500	1.4	700	794	20-22 Seat Ideal; this conference room will serve res lift along with the judicial conference room.
1.14	Medium Conference	3	8	25	200	600	1.4	840	257	8-10 Seats Ideal. 2/3 will serve as the anti-rooms for the large conference room for judicial cases.
1.15	Front Desk	1	2	100	200	200	1.4	280	360	2 Graduate Students- May be able to share with Community Ethics
1.16	Waiting Area	1	12	15	180	180	1.4	252	217	Waiting for 10-12 People Max - May be able to share with Community Ethics
1.17	Supply Room	1	0	0	120	120	1.4	168	290	
1.18	File Storage Room	1	0	0	175	175	1.4	245	159	
1.19	Copy Room	1	0	0	100	100	1.4	140		Shared with Supply Room
1.20	Break Room	1	0	0	300	300	1.4	420	298	
1.21	Programming/RA Work Room	1	0	0	100	100	1.4	140	0	This is a room for RA's to work on projects. May be optional; Place in location that is accessible without keeping the office suite open.

2	DEPARTMENT OF COMMUNITY ETHICS					1380		1932		
2.1	Director of Community Ethics	1	1	200	200	200	1.4	280	232	
2.2	Assistant Director of Community Ethics	1	1	120	120	120	1.4	168	155	
2.3	Associate Director of Community Ethics	1	1	150	150	150	1.4	210	159	
2.4	Drug & Alcohol Educator	1	1	120	120	120	1.4	168	140	
2.5	Growth Space	1	1	120	120	120	1.4	168	103	
2.6	Office Work Space	2	2	100	200	400	1.4	560	226	
2.7	Support Staff	1	1	120	120	120	1.4	168		Shared with Work Area
2.8	Front Desk	0	2	100	200	0	1.4	0	143	2 Graduate Students- May be able to share with Community Ethics
2.9	Waiting Area	0	12	15	180	0	1.4	0	141	Waiting for 10-12 People Max - May be able to share with Community Ethics
2.10	Storage	1	0	0	150	150	1.4	210	85	

* See the conference rooms for res life for judicial cases.

3	CAMPUS SERVICES					1470		2058		
3.1	Assistant Vice Chancellor for Campus Services	1	1	250	250	250	1.4	350	250	
3.2	Director of Campus Services	1	1	200	200	200	1.4	280	253	
3.3	Director of Conference Services	1	1	180	180	180	1.4	252	185	
3.4	Director of Food Service	1	1	120	120	120	1.4	168	146	
3.5	Catering Suite	2	1	120	120	240	1.4	336	329	2 People with side meeting area
3.6	Human Resource Office	2	1	120	120	240	1.4	336	170	
3.7	Admin	1	1	120	120	120	1.4	168	0	
3.8	Waiting	1	8	15	120	120	1.4	168		Shared Residential Living Suite

4	DINING					13560		15696		
4.1	Dining Hall Seating	1	480	12	5760	5760	1.1	6336	6073	
4.2	Special Meeting/Venue Room	1	200	18	3600	3600	1	3600	1869	Includes fireplace and stage area.
4.3	Multi-purpose Rooms	2	30	25	750	1500	1.4	2100	3216	Open to dining during the day
4.4	Storage	1			300	300		300	292	
4.5	Serving Area with Stations	6	400	0	0	2400	1.4	3360	2275	Smokehouse, Pizza, Salad Bar, Bakery, Grille, ?

5	BRAND A "STARBUCKS"					1200		1500		
5.1	Servery/Kitchen	1	300	0	0	300	1.4	420	420	TBD
5.2	Starbucks Dining	1	50	18	900	900	1.2	1080	1208	50 people seated

6	BRAND B "CHILI'S II"					2600		3280		
6.1	Servery/Kitchen	1	800	0	0	800	1.4	1120	1120	TBD
6.2	Chilis Dining	1	100	18	1800	1800	1.2	2160	1979	100 people seated

7	BRAND C "C-STORE"					1200		1380		
7.1	C-Store	1	1000	0	0	1000	1.1	1100	1043	
7.2	C-Store Storage	1	200	0	0	200	1.4	280	280	TBD

8	KITCHEN/SUPPORT					7710		9794		
8.1	Tray Drop	1	0	0	400	400	1.3	520	450	
8.2	Dry Storage	1	0	0	500	500	1.4	700	348	
8.3	Paper Storage	1	0	0	250	250	1.4	350	0	
8.4	Misc. Storage	1	0	0	500	500	1.4	700	0	Locate near loading
8.5	Dishwashing									
a	Dishwashing	1	0	0	900	900	1.4	1260	665	
b	Potwash	1	0	0	250	250	1.4	350	332	
c	Warewash	1	0	0	300	300	1.4	420	0	



Room/Area Name	QTY.	PEOPLE	NSF/P	NSF/RM	NSF	FACTOR	ASF	PROVIDED NSF	Notes
8.6 Catering								1006	Catering serves as the "shipping" element. Locations near the loading dock would be best.
a Catering Kitchen	1	0	0	500	500	1.2	600		TBD
b Catering Dishwashing	1	0	0	100	100	1.4	140		TBD
c Catering Storage	1	0	0	200	200	1.4	280		TBD
d Catering Staging	1	0	0	150	150	1.4	210		TBD
8.7 Production Kitchen	1	0	0	2000	2000	1.1	2200	1317	
8.8 Refrigerated Storage	1	0	0	1300	1300	1.2	1560	682	
8.9 Production Office	1	2	100	200	200	1.4	280	211	
8.10 Employee Lockers	2	20	0	80	160	1.4	224	210	12" x 2 high units, 10 female, 10 male. May be incorporated into staff toilets.
8.11 Receiving	1	0	0	1000	1000	1.1	1100	887	
9 PROPOSED NET S. F.					33515		41793		
9.1 Circulation (25% ASF)							10448		
Vestibules/Lobbies									
9.2 Restrooms (5% ASF)							2090	762	Provide 3 areas - Dining, Office and Staff
Housekeeping									
9.3 Mechanical Systems (8% ASF)							3343		
Chiller									
Boiler									
AHU Rooms									
Pump Room									
Cooling Tower (if necessary)									
9.4 Electrical Systems (4% ASF)							1672		
Telecommunications Rooms									
Electrical Rooms									
9.5 Structure/Exterior Walls (5% ASF)							2090		
10 TOTAL BUILDING GROSS SQ. FT.								61436	

D.2 PROGRAM OVERVIEW

147

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014



D. DETAILED SPACE PROGRAM

1. DESIGN NARRATIVES
 - a. ARCHITECTURAL NARRATIVE
 - b. STRUCTURAL NARRATIVE
 - c. MEP NARRATIVE
 - i. BUILDING
 - ii. BOILER PLANT
2. PROGRAM OVERVIEW
3. ROOM DATA SHEETS
4. PRE-DESIGN DRAWINGS

RESIDENTIAL LIVING

1.1 - DIRECTOR OF RESIDENTIAL LIVING

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.2 - DIRECTOR OF FACILITIES SERVICES

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	180
TOTAL SQFT:	180
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.3 - DIRECTOR OF RESIDENCE LIFE

QUANTITY:	2
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	180
TOTAL SQFT:	360
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.4 - DIRECTOR OF OPERATIONS

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	180
TOTAL SQFT:	180
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.5 - ASST. DIRECTOR OF FACILITIES

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	Director of Facilities



RESIDENTIAL LIVING

1.6 - ASST. DIRECTOR OF RESIDENCE LIFE

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	Director of Residence Life



RESIDENTIAL LIVING

1.7 - ASST. DIRECTOR OF ACADEMIC INITIATIVES

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.8 - ASST. DIRECTOR OF OPERATIONS

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	Director of Operations



RESIDENTIAL LIVING

1.9 - FINANCIAL TRANSACTIONS MANAGER

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.10 - ROOM ASSIGNMENTS

QUANTITY:	2
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	240
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	Near Reception - most visited

RESIDENTIAL LIVING

1.11 - OPERATIONS ASSISTANT

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.12 - GROWTH SPACE

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.13 - LARGE CONFERENCE

QUANTITY:	1
OCCUPANCY:	20
FUNCTION:	Conference Room to serve Residential Living & Dept of Community Ethics
FURNITURE / EQUIPMENT:	20 seats, power & data capable conference table, mini refrigerator, projection screen
AREA	
SQFT / RM:	500
TOTAL SQFT:	500
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & painted gypsum
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	Floor boxes, power for projection, power for LCD Screens
LIGHTING:	2 settings for lighting - full lighting, and low lighting for presentations; provide both motion and audio occupancy sensors; 60 fc. LED lighting highly desirable.
AV / COMMUNICATIONS:	Wireless access, data ports, Voice Over IP ports, LCD, projector
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	Privacy critical, provide privacy shades if interior glazing is provided
ADJACENCIES:	



RESIDENTIAL LIVING

1.14 - MEDIUM CONFERENCE

QUANTITY:	3
OCCUPANCY:	8-10 people
FUNCTION:	Conference Room to serve as the anti-rooms for the large conference room for judicial cases
FURNITURE / EQUIPMENT:	8-10 seats, conference table
AREA	
SQFT / RM:	200
TOTAL SQFT:	600
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & painted gypsum
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles, power for LCD Screens
LIGHTING:	2 settings for lighting - full lighting, and low lighting for presentations; provide both motion and audio occupancy sensors. 60 fc. LED lighting highly desirable.
AV / COMMUNICATIONS:	Wireless access, data ports, Voice Over IP ports, LCD
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	Privacy critical, provide privacy shades if interior glazing is provided
ADJACENCIES:	Large Conference Room



RESIDENTIAL LIVING

1.14 - FRONT DESK

QUANTITY:	1
OCCUPANCY:	2
FUNCTION:	Reception desk for Res Living & Community Ethics
FURNITURE / EQUIPMENT:	1 reception desk, 2 task chairs
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & painted gypsum
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	30 fc. LED lighting desirable.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports, LCD
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Res Living & Community Ethics



RESIDENTIAL LIVING

1.16 - WAITING AREA

QUANTITY:	1
OCCUPANCY:	10-12 people
FUNCTION:	Waiting for reception area
FURNITURE / EQUIPMENT:	10-12 seats, 2 side tables
AREA	
SQFT / RM:	180
TOTAL SQFT:	180
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & painted gypsum
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	30 fc. LED lighting desirable.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports, LCD
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Front Desk

RESIDENTIAL LIVING
1.17 - SUPPLY

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	Storage
FURNITURE / EQUIPMENT:	Shelving
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Impact resistant gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Resilient flooring
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	20 Fc direct LED
AV / COMMUNICATIONS:	n/a
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	
SECURITY:	
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.18 - FILE STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	File Storage
FURNITURE / EQUIPMENT:	Shelving and/or file cabinets
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Impact resistant gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Resilient flooring
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	20 Fc direct LED
AV / COMMUNICATIONS:	n/a
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	
SECURITY:	
SPECIAL:	
ADJACENCIES:	



RESIDENTIAL LIVING

1.19 - COPY ROOM

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	Employee workroom
FURNITURE / EQUIPMENT:	Storage wall and base cabinets, plastic laminate work surfaces, printer/copies
AREA	
SQFT / RM:	100
TOTAL SQFT:	100
CRITICAL CLEARANCES:	ADA requirements
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & gypsum soffit
FLOOR:	Resilient flooring or carpet tile
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles & required power for printer/copier
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor
AV / COMMUNICATIONS:	Wireless access, data ports for printer/copier
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	Key access from Corridor
ADJACENCIES:	Centrally located



RESIDENTIAL LIVING

1.20 - BREAK ROOM

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	Employee break room
FURNITURE / EQUIPMENT:	Storage wall and base cabinets, solid surface, stainless steel sink, stainless steel - French door refrigerator with ice maker, microwave
AREA	
SQFT / RM:	100
TOTAL SQFT:	100
CRITICAL CLEARANCES:	ADA requirements
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & gypsum soffit
FLOOR:	Porcelain tile
BASE:	Porcelain tile
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles & required power for appliances
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor
AV / COMMUNICATIONS:	n/a
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	Key access from Corridor
ADJACENCIES:	



DEPT. OF COMMUNITY ETHICS

2.1 - DIRECTOR OF COMMUNITY ETHICS

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



DEPT. OF COMMUNITY ETHICS

2.2 - ASST. DIRECTOR OF COMMUNITY ETHICS

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



DEPT. OF COMMUNITY ETHICS

2.3 - ASSOC. DIRECTOR OF COMMUNITY ETHICS

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	150
TOTAL SQFT:	150
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



