Morris·Berg
ARCHITECTS

1401 WEST MOREHEAD STREET, SUITE 125
CHARLOTTE NC 28208-5600
(704) 552-5800 FAX (704) 552-7420

ADDENDUM #1

March 23, 2018

UNC Charlotte Sycamore Hall Renovation
Charlotte, North Carolina
SCO #16-12735

This addendum is pursuant to the University of North Carolina General Administration Instructions to Bidders and General Conditions of the Contract in connection with the revision of Bidding Documents which have been previously issues.

Addenda are issued prior to execution of Contract. All instructions contained herein shall be reflected in the Contract Sum and this Addendum will be made a part of the Contract Documents, if, as and when a Construction Contract is awarded.

This Addendum forms a part of the Contract Documents and modifies the original documents dated February 28, 2018, as noted below. Acknowledge receipt of this Addendum in the space provided on the Form of Proposal. Failure to do so will subject the Bidder to disqualification.

REVISIONS TO THE PROJECT MANUAL:

1. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. Form of Proposal – Replace page FOP-3 (page 3) with attached page.

2. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 012100 – Replace pages 3-4 with attached pages.

3. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 012200 – Replace page 2 with attached page.

4. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 012300 – Replace page 2 with attached page.

5. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 084413 – Replace page 3 with attached page.

6. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 232113 – Replace page 6 with attached page.

7. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 237313 – Replace page 2 with attached page.

8. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 260513 – Replace page 3 with attached page.

9. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
   a. SECTION 260533 – Replace page 3 with attached page.

10. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
    a. SECTION 030130 – Replace pages 3-4 with attached pages.

REVISIONS TO DRAWINGS

1. SBD-001, Addendum #1 revisions to detail 9/S801.
2. Replace Sheet FP001 with attached Sheet FP101.
3. Replace Sheet E006 with attached Sheet E006.
4. Replace Sheet AF100 with attached Sheet AF100.

BIDDER CLARIFICATION REQUESTS

#	RFI/ Substitution Request	Response
1	Please clarify if blinds are required at Office 106 and Conference 306. Are interior blinds required at Office 202D?	Blinds are required at Office 106. Blinds are NOT required at Conference 306 and Office 202D. See revisions on attached Sheet AF100.
2.	Are groove mechanical joints approved for chilled water piping over 2-1/2" or is it only approved for hot water piping?	Yes, it is approved for chilled water pipes over 2-1/2".

ATTACHMENTS

1. PRE-BID CONFERENCE MEETING MINUTES
2. PRE-BID CONFERENCE ATTENDANCE SHEET
3. GOOD FAITH EFFORT REQUIREMENT
4. FORM OF PROPOSAL, PAGE FOP-3.
5. SPECIFICATION SECTION 012100 – PAGES 3-4.
6. SPECIFICATION SECTION 012200 – PAGE 2.
7. SPECIFICATION SECTION 012300 – PAGE 2.
8. SPECIFICATION SECTION 084413 – PAGE 3.
9. SPECIFICATION SECTION 232113 – PAGE 6.
10. SPECIFICATION SECTION 237313 – PAGE 2.
11. SPECIFICATION SECTION 260513 – PAGE 3.
12. SPECIFICATION SECTION 260533 – PAGE 3.
13. SPECIFICATION SECTION 030130 – PAGES 3-4.
14. SBD-001 – ADDENDUM #1 REVISIONS.
15. SHEET FP001 – FIRE PROTECTION CRITERIA
16. SHEET E006 – ELECTRICAL DETAILS
17. AF100 – FINISH SCHEDULE

END OF ADDENDUM #1

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March 23, 2018

Pre-Bid Conference Memorandum

UNC Charlotte
Sycamore Hall Renovation
SCO Project ID# 16-12735

Participants: See attached Attendance List

A Pre-Bid Meeting was held on March 22, 2018 in Room 127 of the McEniry Building on the UNC Charlotte main campus located at 9201 University City Boulevard, Charlotte, NC 28223. The meeting was held to review the project bidding requirements, scope of work, Public Hearing for Preferred Brand Alternate and a building tour. The following items were discussed.

1. The project representatives were introduced (Owner, Designer, User) and the attendance sign-in sheet was passed around. Each participant was given a copy of the meeting agenda and Good Faith Effort Requirements.

2. The project accepts Single Prime Bids. Bidding Contractors must be properly licensed. Refer to General Statutes 87-1 for requirements. All bids must be received by Thursday, April 5, 2018 at 3:00 p.m. and will be opened publicly and read aloud at that time. The location for bids to be opened is: Cone Center, Room 208. All mailed deliveries to Capital Projects are to be received by 2:00 PM at 9151 Camron Boulevard, Charlotte NC 28223.

3. Bid documents are available for Prime Contractors (GCs) through the Architect. Electronic bid documents will be provided at no cost to GCs by contacting thameed@morrisberg.com . A $300.00 refundable deposit is required per package. Documents are also available for review at the Office of the Architect, UNC Charlotte, www.ConstructConnect.com, www.construction.com www.mmcaofcharlotte.org.

4. Please us the bid form included in the Specifications, and make sure you are using the correct form for the project that you intend to bid. Any modifications to the Bid Form will be grounds for disqualification. Please fill in all blanks for alternates and unit prices. If you decide to not bid on an alternate, please write in "No Bid". Pay close attention to the MBE forms required. The State's MBE forms are included in Section 003000 of the Specifications and are also listed at the end of the Bid Form. They include the I.D. of HUD Certified/Minority Business Participation, Affidavit A or Affidavit B. Bids do require a Bid Bond in the amount of 5%, and this must be included with the bid. Information on allowable forms of the Bid Bond are included in the Instructions to Bidders.

5. The project goal for MBE participation is a 15% aspirational goal. All forms must be submitted with Bids. The proper MBE participation forms must be submitted with the bid. As previously stated, Identification of Minority Participants, and either Appendix A or B.

Contact Dorothy Vick at UNC Charlotte for assistance with locating minority subcontractors for this project. Communication with minority contractors is required 10 days prior to bid. See attached UNC Charlotte "Good Faith Effort" Requirements (Sycamore Hall Renovation).

6. Schedule – It is the Owner's goal to provide Notice to Proceed in June 2018. The Construction time is 270 calendar days from the Notice to Proceed. Liquidated Damages are included in the amount of $250 per calendar day from 271-300 days. Liquidated damages in the amount of $1,000 will be assessed after day 300.

7. Substitutions / Clarifications - All requests for substitutions clarification must be submitted through Prime Contractors to the office of the Architect in writing or by electronic mail no later than 10 days prior to the bid date on March 28, 2018. Follow the Instructions to Bidders for Substitution requests. Responses to requests for clarification or RFIs will be provided in writing by way of addendum. The last addendum will be released March 29, 2018.

8. Project Scope – A brief description of the project scope was provided. Details regarding project scope are defined in the Bid Documents.
   Alternates for the project are as follows:
   - Alternate #1: Provide complete price to paint exposed ceilings, as indicated on Drawings or in Specifications.
   - Alternate #6: Provide complete price to provide up-fit renovations to the fourth floor of the Project building.
   - Alternate #7: Provide complete price to provide LED lighting in lieu of Fluorescent fixtures, as indicated on the drawings.
   - Alternate #8: Provide complete price to provide Sprinkler System, as indicated in the Drawings and Specifications.

   Allowances and Unit Prices are included on the bid form and are further defined in the Specifications.

9. Presentation of Preferred Brand Alternates – To provide consistency for UNC Charlotte, Preferred Brand Alternates are listed and have been discussed in the Pre-Bid Meeting with no objections. They are as follows:
   - Provide and install Schlage ND Series cylindrical locksets.
   - Provide and install Von Duprin 8/99 series exit/panic devices.
   - Provide and install HES 1006 Von Duprin heavy duty electric strikes.
   - Provide and install Schlage Everest D and Schlage Primus C.

10. Additional Comments/Questions:
    - Question: Can the addenda changes in the drawings and specifications be "clouded" in the new bid set? Response: The addenda have been incorporated into the current bid set of documents. These are not and will not be clouded in the current bid set.
    - Question: What happens if the project is bid over budget? Response: UNC Charlotte will assess the bids when they are received and provide direction accordingly.

- Question: Are furnishings in the existing building going to be removed? Response: UNC Charlotte will be responsible for removing all items prior to GC mobilizing.
- Question: Are additional hazardous materials located in the building other than what is shown in the Bid Documents? Response: The hazardous materials survey and removal diagrams are included in the Bid Set. No other known hazardous materials are present on this project.

11. At the close of the meeting the participants were invited to meet at the site. The Architect and UNC Charlotte personnel conducted a walk-through of the site to further explain the scope of work.

End of Notes - Participants are requested to provide written responses to the Architect for any corrections or additions to these minutes.

By: Tarik Hameed

Morris-Berg Architects

Copy: Participants; Planholders

ATTENDANCE LIST
Pre-Bid Conference
Thursday, March 22, 2018 (3:00 PM)

Morris·Berg
ARCHITECTS
1401 WEST MOREHEAD STREET, SUITE 125, CHARLOTTE, NC 28208
(704) 552-5800 FAX (704) 552-7420

UNC Charlotte – Sycamore Hall Renovation

PLEASE PRINT CLEARLY

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Erica Hubbard	All Things Pro	erica@allthingscleaning.com

UNC Charlotte
"Good Faith Effort" Requirements
(Sycamore Hall Renovation)

This information is provided as a guide for firms who may be new to UNC Charlotte and may not be familiar with our expectations regarding minority business participation on University Managed Projects (UMP) projects. Bidders should be familiar with the ***Guidelines for Recruitment & Selection of Minority Businesses for Participation In University of North Carolina Construction Contracts***

Identification of HUB Certified/Minority Business Participation form – Only list minority firms that you will use as construction subcontractors, vendors, suppliers or professional service providers on this project. The bidder cannot list himself on this form as he cannot subcontract to himself. **Note:** This form should be submitted with your bid, even if left blank.

Affidavit A – Listing of Good Faith Efforts – the bidder is certifying that he has made a good faith effort to comply under those areas checked on the form. Do not check a Good Faith Effort item unless you can provide the following;

1. Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists ***at least 10 days before the bid or proposal date*** and notifying them of the nature and scope of the work to be performed.
   Example: Copies of written (emailed or faxed) notification to minority businesses and copies of quotes/proposals received for work solicited to minority businesses. Notification should include, at a minimum, project location, location where plans and specifications may be obtained or viewed, trade or scopes of work for which subcontracts are being solicited, contact person within the prime contractor organization.

   Be sure to maintain a telephone log to confirm that minority firms received your Invitation For Bid (IFB). The log should contain the date contacted, telephone number, and name of the individual representing the minority firm who acknowledged receipt of your IFB. ***Also maintain a telephone log to confirm that minority firms acknowledged a "bid/no bid" to your IFB***. The log should contain the date contacted, telephone number, and name of the individual representing the minority firm who acknowledged "bid/no bid" to your IFB.

2. Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.
   Copies of written (emailed or faxed) notification to minority businesses should include, at a minimum, project location, location where plans and specifications may be obtained or viewed, trade or scopes of work for which subcontracts are being solicited, contact person within the prime contractor organization.

3. Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
   Document steps taken to segment elements of work into economically feasible units to meet minority business availability. Identify sub-contractors/suppliers/consultants and scope of work involved in segmenting.

   Be sure that you are soliciting quotes from ***at least*** three (3) minority firms in scopes of work that typically have adequate numbers of minority firms available that can perform the work required (hauling, concrete, flooring, masonry, painting, electrical suppliers, etc.). Do not solicit quotes from minority firms in those scopes of work that typically do not have minority firms available that can perform the work required (elevators, fire suppression systems, roofing, etc.). If there are minority firms that you typically use on your projects then by all means, feel free to use them, if you are sure you are receiving reasonable pricing and quality work.

