ADDENDUM NO. 5

DATE: March 18, 2020

ARCHITECT: Smolen, Emr, Ilkovitch Architects, Inc.
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OWNER: Howard County Public School System

PROJECT: Hammond High School Renovation and Addition
Columbia, Maryland
Architect Project No. 18011

TO: All Prospective Bidders

The following changes are made a part of the Drawings and Specifications for the subject project, dated February 25, 2020. Receipt of this Addendum is to be acknowledged, in the space provided in the Bid Form. Failure to do so may subject the Bid to be considered as non-responsive.

A. REQUESTS FOR INFORMATION

38. Air Barrier behind Metal Wall Panels; Reference Dwg detail 12/A2.22;
Please clarify if air barrier is required, or not behind metal wall panels, on insulated sheathing panels. If required, what package contractor is to furnish and install it.

    RESPONSE: Air barrier is required behind wall panels. 1A prime contractor shall provide air barrier on insulated sheathing panels. 4A prime contractor shall provide air barrier on masonry substrates.

39. Addendums 1 and 2 have made a substantial amount of electrical changes. The addendum narrative without revised electrical drawings is making it difficult to communicate the changes to equipment vendors. Do you expect updated electrical drawings with the addendum changes prior to bid date?

    RESPONSE: Please see Addendum #3 for drawings related to narrative changes made in Addenda 1 & 2

40. On drawing E9.02, the feeder from the main switchboard to 500KVA transformer T-NLM does not indicate conduit nor feeder sizes. Please advise if the 1200-amp primary overcurrent protection is correct. Please provide the primary and secondary conduit and feeder sizes for transformer T-NLM.

    RESPONSE: Revised riser issued with Addendum #3. Please to revised sheet E9.02 for information.

41. Acoustical Fire Vent; What package contractor is responsible to install 5 units of Fire Vent, that is shown on Mechanical Dwg M3.20(keynote A6) but is not shown on Architectural Roof Dwg A2.20. There is no reference specification for Fire Vent.

    RESPONSE: Scope adjustments have been made in this addenda

42. Will you please provide name and model number of required lint trap or detailed sketch.

    RESPONSE: Dryer is provided in FFE package. Design basis assumed an integral lint trap. Coordination is required after final vendor drawings have been released.

43. Can Design Plus be added to the list of approved sprinkler contractors.

    RESPONSE: Yes. See specification changes below.

44. Can you please confirm the texture for brick #1B? The Taylor Auburn #7. The Taylor #119(#1A) is a smooth.

    RESPONSE: Texture is to be smooth. See specification changes below.

45. The overflow drains shown throughout the plumbing drawings are not designed relative to the spec. Example, RD-2 4'' overflow drain. The question would be, is the OFD shown on the drawings a pipe stub 3'' above the roof line or should we match the size shown to the spec, either RD-1A, 2A or 3A…3''…4''…6''?

    RESPONSE: Provide transition pipe fitting as necessary to connect to specified ORD size. Pipe sizes on plans are intentional.

46A. Spec 260543-3.1-D states that all underground conduits shall be encased in reinforced concrete; other instances within 260543 indicate that direct burial is acceptable for some applications. Please advise.

    RESPONSE: Provide the following:

    a. Direct bury Schedule 80 PVC for primary electrical service conduits. Provide reinforced concrete encasement at all changes in direction. Provide reinforced concrete encased, rigid steel (GRS) long sweeping 90's for all turn-ups. Refer to site plans for bury depth.
    b. Direct Bury Schedule 80 PVC for all fiber, telephone and cable TV service conduits. Provide reinforced concrete encasement at all changes in direction. Provide reinforced concrete encased, rigid steel (GRS) long sweeping 90's for all turn-ups. Refer to site plans for bury depth.
    c. Concrete encased Schedule 40 PVC reinforced ductbank for secondary electrical service lateral and generator feeder. Provide reinforced concrete encased, rigid steel (GRS) long sweeping 90's for all turn-ups. Refer to site plans for bury depth.

46B. Spec 260543 indicates schedule 40 PVC for underground ducts. Ductbank detail on UE1.2 also calls for PVC-40, but dwg E9.02 calls for schedule 80 PVC for primary & secondary ductbanks. Please advise.

    RESPONSE: Provide the following:

    a. Direct bury Schedule 80 PVC for primary electrical service conduits. Provide reinforced concrete encasement at all changes in direction. Provide reinforced concrete encased, rigid steel (GRS) long sweeping 90's for all turn-ups. Refer to site plans for bury depth.
    b. Direct Bury Schedule 80 PVC for all fiber, telephone and cable TV service conduits. Provide reinforced concrete encasement at all changes in direction. Provide reinforced concrete encased, rigid steel (GRS) long sweeping 90's for all turn-ups. Refer to site plans for bury depth.

c. Concrete encased Schedule 40 PVC reinforced ductbank for secondary electrical service lateral and generator feeder. Provide reinforced concrete encased, rigid steel (GRS) long sweeping 90's for all turn-ups. Refer to site plans for bury depth.

46C. E9.02 calls out both GRC sweep 90's and PVC-80 sweep 90's as standard for all underground feeders. Please advise.

RESPONSE: Provide reinforced concrete encased, rigid steel (GRS) long sweeping 90's for all turn-ups.

46D. Spec 260543 states that concrete shall be dyed red for power and yellow for communications; please confirm this requirement.

RESPONSE: Omit the requirement to dye concrete red and yellow.

46E. Please confirm that communications and fiber conduits are direct buried.

RESPONSE: Communications and fiber conduits shall be direct-buried. Provide reinforced concrete encasement at all ells and changes in direction.

47A. No transformer schedule is provided; please advise.

RESPONSE: Revised riser issued with Addendum #3. Please to revised sheet E9.02 for information

47B. No panel schedules are provided for panels NLD, ED, EDEG, & EDLS. Those are just the ones I have confirmed; there may be additional unscheduled panels. Our gear vendors rely on those schedules to configure accurate quotations; please provide a full list of panel schedules.

RESPONSE: Refer to addendum #5 for information.

48A. Addendum 2 notes extensive changes to several electrical drawings, however no revised drawings were provided. Please advise.

RESPONSE: Please reference Addendum # 3

48B. Please confirm that MC cable is not permitted anywhere on project, including for light fixture whips.

RESPONSE: MC is only permitted for light fixture whips.

49. Will knock down door frames be acceptable or will frames need to be shop welded?

RESPONSE: All hollow metal frames are to be shop welded.

50. In the 16A – Electrical scope of work it states on paragraph #10 there are 12 modular classrooms to provide low-voltage, security and fire alarm services but no drawings can be found throughout the bid set. Please advise.

RESPONSE: Revised site plan issued with Addendum #3. Please to revised sheet UE1.1 for information.

51. We respectfully submit for your consideration a request to approve products as an accepted substitute on Hammond High School Renovation/Addition (12-686486); please find substitution request form attached.

With over 30 years of experience, Scranton Products is the industry leader in plastic (HDPE) bathroom partitions and lockers. Constructed from premium, American-made solid plastic, our products resist dents, scratches, corrosion, graffiti and mildew. More information regarding the benefits of our products as well as technical data sheets and MSDS forms for the appropriate product(s), confirming performance as specified, can be reviewed via the links below:

- SP Artisan Woodgrain Collection
- LEED Points
- Tufftec Lockers Brochure
- Engraving Brochure
- Health Product Declaration - Tufftec
- Tufftec Specifications
- Tufftec HDPE vs Metal Brochure
- Health Product Declaration – Tufftec
- SP Artisan Woodgrain Collection
- Tufftec Benches Brochure

RESPONSE: Proposed substitution is to be submitted in accordance with Specification Section 00 10 00, AIA Document A701 –Instructions to Bidders, Article 3, Bidding Documents, 3.3 Substitutions

52. Can you confirm that the bid date remains March 25th, 2020 for this project despite the schools being closed until the 27th of March?

RESPONSE: Please reference Addendum #4

53. What are the floor, wall finishes in J 101, J102 and J104 in field house.

RESPONSE: See addendum sketch AD-A10, attached

54. I see some issues on single line and schedules. I can't find a schedule for swb MSB nor switchboards NLD, NLD MHD and MLD that are shown On plan dwg E6.02. Single line doesn't show those switchboards either and shows feeders directly fed from MSB.

Feeder to 500 Kva transformer at 1200A at 480 also doesn't make sense. Also, I don't believe bge meters at the xfmr. Need a CT section.

RESPONSE: Revised riser issued with Addendum #3. Please to revised sheet E9.02 for information.

55A. Wage Rates – can you provide an off-road truck rate?

RESPONSE: Per DLLR, "If the truck is only dropping something off, he does not have to pay Prevailing Wage."

55B. Note 3 on Sheet C-6 indicates the crosswalks to be acrylic or latex paint but Note 4 on the same sheet indicates thermoplastic, could we get a clarification on this?

RESPONSE: Provide thermoplastic striping per note 4

56A. 9A Bid scope #1 calls for coordinated drawings. Please confirm that this is ceiling coordination drawings. Also, confirm that 3D ceiling coordination drawings is what is required and no 2D

RESPONSE: Coordinated Drawings from the 9A Prime Contractor shall include, but is not limited to, ceilings, access doors and frames and other items as required per specifications. Coordination drawings shall be 2D.

56B. Please confirm that room C122 & C124 should receive black grid and tile. Finish schedule does not have any note.

RESPONSE: Provide black grid and tile for Room C122 and C124.

56C. Are there any other ceilings that must be different color than the above in question?

RESPONSE: No there are not, C122 and C124 are the only exceptions.

56D. RCP shows room C107 to be drywall ceiling but finish schedule calls for C1 - suspension acoustical tile. Please advise whether to follow RCP or finish schedule.

RESPONSE: Follow RCP for room C107. The ceiling is to be drywall.

56E. RCP shows ACT in room A102A, but finish schedule shows this room to be exposed and to be painted.

RESPONSE: There is no room A102A

56F. RCP shows room F108 with NO ceiling but finish schedule calls for C1 – suspension acoustical tile. Please advise whether to follow RCP or finish schedule?

RESPONSE: Follow RCP for room F108.No ceiling is required in this room.

56G. RCP shows room 109 with NO ceiling nor GWB ceiling but finish schedule shows exposed and to have GWB ceiling. Please confirm that this room should get drywall ceiling.

RESPONSE: If the question is related to the room H109 (Choral Room), then see RFI 56K.

56H. RCP shows vestibule G130 to be drywall ceiling but finish schedule calls for C1 – suspension acoustical tile. Please advise whether to follow RCP or finish schedule

RESPONSE: Follow RCP for vestibule G130. The ceiling is to be drywall.

56J. Please confirm we are using standard ceiling tile (C-1) in the following rooms H100, H102, H104, H105A, H106, H110 and H111. If these rooms need ceiling tile with higher NRC, please provide ceiling tile name and number as shown on specs.

RESPONSE: Provide 0.90 NRC acoustical ceiling tiles in rooms H102, H105A, H106. H110 and H111. Basis of design product: Armstrong Optima, specification subsection 2.2.C. in 24x48 size.

56K. RCP shows NO ceilings in choral H109 but finish schedule call for C1 – suspension acoustical tile. Please confirm that this room will receive ACT as the previous rooms listed on the previous question.

RESPONSE: Follow RCP for room H109. No ceiling is required in this room. Acoustical panels are to be mounted to the underside of deck.

56L. RCP shows GWB ceiling at H122 but finish schedule calls for C1 – suspension acoustical tile. Please advise whether to follow RCP or finish schedule.

RESPONSE: Follow RCP for vestibule H122. The ceiling is to be drywall.

56M. RCP shows GWB ceiling at H125 but finish schedule calls for C1 – suspension acoustical tile. Please advise whether to follow RCP or finish schedule.

RESPONSE: Follow RCP for vestibule H125. The ceiling is to be drywall.

56N. RCP shows NO ceiling stage/ wings H131, but finish calls for C-1 – suspension acoustical tile. Please advise whether to follow RCO of finish schedule.

RESPONSE: Ceiling in stage wings is to be GWB. See sketch AD-A11, attached.

56P. RCP shows NO ceiling at stairs 5 H133 and it is highlighted light gray as all other drywall ceilings. Finish schedule call this room to have expose structure. Please advise whether this room will have drywall ceiling.

RESPONSE: Ceiling in room H113 and H121 is to be existing to remain. See sketch AD-A11, attached.

56Q. Spec section 098418 – acoustical metal panels calls for two type metal panels. I went over all RCP drawings and all I can find is type 2 metalworks 96”x 6” x 5/8”. Please advise where is intend to be use type 1 metalworks panels 24”X24 and type 2 metalworks 96” x 12”.

RESPONSE: The design intent for both type 1 and type 2 panels are to be metalworks 96’’x6’’ Type 1 panels are to be solid. Type 2 panels are to be microperforated. The type 2 panels are used in the CR Commons C131. All other panels are type 1.

57. Regarding RFI #36 Response by Addendum #3 with revised Specification Section 074213.13, we acknowledged that Exterior Elevation Dwg Legend #7 (between first floor windows) is belong to 7A work scope, but it is not yet clarified that what package contractor’s work for Door and Window Dwg Key Note #6 & #6A (Door #M29, G28/M28, G24/M24, G18/M18, M17, G16, G15), which is asked by same RFI; If these building inside door’s metal panels are belong to 7A, please provide with applicable Specification for these panels.

RESPONSE: Keynote 6 at frames 24, 28 & 29 is incorrect. These keynotes should read 7. Frames 15, 16, 17 & 18 do require metal panels as described by keynote 6. Interior metal panels will not be scoped to the 7A. Scope adjustments have been made in this addendum.

58. What Subcontractors are needed to be listed in the bid form.

RESPONSE: Bidders should review their respective contract packages for the naming of any specific subcontractors. If none required, we ask that you name up to the top 3 main subcontractors for the project, excluding the Minority Business Enterprise (MBE) firms already included on Attachment B.

59. I reviewed the documents yesterday and I was not able to locate the true scope for the field/synthetic work. Let me know if I am missing something on my end. Thanks.

RESPONSE: C-21 contains relevant information, but the bidders should review the Civil Plans and other Contract Documents in their entirety.

60A. The panel schedule for panel board EMH1C (drawing E10.03) list the panel as 800 amp. The electrical riser-feeder schedule on drawing E9.02 lists panel EMH1C as a 400 amp panel with

two sets of 2-1/2”C , each containing 4- #3/0 and #3GW. Please advise if the feeder schedule is correct.

RESPONSE: Refer to Addendum #3 riser. EMH1C is 200 amps.

60B. If panel EMH1C is an 800 amp panel board per the panel schedule, is the 600 amp ATS -G large enough for the loads?

RESPONSE: ATS-G and EDEG to be 800 amps. Refer to this addendum for additional requirements.

60C. Are panel schedules for distribution panels EDEG and EDLS available for panel ordering information?

RESPONSE: No, refer to write-up.

60D. Panel board EH1D is listed on the drawing E9.02 /electrical riser-feeder schedule. A panel schedule for panel EH1D is shown on drawing E 10.01. The panel schedule does not indicate a panel location. Does panel EH1D exist on the floor plans?

RESPONSE: Refer to sheet E6.02, Room D117.

61A. Section 263213, 2.8, D. specifies generator controller shall be provided with BAC-net interface for monitoring all generator functions. BACnet is not industry standard protocol for generator communications. Please confirm if BACnet is actually required for generator communication on this project or is industry standard MODBUS RTU protocol acceptable for generator monitoring?

RESPONSE: Provide BAC-net.

61B. Please clarify number of poles required for each ATS shown on drawing E9.02? 3 poles with solid neutral or 4-pole switched neutral?

RESPONSE: Provide 4-pole for both Automatic Transfer Switches.

61C. Section 263213, 2.11, J. 1. specifies each ATS must be 65KAIC rated. Please confirm if this 65 KAIC rating is required as this is not indicated on the electrical drawings. If it is required each ATS must be upsized in amperage to meet this rating. Is it required?

RESPONSE: Provide 65kAIC rating.

61D. Section 263213, 2.11, K. specifies each ATS must be by Onan, ASCO, or Russelectric. Please confirm if Kohler is also acceptable for the ATS for this project provided specifications are met?

RESPONSE: Provide Cummins/Onan, ASCO, or Russelectric

61E. Section 263213, 2.11, L. 5. Specifies each ATS shall be provided with a four-position selector switch for TEST, AUTO, OFF, and ENGINE START. This is a special accessory item that is not standard on most ATS’s from manufacturers. If required it will make the ATS’s more expensive for this project. Please confirm if this four-position selector switch can be excluded for all ATS on this job?

RESPONSE: Yes, provide selector switch.

61F. Section 263213, 3.6, B. specifies generator shall be load bank tested at 1.0 PF on-site using resistive type load banks. While section 263213, 3.9, C. specifies load banks for on-site testing shall be capable of providing full load at 0.8 power factor. These are conflicting requirements in the specification. 0.8 PF type load banks are very expensive to rent for testing of generators so please confirm if 1.0 PF resistive type load banks only are acceptable for on-site testing of generator? 1.0 PF load banks are acceptable for on-site testing per NFPA 110 requirements.

RESPONSE: 1.0 PF is acceptable.

62A. Several frames call for hollow metal types M31, M32 and M33 but these are not shown on the schedule. Please provide clarification on these frames.

RESPONSE: Please reference addendum #3

62B. W11 and W12 are not on the window schedule as shown on2/A3.01.

RESPONSE: W11 is to be similar to W1, but with vision glass instead of spandrel glass. W12 is to be similar to W2, but with vision glass instead of spandrel glass. See sketch AD-A12, attached.

62C. Door T30 shows Aluminum and a 60 Min fire rating. Please advise if we should be pricing fire rated framing from TGP or if this should be a hollow metal door.

RESPONSE: Please reference Addendum #3

63A. The 3A contractor will do the saw cutting & demolition for all underpinning, masonry shear walls & TWF. This includes the area along UU/VV lines opposite of where the building is be removed. Spoils are move outside of the building and removed from site by 2A. All overhead shoring for said work is done by 1A.

RESPONSE: The first item is a statement. Please thoroughly review Specification Section 01 02 00 in its entirety for delineations in scope between Prime Contract Packages.

63B. The demolition drawing shaded slab area to be demoed but it does no show up on structural drawings to be replaced mean that this is the 2 ½" filled area?

RESPONSE: Please review Contract Documents in their entirety to determine areas for this specific criteria. For example, demolition key note 8 indicates "... REMOVE EXISTING CERAMIC TILE AND MUD BED DOWN TO STRUCTURAL SLAB...".

64. The 15A Scope of Work Item #33 states "Contractor shall provide equipment screens". Is it tintent for the 15A contractors furnish and install rooftop equipment screening? Please clarify.

RESPONSE: Contractor shall provide all screening as required per Contract Documents inclusive of bird screening, insect screening, etc.

65. We will be submitting pricing for the 15A package. The bid form has a section to name subcontractors, but the specification does not indicate who, if any, are to be named on bid day. Please clarify.

RESPONSE: Bidders should review their respective contract packages for the naming of any specific subcontractors. If none required, we ask that you name up to the top 3 main subcontractors for the project, excluding the Minority Business Enterprise (MBE) firms already included on Attachment B.

66. Will the project CADD files be given to the 15A contractor in order to do the coordinated drawings? If they are given to the contractor, will there be a cost from the Architect for those files? Please advise.

RESPONSE: CADD files will be made available to all contractors upon request. Execution of waiver forms will be required. Architect requires a $200 fee for drawing requests. No additional fees will be required for mechanical, electrical, or plumbing drawings. Additional fees may be required for other disciplines

67. Addendum 3 made significant structural changes to the power distribution system; these changes are requiring us to reconfigure or re-do a large portion of our work. With this being the case, it will be incredibly difficult to complete this project by the current 3/25 bid date. We request a time extension so that all bidding contractors have the means to provide complete and competitive submissions.

Several of our subcontractors and materials/equipment vendors are starting to say that they may not be able to provide pricing to us for HHS and other impending projects due to the growing pandemic. In particular, there is concern about potential shutdowns of manufacturing facilities. I am sure you all are already aware of this situation; I just want to re-iterate that if the fixture and/or switchgear supply chains halt or falter than we are dead in the water bidding-wise

RESPONSE: Reference Addendum #4.

68. Will a site walk be scheduled prior to bid date?

RESPONSE: A Walkthrough occurred after the Pre-Bid Meeting. In addition, Addendum #2 added two additional Walkthrough opportunities. There will be no more Pre-Bid Walkthroughs.

69A. It appears that detailed floor plans for the voice/data and catv terminations are missing. There is mention in the scope for workstation multi-jack outlets but the floor plans do not show outlet markets....just speaker terminations. Please advise.

RESPONSE: E4.XX drawings indicate all data outlets. The XD designation indicated multi-outlet locations. Refer to P, MI, TI, etc. details as well. Refer to E7.XX sheets for additional details.

69B. The existing Rauland Borg TC21 public address / intercom system is noted to be maintained throughout the project until the new system is in place in the MDF. With the existing system being Rauland Borg, Rauland Borg requires that only a authorized dealer/system integrater is to maintain their system. CTSI is the only authorized dealer / system integrator for Rauland Borg in Maryland. Please advise on how to proceed.

RESPONSE: Intercom has to be maintained through-out construction. This can be accomplished with the existing system or installing new system through-out during phase 1 and reworking during each phase.

70A. Looking at Drawing A2.21, the detail of roof drain and overflow drains show an extension type drain. However, please advise if the roof drain spec on Page 220100-3 needs to be revised.

RESPONSE: See revisions to specifications included within this addendum.

70B. Which trade is responsible for the wood blocking and misc. steel on the underside required at the drain locations?

RESPONSE: Please review the Contract Documents in their entirety. Specification Section 01 02 00 provides the Contract Packages and delineations. The 1A Contract Package item 29 defines responsibilities for wood blocking. Please reference 15A Contract Package item 27 regarding structural support.

71. I see types of flow meters in the specification. I do not see their application.
Is Onicon turbine type F-1200 flow meters acceptable for all plant flow meters?

RESPONSE: Onicon Turbine Type F-1200 is acceptable for all single direction flow closed loop applications. For potable water applications, provide the specified potable water flow meter.

72A. Section 116623, paragraph 2.2. specifies a touch screen group controller but drawing E7.02, detail 9 shows a key-switch cabinet. Can you confirm which operation is to be used for the basketball hoops and divider curtain, touch screen group controller or key-switch?

RESPONSE: The touch screen group controller is to be used.

72B. Section 116623, paragraph 2.3.A.3. does not specify bolt-on edge padding for the lower portion and sides of the glass backboard, which is generally provided. Will PMCE bolt-on edge padding be required for the rectangular glass backboards?

RESPONSE: Yes. Provide PMCE bolt-on edge padding at the lower portion and sides of the glass backboards

72C. Section 116623, paragraph 2.3.A. and 2.3.B. do not specify electric height adjusters but drawing E3.06 indicates a power supply for height adjusters at each basketball hoop. Are electric height adjusters required for any of the basketball hoops in each gym?

RESPONSE: Electronic height adjusters are not required for each basketball hoop. Provide specified manual height adjusters.

72D. Section 116623, paragraph 2.4 specifies Sports Imports floor inserts but the gym equipment schedule on drawing A9.12, item G6 specifies Performance Sports Systems equipment for the volleyball equipment. Can you confirm the volleyball equipment should be manufactured by Sports Imports, as we believe this is a HCPSS standard?

RESPONSE: Provide Sports Imports floor inserts per specifications

72E. Section 116623, paragraph 2.7. specifies a divider curtain but a power supply is only shown in the auxiliary gym on drawing E3.06 and drawing A9.06 only shows a divider curtain in the main gym. Will a divider curtain be required in each gym?

RESPONSE: A divider curtain is only required in the main gym. Auxillary gym does not require a divider curtain as this would conflict with the Mulit-Sport Cage.

72F. Will the lights and HVAC be mounted at the heights indicated on A9.54, A9.55 & A9.56 or can they be coordinated to avoid conflict with the mounting of the ceiling mounted gym equipment, the recommendation would be to have them mount even with or above the bottom chord of the truss?

RESPONSE: Lights are to be mounted so the bottom is even with the bottom chord of the open web steel joists. Ductwork is to be installed as shown on interior elevations.

72G. Section 116643, paragraph 2.5.H. specifies to provide (2) control consoles. Should (2) control consoles be provided for the main gym and (1) for the auxiliary gym, as this would allow each scoreboard to be operated independently, if needed?

RESPONSE: A total of two (2) consoles are required. Intent is for both scoreboards in the main gym to be able to be controlled by one console.

72H. Section 116643, paragraph 2.2.D.1. specifies UniView digits for the main gym and paragraph 2.3.D. specifies PanaView digits for the auxiliary gym. Should both gyms be the same digit technology for the scoreboards and shot clocks, if so, which style, UniView or PanaView?

RESPONSE: Follow specifications for bid. Higher grade UniView digits are required for the main gymnasium, while lower grade PanaView digits are acceptable for the auxillary gymnasium.

72J. Section 126100 currently only includes one manufacturer for the auditorium seating. To allow for additional competition, will Hussey Seating Company's Quattro Traditional, Classic Series chair model #S3.L.3.T. be considered for approval?

RESPONSE: Specification is written as a performance specification. Any manufacturer that can meet the performance requirements listed will be acceptable. Irwin is only listed as a basis of design and is not being sole-sourced.

73A. Clarify what contract package has the "Steel Bent Plates" at the masonry cavity windows sills and jambs shown on drawing A8.05, that are not labeled "By Storefront Manuf."

RESPONSE: Scope adjustments have been made in this addendum.

73.B. Clarify if any existing furnishings removed and stored may be stored on site, Section 010190 paragraph 3.1.A.7 reads "if any items are allowed to be stored on site".

RESPONSE: Storage onsite will be made available during summers when school is not in session. No other storage during the school year is anticipated.

73C. Will the existing furniture moved be needed for the modular trailers.

RESPONSE: Yes, existing furniture is to be moved from the building into the modular during the first summer after modular is installed.

73D. Will the library shelving need to be removed and stored.

RESPONSE: No.

73E. Is there weight room equipment to be removed and stored.

RESPONSE: Existing weight room equipment is to be moved to a temporary location onsite, location to be field coordinated.

73F. Will the kitchen equipment need to be removed and stored.

RESPONSE: No.

74. Referencing the item below. Manufacturer has just notified me that this is discontinued and is asking for a replacement Model. Please advise.

ITEM #32: AIR-SCREEN MERCHANDISER

QUANTITY: One (1)
MANUFACTURER: Structural Concepts
MODEL NO.: DOS3637R (N058)
PERTINENT DATA: Drop-in, Self-Contained, Rear-Loading
UTILITIES REQ'D: 15.8A, 120V, 1PH
ALTERNATE MFRS.: None

Furnish and set-in-place per Equipment Plan, Sheet K101, Manufacturer's Instructions and the following:

1. Accessories:
-- Shelf lights.
-- Locking roll-down security cover.
-- 5-year compressor warranty.
-- Hinged rear access doors with locks.

2. Cord and plug set.

3. Mount securely to Item #28G, Solid Top Counter.

RESPONSE: Per manufacturer, this model number is correct and the product is still available for production.

75A. Specification section 08 63 00 - Structural Skylight System lists a 40 psf loading requirement. S0.01 indicates 30 psf. Please confirm the required design load.

RESPONSE: Utilize the 40 psf loads listed within 086300/1.5.A.2

75B. Structural skylight indicates a minimal outward thrust design is required 86300/2.5.A, but the beam sizes listed in 086300/1.6.A.2 will not allow for such a design. Please clarify which is correct

RESPONSE: Minimal Outward Thrust design requirement is to be removed.

75C. Structural skylight specification requirements as to the face sheet requirements conflict. Are 0.060 Huricane-Hi Impact sheets required? Please clarify.

RESPONSE: Impact requirement for Exterior face sheet (0863000/2.2.A.3.b.) is to be reduced to 70 ft. lbs. Utilize face sheets as listed within 2.2.A.4

76. Will there be any delays with the bid due date?

RESPONSE: Please refer to Addendum #4 regarding the bid due date.

77. Specification 230200 – HVAC Equipment
    1. PART 3 – WATER COOLED CHILLER (C-1, and C-2)
       Paragraph 3.1 – Please add Trane to the list of Acceptable Manufacturers
    2. PART 7 – VARIABLE AIR VOLUME BOXES (VAV SINGLE INLET)
       Paragraph 7.2.1 – Please add Trane to the list of Acceptable Manufacturers
    3. PART 8 – FAN POWERED PARALLEL VARIABLE AIR VOLUME BOXES (FVAV)
       Paragraph 8.2.1 – Please add Trane to the list of Acceptable Manufacturers
    4. PART 10 – FAN COIL UNITS

Paragraph 8.2.1 – Please add Trane to the list of Acceptable Manufacturers

RESPONSE: Refer to Changes to Specifications section of Addendum #5.

78. Please provide elevations for hollow metal frame types M31, M32 and M33.

    RESPONSE: Please reference Addendum #3

79. Please confirm if openings D123 and D123.2 are hollow metal or aluminum. Listed on door schedule as HM but on elevation 2/A3.04 as aluminum.

    RESPONSE: Please reference Addendum #3

80. Please provide size, door and frame type for #T08

    RESPONSE: T8 is an existing door. Intent is to provide new hardware on existing door.

81. Please confirm frame type for H200.3 and H200.4 – dimensions do not match frame elevation G19.

    RESPONSE: Provide frame similar to G19, but 6’-0” in width at openings H200.3 and H200.4

82. Please clarify what “UC” means in the comments column on the door schedules.

    RESPONSE: UC references a 1” clear undercut. See revision to General Note A on sheet A8.01 incorporated within this addendum.

83. Finish Schedule A2.11 lists no finishes in Alternate #1 Rooms J100 - J104. Please advise what finishes are to go into these rooms

    RESPONSE: See sketch AD-A10, attached.

84. Advise if typical wall type A4/A7.00 has a nominal 4" stud (3 5/8") or an actual 4" stud.

    RESPONSE: Either size is acceptable. Reference addendum #3.

85. HM Frame M31 is not illustrated on A8.02 however is assigned on the Door Schedule. Provide details as necessary.

    RESPONSE: Please reference Addendum #3.

86. HM Frame M32 is not illustrated on A8.02 however is assigned on the Door Schedule. Provide details as necessary.

    RESPONSE: Please reference Addendum #3.

87. HM Frame M33 is not illustrated on A8.02 however is assigned on the Door Schedule. Provide details as necessary and confirm that this frame type supports (1) Pair and (1) Single door.

    RESPONSE: Please reference Addendum #3.

88. Clerestory Windows shown on detail 2/A2.03 in Commons C131 are not on the Door Schedule like the other Vision Windows. They are noted with Window Numbers but not with any Window Types on A8.02. Confirm (12) Each are Type M26, (2) Each are Type M27 and (2) Each are Type M25.

RESPONSE: Tags in detail 2/A2.03 reference hollow metal opening numbers, which are included within the door schedule on A8.00. Please reference Addendum #3.

89. Please confirm if Airline is an acceptable alternate for the louvers.

    RESPONSE: Proposed substitution is to be submitted in accordance with Specification Section 00 10 00, AIA Document A701 –Instructions to Bidders, Article 3, Bidding Documents, 3.3 Substitutions

90. We fabricate all signage in-house, including ADA compliant signage. Please confirm if our company, AA signs, is an acceptable alternate to fabricate the exterior and ADA signage in-house.

    RESPONSE: Proposed substitution is to be submitted in accordance with Specification Section 00 10 00, AIA Document A701 –Instructions to Bidders, Article 3, Bidding Documents, 3.3 Substitutions

91. For the exterior signage, can you provide the specifications for the 2 post and panel signs from Allen Industries?

    RESPONSE: Follow requirements listed within specification 101400 - Signage.

92. Where will the furniture for the modular trailers come from?

    RESPONSE: Existing furniture is to be relocated from the building during the first summer.

93. Phase 1 shows a 1 year time frame. Does that mean the items from phase 1 will be stored for an entire year? Will these items be going to the modular?

    RESPONSE: Existing furniture will either be moved to modular, other temporary onsite locations, or to is to be delivered by contractor to the HCPSS warehouse. Items scheduled for temporary locations (such as the temp admin as an example) may need to be moved twice. First to an onsite storage location while temp area is constructed, and second to that temporary area.

94. For the furniture move, should we plan to pack everything? SOW isn't very definitive.

    RESPONSE: Yes. See specification section 010190.

95. Will the library shelving need to be removed and stored?

    RESPONSE: No

96. Will items be moved in the weight room?

    RESPONSE: Existing weight room equipment is to be moved to a temporary location onsite, location to be field coordinated.

97. Will the kitchen equipment need to be removed and stored?

    RESPONSE: No.

98. Per the specs provided for 6"x6"x3/8" abrasive bright clear glaze, the only brands that may match the spec is Seneca and Trinity (dependent on thickness and glaze). Seneca and Trinity

both have a base of 5" high instead of 6" high. Could either of these manufacturers be used as an alternative?

RESPONSE: 5” high quarry tile base will be acceptable.

99. 1A SOW #3 indicates for 1A Contractor to provide toilets for all personnel. Please provide the number of anticipated workers on-site so we can accurately account for the number of toilets to be included in our bid.

    RESPONSE: The 1A Prime Contract bidders shall make their own assumptions for this scope of work.

100. 1A SOW #9 indicates for 1A Contractor to provide all dumpsters for the project. It is very difficult to accurately account for this item. We suggest having this requirement be an allowance item with estimated quantities of dumpsters with established unit pricing per dumpster to be used for billing purposes and to be used as an add or credit if the actual quantity used is under or over the estimated quantity.

    RESPONSE: The 1A Prime Contract bidders shall make their own assumptions for this scope of work.

101. 1A SOW #19 indicates for 1A Contractor to provide sweeping compound for use by the composite cleaning. Please provide quantity to be included in the bid.

    RESPONSE: The 1A Prime Contract bidders shall make their own assumptions for this scope of work.

102. Please provide areas where 1A Contractor needs to be provide temporary flooring per 1A SOW #23.

    RESPONSE: See keynote 18 on step plans in phasing drawings, sheets A0.51 thru A0.53

103. Please confirm that per 1A SOW #26, 1A Contractor is not responsible for installing and removing (only maintenance in between 5A demobilization and 7A mobilization) the fall protection at the roof edges and building perimeter.

    RESPONSE: Scope of Work item # 26 in the 1A Prime Contract Package is in reference only to "all areas created by work under the 5A Prime Contract Package." Other safety measures are addressed by other scope items.

104. Please clarify 1A SOW #11. Is the 1A Contractor responsible for installation and removal of all temporary protection including window openings? Is the 1A responsible for negative air machines throughout the duration of the project for all phases?

    RESPONSE: Yes.

105. 1A SOW #34 indicates for 1A contractor to provide patching of existing holes including smoke and fire stopping. It is impossible to quantify this unknown condition to accurately provide a bid. We suggest making this as an allowance item.

    RESPONSE: This scope item remains unchanged.

106. In section 093000/2.2.B.8- Dal-Tile Volume 1.0 (Basis of Design) only offers a 6x12 cove base, instead of the 4x8 that is specified. Is this acceptable?

RESPONSE: Cove base is to be tile type CT-W1. See 093000/2.2.C.8.a

107. In section 093000 2.2.C, per the Basis of Design, the colors listed on A953 for CT-W1 is Dal-Tile Color Wheel. The wheel only offers a 4x12 cove base instead of the specified 3.x6 cove base, is this acceptable?

RESPONSE: 4" x 12" cove base will be an acceptable alternative shape.

108. The colors listed on drawing A953 are all from the Dal-Tile Color Wheel but the color Sunflower has been dropped, is it acceptable to substitute Mustard in its place, price a TBD color from the same color group, or price Sunflower as a custom color (if available)? Please confirm how to proceed.

RESPONSE: Do not include pricing for custom colors. Architect will select from manufacturer's range of colors within the price ranges listed.

109. Per spec section 093000/3.5.B, is flood testing required on all floors or only for floors with drains?

RESPONSE: Flood testing is only required on floors with floor drains.

110. Per spec section 093000/2.6, please confirm the use of Sand-Portland Cement Grout in the kitchen area and freezer.

RESPONSE: Epoxy Grout is to be used within the kitchen area and freezer. See changes to specification.

110. Could you supply a BOD style/product line for the manufacturers specified in spec section 093000/2.2.E?

RESPONSE: This section is to be removed. See changes to specification.

111. In spec section 096513, item 2.1.F calls for use of Preformed Outside Base Corners while 3.3.H.1 gives the installation of Job Formed Outside BaseCorners. Please confirm if preformed outside corners are required.

RESPONSE: Job formed base corners installed per 3.3.H.1 will be acceptable

112. In the auditorium, will the new stage steps be hardwood or carpet?

RESPONSE: The new stage steps are to be carpeted, see A9.37.

113. Can you provide details for the limits of carpet in the auditorium area?

RESPONSE: See A9.37

114. In drawing A2.12 PSECDP (Alternate), can a finish schedule be supplied for this area?

RESPONSE: See A9.21

115. In spec section 093000/2.4 and 2.9, Crack Isolation Membrane is listed as Schluter Kerdi and waterproof membrane is listed as Mapelastic 400 (discontinued). Keri is intended as the Waterproof Membrane with limited Crack Isolation Capabilities and Mapelastic 400 has been replaced with Aquadefense. Is it acceptable to use the Aquadefense as both the CIM and WPM?

RESPONSE: Replacement of discontinued products with manufacturer recommended replacements is acceptable.

116. 1A Scope Item #34 indicates that existing smoke and firestopping might need to be patched. Please provide allowance quantities or values for this work, for estimating purposes.

RESPONSE: This scope item remains unchanged.

117. In spec section 096800/2.1.A, it states that color selections may be made from any or all manufacturers without additional cost to the owner. Should we price all carpet as the most expensive one from this list?

RESPONSE: Any of the product lines listed within 2.2 and 2.3 will be acceptable. The note is referenced in the RFI is intended solely to indicate that the Architect may select any colors within the specified product lines at no cost to the owner.

B. CHANGES TO SPECIFICATIONS

- Section 003000- Form of Proposal
  - **REMOVE AND REPLACE** unit prices with updated unit prices, attached.
- Section 00 90 00 - Exhibit A & B – Change Order Request Format
  - **REMOVE AND REPLACE** Change order form with revised change order form, attached
- Section 010200 – Contract Packages
  - Item 3.A.14 (1A - General Trades Contract Package)
    - **ADD** the following statements to the existing - "The estimating of quantities for each material is the responsibility of the 1A Prime Contractor. All abatement work must occur after normal school hours."
  - Item 3.A.76 (1A - General Trades Contract Package)
    - **ADD** this item. "The 7A Prime Contractor shall provide all fire vents. The 7A Prime Contractor shall furnish all interior cabling and manual release materials to the 1A Prime Contractor for installation. The 9E Prime Contractor shall provide all paint associated with fire vents."
  - Item 3.A.77 (1A - General Trades Contract Package)
    - **ADD** this item. "Contractor shall provide AED and Fire Blankets and respective cabinets."
  - Item 3C. (3A – Concrete Contract Package)
    - **DELETE** Specification Section 03 35 13 High-Tolerance Concrete Floor Finishing.
  - Item 3.C.25 (3A - Concrete Trades Contract Package)
    - **REMOVE** this item entirely.
  - Item 3.C.27 (3A - Concrete Contract Package)
    - **ADD** this item. " Contractor shall provide 750 cubic yards of undercut for unsuitable soils, as determined by the Owner's third-party inspector, and replacement with suitable fill that can obtain rated bearing capacity. This shall include removal and disposal of unsuitable soils off site in addition to import of approved suitable backfill material that is placed and compacted to project standards.
  - Item 3D. (4A – Masonry Contract Package)

- **ADD** this item. “Specification Section ‘07 27 13 – SELF-ADHERED NON PERMEABLE AIR BARRIER MEMBRANE’”

- Item 3.D.33 (4A – Masonry Contract Package)
  - **ADD** this item. "Contractor shall provide all Self-Adhered non Permeable Air Barrier Membranes on Masonry."
- Item 3.F.27 (7A - Roofing Contract Package)
  - **ADD** this item. "The 7A Prime Contractor shall provide all fire vents. The 7A Prime Contractor shall furnish all interior cabling and manual release materials to the 1A Prime Contractor for installation. The 9E Prime Contractor shall provide all paint associated with fire vents."
- Item Add 3.F.28 (7A - Roofing Contract Package) –
  - **ADD** this item: "The 8A Prime Contractor shall provide all fixed insulated metal panels, laminated metal panels and any other metal panels to be installed within the interior of the building. The 7A Prime Contractor shall provide all other metal panels."
- Item 3.G.10 (8A - Windows Contract Package)
  - **ADD** this item. "The 8A Prime Contractor shall provide all fixed insulated metal panels, laminated metal panels and any other metal panels to be installed within the interior of the building. The 7A Prime Contractor shall provide all other metal panels."
- Item 3.G.11 (8A - Windows Contract Package)
  - **ADD** this item. "The 8A Prime Contractor shall provide all bent plates referenced on architectural drawings but not detailed in structural drawings at the masonry cavity and any other locations as required for a full installation of window, storefront and curtainwall systems installed under this package. Any materials directly attached to the CMU backup and required to be installed prior to insulation and brick shall be turned over to the 4A Prime Contractor for installation. The 8A Prime Contractor shall install all other materials required under this scope item.”
- Item 3.I.14 (9E - Painting Contract Package)
  - **ADD** the following statement: "The 7A Prime Contractor shall provide all fire vents. The 7A Prime Contractor shall furnish all interior cabling and manual release materials to the 1A Prime Contractor for installation. The 9E Prime Contractor shall provide all paint associated with fire vents."
- Item 3.L.57 (15A - Mechanical/Plumbing Contract Package)
  - **ADD** this item as follows "Contractor shall coordinate any special considerations for roofing work with the 7A Prime Contractor. Special consideration is required where roof work is adjacent to air handlers, outside air intake louvers, vent pipes, or any other mechanical/plumbing devices that could transmit adhesive fumes into the occupied areas of the building. Coordinate with 7A Prime Contractor for closing of outside air dampers or full unit shutdowns as directed by the Construction Manager."
- Item 3.M.53 (16A - Electrical Contract Package)
  - **ADD** the following statement "Contractor shall relocate the existing site signage and wireless communication devices. Contractor shall provide new skirting."

- Section 024119 – Selective Demolition
  - **REMOVE AND REPLACE** Asbestos Abatement Design with revised Asbestos Abatement Design, attached.
- Section 033513 – High Tolerance Concrete Floor Finishing
  - **REMOVE** section in its entirety

- Section 04 20 00 – Unit Masonry
  - **ADD** smooth texture for Option B Taylor Gray #119 in subparagraph 3.17.
  - **ADD** smooth texture for Option B Taylor Auburn #7 in subparagraph 3.17.
- Section 07 21 00 – Building Insulation
  - **ADD subparagraph 2.2.F as follows:**

    F. Glazing insulation: Semi-rigid stone wool insulation board, 3.5". Cut sizes as required to infill mullions where glazing is above ceilings. Basis of design: Roxul Curtainrock 40.
- Section 05 81 00 – Expansion Joint Covers
  - **REVISE** subparagraph 2.2.A.6 to read as follows:

    6. Type 6 - Wall to Wall, Exterior, Expanding Impregnated Vandal-Resistant Foam Seal, EIV Series
       a. Color as selected by architect from manufacturer's full range
  - **ADD** subparagraph 2.4.A as follows:

    A. All exterior wall expansion joints are to receive type 6 expansion joint covers.
- Section 07 72 00 – Roof Hatch
  - **ADD** Subsection 2.3 as follows:

    2.3 AUTOMATIC SMOKE HATCH

    A. Provide acoustically rated Bilco Double Leaf Fire Vents at stage roof. See keynote A6 on sheet M3.20 for locations and requirements.
- Section 09 30 00 – Tiling
  - **ADD** Subsection 2.6.B as follows:

    B. Water-Cleanable Epoxy Grout: ANSI A118.3, with a VOC content of 65 g/L or less. (for use within kitchen area)

    1. Subject to compliance with requirements, provide one of the following:
       a. Boiardi Products,
       b. Laticrete International, Inc.
       c. MAPEI Corporation.
    2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 and 212 deg F (60 and 100 deg C), respectively, and certified by manufacturer for intended use.
  - **REMOVE** Subsection 2.2.E in its entirety.
- Section 11 61 43 – TV Studio Curtains and Pipe Grid
  - **REVISE** subsection 2.2.A and 2.2.A.1 to read as follows:

    A. Provide stationary **20'-8" x 35'-0"** ~~**30' x 30'**~~ pipe grid in TV Studio Room shown on the plans Grid to be laid out and configured as shown in Dwgs.

1. Pipe grid spacing is to be 4'-0" by 4'-0" on center and installed **12'-6"** ~~**10'-0"**~~ off the finished floor. Height to be confirmed, verified, and coordinated by this section with Contractor and other trades in the field

- Section 133416 – Grandstand Bleachers and Prefabricated Metal Pressboxes
  - **REVISE** Subsection 1.4 to read as follows:

    1.4 QUALIFICATIONS
  - **ADD** Subparagraphs 1.4.B & 1.4.C as follows:

    B. AISC Certification: All Structural steel for the grandstand/ bleachers and press box support is to be fabricated in an AISC certified plant. Only manufacturers listed on the AISC website as being certified meet these criteria. Proper certification and inspections are required under Chapter 17 of the IBC Code. Criteria is set forth requiring AISC Certification to confirm to the owners, architect, engineer and building official that the steel manufacturing facility has the fabricating personnel, organization, experience, procedures, knowledge , equipment and the commitment to produce steel of the quality required for the building industry.

    C. Pressbox manufacturer must be registered with the State of Maryland Department of Housing and Urban Development as an authorized supplier of Industrialized Buildings. Authorization must be based on construction methods as described in this section. Manufacturer must provide evidence as approved by "Interstate Industrialized Building Commission".
  - **ADD** Subparagraphs 2.3.A.12 as follows:

    12. Press box roof is to be structured to support the load for three (3) speakers of 300 lbs each. Speakers are to be mounted on the edge of roof (field side), with one on the plan east side, one on the plan west side, and centered. Coordinate mounting details with electrical prime contractor.

- Section 142123.16 – Machine Room-Less Electric Traction Passenger Elevators
  - **REVISE** subparagraph 2.1.C to read as follows:

    C. Acceptable alternate manufacturer: ~~Kone, Schindler, ThyssenKrupp~~, Minnesota Elevator, Canton Elevator, Alliance Elevator, and Hollister Whitney Vantage Equipment.

- Section 20 11 00 – SLEEVING, CUTTING, PATCHING, REPAIRING AND FIRESTOPPING
  - **ADD** the following to PART 2 – SLEEVES:

    2.4 Provide pipe sleeves through all interior wall penetrations. Sleeve shall be cast iron or schedule 40 steel. In all cases, sleeves shall be at least two pipe sizes larger than nominal pipe diameter plus insulation. Where firestop assembly is UL listed, sleeve material and size shall be as indicated in the listing. Sleeves through walls and floors shall be cut flush with inside surface unless otherwise indicated. Reference Part 5 for firestopping requirements in rated walls. Sleeves and annular space between pipe and sleeve in non-rated walls shall be sealed completely with acoustical non-shrink caulk.

- Section 20 13 10 – PIPE FILLING, CLEANING, FLUSHING, PURGING AND CHEMICAL TREATMENT

  - **REVISE** paragraph 3.1. Provide Shelco Filters model # 5FOS-SB-304L-Blank-1.5-MNPT-ML-B in lieu of 5 gallon pot feeder. Provide 1.5" valved lines to pump suction/discharge in lieu of 1".

- Section 21 01 00 – Fire Protection System

  - **ADD** to Design Plus as an acceptable sprinkler contractor in subparagraph 1.2

- Section 22 01 00 – PLUMBING SPECIALTIES

  - **REVISE** ORD-1 in PART 4 – ROOF DRAINS: Provide Mifab Hydro Max MH-501-28 with underdeck clamp, debris guard, and integral 2" water dam. This model/type overflow drain is only available in a 5" connection. Refer to plans for pipe reducing sizes.

- Section 23 02 00 – HVAC EQUIPMENT

  - **ADD** Trane as an acceptable manufacturer to PART 3 – WATER COOLED CHILLER (C-1, and C-2).

  - **ADD** Trane as an acceptable manufacturer to PART 7 – VARIABLE AIR VOLUME BOXES (VAV SINGLE INLET).

  - **ADD** Trane as an acceptable manufacturer to PART 8 – FAN POWERED PARALLEL VARIABLE AIR VOLUME BOXES (FVAV).

  - **ADD** Trane as an acceptable manufacturer to PART 10 – FAN COIL UNITS.