DEPT. OF COMMUNITY ETHICS

2.4 - DRUGS & ALCOHOL EDUCATOR

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



DEPT. OF COMMUNITY ETHICS

2.5 - GROWTH SPACE

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



DEPT. OF COMMUNITY ETHICS

2.6 - OFFICE WORK SPACE

QUANTITY:	2
OCCUPANCY:	2
FUNCTION:	Employee workroom
FURNITURE / EQUIPMENT:	Storage wall and base cabinets, plastic laminate work surfaces, printer/copies, work table, and 2 chairs
AREA	
SQFT / RM:	200
TOTAL SQFT:	400
CRITICAL CLEARANCES:	ADA requirements
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & gypsum soffit
FLOOR:	Resilient flooring or carpet tile
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles & required power for printer/copier
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, data ports for printer/copier
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	Key access from Corridor
ADJACENCIES:	Centrally located



DEPT. OF COMMUNITY ETHICS

2.7 - SUPPORT STAFF

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



DEPT. OF COMMUNITY ETHICS

2.8 - FRONT DESK

QUANTITY:	1
OCCUPANCY:	2
FUNCTION:	Reception desk for Res Living & Community Ethics
FURNITURE / EQUIPMENT:	1 reception desk, 2 task chairs
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & painted gypsum
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	30 fc. LED lighting desirable.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports, LCD
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Res Living & Community Ethics

DEPT. OF COMMUNITY ETHICS

2.9 - WAITING AREA

QUANTITY:	1
OCCUPANCY:	10-12 people
FUNCTION:	Waiting for reception area
FURNITURE / EQUIPMENT:	10-12 seats, 2 side tables
AREA	
SQFT / RM:	180
TOTAL SQFT:	180
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & painted gypsum
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	30 fc. LED lighting desirable.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports, LCD
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Front Desk, may share with Residential Living



DEPT. OF COMMUNITY ETHICS

2.10 - STORAGE ROOM

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	Storage
FURNITURE / EQUIPMENT:	Shelving
AREA	
SQFT / RM:	150
TOTAL SQFT:	150
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Impact resistant gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Resilient flooring
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	20 Fc direct LED
AV / COMMUNICATIONS:	n/a
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	
SECURITY:	
SPECIAL:	
ADJACENCIES:	

CAMPUS SERVICES

3.1 - ASST. VICE CHANCELLOR FOR CAMPUS SERVICES

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf, sm conf table with 4 chairs
AREA	
SQFT / RM:	250
TOTAL SQFT:	250
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



CAMPUS SERVICES

3.2 - DIRECTOR OF CAMPUS SERVICES

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



CAMPUS SERVICES

3.3 - DIRECTOR OF CONFERENCE SERVICES

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, guest chair, loveseat, lounge chair, side table, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	180
TOTAL SQFT:	180
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



CAMPUS SERVICES

3.4 - DIRECTOR OF FOOD SERVICES

QUANTITY:	1
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



CAMPUS SERVICES

3.5 - CATERING SUITE

QUANTITY:	1
OCCUPANCY:	2
FUNCTION:	Office, including desk area with file storage, and side meeting area
FURNITURE / EQUIPMENT:	(2) L-shaped desk, (2) task chair, (2) 4-drawer lateral file, meeting table with 4 guest chairs
AREA	
SQFT / RM:	240
TOTAL SQFT:	240
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	



CAMPUS SERVICES

3.6 - HUMAN RESOURCE OFFICE

QUANTITY:	2
OCCUPANCY:	1
FUNCTION:	Office, including desk area with file storage, bookcases, and seating for visitors
FURNITURE / EQUIPMENT:	U-shaped desk, task chair, 2 guest chairs, 4-drawer lateral file, full-height bookshelf
AREA	
SQFT / RM:	120
TOTAL SQFT:	240
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	Acoustically Seal; STC 49 minimum
DAYLIGHTING:	Highly desirable
NATURAL VENTILATION:	Operable windows desirable
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	Key access from Corridor
SPECIAL:	
ADJACENCIES:	Near reception - high number of visitors



CAMPUS SERVICES

3.8 - WAITING AREA

QUANTITY:	1
OCCUPANCY:	8
FUNCTION:	Waiting for reception area
FURNITURE / EQUIPMENT:	8 seats, 1 side tables
AREA	
SQFT / RM:	120
TOTAL SQFT:	120
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Gypsum, painted
CEILING:	Acoustical Ceiling Tile & painted gypsum
FLOOR:	Carpet or Carpet tiles
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	30 fc. LED lighting desirable.
AV / COMMUNICATIONS:	Wireless access, 2 data ports, 2 Voice Over IP ports, LCD
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - minimum outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



DINING

4.1 - DINING HALL SEATING

QUANTITY:	1
OCCUPANCY:	480
FUNCTION:	Seating area for Dining Hall
FURNITURE / EQUIPMENT:	Multi-posture seating; provide different height tables and chairs along with lounge seating
AREA	
SQFT / RM:	5760
TOTAL SQFT:	5760
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Painted gypsum
CEILING:	Wood paneling, ceiling tile, & painted gypsum
FLOOR:	Epoxy Terrazzo
BASE:	Epoxy Terrazzo
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable
AV / COMMUNICATIONS:	Wireless access, Cable TV drops
MECHANICAL	
TEMPERATURE:	Cooling: 75°, Heating: 70°
VENTILATION:	7.5 cfm / per person - min outdoor air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Serving Area



DINING

4.2 - SPECIAL MEETING / VENUE ROOM

QUANTITY:	1
OCCUPANCY:	200
FUNCTION:	
FURNITURE / EQUIPMENT:	Multi-posture seating; provide different height tables and chairs along with lounge seating - All furniture to be movable
AREA	
SQFT / RM:	3600
TOTAL SQFT:	3600
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Painted gypsum
CEILING:	Wood paneling, ceiling tile, & painted gypsum
FLOOR:	Epoxy Terrazzo
BASE:	Epoxy Terrazzo
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable
AV / COMMUNICATIONS:	Wireless access, Cable TV drops
MECHANICAL	
TEMPERATURE:	Cooling: 75°, Heating: 70°
VENTILATION:	7.5 cfm / per person - min outdoor air; see MEP narrative
SECURITY:	
SPECIAL:	provide fireplace and stage area
ADJACENCIES:	



DINING

4.3 - MULTI-PURPOSE ROOMS

QUANTITY:	2
OCCUPANCY:	30
FUNCTION:	
FURNITURE / EQUIPMENT:	Multi-posture seating; provide different height tables and chairs along with lounge seating - All furniture to be movable
AREA	
SQFT / RM:	750
TOTAL SQFT:	1500
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Painted gypsum
CEILING:	Wood paneling, ceiling tile, & painted gypsum
FLOOR:	Epoxy Terrazzo
BASE:	Epoxy Terrazzo
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable
AV / COMMUNICATIONS:	Wireless access, Cable TV drops
MECHANICAL	
TEMPERATURE:	Cooling: 75°, Heating: 70°
VENTILATION:	7.5 cfm / per person - min outdoor air; see MEP narrative
SECURITY:	
SPECIAL:	Open to Dining during the day
ADJACENCIES:	Dining / Serving Area



DINING
4.4 - STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	Storage for chairs & tables from Dining area
FURNITURE / EQUIPMENT:	Multi-posture seating; provide different height tables and chairs along with lounge seating
AREA	
SQFT / RM:	300
TOTAL SQFT:	300
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Impact resistant gypsum, painted
CEILING:	ceiling tile
FLOOR:	Epoxy Terrazzo
BASE:	Epoxy Terrazzo
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	20 Fc direct LED
AV / COMMUNICATIONS:	n/a
MECHANICAL	
TEMPERATURE:	Cooling: 75°, Heating: 70°
VENTILATION:	
SECURITY:	
SPECIAL:	
ADJACENCIES:	Multi-purpose Room, Special Meeting - Venue Room



DINING

4.5 - SERVING AREA WITH STATIONS

QUANTITY:	6
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	400
TOTAL SQFT:	2400
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°, Heating: 70°
VENTILATION:	7.5 cfm / per person - min outdoor air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Near Brand B for dishwashing



BRAND A "STARBUCKS"

5.1 - SERVERY / KITCHEN

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	Starbucks Serving / Kitchen - more information to be provided by Aramark
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	300
TOTAL SQFT:	300
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75 °F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



BRAND A "STARBUCKS"
5.2 - DINING

QUANTITY:	1
OCCUPANCY:	50
FUNCTION:	Starbucks Dining Area - more information to be provided by Aramark
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	900
TOTAL SQFT:	900
CRITICAL CLEARANCES:	
FINISHES	
WALL:	
CEILING:	
FLOOR:	
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc. LED lighting desirable
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75 °F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



BRAND B "CHILI'S II"

6.1 - SERVERY / KITCHEN

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	Chili's II Serving / Kitchen - more information to be provided by Aramark
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	800
TOTAL SQFT:	800
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling 75° F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



BRAND B "CHILI'S II"
6.2 - DINING

QUANTITY:	1
OCCUPANCY:	100
FUNCTION:	Chili's II Dining Area - more information to be provided by Aramark
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	1800
TOTAL SQFT:	1800
CRITICAL CLEARANCES:	
FINISHES	
WALL:	
CEILING:	
FLOOR:	
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc. LED lighting desirable
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling 75° F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	Provide pick-up window
ADJACENCIES:	



BRAND C "C-STORE"

7.1 - C-STORE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	C-Store store area - more information to be provided by Aramark
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	1000
TOTAL SQFT:	1000
CRITICAL CLEARANCES:	
FINISHES	
WALL:	
CEILING:	
FLOOR:	
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, LED lighting desirable
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 75° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



BRAND C "C-STORE"

7.2 - C-STORE STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	C-Store storage area - more information to be provided by Aramark
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc. LED lighting desirable
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75° F, Heating: 75° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT

8.1 - TRAY DROP

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	400
TOTAL SQFT:	400
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Washable
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Terrazzo
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT

8.2 - DRY STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	500
TOTAL SQFT:	500
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	

KITCHEN / SUPPORT

8.3 - PAPER STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	250
TOTAL SQFT:	250
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT

8.4 - MISC. STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	500
TOTAL SQFT:	500
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Near Loading



KITCHEN / SUPPORT- DISHWASHING
8.5a - DISHWASHING

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	900
TOTAL SQFT:	900
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT-DISHWASHING

8.5b - POTWASH

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	250
TOTAL SQFT:	250
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT-DISHWASHING

8.5c - WAREWASH

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	300
TOTAL SQFT:	300
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT-CATERING

8.6a - CATERING KITCHEN

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	500
TOTAL SQFT:	500
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Catering to be located near the loading dock



KITCHEN / SUPPORT-CATERING

8.6b - CATERING DISHWASHING

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	100
TOTAL SQFT:	100
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Catering to be located near the loading dock



KITCHEN / SUPPORT-CATERING

8.6c - CATERING STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Catering to be located near the loading dock



KITCHEN / SUPPORT-CATERING

8.6d - CATERING STAGING

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	150
TOTAL SQFT:	150
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	Catering to be located near the loading dock



KITCHEN / SUPPORT

8.7 - PRODUCTION KITCHEN

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	2000
TOTAL SQFT:	2000
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	60 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT

8.8 - REFRIGERATED STORAGE

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	1300
TOTAL SQFT:	1300
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	30 fc, fixtures with lenses or coated bulb
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT

8.9 - PRODUCTION OFFICE

QUANTITY:	1
OCCUPANCY:	2
FUNCTION:	Office
FURNITURE / EQUIPMENT:	2 U-shaped desks, 2 task chairs, 4 guest chairs, 2 lateral files
AREA	
SQFT / RM:	200
TOTAL SQFT:	200
CRITICAL CLEARANCES:	
FINISHES	
WALL:	painted gypsum board
CEILING:	Acoustical Ceiling Tile
FLOOR:	Slip resistant - Stonhard
BASE:	Rubber base
ACOUSTICS:	Acoustically seal
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	General duplex receptacles
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	2 data ports, 2 phone jacks
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT

8.10 - EMPLOYEE LOCKERS

QUANTITY:	2
OCCUPANCY:	20
FUNCTION:	Locker Rooms - 1 female, 1 male - may be incorporated into staff toilets
FURNITURE / EQUIPMENT:	12" x 2-height units - 10 female, 10 male
AREA	
SQFT / RM:	80
TOTAL SQFT:	160
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Acoustical Ceiling Tile
FLOOR:	Slip resistant - Stonhard
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



KITCHEN / SUPPORT

8.11 - RECEIVING

QUANTITY:	1
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	1000
TOTAL SQFT:	1000
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Washable tile with vinyl coating
FLOOR:	Slip resistant - Stonhard
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	30 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70° F
VENTILATION:	5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



ADDITIONAL BUILDING SUPPORT
9.1 - RESTROOMS

QUANTITY:	
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	
AREA	
SQFT / RM:	
TOTAL SQFT:	
CRITICAL CLEARANCES:	
FINISHES	
WALL:	Porcelain tile at wet walls, epoxy painted gypsum
CEILING:	ceiling tile, epoxy painted gypsum
FLOOR:	Porcelain tile
BASE:	
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	30 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70°F
VENTILATION:	75 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