4. Working with minority trade, community or contractor organization identified by the Office for Historically Underutilized Businesses (HUB) and included in the bid documents that provide assistance in recruitment of minority businesses. **Note:** Minority plan rooms are not applicable.
   Provide a copy of meeting minutes between prime contractor and minority trade, community or contractor organization. At minimum the following topics should be discussed/reviewed during the meeting: project location; location where plans and specifications may be obtained or viewed; trade or scopes of work for which subcontracts are being solicited; bonding requirements; insurance requirements; prime contractor's contact person; minority trade, community or contractor organization contact person; strategies to segment elements of the work into economically feasible units to meet minority business availability; strategies to increase minority business utilization through joint ventures and/or partnerships; notification that the meeting will be counted toward the contractor's good faith effort.

   Maintain a copy of the request, and have the date, telephone number and name of the individual who acknowledged receipt of your request and information regarding any/all assistance provided by the organization

5. Attending any pre-bid meetings scheduled by the public owner.
   Attendance will be verified by conference sign-in sheet.

6. Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.

Have documentation describing the type of assistance provided or offered to minority businesses. Provide names and contacts of minority businesses to which assistance was offered and names of the contact person of bonding companies or financial institutions offering assistance.
Be sure to mention that assistance with bonding and/or insurance will be provided in your IFB.

7. Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
   Document number of bids received from minority businesses in the trade or scopes of work for which subcontracts are being solicited, the number of minority businesses that submitted low bids or proposals, the number of minority businesses the bidder has offered to negotiate prices or services, and the number of minority businesses the bidder has agreed to utilize on the project, outline steps taken.

8. Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required or assisting minority businesses in obtaining the same unit pricing with the bidders supplier.
   Document names, addresses and telephone numbers of minority businesses to which assistance was offered, outline steps taken. Give dates assistance was offered and document outcome.
   Be sure to mention that assistance with equipment, loan capital, lines of credit or joint pay agreements to secure loans, supplies, or letters of credit will be provided in your IFB.

9. Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
   Provide a copy of joint venture or partnership arrangements between bidder and minority businesses.

10. Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.
    Provide a copy of quick pay agreements and/or policies and document the number of minority businesses that will utilize the quick pay agreement. Provide a copy of the quick pay agreement between bidder and minority businesses.
    Be sure to mention that quick pay agreements will be provided to assist contractors with cash-flow demands in your IFB.

Note: ***Referencing the Good Faith Efforts listed above in your IFB is not enough. You must be able to document your efforts.***

Affidavit B – Intent to Perform Contract with Own Workforce – In making this certification the bidder is stating that he does not customarily subcontract elements of this type project and normally performs and has the capability to perform and will perform all elements of the work on this project with his own current workforce. The bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible. "***Self-performing"*** means the contractor has all equipment, personnel and supplies on hand to perform the contract. If the contractor needs to purchase supplies or rent equipment and operators to perform the work, then the contractor ***is not*** self-performing and should make efforts to purchase supplies or equipment, or temporary labor from minority firms. **Note:** No other Affidavits are required if the Bidder meets this criteria.

Affidavit C – Portion of the Work to be Performed by HUB Certified/Minority Businesses – This form is to be submitted only by the apparent lowest responsible, responsive bidder with equal to or greater than 10% minority participation.

Affidavit D – Good Faith Efforts – This form is to be submitted only by the apparent lowest responsible, responsive bidder with less than 10% minority participation along with their backup documentation.

Minority-owned Pre-qualified Bidders – ***must also*** meet the minority participation goals set for the project. Work performed by the minority-owned pre-qualified bidder will be counted towards the minority participation goal ***only if*** the minority contractor is ***self–performing*** and submitted Affidavit B***.***

Certification Requirements – Ensure the minority firms you contact for subcontracting opportunities are listed in the Statewide Uniform Certification (SWUC) Vendor database as ***only firms*** listed in the SWUC Vendor database, at the time of contract award, ***will be counted*** towards the minority participation goal for this project. Go to http://www.doa.nc.gov/hub/searchhub.aspx for access to the SWUC Vendor database.

Assistance:

Email (***Email Subject: UNC Charlotte Sycamore Hall Renovation)*** the UNC Charlotte HUB Coordinator, Dorothy Vick (dlvick@uncc.edu) **no later than 12:00 Noon March 23, 2018** for the following;

1. **Assistance in finding certified minority firms who have worked on UNC Charlotte projects and who can perform the scopes of work (site work, concrete, electrical, etc.) you are seeking,** and/or

2. **A list of minority trade, community or contractor organizations** identified by the Office for Historically Underutilized Businesses that provide assistance in recruitment of minority businesses.

7. **Alternate No. 7: LED Lighting**

a. Provide complete price to provide LED lighting fixtures in lieu of Fluorescent fixtures, as indicated in the Drawings and Specifications.

(Add) *(Deduct)* _____ Dollars($) _____

8. **Alternate No. 8: Sprinkler System Upfit**

a. Provide complete price to provide Sprinkler System, as indicated in the Drawings and Specifications.

(Add) *(Deduct)* _____ Dollars($) _____

9. **Alternate No. 9: Pinehall Brick Pavers**

a. Provide complete price to provide Pinehall Brick Company pavers, in lieu of other manufacturers.

(Add) *(Deduct)* _____ Dollars($) _____

UNIT PRICES:

Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the base bid quantity of the work all in accordance with the contract documents.

Item		Price/Unit	Quantity in Base Bid
UP-1	Composite Structural Reinforcing for Elevated Concrete Slabs (Top of Slab)	_____per each installation	80 Repairs (per Allowance)
UP-2	Composite Structural Reinforcing for Elevated Concrete Slabs (Bottom of Slab)	_____per each installation	80 Repairs (per Allowance)
UP-3	Interior Exit Sign Installation	_____per each exit sign	As indicated on Drawings

The bidder further proposes and agrees hereby to commence work under this contract on a date to be specified in a written order of the designer and shall fully complete all work thereunder within the time specified in the Supplementary General Conditions Article 23. Applicable liquidated damages amount is

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

Provide with the bid - Under GS 143-128.2(c) the undersigned bidder shall identify **on its bid** (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. **Also** list the good faith efforts (Affidavit **A**) made to solicit minority participation in the bid effort.

NOTE: A contractor that performs all of the work with its own workforce may submit an Affidavit (**B)** to that effect in lieu of Affidavit (**A)** required above. The MB Participation Form must still be submitted even if there is zero participation.

After the bid opening - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low bidder, the bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

An Affidavit (**C**) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the 10% goal

2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

Allowance No. 1- Quantity Allowance: In the Base Bid, include an allowance for 80 top slab repairs (Top Bars Cut) for new penetrations in existing reinforced slab. See Structural Drawing S801 for Slab Reinforcement System Requirements. Charges against this allowance shall be applicable only under the following conditions:

1. Location of existing reinforcing has been identified by approved methods in accordance with the Structural Drawings.
2. A coring plan has been submitted to the Design Team for review and approval.
3. The Design Team has had an opportunity to make recommended location modifications to avoid the use of corrective measures.
4. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."

Allowance No. 2- Quantity Allowance: In the Base Bid, include an allowance for 80 bottom slab repairs (Bottom Bars Cut) for new penetrations in existing reinforced slab. See Structural Drawing S801 for Slab Reinforcement System Requirements. Charges against this allowance shall be applicable only under the following conditions:

1. Location of existing reinforcing has been identified by approved methods in accordance with the Structural Drawings.
2. A coring plan has been submitted to the Design Team for review and approval.
3. The Design Team has had an opportunity to make recommended location modifications to avoid the use of corrective measures.
4. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."

Allowance No. 3- Quantity Allowance: In the Base Bid, include an allowance for the installation of Interior Exit Signs. See Drawings for quantities. Charges against this allowance shall be applicable only under the following conditions:

1. Authorities having jurisdiction are requiring additional Interior Exit Signs.
2. The Design Team has had an opportunity to review additional request.
3. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."

END OF SECTION 012100

3.1 LIST OF UNIT PRICES

A. Unit Price No. 1– Composite Structural Reinforcing for Elevated Concrete Slabs
Top of Slab Unit price: Estimated quantity: See Section 012100; Part 3.1A Allowance No. 1, given 8 feet long installations (4 feet on each side of opening centerline). Quantities are approximate. See drawings for penetration locations:

$_____per each installation

Each installation consists of one or more reinforcing elements providing equivalent structural capacity to one existing 3/4" diameter (#6) ASTM A 615 Grade 40 reinforcing bar.

B. Unit Price No. 2 – Composite Structural Reinforcing for Elevated Concrete Slabs

Bottom of Slab Unit price: Estimated quantity: See Section 012100; Part 3.1A Allowance No. 2, given 8 feet long installations (4 feet on each side of opening center- line), including fire protection system. Quantities are approximate. See drawings for penetration locations:

$_____per each installation

Each installation consists of one or more reinforcing elements providing equivalent structural capacity to one existing 3/4" diameter (#6) ASTM A 615 Grade 40 reinforcing bar.

C. Unit Price No. 3 – Interior Exit Sign Installation Including Labor and Materials to furnish and Install. Estimated quantity: See Drawings for Quantities.

$_____per sign.

END OF SECTION 012200

3.1 SCHEDULE OF ALTERNATES

A. Alternates as required to ensure that the Project can be bid within the funds available. This list is provided below:

1. Alternate No. 1: Paint Exposed Ceilings
   a. Provide complete price to paint all exposed ceilings, as indicated on Drawings or in Specifications.

2. Alternate No. 2: Cylindrical Locksets.
   a. Provide complete price to furnish and install Schlage ND Series cylindrical lockets, in lieu of other approved manufacturers as specified in Division 8, Section 087100 "Door Hardware".

3. Alternate No. 3: Exit/Panic Devices.
   a. Provide complete price to furnish and install Von Duprin 98/99 Series Exit/Panic Devices, in lieu of other approved manufacturers as specified in Division 8, Section 087100 "Door Hardware".

4. Alternate No. 4: Electric Strikes.
   a. Provide complete price to furnish and install HES 1006 (or similar) or Von Duprin Heavy Duty Electric Strikes, in lieu of other approved manufacturers as specified in Division 8, Section 087100 "Door Hardware".

5. Alternate No. 5: Keying.
   a. Provide complete price to furnish and install Schlage Everest D (interior and mechanical keying) and Schlage Primus C (entry keys), in lieu of other approved manufacturers as specified in Division 08, Section 087100 "Door Hardware".

6. Alternate No. 6: Fourth Floor Renovations:
   a. Provide complete price to provide up-fit renovations to the fourth floor of the Project building. Provide Base Bid work as indicated on the Drawings.

7. Alternate No. 7: LED Lighting
   a. Provide complete price to provide LED lighting fixtures in lieu of Fluorescent fixtures, as indicated in the Drawings and Specifications.

8. Alternate No. 8: Sprinkler System Upfit
   a. Provide complete price to provide Sprinkler System, as indicated in the Drawings and Specifications.

9. Alternate No. 9: Brick Pavers
   a. Provide complete price to provide "Pinehall Brick Company" pavers, per UNC Charlotte Design and Construction Manual, in lieu of other manufacturers.

END OF SECTION 012300

1.5 Project Conditions

A. Field Measurements: Verify actual locations of structural supports for glazed aluminum curtain-walls by field measurements before fabrication and indicate measurements on Shop Drawings.

