Addendum No. 001

Subject: Francis Hopkinson School Classroom Modernization Renovation

Location: Francis Hopkinson School
1301 – 31 E Luzerne Street
Philadelphia, Pennsylvania 19124

This Addendum, dated 17 of February, 2022, shall modify and become part of the Contract Documents for the work of this project. Any items not mentioned herein, or affected by, shall be performed strictly in accordance with the original documents.

SPECIFICATIONS:

SECTION 03 54 16
1. REPLACE Section 03 54 16 Hydraulic Cement Underlayment with the attached section. Changes made shown underlined and in red font.

SECTION 09 65 19
1. REPLACE Section 09 65 19 Resilient Tile Flooring with the attached section. Changes made shown underlined and in red font.

SECTION 10 11 00
1. REPLACE Section 10 11 00 Visual Display Units with attached section. Changes made shown underlined and in red font.

SECTION 27 13 00
1. REPLACE Section 27 13 00 Communications Systems with attached section.

ARCHITECTURAL DRAWINGS:

DRAWING A-004
1. ADD Keynote A17 to “Floor Plan – Key Notes” as indicated on drawings.

DRAWING A-005
1. MODIFY Remark “8L” to “8A” as indicated on drawings.

DRAWING A-110
1. ADD Keynote “A17” to Classroom 103 as indicated on drawings

DRAWING A-130
1. ADD Detail C-AS as indicated on drawings.

DRAWING A-131
1. MODIFY Detail 1/A-131 as indicated on drawings.
2. MODIFY Detail 5/A-131 as indicated on drawings.
3. MODIFY, Detail number for “Finish Plan – Zone B” as indicated on drawings
4. MODIFY, Detail number for “Finish Plan – Zone C” as indicated on drawings

**DRAWING A-401**
1. MODIFY Detail A28 as indicated on drawings.

**DRAWING A-402**
1. MODIFY Detail A49 as indicated on drawings.

**DRAWING A-800**
1. MODIFY Detail 4/A-800 as indicated on drawings.

**ELECTRICAL DRAWINGS:**

**DRAWING E-100**
1. MODIFY Sheet notes as indicated on drawings
2. MODIFY Detail 1 as indicated on drawings
3. MODIFY Detail 2 as indicated on Drawings
4. MODIFY Detail 3 as indicated on drawings

**DRAWING E-101**
1. MODIFY Sheet notes as indicated on drawings
2. MODIFY Detail 1 as indicated on drawings
3. MODIFY Detail 2 as indicated on Drawings

**DRAWING E-110**
1. MODIFY General notes as indicated on drawings
2. MODIFY Sheet notes as indicated on drawings

**DRAWING E-111**
1. MODIFY General notes as indicated on drawings
2. MODIFY Sheet notes as indicated on drawings

**DRAWING E-120**
1. MODIFY General notes as indicated on drawings
2. MODIFY Sheet notes as indicated on drawings

**DRAWING E-121**
1. MODIFY General notes as indicated on drawings
2. MODIFY Sheet notes as indicated on drawings

**DRAWING E-130**
1. MODIFY General notes as indicated on drawings
2. MODIFY Sheet notes as indicated on drawings

**DRAWING E-131**
1. MODIFY General notes as indicated on drawings
2. MODIFY Sheet notes as indicated on drawings
3. MODIFY Detail 2 as indicated on drawings

**DRAWING E-200**
1. MODIFY Responsibility matrix as indicated on drawings

**BIDDER’S QUESTIONS AND RESPONSES ARE AS FOLLOWS:**

Question 1: Please confirm that Catharine Elementary School is the only Classroom Modernization project that requires Room Signage. The bid documents for all the other projects include a specification for signage however, Catharine ES is the only project that shows signage on the drawings.
Answer 1: There is no signage in the scope of the Francis Hopkinson School Classroom Modernization project.

Question 2: Section 01 11 00 Environmental Coordination, Part 4 – Renovation, Repair, and Painting – US EPA Lead Based Paint Rule. It is our understanding that he Renovation, Repair, and Painting (RRP) is limited to the surfaces in the 15 classrooms indicated as “no hatch” on Drawing A-002. Please confirm that our understanding is correct. Alternatively, provide a listing of all surfaces in all rooms throughout the building that require RRP work.

Answer 2: The hatch is a diagrammatic graphic used to show the general scope of work and should not be a determining factor in where finishes are applied. Refer to specifications, floor plans, interior elevations, RCPs, finish plans, and finish schedule and legend for full scope of work.

Question 3: Drawings E-120 & E-121 keynote #4 calls for all receptacles to be tamper resistant AFCI. Spec section 262726 neither specifies duplex tamper resistant AFCI receptacles nor does it specify duplex tamper resistant combination GFCI/AFCI receptacles. Please clarify design intent.

Answer 3: Provide tamper resistant receptacles – AFCI not required.

Question 4: Drawings E-110, E-111, E-120, E-121, E-130, E-131 mention a general note regarding 500/700 series wiremold for new devices. Please confirm surface mounted EMT conduit with one hole straps can be provided instead as this has been done on previous SDP project numerous times and offers better protection from damage.

Answer 4: Provide surface mounted EMT conduit in lieu of wiremold for new devices. General note updated on plans accordingly.

Question 5: Drawings E-110, E-111, E-120, E-121, E-130, E-131 mention a general regarding painting of surface raceways. Painting is in the GC contract per the summary of work spec section 011000. Please confirm this painting of surface raceways note applies to the GC contract.

Answer 5: GC to paint the raceway.

Question 6: Drawing E-130 keynote #3 and drawing E-131 keynote #3 specifies a catalog for a SAM series clock that receives the time signal via wires. In the same sentence the SAL series clock is mentioned which receives the time signal wirelessly which conflicts. The SAL series can either be powered by a battery, 24V circuit or 120V circuit. Which is the correct clock series SAM or SAL? Do the existing clocks on site receive the time signal from wires or wirelessly? How are the existing clocks on site powered (battery, 24v circuit, 120v circuit)?

Answer 6: Provide SAM series clock – catalog number as noted on plan.

Question 7: Drawings E-130 and E-131 show keynote #1 which mentions testing existing cables and removing/replacing the cables if they do not pass a test. The scope for removing/replacing the cables is not biddable. We cannot know what cables will pass and what cables will not pass prior to the bid, so it would be a complete guess as to how many won’t pass. Please pick a scenario below to resolve this issue:

- Scenario #1: Provide an allowance to the EC bid and EC will provide proposal (or ticket work) during construction for removing/replacing cables
- Scenario #2: Eliminate remove/replacing cables that do not pass scope. Any cables that do not pass SDP can make a decision during construction on whether to replace them or not under additional cost to the contract.

Answer 7: EC to replace all existing cables within scope of work area with new CAT6 cables.

Question 8: Drawing E-130 keynote #4 and drawing E-131 keynote #6 call for providing a new rack “as necessary”. We cannot bid “as necessary” and SDP IT department should have coordinated this with the AE consultant during design phase. Please pick a scenario below to resolve this issue:

- Scenario #1: Provide an allowance to the EC bid and make a decision to provide a new rack during construction
- Scenario #2: Confirm new racks are not required and only patch panels need to be added in existing racks as required.
- Scenario #3: Provide details on new rack(s) and rack elevations for equipment required inside rack (e.g. wall mount or floor mount, U height, open rack or enclosed cabinet etc.) and how racks are receiving 120V power via new receptacles.
Answer 8: New rack not required, provide patch panels needed in existing racks.

Question 9: Drawing E-200 specifies Cat6A cable for new data outlets. Spec section 271300-3.2A mentions Cat6A, but spec section 271300-3.2C(2)(a) lists parts numbers for Cat6 rated cable which conflicts. Please clarify design intent.
Answer 9: Provide CAT6 cables

Question 10: Drawing E-131 keynote #4 specifies an analog speaker Bogen MB8TSQ. This keynote calls for a Cat6A cable which does not coordinate with the speaker specification. A Cat6A cable would be for a digital speaker but the specified speaker is an analog speaker that requires #16/2 twisted/shielded cable. Can SDP please clarify where to pick up the speaker circuit for this new speaker?
Answer 10: All speakers shall require one CAT6 drop per speaker, each individually home run back to the MDF or nearest IDF. All speaker cabling shall be terminated on a patch panel at the closet, terminated on a RJ45 jack at the speaker, and shall be labeled at both ends according to the labeling guidelines in the specifications.

Speaker-side installation shall be as follows: Use the blue pair of the CAT6 to terminate to the speaker wires – white to the common, blue to the watt.

1W TAP - CLASSROOMS / OFFICES / ETC.
4W TAP - COMMON AREA / HALLWAYS / ETC.

Question 11: Please provide bottom of fixture mounting height for the type D1/D1E pendants in Zone C Little School House.
Answer 11: 9’-0” AFF

Question 12: Types D1 and D1E are specified as standalone 8’ fixtures. Please confirm the runs should be specified as a 24 ft continuous run where the manufacturer would provide (3) 8ft sections joined together.
Answer 12: Confirmed.

Question 13: Fixture Type A2E is specified on drawing E-110. There are no counts for type A2E on the floor plans. Please advise if fixture type is required.
Answer 13: Type A2E not required.

