UNC CHARLOTTE

Academic Complex Renovations

SCO ID# 13-11117-01A

Addendum #3

October 10, 2016

University of North Carolina at Charlotte
Academic Complex Renovation

ADDENDUM #3

October 10, 2016

To: ALL BIDDERS OF RECORD:

This addendum forms a part of the Contract Documents and modifies the original Project Drawings, and Project Manual dated September 7, 2016. Acknowledgement of receipt of this Addendum in the space provided on the Bid Form is mandatory. Failure to do so may subject the Bidder to disqualification. All bidders need to make sure that this entire addendum is thoroughly reviewed.

Reminder:

1. Bid Day **–** Tuesday, October 18, 2016, 2:30 p.m. Sealed proposals will be received in Salons A & B on the 3rd floor of the Barnhardt Student Activity Center (building #46 on the campus map) - http://maps.uncc.edu - visitor parking available in Cone Deck 2 on the University of North Carolina at Charlotte Campus.

Project Bid Manual

Please make the following changes to the Scopes of Work as applicable:

1. BP-001 General Inclusions
    a. Revise Item 40 to include: Subcontractor shall include any ground penetrating radar required to locate items embedded in concrete.
    b. Revise Item 43 revised to read: Reinstall any disturbed or removed safety cabling or railing.
    c. Revise Item 47 to include: Any damage to surrounding building elements resulting from the work of Subcontractor shall be repaired or replaced at the expense of the Subcontractor who caused the damage.
    d. Revise Priority Task Item # 8: Subcontractor will inform the QA/QC Manager. Change QA/QC Manager to Construction Manager.
    e. Add the following to Priority Task Item # 6: Submit list of proposed project personnel including contact information.
    f. Revise Allowance #2 to include: Prior to utilization of an allowance, the Contractors field Supervisor shall request permission, and identify the area or work where the allowance will be used. Immediately after allowance work is complete, submit a work ticket to the Construction Manager for verification of work performed.

2. BP-01A General Trades and Final Cleaning
    a. Revise Scope of Work Item #15: Include material and labor required install Ten (10) temp door lockups out of plywood and 2x4's. Lockups will serve as temp doors for electrical, mechanical, and other rooms determined by the Construction Manager. Material will be removed, and reused for each phase of construction. Include hardware (hinges and hasp locks) for each lock-up room.
    b. Remove the following from Scope of Work Item #14
    c. Add Scope of Work Item # 30: Remove all flooring protection, and other temporary protection prior to final cleaning. Ensure flooring is cleaned per manufactures recommendations.
    d. Add New Alternate #1: See Specification Section 012300, Alternate No. 10 Clean exterior concrete ramps and walks at breezeways. The scope of work for this alternate shall include pressure washing and cleaning of the exterior on-grade concrete ramps, sidewalks, and other concrete areas located under and adjacent to the breezeways between the buildings (4 areas total). Clean concrete to building edges and to where the walks/ramps meet the University brick sidewalk systems.
    e. Add Scope of Work Item #31: Protect areas of existing hardscape under Construction Managers dumpster. Include a minimum of 1" thick OSB board, on top of 1" thick rigid foam sheathing for protection. Maintain protection as needed. Base Bid shall assume 320 square feet of the hardscape protection described above.
3. BP-02E Landscaping
    a. Remove Allowance #1
    b. Add the Following Specification Sections to the Scope of Work Summary: 329200 Turf and Grasses, 329300 Plants, 015000 Temporary Facilities and Controls (1.09 Tree and Plant Protection).
    c. New Scope of Work Item #2: To complete new utility work, existing trees, bushes, and grasses need to be removed, stored offsite, and replaced when construction is complete. Plants shall be removed, properly balled and burlapped in accordance with their size, stored, watered, and cared for until construction is complete. The construction Manager will advise when appropriate. Bidders shall include removal and storage of the following plants for a 4 month period:
        i. Grass type plant, similar to Muhly Grass – 20 plants total.
        ii. Small tree ±7' tall, with a 3" diameter trunk, similar to an Oak Leaf Holly or Dogwood – 5 plants total.
        iii. Small Bush similar to an Oak Leaf Hydrangea – 3 total.
    d. New Scope of Work Item #3: Include the punning heading, and trimming of all existing landscaping. Construction is broken up into three phases. Include a mobilization for pruning existing landscaping for each phase of construction.
    e. New Scope of Work Item #4: Utility work, construction traffic, and laydown will destroy grasses. This Contractor shall include in the base bid the reseeding of 14,000 square feet of existing landscape. Assume the use of #2 Sun and

Partial Shade type grass seed mix. See specification section 329200, 2.01 Seed for requirements. Include all prep work and maintenance required.

f. New Scope of Work Item # 5: Include five cubic yards of shredded hardwood mulch. Mulch will be delivered and installed at the discretion of the Construction Manager. Include a minimal of 3 mobilizations to deliver, offload, and install mulch. No material storage is allowed onsite.

4. BP-02K Abatement & Demolition
   a. Add to Scope of Work item 20: Temporary windows shall consist of 2"x4" wood framing around the perimeter of the opening. Install reinforced plastic over the opening, stapled to the 2"x4" framing. This scope of work shall be responsible for installing temporary guard rail protection at all openings. Temporary guard rails shall meet OSHA requirements, and at minimum consist of a top rail, mid rail, and toe kick.
   b. Revise Scope of Work Item # 27: Protect areas of existing hardscape under all demo and abatement dumpsters and hazardous waste containers. Include a minimum of 1" thick OSB board, on top of 1" thick rigid foam sheathing for protection. Maintain protection as needed.
   c. Remove Scope of Work Item #38
   d. Add New Scope of Work Item# 51: For electrical demolition, the Electrical Contractor will cut, cap, make safe, and perform all electrical demolition inside of the electrical or mechanical rooms. Demo and Abatement Contractor shall be responsible for the demolition of all electrical items, raceways, fixtures, etc. outside of the electrical or mechanical rooms. Include the removal and disposal of all interior lighting, power, and fire alarm. Remove and dispose all raceways, conduit, and wire back to the outside of the electrical and mechanical rooms. Items to remain in function, or to be reused, will be identified by the Electrical and Mechanical Contractor. Take extreme precaution to ensure no damage is caused to the items identified to remain in use or to be reused. All keyed notes in the project documents shall be included as they apply to this scope of work.
   e. Add New Scope of Work Item # 52: Any abandoned, or empty, rough in, raceway, or fixture that is not in use, or going to be reused shall be removed by this Contractor.
   f. Add new Scope of Work Item # 53: Remove all lead based paint identified in the hazardous material report. Hand and guardrails identified to have lead based paint will be cut off and removed by the Misc. Steel package after the lead based paint is removed from the railings by the Demolition and Abatement Contractor. (Do not remove handrails, only remove lead based paint form the handrails).
   g. Remove Allowance #1.
   h. Add New Alternate #6 on Bid Form: Provide the cost to provide a Payment and Performance Bond.
5. BP-04A Turnkey Masonry
   a. Add to Scope of Work Item #20: BP-04A shall be responsible for providing a signed inventory sheet of all hollow metal door frames received. Submit inventory list to the Construction Manager after receiving and stocking doors.

b. Remove Alternate #4 Brick Panel Repairs (Macy, Barnard, Garinger, Winningham). See Bid Form for new alternate #4.
c. Add new Alternate #5: Architect Alternate #9: Exterior Electrical Room South side of Denny Building The scope of work for this alternate shall include the cleaning and painting of the existing walls, doors and other components for the exterior CMU wall located on the south side of Denny building located in the breezeway. The work shall also include surface prep for a smooth finish of the exterior CMU wall replacement of existing sealants. The work shall also include the cleaning and installation of an elastomeric coating over the exposed face of CMU. (Note this work is also included as part of Alt No 06, but is a separate scope under this alternate in the event Alternate 06 is not accepted. Masonry Package shall include the surface prep for a smooth finish of the exterior CMU wall, all rubbing, patching, grinding, etc., to achieve a smooth surface.
d. Add new Unit Price #5: Architects Alternate T-1 Denny Existing Precast Panel Connection Repair: See new details 8 and 9 on sheet S-801. For BP-05B to repair the existing welds, this bid package BP-04A will need to remove CMU. CMU can be removed with a chipping hammer or a masons hammer. Assume the demo and replacement of 3 CMU at each connection (432 connections).
e. Add new Unit Price #6: Architects Alternate T-5 Denny Existing Precast Panel Connection Repair: See new details 8 and 9 on sheet S-801. For BP-05B to repair the existing welds, this bid package BP-04A will need to remove CMU. CMU can be removed with a chipping hammer or a masons hammer. Assume the demo and replacement of 3 CMU at each connection (50 connections).

6. BP-05B Misc. Steel
   a. Remove Scope of Work Item #4
   b. Add item 14: This Contractor shall be responsible for the removal and replacement of all handrails shown in the project documents. If new handrails are not installed immediately after exisint handrail are removed, this Contractor shall provide temporary guardrails that meet OHSA requirements.
   c. New Unit Price #1: The scope of the work shall include repair of existing precast panel connections at the Denny Building. Refer to the attached details and notes for the description of the repair. There are a total of (108) precast panels with (4) connections per panel. This repair is to be included for base bid and for Alternate No. 01A – Alternate Method of Construction to Reclad Exterior Walls (Denny). T -1 Denny Existing Precast Panel Connection Repair – Clean, Inspect, and Paint Only: Refer to repair details and notes. This applies to each connection. (Base bid quantity 432 connections)
   d. New Unit Price # 2: The scope of the work shall include repair of existing precast panel connections at the Denny Building. Refer to the attached details and notes for the description of the repair. There are a total of (108) precast panels with (4) connections per panel. This repair is to be included for base bid and for Alternate No. 01A – Alternate Method of Construction to

Reclad Exterior Walls (Denny). Refer to repair details and notes. Assume welds are deficient at connection. This applies to each connection. (Base bid quantity 50 connections)

7. BP-07A Caulking & Waterproofing
    a. Add New Alternate #9: See Alternate #2 in Specification Section 012300. Sealant Replacement/Elastomeric Coating/Spall Repairs at Spandrel Beams and Sealant Replacement at Aggregate Surfaced Panels (Denny). The scope of work for this alternate shall include the removal and replacement of all sealant joints in the aggregate surfaced wall panels and the horizontal joint above the panel flashing. The work shall also include cleaning the aggregate surfaced wall panels and concrete spandrel beams. The work shall also include installation of an elastomeric coating over the exposed face of the concrete spandrel beams. Contractor shall provide in the bid the lump sum price to perform this work. (Repair of spalled concrete on the spandrel beams will be performed under this Alternate, but will be performed on a unit rate basis and shall not be included in the lump cost.
    b. New Alternate #10: To provide a Payment and Performance Bond.

8. BP-08B Turnkey Doors Frames and Hardware
    a. Remove Scope of Work Item # 10 and Replace with: All doors and hardware shall be refinished offsite. Refinishing of doors will not be allowed onsite. This Contractor shall be responsible for removing existing doors and hardware, taking them to a location off campus to refinish, and then bring them back to the project once ready to install. Coordinate with Construction Managers Superintendent for all deliveries.
    b. Replace Unit Price #2 with the following unit price: Architects Unit Price V, New 1 Hour Rated Door: Provide a unit price for a new 1 hr. rated door, per each door, in the event the existing rated doors are determined to be ACM. Existing Hardware to be reused and installed on new door. No new rated doors to be included in base bid.
    c. New Unit Price: Provide a unit price per door to refinish a interior wood door. Unit price should include a natural finish, with 1 coat wood sealer, 1 coat gloss spar varnish, and 2 coats stain varnish, per university standards. Existing Hardware to be reused and installed on new door. No new rated doors to be included in base bid.
9. BP-09A Metal Studs & Drywall
    a. Include with Scope of Work Item # 14: Excess drywall mud shall be removed from all finishes upon the completion of work.
10. BP-09D Ceramic Tile
    a. New Alternate #1 Architect Alternate No. 15 Restroom Tile: In addition to the base bid tile work; for all other walls in the restroom areas as shown on enlarged plans A-401, A-402, 403, this alternate to include all costs associated with providing tile on all walls (north, south, east, and west). All wall tile to be to the height of 6'-3" as indicated on A-404. All other wall area not receiving tile to be painted.

Phase 1 ADD **Dollars ($)**

Phase 2 ADD **Dollars ($)**

Phase 3 ADD **Dollars ($)**

11. BP-09E Resilient, Carpet, and Base
    a. Add Scope of Work Item #26: This Contractor shall provide and install new transitions at all locations where new flooring provided in this Scope or work is installed up to existing flooring to remain.
    b. New Unit Price # 1 Architects Unit Price X Carpet Flooring: Provide a unit price for each square foot of new carpeting, (including floor prep and misc. accessories required for installation). Base bid to include quantities as defined by the contract documents. This unit price to be deductive or additive in the event the Owner elects to adjust the scope of carpeting or abatement activities vary as defined by unit price "U Abatement Activities & Quantities".
    c. New Unit Price # 2 Architects Unit Price Y VCT Flooring: Provide a unit price for each square foot of new VCT Flooring, (including floor prep and misc. accessories required for installation). Base bid to include quantities as defined by the contract documents. This unit price to be deductive or additive in the event the Owner elects to adjust the scope of VCT or abatement activities vary as defined by unit price "U Abatement Activities & Quantities.
    d. New Unit Price # 3 Architects Unit Price Z Resilient Base: Provide a unit price for each linear foot of resilient base, (including floor/wall prep and misc. accessories required for installation). Base bid to include quantities as defined by the contract documents. This unit price to be deductive or additive in the event the Owner elects to adjust the scope of resilient base or abatement activities vary as defined by unit price "U Abatement Activities & Quantities".
    e. Revise Alternate #5 Architect Alternate No. 14 Auditorium Seats: The scope of work for this alternate shall include the total replacement of all fixed seating in the auditorium classrooms. Base bid assumes that the flooring in Denny classrooms 220 and 200 is to remain. If the alternate to replace the seating in room 220 and 200 is selected, the flooring will need to be replaced. For this alternate this Bid Package shall include new flooring in Denny rooms 220 and 200 per Alternate 7B floor plan

       1) Denny Room 200 only – Price per 7B floor plan.

       ADD **Dollars ($)**

       2) Denny Room 220 only – Price per 7B floor plan.

       ADD **Dollars ($)**

12. BP-09F Painting
    a. New Scope of Work item #28: This Contractor shall include the painting of all exposed piping in closets, stairwells, mechanical rooms, electrical rooms, etc. Color to be selected by the Architect.
    b. New Scope of Work Item #29: This Subcontractor shall include all prep work, primer, and paint, to ensure a seamless transition between new and existing CMU walls.
    c. Remove Alternate #1
    d. New Alternate #5 Architect Alternate No. 15 Restroom Tile: In addition to the base bid tile work; for all other walls in the restroom areas as shown on enlarged plans A-401, A-402, 403, this alternate to include all costs associated with providing tile on all walls (north, south, east, and west). All wall tile to be to the height of 6'-3" as indicated on A-404. All other wall area not receiving tile to be painted.
13. BP-015A Fire Sprinkler
    a. Remove Scope of Work Item # 27.
14. BP-15D HVAC Systems:
    a. This Contractor shall provide a competent foreman to remove existing thermostats, and BAS equipment that will be returned to the Owner. Include a minimum of fifty hours.
    b. Remove Scope of Work Item #38.
15. BP-016A Electrical and Fire Alarm:
    a. New Scope of Work Item #72: The electrical contractor will be responsible for all demolition inside of the electrical, mechanical, and back of house rooms that contain powered equipment. For electrical demolition, the Electrical Contractor will cut, cap, make safe, and perform all electrical demolition inside of the electrical or mechanical rooms. Demo and Abatement Contractor shall be responsible for the demolition of all electrical items, raceways, fixtures, etc. outside of the electrical or mechanical rooms. Perform all electrical related demo inside of these rooms, cut and cap conduit to a point outside of the wall of each electrical or back of house room. The removal of fire alarm systems that must remain in use during construction shall be by this Contractor.
    b. New Scope of Work Item #73: Remove, protect, and store all existing light fixtures that are scheduled to be removed and reinstalled.
    c. New Scope of Work Item #74: Include a fulltime employee onsite during demolition activities.
    d. Allowance #1: Revise to a 1 hour Rating
    e. Allowance #2: Revise to a 1 hour Rating.

Attachments

1. Woolpert Architects Addendum #3 Drawing Log (2 pages)
2. Woolpert Architects Addendum #3 Project Manual #1 Log (1 page)
3. Woolpert Architects Addendum #3 Project Manual #2 Log (1 page)
4. Specifications Sections dated 10-10-2016:
    a. 00 01 00 Table of Contents (4 pages)
    b. 01 22 00 Unit Prices (5 pages)
    c. 01 23 00 Alternates (6 pages)
    d. 07 27 26 Fluid Applied Membrane Air Barriers (9 pages)
    e. 09 51 00 Suspended Acoustical Ceilings (3 pages)
    f. 10 14 00 Signage (3 pages)
    g. 32 92 00 Turf and Grasses (6 pages)
5. Specifications Sections dated 10-06-2016:
    a. 09 30 00 Tiling (6 pages)
    b. 09 68 13 Tile Carpeting (4 pages)
    c. 32 93 00 Plants (8 pages)

Drawings dated 10-10-2016:

6. Architectural:
    a. A-101A Macy First Floor Plan Renovation
    b. A-102A Macy Second Floor Plan Renovation
    c. A-112A Macy Second Floor Reflected Ceiling Plan
    d. A-101B Barnard First Floor Plan Renovation
    e. A-102B Barnard Second Floor Plan Renovation
    f. A-101C Denny First Floor Plan Renovation
    g. A-102C Denny Second Floor Plan Renovation
    h. A-101D Garinger First Floor Plan Renovation
    i. A-102D Garinger Second Floor Plan Renovation
    j. A-101E Winningham First Floor Plan Renovation
    k. A-102E Winningham Second Floor Plan Renovation
    l. A-701 Room Finish Schedule
    m. A-702 Room Finish Schedule
    n. A-504 Wall Section and Details
7. Structural:
    a. S-801 Structural Typical Details
8. Mechanical:
    a. M-002 Mechanical Schedules
    b. MD-100C First Floor Denny Demolition Plan
9. Electrical:
    a. E-001 Electrical Notes
    b. E-002 Electrical Symbol Legend
    c. E-201A Macy First Floor Plan Renovation Power
    d. E-202A Macy Second Floor Plan Renovation Power
    e. E-201B Barnard First Floor Plan Renovation Power
    f. E-202B Barnard Second Floor Plan Renovation Power
    g. E-201C Denny First Floor Plan Renovation Power
    h. E-202C Denny Second Floor Plan Renovation Power

i. E-201D Garinger First Floor Plan Renovation Power
j. E-202D Garinger Second Floor Plan Renovation Power
k. E-201E Winningham First Floor Plan Renovation Power
l. E-202E Winningham Second Floor Plan Renovation Power
m. E-102A Macy Second Floor Plan Renovation Lighting

Pre-Bid RFI's 1 through 15

10. RFI #
    a. RFI 001 (13 pages)
    b. RFI 002 (1 page)
    c. RFI 003 (1 page)
    d. RFI 004 (1 page)
    e. RFI 005 (1 page)
    f. RFI 006 (1 page)
    g. RFI 007 (1 page)
    h. RFI 008 (1 page)
    i. RFI 009 (1 page)
    j. RFI 010 (1 page)
    k. RFI 011 (1 page)
    l. RFI 012 (1 page)
    m. RFI 013 (1 page)
    n. RFI 014 (1 page)
    o. RFI 015 (1 page)

Substitution Requests

11. Request
    a. Window Roller Shades – Rejected
    b. Polycoat Waterproofing – Approved
    c. ECS – Honeywell/Tridim – Approved

End of Addendum #3

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Addendum No. 3

Drawings - Vol. # 1 & 2

Vol & Item No.	Sheet #	Description
Vol 2 - 001	E-001	General Note Added
Vol 2 - 002	E-002	Unused symbols removed from schedule
Vol 2 - 003	E-201A	Notes updated to include plugmold types
Vol 2 - 004	E-202A	Notes updated to include plugmold types. Plugmold type changed to 2-channel in rooms 207,206,205,201
Vol 2 - 005	E-201B	Notes updated to include plugmold types
Vol 2 - 006	E-202B	Notes updated to include plugmold types
Vol 2 - 007	E-201C	Notes updated to include plugmold types. Plugmold type changed to 2-channel in rooms 106,105,104,103,102, 115,116,117,118
Vol 2 - 008	E-202C	Notes updated to include plugmold types. Plugmold type changed to 2-channel in rooms 206,205,203,202,215,216,217,218
Vol 2 - 009	E-201D	Notes updated to include plugmold types. Data locations added in 113B
Vol 2 - 010	E-202D	Notes updated to include plugmold types. Plugmold type changed to 2-channel in room 240
Vol 2 - 011	E-201E	Notes updated to include plugmold types
Vol 2 - 012	E-202E	Notes updated to include plugmold types
Vol 2 - 013	M-002	Added information to acceptable mfr list
Vol 2 - 014	MD-100C	Revised demo notes
Vol 1 - 015	S-801	The scope of the work shall include repair of existing precast panel connections at the Denny Building. Refer to the attached details and notes for the description of the repair. There are a total of (108) precast panels with (4) connections per panel. This repair is to be included for base bid and for Alternate No. 01A – Alternate Method of Construction to Reclad Exterior Walls (Denny).
Vol 1 – 016	A-101A	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 017	A-102A	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 018	A-112A	Revised stairwell ceiling condition. Stairs not to receive ACT.
Vol 1 – 019	A-101B	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 020	A-102B	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 021	A-101C	Legend updated to “See Sheet a-504” for New CMU Partition, Note 108 added: The scope of the demolition of the ductwork and piping is shown on sheet MD-100C. The demolition of the ductwork and piping, and new capping to be below the slab as required to allow for the installation of new concrete slab infill as defined and similar to detail 5-S801. In the event the subgrade/stone is not directly beneath the new slab location, contractor to provide formwork to span the floor openings to accommodate the placement of the new rebar and concrete. The top of the new concrete slab to be level and smooth with the existing floor to accommodate the new flooring scheduled for these areas.
Vol 1 – 022	A-102C	Legend updated to “See Sheet a-504” for New CMU Partition

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Vol 1 – 023	A-101D	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 024	A-102D	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 025	A-101E	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 026	A-102E	Legend updated to “See Sheet a-504” for New CMU Partition
Vol 1 – 027	A-701	FAF designated as “NOT USED”
Vol 1 – 028	A-702	FAF designated as “NOT USED”
Vol 2 – 029	E-102A	Revised stairwell ceiling condition. Stairs not to receive ACT.
Vol 1 – 030	A-504	Revised Partition types and added clarification notes

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Addendum No. 3

Specification – Project Manual # 1

No.	Section #	Description
PM 1 - 001	01 22 00 - Unit Prices	Additional Unit Prices added for inclusion on bid forms
PM 1 - 002	01 23 00 - Alternates	General Formatting Updated for Header (sent on 10-7-16) Added Alternate 15 - Restroom Tile (revised 10-10-16, use the file sent today)
PM 1 - 003	09 51 00 – Suspended Acoustical Ceilings	Clarification of Manufacturers and Suspension System
PM 1 - 004	10 14 00 - Signage	Indicated requirements for sizing
PM 1 - 005	07 27 26 – Fluid-Applied Membrane Vapor-Air Barriers	Added new section (sent 10-7-16) Updated information in section (revised 10-10-16, use the file sent today)
PM 1 - 006	Table of Contents	Updated to include new sections
PM 1 - 007	09 30 00 Tiling	Addition of Manufacturers (sent on 10-7-16) Revised to require cove base (revised 10-10-16, use the file sent today)
PM 1 - 008	09 68 13 Tile Carpeting	Identification of Resilient Base

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Addendum No. 3

Specification – Project Manual # 2

No.	Section	Description
PM 2 - 001	32 92 00 – Turf and Grasses	Inclusion of new Section
PM 2 - 002	32 93 00 - Plants	Inclusion of new Section

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DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

DIVISION 31 EARTHWORK

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 01 22 00

UNIT PRICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
2. Division 01 Section "Quality Requirements" for general testing and inspecting requirements.

1.03 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.04 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SCHEDULE OF UNIT PRICES

List of Unit Rate Items-UNCC Academic Buildings

A. Shelf Angle Replacement: Remove and dispose of existing corroded shelf angles where identified in the field and install new galvanized shelf angles with epoxy imbedded bolts as shown on detail 4/W703. (base bid quantity 100 LF)

B. Shelf Angle Replacement Shims: Install new galvanized shim plates and weld to top and bottom of new shelf angles as shown on detail 4/W703. (base bid quantity 50 EA)

C. Tuckpointing: Remove existing deteriorated/cracked mortar joints and install new re-pointing mortar as shown on detail 7/W701. (base bid quantity 2000 LF)

D. Concrete Spall Repairs: Remove existing concrete surface spalls and patch with new repair mortar per details on W-701 (base bid quantity 10 CF)

E. Grout Installation Beneath Slab-On-Grade “SG”: Install grout beneath slab-on-grade as shown on Structural Drawing’s plan; Schedule of Deficiencies; and Slab Stabilization Notes. (Base bid quantity 720 CF).

F. Slab Repair “C1”: Sawcut and remove 2 feet wide section of slab centered along length of crack. Replace with new 4-inch thick slab. Epoxy reinforcing steel into existing slab around perimeter per Section 5/S801. (Base bid quantity 50 LF).

G. Slab Repair “C2”: Route and seal crack with a semi-rigid epoxy joint filler per detail 4/S801. (Base bid quantity 30 LF).

H. Interior Masonry Wall Repair “WC”: Tuck-point failed mortar joints per detail 6/S801. (Base bid quantity 175 LF).

I. Spot Smoke Detector: Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

J. Spot Heat Detector (combination type – addressable): Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

K. Spot Heat Detector fixed (with addressable monitor module): Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

L. Addressable Pull Station: Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

M. Duct Smoke Detector (access door and AHU shutdown): Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

N. Speaker/Strobe: Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

O. Strobe only (synchronous): Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

P. Isolation Module: Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

Q. Monitor Module: Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

R. Control Module: Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

S. Magnetic Door Hold: Provide a unit price, per each device, in the event an additional device is required. Devices as indicated in the drawings to be included in the base bid.

T. Structural Item 1: Repair of Denny Precast Panel Connections:

Description: The scope of the work shall include repair of existing precast panel connections at the Denny Building. Refer to the attached details and notes for the description of the repair. There are a total of (108) precast panels with (4) connections per panel. This repair is to be included for base bid and for Alternate No. 01A – Alternate Method of Construction to Reclad Exterior Walls (Denny).

Include the following Unit Price:

T -1 Denny Existing Precast Panel Connection Repair – Clean, Inspect, and Paint Only: Refer to repair details and notes. This applies to each connection. (Base bid quantity 432 connections)

T-2 Denny Existing Precast Panel Connection Repair – Repair Welds Only: Refer to repair details and notes. Assume welds are deficient at connection. This applies to each connection. (Base bid quantity 50 connections)

U. Abatement Activities & Quantities: The asbestos contractor is to include in their base bid for asbestos removal the approximate quantities of Asbestos-Containing Materials (ACMs) referenced in Tables 1 and Table 2 of the Report of Hazardous Materials Assessment and Design Development which is included in Appendix C of the Asbestos Removal Specifications. In addition, the approximate location of ACMs to be removed is highlighted on Figures (Figure 1 through Figure 10) which are part of the Asbestos Removal Specifications. If additional ACMs require removal, due to being concealed, due to a lack of destructive testing or if ACM has been removed since the time of our asbestos survey conducted in July 2015, the asbestos contractor is to include unit rates that will be used for add/deduct purposes during the project. The successful Asbestos Contractor/Bidder will confirm prior to starting a Phase that the quantities referenced in the report and highlighted on the figures are consistent with ACMs scheduled to be removed and turn in amended quantities for removal by the asbestos project designer prior to starting work. The asbestos contractor is to include the following unit rates in their bids:

U1 – Include cost per linear foot to remove Thermal Systems Insulation (TSI) on piping and mudded compound on elbows, tees, values, etc. associated with piping.

U2 – Include cost per linear foot to remove TSI on piping and mudded compound associated with piping behind/within permanent walls or above permanent ceilings such as Masonry block walls and hard plaster ceilings. The asbestos contractor is to presume that selective demolition will be required to access the TSI and mudded compound.

U3 – Include cost per square foot to remove TSI on boilers, tanks, HVAC equipment, etc.

U4 – Include cost per square foot to remove floor tile and mastic (single layer).

U5 – Include cost per square foot to remove floor tile and mastic (multiple layers).

U6 – Include cost to remove additional Windows with Exterior Window Caulk/Window Glazing Compound.

U7 – Include cost to remove additional Windows with Interior Window Caulk/Window Glazing Compound.

U8 – Include cost per square foot to remove additional step tread.

U9 – Include cost per square foot to remove additional cove base and mastic.

U10 – Include cost per linear foot to remove additional expansion caulk/building caulk.

U11 – Include cost per linear foot to remove cement asbestos duct. The asbestos contractor is to presume that partial removal of the concrete floor will be required.

U12 – Include cost per linear foot to remove black HVAC mastic on HVAC ducts.

U13 – Include cost per square foot to remove additional floor tile and mastic within existing elevators.

U14 – Include cost per square foot to remove additional asbestos containing plaster.

U15 – Include cost per square foot to remove asbestos containing ceiling texture (if identified or concealed).

U16 – Include unit rate to remobilize if asbestos contactor has left job site and unknown or concealed asbestos materials are identified during renovations.

U17 – Include unit rate to remove a fire door on a per door basis if asbestos is identified in the fire doors and the asbestos contractor is to remove any additional doors than included in the base bid (budget). Abetment Contractor to remove existing door hardware and turn over to the Construction Manager for reuse.

V. New 1 Hr. Rated Door: Provide a unit price for a new 1 hr. rated door, per each door, in the event the existing rated doors are determined to be ACM. Existing Hardware to be reused and installed on new door. No new rated doors to be included in base bid.

W. New 1 Hr. Rated Door: Provide a unit price for each square foot of new carpeting. Base bid to include quantities as shown in the contract documents. This unit price to be deductive or additive in the event the Owner elects to adjust the scope of carpeting or abatement activities vary as defined by unit price “U Abatement Activities & Quantities”.

X. Carpet Flooring: Provide a unit price for each square foot of new carpeting, (including floor prep and misc. accessories required for installation). Base bid to include quantities as defined by the contract documents. This unit price to be deductive or additive in the event the Owner elects to adjust the scope of carpeting or abatement activities vary as defined by unit price “U Abatement Activities & Quantities”.

Y. VCT Flooring: Provide a unit price for each square foot of new VCT Flooring, (including floor prep and misc. accessories required for installation). Base bid to include quantities as defined by the contract documents. This unit price to be deductive or additive in the event the Owner elects to adjust the scope of VCT or abatement activities vary as defined by unit price “U Abatement Activities & Quantities.

Z. Resilient Base: Provide a unit price for each linear foot of resilient base, (including floor/wall prep and misc. accessories required for installation). Base bid to include quantities as defined by the contract documents. This unit price to be deductive or additive in the event the Owner elects to adjust the scope of resilient base or abatement activities vary as defined by unit price “U Abatement Activities & Quantities”.

END OF SECTION

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.03 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.04 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SCHEDULE OF ALTERNATES

ALTERNATES: Include the following as indicated on the drawings:

A. Alternate No. 01

Alt No.01 - Reclad Exterior Walls with Brick (Denny)

Description: The scope of work for this alternate shall include the removal of the complete existing precast exterior wall system on the Denny Building, unless specifically noted to keep selected portions of precast. A new exterior wall system is to be installed and coordinated with all other existing building components. A steel stud and associated wall system components to result in a brick recladding brick system for the exterior of the Denny building.

Alternate No. 01A: .

Alt No. 01A - Alternate Method of Construction to Reclad Exterior Walls (Denny)

Description: The scope of work for this alternate shall include the keeping the complete existing precast exterior wall system on the Denny Building, unless specifically noted to remove portions of precast. A new exterior wall system is to be installed and coordinated with all other existing building components. The existing precast will be integrated into other wall system components to result in a brick recladding brick system for the exterior of the Denny building. Masonry shop drawings submitted for this alternate to indicate masonry anchors used to attach the brick ties in a random pattern and attached to the existing precast with a minimum embed, so not to damage the existing precast panels during recladding installation and adequate pullout strength for the masonry recladding.

B. Alternate No. 02:

Alt No. 02 - Sealant Replacement/Elastomeric Coating/Spall Repairs at Spandrel Beams and Sealant Replacement at Aggregate Surfaced Panels (Denny)

Description: The scope of work for this alternate shall include the removal and replacement of all sealant joints in the aggregate surfaced wall panels and the horizontal joint above the panel flashing. The work shall also include cleaning the aggregate surfaced wall panels and concrete spandrel beams. The work shall also include installation of an elastomeric coating over the exposed face of the concrete spandrel beams. Contractor shall provide in the bid the lump sum price to perform this work. (Repair of spalled concrete on the spandrel beams will be performed under this Alternate, but will be performed on a unit rate basis and shall not be included in the lump cost.

C. Alternate No. 03:

Alt No. 03: Brick Panel through Wall Flashing Repairs (Macy, Barnard, Garinger, Winningham)

Description: The scope of work for this alternate shall include the removal of the existing brick masonry, installation of a new through wall flashing system, and installation of new brick masonry above the shelf angles along the bottom of the brick panels. Contractor shall provide in the bid the lump sum price to perform this work. (Replacement of deteriorated shelf angles and installation of shim plates will be performed under this Alternate, but will be performed on a unit rate basis and shall not be included in the lump cost.

D. Alternate No. 04:

Alt No. 004: Brick Panel Repairs (Macy, Barnard, Garinger, Winningham)

Description: The scope of work for this alternate shall include the cleaning and installation of a clear water repellent sealer over of all brick masonry surfaces. The work shall also include removal of the existing and installation of a new cap flashing and sealants at the top of the panels. Contractor shall provide in the bid the lump sum price to perform this work. (Tuckpointing of deteriorated mortar joints will be performed under this Alternate, but will be performed on a unit rate basis and shall not be included in the lump cost.

E. Alternate No. 05:

Alt No. 05: Concrete Spall Repairs/Elastomeric Coating at Spandrel Beams (Macy, Barnard, Garinger, Winningham)

Description: The scope of work for this alternate shall include the cleaning and installation of an elastomeric coating over the exposed face of the concrete spandrel beams. Contractor shall provide in the bid the lump sum price to perform this work. (Repair of spalled concrete on the spandrel beams will be performed under this Alternate, but will be performed on a unit rate basis and shall not be included in the lump cost).

F. Alternate No. 06:.

Alt No. 06: Connector Building and Electrical Room (Denny) Repairs

Description: The scope of work for this alternate shall include the cleaning and painting of the existing louvers. The work shall also include replacement of existing sealants. The work shall also include the cleaning and installation of an elastomeric coating over the exposed face of CMU and the concrete spandrel beams as appropriate. (Repair of spalled concrete on the spandrel beams will be performed under this Alternate, but will be performed on a unit rate basis and shall not be included in the lump cost.

G. Alternate No. 07: Carpet and Wall Base Material Replacement and New Wall Base.

Base Bid: Remove existing flooring (carpet, VCT flooring, and wall base) and install new flooring (carpet, vct, and wall base) as noted on the Drawings & Finish Schedule.

Alternate: 7A - Remove existing corridor VCT flooring and wall base on the second floor of Denny building and provide new corridor VCT flooring and wall base on the second floor of Denny building to accommodate corridor way finding.

Alternate: 7B - Remove existing flooring (carpet and/or VCT flooring, and wall base) and install new flooring (carpet, vct, and wall base) as noted by Alternate 7B on the Drawings & Finish Schedule.

Alternate: 7C - Remove existing flooring (carpet and/or VCT flooring, and wall base) and install new flooring (carpet, vct, and wall base) as noted by Alternate 7C on the Drawings & Finish Schedule.

H. Alternate No. 08

Alt No. 08: Exterior Trash Enclosure Repairs

Description: The scope of work for this alternate shall include the cleaning and painting of the existing walls, gates and other components for the exterior trash enclosures located in the breezeways. The work shall also include replacement of existing sealants. The work shall also include the cleaning and installation of an elastomeric coating over the exposed face of CMU and the concrete columns as appropriate. (Repair of spalled concrete on the columns will be performed under this Alternate, but will be performed on a unit rate basis and shall not be included in the lump cost.

I. Alternate No. 09

Alt No. 08: Exterior Electrical Room South side of Denny Building

Description: The scope of work for this alternate shall include the cleaning and painting of the existing walls, doors and other components for the exterior CMU wall located on the south side of Denny building located in the breezeway. The work shall also include surface prep for a smooth finish of the exterior CMU wall replacement of existing sealants. The work shall also include the cleaning and installation of an elastomeric coating over the exposed face of CMU. (Note this work is also included as part of Alt No 06, but is a separate scope under this alternate in the event Alternate 06 is not accepted.

J. Alternate No. 10:

Alt No. 10: Clean exterior concrete ramps and walks at breezeways.

Description: The scope of work for this alternate shall include pressure washing and cleaning of the exterior on-grade concrete ramps, sidewalks, and other concrete areas located under and adjacent to the breezeways between the buildings (4 areas total). Clean concrete to building edges and to where the walks/ramps meet the University brick sidewalk systems.

K. Alternate No. 11: Carpet (Preferred Alternate)

Alternate No. 11: Provide basis of design carpet as noted in section 09 68 13 Tile Carpeting, and Finish Schedule.

L. Alternate No. 12: Exterior Face Brick (Preferred Alternate)

Base Bid: Bricks to be by manufactured as listed in specification section 04 20 00 Unit Masonry, including Hanson Brick as an acceptable manufacturer. Bricks bid by other manufacturers must be equal to the basis of design “Morrocroft Special #02-79-1” in color, texture, finish, size etc.

Alternate No. 12: Face Brick to be Morrocroft Special #02-79-1 manufactured by Hanson Brick at www.hansonbrick.com (one available source in Charlotte is Brick Yard Limited). Installation shall comply with UNCC Std. Spec S02525.

M. Alternate No. 13: Fire Alarm System (Preferred Alternate)

Base Bid: Fire Alarm System to be manufactured as listed in Specification Section 28 31 11, Digital, Addressable Fire-Alarm System, including Simplex Grinnell as an acceptable manufacturer.

Alternate No. 13: Fire Alarm System to be Simplex Grinnell. The E.C. is to provide alternate pricing for a Simplex Grinnell fire alarm system that is compatible with the existing campus wide system.

N. Alternate No. 14: Auditorium Seats (Alternate)

Base Bid: Denny Rooms 120 and 122 to receive new swing away seating as listed in Spec Section 12 70 00 Swing Away Seat.

All other fixed seating to be removed and stored in a location approved by the Owner. All seating and tables to be documented by the Construction Manager for the condition prior to removal to include: 1) wear and tear and 2) proper working of condition. The CM is to propose a current value of the fixtures to the Owner for concurrence prior to removal. After the major parts of construction are completed, with the Owner’s approval the existing fixtures to be reinstalled. In the event damage has occurred, the Owner may elect one of the following:

1) Construction Manger fix the existing fixtures.

2) Construction Manger to provide a proposal to the Owner using the cost established by this Alternate to procure and install new seating, proposal to deduct the value of the existing fixtures as previously established.

Alternate 14: The scope of work for this alternate shall include the total replacement of all fixed seating in the auditorium classrooms, to be separated by cost per auditorium as follows:

1) Denny Room 109 – Price per Section 12 70 00 Swing Away Seat
2) Denny Room 111 – Price per Section 12 70 00 Swing Away Seat
3) Denny Room 200 – Price per Section 12 61 00 Fixed Audience Seating.
4) Denny Room 220 – Price per Section 12 70 00 Swing Away Seat

O. Alternate No. 15: Restroom Tile (Alternate)

Base Bid: For all restroom areas as shown on enlarged plans A-401, A-402, 403 and interior elevations A-404 contractor to demolish all existing tile and associated materials, rework surfaces (see notes on A-001) to receive either new tile or paint as indicated by

the contract documents (tile only occurs on the walls indicated on A-404). All other wall surfaces in these areas to receive paint.

Alternate No. 15: In addition to the base bid tile work; for all other walls in the restroom areas as shown on enlarged plans A-401, A-402, 403, this alternate to include all costs associated with providing tile on all walls (north, south, east, and west). All wall tile to be to the height of 6'-3" as indicated on A-404. All other wall area not receiving tile to be painted.

END OF SECTION

SECTION 07 27 26

FLUID-APPLIED MEMBRANE AIR BARRIERS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes the following:

1. Fluid applied membrane air barrier, vapor permeable applied on masonry, concrete gypsum sheathing, and other construction materials.

1.02 RELATED SECTIONS

A. Gypsum Board Assemblies for wall sheathings and wall sheathing joint-and-penetration treatments: Section 09 21 16.

B. Building Insulation for foam-plastic board insulation: Section 07 21 00.

C. Joint Sealants for joint-sealant materials and installation: Section 07 92 00.

1.03 DEFINITIONS

A. ABAA: Air Barrier Association of America.

B. Air Barrier Assembly: The collection of air barrier materials and auxiliary materials applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.

1.04 PERFORMANCE REQUIREMENTS

A. General: Air barrier shall be capable of performing as a continuous vapor-permeable air barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Air barrier assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.

1. Air Barrier Assembly Air Leakage: Not to exceed 0.01 cfm x sq. ft. of surface area at 1.57 lbf./sq. ft. ASTM E283 and ASTM E2178.

1.05 PRECONSTRUCTION TESTING

A. Mockup Testing: Air barrier assemblies shall comply with performance requirements indicated, as evidenced by reports based on mockup testing by a qualified testing agency.

1. Contractor will engage a qualified testing agency.

2. Qualitative Testing: Mockups will be tested for evidence of air leakage according to ASTM E 1186, smoke pencil with pressurization or depressurization.

3. Quantitative Air Leakage Testing: Testing of the mockup for air leakage will be conducted not to exceed the test pressure differential, positive and negative, indicated in "Performance Requirements" Article for air barrier assembly air leakage when tested according to ASTM E 283.

4. Notify Architect seven days in advance of the dates and times when mockup testing will take place.

1.06 REFERENCES

A. The following standards are applicable to this section:

1. ASTM E2178: Standard Test Method for Air Permeance of Building Materials.

2. ASTM E283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences Across the Specimen.

3. E1677 Specification for Air Retarder (AR) Material or System for Low-Rise Framed Building Walls

4. ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

5. ASTM E96: Water Vapor Transmission of Materials.

1.07 SUBMITTALS

A. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of air barrier.

B. Shop Drawings: Show locations and extent of air barrier. Include details for substrate joints and cracks, counterflashing strip, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction. Include details of interfaces with other materials that form part of air barrier. Include details of mockups.

C. Product Certificates: For air barriers, certifying compatibility of air barrier and accessory materials with Project materials that connect to or that come in contact with the barrier; signed by product manufacturer.

D. Qualification Data: For Applicator.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for air barriers.

1.08 QUALITY ASSURANCE

A. Applicator Qualifications: A firm experienced in applying air barrier materials similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Mockups: Before beginning installation of air barrier, build mockups of exterior wall assembly ijn accordance with the Unit Masonry Specification to demonstrate surface preparation, crack

and joint treatment, and sealing of gaps, terminations, and penetrations of air barrier membrane.

1. Coordinate construction of mockup to permit inspection by testing agency of air barrier before external insulation and cladding is installed.

2. Include junction with foundation wall intersection.

3. If Architect determines mockups do not comply with requirements, reconstruct mockups and apply air barrier until mockups are approved.

4. Approved mockups may become part of the completed Work if undisturbed at time of Contract Completion.

C. Preinstallation Conference: Conduct conference at Project site.

1. Include installers of other construction connecting to air barrier, including roofing, waterproofing, architectural precast concrete, masonry, sealants, windows, glazed curtain walls, and door frames.

2. Review air barrier requirements including surface preparation, substrate condition and pretreatment, minimum substrate curing period, forecasted weather conditions, special details and sheet flashings, mockups, installation procedures, sequence of installation, testing and inspecting procedures, and protection and repairs.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Store liquid materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by air barrier manufacturer.

B. Remove and replace liquid materials that cannot be applied within their stated shelf life.

C. Store rolls according to manufacturer's written instructions.

D. Protect stored materials from direct sunlight.

1.10 PROJECT CONDITIONS

A. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended by air barrier manufacturer. Protect substrates from environmental conditions that affect performance of air barrier. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

PART 2 PRODUCTS

2.01 FLUID-APPLIED MEMBRANE AIR BARRIER

A. Fluid-Applied, Vapor Permeable Membrane Air Barrier: Seamless, vapor permeable elastomeric membrane.

1. Products: Subject to compliance with requirements, provide one of the following:
   a) Elastomeric Membrane:
      1) HENRY COMPANY; Air-Bloc 31.

2) CARLISLE COATINGS & WATERPROOFING; Barritech
3) VP.
4) MEADOWS, W. R., INC.; Air-Shield LMP.
5) GRACE
6) TREMCO

2. Physical and Performance Properties:
   a) Air Permeability ASTM E2178: 0.004 cfm / ft2 @ 1.57 lbs / ft2 and have no increased air leakage when subjected to a sustained wind load of 10.5 lbs/ft2 for 1 hour and gust wind load pressure of 62.8 lbs/ft2 for 10 seconds when tested at 1.6 lbs/ft2 to ASTM E 331
   b) Water vapor permeance (43 mil dry thickness): 21 perms to ASTM
   c) E96 Method B
   d) Wet Film Thickness: 90 mils
   e) Elongation: 1000% to ASTM D 412

2.02 AUXILIARY MATERIALS

A. Primer: Liquid waterborne or solvent-borne primer recommended for substrate by manufacturer of air barrier material.

B. Joint Reinforcing Strip: Air barrier manufacturer's glass-fiber-mesh tape.

C. Substrate Patching Membrane: Manufacturer's standard trowel-grade substrate filler.

D. Adhesive and Tape: Air barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.

E. Stainless-Steel Sheet: ASTM A 240, Type 304, 0.0187 inch thick, and Series 300 stainless-steel fasteners.

F. Sprayed Polyurethane Foam Sealant: 1- or 2-component, foamed-in-place, polyurethane foam sealant, 1.5 to 2.0 lb/cu. ft density; flame spread index of 25 or less according to ASTM E 162; with primer and non-corrosive substrate cleaner recommended by foam sealant manufacturer.

G. Preformed Silicone-Sealant Extrusion: Manufacturer's standard system consisting of cured low-modulus silicone extrusion, sized to fit opening widths, with a single-component, neutral-curing, Class 100/50 (low-modulus) silicone sealant for bonding extrusions to substrates.

H. Joint Sealant: ASTM C 920, single-component, neutral-curing silicone; Class 100/50 (low-modulus), Grade NS, Use NT related to exposure, and, as applicable to joint substrates indicated, Use O. Comply with Section 07 92 00.

I. High temperature peal and stick membrane to be compatible with the Fluid Applied Membrane system as approved by the fluid applied membrane manufacturer.

J. Other materials as recommended by barrier manufacturer for a complete air and water tight barrier.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance.

1. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.
2. Verify that concrete has cured and aged for minimum time period recommended by air barrier manufacturer.
3. Verify that concrete is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
4. Verify that masonry joints are flush and completely filled with mortar.
5. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 SURFACE PREPARATION

A. Clean, prepare, treat, and seal substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for air barrier application.

B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.

C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.

D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate patching membrane.

E. Remove excess mortar from masonry ties, shelf angles, and other obstructions.

F. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.

G. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.

3.03 JOINT TREATMENT

A. Concrete and Masonry: Prepare, treat, rout, and fill joints and cracks in substrate according to ASTM C 1193 and air barrier manufacturer's written instructions. Remove dust and dirt from joints and cracks complying with ASTM D 4258 before coating surfaces.

1. Prime substrate and apply a single thickness of preparation coat strip extending a minimum of 3 inches along each side of joints and cracks. Apply a double thickness of air barrier membrane and embed a joint reinforcing strip in preparation coat.

B. Gypsum Sheathing: Fill joints greater than 1/4 inch with sealant according to ASTM C 1193 and with air barrier manufacturer's written instructions. Apply first layer of fluid air barrier membrane at joints. Tape joints with joint reinforcing strip after first layer is dry. Apply a second layer of fluid air barrier membrane over joint reinforcing strip.

3.04 TRANSITION STRIP INSTALLATION

A. Install strips, transition strips, and auxiliary materials according to air barrier manufacturer's written instructions to form a seal with adjacent construction and maintain a continuous air barrier.

B. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Reprime areas exposed for more than 24 hours.

1. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.

C. Connect and seal exterior wall air barrier membrane continuously to roofing membrane air barrier, concrete below-grade structures, floor-to floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.

D. At end of each working day, seal top edge of strips and transition strips to substrate with manufacturer’s termination sealant.

E. Apply joint sealants forming part of air barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

F. Wall Openings: Prime concealed perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply manufacturer's recommended transition strip so that a minimum of 3 inches of coverage is achieved over both substrates. Maintain 3 inches of full contact over firm bearing to perimeter frames with not less than 1 inch of full contact.

1. Transition Strip: Roll firmly to enhance adhesion.

2. Elastomeric Flashing Sheet: Apply adhesive to wall, frame, and flashing sheet. Install flashing sheet and termination bars, fastened at 6 inches o.c. Apply lap sealant over exposed edges and on cavity side of flashing sheet.

3. Preformed Silicone-Sealant Extrusion: Set in full bed of silicone sealant applied to walls, frame, and membrane.

G. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, and doors, and miscellaneous penetrations of air barrier membrane with foam sealant.

H. Seal strips and transition strips around masonry reinforcing or ties and penetrations with termination sealant.

I. Seal top of through-wall flashings (specified in Section 04 00 00) to air barrier with an additional 6-inch- wide, strip.

J. Seal exposed edges of strips at seams, cuts, penetrations, and terminations not concealed by metal counterflashings or ending in reglets with termination sealant.

K. Repair punctures, voids, and deficient lapped seams in strips and transition strips. Slit and flatten fishmouths and blisters. Patch with transition strips extending 6 inches beyond repaired areas in strip direction.

3.05 AIR BARRIER MEMBRANE INSTALLATION

A. Apply air barrier membrane to form a seal with strips and transition strips and to achieve a continuous air barrier according to air barrier manufacturer's written instructions.

B. Apply air barrier membrane within manufacturer's recommended application temperature ranges.

C. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Reprime areas exposed for more than 24 hours.

    1. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.

D. Apply a continuous unbroken air barrier to substrates. Apply membrane in full contact around protrusions such as masonry ties.

E. Apply strip and transition strip a minimum of 1 inch onto cured air membrane according to air barrier manufacturer's written instructions.

F. Do not cover air barrier until it has been tested and inspected by testing agency.

G. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air barrier components.

3.06 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.

B. Inspections: Air barrier materials and installation are subject to inspection for compliance with requirements. Inspections may include the following:

1. Continuity of air barrier system has been achieved throughout the building envelope with no gaps or holes.

2. Continuous structural support of air barrier system has been provided.

3. Masonry and concrete surfaces are smooth, clean and free of cavities, protrusions, and mortar droppings.

4. Site conditions for application temperature and dryness of substrates have been maintained.

5. Maximum exposure time of materials to UV deterioration has not been exceeded.

6. Surfaces have been primed, if applicable.

7. Laps in strips and transition strips have complied with minimum requirements and have been shingled in the correct direction (or mastic has been applied on exposed edges), with no fishmouths.

8. Termination mastic has been applied on cut edges.

9. Strips and transition strips have been firmly adhered to substrate.

10. Compatible materials have been used.

11. Transitions at changes in direction and structural support at gaps have been provided.

12. Connections between assemblies (membrane and sealants) have complied with requirements for cleanliness, preparation and priming of surfaces, structural support, integrity, and continuity of seal.