1.6 Warranty

A. Special Assembly Warranty: Standard form in which manufacturer agrees to repair or replace components of glazed aluminum curtain-wall systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including, but not limited to, excessive deflection.
      b. Noise or vibration caused by thermal movements.
      c. Water penetration through fixed glazing and framing areas.
      d. Failure of operating components.
   2. Warranty Period: Ten years from date of Final Acceptance.

PART 2 - PRODUCTS

2.1 Manufacturers

A. Basis-of-Design Product: The design for glazed aluminum curtain-wall systems is based on EFCO Corporation "System 5600 **(2-1/2" x 5")** Outside Glazed Curtain Wall." Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
   1. Kawneer North America; an Alcoa company.
   2. Oldcastle, Inc. (Vistawall Architectural Products).
   3. YKK AP America Inc.

B. Dimensions listed above are required for this project's existing conditions. No substitutions from these dimensional properties will be approved.

2.2 Materials

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
   1. Sheet and Plate: ASTM B 209.
   2. Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221.
   3. Extruded Structural Pipe and Tubes: ASTM B 429.
   4. Structural Profiles: ASTM B 308.

B. Steel Reinforcement: With manufacturer's standard corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.
   1. Structural Shapes, Plates, and Bars: ASTM A 36.
   2. Cold-Rolled Sheet and Strip: ASTM A 1008.
   3. Hot-Rolled Sheet and Strip: ASTM A 1011.

2.3 Framing

A. Framing Members: Manufacturer's standard extruded or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
   1. Construction: Thermally improved.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
   1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
   2. Reinforce members as required to receive fastener threads.

D. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.

D. Chilled-water piping, aboveground, NPS 2-1/2 and larger, shall be any of the following:

1. Schedule 40 steel pipe, wrought-steel fittings and wrought-cast or forged-steel flanges and flange fittings, and welded and flanged joints.
2. Schedule 40 steel pipe; grooved, mechanical joint coupling and fittings; and grooved, mechanical joints.

E. Makeup-water piping installed aboveground shall be the following:

1. Type L, drawn-temper copper tubing, wrought-copper fittings, and soldered joints.

F. Makeup-Water Piping Installed Belowground and within Slabs: Type K, annealed-temper copper tubing, wrought-copper fittings, and soldered joints. Use the fewest possible joints.

G. Condensate-Drain Piping: Type DWV, drawn-temper copper tubing, wrought-copper fittings, and soldered joints.

H. Blowdown-Drain Piping: Same materials and joining methods as for piping specified for the service in which blowdown drain is installed.

I. Air-Vent Piping:

1. Inlet: Same as service where installed with metal-to-plastic transition fittings for plastic piping systems according to piping manufacturer's written instructions.
2. Outlet: Type K, annealed-temper copper tubing with soldered or flared joints.

J. Safety-Valve-Inlet and -Outlet Piping for Hot-Water Piping: Same materials and joining methods as for piping specified for the service in which safety valve is installed with metal-to-plastic transition fittings for plastic piping systems according to piping manufacturer's written instructions.

3.2 PIPING INSTALLATIONS

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.

B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

E. Install piping to permit valve servicing.

F. Install piping at indicated slopes.

G. Install piping free of sags and bends.

A. Include data on design, inspection and procedures related to preventative maintenance. Operation and Maintenance manuals shall be submitted at the time of unit shipment.

1.05 QUALIFICATIONS

A. Manufacturer shall be a company specializing in the design and manufacture of commercial / industrial custom HVAC equipment. Manufacturer shall have been in production of custom HVAC equipment for a minimum of 5 years.

B. Each unit shall bear an ETL or UL label under UL Standard 1995 indicating the complete unit is listed as an assembly. ETL or UL listing of individual components, or control panels only, is not acceptable.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under the supervision of the owner.

1.07 SEQUENCING AND SCHEDULING

A. Coordinate work performed under this section with work performed under the separate installation contract.

1.08 WARRANTY

A. The complete unit shall be covered by a parts warranty issued by the manufacturer covering the first year of operation. This warranty period shall start upon receipt of start-up forms for the unit or eighteen months after the date of shipment, whichever occurs first.

B. The installing contractor shall provide labor warranty during the unit's first year of operation.

1.07 FACTORY TESTING

A. Leakage Test and Deflection

1. The casing leakage of the unit shall not exceed 1% of the design airflow of the unit when tested at 1.5 times the scheduled operating pressure. (Units under 10,000 c.f.m. shall be tested in accordance with SMACNA Class 4 requirements). Panel deflection shall not exceed $1/180^{th}$ of the span of the panels for 2" walls and $1/240^{th}$ of the span of the panels for 4" walls when operating at 1.5 times the scheduled operating pressure or a maximum of 12"w.c. static pressure.

PART TWO - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Provide air handling units as manufactured by TMI, Temtrol, Governair, Energy Labs, or Innovent provided the construction specifications capacities, performance criteria, and space constraints are met. Alternate products complying with the construction specifications, capacities, performance criteria, and space constraints may be submitted for consideration and must obtain written prior approval from Architect prior to bidding.

A. Manufacturer's Qualifications: Company experienced in manufacturing Products specified in this Section with minimum of 10 years.

B. Cable Splicer Qualifications:
   1. Workers' Competency: Submit high voltage cable splicer certification of competency and experience 30 days before splices or terminations are made in high voltage cables. Splicer experience during the immediate past three years shall include performance in splicing and terminating cables of the types and classification being provided under this Subcontract. In lieu of a certification of competency, a Subcontractor may demonstrate the qualifications of a proposed cable splicer through formal training and relevant experience in splicing cables of the type and class under this Subcontract.
   2. A notarized listing of relevant projects completed by the proposed splicer during the past three years and completed formal training must be submitted to demonstrate qualifications.
   3. Before assigning cable splicer to work covered by this specification, the Subcontractor shall provide the University with the names of the cable splicers to be employed, together with satisfactory proof that each splicer has had at least three years experience in splicing high-voltage cables and is experienced with the type and rating of cables to be spliced. In addition, each cable splicer may be required to make an approved dummy splice in the presence of the Project Manager in accordance with manufacturer's instructions, before the splicer is accepted to splice cable covered by this Specification.
   4. Material for dummy splices shall be furnished by the Subcontractor.

C. Factory Inspection by University: Following cable fabrication, the University reserves the right to have a factory inspection and witness testing of the cable. The Subcontractor shall notify the University in writing at least three weeks prior to factory tests. The University will provide the Subcontractor with a written waiver if a factory inspection and witness testing of the cable is not to be performed by the University.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Okonite Co., General Cable (Prysmian), Kerite Co., or equal.

2.2 15KV CABLE

A. This Specification describes requirements for 15kV Class (133 percent Insulation level) shielded power cable for use in power distribution. Cable provided must be single conductor, jacketed, and insulated with a high quality, heat, moisture, impact, ozone, and corona resistant thermosetting (ethylene propylene) rubber that shall be suitable for use in wet or dry locations in conduit, underground duct systems, direct burial, and aerial installations.

B. Conductors:
   1. Conductor material shall be annealed uncoated copper in conformance with ASTM B-3.
   2. Conductors shall be either concentric stranded in conformance with ASTM B-8 or compact-round-stranded in conformance with ASTM B-496.

2.03 COUPLINGS, CONNECTIONS, ETC.

A. Flexible conduit connectors shall be insulated throats. "Anti-short" bushings shall be used at all motor connections.

B. "Split" or "Erickson" couplings.

C. Expansion couplings.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Heavy wall intermediate metal conduit to be made up with full threads, to which a conductive pipe compound (T & B Kopr-Shield or equal) has been applied, and butted in couplings.

B. Underground runs outside building footprint shall have minimum of 24" cover, filled and tamped in 6" layers. An 8" wide, yellow warning tape reading "Danger Electrical Conduits" shall be provided for each underground conduit run. Bury maximum 12" below finished grade entire length of conduit run.

C. Support conduit as required by code.

D. All raceways shall be concealed unless specifically shown or approved otherwise.

E. Make all cuts square. Remove any burrs by reaming.

F. EMT shall be attached to boxes or enclosures with steel compression couplings and fittings only.

G. EMT and IMC shall be attached to boxes or enclosures with flanged connector and locknuts with insulating bushing.

H. All hard raceways both exposed and concealed shall be run at right angles, either parallel or perpendicular to building lines. Flexible conduit may be run point-to-point only in concealed locations, but must be installed in a neat, workmanship-like manner, that is easily traced. Random, sagging runs shall not be allowed.

3.02 SLEEVES AND PENETRATIONS

A. Electrical Contractor shall provide sleeves and openings for raceways penetrating exterior walls, fire rated partitions, and roofs. Provisions for all such penetrations shall be as approved by the Architect/Engineer.

B. For any raceway passing through an exterior wall, above or below grade, provide appropriate sleeve and water proofing. Fill space between conduit and sleeve with appropriate compound (eg. lead and oakum) and then apply caulking compound - flush finished surfaces.

Manufacturer's name, labels, product identification, and batch numbers.

B. FRP Reinforcement shall be stored in a cool dry area away from direct sunlight, flame, moisture, or other hazards.

C. Store primer, saturant and protective coating under conditions as recommended by the manufacturer in a cool dry place out of direct sunlight. Products that have exceeded their shelf life shall not be used.

D. The contractor is required to confirm that all materials used in accordance with this Section conform to local, state, and federal environmental and worker's safety laws and regulations.

E. During operations, the contractor shall maintain barricades.

F. The contractor shall properly dispose of empty containers in accordance with local regulations.

G. Submittals: Shop Drawings for blocking as required.

PART 2 – PRODUCTS

2.1 FRP REINFORCEMENT FABRIC AND/OR LAMINATE

A. FRP Pre-cured strip shall be high strength, high modulus, unidirectional carbon fiber reinforced polymer (CFRP).

1. FRP pre-cured strip shall be of the type, size, layer and location as indicated on the Drawings.
2. FRP pre-cured strip shall meet the following minimum requirements:

Property	**Requirement**	**ASTM Test Method**
Laminate Tensile Strength, In primary fiber direction	406,000 psi (2,800 MPa)	D3039
Laminate Tensile Modulus, In primary fiber direction	$23.2x10^6$ psi (160,000 MPa)	D3039
Laminate Elongation at break	1.69 %	D3039
Laminate Thickness	0.047 inch (1.2 mm)	
Fiber Volume, minimum	68%	D2563

3. Approved manufacturers and/or products are:
   a. Sika CarboDur, Sika Corp., Lyndhurst, NJ.
   b. FYFE, An Aegion Company, Sand Diego, CA
   c. Alternate products must be submitted **and** approved by the Engineer a minimum of two weeks prior to the bid date.

2.2 EPOXY REPAIR MORTAR

A. Repair mortar shall be 100% solids, non-sag paste epoxy.

B. Approved manufactueres and/or products are:
   1. Sikadur 30, Sika Corp., Lyndhurst, NJ
   2. Sikadur 31, Sika Corp., Lyndhurst, NJ.
   3. FYFE, An Aegion Company, Sand Diego, CA
   4. Alternate products must be submitted **and** approved by the Engineer a minimum of two weeks prior to the bid date.

PART 3 – EXECUTION

3.1 GENERAL

A. Inspect surfaces to receive the work and report immediately in writing to the Engineer as required in the General Conditions and deficiencies in the surface that render if unsuitable for proper execution of this work.

B. Protect vehicles, concrete, and other items surrounding work area from dust or damage due to Work of this Section.

3.2 SURFACE PREPARATION

A. All concrete surfaces shall be dry and free of surface moisture and frost, and tested by the Contractor to evaluate moisture transmission in accordance with ASTM D4263, "Indicating Moisture in Concrete by the Plastic Sheet Method."

B. All concrete surfaces shall be sound. Remove deteriorated concrete, dust, laitance, grease, paint, curing compounds, waxes, impregnations, foreign particles, and other bond inhibiting materials from the surface by blast cleaning or equivalent mechanical means.