Question 14: Drawing E-111 shows counts for type C1E. C1E is not specified on the legend. Please provide specification.
Answer 14: C1E = SIGNIFY DAY-BRITE #FSW440L840-UNV-DIM-EMLED

Question 15: Drawing E-111 specifies type F1E which we assume is supposed to be equipped with battery backup. Battery backup is not specified in the catalog number. Please clarify design intent.
Answer 15: F1E = SIGNIFY DAY-BRITE #1FPZ30L840-4-DS-UNV-DIM-BSL10LST

Question 16: Drawing E-101 keynote #6 and drawing E-131 keynote #5 call for relocating an IT rack. Extending cables are mentioned in keynote which is not possible CAT data cabling and fiberoptic cabling. Is the new rack location going to shorten the cable length so the data/fiberoptic cables can be cut to length and reused and re-terminated on the patch panels? Or will the cable not reach for the new rack location and we are supposed to figure new cables? If new cables are required, we need details on requirements or an allowance needs to be added to the EC bid for this vague scope. Please clarify design intent.
Answer 16: Rack is being relocated to the other side of same wall. Intent is to disconnect / reconnect existing cables from its current location to new location on the other side of same wall. Extending cables refers to re-routing of existing cables to the other side of the wall and reconnecting them. See demo plan for existing rack location (also shown below).
Question 17: Fixture types C2 and C2E on drawing E-111 are specified as 4’ standalone fixtures. There are instances where (2) 4ft sections are mounted next to each other in a continuous run. There is a combination of (2) 4ft C2’s. There is another combination of (1) 4ft C2 and (1) 4ft C2E (battery backup). If the manufacturer determines that it makes more sense from a manufacturing standpoint to provide these configurations below, is this acceptable?

- C2 (4ft) + C2 (4ft)
  - If Manufacturer can provide (1) 8ft section, is this acceptable?
- C2E (4ft with battery) + C2 (4ft)
  - If manufacturer can provide (1) 8ft section where 4ft of the section is on battery backup, is this acceptable?

Answer 17: Yes

ATTACHMENTS:

SPECIFICATIONS
Section 03 54 16 Hydraulic Cement Underlayment
Section 09 65 19 Resilient Tile Flooring
Section 10 11 00 Visual Display Units
Section 27 13 00 Communications Systems

DRAWINGS
Drawing A-004 General Information
Drawing A-005 Schedules
Drawing A-110 Demolition and Floor Plans – ‘Zone A’
Drawing A-130 Interior Finish Legend and Schedules
Drawing A-131 Interior Finish Plans
Drawing A-401 Interior Elevations – ‘Zone A’
Drawing A-402 Interior Elevations – ‘Zone A’
Drawing A-800 Details

Drawing E-100 Electrical Demolition Plans – Zone A
Drawing E-101 Electrical Demolition Plans – Zone B and C
Drawing E-110 Lighting Plans – Zone A
Drawing E-111 Lighting Plans – Zones B and C
Drawing E-120 Power Plans – Zone A
Drawing E-121 Power Plans – Zones B and C
Drawing E-130 Special Systems Plans – Zone A
Drawing E-131 Special Systems Plans- Zones B and C
Drawing E-200 Electrical Details

End of Addendum No. 1
SECTION 03 54 16 - HYDRAULIC CEMENT UNDERLAYMENT

PART 1 - GENERAL

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

1.2 SUMMARY
A. Section Includes:
   1. Polymer-modified, self-leveling, hydraulic cement underlayment for application below interior floor coverings.

1.3 ACTION SUBMITTALS
A. Product Data: For the following:
   2. Primer.

1.4 INFORMATIONAL SUBMITTALS
Qualification Data: For Installer. Installer who is approved by manufacturer for application of underlayment products required for this Project.

1.5 FIELD CONDITIONS
A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.

PART 2 - PRODUCTS

2.1 HYDRAULIC CEMENT UNDERLAYMENTS
A. Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied in minimum uniform thickness of 1/4 inch (6 mm) and that can be feathered at edges to match adjacent floor elevations.
2. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C109/C109M.

3. Basis-of-Design Product: Subject to compliance with requirements, provide:
   a. Ardex K15 System as manufactured by ARDEX Americas of Aliquippa, PA
   b. Or comparable product by one of the following:
      1) ProSpec, H.B. Fuller Construction Products
      2) Dayton Superior Corporation

B. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm); or coarse sand as recommended by underlayment manufacturer.
   1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.

C. Water: Potable and at a temperature of not more than 70 deg F (21 deg C).

D. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

2.2 SELF-DRYING, CEMENT-BASED FINISH UNDERLAYMENT

A. Cement-Based Finish Underlayment: Blend of Portland cement and other hydraulic cements to provide a smooth finish and a true featheredge.
   1. For use at doorway or transitions to existing flooring.

B. Basis of Design Product: Subject to compliance with requirements, provide:
   1. Ardex Feather Finish, as manufactured by ARDEX Americas of Aliquippa, PA
   2. Or comparable product

C. Primer:
   1. For gypsum surfaces: basis of design is Ardex P 51 Primer
   2. For other non-porous substrates, such as epoxy coating systems and metal: basis of design is Ardex P 82 Ultra Prime

D. Water:
   1. Should be clean, potable, and not warmer than 70-degrees Fahrenheit

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for conditions affecting performance of the Work.

B. Proceed with application only after unsatisfactory conditions have been corrected.
3.2 PREPARATION

A. Prepare and clean substrate according to manufacturer's written instructions.
   1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.
   2. Fill substrate voids to prevent underlayment from leaking.

B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.

C. Nonporous Substrates: For ceramic tile, quarry tile, and terrazzo substrates, remove waxes, sealants, and other contaminants that might impair underlayment bond; prepare surfaces according to manufacturer's written instructions. Sand over entire surface prior to primer.

3.3 INSTALLATION

A. Mix and install underlayment components according to manufacturer's written instructions.
   1. Close areas to traffic during underlayment installation and for time period after installation recommended in writing by manufacturer.
   2. Coordinate installation of components to provide optimum adhesion to substrate and between coats.
   3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.

B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

C. Install underlayment to produce uniform, level surface.
   1. Install a final layer without aggregate to product surface.
   2. Feather edges to match adjacent floor elevations.

D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during installation and curing processes.

E. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

F. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

G. For Self-Drying, Cement-Based Finish Underlayment Only: Where used as a transition to door threshold or existing floor finish to remain, slope product from pour stop or high point to threshold or existing finish at no greater than 1:20. Coordinate transition depth with slope and surrounding wall layout.
3.4 INSTALLATION TOLERANCES

A. Finish and measure surface, so gap at any point between gypsum cement underlayment surface and an unleveled, freestanding, 10-foot- (3.05-m-) long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/4 inch (6 mm).

3.5 PROTECTION

A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION 03 54 16
SECTION 09 65 19 - RESILIENT TILE FLOORING

PART 1 - GENERAL

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

1.2 SUMMARY
A. Section Includes:
   1. Vinyl Composition Tile (VCT)

B. Related Sections include the following:
   1. Division 3 Section “Hydraulic Cement Underlayment” for underlayment and primer to be installed prior to VCT installation.

1.3 ACTION SUBMITTALS
A. Product Data: For each type of product.

B. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
   1. Show details of special patterns.

C. Product Schedule: For floor tile. Use same designations indicated on Drawings.

1.4 INFORMATIONAL SUBMITTALS
A. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS
A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS
A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Floor Tile: Furnish one box for every 60 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.
1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F. Store floor tiles on flat surfaces.

1.9 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F in spaces to receive floor tile during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 Vinyl Composition Tile (VCT)

A. Products: Subject to compliance with requirements, provide one of the following:

1. Armstrong “Standard Excelon Imperial Texture VCT”

B. Tile Standard: ASTM F 1066, Class 2, through-pattern.

C. Wearing Surface: Smooth

D. Thickness: 0.125 inch
E. Size: 12 by 12 inches
F. Color: Refer to drawings for color selections and patterns.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
   1. Adhesives shall comply with the following limits for VOC content:
      a. Vinyl Composition Tile Adhesives: 50 g/L or less.
      b. Luxury Vinyl Tile Adhesives: Per manufacturer’s recommendations.
   2. Adhesives shall comply with the testing and product requirements of the California Department of Public Health’s “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers.”
   3. Provide adhesive for porous substrates.

C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
   1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Receive Resilient Tile Floor Manufacturer’s written approval of substrate required before installation of any tile flooring. The Carpet and Resilient Tile Contractor is responsible for obtaining the Resilient Tile Flooring Manufacturer’s written approval of the floor as an acceptable substrate for the installation of manufacturer’s tile product specified. If the floor is not acceptable to the manufacturer, the general contractor is responsible for preparing the floor to receive the new tile, as specified in order paragraphs of this specification, including an underlayment or leveling compound where necessary to meet all requirements for a manufacturer’s approval of the substrate.

3.2 PREPARATION

A. Prepare substrates according to floor tile manufacturer’s written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.
   1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.

3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 10 pH.

4. Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations, but not less stringent than the following:
   a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
   b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install floor tiles until they are the same temperature as the space where they are to be installed.
   1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
   1. Lay tiles in pattern indicated

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
   1. Lay tiles with grain running in one direction.

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
H. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer’s written instructions for cleaning and protecting floor tile.

B. Perform the following operations immediately after completing floor tile installation:
   1. Remove adhesive and other blemishes from exposed surfaces.
   2. Sweep and vacuum surfaces thoroughly.
   3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.

E. Joint Sealant: Apply sealant to resilient terrazzo floor tile perimeter and around columns, at door frames, and at other joints and penetrations.

F. Sealers and Finish Coats: Remove soil, visible adhesive, and surface blemishes from resilient floor tile surfaces before applying liquid cleaners, sealers, and finish products.
   1. Finish: Apply 3 coats of liquid floor polish to vinyl composition tile flooring.

G. Cover floor tile until Substantial Completion.

END OF SECTION 096519
SECTION 10 11 00 - VISUAL DISPLAY UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Products defined by Finish Tags MB & TB (noted on drawings):
      a. Markerboards (MB), includes:
         1) MB = Markerboard w/ Aluminum Frame (adhered to wall surface)
         2) MB1 = Markerboard “Skin” (adhered to existing Chalkboard)
         3) MB2 = Markerboard “Skin” (adhered to MDF panel / blocking)
      b. Tackboards (TB), includes:
         1) TB = Vinyl Tackboard w/ Aluminum Frame
         2) TBW = Vinyl Tackboard – Edge Wrapped (adhered to wall surface)
         3) TB1 = Vinyl Tackboard – Edge Wrapped (adhered to existing Chalkboard)
         4) TB2 = Vinyl Tackboard – Edge Wrapped (adhered to MDF panel / blocking)
         5) TB3 = Vinyl Tack Covering (adhered to existing wood panel)
         6) TB4 = Same product as TB (see above)
      c. Display/Map Rail

1.3 SUBMITTALS

A. Product Data: For each type of visual display board indicated.

B. Shop Drawings: For each type of visual display board required.
   1. Include dimensioned elevations. Show location of joints between individual panels where unit dimensions exceed maximum panel length.
   2. Include sections of typical trim members.
   3. Show anchors, grounds, reinforcement, accessories, layout, and installation details.
   4. Contractor shall verify the existing board dimensions to ensure new visual display boards cover extent of existing boards.

C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors and textures available for the following:
   1. Markerboards: Actual sections of porcelain enamel finish for each type of markerboard required.
   2. Vinyl-Faced Cork Tackboards: Fabric swatches for each type of vinyl- faced cork tackboard indicated.
D. Product Certificates: Signed by manufacturers of tackboards certifying that vinyl-faced materials furnished comply with requirements specified for flame-spread ratings.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who is an authorized representative of markerboard manufacturer for both installation and maintenance of markerboard units.

B. Source Limitations: Obtain visual display boards through one source from a single manufacturer.

C. Product Options: Drawings indicate size, profiles, and dimensional requirements of visual display boards and are based on the products indicated.
   1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval and only to the extent needed to comply with performance requirements. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.

D. Fire-Test-Response Characteristics: Provide vinyl-fabric-faced tackboards with the following surface-burning characteristics as determined by testing assembled materials composed of facings and backings identical to those required in this Section per ASTM E 84 by a testing and inspecting agency acceptable to authorities having jurisdiction. Identify vinyl-fabric-faced tackboards with appropriate markings of applicable testing and inspecting agency.
   1. Flame Spread: 25 or less.
   2. Smoke Developed: 10 or less.

E. Field Measurements: Verify field measurements before preparation of Shop Drawings and before fabrication to ensure proper fitting. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
   1. Allow for trimming and fitting where taking field measurements before fabrication might delay the Work.

1.5 WARRANTY

A. Writing Surface: Manufacturer’s standard, written, material warranty agreeing at manufacturer’s option to repair or replace the original boards if they do not retain their original writing and erasing qualities, gloss variance, or color consistency under normal usage and maintenance, without reducing or otherwise limiting any other rights to correction which the Owner may have under the Contract Documents. Warranty does not include the cost of removal or reinstallation.
   1. Term of Warranty: As long as the product is installed and in use, or Forever, whichever comes first.

B. Workmanship and Materials: Manufacturer’s standard, written, material replacement warranty agreeing at manufacturer’s option to repair or replace any products which, under normal usage and maintenance, show defects in workmanship or materials, without reducing or otherwise limiting any other rights to correction which the Owner may have under the Contract Documents. Warranty does not include the cost of removal or reinstallation.
   1. Term of Warranty: 10 years from date of Substantial Completion.
PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. Claridge Products and Equipment, Inc.
   b. Marsh Industries
   c. AARCO
   d. Polyvision

2. Tackboards:
   a. Claridge Products and Equipment, Inc.
   b. Marsh Industries
   c. AARCO.
   d. Polyvision

3. Tackstrips/Display:
   a. Marsh Industries
   b. Claridge Products and Equipment, Inc.
   c. AARCO.
   d. Polyvision

2.2 MATERIALS FOR MARKERBOARD (MB) PANELS

A. Description of Markerboard Assemblies:

1. MB = Markerboard w/ Aluminum Frame, typical
   a. Basis of Design: Claridge Products – E-3 Surface over manuf. core w/ Series #1 Alum. Frame
   b. Size / Installation: Reference Drawings

2. MB1 = Markerboard “Skin” (adhered to existing Chalkboard)
   a. Basis of Design: Claridge Products – E-3 Surface
   b. Size / Installation: Reference Drawings

3. MB2 = Markerboard “Skin” (adhered to MDF panel/blocking)
   a. Basis of Design: Claridge Products – E-3 Surface
   b. Size / Installation: Installed over ½” thick MDF panel, by GC. Reference drawings for overall size & locations.

B. Writing Surface Facing Sheet

1. E-3 Environmental Ceramicsteel Magnetic Surface shall be enameling grade cold rolled steel manufactured from a minimum of 30 percent post-consumer and post-industrial waste, .016” thick for all pre-framed boards without joints. All face sheets shall be .025” thick for boards with spline joints and have the same content as .016” thick face sheets.
2. All enameling grade steel shall be coated with the Cradle to Cradle certified e3 environmental ceramic steel coating process developed by PolyVision or equal. Writing surfaces shall exhibit the following characteristics:
   a. All coatings shall contain less than a combined total of less than 0.1 percent of heavy metals cadmium, mercury, hexavalent chromium, and lead.
   b. All coatings shall be free of arsenic and antimony as well as volatile organic compounds.
   c. Writing surface face sheet shall be 99 percent recyclable.
   e. Marker board 80 to 85 percent gloss (low gloss surface, recommended for projection. Wet cleaning required if used as a marker surface.)
   f. Facing sheet coatings:
      1) 1.7-2.5 mils enameled ground coat on face minimum thickness.
      2) 3.0 – 4.0 mils enameled cover (color) coat for marker board.
      3) 1.7-2.5 mils enameled minimum ground coat on back of facing.
      4) Firing temperatures shall be 1475-1500 degrees minimum for marker boards, and 1200-1250 degree for chalk boards.
   g. Color(s): “White”, unless noted otherwise

C. Writing Surface Core
   1. Core: Minimum 7/16 inch thick, particleboard core material complying with requirements of ANSI A208.1, Grade 1-M-1.
   2. Backing Sheet: manufacturer's standard. Moisture blocking backing 015 thick recyclable, and shall be factory laminated to core material.
   3. Laminating Adhesive: Manufacturer's standard, moisture-resistant, thermoplastic-type adhesive.

D. Lamination
   1. Factory machine type only.

E. Writing Surface Overlay “Skin”
   1. Basis of Design: Claridge Products – LCS Skins
      a. Steel Gauge: 24
   3. Size: Custom, refer to drawings and verify dimensions in field.
   4. Installation: Over existing boards (where indicated in drawings)
   5. Adhesive:
      a. Where installations are detailed over existing Chalkboard (slate panels), provide troweled contact cement, per manufacture’s recommendations, similar to Claridge Products – 18A Adhesive

2.3 MATERIALS FOR TACKBOARD (TB) PANELS

A. Description of Tackboard Assemblies:
   1. TB = Vinyl Tackboard w/ Aluminum Frame, typical
      a. Basis of Design: Claridge – Fabricork #1380 w/ Series #1 Alum. Frame
      b. Vinyl fabric on ½ inch core composed of 1/8-inch natural cork over 3/8 inch backer board (Duracore) with Aluminum Frame at perimeter.
      c. Size / Installation: Reference Drawings
   2. TBW = Vinyl Tackboard – Edge Wrapped
      a. Basis of Design: Claridge – Fabricork #1380EW
b. Vinyl fabric on ½ inch core composed of 1/8-inch natural cork over 3/8 inch backer board (Duracore), wrap fabric over edges onto back of core panel.