ADDITIONAL BUILDING SUPPORT

9.2 - HOUSEKEEPING

QUANTITY:	
OCCUPANCY:	
FUNCTION:	
FURNITURE / EQUIPMENT:	Janitor Sink, shelving
AREA	
SQFT / RM:	
TOTAL SQFT:	
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Ceiling tile
FLOOR:	Resilient flooring
BASE:	Rubber
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	40 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70°F
VENTILATION:	
SECURITY:	
SPECIAL:	
ADJACENCIES:	



ADDITIONAL BUILDING SUPPORT

9.3 - EMPLOYEE LOCKERS

QUANTITY:	
OCCUPANCY:	20
FUNCTION:	Locker Rooms - 1 female, 1 male - may be incorporated into staff toilets
FURNITURE / EQUIPMENT:	12" x 2-height units - 10 female, 10 male
AREA	
SQFT / RM:	80
TOTAL SQFT:	
CRITICAL CLEARANCES:	
FINISHES	
WALL:	FRP to 8'-0" & epoxy paint above
CEILING:	Acoustical Ceiling Tile
FLOOR:	Resilient flooring
BASE:	Rubber base
ACOUSTICS:	
DAYLIGHTING:	
NATURAL VENTILATION:	
ELECTRICAL	
POWER:	
LIGHTING:	30 fc. LED lighting desirable with occupancy sensor. Task lighting recommended.
AV / COMMUNICATIONS:	
MECHANICAL	
TEMPERATURE:	Cooling: 75°F, Heating: 70°F
VENTILATION:	7.5 cfm / per person - min outside air; see MEP narrative
SECURITY:	
SPECIAL:	
ADJACENCIES:	



D. DETAILED SPACE PROGRAM

1. DESIGN NARRATIVES
 - a. ARCHITECTURAL NARRATIVE
 - b. STRUCTURAL NARRATIVE
 - c. MEP NARRATIVE
 - i. BUILDING
 - ii. BOILER PLANT
2. PROGRAM OVERVIEW
3. ROOM DATA SHEETS
4. PRE-DESIGN DRAWINGS



D.4 PRE-DESIGN DRAWINGS

221

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014



E. PRELIMINARY PROJECT SCHEDULE





E. PRELIMINARY PROJECT SCHEDULE

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal



E. PRELIMINARY PROJECT SCHEDULE

225

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014



F. FACILITIES CONDITION ASSESSMENT PROGRAM

1. FCAP REPORT
2. DESIGN STRATEGIES TO ADDRESS FCAP ISSUES
3. PRELIMINARY LIFE SAFETY DOCUMENTS
4. HEALTH CODE REVIEWS REQUIRED



F. FACILITIES CONDITION ASSESSMENT PROGRAM

1. FCAP REPORT
2. DESIGN STRATEGIES TO ADDRESS FCAP ISSUES
3. PRELIMINARY LIFE SAFETY DOCUMENTS
4. HEALTH CODE REVIEWS REQUIRED



**State of North Carolina
State Construction Office
Facility Condition Assessment Program**

10/29/2014 2:46:32 PM

Department: EDUCATIONAL INSTITUTIONS GENERAL

Agency: WESTERN CAROLINA UNIVERSITY

Complex: WESTERN CAROLINA UNIVERSITY



State of North Carolina
State Construction Office
Facility Condition Assessment Program

EDUCATIONAL INSTITUTIONS GENERAL
WESTERN CAROLINA UNIVERSITY

**WESTERN CAROLINA UNIVERSITY -
BROWN CAFETERIA #23**

Status: 1

- 1 – Original
- 2 – Revised
- 3 – Resolved

Fund: 2

- 1 – General Fund
- 2 – Receipts

Priority: 6

- 0 – Now
- 1 – Year
- 2 – Years
- 3 – Years
- 4 – Years
- 5 – Years

Masterformat Classification

Division: Electronic Safety and Security

Subdivision: Fire Detection and Alarm

[Item]

Original Assessment

Cost Estimate: \$21,400

Date: 2013-09-26

Assessor: ccarl

Production of the Edwards Quick Start series fire alarm panel ended in January 2012. Replacement system assemblies will be manufactured for a limited period pending parts availability. Sometime in the future the panel will become irreparable.

Correction

Recommend replacing the fire alarm panel with one that is compatible with the existing initiating devices and notification appliances. An assessment of the asset should be made to determine the extent that additional initiating devices and notification appliances may have to be provided to satisfy the present requirements of NC Fire Prevention Code and National Fire Alarm Code®.

Revised Assessment

Cost Estimate: _____

Date: _____

Assessor: _____



State of North Carolina
State Construction Office
Facility Condition Assessment Program

EDUCATIONAL INSTITUTIONS GENERAL
WESTERN CAROLINA UNIVERSITY

**WESTERN CAROLINA UNIVERSITY -
BROWN CAFETERIA #23**

Status: 2

- 1 – Original
- 2 – Revised
- 3 – Resolved

Fund: 1

- 1 – General Fund
- 2 – Receipts

Priority: 0

- 0 – Now
- 1 – Year
- 2 – Years
- 3 – Years
- 4 – Years
- 5 – Years

Masterformat Classification

Division: Heating, Ventilating, and Air Conditioning (HVAC)

Subdivision: Common Work Results for HVAC

[Item]

Original Assessment

Cost Estimate: \$2,000,000

Date: 2013-09-26

Assessor: jbaden

The mechanical systems in Brown Building are in poor condition and well beyond normal service life. There is no cooling system in Brown except for a DX heat pump system serving the convenience store area. HVAC controls are pneumatic. The mechanical systems for the coolers and freezers that formerly served the cafeteria are beyond normal service life. The attached photos depict the main cafeteria area (photo 113), and various HVAC systems showing deterioration (photos 114 - 116).

Correction

Provide a complete mechanical renovation for Brown Building. Replace the existing air handlers with modern DDC control units and provide a modern chiller for cooling. Replace all kitchen equipment, including cooler and freezer systems if Brown is to be restored as a cateria. Provide improved exhaust ventilation throughout the building.

Revised Assessment

Cost Estimate: \$2,000,000

Date: 2013-09-26

Assessor: jbaden

Mechanical discrepancies at Brown Cafeteria and recommended corrections are outlined above.



State of North Carolina
State Construction Office
Facility Condition Assessment Program

EDUCATIONAL INSTITUTIONS GENERAL
WESTERN CAROLINA UNIVERSITY

**WESTERN CAROLINA UNIVERSITY -
BROWN CAFETERIA #23**

Status: 2

- 1 – Original
- 2 – Revised
- 3 – Resolved

Fund: 1

- 1 – General Fund
- 2 – Receipts

Priority: 0

- 0 – Now
- 1 – Year
- 2 – Years
- 3 – Years
- 4 – Years
- 5 – Years

Masterformat Classification

Division: Fire Suppression

Subdivision: Water-Based Fire-Suppression Systems

[Item]

Original Assessment

Cost Estimate: \$320,000

Date: 2013-09-26

Assessor: jbaden

Brown Building does not have a fire sprinkler system, although kitchen fire suppression equipment is in place.

Correction

If Brown Building is renovated, include an automatic fire sprinkler system throughout the building.

Revised Assessment

Cost Estimate: \$320,000

Date: 2013-09-26

Assessor: jbaden

Fire sprinkler discrepancies and the recommended correction is outlined above.



State of North Carolina
State Construction Office
Facility Condition Assessment Program

EDUCATIONAL INSTITUTIONS GENERAL
WESTERN CAROLINA UNIVERSITY

**WESTERN CAROLINA UNIVERSITY -
BROWN CAFETERIA #23**

Status: 2

- 1 – Original
- 2 – Revised
- 3 – Resolved

Fund: 2

- 1 – General Fund
- 2 – Receipts

Priority: 3

- 0 – Now
- 1 – Year
- 2 – Years
- 3 – Years
- 4 – Years
- 5 – Years

Masterformat Classification

Division: Existing Conditions
Subdivision: Schedules for Existing Conditions
[Item]

Original Assessment

Cost Estimate: \$8,100,000 **Date:** 2008-01-01 **Assessor:** scofcap

50 YO BUILDING HAS MANY SYSTEMS WHICH ARE WORN OUT DUE TO AGE AND HEAVY USE. BUILDING USES HAVE CHANGED SINCE ORIGINAL CONSTRUCTION.

Correction

RENOVATE BUILDING TO INCLUDE: REMOVE AND REPLACE ROOF. ROOF IS 10 YO BUT PONDS WATER AND DOES NOT DRAIN PROPERLY - SOME LEAKS. REPLACE WINDOWS WITH LOW MAINTENANCE DBL PANE CLAD UNITS. REPLACE EXTERIOR DOORS. RENOVATE ALL FLOOR FINISHES INCLUDING VCT AND CARPET. ABATE ASBESTOS CEILING FINISH (SPRAY ON). RECONFIGURE INTERIOR SPACES AS NEEDED FOR PRESENT AND FUTURE USE. FULL BATHROOM AND KITCHEN RENOVATION. FULL HVAC AND ELECTRICAL RENOVATION INCLUDING ALL SYSTEMS AND FIRE ALARM AND SUPPRESSION SYSTEMS. REPLACE ALL INTERIOR DOORS AND HARDWARE. RENOVATE ALL INTERIOR FINISHES.

Revised Assessment

Cost Estimate: \$9,600,000 **Date:** 2014-05-13 **Assessor:** wdsessoms

Building is still in similar condition as 2008 FCAP. Estimate and Masterformat information updated.



State of North Carolina
State Construction Office
Facility Condition Assessment Program

EDUCATIONAL INSTITUTIONS GENERAL
WESTERN CAROLINA UNIVERSITY

**WESTERN CAROLINA UNIVERSITY -
BROWN CAFETERIA #23**

Status: 1

- 1 – Original
- 2 – Revised
- 3 – Resolved

Fund: 2

- 1 – General Fund
- 2 – Receipts

Priority: 6

- 0 – Now
- 1 – Year
- 2 – Years
- 3 – Years
- 4 – Years
- 5 – Years

Masterformat Classification

Division: Electrical

Subdivision: Switchboards and Panelboards

[Item]

Original Assessment

Cost Estimate: \$949,000

Date: 2013-09-26

Assessor: ccarl

The 53 year old Brown Cafeteria electrical system is obsolete. Replacement parts for the switchboard and branch circuit panels are only available from electrical salvage companies and only if the companies coincidentally have the parts in stock. Failures of a panel interior or breaker will result in an extended electrical outage of one or more circuits of the affected panel while replacement equipment is located. The wiring, too, is obsolete, having an insulation that has a tendency to dry out and easily crack.

Correction

A complete replacement of the electrical system is recommended.

Revised Assessment

Cost Estimate: _____

Date: _____

Assessor: _____



State of North Carolina
State Construction Office
Facility Condition Assessment Program

EDUCATIONAL INSTITUTIONS GENERAL
WESTERN CAROLINA UNIVERSITY

**WESTERN CAROLINA UNIVERSITY -
BROWN CAFETERIA #23**

Status: 1

- 1 – Original
- 2 – Revised
- 3 – Resolved

Fund: 2

- 1 – General Fund
- 2 – Receipts

Priority: 2

- 0 – Now
- 1 – Year
- 2 – Years
- 3 – Years
- 4 – Years
- 5 – Years

Masterformat Classification

Division: Electrical

Subdivision: Lighting

[Item]

Original Assessment

Cost Estimate: \$231,600

Date: 2013-09-26

Assessor: ccarl

The asset utilizes a number of 53 year old luminaires that are obsolete. T-12 florescent lamps that are used in these, and other newer luminaires, are no longer manufactured. Luminaires are in various states of disrepair, and replacement parts are unobtainable. Please know that ballasts that had not been replaced subsequent to 1979 are likely to contain PCBs. Emergency egress illumination of the arcade is provided by battery backed dual head incandescent lamped luminaires; however, normal arcade illumination is provided by high intensity discharge (HID) lamped luminaires. HID lamps that are re-energized immediately after having lost power are hot and will remain dark for a period of time required for the lamps to re-strike. The emergency egress luminaires immediately turn off upon restoration of power to leave the arcade space dark for an extended period until the HID luminaries re-strike. Additionally, the intended application of the installed emergency egress luminaires is for corridor use as compared to the large arcade space. Lastly, the asset does not have emergency egress illumination at the exit discharges, a building code requirement that was effected in 2002, nor does it appear that sufficient emergency egress illumination had been installed elsewhere.

Correction



Correction

It is recommended that an engineered replacement is made of all luminaires and that emergency egress illumination is provided as required. An engineered solution will yield modern illumination aesthetics and photometry, improved energy use, and emergency egress lighting that is compliant with NC Fire Prevention and NC Building codes. The estimated cost is for provision of an assumed quantity of emergency egress luminaires of a general type and an assumed cost per square foot for replacement luminaires for the entire asset.