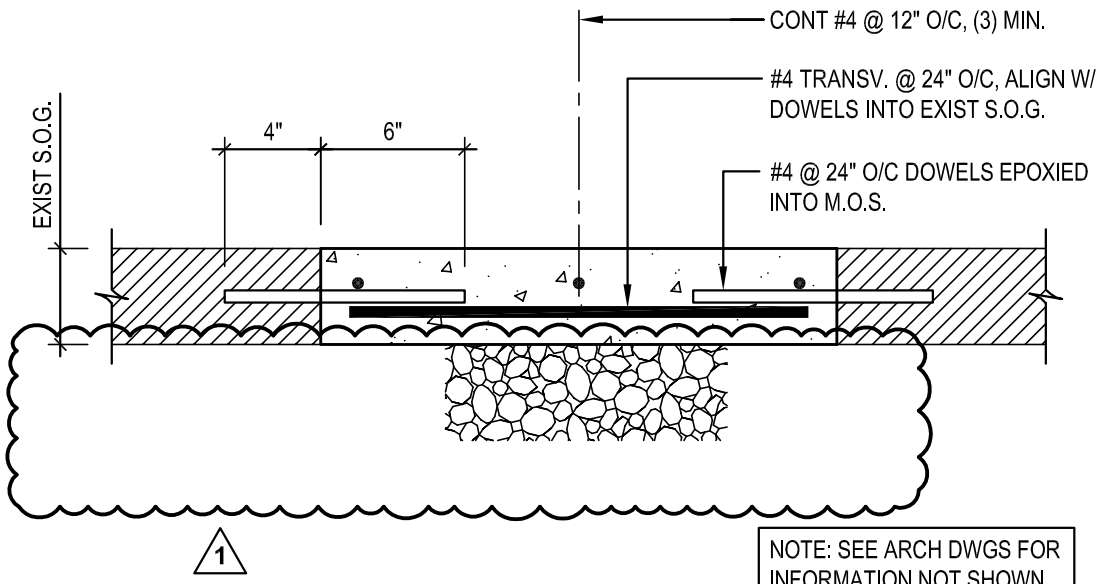
C. All concrete surfaces shall be air blasted and vacuumed clean to a dust free condition.

D. Concrete surface irregularities less than one inch shall be ground and smoothed and/or filled with an approved repair mortar (e.g., Sikadur 30) with the addition of one part oven dried sand to make an epoxy mortar. Surface irregularities shall be limited to less than 0.04 inches (1 mm). Surface irregularities greater than one inch shall be repaired using an approved cementitious repair mortar (e.g. SikaTop 123).

E. External concrete corners shall be rounded to at least a 1/2 inch radius when perpendicular to fiber orientation and internal corners shall be smoothed by troweling epoxy mortar into the corners.

F. The adhesive strength of the concrete shall be verified after preparation by random pull-off testing (ACI 503R) at the direction of the Engineer. Minimum tensile strength is 200 psi with concrete substrate failure, or as approved by the Engineer.

3.3 MIXING PRIMER AND SATURANT



9 / S801

TYPICAL DETAIL
EXISTING S.O.G. REPAIR

1 1/2" = 1'-0"

Dwg.# 160348-S7052.DWG

PURPOSE OF DRAWING: ADDENDUM #1 REVISIONS

Morris·Berg
ARCHITECTS
1401 WEST MOREHEAD STREET, SUITE 125, CHARLOTTE, NC 28208
(704) 552-5800 FAX (704) 552-7420

UNC CHARLOTTE
SYCAMORE HALL
RENOVATION

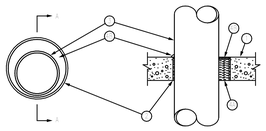
BULLETIN DRAWING TITLE:

PROJECT NUMBER SCO ID#16-12735

DRAWING NUMBER **SBD-01**

RE: S801

System No. C-AJ-1155
September 26, 2000
F RATING - 3 HR
T RATING - 0 HR
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - 4 CFM/SQ FT



SECTION A-A

1. FLOOR OR WALL ASSEMBLY – MIN 4–1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100–150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 26 IN.
SEE CONCRETE BLOCKS (CAZT) CATEGORY IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. METALLIC SLEEVE (OPTIONAL) – NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL ASSEMBLY.

3. THROUGH PENETRANTS – ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE ANNULAR SPACE SHALL BE MIN 0 IN.(POINT CONTACT) TO MAX 2–1/4 IN. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:

A. STEEL PIPE – NOM 20 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE – NOM 20 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
C. CONDUIT – NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOM 6 IN. DIAM (OR SMALLER) STEEL CONDUIT.
D. COPPER TUBING – NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
E. COPPER PIPE – NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

4. FIRESTOP SYSTEM – THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

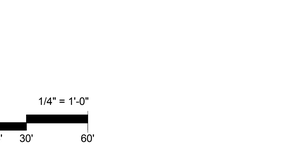
A. PACKING MATERIAL – MIN 4 IN. THICKNESS OF MIN 4.0 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP END OF SLEEVE FOR FLOORS OR FROM BOTH ENDS OF SLEEVE FOR WALLS AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

B. FILL, VOID OR CAVITY MATERIAL* – SEALANT – MIN 1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE TOP END OF THE SLEEVE FOR FLOORS, OR WITH BOTH ENDS OF THE SLEEVE FOR WALLS. MIN 1/2 IN. THICK BEAD OF ALL MATERIAL TO BE INSTALLED AROUND PIPE AT INTERFACE OF SLEEVE FOR POINT CONTACT INSTALLATIONS.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – FS–ONE SEALANT
*BEARING THE UL CLASSIFICATION MARK

3 U.L SYSTEM NO C-AJ-1155 DETAIL
NO SCALE

System No. W-L-1054
December 04, 2002
F RATINGS - 1 AND 2 HR (SEE ITEMS 1 AND 3)
T RATING - 0 HR
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - 4 CFM/SQ FT



SECTION A–A

1. WALL ASSEMBLY – THE 1 OR 2 HR FIRE–RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS – WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2–1/2 IN. WIDE AND SPACED MAX 24 IN. OC. WHEN STEEL STUDS ARE USED AND THE DIAM OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW–ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4 TO 6 IN. WIDER AND 4 TO 6 IN. HIGHER THAN THE DIAM OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 IN. CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.

B. GYPSUM BOARD* – 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 32–1/4 IN. FOR STEEL STUD WALLS. MAX DIAM OF OPENING IS 14–1/2 IN. FOR WOOD STUD WALLS.

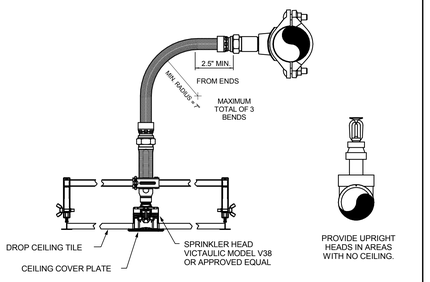
THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.

2. THROUGH–PENETRANTS – ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 2–1/4 IN. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45 DEGREES FROM PERPENDICULAR. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. STEEL PIPE – NOM 30 IN DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE – NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
C. CONDUIT – NOM 4 IN DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. DIAM STEEL CONDUIT.
D. COPPER TUBING – NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
E. COPPER PIPE – NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

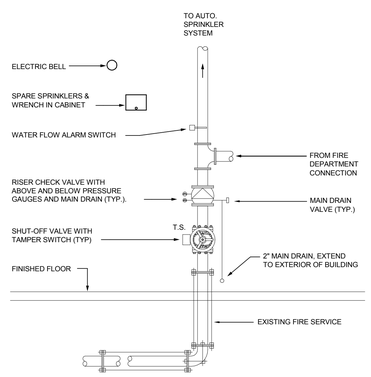
3. FILL, VOID OR CAVITY MATERIAL* – SEALANT – MIN 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL. A MIN 1/2 IN. DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – FS–ONE SEALANT
*BEARING THE UL CLASSIFICATION MARK

4 U.L SYSTEM NO W-L-1054 DETAIL
NO SCALE

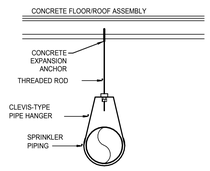


BRAIDED AQUAFLEX FLEXIBLE HOSE SPRINKLER ASSEMBLIES FOR CONCEALED PENDENT SPRINKLERS

1 TYPICAL RETURN BEND SCHEMATIC
NO SCALE



2 EXISTING SPRINKLER RISER DETAIL
NO SCALE



5 SPRINKLER PIPE SUSPENSION DETAIL
NO SCALE

FIRE PROTECTION LEGEND

N	PROVIDE NEW SPRINKLER, MATCH EXISTING
E	EXISTING SPRINKLER TO REMAIN
	REMOVE EXISTING SPRINKLER
E	RELOCATE DROP & PROVIDE NEW SPRINKLER

INSTALL SPRINKLERS IN ACCORDANCE WITH NFPA 13, SPRINKLER LISTING AND THE MANUFACTURERS RECOMMENDATIONS.

FIRE PROTECTION NOTES

GENERAL REQUIREMENTS:

1. THE EXISTING BUILDING IS PROTECTED THROUGHOUT BY AN AUTOMATIC, HYDRAULICALLY DESIGNED SPRINKLER SYSTEM. PROVIDE DESIGN, MATERIALS AND LABOR NEEDED TO MODIFY THE EXISTING SYSTEM TO CONFORM TO THE NEW SPACE LAYOUT. DELIVER A MODIFIED SYSTEM THAT MEETS THE INSTALLATION REQUIREMENTS OF THE 2013 EDITION OF NFPA 13.
2. IF NEW SPRINKLERS MUST BE ADDED, PROVIDE SPRINKLERS OF THE SAME CHARACTERISTICS (TYPE, ORIFICE SIZE, K FACTOR, FINISH, ETC.) AS THE EXISTING SPRINKLERS.
3. SPRINKLER CONTRACTOR SHALL SECURE A COMPLETE SET OF CONSTRUCTION DOCUMENTS (DRAWINGS AND SPECIFICATIONS) AND COORDINATE THE LOCATION OF EXISTING AND NEW SPRINKLERS WITH THE WORK OF OTHER TRADES. RELOCATE AND ADD SPRINKLERS AS NEEDED TO PROVIDE ADEQUATE COVERAGE UNDER THE INSTALLATION REQUIREMENTS OF THE LATEST EDITON OF NFPA 13.
4. THE INTENT OF THESE PLANS IS TO PROVIDE INFORMATION TO THE REVIEWING AUTHORITIES THAT THE BUILDING WILL BE PROTECTED BY A SPRINKLER SYSTEM FOR PERMIT APPROVAL. SPRINKLER (HEAD) LAYOUT INCLUDED WITH THIS SET OF PLANS IS PROVIDED FOR COORDINATION WITH RESPECT TO LIGHTS, CEILING GRID, MECHANICAL DIFFUSERS, ETC. THE FP CONTRACTOR SHALL PROVIDE A COMPLETE SET OF SHOP DRAWINGS TO ENGINEER FOR REVIEW IF MORE THAN 20 HEADS HAVE BEEN ADDED TO THE AREA OF WORK INDICATED ON DRAWINGS.
5. WHERE MODIFICATION OF THE SYSTEM INCLUDES THE ADDITION OF 20 OR MORE SPRINKLERS, PROVIDE HYDRAULIC CALCULATIONS TO DEMONSTRATE THE PRESSURE AND FLOW REQUIREMENTS ARE SATISFIED AND IN COMPLIANCE WITH NFPA 13. CALCULATIONS SHALL SHALL MEET ALL THE REQUIREMENTS OF NFPA 13.
6. IN ALL CASES, EVEN IF CALCULATIONS ARE NOT REQUIRED, PROVIDE A COMPLETE SET OF SHOP DRAWINGS, USING THE FLOOR PLANS OBATINED FROM THE ARCHITECT, SHOWING THE COMPLETE SPRINKLER SYSTEM LAYOUT. INDICATE ON THE PLANS THE HAZARD ASSUMED FOR THE SPACE(S) AND CLEARLY INDICATE THE TYPE OF SPRINKLER PROVIDED IN EACH AREA.