3. **TB1 = Vinyl Tackboard - Edge Wrapped (adhered to existing Chalkboard)**
   a. Basis of Design: Claridge – Fabricork #1380EW
   b. Vinyl fabric on ½ inch core composed of 1/8-inch natural cork over 3/8 inch backer board (Duracore), wrap fabric over edges onto back of core panel.
   c. Size / Installation: Reference Drawings

4. **TB2 = Vinyl Tackboard – Edge Wrapped (adhered to MDF panel & blocking)**
   a. Basis of Design: Claridge – Fabricork #1380EW
   b. Vinyl fabric on ½ inch core composed of 1/8-inch natural cork over 3/8 inch backer board (Duracore), wrap fabric over edges onto back of core panel.

5. **TB3 = Vinyl Tackboard Covering (adhered to existing wood panels, scribe to existing wood frame)**
   a. Basis of Design: Claridge – Fabricork #1500
   b. Vinyl fabric over core of ¼” natural cork

**B. Core:**

1. Composed of 100 percent post-consumer and post-industrial waste or 100 percent naturally sustainable.
2. Basis of Design: Claridge - Duracore

**C. Vinyl Coverings:**

1. Covering: 20 ounce per linear yard, 2-ply, 100 percent recycled polyester with a plain non directional weave pattern. Mildew-resistant, washable vinyl fabric complying with FS CCC-W-408, Type II, weighing not less than 13 oz./sq. yd, laminated to cork over fiberboard.
2. Color / Pattern: If not indicated in drawings, provide samples of manufacture’s full range of standard options.

**2.4 ACCESSORIES**

**A. Metal Trim and Accessories:**

1. Fabricate frames and trim of not less than 0.062-inch thick, extruded-aluminum alloy, size and shape as indicated, to suit type of installation. Provide straight, single-length units. Keep joints to a minimum. Miter corners to a neat, hairline closure.
2. Where size of visual display boards or other conditions require support in addition to normal trim, provide structural supports or modify trim as indicated or as selected by Architect from manufacturer's standard structural support accessories to suit conditions indicated.
3. Basis-of-Design: Claridge Products - Series #1 Boards

**B. Field-Applied Trim:** Manufacturer's standard snap-on trim with no visible screws or exposed joints.

**C. Map Rail:** Furnish map rail at top of each aluminum framed markerboard with rail length equaling length of markerboard. In instances where tackboard(s) are located adjacent to markerboard display rail should equal length of markerboard and tackboard(s). Each display rail on markerboard should be complete with the following accessories:

1. Display Rail: Provide continuous cork display rail approximately 2 inches wide integral with map rail.
a. 100 percent naturally sustainable 1/4-inch thick pure grain natural cork at all tackstrips and display rails.

b. Provide a minimum of 12 colors to select cork, ie: Claridge Cork

2. End Stops: Provide one end stop at each end of map rail.

3. Map Hooks: Provide 2 metal map hooks for every 48 inches of map rail or fraction thereof.

4. Flag Holder: Provide one flag holder for each room.

5. Metal roller brackets: Provide one pair for each room.

D. Adhesives

1. Mildew-resistant, nonstaining adhesive for use with specific type of panels, sheets, or assemblies; and for substrate application; as recommended in writing by visual display unit manufacturer

2.5 FABRICATION

A. Porcelain Enamel Markerboards: Laminate facing sheet and backing sheet to core material under pressure with manufacturer's recommended flexible, waterproof adhesive.

B. Assembly: Provide factory-assembled markerboard and tackboard units, unless field assembled units are required.

1. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, balanced around center of board, as acceptable to Architect.

2. Provide manufacturer's standard mullion trim at joints between markerboard and tackboards.

2.6 FINISHES

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.

B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.

C. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 607.1.

PART 3 - PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine wall surfaces, with Installer present, for compliance with requirements and other conditions affecting installation of visual display boards.

B. Surfaces to receive markerboards shall be free of dirt, scaling paint, and projections or depressions that would affect smooth, finished surfaces of markerboards.
C. Surfaces to receive tackboards shall be dry and free of substances that would impair the bond between tackboards and substrate.

D. Existing Chalkboard (slate surfaces) to receive new Writing Surface Overlay “Skin” product to be cleaned of all debris including: chalk residue, adhesive, screws, nails. If skin spans over an existing joint between chalkboard panels, provide filler and sand smooth.

E. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Deliver factory-built visual display boards completely assembled in one piece without joints, where possible. If dimensions exceed panel size, provide 2 or more pieces of equal length as acceptable to Architect. When overall dimensions require delivery in separate units, prefitt components at the factory, disassemble for delivery, and make final joints at the site. Use splines at joints to maintain surface alignment.

B. Install units in locations and at mounting heights indicated and according to manufacturer's written instructions. Keep perimeter lines straight, plumb, and level. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.

C. Coordinate Project-site-assembled units with grounds, trim, and accessories. Join parts with a neat, precision fit.

3.3 ADJUSTING AND CLEANING

A. Verify that accessories required for each unit have been properly installed and that operating units function properly.

B. Clean units according to manufacturer's written instructions.

END OF SECTION
SECTION 271300 – COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 FORWARD

A. The following specification is typically intended for the extension of existing communications systems in an existing facility. They are intended to provide a set of instructions and materials needed for installation of additional data and voice ports, and additional cabling for new data and voice ports, etc. within parameters set by industry standards and by the SDP IT Department:

1.2 DESIGN

A. Structured Cabling Systems:

1. All horizontal drops for voice and data shall be Cat.6 (minimum) copper.
2. From drop locations to IDF

1.3 APPLICABLE STANDARDS

B. EIA/TIA-568-B.1 & B.1-1; B.2, B-2.2, B-2.3; B.3."Commercial Building Telecommunication Standard."
C. EIA/TIA-455-61. "FOTP-61, Measurement of Fiber or Cable Attenuation Using an OTDR."
E. ANSI/TIA/EIA-607-A."Commercial Building Grounding and Bonding Requirements for Telecommunications."
F. TIA/EIA 492AAAB “Detail Specification for 50µm Core Diameter/125µm Cladding Diameter Class Multi-Mode Optical Fibers”
G. TIA/EIA 492AAC-A “Detail Specification for 850-nm Laser Optimized 50-µm Core Diameter/125µm Cladding Diameter Class 1a Graded Index Multi-Mode Optical Fibers”
H. IEEE 802.3 "Carrier Sense Multiple Access with Collision Detection" and all applicable supplements a through af.
1. IEEE 802.3u-100 Base T/100-Base-TX, Fast Ethernet
2. IEEE 802.3z-Gigabit Ethernet
3. IEEE 802.3 ab-1000 Base T
4. IEEE 802.3ae-10 Gigabit Ethernet
I. Electrical Code Compliance: Comply with applicable local and code requirements of the authority having jurisdiction.
J. NFPA-70-NEC Compliance: Comply with NEC requirements as applicable to construction, installation and color coding of both power type wires/cables and control/signal transmission media.


M. ASTM Compliance: Comply with applicable requirements of D-2219 and D-2220. Provide copper conductors with conductivity of not less than 98% at 20°C (68°F).

N. FCC Compliance: Comply with U.S. Federal Communications Commission Class 8 standard for allowable radiation from network equipment and wiring.

O. Internet Networking Standards: Network hardware and software shall be able to communicate with the Internet and provide for the creation of IP based networks for the district. Supplied hardware and software shall comply with the following standards and RFC's as appropriate.

1. MIL-STD -1777, RFC 971 -Internet Protocol
2. MIL-STD -1778, RFC 793 -Transmission Control Protocol
4. MIL-STD -1781, RFC 821 -Simple Mail Transfer Protocol
6. RFC 950 -Internet Standard Sub-Netting Procedure
7. RFC 1140 -Official Protocol Standards
8. RFC 1156 -MIB Base for IP Networks
9. RFC-1213 -MIB-II
10. RFC-1757 -Remote Monitoring(RMON)
11. RFC 1157 -Simple Network Management Protocol
12. RFC 1720 -TCP/IP, OSI Compliant
13. RFC 1918 -Address Allocation for Private Subnets
14. RFC 1583 -OSPF, Version II
15. RFC 1723 -RIP -II

P. NECA (National Electrical Contractors Association) Standard of Installation.

Q. BICSI TDM Manual, latest edition

R. BICSI LAN Design Manual, latest edition

PART 2  STRUCTURED CABELING SYSTEM (SCS) DISTRIBUTION

2.1  DEFINITIONS

A. MAIN DISTRIBUTION FRAME (MDF): The MDF is the location, within a building or complex of buildings, where the entire telecommunications system originates. It may include: the physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and patching and equipment racks.

B. INTERMEDIATE DISTRIBUTION FRAME (IDF): The IDF is the location in a building where a transition between the backbone or vertical riser system and the individual drop distribution system occurs. It may include: the physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and patching and equipment racks. The IDF’s provide the interface location between fiber distribution cable (backbone) and station cable (horizontal distribution). All walls shall be covered with 3/4" plywood, AC or better, from 12" above the finished floor to the ceiling, painted with two coats of fire retardant paint both sides.

C. Entrance Facility (EF): Existing. Existing MDF room is the entrance facility.

D. BACKBONE PATHWAY: The Backbone Pathway consists of a series of conduits, surface raceways (renovations only), cable trays, conduit sleeves, and chases which connect the MDF to IDF’s and MDF to the EF and the MDF to the Server Room. It generally houses the vertical or backbone system.