Revised Assessment

Cost Estimate: _____

Date: _____

Assessor: _____

State of North Carolina
State Construction Office
Facility Condition Assessment Program

EDUCATIONAL INSTITUTIONS GENERAL
WESTERN CAROLINA UNIVERSITY

**WESTERN CAROLINA UNIVERSITY -
BROWN CAFETERIA #23**

Status: 2

- 1 – Original
- 2 – Revised
- 3 – Resolved

Fund: 1

- 1 – General Fund
- 2 – Receipts

Priority: 0

- 0 – Now
- 1 – Year
- 2 – Years
- 3 – Years
- 4 – Years
- 5 – Years

Masterformat Classification

Division: Plumbing

Subdivision: Common Work Results for Plumbing

[Item]

Original Assessment

Cost Estimate: \$800,000

Date: 2013-09-26

Assessor: jbaden

The plumbing system at Brown Building is aging and outmoded. Potable and waste lines are original to this 1960 building. Repairs to the cast iron waste lines are evident in the basement, where plastic lines have replaced some leaking sections of the cast iron pipes. The existing Aerco steam to hot water heat exchanger is not operational, leaving Brown Building without potable hot water.

Correction

Provide a complete plumbing renovation for Brown Building. Replace all potable water and waste lines, along with all plumbing fixtures. Provide a new domestic hot water heater.

Revised Assessment

Cost Estimate: \$800,000

Date: 2013-09-26

Assessor: jbaden

Plumbing deficiencies and recommended corrections at Brown Cafeteria are outlined above.



F. FACILITIES CONDITION ASSESSMENT PROGRAM

1. FCAP REPORT
2. DESIGN STRATEGIES TO ADDRESS FCAP ISSUES
3. PRELIMINARY LIFE SAFETY DOCUMENTS
4. HEALTH CODE REVIEWS REQUIRED



F.2 DESIGN STRATEGIES TO ADDRESS FCAP ISSUES

243

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014



F. FACILITIES CONDITION ASSESSMENT PROGRAM

1. FCAP REPORT
2. DESIGN STRATEGIES TO ADDRESS FCAP ISSUES
3. PRELIMINARY LIFE SAFETY DOCUMENTS
4. HEALTH CODE REVIEWS REQUIRED





F.3 PRELIMINARY LIFE SAFETY DOCUMENTS

247

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014



F. FACILITIES CONDITION ASSESSMENT PROGRAM

1. FCAP REPORT
2. DESIGN STRATEGIES TO ADDRESS FCAP ISSUES
3. PRELIMINARY LIFE SAFETY DOCUMENTS
4. HEALTH CODE REVIEWS REQUIRED



HEALTH DEPARTMENT CODE REVIEWS:

The Environmental Health Department Review will be handled by the Jackson County Department of Environmental Health in Sylva. The health department requires a submittal with the following for food service:

Jackson County Department of Public Health
Attn: Jill Breedlove
538 Scotts Creek Road
Sylva, NC 28779

Hardcopies only:

- Applications for Each food service outlet – each to have its own.(dining hall, starbucks, chilis, c-store...) Application is available at: <http://ehs.ncpublichealth.com/faf/food/planreview/app.htm>
 - \$250.00 Application Fee
- 1 set of plans, drawn to scale, showing the location of equipment, plumbing and electrical services, and mechanical ventilation of food service and related drawings within food service. (A complete set is fine, but not required.
- Proposed Menus
- Equipment List (not generic – specific to the project) with Manufacturers specification sheets for each piece of equipment show in the plans.

Review times are 30 days.

Documents for reference concerning food service include:

1. North Carolina Food Code Manual; A Reference for 15A NCAC 18A .2600 “Rules Governing the Food Protection and Sanitation of Food Establishments”, September 1, 2012.

The Plan Review Unit of the Environmental Health Services Section protects public health by ensuring that plans for food establishments meet the requirements of the [North Carolina Food Code](#) (PDF, 1.6 MB) and the [Rules Governing the Food Protection and Sanitation of Food Establishments \(15A NCAC 18A .2600\)](#)(PDF, 206 KB).

Plans for franchised or chain food establishments are reviewed based on the menu submitted. The emphasis of the review is on food preparation and food handling procedures, and the equipment used to support these operations.

Plans for franchised or chain lodging establishments are reviewed according to the North Carolina [Rules Governing the Sanitation of Lodging Places \(15A NCAC 18A .1800\)](#) (PDF, 31 KB).



G. ADVANCED PLANNING FOR ENERGY EFFICIENT BUILDINGS

1. BUILDING & SITE ENERGY COSTS
 - a. CONSTRUCTION COST
 - b. DESIGN FEE
 - c. COMMISSIONING COST
2. BUILDING & SITE ENERGY STRATEGIES
 - a. POTENTIAL ENERGY & WATER CONSERVATION STRATEGIES
 - b. ENERGY EVALUATION DIAGRAMS
3. BUILDING & SITE ENERGY EVALUATION

G. ADVANCED PLANNING FOR ENERGY EFFICIENT BUILDINGS

1. BUILDING & SITE ENERGY COSTS
 - a. CONSTRUCTION COST
 - b. DESIGN FEE
 - c. COMMISSIONING COST
2. BUILDING & SITE ENERGY STRATEGIES
 - a. POTENTIAL ENERGY & WATER CONSERVATION STRATEGIES
 - b. ENERGY EVALUATION DIAGRAMS
3. BUILDING & SITE ENERGY EVALUATION



G.1.a BUILDING & SITE ENERGY COSTS - CONSTRUCTION

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal



G.1.a BUILDING & SITE ENERGY COSTS - CONSTRUCTION

257

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014





G.1.1.b BUILDING & SITE ENERGY COSTS - DESIGN FEE

259

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014



STATE OF NORTH CAROLINA - DEPARTMENT OF ADMINISTRATION
 STATE CONSTRUCTION OFFICE
 PROPOSED REPAIR & RENOVATION OR CAPITAL IMPROVEMENT PROJECT
 2014 - 2015 Non-Appropriated Project

Form OC-25
 (Rev 05/12)

(Definitions/explanations are provided on pg 2 to assist in completion of this form.)

DEPARTMENT and DIVISION: Western Carolina University DATE: 12/18/2013
 PROJECT IDENTIFICATION: Brown Building Renovation & Addition
 PROJECT CITY or LOCATION: Cullowhee

PROJECT DESCRIPTION & JUSTIFICATION: (Attach add'l data as necessary to indicate need, size, function of improvements as well as a master plan.)

Project is to fully renovate Brown Building that previously housed a cafeteria on our upper campus, which went offline in 2010 when WCU's new Courtyard Dining was opened. Presently, it is utilized as a student services building for multiple functions and for storage. An addition will be included in order to address additional program requirements beyond the existing building square footage. (continued)

CURRENT ESTIMATED CONSTRUCTION COST	QTY	UNIT	COST PER UNIT	TOTAL
A. Land Requirement				\$ -
B. Site Preparation				
1. Demolition	1	LS	\$ 220,000	\$ 220,000
2. Site Work	1	LS	\$ 450,000	\$ 450,000
C. Construction				
1. Utility Services	1	LS	\$ 3,200,000	\$ 3,200,000
2. Building Construction (new space)	25,124	SF	\$ 195	\$ 4,899,180
3. Building Construction (existing)	30,240	SF	\$ 185	\$ 5,594,400
4. Plumbing (new space)	25,124	SF	\$ 28	\$ 703,472
5. HVAC (new space)	25,124	SF	\$ 32	\$ 803,968
6. Electrical (Includes TV & Radio Studio)	25,124	SF	\$ 35	\$ 879,340
7. Fire Supression and Alarm Systems	25,124	SF	\$ 8	\$ 200,992
8. Telephone, Data, Video	25,124	SF	\$ 2	\$ 50,248
9. Associated Construction Costs	1	LS	\$ 150,000	\$ 150,000
10. Other: <u>Remote Location Factor</u>	1	LS	\$ 680,100	\$ 680,100
D. Equipment				
1. Fixed	1	LS	\$ 250,000	\$ 250,000
2. Moveable	1	LS	\$ 400,000	\$ 400,000
ESTIMATED CONSTRUCTION COSTS				\$ 18,481,700

Items below may be calculated by percentage or lump sum. If using lump sum, make entry in \$ field.

DESIGN FEE	14 %	(% of Estimated Construction Costs)	\$ 2,587,438
PRECONSTRUCTION COSTS	0.5 %	(% of Estimated Construction Costs [1% for CM@Risk])	\$ 92,409
COMMISSIONING	1 %	(0.5% simple; 1.0% moderate; 1.5% complex)	\$ 184,817
SPECIAL INSPECTIONS/MATERIALS	1.25 %	(1.25% estimated)	\$ 231,021
SUSTAINABILITY	0 %	(3% LEED Gold, 2% LEED Silver)	\$ -
ADVANCE PLANNING	1.5 %	Includes programming, feasibility, analysis (% of Estimated Construction Costs)	\$ 277,226
CONTINGENCIES	5 %	(% of Estimated Construction Costs [3% New or 5% R&R])	\$ 924,085
ESTIMATED COSTS		(% of Estimated Construction Costs + Contingencies + Design Fee)	\$ 21,854,610
Escalation = percent per month multiplied by number of months			
(From Est. Date to mid-point of construction) = <u>25</u> months \$ <u>0.12</u> % per month			
General Bldgs: 0-17 mos = 0%; 18-23 mos = .04%; 24-35 mos = .12%; 36-47 mos = .16%; 48-60 mos = .18%			
Health Bldgs: 0-5 mos = .18%; 6-11 mos = .22 %; 12-17 mos = .26%; 18-23 mos = .29%; 24-35 mos = .33%; 36-47 mos = .36%; 48-60 mos = .38%			
ESCALATION COST INCREASE (Total of Estimated Construction Costs x Escalation %)			\$ 655,638
TOTAL ESTIMATED PROJECT COSTS (Estimated Construction Costs + Escalation Cost Increase)			\$ 22,510,249



(Governing Board or Agency Head)

STATE OF NORTH CAROLINA - DEPARTMENT OF ADMINISTRATION
 STATE CONSTRUCTION OFFICE
 PROPOSED REPAIR & RENOVATION OR CAPITAL IMPROVEMENT PROJECT
 BIENNIUM 2013 - 2015
 DEFINITIONS OR EXPLANATIONS

Form OC-25
 (Rev 05/12)

Proposed Capital Improvement Project 2014-15
 Western Caroliana University
 BrownBuilding Renovation & Addition
 Page 2

Description: (Continued)

Programs that will be housed in this facility when complete will be: Food Services and Dining, Residential Living Administration Offices, Campus student group offices, Student support activities such as Base Camp Cullowhee (an outdoors program), etc. The existing building consist of 30,240 sq. ft.. An additional square footage of 25,124 sq. ft. will be added to accomodate the square footage requirements. The project will include sitework to incorporate new site circulation paths, parking and accomodaton of a new energy plant to servie this building and adjacent buildings. Total square footage projection is 55,364 sq. ft.

B. SITE PREPARATION**1 Demolition**

- a. Remove parking and site amenities in preparation for construction of new site elements

Lump Sum = \$100,000 \$ 100,000

- b. Asbestos & Leads Abatement

Lump Sum = \$120,000 \$ 120,000

Total Demolition	\$ 220,000
------------------	------------

TOTAL DEMOLITION COST	\$ 220,000
------------------------------	-------------------

2 Sitework

- a. Grading of area for parking lot pavement and walkways

Lump Sum @ \$250,000 \$ 250,000

- b. Grading and finish site work

Lump Sum @ \$200,000 \$ 200,000

Total Sitework	\$ 450,000
----------------	------------

TOTAL SITE WORK	\$ 450,000
------------------------	-------------------

C. CONSTRUCTION**1 Utility Services**

- a. General site utilities to the building

Lump Sum @ \$200,000 = \$ 200,000

- a. Mini Energy Plant

Lump Sum @ \$3,000,000 = \$3,000,000

Total Utility Services	\$ 3,200,000
------------------------	--------------

2 Building Construction (new)

- a. Description

25,124 sf @ \$195 = \$4,899,180

G. ADVANCED PLANNING FOR ENERGY EFFICIENT BUILDINGS

1. BUILDING & SITE ENERGY COSTS
 - a. CONSTRUCTION COST
 - b. DESIGN FEE
 - c. COMMISSIONING COST
2. BUILDING & SITE ENERGY STRATEGIES
 - a. POTENTIAL ENERGY & WATER CONSERVATION STRATEGIES
 - b. ENERGY EVALUATION DIAGRAMS
3. BUILDING & SITE ENERGY EVALUATION

Western Carolina University Brown Building Advanced Planning Sustainable Design Report

October 28, 2014

Background

Energy Ace, a division of Merrick & Company, was contracted by Watson Tate Savory to conduct a sustainability charrette covering LEED credit strategies and subsection G of the North Carolina State Construction Manual Section 305. LEED is a private third-party green building rating system developed by the U.S. Green Building Council.