FIRE PROTECTION CRITERIA (BASE BID)

OVERALL DESCRIPTION
THE CONSTRUCTION WILL CONSIST OF RENOVATIONS TO AN EXISTING 4 STORY BUILDING AND ITS FIRE PROTECTION SYSTEM. THE BUILDING IS LOCATED IN CHARLOTTE, NORTH CAROLINA. BUILDING SERVED BY AN EXISTING 6" FIRE MAIN.

ACCEPTANCE TESTING
THE FIRE SPRINKLER ACCEPTANCE TESTING SHALL BE PROVIDED PER NFPA 13, 2013 EDITION.

OCCUPANCY CLASSIFICATION
THE BUILDING IS AN EXISTING 4 STORY DORMITORY RENOVATED TO OFFICE SPACE, LIGHT HAZARD OCCUPANCY

STRUCTURAL SUPPORT
STRUCTURAL SUPPORT AND STRUCTURAL OPENINGS FOR THE FIRE PROTECTION SYSTEM INCLUDING LIVE AND DEAD LOADS HAVE BEEN COORDINATED WITH THE STRUCTURAL ENGINEER. STEEL SLEEVES WILL BE SET PRIOR TO CONCRETE PLACEMENT, TO PROVIDE FOR PENETRATIONS OF FIRE PROTECTION PIPING, THROUGH THE FLOORS OR ROOF STRUCTURE. CORE DRILLING WILL BE ALLOWED FOR CMU WALL PENETRATIONS FOR FIRE PROTECTION PIPING AS MAY BE REQUIRED. ALL PENETRATIONS WILL BE PROPERLY FIRE-CAULKED, AS REQUIRED.

POINT OF SERVICE:
FP CONTRACTOR'S WORK BEGINS AT RISER. CONTRACTOR TO PROVIDE NEW RISER ASSEMBLY.

GOVERNING STANDARDS:
SYSTEM DESIGN AND INSTALLATION SHALL COMPLY WITH 2013 EDITION OF NFPA 13, 2013 EDITION OF NFPA 14, AND THE 2014 EDITION OF NFPA 25 AS WELL AS THE 2012 NORTH CAROLINA BUILDING CODE AND THE 2012 NORTH CAROLINA FIRE PREVENTION CODE.

DESIGN APPROACH:
THE SYSTEM SHALL BE EVALUATED TO BE REUSED. THE BUILDING SHALL ONLY BE PROVIDED WITH A MANUAL, WET STANDPIPE SYSTEM AS A PART OF THE BASE BID. THE CONTRACTOR IS RESPONSIBLE FOR UPGRADE OF EXISTING STANDPIPE SYSTEM TO MEET CURRENT CODE REQUIREMENTS.

FLOW TEST INFORMATION:
TEST DATE: 1/25/17 - 10:15 AM
STATIC: 54 PSIG / RESIDUAL: 47 PSIG
919 GPM
FLOW AT 20 PSIG: 2157

VALVING AND ALARM REQUIREMENTS:
INSTALL FLOW SWITCH IN FIRE RISER AND PUT TAMPER SWITCH ON CONTROL VALVE IN RISER WITH LOCAL AUDIBLE ALARM AND CENTRAL STATION MONITORING. PROVIDE TAMPER SWITCHES ON OS&Y VALVES ON FIRE BACKFLOW DEVICE. CONTRACTOR SHALL REPLACE BACKFLOW DEVICE WITH NEW RPZ TYPE.

MIC RISK EVALUATION:
THERE IS A MINIMAL RISK OF MIC IN THE WATER SUPPLY FOR THIS LOCATION ACCORDING TO THE LOCAL AHJ.

COMPONENT SPECIFICATIONS:
ALL INSIDE AND UNDERGROUND PIPING, VALVES, SWITCHES, AND OTHER COMPONENTS TO BE UL AND FM LISTED MATERIALS FOR FIRE PROTECTION. ALL UNDERGROUND PIPING SHALL BE INSTALLED BY A STATE CERTIFIED CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR PIPING OUTSIDE OF THE BUILDING UP TO ONE FOOT ABOVE FINISHED FLOOR INSIDE THE BUILDING.

1

FIRE PROTECTION CRITERIA (ALTERNATE #8)

DESIGN APPROACH:
THE SYSTEM SHALL BE EVALUATED TO BE REUSED. DUE TO LIMITED FLOOR TO FLOOR ELEVATION, COMPLETE RE-WORK, WITH NEW MAINS, BRANCH PIPING, AND HEADS SHALL BE REQUIRED. PROVIDE PENDENT HEADS IN AREAS WITH CEILINGS, UPRIGHT HEADS IN BALANCE OF BUILDING.

DESIGN CRITERIA NFPA 13

SPRINKLER HEADS SHALL BE SPACED IN ACCORDANCE WITH NFPA 13 AND THE MANUFACTURERS APPROVAL LISTING.

SPRINKLER HEAD SPACING SHALL NOT EXCEED 225 SQ.FT. PER HEAD FOR LIGHT HAZARD AREAS. SPRINKLER HEAD SPACING SHALL NOT EXCEED 130 SQ.FT. PER HEAD FOR ORDINARY HAZARD AREAS.

LIGHT HAZARD OCCUPANCIES INCLUDE BUT NOT LIMITED TO:
OFFICE SPACES, RESTROOMS, WAITING AND RECEPTION AREAS.

ORDINARY GROUP 1 OCCUPANCIES INCLUDE BUT NOT LIMITED TO:
MECHANICAL ROOMS, ELECTRICAL ROOMS, SMALL STORAGE AND JANITOR ROOMS.

DESIGN DENSITY FOR LIGHT HAZARD .10/1500 + 100 HOSE MINIMUM.
DESIGN DENSITY FOR ORD HAZARD 1 .15/1500 + 250 HOSE MINIMUM.

SAFETY FACTOR OF 10 PSI LESS IS REQUIRED FOR STATIC AND RESIDUAL PRESSURES AND SAFETY FACTOR OF 10% LESS IS REQUIRED FOR FLOW.

F.P. CONTRACTOR SHALL TERMINATE THE HYDRAULIC CALCULATIONS AT THE CITY CONNECTION MINIMUM. INDICATE ON DRAWINGS ALL UNDERGROUND PIPE AND FITTINGS BOTH NEW AND EXISTING.

CONTRACTOR MAY USE AREA REDUCTION PER NFPA 13 IF APPLICABLE.

FIRE PROTECTION SPECIFICATIONS

WORKING PLANS , DESIGN, INSTALLATION

PROVIDE DESIGN, FABRICATION AND INSTALLATION OF A HYDRAULICALLY CALCULATED AUTOMATIC SPRINKLER SYSTEM. INCLUDE ALL SERVICES, MATERIALS, LABOR AND EQUIPMENT REQUIRED FOR A COMPLETE WORKING SYSTEM. DESIGN, AND INSTALL SPRINKLER SYSTEM IN FULL COMPLIANCE WITH THE REQUIREMENTS OF THE 2013 EDITION OF NFPA 13, THE OWNER'S INSURANCE UNDERWRITER AND THE LOCAL AUTHORITIES.

PROVIDE SHOP DRAWINGS FOR REVIEW BY THE A/E, INCLUDING BUT NOT LIMITED TO ALL REQUIRED ITEMS AS OUTLINED IN NFPA 13 CHAPTER 22 "PLANS AND CALCULATIONS". SHOP DRAWINGS MUST BE PREPARD BY A NICET LEVEL III TECHNICIAN (MINIMUM), INCLUDE DESIGNERS NAME, SIGNATURE AND CERTIFICATE NUMBER.

DESIGN AND HYDRAULICALLY CALCULATE THE SPRINKLER SYSTEM UTILIZING THE INFORMATION INCLUDED HEREON. MEET ALL NFPA 13 STANDARDS WHETHER OR NOT SPECIFICALLY INDICATED WITHIN THESE DOCUMENTS.

OBTAIN CURRENT UP-TO-DATE WATER FLOW TEST INFORMATION BEFORE STARTING THE DESIGN. WATER FLOW TEST DATA OLDER THAN 1 YEAR WILL NOT BE ACCEPTED. FLOW TEST DATA NOTED ON THESE PLANS DOES NOT WAIVE THE CONTRACTOR'S RESPONSIBILITY TO MEET THIS REQUREMENT.

THE INTENT OF THESE PLANS IS TO PROVIDE INFORMATION TO THE REVIEWING AUTHORITIES THAT THE BUILDING WILL BE PROTECTED BY A SPRINKLER SYSTEM. SPRINKLER (HEAD) LAYOUT INCLUDED WITH THIS SET OF PLANS IS PROVIDED FOR COORDINATION AND AS A REFERENCE ONLY, AND SHALL NOT BE CONSIDERED AN ACTUAL DESIGN OR CONSTRUCTION DOCUMENT.

PRIOR TO THE START OF CONSTRUCTION, SUBMIT EIGHT (1) SETS OF ELECTRONIC SPRINKLER PLANS, MATERIALS DATA AND HYDRAULIC CALCULATIONS FOR THE A/E REVIEW. APPROVED PLANS SHALL BE SUBMITTED TO SCO FOR FINAL REVIEW AND APPROVAL.

EXAMINE THE CONSTRUCTION DOCUMENTS, INCLUDING ANY SPECIFICATIONS OR PROJECT MANUALS, REVIEW THE JOB CONDITIONS AND VERIFY ALL MEASUREMENTS, DISTANCES, ELEVATIONS, CLEARANCES, PIPE SIZES, ETC. PRIOR TO THE START OF CONSTRUCTION. COORDINATE THE LOCATION OF SPRINKLERS WITH THE ARCHITECTURAL PLANS. ANY CHANGES OR ALTERATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPOSIBILITY OF THE CONTRACTOR.

AT THE COMPLETION OF THE PROJECT, PROVIDE TO THE OWNER TWO SETS OF RECORD DRAWINGS WHICH CLEARLY SHOW ANY CHANGES AND/OR MODIFICATIONS, ADDITIONS OR DELETIONS TO AND FROM THE CONSTRUCTION DOCUMENTS, AND ALL WORK ADDED TO THE CONTRACT DOCUMENTS. THE SETS SHALL BE REVIEWED BY THE A/E BEFORE TURNING THEM OVER TO THE OWNER.

PROVIDE ALL NECESSARY OFFSETS, RISES OR DROPS IN THE PIPING AND AUXILIARY DRAINS AS REQUIRED BY BUILDING CODES WHETHER OR NOT SHOWN ON THE PLANS.

PROVIDE RECORD DRAWINGS WHICH CLEARLY SHOW ALL UNDERGROUND PIPING DIMENSIONED FROM ANY PERMANENT STRUCTURE, AND ALL WORK ADDED TO THE CONTRACT DOCUMENTS.

