LORD AECK SARGENT

February 5, 2024

Project: UNC Bingham Hall Comprehensive Renovation

State ID#: 21-23548-02A

LAS Project No. 11706-00

Re: Addendum ADD-02

To: Bidders

This addendum forms a part of the Contract Documents and modifies the original Contract Documents for the **BID SET**, dated 1/8/2024, as noted below.

In modified specifications, new text is indicated in red and deleted text is stricken-through. On drawings, changes are clouded and noted with revision delta tags.

AMENDMENTS TO CONTRACT DOCUMENTS:

SPECIFICATIONS

The following specification Sections are being reissued with changes:

- 00 01 10 TOC
- 00 40 00 Form of Proposal
- 01 22 00 Unit Price
- 07 31 26 Slate Shingles
- 09 30 00 Tiling
- 09 66 23 Resinous Matrix Epoxy Flooring
- 09 68 13 Tile Carpeting
- 09 91 00 Painting
- 10 14 12 Panel Signage
- 14 24 00 Elevator Cab Finish

The following additional specification Sections are being issued:

07 84 13 - Firestopping

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DRAWINGS

The following drawings are being reissued with changes:

1.	TC101	7. AD501	13. A301	19. A620
2.	TC102	8. A101	14. A302	20. A701
3.	TC103	9. A102	15. A401	21. A702
4.	TC104	10. A201	16. A402	
5.	AD101	11. A202	17. A601	
6.	AD102	12. A203	18. A603	

The following drawings are removed from the bid set:

- 1. A632
- 2. A633

SUBSTITUTION REQUEST

11 81 29 – Facility Fall Protection	Guardian CB-Hybrid system w/ Checkmate	Rejected
08 14 33 – Aluminum Windows	Boyd Series 3000 Single Hung Window	Accepted
10 51 29 – Phenolic Lockers	Summit 3-tier Phenolic Lockers	Rejected
10 11 01 – Visual Display Boards	Corona Frameless Marker boards	Accepted
26 51 19 – LED Interior Lighting	LEDALITE by signify: fixture types L1, L2, L3, L4	Accepted

MEETING MINUTES

Preferred Brand Alternate Meeting Minutes January 16, 2024

BID QUESTIONS

Refer to attached list of bid questions and responses

Copy: Quade Gallagher, UNC Chris Glenn, UNC Design Consultants

File: K:\PROJECTS\11706-00\BIDDING\Addenda\ADD-02\ADD-02.docx

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END OF SECTION 00 01 10

FORM OF PROPOSAL

Bingham Hall Comprehensive Renovation	Contract: Single Prime General Contract
University of North Carolina at Chapel Hill	Bidder:
SCO-ID # 21-23548-02A	Date:

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed. The bidder further declares that he and his subcontractors have fully complied with NCGS 64, Article 2 in regards to E-Verification as required by Section 2.(c) of Session Law 2013-418, codified as N.C. Gen. Stat. § 143-129(j).

The Bidder proposes and agrees if this proposal is accepted to contract with the State of North Carolina through the University of North Carolina at Chapel Hill in the form of contract specified below, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of Bingham Hall Comprehensive Renovation in full in complete accordance with the plans, specifications and contract documents, to the full and entire satisfaction of the State of North Carolina, and the University of North Carolina at Chapel Hill with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the contract documents, for the sum of:

SINGLE PRIME CONTRACT:

Base Bid:		Dollars(\$)	
General Subcontractor:		Plumbing Subcontractor:	
	Lic		Lic
Mechanical Subcontractor:		Electrical Subcontractor:	
	Lic		Lic

GS143-128(d) requires all single prime bidders to identify their subcontractors for the above subdivisions of work. A contractor whose bid is accepted shall not substitute any person as subcontractor in the place of the subcontractor listed in the original bid, except (i) if the listed subcontractor's bid is later determined by the contractor to be non-responsible or non-responsive or the listed subcontractor refuses to enter into a contract for the complete performance of the bid work, or (ii) with the approval of the awarding authority for good cause shown by the contractor.

ALTERNATES:

Should any of the alternates as described in the contract documents be accepted, the amount written below shall be the amount to be "added to" the base bid.

Alternate No. A1: Aluminum Replacement Windows	
<u>(Add)</u>	Dollars(\$)
Alternate No. A2: Elevator Cab Interior Einishes	
Alternate NO. AZ. Elevator Cap Interior Finishes	
(Add)	Dollars(\$)

Alternate No. A3: Stair Landings Floor Finish (Add)	Dollars(\$)
Alternate No. A4: Low-e Coating on New Storm Windows (Add)	Dollars(\$)
Alternate No. C1: Storm Drainage Improvements along West Side of Bui (Add)	ding Dollars(\$)
Alternate No. PB-1: Owner Preferred Hydronic System Water Treatment (Add)	Dollars(\$)
Alternate No. PB-2: Owner Preferred Variable Frequency Drive (VFD) Ca (Add)	ables Dollars(\$)
Alternate No. PB-3: Owner Preferred Butterfly Valves (Add)	Dollars(\$)
Alternate No. PB-4: Owner Preferred Balancing Valves (Add)	Dollars(\$)
Alternate No. PB-5: Owner Preferred Pressure Reducing Valves (Add)	Dollars(\$)
Alternate No. PB-6: Owner Preferred Mechanical Access Doors (Add)	Dollars(\$)
Alternate No. PB-7: Owner Preferred Drinking Fountains (Add)	Dollars(\$)
Alternate No. PB-8: Owner Preferred Door Hardware (Add)	Dollars(\$)
Alternate No. PB-9: Owner Preferred Tile Carpet (Add)	Dollars(\$)
Alternate No. PB-10: BAS by Automatic Logic Controls (ALC) (Add)	Dollars(\$)
Alternate No. PB-11: BAS by Schneider Electric (SE) (Add)	Dollars(\$)

UNIT PRICES

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

No. A1: Repointing of Brick Masonry (<i>SF</i>)	Unit Price (\$)
No. A2: New Slate Roof Shingles (SF)	Unit Price (\$)
No. A3: Plaster Work Type R1 (SF)	Unit Price (\$)
No. A4: Plaster Work Type R2 (<i>SF</i>)	Unit Price (\$)
No. A5: Plaster Work Type R3 (<i>SF</i>)	Unit Price (\$)

No. A6: Plaster Work Type T1 (SF)	Unit Price (\$)
No. A7: Plaster Work Type N1 (SF)	Unit Price (\$)
No. A8: Roof Deck Repair (<i>SF</i>)	Unit Price (\$)
No. C1: Rock Excavation and Disposal Offsite (CY)	Unit Price (\$)
No. C2: Unsuitable Soils Excavation and Disposal Offsite (CY)	Unit Price (\$)
No. C3: Replacement of Removed Rock or Unsuitable Soils with Aggrega	ate Base Course In-Place (<i>CY</i>) Unit Price (\$)
No. C4: Replacement of Removed Rock or Unsuitable Soils with No. 57 V	Vashed Stone In-Place (<i>CY</i>) Unit Price (\$)
No. C5: Replacement of Removed Rock or Unsuitable Soils with Excavat	able Flowable Fill In-Place (CY) Unit Price (\$)
No. S1: Infill of Openings in Existing Floors, size between 6"-9" (Each)	Unit Price (\$)
No. S2: Infill of Openings in Existing Floors, size between 9"-32" (Each)	Unit Price (\$)

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

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

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

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

An Affidavit (**B**) identifying intent to perform contract with <u>own</u> workforce. All evidentiary documents to prove good faith efforts from Affidavit **A** must also be provided;

* OR *

An Affidavit (**C**) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is <u>equal to or more than the 10% goal</u> established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit **D** is not necessary;

* OR *

<u>If less than the 10% goal</u>, Affidavit (**D**) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

Note: Bidders must always submit <u>with their bid</u> the Identification of Minority Business Participation Form listing all MB contractors, <u>vendors and suppliers</u> that will be used. If there is no MB participation, then enter none or zero on the form. Affidavit A also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low bidder is grounds for

Proposal Signature Page

The undersigned further agrees that in the case of failure on his part to execute the said contract and the bonds within ten (10) consecutive calendar days after being given written notice of the award of contract, the certified check, cash or bid bond accompanying this bid shall be paid into the funds of the owner's account set aside for the project, as liquidated damages for such failure; otherwise the certified check, cash or bid bond accompanying this proposal shall be returned to the undersigned.

Respectfully submitted this day of _____

(Name of firm or corporation making bid)		
WITNESS:	By: Signature	
(Proprietorship or Partnership)	Name: Print or type	
	Title (Owner/Partner/Pres./V.Pres)	
	Address	
ATTEST:		
Ву <u>:</u>	License No	
Title: (Corp. Sec. or Asst. Sec. only)	Federal I.D. No	
	Email Address:	

(CORPORATE SEAL)

Addendum received and used in computing bid:

Addendum No. 1 _____

Addendum No. 2

Confirm in the space provided below that this bid includes the open protocol lighting control system, devices and interfaces as specified in division 26; specifically as noted in section 26 09 43.19 Addressable Luminaire Lighting Controls and on the Lighting Control Detail Sheets.

Confirmed _____

SECTION 01 22 00 - UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.

1.02 COSTS INCLUDED

A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.03 UNIT QUANTITIES SPECIFIED

A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.04 MEASUREMENT OF QUANTITIES

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. Measurements and quantities will be verified by Owner.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.
- D. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- E. Measurement by Area: Measured by square dimension using mean length and width or radius.
- F. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- G. Perform surveys required to determine quantities, including control surveys to establish measurement reference lines. Notify Architect prior to starting work.
- H. Contractor's Engineer Responsibilities: Sign surveyor's field notes or keep duplicate field notes, calculate and certify quantities for payment purposes.
- 1.05 PAYMENT
 - A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.
 - B. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected Products.
- 1.06 SCHEDULE OF UNIT PRICES
 - A. A1 Repointing of Brick Masonry
 - 1. Section 04 09 20 Masonry Replacement, Repair and Re-Pointing.
 - 2. Measurement: Wall area quantity, work in place.
 - 3. Payment: Per square foot.
 - 4. Include the following quantity in the Base Bid: Area as noted on Drawings.

- B. A2 New Slate Roof Shingles
 - 1. Section 07 31 26 Slate Shingles.
 - 2. Measurement: Plan quantity, work in place.
 - 3. Payment: Per square foot.
 - 4. Include the following quantity in the Base Bid: 50% of the existing roof area.
- C. <u>A3 Plaster Work Type R1</u>
- 1. Section 09 21 00 Plaster Repair and Conservation
- 2. Measurement: Wall area quantity, work in place.
- 3. Payment: Per square foot.
- 4. Include the following quantity in the Base Bid: 30 SF
- D. A4 Plaster Work Type R2
 - 1. Section 09 21 00 Plaster Repair and Conservation
 - 2. Measurement: Wall area quantity, work in place.
 - 3. Payment: Per square foot.
 - 4. Include the following quantity in the Base Bid: 60 SF
- E. A5 Plaster Work Type R3
- 1. Section 09 21 00 Plaster Repair and Conservation
- 2. Measurement: Wall area quantity, work in place.
- 3. Payment: Per square foot.
- 4. Include the following quantity in the Base Bid: 275 SF
- F. A6 Plaster Work Type T1
- 1. Section 09 21 00 Plaster Repair and Conservation
- 2. Measurement: Wall area quantity, work in place.
- 3. Payment: Per square foot.
- 4. Include the following quantity in the Base Bid: 100 SF
- G. A7 Plaster Work Type N1
- 1. Section 09 21 00 Plaster Repair and Conservation
- 2. Measurement: Wall area quantity, work in place.
- 3. Payment: Per square foot.
- 4. Include the following quantity in the Base Bid: 240 SF
- H. A8 Roof Deck Repair
- 1. Section
- 2. Measurement: Roof area quantity, work in place.
- 3. Payment: Per square foot.
- 4. Include the following quantity in the Base Bid: 500 SF
- I.___AB1 Pipe Insulation Abatement
 - 1. Measurement: Pipe length quantity, measured before removal.
 - 2. Payment: Per linear foot.
 - 3. Include the following quantity in the Base Bid: Area as noted on Drawings.
- D. C1 Rock Excavation and Disposal Off-Site
 - 1. Division 31 Section.
 - 2. Description: Excavation, loading, transport and legal disposal of materials, including all disposal fees.

- 3. Measurement: Cubic yard measured before removal. Excvation will be classified and quantities verified by a soils and materials engineer employed by the Owner.
- 4. Payment: Per cubic yard.
- 5. Include the following quantity in the Base Bid: 10 CY.
- E. C2 Unsuitable Soils Excavation and Disposal Off-Site.
 - 1. Description: Excavation, loading, transport and legal disposal of materials, including all disposal fees.
 - 2. Measurement: Cubic yard measured before removal. Excvation will be classified and quantities verified by a soils and materials engineer employed by the Owner.
 - 3. Payment: Per cubic yard.
 - 4. Include the following quantity in the Base Bid: 50 CY.
- F. C3 Replacement of Removed Rock or Unsuitable Soils with Aggregate Base Course In-Place.
 - 1. Description: Certified ABC materials from contractor's off-site source. Excavation, loading, transport, transport, placement and compaction of ABC into void remaining from removed rock or unsuitable soil. Cost of removal or rock or unsuitable soil is included in other Unit Prices.
 - 2. Measurement: Cubic yard of void to be filled. Quantities will be verified by a soils and materials engineer employed by the Owner based on volume of void to be filled.
 - 3. Payment: Per cubic yard.
 - 4. Include the following quantity in the Base Bid: 20 CY.
- G. C4 Replacement of Removed Rock or Unsuitable Soils with N0. 57 Washed Stone In-Place.
 - 1. Description: Certified #57 washed stone from contractor's off-site source. Excavation, loading, transport, transport, placement and compaction of #57 washed stone into void remaining from removed rock or unsuitable soil. Cost of removal or rock or unsuitable soil is included in other Unit Prices.
 - 2. Measurement: Cubic yard of void to be filled. Quantities will be verified by a soils and materials engineer employed by the Owner based on volume of void to be filled.
 - 3. Payment: Per cubic yard.
 - 4. Include the following quantity in the Base Bid: 20 CY.
- H. C5 Replacement of Removed Rock or Unsuitable Soils with Excavatable Flowable Fill In-Place.
 - 1. Description: Excavatable flowable fill from contractor's off-site source. Excavation, loading, transport, transport, placement and compaction of flowable fill into void remaining from removed rock or unsuitable soil. Cost of removal or rock or unsuitable soil is included in other Unit Prices.
 - 2. Measurement: Cubic yard of void to be filled. Quantities will be verified by a soils and materials engineer employed by the Owner based on volume of void to be filled.
 - 3. Payment: Per cubic yard.
 - 4. Include the following quantity in the Base Bid: 20 CY.
- I. S1 Infill of Openings in Existing Floors (Opening size between 6" and 9")
 - 1. Drawing: 2/S502.
 - 2. Measurement: Plan quantity, work in place.
 - 3. Payment: Per quantity of openings to receive infill.
 - 4. Include the following quantity in the Base Bid: quantity as noted on the Drawings.
- J. S2 Infill of Openings in Existing Floors (Opening size between 9" and 32")
 - 1. Drawing: 2/S502.
 - 2. Measurement: Plan quantity, work in place.
 - 3. Payment: Per quantity of openings to receive infill.
 - 4. Include the following quantity in the Base Bid: quantity as noted on the Drawings.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 07 31 26 - SLATE SHINGLES

PART 1 GENERAL

- 1.01 SECTION INCLUDES
 - A. Slate roofing shingles.
 - 1. Quantity of shingles salvaged from existing roof is expected to be approximately 50 percent. Base Bid quantity of new slate roof shingles shall provide 50%.
 - B. Water-resistant underlayment.
 - C. Metal roof flashing.
- 1.02 RELATED REQUIREMENTS
 - A. Section 07 62 00 Sheet Metal Flashing and Trim.
- 1.03 REFERENCE STANDARDS
 - A. ASTM B370 Standard Specification for Copper Sheet and Strip for Building Construction; 2022.
 - B. ASTM C406/C406M Standard Specification for Roofing Slate; 2015.
 - C. ASTM C920 Standard Specification for Elastomeric Joint Sealants; 2018.
 - D. ASTM C1311 Standard Specification for Solvent Release Sealants; 2022.
 - E. ASTM D1970/D1970M Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
 - F. ASTM D4586/D4586M Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2018).
 - G. ASTM E96/E96M Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022.
 - H. AWPA U1 Use Category System: User Specification for Treated Wood; 2022.
 - I. NRCA (RM) The NRCA Roofing Manual; 2022.
- 1.04 SUBMITTALS
 - A. Product Data: Manufacturer's data sheets on slate roofing, including material characteristics, application limitations, and recommendations for installation and quarry source.
 - B. Provide ASTM C406 Test report on the proposed slate material indicating classification grade.
 - C. Shop Drawings: Details for specially configured metal flashing, joint configurations, and flashing locations.
 - D. Selection Samples: Actual pieces of slate shingles representing full range of available colors and finishes, for selection by Architect.
 - E. Verification Samples: Actual shingles in each selected color and finish, illustrating full range of color and texture variation to be anticipated in the finished work.
 - F. Installer's qualification statement.
 - G. Specimen warranty.
 - 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 Shingles: Quantity equal to 3 percent of total installed, but not less than one full carton.
- 1.05 QUALITY ASSURANCE
 - A. Source Limitations: Obtain slate required for this project from one quarry with adequate resources to ensure consistent quality and appearance for project.

B. Installer Qualifications: Company specializing in installing slate roofing, with at least three years of documented experience.

1.06 MOCK-UPS

- A. See Section 01 40 00 Quality Requirements for additional requirements.
- B. Provide a mock-up for evaluation of overall installed appearance.
 - 1. Apply slate shingles to specified pattern in location designated by Architect.
 - 2. Minimum size of mock-up is 100 sq ft (9.3 sq m).
 - 3. Do not proceed with remaining work until workmanship and overall appearance and pattern are approved by Architect.
 - 4. Approved mock-up may remain as part of work.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver shingles to project site in fabricator's unopened crates or cartons, clearly labeled and identified.
- B. Handle shingles to avoid chipping, breakage, soiling, or other damage. Protect edges with wood or other cushioning and protective material.
- C. Stack skids and slate cartons to distribute weight evenly and to avoid breakage or cracking.
- D. Immediately prior to installation, distribute stacked slate shingles on roof to facilitate installation and to avoid overloading roofing substrate.

1.08 FIELD CONDITIONS

A. Do not install shingles or eave protection membrane when surface temperatures are below 45 degrees F (7 degrees C).

1.09 WARRANTY

- A. See Section 01 78 00 Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 2-year manufacturer warranty for defective materials and workmanship. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Slate Shingles:
 - 1. Vermont Structural Slate Company, Inc; Grayson Slate, by James River Slate Company (subsidiary of Vermont Structural Slate): www.vermontstructuralslate.com/#sle.
 - 2. Buckingham Slate Company; www.buckinghamslate.com/#sle.
 - 3. Black Diamond Slate, LLC; www.blackdiamondslate.com/#sle.

2.02 ROOFING MATERIALS

- A. Slate Shingles: Hard, dense, sound rock, free of ribbons.
 - 1. Type: Traditional; drilled or punched with two nail holes per shingle, located for headlap as specified under installation.
 - 2. Classification: Grade S1, expected service life over 75 years, complying with ASTM C406/C406M.
 - 3. Texture: Rough
 - 4. Thickness: To match existing to be reused.
 - 5. Length: To match existing to be reused.
 - 6. Width: To match existing to be reused.
 - 7. Butt Shape: To match existing to be reused.
 - 8. Color: Unfading, color to match existing roofing.
 - 9. Slates to be applied with standard head lap to match existing, based on matching existing slate size and existing slope of roof.
 - 10. Starter Slate: Slate shingles with chamfered nail holes front-side punched.

- a. Length: Exposure of slate shingles plus head lap.
- B. Underlayment: Self-adhering polymer-modified sheet; 40 mil (1.016 mm) total thickness; with strippable siliconized release film on bottom side and slip resistant and UV-stable facing on top side.
 - 1. Water Vapor Permeance: 30 perm (1716 ng/(Pa s sq m)), when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).
 - 2. Products:
 - a. W.R. Grace & Co; Product Grace Ice and Water Shield HT.
- C. Slip Sheet: Rosin sized building paper.
- D. Eave Protection Membrane: Self-adhering polymer-modified asphalt sheet complying with ASTM D1970/D1970M; nominal total thickness of 40 mil, 0.040 inch (1.0 mm); with strippable release paper and polyethylene sheet top surface.