13. All penetrations have been sealed.

C. Tests: Testing to be performed will be determined by Owner's testing agency from among the following tests:

1. Qualitative Testing: Air barrier assemblies will be tested for evidence of air leakage according to ASTM E 1186, smoke pencil with pressurization or depressurization.

2. Quantitative Air Leakage Testing: Testing not to exceed the test pressure differential, positive and negative, indicated in "Performance Requirements" Article for air barrier assembly air leakage according to ASTM E 283.

D. Remove and replace deficient air barrier components and retest as specified above.

3.07 CLEANING AND PROTECTION

A. Protect air barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.

1. Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. Remove and replace air barrier exposed for more than 60 days.

2. Protect air barrier from contact with creosote, uncured coal-tar products, TPO, EPDM, flexible PVC membranes, and sealants not approved by air barrier manufacturer.

B. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.

C. Remove masking materials after installation.

END OF SECTION

SECTION 09 30 00
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Aluminum thresholds.

D. Ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 07 92 00 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

A. ANSI A108/A118/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile - Version; 2014.

B. ANSI A108.1A - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2014.

C. ANSI A108.1B - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).

D. ANSI A108.1C - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).

E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 2009 (Revised).

F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).

G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (Reaffirmed 2010).

H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2010).

I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (Reapproved 2010).

J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (Reapproved 2010).

K. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2010 (Revised).

L. ANSI A108.12 - American National Standard Specifications for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).

M. ANSI A108.13 - American National Standard Specifications for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2010).

N. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2013 (Revised).

O. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2012 (Revised).

P. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2010 (Revised).

Q. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2010 (Revised).

R. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014.

S. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2012.

T. ANSI A137.1 - American National Standard Specifications for Ceramic Tile - Version; 2013.1.

U. ASTM C373 - Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles; 2014a.

V. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2015.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Samples: Submit 2 samples illustrating style & color for each tile. Submit a minimum of 10 days prior to bid day for prior approval by architect and owner.

Once approved: Mount tile and apply grout on two plywood panels, minimum 24 by 36 inches in size illustrating pattern, color variations, and grout joint size variations.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 60 00 - Product Requirements, for additional provisions.
2. Extra Tile: 2 percent of each size, color, and surface finish combination.

1.06 QUALITY ASSURANCE

A. Maintain one copy of and ANSI A108/A118/A136.1 and TCNA (HB) on site.

B. Installer Qualifications: Company specializing in performing tile installation, with minimum of five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

Wall Tile

A. Manufacturers: All products by the same manufacturer.
   1. Trinity Tile: BASIS OF DESIGN
   2. Crossville
      a. Submit 2 samples illustrating style & color for each tile. Submit a minimum of 10 days prior to bid day for prior approval by architect and owner.
   3. Ceramic Techniques
      a. Submit 2 samples illustrating style & color for each tile. Submit a minimum of 10 days prior to bid day for prior approval by architect and owner.
   4. Dal-Tile Corporation

B. Glazed Wall Tile: Field Tile: ANSI A137.1, standard grade.
   1. Basis of Design.
   2. Manufacturer: Trinity Tile.
   3. Style: Crayon Series Bright.
   4. Size: 3” x 6”
   5. Color: Tender Grey (Group 1).
   6. Pattern: Refer to Architectural Elevations on Sheet ____.
   7. Trim Units: Bullnose and base shapes in sizes coordinated with field tile.

C. Glazed Wall Tile: Accent Tile: ANSI A137.1, standard grade.
   1. Basis of Design.
   2. Manufacturer: Trinity Tile.
   3. Style: Crayon Series Bright.
   4. Size: 3” x 6”
   5. Color: Kelly Green (Group 3).
   6. Pattern: Refer to Architectural Elevations on Sheet ____.
   7. Trim Units: Bullnose and base shapes in sizes coordinated with accent tile.

Floor Tile

A. Manufacturers: All products by the same manufacturer.
   1. Trinity Tile: BASIS OF DESIGN: www.trinitytile.com
   2. Apavisa: www.apavisa.com
      a. Submit 2 samples illustrating style & color for each tile. Submit a minimum of 10 days prior to bid day for prior approval by architect and owner.
   3. Cerdisa: www.ceramichecerdisa.com
      a. Submit 2 samples illustrating style & color for each tile. Submit a minimum of 10 days prior to bid day for prior approval by architect and owner.

B. Porcelain Tile: ANSI A137.1, standard grade.
   1. Basis of Design.
   2. Manufacturer: Trinity Tile.
   3. Style: District.
   4. Size: 12” x 12”
   5. Color: Light Grey (matte finish).
   6. Thickness: 3/8”
   7. Pattern: Bond/ Brick joint pattern, a maximum 30% offset is recommended along with a 3/16 grout joint.

2.02 TRIM AND ACCESSORIES

A. Ceramic Trim: Matching bullnose, straight base, and cove ceramic shapes in sizes coordinated with field & accent tile.
   1. Applications:
      a. Open Edges: Bullnose.
      b. Inside Corners: Jointed.
      c. Outside corners: Bullnose.
      d. Floor to Wall Joints: Cove base.
   2. Manufacturers: Same as for tile.

B. Thresholds
   1. Application: At doorways where tile terminates to VCT.
   2. Manufacturer: Schluter Systems.
   3. Profile: Reno-U.
   4. Description: Profile with sloped exposed surface, 5/32” (4mm) tall leading edge, integrated trapezoid-perforated anchoring leg and integrated grout joint spacer.
   5. Material & Finish: AE Satin Anodized Aluminum
   6. Height as required.

2.03 SETTING MATERIALS

A. Manufacturers:
   1. Mapei
   2. Custom Building Products
   3. LATICRETE International

B. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4 or ANSI A118.15.
   1. Applications: Use this type of bond coat where indicated and where no other type of bond coat is indicated.
   2. Products:
      a. Mapei: LFT Thinset Mortar
      b. Custom Building Products
      c. LATICRETE International

2.04 GROUTS

A. Manufacturers:
   1. Mapei
   2. Custom Building Products
   3. LATICRETE International

B. Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
   1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
   2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
   3. Color(s): As selected by Architect from manufacturer's full line.
   4. Products:
      1. Mapei
      2. Custom Building Products
      3. LATICRETE International

C. Standard Grout: ANSI A118.6 standard cement grout.
   1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.

2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
3. Color(s): As selected by Architect from manufacturer's full line.
4. Products:
    1. Mapei
    2. Custom Building Products
    3. LATICRETE International

2.05 ACCESSORY MATERIALS

A. Waterproofing Membrane at Floors: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
    1. Products:
        a. Mapei
        b. Custom Building Products
        c. LATICRETE International

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.

D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1A thru A108.13, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Install thresholds where indicated.

G. Sound tile after setting. Replace hollow sounding units.

H. Keep control and expansion joints free of mortar, grout, and adhesive.

I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.
   1. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.

3.05 INSTALLATION - WALL TILE

A. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat.

3.06 CLEANING

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09 51 00
SUSPENDED ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2013a.

B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2013.

C. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2014.

D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, and mechanical and electrical items installed in the ceiling.

C. Product Data: Provide data on suspension system components.

D. Samples: Submit two samples 6 x 6 inch in size illustrating material and finish of acoustical units.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Acoustical Units: Quantity equal to 2 percent of total installed.

1.04 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Panels:
   1. Armstrong World Industries, Inc ; Basis of Design - Interior: www.armstrong.com.
   2. CertainTeed Corporation ; Basis of Design - Exterior: www.certainteed.com.
   3. USG ; interior & exterior, www.usg.com.

2.02 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.

B. Acoustical Tile Type Interior: Painted mineral fiber, ASTM E1264 Type III, with the following characteristics:
   1. Size: 24 by 24 inches.
   2. Thickness: 5/8 inches.
   3. Composition: Water felted.
   4. Light Reflectance: 85 percent, determined in accordance with ASTM E1264.
   5. NRC Range: 0.50 to 0.60, determined in accordance with ASTM E1264.
   6. Articulation Class (AC): determined in accordance with ASTM E1264.
   7. Ceiling Attenuation Class (CAC): 33, determined in accordance with ASTM E1264.
   8. Surface Color: White.
   9. Suspension System:

a. Two by two grid configurations are preferred.

b. Concealed grid systems, such as tee-and-spline systems, which are not accessible are not authorized.

c. The ceiling suspension system shall be the type using formed double web tee sections.

d. Exposed surfaces below the acoustical material shall be white baked enamel either directly applied to the bottom flange or by a cap piece applied to the flange.

e. The system shall be of the type that each section shall have a positive interlock to the other.

f. Main beams shall be approximately 1" wide and 114" high. Cross tees and bridging tees shall be of the same width as main beam and approximately 1 1/4" high.

g. Provide wall angles and splices as required for complete installation.

C. Acoustical Tile Type Exterior: Vinyl faced mineral fiber , ASTM E1264 Type IV, with the following characteristics:
   1. Size: 24 by 48 inches.
   2. Thickness: 5/8 inches.
   3. Composition: Water felted.
   4. Surface Color: White.
   5. Suspension System: Concealed grid Type Exterior.

2.03 SUSPENSION SYSTEM(S)

A. Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

B. Exposed Steel Suspension System Type Interior: Formed galvanized steel, commercial quality cold rolled ; intermediate-duty.
   1. Profile: Tee ; 15/16 inch wide face.
   2. Construction: Double web.
   3. Finish: White baked enamel.

C. Exposed Aluminum Suspension System Type Exterior: All aluminum ; light-duty.
   1. Profile: Tee; 15/16 inch wide face.
   2. Finish: Painted color as selected.
      a. Off-white
   3. Products:
      a. Series 830 manufactured by Chicago Metalilcs, or approved equal.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application , seismic requirements, and ceiling system flatness requirement specified.

B. Perimeter Moldings: Same material and finish as grid.
   1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Locate system on room axis according to reflected plan.

D. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

E. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

I. Do not eccentrically load system or induce rotation of runners.

J. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.
   2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above-ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

END OF SECTION

SECTION 09 68 13
TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpet tile, fully adhered.

B. Removal of existing carpet tile.

1.02 RELATED REQUIREMENTS

A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 01 74 19 - Construction Waste Management and Disposal: Reclamation/Recycling of new carpet tile scrap, removed carpet tile, and _____.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

C. Shop Drawings: Indicate layout of joints, direction of carpet pile, and location of edge moldings.

D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.

E. Submit two, 12 inch long samples of edge strip and base cap.

F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.

1.05 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Tile Carpeting:
   1. Mannington Commercial: BASIS OF DESIGN
   2. Masland
      a. Submit two carpet tiles illustrating color and pattern design for each carpet color. Submit a minimum of 10 days prior to bid day for prior approval by architect and owner.
   3. Atlas Mills
      a. Submit two carpet tiles illustrating color and pattern design for each carpet color. Submit a minimum of 10 days prior to bid day for prior approval by architect and owner.

2.02 MATERIALS

A. Tile Carpeting, Type CPT: Tufted, manufactured in one color dye lot.
1. Basis of Design
2. Manufacturer: Mannington Commercial.
3. Pattern/ Color: M39336-010A-10 (Neutral).
4. Tile Size: 18” x 36”
5. Construction: Textured pattern loop (non-phthalate construction).
6. Die Method: Solution.
7. Fiber: Econyl (type 6 nylon)
8. Avg. Density: 5,538.
9. Guage: 5/64
10. Pile Thickness: .091”.
11. Primary backing: 100% Synthetic
12. Secondary Backing: Infinity Modular reinforced composite closed cell polymer.
13. Installation Method: Monolithic, vertical Ashlar, horizontal brick ashlar

B. Tile Carpeting, Type 5: Tufted, manufactured in one color dye lot.
1. Basis of Design
2. Manufacturer: Mannington Commercial.
3. Pattern/ Color: M39336-009A-10 (Red).
4. Tile Size: 18” x 36”
5. Construction: Textured pattern loop (non-phthalate construction).
6. Die Method: Solution.
7. Fiber: Econyl (type 6 nylon)
8. Avg. Density: 5,538.
9. Guage: 5/64
10. Pile Thickness: .091”.
11. Primary backing: 100% Synthetic
12. Secondary Backing: Infinity Modular reinforced composite closed cell polymer.
13. Installation Method: Monolithic, vertical Ashlar, horizontal brick ashlar

C. Tile Carpeting, Type 4: Tufted, manufactured in one color dye lot.
1. Basis of Design
2. Manufacturer: Mannington Commercial.
3. Pattern/ Color: M39336-004A (Gold).
4. Tile Size: 18” x 36”
5. Construction: Textured pattern loop (non-phthalate construction).
6. Die Method: Solution.
7. Fiber: Econyl (type 6 nylon)
8. Avg. Density: 5,538.
9. Guage: 5/64
10. Pile Thickness: .091”.
11. Primary backing: 100% Synthetic
12. Secondary Backing: Infinity Modular reinforced composite closed cell polymer.
13. Installation Method: Monolithic, vertical Ashlar, horizontal brick ashlar

D. Tile Carpeting, Type 3: Tufted, manufactured in one color dye lot.
1. Basis of Design
2. Manufacturer: Mannington Commercial.
3. Pattern/ Color: M39336-006A-10 (Green).
4. Tile Size: 18” x 36”
5. Construction: Textured pattern loop (non-phthalate construction).

6. Die Method: Solution.
7. Fiber: Econyl (type 6 nylon)
8. Avg. Density: 5,538.
9. Guage: 5/64
10. Pile Thickness: .091”.
11. Primary backing: 100% Synthetic
12. Secondary Backing: Infinity Modular reinforced composite closed cell polymer.
13. Installation Method: Monolithic, vertical Ashlar, horizontal brick ashlar

E. Tile Carpeting, Type 2: Tufted, manufactured in one color dye lot.
1. Basis of Design
2. Manufacturer: Mannington Commercial.
3. Pattern/ Color: M39336-005A-10 (Orange).
4. Tile Size: 18” x 36”
5. Construction: Textured pattern loop (non-phthalate construction).
6. Die Method: Solution.
7. Fiber: Econyl (type 6 nylon)
8. Avg. Density: 5,538.
9. Guage: 5/64
10. Pile Thickness: .091”.
11. Primary backing: 100% Synthetic
12. Secondary Backing: Infinity Modular reinforced composite closed cell polymer.
13. Installation Method: Monolithic, vertical Ashlar, horizontal brick ashlar

F. Tile Carpeting, Type 1: Tufted, manufactured in one color dye lot.
1. Basis of Design
2. Manufacturer: Mannington Commercial.
3. Pattern/ Color: M39336-003A-10 (Blue).
4. Tile Size: 18” x 36”
5. Construction: Textured pattern loop (non-phthalate construction).
6. Die Method: Solution.
7. Fiber: Econyl (type 6 nylon)
8. Avg. Density: 5,538.
9. Guage: 5/64
10. Pile Thickness: .091”.
11. Primary backing: 100% Synthetic
12. Secondary Backing: Infinity Modular reinforced composite closed cell polymer.
13. Installation Method: Monolithic, vertical Ashlar, horizontal brick ashlar

2.03 ACCESSORIES

A. Sub-Floor Filler: White premix latex; type recommended by flooring material manufacturer.

B. Edge Strips:
1. Manufacturer: Schluter Systems.
2. Profile: Sheine.
3. Description: Profile with sloped exposed surface, 5/32” (4mm) tall leading edge, integrated trapezoid-perforated anchoring leg and integrated grout joint spacer.
4. Material & Finish: AE Satin Anodized Aluminum
5. Height as required.

C. Adhesives:
1. Compatible with materials being adhered; maximum VOC content as specified in Section 01 61 16.

D. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

2.04 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
   1. Manufacturers:
      a. Roppe Corp: Basis of Design
      b. Johnsonite, a Tarkett Company: www.johnsonite.com.
      c. Mannington Commercial
   2. Height: 4 inch.
   3. Thickness: 0.125 inch thick.
   4. Finish: Satin.
   5. Length: Roll.
   6. Color: Color as selected from manufacturer's standards.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.

C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for flooring installation by testing for moisture and pH.
   1. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

A. Remove existing carpet tile.

B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

C. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

D. Vacuum clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install carpet tile in accordance with manufacturer's instructions.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.

F. Fully adhere carpet tile to substrate.

G. Trim carpet tile neatly at walls and around interruptions.

H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.

B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 10 14 00
SIGNAGE

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities; International Code Council 2009 (ANSI).

1.02 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

C. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.

D. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

E. Contract closeout:
   1. Furnish appropriate checklist for aiding in reordering after Date of Substantial Completion. Maintain computer schedule program for **FIVE** years for ordering new sign-age required by Owner.
   2. Maintenance data and cleaning requirements for exterior surfaces.
   3. Proper steps to remove signs for repairs or updated installation replacement.
   4. Furnish accurate templates in PowerPoint or other Microsoft based application useful for creating replacement insertable information cards.

1.03 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain this minimum temperature during and after installation of signs.

C. System Description:
   1. Signage under this section is intended to include items for identification, direction, control, and information where installed from single manufacturer.

D. ADA Design Requirements:
   1. Signage requiring tactile graphics:
      a. Wall mounted signs designating permanent rooms and spaces such as, room numbers and restroom, department, office, accessibility designated space, and fire exit identifications.
   2. Signage not requiring tactile graphics but require compliance to other ADA requirements: All other signs providing direction to or information about function of space such as, directional signs (signs with arrow), informational signs (operating hours, policies, etc.), regulatory signs (no smoking, do not enter), and ceiling and projected wall mount signs.
   3. Tactile graphics signs mounting requirements:
      a. Single doors: Mount 60" to sign centerline above finish floor and on wall adjacent to latch side of door.
      b. Openings: Mount 60" to sign centerline above finish floor adjacent opening.
      c. No wall space adjacent latch side of door, opening, or double doors: Mount 60" to sign centerline above finish floor on nearest adjacent wall.

1.04 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer:
   a. Work required under this section from manufacturers regularly engaged in work of this magnitude and scope for minimum of five years.
   b. Third party vendor must provide manufacturer information including Name, Contact, Location, and manufacturer must provide all within this Division outline as if they were the direct supplier and installer for the sign package.
   c. Maintain computer link between schedule input and computerized typography production.

1.05 SEQUENCING AND SCHEDULING:

A. Schedule system installation after related finishes have been completed.
B. Provide timeline of installation.

PART 2 PRODUCTS

2.01 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

2.02 SIGN TYPES

A. Flat Signs: Signage media without frame.
   1. Edges: Square.
   2. Corners: Square.
   3. Wall Mounting of One-Sided Signs: Tape adhesive.

B. Color and Font: Unless otherwise indicated:
   1. Character Font: INTERSTATE.
   2. Character Case: Upper case only.
   3. Background Color: Putty.
   4. Character Color: Olive Green.

C. Wall Mounted:
   1. 7-1/4" by 7-1/4" -Type A
   2. 9" by 7-1/4" - Type B
   3. 9" by 7-1/4" - Type B
   4. 9" by 7-1/4" - Type B.1
   5. 9" by 7-1/4" - Type B.2
   6. 9" by 7-1/4" - Type B.3
   7. 9" by 7-1/4" - Type B.4
   8. 9" by 7-1/4" - Type B.5
   9. 9" by 9 " - Type C.3
   10. 3-1/2" by 7-1/4" - Type F
   11. 4-1/2" by 8-1/2" - Type F.1
   12. 5-7/8" by 5-1/4" - Type J

2.03 TACTILE SIGNAGE MEDIA

A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
   1. Total Thickness: 1/16 inch.

2.04 DIMENSIONAL LETTERS

A. Plastic Letters:
   1. Material: Acrylic plastic sheet, flat, 1 inch total thickness
   2. Color: Black.
   3. Mounting: Concealed screws.

2.05 ACCESSORIES

A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Locate signs where indicated:
   1. If no location is indicated obtain Owner's instructions.

D. Protect from damage until Substantial Completion; repair or replace damage items.

3.02 EXAMINATION:

A. Verification of conditions:
   1. Examine areas to receive signage; notify Architect in writing of unacceptable substrate.
   2. Beginning work indicates acceptance of substrate.
   3. Subsequent modifications to substrate or signage becomes this section's complete responsibility.

3.03 CLEANING:

A. Clean exposed surfaces not more than 48 hours prior to Date of Substantial Completion in accord with manufacturer's written cleaning instructions.

3.05 REMOVAL AND REPAIRS:

A Verification of conditions:
   1. Examine areas to remove existing signage; notify Architect in writing of areas that will be damaged and repaired.
   2. Beginning work indicates acceptance to repair wall conditions up to paint.

B Remove existing signage and return to Owner, if required. If not, dispose as appropriate.

END OF SECTION

SECTION 32 92 00

TURF AND GRASSES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Seeding.
2. Sodding.

B. Project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However unless adequate written justification is provided, then it is expected that these guidelines will govern the design and specifications.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Material Test Reports: For existing surface soil and imported topsoil.

C. Maintenance Instructions: Recommended procedures to be approved by Owner for maintenance of lawns during a calendar year. Submit before expiration of required maintenance periods.

1.03 QUALITY ASSURANCE

A. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.

1. Report suitability of topsoil for lawn growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil.

B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.04 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

1.05 SCHEDULING

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
1. Spring Planting: March 15-June 15.

2. Fall Planting: August 15-November 15.

1.06 LAWN MAINTENANCE (SEE SECTION 3.4 FOR FURTHER INFORMATION)

A. Begin maintenance immediately after each area is planted and continues until acceptable lawn is established, but for not less than the following periods:

1. Seeded Lawns: 60 days from date of Substantial Completion.

a. When full maintenance period has not elapsed before end of planting season, or if lawn is not fully established, continue maintenance during next planting season.

2. Sodded Lawns: 60 days from date of Substantial Completion.

B. Mow lawn as soon as top growth is tall enough to cut (max 3”). Schedule initial and subsequent mowing to maintain the following grass height:

1. Mow grass 1-1/2 to 2 inches high.

C. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

PART 2 - PRODUCTS

2.01 SEED

A. Grass Seed Mix:

1. Full Sun: Tall Fescue Blend a minimum of three cultivars. (modify per drawing for seasonal application of crop seeds)

2. Sun and Partial Shade: Proportioned by weight as follows:
   a. 60 percent Tall Fescue Blend
   b. 30 percent chewings red fescue (Festuca rubra variety).
   c. 10 percent perennial ryegrass (Lolium perenne).
   d. 10 percent Kentucky bluegrass (.Poa pratensis).

3. Shade: Proportioned by weight as follows:
   a. 50 percent chewings red fescue (Festuca rubra variety).
   b. 35 percent rough Tall Fescue Blend
   c. 15 percent rough bluegrass (Poa trivialis).

A. Grass Seed: Seed Mixseed mix.

2.02 TURFGRASS SOD

A. Turfgrass Sod: Certified Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with TPI's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.

B. Turfgrass Species: Sod of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:

1. Full Sun: Tall Fescue Blend a minimum of three cultivars. (modify per drawing for seasonal application of crop seeds)

2. Sun and Partial Shade: Proportioned by weight as follows:
   a. 60 percent Tall Fescue Blend
   b. 30 percent chewings red fescue (Festuca rubra variety).
   c. 10 percent perennial ryegrass (Lolium perenne).
   d. 10 percent Kentucky bluegrass (.Poa pratensis).

3. Shade: Proportioned by weight as follows:
   a. 50 percent chewings red fescue (Festuca rubra variety).
   b. 35 percent rough Tall Fescue Blend
   c. 15 percent rough bluegrass (Poa trivialis).

C. All turf grass and seed sources and grassing subcontractors must be listed by the contractor and approved by the A&E. Refer to the Drawings for location of seed types.

2.03 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 6 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth. To be determined by the WSSU project representative.

2.04 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Class: Class O, with a minimum 95 percent passing through No. 8 (2.36-mm) sieve and a minimum 55 percent passing through No. 60 (0.25-mm) sieve.

B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.

2.05 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1/2-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.

B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8.

C. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.

2.06 FERTILIZER

A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 1 percent nitrogen and 10 percent phosphoric acid. Standard analysis is 10-20-20.

B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
   1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.

C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

   2. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.07 PLANTING SOIL MIX

A. Planting Soil: ASTM D 5268 topsoil, with pH range of 5.5 to 7, a minimum of 6 percent organic material content from existing, native surface when possible. Verify suitability of soil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

B. Planting Soil Mix: Consult with WSSU Facilities Maintenance Division for approval.

PART 3 - EXECUTION

3.01 LAWN PREPARATION

A. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

   1. Spread planting soil mix to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement.

   2. Spread approximately one-half the thickness of planting soil mix over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil mix.

B. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:

   1. Loosen surface soil to a depth of at least of 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 6 inches of soil.

   2. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

D. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

E. Before planting, obtain Owner and A&E's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.02 SEEDING

A. Sow seed at the rate of 4 lb/1000 sq. ft. (exact to be determined by approved mixture)

B. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h). Evenly distribute seed by sowing equal quantities in two directions at right angles to each other. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

C. Protect seeded areas from hot, dry weather or drying winds by applying approved compost mulch and/or planting soil within 24 hours after completing seeding operations. Soak areas, scatter mulch/soil uniformly to a thickness of 3/8", and roll surface smooth.

3.03 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across angle of slopes exceeding 1:3.

2. Anchor sod on slopes exceeding 1:6 only with anchors (pegs/staple) approved by Project representative and WSSU Facilities Maint. Division Anchors to be spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.

D. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.04 TURF MAINTENANCE

E. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, re-grade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

F. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain height appropriate for species without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowing (see Part 1, Subsection 1.2 for heights).

G. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations.

Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

3.05 SATISFACTORY LAWNS

A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities.

B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

END OF SECTION

SECTION 32 93 00

PLANTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Plants.
2. Planting soils.

1.02 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.

C. Finish Grade: Elevation of finished surface of planting soil.

D. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

E. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

F. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

G. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

H. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

I. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

J. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

K. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.03 SUBMITTALS

A. Product Data: For each type of product indicated, including soils.

B. Samples of mineral mulch.

C. Product certificates.

D. Material Test Reports: For existing surface soil and imported topsoil.

E. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of plants during a calendar year.

1.04 QUALITY ASSURANCE

A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

1. Pesticide Applicator: State licensed, commercial.

B. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory.
1. The soil-testing laboratory shall oversee soil sampling.
2. Report suitability of tested soil for plant growth.
    a. State recommendations for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
    b. Report presence of problem salts, minerals, or heavy metals; if present, provide additional recommendations for corrective action.

C. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

D. Pre-construction conference: Conduct conference at Project site.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver bare-root stock plants freshly dug. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.

B. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

C. Handle planting stock by root ball.

D. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.

E. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate

aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1.06 WARRANTY

A. Special Warranty: Warrant the following exterior plants, for the warranty period indicated, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, or incidents that are beyond Contractor's control.

1. Warranty Period for Trees and Shrubs: One year from date of Substantial Completion.

2. Warranty Period for Ground Cover and Plants: Six months from date of Substantial Completion.

1.07 MAINTENANCE/SERVICE

A. Trees and Shrubs: Maintain for the following maintenance period by replacing dead or damaged plants, by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Restore or replace damaged tree wrappings.

1. Maintenance Period: Six months from date of Substantial Completion.

B. Ground Cover and Plants: Maintain for the following maintenance period by watering, weeding, fertilizing, and other operations as required to establish healthy, viable plantings:

1. Maintenance Period: Six months from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

C. Annuals Perennials and Biennials: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery.

2.02 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:

1. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through No. 60 sieve.

B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing through No. 6 (3.35-mm) sieve and a maximum of 10 percent passing through No. 40 (0.425-mm) sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Aluminum Sulfate: Commercial grade, unadulterated.

E. Perlite: Horticultural perlite, soil amendment grade.

F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 (0.30-mm) sieve.

G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.

2.03 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1/2-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or granular texture, with a pH range of 3.4 to 4.8.

C. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.

D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.

2.04 FERTILIZERS

A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 1 percent nitrogen and 10 percent phosphoric acid. Standard analysis is 10-20-20

B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

D. Planting Tablets: Tightly compressed chip type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.

1. Size: as recommended by testing and pre manufacturers recommendations
2. Nutrient Composition: 20 percent nitrogen, 10 percent phosphorous, and 5 percent potassium, by weight plus micronutrients.

2.05 PLANTING SOILS

A. Planting Soil: ASTM D 5268 topsoil, with pH range of 5.5 to 7, a minimum of 6 percent organic material content from existing, native surface when possible. Verify suitability of soil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

B. Planting Soil Mix: Consult with WSSU Facilities Maint. Division for approval of Planting Soil

2.06 MULCHES

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:

1. Shredded hardwood is the standard.
2. Pine bark nuggets are to be used around buildings where cigarettes might be thrown, especially near doorways.

2.07 PESTICIDES

A. General: Pesticide registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 - EXECUTION

3.01 PLANTING AREA ESTABLISHMENT

A. Loosen subgrade of planting areas to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
1. Spread planting soil to a depth of 24 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

a. Spread approximately one-fourth the thickness of planting soil mix over loosened subgrade. Mix thoroughly into top 3 inches of subgrade. Spread remainder of planting soil mix

B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

C. Herbicides: Three (3) working days prior to the planting of shrubs and groundcovers, but subsequent to planting bed preparation, the GS shall be notified and be on hand when the

pre-emergent is applied to the planting project. The first application of the chemical trifluralin, oryzalin, or approved substitute by the GS should be applied per labeled instructions. (See instructions under Mulching for Application Rate).

3.02 EXCAVATION FOR TREES AND SHRUBS

A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.

1. Excavate approximately three times as wide as ball diameter and/or at mini clearances as detailed on the plans.
2. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.

B. Subsoil and topsoil removed from excavations may be used as planting soil if approved by the owner.

3.03 TREE, SHRUB, AND VINE PLANTING

A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1.

B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

C. Set stock plumb and in center of planting pit or trench with root flare/crown 1-1/2-inch above adjacent finish grades.

1. Use planting soil for backfill.
2. Balled and Burlapped: After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Balled and Potted or Container-Grown: Carefully remove root ball from container without damaging root ball or plant.
4. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
5. When approved by Owner, Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
6. Continue backfilling process. Water again after placing and tamping final layer of soil.

D. Bare-Root Stock: Set and support bare-root stock in center of planting pit or trench with root flare 1 inch adjacent finish grade.

1. Use planting soil for backfill.

2. Spread roots without tangling or turning toward surface, and carefully work backfill around roots by hand. Puddle with water until backfill layers are completely saturated. Plumb before backfilling, and maintain plumb while working backfill around roots and placing layers above roots.

3. When approved by Owner Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside soil-covered roots about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole or touching the roots.

4. Continue backfilling process. Water again after placing and tamping final layer of soil.

5. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.04 TREE, SHRUB, AND VINE PRUNING

A. Remove only dead, dying, or broken branches. Do not prune for shape.

B. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by A&E, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.

3.05 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees, shrubs, and vines as shown on the plans in even rows with triangular spacing.

B. Use planting soil for backfill.

C. Dig holes large enough to allow spreading of roots.

D. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

E. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

F. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.06 PLANTING AREA MULCHING

A. Within two (2) days after planting, mulch all planting areas, entire shrub and groundcover beds with a four-inch (4”) layer of mulching material. Taper mulch to ground level at the trunk. Do not allow mulch to pile up against the trunks.

Prior to mulching, apply trifluralin, oryzalin pre-emergent herbicide or approved equal as specified by GS to surface according to label directions. Then apply a second application after mulching. Application shall not proceed without the presence of a representative of the GS.

B. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Trees in Turf Areas: Apply organic mulch (approve hardwood) ring of 4-inches deep and at a radius around trunks or stems to encompass the root ball and saucer as detailed on the plans. Do not place mulch within 3 inches of trunks or stems.

2. Organic Mulch (approve hardwood) in Planting Areas: Apply 4-inch average thickness of mulch extending 12 inches beyond edge of individual planting pit or over whole surface of planting area per plans, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.07 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.

B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use practices to minimize the use of pesticides and reduce hazards.

D. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

E. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

END OF SECTION

1. GENERAL:

A. THE WORK COVERED BY THE SPECIFICATIONS CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, MATERIAL,S AND SUPPLIES AS NECESSARY FOR THE COMPLETE AND SATISFACTORY OPERATING ELECTRICAL SYSTEMS AS SHOWN ON THE PLANS.
B. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2014 NATIONAL ELECTRICAL CODE, NFPA, STATE BUILDING CODE, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY. CONTRACTOR SHALL PAY FOR ALL REQUIRED PERMITS, FEES, INSPECTIONS, ETC. (IF ANY ARE REQUIRED).
C. CONTRACTOR SHALL COORDINATE ELECTRICAL INSPECTIONS WITH SCO ELECTRICAL INSPECTOR.
D. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. OR BY A STATE APPROVED THIRD PARTY TESTING AGENCY FOR THE USE INTENDED WHERE A STANDARD FOR SUCH MATERIALS AND USE EXISTS. ALL ITEMS OF THE SAME TYPE AND RATING SHALL BE IDENTICAL AND OF THE SAME MANUFACTURER.
E. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CATALOG DATA IN ELECTRONIC FORMAT (PDF) FOR ALL ELECTRICAL ITEMS IN THE SCOPE OF WORK, INCLUDING, BUT NOT LIMITED TO, RACEWAYS, BOXES, FITTINGS, CONDUCTORS, LUMINAIRES, LAMPS, BALLASTS, WIRING DEVICES, SAFETY SWITCHES, DISCONNECTS, TRANSFORMERS, PANELBOARDS, SWITCHBOARDS, SWITCHGEARS, GENERATORS, AUTOMATIC TRANSFER SWITCHES (ATS). FIRE ALARM, TELECOMMUNICATIONS, ETC. FOR APPROVAL AS APPLICABLE FOR THE PROJECT. ONE COMPLETE SET OF APPROVED SUBMITTALS SHALL BE MAINTAINED AT THE JOB SITE.
F. ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH THE BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, CONDUIT, WIRING, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, METHODS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COSTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED AFTER BIDS HAVE BEEN ACCEPTED AND ALL COSTS WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. CREDITS SHALL BE GIVEN TO THE OWNER WHERE SUCH EQUIPMENT AND METHODS RESULT IN LESS EXPENSE TO THE CONTRACTOR.
G. ONE COMPLETE SET OF THE LATEST CONSTRUCTION PLANS OF ALL TRADES SHALL BE MAINTAINED AT THE JOB SITE. IN ADDITION, ALL ADDENDUMS, BULLETINS, AND/OR SKETCHES SHALL BE INCORPORATED INTO THE ON-SITE CONSTRUCTION PLANS AS THE JOB PROGRESSES.
H. COMPLETELY ADEQUATE HOUSING SHALL BE PROVIDED FOR ALL MATERIALS STORED ON JOB SITE. ONLY CONDUIT MAY BE STORED OUTSIDE, BUT NOT IN CONTACT WITH THE GROUND.
I. THE CONDUIT AND NEUTRAL SYSTEM SHALL BE GROUNDED AT THE MAIN SERVICE EQUIPMENT. GROUNDING ELECTRODE SYSTEM SHALL BE INSTALLED PER NEC 250.
J. PROVIDE AN INTERSYSTEM BONDING TERMINATION DEVICE AT THE MAIN ELECTRICAL SERVICE PER NEC 250.94.
K. WIRING SHALL BE TESTED FOR CONTINUITY AND GROUNDS BEFORE BEING ENERGIZED. FAULTY WIRING SHALL BE REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER.
L. PROVIDE ALL CUTTING AND PATCHING FOR INSTALLATION OF WORK AND REPAIR ANY DAMAGE DONE.
M. DIVISION 21 AND 23 CONTRACTORS SHALL PROVIDE DISCONNECT SWITCHES, STARTERS, VFD'S AND FINAL EQUIPMENT CONNECTIONS FOR ASSOCIATED EQUIPMENT. FOR ALL OTHER EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS, THE ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL CONNECTIONS TO THE EQUIPMENT (UNLESS OTHERWISE NOTED), EXCEPT FOR CONTROL WIRING FOR EQUIPMENT NOT PROVIDED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING FOR SUCH EQUIPMENT SHALL BE PROVIDED BY THE RESPECTIVE DISCIPLINE.
N. ALL ELECTRICAL JUNCTION BOXES, SWITCHGEAR, CABLING, VOICE/DATA OUTLETS, LOW VOLTAGE CABINETS, EMERGENCY RECEPTACLES, ETC. SHALL BE LABELED ACCORDING TO PANEL/RACK AND CIRCUIT NUMBER.
O. UPON COMPLETION OF WORK, CONTRACTOR SHALL PRESENT ENGINEER WITH CERTIFICATE OF APPROVAL FROM LOCAL INSPECTOR AND/OR AUTHORITY HAVING JURISDICTION BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.
P. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR EFFECTIVE THE DATE THE PROJECT IS ACCEPTED BY THE OWNER. ANY IMPERFECT MATERIALS OR WORKMANSHIP SHALL BE REPLACED WITHOUT ADDED COST TO THE PROJECT.
Q. IT SHALL NOT BE THE INTENT OF ISSUED PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL NECESSARY ITEMS FOR A COMPLETE AND OPERATING SYSTEM.
R. THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FURNISH, FABRICATE, ERECT, CONNECT, AND COMPLETELY INSTALL SYSTEMS IN PROPER OPERATING CONDITION. ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED SHALL BE INCLUDED AS PART OF THIS WORK TO COMPLETE THE INSTALLATION.
S. EXCEPT WHEN DIVISION 21 AND 23 CONTRACTORS ARE TO PROVIDE DISCONNECT SWITCHES AND FINAL EQUIPMENT CONNECTIONS, THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS, OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS, CONTRACTOR SHALL COORDINATE THE ROUGH-IN OF ALL OUTLET LOCATIONS WITH ARCHITECTURAL FLOOR PLANS, ELEVATIONS, AND MILLWORK SHOP DRAWINGS PRIOR TO ROUGH-IN.
T. ELECTRICAL CONTRACTOR SHALL NOT SCALE PLANS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS OTHERWISE NOTED.
U. CONTRACTOR SHALL TEST ALL "LIFE SAFETY" EQUIPMENT AND SYSTEMS FOR PROPER FUNCTION AND OPERATION. UPON SUCCESSFUL COMPLETION OF TESTS, CONFIRMATION SHALL BE SENT TO THE ENGINEER OF RECORD IN THE FORM OF A LETTER STATING THE TESTS PERFORMED, THE RESULTS, AND THE DATE TESTS WERE SUCCESSFULLY COMPLETE. "LIFE SAFETY" EQUIPMENT AND SYSTEMS CONSIST OF THOSE AS SPECIFIED IN THE STATE BUILDING CODE, THE NATIONAL ELECTRICAL CODE (NEC), NFPA 101, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY.
V. IF DURING THE COURSE OF WORK, THE CONTRACTOR DISCOVERS A PROBLEM WITH THE PERFORMANCE OF THE INSTALLATION RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC, OR OTHER CODES OR REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY BRING THE PROBLEM TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK.
W. WHERE THERE ARE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BRING THE ISSUE TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK OR ORDERING ANY MATERIALS. NO ADDITIONAL COSTS SHALL BE WARRANTED WITHOUT A CHANGE TO THE PROJECT SCOPE.
X. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PROVIDING TEMPORARY POWER AND LIGHTING FOR ALL TRADES. AT NO TIME SHALL EXISTING BUILDING POWER SYSTEMS BE UTILIZED WITHOUT WRITTEN PERMISSION FROM THE OWNER.
Y. COORDINATE LOCATION AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH THE UNIVERSITY. WHERE MORE THAN ONE SERVICE IS SUPPLIED TO A BUILDING, PROVIDE IDENTIFICATION AT EACH SERVICE PER NEC 230-2(E).
Z. COORDINATE LOCATION AND REQUIREMENTS FOR TELEPHONE SERVICE WITH THE TELEPHONE COMPANY.
AA. THE CONTRACTOR SHALL PROVIDE A MINIMUM TWO WEEK NOTICE FOR ANY PLANNED UTILITY OUTAGES. WRITTEN AUTHORIZATION FROM THE OWNER SHALL BE OBTAINED PRIOR TO ANY OUTAGE. ALL PLANNED UTILITY OUTAGES SHALL BE COORDINATED WITH THE OWNER TO OCCUR DURING NON-OPERATING TIMES, INCLUDING NIGHTS, WEEKENDS AND HOLIDAYS. ALL PLANNED UTILITY OUTAGES SHALL INCLUDE PROVISIONS FOR PROPER BACK-UP OF ALL LIFE-SAFETY SYSTEMS AND INCLUDE AN APPROVED FIRE-WATCH PROGRAM AS REQUIRED BY THE LOCAL FIRE MARSHALL.
AB. EACH BIDDER SHALL VISIT THE JOB SITE PRIOR TO BIDDING TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND TO ASCERTAIN THE EXTENT OF WORK REQUIRED. FAILURE TO VISIT SITE SHALL NOT EXCUSE CONTRACTOR FROM PERFORMING REQUIRED WORK NOR SHALL IT BE AN ACCEPTABLE REASON FOR REQUESTING ADDITIONS TO THE CONTRACT.

2. DEMOLITION NOTES:

A. PARTIAL AND TOTAL DEMOLITION OF PORTIONS OF THE BUILDING SHALL BE PERFORMED ALONG WITH ALL NECESSARY MODIFICATIONS TO THAT PORTION OF THE EXISTING BUILDING WHICH SHALL REMAIN SO THAT IT CONTINUES TO FUNCTION UNAFFECTED BY THE DEMOLITION AND ASSOCIATED NEW CONSTRUCTION.
B. WHERE INCLUDED AS PART OF THE CONTRACT DOCUMENTS, THE DRAWINGS INDICATE THE GENERAL AREAS OF WORK INVOLVED. HOWEVER, THE ELECTRICAL CONTRACTOR SHALL PERFORM WORK OUTSIDE THOSE AREAS SHOWN AS IS NECESSARY TO COMPLY WITH THE INTENT OF THIS SECTION.
C. THE ELECTRICAL CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE EXISTING BUILDING AND WITH THE WORK OF ALL OTHER TRADES AND INCLUDE ALL WORK NECESSARY TO COMPLY WITH THE INTENT OF THE DEMOLITION.
D. IT SHALL BE UNDERSTOOD THAT FIELD CONDITIONS MAY BE ENCOUNTERED DURING THE EXECUTION OF THIS CONTRACT WHICH WILL REQUIRE EXTENSION OR RELOCATION OF EXISTING SYSTEMS OR EQUIPMENT WHICH ARE NOT SPECIFICALLY SHOWN ON THE DRAWINGS, BUT WHICH ARE REQUIRED TO MEET THE STATED INTENT THAT THE BUILDING CONTINUE TO FUNCTION UNAFFECTED BY THE DEMOLITION AND ASSOCIATED NEW CONSTRUCTION. THE ELECTRICAL CONTRACTOR SHALL INCLUDE SUCH WORK AS WOULD NORMALLY BE EXPECTED IN AN EXISTING BUILDING OF THIS AGE AND TYPE.
E. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL TOOLS, EQUIPMENT, LABOR, ETC. IN ORDER TO ACCOMPLISH THE DEMOLITION PORTION OF THE PROJECT.
F. THE DEMOLITION OF CERTAIN AREAS OF THE EXISTING BUILDING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE GENERAL CONTRACTOR TO DIFFERENTIATE THE SCOPE OF WORK BETWEEN SEPARATE TRADES.
G. THE ELECTRICAL CONTRACTOR SHALL INCLUDE COORDINATION WITH THE GENERAL CONTRACTOR AND SUCH DEMOLITION OF THE EXISTING ELECTRICAL SYSTEMS AS IS NECESSARY SO THAT THE DEMOLITION WORK OF THE GENERAL CONTRACTOR SHALL NOT DAMAGE THOSE PORTIONS OF THE ELECTRICAL SYSTEMS WHICH ARE TO REMAIN IN SERVICE, ARE TO BE REUSED, OR ARE TO BECOME THE PROPERTY OF THE OWNER.
H. TURN OVER TO OWNER, UPON REQUEST OR AS NOTED, ITEMS SHOWN AS BEING REMOVED AND NOT REINSTALLED. ITEMS NOT DIRECTED OR REQUESTED TO BE TURNED OVER TO THE OWNER SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR.
I. EQUIPMENT OR MATERIALS WHICH ARE TO BE REUSED OR TURNED OVER TO THE OWNER SHALL BE CAREFULLY REMOVED, CLEANED, AND STORED IN A CLEAN AND DRY AREA. SHOULD THE ELECTRICAL CONTRACTOR ENCOUNTER SUCH EQUIPMENT WHICH IS NOT IN SATISFACTORY CONDITION FOR REUSE AND NOT IN WORKING ORDER, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.
J. DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT REQUIRING REMOVAL. CONDUIT SHALL BE REMOVED BACK TO THE POINT WHERE IT WILL BE CONCEALED AT THE COMPLETION OF THIS CONTRACT. WIRE AND CABLE SHALL BE REMOVED BACK TO THE FIRST OUTLET BOX, CABINET, OR TERMINATION POINT WHICH IS TO REMAIN. CIRCUITS WHICH ARE NOT REUSED SHALL BE REMOVED BACK TO THE SOURCE IN THEIR ENTIRETY.
K. REMOVE AND REINSTALL CEILINGS IN THE EXISTING BUILDING AS REQUIRED FOR THE WORK. COORDINATE WITH THE GENERAL CONTRACTOR. IN SUCH AREAS, REMOVE AND REINSTALL ALL ELECTRICAL DEVICES WHICH ARE TO REMAIN IN OR ON THE CEILING.
L. WHERE NEW CEILINGS CONFLICT WITH EXISTING ELECTRICAL WORK WHICH IS TO REMAIN, RELOCATE THE ELECTRICAL WORK INVOLVED TO CLEAR THE NEW CONSTRUCTION.
M. WHERE NEW WALL OR FLOOR FINISHES CONFLICT WITH EXISTING ELECTRICAL WORK WHICH IS TO REMAIN, RELOCATE THE ELECTRICAL WORK INVOLVED OR PROVIDE BOX EXTENSIONS OR SIMILAR DEVICES AND REINSTALL ON THE NEW FINISH.
N. WHERE EXISTING BRANCH CIRCUITS AND SYSTEMS ARE INTERRUPTED BY NEW WORK OR SYSTEMS (ELECTRICAL, MECHANICAL, PLUMBING, FIRE PROTECTION, ETC.), EXTEND AND RECONNECT THOSE CIRCUITS AND SYSTEMS. WHERE THOSE CIRCUITS OR SYSTEMS MUST REMAIN IN SERVICE DURING THE EXECUTION OF THIS CONTRACT, PROVIDE TEMPORARY CONNECTIONS UNTIL FINAL CONNECTIONS ARE COMPLETE.

2012 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY – ELECTRICAL SUMMARY

501.1 METHOD OF COMPLIANCE
☐ NC SPECIFIC COMCHECK PROVIDED
■ 2012 NCECC CHAPTER 5 ☐ 20% IMPROVEMENT OVER ASHRAE 90.1-2007
☐ NOT APPLICABLE BASED ON PROJECT SCOPE

501.2 APPLICATION COMPLIANCE
☐ 506.2.1 EFFICIENT MECH EQUIPMENT ☐ 506.2.4 HI EFFICIENCY DOMESTIC HW
■ 506.2.2 REDUCED LTG DENSITY ☐ 506.2.5 ONSITE RENEWABLE ENERGY
☐ 506.2.3 ENERGY RECOVERY SYSTEMS ☐ 506.2.6 DAYLIGHTING CONTROLS
☐ NOT APPLICABLE BASED ON PROJECT SCOPE

505.2 – INTERIOR LIGHTING CONTROLS (MANDATORY REQUIREMENTS):
■ INTERIOR LIGHTING SYSTEMS ARE PROVIDED WITH CONTROLS AS REQUIRED PER SECTION 505.2, EXCEPT WHERE EXEMPT.
☐ NOT APPLICABLE

505.3 – TANDEM WIRING (MANDATORY REQUIREMENTS):
☐ FLUORESCENT LUMINARIES LOCATED WITHIN THE SAME AREA ARE TANDEM WIRED AS REQUIRED PER SECTION 505.3, EXCEPT WHERE EXEMPT.
■ NOT APPLICABLE

505.4 – EXIT SIGNS (MANDATORY REQUIREMENTS):
■ INTERNALLY ILLUMINATED EXIT SIGNS DO NOT EXCEED 5 WATTS PER SIDE.
☐ NOT APPLICABLE

505.5 – INTERIOR LIGHTING POWER REQUIREMENTS (PRESCRIPTIVE) (NON-EXEMPT):
☐ NOT APPLICABLE PER 2012 NCECC 101.4.3, EXCEPTION 1.G.
505.5.1 – TOTAL CONNECTED INTERIOR LIGHTING POWER:
65,004 WATTS SPECIFIED
31 % REDUCTION OF SPECIFIED VS. ALLOWED (506.2.2)
505.5.2 – TOTAL ALLOWABLE INTERIOR LIGHTING POWER:
METHOD OF COMPLIANCE:
■ BUILDING AREA METHOD ☐ SPACE-BY-SPACE METHOD
94,409 WATTS ALLOWED

505.6.1 – EXTERIOR BUILDING GROUNDS LIGHTING:
■ LAMPS OPERATING AT GREATER THAN 100 WATTS FOR EXTERIOR BUILDING GROUNDS LUMINARIES HAVE A MINIMUM EFFICACY OF 60 LUMENS PER WATT, EXCEPT WHERE EXEMPT.
☐ NOT APPLICABLE

505.6.2 – EXTERIOR BUILDING LIGHTING POWER (NON-EXEMPT):
■ NOT APPLICABLE
TOTAL CONNECTED EXTERIOR LIGHTING POWER:
4,400 WATTS SPECIFIED
TOTAL ALLOWABLE EXTERIOR LIGHTING POWER:
5,687 WATTS ALLOWED

505.6.3 – SHIELDING OF EXTERIOR BUILDING LIGHTING FIXTURES:
■ ONLY FULLY SHIELDED EXTERIOR BUILDING LIGHTING FIXTURES ARE PROVIDED, EXCEPT WHERE EXEMPT.
☐ ALTERNATIVE EXTERIOR BUILDING LIGHTING FIXTURES ARE PROVIDED FOR GREATER ENERGY EFFICIENCY OVER FULLY SHIELDED EXTERIOR BUILDING LIGHTING FIXTURES.
☐ NOT APPLICABLE

505.7 – ELECTRICAL ENERGY CONSUMPTION (DWELLING UNITS):
☐ SEPARATE TENANT METERING TO DETERMINE ELECTRICAL ENERGY CONSUMPTION HAS BEEN PROVIDED FOR BUILDINGS HAVING INDIVIDUAL DWELLING UNITS.
■ NOT APPLICABLE

ELECTRICAL PLAN INDEX

PROJECT PHASING NOTE

REFER TO ARCHITECTURAL SHEET G-101 FOR COMPLETE PROJECT PHASING REQUIREMENTS. ANY WORK ASSOCIATED WITH PHASING SHALL BE PROVIDED AS A FUNCTION OF THE SCOPE OF WORK INDICATED AND INTENDED TO OCCUR. ALL NOTIFICATIONS OF INTERRUPTION OF THE EXISTING BUILDING SERVICE(S) SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER/PROJECT MANAGER A MINIMUM OF 1 WEEK.

LOAD TABULATION

LOADS IN KVA	EXISTING DEMAND		NEW CONNECTED		DIVERSITY	NEW DEMAND		TOTAL KVA
	SINGLE PHASE	THREE PHASE	SINGLE PHASE	THREE PHASE	FACTOR (%)	SINGLE PHASE	THREE PHASE	EXISTING AND NEW DEMAND
LIGHTS			84.2		125	105.2		105.2
VENTILATION			81.5	190.1	100	81.5	190.1	271.6
MOTORS				49.8	100		49.8	49.8
KITCHEN								
RECEPTACLES			263.6		NEC	143.8		143.8
WATER HEATER			10.0		125	12.5		12.5
MISC.			140.8	211.1	100	140.8	211.1	351.9
FUTURE ALLOWANCE					100		0.0	
TOTAL						483.7	451.1	934.8

ALTERNATE #1

BASE BID:
EXISTING CONDUITS THAT PENETRATE THE BUILDING CLADDING WILL BE EXISTING AND TO REMAIN.