- Section 25 04 00 – BUILDING AUTOMATION SYSTEM

  - **ADD** the following to PART 4 – SUBMITTALS:

    4.5.1 Provide a maximum of 20 points for each BACNET interface to the following pieces of equipment. Coordinate points to map and points nomenclature with the owner and engineer.
    - Chillers C-1, C-2
    - Boilers B-1, B-2, B-3
    - Electrical Switchgear

- Section 274000 IP Video Distribution System

  - **REVISE** subparagraph 2.4 Equipment Section to read as follows
    - At the Head-end
      - Qty (1) PRO3 3-Series Control Processor
      - Qty (1) DM-XIO-DIR-160 DigitalMedia Director - Virtual Switching Appliance
        - This is not a media server, it is a switching appliance that will communicate with all of the NVX endpoints on the network.
      - Qty (2) DMF -CI-8 DigitalMedia Card Chassis for DM-NVX-C
      - Qty (9) DM-NVX-E30C Network AV Encoder Card
      - Qty (1) DM-NVX-D30C Network AV Decoder Card
        - For connection to rack LCD for channel management
      - QTY (1) MPC3-101-B Media Presentation Controller

- To control rack decoder card
- At each Classroom/Display
  - MPC3-101-B Media Presentation Controller
    - Wall mounted control button panel – requires 1-gang rough-in
    - Buttons can be programmed for: turn display on/off, source selection, "channel" up/down selection
    - Requires PoE Network Drop
  - DM-NVX-350 Network AV Decoder
    - Has 2 HDMI inputs so that local sources can be switched through this device as well
    - Alternatively, we could use the single HDMI output DM-NVX-D30 Network AV Decoder (requires PoE network drop) if you would like to switch sources through the projector or flat panel display and save a little cost.
- At mobile Cart
  - Qty (1) DM-NVX-E30 Network AV Encoder
    - Requires PoE connection

❑ Section 31 10 00 – Site Clearing

- **REVISE** subparagraph 3.4.C.2 to read as follows:

2. Stockpiling of topsoil onsite is not permissible.

C. CHANGES TO DRAWINGS

1. CIVIL DRAWINGS

❑ C1 – TITLE SHEET AND SEQUENCE OF CONSTRUCTION

- **REVISE** sheet index as shown in sketch AD-C04

❑ C2 – DEMOLITION PLAN

- **REVISE** showed limit of existing pipe to be removed as shown in sketch AD-C05

❑ C14 – STEP 1

- **ADD** stabilized construction entrance as shown in sketch AD-C06

❑ C15 – STEP 2

- **ADD** stabilized construction entrance as shown in sketch AD-C07

❑ C16 – STEP 3

- **ADD** stabilized construction entrance as shown in sketch AD-C08

❑ C17 – STEP 4

- **ADD** stabilized construction entrance as shown in sketch AD-C09

- **ADD** stabilized construction entrance as shown in sketch AD-C10

- ❑ C20 – STEPS 7,8, & 9
  - **ADD** stabilized construction entrance as shown in sketch AD-C11
- ❑ C26 – HAND|CAP ACCESS PLAN AND STORM DRAIN PROFILES
  - **REMOVE** storm drain profile TO M-15 entrance as shown in sketch AD-C12
  - **REMOVE** storm drain profile TO M-15 entrance as shown in sketch AD-C13
- ❑ C26 – HAND|CAP ACCESS PLAN AND STORM DRAIN PROFILES
  - **REMOVE** storm drain profile TO M-15 entrance as shown in sketch AD-C12
- ❑ **REPLACE** SHEETS **C-4, C-6, C-10 AND C-19** with the attached.

2. **ARCHITECTURAL DRAWINGS**

- ❑ A0.50 - OVERALL PHASING PLAN
  - **REVISE** detail 2/A0.50 to modify phasing of tubular daylighting devices as shown in sketch AD-A09
- ❑ A2.09 – FLOOR PLAN - FLOOR 2 - AREA H & PENTHOUSES 3, 4, 5, 6 & 7
  - **REVISE** floor hatching to clarify existing vs. new concrete work in penthouses. See reissued sheet.
- ❑ A2.57 – RCP – FLOOR 1 – AREA H
  - **REVISE** ceiling in stage wings and existing spiral staircases as shown in sketch AD-A11
- ❑ A6.03 – VERTICAL CIRC. PLANS AND DETAILS – STAIR 3
  - **REVISE** detail 2/A6.03 to show CMU walls at elevator pit instead of CIP concrete as shown in sketch AD-A08.
- ❑ A8.01 – DOOR SCHEDULE - FIRST & SECOND FLOOR, TEMPORARY AND ALTERNATES
  - **REVISE** GENERAL NOTE A to read as follows: Provide 1” clear undercut at all doors noted “UC” in door schedule. 1” clear dimension is to be between bottom of door and finish floor, coordinate with finish schedule for floor thicknesses.
- ❑ A8.03 – WINDOW, CURTAIN WALL AND STORE FRONT SCHEDULE
  - **REVISE** Window schedule as shown in sketch AD-A12
- ❑ A9.21 – FINISH SCHEDULES AREA G, H, SECOND FLOOR, AND ALTERNATES
  - **ADD** finish schedule for alternate field house. See attachment AD-A10

3. THEATER -AV DRAWINGS

- ❑ None

4. STRUCTURAL DRAWINGS

- ❑ Sheet S0.02 – INSPECTION TABLES AND SCHEDULES
  - **REVISE** Detail reference for Wall footing TWF
- ❑ Sheet S3.04 – TYPICAL STEEL FRAMING DETAILS
  - **ADD** Note for roof infill at damaged sections of roof deck
- ❑ Sheet S3.05 – TYPICAL STEEL FRAMING AND RENOVATION DETAILS
  - **ADD** Detail for roof infill.

5. MECHANICAL DRAWINGS

- ❑ Sheet M2.11 – TEMPORARY CONDITIONS – MECHANICAL
  - **ADD** FIRST FLOOR PLAN – TEMPORARY LOCKER ROOM view to Sheet M2.11. See addendum drawing AD-M23.
- ❑ Sheet M3.02 – FIRST FLOOR PLAN – AREA B – MECHANICAL
  - **ADD** humidity sensor to MEDIA CENTER B127, install adjacent to thermostat/CO2 sensor.
- ❑ Sheet M3.03 – FIRST FLOOR PLAN – AREA C – MECHANICAL
  - **ADD** humidity sensor to KITCHEN C102, install adjacent to thermostat/CO2 sensor.
  - **ADD** humidity sensor to CAFETERIA C101, install adjacent to thermostat/CO2 sensor.
  - **ADD** Keynote A68 to AC-2 in MDF C112.

    A68 PROVIDE PLENUM 2'-0" TALL OFF BOTTOM INLET AC UNIT. PLENUM SHALL BE FULL SIZE OF THE UNIT INLET. PROVIDE FLOOR STANDS/SUPPORTS FOR AC UNIT AS REQUIRED - DO NOT SUPPORT AC UNIT WITH PLENUM. PROVIDE FLEXIBLE CANVAS CONNECTOR AT PLENUM CONNECTION TO UNIT INLET. PROVIDE HIGH EFFICIENCY TAKE-OFF AT DUCT CONNECTION TO PLENUM. DO NOT BLOCK ACCESS TO UNIT WITH DUCTWORK.
- ❑ Sheet M3.07 – FIRST FLOOR PLAN – AREA G – MECHANICAL
  - **ADD** humidity sensor and wall-mounted switch to AUXILIARY GYM G112, install adjacent to thermostat/CO2 sensor. **ADD** Keynote A48 to wall-mounted switch.
  - **ADD** humidity sensor to WRESTLING ROOM G113, install adjacent to thermostat/CO2 sensor.
  - **ADD** humidity sensor to WEIGHT TRAINING G114, install adjacent to thermostat/CO2 sensor.
  - **ADD** humidity sensor to MAIN GYM G100, install adjacent to thermostat/CO2 sensor. Typical of 2.
  - **ADD** 8”Ø vertical dryer exhaust duct through roof to G127A. Coordinate with location of dryer. Route to dryer and connect, provide transition fittings and elbows as necessary. Coordinate ductwork size with final vendor drawings. Route 8”Ø dryer duct through roof and provide dryer weather hood with backdraft damper. Bird screen is not permitted.

- Sheet M3.08 – FIRST FLOOR PLAN – AREA H – MECHANICAL
  - **ADD** humidity sensor to AUDITORIUM H130, install adjacent to thermostat/CO2 sensor. Typical of 2.
- Sheet M3.20 – OVERALL ROOF PLAN – MECHANICAL
  - **REVISE** keynote A41:

    PROVIDE AND INSTALL NEW CONTROLLER/BACNET MS/TP INTERFACE TO EXISTING ROOFTP UNIT TERMINAL STRIP, CAPABLE OF COMMUNICATING WITH NEW BUILDING AUTOMATION SYSTEM. **REFER TO SHEET M6.11 FOR SEQUENCE**.
- Sheet M4.02 – ENLARGED BOILER ROOM – MECHANICAL
  - **ADD** Keynote M78 to P-1A/1B on the ENLARGED BOILER ROOM PLAN.

    M78 PROVIDE CHILLED WATER PUMPS WITH INSULATED PUMP BOX. REFER TO THE DETAIL ON SHEET M6.03 FOR ADDITIONAL INFORMATION.
  - **ADD** Keynote M79 to B-1/B-2/B-3 maintenance pad on the ENLARGED BOILER ROOM PLAN.

    M79 PROVIDE 5” THICK CONCRETE MAINTENANCE PAD UNDER MECHANICAL EQUIPMENT. PAD SHALL BE 6” LARGER THAN THE MECHANICAL EQUIPMENT FOOTPRINT IN ALL DIRECTIONS UNLESS SHOWN LARGER ON THE FLOOR PLAN.
  - **REMOVE** Keynote M69 from B-1/B-2/B-3 maintenance pad on the ENLARGED BOILER ROOM PLAN.
- Sheet M4.06 – ENLARGED PLANS – MECHANICAL
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #1 – MECHANICAL.

    M80 PROVIDE AUTOMATIC AIR VENTS. PIPE TO NEAREST FLOOR DRAIN.
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #2 – MECHANICAL.
- Sheet M4.07 – ENLARGED PLANS – MECHANICAL
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #3 – MECHANICAL.
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #4 – MECHANICAL.
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #5 – MECHANICAL.
- Sheet M4.08 – ENLARGED PLANS – MECHANICAL
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #6 – MECHANICAL.
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED AUDITORIUM MECHANICAL ROOM #1 – MECHANICAL.
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED AUDITORIUM MECHANICAL ROOM #2 – MECHANICAL.
- Sheet M4.09 – ENLARGED PLANS – MECHANICAL

- **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #7 – MECHANICAL.

- ❑ Sheet M4.10 – ENLARGED PLANS – MECHANICAL
  - **ADD** Keynote M80 to highest point of CHWS/R and HWS/R piping in ENLARGED PENTHOUSE #8 – MECHANICAL.
- ❑ Sheet M5.01 – MECHANICAL PIPING SCHEMATICS
  - **REVISE** pot feeder pipe size. Provide 1-1/2" pipe in lieu of 1".
  - **REMOVE** "5-GAL" from pot feeder label.
  - **ADD** the following note to P-1A/1B on the CHILLED WATER PIPING SCHEMATIC:

    PROVIDE CHILLED WATER PUMPS WITH INSULATED PUMP BOX. REFER TO THE DETAIL ON SHEET M6.03 FOR ADDITIONAL INFORMATION.
- ❑ Sheet M5.02 – MECHANICAL PIPING SCHEMATICS
  - **ADD** condensate neutralization tank to piping schematic. See addendum drawing AD-M24.
  - **REVISE** pot feeder pipe size. Provide 1-1/2" pipe in lieu of 1".
  - **REMOVE** "5-GAL" from pot feeder label.
- ❑ Sheet M6.03 – MECHANICAL DETAILS
  - **ADD** the following note to the DRYER VENT DETAIL:

    NO CAP OR SCREEN PERMITTED ON WEATHER HOOD.
- ❑ Sheet M6.04 – TEMPERATURE CONTROLS SCHEMATICS
  - **ADD** the following control zone to the AUTO-OCCUPIED-LOW OCCUPANCY-UNOCCUPIED CONTROL SCHEDULE:

    ZONE NO. – 15, AREA SERVED – DANCE HALL, EQUIPMENT – E(RTU)
- ❑ Sheet M6.06 – TEMPERATURE CONTROLS SCHEMATICS
  - **REVISE** OPEN LOOP MAKE-UP WATER CONTROL SEQUENCE, note 4:

    4. PROVIDE PADDLE FLOW SWITCH IN OVERFLOW PIPING AT EACH COOLING TOWER. IF OVERFLOW SWITCH IS ACTIVATED WHILE MAKE-UP WATER CONTROL VALVE IS OPEN, ACTIVATE AN ALARM AT THE BAS. THIS ALARM SHALL NOT AFFECT OPERATION OF THE MAKE-UP WATER SYSTEM.
  - **ADD** CT-1 OVERFLOW/FILL ALARM to the CONDENSER WATER POINT LIST as a digital input (DI). **ADD** CT-2 OVERFLOW/FILL ALARM to the CONDENSER WATER POINT LIST as a digital input (DI).
- ❑ Sheet M6.07 – TEMPERATURE CONTROLS SCHEMATICS
  - **ADD** the following line to note 10 in the HEATING HOT WATER SYSTEM CONTROL SEQUENCE:

    ALL OA UNITS IN THE BUILDING SHALL DE-ENERGIZE ASSOCIATED SUPPLY FANS AND FULLY CLOSE ASSOCIATED OUTSIDE AIR DAMPERS. OA UNIT EXHAUST FANS SHALL MODULATE SPEED TO MAINTAIN MINIMUM AIR FLOW REQUIRED FOR CONSTANT VOLUME BUILDING EXHAUST.
- ❑ Sheet M6.08 – TEMPERATURE CONTROLS SCHEMATICS

- **REVISE** control sequences for SINGLE ZONE VAV AIR HANDLING UNITS (AHU-1, 2, 3, 6A/B) and SINGLE ZONE VAV AIR HANDLING UNITS (AHU-7A/B, 8A/B, 9, 10, 11). In heating mode, the 2-way hot water control valve shall modulate as required to maintain space temperature setpoint in lieu of discharge air temperature setpoint.
- **ADD** the following sequence to the SINGLE ZONE VAV AIR HANDLING UNITS (AHU-7A/B, 8A/B, 9, 10, 11) control sequence:

  22. EXHAUST PURGE (AHU-9, 10, 11): WHEN THE EXHAUST PURGE 3-HR TIMER SWITCH IS ACTIVATED, THE AHU SHALL OPERATE IN ECONOMIZER MODE, WITH THE FOLLOWING CHANGES. SUPPLY FAN SHALL RUN CONTINUOUS, WITH MINIMUM SUPPLY FAN AIRFLOW ACCORDING TO THE PREVIOUS SCHEDULE. RELIEF FAN SHALL RUN CONTINUOUS, WITH MINIMUM RELIEF FAN AIRFLOW ACCORDING TO THE FOLLOWING SCHEDULE. OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE SETPOINT, WITH MINIMUM OUTSIDE AIR ACCORDING TO THE FOLLOWING SCHEDULE.

EXHAUST PURGE AIRFLOW SCHEDULE		
TAG	MIN RELIEF AIRFLOW	MIN OA AIRFLOW
AHU-9	2200 CFM	1800 CFM
AHU-10	1000 CFM	800 CFM
AHU-11	1000 CFM	800 CFM

- Sheet M6.09 – TEMPERATURE CONTROLS SCHEMATICS
  - **REMOVE** note 15. WINTER DISCHARGE AIR RESET from the MULTIZONE VAV AIR HANDLING UNITS control sequence.
  - **ADD** the following sequence to the MULTIZONE VAV AIR HANDLING UNITS control sequence:

    21. DEHUMIDIFICATION MODE:

    A. WHEN OPERATING IN OCCUPIED MODE, IF RETURN AIR RH EXCEEDS 60% (ADJ), THE UNIT SHALL ENTER DEHUMIDIFICATION MODE.

    B. WHEN INDEXED TO DEHUMIDIFICATION MODE, THE COOLING COIL DISCHARGE AIR TEMPERATURE SHALL BE SET TO 55 DEG F (ADJ). IN COOLING MODE, ALL COOLING SETPOINTS SHALL BE RESET TO 75 DEG F (ADJ) IN ALL OCCUPIED SPACES. IN HEATING MODE, ALL HEATING SETPOINTS SHALL BE RESET TO 73 DEG F (ADJ) IN ALL OCCUPIED SPACES.

    C. WHEN RETURN AIR RH IS LESS THAN 55% (ADJ), THE UNIT SHALL OPERATE ACCORDING TO THE PREVIOUS SEQUENCES.

    22. UNOCCUPIED DEHUMIDIFICATION MODE:

    A. WHEN OPERATING IN UNOCCUPIED MODE, IF RETURN AIR RH EXCEEDS 60% (ADJ), THE UNIT SHALL ENTER MAINTENANCE MODE.

    B. WHEN RETURN AIR RH IS LESS THAN 55% (ADJ), THE UNIT SHALL OPERATE ACCORDING TO THE PREVIOUS SEQUENCES.

- Sheet M6.11 – TEMPERATURE CONTROLS SCHEMATICS

- **REPLACE SHEET** M6.11. **ADD** controls schematic, sequence, and points list for Existing Dance Studio Rooftop Unit (RTU). **REMOVE** note 3 from the OUTSIDE AIR HANDLING UNIT (OA-1 THROUGH OA-4) control sequence. **REVISE** note 6. EXHAUST FAN CONTROL (previously note 7) in the OUTSIDE AIR HANDLING UNIT (OA-1 THROUGH OA-4) control sequence. **REVISE** OUTSIDE AIR SYSTEM points list. Provide EXHAUST AIR CFM in lieu of RELIEF AIR CFM.

- ❑ Sheet M6.12 – TEMPERATURE CONTROLS SCHEMATICS
  - **ADD** EXHAUST AIR CFM as an Analogue Input (AI) to the OUTSIDE AIR UNITS OA-5A AND 5B POINT LIST.
  - **ADD** OUTSIDE AIR CFM as an Analogue Input (AI) to the OUTSIDE AIR UNITS OA-5A AND 5B POINT LIST.
- ❑ Sheet M7.01 – MECHANICAL SCHEDULES
  - **ADD** the following remark to the BOILER SCHEDULE:

    5. PROVIDE CONDENSATE NEUTRALIZATION TANK.
- ❑ Sheet M7.04 – MECHANICAL SCHEDULES
  - **REVISE** AC-2 MODEL # to ARUF61 in lieu of AWUF61 on SPLIT SYSTEM INDOOR UNIT SCHEDULE.

7. PLUMBING DRAWINGS

- ❑ Sheet P4.02 – FIRST FLOOR PLAN – AREA B – PLUMBING
  - **REPLACE SHEET** P4.02. **ADD** Hot water supply and return piping for phasing issues.
- ❑ Sheet P4.03 – FIRST FLOOR PLAN – AREA C – PLUMBING
  - **REPLACE SHEET** P4.03. **ADD** Hot water supply and return piping for phasing issues.
- ❑ Sheet P4.07 – FIRST FLOOR PLAN – AREA G – PLUMBING
  - **REPLACE SHEET** P4.07. **ADD** Hot water supply and return piping for phasing issues.
- ❑ Sheet P4.08 – FIRST FLOOR PLAN – AREA H – PLUMBING

  REPLACE SHEET P4.08. **ADD** Hot water supply and return piping for phasing issues.

8. FIRE PROTECTION DRAWINGS

- ❑ None

9. ELECTRICAL DRAWINGS

- ❑ General First Floor Demolition Plans and Scope
  - ❑ Low-Voltage System Clarifications
    - Pre and Post Test Scope of Work:
      - All low-voltage systems including data/voice, fire alarm, wireless access points, projectors, AV equipment, CATV, CCTV and security shall be pre and post tested during each phase. Results shall be tabulated and sent to Engineer and HCPSS for review and comment.
      - Contractor will be responsible for maintaining all existing low-voltage systems to remain and systems that are partially demolished. Downstream devices shall not be affected during demolition and any issues will be required to be immediately corrected to allow proceeding with construction.

- Voice/Data
  - Contractor shall ensure all existing classroom data and voice jacks/drops remain active. Cables cut or damaged during construction shall be repulled with new. At minimum, provide an active data drop for the IP Phone, 2 data drops for students, 1 data drop for ceiling wireless access point and 2 data drops for interactive classroom.
- Intercom/PA/Master Clocks:
  - Intercom/PA/Master Clocks to be maintained through-out construction. This can be accomplished with the existing system or installing new system through-out during phase 1 and reworking during each phase.
- Security – Intrusion Detection:
  - Existing security system is located in existing front office. Refer to sheet E1.02. Existing security system head-end shall be relocated to Penthouse 6 during phase 1. Rework and extend all existing device(s) wiring to head-end in Penthouse 6.
  - Existing security system shall be monitored by the new security system by the end of phase 1 and shall continue until the existing system is phased out and new system installed complete.
- Security – Video Surveillance:
  - Existing video surveillance system is located in existing front office. Refer to sheet E1.02. Existing video surveillance system head-end shall be relocated to Penthouse 6 during phase 1. Rework and extend all existing device(s) wiring to head-end in Penthouse 6.
  - Existing Video Surveillance Cameras shall remain in service until removed during each phase of work. Turn over removed cameras at the end of each phase to the Owner.
  - Existing video surveillance system shall be monitored by the new video surveillance system by the end of phase 1 and shall continue until the existing system is phased out and new system installed complete.
- Telephone:
  - Existing telephone head-end shall be relocated to penthouse 6. Provide new wiring, as required, to fire alarm and security panels.
  - Existing telephones to be maintained through-out construction. This can be accomplished with the existing system or installing new voice drops through-out during phase 1 and reworking during each phase. At minimum, provide an active voice drop for each classroom and office.
- Gym and Dance Studio AV systems: Existing systems shall be removed, cleaned, stored and re-installed during associated phase of construction. System shall be complete and operational after re-installation.
- Fire Alarm:
  - Existing Fire Alarm System shall remain in service until the new fire alarm system is installed complete. The existing Fire Alarm System shall be tied to new fire alarm system during phase 1. During Phase 9, the existing fire alarm system is to be demolished. Al the latest, the new fire alarm system shall be installed complete in phase 10 by the end of phase 8. Adjustments/rework to the fire alarm system shall be made during phase 10 work, as required.
  - Existing fire alarm annunciator shall be relocated to the temporary Admin Space. Provide all new cabling.
  - Re-certify the complete fire alarm system (existing/new) at the completion of each phase, as required.
- All new low-voltage systems cabling shall be plenum rated.
- Color coding of all low-voltage systems cabling shall be verified with Owner during shop-drawing review.

- Relocated existing Ai-Phone system to temporary entrance per drawings. Provide all new cabling for system. Support cabling on j-hooks every 4'.
- Existing paging intercom (PA) system shall remain in service during duration of the project until new system is installed complete.
- Wireless Access Points: Existing Wireless Access Points shall remain in service during duration of the project. Cabling shall be protected during construction to ensure devices stay active. During each phase, remove the wireless access points with-in each phase, label, box-up and return to Owner.
- Existing Corridor Lighting Controls
  - Existing light switches located in existing front office to be relocated to temporary front office. Total of 12 toggle snap switches controlling corridor lighting.

- Sheet E0.01 – Second Floor Plan – Area A, B, and C – Lighting
  - **ADD** – Section Local Sound. Provide 3.5mm jack with single gang stainless steel faceplate. Symbol shall be circle with an A inside.
  - **ADD** – Section Local Sound. Provide Attero Tech unD6IO-BT wall plate with double gang stainless steel faceplate. Symbol shall be circle with an AV inside.
  - **ADD** – Section Local Sound. Wireless sensor for sound system controls. Symbol shall be circle with an SS inside with a subscript R. Coordinate exact requirement with AV diagrams on sheet E7.06 and specifications.
  - **ADD** – Classroom A/V Equipment. Provide a data drop to all ceiling mounted projectors. Coordinate mounting of data drop with projector mounting bracket. Provide each projector with a Creston NVX decoder mounted on projector mounting bracket. Coordinate all requirements prior to construction.
- Sheet E1.XX – First Floor Demolition Plan – All Areas – Lighting/Power
  - **ADD** – All exterior wall packs shall be demolished complete. Return all wall packs to HCPSS. Coordinate exact requirements and existing conditions prior to construction.
- Sheet E2.06 – First Floor Plan – Area G – Lighting
  - **ADD** – Main Gym G100 has twelve (12) solar tubes (TDD). Electrical contractor shall provide power and control cabling as required to provide a complete system. Route three (3) #12 conductors in 3/4" conduit between each solar tube and to 20A/1P breaker panelboard "NH1F". Provide solar tube control switch (TD) near touch pad. Provide conduit and conductors as required for controls of solar tubes.
- Sheet E2.11 – Second Floor Plan – Area A, B and C – Lighting
  - **REPLACE SHEET** – Lighting Changes, see revision clouds.
- Sheet E3.03 – First Floor Plan – Area C – Power
  - **REPLACE SHEET** – AV changes, see revision clouds.
- Sheet E3.05 – First Floor Plan – Area E and F – Power
  - **REPLACE SHEET**
    - **ADD** – Aux Gym G112 Sound rack shall be located in plan south west corner. Provide two (2) dedicated surge suppression quadruplexes for sound rack. Route three (3) #10 conductors in 3/4" conduit to 20A/1P breaker in panelboard "NL1G".
    - **REVISE** – Three (3) Electrical panelboards located in Electrical Closet F106A shall be recessed in lieu of surface mounted.

- **ADD** – Provide all electrical device circuits in Fabrication Lab E108 and Material Storage E116 shall be equipped with magnetic switch for each power tool receptacle/outlet. Locate adjacent to receptacle/outlet. Manufacturer to be Big Horn 18825 series or approved equal.
- **ADD** – Provide new electrical Panel NLFL shall be 200A/120/208V/3PH/4W/200A two-step, 100% rated, electronic trip, full function molded case "micro-logic" main circuit breaker and square "D'' #2350 circuit monitor in Fabrication Lab E108. Power distribution panel shall be an "I-line" type panel with 63." min. of breaker mounting space, circuit breakers with minimum ratings of 65kaic. square "d" – HCM or equal. Provide (3) 30A/3P, (3) 30A/2P, and (30) 20A/1P breakers. All remaining space shall be filled with equal amounts of spare 100A/3P breakers. Feed panel NLFL to panel NLD. Route four (4) #25kcmil conductors and one (1) #2 ground in 2-1/2" to 200A/3P breaker in panel NLD.

- ❑ Sheet E3.06 – First Floor Plan – Area G – Power
  - **REPLACE SHEET** – Changes to Main Gym G100, Aux Gym G112, Weight Room, and Wrestling, see revision clouds.
- ❑ Sheet E6.02 – Enlarged Plan – Main Elec, Main Mech and MDF Rooms – Elec.
  - **REPLACE SHEET** – Power and systems changes, see revision clouds.
- ❑ Sheet E7.06 – Details – Electrical
  - **REVISE** – Speaker symbols in Cafeteria Line Diagram shall be (SS)C in lieu of (CS)C and antenna symbol shall be (SS)R in lieu of (CS)R.
  - **REVISE** – Speaker symbols in Aux Gym Sound System Line Diagram shall be (SS)AG in lieu of (CS)C and antenna symbol shall be (SS)R in lieu of (CS)R.
  - **ADD** - Cafeteria Line Diagram detail shall be utilized for sound system in weight room and wrestling room. Coordinate requirements with specifications.
  - **REVISE** – IP Video One-Line Diagram Detail. All cables from STB decoders to displays shall utilize HDMI cables.
- ❑ Sheet E4.01 – First Floor Plan – Area A – Systems
  - **Delete –** AI Phone and Card Reader from main entrance near vestibule.
  - **ADD –** Provide additional Intercom Master to Secretary Office A111 near desk.
  - **Delete –** AI Phone Remote outside Stair 1 A121.
- ❑ Sheet E4.02 – First Floor Plan – Area B – Systems
  - **ADD** – Card Reader to IDF B141.
- ❑ Sheet E4.02 – First Floor Plan – Area B – Systems
  - **REVISE** – AI Phone outside Corridor C110 shall interface with AI master in Office C108.
  - **ADD** – AI Phone master intercom in Office C108 near desk.
  - **ADD** – Card Reader to MDF C112.
- ❑ Sheet E4.04 – First Floor Plan – Area D – Systems
  - **ADD** – Card Reader to IDF D117A.
- ❑ Sheet E4.05 – First Floor Plan – Area E and F – Systems
  - **REPLACE SHEET** – AV changes, see revision clouds.
- ❑ Sheet E4.06 – First Floor Plan – Area G – Systems

- **REPLACE SHEET** – AV changes, see revision clouds

- Sheet E4.07 – First Floor Plan – Area H – Systems
  - **ADD** – Card Reader to Elec H124.
  - **ADD** – Card Reader to exterior door in Work Shop H128.
- Sheet E4.11 – First Floor Plan – Area A, B, and C – Systems
  - **ADD** – Card Reader to IDF B120.
- Sheet E6.02 – First Floor Plan – Area G – Systems
  - **REPLACE SHEET** – Electrical Changes, see revision clouds.
- Sheet E7.00 – Details – Electrical
  - **REPLACE SHEET** – Lighting Fixture changes and Catwalk view added, refer to revision clouds for details.
- Sheet E7.05 – Details – Electrical
  - **REVISE** – C.F.C.I Classroom Audio Visual System Installation Schematic Detail. Provide Media Presentation Controller shall be mounted above teacher's desk with data drops. Rough-in and stub conduit above ceiling as required for controller. Coordinate all requirements with manufacturer prior to construction.
  - **REVISE** – C.F.C.I Aux Gym and Cafeteria Audio Visual System Installation Schematic Detail. Provide Media Presentation Controller shall be mounted 48" above (TI) inputs with data drops. Rough-in and stub conduit above ceiling as required for controller. Coordinate all requirements with manufacturer prior to construction.
- Sheet E9.02 – Power Distribution Riser Diagram – New Work
  - **REVISE** – Panelboard "NL1F" shall be double tub in lieu of single tub. Provide twenty additional 20A/1P spare breaker.
  - **REVISE** – Panelboard "KH" shall be fed from distribution panel "EDEG" in lieu of "EDLS".
  - **REVISE** – Panelboard "EDEG" shall be 800A rated in lieu of 600A. Utilize tag note 6 for sizing the feeders. EDED shall be 800A/120/208V/3PH/4W/800A two-step, 100% rated, electronic trip, full function molded case "micro-logic" main circuit breaker and square "D'' #2350 circuit monitor. Power distribution panel shall be an "I-line" type panel with 108." min. of breaker mounting space, circuit breakers with minimum ratings of 65kaic. square "d" – HCP or equal. Provide (1) 225A/3P, (1) 200A/3P, (8) 100A/3P and (10) 20A/1P breakers. All remaining space shall be filled with equal amounts of spare 100a/3p breakers.
  - **REVISE** – Electrical Panel EDLS shall be 200A/120/208V/3PH/4W/200A two-step, 100% rated, electronic trip, full function molded case "micro-logic" main circuit breaker and square "D'' #2350 circuit monitor. Power distribution panel shall be an "I-line" type panel with 63." min. of breaker mounting space, circuit breakers with minimum ratings of 65kaic. square "d" – HCM or equal. Provide (9) 100A/3P and (10) 20A/1P breakers. All remaining space shall be filled with equal amounts of spare 100A/3P breakers.
  - **REVISE** – 100% rated molded case circuit breaker with electronic trip in nema 1 enclosure serving ATS-EG shall be 800A in lieu of 600A. Utilize tag note 6 for sizing the feeders. ATS-EG shall be 800A rated in lieu of 600A.
  - **REVISE** – The generator shall be 450KW in lieu of 350KW.
  - **ADD** – Switchboard "NLD" shall be provided with (1) 600A/3P, (1) 400A/3P, (2) 300A/3P, (2) 250A/3P, (7) 200A/3P, (3) 100A/3P, and (4) 20A/1P breakers. All remaining space shall be filled with equal amounts of spare 100A/3P breakers.

- **REVISE** – Electrical Panel MLD shall be 400A/120/208V/3PH/4W/400A two-step, 100% rated, electronic trip, full function molded case "micro-logic" main circuit breaker and square "D'' #2350 circuit monitor. Power distribution panel shall be an "I-line" type panel with 63." min. of breaker mounting space, circuit breakers with minimum ratings of 65kaic. square "d" – HCP-SU or equal. Provide (6) 100A/3P and (20) 20A/1P breakers. All remaining space shall be filled with equal amounts of spare 100A/3P breakers.

- ❑ **ADD SHEETS** – EF1.1 and EF2.1 – Fire Alarm Annunciator

D. ATTACHMENTS

1. ADDENDUM DRAWINGS

- ❑ AD-C04 thru AD-C13
- ❑ AD-A08 thru AD-A12
- ❑ AD-S06 thru AD-S08
- ❑ AD-M23 thru AD-M24
- ❑ AD-M24
- ❑ C4
- ❑ C6
- ❑ C8
- ❑ C10
- ❑ C19
- ❑ A2.09
- ❑ M6.11
- ❑ P4.02
- ❑ P4.03
- ❑ P4.07
- ❑ P4.08
- ❑ E2.11
- ❑ E3.03
- ❑ E3.05
- ❑ E3.06

- ❑ E4.03
- ❑ E4.05
- ❑ E4.06
- ❑ E6.02
- ❑ E7.00
- ❑ EF1.1
- ❑ EF2.1

2. ADDENDUM SPECIFICATIONS

- ❑ Section 003000- Form of Proposal (Updated unit prices)
- ❑ Section 024119 – Selective Structure Demolition (Revised Asbestos Abatement Design)
- ❑ Section 009000 - Exhibit A & B – Change Order Request Format (Revised change order form)
- ❑ Section 072713 – Self-Adhered Non Permeable Air Barrier Membrane

3. OTHER

- ❑ 3/10/2020 Prebid Walkthrough Sign-in Sheet
- ❑ 3/12/2020 Prebid Walkthrough Sign-in Sheet

END OF ADDENDUM NO. 5

SHEET INDEX

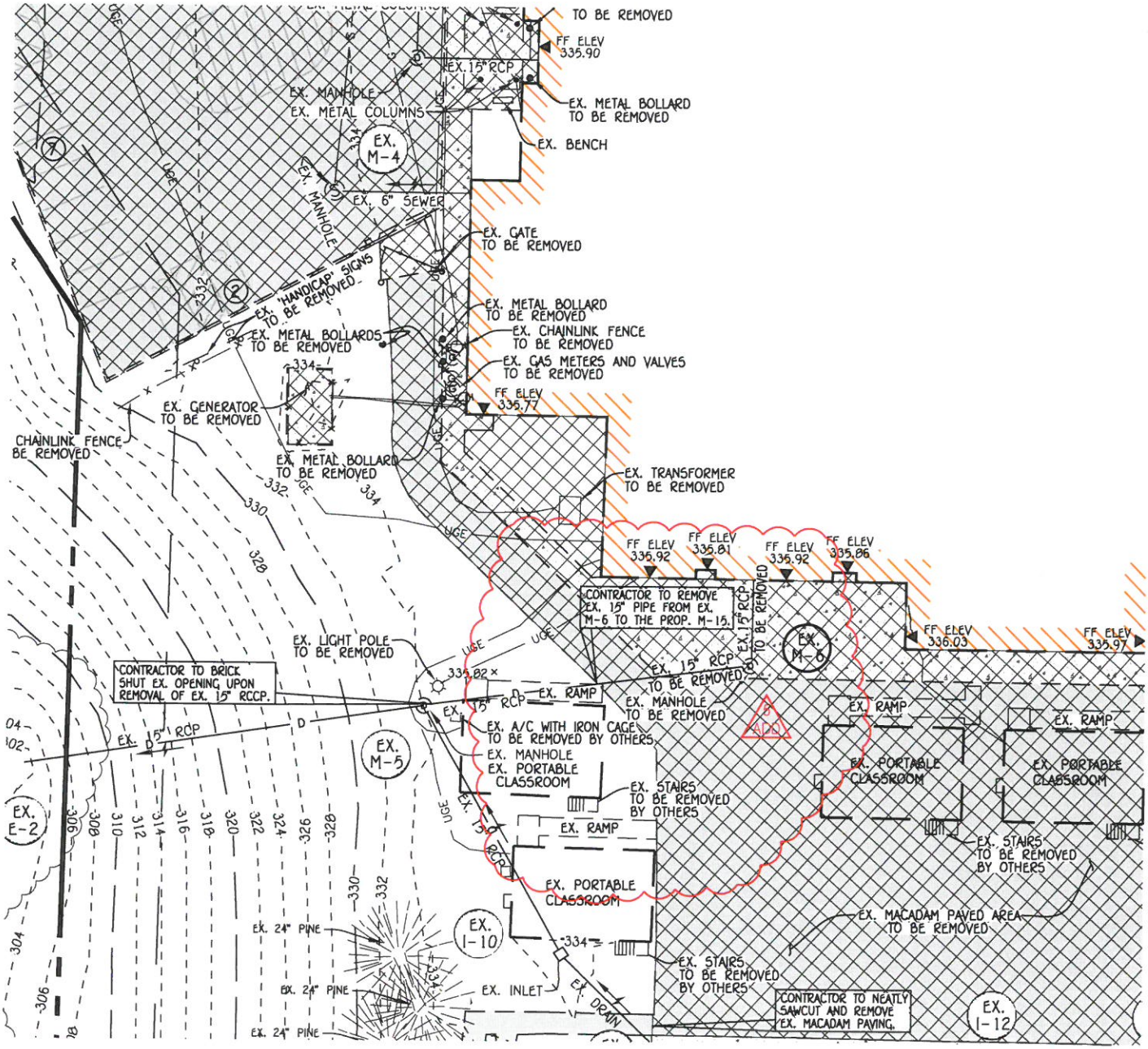
SHEET NUMBER	DESCRIPTION
C-1	TITLE SHEET AND SEQUENCE OF CONSTRUCTION
C-2	DEMOLITION PLAN
C-3	DEMOLITION PLAN
C-4	SITE DEVELOPMENT PLAN
C-5	SITE DEVELOPMENT PLAN
C-6	GEOMETRY PLAN AND STRIPING PLAN
C-7	GEOMETRY PLAN
C-8	SEDIMENT AND EROSION CONTROL PLAN
C-9	SEDIMENT AND EROSION CONTROL PLAN
C-10	SOILS AND STORM DRAINAGE AREA MAP
C-11	SOILS AND STORM DRAINAGE AREA MAP
C-12	DETAIL SHEET
C-13	PROFILE AND DETAIL SHEET
C-14	STEP1
C-15	STEP 2
C-16	STEP 3
C-17	STEP 4
C-18	STEP 5
C-19	STEP 6, 7, 8 & 9
C-20	TEMPORARY CONDITIONS - DEMO PLAN AND SITE PLAN
C-21	ALTERNATES: DAYCARE EXPANSION, FIELD HOUSE & SEWER LINE, TRACK AND TURF REPLACEMENT
C-22	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
C-23	RETAINING WALL PLAN AND DETAILS
C-24	RETAINING WALL ELEVATION AND FENCE DETAIL
C-25	HANDICAP ACCESS PLAN
C-26	HANDICAP ACCESS PLAN AND STORM DRAIN AND UTILITY PROFILES
C-27	SOD & SEEDING PLAN AND LANDSCAPE PLAN
C-28	SOD & SEEDING PLAN
C-29	SWM PROFILES, PLANTING PLAN AND STRUCTURE SCHEDULE
C-30	IRRIGATION PLAN
C-31	TRAFFIC CONTROL PLAN AND DETAILS

5 ADD

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-1

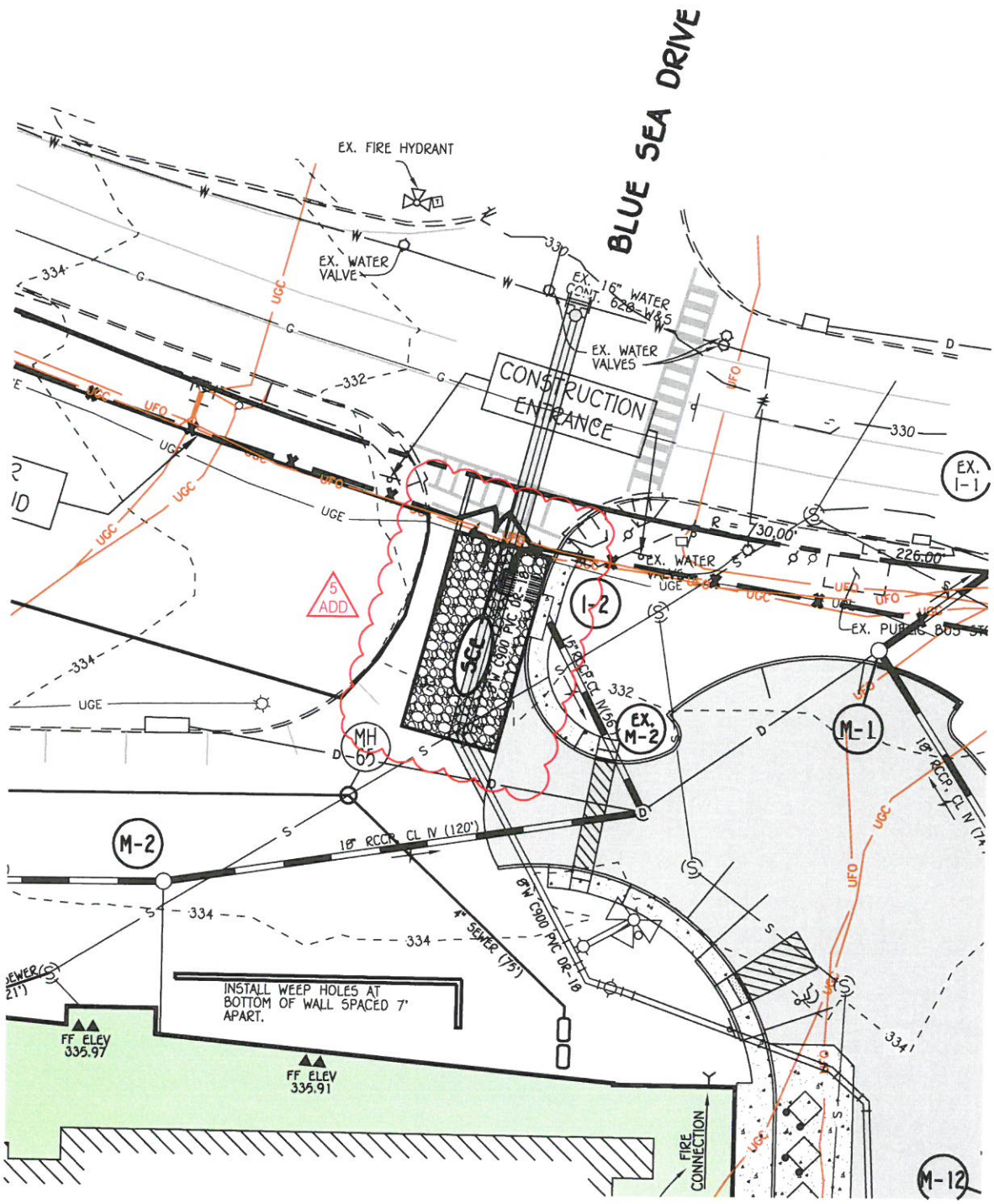
FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	SCALE: NO SCALE ADDENDUM 05 DATE: 3/18/20
	ITEM: REVISED SHEET INDEX	**AD-C04**



ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-2

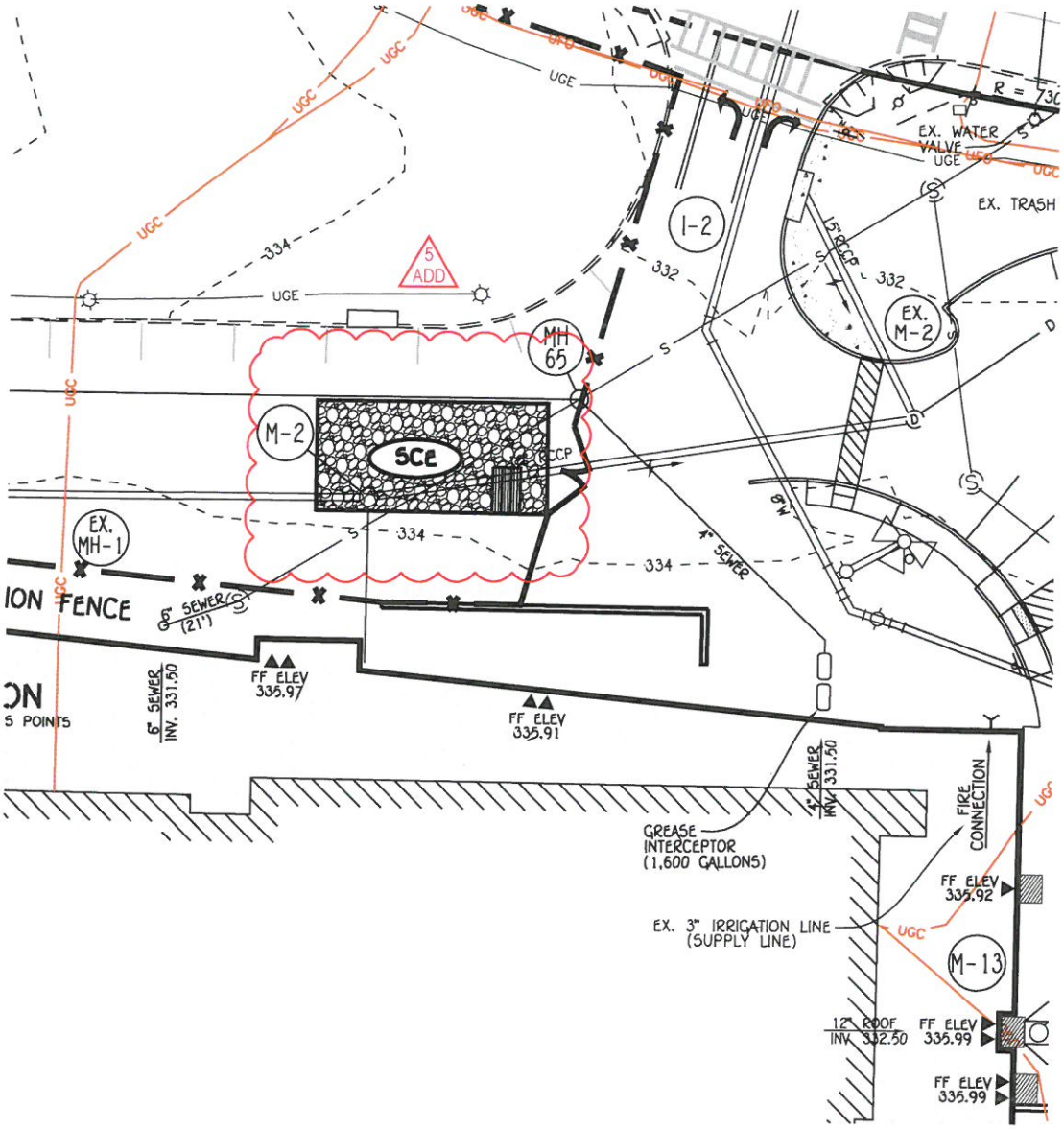
FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	SCALE: NO SCALE ADDENDUM 05 DATE: 3/18/20
	ITEM: SHOWED LIMIT OF EXISTING PIPE TO BE REMOVED	**AD-C05**



ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-14

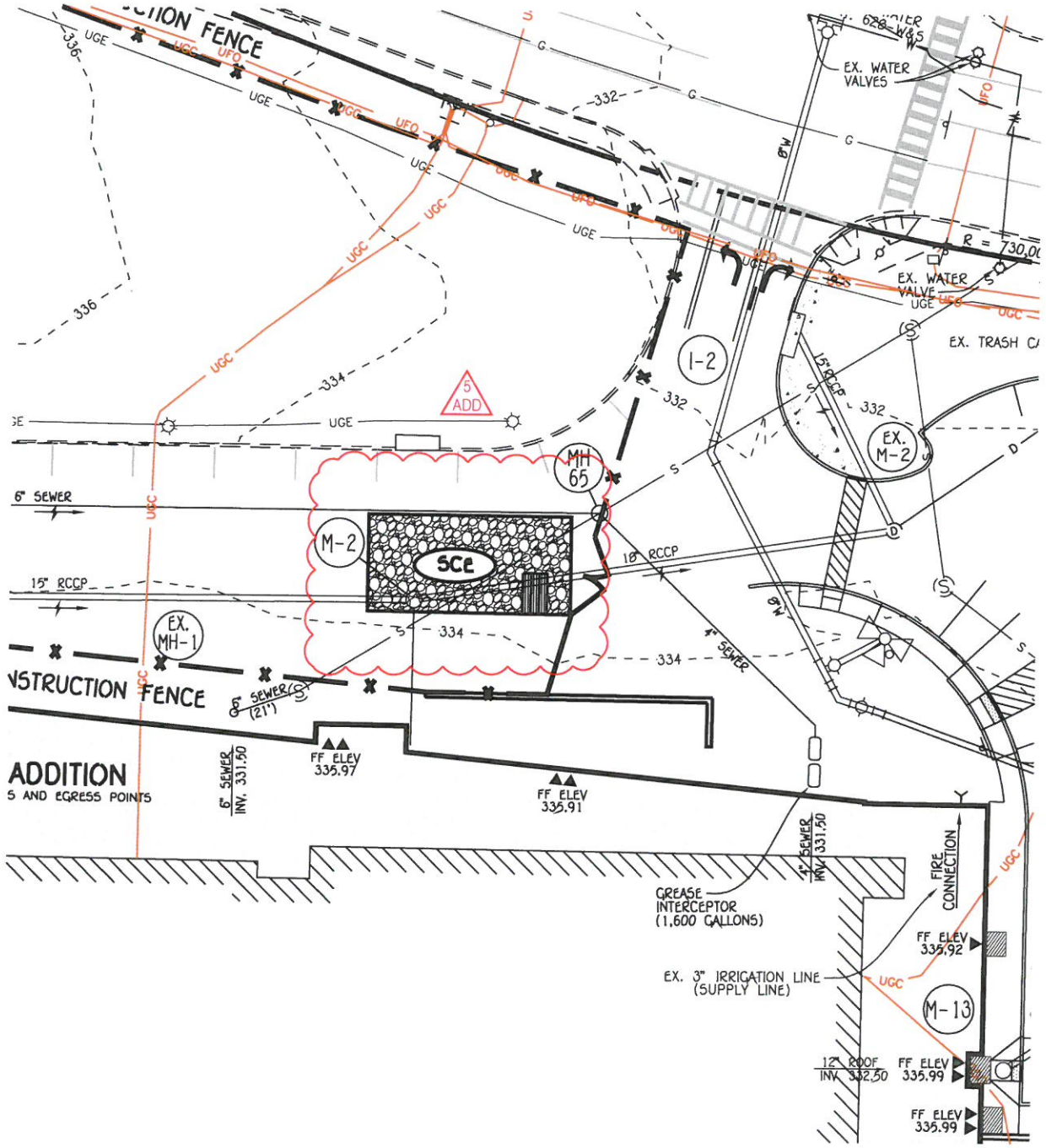
FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	**SCALE:** 1" = 40' **ADDENDUM** 05 **DATE:** 3/18/20
	ITEM: ADDED STABILIZED CONSTRUCTION ENTRANCE	**AD-C06**



ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-15

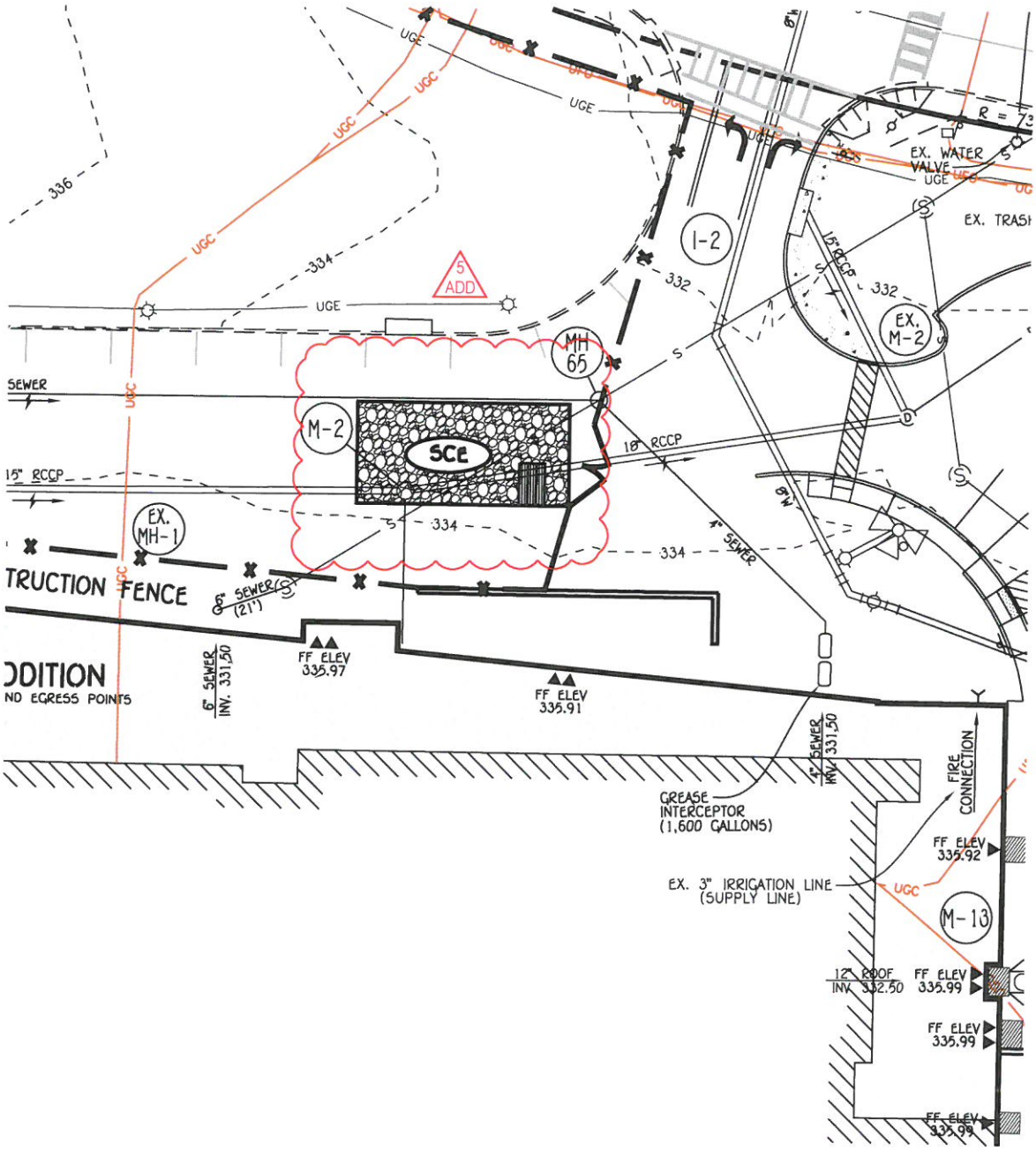
FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	**SCALE:** 1" = 40' **ADDENDUM** 05 **DATE:** 3/18/20
	ITEM: ADDED STABILIZED CONSTRUCTION ENTRANCE	**AD-C07**



ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-16

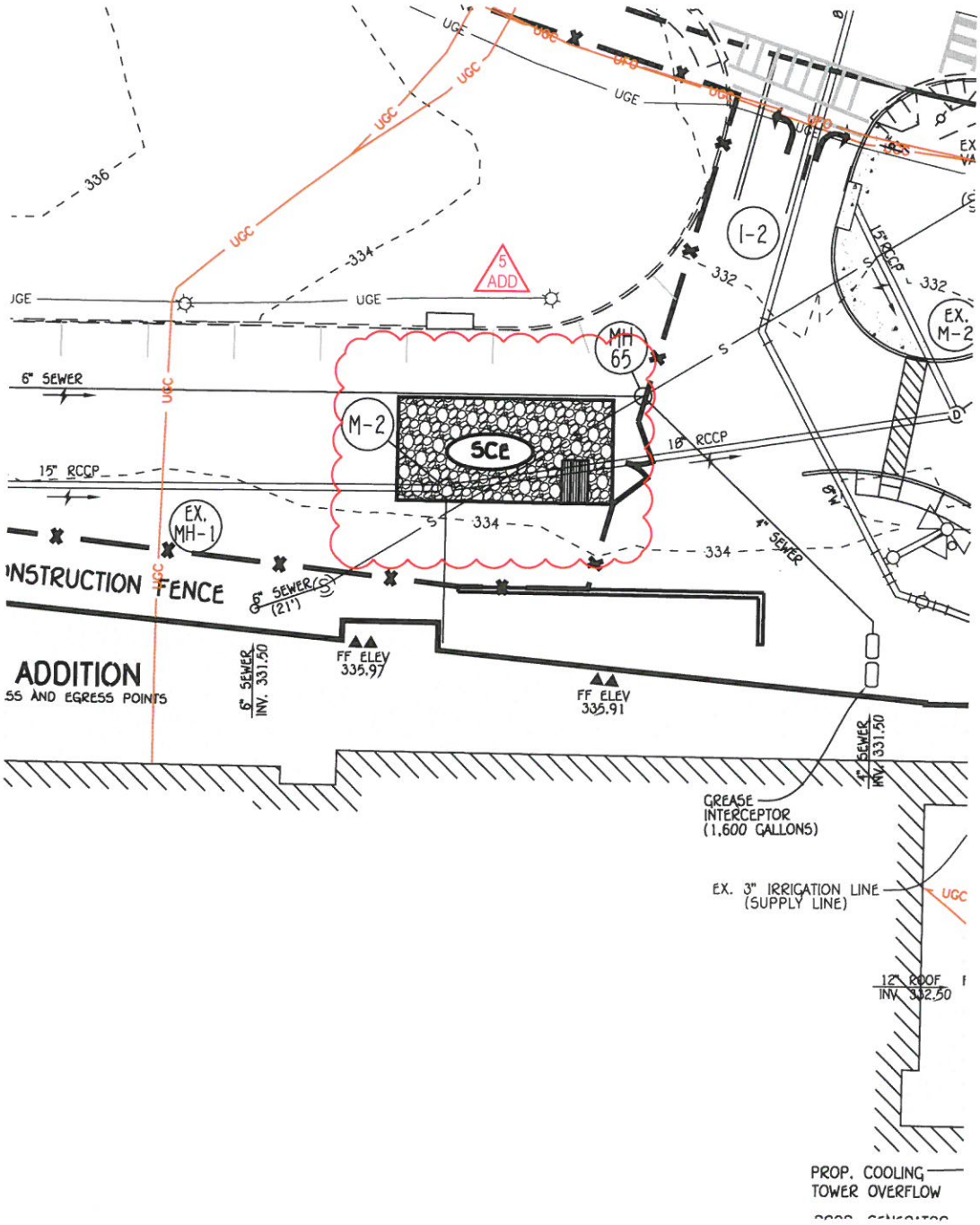
FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	**SCALE:** 1" = 40' **ADDENDUM** 05 **DATE:** 3/18/20
	ITEM: ADDED STABILIZED CONSTRUCTION ENTRANCE	**AD-C08**



ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-17

FISHER, COLLINS, CARTER **10272 BALTIMORE NATIONAL PIKE** ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	**SCALE: 1" = 40'** **ADDENDUM 05** **DATE: 3/18/20**
	ITEM: **ADDED STABILIZED CONSTRUCTION ENTRANCE**	**AD-C09**



ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-18

FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	**SCALE:** 1" = 40' **ADDENDUM** 05 **DATE:** 3/18/20
	ITEM: ADDED STABILIZED CONSTRUCTION ENTRANCE	**AD-C10**

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

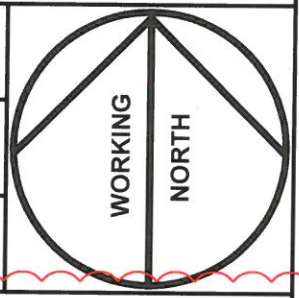
SHEET TITLE:

TEMPORARY CONDITIONS DEMO PLAN AND SITE PLAN

PROJECT NO: 18011.00

DATE: 02/19/2020

SCALE:



SHEET NO:

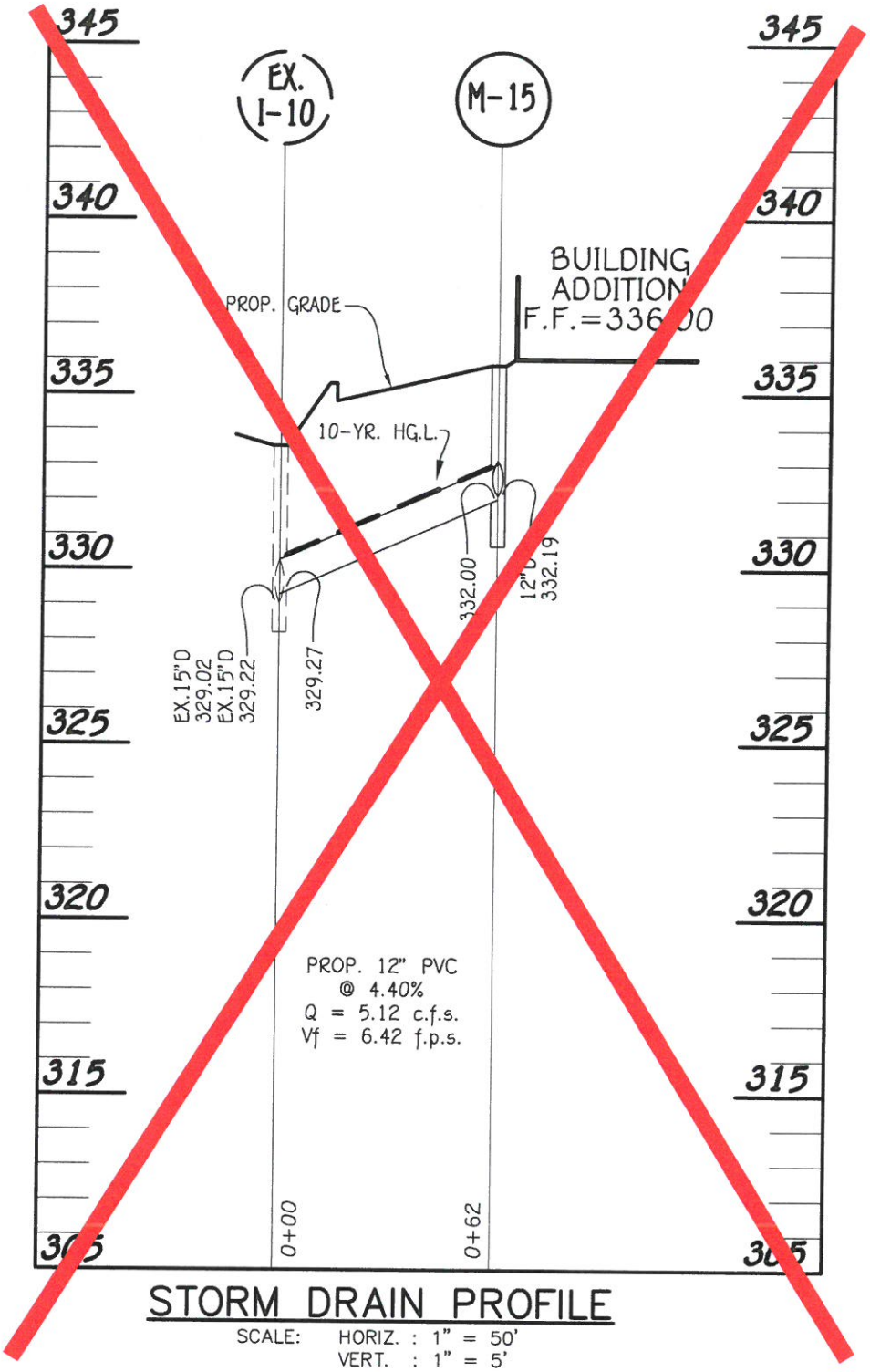
C-20

5 ADD

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-20

FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	HAMMOND HIGH SCHOOL RENOVATION AND ADDITION	SCALE: 1" = 40' ADDENDUM 05 DATE: 3/18/20
	ITEM: ADDED STABILIZED CONSTRUCTION ENTRANCE	AD-C11



STORM DRAIN PROFILE

SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-26

FISHER, COLLINS, CARTER 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD 21042 410-461-2855(P)	**HAMMOND HIGH SCHOOL RENOVATION AND ADDITION**	SCALE: NO SCALE ADDENDUM 05 DATE: 3/18/20
	ITEM: REMOVE STORM DRAIN PROFILE TO M-15	**AD-C12**

M-12	PRIVATE	335.00	330.03 (18")	329.93 (18")	N 546782.15	E 1352243.74
M-13	PRIVATE	335.80	332.50 (12")	332.00 (18")	N 546754.65	E 1352178.17
M-14	PRIVATE	335.76	332.50 (12")	332.25 (15")	N 546546.99	E 1352138.88
M-15	PRIVATE	335.81 335.82	330.13(15") 332.19 (12")	332.00 (12") 330.03(15")	N 546450.94 546,477.84	E 1351671.82 1,351,646.24
R-1	PRIVATE	324.70	320.50 (4")	319.65 (15")	N 547112.08	E 1351409.80
R-2	PRIVATE	332.10	327.90 (4")	327.87 (EX. 15")	N 547168.98	E 1351515.69
E-1	PRIVATE	324.31	–	323.00 (15")	N 547053.13	E 1351408.83
E-2	PRIVATE	331.87	–	330.50 (15")	N 547191.02	E 1351524.32
FT-1	PRIVATE	330.21 331.06	–	326.51 (4")	N 546661.60 N 546661.59	E 1351520.52 E 1351520.52
FT-2	PRIVATE	328.46 328.22	–	324.33 (4")	N 546719.82 N 546736.45	E 1351482.99 E 1351479.47
FT-3	PRIVATE	326.81 326.62	–	322.87 (4")	N 546825.06 N 546837.77	E 1351460.55 E 1351457.84
FT-4	PRIVATE	326.56 326.83	–	322.91 (4")	N 546902.77 N 546915.48	E 1351443.73 E 1351441.02

5 ADD

* - DENOTES TOP OF CURB ELEVATION AT CENTERLINE OF INLET
** - DENOTES GRATE ELEVATION

'A' INLET COORDINATES ARE AT CENTERLI
'S' INLETS SHALL HAVE RETICULAR GRATE
'FTSC' FILTERRA COORDINATES ARE AT CC

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: C-26

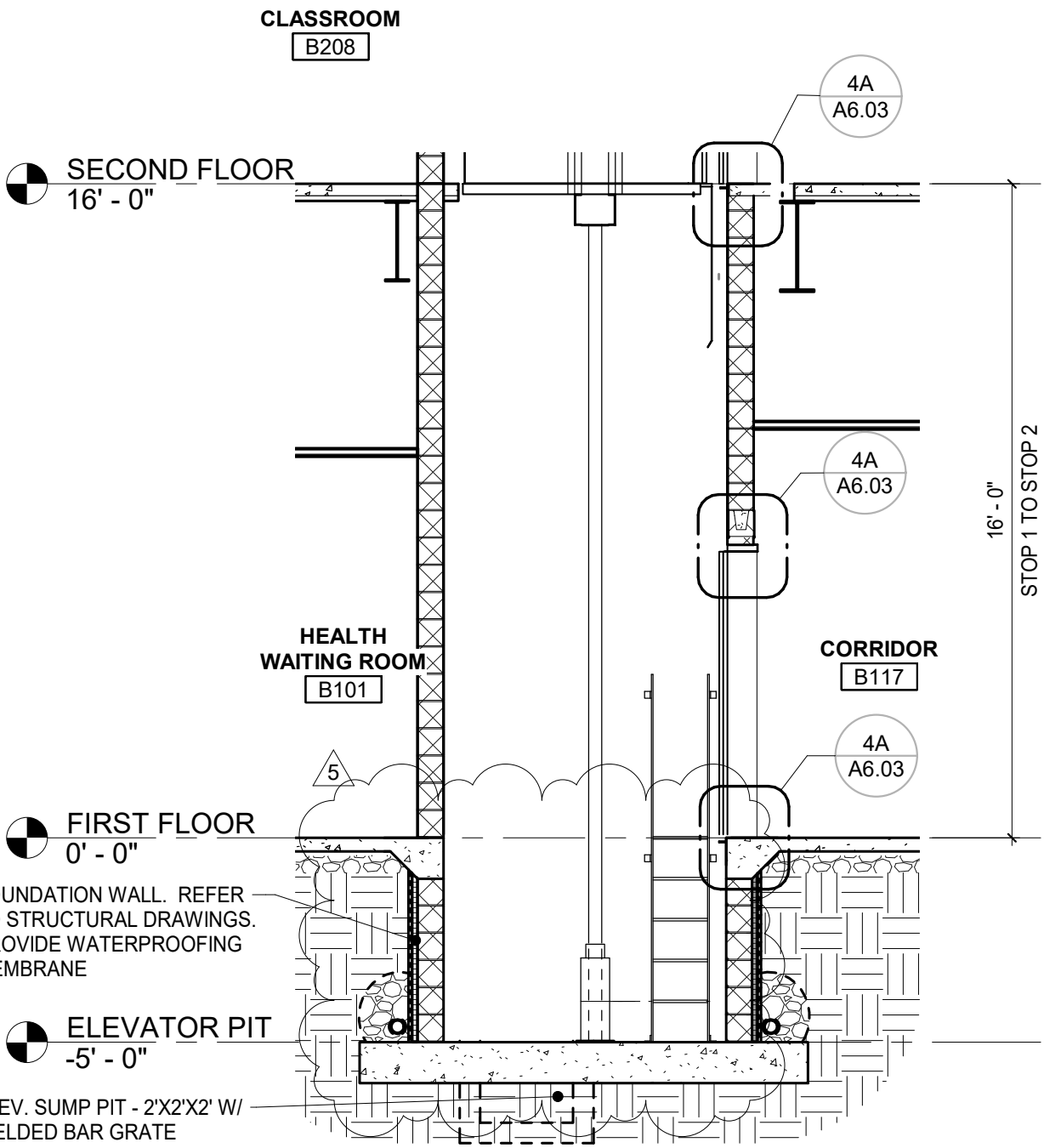
FISHER, COLLINS, CARTER
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21042
410-461-2855(P)

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

ITEM: REMOVE STORM DRAIN PROFILE TO M-15

SCALE: NO SCALE
ADDENDUM 05
DATE: 3/18/20

AD-C13



2 / A6.03 ELEVATOR SECTION

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

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: A6.03

SMOLEN • EMR • ILKOVITCH ARCHITECTS

9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

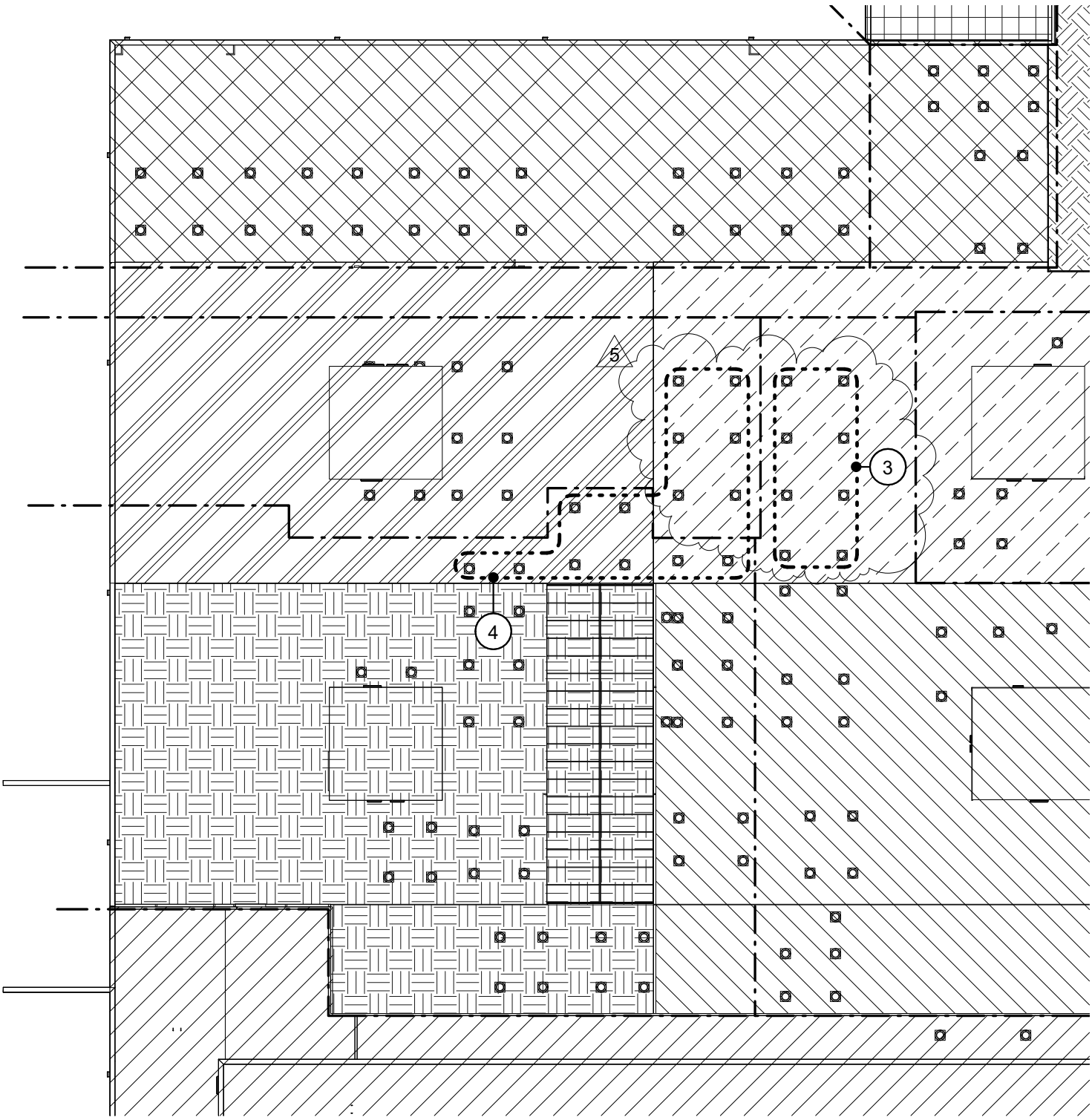
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:	1/4" = 1'-0"
ADDENDUM:	5
DATE:	03/13/20

ITEM:

ELEVATOR PIT WALLS

AD-A08



2 / A0.50 ROOF PHASING PLAN

SCALE: 1" = 40'-0"

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: A0.50

SMOLEN • EMR • ILKOVITCH ARCHITECTS

9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE: 1" = 40'-0"
ADDENDUM: 5
DATE: 03/13/20

ITEM:

ROOF/TDD PHASING REVISION

AD-A09

FINISH SCHEDULE - FIELD HOUSE - ADDENDUM #5

NUMBER	NAME	FLOOR										BASE							WALL			CEILING		
		RF- RESILENT FLOORING	CPT - CARPET	CT- CERAMIC TILE	SC - SEALED CONCRETE	NSRF - NON- SLIP RESILENT FLOORING	RT- RESILENT ATHLETIC FLOORING	WD- WOOD	EP - EPOXY	Q.T QUARRY TILE	ETR- EXISTING TO REMAIN	RB -RUBBER BASE	CT -CERAMIC TILE	EP - EPOXY BASE	QT - QUARRY TILE	VRB - VENTDRESILENT BASE	ETR - EXISTING TO REMAIN	X - NONE	PT1 - PAINT COLOR 1	PT2 - PAINT COLOR 2	CT - CERAMIC TILE	C1 - SUSPENDED ACOUSTICAL TILE	C2 - GYPSUM BOARD PAINTED	C3 - EXPOSED STRUCTURE PAINTED
FIELD HOUSE																								
J100	TICKETS	RF										RB							PT1			C1		
J101	CONCESSION	RF										RB							PT1			C1		
J102	BOYS			CT									CT						PT1		CT		C2	
J103	CU 8						RT					RB							PT1					C3
J104	GIRLS			CT									CT						PT1		CT		C2	

5

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: A9.21

SMOLEN • EMR • ILKOVITCH ARCHITECTS

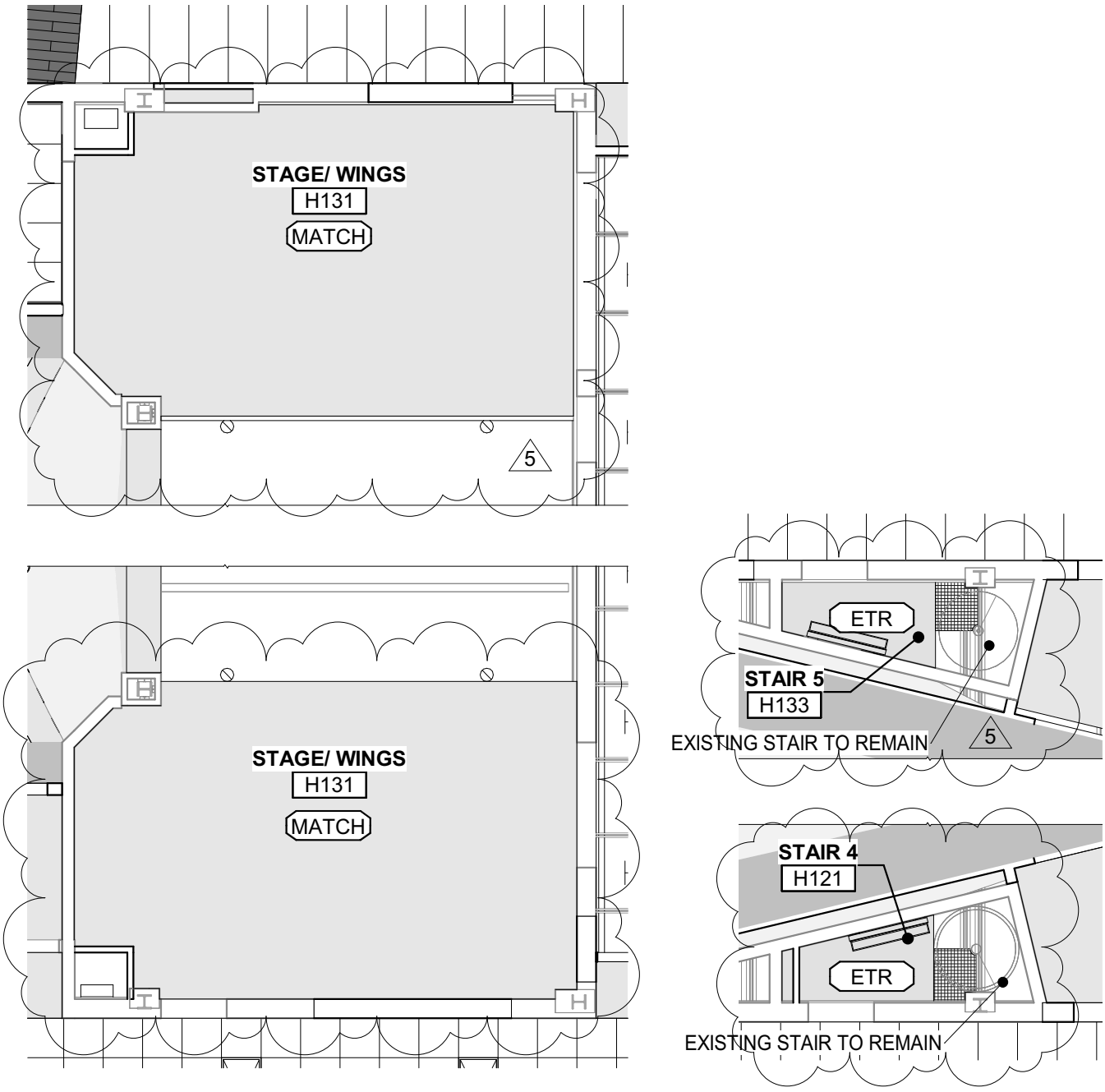
9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:
ADDENDUM 5
DATE: 03/16/20

ITEM:
FINISH SCHEDULE ALTERNATE - FIELD HOUSE

AD-A10



1 / A2.57 AUDITORIUM RCP PLAN / H121 - H131 AND H133

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

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: A2.57

SMOLEN • EMR • ILKOVITCH ARCHITECTS

9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

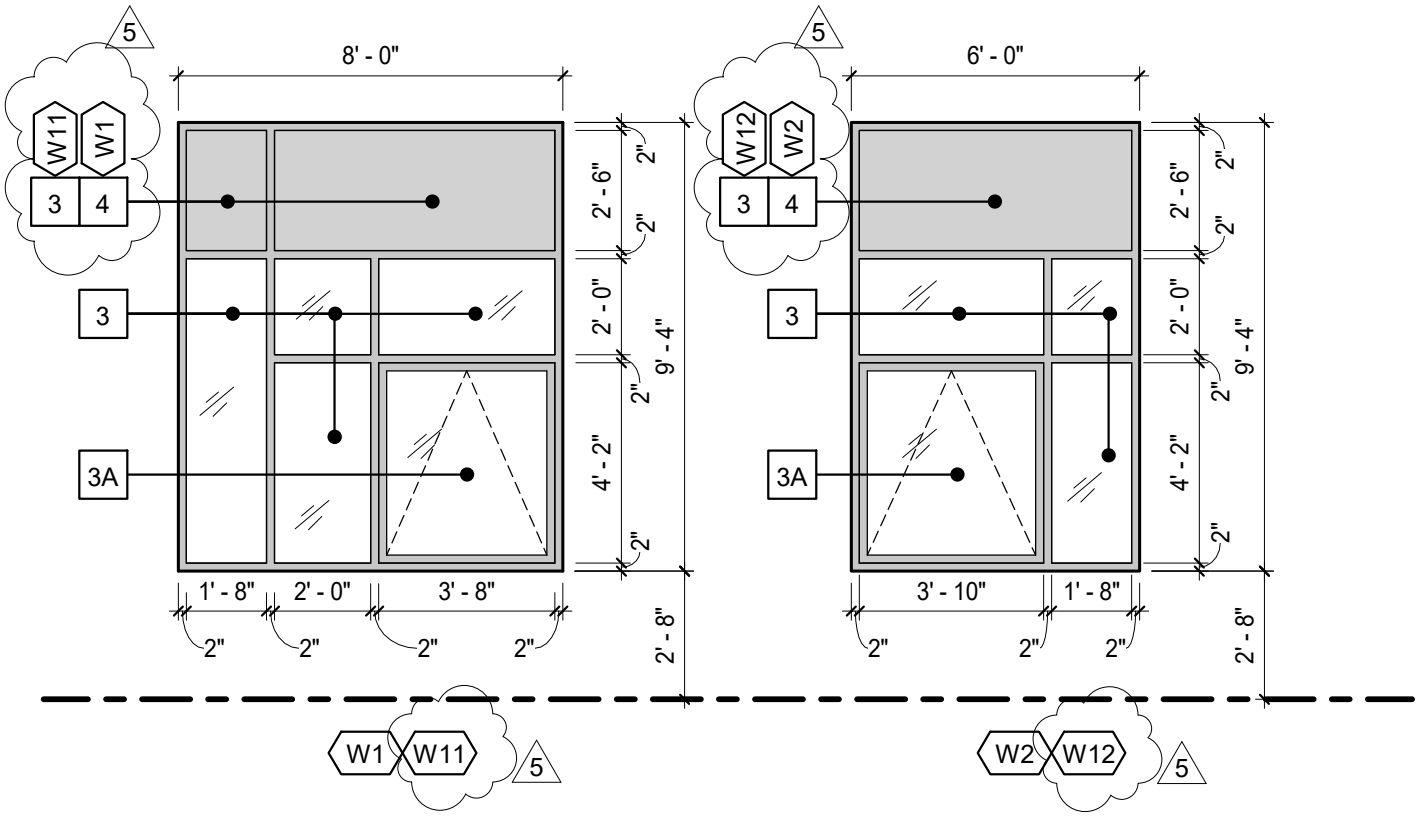
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:	1/8" = 1'-0"
ADDENDUM	5
DATE:	03/17/20

ITEM:

AUDITORIUM RCP PLAN / H121 - H131 AND H133

AD-A11



ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: A8.03

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SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

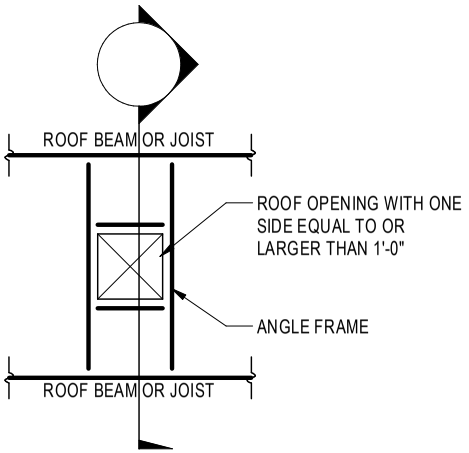
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:	1/4" = 1'-0"
ADDENDUM:	5
DATE:	03/18/20

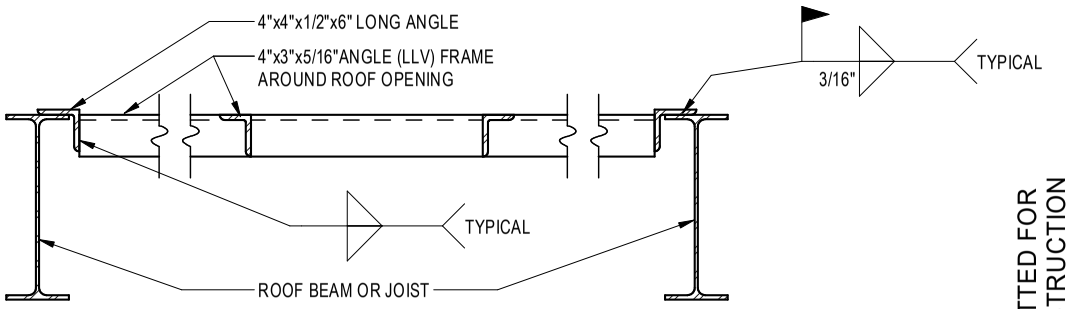
ITEM:

WINDOWS W11 & W12

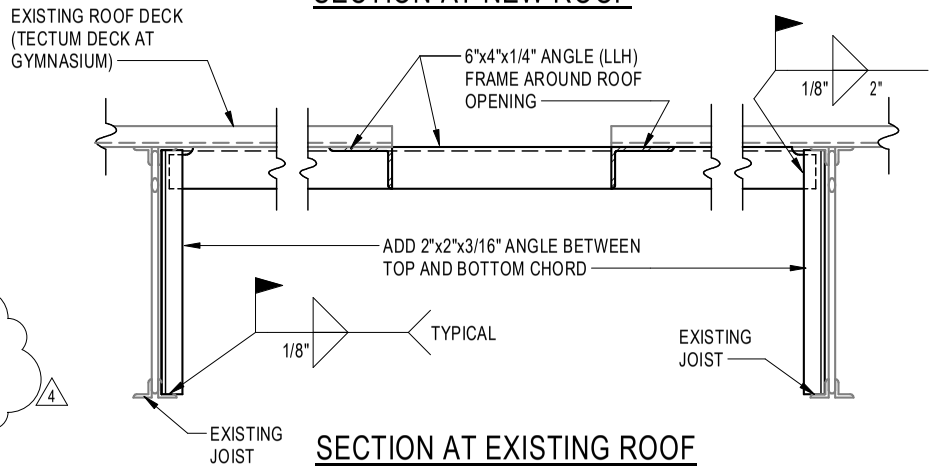
AD-A12



PLAN



SECTION AT NEW ROOF



SECTION AT EXISTING ROOF

NOTES:
1. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION OF OPENINGS.
2. PROVIDE ANGLE FRAME AT ALL ROOF DRAINS.
3. PROVIDE ANGLE FRAME WHEN SECTIONS OF ROOF DECK ARE REMOVED DUE TO DAMAGE. SEE DETAIL K/S3.04 FOR INFILL WITH NEW METAL DECK.

4

ROOF OPENING FRAME DETAIL

B / S3.03 TYPICAL DETAIL

SCALE: 1" = 1'-0"

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: S3.03

SCALE:	N.T.S.
ADDENDUM	05
DATE:	03/18/20

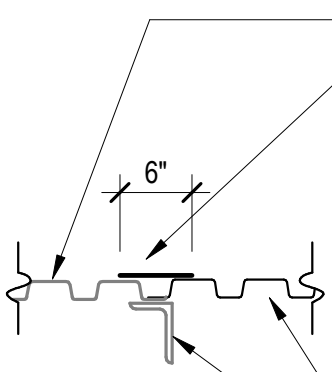
AD-S06

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

ITEM: TYPICAL STEEL FRAMING DETAILS

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9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

4



EXISTING ROOF DECK

MINIMUM 18 GAGE PLATE BY METAL DECK MANUFACTURER. ATTACH TO DECK WITH No. 10 SCREWS AT 12" o.c.

NEW ROOF DECK

EXISTING ANGLE FRAME AROUND OPENING

EXISTING ROOF INFILL

K
S3.04

SECTION

SCALE: 3/4" = 1'-0"

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: S3.04

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ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:
ADDENDUM: 05
DATE: 03/18/20

ITEM:

TYPICAL STEEL FRAMING AND RENOVATION DETAILS

AD-S07

WALL FOOTING SCHEDULE

MARK	SIZE	THICKNESS	REINFORCEMENT
TWF	4 SEE DETAIL M/S3.02		
WF20	2'-0" CONTINUOUS	1'-0"	2-#5 CONTINUOUS BOTTOM
WF28	2'-8" CONTINUOUS	1'-0"	3-#5 CONTINUOUS BOTTOM
WF34	3'-4" CONTINUOUS	1'-0"	3-#5 CONTINUOUS BOTTOM
WF40	4'-0" CONTINUOUS	1'-0"	4-#5 CONTINUOUS BOTTOM
WF48	4'-8" CONTINUOUS	1'-0"	5-#5 CONTINUOUS BOTTOM, #5 @ 12" o.c. TRANSVERSE
WF54	5'-4" CONTINUOUS	1'-0"	6-#5 CONTINUOUS BOTTOM, #5 @ 12" o.c. TRANSVERSE

NOTES:

1. ALL 6" AND 8" CMU WALLS SHALL RECEIVE TWF CONTINUOUS THICKENED SLABS UNLESS NOTED OTHERWISE (REFER TO M/S3.02). LOCATIONS OF WALLS ARE SHOWN ON ARCHITECTURAL PLANS.

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: S0.02

SMOLEN • EMR • ILKOVITCH ARCHITECTS

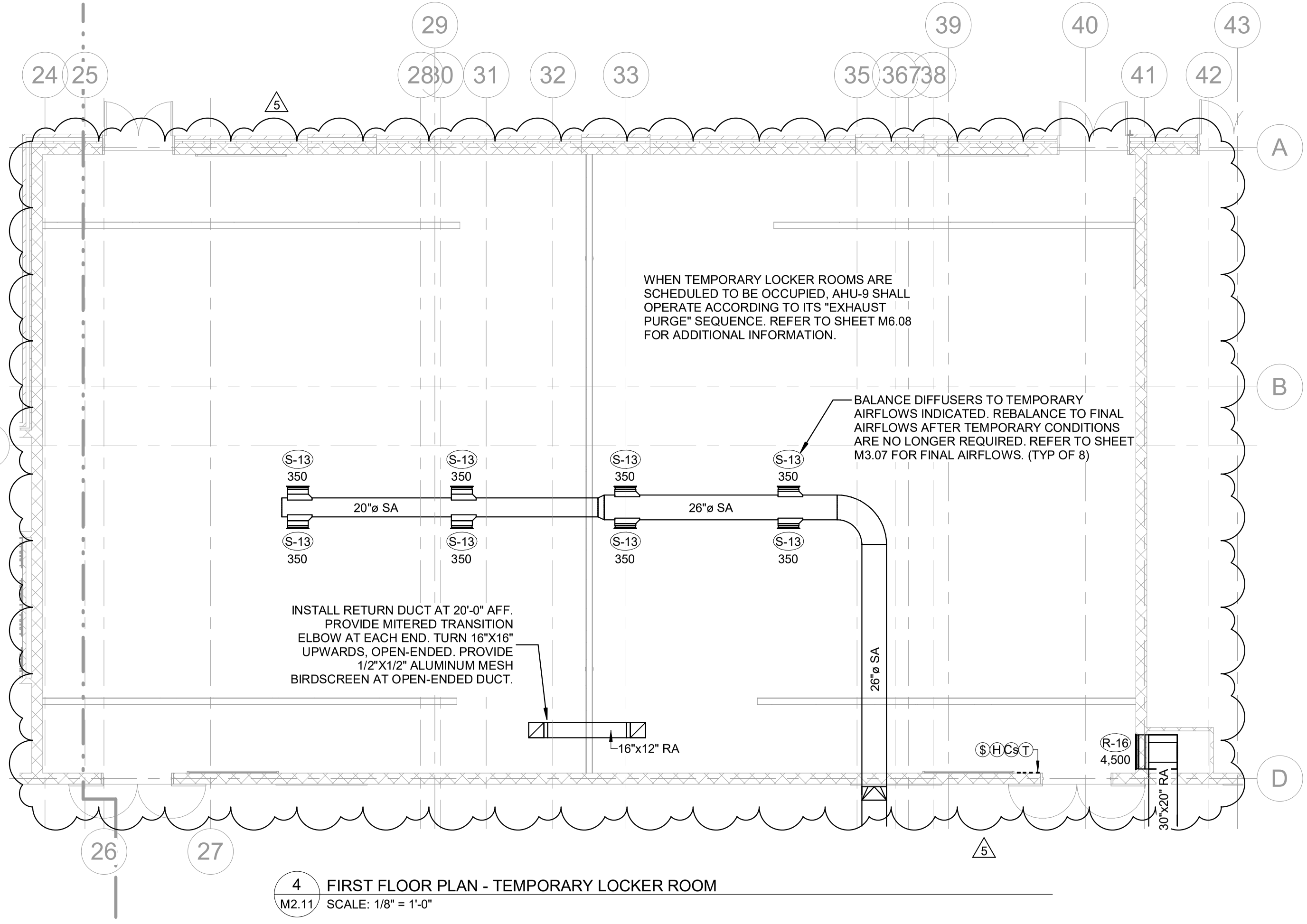
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SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:
ADDENDUM: 05
DATE: 03/18/20

ITEM:
INSPECTION TABLES AND SCHEDULES

AD-S08



4 M2.11 FIRST FLOOR PLAN - TEMPORARY LOCKER ROOM
SCALE: 1/8" = 1'-0"

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

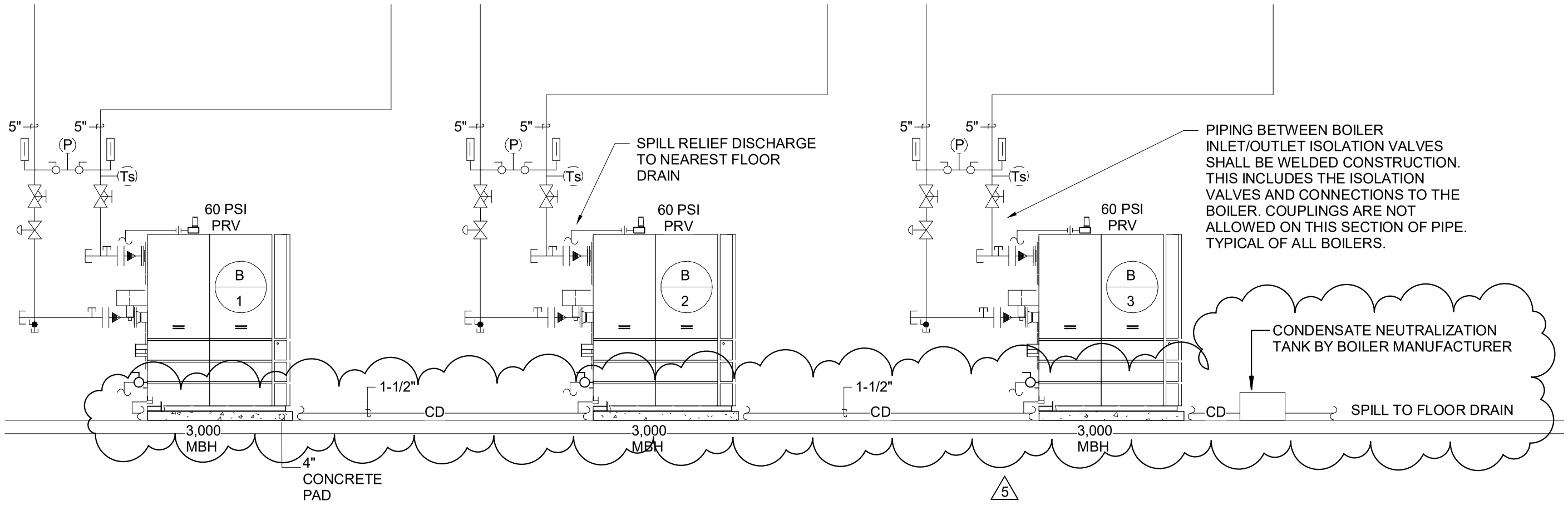
REF SHT NO.: M2.11
SCALE: 1/8" = 1'-0"
ADDENDUM: 05
DATE: 03/18/20

AD-M23

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

ITEM: FIRST FLOOR PLAN - TEMPORARY LOCKER ROOM

SMOLEN • EMR • ILKOVITCH ARCHITECTS
9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)



PRIMARY HOT WATER PIPING SCHEMATIC

NOT TO SCALE

ONLY INFORMATION CLOUDED HAS CHANGED. SOME INFORMATION HAS BEEN OMITTED FOR CLARITY ONLY. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS.

REF SHT NO.: M5.02

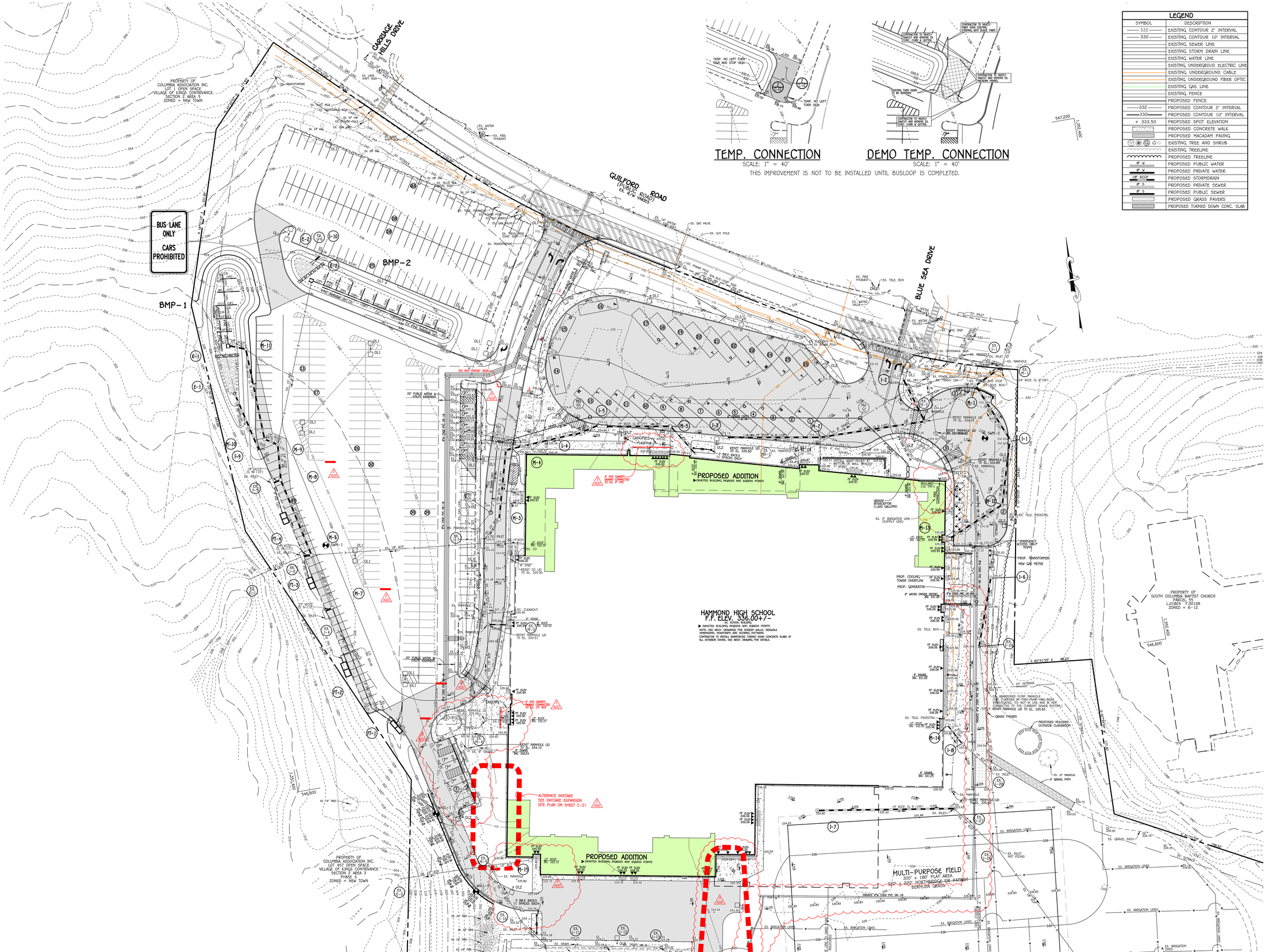
SCALE:	12" = 1'-0"
ADDENDUM:	05
DATE:	03/18/20

AD-M24

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

ITEM: CONDENSATE NEUTRALIZATION TANK

SMOLEN • EMR • ILKOVITCH ARCHITECTS
9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)



TEMP. CONNECTION

SCALE: 1" = 40'

DEMO TEMP. CONNECTION

SCALE: 1" = 40'

THIS IMPROVEMENT IS NOT TO BE INSTALLED UNTIL BUSLOOP IS COMPLETED.