2.03 ACCESSORIES

- A. Flashing:
 - 1. Copper: ASTM B370 copper, cold rolled, 16 oz/sq ft (0.56 mm thick).
- B. Attachment Members:
 - 1. Material: Pressure preservative treated wood complying with AWPA U1 Use Category UC3B, Commodity Specification A (Treatment C2) using waterborne preservative to 0.25 lb/cu ft (4.0 kg/cu m) retention.
 - 2. Nailers: Nominal 2 inches (50 mm) wide by 1-inch (25 mm) thick members, or thickness as required for specific conditions.
 - 3. Cant Strips: Beveled strips, nominal size as indicated, nominal 48 inches (1220 mm) long and spaced nominal 1/2 inch (12.5 mm) apart at ends for drainage.
- C. Nails: Slater's large-headed copper ring shank nails, length not less than twice slate thickness plus underlayment and 1 inch (25 mm), or long enough to penetrate completely through roof sheathing.
 - 1. Base selection of nails on mock-ups performed by Contractor and Architect in field. Evaluate the following for use:
 - a. 10 gauge copper, ring-shank, large-head nails.
 - b. 10 gauge stainless steel, smooth-shank, large-head nails.
 - c. If 10 gauge nails bend, test 9 gauge stainless steel, smooth-shank nails.
- D. Asphalt Flashing Cement: For use as adhesive dabs below hip and ridge slates:
 - 1. Trowel grade cement containing non-asbestos stabilizers or fibers complying with ASTM D4586/D4586M.
- E. Butyl Sealant: ASTM C1311 one-part non-sag polymerized butyl sealant.
- F. Sealant: ASTM C920 low-modulus silicone joint sealer.
- G. Slate Hooks for Slate Repair Work: For slates with a 3-inch headlap and measuring up to 3/4 inch thick; 3-inches long, 10-gauge solid copper, Type 304 stainless steel, or Type 304 stainless steel powder coated black or bronze with 3/8-inch hook or 3/4-inch hook.
- H. Metal Ridge and Hip Accessories: As indicated on drawings, same material as exposed flashings.
- I. Deck Sheathing:
 - 1. Glass-mat-faced gypsum board: ASTM C1177/C1177M
 - a. DensDeck, Thickness: 5/8 inch(16mm).

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that roofing accessories and roofing penetrations are complete and properly flashed.

- B. Verify that roof openings are correctly framed.
- C. Verify that roof deck surfaces are dry and free of ridges, warping, and voids.

3.02 SALVAGE AND REUSE

- A. Take necessary steps and precautions to remove, carefully clean, visually evaluate and ring (sound test), stock, store (on edges - do not stack flat), and protect existing slate for reinstallation or for Owner's salvage as directed by Owner. Discard cracked, split, chipped, or weathered internally deteriorated) slates.
- 3.03 PREPARATION
 - A. Prepare deck surfaces using methods recommended by slate shingle and underlayment manufacturer for existing project conditions.
 - B. Broom clean roof deck thoroughly prior to beginning installation.

3.04 INSTALLATION

- A. Install slate shingle roofing system in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Sheet Metal Flashing: Install flashing as indicated and as required by project conditions.
 - 1. Install flashing at each location where slate roof intersects other roofs, walls, parapets, chimneys, ventilators, and similar projections.
 - 2. Fabricate flashings at open valleys with standing rib at center of valley, not less than 1 inch (25 mm) high; extend flashing not less than 12 inches (305 mm) onto roof deck on each side of valley.
 - 3. Attach shingles at valleys using copper wires to copper straps nailed beyond edge of flashing sheets.
 - 4. Install drip edge flashing at eaves prior to installing underlayment.
 - 5. Install metal ridge cap in accordance with NRCA details and recommendations.
- C. Underlayment:
 - Install underlayment over entire deck surface. At select locations including ridges and valleys, there use 2 layers of underlayment. Provide felt underlayment over self-adhering sheet to prevent slate from sticking to underlayment. Apply additional layer of underlayment not less than 36 inches (914 mm) wide at valleys.
 - 2. Ice Dam Protection: Install eave protection membrane at eaves, extending to a line that when projected to the horizontal is not less than 24 inches (610 mm) inside of interior wall line.
- D. Wood Attachment Members:
 - 1. Cants: Install cant strips at eaves on top of underlayment, spaced for drainage.
 - 2. Nailers: Install nailers at ridge and hips, directly over underlayment. Protect with additional layer of underlayment before installing ridge and hip slates and accessories.
- E. Slate Shingles:
 - 1. Double shingles at eaves and cornice line. Beginning at built in gutter, project shingles minimum uniform dimension of 1 inches (25.4 mm) and lay shingles in horizontal courses. Install shingles with minimum of 4-inch (102 mm) headlaps, and stagger joints between courses a minimum of 3 inches (76 mm). Project shingles minimum uniform dimension of 1 inch (25.4 mm) at gables.
 - 2. Cut and fit shingles neatly around vents, pipes, and other projections.
- 3.05 CLEANING
 - A. See Section 01 70 00 Execution and Closeout Requirements for additional requirements.
 - B. Clean exposed work upon completion of installation; remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to finish.

3.06 PROTECTION

- A. Minimize and prevent traffic over finished roof surface, and when necessary wear soft-soled shoes and walk on butt or tab of slate shingles to avoid breakage.
- B. Remove and replace damaged or broken slate shingles before Date of Substantial Completion.

END OF SECTION

SECTION 07 84 00 - FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Protection of fire-resistance-rated construction as required by the building code, and using materials subject to the limitations of this specification.
- B. The location and extent of fire-resistance-rated construction is indicated on the Drawings.
 - 1. Protect every penetration into or through such construction.
 - 2. Protect every joint in such construction or between elements of such construction and adjacent construction.
- C. Work Not Included: Repairing penetrations made in error and repairing penetrations which are too large to be sealed by the methods indicated; these are to be repaired using the original material of the construction.

1.02 REFERENCES

- A. ASTM E1966 Standard Test Method for Fire-Resistive Joint Systems; 2015 (Reapproved 2019).
- B. ASTM E2174 Standard Practice for On-Site Inspection of Installed Firestop Systems; 2020a.
- C. ASTM E2307 Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus; 2020.
- D. ASTM E2393 Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers; 2020a.
- E. ASTM E814 Standard Test Method for Fire Tests of Penetration Firestop Systems; 2013a (Reapproved 2017).
- F. FM 4991 Approval Standard of Firestop Contractors; 2013.
- G. FM P7825 Approval Guide; current edition.
- H. ITS (DIR) Directory of Listed Products; Current Edition.
- I. UL (FRD) Fire Resistance Directory; Current Edition.
- J. UL 1479 Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.
- K. UL 2079 Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.
- 1.03 DEFINITIONS
 - A. Fire Wall, Fire Barrier, Smoke Barrier, Fire Partition: As defined by the building code.
- 1.04 SUBMITTALS
 - A. Product Data: Provide data on product characteristics, performance ratings, limitations, and tested assembly details including preparation and installation instructions.
 - B. Installer Qualifications.
 - C. Shop Drawings Schedule: Submit a single, integrated, and complete list of joints and penetrations to be sealed including penetrations caused by mechanical, electrical, plumbing, and other work. Do not submit separate schedules prepared by the various subcontractors. Identify the following:
 - 1. Type of penetration (floor, wall, other).
 - 2. Fire rating of penetrated assembly.
 - 3. Material of penetrated assembly (e.g., cast-in-place concrete wall, CMU wall, composite floor deck, etc.).

- 4. Size and material of the penetrating object (e.g. 4 to 8 inches (100 to 200 mm) C.I.P, EMT up to 2 inch (50 mm) dia., etc.).
- 5. Testing laboratory design number.
- 6. Manufacturer's design number.
- D. Preinstallation Inspection Report.
- E. Final Inspection Report.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this Section and:
 - 1. Either approved by Factory Mutual Research under FM 4991, Approval of Firestop Contractors or listed as a UL Qualified Firestop Contractor in accordance with the UL Qualified Firestop Contractors Program (QFCP).
 - 2. Licensed to perform firestopping work in the jurisdiction in which the Project is located.
- B. Manufacturer's technical representative shall be available for initial job start-up and trouble-shooting as needed, and to assist with inspections.
- C. Coordination Meeting: Prior to the start of work which involves cutting penetrations, conduct a meeting with installers of such work to identify fire barriers and required configurations of penetrations and to discuss the proper procedures and time schedule for cutting, patching, and sealing penetrations in such assemblies, with emphasis on avoiding unnecessary cutting and patching.

1.06 REGULATORY REQUIREMENTS

- A. Protect fire rated construction as required by the building code, and using materials subject to the limitations of this specification. Construction to be protected includes:
 - 1. Penetrations into or through fire walls, fire barriers, and fire partitions.
 - 2. Penetrations into or through fire-resistance-rated floors, floor/ceiling assemblies, and the ceiling membrane of roof/ceiling assemblies.
 - 3. Joints in or between fire-resistance-rated walls, floors, floor/ceiling assemblies, roofs, and roof/ceiling assemblies.
 - 4. Joints between fire-resistance-rated floor or floor/ceiling assemblies and exterior curtain wall assemblies (where a curtain wall is formed by wall materials that bypass the floor slab edge such as aluminum framing and glass, studs and other cladding, or other wall materials).
 - 5. Joints at the intersection of horizontal smoke barriers and exterior curtain wall assemblies.
 - 6. Penetrations into or through non-fire-resistance-rated floors, floor/ceiling assemblies, and the ceiling membrane floor/ceiling assemblies.

1.07 MOCK-UP

- A. Install one mock-up of each major type of firestop assembly using proposed materials and illustrating workmanship to be expected in the completed work.
- B. Obtain approval of the manufacturer's technical representative before proceeding with firestopping work.
- C. Disassembly or removal may be required during inspection.

1.08 PROJECT CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation.
- B. Provide ventilation in areas where solvent-cured materials are being installed.
- 1.09 DELIVERY, STORAGE, AND HANDLING
 - A. Deliver products to project site in original unopened containers bearing the name of the manufacturer, product name, type, and testing agency's identification mark.
 - B. Store products in accordance with manufacturer's instructions.

1.10 SEQUENCING AND SCHEDULING

A. Perform firestopping work after completion of work which penetrates fire barriers, but prior to covering up or eliminating access to the penetration. Coordinate with installers of such other work.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

A. Refer to Section 01 60 00 - Product Requirements .

2.02 MANUFACTURERS

- A. Fire Testing of Assemblies: Provide materials and designs that have been tested by approved agencies, as follows:
 - 1. Listing in the current-year classification or ITS (DIR), FM P7825, or UL (FRD) will be considered as constituting an acceptable test report.
 - 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
- B. Provide products complying with requirements of the contract documents and made by a single manufacturer to the greatest extent practicable, unless otherwise indicated and approved by the Architect.

2.03 MATERIALS

- A. Firestopping Materials: Provide assemblies whose fire-resistance ratings have been determined by testing in the configurations required and which have fire-resistance ratings at least as high as that of the fire-rated assembly in which they are to be installed.
 - 1. If a tested assembly is not available for a particular penetration or joint configuration, modify the penetration or joint configuration to suit available assemblies; do not modify assembly configuration except as specifically stated in the test report or as approved by the authority having jurisdiction.
 - 2. Provide products that:
 - a. Allow normal expansion and contraction movement of the assembly without failure of the seal.
 - b. Emit no hazardous, combustible, or irritating by-products during installation or curing period.
 - c. Do not require special tools for installation.
 - 3. Provide products that allow for differential movement unless otherwise approved.
 - 4. For products used in horizontal assemblies, provide products that are impervious to water when fully cured.
 - 5. For materials used in expansion joints, provide sealant with at least 40% movement capability in compression or extension. For other joints provide at least 25% movement capability in compression or extension.
 - 6. Select assemblies and products so as to minimize the number of different assemblies and different products used.
- B. Penetration Assembly Labels: Permanent, red marking with black lettering.
 - 1. For marking firestopping assemblies, use wired-on labels unless otherwise approved.
 - 2. Legend:
 - a. "Fire-Rated Assembly Do not disturb See maintenance instructions".
 - b. Product manufacturer's name.
 - c. U.L. Des. No. _____
 - d. F rating: _____
 - e. T rating:
 - f. Installer's name.
- C. Partition Labels:

- 1. Permanent, red lettering with legend "RATED FIRE BARRIER PROTECT ALL OPENINGS".
- 2. Use letters at least 3 inches (76 mm) high with 3/8 inch stroke.

2.04 ASSEMBLIES

- A. Protect fire rated construction as required by the building code, and using materials subject to the limitations of this specification.
 - 1. Exceptions: Certain materials, locations, and assemblies are exempt where permitted by the building code and approved by the authorities having jurisdiction.
- B. Penetrations into or through fire walls, fire barriers, and fire partitions: Provide through-penetration firestop systems tested per ASTM E814 or UL 1479, minimum positive pressure differential of 0.01 inch (0.25 mm) of water, F rating not less than that of the wall.
- C. Penetrations into or through fire-resistance-rated floors, floor/ceiling assemblies, and the ceiling membrane of roof/ceiling assemblies: Provide through-penetration firestop systems tested per ASTM E814 or UL 1479, minimum positive pressure differential of 0.01 inch (0.25 mm) of water, F rating and T rating not less than that of the floor nor less than 1 hour whichever is greater.
- D. Joints in or between fire-resistance-rated walls, floors, floor/ceiling assemblies, roofs, and roof/ceiling assemblies: Provide fire-resistant joint systems tested per ASTM E1966 or UL 2079.
- E. Joints between fire-resistance-rated floor or floor/ceiling assemblies and exterior curtain wall assemblies (where a curtain wall is formed by wall materials that bypass the floor slab edge such as aluminum framing and glass, studs and other cladding, or of other wall materials): Provide an approved system tested per ASTM E2307, F rating not less than that of the floor.
- F. Joints at the intersection of horizontal smoke barriers and exterior curtain wall assemblies: Provide fire-resistant joint systems tested per UL 2079 for air leakage. The L rating measured at 0.30 inch (7.6 mm) of water in ambient and elevated temperature tests: Not greater than 5 cfm/lf (28 cu m/hr/lm).

2.05 ACCESSORIES

A. Primers, Sleeves, Forms, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Preinstallation Inspection:
 - 1. Inspect for penetrations of any type; mark or otherwise identify all penetrations indicating action required: "Repair" or "Firestop".
 - 2. Conduct inspection prior to covering up or enclosing walls or ceilings.
 - 3. Conduct inspection jointly with authorized representative of authority having jurisdiction, unless the authority waives the inspection.
 - 4. Submit a report detailing findings of inspection to the Architect.
- B. If the configuration of a particular penetration does not conform to the configuration necessary for the required firestopping assembly, modify the construction to suit the firestopping assembly design.

3.02 PREPARATION

- A. Prepare penetrations in accordance with material manufacturer's instructions.
- B. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.
- C. Remove incompatible materials which may affect bond.

3.03 INSTALLATION

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings. Provide all accessory materials required.
- B. Produce a smooth, uniform, neat appearing finish.
- C. Remove combustible forming materials, unless they are a required component of the tested assembly.
- D. Do not cover installed firestopping until inspected by authority having jurisdiction, unless such inspection is waived by the authority.

3.04 PERMANENT IDENTIFICATION

- A. Affix penetration assembly labels to each fire-stop penetration assembly.
- B. Within accessible concealed ceilings spaces and within accessible concealed floor, floor-ceiling, or attic spaces, install partition identification labels on fire walls, fire barriers, fire partitions, and smoke partitions. Install labels in the concedaled space within 15 feet (4.5 m) of ends of such walls and at intervals not exceeding 30 feet (9 m).

3.05 FIELD QUALITY CONTROL

- A. Special inspections are required by the building code or by the authority having jurisdiction. Inspections shall be conducted in accordance with ASTM E2174 and ASTM E2393 by an approved inspection agency acceptable to the authority having jurisdiction.
 - 1. The Owner will pay for the cost of one such inspection. The cost of additional inspections, if required, will be deducted from the Contract Price in accordance with the General Conditions.
- B. Special Inspections: Coordinate and schedule special inspections by the approved inspection agency.
- C. Inspect completed installations for completeness and correct installation.
 - 1. Arrange for the firestopping material manufacturer's representative to conduct an inspection of completed work.
 - 2. If installed work is to be covered in completed work, inspect and obtain approval prior to covering.
- D. Submit report of inspection to the Architect.
- E. Notify the Architect of completed firestopping work prior to covering with subsequent work.
- 3.06 CLEANING AND PROTECTION
 - A. Clean adjacent surfaces of excess firestopping materials promptly. Use methods and materials approved by the manufacturers of the penetration seals and of surfaces to be cleaned.
 - B. Protect adjacent surfaces from damage by material installation.
 - C. Protect installed work during curing period.
 - D. Protect installed work from damage from construction operations using substantial barriers, if necessary.
 - E. Repair damaged firestopping and adjacent materials in accordance with manufacturer's instructions.

END OF SECTION

SECTION 09 30 00 - TILING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Tile.
 - 2. Tile setting materials.
 - 3. Isolation and waterproofing membrane under tile.

1.02 REFERENCES

- A. ANSI A108/A118/A136 American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2019.
- B. ANSI A108.4 American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile Setting Epoxy Adhesive.
- C. ANSI A108.5 Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
- D. ANSI A118.3 American National Standard Specifications for Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile Setting Epoxy Adhesive.
- E. ANSI A118.15 American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2019.
- F. ANSI A137.3 American National Standard Specifications for Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs; 2021.
- G. TCNA (HB) Handbook for Ceramic, Glass, and Stone Tile Installation; 2021.

1.03 SUBMITTALS

- A. Product Data:
 - 1. Written product information which demonstrates materials to be used on the project comply with contract documents.
 - 2. Manufacturer's installation instructions.
- B. Installer qualifications.
- C. Samples for Verification Purposes: Submit the following:
 - 1. Submit each tile type selected mounted on a minimum 12 inches (305 mm) square board with joints filled using selected grout.
- D. Contractor's Certificate of Inspection of Waterproofing Membrane.

1.04 QUALITY ASSURANCE

- A. Material Source: Furnish each type, finish, and color of tile product and accessory materials from a single supplier.
- B. Installer Qualifications for Tile:
 - 1. Certified Tile Installer (CTI), Certified Tile Education Foundation; https://www.ceramictilefoundation.org.
- 1.05 DELIVERY, STORAGE, AND HANDLING
 - A. Deliver and store tile products and setting materials in manufacturer's sealed packages. Protect material from damage and store in dry location.
- 1.06 PROJECT CONDITIONS
 - A. Provide temperatures in tiled areas during installation and after completion as required by referenced installation standard or manufacturer's instructions, but not less than 50 deg F (10 deg C) nor more than 90 deg F (32.2 deg C) unless otherwise approved. For unavoidable conditions outside of this range, obtain material manufacturer's recommendations.

B. If necessary to use temporary heaters, vent units to exterior to protect tile work from carbon dioxide accumulation.

1.07 MAINTENANCE

- A. Extra Materials: Deliver supply of maintenance materials to the Owner. Furnish maintenance materials from same lot as materials installed, and enclosed in protective packaging with appropriate identifying labels.
 - 1. Furnish not less than 2 percent of total product installed maintenance stock for each type, color, pattern, and size of tile product installed.

PART 2 PRODUCTS

2.01 MATERIALS - GENERAL

- A. Ceramic Tile Standard: ANSI A137.1. Tile grade: "Standard Grade," unless noted otherwise.
- B. Standard for guaged porcelain tiles and guaged porcelain panels / slabs: ANSI A137.3.
- C. Tile Installation Materials Standard: ANSI standard referenced for setting and grouting materials.
- D. Colors, Textures, and Patterns, Tile, Grout, and Other Products: Match colors indicated or, if not indicated, as selected by Architect from manufacturer's full range of colors.
- E. Color Blending: Factory-blend tile products which have a natural color range so products taken from one box will have the same range as products from a separate box.
- F. Tile Mounting: Manufacturer's standard factory back- or edge-mounting.

2.02 TILE MATERIALS

- A. Color selections listed are based on grouped specification sections Basis of Design. Refer to Section 01 30 00 for grouped specifications. If another acceptable manufacturer within the listing is provided in lieu of Basis of Design this could prompt color selections being required to be reviewed and reselected with the same style, line, and series of listed manufacturer product.
- B. Floor & Wall Tile:
 - 1. Tile Type 1 (093000.T1), Basis of Design:
 - a. Manufacturer: Daltile
 - b. Pattern: Rekindle
 - c. Color: Light Grey RK12
 - d. Size: 12x24
 - e. Grout Color: to be selected from full manufacturers offerings.
 - f. Contact: Michele Miller, 704.877.6396, michele.miller@daltile.com
 - g. Other Acceptable Manufacturers and Patterns:
 - 1) Atlas Concorde
 - (a) Pattern: Rift
 - (b) Color: Gravel
 - (c) Size: 12x24
 - (d) Grout Color: to be selected from full manufacturers offerings.
 - (e) Contact: Ann Hartley, 919-602-6125, ahartley@mosaictileco.com
 - 2) Best Tile:
 - (a) Pattern: Provence
 - (b) Color: Ecru
 - (c) Size: 12x24
 - (d) Grout Color: to be selected from full manufacturers offerings.
 - (e) Contact: Nancy Peters, 919.986.6256, npeters@besttile.com

2.03 THRESHOLDS AND TRANSITIONS

A. General:

- 1. Fabricate to size to provide transition between tile floor and adjacent floor surface.
- 2. At door openings, install a single full-width piece; notch threshold to door jamb profile.
- 3. For tile on gypsum panel underlayment: Use full-thickness threshold / saddle units butted against panels.
- B. Products: Refer to Section 09 60 10 Flooring Transitions.
- 2.04 SETTING, GROUTING, AND WATERPROOFING MATERIAL MANUFACTURERS:
 - A. Provide products of a single manufacturer, unless otherwise specified, required, and approved.
 1. Exception: Provide the sheet waterproofing products specified.
 - B. Manufacturers:
 - 1. Custom Building Products.
 - 2. Laticrete International, Inc.
 - 3. Mapei Corporation.