E. BACKBOARD: Backboard generally refers to the plywood sheeting lining the walls of telecommunications facilities. Backboard may also refer to the entire wall-mounted assembly, including wire management, wiring blocks, and equipment racks. In this case, the term Backboard is fully interchangeable with SBB or TTB and the equipment required to fulfill the Scope of Work below.

2.2  WORK DESCRIPTION -TYPICAL

A. CONTRACTOR to provide all infrastructure wiring and conduit (if necessary), between and including classroom faceplate or termination, and closet patch panel termination, all cut sheets for Fiber Optic cable, copper UTP cable, patch panels, station jacks, speakers, phone faceplates, and Wireless Access Point enclosures for approval by SDP Tech Services, all patch cables on both ends of each termination, all Wireless Access Point enclosures for every AP location with the exception of any spaces with a drop ceiling at 12 feet high or less (classrooms, hallways, etc), metal faceplates for all wall phones, material and installation of all speakers, as well as the TERMINATION, LABELING, and TESTING of all copper and fiber wiring.

B. The work performed under these guidelines shall be of good quality and performed in a workmanlike manner. In this context "good quality" means the work shall meet industry technical standards and quality of appearance. The owner reserves the right to reject all or a portion of the work performed, either on technical or aesthetic grounds. “Rats Nest” wiring and poor workmanship is not acceptable.
2.3 MANUFACTURERS

A. Cat 6 cables and telecommunications outlets shall be equal in quality and performance to that manufactured by SYSTIMAX. Note that other cabling systems meeting the listed performance and warranty requirements are also acceptable substitutions.

2.4 FUNCTIONS AND OPERATION

A. All copper and fiber network cabling shall be labeled on both ends - at the classroom/workstation termination end, as well as the network closet patch panel termination end. All labels shall be comprised of a sequential numbering scheme that meets TIA/EIA-606 requirements, and shall include room location numbers as described herein.

B. All labels shall be machine printed on clear or opaque tape, stenciled onto adhesive labels, or type written onto adhesive labels, with legible block characters that are at least one-eighth inch (1/8") in height. The text shall be of a color contrasting with the label such that it may be easily read. If labeling tape is utilized, the width of the tape shall not exceed 3/8".

CLASSROOM/WORKSTATION TERMINATIONS

1. All copper cable terminations on the classroom/workstation side shall be labeled in logical order with the respective network closet number, room location number, drop type, and drop number. The numbering and abbreviation scheme shall be as follows:

CLOSET# - ROOM# - TYPE INITIAL - DROP#

a. For example, in room 205 there may be 8 Data drops which all terminate in IDF3. Those drops shall be labeled in sequential order as such:
   i. “IDF3-205-D1”
   ii. “IDF3-205-D2”
   iii. “IDF3-205-D3”, etc…

b. If data drops are grouped together on a multi-port faceplate, and label space on each faceplate is limited, the network closet label may be shown once per group, provided that all drops in that group run to the same closet. Using the example above, if the 8 data drops in room 205 are grouped into (2) 4-port faceplates, they shall be labeled as such:
   i. Faceplate 1 label: “IDF3”
      1. Data drop 1: “205-D1”
      2. Data drop 2: “205-D2”
      3. Data drop 3: “205-D3”
4. Data drop 4: “205-D4”
   ii. Faceplate 2 label: “IDF3”
1. Data drop 5: “205-D5”
2. Data drop 6: “205-D6”, etc…

2. Type initials shall be designated as follows:
   a. Data: “D”
   b. Wireless: “W”
   c. Speaker: “S”
   d. Alarm: “A”
   e. Voice: Any voice cabling shall not be differentiated from any data cabling, and shall be grouped in with the “D” designation for Data.

3. Room initials for non-numbered locations shall be as follows:
   a. Auditorium: “AUD”
   b. Cafeteria: “CAF”
   c. Gym: “GYM”
   d. Library: “IMC”
   e. Hallway: “HALL”
   f. Main Office: “MO”
   g. Any other locations not listed here which do not have a numerical room designation shall be abbreviated logically.

4. Other classroom/workstation side labeling examples are as follows:
   a. 2 WiFi drops at the ceiling of classroom 104, which run back to the MDF: i. “MDF-104-W1” ii. “MDF-104-W2” b. 8 speakers in the Cafeteria, which run back to IDF2: i. “IDF2-CAF-S1” ii. “IDF2-CAF-S2”, etc… c. 4 phones in the Main Office, which run back to IDF1: i. “IDF1-MO-D1” ii. “IDF1-MO-D2”, etc...

**NETWORK CLOSET TERMINATIONS**

1. All cable terminations on the network closet side shall be terminated on patch panels and grouped together by type, as described in the Rack Installation section above.
   a. All patch panels shall be labeled by drop type in order as follows:
      i. “OUTSIDE FIBER” (if applicable - only in MDF)
      ii. “FIBER”
      iii. “LEGACY TIE CABLES”
      iv. “WIRELESS”
      v. “DATA” (Data includes all: network data, voice, speaker, alarm, and headend controller drops.)
   b. All copper cable terminations on those patch panels shall be labeled in logical order with the respective room location number, drop type,
and drop number. The numbering and abbreviation scheme shall be as follows:

**ROOM# - TYPE INITIAL - DROP#**

2. For example, all non-Wireless copper cabling from classroom 201 and classroom 202, including 4 data drops each, 1 wall phone each, and 1 speaker each, shall be terminated on the DATA patch panel. Those drops shall be labeled sequentially as such:

3. Additionally, in that same example, the Wireless Access Point cabling from both classrooms 201 and 202 shall be terminated in the WIRELESS patch panel in that same closet, and labeled sequentially as such:

**FIBER TERMINATIONS**

1. Optical fiber cable segments shall be labeled at each end with the respective closet or classroom/lab identifier, as well as the cable type, as follows:

   **ROOM# - TYPE INITIAL**

   a. For example, a 24 strand, OM3, 50μ Multimode fiber cable between the MDF and IDF1 shall be labeled as follows:
      i. In the MDF: “IDF1-MM”
      ii. In IDF1: “MDF-MM”

   b. For example, a 12 strand, OM3, 50μ Multimode fiber cable between the MDF and a computer lab in room# 305 shall be labeled as follows:
      i. In the MDF: “Lab 305-MM”
      ii. In the computer lab: “MDF-MM”

   c. For example, a 24 strand Single mode fiber cable between the MDF and the Annex shall be labeled as follows:
      i. In the MDF: “Annex-SM”
      ii. In the Annex: “MDF-SM”

2. Additional fiber cable labeling shall include Warning Tags:
a. At each location where the fiber cable is exposed to human intrusion, it shall be marked with warning tags. These tags shall be yellow or orange in color, and shall contain the warning: "CAUTION FIBER OPTIC CABLE." The text shall be permanent, black, block characters, and at least 3/16" high.

b. A warning tag shall be permanently affixed to each exposed cable or bundle of cables, at intervals of not more than five (5) feet. Any section of exposed cable which is less than five (5) feet in length shall have at least one warning tag affixed to it.

Any additional labeling questions not addressed in this document shall be sent to SDP Tech Services for further clarification.

C. The intended function of the data communications cable system is to transmit data signals from a central location to several individual data outlet locations. Upon completion of the work outlined in this specification, the system shall be capable of transmitting data signals at a rate of 1000 Mbps minimum over Category 6 cable and over SM and MM fiber. Both SM and MM fiber shall also be capable of transmitting 10Gbps based upon the transmitting distance and number of links.

D. Work station cable, from the IDF to the work area, shall be installed in accordance with EIA/TIA-568-B.2 specified installation practices, BICSI Guidelines, manufacturer specified installation practices, SYSTIMAX or (Other Acceptable Substitutes) Certified Cabling System installation practices, and shall be capable of transmitting a signal at 1000 Mbps with acceptable attenuation and cross-talk measurements and PSACR MARGIN. The entire workstation cable system, including wiring blocks, cable, and telecommunications outlets shall be tested for Category 6 compliance.

PART 3 -PRODUCTS AND INSTALLATION

3.1 GENERAL

A. Throughout Part 3, material quantities are not given. It is the responsibility of the Contractor to provide appropriate quantities of materials to provide a complete, functional system according to the design drawings, specifications, and work description.

B. General installation provisions are as follows:

   1. Cable: Where cable enters an MDF or IDF it shall be supported on horizontal or vertical cable runway. If terminations are on backboards, then from the runway support to the backboard via "D" Rings and cable ties. All cable shall be neatly bundled, combed, and tied. All cable runs, within the MDF or IDF, shall be horizontal or vertical, and bends shall comply with minimum specified cable bending radii. Copper UTP cable runs shall be provided with a ten-foot slack loop in the cable runway, in each IDF. Spread out the Cat. 6 cable in the runway and cable trays to avoid heavy stressing of the cable due to its own weight. Provide sufficient slack in...
the run to avoid any cinching of cables. NOTE CAT.6 CABLES SHALL NOT BE
CINCHED TOO TIGHTLY. CABLE TIES AT PATCH PANEL LOCATIONS SHALL
BE VELCRO TYPE TIE-WRAPs ONLY. PLASTIC WIRE TIE WRAPS ARE NOT
ALLOWED TO BE USED FOR ANY CAT.6 CABLING.