ALTERNATE BID:
THE E.C. IS TO WORK WITH BUILDING CLADDING CONTRACTOR TO TEMPORARILY REMOVE EXISTING CONDUITS THAT PENETRATE THE BUILDING'S EXTERIOR WALLS. E.C. IS TO RE-INSTALL/EXTEND CONDUITS/CIRCUITS AFTER THE NEW CLADDING IS INSTALLED. EXTEND EXISTING FLUSH MOUNTED BOXES AS REQUIRED. E.C. IS TO SITE VERIFY EXTENT OF WORK PRIOR TO BIDDING.

ALTERNATE #13

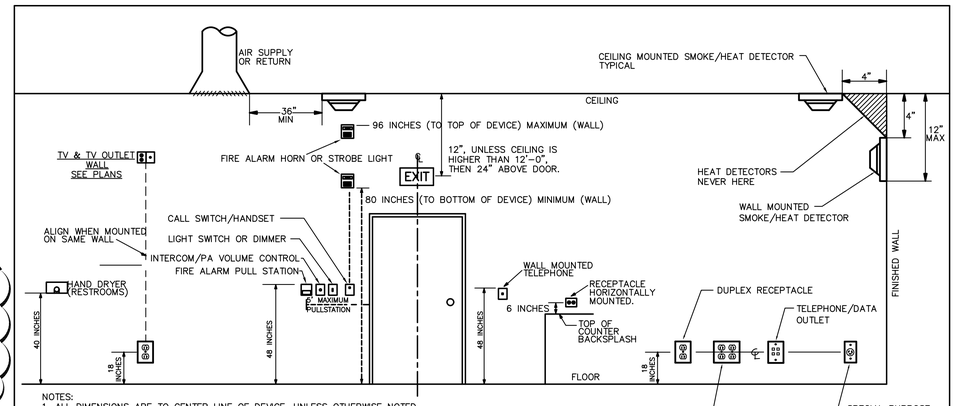
BASE BID:
REFER TO SPECS FOR ACCEPTABLE FIRE ALARM MANUFACTURERS.

ALTERNATE BID:
THE E.C. IS TO PROVIDE ALTERNATE PRICING FOR A SIMPLEX GRINNELL FIRE ALARM SYSTEM THAT IS COMPATIBLE WITH THE EXISTING CAMPUS WIDE NETWORK.

3

GENERAL NOTE

ALL INDIVIDUAL ELECTRICAL DEVICE BOXES (FIRE ALARM DEVICES, RECEPTACLES, SWITCHES, ETC...) ARE TO BE FLUSH MOUNTED, WITH CONCEALED CONDUITS, IN EXISTING STUD WALLS. SURFACE MOUNTED DEVICES AND RACEWAYS ARE ALLOWED ON EXISTING MASONRY WALLS.



NOTES:
1. ALL DIMENSIONS ARE TO CENTER LINE OF DEVICE, UNLESS OTHERWISE NOTED.
2. LOCATIONS WHERE TV MOUNT IS BACK TO BACK ON SAME WALL, AN OFFSET OF 8-12" WILL BE NEEDED FOR INSTALLATION OF JACK/RECEPTACLE.
3. DEVICES ABOVE COUNTER TOPS SHALL BE A MAXIMUM OF 44" TO TOP OF DEVICE FOR ADA ACCESS.

1 MOUNTING HEIGHTS OF DEVICES - ELEVATION
NO SCALE

WOOLPERT
11301 Carmel Commons Blvd.
Suite 300
Charlotte, NC 28226
704.525.6284
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NORTH CAROLINA PROFESSIONAL SEAL 028297 ENGINEER BRANDON L. MILLER
9/07/16

CODE : 41326
ITEM : 307
SCO ID # : 13-11117-01-A

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Revisions:
3 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

ELECTRICAL NOTES

E-001

1 OF 74
OPTIMA #: 14-0457

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SYMBOL SCHEDULE

SCHEDULE NOTES:
1. SEE DETAIL FOR STANDARD MOUNTING HEIGHTS OF ALL DEVICES, UNLESS OTHERWISE NOTED.
2. ALL DEVICES (SWITCHES AND RECEPTACLES) SHALL BE GRAY AND EMERGENCY SHALL BE RED. COVER PLATE SHALL BE 302 STAINLESS STEEL. ALL COVER PLATES IN MASONRY WALLS SHALL BE JUMBO PLATES.
3. DEVICE BOXES SHALL NOT BE MOUNTED BACK TO BACK IN COMMON WALLS UNLESS OTHERWISE NOTED.
4. ALL FIRE ALARM SHALL BE IN CONDUIT.
5. ALL LOW VOLTAGE CABLING SHALL BE PLENUM RATED.
6. MC CABLE SHALL NOT BE PERMITTED.
7. ALL PLAN DRAWINGS SHALL SUPERCEDE SPECIFICATIONS WHEN PLANS AND SPECIFICATIONS ARE IN CONFLICT.
8. ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, CONDUIT, WIRE, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
9. SHARED NEUTRAL OR "SUPER NEUTRAL" CONDUCTORS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY SHOWN ON THESE DRAWINGS.
10. ALL WALL MOUNTED OCCUPANCY/VACANCY SENSOR SWITCH OUTLETS SHALL BE BE PROVIDED WITH A GROUNDED CONDUCTOR AS PART OF THE WIRING SYSTEM.

ABBREVIATIONS

+42"	DIMENSION INDICATES HEIGHT ABOVE FINISHED FLOOR AT WHICH CENTER OF DEVICE IS TO MOUNTED. SEE PLANS.
3R	NEMA 3R
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLER UNIT
C	CEILING MOUNTED DEVICE
C.B.	CIRCUIT BREAKER
EC	EMPTY CONDUIT WITH PULL CORD
E.C.	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FACP	FIRE ALARM CONTROL PANEL
FPN	FUSE PER NAMEPLATE
LC	LIGHTING CONTACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
U.G.	UNDERGROUND
WP	WEATHERPROOF
S.E.	SERVICE ENTRANCE
EM	EMERGENCY FIXTURE WITH BATTERY OR GEN. BACK-UP
ER	EXISTING ITEM RELOCATED TO THIS LOCATION.
RL	EXISTING ITEM TO BE RELOCATED.
RM	EXISTING ITEM TO REMAIN.
RP	EXISTING ITEM TO BE REPLACED.
RV	EXISTING ITEM TO BE REMOVED.
Isc	RMS SYMMETRICAL SHORT CIRCUIT CURRENT
AIC	AMPERE INTERRUPTING CAPACITY (EQUIPMENT RATING)
SM	SURFACE MOUNTED
N	NEW DEVICE AND LOCATION

DEVICES AND PATHWAYS

- WIRING SYSTEM CONCEALED IN WALL OR CEILING. WHEN SHOWN, CROSS LINES INDICATE NUMBER OF WIRES. (GROUND WIRES ARE NOT SHOWN)
- WIRING SYSTEM CONCEALED IN OR UNDER SLAB OR UNDERGROUND, POWER PLANS
- WIRING SYSTEM EXPOSED
- CONDUIT TURNED UP TO FLOOR ABOVE.
- CONDUIT TURNED DOWN TO FLOOR BELOW.
- BRANCH CIRCUIT HOMERUN TO PANEL.
- JUNCTION BOX WITH CONNECTION TO EQUIPMENT SERVED. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING.
- U — HUBBELL USB4 SERIES USB DEVICE. THIS SHALL BE INSTALLED IN PLUGMOLD IF SHOWN AT PLUGMOLD. IF SHOWN ALONE ON THE DRAWINGS, CONTRACTOR SHALL FURNISH SURFACE MOUNTED JUNCTION BOX FOR DEVICE AND RACEWAY TO ABOVE ACCESSIBLE CEILING. OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON.
- DU — HUBBELL USB20X2 SERIES DUPLEX RECEPTACLE / USB COMBINATION DEVICE. THIS SHALL BE INSTALLED IN PLUGMOLD IF SHOWN AT PLUGMOLD. IF SHOWN ALONE ON THE DRAWINGS, CONTRACTOR SHALL FURNISH SURFACE MOUNTED JUNCTION BOX FOR DEVICE AND RACEWAY TO ABOVE ACCESSIBLE CEILING. OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON.
- OR SM — SURFACE MOUNTED DUPLEX RECEPTACLE, 20 AMP, 120 VOLT (USE 20 AMP FOR SINGLE RECEPTACLE ON A CIRCUIT.) HUBBELL 5352, OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON. FURNISH SURFACE MOUNTED BACKBOX FOR DEVICE WITH SURFACE MOUNTED RACEWAY TO UP ABOVE ACCESSIBLE CEILING.
- SURFACE MOUNTED DUPLEX RECEPTACLE MOUNTED 6" ABOVE COUNTER BACKSPLASH, OR AT HEIGHT INDICATED, 20 AMP, 120 VOLT (USE 20 AMP FOR SINGLE RECEPTACLE ON A CIRCUIT.) HUBBELL OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON. FURNISH SURFACE MOUNTED BACKBOX FOR DEVICE WITH SURFACE MOUNTED RACEWAY TO UP ABOVE ACCESSIBLE CEILING.
- SURFACE MOUNTED QUADRAPLEX RECEPTACLE (TWO NEMA 5-20R DUPLEX RECEPTACLES) MOUNTED 6" ABOVE COUNTER BACKSPLASH, OR AT HEIGHT INDICATED, HUBBELL OR EQUAL BY WIREMOLD, LEGRAND. FURNISH SURFACE MOUNTED BACKBOX FOR DEVICE WITH SURFACE MOUNTED RACEWAY TO UP ABOVE ACCESSIBLE CEILING.
- EWC — SURFACE MOUNTED NEMA 5-20R DUPLEX RECEPTACLE FOR ELECTRIC WATER COOLER. HUBBELL OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON. FURNISH SURFACE MOUNTED BACKBOX FOR DEVICE WITH SURFACE MOUNTED RACEWAY TO UP ABOVE ACCESSIBLE CEILING. PROVIDE GFCI PROTECTED CIRCUIT BREAKER. UTILIZE ELBOWS AS REQUIRED TO AVOID WATER COOLER.
- R — RECESSED DUPLEX RECEPTACLE, 20 AMP, 120 VOLT (USE 20 AMP FOR SINGLE RECEPTACLE ON A CIRCUIT.) HUBBELL 5352, OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON.
- R — RECESSED QUADRAPLEX RECEPTACLE (TWO NEMA 5-20R RECEPTACLES), 20 AMP, 120 VOLT (USE 20 AMP FOR SINGLE RECEPTACLE ON A CIRCUIT.) HUBBELL 5352, OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON.
- GFI — GROUND FAULT RECEPTACLE. NEMA 5-20R DUPLEX. ALL RECEPTACLES INSTALLED OUTSIDE, WITHIN 6' OF A SINK OR IN A KITCHEN SHALL BE GFCI.
- C — CEILING MOUNTED DUPLEX RECEPTACLE. NEMA 5-20R DUPLEX.
- IG — ISOLATED GROUND RECEPTACLE. NEMA 5-20R DUPLEX.
- WP — WEATHERPROOF RECEPTACLE. NEMA 5-20R GFI DUPLEX. COVER SHALL BE INTERMATIC #WP1020 (CLEAR) OR EQUAL BY LEGRAND, HUBBELL OR LEVITON.
- + — DUPLEX RECEPTACLE, 20 AMP, 120 VOLT (USE 20 AMP FOR SINGLE RECEPTACLE ON A CIRCUIT.) T.V. RECEPTACLE MOUNTED AT 88" AFF.
- SPD — SURGE PROTECTION DEVICE (SPD); SEE DETAIL
- HUBBELL 4750 SERIES PLUGMOLD. NEMA 5-20R RECEPTACLES. REFER TO DRAWINGS FOR QUANTITIES. IF MULTIPLE CIRCUITS ARE SHOWN AT THE PLUGMOLD, ALTERNATE CIRCUITS ON PLUGMOLD. OR EQUAL BY WIREMOLD, LEGRAND OR LEVITON
- SPECIAL OUTLET. SEE PLANS.
- FC — MODULAR FURNITURE CONNECTION. PROVIDE SURFACE MOUNTED DOUBLE-GANG BARRIERED J-BOX FOR POWER AND TELE/DATA. EXTEND 1-1/4" EC TO ABOVE ACCESSIBLE CEILING FOR TELE/DATA. CONNECT POWER AS INDICATED. PROVIDE RACEWAY TO ABOVE ACCESSIBLE CEILING.
- FC R — RECESSED MODULAR FURNITURE CONNECTION. PROVIDE DOUBLE-GANG BARRIERED J-BOX FOR POWER AND TELE/DATA. EXTEND 1-1/4" EC TO ABOVE ACCESSIBLE CEILING FOR TELE/DATA. CONNECT POWER AS INDICATED.
- M — MOTOR OPERATED DAMPER (DAMPER BY M.C.)
- G — GROUNDING BAR PER DIAGRAM.
- MO — SIX GANG FLUSH MOUNTED FLOOR BOX WITH ACCESSIBLE COVER FOR POWER AND COMMUNICATIONS. PROVIDE FIVE NEMA 5-20R DUPLEX RECEPTACLES AND ONE COMM. PLATE WITH PROVISION FOR SIX RJ45 CAT6 JACKS. EQUAL TO WIREMOLD RFB6E-OC-RCT. ARCHITECT TO SELECT FINISH. STUB FROM BOX ONE CONCEALED 1¼"C ROUTED TO WHICHEVER IS NEAREST, BB, J-HOOKS, OR CABLE TRAY.

PANELS, DISCONNECTS

- S_M — FRACTIONAL HORSEPOWER MANUAL MOTOR STARTER, WITH OVERLOAD PROTECTION
- NON-FUSED HEAVY DUTY DISCONNECT SWITCH. NUMERALS INDICATE SWITCH RATING. NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED.
- FUSED HEAVY DUTY DISCONNECT SWITCH. NUMERALS INDICATE SWITCH RATING/FUSE SIZE. NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED.
- CIRCUIT BREAKER. NUMERALS INDICATE RATING. NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED.
- PLYWOOD TELEPHONE BACKBOARD. SIZE AS INDICATED ON RISER.
- PANELBOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL AT 6'-6" AFF.
- DOOR MOTOR CONTROL. MOUNT +48" AFF, CONTROLS SHALL BE UP, DOWN, AND STOP MOUNTED ON 4" SQUARE BOX (FLUSH BOX)
- CONNECTION TO MOTOR. STARTER PROVIDED BY OTHERS UNLESS OTHERWISE NOTED.
- PANELBOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL AT 6'-6" AFF.

FIRE ALARM

- F — FIRE ALARM MANUAL STATION WITH CLEAR POLYCARBONATE PROTECTIVE COVER. COVER SHALL HAVE INTEGRAL BATTERY BACKED UP AUDIBLE ALARM.
- F — ADA COMPLIANT FIRE ALARM SPEAKER WITH STROBE LIGHT, 75cd, UNLESS OTHERWISE NOTED. WHITE FINISH.
- S — ADA COMPLIANT FIRE ALARM STROBE LIGHT, 75cd, UNLESS OTHERWISE NOTED. WHITE FINISH.
- SD — CEILING MOUNTED SMOKE DETECTOR.
- SDR — CEILING MOUNTED SMOKE DETECTOR TO RECALL ELEVATOR UNDER ALARM CONDITION. SEE 2/E004 FOR DETAILS.
- DD RAIL — DUCT MOUNTED SMOKE DETECTOR. FURNISHED AND CONNECTED BY ELECTRICAL CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. CUTTING OF DUCT, INSTALLATION OF DETECTOR. AND DETERMINATION OF SAMPLING TUBE LENGTH SHALL BE THE MECHANICAL CONTRACTOR. PROVIDE REMOTE INDICATING LIGHT WITH EACH DETECTOR. DUCT SMOKE DETECTORS REQUIRE REMOTE ANNUNCIATOR INDICATOR LIGHTS WITH TEST SWITCHES (RAILS).
- HD — CEILING MOUNTED HEAT DETECTOR.
- FS — SPRINKLER SYSTEM FLOW SWITCH.
- TS — SPRINKLER SYSTEM TAMPER SWITCH.
- SD — SMOKE DAMPER. FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, CONNECTED TO FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.
- DH — MAGNETIC DOOR HOLDER, PROVIDED BY GENERAL CONTR, INSTALLED BY ELEC. CONTR. PROVIDE A SMOKE DETECTOR WITHIN 5 FT. OF BOTH SIDES OF DOORS TO LOCALLY RELEASE DOOR UPON SMOKE SIGNAL.
- FAAP — FIRE ALARM REMOTE GRAPHIC ANNUNCIATOR.
- F — ADA COMPLIANT FIRE ALARM SPEAKER STROBE LIGHT, 75cd, UNLESS OTHERWISE NOTED. WHITE FINISH. (CEILING MOUNTED)
- S — ADA COMPLIANT FIRE ALARM STROBE LIGHT, 75cd, UNLESS OTHERWISE NOTED. WHITE FINISH. (CEILING MOUNTED)
- FACP — FIRE ALARM CONTROL PANEL WITH LOCAL SMOKE DETECTOR
- NAC — FIRE ALARM NOTIFICATION POWER SUPPLY.
- R — DUCT DETECTOR REMOTE INDICATING LIGHT.
- CO — CEILING MOUNTED CARBON MONOXIDE DETECTOR (CENTRAL SYSTEM CONNECTED)
- ISO — ISOLATION MODULE.

SPECIAL SYSTEMS

- GA — GENERATOR ANNUNCIATOR PANEL; 3/4" CONDUIT TO ATS. PROVIDE CABLING PER MANUFACTURER RECOMMENDATIONS
- CR — CARD READER ACCESS CONTROL. SEE SPECIFIC DIAGRAM ON SHEET E-003

TELECOMMUNICATIONS

- H — HANDSET/TELEPHONE FOR INTERCOM/PA SYSTEM +48" 1" EC TO ABOVE ACCESSIBLE CEILING WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING.
- TELE/DATA OUTLET ABOVE COUNTER OR HEIGHT SPECIFIED. 1" EC TO ABOVE ACCESSIBLE CEILING WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING.
- TELE/DATA OUTLET. 1" EC TO ABOVE ACCESSIBLE CEILING WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING.

LIGHTING (SEE FIXTURE SCH.)

- A4 — LED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE. SUSPEND FOUR CORNERS WITH WIRE TO STRUCTURE. DO NOT ALLOW GRID ALONE TO SUPPORT FIXTURE. SUBSCRIPT INDICATES FIXTURE TYPE.
- LED STRIP FIXTURE.
- LED OR H.I.D. LIGHTING FIXTURE.
- WALL MOUNTED INCANDESCENT, LED OR H.I.D. LIGHTING FIXTURE.
- LED FIXTURE WITH EMERGENCY BATTERY PACK. 1100 LUMEN INVERTER. SEE LIGHTING FIXTURE SCHEDULE
- LED DOWNLIGHT WITH AN 90 MINUTE EMERGENCY BATTERY PACK. SEE LIGHTING FIXTURE SCHEDULE.
- OR — EXIT LIGHT WITH ARROWS AND NUMBERS OF FACES AS INDICATED ON PLANS. 90 MIN BATTERY BACKUP. SEE LIGHTING FIXTURE SCHEDULE. THIS DESIGNATION SYMBOLIZES LIGHTING TYPE 'X'.
- EMERGENCY BATTERY PACK FIXTURE. 90 MINUTE EMERGENCY INTEGRAL BATTERY. SEE LIGHTING FIXTURE SCHEDULE
- EMERGENCY BATTERY PACK/EXIT COMBO FIXTURE WITH 90 MINUTE BATTERY BACKUP, SEE FIXTURE SCHEDULE.
- EXTERIOR EMERGENCY FIXTURE.
- SINGLE HEAD POLE FIXTURE.
- DOUBLE HEAD POLE FIXTURE.
- LIGHT BOLLARD.
- FLOODLIGHT.
- S — SINGLE POLE SWITCH, 20 AMP, 120/277 VOLT, COOPER AH 1221, OR EQUAL BY HUBBELL, LEVITON, AND PASS & SEYMOUR.
- S_3 — THREE WAY SWITCH, 20 AMP, 120/277 VOLT, COOPER 1223, THREE WAY SWITCH, 20 AMP, 120/277 VOLT, COOPER 1223, OR EQUAL BY HUBBELL, LEVITON, AND PASS & SEYMOUR.
- S_4 — FOUR WAY SWITCH, 20 AMP, 120/277 VOLT,
- S_T — 2-HR TIMER SWITCH, 20 AMP, 120/277 VOLT
- SS — INDICATES TWO LEVEL SWITCHING. SWITCH OUTER TWO LAMPS OF FIXTURES TOGETHER AND THE INNER LAMP(S) TOGETHER.
- LOW VOLTAGE LIGHTING CONTROL CABLE. SEE VENDOR WIRING DIAGRAMS FOR EXACT REQUIREMENTS.

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3 ADDENDUM 3 10/10/16

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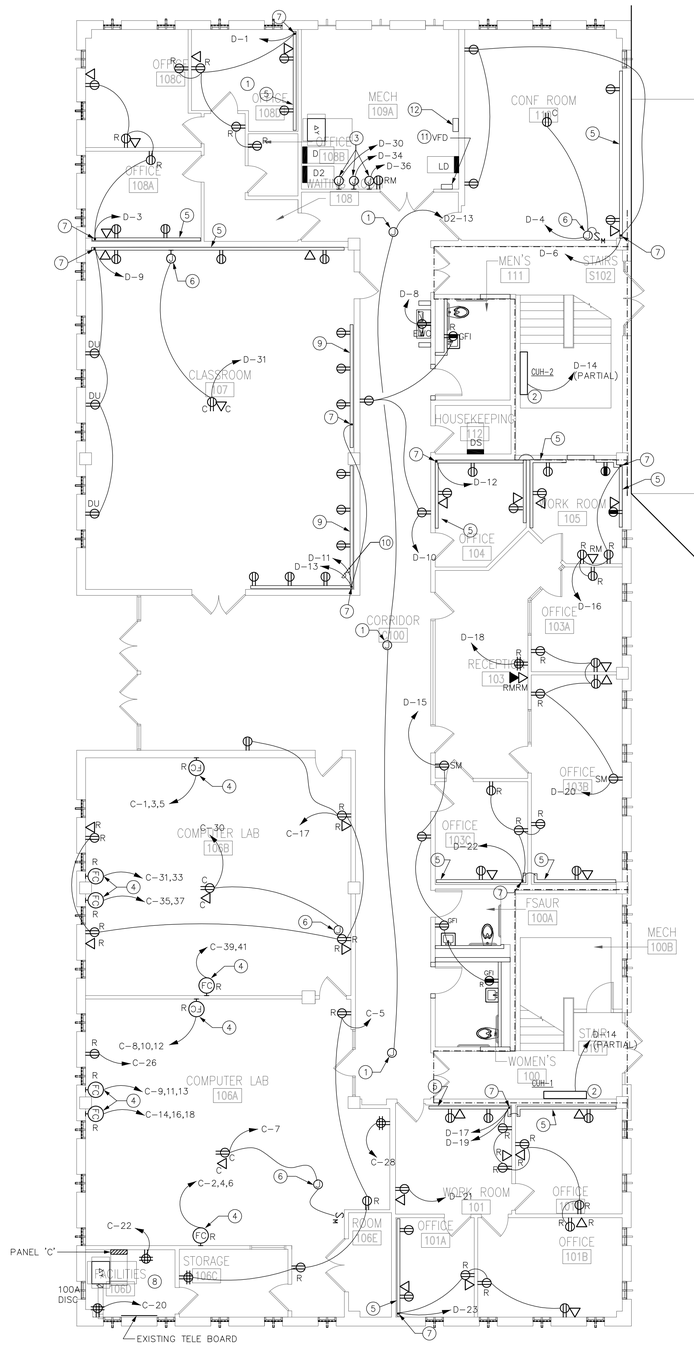
ELECTRICAL SYMBOL LEGEND

E-002



1 MACY - FIRST FLOOR PLAN RENOVATION - POWER
1/8" = 1'-0"

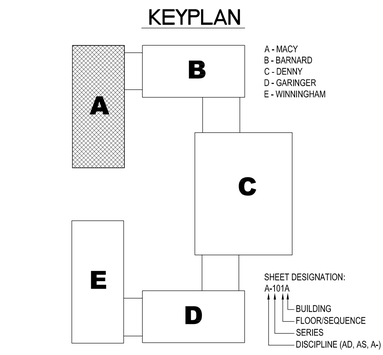
GENERAL NOTES

1. COORDINATE EXACT LOCATIONS OF ALL DEVICES IN FIELD WITH UNIVERSITY REPRESENTATIVE PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES (XX)

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING FOR MECHANICAL VAV CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.
3. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO BAS PANEL. 20A/1ø,120V CIRCUIT. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.
4. CONTRACTOR SHALL FIELD VERIFY QUANTITY OF ELECTRICAL CIRCUITS SUPPLYING EXISTING BASE POWER FEED AND PROVIDE SAME QUANTITY OF CIRCUIT TO NEW BASEFEED.
5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. COORDINATE TELE/COMMUNCATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
6. CIRCUIT EXISTING PROJECTION SCREEN JUNCTION BOX W/ CEILING MOUNTED PROJECTOR RECEPTACLE. UTILIZE EXISTING SCREEN CONTROLLER.
7. E.C. IS TO PROVIDE VERTICAL SURFACE MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.
8. COORDINATE LOCATION OF A/V J-BOX WITH A/V RISER DIAGRAM SHEET 2/E-006 FOR CONNECT TO DEVICES WITHIN THIS ROOM.
9. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD 3000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
10. THIS CIRCUIT POWERS DEVICES WITHIN 6' OF SINK. CONTRACTOR SHALL PROVIDE GFCI PROTECTED DEVICE AT THE BEGINNING OF CIRCUIT.
11. CONTRACTOR SHALL RECONNECT EXISTING SUPPLY FAN CIRCUIT CONNECTION TO LINE SIDE OF VFD. EXTEND CONDUIT AND CONDUCTORS AS NEEDED. CONTRACTOR SHALL PROVIDE AND INSTALL 3#4,1#10G.,1"C. FROM ELECTRICAL CONNECTION LOCATION OF SUPPLY FAN TO LOAD SIDE OF VFD. COORDINATE EXACT LOCATIONS OF CONNECTIONS AND EQUIPMENT PRIOR TO ROUGH-IN.
12. PROVIDE LIGHTING CONTACTOR. REFER TO DETAIL 2/E006.

KEYPLAN



N

RATED WALL LEGEND

1 HOUR FIRE BARRIER

REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE WALL CONSTRUCTION AND RATING INFORMATION.

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MACY
FIRST FLOOR PLAN
RENOVATION
POWER

E-201A

32 OF 74
OPTIMA #: 14-0457

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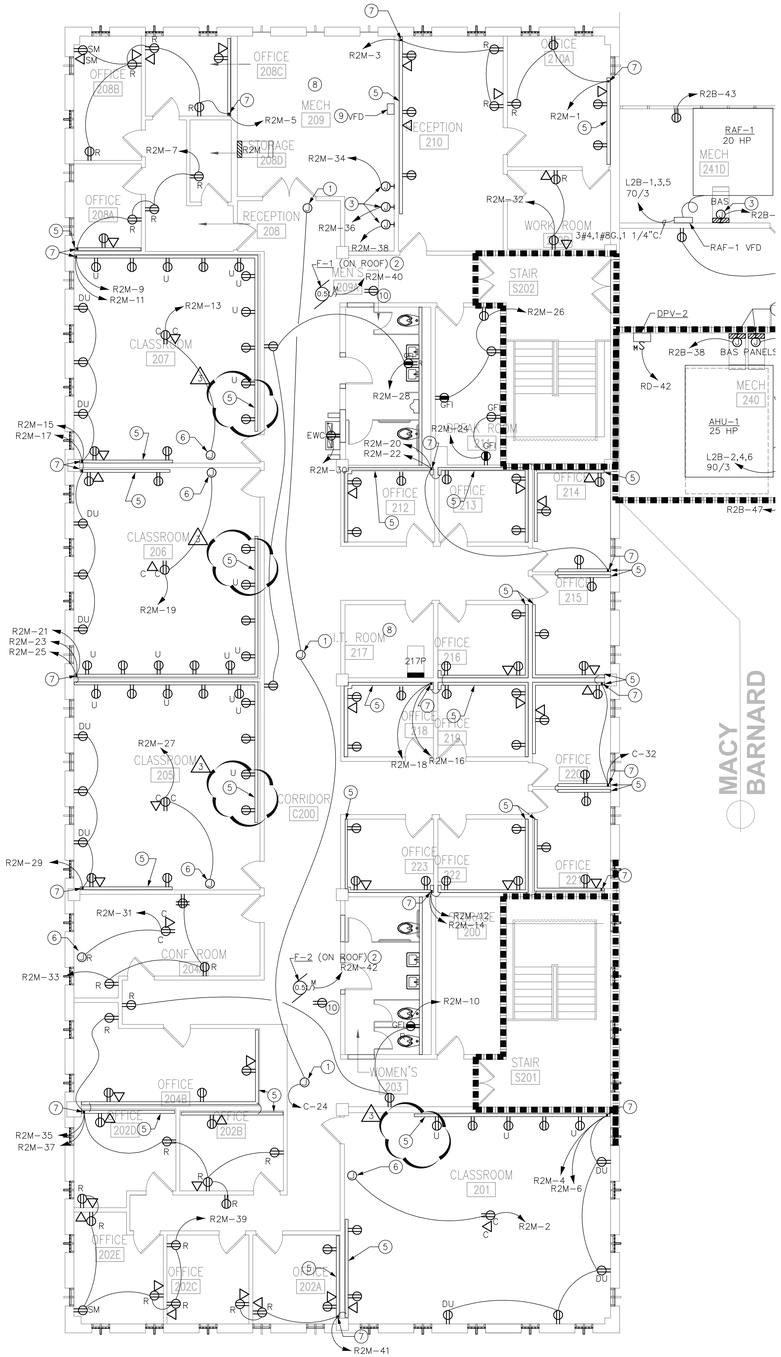


1 MACY - SECOND FLOOR PLAN RENOVATION - POWER
1/8" = 1'-0"

MACY BARNARD

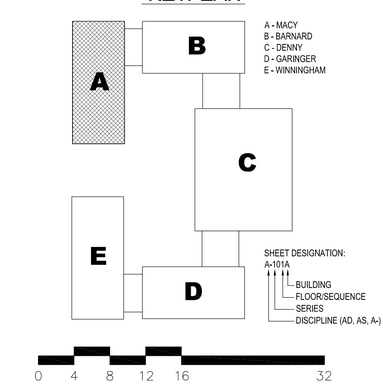
GENERAL NOTES

1. COORDINATE EXACT LOCATIONS OF ALL DEVICES IN FIELD WITH UNIVERSITY REPRESENTATIVE PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES (XX)

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN. PROVIDE AND INSTALL GFI/WP RECEPTACLE WITHIN 25' OF EQUIPMENT.
3. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO BAS PANEL. 20A-1P 120V CIRCUIT.
4. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD SERIES 3000 OR EQUAL BY HUBBLE OR LEVITON.
5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. COORDINATE TELE/COMMUNICATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
6. CIRCUIT EXISTING PROJECTION SCREEN JUNCTION BOX WITH CEILING MOUNTED PROJECTOR RECEPTACLE. UTILIZE EXISTING SCREEN CONTROLLER.
7. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL SURFACE MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.
8. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.
9. CONTRACTOR SHALL RECONNECT EXISTING SUPPLY FAN CIRCUIT CONNECTION TO LINE SIDE OF VFD. EXTEND CONDUIT AND CONDUCTORS AS NEEDED. CONTRACTOR SHALL PROVIDE AND INSTALL 3#4,1#10G,1"C. FROM ELECTRICAL CONNECTION LOCATION OF SUPPLY FAN TO LOAD SIDE OF VFD. COORDINATE EXACT LOCATIONS OF CONNECTIONS AND EQUIPMENT PRIOR TO ROUGH-IN.
10. PROVIDE AND INSTALL ROOF TOP GFCI/WP RECEPTACLES AS NEEDED. UTILIZE CIRCUIT R2M-8.

KEYPLAN



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1 HOUR FIRE BARRIER
REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE WALL CONSTRUCTION AND RATING INFORMATION.

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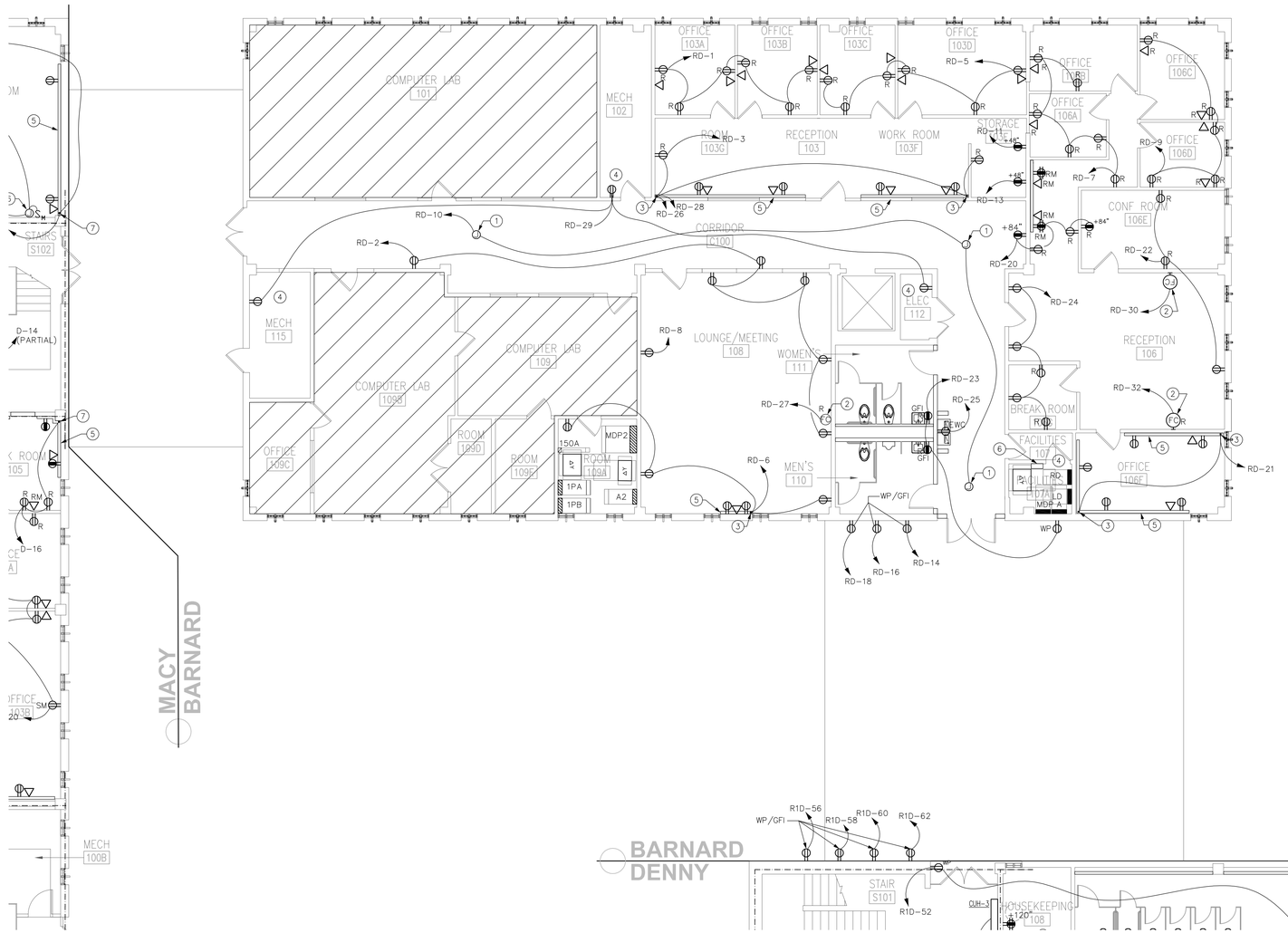
Academic Complex Renovations
9201 University City Blvd.
Charlotte, NC 28223

Revisions:
3 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

MACY
SECOND FLOOR PLAN
RENOVATION
POWER

E-202A



1 BARNARD - FIRST FLOOR PLAN RENOVATION - POWER
1/8" = 1'-0"

GENERAL NOTES

1. COORDINATE EXACT LOCATIONS OF ALL DEVICES IN FIELD WITH UNIVERSITY REPRESENTATIVE PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES (XX)

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. CONTRACTOR SHALL FIELD VERIFY QUANTITY OF ELECTRICAL CIRCUITS SUPPLYING THIS BASE POWER FEED AND PROVIDE SAME QUANTITY OF CIRCUITS TO EXISTING BASEFEED IN SAME LOCATION.

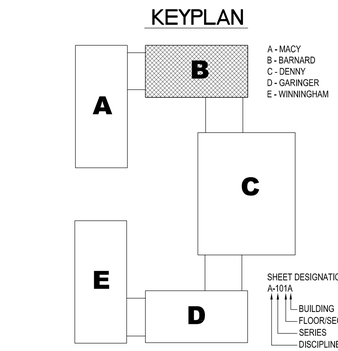
3 3. COORDINATE TELE/COMMUNICATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL SURFACE MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.

4. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.

3 5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE OR LEVITON.

6. PROVIDE LIGHTING CONTACTOR. REFER TO DETAIL 3/E500.

KEYPLAN



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N

RATED WALL LEGEND

1 HOUR FIRE BARRIER	
REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE WALL CONSTRUCTION AND RATING INFORMATION.	

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NORTH CAROLINA PROFESSIONAL SEAL 028297 ENGINEER BRANDON L MILLER
9/07/16

CODE : 41326
ITEM : 307
SCO ID # : 13-11117-01-A

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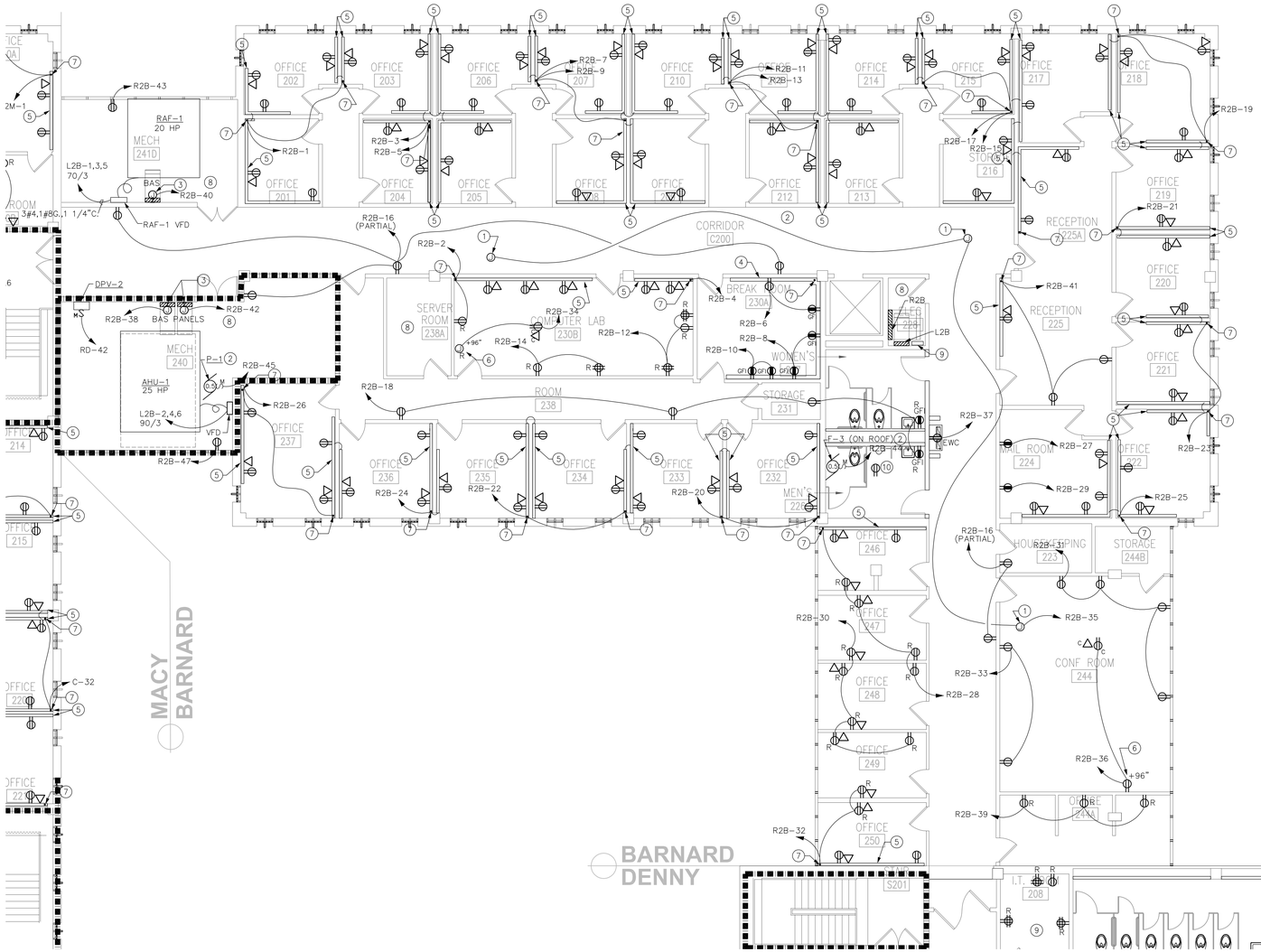
BARNARD
FIRST FLOOR PLAN
RENOVATION
POWER

E-201B

Printed: Oct 04, 2016 - 3:26pm - By: BMiller - Filename: J:\2014\14-0457\xEPWR.dwg



1 BARNARD - SECOND FLOOR PLAN RENOVATION - POWER

1/8" = 1'-0"

GENERAL NOTES

1. COORDINATE EXACT LOCATIONS OF ALL DEVICES IN FIELD WITH UNIVERSITY REPRESENTATIVE PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES (XX)

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.
3. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO BAS PANEL. 20A-1P-120V CIRCUIT.

3 4. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD 3000 SERIES OR EQUAL BY HUBBLE OR LEVITON.

5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE OR LEVITON.

6. CIRCUIT EXISTING PROJECTION SCREEN JUNCTION BOX W/ CEILING MOUNTED PROJECTOR RECEPTACLE. UTILIZE EXISTING SCREEN CONTROLLER.

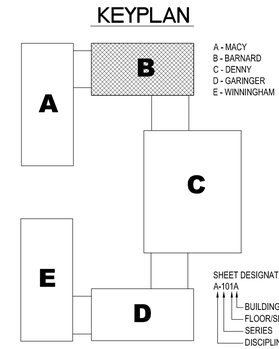
3 7. COORDINATE TELE/COMMUNICATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL SURFACE MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.

8. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.

9. PROVIDE LIGHTING CONTACTOR. REFER TO DETAIL 2/E006.

10 PROVIDE AND INSTALL ROOF TOP GFCI/WP RECEPTACLES AS NEEDED. UTILIZE CIRCUIT R2B-46.

KEYPLAN



RATED WALL LEGEND

1 HOUR FIRE BARRIER	
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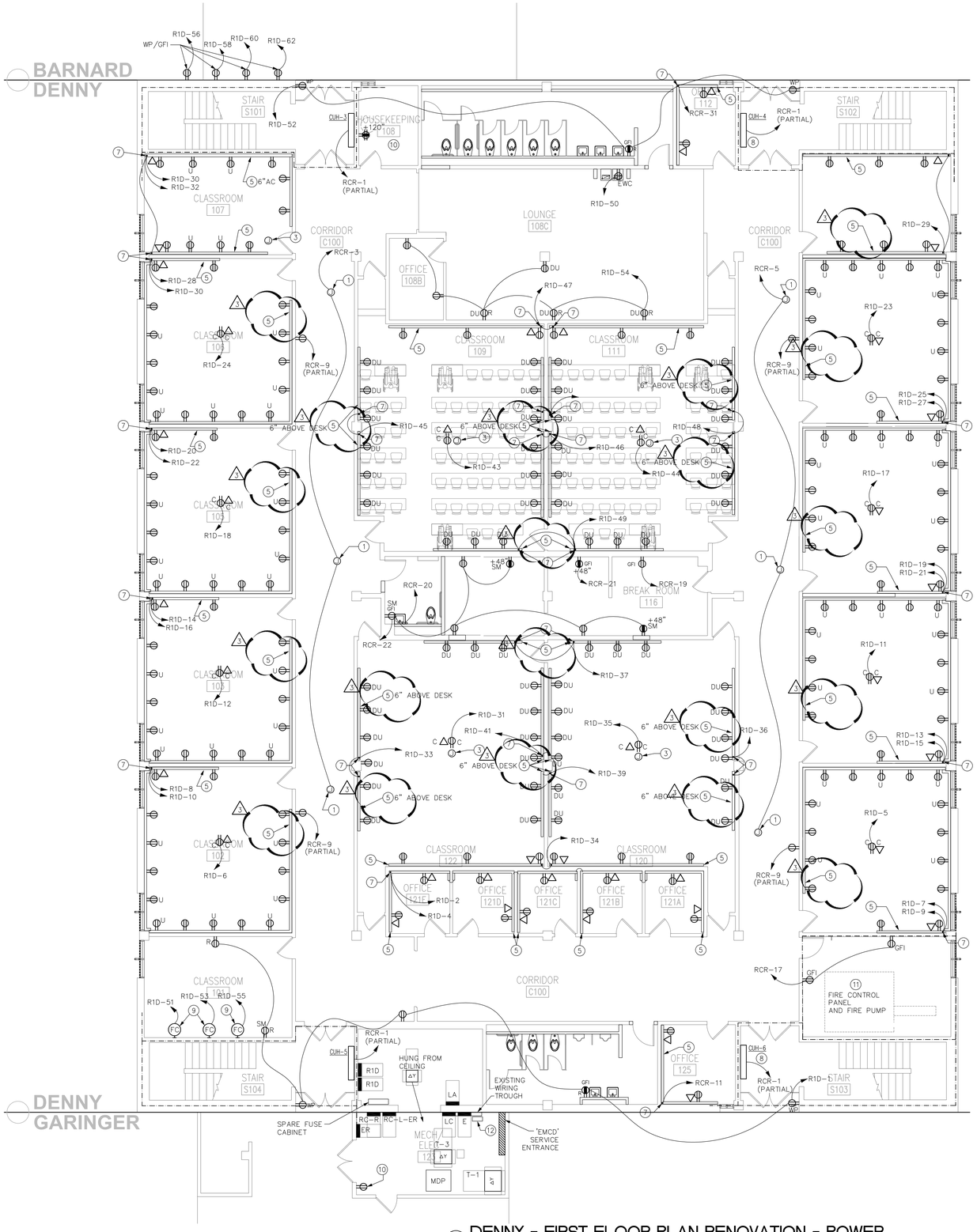
BARNARD
SECOND FLOOR PLAN
RENOVATION
POWER

E-202B

37 OF 74
OPTIMA #: 14-0457



1 DENNY - FIRST FLOOR PLAN RENOVATION - POWER

1/8" = 1'-0"

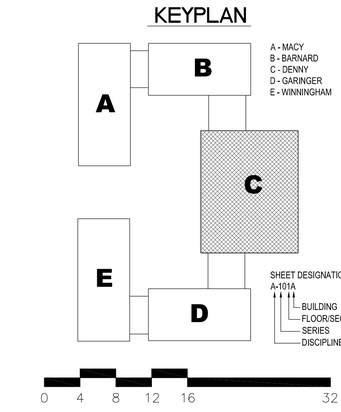
GENERAL NOTES

1. COORDINATE EXACT LOCATIONS OF ALL DEVICES IN FIELD WITH UNIVERSITY REPRESENTATIVE PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES (XX)

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD 3000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
3. COORDINATE LOCATION OF A/V J-BOX. REFER TO A/V RISER DIAGRAM SHEET 2/E-006 FOR CONNECT TO DEVICES WITHIN THIS ROOM.
4. NOT USED.
5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. COORDINATE TELE/COMMUNCATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
6. LOCATE PROJECTOR SCREEN JUNCTION BOX ABOVE CEILING ADJACENT TO SCREEN. LOCATE SCREEN CONTROL SWITCH CONNECT ADJACENT TO SCREEN. MOUNT AT 48" AND POWER FROM SCREEN J-BOX VIA FLEX CONDUIT. COORDINATE LOCATION OF PROJECTION SCREEN JUNCTION BOX WITH SCOTT STRIKA AT THE OFFICE OF CLASSROOM SUPPORT.
7. COORDINATE TELE/COMMUNICATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL SURFACE MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.
8. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.
9. CONTRACTOR SHALL FIELD VERIFY QUANTITY OF ELECTRICAL CIRCUITS SUPPLYING EXISTING BASE POWER FEED AND PROVIDE SAME QUANTITY OF CIRCUIT TO NEW BASEFEED.
10. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.
11. REFER TO POWER RISER DIAGRAM FOR POWERING OF THE FIRE PUMP.
12. PROVIDE LIGHTING CONTACTOR. REFER TO DETAIL 2/E006.

KEYPLAN



N

RATED WALL LEGEND

1 HOUR FIRE BARRIER

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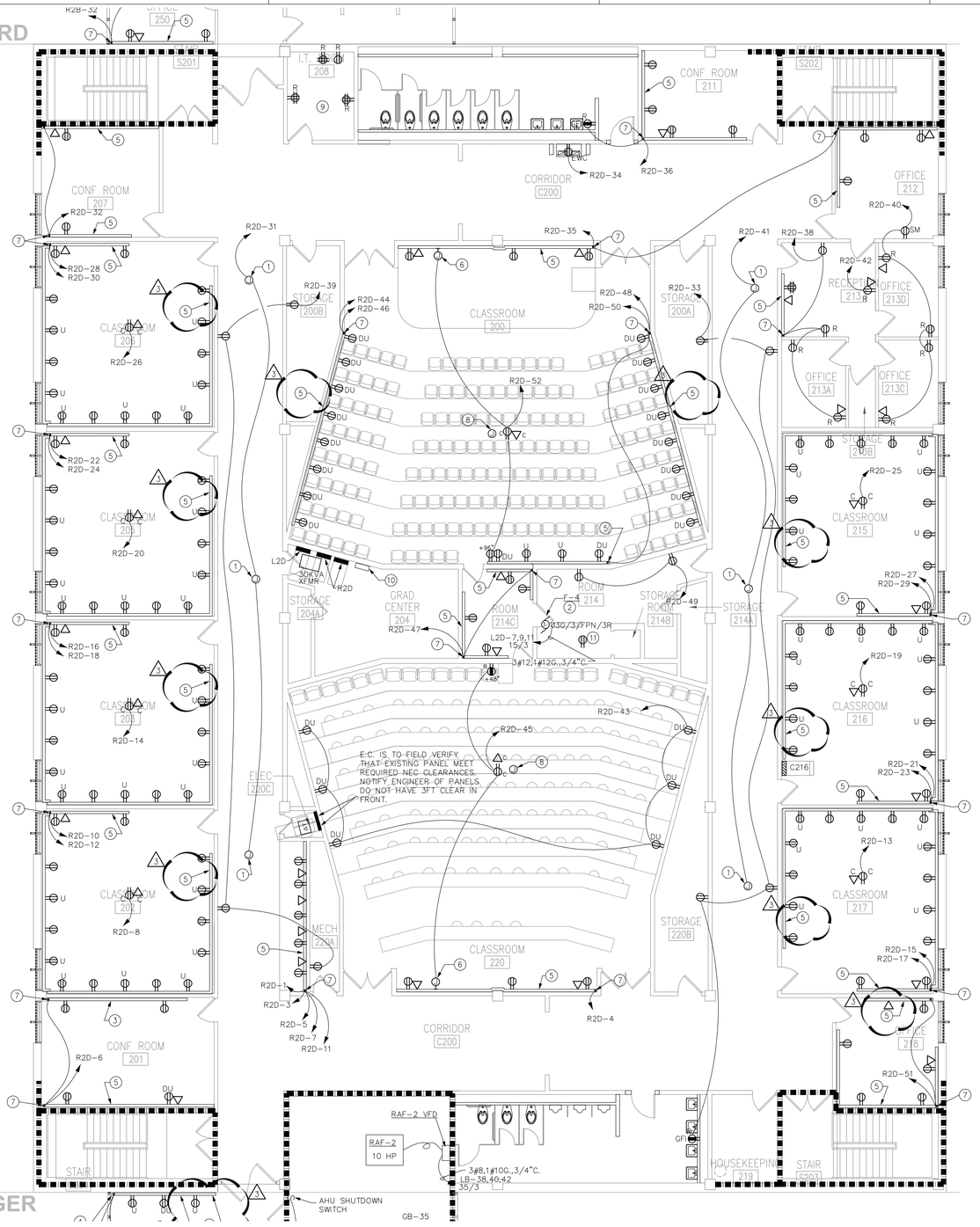
Proj. No.: 075052
Date: 07-SEP-16

DENNY
FIRST FLOOR PLAN
RENOVATION
POWER

E-201C

BARNARD DENNY



DENNY GARINGER

1 DENNY - SECOND FLOOR PLAN RENOVATION - POWER
1/8" = 1'-0"

GENERAL NOTES

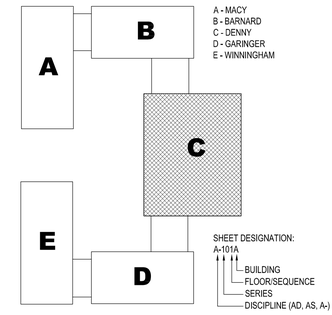
10. PROVIDE AND INSTALL RCCO TOP GFCI WP RECEPTACLES AS NEEDED. UTILIZE CIRCUIT R2D-37.