2.05 SETTING MATERIALS

- A. Latex-Portland Cement Mortar: Two-component, dry mortar mix and liquid latex additive, field-mixed; complying with ANSI A118.15.
 - 1. All components premeasured and prepackaged.
 - 2. Liquid latex additive: Acrylic or styrene-butadiene resin water emulsion.
 - 3. Mix in accordance with manufacturer's recommendations.
 - 4. "ProLite Thin Set Mortar"; Custom Building Products.
 - 5. "255 MultiMax Thin Set Mortar"; Laticrete International, Inc.
 - 6. "UltraLite Thin Set Mortar"; Mapei Corporation.
- B. Organic Adhesive: ANSI A136.1.
 - 1. "AcrylPro Ceramic Tile Adhesive"; Custom Building Products.
 - 2. "Laticrete 15 (136 g/l)"; Laticrete International, Inc.
 - 3. "Ultramastic ECO"; Mapei.

2.06 MEMBRANE MATERIALS

- A. Sheet Waterproofing Membrane:
 - 1. Waterproofing Above Sloped Bed: Waterproofing / Vaporproofing Walls: 0.030 inch (0.76 mm) nominal thickness chlorinated polyethylene (CPE), a non-plasticized elastomer, with non-woven polyester laminated to both sides. "NobleSeal TS"; The Noble Company.
 - a. For individual shower pans and similar applications provide single full-width sheets without laps or splices.
 - b. Where application width exceeds 4 feet (1.2 m), provide lapped sheets bonded with membrane manufacturer's recommended waterproof adhesive. (Sheet width 5 feet (1.5 m) x roll length.)
 - c. Bond sheet to sloped substrate .
 - d. Install tile on top of sheet using thin-set method.
 - 2. Extend sheet up and over curbs, and down outside face approximately 2 inches (50 mm).
 - 3. Extend sheet up walls curb height plus 2 inches (50 mm).
 - 4. At inside corners, fold sheet to form corner without cutting or puncturing such that no additional sealing is required.
 - 5. Provide manufacturer's standard pre-formed corners for use at shower pan dams, curbs, and other outside corners.
 - 6. Provide membrane manufacturer's approved products for joining, fastening, and adhering membrane and for sealing membrane to drains.

2.07 GROUTING MATERIALS

- A. Chemical-Resistant, Water-Cleanable Ceramic Tile Setting and Grouting Epoxy: ANSI A118.3.
 - 1. "CEG-Lite 100% Solids Epoxy Grout"; Custom Building Products.
 - 2. "SpectraLock Pro Grout"; Laticrete International, Inc.
 - 3. "Kerapoxy"; Mapei Corporation.

- B. Grout Color: Using brand-name products specified above, provide grout matching the color selected by the Architect. Brand names/colors indicated on the finish schedule or plans, if any, denote color, only, not product.
- 2.08 PATCHING AND LEVELING COMPOUND
 - A. Portland cement base, acrylic polymer compound, manufactured specifically for resurfacing and leveling concrete floors.
 - B. Have not less than the following physical properties:
 - 1. Compressive strength 4000 psi (27.58 MPa).
 - 2. Tensile strength 800 psi (5.56 MPa).
 - 3. Flexural strength 850 psi (5.86 MPa).
 - C. Capable of being applied in layers up to 1 1/2 inches (38 mm) thick, being brought to a feather edge, and being troweled to a smooth finish.
 - D. Ready for use in 48 hours after application.
- 2.09 MISCELLANEOUS MATERIALS
 - A. Tile Cleaner: Acidic tile cleaners are not acceptable. Provide products specifically recommended by grout manufacturer for type of grout and tile used, such as the following:
 - 1. Commercial detergent or tri-sodium phosphate.
 - 2. Dry grout powder.
 - 3. Methyl alcohol.
 - B. Joint Sealant: Specified in Division 07. Color shall match adjacent grout unless otherwise indicated.
 - C. Metal Edge Strip:
 - 1.L-shaped profile with 1/8" (3.2 mm) wide top section and
 - vertical wall section that together form the visible surface, integrated
 - trapezoid-perforated anchoring leg, and integrated grout joint spacer.
 - 2. Anchoring Leg:
 - a. Provide with straight anchoring leg
 - b. Provide with special radius anchoring leg for radius applications
 - 3. Material and Finish:
 - a. ACGB Brushed Chrome Anodized Aluminum
 - 4. Height: as required

PART 3 EXECUTION

- 3.01 EXAMINATION
 - A. Verify with the installer that substrate areas where tile is to be installed have been prepared correctly, and that all backing materials have been installed. Correct unacceptable conditions before start of tile work.
 - B. Verify that concrete substrates have not been cured with membrane-forming curing compounds. The following types of curing are suitable to receive tile or bonded mortar beds:
 - 1. Continuous moist curing methods.
 - 2. Moisture-retaining sheet materials.
 - 3. Membrane-forming curing compounds are acceptable only where thick-bed with cleavage membrane will be installed.
 - C. Ensure that substrates to receive tiling work conform to TCNA (HB) requirements.

- D. Ensure that surfaces to which tile will bond (surface of concrete for direct bonding, surface of thick mortar bed, surface of tile backer board, or other surface) does not vary from true plane by more than:
 - 1. 1/4 inch in 10 feet nor more than 1/16 inch in 12 inches when measured from high points in the surface for tiles less than 15 inches in length.
 - 2. 1/8 inch in 10 feet nor more than 1/16 inch in 24 inches when measured from high points in the surface for tiles with any dimension 15 inches or more.
- E. Correct unsuitable substrates before proceeding to install tile.

3.02 PREPARATION

- A. Factory-Blending: Before start of installation verify that tile with an anticipated range of colors has been correctly blended to achieve a uniform color range from tile package to tile package.
- B. Patching and Leveling:
 - 1. Mix and apply patching and leveling compound in accordance with manufacturer's instructions.
 - 2. Fill holes and cracks and level concrete floors that are out of required plane with patching and leveling compound.
 - 3. Thickness of compound shall be as required to bring finish tile system to elevation shown.
 - 4. Slope compound to drain where drains are shown.
- C. Floors:
 - 1. Membrane-forming curing compounds, if used, shall be completely removed by abrasive blast cleaning, vigorous wire brushing, or scarifying. Acid cleaning is not acceptable, unless specifically approved by the Architect.
 - 2. Mortar bed for depressed slabs:
 - a. Install mortar bed not less than 1-1/4 inch (32 mm) thick unless otherwise indicated.
 - b. Install setting bed reinforcing centered in mortar fill.
 - c. Screed finish to level plane, and slope to drains unless otherwise shown.
 - d. Cure mortar bed fill not less than seven days. Do not use curing compounds or coatings.
- D. Walls:
 - 1. Apply patching and leveling compound to concrete and masonry surfaces that are out of required plane.
 - 2. Apply leveling coats of material compatible with wall surface and tile setting material to wall surfaces, other than concrete and masonry, that are out of required plane.

3.03 INSTALLATION - GENERAL

- A. Tile Installation Standard:
 - 1. ANSI A108/A118/A136 series, for setting and grouting materials listed.
 - 2. Comply with TCNA (HB) "Handbook for Ceramic Tile Installation" for type of applications indicated.
- B. Set tile firmly in place with finish surfaces in true planes.
 - 1. Seal tile joints water tight around electrical outlets, piping fixtures, and fittings before cover plates and escutcheons are set in place.
 - 2. Completed work shall be free from:
 - a. Hollow sounding areas.
 - b. Loose or cracked or scratched tile.
 - c. Out of plane or misaligned tile.
 - d. Mismatched patterns or colors.
 - e. Grout haze or other stains.
 - f. Other defects.
 - 3. Mortar Coverage: Ensure that mortar is well bonded to tile and to substrate accross at least 95% of the area, evenly distributed to support edges and corners, and no voids exceeding 2 square inches and no voids within 2 inches of corners.

- C. Install waterproofing to comply with waterproofing manufacturer's instructions as necessary to result in a watertight installation.
- D. Install tile under or behind equipment and fixtures.
- E. Carefully cut, drill, and grind tile to fit around items projecting through tile surface, so that escutcheons or cover plates conceal cut edges, and without marring tile surface.
- F. Joint Patterns: Lay out tile according to patterns indicated on drawings, or if not shown, in a grid pattern with floor joints aligning with wall and trim joints. Install joints straight and of uniform width. Neatly form intersections and returns.
 - 1. Lay out tile work so that no tile less than one-half full size is used. Make all cuts on the outer edge of the field.
 - 2. Joint size, unless otherwise indicated:
 - a. Wall tile: 1/16 inch (1.5 mm).
 - b. Ceramic mosaic tile: 1/16 inch (1.5 mm).
 - c. Quarry tile: 1/4 inch (6 mm).
 - d. Marble tile: 1/8 inch (3 mm).
 - e. Other floor tile: As directed by the Architect.
- G. Sealant-Filled Joints: Install joints in the locations listed below, and elsewhere indicated on the drawings. Saw-cut joints are unacceptable. Joint installation method: TCA EJ 171.
 - 1. Between floor tile and base tile or other hard finish material at walls, curbs, columns, pipes, and similar conditions.
 - 2. Where changes occur in floor or wall substrates. Locate joint in tile directly over joint in substrate.
 - 3. Where control, construction, or cold joints occur in floor or wall substrates. Locate joint in tile directly over joint in substrate.
- H. Remove and reset defective work.
- 3.04 TRIM
 - A. Thresholds: Install thresholds (marble or solid surfacing, as indicated) between tile floors and adjacent flooring or other materials where adjacent finish is not flush with top of tile. Install with thin-set mortar where thick mortar bed would be exposed above adjacent floor finish.

3.05 CONCRETE FLOOR APPLICATIONS

- A. Application 09 30 00.MBC: Thick-set mortar bed w/ cleavage membrane; TCNA F111.
 - 1. Cleavage membrane: Asphalt-saturated felt.
 - 2. Mortar bed: Portland cement mortar, ANSI A108.1A or B, as indicated in the Contract Documents.
 - 3. Bond coat and grout: As indicated in the Contract Documents.
- B. Application 09 30 00.HLE: Horizontal tile, latex mortar; epoxy grout, TCNA F115.
 - 1. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 2. Grout: Epoxy, ANSI A108.6.
- C. Application 09 30 00.HWLE: Horizontal tile, waterproof membrane, TCNA F122/F122A; latex mortar, epoxy grout, TCNA F115.
 - 1. Waterproof membrane.
 - 2. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 3. Grout: Epoxy, ANSI A108.6.

3.06 WOOD FRAMED FLOOR APPLICATIONS

- A. Application 09 30 00.HBLL: Horizontal tile, backing board over subflooring, latex mortar, latex grout; TCNA F151.
 - 1. Coated glass mat water-resistant gypsum backer board:
 - a. Butt joints together with 1/8 inch (3 mm) space at joints. Layout work and use appropriate length material to avoid end joints. Stagger end joints between adjacent panels. Stagger end joints between subflooring and panels.
- b. Place coated rear face up, so that coated front face will receive tile.
- c. Fit panels snugly around penetrations and openings.
- d. Laminate panels to subflooring using latex-Portland cement mortar. Embed panels into mortar while mortar is still plastic. Ensure full coverage for complete bonding in accordance with TCNA standards.
- e. Fasten panels to subfloor with galvanized roofing nails (1 inch (25 mm) longer than thickness of backing board. Drive fasteners tight against and flush with panel surface. Do not countersink fasteners.
- f. Locate fasteners not closer than 3/8 inch (10 mm) from edge and ends of panels.
- g. Space fasteners at not more than 8 inches on center in all directions.
- h. Apply 2 inches (50 mm) 10x10 glass mesh tape over joints, and embed with latex-Portland cement mortar.
- i. Thresholds and saddles: Use full-thickness units butted against panels.
- 2. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
- 3. Grout: Latex-Portland cement, ANSI A108.10.
- B. Application 09 30 00.HMLE: Horizontal tile, membrane over poured gypsum underlayment, latex mortar, epoxy grout; TCNA F180.
 - 1. Membrane: Crack isolation, sound isolation, or waterproof membrane, as indicated; bonded to substrate. Prime substrate in accordance with membrane manufacturer's instructions before installing membrane.
 - 2. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 3. Grout: Epoxy, ANSI A108.6.

3.07 OTHER APPLICATIONS

- A. Application 09 30 00.BLE: Bathtub walls or prefabricated shower receptor, latex mortar and epoxy grout on walls; TCNA B419.
 - 1. Tub or prefabricated shower receptor: Specified elsewhere.
 - 2. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 3. Grout: Epoxy, ANSI A108.6.
- B. Application 09 30 00.SLEC: Individual shower w/ curb, waterproof membrane, latex mortar, and epoxy grout on floors and walls; TCNA B420.
 - 1. Waterproof membrane.
 - 2. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 3. Grout: Epoxy, ANSI A108.6.
- C. Application 09 30 00.SLEA: Individual Shower, Accessible Roll-In w/ waterproof membrane, latex mortar, and epoxy grout on floors and walls.
 - 1. Recessed slab, thick mortar bed, sloped to drain, with reinforcing: Portland cement mortar, ANSI A108.1B.
 - 2. Waterproof membrane.
 - 3. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 4. Grout: Epoxy, ANSI A108.6.
- D. Application 09 30 00.S: Stairs; Latex mortar and grout on treads and risers; TCNA S151.
 - 1. Method F112 on treads; Method W211 on risers.
 - 2. Mortar bed: Portland cement mortar, ANSI A108.1C.
 - 3. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 4. Grout: Latex-Portland cement, ANSI A108.10.
 - 5. Use cove tile at junction of riser and tread. Use finished step nosing tile at nosings.
- 3.08 WALL APPLICATIONS
 - A. Application 09 30 00.VAL: Vertical tile, organic adhesive, latex grout: TCNA W242.
 - 1. Gypsum backing board on walls: Specified Section 09 21 16 Gypsum Board Assemblies.
 - 2. Adhesive: Organic adhesive, ANSI A108.4.

- 3. Grout: Latex-Portland cement, ASNI A108.10.
- B. Application 09 30 00.VLE: Vertical tile, latex mortar, epoxy grout: TCNA W202E/W202I//W245.
 - 1. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 2. Grout: Epoxy, ANSI A108.6.
- C. Application 09 30 00.VLL: Vertical tile, latex mortar, latex grout: TCNA W202E/W202I//W245.
 - 1. Bond coat: Latex-Portland cement mortar, ANSI A108.5.
 - 2. Grout: Latex-Portland cement, ANSI A108.10.

3.09 FIELD QUALITY CONTROL FOR WATERPROOFING MEMBRANES

- A. Drains:
 - 1. Sheet waterproofing: Extend waterproof membrane into drain body and secure with clamping ring. Allow bonding adhesives to cure prior to flood testing.
- B. Flood test waterproofing prior to installing tile. Place inflatable plumber's balloon or similar device in piping beneath drains. (Device must contact drain pipe, not drain bowl rim.) Fill waterproofed area with water to a depth of 2 inches (50 mm) measured at shallowest point. Allow to stand at least 24 hours. Installation shall be leak-free.
- C. Submit flood test field report to the Architect.
- 3.10 SEALING OF JOINTS
 - A. Rake out joints for installation of sealant specified elsewhere.
 - 1. At thick-set assemblies, rake out joint full depth of tile and setting bed.
 - 2. At thin-set assemblies, rake out joint full depth of tile.
 - 3. At waterproof membrane assemblies, rake out joint down to but not through waterproof membrane. Do not damage membrane.
 - B. Install sealant in accordance with requirements specified elsewhere.

3.11 CLEANING AND PROTECTION

- A. Clean tile surfaces after installation is complete.
 - 1. Remove grout residue from tile as soon as possible after tile installation and in strict accordance with manufacturer's instructions.
 - 2. Tile that is stained or which contains grout haze after cleaning will be considered defective, and shall be removed and replaced with new tile at no cost to the Owner.
- B. Replace any broken, chipped, marred, or otherwise damaged tile before final acceptance.
- C. Protection: Apply neutral protective cleaner to tile after installation if recommended by tile manufacturer. Overlay completed tile installation with kraft paper for protection from subsequent construction activities.
- D. Do not allow any traffic on completed tile floors for minimum 7 days after completion.
- E. Remove protection, rinse, and dry tile installations before final review and acceptance.

CONTRACTOR'S CERTIFICATE OF INSPECTION OF WATERPROOFING MEMBRANE:

I certify that I have inspected the Waterproofing Membrane Work specified in this Section in its entirety. None of this Work has been covered by subsequent Work, including setting mortar, tile, or other materials specified in this Section or materials specified in other Sections.

The waterproofing was flood tested on (insert date) and found to be leak-free.

I have inspected the Waterproofing Membrane Work in its entirety. No segment has be left uninspected. Certified this _____ day of _____, 20____ by

(signature)

(printed name)

on behalf of

(Contractor)

UNC Bingham Hall Renovation SCO ID # 21-23548-02A UNC CIP # 21212

SECTION 09 66 23 - RESINOUS MATRIX TERRAZZO FLOORING

PART 1 GENERAL

- 1.01 SECTION INCLUDES
 - A. Thin-set epoxy terrazzo.
 - B. Crack detailing installation.
 - C. <u>Thin-set</u> <u>Thin-set Precast</u> epoxy terrazzo<u>wall</u> base.
 - D. Refinishing of Existing Portland Cement Terrazzo floor and base.
 - 1. Cleaning and refinishing of existing terrazzo.
 - 2. Patching of minor chips and holes in existing terrazzo.
 - 3. Repair of minor cracks in existing terrazzo.
 - 4. Infill of demolished terrazzo.
- 1.02 REFERENCES
 - A. ASTM D2370 Standard Test Method for Tensile Properties of Organic Coatings; 2016 (Reapproved 2021).
 - B. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.
 - C. NTMA (SPECS) Terrazzo Specifications; The National Terrazzo and Mosaic Association, Inc.; current edition located at www.ntma.com
- 1.03 SUBMITTALS
 - A. Product Data:
 - 1. Provide data for divider strips, control joint strips, expansion joints, and sealer.
 - Provide product data for epoxy terrazzo matrix, matrix pigments, aggregate, curing compound, <u>gourtgrout</u>, sealer, seal remover, cleaner, and include a copy of the current NTMA recommendations.
 - B. Samples: Provide the following:
 - 1. Epoxy Terrazzo: 6 x 6 inches (150 x 150 mm) in size illustrating color, chip size and variation, chip gradation, matrix color and typical divider strip to matching existing portland cement color. Provide samples for each color.
 - a. Following cleaning of existing floor, make up an initial set of range samples to color match the cement paste & aggregates in the floor.
 - b. Polish cured samples for comparison by Architect with the cleaned floor for approval.
 - 2. <u>Precast Epoxy Terrazzo: 12 inch long sample of each precast item required.</u>
 - <u>3.</u> Accessories: 6 inches (150 mm) long divider strip and control joint strip.
 - C. Cleaning and Maintenance Data: Include procedures for stain removal, stripping, and sealing.
 - D. Qualifications: Submit proof of installer and manufacturer membership in NTMA.
 - E. Shop Drawings: Indicate divider strip and control joint layout, and details of adjacent components.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with NTMA recommendations as posted at their web site at www.ntma.com.
- B. Installer Qualifications: A qualified installer who is acceptable to epoxy terrazzo manufacturer to install manufacturer's products.
 - 1. NTMA member.
 - 2. Approved by epoxy terrazzo manufacturer.
 - 3. Not less than five years experience and with at least three projects of comparable scope and complexity of at least 50 percent of total square footage of this project.

- C. Pre-installation Conference: Conduct conference at Project site. Review methods and procedures related to terrazzo including, but not limited to, the following:
 - 1. Inspect and discuss installation procedures, joint details, jobsite conditions, substrate specification, vapor barrier details and coordination with other trades.
 - 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review existing conditions that are to be matched.
 - 4. Review special terrazzo designs and patterns.
 - 5. Review dust-control procedures.
 - 6. Review plans for concrete curing and site drying to enable timely achievement of suitable slab moisture conditions in accordance with Part 3 Execution..
- D. Mock-Up: Install mock-up to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution.
 - 1. For epoxy terrazzo, install mock-up of at least 100 sq.ft. (9 sq.m) of typical flooring and base condition for each color and pattern in locations directed by Architect.
 - 2. Provide mock-up of each specified cleaning method in area approximately 4 feet by 4 feet and representing the full extent of conditions to be encountered on the project. Mock-up area shall include all terrazzo colors present in the floor. Following approval of cleaning, this area shall be used to match repair materials. Mock-up shall dry for at least 3 days prior to review.
 - 3. Perform mock-up of 2 lineal feet of crack repair.
 - 4. Perform mock-up of one patch repair.
 - 5. Perform mock-up of finishing including initial grinding, grouting, fine grinding and sealer application. Mock-up shall be used to confirm the extent of grinding and the final finish desired. Two sheens of sealer are specified and the mock-up shall determine which will be used.
 - 6. All related submittals shall be reviewed and approved prior to beginning mock-ups.
 - 7. Mock-up, if approved, may become part of the completed work if <u>undistrubed</u><u>undisturbed</u> at time of Substantial Completion.