PLAN

SCALE: 1" = 40'

LEGEND

SYMBOL	DESCRIPTION
332	EXISTING CONTOUR 2' INTERVAL
330	EXISTING CONTOUR 10' INTERVAL
	EXISTING SEWER LINE
	EXISTING STORM DRAIN LINE
	EXISTING WATER LINE
	EXISTING UNDERGROUD ELECTRIC LINE
	EXISTING UNDERGROUND CABLE
	EXISTING UNDERGROUND FIBER OPTIC
	EXISTING GAS LINE
	EXISTING FENCE
	PROPOSED FENCE
332	PROPOSED CONTOUR 2' INTERVAL
330	PROPOSED CONTOUR 10' INTERVAL
+ 333.50	PROPOSED SPOT ELEVATION
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
	EXISTING TREE AND SHRUB
	EXISTING TREELINE
	PROPOSED TREELINE
8" W	PROPOSED PUBLIC WATER
8" W	PROPOSED PRIVATE WATER
18" RCCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
	PROPOSED GRASS PAVERS
	PROPOSED TURNED DOWN CONC. SLAB

FOR CONTINUATION SEE SHEET C-5

ARCHITECT

SMOLEN • EMR • ILKOVITCH ARCHITECTS

9211 CORPORATE BLVD, SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

CIVIL

FISHER, COLLINS, CARTER

10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21042
410-461-2855(P)

KITCHEN

NYIKOS ASSOCIATES, INC.

18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530(P)

STRUCTURAL

COLUMBIA ENGINEERING

6210 OLD DOBBIN LANE, SUITE 150
COLUMBIA, MD 21045
410-992-9970(P)

MECH./ELECTRICAL/PLUMBING

CMTA, INC.

10411 MEETING ST.
PROSPECT, KY 40059
502-326-3085(P)

ACOUSTIC & MEDIA SYSTEMS
ACOUSTICAL DESIGN COLLABORATIVE, LTD

606 BOSLEY AVE
TOWSON, MD 21204
410-821-5930(P)

LEED

DOO CONSULTING

531 PICCADILLY ROAD
TOWSON, MD 21204
443-463-5859(P)

CONSTRUCTION MANAGER

J. VINTON SCHAFER & SONS

1309-Q CONTINENTAL DRIVE
ABINGDON, MD 21009
410-335-3000(P)

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENS NO. 38386, EXPIRATION DATE: JANUARY 12, 2022."

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	PERMIT REVISION	02/19/2020
2	ADDENDUM 3	03/12/2020
3	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

SITE DEVELOPMENT PLAN

PROJECT NO: 18011.00

DATE: 02/19/2020

SCALE: 1" = 40'

WORKING NORTH

SHEET NO:

C-4

NOTES:

1. ALL SIGN LOCATIONS AND PAVEMENT MARKINGS TO BE INSTALLED IN THE COUNTY RIGHT-OF-WAY OR AT A COUNTY INTERSECTION MUST BE APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-2430).

2. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

3. ALL PAINT FOR PARKING STRIPING, BUS LOOP STRIPING, HANDICAPPED SYMBOLS AND CROSSWALKS TO BE ACRYLIC OR LATEX PAINT ESPECIALLY FORMULATED AND MANUFACTURED FOR USE ON ASPHALTIC CONCRETE UNDER TRAFFIC CONDITIONS. ACCEPTABLE STRIPING PAINTS ARE "NON-REFLECTIONIZED" BY SHERWIN WILLIAMS OR "IRON-CLAD" BY BENJAMIN MOORE. PARKING STRIPES SHALL BE 4" WIDE WHITE UNLESS OTHERWISE NOTED. ACCESSIBLE SPACE STENCIL SHALL BE PAINTED BLUE IN ACCORDANCE WITH FEDERAL STANDARD 5952.

4. ALL PAVEMENT MARKINGS, CROSSWALKS AND STOP BARS SHALL BE THERMOPLASTIC.

NOTE: THE CONTRACTOR SHALL NOTIFY MR. PARRIS ZIRKENBACH (410-313-5752) AT THE TRAFFIC ENGINEERING DIVISION BEFORE ANY SIGNS, SCHOOL FLASHERS OR MARKERS ARE ORDERED AND/OR INSTALLED.

CARRIAGE HILLS DRIVE

GUILFORD ROAD (PUBLIC ROAD) c.v. 82'W VARIES

BLUE SEA DRIVE

PROPERTY OF COLUMBIA ASSOCIATION INC. LOT 1 OPEN SPACE VILLAGE OF KINGS CONTRIVANCE SECTION 2 AREA 5 ZONED = NEW TOWN

BMP-1

BMP-2

HAMMOND HIGH SCHOOL
F.F. ELEV. 336.00+/-
EX. SCHOOL BUILDING
▶ DENOTES BUILDING INGRESS AND EGRESS POINTS
NOTE: SEE ARCH. DRAWINGS FOR SCREEN WALLS, SIDEWALK DIMENSIONS, MOWSTRIPS AND SCORING PATTERNS.
CONTRACTOR TO INSTALL REINFORCED TURNED DOWN CONCRETE SLABS AT ALL EXTERIOR DOORS. SEE ARCH. DRAWING FOR DETAILS.

PROPOSED ADDITION
▶ DENOTES BUILDING INGRESS AND EGRESS POINTS

PROPOSED ADDITION
▶ DENOTES BUILDING INGRESS AND EGRESS POINTS

MULTI-PURPOSE FIELD
300' x 180' PLAY AREA
420' NORTHBRIDGE OR PATRIOT BERMUDA GRASS

NOTE: UPON COMPLETION ON PARKING LOT STRIPING CONTACT OFFICE OF THE FIRE MARSHAL, HOWARD COUNTY DEPARTMENT OF FIRE AND RESCUE SERVICES TO LOCATE FIRE LANE SIGNAGE. CURRENT FIRE LANE SIGN LOCATIONS ARE APPROXIMATE.

PROPERTY OF COLUMBIA ASSOCIATION INC. LOT 457 OPEN SPACE VILLAGE OF KINGS CONTRIVANCE SECTION 2 AREA 3 PHASE 3 ZONED = NEW TOWN

PROPERTY OF SOUTH COLUMBIA BAPTIST CHURCH PARCEL 55 L.01614 F.00128 ZONED = R-12

PROPOSED MULCHED OUTDOOR CLASSROOM

FOR CONTINUATION SEE SHEET C-7

PLAN
SCALE: 1" = 40'

LEGEND

SYMBOL	DESCRIPTION
S	EXISTING SEWER LINE
D	EXISTING STORM DRAIN LINE
W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUND ELECTRIC LINE
UGC	EXISTING UNDERGROUND CABLE
UFO	EXISTING UNDERGROUND FIBER OPTIC
G	EXISTING GAS LINE
X	EXISTING FENCE
X	PROPOSED FENCE
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
8" W	PROPOSED PUBLIC WATER
8" W	PROPOSED PRIVATE WATER
18" RCCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
	PROPOSED GRASS PAVERS
	PROPOSED TURNED DOWN CONC. SLAB

ARCHITECT

SMOLEN • EMR • ILKOVITCH ARCHITECTS

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18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530(P)

STRUCTURAL

COLUMBIA ENGINEERING

6210 OLD DOBBIN LANE, SUITE 150
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410-992-9970(P)

MECH./ELECTRICAL/PLUMBING

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410-821-5930(P)

LEED

DOO CONSULTING

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TOWSON, MD 21204
443-463-5859(P)

CONSTRUCTION MANAGER

J. VINTON SCHAFER & SONS

1309-Q CONTINENTAL DRIVE
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410-335-3000(P)

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PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
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3	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

GEOMETRY PLAN AND STRIPING PLAN

PROJECT NO: 18011.00

DATE: 02/19/2020

SCALE: 1" = 40'

WORKING NORTH

SHEET NO:

C-6

ADD 5

SOILS LEGEND

SOIL	NAME	GROUP
GhB	Glenelg loam, 8 to 15 percent slopes, K VALUE = 0.20	B
GhC	Glenelg – Urban loam, 8 to 15 percent slopes, K VALUE = 0.20	B
MaC	Manor loam, 8 to 15 percent slopes, K VALUE = 0.24	B
** MaD	Manor loam, 15 to 25 percent slopes, K VALUE = 0.24	B
UuB	Urban land-Udorthents complex, 0 to 8 percent slopes, K VALUE = 0.28	X

** DENOTES HIGHLY ERODIBLE SOILS

LEGEND

SYMBOL	DESCRIPTION
332	EXISTING CONTOUR 2' INTERVAL
330	EXISTING CONTOUR 10' INTERVAL
S	EXISTING SEWER LINE
D	EXISTING STORM DRAIN LINE
W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUD ELECTRIC LINE
UTC	EXISTING UNDERGROUD CABLE
UFO	EXISTING UNDERGROUD FIBER OPTIC
G	EXISTING GAS LINE
x x	EXISTING FENCE
x x	PROPOSED FENCE
332	PROPOSED CONTOUR 2' INTERVAL
330	PROPOSED CONTOUR 10' INTERVAL
+ 333.50	PROPOSED SPOT ELEVATION
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
	EXISTING TREE AND SHRUB
	EXISTING TREELINE
	PROPOSED TREELINE
8" W	PROPOSED PUBLIC WATER
8" W	PROPOSED PRIVATE WATER
18" RCCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
	PROPOSED GRASS PAVERS
	SOILS DELINEATION
SSF	SUPER SILT FENCE
	PROPOSED TURNED DOWN CONC. SLAB

FOR CONTINUATION SEE SHEET C-9

PLAN
SCALE: 1" = 40'

ARCHITECT
SMOLEN • EMR • ILKOVITCH ARCHITECTS
9211 CORPORATE BLVD, SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

CIVIL
FISHER, COLLINS, CARTER
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21042
410-461-2855(P)

KITCHEN
NYIKOS ASSOCIATES, INC.
18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530(P)

STRUCTURAL
COLUMBIA ENGINEERING
6210 OLD DOBBIN LANE, SUITE 150
COLUMBIA, MD 21045
410-992-9970(P)

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CONSTRUCTION MANAGER
J. VINTON SCHAFER & SONS
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3	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

SEDIMENT AND EROSION CONTROL PLAN

PROJECT NO: 18011.00
DATE: 02/19/2020
SCALE: 1" = 40'
WORKING NORTH

SHEET NO:

C-8

DRAINAGE AREA DATA

DRAINAGE AREA	STRUCTURE NO.	AREA (AC.)	"C"	% IMP.
A	I-1	0.61	0.53	50
B	I-2	0.52	0.77	88
C	I-3	0.40	0.79	90
D	I-4	0.11	0.52	52
E	I-5	0.69	0.71	79
F	I-6	0.55	0.21	7
G	I-7	0.39	0.16	0
H	I-8	0.16	0.32	32
I	I-9	0.87	0.64	66
J	I-10	0.87	0.69	76
K	I-11	0.06	0.56	57
L	I-12	0.11	0.59	58

SOILS LEGEND

SOIL	NAME	GROUP
GhB	Glenelg loam, 8 to 15 percent slopes, K VALUE = 0.20	B
GhC	Glenelg - Urban loam, 8 to 15 percent slopes, K VALUE = 0.24	B
MaC	Manor loam, 8 to 15 percent slopes, K VALUE = 0.24	B
** MaD	Manor loam, 15 to 25 percent slopes, K VALUE = 0.24	B
UuB	Urban land-Udorthents complex, 0 to 8 percent slopes, K VALUE = 0.28	X

** DENOTES HIGHLY ERODIBLE SOILS

LEGEND

SYMBOL	DESCRIPTION
332	EXISTING CONTOUR 2' INTERVAL
330	EXISTING CONTOUR 10' INTERVAL
S	EXISTING SEWER LINE
D	EXISTING STORM DRAIN LINE
W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUD ELECTRIC LINE
UGC	EXISTING UNDERGROUND CABLE
UFO	EXISTING UNDERGROUND FIBER OPTIC
G	EXISTING GAS LINE
x x	EXISTING FENCE
x x	PROPOSED FENCE
332	PROPOSED CONTOUR 2' INTERVAL
330	PROPOSED CONTOUR 10' INTERVAL
+ 333.50	PROPOSED SPOT ELEVATION
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
	EXISTING TREE AND SHRUB
	EXISTING TREELINE
	PROPOSED TREELINE
8" W	PROPOSED PUBLIC WATER
8" W	PROPOSED PRIVATE WATER
10" RCCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
	PROPOSED GRASS PAVERS
	SOILS DELINEATION
	PROPOSED TURNED DOWN CONC. SLAB

FOR CONTINUATION SEE SHEET C-11

PLAN
SCALE: 1" = 40'

ARCHITECT
SEI SMOLEN • EMR • ILKOVITCH ARCHITECTS
9211 CORPORATE BLVD, SUITE 340
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ELLICOTT CITY, MD 21042
410-461-2855(P)

KITCHEN
NYIKOS ASSOCIATES, INC.
18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530(P)

STRUCTURAL
COLUMBIA ENGINEERING
6210 OLD DOBBIN LANE, SUITE 150
COLUMBIA, MD 21045
410-992-9970(P)

MECH./ELECTRICAL/PLUMBING
CMTA, INC.
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PROSPECT, KY 40059
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LEED
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531 PICCADILLY ROAD
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443-463-5859(P)

CONSTRUCTION MANAGER
J. VINTON SCHAFER & SONS
1309-Q CONTINENTAL DRIVE
ABINGDON, MD 21009
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2	ADDENDUM 3	03/12/2020
3	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

SOILS AND STORM DRAINAGE AREA MAP

PROJECT NO: 18011.00
DATE: 02/19/2020
SCALE: 1" = 40'
WORKING NORTH

SHEET NO:
C-10 ADD

TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

—— x —— DENOTES 6' HIGH TEMPORARY CHAIN LINK CONSTRUCTION FENCE, USE DRIVEN POSTS IN AREAS WITHOUT PAVING.

CARRIAGE HILLS DRIVE

GUILFORD ROAD (PUBLIC ROAD) VARIES

BLUE SEA DRIVE

PROPERTY OF COLUMBIA ASSOCIATION INC. LOT I OPEN SPACE VILLAGE OF KINGS CONTRIVANCE SECTION 2 AREA 3 ZONED = NEW TOWN

BUS LANE ONLY CARS PROHIBITED

BMP-1

BMP-2

TEMP. CONSTRUCTION FENCE

TEMP. PATH

CANOPIES

PROPOSED ADDITION
▶ DENOTES BUILDING INGRESS AND EGRESS POINTS

HAMMOND HIGH SCHOOL
F.F. ELEV. 336.00+/-
EX. SCHOOL BUILDING
▶ DENOTES BUILDING INGRESS AND EGRESS POINTS
NOTE: SEE ARCH. DRAWINGS FOR SCREEN WALLS, SIDEWALK CONDENSING, POWERSPS AND SCORING PATTERN CONNECTION TO INSTALL REINFORCED THINNED EDAN CONCRETE SLABS AT ALL OUTSIDE DOORS, SEE ARCH. DRAWING FOR DETAILS.

TEMP. MAIN ENTRANCE

TEMPORARY BARRIERS

RETAINING WALL

20' TEMP. ACCESS ROAD

EX. TENNIS COURTS

EX. BASKETBALL COURTS

EX. TRASH CAN

EX. PUBLIC BUS STOP

PROP. TRANSFORMER
NEW GAS METER

PROP. COOLING TOWER OVERFLOW

PROP. GENERATOR

EMERGENCY ACCESS ONLY SIGNS

PROPERTY OF SOUTH COLUMBIA BAPTIST CHURCH PARCEL 55 L.01824 F.00108 ZONED = R-12

EX. BENCHES

EX. PLANTER BOXES

9' GRAVEL PATH

EX. IRRIGATION LINES

EX. IRRIGATION VALVE

EX. WATER LINE

EX. IRRIGATION VALVES

EX. METAL BLEACHERS (VISITORS SIDE)

EX. CHAINLINK FENCE

PROPERTY OF COLUMBIA ASSOCIATION INC. LOT 457 OPEN SPACE VILLAGE OF KINGS CONTRIVANCE SECTION 2 AREA 3 PHASE 3 ZONED = NEW TOWN

PLAN
SCALE: 1" = 40'

SITE PLAN LEGEND

SYMBOL	DESCRIPTION
332	EXISTING CONTOUR 2' INTERVAL
330	EXISTING CONTOUR 10' INTERVAL
S	EXISTING SEWER LINE
D	EXISTING STORM DRAIN LINE
W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUND ELECTRIC LINE
UGC	EXISTING UNDERGROUND CABLE
UFO	EXISTING UNDERGROUND FIBER OPTIC
G	EXISTING GAS LINE
x x x	EXISTING FENCE
x x	PROPOSED FENCE
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
	EXISTING TREE AND SHRUB
	EXISTING TREELINE
	PROPOSED TREELINE
8" W	PROPOSED PUBLIC WATER
8" W	PROPOSED PRIVATE WATER
18" RCCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER

ARCHITECT

SEI SHOLEN • EMR • ILKOVITCH ARCHITECTS

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PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	PERMIT REVISION	02/19/2020
2	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

STEP 6, 7, 8 & 9

PROJECT NO: 18011.00

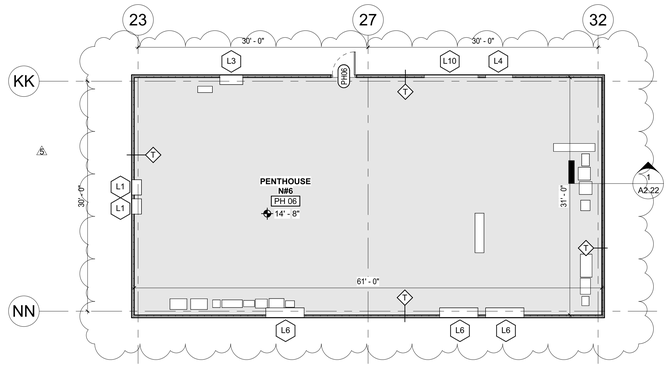
DATE: 02/19/2020

SCALE: 1" = 40'

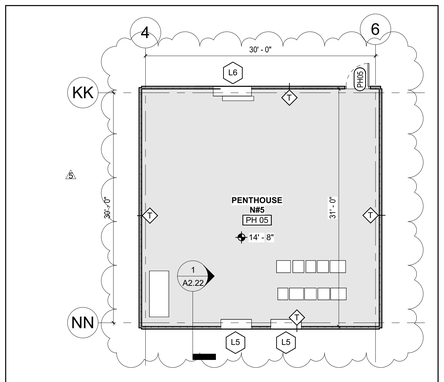
WORKING NORTH

SHEET NO:

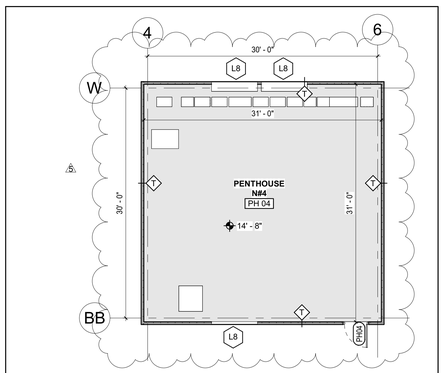
C-19



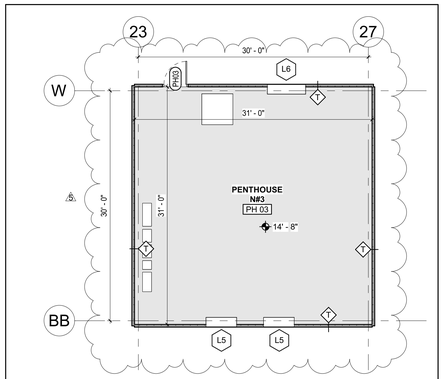
5 A2.09 AREA B - PENTHOUSE #6
SCALE: 1/8" = 1'-0"



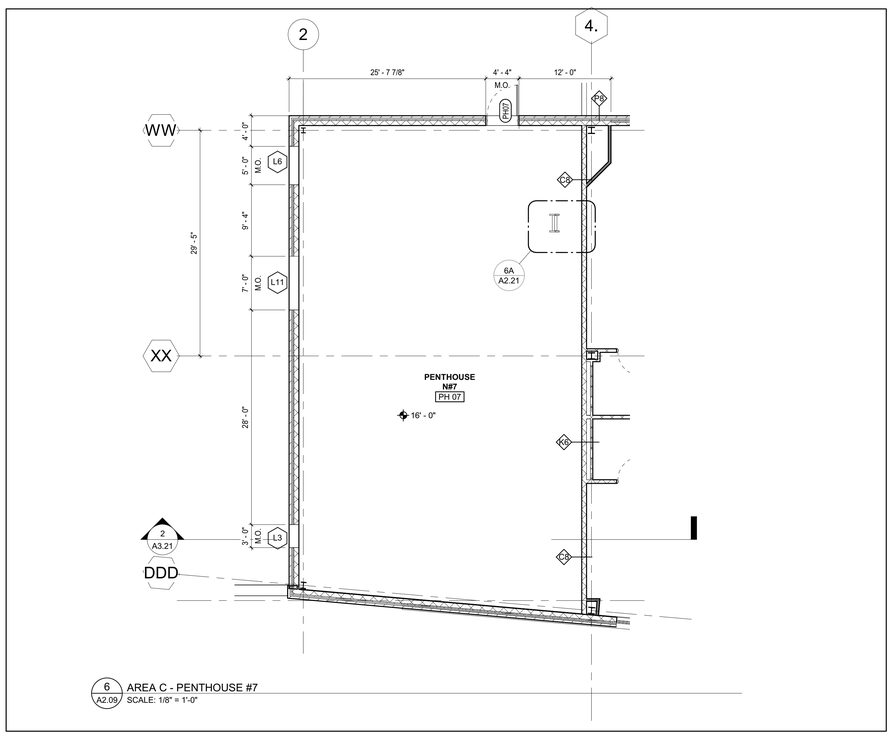
4 A2.09 AREA C - PENTHOUSE #5
SCALE: 1/8" = 1'-0"



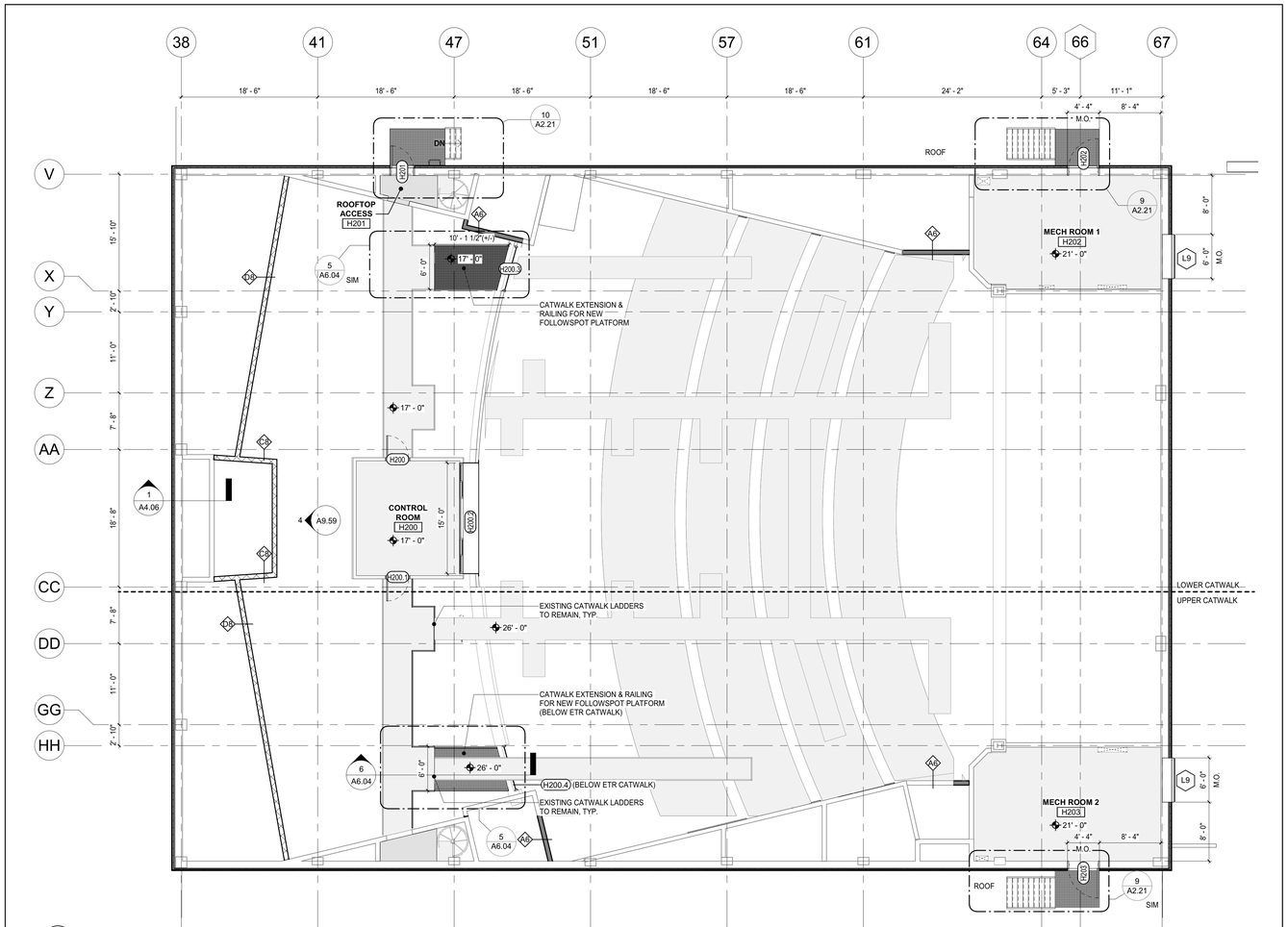
3 A2.09 AREA D - PENTHOUSE #4
SCALE: 1/8" = 1'-0"



2 A2.09 AREA E - PENTHOUSE #3
SCALE: 1/8" = 1'-0"

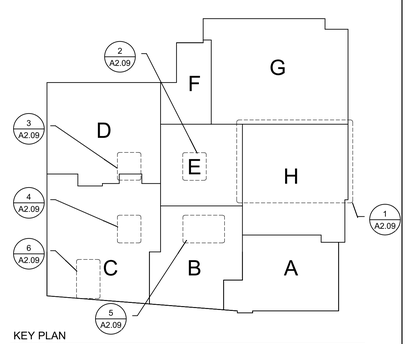


6 A2.09 AREA C - PENTHOUSE #7
SCALE: 1/8" = 1'-0"



1 A2.09 AREA H - SECOND FLOOR
SCALE: 1/8" = 1'-0"

REFER TO A2.00 FOR GENERAL NOTES AND SYMBOL LEGEND



KEY PLAN
SCALE : N.T.S.

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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional architect under the laws of the State of Maryland, License No.: 16066, Expiration Date: 1/6/2022.

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	BID SET	02/25/2020
1	ADDENDUM 2	03/06/2020
2	ADDENDUM 3	03/12/2020
3	ADDENDUM 5	03/13/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FLOOR PLAN - FLOOR 2 - AREA H & PENTHOUSES 3, 4, 5, 6 & 7

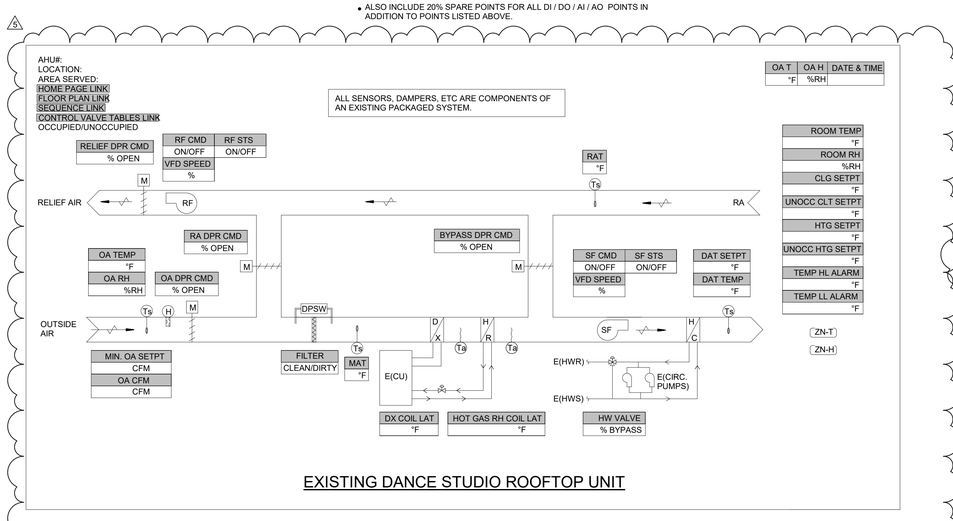
PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 1/8" = 1'-0"
WORKING NORTH

SHEET NO:
A2.09

3/16/2020 5:46:31 PM

POINTS: OUTSIDE AIR SYSTEM	DI	DO	AI	AO	CALCULATED	ALARM
SUPPLY FAN START, STOP, STATUS AND RUNTIME HOURS	X	X			X	
SUPPLY FAN SPEED				X		
EXHAUST FAN START, STOP, STATUS AND RUNTIME HOURS	X	X			X	
EXHAUST FAN SPEED				X		
ENERGY RECOVERY WHEEL START, STOP, STATUS AND RUNTIME HOURS	X	X			X	
ENERGY RECOVERY WHEEL SPEED				X		
UNIT OUTSIDE AIR DAMPER COMMAND AND STATUS	X	X				
UNIT EXHAUST AIR DAMPER COMMAND AND STATUS	X	X				
SMOKE DETECTORS (TYP.2)	X					
LOW LIMIT (FREEZE-STAT)	X					
OUTSIDE AIR TEMPERATURE UPSTREAM OF ENERGY RECOVERY WHEEL (F)			X			
OUTSIDE AIR TEMPERATURE DOWNSTREAM OF ENERGY RECOVERY WHEEL (F)			X			
OUTSIDE AIR HUMIDITY UPSTREAM OF ENERGY RECOVERY WHEEL (F)			X			
OUTSIDE AIR HUMIDITY DOWNSTREAM OF ENERGY RECOVERY WHEEL			X			
EXHAUST AIR TEMPERATURE UPSTREAM OF ENERGY RECOVERY WHEEL (F)			X			
EXHAUST AIR TEMPERATURE DOWNSTREAM OF ENERGY RECOVERY WHEEL (F)			X			
EXHAUST HUMIDITY UPSTREAM OF ENERGY RECOVERY WHEEL (RH)			X			
CHILLED WATER COIL LEAVING AIR TEMPERATURE (F)			X			
UNIT DISCHARGE AIR TEMPERATURE (F)			X			
SUPPLY DUCT STATIC PRESSURE ("w.g.)			X			
SUM OF CONNECTED TERMINAL UNITS - OA CFM					X	
CHILLED WATER VALVE				X		
CHILLED WATER RETURN TEMPERATURE			X			
HOT WATER VALVE				X		
HOT WATER COIL LEAVING AIR TEMPERATURE			X			
FILTER STATUS EXHAUST	X					
PRE-FILTER STATUS SUPPLY	X					
FILTER STATUS SUPPLY	X					
ENERGY RECOVERY WHEEL DIFFERENTIAL PRESSURE			X			
UNIT DISCHARGE HUMIDITY			X			
EXHAUST AIR PRESSURE LOW LIMIT	X					
SUPPLY AIR PRESSURE HIGH LIMIT	X					
EXHAUST AIR FLOW DAMPER POSITION (QTY: 3)				X		
EXHAUST AIR FLOW DAMPER CFM (QTY: 3)			X			
5 EXHAUST AIR CFM			X			
OUTSIDE AIR CFM			X			
BUILDING STATIC PRESSURE			X			

- ALSO INCLUDE 20% SPARE POINTS FOR ALL DI / DO / AI / AO POINTS IN ADDITION TO POINTS LISTED ABOVE.



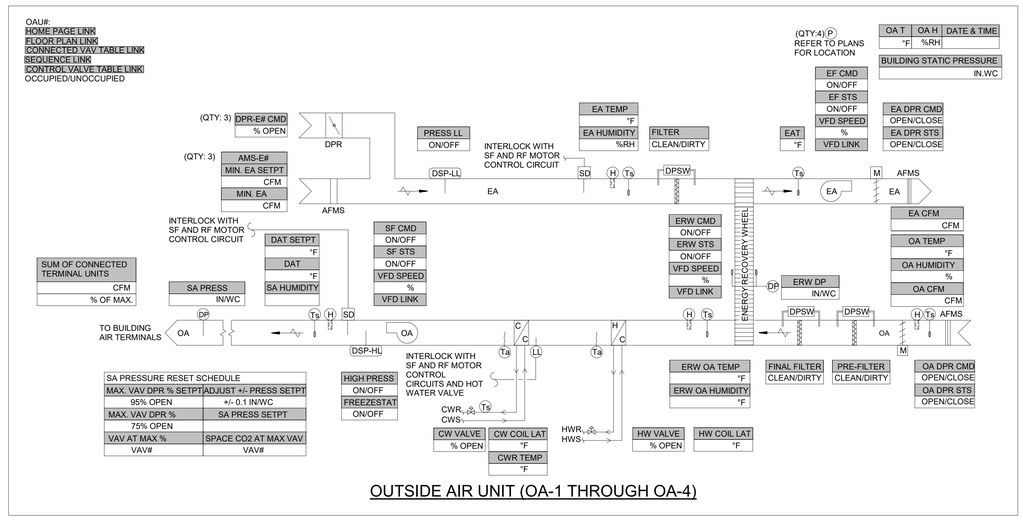
EXISTING DANCE STUDIO ROOFTOP UNIT

EXISTING DANCE STUDIO RTU POINTS LIST	DI	DO	AI	AO	CALCULATED	ALARM
SUPPLY FAN START, STOP, STATUS AND RUNTIME HOURS	X	X			X	
SUPPLY FAN VFD SPEED				X		
RELIEF FAN START, STOP, STATUS AND RUNTIME HOURS	X	X			X	
RELIEF FAN VFD SPEED				X		
OUTSIDE AIR DAMPER POSITION	X			X		
RELIEF AIR DAMPER POSITION	X			X		
RETURN AIR DAMPER POSITION	X			X		
BYPASS DAMPER POSITION	X			X		
FILTER STATUS	X					
OUTSIDE AIR TEMPERATURE			X			
MIXED AIR TEMPERATURE			X			
LEAVING AIR TEMPERATURE - DX COIL			X			
LEAVING AIR TEMPERATURE - HOT GAS REHEAT COIL			X			
DISCHARGE AIR TEMPERATURE			X			
ZONE RELATIVE HUMIDITY			X			
ZONE TEMPERATURE			X			
HOT GAS REHEAT CONTROL VALVE				X		
HOT WATER CONTROL VALVE				X		

- ALSO INCLUDE 20% SPARE POINTS FOR ALL DI / DO / AI / AO POINTS IN ADDITION TO POINTS LISTED ABOVE.

EXISTING DANCE STUDIO ROOFTOP UNIT:

1. ALL SENSORS, DAMPERS, FANS, COILS, CONDENSING UNITS, ETC ARE COMPONENTS OF AN EXISTING PACKAGED SYSTEM AND ARE TO REMAIN AND BE REUSED. THE TCC IS RESPONSIBLE FOR PROVIDING A NEW DDC CONTROLLER TO THE UNIT'S TERMINAL STRIP, CAPABLE OF PROVIDING THE REQUIRED SEQUENCE.
2. IF COMMUNICATION IS LOST BETWEEN THE NETWORK CONTROL PANEL AND THE RTU SYSTEM CONTROLLER, THEN THE RTU SYSTEM SHALL BE PLACED INTO THE OCCUPIED MODE UNTIL COMMUNICATION IS RESTORED.
3. SUPPLY AIR FAN: THE EXISTING TEMPERATURE SENSOR LOCATED IN THE SPACE SHALL CONTROL THE OPERATION OF THE SUPPLY FAN. THE SUPPLY FAN SHALL VARY BETWEEN THE MINIMUM AIRFLOW SETTING AND MAXIMUM AIRFLOW SETTING TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. AN EXISTING VFD CURRENT SENSING RELAY SHALL PROVE FAN STATUS. SET THE MINIMUM AIRFLOW TO 1,410 CFM, MAXIMUM AIRFLOW TO 2,800 CFM. COORDINATE VFD % SETPOINTS WITH THE TAB CONTRACTOR. WHEN FAN STATUS IS ESTABLISHED CONTROL ROUTINE SHALL BE ENABLED. EACH FAN SHALL BE MONITORED VIA A CURRENT SENSING RELAYS, AND MONITORED VIA THE BAS. UPON MOTOR FAILURE, AN ALARM SHALL BE SENT TO THE BAS.
4. MINIMUM OUTDOOR AIR FLOW CONTROL: WHEN THE AHU IS OPERATING IN THE OCCUPIED MODE, THE OUTSIDE AIR DAMPER SHALL BE AT MINIMUM POSITION.
5. IN COOLING MODE: WHEN ROOM TEMPERATURE IS ABOVE COOLING SETPOINT, THE FAN SHALL BE CYCLED ON, AND THE UNIT SHALL SEQUENCE THE COMPRESSOR STAGES AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SET POINT. MODULATE COMPRESSOR FROM 15% TO 100%. PROVIDE A 15 MINUTE (ADJ) TIME DELAY BETWEEN COMPRESSOR CYCLES TO PREVENT SHORT-CYCLING. HOT WATER CONTROL VALVE SHALL BE CLOSED.
6. DEHUMIDIFICATION CONTROL
   A. IF SPACE TEMPERATURE IS LESS THAN 5 DEG F (ADJ) ABOVE COOLING SET POINT, THE RETURN AIR BYPASS DAMPER SHALL MODULATE TO MAINTAIN THE SPACE SETPOINT OF 55% (ADJ). THE BYPASS DAMPER SHALL MODULATE TO FULL BYPASS WHEN HUMIDITY LEVELS ARE LESS THAN SET POINT AND MODULATE TO FULL CLOSED WHEN HUMIDITY LEVELS ARE ABOVE SET POINT. IF SPACE TEMPERATURE IS GREATER THAN 5 DEG F (ADJ) ABOVE COOLING SET POINT, THE RETURN AIR BYPASS DAMPER AND HOT GAS REHEAT VALVE SHALL BE CLOSED.
   B. IF SPACE RELATIVE HUMIDITY EXCEEDS 60% (ADJ), THE UNIT SHALL SEQUENCE THE COMPRESSOR STAGES AS REQUIRED TO MAINTAIN A COIL DISCHARGE TEMPERATURE OF 55 DEG F (ADJ) OR LESS WHILE MODULATING THE CAPACITY OF THE HOT GAS REHEAT COIL TO MAINTAIN SPACE TEMPERATURE SET POINT.
   C. IF THE MEASURED REFRIGERANT SUCTION PRESSURE IS LESS THAN 62 PSI (ADJ), THE BYPASS DAMPER SHALL MODULATE TOWARDS THE CLOSED POSITION. AFTER REFRIGERANT SUCTION PRESSURE RISES ABOVE 62 PSI (ADJ), THE BYPASS DAMPER SHALL OPERATE ACCORDING TO THE PREVIOUS SEQUENCES.
7. IN ECONOMIZER MODE: WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 65 DEG F (ADJ), THE OUTSIDE AIR DAMPER, RELIEF AIR DAMPER, AND RETURN AIR DAMPER SHALL MODULATE AS REQUIRED TO MAINTAIN 55 DEG F (ADJ) DISCHARGE AIR TEMPERATURE. THE RELIEF FAN SHALL START AND OPERATION SHALL BE PROVEN VIA VFD CONTACTS. THE RELIEF FAN SPEED SHALL UTILIZE FAN TRACKING AND LAG THE SUPPLY FAN. A LINEAR OFFSET SHALL BE FIELD DETERMINED. THE TCC SHALL DRIVE THE AHU TO MAXIMUM AIRFLOW AND THE VFD % SHALL BE SET BY THE TAB CONTRACTOR TO OBTAIN REQUIRED RELIEF AIR CFM. THEN THE TCC SHALL DRIVE THE AHU TO MINIMUM AND THE VFD % SHALL BE SET BY TAB CONTRACTOR TO OBTAIN REQUIRED RELIEF AIR CFM. THE RELIEF FAN SHALL LAG THE SUPPLY FAN LINEARLY BETWEEN THE MINIMUM AND MAXIMUM CFM REQUIREMENTS. NORMALLY UNDER THIS CONDITION, THE COMPRESSOR SHALL BE STAGED OFF. HOWEVER, IF FURTHER COOLING IS REQUIRED, IT SHALL STAGE ON AND MODULATE AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT.
8. IN HEATING MODE: IF THE ECONOMIZER DAMPER IS AT ITS MINIMUM OUTSIDE AIR POSITION AND THE MIXED AIR TEMPERATURE IS LESS THAN 52°F, THEN THE 2-WAY HOT WATER CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. THE RELIEF AIR DAMPER SHALL BE CLOSED, AND THE RETURN AIR DAMPER SHALL BE OPEN. THE OA DAMPER SHALL BE AT ITS MINIMUM OUTSIDE AIR POSITION. THE BYPASS DAMPER AND HOT GAS REHEAT VALVE SHALL BE CLOSED, AND THE COMPRESSOR SHALL BE OFF.
   A. IF OUTSIDE AIR TEMPERATURE IS LESS THAN 40 DEG F (ADJ), THE EXISTING CIRCULATOR PUMP SHALL BE ENERGIZED TO RUN CONTINUOUSLY. IF OUTSIDE AIR TEMPERATURE IS GREATER THAN 40 DEG F (ADJ), THE EXISTING CIRCULATOR PUMP SHALL BE DE-ENERGIZED. PUMPS SHALL OPERATE ON A LEAD/LAG BASIS, WITH LEAD PUMP SELECTION BASED ON RUN TIME HOURS. IN THE EVENT OF LEAD PUMP FAILURE, LAG PUMP SHALL AUTOMATICALLY START AFTER A 15 SECOND TIME DELAY (ADJ).
9. UNOCCUPIED MODE:
   A. WHEN BUILDING IS INDEXED TO UNOCCUPIED, THE AHU SHALL BE OFF, AND BOTH THE CHILLED AND HOT WATER CONTROL VALVES SHALL BE FULL CLOSED.
   B. IF SPACE TEMPERATURE FALLS BELOW UNOCCUPIED HEATING SETPOINT, THE FAN SHALL CYCLE ON AND THE HOT WATER CONTROL VALVE SHALL MODULATE AS NECESSARY TO MAINTAIN UNOCCUPIED HEATING SETPOINT.
   C. IF SPACE TEMPERATURE RISES ABOVE UNOCCUPIED COOLING SETPOINT, THE FAN SHALL CYCLE ON AND THE UNIT SHALL SEQUENCE THE COMPRESSOR STAGES AS REQUIRED TO MAINTAIN UNOCCUPIED COOLING SETPOINT.
   D. IF SPACE RELATIVE HUMIDITY EXCEEDS 60% (ADJ), THE UNIT SHALL ENTER MAINTENANCE MODE. WHEN SPACE RELATIVE HUMIDITY IS LESS THAN 55% (ADJ), THE UNIT SHALL OPERATE ACCORDING TO THE PREVIOUS SEQUENCES.
10. MORNING WARM-UP: WHEN INDEXED TO OCCUPIED MODE BY THE BAS, THE UNIT IS IN MORNING WARM-UP MODE WHEN RETURN AIR FALLS BELOW 65°F (ADJ.) AND UNTIL RETURN AIR RISES ABOVE 68°F (ADJ.). DURING MORNING WARM-UP MODE, THE OUTSIDE AIR DAMPERS SHALL BE CLOSED, THE RETURN AIR DAMPERS SHALL BE OPEN AND THE RELIEF AIR DAMPERS SHALL BE CLOSED. THE HOT WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN A 95°F (ADJ.) DISCHARGE AIR TEMPERATURE.
11. MORNING COOL-DOWN: WHEN INDEXED TO OCCUPIED MODE BY THE BAS, THE UNIT IS IN MORNING COOL-DOWN MODE WHEN RETURN AIR RISES ABOVE 81°F (ADJ.) AND UNTIL RETURN AIR FALLS BELOW 78°F (ADJ.). DURING MORNING COOL-DOWN MODE, THE OUTSIDE AIR DAMPERS SHALL BE CLOSED, THE RETURN AIR DAMPERS SHALL BE OPEN AND THE RELIEF AIR DAMPERS SHALL BE CLOSED. THE UNIT SHALL SEQUENCE THE COMPRESSOR STAGES AS REQUIRED TO MAINTAIN A 55°F (ADJ.) DISCHARGE AIR TEMPERATURE.
12. OPTIMAL START: EACH AHU SHALL UTILIZE OPTIMAL START. THE BAS SHALL CALCULATE THE REQUIRED WARM-UP OR COOL-DOWN TIME BASED ON THE ASSOCIATED ZONE'S OCCUPIED HEATING (70°F) AND COOLING (76°F) SET POINTS, THE CURRENT ZONE DEWPOINT AND TEMPERATURE, THE OUTDOOR AIR TEMPERATURE, AND A MASS/CAPACITY FACTOR FOR EACH ZONE. THE MASS FACTOR SHALL BE MANUALLY ADJUSTED OR SELF-TUNED BY THE BAS. IF AUTOMATIC, THE TUNING PROCESS SHALL BE TURNED ON OR OFF BY A SOFTWARE SWITCH TO ALLOW TUNING TO BE STOPPED AFTER THE SYSTEM HAS BEEN TRAINED. WARM-UP OR COOL-DOWN MODE SHALL START BASED ON THE ZONE WITH THE LONGEST CALCULATED TIME REQUIREMENT, BUT NO EARLIER THAN 3 HOURS BEFORE THE START OF THE SCHEDULED OCCUPIED PERIOD, AND SHALL END AT THE SCHEDULED OCCUPIED START HOUR.
   A. OPTIMAL START SHALL BE RESET AT FINAL COMPLETION
13. MAINTENANCE MODE: WHEN INDEXED TO MAINTENACE MODE BY THE BAS, THE UNIT SHALL OPERATE IN COOLING MODE WITH THE OUTSIDE AIR DAMPER CLOSED. THE RETURN AIR DAMPER SHALL BE FULL OPEN.
14. DISCHARGE LOW LIMIT: IF SUPPLY AIR TEMPERATURE DROPS BELOW 36 DEG F (ADJ), THE SUPPLY FAN, RELIEF FAN, AND CONDENSING UNIT SHALL DE-ENERGIZE AND AN ALARM SHALL SOUND AT THE BAS. UPON MANUAL RESET, THE UNIT SHALL RETURN TO NORMAL OPERATION.
15. SMOKE SHUTDOWN: SMOKE DETECTORS SHALL BE LOCATED IN THE SUPPLY AND RETURN AIR STREAMS. IF SMOKE IS DETECTED, THE SUPPLY AND RELIEF FANS SHALL BE DE-ACTIVATED AND AN AUDIO/VISUAL ALARM SHALL ACTIVATE. UPON CORRECTION OF THE PROBLEM, THE SYSTEM SHALL BE MANUALLY RESET AND THE UNIT SHALL RETURN TO NORMAL OPERATION.
16. FILTERS: A DIFFERENTIAL AIR PRESSURE SWITCH SHALL BE INSTALLED ACROSS THE FILTER BANK. WHEN THE DIFFERENTIAL PRESSURE EXCEEDS 1.2" WC (ADJ.), THEN AN ALARM SHALL BE GENERATED AT THE BAS INDICATING FILTER CHANGING IS NECESSARY. SET EXACT ALARM SETTING PER THE FILTER MANUFACTURER'S RECOMMENDATIONS.
17. EMERGENCY SHUT-OFF: WHEN THE EMERGENCY FAN DISCONNECT SWITCH IS ACTIVATED, THE SUPPLY AND RELIEF FAN MOTORS SHALL BE DEACTIVATED, AND THE OUTSIDE AIR DAMPER SHALL CLOSE. AFTER THE EMERGENCY SHUT-OFF SWITCH HAS BEEN DEACTIVATED, THE AHU WILL RESUME NORMAL OPERATION.