2. Labeling: hand written labels are not acceptable. All labels shall be machine printed
on clear or opaque tape, stenciled onto adhesive labels, or type written onto
adhesive labels. The font shall be at least one-eighth inch (1/8") in height, block
characters, and legible. The text shall be of a color contrasting with the label such
that it may be easily read. If labeling tape is utilized, the width of the tape shall not
exceed 3/8," and the font color shall contrast with the background. Patch panels shall
exhibit workstation numbers, in sequential order, for all workstations served by the
MDF or IDF.
   a. Each telecommunications outlet shall be labeled with its respective work
      station number (machine labels only). Workstation numbers shall be
      comprised of a sequential numbering scheme that meets the TIA/EIA-
      606 requirements, i.e. "1-1¬DJ-52"(IDF #1-rack 1-data patch panel-port
      #52); or"1-2-VJ-48" (IDF #1-rack 2¬voice patch panel-port# 48). Each
      workstation cable shall be labeled, using a machine based net
      permanent labeling medium, at each end with its respective workstation
      number. Each binder group shall be tied off with its respective identifying
      ribbon at each break-out point.

3. T-Bar Suspended Ceilings: All data drop cable above dropped ceilings shall be
installed in J-hooks, cable tray, or a combination thereof, conduit, or in cable chase.
In no case shall cable be supported on ceiling tiles, T-bars, or tie-wrapped to any
conduit or pipes. Cable must be supported in all areas. Bridle rings and tie-wrapped
supporting means are not acceptable. Wire-rod cable trays are acceptable above
dropped ceilings in-lieu of J-hooks. Laying cable on a T-bar ceiling is not allowed by
the NEC and is not acceptable for support of Cat. 6 cabling, j-hooks must be used
between conduit stub-ups and the wire rod cable tray for support.

3.2 WORK STATION CABLE

A. DESCRIPTION: From each IDF, 4-pair Category 6 UTP cables shall be routed to each
work station (for both data and voice outlets) served by the IDF. Where the data outlet
resides in a classroom, a minimum of 6 cables plus one voice drop shall be required
Route drops in, conduit, j-hooks, and /or chases and sleeves as required.

B. COPPER UTP CABLE SPECIFICATIONS

1. HIGH SPEED LAN COMMUNICATIONS PLENUM CABLE: ENHANCED MARGIN
   CATEGORY 6, HORIZONTAL UNSHIELDED TWISTED PAIR (UTP).

C. SCOPE
1. This section defines the requirements for commercially available high-performance Category 6 plenum-rated LAN communications cable. The cable design described herein exceeds minimum ANSI/TIA/EIA 568-B Category 6 and ISO/IEC 11801 Class D standards in critical transmission characteristics and provides additional specifications for conductor insulation. This specification provides more ACR margin (headroom) at transmission frequencies up to 200 MHz, better electrical balance, and temperature/humidity stability for superior long-term performance. (NOTE: Minimum cable fire-rating shall be CMR; plenum rating only as required if returns are ducted; however, 100% FEP cable must be supplied).

   a. The minimum Power Sum ACR, for the Worst Case Pair for a 4-Connector Channel shall be 10.9dB at 200 MHz.

2. ENGINEERING SPECIFICATIONS

   a. Cable Manufacturers’ Part Numbers:

      1) SYSTIMAX # 2071E GigaMax Cable & Gigamax Cabling System – Preferred
      2) Mohawk/CDT: AdvanceNet with Hubbell NEXTSPEED
      3) Berk-Tek: LanMark 2000 with Ortronics Clarity
      4) Superior Essex: NextGain with Leviton eXtreme
      5) Commscope : Ultrapipe with Siemon Ultra-“Uniprise Solution”

   b. Product: Jack Faceplates (WAO’s) 4 pair, S110 connecting blocks, T568B pinning, Category 6 compliant, light Ivory or as selected by SDP:

      1) Modular Outlet Jacks: SYSTIMAX MGS-400 Series jacks in M-Series Information Outlets, 8 wire, T568B pinning, Category 6 S110 type insulation displacement modular outlet. Provide couplers as required per application and drawings.
      2) Faceplates: CommScope M10LW4SP 1-port Single Gang Stainless Steel Telephone Faceplate, part #760100891

   c. Accessories: Snap-in colored icons, blue for data and light gray for voice, ‘phone’ for voice and ‘computer’ for data/video, labels and clear label covers, quantities as required

      1) Required Accessories and Quantities (Surface Mount Boxes):
      2) Modular Mounting Frames: SYSTIMAX. PART #M12AP-246, Two-port, with cover, base, bezel, icons, screws, Light Ivory – surface mount with
screws.
3) Modular Mounting Frames: SYSTIMAX, PART #M14L-246, Four-port, with cover, base, bezel, icons, screws, Light Ivory – surface mount with screws.
4) Modular Mounting Frames: SYSTIMAX, PART #M16L-246, Six-port, with cover, base, bezel, icons, screws, Light Ivory – surface mount with screws.
5) Modular Outlet Jacks: SYSTIMAX M-Series Information Outlets or Flexible Information Outlets for HI-LO outlets and/or A/V outlets, 8 wire, T568B pinning, Category 6 S110 insulation displacement type modular outlet. Provide couplers as per application and drawings.
   a) SYSTIMAX MGS400 Category 6 jack
   b) single port F-type coaxial adapter
   c) blank inserts for unused port
   d) Icons same as surface raceway jacks

3. INSTALLATION:
   a. Installation shall be conducted in accordance with guidelines established the manufacturer and industry standards. Surface raceway jack faceplates shall be mounted in the surface raceway hanging boxes and shall be coordinated by the installation contractor. Each jack faceplate plate shall be labeled with its respective work station number. Each modular surface mounted box shall be labeled with its respective work station number. Labels shall be made by machine and shall be compliant with TIA/EIA-606 requirements.

D. TESTING AND DOCUMENTATION

1. TESTING:
   a. Contractor shall test each pair of each twisted-pair copper cable. The Owner reserves the right to have a representative present during all or a portion of the testing process. If the Owner elects to be present during testing, test results will only be acceptable when conducted in the presence of the Owner.
   b. Tests
      1) Multi-mode: Signal attenuation at 850 and 1300 nm.
      2) Single-mode: Bi-directional signal attenuation at 1310 and 1550 nm.

E. WORKSTATION CABLE:

1. Each workstation cable shall be tested from the Jack Panel to the data outlet per TIA/EIA-568-B2.1 permanent link test requirements.
a. Test Equipment: Minimum Level III Compliant Tester
   1) Wirescope 350(Agilent Technologies) or equivalent
      a) Test Criteria: The system shall be tested to Category 6 TIA/EIA-568-B.2-1 permanent link test parameter requirements.

F. DOCUMENTATION:
   1. Contractor shall provide documentation to include test results and as-built drawings, all test results shall be computer generated. One Hard Copy shall also be provided to the District. Software for viewing the test results shall also be provided in the soft copy package.

G. WORK STATION CABLE:
   1. The results of the work station cable tests shall be provided in the form of computer print-outs from the test equipment.

H. AS-BUILT DRAWINGS:
   1. Contractor will be provided with clean copies of the Electrical drawings depicting data outlet locations or, if required by Addendum, shall produce drawings depicting data outlet locations as they were installed. The drawings, provided by Owner or in accordance with Addendum shall be modified to indicate actual cable routing, work station locations and workstation numbers.

3.3 INSTALLATION TESTING - COPPER

   A. The Owner/Engineer shall be notified 2 weeks prior to any testing so that the testing may be witnessed.

   B. Before requesting a final inspection, the Contractor shall perform a series of end to end installation performance tests. The Contractor shall submit for approval a proposal describing the test procedures, test result forms, and timetable for fiber optic and all copper plant wiring.

   C. Acceptance of the simple test procedures discussed below is predicated on the Contractor's use of the recommended products including but not limited to twisted pair cable, cross-connect blocks, and outlet devices specified and adherence to the inspection requirements, and practices set forth. Acceptance of the completed installation will be evaluated in the context of each of these factors.

   D. Minimum Test Parameter requirements for Enhanced Category 6 horizontal cabling.

      1. Category 6:

         a. Each wire/pair shall be tested at both ends for the following utilizing Contractor generated test results forms:
1) Wire Map
2) Length
3) Insertion Loss
4) Near-end crosstalk (NEXT) loss
5) Power sum near-end crosstalk (PSNEXT)
6) Equal-level far-end crosstalk (ELFEXT)
7) Power sum equal-level far-end crosstalk (PSELFEXT)
8) Return loss
9) Propagation delay
10) Delay Skew
11) Power Sum ACR

2. When errors are found, the source of each error shall be determined, corrected, and the cable re-tested. All defective components shall be replaced and retested. Defective components not corrected shall be reported to the Owner/Engineer with explanations of the corrective actions attempted.

3. Test records shall be maintained using the approved test results forms. The form shall record closet number, riser pair number or outlet ID, outcome of test, indication of errors found (e.g., a, b, c, d, or e) cable length, re-test results after problem resolution and signature of the technician completing the tests.