1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Store resin materials in a dry, secure area.
- B. Maintain minimum temperature of 55 degrees F (13 degrees C).
- C. Keep products away from fire or open flame.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not install terrazzo when temperature is below 50 degrees F (10 degrees C) or above 90 degrees F (32 degrees C).
- B. Maintain temperature within specified range 24 hours before, during, and 72 hours after installation of flooring.
- C. Verify that the dew point is at least 5 deg F (-15 deg C) less than the slab and air temperature.
- D. Provide ambient lighting level of 50 ft candles (540 lx), measured at floor surface.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

- A. Refer to Section 01 60 00 Product Requirements .
- 2.02 MANUFACTURERS
 - A. Epoxy Terrazzo:
 - 1. Terrazzo & Marble Supply Companies; Terroxy Resin Systems. www.tmsupply.com.
 - 2. Master Terrazzo Technologies; Morricite Thinset Epoxy: www.masterterrazzo.com.
 - 3. General Polymers; Thin-Set Epoxy Terrazzo No. 1100: <u>www.generalpolymers.com</u>.

B. Precast Epoxy Terrazzo:

- 1. Terrazzo & Marble Supply Companies; Terroxy Resin Systems. www.tmsupply.com.
- 2. Precast Terrazzo Enterprises; Raleigh, NC 800.849.8849.
- 3. Romoco Precast Terrazzo Products; Manheim, PA 717.665.2739.

2.03 EPOXY TERRAZZO

- A. Thickness: 3/8 inch (9 mm).
- B. Custom Mix 1 to match existing:
 - 1. Matrix Color: Color to match existing Terrazzo; site visit required.
 - 2. Aggregate Size and Percentages:
 - 3. Aggregate Name 1: Match existing, site visit required.
 - a. Size: No.0
 - b. Percentage: 10%
 - 4. Aggregate Name 2: Match existing, site visit required.
 - a. Size: No. 1
 - b. Percentage: 70%
 - 5. Aggregate Name 2: Match existing, site visit required.
 - a. Size: No. 0
 - b. Percentage: 10%
 - 6. Aggregate Name 2: Match existing, site visit required.
 - a. Size: No. 0
 - b. Percentage: 10%

C. Precast Base: Same type and thickness as floors.

1. Height: 6 inch.

2. Matric and color to match adjacent terrazzo flooring.

2.04 MATERIALS

- A. Epoxy Matrix: Two component resin and epoxy hardener with mineral filler and color pigment, non-volatile, thermo-setting.
- B. Aggregate: Crushed marble, size in accordance with NTMA Plate of standard gradation and uniform coloration.

2.05 ACCESSORIES

- A. Flooring Transitions: Refer to Section 09 60 10 Flooring Transitions.
- B. Divider Strips: 1/8 inch (3 mm) x 18 guagegauge thick brass exposed top strip, brass concealed bottom strip, with anchoring features.
- C. Control Joint Strips: 1/8 inch (3 mm) x 18 gauge nominal width brass exposed top strips, brass concealed bottom strips.
- D. Flexible Epoxy Membrane: 100 percent solids for full coverage with the following properties:
 1. Tensile Strength: ASTM D2370, 68 deg F (20 deg C).; 1,500 psi (10.34 MPa).
- E. Control Joint Filler: 100 percent solids flexible, grindable epoxy joint filler in color selected by Architect to match or complement terrazzo system.
- F. Cleaner: Neutralizing liquid type, pH of 7.
- G. Sealer: Medium gloss acrylic sealer, low viscosity, clear acrylic finish.

PART 3 EXECUTION

- 3.01 EXAMINATION
 - A. Verify that sub-floor surfaces are smooth and flat and are ready to receive terrazzo.
 - B. Verify that wall surfaces are smooth and flat .

- C. Verify that sub-floor surfaces are dust-free, and free of substances which would impair bonding of materials to sub-floor surfaces.
- D. Verify that wood sub-floors have 12 percent maximum moisture content.
- E. Examine substrate and areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions, including levelness tolerances, have been corrected. Examine areas to receive terrazzo for:
 - 1. Defects in existing work that affect proper execution of terrazzo work.
- F. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION FOR NEW EPOXY TERRAZZO

- A. Clean substrate of foreign matter.
- B. Prepare concrete substrate to open surface pores by means of vacuum shotblasting or with a terrazzo grinder, dry with coarse diamond stones with a vacuum unit. Achieve a CSPD-CSP5 profile according to International Concrete Repair Institute Guideline No. 03732. Remove contaminating or bond breaking substances including but not limited to dust, laitance, curing compounds, coatings, sealers, oil, and grease. Chemically remove oil or grease not removed by vacuum blasting. Remove spalled or deteriorated concrete by scabbling or chipping hammers. Acid etching is not acceptable.
- C. Repair or level damaged concrete with epoxy fill mortar. Latex fills or self-leveling underlayments are not acceptable.
- D. Cracks and non-expansion joints greater than 1/16 inch (1.5 mm) wide after surface preparation shall be prepared until sound.

3.03 PREPARATION FOR EXISTING CEMENTIOUS TERRAZZO RESTORATION

- A. Existing terrazzo floors and base that are to remain as an exposed finish are to be fully stripped, grinded, grouted, polished and sealed with water base acrylic sealer.
- B. Cover and protect all adjacent finished surfaces during restoration process.
- C. Remove all debris.
- D. Remove existing patches in terrazzo surfaces.
- E. Remove remnants of utilities stubbed through floor. Cut old utilities below concrete floor slab.
- F. Repair or level damaged concrete with epoxy fill mortar. Latex fills or self-leveling underlayments are not acceptable.
- G. Verify that sub-floor surfaces are dust-free and free of substances which would impair bonding of materials to sub-floor surfaces.
- H. Verify that required floor-mounted utilities are in correct location.
- I. Perform a thorough examination of the existing conditions. Perform any necessary tests on an inconspicuous surface to determine the current conditions and appropriate steps and materials necessary for stripping terrazzo surfaces.
- J. Contractor shall strip surface of all topical coatings and treatments on floor.
- K. Strip existing sealers and coatings from floor:
 - 1. Apply seal remover with a low pressure spray and let stand for five to ten minutes. Scrub surface with a stiff bristle brush. Work in areas no more than four feet wide to insure that the applicator is always standing on a dry floor.
 - 2. Using a low pressure tank sprayer, apply a mist of water over the cleaner already on the floor.
 - 3. Pick up all remaining residues with a wet vac.
 - 4. Using a power scrubber with a scrub brush attachment, scrub the floor until all coating material has been removed.
 - 5. Pick up all liquid residues with a wet vac.

- 6. Thoroughly rinse the surface with clean, clear water.
- 7. Pick up all remaining liquid residues with a wet vac and allow to dry.
- L. If floor is not fully clean following stripping, clean using the specified Cleaner.
 - 1. Dilute cleaner per manufacturer's instructions.
 - 2. Pre-wet area to be cleaned.
 - 3. Apply cleaning solution with floor scrub brushes or low pressure spray.
 - 4. Let stand one to ten minutes based on mock-up results. Gently scrub heavily soiled areas. Do not allow cleaner to dry on the surface. If drying occurs, lightly wet surfaces with fresh water and reapply the cleaner in a gentle scrubbing manner.
 - 5. Thoroughly rinse the surface with clean, clear water.
 - 6. Pick up all remaining liquid residues with a wet vac and allow to dry.
 - 7. Repeat process if needed to thoroughly clean surface.
- M. Patching of holes:
 - 1. Surface Preparation:
 - a. With a power saw or hand tools, cut a vertical perimeter wall around the area to be patched. If the patch is smaller than an inch square, slightly undercut this edge.
 - b. Clean surface of debris. Saturate void with water to prevent quick surface drying. Ensure that water penetrates into the surface in order to achieve a proper bond. Clean surfaces until any obstructing material has been removed.
- N. Repair of small cracks:
 - 1. Clean cracks by mechanical means (metal dental pick or small "dremel" tooling) to remove dirt, debris, and sealers. Do not rout out or widen the crack.
 - 2. Fill cracks with grout to match the existing adjacent matrix, using mixture composition from approved mock-up.
 - 3. Allow repair to cure.
- O. Fill any large voids with matching terrazzo mix. Grout all pinholes, matrix voids, cracks, and fissures with matching epoxy colored resin or clear resin.
- P. Allow 24 hours for resin and grout to cure.
- Q. Polish the entire floor as specified in finishing.
- 3.04 GENERAL INSTALLATION REQUIREMENTS
 - A. Comply with NTMA's written recommendations for terrazzo and accessory installation.
 - B. Place, rough grind, grout, cure grout, fine grind, and finish terrazzo according to manufacturer's written instructions and NTMA's "Guide Specification for Epoxy Terrazzo."
 - C. Ensure that matrix components and fluids from grinding operations do not stain terrazzo by reacting with divider and control-joint strips.
 - D. Delay fine grinding until heavy trade work is complete and construction traffic through area is restricted.
- 3.05 PREPARATION FOR EPOXY TERRAZZO INSTALLATION WITH CRACK DETAILING
 - A. Divider and Accessory Strips: Install in locations indicated in adhesive setting bed without voids below strips.
 - B. Control-Joint Strips: Install back to back directly over concrete control and now-doweled construction joints leaving a space appropriate for anticipated movement- typically 1/4 inch (6 mm) to 3/8 inch (10 mm). Fill gap between control joints with joint filler.
 - C. Cracks and Non-Expansion Joints:
 - 1. Type 1 Hairline cracks shall receive detail coat of epoxy primer with 6 inches (150 mm) fiberglass tape.
 - 2. Type 2 Fill cracks greater than hairline but less than 1/16 inch (1.5 mm) wide after surface preparation with neat, epoxy membrane. Place detail coat of membrane over

crack and embed 12 inches (305 mm) fiberglass cloth. Lightly abrade or solvent wipe treated cracks prior to applying primer.

- 3. Type 3 Fill cracks greater than 1/16 inch (1.5 mm) with flexible epoxy membrane. Place 25 30 mils (0.63 0.76 mm) detail coat so that membrane extends at least 9 to 12 inches (230 to 305 mm) on each side of crack or joint. After membrane has leveled, lay precut membrane fabric into wet membrane. Smooth cloth with a flat steel trowel, allowing cloth to be encapsulated but remain exposed on the surface of membrane. Lightly abrade, or solvent wipe, treated cracks prior to applying primer. Allow in base bid for above crack detailing as follows: 5 percent of lineal footage of total project square footage for combined Type 1 & 2, and 3 percent of lineal footage of Type 3.
- D. Primer: Apply epoxy primer evenly over prepared substrate, cracks and non-expansion joints at the rate of 200 300 sq.ft/gal (5 7.3 sq.m/l) for normal concrete, to thoroughly wet surface, but avoiding ponding the material. Highly porous concrete may require additional material.
- 3.06 APPLICATION TERRAZZO
 - A. Mix terrazzo binder with chips and fillers in ratios as approved by manufacturer.
 - B. Trowel apply terrazzo mixture over epoxy primer to provide smooth seamless surface at a minimum of 3/8 inch (10 mm) thick. Allow cure per manufacturer's recommendations prior to grinding operations.
 - C. Flush Vertical Base: Bond topping to wall.
- 3.07 FINISHING
 - A. Finish terrazzo to NTMA requirements.
 - B. Rough Grinding: Grind with 24 or finer grit stones or with comparable diamond plates.
 - C. Intermediate Grinding: Follow initial grind with 80 or finer grit stones.
 - D. Grouting:
 - 1. Cleanse floor with clean water and rinse thoroughly.
 - 2. Remove excess rinse water by wet vacuum and machine until completely dry.
 - 3. Apply epoxy grout to fill voids.
 - E. Fine Grinding: Grind with 120 grit stones until all grout is removed from surface. Repeat rough grinding, grout coat, and fine grinding if large voids exist after initial fine grinding. Produce surface with a minimum of 70 percent aggregate exposure.
 - F. Hand grind base and cove similarly.
 - G. Remove and replace terrazzo areas that evidence lack of bond with substrate. Cut out terrazzo areas in panels defined by strips and replace to match adjacent terrazzo.
- 3.08 INSTALLATION TOLERANCES
 - A. Maximum Variation from Flat Surface: 1/8 inch in 10 feet (3 mm in one m).
 - B. Maximum Variation from Level (Except Surfaces Sloping to Drain): 1/8 inch (3 mm).
 - C. All patches and crack repairs shall be smooth and aligned with edges of adjacent existing terrazzo.
- 3.09 CLEANING
 - A. Scrub and clean terrazzo surfaces with cleaner in accordance with manufacturer's instructions. Let dry.
 - B. Immediately after terrazzo has dried, apply sealer in accordance with manufacturer's instructions.
 - C. Seal and polish surfaces, in accordance with manufacturer's instructions.

3.10 PROTECTION OF FINISHED WORK

A. Do not permit construction traffic over finished terrazzo surfaces.

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 09 05 61 Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.
- C. Section 09 05 61 Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

1.03 REFERENCE STANDARDS

- A. ASTM D2859 Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2016 (Reapproved 2021).
- B. CRI 104 Standard for Installation of Commercial Carpet; 2015.

1.04 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 and direction of carpet pile.
- D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- 1.05 QUALITY ASSURANCE
 - A. Installer Qualifications: Company specializing in installing carpet tile with minimum five years documented experience and approved by carpet tile manufacturer.

1.06 FIELD CONDITIONS

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

1.07 EXTRA MATERIALS

A. Provide 5 percent of installed tile carpet product of each type and color specified.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Color selections listed are based on grouped specification sections Basis of Design. Refer to Section 01 30 00 for grouped specifications. If another acceptable manufacturer within the listing is provided in lieu of Basis of Design this could prompt color selections being required to be reviewed and reselected with the same style, line, and series of listed manufacturer product.
- B. Tile Carpeting for Offices (096813.CT1):
 - 1. BASIS OF DESIGN: Shaw Contract: www.shawcontract.com.
 - a. Product/Style: In Tune 5T496
 - b. Color: Merge 50518
 - c. Size: 9x36
 - d. Installation Pattern: Ashlar
 - e. Tufted Weight: 17oz.
 - f. Construction: Multi-level Pattern Loop

- g. Fiber: Ecosolution Q Dyed Nylon
- h. Dye Method: 100% Solution Dyed
- i. Protective Treatments: SSP Shaw Soil Protection.
- j. Representative Contact: Michelle Parrish, michelle.parrish@shawcontract.com, 919.609.9033 c
- 2. Other acceptable manufacturers:
 - a. Mannington Commercial: www.manningtoncommercial.com#sle.
 - 1) Product/Style: Summit
 - 2) Color: Custom Color; coordinate with architect/designer on yarn colors and percentages.
 - 3) Size: 12"x48"
 - 4) Representative Contact: Joyce Cavin, Joyce.cavin@Mannington.com, 919.538.1800 c
 - b. Mohawk Group: www.mohawkgroup.com/#sle.
 - 1) Product/Style: Distressed Twill
 - 2) Color: Custom Color; coordinate with architect/designer on yarn colors and percentages.
 - 3) Size: 12"x36"
 - 4) Representative Contact: Lori Zeto, lori_zeto@mohawkind.com, 919.302.6652 c
- C. Tile Carpeting for Huddle / Meeting Rooms (096813.CT2):
 - 1. BASIS OF DESIGN: Mohawk Group: www.mohawkgrop.com.
 - a. Product/Style: Biotope
 - b. Color: Morel 978
 - c. Size: 12x36
 - d. Installation Pattern: Ashlar
 - e. Tufted Weight: 23oz.
 - f. Construction: Tufted
 - g. Fiber: Duracolor Tricor Premium Nylon
 - h. Dye Method: 100% Solution Dyed
 - i. Representative Contact: Lori Zeto, lori_zeto@mohawkind.com, 919.302.6652 c
 - 2. Other acceptable manufacturers:
 - a. Bentley Mills: www.bentleymills.com.
 - 1) Product/Style: Redacted 8RF23
 - 2) Color: Document 801532
 - 3) Size: 18x36
 - 4) Representative Contact: Christy Bennett, christy.bennett@bentleymills.com, 336.676.2935 c
 - b. Shaw Contract: www.shawcontract.com
 - 1) Product/Style: Gather, Linen Tile
 - 2) Color: Custom Color to match basis of design; coordinate with architect/designer on yarn colors and percentages.
 - 3) Size: 18"x36"
 - 4) Representative Contact: Michelle Parrish, michelle.parrish@shawcontract.com, 919.609.9033 c
- D. Tile Carpeting for Classrooms:
 - 1. BASIS OF DESIGN: J&J Flooring: https://www.jjflooringgroup.com/ (096813.CT3; field)
 - a. Product/Style: Kinetex, Z Factor
 - b. Color: Analysis
 - c. Size: 24x24
 - d. Installation Pattern: Ashlar
 - e. Representative Contact: Tim Baucom, tim.baucom@jjflooring.com, 919.412.2180 c

b.

- 2. BASIS OF DESIGN: J&J Flooring: https://www.jjflooringgroup.com/ (096813.CT4; teaching zone)
 - a. Product/Style: Kinetex, Z Factor
 - b. Color: Control
 - c. Size: 24x24
 - d. Installation Pattern: Ashlar
 - e. Representative Contact: Tim Baucom, tim.baucom@jjflooring.com, 919.412.2180 c
- 3. Other acceptable manufacturers:
 - a. EF Contract: (field; 096813.CT3)
 - 1) Product/Style: Kinetex, Intrigue
 - 2) Color: to be selected by architect/designer from manufacturers full offerings.
 - 3) Size: 24x24
 - 4) Installation Pattern: Ashlar
 - 5) Representative Contact: King Bostrom, king@kingbostrom.com, 919.606.6213 c
 - EF Contract: (teaching zone; 096813.CT4)
 - 1) Product/Style: Kinetex, Vestige
 - 2) Color: to be selected by architect/designer from manufacturers full offerings.
 - 3) Size: 24x24
 - 4) Installation Pattern: Ashlar
 - 5) Representative Contact: King Bostrom, king@kingbostrom.com, 919.606.6213 c
- E. Tile Carpeting for Elevator (096813.CT5):
 - 1. BASIS OF DESIGN: Mohawk Group: www.mohawkgroup.com.
 - a. Product/Style: Tuff Stuff II First Step II
 - b. Color: 989 Obsidian
 - c. Size: 24"x24"
 - d. Installation Pattern: Ashlar
 - e. Tufted Weight: 38oz.
 - f. Construction: Tufted
 - g. Fiber: Duracolor Premium Nylon
 - h. Dye Method: 100% Solution Dyed
 - i. Representative Contact: Lori Zeto, lori_zeto@mohawkind.com, 919.302.6652 c
 - 2. Other acceptable manufacturers:
 - a. Shaw Contract: www.shawcontract.com
 - 1) Product/Style: Welcome II
 - 2) Color: Ebony
 - 3) Size: 24"x24"
 - 4) Representative Contact: Michelle Parrish, michelle.parrish@shawcontract.com, 919.609.9033 c
 - b. Mannington Commercial: www.manningtoncommercial.com#sle.
 - 1) Product/Style: Ruffian II
 - 2) Color: Ebony Earth
 - 3) Size: 24"x24"
 - 4) Representative Contact: Joyce Cavin, Joyce.cavin@Mannington.com, 919.538.1800 c
 - c. Bentley Mills: www.bentleymills.com
 - 1) Product/Style: Rough Idea Shear
 - 2) Color: Shape
 - 3) Size: 24"x24"
 - 4) Installation Pattern: Ashlar
 - 5) Representative Contact: Christy Bennett, christy.bennett@bentleymills.com, 336.676.2935 c

2.02 ACCESSORIES

- A. Edge Strips: As specified in Section 09 60 10 Flooring Transitions.
- B. Edge Strips: Embossed aluminum, _____ color.
- 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.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
- C. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Remove existing carpet tile.
- B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- C. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.
- D. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- E. Vacuum clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of subfloor 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. Locate change of color or pattern between rooms under door centerline.
- G. Fully adhere carpet tile to substrate.
- H. Trim carpet tile neatly at walls and around interruptions.
- I. 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.

SECTION 09 91 00 - PAINTING

PART 1 GENERAL

- 1.01 SECTION INCLUDES
 - A. Surface preparation.
 - B. Field application of paints.
 - C. Paints and Coatings on Interior Substrates.
 - 1. Concrete walls.
 - 2. Plaster.
 - 3. Concrete masonry units.
 - 4. Gypsum board.
 - 5. Gypsum board ceilings.
 - 6. Wood trim, painted.
 - 7. Telephone and electrical panel backers.
 - 8. Ferrous Metals
 - D. Paints and coatings on previously painted surfaces.
 - E. See Schedules at end of this Section.