WARRANT THE SYSTEM LABOR, MATERIALS AND EQUIPMENT FOR THE AMOUNT OF TIME SPECIFIED IN THE PROJECT MANUAL. IF NO WARRANTY SECTION IS PROVIDED, THEN WARRANT THE SYSTEM LABOR, MATERIAL AND EQUIPMENT FOR A MINIMUM OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. PRIOR TO TURNING THE COMPLETED SYSTEM TO THE OWNER, REVIEW THE INSTALLATION WITH THE A/E AND REPLACE OR REPAIR ANY DEFECTIVE WORKMANSHIP, EQUIPMENT AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

MATERIALS

ABOVE GROUND PIPING AND FITTINGS - BLACK STEEL CONFORMING TO ASTM SPECIFICATIONS FOR BLACK AND HOT DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS STEEL PIPE FOR ORDINARY USES, ANSI/ASTM A53. FITTINGS SHALL BE WELDED, SCREWED, OR GROOVED MECHANICAL JOINT.

PIPE HANGERS - CONFORM TO NFPA 13 AND UL STANDARDS FOR SPACING, NUMBER, SIZE, AND TYPE. PIPE SHALL BE GENRALLY SUPPORED BY CLAMPS AND RODS SECURED TO OVERHEAD CONSTRUCTION.

VALVES - OS&Y TYPE, ORON BODY BRONZE MOUNTED, DOUBLE DISC WITH PARALLEL SEATS, OR: BUTTERFLY, LUG TYPE, DUCTILE IRON BODY, STAINLESS STEEL STEM, ALUMINUM BRONZE DISC, PHENOLIC RING AND BUNA N SEAT. VALVES SHALL BE FM/UL LISTED AND APPROVED FOR FIRE PROTECTION SERVICE.

ESCUTCHEON PLATES: PROVIDE CHROME PLATED ESCUTCHEON PLATES WHERE PIPES PASS THROUGH FINISHED WALLS, FLOORS, OR CEILING. PROVIDE PRIME COAT PAINTED ESCUTCHEON PLATES WHEREVER PIPES PASS THROUGH THE WALLS, FLOORS, OR CEILINGS IN UNFINISHED EXPOSED AREAS.

TESTING AND FLUSHING: OVERHEAD SPRINKLER PIPING: TESTED FOR A PERIOD OF TWO HOURS AT A HYDROSTATIC PRESSURE OF 200 LBS. AND ALL PIPING, VALVES, HEADS,ETC. SHALL BE WATERTIGHT.

ACCEPTANCE TESTS AND MAINTENANCE

SYSTEMS SHALL PASS A HYDROSTATIC PRESSURE TEST PERFORMED FOR THE UNDERGROUND AND ABOVE GROUND PIPING SYSTEM IN ACCORDANCE WITH NFPA 13.

ALL TESTS SHALL BE WITNESSED BY THE ENGINEER OF RECORD. ALL FIRE PENETRATIONS SHALL BE FILLED WITH APPROVED MATERIAL AND NAIL PLATES SHALL BE IN PLACE AT TIME OF TEST. WHERE METAL STUDS ARE USED, PIPING SHALL BE PROTECTED WITH EITHER A SLEEVE OR GROMMET.

ALL RISERS SHALL HAVE A HYDRAULIC DATA NAMEPLATE IN ACCORDANCE WITH NFPA 13. SPARE SPRINKLER HEADS SHALL BE LOCATED IN A SPARE HEAD CABINET WITH SPRINKLER HEAD WRENCH. LABELS FOR INSPECTORS TEST, AUXILIARY CONTROL VALVES, ETC SHALL BE IN PLACE. BUILDING DIAGRAM SHALL BE IN PLACE AT EACH RISER.

TRUE NORTH
PLAN NORTH
1/4" = 1'-0"
0' 15' 30' 60'

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040327 2/27/18 ENGINEER LARRY P. McWILLIAMS

UNC CHARLOTTE

BID SET

ISSUE DATE: FEBRUARY 28, 2018

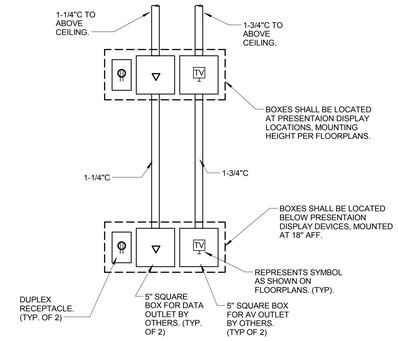
SCO ID# 16-12735-02A
CODE:41526 ITEM:303

SYCAMORE HALL RENOVATION
UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE
9201 UNIVERSITY CITY BOULEVARD, CHARLOTTE, NC 28223

PROJECT NUMBER 1610

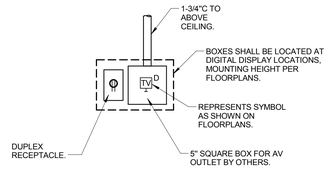
SHEET TITLE
FIRE PROTECTION CRITERIA

SHEET NUMBER
FP001



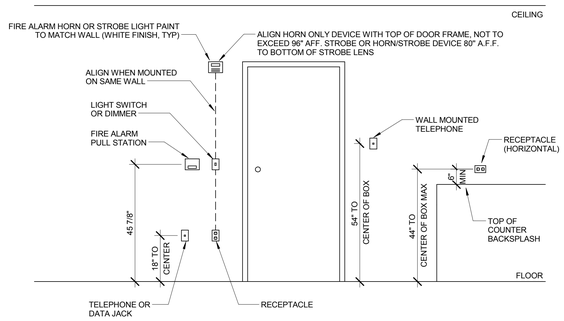
PRESENTATION DISPLAY MONITOR DETAIL

8 / E006 SCALE: NTS



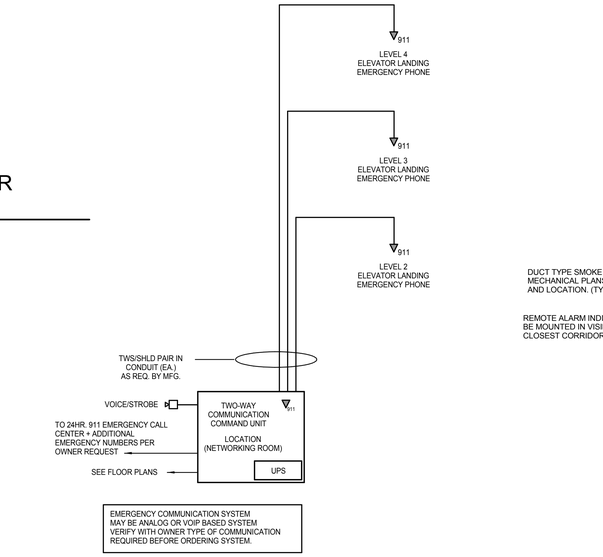
DIGITAL SIGNAGE DISPLAY MONITOR DETAIL

5 / E006 SCALE: NTS



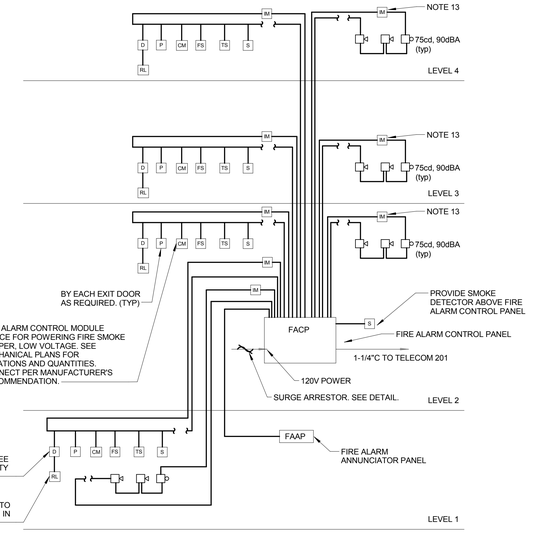
MOUNTING HEIGHT DIAGRAM

4 / E006 SCALE: NTS



ELEVATOR TWO-WAY COMMUNICATION DIAGRAM

6 / E006 SCALE: NTS



FIRE ALARM SYSTEM NOTES:

1. FIRE ALARM DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH NFPA 72 AND ADA.
2. ACTUATION OF ANY PULL STATION, FLOW SWITCH OR SMOKE DETECTOR SHALL ACTIVATE GENERAL ALARM.
3. FIRE ALARM SYSTEM SHALL BE *ADDRESSABLE* , 24VDC, POWER LIMITED, FULLY SUPERVISED, WITH 5 MINUTE ALARM, 60 HOUR STANDBY BATTERY SYSTEM.
4. NOTE THAT FIRE ALARM PLANS SUBMITTED HEREIN FOR BUILDING PERMIT ARE NOT PART OF THE BUILDING PLANS REVIEW. A SEPARATE SUBMITTAL AND PERMIT IS REQUIRED FOR THE FIRE ALARM AND/OR FIRE SPRINKLER SYSTEM.
5. ALL FIRE ALARM SWITCHES, MODULES, AND WIRING SHALL BE PROVIDED BY THE FIRE ALARM SUB-CONTRACTOR. FIRE ALARM SYSTEM SUB-CONTRACTOR SHALL BE RESPONSIBLE TO SUBMIT DETAILED SYSTEM DRAWINGS, CUTSHEETS, WIRING DIAGRAMS, ETC. AS REQUIRED FOR FINAL PERMITTING.
6. ALL COMPONENTS NECESSARY FOR CERTIFICATE OF OCCUPANCY SHALL BE INCLUDED IN THE BID. SEE PLANS FOR MINIMUM NUMBER OF DEVICES. PROVIDE ADDITIONAL DEVICES WHERE DIRECTED BY FIRE MARSHALL.
7. INITIATING DEVICE CIRCUITS SHALL BE CLASS B, STYLE A; SIGNAL LINE CIRCUITS SHALL BE CLASS A, STYLE 1; NOTIFICATION APPLIANCE CIRCUITS SHALL BE CLASS B, STYLE W.
8. ALL TAMPER AND FLOW SWITCH CONNECTION LOCATIONS TO BE FIELD VERIFIED WITH SPRINKLER SUB-CONTRACTOR AS REQ'D.
9. COORD. WITH M.C. TO PROVIDE SHUTDOWN INTERLOCK WIRING TO RESPECTIVE AHU AS REQUIRED.
10. PROVIDE PHENOLIC DUCT DETECTOR INDICATING PLATE (WHITE/BLACK LETTERS) ON CEILING GRID UNDER EACH RESPECTIVE DUCT DETECTOR LOCATION. ADDRESSABLE PANEL DISPLAY TO NOTE ROOM NUMBER FOR ALL DEVICES.
11. PROVIDE SURGE PROTECTIVE DEVICE ON FACP INCOMING AC POWER (ADJACENT TO POWER PANEL.) ANY EXTERIOR FIRE ALARM CIRCUITS SHALL BE PROVIDED WITH SURGE PROTECTION AT THE POINT OF ENTRY TO THE BUILDING. ANY EXTERIOR CIRCUITS SHALL BE INSTALLED IN CONDUIT, MINIMUM 18" BELOW GRADE WITH ORANGE WARNING TAPE 6" ABOVE THE CONDUIT.
12. MAINTAIN A MINIMUM OF 3 FEET BETWEEN FIRE DETECTION DEVICES AND AIR DEVICES.
13. ISOLATION MODULES SHALL BE INSTALLED AT THE FACP ON BOTH THE OUTGOING AND THE RETURN CONDUCTOR OF EACH LOOP. ADDITIONALY, ISOLATION MODULES SHALL BE INSTALLED AFTER EACH 20 DEVICES. ISOLATION MODULES SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE NEAREST LOOP DEVICE AND SHALL BE IDENTIFIED BY A MACHINED LABEL AT THAT DEVICE.