OUTSIDE AIR UNIT (OA-1 THROUGH OA-4)

OUTSIDE AIR HANDLING UNIT (OA-1 THROUGH OA-4):

1. OUTSIDE AIR UNIT MAJOR COMPONENTS AS FOLLOWS: A VARIABLE FLOW SUPPLY FAN AND EXHAUST FAN, ENERGY RECOVERY WHEEL (ERW), HOT WATER COIL, CHILLED WATER COIL, OUTSIDE AIR AND EXHAUST AIR DAMPERS.
2. THE SYSTEM SHALL OPERATE UNDER THE CONTROL OF A LOCAL, STAND-ALONE, MICROPROCESSOR BASED DDC CONTROLLER. THE DDC CONTROLLER SHALL BE PROVIDED BY THE TCC.
3. EACH SYSTEM SHALL BE PLACED INTO THE OCCUPIED/UNOCCUPIED MODE BASED UPON THE USER ADJUSTABLE SCHEDULE AT THE USER INTERFACE. THESE SYSTEMS SHALL BE IN THE OCCUPIED MODE DURING REGULAR BUSINESS HOURS ONLY. THE UNIT SHALL BE OFF WHEN SCHEDULED AS UNOCCUPIED AND WARM-UP.
4. IF COMMUNICATION IS LOST BETWEEN THE NETWORK CONTROL PANEL AND THE OUTSIDE AIR SYSTEM CONTROLLER, THEN THE OUTSIDE AIR SYSTEM SHALL BE PLACED INTO THE OCCUPIED MODE UNTIL COMMUNICATION IS RESTORED.
5. SUPPLY AIR FAN: THE SUPPLY FAN VFD SHALL BE CONTROLLED TO MAINTAIN AN INITIAL 1.0" WC DUCT STATIC PRESSURE SETPOINT. REFER TO PLANS FOR DUCT STATIC PRESSURE SENSOR LOCATION APPROXIMATELY 2/3 DOWNSTREAM OF THE SUPPLY DUCT. THE SUPPLY FAN SHALL START AND OPERATION SHALL BE PROVEN VIA CURRENT SENSING RELAY ON THE VFD. DDC SYSTEM SURVEYS DAMPER OPEN POSITION FOR ALL CONNECTED VAV BOXES EVERY TEN MINUTES. SUPPLY AIR STATIC PRESSURE SETPOINT SHALL DECREASE BY 0.1" WC IF DAMPER OPEN POSITION FOR ALL CONNECTED VAV BOXES IS 75% (ADJ.) OR LESS; INCREASE BY 0.1" WC IF ANY CONNECTED VAV BOX DAMPER OPEN POSITION IS GREATER THAN 95% (ADJ.). SETPOINT SHALL BE RESET BETWEEN MINIMUM AND MAXIMUM SETPOINT OF 0.5" WC AND 1.5" WC. THE GRAPHICS SHALL INDICATE THE VAV BOX WITH THE GREATEST DAMPER OPEN POSITION AND SPACE TEMP, SETPOINT AND LINK TO THE VAV BOX FOR TROUBLE SHOOTING.
6. EXHAUST FAN CONTROL: WHEN THE BUILDING IS INDEXED TO OCCUPIED MODE, THE EXHAUST FAN SHALL START 100% (ADJ.) AND OPERATION SHALL BE PROVEN VIA CURRENT SENSING RELAY. PROVIDE A 3 MINUTE (ADJ.) TIME DELAY PRIOR TO STARTING THE SUPPLY FAN. THE EXHAUST FAN SHALL MODULATE TO MAINTAIN EXHAUST AIR CFM EQUAL TO 90% (ADJ.) OF OUTSIDE AIR CFM, DOWN TO THE MINIMUM EXHAUST AIRFLOW REQUIRED TO MEET THE BUILDING CONSTANT VOLUME EXHAUST AIRFLOW SETPOINT.
7. UNOCCUPIED MODE: THE SUPPLY FAN, EXHAUST FAN, AND ENERGY RECOVERY WHEEL SHALL BE OFF. THE OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPER SHALL BE FULLY CLOSED. THE HOT AND CHILLED WATER VALVES SHALL BE FULLY CLOSED. 5
8. OCCUPIED MODE: THE FOLLOWING SHALL OCCUR IN SEQUENTIAL ORDER: THE ENERGY RECOVERY WHEEL SHALL BE TURNED ON, OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPER SHALL FULLY OPEN AND BE PROVED VIA END SWITCH. SUPPLY AND EXHAUST FANS SHALL START ACCORDING TO THEIR RESPECTIVE SEQUENCES.
   A. WHEN OUTSIDE AIR TEMPERATURE IS BELOW 40 DEG F (ADJ.), THE ENERGY RECOVERY WHEEL SHALL START, THE EXHAUST AIR DAMPER SHALL PROVE FULLY OPEN AND EXHAUST FAN SHALL START AND RUN FOR 5 MINUTES (ADJ.) BEFORE OUTSIDE AIR DAMPER IS PROVEN FULLY OPEN AND SUPPLY FAN STARTS.
   B. THE SYSTEM SHALL NOT START IF ANY ONE COMPONENT DOES NOT PROVE OPERATION.
   C. THE SYSTEM WILL BE PLACED INTO A MODE OF OPERATION BASED UPON THE FOLLOWING ADJUSTABLE TEMPERATURE SCHEDULE:

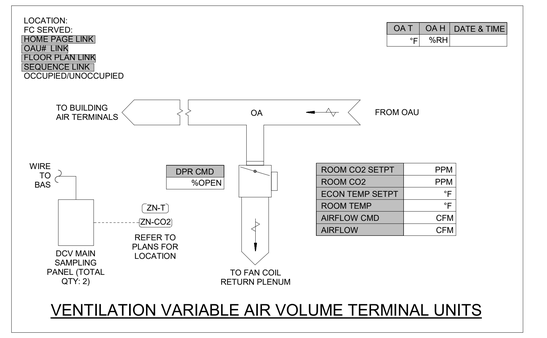
OUTSIDE AIR TEMPERATURE	MODE OF OPERATION
55 DEG F OR GREATER (ADJ.)	COOLING MODE
LESS THAN 55 DEG F (ADJ.)	HEATING MODE

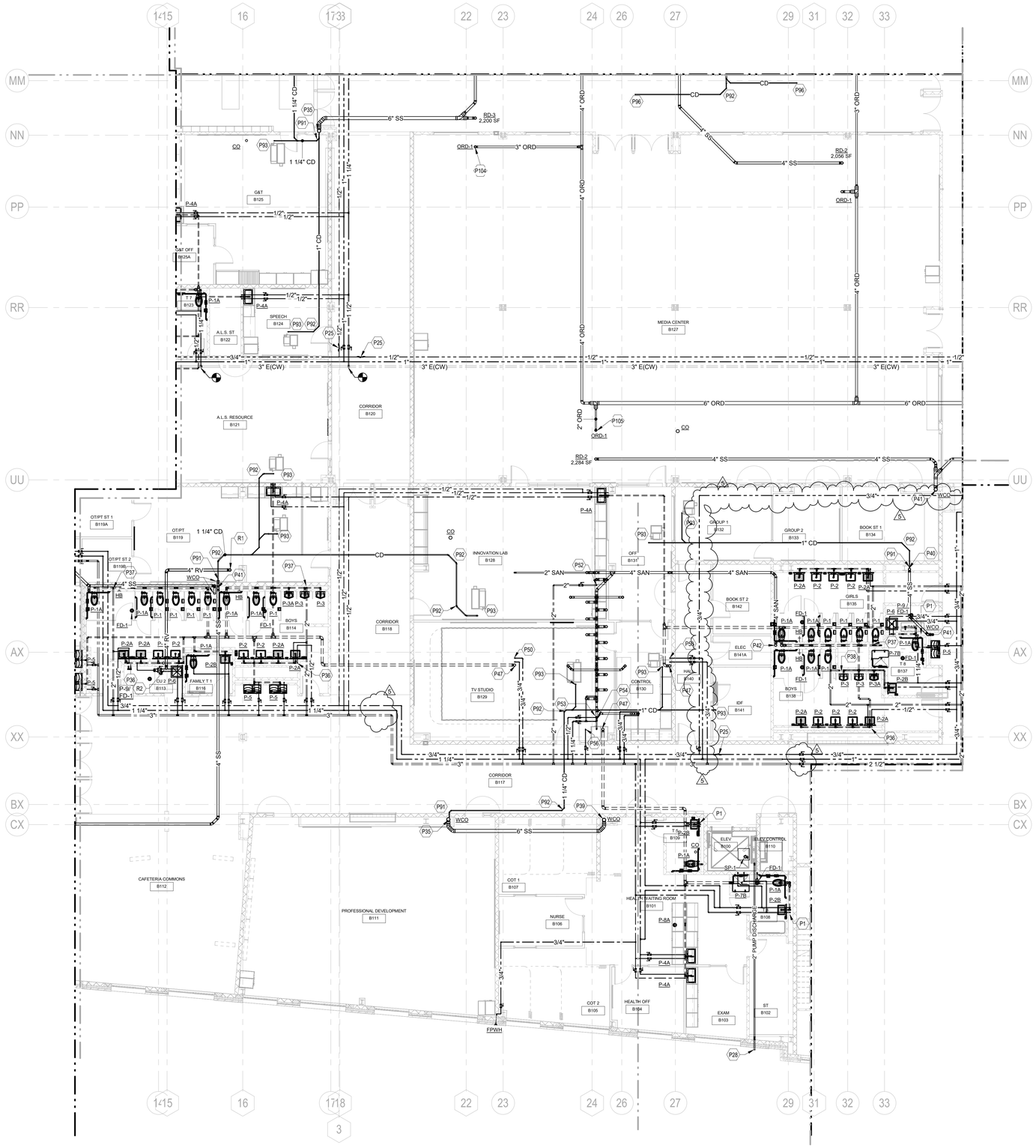
10. COOLING MODE:
    A. MODULATE THE ERW VFD SPEED TO MAINTAIN THE LOWEST POSSIBLE OUTSIDE AIR TEMPERATURE AT THE WHEEL DISCHARGE.
    B. MODULATE THE CHILLED WATER VALVE TO MAINTAIN A UNIT DISCHARGE AIR TEMPERATURE OF 55 DEG F (ADJ.).
11. HEATING MODE:
    A. WHEN THE OUTSIDE AIR IS BELOW 55 DEG F (ADJ.) THE ERW VFD SHALL MODULATE SPEED TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 55 DEG F (ADJ.), AND THE CHILLED WATER VALVE SHALL BE FULLY CLOSED.
    B. IF ERW VFD SPEED IS AT 100% AND UNABLE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT, MODULATE HOT WATER CONTROL VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.
    C. IF THE EXHAUST AIR DEW POINT TEMPERATURE EXCEEDS 57 DEG F (ADJ.) THEN THE UNIT SHALL ENTER COOLING MODE.
12. FREEZE PROTECTION: IF A TEMPERATURE OF 45°F (ADJ.) OR LESS IS DETECTED AT THE HOT WATER COIL LEAVING AIR TEMPERATURE SENSOR, THE OUTSIDE AIR AND RETURN AIR DAMPERS SHALL MODULATE TO MAINTAIN A MIXED AIR TEMPERATURE ABOVE 40°F. THE OUTSIDE AIR DAMPER SHALL ONLY BE ALLOWED TO MODULATE BELOW MINIMUM SETPOINT, DOWN TO 25% (ADJ.) BELOW MINIMUM SETPOINT. A LOW LIMIT TEMPERATURE SENSOR SHALL BE LOCATED ON THE UPSTREAM SIDE OF THE CHILLED WATER COIL. IF A TEMPERATURE OF 40 DEGREES F (ADJUSTABLE) OR LESS IS DETECTED, THE FANS SHALL SHUT-OFF. THEN THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL FULLY CLOSE, HW VALVE SHALL OPEN, AND AN AUDIO/VISUAL ALARM SHALL ACTIVATE. UPON CORRECTION OF THE PROBLEM, THE SYSTEM SHALL BE MANUALLY RESET AND SHALL RETURN TO NORMAL OPERATION. THE FREEZE PROTECTION WIRE SHALL BE SERPENTINE ACROSS THE ENTIRE FACE OF THE COIL EVERY SIX INCHES ON CENTER.
13. SMOKE SHUTDOWN: SMOKE DETECTORS SHALL BE LOCATED IN THE SUPPLY AND EXHAUST AIR STREAMS. IF SMOKE IS DETECTED, THE SUPPLY AND EXHAUST FANS SHALL DE-ACTIVATE AND AN AUDIO/VISUAL ALARM SHALL ACTIVATE. UPON CORRECTION OF THE PROBLEM, THE SYSTEM SHALL BE MANUALLY RESET AND UNIT SHALL RETURN TO NORMAL OPERATION.
14. OVER PRESSURIZATION CONTROL: A STATIC PRESSURE SENSOR SHALL BE LOCATED AT THE AHU SUPPLY AIR OUTLET AND EXHAUST AIR INLET, BEFORE ANY FIRE DAMPERS OR SMOKE DAMPERS. THE SUPPLY AIR PRESSURE SENSOR SHALL BE LOCATED IN THE PLENUM AFTER THE FANS. THE EXHAUST AIR SENSOR SHALL BE LOCATED IN THE AIR PLENUM. IF THE PRESSURE IN THE SUPPLY DUCT EXCEEDS 4.5" W.G. (ADJUSTABLE) IN THE SUPPLY AIR DUCT OR -2.0" W.G. (ADJUSTABLE) IN THE AIR DUCT, THE FAN SHALL BE DE-ACTIVATED. UPON CORRECTION OF THE PROBLEM, THE SYSTEM SHALL BE MANUALLY RESET AND UNIT SHALL RETURN TO NORMAL OPERATION.
15. PRE-FILTERS: A DIFFERENTIAL AIR PRESSURE SWITCH SHALL BE INSTALLED ACROSS THE OUTSIDE AIR AND EXHAUST AIR PRE-FILTER BANKS. WHEN THE DIFFERENTIAL PRESSURE EXCEEDS 1.0" WC (ADJ.), THEN AN ALARM SHALL BE GENERATED AT THE BAS INDICATING FILTER CHANGING IS NECESSARY. SET EXACT ALARM SETTING PER THE FILTER MANUFACTURER'S RECOMMENDATIONS.
16. FILTERS: A DIFFERENTIAL AIR PRESSURE SWITCH SHALL BE INSTALLED ACROSS THE OUTSIDE AIR FILTER BANK. WHEN THE DIFFERENTIAL PRESSURE EXCEEDS 1.2" WC (ADJ.), THEN AN ALARM SHALL BE GENERATED AT THE BAS INDICATING FILTER CHANGING IS NECESSARY. SET EXACT ALARM SETTING PER THE FILTER MANUFACTURER'S RECOMMENDATIONS.
17. BUILDING EXHAUST AIR FLOW MEASURING STATIONS AND DAMPERS: AIRFLOW MEASURING STATIONS AND MOTORIZED DAMPERS ARE PROVIDED TO ENSURE CONSTANT VOLUME EXHAUST REQUIREMENTS ARE MAINTAINED WHEN THE BUILDING IS OCCUPIED. WHEN THE BUILDING IS INDEXED TO OCCUPIED MODE BY THE NETWORK CONTROLLER, THE MOTORIZED DAMPER ON THE PRESSURIZATION EXHAUST BRANCH DUCTWORK SHALL MODULATE TO MAINTAIN A SET CFM (ADJ.) AT THE RESTROOM EXHAUST BRANCH.
18. EMERGENCY SHUT-OFF: WHEN THE EMERGENCY FAN DISCONNECT SWITCH IS ACTIVATED, THE SUPPLY AND EXHAUST FAN MOTORS SHALL BE DEACTIVATED, AND THE OUTSIDE AIR DAMPER SHALL CLOSE. AFTER THE EMERGENCY SHUT-OFF SWITCH HAS BEEN DEACTIVATED, THE AHU WILL RESUME NORMAL OPERATION.

POINTS: VENTILATION VAV	DI	DO	AI	AO	CALCULATED	TREND
VAV BOX DAMPER POSITION				X		
VAV BOX AIRFLOW (CFM)			X			X
ROOM CO2 CONCENTRATION (PPM)			X			X
ROOM TEMPERATURE (°F)			X			X

VENTILATION VARIABLE AIR VOLUME (VAV) BOX

1. A WALL MOUNTED ROOM CO2 SENSOR AND TEMPERATURE SENSOR SHALL CONTROL THE VENTILATION VAV BOX, UNLESS NOTED OTHERWISE. EACH VAV BOX SHALL HAVE A FULLY PROGRAMMABLE UNITARY CONTROLLER CAPABLE OF PROVIDING THE REQUIRED SEQUENCE.
2. AN AIR FLOW SENSOR SHALL BE LOCATED ON THE INLET SIDE OF THE VAV BOX. THIS SHALL BE USED TO SET MINIMUM/MAXIMUM SETPOINTS.
3. THE DDC SYSTEM SHALL MONITOR PRIMARY AIRFLOW CFM AT EACH VAV.
4. OCCUPIED MODE:
   A. THE UNIT CONTROLLER SHALL MEASURE THE ROOM CO2 CONCENTRATION AND MODULATE ITS DAMPER BETWEEN MINIMUM AND MAXIMUM POSITION TO MAINTAIN A SPACE CO2 SETPOINT OF 1000 PPM (ADJ.).
      a. WHEN ROOM CO2 CONCENTRATION IS BELOW SETPOINT, THE VENTILATION VAV BOX DAMPER SHALL MODULATE TO MINIMUM POSITION.
      b. WHEN ROOM CO2 CONCENTRATION IS ABOVE SETPOINT, THE VENTILATION VAV BOX DAMPER SHALL MODULATE FROM MINIMUM AIRFLOW SETPOINT TO MAXIMUM VENTILATION SETPOINT TO MAINTAIN ROOM CO2 SETPOINT.
5. UNOCCUPIED MODE:
   A. WHEN BUILDING IS INDEXED TO UNOCCUPIED, VENTILATION VAV BOX DAMPER SHALL BE FULL CLOSED.
6. ECONOMIZER MODE:
   A. WHEN THE ASSOCIATED DEDICATED OUTSIDE AIR SYSTEM (DOAS) IS IN HEATING MODE, THE CONTROLLER SHALL MEASURE THE ROOM TEMPERATURE.
      a. WHEN ROOM TEMPERATURE IS ABOVE 76°F (ADJ.), THE VENTILATION VAV BOX SHALL MODULATE ITS DAMPER FROM MINIMUM AIRFLOW SETPOINT TO MAXIMUM ECONOMIZER SETPOINT (ADJ.) TO MAINTAIN ROOM TEMPERATURE.
      b. WHEN ROOM TEMPERATURE IS BELOW SETPOINT, THE VENTILATION VAV BOX SHALL OPERATE ACCORDING TO THE OCCUPIED MODE.
7. MAINTENANCE MODE:
   A. WHEN ASSOCIATED OUTSIDE AIR UNIT IS INDEXED TO MAINTENANCE MODE, VENTILATION VAV BOX DAMPER SHALL BE FULL CLOSED.
8. THE TWO VENTILATION VAV BOXES IN THE SCIENCE WING CORRIDOR (VAV'S 3D122A, 3D122B) SHALL OPERATE ACCORDING TO THE SCIENCE EXHAUST SEQUENCE ON SHEET M6.10.

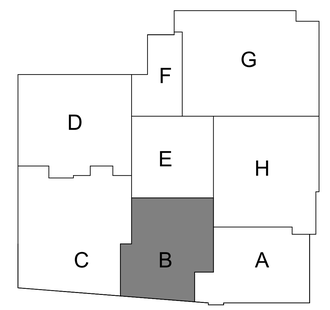

LOCATION:
FC SERVED:
HOME PAGE LINK
OAU# LINK
FLOOR PLAN LINK
SEQU



1 P4.02 FIRST FLOOR PLAN - AREA B - PLUMBING
SCALE: 1/8" = 1'-0"

TAGGED NOTES

P1	EXTEND 1-1/4" CW AND 1/2" HW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P25	HOT WATER RETURN BALANCING VALVE. REFER TO DETAIL SHEET P1.02
P28	2" SUMP PUMP DISCHARGE DOWN IN CHASE. EXTEND 2" SUMP PUMP DISCHARGE LINE THROUGH WALL AND SPILL TO GRADE. FURNISH AND INSTALL A ZURN MODEL ZARB199-SS DOWNSPOUT NOZZLE WITH STAINLESS STEEL SCREEN AT POINT OF DISCHARGE.
P35	6" STORM DOWN
P36	EXTEND 1/2" CW/HW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P37	EXTEND 2" CW DOWN IN CHASE. ROUTE 2" HEADER HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P38	EXTEND 1-1/2" CW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P39	6" STORM UP
P40	4" STORM UP
P41	4" STORM DOWN
P42	4" SAN DOWN
P47	4" VENT UP
P50	EXTEND 1/2" CW/HW PIPING UP IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P52	EXTEND 2" CW UP IN CHASE. ROUTE 2" HEADER HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P53	1-1/4" CW UP TO WATER CLOSET
P54	1/2" CW/HW UP TO LAVATORY.
P56	1/2" CW UP TO ELECTRIC WATER COOLERS
P91	ROUTE CONDENSATE TO NEW STORM LINE AND CONNECT. INSTALL SWING CHECK VALVE IN CONDENSATE LINE PRIOR TO CONNECTION.
P92	PROVIDE CONDENSATE CLEAN OUT IN THIS LOCATION.
P93	ROUTE CONDENSATE PIPING TO MECHANICAL EQUIPMENT. REFER TO THE MECHANICAL DRAWINGS FOR PIPE SIZE AND CONTINUATION
P96	ROUTE CONDENSATE PIPING UP THROUGH PENTHOUSE SLAB TO MECHANICAL EQUIPMENT. REFER TO THE MECHANICAL DRAWINGS FOR PIPE SIZE AND CONTINUATION.
P104	3" CONNECTION TO OVERFLOW DRAIN
P105	2" CONNECTION TO OVERFLOW DRAIN
R1	RADON VENT UP
R2	RADON VENT DN



KEY PLAN
SCALE : N.T.S.

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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 47322, Expiration Date: 10/20/2021.

PROFESSIONAL SEAL:

STATE OF MARYLAND · JEAN E. FAMILIER · 47322 · PROFESSIONAL ENGINEER

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

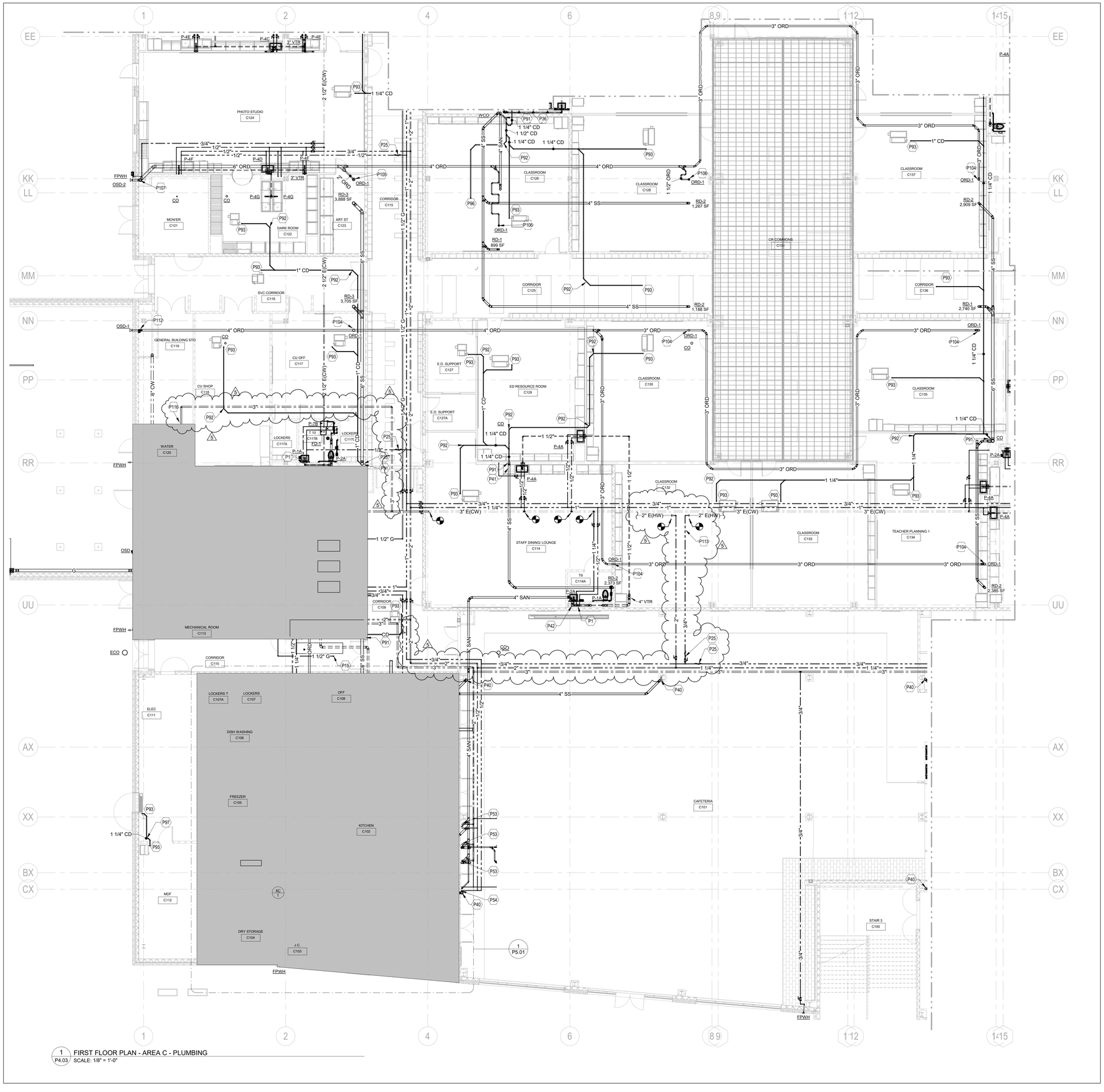
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FIRST FLOOR PLAN - AREA B - PLUMBING

PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: 1/8" = 1'-0"

WORKING NORTH

SHEET NO:
P4.02

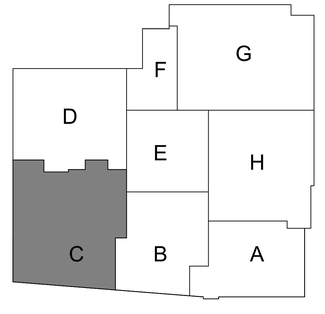
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1 P4.03 FIRST FLOOR PLAN - AREA C - PLUMBING
SCALE: 1/8" = 1'-0"

TAGGED NOTES

P1	EXTEND 1-1/4" CW AND 1/2" HW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P15	EXTEND 1-1/2" GAS LINE UP TO MAKE-UP AIR UNIT ON ROOF AND CONNECT. FURNISH AND INSTALL GAS SHUT-OFF VALVE AND 6" DIRT LEG ABOVE ROOF.
P25	HOT WATER RETURN BALANCING VALVE. REFER TO DETAIL SHEET P1.02
P35	6" STORM DOWN
P36	EXTEND 1/2" CW/HW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P40	4" STORM UP
P41	4" STORM DOWN
P42	4" SAN DOWN
P53	1-1/4" CW UP TO WATER CLOSET
P54	1/2" CW/HW UP TO LAVATORY
P91	ROUTE CONDENSATE TO NEW STORM LINE AND CONNECT. INSTALL SWING CHECK VALVE IN CONDENSATE LINE PRIOR TO CONNECTION.
P92	PROVIDE CONDENSATE CLEAN OUT IN THIS LOCATION.
P93	ROUTE CONDENSATE PIPING TO MECHANICAL EQUIPMENT. REFER TO THE MECHANICAL DRAWINGS FOR PIPE SIZE AND CONTINUATION
P96	ROUTE CONDENSATE PIPING UP THROUGH PENTHOUSE SLAB TO MECHANICAL EQUIPMENT. REFER TO THE MECHANICAL DRAWINGS FOR PIPE SIZE AND CONTINUATION.
P97	1-1/4" CONDENSATE DOWN.
P104	3" CONNECTION TO OVERFLOW DRAIN
P105	2" CONNECTION TO OVERFLOW DRAIN
P106	1-1/2" CONNECTION TO OVERFLOW DRAIN
P107	6" ELBOW, THEN 4" OVERFLOW DN. SPILL AT 6" ABOVE GRADE.
P112	4" ELBOW, THEN 3" OVERFLOW DN. SPILL AT 6" ABOVE GRADE.
P113	EXISTING 2" HOT WATER MAIN LOOP SERVING THE EXISTING SCHOOL. UNDER PHASE 1, DEMOLISH SECTION OF PIPE, AND RE-ROUTE TO NEW 2" HW AS SHOWN WITH SHUT OFF VALVE. THIS WILL BECOME THE TEMPORARY DOMESTIC HOT WATER FEED FOR THE EXISTING SCHOOL. PROVIDE A 3/4" HWR CONNECTION TO THE OTHER SECTION OF PIPING. THIS WILL BECOME THE TEMPORARY DOMESTIC HOT WATER RETURN FEED FOR THE EXISTING SCHOOL. ONCE CONSTRUCTION HAS COMPLETED, REMOVE PIPING DOWNSTREAM OF THE SHUT OFF VALVES AND CAP.
P116	CONNECT TEMPORARY 3" DOMESTIC COLD WATER MAIN TO DOWNSTREAM OF NEW DOMESTIC WATER REDUCED PRESSURE BACKFLOW PREVENTOR.



KEY PLAN
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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 47322, Expiration Date: 10/20/2021.

PROFESSIONAL SEAL:

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

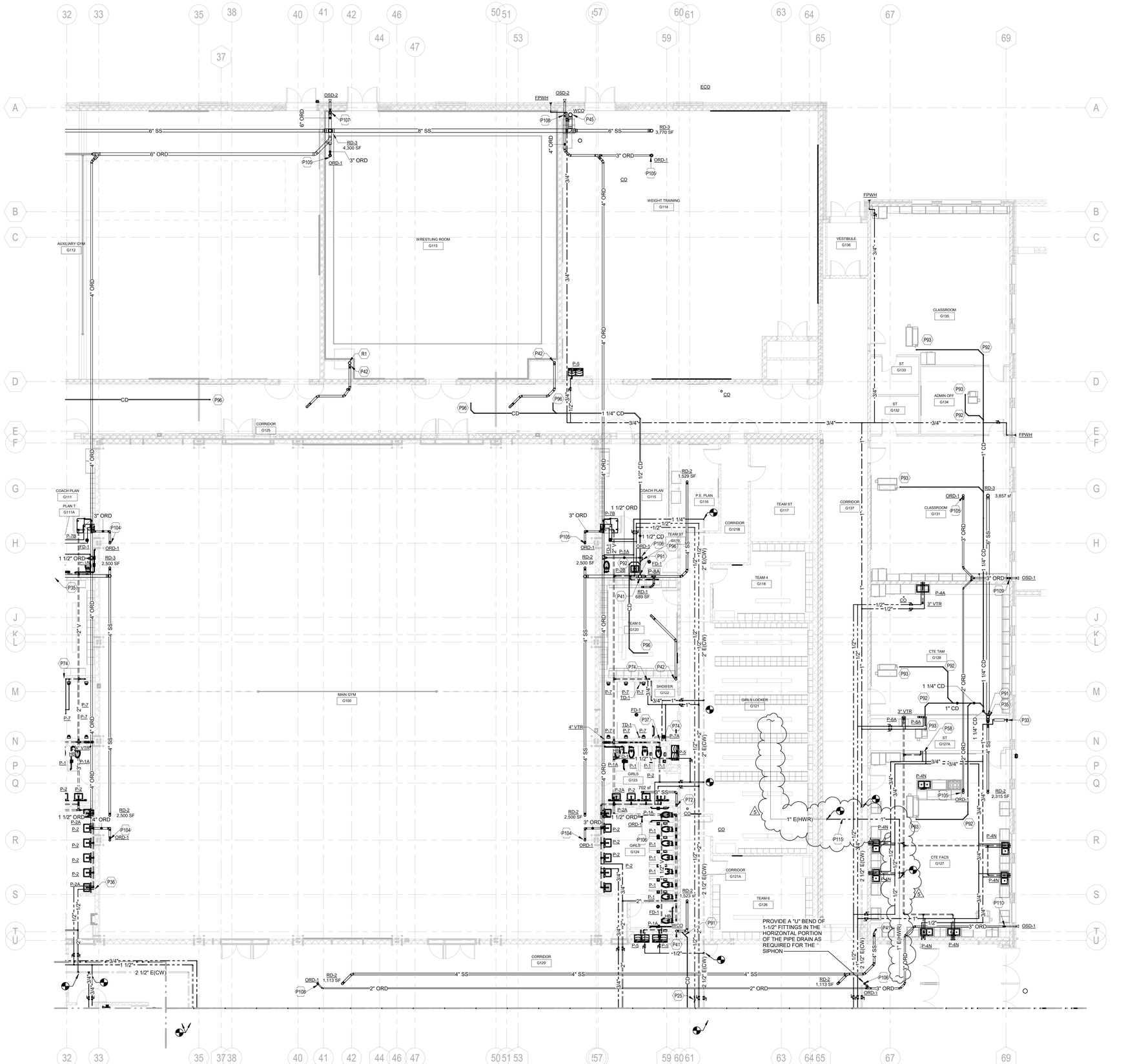
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - AREA C - PLUMBING

PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: 1/8" = 1'-0"
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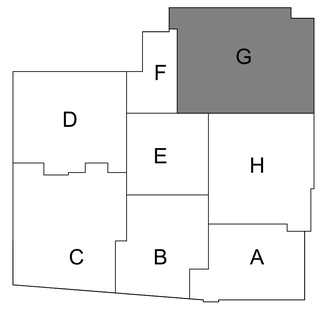
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P4.03

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1 FIRST FLOOR PLAN - AREA G - PLUMBING
P4.07 SCALE: 1/8" = 1'-0"

TAGGED NOTES	##
P25	HOT WATER RETURN BALANCING VALVE. REFER TO DETAIL SHEET P1.02
P33	EXTEND 1" DOMESTIC WATER LINE UP FROM BELOW GRADE AND INSTALL A SHUT-OFF VALVE IN THE VERTICAL RISE. FURNISH AND INSTALL A 1" WILKINS MODEL 375XL-SAG BACKFLOW PREVENTER WITH STRAINER AND AIR GAP, OR EQUAL. EXTEND DISCHARGE LINE THROUGH EXTERIRO WALL AND SPILL TO GRADE.
P35	6" STORM DOWN
P36	EXTEND 1/2" CW/HW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P37	EXTEND 2" CW DOWN IN CHASE. ROUTE 2" HEADER HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P41	4" STORM DOWN
P42	4" SAN DOWN
P45	8" STORM DOWN
P58	1/2" CW/HW DOWN TO BELOW SLAB.
P72	3" STORM DOWN.
P74	EXTEND 3/4" CW/HW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN WALL TO FIXTURES AND CONNECT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONS AS REQUIRED.
P91	ROUTE CONDENSATE TO NEW STORM LINE AND CONNECT. INSTALL SWING CHECK VALVE IN CONDENSATE LINE PRIOR TO CONNECTION.
P92	PROVIDE CONDENSATE CLEAN OUT IN THIS LOCATION.
P93	ROUTE CONDENSATE PIPING TO MECHANICAL EQUIPMENT. REFER TO THE MECHANICAL DRAWINGS FOR PIPE SIZE AND CONTINUATION
P96	ROUTE CONDENSATE PIPING UP THROUGH PENTHOUSE SLAB TO MECHANICAL EQUIPMENT. REFER TO THE MECHANICAL DRAWINGS FOR PIPE SIZE AND CONTINUATION.
P104	3" CONNECTION TO OVERFLOW DRAIN
P105	2" CONNECTION TO OVERFLOW DRAIN
P106	1-1/2" CONNECTION TO OVERFLOW DRAIN
P107	6" ELBOW, THEN 4" OVERFLOW DN. SPILL AT 6" ABOVE GRADE.
P108	4" OVERFLOW DOWN. SPILL AT 6" ABOVE GRADE.
P109	3" OVERFLOW DOWN. SPILL AT 6" ABOVE GRADE.
P110	3" ELBOW, THEN 2" OVERFLOW DN. SPILL AT 6" ABOVE GRADE.
P115	DURING PHASE 1, CONNECT BOTH EXISTING HOT WATER RETURN FEEDS WHICH HAD FED INTO THE DEMOLISHED MAIN MECHANICAL ROOM. THIS WILL CONNECT THE MAINS AND THEN FLOW TO THE NEW HOT WATER SYSTEM.
R1	RADON VENT UP



KEY PLAN
SCALE : N.T.S.

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

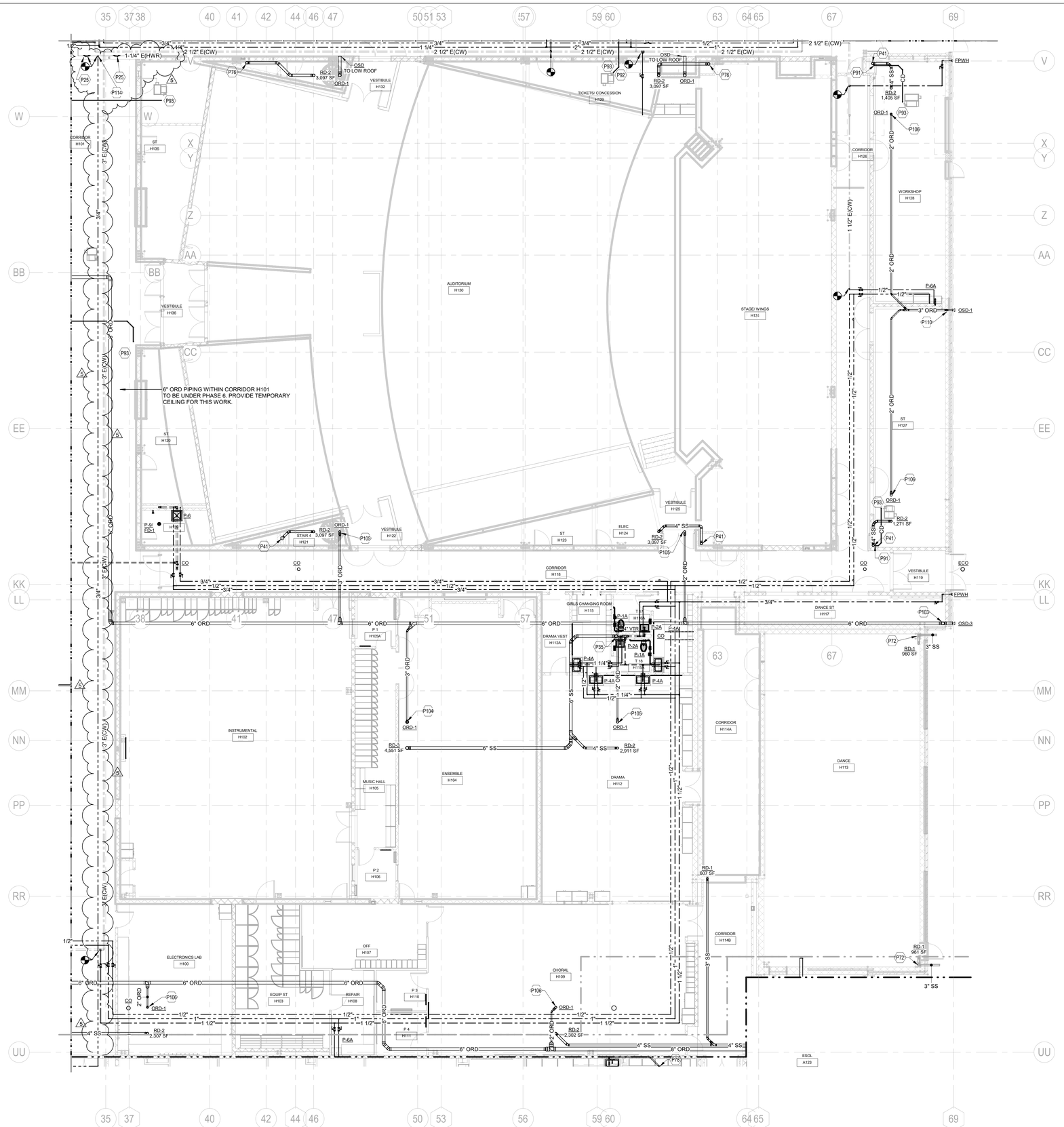
SHEET TITLE:
FIRST FLOOR PLAN - AREA G - PLUMBING

PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: 1/8" = 1'-0"

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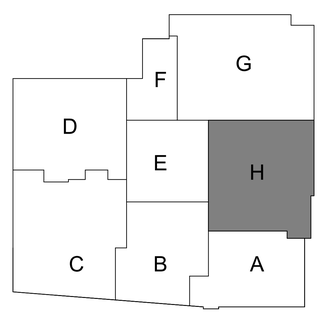
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1 FIRST FLOOR PLAN - AREA H - PLUMBING
P4.08 SCALE: 1/8" = 1'-0"

TAGGED NOTES	##
P25	HOT WATER RETURN BALANCING VALVE. REFER TO DETAIL SHEET P1.02
P35	6" STORM DOWN
P41	4" STORM DOWN
P72	3" STORM DOWN.
P76	5" STORM DOWN.
P78	2" SAN. DOWN
P91	ROUTE CONDENSATE TO NEW STORM LINE AND CONNECT. INSTALL SWING CHECK VALVE IN CONDENSATE LINE PRIOR TO CONNECTION.
P92	PROVIDE CONDENSATE CLEAN OUT IN THIS LOCATION.
P93	ROUTE CONDENSATE PIPING TO MECHANICAL EQUIPMENT. REFER TO THE MECHANICAL DRAWINGS FOR PIPE SIZE AND CONTINUATION
P103	6" OVERFLOW DN. SPILL AT 6" ABOVE GRADE
P104	3" CONNECTION TO OVERFLOW DRAIN
P105	2" CONNECTION TO OVERFLOW DRAIN
P106	1-1/2" CONNECTION TO OVERFLOW DRAIN
P110	3" ELBOW, THEN 2" OVERFLOW DN. SPILL AT 6" ABOVE GRADE.
P114	EXISTING 1-1/4" HOT WATER RETURN MAIN FLOWING TO THE EXISTING DEMOLISHED MAIN MECHANICAL ROOM. INTERCEPT AT THIS LOCATION, AND PROVIDE NEW BALANCING VALVES AS INDICATED. NEW TEMPORARY 3/4" HWR PIPING IN CORRIDOR TO BE INSTALLED UNDER PHASE 1, AND CONNECT WHERE SHOWN. ONCE CONSTRUCTION HAS COMPLETED, REMOVE PIPING DOWNSTREAM OF THE SHUT OFF VALVES AND CAP.



KEY PLAN
SCALE : N.T.S.

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

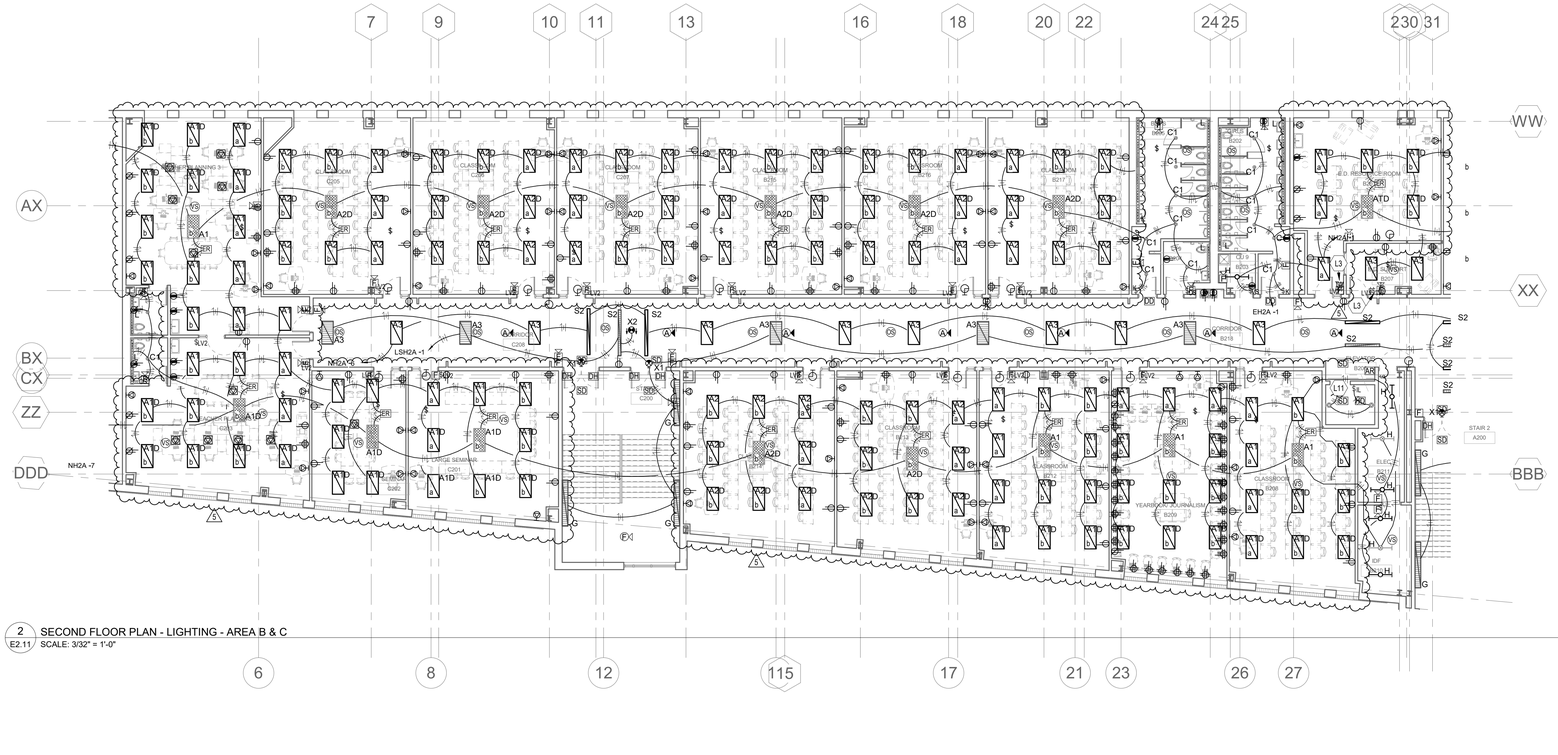
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - AREA H - PLUMBING

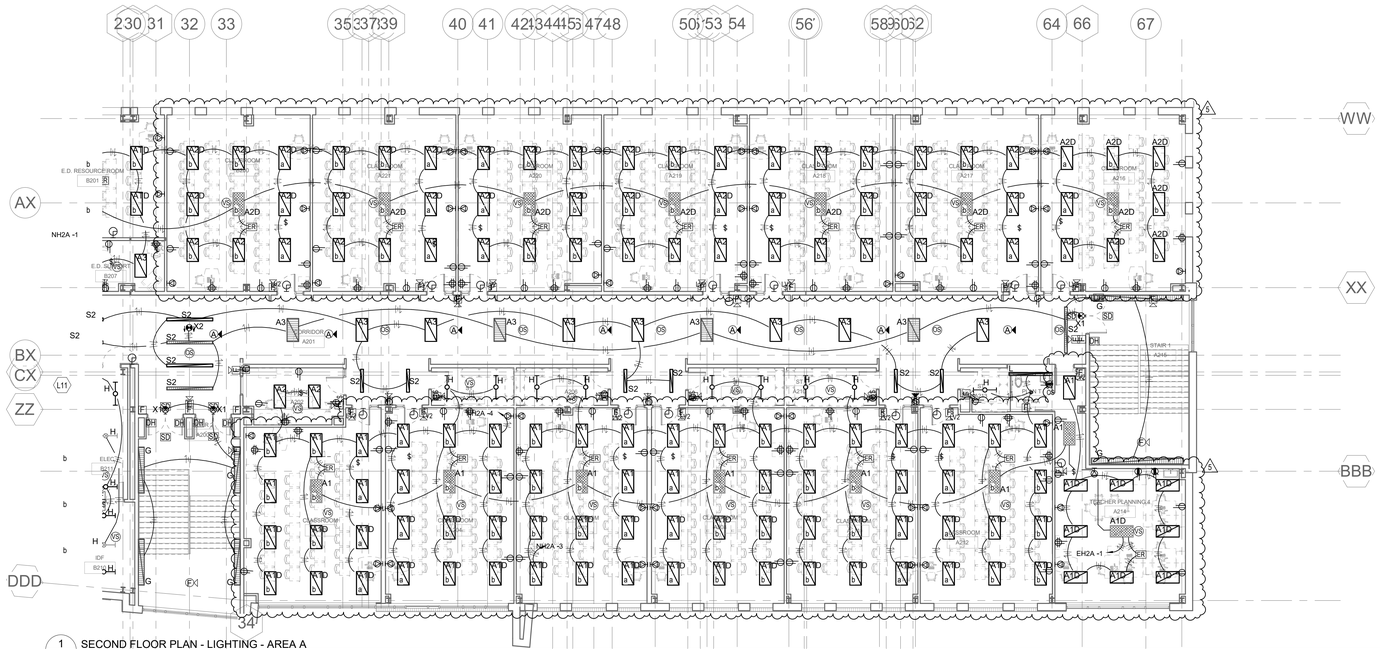
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2 SECOND FLOOR PLAN - LIGHTING - AREA B & C
E2.11 SCALE: 3/32" = 1'-0"

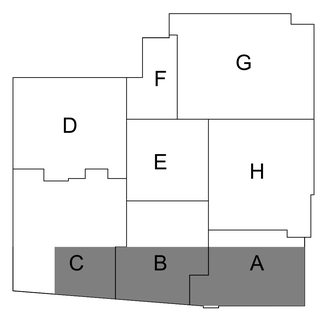


1 SECOND FLOOR PLAN - LIGHTING - AREA A
E2.11 SCALE: 3/32" = 1'-0"

TAGGED NOTES (##)

L3 PROVIDE TUNABLE WHITE LIGHTING CONTROLS FOR LIGHT FIXTURES IN THIS AREA.

L11 EXTEND TO LIGHTS IN ELEVATOR PIT.



KEY PLAN
SCALE : N.T.S.

ARCHITECT

SMOLEN • EMR • ILKOVITCH ARCHITECTS

9211 CORPORATE BLVD, SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

CIVIL
FISHER, COLLINS, CARTER

10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21042
410-461-2855(P)

KITCHEN
NYIKOS ASSOCIATES, INC.

18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530(P)

STRUCTURAL
COLUMBIA ENGINEERING

6210 OLD DOBBIN LANE, SUITE 150
COLUMBIA, MD 21045
410-992-9970(P)

MECH./ELECTRICAL/PLUMBING
CMTA, INC.

10411 MEETING ST.
PROSPECT, KY 40059
502-326-3085(P)

ACOUSTIC & MEDIA SYSTEMS
ACOUSTICAL DESIGN COLLABORATIVE, LTD

606 BOSLEY AVE
TOWSON, MD 21204
410-821-5930(P)

LEED
DOO CONSULTING

531 PICCADILLY ROAD
TOWSON, MD 21204
443-463-5858(P)

CONSTRUCTION MANAGER
J. VINTON SCHAFER & SONS

1309-Q CONTINENTAL DRIVE
ABINGDON, MD 21009
410-335-3000(P)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 36125, Expiration Date: 07/28/2020.