1.02 REFERENCES

- A. ASTM D16 Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2019.
- B. ASTM D4214 Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; 2007 (Reapproved 2015).
- C. ASTM D4258 Standard Practice for Surface Cleaning Concrete for Coating; 2005 (Reapproved 2017).
- D. ASTM D523 Standard Test Method for Specular Gloss; 2014 (Reapproved 2018).
- E. SSPC-SP 3 Power Tool Cleaning; 2018.
- 1.03 DEFINITIONS
 - A. Conform to ASTM D16 for interpretation of terms used in this section.
 - B. Gloss Ranges: Tested in accordance with ASTM D523.
 - 1. Flat refers to a lusterless or matte finish with a gloss range between 0 and 5 when measured at a 60-degree meter.
 - 2. Eggshell refers to low-sheen finish with a gloss range between 5 and 20 when measured at a 60-degree meter.
 - 3. Satin refers to low-to-medium-sheen finish with gloss range between 15 and 35 when measured at a 60-degree meter.
 - 4. Semi-gloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
 - 5. Gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.

1.04 SUBMITTALS

- A. Product Data: Provide data on all finishing products including:
 - 1. Manufacturer name.
 - 2. Product Type.
 - 3. Product Name.
 - 4. Product Number.
 - 5. Color.
- B. Samples:

1. Submit two painted samples, illustrating each combination of color and sheen and textures with specified coats cascaded. Submit on hardboard unless otherwise indicated, 8x11 inch (203.2x279.4 mm) in size.

1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing. Information shall be legible.
- C. Use of off-brand containers or mixing buckets will not be allowed on the site.
- D. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions. Protect from freezing.

1.06 PROJECT CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Application Temperatures for Waterborne Paints: Minimum 45 degrees F (7 degrees C) for interiors; minimum 50 degrees F (10 degrees C) for exterior; maximum 90 degrees F (32 degrees C), unless required otherwise by manufacturer's instructions. Maintain interior temperatures until paint is completely dry and cured.
- C. Application Temperatures for Solvent Thinned Paints: Minimum 50 degrees F (10 degrees C) for interiors and exterior; maximum 95 degrees F (35 degrees C), unless required otherwise by manufacturer's instructions. Maintain interior temperatures until paint is completely dry and cured.
- D. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.
- E. Ventilation: Ventilate affected areas during paint application. Exhaust solvent vapors outdoors, away from air intakes and people.

1.07 EXTRA MATERIALS

- A. Supply 1 gallon (4 L) of each color, type, and surface texture of topcoat; store where directed.
- B. Label each container with color, type, and texture in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 VOLATILE ORGANIC COMPOUNDS:

- A. Provide interior paints and coatings complying with Green Seal Standard GS-11 Paints, First Edition, May 20, 1993, for VOC content limits as follows:
 - 1. Non-Flat: 150g/l.
 - 2. Flat 50 g/l.
- B. Provide anti-corrosive and anti-rust paints applied to interior ferrous metal substrates complying with Green Seal Standard GC-03, Anti-Corrosive Paints, Second Edition, January 7, 1997, for VOC content limits as follows:
 - 1. Flat: 250 g/l
 - 2. Semi-gloss: 250 g/l.
 - 3. Gloss: 250 g/l.
- C. Provide clear wood finishes, floor coatings, stains, sealers, and shellacs applied to interior elements complying with South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004 for VOC content limits as follows:
 - 1. Clear wood finishes:
 - a. Varnish: 350 g/l.
 - b. Lacquer: 550 g/l.

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- 2. Floor Coatings: 100 g/l.
- 3. Sealers:
 - a. Waterproofing Sealers: 250 g/l.
 - b. Sanding Sealers: 275 g/l.
 - c. All Other Sealers: 200 g/l.
- 4. Shellac:
 - a. Clear: 730 g/l.
 - b. Pigmented: 550 g/l.
- 5. Stains: 250 g/l.

2.02 MANUFACTURERS - PAINTS

- A. Benjamin Moore & Co: www.benjaminmoore.com.
- B. PPG Paints, Inc.: www.ppgpaints.com.
- C. The Sherwin-Williams Co: www.sherwin-williams.com.
- 2.03 PAINTS AND COATINGS GENERAL
 - A. Do not use insecticides in paint materials
- 2.04 ACCESSORY MATERIALS
 - A. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
 - B. Patching Material: Latex filler.
 - C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

- 3.01 EXAMINATION
 - A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
 - B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.02 PREPARATION

- A. General:
 - 1. Start of the surface preparation or paint materials application will be construed as applicator's acceptance of the surfaces as satisfactory for application of materials.
 - 2. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
 - 3. Surfaces: Correct defects and clean surfaces of substances which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
 - 4. Marks: Seal with sealer compatible with primer and finish coats marks which may bleed through surface finishes.
 - 5. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
 - 6. Reduce the gloss of glossy surfaces to be painted.
 - 7. Fill nail holes, cracks, chips, spalls, and similar damaged areas to match adjacent undamaged areas.
- B. Paint Removal:
 - 1. Remove flaking, cracking, blistering, peeling or otherwise deteriorated paint and paint failing adhesion testing, by scraping with hand scrapers.
 - 2. After scraping, remove large areas of paint on architectural details using sanders, heat guns or heat plates, or chemical paint removers. Do not use flame heat devices.
 - 3. When chemical strippers are used, neutralize substrate after stripping to a pH of 5 to 8.5.
 - 4. Remove paint to bare substrate or first sound paint layer.

- 5. Paint removal shall not damage or mar the substrate material.
- 6. After paint removal, featheredge and sand edges smooth of remaining chipped paint.
- C. Previously Painted Surfaces:
 - 1. Thoroughly remove all grease, dirt, dust or other foreign matter.
 - 2. Remove coatings that are blistering, cracking, flaking, peeling, or otherwise deteriorating.
 - 3. Roughen slick surfaces.
 - 4. Repair damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls with suitable material to match adjacent undamaged areas.
 - 5. Feather edge edges of chipped paint, and sand smooth.
 - 6. Clean metal surfaces in accordance with SSPC requirements using solvent, mechanical, or chemical cleaning methods to provide surfaces suitable for painting. Preparation of ferrous surfaces if not specified shall as recommended by coating manufacturer, but in no case less than SSPC-SP 3.
 - 7. Chalk shall be removed so that when tested in accordance with ASTM D4214, the chalk resistance rating is no less than 8.
- D. Concrete Surfaces to be Painted:
 - 1. Remove dirt, loose mortar, scale, salt or alkali powder, glaze, efflorescence, laitance, and other foreign matter.
 - 2. Remove oil and grease with a solution of trisodium phosphate; rinse well and allow to dry.
 - 3. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
 - 4. Detergent wash surfaces to receive paint, in accordance with ASTM D4258. Rinse with water and allow to dry.
 - 5. Allow surfaces to dry at lease 30 days before applying paint materials.
 - 6. Fill concrete surface voids. Dried filler shall be uniform and free of pinholes. Do not apply filler over joint sealers.
- E. Concrete Unit Masonry Surfaces to be Painted:
 - 1. Remove dirt, efflorescence, laitance, and other foreign matter.
 - 2. Remove oil and grease with a solution of trisodium phosphate; rinse well and allow to dry.
 - 3. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
 - 4. Allow surfaces to dry at lease 30 days before applying paint materials.
- F. Stucco and Plaster Surfaces to be Painted:
 - 1. Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces.
 - 2. Wash and neutralize high alkali surfaces.
 - 3. Allow to age minimum 30 days before painting.
 - 4. Clean of all loose matter that may affect paint application.
- G. Metal Piping: The semitransparent film applied at the mill to some piping and tubing is not considered a shop applied primer. Where indicated to be painted, overcoat with the specified ferrous metal primer.
- H. Gypsum Board Surfaces to be Painted:
 - 1. Fill minor defects with filler compound. Spot prime defects after repair.
 - 2. Remove loose dust and dirt by brushing with a soft brush, rubbing with a cloth, or vacuum cleaning. A damp cloth may be used when water based paint materials are to be applied. Allow to dry.
- I. Wood:
 - 1. Wipe off dust and grit prior to priming.
 - 2. Scrape and clean small, dry seasoned knots, then apply a thin coat of commercial knot sealer, before application of the priming coat.

- 3. Scrape off pitch on large, open, unseasoned knots and all other beads or streaks of pitch and sap. If the pitch is still soft, remove with mineral spirits or turpentine, and thinly coat the resinous area with knot sealer.
- 4. Back prime concealed surfaces before installation.
- 5. Sand between coats.
- 6. Set finishing nails, fill holes, and prime surface imperfections. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler, colored to match the finish coat if natural finish is required, allowed to dry, and sand smooth.
- J. Insulated Coverings to be Painted: Remove dirt, grease, and oil from canvas and cotton.

3.03 APPLICATION

- A. Unless otherwise specified or recommended by the paint manufacturer, paint may be applied by brush, roller, or spray. Rollers for applying paints and enamels shall be of a type designed for the coating to be applied and the surface to be coated.
 - 1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 - 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 - 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- B. Thinning:
 - 1. When thinning is required to suit surface, temperature, weather conditions, or application methods, paints may be thinned in accordance with the manufacturer's directions.
 - 2. The use of thinner shall not relieve the Contractor from obtaining complete hiding, full film thickness, or required gloss. Thinning shall not cause the paint to exceed limits on volatile organic compounds.
- C. Do not mix paint materials of different manufacturers.
- D. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- E. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Minimum Coating Thickness:
 - 1. Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness as recommended by manufacturer. Provide total dry film thickness of the entire system as recommended by manufacturer.
 - 2. Strip paint to ensure that all edges, corners, crevices, welds, and rivets receive a film thickness equal to that of adjacent painted surfaces.
 - 3. Apply each coat of paint so dry film shall be of uniform thickness and free from runs, drops, ridges, waves, pinholes or other voids, laps, brush marks, and variations in color, texture, and finish. Hiding shall be complete. If application thickness or color and opacity of the paint do not achieve complete hiding, apply additional coat(s) to achieve complete hiding without change in contract price.
- H. Apply two coats of primer or sealer to surfaces of wood doors, including top and bottom edges, which are cut.
- I. Back prime and seal ends of interior panel backer boards specified to be finished.

3.04 INTERIOR WALL AND CEILING JOINTS

- A. Sealant-Type Expansion Joints in Gypsum Wallboard:
 - 1. Ensure that backer rod and joint sealant (specified in Division 07) are completed and cured prior to application of paint.
- B. Control and Expansion Joints in Concrete and CMU:

- 1. Apply coatings to the joint face (approximately 1/2 inch (13 mm) deep) and allow to cure before installing backer and joint sealant specified in Division 07.
- C. Fillet Joints between Hollow Metal Door Frames and Adjacent Walls (and similar locations):
 1. Ensure that backer rod and joint sealant (specified in Division 07) are completed and
 - cured prior to application of paint.

3.05 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Refer to respective Sections in Divisions 21, 22, 23, and 26 for schedule of color coding of equipment, duct work, piping, and conduit.
- B. Paint shop-primed equipment, where indicated.
- C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- D. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.06 REPAIR AND RESTORATION

- A. Reinstall electrical plates, hardware, light fixture trim, escutcheons, and fittings that were removed prior to preparing surfaces or finishing.
- B. Restore to original condition surfaces damaged or marred by painting materials application.
- C. Remove, refinish, or repaint work not complying with approved samples and other specified requirements.
- 3.07 PROTECTION AND CLEANING
 - A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.
- 3.08 SCHEDULE SURFACES TO BE FINISHED
 - A. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically noted.
 - 2. UL, FMG, or other code required labels; fire rating labels; and equipment name, identification, performance rating, serial number and capacity labels.
 - 3. Stainless steel items.
 - B. Paint the surfaces described in Schedules at the end of this Section and as follows:
 - 1. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of permanently fixed equipment or furniture, paint surfaces behind permanently fixed equipment or furniture with primer only.
 - 2. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 - 3. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
 - 4. Paint both sides and edges of plywood panel backers for electrical and telephone equipment before installing equipment.

3.09 INTERIOR PRIMERS, SEALERS, AND FILLERS

- A. Interior Acrylic Primer for Concrete and Plaster:
 - 1. Benjamin Moore & Co.; 608 Ultra Spec Masonry Interior/Exterior 100% Acrylic Sealer (46 g/l).
 - 2. PPG Paints; 4-603XI PERMA-CRETE Interior/Exterior Alkali Resistant Primer. (88 g/l)
 - The Sherwin-Williams Co.; A24W300 Loxon Concrete & Masonry Primer/Sealer. (< 50 g/l)
- B. Interior Block Filler for Concrete Masonry Units:
 - 1. Benjamin Moore & Co.; 571 Ultra Spec Hi-Build Masonry Block Filler. (45 g/l)
 - 2. PPG Paints; 6-7 Speedhide INT/EXT Latex Masonry Block Filler. (18 g/l)

- 3. The Sherwin-Williams Co.; B25W25 PrepRite Acrylic Latex Block Filler. (42 g/l)
- C. Interior Acrylic Primer for Gypsum Board:
 - 1. Benjamin Moore & Co.; N534 Ultra Spec 500 Interior Latex Primer. (0 g/l)
 - 2. PPG Paints; 6-4900XI Speedhide Zero VOC Interior Primer. (0 g/l)
 - 3. The Sherwin-Williams Co.; B28W02600 ProMar 200 Zero VOC Interior Latex Primer. (0 g/l)
- D. Interior Acrylic Primer for Wood:
 - 1. Benjamin Moore & Co.; 046 Fresh Start High-Hiding All Purpose Primer. (44 g/l)
 - 2. PPG Paints; 17-921XI Seal-Grip Acrylic Latex Stain Blocking Primer. (84 g/l)
 - 3. The Sherwin-Williams Co.; PrepRite ProBlock Latex Primer, B51 Series. (96 g/l)
- E. Interior Acrylic Primer for Ferrous Metal:
 - 1. Benjamin Moore & Co.; HP04 Ultra Spec HP Acrylic Metal Primer. (48 g/l)
 - 2. PPG Paints; 90-712 Pitt-Tech Primer/Finish DTM Industrial Enamel. (123 g/l)
 - 3. The Sherwin-Williams Co.; B66W1 Direct To Metal Acrylic Primer & Finish. (138 g/l)

3.10 INTERIOR FINISH COATS

- A. Flat Acrylic Finish Coats for Concrete, Plaster, Concrete Masonry Units, Gypsum Board, Wood:
 - 1. Benjamin Moore & Co.; N536 Ultra Spec 500 Interior Flat. (0 g/l)
 - 2. PPG Paints; 6-4110XI Speedhide Zero VOC Flat Interior Latex. (0 g/l)
 - 3. The Sherwin-Williams Co.; ProMar 200 Zero VOC Flat, B30-2600. (0 g/l)
- B. Eggshell Acrylic Finish Coats for Concrete, Plaster, Concrete Masonry Units, Gypsum Board, Wood:
 - 1. Benjamin Moore & Co.; N538 Ultra Spec 500 Interior Eggshell. (0 g/l)
 - 2. PPG Paints; 6-4310XI Speedhide Zero VOC Interior Eggshell Latex. (0 g/l)
 - 3. The Sherwin-Williams Co.; ProMar 200 Zero VOC Eg-Shel, B20-2600. (0 g/l)
- C. Semi-Gloss Acrylic Finish Coats for Concrete, Plaster, Concrete Masonry Units, Gypsum Board, Wood:
 - 1. Benjamin Moore & Co.; N539 Ultra Spec 500 Interior Semi-Gloss. (0 g/l)
 - 2. PPG Paints; 6-4510XO Speedhide Zero VOC Interior Semi-Gloss Latex. (0 g/l)
 - 3. The Sherwin Williams Co.; ProMar 200 Zero VOC Semi-Gloss B31-2600. (0 g/l)
- D. Semi-Gloss Acrylic Finish Coats for Ferrous Metal:
 - 1. Benjamin Moore & Co.; HP29 Ultra Spec D.T.M. Acrylic Semi-Gloss. (147 g/l)
 - 2. PPG Paints; 90-474 Pitt-Tech Int/Ext Satin DTM Industrial Enamel. (227 g/l)
 - 3. The Sherwin-Williams Co.; B66 Pro Industrial Acrylic Coating, Semi- Gloss. (0 g/l)

3.11 PRIMER, INTERMEDIATE, AND TOP COAT COLORS

- A. Except where coating materials cannot be tinted, tint each successive (primer, intermediate, top) coat of paint a sufficiently contrasting color to facilitate identification of complete coating coverage. The preceding coat may be in the same color family, but shall be noticeably different. Provide additional top coats without change in Contract Price if necessary to achieve complete hiding and uniform sheen.
- B. Top coat colors are indicated on the drawings and schedules. For approval of actual colors, see sample and mock-up requirements specified above.
- C. Top coat colors of manufacturers listed on the Finish Schedule (or elsewhere) indicate the required color, only, and do not indicate the required brand name product, which shall be as specified in above.
- D. Top Coat Colors:
 - 1. Before submitting samples for approval and before purchasing project quantities of material, confirm with the Architect that colors have not changed based on awarded flooring, tile, and countertop finishes.

- 2. Match the following colors:
 - a. Paint Color 1 (PC1); Match Sherwin Williams Snowbound SW 7004 (field).
 - b. Paint Color 2 (PC2); Architect/Designer to select color. (Accent)
- 3.12 PAINT SYSTEMS INTERIOR
 - A. Concrete and Plaster:
 - 1. First Coat: Acrylic primer.
 - 2. Two Top Coats: Eggshell acrylic finish.
 - B. Concrete Masonry Units:
 - 1. First Coat: Acrylic Block Filler.
 - 2. Two Top Coats: Eggshell acrylic finish.
 - C. Gypsum Board:
 - 1. First Coat: Acrylic primer.
 - 2. Two Top Coats: Eggshell acrylic finish.
 - D. Gypsum Board Ceilings:
 - 1. First Coat: Acrylic primer.
 - 2. Two Top Coats: Flat latex paint finish.
 - E. Wood Trim, and Panel Backers, Painted:
 - 1. First Coat: Primer.
 - 2. Two Top Coats: Semi-gloss acrylic finish.

F. Ferrous Metals:

- 1. First Coat: Primer.
- 2. Two Top Coats: Semi-gloss acrylic finish.

SECTION 10 14 23 - PANEL SIGNAGE

PART 1 GENERAL

- 1.01 SECTION INCLUDES
 - A. Panel signage.
- 1.02 REFERENCE STANDARDS
 - A. ADA Standards 2010 ADA Standards for Accessible Design; 2010.
 - B. ICC A117.1 Accessible and Usable Buildings and Facilities; 2017.
- 1.03 SUBMITTALS
 - A. See Section 01 30 00 Administrative Requirements for submittal procedures.
 - B. Product Data: Manufacturer's product literature for each type of panel sign, indicating styles, font, foreground and background colors, locations, and overall dimensions of each sign.
 - C. Shop Drawings:
 - 1. Include dimensions, locations, elevations, materials, text and graphic layout, attachment details, and schedules.
 - 2. Schedule: Provide information sufficient to completely define each panel sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
 - a. When room numbers to appear on signs differ from those on drawings, include the room number on schedule.
 - b. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
 - c. Submit for approval by Owner through Architect prior to fabrication.
 - D. Selection Samples: Where colors, materials, and finishes are not specified, submit two sets of color selection charts or chips.
 - E. Verification Samples: Submit samples showing colors, materials, and finishes specified.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Panel Signage:
 - 1. APCO; www.apcosigns.com
 - 2. Best Sign Systems, Inc; www.bestsigns.com
 - 3. FASTSIGNS Internations, Inc; www.fastsigns.com

2.02 REGULATORY REQUIREMENTS

A. Accessibility Requirements: Comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most restrictive requirements.

2.03 PANEL SIGNAGE

- A. Panel Signage <u>A</u>:
 - 1. General: Comply with UNC Signage Standards.
 - 2. Application: Room and door signs.
 - 3. Description: Flat signs with engraved panel media, tactile characters.
 - 4. Sign Size: 4 inches by $\frac{68}{2}$ inches (100 mm by 152 mm).
 - 5. Sign Edges: Squared.
 - 6. Corners: Squared.
 - 7. Color and Font, unless otherwise indicated:

- a. Character Font: as indicated in UNC signage standards ITC Franklin Gothic LT Pro.
- b. Character Case: Upper and lower case (title case).
- c. Background Color: Pantone Black 3 at 6% color to be selected by Owner.
- d. Character Color: Pantone Black <u>3</u>Contrasting color.
- 8. Profile: Flat panel without frame in aluminum frame.
 - a. Frame Finish: Black anodized.
- 9. Tactile Letters: Raised 1/32 inch minimum.
- 10. Braille: Grade II, ADA compliant.
- 11. Material: Acrylic plastic base with applied plastic letters and braille.
- 12. One-Sided Mounting: Tape Adhesive.
- 13. Mounting on Glazing: Provide matching backer panel on opposite side of glazing.
- B. Panel Signage B:
 - 1. General: Comply with UNC Signage Standards.
 - 2. Application: Restroom door signs.
 - 3. Description: Flat signs with engraved panel media, tactile characters.
 - 4. Sign Size: 9 inches by 6 ¹/₂" inches (228 mm by 165 mm).
 - 5. Sign Edges: Squared.
 - 6. Corners: Squared.
 - 7. Color and Font, unless otherwise indicated:
 - a. Character Font: ITC Franklin Gothic LT Pro.
 - b. Character Case: Upper and lower case (title case).
 - c. Background Color: Pantone Black 3 at 6%.
 - d. Character Color: Pantone Black.
 - 8. Profile: Flat panel without frame.
 - 9. Tactile Letters: Raised 1/32 inch minimum.
 - 10. Braille: Grade II, ADA compliant.
 - 11. Material: Acrylic plastic base with applied plastic letters and braille.
 - 12. One-Sided Mounting: Tape Adhesive.
 - 13. Mounting on Glazing: Provide matching backer panel on opposite side of glazing.
 - 14. Symbols: Identify with pictograms, the names "MEN" and "WOMEN",
- C. Panel Signage C.1,C.2:
 - 1. General: Comply with UNC Signage Standards.
 - 2. Application: Restroom door signs.
 - 3. Description: Flat signs with engraved panel media, tactile characters.
 - 4. Sign Size: 9 inches by 8 inches (228 mm by 203 mm).
 - 5. Sign Edges: Squared.
 - 6. Corners: Squared.
 - 7. Color and Font, unless otherwise indicated:
 - a. Character Font: ITC Franklin Gothic LT Pro.
 - b. Character Case: Upper and lower case (title case).
 - c. Background Color: Pantone Black 3 at 6%.
 - d. Character Color: Pantone Black.
 - 8. Profile: Flat panel without frame.
 - 9. Tactile Letters: Raised 1/32 inch minimum.
 - 10. Braille: Grade II, ADA compliant.
 - 11. Material: Acrylic plastic base with applied plastic letters and braille.
 - <u>12. One-Sided Mounting: Tape Adhesive.</u>
 - 13. Mounting on Glazing: Provide matching backer panel on opposite side of glazing.
 - 14. Symbols: Identify with pictograms, stairs

SECTION 14 24 00 - ELEVATOR CAB FINISHES

- PART 1 GENERAL
- 1.01 SECTION INCLUDES

A. Alternate A2: Provide and install new elevator cab interior finishes: wall panels and flooring.

- 1.02 RELATED REQUIREMENTS
 - A. Section 09 65 00 Resilient Flooring_____
 - B. Section 09 68 16 Sheet Carpeting: Floor finish in car.
- 1.03 REFERENCE STANDARDS
- 1.04 SUBMITTALS
 - A. Shop Drawings: Include appropriate plans, elevations, sections, diagrams, and details on following items:
 - 1. Cab panels.
 - 2. Floor material layout.
 - B. Samples: Submit samples illustrating finishes in the form of product cut sheets and physical samples.