The Brown building sustainability charrette was held October 16, 2014 in the Harrill Hall building on Western Carolina University's Campus. Attendees included professionals from the architecture, mechanical engineering, facilities maintenance, campus sustainability, and civil engineering disciplines. The discussion was facilitated by Kat West, a LEED Accredited professional. She was assisted by Micheal Smith, a professional engineer and LEED Accredited professional with over 25 years of experience in mechanical system design and commissioning roles.

Site Considerations

The Brown Building renovation and addition project will be located on the site of the existing Brown building and adjacent land located in Cullowhee, North Carolina. The project will be located in ASHRAE Climate Zone 4. The building is located on a modest hill.

1



Existing Brown Building, 35.310112, -83.177567

Advance Planning Sustainability Workshop

Existing Conditions

The two-story, 30,240 square feet existing Brown Building has steel windows with single pane glass. Parking spaces are adequate to serve the building occupants' future needs; no new parking will be added during construction. The existing roof on the Brown building is composed of brown ethylene propylene diene monomer (EPDM) material. The addition will impact all four sides of the existing Brown building.

Sustainable Design Goals

Western Carolina University will require the design team to meet a minimum LEED Silver certification under version 3 of the New Construction rating system. To earn LEED Silver certification 50 points must be earned. Preference will be given to design strategies that are cost effective and earn additional LEED points to push the project into the Gold score range (60-79 points).

Energy Conservation Goals & Systems

- The designed building must be 20% more efficient than the baseline building defined in ASHRAE 90.1-2007 Appendix G.
- Variable Frequency Drives must be used on all Air Handling Units (AHUs), pumps, and fans.
- The facilities department at Western Carolina will require that the design exclude any custom built motors.
- Filters and lights should be standardized to allow for efficient replacement and stock keeping.
- Western Carolina University will require that all existing under slab piping be discarded and not reused on the campus.
- The building design will utilize an air-cooled chiller.
- The building design will include an air side economizer to take advantage of favorable outside air conditions and reduce the need to condition temperate air.
- Light Emitting Diodes (LEDs) will be utilized in all possible locations. These lights often have a payback of less than 18 months and reduce internal heat gain. This will save significant energy and lead to a reduced Lighting Power Density (LPD).
- The renovated Brown building will be served by a new campus steam plant. The Brown building will require at least 3,300 pounds of steam per hour which will be doubled for redundancy. This load is expected to represent approximately 10% of the total load of the new steam plant.

Advance Planning Sustainability Workshop

- Roof Insulation must be a minimum of R-30.
- Solar hot water will be assessed on a life-cycle cost basis. If solar hot water is cost effective the system must be mounted on the roof to allow for proper clearances for cleaning and roof maintenance. Roof integrity must be maintained to ensure the building envelope does not leak.
- Occupancy and vacancy sensors will be used in all appropriate spaces. Mechanical rooms will not be equipped with occupancy sensors because these rooms are prone to false triggers. Occupancy and vacancy sensors will be commissioned after installation to ensure proper function. The majority of occupancy and vacancy sensors will be equipped with manual override capabilities.
- Roofing material will have a Solar Reflectance Index (SRI) of at least 79 to minimize heat gain and reduce cooling loads.
- Glazing will be selected based on the visible light transmittance, U-value, and solar heat gain coefficient. Tinted glass is not acceptable to Western Carolina University. Low-e glass must be used. Glazing options will be analyzed using energy modeling software and life cycle cost analysis (simple payback). The glass selected for the Brown Building must match the aesthetic of existing glass on campus.
- An energy model will be used to calculate predicted energy savings for the proposed design. This model will be designed using Trane Trace software following the guidance in ASHRAE 90.1-2007 Appendix G. The energy model will be performed by the mechanical designer, Optima Engineering, with feedback from Watson Tate Savory. Building envelope assemblies will be evaluated for thermal performance properties.
- The dining hall will be trayless, this will reduce the need for hot water and thus save energy. The existing Courtyard Dining Hall on campus is trayless and this works well for visitors and the food service provider, Aramark.
- MERV-8 filters will be used throughout the building. These filters improve indoor air quality and do not require a significantly increased fan power to avoid pressure drops.
- Office spaces on the perimeter of the building will be served by a VAV system which will allow for a high level of individual control of space temperatures.
- Dimmable ballasts with integrated daylight sensors will be utilized in the lighting design to facilitate daylight harvesting.
- An ASHRAE 62.1 spreadsheet will be completed during design development to optimize the level of outside air delivered to spaces.

Advance Planning Sustainability Workshop

Water Conservation Strategies Identified during Advanced Planning

The building design will include a shower, hand washing sinks, urinals, water closets, and process equipment such as dish washers. Predicted water savings will be calculated using the LEED for New Construction methodology outlined in the rating system's water efficiency prerequisite. Plumbing fixtures and fittings will be selected based on performance and water efficiency. The building design must meet a minimum water savings of 20% compared to the International Plumbing Code (IPC) 2006 requirements. The following fixture flow and flush rates are acceptable to Western Carolina University:

Water Closets: 1.28 gallons per flush

Urinals: 0.125 gallons per flush

Hand washing sinks: 0.5 gallons per minute sensor activated faucet

Showers: 1.5 gallons per minute

To comply with LEED requirements prerinse spray valves must not exceed a flow rate of 1.6 gallons per minute.

Hand washing sinks must be designed to supply hot water with minimal wait times. It is unacceptable for building occupants to wait 5 seconds in order to wash their hands with sufficiently hot water. The contractor must maintain proper grading for all installed under slab sanitary piping to ensure that no clogs occur in the plumbing system. The plumbing system designer must inspect piping grading during the Construction Administration phase of the project. These requirements will be outlined in the Owner's Project Requirements document.

The exterior landscaping will be designed to require no potable water. No irrigation system will be installed.

Building Geometry and Daylighting Consideration

The existing Brown building has a deep floor plate. Western Carolina University has established a goal of achieving daylighting in 75% of the regularly occupied floor area. This goal will be measured by Watson Tate Savory using a daylighting Excel spreadsheet designed by the U.S. Green Building Council. This spreadsheet will be used to make glazing decisions regarding the visible light transmittance (VLT) of the glass. The renovation of the existing Brown building may encompass envelope modifications to increase the size of window openings.

Solatubes® are an acceptable technology to include in the building design. Blinds or shading devices will be utilized in areas where daylight levels are expected to exceed 500 foot candles. Rooms illuminated with Solatubes® or other technologies may be documented using computer simulation software provided by the product manufacturer. An effort will be made to locate storage areas on the interior of the building where access to windows and skylights will be minimal. This will maintain exterior walls for occupied office spaces where daylight will benefit occupants.



LEED v. 3

New Construction

Western Carolina Brown Building

Cullowhee, NC 28723

Yes	?	No	Points	Project Information Forms
Y		Required	PIf1	Minimum Program Requirements
Y		Required	PIf2	Project Summary Details
Y		Required	PIf3	Occupant & Usage Data
Y		Required	PIf4	Schedule & Overview Documents

Yes	?	No	Points	Sustainable Sites
18		8	26 Points	Sustainable Sites
Y		Required	SSp1	Construction Activity Pollution Prevention
1			1	SSc1 Site Selection
5			5	SSc2 Development Density and Community Connectivity
1			1	SSc3 Brownfield Redevelopment
6			6	SSc4.1 (RP) Alternative Transportation, Public Transportation Access
1			1	SSc4.2 Alternative Transportation, Bicycle Storage & Changing Rooms
		3	3	SSc4.3 Alternative Transportation, Low Emitting & Fuel Efficient Vehicles
2			2	SSc4.4 Alternative Transportation, Parking Capacity
		1	1	SSc5.1 Reduced Site Disturbance, Protect or Restore Habitat
		1	1	SSc5.2 Reduced Site Disturbance, Maximizing Open Space
		1	1	SSc6.1 (RP) Stormwater Management, Quantity Control
		1	1	SSc6.2 Stormwater Management, Quality Control
1			1	SSc7.1 Landscape & Exterior Design to Reduce Heat Islands, Non-Roof
1			1	SSc7.2 Landscape & Exterior Design to Reduce Heat Islands, Roof
		1	1	SSc8 Light Pollution Reduction

Yes	?	No	Points	Water Efficiency
6	2	2	10 Points	Water Efficiency
Y		Required	WEp1	Water Use Reduction, 20% Reduction
4			2-4	WEc1 Water Efficient Landscaping, Reduce by 100%
		2	2	WEc2 Innovative Wastewater Technologies
2	2		2-4	WEc3 (RP) Water Use Reduction

Yes	?	No	Points	Energy & Atmosphere
8	13	14	35 Points	Energy & Atmosphere
Y		Required	EAp1	Fundamental Commissioning of the Building Energy Systems
Y		Required	EAp2	Minimum Energy Performance, 10% New Bldg or 5% Existing Bldg
Y		Required	EAp3	Fundamental Refrigerant Management
5	8	6	1-19	EAc1 (RP) Optimize Energy Performance
	1	6	1-7	EAc2 On Site Renewable Energy
2			2	EAc3 Enhanced Commissioning
	2		2	EAc4 Enhanced Refrigerant Management
1	2		3	EAc5 Measurement & Verification
		2	2	EAc6 Green Power

Yes	?	No	Points	Materials & Resources
7	3	4	14 Points	Materials & Resources
Y		Required	MRp1	Storage & Collection of Recyclables
2	1		1-3	MRC1.1 Building Reuse, Maintain Existing Walls, Floors and Roof (55, 75, 95%)
		1	1	MRC1.2 Building Reuse, Maintain 50% of Interior Non-Structural Elements
2			1-2	MRC2 Construction Waste Management
		2	1-2	MRC3 Materials Reuse
2			1-2	MRC4 Recycled Content





10/28/2014

Assignee	Assignee	Status	Notes
WTS		D	
WTS		D	
WTS		D	what is expected occupancy?
WTS		D	

Assignee	Assignee	Status	Notes
Civil	Contractor	C	Not Started
Civil	Energy Ace	D	Not Started
Energy Ace		D	Not Started
Owner		D	Not Started
WTS		D	Not Started
WTS		D	Cat Tran stop 15 on red & orange routes
Owner		D	Not Started
Arch/Civil		D	Not Started
n/a		D	no new parking will be added
Civil/ Land Arch		D	Not Started
Civil		D	Not Started
Civil		D	Not Started
Civil/ Land Arch		C	Not Started
WTS		D	Not Started
Electrical		D	Not Started

Responsibility	Notes
Optima	
Land Arch	no permanent irrigation
Optima	
Optima	

Responsibility	Notes
TBD	
Optima	
Optima	
Optima	state law requires 20% better than ASHRAE 90.1-2007
Optima	
TBD	
Optima	probably achievable
TBD	
Owner	

Responsibility	Notes
WTS	
WTS	needs to be calculated, excludes windows, includes roof
WTS	
Contractor	
Contractor	
Contractor	

G.2.a BUILDING & SITE STRATEGIES - POST SUSTAINABLE WORKSHOP SCORECARD



Refer to section D.1.c.i - MEP Building Narrative for additional potential energy & water conservation strategies.







G. ADVANCED PLANNING FOR ENERGY EFFICIENT BUILDINGS

1. BUILDING & SITE ENERGY COSTS
 - a. CONSTRUCTION COST
 - b. DESIGN FEE
 - c. COMMISSIONING COST
2. BUILDING & SITE ENERGY STRATEGIES
 - a. POTENTIAL ENERGY & WATER CONSERVATION STRATEGIES
 - b. ENERGY EVALUATION DIAGRAMS
3. BUILDING & SITE ENERGY EVALUATION

Checklist for Deliverables (In addition to other requirements listed elsewhere in the State Construction Manual)

This checklist shall be used on projects subject to GS-143-135.35-.40 (Article 8C).