1. COORDINATE EXACT LOCATION OF ALL RECEPTACLES WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD SERIES 3000 OR EQUAL BY HUBBLE OR LEVITON.
4. NOT USED
5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. WIREMOLD SERIES 4000 OR EQUAL BY HUBBLE OR LEVITON.
6. LOCATE PROJECTOR SCREEN JUNCTION BOX ABOVE CEILING ADJACENT TO SCREEN. LOCATE SCREEN CONTROL SWITCH CONNECT ADJACENT TO SCREEN. MOUNT AT 48" AND POWER FROM SCREEN J-BOX VIA FLEX CONDUIT. COORDINATE LOCATION OF PROJECTION SCREEN JUNCTION BOX WITH SCOTT STRIKA AT THE OFFICE OF CLASSROOM SUPPORT.
7. COORDINATE TELE/COMMUNCATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.
8. COORDINATE LOCATION OF A/V J-BOX. REFER TO A/V RISER DIAGRAM SHEET 2/E-006 FOR CONNECT TO DEVICES WITHIN THIS ROOM.
9. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.
10. PROVIDE LIGHTING CONTACTOR. REFER TO DETAIL 2/E006.
11. PROVIDE AND INSTALL ROOF TOP GFCI/WP RECEPTACLES AS NEEDED. UTILIZE CIRCUIT R2D-37.

KEYPLAN



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N

RATED WALL LEGEND

1 HOUR FIRE BARRIER

REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE WALL CONSTRUCTION AND RATING INFORMATION.

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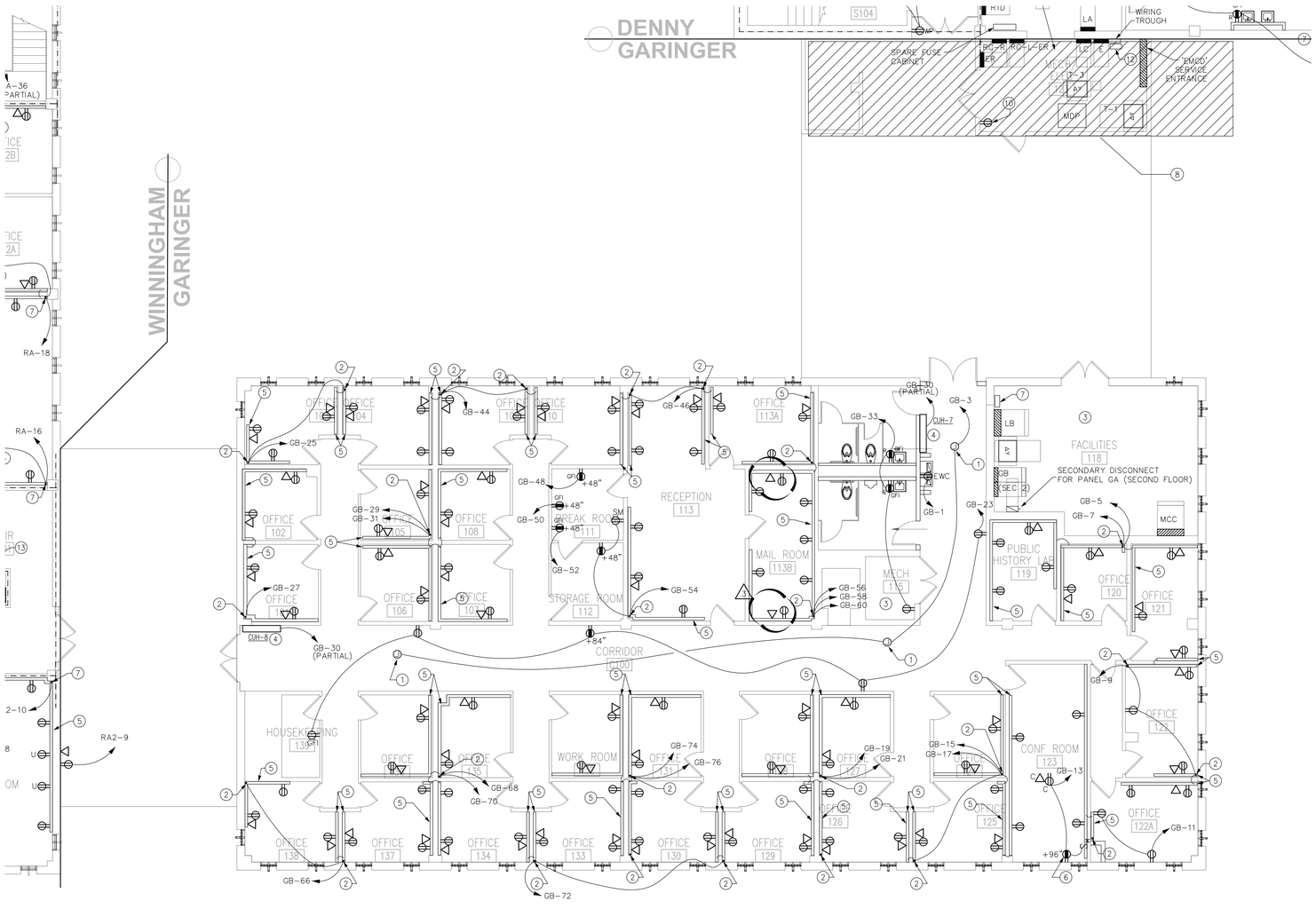
DENNY
SECOND FLOOR PLAN
RENOVATION
POWER

E-202C



1 GARINGER - FIRST FLOOR PLAN RENOVATION- POWER

1/8" = 1'-0"

GENERAL NOTES

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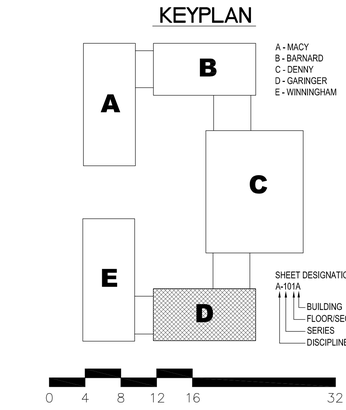
6. CIRCUIT EXISTING PROJECTION SCREEN JUNCTION BOX WITH CEILING MOUNTED PROJECTOR RECEPTACLE. UTILIZE EXISTING SCREEN CONTROLLER.
7. PROVIDE LIGHTING CONTACTOR. REFER TO DETAIL 2/E006.
8. REFER TO DENNY PLANS FOR THIS AREA.

KEYPLAN



0 4 8 12 16 32

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GARINGER
FIRST FLOOR PLAN
RENOVATION
POWER

E-201D

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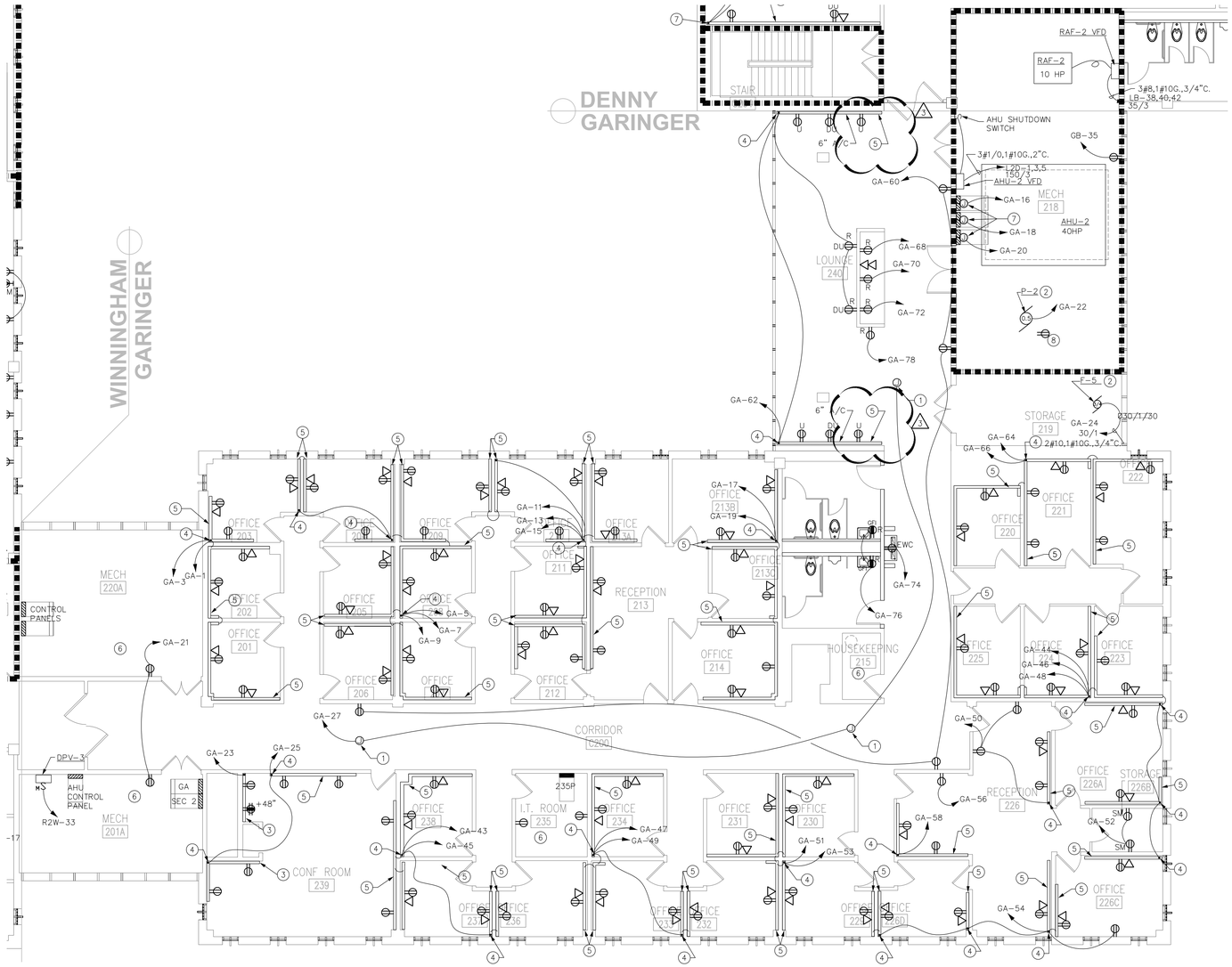

1 GARINGER - SECOND FLOOR PLAN RENOVATION - POWER

1/8" = 1'-0"

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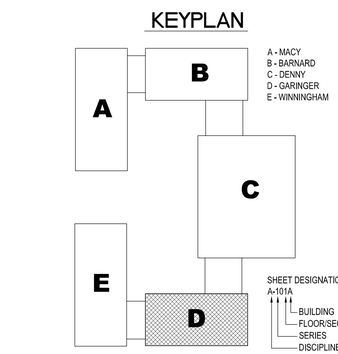
1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD SERIES 3000 OR EQUAL BY HUBBLE OR LEVITON.
4. COORDINATE TELE/COMMUNICATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.
5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE TO LEVITON.
6. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.
7. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO BAS PANEL. 20A/1ø,120V CIRCUIT.
8. PROVIDE AND INSTALL ROOF TOP GFCI/WP RECEPTACLES AS NEEDED. UTILIZE CIRCUIT R2D-37.

KEYPLAN



RATED WALL LEGEND

1 HOUR FIRE BARRIER

REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE WALL CONSTRUCTION AND RATING INFORMATION.

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NORTH CAROLINA PROFESSIONAL SEAL 028297 ENGINEER BRANDON L. MILLER
9/07/16

CODE : 41326
ITEM : 307
SCO ID # : 13-11117-01-A

optima engineering
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Revisions:

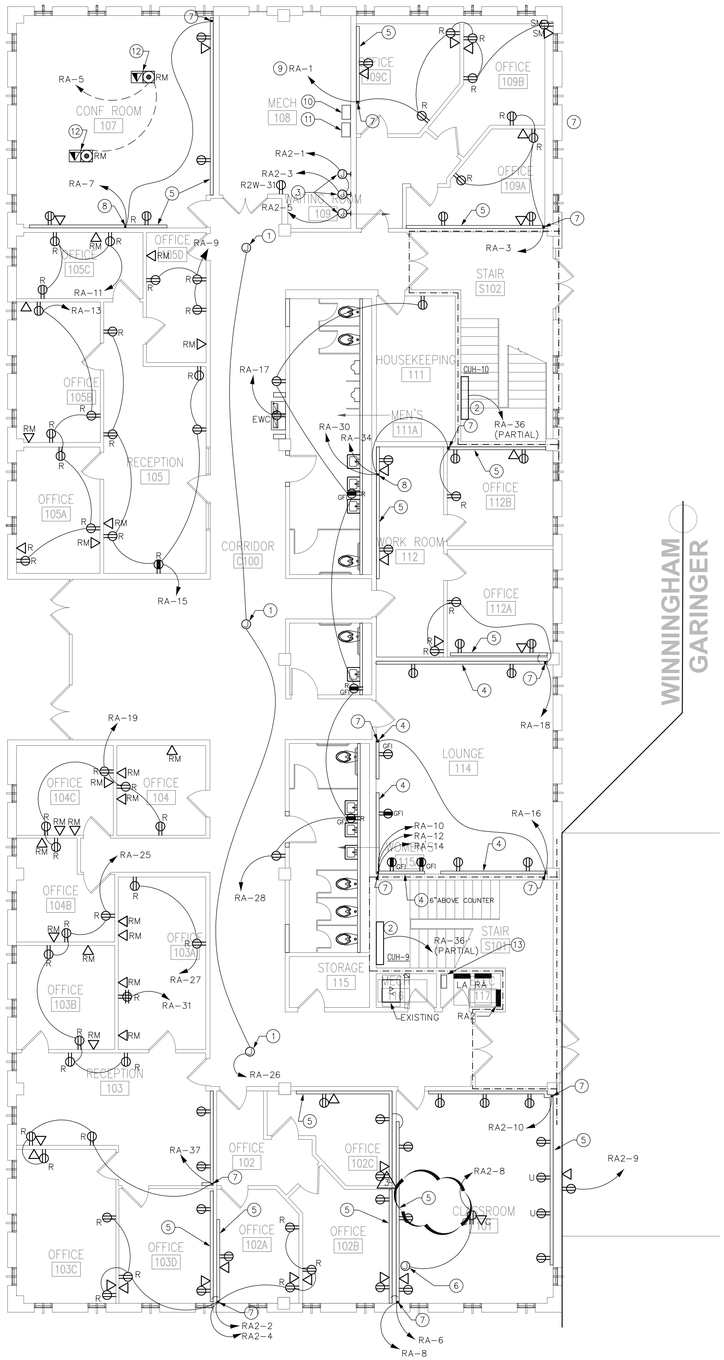
3	ADDENDUM 3	10/10/16

Proj. No.: 075052
Date: 07-SEP-16

GARINGER
SECOND FLOOR PLAN
RENOVATION
POWER

E-202D

45 OF 74
OPTIMA #: 14-0457



1 WINNINGHAM - FIRST FLOOR PLAN RENOVATION - POWER
1/8" = 1'-0"

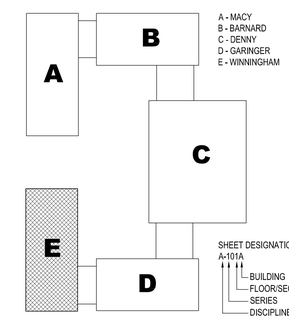
GENERAL NOTES

1. COORDINATE EXACT LOCATIONS OF ALL DEVICES IN FIELD WITH UNIVERSITY REPRESENTATIVE PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES (XX)

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.
3. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO BAS PANEL. 20A/1#12/0V CIRCUIT.
4. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD 3000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
6. CIRCUIT EXISTING PROJECTION SCREEN JUNCTION BOX WITH CEILING MOUNTED PROJECTOR RECEPTACLE. UTILIZE EXISTING SCREEN CONTROLS.
7. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL RACEWAY FROM CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS.
8. UTILIZE EXISTING RECESSED CONDUIT SERVING RECEPTACLE TO BE REMOVED TO SERVE THE NEW PLUGMOLD. PROVIDE NEW CONDUCTORS IN EXISTING CONDUIT.
9. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.
10. CONTRACTOR SHALL RECONNECT EXISTING RETURN FAN CIRCUIT CONNECTION TO LINE SIDE OF VFD. EXTEND CONDUIT AND CONDUCTORS AS NEEDED. CONTRACTOR SHALL PROVIDE AND INSTALL 3#12,1#12G.,3/4"C. FROM ELECTRICAL CONNECTION LOCATION OF RETURN FAN TO LOAD SIDE OF VFD. COORDINATE EXACT LOCATIONS OF CONNECTIONS AND EQUIPMENT PRIOR TO ROUGH-IN.
11. CONTRACTOR SHALL RECONNECT EXISTING SUPPLY FAN CIRCUIT CONNECTION TO LINE SIDE OF VFD. EXTEND CONDUIT AND CONDUCTORS AS NEEDED. CONTRACTOR SHALL PROVIDE AND INSTALL 3#4,1#10G.,1"C. FROM ELECTRICAL CONNECTION LOCATION OF SUPPLY FAN TO LOAD SIDE OF VFD. COORDINATE EXACT LOCATIONS OF CONNECTIONS AND EQUIPMENT PRIOR TO ROUGH-IN.
12. UTILIZE EXISTING CONDUIT SERVING DEVICE TO BE REMOVED. REPLACE CONDUCTORS WITH NEW.
13. PROVIDE LIGHTING CONTACTOR. REFER TO DETAIL 2/E006.

KEYPLAN



RATED WALL LEGEND

1 HOUR FIRE BARRIER

REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE WALL CONSTRUCTION AND RATING INFORMATION.

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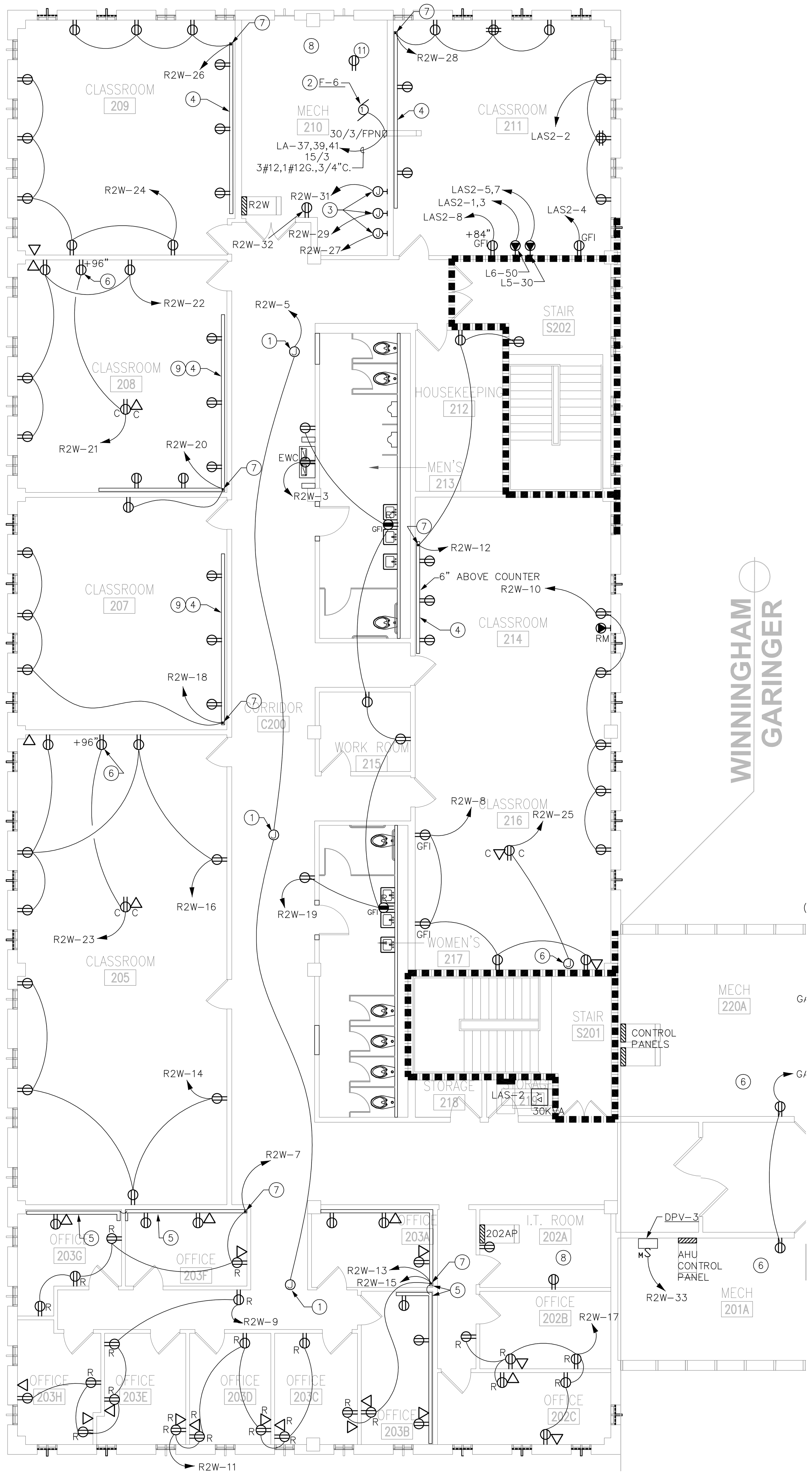
Revisions:
3 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

WINNINGHAM
FIRST FLOOR PLAN
RENOVATION
POWER

E-201E

1	2	3	4	5	6



1 WINNINGHAM - SECOND FLOOR PLAN RENOVATION - POWER
1/8" = 1'-0"

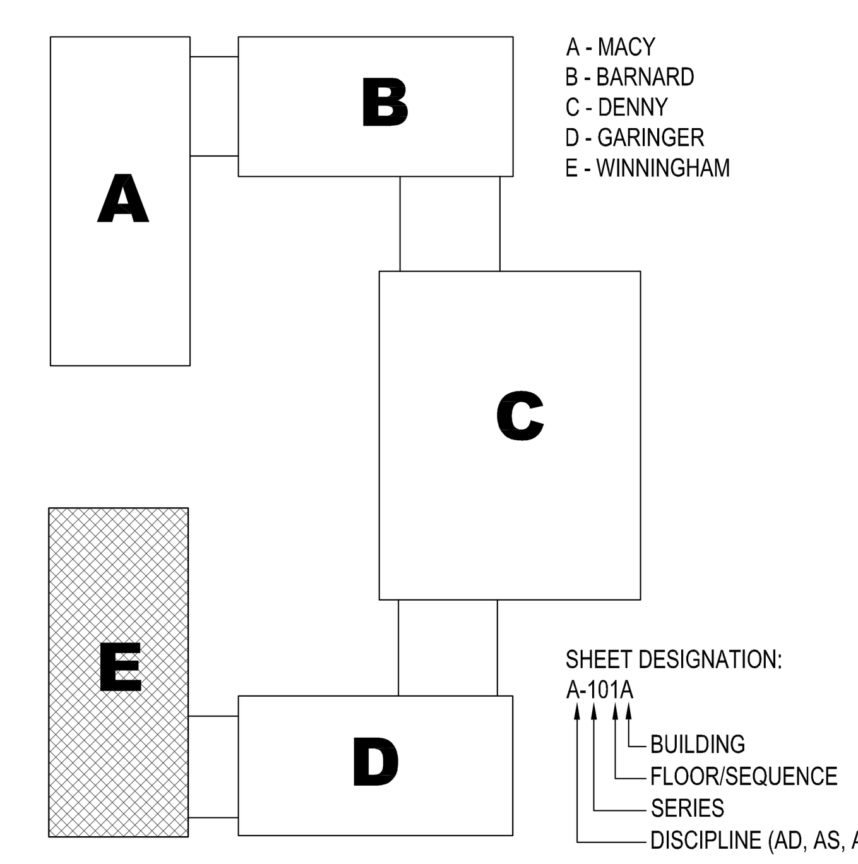
GENERAL NOTES

1. COORDINATE EXACT LOCATIONS OF ALL DEVICES IN FIELD WITH UNIVERSITY REPRESENTATIVE PRIOR TO ROUGH-IN.
2. IF ANY RECEPTACLES ARE REPLACING DEVICES ON A DEDICATED CIRCUIT, THEN CONTRACTOR SHALL REPLACE WITH A DEDICATED CIRCUIT. THIS DIRECTIVE SUPERCEDES ANY OTHER DIRECTION SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL PROVIDE PRICING FOR ONE (1) WIRELESS ACCESS POINT PER CLASSROOM AND ONE (1) WIRELESS ACCESS POINT FOR EVERY 100' OF CORRIDOR.
4. NEW PLUGMOLD SHALL BE PRE-WIRED WITH NUMBER OF CIRCUITS INDICATED. DIVIDE TOTAL LENGTH OF PLUGMOLD BY NUMBER OF CIRCUITS AND EACH CIRCUIT SHALL POWER THE DIVIDED LENGHTS
5. ALL CEILING MOUNTED DEVICES IN CEILING TILES SHALL BE RECESSED.
6. ALL CIRCUITS ASSOCIATED WITH ELEVATOR HAVE BEEN UPDATED IN PRIOR PROJECT AND ARE EXISTING TO REMAIN.

KEYED NOTES (XX)

1. PROVIDE AND INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING TO MECHANICAL CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.
3. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO BAS PANEL. 20A/1Ø,120V CIRCUIT.
4. PROVIDE AND INSTALL 1-CHANNEL PLUGMOLD ALONG BASE OF WALL FOR POWER. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WIREMOLD 3000 SERIES OR EQUAL BY HUBBLE OR LEVITON. (3)
5. PROVIDE AND INSTALL 2-CHANNEL PLUGMOLD ALONG BASE OF WALL. UPPER CHANNEL SHALL BE FOR POWER AND LOWER CHANNEL SHALL BE FOR DATA/COMMUNICATIONS. INSTALL DEVICES IN PLUGMOLD WHERE NOTED. WHERE RECEPTACLE AND TELECOMM. DEVICE ARE SHOWN NEXT TO EACH OTHER, INSTALL DIRECTLY ABOVE EACH OTHER IN FIELD. WIREMOLD 4000 SERIES OR EQUAL BY HUBBLE OR LEVITON.
6. CIRCUIT EXISTING PROJECTION SCREEN JUNCTION BOX WITH CEILING MOUNTED PROJECTOR RECEPTACLE. UTILIZE EXISTING SCREEN CONTROLLER.
7. COORDINATE TELE/COMMUNICATIONS DEVICE TYPE WITH OWNER PRIOR TO ROUGH-IN AND PURCHASE. CONTRACTOR SHALL PROVIDE AND INSTALL VERTICAL MOUNTED RACEWAY FROM ABOVE CEILING DOWN TO SINGLE OR DUAL CHANNEL RACEWAY SHOWN ON PLANS. THIS VERTICAL RACEWAY IS TO MATCH THE TYPE OF HORIZONTAL RACEWAY IN WHICH IT CONNECTS. (3)
8. CONTRACTOR SHALL VERIFY LOCATIONS AND QUANTITY OF RECEPTACLES IN THIS ROOM. REPLACE WITH NEW. RE-CIRCUIT TO SAME BREAKER THAT PRESENTLY SERVES THIS RECEPTACLE.
9. THIS CIRCUIT POWERS DEVICES WITHIN 6' OF SINK. CONTRACTOR SHALL PROVIDE GFCI PROTECTED DEVICE AT THE BEGINNING OF CIRCUIT.
10. CONTRACTOR SHALL RECONNECT EXISTING RETURN FAN CIRCUIT CONNECTION TO LINE SIDE OF VFD. EXTEND CONDUIT AND CONDUCTORS AS NEEDED. CONTRACTOR SHALL PROVIDE AND INSTALL 3#12,1#12G.,3/4"C. FROM ELECTRICAL CONNECTION LOCATION OF RETURN FAN TO LOAD SIDE OF VFD. COORDINATE EXACT LOCATIONS OF CONNECTIONS AND EQUIPMENT PRIOR TO ROUGH-IN.
11. PROVIDE AND INSTALL ROOF TOP GFCI/WP RECEPTACLES AS NEEDED. UTILIZE CIRCUIT R2W-34.

KEYPLAN



0 4 8 12 16 32

N

RATED WALL LEGEND

1 HOUR FIRE BARRIER

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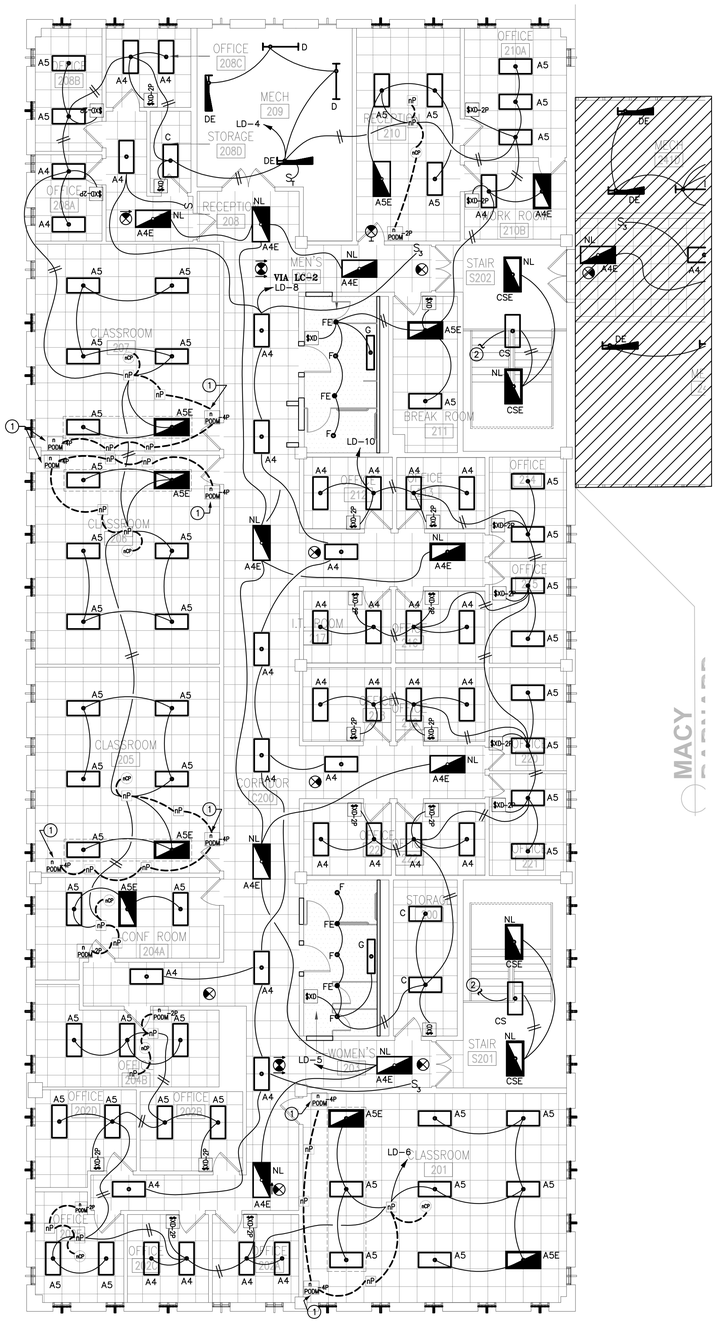
Revisions:

3	ADDENDUM 3	10/10/16

Proj. No.: 075052
Date: 07-SEP-16

WINNINGHAM
SECOND FLOOR PLAN
RENOVATION
POWER

E-202E



Printed: Oct 07, 2016 — 12:10pm — By: wdavenport — Filename: J:\2014\14-0457\xELTG.dwg

Created on 05/18/16 09:58 by A120WKH10.
UNCC - Academic Complex Renovations_Bagby Controls-V0.dwg
PROJECT: UNCC - ACADEMIC COMPLEX RENOVATIONS

nCP 10	nCM PDT 10 Extended Range 360° Sensor-Ceiling Mount, Low Voltage, Dual Technology (PDT)
nCP	nCM PDT 9 Standard Range 360° Sensor, Ceiling Mount, Low Voltage, Dual Technology (PDT)
n PODM-2P	nPODM 2P [COLOR] 2 Channel On/Off Toggle
n PODM-4P	nPODM 4P [COLOR] 4 Channel On/Off Toggle
nP	nPP16 Power/Relay Pack: 16A 120/277 VAC
$XD-2P	WSX PDT 2P [COLOR] Wall Switch Decorator Sensor-Dual Technology (PDT), w/Convertible Neutral/No Neutral Wiring; 2 Pole (2-Vacancy Default)
$XD	WSX PDT [COLOR] Wall Switch Decorator Sensor-Dual Technology (PDT), w/Convertible Neutral/No Neutral Wiring;

EQUAL MANUFACTURERS: WATTSTOPPER, LEVITON OR COOPER

① MACY - SECOND FLOOR PLAN RENOVATION - LIGHTING

1/8" = 1'-0"

GENERAL NOTES

1. LIGHTS DENOTED WITH "NL" SHALL BE NIGHT LIGHTS AND REMAIN "ON" AT ALL TIMES. CONTRACTOR SHALL PROVIDE ADDITIONAL "HOT" TO THIS LIGHT AND CONNECT LIGHT TO CIRCUIT AHEAD OF LOAD SWITCHING.
2. ALL EXIT SIGNS ARE TYPE 'X' UNLESS OTHERWISE NOTED AND SHALL BE CONNECTED TO NEAREST 277 VOLT LIGHTING CIRCUIT AHEAD OF LOCAL SWITCHING.

KEYED NOTES

1. THE FRONT ROW OF THE LIGHTS IN THIS ROOM SHALL BE CONTROLLED FROM 2 BUTTONS OF THE 4 BUTTON WALL MOUNTED DIMMING LIGHT SWITCH/KEYPAD FOR RAISE/LOWER. ALL OTHER LIGHTS SHALL BE CONTROLLED FROM THE OTHER 2 BUTTONS OF THE 4 BUTTON SWITCH/KEYPAD. ALL LIGHTS SHALL BE ROUTED THROUGH CEILING MOUNTED OCCUPANCY SENSOR SET TO VACANCY MODE(MANUAL-ON/AUTO-OFF). THERE SHALL BE 3-WAY SWITCH/KEYPADS LOCATED AT THE DOOR(S) AND AT THE PODIUM. COORDINATE EXACT LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.
2. CONNECT TO STAIRWELL LIGHTS IN THIS STAIRWELL ON LOWER LEVEL. REFER TO 1ST FLOOR LIGHTING PLAN FOR THIS BUILDING FOR CONTINUATION. LIGHTS DENOTED WITH 'NL' IN THIS STAIRWELL ARE ON NIGHT LIGHTS AND SHALL BE CONNECTED AHEAD OF SWITCHING.

KEYPLAN

0 4 8 12 16 32

N

RATED WALL LEGEND

1 HOUR FIRE BARRIER

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Date:	07-SEP-16

MACY
SECOND FLOOR PLAN
RENOVATION
LIGHTING

E-102A

13 OF 74
OPTIMA #: 14-0457

VARIABLE VOLUME AIR HANDLING UNIT SCHEDULE (CHILLED WATER COOLING WITH HOT WATER HEAT)

UNIT NUMBER	AREA SERVED	SUPPLY FAN		OCCUPIED MIN. OUTSIDE AIRFLOW (CFM)	DESIGN OUTSIDE AIRFLOW (CFM)	PREHEAT COIL						COOLING COIL								ELECTRICAL DATA				MANUFACTURER & MODEL NO.
		AIR FLOW (CFM)	E.S.P. (IN. H_2O)			TOTAL CAPACITY	GPM	RUNOUT SIZE	E.W.T. (°F)	L.W.T. (°F)	MAX. P.D.	MAX. S.P.	TOTAL CAPACITY	SENSIBLE CAPACITY	GPM	RUNOUT SIZE	E.W.T. (°F)	L.W.T. (°F)	MAX. P.D.	MAX. S.P.	SUPPLY FAN (H.P.)	VOLTS	PHASE	Hz	
AHU-1	BARNARD	16,500	2.5"	3470	4950	345,800	24	(2)1.5"	180	150	10'	.2"	674,200	470,150	110	(2)2.0"	45	57	12'	1.05"	25	460	3	60	DAIKIN CAH-35
AHU-2	DENNY	29,000	2.5"	6750	8700	612,500	40	(2)1.5"	180	150	10'	.2"	1,190,800	822,760	250	(2)2.5"	45	57	15'	1.0"	40	460	3	60	DAIKIN CAH
RAF-1	BARNARD	16,500	2.5"																		20	460	3	60	DAIKIN CAH

NOTES:
1. COOLING COIL CAPACITY IS BASED ON 80° F. D.B./67° F. W.B. E.A.T. AND 54.2° F. D.B./53.9° F. W.B. L.A.T.
2. MAXIMUM FACE VELOCITY OF COOLING COILS SHALL BE 500 FPM.
3. HEATING COIL CAPACITY IS BASED ON PROVIDING A MINIMUM OF 45° DELTA T, WITH MIN OA PROVIDED, HEATING AIRFLOW RATE, (DESIGN WORST CASE – MORNING WARM-UP)
4. ALL UNITS SHALL HAVE A FACTORY INSTALLED 8" HIGH BASE RAIL. MOUNT AHU ON HOUSEKEEPING PADS.
5. CONTRACTOR SHALL INSTALL NEW BELTS AND A NEW SET OF MERV 8 PLEATED FILTERS AT SUBSTANTIAL COMPLETION, AND PROVIDE SPARE SETS OF BELTS AND FILTERS TO THE OWNER.
6. UNITS SHALL BE DOUBLE-WALL AHU CONSTRUCTION, BELT DRIVE PLENUM SUPPLY FAN WITH VARIABLE SPEED DRIVE, (SOLID STATE ENTHALPY CONTROL) VAV CONTROLS, SUPPLY FAN MOTOR SPRING-TYPE VIBRATION ISOLATORS, ALL NON-LOW VOLTAGE ELECTRICAL WIRING IN METALLIC RACEWAY, DUCT MOUNTED STATIC PRESSURE CONTROLLER, NEMA PREMIUM EFFICIENCY FAN MOTORS, EXTENDED SUPPLY FAN DISCHARGE PLENUM SECTION, STANDARD FILTERS (MERV 8), PITCHED STAINLESS STEEL DRAIN PAN, RESETTABLE CIRCUIT BREAKERS, CONTROL PANEL WITH DISPLAY, BAS CONTROLS INTERFACE MODULE, MARINE TYPE LIGHTS IN EACH SECTION WIRED BACK TO A COMMON SWITCH. ALL ACCESS DOORS SHALL BE HINGED DOORS WITH "TOOL-LESS" ENTRY.
7. ALL UNITS SHALL BE U.L. LABELED.
8. PROVIDE EACH UNIT WITH A PHOTO-ELECTRIC TYPE SMOKE DETECTOR, INSTALLED IN THE RETURN DUCT WIRED TO SHUT DOWN THE UNIT UPON ACTIVATION. SMOKE DETECTOR SHALL BE SUPPLIED, WIRED FOR INTERFACE WITH FIRE ALARM SYSTEM AND UNIT SHUTDOWN BY THE ELECTRICAL CONTRACTOR. SMOKE DETECTOR SHALL BE INSTALLED IN THE RETURN DUCT BY THE MECHANICAL CONTRACTOR.
9. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
10. PROVIDE EQUIPMENT MOUNTED DUPLEX GFI SERVICE RECEPTACLE IN WEATHER TIGHT "WHILE IN USE" COVER
11. VFD SHALL BE PROVIDED BY UNIT MANUFACTURER AND SHALL BE FACTORY WIRED TO CONTROL BOX MOUNTED ON EXTERIOR OF UNIT.
12. UNIT CONDENSATE DRAIN PAN SHALL SLOPE IN TWO DIRECTIONS AND SHALL COMPLY WITH ASHRAE 62.1 TO PROVIDE COMPLETE DRAINAGE OF CONDENSATE. PROVIDE DRAIN PAN CONSTRUCTION DETAILS WITH UNIT SHOP DRAWING. (COOLING COILS WITH SHEET METAL BOTTOM PANELS WITH WEEP HOLES OR SLOTS ARE NOT ACCEPTABLE). DRAIN PIPING SHALL BE TYPE "L" HARD DRAWN COPPER PIPE AND FITTINGS.
13. THE BELOW EXISTING AIR HANDLERS SHALL BE BALANCED TO THE ASSOCIATED SUPPLY VOLUMES (APPROX. VALUES ARE NOTED BELOW FOR REFERENCE, REFER TO PLANS FOR FINAL CONNECTED AIRFLOW OF ASSOCIATED TERMINAL UNITS)
    MACY: 1ST FLOOR AHU – SUPPLY – 7,700 (OA PER VENT CALC)
    MACY: 2ND FLOOR AHU – SUPPLY – 7,300 (OA PER VENT CALC)
    WINNINGHAM: 1ST FLOOR AHU – SUPPLY – 7,500 (OA PER VENT CALC)
    WINNINGHAM: 2ND FLOOR AHU – SUPPLY – 8,000 (OA PER VENT CALC)

FAN SCHEDULE

SYMBOL	LOCATION	TYPE	CFM	APPROX. S.P.	DRIVE	FAN RPM	ELECTRICAL DATA				MANUFACTURER	ACCESSORIES	CONTROLS
							VFD	H.P.	VOLTAGE	PHASE	GREENHECK		
F-1	MACY ROOF	DOWNBLAST	375	0.5"	BELT	1353	NO	1/2	120/1/60		GB-101HP-4	A,B,C,I	1
F-2	MACY ROOF	DOWNBLAST	375	0.5"	BELT	1353	NO	1/2	120/1/60		GB-101HP-4	A,B,C,I	1
F-3	BARNARD ROOF	DOWNBLAST	675	0.5"	BELT	1321	NO	1/2	120/1/60		GB-091-4	A,B,C,I	1
F-4	DENNY 2ND FLR	INLINE	1925	1.0"	BELT	2008	NO	1.0	480/3/60		BSQ-120-10	A,D,E,F,G	1
F-5	GARINGER 2ND FLR	INLINE	675	0.75"	BELT	2113	NO	3/4	120/1/60		BSQ-80-5	A,D,E,F	1
F-6	WINNINGHAM 2ND FLR	INLINE	1900	1.0"	BELT	2473	NO	1.0	480/3/60		BSQ-120-10	A,D,E,F,G	1
RAF-2	DENNY 2ND MER	MIXED FLOW	25,000	1.5"	BELT	1116	YES	10	480/3/60		QEI-36-II	A,D,E,F,G,H	1

ACCESSORIES
- A: DISCONNECT SWITCH
- B: BACKDRAFT DAMPER
- C: ACOUSTICAL LINING
- D: HANGING BRACKETS WITH VIBRATION ISOLATION
- E: BELT GUARD
- F: EXTENDED LUBE LINES
- G: MAGNETIC STARTER WITH AUXILIARY CONTACTS
- H: SHAFT GROUNDING RING
- I: ROOF CURB

CONTROLS
1: CONTROLLED BY BUILDING AUTOMATION SYSTEM
2: ROOM THERMOSTAT

NOTES:
1. ALL FANS SHALL BE U.L. LISTED AND LABELED AND SHALL BE AMCA CERTIFIED FOR SOUND AND AIR FLOW. ALL FANS INSTALLED INSIDE, ABOVE, OR ADJACENT TO OCCUPIED SPACES SHALL HAVE A MAXIMUM 9.0 INLET SONE LEVEL.
2. ALL FANS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. MECHANICAL CONTRACTOR SHALL PROVIDE MAGNETIC STARTER WITH AUXILIARY CONTACTS AS REQUIRED.
4. INSTALL INLINE FANS TIGHT TO BOTTOM OF STRUCTURE
5. ALL FANS SHALL BE INTEGRATED INTO NEW BAS TO MONITOR FAN STATUS.

EQUIVALENT MANUFACTURERS LISTING

LISTING OF MANUFACTURER'S NAME DOES NOT GUARANTEE APPROVAL. ALL EQUIPMENT MUST MEET OR EXCEED QUALITY AND CAPACITIES OF SPECIFIED EQUIPMENT. FINAL APPROVAL WILL BE BASED ON EQUIPMENT SUBMITTALS. ANY MANUFACTURER NOT LISTED BUT WISHING TO BID THIS PROJECT SHALL SUBMIT A WRITTEN REQUEST A MINIMUM OF 14 DAYS PRIOR TO BID DATE OR AS INDICATED IN THE SPECIFICATIONS, PRIOR APPROVAL IS REQUIRED FOR ALL MANUFACTURERS NOT LISTED. SEE SPECIFICATIONS FOR ADDITIONAL REQUIRMENTS.

FANS: COOK, GREENHECK, PENN, TWIN CITY
AIR DISTRIBUTION: CARNES, METAL•AIRE, NAILOR, PRICE, TITUS
FIRE DAMPERS: NAILOR, RUSKIN, POTTORFF, PREFCO, SAFE-AIRE
DDC CONTROLS: HOFFMAN BUILDING TECHNOLOGIES, SCHNEIDER ELECTRIC CONTROLS, UNITED AUTOMATION ~~CORPORATION~~ MECHANICAL SYSTEMS & SERVICES, JOHNSON CONTROLS, ENGINEERED CONTROL SOLUTIONS (SEE SPECIFICATIONS FOR ADDITIONAL REQUIRMENTS) 3
PUMPS & HYDRONIC EQUIPMENT PATTERSON, PERLESS, BELL & GOSSETT, TACO
FACTORY ASSEMBLED MODULAR AIR HANDLERS: DAIKIN, TRANE, CARRIER, YORK 3
UNIT HEATERS: DAIKIN, TRANE, CARRIER, PRICE, YORK
VARIABLE FREQUENCY DRIVES: ABB, CUTLER HAMMER, DANFOSS, SQUARE D
TERMINAL UNITS: PRICE, NAILOR, METAL•AIRE, TITUS, YORK, ENVIROTEC

NOTE:
ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, PIPING, SHEET METAL, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

COORDINATION DRAWINGS

PER SPECIFICATION SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION, THE MECHANICAL CONTRACTOR SHALL ORGANIZE COORDINATION MEETINGS TO DEVELOP A SET OF COORDINATION DRAWINGS WITH ALL CONTRACTORS (ELECTRICAL, MECHANICAL, PLUMBING, FIRE PROTECTION, IT/DATA, AND GENERAL CONTRACTOR). THE MECHANICAL CONTRACTOR WILL HAVE THE LEAD RESPONSIBILITY FOR THE COORDINATION DRAWINGS. THE MECHANICAL CONTRACTOR SHALL PRODUCE THE ORIGINAL DRAWINGS AND FORWARD THE DRAWINGS TO EACH OF THE OTHER CONTRACTORS FOR THEM TO ADD THEIR SYSTEMS TO THIS SET OF COORDINATION DRAWINGS. THE CONTRACTORS WILL DEVELOP THE DRAWINGS IN THIS ORDER: MECHANICAL, FIRE PROTECTION, PLUMBING, ELECTRICAL, IT/DATA, AND GENERAL. THIS SHALL ALSO BE THE ORDER OF PRECEDENCE FOR INSTALLATION OF SYSTEMS. ANY RELOCATION OF SYSTEM ROUTINGS WILL BE FOUND IN THE COORDINATION PHASE AND NOTICED BY EACH OF THE CONTRACTORS. THESE DRAWINGS, WHEN COMPLETED, SHALL BE SIGNED OFF BY ALL OF THE ABOVE LISTED PARTIES. DRAWINGS SHALL BE COMPLETED PRIOR TO FABRICATION AND INSTALLATION OF DUCTWORK AND PIPING SYSTEMS, OR PURCHASE OF EQUIPMENT. THE FOLLOWING ITEMS REPRESENT THE MINIMUM REQUIREMENTS AND COORDINATION DRAWINGS:

1. ALL COORDINATION DRAWINGS WILL BE PRODUCED AT 1/4"= 1'-0" SCALE
2. COORDINATION DRAWINGS WILL BE DISTRIBUTED ON REPRODUCIBLE MATERIAL 48"x36"
4. COORDINATION DRAWINGS ARE NOT SHOP DRAWINGS AND ARE REQUIRED IN ADDITION TO SHOP DRAWINGS.
5. ONCE THE COMPLETE COORDINATION DRAWINGS HAVE BEEN COMPILED, THE MECHANICAL CONTRACTOR WILL DISTRIBUTE ONE SIGNED SET TO EACH OF THE FOLLOWING CONTRACTORS: ELECTRICAL, PLUMBING, FIRE PROTECTION, AND GENERAL. ADDITIONAL SETS WILL BE SENT TO THE OWNER, ARCHITECT, AND ENGINEER.

THE USE OF BUILDING INFORMATION MODELING (BIM) THROUGHOUT THE CONSTRUCTION PROCESS IS A REQUIREMENT FOR THIS PROJECT TO HELP REDUCE OR ELIMINATE FIELD DETECTED CONFLICTS, IMPROVE CONSTRUCTION QUALITY AND MAINTAIN AN AGGRESSIVE SCHEDULE. THE CONTRACTOR WILL BE RESPONSIBLE FOR CREATING THE MODEL AND MANAGING THE COORDINATION AND COLLISION DETECTION PROCESS. THE MODEL MUST CONTAIN COMPLETE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION SYSTEMS CONSISTENT WITH THE DESIGN AND FABRICATION DRAWINGS.