PART 2 PRODUCTS

2.01 MATERIALS

A. Carpet Flooring: See Section 09 68 16, Type CT-4-5.

2.02 CAR AND HOISTWAY ENTRANCES

2.03 CAR EQUIPMENT AND MATERIALS

- A. Elevator Car, No. 1:
 - 1. Flooring: Carpet Tile-4-<u>5</u> (09 6813.CT-4-<u>5</u>).
 - 2. Side Walls: Plastic laminate on plywood. Match 06 4100.PL1 as specified in Section 06 4100 Architectural Wood Casework & Upholstered Bench Seating.
 - 3. Rear Wall: Plastic laminate on plywood. Match 06 4100.PL1 as specified in Section 06 4100 Architectural Wood Casework & Upholstered Bench Seating.
 - 4. Existing Handrail to remain. Protect during construction and tighten any loose attachments.
 - 5. Ceiling:
 - a. Existing ceiling & lights to remain. Secure existing lights, tighten trim around lights and protect during construction.

PART 3 EXECUTION

- 3.01 CLEANING
 - A. Clean surfaces and components in accordance with manufacturers written instructions.
- 3.02 PROTECTION
 - A. Do not permit construction traffic within car after cleaning.



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Ρ2	20:2			1029 1032		P2B : 2 	3' - 0" 5' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD	STN	1 : A 1 : A	2" 2"	HM HM	
				1042 E100	PR	 P2C : 1	4' - 0" 3' - 0"	 P2C : 1	0" 3' - 0"	7' - 0" 9' - 0"	1 3/4" 1 3/4"	WD	STN	1 : A 1 : A	2" 0"	HM EXT	
				E101 E102	PR	P2C : 2 P2C : 2	2' - 9" 2' - 8"	P2C : 2	2' - 9" 0"	8' - 0" 7' - 0 1/2"	1 3/4" 1 3/4"	WD WD	STN STN	10 : A 1 : A	2" 2"	HM HM	
				E103	PR	P2C : 2	2' - 9"	P2C : 2	2' - 9"	8' - 0"	1 3/4"	WD	STN	10 : A	2"	НМ	
				Second 2000A	l Floor PR	P2B : 1	3' - 0"	P2B : 1	3' - 0"	7' - 0"	1 3/4"	WD	STN	1:A	2"	НМ	6
				2000B 2000D	PR PR	P2B : 1 P2B : 1	3' - 0" 3' - 0"	P2B : 1 P2B : 1	3' - 0" 3' - 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 1 : A	2" 2"	HM HM	9
				2000E 2004	PR	P2B : 1 	3' - 0" 5' - 5"	P2B : 1	3' - 0" 0"	7' - 0" 7' - 6"	1 3/4" 1 3/4 \$		STN	1:A 1:A	2" 2"	HM HM	
				2005 2005A		P2B : 2 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD	STN	1 : A 2 : A	2" 2"	HM HM	
				2005B 2005C		P2B : 1 P2B : 2	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 1 : A	2" 2"	HM HM	
SEE DOOR	SCHEDULE	2		2005D 2006		P2B : 1 P2B : 2	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 1 : A	2" 2"	HM HM	
				2006A 2006B		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
				2006C 2006D		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
				2007 2011		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
× □				2013 2014		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
5 S				2014A 2014B		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
				2014C 2014D		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
				2014E 2014F		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
				2015 2017		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
				2021 2022		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 1 : A	2" 2"	HM HM	
				2024 2025		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 2 : A	2" 2"	HM HM	
				2026 2026A		P2B : 2 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 1 : A	2" 2"	HM HM	
				2027 2029		P2B : 1 P2B : 2	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 1 : A	2" 2"	HM HM	
				2030 2032			4' - 0" 5' - 5"		0" 0"	7' - 0" 7' - 6"	1 3/4" 1 3/4"			1 : A 1 : A	2" 2"	HM HM	
				Third F	loor		1				1						
				3000A 3001		P2B:1 P2B:1	3' <u>- 0"</u> 5' - 0"	P2B - 1	3' - 0"	7' - 0"	1 3/4" 1 3 /4 "	WD	STN	$1 \cdot A$ 2 : A	2"	HM	
1	10A			3002 3003		P2B : 1 P2B : 1	3' - 0" 3' - 9 "	P2B : 1	3' - 0" 1 0"	7' - 0"	1 3/4" 1 3/4"	WD WD		1:A کونی ا	2" 2"	нм НМ	
				3004 3005	PR	P2B : 1 P2B : 1	<u>3</u> -0" 3'-0"	P2B : 1	<u>3 - 0"</u> 0"	7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 2 : A	2" 2"	HM HM	6
				3006 3006A		P2B : 2 P2B : 2	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 1 : A	2" 2"	HM HM	
مر ^{3/4} پر 2"				3007 3011		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
				3013 3014		P2B : 1 P2B : 2	3' - 0" 3' - 0"		0" 0"	7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2:A 1:A	2" 2"	HM HM	
	2"			3014A 3015		P2B : 2 P2B : 1	3' - 0" 3' - 0"		0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 2 : A	2"	HM HM	
				3017 3021		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 2 : A	2" 2"	HM HM	
<u> </u>				3022 3024		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1:A 1:A	2" 2"	HM HM	
	ARIES			3025 3026		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 1 : A	2" 2"	HM HM	
	>			3027 3028		P2B : 1 P2B : 1	3' - 0" 3' - 6"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	2 : A 1 : A	2" 2"	HM HM	
				3028A 3029		P2B : 1 P2B : 1	3' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD WD	STN STN	1 : A 2 : A	2" 2"	HM HM	
	5			3030 3031		 P2B : 1	4' - 0" 3' - 0"		0" 0"	7' - 0" 7' - 0"	1 3/4" 1 3/4"	WD	STN	1 : A 2 : A	2" 2"	HM HM	
				3032	PR	P2B : 1	3' - 0"	P2B : 1	3' - 0"	7' - 0"	1 3/4"	WD	STN	1 : A	2"	HM	9
	`																



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	Level	Mark	Type Mark	Height	Width	Note
<					1	
	First Floor	S101	A4	8' - 10 7/8"	3' - 2 1/2"	
	First Floor	S102	A10	8' - 10 7/8"	3' - 0"	
	First Floor	S104	A4	8' - 10 7/8"	3' - 2 1/2"	
	First Floor	S105	A1	8' - 10 7/8"	5' - 4"	
	First Floor	S106	A1	8' - 10 7/8"	5' - 4"	
	Second Floor	S201	A4	8' - 10 7/8"	3' - 2 1/2"	
	Second Floor	S202	A2	8' - 10 7/8"	6' - 0"	
	Second Floor	S203	A4	8' - 10 7/8"	3' - 2 1/2"	
,	Second Floor	S204	A1	8' - 10 7/8"	5' - 4"	
	Second Floor	S205	A1	8' - 10 7/8"	5' - 4"	
	Third Floor	S301	A8	7' - 10 3/8"	3' - 2 1/2"	
	Third Floor	S302	A8	7' - 10 3/8"	3' - 2 1/2"	
_	Third Floor	S303	A6	7' - 10 3/8"	6' - 0"	
	Third Floor	S304	A8	7' - 10 3/8"	3' - 2 1/2"	
	Third Floor	S305	A8	7' - 10 3/8"	3' - 2 1/2"	
1	Third Floor	S306	A9	7' - 10 3/8"	3' - 0"	
	Third Floor	S307	A9	7' - 10 3/8"	3' - 0"	
	Third Floor	S308	A9	7' - 10 3/8"	3' - 0"	

Window Schedule South

		Window S	Schedule North	ו	
Level	Mark	Type Mark	Height	Width	Note
First Floor	N101	A1	8' - 10 7/8"	5' - 4"	
First Floor	N102	A1	8' - 10 7/8"	5' - 4"	
First Floor	N103	A4	8' - 10 7/8"	3' - 2 1/2"	
First Floor	N105	A4	8' - 10 7/8"	3' - 2 1/2"	
Second Floor	N201	A1	8' - 10 7/8"	5' - 4"	
Second Floor	N202	A1	8' - 10 7/8"	5' - 4"	
Second Floor	N203	A4	8' - 10 7/8"	3' - 2 1/2"	
Second Floor	N204	A2	8' - 10 7/8"	6' - 0"	
Second Floor	N205	A4	8' - 10 7/8"	3' - 2 1/2"	
Third Floor	N301	A9	7' - 10 3/8"	3' - 0"	
Third Floor	N302	A9	7' - 10 3/8"	3' - 0"	
Third Floor	N303	A9	7' - 10 3/8"	3' - 0"	
Third Floor	N304	A8	7' - 10 3/8"	3' - 2 1/2"	
Third Floor	N305	A8	7' - 10 3/8"	3' - 2 1/2"	
Third Floor	N306	A6	7' - 10 3/8"	6' - 0"	
Third Floor	N307	A8	7' - 10 3/8"	3' - 2 1/2"	
Third Floor	N308	A8	7' - 10 3/8"	3' - 2 1/2"	