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	BID SET	02/25/2020
2.	ADDENDUM 2	03/06/2020
3.	ADDENDUM 3	03/12/2020
4.	ADDENDUM 4	03/13/2020
5.	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

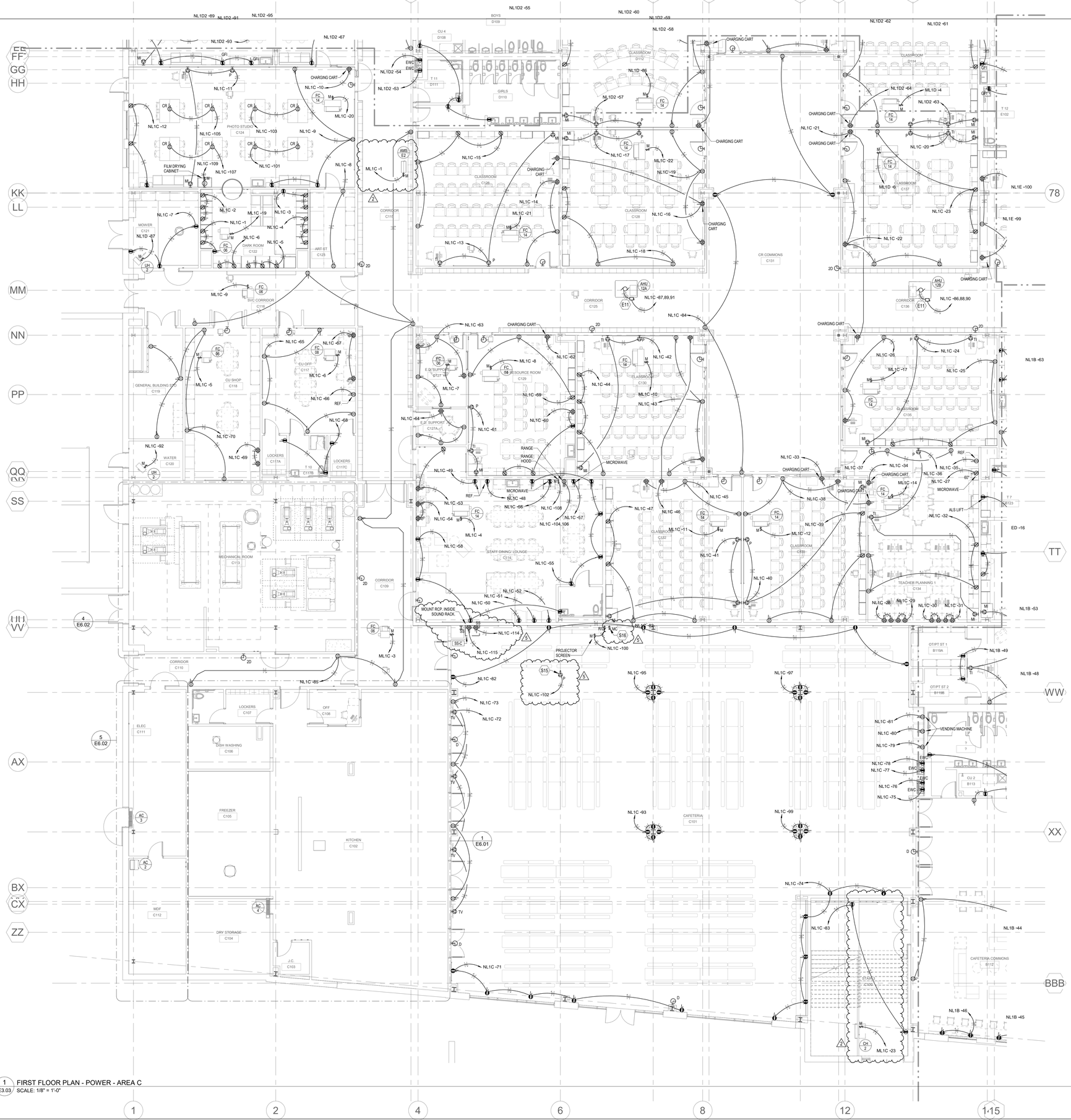
SHEET TITLE:
SECOND FLOOR PLAN - AREA A, B & C - LIGHTING

PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 3/32" = 1'-0"

WORKING NORTH

SHEET NO:
E2.11

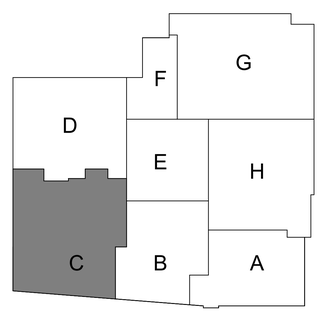
3/18/2020 11:20:40 AM



TAGGED NOTES

- E11 PROVIDE 30A/250V/3P FUSIBLE DISCONNECT SWITCH IN NEMA-1 ENCLOSURE FUSED AS EQUIPMENT NAMEPLATE RATING. COORDINATE EXACT LOCATION WITH ALL TRADES PRIOR TO ROUGHIN. PROVIDE FRAMING FOR MOUNTING AS INDICATED. CONTRACTOR SHALL ENSURE 3'-0" CLEARANCE IN FRONT OF SWITCH WITH 30" WIDE CLEAR WALKING PATH TO EQUIPMENT.
- S15 PROVIDE PROJECTOR LIFT WITH THE FOLLOWING: 23 ½" W X 23 ½" D, MAXIMUM PROJECTOR SIZE SHOULD BE 20" X 20", WEIGHT CAPACITY OF 35 LBS, AND A LOWERING DISTANCE OF 48". LIFT SPECIFICATION BASED ON DRAPER MODEL 300196 MICRO LIFT.
- S16 PROJECTOR LIFT CONTROLLER. COORDINATE REQUIREMETNS WITH MANUFACTURER PRIOR TO CONSTRUCTION.

1 E3.03 FIRST FLOOR PLAN - POWER - AREA C
SCALE: 1/8" = 1'-0"



KEY PLAN
SCALE : N.T.S.

ARCHITECT
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CONSTRUCTION MANAGER
J. VINTON SCHAFER & SONS
1309-Q CONTINENTAL DRIVE
ABINGDON, MD 21009
410-335-3000(P)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 36125, Expiration Date: 07/28/2020.

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	BID SET	02/25/2020
2	ADDENDUM 2	03/06/2020
3	ADDENDUM 3	03/12/2020
4	ADDENDUM 4	03/13/2020
5	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

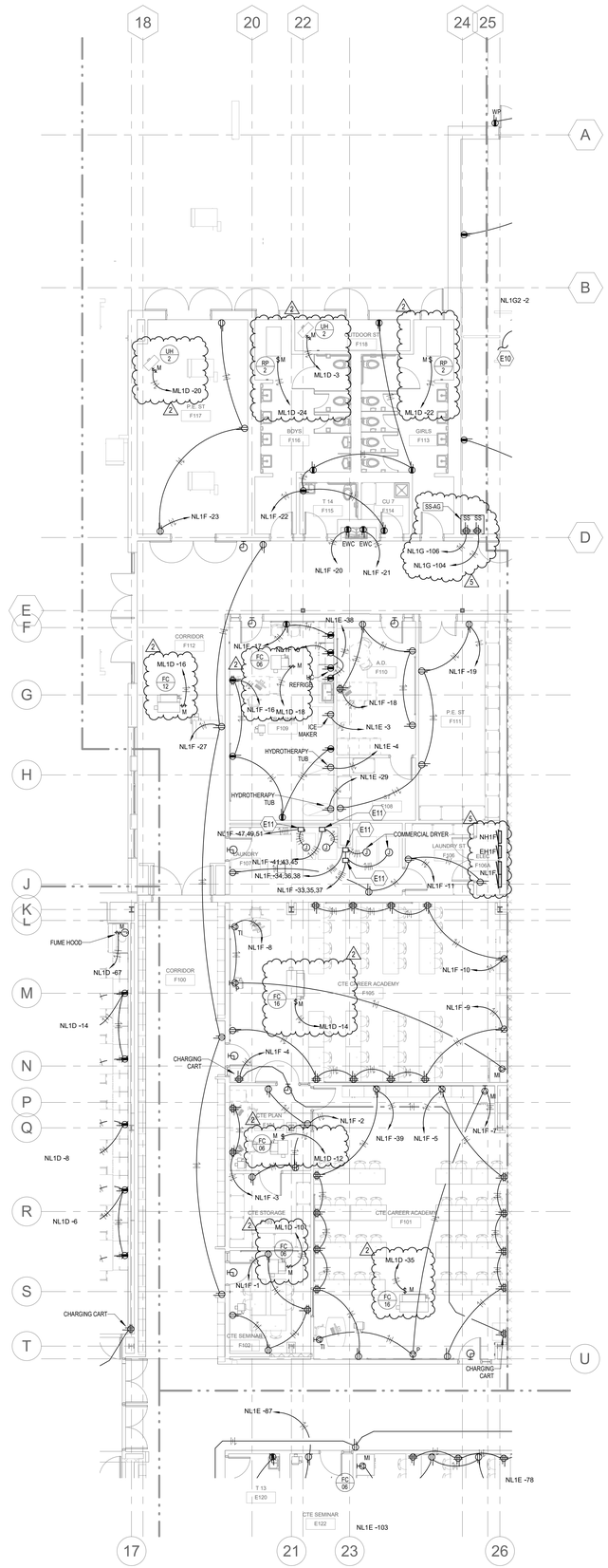
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - AREA C - POWER

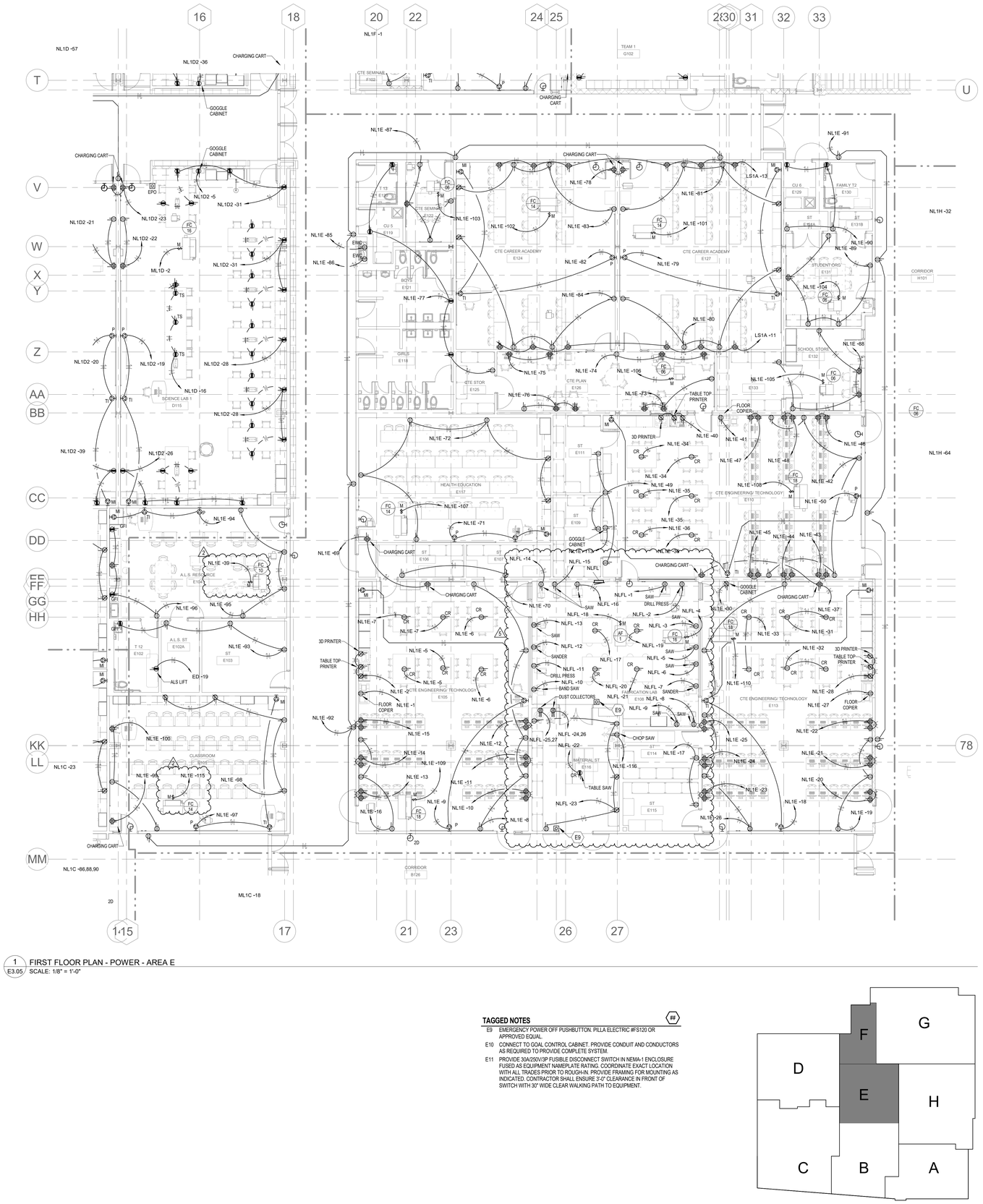
PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 1/8" = 1'-0"
WORKING NORTH

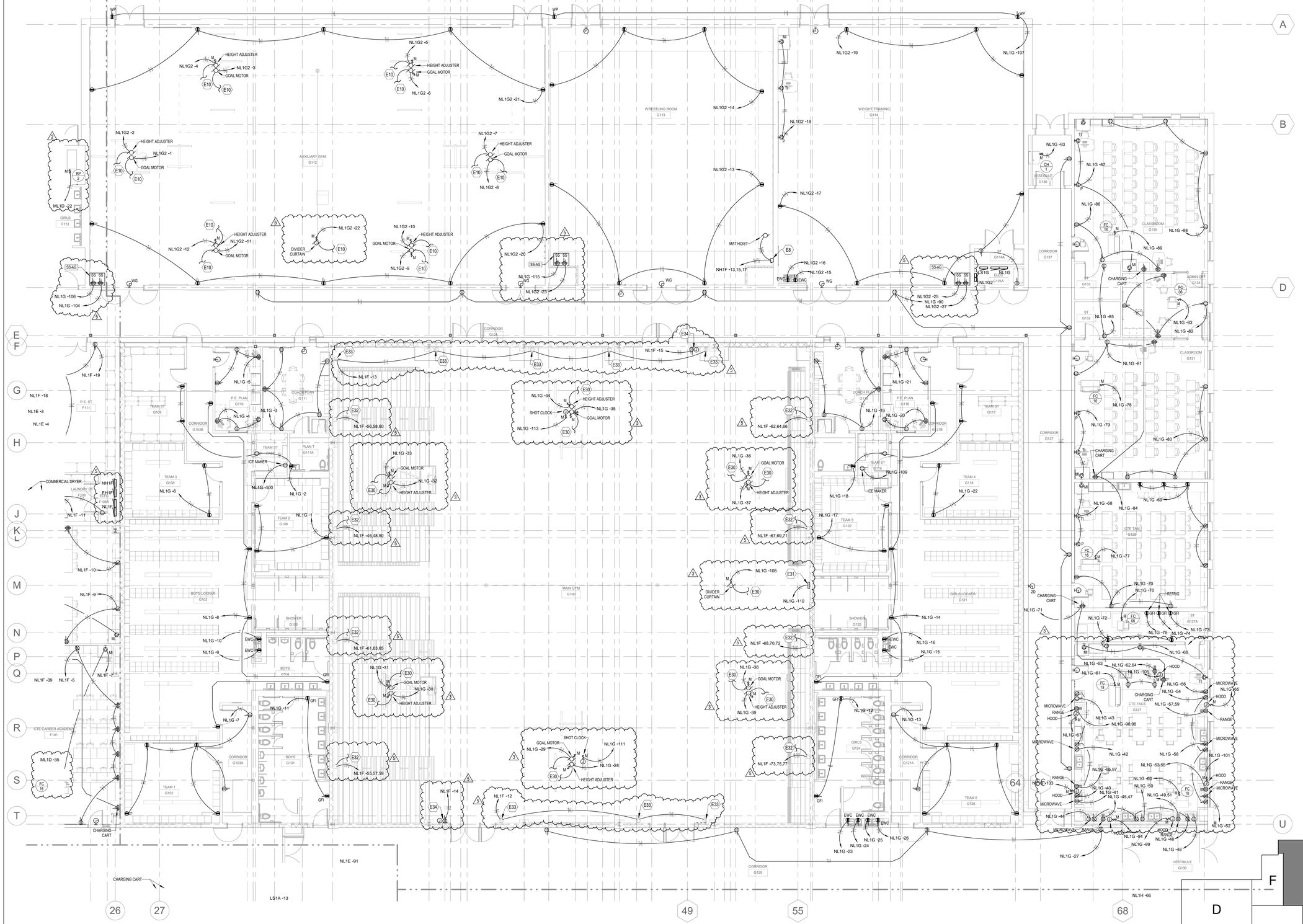
SHEET NO:
E3.03

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2 FIRST FLOOR PLAN - POWER - AREA F
E3.05 SCALE: 1/8" = 1'-0"

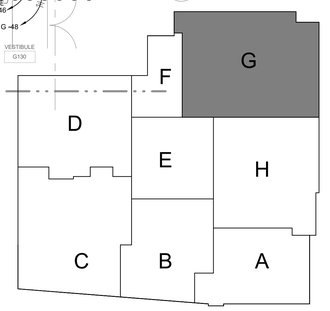

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1 FIRST FLOOR PLAN - POWER - AREA G
E3.06 SCALE: 1/8" = 1'-0"

TAGGED NOTES ##

- E8 NEMA 1, HEAVY DUTY, 30A, 600V, 3-PH, 4W FUSED DISCONNECT.
- E10 CONNECT TO GOAL CONTROL CABINET. PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED TO PROVIDE COMPLETE SYSTEM.
- E30 CONNECT TO TOUCH PAD. PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED TO PROVIDE COMPLETE SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER PRIOR TO CONSTRUCTION.
- E31 ELECTRICAL CONTRACTOR SHALL PROVIDE ROUGH-IN AND STUB-OUT FOR TOUCH PAD FOR GYM CONTROLS. COORDINATE REQUIREMENTS WITH SPECIFICATIONS 116623 PRIOR TO CONSTRUCTION.
- E32 EXISTING BLEACHER DISCONNECT SHALL REMAIN. ELECTRICAL CONTRACTOR SHALL INTERCEPT AND EXTEND TO PANELBOARD INDICATED DURING PHASE 8. ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING BREAKER SIZE PRIOR TO DEMOLITION AND MATCH FOR NEW POWER REQUIREMENTS. ROUTE FIVE (5) #10 CONDUCTORS SO REQUIRED. PROVIDE CONDUCTORS AND CONDUIT AS REQUIRED FOR NEW TOUCH PAD TO CONTROLLER BLEACHERS. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER PRIOR TO CONSTRUCTION.
- E33 ELECTRICAL CONTRACTOR SHALL UTILIZE EXISTING ROUGH-IN AND RACEWAYS TO INTERCEPT AND EXTEND NEW CONDUIT AND CONDUCTORS AS REQUIRED TO PROVIDE POWER TO NEW FACEPLATE AND DUPLEX RECEPTACLE AT EXISTING LOCATION. ALL WORK SHALL BE COMPLETE DURING PHASE 8.
- E34 NEW GYM SCOREBOARD. LOCATE ROUGH-INS PER ARCHITECTURAL PLANS. STUB 1" CONDUIT TO NEW TOUCH PAD. PROVIDE ALL CONDUIT AND CONDUCTORS AS REQUIRED FOR COMPLETE SYSTEM. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER PRIOR TO CONSTRUCTION.



KEY PLAN
SCALE : N.T.S.

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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 36125, Expiration Date: 07/28/2020.

PROFESSIONAL SEAL:

PRINTS ISSUED

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5.	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

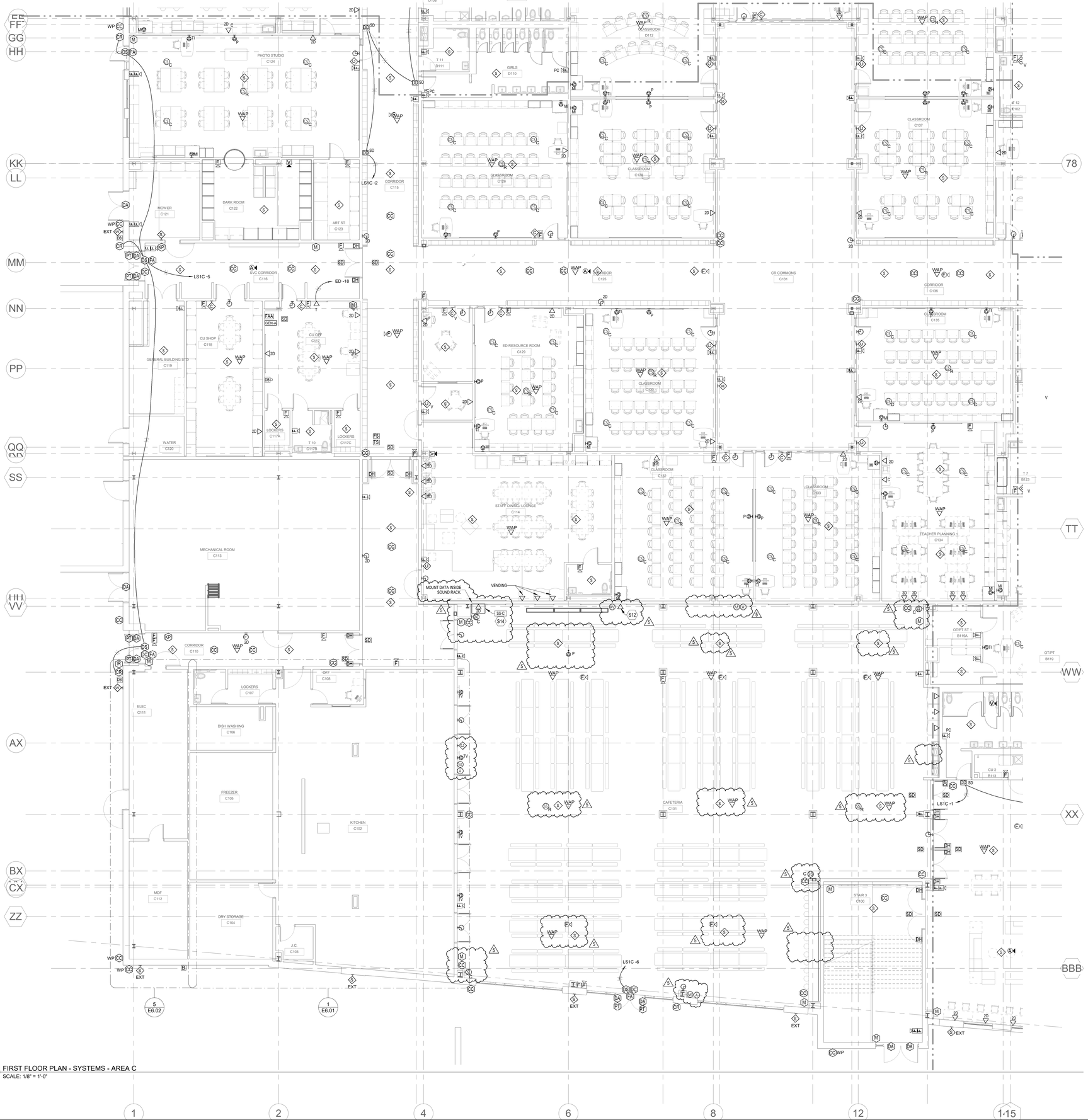
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - AREA G - POWER

PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 1/8" = 1'-0"
WORKING NORTH

SHEET NO:
E3.06

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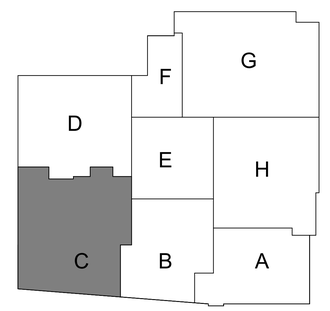


1 E4.03 FIRST FLOOR PLAN - SYSTEMS - AREA C
SCALE: 1/8" = 1'-0"

TAGGED NOTES ##

S12 EXTRON TLP PRO 320M TOUCH CONTROLLER. PROVIDE ROUGH-IN FOR MOUNTING CONTROLLER. PROVIDE DATA DROP AS REQUIRED. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.

S14 PROVIDE FOUR (4) 2" CONDUITS RECESSED IN WALL TO ABOVE CEILING/JOINTS FROM 12"X12" JUNCTIONS BOX,MOUNTED AT 36" CENTER ON SOUND RACK. CONDUITS SHALL BE PROVIDED WITH BUSHINGS. COORDINATE ALL REQUIREMENTS PRIOR TO INSTALLATIONS



KEY PLAN
SCALE : N.T.S.

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

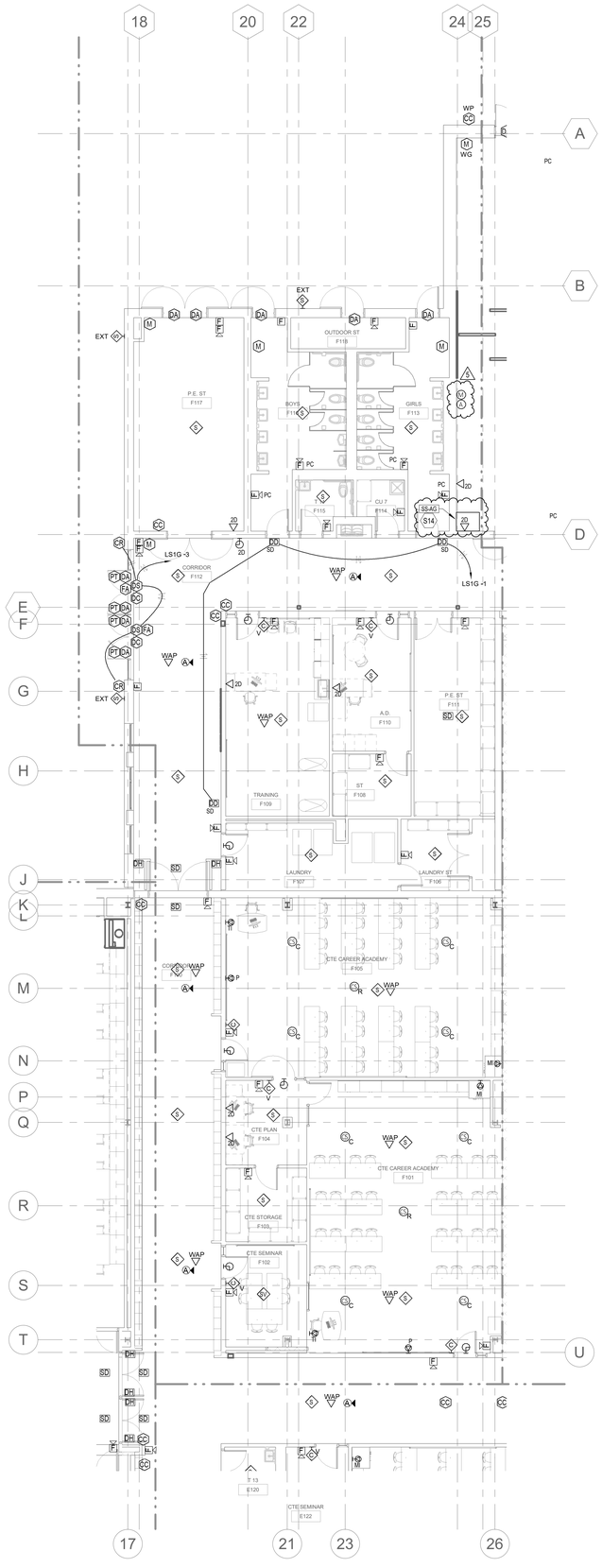
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FIRST FLOOR PLAN - AREA C - SYSTEMS

PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 1/8" = 1'-0"

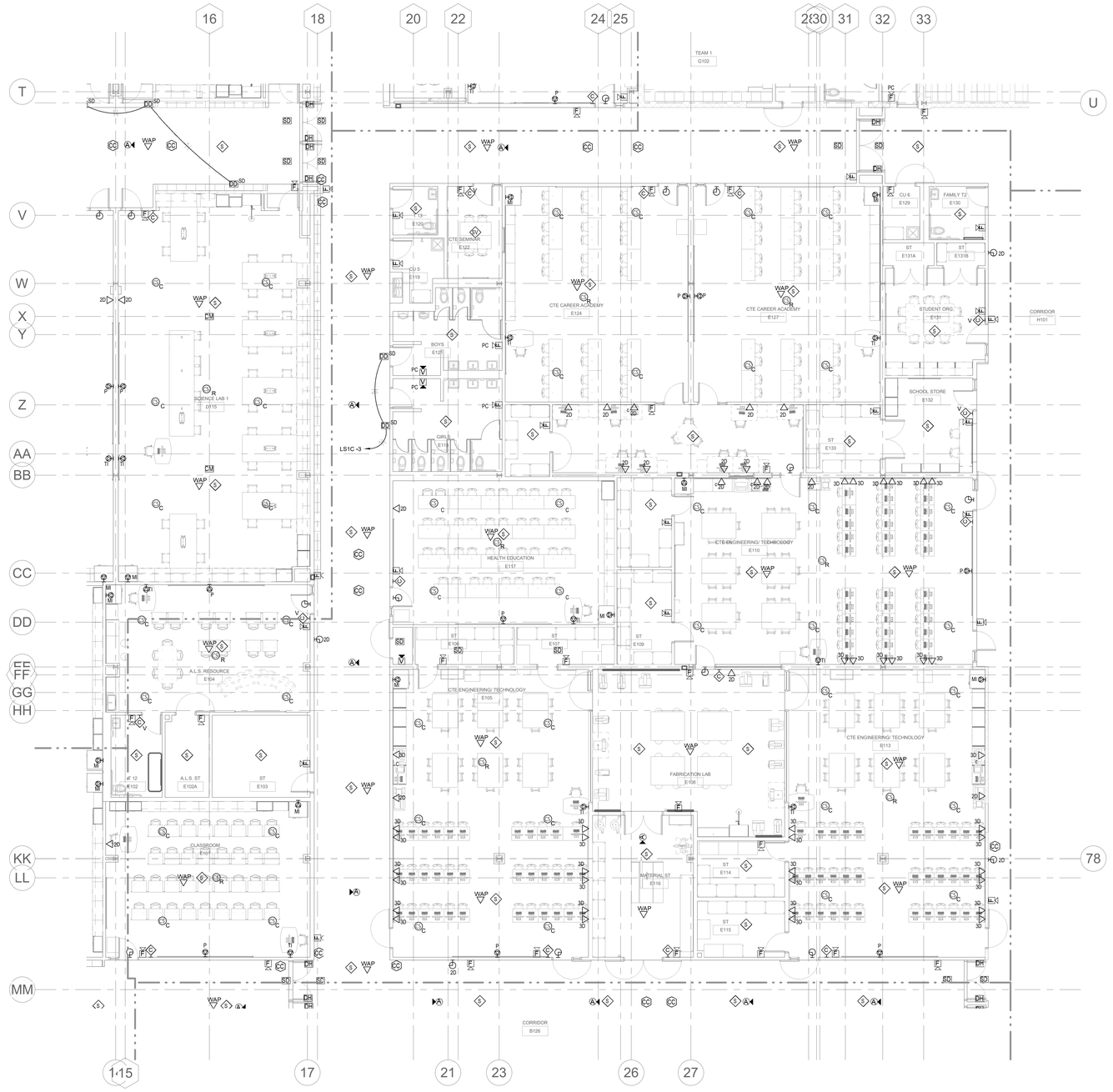
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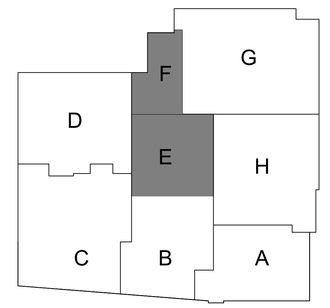
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2 FIRST FLOOR PLAN - SYSTEMS - AREA F
E4.05 SCALE: 1/8" = 1'-0"



1 FIRST FLOOR PLAN - SYSTEMS - AREA E
E4.05 SCALE: 1/8" = 1'-0"



KEY PLAN
SCALE : N.T.S.

ARCHITECT

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

FIRST FLOOR PLAN - AREA E & F - SYSTEMS

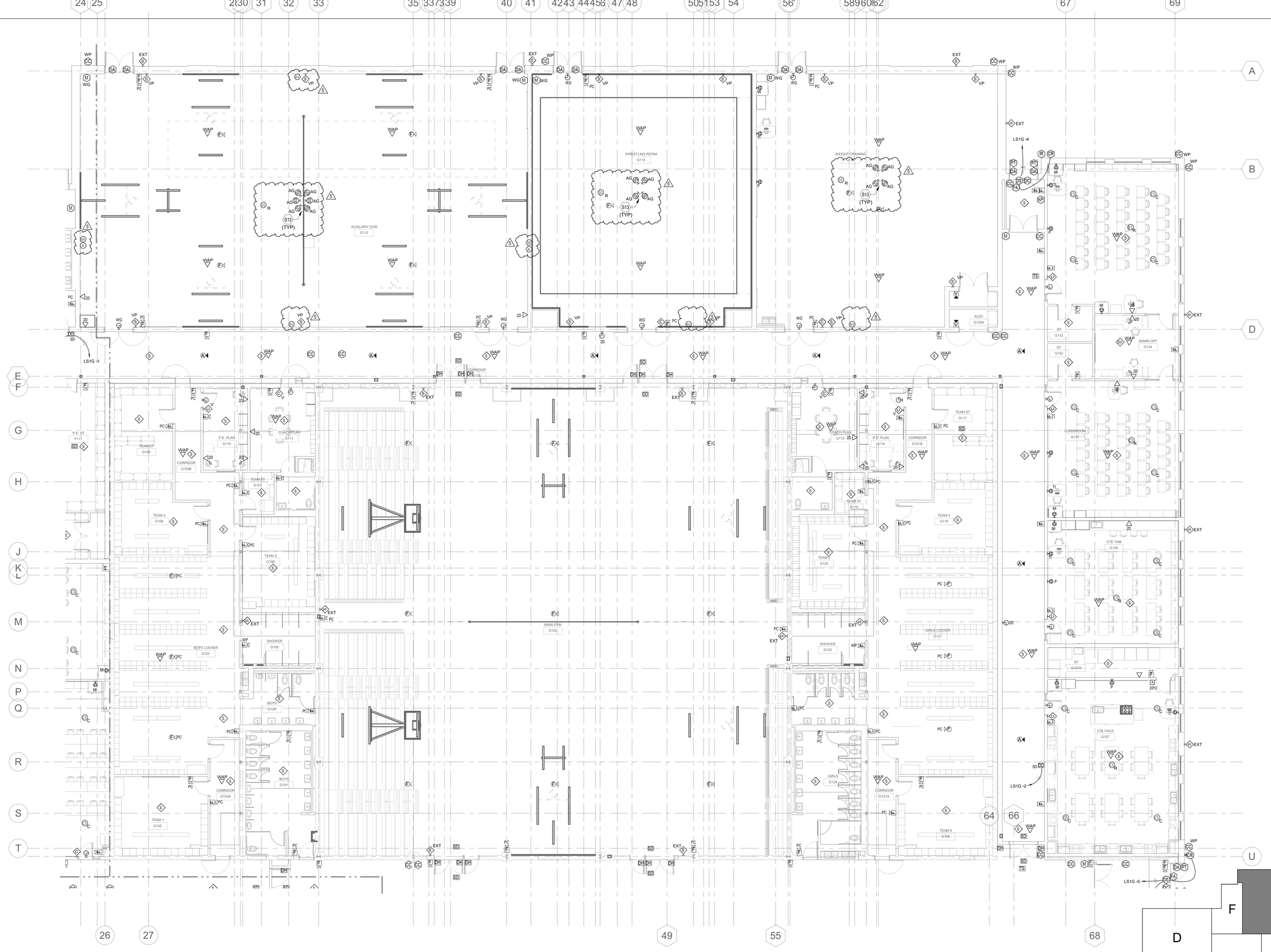
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WORKING NORTH

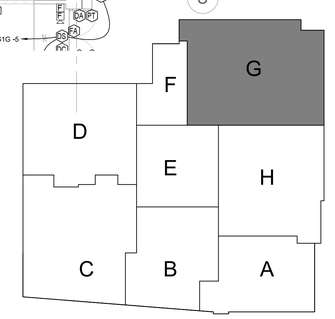
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1 E4.06 FIRST FLOOR PLAN - SYSTEMS - AREA G
SCALE: 1/8" = 1'-0"



KEY PLAN
SCALE : N.T.S.

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

FIRST FLOOR PLAN - AREA G - SYSTEMS

PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 1/8" = 1'-0"

WORKING NORTH

SHEET NO:

E4.06

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GENERAL NOTES (LIGHTING):

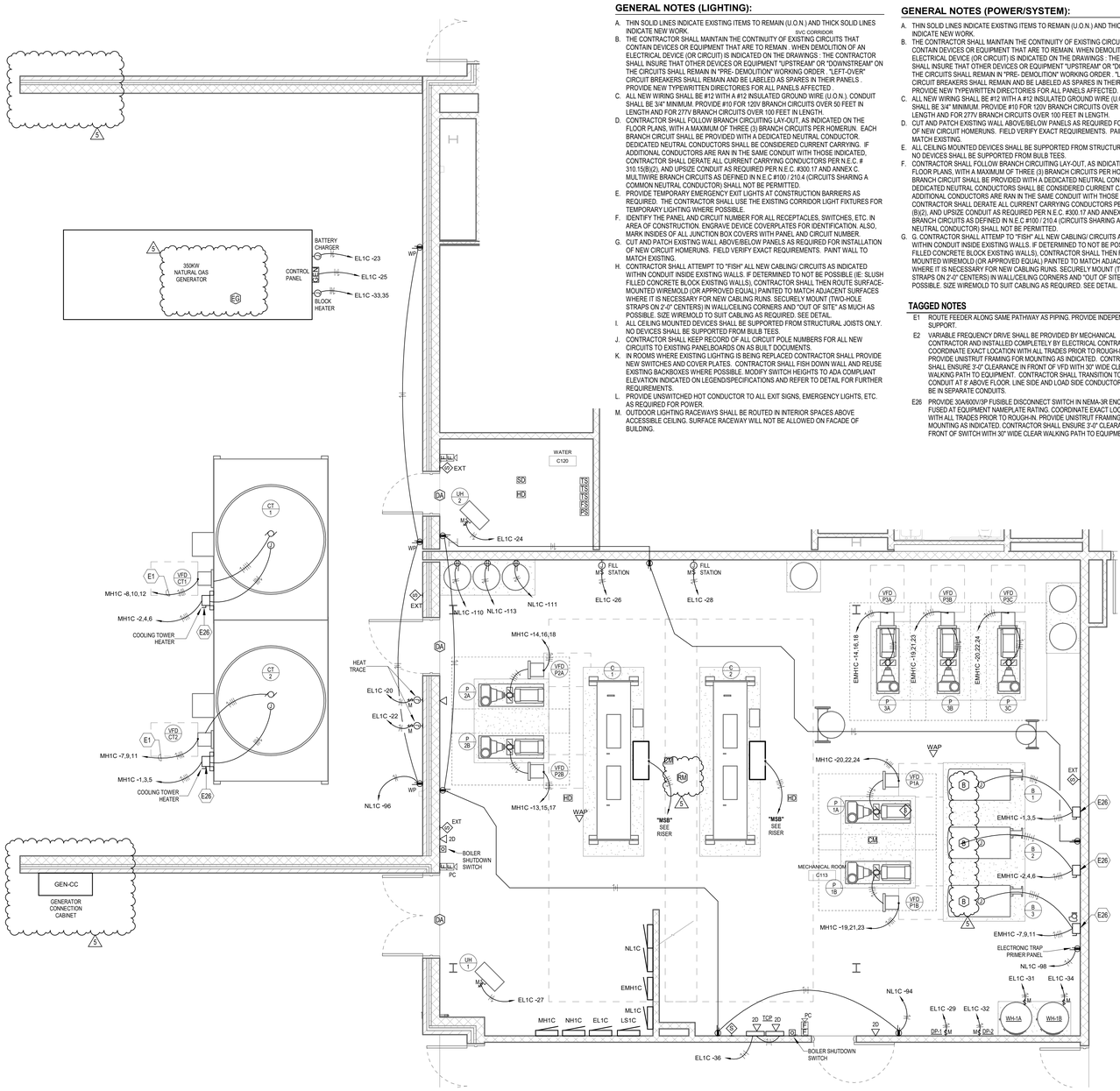
A. THIN SOLID LINES INDICATE EXISTING ITEMS TO REMAIN (U.O.N.) AND THICK SOLID LINES INDICATE NEW WORK.
B. THE CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF EXISTING CIRCUITS THAT CONTAIN DEVICES OR EQUIPMENT THAT ARE TO REMAIN. WHEN DEMOLITION OF AN ELECTRICAL DEVICE (OR CIRCUIT) IS INDICATED ON THE DRAWINGS : THE CONTRACTOR SHALL INSURE THAT OTHER DEVICES OR EQUIPMENT "UPSTREAM" OR "DOWNSTREAM" ON THE CIRCUITS SHALL REMAIN IN "PRE- DEMOLITION" WORKING ORDER. "LEFT-OVER" CIRCUIT BREAKERS SHALL REMAIN AND BE LABELED AS SPARES IN THEIR PANELS . PROVIDE NEW TYPEWRITTEN DIRECTORIES FOR ALL PANELS AFFECTED .
C. ALL NEW WIRING SHALL BE #12 WITH A #12 INSULATED GROUND WIRE (U.O.N.). CONDUIT SHALL BE 3/4" MINIMUM. PROVIDE #10 FOR 120V BRANCH CIRCUITS OVER 50 FEET IN LENGTH AND FOR 277V BRANCH CIRCUITS OVER 100 FEET IN LENGTH.
D. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. # 310.15(B)(2), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
E. PROVIDE TEMPORARY EMERGENCY EXIT LIGHTS AT CONSTRUCTION BARRIERS AS REQUIRED. THE CONTRACTOR SHALL USE THE EXISTING CORRIDOR LIGHT FIXTURES FOR TEMPORARY LIGHTING WHERE POSSIBLE.
F. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. ENGRAVE DEVICE COVERPLATES FOR IDENTIFICATION. ALSO, MARK INSIDES OF ALL JUNCTION BOX COVERS WITH PANEL AND CIRCUIT NUMBER.
G. CUT AND PATCH EXISTING DRYWALL ABOVE/BELOW PANELS AS REQUIRED FOR INSTALLATION OF NEW CIRCUIT HOMERUNS. FIELD VERIFY EXACT REQUIREMENTS. PAINT WALL TO MATCH EXISTING.
H. CONTRACTOR SHALL ATTEMPT TO "FISH" ALL NEW CABLING/ CIRCUITS AS INDICATED WITHIN CONDUIT INSIDE EXISTING WALLS. IF DETERMINED TO NOT BE POSSIBLE (IE: SLUSH FILLED CONCRETE BLOCK EXISTING WALLS), CONTRACTOR SHALL THEN ROUTE SURFACE-MOUNTED WIREMOLD (OR APPROVED EQUAL) PAINTED TO MATCH ADJACENT SURFACES WHERE IT IS NECESSARY FOR NEW CABLING RUNS. SECURELY MOUNT (TWO-HOLE STRAPS ON 2'-0" CENTERS) IN WALL/CEILING CORNERS AND "OUT OF SITE" AS MUCH AS POSSIBLE. SIZE WIREMOLD TO SUIT CABLING AS REQUIRED. SEE DETAIL.
I. ALL CEILING MOUNTED DEVICES SHALL BE SUPPORTED FROM STRUCTURAL JOISTS ONLY. NO DEVICES SHALL BE SUPPORTED FROM BUILDING TEES.
J. CONTRACTOR SHALL KEEP RECORD OF ALL CIRCUIT POLE NUMBERS FOR ALL NEW CIRCUITS TO EXISTING PANELBOARDS ON AS BUILT DOCUMENTS.
K. IN ROOMS WHERE EXISTING LIGHTING IS BEING REPLACED CONTRACTOR SHALL PROVIDE NEW SWITCHES AND COVER PLATES. CONTRACTOR SHALL FISH DOWN WALL AND REUSE EXISTING BACKBOXES WHERE POSSIBLE. MODIFY SWITCH HEIGHTS TO ADA COMPLIANT ELEVATION INDICATED ON LEGEND/SPECIFICATIONS AND REFER TO DETAIL FOR FURTHER REQUIREMENTS.
L. PROVIDE UNSWITCHED HOT CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY LIGHTS, ETC. AS REQUIRED FOR POWER.
M. OUTDOOR LIGHTING RACEWAYS SHALL BE ROUTED IN INTERIOR SPACES ABOVE ACCESSIBLE CEILING. SURFACE RACEWAY WILL NOT BE ALLOWED ON FACADE OF BUILDING.

GENERAL NOTES (POWER/SYSTEM):

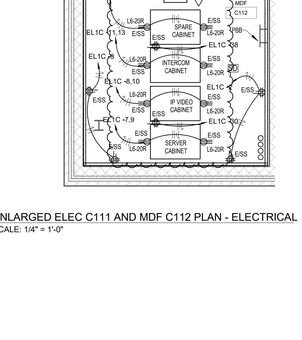
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D. CUT AND PATCH EXISTING WALL ABOVE/BELOW PANELS AS REQUIRED FOR INSTALLATION OF NEW CIRCUIT HOMERUNS. FIELD VERIFY EXACT REQUIREMENTS. PAINT WALL TO MATCH EXISTING.
E. ALL CEILING MOUNTED DEVICES SHALL BE SUPPORTED FROM STRUCTURAL JOISTS ONLY. NO DEVICES SHALL BE SUPPORTED FROM BUILD TEES.
F. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. #310.15 (B)(2), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
G. CONTRACTOR SHALL ATTEMP TO "FISH" ALL NEW CABLING/ CIRCUITS AS INDICATED WITHIN CONDUIT INSIDE EXISTING WALLS. IF DETERMINED TO NOT BE POSSIBLE (IE: SLUSH FILLED CONCRETE BLOCK EXISTING WALLS), CONTRACTOR SHALL THEN ROUTE SURFACE-MOUNTED WIREMOLD (OR APPROVED EQUAL) PAINTED TO MATCH ADJACENT SURFACES WHERE IT IS NECESSARY FOR NEW CABLING RUNS. SECURELY MOUNT (TWO-HOLE STRAPS ON 2'-0" CENTERS) IN WALL/CEILING CORNERS AND "OUT OF SITE" AS MUCH AS POSSIBLE. SIZE WIREMOLD TO SUIT CABLING AS REQUIRED. SEE DETAIL.

TAGGED NOTES

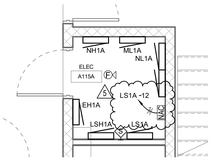
E1 ROUTE FEEDER ALONG SAME PATHWAY AS PIPING. PROVIDE INDEPENDENT SUPPORT.
E2 VARIABLE FREQUENCY DRIVE SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AND INSTALLED COMPLETELY BY ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION WITH ALL TRADES PRIOR TO ROUGH-IN. PROVIDE UNISTRUT FRAMING FOR MOUNTING AS INDICATED. CONTRACTOR SHALL ENSURE 3'-0" CLEARANCE IN FRONT OF VFD WITH 30" WIDE CLEAR WALKING PATH TO EQUIPMENT. CONTRACTOR SHALL TRANSITION TO RIGID CONDUIT AT 8' ABOVE FLOOR. LINE SIDE AND LOAD SIDE CONDUCTORS SHALL BE IN SEPARATE CONDUITS.
E26 PROVIDE 30A/600V/3P FUSIBLE DISCONNECT SWITCH IN NEMA-3R ENCLOSURE FUSED AT EQUIPMENT NAMEPLATE RATING. COORDINATE EXACT LOCATION WITH ALL TRADES PRIOR TO ROUGH-IN. PROVIDE UNISTRUT FRAMING FOR MOUNTING AS INDICATED. CONTRACTOR SHALL ENSURE 3'-0" CLEARANCE IN FRONT OF SWITCH WITH 30" WIDE CLEAR WALKING PATH TO EQUIPMENT.



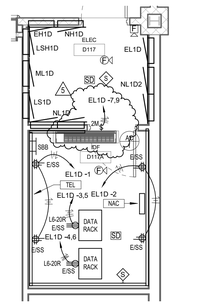
4 ENLARGED MECHANICAL ROOM C113 AND MECHANICAL YARD - ELECTRICAL
E6.02 SCALE: 1/4" = 1'-0"



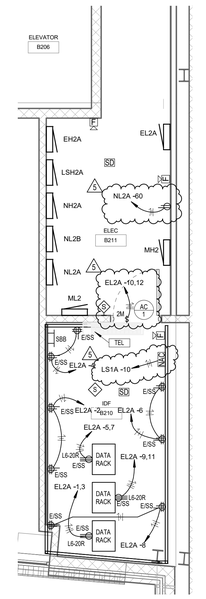
5 ENLARGED ELEC C111 AND MDF C112 PLAN - ELECTRICAL
E6.02 SCALE: 1/4" = 1'-0"



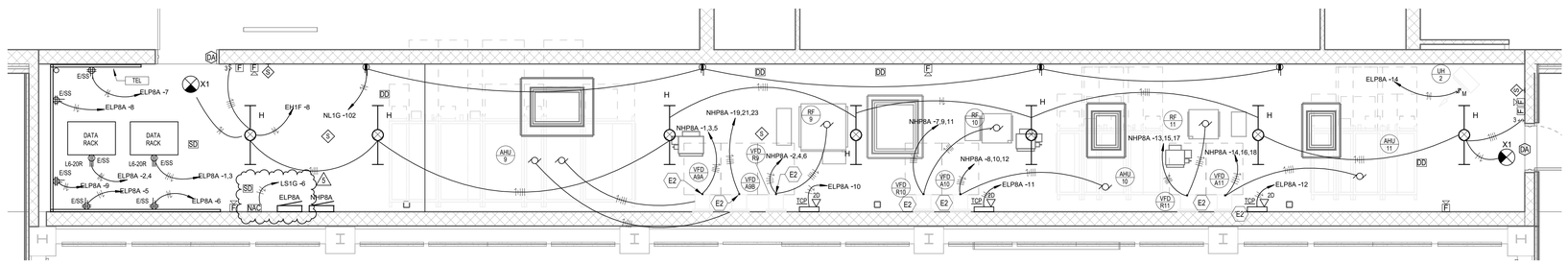
1 ENLARGED ELEC A115A PLAN - ELECTRICAL
E6.02 SCALE: 1/4" = 1'-0"



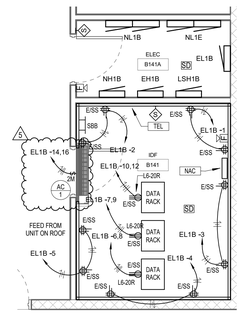
2 ENLARGED ELEC AND IDF D117 PLAN - ELECTRICAL
E6.02 SCALE: 1/4" = 1'-0"



7 ENLARGED IDF B210 AND ELEC B211 PLAN - ELECTRICAL
E6.02 SCALE: 1/4" = 1'-0"



3 ENLARGED PENTHOUSE #8 - ELECTRICAL
E6.02 SCALE: 1/4" = 1'-0"



6 ENLARGED ELEC AND IDF B141 PLAN - ELECTRICAL
E6.02 SCALE: 1/4" = 1'-0"

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1309-Q CONTINENTAL DRIVE
ABINGDON, MD 21009
410-335-3000(P)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 36125, Expiration Date: 07/28/2020.