HOT WATER CABINET UNIT HEATER SCHEDULE

SYMBOL	LOCATION	CFM	GPM	BTUH	WPD	MOTOR			MANUFACTURER	ACCESSORIES
						R.P.M.	WATTS	VOLTAGE	MCQUAY	
CUH-1	MACY STAIR 101	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-2	MACY STAIR 102	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-3	DENNY STAIR 101	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-4	DENNY STAIR 102	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-5	DENNY STAIR 103	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-6	DENNY STAIR 104	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-7	GARGR CORR.	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-8	GARGR CORR.	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-9	WINHM STAIR 101	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B
CUH-10	WINHM STAIR 102	600	2.3	47,100	4.4	1122	123	120/1/60	FHVC-06	A,B

NOTES:
1. HEATING CAPACITY BASED ON 65° F. E.A.T., 180° F. E.W.T.
2. MAXIMUM WATER PRESSURE DROP SHALL BE 5'.
3. THE ABOVE NOTED HEATING VALUES ARE BASED ON E.W.T. OF 180°F AND A L.W.T. OF 140°F
4. UNITS SHALL BE RECESSED WALL TYPE WITH TRIM FACE PANEL KIT, MOUNT BOTTOM OF UNIT 12" A.F.F.

ACCESSORIES
A: DISCONNECT SWITCH
B: BUILT-IN THERMOSTAT

ROOF MOUNTED GRAVITY HOOD SCHEDULE

SYMBOL	LOCATION	SERVICE	CFM	THROAT SIZE	MAX. THROAT VELOCITY (FPM)	MAX. S.P. DROP (IN.)	MANUFACTURER GREENHECK	ACCESSORIES
RH-1	WINNINGHAM ROOF	F-6 EXHAUST AIR	1,725	20x20	767	0.05"	GRSR-20	A,B,C

NOTES:
1. PROVIDE ALL VENTILATORS WITH FACTORY ROOF CURBS. CURBS AND VENTILATORS SHALL BE INSTALLED LEVEL.

ACCESSORIES
A: ROOF CURB
B: INSECT SCREEN
C: INSULATION

PUMP SCHEDULE

SYMBOL	SERVICE	GPM	HEAD	ELECTRICAL				MANUFACTURER
				R.P.M.	H.P.	VOLTAGE	VFD	B&G MODEL
P-1	HOT WATER PREHEAT	24	25'	1725	1/2	120/1/60	NO	SERIES E90
P-2	HOT WATER PREHEAT	40	25'	1725	1/2	120/1/60	NO	SERIES E90-1.25AAB

NOTES:
1. ALL PUMPS SHALL BE FURNISHED WITH TEFC PREMIUM EFFICIENCY MOTORS PER EPACT REQUIREMENTS.
2. MECHANICAL CONTRACTOR SHALL PROVIDE DISCONNECT AND MAGNETIC STARTER WITH AUXILIARY CONTACTS AS REQUIRED.
3. ALL PUMPS SHALL BE SELECTED AT NON-OVERLOADING CONDITIONS FOR THE MOTOR PROVIDED

DUCT CLEANING

1. MECHANICAL CONTRACTOR SHALL CLEAN ALL NEW AND EXISTING DUCTWORK TO COMPLY WITH SMACNA DUCT CLEANLINESS FOR NEW CONSTRUCTION – INTERMEDIATE LEVEL

SYSTEM FLUSHING REQUIREMENTS

1. ALL HYDRONIC SYSTEMS SHALL BE PRESSURE FLUSHED, VENTED, AND CHEMICALLY TREATED PRIOR TO TURNING OVER AND CONNECTION TO EXISTING SYSTEM BY MEANS OF OPENING SYSTEM ISOLATION VALVES.
2. A SYSTEM FLUSHING AND CHEMICAL TREATMENT REPORT SHALL BE SUBMITTED PRIOR START OF WORK VIA SUBMITTAL FOR APPROVAL.
3. ALL CLOSED LOOP PIPING SYSTEMS SHALL BE FLUSHED USING PRODUCT AND SERVICES BY THE UNIVERSITIES CHEMICAL TREATMENT PROVIDER.

T+B PRE-READ REPORT

1. MECHANICAL CONTRACTOR SHALL PROVIDE A PRE-DEMOLITION TEST AND BALANCE REPORT ON THE EXISTING SYSTEMS INDICATED TO REMAIN: AHUS. REPORT SHALL INCLUDE AIR AND WATER FLOWS; ENTERING AND LEAVING AIR CONDITIONS; EXTERNAL AND TOTAL STATIC PRESSURES, AND ALL PERFORMANCE AND CONTROLS DEFICIENCIES DISCOVERED. ANY EQUIPMENT OR COMPONENT FOUND TO BE INOPERABLE OR SHORT OF DESIGN CAPACITIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. SUMMATION OF GRILLES IS AN ACCEPTABLE ALTERNATIVE TO DUCT TRAVERSE READINGS. PRE-DEMOLITION TEST AND BALANCE REPORT TO BE COMPLETED BY AN INDEPENDENT, CERTIFIED TEST AND BALANCE CONTRACTOR. CONTROLS DIAGNOSTICS REPORT SHALL BE COMPLETED BY THE CONTROLS CONTRACTOR. REPORTS SHALL BE SUBMITTED FOR REVIEW DURING SHOP SUBMITTAL PROCESS.
2. CONDUCT TESTING AND BALANCING IN ACCORDANCE WITH TECHNICAL PORTIONS OF THE AABC "NATIONAL STANDARDS FOR TESTING AND BALANCING HVAC SYSTEMS", LATEST EDITION.
3. INSTRUMENTS USED FOR BALANCING MUST HAVE BEEN CALIBRATED WITHIN A PERIOD OF SIX (6) MONTHS PRIOR TO BALANCING. SUBMIT SERIAL NUMBERS, AND DATES OF CALIBRATION OF ALL INSTRUMENTS TO BE USED PRIOR TO THE START OF WORK.
4. REFER TO SPECIFICATION SECTION 230593 AND CONTRACT DRAWINGS IN THEIR ENTIRETY FOR ADDITIONAL REQUIREMENTS.

WOOLPERT
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Charlotte, NC 28226
704.525.6284
FAX: 704.525.8529

NORTH CAROLINA PROFESSIONAL SEAL 17228 ENGINEER RONALD V. ALMOND
9/07/16

CODE : 41326
ITEM : 307
SCO ID # : 13-11117-01-A

optima engineering
1927 South Tryon St., Suite 300, Charlotte NC 28203
333 Fayetteville St., Suite 311, Raleigh NC 27601
Phone: 704-338-1292 • www.optimaengineering.com
North Carolina License Number C-0914

University of North Carolina at Charlotte
Academic Complex Renovations
9201 University City Blvd.
Charlotte, NC 28223

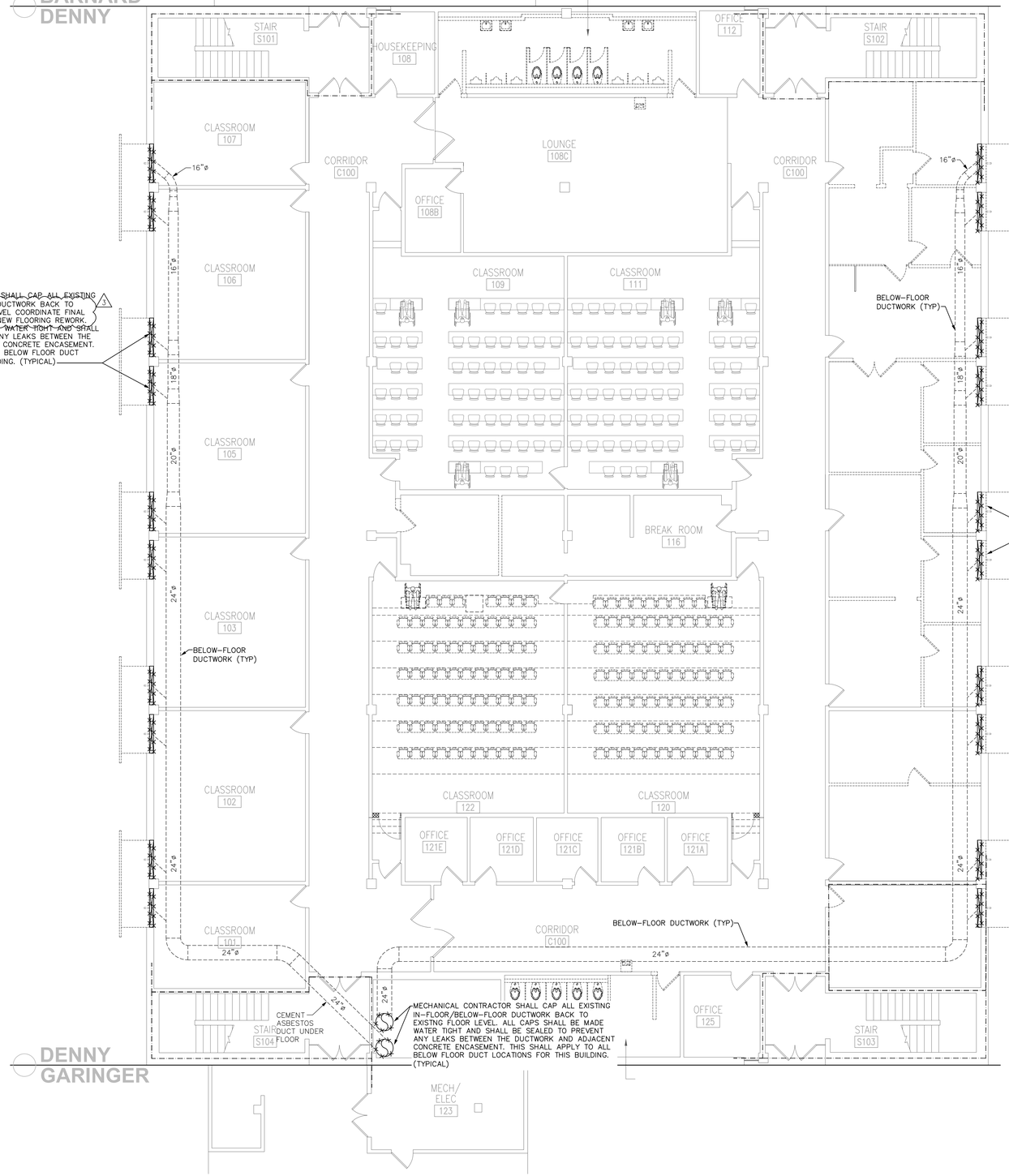
Revisions:
3 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

MECHANICAL SCHEDULES

M-002

BARNARD
DENNY



DENNY
GARINGER

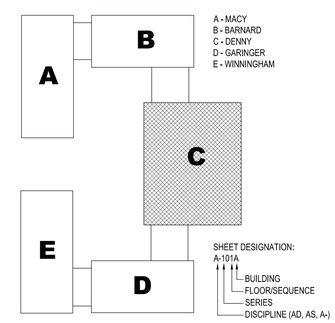
CONTRACTOR NOTE:

ANY TIME SUSPICIOUS MATERIALS ARE ENCOUNTERED WORK SHALL BE STOPPED, THE INVOLVED AREA SHALL BE SECURED TO PREVENT INADVERTENT CONTAMINATION OR EXPOSURE, AND NOTIFICATION SHALL BE CONVEYED TO THE CONSTRUCTION MANAGER WHO SHALL IN TURN NOTIFY THE PROPER PARTIES FOR REMOVAL AND/OR ABATEMENT

1 DENNY - FIRST FLOOR PLAN DEMOLITION (UNDERFLOOR)

1/8" = 1'-0"

KEYPLAN



SHEET DESIGNATION:
A-101A
- BUILDING
- FLOOR/SEQUENCE
- SERIES
- DISCIPLINE (AD, AS, A-)

0 4 8 12 16 32

N

RATED WALL LEGEND

1 HOUR FIRE BARRIER

REFER TO ARCHITECTURAL DRAWINGS FOR COMPLETE WALL CONSTRUCTION AND RATING INFORMATION.

WOOLPERT
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NORTH CAROLINA REGISTERED SEAL 17228 ENGINEER RONALD V. ALMOND
9/07/16

CODE : 41326
ITEM : 307
SCO ID # : 13-11117-01-A

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333 Fayetteville St., Suite 311, Raleigh NC 27601
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Revisions:
1 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

FIRST FLOOR
DENNY
DEMOLITION PLAN

MD-100C

CONTROL & CONSTRUCTION JOINT NOTES:

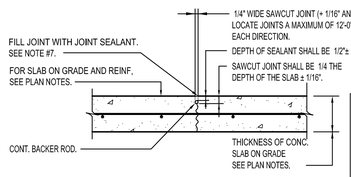
1. SAWCUT JOINTS AT CONTROL JOINTS SHALL BE MADE AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT RAVELING OUT OF THE AGGREGATE AND DAMAGE TO THE EDGES, BUT NO LATER THAN 36 HOURS AFTER THE FINISHING OF THE SLAB SURFACE HAS BEEN COMPLETED.

2. SAWCUT JOINTS SHALL BE MADE AT ALL CONSTRUCTION JOINTS. CONSTRUCTION JOINTS MAY BE SAWCUT WHEN CONTROL JOINTS ARE SAWCUT OR AT ANY TIME PRIOR TO THE TIME THAT SEALANTS ARE TO BE INSTALLED IN THE CONSTRUCTION JOINT.

3. IMMEDIATELY AFTER SAWCUTTING, CLEAN THE JOINT AND SLAB SURFACE WITH A HIGH PRESSURE WATER BLASTER (1000 PSI MIN.). WATER BLASTING SHALL REMOVE ALL LAITANCE AND OTHER CONTAMINATES FROM THE JOINT AND SLAB SURFACE.

4. CONTINUE CURING THE SLAB SURFACES AND JOINT AS SPECIFIED.

5. AFTER A MINIMUM OF 60 DAYS AFTER THE JOINTS ARE SAWCUT AND AFTER THE BUILDING SHELL IS COMPLETE, RECLEAN ALL JOINTS WITH A WATER BLASTER AND BLOW CLEAN WITH COMPRESSED AIR.

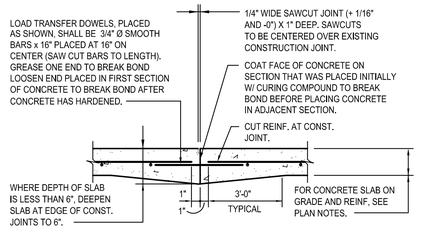


SAWCUT CONTROL JOINT

NOTE:
POSITION AND ALIGN DOWELS PERPENDICULAR TO THE JOINT & PARALLEL TO THE TOP SLAB SURFACE. DOWELS SHALL BE SECURELY SUPPORTED DURING PLACEMENT OF THE CONCRETE.

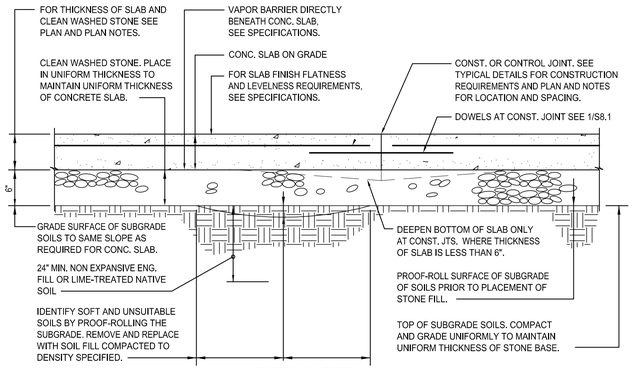
6. IMMEDIATELY AFTER BLOWING SURFACE DRY, PRIME THE SURFACES TO RECEIVE THE SEALANT, PLACE BACKER ROD AND SEALANT. BACKER ROD SHALL BE INSTALLED WITH A GAGE TO THE SPECIFIED DEPTH.

7. SEALANT FOR JOINTS SHALL BE A TWO PART SELF-LEVELING POLYURETHANE SEALANT HAVING A MINIMUM SHORE A HARDNESS OF 30 AND A MAXIMUM OF 40. SEALANT SHALL BE LEVEL WITHIN 1/32" BELOW THE SURFACE. REMOVE ANY EXCESS SEALANT THAT IS ABOVE THE FINISH FLOOR SURFACE ON EITHER SIDE OF THE JOINT PRIOR TO PLACEMENT OF ANY FLOOR FINISHES. MAINTAIN A UNIFORM THICKNESS OF SEALANT THE FULL LENGTH OF ALL JOINTS.



CONSTRUCTION JOINT

1 S801 TYPICAL DETAIL SLAB-ON-GRADE
3/4" = 1'-0"
Dwg.# 140556-S8013.DWG



2 S801 TYPICAL DETAIL SLAB-ON-GRADE
1" = 1'-0"
Dwg.# 140556-S8008.DWG

ADHESIVE ANCHOR INSTALLATION NOTES:

1. ALL RODS OR DOWELS SET INTO ADHESIVE SHALL BE CLEAN AND FREE OF OIL OR GREASE.

2. ACCURATELY MARK THE SURFACE (WITHIN ⅛") THAT WILL RECEIVE THE NEW ANCHORS WITH THE LOCATION SHOWN IN THE CONNECTION DETAIL.

3. PRIOR TO DRILLING ANCHOR HOLES, LOCATE WITH A PACHOMETER OR ¼" DIA. DRILLED PROBE HOLES EXISTING REINFORCING STEEL WHICH MAY BE BELOW THE SURFACE AT THE SPECIFIED ANCHOR LOCATION. ADJUST ANCHOR LOCATIONS TO AVOID CUTTING OF ANY EXISTING REINFORCING STEEL. POSITIONS OF RELOCATED ANCHORS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO DRILLING THE HOLES FOR THE ANCHORS.

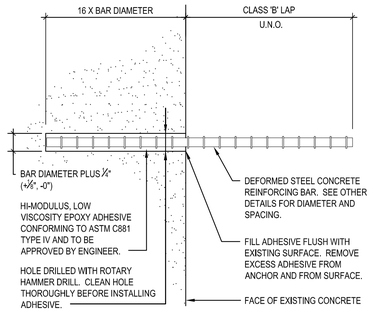
4. DRILL HOLES USING A ROTARY TYPE HAMMER DRILL WITH CARBIDE BITS. EQUIPMENT FOR DRILLING SHALL BE APPROVED BY THE ADHESIVE MANUFACTURER. HOLES SHALL BE DRILLED AT A 90° ANGLE (±2°) FROM FACE OF THE MEMBER. IMPROPERLY DRILLED HOLES SHALL BE REJECTED AND FILLED WITH A NON-SHRINK, NON-METALLIC GROUT AND NEW HOLES DRILLED AT THE CONTRACTOR'S EXPENSE.

5. BLOW EACH HOLE CLEAN WITH OIL-FREE COMPRESSED AIR. CLEAN EACH HOLE WITH A BOTTLE BRUSH AND REPEAT CLEANING WITH COMPRESSED AIR. HOLES SHALL BE THOROUGHLY CLEANED OF ALL DUST, LOOSE PARTICLES OF MATERIAL AND OTHER BOND INHIBITING MATERIAL.

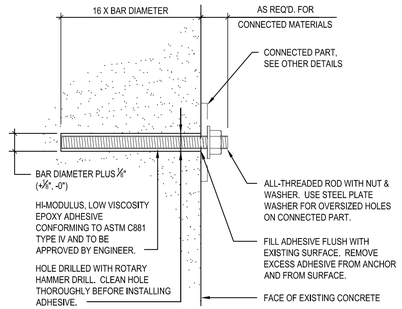
6. PROPORTION, MIX, CONDITION, AND INSTALL ADHESIVE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED SPECIFICATIONS AND INSTRUCTIONS, AND THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS.

7. MIX AND INJECT THE ADHESIVE INTO EACH HOLE BEGINNING AT THE BACK OR BOTTOM OF THE HOLE USING A PIPE OR TUBE. AS THE HOLE IS FILLED, WITHDRAW THE PIPE NOZZLE AT THE SAME RATE AS THE HOLE IS FILLED. INJECT THE ADHESIVE INTO THE HOLE UNTIL THE HOLE IS ONE-HALF TO THREE-QUARTERS FULL. APPLY ADHESIVE TO FULLY COAT THE LENGTH OF ANCHOR TO BE EMBEDDED, THEN INSERT THE ANCHOR INTO THE HOLE IN ONE CONTINUOUS STROKE AND WHILE ROTATING ONE FULL REVOLUTION. THE ANCHOR BOLT SHALL NOT BE MOVED BACK AND FORTH, AS THIS WILL ENTRAP AIR, AS DOES EXCESSIVE ROTATION. INJECT ADDITIONAL ADHESIVE AS REQUIRED TO FILL VOID AROUND ANCHOR.

8. AFTER ADHESIVE HAS FULLY CURED, INSTALL WASHERS AND NUTS ON THREADED ROD ANCHORS AS REQ'D AND TIGHTEN EACH NUT. DO NOT EXCEED THE MAX. TORQUE SPECIFIED BY THE ADHESIVE MANUF. ALL NUTS SHALL BE RETORQUED WITHIN 24 TO 72 HOURS AFTER INITIAL TORQUING. DO NOT TORQUE NUTS NOTED TO BE FINGER TIGHT.



CONCRETE REINFORCING BAR DOWELS



THREADED ROD ANCHOR

3 S801 TYPICAL DETAIL ADHESIVE ANCHORING OF RODS AND DOWELS
FULL SCALE
Dwg.# 140556-S8326.DWG

REPAIR TYPE 'C2' ROUTE & SEAL CRACKS IN SLAB
File # 140556-S1011.DWG

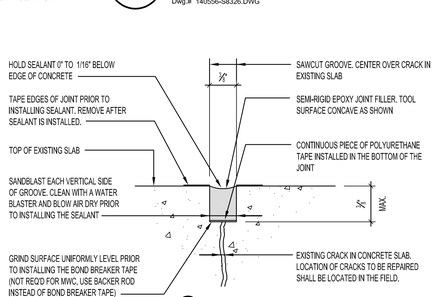
METHODS, PROCEDURES AND MATERIALS:

THE INTENT OF THIS REPAIR IS TO INSTALL SQUARE SAW CUTS AT EXISTING CRACKS IN THE SLABS, CLEAN, PREPARE AND INSTALL NEW SEALANT TO HALT WATER INTRUSION THROUGH THE CRACKS AND OBTAIN A WATERTIGHT JOINT. THE FOLLOWING PROCEDURES SHALL APPLY TO THIS REPAIR:

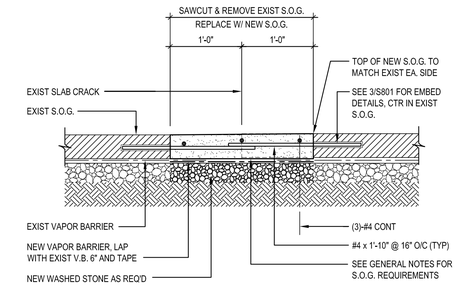
1. REPAIR LOCATIONS ARE INDICATED ON PLAN.
2. CONTRACTOR SHALL PREPARE A MOCK-UP AREA FOR THIS REPAIR PROCEDURE. ONCE COMPLETED, THE MOCK-UP AREA SHALL BE EVALUATED BY THE OWNER'S REPRESENTATIVE. AFTER ACCEPTANCE OF INSTALLATION WITHIN THE MOCK-UP AREA, THE CONTRACTOR SHALL PROCEED WITH THE INSTALLATION IN AREAS DESIGNATED.
3. SAW CUT A SQUARE NOTCH/GROOVE INTO THE TOP SURFACE OF THE CONCRETE ALONG THE EXISTING CONSTRUCTION JOINT. SAW CUT SHALL BE APPROXIMATELY CENTERED OVER THE EXISTING CRACK. SAW CUT WIDTH AND DEPTH SHALL BE AS REQUIRED IN THE DETAIL. SAW CUT DEPTH SHALL NOT BE GREATER THAN THE WIDTH OF THE SAWCUT.
4. CLEAN AND PREPARE SURFACES TO RECEIVE SEALANT WITH A DRY ABRASIVE BLAST. PROTECT CONCRETE SURFACES ADJACENT TO JOINT TO PREVENT DAMAGE FROM ABRASIVE BLAST. CLEANING SHALL REMOVE ANY EXISTING DIRT, DUST, GREASE, OIL, AND/OR OTHER FOREIGN MATTER DETRIMENTAL TO BOND OF SEALANT MATERIALS.
5. BLOW OUT JOINT WITH OIL-FREE COMPRESSED AIR TO REMOVE ANY REMAINING DEBRIS.
6. CAREFULLY INSTALL BOND-BREAKER TAPE ACROSS BOTTOM OF JOINT. TAPE SHALL NOT EXTEND ONTO THE BONDING SURFACES ON THE SIDES OF JOINT. TAPE WIDTH SHALL MATCH THE JOINT WIDTH SO THAT THE TAPE COMPLETELY COVERS THE BOTTOM OF JOINT.
7. APPLY PRIMER TO CLEAN CONCRETE SURFACES IN ACCORDANCE WITH SEALANT MANUFACTURER'S PRINTED INSTRUCTIONS..
8. INSTALL SEALANT INTO PREPARED JOINT. TOOL TOP SURFACE OF SEALANT TO OBTAIN SLIGHTLY CONCAVE SURFACE AND TO COMPRESS THE UNCURED SEALANT AGAINST THE SIDES OF THE JOINT.

MATERIALS:

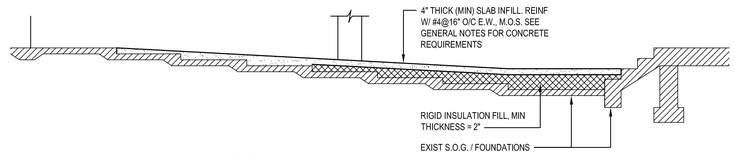
SEALANT: SIKADUR 51 SL, BY SIKA CORP. (OR APPROVED EQUAL)



4 S801 REPAIR TYPE 'C2' ROUTE & SEAL CRACKS @ SLAB
FULL SCALE
Dwg.# 140556-S8800.DWG



5 S801 TYPICAL DETAIL REPAIR "C1"
1" = 1'-0"
Dwg.# 140556-S8001.DWG

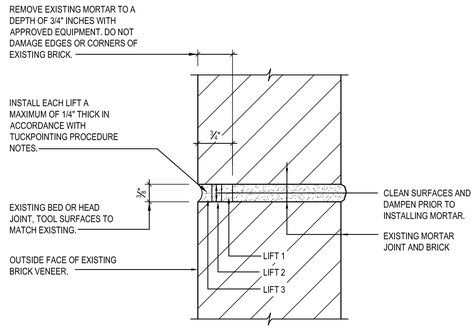


7 S801 SECTION
1/4" = 1'-0"
Dwg.# 140556-S8003.DWG

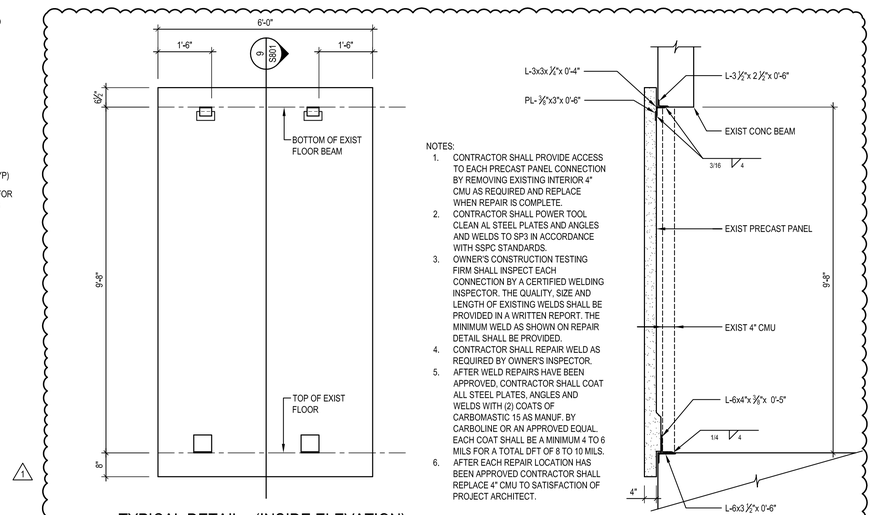
TUCK-POINTING PROCEDURE NOTES 6/S801
File # 02M.dwg

THE INTENT OF THE WORK SPECIFIED IN THIS DETAIL AND PROCEDURE NOTES IS TO TUCK-POINT DETERIORATED MORTAR JOINTS BETWEEN EXISTING BRICKS AS LOCATED IN THE FIELD BY THE ENGINEER AND/OR CONTRACTOR. THE FOLLLOWING PROCEDURES SHALL BE FOLLOWED IN TUCK-POINTING THE JOINTS.

1. WHERE MORTAR IS NOT COMPLETELY REMOVED FROM THE EXISTING JOINTS FOR A DEPTH OF 3/4 INCHES, REMOVE ADDITIONAL MORTAR TO THE MINIMUM DEPTH SHOWN. REMOVE WITH A SAW TOOLING CHISEL, HAND CHISEL OR SPECIAL POINTER'S GRINDER IN SUCH A MANNER AS NOT TO DAMAGE THE EXISTING BRICK AND MORTAR THAT WILL REMAIN. REMOVE TO A UNIFORM DEPTH OF 3/4" INCHES.
2. REMOVE ALL DUST AND DEBRIS FROM THE JOINT BY WIRE BRUSHING, FOLLOWED BY BLOWING WITH OIL-FREE AIR OR RINSING WITH WATER.
3. JOINTS TO BE TUCK-POINTED SHALL BE DAMPENED. TO ENSURE GOOD BOND, THE BRICK AND MORTAR MUST ABSORB ALL SURFACE WATER.
4. JOINTS SHALL BE FILLED WITH PREHYDRATED MORTAR IN THREE LAYERS BY PACKING EACH LAYER TIGHTLY INTO THE JOINT IN LAYERS OF APPROXIMATELY 1/4". EACH LAYER SHALL BE "THUMB-PRINT HARD" BEFORE APPLYING THE NEXT LAYER. THE JOINTS SHALL BE TOOLED TO MATCH THE EXISTING JOINTS AFTER THE LAST LAYER OF MORTAR IS "THUMB-PRINT HARD".
5. PROPORTIONS OF MORTAR FOR TUCKPOINTING SHALL BE ONE PART OF TYPE 1 PORTLAND CEMENT, ONE PART HYDRATED LIME AND 6 PARTS OF CLEAN SAND MEETING ASTM C144. PREPACKAGED MASONRY CEMENT MEETING THESE PROPORTIONS FOR CEMENT AND LIME MAY BE USED WITH THREE PARTS OF CLEAN SAND TO ONE PART OF PREPACKAGED MASONRY CEMENT. PROPORTIONS SHALL BE BY VOLUME.
6. TUCKPOINTING MORTAR SHALL BE PREHYDRATED TO REDUCE SHRINKAGE IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
   A. THOROUGHLY MIX ALL DRY INGREDIENTS.
   B. ADD ONLY ENOUGH WATER TO PRODUCE A DAMP WORKABLE CONSISTENCY WHICH WILL RETAIN ITS SHAPE.
   C. ALLOW TO STAND IN DAMPENED CONDITION FOR 1 TO 1–1/2 HOURS.
   D. ADD WATER TO BRING MORTAR TO A WORKABLE CONSISTENCY.



6 S801 TYPICAL TUCK-POINTING DETAIL FOR EXISTING DAMAGED MORTAR JOINT
6" = 1'-0"
Dwg.# 02M.dwg



NOTES:
1. CONTRACTOR SHALL PROVIDE ACCESS TO EACH PRECAST PANEL CONNECTION BY REMOVING EXISTING INTERIOR 4" CMU AS REQUIRED AND REPLACE WHEN REPAIR IS COMPLETE.
2. CONTRACTOR SHALL POWER TOOL CLEAN AL STEEL PLATES AND ANGLES AND WELDS TO SP3 IN ACCORDANCE WITH SSPC STANDARDS.
3. OWNER'S CONSTRUCTION TESTING FIRM SHALL INSPECT EACH CONNECTION BY A CERTIFIED WELDING INSPECTOR. THE QUALITY, SIZE AND LENGTH OF EXISTING WELDS SHALL BE PROVIDED IN A WRITTEN REPORT. THE MINIMUM WELD AS SHOWN ON REPAIR DETAIL SHALL BE PROVIDED.
4. CONTRACTOR SHALL REPAIR WELD AS REQUIRED BY OWNER'S INSPECTOR.
5. AFTER WELD REPAIRS HAVE BEEN APPROVED, CONTRACTOR SHALL COAT ALL STEEL PLATES, ANGLES AND WELDS WITH (2) COATS OF CARBOMASTIC 15 AS MANUF. BY CARBOLINE OR AN APPROVED EQUAL. EACH COAT SHALL BE A MINIMUM 4 TO 6 MILS FOR A TOTAL DFT OF 8 TO 10 MILS.
6. AFTER EACH REPAIR LOCATION HAS BEEN APPROVED CONTRACTOR SHALL REPLACE 4" CMU TO SATISFACTION OF PROJECT ARCHITECT.

8 S801 TYPICAL DETAIL - (INSIDE ELEVATION) EXISTING PRECAST PANEL CONNECTION REPAIR
1/2" = 1'-0"
Dwg.# 140556-S7800.DWG

9 S801 SECTION
1/2" = 1'-0"
Dwg.# 140556-S7800.DWG

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Project Number: 140556
File Name: 140556-S0801
Plotted: 10/7/2016 11:20 AM

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SCO ID # : 13-11117-01A

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15765 CHARLES E. CARDWELL

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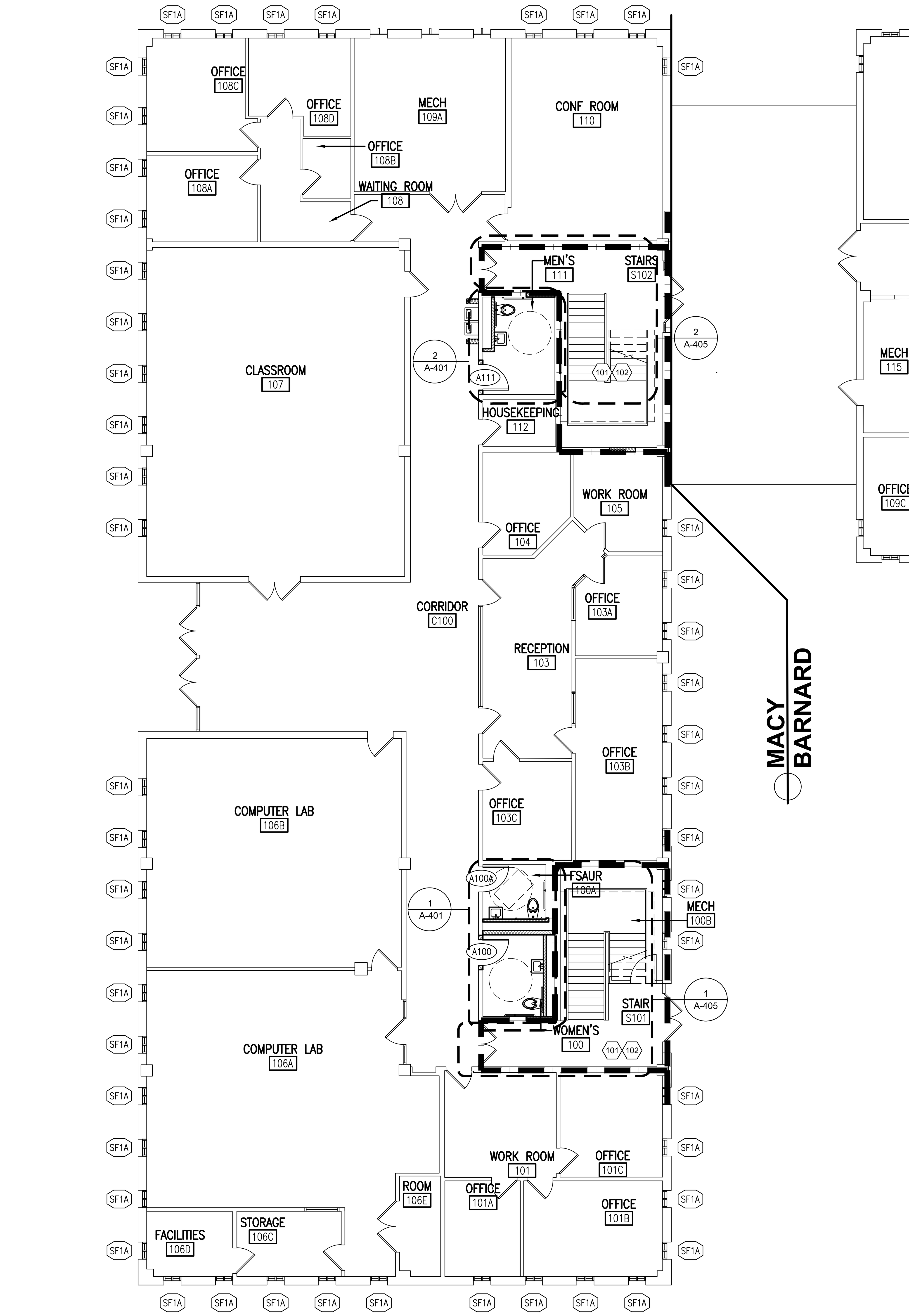
Revisions:
1 ADDENDUM 3 10-10-16

Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
TYPICAL DETAILS

S-801



NORTH

MACY - FIRST FLOOR PLAN RENOVATION

SCALE: 1/8"=1'-0"

GENERAL NOTES

(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
2. INSTALL SHADES ON ALL EXTERIOR WINDOWS.
3. PAINT EXISTING DOOR FRAMES.
4. INFILL ALL OPENINGS IN CMU PARTITIONS AT ALL LOCATION AFTER REMOVAL OF HVAC WORK. MATCH EXISTING PARTITIONS. REFER TO UL C-AJ-0041 FOR FIRE RATED WALLS - TYPICAL.
5. PATCH AND REPAIR ALL INTERIOR PARTITIONS TO RECEIVE NEW FINISHES AFTER REMOVAL OF HVAC EQUIPMENT AND ELECTRICAL DEVICES.

SHEET KEYNOTES

(NOT ALL KEYNOTES ARE SHOWN ON THE SHEET)

101 INSTALL NEW CONTRASTING ADA STAIR TREAD

102 INSTALL NEW GUARDRAILS AND HANDRAILS COMPLYING WITH 2012 NC BUILDING CODE. SEE SHEET A-406.

103 INSTALL NEW ADA COMPLIANT SLOPED FLOOR

104 INSTALL NEW FURNITURE AND ROOM ACCESSORIES

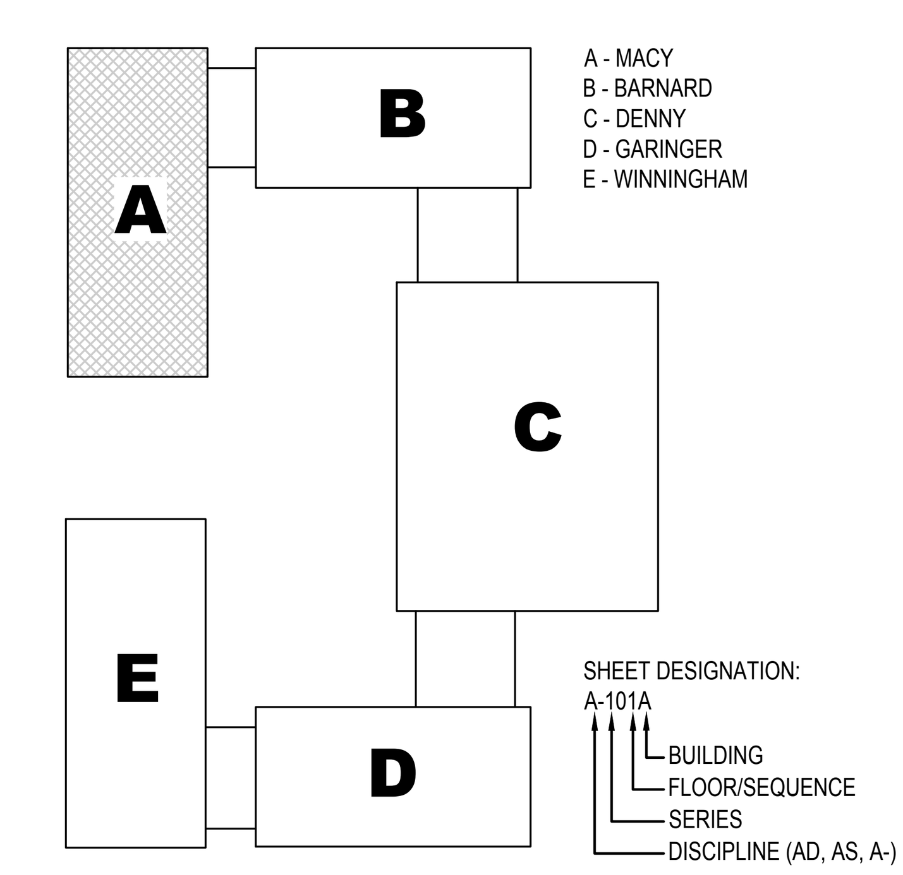
SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-504)

FIRE RATED PARTITION - 1 HR

KEY PLAN



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Revisions:

1 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
MACY
FIRST FLOOR PLAN
RENOVATION

A-101A

GENERAL NOTES
(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
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SHEET KEYNOTES
(NOT ALL KEYNOTES ARE SHOWN ON THE SHEET)

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102 INSTALL NEW GUARDRAILS AND HANDRAILS COMPLYING WITH 2012 NC BUILDING CODE. SEE SHEET A-406.

103 INSTALL NEW ADA COMPLIANT SLOPED FLOOR

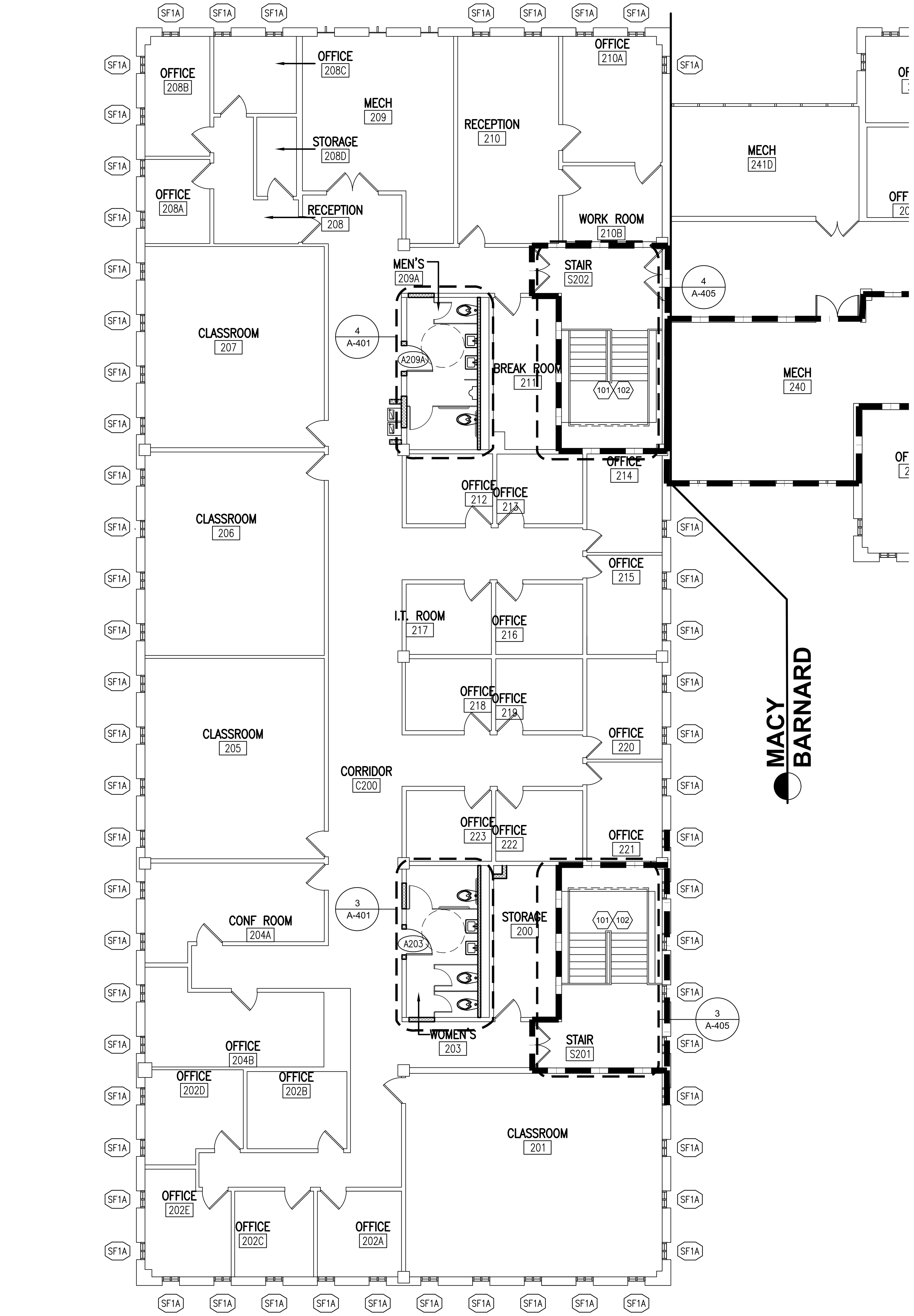
104 INSTALL NEW FURNITURE AND ROOM ACCESSORIES

SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-501) 1

FIRE RATED PARTITION - 1 HR



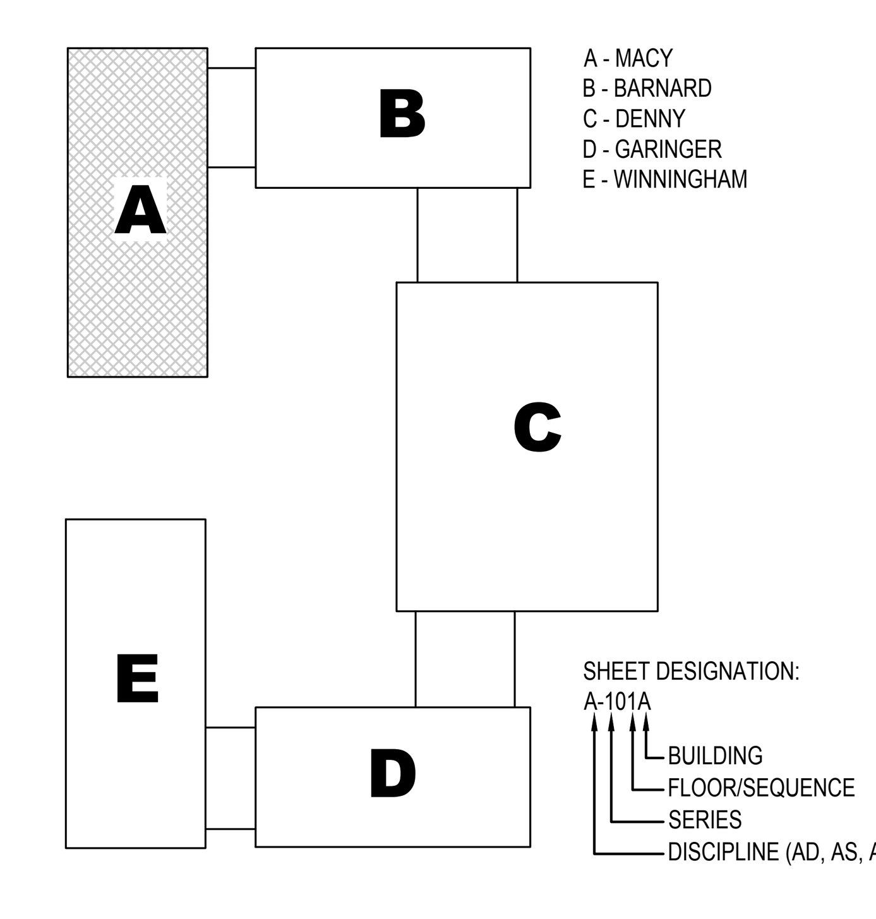
NORTH

MACY - SECOND FLOOR PLAN RENOVATION

SCALE: 1/8"=1'-0"

0 4' 8' 16'

KEY PLAN



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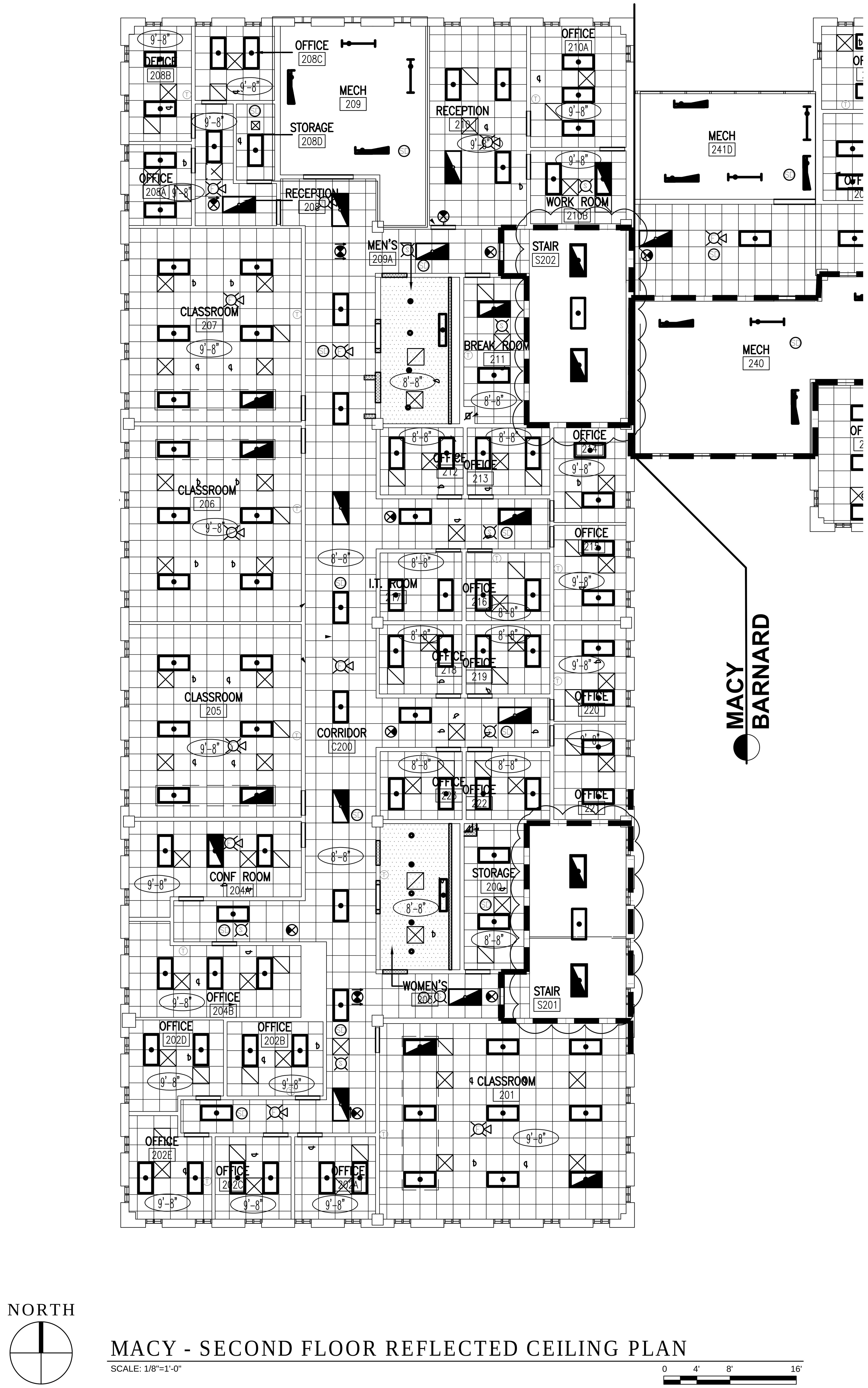
Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
MACY
SECOND FLOOR PLAN
RENOVATION