4. Test results for each 4 pair, Category 6, UTP cable must be submitted with identification to match labels on all patch panel ports and 8 position modular jacks, and identification to match as-built associated with that cable.

5. Owner/Engineer will observe and verify the accuracy of test results submitted.

6. Submit in both hardcopy and electronic floppy disc format.

E. ACCEPTANCE

1. Acceptance of the Data Communications System, by Owner, shall be based on the results of testing, functionality, and the receipt of documentation. With regard to testing, all fiber segments and all workstation data cables must meet the criteria established in the Section above. With regard to functionality, Contractor must demonstrate to Owner that 1000 Mbps data signals can be successfully transmitted, bi-directionally, from the MDF to and from a minimum of 10% of individual data outlets on each floor, witness tested by the Owner. The number of outlet locations to be tested shall be determined by Owner. With regard to documentation, all required documentation shall be submitted to Owner.

F. MINIMUM WARRANTY
1. The Cabling System shall meet the performance requirements of the ANSI/TIA/EIA-568-B.2 standard. The warranty on the material, services, and operation of the cabling system to this specification must be for a period of at least 20 years. The connecting hardware shall have a lifetime extended warranty against defects in material and workmanship.

2. The warranty must include the following statements regarding the cabling system:
   a. "Will support and conform to TIA/EIA-568-B specifications covering ANY CURRENT OR FUTURE APPLICATION which supports transmission over a properly constructed horizontal cabling system premises network which meets the channel and/or basic link performance as described in TIA/EIA-568-B."
   b. "Will be free from defects in material or faulty workmanship."

PART 4 -VOICE DISTRIBUTION

4.1 GENERAL

   A. PERFORMANCE REQUIREMENTS
      1. The Telephone Voice Distribution System shall be provided from the outlet locations to the IDF’s with Cat.6 station cabling.

4.2 PRODUCTS AND INSTALLATION

   A. General: Refer to the requirements and equipment outlined in this guideline specification.
   B. Miscellaneous Hardware: Provide all terminations, cross-connects, wire management, surge protectors, etc. for a complete and operational system.
      1. Jacks, wall mount only, EIA/TIA 568B Pin-out, Cat. 6; provide wall mount type jacks with studded mounts for locations as required – Classrooms shall be located in the recessed wall box enclosure-see module details
      2. Auxiliary Equipment: The Contractor shall install cross-connect wire (minimum Cat. 3 rated), D-rings, wire distribution spools, 110 block labeling, organizer rings, and other appurtenances for a complete, neat, and functional system.

   C. RECORD DRAWINGS
      1. The Contractor shall submit record drawings showing the actual system installation and the hardware/equipment locations. Clearly drafted markings on the Bid Documents attached Drawings shall be acceptable. These drawings shall indicate actual cable routing, cable numbers, outlet jack labeling, and designations of each termination at outlets and in the IDF’s/MDF. Also included shall be the test report.

PART 5 - CABLE AND WIRE MANAGEMENT

5.1 GENERAL
A. Unless indicated all data and voice cables shall be installed in conduit.

B. Cabling, voice and data shall be installed according to the general requirements, as detailed below, and as shown on the drawings or in an attached addendum.

1. No more than 50 UTP cable drops per run can be installed in Category 6 two inch "J-hooks" as called out herein (if necessary).

2. Station Cable drops from work area outlet will be installed in conduit, Category 6 "J-hooks," from outlet stub up to the cable tray.

3. Use Vertical Wire runway to support any /all risers between floors in closets or accessible locations; in no case shall any cable risers be unsupported.

4. Cables entering IDF’s/MDF’s shall be supported with Cable runway from entrance to rack/cabinet location.

PART 6 - CORING/SLOTTING/SLEEVEING

6.1 SLEEVES:

A. All wall penetrations shall be bored, and then sleeved; minimum is 1-inch metallic sleeve with plastic bushings or as required to size up. All floor penetrations shall be core drilled clean and true, and then installed with a metallic sleeve and plastic bushings on each side.

B. The Contractor shall provide sleeves where required to protect equipment or facilities in the installation. Each sleeve shall extend through its respective floor, wall, or partition and shall be cut flush with each surface unless otherwise required.

C. Sleeves in bearing and masonry walls, floors, and partitions shall be of standard weight steel pipe finished with smooth edges. For other masonry partitions, through suspended ceilings and for concealed vertical piping, sleeves shall be No. 22 U.S.G. galvanized iron.

D. All sleeves shall be properly installed and securely cemented in place.

E. Floor sleeves shall extend 3 inches above the finished floor. Space between floor sleeves and passing conduit shall be caulked with graphite packing and waterproof caulking compound as required for a waterproof installation. All floor sleeves shall be installed with plastic bushings to protect the cable, on both sides.

F. Where conduits pass through waterproofed floors or walls, design of sleeves shall be such that waterproofing can be flashed into and around the sleeves.

G. Sleeves through exterior walls below grade shall have the spaces between conduit and sleeve caulked watertight.

H. Core drill one size larger than sleeve to accommodate the sleeve installation, caulk the void with watertight and fire rated sealing mastic (between bore and sleeve).

6.2 CHASES AND OPENINGS

A. All openings or chases required for the installation of the telecommunications work in the building shall be provided by the Contractor.
B. This Contractor shall seal all openings he has made in fire rated floors, ceilings or partitions after his work has been installed. The material used for sealing the openings shall have a fire rating equal to or greater than the rating of the floor, ceiling or partition material. All fire stop material shall be U.L. classified. Fire stop sealants, foams and compounds shall be as manufactured by 3M, STI, or Nelson. All floors minimum 2-hour rated fire stops and all corridor penetrations to classrooms or other areas.

C. All Corridor Walls shall be considered fire rated and shall have a two-hour fire stop also- the Contractor has the option to install a UL Classified Sleeve/Firestop Combination, for wall and floor applications; use the STI “EZ-PATH” System, 1.5” for corridor penetrations to classrooms and 4” for floors for risers and 4” for entering IDF’s/MDF’s from the corridor.
WHEN EXISTING WOOD TRIMS ARE TO BE REMOVED, WHERE POSSIBLE, SALVAGE PROFILES UNO PROVIDE PROPER PROTECTION FOR ALL SURFACES TO REMAIN DURING CONSTRUCTION. SHALL APPLY TO ENTIRE ROOM, UNLESS NOTED OTHERWISE.

FACE OF PC - 2022-006-P

CEILING MAXIMUM CASEWORK FOR CMU WALLS, TOOTH-IN NEW BLOCK WHERE CUT UNITS OR OPEN CORES ARE EXPOSED.

GENERAL DEMOLITION NOTES:

'TACKBOARD' UNITS, DOORS, DOOR TRIMS, INTERIOR WINDOW MULLIONS/GLAZING BEADS.

GENERAL INFORMATION

INCLUSIVE OF WINDOW TRIMS, WOOD PANELS, WINDOW SILLS, 'CHALKBOARD' AND EXPANSION ELEVATIONS & DETAILS FOR NEW WORK PERTAINING TO TYPES & LAYOUTS OF VISUAL DISPLAY.

ADDENDUM 1

COATINGS TO SUFFICIENTLY MATCH EXISTING SURFACE. WHERE NEW WALLS INFILL AT TRIM, CHAIR RAIL TRIM, CROWN MOLDING, BUILT-IN CABINETS, DOORS

PAINTED SOLID WOOD BASE, REF. DETAIL 11-A-800.

PROVIDE ACOUSTICAL BATT INSULATION INSIDE ENTIRE WOOD FRAME [JAMBS & HEAD] PROVIDE A WOOD-INFILL / COVER PLATE AT ABANDONED FLOOR RECEPTACLE.

PROVIDE ACOUSTICAL BATT INSULATION INSIDE ENTIRE WOOD FRAME [JAMBS & HEAD] PROVIDE A WOOD-INFILL / COVER PLATE AT ABANDONED FLOOR RECEPTACLE.