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	BID SET	02/25/2020
2	ADDENDUM 2	03/06/2020
3	ADDENDUM 3	03/12/2020
4	ADDENDUM 4	03/13/2020
5	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

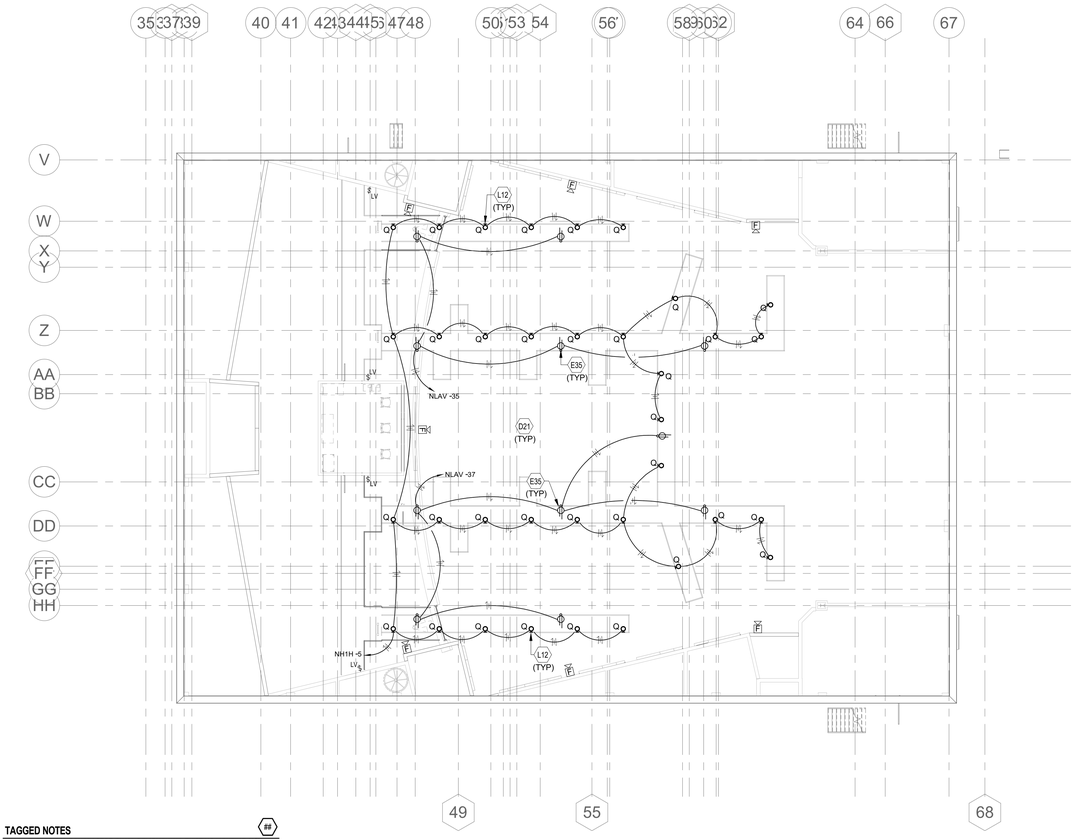
ENLARGED PLAN - MAIN ELEC, MAIN MECH AND MDF ROOMS - ELEC

PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 1/4" = 1'-0"
WORKING NORTH

SHEET NO:

E6.02

3/18/2020 11:23:52 AM



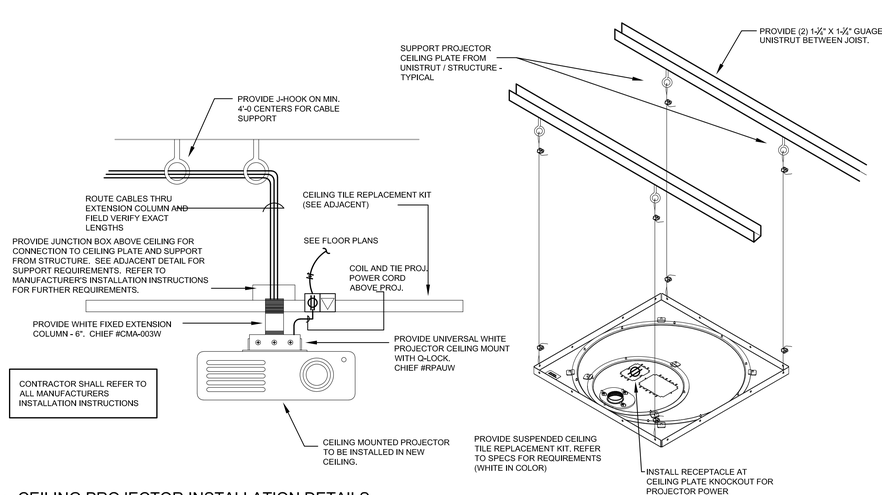
1 PARTIAL FLOOR PLAN - ELECTRICAL - AUDITORIUM CATWALK
E7.00 SCALE: 3/32" = 1'-0"

TAGGED NOTES (##)

D21 ELECTRICAL CONTRACTOR SHALL DEMOLISH ALL EXISTING LIGHTING AND RECEPTACLES FOR EXISTING CATWALK. COORDINATE ALL REQUIREMENTS PRIOR TO CONSTRUCTION.

E35 PROVIDE UNISTRUT AS REQUIRED FOR MOUNTING DUPLEX TO CATWALK RAILING. COORDINATE EXACT REQUIREMENTS WITH EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

L12 REFER TO SHEET E7.00 FOR MOUNTING DETAIL FOR FIXTURE TYPE 'Q'. (TYPICAL)

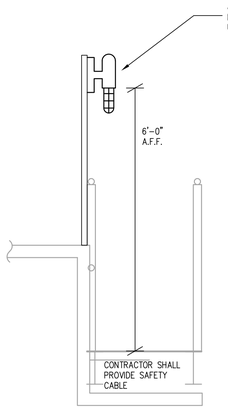


3 CEILING PROJECTOR INSTALLATION DETAILS
SCALE: NONE

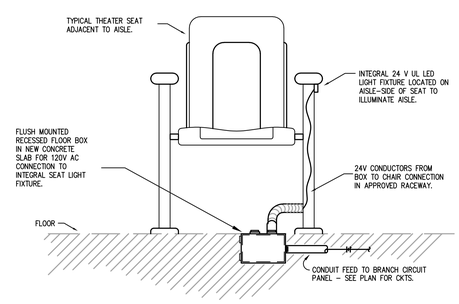
SYMBOL ON DRAWINGS: P

ELEC - LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	BASIS OF DESIGN	EQUAL MANUFACTURERS	MOUNTING	LAMPS / CCT	VOLTAGE	REMARKS
A1	2'x4' LAY-IN LED WITH 1% DIMMING DRIVER, PATTERN A19 LENS.	LITHONIA # EPANL 2X4 4000LM 80CRI 40K MIN1 ZT MVOLT GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A1D	SAME AS ABOVE EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	LITHONIA # EPANL 2X4 4000LM 80CRI 40K MIN1 ZT MVOLT CL80 RES7 GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A2	2'x4' LAY-IN LED WITH 1% DIMMING DRIVER, PATTERN A19	LITHONIA # EPANL 2X4 4800LM 80CRI 40K MIN1 ZT MVOLT GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A2D	SAME AS ABOVE EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	LITHONIA # EPANL 2X4 4800LM 80CRI 40K MIN1 ZT MVOLT CL80 RES7 GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A2V	SAME AS 'A2' EXCEPT VANDAL RESISTANT	LITHONIA # 2VRTL G L48 5000LM ICW AP125FL MVOLT GZ1 40K 90CRI WH	COOPER, PHILIPS	RECESSED	LED	120/277	
A2VE	SAME AS 'A2' EXCEPT VANDAL RESISTANT AND INTEGRAL BATTERY	LITHONIA # 2VRTL G L48 5000LM ICW AP125FL MVOLT GZ1 40K 90CRI PS1050WH	COOPER, PHILIPS	RECESSED	LED	120/277	
A3	2'x4' LAY-IN LED WITH 1% DIMMING DRIVER, PATTERN A19 LENS, AND REPLACABLE, UPGRADABLE LED MODULES.	LITHONIA # EPANL 2X4 5400LM 80CRI 40K MIN1 ZT MVOLT GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A3D	SAME AS "A3" EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	LITHONIA # EPANL 2X4 5400LM 80CRI 40K MIN1 ZT MVOLT CL80 RES7 GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A3E	SAME AS "A3" EXCEPT WITH INTEGRAL BATTERY	LITHONIA # EPANL 2X4 5400LM 80CRI 40K MIN1 ZT MVOLT E10WCP GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A4	2'x2' LAY-IN LED TROFFER WITH 1% DIMMING DRIVER, PATTERN A19 LENS, AND REPLACABLE, UPGRADABLE LED MODULES.	LITHONIA # 2GTL 2 40L RW A19 EZ1 LP840 LATC GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
AF	2'x4' LAY-IN LED TROFFER WITH 1% DIMMING DRIVER, PATTERN A19 LENS, AND REPLACABLE, UPGRADABLE LED MODULES.	LITHONIA # 2GTL 4 48L RW A19 EZ1 LP840 LATC GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
AG	2'x2' LAY-IN LED TROFFER WITH 1% DIMMING DRIVER, PATTERN A19 LENS, GASKETED	LITHONIA # 2GTL 4 72L FW A19 MVOLT EZ1 LP840 ABC	COOPER, PHILIPS	RECESSED	LED	120/277	
AGE	SAME AS 'AG' EXCEPT GASKETED AND INTEGRAL BATTERY	LITHONIA # 2GTL 4 72L FW A19 MVOLT EZ1 LP840 ABC EL14L	COOPER, PHILIPS	RECESSED	LED	120/277	
AL	ARCHITECTURAL LINEAR LIGHTING SYSTEM	JUNO # IO414 20X4SD 5FT 40K 90CRI DLDPS 25W	COOPER, PHILIPS		LED	120/277	
AT	RECESSED TUNABLE WHITE 2'x4' LAY-IN LED TROFFER	MARK LIGHTING #CHSL 2X4 G9 90CRI TUWH RHYR 5000LM MNML 1SD DARK 277 EMG NLT	COOPER, PHILIPS	RECESSED	LED	120/277	
ATD	SAME AS "AT" EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	SAME AS 'ATD' EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	COOPER, PHILIPS	RECESSED	LED	120/277	
B	2'X2' LAY-IN LEDVOLUMETRIC RECESSED LIGHTING	LITHONIA # 2BLT2 48L ADP EZ1 LP840	COOPER, PHILIPS	RECESSED	LED	120/277	
C1	6" ROUND LED DOWNLIGHT	GOTHAM # ICO 40 60 6AR LD 70D EZB SF TRW	COOPER, PHILIPS	RECESSED	LED	120/277	
C2	6" ROUND LED DOWNLIGHT	GOTHAM # ICO 40 60 6AR LD 70D EZB SF TRW	COOPER, PHILIPS	RECESSED	LED	120/277	
CA	AMBER LED FOR DARK ROOM	COLE LIGHTING #PH810 OC	COOPER, PHILIPS	RECESSED	LED	120/277	
CS	SAME AS 'C1' EXCEPT WET LOCATION		COOPER, PHILIPS	RECESSED	LED	120/277	
CX	SAME AS 'C1' EXCEPT WET LOCATION		COOPER, PHILIPS	RECESSED	LED	120/277	
G	WALL MOUNTED LINEAR SCONCE. MOUNT AT 80" TO BOTTOM OF LENS PER ADAAG	CORELITE #DWI WA 6 L40 1 T SUWA 8 2 S	COOPER, PHILIPS	SURFACE	LED	120/277	COORDINATE LENGTH OF FIXTURE WITH FLOOR PLANS
H	4' INDUSTRIAL LED FIXTURE. PROVIDE WITH 48" LONG GRIPPLE AIRCRAFT CABLE.	METALUX: 4SNLED31UNVLCL835CD	COOPER, PHILIPS	PENDANT	LED	120/277	
HE	SAME AS "H" EXCEPT WITH INTEGRAL BATTERY	METALUX: 4SNLED31UNVLCL835CDEM	COOPER, PHILIPS	PENDANT	LED	120/277	
HG	4' INDUSTRIAL LED FIXTURE. PROVIDE WITH 48" LONG GRIPPLE AIRCRAFT CABLE.	METALUX: 4SNLED31UNVLCL835CD	COOPER, PHILIPS	PENDANT	LED	120/277	
IU	DIE CAST ALUMINUM, SPECIAL SIGNAGE "DARKROOM IN USE"	LITHONIA # LE P W 1 R 120/277 SW06	COOPER, PHILIPS	WALL	LED	120/277	
J	WALL MOUNTED VAPOR TIGHT	LUMINAIRE LED # VPF 83-40W 4000K GLR WET	COOPER, PHILIPS	WALL	LED	120/277	
L	RECESSED LED PERIMETER LIGHT	A LIGHT #ACL5-LENGTH-LS-40-U-HE-(CEILING)-T-D	COOPER, PHILIPS				
OL1	EXTERIOR SITE LIGHTING ON 25' SQUARE STEEL POLE	LITHONIA # DSX2 LED 100C 1000 30K T5W MVOLT SPA PIRHIFC3V SF	COOPER, PHILIPS	25' POLE	LED	120/277	
OL2	EXTERIOR SITE LIGHTING ON 25' SQUARE STEEL POLE	LITHONIA # DSX2 LED 100C 1000 30K T3M MVOLT SPA PIRHIFC3V SF	COOPER, PHILIPS	25' POLE	LED	120/277	
OL3	EXTERIOR SITE LIGHTING ON 25' SQUARE STEEL POLE	LITHONIA # DSX2 LED 100C 1000 30K T1M MVOLT SPA PIRHIFC3V SF	COOPER, PHILIPS	25' POLE	LED	120/277	
P1	LED HIGH BAY WITH PRISMATIC GLASS REFRACTOR, CAST ALUMINUM HEAT SINK AND WIREGUARD.	HOLOPHANE # PHG 30L 4K 80CRI AS W WGD D WG	COOPER, PHILIPS	PENDENT	LED	120/277	
P2	PENDANT MOUNTED LED CYLINDER W/ 6" APERATURE	GOTHAM #ICO CYL 30 60 6AR 70 120	COOPER, PHILIPS			120/277	
P3	LED 6" CYLINDER PENDANT	LITHONIA #LDN6CYL 40/30 L06 LS WR LS MVOLT GZ1 FCM SF X	COOPER, PHILIPS	PENDANT		120/277	ARCHITECT TO SELECT FINISH
Q	WALL MOUNTED VAPOR TIGHT	R-A-L # AVP 26L U HF G C 30	COOPER, PHILIPS	WALL	LED	120/277	
R	RELOCATED FIXTURE					120/277	FIELD VERIFY ALL REQUIREMENTS PRIOR TO CONSTRUCTION.
S1	LINEAR LED PENDENT	FOCALPOINT # FSM4LS LS FL 625 40K 1C UNV LD1 24' DM X'	COOPER, PHILIPS			120/277	
S2	RECESSED LINEAR LED	FOCALPOINT # FSM4L LS FL 625 40K 1C UNV LD1 DM X'	COOPER, PHILIPS			120/277	
T	LED TRACK SYSTEM. 15-60 DEGREE ADJUSTABLE BEAM.	PALOMA #LED523	COOPER, PHILIPS			120/277	
TDD	SOLAR TUBE DAYLIGHT	REFER TO SPECIFICATIONS	COOPER, PHILIPS			120/277	EC SHALL PROVIDE UNSWITCHED BRANCH CIRCUIT TO EVERY SOLAR TUBE DEVICE DAMPER. EC SHALL PROVIDE ALL LOW-VOLTAGE WIRING FOR CONTROL OF DAMPERS FROM SWITCH TD LOCATED IN EACH ROOM TO DAYLIGHT DAMPERS. SWITCH 'TD' TO BE INSTALLED COMPLETE BY EC.
TL	LED TAPE LIGHT WITH RGB COLOR CHANGING OPTICS	KELVIX #RGBW-3	COOPER, PHILIPS				
W	LED WALL PACK	LITHONIA # WSQLED 2 10A 700/40K SR3 MVOLT SF XXXX VG	COOPER, PHILIPS	SURFACE	LED	120/277	
W2	WET LOCATION LINEAR DIRECT LED LIGHT FIXTURE	PINNACLE #EX WETN 835HO LENGTH PER FLOOR PLANS S U OL1 1 0 CC GLR	AXIS, COOPER, AND PHILIPS			120/277	
X1	SINGLE-SIDED SELF-LUMINOUS EXIT SIGN	SURELITE #TRX1-1-R-AL-20	COOPER, PHILIPS	SURFACE	LED	120/277	
X2	DOUBLE-SIDED SELF-LUMINOUS EXIT SIGN	SURELITE #TRX1-2-R-AL-20	COOPER, PHILIPS	SURFACE	LED	120/277	



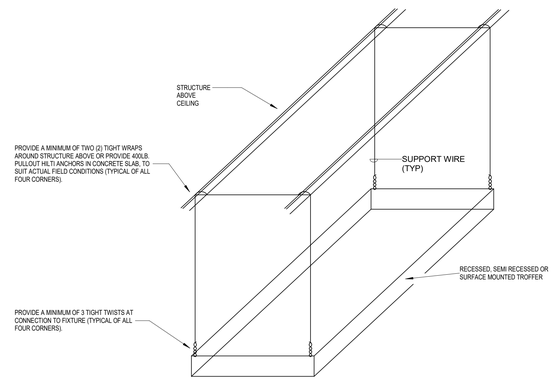
1 TYPE 'Q' FIXTURE MOUNTING DETAIL
SCALE: NONE



4 CEILING PROJECTOR INSTALLATION DETAILS
SCALE: NONE

GENERAL NOTES (LUMINAIRE SCHEDULE):

A. ALL LUMINAIRES AND COMPONENTS SHALL BE UL LISTED.
B. WHERE LUMINAIRES ARE SHOWN SPLIT-WIRED (HALF EMERGENCY POWER/ HALF NORMAL POWER) ON FLOOR PLANS, LUMINAIRES SHALL BE PROVIDED WITH MULTIPLE ELECTRONIC BALLASTS FOR MULTIPLE POWER CIRCUITS AS INDICATED ON FLOOR PLANS.
C. PROVIDE DRIVERS FOR FIXTURE LAMP SWITCHING AS INDICATED ON LIGHTING FLOOR PLANS.
D. CONTRACTOR SHALL FOCUS, AIM AND ADJUST LUMINAIRES UNDER THE SUPERVISION AND DIRECTION OF THE ENGINEER AND ARCHITECT. ALLOW LABOR FOR FINAL FOCUS AND ADJUSTMENTS AFTER DARK. LIFTS AND SCAFFOLDING SHALL BE AVAILABLE.
E. ALL LAY-IN FIXTURES SHALL BE PROVIDED WITH SCREW ON HOLD DOWN CLIPS AND MAXIMUM 6'-0" LONG FLEXIBLE CONDUIT WHIPS.
F. ALL FIXTURES SHALL HAVE A CRI GREATER THAN 80, U.O.N.
G. CONFIRM ALL FINISHES AND MOUNTING HEIGHTS WITH ARCHITECT DURING SHOP DRAWING REVIEW. PROVIDE CUSTOM, FACTORY CUT STEM LENGTHS AS REQUIRED.
H. REFER TO LIFE SAFETY AND LIGHTING DRAWINGS FOR MOUNTING REQUIREMENTS, NUMBER OF FACES AND ARROWS (CHEVRONS) FOR ALL EXIT SIGNS. COORDINATE WITH ARCHITECT'S REFLECTED CEILING PLANS.
I. CONTRACTOR SHALL VERIFY CEILING TYPES PRIOR TO ORDERING FIXTURE AND PROVIDE FIXTURES APPROPRIATE TO THE ACTUAL CONDITION. THIS IS TO INCLUDE SPECIFIC TYPE OF LAY-IN CEILING GRID.
J. ALL LUMINAIRES, INCLUDING PENANTS AND DOWNLIGHTS SHALL HAVE A "MAXIMUM WATTAGE LABEL" AFIXED TO EACH FIXTURE BY THE MANUFACTURER'S FACTORY. MAXIMUM WATTAGE TO BE BASED ON THE SPECIFIED LIGHT ENGINE AND/OR DRIVER FROM THE LIGHT FIXTURE SCHEDULE.
K. ALL LUMINAIRES SHALL HAVE INTERNAL FAST-BLOWING FUSING.
L. PROVIDE GROUNDING CONDUCTOR AND NEUTRAL TO ALL SWITCHES, DIMMERS, AND WALL MOUNTED OCCUPANCY SENSORS.
M. FIXTURES AND ASSOCIATED ON-BOARD CIRCUITRY MUST MEET CLASS A EMISSION LIMITS REFERRED TO IN FEDERAL COMMUNICATIONS COMMISSION (FCC) TITLE 47, SUBPART B, SECTION 15 NON-CONSUMER REQUIREMENTS FOR EMI/RFI EMISSIONS. ANY ADDITIONAL MATERIALS AND LABOR REQUIRED TO ADDRESS EMI/RFI ISSUES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
N. ALL DOWNLIGHTS ABOVE SHOWER AREAS SHALL HAVE DEAD FRONT DROP LENS TRIM.
O. PROVIDE SUPPORT WIRES FOR ALL LIGHT FIXTURES.



GENERAL TROFFER SUPPORT DETAIL NOTES:
1. SUPPORT WIRES SHALL BE GALVANIZED REGULAR COATING, SOFT TEMPER, 0.1055 INCHES IN DIAMETER (12 GAGE).
2. ALTERNATELY, CONTRACTOR MAY SUPPORT FIXTURES WITH SINGLE WIRE FROM ALL FOUR CORNERS OF FIXTURE PER SPECIFICATIONS WITH NUMBER OF TWISTS AT FIXTURE AND NUMBER OF WRAPS AROUND STRUCTURE INDICATED IN THIS DETAIL.

2 TROFFER SUPPORT DETAIL
SCALE: NONE

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

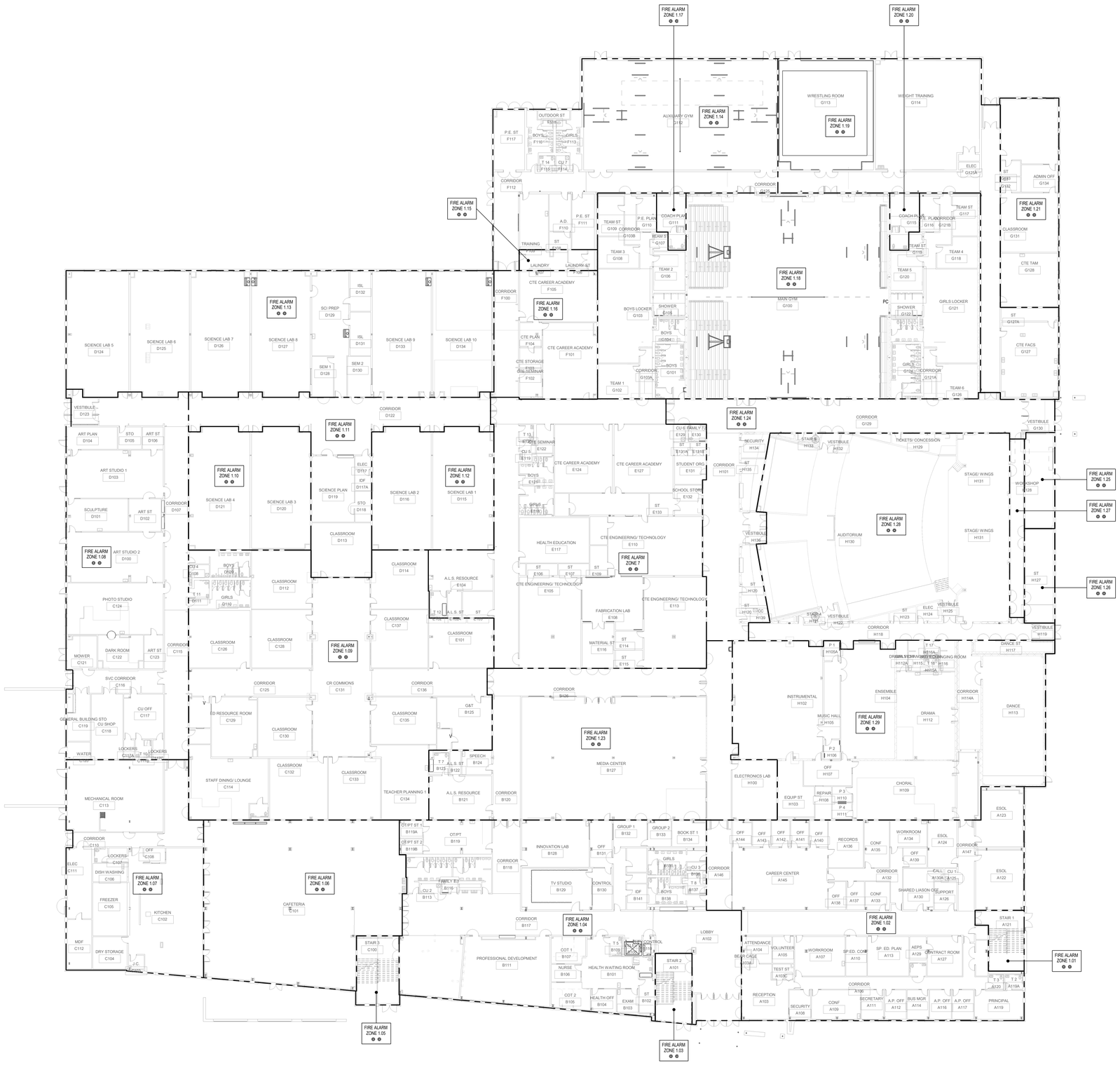
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
DETAILS - ELECTRICAL

PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: As indicated
WORKING NORTH

SHEET NO: 5
E7.00

3/18/2020 11:24:26 AM



1 FIRST FLOOR PLAN - FIRE ALARM ANNUNCIATOR ZONE 1
EF1.1 SCALE: 3/64" = 1'-0"

ALARM

RED LED	MANUAL PULL STATION
	AREA SMOKE DETECTOR
RED LED	HEAT DETECTOR
	MACHINE ROOM HEAT DETECTION
RED LED	ELEVATOR SHAFT HEAT DETECTOR
	ELEVATOR LOBBY MACH RM SMOKE DETECTOR
RED LED	ELEVATOR SHAFT SMOKE DETECTOR
	SPRINKLER FLOW SWITCH
RED LED	PORTABLE CLASSROOM TRAILER
	CARBON MONOXIDE DETECTOR
RED LED	(OPERATIONAL SPARE)

SUPERVISORY

AMBER LED	DUCT SMOKE DETECTOR
	SPRINKLER VALVE TAMPER SWITCH
AMBER LED	MAIN VALVE TAMPER SWITCH
	ELEVATOR SHUNT-TRIP CONTROL POWER
AMBER LED	(OPERATIONAL SPARE)

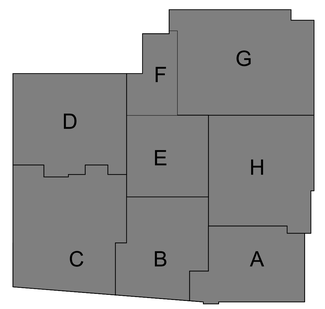
STATUS

GREEN LED	GENERATOR RUNNING
AMBER LED	GENERATOR FAULT
AMBER LED	AUTOMATIC TRANSFER SWITCH NOT IN AUTO
GREEN LED	POWER ON
AMBER LED	SYSTEM TROUBLE

ALARM — SILENT KEY OPERATED — LAMP TEST PUSH BUTTON

HAMMOND HIGH SCHOOL
8800 GUILFORD ROAD
COLUMBIA, MD 21046

NOTE: COORDINATE EXACT SCHOOL NAME AND ADDRESS TO BE PLACED ON FIRE ALARM ANNUNCIATOR PANEL WITH HOWARD COUNTY PUBLIC SCHOOL SYSTEM.



KEY PLAN
SCALE : N.T.S.

ARCHITECT

SMOLEN • EMR • ILKOVITCH ARCHITECTS
9211 CORPORATE BLVD, SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

CIVIL
FISHER, COLLINS, CARTER
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21042
410-461-2855(P)

KITCHEN
NYIKOS ASSOCIATES, INC.
18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530(P)

STRUCTURAL
COLUMBIA ENGINEERING
6210 OLD DOBBIN LANE, SUITE 150
COLUMBIA, MD 21045
410-992-9970(P)

MECH./ELECTRICAL/PLUMBING
CMTA, INC.
10411 MEETING ST.
PROSPECT, KY 40059
502-326-3085(P)

ACOUSTIC & MEDIA SYSTEMS
ACOUSTICAL DESIGN COLLABORATIVE, LTD
606 BOSLEY AVE
TOWSON, MD 21204
410-821-5930(P)

LEED
DOO CONSULTING
531 PICCADILLY ROAD
TOWSON, MD 21204
443-463-5859(P)

CONSTRUCTION MANAGER
J. VINTON SCHAFER & SONS
1309-Q CONTINENTAL DRIVE
ABINGDON, MD 21009
410-335-3000(P)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 36125, Expiration Date: 07/28/2020.

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	BID SET	02/25/2020
2	ADDENDUM 2	03/06/2020
3	ADDENDUM 3	03/12/2020
4	ADDENDUM 4	03/13/2020
5	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

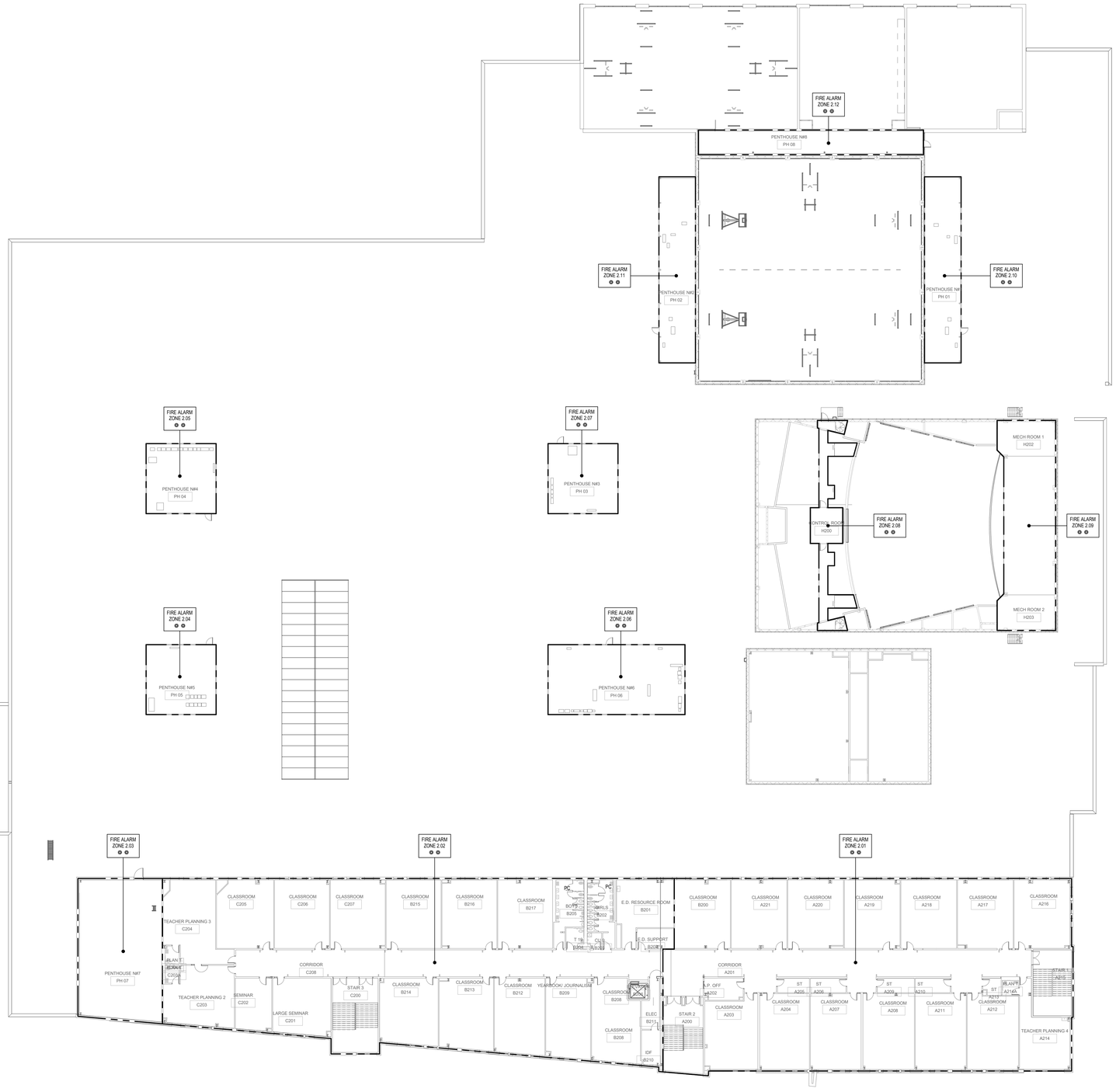
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - FIRE ALARM ANNUNCIATOR

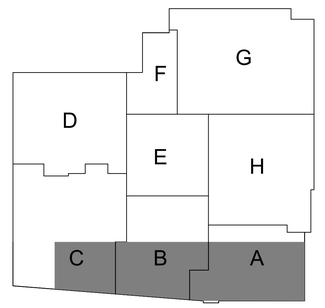
PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 3/64" = 1'-0"
WORKING NORTH

SHEET NO:
EF1.1

3/18/2020 11:36:36 AM



1 / EF2.1 SECOND FLOOR PLAN - FIRE ALARM ANNUNCIATOR ZONE 1
SCALE: 3/64" = 1'-0"



KEY PLAN
SCALE : N.T.S.

ARCHITECT

SMOLEN • EMR • ILKOVITCH ARCHITECTS

9211 CORPORATE BLVD, SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

CIVIL
FISHER, COLLINS, CARTER

10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21042
410-461-2855(P)

KITCHEN
NYIKOS ASSOCIATES, INC.

18219-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
240-683-9530(P)

STRUCTURAL
COLUMBIA ENGINEERING

6210 OLD DOBBIN LANE, SUITE 150
COLUMBIA, MD 21045
410-992-9970(P)

MECH./ELECTRICAL/PLUMBING
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531 PICCADILLY ROAD
TOWSON, MD 21204
443-463-5859(P)

CONSTRUCTION MANAGER
J. VINTON SCHAFER & SONS

1309-Q CONTINENTAL DRIVE
ABINGDON, MD 21009
410-335-3000(P)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No.: 36125, Expiration Date: 07/28/2020.

PROFESSIONAL SEAL:

PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
1	BID SET	02/25/2020
2.	ADDENDUM 2	03/06/2020
3.	ADDENDUM 3	03/12/2020
4.	ADDENDUM 4	03/13/2020
5.	ADDENDUM 5	03/18/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

SECOND FLOOR PLAN - FIRE ALARM ANNUNCIATOR

PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: 3/64" = 1'-0"

WORKING NORTH

SHEET NO:

EF2.1

3/18/2020 11:36:38 AM

UNIT PRICES – Updated 3/18/20 – Addenda # 5

Unit prices for extra work or credits listed below are applicable to all work on this project involving extra materials/services performed by the Contractor or his Subcontractor(s) and/or credits to the Owner for materials/services deleted from the project. Prices as stated shall remain in effect for the duration of this project. The undersigned acknowledges the unit price values as part of this bid proposal and agree to add or delete items for the unit prices identified when directed to do so by the Owner.

Item No.	Description	Unit	Price
1	Furnish and install riprap Class 1	Ton	$60.00
2	Earth excavation-machine and disposal offsite	Cu. Yd.	$30.00
3	Earth excavation-hand and disposal offsite	Cu. Yd.	$140.00
4	Excavate and legally dispose offsite petroleum contaminated soil	Cu. Yd.	$350.00
5	Undercut, dispose offsite, refill with suitable materials and compact per specified requirements	Cu. Yd.	$85.00
6	Import MSHA CR-6 and place	Ton	$40.00
7	Import #2 stone and place	Ton	$40.00
8	Import #57 stone and place	Ton	$45.00
9	Remove and legally dispose offsite of MSHA CR-6, # 2 stone, or # 57 stone and regrade area	Ton	$65.00
10	Import screened topsoil and fine grade in place per project specifications	Cu. Yd.	$55.00
11	Sodding	Sq. Yd.	$7.50
12	Permanent seeding and mulch	Sq. Yd.	$1.50
13	Temporary seeding and straw	Sq. Yd.	$0.75
14	Furnish and install stabilization fabric	Sq. Yd.	$2.00
15	Remove and dispose of stabilization fabric	Sq. Yd.	$1.00
16	Furnish, install, maintain, and remove super silt fence and grade/restabilize	Ln. ft.	$12.50
17	Furnish, install, maintain, and remove silt fence and grade/restabilize	Ln. ft.	$7.50
18	Furnish and install "Leafgro" or equal to amend topsoil to specified organic content. Quantity based on amount of amendment used	Cu. Yd.	$45.00

19	Furnish and install 5% soil cement 1' deep.	Sq. yd.	$55.00
20	Funish and install 6% hydrated lime 1' deep.	Sq. Yd.	$55.00
21	Remove trench rock, haul and dispose of legally offsite	Cu. Yd.	$225.00
22	Remove open rock, haul and dispose of legally offsite	Cu. Yd.	$125.00
23	Removal of existing sidewalk and spoil as necessary, dispose of legally offsite. Install sidewalk as per specifications.	Sq. Ft.	$22.50
24	Grade for new sidewalk, removal of spoils as necessary, dispose of legally offsite. Install new stone and sidewalk as per specifications.	Sq. Ft.	$12.50
25	Saw Cut Asphalt Paving	Lineal Ft.	$18.00
26	Remove damaged paving, dispose of legally offsite, replace with light duty paving section as per specifications.	Sq. Yd.	$55.00
27	Remove damaged paving, dispose of legally offsite, replace with heavy duty paving section as per specifications.	Sq. Yd.	$70.00
28	Saw cut and removal of existing curb and gutter and dispose of legally offsite. Install new curb and gutter as per specifications.	Ln. ft.	$45.00
29	Grade for new Curb and Gutter, removal of spoils as necessary, dispose of legally offsite. Install stone and new curb and gutter as per specifications	Ln. ft.	$35.00
30	4" CMU Wall per sq./ft. of wall surface, includes mortar/joint reinforcement, bullnose corners, labor, scaffold, and all incidentals. This price does not include grout infill. CMU units to be regular hollow for purpose of unit price.	Sq. Ft.	$12.00
31	6" CMU Wall per sq./ft. of wall surface, includes mortar/joint reinforcement, bullnose corners, labor, scaffold, and all incidentals. This price does not include grout infill. CMU units to be regular hollow for purpose of unit price.	Sq. Ft.	$14.00

32	8" CMU Wall per sq./ft. of wall surface, includes mortar/joint reinforcement, bullnose corners, labor, scaffold, and all incidentals. This price does not include grout infill. CMU units to be regular hollow for purpose of unit price.	Sq. Ft.	$18.00
33	12" CMU Wall per sq./ft. of wall surface, includes mortar/joint reinforcement, bullnose corners, labor, scaffold, and all incidentals. This price does not include grout infill. CMU units to be regular hollow for purpose of unit price.	Sq. Ft.	$22.00
34	Receptacle: Provide 120-volt, 20-Ampere receptacle, and 100 ln.ft. project specified wiring in 25 ln.ft. of project specified conduit, and other materials as needed for a complete receptacle addition.	Per location	$475.00
35	F/A Device: Provide 15, 30, 60, 75 or 110-CD ceiling or wall-mounted fire alarm horn, horn/strobe, or speaker/strobe and 50 ln.ft. of project specified fire alarm cabling and conduit. Provide all programming and testing.	Per location	$425.00
36	F/A Device: Provide 15, 30, 60, 75 or 110-CD ceiling or wall-mounted fire alarm strobe and 50 ln.ft. of project specified fire alarm cabling and conduit. Provide all programming and testing.	Per location	$415.00
37	Fire Alarm Pull Station: Provide a manual fire alarm pull station complete with 50 ln.ft. of project specified fire alarm cabling and conduit. Include all testing and programming of device.	Each	$450.00
38	Data Outlet: Provide 300-ln.ft. of project specificed wiring, data jack, faceplate and backbox. Provide 10-ln.ft. of project specified conduit. Provide all terminations, testing and labeling.	Per location	$425.00
39	Exit Light: Provide exit light with wire guards and 50-ft. of project specified conduit and wire.	Each	$400.00

40	Switch: Provide 1 P, 20A toggle switch including box, cover plate, and 50 ft of project specified conduit and wiring.	Each	$400.00
41	Telephone Drop: Provide a project specified telephone jack complete with testing and termination. Include 300 ft of project specified cable and 10 ln.ft. of project specified conduit.	Each	$400.00
42	Speaker: Provide PA system ceiling mounted speaker including back box, 50 lf of project specified cabling and conduit and programming.	Each	$400.00
43	Painting - provide one prime coat and two finish coats	Sq. Ft.	$1.10
44	Temporary walkway - Furnish and install 5' wide temporary walkway consisting of 1"x6" pressure treated planks on 4"x4" pressure treated framing. Framing shall consist of one 4x4 under each side of the walkway and one under the center.	Ln. ft.	$45.00
45	Temporary partition per details in contract documents	Sq. Ft.	$10.50
46	Furnish and install Main Steel Framing: This shall include columns, posts, hangers, beams, girders, trusses, and connections. It shall also include base plates, bearing plates, stiffeners, angles, etc., which become part of the framing.	Lb.	$5.00
47	Furnish and install Miscellaneous Steel Framing: This shall include sub-framing for various purposes, such as mechanical openings and framing of a similar nature that may be required for the construction of the project.	Lb.	$5.00
48	Install VCT	Sq. Ft.	$3.75
49	Install Carpet Tile	Sq. Ft.	$4.50
50	Remove and dispose of existing flooring	Sq. Ft.	$1.00
51	Install temporary 2ft x 4ft Acoustical Ceiling Tile system (ceiling tile and grid)	Sq. Ft.	$3.25
52	Demo Acoustical Ceiling Tile system (ceiling tile and grid)	Sq. Ft.	$1.00
53	Ceiling system repair for mains and grid	Sq. Ft.	$3.25
54	Remove and replace existing roof deck	Sq. Ft.	$20.00

55	Scrape and paint existing roof deck	Sq. Ft.	$5.00

Note: Unit prices include all costs, taxes, overhead, profit, and bond and shall be total compensation for the work described. All work covered by unit prices shall be performed in accordance with the requirements of the Contract Documents.

ASBESTOS ABATEMENT DESIGN
HAMMOND HIGH SCHOOL
8800 GUILFORD RD.
COLUMBIA, MD 21046

ASBESTOS REMOVAL

FEBRUARY 21, 2020

PREPARED FOR:

SEI
9211 CORPORATE BLVD
ROCKVILLE, MD 20850

PREPARED BY:

SALUT INC.
1818 NEW YORK AVENUE NE, SUITE 231
WASHINGTON, DC 20002

PART 1 GENERAL

1.1 WORK INCLUDED

A. The proposed work is the removal of asbestos-containing material listed in Table 1 in multiple areas.

B. It is the responsibility of the Contractor to verify any and all existing conditions and quantities of materials to be removed prior to work begins. The Contractor shall, at a minimum, perform work based on information and methodologies set forth in this Specification. If the Contractor feels an alternate method of remediation other than described herein would improve the efficiency and cost effectiveness or quality of the final product, the Contractor may submit an alternate plan based upon those means and methods. Shop drawings and/or other relevant information regarding the alternative methods must be submitted along with the alternate work plan. The Owner and/or the Owner's Representative will review alternative methods prescribed in the work plan. Alternative methods may not be utilized without written approval from the Owner and/or the Owner'sRepresentative.

C. The scope of work included in these documents requires the Contractor to provide all labor, equipment, materials, and transportation necessary to complete the environmental abatement and remediation as specified herein. SALUT scope was non- destructive. Should future activities disturb building materials which were not tested for the presence of asbestos, additional testing should be performed or the materials should be assumed to be asbestos-containing.

D. The materials identified in Table 1 contain asbestos, therefore by regulation, and this Specification, require special handling and care. The purpose of this Section and Section 3 is to outline the procedures to be followed during the removal of these materials.

If requested by the Owner, the Contractor shall remove and properly dispose the following asbestos-containing materials in accordance with this Specification. The estimating of quantities for each material is the responsibility of the Contractor. It is also the responsibility of the Contractor to review field conditions, including: locations, surface area, thickness, cross-sectional area, component layers, and substrate conditions.

E. Asbestos-Containing Materials

The Contractor shall remove and properly dispose of all of the following asbestos-containing materials listed in Table 1. All material listed are categorized as Category II non-friable material.

Table 1: Asbestos-containing Material

Location		Sample #	Description of Material (s)	Locations and Quantities
Floor	Sample Room #			
2	Projector Room	HHS-1226-269	Floor Tile 12”x12” Miscellaneous Tan w/ Dark & Light Brown Specks	To be verified by the contractor
2	Projector Room	HHS-1226-270	Floor Tile Mastic Miscellaneous Black	To be verified by the contractor
2	Attic Space	HHS-1226-273	Duct Sealant Miscellaneous White	To be verified by the contractor
1	Custodial Room	HHS-1226-277	Sink Sealant Miscellaneous Hard, Black	To be verified by the contractor
1	Cafeteria Corridor	HHS-1226-279	Duct Sealant Miscellaneous White	To be verified by the contractor
1	Cafeteria	HHS-1226-282	Floor Tile Mastic Miscellaneous Black	See Note 5
1	Gymnasium Corridor	HHS-1226-283	Door Caulking Miscellaneous Smooth, Sticky, Beige	To be verified by the contractor
1	Gymnasium Corridor	HHS-1226-284	Door Caulking Miscellaneous Smooth, Sticky	To be verified by the contractor
1	Gymnasium Corridor	HHS-1226-285	Door Caulking Miscellaneous Smooth, Sticky, Beige	To be verified by the contractor
1	Main Office	HHS-1226-298	Transite Panel Miscellaneous Gray	To be verified by the contractor
2	Cat Walk	HHS-28- 461	Duct Sealant Miscellaneous White	To be verified by the contractor
1	Hallway Near Auditorium	HHS-28- 462	Duct Sealant Miscellaneous White	To be verified by the contractor
1	Hallway Near Room 230	HHS-28- 463	Duct Sealant Miscellaneous White	To be verified by the contractor
1	Hallway Near Room 229	HHS-28- 464	Duct Sealant Miscellaneous White	To be verified by the contractor
1	Hallway Near Room 405	HHS-28- 466	Duct Sealant Miscellaneous White	To be verified by the contractor
1	Room 604	HHS-28- 467	Duct Sealant Miscellaneous White	To be verified by the contractor

Note 1: During the performance of the project, the Contractor will be subject to inspection by the Owner's representative. If the Contractor is found not in compliance with this Specification, the Contractor will stop all work immediately to resolve the violation. Standby time shall be at the contractor's expense.

Note 2: The Abatement Contractor shall coordinate with the Mechanical, Electrical, Plumbing, and General Contractors to ensure that all appropriate systems that will be impacted by demolition have been properly decommissioned prior to the start of any work. Under the base bid scope of work, the asbestos contractor will be required to perform all demolition as necessary to expose hidden ACMs including but not limited to flooring and thermal pipe system and fitting insulation materials.

Note 3: The Abatement Contractor shall coordinate with the General Contractor selected for this project to verify that the structure will support the planned activities and comply with local building codes and OSHA requirements.

Note 4: Every attempt should be made to not cut through the asbestos-containing sealant. Cuts should be around the ACM as to limit the disturbance of asbestos-containing material, reducing the potential for airborne exposure.

Note 5: It is determined that Cafeteria Floor Tile Mastic has previously been and complete abatement is unwarranted. However, any spotty residual black adhesive containing asbestos may remain/exist along fine, perimeter edges that would only require spot cleaning with a solvent and cloth.

1.2 PRE-EXISTING CONTAMINATION

A. The Contractor will be responsible for cleaning any pre-existing contamination associated with the identified asbestos-containing materials.

1.3 CODES AND REGULATIONS

A. General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes and regulations have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Designer harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of the contractor, the contractor's employees, or subcontractors.