Window Schedule West Window Schedule East Level Mark Type Mark Height Window First Floor Window Al 8'-10.78' 5'-4" Second Floor W205 Al 8'-10.78' <th>4</th> <th></th> <th>5</th> <th></th> <th>6</th> <th>7</th> <th></th> <th>8</th> <th>3</th> <th></th> <th>9</th>	4		5		6	7		8	3		9
Window Schedule West Window Schedule East Lavel Mark Type Mark Height Width Note First Floor W101 A1 8'-10.78' 6'-4' First Floor First Floor First Floor First Floor First Floor W103 A1 8'-10.78' 6'-4' First Floor First Floor First Floor W105 A4 8'-10.78' 6'-4' First Floor W106 A4 8'-10.78' 6'-4' First Floor First Floor W106 A4 8'-10.78' 6'-4' First Floor First Floor W106 A4 8'-10.78' 6'-4' First Floor First Floor W107 A4 8'-10.78' 6'-4' First Floor First Floor W10 A4 8'-10.78' 5'-4' First Floor First Floor W10 A4 8'-10.78' 5'-4' First Floor First Floor W11 A4 8'-10.78' 5'-4' First Floor First Floor W11 A4 8'-10.78' 5'-4' Second Floor Econd Flor											
Level Mark Type Mark Height Width Note First Floor W101 A1 8: 10.785 5: 4" First Floor W102 A1 8: 10.785 5: 4" First Floor W103 A1 8: 10.785 5: 4" First Floor W104 A4 8: 10.785 5: 4" First Floor W106 A4 8: 10.785 5: 4" First Floor W106 A4 8: 10.785 5: 4" First Floor W106 A4 8: 10.785 5: 4" First Floor W104 A4 9: 10.785 5: 4" First Floor W104 A4 9: 10.785 5: 4" First Floor W115 A1 8: 10.785 5: 4" Second Floor W103			Wi	indow Schedu	le West				W	indow Sched	lule East
First Floor W101 A1 8' - 10 7/8' 5' - 4" First Floor W102 A1 8' - 10 7/8' 5' - 4" First Floor W103 A1 8' - 10 7/8' 5' - 4" First Floor W104 A4 8' - 10 7/8' 5' - 4" First Floor W105 A4 8' - 10 7/8' 5' - 4" First Floor W108 A4 8' - 10 7/8' 5' - 4'' First Floor W108 A4 8' - 10 7/8' 5' - 4'' First Floor W108 A4 8' - 10 7/8'' 5' - 4'' First Floor W108 A4 8' - 10 7/8'' 5' - 4'' First Floor W104 A4 8' - 10 7/8'' 5' - 4'' First Floor W104 A4 8' - 10 7/8'' 5' - 4'' First Floor W114 A4 8' - 10 7/8'' 5' - 4'' First Floor W116 A1 8' - 10 7/8'' 5' - 4'' First Floor W116 A1 8' - 10 7/8'' 5' - 4'' First Floor W116 A1 8' - 10 7/8'' 5' - 4''	Level	Mark	Type Mark	Height	Width	Note	Level	Mark	Type Mark	Height	Width
First Floor W102 A1 8' - 10 7/8' 5' - 4'' First Floor W103 A1 8' - 10 7/8' 5' - 4'' First Floor W103 A1 8' - 10 7/8' 5' - 4'' First Floor W106 A4 8' - 10 7/8' 5' - 4'' First Floor W107 A4 8' - 10 7/8' 5' - 4'' First Floor W107 A4 8' - 10 7/8' 5' - 4'' First Floor W108 A4 8' - 10 7/8' 5' - 4'' First Floor W108 A4 8' - 10 7/8' 5' - 4'' First Floor W112 A4 8' - 10 7/8' 5' - 4'' First Floor W112 A4 8' - 10 7/8' 5' - 4'' First Floor W112 A4 8' - 10 7/8' 5' - 4'' First Floor W113 A1 8' - 10 7/8' 5' - 4'' Second Floor W114 A1 8' - 10 7/8' 5' - 4'' Second Floor W20 A1 8' - 10 7/8' 5' - 4''	First Floor	W101	Δ1	8' - 10 7/8"	5' - 4"		First Floor	F101	A1	8' - 10 7/8"	5' - 4"
First Floor W103 A1 Ø = 10 7/8" S = 41 First Floor W104 A4 B = 10 7/8" S = 2 1/2" First Floor W106 A4 B = 10 7/8" S = 2 1/2" First Floor W106 A4 B = 10 7/8" S = 2 1/2" First Floor W108 A4 B = 10 7/8" S = 2 1/2" First Floor W10 A4 B = 10 7/8" S = 2 1/2" First Floor W110 A4 B = 10 7/8" S = 2 1/2" First Floor W111 A4 B = 10 7/8" S = 2 1/2" First Floor W113 A4 B = 10 7/8" S = 2 1/2" First Floor W113 A4 B = 10 7/8" S = 2 1/2" First Floor W113 A4 B = 10 7/8" S = 41" Second Floor W114 A4 B = 10 7/8" S = 41" Second Floor W214 A1 B = 10 7/8" S = 41" Second Floor W214 A1 B = 10 7/8" S = 41" Second Floor W214 A3 7 - 7 1/4" S = 2 1/2"	First Floor	W102	A1	8' - 10 7/8"	5' - 4"		First Floor	F102	A1	8' - 10 7/8"	5' - 4"
First Floor W104 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W105 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W107 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W108 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W108 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W108 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W110 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W111 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W112 A4 8 - 10 7/8" 5 - 4" First Floor W113 A4 8 - 10 7/8" 5 - 4" First Floor W114 A4 8 - 10 7/8" 5 - 4" Second Floor W211 A1 8 - 10 7/8" 5 - 4" Second Floor W212 A1 8 - 10 7/8" 5 - 4" Second Floor W204 A3 7 - 71/4" 3 - 2 1/2" Second Floor W204 A3 7 - 71/4" 3 - 2 1/2"	First Floor	W102	A1	8' - 10 7/8"	5' - 4"						
First Floor W106 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W106 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W108 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W108 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W108 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W110 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W110 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W111 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W113 A4 8 - 10 7/8" 9 - 2 1/2" First Floor W114 A4 8 - 10 7/8" 5 - 4" Second Floor W210 A1 8 - 10 7/8" 5 - 4" Second Floor W210 A1 8 - 10 7/8" 5 - 4" Second Floor W210 A1 8 - 10 7/8" 5 - 4" Second Floor W201 A1 8 - 10 7/8" 5 - 4" Second Floor W202 A1 8 - 10 7/8" 5 - 4" <td>First Floor</td> <td>W104</td> <td>A4</td> <td>8' - 10 7/8"</td> <td>3' - 2 1/2"</td> <td></td> <td>First Floor</td> <td>E103</td> <td>A1</td> <td>8' - 10 7/8"</td> <td>5' - 4"</td>	First Floor	W104	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E103	A1	8' - 10 7/8"	5' - 4"
First Floor W106 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W107 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W108 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W110 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W110 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W114 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W114 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W114 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W114 A4 8 - 10 7/8" 5 - 4" First Floor W114 A4 8 - 10 7/8" 5 - 4" First Floor W114 A1 8 - 10 7/8" 5 - 4" Second Floor W201 A1 8 - 10 7/8" 5 - 4" Second Floor W201 A1 8 - 10 7/8" 5 - 4" Second Floor W201 A1 8 - 10 7/8" 5 - 4" Second Floor W204 A3 7 - 7 1/4" 3 - 2 1/2"	First Floor	W105	A4	8' - 10 7/8"	3' - 2 1/2"						
First Floor W107 A4 8' 10 7/8' 3' 2 1/2' First Floor W110 A4 8' 10 7/8' 3' 2 1/2' First Floor W111 A4 8' 10 7/8' 3' 2 1/2' First Floor W111 A4 8' 10 7/8' 3' 2 1/2' First Floor W112 A4 8' 10 7/8' 3' 2 1/2' First Floor W113 A4 8' 10 7/8' 3' 2 1/2' First Floor W113 A4 8' 10 7/8' 3' 2 1/2' First Floor W114 A4 8' 10 7/8' 5' 4' First Floor W116 A1 8' 10 7/8' 5' 4' Second Floor K101 A1 8' 10 7/8' 5' 4' Second Floor W201 A1 8' 10 7/8' 5' 4' Second Floor W201 A1 8' 10 7/8' 5' 4' Second Floor W204 A1 8' 10 7/8' 5' 4' Second Floor W204 A3 7' 1/4' 3' 2 1/2' Second Floor W204 A3 7' 1/4' 3' 2 1/2' Second Floor </td <td>First Floor</td> <td>W106</td> <td>A4</td> <td>8' - 10 7/8"</td> <td>3' - 2 1/2"</td> <td></td> <td>First Floor</td> <td>E104</td> <td>A1</td> <td>8' - 10 7/8"</td> <td>5' - 4"</td>	First Floor	W106	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E104	A1	8' - 10 7/8"	5' - 4"
First Floor W108 A4 8 - 10 7/8" 3' - 2 1/2" First Floor W100 A4 8' - 10 7/8" 3' - 2 1/2" First Floor W100 A4 8' - 10 7/8" 3' - 2 1/2" First Floor W112 A4 8' - 10 7/8" 3' - 2 1/2" First Floor W112 A4 8' - 10 7/8" 3' - 2 1/2" First Floor W113 A4 8' - 10 7/8" 3' - 2 1/2" First Floor W114 A4 8' - 10 7/8" 3' - 2 1/2" First Floor W115 A1 8' - 10 7/8" 5' - 4" Second Floor W116 A1 8' - 10 7/8" 5' - 4" Second Floor W201 A1 8' - 10 7/8" 5' - 4" Second Floor W202 A1 8' - 10 7/8" 5' - 4" Second Floor W202 A1 8' - 10 7/8" 5' - 4" Second Floor W204 A3 7' - 1/4" 3' - 2 1/2" Second Floor E204 A1 8' - 10 7/8" 5' - 4" Second Floor W206 A3 7' - 1/4" 3' - 2 1/2"	First Floor	W107	A4	8' - 10 7/8"	3' - 2 1/2"						
First Floor W110 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W111 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W112 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W113 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W113 A4 8 - 10 7/8" 3 - 2 1/2" First Floor W115 A1 8 - 10 7/8" 5 - 4" First Floor W115 A1 8 - 10 7/8" 5 - 4" First Floor W116 A1 8 - 10 7/8" 5 - 4" Second Floor W201 A1 8 - 10 7/8" 5 - 4" Second Floor W201 A1 8 - 10 7/8" 5 - 4" Second Floor W201 A1 8 - 10 7/8" 5 - 4" Second Floor W205 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor E204 A1 8 - 10 7/8" 5 - 4" Second Floor W206 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor E205 A1 8 - 10 7/8" 5 - 4" Second Floor <	First Floor	W108	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E105	A1	8' - 10 7/8"	5' - 4"
First Floor W111 A4 8' - 10 7/8' 3' - 2 1/2' First Floor W112 A4 8' - 10 7/8' 3' - 2 1/2' First Floor E108 A1 8' - 10 7/8' 5' - 4' First Floor W113 A4 8' - 10 7/8' 3' - 2 1/2' First Floor E101 A1 8' - 10 7/8' 5' - 4'' First Floor W116 A1 8' - 10 7/8' 5' - 4'' First Floor E111 A1 8' - 10 7/8' 5' - 4'' Second Floor W116 A1 8' - 10 7/8' 5' - 4'' Second Floor E201 A1 8' - 10 7/8' 5' - 4'' Second Floor W201 A1 8' - 10 7/8' 5' - 4'' Second Floor E203 A1 8' - 10 7/8' 5' - 4'' Second Floor W203 A1 8' - 10 7/8' 5' - 4'' Second Floor E204 A1 8' - 10 7/8'' 5' - 4'' Second Floor W206 A3 7' - 7 1/4'' 3' - 2 1/2'' Second Floor E206 A1 8' - 10 7/8'' 5' - 4'' Second Floor W204 A3 7' - 7 1/4''	First Floor	W110	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E106	A1	8' - 10 7/8"	5' - 4"
First Floor W112 A4 B* 0.7078 3 - 2.12" First Floor W113 A4 B* 0.778 S - 2.12" First Floor First Floor E100 A1 B* -10.778 S - 4" First Floor W114 A4 B* 10.778 S - 4" First Floor E110 A1 B* -10.778 S - 4" First Floor W116 A1 B* 10.778 S - 4" Second Floor E112 A1 B* -10.778 S - 4" Second Floor W201 A1 B* 10.778 S - 4" Second Floor E201 A1 B* -10.778 S - 4" Second Floor W202 A1 B* 10.778 S - 4" Second Floor E203 A1 B* -10.778 S - 4" Second Floor W204 A3 7 - 7.14" 3 - 2.12" Second Floor E205 A1 B* -10.778 S - 4" Second Floor W204 A3 7 - 7.14" 3 - 2.12" Second Floor E205 A1 B - 10.78" S - 4" Second Floor W210 A3 7 - 7.14" 3 - 2.12" Second Floor<	First Floor	W111	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E107	A1	8' - 10 7/8"	5' - 4"
First Floor W113 A4 8' - 0.7/8' 3' - 2.1/2' First Floor W114 A4 8' - 10.7/8' 5' - 4" First Floor W115 A1 8' - 10.7/8' 5' - 4" First Floor W116 A1 8' - 10.7/8' 5' - 4" Second Floor W116 A1 8' - 10.7/8' 5' - 4" Second Floor W117 A1 8' - 10.7/8' 5' - 4" Second Floor W202 A1 8' - 10.7/8' 5' - 4" Second Floor W202 A1 8' - 10.7/8' 5' - 4" Second Floor W202 A1 8' - 10.7/8' 5' - 4" Second Floor W203 A1 8' - 10.7/8' 5' - 4" Second Floor W204 A3 7' - 7.1/4' 3' - 2.1/2' Second Floor E206 A1 8' - 10.7/8' 5' - 4" Second Floor W206 A3 7' - 7.1/4' 3' - 2.1/2' Second Floor E206 A1 8' - 10.7/8' 5' - 4" Second Floor W206 A3 7' - 7.1/4'' 3' - 2.1/2' Second Floor	First Floor	W112	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E108	A1	8' - 10 7/8"	5' - 4"
First Floor W114 A4 B* 10 7/B* 3* 2 1/2* First Floor W115 A1 B* 10 7/B* 5* 4* First Floor W116 A1 B* 10 7/B* 5* 4* Second Floor W201 A1 B* 10 7/B* 5* 4* Second Floor W201 A1 B* 10 7/B* 5* 4* Second Floor W202 A1 B* 10 7/B* 5* 4* Second Floor W202 A1 B* 10 7/B* 5* 4* Second Floor W204 A3 7* 7 7/4* 3* 2 1/2* Second Floor W206 A3 7* 7 7/4* 3* 2 1/2* Second Floor W208 A3 7* 7 7/4* 3* 2 1/2* Second Floor W208 A3 7* 7 7/4* 3* 2 1/2* Second Floor W210 A3 7* 7 7/4* 3* 2 1/2* Second Floor W210 A3 7* 7 7/4* 3* 2 1/2* Second Floor W210 A3 7* 7 1/4* 3* 2 1/2* Second Floor W210 A3 7* 7 1/4* 3* 2 1/2* Second Flo	First Floor	W113	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E110	A1	8' - 10 7/8"	5' - 4"
First Floor W115 A1 B* 10 7/B* 5 - 4* First Floor W117 A1 B* 10 7/B* 5 - 4* Second Floor W201 A1 B* 10 7/B* 5 - 4* Second Floor W202 A1 B* 10 7/B* 5 - 4* Second Floor W202 A1 B* 10 7/B* 5 - 4* Second Floor W203 A1 B* 10 7/B* 5 - 4* Second Floor W204 A3 7' - 7 1/4* 3' - 2 1/2* Second Floor W205 A3 7' - 7 1/4* 3' - 2 1/2* Second Floor W206 A3 7' - 7 1/4* 3' - 2 1/2* Second Floor W208 A3 7' - 7 1/4* 3' - 2 1/2* Second Floor W208 A3 7' - 7 1/4* 3' - 2 1/2* Second Floor W209 D1 6' - 0'' HALF ROUND WINDOW Second Floor W210 A3 7' - 7 1/4* 3' - 2 1/2* Second Floor W210 A3 7' - 7 1/4* 3' - 2 1/2* Second Floor W214 A3 7' - 7 1/4* 3' - 2 1/2*	First Floor	W114	A4	8' - 10 7/8"	3' - 2 1/2"		First Floor	E111	A1	8' - 10 7/8"	5' - 4"
First Floor W116 A1 8 * 10 7/8" 5 - 4" First Floor W117 A1 8 * 10 7/8" 5 - 4" Second Floor E202 A1 8 * 10 7/8" 5 - 4" Second Floor W201 A1 8 * 10 7/8" 5 - 4" Second Floor E202 A1 8 * 10 7/8" 5 - 4" Second Floor W202 A1 8 * 10 7/8" 5 - 4" Second Floor E203 A1 8 - 10 7/8" 5 - 4" Second Floor W204 A3 7 * 7 1/4" 3' - 2 1/2" Second Floor E205 A1 8 - 10 7/8" 5 - 4" Second Floor W205 A3 7 * 7 1/4" 3' - 2 1/2" Second Floor E206 A1 8 - 10 7/8" 5 - 4" Second Floor W209 A3 7 * 7 1/4" 3' - 2 1/2" Second Floor E204 A1 8 - 10 7/8" 5 - 4" Second Floor W210 A3 7 * 7 1/4" 3' - 2 1/2" Second Floor E204 A1 8 - 10 7/8" 5 - 4"	First Floor	W115	A1	8' - 10 7/8"	5' - 4"		First Floor	E112	A1	8' - 10 7/8"	5' - 4"
First Floor W117 A1 8 + 10 7/8" 5' - 4" Second Floor E202 A1 8' + 10 7/8" 5' - 4" Second Floor W201 A1 8' + 10 7/8" 5' - 4" Second Floor E203 A1 8' + 10 7/8" 5' - 4" Second Floor W203 A1 8' + 10 7/8" 5' - 4" Second Floor E203 A1 8' + 10 7/8" 5' - 4" Second Floor W204 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E206 A1 8' - 10 7/8" 5' - 4" Second Floor W205 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E206 A1 8' - 10 7/8" 5' - 4" Second Floor W208 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E208 A1 8' - 10 7/8" 5' - 4" Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E209 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Third Floor E301 A9 7' - 10 3/8" 3' - 0" <td>First Floor</td> <td>W116</td> <td>A1</td> <td>8' - 10 7/8"</td> <td>5' - 4"</td> <td></td> <td>Second Floor</td> <td>E201</td> <td>A1</td> <td>8' - 10 7/8"</td> <td>5' - 4"</td>	First Floor	W116	A1	8' - 10 7/8"	5' - 4"		Second Floor	E201	A1	8' - 10 7/8"	5' - 4"
Second Floor W201 A1 8 - 10 7/8" 5' - 4" Second Floor W202 A1 8' - 10 7/8" 5' - 4" Second Floor W203 A1 8' - 10 7/8" 5' - 4" Second Floor W203 A1 8' - 10 7/8" 5' - 4" Second Floor W204 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W206 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W206 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W207 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W209 D1 6' - 0" HLF ROUND WINDOW Second Floor W209 D1 6' - 0" HLF ROUND WINDOW Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W212 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W213 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4"	First Floor	W117	A1	8' - 10 7/8"	5' - 4"		Second Floor	E202	A1	8' - 10 7/8"	5' - 4"
Second Floor W202 A1 8' - 10 7/8" 5' - 4" Second Floor W204 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E205 A1 8' - 10 7/8" 5' - 4" Second Floor W205 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E206 A1 8' - 10 7/8" 5' - 4" Second Floor W206 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E206 A1 8' - 10 7/8" 5' - 4" Second Floor W208 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E207 A1 8' - 10 7/8" 5' - 4" Second Floor W208 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E208 A1 8' - 10 7/8" 5' - 4" Second Floor W211 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E201 A1 8' - 10 7/8" 5' - 4" Second Floor W212 A3 7' - 7 1/4" 3' - 2 1/2" Third Floor E302 A9 7' - 10 3/8"	Second Floor	W201	A1	8' - 10 7/8"	5' - 4"		Second Floor	E203	A1	8' - 10 7/8"	5' - 4"
Second Floor W203 A1 8 - 10 7/8 5 - 4" Second Floor W204 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor Second Floor Eacond Floor W206 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor Eacond Floor W206 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor E206 A1 8 - 10 7/8 5 - 4" Second Floor W206 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor E207 A1 8 - 10 7/8" 5 - 4" Second Floor W209 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor E208 A1 8 - 10 7/8" 5 - 4" Second Floor W210 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor E201 A1 8 - 10 7/8" 5 - 4" Second Floor W213 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor E201 A1 8 - 10 7/8" 5 - 4" Second Floor W213 A3 7 - 7 1/4" 3 - 2 1/2" Third Floor E301	Second Floor	W202	A1	8' - 10 7/8"	5' - 4"			5004		01 40 7/01	
Second Floor W204 A3 T - 7 1/4" 3 - 2 1/2" Second Floor W206 A3 T - 7 1/4" 3' - 2 1/2" Second Floor E206 A1 6' - 10 7/8" 5' - 4" Second Floor W206 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E206 A1 6' - 10 7/8" 5' - 4" Second Floor W208 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E207 A1 8' - 10 7/8" 5' - 4" Second Floor W208 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E208 A1 8' - 10 7/8" 5' - 4" Second Floor W210 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E201 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E210 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 T' - 7 1/4" 3' - 2 1/2" Third Floor E301 A9 T' - 10 3/8"	Second Floor	W203	A1	8' - 10 7/8"	5' - 4"		Second Floor	E204	A1	8' - 10 7/8"	5' - 4"
Second Floor W205 A3 T - 7 1/4" 3' - 2 1/2" Second Floor W206 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor EC00 A1 8' - 10 7/8" 5' - 4" Second Floor W206 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E207 A1 8' - 10 7/8" 5' - 4" Second Floor W206 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E207 A1 8' - 10 7/8" 5' - 4" Second Floor W206 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E209 A1 8' - 10 7/8" 5' - 4" Second Floor W211 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E210 A1 8' - 10 7/8" 5' - 4" Second Floor W213 A3 T' - 7 1/4" 3' - 2 1/2" Second Floor E210 A1 8' - 10 7/8" 5' - 4" Second Floor W215 A1 8' - 10 7/8" 5' - 4" Third Floor E302 A9 T' - 10 3/8"	Second Floor	W204	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor	E205	Λ1	0' 10 7/0"	5' 1"
Second Floor W206 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W207 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W208 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W208 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W208 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W212 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W213 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Second Floor W217 A1 8' - 10 7/8"	Second Floor	W205	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor	E200		0 - 10 7/0	5 - 4
Second Floor W207 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W208 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W208 A1 8' - 10 7/8" 5' - 4" Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E208 A1 8' - 10 7/8" 5' - 4" Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E208 A1 8' - 10 7/8" 5' - 4" Second Floor W211 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E210 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Third Floor E305 A9 7' - 10 3/8" 3' - 0" Second Floor W214 A1 8' - 10 7/8" 5' - 4" Third Floor E305 A9 7' - 10 3/8" 3' - 0" Third Floor W301 A7 7' - 10 7/8" 5' - 0" Third Floor E306 A9 7' - 10 3/8"	Second Floor	W206	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor	E200		0 - 10 7/0	5 - 4
Second Floor W208 A3 7 - 7 1/4" 3 - 2 1/2" Second Floor W209 D1 6' - 0" 10' - 0" HALF ROUND WINDOW Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E209 A1 8' - 10 7/8" 5' - 4" Second Floor W211 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E210 A1 8' - 10 7/8" 5' - 4" Second Floor W212 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E210 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E202 A9 7' - 10 3/8" 3' - 0" Second Floor W215 A1 8' - 10 7/8" 5' - 4" Second Floor E305 A9 7' - 10 3/8" 3' - 0" Third Floor W301 A7 7' - 10 7/8" 5' - 4" Second Floor E306 A9 7' - 10 3/8" 3' - 0" Third Floor W302 <td< td=""><td>Second Floor</td><td>W207</td><td>A3</td><td>7' - 7 1/4"</td><td>3' - 2 1/2"</td><td></td><td>Second Floor</td><td></td><td>AI</td><td>0 - 10 7/0</td><td>5-4</td></td<>	Second Floor	W207	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor		AI	0 - 10 7/0	5-4
Second Floor W209 D1 6' - 0" 10' - 0" HALF ROUND WINDOW Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor Econd Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W211 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E210 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E211 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Third Floor E301 A9 7' - 10 3/8" 3' - 0" Second Floor W215 A1 8' - 10 7/8" 5' - 4" Second Floor E302 A9 7' - 10 3/8" 3' - 0" Third Floor W301 A7 7' - 10 7/8" 5' - 4" Third Floor E306 A9 7' - 10 3/8" 3' - 0" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor E310	Second Floor	W208	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor	F208	A1	8' - 10 7/8"	5' - 4"
Second Floor W210 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor Early and the s	Second Floor	W209	D1	6' - 0"	10' - 0"	HALF ROUND WINDOW	Second Floor	E209	A1	8' - 10 7/8"	5' - 4"
Second Floor W211 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W212 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor E212 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Third Floor E212 A1 8' - 10 7/8" 5' - 4" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Third Floor E301 A9 7' - 10 3/8" 3' - 0" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Third Floor E302 A9 7' - 10 3/8" 3' - 0" Second Floor W217 A1 8' - 10 7/8" 5' - 4" Third Floor E302 A9 7' - 10 3/8" 3' - 0" Third Floor W301 A7 7' - 10 7/8" 5' - 0" Third Floor E309 A9 7' - 10 3/8" 3' - 0" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor E311 A9 7' - 10 3/8" 3' - 0	Second Floor	W210	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor	E210	A1	8' - 10 7/8"	5' - 4"
Second Floor W212 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W213 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor K214 A3 7' - 7 10/8" 5' - 4" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Third Floor E305 A9 7' - 10 3/8" 3' - 0" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Third Floor E306 A9 7' - 10 3/8" 3' - 0" Second Floor W217 A1 8' - 10 7/8" 5' - 4" Third Floor E306 A9 7' - 10 3/8" 3' - 0" Third Floor W301 A7 7' - 10 7/8" 5' - 0" Third Floor E310 A9 7' - 10 3/8" 3' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor E314 A9 7' - 10 3/8" 3' -	Second Floor	W211	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor	F211	A1	8' - 10 7/8"	5' - 4"
Second Floor W213 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W215 A1 8' - 10 7/8" 5' - 4" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Third Floor W301 A7 7' - 10 7/8" 5' - 4" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W304 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W305 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2"<	Second Floor	W212	A3	7' - 7 1/4"	3' - 2 1/2"		Second Floor	F212	A1	8' - 10 7/8"	5' - 4"
Second Floor W214 A3 7' - 7 1/4" 3' - 2 1/2" Second Floor W215 A1 8' - 10 7/8" 5' - 4" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Second Floor W217 A1 8' - 10 7/8" 5' - 4" Third Floor W301 A7 7' - 10 7/8" 5' - 0" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W304 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2"	Second Floor	W213	A3	7' - 7 1/4"	3' - 2 1/2"		Third Floor	E301	A9	7' - 10 3/8"	3' - 0"
Second Floor W215 A1 8' - 10 7/8" 5' - 4" Second Floor W216 A1 8' - 10 7/8" 5' - 4" Second Floor W217 A1 8' - 10 7/8" 5' - 4" Third Floor W301 A7 7' - 10 7/8" 5' - 0" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 3/8" 3' - 0" Third Floor W304 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2"	Second Floor	W214	A3	7' - 7 1/4"	3' - 2 1/2"		Third Floor	E302	A9	7' - 10 3/8"	3' - 0"
Second Floor W216 A1 8' - 10 7/8" 5' - 4" Second Floor W217 A1 8' - 10 7/8" 5' - 4" Third Floor W217 A1 8' - 10 7/8" 5' - 4" Third Floor W301 A7 7' - 10 7/8" 5' - 0" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W304 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2"<	Second Floor	W215	A1	8' - 10 7/8"	5' - 4"		Third Floor	E305	A9	7' - 10 3/8"	3' - 0"
Second Floor W217 A1 8'-107/8" 5'-4" Third Floor W301 A7 7'-107/8" 5'-0" Third Floor W302 A7 7'-107/8" 5'-0" Third Floor W303 A7 7'-107/8" 5'-0" Third Floor W304 A5 6'-63/4" 3'-21/2" Third Floor W306 A5 6'-63/4" 3'-21/2" Third Floor W307 A5 6'-63/4" 3'-21/2" Third Floor W308 A5 6'-63/4" 3'-21/2" Third Floor W308 A5 6'-63/4" 3'-21/2" Third Floor W309 A11 6'-63/4" 3'-21/2" Third Floor W310 A5 6'-63/4" 3'-21/2" Third Floor W310	Second Floor	W216	A1	8' - 10 7/8"	5' - 4"		Third Floor	E306	A9	7' - 10 3/8"	3' - 0"
Third Floor W301 A7 7' - 10 7/8" 5' - 0" Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W304 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W307 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2"	Second Floor	W217	A1	8' - 10 7/8"	5' - 4"		Third Floor	E309	A9	7' - 10 3/8"	3' - 0"
Third Floor W302 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W303 A7 7' - 10 7/8" 5' - 0" Third Floor W304 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W305 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W307 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" <t< td=""><td>Third Floor</td><td>W301</td><td>A7</td><td>7' - 10 7/8"</td><td>5' - 0"</td><td></td><td>Third Floor</td><td>E310</td><td>A9</td><td>7' - 10 3/8"</td><td>3' - 0"</td></t<>	Third Floor	W301	A7	7' - 10 7/8"	5' - 0"		Third Floor	E310	A9	7' - 10 3/8"	3' - 0"
Third Floor W303 A7 $7' \cdot 107/8"$ $5' \cdot 0"$ Third Floor W304 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W305 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W306 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W306 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W307 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W308 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W308 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W309 A11 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W310 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W311 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W312 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W313 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W313 A5 $6' \cdot 63/4"$ $3' \cdot 21/2"$ Third Floor W314 A5	Third Floor	W302	A7	7' - 10 7/8"	5' - 0"		Third Floor	E311	A9	7' - 10 3/8"	3' - 0"
Third Floor W304 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W305 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W307 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4"	Third Floor	W303	A7	7' - 10 7/8"	5' - 0"		Third Floor	E312	A9	7' - 10 3/8"	3' - 0"
Third Floor W305 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W307 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W3010 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" <td>Third Floor</td> <td>W304</td> <td>A5</td> <td>6' - 6 3/4"</td> <td>3' - 2 1/2"</td> <td></td> <td>Third Floor</td> <td>E313</td> <td>A9</td> <td>7' - 10 3/8"</td> <td>3' - 0"</td>	Third Floor	W304	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E313	A9	7' - 10 3/8"	3' - 0"
Third Floor W306 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W307 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8"	Third Floor	W305	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E314	A9	7' - 10 3/8"	3' - 0"
Third Floor W307 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 4' - 4" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" <t< td=""><td>Third Floor</td><td>W306</td><td>A5</td><td>6' - 6 3/4"</td><td>3' - 2 1/2"</td><td></td><td>Third Floor</td><td>E315</td><td>A9</td><td>7' - 10 3/8"</td><td>3' - 0"</td></t<>	Third Floor	W306	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E315	A9	7' - 10 3/8"	3' - 0"
Third Floor W308 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W309 A11 6' - 6 3/4" 4' - 4" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' -	Third Floor	W307	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E316	A9	7' - 10 3/8"	3' - 0"
Third Floor W309 A11 6' - 6 3/4" 4' - 4" Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' -	Third Floor	W308	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E317	A9	7' - 10 3/8"	3' - 0"
Third Floor W310 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0"	Third Floor	W309	A11	6' - 6 3/4"	4' - 4"		Third Floor	E318	A9	7' - 10 3/8"	3' - 0"
Third Floor W311 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0"	Third Floor	W310	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E319	A9	7' - 10 3/8"	3' - 0"
Third Floor W312 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0"	Third Floor	W311	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E320	A9	7' - 10 3/8"	3' - 0"
Third Floor W313 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor E322 A9 7' - 10 3/8" 3' - 0" Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor E323 A9 7' - 10 3/8" 3' - 0" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor E324 A9 7' - 10 3/8" 3' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor E324 A9 7' - 10 3/8" 3' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor E324 A9 7' - 10 3/8" 3' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor E324 A9 7' - 10 3/8" 3' - 0"	Third Floor	W312	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E321	A9	7' - 10 3/8"	3' - 0"
Third Floor W314 A5 6' - 6 3/4" 3' - 2 1/2" Third Floor E323 A9 7' - 10 3/8" 3' - 0" Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor E323 A9 7' - 10 3/8" 3' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor E324 A9 7' - 10 3/8" 3' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0" Third Floor E324 A9 7' - 10 3/8" 3' - 0"	Third Floor	W313	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E322	A9	7' - 10 3/8"	3' - 0"
Third Floor W315 A7 7' - 10 7/8" 5' - 0" Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0"	Third Floor	W314	A5	6' - 6 3/4"	3' - 2 1/2"		Third Floor	E323	A9	7' - 10 3/8"	3' - 0"
Third Floor W316 A7 7' - 10 7/8" 5' - 0" Third Floor W317 A7 7' - 10 7/8" 5' - 0"	Third Floor	W315	A7	7' - 10 7/8"	5' - 0"		Third Floor	E324	A9	7' - 10 3/8"	3' - 0"
Third Floor W317 A7 7' - 10 7/8" 5' - 0"	Third Floor	W316	A7	7' - 10 7/8"	5' - 0"						~
	Third Floor	W317	A7	7' - 10 7/8"	5' - 0"						