ADVANCE PLANNING PHASE SUBMITTALS

- 1 Initial OC-25 Certified for Advanced Planning to determine general scope and description of project (Owner)
- 2 Letter Agreement for Advanced Planning signed (Owner / Architect / Engineer)
- 3 Narrative of Owner's project requirements including basis of design for predicting energy and water use (Owner / Architect / Engineer)
- 4 Building Program including functional use, design features, and space considerations (Owner / Architect / Engineer)
- 5 Submit written project criteria, design recommendations and rationale that led to the design recommendations to the SCO for potential energy and water conservation strategies, based on building geometry, daylighting depth and existing conditions site plan, with development implications. (Architect / Engineer)
- 6 Reconciliation of project scope and funding. (Architect / Engineer)
- 7 Commissioning Authority selected and Letter Agreement signed (Owner / Commissioning Authority)
- 8 Updated OC-25 certified, if needed (Owner)

AFTER CERTIFICATION OF OC-25

- 9 Designer Contract signed (SCO / Architect / Engineer)

SCHEMATIC PHASE SUBMITTALS

- 10 Site Plan showing orientation (Architect / Engineer)
- 11 Daylight Factor Calculation (Architect / Engineer)
- 12 Base building characteristics used in Energy Modeling (Architect / Engineer)
- 13 Results of Energy Modeling (baseline and alternate, improved building) (Architect / Engineer)
- 14 LCCA report with preliminary calculations for costs to construct baseline building and alternate, improved building. (Architect / Engineer)
- 15 Energy strategies investigated using LCCA basis for recommending primary building systems (Architect / Engineer)
- 16 Report on integrated design process activities (design charrette) (Architect / Engineer)
- 17 Report from Commissioning Authority including verification of design intent (CxA)



DESIGN DEVELOPMENT PHASE SUBMITTALS

- 18 Revised / updated Energy Modeling results. (Architect / Engineer)
- 19 Indicate incremental cost to achieve to achieve energy and water goals above that of baseline. (Architect / Engineer)
- 20 Refined and updated LCCA (Architect / Engineer)
- 21 Description of selected of energy conservation measures (Architect / Engineer)
- 22 Indoor water use projection (Architect / Engineer)
- 23 Outdoor water use projection and site plan (Architect / Engineer)
- 24 Report from Commissioning Authority (CxA) including outline Cx specifications

CONSTRUCTION DOCUMENT PHASE SUBMITTALS

- 25 Revised / updated Energy Modeling results. (Architect / Engineer)
- 26 Refined and updated LCCA (Architect / Engineer)
- 27 Indoor water use projection (Architect / Engineer)
- 28 Outdoor water use projection (Architect / Engineer)
- 29 Report from Commissioning Authority including Cx specifications (CxA)

CONTRACT ADMINISTRATION PHASE SUBMITTALS

- 30 Commissioning Authority provides issue log from functional testing conducted during construction. (CxA)

POST-OCCUPANCY SUBMITTALS

- 31 10 month post-occupancy energy and water trending and warranty inspection report from Commissioning Agent (Owner / CxA)
- 32 12 month post-occupancy measure and verification of energy and water usage report (Owner CxA)
- 33 Recommendations for bringing building into compliance with projected energy and water goals if required (Owner)

G. APPENDIX

1. MEETING MINUTES



29 September 2014
10.21.2014 Revisions

Meeting Minutes

To:	Julie Moran
From:	Jana Hartenstine
Cc:	All Attendees, Alan Sellers- WCU, Lance Williams- Stewart Engineering, Chris Herron – Stewart Engineering, Kat West & Micheal Smith – Energy Ace, Ron Almond - Optima

**RE: Brown Building Renovation and Addition (A/P)
 Western Carolina University**
 WTS# 1429
 SCO # 13-10964-01

Date of Meeting	Meeting 01_Advanced Planning September 19, 2014	
Time	10:00 am	
Location	Harrill Hall	
	Attendees	<i>See attached sign-in sheet</i>

- I. A Kick-Off meeting was held at Harrill Hall on the WCU campus on September 19, 2014 to begin the Advance Planning and Programming phase of the project. The following will outline the discussions and how the project is to proceed.
- A. Introductions:
 - 1. All team members were introduced and roles were discussed. Julie Moran was officially given the project leadership for WCU by Joe Walker. Julie may be assisted by an Owner PM to be determined. Jana Hartenstine will be the PM for the A/E and will be point of contact.
 - 2. Galen will review documents at milestone submittals.
 - 3. WCU has met to put time into the Brown planning to make sure that they are able to convey their wants and needs to the design team.
- B. Review of Owner expectations and program for Brown:
 - 1. **General Campus Notes:**
 - Enrollment has grown each year with traditional freshman; enrollment is expected to grow for another 2-4 years until it plateaus.



- Housing currently has around 4,000 beds on campus; WCU would like student housing availability to remain 4,000 beds moving forward; however, WCU will have to manage this with renovating and replacing existing residence halls
- A mixed-use project off campus project on the WCU campus is currently being developed; 20,000 sf of retail and dining along with 250-350 beds above – this is due to be open Fall of 2016

2. Courtyard Dining and other existing Campus offerings

- The only “dining hall” on campus is Courtyard. Courtyard opened 6 years ago and Brown was taken off line. Courtyard was overmatched the day it was opened.
- Courtyard has 560-580 seats.
- The layout in Courtyard is stations and seating. It is difficult to use the dining hall for any multi-use events.
 1. Resident Dining is upstairs and set up as an all you can eat food court/stations.
 2. Brands are downstairs and include Starbucks, A Convenience Store with Freshens, McAllister’s, Which Wich, Burger Studio, Moes, and Panda.
- Catering is located in Courtyard, but this was never planned. It’s operating in borrow space.
- The Student union contains the following restaurants: Einstein’s, Papa John’s, Chick fil A, Sushi Grab & Go, 2 convenience stores.
- The Library has a coffee and bakery shop. (Java City and Pot Express).
- Brown currently has a “light” convenience store.
- WCU Dining has 5200 meal plans served out of one building along with \$1.5M in cash sales/year. This is a combination of student, faculty and visitors for about \$20,000 meals at \$7.50/meal.
 1. There will be future shift in meals plans that will introduce more swipes and cull through current plans to make more flexible.

3. General Brown Building Notes:

- WCU does not want to duplicate their existing dining hall (Courtyard) stations and seating model.
 - o WCU does not want to duplicate dining offerings in Brown.
- A 25,000 sf addition to Brown was requested; WCU derived sf request from the size of a single floor of Courtyard Dining Hall. The budget also drove this number.
- WCU wants Brown to be a destination point and offer a different dining experience.
- A natural/lodge aesthetic is preferred by WCU. This might include a fire place.
- WCU’s goal is to capture the students walking to center campus.
- Sustainability: Goal would be to achieve LEED Gold if possible without “buying points”.

4. Program Needs:

- WTS to design efficient, flexible spaces - Brown to be more of a student life building than a dining hall.
- WCU wants the Brown program to include the following items:
 - o The program should mostly consist of multi-use spaces / flexible spaces
 - Flex space that may be used by student orgs, staff, & faculty.

- If there is room, flex space can include conference rooms & executive dining (may not provide if need is not established). A game room for video gaming possibly as part of other use spaces.
- Provide ability to divide space – possibly use glass retractable door system (to allow for visual connection, daylight, & acoustical separation. Retractable wall could be used to be non-intrusive and easy to close. Furman University had an interesting example of a “soft” retractable wall.
- A smaller area for food service (one time in, one time out)
- One full dining space that can be separated as a separate venue at night to have events such as a comedy club.
 - The food service/line configuration will have to be evaluated to allow this to happen.
 - Wake Forest new dining hall (North) is a good example – this model is “All you can carry”.
 - Provide food support infrastructure direct to the space. The vision is not to have to cater this space.
- One smaller area to access food at night
- Provide +/- 750 seats total for dining hall.
- Three brands are envisioned for Brown.
 - A convenience store/retail space that is a similar size to the Courtyard; to serve coffee and other convenience retail items
 - Two fast food restaurants or something like McAllister’s – will use a national brand not Aramark; contending restaurants are:
 - Chili’s To Go
 - Smoke House
 - Todd to provide Market Match information from Aramark.

5. Existing Program to be relocated into Brown:

- The catering facility will move into Brown from Courtyard
 - Catering requires a lot of storage area but not a lot of production area
 - Prefer catering storage area to be a bit bigger than existing area (around 1200sf)
 - Area can be a large flexible space
 - Loading dock should not be in the main space of catering (like it is in the Courtyard building)
 - Ensure a 52’ truck can reach the loading dock (This is a 52’ trailer plus a 20’ tractor for 72’ total)
- Existing Student Life office space will also move into Brown from Scott Hall
 - Program outline was provided for approximately 19k SF (attached)
 - Create an efficient reception and office layout
- Judicial Suite:
 - Code of Conduct & Title 9 hearings will held in this suite
 - Some areas to be private due to subject sensitivity
 - Suite cannot be off main area
 - Provide separate entrances for plaintive and defendant; it would be nice if entrances are from both the outside and inside
 - Provide two different waiting rooms for plaintive and defendant



- One conference room to hear trails room
- Conference room can be used for other programmatic needs

6. Existing Program to be relocated from Brown:

- WCU will move the existing tenants in Brown out before construction (Storage and Basecamp)
- WCU will move the C-store in Brown out until the new C-store is constructed.
- Existing “toys” and gaming area will be moved out of Brown for construction, but a new gaming area in the new Brown would be very welcome by the CU.

7. Loading/Back of house Food service Needs:

- Stewart Engineering will need to have a good idea of deliveries and solid waste. In addition, parking requirements will need to be understood.
 - Catering loads from the ground. If the dock is raised, they will require a ramp to get to grade.
 - All deliveries are by 55-58 foot trucks. Trucks are in and out each day. (This is a 52’ trailer plus a 20’ tractor for 72’ total)
 - When trucks go up the hill, there is a curb that prevents them from turning north, but they can go south.
 - The visibility is poor and the area is accident prone.
 - More than one truck at a time has to be accommodated.
 - Dumpster space needs to be provided.
- Building Service: Todd to log deliveries and provide truck size, numbers, and days of delivery to inform Brown. Catering vans load from ground level. Other services will include garbage dumpsters and collection, composting, recycling. Currently food waste is picked up by local hog farmer, this is expected to continue.
 - Food service busiest days are M,W and F.

8. Student growth and circulation patterns

- Most students traveling around the Brown building are headed to the Academic Core, Balsam and Blueridge.
- Students flow underneath Brown walking towards Central from Upper Campus, which seems to WCU to be a great opportunity to capture them and direct the building towards lower campus.
- Buchanon Hall project will add 350 additional beds, but WCU is not sure when this project will materialize.
- The new mix-used project west on Central will have an additional 20,000 s.f. of retail and 250-250 additional beds.

9. Utilities

- Steam

- The existing steam plant is at capacity. There are 4 boilers, 3 of which are reliable.
- WCU needs to get the load of the existing plant. This is either by a new regional/satellite boiler plant or stand-alone hot water boilers.
- Optima will life cycle out the boilers to evaluate what is more efficient and payback.
- There is no additional money for a boiler plant. The life of a new plant is about 30 years. The infrastructure is fairly new and would age out with a new boiler plant.
- MEP
 - All MEP will need to be replaced as part of the project.
- Fire Alarm
 - There is a fire alarm system in Brown.
- Structure
 - Stewart Engineering will have Lance Williams come up next week to evaluate the existing building condition.
- Sprinklers
 - There are not currently sprinklers in Brown. The building will be sprinklered. The water pressure is good. Optima will need a test by WCU.

10. STEERING COMMITTEE GOALS

CAMPUS ARCHITECTURE PRECEDENTS ON WCU CAMPUS

- Moore
 - Brick Detail
 - Indoor/Outdoor
 - Character of the Hill (historic campus)
- Balsam & Blue Ridge
 - Porches
- Reynolds
- Fitness Center (old & new)
- Harrill
 - Blending of old with new expression
 - Mechanical screening not well done

STUDENT LIFE AND DINING PRECEDENTS

- Wake Forest North Dining Hall
- Furman Dining
 - See screen wall ideas (not good for sound)
- ECU
 - Confined serving area and flexible dining spaces
- WCU Courtyard
- Davidson Vail Commons
- Clemson
 - Loading dock good
- WSSU Student Activities Building
- Elon
 - Fireplace
- Neo Burrito at Biltmore Park
 - Demonstration of sustainability in design
 - <https://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcRyT-JgXSpksaDwF-1FBWlgbqdXbbEZ87FH6lRrWkWY4YP-Hk1JNQ>
- Grove Park Inn
 - Fireplace and Lobby (sense of a lodge)
 - <http://www.romanticasheville.com/lodgingimages/grovepark2013.jpg>

WHAT ARE MEASUREMENTS OF PROJECT SUCCESS?

- Operational Efficiency
- Flexibility
- A destination facility with strong visual connection to WCU campus
- Participation of students
- Energy Efficiency (LEED Gold?)
- Waste Efficiency
- Simplicity and Clarity of Design
- On Time and On Budget (Opens Fall of 2016 & \$22.5M Total Project Budget)
- Timely Close-Out (w/in 30-60 days)
- Keep Site Natural (of the mountains & trees)

1307 Morehead St, Suite 101, Charlotte, 28208
704.749.5181

- Pursuit of “Happy” achieved (balance all of above...)

WHO ARE PROJECT STAKEHOLDERS?

- Students
- Student Affairs
- Campus Services
- Residence Life
- Aramark
- Facilities Management
- Design Team
- Information Technology

WHAT ARE THE PROJECT GOALS?