A-102A



MACY - SECOND FLOOR REFLECTED CEILING PLAN

SCALE: 1/8"=1'-0"

0 4' 8' 16'

GENERAL NOTES

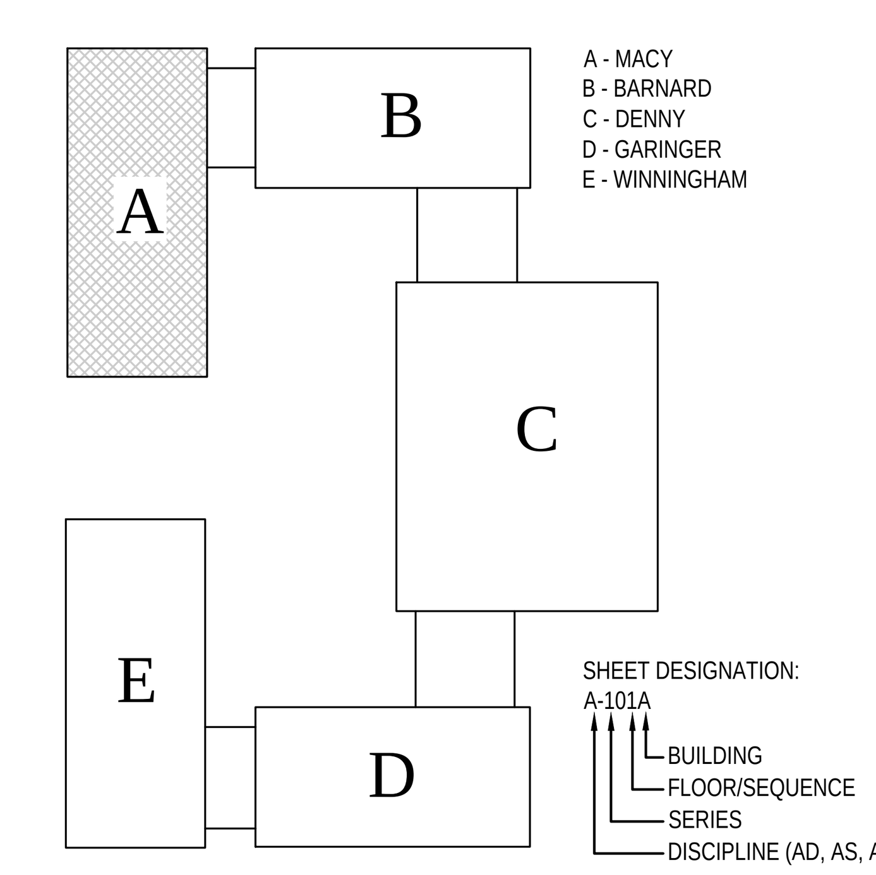
SHEET KEYNOTES

(NOT ALL KEYNOTES ARE SHOWN ON THE SHEET)

SYMBOLS LEGEND

- CEILING HEIGHT TAG
- ACOUSTICAL PANEL CEILINGS
- EXTERIOR CEILING SYSTEM
- GYPSUM BOARD CEILING
- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- EXHAUST AIR GRILLE
- FLUORESCENT OR LED LIGHTING FIXTURE
- FLUORESCENT OR LED STRIP FIXTURE
- FLUORESCENT FIXTURE WITH EMERGENCY BATTERY PACK. SEE ELECTRICAL.
- WALL MOUNTED LIGHTING FIXTURE
- EXIT LIGHT WITH ARROWS AND NUMBERS OF FACES INDICATED ON PLAN
- FLUORESCENT, LED OR HID LIGHTING FIXTURE
- FLUORESCENT OR LED WITH EMERGENCY BATTERY PACK
- OCCUPANCY SENSOR
- SMOKE DETECTOR
- ADA COMPLIANT FIRE ALARM SPEAKER STROBE LIGHT
- ADA COMPLIANT FIRE ALARM STROBE LIGHT

KEY PLAN



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Date: 07-SEP-16

Sheet Name:
MACY
SECOND FLOOR
REFLECTED CEILING
PLAN

A-112A

GENERAL NOTES
(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
2. INSTALL SHADES ON ALL EXTERIOR WINDOWS.
3. PAINT EXISTING DOOR FRAMES.
4. INFILL ALL OPENINGS IN CMU PARTITIONS AT ALL LOCATION AFTER REMOVAL OF HVAC WORK. MATCH EXISTING PARTITIONS. REFER TO UL C-AJ-0041 FOR FIRE RATED WALLS - TYPICAL.
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SHEET KEYNOTES

101 RELOCATED EXISTING STOREFRONT, DOOR, DOOR HARDWARE AND ASSOCIATED EQUIPMENT FOR A FULLY FUNCTION EXTERIOR DOOR.

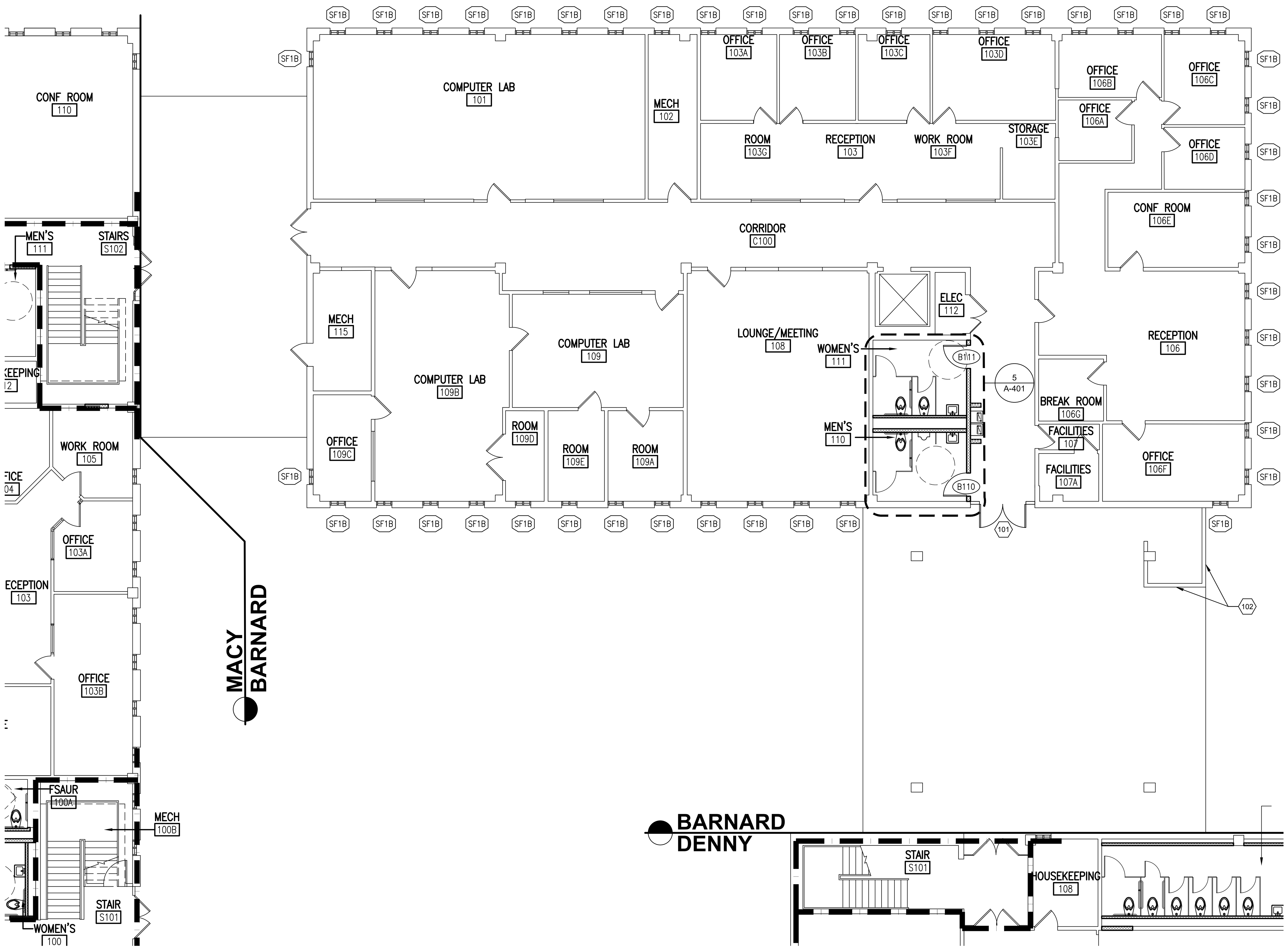
102 CLEAN AND COAT ALL EXPOSED SURFACES OF CMU WITH ELASTOMETRIC COATING.

SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-504) 1

1 HR FIRE RATED BARRIER



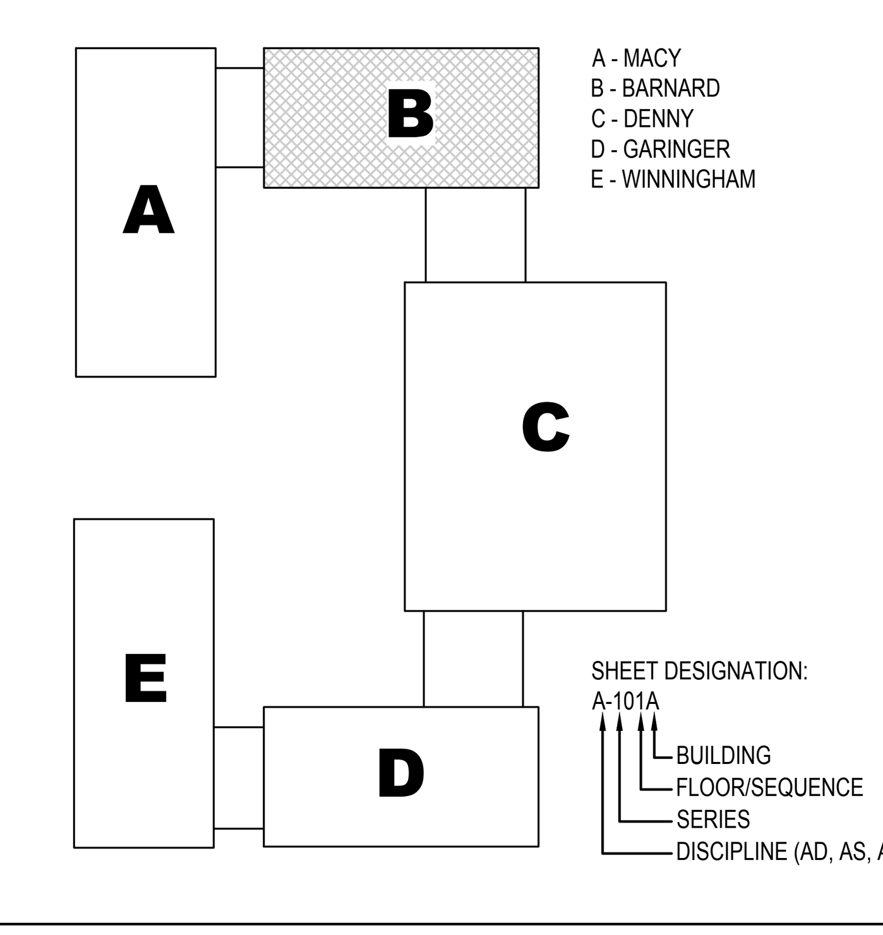
NORTH

BARNARD - FIRST FLOOR PLAN RENOVATION

SCALE: 1/8"=1'-0"

0 4' 8' 16'

KEY PLAN



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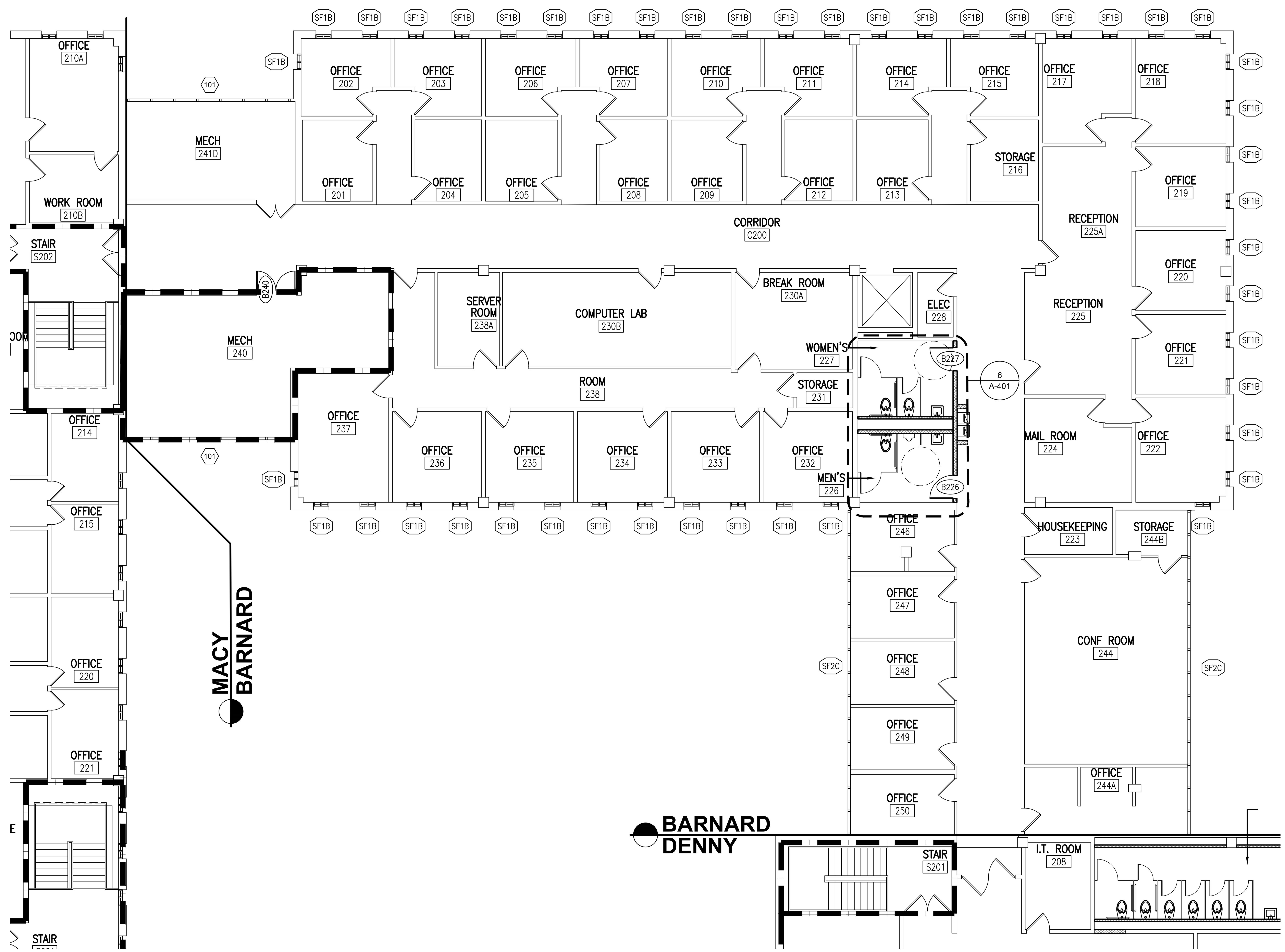
Date: 07-SEP-16

Sheet Name:
BARNARD
FIRST FLOOR PLAN
RENOVATION

A-101B



NORTH

BARNARD - SECOND FLOOR PLAN RENOVATION

SCALE: 1/8"=1'-0"

0 4' 8' 16'

GENERAL NOTES

(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
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SHEET KEYNOTES

101 EXISTING LOUVERS - PREP, PRIME & PAINT. REPLACE CORRODED FIELD LOUVER SECTIONS AS REQUIRED.

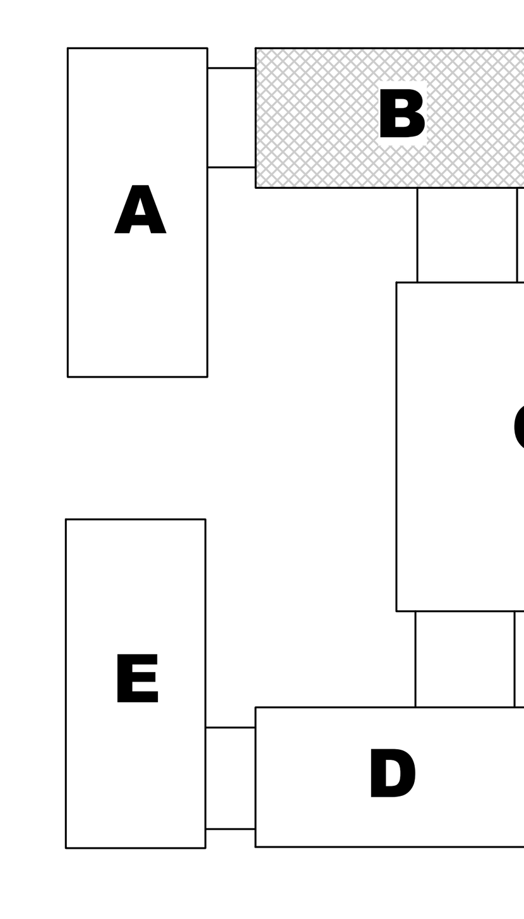
SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-504) 1

1 HR FIRE RATED BARRIER

KEY PLAN



A - MACY
B - BARNARD
C - DENNY
D - GARINGER
E - WINNINGHAM

SHEET DESIGNATION:
A-101A
BUILDING
FLOOR/SEQUENCE
SERIES
DISCIPLINE (AD, AS, A-)

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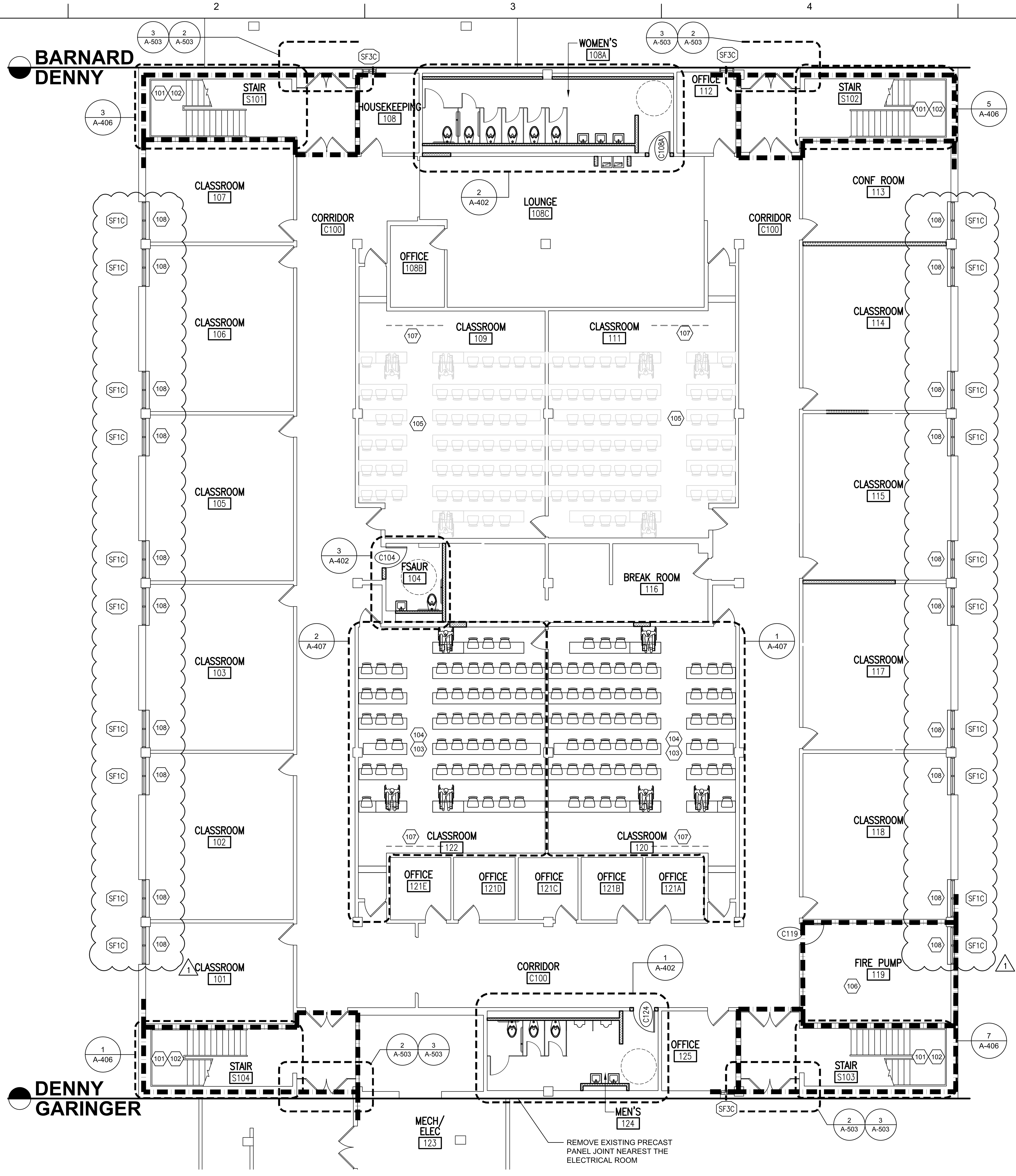
Sheet Name:
BARNARD
SECOND FLOOR PLAN
RENOVATION

A-102B

075052_UNCC-ACP_C-DENNY_PLANS.dwg



DENNY - FIRST FLOOR PLAN RENOVATION

SCALE: 1/8"=1'-0"

0 4' 8' 16'

GENERAL NOTES

(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
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(NOT ALL KEYNOTES ARE SHOWN ON THE SHEET)

101 INSTALL NEW CONTRASTING ADA STAIR TREAD

102 INSTALL NEW GUARDRAILS AND HANDRAILS COMPLYING WITH 2012 NC BUILDING CODE. SEE SHEET A-406.

103 INSTALL NEW ADA COMPLIANT SLOPED FLOOR

104 INSTALL NEW FIXED FURNITURE AND ROOM ACCESSORIES

105 REINSTALL STORED FURNITURE AND ROOM ACCESSORIES

106 EXISTING FLOOR CONSTRUCTION IS PER UL # CA-J-5091

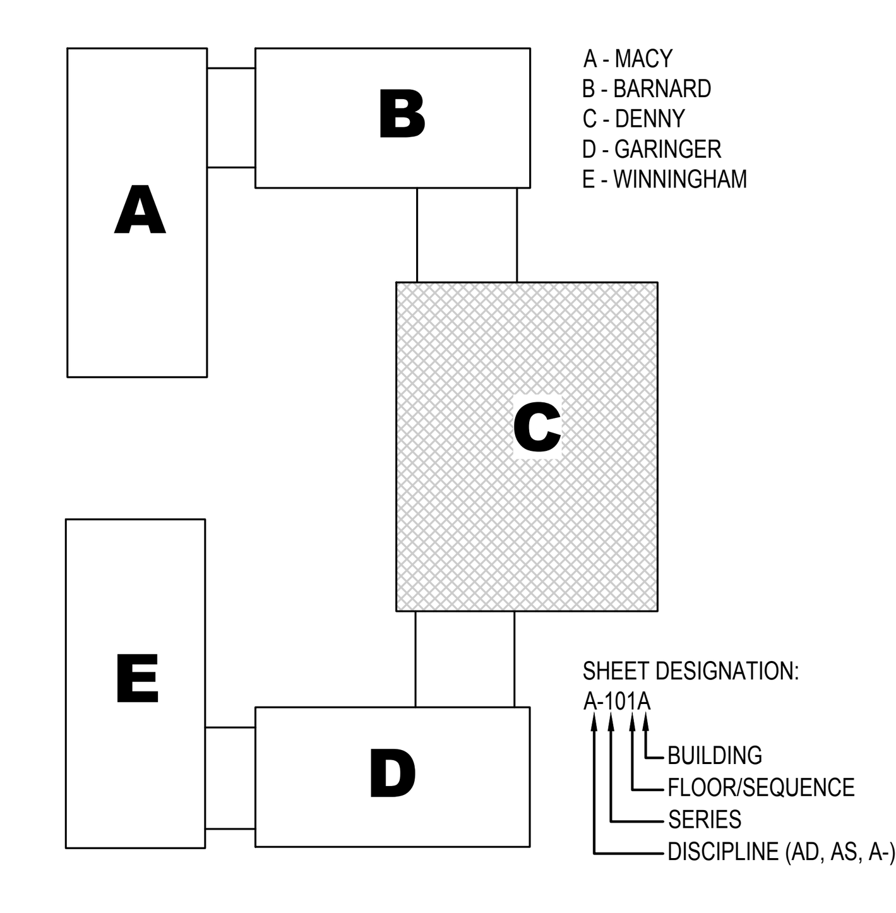
107 INSTALL NEW 60"X133"DIAGONAL PROJECTOR SCREEN. COORDINATE WITH OWNER FOR FINAL PLACEMENT.

108 THE SCOPE OF THE DEMOLITION OF THE DUCTWORK AND PIPING IS SHOWN ON SHEET MD-100C. THE DEMOLITION OF THE DUCTWORK AND PIPING, AND NEW CAPPING TO BE BELOW THE SLAB AS REQUIRED TO ALLOW FOR THE INSTALLATION OF NEW CONCRETE SLAB INFILL AS DEFINED AND SIMILAR TO DETAIL 5-S801. IN THE EVENT THE SUBGRADE/STONE IS NOT DIRECTLY BENEATH THE NEW SLAB LOCATION, CONTRACTOR TO PROVIDE FORMWORK TO SPAN THE FLOOR OPENINGS TO ACCOMMODATE THE PLACEMENT OF THE NEW REBAR AND CONCRETE. THE TOP OF THE NEW CONCRETE SLAB TO BE LEVEL AND SMOOTH WITH THE EXISTING FLOOR TO ACCOMMODATE THE NEW FLOORING SCHEDULED FOR THESE AREAS.

SYMBOLS LEGEND

- LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN
- NEW CMU PARTITION (SEE SHEET A-504)
- 1 HR FIRE RATED BARRIER

KEY PLAN



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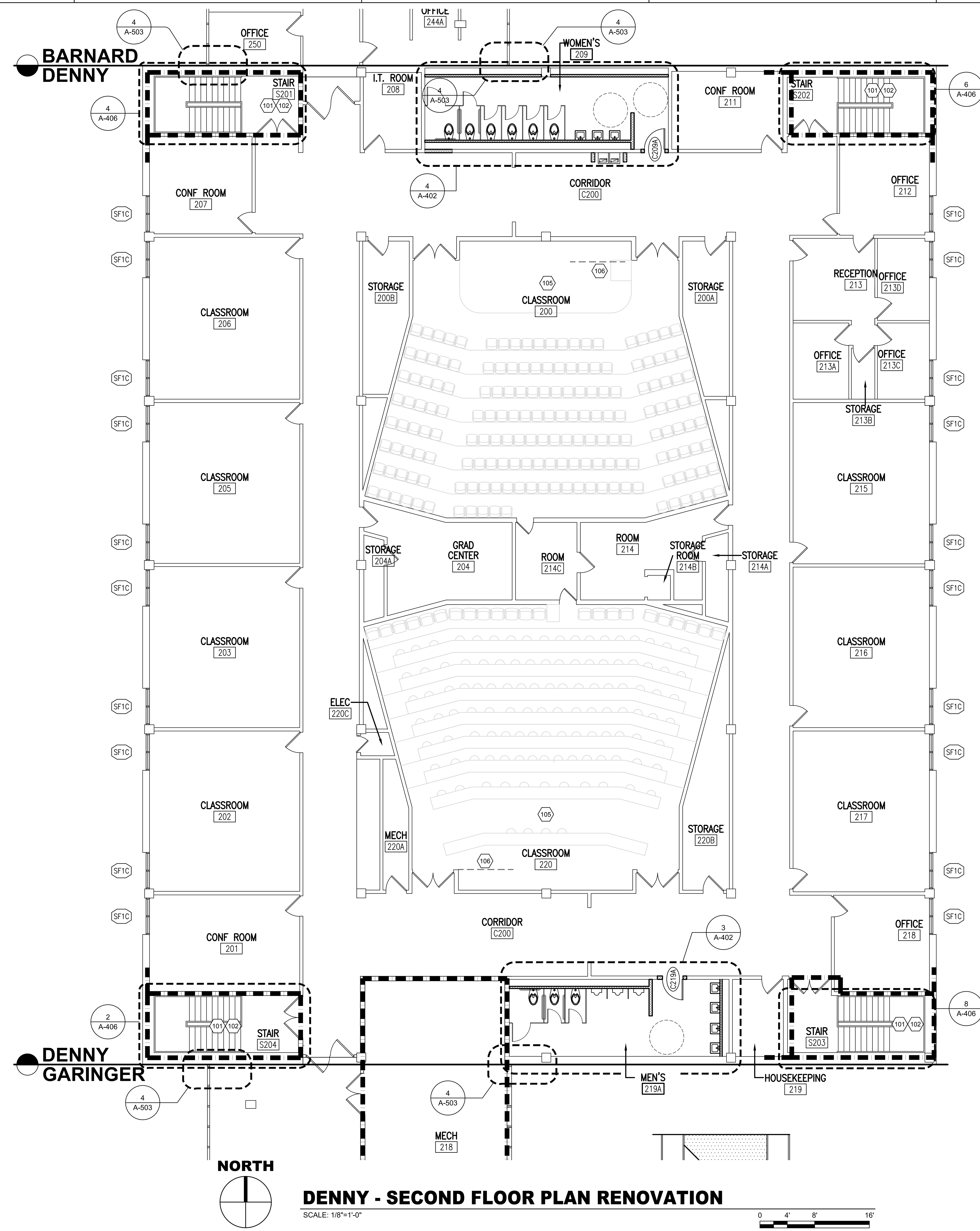
Revisions:

1 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
DENNY
FIRST FLOOR PLAN
RENOVATION

A-101C



DENNY - SECOND FLOOR PLAN RENOVATION

SCALE: 1/8"=1'-0"

0 4' 8' 16'

GENERAL NOTES

(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
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SHEET KEYNOTES

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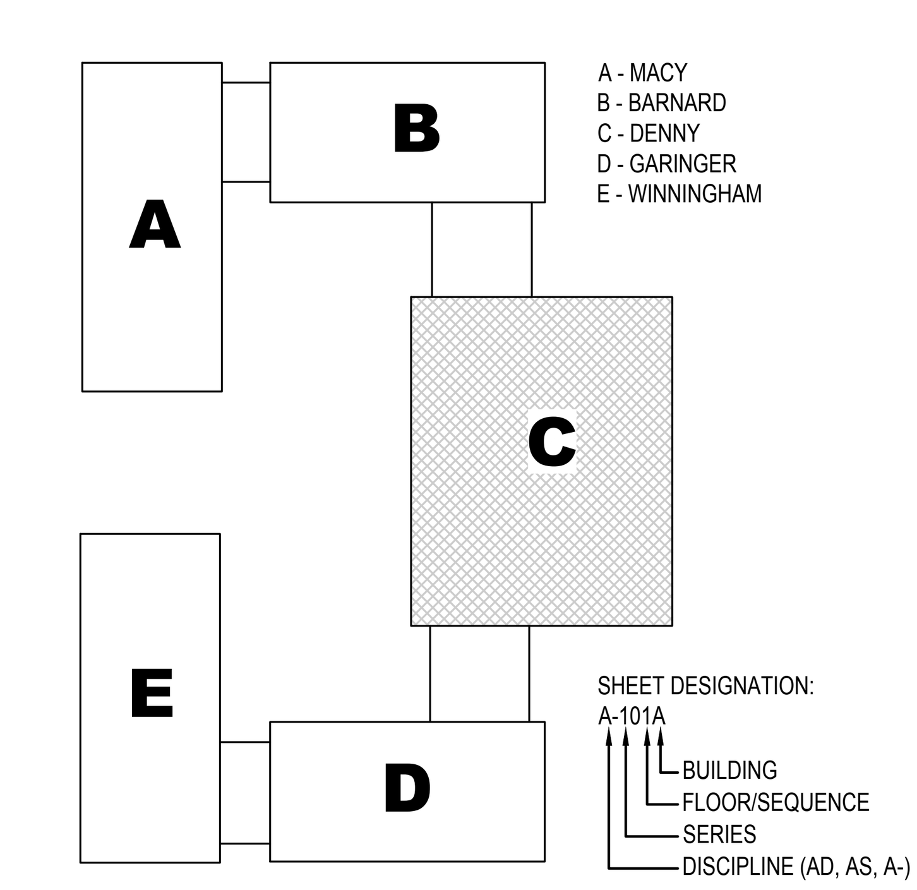
SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-504) 1

1 HR FIRE RATED BARRIER

KEY PLAN



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Revisions:

1 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
DENNY
SECOND FLOOR PLAN
RENOVATION

A-102C

GENERAL NOTES

(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
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SHEET KEYNOTES

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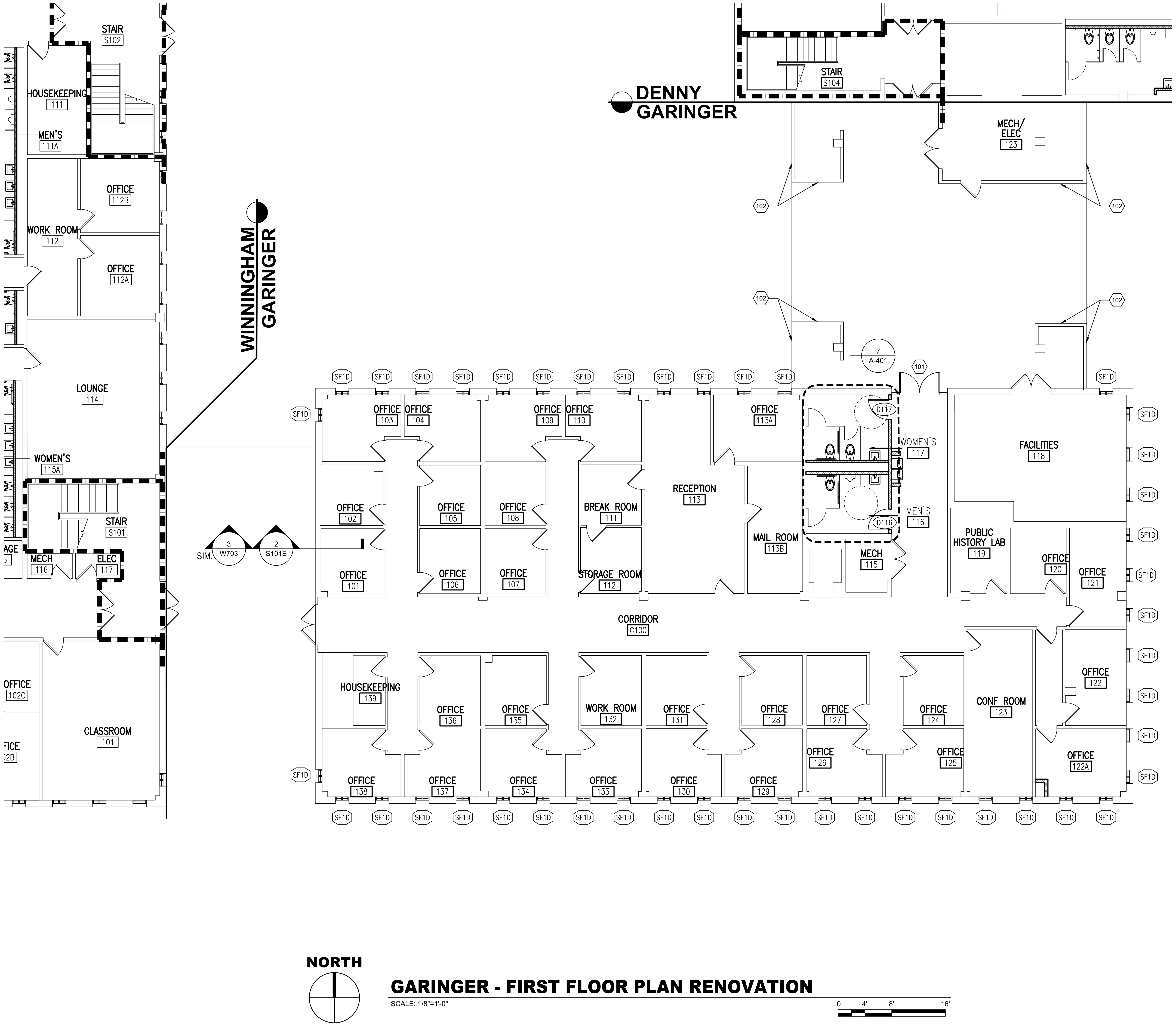
102 CLEAN AND COAT ALL EXPOSED SURFACES OF CMU WITH ELASTOMETRIC COATING.

SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-504)

1 HR FIRE RATED BARRIER

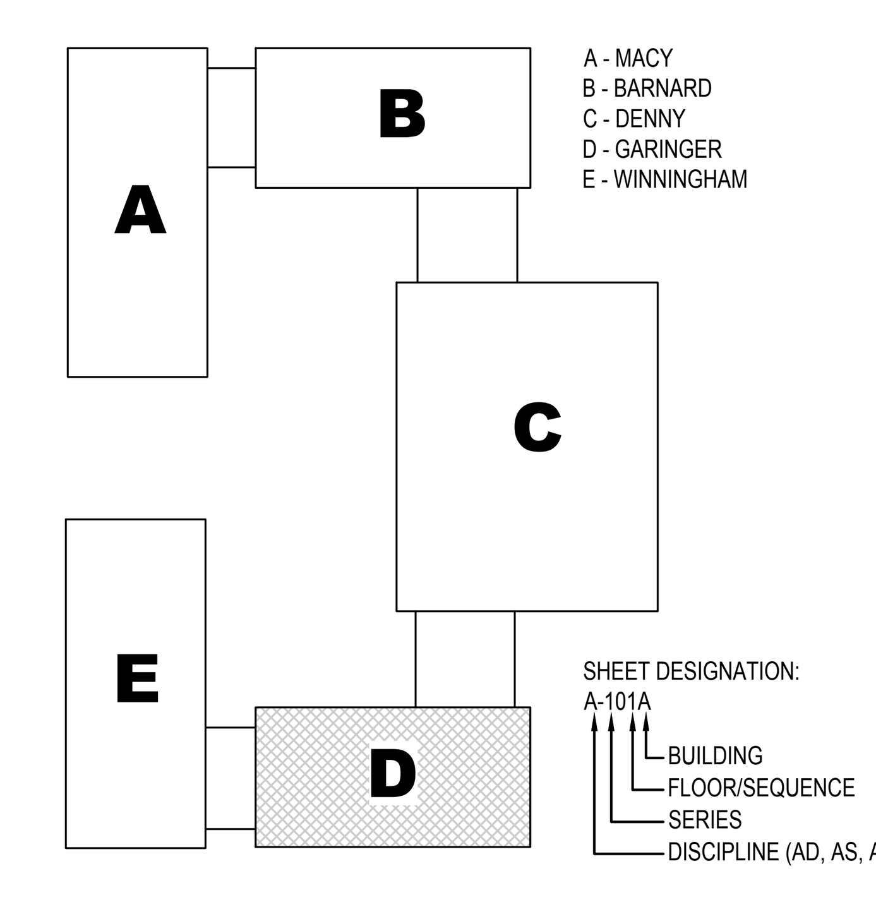


GARINGER - FIRST FLOOR PLAN RENOVATION

SCALE: 1/8"=1'-0"

0 4' 8' 16'

KEY PLAN



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Academic Complex Renovations

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Revisions:

1 ADDENDUM 3 10/10/16

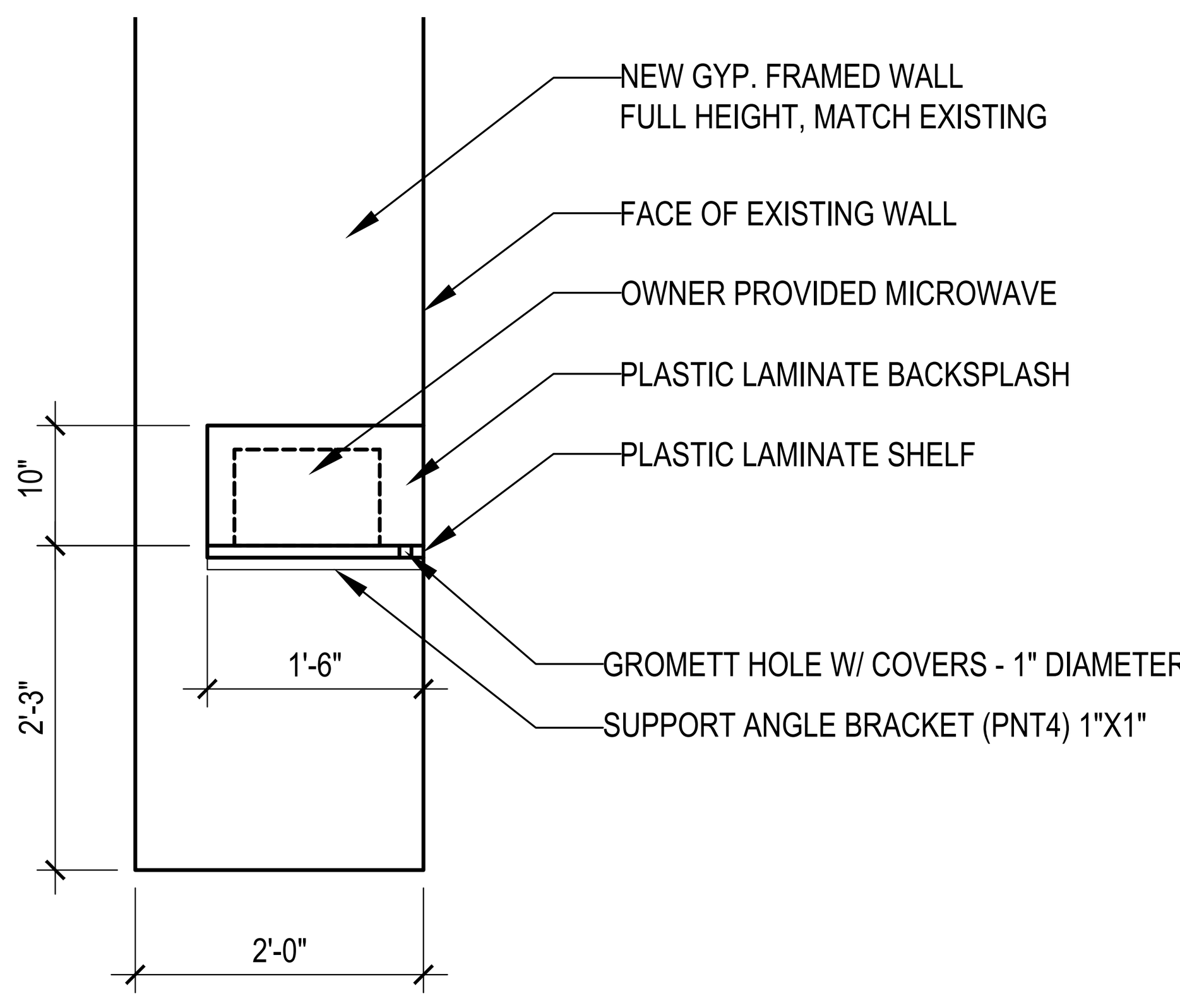
Proj. No.: 075052

Date: 07-SEP-16

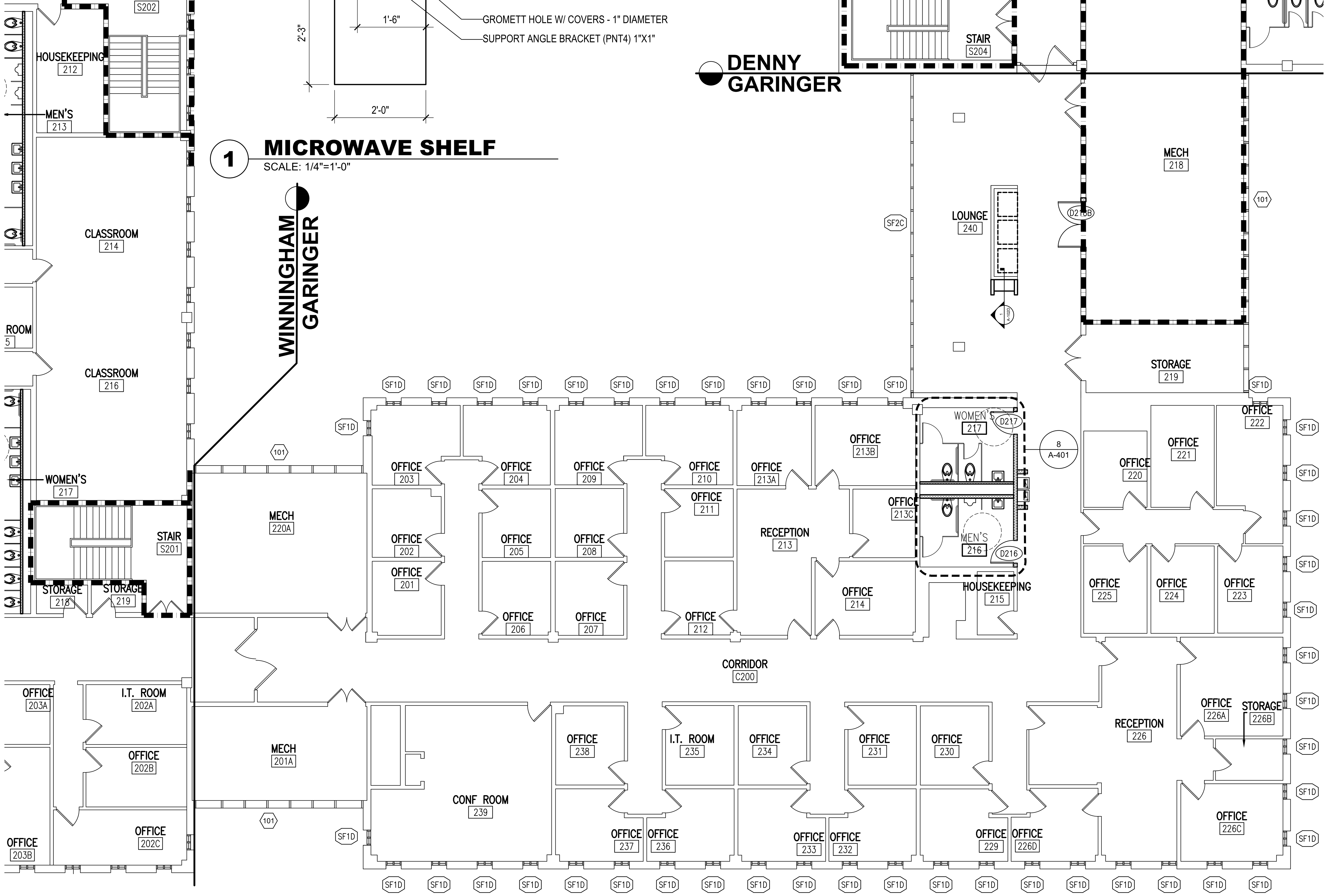
Sheet Name:

GARINGER FIRST FLOOR PLAN RENOVATION

A-101D



1 MICROWAVE SHELF
SCALE: 1/4"=1'-0"



NORTH

GARINGER - SECOND FLOOR PLAN RENOVATION
SCALE: 1/8"=1'-0"
0 4' 8' 16'

GENERAL NOTES
(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
2. INSTALL SHADES ON ALL EXTERIOR WINDOWS.
3. PAINT EXISTING DOOR FRAMES.
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SHEET KEYNOTES

101 EXISTING LOUVERS - PREP, PRIME & PAINT. REPLACE CORRODED FIELD LOUVER SECTIONS AS REQUIRED.

SYMBOLS LEGEND

- LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN
- NEW CMU PARTITION (SEE SHEET A-504) 1
- 1 HR FIRE RATED BARRIER

KEY PLAN

A - MACY
B - BARNARD
C - DENNY
D - GARINGER
E - WINNINGHAM

SHEET DESIGNATION: A-101A — BUILDING, FLOOR/SEQUENCE, SERIES, DISCIPLINE (AD, AS, A-)

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SCO ID # : 13-11117-01A

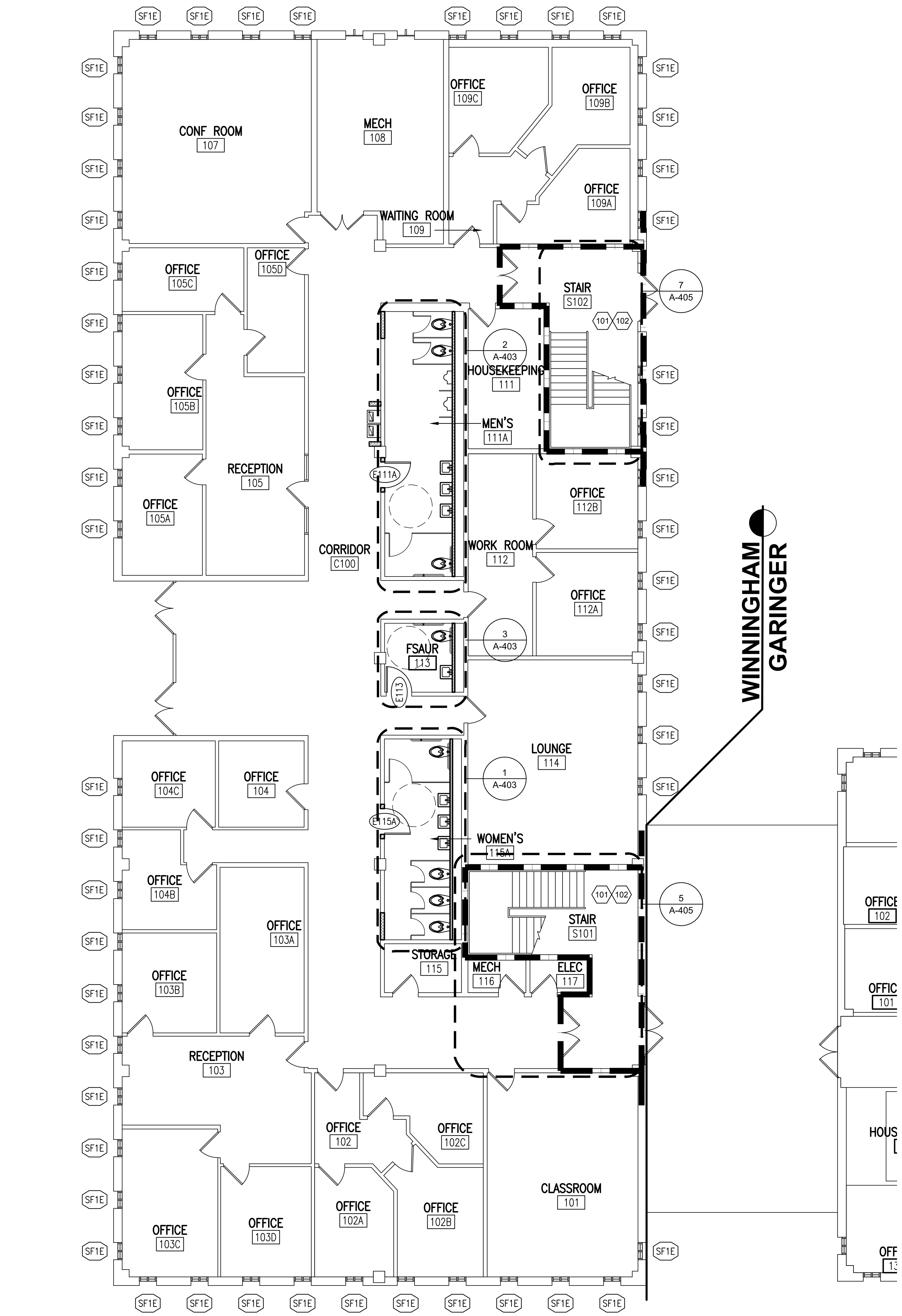
University of North Carolina at Charlotte
Academic Complex Renovations
9201 University City Blvd.
Charlotte, NC 28223

Revisions:
1 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
GARINGER SECOND FLOOR PLAN RENOVATION

A-102D



WINNINGHAM - FIRST FLOOR PLAN RENOVATION

GENERAL NOTES

(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
2. INSTALL SHADES ON ALL EXTERIOR WINDOWS.
3. PAINT EXISTING DOOR FRAMES.
4. INFILL ALL OPENINGS IN CMU PARTITIONS AT ALL LOCATION AFTER REMOVAL OF HVAC WORK. MATCH EXISTING PARTITIONS. REFER TO UL C-AJ-0041 FOR FIRE RATED WALLS - TYPICAL.
5. PATCH AND REPAIR ALL INTERIOR PARTITIONS TO RECEIVE NEW FINISHES AFTER REMOVAL OF HVAC EQUIPMENT AND ELECTRICAL DEVICES.