w Sched	ule East			
Height	Width	Note	Level	
			Basement	L
10 7/8"	5' - 4"		Basement	L
10 7/8"	5' - 4"	DECORATIVE GLAZING	Basement	L
	-	FILM: 09 77 56.GF3	Basement	L
10 7/8"	5' - 4"	DECORATIVE GLAZING FILM: 09 77 56.GF3	First Floor	L
10 7/8"	5' - 4"	DECORATIVE GLAZING FILM: 09 77 56.GF3	1. NOMINAL DIN SOLIABENES	
10 7/8"	5' - 4"		2. REFER TO PI	_/
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"	DECORATIVE GLAZING FILM: 09 77 56.GF3		
10 7/8"	5' - 4"	DECORATIVE GLAZING FILM: 09 77 56.GF3		
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"	REPLACE LOUVER WITH SALVAGED WINDOW SASH	L-06	
10 7/8"	5' - 4"			IN
10 7/8"	5' - 4"			Ī
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 7/8"	5' - 4"			
10 3/8"	3' - 0"			
10 3/8"	3' - 0"			
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10 3/8"	3' - 0"			
10 3/8"	3' - 0"			
10 3/8"	3' - 0"		L-03	
10 3/8"	3' - 0"			
10 3/8"	3' - 0"			N
10 3/8"	3' - 0"			
10 3/8"	3' - 0"			
10 3/8"	3' - 0"			
10.3/8"	3' - 0"			
10.3/8"	3' - 0"			
10.3/8"	3' - 0"			
10 0/0				=

		LOUVER SUP	
Level	Type Mark	Width	
Basement	L-01	3' - 3 1/4"	6'
Basement	L-02	5' - 0"	
Basement	L-04	3' - 3 1/4"	
Basement	L-05	3' - 3 1/4"	
First Floor	L-03	1' - 4"	
Third Floor	L-06	2' - 11 1/4"	7



13 MATERIAL KEYNOTES AECK ARGEN 06 10 00.LBC BLOCKING, CONTINUOUS 07 92 00.JS Joint Sealant 09 21 16.CF Interior Ceiling Framing 09 21 16.FS Metal Stud **PPD** 09 21 16.T Trim 09 30 00.ETM Metal Edge Trim, Metal 09 30 00.T1 Tile 1 **B** 09 51 00.AC6 Acoustical Ceiling System 6 S 09 66 23.PCTB Pre-cast Terrazzo Base \sim ∕1∖́ © 2021 Lord Aeck Sargent LordAeckSargent.com Unless otherwise agreed to in writing, this document is the sole property of Lord Aeck Sargent and is to be returned upon demand. The information herein is confidential and may not be used nor divulged without the written permission of Lord Aeck Sargent REVISION: Addendum #2 2/5/2024 ENT PLANA CERT. NO. 53851 CHAPEL HILL SECTIONS **INTERIOR** Ξ Ч RENOVATIO olina 22 Car rsity of North -23548-02A UNG HAM HALL BINGI LOCATION 36 Lend JOB N⊿ Univ ISSUE DATE SEAL 1/8/2023 nun JOB. NO. 11706-00 WG. NO. A620 01.08.2024 13 14 15

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LORD AECK SARGENT

PROJECT NAME	PROJECT NO.							
Bingham Hall Comprehensive Renovation	11706-00							
DATE OF MEETING	TIME							
January 16 th , 2024	2:00 PM							
MEETING LOCATION	PURPOSE							
Facilities Construction Shops Building	Preferred Brand Alternates							
PARTICIPANTS	DISTRIBUTION							
Quade Gallagher, UNC FPD								
Chris Glenn, UNC CCM								
Kelly Yates, LAS								
Julia Sibert, LAS								
Keith Downing, CLH p.a.								
Reade Daniel, Newcomb, and Boyd								
(See attached for pre-bid sign-in sheet)								
FILE: MN240116_Pre-Bid.docx	VIA: Email							
ITEMS								
ISSUE		ACTION BY						
NO.	ISSUE	DATE DUE						
"#" "mm/dd/yy" " Description "		" Status "						
1 • Review the preferred	brand alternates.							
There were no object	tions to the alternates.							

REMARKS

N/A

ATTACHMENTS

- Pre-bid Meeting Attendance list

PREPARED BY

JULIA SIBERT

DATE PREPARED 01/1

01/16/2024

1175 Peachtree Street NE, Suite 2400 Atlanta, GA 30361 877-929-1400 Iordaecksargent.com THESE NOTES SUMMARIZE OUR UNDERSTANDING OF THIS MEETING. PROJECT ACTIONS WILL BE BASED ON THESE NOTES. PLEASE CONTACT THE WRITER IMMEDIATELY IF YOU DO NOT CONCUR. Bingham Hall Comprehensive Renovation

#	RFI	Response			
G	General				
1	Are there any allowances besides the ones shown under the unit price section?	There are no Allowances in the project. The description of each Unit Price includes the quantity of that scope which must be included in the Base Bid.			
2	1. Are all Greenlaw plans for reference only? Is this work detailed on sheet S401 to be performed by the Bingham project or is this just for reference?	Greenlaw plans are provided for reference. All scope of work identified within Greenlaw, including the slab replacement detailed on S401, shall be performed by UNC's separate contractor. This scope does not fall within the Bingham Renovation project.			
3	Are as-built drawings available to the bidders? This would help the demolition bidders.	There is not one set of comprehensive, as-built documents. Original building drawings (1928) and Renovation drawings (1971, 1980, 2002) are available for review; send request via email to the Designer.			
4	In the drawing set, there is a drawing with no number or title block between A632 and A701. It is a site lighting drawing. Is this an Electrical drawing?	A632 and the sheet titled "Exterior Lighting" have been removed from the set.			
5	The drawings show a dashed line along the exterior walls in many locations on the 2nd floor. What is the intent for these walls?	Dashed line has been removed from the drawings.			
Si	te logistics				
6	Can a crane be used to set the air handler unit on the 3 rd floor?	Equipment for loading material/equipment in the building shall fit within limits of disturbance and site fence. No lift/crane/equipment may be driven across or placed on the area of existing underground utility tunnel.			
7	Can dumpsters / Asbestos Dumpster be staged at the building? Or does all demo work need to be done by dump trucks?	A dumpster can be located within the site fence if it is: - removed daily between the hours of 8PM and 7AM, - flaggers are used when removing the dumpster, - It can be hauled by a less than 1 ton truck.			
8	Can we provide steel plate bridging at the steam tunnel for vehicle traffic?	It is not feasible/ not acceptable.			
Si	tework				
9	The unit pavers that are shown to be removed and replaced on C202 above the portion of work that is to be completed under the separate contract for the duct bank, are they planned to be removed and replaced by the contractor for the other contract or is this under this contract?	The Bingham Contractor will be responsible for reinstalling the pavers because of the duct bank work in the area plan west of the project diving line. In the area noted as a "scope overlap" both contractors will be responsible for reinstialling the pavers in this area due to work anticipated to happen during both phases.			
De	emo				
10	1. On the finish demo plans, there are areas of cross hatching but we don't see that pattern in the legend. What is the cross hatching pattern calling for?	The crosshatch pattern is the second item on the floor finish legend (Cross hatch = Demolish existing flooring down to the existing sleeper).			
11	amount of loose furnishings, books, personal effects, window blinds, items on the walls (projection screens, marker boards, etc.). Will the building be in this condition when turned over to the successful GC? If so, how do we account for all of these items (to be removed) since they are not shown on the drawings. Will some of this be salvaged by the University?	for salvage in the drawings or specs, shall be removed and disposed of by the GC.			
12	If there are items to be salvaged by the University, will a list be provided prior to bid? What role does the GC play in the salvaging?	Refer to revised section 01 10 00 for list of items Owner intends to remove and salvage prior to start of work. For items that GC shall be responsible to salvage, refer to section 02 03 42 and demo drawings.			
13	There are several locations on the facade where metal support bars were installed, likely to hold up thru window AC units. Are those to remain?	Per note F on sheets A201, A202, A203 remove all metal straps and anchors; repoint.			
A	Abatement				
14	The narrative on the AB drawings indicates that the sashes on	Yes, Base Bid scope calls for abatement, restoration and			

	the existing windows (base bid) should be removed for removal of lead and asbestos. It does not say to reinstall these sashes. Is that required?	reinstallation of existing sashes.
15	For abatement, to avoid cleaning of removed sashes on site to allow others to work within the space, is there a location that UNC can allow abatement contractors to perform the cleaning of these sashes off site? This does not have to be on campus, but close enough to avoid extra costs of out of state subs hauling these materials to their warehouses and back.	The University can provide an alternate location on campus; however, the Contractor shall provide power and water. Material may not be taken off-campus.

#	RFI	Response
16	Is lead paint removal from the existing windows required if Alternate A1 is accepted, for window replacement?	Refer to section 02 82 33.1: If Alternate A1 is accepted, the abatement of the window caulking shall be performed as indicated in the specifications. Because the paint on the windows will not be removed, the windows can be discarded as construction debris. In lieu of on-site abatement of the window caulking, the window units can be contained properly within asbestos disposal containers and disposed of at a landfill approved or permitted to accept asbestos waste. Refer to project specifications for proper containment and disposal requirements.
17	Will chemical methods for removal of lead paint be acceptable?	Designer is open to considering chemical methods, but the selected contractor must submit a detailed plan for chemical method of removal, including material safety data sheets, for review and approval by the Designer. Should the proposed chemical method be rejected, then manual methods as specified must be used.
Ro	oofing	
18	deck?	no there is not.
19	We didn't see a specification for the roof deck material and size.	Refer to revised specification section 07 31 26.
20	Will the repair and leveling of cementious roof deck be completed by the framers?	Scope division is not determined by the Designer. Recommend reviewing this question with the General Contractors.
21	Note 7 on A103 instructs the bidder to repair and level existing cementitious roof deck. How would a GC estimate the amount and value of this as this roof decking is covered in slate roof tiles? Would this best be done by an allowance or unit price?	Refer to 03 51 19 Gypsum Concrete Roof Deck Patching and 01 22 00 Unit Prices. New unit price requirement has been added to the revised Form of Proposal.
22	Do you know the color and size of the existing slate shingles.	The existing slate is believed to be sourced from the Buckingham Slate district in Virginia, and the shingles are 12" by 24". There is approximately 10" of exposure and 3" or greater of sidelap. The shingles are nominally ¼" thick.
23	The slate material required to match existing size and color is not available. What material should we price?	It is understood that Buckingham Slate material from Virginia is unavailable in sufficient quantity for this project. Provide material in size to match existing, 12" x 24", with color as close as possible.
M	EP	Defer to "Division of Work Matrix" which appears on E001. T001
24	scope or is this contracted by the university?	AV002, SC001.
25	Throughout the Mechanical/Electrical/ Plumbing Specifications the same paragraph appears: "Seal pipe penetrations with fire- and smoke-stop materials. Comply with requirements for firestopping and fill materials specified in Section 07 84 13 "Penetration Firestopping."" Section 07 84 13 does not appear in the Project Manual.	Refer to new specification section 07 84 13.
26	Is the crawl space on drawing M101 considered concealed or	The crawlspace is enclosed.
27	Is the attic and crawl space outside the building envolope? If yes (R-8) 3" 3/4# wrap is used for these appications. Please advise.	Both the attic and the crawlspace are considered inside the building envelope. Refer to specification section 230713-3.10.D.1 for insulation requirements. 3" R-8 is not neccessary.
28	Referring to the Building Automation Specs, two alternates are shown in section 23 80 00 1.02.B. This is not on the bid form or in section 01 23 00. Please advise.	Refer to revised section 01 23 00 and revised Form of Proposal.
St	ructural	The AIRC partification is required for this project in order to estimate
29	to be AISC certified. Can this requirement be removed as this job is small and many smaller fabrication shops do not have AISC certification.	the fabricator qualification requirement of the statement of special inspections.
30	What is the maximum loading allowed on the structural floors, specifically for construction equipment like lifts and demolition aids?	Construction loading must not exceed live loads shown on S001.
Ar	chitectural	
31	There are damaged walls that remain, specifically along the interior of the perimeter. Repair for these areas is not specifically called out on the drawings. How will this be addressed?	Plaster repair is addressed in specification section 09 21 00. In section 01 22 00 Unit Prices, the Base Bid quantity is provided for each type of plaster repair.
32	The requirement for plaster repair unit prices is indicated in the the plaster specification but not in the unit prices specification. How will this be addressed? Can the unit prices be in the form of T&M rates?	Refer to revised Form of Proposal and revised specification section 01 22 00 for Plaster repair type Unit Prices, including required Base Bid quantity for each type.
33	Do notes 12 and 3 regarding plaster repair on sheets A101 and A102 fit into the unit price or "quanitity of each type" scenario?	Areas indicated on the plans are included within the required Base Bid quantity for each plaster repair type.

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#	RFI	Response
34	Terrazzo - Section 09 66 23 1.01 D.2 Repair of minor chips and holes in existing terrazzo is to be included. Can a definition of minor be provided. during the site visit several areas of damage or years of use could be deemed not minor. Additionally, bolts in the terrazzo (in areas to remain) where evident. How should those be handled? Lastly, as water radiators are removed, how should that be treatedholes, bolts, etc.	See Section 09 66 23 - 3.03 Preparation for Existing Cementitious Terrazzo Restoration for details on what is required for each flooring condition.
35	Are the existing stairs (metal components) to be painted? Is scraping required? If so, how do we quantify this from the drawings?	Refer to revised sheets A201-203 and A301-302 and revised specification section 09 91 00.
36	Do the new steel members added for floor/roof reinforcement require applied fireproofing?	No.
37	On Drawing A101 Plan A1 it appears to indicate cold fluid applied waterproofing in the crawlspace. The wall section A8/A211 shows this wall to be above the grade in the crawlspace. Should waterproofing be figured here for the whole wall height or just from the footer to the floor line?	Waterproofing should be installed for the full height of the wall.
38	Can you provide a room finish schedule	A room finish schedule is not provided. Refer to notes on finish plans sheets A701 and A702 and the interior elevations - A610 series.
39	There are microwaves and refrigerators being shown on A617 in the workroom and wanted to see if these are to be the responsibility of the GC along with any other residential equipment?	The workroom appliances and equipment are owner-furnished and owner-installed.
40	Windows will be completely removed or restored?	Base Bid scope includes restoration of existing windows to remain and installation of new interior storm windows. Alternate A1 includes removal of existing windows and instsallation of replacement windows.
41	On the finish plan (A701), the schedule shows the elevator cap to receive "Carpet 5." The spec 14 24 00 shows the elevator receiving "Carpet 4." Can you please confirm the carpet that is required in the elevator cab?	Carpet 5 is used in the elevator. Refer to revised section 14 24 00.
42	Can you please provide a detail on how you want the ceramic wall tile to transition to the window frames on the 1st and 2nd floor toilets? Is the intent to use a Schluter trim or butt up to the existing frame and provide a sealant?	Refer to new detail A7 on revised sheet A620, and revised section 09 30 00 - Tiling.
43	Besides the windows pointed out in the spec section 08 59 00, is there any other locations that are in need for High Performance Coatings (09 96 00)?	Refer to revised exterior elevation sheets A201-203 for painting of metal railings scope.
44	In the flooring specs other than Tiling (09 30 00), there is no indication of Maintenance/Attic stock %. Is there a certain amount that will be needed for any other flooring other than Tile?	Refer to section 09 65 00 - Resilient Flooring paragraph 1.05. Refer to revised section 09 68 13 - Tile Carpeting paragraph 1.07.
45	Door 029C on the door schedule (A601) has no information on frame or door type shown. Is this an existing to remain door?	Refer to revised sheet A601. Door in question has been renamed 1000A.
46	Hardware set 34 in the specifications calls for no hardware, because it denotes a cased opening. Door number 2004 is shown on the door schedule (A601) with a hollow metal door and frame. Is this correct? Additionally, doors number 1004, 1024, 1032, 1042 call for hollow metal frames. Are these doors to receive frames with no door? Or are these just sheetrock cased openings?	Cased openings shall receive HM frame with no doors or hardware. Refer to revised A601.
47	In regards to page A604, can locations of the Head and Jamb details for H9 & F9 be specified along with details C5 & A5 for alternate #1? Are these locations indicated by the sizes shown on the window legend on A603? If so, can you confirm that details H9 & F9 are used at locations for windows A11, A9, A8, and A5 as these locations are indicated by the window images?	Refer to revised sheet A603 for additional notes regarding location for use of the details.
48	I wanted to ask if anyone has asked about note B stating that the typical partition type is 0 S 55 G but there is no indication of this partition type on the partition schedule in the specs?	Revised sheets A101-102 indicate typical partition type of 0 S 49 G.
49	Will it be permissible for the restoration contractor to remove the frames in addition to the sashes? They could likely perform a superior restoration is allowed to.	Yes, it is permissible to remove the frames, though not required.
W	indow shades	
50	Sheet A401 includes Note 1 in several locations, but the note says it's not used. On Sheet A402, it is used.	Note 1 is not used on sheet A401. Instances of the note on revised sheet A401 have been removed.
51	Can you get clarification that only Classroom 2029 and 3006 are System 2 window treatments? Any other places?	Only classroom 2029 shall receive window shade system 2. References to other spaces receiving system 2 have been removed.
52	On sheet A402, 3rd floor Classroom 3014 is not marked Note 1, but it appears all other classrooms are. Should this be system 2/note 1?	No, classroom 3014 shall receive window shade system 1.

#	RFI	Response
53	Specification 122413 section 2.07 list mounting conditions.	Please refer to paragraph 2.03 for shade mounting conditions of
	Please Clarify what mounting detail applies to Shade System 1	each system, and detail E1/A620. The intent is for rectangular
	head. Please confirm that the intent is for rectangular shades to	the window.
	be outside mounted above window head. If not please clarify.	
Si	gnage	
54	In regards to the signage scope, the specs call to "Comply with	UNC signage standards are in development. Refer to revised
	supplied so the respective contractors can follow these	section 10 14 23 - Panel signage for size and material information.
	guidelines?	