- A building that supports student life and students “happen to eat there”
- Flexibility for Dining & Meeting spaces
 - Open but able to section off
 - Day & Night uses
 - Uses by General student, student organizations, special programs, departments
- Be a Destination and Social Hub
 - Let’s go to “THE _____”
- Be an Active and vibrant facility
- Take load off of existing steam plant
 - Make best decision for future infrastructure and LCCA
- Secure and private Judicial suite
- Dining to exceed current needs, meets needs of the future (5 years..?)
- Accommodate Catering facilities
- Indoor/Outdoor relationship and spaces (mountain seating)
- Inviting to students to stop by as they walk to/from classes
- Sustainable Model
- Project Work Process – good, timely decisions to keep schedule and project on-track.

C. Project Budget:



1. WCU to provide copy of OC 25 Form with breakdown of budget as submitted to SCO.
2. Total Project Budget is \$22.5M.

D. Schedule & Future Meetings:

1. Discussed a bi-weekly schedule for a series of meetings for Advance Planning. Dates would be tentatively as follows:
 - Kick-off – 9.19.14
 - Design Charrette & Sustainable Workshop (2-day) - 10.2&3.14
 - Follow-up presentation – 10.16.14
 - Final presentation – 10.30.14
2. Food Service Meetings will include Aramark and Student Services – Keith or Brian are to be included in reviews and concept discussions.

E. Existing Facilities Walk through:

- The Courtyard uses Kone elevators – Kone is the preferred elevator vendor, but the current service contract is with Otis.
 - o Existing courtyard facility uses a heavy-duty passenger elevator (4000lbs max) for their freight needs, but an actual freight elevator would be preferred at Brown.
 - o WCU would like a separate freight elevator at Brown
- Locker rooms double as storage area currently.
- Courtyard seems low on storage for food and in general.
- WTS to review trees with Roger Turk.

- II. A Meeting was held at Facilities Management after the steering committee meeting to discuss Building and Site considerations – see Meeting Minutes 01A.

End of Minutes



29 September 2014

Revised 10.21.2014

To:	Julie Moran
From:	Jana Hartenstine
Cc:	All Attendees

Meeting Minutes

**RE: Brown Building Renovation and Addition (A/P)
Western Carolina University**

WTS# 1429

SCO # 13-10964-01

Date of Meeting	Meeting 01A_Advanced Planning- Facilities September 19, 2014	
Time	1:30 pm	
Location	WCU Facilities	
	Attendees	See attached Sign in Sheet

Meeting 01a was held to gain an understanding of the Brown utilities along with facility preferences as they relate to HVAC, infrastructure, grounds and some architecture systems that require maintenance. The following is a summary of the discussion.

1. Steam Distribution
 - a. WCU Facilities requested a 40,000#/hr. steam plant final capacity to help off load the existing boiler plant
 - i. The initial boiler installation will only provide enough capacity for Brown with a minimum of 2 boilers installed, with one boiler carrying 2/3 of the anticipated load.
 - ii. Boiler will send off moisture clouds.
 - b. The Albright Benton Building will need to be taken off the Brown steam service because it is provided with 30# low pressure steam from Brown.
 - i. This will need to be addressed in a separate project to convert Albright Benton to a gas fired boiler.



- ii. Natural Gas service will need to be extended down to a location for both the Brown Building and Albright Benton service.
 - c. The discussion with facilities included the possibility of switching to a hot water type system. The existing underground steam infrastructure in place has been repaired to provide adequate service. Steam boiler and associated distribution system will be provided.
 - d. The potential for asbestos containing materials is possible on underground steam piping; abatement will need to be addressed as a part of this project.
- 2. HVAC Equipment
 - a. York Chillers are not preferred.
 - b. Both air cooled chiller and cooling tower with chiller will be evaluated by Optima. In addition, Dx may be evaluated.
 - c. WCU would prefer no rooftop units due to winter access, leaking concerns, access and concern over screening. Grade/ground level access is the preference.
 - d. Fan coils are not a WCU preference.
 - e. Service area should have a rollup door and access for trucks.
- 3. HVAC Controls
 - a. The central BAS ties into the Ethernet.
 - b. Control preference is Automated Logic, but Trane and Schneider may also be considered.
- 4. Metering
 - a. Metering shall be required on all building services; electricity, steam, water, etc. The meter type shall be reviewed with facilities.
- 5. Sanitary
 - a. Provide extra heavy duty cast iron sanitary on below slab piping.
 - i. Optima needs to observe and ensure the extra heavy duty cast iron is provided during installation.
 - b. The existing sanitary sewer will need to be relocated around the building footprint.
- 6. Water pressure
 - a. The water pressure provided by the campus distribution system will provide adequate building pressure to avoid providing a fire pump.
 - b. Optima will need a flow test at the building to confirm
- 7. Electrical
 - a. The project will be "starting over" for electrical service.
 - b. Re-feed existing building electrical service if new building addition is placed over existing electrical feed.

- c. LED lighting is standard. Control is to be localized.
 - d. A new transformer will be required. 480v main electrical service shall be provided.
 - i. There is no preference on the transformer, but facilities will verify with Terry.
 - e. The existing switch cannot be relocated.
 - f. The existing site lighting is metal halide. WCU is open to the possibility of LED. The Harrill bollards were LED. Poles were LED and the parking lights were metal halide.
 - i. Julie indicated that WCU would like to consider/investigate a new lighting standard.
8. Fire Alarm
- a. Fire Alarm will be manufactured by EST.
9. Gas
- a. A gas main extension on Central will be required for this project.
 - b. PSNC is the natural gas utility.
10. **Telecom runs up Central Avenue.**
- a. **The broadband is not in use.**
 - b. **The fiber is still in use.**
11. Food service is permitted by Jackson County.
12. Structural
- a. Facilities said there are some structural cracks, but nothing notable.
 - b. The lower floors used to have moisture problems.
13. Roofing
- a. ~~WCU's preference is a Sarnafil PVC, has used a Sarnafil PVC is thinks it's oka~~
FiberTite (KEE), but would like to entertain a Sarnafil modified bitumen 3 ply roof.
 - a-i. ~~TPO is not an option for WCU.~~
 - b. Grease traps on the roof can leave a mess. Reggie suggested that technologies could be considered to relieve this.
 - i. UV at holds or a water wash may be considered for WCU review.
14. Roads/Infrastructure
- a. The design team needs to consider Central Avenue and the traffic impact when designing and building the new utility connections.

Moving Forward: Wrap- up meeting with Julie Moran:

- WCU will email WTS the preliminary brown program developed internally prior to this meeting

- WCU will email WTS campus building standards
- WCU to send WTS building surveys by mid-October (will include tree survey)
- WCU to start process of selecting commissioning agent
- If project can be delivered under a CM@Risk contract (Julie to advise) , WTS to think about delivering an early site package to help ease schedule.
- WTS to look into moving loading dock & food storage to upper level to be on same level as Dining and to possibly improve service vehicle circulation and parking.
- WCU to decide upon using a CM@Risk or a Design/Bid/Build delivery.
- WTS to show Julie new massing developments
- WTS to see if program can fit into a smaller foot print under 25,000sf
- Julie to send Courtyard Dining Hall plans to WTS

End of Minutes





21 October 2014

To:	Julie Moran
From:	Jana Hartenstine
Cc:	

Meeting Minutes

**RE: Brown Building Renovation and Addition (A/P)
Western Carolina University**

WTS# 1429
SCO # 13-10964-01

Date of Meeting	Meeting 02_Advanced Planning October 02, 2014	
Time	7:00 p.m.	
Location	University Center – Catamount Room	
	Attendees	<i>Mistie Bibbee, Michael Watson, Jana Hartenstine, WCU Students</i>

- I. A Kick-Off meeting was held at Harrill Hall on the WCU campus on October 2, 2014 to get student input on the Brown Dining Hall Project. Student Government and organizations were invited to share their experience with topics that would affect the dining hall program and design. The following will outline the discussions and how the project is to proceed.
 - A. Introductions of attendees:
 1. Brittany is a sophomore on campus. She works for Aramark, stays on campus during weekends and lives in Reynolds. She belongs and meets regularly with Phi Sigma Pi and the Organization of Ebony Students.
 2. Zach is a junior and an RA in Scott. He lived in Reynolds last year and used the C-store a lot. He didn't like walking up the hill to Reynolds.
 3. James is an RA in Balsam. He lived in Balsam all 3 years. James has classes in McKee and by the library, and would consider Brown for lunch because it's closer to the buildings where he has his classes. Right now he packs his lunch because everything is too far for him to manage with his schedule.
 4. Amber is a senior and lives in Albright Benton. She doesn't feel safe crossing Central Avenue.
 5. Sara is a junior and a RA in Scott. She brings her own food although she stays on campus until 11:00 some nights.
 6. Dustin is a senior and lives off Central Drive.



7. Josh lives in the Village (upper West).
8. Brandon lived in Reynolds.
9. Emily is with SGA, is a sophomore and lives off campus. She lived in Scott last year. She has a restrictive diet and doesn't eat the food that campus offers.

B. Student thoughts on campus:

1. General discussion included the following points:
 - Weekends
 - o 2/3 of students go home on the weekends and students who stay want to have options of places to go on campus. The UC is closed until Sunday night, and there's no place to hang out on Saturday.
 - o RAs thought more students would stay over weekends if there was more open/available to do.
 - Meals
 - o Student on upper campus usually eat breakfast in their rooms because of the time it takes to get to the dining hall.
 - o Lunch was generally a convenience grab for most students.
 - o Most thought that dinner choice was based on where they live and they'd go out with friends/dorm mates.
 - Dining Halls
 - o Students were asked if they'd seen other dining halls that they liked or whose qualities they'd like to see in Brown. Clemson was the one mention for its range of dining choices.
 - o Student love outdoor seating.
 - o Students like having Starbucks as an option to study in.
 - o Students like the ambient noise of the dining hall.
 - o Students liked the idea of being able to use the dining hall without swiping a meal plan and having the option to eat with friends that made other choices.
 - Hangout Space
 - o There is a lack of "hang out" space on campus. There are pool tables in Reynolds, but with no other attractions.
 - o Illusions is the campus "club" but doesn't draw student in. It doesn't feel like a place to hang out. Furniture and lighting, along with the location on the 3rd floor of the UC is a drawback.
 - o Students go to Cook Out for late nights. It is open until 3 am.
 - o The UC could have more seating.
 - Meeting Space
 - o Priority is given to specific organizations for space. Other groups starting up can have difficulty finding meeting space.
 - o One example of group size was Phi Sigma Pi's meetings were 15-20 people when Brittany started, but have grown to 25-30 per meeting.
 - o Org. of Ebony students is about 25 people and meet in the CU 3rd floor in the intercultural affairs office every other Monday.

- Meetings for smaller groups don't have consistent places to meet.
- It is difficult getting space in the UC and the library.
- Student would like food offering in places they meet so they can grab and go.
- Circulation
 - Students who live on Upper Campus walk via Chancellor's Drive or through the Brown site. It is easier to walk up through Brown because steps are provided whereas Chancellor's Drive is a long continuous slope. Some reported walking back up late at night, so if Brown was open late it would be welcomed stop off. Others said they would welcome the opportunity to get coffee and study at a coffee shop at Brown late at night – even 24/7.
- Res Life
 - RA's will need to visit the housing offices to be in Brown 1-2 times per week, so even those from the Lower Campus.

2. Restaurants

- List of restaurant types that were desirable to those present included:
 - Barbeque
 - Sticky Fingers
 - Starbucks
 - Something that had a local feel.
 - Soul/Comfort Food
 - Healthy option (vegetarian).
 - Cheddars
 - Fats
 - Mellow Mushroom
 - Full service Subway

3. Each student was asked what one thing about Brown was most important to them.

Answers were as follows:

- Sit down restaurant
- 24 hour coffee shop with lots of seating
- Outdoor dining and hangout space. Cool weather doesn't deter students from sitting outside.
- Locally owned shops and food venues (UNC Chapel Hill ex)
- Semi-private seating areas
- Fireplace and hangout space
- "Homey" feel – no fluorescent lighting
- Traffic Control measures on Central Avenue & wider sidewalks
- 24/7 operation
- Upper Campus is beautiful and Brown should be the center of it.
- More windows
- Pool tables/ping pong
- Healthy/vegetarian choices

4. Summary



- “Front Door” should be at both Upper and Lower entrances. Not looking at loading dock.
- “All you can Carry” concept would be welcomed so they could join friends who are just coming to visit or bring food from other venues.
- They like to study in Starbuck and Courtyard currently, so more similar study spaces would be welcomed. Library is too quiet.
- It would be good to have an on campus place that was open late and weekends. It would have to compete with places that sell alcohol (Tucks Wings for instance) so it would have to be good enough to compete.