REPLACE EX. WOOD FLOOR PANEL W/ MDF PANEL

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REPLACE EX. WOOD FLOOR PANEL W/ MDF PANEL
### DOOR SCHEDULE

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<th>DOOR</th>
<th>MAT'L TYPE</th>
<th>MAT'L</th>
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<th>RT</th>
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### DOOR SCHEDULE (REMARKS/NOTES)

1. **REPLACE EXISTING GLAZING PANELS AND STAINED SOLID WOOD GLAZING BEADS IN TRANSOMS / HIGH WINDOWS**: WHERE INDICATED ON INTERIOR ELEVATIONS
2. **REPLACE EXISTING TWO (2) GLAZING PANELS AND STAINED SOLID WOOD GLAZING BEADS IN DOOR**
3. **STOP MOLDING IS NOTED TO BE REPLACED**: PROVIDE SOLID OAK TRIM TO MATCH EXISTING PROFILE (AT ADJACENT DOOR) & 'DARK' STAIN OF EXISTING WOOD TRIM.
4. **TYPICAL MOUNTING HEIGHTS FOR PLUMBING & TOILET ROOM ACCESSORIES**

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**ZONE "A" - MAIN BUILDING - FIRST FLOOR**

**ZONE "B" - PORTABLE BUILDING**

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**ISSUE FOR BID**

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**DATE**

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**PHILADELPHIA, PA 19130 - 4015 440 NORTH BROAD STREET**

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**PROJECT SHEET**

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**CLASSROOM MODERNIZATION SCHEDULE**

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**SHEETS**

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**A - 005**

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**SHEET 1 OF 10**
**REFINISHING EXISTING WOODWORK, DOORS & WINDOWS**

- **ZONE 'A' - FIELD PAINT @ TYPICAL WALLS**
  - Use of manufactured colors.
  - Reference finish plans for color selection related to room's accessories.
- **ZONE 'A' - REFINISHING EXIST. WOODWORK & DOORS**
  - ZONE 'A' - RM. #101T
  - ACCENT PAINT, WHERE INDICATED DRAWINGS
  -區域 A - 墻面漆
  - 參考塗飾計劃所選材質
- **ZONE 'A' - NEW WOOD DOORS & WOOD TRIM**
  - ZONE 'A' - RM. #101T
  - REF. NOTE #9
  - Paint @ Hollow Metal Frames / Trim, Typ.
  - 參考號 #9
  - 窗洞口之漆
- **STUDENT COAT AREA**
  - ZONE 'A' - RM. #101T
  - REF. NOTE #9
  - Paint @ Existing Concrete / Plaster Ceiling, Typ.
  - 參考號 #9
  - 其他區域
- **TOILET ROOM**
  - ZONE 'A' - RM. #101T
  - REF. NOTE #9
  - Paint @ Existing Concrete / Plaster Ceiling, Typ.
  - 參考號 #9
  - 其他區域
- **ZONE 'A' - RM. #101T**
  - Reference Finish Plans for Color Selection Related to Room's Accessories.
  - 參考塗飾計劃所選材質
  - 其他區域

**WOOD FLOORING**

- **ZONE 'A' - EXISTING WOOD FLOORING**
  - ZONE 'A' - RM. #101T
  - REF. SPEC. FOR MARKERBOARD ASSEMBLIES:
  - 參考標記板組裝
  - 其他區域
  - **POSSIBLE FLOORING**
    - **RESINOUS FLOORING**
      - CT-W1 = #X714 DESERT GRAY - MATTE (FIELD)
      - CT-W3 = #X714 DESERT GRAY - SATIN (BASE)
    - **RESINOUS FLOORING**
      - SW 7014 - EIDER WHITE ("WHITE")
      - SW 9052 - BLITHE BLUE ("TEAL")
    - **RESINOUS FLOORING**
      - CS ACROVYN - 72" H
      - SSM-B
    - **RESINOUS FLOORING**
      - ACCENT PAINT, WHERE INDICATED DRAWINGS
      - SW 7014 - EIDER WHITE ("WHITE")
      - SW 9052 - BLITHE BLUE ("TEAL")
    - **RESINOUS FLOORING**
      - REF. SPEC. FOR MARKERBOARD ASSEMBLIES:
      - 參考標記板組裝
      - 其他區域

**P-TILEquets**

- **EXIST. WOOD CEILING & 'PURPLE' EXPOSED STRUCTURE TO REMAIN**
  - 參考號 #9
  - 其他區域
- **EXIST. WOOD CEILING & 'PURPLE' EXPOSED STRUCTURE TO REMAIN**
  - 參考號 #9
  - 其他區域

**ACOUSTICS**

- **ZONE 'A' - RM. #101T**
  - REF. NOTE #9
  - ACCENT PAINT, WHERE INDICATED DRAWINGS
  - 參考號 #9
  - 其他區域

**PAINT @ EXISTING CONCRETE / PLASTER CEILING**

- **ZONE 'A' - RM. #101T**
  - REF. NOTE #9
  - ACCENT PAINT, WHERE INDICATED DRAWINGS
  - 參考號 #9
  - 其他區域

**GENERAL NOTES**

- **BASE TO REMAIN**
  - 參考號 #9
  - 其他區域
- **FASCIA / SHADECLOTH / COLOR / OPENNESS**
  - 參考號 #9
  - 其他區域

**REFERENCE INTERIOR FINISH - ROOM SCHEDULE**

- **REFERENCE INTERIOR FINISH - ROOM SCHEDULE**
  - 參考塗飾計劃所選材質
  - 其他區域
NOTES FOR NEW WOOD DOORS IN ZONE 'A':

1. PROVIDE NEW STILE & RAIL WOOD DOORS WITH GLAZING LITES WHERE SHOWN.

2. DOOR SIZES TO BE VERIFIED IN THE FIELD WITH EXISTING WOOD FRAMES TO REMAIN.

3. PANEL SIZES AND CONFIGURATIONS TO MATCH EXISTING WOOD DOORS AT OTHER CLASSROOMS. VERIFY DIMENSIONS IN FIELD TO BE COORDINATED.

4. DOORS TO BE "DARK" STAINED FINISH TO MATCH EXIST.

5. REFERENCE DOOR SCHEDULE FOR HARDWARE [NOT SHOWN].

GENERAL NOTES FOR INTERIOR ELEVATIONS FOR SHEETS A-400, A-401 & A-402 - BUILDING ZONE 'A':

1. REFINISH EXISTING CHALKBOARD / MARKERBOARD / TACKBOARD (CB-MB-TB) ASSEMBLIES, THIS INCLUDES:
   - REFINISHING WOOD PERIMETER TRIM, DIVIDER TRIM, & CHALK TRAY. REFERENCE DETAILS #9 THRU 12 ON SHEET A-800.
   - PREPPING / REFINISHING / REPLACING RECESSED AREAS TO RECEIVE VISUAL DISPLAY UNITS (MB# & TB#) & RELATED FINISHES, REFERENCE SPEC #101100 & DETAILS ON SHEET A-800.

2. REFINISH EXISTING WOOD DOORS, WINDOWS & RELATED TRIM. REFER TO A-300 MORE INFORMATION.

3. WOOD ITEMS NOTED TO BE RE-FINISHED SHALL BE RE-FINISHED ON BOTH SIDES.
   - THIS INCLUDES ITEMS ALONG THE CORRIDOR: DOORS, TRANSOM WINDOWS, COAT CLOSET 'HIGH' WINDOWS AND RELATED PERIMETER TRIM & DIVIDERS.
   - THIS INCLUDES PERIMETER WOOD TRIM AROUND DEMO'D OPERABLE PARTITION BETWEEN ROOMS: 204 THRU 207.

4. EXISTING WALLS ARE PLASTER IN ZONE 'A', UNO. WHERE ITEMS ARE DEMO'D / REMOVED, PATCH & PREP PLASTER FINISH TO RECEIVE NEW PAINT FINISH WHERE ITEMS ARE DEMOLISHED.

HATCH INDICATES EX. "TACK PANEL" & RELATED SUPPORT BLOCKING TO BE REPLACED, REF. DETAIL 9/A-800

PROVIDE WOOD MILLWORK AS INDICATED. REFER TO DETAILS ON SHEET A-800 FOR ESTIMATED PROFILE OF WOOD TRIM/FRAME.
GENERAL NOTES

Sheet: 35 - E-101

EC - 2022-006-E

放学 notes

PC - 2022-006-P

GC - 2022-006-G

DRAWN BY:

CHECKED BY:

LOCATION NO:

DRAWING TITLE:

DRAWING SCALE:

TRUE SCALE:

REVISION NO:

DATE:

80" = 80"

80" = 80"

80" = 80"

80" = 80"

Attn: GOPI PATEL
Email: GOPI.PATEL@PSQUAREDENG.COM
Phone: 484.539.9459

FIRST GRADE
PLYMOUTH MEETING, PA 19462
300 BROOKSIDE AVENUE - BLDG. 18 - SUITE 150
AMBLER, PA, 19002
920 GERMANTOWN PIKE, SUITE 20
AMBLER, PA, 19002
300 BROOKSIDE AVENUE - BLDG. 18 - SUITE 150
AMBLER, PA, 19002
920 GERMANTOWN PIKE, SUITE 20
AMBLER, PA, 19002
920 GERMANTOWN PIKE, SUITE 20
AMBLER, PA, 19002
215.646.2003

ENGINEER:

MECHANICAL / PLUMBING / ELECTRICAL

DISCONNECT / REROUTE / RECONNECT EXISTING WIRING. COORDINATE ALL WORK WITH SDP-IT.

EXISTING CABLE BACK TO SOURCE.

DISCONNECT AND LEAVE EXISTING WIRING IN SAFE CONDITION FOR FUTURE REUSE.

EXISTING DUPLEX RECEPTACLE TO BE REPLACE IN PLACE WITH NEW GFCI RECEPTACLE.

DISCONNECT AND REMOVE EXISTING WIRING AND CONDUIT BACK TO SOURCE.

TURN BREAKER TO OFF POSITION AND MARK AS "SPARE".

RESISTANT RECEPTACLES. DISCONNECT AND LEAVE EXISTING WIRING IN SAFE CONDITION FOR FUTURE REUSE.

EXISTING WALL MOUNTED IT RACK  TO NEW LOCATION AS SHOWN ON DRAWING E-121.

RESISTANT RECEPTACLES. DISCONNECT AND LEAVE EXISTING WIRING IN SAFE CONDITION FOR FUTURE REUSE.

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