FIRE ALARM RISER DIAGRAM

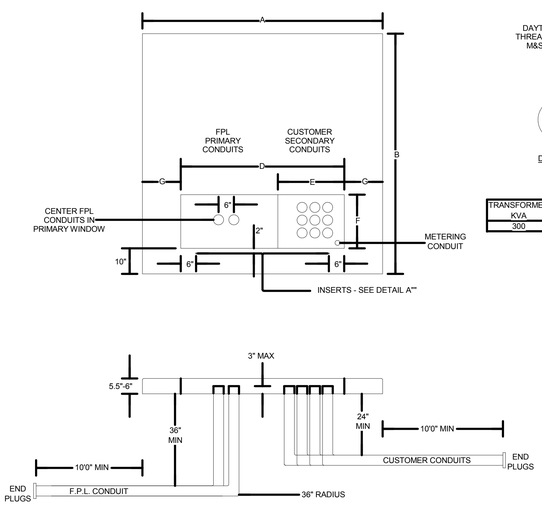
2 / E006 SCALE: NTS

TELEPHONE RISER NOTES:

1. TWO (2) 4"C TO TELEPHONE SERVICE POINT. COORDINATE WITH TELEPHONE PROVIDER FOR LOCATION OF TERMINATION POINT.
2. PROVIDE TWO (2) DUPLEX RECEPTACLES ON A DEDICATED CIRCUIT FOR TELEPHONE AND OTHER COMMUNICATION EQUIPMENT.
3. PROVIDE 1-1/4"C STUBBED ABOVE CEILING WITH INSULATING BUSHING FOR EACH TELEPHONE ONLY OR DATA ONLY OUTLET.
4. PROVIDE 1-1/4"C STUBBED ABOVE CEILING WITH INSULATING BUSHING FOR EACH COMBINATION TELEPHONE/DATA OUTLET.
5. PROVIDE INSULATING BUSHING ON ENDS OF ALL CONDUITS.
6. TWO (2) 3"C, STUB INTO CORRIDOR AND CAP. REFER TO TELECOM DRAWINGS AND COORDINATE WITH LOW VOLTAGE CONSULTANT FOR LOCATION AND ROUTING OF TELECOM CONDUIT.

TELEPHONE RISER DIAGRAM

1 / E006 SCALE: NTS



TRANSFORMER KVA	A	B	D	E	F	G
300	78	78	60	25	21	9

TRANSFORMER PAD DETAIL

7 / E006 SCALE: NTS

FIRE ALARM SYSTEM MATRIX

SYSTEM INPUTS \ FIRE ALARM SYSTEM BLDG RESPONSE / CENTRAL COMMUNICATOR	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE GENERAL EVACUATION SIGNAL	CLOSE FIRE/SMOKE DAMPERS	SEND FIRE ALARM SIGNAL TO CENTRAL COMM.	SEND SUPERVISORY SIGNAL TO CENTRAL COMM.	SEND TROUBLE SIGNAL TO CENTRAL COMM.	AHU SHUTDOWN	RELEASE OF ELECTROMAGNETIC DOOR HOLDERS	SHOW CHANGE OF STATUS ON ANNUNCIATOR	SHOW CHANGE OF STATUS ON CENTRAL PANEL	SEND FIRE ALARM SIGNAL TO CENTRAL STATION	SEND SUPERVISORY SIGNAL TO CENTRAL STATION	SEND TROUBLE SIGNAL TO CENTRAL STATION	INITIATE ELEVATOR CAPTURE	INITIATE ELEVATOR POWER SHUNT TRIP
MANUAL FIRE ALARM PULL STATION	o	o				o	o	o						o	o	o					
BUILDING SMOKE DETECTOR	o	o				o	o	o					o	o	o	o					
BUILDING HEAT DETECTOR	o	o				o	o	o					o	o	o	o					
BUILDING DUCT DETECTOR			o	o					o		o			o	o		o				
SPRINKLER WATERFLOW	o	o				o	o	o						o	o	o					
SPRINKLER TAMPER			o	o					o					o	o		o				
FIRE ALARM AC POWER FAILURE					o	o				o				o	o			o			
FIRE ALARM SYSTEM LOW BATTERY					o	o				o				o	o			o			
OPEN CIRCUIT					o	o				o				o	o			o			
GROUND FAULT					o	o				o				o	o			o			
NOTIFICATION APPLIANCE CIRCUIT SHORT					o	o				o				o	o			o			
AHU SHUTDOWN DEFEAT SWITCH	o	o							o					o	o		o				
SMOKE DETECTOR AT ELEVATOR LOBBIES, SHAFT OR MACHINE SPACE																			o		
HEAT DETECTOR AT ELEVATOR SHAFT OR MACHINE SPACE																					o

FIRE ALARM SYSTEM MATRIX NOTES:

1. COORDINATE SYSTEM RESPONSE TO DUCT SMOKE DETECTORS WITH OWNER.
2. COORDINATE WITH FIRE SPRINKLER DESIGNER TO INCLUDE LOW TEMPERATURE TROUBLE INDICATION IN EXISTING FIRE SPRINKLER HOT BOX AS REQUIRED.
3. COORDINATE SEQUENCE OF OPERATIONS WITH OWNER AND SYSTEM MANUFACTURER.

FIRE ALARM SYSTEM MATRIX

3 / E006 SCALE: NTS

TRUE NORTH

PLAN NORTH

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License No.:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040774 04/26/18 CHRISTINA D. CALDWELL

UNC CHARLOTTE

BID SET

ISSUE DATE: FEBRUARY 28, 2018

SCO ID# 16-12735-02A
CODE:41526 ITEM:303

SYCAMORE HALL RENOVATION

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

9201 UNIVERSITY CITY BOULEVARD, CHARLOTTE, NC 28223

PROJECT NUMBER 1610

SHEET TITLE
ELECTRICAL DETAILS

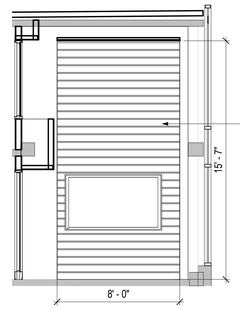
SHEET NUMBER
E006

FINISH SCHEDULE - BASE BID

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING	WINDOW TREATMENT	REMARKS
FIRST FLOOR							
100	LOBBY	LVT-1, LVT-2	RB-1	P-1, P-3	EXP, GB-1	-	
100A	VENDING	LVT-1	RB-1	P-1	GB-1	-	
100B	ELEV. CONTROL	SC-1	RB-1	P-1	EXP	-	
101	STORAGE	LVT-1	RB-1	P-1	EXP	-	
102	ELECT.	SC-1	RB-1	P-1	EXP	-	
102B	MAILROOM	LVT-2	RB-1	P-1	GB-1	-	
103	TOILET	FT-1	TB-1	EP-1, WT-1, WT-2	GB-2	-	FINISH REMARK #1
104	CORRIDOR	LVT-1, LVT-2	RB-1	P-1, P-5	EXP	-	
105	BREAK	LVT-1, LVT-2, LVT-3	RB-1	P-1, P-4	EXP, GB-1	VBLE	
106	TIMS OFFICE	CPT-1	RB-1	P-1	EXP	BL-E	
107	MECH.	SC-1	RB-1	P-1	EXP		
108	CONFERENCE ROOM	CPT-1	RB-1	P-1	EXP	BL-E	
109	CHARP OFFICE	CPT-1	RB-1	P-1, P-5	EXP	BL-E	
110B	DATA OFFICE	CPT-1	RB-1	P-1	EXP	BL-E	
E1	ELEVATOR	-	-	-	-	-	FINISH REMARK #2
SB.1	EXISTING STAIR	EXIST	EXIST	P-1	EXIST	-	FINISH REMARK #3
SECOND FLOOR							
200	CORRIDOR	LVT-1, LVT-2	RB-1	P-1, P-3, P-4, P-5	EXP, GB-1	BL-E	
200E	MAIN ELECTRICAL	SC-1	RB-1	P-1	EXP	-	
200M	MAIN MECHANICAL	SC-1	RB-1	P-1	EXP	-	
201	TELECOM	SC-1	RB-1	P-1	EXP	-	
202	CORRIDOR	CPT-1	RB-1	P-1, P-3, P-4, P-5	EXP	BL-E	
202A	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
202B.1	WS	CPT-1	RB-1	P-1	EXP	-	
202B.2	WS	CPT-1	RB-1	P-1	EXP	-	
202B.3	WS	CPT-1	RB-1	P-1	EXP	-	
202B.4	WS	CPT-1	RB-1	P-1	EXP	-	
202B.5	WS	CPT-1	RB-1	P-1	EXP	BL-E	
202B.6	WS	CPT-1	RB-1	P-1	EXP	BL-E	
202C	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	VBLE	
202D	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	-	
202E.1	WS	CPT-1	RB-1	P-1	EXP	-	
202E.2	WS	CPT-1	RB-1	P-1	EXP	-	
202E.3	WS	CPT-1	RB-1	P-1	EXP	BL-E	
202F	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
202G	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
202H	WORKROOM	CPT-1	RB-1	P-1, P-4	EXP	-	
202I	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
202J	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
203	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
204	ELECT.	SC-1	RB-1	P-1	EXP	-	
205	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
206	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
207	WS	CPT-1	RB-1	P-1	EXP	-	
208	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
209	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
210	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
211	STORAGE	LVT-1	RB-1	P-1	EXP	-	
212	MEN	FT-1	TB-1	EP-1, WT-1, WT-2	GB-2	-	FINISH REMARK #1
213	JANITOR	SC-1	RB-1	P-1, ST	EXP	-	
214	WOMEN	FT-1	TB-1	EP-1, WT-1, WT-2	GB-2	-	FINISH REMARK #1
215	CONF. ROOM	CPT-1	RB-1	P-1, P-3	EXP	BL-E	
216	ELECT.	SC-1	RB-1	P-1	EXP	-	
CS	CRAWLSPACE	-	-	-	-	-	
E2	ELEVATOR	-	-	-	-	-	FINISH REMARK #2
SA.2	EXISTING STAIR	EXIST	EXIST	P-1	EXIST		FINISH REMARK #3
SB.2	EXISTING STAIR	EXIST	EXIST	P-1	EXIST		FINISH REMARK #3
THIRD FLOOR							
300	CORRIDOR	LVT-1, LVT-2, LVT-3	RB-1	P-1, P-4, P-5	EXP	BL-E	
300A	VESTIBULE	FT-1	TB-1	P-1	GB-1	-	
301	LOBBY	CPT-1	RB-1	P-1	GB-1	BL-E	
302	COMMONS	CPT-1	RB-1	P-1	EXP, AC-1, AC-G3, AC-G4, AC-G5, AC-Y3, AC-Y4	-	
303	RECEPTION	CPT-1	RB-1	P-1, P-4	GB-1	BL-E	
304	ELECT.	SC-1	RB-1	P-1	EXP	-	
305	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
306	CONF. ROOM	CPT-1	RB-1	P-1, WW-1	EXP, WC-1	-	
307	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
308	ELEC.	SC-1	RB-1	P-1	EXP	-	
309	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
310	CORRIDOR	CPT-1	RB-1	P-1	EXP	BL-E	
310A	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
310B.1	WS	CPT-1	RB-1	P-1	EXP		
310B.2	WS	CPT-1	RB-1	P-1	EXP		
310B.3	WS	CPT-1	RB-1	P-1	EXP		
310B.5	WS	CPT-1	RB-1	P-1	EXP	BL-E	
310B.6	WS	CPT-1	RB-1	P-1	EXP	BL-E	
310C	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
310D	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
310E	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
310F	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
310G	OFFICE	CPT-1	-	P-1, P-2	EXP	BL-E	
310H	WORKROOM	CPT-1	RB-1	P-1	EXP	-	
310I	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
311	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
312	MEN	FT-1	TB-1	EP-1, WT-1, WT-2	GB-2	-	FINISH REMARK #1
313	JANITOR	SC-1	RB-1	P-1	EXP	-	
314	WOMEN	FT-1	TB-1	EP-1, WT-1, WT-2	GB-2	-	FINISH REMARK #1
315	STORAGE	LVT-2	RB-1	P-1	EXP	-	
317	CONF. ROOM	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
E3	ELEVATOR	-	-	-	-	-	FINISH REMARK #2
SA.3	STAIR	EXIST	EXIST	P-1	EXIST		FINISH REMARK #3
SB.3	STAIR	EXIST	EXIST	P-1	EXIST		FINISH REMARK #3
FOURTH FLOOR							
404	ELECT.	SC-1	RB-1	P-1	EXP	-	
408	JAN.	SC-1	RB-1	P-1	EXP	-	
408A	MECH.	-	-	-	EXP		
409	MEN	FT-1	TB-1	EP-1, WT-1, WT-2	GB-2	-	FINISH REMARK #1
410	WOMEN	FT-1	TB-1	EP-1, WT-1, WT-2	GB-2	-	FINISH REMARK #1
E4	ELEVATOR	-	-	-	-	-	FINISH REMARK #2
SA.4	EXISTING STAIR	EXIST	EXIST	P-1, P-3	EXIST	-	FINISH REMARK #3
SB.4	EXISTING STAIR	EXIST	EXIST	P-1	EXIST	-	FINISH REMARK #3