End of Minutes



21 October 2014

To:	Julie Moran
From:	Jana Hartenstine
Cc:	All Attendees, Alan Sellers- WCU, Lance Williams- Stewart Engineering, Chris Herron – Stewart Engineering, Kat West & Micheal Smith – Energy Ace, Ron Almond - Optima

Meeting Minutes

RE: **Brown Building Renovation and Addition (A/P)**
Western Carolina University

WTS# 1429
SCO # 13-10964-01

Date of Meeting	Meeting 02A_Advanced Planning October 02, 2014	
Time	9:00 am	
Location	Harrill Hall	
Attendees	Name	Organization/Co.
	Julie Moran	WCU
	Keith Corzine	WCU
	Bryant Barnett	WCU
	Mistee Bibbee	WCU
	Tim Chapman	WCU
	Todd Littrell	WCU
	Reggie Daniel	Camacho
	Michael Watson	WTS
	Tom Savory	WTS
	Chris Erario	WTS
	Jana Hartenstine	WTS

1. **Michael and Jana started the meeting off with a summary of the meeting with the students the night before. See Notes for Meeting 2.**
2. **Review of Kick-Off meeting discussions from 9.19.14:**
 - It was noted a variety of meetings and groups would use the Brown facility and therefore the emphasis on flexible meeting space was reiterated.
 - Parking on site will not be provided except for service vehicles, and handicap spaces.
 - Tim noted that service delivery trucks had been discussed as 52' long, but the cabs are an additional 26', so 72' total length.



- It was noted that two smaller dumpsters could be used in lieu of the one large one currently used. Other service yard needs will include food composting container, recycling containers, and catering van access.

3. Reviewed Planning Options 1-4.

- It was agreed that all dining (including Brand and coffee shop) should be on the upper level for synergy and sharing of services.
- It was agreed that Option 2 created best organization of spaces and WTS would further develop this direction.
- WTS will provide suite adjacencies and further massing studies for next meeting.

4. Reviewed precedents

- Precedent reviewed wer to show idea of scale and material.
- It was noted that a lot of the images had stone, which WCU has on landscape/hardscape and retaining walls. Julie thought it might be something we use as a hardscape/floor.

5. Reviewed Program spreadsheet

- WTS to break down uses and consider different efficiencies based on use.
- Dining may need more than 15 SF per seat depending on circulation and grossing factors applied. Julie thought at least 17sf/person as a minimum.
- See notes in attached Program spreadsheet which were added during the meeting

6. Discussed Schedule and future meetings:

- Sustainability workshop is planned for 10.16.14.
- Follow-up design options meeting is planned for 10.16.14.
- Will present options and discuss direction for steam mini-plant v. hot water (building-specific).
- Todd will not be available for the 16th.

7. Discussed Foodservice and Planning led by Reggie Daniel:

- Confirmed dining to be “all-you-can-carry” setup like Wake Forest North Dining.
 - 750 seats
 - Hours from 7 AM to 9 PM, continuous operation.
- Dining will share dish return/washing with Fast-Casual themed brand (i.e. Cheddars or Chilies Too).
- Confirmed Brand restaurant will need 3,000 SF including seating area. Julie to provide CAD drawings of McAlister’s which is similar for Chilies.
 - 100 seats
 - Hours from 11 AM to 2 AM
- Confirmed Coffee Shop (Starbucks) will need 1,800 SF.
 - Good to have separate entry, could be open 24/7.
 - 50 seats.
- Confirmed C-Store will need 1,200 SF.
- Dining Servery should have 5 to 6 concept stations, identified the following:
 - BBQ – “Smokehouse”
 - Salad
 - Pizza

- Bakery
- Grill
- Drinks station will be out in seating area, can be turned off after hours.
- Space dedicated to Private dining is not high priority, flex space is more useable.
- Student participation anticipated:
 - Breakfast: 500
 - Lunch: 900-1,000
 - Dinner: 1,200 – 1,500
- Catering provides \$850k - \$1M in sales per year.
 - Reggie to Chef and Catering Director to review program in more detail.
- All dining will have take-out. Need to have pick-up window to speed up service.
 - Carry out containers are bio-degradable except for some brands who will not allow.
 - Dining is tray-less.
 - Need refrigerated trash room.
- Recycle program includes separate containers for:
 - Cardboard
 - Post-container waste
 - Food waste – given to hog farmer will require refrigerated waste room.
 - Tin cans
 - Note: paper, plastics & napkins go to land fill.
- Dining will have an option for unlimited swipe cards.
 - Currently have \$1.5M in cash sales on campus.
 - Credit & debit use is in 10-11% range.

End of Minutes



WCU Brown Dining Hall

October 3, 2014

Ref. No.	Department	Space Name	Qty.	NSF	Total NSF	
1.00	Administration				8,600	
	Residential Living				4,285	
		Dir. Residential Living	1	200	200	
		Dir. Facilities Services	1	180	180	
		Dir. Residential Life	1	180	180	
		Dr. Operations	1	180	180	
		Asst. Dir. Facilities Services	1	120	120	
		Asst. Dir. Residence Life	2	120	240	
		Asst. Dir. Academic Initiatives	1	120	120	
		Asst. Dir. Operations	1	120	120	
		Financial Transactions Manager	1	120	120	
		Room Assignments	2	120	240	
		Operations Asst.	1	120	120	
		Growth Space	1	120	120	
		Large Conference Room	1	400	400	22 seats - can be shared
		Small Conference Room	3	250	750	12 seats - can be shared
		Judicial Break-Out			0	
		Front Desk	1	200	200	2 people at desk
		Waiting	1	200	200	10-12 seats,
		Supply/Storage	1	120	120	
		File Storage	1	175	175	
		Copy Room	1	100	100	
		Kitchen	1	300	300	
		Programming Room	1	100	100	RA Work Room - may be optional
	Dept. of Student Community Ethics				1,400	
		Director	1	200	200	
		Asst. Director	1	120	120	
		Assoc Director	1	150	150	
		Drug and Alcohol Educator	1	120	120	
		Growth Space	1	120	120	
		Office/Work Space	1	100	100	
		Support Staff	1	120	120	
		Front Desk	1	200	200	
		Storage	1	150	150	
		Waiting	1	120	120	
	Campus Services				1,210	
		Asst. Vice Chancellor for Campus Services	1	250	250	
		Director of Campus Services	1	200	200	
		Dir Conference Services	1	180	180	
		Office	2	180	360	Dining offices?
		Storage	1	100	100	
		Waiting	1	120	120	Could be shared w Res. Living
	Student Activity Spaces				0	

Watson Tate Savory Architects, Inc.
mail@watsonatesavory.com



Ref. No.	Department	Space Name	Qty.	NSF	Total NSF
		Base-Camp			
		Student Activity Spaces - See Meeting Lounge	2	-	0
		Dining Area - See Food Services			0
	Western Carolinian News				1,145
		Offices	5	120	600
		Conference	1	250	250
		Workroom	1	175	175
		Storage	1	120	120
	Dining Admin.				560
		Catering Office	1	200	200
		Food Serv Dir	1	120	120
		HR	2	120	240
2.00	Food Services				20,920
	Dining				11,970
		Dining Hall Seating	750	15	11,250
		Serving Area	4	180	720
		Dish/Tray Wash	1	1000	1,000
	Starbucks				1,050
		Kitchen/Support/Storage	1	300	300
		Office	1		
		Seating	50	15	750
	Other Brand				1,550
		Kitchen/Support/Storage	1	800	800
		Office	1		
		Seating	50	15	750
	C-Store				1,350
		Retail Area	1	1000	1,000
		Support/Storage	1	350	350
	Kitchen/Kitchen Support				5,000
		Receiving	1	140	140
		Dry Storage	1	280	280
		Paper Storage	1	140	140
		Misc Storage	1	280	280
		Catering Storage	1	140	210
		Catering Prep	1	140	140
		Catering Kitchen?	1	800	800
		Production Kitchen	1	1210	1,210
		Refrigerated Storage	1	720	720
		Production Office	1	200	200
		Employee Lockers	20	2	40
		Jan Closets	1	140	140
		Employee Restrooms	2	350	700
3.00	Meeting/Lounge Areas				5,392
	Meeting/Flex Spaces				2,450
		Large Meeting Rooms	2	850	1,700

Keith to check...

2 desks & meeting table

Incl in above

Incl in above

2 desks

20 units at 12" x 2 high



Ref. No.	Department	Space Name	Qty.	NSF	Total NSF
		Small Meeting Rooms	2	375	750
	Venue Space				2,942
		Seating/Lounge	50	15	750
		Grill/Servery	1	400	400
		Storage	1	280	280
		Equipment	1	112	112
		Games	1	1120	1,120
		Stage	1	280	280
4.00	Building Services				5,750
		Shipping/Receiving	1	1000	1,000
		General Storage	1	1000	1,000
		Mech./Elec.	1	3500	3,500
		Janitor	1	250	250
		Toilets for Dining & Meeting	2	350	700
		Toilets for Offices	2	280	560
	Net Program Totals				40,662
	Grossing Factor 30%				12,199
	Total Building Gross Square Footage				52,861



Meeting 3 – Steam Plant & meeting 3A – LEED

Location: Meeting at Harrill Hall, WCU Campus

Attendees: Bryant Barnett, Tim Chapman, Jeffrey Hughes, Julie Moran, Lee Smith, Terry Riouf – WCU; Ron Almond, Chad Hancock – Optima; Kat West, Micheal Smith – Energy Ace; Chris Erario, Michael Watson – WTS.

Brown Building Survey:

1. Prefer Spence pressure regulating valves – No Spirax/Sarco.
2. Prefer triple offset valves – No gate valves (except in small trap lines)
3. No brass valves – All steel valves.
4. Inverted Bucket traps on high pressure, F&T on low pressure and modulating loads, Thermodisc are also acceptable based on application and correct sizing
5. Data closets to be provided with natural ventilation or dedicated split system, will review load and determine best method
6. Belt drive on fans is acceptable over direct drive for adjustability
7. Aerco B+II Steam Domestic Water Heaters are preferred
8. Dual fuel (NG & #2 Fuel oil) will be required for boilers – requested 7 day storage capacity
9. Albright / Benton (work shall occur outside scope of Brown Renovation)
 - a. Reviewed location for new steam condensate tie back to main condensate line going back to Boiler Plant instead of Brown Building
 - b. Reviewed option of locating a new PRV for A/B if steam station in Brown is demolished.
 - c. Reviewed option of keeping existing steam PRV station that serves A/B online during renovation of Brown.
 - i. This option will be reviewed further to determine best case option of minimizing work/cost to keep A/B operational.
 - d. Reviewed option of extending new LPS (30#) steam from Brown to existing LPS (near recent condensate piping tap/reefed), which will cut off existing loop up the hill and back down.
 - e. Reviewed option of adding new condensate piping along front of A/B
 - f. All other steam/heating equipment to remain unchanged

Steam vs Hot Water Discussion:

1. Decision to use steam agreed upon by all parties.
2. Need budget for “Day One” steam plant. OE will provide preliminary number to WTS
3. 30,000 lb/hr (1/3 of central plant) preferred capacity for new secondary plant.
4. Reviewed provide list of PROS/CONS
5. Discussed efficiency difference between Hot Water and Steam Boilers

LEED Workshop:

302

H.1 MEETING MINUTES - MEETING 3 & 3A by Optima Engineering

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014

1. LEED
 - a. Goal of LEED Gold, Silver a minimum. (Don't buy points)
 - b. LEED Version 3 – New Construction
 - c. No motion sensors in mechanical rooms.
 - d. LED lighting preferred.
 - e. Review option for Office Space window position sensor vs HVAC system operation (Similar to Harrill Hall)
 - f. Type of glass used at Harrill Hall??
 - g. LCCA for solar thermal (ROM)
 - i. If provided be sure to provide enough space below for roof repair/replacement.
 - h. LCCA for geothermal (ROM)
 - i. NO to solar PV
 - j. 1000 people per day in dining. 50 per day in the admin.
 - k. No car charging stations
 - l. Plan for building flush out
 - m. Some parts of Dining Hall will be 24hrs
2. Generator with belly tank.
3. Proper slope on all SS lines to work with low flow fixtures.
4. Minimize domestic HW wait times at faucets, extend DHWR line
5. DO NOT reuse any existing under slab sanitary piping.
6. NO chilled beams
7. Provide standard sizes were possible, light bulbs, filters, etc.

See Section G.2.b.ii - Sustainable Workshop Report for Meeting 3A Meeting Minutes. The topic of discussion in Meeting 3A was strategies for sustainable design. Notes by Energy Ace.

Date: 10.16.14

Location: Harrill Hall, WCU Campus

Attendees: Bryant Barnett, Tim Chapman, Jeffrey Hughes, Julie Moran, Lee Smith, Lauren Bishop (Chief Sustainability Officer-Director of Sustainability & Energy Management) David King (Energy Management Specialist) – WCU; Ron Almond, Chad Hancock – Optima; Kat West, Micheal Smith – Energy Ace; Chris Erario, Michael Watson – WTS.



H.1 MEETING MINUTES - MEETING 3A

305

WCU Brown Building Renovation & Addition - SCO No.: 13-10964-01-WCU
Programming & Advanced Planning Submittal

7 November 2014