C. Federal Requirements: Abide by all Federal requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials including, but not limited to, the following:

1. OSHA: U.S. Department of Labor, Occupational Safety and HealthAdministration including but not limited to:

29 CFR 1910.1001	- Asbestos, Tremolite, Anthophyllite, Actinolite; 29
CFR 1926.1101	- Asbestos in Construction
29 CFR 1910.134	- Respiratory Protection;
29 CFR 1926.103	- Respiratory Protection;
29 CFR 1910.146	- Permit Required Confined Space;
29 CFR 1926.20	- General Safety and Health Provisions;
29 CFR 1926.21	- Safety Training and Education;
29 CFR 1926.23	- First Aid;
29 CFR 1926.24	- Fire Protection;
29 CFR 1926.25	- Housekeeping;
29 CFR 1926.28	- Personal Protective Equipment;
29 CFR 1926.51	- Sanitation;
29 CFR 1926.55	- Gases, Vapors, Fumes, Dusts, and Mists;
29 CFR 1926.56	- Illumination;
29 CFR 1926.57	- Ventilation;
29 CFR 1926.59	- Hazard Communication;
29 CFR 1910.1200	- Hazard Communication;
29 CFR 1926.200	- Accident Prevention Signs and Tags;
29 CFR 1926.300, 301, 302	- Hand and Power Tools;
29 CFR 1926.451	- Scaffolding;
29 CFR 1926.500, 502, 503	- Fall Protection;
29 CFR Subpart E	- Personal Protective and Life Saving Equipment

2. DOT: U. S. Department of Transportation, including but not limited to: 49

CFR 171 and 172	- Hazardous Substances;
49 CFR 171-180	- General Awareness and Training Requirements for Handlers, Loaders and Drivers;
49 CFR 171-180	- Editorial and Technical Revisions

3. EPA: U. S. Environmental Protection Agency including but not limited to: 40

CFR 61-SUBPART A	- General Provisions
40 CFR 61-SUBPART M	- National Emission Standard for Asbestos
40 CFR 61-Appendix A to SUBPART M Operations	- Interpretive Rule Governing Roof Removal
40 CFR 763	- Asbestos Containing Material in Schools

4. MDE: Maryland Department of the Environment including but not limited to:

   COMAR 26.11.21 Control of Asbestos

D. Local Requirements: Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

E. Building Codes: Comply with applicable provision of state and/or local building codes that govern any part of the work, including but not limited to the following:
   1. BOCA Chapter 33 Site Work, Demolition, and Construction with special attention to:
      a. BOCA 3304 Protection of the Public
      b. BOCA 3307 Health Hazards

1.4 REFERENCE STANDARDS

A. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in the Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006 (202) 626-7300
AIHA	American Industrial Hygiene Assoc. 2700 Prosperity Ave., Suite 250 Fairfax, VA 22031 (703) 849-8888
ANSI	American National Standards Institute 1899 C Street, NW, 11th Floor Washington, DC 20036
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329 (404) 636-8400
ASTM	American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959 (610) 832-9585
NFPA	National Fire Protection Assoc. One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101 (617) 770-3000 (800) 344-3555
UL	Underwriters Laboratories 333

Pfingsten Rd.
Northbrook, IL 60062 (708) 272-8800

B. Federal Government Agencies: Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CFR Code of Federal Regulations
(Available from the Government Printing Office)
N. Capitol St. between G and H St., NW
Washington, DC 20402 (202) 783-3238
(Material is usually first published in the "Federal Register")

DOT Department of
Transportation 400 Seventh
St., SW
Washington, DC 20590 (202) 366-4000

EPA Environmental
Protection Agency 401
M St., SW
Washington, DC 20460 (202) 260-2090

NIST National Institute of Standards and
Technology (U.S. Department of Commerce)
Gaithersburg, MD 20899 (301) 975-2000

OSHA Occupational Safety and Health
Administration (U.S. Department of Labor)
200 Constitution Ave., NW
Washington, DC 20210 (202) 219-
6091

1.5 DEFINITIONS

A. Accreditation: A formal recognition that an organization (e.g. laboratory) is competent to carry out specific tasks or type of tests.

B. Accredited Laboratory: A laboratory that has been evaluated and given approval to perform a specified measurement or task (such as the National Voluntary Laboratory Accreditation Program), usually for a specific property or analyze for a specified period of time.

C. Accredited Training Provider: A training provider that meets the standards established by EPA to provide training under the EPA model accreditation plan.

D. Adequately Wet: To sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from the asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.

E. Air Sampling: Sampling of asbestos concentrations within the asbestos control area and inside the physical boundaries which is representative of the airborne asbestos concentrations which may reach the breathing zone of personnel potentially exposed to asbestos. The PM shall be responsible for all area monitoring.

F. Amended Water: Water containing a wetting agent or surfactant with a maximum surface tension of 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.

G. Area Monitoring: Sampling of asbestos concentrations within the asbestos control area and inside the physical boundaries which is representative of the airborne asbestos concentrations which may reach the breathing zone of personnel potentially exposed to asbestos. The Owner's Agent/Representative shall be responsible for all area monitoring.

H. Asbestos: The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content of the material is determined to be at least one percent.

I. Asbestos Control Area: That area where asbestos removal operations are performed which is isolated by physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.

J. Asbestos-Containing Material (ACM): Any material containing more than 1% asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

K. Asbestos-Containing Waste Material: Any waste that contains asbestos. This term includes filters or other materials contaminated with asbestos. This term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

L. Asbestos Debris: Pieces of ACM that can be identified by color, texture, or composition, or dust, if the dust is determined by an accredited inspector to be ACM.

M. Asbestos Fibers: Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.

N. Background: The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.

O. Blank: A non-exposed sample of the medium used for testing, such as a wipe or filter, which is analyzed like other samples to determine whether (1) samples are contaminated with asbestos before samples are collected (e.g., at the factory, or at the testing site), (2) the samples are contaminated after sample collection (e.g., during transportation to the laboratory or in the

laboratory).

P. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches around the nose and mouth of the face.

Q. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

R. CFR - The Code of Federal Regulations: The basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.

S. Change Rooms and Shower Facilities: Rooms equipped with separate storage facilities for clean protective work clothing and equipment and for street clothes which prevent cross- contamination with a shower facility in between.

T. Competent Person: An individual who meets the requirements of OSHA as a “competent person” for the specific activity involved in the work. The “competent person” must meet the requirements of 29 CFR 1926.32(f), and 29 CFR 1926.1101.

U. Containment: A process to protect workers and the environment by controlling exposures to asbestos dust and debris created during abatement.

V. Decontamination Room: Room for removal of contaminated personal protective equipment (PPE).

W. Detection Limit: The minimum concentration of a component that a method can reliably measure.

X. Eight Hour Time Weighted Average (TWA): Airborne concentration of asbestos to which an employee is exposed, averaged over an 8-hour time work day.

Y. Encapsulants: Specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows which must comply with performance requirements as specified herein.

1. Removal Encapsulant (can be used as a wetting agent).
2. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos containing material).
3. Penetrating Encapsulant (used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage).
4. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed).

Z. Engineering Controls: Measures other than respiratory protection or administrative control that are implemented at the work site to contain, control, and/or otherwise reduce exposure to asbestos-contaminated dust and debris. The measures include process and product substitution, isolation, and ventilation.

AA. Exposure Monitoring: The personal air monitoring of an employee's breathing zone to determine the amount of contaminant (e.g. asbestos) to which he/she is exposed.

BB. Federal Register: A document published daily by the Federal government that contains either proposed or final regulations.

CC. Friable Asbestos Material: One percent asbestos containing material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

DD. Glovebag Technique: Those asbestos removal and control techniques put forth in 29 CFR 1926.1101 Appendix G.

EE. HEPA Filter Equipment: High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

FF. Intact: ACM that has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

GG. Leak-tight: That solids or liquids cannot escape or spill out. It also means dust-tight.

HH. Negative Pressure Enclosure (NPE): A pressure differential and ventilation system where the work area is maintained at a negative pressure relative to air pressure outside the work area.

II. Non-friable Asbestos Material: Material that contains asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. It is understood that asbestos fibers may be released under other conditions such as demolition, removal, or mishap.

JJ. Permissible Exposure Limit (PEL) (for asbestos fibers): 0.1 fibers per cubic centimeter of air as an 8 hour time weighted averaged as determined by 29 CFR1926.1101.

KK. Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

LL. Personal Samples (for sampling asbestos fibers): Air samples collected from within the breathing zone of a worker, but outside the respirator. The samples are collected with a personal sampling pump, pulling 1 to 2.5 liters/minute of air.

MM. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

NN. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

OO. Surfacing Material: Material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

PP. Thermal System Insulation (TSI): Insulation applied to pipes, fittings, boilers, breeching, tanks, ducts or other components to prevent heat loss or gain.

QQ. Visible Emissions: Any emissions containing particulate material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

RR. Wetting Agent: A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied. An equivalent wetting agent must have a surface tension of at most 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D1331.

SS. Work Area: The area where asbestos abatement or related work is performed which is defined and/or isolated to prevent the spread of asbestos fibers, or debris, and entry by unauthorized personnel.

TT. Work Practice: A procedure followed by workers that is intended to minimize exposure to the worker and the environment.

1.6 SUB-CONTRACTING REQUIREMENTS

A. In the event that the Contractor sub-contracts a portion of the Work, the sub-contractor to the Contractor must meet all requirements of the Contractor specified herein and within related contract documents. All sub-contractors must be approved, in writing, by the Owner and Owner's Representative prior to the Contractor and sub-contractor entering into an agreement to perform work on-site.

1.7 NOTIFICATION TO CONTRACTOR

A. Asbestos-Containing Materials

1. The Work included within this Specification involves the disturbance of asbestos-containing materials (ACMs). All ACMs known to be present at the work-site is presented in this Work Plan. The discovery of additional ACMs by the Contractor shall require immediate notification to the Owner's Representative, the employees of all other trades present on-site, and superintendent or foreman assigned to the project. All newly discovered ACMs will be bulk sampled by the Owner's Representative. No newly discovered ACMs are to be disturbed until instructed as such by the Owner.

2. Removing or otherwise disturbing ACMs may release asbestos fibers into building's atmosphere creating a health risk to all building occupants. The Contractor shall inform all laborers, supervisors, foreman, superintendents, and other employees of the location of ACMs within the building and ensure care is taken while working around the ACMs to ensure the materials are not disturbed and be certain all employees on-site are informed of proper work procedures following an unplanned disturbance.

3. The Contractor shall ensure that during his work any encounter or disturbance to ACMs will be performed in accordance with all applicable regulations and requirements set forth herein.

1.8 COORDINATION

A. Coordinate the abatement/remediation of the materials listed within this Specification with other sub-contractors on-site in order to maintain efficient and orderly completion of the Work.

1. Scheduling of operations shall be in a manner required to achieve the most satisfactory results where the completion of one aspect of the Work is essential to the commencement of work involving other components.

B. Notifications

1. It is the Work of the Contractor to inform all employees and contractors on-site the nature of the asbestos work, location of ACMs, applicable regulations, and any relevant requirements listed in this Specification. Notification prior to the start of work must be made to:
   a. Employees performing environmental remediation/abatement,
   b. Employees who will be in the work area during the performance of environmental remediation/abatement, and;
   c. Employers of employees who work and/or will be working in areas adjacent to the environmental remediation/abatement while the work is in progress.

2. Contractor is responsible for submitting notification of emergency service agencies including fire, ambulance, police or other agency that may service the work site in case of an emergency. Methods of entering work area and emergency entry and exit locations must be made available to all emergency service agencies.

3. Notifications of Emergency: Any employee or visitor to the job site may notify emergency service agencies at any time without change to the Contract and/or Contract Sum.

4. Notify Federal and State Agencies: The Contractor shall submit a notification to the Maryland Department of the Environment (MDE) of the pending Asbestos Abatement Work prior to commencement of work.

5. 3-Day Posting of Notification: The Contractor shall post notification signs of the abatement work, at all building entrances, three (3) days prior to commencement of work.

C. Emergency Directory

1. Develop a directory of all emergency contacts involved in the project. Include the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site. List business name, contact person, normal business and emergency telephone, mobile phone and fax numbers and addresses of:
   a. Owner, Owner's Representative, and Project Administrator.
   b. Contractor's General Superintendent, supervisory personnel and Contractor's home office.
   c. Environmental Remediation Sub-Contractor's Superintendent, supervisory personnel and Contractor's home office.
   d. Emergency services including but not limited to fire, ambulance, doctor, hospital,

police, power and gas companies, telephone company.

e. Local, state, and federal agencies with jurisdiction over the project.

2. Post copies of the Emergency Directory adjacent to the entrance to work area.

D. Alternate Procedures: Contractor shall comply with procedures specified in all applicable regulations and this Specification. Worker protective measures, engineering controls, and work practices all must be in compliance with this Specification and applicable regulations.

1. Variance: If procedures within this Specification cannot be implemented due to site-specific conditions or if the Contractor is aware of a more efficient approach, the Contractor may complete and submit a Request for Variance to the Owner, either prior to bidding or during the course of the project. The Request for Variance must include:
   a. Details of the problem(s) encountered – or potential time/cost savings – and recommended alternatives.
   b. The Owner will review such variance submittal(s) for compliance with Federal, State, and Local/Municipal regulations and submit recommendations for acceptance or rejection of the request for variance.
   c. Alternative methods described in all Request for Variance proposals must, at a minimum, comply with:
      i. Those recommended by manufacturer of approved materials.
      ii. Those required by pertinent regulations of authority-having-jurisdiction.

2. Methods described in the Contractor's Request for Variance may not be implemented without written approval by the Owner and/or the Owner's Representative.

1.9 ENVIRONMENTAL ABATEMENT SUB-CONTRACTOR QUALIFICATIONS

A. Contractor shall be licensed in the Maryland as an Asbestos Removal Contractor.

B. Project Supervisor: The Contractor shall employee a Project Supervisor who has experience in managing asbestos abatement projects and implementing engineering controls as well as being familiar with allowable work practices, personal and atmospheric protective measures, disposal of asbestos procedures, etc. The Contractor's Project Supervisor will serve as the Competent Person as required by federal and Maryland regulations. The Project Supervisor will be responsible for performing the Work described herein in accordance with all applicable federal and Maryland regulations as well as this Specification. Additionally, the Project Supervisor shall meet the following minimum criteria:

1. Training: The Project Supervisor must have a valid, non-expired training certification from a Maryland approved trainer for a course that meets the requirements of the EPA Model Accreditation Plan for asbestos abatement contractor/supervisor and licensed by the Maryland as a Worker Supervisor.

2. Experience: The Supervisor must:
   a. Have a minimum of five (5) years of experience in the on-site management of asbestos abatement projects, and

b. Have served as Project Supervisor on a minimum of five (5) asbestos abatement projects of similar size and scope of work.

3. Responsibilities
   a. Inspect asbestos removal work for conformance with all applicable regulations and current industry standards.
   b. Perform or oversee OSHA monitoring and ensure proper personal protective equipment (PPE) is being utilized by all abatement personnel.
   c. Ensure work is performed as described within this Specification at all times.
   d. Continuously evaluate engineering controls established to prevent hazardous exposure to personnel and to the environment at all times.

4. The Supervisor must meet all the requirements as a Competent Person as required by OSHA 29 CFR 1926.

5. The Supervisor must be an employee of the Contractor.

C. Foreman: If the Contractor will staff more than 10 asbestos abatement workers, the Contractor shall provide a Foreman to directly supervise and manage no more than 10 environmental remediation workers at any time. Each Foreman will act as the Competent Person as required by OSHA 29 CFR 1926 for the workers the Foreman is responsible for. The Foreman shall be responsible for oversight of the workers and report directly to the Project Supervisor. If there are 10 or fewer workers on the environmental remediation project the Supervisor may fill the Foreman's position. The Foreman must meet all the requirements of a Competent Person as required by OSHA 29 CFR 1926. The Foreman must be an employee of the Contractor.

1.10 RECORD KEEPING

A. Daily Log: The Contractor shall maintain a Daily Log posted in an area accessible to the Owner, the Owner's Representative, and the General Contractor (GC). The Daily Log must consist of the following items:

1. Meetings: reason, attendants, summary of discussion;

2. Special or unusual events, i.e. barrier breeching, equipment failures, loss of electrical power;

3. Accidents: injured individual, nature of injury, treatment, etc.

4. Documentation of Contractor's completion of the following:
   a. Inspection of work area preparation prior to start of removal and daily thereafter;
   b. Removal of any sheet plastic barriers;
   c. Removal of waste materials from work area;
   d. Decontamination of equipment (list items);
   e. Final inspection/final air test analysis;
   f. List of subcontractors at the site;
   g. Count of personnel at the site;
   h. High and low temperatures, general weather for outdoor work;

j. Stoppages, delays, shortages, losses;
k. Emergency procedures;
l. Orders and requests of governing authorities;

B. Entry/Exit Log: The Contractor shall maintain a daily log, placed adjacent to the entrance to each work area, documenting the dates and time of, but not limited to, the following items:

1. Visitors, permitted and unauthorized, with the following information:
   a. Name
   b. Organization
   c. Entry time
   d. Exit Time
   e. Respiratory protection

2. Personnel, by name, entering and leaving the work area with the following information:
   a. Printed Name
   b. Identification Number
   c. Entry Time
   d. Exit Time
   e. Respiratory Protection

C. The following information shall be posted on-site in a location accessible to workers, Owner's Representative, and Owner:

1. Air Monitoring Results

2. Documentation of inspections by OSHA, EPA or local authority.

3. Respiratory Protection Program.

4. Telephone numbers and locations of emergency services including, but not limited to, fire, ambulance, doctor, hospital, police, power and gas companies, telephone company.

5. Other records:
   a. Waste Manifests and shipping records
   b. Landfill receipts.
   c. Accident reports.

D. Special Reports:

1. General: All special reports are to be submitted directly to the Owner's Representative unless otherwise instructed by the Owner. Special reports shall be submitted within 24 hours of events requiring a special report. The Owner and any other parties involved or affected by the occurrence shall receive copies of each special report.

2. Reporting Unusual Events: If an unplanned event of significant nature occurs during the project (examples: failure of pressure differential system, rupture of temporary enclosures, injury to personnel, etc), prepare and submit report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and

similar pertinent information.

1.11 WORKER PROTECTION

A. Worker Training

1. AHERA Accreditation: All workers/supervisors are to be accredited as Asbestos Workers/Supervisors as required by the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

2. OSHA Training: All workers/supervisors performing asbestos work shall be trained in accordance with 29 CFR 1926.1101 for Class II work. Provide training for all workers/supervisors who will perform any asbestos related activity (including non-friable asbestos activities). Training method and length shall be in accordance with the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

B. Medical Surveillance

1. Before exposure to airborne asbestos fibers or use of negative pressure respirators, provide workers with a comprehensive medical examination as required by 29 CFR 1926.1101 and 29 CFR 1910.134.

2. Medical examination shall be performed initially and annually thereafter.

C. Medical Records: Maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of 30 years after termination of employment and make records of the required medical examinations and exposure data available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health Administration (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

D. Environment, Safety and Health Compliance: In addition to detailed requirements of this Specification, comply with those applicable laws, ordinances, criteria, rules, and regulations of Federal, State, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Comply with the applicable requirements of the current issue of 29 CFR 1926.1101, 40 CFR 61-SUBPART A and 40 CFR 61-SUBPART M. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this Specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement shall apply.

E. Respiratory Protection Program

1. Instruct and train each worker in proper respirator use and require that each worker always wear a respirator, properly fitted on the face, in the Work Area.

2. Furnish each employee required to wear a negative pressure or powered air purifying respirator with a respirator fit test at the time of initial fitting and at least every 6 months

thereafter as required by 29 CFR 1926.1101.

3. Establish and implement a respirator program as required by ANSI Z88.2, 29 CFR 1926.1101, and 29 CFR 1926.103.

4. The Contractor shall provide the appropriate type of respirators for each task as stipulated by 29 CFR 1926.1101, 29 CFR 1926.103, and 29 CFR 1910.134 or provide and initial exposure assessment as outlined below.

5. Initial Exposure Assessment: Submit level of respiratory protection intended for each operation required by the project. Base this selection on an “Initial Exposure Assessment” as required by OSHA 29 CFR 1926.1101. Submit information to support this "Initial Exposure Assessment."
   a. Submit data from exposure monitoring for the PEL and EL from prior asbestos jobs within 12 months;
   b. Submit monitoring and analysis that were performed in compliance with the OSHA asbestos standard in effect;
   c. Submit data that was obtained under workplace conditions "closely resembling" those that will exist during the work;
   d. Submit data from past asbestos jobs where the type of asbestos abatement and other work, material, control methods, work practices, and environmental conditions closely resemble those that will exist during the work;
   e. Submit exposure data from prior asbestos jobs where the work that was conducted by employees whose training and experience are no more extensive than that of employees performing the current job;
   f. Based on the exposure data from the previous asbestos jobs, select respiratory protection for the Work that will, to a high degree of certainty, prevent worker exposures (inside the respirator) that exceed the Permissible Exposure Limits (PEL) set forth in this Section of the specifications.

6. Require that respiratory protection be used at all times that there is any possibility of disturbance of ACM whether intentional or accidental.

7. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy.

8. Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used be Powered air-purifying respirators with high efficiency filters.

9. Do not allow the use of single-use, disposable, quarter-face or half-face respirators for any purpose.

F. Hazardous Communication Program: Establish and implement a Hazardous Communication Program as required by 29 CFR 1926.59.

1.12 PROJECT MONITOR

A. The Owner shall contract an Industrial Hygiene Consultant (IHC) to provide on-site project monitoring and testing. The IHC shall not have any direct or indirect association with the Contractor. The IHC shall employ and provide the services of an on-site Project Monitor (PM).

B. Project Monitor Qualifications

1. The IHC shall be trained through the National Institute of Occupational Safety and Health (NIOSH) 582 (or equivalency) course.

2. The IHC shall maintain a laboratory deemed proficient through the NIOSH Proficiency Testing Program (PAT) for Phase Contrast Microscopy (PCM) for analysis of asbestos air samples.

C. Project Monitor Responsibilities

1. The IHC shall be responsible for daily air monitoring, of the building's atmosphere outside the work area for airborne particulates.

2. The IHC shall be responsible for monitoring the Contractor's work practices and evaluating compliance with the Project Specifications and all applicable federal and Maryland regulations.

3. The IHC shall perform visual inspections of the work area(s) throughout each shift, including prior to the start of work, to ensure all work area barriers and proper engineering controls are in place.

4. It is the work of the IHC to perform final clearance visual inspections to ascertain that all visible asbestos has been removed and that no visible dust and/or debris remain in the work areas.

1.13 SAMPLING

A. Baselines

1. Air Samples: If requested by the owner, prior to the initiation of asbestos abatement work, the PM shall collect aggressive Phase Contrast Microscopy (PCM) air samples throughout the work area to establish baseline levels of fiber concentrations comparable with the analytical results of the final clearance air samples.

B. Sampling During Work

1. Air Sampling Outside Work Area: The IHC shall collect Phase Contrast Microscopy (PCM) air samples from outside the work area during each shift. A minimum of two (2) air samples from outside the work area shall be collected during each shift.

   a. Asbestos: Maintain fiber concentrations at lowest possible levels, not to exceed 0.1 fibers/cubic centimeter (f/cc). If concentrations rise above or equal to 0.1 f/cc, stop abatement work and re-evaluate engineering controls. The PM shall determine source of the high reading and suggest appropriate measures to reduce

airborne fiber concentrations.

2. Air Sampling Inside Work Area: The PM shall monitor airborne fiber concentrations within the work area. The purpose of this sampling is to continuously evaluate engineering controls established within the work area. A minimum of one (1) Phase Contrast Microscopy (PCM) air sample inside work area must be collected every four (4) hours of each shift while the removal of asbestos is in progress.
   a. Asbestos: Maintain fiber concentrations at lowest possible levels, not to exceed 0.1 f/cc. If concentrations rise above this figure revise work procedures to lower fiber levels.

C. Final Clearance

1. It is the work of the IHC to collect final clearance air samples following the successful completion of a final visual inspection which verifies all specified ACMs have been removed from the work area and no dust or debris remain.

2. Aggressive Air Sampling: Upon completion of abatement work and successful final clearance visual inspection, the IHC shall perform final clearance aggressive air sampling for asbestos in accordance with Maryland regulations.

   a. TEM Analysis: Transmission Electron Microscopy Methods set forth in 40 CFR Part 763, Subpart E, Appendix A.

   b. The Contractor shall be responsible for re-cleaning of the Work Area, following the analysis of final clearance air samples resulting in unacceptable concentrations of asbestos at no additional cost to the Owner.

3. The Contractor shall be responsible for any additional cost due to the Owner for the re-collection of final clearance air samples due to unacceptable initial results including sample analysis and sample collection fees.

4. All final clearance air sampling results are to be submitted to MDE and HCPS Environmental Consultant within 24-hours of receipt by the abatement contractor.

D. OSHA Monitoring: OSHA Monitoring is work of the Contractor and is not covered in this section. However, it must be conducted daily as required and in accordance with 29 CFR 1926.1101.

E. Stop Work: The PM may issue a stop work order only when the integrity of the work area is breached, results of sampling performed outside of the work area exceed baseline levels (or >0.1 f/cc), or results of inside work area sampling reveals inadequate engineering controls. The Contractor shall correct the fault in work area and/or work procedures at no cost to the Owner.

1.14 SUBMITTALS

Five (5) days prior to the start of work, **submit 2 copies** of the following to the Owner's Representative for review. Do not starts work until these submittals are approved by the Owner's Representative indicating that the submittal is returned for unrestricted use.

A. Environmental Abatement Contractor - General

1. Maryland Asbestos Abatement Contractor license;

2. Contingency Plans;

3. Emergency Directory;

4. Notification: Copy of notification sent to MDE, which shall be submitted before asbestos abatement activities begin;

5. 3-day Asbestos Project Notice: Notices of asbestos abatement work must be posted at least three (3) days before work commences. Notices must be posted immediately outside all entrances and exits from the work site of asbestos abatement, if warranted by this project;

6. Resumes for Supervisor and Foremen;

7. Accreditation: Submit evidence in the form of training course certificate and Maryland Worker or Worker Supervisor license for the Supervisor, Foreman and workers as being trained in asbestos health and safety in accordance with the Maryland regulations and EPA AHERA protocols;

8. Medical surveillance for Supervisor, Foreman, and workers;

9. Signed Worker's Certificate of Acknowledgement (found at the end of this Section) for asbestos for each worker;

10. Testing Laboratory information for laboratory performing OSHA monitoring and/or sample analysis;

11. Hazard Communication Program as required by 29 CFR 1910.1200(e);

12. Chemical Information List:
    a. Submit written chemical information list for hazardous materials that are intended to be used at the Site;
    b. Prepare chemical information list using an inventory of hazardous materials and their respective safety data sheets. Arrange list in alphabetical order according to common name. Include chemical name, and identify locations where the hazardous materials are intended to be used;
    c. Submit complete chemical information list of hazardous materials and associated safety data sheets at least two weeks prior to commencement of Project (not just before a specific activity using hazardous materials commences). This information is required in advance for adequate planning purposes.
13. Safety Data Sheets:
    a. Submit Safety Data Sheets (SDS) for all products that contain hazardous constituents and are intended to be used in the Work or stored onsite.

i. The Contractor must comply with manufacturer's recommendations for handling, storage, use, and disposal of all materials including hazardous constituents

b. If a change in material(s) used is required during the Work, submit appropriate SDS for the new materials and amend all applicable documentation (hazard communication program, respiratory protection program, etc) as required. Submission of SDS and amended documents must be completed ten (10) days prior to the delivery of the new material(s) to the site.

B. Environmental Abatement Contractor - Licenses and Qualifications: The Owner shall make the final determination regarding the approval of the Contractor's qualifications in reference to this Work. The Owner shall require at a minimum the following qualifications to be met in order to remove ACMs from the facility:

1. The Contractor and their workers shall be accredited and licensed with the Maryland Department of the Environment to perform asbestos remediation.

2. Contractor shall submit all training accreditations and applicable licenses for employees who will be used to perform the specified work.

3. Contractor shall submit a statement, notarized and signed (by an Owner, Partner, Officer, or Principle of the company), which verifies the accuracy of the following information which shall be submitted to the Owner:
   a. Documentation of successful completion of at least three (3) abatement projects of similar size, scope, and dollar value.

      i. Reference names, telephone numbers, and addresses of Owner representatives for the above referenced three (3) abatement projects.

      ii. Include air monitoring data from an independent monitoring firm demonstrating compliance with OSHA airborne hazardous particulate concentrations during the work.

   b. Names of Contractor representatives who shall have complete authority to speak for and make commitments for the Contractor (including size and dollar value) of individual projects previously supervised.

4. OSHA Compliance: Submit evidence of full compliance with medical surveillance and respiratory protection provisions of existing regulations. Include at a minimum:
   a. Written respiratory protection,
   b. Medical surveillance programs, and
   c. Proof of respirator fit testing.

5. Disclosure Statement: Contractor shall submit the following statement notarized and signed (by a principle of the company) verifying accuracy and truth of the following information;
   a. Description of any asbestos abatement or other environmental remediation projects which have been prematurely terminated, including the circumstances surrounding such termination.
   b. List of any contractual penalties which the Contractor has incurred for breach or non-

compliance with Contract Specifications on previous projects, such as overruns of completion time leading to liquidated damages.

c. List of any citations levied against the Contractor by any governmental entity for violations related to asbestos abatement, or other environmental remediation work including the name and location of the project, date(s) of violation(s), and allegation resolution.
d. Description of all legal proceeding, lawsuits or claims which have been filed or levied against the Contractor or any of his past or present employees for asbestos abatement, or other environmental remediation related activities.
e. Acknowledgement of any of the above circumstances will not necessarily result in automatic disqualification.

    i. Failure to disclose any of this information shall be cause for automatic disqualification.
    ii. The Owner shall be the sole determinant of the Contractor's ability to remove hazardous materials competently andcorrectly.

f. Affirmation that the no principle(s) has/have been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency.

PART 2 PRODUCTS

2.1 HAZARDOUS MATERIALS

The Contractor is required to have onsite, at all times, SDS on products being utilized during the execution of the Work. The Owner may, at their discretion, refuse to allow any products which the Owner feels may for any reason jeopardize the safety of building occupants and/or workers within the building. In this event, the Contractor must submit a substitute product that is less hazardous. If an appropriate substitute product is not available, the Contractor may submit an alternative plan for protecting the building occupants/workers from exposure to the hazardous material. The Owner has the final authorization for all products being used by the Contractor.

2.2 MATERIALS AND EQUIPMENT

The Contractor's use of equipment, protective clothing, special facilities and/or devices shall be in accordance with applicable regulations and manufacturer's instructions.

2.3 RESPIRATORS

A. Respirator Bodies: Provide half face negative pressure air purifying respirators or full-face powered air purifying respirators (PAPR's). Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32degrees Fahrenheit (0 degrees Celsius).

B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with 42 CFR Part 84 and ANSI Z228.2. Also, additional cartridge sections may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH Certification.

C. Non-permitted Respirators: Do not use single use, disposable or quarter face respirators.

D. Supplied Air Respirator Systems: If deemed to be necessary through compliance with 29 CFR 1926.103 and/or 29 CFR 1910.146, Supplied Air Respirator Systems shall comply with the following:

1. Provide air used for breathing in supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade D.
2. Facepiece and Hose: Provide full facepiece and hose by same manufacturer that has been certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure facepiece.
3. Auxiliary backup system: In atmospheres which contain sufficient oxygen (greater than or equal to 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator equipped with an emergency back up HEPA filter.
4. Escape air supply: In atmospheres which are oxygen deficient (less than 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.
5. Backup air supply: Provide a reservoir of compressed air located outside the Work Area which will automatically maintain a continuous uninterruptible source of air automatically available to each connected facepiece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average-sized adult male engaged in moderately strenuous activity.
6. Warning device: Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible above the noise level produced by equipment and work procedures in use, in all parts of the Work Area and at the compressor. Connect alarm to warn of:

a. Compressor shut down or other fault requiring use of backup air supply
b. Carbon Monoxide (CO) levels in excess of 5 PPM/V Compressor Motor: Provide a compressor driven by an electric motor. Do not use a gas or diesel engine to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.

7. Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from engines, motors, auxiliary generator or buildings.

2.4 PROTECTIVE CLOTHING

A. Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the Work Area. Provide a sufficient number for all required changes, for all workers in the Work Area.

B. Boots: Provide work boots with non-skid soles, and where required by OSHA, foot protectives, for all workers. Provide boots at no cost to workers. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with ACM. Dispose of boots as asbestos-contaminated waste at the end of the work.

C. Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from Work Area at the end of the work.

D. Goggles: Provide eye protection (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Thoroughly clean, decontaminate and bag goggles before removing them from Work Area at the end of the work.

E. Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from Work Area and dispose of as asbestos-contaminated waste at the end of the work.

2.5 ELECTRICAL SERVICE

A. General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.

B. Ground Fault Protection: Equip all circuits for any purpose entering the Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters equipped with test button and reset switch for circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.

C. Electrical Power Cords: Provide grounded extension cords. Use “hard-service” cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

D. Lamps and Light Fixtures: Provide general service incandescent lamps, sealed quartz halogen

construction lights, or fluorescent lamps of wattage required for adequate illumination as required by the work. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture. Provide lighting with a secure base to insure that they will not be knocked over. Keep lights away from combustible materials.

2.6 SCAFFOLDING

A. Provide scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this Specification. At this time, scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of scaffolding shall comply with applicable OSHA provisions.

B. Equip rungs of metal ladders, etc. with an abrasive non-slip surface.

C. Provide a nonskid surface on scaffold surfaces subject to foot traffic.

2.7 FIRST AID

A. Comply with governing regulations and recognized recommendations within the construction industry.

B. At a minimum, the onsite first aid kits will be sufficient for the numbers of workers onsite and shall include the following:
   1. Various sizes and types of bandages
   2. Sterile sponges
   3. Constricting bandage
   4. Eye patches
   5. Antiseptic wipes
   6. First aid cream
   7. Triangular bandage
   8. Disposable gloves
   9. Eye irrigating solution
   10. Aspirin or non-aspirin pain reliever
   11. Scissors
   12. Tweezers
   13. Rescue blanket
   14. First aid guide
   15. First aid tape
   16. Non-stick pads
   17. Cold/hot packs
   18. Splints
   19. Stretch gauze

2.8 FIRE EXTINGUISHERS

Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

1. Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance;

2. Arranged to provide access to and replacement of all air filters from intake end;

3. Mounted on casters or wheels.

B. Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions.

C. HEPA Filters for Vacuum: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.

1. Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.

2. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent.

3. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.
4. Provide filters that are marked with: the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test airflow.

D. Safety and Warning Devices: Provide units with the following safety and warning devices:

1. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter;

2. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge;

3. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red);

4. Audible alarm if unit shuts down due to operation of safety systems.

E. Electrical Components: Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.

2.9 CLEANING AND DECONTAMINATION

A. Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6 mil (0.15 mm) thick, clear, frosted, or black as indicated.

B. Disposal Bags: Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled with three labels with text as follows:

1. First Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE FIBERS IS HAZARDOUS TO YOUR HEALTH

2. Second Label: Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances

RQ-ASBESTOS WASTE CLASS 9

NA2212-PG III

3. Third Label: Provide the name of the waste generator (Owner's name), the location from which the waste was generated and the names and addresses of the contractor and transporter. This label must be durable, able to repel dirt and moisture (e.g., permanent marker). Label must be placed directly on disposal bag(s) in a legible format.

2.10 WETTING MATERIALS

A. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons (19 liters) of water.

B. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of ACM. Use a material which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a mixture of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether in five gallons (19 liters) of water.

2.11 ENCAPSULANTS

All encapsulants shall conform to current USEPA requirements and shall contain no toxic

or hazardous substances as defined in 29 CFR 1926.59.

PART 3 EXECUTION

3.1 VENTILATION

A. Provide adequate ventilation of the Work to ensure that Owner, workers and visitors are not potentially exposed to asbestos containing materials.
B. Provide and maintain ventilation in functional, efficient working order for the duration of the Project.
C. Prevent fumes, vapors, and dust related to the Work from infiltrating other parts of the building or adjacent buildings which may beoccupied.
D. Upon completion of work, with wet pollutant emitters (e.g., paints, mastic, glues, and/or mastic/glue removers) purge all work areas of airborne contaminants by supplying adequate outside air and exhausting contaminants to the building exterior.

3.2 PROTECTION

A. Equipment

1. Respirators: At a minimum all Class II work will be performed utilizing half-faced respirators. Provide personnel engaged in pre-cleaning, cleanup, handling, encapsulation and removal of asbestos materials with respiratory protection as indicated in 29 CFR 1926.1101 and 29 CFR 1926.103.
2. Protective Clothing: Provide personnel exposed to asbestos with disposable "non-breathable," whole body outer protective clothing, head coverings, gloves, and foot coverings. Provide disposable gloves to protect hands. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck by the use of tape.
3. Eye Protection: Provide goggles to personnel engaged in asbestos abatement operations when the use of a fullface respirator is not required.

B. Storage: Waste generated during abatement shall be stored in a construction trailer or hauling container that shall comply with 40 CFR 61-SUBPART M, State, regional, and local standards. Temporary on-site storage shall be provided by theContractor.

C. Electrical Service:

1. General: If necessary, provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

2. Lockout: Lockout all existing power to or through the work area. Unless specifically noted otherwise existing power and lighting circuits to the work area are not to be used. All power and lighting to the Work Area is to be provided from outside of the work area.

D. Heating, Ventilating and Air Conditioning (HVAC) Systems: Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the asbestos work areas. Seal intake and exhaust vents in the asbestos work area with 6 mil (0.15 mm) in thickness plastic sheet and tape. Seal seams in HVAC components that pass through the asbestos work area.

E. Securing Work Area: Secure work area from access by public, occupants, staff or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area.

F. Access: Limit access to regulated areas to authorized persons as defined by OSHA, and to the Owner, Designer, Project Administrator or a representative authorized by one of these entities.

G. Demarcation of Work Area: Provide bilingual warning signs printed in English and Spanish at all approaches to asbestos control areas. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide vertical format conforming to 29 CFR 1926.200, and 29 CFR 1926.1101 (minimum 20" by 14") displaying the following:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE
HAZARD AUTHORIZED PERSONNEL
ONLY RESPIRATORS AND
PROTECTIVE CLOTHING ARE
REQUIRED IN
THIS AREA

H. Warning Labels: Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Provide labels conforming to 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

DANGER CONTAINS ASBESTOSFIBERS
AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD
BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM

3.3 WORK AREA

A. Pre-cleaning: Prior to establishment of the work area, wet wipe and HEPA vacuum all surfaces potentially contaminated with asbestos. Clean movable objects and remove them from the work area.

B. Completely isolate the Work Area from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas. Perform all such required cleaning or decontamination at no additional cost to Owner.

C. Containment: Construct a portable mini-enclosure with negative pressure (-0.02 at all times) to remove each ACM component. The containment should be built using two layers of 6 mil plastic.

D. Demarcating the Area: Use “danger” barrier tape to demarcate the work area. None asbestos workers should not enter this zone.

E. Plastic on Floor: Place a layer of 6-mil plastic below work area to capture any falling debris from the work area.

F. Personal Decontamination Unit

1. Provide a one-stage decontamination unit with for personnel decontamination for each work area. A common three-stage decontamination room for floor tile containments may be utilized.

2. Each individual shall perform the following decontamination procedures upon exiting work area:
   a. HEPA vacuum and remove asbestos contaminated disposable protective clothing while still wearing respirators in the equipment room and seal in two impermeable bags for disposal. Label the outer bag as asbestos contaminated waste.
   b. Wash and remove respirator.

3. Dispose of asbestos contaminated work clothing as asbestos contaminated waste.

3.4 SCAFFOLDING

A. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.

B. Clean, as necessary, debris from non-slip surfaces.

C. At the completion of abatement work clean construction aids within the Work Area, wrap in one layer of 6 millimeters thick polyethylene sheet and seal before removal from the Work Area.

3.5 WORK PROCEDURES

A. For floor tiles and mastic abatement, enclose critical barriers with 6 mil plastic. Setup microtraps to achieve negative pressure. A common three-stage decontamination unit maybe utilized.

B. Remove ACM floor tiles and mastic by hand tools (deck scrapper, mastic remover solvent etc).

C. For door caulking, sink sealant and duct sealant removal avoid creating any sort of dust. Duct sealant maybe wrapped with duct tape an then cut from areas where there is no asbestos material. Drop-clothes, negative air machines with HEPA filtration in the direct vicinity of the work

area, critical barriers, wet methods, avoid cutting the ACM.

D. Continuously clean work area and plastic drop sheeting by HEPA vacuuming all surfaces potentially contaminated with asbestos.

E. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Work Area.

F. Personnel of other trades not engaged in the removal and demolition of asbestos containing material shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection and training provisions of this Specification are complied with by the trade personnel.

G. Pre-clean all work areas of pre-existing contamination/debris to include asbestos containing material fragments that have been dislodged. Pre-abatement visual cleanliness will be determined by the PM.

H. Wet Removal techniques shall be used. Dry removal will not be permitted.

I. Coordinate abatement in a manner to minimize the number of work areas that will require final clearance air sampling.

J. High pressure washers are not permitted for the removal of ACM or during clean-up activities.

K. Wet asbestos-containing material (ACM) with a fine spray of amended water prior to and during removal, cutting, or other handling so as to reduce the emission of airborne fibers.

L. Remove material and immediately place in 6 mil (0.15 mm) in thickness plastic disposal bags.

M. Evacuate air from disposal bags with a HEPA filtered vacuum cleaner before sealing. Twist neck of bags, bend over, and seal with minimum three wraps of duct tape.

N. Any asbestos waste material which will not fit inside pre-structured polyethylene bags shall be sealed in three (3) layers of 6 mil (0.15 mm) in thickness plastic sheeting, labeled, and inspected by the PM prior to removal.

O. Housekeeping: Maintain surfaces of the Work Area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. DO NOT USE COMPRESSED AIR.

P. Stop Work: If an asbestos fiber release or spill occurs outside of the Work Area, stop work immediately, correct the condition to the satisfaction of the PM and Owner's Representative, including clearance sampling, prior to resumption of work. In addition, the PM has Stop Work authority.

3.6 CONTAMINATION OF BUILDING MATERIALS DUE TO CONTAINMENT BREECH

A. If during the performance of the Work it is determined by the PM through air sampling and/or observations of dust and debris, that a Work Area breech or by other means the Contractor has caused areas of the building to be contaminated with asbestos, the Contractor shall stop work immediately. The Contractor shall clean all affected areas of the building determined to be contaminated by the PM, Owner or Owner's Representative at no additional cost to the Owner.

B. All decontamination and cleaning work will be performed by the Contractor until such cleaning has achieved a level of cleanliness deemed satisfactory by the PM via TEM air sample results which demonstrate the airborne fiber concentration in the affected area is less than 70 structures/mm^2 or PCM air sample results which demonstrate the airborne fiber concentration in the affected area is less than 0.01 f/cc in addition to a visual inspection for the presence of dust, debris, and/or bulk asbestos material.

C. The Contractor shall credit or reimburse the Owner for all costs associated with additional air sampling and consulting performed by the IHC related to the contamination caused by the Contractor.

D. Contractor accepts all liability for damages caused by Contractor's negligence and shall accept all responsibility and liability for damages claimed by any lawsuit or other legal action brought against the Owner, its employees, the Owner's Representatives and the IHC as a result of asbestos contamination caused by Contractor.

3.7 CLEAN-UP

A. Wet wipe, using a water and surfactant solution, all surfaces within the work area including plastic barriers with paper towels or disposable rags. The surfactant shall be of a type that penetrates asbestos materials so that the material is thoroughly wetted.

B. When the surfaces have dried, HEPA vacuum all surfaces in the room starting at the ceiling, then top of wall and working downward to the floor.

C. HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Vacuum the floor in parallel passes with each pass overlapping the previous by one half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.

D. Repeat wet wiping and HEPA vacuuming until no visible residue remains.

E. Remove used HEPA unit pre-filters and replace with clean filters. Use filters are to be disposed of asbestos contaminated waste.

3.8 FINAL CLEARANCE

A. Prior to removal of plastic barriers and after pre-clearance clean up of gross contamination, the

PM shall conduct a visual inspection of all areas affected by the removal to ascertain that all specified ACM has been removed and no visible dust or debris remains within the Work Area.

B. If visible ACM, dust or debris is identified by the IHC, the Contractor shall re-clean the Work Area.

C. Upon obtaining a satisfactory final visual inspection from the IHC, the Contractor shall apply a lock-down encapsulant. The encapsulant shall be spray applied to ceiling, walls, floors, and other areas exposed in the removal area. The exposed area shall include but not be limited to plastic barriers, furnishings, and articles to be discarded as well as dirty change room, air locks for bag removal.

D. When encapsulant is dry to the touch, the IHC shall conduct final clearance sampling in accordance with Section 1.17C of this Specification.

E. Within 24 hours of receiving final clearance sample results, the Contractor shall submit copies to the MDE.

3.9 TEAR-DOWN

A. After acceptable airborne concentration teardown containments, remove all signs and demarcation tape. Dispose of filters as asbestos contaminated materials.

B. Plastic sheeting, duct tape, etc. utilized in the construction of the Work Area shall be disposed of as asbestos-contaminated waste.

3.10 DISPOSAL OF ASBESTOS

A. Waste generated as a result of asbestos removal shall be disposed of at a MD- approved asbestos landfill.

B. HCPS representative must sign waste manifest before it is removed from site. Provide 48 hour notification prior to removal.

C. The asbestos waste shall be put in 6 mil asbestos waste bags (double bag) and air vacuumed out and “goose-necked” tied with duct tape.

D. Each asbestos disposal bag and wrapped material shall be affixed with a warning and DOT label.

E. The name of the waste generator and the location at which the waste was generated shall be clearly indicated on the outside of each asbestos disposal bag and wrapped material.

F. Prevent contamination of the transport vehicle. These precautions include lining the vehicle cargo area with plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete.

G. Procedure for hauling and disposal shall comply with 40 CFR 61-SUBPART M, State, regional, and local standards.

H. Workers unloading the asbestos disposal bags shall wear appropriate respirators and personal protective clothing. All used coveralls should be disposed off as asbestos.

HOWARD COUNTY
PUBLIC SCHOOL SYSTEM

Construction Change Proposal / Change Order

Project: _____ Contract #: _____

HCPSS PM: _____ PCO #: _____

Architect: _____ CM: _____

Description of Change (RFP): Date: _____

Attachments:

Contractor Proposal (Attach Form A1 and Backup)

Contractor: _____ Amount: _____

Minority Participation : Yes_____ No____

Contractor Signature: Date: _____

Archtect / CM Review:

CM Comments:

CM Signature: Date: _____

Architect Comments:

Architect Signature: Date: _____

Change Status:

Accepted: _____ Not Accepted: _____

HCPSS Signature:_____ Date: _____

Contract Status: CO #: _____

Original Contract Amount:

Changes To Date:

This Change:

New contract Amount:

EXHIBIT B

CHANGE ORDER REQUEST FORMAT

PROJECT NAME: DATE:

GENERAL CONTRACTOR:

SUBCONTRACTOR:

SUB-SUBCONTRACTOR:

C.O.R. ITEM OR WORK:

I. DIRECT PAYROLL LESS FRINGES, INSURANCE, TAXES*:	
II.A FRINGES (CASH IN LIEU)	
II.B FRINGES (PAID BY EMPLOYER) - $ PER HOUR	
II.C TAX, INSURANCE, BURDEN _____ % of Payroll & CIL	0
III. TOTAL MATERIAL COSTS**:	
IV. MATERIAL SALES TAX:	0
V. EQUIPMENT RENTALS (ATTACH COPY OF INVOICE):	
VI. CONTRACTOR-OWNED EQUIPMENT**:	
VII. PROFIT AND OVERHEAD 20% OF LINES I & III:	0
VIII. 8% OF LINE V (ONLY WITH INVOICE COPY):	0
IX. TOTAL ALL LINES:	0
X. SUBCONTRACTORS COSTS (ATTACH BREAKDOWN):	
XI. 8% PROFIT & OVERHEAD ON SUBCONTRACTORS:	0
XII. TOTAL LINES IX, X, & XI:	0
XIII. BOND _____ % OF LINE XII:	0
XIV. TOTAL COST OF WORK:	0

*Provide Itemization of Labor Hours and Worker Classification

**Provide Itemization

Change Order Request Format is Required for each Portion of Change Order Request Submission.

EXHIBIT B
DESCRIPTION

All change orders shall be submitted in the change order request format (see Exhibit A) as set forth below:

1. Attach an itemization of labor hours. A certified payroll affidavit may be required to substantiate labor rates. The cost of foreman and superintendent may be added only when the change order makes necessary the hiring of additional supervisory personnel or makes their employment for time in addition to that required by the basic contract.

2. Labor burden percentage costs shall include all taxes, insurance, liabilities, workmen's compensation, unemployment, and any additional cost associated as labor burdens. Labor burden percentage rates are subject to approval of the Owner and is not subject to profit and overhead. Contractors and their subcontractors are to provide a breakdown of labor burden and fringe benefits to the owner for review for each worker classification prior to the approval of any change order.

3. Attach an itemization of all materials used listing unit prices and extended prices.

4. Attach an itemization of equipment used and rental rates. If equipment is a rental, attach a copy of the rental invoice. Rental equipment and contractor-owned equipment costs shall include all costs associated with the equipment, i.e. transportation, set-up, gas, and oil. Rental rates shall not exceed rates established by local rental companies and "MEANS DATA" rates.

5. Profit and overhead shall be considered full reimbursement for any additional expenses caused by the change order work. The Contractor shall agree to 20% profit and overhead markup on work by own forces and 8% profit and overhead markup on Subcontractors work. Allowances for overhead shall include but not limited to the costs for use of, small tools and consumables; trucks and trucking costs; maintenance and/or operations of Contractor's regular established office, branch office, and other facilities; resident and/or non-actively engaged supervision; time keepers; clerk; stenographer; watchmen; cost of correspondence; increased item of warranty under the change.

6. Profit and overhead at 8% may be added to equipment that is rented.

7. Only the actual added costs of the bond may be added to the change order amount. No further markup shall be allowed.

8. Change order requests shall not be considered unless they are submitted in proper format with all required and requested supporting documentation. All portions of the change shall use the change order request format.

9. For all work to be performed by a Subcontractor/Subcontractors, the Contractor shall furnish the Subcontractors itemized proposal that shall contain original signatures by an authorized representative of the Subcontracting firm. If requested by the Owner or Architect, proposals from suppliers or there supporting data to substantiate the Contractor's or Subcontractor's cost shall be furnished. Subcontractors and vendors are subject to the same terms of the CO/CO Form.

10. On changes resulting in a credit to the Owner, the credit shall be the net cost without profit overhead and profit.

11. Change order costs shall not exceed unit pricing as provided if applicable by Contract Documents.

QUANDEL
J.VINTON SCHAFER

Howard County
Public School System

Meeting Type/ Date & Time:	Pre Bid Walkthrough - 3/10/2020 3:30PM
Meeting Location:	Hammond HS - 8800 Guilford Rd, Columbia, MD 21046

Attendees				
Name	**Company**	**Discipline**	**Phone #**	**Email Address**
Brett Harrison	Banco Enter.	Asbestos	4103350660	brett@bancoent.com

QUANDEL
J.VINTON SCHAFER

Howard County
Public School System

Meeting Type/ Date & Time:	Pre Bid Walkthrough - 3/12/2020 3:30PM
Meeting Location:	Hammond HS - 8800 Guilford Rd, Columbia, MD 21046

Attendees				
Name	**Company**	**Discipline**	**Phone #**	**Email Address**
Tony DeLaVega	DeLaVega LLC	Demo + E&S Site work	443-824-3205	Tony@delavegausa.com
Mike Keefer	GG Tignall	Mechanical/plumb	4104285599	MKeefer@getignall.com
Adam Zeleny	Capital Demolition	Demolition	4105006633	adam@capdemolition.net
Fredy Rivera	Delavega LLC	site work and Dem	301-537-7766	frey@delavegausa.com