FINISH SCHEDULE - ALTERNATE #6

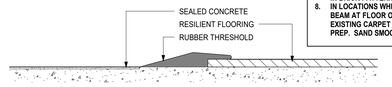
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING	WINDOW TREATMENT	REMARKS
FOURTH FLOOR							
400	CORRIDOR	LVT-1, LVT-2	RB-1	P-1, P-3, P-4, P-5	EXP	BL-E	
401	CORRIDOR	CPT-1	RB-1	P-1, P-3	EXP	BL-E	
401A.1	WS	CPT-1	RB-1	P-1	EXP		
401A.2	WS	CPT-1	RB-1	P-1	EXP		
401A.3	WS	CPT-1	RB-1	P-1	EXP		
401A.4	WS	CPT-1	RB-1	P-1	EXP		
401A.5	WS	CPT-1	RB-1	P-1	EXP	BL-E	
401A.6	WS	CPT-1	RB-1	P-1	EXP	BL-E	
401B.1	WS	CPT-1	RB-1	P-1	EXP		
401B.2	WS	CPT-1	RB-1	P-1	EXP		
401B.3	WS	CPT-1	RB-1	P-1	EXP	BL-E	
401B.4	WS	CPT-1	RB-1	P-1	EXP	BL-E	
401C.1	WS	CPT-1	RB-1	P-1	EXP		
401C.2	WS	CPT-1	RB-1	P-1	EXP		
401C.3	WS	CPT-1	RB-1	P-1	EXP	BL-E	
401D	COLLABORATION	CPT-1	RB-1	P-1	EXP	BL-E	
402	CORRIDOR	CPT-1	RB-1	P-1, P-4	EXP	-	
402.1	WS	CPT-1	RB-1	P-1	EXP		
402.2	WS	CPT-1	RB-1	P-1	EXP		
402.3	WS	CPT-1	RB-1	P-1	EXP		
402.4	WORK AREA	CPT-1	RB-1	P-1	EXP		
402A	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402B	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402C	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402D	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402E	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402F	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402G	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402H	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402I	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
402J	OFFICE	CPT-1	RB-1	P-1	EXP	-	
402K	STO.	CPT-1	RB-1	P-1	EXP	-	
403	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
405	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
406	OFFICE	CPT-1	RB-1	P-1, P-2	EXP	BL-E	
407	WORKROOM	CPT-1	RB-1	P-1	EXP	-	
409	MEN						
410	WOMEN						
411	CONF. ROOM	CPT-1	RB-1	P-1, P-2	EXP	BL-E	



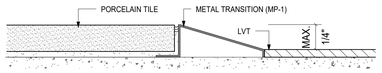
WOOD WALL & CEILING AT LARGE CONFERENCE ROOM

2 1/4" = 1'-0"

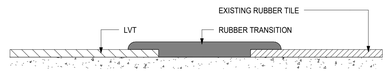
CARPET / LVT RESILIENT FLOORING TRANSITION



SEALED CONCRETE / LVT RESILIENT FLOORING TRANSITION



PORCELAIN TILE TO LVT TRANSITION

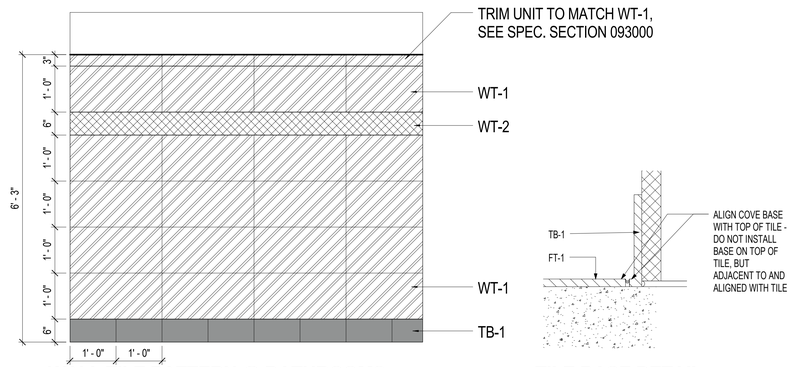


LVT TO EXISTING RUBBER TILE TRANSITION

GENERAL NOTE: TRANSITION BETWEEN ALL FLOOR FINISHES NOT TO EXCEED 1/4" HIGH VERTICAL

FLOOR TRANSITION DETAILS

1 12" = 1'-0"



WALL TILE PATTERN @ BATHROOMS

3 3/4" = 1'-0"

TILE BASE DETAIL

4 3" = 1'-0"

FINISH REMARKS

1. INSTALL WALL TILE ON WET WALLS ONLY- BEHIND TOILET AND ON TOILET SIDE WALL ONLY. TERMINATE WALL TILE AT INSIDE CORNERS.
2. SEE ELEVATOR SPEC FOR INTERIOR FINISHES IN ELEVATOR CAB.
3. ALL EXPOSED (PREVIUOSLY PAINTED) SURFACES IN STAIRS SHALL RECIEVE P-7 PAINT. THIS INCLUDES STRINGERS, HANDRAILS, GUARDRAILS, AND UNDERSIDE OF STAIR RUNS. THE UPPERMOST EXPOSED STRUCTURE OF EACH STAIR SHALL BE PAINTED P-1.

FINISH NOTES

1. ALL FINISHES ARE TO COMPLY WITH THE 2012 NORTH CAROLINA STATE BUILDING CODE CHAPTER 8.
2. ALL FINISH MATERIALS TO MEET OR EXCEED THE FLAME SPREAD REQUIREMENTS OF TABLE 803.9 OF THE 2012 NORTH CAROLINA STATE BUILDING CODE.
3. PROVIDE APPROPRIATE TRANSITION STRIP AT ALL DOORS AND LOCATIONS WHERE FLOOR FINISH MATERIALS CHANGE.
4. FIELD VERIFY ALL ACCENT WALL LOCATIONS (START AND STOP POINTS) WITH ARCHITECT BEFORE PAINTING.
5. ALL TOILET ROOMS TO COMPLY WITH SECTION 1210.2 IN THE 2012 NC STATE BUILDING CODE.
6. INSTALL RUBBER BASE ON FRONT OF ALL ACCESSIBLE BASE CABINETS.
7. BRICK TILE PATTERN INSTALL PER MANUFACTURER'S REQUIREMENTS; OVERLAP SHOULD NOT EXCEED 33% IN BRICK PATTERN INSTALLATION
8. IN LOCATIONS WHERE EXPOSED BEAM AT FLOOR OCCURS, REMOVE EXISTING CARPET & ADHESIVE, PREP. SAND SMOOTH & PAINT P-1.

FINISH DESCRIPTION

FLOOR

CPT-1	FIELD CARPET TILE (INSTALLED BRICK ASHLAR)
FT-1	FLOOR TILE - PORCELAIN (INSTALLED BRICK ASHLAR)
LVT-1	LUXURY VINYL TILE (FIELD - LIGHT GRAY)
LVT-2	LUXURY VINYL TILE (ACCENT - DARK GRAY)
LVT-3	LUXURY VINYL TILE (ACCENT - GREEN)
SC-1	SEALED CONCRETE - SEE DIV. 9
EXIST	EXISTING FLOOR FINISH TO REMAIN
-	NO NEW SCHEDULED FLOOR FINISH

BASE

RB-1	RUBBER BASE
TB-1	6" PORCELAIN TILE COVE BASE
EXIST	EXISTING BASE FINISH TO REMAIN
-	NO NEW SCHEDULED BASE FINISH

WALL

EP-1	EPOXY WALL PAINT (MATCH P-1)
P-1	WALL PAINT - OVERALL - WHITE
P-2	WALL PAINT (ACCENT - GRAY)
P-3	WALL PAINT (ACCENT - YELLOW)
P-4	WALL PAINT (ACCENT - GREEN)
P-5	WALL PAINT (ACCENT - BLUE)
P-6	GYP. BD. SUSPENDING CEILINGS, SOFFITS & BULKHEAD U.O.N.
P-7	METAL PAINT (ACCENT - DARK GRAY
ST	STAINLESS STEEL BACKSPLASH
WW-1	WOOD WALL PANEL
WT-1	PORCELAIN TILE - FIELD
WT-2	PORCELAIN TILE - ACCENT
-	NO NEW SCHEDULED WALL FINISH

CEILING

GB-1	PAINTED GWB TO BE PAINTED P-6
GB-2	PAINTED MOISTURE-RESISTANT GWB
WC-1	WOOD CEILING PANEL
EXP	EXPOSED STRUCTURE (BASE BID)
EXP	EXPOSED STRUCTURE PAINTED P-1 (ALTERNATE #8)
EXIST	EXISTING CEILING FINISH TO REMAIN
-	NO NEW SCHEDULED CEILING FINISH
AC-1	HIGH NRC, 2' X 2' ACOUSTICAL PANEL CEILING
AC-G3	CEILING CLOUDS W/AC-1 & GREEN TRIM SEE SPECIFICATION SECTION 095113
AC-G4	CEILING CLOUD W/AC-1 & GREEN TRIM, SEE SPEC. SECTION 095113
AC-G5	CEILING CLOUD W/AC-1 & GREEN TRIM SEE SPEC. SECTION 095113
AC-Y3	CEILING CLOUD W/AC-1 & YELLOW TRIM SEE SPEC. SECTION 095113
AC-Y4	CEILING CLOUD W/AC-1 & YELLOW TRIM SEE SPEC. SECTION 095113

WINDOW TREATMENT

BL-E	HORIZONTAL BLINDS ON EXTERIOR WINDOWS - SEE SPEC SECTION 12113
-	NO SCHEDULED WINDOW TREATMENT

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1401 WEST MOREHEAD STREET, SUITE 125
CHARLOTTE NC 28208-5680
(704) 552-5800 FAX (704) 552-7420

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TODD ANNINGTON REGISTERED ARCHITECT 16891 NORTH CAROLINA CHARLOTTE, NC

UNC CHARLOTTE

BID SET

ISSUE DATE: FEBRUARY 28, 2018

SCO ID# 16-12735-02A
CODE:41526 ITEM:303

SYCAMORE HALL RENOVATION

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE
9201 UNIVERSITY CITY BOULEVARD, CHARLOTTE, NC 28223

PROJECT NUMBER 1610

SHEET TITLE
FINISH SCHEDULE

SHEET NUMBER
AF100