SHEET KEYNOTES

101 INSTALL NEW CONTRASTING ADA STAIR TREAD

102 INSTALL NEW GUARDRAILS AND HANDRAILS COMPLYING WITH 2012 NC BUILDING CODE. SEE SHEET A-406.

103 INSTALL NEW ADA COMPLIANT SLOPED FLOOR

104 INSTALL NEW FURNITURE AND ROOM ACCESSORIES

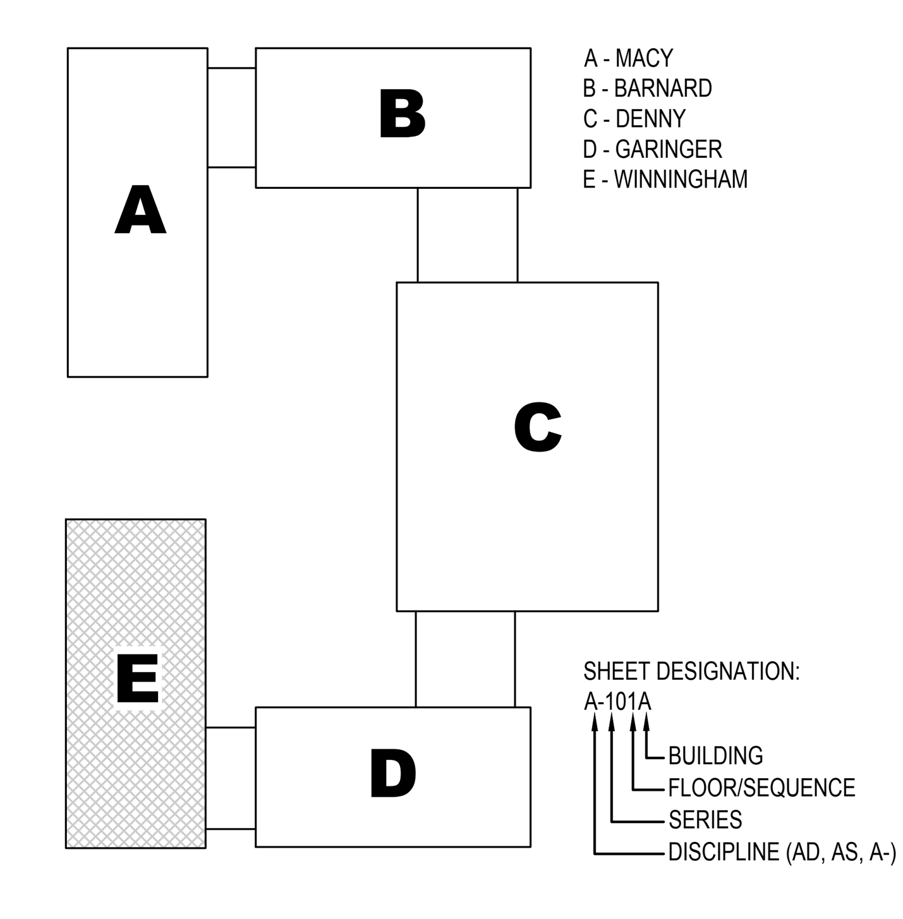
SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-504) 1

1 HR FIRE RATED BARRIER

KEY PLAN



WOOLPERT

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Sheet Name:
WINNINGHAM
FIRST FLOOR PLAN
RENOVATION

A-101E

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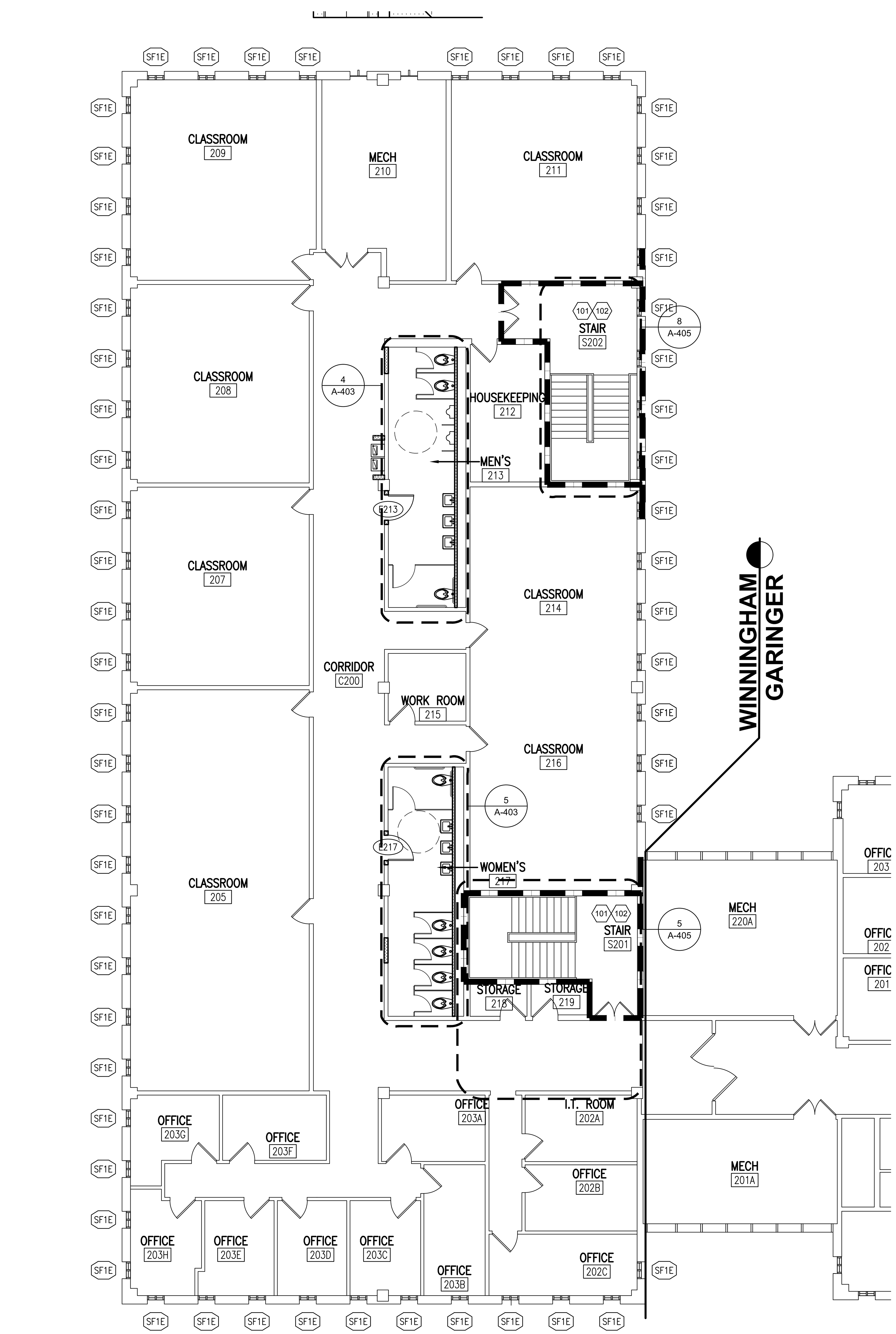
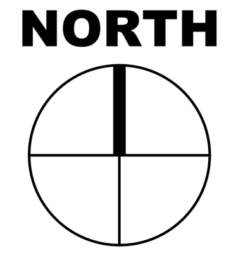


NORTH



WINNINGHAM - SECOND FLOOR PLAN RENOVATION

0 4' 8' 16'

GENERAL NOTES

(SEE GENERAL NOTES ON SHEET A-001, TYPICAL)

1. SEE ROOM FINISH SCHEDULE SHEET A-701/702 FOR FINISHES.
2. INSTALL SHADES ON ALL EXTERIOR WINDOWS.
3. PAINT EXISTING DOOR FRAMES.
4. INFILL ALL OPENINGS IN CMU PARTITIONS AT ALL LOCATION AFTER REMOVAL OF HVAC WORK. MATCH EXISTING PARTITIONS. REFER TO UL C-AJ-0041 FOR FIRE RATED WALLS - TYPICAL.
5. PATCH AND REPAIR ALL INTERIOR PARTITIONS TO RECEIVE NEW FINISHES AFTER REMOVAL OF HVAC EQUIPMENT AND ELECTRICAL DEVICES.

SHEET KEYNOTES

101 INSTALL NEW CONTRASTING ADA STAIR TREAD

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103 INSTALL NEW ADA COMPLIANT SLOPED FLOOR

104 INSTALL NEW FURNITURE AND ROOM ACCESSORIES

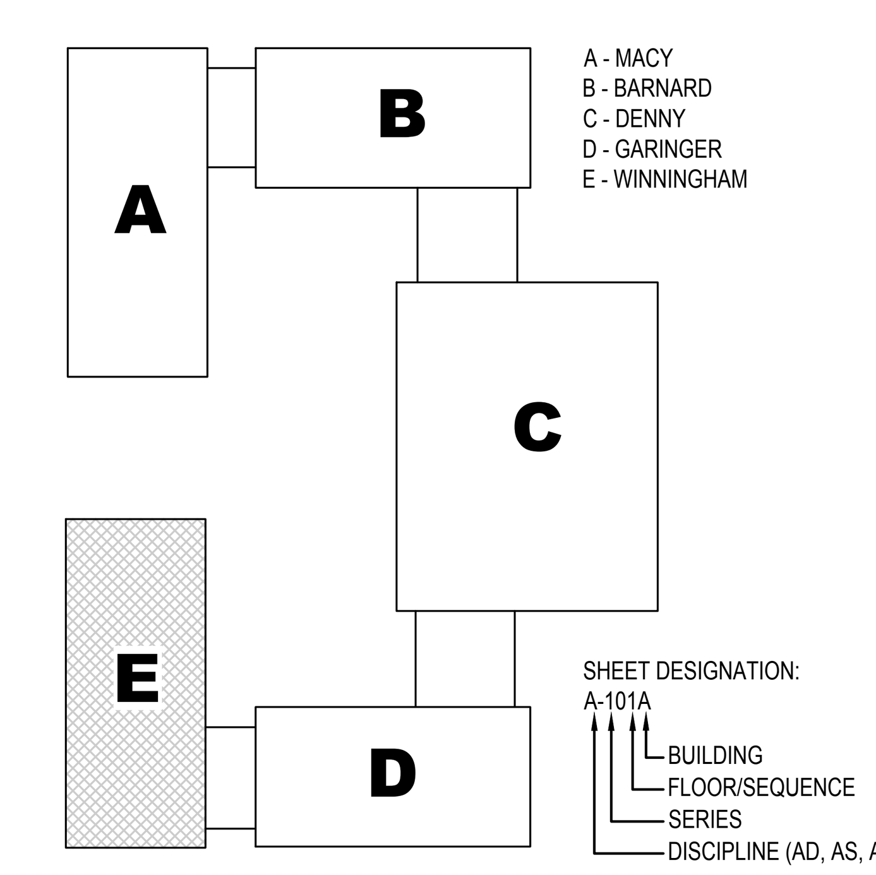
SYMBOLS LEGEND

LINE OF EXISTING WALL OR BUILDING ELEMENT TO REMAIN

NEW CMU PARTITION (SEE SHEET A-504) 1

1 HR FIRE RATED BARRIER

KEY PLAN



D

C

B

A

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Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
WINNINGHAM
SECOND FLOOR PLAN
RENOVATION

A-102E

ROOM FINISH SCHEDULE

BUILDING A - MACY						
ROOM NO.	ROOM NAME	WALLS	FLOOR	BASE	CEILING	REMARKS
C100	CORRIDOR	PNT/PNT1	VCT/VCT1	RB	ACT	
S101	STAIRS	PNT	VCT	RB		
S102	STAIRS	PNT	VCT	RB		
100	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
100A	FSAUR	WT/PNT	FT	TB	GYP. BD - PNT	
100B	MECH	PNT (A)	-	-	-	
101	WORK ROOM	PNT (A)	CPT	RB	ACT (A)	
101A	OFFICE	PNT (A)	CPT	RB	ACT (A)	
101B	OFFICE	PNT (A)	CPT	RB	ACT (A)	
101C	OFFICE	PNT (A)	CPT	RB	ACT (A)	
103	RECEPTION	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103B	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
104	OFFICE				ACT (A)	CONFIRM ALTERNATE #7
105	WORK ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106A	COMPUTER LAB	PNT (A)	CPT1	RB	ACT (A)	
106B	COMPUTER LAB	PNT (A)	CPT1	RB	ACT (A)	
106C	STORAGE					
106D	FACILITIES					
106E	STORAGE					
107	CLASSROOM	PNT	CPT1	RB	ACT (A)	CONFIRM ALTERNATE #7
108	WAITING ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
108A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
108B	STORAGE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
108C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
108D	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
109A	MECH					
110	CONF ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
111	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
112	HOUSEKEEPING					
C200	CORRIDOR	PNT/PNT1	-	-	ACT (A)	CONFIRM ALTERNATE #7
S201	STAIRS	PNT	VCT	RB		
S202	STAIRS	PNT	VCT	RB		
200	STORAGE	PNT (A)	-	-	-	CONFIRM ALTERNATE #7
201	CLASSROOM	PNT	VCT	RB	ACT	
202A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
202B	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
202C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
202D	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
202E	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
203	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
204A	CONF ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
204B	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
205	CLASSROOM	PNT	VCT	RB	ACT	
206	CLASSROOM	PNT	VCT	RB	ACT	
207	CLASSROOM	PNT	VCT	RB	ACT	
208	RECEPTION	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
208A	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
208B	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
208C	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
208D	STORAGE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
209	MECH					
209A	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
210	RECEPTION	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
210A	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
210B	WORK ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
211	BREAK ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
212	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
213	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
214	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
215	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
216	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
217	I.T ROOM			-	ACT (A)	CONFIRM ALTERNATE #7
218	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
219	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
220	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
221	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
222	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
223	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7

PNT PAINT - BASIS OF DESIGN - DURON - ANTIQUE WHITE NO. 22-03111 OR SHERWIN WILLIAMS POLAR BEAR NO. 7564
PNT1 - BLUE, PNT2 - ORANGE, PNT3 - GREEN, PNT4 - GOLD, PNT5 - RED
VCT VINYL COMPOSITION TILE - FIELD TILE
VCT1 - BLUE, VCT2 - ORANGE, VCT3 - GREEN, VCT4 - GOLD, VCT5 - RED
RB RUBBER BASE
CPT CARPET - GRAY BASE
CPT1 - BLUE, CPT2 - ORANGE, CPT3 - GREEN, CPT4 - GOLD, CPT5 - RED
ACT ACOUSTICAL CEILING TILE
WT WALL TILE
FT FLOOR TILE: COMPLY WITH TCNA METHOD F122-12 FOR CONCRETE SLAB ON GRADE AND TCNA METHOD F122A-12 FOR CONCRETE SLAB ABOVE GROUND
TB TILE BASE
GYP. BD GYPSUM BOARD
FLUID APPLIED FLOORING — VOID - NOT USED (1)

NOTES:

REFER TO FINISH PLAN FOR CORRIDOR LAYOUT OF VCT AND PAINT.

ALTERNATE #8: REMOVE EXISTING CARPET AND WALL BASE. INSTALL NEW CARPET (CPT) AND RUBBER BASE (RB).

ROOM FINISH SCHEDULE

BUILDING B - BARNARD						
ROOM NO.	ROOM NAME	WALLS	FLOOR	BASE	CEILING	REMARKS
C100	CORRIDOR	PNT/PNT2	VCT/VCT2	RB	ACT	
101	COMPUTER LAB	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
102	MECH					
103	RECEPTION	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103B	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103D	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103E	STORAGE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103F	WORK ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
103G	ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106	RECEPTION	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106B	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106D	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106E	CONF ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106F	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
106G	BREAK ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
107	FACILITIES					
107A	FACILITIES					
108	LOUNGE/MEETING	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
109	COMPUTER LAB	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
109A	ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
109B	COMPUTER LAB	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
109C	ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
109D	ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
109E	ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
110	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
111	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
112	ELEC					
115	MECH					
C200	CORRIDOR	PNT/PNT2	VCT/VCT2	RB	ACT	
201	OFFICE	PNT	CPT	RB	ACT	
202	OFFICE	PNT	CPT	RB	ACT	
203	OFFICE	PNT	CPT	RB	ACT	
204	OFFICE	PNT	CPT	RB	ACT	
205	OFFICE	PNT	CPT	RB	ACT	
206	OFFICE	PNT	CPT	RB	ACT	
207	OFFICE	PNT	CPT	RB	ACT	
208	OFFICE	PNT	CPT	RB	ACT	
209	OFFICE	PNT	CPT	RB	ACT	
210	OFFICE	PNT	CPT	RB	ACT	
211	OFFICE	PNT	CPT	RB	ACT	
212	OFFICE	PNT	CPT	RB	ACT	
213	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
214	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
215	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
216	STORAGE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
217	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
218	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
219	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
220	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
221	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
222	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
223	HOUSEKEEPING					
224	MAIL ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
225	RECEPTION	PNT (A)	CPT	RB	ACT (A)	
225A	RECEPTION	PNT (A)	CPT	RB	ACT (A)	
226	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
227	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
228	ELEC					
230A	BREAK ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
230B	COMPUTER LAB	PNT (A)	CPT2	RB	ACT (A)	
231	STORAGE	PNT	CPT	RB	ACT	
232	OFFICE	PNT	CPT	RB	ACT	
233	OFFICE	PNT	CPT	RB	ACT	
234	OFFICE	PNT	CPT	RB	ACT	
235	OFFICE	PNT	CPT	RB	ACT	
236	OFFICE	PNT	CPT	RB	ACT	
237	OFFICE	PNT	CPT	RB	ACT	
238	ROOM	PNT	CPT	RB	ACT	
238A	SERVER ROOM				ACT (A)	
240	MECH					
241D	MECH					
244	CONF ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
244A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
244B	STORAGE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
246	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
247	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
248	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
249	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
250	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7

PNT PAINT - BASIS OF DESIGN - DURON - ANTIQUE WHITE NO. 22-03111 OR SHERWIN WILLIAMS POLAR BEAR NO. 7564
PNT1 - BLUE, PNT2 - ORANGE, PNT3 - GREEN, PNT4 - GOLD, PNT5 - RED
VCT VINYL COMPOSITION TILE - FIELD TILE
VCT1 - BLUE, VCT2 - ORANGE, VCT3 - GREEN, VCT4 - GOLD, VCT5 - RED
RB RUBBER BASE
CPT CARPET - GRAY BASE
CPT1 - BLUE, CPT2 - ORANGE, CPT3 - GREEN, CPT4 - GOLD, CPT5 - RED
ACT ACOUSTICAL CEILING TILE
WT WALL TILE
FT FLOOR TILE: COMPLY WITH TCNA METHOD F122-12 FOR CONCRETE SLAB ON GRADE AND TCNA METHOD F122A-12 FOR CONCRETE SLAB ABOVE GROUND
TB TILE BASE
GYP. BD GYPSUM BOARD
FLUID APPLIED FLOORING — VOID - NOT USED (1)

NOTES:

REFER TO FINISH PLAN FOR CORRIDOR LAYOUT OF VCT AND PAINT.

ALTERNATE #8: REMOVE EXISTING CARPET AND WALL BASE. INSTALL NEW CARPET (CPT) AND RUBBER BASE (RB).

ROOM FINISH SCHEDULE

BUILDING C - DENNY						
ROOM NO.	ROOM NAME	WALLS	FLOOR	BASE	CEILING	REMARKS
C100	CORRIDOR	PNT/PNT3	VCT/VCT3	RB	ACT	
S101	STAIR	PNT	VCT	RB		
S102	STAIR	PNT	VCT	RB		
S103	STAIR	PNT	VCT	RB		
S104	STAIR	PNT	VCT	RB		
101	CLASSROOM	PNT	CPT3	RB	ACT	
102	CLASSROOM	PNT	CPT3	RB	ACT	
103	CLASSROOM	PNT	CPT3	RB	ACT	
104	FSAUR	WT/PNT	FT	TB	GYP. BD - PNT	
105	CLASSROOM	PNT	CPT3	RB	ACT	
106	CLASSROOM	PNT	CPT3	RB	ACT	
107	ANTHROPOLOGY LAB	PNT	CPT3	RB	ACT	
108	HOUSEKEEPING					
108A	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
108B	OFFICE	PNT (A)	CPT	RB	ACT (A)	
108C	LOUNGE	PNT/PNT3	CPT3	RB	ACT	
109	CLASSROOM	PNT	CPT3/VCT	RB	ACT	
111	CLASSROOM	PNT	CPT3/VCT	RB	ACT	
112	OFFICE	PNT	CPT	RB	ACT	
113	CONF ROOM	PNT (A)	-	-	ACT	CONFIRM ALTERNATE #7
114	CLASSROOM	PNT	CPT3	RB	ACT	
115	CLASSROOM	PNT	CPT3	RB	ACT	
116	BREAK ROOM	PNT	VCT	RB	ACT	
117	CLASSROOM	PNT	CPT3	RB	ACT	
118	CLASSROOM	PNT	CPT3	RB	ACT	
119	FIRE PUMP	PNT (A)	FAF	COVED BASE	GYP. BD - PNT	SEE 1/A-702, 1 HR-RATED
120	CLASSROOM	PNT	CPT3/VCT	RB	ACT	
121A	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
121B	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
121C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
121D	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
121E	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
122	CLASSROOM	PNT	CPT3/VCT	RB	ACT	
123	MECH/ELEC					
124	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
125	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
C200	CORRIDOR	PNT/PNT3	-	-	ACT (A)	CONFIRM ALTERNATE #7
S201	STAIR	PNT	VCT	RB		
S202	STAIR	PNT	VCT	RB		
S203	STAIR	PNT	VCT	RB		
S204	STAIR	PNT	VCT	RB		
200	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
200A	STORAGE	PNT	VCT	RB	ACT (A)	
200B	STORAGE					
201	CONF ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
202	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
203	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
204	GRAD CENTER	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
204A	STORAGE	PNT (A)	-	-	ACT (A)	
205	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
206	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
207	CONF ROOM	PNT	CPT3	RB	ACT	
208	I.T. ROOM				ACT (A)	
209	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
211	CONF ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
212	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
213	RECEPTION	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
213A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
213B	STORAGE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
213C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
213D	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
214	ROOM	PNT	VCT	RB	ACT	
214A	STORAGE	PNT	VCT	RB	ACT	
214B	STORAGE	PNT	VCT	RB	ACT	
214C	ROOM	PNT	VCT	RB	ACT (A)	
215	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
216	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
217	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
218	CONF ROOM	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
219	HOUSEKEEPING	PNT	VCT	RB		
219A	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
220	CLASSROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
220A	MECH					
220B	STORAGE	PNT	VCT	RB	ACT (A)	
220C	ELEC					

PNT PAINT - BASIS OF DESIGN - DURON - ANTIQUE WHITE NO. 22-03111 OR SHERWIN WILLIAMS POLAR BEAR NO. 7564
PNT1 - BLUE, PNT2 - ORANGE, PNT3 - GREEN, PNT4 - GOLD, PNT5 - RED
VCT VINYL COMPOSITION TILE - FIELD TILE
VCT1 - BLUE, VCT2 - ORANGE, VCT3 - GREEN, VCT4 - GOLD, VCT5 - RED
RB RUBBER BASE
CPT CARPET - GRAY BASE
CPT1 - BLUE, CPT2 - ORANGE, CPT3 - GREEN, CPT4 - GOLD, CPT5 - RED
ACT ACOUSTICAL CEILING TILE
WT WALL TILE
FT FLOOR TILE: COMPLY WITH TCNA METHOD F122-12 FOR CONCRETE SLAB ON GRADE AND TCNA METHOD F122A-12 FOR CONCRETE SLAB ABOVE GROUND
TB TILE BASE
GYP. BD GYPSUM BOARD
FLUID APPLIED FLOORING — VOID - NOT USED (1)

NOTES:

REFER TO FINISH PLAN FOR CORRIDOR LAYOUT OF VCT AND PAINT.

ALTERNATE #8: REMOVE EXISTING CARPET AND WALL BASE. INSTALL NEW CARPET (CPT) AND RUBBER BASE (RB).

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SCO ID # : 13-11117-01A

University of North Carolina at Charlotte
Academic Complex
Renovations
9201 University City Blvd.
Charlotte, NC 28223

Revisions:
1 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
ROOM FINISH SCHEDULE

A-701

ROOM FINISH SCHEDULE

BUILDING D - GARINGER

ROOM NO.	ROOM NAME	WALLS	FLOOR	BASE	CEILING	REMARKS
C100	CORRIDOR	PNT/PNT4	VCT/VCT4	RB	ACT	
101	OFFICE	PNT	CPT	RB	ACT	
102	OFFICE	PNT	CPT	RB	ACT	
103	OFFICE	PNT	CPT	RB	ACT	
104	OFFICE	PNT	CPT	RB	ACT	
105	OFFICE	PNT	CPT	RB	ACT	
106	OFFICE	PNT	CPT	RB	ACT	
107	OFFICE	PNT	CPT	RB	ACT	
108	PRINTER ROOM	PNT	CPT	RB	ACT	
109	OFFICE	PNT	CPT	RB	ACT	
110	OFFICE	PNT	CPT	RB	ACT	
111	BREAK ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
112	STORAGE ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
113	RECEPTION	PNT	-	-	ACT	CONFIRM ALTERNATE #7
113A	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
113B	MAIL ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
115	MECH					
116	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
117	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
118	FACILITIES					
119	PUBLIC HISTORY LAB	PNT	CPT	RB	ACT	
120	OFFICE	PNT	CPT	RB	ACT	
121	OFFICE	PNT	CPT	RB	ACT	
122	OFFICE	PNT	CPT	RB	ACT	
122A	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
123	CONF ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
124	OFFICE	PNT	CPT	RB	ACT	
125	OFFICE	PNT	CPT	RB	ACT	
126	OFFICE	PNT	CPT	RB	ACT	
127	OFFICE	PNT	CPT	RB	ACT	
128	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
129	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
130	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
131	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
132	WORK ROOM	PNT	-	-	ACT	CONFIRM ALTERNATE #7
133	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
134	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
135	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
136	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
137	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
138	OFFICE	PNT	-	-	ACT	CONFIRM ALTERNATE #7
139	HOUSEKEEPING	PNT	VCT	RB		
C200	CORRIDOR	PNT/PNT4	VCT/VCT4	RB	ACT	
201	OFFICE	PNT	CPT	RB	ACT	
201A	MECH					
202	OFFICE	PNT	CPT	RB	ACT	
203	OFFICE	PNT	CPT	RB	ACT	
204	OFFICE	PNT	CPT	RB	ACT	
205	OFFICE	PNT	CPT	RB	ACT	
206	OFFICE	PNT	CPT	RB	ACT	
207	LOUNGE	PNT/PNT4	CPT4	RB	ACT	
208	OFFICE	PNT	CPT	RB	ACT	
209	OFFICE	PNT	CPT	RB	ACT	
210	OFFICE	PNT	CPT	RB	ACT	
211	OFFICE	PNT	CPT	RB	ACT	
212	OFFICE	PNT	CPT	RB	ACT	
213	RECEPTION	PNT	CPT	RB	ACT	
213A	OFFICE	PNT	CPT	RB	ACT	
213B	OFFICE	PNT	CPT	RB	ACT	
213C	STORAGE	PNT	CPT	RB	ACT	
214	OFFICE	PNT	CPT	RB	ACT	
215	HOUSEKEEPING					
216	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
217	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
218	MECH					
219	STORAGE				ACT	
220	OFFICE	PNT	CPT	RB	ACT	
220A	MECH					
221	OFFICE	PNT	CPT	RB	ACT	
222	OFFICE	PNT	CPT	RB	ACT	
223	OFFICE	PNT	CPT	RB	ACT	
224	OFFICE	PNT	CPT	RB	ACT	
225	OFFICE	PNT	CPT	RB	ACT	
226	RECEPTION	PNT	CPT	RB	ACT	
226A	OFFICE	PNT	CPT	RB	ACT	
226B	STORAGE	PNT	CPT	RB	ACT	
226C	OFFICE	PNT	CPT	RB	ACT	
226D	OFFICE	PNT	CPT	RB	ACT	
229	OFFICE	PNT	CPT	RB	ACT	
230	OFFICE	PNT	CPT	RB	ACT	
231	OFFICE	PNT	CPT	RB	ACT	
232	OFFICE	PNT	CPT	RB	ACT	
233	OFFICE	PNT	CPT	RB	ACT	
234	OFFICE	PNT	CPT	RB	ACT	
235	I.T. ROOM	PNT (A)	-	-	ACT	CONFIRM ALTERNATE #7
236	OFFICE	PNT	CPT	RB	ACT	
237	OFFICE	PNT	CPT	RB	ACT	
238	OFFICE	PNT	CPT	RB	ACT	
239	CONF ROOM	PNT (A)	CPT4	RB	ACT (A)	
240	LOUNGE	PNT	VCT	RB	ACT	

PNT PAINT - BASIS OF DESIGN - DURON - ANTIQUE WHITE NO. 22-03111 OR SHERWIN WILLIAMS POLAR BEAR NO. 7564
PNT1 - BLUE, PNT2 - ORANGE, PNT3 - GREEN, PNT4 - GOLD, PNT5 - RED
VCT VINYL COMPOSITION TILE - FIELD TILE
VCT1 - BLUE, VCT2 - ORANGE, VCT3 - GREEN, VCT4 - GOLD, VCT5 - RED
RB RUBBER BASE
CPT CARPET - GRAY BASE
CPT1 - BLUE, CPT2 - ORANGE, CPT3 - GREEN, CPT4 - GOLD, CPT5 - RED
ACT ACOUSTICAL CEILING TILE
WT WALL TILE
FT FLOOR TILE: COMPLY WITH TCNA METHOD F122-12 FOR CONCRETE SLAB ON GRADE AND TCNA METHOD F122A-12 FOR CONCRETE SLAB ABOVE GROUND
TB TILE BASE
GYP. BD GYPSUM BOARD
FAF FLUID APPLIED FLOORING
VOID - NOT USED VOID - NOT USED
1

NOTES:

REFER TO FINISH PLAN FOR CORRIDOR LAYOUT OF VCT AND PAINT.

ALTERNATE #8: REMOVE EXISTING CARPET AND WALL BASE. INSTALL NEW CARPET (CPT) AND RUBBER BASE (RB).

ROOM FINISH SCHEDULE

BUILDING E - WINNINGHAM

ROOM NO.	ROOM NAME	WALLS	FLOOR	BASE	CEILING	REMARKS
C100	CORRIDOR	PNT/PNT5	VCT/VCT5	RB	ACT	
S101	STAIR	PNT	VCT	RB		
S102	STAIR	PNT	VCT	RB		
101	CLASSROOM	PNT	CPT5	RB	ACT	
102	WAITING ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
102A	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
102B	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
102C	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
103	RECEPTION	PNT	CPT	RB	ACT (A)	
103A	OFFICE	PNT	CPT	RB	ACT (A)	
103B	OFFICE	PNT	CPT	RB	ACT (A)	
103C	OFFICE	PNT	CPT	RB	ACT (A)	
103D	OFFICE	PNT	CPT	RB	ACT (A)	
104	OFFICE	PNT	CPT	RB	ACT (A)	
104B	OFFICE	PNT	CPT	RB	ACT (A)	
104C	OFFICE	PNT	CPT	RB	ACT (A)	
105	RECEPTION	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
105A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
105B	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
105C	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
105D	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
107	CONF ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
108	MECH					
109	WAITING ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
109A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
109B	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
109C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
111	HOUSEKEEPING					
111A	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
112	WORK ROOM	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
112A	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
112B	OFFICE	PNT	-	-	ACT (A)	CONFIRM ALTERNATE #7
113	FSAUR	WT/PNT	FT	TB	GYP. BD - PNT	
114	LOUNGE	PNT (A)	VCT	RB	ACT (A)	
115	STORAGE				ACT	
115A	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
116	MECH					
117	ELEC					
C200	CORRIDOR	PNT/PNT5	VCT/VCT5	RB	ACT	
S201	STAIR	PNT	VCT	RB		
S202	STAIR	PNT	VCT	RB		
202A	I.T ROOM				ACT (A)	
202B	OFFICE	PNT	CPT	RB	ACT (A)	
202C	OFFICE	PNT	CPT	RB	ACT (A)	
203A	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
203B	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
203C	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
203D	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
203E	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
203F	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
203G	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
203H	OFFICE	PNT (A)	-	-	ACT (A)	CONFIRM ALTERNATE #7
205	CLASSROOM	PNT	VCT	RB	ACT	
207	CLASSROOM	PNT	VCT	RB	ACT	
208	CLASSROOM	PNT	VCT	RB	ACT	
209	CLASSROOM	PNT	VCT	RB	ACT	
210	MECH					
211	CLASSROOM	PNT	VCT	RB	ACT	
212	ROOM				ACT (A)	
213	MEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
214	CLASSROOM	PNT	VCT	RB	ACT	
215	WORK ROOM	PNT	VCT	RB	ACT (A)	
216	CLASSROOM	PNT	VCT	RB	ACT	
217	WOMEN'S	WT/PNT	FT	TB	GYP. BD - PNT	
218	STORAGE					
219	STORAGE					

PNT PAINT - BASIS OF DESIGN - DURON - ANTIQUE WHITE NO. 22-03111 OR SHERWIN WILLIAMS POLAR BEAR NO. 7564
PNT1 - BLUE, PNT2 - ORANGE, PNT3 - GREEN, PNT4 - GOLD, PNT5 - RED
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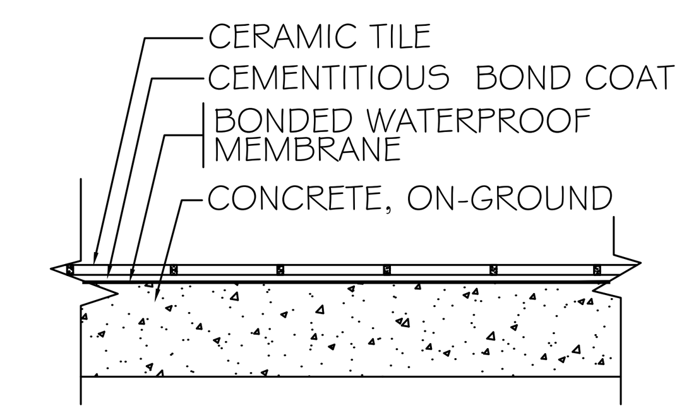
VCT1 - BLUE, VCT2 - ORANGE, VCT3 - GREEN, VCT4 - GOLD, VCT5 - RED
RB RUBBER BASE
CPT CARPET - GRAY BASE
CPT1 - BLUE, CPT2 - ORANGE, CPT3 - GREEN, CPT4 - GOLD, CPT5 - RED
ACT ACOUSTICAL CEILING TILE
WT WALL TILE
FT FLOOR TILE: COMPLY WITH TCNA METHOD F122-12 FOR CONCRETE SLAB ON GRADE AND TCNA METHOD F122A-12 FOR CONCRETE SLAB ABOVE GROUND
TB TILE BASE
GYP. BD GYPSUM BOARD
FAF FLUID APPLIED FLOORING
VOID - NOT USED VOID - NOT USED
1

NOTES:

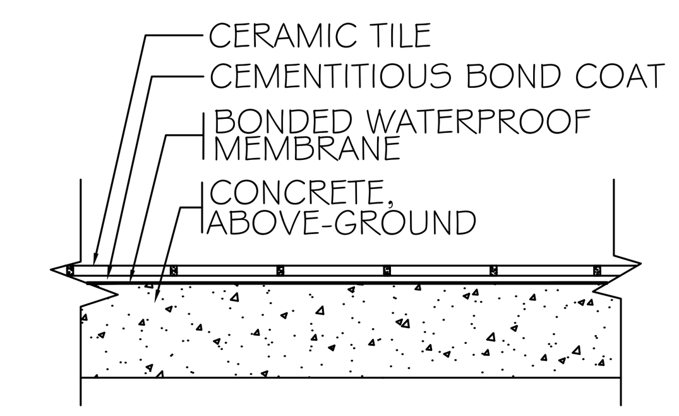
REFER TO FINISH PLAN FOR CORRIDOR LAYOUT OF VCT AND PAINT.

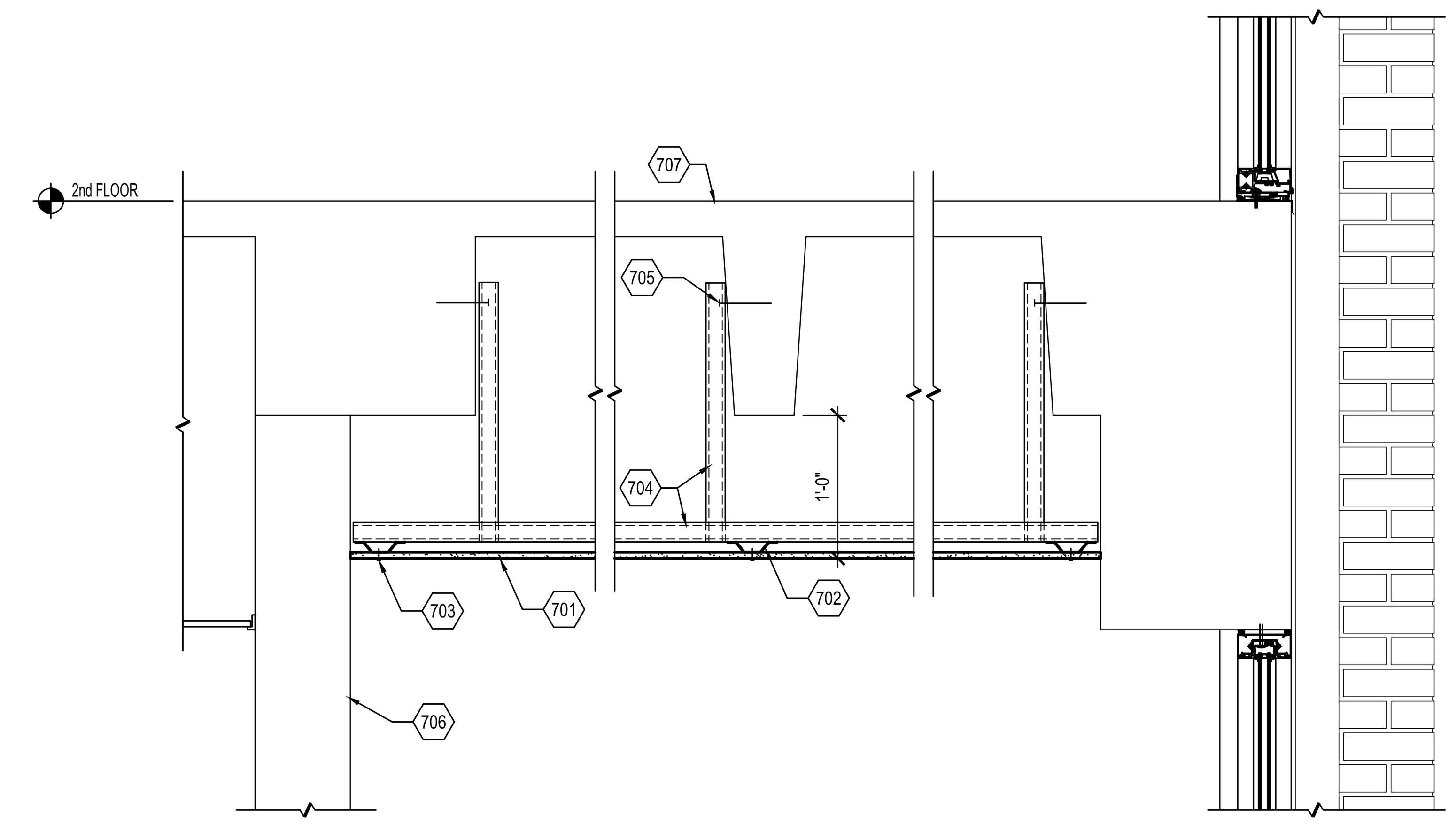
ALTERNATE #8: REMOVE EXISTING CARPET AND WALL BASE. INSTALL NEW CARPET (CPT) AND RUBBER BASE (RB).

INTERIOR FLOORS OVER CONCRETE
On-Ground Concrete F122-12
Waterproof Membrane
Ceramic Tile



INTERIOR FLOORS OVER CONCRETE
Above-Ground Concrete F122A-12
Waterproof Membrane
Ceramic Tile





KEYNOTE LEGEND
701 3/8" TYPE X GYPSUM WALLBOARD.
702 7/8" X 2-5/8" X 0.018" (NO. 25 CARBON SHEET STEEL GAGE) HAT-SHAPED GALV. STEEL CHANNEL @ 24" O.C. - SPAN 35" AND SUPPORTED ALONG THEIR LENGTH AT 35" INTERVALS, TYPICAL.
703 1" LONG NO. 6 SCREWS, TYPICAL.
704 0.033" (NO. 21 GALV. SHEET GAGE) GALV. STEEL FLAT STRAP HANGERS HAVING FORMED EDGES THAT ENGAGE THE LIPS OF THE CHANNEL, TYPICAL.
705 5/32" X 1-1/4" LONG POWER-DRIVEN FASTNERS, TYPICAL.
706 EXISTING WALL.
707 EXISTING CONCRETE FLOOR/BEAM SYSTEM.

NOTES
1- THE WALLBOARD IS INSTALLED WITH THE LONG DIMENSION PERPENDICULAR TO THE CHANNELS.
2- ALL END JOINTS OCCUR ON THE CHANNELS AND SUPPLEMENTARY CHANNELS ARE INSTALLED PARALLEL TO THE MAIN CHANNELS, 12" EACH SIDE, AT END JOINT OCCURRENCES.
3- THE FINISHED CEILING IS LOCATED APPROXIMATELY 12" BELOW THE SOFFIT OF THE FLOOR SLAB.

1 FLOOR/CEILING ASSEMBY DETAIL

SCALE: 1" = 1'-0" 1-HR RATED

PER TABLE 720.1(3) - MINIMUM PROTECTION FOR FLOOR AND ROOF SYSTEMS, ITEM 5.2.1 OF NCBC-2012

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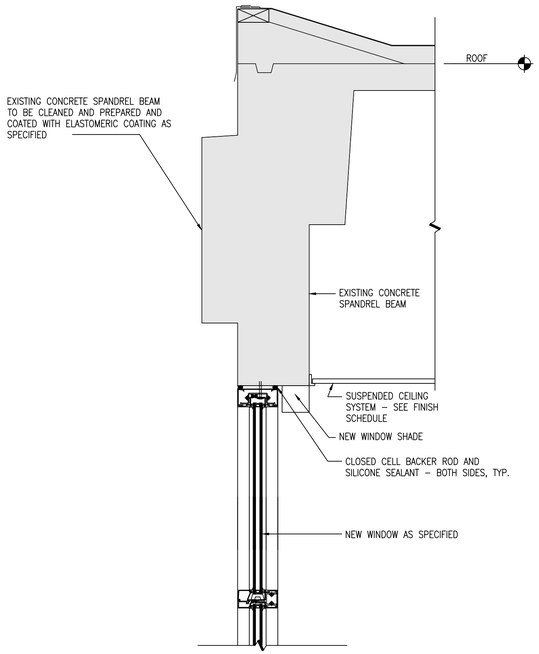
Revisions:
1 ADDENDUM 3 10/10/16

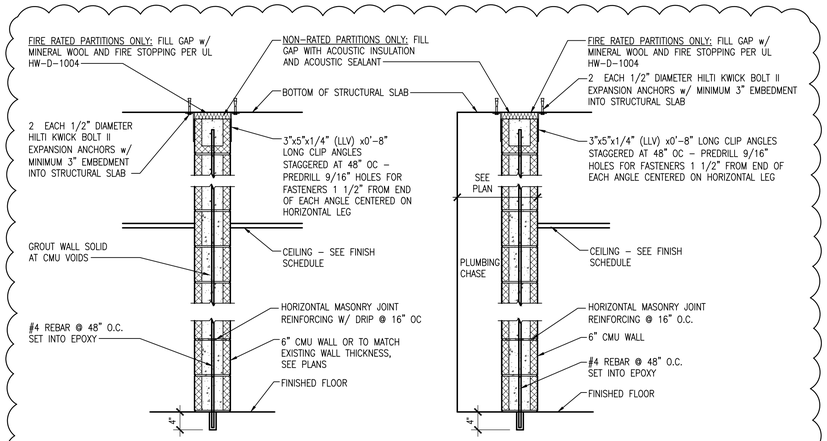
Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
ROOM FINISH SCHEDULE

A-702



6 DETAIL @ Head
SCALE: 1-1/2"=1'-0"



P1 - THIS PARTITION TYPE TO BE USED AS FOLLOWS:

A. NEW OR INFILL CORRIDOR, STAIR OR ROOM DIVIDING WALLS IN NON-RATED CONDITIONS.

B. NEW OR INFILL CORRIDOR, STAIR OR ROOM DIVIDING WALLS IN RATED CONDITIONS.

C. USE WALL HEAD CONDITION IN EXISTING RATED WALLS THAT DO NOT EXTEND TIGHT TO EXISTING STRUCTURE ABOVE. WALL HEAD BRACING CONDITION FOR EXISTING RATED, NEW OR INFILL WALLS ONLY.

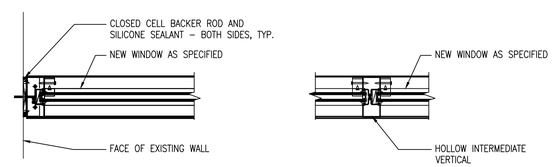
P2 - THIS PARTITION TYPE TO BE USED AS FOLLOWS:

A. NEW OR INFILL RESTROOM WALLS ALL CONDITIONS.

B. REST ROOM CHASES FOR PLUMBING TO HAVE THE MINIMUM CHASE DIMENSIONS NOTED BELOW: THE DIMENSIONS NOTED BELOW TO PREVAIL IN THE EVENT THE DIMENSIONS ON THE PLANS CONFLICT, FINAL DIMENSIONS TO BE COORDINATED TO ACCOMMODATE THE CARRIERS USED FOR THE PLUMBING FIXTURES.
1. BACK TO BACK FIXTURES/CHASES TO HAVE A MIN. DIMENSION OF 1'-4" CLEAR
2. SINGLE FIXTURES/CHASES TO HAVE A MIN DIMENSION OF 1'-0" CLEAR.

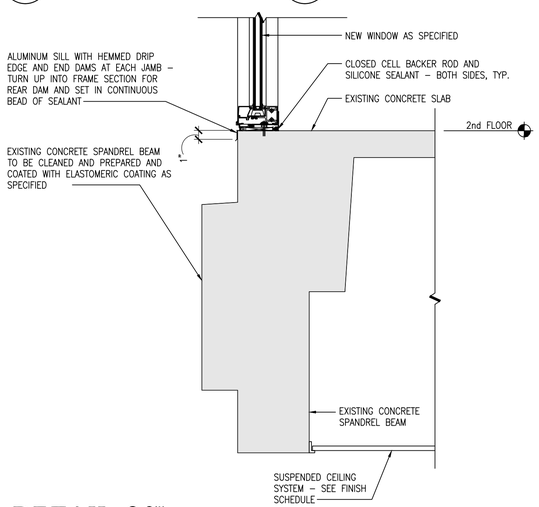
1 PARTITION TYPES
SCALE: 3/4"=1'-0"

GENERAL PARTITION NOTES
1. SEE 7 & 8/A-403 FOR WING WALLS FOR WATER COOLER LOCATIONS.
2. ALL NEW AND INFILL CMU WALLS TO BE DOWEL INTO EXISTING SLABS AT 4'-0" O.C. IF LESS THAN 4'-0" IN LENGTH USE TWO DOWELS MIN.



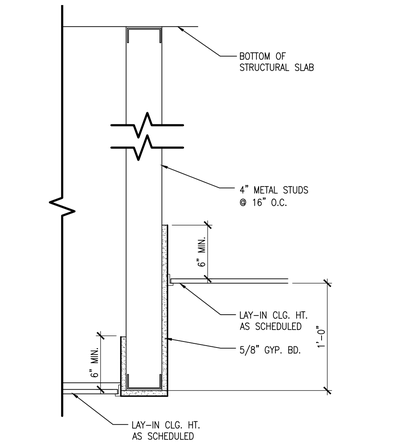
5A DETAIL @ Jamb
SCALE: 1-1/2"=1'-0"

5B DETAIL @ Vertical Mullion
SCALE: 1-1/2"=1'-0"

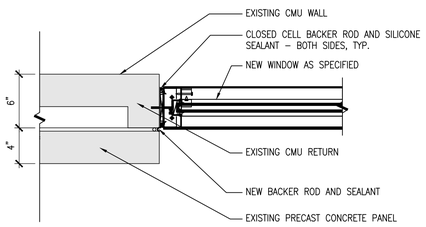


4 DETAIL @ Sill
SCALE: 1-1/2"=1'-0"

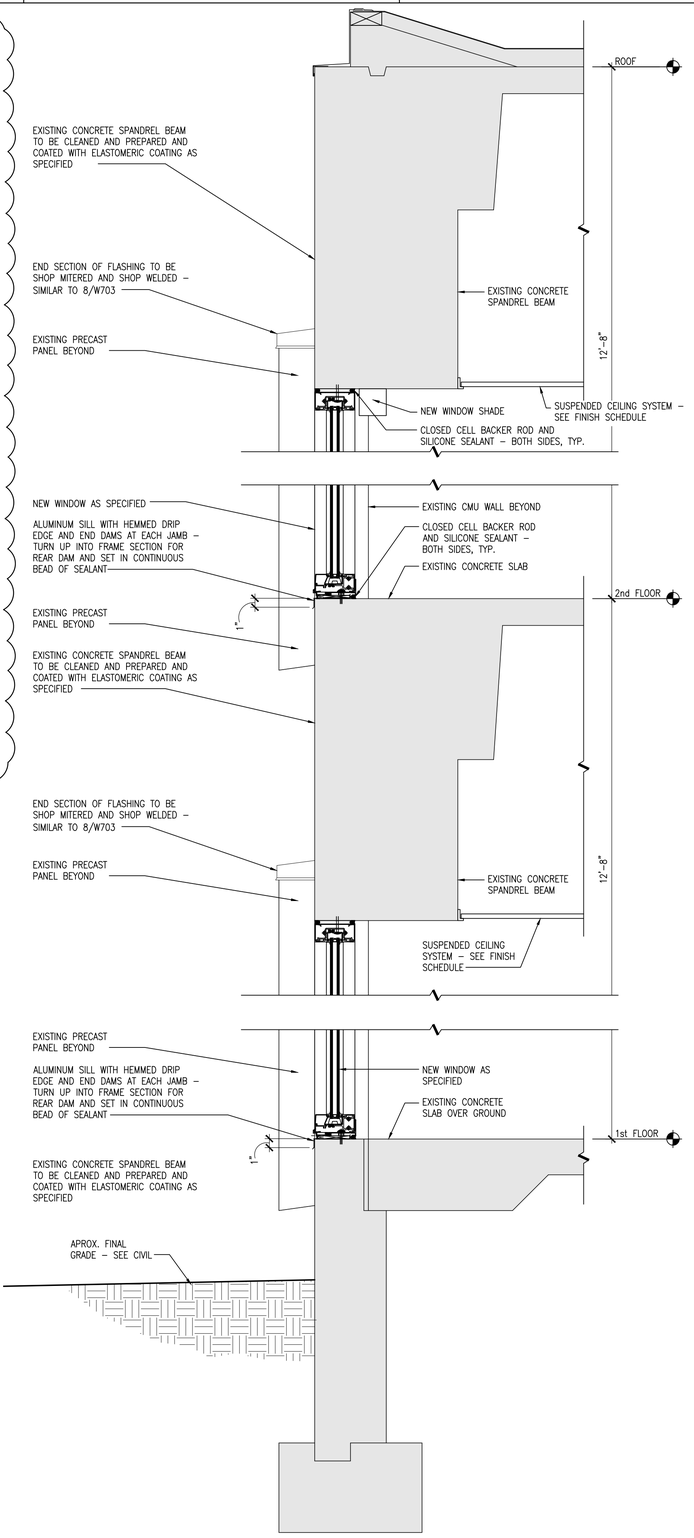
GENERAL NOTE
REFER TO THE "W" SERIES DRAWINGS FOR NOTES AND DETAILS ON ALL CONTROL AND EXPANSION JOINT"S" AND TO STRUCTURAL DRAWINGS FOR NOTES ON FRAMING AND FOUNDATIONS



3 DETAIL
SCALE: 1-1/2"=1'-0"



2 DETAIL @ Jamb
SCALE: 1-1/2"=1'-0"



1 WALL SECTION - Base Bid Ony
SCALE: 1-1/2"=1'-0"

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704.525.6284
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Revisions:
1 ADDENDUM 3 10/10/16

Proj. No.: 075052
Date: 07-SEP-16

Sheet Name:
WALL SECTION AND DETAILS

A-504

Printed: Oct 10, 2016 – 3:32pm – By: lizardo – Filename: W:\Srvln\DE\Charlotte\Clients\UNC Charlotte\075052 Academic Complex Programming\4.0 Disciplines\Arch\Dwgs_DRAWINGS\075052_UNCC-ACP_C-DENNY_WS.dwg

11. Pre-bid RFI's

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 001

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Richa Graphics

SCOPE REFERENCE: Signage

SUBJECT MATTER: Sign Types

PAGE REFERENCE: Spec Section 101400

DESCRIPTION: Construction Documents do not indicate the need for the following signs: Area of Refuge, Restroom Blades, Directory Signs, Egress Signs, Exterior Signs, Classroom Capacity, Elevator, ADA Directional, etc. Please advise if they are required. Please provide the requirements, size, finish, color, etc., for room signage. Specification section 101400-2 calls for Black Acrylic Dimensional Letters, please confirm the thickness.

REQUESTED BY: Sachin Vyas DATE: 10/3/16

RESPONSE: **Specification Section 10 14 00 – Signage; has been updated by Addenda #003, to incorporate additionl signage requirments. By refrence, "Attachemt No 001" (pages 1-12) is incorporated into the bidding document as part of this RFI response, to provide information on signage requirements, sizes, finishes, color, etc. Black Acrylic Dimensional Letters to be 1 inch thick.**

BY: Taylor Bishal DATE: 10/7/2016

Introduction

PREFACE

In an effort to present a consistent image and visual harmony throughout The University of North Carolina at Charlotte campus, an overall signage program has been developed. This way-finding system will help guide students, faculty, staff and visitors to their destinations throughout the campus.

The purpose of these signage standards is to establish basic guidelines for the fabrication and installation of all exterior identification, informational and directional signage. These standards establish certain policies for the execution of signage as well as providing a description of various sign types, graphic uses, materials, Specifications, fabrication and installation procedures, etc.

All signage must be in conformance with these standards and approved by the UNC Charlotte Department of Facilities Management prior to fabrication and installation. The sign types herein identified for UNC Charlotte adhere to the codes and regulations for the City of Charlotte, North Carolina.

Specific signs on public roadways may require sign permits prior to fabrication. The fabricator shall be responsible for obtaining any required permits from the City. A construction drawing has been completed for each sign type and may be obtained at the UNC Charlotte Department of Facilities Management.

These drawings must be complied with, though fabrication methods and materials may be altered in attempt to produce a better product with approval of Facilities Management Design Services.

The fabricator shall submit in writing for approval any suggested revisions to these drawings to the UNC Charlotte Department of Facilities Management prior to making the revision. Sign shapes, sizes, colors, finishes, graphics, etc. may not be changed. It is required that the fabricator produce shop drawings of all signs to be fabricated, and submit them to the Project Manager for approval.

Type Style 1

The vendor must provide Submittal Drawings with layout and character sizing, including compression and spacing sizes used to create readable and functional signage . Use of Sub-Brand Logos must be pre-approved by Marketing before including in sign fabrication if other than the Crown or the Crown and University name as depicted above in standard black or PMS 349 Campus Green.

http://www.publicrelations.uncc.edu/logo/main-logo.html

http://www.publicrelations.uncc.edu/logo/sub-brand.html

TYPE STYLE AND COPY

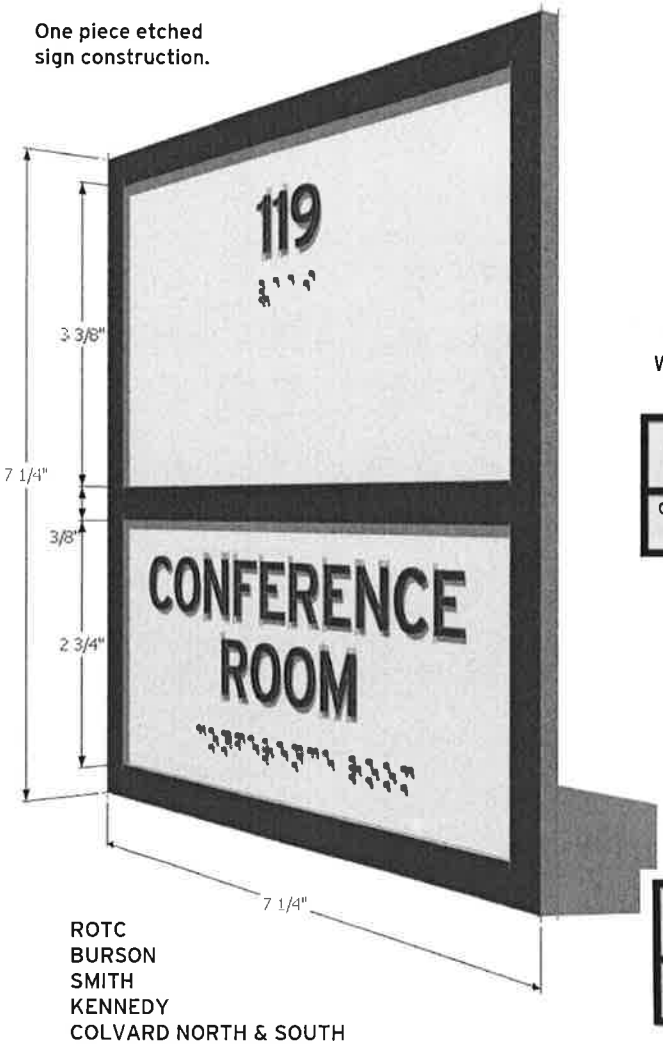
To maintain consistency, the typeface used on all Logos is to be UTOPIA. The Tactile or Raised Relief sign copy will be Interstate upper case. Utopia and Interstate are the new 2009 standard fonts created for the University and compatible for PC based vinyl cutting devices and is required for this program. While the point sizes of text will vary, the letter spacing condensed characters and letter kerning must be followed. All copy should be 85% condensed and have -.15 letter spacing.

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

ARROW AND COPY

The arrow as shown should be used for all directional needs. The arrow should be used in an orientation which will make the directional information most obvious. The relationship between the arrow and the type as shown should always be maintained.

There are instances where a curved arrow or turned arrow is required to convey correct directions. The vendor must provide drawings for approval prior to fabrication.



ROTC
BURSON
SMITH
KENNEDY
COLVARD NORTH & SOUTH

TYPE A 2

FIXED ROOM IDENTIFICATION

CURRENT BUILDING SAMPLE LIST WITH NEW DESIGN MANUAL SIGNAGE

WINNINGHAM

DENNY

FRETWELL
CONE CENTER

STUDENT HEALTH
CENTER

ROWE ARTS

BIOINFORMATICS
CAMERON

KING BUILDING

The vendor must provide Submittal Drawings with layout and character sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

To maintain consistency, the typeface used on all sign copy will be Interstate in upper case. Interstate is the new 2009 standard font created for the University and compatible for PC based vinyl cutting devices and is required for this program.

While the point sizes of text will vary (Std. is ¾"), the letter spacing condensing or spacing of characters and kerning balance must be followed.

FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

ARROWS AND COPY

The arrow as shown should be used for all directional needs. The arrow should be used in an orientation which will make the directional information most obvious. The relationship between the arrow and the type as shown should always be maintained.

There are instances where a curved arrow or turned arrow is required to convey correct directions. The vendor must provide drawings for approval prior to fabrication.

One piece etched sign construction.

TYPE B

3

ADA
RESTROOM ID

The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

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FABRICATION AND MOUNTING

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Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

ARROWS AND COPY

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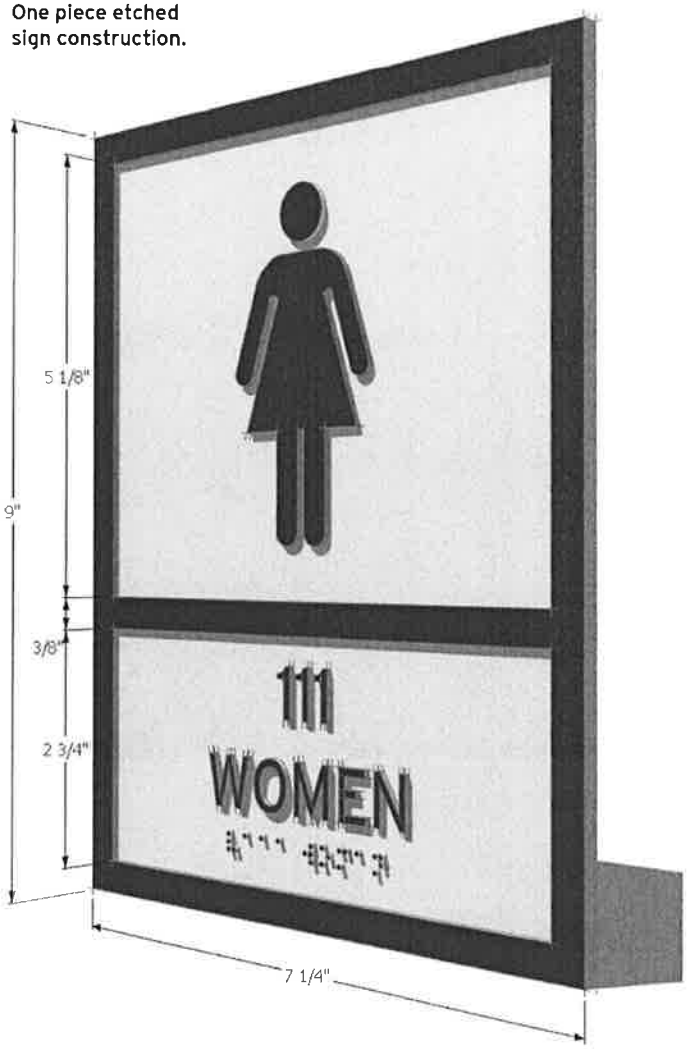
One piece etched
sign construction.

TYPE B.0

4

STD. RESTROOM
IDENTIFICATION



The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

To maintain consistency, the typeface used on all sign copy will be Interstate in upper case. Interstate is the new 2009 standard font created for the University and compatible for PC based vinyl cutting devices and is required for this program.

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FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

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There are instances where a curved arrow or turned arrow is required to convey correct directions. The vendor must provide drawings for approval prior to fabrication.

One piece etched sign construction.

TYPE B.2

6

STAIRWELL EXIT IDENTIFICATION

The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

To maintain consistency, the typeface used on all sign copy will be Interstate in upper case. Interstate is the new 2009 standard font created for the University and compatible for PC based vinyl cutting devices and is required for this program.

While the point sizes of text will vary (Std. is ¾"), the letter spacing condensing or spacing of characters and kerning balance must be followed.

FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

ARROWS AND COPY

The arrow as shown should be used for all directional needs. The arrow should be used in an orientation which will make the directional information most obvious. The relationship between the arrow and the type as shown should always be maintained.

There are instances where a curved arrow or turned arrow is required to convey correct directions. The vendor must provide drawings for approval prior to fabrication.

One piece etched sign construction.

TYPE B.3

7

STAIRWELL LEVEL AND NUMBER IDENTIFICATION

The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

To maintain consistency, the typeface used on all sign copy will be Interstate in upper case. Interstate is the new 2009 standard font created for the University and compatible for PC based vinyl cutting devices and is required for this program.

While the point sizes of text will vary (Std. is ¾"), the letter spacing condensing or spacing of characters and kerning balance must be followed.

FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

ARROWS AND COPY

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One piece etched sign construction.

TYPE B.4

8

ELEVATOR IN CASE OF FIRE DO NOT USE - REDIRECTION

The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

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While the point sizes of text will vary (Std. is ¾"), the letter spacing condensing or spacing of characters and kerning balance must be followed.

FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

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One piece etched sign construction.

TYPE C.3

13

ADA SERVICES DIRECTIONAL

The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

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While the point sizes of text will vary (Std. is ¾"), the letter spacing condensing or spacing of characters and kerning balance must be followed.

FABRICATION AND MOUNTING

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Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

ARROWS AND COPY

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One piece etched
sign construction.

TYPE F 17

SPECIFIC ID or
WAYFIND

The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage.

TYPE STYLE AND COPY

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FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

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ARROWS AND COPY

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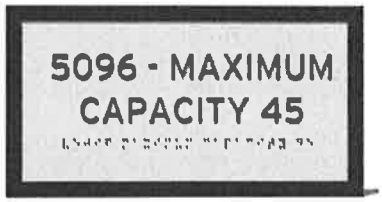
One piece etched
sign construction.

TYPE F.1

18

CLASSROOM
CAPACITY



The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

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FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

ARROWS AND COPY

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There are instances where a curved arrow or turned arrow is required to convey correct directions. The vendor must provide drawings for approval prior to fabrication.

One piece etched sign construction.

TYPE J

23

ELEVATOR LOCATION IDENTIFICATION

The vendor must provide Submittal Drawings with layout, character and pictogram sizing, including compression and spacing sizes used to create readable and functional signage .

TYPE STYLE AND COPY

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FABRICATION AND MOUNTING

The Fabricator is to provide scaled text layouts of all signs to the University for approval prior to fabrication. Refer to construction drawings for detailed specifications.

Chemically etched inset 1/32" to meet 2010 ADA Standards for Tactile relief.

Signs to be mounted with secure 2-way tape for variable surfaces, and be located 60" to center of the sign (see NCBC 18.4 for mounting heights and wall and doorway placement requirements).

ARROWS AND COPY

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There are instances where a curved arrow or turned arrow is required to convey correct directions. The vendor must provide drawings for approval prior to fabrication.

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 002

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Foundation Repair Services

SCOPE REFERENCE:

SUBJECT MATTER: Slab Stabilization

PAGE REFERENCE: S-101E

DESCRIPTION: 1.3 Performance, note A says that Ground Penetrating Radar and destructive core removal is to be utilized to identify locations of voids beneath the slab on grade. Please clarify the requirements for precision or spacing of the GPR mapping passes. Is the entire footprint of the building to be mapped using GPR? What is the required spacing, and required amount of destructive core drilled investigation holes?

REQUESTED BY: David T. King DATE: 10/4/16

RESPONSE: A minimum of 25% of the floor slab shall be mapped using GPR spread throughout the building. The intent of the GPR testing is to provide a more reliable estimate of the amount of grouting required. The precision of the GPR is up to the GPR operator in order to provide meaningful results. The amount of coring is at the discretion of the GPR operator in order to valaidate their results.

BY: Chuck Cardwell, PE DATE: 10-7-16

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 003

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: CJ Geo

SCOPE REFERENCE:

SUBJECT MATTER: Slab Stabilization

PAGE REFERENCE: S-101E

DESCRIPTION: See the Winningham building on sheet A-703. The flooring outlined in red is shown to remain. In order to complete the recommended repair for slab stabilization this flooring will need to be removed/replaced. Also, flooring in these areas were identified as ACM materials. Destructive cores, and drilling for injection points could render the ACM friable during drilling. This flooring will need to be removed inside of a containment case prior to Slab stabilization activities. Furthermore GPR mapping of voids, and under slab rough in will need to be marked on the floor, this cannot be completed if the existing floor is to remain. Please clarify whether or not the flooring will be removed in these areas to facilitate GPR and grouting.

REQUESTED BY: Kirk Roberts DATE: 10/4/16

RESPONSE: Prior to construction, abatement contractor shall reconcile any and all areas that are in conflict with ECS's findings and submit to the Construction Manager for review. If any variances are discovered, additive or deductive, the net change shall be approved by change order. Reference other RfIs related to slab stabilization for additional information.

BY: Taylor Bishal DATE: 10/07/2016

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 004

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: CJ Geo

SCOPE REFERENCE:

SUBJECT MATTER: Slab Stabilization

PAGE REFERENCE: S-101E 1.3-C, 3.1-A

DESCRIPTION: Please provide detailed standards for what is classified as a defect in addition to detailed specifications for defect repairs. Presence of floor coverings prevents determining scope.

REQUESTED BY: Kirk Roberts DATE: 10/4/16

RESPONSE: For bidding purposes assume no defects in slab. Only defects noted during construction that would prevent proper grouting operations will be considered. Unit prices shall be used for any repairs that may be required.

BY: Chuck Cardwell, PE DATE: 10-7-16

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 005

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: NEO Corporation

SCOPE REFERENCE:

SUBJECT MATTER: Existing Fire Doors

PAGE REFERENCE:

DESCRIPTION: Are the existing fire doors to be assumed positive for asbestos? These doors will be removed, hardware removed, refinished, and then installed. If the fire doors contain asbestos, the process of removal and reinstallation of the door, door hardware, and refinishing of the door could render the asbestos friable. If positive for asbestos, please confirm that the doors that are scheduled to be removed are to be included in the abatement scope.

REQUESTED BY: Jeff Dowdy DATE: 10/4/16

RESPONSE: The fire doors have not been sampled, since destructive testing was not conducted during the inspection phase of the project. The fire doors should be presumed to contain asbestos until confirmation can be made during the abatement phase of the project. If the fire doors are identified to contain asbestos, the fire doors should be removed in a nonfriable manner in accordance with the asbestos specifications for Removal of Nonfriable Asbestos Materials found in Section 02080, Part 1.03 for Nonfriable Asbestos removal. The abatement contractor is to remove the door from the door frame with hardware removed and stored by the Construction manager for reuse. Fire doors must be double wrapped in 6 mil poly sheeting and properly disposed as asbestos waste in accordance with the asbestos specifications.

Please reference section 01 23 00 – Alternates, a new alternate has been created to provide pricing to evaluate, remove and dispose of the existing fire rated doors in the event that are deemed containing asbestos. Additionally an alternate has been added to provide new fire Rated Doors.

BY: Brian Mass, David Welling DATE: 10/6/16

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 006

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: EHG, LLC

SCOPE REFERENCE:

SUBJECT MATTER: Expansion Joint Caulking

PAGE REFERENCE:

DESCRIPTION: The existing expansion joint caulking on the exterior of the building is scheduled to be removed and replaced. This material was not identified in the hazardous material survey. Does this material contain asbestos?

REQUESTED BY: Daniel Mock DATE: 10/4/16

RESPONSE: Asbestos was detected in window caulk and interior expansion joint caulk during the inspection phase so based on the age of the buildings, the expansion joint caulking on the exterior of the buildings is presumed to contain asbestos. The expansion joint caulking is considered nonfriable and should be removed by the abatement contractor in accordance with methods and procedures outlined in the window caulk removal section of the specifications.

BY: Brian Mass DATE: 10/6/16

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 007

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Bonitz Contracting

SCOPE REFERENCE: 09 51 00

SUBJECT MATTER: Acoustical Ceiling Spec

PAGE REFERENCE:

DESCRIPTION: Armstrong World Industries Inc. is the basis of design for interior, and CertainTeed Corporation is the basis of design for Exterior Acoustical ceilings. USG is listed, but does not note if it is acceptable for an interior or exterior application. Please confirm where USG is allowed to be use, and what type USG acoustical ceiling is required. ACT-1 grid system is called out for Heavy Duty. The seismic design category is B, and typicall HD is not required for seismic B. Is intermediate duty grid acceptable? Vinyl Gyp grid is called for to be extruded aluminum, but 830 Chicago Metallic is "ALL Aluminum", is extruded aluminum, or all aluminum grid required?

REQUESTED BY: Justin Henry DATE: 10/4/16

RESPONSE: USG shall be acceptable as either interior or exterior application, as an equal to the Basis of Design. ACT – 1 grid system will be acceptable with an intermediate-duty grid system. For 830 Chicago Metallic, "ALL Aluminum" is required. Specification Section 09 51 00 has been updated by Addenda #003 to reflect these changes.

BY: Taylor Bishal DATE: 10/07/16

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 008

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Bonitz Contracting

SCOPE REFERENCE: A-111A/A-112A

SUBJECT MATTER: Acoustical Ceiling in Stairs

PAGE REFERENCE:

DESCRIPTION: The RCP for Macy shows ACT in the stair on level 1, and 2. The finish schedule does not show an ACT in those stairs. This also occurs in Winningham. Should there be ACT in every stair, or only as currently shown on the RCP?

REQUESTED BY: Justin Henry DATE: 10/4/16

RESPONSE: **ACT should not occur in the stairwells. Drawing A-112A has been updated by Addenda #003.**

BY: Taylor Bishal DATE: 10/7/2016

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 009

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Barnhill Contracting

SCOPE REFERENCE:

SUBJECT MATTER: Concrete Finishes

PAGE REFERENCE: 03 35 00

DESCRIPTION: The concrete finishes section notes that for slabs on grade the contractor shall remedy any floor section measuring below the minimum flatness or levelness requirements by removing and replacing that portion of the slab on grade with a new section of slab meeting the minimum flatness and levelness requirements. Additional remedies included grinding and resurfacing. Does this section apply to new slabs, or existing slabs? There is great probability that existing supported slabs, and slabs on grade do not meet the floor flatness and levelness requirements noted in the specifications, especially the Winningham building. From just a visual inspection you can tell that the slab on grade in Winningham is not level. If any, what is the requirement for remediation of elevated slabs, and slabs on grade? Is it the intent to grind, and level the entire area of slab through scarification/grinding, and self-leveling grout to achieve the specified flatness and levelness? Or is the intent to install new flooring over the existing concrete slab accepting its condition of flatness and levelness? Please clarify the requirements for floor flatness and levelness.

REQUESTED BY: Reiland Funderburk DATE: 10/4/16

RESPONSE: This would only apply to new concrete floors; existing concrete floor slabs are not to be re-worked for flatness, only to be prepared to be smooth and consistent to receive new finishes, such that imperfections, concrete bumps/burrs to not transfer through new flooring materials. Any existing mastics or flooring materials to be removed prior to the installation of new flooring in areas schedule to receive new flooring.

BY: David Welling DATE: 10/7/16

BARNHILL CONTRACTING COMPANY

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 010

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Barnhill Contracting

SCOPE REFERENCE:

SUBJECT MATTER: Earthwork

PAGE REFERENCE: 26 05 43

DESCRIPTION: Utility work, and demolition activities will disturb existing grass, plants, mulch and stone. Paragraph 4.3 Earthwork notes to restore vegetation and include necessary top soiling, fertilizing, liming, seeding, sodding, sprigging, and mulching. What type of seeding, or sodding is required? Is new mulch required to be installed at all areas disturbed by construction work? If so what type of mulch is required? This section also notes to comply with Division 32 sections "Turfs and Grasses" and "Plants", that section does not exist. Please provide the specific requirements for restoring vegetation, topsoil, fertilizing, liming, seeding, sodding, sprigging, and mulching, and any associated maintenance or warranty.

REQUESTED BY: Reiland Funderburk DATE: 10/4/16

RESPONSE: Specification Sections 32 92 00 – Turf and Grasses and 32-93-00 Plants has been added by Addenda #003. Sodding is not required seeding will be utilized. The areas disturbed during construction should be selectively coordinated and limited to the minimum area required to conduct work on the site. Contractors are responsible for coordinating with the Owner any plants to be removed, and if the Owner wants to salvage and nursery for future use. Contractor is responsible for returning disturbed areas back to seeded or mulched condition to match existing. Landscape plantings are not required for the Project unless specifically noted by the contract documents.

BY: David Welling DATE: 10/6/16

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 011

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Barnhill Contracting

SCOPE REFERENCE:

SUBJECT MATTER: Fluid Applied Flooring

PAGE REFERENCE: A-701 Room Finish Schedule

DESCRIPTION: Fluid Applied flooring is listed in the abbreviations on the room finish schedule, but does not appear in any rooms. Please specify the material, finish, etc., and provide locations where fluid applied flooring is required.

REQUESTED BY: Reiland Funderburk DATE: 10/4/16

RESPONSE: **Fluid applied flooring is not used in this project. This change has been noted on drawing sheets A-701 & A-702.**

BY: Taylor Bishal DATE: 10/7/2016

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 012

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Barnhill Contracting

SCOPE REFERENCE:

SUBJECT MATTER: Fire Extinguishers

PAGE REFERENCE:

DESCRIPTION: There are no fire extinguishers, or fire extinguisher cabinets shown on the plans. Please advise if fire extinguishers are required. If fire extinguishers are required provide locations where they are to be located.

REQUESTED BY: Reiland Funderburk DATE: 10/4/16

RESPONSE: Fire Extinguishers are not required for the Project.

BY: David Welling DATE: 10/6/16

BARNHILL CONTRACTING COMPANY

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 013

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Barnhill Contracting

SCOPE REFERENCE:

SUBJECT MATTER: Roofing

PAGE REFERENCE: MD-201

DESCRIPTION: Drawings note to patch and repair existing roof to maintain existing roof Warranty. Please provide detailed information on the existing roofing, warranty, patching requirements, and contact information for the company or manufacturer who holds the existing roofing warranty. A warrantable roof patch or repair cannot be achieved without this information.

REQUESTED BY: Reiland Funderburk DATE: 10/4/16

RESPONSE: Roofing information was requested but not provided to the Construction Manager. BP-15D HVAC Systems is responsible for this repair. The awarded Contractor for BP-15D will coordinate with the Construction Manager to obtain the required roofing information. For bid purposes, bidders should evaluate the extent of roof repair that will be created by the work performed in BP-15D Scope of Work, and include proportionate funds to repair roofing that is damaged due to work performed in BP-15D Scope of Work.

BY: DATE:

BARNHILL CONTRACTING COMPANY

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 014

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Barnhill Contracting

SCOPE REFERENCE:

SUBJECT MATTER: Existing In-Floor Ductwork

PAGE REFERENCE: MD-100C

DESCRIPTION: Mechanical drawings note that all existing in-floor and below floor ductwork shall be caped back to the existing floor level, and to make all caps water tight and sealed. Is the intent to cap the duct at the existing floor level, and have an exposed cap? If so, please provide material requirements and details for the water tight duct cap. Instead of capping the duct back to the existing floor level, would it be acceptable to remove the duct to below the existing floor level, and infill the remaining opening with grout or concrete? If so, please provide details and requirements for the infill.

REQUESTED BY: Reiland Funderburk DATE: 10/4/16

RESPONSE:

The mechanical plans have been revised to clarify the extent of the existing underfloor ductwork demolition and duct/piping capping scope. Sheet A101-C has been revised to provide information and requirements for patching of the existing concrete floor slab with infill concrete prior to installation of new flooring. Detail for slab installation is provided by detail 5 - S801

BY: David Welling DATE: 10/6/16

Barnhill Contracting
PRE BID REQUEST FOR INFORMATION

TO: David Welling
Woolpert
11301 Carmel Commons Boulevard, Suite 300
Charlotte, NC 28226

RFI # 015

FROM: Reiland Funderburk
Barnhill Contracting Company
5701 Westpark Drive, Suite 205
Charlotte, NC 28217

ATTN: DAVID WELLING, AIA, LEED AP

SUBCONTRACTOR NAME: Barnhill Contracting

SCOPE REFERENCE:

SUBJECT MATTER: CMU Partition Note

PAGE REFERENCE: Renovation Plans

DESCRIPTION: Drawings indicate to see sheet A-501 for new CMU partition. There is no detail for new CMU partitions on sheet A-501. Please provide the correct sheet and detail.

REQUESTED BY: Reiland Funderburk DATE: 10/4/16

RESPONSE: **Renovation Plans now reference "See Sheet A-504" for New CMU Partition Detail.**

BY: Taylor Bishal DATE: 10/7/2016

11. Substitution Requests

UNC Charlotte - Academic Complex Renovations
9-07-2016

075052

SUBSTITUTION REQUEST
(After the Bidding Phase)

Project: UNC Charlotte Academic Complex Renovation
☐ Phase 1 ☐ Phase 2 ☐ Phase 3

Substitution Request Number:

From:

To:

Date:

A/E Project Number: 075052

Re: Roller Shade Substitution Request

Contract For: Academic Complex Renovation

Specification Title: Window Roller Shades

Description: Manual Roller Shades

Section: 01-25-00 Page: 590

Article/Paragraph: 2.01-A

Proposed Substitution: Solarfective Roller Shades

Manufacturer: Solarfective Products Limited Address: 55 Hymus Rd, Ontario Canada Phone: 416-421-3800

Trade Name: Solarfective Model No.: T-1 Detail

Installer: Acoustical Interiors Address: 605 Phillip Davis Dr., CLT NC Phone: 704-525-2024

History: ☐ New product ☐ 2-5 years old ☐ 5-10 yrs old ☒ More than 10 years old

Differences between proposed substitution and specified product:

☐ Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: We are suppliers for Solarfective products

Similar Installation:

Project: Roper Office Park Architect: LS3P

Address: 8536 Palmetto Commerce Parkway Owner: Roper St Francis Healthcare

North Charleston, SC Date Installed: 3/8/2016

Proposed substitution affects other parts of Work: ☒ No ☐ Yes; explain

Savings to Owner for accepting substitution: ($ 0).

Proposed substitution changes Contract Time: ☒ No ☐ Yes [Add] [Deduct] days.

Supporting Data Attached: ☒ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☐

SUBSTITUTION REQUEST
(Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Beth Worthington

Signed by: Beth Worthington

Firm: Acoustical Interiors, Inc.

Address: 605 Phillip Davis Drive, Suite 5
Charlotte, NC 28217

Telephone: 704-525-2024

Attachments: Solarfective Marketing Binder, Detail T-1, Isometric Drawing, Fabric Data

missing

A/E=s REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00.
☒ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E ☐ _____

Submittal Incomplete

075052

SUBSTITUTION REQUEST
(After the Bidding Phase)

Project: UNC Charlotte Academic Complex Renovation

☐ Phase 1 ☐ Phase 2 ☐ Phase 3

To: David Welling

Re: Substitution request

Substitution Request Number: 001

From: Vandna Mittal

Date: 10-1-16

A/E Project Number: 075052

Contract For: Academic Complex Renovation

Specification Title: Fluid applied waterproofing

Section: 071400 Page: 2

Description: meets ASTM 836 and E96

Article/Paragraph: part 2 products 2.01

Proposed Substitution: aquaseal 5000

Manufacturer: Polycoat products Address: 14772 spring ave, santa se springs ca 90670 Phone: 562-807-8834

Trade Name: n/a Model No.: n/a

Installer: _____ Address: _____ Phone: _____

History: ☐ New product ☐ 2-5 years old ☐ 5-10 yrs old ☒ More than 10 years old

Differences between proposed substitution and specified product: none, meets all requirements listed

☐ Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: equal product

Similar Installation: yes

Project: Via 425 apartments Architect: Contractor: act-dek Inc.

Address: Carson, CA 49000 ft² Owner: _____

Date Installed: _____

Proposed substitution affects other parts of Work: ☒ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: upon request ($ _____)

Proposed substitution changes Contract Time: ☒ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☒ support letter

SLA

SUBSTITUTION REQUEST
(Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Vandna Mittal

Signed by: Vandna Mittal

Firm: Polycoat products

Address: 14722 spring ave, Santa Fe Springs, CA 90670

Telephone: 562-802-8834 / 909-810-8163

Attachments: Product data, support letter

A/E-s REVIEW AND ACTION

☒ Substitution approved - Make submittals in accordance with Specification Section 01 33 00.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by:

Date:

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E ☐ _____

Approved for use in waterproofing from Top of footing to Grade along CMU wall for the reclading of Denny Building!

POLYCOAT PRODUCTS
A Division of American Polymers Corp.

POLYCOAT-AQUASEAL® 5000

Single Component, Bitumen Modified Waterproofing Membrane System

Technical Data Sheet

POLYCOAT - AQUASEAL ® 5000 SYSTEM

System Description:

Polycoat-Aquaseal® 5000 is a single component, liquid applied, bitumen modified, coal tar free, moisture cured polyurethane waterproofing membrane. It is available in three application versions: Horizontal (H), Vertical (V), and Water Catalyzing (WC) – available only in horizontal. Polycoat-Aquaseal® 5000 is in complete compliance with SCAQMD air quality standards, and has VOC levels equal to or less than 100 grams per liter.

FEATURES

- Economical
- User Friendly
- Labor Saving
- Resistant to Bacteria
- Meets the Criteria of ASTM C-836 and E-96

TYPICAL USES

- Bridges
- Tunnels
- Planters
- Basements
- Between Slabs
- Foundation Walls
- Shower Pans

Approved City of Los Angeles RR# 25935

Color: Black

Packaging: 5 gallon (18.9 liter) pail. 55 gallon drum, net fill 50 gallons (189 liters)

Mixing For Polycoat-Aquaseal® 5000H / 5000V

Before application, Polycoat-Aquaseal® 5000 should be thoroughly mixed using a mechanical mixer at slow speed to ensure a homogeneous material. Take care not to allow entrapment of air into the material. Do not mix in an up and down motion.

Mixing For Polycoat-Aquaseal® 5000WC-H:

Before application, mix Polycoat-Aquaseal® 5000WC using a mechanical mixer at slow speed. Mix Polycoat-Aquaseal® 5000WC with water (water must be added) at a ratio of one quart of water to five gallons of Polycoat-Aquaseal® 5000WC. This will yield 5¼ gallons of membrane. The mixing ratio is 20 parts Polycoat-Aquaseal® 5000WC membrane to 1 part of water (20:1). Use care not to allow the entrapment of air into the mixture. Do not mix in an up and down motion.

Polycoat-Aquaseal® 5000 (100 VOC) Properties: Coverage @ 1 gal/100 sq. ft results in 14 mils DFT

Based on Drawn Down Film	5000H Horizontal	5000V Vertical	5000WC-H Water Catalyzed	Green Concrete
Hardness, ASTM D-2240	50 ± 5 Shore A	45 ± 5 Shore A	30 ± 5 Shore A	**Polycoat-Aquaseal® 5000 may be applied to Green Concrete.** Green concrete GC Additive must be added to Polycoat-Aquaseal® 5000 at a ratio of ½ pint GC Additive to 5 gallons of Polycoat-Aquaseal® 5000. Thoroughly mix with a variable speed drill and mixing paddle at slow speed. The standard Polycoat-Aquaseal® 5000 may be applied to both fully cured (28 days for poured in place and 10 days after grouting for block) and green concrete.
Tear Resistance, Die C, ASTM D-624	40 ± 20 pli 21 ± 3.5 kNm	35 ± 10 pli 14 ± 2 kNm	50 ± 5 pli 8.8 ± 0.9 kNm	
Tensile Strength, ASTM D-412	350 ± 50 psi 3.45 ± 0.3 Mpa	350 ± 50 psi 3.45 ± 0.3 Mpa	500 ± 50 psi 2.1 ± 0.3 Mpa	
Ultimate Elongation, ASTM D-412	300 ± 50%	300 ± 50%	300 ± 50%	
Specific Gravity	1.32	1.23	1.12	
Total Solids by Weight, ASTM D-236	92 ± 3%	92 ± 3%	95 ± 1%	
Total Solids by Volume, ASTM D-2697	90 ± 3%	90 ± 3%	94 ± 1%	
Viscosity at 80°F (27°C)	5000 ± 2000 cps	40,000 ± 20,000 cps	-	
Service Temperature	- 25°F to 200°F - 31.7°C to 93.3°C	- 25°F to 200°F - 31.7°C to 93.3°C	-	
Volatile Organic Compounds, ASTM D-2369-81	0.83 lb/gal 100 gm/liter	0.83 lb/gal 100 gm/liter	<0.5 lb/gal <60 gm/liter	

Joints, Cracks and Flashing:
Apply a stripe coat of Polycoat-Aquaseal® 5000 over all cracks up to 1/16" in width. All cracks over 1/16" in width must be caulked with a polyurethane sealant.

All metal flashings must be primed with manufacturer's recommended primer.

Application:
Polycoat-Aquaseal® 5000 may be applied with a brush, squeegee, trowel, roller or airless sprayer. Over smooth surfaces, such as poured-in-place concrete, apply Polycoat-Aquaseal® 5000 evenly in two 30 mil coats. The application rate to achieve 30 dry mils is 50 sq. ft. / gallon.

Polycoat-Aquaseal® 5000WC-H (Water Catalyzed) can be applied at any thickness.

Apply Polyprime 21 per product data sheet in all applications where the Aquaseal 5000 membrane will be submerged in water.

Membrane Protection
As soon as possible after completion of a successful water test or visual inspection and/or repairs, cover membrane with approved protection board or geotextile drainage composite. All horizontal and vertical membrane must be protected.

Curing:
At 75°F (24°C) and 50% relative humidity, allow each coat of Polycoat-Aquaseal® 5000 Vertical, Horizontal and Green Concrete to cure 16 hours minimum.

Cure time will vary depending on temperature and humidity. If more than 48 hours pass between coats the surface must be re-primed.

For Polycoat-Aquaseal® 5000 WC applications, at 75°F (24°C) and 50% relative humidity, allow coating to cure a minimum of 2-4 hours before proceeding to subsequent coats. Cure time will vary depending on temperature and humidity If more than 48 hours pass between coats the surface must be re-primed.

Polycoat-Aquaseal® 5000 is very sensitive to heat and moisture. Higher temperatures and/or high humidity will accelerate the cure time. Use caution in thickness of application. Limit single coat thickness to 30-40 wet mils.

Equipment Cleanup:
Equipment should be cleaned with an environmentally safe solvent, as permitted under local regulations, immediately after use.

Storage:
Polycoat-Aquaseal® 5000 has a shelf life of one (1) year from date of manufacture in original, factory-sealed containers when stored indoors at a temperature between 60-95°F (15-35°C).

Limitations:
The following conditions must not be coated with Polycoat **deck coatings or systems:** split slabs, buried membrane, sandwich slabs with insulation, slabs over unvented metal pan, magnesite, and lightweight concrete. On grade slabs may receive Polycoat system coatings provided a moisture-vapor transmission test is first performed. Please contact Polycoat technical department with the results.

With regard to coating asphalt surfaces, please contact Polycoat technical department.

Surfaces must be dry, clean and free of foreign matter. Clear coating may turn opaque and cloudy due to moisture penetration, especially in exterior applications. Surface may be slippery when wet. Containers that have been opened must be used as soon as possible. Do not dilute under any circumstance.

Warning:
This product contains Aromatic Hydrocarbons, Isocyanates and Solvent.

Rev. 8/21/15

POLYCOAT PRODUCTS
A Division of American Polymers Corp

VIA E-MAIL

9-29-16 david.welling@woolpert.com

Flanagan and Company AIA
92 Spruce Street Oceanside CA 94362
Project: RFQ for Academic Complex Renovation
Reference: Substitution request

Dear Mr. Welling,

We have followed your project which has no company or product written in your specifications for a below grade waterproofing membrane.

We respectfully request the submission and approval of our Aquaseal 5000 as an equal. Polycoat is a California manufacturer of VOC compliant coatings with over 30 years of high quality and innovative technologies. This product has recently been approved after stringent testings for ASTM C836 and E96 were passed. We are one of the largest coating manufacturers in the state, and all of our coatings are VOC compliant to the highest California standards and requirements.

Aquaseal 5000 meets ASTM C 836 and ASTM E 96.

Please be directed to our website at polycoatusa.com for a comprehensive listing of technologies our company manufactures and as a source for future projects. If you would like any additional information, I am happy to refer to a technical sales executive. Thank you for your consideration.

Very truly yours,

Vandna Mittal
POLYCOAT PRODUCTS

BARNHILL CONTRACTING COMPANY

Substitution Request Form

Submit to the Construction Manager on Supplier/Trade/Subcontractor Company Letterhead

Date: 9-22-16 Request No.: _____

Project: UNCC ACADEMIC COMPLEX

We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Paragraph	Specified Item Description
230900	1:13	HONEYWELL / TRIDIUM

Proposed Substitution: SAME MATERIAL ADDITIONAL INSTALLER

Attach complete technical data including laboratory tests if applicable. ☑ YES ☐ NO

Include complete information detailing changes to Drawings and/or Specifications, which proposed substitution will require for proper installation. Complete all blanks below:

A. Does the substitution affect dimensions shown on Drawings? ☐ YES ☑ NO

If YES, explain: _____

B. Will substitution have impact on other trades? ☐ YES ☑ NO

If YES, explain: _____

C. Differences between proposed/specified item? ☐ YES ☑ NO

If YES, explain: _____

D. Substitute product(s) have/has been reviewed to ensure all are compatible for installation in accordance with project requirements? ☑ YES ☐ NO

If NO, explain: _____

Mech

BARNHILL CONTRACTING COMPANY

Substitution Request Form

E. Manufacturer's guarantees of proposed/specified items meet specifications? ☑ **YES** ☐ **NO**
If NO, explain: _____

F. Will substitution have impact on project schedule? ☐ **YES** ☑ **NO**
If YES, explain: _____

G. Savings ___ or Credit ___ to the project for accepting substitution? $ NA

Provide calculation of how credit or savings was determined: _____

H. The undersigned agrees to pay all associated costs for changes to design (including engineering and detailing costs) and impact to other trades (if any) caused by substitution? ☑ **YES** ☐ **NO** If NO, explain: _____

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By: Engineered Control Solutions
Company Name, Address

Signature Date: 8-9-16

704-914-5373
Contact Number

For Internal Use Only

Review Completed by: _____ Date: _____

☒ **Approved to Submit to Design Professional**
☐ **Additional Details/Information Required**
☐ **Not Approved/Rejected**

Comment: M-002 has been update to include as acceptable Manuf.

Engineered Control Solutions, Inc.
P.O. Box 1885, Fuquay-Varina, NC 27526
Phone: 919-567-0706
Fax: 919-567-0705
www.ECScontrols.net

March 2014

Firm's History

Engineered Control Solutions, Inc. was founded in August, 1999, in order to fulfill a need for a high-end DDC controls integrator who could provide superior customer service at a reasonable price.

Engineered Control Solutions is an award-winning Honeywell Authorized Controls Integrator, a certified Honeywell Open Integrated Systems Provider (i.e., Tridium Systems Integrator), a Distech Controls System Provider and KMC Controls Authorized Dealer, with offices in North Carolina and South Carolina. Our emphasis is on the design and installation of medium- and large-size DDC control systems, primarily open-protocol (LonMark™ and BACnet) and Ethernet-based systems (Tridium™). We are also certified as an Echelon® Network Integrator, giving us even greater flexibility to utilize whatever Lon-based controllers make the most sense for each application. ECS is fully licensed as an unlimited mechanical and unlimited electrical contractor in both North Carolina and South Carolina and is equipped to provide full coverage for warranty and after-warranty service. Our home office is located in Fuquay-Varina, NC with branch offices located in Wilmington, NC and Greenville, SC.

We currently have control systems installed in the following school districts: Bladen County, Person County, Darlington County, Duplin County, Sampson County, Harnett County, Vance County, Wake County, and Lenoir County, as well as systems in several major universities including University of North Carolina at Wilmington. Other systems and customers of ECS include multiple sites at Fort Bragg and Camp Lejeune military bases, multiple North Carolina Municipal Government complexes, multiple North Carolina Department of Corrections facilities, several hundred financial institutions, multiple churches, and many commercial facilities including several large data centers for multiple banking clients.

Having Honeywell, Distech, and KMC controller lines available for our customers allows ECS to offer the "best in class" for every application by using the latest products in the design and development of open systems. We believe that this trend in facility control systems, coupled with LAN- and Internet-based "thin-client" graphical user interfaces, is the future for the HVAC controls industry. Control system installation and service will continue to become less influenced by brand-name and more dependent on quality (solutions, responsiveness, and relationship).

Organizational Structure

ENGINEERED CONTROL SOLUTIONS, INC. PROPRIETARY

With a great deal of experience working in various corporate settings, the management team at ECS strives to balance the benefits of big-business systems with the benefits of small-business flexibility. As such, our organizational structure is based on some of the principles of team-based work cells, where all members are expected to have working proficiency in a wide range of tasks.

The organization can be broken down into the following functional areas:

- Management
- Office Administration
- Sales
- Estimating
- Project Engineering and Design
- Programming
- Graphics
- Installation
- Startup and Commissioning
- Service

Key Employee Qualifications

ENGINEERED CONTROL SOLUTIONS, INC. PROPRIETARY

Refer to Appendix I, Resumes.

Overall, ECS has a high concentration of experience and talent in areas directly or indirectly related to the development and implementation of creative, comprehensive and cost-effective energy-saving solutions. This includes an extensive track record of DDC installations. There is also a proven understanding of the performance contracting process, developed through principal employees' past experience in the implementation of over $55m in contracts.

Project Management Approach

Before the receipt of a formal contract, ECS reviews the scope and schedule of expected projects and develops general manpower plans. Our targeted bidding/negotiated process results in an unusually high "hit rate", allowing us to cost-effectively begin project development work during the estimating phase. Preliminary project engineering is completed, such as valve sizing and component selection. Upon receipt of contract and associated project documents, the design submittal is completed. We are proud that our submittals have been praised by our customers, project engineers and installing contractors as some of the best in the industry.

Job progress is tracked through each phase of the project, utilizing various visual and electronic tracking tools. A project manager is assigned to serve as the primary point of contact throughout the project, with the broader project team providing ongoing support.

We also work very closely with our installation subcontractors to position them as representatives of ECS on the jobsite.

Controls Installation

ECS originally subcontracted the installation of our control systems for all projects; however, we created our own controls installation department in 2010 as a means of consistently applying our strict installation standards. Today we utilize both our own installation department as well as subcontract labor for project installation.

Project Commissioning

ECS has developed a project commissioning process based on strict military standards that is applied to all new installations. This process is constantly under review and refinement and can be modified to meet all levels of commissioning, including LEED.

Problem Resolution Process

ECS was founded on the principle that the level of customer service and design/ installation/support quality in the local DDC controls market was well below where it could and should be. Our goal has been to develop every customer relationship such that any customer could be a good reference, and we have been able to meet that goal year after year.

Our problem resolution process is simple – timely and honest situation analysis with a response that is mutually satisfactory to all parties. This sometimes means an open admission to a mistake or misunderstanding on our part, and we are willing to do what needs to be done to make things right.

Warranty Provisions

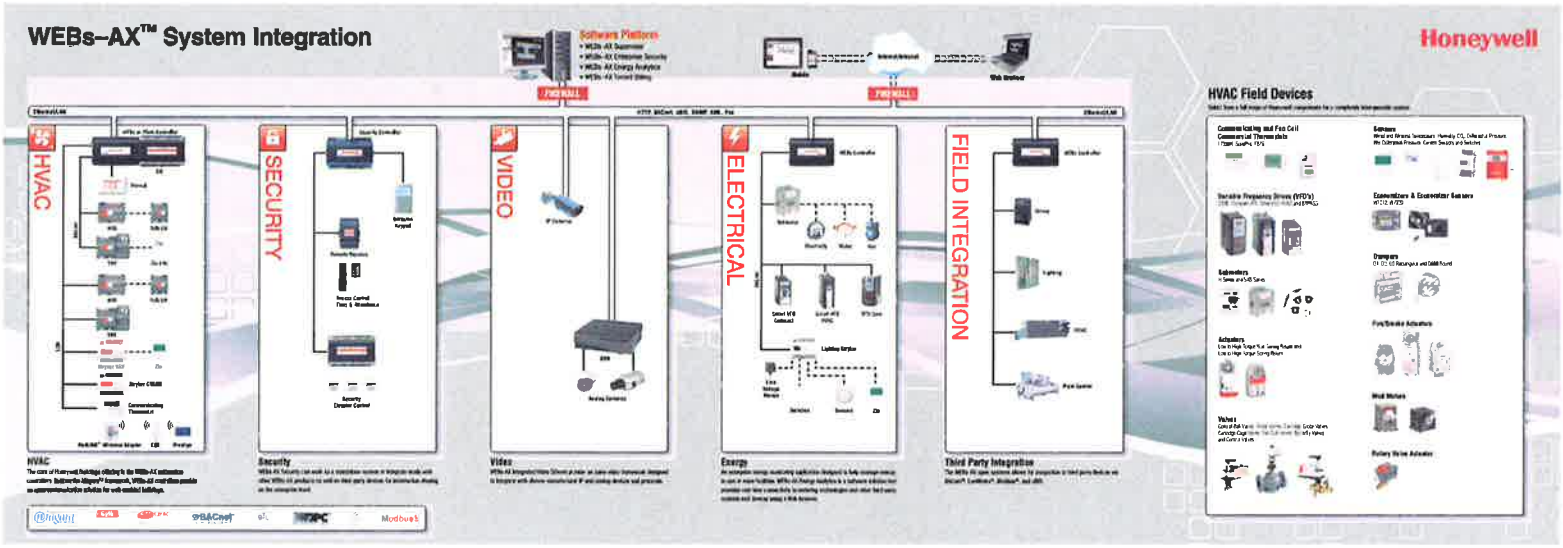
Warranty terms for projects are typically one year after the agreed-to date of substantial completion but extended warranties are offered should the project require. In the case of larger projects progressive completion and warranty start dates may be appropriate. Honeywell provides a five year parts-only warranty for its actuators, and we will support the customer to obtain actuator warranty replacement throughout this period.

Training Services

ECS regularly provides customized training at our training center in Fuquay-Varina as well as various customer sites, covering our installations, other control systems and on mechanical systems. In addition, there is a wide range of factory course offerings for our multiple product lines. Details on the extensive list of courses are available on request.

Long-Term Support Capabilities

Engineered Control Solutions is firmly established as a locally-owned, cost-effective, quality-oriented DDC contractor with offices in North Carolina and South Carolina. We expect to continue to support our ever-growing customer base with engineering, service and contracting services well into the future. We have both local support phone lines and toll free lines allowing customers to reach our organization for technical assistance.


WEBs–AX™ System Integration
Honeywell
Software Platform
HVAC
SECURITY
VIDEO
ELECTRICAL
FIELD INTEGRATION
HVAC Field Devices
HVAC
Security
Video
Energy
Third Party Integration
BACnet
LON
OPC
SNMP
Modbus

WEBs-AX™ System Options

Site Supervision

HVAC

SECURITY

Applications

ENERGY

Driver

WEB Station

WEB Controller

Controllers

Accessories

WEBs-AX™ System HVAC Controllers Options

Honeywell

Programmable Field Controllers

Additional I/O Module

Advanced Configurable Field Controllers

Lighting Zone Controllers

Configurable Field Controllers